# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

May 5, 2016

Scott J. Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Units 1 – behind Well Site (File: C09D011)**
**Supplemental/Revised Grading and Drainage Plan**
**Engineer's Stamp Date 4-25-2016**

Dear Mr. Steffen:

Based upon the information provided in your submittals received 4-25-16 the above referenced submittal is approved for Grading Permit

Please provide the Engineer Certification per the DPM checklist after the grading is complete.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

# City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

**Project Title:** VALLE PRADO UNIT 1 Building Permit #: _____ City Drainage #: C09/D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: Valle Prado Unit 1

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD I ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: _____ Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Other Contact:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

**DEPARTMENT:**

X HYDROLOGY/ DRAINAGE
___ TRAFFIC/ TRANSPORTATION
___ MS4/ EROSION & SEDIMENT CONTROL

**TYPE OF SUBMITTAL:**

___ ENGINEER/ ARCHITECT CERTIFICATION

___ CONCEPTUAL G & D PLAN
X GRADING PLAN
___ DRAINAGE MASTER PLAN
___ DRAINAGE REPORT
___ CLOMR/LOMR

___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ TRAFFIC IMPACT STUDY (TIS)
___ EROSION & SEDIMENT CONTROL PLAN (ESC)

___ OTHER (SPECIFY) _____

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY

___ PRELIMINARY PLAT APPROVAL
___ SITE PLAN FOR SUB'D APPROVAL
___ SITE PLAN FOR BLDG. PERMIT APPROVAL
___ FINAL PLAT APPROVAL
___ SIA/ RELEASE OF FINANCIAL GUARANTEE
___ FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
___ SO-19 APPROVAL
___ PAVING PERMIT APPROVAL
___ GRADING/ PAD CERTIFICATION
___ WORK ORDER APPROVAL
___ CLOMR/LOMR

___ PRE-DESIGN MEETING
___ OTHER (SPECIFY) _____

RECEIVED
APR 25 2016
LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: X Yes ___ No

DATE SUBMITTED: 4/25/16 By: SCOTT STEFFEN

---

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

# Bohannan Huston

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

April 25, 2016

Rita Harmon, P. E.
Planning Department
Hydrology Review Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Valle Prado Unit 1, Supplemental Grading and Drainage Plan (C09/D011)

Dear Rita:

Enclosed is the Supplemental Grading and Drainage Plan for Valle Prado Unit 1 for your review and approval. This submittal modifies the original drainage design behind the ABCWUA well site and Lots 29-32. The modification is required due to the location of the New Mexico Gas Company gas transmission line the prevents the drainage swale behind lots 29-32 from being constructed per the original grading plan and results in runoff ponding on the north side of Lot 29.

To minimize the volume of ponding water adjacent to Lot 29 two small retention ponds are proposed as shown on the attached grading plan. In addition, a small berm will constructed north of the Lot 29 side yard wall to prevent water from ponding directly on the wall. The volume provided for the two ponds is 2 times the 100-year, 24-hour runoff volume as shown on the attached Basin Map. The small berm (Basin 3) has capacity for just under 2 times the 100-year, 24-hour runoff volume.

If you have any questions or require further information in order to approve the Supplemental Grading and Drainage Plan, please feel free to contact me at 823-1000.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development and Planning Group

Enclosures

RECEIVED
APR 25 2016
LAND DEVELOPMENT SECTION

**Engineering ▲**
**Spatial Data ▲**
**Advanced Technologies ▲**

P:\20150013\Correspondence\Submittals\G&D\20160329 Unit 2 Pond Grading\Valle Prado Unit 2_Offsite Pond.Docx

## Scott Steffen

**From:** Scott Steffen
**Sent:** Monday, April 25, 2016 9:24 AM
**To:** Harmon Rita T. (rharmon@cabq.gov)
**Cc:** PLNDRS@cabq.gov
**Subject:** Valle Prado Unit 1 Supplemental Grading and Drainage Plan
**Attachments:** Valle Prado U1 Supplemental G&D Plan Submittal_C09_D011.pdf

Rita,

Attached is the Supplemental Grading and Drainage Plan for Valle Prado Unit 1 for your review and approval. This submittal modifies the original drainage design behind the ABCWUA well site and Lots 29-32. The modification is required due to the location of the New Mexico Gas Company gas transmission line the prevents the drainage swale behind lots 29-32 from being constructed per the original grading plan and results in runoff ponding on the north side of Lot 29.

You should receive a hard copy this afternoon.

Let me know if you have any questions.

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

RECEIVED
APR 25 2016
LAND DEVELOPMENT SECTION

resent email noting that an approved ESC plan reqd prior to GP.

**Harmon Rita T.**

---

**From:** Harmon Rita T.
**Sent:** Friday, February 12, 2016 3:42 PM
**To:** Scott J. Steffen (ssteffen@bhinc.com); Rick Beltramo (rbeltramo@gcinm.com)
**Subject:** C09D011_PP_Appr : Valle Prado Unit 4 and 5 Stamp Date 1-8-2016

Scott,

This email is being sent in lieu of an attached comment letter in order to expedite the response for initial reviews. Responses to comments should continue to be included in the re-submittal. A reply to this email with responses to comments will not be considered a re-submittal.

Based upon the information provided in your submittal received 1-09-2016, the above referenced plan is approved for DRB action on the Preliminary Plats.

Prior to Grading Permit, the following comments must be addressed:

- The Drainage Report shows "Future Pond A5" on western boundary of On Valle Prado Unit 5. When will this Pond be built/graded? Until it is built, how and where will offsite flows be directed? Is a swale needed along the western boundary?
- Was Pond A6 on Valle Prado Unit 3 built? Since this pond collected offsite flows, it seems that Pond A5 should be built for the same reasons.
- It is understood that Valle Prado Unit 3 is to be amended so that grades at the rear of lots 19, 20, and 21 will match those shown on Valle Prado Unit 5. The amended plan should be submitted at the same time or before Valle Prado 5 is resubmitted.
- Interim Grading Plan for Unit 4 is needed showing Temporary Sedimentation Ponds.
- Unit 5 should show a sedimentation pond at the west end of Woodmont Avenue.
- Both Units 4 and 5 should show the As-built elevations roads, pads, etc. of Valle Prado Unit 2 and 3.
- Include in the Infrastructure List Pond A5 (With Agreements and Covenants) and the Retaining wall on east side of Sand Rock Street .

If you have any question please do not hesitate to contact me.

| | % D (Ac) |
|---|---|
| Basin 1 | 4.0 |
| " 2 | 2.59 |
| " 3 | 2.09 |
| | 8.68 Ac. |


***Rita Harmon, P.E.***
Senior Enginneer, Planning Department
Development Review Services
505-924-3695


Ac. = 15.5 Ac. for Future Basin 1, 2, + 3

| | | | | |
|---|---|---|---|---|
| Future Basin 1 | % D = 58 | A = 0.010781 SQ mi | , 6.9 Ac | |
| 2 | 54 | A = 0.0075 | , 4.8 | |
| 3 | 55 | A = .005938 | , 3.8 | |

## Scott Steffen

**From:** Scott Steffen
**Sent:** Friday, January 08, 2016 9:17 AM
**To:** Harmon Rita T. (rharmon@cabq.gov)
**Cc:** PLNDRS@cabq.gov; Rebecca Gauna; 'Rick Beltramo'
**Subject:** Valle Prado Units 4 and 5 - C09/D-11
**Attachments:** Valle Prado Units 4_5 Grading Plan.pdf

Rita,

Attached is the Valle Prado Units 4 and 5 grading plan.

As we discussed in a previous meeting a drainage report is not required for Units 4 and 5 as they were included in the Valle Prado Units 1 and 2 drainage report as Future Basins 1-3. The report had 90 lots for Units 4 and 5. The submittal has 73 lots for Units 4 and 5. This results in a decrease in the %D land treatment of between 5%-10%. This results in a decrease in the runoff from Units 4 and 5 of about 2.5 cfs. Therefore, the drainage analysis presented in the Units 1 and 2 report is still valid and an update is not necessary.

Becky Gauna from our office will be submitting the Valle Prado Units 4 and 5 preliminary plats this morning. As part of the submittal the DRWS form will need to be signed by someone in Hydrology. Will you or someone from Hydrology be available to sign the DRWS form based on this information?

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

RECEIVED
JAN 09 2016
LAND DEVELOPMENT SECTION

# City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

**Project Title:** VALLE PRADO UNITS 4 AND 5 Building Permit #: _____ City Drainage #: C09/D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: Tract 6 Trails Unit 3A/Tract C Valle Prado Unit 3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD I ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: _____ Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Other Contact:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

**DEPARTMENT:**

X HYDROLOGY/ DRAINAGE
___ TRAFFIC/ TRANSPORTATION
___ MS4/ EROSION & SEDIMENT CONTROL

**TYPE OF SUBMITTAL:**

___ ENGINEER/ ARCHITECT CERTIFICATION

___ CONCEPTUAL G & D PLAN
X GRADING PLAN
___ DRAINAGE MASTER PLAN
___ DRAINAGE REPORT
___ CLOMR/LOMR

___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ TRAFFIC IMPACT STUDY (TIS)
___ EROSION & SEDIMENT CONTROL PLAN (ESC)

___ OTHER (SPECIFY) _____

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY

X PRELIMINARY PLAT APPROVAL
___ SITE PLAN FOR SUB'D APPROVAL
___ SITE PLAN FOR BLDG. PERMIT APPROVAL
___ FINAL PLAT APPROVAL
___ SIA/ RELEASE OF FINANCIAL GUARANTEE
___ FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
___ SO-19 APPROVAL
___ PAVING PERMIT APPROVAL
___ GRADING/ PAD CERTIFICATION
___ WORK ORDER APPROVAL
___ CLOMR/LOMR

___ PRE-DESIGN MEETING
___ OTHER (SPECIFY) _____

AO

RECEIVED
JAN 09 2016
LAND DEVELOPMENT SECTION

Paid $780.00

IS THIS A RESUBMITTAL?: ___ Yes X No

DATE SUBMITTED: 1/8/16 By: SCOTT STEFFEN

---

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

January 15, 2016

Scott Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Unit 2, ROFG**
**Grading and Drainage Plan**
**Engineer's Stamp Date 7-10-2014 (File: C09D011)**
**Certification dated 12-9-2015**

Dear Mr. Steffen:

Based upon the information provided in your Certification received 12-9-2015, the above referenced Certification is not accepted for Release of Financial Guarantee. Prior to ROFG the following conditions must be met:

- It does not appear that the retaining wall behind Lot 14 extends to Lot 22 as shown on the plan. Is it covered with dirt? Provide a picture showing that it extends.
- Retaining wall behind lot 12 was not built. It has a 3' split at the NW corner and cannot be a garden wall.
- Double garden walls behind Lots 11 thru 13, and lots 23 and 24 were allowed in lieu of retaining walls since they are allowed to retain 2 ft. However, since they are intended to function exactly as a retaining wall and support the grade and building pad, they must be built prior Release of Financial Guarantee.
- The Alternative grading plan is not accepted since it does not show a viable drainage scheme.

If you have any questions, you can contact me at 924-3695.

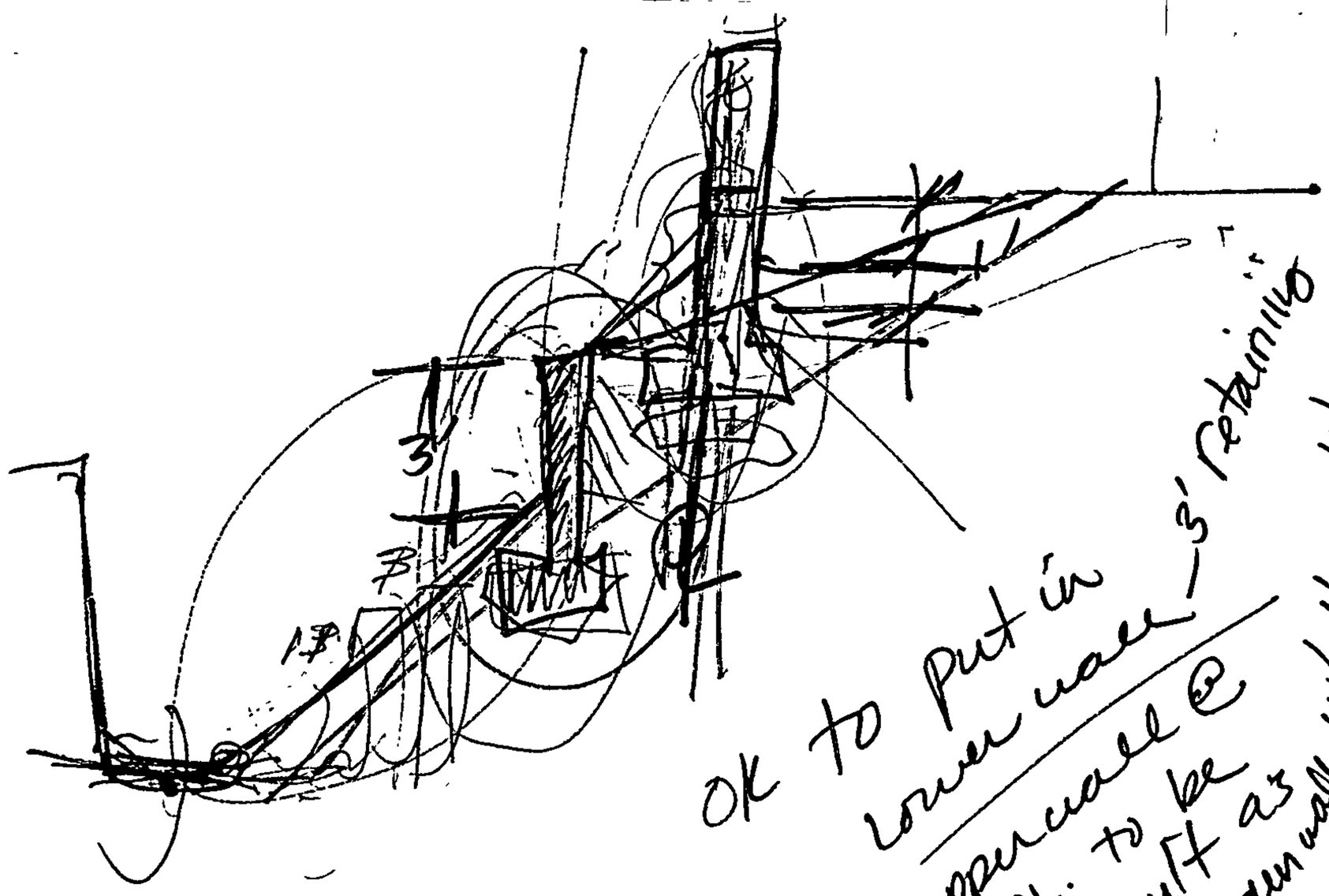
PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email

C09D011_ROFG_Cmmt_VPU2.doc




OK to put in lower wall – 3' retaining
upper wall @ PL. to be built as 1' split w/ 1' small garden

Drainage resolution behind well house & near open space is tied to ~~this~~ VP #6 I.L.
~~Bots. UNIT 2~~
Peter

## Harmon Rita T.

**To:** Scott J. Steffen (ssteffen@bhinc.com)
**Cc:** Rick Beltramo (rbeltramo@gcinm.com)
**Subject:** FW: Valle Prado Unit 2 - Pad Certs
**Attachments:** C09D011_GPCert_Appr_VPU2.pdf

Scott,
I forgot to add to my letter that the drainage problems behind the well house also need to be resolved prior to ROFG for VP Unit 2.

put on VP #4 on 3 1.C list.
1/21/16 RTH

Rita

---

**From:** Harmon Rita T.
**Sent:** Thursday, December 31, 2015 9:13 AM
**To:** Scott J. Steffen (ssteffen@bhinc.com)
**Cc:** Rick Beltramo (rbeltramo@gcinm.com)
**Subject:** Valle Prado Unit 2 - Pad Certs

Scott,

Please find attached a copy of the Hydrology Letter for the above referenced project.

Sincerely,

***Rita Harmon, P.E.***
*Senior Engineer*
Planning Department
Development & Review Services Division
600 2nd St. NW, Suite 201
Albuquerque, NM 87102
t 505-924-3695
f 505-924-3864

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

January 15, 2016

Scott Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Unit 2, Pad Certification of all lots**
**Grading and Drainage Plan**
**Engineer's Stamp Date 7-10-2014 (File: C09D011)**
**Certification dated 12-9-2015**

Dear Mr. Steffen:

Based upon the information provided in your Certification received 12-9-2015, the above referenced Certification is acceptable for Building Pad Certification for all lots.

If you have any questions, you can contact me at 924-3695.

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email



C09D011_Pad_Cert_Appr_VPU2.doc

*Albuquerque - Making History 1706-2006*

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

December 30, 2015

Scott Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Unit 2, Pad Certification of all lots**
**Grading and Drainage Plan**
**Engineer's Stamp Date 7-10-2014 (File: C09D011)**
**Certification dated 12-9-2015**

Dear Mr. Steffen:

Based upon the information provided in your Certification received 12-9-2015, the above referenced Certification is acceptable for Building Pad Certification but not for Release of Financial Guarantee. Prior to ROFG the following conditions must be met:

- It does not appear that the retaining wall behind Lot 14 extends to Lot 22 as shown on the plan. Is it covered with dirt? Provide a picture showing that it extends.
- Retaining wall behind lot 12 was not built. It has a 3' split at the NW corner and cannot be a garden wall.
- Double garden walls behind Lots 11 thru 13, and lots 23 and 24 were allowed in lieu of retaining walls since they are allowed to retain 2 ft. However, since they are intended to function exactly as a retaining wall and support the grade and building pad, they must be built prior Release of Financial Guarantee.
- The Alternative grading plan is not accepted since it does not show a viable drainage scheme.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

# Bohannan Huston

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

December 9, 2015

Ms. Rita Harmon
Hydrology Section
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Grading and Drainage Certification, Valle Prado Unit 2
DRB Case No. 1004404, (C09/D011)

Dear Rita:

We are submitting the final grading and drainage certification for Valle Prado Unit 2. Enclosed for your review is the approved grading and drainage plan dated 7/10/14, with as-built elevations for Unit 2. Construction of the dual garden walls at the back of Lots 11 through 13 is the responsibility of the homebuilder per an agreement with Wexford Construction. This gives the homebuilder flexibility in terms of whether 1 or 2 walls needs to be constructed based on the depth of the home that is built on each lot. Also enclosed is an alternative grading plan showing a single garden wall on the property line, a 3:1 slope in the back yard and a shorter pad than on the approved plan. This alternate grading plan is provided for information as to what the lot would look like without the dual garden walls. As such, as-built grades are not provided on the alternative grading plan.

Similarly, the upper garden wall on the back and side of Lot 14 (back of Lots 22-24, Valle Prado Unit 1) is the responsibility of the homebuilder and will be built at the time of home construction. The lower retaining wall on Lot 14 has been constructed.

In addition, the homebuilder may choose to move the 4 foot split into a single retaining wall at the lower wall location thereby eliminating the 2 foot split on the upper wall, which would allow for a taller privacy wall on the property line. If the homebuilder chooses to do so, they would be responsible for securing a wall permit to construct the lower wall as a retaining wall.

As-built elevations for the small retention pond at the south end of Two Rock Road show a pond volume of 0.57 acre-feet, which is greater than the 10-day volume of 0.49 acre-feet. The top of the pond elevation was increased to get the required retention volume due to the presence of basalt rock. The as-builts show that the retention pond functions per the intent of the design in the Valle Prado Units 1 and 2 Drainage Report, dated 6/24/14.

After reviewing these as-built elevations and visiting the site on 12/09/15, it is my belief that the Valle Prado Unit 2 subdivision has been graded in substantial compliance with the approved grading and drainage plan.

Your review and approval is requested for Building Permit Approval and Release of Financial Guaranty for Valle Prado Unit 2. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development & Planning

Enclosure

cc: Rick Beltramo, Wexford Construction

# City of Albuquerque

## Planning Department

## Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNIT 2 Building Permit #: _____ City Drainage #: C09/D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: LOTS 1-29, VALLE PRADO UNIT 2

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-639-4798 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Paid Cert for all Pers

**TYPE OF SUBMITTAL:**

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- X ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ ENGINEER'S CERT (ESC)
- ____ SO-19
- ____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- X SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ GRADING CERTIFICATION
- ____ SO-19 APPROVAL
- ____ ESC PERMIT APPROVAL
- ____ ESC CERT. ACCEPTANCE
- ____ OTHER (SPECIFY)

RECEIVED
DEC 09 2015
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 10/09/15 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

December 24, 2015

Scott Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Unit 2**
**Alternative Grading and Drainage Plan for Lots 11,12 and 13.**
**Engineer's Stamp Date 12-9-2015 (File: C09D011A)**

Dear Mr. Steffen:

Based upon the information provided in your submittal received 12-9-2015, the above referenced submittal cannot be approved for Grading Permit until the following comments are addressed.

- Information only: The originally approved plan (7-10-14) shows a double garden wall. This alternative shows a single garden wall, with the slope grading being extended closer to the pad at a maximum slope of 3:1. This alternative plan gives the home builder the option to build a single garden wall without a retaining wall.
- Lot 11: The B.O.W. is 90.99 in the center of the lot, but the contour is a 90. It appears a second garden wall is required.
- Lot 12 : B.O.W is 89.64 at the corner, but the 89.0 contour is very close. Is there enough room to build it up 8" at a 3:1 slope. Note that the original plan actually had a retaining wall with a 3' split at this corner, and not a garden wall.
- Lot 13: Flows appear to sheet flow down to within 10' of pad and go around corner. It is highly unlikely that a homeowner would maintain a drainage swale right outside their back door.
- Sloped side of Garden walls will erode and undermine any capacity to retain 2'. It will also expose Footing.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov



C09D011_GP_Alternate_Cmmt_VPU2.doc

note

not sent

# City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNIT 2 Building Permit #: City Drainage #: C09/D011

DRB#: 1004404 EPC#: Work Order#:

Legal Description: LOTS 1-29, VALLE PRADO UNIT 2

City Address:

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-639-4798 Fax#: E-mail:

**Architect:** Contact:

Address:

Phone#: Fax#: E-mail:

**Surveyor:** Contact:

Address:

Phone#: Fax#: E-mail:

**Contractor:** Contact:

Address:

Phone#: Fax#: E-mail:

NO - VALBAL - Gardens/Retaining walls not on

**TYPE OF SUBMITTAL:**

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- X ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ ENGINEER'S CERT (ESC)
- ____ SO-19
- ____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ ~~GRADING PERMIT APPROVAL~~
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ GRADING CERTIFICATION
- ____ SO-19 APPROVAL
- ____ ESC PERMIT APPROVAL
- ____ ESC CERT. ACCEPTANCE
- ____ OTHER (SPECIFY)

RECEIVED SEP 10 2015 LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 09/10/15 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

# Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

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:** Rita Harmon
Hydrology Section
City of Albuquerque
600 2nd St NW

**Requested by:** Scott Steffen

**Date:** September 10, 2015

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

**Phone:** 924-3695
**Job No.:** 20150013.020.01.cdp

**Job Name:** Valle Prado Unit 2

**DELIVERY VIA**

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

**PICK UP**

Item: _____

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Valle Prado Unit 2 G&D lot cert |

**COMMENTS / INSTRUCTIONS**

RECEIVED
SEP 10 2015
LAND DEVELOPMENT SECTION

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

## Scott Steffen

**From:** Scott Steffen
**Sent:** Thursday, September 10, 2015 11:53 AM
**To:** Harmon Rita T. (rharmon@cabq.gov); PLNDRS@cabq.gov
**Cc:** 'Rick Beltramo'
**Subject:** Valle Prado Unit 2 lot certification
**Attachments:** Valle Prado Unit 2 G&D Pad Certification.pdf

Rita,

Attached is the Valle Prado Unit 2 lot certification. You should receive a hard copy this afternoon.

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

RECEIVED
SEP 1 0 2015
LAND DEVELOPMENT SECTION

# Bohannan Huston

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

September 10, 2015

Ms. Rita Harmon
Hydrology Section
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Partial Grading and Drainage Certification, Valle Prado Unit 2
DRB Case No. 1004404, (C09/D011)

Dear Rita:

We are submitting a partial grading and drainage certification for Valle Prado Unit 2. The partial certification only includes Valle Prado Unit 2 Lots 1-29. Enclosed for your review is the approved grading and drainage plan dated 7/10/14, with as-built elevations for Unit 2. The Unit 2 lots have been graded, and curb and gutter, pavement and storm drain improvements have been constructed.

The small retention pond at the south end of Two Rock Road is not being certified at this time. Prior to request for release of financial guaranty for Valle Prado Unit 2 a certification will be submitted that includes this pond, stating that it functions per the intent of the design in the Valle Prado Units 1 and 2 Drainage Report, dated 6/24/14.

After reviewing these as-built elevations and visiting the site on 9/8/15, it is my belief that the Valle Prado Unit 2 subdivision has been graded in substantial compliance with the approved grading and drainage plan.

Your review and approval is requested for Building Permit Approval for Valle Prado Unit 2, Lots 1-29. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development & Planning

RECEIVED
SEP 10 2015
LAND DEVELOPMENT SECTION

Enclosure

cc: Rick Beltramo, Wexford Construction

**Engineering ▲**
**Spatial Data ▲**
**Advanced Technologies ▲**

P:\20150013\Correspondence\Submittals\G&D Cert\Unit 2\Pad Cert\20150910 Unit 2 Pad Cert Docx

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

P2

Richard J. Berry, Mayor

November 24, 2014

Scott Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Units 1 & 2 (File: C09D011) (DRB # 1004404,)**
***Removal of Offsite Pond 2***
**Revised Drainage Report Calculations, (AHYMO, InRoads)**
**Revised to Grading and Drainage Plan Unit , Engr. Stamp 11-19-2014** UNIT 1 only
**Revised Inlet and Storm Drain Network Map, 11-19-2014**
**Revised Work Order Construction Drwg., Sht 11/19, CPN # 740581**
**(DRB # 1004404)**

Dear Mr. Steffen:

Based upon the information provided in your submittals received 11-19-2014 , the above referenced submittals are approved for Grading Permit. This revision removes Offsite Pond 2 from the **Amendment to The Drainage Master Plan for the Trails Units 1,2, and 3(April 2014)** .

It is noted that the previous change, moving the SD in Woodmont west of Nightshine Street into Sub-basin E1.1, is reflected in the Revised Drainage Report Calculations, (AHYMO, InRoads) and Revised Inlet and Storm Drain Network Map.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email, Monica Ortiz

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

P2

# City of Albuquerque

## Planning Department

## Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNITS 1 AND 2 Building Permit #: _____ City Drainage #: C09/D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: TRACTS 9 AND 0S-3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL G & D PLAN
____ GRADING PLAN
____ EROSION & SEDIMENT CONTROL PLAN (ESC)
____ ENGINEER'S CERT (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ ENGINEER'S CERT (TCL)
____ ENGINEER'S CERT (DRB SITE PLAN)
____ ENGINEER'S CERT (ESC)
____ SO-19
X OTHER (SPECIFY) Drainage Plan Addendum

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

____ SIA/FINANCIAL GUARANTEE RELEASE
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D APPROVAL
____ S. DEV. FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ CERTIFICATE OF OCCUPANCY (PERM)
____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ WORK ORDER APPROVAL
____ GRADING CERTIFICATION
____ SO-19 APPROVAL
____ ESC PERMIT APPROVAL
____ ESC CERT. ACCEPTANCE
____ OTHER (SPECIFY)

RECEIVED
NOV 19 2014
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 11/19/14 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

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:** Curtis Cherne
Hydrology Section
City of Albuquerque
600 2nd St NW

**Requested by:** Scott Steffen

**Date:** November 19, 2014

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

**Phone:** 924-3986
**Job No.:** 20140164.005.01.cdp

**Job Name:** Valle Prado Drainage Report

**DELIVERY VIA**

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

**PICK UP**

Item: _____

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Drainage report addendum for removal of Offsite Pond 2 |

**COMMENTS / INSTRUCTIONS**

RECEIVED
NOV 19 2014
LAND DEVELOPMENT SECTION

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

Bohannan Huston

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

November 19, 2014

Curtis Cherne, P. E.
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Valle Prado Units 1 and 2, DRB 1004606, CPN#740581 (C09/D011)
Drainage Report Addendum #2

Dear Curtis:

This letter is an addendum to the previously approved drainage report for Valle Prado Units 1 and 2 (VP DR). The purpose of this addendum is to remove Offsite Pond 2 as shown in The Trails Units 1, 2 and 3 Drainage Master Plan (DMP) from Tract 7. This addendum also assumes that the previous addendum dated 11/12/14, that removes storm drain in Woodmont west of Nightshine Street has been approved. This addendum addresses the following items:

- Removal of Offsite Pond 2 from the VP DR AHYMO analysis
- Revises the Pond E grading based on as-built conditions and changes to the storm drain outfall to the pond
- Modifies the Pond E stage-discharge curve based on the revised grading and increased runoff due to the removal of Offsite Pond 2
- Updates the Inlet and Storm Drain Network Map to reflect the increased flow in the storm drain due to the removal of Offsite Pond 2.

Included for your review are the revised AHYMO input, output and summary output information, revised grading plan, Pond E stage-discharge curve, Pond E stage-storage curve, the revised Inlet and Storm Drain Network Map, and the revised storm drain hydraulic grade line analysis.

Runoff from Offsite Basin 2 into Offsite Pond 2 per the DMP is 13.9 cfs. Outflow from Offsite Pond 2 per the DMP is 4.4 cfs. The increase in peak flow at Pond E resulting from removal of Offsite Pond 2 is 3.0 cfs. The table below provides a summary of Pond E operations with and without Offsite Pond 2.

RECEIVED
NOV 19 2014
LAND DEVELOPMENT SECTION

| POND E SUMMARY | | |
|---|---|---|
| **Description** | **w/Offsite Pond 2** | **w/o Offsite Pond 2** |
| Peak Inflow, cfs | 177.6 | 180.6 |
| Time to Peak, hrs | 1.5 | 1.5 |
| Peak Outflow, cfs | 21.2 | 20.9 |
| Time to Peak, hrs | 2.3 | 2.5 |
| Max Water Surface, feet | 5451.58 | 5451.57 |
| Storage Volume, ac-ft | 5.92 | 6.59 |
| Peak Flow AP-E, cfs | 22.9 | 21.8 |
| Time to Peak, hrs | 2.0 | 2.0 |

Basin E.6 included (road)

OK

The revised Pond E analysis results in a peak discharge at Analysis Point E of 21.8 cfs, which is less than the allowed discharge in the DMP of 22.3 cfs. The results of this analysis show that the removal of Offsite Pond 2 does not impact the downstream storm drain or operation of Pond E. Therefore, the removal of Offsite Pond 2 from Tract 7 should be allowed.

If you have any questions or require further information, please feel free to contact me.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development and Planning Group

Enclosures

cc: Rick Beltramo, Wexford Construction

RECEIVED
NOV 19 2014
LAND DEVELOPMENT SECTION

```
AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -                        - VERSION:  1997.02c      RUN DATE (MON/DAY/YR) =11/10/2014
INPUT FILE = DEV_Cond.HYM                                                                USER NO.= AHYMO-S-9702c1BohanHu-AH

                              FROM  TO                    PEAK        RUNOFF                TIME TO    CFS      PAGE =   1
                  HYDROGRAPH   ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK     PER
COMMAND        IDENTIFICATION  NO.  NO.     (SQ MI)      (CFS)       (AC-FT)    (INCHES)   (HOURS)   ACRE     NOTATION

*S  VALLE PRADO @ THE TRAILS UNIT 3A DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 24 HOUR STORM
*S
START                                                                                                   TIME=       .00
LOCATION                      DEFAULT
RAINFALL  TYPE= 2                                                                                       RAIN24=   2.660
*S
*S                    ***********************
*S                    *COMPUTE ONSITE BASINS*
*s                    ***********************
*S
*S
*S
*S COMPUTE BASIN 1 ****************************************************
COMPUTE NM HYD          1.00   -     1        .00500         8.92        .439      1.64591    1.500    2.788 PER IMP=  52.00
*S COMPUTE BASIN 2 ****************************************************
COMPUTE NM HYD          2.00   -     2        .00451         7.86        .380      1.58072    1.500    2.721 PER IMP=  48.00
*S COMPUTE BASIN 3 ****************************************************
COMPUTE NM HYD          3.00   -     3        .00688        11.22        .520      1.41777    1.500    2.550 PER IMP=  38.00
*S COMPUTE BASIN 4 ****************************************************
COMPUTE NM HYD          4.00   -     4        .00359         6.26        .303      1.58072    1.500    2.722 PER IMP=  48.00
*S COMPUTE BASIN 5 ****************************************************
COMPUTE NM HYD          5.00   -     5        .00188         3.05        .140      1.40148    1.500    2.541 PER IMP=  37.00
*S COMPUTE FUTURE BASIN 1 *********************************************
COMPUTE NM HYD          FB.1   -     6        .01078        19.93       1.003      1.74368    1.500    2.888 PER IMP=  58.00
*S COMPUTE FUTURE BASIN 2 *********************************************
COMPUTE NM HYD          FB.2   -     7        .00750        13.54        .671      1.67850    1.500    2.821 PER IMP=  54.00
*S COMPUTE FUTURE BASIN 3 *********************************************
COMPUTE NM HYD          FB.3   -     8        .00594        10.79        .537      1.69479    1.500    2.839 PER IMP=  55.00
*S COMPUTE FUTURE BASIN 4 *********************************************
COMPUTE NM HYD          FB.4   -     9        .00484         8.07        .379      1.46666    1.500    2.602 PER IMP=  41.00
*S COMPUTE OFFSITE BASIN 2 ********************************************
COMPUTE NM HYD         OFF.2   -    10        .00094          .62        .023       .45840    1.500    1.035 PER IMP=    .00
*S COMPUTE OFFSITE BASIN 3 ********************************************
COMPUTE NM HYD         OFF.3   -    11        .00109          .74        .027       .46712    1.500    1.056 PER IMP=    .00
*S COMPUTE OFFSITE BASIN 4 ********************************************
COMPUTE NM HYD         OFF.4   -    12        .00141          .93        .034       .45840    1.500    1.033 PER IMP=    .00
*S COMPUTE OFFSITE BASIN 5 ********************************************
COMPUTE NM HYD         OFF.5   -    13        .00328         1.99        .075       .42601    1.500     .948 PER IMP=    .00
*S COMPUTE OFFSITE BASIN WELL *****************************************
COMPUTE NM HYD      OFF.WELL   -    14        .00156         2.26        .094      1.12446    1.500    2.256 PER IMP=  20.00
*S
*S ADD BASINS 1 AND 2 TO CREATE TEMP A ********************************
ADD HYD               TEMP.A  1& 2  15        .00951        16.78        .819      1.61490    1.500    2.757
```

| 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 ADD BASINS TEMP A AND 3 TO CREATE TEMP 1.B********** | | | | | | | | | | |
| ADD HYD | TEMP.B | 15& 3 | 16 | .01639 | 28.00 | 1.339 | 1.53218 | 1.500 | 2.670 | |
| *S ADD BASINS TEMP B AND 5 TO CREATE TEMP C********** | | | | | | | | | | |
| ADD HYD | TEMP.C | 16& 5 | 17 | .01826 | 31.05 | 1.479 | 1.51874 | 1.500 | 2.657 | |
| *S ADD BASINS TEMP C AND FUTURE BASIN 1 TO CREATE TEMP D********** | | | | | | | | | | |
| ADD HYD | TEMP.D | 17& 6 | 18 | .02904 | 50.98 | 2.482 | 1.60222 | 1.500 | 2.743 | |
| *S ADD BASINS TEMP D AND FUTURE BASIN 2 TO CREATE TEMP E********** | | | | | | | | | | |
| ADD HYD | TEMP.E | 18& 7 | 19 | .03654 | 64.52 | 3.153 | 1.61787 | 1.500 | 2.759 | |
| *S ADD BASINS TEMP E AND FUTURE BASIN 3 TO CREATE TEMP F********** | | | | | | | | | | |
| ADD HYD | TEMP.F | 19& 8 | 20 | .04248 | 75.31 | 3.690 | 1.62861 | 1.500 | 2.770 | |
| *S ADD BASINS TEMP F AND OFFSITE BASIN 3 TO CREATE TEMP G********** | | | | | | | | | | |
| ADD HYD | TEMP.G | 20&11 | 21 | .04358 | 76.05 | 3.717 | 1.59945 | 1.500 | 2.727 | |
| *S ADD BASINS TEMP G AND OFFSITE BASIN 4 TO CREATE TEMP H********** | | | | | | | | | | |
| ADD HYD | TEMP.H | 21&12 | 22 | .04498 | 76.98 | 3.752 | 1.56378 | 1.500 | 2.674 | |
| *S ADD BASINS TEMP H AND OFFSITE BASIN WELL TO CREATE TEMP I********** | | | | | | | | | | |
| ADD HYD | TEMP.1 | 22&14 | 23 | .04655 | 79.24 | 3.845 | 1.54902 | 1.500 | 2.660 | |
| *S ADD BASINS TEMP I AND OFFSITE BASIN 5 TO CREATE TEMP J********** | | | | | | | | | | |
| ADD HYD | TEMP.J | 23&13 | 24 | .04983 | 81.23 | 3.920 | 1.47507 | 1.500 | 2.547 | |
| *S TEMP BASIN J REPLACES BASIN E3 AND E5 FROM THE DMP AHYMO FILE********** | | | | | | | | | | |
| COMPUTE NM HYD | OFFSITE2 | - | 25 | .08050 | 13.87 | 1.783 | .41534 | 2.000 | .269 | PER IMP= .00 |
| COMPUTE NM HYD | BASIN.B | - | 28 | .01998 | 34.80 | 1.407 | 1.32000 | 1.500 | 2.721 | PER IMP= 32.00 |
| ROUTE RESERVOIR | POND.B | 28 | 29 | .01998 | 3.36 | 1.407 | 1.31999 | 2.100 | .263 | AC-FT= .930 |
| ROUTE MCUNGE | RTE.PONDB | 29 | 30 | .01998 | 3.36 | 1.407 | 1.32010 | 2.100 | .263 | CCODE = .2 |
| ADD HYD | OFF.B | 30&25 | 31 | .10048 | 17.20 | 3.190 | .59523 | 2.000 | .268 | |
| COMPUTE NM HYD | BASINE1.1 | - | 32 | .02753 | 48.45 | 1.986 | 1.35259 | 1.500 | 2.750 | PER IMP= 34.00 |
| ADD HYD | OFF.E11 | 32&31 | 33 | .12801 | 54.83 | 5.176 | .75811 | 1.500 | .669 | |
| COMPUTE NM HYD | BASINE1.2 | - | 34 | .00588 | 10.36 | .424 | 1.35259 | 1.500 | 2.752 | PER IMP= 34.00 |
| COMPUTE NM HYD | BASIN.E2 | - | 35 | .01348 | 27.42 | 1.324 | 1.84145 | 1.500 | 3.178 | PER IMP= 64.00 |
| ADD HYD | E2.E12 | 34&35 | 36 | .01936 | 37.77 | 1.748 | 1.69294 | 1.500 | 3.049 | |
| ROUTE MCUNGE | RTE.E12 | 36 | 37 | .01936 | 31.30 | 1.684 | 1.63074 | 1.600 | 2.526 | CCODE = .2 |
| COMPUTE NM HYD | BASIN.E4 | - | 38 | .00577 | 13.11 | .697 | 2.26513 | 1.500 | 3.550 | PER IMP= 90.00 |
| ADD HYD | AP1 | 38&33 | 39 | .13378 | 67.94 | 5.873 | .82310 | 1.500 | .794 | |
| ROUTE MCUNGE | RTE.E1E4 | 39 | 40 | .13378 | 67.94 | 5.873 | .82310 | 1.500 | .794 | CCODE = .0 |
| ADD HYD | AP2 | 37&40 | 41 | .15314 | 99.13 | 7.557 | .92520 | 1.500 | 1.011 | |
| ROUTE MCUNGE | RTE.E1E4 | 41 | 42 | .15314 | 99.13 | 7.557 | .92520 | 1.500 | 1.011 | CCODE = .0 |
| ADD HYD | AP3 | 42&24 | 43 | .20297 | 180.36 | 11.476 | 1.06018 | 1.500 | 1.388 | |
| COMPUTE NM HYD | BASIN.OFF6 | - | 44 | .00140 | 2.33 | .072 | .96928 | 1.500 | 2.597 | PER IMP= .00 |
| ADD HYD | POND | 43&44 | 45 | .20437 | 182.68 | 11.549 | 1.05956 | 1.500 | 1.397 | |
| ROUTE RESERVOIR | POND.E | 45 | 46 | .20437 | 20.87 | 10.785 | .98950 | 2.500 | .160 | AC-FT= 6.590 ← Pond Vol |
| COMPUTE NM HYD | BASIN.E6 | - | 47 | .00488 | 11.09 | .590 | 2.26512 | 1.500 | 3.550 | PER IMP= 90.00 |
| ADD HYD | TOTALE | 46&47 | 48 | .20925 | 21.75 | 11.375 | 1.01925 | 2.000 | .162 | |
| FINISH | | | | | | | | | | |

Revised (was ID #27 – Routed offsite Pond 21

ID #25 – is offsite Basin 2

* THIS AHYMO RUN
• OMITS offsite
Pond 2.

• Pond E has
Been Lowered
& enlarged which
is reflected in
this run:

```
     AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02c
         RUN DATE (MON/DAY/YR) = 11/10/2014
         START TIME (HR:MIN:SEC) = 15:32:06      USER NO.= AHYMO-S-9702c1BohanHu-AH
         INPUT FILE = DEV_Cond.HYM

*S  VALLE PRADO @ THE TRAILS UNIT 3A DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 24 HOUR STORM
*S
*  CREATED NOVEMBER 10, 2014
*
*
*CONVERT TO NMHYMO
START                  TIME=0.0 HR  PUNCH CODE=0
*****************************************************
LOCATION            NM
     Soil infiltration values (LAND FACTORS) for this location are not available.
     The following default values were used.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
           A            0.65                  1.67
           B            0.50                  1.25
           C            0.35                  0.83
           D            0.10                  0.04
*
*****************************************************
*
*****************************************************
*100 YEAR - 24 HOUR
RAINFALL               TYPE=2  RAIN QUARTER=0
                            RAIN ONE=1.84 IN  RAIN SIX=2.20 IN
                            RAIN DAY=2.66 IN  DT=0.10 HRS


                COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =    .100000 HOURS       END TIME =    24.000000 HOURS
                   .0000   .0060   .0124   .0193   .0266   .0347   .0435
                   .0532   .0640   .0764   .0908   .1071   .1906   .4476
                   .9796  1.3314  1.5028  1.6393  1.7527  1.8488  1.9308
                  1.9485  1.9639  1.9776  1.9899  2.0013  2.0117  2.0215
                  2.0306  2.0393  2.0475  2.0553  2.0627  2.0698  2.0766
                  2.0832  2.0895  2.0956  2.1015  2.1072  2.1128  2.1182
                  2.1234  2.1285  2.1335  2.1383  2.1431  2.1477  2.1522
                  2.1566  2.1610  2.1652  2.1694  2.1734  2.1774  2.1814
                  2.1852  2.1890  2.1927  2.1964  2.2000  2.2039  2.2078
                  2.2117  2.2155  2.2193  2.2231  2.2268  2.2305  2.2342
                  2.2379  2.2416  2.2452  2.2488  2.2524  2.2559  2.2595
                  2.2630  2.2665  2.2700  2.2734  2.2768  2.2802  2.2836
                  2.2870  2.2903  2.2937  2.2970  2.3002  2.3035  2.3068
                  2.3100  2.3132  2.3164  2.3196  2.3227  2.3259  2.3290
                  2.3321  2.3352  2.3383  2.3413  2.3444  2.3474  2.3504
                  2.3534  2.3563  2.3593  2.3622  2.3652  2.3681  2.3710
                  2.3739  2.3767  2.3796  2.3824  2.3853  2.3881  2.3909
                  2.3937  2.3965  2.3992  2.4020  2.4047  2.4074  2.4101
                  2.4128  2.4155  2.4182  2.4208  2.4235  2.4261  2.4287
                  2.4314  2.4340  2.4365  2.4391  2.4417  2.4442  2.4468
                  2.4493  2.4518  2.4543  2.4568  2.4593  2.4618  2.4643
                  2.4667  2.4692  2.4716  2.4740  2.4765  2.4789  2.4813
                  2.4837  2.4860  2.4884  2.4908  2.4931  2.4955  2.4978
                  2.5001  2.5024  2.5047  2.5070  2.5093  2.5116  2.5139
                  2.5161  2.5184  2.5206  2.5229  2.5251  2.5273  2.5295
                  2.5317  2.5339  2.5361  2.5383  2.5404  2.5426  2.5448
                  2.5469  2.5490  2.5512  2.5533  2.5554  2.5575  2.5596
                  2.5617  2.5638  2.5659  2.5680  2.5700  2.5721  2.5741
                  2.5762  2.5782  2.5803  2.5823  2.5843  2.5863  2.5883
                  2.5903  2.5923  2.5943  2.5963  2.5982  2.6002  2.6022
                  2.6041  2.6061  2.6080  2.6099  2.6119  2.6138  2.6157
                  2.6176  2.6195  2.6214  2.6233  2.6252  2.6271  2.6290
                  2.6308  2.6327  2.6346  2.6364  2.6383  2.6401  2.6419
                  2.6438  2.6456  2.6474  2.6492  2.6510  2.6528  2.6546
                  2.6564  2.6582  2.6600
```

RECEIVED
NOV 19 2014
LAND DEVELOPMENT SECTION

```
*S
  *S                    ***********************
  *S                    *COMPUTE ONSITE BASINS*
  *s                    ***********************
  *S
  *S
  *S
  *S COMPUTE BASIN 1 ****************************************************
  *
  COMPUTE NM HYD        ID=1 HYD=1  AREA=0.005  PER A=0 PER B=24
                            PER C=24 PER D=52  TP=-0.1715  RAINFALL=-1

      K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   7.9785    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
      AREA =      .002600 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


      K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
      UNIT PEAK =   4.9601    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
      AREA =      .002400 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

  PRINT HYD             ID=1   CODE=1

                                  OUTFLOW HYDROGRAPH REACH     1.00

     RUNOFF VOLUME =     1.64591 INCHES     =        .4389 ACRE-FEET
     PEAK DISCHARGE RATE =       8.92 CFS  AT   1.500 HOURS   BASIN AREA =   .0050 SQ. MI.


  *
  *S COMPUTE BASIN 2 ****************************************************
  COMPUTE NM HYD        ID=2 HYD=2  AREA=0.004513  PER A=0 PER B=26
                            PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1

      K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   6.6475    CFS   UNIT VOLUME =    1.004       B =   526.28      P60 = 1.8400
      AREA =      .002166 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


      K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
      UNIT PEAK =   4.8501    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
      AREA =      .002347 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

  PRINT HYD             ID=2   CODE=1

                                  OUTFLOW HYDROGRAPH REACH     2.00

     RUNOFF VOLUME =     1.58072 INCHES     =        .3805 ACRE-FEET
     PEAK DISCHARGE RATE =       7.86 CFS  AT   1.500 HOURS   BASIN AREA =   .0045 SQ. MI.
  *
  *S COMPUTE BASIN 3 ****************************************************
  COMPUTE NM HYD        ID=3 HYD=3  AREA=0.006875  PER A=0 PER B=31
                            PER C=31 PER D=38  TP=-0.1715  RAINFALL=-1

      K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
      UNIT PEAK =   8.0169    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
      AREA =      .002613 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


      K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
      UNIT PEAK =   8.8093    CFS   UNIT VOLUME =    1.003       B =   354.44      P60 = 1.8400
      AREA =      .004263 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

  PRINT HYD             ID=3   CODE=1

                                  OUTFLOW HYDROGRAPH REACH     3.00

     RUNOFF VOLUME =     1.41777 INCHES     =        .5198 ACRE-FEET
     PEAK DISCHARGE RATE =      11.22 CFS  AT   1.500 HOURS   BASIN AREA =   .0069 SQ. MI.
```

```
*
*S COMPUTE BASIN 4 ****************************************************
COMPUTE NM HYD       ID=4 HYD=4  AREA=0.003594  PER A=0 PER B=26
                          PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   5.2938    CFS   UNIT VOLUME =    1.004       B =   526.28      P60 = 1.8400
     AREA =      .001725 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   3.8624    CFS   UNIT VOLUME =    1.001       B =   354.44      P60 = 1.8400
     AREA =      .001869 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=4   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     4.00

    RUNOFF VOLUME =     1.58072 INCHES     =        .3030 ACRE-FEET
    PEAK DISCHARGE RATE =       6.26 CFS  AT   1.500 HOURS   BASIN AREA =   .0036 SQ. MI.


*
*S COMPUTE BASIN 5 ****************************************************
COMPUTE NM HYD       ID=5 HYD=5  AREA=0.001875  PER A=0 PER B=31.5
                          PER C=31.5 PER D=37  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   2.1289    CFS   UNIT VOLUME =    1.001       B =   526.28      P60 = 1.8400
     AREA =      .000694 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   2.4413    CFS   UNIT VOLUME =    .9998       B =   354.44      P60 = 1.8400
     AREA =      .001181 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=5   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     5.00


    RUNOFF VOLUME =     1.40148 INCHES     =        .1401 ACRE-FEET
    PEAK DISCHARGE RATE =       3.05 CFS  AT   1.500 HOURS   BASIN AREA =   .0019 SQ. MI.


*
*S COMPUTE FUTURE BASIN 1 *********************************************
COMPUTE NM HYD       ID=6 HYD=FB.1  AREA=0.010781  PER A=0 PER B=21
                          PER C=21 PER D=58  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   19.188    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =      .006253 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   9.3581    CFS   UNIT VOLUME =    1.003       B =   354.44      P60 = 1.8400
     AREA =      .004528 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=6   CODE=1

                                   HYDROGRAPH FROM AREA FB.1


    RUNOFF VOLUME =     1.74368 INCHES     =       1.0026 ACRE-FEET
    PEAK DISCHARGE RATE =      19.93 CFS  AT   1.500 HOURS   BASIN AREA =   .0108 SQ. MI.
```

```
*
*S COMPUTE FUTURE BASIN 2 ****************************************************
COMPUTE NM HYD        ID=7 HYD=FB.2  AREA=0.0075  PER A=0 PER B=23
                           PER C=23 PER D=54  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   12.428    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =      .004050 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   7.1301    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =      .003450 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=7   CODE=1

                                   HYDROGRAPH FROM AREA FB.2


    RUNOFF VOLUME =     1.67850 INCHES     =        .6714 ACRE-FEET
    PEAK DISCHARGE RATE =      13.54 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


*
*S COMPUTE FUTURE BASIN 3 ****************************************************
COMPUTE NM HYD        ID=8 HYD=FB.3  AREA=0.005938  PER A=0 PER B=22.5
                           PER C=22.5 PER D=55  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   10.022    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =      .003266 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   5.5224    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =      .002672 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=8   CODE=1

                                   HYDROGRAPH FROM AREA FB.3


    RUNOFF VOLUME =     1.69479 INCHES     =        .5367 ACRE-FEET
    PEAK DISCHARGE RATE =      10.79 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.


*
*S COMPUTE FUTURE BASIN 4 ****************************************************
COMPUTE NM HYD        ID=9 HYD=FB.4  AREA=0.004844  PER A=0 PER B=29.5
                           PER C=29.5 PER D=41  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   6.0945    CFS   UNIT VOLUME =    1.004       B =   526.28      P60 = 1.8400
     AREA =      .001986 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   5.9066    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =      .002858 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=9   CODE=1

                                   HYDROGRAPH FROM AREA FB.4


    RUNOFF VOLUME =     1.46666 INCHES     =        .3789 ACRE-FEET
    PEAK DISCHARGE RATE =       8.07 CFS  AT   1.500 HOURS   BASIN AREA =   .0048 SQ. MI.


*
```

```
*S COMPUTE OFFSITE BASIN 2 ****************************************************
COMPUTE NM HYD        ID=10 HYD=OFF.2  AREA=0.000938  PER A=80 PER B=20
                           PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .203093HR    TP =   .171500HR    K/TP RATIO =  1.184216     SHAPE CONSTANT, N =  2.997519
     UNIT PEAK =   1.5403    CFS   UNIT VOLUME =    .9852       B =   281.62      P60 = 1.8400
     AREA =      .000938 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD             ID=10   CODE=1

                                        HYDROGRAPH FROM AREA OFF.2


    RUNOFF VOLUME =      .45840 INCHES     =        .0229 ACRE-FEET
    PEAK DISCHARGE RATE =        .62 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*
*S COMPUTE OFFSITE BASIN 3 ****************************************************
COMPUTE NM HYD        ID=11 HYD=OFF.3  AREA=0.001094  PER A=76 PER B=24
                           PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .201399HR    TP =   .171500HR    K/TP RATIO =  1.174338     SHAPE CONSTANT, N =  3.020870
     UNIT PEAK =   1.8086    CFS   UNIT VOLUME =    .9871       B =   283.52      P60 = 1.8400
     AREA =      .001094 SQ MI    IA =    .61400 INCHES    INF =   1.56920 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD             ID=11   CODE=1

                                        HYDROGRAPH FROM AREA OFF.3


    RUNOFF VOLUME =      .46712 INCHES     =        .0273 ACRE-FEET
    PEAK DISCHARGE RATE =        .74 CFS  AT   1.500 HOURS   BASIN AREA =   .0011 SQ. MI.

*
*S COMPUTE OFFSITE BASIN 4 ****************************************************
COMPUTE NM HYD        ID=12 HYD=OFF.4  AREA=0.001406 PER A=80 PER B=20
                           PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .203093HR    TP =   .171500HR    K/TP RATIO =  1.184216     SHAPE CONSTANT, N =  2.997519
     UNIT PEAK =   2.3088    CFS   UNIT VOLUME =    .9875       B =   281.62      P60 = 1.8400
     AREA =      .001406 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD             ID=12   CODE=1

                                        HYDROGRAPH FROM AREA OFF.4


    RUNOFF VOLUME =      .45840 INCHES     =        .0344 ACRE-FEET
    PEAK DISCHARGE RATE =        .93 CFS  AT   1.500 HOURS   BASIN AREA =   .0014 SQ. MI.


*
*S COMPUTE OFFSITE BASIN 5 ****************************************************
COMPUTE NM HYD        ID=13 HYD=OFF.5  AREA=0.003281  PER A=95 PER B=5
                           PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .209446HR    TP =   .171500HR    K/TP RATIO =  1.221261     SHAPE CONSTANT, N =  2.914129
     UNIT PEAK =   5.2562    CFS   UNIT VOLUME =    .9902       B =   274.74      P60 = 1.8400
     AREA =      .003281 SQ MI    IA =    .64250 INCHES    INF =   1.64900 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD             ID=13   CODE=1

                                        HYDROGRAPH FROM AREA OFF.5


    RUNOFF VOLUME =      .42601 INCHES     =        .0745 ACRE-FEET
    PEAK DISCHARGE RATE =       1.99 CFS  AT   1.500 HOURS   BASIN AREA =   .0033 SQ. MI.


*
*S COMPUTE OFFSITE BASIN WELL *************************************************
COMPUTE NM HYD        ID=14 HYD=OFF.WELL  AREA=0.001563  PER A=0 PER B=40
                           PER C=40 PER D=20  TP=-0.1715  RAINFALL=-1
```

```
K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   .95926    CFS   UNIT VOLUME =    .9965       B =   526.28      P60 = 1.8400
AREA =      .000313 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
UNIT PEAK =   2.5842    CFS   UNIT VOLUME =    .9998       B =   354.44      P60 = 1.8400
AREA =      .001250 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=14   CODE=1

                                    HYDROGRAPH FROM AREA OFF.WELL

   RUNOFF VOLUME =     1.12446 INCHES     =        .0937 ACRE-FEET
   PEAK DISCHARGE RATE =       2.26 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.
*
*S
*
*S ADD BASINS 1 AND 2 TO CREATE TEMP A ***********************************
ADD HYD              ID=15 HYD=TEMP.A ID I=1 II=2
PRINT HYD            ID=15 CODE=0
```

HYDROGRAPH FROM AREA TEMP.A

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| .100 | .0 | 5.100 | .1 | 10.100 | .1 | 15.100 | .1 | 20.100 | .1 |
| .200 | .0 | 5.200 | .1 | 10.200 | .1 | 15.200 | .1 | 20.200 | .1 |
| .300 | .0 | 5.300 | .1 | 10.300 | .1 | 15.300 | .1 | 20.300 | .1 |
| .400 | .0 | 5.400 | .1 | 10.400 | .1 | 15.400 | .1 | 20.400 | .1 |
| .500 | .0 | 5.500 | .1 | 10.500 | .1 | 15.500 | .1 | 20.500 | .1 |
| .600 | .0 | 5.600 | .1 | 10.600 | .1 | 15.600 | .1 | 20.600 | .1 |
| .700 | .0 | 5.700 | .1 | 10.700 | .1 | 15.700 | .1 | 20.700 | .1 |
| .800 | .0 | 5.800 | .1 | 10.800 | .1 | 15.800 | .1 | 20.800 | .1 |
| .900 | .0 | 5.900 | .1 | 10.900 | .1 | 15.900 | .1 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 1.100 | .0 | 6.100 | .1 | 11.100 | .1 | 16.100 | .1 | 21.100 | .1 |
| 1.200 | .6 | 6.200 | .1 | 11.200 | .1 | 16.200 | .1 | 21.200 | .1 |
| 1.300 | 2.9 | 6.300 | .1 | 11.300 | .1 | 16.300 | .1 | 21.300 | .1 |
| 1.400 | 10.5 | 6.400 | .1 | 11.400 | .1 | 16.400 | .1 | 21.400 | .1 |
| 1.500 | 16.8 | 6.500 | .1 | 11.500 | .1 | 16.500 | .1 | 21.500 | .1 |
| 1.600 | 14.4 | 6.600 | .1 | 11.600 | .1 | 16.600 | .1 | 21.600 | .1 |
| 1.700 | 9.8 | 6.700 | .1 | 11.700 | .1 | 16.700 | .1 | 21.700 | .1 |
| 1.800 | 6.9 | 6.800 | .1 | 11.800 | .1 | 16.800 | .1 | 21.800 | .1 |
| 1.900 | 5.2 | 6.900 | .1 | 11.900 | .1 | 16.900 | .1 | 21.900 | .1 |
| 2.000 | 4.2 | 7.000 | .1 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 2.100 | 3.1 | 7.100 | .1 | 12.100 | .1 | 17.100 | .1 | 22.100 | .1 |
| 2.200 | 1.9 | 7.200 | .1 | 12.200 | .1 | 17.200 | .1 | 22.200 | .1 |
| 2.300 | 1.3 | 7.300 | .1 | 12.300 | .1 | 17.300 | .1 | 22.300 | .1 |
| 2.400 | 1.0 | 7.400 | .1 | 12.400 | .1 | 17.400 | .1 | 22.400 | .1 |
| 2.500 | .8 | 7.500 | .1 | 12.500 | .1 | 17.500 | .1 | 22.500 | .1 |
| 2.600 | .6 | 7.600 | .1 | 12.600 | .1 | 17.600 | .1 | 22.600 | .1 |
| 2.700 | .5 | 7.700 | .1 | 12.700 | .1 | 17.700 | .1 | 22.700 | .1 |
| 2.800 | .4 | 7.800 | .1 | 12.800 | .1 | 17.800 | .1 | 22.800 | .1 |
| 2.900 | .3 | 7.900 | .1 | 12.900 | .1 | 17.900 | .1 | 22.900 | .1 |
| 3.000 | .3 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .2 | 8.100 | .1 | 13.100 | .1 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .2 | 8.200 | .1 | 13.200 | .1 | 18.200 | .1 | 23.200 | .1 |
| 3.300 | .2 | 8.300 | .1 | 13.300 | .1 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .2 | 8.400 | .1 | 13.400 | .1 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .1 | 8.500 | .1 | 13.500 | .1 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .1 | 8.600 | .1 | 13.600 | .1 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .1 | 8.700 | .1 | 13.700 | .1 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .1 | 8.800 | .1 | 13.800 | .1 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .1 | 8.900 | .1 | 13.900 | .1 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .1 | 9.100 | .1 | 14.100 | .1 | 19.100 | .1 | 24.100 | .0 |
| 4.200 | .1 | 9.200 | .1 | 14.200 | .1 | 19.200 | .1 | 24.200 | .0 |
| 4.300 | .1 | 9.300 | .1 | 14.300 | .1 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .1 | 9.400 | .1 | 14.400 | .1 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .1 | 9.500 | .1 | 14.500 | .1 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .1 | 9.600 | .1 | 14.600 | .1 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .1 | 9.700 | .1 | 14.700 | .1 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .1 | 9.800 | .1 | 14.800 | .1 | 19.800 | .1 | | |
| 4.900 | .1 | 9.900 | .1 | 14.900 | .1 | 19.900 | .1 | | |

```
RUNOFF VOLUME =     1.61490 INCHES     =        .8193 ACRE-FEET
PEAK DISCHARGE RATE =      16.78 CFS  AT   1.500 HOURS   BASIN AREA =   .0095 SQ. MI.
```

```
*
*S ADD BASINS TEMP A AND 3 TO CREATE TEMP 1.B*******************************
ADD HYD            ID=16 HYD=TEMP.B ID I=15 II=3
PRINT HYD           ID=16 CODE=0
```

HYDROGRAPH FROM AREA TEMP.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| .100 | .0 | 5.100 | .1 | 10.100 | .1 | 15.100 | .1 | 20.100 | .1 |
| .200 | .0 | 5.200 | .2 | 10.200 | .1 | 15.200 | .1 | 20.200 | .1 |
| .300 | .0 | 5.300 | .2 | 10.300 | .1 | 15.300 | .1 | 20.300 | .1 |
| .400 | .0 | 5.400 | .2 | 10.400 | .1 | 15.400 | .1 | 20.400 | .1 |
| .500 | .0 | 5.500 | .2 | 10.500 | .1 | 15.500 | .1 | 20.500 | .1 |
| .600 | .0 | 5.600 | .2 | 10.600 | .1 | 15.600 | .1 | 20.600 | .1 |
| .700 | .0 | 5.700 | .2 | 10.700 | .1 | 15.700 | .1 | 20.700 | .1 |
| .800 | .0 | 5.800 | .2 | 10.800 | .1 | 15.800 | .1 | 20.800 | .1 |
| .900 | .0 | 5.900 | .2 | 10.900 | .1 | 15.900 | .1 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 1.100 | .1 | 6.100 | .2 | 11.100 | .1 | 16.100 | .1 | 21.100 | .1 |
| 1.200 | 1.0 | 6.200 | .2 | 11.200 | .1 | 16.200 | .1 | 21.200 | .1 |
| 1.300 | 4.6 | 6.300 | .2 | 11.300 | .1 | 16.300 | .1 | 21.300 | .1 |
| 1.400 | 17.3 | 6.400 | .2 | 11.400 | .1 | 16.400 | .1 | 21.400 | .1 |
| 1.500 | 28.0 | 6.500 | .2 | 11.500 | .1 | 16.500 | .1 | 21.500 | .1 |
| 1.600 | 24.1 | 6.600 | .2 | 11.600 | .1 | 16.600 | .1 | 21.600 | .1 |
| 1.700 | 16.3 | 6.700 | .2 | 11.700 | .1 | 16.700 | .1 | 21.700 | .1 |
| 1.800 | 11.5 | 6.800 | .2 | 11.800 | .1 | 16.800 | .1 | 21.800 | .1 |
| 1.900 | 8.5 | 6.900 | .2 | 11.900 | .1 | 16.900 | .1 | 21.900 | .1 |
| 2.000 | 6.7 | 7.000 | .2 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 2.100 | 4.9 | 7.100 | .2 | 12.100 | .1 | 17.100 | .1 | 22.100 | .1 |
| 2.200 | 3.0 | 7.200 | .2 | 12.200 | .1 | 17.200 | .1 | 22.200 | .1 |
| 2.300 | 2.1 | 7.300 | .2 | 12.300 | .1 | 17.300 | .1 | 22.300 | .1 |
| 2.400 | 1.6 | 7.400 | .2 | 12.400 | .1 | 17.400 | .1 | 22.400 | .1 |
| 2.500 | 1.3 | 7.500 | .2 | 12.500 | .1 | 17.500 | .1 | 22.500 | .1 |
| 2.600 | 1.0 | 7.600 | .2 | 12.600 | .1 | 17.600 | .1 | 22.600 | .1 |
| 2.700 | .8 | 7.700 | .2 | 12.700 | .1 | 17.700 | .1 | 22.700 | .1 |
| 2.800 | .7 | 7.800 | .2 | 12.800 | .1 | 17.800 | .1 | 22.800 | .1 |
| 2.900 | .5 | 7.900 | .2 | 12.900 | .1 | 17.900 | .1 | 22.900 | .1 |
| 3.000 | .5 | 8.000 | .2 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .4 | 8.100 | .2 | 13.100 | .1 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .3 | 8.200 | .2 | 13.200 | .1 | 18.200 | .1 | 23.200 | .1 |
| 3.300 | .3 | 8.300 | .2 | 13.300 | .1 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .2 | 8.400 | .2 | 13.400 | .1 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .2 | 8.500 | .2 | 13.500 | .1 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .2 | 8.600 | .2 | 13.600 | .1 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .2 | 8.700 | .2 | 13.700 | .1 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .2 | 8.800 | .2 | 13.800 | .1 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .2 | 8.900 | .2 | 13.900 | .1 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .1 | 9.100 | .2 | 14.100 | .1 | 19.100 | .1 | 24.100 | .1 |
| 4.200 | .1 | 9.200 | .2 | 14.200 | .1 | 19.200 | .1 | 24.200 | .0 |
| 4.300 | .1 | 9.300 | .2 | 14.300 | .1 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .1 | 9.400 | .2 | 14.400 | .1 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .1 | 9.500 | .2 | 14.500 | .1 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .1 | 9.600 | .2 | 14.600 | .1 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .1 | 9.700 | .2 | 14.700 | .1 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .1 | 9.800 | .1 | 14.800 | .1 | 19.800 | .1 | | |
| 4.900 | .1 | 9.900 | .1 | 14.900 | .1 | 19.900 | .1 | | |

```
RUNOFF VOLUME =      1.53218 INCHES      =       1.3392 ACRE-FEET
PEAK DISCHARGE RATE =      28.00 CFS  AT   1.500 HOURS   BASIN AREA =   .0164 SQ. MI.
```

```
*
*S ADD BASINS TEMP B AND 5 TO CREATE TEMP C*******************************
ADD HYD              ID=17 HYD=TEMP.C ID I=16 II=5
PRINT HYD             ID=17 CODE=0
```

HYDROGRAPH FROM AREA TEMP.C

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .2 | 10.000 | .2 | 15.000 | .1 | 20.000 | .1 |
| .100 | .0 | 5.100 | .2 | 10.100 | .2 | 15.100 | .1 | 20.100 | .1 |
| .200 | .0 | 5.200 | .2 | 10.200 | .2 | 15.200 | .1 | 20.200 | .1 |
| .300 | .0 | 5.300 | .2 | 10.300 | .2 | 15.300 | .1 | 20.300 | .1 |
| .400 | .0 | 5.400 | .2 | 10.400 | .2 | 15.400 | .1 | 20.400 | .1 |
| .500 | .0 | 5.500 | .2 | 10.500 | .2 | 15.500 | .1 | 20.500 | .1 |
| .600 | .0 | 5.600 | .2 | 10.600 | .2 | 15.600 | .1 | 20.600 | .1 |
| .700 | .0 | 5.700 | .2 | 10.700 | .2 | 15.700 | .1 | 20.700 | .1 |
| .800 | .0 | 5.800 | .2 | 10.800 | .2 | 15.800 | .1 | 20.800 | .1 |
| .900 | .0 | 5.900 | .2 | 10.900 | .2 | 15.900 | .1 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .2 | 16.000 | .1 | 21.000 | .1 |
| 1.100 | .1 | 6.100 | .2 | 11.100 | .2 | 16.100 | .1 | 21.100 | .1 |
| 1.200 | 1.1 | 6.200 | .2 | 11.200 | .2 | 16.200 | .1 | 21.200 | .1 |
| 1.300 | 5.0 | 6.300 | .2 | 11.300 | .2 | 16.300 | .1 | 21.300 | .1 |
| 1.400 | 19.2 | 6.400 | .2 | 11.400 | .1 | 16.400 | .1 | 21.400 | .1 |
| 1.500 | 31.1 | 6.500 | .2 | 11.500 | .1 | 16.500 | .1 | 21.500 | .1 |
| 1.600 | 26.7 | 6.600 | .2 | 11.600 | .1 | 16.600 | .1 | 21.600 | .1 |
| 1.700 | 18.1 | 6.700 | .2 | 11.700 | .1 | 16.700 | .1 | 21.700 | .1 |
| 1.800 | 12.7 | 6.800 | .2 | 11.800 | .1 | 16.800 | .1 | 21.800 | .1 |
| 1.900 | 9.4 | 6.900 | .2 | 11.900 | .1 | 16.900 | .1 | 21.900 | .1 |
| 2.000 | 7.4 | 7.000 | .2 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 2.100 | 5.5 | 7.100 | .2 | 12.100 | .1 | 17.100 | .1 | 22.100 | .1 |
| 2.200 | 3.3 | 7.200 | .2 | 12.200 | .1 | 17.200 | .1 | 22.200 | .1 |
| 2.300 | 2.3 | 7.300 | .2 | 12.300 | .1 | 17.300 | .1 | 22.300 | .1 |
| 2.400 | 1.8 | 7.400 | .2 | 12.400 | .1 | 17.400 | .1 | 22.400 | .1 |
| 2.500 | 1.4 | 7.500 | .2 | 12.500 | .1 | 17.500 | .1 | 22.500 | .1 |
| 2.600 | 1.1 | 7.600 | .2 | 12.600 | .1 | 17.600 | .1 | 22.600 | .1 |
| 2.700 | .9 | 7.700 | .2 | 12.700 | .1 | 17.700 | .1 | 22.700 | .1 |
| 2.800 | .7 | 7.800 | .2 | 12.800 | .1 | 17.800 | .1 | 22.800 | .1 |
| 2.900 | .6 | 7.900 | .2 | 12.900 | .1 | 17.900 | .1 | 22.900 | .1 |
| 3.000 | .5 | 8.000 | .2 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .4 | 8.100 | .2 | 13.100 | .1 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .4 | 8.200 | .2 | 13.200 | .1 | 18.200 | .1 | 23.200 | .1 |
| 3.300 | .3 | 8.300 | .2 | 13.300 | .1 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .3 | 8.400 | .2 | 13.400 | .1 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .2 | 8.500 | .2 | 13.500 | .1 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .2 | 8.600 | .2 | 13.600 | .1 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .2 | 8.700 | .2 | 13.700 | .1 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .2 | 8.800 | .2 | 13.800 | .1 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .2 | 8.900 | .2 | 13.900 | .1 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .2 | 9.100 | .2 | 14.100 | .1 | 19.100 | .1 | 24.100 | .1 |
| 4.200 | .2 | 9.200 | .2 | 14.200 | .1 | 19.200 | .1 | 24.200 | .0 |
| 4.300 | .2 | 9.300 | .2 | 14.300 | .1 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .2 | 9.400 | .2 | 14.400 | .1 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .2 | 9.500 | .2 | 14.500 | .1 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .2 | 9.600 | .2 | 14.600 | .1 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .2 | 9.700 | .2 | 14.700 | .1 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .2 | 9.800 | .2 | 14.800 | .1 | 19.800 | .1 | | |
| 4.900 | .2 | 9.900 | .2 | 14.900 | .1 | 19.900 | .1 | | |

RUNOFF VOLUME = 1.51874 INCHES = 1.4793 ACRE-FEET
PEAK DISCHARGE RATE = 31.05 CFS AT 1.500 HOURS BASIN AREA = .0183 SQ. MI.

*

```
*S ADD BASINS TEMP C AND FUTURE BASIN 1 TO CREATE TEMP D************************
ADD HYD              ID=18 HYD=TEMP.D ID I=17 II=6
PRINT HYD             ID=18 CODE=0
```

HYDROGRAPH FROM AREA TEMP.D

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .3 | 10.000 | .3 | 15.000 | .2 | 20.000 | .2 |
| .100 | .0 | 5.100 | .3 | 10.100 | .3 | 15.100 | .2 | 20.100 | .2 |
| .200 | .0 | 5.200 | .3 | 10.200 | .3 | 15.200 | .2 | 20.200 | .2 |
| .300 | .0 | 5.300 | .3 | 10.300 | .3 | 15.300 | .2 | 20.300 | .2 |
| .400 | .0 | 5.400 | .3 | 10.400 | .3 | 15.400 | .2 | 20.400 | .2 |
| .500 | .0 | 5.500 | .3 | 10.500 | .3 | 15.500 | .2 | 20.500 | .2 |
| .600 | .0 | 5.600 | .3 | 10.600 | .3 | 15.600 | .2 | 20.600 | .2 |
| .700 | .0 | 5.700 | .3 | 10.700 | .3 | 15.700 | .2 | 20.700 | .2 |
| .800 | .0 | 5.800 | .3 | 10.800 | .3 | 15.800 | .2 | 20.800 | .2 |
| .900 | .0 | 5.900 | .3 | 10.900 | .3 | 15.900 | .2 | 20.900 | .2 |
| 1.000 | .0 | 6.000 | .3 | 11.000 | .3 | 16.000 | .2 | 21.000 | .2 |
| 1.100 | .1 | 6.100 | .3 | 11.100 | .3 | 16.100 | .2 | 21.100 | .2 |
| 1.200 | 1.9 | 6.200 | .4 | 11.200 | .3 | 16.200 | .2 | 21.200 | .2 |
| 1.300 | 8.8 | 6.300 | .4 | 11.300 | .3 | 16.300 | .2 | 21.300 | .2 |
| 1.400 | 31.9 | 6.400 | .4 | 11.400 | .3 | 16.400 | .2 | 21.400 | .2 |
| 1.500 | 51.0 | 6.500 | .4 | 11.500 | .3 | 16.500 | .2 | 21.500 | .2 |
| 1.600 | 43.7 | 6.600 | .4 | 11.600 | .3 | 16.600 | .2 | 21.600 | .2 |
| 1.700 | 29.7 | 6.700 | .3 | 11.700 | .3 | 16.700 | .2 | 21.700 | .2 |
| 1.800 | 21.0 | 6.800 | .3 | 11.800 | .3 | 16.800 | .2 | 21.800 | .2 |
| 1.900 | 15.8 | 6.900 | .3 | 11.900 | .3 | 16.900 | .2 | 21.900 | .2 |
| 2.000 | 12.6 | 7.000 | .3 | 12.000 | .3 | 17.000 | .2 | 22.000 | .2 |
| 2.100 | 9.3 | 7.100 | .3 | 12.100 | .3 | 17.100 | .2 | 22.100 | .2 |
| 2.200 | 5.6 | 7.200 | .3 | 12.200 | .3 | 17.200 | .2 | 22.200 | .2 |
| 2.300 | 3.9 | 7.300 | .3 | 12.300 | .3 | 17.300 | .2 | 22.300 | .2 |
| 2.400 | 3.0 | 7.400 | .3 | 12.400 | .3 | 17.400 | .2 | 22.400 | .2 |
| 2.500 | 2.3 | 7.500 | .3 | 12.500 | .3 | 17.500 | .2 | 22.500 | .2 |
| 2.600 | 1.9 | 7.600 | .3 | 12.600 | .3 | 17.600 | .2 | 22.600 | .2 |
| 2.700 | 1.5 | 7.700 | .3 | 12.700 | .3 | 17.700 | .2 | 22.700 | .2 |
| 2.800 | 1.2 | 7.800 | .3 | 12.800 | .2 | 17.800 | .2 | 22.800 | .2 |
| 2.900 | 1.0 | 7.900 | .3 | 12.900 | .2 | 17.900 | .2 | 22.900 | .2 |
| 3.000 | .8 | 8.000 | .3 | 13.000 | .2 | 18.000 | .2 | 23.000 | .2 |
| 3.100 | .7 | 8.100 | .3 | 13.100 | .2 | 18.100 | .2 | 23.100 | .2 |
| 3.200 | .6 | 8.200 | .3 | 13.200 | .2 | 18.200 | .2 | 23.200 | .2 |
| 3.300 | .5 | 8.300 | .3 | 13.300 | .2 | 18.300 | .2 | 23.300 | .2 |
| 3.400 | .5 | 8.400 | .3 | 13.400 | .2 | 18.400 | .2 | 23.400 | .2 |
| 3.500 | .4 | 8.500 | .3 | 13.500 | .2 | 18.500 | .2 | 23.500 | .2 |
| 3.600 | .4 | 8.600 | .3 | 13.600 | .2 | 18.600 | .2 | 23.600 | .2 |
| 3.700 | .4 | 8.700 | .3 | 13.700 | .2 | 18.700 | .2 | 23.700 | .2 |
| 3.800 | .3 | 8.800 | .3 | 13.800 | .2 | 18.800 | .2 | 23.800 | .2 |
| 3.900 | .3 | 8.900 | .3 | 13.900 | .2 | 18.900 | .2 | 23.900 | .2 |
| 4.000 | .3 | 9.000 | .3 | 14.000 | .2 | 19.000 | .2 | 24.000 | .2 |
| 4.100 | .3 | 9.100 | .3 | 14.100 | .2 | 19.100 | .2 | 24.100 | .1 |
| 4.200 | .3 | 9.200 | .3 | 14.200 | .2 | 19.200 | .2 | 24.200 | .1 |
| 4.300 | .3 | 9.300 | .3 | 14.300 | .2 | 19.300 | .2 | 24.300 | .0 |
| 4.400 | .3 | 9.400 | .3 | 14.400 | .2 | 19.400 | .2 | 24.400 | .0 |
| 4.500 | .3 | 9.500 | .3 | 14.500 | .2 | 19.500 | .2 | 24.500 | .0 |
| 4.600 | .3 | 9.600 | .3 | 14.600 | .2 | 19.600 | .2 | 24.600 | .0 |
| 4.700 | .3 | 9.700 | .3 | 14.700 | .2 | 19.700 | .2 | 24.700 | .0 |
| 4.800 | .3 | 9.800 | .3 | 14.800 | .2 | 19.800 | .2 | 24.800 | .0 |
| 4.900 | .3 | 9.900 | .3 | 14.900 | .2 | 19.900 | .2 | 24.900 | .0 |

```
RUNOFF VOLUME =     1.60222 INCHES     =       2.4818 ACRE-FEET
PEAK DISCHARGE RATE =      50.98 CFS  AT   1.500 HOURS   BASIN AREA =   .0290 SQ. MI.
```

*

```
*S ADD BASINS TEMP D AND FUTURE BASIN 2 TO CREATE TEMP E************************
ADD HYD              ID=19 HYD=TEMP.E ID I=18 II=7
PRINT HYD             ID=19 CODE=0
```

HYDROGRAPH FROM AREA TEMP.E

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .2 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .2 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .2 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .2 |
| .400 | .0 | 5.400 | .4 | 10.400 | .4 | 15.400 | .3 | 20.400 | .2 |
| .500 | .0 | 5.500 | .4 | 10.500 | .4 | 15.500 | .3 | 20.500 | .2 |
| .600 | .0 | 5.600 | .4 | 10.600 | .4 | 15.600 | .3 | 20.600 | .2 |
| .700 | .0 | 5.700 | .4 | 10.700 | .4 | 15.700 | .3 | 20.700 | .2 |
| .800 | .0 | 5.800 | .4 | 10.800 | .4 | 15.800 | .3 | 20.800 | .2 |
| .900 | .0 | 5.900 | .4 | 10.900 | .4 | 15.900 | .3 | 20.900 | .2 |
| 1.000 | .0 | 6.000 | .4 | 11.000 | .4 | 16.000 | .3 | 21.000 | .2 |
| 1.100 | .1 | 6.100 | .4 | 11.100 | .3 | 16.100 | .3 | 21.100 | .2 |
| 1.200 | 2.4 | 6.200 | .4 | 11.200 | .3 | 16.200 | .3 | 21.200 | .2 |
| 1.300 | 11.3 | 6.300 | .5 | 11.300 | .3 | 16.300 | .3 | 21.300 | .2 |
| 1.400 | 40.4 | 6.400 | .5 | 11.400 | .3 | 16.400 | .3 | 21.400 | .2 |
| 1.500 | 64.5 | 6.500 | .5 | 11.500 | .3 | 16.500 | .3 | 21.500 | .2 |
| 1.600 | 55.2 | 6.600 | .5 | 11.600 | .3 | 16.600 | .3 | 21.600 | .2 |
| 1.700 | 37.5 | 6.700 | .4 | 11.700 | .3 | 16.700 | .3 | 21.700 | .2 |
| 1.800 | 26.6 | 6.800 | .4 | 11.800 | .3 | 16.800 | .3 | 21.800 | .2 |
| 1.900 | 20.1 | 6.900 | .4 | 11.900 | .3 | 16.900 | .3 | 21.900 | .2 |
| 2.000 | 16.0 | 7.000 | .4 | 12.000 | .3 | 17.000 | .3 | 22.000 | .2 |
| 2.100 | 11.8 | 7.100 | .4 | 12.100 | .3 | 17.100 | .3 | 22.100 | .2 |
| 2.200 | 7.2 | 7.200 | .4 | 12.200 | .3 | 17.200 | .3 | 22.200 | .2 |
| 2.300 | 4.9 | 7.300 | .4 | 12.300 | .3 | 17.300 | .3 | 22.300 | .2 |
| 2.400 | 3.8 | 7.400 | .4 | 12.400 | .3 | 17.400 | .3 | 22.400 | .2 |
| 2.500 | 3.0 | 7.500 | .4 | 12.500 | .3 | 17.500 | .3 | 22.500 | .2 |
| 2.600 | 2.4 | 7.600 | .4 | 12.600 | .3 | 17.600 | .3 | 22.600 | .2 |
| 2.700 | 1.9 | 7.700 | .4 | 12.700 | .3 | 17.700 | .3 | 22.700 | .2 |
| 2.800 | 1.6 | 7.800 | .4 | 12.800 | .3 | 17.800 | .3 | 22.800 | .2 |
| 2.900 | 1.3 | 7.900 | .4 | 12.900 | .3 | 17.900 | .3 | 22.900 | .2 |
| 3.000 | 1.1 | 8.000 | .4 | 13.000 | .3 | 18.000 | .3 | 23.000 | .2 |
| 3.100 | .9 | 8.100 | .4 | 13.100 | .3 | 18.100 | .3 | 23.100 | .2 |
| 3.200 | .8 | 8.200 | .4 | 13.200 | .3 | 18.200 | .3 | 23.200 | .2 |
| 3.300 | .7 | 8.300 | .4 | 13.300 | .3 | 18.300 | .3 | 23.300 | .2 |
| 3.400 | .6 | 8.400 | .4 | 13.400 | .3 | 18.400 | .3 | 23.400 | .2 |
| 3.500 | .5 | 8.500 | .4 | 13.500 | .3 | 18.500 | .3 | 23.500 | .2 |
| 3.600 | .5 | 8.600 | .4 | 13.600 | .3 | 18.600 | .3 | 23.600 | .2 |
| 3.700 | .5 | 8.700 | .4 | 13.700 | .3 | 18.700 | .3 | 23.700 | .2 |
| 3.800 | .4 | 8.800 | .4 | 13.800 | .3 | 18.800 | .2 | 23.800 | .2 |
| 3.900 | .4 | 8.900 | .4 | 13.900 | .3 | 18.900 | .2 | 23.900 | .2 |
| 4.000 | .4 | 9.000 | .4 | 14.000 | .3 | 19.000 | .2 | 24.000 | .2 |
| 4.100 | .4 | 9.100 | .4 | 14.100 | .3 | 19.100 | .2 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .4 | 14.200 | .3 | 19.200 | .2 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .3 | 19.300 | .2 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .2 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .2 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .2 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .2 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .2 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .2 | 24.900 | .0 |

```
RUNOFF VOLUME =      1.61787 INCHES      =        3.1532 ACRE-FEET
PEAK DISCHARGE RATE =       64.52 CFS  AT   1.500 HOURS   BASIN AREA =   .0365 SQ. MI.
```

*

```
*S ADD BASINS TEMP E AND FUTURE BASIN 3 TO CREATE TEMP F************************
ADD HYD              ID=20 HYD=TEMP.F ID I=19 II=8
PRINT HYD             ID=20 CODE=0
```

HYDROGRAPH FROM AREA TEMP.F

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.8 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.3 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 47.2 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 75.3 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 64.4 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 43.8 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 31.1 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 23.5 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 18.7 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 13.9 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.4 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 5.8 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.4 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.5 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.8 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.2 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.8 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.5 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.2 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .6 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .5 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

```
RUNOFF VOLUME =     1.62861 INCHES     =       3.6899 ACRE-FEET
PEAK DISCHARGE RATE =      75.31 CFS  AT   1.500 HOURS   BASIN AREA =   .0425 SQ. MI.
```

*

```
*S ADD BASINS TEMP F AND OFFSITE BASIN 3 TO CREATE TEMP G**********************
ADD HYD            ID=21 HYD=TEMP.G ID I=20 II=11
PRINT HYD           ID=21 CODE=0
```

HYDROGRAPH FROM AREA TEMP.G

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.8 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.3 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 47.6 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 76.1 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 65.1 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 44.2 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 31.4 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 23.7 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 18.9 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 13.9 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.4 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 5.8 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.5 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.5 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.8 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.3 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.8 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.5 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.3 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .6 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .5 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

```
RUNOFF VOLUME =     1.59945 INCHES     =       3.7172 ACRE-FEET
PEAK DISCHARGE RATE =      76.05 CFS  AT   1.500 HOURS   BASIN AREA =   .0436 SQ. MI.
```

*

```
*S ADD BASINS TEMP G AND OFFSITE BASIN 4 TO CREATE TEMP H***********************
ADD HYD            ID=22 HYD=TEMP.H ID I=21 II=12
PRINT HYD           ID=22 CODE=0
```

HYDROGRAPH FROM AREA TEMP.H

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.8 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.3 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 48.1 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 77.0 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 66.0 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 44.8 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 31.8 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 23.9 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 19.0 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 14.0 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.5 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 5.9 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.5 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.6 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.9 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.3 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.9 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.5 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.3 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .7 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .6 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.56378 INCHES = 3.7516 ACRE-FEET
PEAK DISCHARGE RATE = 76.98 CFS AT 1.500 HOURS BASIN AREA = .0450 SQ. MI.

*

```
*S ADD BASINS TEMP H AND OFFSITE BASIN WELL TO CREATE TEMP I*******************
ADD HYD            ID=23 HYD=TEMP.1 ID I=22 II=14
PRINT HYD           ID=23 CODE=0
```

HYDROGRAPH FROM AREA TEMP.1

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .5 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.9 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.5 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 49.4 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 79.2 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 68.0 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 46.2 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 32.7 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 24.5 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 19.4 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 14.3 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.7 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 6.1 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.6 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.7 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.9 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.4 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.9 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.6 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.3 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .7 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .6 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .5 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .5 | 14.400 | .4 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .5 | 14.500 | .4 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .4 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .4 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.54902 INCHES = 3.8453 ACRE-FEET
PEAK DISCHARGE RATE = 79.24 CFS AT 1.500 HOURS BASIN AREA = .0465 SQ. MI.

*

```
*S ADD BASINS TEMP I AND OFFSITE BASIN 5 TO CREATE TEMP J***********************
ADD HYD            ID=24 HYD=TEMP.J ID I=23 II=13
PRINT HYD           ID=24 CODE=0
```

HYDROGRAPH FROM AREA TEMP.J

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .5 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.9 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.5 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 50.4 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 81.2 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 69.8 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 47.4 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 33.4 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 25.0 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 19.7 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 14.6 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.9 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 6.2 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.8 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.8 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 3.0 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.4 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 2.0 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.6 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.4 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | 1.0 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .9 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .8 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .7 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .6 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .5 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .5 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .5 | 14.400 | .4 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .5 | 14.500 | .4 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .4 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .4 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.47507 INCHES = 3.9198 ACRE-FEET
PEAK DISCHARGE RATE = 81.23 CFS AT 1.500 HOURS BASIN AREA = .0498 SQ. MI.

*

```
*S TEMP BASIN J REPLACES BASIN E3 AND E5 FROM THE DMP AHYMO FILE****************


COMPUTE NM HYD      ID=25  HYD NO=OFFSITE2  DA=.0805 SQ MI
                             %A=100  %B=0.0  %C=0.0 %D=0.0
                             TP=-.66 HR  RAIN=-1

     K =   .803590HR    TP =   .660000HR    K/TP RATIO =  1.217560     SHAPE CONSTANT, N =  2.922175
     UNIT PEAK =   33.592    CFS   UNIT VOLUME =    .9995       B =   275.41      P60 = 1.8400
     AREA =      .080500 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=25 CODE=10

                                    HYDROGRAPH FROM AREA OFFSITE2

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
      .000       .0          4.000      1.5          8.000       .3         12.000       .1         16.000       .0
     1.000       .0          5.000       .9          9.000       .2         13.000       .0         17.000       .0
     2.000      13.9         6.000       .6         10.000       .1         14.000       .0         18.000       .0
     3.000       5.2         7.000       .4         11.000       .1         15.000       .0

    RUNOFF VOLUME =      .41534 INCHES     =       1.7832 ACRE-FEET
    PEAK DISCHARGE RATE =      13.87 CFS  AT   2.000 HOURS   BASIN AREA =   .0805 SQ. MI.


*
*
*ROUTE RESERVOIR      ID=26 HYD=OFFPOND2  INFLOW ID=25 CODE=5
*                            OUTFLOW        STORAGE  DEPTH
*                            0      0                 0
*                            2.16   0.047             1
*                            3.06   0.222             2
*                            3.75   0.466             3
*                            4.33   0.751             4
*                            4.84   1.081             5
*
*
*PRINT HYD            ID=26 CODE=10
*
*
*COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.011
*                              DIA=2.0  N=0.013
*ROUTE MCUNGE         ID=27 HYD=RTE.OFFPOND2 INFLOW ID=26
*                     DT=0.0  L=900 NS=0  SLOPE=0.011
*                     MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
*PRINT HYD            ID=27 CODE=0
*
*
COMPUTE NM HYD      ID=28  HYD NO=BASIN.B  DA=.01998 SQ MI
                             %A=0  %B=34.0  %C=34.0 %D=32.0
                             TP=-.133 HR  RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   25.299    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
     AREA =      .006394 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
     UNIT PEAK =   36.207    CFS   UNIT VOLUME =    1.007       B =   354.44      P60 = 1.8400
     AREA =      .013586 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=28 CODE=10
```

asterisked to show offsite Pond 2 not part of calcs.
ID #26

HYDROGRAPH FROM AREA BASIN.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 2.000 | 5.8 | 7.000 | .2 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 3.000 | .3 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |

RUNOFF VOLUME = 1.32000 INCHES = 1.4066 ACRE-FEET
PEAK DISCHARGE RATE = 34.80 CFS AT 1.500 HOURS BASIN AREA = .0200 SQ. MI.

*
*
ROUTE RESERVOIR ID=29 HYD=POND.B INFLOW ID=28 CODE=5

| OUTFLOW | | STORAGE | DEPTH |
|---|---|---|---|
| 0 | 0 | | 5515 |
| 1.71 | 0.06 | | 5516 |
| 2.42 | 0.24 | | 5517 |
| 2.96 | 0.55 | | 5518 |
| 3.42 | 0.99 | | 5519 |
| 3.82 | 1.67 | | 5520 |

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

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 5515.00 | .000 | .00 |
| .50 | .00 | 5515.00 | .000 | .00 |
| 1.00 | .00 | 5515.00 | .000 | .00 |
| 1.50 | 34.80 | 5517.54 | .407 | 2.71 |
| 2.00 | 5.83 | 5518.84 | .918 | 3.34 |
| 2.50 | .93 | 5518.75 | .880 | 3.31 |
| 3.00 | .31 | 5518.50 | .769 | 3.19 |
| 3.50 | .17 | 5518.23 | .649 | 3.06 |
| 4.00 | .13 | 5517.94 | .531 | 2.93 |
| 4.50 | .12 | 5517.58 | .419 | 2.73 |
| 5.00 | .13 | 5517.24 | .315 | 2.55 |
| 5.50 | .14 | 5516.88 | .219 | 2.34 |
| 6.00 | .15 | 5516.42 | .136 | 2.01 |
| 6.50 | .16 | 5516.03 | .065 | 1.73 |
| 7.00 | .15 | 5515.40 | .024 | .68 |
| 7.50 | .15 | 5515.18 | .011 | .31 |
| 8.00 | .14 | 5515.11 | .007 | .20 |
| 8.50 | .14 | 5515.09 | .006 | .16 |
| 9.00 | .14 | 5515.08 | .005 | .14 |
| 9.50 | .13 | 5515.08 | .005 | .14 |
| 10.00 | .13 | 5515.08 | .005 | .13 |
| 10.50 | .12 | 5515.07 | .004 | .13 |
| 11.00 | .12 | 5515.07 | .004 | .12 |
| 11.50 | .12 | 5515.07 | .004 | .12 |
| 12.00 | .12 | 5515.07 | .004 | .12 |
| 12.50 | .11 | 5515.07 | .004 | .11 |
| 13.00 | .11 | 5515.07 | .004 | .11 |
| 13.50 | .11 | 5515.06 | .004 | .11 |
| 14.00 | .10 | 5515.06 | .004 | .11 |
| 14.50 | .10 | 5515.06 | .004 | .10 |
| 15.00 | .10 | 5515.06 | .004 | .10 |
| 15.50 | .10 | 5515.06 | .004 | .10 |
| 16.00 | .10 | 5515.06 | .003 | .10 |
| 16.50 | .09 | 5515.06 | .003 | .10 |
| 17.00 | .09 | 5515.06 | .003 | .09 |
| 17.50 | .09 | 5515.05 | .003 | .09 |
| 18.00 | .09 | 5515.05 | .003 | .09 |
| 18.50 | .09 | 5515.05 | .003 | .09 |
| 19.00 | .09 | 5515.05 | .003 | .09 |
| 19.50 | .08 | 5515.05 | .003 | .09 |
| 20.00 | .08 | 5515.05 | .003 | .08 |
| 20.50 | .08 | 5515.05 | .003 | .08 |
| 21.00 | .08 | 5515.05 | .003 | .08 |
| 21.50 | .08 | 5515.05 | .003 | .08 |
| 22.00 | .08 | 5515.05 | .003 | .08 |
| 22.50 | .08 | 5515.05 | .003 | .08 |
| 23.00 | .07 | 5515.04 | .003 | .08 |
| 23.50 | .07 | 5515.04 | .003 | .08 |
| 24.00 | .07 | 5515.04 | .003 | .07 |

| | | | | |
|---|---|---|---|---|
| 24.50 | .00 | 5515.02 | .001 | .03 |
| 25.00 | .00 | 5515.01 | .000 | .01 |
| 25.50 | .00 | 5515.00 | .000 | .00 |

PEAK DISCHARGE = 3.357 CFS - PEAK OCCURS AT HOUR 2.10
MAXIMUM WATER SURFACE ELEVATION = 5518.863
MAXIMUM STORAGE = .9296 AC-FT INCREMENTAL TIME= .100000HRS

*
*
PRINT HYD ID=29 CODE=10

HYDROGRAPH FROM AREA POND.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 2.0 | 12.000 | .1 | 18.000 | .1 | 24.000 | .1 |
| 1.000 | .0 | 7.000 | .7 | 13.000 | .1 | 19.000 | .1 | 25.000 | .0 |
| 2.000 | 3.3 | 8.000 | .2 | 14.000 | .1 | 20.000 | .1 | 26.000 | .0 |
| 3.000 | 3.2 | 9.000 | .1 | 15.000 | .1 | 21.000 | .1 | | |
| 4.000 | 2.9 | 10.000 | .1 | 16.000 | .1 | 22.000 | .1 | | |
| 5.000 | 2.6 | 11.000 | .1 | 17.000 | .1 | 23.000 | .1 | | |

RUNOFF VOLUME = 1.31999 INCHES = 1.4066 ACRE-FEET
PEAK DISCHARGE RATE = 3.36 CFS AT 2.100 HOURS BASIN AREA = .0200 SQ. MI.

*
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.03
DIA=2.0 N=0.013

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .10 | .06 | .21 | .89 |
| .21 | .17 | .89 | 1.22 |
| .31 | .31 | 2.07 | 1.45 |
| .42 | .47 | 3.73 | 1.62 |
| .52 | .65 | 5.82 | 1.76 |
| .63 | .84 | 8.31 | 1.85 |
| .73 | 1.04 | 11.13 | 1.93 |
| .83 | 1.24 | 14.24 | 1.97 |
| .94 | 1.45 | 17.55 | 2.00 |
| 1.04 | 1.66 | 21.00 | 2.00 |
| 1.15 | 1.86 | 24.52 | 2.00 |
| 1.25 | 2.07 | 28.02 | 2.00 |
| 1.35 | 2.27 | 31.40 | 2.00 |
| 1.46 | 2.46 | 34.57 | 2.00 |
| 1.56 | 2.63 | 37.41 | 2.00 |
| 1.67 | 2.80 | 39.77 | 2.00 |
| 1.77 | 2.94 | 41.46 | 2.00 |
| 1.88 | 3.06 | 42.15 | 2.00 |
| 2.00 | 3.14 | 42.15 | 2.00 |

ROUTE MCUNGE ID=30 HYD=RTE.PONDB INFLOW ID=29
DT=0.0 L=1180 NS=0 SLOPE=0.03
MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0

INFLOW END= 261 TABLE PTS= 19
DT= .100000 QMED= 1.68 CKMED= 8.4416
WIDTH MED= 1.38 NREACH= 1 DX= 1180.00

| DEPTH (FT) | AREA (SQ FT) | Q (CFS) | TRAVEL TIME(HR) | WIDTH (FT) | ck (FPS) | VEL (FPS) | C | D | C1 | C2 | C3 | Q-M (CFS) | C1-M | C2-M | C3-M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .0 | .0 | .135 | .0 | 3.28 | 1.55 | 1.000 | .000 | 1.000 | .000 | .000 | .0 | 1.000 | .000 | .000 |
| .10 | .1 | .2 | .100 | .9 | 5.42 | 3.29 | 1.652 | .001 | .999 | .246 | -.245 | .0 | .999 | .065 | -.065 |
| .21 | .2 | .9 | .064 | 1.2 | 7.47 | 5.14 | 2.280 | .003 | .998 | .391 | -.389 | .5 | .999 | .309 | -.307 |
| .31 | .3 | 2.1 | .050 | 1.5 | 9.46 | 6.61 | 2.887 | .004 | .998 | .486 | -.484 | 1.4 | .998 | .442 | -.440 |
| .42 | .5 | 3.7 | .042 | 1.6 | 11.14 | 7.86 | 3.398 | .006 | .997 | .546 | -.543 | 2.9 | .998 | .519 | -.516 |
| .52 | .7 | 5.8 | .037 | 1.8 | 12.57 | 8.95 | 3.834 | .007 | .997 | .587 | -.584 | 4.7 | .997 | .568 | -.565 |
| .63 | .8 | 8.3 | .033 | 1.9 | 13.78 | 9.90 | 4.204 | .009 | .996 | .616 | -.613 | 7.0 | .997 | .603 | -.600 |
| .73 | 1.0 | 11.1 | .031 | 1.9 | 14.80 | 10.74 | 4.515 | .011 | .996 | .638 | -.634 | 9.7 | .996 | .629 | -.625 |
| .83 | 1.2 | 14.2 | .029 | 2.0 | 15.64 | 11.48 | 4.771 | .013 | .995 | .654 | -.650 | 12.7 | .996 | .647 | -.643 |
| .94 | 1.4 | 17.5 | .027 | 2.0 | 16.29 | 12.13 | 4.971 | .015 | .995 | .666 | -.661 | 15.9 | .995 | .661 | -.656 |
| 1.04 | 1.7 | 21.0 | .026 | 2.0 | 16.75 | 12.69 | 5.110 | .018 | .994 | .674 | -.668 | 19.3 | .995 | .671 | -.665 |
| 1.15 | 1.9 | 24.5 | .025 | 2.0 | 16.86 | 13.16 | 5.143 | .021 | .993 | .676 | -.669 | 22.7 | .994 | .676 | -.670 |
| 1.25 | 2.1 | 28.0 | .024 | 2.0 | 16.54 | 13.56 | 5.047 | .024 | .992 | .671 | -.663 | 26.3 | .993 | .674 | -.667 |
| 1.35 | 2.3 | 31.4 | .024 | 2.0 | 15.76 | 13.86 | 4.808 | .028 | .990 | .657 | -.648 | 29.7 | .991 | .666 | -.657 |
| 1.46 | 2.5 | 34.6 | .023 | 2.0 | 14.44 | 14.08 | 4.407 | .034 | .988 | .632 | -.620 | 33.0 | .989 | .647 | -.636 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.56 | 2.6 | 37.4 | .023 | 2.0 | 12.50 | 14.20 | 3.813 | .042 | .983 | .588 | -.571 | 36.0 | .986 | .615 | -.600 |
| 1.67 | 2.8 | 39.8 | .023 | 2.0 | 9.73 | 14.21 | 2.969 | .058 | .971 | .503 | -.475 | 38.6 | .979 | .556 | -.534 |
| 1.77 | 2.9 | 41.5 | .023 | 2.0 | 5.70 | 14.09 | 1.739 | .103 | .928 | .296 | -.224 | 40.6 | .960 | .435 | -.395 |
| 1.88 | 3.1 | 42.1 | .024 | 2.0 | 3.25 | 13.77 | .991 | .183 | .831 | .080 | .088 | 41.8 | .838 | .088 | .074 |

MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) = 3 OCCURRED 1 TIMES. AVERAGE NUMBER ITERATIONS = 1.1036
Equations solved using the Ponce correction to C2
*
PRINT HYD ID=30 CODE=0

HYDROGRAPH FROM AREA RTE.PONDB

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.300 | 2.5 | 10.600 | .1 | 15.900 | .1 | 21.200 | .1 |
| .100 | .0 | 5.400 | 2.4 | 10.700 | .1 | 16.000 | .1 | 21.300 | .1 |
| .200 | .0 | 5.500 | 2.4 | 10.800 | .1 | 16.100 | .1 | 21.400 | .1 |
| .300 | .0 | 5.600 | 2.3 | 10.900 | .1 | 16.200 | .1 | 21.500 | .1 |
| .400 | .0 | 5.700 | 2.2 | 11.000 | .1 | 16.300 | .1 | 21.600 | .1 |
| .500 | .0 | 5.800 | 2.2 | 11.100 | .1 | 16.400 | .1 | 21.700 | .1 |
| .600 | .0 | 5.900 | 2.1 | 11.200 | .1 | 16.500 | .1 | 21.800 | .1 |
| .700 | .0 | 6.000 | 2.0 | 11.300 | .1 | 16.600 | .1 | 21.900 | .1 |
| .800 | .0 | 6.100 | 2.0 | 11.400 | .1 | 16.700 | .1 | 22.000 | .1 |
| .900 | .0 | 6.200 | 1.9 | 11.500 | .1 | 16.800 | .1 | 22.100 | .1 |
| 1.000 | .0 | 6.300 | 1.9 | 11.600 | .1 | 16.900 | .1 | 22.200 | .1 |
| 1.100 | .0 | 6.400 | 1.8 | 11.700 | .1 | 17.000 | .1 | 22.300 | .1 |
| 1.200 | .0 | 6.500 | 1.7 | 11.800 | .1 | 17.100 | .1 | 22.400 | .1 |
| 1.300 | .5 | 6.600 | 1.6 | 11.900 | .1 | 17.200 | .1 | 22.500 | .1 |
| 1.400 | 1.7 | 6.700 | 1.3 | 12.000 | .1 | 17.300 | .1 | 22.600 | .1 |
| 1.500 | 2.6 | 6.800 | 1.1 | 12.100 | .1 | 17.400 | .1 | 22.700 | .1 |
| 1.600 | 2.9 | 6.900 | .9 | 12.200 | .1 | 17.500 | .1 | 22.800 | .1 |
| 1.700 | 3.2 | 7.000 | .7 | 12.300 | .1 | 17.600 | .1 | 22.900 | .1 |
| 1.800 | 3.2 | 7.100 | .6 | 12.400 | .1 | 17.700 | .1 | 23.000 | .1 |
| 1.900 | 3.3 | 7.200 | .5 | 12.500 | .1 | 17.800 | .1 | 23.100 | .1 |
| 2.000 | 3.3 | 7.300 | .4 | 12.600 | .1 | 17.900 | .1 | 23.200 | .1 |
| 2.100 | 3.4 | 7.400 | .4 | 12.700 | .1 | 18.000 | .1 | 23.300 | .1 |
| 2.200 | 3.4 | 7.500 | .3 | 12.800 | .1 | 18.100 | .1 | 23.400 | .1 |
| 2.300 | 3.3 | 7.600 | .3 | 12.900 | .1 | 18.200 | .1 | 23.500 | .1 |
| 2.400 | 3.3 | 7.700 | .3 | 13.000 | .1 | 18.300 | .1 | 23.600 | .1 |
| 2.500 | 3.3 | 7.800 | .2 | 13.100 | .1 | 18.400 | .1 | 23.700 | .1 |
| 2.600 | 3.3 | 7.900 | .2 | 13.200 | .1 | 18.500 | .1 | 23.800 | .1 |
| 2.700 | 3.3 | 8.000 | .2 | 13.300 | .1 | 18.600 | .1 | 23.900 | .1 |
| 2.800 | 3.2 | 8.100 | .2 | 13.400 | .1 | 18.700 | .1 | 24.000 | .1 |
| 2.900 | 3.2 | 8.200 | .2 | 13.500 | .1 | 18.800 | .1 | 24.100 | .1 |
| 3.000 | 3.2 | 8.300 | .2 | 13.600 | .1 | 18.900 | .1 | 24.200 | .1 |
| 3.100 | 3.2 | 8.400 | .2 | 13.700 | .1 | 19.000 | .1 | 24.300 | .1 |
| 3.200 | 3.1 | 8.500 | .2 | 13.800 | .1 | 19.100 | .1 | 24.400 | .0 |
| 3.300 | 3.1 | 8.600 | .2 | 13.900 | .1 | 19.200 | .1 | 24.500 | .0 |
| 3.400 | 3.1 | 8.700 | .2 | 14.000 | .1 | 19.300 | .1 | 24.600 | .0 |
| 3.500 | 3.1 | 8.800 | .1 | 14.100 | .1 | 19.400 | .1 | 24.700 | .0 |
| 3.600 | 3.0 | 8.900 | .1 | 14.200 | .1 | 19.500 | .1 | 24.800 | .0 |
| 3.700 | 3.0 | 9.000 | .1 | 14.300 | .1 | 19.600 | .1 | 24.900 | .0 |
| 3.800 | 3.0 | 9.100 | .1 | 14.400 | .1 | 19.700 | .1 | 25.000 | .0 |
| 3.900 | 3.0 | 9.200 | .1 | 14.500 | .1 | 19.800 | .1 | 25.100 | .0 |
| 4.000 | 2.9 | 9.300 | .1 | 14.600 | .1 | 19.900 | .1 | 25.200 | .0 |
| 4.100 | 2.9 | 9.400 | .1 | 14.700 | .1 | 20.000 | .1 | 25.300 | .0 |
| 4.200 | 2.9 | 9.500 | .1 | 14.800 | .1 | 20.100 | .1 | 25.400 | .0 |
| 4.300 | 2.8 | 9.600 | .1 | 14.900 | .1 | 20.200 | .1 | 25.500 | .0 |
| 4.400 | 2.8 | 9.700 | .1 | 15.000 | .1 | 20.300 | .1 | 25.600 | .0 |
| 4.500 | 2.7 | 9.800 | .1 | 15.100 | .1 | 20.400 | .1 | 25.700 | .0 |
| 4.600 | 2.7 | 9.900 | .1 | 15.200 | .1 | 20.500 | .1 | 25.800 | .0 |
| 4.700 | 2.7 | 10.000 | .1 | 15.300 | .1 | 20.600 | .1 | 25.900 | .0 |
| 4.800 | 2.6 | 10.100 | .1 | 15.400 | .1 | 20.700 | .1 | 26.000 | .0 |
| 4.900 | 2.6 | 10.200 | .1 | 15.500 | .1 | 20.800 | .1 | 26.100 | .0 |
| 5.000 | 2.6 | 10.300 | .1 | 15.600 | .1 | 20.900 | .1 | | |
| 5.100 | 2.5 | 10.400 | .1 | 15.700 | .1 | 21.000 | .1 | | |
| 5.200 | 2.5 | 10.500 | .1 | 15.800 | .1 | 21.100 | .1 | | |

RUNOFF VOLUME = 1.32010 INCHES = 1.4067 ACRE-FEET
PEAK DISCHARGE RATE = 3.36 CFS AT 2.100 HOURS BASIN AREA = .0200 SQ. MI.

*
*
ADD HYD ID=31 HYD=OFF.B ID I=30 II=25
PRINT HYD ID=31 CODE=10

HYDROGRAPH FROM AREA OFF.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 2.6 | 12.000 | .2 | 18.000 | .1 | 24.000 | .1 |
| 1.000 | .0 | 7.000 | 1.1 | 13.000 | .1 | 19.000 | .1 | 25.000 | .0 |
| 2.000 | 17.2 | 8.000 | .5 | 14.000 | .1 | 20.000 | .1 | 26.000 | .0 |
| 3.000 | 8.4 | 9.000 | .3 | 15.000 | .1 | 21.000 | .1 | | |
| 4.000 | 4.4 | 10.000 | .2 | 16.000 | .1 | 22.000 | .1 | | |
| 5.000 | 3.5 | 11.000 | .2 | 17.000 | .1 | 23.000 | .1 | | |

RUNOFF VOLUME = .59523 INCHES = 3.1898 ACRE-FEET
PEAK DISCHARGE RATE = 17.20 CFS AT 2.000 HOURS BASIN AREA = .1005 SQ. MI.

```
*
*
COMPUTE NM HYD      ID=32  HYD NO=BASINE1.1  DA=.02753 SQ MI
                            %A=0.0  %B=33.0  %C=33.0 %D=34.0
                            TP=-0.133 HR  RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   37.038    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
     AREA =      .009360 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
     UNIT PEAK =   48.422    CFS   UNIT VOLUME =    1.007       B =   354.44      P60 = 1.8400
     AREA =      .018170 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=32 CODE=10
```

HYDROGRAPH FROM AREA BASINE1.1

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .2 | 10.000 | .2 | 15.000 | .1 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .2 | 16.000 | .1 | 21.000 | .1 |
| 2.000 | 8.3 | 7.000 | .2 | 12.000 | .2 | 17.000 | .1 | 22.000 | .1 |
| 3.000 | .4 | 8.000 | .2 | 13.000 | .2 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .2 | 19.000 | .1 | 24.000 | .1 |

RUNOFF VOLUME = 1.35259 INCHES = 1.9860 ACRE-FEET
PEAK DISCHARGE RATE = 48.45 CFS AT 1.500 HOURS BASIN AREA = .0275 SQ. MI.

```
*
*
ADD HYD                ID=33 HYD=OFF.E11 ID I=32 II=31
PRINT HYD            ID=33 CODE=10
```

HYDROGRAPH FROM AREA OFF.E11

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 2.9 | 12.000 | .3 | 18.000 | .2 | 24.000 | .2 |
| 1.000 | .0 | 7.000 | 1.4 | 13.000 | .3 | 19.000 | .2 | 25.000 | .0 |
| 2.000 | 25.5 | 8.000 | .7 | 14.000 | .3 | 20.000 | .2 | 26.000 | .0 |
| 3.000 | 8.9 | 9.000 | .5 | 15.000 | .3 | 21.000 | .2 | | |
| 4.000 | 4.6 | 10.000 | .4 | 16.000 | .2 | 22.000 | .2 | | |
| 5.000 | 3.7 | 11.000 | .4 | 17.000 | .2 | 23.000 | .2 | | |

RUNOFF VOLUME = .75811 INCHES = 5.1757 ACRE-FEET
PEAK DISCHARGE RATE = 54.83 CFS AT 1.500 HOURS BASIN AREA = .1280 SQ. MI.

```
*
*
COMPUTE NM HYD      ID=34  HYD NO=BASINE1.2  DA=.00588 SQ MI
                            %A=0.0  %B=33.0  %C=33.0 %D=34.0
                            TP=-0.133 HR  RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   7.9108    CFS   UNIT VOLUME =    1.029       B =   526.28      P60 = 1.8400
     AREA =      .001999 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
     UNIT PEAK =   10.342    CFS   UNIT VOLUME =    1.006       B =   354.44      P60 = 1.8400
```

```
AREA =       .003881 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD          ID=34 CODE=10

                                HYDROGRAPH FROM AREA BASINE1.2

  TIME     FLOW        TIME     FLOW        TIME     FLOW        TIME     FLOW        TIME     FLOW
   HRS     CFS          HRS     CFS          HRS     CFS          HRS     CFS          HRS     CFS
   .000      .0        5.000      .0       10.000      .0       15.000      .0       20.000      .0
  1.000      .0        6.000      .0       11.000      .0       16.000      .0       21.000      .0
  2.000     1.8        7.000      .0       12.000      .0       17.000      .0       22.000      .0
  3.000      .1        8.000      .0       13.000      .0       18.000      .0       23.000      .0
  4.000      .0        9.000      .0       14.000      .0       19.000      .0       24.000      .0

RUNOFF VOLUME =     1.35259 INCHES     =        .4242 ACRE-FEET
PEAK DISCHARGE RATE =      10.36 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.


*
*
COMPUTE NM HYD      ID=35  HYD NO=BASIN.E2  DA=.01348 SQ MI
                           %A=0.0  %B=18.0  %C=18.0 %D=64.0
                           TP=-.133 HR  RAIN=-1

K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   34.137    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
AREA =       .008627 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
UNIT PEAK =   12.933    CFS   UNIT VOLUME =    1.006       B =   354.44      P60 = 1.8400
AREA =       .004853 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD          ID=35 CODE=10

                                HYDROGRAPH FROM AREA BASIN.E2

  TIME     FLOW        TIME     FLOW        TIME     FLOW        TIME     FLOW        TIME     FLOW
   HRS     CFS          HRS     CFS          HRS     CFS          HRS     CFS          HRS     CFS
   .000      .0        5.000      .2       10.000      .2       15.000      .1       20.000      .1
  1.000      .0        6.000      .2       11.000      .2       16.000      .1       21.000      .1
  2.000     6.1        7.000      .2       12.000      .2       17.000      .1       22.000      .1
  3.000      .3        8.000      .2       13.000      .1       18.000      .1       23.000      .1
  4.000      .2        9.000      .2       14.000      .1       19.000      .1       24.000      .1

RUNOFF VOLUME =     1.84145 INCHES     =       1.3239 ACRE-FEET
PEAK DISCHARGE RATE =      27.42 CFS  AT   1.500 HOURS   BASIN AREA =   .0135 SQ. MI.


*
*
ADD HYD                ID=36 HYD=E2.E12 ID I=34 II=35
PRINT HYD             ID=36 CODE=10

                                HYDROGRAPH FROM AREA E2.E12

  TIME     FLOW        TIME     FLOW        TIME     FLOW        TIME     FLOW        TIME     FLOW
   HRS     CFS          HRS     CFS          HRS     CFS          HRS     CFS          HRS     CFS
   .000      .0        5.000      .2       10.000      .2       15.000      .2       20.000      .1
  1.000      .0        6.000      .2       11.000      .2       16.000      .2       21.000      .1
  2.000     7.9        7.000      .3       12.000      .2       17.000      .2       22.000      .1
  3.000      .4        8.000      .2       13.000      .2       18.000      .1       23.000      .1
  4.000      .2        9.000      .2       14.000      .2       19.000      .1       24.000      .1

RUNOFF VOLUME =     1.69294 INCHES     =       1.7480 ACRE-FEET
PEAK DISCHARGE RATE =      37.77 CFS  AT   1.500 HOURS   BASIN AREA =   .0194 SQ. MI.


*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.002
                           DIA=3.0  N=0.013

                          RATING CURVE PIPE SECTION  1.0
                              WATER       FLOW        FLOW        MAX
```

| SURFACE ELEV | AREA SQ FT | RATE CFS | WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .16 | .14 | .16 | 1.33 |
| .31 | .39 | .68 | 1.83 |
| .47 | .71 | 1.58 | 2.18 |
| .63 | 1.07 | 2.84 | 2.44 |
| .78 | 1.46 | 4.43 | 2.63 |
| .94 | 1.89 | 6.33 | 2.78 |
| 1.09 | 2.33 | 8.48 | 2.89 |
| 1.25 | 2.79 | 10.84 | 2.96 |
| 1.41 | 3.26 | 13.36 | 2.99 |
| 1.56 | 3.72 | 15.99 | 3.00 |
| 1.72 | 4.19 | 18.67 | 3.00 |
| 1.88 | 4.65 | 21.33 | 3.00 |
| 2.03 | 5.10 | 23.90 | 3.00 |
| 2.19 | 5.53 | 26.32 | 3.00 |
| 2.35 | 5.93 | 28.48 | 3.00 |
| 2.50 | 6.30 | 30.27 | 3.00 |
| 2.66 | 6.62 | 31.56 | 3.00 |
| 2.81 | 6.89 | 32.09 | 3.00 |
| 3.00 | 7.07 | 32.09 | 3.00 |

ROUTE MCUNGE ID=37 HYD=RTE.E12 INFLOW ID=36
DT=0.0 L=800 NS=0 SLOPE=0.01
MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0

INFLOW END= 249 TABLE PTS= 19
DT= .100000 QMED= 18.89 CKMED= 5.7936
WIDTH MED= 3.00 NREACH= 1 DX= 800.00

| DEPTH (FT) | AREA (SQ FT) | Q (CFS) | TRAVEL TIME(HR) | WIDTH (FT) | ck (FPS) | VEL (FPS) | C | D | C1 | C2 | C3 | Q-M (CFS) | C1-M | C2-M | C3-M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .0 | .0 | .271 | .0 | 2.22 | .53 | 1.000 | .000 | 1.000 | .000 | .000 | .0 | 1.000 | .000 | .000 |
| .16 | .1 | .2 | .200 | 1.3 | 2.21 | 1.11 | .993 | .007 | .993 | .000 | .007 | .0 | .999 | .000 | .001 |
| .31 | .4 | .7 | .128 | 1.8 | 2.53 | 1.74 | 1.138 | .018 | .983 | .072 | -.055 | .4 | .989 | .030 | -.019 |
| .47 | .7 | 1.6 | .099 | 2.2 | 3.20 | 2.24 | 1.441 | .028 | .977 | .190 | -.167 | 1.1 | .979 | .135 | -.115 |
| .63 | 1.1 | 2.8 | .084 | 2.4 | 3.77 | 2.66 | 1.696 | .039 | .972 | .269 | -.240 | 2.2 | .974 | .232 | -.206 |
| .78 | 1.5 | 4.4 | .073 | 2.6 | 4.25 | 3.03 | 1.913 | .049 | .967 | .325 | -.292 | 3.6 | .969 | .299 | -.268 |
| .94 | 1.9 | 6.3 | .066 | 2.8 | 4.66 | 3.35 | 2.098 | .061 | .961 | .367 | -.328 | 5.4 | .964 | .348 | -.312 |
| 1.09 | 2.3 | 8.5 | .061 | 2.9 | 5.01 | 3.63 | 2.253 | .073 | .956 | .399 | -.355 | 7.4 | .959 | .385 | -.343 |
| 1.25 | 2.8 | 10.8 | .057 | 3.0 | 5.29 | 3.88 | 2.381 | .087 | .950 | .423 | -.373 | 9.6 | .953 | .413 | -.366 |
| 1.41 | 3.3 | 13.4 | .054 | 3.0 | 5.51 | 4.10 | 2.481 | .101 | .944 | .442 | -.385 | 12.1 | .947 | .434 | -.381 |
| 1.56 | 3.7 | 16.0 | .052 | 3.0 | 5.67 | 4.29 | 2.550 | .118 | .936 | .455 | -.391 | 14.7 | .940 | .450 | -.390 |
| 1.72 | 4.2 | 18.7 | .050 | 3.0 | 5.70 | 4.45 | 2.567 | .136 | .926 | .460 | -.386 | 17.3 | .932 | .459 | -.390 |
| 1.88 | 4.7 | 21.3 | .048 | 3.0 | 5.60 | 4.59 | 2.519 | .159 | .914 | .456 | -.370 | 20.0 | .921 | .460 | -.380 |
| 2.03 | 5.1 | 23.9 | .047 | 3.0 | 5.33 | 4.69 | 2.399 | .187 | .896 | .442 | -.338 | 22.6 | .906 | .451 | -.357 |
| 2.19 | 5.5 | 26.3 | .047 | 3.0 | 4.89 | 4.76 | 2.199 | .224 | .869 | .416 | -.285 | 25.1 | .884 | .432 | -.316 |
| 2.35 | 5.9 | 28.5 | .046 | 3.0 | 4.23 | 4.80 | 1.903 | .281 | .824 | .372 | -.195 | 27.4 | .851 | .398 | -.248 |
| 2.50 | 6.3 | 30.3 | .046 | 3.0 | 3.29 | 4.81 | 1.482 | .383 | .733 | .302 | -.034 | 29.4 | .790 | .343 | -.133 |
| 2.66 | 6.6 | 31.6 | .047 | 3.0 | 1.93 | 4.77 | .868 | .682 | .465 | .216 | .319 | 30.9 | .652 | .260 | .088 |
| 2.81 | 6.9 | 32.1 | .048 | 3.0 | 1.10 | 4.66 | .495 | 1.216 | .103 | .262 | .635 | 31.8 | .123 | .255 | .623 |

MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) = 11 OCCURRED 1 TIMES. AVERAGE NUMBER ITERATIONS = 1.0628
Equations solved using the Ponce correction to C2
*
PRINT HYD ID=37 CODE=0

HYDROGRAPH FROM AREA RTE.E12

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .2 | 10.000 | .2 | 15.000 | .2 | 20.000 | .1 |
| .100 | .0 | 5.100 | .2 | 10.100 | .2 | 15.100 | .2 | 20.100 | .1 |
| .200 | .0 | 5.200 | .2 | 10.200 | .2 | 15.200 | .2 | 20.200 | .1 |
| .300 | .0 | 5.300 | .2 | 10.300 | .2 | 15.300 | .2 | 20.300 | .1 |
| .400 | .0 | 5.400 | .2 | 10.400 | .2 | 15.400 | .2 | 20.400 | .1 |
| .500 | .0 | 5.500 | .2 | 10.500 | .2 | 15.500 | .2 | 20.500 | .1 |
| .600 | .0 | 5.600 | .2 | 10.600 | .2 | 15.600 | .2 | 20.600 | .1 |
| .700 | .0 | 5.700 | .2 | 10.700 | .2 | 15.700 | .2 | 20.700 | .1 |
| .800 | .0 | 5.800 | .2 | 10.800 | .2 | 15.800 | .2 | 20.800 | .1 |
| .900 | .0 | 5.900 | .2 | 10.900 | .2 | 15.900 | .2 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .2 | 16.000 | .2 | 21.000 | .1 |
| 1.100 | .0 | 6.100 | .2 | 11.100 | .2 | 16.100 | .2 | 21.100 | .1 |
| 1.200 | .4 | 6.200 | .3 | 11.200 | .2 | 16.200 | .2 | 21.200 | .1 |
| 1.300 | 6.0 | 6.300 | .3 | 11.300 | .2 | 16.300 | .2 | 21.300 | .1 |
| 1.400 | 22.3 | 6.400 | .3 | 11.400 | .2 | 16.400 | .2 | 21.400 | .1 |
| 1.500 | 31.2 | 6.500 | .3 | 11.500 | .2 | 16.500 | .2 | 21.500 | .1 |
| 1.600 | 31.3 | 6.600 | .3 | 11.600 | .2 | 16.600 | .2 | 21.600 | .1 |
| 1.700 | 20.5 | 6.700 | .3 | 11.700 | .2 | 16.700 | .2 | 21.700 | .1 |
| 1.800 | 13.8 | 6.800 | .3 | 11.800 | .2 | 16.800 | .2 | 21.800 | .1 |
| 1.900 | 10.9 | 6.900 | .3 | 11.900 | .2 | 16.900 | .2 | 21.900 | .1 |
| 2.000 | 8.6 | 7.000 | .3 | 12.000 | .2 | 17.000 | .2 | 22.000 | .1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.100 | 6.5 | 7.100 | .3 | 12.100 | .2 | 17.100 | .2 | 22.100 | .1 |
| 2.200 | 3.7 | 7.200 | .3 | 12.200 | .2 | 17.200 | .2 | 22.200 | .1 |
| 2.300 | 2.4 | 7.300 | .3 | 12.300 | .2 | 17.300 | .2 | 22.300 | .1 |
| 2.400 | 1.8 | 7.400 | .2 | 12.400 | .2 | 17.400 | .2 | 22.400 | .1 |
| 2.500 | 1.4 | 7.500 | .2 | 12.500 | .2 | 17.500 | .2 | 22.500 | .1 |
| 2.600 | 1.1 | 7.600 | .2 | 12.600 | .2 | 17.600 | .2 | 22.600 | .1 |
| 2.700 | .9 | 7.700 | .2 | 12.700 | .2 | 17.700 | .2 | 22.700 | .1 |
| 2.800 | .7 | 7.800 | .2 | 12.800 | .2 | 17.800 | .2 | 22.800 | .1 |
| 2.900 | .6 | 7.900 | .2 | 12.900 | .2 | 17.900 | .2 | 22.900 | .1 |
| 3.000 | .5 | 8.000 | .2 | 13.000 | .2 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .4 | 8.100 | .2 | 13.100 | .2 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .4 | 8.200 | .2 | 13.200 | .2 | 18.200 | .2 | 23.200 | .1 |
| 3.300 | .3 | 8.300 | .2 | 13.300 | .2 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .3 | 8.400 | .2 | 13.400 | .2 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .3 | 8.500 | .2 | 13.500 | .2 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .3 | 8.600 | .2 | 13.600 | .2 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .2 | 8.700 | .2 | 13.700 | .2 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .2 | 8.800 | .2 | 13.800 | .2 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .2 | 8.900 | .2 | 13.900 | .2 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .2 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .2 | 9.100 | .2 | 14.100 | .2 | 19.100 | .1 | 24.100 | .1 |
| 4.200 | .2 | 9.200 | .2 | 14.200 | .2 | 19.200 | .1 | 24.200 | .1 |
| 4.300 | .2 | 9.300 | .2 | 14.300 | .2 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .2 | 9.400 | .2 | 14.400 | .2 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .2 | 9.500 | .2 | 14.500 | .2 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .2 | 9.600 | .2 | 14.600 | .2 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .2 | 9.700 | .2 | 14.700 | .2 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .2 | 9.800 | .2 | 14.800 | .2 | 19.800 | .1 | 24.800 | .0 |
| 4.900 | .2 | 9.900 | .2 | 14.900 | .2 | 19.900 | .1 | 24.900 | .0 |

RUNOFF VOLUME = 1.63074 INCHES = 1.6838 ACRE-FEET
PEAK DISCHARGE RATE = 31.30 CFS AT 1.600 HOURS BASIN AREA = .0194 SQ. MI.

```
*
*
COMPUTE NM HYD      ID=38  HYD NO=BASIN.E4  DA=.00577 SQ MI
                           %A=0.0  %B=5.0  %C=5.0 %D=90.0
                           TP=-0.133 HR  RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   20.548    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
     AREA =      .005193 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
     UNIT PEAK =   1.5377    CFS   UNIT VOLUME =    .9989       B =   354.44      P60 = 1.8400
     AREA =      .000577 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=38 CODE=10
```

HYDROGRAPH FROM AREA BASIN.E4

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 2.000 | 3.4 | 7.000 | .1 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 3.000 | .2 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |

RUNOFF VOLUME = 2.26513 INCHES = .6971 ACRE-FEET
PEAK DISCHARGE RATE = 13.11 CFS AT 1.500 HOURS BASIN AREA = .0058 SQ. MI.

```
*
*
ADD HYD                 ID=39 HYD=AP1 ID I=38 II=33
PRINT HYD             ID=39 CODE=10
```

HYDROGRAPH FROM AREA AP1

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 3.0 | 12.000 | .4 | 18.000 | .3 | 24.000 | .2 |
| 1.000 | .0 | 7.000 | 1.5 | 13.000 | .4 | 19.000 | .3 | 25.000 | .0 |
| 2.000 | 28.9 | 8.000 | .8 | 14.000 | .4 | 20.000 | .3 | 26.000 | .0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3.000 | 9.0 | 9.000 | .6 | 15.000 | .3 | 21.000 | .3 |
| 4.000 | 4.7 | 10.000 | .5 | 16.000 | .3 | 22.000 | .3 |
| 5.000 | 3.8 | 11.000 | .5 | 17.000 | .3 | 23.000 | .2 |

RUNOFF VOLUME = .82310 INCHES = 5.8728 ACRE-FEET
PEAK DISCHARGE RATE = 67.94 CFS AT 1.500 HOURS BASIN AREA = .1338 SQ. MI.

```
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                            DIA=4.0  N=0.013
```

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .21 | .25 | 1.21 | 1.78 |
| .42 | .69 | 5.27 | 2.44 |
| .63 | 1.25 | 12.26 | 2.91 |
| .83 | 1.90 | 22.05 | 3.25 |
| 1.04 | 2.60 | 34.43 | 3.51 |
| 1.25 | 3.36 | 49.13 | 3.71 |
| 1.46 | 4.15 | 65.82 | 3.85 |
| 1.67 | 4.96 | 84.15 | 3.94 |
| 1.88 | 5.79 | 103.74 | 3.99 |
| 2.08 | 6.62 | 124.15 | 4.00 |
| 2.29 | 7.45 | 144.94 | 4.00 |
| 2.50 | 8.27 | 165.61 | 4.00 |
| 2.71 | 9.06 | 185.62 | 4.00 |
| 2.92 | 9.82 | 204.35 | 4.00 |
| 3.13 | 10.54 | 221.12 | 4.00 |
| 3.34 | 11.20 | 235.07 | 4.00 |
| 3.54 | 11.77 | 245.05 | 4.00 |
| 3.75 | 12.24 | 249.15 | 4.00 |
| 4.00 | 12.57 | 249.15 | 4.00 |

```
ROUTE MCUNGE          ID=40 HYD=RTE.E1E4 INFLOW ID=39
                      DT=0.0  L=400 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
     ZERO VALUE HYDROGRAPH OR SHORT ROUTE - ROUTING BYPASSED
*
PRINT HYD             ID=40 CODE=0
```

HYDROGRAPH FROM AREA RTE.E1E4

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.300 | 3.6 | 10.600 | .5 | 15.900 | .3 | 21.200 | .3 |
| .100 | .0 | 5.400 | 3.5 | 10.700 | .5 | 16.000 | .3 | 21.300 | .3 |
| .200 | .0 | 5.500 | 3.4 | 10.800 | .5 | 16.100 | .3 | 21.400 | .3 |
| .300 | .0 | 5.600 | 3.3 | 10.900 | .5 | 16.200 | .3 | 21.500 | .3 |
| .400 | .0 | 5.700 | 3.2 | 11.000 | .5 | 16.300 | .3 | 21.600 | .3 |
| .500 | .0 | 5.800 | 3.1 | 11.100 | .5 | 16.400 | .3 | 21.700 | .3 |
| .600 | .0 | 5.900 | 3.1 | 11.200 | .5 | 16.500 | .3 | 21.800 | .3 |
| .700 | .0 | 6.000 | 3.0 | 11.300 | .5 | 16.600 | .3 | 21.900 | .3 |
| .800 | .0 | 6.100 | 2.9 | 11.400 | .5 | 16.700 | .3 | 22.000 | .3 |
| .900 | .0 | 6.200 | 2.8 | 11.500 | .4 | 16.800 | .3 | 22.100 | .3 |
| 1.000 | .0 | 6.300 | 2.8 | 11.600 | .4 | 16.900 | .3 | 22.200 | .3 |
| 1.100 | .2 | 6.400 | 2.7 | 11.700 | .4 | 17.000 | .3 | 22.300 | .3 |
| 1.200 | 3.7 | 6.500 | 2.6 | 11.800 | .4 | 17.100 | .3 | 22.400 | .3 |
| 1.300 | 14.9 | 6.600 | 2.4 | 11.900 | .4 | 17.200 | .3 | 22.500 | .3 |
| 1.400 | 54.4 | 6.700 | 2.1 | 12.000 | .4 | 17.300 | .3 | 22.600 | .3 |
| 1.500 | 67.9 | 6.800 | 1.9 | 12.100 | .4 | 17.400 | .3 | 22.700 | .3 |
| 1.600 | 53.0 | 6.900 | 1.7 | 12.200 | .4 | 17.500 | .3 | 22.800 | .3 |
| 1.700 | 40.9 | 7.000 | 1.5 | 12.300 | .4 | 17.600 | .3 | 22.900 | .3 |
| 1.800 | 35.0 | 7.100 | 1.4 | 12.400 | .4 | 17.700 | .3 | 23.000 | .2 |
| 1.900 | 31.5 | 7.200 | 1.2 | 12.500 | .4 | 17.800 | .3 | 23.100 | .3 |
| 2.000 | 28.9 | 7.300 | 1.1 | 12.600 | .4 | 17.900 | .3 | 23.200 | .2 |
| 2.100 | 24.2 | 7.400 | 1.1 | 12.700 | .4 | 18.000 | .3 | 23.300 | .2 |
| 2.200 | 20.6 | 7.500 | 1.0 | 12.800 | .4 | 18.100 | .3 | 23.400 | .2 |
| 2.300 | 18.4 | 7.600 | .9 | 12.900 | .4 | 18.200 | .3 | 23.500 | .2 |
| 2.400 | 16.5 | 7.700 | .9 | 13.000 | .4 | 18.300 | .3 | 23.600 | .2 |
| 2.500 | 14.8 | 7.800 | .9 | 13.100 | .4 | 18.400 | .3 | 23.700 | .2 |
| 2.600 | 13.3 | 7.900 | .8 | 13.200 | .4 | 18.500 | .3 | 23.800 | .2 |
| 2.700 | 12.0 | 8.000 | .8 | 13.300 | .4 | 18.600 | .3 | 23.900 | .2 |
| 2.800 | 10.8 | 8.100 | .8 | 13.400 | .4 | 18.700 | .3 | 24.000 | .2 |
| 2.900 | 9.9 | 8.200 | .7 | 13.500 | .4 | 18.800 | .3 | 24.100 | .2 |
| 3.000 | 9.0 | 8.300 | .7 | 13.600 | .4 | 18.900 | .3 | 24.200 | .1 |
| 3.100 | 8.3 | 8.400 | .7 | 13.700 | .4 | 19.000 | .3 | 24.300 | .1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3.200 | 7.7 | 8.500 | .7 | 13.800 | .4 | 19.100 | .3 | 24.400 | .1 |
| 3.300 | 7.1 | 8.600 | .7 | 13.900 | .4 | 19.200 | .3 | 24.500 | .0 |
| 3.400 | 6.7 | 8.700 | .7 | 14.000 | .4 | 19.300 | .3 | 24.600 | .0 |
| 3.500 | 6.2 | 8.800 | .6 | 14.100 | .4 | 19.400 | .3 | 24.700 | .0 |
| 3.600 | 5.9 | 8.900 | .6 | 14.200 | .4 | 19.500 | .3 | 24.800 | .0 |
| 3.700 | 5.5 | 9.000 | .6 | 14.300 | .4 | 19.600 | .3 | 24.900 | .0 |
| 3.800 | 5.2 | 9.100 | .6 | 14.400 | .4 | 19.700 | .3 | 25.000 | .0 |
| 3.900 | 5.0 | 9.200 | .6 | 14.500 | .4 | 19.800 | .3 | 25.100 | .0 |
| 4.000 | 4.7 | 9.300 | .6 | 14.600 | .4 | 19.900 | .3 | 25.200 | .0 |
| 4.100 | 4.5 | 9.400 | .6 | 14.700 | .4 | 20.000 | .3 | 25.300 | .0 |
| 4.200 | 4.4 | 9.500 | .6 | 14.800 | .4 | 20.100 | .3 | 25.400 | .0 |
| 4.300 | 4.3 | 9.600 | .6 | 14.900 | .3 | 20.200 | .3 | 25.500 | .0 |
| 4.400 | 4.2 | 9.700 | .6 | 15.000 | .3 | 20.300 | .3 | 25.600 | .0 |
| 4.500 | 4.2 | 9.800 | .6 | 15.100 | .3 | 20.400 | .3 | 25.700 | .0 |
| 4.600 | 4.1 | 9.900 | .5 | 15.200 | .3 | 20.500 | .3 | 25.800 | .0 |
| 4.700 | 4.0 | 10.000 | .5 | 15.300 | .3 | 20.600 | .3 | 25.900 | .0 |
| 4.800 | 3.9 | 10.100 | .5 | 15.400 | .3 | 20.700 | .3 | 26.000 | .0 |
| 4.900 | 3.8 | 10.200 | .5 | 15.500 | .3 | 20.800 | .3 | 26.100 | .0 |
| 5.000 | 3.8 | 10.300 | .5 | 15.600 | .3 | 20.900 | .3 | | |
| 5.100 | 3.7 | 10.400 | .5 | 15.700 | .3 | 21.000 | .3 | | |
| 5.200 | 3.6 | 10.500 | .5 | 15.800 | .3 | 21.100 | .3 | | |

RUNOFF VOLUME = .82310 INCHES = 5.8728 ACRE-FEET
PEAK DISCHARGE RATE = 67.94 CFS AT 1.500 HOURS BASIN AREA = .1338 SQ. MI.

```
*
*
ADD HYD                ID=41 HYD=AP2 ID I=37 II=40
PRINT HYD              ID=41 CODE=10
```

HYDROGRAPH FROM AREA AP2

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 3.2 | 12.000 | .6 | 18.000 | .4 | 24.000 | .4 |
| 1.000 | .0 | 7.000 | 1.7 | 13.000 | .6 | 19.000 | .4 | 25.000 | .0 |
| 2.000 | 37.5 | 8.000 | 1.0 | 14.000 | .5 | 20.000 | .4 | 26.000 | .0 |
| 3.000 | 9.5 | 9.000 | .9 | 15.000 | .5 | 21.000 | .4 | | |
| 4.000 | 5.0 | 10.000 | .8 | 16.000 | .5 | 22.000 | .4 | | |
| 5.000 | 4.0 | 11.000 | .7 | 17.000 | .5 | 23.000 | .4 | | |

RUNOFF VOLUME = .92520 INCHES = 7.5565 ACRE-FEET
PEAK DISCHARGE RATE = 99.13 CFS AT 1.500 HOURS BASIN AREA = .1531 SQ. MI.

```
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                            DIA=4.0  N=0.013
```

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .21 | .25 | 1.21 | 1.78 |
| .42 | .69 | 5.27 | 2.44 |
| .63 | 1.25 | 12.26 | 2.91 |
| .83 | 1.90 | 22.05 | 3.25 |
| 1.04 | 2.60 | 34.43 | 3.51 |
| 1.25 | 3.36 | 49.13 | 3.71 |
| 1.46 | 4.15 | 65.82 | 3.85 |
| 1.67 | 4.96 | 84.15 | 3.94 |
| 1.88 | 5.79 | 103.74 | 3.99 |
| 2.08 | 6.62 | 124.15 | 4.00 |
| 2.29 | 7.45 | 144.94 | 4.00 |
| 2.50 | 8.27 | 165.61 | 4.00 |
| 2.71 | 9.06 | 185.62 | 4.00 |
| 2.92 | 9.82 | 204.35 | 4.00 |
| 3.13 | 10.54 | 221.12 | 4.00 |
| 3.34 | 11.20 | 235.07 | 4.00 |
| 3.54 | 11.77 | 245.05 | 4.00 |
| 3.75 | 12.24 | 249.15 | 4.00 |
| 4.00 | 12.57 | 249.15 | 4.00 |

```
ROUTE MCUNGE          ID=42 HYD=RTE.E1E4 INFLOW ID=41
                      DT=0.0  L=600 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
```

ZERO VALUE HYDROGRAPH OR SHORT ROUTE - ROUTING BYPASSED

*
PRINT HYD ID=42 CODE=0

HYDROGRAPH FROM AREA RTE.E1E4

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.300 | 3.8 | 10.600 | .7 | 15.900 | .5 | 21.200 | .4 |
| .100 | .0 | 5.400 | 3.7 | 10.700 | .7 | 16.000 | .5 | 21.300 | .4 |
| .200 | .0 | 5.500 | 3.7 | 10.800 | .7 | 16.100 | .5 | 21.400 | .4 |
| .300 | .0 | 5.600 | 3.6 | 10.900 | .7 | 16.200 | .5 | 21.500 | .4 |
| .400 | .0 | 5.700 | 3.5 | 11.000 | .7 | 16.300 | .5 | 21.600 | .4 |
| .500 | .0 | 5.800 | 3.4 | 11.100 | .7 | 16.400 | .5 | 21.700 | .4 |
| .600 | .0 | 5.900 | 3.3 | 11.200 | .7 | 16.500 | .5 | 21.800 | .4 |
| .700 | .0 | 6.000 | 3.2 | 11.300 | .7 | 16.600 | .5 | 21.900 | .4 |
| .800 | .0 | 6.100 | 3.2 | 11.400 | .7 | 16.700 | .5 | 22.000 | .4 |
| .900 | .0 | 6.200 | 3.1 | 11.500 | .6 | 16.800 | .5 | 22.100 | .4 |
| 1.000 | .0 | 6.300 | 3.0 | 11.600 | .6 | 16.900 | .5 | 22.200 | .4 |
| 1.100 | .2 | 6.400 | 2.9 | 11.700 | .6 | 17.000 | .5 | 22.300 | .4 |
| 1.200 | 4.2 | 6.500 | 2.9 | 11.800 | .6 | 17.100 | .5 | 22.400 | .4 |
| 1.300 | 20.9 | 6.600 | 2.7 | 11.900 | .6 | 17.200 | .5 | 22.500 | .4 |
| 1.400 | 76.7 | 6.700 | 2.4 | 12.000 | .6 | 17.300 | .5 | 22.600 | .4 |
| 1.500 | 99.1 | 6.800 | 2.1 | 12.100 | .6 | 17.400 | .5 | 22.700 | .4 |
| 1.600 | 84.3 | 6.900 | 1.9 | 12.200 | .6 | 17.500 | .5 | 22.800 | .4 |
| 1.700 | 61.4 | 7.000 | 1.7 | 12.300 | .6 | 17.600 | .5 | 22.900 | .4 |
| 1.800 | 48.8 | 7.100 | 1.6 | 12.400 | .6 | 17.700 | .5 | 23.000 | .4 |
| 1.900 | 42.5 | 7.200 | 1.5 | 12.500 | .6 | 17.800 | .5 | 23.100 | .4 |
| 2.000 | 37.5 | 7.300 | 1.4 | 12.600 | .6 | 17.900 | .4 | 23.200 | .4 |
| 2.100 | 30.7 | 7.400 | 1.3 | 12.700 | .6 | 18.000 | .4 | 23.300 | .4 |
| 2.200 | 24.3 | 7.500 | 1.2 | 12.800 | .6 | 18.100 | .4 | 23.400 | .4 |
| 2.300 | 20.8 | 7.600 | 1.2 | 12.900 | .6 | 18.200 | .4 | 23.500 | .4 |
| 2.400 | 18.3 | 7.700 | 1.1 | 13.000 | .6 | 18.300 | .4 | 23.600 | .4 |
| 2.500 | 16.2 | 7.800 | 1.1 | 13.100 | .6 | 18.400 | .4 | 23.700 | .4 |
| 2.600 | 14.3 | 7.900 | 1.1 | 13.200 | .6 | 18.500 | .4 | 23.800 | .4 |
| 2.700 | 12.8 | 8.000 | 1.0 | 13.300 | .6 | 18.600 | .4 | 23.900 | .4 |
| 2.800 | 11.5 | 8.100 | 1.0 | 13.400 | .6 | 18.700 | .4 | 24.000 | .4 |
| 2.900 | 10.4 | 8.200 | 1.0 | 13.500 | .6 | 18.800 | .4 | 24.100 | .3 |
| 3.000 | 9.5 | 8.300 | 1.0 | 13.600 | .6 | 18.900 | .4 | 24.200 | .2 |
| 3.100 | 8.7 | 8.400 | .9 | 13.700 | .6 | 19.000 | .4 | 24.300 | .1 |
| 3.200 | 8.1 | 8.500 | .9 | 13.800 | .5 | 19.100 | .4 | 24.400 | .1 |
| 3.300 | 7.5 | 8.600 | .9 | 13.900 | .5 | 19.200 | .4 | 24.500 | .1 |
| 3.400 | 7.0 | 8.700 | .9 | 14.000 | .5 | 19.300 | .4 | 24.600 | .0 |
| 3.500 | 6.5 | 8.800 | .9 | 14.100 | .5 | 19.400 | .4 | 24.700 | .0 |
| 3.600 | 6.1 | 8.900 | .9 | 14.200 | .5 | 19.500 | .4 | 24.800 | .0 |
| 3.700 | 5.8 | 9.000 | .9 | 14.300 | .5 | 19.600 | .4 | 24.900 | .0 |
| 3.800 | 5.5 | 9.100 | .8 | 14.400 | .5 | 19.700 | .4 | 25.000 | .0 |
| 3.900 | 5.2 | 9.200 | .8 | 14.500 | .5 | 19.800 | .4 | 25.100 | .0 |
| 4.000 | 5.0 | 9.300 | .8 | 14.600 | .5 | 19.900 | .4 | 25.200 | .0 |
| 4.100 | 4.8 | 9.400 | .8 | 14.700 | .5 | 20.000 | .4 | 25.300 | .0 |
| 4.200 | 4.6 | 9.500 | .8 | 14.800 | .5 | 20.100 | .4 | 25.400 | .0 |
| 4.300 | 4.5 | 9.600 | .8 | 14.900 | .5 | 20.200 | .4 | 25.500 | .0 |
| 4.400 | 4.4 | 9.700 | .8 | 15.000 | .5 | 20.300 | .4 | 25.600 | .0 |
| 4.500 | 4.4 | 9.800 | .8 | 15.100 | .5 | 20.400 | .4 | 25.700 | .0 |
| 4.600 | 4.3 | 9.900 | .8 | 15.200 | .5 | 20.500 | .4 | 25.800 | .0 |
| 4.700 | 4.2 | 10.000 | .8 | 15.300 | .5 | 20.600 | .4 | 25.900 | .0 |
| 4.800 | 4.1 | 10.100 | .7 | 15.400 | .5 | 20.700 | .4 | 26.000 | .0 |
| 4.900 | 4.0 | 10.200 | .7 | 15.500 | .5 | 20.800 | .4 | 26.100 | .0 |
| 5.000 | 4.0 | 10.300 | .7 | 15.600 | .5 | 20.900 | .4 | | |
| 5.100 | 3.9 | 10.400 | .7 | 15.700 | .5 | 21.000 | .4 | | |
| 5.200 | 3.9 | 10.500 | .7 | 15.800 | .5 | 21.100 | .4 | | |

RUNOFF VOLUME = .92520 INCHES = 7.5565 ACRE-FEET
PEAK DISCHARGE RATE = 99.13 CFS AT 1.500 HOURS BASIN AREA = .1531 SQ. MI.

*
ADD HYD ID=43 HYD=AP3 ID I=42 II=24
PRINT HYD ID=43 CODE=10

HYDROGRAPH FROM AREA AP3

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 3.7 | 12.000 | 1.0 | 18.000 | .8 | 24.000 | .6 |
| 1.000 | .0 | 7.000 | 2.3 | 13.000 | 1.0 | 19.000 | .7 | 25.000 | .0 |
| 2.000 | 57.2 | 8.000 | 1.5 | 14.000 | .9 | 20.000 | .7 | 26.000 | .0 |
| 3.000 | 10.9 | 9.000 | 1.3 | 15.000 | .9 | 21.000 | .7 | | |
| 4.000 | 5.4 | 10.000 | 1.2 | 16.000 | .8 | 22.000 | .7 | | |
| 5.000 | 4.4 | 11.000 | 1.1 | 17.000 | .8 | 23.000 | .6 | | |

```
    RUNOFF VOLUME =      1.06018 INCHES      =       11.4763 ACRE-FEET
    PEAK DISCHARGE RATE =     180.36 CFS  AT   1.500 HOURS   BASIN AREA =   .2030 SQ. MI.


*PLOT HYD                   ID=43
*
COMPUTE NM HYD      ID=44  HYD NO=BASIN.OFF6  DA=.0014 SQ MI
                               %A=0.0  %B=0  %C=100.0 %D=0
                               TP=-0.133 HR  RAIN=-1

     K =   .105291HR    TP =   .133000HR    K/TP RATIO =   .791661     SHAPE CONSTANT, N =  4.531123
     UNIT PEAK =   4.0963    CFS   UNIT VOLUME =    1.011       B =   389.14      P60 = 1.8400
     AREA =      .001400 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=44 CODE=10

                                   HYDROGRAPH FROM AREA BASIN.OFF6

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
      .000       .0          1.000       .0          2.000       .3          3.000       .0

    RUNOFF VOLUME =      .96928 INCHES      =        .0724 ACRE-FEET
    PEAK DISCHARGE RATE =       2.33 CFS  AT   1.500 HOURS   BASIN AREA =   .0014 SQ. MI.


*
ADD HYD                   ID=45 HYD=POND ID I=43 II=44
PRINT HYD             ID=45 CODE=10

                                   HYDROGRAPH FROM AREA POND

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
      .000       .0          6.000      3.7         12.000      1.0         18.000       .8         24.000       .6
     1.000       .0          7.000      2.3         13.000      1.0         19.000       .7         25.000       .0
     2.000      57.5         8.000      1.5         14.000       .9         20.000       .7         26.000       .0
     3.000      10.9         9.000      1.3         15.000       .9         21.000       .7
     4.000       5.4        10.000      1.2         16.000       .8         22.000       .7
     5.000       4.4        11.000      1.1         17.000       .8         23.000       .6

    RUNOFF VOLUME =      1.05956 INCHES      =       11.5486 ACRE-FEET
    PEAK DISCHARGE RATE =     182.68 CFS  AT   1.500 HOURS   BASIN AREA =   .2044 SQ. MI.


*PLOT HYD                   ID=45
*
*
ROUTE RESERVOIR         ID=46 HYD=POND.E  INFLOW ID=45 CODE=5
                               OUTFLOW        STORAGE  DEPTH

                               0              0.02             5440
                               0.011  0.05             5440.5
                               0.012  0.09             5441
                               0.013  0.13             5441.5
                               0.014  0.18             5442
                               0.015  0.24             5442.5
                               0.016  0.31             5443
                               0.017  0.39             5443.5
                               0.018  0.50             5444
                               0.02   0.65             5444.5
                               0.03   0.83             5445
                               0.50   1.03             5445.5
                               1.3            1.28             5446
                               2.2            1.56             5446.5
                               3.3            1.89             5447
                               4.5            2.25             5447.5
                               5.8            2.64             5448
                               7.6            3.08             5448.5
                               9.5            3.56             5449
                               11.5   4.08             5449.5
                               13.6   4.63             5450
                               15.8   5.21             5450.5
                               18.1   5.83             5451
                               20.5   6.49             5451.5
                               23.0   7.17             5452
```

See summary

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

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 5440.00 | .020 | .00 |
| .50 | .00 | 5440.00 | .020 | .00 |
| 1.00 | .00 | 5440.00 | .020 | .00 |
| 1.50 | 182.68 | 5447.39 | 2.168 | 4.23 |
| 2.00 | 57.50 | 5451.16 | 6.045 | 18.88 |
| 2.50 | 19.98 | 5451.57 | 6.590 | 20.87 |
| 3.00 | 10.89 | 5451.39 | 6.351 | 19.99 |
| 3.50 | 7.20 | 5451.07 | 5.920 | 18.43 |
| 4.00 | 5.43 | 5450.69 | 5.451 | 16.69 |
| 4.50 | 4.79 | 5450.32 | 5.005 | 15.02 |
| 5.00 | 4.42 | 5449.98 | 4.606 | 13.51 |
| 5.50 | 4.12 | 5449.66 | 4.253 | 12.16 |
| 6.00 | 3.73 | 5449.36 | 3.937 | 10.95 |
| 6.50 | 3.40 | 5449.09 | 3.656 | 9.87 |
| 7.00 | 2.27 | 5448.82 | 3.386 | 8.81 |
| 7.50 | 1.75 | 5448.55 | 3.125 | 7.78 |
| 8.00 | 1.53 | 5448.29 | 2.891 | 6.83 |
| 8.50 | 1.40 | 5448.05 | 2.687 | 5.99 |
| 9.00 | 1.32 | 5447.83 | 2.509 | 5.36 |
| 9.50 | 1.25 | 5447.63 | 2.352 | 4.84 |
| 10.00 | 1.19 | 5447.45 | 2.212 | 4.37 |
| 10.50 | 1.14 | 5447.27 | 2.088 | 3.96 |
| 11.00 | 1.10 | 5447.12 | 1.978 | 3.59 |
| 11.50 | 1.05 | 5446.99 | 1.881 | 3.27 |
| 12.00 | 1.02 | 5446.86 | 1.794 | 2.98 |
| 12.50 | .98 | 5446.74 | 1.718 | 2.73 |
| 13.00 | .95 | 5446.64 | 1.650 | 2.50 |
| 13.50 | .93 | 5446.55 | 1.590 | 2.30 |
| 14.00 | .91 | 5446.46 | 1.537 | 2.12 |
| 14.50 | .88 | 5446.37 | 1.489 | 1.97 |
| 15.00 | .86 | 5446.30 | 1.446 | 1.83 |
| 15.50 | .84 | 5446.23 | 1.408 | 1.71 |
| 16.00 | .82 | 5446.17 | 1.374 | 1.60 |
| 16.50 | .80 | 5446.11 | 1.343 | 1.50 |
| 17.00 | .79 | 5446.06 | 1.316 | 1.42 |
| 17.50 | .77 | 5446.02 | 1.291 | 1.34 |
| 18.00 | .75 | 5445.98 | 1.269 | 1.27 |
| 18.50 | .74 | 5445.94 | 1.249 | 1.20 |
| 19.00 | .73 | 5445.90 | 1.231 | 1.14 |
| 19.50 | .71 | 5445.87 | 1.215 | 1.09 |
| 20.00 | .70 | 5445.84 | 1.200 | 1.04 |
| 20.50 | .69 | 5445.81 | 1.186 | 1.00 |
| 21.00 | .68 | 5445.79 | 1.174 | .96 |
| 21.50 | .67 | 5445.77 | 1.163 | .93 |
| 22.00 | .66 | 5445.75 | 1.153 | .89 |
| 22.50 | .64 | 5445.73 | 1.143 | .86 |
| 23.00 | .63 | 5445.71 | 1.135 | .84 |
| 23.50 | .62 | 5445.69 | 1.127 | .81 |
| 24.00 | .62 | 5445.68 | 1.120 | .79 |
| 24.50 | .07 | 5445.64 | 1.099 | .72 |
| 25.00 | .01 | 5445.59 | 1.073 | .64 |
| 25.50 | .00 | 5445.54 | 1.048 | .56 |
| 26.00 | .00 | 5445.49 | 1.027 | .49 |
| 26.50 | .00 | 5445.44 | 1.008 | .45 |
| 27.00 | .00 | 5445.40 | .990 | .41 |
| 27.50 | .00 | 5445.36 | .974 | .37 |

max to AP.E

(~~tiated to 22.3 from Thompson report.~~)

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 28.00 | .00 | 5445.32 | .959 | .33 |
| 28.50 | .00 | 5445.29 | .946 | .30 |
| 29.00 | .00 | 5445.26 | .934 | .28 |
| 29.50 | .00 | 5445.23 | .923 | .25 |
| 30.00 | .00 | 5445.21 | .914 | .23 |
| 30.50 | .00 | 5445.19 | .905 | .21 |
| 31.00 | .00 | 5445.17 | .897 | .19 |
| 31.50 | .00 | 5445.15 | .889 | .17 |
| 32.00 | .00 | 5445.13 | .883 | .15 |
| 32.50 | .00 | 5445.12 | .877 | .14 |
| 33.00 | .00 | 5445.10 | .871 | .13 |
| 33.50 | .00 | 5445.09 | .866 | .11 |
| 34.00 | .00 | 5445.08 | .862 | .10 |
| 34.50 | .00 | 5445.07 | .857 | .09 |
| 35.00 | .00 | 5445.06 | .854 | .09 |
| 35.50 | .00 | 5445.05 | .850 | .08 |

| | | | | |
|---|---|---|---|---|
| 36.00 | .00 | 5445.04 | .847 | .07 |
| 36.50 | .00 | 5445.04 | .845 | .06 |
| 37.00 | .00 | 5445.03 | .842 | .06 |
| 37.50 | .00 | 5445.02 | .840 | .05 |
| 38.00 | .00 | 5445.02 | .838 | .05 |
| 38.50 | .00 | 5445.01 | .836 | .04 |
| 39.00 | .00 | 5445.01 | .834 | .04 |
| 39.50 | .00 | 5445.01 | .832 | .04 |
| 40.00 | .00 | 5445.00 | .831 | .03 |
| 40.50 | .00 | 5445.00 | .830 | .03 |
| 41.00 | .00 | 5445.00 | .829 | .03 |
| 41.50 | .00 | 5444.99 | .827 | .03 |
| 42.00 | .00 | 5444.99 | .826 | .03 |
| 42.50 | .00 | 5444.99 | .825 | .03 |
| 43.00 | .00 | 5444.98 | .824 | .03 |
| 43.50 | .00 | 5444.98 | .822 | .03 |
| 44.00 | .00 | 5444.98 | .821 | .03 |
| 44.50 | .00 | 5444.97 | .820 | .03 |
| 45.00 | .00 | 5444.97 | .819 | .03 |
| 45.50 | .00 | 5444.97 | .818 | .03 |
| 46.00 | .00 | 5444.96 | .816 | .03 |
| 46.50 | .00 | 5444.96 | .815 | .03 |
| 47.00 | .00 | 5444.96 | .814 | .03 |
| 47.50 | .00 | 5444.95 | .813 | .03 |
| 48.00 | .00 | 5444.95 | .812 | .03 |
| 48.50 | .00 | 5444.95 | .810 | .03 |
| 49.00 | .00 | 5444.94 | .809 | .03 |
| 49.50 | .00 | 5444.94 | .808 | .03 |
| 50.00 | .00 | 5444.94 | .807 | .03 |
| 50.50 | .00 | 5444.93 | .806 | .03 |
| 51.00 | .00 | 5444.93 | .804 | .03 |
| 51.50 | .00 | 5444.93 | .803 | .03 |
| 52.00 | .00 | 5444.92 | .802 | .03 |
| 52.50 | .00 | 5444.92 | .801 | .03 |
| 53.00 | .00 | 5444.92 | .800 | .03 |
| 53.50 | .00 | 5444.91 | .799 | .03 |
| 54.00 | .00 | 5444.91 | .797 | .03 |
| 54.50 | .00 | 5444.91 | .796 | .03 |
| 55.00 | .00 | 5444.90 | .795 | .03 |
| 55.50 | .00 | 5444.90 | .794 | .03 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 56.00 | .00 | 5444.90 | .793 | .03 |
| 56.50 | .00 | 5444.89 | .792 | .03 |
| 57.00 | .00 | 5444.89 | .790 | .03 |
| 57.50 | .00 | 5444.89 | .789 | .03 |
| 58.00 | .00 | 5444.88 | .788 | .03 |
| 58.50 | .00 | 5444.88 | .787 | .03 |
| 59.00 | .00 | 5444.88 | .786 | .03 |
| 59.50 | .00 | 5444.87 | .785 | .03 |

PEAK DISCHARGE = 20.868 CFS - PEAK OCCURS AT HOUR 2.50
MAXIMUM WATER SURFACE ELEVATION = 5451.574
MAXIMUM STORAGE = 6.5901 AC-FT INCREMENTAL TIME= .100000HRS

*
PRINT HYD ID=46 CODE=10

HYDROGRAPH FROM AREA POND.E

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 12.000 | 3.0 | 24.000 | .8 | 36.000 | .1 | 48.000 | .0 |
| 1.000 | .0 | 13.000 | 2.5 | 25.000 | .6 | 37.000 | .1 | 49.000 | .0 |
| 2.000 | 18.9 | 14.000 | 2.1 | 26.000 | .5 | 38.000 | .0 | 50.000 | .0 |
| 3.000 | 20.0 | 15.000 | 1.8 | 27.000 | .4 | 39.000 | .0 | 51.000 | .0 |
| 4.000 | 16.7 | 16.000 | 1.6 | 28.000 | .3 | 40.000 | .0 | 52.000 | .0 |
| 5.000 | 13.5 | 17.000 | 1.4 | 29.000 | .3 | 41.000 | .0 | 53.000 | .0 |
| 6.000 | 11.0 | 18.000 | 1.3 | 30.000 | .2 | 42.000 | .0 | 54.000 | .0 |
| 7.000 | 8.8 | 19.000 | 1.1 | 31.000 | .2 | 43.000 | .0 | 55.000 | .0 |
| 8.000 | 6.8 | 20.000 | 1.0 | 32.000 | .2 | 44.000 | .0 | 56.000 | .0 |
| 9.000 | 5.4 | 21.000 | 1.0 | 33.000 | .1 | 45.000 | .0 | 57.000 | .0 |
| 10.000 | 4.4 | 22.000 | .9 | 34.000 | .1 | 46.000 | .0 | 58.000 | .0 |
| 11.000 | 3.6 | 23.000 | .8 | 35.000 | .1 | 47.000 | .0 | 59.000 | .0 |

RUNOFF VOLUME = .98950 INCHES = 10.7850 ACRE-FEET
PEAK DISCHARGE RATE = 20.87 CFS AT 2.500 HOURS BASIN AREA = .2044 SQ. MI.

```
*PLOT HYD                    ID=46
*
COMPUTE NM HYD       ID=47  HYD NO=BASIN.E6  DA=.00488 SQ MI
                                %A=0.0  %B=5.0  %C=5.0 %D=90.0
                                TP=-0.133 HR  RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   17.379    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
     AREA =      .004392 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
     UNIT PEAK =   1.3005    CFS   UNIT VOLUME =    .9989       B =   354.44      P60 = 1.8400
     AREA =      .000488 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=47 CODE=10
```

HYDROGRAPH FROM AREA BASIN.E6

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 2.000 | 2.9 | 7.000 | .1 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 3.000 | .1 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |

```
     RUNOFF VOLUME =     2.26512 INCHES     =        .5895 ACRE-FEET
     PEAK DISCHARGE RATE =      11.09 CFS  AT   1.500 HOURS   BASIN AREA =   .0049 SQ. MI.


*
ADD HYD                 ID=48 HYD=TOTALE ID I=46 II=47
PRINT HYD               ID=48 CODE=10
```

HYDROGRAPH FROM AREA TOTALE

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 12.000 | 3.1 | 24.000 | .8 | 36.000 | .1 | 48.000 | .0 |
| 1.000 | .0 | 13.000 | 2.6 | 25.000 | .6 | 37.000 | .1 | 49.000 | .0 |
| 2.000 | 21.8 | 14.000 | 2.2 | 26.000 | .5 | 38.000 | .0 | 50.000 | .0 |
| 3.000 | 20.1 | 15.000 | 1.9 | 27.000 | .4 | 39.000 | .0 | 51.000 | .0 |
| 4.000 | 16.8 | 16.000 | 1.7 | 28.000 | .3 | 40.000 | .0 | 52.000 | .0 |
| 5.000 | 13.6 | 17.000 | 1.5 | 29.000 | .3 | 41.000 | .0 | 53.000 | .0 |
| 6.000 | 11.1 | 18.000 | 1.3 | 30.000 | .2 | 42.000 | .0 | 54.000 | .0 |
| 7.000 | 8.9 | 19.000 | 1.2 | 31.000 | .2 | 43.000 | .0 | 55.000 | .0 |
| 8.000 | 6.9 | 20.000 | 1.1 | 32.000 | .2 | 44.000 | .0 | 56.000 | .0 |
| 9.000 | 5.5 | 21.000 | 1.0 | 33.000 | .1 | 45.000 | .0 | 57.000 | .0 |
| 10.000 | 4.5 | 22.000 | .9 | 34.000 | .1 | 46.000 | .0 | 58.000 | .0 |
| 11.000 | 3.7 | 23.000 | .9 | 35.000 | .1 | 47.000 | .0 | 59.000 | .0 |

```
     RUNOFF VOLUME =     1.01925 INCHES     =      11.3745 ACRE-FEET
     PEAK DISCHARGE RATE =      21.75 CFS  AT   2.000 HOURS   BASIN AREA =   .2092 SQ. MI.
```

limited to 22.3 cfs from Thompson Report

OK

```
*
*
FINISH

     NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 15:32:06
```

THIS is A summary (or shortened input file) of AHYMO.

```
*S  VALLE PRADO @ THE TRAILS UNIT 3A DRAINAGE BASIN (D) PROPOSED
*   100 YEAR - 24 HOUR STORM
*S
*   CREATED NOVEMBER 10, 2014
*
*
*CONVERT TO NMHYMO
START                    TIME=0.0 HR   PUNCH CODE=0
*****************************************************
LOCATION   NM
*
*****************************************************
*
*****************************************************
*100 YEAR - 24 HOUR
RAINFALL                 TYPE=2  RAIN QUARTER=0
                  RAIN ONE=1.84 IN  RAIN SIX=2.20 IN
                  RAIN DAY=2.66 IN  DT=0.10 HRS

*S
*S                       **********************
*S                       *COMPUTE ONSITE BASINS*
*S                       **********************
*S
*S
*S
*S COMPUTE BASIN 1 ******************************************
*
COMPUTE NM HYD        ID=1 HYD=1  AREA=0.005  PER A=0 PER B=24
                PER C=24 PER D=52  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=1   CODE=1
*
*S COMPUTE BASIN 2 ******************************************
COMPUTE NM HYD        ID=2 HYD=2  AREA=0.004513  PER A=0 PER B=26
                PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=2   CODE=1
*
*S COMPUTE BASIN 3 ******************************************
COMPUTE NM HYD        ID=3 HYD=3  AREA=0.006875  PER A=0 PER B=31
                PER C=31 PER D=38  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=3   CODE=1
*
*S COMPUTE BASIN 4 ******************************************
COMPUTE NM HYD        ID=4 HYD=4  AREA=0.003594  PER A=0 PER B=26
                PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=4   CODE=1
*
*S COMPUTE BASIN 5 ******************************************
COMPUTE NM HYD        ID=5 HYD=5  AREA=0.001875  PER A=0 PER B=31.5
                PER C=31.5 PER D=37  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=5   CODE=1
*
*S COMPUTE FUTURE BASIN 1 ***********************************
COMPUTE NM HYD        ID=6 HYD=FB.1  AREA=0.010781  PER A=0 PER B=21
                PER C=21 PER D=58  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=6   CODE=1
*
*S COMPUTE FUTURE BASIN 2 ***********************************
COMPUTE NM HYD        ID=7 HYD=FB.2  AREA=0.0075  PER A=0 PER B=23
```

```
                PER C=23 PER D=54  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=7   CODE=1
*
*S COMPUTE FUTURE BASIN 3 ************************************************
COMPUTE NM HYD       ID=8 HYD=FB.3  AREA=0.005938  PER A=0 PER B=22.5
                PER C=22.5 PER D=55  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=8   CODE=1
*
*S COMPUTE FUTURE BASIN 4 ************************************************
COMPUTE NM HYD       ID=9 HYD=FB.4  AREA=0.004844  PER A=0 PER B=29.5
                PER C=29.5 PER D=41  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=9   CODE=1
*
*S COMPUTE OFFSITE BASIN 2 ************************************************
COMPUTE NM HYD       ID=10 HYD=OFF.2  AREA=0.000938  PER A=80 PER B=20
                PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=10   CODE=1
*
*S COMPUTE OFFSITE BASIN 3 ************************************************
COMPUTE NM HYD       ID=11 HYD=OFF.3  AREA=0.001094  PER A=76 PER B=24
                PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=11   CODE=1
*
*S COMPUTE OFFSITE BASIN 4 ************************************************
COMPUTE NM HYD       ID=12 HYD=OFF.4  AREA=0.001406 PER A=80 PER B=20
                PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=12   CODE=1
*
*S COMPUTE OFFSITE BASIN 5 ************************************************
COMPUTE NM HYD       ID=13 HYD=OFF.5  AREA=0.003281  PER A=95 PER B=5
                PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=13   CODE=1
*
*S COMPUTE OFFSITE BASIN WELL
*****************************************
COMPUTE NM HYD       ID=14 HYD=OFF.WELL  AREA=0.001563  PER A=0 PER B=40
                PER C=40 PER D=20  TP=-0.1715  RAINFALL=-1
PRINT HYD        ID=14   CODE=1
*
*S
*
*S ADD BASINS 1 AND 2 TO CREATE TEMP A ******************************
ADD HYD             ID=15 HYD=TEMP.A ID I=1 II=2
PRINT HYD            ID=15 CODE=0
*
*S ADD BASINS TEMP A AND 3 TO CREATE TEMP 1.B*****************************
ADD HYD             ID=16 HYD=TEMP.B ID I=15 II=3
PRINT HYD            ID=16 CODE=0
*
*S ADD BASINS TEMP B AND 5 TO CREATE TEMP C*****************************
ADD HYD             ID=17 HYD=TEMP.C ID I=16 II=5
PRINT HYD            ID=17 CODE=0
*
*S ADD BASINS TEMP C AND FUTURE BASIN 1 TO CREATE TEMP
D*****************************
ADD HYD             ID=18 HYD=TEMP.D ID I=17 II=6
PRINT HYD            ID=18 CODE=0
*
*S ADD BASINS TEMP D AND FUTURE BASIN 2 TO CREATE TEMP
```

```
E*******************************
ADD HYD                ID=19 HYD=TEMP.E ID I=18 II=7
PRINT HYD               ID=19 CODE=0
*
*S ADD BASINS TEMP E AND FUTURE BASIN 3 TO CREATE TEMP
F*******************************
ADD HYD                ID=20 HYD=TEMP.F ID I=19 II=8
PRINT HYD               ID=20 CODE=0
*
*S ADD BASINS TEMP F AND OFFSITE BASIN 3 TO CREATE TEMP
G*******************************
ADD HYD                ID=21 HYD=TEMP.G ID I=20 II=11
PRINT HYD               ID=21 CODE=0
*
*S ADD BASINS TEMP G AND OFFSITE BASIN 4 TO CREATE TEMP
H*******************************
ADD HYD                ID=22 HYD=TEMP.H ID I=21 II=12
PRINT HYD               ID=22 CODE=0
*
*S ADD BASINS TEMP H AND OFFSITE BASIN WELL TO CREATE TEMP
I*******************************
ADD HYD                ID=23 HYD=TEMP.1 ID I=22 II=14
PRINT HYD               ID=23 CODE=0
*
*S ADD BASINS TEMP I AND OFFSITE BASIN 5 TO CREATE TEMP
J*******************************
ADD HYD                ID=24 HYD=TEMP.J ID I=23 II=13
PRINT HYD               ID=24 CODE=0
*
*S TEMP BASIN J REPLACES BASIN E3 AND E5 FROM THE DMP AHYMO
FILE************************


COMPUTE NM HYD          ID=25  HYD NO=OFFSITE2  DA=.0805 SQ MI
                      %A=100  %B=0.0  %C=0.0 %D=0.0
                      TP=-.66 HR  RAIN=-1
PRINT HYD               ID=25 CODE=10
*
*
*ROUTE RESERVOIR   ID=26 HYD=OFFPOND2  INFLOW ID=25 CODE=5
*                  OUTFLOW  STORAGE    DEPTH
*                  0   0          0
*                  2.16     0.047      1
*                  3.06     0.222      2
*                  3.75     0.466      3
*                  4.33     0.751      4
*                  4.84     1.081      5
*
*
*PRINT HYD         ID=26 CODE=10
*
*
*COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.011
*                   DIA=2.0  N=0.013
*ROUTE MCUNGE          ID=27 HYD=RTE.OFFPOND2 INFLOW ID=26
*                      DT=0.0  L=900 NS=0  SLOPE=0.011
*                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
```

asterisked = not included in run

```
*
*PRINT HYD              ID=27 CODE=0
*
*
COMPUTE NM HYD        ID=28  HYD NO=BASIN.B  DA=.01998 SQ MI
                     %A=0  %B=34.0  %C=34.0 %D=32.0
                     TP=-.133 HR  RAIN=-1
PRINT HYD             ID=28 CODE=10
*
*
ROUTE RESERVOIR      ID=29 HYD=POND.B  INFLOW ID=28 CODE=5
                     OUTFLOW  STORAGE    DEPTH
                     0   0          5515
                     1.71     0.06       5516
                     2.42     0.24       5517
                     2.96     0.55       5518
                     3.42     0.99       5519
                     3.82     1.67       5520
*
*
PRINT HYD            ID=29 CODE=10    Pond B
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.03
                      DIA=2.0  N=0.013
ROUTE MCUNGE            ID=30 HYD=RTE.PONDB INFLOW ID=29
                        DT=0.0  L=1180 NS=0  SLOPE=0.03
                        MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD               ID=30 CODE=0
*
*
ADD HYD              ID=31 HYD=OFF.B ID I=30 II=25
PRINT HYD            ID=31 CODE=10
*
*
COMPUTE NM HYD        ID=32  HYD NO=BASINE1.1  DA=.02753 SQ MI
                     %A=0.0  %B=33.0  %C=33.0 %D=34.0
                     TP=-0.133 HR  RAIN=-1
PRINT HYD             ID=32 CODE=10
*
*
ADD HYD                ID=33 HYD=OFF.E11 ID I=32 II=31
PRINT HYD            ID=33 CODE=10
*
*
COMPUTE NM HYD        ID=34  HYD NO=BASINE1.2  DA=.00588 SQ MI
                     %A=0.0  %B=33.0  %C=33.0 %D=34.0
                     TP=-0.133 HR  RAIN=-1
PRINT HYD             ID=34 CODE=10
*
*
COMPUTE NM HYD        ID=35  HYD NO=BASIN.E2  DA=.01348 SQ MI
                     %A=0.0  %B=18.0  %C=18.0 %D=64.0
                     TP=-.133 HR  RAIN=-1
PRINT HYD             ID=35 CODE=10
*
*
ADD HYD                ID=36 HYD=E2.E12 ID I=34 II=35
```

```
PRINT HYD          ID=36 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.002
                    DIA=3.0  N=0.013
ROUTE MCUNGE          ID=37 HYD=RTE.E12 INFLOW ID=36
                      DT=0.0  L=800 NS=0  SLOPE=0.01
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=37 CODE=0
*
*
COMPUTE NM HYD       ID=38  HYD NO=BASIN.E4  DA=.00577 SQ MI
                    %A=0.0  %B=5.0  %C=5.0 %D=90.0
                    TP=-0.133 HR  RAIN=-1
PRINT HYD             ID=38 CODE=10
*
*
ADD HYD               ID=39 HYD=AP1 ID I=38 II=33
PRINT HYD          ID=39 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                    DIA=4.0  N=0.013
ROUTE MCUNGE          ID=40 HYD=RTE.E1E4 INFLOW ID=39
                      DT=0.0  L=400 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=40 CODE=0
*
*
ADD HYD            ID=41 HYD=AP2 ID I=37 II=40
PRINT HYD          ID=41 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                    DIA=4.0  N=0.013
ROUTE MCUNGE          ID=42 HYD=RTE.E1E4 INFLOW ID=41
                      DT=0.0  L=600 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=42 CODE=0
*
ADD HYD               ID=43 HYD=AP3 ID I=42 II=24
PRINT HYD          ID=43 CODE=10
*PLOT HYD                 ID=43
*
COMPUTE NM HYD       ID=44  HYD NO=BASIN.OFF6  DA=.0014 SQ MI
                    %A=0.0  %B=0  %C=100.0 %D=0
                    TP=-0.133 HR  RAIN=-1
PRINT HYD             ID=44 CODE=10
*
ADD HYD               ID=45 HYD=POND ID I=43 II=44
PRINT HYD          ID=45 CODE=10
*PLOT HYD                 ID=45
*
*
ROUTE RESERVOIR      ID=46 HYD=POND.E  INFLOW ID=45 CODE=5
                    OUTFLOW  STORAGE    DEPTH
```

Qout Vol

fr. (Lower) stage discharge

fr. stage discharge (Hydro)

| Outflow | storage | Depth |
|---|---|---|
| 0 | 0.02 | 5440 |
| 0.011 | 0.05 | 5440.5 |
| 0.012 | 0.09 | 5441 |
| 0.013 | 0.13 | 5441.5 |
| 0.014 | 0.18 | 5442 |
| 0.015 | 0.24 | 5442.5 |
| 0.016 | 0.31 | 5443 |
| 0.017 | 0.39 | 5443.5 |
| 0.018 | 0.50 | 5444 |
| 0.02 | 0.65 | 5444.5 |
| 0.03 | 0.83 | 5445 |
| 0.50 | 1.03 | 5445.5 |
| 1.3 | 1.28 | 5446 |
| 2.2 | 1.56 | 5446.5 |
| 3.3 | 1.89 | 5447 |
| 4.5 | 2.25 | 5447.5 |
| 5.8 | 2.64 | 5448 |
| 7.6 | 3.08 | 5448.5 |
| 9.5 | 3.56 | 5449 |
| 11.5 | 4.08 | 5449.5 |
| 13.6 | 4.63 | 5450 |
| 15.8 | 5.21 | 5450.5 |
| 18.1 | 5.83 | 5451 |
| 20.5 | 6.49 | 5451.5 |
| 23.0 | 7.17 | 5452 |

```
*
PRINT HYD          ID=46 CODE=10
*PLOT HYD                ID=46
*
COMPUTE NM HYD       ID=47  HYD NO=BASIN.E6  DA=.00488 SQ MI
                   %A=0.0  %B=5.0  %C=5.0 %D=90.0
                   TP=-0.133 HR  RAIN=-1
PRINT HYD            ID=47 CODE=10
*
ADD HYD             ID=48 HYD=TOTALE ID I=46 II=47
PRINT HYD          ID=48 CODE=10
*
*
FINISH
```

cum Q from Stage Discharge (see next sht3)

POND E STAGE - STORAGE



| Elevation | Incremental Volume | Cumulative Volume | Acre-Feet | Surface Area |
|---|---|---|---|---|
| | cu ft | cu ft | | sq ft |
| 5440.0000 | 947.9676 | 947.9676 | 0.0218 | 2195.9910 |
| 5440.5000 | 1252.1439 | 2200.1115 | 0.0505 | 2816.7051 |
| 5441.0000 | 1568.6822 | 3768.7937 | 0.0865 | 3462.1436 |
| 5441.5000 | 1897.5824 | 5666.3760 | 0.1301 | 4132.3074 |
| 5442.0000 | 2238.8444 | 7905.2205 | 0.1815 | 4827.1917 |
| 5442.5000 | 2592.4684 | 10497.6889 | 0.2410 | 5546.8013 |
| 5443.0000 | 2958.4543 | 13456.1432 | 0.3089 | 6291.1350 |
| 5443.5000 | 3435.4544 | 16891.5976 | 0.3878 | 7730.0244 |
| 5444.0000 | 4765.1367 | 21656.7343 | 0.4972 | 11509.0708 |
| 5444.5000 | 6504.2686 | 28161.0028 | 0.6465 | 14383.7778 |
| 5445.0000 | 7808.1540 | 35969.1568 | 0.8257 | 16819.7476 |
| 5445.5000 | 9050.1165 | 45019.2732 | 1.0335 | 19472.6843 |
| 5446.0000 | 10552.3791 | 55571.6523 | 1.2757 | 22897.4426 |
| 5446.5000 | 12399.6673 | 67971.3196 | 1.5604 | 26711.8103 |
| 5447.0000 | 14226.0884 | 82197.4080 | 1.8870 | 30166.4624 |
| 5447.5000 | 15799.2714 | 97996.6794 | 2.2497 | 32936.1387 |
| 5448.0000 | 17162.7529 | 115159.4323 | 2.6437 | 35936.8713 |
| 5448.5000 | 18911.3998 | 134070.8321 | 3.0778 | 39780.8455 |
| 5449.0000 | 20890.8554 | 154961.6875 | 3.5574 | 43654.4771 |
| 5449.5000 | 22601.3955 | 177563.0830 | 4.0763 | 46670.2239 |
| 5450.0000 | 24056.8956 | 201619.9786 | 4.6286 | 49563.0105 |
| 5450.5000 | 25519.4525 | 227139.4310 | 5.2144 | 52537.9075 |
| 5451.0000 | 27004.5349 | 254143.9660 | 5.8343 | 55441.2068 |
| 5451.5000 | 28404.4083 | 282548.3743 | 6.4864 | 58136.0886 |
| 5452.0000 | 29692.9470 | 312241.3213 | 7.1681 | 60613.1260 |

↑ into Attymo

RECEIVED
NOV 19 2014
LAND DEVELOPMENT SECTION

**Valle Prado Pond E**
Job # 20150013
11/10/2014

# STAGE – DISCHARGE

| Water Surf: ft | Water Depth ft | 1st Row Head ft | Perforation Q cfs | Open Top Q cfs | | Cumulative Q |
|---|---|---|---|---|---|---|
| 5445 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00000 |
| 5445.5 | 0.50 | 0.50 | 0.67 | 0.00 | 0.50 | 0.66851 |
| 5446 | 1.00 | 1.00 | 0.95 | 0.00 | 1.00 | 1.61393 |
| 5446.5 | 1.50 | 1.50 | 1.16 | 0.00 | 1.50 | 2.77183 |
| 5447 | 2.00 | 2.00 | 1.34 | 0.00 | 2.00 | 4.10885 |
| 5447.5 | 2.50 | 2.50 | 1.49 | 0.00 | 2.50 | 5.60369 |
| 5448 | 3.00 | 3.00 | 1.64 | 0.00 | 3.00 | 6.12046 |
| 5448.5 | 3.50 | 3.50 | 1.77 | 0.00 | 3.50 | 7.56168 |
| 5449 | 4.00 | 4.00 | 1.89 | 0.00 | 4.00 | 9.45251 |
| 5449.5 | 4.50 | 4.50 | 2.01 | 0.00 | 4.50 | 11.45805 |
| 5450 | 5.00 | 5.00 | 2.11 | 0.00 | 5.00 | 13.57207 |
| 5450.5 | 5.50 | 5.50 | 2.22 | 0.00 | 5.50 | 15.78927 |
| 5451 | 6.00 | 6.00 | 2.32 | 0.00 | 6.00 | 18.10506 |
| 5451.5 | 6.50 | 6.50 | 2.41 | 0.00 | 6.50 | 20.51542 |
| 5452 | 7.00 | 7.00 | 2.50 | 0.00 | 7.00 | 23.01678 |
| | 7.50 | 7.50 | 2.59 | 0.00 | 7.50 | 25.60590 |
| | 8.00 | 8.00 | 2.67 | 0.00 | 8.00 | 28.27994 |
| | 8.50 | 8.50 | 2.76 | 0.00 | 8.50 | 31.03629 |
| | 9.00 | 9.00 | 2.84 | 0.00 | 9.00 | 33.87254 |
| | 9.50 | 9.50 | 2.91 | 0.00 | 9.50 | 36.78652 |
| | 10.00 | 10.00 | 2.99 | 0.00 | 10.00 | 39.77619 |
| | 10.50 | 10.50 | 3.06 | 24.07 | 10.50 | 66.90612 |
| | 11.00 | 11.00 | 3.14 | 34.04 | 11.00 | 80.01036 |
| | 11.50 | 11.50 | 3.21 | 41.68 | 11.50 | 90.86564 |
| | 12.00 | 12.00 | 3.28 | 48.13 | 12.00 | 100.58924 |
| | 12.50 | 12.50 | 3.34 | 53.81 | 12.50 | 109.61311 |
| | 13.00 | 13.00 | 3.41 | 58.95 | 13.00 | 118.15817 |
| | 13.50 | 13.50 | 3.47 | 63.67 | 13.50 | 126.35517 |
| | 14.00 | 14.00 | 3.54 | 68.07 | 14.00 | 134.28896 |

No Affirm

| | | |
|---|---|---|
| **Orifice Coefficient =** | 0.6 | |
| Stand Pipe Diameter | 36 | in |
| Stand Pipe Height | 10 | ft |
| Stand Pipe Area | 7.068583 | sq ft |
| Open Top | yes | |
| Hole Size | 3 | in |
| Hole Area | 7.069 | sq in |
| # of Holes/Row | 5.00 | |
| Clogging Factor | 20.0% | |
| Row Area | 35.34 | sq in |
| Net Row Area | 28.27 | sq in |
| Row Spacing | 6.00 | in |
| Top Row Depth | 9.50 | ft |
| # of Rows | 19.00 | |

higher end of Riser

**Valle Prado Pond E**
**Job # 20150013**
**11/10/2014**

STAGE-DISCHARGE

| Water Surf ft | Water Depth ft | 1st Row Head ft | Perforation Q cfs | Open Top Q cfs | | Cumulative Q |
|---|---|---|---|---|---|---|
| 5445 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00000 |
| 5445.5 | 0.50 | 0.50 | 0.53 | 0.00 | 0.50 | 0.53487 |
| 5446 | 1.00 | 1.00 | 0.76 | 0.00 | 1.00 | 1.29114 |
| 5446.5 | 1.50 | 1.50 | 0.93 | 0.00 | 1.50 | 2.21746 |
| 5447 | 2.00 | 2.00 | 1.07 | 0.00 | 2.00 | 3.28703 |
| 5447.5 | 2.50 | 2.50 | 1.20 | 0.00 | 2.50 | 4.48295 |
| 5448 | 3.00 | 3.00 | 1.31 | 0.00 | 3.00 | 5.79298 |
| 5448.5 | 3.50 | 3.50 | 1.41 | 0.00 | 3.50 | 7.20793 |
| | 4.00 | 4.00 | 1.51 | 0.00 | 4.00 | 8.72060 |
| | 4.50 | 4.50 | 1.60 | 0.00 | 4.50 | 10.32503 |
| | 5.00 | 5.00 | 1.69 | 0.00 | 5.00 | 12.01625 |
| | 5.50 | 5.50 | 1.77 | 0.00 | 5.50 | 13.79001 |
| | 6.00 | 6.00 | 1.85 | 0.00 | 6.00 | 15.64264 |
| | 6.50 | 6.50 | 1.93 | 24.07 | 6.50 | 41.63735 |
| | 7.00 | 7.00 | 2.00 | 34.04 | 7.00 | 53.60706 |
| | 7.50 | 7.50 | 2.07 | 41.68 | 7.50 | 63.32758 |
| | 8.00 | 8.00 | 2.14 | 48.13 | 8.00 | 71.91540 |
| | 8.50 | 8.50 | 2.21 | 53.81 | 8.50 | 79.80178 |
| | 9.00 | 9.00 | 2.27 | 58.95 | 9.00 | 87.20709 |
| | 9.50 | 9.50 | 2.33 | 63.67 | 9.50 | 94.26158 |
| | 10.00 | 10.00 | 2.39 | 68.07 | 10.00 | 101.04968 |
| | 10.50 | 10.50 | 2.45 | 72.20 | 10.50 | 107.62963 |
| | 11.00 | 11.00 | 2.51 | 76.10 | 11.00 | 111.53507 |
| | 11.50 | 11.50 | 2.56 | 79.82 | 11.50 | 117.75813 |
| | 12.00 | 12.00 | 2.62 | 83.37 | 12.00 | 123.87223 |
| | 12.50 | 12.50 | 2.67 | 86.77 | 12.50 | 129.89644 |
| | 13.00 | 13.00 | 2.73 | 90.05 | 13.00 | 135.84607 |
| | 13.50 | 13.50 | 2.78 | 93.21 | 13.50 | 141.73362 |
| | 14.00 | 14.00 | 2.83 | 96.27 | 14.00 | 147.56941 |

into HYMO

| | | |
|---|---|---|
| **Orifice Coefficient =** | 0.6 | |
| Stand Pipe Diameter | 36 | in |
| Stand Pipe Height | 6 | ft |
| Stand Pipe Area | 7.068583 | sq ft |
| Open Top | yes | |
| ~~Hole Size~~ | 3 | in |
| Hole Area | 7.069 | sq in |
| # of Holes/Row | 4.00 | |
| Clogging Factor | 20.0% | |
| Row Area | 28.27 | sq in |
| Net Row Area | 22.62 | sq in |
| Row Spacing | 6.00 | in |
| Top Row Depth | 5.50 | ft |
| # of Rows | 11.00 | |

1st (lower) part of Riser

w/o Offsite Pond 2



Design Log

==========

InRoads Storm & Sanitary Design Log

Drainage File: P:\20150013\CDP\Reports\Unit 1_2 DR Addendum #2\20150013_SD.sdb

Design File: P:\20150013\CDP\DESIGN\DRAWING1.DWG

Display Log: P:\20150013\CDP\DESIGN\design.log

Date: Thursday, November 20, 2014 12:08:19 PM

==========

HGL/EGL Computations:

Table A:

$= HGL_{DN} + \frac{V^2}{2g}$ $= HGL_{up} + \frac{V^2}{2g}$

| Struct_ID | D (in) | Q (cfs) | L (ft) | V (ft/s) | d (ft) | dc (ft) | V^2/2g (ft) | Sf (ft/ft) | Dn_Soffit (ft) | EGLdn (ft) | HGLdn (ft) | Tot_Loss (ft) | EGLup (ft) | HGLup (ft) | Rim_Elev. (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | 5447.50 | - |
| (Alternate HGL and EGL Used) | | | | | | | | | | | | | 5450.21 | 5448.90 | |
| SDP25 | 60 | 180.61 | 76.79 | 9.20 | - | - | 1.31 | 0.0048 | 5448.90 | 5450.21 | 5448.90 | 0.37 | 5450.58 | 5449.27 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.58 | 5449.27 | 0.32 | 5450.90 | 5449.59 | 5452.43 |
| SDP24 | 54 | 169.71 | 11.31 | 10.67 | - | - | 1.77 | 0.0074 | 5448.70 | 5450.90 | 5449.59 | 0.08 | 5450.99 | 5449.22 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5450.99 | 5449.22 | 0.73 | 5451.71 | 5449.94 | 5452.75 |
| SDP23 | 54 | 103.41 | 96.07 | 6.50 | - | - | 0.66 | 0.0028 | 5448.86 | 5451.71 | 5449.94 | 0.27 | 5451.98 | 5451.32 | - |
| exSDMH1 | | | | | | | | | | 5451.98 | 5451.32 | 0.33 | 5452.31 | 5451.65 | 5452.15 |
| SDP8 | 48 | 65.63 | 211.12 | 5.22 | - | - | 0.42 | 0.0021 | 5448.76 | 5452.31 | 5451.65 | 0.44 | 5452.75 | 5452.33 | - |
| SDMH7 | - | - | - | - | - | - | - | - | - | 5452.75 | 5452.33 | 0.04 | 5452.80 | 5452.37 | 5457.54 |
| SDP6 | 48 | 65.63 | 191.03 | 20.56 | - | - | 6.57 | 0.0021 | 5451.15 | 5452.80 | 5452.37 | - | 5464.81 | 5458.24 | - |
| SDMH6 | - | - | - | - | - | - | - | - | - | 5464.81 | 5458.24 | - | 5464.81 | 5458.24 | 5466.56 |
| SDP17 | 48 | 65.63 | 218.86 | 20.58 | 1.20 | 2.44 | 6.58 | - | 5461.14 | 5464.93 | 5458.34 | - | 5476.34 | 5469.75 | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | 5476.34 | 5469.75 | - | 5476.34 | 5469.75 | 5476.70 |
| SDP14 | 48 | 65.63 | 42.01 | 16.92 | 1.39 | 2.44 | 4.45 | - | 5472.65 | 5474.49 | 5470.04 | - | 5475.58 | 5471.13 | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | 5475.58 | 5471.13 | - | 5475.58 | 5471.13 | 5478.77 |
| SDP34 | 42 | 54.83 | 12.04 | 8.16 | 2.30 | 2.31 | 1.03 | - | 5473.27 | 5473.11 | 5472.07 | - | 5473.15 | 5472.11 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5450.58 | 5449.27 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.58 | 5449.27 | 0.08 | 5450.66 | 5449.35 | 5452.43 |
| SDP28 | 18 | 7.50 | 20.06 | 4.24 | - | - | 0.28 | 0.0051 | 5449.43 | 5450.66 | 5449.35 | 0.10 | 5450.76 | 5450.48 | - |
| IN14 | - | - | - | - | - | - | - | - | - | 5450.76 | 5450.48 | - | 5450.76 | 5450.48 | 5452.93 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5450.99 | 5449.22 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5450.99 | 5449.22 | 0.37 | 5451.35 | 5449.59 | 5452.75 |
| SDP29 | 36 | 55.40 | 74.64 | 7.84 | - | - | 0.95 | 0.0069 | 5447.42 | 5451.35 | 5449.59 | 0.51 | 5451.87 | 5450.92 | - |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5451.87 | 5450.92 | 0.15 | 5452.02 | 5451.07 | 5454.09 |
| SDP3 | 24 | 30.20 | 97.93 | 9.61 | - | - | 1.44 | 0.0178 | 5450.33 | 5452.02 | 5451.07 | 1.75 | 5453.77 | 5452.33 | - |
| SDMH3 | - | - | - | - | - | - | - | - | - | 5453.77 | 5452.33 | 0.60 | 5454.37 | 5452.94 | 5455.53 |
| SDP4 | 24 | 30.20 | 113.83 | 9.61 | - | - | 1.44 | 0.0178 | 5451.74 | 5454.37 | 5452.94 | 2.03 | 5456.40 | 5454.96 | - |
| SDMH4 | - | - | - | - | - | - | - | - | - | 5456.40 | 5454.96 | 0.48 | 5456.88 | 5455.44 | 5459.00 |
| SDP5 | 24 | 30.20 | 177.97 | 15.83 | - | - | 3.90 | 0.0178 | 5455.23 | 5456.88 | 5455.44 | - | 5465.69 | 5461.80 | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5465.69 | 5461.80 | - | 5465.69 | 5461.80 | 5466.43 |
| SDP32 | 24 | 17.80 | 59.75 | 8.55 | 1.26 | 1.52 | 1.14 | - | 5464.62 | 5465.02 | 5463.88 | - | 5465.65 | 5464.52 | - |
| IN11 | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - | 5465.65 | 5464.52 | 5467.76 |
| SDP31 | 24 | 8.90 | 28.04 | 12.18 | 0.57 | 1.06 | 2.30 | - | 5465.26 | 5466.82 | 5464.52 | - | 5467.37 | 5465.06 | - |
| IN12 | - | - | - | - | - | - | - | - | - | 5467.37 | 5465.06 | - | 5467.37 | 5465.06 | 5469.00 |
| SDP30 | 18 | 5.50 | 20.01 | 10.87 | 0.49 | 0.90 | 1.84 | - | 5466.00 | 5466.90 | 5465.06 | - | 5467.51 | 5465.67 | - |
| IN10 | - | - | - | - | - | - | - | - | - | 5467.51 | 5465.67 | - | 5467.51 | 5465.67 | 5470.17 |

From AHIMMO

Unit 1 Roads w/o Offsite Pond 2

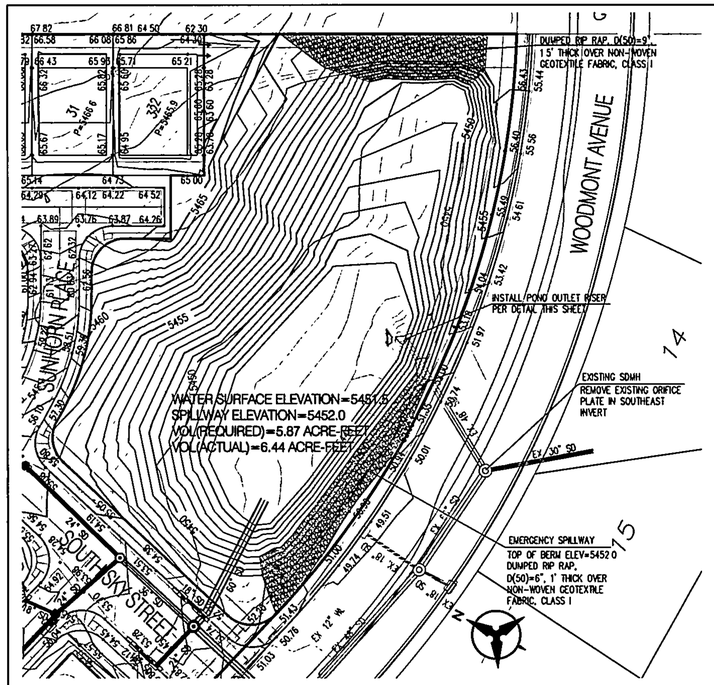
| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5450.99 | 5449.22 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5450.99 | 5449.22 | 0.33 | 5451.31 | 5449.54 | 5452.75 |
| SDP27 | 24 | 10.90 | 41.04 | 3.47 | - | - | 0.19 | 0.0023 | 5446.07 | 5451.31 | 5449.54 | 0.10 | 5451.41 | 5451.22 | - |
| IN15 | - | - | - | - | - | - | - | - | - | 5451.41 | 5451.22 | 0.18 | 5451.59 | 5451.40 | 5453.15 |
| SDP26 | 18 | 7.50 | 20.03 | 4.24 | - | - | 0.28 | 0.0051 | 5450.15 | 5451.59 | 5451.40 | 0.10 | 5451.69 | 5451.41 | - |
| IN13 | - | - | - | - | - | - | - | - | - | 5451.69 | 5451.41 | - | 5451.69 | 5451.41 | 5453.36 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.98 | 5451.32 | - |
| exSDMH1 | - | - | - | - | - | - | - | - | - | 5451.98 | 5451.32 | 0.27 | 5452.25 | 5451.59 | 5452.15 |
| SDP20 | 24 | 37.78 | 174.64 | 12.03 | - | - | 2.25 | 0.0279 | 5446.76 | 5452.25 | 5451.59 | 4.87 | 5457.12 | 5454.87 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5475.58 | 5471.13 | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | 5475.58 | 5471.13 | - | 5475.58 | 5471.13 | 5478.77 |
| SDP7 | 24 | 10.80 | 71.96 | 11.47 | 0.68 | 1.17 | 2.04 | - | 5472.02 | 5473.17 | 5471.13 | - | 5475.17 | 5473.13 | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5475.17 | 5473.13 | - | 5475.17 | 5473.13 | 5481.96 |
| SDP21 | 18 | 5.40 | 29.80 | 9.36 | 0.54 | 0.89 | 1.36 | - | 5477.71 | 5478.11 | 5476.75 | - | 5478.99 | 5477.63 | - |
| IN1 | - | - | - | - | - | - | - | - | - | 5478.99 | 5477.63 | - | 5478.99 | 5477.63 | 5482.34 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.87 | 5450.92 | - |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5451.87 | 5450.92 | 0.25 | 5452.12 | 5451.17 | 5454.09 |
| SDP11 | 24 | 25.20 | 70.94 | 8.02 | - | - | 1.00 | 0.0124 | 5450.01 | 5452.12 | 5451.17 | 0.88 | 5453.00 | 5452.00 | - |
| IN5 | - | - | - | - | - | - | - | - | - | 5453.00 | 5452.00 | 0.23 | 5453.24 | 5452.24 | 5454.96 |
| SDP15 | 24 | 14.60 | 275.46 | 12.26 | - | - | 2.33 | 0.0042 | 5452.46 | 5453.24 | 5452.24 | - | 5463.08 | 5460.75 | - |
| IN3 | - | - | - | - | - | - | - | - | - | 5463.08 | 5460.75 | - | 5463.08 | 5460.75 | 5464.44 |
| SDP16 | 18 | 7.30 | 28.03 | 11.23 | 0.59 | 1.04 | 1.96 | - | 5461.44 | 5462.71 | 5460.75 | - | 5463.57 | 5461.61 | - |
| IN4 | - | - | - | - | - | - | - | - | - | 5463.57 | 5461.61 | - | 5463.57 | 5461.61 | 5466.53 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5465.69 | 5461.80 | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5465.69 | 5461.80 | - | 5465.69 | 5461.80 | 5466.43 |
| SDP2 | 24 | 12.40 | 85.47 | 12.27 | 0.71 | 1.26 | 2.34 | - | 5464.62 | 5465.68 | 5463.34 | - | 5468.84 | 5466.50 | - |
| IN8 | - | - | - | - | - | - | - | - | - | 5468.84 | 5466.50 | 1.05 | 5469.89 | 5467.55 | 5471.88 |
| (Alternate HGL and EGL Used) | | | | | | | | | | | | | 5468.08 | 5467.69 | |
| SDP1 | 18 | 6.20 | 28.01 | 5.06 | 0.98 | 0.96 | 0.40 | 0.0060 | 5467.96 | 5468.08 | 5467.69 | 0.17 | 5468.25 | 5467.85 | - |
| IN7 | - | - | - | - | - | - | - | - | - | 5468.25 | 5467.85 | - | 5468.25 | 5467.85 | 5471.85 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - |
| IN11 | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - | 5465.65 | 5464.52 | 5467.76 |
| SDP33 | 18 | 5.50 | 23.04 | 11.86 | 0.46 | 0.90 | 2.19 | - | 5464.76 | 5466.70 | 5464.52 | - | 5466.97 | 5464.78 | - |
| IN9 | - | - | - | - | - | - | - | - | - | 5466.97 | 5464.78 | - | 5466.97 | 5464.78 | 5468.32 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5475.17 | 5473.13 | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5475.17 | 5473.13 | - | 5475.17 | 5473.13 | 5481.96 |
| SDP22 | 18 | 5.40 | 30.97 | 7.51 | 0.64 | 0.89 | 0.88 | - | 5477.71 | 5477.73 | 5476.85 | - | 5478.23 | 5477.35 | - |
| IN2 | - | - | - | - | - | - | - | - | - | 5478.23 | 5477.35 | - | 5478.23 | 5477.35 | 5481.96 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5453.00 | 5452.00 | - |
| IN5 | - | - | - | - | - | - | - | - | - | 5453.00 | 5452.00 | 0.12 | 5453.12 | 5452.12 | 5454.96 |
| SDP12 | 18 | 5.30 | 28.02 | 3.00 | - | - | 0.14 | 0.0025 | 5451.96 | 5453.12 | 5452.12 | 0.07 | 5453.19 | 5453.05 | - |
| IN6 | - | - | - | - | - | - | - | - | - | 5453.19 | 5453.05 | - | 5453.19 | 5453.05 | 5455.36 |

Table B:

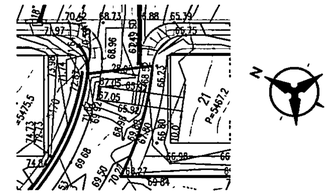
| LOSSES | | | | | | | | -\|LOSS_COEFFICENTS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Str_ID | Hf | Hb | Hstr | Hc | He | Hj | Total \| | Dstr | Ko | CD | Cd | Cq | Cp | Cb | K |
| Outfall | - | - | - | - | - | - | - \| | - | - | - | - | - | - | - | - |
| SDP25 | 0.37 | - | - | - | - | - | 0.37 \| | - | - | - | - | - | - | - | - |
| IN16 | - | - | 0.32 | - | - | - | 0.32 \| | 5.07 | 0.452 | 1.000 | 0.504 | 1.063 | 1.000 | 1.000 | 0.242 |
| SDP24 | 0.08 | - | - | - | - | - | 0.08 \| | - | - | - | - | - | - | - | - |
| SDMH11 | - | - | 0.73 | - | - | - | 0.73 \| | 4.97 | 1.526 | 1.000 | 0.531 | 0.506 | 1.000 | 1.000 | 0.410 |
| SDP23 | 0.27 | - | - | - | - | - | 0.27 \| | - | - | - | - | - | - | - | - |
| exSDMH1 | - | - | 0.33 | - | - | - | 0.33 \| | 6.56 | 1.526 | 1.000 | 0.627 | 0.530 | 1.000 | 1.000 | 0.507 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SDP8 | 0.44 | - | - | - | - | - | 0.44 | - | - | - | - | - | - | - | - |
| SDMH7 | - | - | 0.04 | - | - | - | 0.04 | 5.28 | 0.174 | 1.000 | 0.591 | 1.000 | 1.000 | 1.000 | 0.103 |
| SDP6 | 0.40 | - | - | - | - | - | 0.40 | - | - | - | - | - | - | - | - |
| SDMH6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP17 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP14 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP34 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IN16 | - | - | 0.08 | - | - | - | 0.08 | 5.07 | 1.422 | 1.000 | 0.504 | 0.082 | 1.000 | 1.000 | 0.059 |
| SDP28 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - | - |
| IN14 | - | - | - | - | - | - | - | 1.55 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH11 | - | - | 0.37 | - | - | - | 0.37 | 4.97 | 1.526 | 1.000 | 0.531 | 0.256 | 1.000 | 1.000 | 0.208 |
| SDP29 | 0.51 | - | - | - | - | - | 0.51 | - | - | - | - | - | - | - | - |
| SDMH2 | - | - | 0.15 | - | - | - | 0.15 | 2.66 | 0.228 | 1.000 | 0.465 | 1.531 | 1.000 | 1.000 | 0.162 |
| SDP3 | 1.75 | - | - | - | - | - | 1.75 | - | - | - | - | - | - | - | - |
| SDMH3 | - | - | 0.60 | - | - | - | 0.60 | 2.68 | 0.704 | 1.000 | 0.596 | 1.000 | 1.000 | 1.000 | 0.420 |
| SDP4 | 2.03 | - | - | - | - | - | 2.03 | - | - | - | - | - | - | - | - |
| SDMH4 | - | - | 0.48 | - | - | - | 0.48 | 1.81 | 0.705 | 1.000 | 0.471 | 1.000 | 1.000 | 1.000 | 0.332 |
| SDP5 | 3.17 | - | - | - | - | - | 3.17 | - | - | - | - | - | - | - | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP32 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP31 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP30 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN10 | - | - | - | - | - | - | - | 0.49 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH11 | - | - | 0.33 | - | - | - | 0.33 | 4.97 | 0.178 | 1.000 | 0.531 | 1.951 | 1.000 | 1.000 | 0.184 |
| SDP27 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - | - |
| IN15 | - | - | 0.18 | - | - | - | 0.18 | 2.57 | 1.671 | 1.000 | 0.581 | 1.000 | 1.000 | 1.000 | 0.971 |
| SDP26 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - | - |
| IN13 | - | - | - | - | - | - | - | 2.05 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| exSDMH1 | - | - | 0.27 | - | - | - | 0.27 | 6.56 | 0.459 | 1.000 | 0.627 | 1.414 | 1.000 | 1.000 | 0.407 |
| SDP20 | 4.87 | - | - | - | - | - | 4.87 | - | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP7 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP21 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN1 | - | - | - | - | - | - | - | 0.54 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH2 | - | - | 0.25 | - | - | - | 0.25 | 2.66 | 1.553 | 1.000 | 0.465 | 0.366 | 1.000 | 1.000 | 0.264 |
| SDP11 | 0.88 | - | - | - | - | - | 0.88 | - | - | - | - | - | - | - | - |
| IN5 | - | - | 0.23 | - | - | - | 0.23 | 1.54 | 0.366 | 1.000 | 0.428 | 1.491 | 1.000 | 1.000 | 0.233 |
| SDP15 | 1.15 | - | - | - | - | - | 1.15 | - | - | - | - | - | - | - | - |
| IN3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP16 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN4 | - | - | - | - | - | - | - | 0.59 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP2 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN8 | - | - | 1.05 | - | - | - | 1.05 | 0.72 | 1.667 | 1.000 | 0.270 | 1.000 | 1.000 | 1.000 | 0.450 |
| SDP1 | 0.17 | - | - | - | - | - | 0.17 | - | - | - | - | - | - | - | - |
| IN7 | - | - | - | - | - | - | - | 1.25 | - | - | - | - | - | - | - |

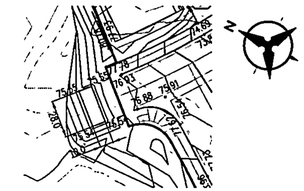
| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IN11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP33 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN9 | - | - | - | - | - | - | - | 0.46 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP22 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN2 | - | - | - | - | - | - | - | 0.64 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IN5 | - | - | 0.12 | - | - | - | 0.12 | 1.54 | 1.670 | 1.000 | 0.428 | 0.163 | 1.000 | 1.000 | 0.117 |
| SDP12 | 0.07 | - | - | - | - | - | 0.07 | - | - | - | - | - | - | - | - |
| IN6 | - | - | - | - | - | - | - | 1.69 | - | - | - | - | - | - | - |



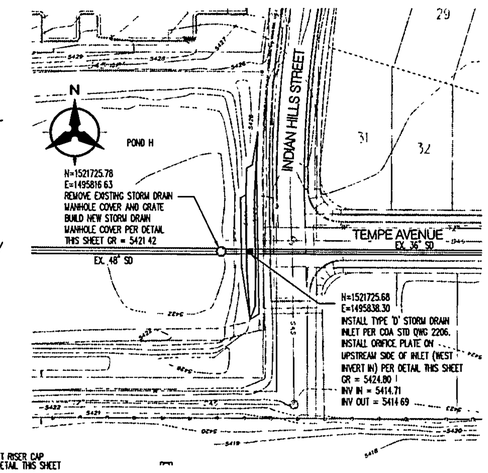

POND E
SCALE: 1" = 50'



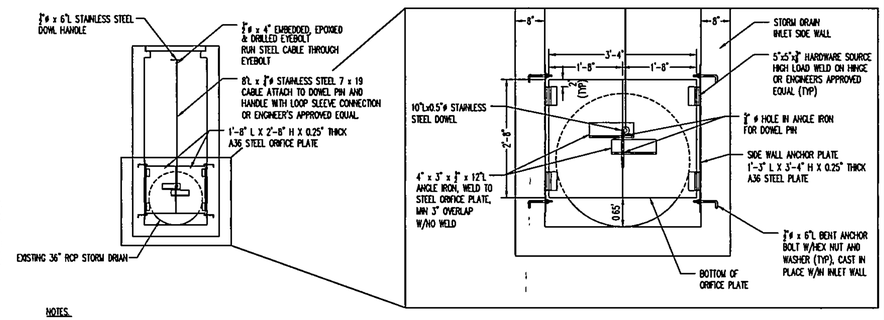
SANDMARK ROAD SEDIMENTATION POND
SCALE: 1" = 50'



REDBLOOM ROAD SEDIMENTATION POND
SCALE: 1" = 50'



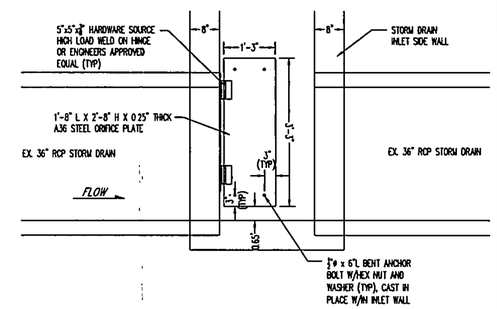

POND H OUTLET MODIFICATIONS
SCALE: 1" = 50'



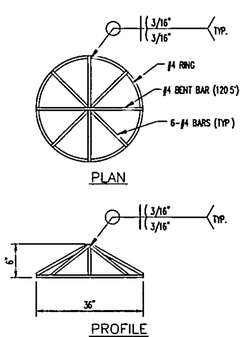

NOTES:

1. FORCE ACTING ON ORIFICE PLATE = 3,006 LBS.
2. CONTRACTOR TO ENSURE THAT ORIFICE PLATES WILL SWING OPEN AT MINIMUM OF 75° UPON INSTALLATION AND THAT DOWEL PIN CAN BE REMOVED UNDER LOAD

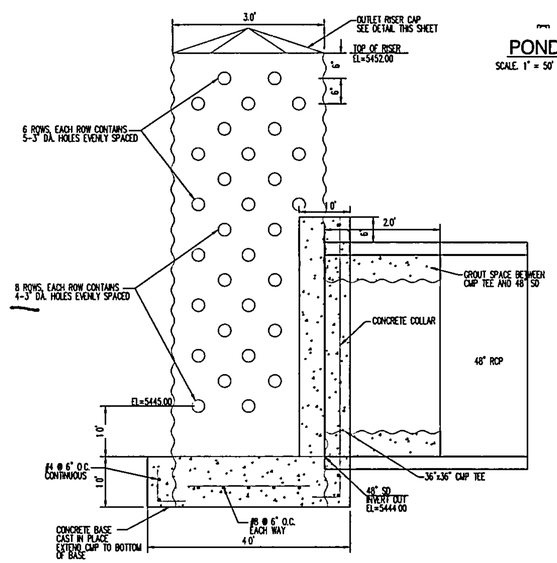
DROP INLET ORIFICE PLATE DETAIL



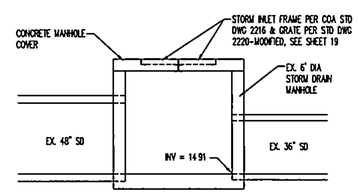

SIDE WALL STEEL ANCHOR PLATE



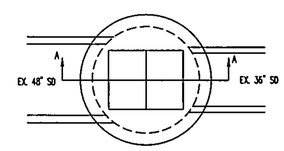

OUTLET RISER CAP DETAIL



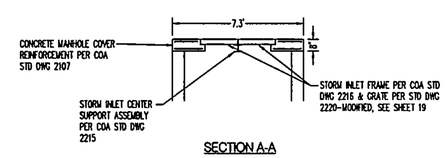

POND OUTLET RISER DETAIL
NOT TO SCALE




ELEVATION VIEW




PLAN VIEW




SECTION A-A

MANHOLE COVER
EXISTING MANHOLE MODIFICATIONS

AS-BUILT INFORMATION

| | | |
|---|---|---|
| CONTRACTOR | | DATE |
| WORK STAKED BY | | DATE |
| STAKING ACCEPTANCE BY | | DATE |
| FIELD VERIFICATION BY | | DATE |
| DRAWINGS CORRECTED BY | | DATE |
| MICROFILM INFORMATION | | |
| RECORDED BY | | DATE |
| NAVD 1988 ELEVATION = 5524.950 | | |

BENCH MARKS

ACS MONUMENT STAMPED "UNION"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
N = 1,523,503.475 E = 1,493,655.030
GROUND-TO-GRID FACTOR = 0.999664360
$\Delta\alpha$ = -00°16'58.96"

SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
|---|---|---|

ENGINEER'S SEAL

SCOTT A. STEVEN
NEW MEXICO
14664
REGISTERED PROFESSIONAL ENGINEER

| No. | Date | REMARKS | By |
|---|---|---|---|
| | | REVISIONS | |
| | | DESIGN | |

Designed By: SJS DATE:05/2011
Drawn By: DH DATE:05/2011
Checked By: SJS DATE:05/2011

Bohannan Huston
www.bhinc.com 800.877.5332

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

VALLE PRADO UNIT 1
POND GRADING PLAN

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
|---|---|---|---|---|

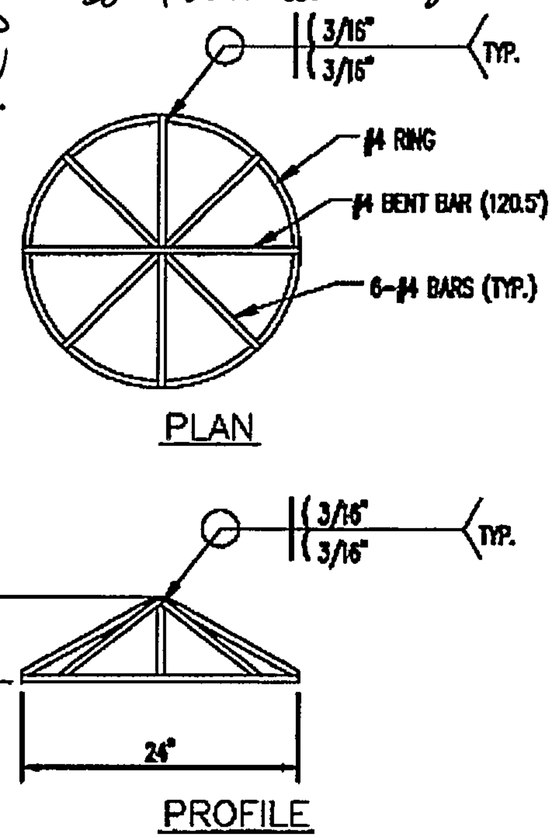
| City Project No. | Zone Map No. | Sheet | Of |
|---|---|---|---|
| 740581 | C-09-Z | 17 | 19 |

P:\20150013\CDP\Plans\General\U1\20150013_POND_DETAILS R4.dwg
November 24, 2014 - 3:03pm

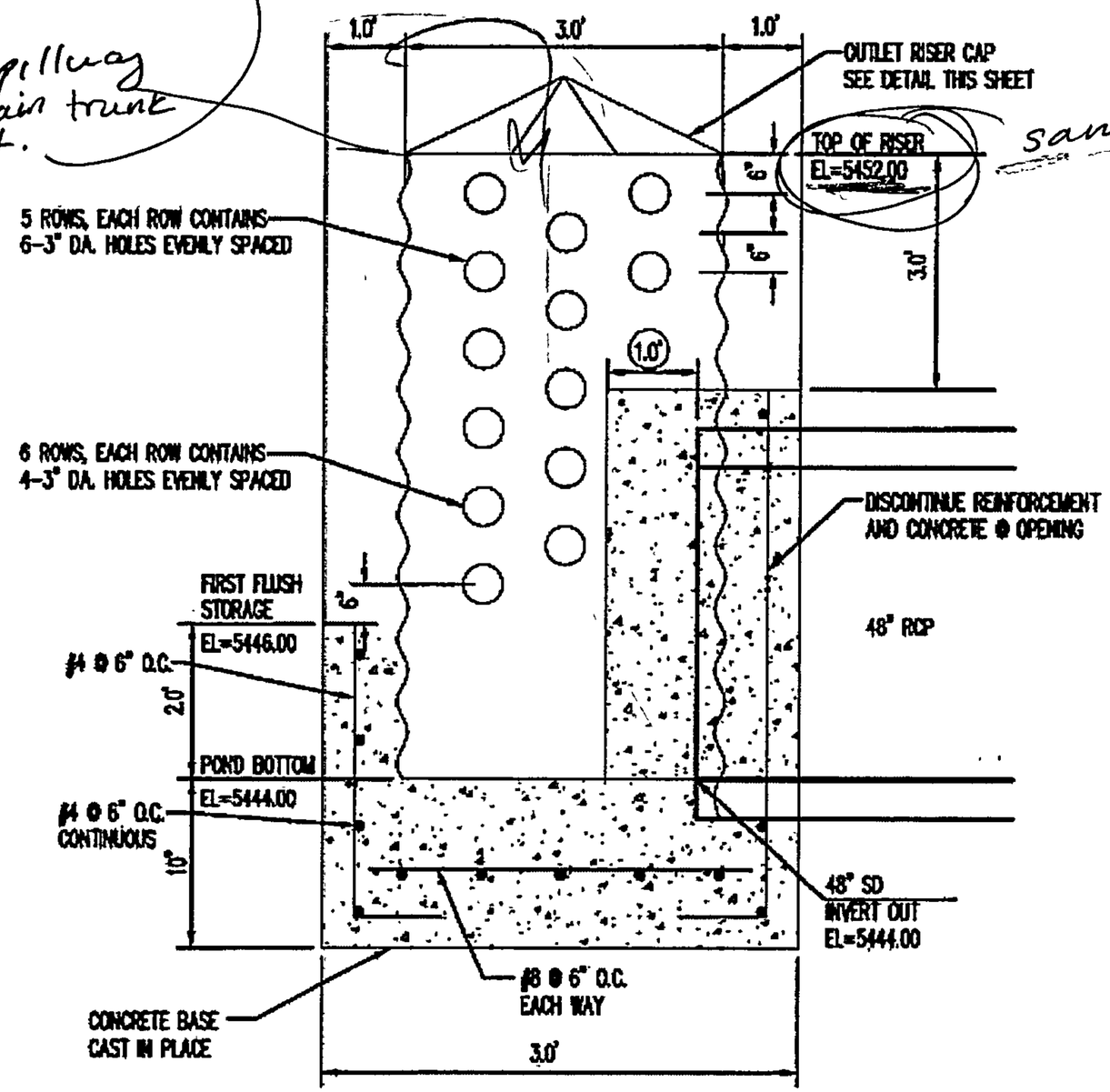
However in this case since MH Elev. in WOODMONT IS and next one down in Valle Vista 52 47' is about 40.00

usually less than Emergency spillway so that water goes to main trunk first.

OLD from workorder




## OUTLET RISER CAP DETAIL

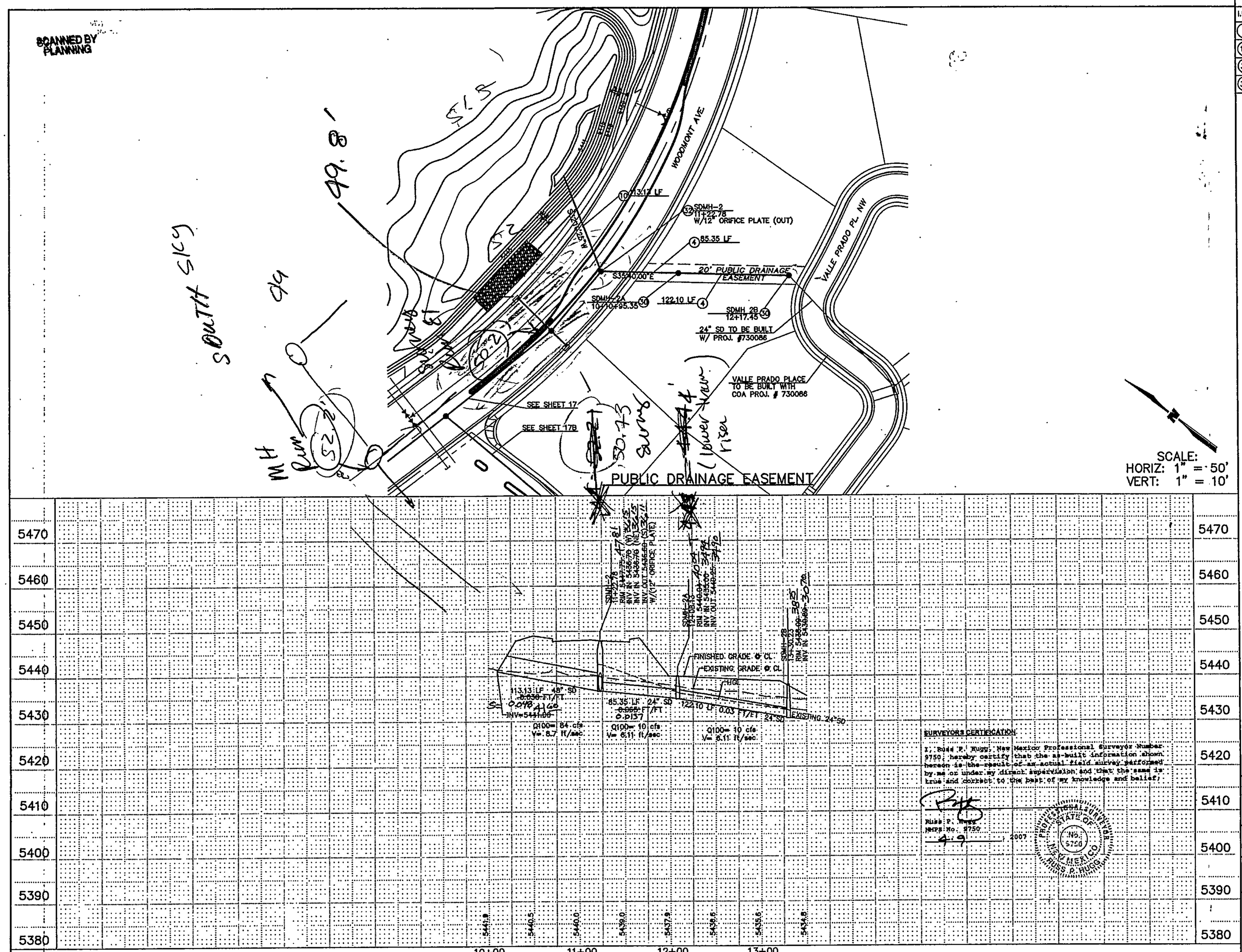



## POND OUTLET RISER DETAIL

NOT TO SCALE

J150013\CDP\Plans\General\U1\20150013_POND_DETAILS.dwg
ust 13, 2014 – 8:10am

SCANNED BY PLANNING




## STORM DRAIN CONSTRUCTION NOTES

| I.D.# | DESCRIPTION |
|---|---|
| 4 | INSTALL 24" STORM DRAIN PIPE |
| 10 | INSTALL 48" STORM DRAIN PIPE |
| 30 | INSTALL 4' DIA. MANHOLE PER COA STD. DTL. 2101 |
| 32 | INSTALL 8' DIA. MANHOLE PER COA STD. DTL. 2101 |

### SURVEYORS CERTIFICATION

I, Russ P. Rugg, New Mexico Professional Surveyor Number 9750, hereby certify that the as-built information shown hereon is the result of an actual field survey performed by me or under my direct supervision and that the same is true and correct to the best of my knowledge and belief.

Russ P. Rugg
NMPS No. 9750
4-9, 2007

PROFESSIONAL SURVEYOR STATE OF NEW MEXICO No. 9750 RUSS P. RUGG

AS-BUILT INFORMATION
CONTRACTOR
WORK STAKED BY SURV TEK DATE 12/06
FIELD WORK VERIFIED BY SEC DATE 2/07
AS-BUILTS PREPARED BY SURV TEK DATE 2/07
DRAWINGS REVIEWED BY SURV TEK DATE 2/07
DRAWINGS REVISED BY SURV TEK DATE 2/07
MICRO-FILM INFORMATION
RECORDED BY DATE
VOL. PAGE

BENCH MARKS
ACS BRASS TABLET STAMPED "D-B10-1980"
Geographic Position (NAD 1927)
N.M. State Plane Coordinates (Central Zone)
X= 357,543.73 Y= 1,527,976.48
Ground-to-Grid Factor = 0.99966354
A.C. = -00°16'30"
SLD 1929 Elevation = 5429.35

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| | | |

ENGINEER'S SEAL
STATE OF NEW MEXICO 15234 SALAZAR LICENSED PROFESSIONAL ENGINEER

| NO. | DATE | REMARKS | BY | APV |
|---|---|---|---|---|
| | | REVISIONS | | |

WILSON & COMPANY, ENGINEERS & ARCHITECTS
DESIGNED BY DATE JAN 05
DRAWN BY DATE JAN 05
CHECKED BY DATE JAN 05

RECORD DRAWING

WILSON & COMPANY
2600 THE AMERICAN ROAD S.E.
SUITE 100
RIO RANCHO, NEW MEXICO
87124
(505) 898-8021

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

# THE TRAILS UNIT 1
## PUBLIC DRAINAGE EASEMENT
## STORM DRAIN PLAN & PROFILE

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
|---|---|---|---|---|
| | | | | |

| City Project No. | Zone Map No. | Sheet | Of |
|---|---|---|---|
| 730084 | C-9-Z | 17A | 51 |

# CITY OF ALBUQUERQUE

May 20, 2015

Scott Steffen, P.E.
Bohannan-Huston, Inc.
Courtyard 1 7500 Jefferson St NE
Albuquerque, New Mexico 87109

ROFG for Unit 1

RE: **Valle Prado Unit 1**
**Grading and Drainage Certification**
**Engineers Stamp Date 11/19/14 (C09D011)**
**Certification Date 4/23/15**

Dear Mr. Steffen,

Based upon the information provided in your submittal received 4/23/15, the above referenced Certification is acceptable for Release of Financial Guarantee for Valle Prado Unit 1.

If you have any questions, please contact me at 924-3420.

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Stormwater Quality Engineer
On behalf of Hydrology
Planning Department

C: File

# City of Albuquerque

## Planning Department
## Development & Building Services Division
## DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNIT 1 Building Permit #: _____ City Drainage #: C09/D011
DRB#: 1004404 EPC#: _____ Work Order#: _____
Legal Description: LOTS 1-32, VALLE PRADO UNIT 1
City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN
Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109
Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO
Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120
Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- X ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ ENGINEER'S CERT (ESC)
- ____ SO-19
- ____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- X SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ GRADING CERTIFICATION
- ____ SO-19 APPROVAL
- ____ ESC PERMIT APPROVAL
- ____ ESC CERT. ACCEPTANCE
- ____ OTHER (SPECIFY)

RECEIVED
APR 23 2015
LAND DEVELOPMENT SECTION

VS verified

WAS A PRE-DESIGN CONFERENCE ATTENDED: _____ Yes _____ No _____ Copy Provided
DATE SUBMITTED: 04/23/15 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

## Scott Steffen

**From:** Scott Steffen
**Sent:** Thursday, April 23, 2015 8:09 AM
**To:** 'PLNDRS@cabq.gov'
**Cc:** Scott Steffen; Harmon Rita T. (rharmon@cabq.gov)
**Subject:** Valle Prado Unit 1 Final G&D cert

Monica,

Use the following link to download the Valle Prado Unit 1 grading and drainage cert requesting release of financial guaranty.

http://sfspublic.bhinc.com/EmailAccess.aspx?tk=TKssteffenD2342015872

NOTE: These files will expire in 14 days from the time this email was generated.

Using Gmail and IE? Please right click on the link and select Open in new window.

Let me know if there are any issues accessing the file.

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

RECEIVED
APR 23
LAND DEVELOPMENT SECTION

Bohannan Huston

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

April 23, 2015

Ms. Rita Harmon
Hydrology Section
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Grading and Drainage Certification, Valle Prado Unit 1
DRB Case No. 1004404, (C09/D011)

Dear Rita:

We are submitting the final grading and drainage certification for Valle Prado Unit 1. Enclosed for your review is the approved grading and drainage plan dated 11/19/14, with as-built elevations for Unit 1 and Pond E. The Unit 1 lots have been graded, and curb and gutter, pavement and storm drain improvements have been constructed. Grading of the Unit 2 lots and public infrastructure has not been completed. The Unit 2 lots will be certified once grading and construction of improvements has been completed.

The Valle Prado Addendum #2 AHYMO analysis, which removed offsite Pond 2, dated 11/19/14, has been updated with a revised stage-storage-discharge curve for Pond E based on the as-built grades for Pond E. The table below shows a comparison of the Pond E operations from Addendum #2 and the as-built condition.

| POND E SUMMARY | | |
|---|---|---|
| **Description** | **Addendum #2** | **As-built Condition** |
| Peak Inflow, cfs | 180.6 | 182.7 |
| Time to Peak, hrs | 1.5 | 1.5 |
| Peak Outflow, cfs | 20.9 | 21.3 |
| Time to Peak, hrs | 2.5 | 2.5 |
| Max Water Surface, feet | 5451.57 | 5451.67 |
| Storage Volume, ac-ft | 6.59 | 6.53 |
| Peak Flow AP-E, cfs | 21.8 | 22.3 |
| Time to Peak, hrs | 2.0 | 2.0 |

The as-built Pond E analysis results in a peak discharge at Analysis Point E of 22.3 cfs, which matches the allowed discharge in the Trails Units 1-3 DMP of 22.3 cfs. The results of this analysis show that Pond E functions per the intent of the design in the Valle Prado Units 1 and 2 Drainage Report Addendum #2, dated 11/19/14 and meets the requirements of the Trails DMP.

RECEIVED
APR 23 2015
LAND DEVELOPMENT SECTION

The final certification was originally submitted to City Hydrology on February 24, 2015. Curtis Cherne provided a comment per the attached email, dated February 27, 2015, regarding the Pond E rip-rap. In response to the comment, additional rip-rap, along with a swale directing water from the gas easement to Pond E, have been constructed and are shown on the as-built grading plan.

After reviewing the as-built elevations and visiting the site on 4/23/15, it is my belief that the Valle Prado Unit 1 subdivision has been graded in substantial compliance with the approved grading plan and will drain in compliance with the approved drainage plan.

Your review and approval is requested for Release of Financial Guaranty for Valle Prado Unit 1. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development & Planning

Enclosure

cc: Rick Beltramo, Wexford Construction

RECEIVED
APR 23 2015
LAND DEVELOPMENT SECTION

## Scott Steffen

**From:** Cherne, Curtis <CCherne@cabq.gov>
**Sent:** Friday, February 27, 2015 11:39 AM
**To:** Scott Steffen; 'Rick Beltramo'
**Subject:** northeast corner of pond e
**Attachments:** IMG_20150227_100910_149.jpg

I went out to the Valle Vista Final today.
Figured I'd cruise over to Valle Prado.

Looks like drainage coming down the gas easement road is going to turn into Pond E, north the rock. You're going to get a cut here.

Curtis

RECEIVED
APR 23 2015
LAND DEVELOPMENT SECTION

# CITY OF ALBUQUERQUE

February 9, 2015

Scott Steffen, P.E.
Bohannan-Huston, Inc.
Courtyard 1 7500 Jefferson St NE
Albuquerque, New Mexico 87109

RE: **Valle Prado Unit 1, lots 1-32**
**Grading and Drainage Plan**
**Engineers Stamp Date 11/19/14 (C09D011)**
**Certification Date 1/2/15**

Dear Mr. Steffen,

Based upon the information provided in your submittal received 2/3/2015, the above referenced Certification for Valle Prado Unit 1 lots 1-32 is acceptable for Building Permit.

If you have any questions, please contact me at 924-3986 or Rudy Rael at 924-3977.

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Planning Department
Development and Review Services

RR/CC
C: File

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

# City of Albuquerque

## Planning Department
## Development & Building Services Division
## DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNIT 1 Building Permit #: _____ City Drainage #: C09/D011
DRB#: 1004404 EPC#: _____ Work Order#: _____
Legal Description: LOTS 1-32, VALLE PRADO UNIT 1
City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN
Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109
Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO
Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120
Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL G & D PLAN
____ GRADING PLAN
____ EROSION & SEDIMENT CONTROL PLAN (ESC)
X ENGINEER'S CERT (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ ENGINEER'S CERT (TCL)
____ ENGINEER'S CERT (DRB SITE PLAN)
____ ENGINEER'S CERT (ESC)
____ SO-19
____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

____ SIA/FINANCIAL GUARANTEE RELEASE
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D APPROVAL
____ S. DEV. FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ CERTIFICATE OF OCCUPANCY (PERM)
____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
____ FOUNDATION PERMIT APPROVAL
X BUILDING PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ WORK ORDER APPROVAL
____ GRADING CERTIFICATION
____ ~~SO-19 APPROVAL~~
____ ESC PERMIT APPROVAL
____ ESC CERT. ACCEPTANCE
____ OTHER (SPECIFY)

RECEIVED
FEB 0 3 2015
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: _____ Yes _____ No _____ Copy Provided
DATE SUBMITTED: 02/02/15 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

# Bohannan ▲ Huston

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

February 2, 2015

Mr. Curtis Cherne
Hydrology Section
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Partial Grading and Drainage Certification, Valle Prado Unit 1
DRB Case No. 1004404, (C09/D011)

Dear Curtis:

We are submitting a partial grading and drainage certification for Valle Prado Units 1 and 2. The partial certification only includes Valle Prado Unit 1 (Lots 1-32). Enclosed for your review is the approved grading and drainage plan dated 11/19/14, with as-built elevations for Unit 1. The Unit 1 lots have been graded, and curb and gutter, pavement and storm drain improvements have been constructed. Grading of the Unit 2 lots and public infrastructure has not been completed. The Unit 2 lots will be certified once grading and construction of improvements has been completed.

In addition, Pond E is not being certified at this time. As-built grades are shown on the enclosed grading plan. There is adequate volume in Pond E to accommodate developed runoff from Valle Prado Unit 1. Prior to request for release of financial guaranty for Valle Prado Unit 1 a certification will be submitted that includes Pond E, stating that it functions per the intent of the design in the Valle Prado Units 1 and 2 Drainage Report Addendum #2, dated 11/19/14.

After reviewing these as-built elevations and visiting the site on 2/2/15, it is my belief that the Valle Prado Unit 1 subdivision has been graded in substantial compliance with the approved grading and drainage plan.

Your review and approval is requested for Building Permit Approval for Valle Prado Unit 1, Lots 1-32. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development & Planning

Enclosure

cc: Rick Beltramo, Wexford Construction

**Engineering ▲**

**Spatial Data ▲**

**Advanced Technologies ▲**

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

November 20, 2014

Scott Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Units 1 & 2- (File: C09D011)**
**Justification for Removal of 250' of Storm Drain from Infrastructure List for Valle Prado Unit 1 (DRB # 1004404, CPN # 740581)**
**Supplemental Calculations, ( InRoads dated 11/11/2014)**
**Revised Inlet and Storm Drain Network Map, 11-12-2014**

Dear Mr. Steffen:

Based upon the information provided in your submittals received 11-13-2014 , the above referenced submittals are approved for an Amendment to the Infrastructure List. The 30" RCP SD in Woodmont Avenue (see SHT 11/19 CPN# 74058, Valle Prado Unit 1) from MH 10 to the plug at the western Tract 9 boundary can be removed from the I.L List, with the condition that

- A new Manhole at the intersection of Nightshine and Woodmont be constructed with this project. A 42" DIA stub will need to be constructed to pick up flows from Basin E1.1, Offsite Basin 2, and Pond B.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov



C09D011_IL_Amend_Unit1.doc

*Albuquerque - Making History 1706-2006*

DRB# 1004404

| SIA Sequence # | COA DRC Project # | Size | Type of Improvement | Location | From | To | Private Inspector | City Inspector | City Cnst Engineer |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PUBLIC STORM DRAIN IMPROVEMENTS** | | W. of Nightshine St. (SD MH 10 on SHT 11/19 | | CPN ~~740~~ 740581) | | |
| | | 36" - 48" DIA | RCP W/ MH & INLETS | WOODMONT AVENUE | WESTERN TRACT 9 BOUNDARY | 200' WEST OF SOUTH SKY STREET | / | / | / |
| | | 24" - 60" DIA | RCP W/ MH & INLETS | SOUTH SKY STREET | WOODMONT AVENUE | 60' NORTH OF SANDMARK ROAD | / | / | / |
| | | 24" DIA | RCP W/ MH & INLETS | RED BLOOM ROAD | SOUTH SKY STREET | 400' WEST OF SOUTH SKY STREET | / | / | / |
| | | 24" DIA | RCP W/ MH & INLETS | SANDMARK ROAD | SOUTH SKY STREET | 60' WEST OF SOUTH SKY ROAD | / | / | / |
| | | | REMOVE EXISTING ORIFICE PLATE | WOODMONT AVENUE | EXISTING SD MANHOLE AP-E TRAILS 1-3 DMP | | / | / | / |
| | | 5.9 AC-FT | POND E W/AGREEMENT AND COVENANT | TRACT 0S-3 | | | / | / | / |
| | | | PLUG EXISTING 48" STORM DRAIN OUTFALL TO EAST | WOODMONT AVENUE | EXISTING SD MANHOLE AT SOUTH SKY STREET INTERSECTION | | / | / | / |
| | | | MODIFIY POND H INLET AND OUTLET PER APRIL 2014 AMENDED TRAILS, UNITS 1-3 DMP | POND H | WEST END OF TEMPE AVENUE | | / | / | / |
| | | 48" | 75 LF RCP STORM DRAIN | UNIVERSE BLVD | SDMH STA 11+40.47 CPN 730084 | SDMH STA 12+19.66 CPN 730084 | / | / | / |
| | | NOTE: | CERTIFICATION OF THE GRADING AND DRAINAGE PLAN IS REQUIRED FOR RELEASE OF FINANCIAL GUARANTEES | | | | | | |
| | | | **PUBLIC WATERLINE IMPROVEMENTS** | | | | | | |
| | | 12" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | WOODMONT AVENUE | SOUTH SKY STREET | TRACT 9 WESTERN BOUNDARY | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | REDBLOOM ROAD | NIGHTLINE STREET | SOUTH SKY STREET | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | NIGHTLINE STREET | WOODMONT AVENUE | REDBLOOM ROAD | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | SOUTH SKY STREET | WOODMONT AVENUE | LOT 24 | / | / | / |
| | | 6" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | SUNHORN PLACE | SOUTH SKY STREET | SUNHORN PLACE HAMMERHEAD TURNAROUND | / | / | / |
| | | 4" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | SUNHORN PLACE HAMMERHEAD TURNAROUND | NORTH STUB TERMINUS | SOUTH STUB TERMINUS | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | SANDMARK ROAD | WEST STUB TERMINUS | SOUTH SKY STREET | / | / | / |

Bohannan Huston

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

November 12, 2014

Curtis Cherne, P. E.
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Valle Prado Units 1 and 2, DRB 100~~4606~~ 4404, CPN#740581 (C09/D011)

Dear Curtis:

This letter is an addendum to the previously approved drainage report for Valle Prado Units 1 and 2. The purpose of this addendum is to provide justification for the removal from the Valle Prado Unit 1 infrastructure list of approximately 250 feet of storm drain in Woodmont Avenue from the west side of Nightshine Street to the Tract 9 west boundary.

Plate 1 of The Trails Units 1, 2 and 3 Drainage Master Plan (DMP) shows a 24" storm drain in Woodmont Avenue at the Tract 9 west boundary with a flow rate of 38.5 cfs. This storm drain serves the outflow from Pond B, Basin E3 (Tract 6) and Basin E4 (Woodmont Avenue).

Per the approved Valle Prado Units 1 and 2 (VP DR) drainage report, runoff from Basin E3 (Tract 6) is conveyed via internal residential streets to the storm drain network in Valle Prado Units 1 and 2, which discharges to Pond E. Basin E3 is contained within portions of VP DR Future Basins 1, 2 and 3. Woodmont Avenue has capacity to convey runoff from Basin E4 (13.1 cfs) without inlets within Basin E4. The VP DR shows inlets just west of the Nightshine Street entrance to Valle Prado Unit 1 that intercepts 10.4 cfs of flow, with a bypass of 3.4 cfs. The inlet location is just downstream of Basin E4. The only flow that would be in the storm drain west of Nightshine Street would be the 3.4 cfs outflow from Pond B.

The developed runoff from DMP Basin E1.1 (Tract 7) south of Woodmont Avenue is 48.5 cfs. Tract 7 will require an internal storm drain network to collect this flow. This network will include running storm drain west in the internal street network parallel to Woodmont Avenue. Rather than running parallel storm drain systems in Woodmont Avenue and Tract 7, it is proposed to extend a storm drain in the Tract 7 internal street network to pick up the 3.4 cfs outflow from Pond B.

Based on the approved VP DR and the proposed extension of storm drain in Tract 7 to serve Pond B it is no longer necessary to extend storm drain in Woodmont Avenue west of the inlets in Woodmont Avenue west of Nightshine Street. Therefore we are requesting to amend the Valle Prado Unit 1 infrastructure list to remove the storm drain as noted above.

DMP Plate 1, VP DR Exhibit 3 (fully developed basin map) and a revised VP DR Exhibit 4 (inlet and storm drain network map) are is included for your information and reference.

If you have any questions or require further information, please feel free to contact me.

Sincerely,

Scott J. Steffen, P.E.
Vice President
Community Development and Planning Group

Enclosures

cc: Rick Beltramo, Wexford Construction

Justification for removal from I.L. of Approximately 250' SD

P1

# City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNITS 1 AND 2 Building Permit #: _____ City Drainage #: C09/D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: TRACTS 9 AND 0S-3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ ENGINEER'S CERT (ESC)
- ____ SO-19
- X OTHER (SPECIFY) Drainage Plan Addendum

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ GRADING CERTIFICATION
- ____ SO-19 APPROVAL
- ____ ESC PERMIT APPROVAL
- ____ ESC CERT. ACCEPTANCE
- X OTHER (SPECIFY) Infrastructure List Amendment

RECEIVED NOV 13 2014 LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 11/12/14 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

## Scott Steffen

**From:** Scott Steffen
**Sent:** Wednesday, November 12, 2014 5:45 PM
**To:** Cherne, Curtis
**Cc:** 'Ortiz, Monica'; 'Rick Beltramo'
**Subject:** Valle Prado Unit 1 Woodmont Avenue storm drain
**Attachments:** Valle Prado DMP_Addendum_Woodmont SD.pdf

Curtis,

Attached is the Valle Prado drainage report addendum justifying the removal of approximately 250' of storm drain in Woodmont Avenue from Nightshine Street to the Tract west boundary.

Let me know if this meets your needs in order to modify the infrastructure list.

You should receive a hard copy in the morning.

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

# Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

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:** Curtis Cherne
Hydrology Section
City of Albuquerque
600 2nd St NW

**Requested by:** Scott Steffen

**Date:** November 12, 2014

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

**Phone:** 924-3986
**Job No.:** 20140164.005.01.cdp

**Job Name:** Valle Prado Drainage Report

**DELIVERY VIA**

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

**PICK UP**

Item: _____

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Drainage report addendum for removal of storm drain in Woodmont Ave |

**COMMENTS / INSTRUCTIONS**

RECEIVED
NOV 13 2014
LAND DEVELOPMENT SECTION

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

Received NOV. 13, 2014

* THIS IS TO JUSTIFY REMOVING SD IN WOODMONT BEYOND MH10 WITH FLOWS FROM BASIN E1.1, OFFSITE POND 2, & POND B being Routed THRU SDP 18

revised sd hgl.txt

Design Log

==========

InRoads Storm & Sanitary Design Log

Drainage File: P:\20150013\CDP\Control\Utility\Arch\20140709\20150013_SD.sdb

Design File: P:\20150013\CDP\PLANS\GENERAL\DRAINAGE EXHIBITS\DRAWING1.DWG

Display Log: P:\20150013\CDP\PLANS\GENERAL\DRAINAGE EXHIBITS\design.log

Date: Tuesday, November 11, 2014 5:42:11 PM

==========

HGL/EGL Computations:

Table A:

| Struct_ID | D (in) | Q (cfs) | L (ft) | V (ft/s) | d (ft) | dc (ft) | V^2/2g (ft) | Sf (ft/ft) | Dn_Soffit (ft) | EGLdn (ft) | HGLdn (ft) | Tot_Loss (ft) | EGLup (ft) | HGLup (ft) | Rim_Elev. (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | 5449.00 | - |
| SDP25 | 60 | 177.59 | 76.79 | 9.04 | - | - | 1.27 | 0.0046 | 5448.90 | 5450.27 | 5449.00 | 0.36 | 5450.63 | 5449.36 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.63 | 5449.36 | 0.31 | 5450.94 | 5449.67 | 5452.43 |
| SDP24 | 54 | 166.69 | 11.31 | 10.48 | - | - | 1.71 | 0.0072 | 5448.70 | 5450.94 | 5449.67 | 0.08 | 5451.02 | 5449.31 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.02 | 5449.31 | 0.70 | 5451.72 | 5450.01 | 5452.75 |
| SDP23 | 54 | 100.39 | 96.07 | 6.31 | - | - | 0.62 | 0.0026 | 5448.86 | 5451.72 | 5450.01 | 0.25 | 5451.97 | 5451.35 | - |
| exSDMH1 | - | - | - | - | - | - | - | - | - | 5451.97 | 5451.35 | 0.31 | 5452.28 | 5451.66 | 5452.15 |
| SDP8 | 48 | 62.61 | 211.12 | 4.98 | - | - | 0.39 | 0.0019 | 5448.76 | 5452.28 | 5451.66 | 0.40 | 5452.68 | 5452.29 | - |
| SDMH7 | - | - | - | - | - | - | - | - | - | 5452.68 | 5452.29 | 0.04 | 5452.72 | 5452.33 | 5457.54 |
| SDP6 | 48 | 62.61 | 191.03 | 20.28 | - | - | 6.39 | 0.0019 | 5451.15 | 5452.72 | 5452.33 | - | 5464.61 | 5458.22 | - |
| SDMH6 | - | - | - | - | - | - | - | - | - | 5464.61 | 5458.22 | - | 5464.61 | 5458.22 | 5466.56 |
| SDP17 | 48 | 62.61 | 218.86 | 20.31 | 1.17 | 2.38 | 6.41 | - | 5461.14 | 5464.72 | 5458.32 | - | 5476.13 | 5469.73 | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | 5476.13 | 5469.73 | - | 5476.13 | 5469.73 | 5476.70 |
| SDP14 | 48 | 62.61 | 42.01 | 16.72 | 1.35 | 2.38 | 4.34 | - | 5472.65 | 5474.35 | 5470.00 | - | 5475.47 | 5471.13 | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | 5475.47 | 5471.13 | - | 5475.47 | 5471.13 | 5478.77 |
| SDP18 | 42 | 51.81 | 38.18 | 8.06 | 2.22 | 2.25 | 1.01 | - | 5473.27 | 5473.00 | 5471.99 | - | 5473.17 | 5472.16 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5450.63 | 5449.36 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.63 | 5449.36 | 0.08 | 5450.70 | 5449.43 | 5452.43 |
| SDP28 | 18 | 7.50 | 20.06 | 4.24 | - | - | 0.28 | 0.0051 | 5449.43 | 5450.70 | 5449.43 | 0.10 | 5450.81 | 5450.53 | - |
| IN14 | - | - | - | - | - | - | - | - | - | 5450.81 | 5450.53 | - | 5450.81 | 5450.53 | 5452.93 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.02 | 5449.31 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.02 | 5449.31 | 0.37 | 5451.39 | 5449.68 | 5452.75 |
| SDP29 | 36 | 55.40 | 74.64 | 7.84 | - | - | 0.95 | 0.0069 | 5447.42 | 5451.39 | 5449.68 | 0.51 | 5451.90 | 5450.95 | - |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5451.90 | 5450.95 | 0.16 | 5452.06 | 5451.10 | 5454.09 |
| SDP3 | 24 | 30.20 | 97.93 | 9.61 | - | - | 1.44 | 0.0178 | 5450.33 | 5452.06 | 5451.10 | 1.75 | 5453.80 | 5452.37 | - |
| SDMH3 | - | - | - | - | - | - | - | - | - | 5453.80 | 5452.37 | 0.61 | 5454.41 | 5452.97 | 5455.53 |
| SDP4 | 24 | 30.20 | 113.83 | 9.61 | - | - | 1.44 | 0.0178 | 5451.74 | 5454.41 | 5452.97 | 2.03 | 5456.44 | 5455.00 | - |
| SDMH4 | - | - | - | - | - | - | - | - | - | 5456.44 | 5455.00 | 0.48 | 5456.92 | 5455.49 | 5459.00 |
| SDP5 | 24 | 30.20 | 177.97 | 15.83 | - | - | 3.90 | 0.0178 | 5455.23 | 5456.92 | 5455.49 | - | 5465.69 | 5461.80 | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5465.69 | 5461.80 | - | 5465.69 | 5461.80 | 5466.43 |
| SDP32 | 24 | 17.80 | 59.75 | 8.55 | 1.26 | 1.52 | 1.14 | - | 5464.62 | 5465.02 | 5463.88 | - | 5465.65 | 5464.52 | - |
| IN11 | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - | 5465.65 | 5464.52 | 5467.76 |
| SDP31 | 24 | 8.90 | 28.04 | 12.18 | 0.57 | 1.06 | 2.30 | - | 5465.26 | 5466.82 | 5464.52 | - | 5467.37 | 5465.06 | - |
| IN12 | - | - | - | - | - | - | - | - | - | 5467.37 | 5465.06 | - | 5467.37 | 5465.06 | 5469.00 |
| SDP30 | 18 | 5.50 | 20.01 | 10.87 | 0.49 | 0.90 | 1.84 | - | 5466.00 | 5466.90 | 5465.06 | - | 5467.51 | 5465.67 | - |
| IN10 | - | - | - | - | - | - | - | - | - | 5467.51 | 5465.67 | - | 5467.51 | 5465.67 | 5470.17 |



THIS IS SUPERCEDED By submittal to omit offsite Pond 2

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.02 | 5449.31 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.02 | 5449.31 | 0.32 | 5451.34 | 5449.63 | 5452.75 |
| SDP27 | 24 | 10.90 | 41.04 | 3.47 | - | - | 0.19 | 0.0023 | 5446.07 | 5451.34 | 5449.63 | 0.10 | 5451.43 | 5451.25 | - |
| IN15 | - | - | - | - | - | - | - | - | - | 5451.43 | 5451.25 | 0.18 | 5451.62 | 5451.43 | 5453.15 |
| SDP26 | 18 | 7.50 | 20.03 | 4.24 | - | - | 0.28 | 0.0051 | 5450.15 | 5451.62 | 5451.43 | 0.10 | 5451.72 | 5451.44 | - |
| IN13 | - | - | - | - | - | - | - | - | - | 5451.72 | 5451.44 | - | 5451.72 | 5451.44 | 5453.36 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.97 | 5451.35 | - |
| exSDMH1 | - | - | - | - | - | - | - | - | - | 5451.97 | 5451.35 | 0.25 | 5452.22 | 5451.60 | 5452.15 |
| SDP20 | 24 | 37.78 | 174.64 | 12.03 | - | - | 2.25 | 0.0279 | 5446.76 | 5452.22 | 5451.60 | 4.87 | 5457.09 | 5454.84 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5475.47 | 5471.13 | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | 5475.47 | 5471.13 | - | 5475.47 | 5471.13 | 5478.77 |
| SDP7 | 48 | 10.80 | 71.96 | 10.62 | 0.54 | 0.95 | 1.75 | - | 5473.98 | 5472.88 | 5471.13 | - | 5474.70 | 5472.95 | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5474.70 | 5472.95 | - | 5474.70 | 5472.95 | 5481.96 |
| SDP21 | 18 | 5.40 | 29.80 | 9.36 | 0.54 | 0.89 | 1.36 | - | 5477.74 | 5478.15 | 5476.79 | - | 5478.99 | 5477.63 | - |
| IN1 | - | - | - | - | - | - | - | - | - | 5478.99 | 5477.63 | - | 5478.99 | 5477.63 | 5482.34 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.90 | 5450.95 | - |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5451.90 | 5450.95 | 0.25 | 5452.16 | 5451.20 | 5454.09 |
| SDP11 | 24 | 25.20 | 70.94 | 8.02 | - | - | 1.00 | 0.0124 | 5450.01 | 5452.16 | 5451.20 | 0.88 | 5453.04 | 5452.04 | - |
| IN5 | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 | 0.24 | 5453.27 | 5452.27 | 5454.96 |
| SDP15 | 24 | 14.60 | 275.46 | 12.26 | - | - | 2.33 | 0.0042 | 5452.46 | 5453.27 | 5452.27 | - | 5463.08 | 5460.75 | - |
| IN3 | - | - | - | - | - | - | - | - | - | 5463.08 | 5460.75 | - | 5463.08 | 5460.75 | 5464.44 |
| SDP16 | 18 | 7.30 | 28.03 | 11.23 | 0.59 | 1.04 | 1.96 | - | 5461.44 | 5462.71 | 5460.75 | - | 5463.57 | 5461.61 | - |
| IN4 | - | - | - | - | - | - | - | - | - | 5463.57 | 5461.61 | - | 5463.57 | 5461.61 | 5466.53 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5465.69 | 5461.80 | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5465.69 | 5461.80 | - | 5465.69 | 5461.80 | 5466.43 |
| SDP2 | 24 | 12.40 | 85.47 | 12.27 | 0.71 | 1.26 | 2.34 | - | 5464.62 | 5465.68 | 5463.34 | - | 5468.84 | 5466.50 | - |
| IN8 | - | - | - | - | - | - | - | - | - | 5468.84 | 5466.50 | 1.05 | 5469.89 | 5467.55 | 5471.88 |
| (Alternate HGL and EGL Used) | | | | | | | | | | | | | 5468.08 | 5467.69 | |
| SDP1 | 18 | 6.20 | 28.01 | 5.06 | 0.98 | 0.96 | 0.40 | 0.0060 | 5467.96 | 5468.08 | 5467.69 | 0.17 | 5468.25 | 5467.85 | - |
| IN7 | - | - | - | - | - | - | - | - | - | 5468.25 | 5467.85 | - | 5468.25 | 5467.85 | 5471.85 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - |
| IN11 | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - | 5465.65 | 5464.52 | 5467.76 |
| SDP33 | 18 | 5.50 | 23.04 | 11.86 | 0.46 | 0.90 | 2.19 | - | 5464.76 | 5466.70 | 5464.52 | - | 5466.97 | 5464.78 | - |
| IN9 | - | - | - | - | - | - | - | - | - | 5466.97 | 5464.78 | - | 5466.97 | 5464.78 | 5468.32 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5474.70 | 5472.95 | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5474.70 | 5472.95 | - | 5474.70 | 5472.95 | 5481.96 |
| SDP22 | 18 | 5.40 | 30.97 | 7.51 | 0.64 | 0.89 | 0.88 | - | 5477.73 | 5477.74 | 5476.87 | - | 5478.23 | 5477.35 | - |
| IN2 | - | - | - | - | - | - | - | - | - | 5478.23 | 5477.35 | - | 5478.23 | 5477.35 | 5481.96 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 | - |
| IN5 | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 | 0.12 | 5453.15 | 5452.15 | 5454.96 |
| SDP12 | 18 | 5.30 | 28.02 | 3.00 | - | - | 0.14 | 0.0025 | 5451.96 | 5453.15 | 5452.15 | 0.07 | 5453.23 | 5453.09 | - |
| IN6 | - | - | - | - | - | - | - | - | - | 5453.23 | 5453.09 | - | 5453.23 | 5453.09 | 5455.36 |

Table B:

| LOSSES | | | | | | | | -\|LOSS_COEFFICENTS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Str_ID | Hf | Hb | Hstr | Hc | He | Hj | Total \| | Dstr | Ko | CD | Cd | Cq | Cp | Cb | K |
| Outfall | - | - | - | - | - | - | - \| | - | - | - | - | - | - | - | - |
| SDP25 | 0.36 | - | - | - | - | - | 0.36 \| | - | - | - | - | - | - | - | - |
| IN16 | - | - | 0.31 | - | - | - | 0.31 \| | 5.16 | 0.452 | 1.000 | 0.509 | 1.063 | 1.000 | 1.000 | 0.245 |
| SDP24 | 0.08 | - | - | - | - | - | 0.08 \| | - | - | - | - | - | - | - | - |
| SDMH11 | - | - | 0.70 | - | - | - | 0.70 \| | 5.07 | 1.526 | 1.000 | 0.537 | 0.499 | 1.000 | 1.000 | 0.409 |
| SDP23 | 0.25 | - | - | - | - | - | 0.25 \| | - | - | - | - | - | - | - | - |
| exSDMH1 | - | - | 0.31 | - | - | - | 0.31 \| | 6.59 | 1.526 | 1.000 | 0.629 | 0.520 | 1.000 | 1.000 | 0.499 |
| SDP8 | 0.40 | - | - | - | - | - | 0.40 \| | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SDMH7 | - | - | 0.04 | - | - | - | 0.04 | 5.24 | 0.174 | 1.000 | 0.588 | 1.000 | 1.000 | 1.000 | 0.103 |
| SDP6 | 0.36 | - | - | - | - | - | 0.36 | - | - | - | - | - | - | - | - |
| SDMH6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP17 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP14 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP18 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IN16 | - | - | 0.08 | - | - | - | 0.08 | 5.16 | 1.422 | 1.000 | 0.509 | 0.082 | 1.000 | 1.000 | 0.059 |
| SDP28 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - | - |
| IN14 | - | - | - | - | - | - | - | 1.60 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH11 | - | - | 0.37 | - | - | - | 0.37 | 5.07 | 1.526 | 1.000 | 0.537 | 0.261 | 1.000 | 1.000 | 0.214 |
| SDP29 | 0.51 | - | - | - | - | - | 0.51 | - | - | - | - | - | - | - | - |
| SDMH2 | - | - | 0.16 | - | - | - | 0.16 | 2.69 | 0.228 | 1.000 | 0.468 | 1.531 | 1.000 | 1.000 | 0.163 |
| SDP3 | 1.75 | - | - | - | - | - | 1.75 | - | - | - | - | - | - | - | - |
| SDMH3 | - | - | 0.61 | - | - | - | 0.61 | 2.72 | 0.704 | 1.000 | 0.601 | 1.000 | 1.000 | 1.000 | 0.423 |
| SDP4 | 2.03 | - | - | - | - | - | 2.03 | - | - | - | - | - | - | - | - |
| SDMH4 | - | - | 0.48 | - | - | - | 0.48 | 1.85 | 0.705 | 1.000 | 0.477 | 1.000 | 1.000 | 1.000 | 0.336 |
| SDP5 | 3.17 | - | - | - | - | - | 3.17 | - | - | - | - | - | - | - | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP32 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP31 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP30 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN10 | - | - | - | - | - | - | - | 0.49 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH11 | - | - | 0.32 | - | - | - | 0.32 | 5.07 | 0.178 | 1.000 | 0.537 | 1.951 | 1.000 | 1.000 | 0.186 |
| SDP27 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - | - |
| IN15 | - | - | 0.18 | - | - | - | 0.18 | 2.60 | 1.671 | 1.000 | 0.585 | 1.000 | 1.000 | 1.000 | 0.977 |
| SDP26 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - | - |
| IN13 | - | - | - | - | - | - | - | 2.08 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| exSDMH1 | - | - | 0.25 | - | - | - | 0.25 | 6.59 | 0.459 | 1.000 | 0.629 | 1.409 | 1.000 | 1.000 | 0.407 |
| SDP20 | 4.87 | - | - | - | - | - | 4.87 | - | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP7 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP21 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN1 | - | - | - | - | - | - | - | 0.54 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH2 | - | - | 0.25 | - | - | - | 0.25 | 2.69 | 1.553 | 1.000 | 0.468 | 0.366 | 1.000 | 1.000 | 0.266 |
| SDP11 | 0.88 | - | - | - | - | - | 0.88 | - | - | - | - | - | - | - | - |
| IN5 | - | - | 0.24 | - | - | - | 0.24 | 1.58 | 0.366 | 1.000 | 0.433 | 1.491 | 1.000 | 1.000 | 0.236 |
| SDP15 | 1.15 | - | - | - | - | - | 1.15 | - | - | - | - | - | - | - | - |
| IN3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP16 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN4 | - | - | - | - | - | - | - | 0.59 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP2 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN8 | - | - | 1.05 | - | - | - | 1.05 | 0.72 | 1.667 | 1.000 | 0.270 | 1.000 | 1.000 | 1.000 | 0.450 |
| SDP1 | 0.17 | - | - | - | - | - | 0.17 | - | - | - | - | - | - | - | - |
| IN7 | - | - | - | - | - | - | - | 1.25 | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IN11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP33 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN9 | - | - | - | - | - | - | - | 0.46 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP22 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN2 | - | - | - | - | - | - | - | 0.64 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IN5 | - | - | 0.12 | - | - | - | 0.12 | 1.58 | 1.670 | 1.000 | 0.433 | 0.163 | 1.000 | 1.000 | 0.118 |
| SDP12 | 0.07 | - | - | - | - | - | 0.07 | - | - | - | - | - | - | - | - |
| IN6 | - | - | - | - | - | - | - | 1.73 | - | - | - | - | - | - | - |

## Cherne, Curtis

**From:** Cherne, Curtis
**Sent:** Tuesday, December 16, 2014 8:44 AM
**To:** 'Scott Steffen'
**Cc:** 'Rick Beltramo'; Cloud, Jack W.
**Subject:** RE: Valle Prado Unit 1 Final Plat Revisions, DRB#

Scott,
The changes are minor and can be as-built.

Curtis

---

**From:** Scott Steffen [mailto:ssteffen@bhinc.com]
**Sent:** Monday, December 15, 2014 2:58 PM
**To:** Cherne, Curtis
**Cc:** 'Rick Beltramo'
**Subject:** RE: Valle Prado Unit 1 Final Plat Revisions, DRB#

Curtis,

Attached is the proposed Lot 25/26 grading revision required for the additional 30' in lot depth. There is no change to the pad depth, just an increase in the back yard. Both lots continue drain to South Sky St per the approved grading. The SE corner of Lot 25 (back lot 25/26 corner) has about 3' of fill from existing ground. This was done to reduce the slope across the back yard. There will be a 2' garden wall split and 4:1 slope outside the wall to tie to existing ground. The proposed rear lot lines are 122 feet from the east boundary of Tract D, so the impact of the proposed fill on adjacent properties is minimum. The approved grading plan has about 2.3' of fill in the SE corner of Lot 25.

Since the pads are not changing is seems that the grading plan revision can either be as-built or we can submit a revised plan for approval. If you would like a revised plan would it still be possible to approve the plat on Wednesday and/or have Jack take delegation?

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

---

**From:** Cloud, Jack W. [mailto:jcloud@cabq.gov]
**Sent:** Monday, December 15, 2014 2:38 PM
**To:** Scott Steffen; 'Rick Beltramo'
**Cc:** Cherne, Curtis
**Subject:** RE: Valle Prado Unit 1 Final Plat Revisions, DRB#

If changed, this would not be the same plat that was previously signed and agreed to, so yes we need a new acknowledgment –
I'll leave it to the City Surveyor if he believes the changes are significant enough to get new signatures or if initialing and dating will be sufficient -

**From:** Scott Steffen [mailto:ssteffen@bhinc.com]
**Sent:** Monday, December 15, 2014 2:12 PM
**To:** Cloud, Jack W.; 'Rick Beltramo'
**Cc:** Cherne, Curtis
**Subject:** RE: Valle Prado Unit 1 Final Plat Revisions, DRB#

Jack,

The plat signature page will not change as a result of the Lot 25/26 revision. Do we need to have the owner, surveyor and City Surveyor resign or initial such that they acknowledge the change?

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

---

**From:** Cloud, Jack W. [mailto:jcloud@cabq.gov]
**Sent:** Monday, December 15, 2014 1:37 PM
**To:** 'Rick Beltramo'
**Cc:** Scott Steffen; Cherne, Curtis
**Subject:** RE: Valle Prado Unit 1 Final Plat Revisions, DRB#

I will defer to Curtis if he feels the revisions are 'minor' enough to proceed –
For Planning you will need to verify the reduction in open space calculations does not fall under minimum requirements –
If not, Planning has no objection to the change as long as you have new signatures from owner, your surveyor and City Surveyor -

---

**From:** Rick Beltramo [mailto:rbeltramo@gcinm.com]
**Sent:** Monday, December 15, 2014 10:04 AM
**To:** Cloud, Jack W.
**Cc:** Scott Steffen; Cherne, Curtis
**Subject:** Valle prado Unit 1 Final Plat Revisions, DRB#

Jack,

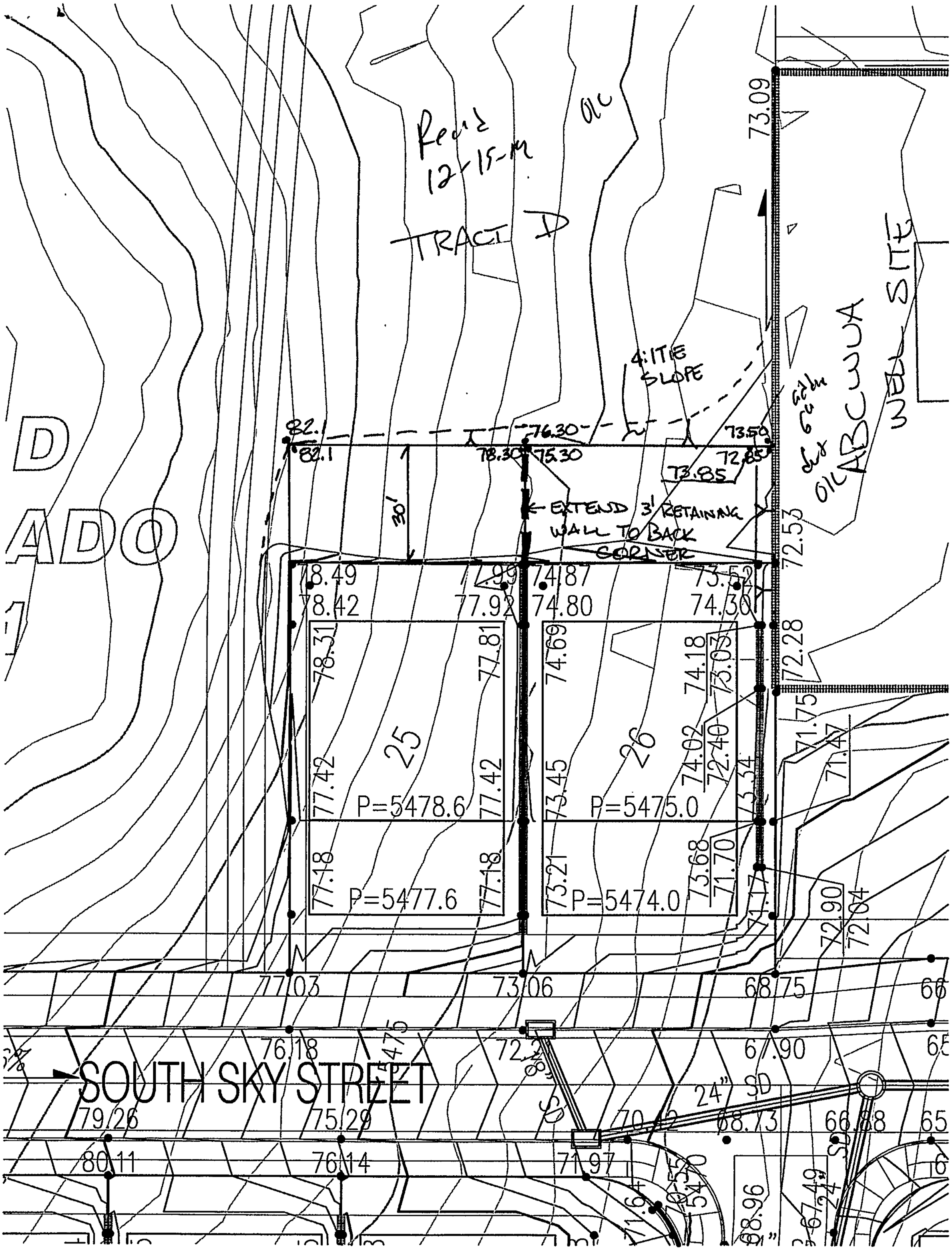
Late last week I received comments from DR Horton, the purchaser of our Valle Prado Unit 1 lots. They have requested that we increase the depth of Lots 25 and 26. I would like to accommodate this request if possible. Attached is a sketch of the proposed amendment.

This amendment would have no affect on the infrastructure improvements. Minor revisions to the grading plan are proposed. I believe the revisions can be accommodated by the grading and drainage certification process, if Curtis is agreeable to that suggested process . Tract "D" open space would be reduced. The Trails has created the required minimum open space tracts. Tract D is above and beyond there required.

Valle Prado Unit 1 is on this Wednesday's DRB agenda for final plat approval. Would it still be possible to incorporate these revisions for DRB approval this Wednesday? We could deliver the amended plat this morning.

Thank you. RLB.

Rick Beltramo
Director of Engineering
Galway Construction, Inc.


TRACT D
4:1 TIE SLOPE
EXTEND 3' RETAINING WALL TO BACK CORNER
30'
82.1
76.30
78.30
75.30
73.59
72.85
73.85
73.09
72.53
72.28
71.75
71.47
78.49
78.42
77.99
77.92
74.87
74.80
73.52
74.30
78.31
77.81
77.42
77.42
77.18
77.18
74.69
74.18
73.03
74.02
72.40
73.45
73.34
73.21
73.68
71.70
71.17
72.90
72.64
25
26
P=5478.6
P=5475.0
P=5477.6
P=5474.0
77.03
73.06
68.75
76.18
72.23
67.90
79.26
75.29
70.12
68.73
66.88
80.11
76.14
71.97
24" SD
SOUTH SKY STREET

## Cherne, Curtis

**From:** Cherne, Curtis
**Sent:** Friday, February 27, 2015 11:39 AM
**To:** steffen, scott; 'Rick Beltramo'
**Subject:** northeast corner of pond e
**Attachments:** IMG_20150227_100910_149.jpg

I went out to the Valle Vista Final today.
Figured I'd cruise over to Valle Prado.

Looks like drainage coming down the gas easement road is going to turn into Pond E, north the rock. You're going to get a cut here.

Curtis

# CITY OF ALBUQUERQUE
## PLANNING DEPARTMENT

### HYDROLOGY DEVELOPMENT SECTION
DEVELOPMENT REVIEW BOARD MEMO

**DRB PROJECT NO: 1006767** **AGENDA ITEM NO: 1**

**SUBJECT:**

Site Plan for Building Permit

**ENGINEERING COMMENTS:**

Lot B was platted into Lot 1A in 2008.

The as-built site appears to deviate from the approved drainage plan in the area formerly shown as Lot B. It was supposed to be lowered for ponding unless prevented from doing so by existing landscaping. It has been paved.

The pavement could be saw-cut along the striped parking line and removed from the landscape area and the landscape area restored and depressed 1 foot or so for water harvesting.

**SIGNED**:
Curtis Cherne
Hydrology Section
City Engineer Designee
AMAFCA Designee
924-3986

**DATE**: 2-4-15

unit 1

Valle prado - OK BB

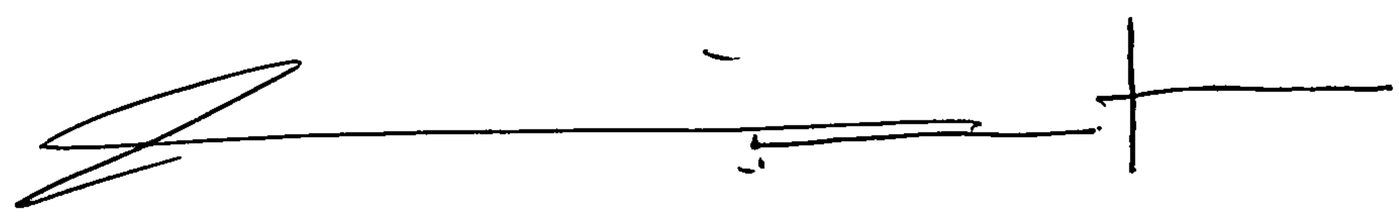
PIPG as-Smith

---

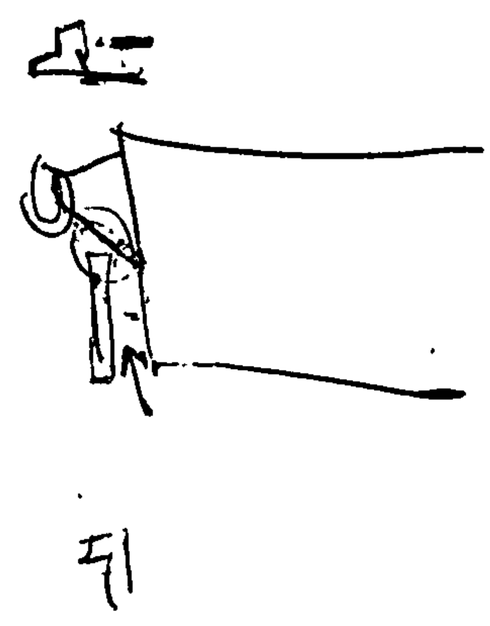
1. - to do

value usta 2, 3

↳ Lot cost ~ $\frac{1}{2}$ 2 $\frac{1}{2}$ 3



unit 3 - 3 wk delay



# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

July 14, 2014

Brian Patterson, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Units 1&2** - Tracts 9 and OS-3 **(File: C09D011)**
**Drainage Report for Valle Prado at the Trails Units 3A,**
**Engineer's Stamp Date 6-24-2014**
**Revised Grading and Drainage Plans, Engineer's Stamp Date 7-10-2014**
**Supplemental Calculations, Engineer's Stamp Date 7-10-2014**
**Revised Inlet and Storm Drain Network Map, Received Stamp Date 7-10-2014**
**Revised Preliminary Plat, Received Stamp Date 7-10-2014**

Dear Mr. Patterson:

Based upon the information provided in your submittals received 6-24-14 and 7-10-14, the above referenced submittals are approved for Grading Permit with the following exceptions:

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

**On the G & D plans:**

1) A cap should be shown on the Woodmont SD, east of South Sky Street on the Grading and Drainage plans, or at least on the As-builts.
2) The temporary pond should note that the Volume shown is for the developed flows only, and the undeveloped discharge calculations are part of another project.
3) On Sheet 1 of Grading and Drainage Plan, is that a wall between Lots 17 and 18?

**On the Inlet and SD Map:**

4) A typo on the Inlet and SD Map shows Inlet #6 as "IN4"
5) Verify that the capacity for SDP6 is 269.5 cfs. It seems relatively high.
6) On the Fully Developed Basin Map, the basin boundary is missing between Basin 1 and 3
7) In the Drainage Report, page 2 has a typo in last paragraph and should be "….Basin 5 (3.1cfs), …"
8) Resubmit the INROADS Storm Drain Network File(Appendix C), to be reflective of the of the current SD Map.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email, Tim Simms, Monica Ortiz

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

July 11, 2014

Brian Patterson, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Units 1&2** - Tracts 9 and OS-3 **(File: C09D011)**
**Drainage Report for Valle Prado at the Trails Units 3A,**
**Engineer's Stamp Date 6-24-2014**
**Revised Grading and Drainage Plans, Engineer's Stamp Date 7-10-2014**
**Supplemental Calculations, Engineer's Stamp Date 7-10-2014**
**Revised Inlet and Storm Drain Network Map, Received Stamp Date 7-10-2014**
**Revised Preliminary Plat, Received Stamp Date 7-10-2014**

Dear Mr. Patterson:

Based upon the information provided in your submittals received 6-24-14 and 7-10-14, the above referenced submittals are approved Preliminary Plat and Site Plan for Subdivision action by the DRB.

The Grading and Drainage Plans cannot be approved until DRB approval. A separate letter will be written with any exception or comment.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email, Tim Simms, Monica Ortiz

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

# Bohannan Huston

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 24, 2014

Ms. Rita Harmon, P.E.
City of Albuquerque
Planning Department
600 2nd Street NW
Albuquerque, NM 87103

Met w/ Curtis on 6-23-14

Re: Response to Comments
Drainage Master Plan for Valle Prado Units 1 and 2

Dear Ms. Harmon:

Based on the letter we received from you dated May 30, 2014 which provided comments for the Drainage Management Plan for Valle Prado Units 1 and 2, below are our responses to each of your comments and how they have been addressed:

1. Hydrology is concerned about grading next to the high pressure gas lines. There is a 8' maximum grade difference along the gas line easement as well as 2 roads that cross the easement. Please submit grading plans to PNM for comment and request that they submit a letter to the COA Planning Department indicating acceptance.
   - **See attached email from Paula McAfee, NM Gas Co. to Rick Beltramo, Woodmont Paseo.**

2. There is an inconsistency in the AHYMO output file in the DMP verses the Table shown on Plate 2 of the DMP that needs to be resolved. The AHYMO indicates AP-E as 15.5 cfs, whereas the table indicates 22.3 cfs.
   - **The Q for AP-E is 22.3 cfs. This is shown in the AHYMO file as ID=40, which is the total of the pond outfall (6.8 cfs) and the bypass flow (15.5cfs).**

max is 20.3 cfs

3. Hydrology would like the 12" orifice plate at AP-E, south of Woodmont, to be removed. If the orifice plate is not removed and the pond outlet is less than 24" diameter effective area, a sluice gate type restriction plate or similar device should be built with this project per the DMP (bottom of page 6).
   - **The orifice plate will be removed at AP-E. A plug will be installed just east of existing SDMH1 and all flows from Woodmont Ave. will be routed north and combine with those flows from Valle Prado. Those combined flows will be conveyed into Pond E, which will have a controlled discharge of Q=20.9 cfs (less than the approved Q=22.3 cfs from the DMP). Pond E has been designed to retain 0.9 ac-ft (first flush) and has a maximum volume of 5.9 ac-ft (with a capacity of 6.4 ac-ft).**

Put on IL

RECEIVED
JUN 24 2014
LAND DEVELOPMENT SECTION

4. DMP Basins E5, E3, and part of C in Tracts 9, 6, and 10 appear to encompass the basins shown on the Fully Developed Basin Map in the Report. Please overlay the basins so that basin boundaries and flows can be better understood and compared.
   - **Done.**

5. The Fully Developed Basin Map in the Report should label Ponds A5 and A6, all future roads, and show conditions and contours beyond northeast boundary. Also, A5 should be shown extending to Woodmont Avenue.
   - **Done.**

6. Provide a table showing basin area (in acre) and flows on the Fully Developed Basin Map.
   - **Done.**

7. The Fully Developed Basin Map should show Woodmont Avenue extending all the way to the north end of Future Basin 1, along with the storm drain. Flows from Basin E6 of the DMP should be accounted for in the Report, as this basin contains half of Woodmont Avenue. Inlets in Woodmont should be sized and located.
   - **Done.**

8. DMP shows Basin E5 as 42% impervious land treatment and should be the same value used in the corresponding basins in the Report.
   - **Each developed basin percent impervious land treatment was determined bu using Table A-5 of the DPM, Section 22.2. The average impervious land treatment (%D) for the Valle Prado basins which are encompassed by DMP Basins E3 and E5 is 43%. The average impervious land treatment (%D) for Basins E3 and E5 in the DMP is 44%. Therefore the developed Q is less than the proposed developed Q from the DMP.**

9. Pond E is noted as a future pond. However, the DMP shows the south and southwest portion of Basin E5 draining to Pond E, rather than a storm drain. Therefore Pond E needs to be sized correctly to contain flows delineated in the DMP. Furthermore, Pond E could be used to pick up the "first flush" required by the drainage ordinance. Pond calculations need to be provided.
   - **See response to comment #3.**

10. The Temporary Sedimentation Ponds located in Future Basins 1,2, 3, and 4 need to be sized to pick up the correct volumes. They seem to be temporary ponds that pick up offsite flows rather than sedimentation ponds.
    - **The streets in Units 1 and 2 have capacity to accept the fully developed flows from these basins. The "sedimentation ponds" are 2' deep at the west end of the pavement for sediment to settle before undeveloped flows enter the street and are picked up by the downstream storm drain.**

11. Basin 2 should not have a pond.
    - **It does not have a pond. Flows from Basin 2 are intercepted by the storm drain network and directed to Pond E.** I meant Offsite Basin 2 Curtis said OK

12. How does Basin 6 drain?

**Basin 6 has been removed and that area is now apart of Basin 5. Basin 5 will be conveyed in the same previous manner.**

RECEIVED
JUN 24 2014
LAND DEVELOPMENT SECTION

13. How does the well site drain? It appears to need a retaining wall to support 6 feet of fill but an existing wall is already in place.
    - **It drains south into South Sky Street.**

14. How does Hooded Sage Street drain to Pond E? Will there be fill in this area? Lot 32 at edge of pond shows a FG elev = 5466.9 along pond while the pond contour is 5457 at the rim in the same area.
    - **This street has been regraded with flows entering Sunhorn Rd and then ultimately into South Sky Street and into the SD network.**

15. Inlets need to be sized using the 6 hour storm.
    - **The 6-hr and 24-hr storm events produce the same Q. See 6-hr summary file in Appendix A.**

16. Hydrology prefers storm drains to be located in the middle of the street. Connecting to the corner of an inlet is not desirable.
    - **See revised storm drain.** (Curtis not sure about) but said OK.? need to ck

Pertaining to Grading Plan:

17. What are the boundaries of Unit 3A?
    - **The boundaries of Unit 3A are well beyond the limits of Valle Prado Units 1 and 2 and can't be readily shown on the Grading Plan.**

18. Woodmont Avenue needs to be included in the Grading Plan with the 54" SD extending past the edge of pavement.
    - **See grading/spot elevations and 48" SD for Woodmont Ave on grading plan.**

19. Some or all of Pond E should be constructed with this project and shown on the grading plan. Pond volume, WSEL, and emergency overflow should be shown as well. Show grade lines along Sunhorn Road adjacent to the pond.
    - **See Pond E info and Sunhorn Rd grading on revised grading plan.**

20. Hooded Sage Street should not extend into Pond easement, nor can a street be supported by a retaining wall.
    - **Hooded Sage St has been pulled back so that it doesn't extend into Tract OS-3. There is no retaining wall supporting Hooded Sage St. See revised grading plan for tie slopes.**

21. The Temporary Sedimentation Ponds located in Future Basins 1,2, 3, and 4 need to be shown on Grading Plan with the pond volume, WSEL, and emergency overflow indicated.
    - **The streets in Units 1 and 2 have capacity to accept the fully developed flows from these basins. The "sedimentation ponds" are 2' deep at the west end of the pavement for sediment to settle before undeveloped flows enter the street and are picked up by the downstream storm drain.**

RECEIVED
JUN 24 2014
LAND DEVELOPMENT SECTION

22. The berms near the Temporary Ponds need to be detailed and dimensioned.
    - **There are no berms on the revised grading plan**

23. Show street slopes. Some street slopes seem to be high.
    - **Street slopes have been added to the revised grading plan.**

24. Show contours in well site and beyond northeast boundary, inside of gas line easement.
    - **Existing contours for well site and w/in gas line easement are included in the revised grading plan.**

25. Spot elevations where Redbloom Road terminates do not tie into existing grades.
    - **See revised grading plan.**

26. A retaining wall is needed between Lot 4 and Lot 13 in Unit 2.
    - **See revised grading plan.**

27. Add Flow Line elevations at end of Sandmark where it connects to South Sky Street to show that inlets are in the sump condition.
    - **The sump at the east end of Sandmark has been removed. See revised grading plan.**

The Drainage Management Plan for Valle Prado Units 1 and 2 is attached. Please feel free to contact me at 823-1000 with questions or comments.

Sincerely,

Brian C. Patterson, P.E.
Project Engineer
Community Development and Planning

BCP/
Enclosures

cc: Scott Steffen, BHI

RECEIVED
JUN 24 2014
LAND DEVELOPMENT SECTION

Woodmont Ave Supplemental Analysis
7/9/2014

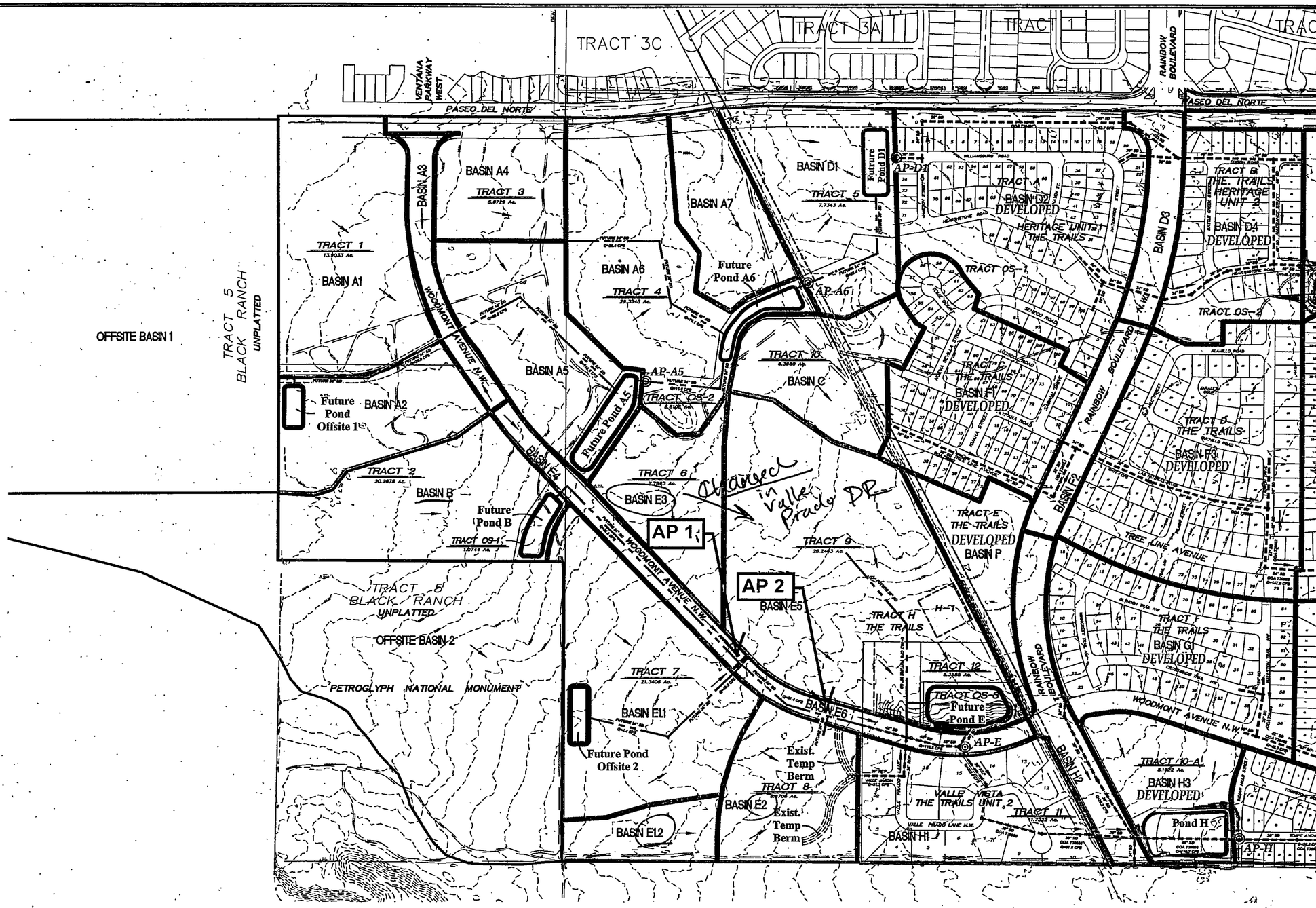
| | Drainage Master Plan | | Valle Prado Drainage Report | |
|---|---|---|---|---|
| Analysis Point | Q (cfs)* | Basins | Q (cfs)* | Basins |
| 1 | 87.4 (ID 74) | B, E1.1, E3, E4 and Offsite Basin 2 | 64.5 (ID 40) | B, E1.1, E4 and Offsite Basin 2 |
| 2 | 118.5 (ID 78) | Flow from AP 1 and Basins E1.2 & E2 | 95.7 (ID 41) | Flow from AP 1 and Basins E1.2 & E2 |

* The Q is from the AHYMO file with the AHYMO ID from the represted report noted in ().

Note:
The difference between the flows from AP 1 and 2 is because Basin E3 from the DMP is routed through the subdivision in the Valle Prado Report and not through Woodmont Ave as depicted in the DMP.

BRIAN C. PATTERSON
NEW MEXICO
20010
7-9-14
PROFESSIONAL ENGINEER

RECEIVED
JUL 10 2014
LAND DEVELOPMENT SECTION




RECEIVED
JUL 10 2014
LAND DEVELOPMENT SECTION

NOTES:

1. STORM DRAIN SIZES BASED ON 100-YR, 24-HR STORM FLOWS. FUTURE PROJECTS MAY BE REQUIRED TO INCREASE STORM DRAIN SIZE BASED ON 100-YR, 6-HR STORM FLOWS.
2. THE INTENDED FUTURE CONTRIBUTION FROM THE TRAILS UNIT 4 IS 20 CFS TO THE MAXIMUM DOWNSTREAM DISCHARGE OF 62 CFS IN UNIVERSE BLVD.

LEGEND

- ANALYSIS POINT
- EXISTING STORM DRAIN
- FLOW DIRECTION
- FUTURE DEVELOPED STORM DRAIN

N

200' 100' 0 200' 400'
SCALE: 200'

DATUM NAVD 1929

Thompson Engineering Consultants, Inc.
tecnm@yahoo.com
P.O. BOX 65760
ALBUQUERQUE, NM 87193
PHONE: (505) 271-2199
FAX: (505) 830-9246

# AMENDMENT TO DMP FOR THE TRAILS UNITS 1,2 AND 3

# PLATE 1

NAVID ASEF 9677 LICENSED PROFESSIONAL ENGINEER 4-14-14

# VALLE PRADO
# FULLY DEVELOPED BASIN MAP

RECEIVED
JUL 10 2014
LAND DEVELOPMENT SECTION

N

100 50 0 100
1" = 100'

LEGEND

- BASIN BOUNDARY
- FLOW ARROW
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- TEMPORARY BERM
- DMP BASIN BOUNDARY

| BASIN | AREA | Q (100YR-24HR) |
|---|---|---|
| | (AC) | (CFS) |
| BASIN 1 | 3.2 | 8.9 |
| BASIN 2 | 2.9 | 7.9 |
| BASIN 3 | 4.4 | 11.2 |
| BASIN 4 | 2.3 | 6.3 |
| BASIN 5 | 1.2 | 3.1 |
| FUTURE BASIN 1 | 6.9 | 19.9 |
| FUTURE BASIN 2 | 4.8 | 13.5 |
| FUTURE BASIN 3 | 3.8 | 10.8 |
| FUTURE BASIN 4 | 3.1 | 8.1 |
| OFFSITE BASIN 2 | 0.6 | 0.6 |
| OFFSITE BASIN 3 | 0.7 | 0.7 |
| OFFSITE BASIN 4 | 0.9 | 0.9 |
| OFFSITE BASIN 5 | 2.1 | 2 |
| OFFSITE BASIN WELL | 1.0 | 2.3 |
| OFFSITE BASIN 6 | 0.9 | 2.3 |
| **TOTAL** | **38.8** | **98.5** |

P:\20150013\CDP\Plans\General\Drainage Exhibits\20150013_FULLY DEVELOPED BASIN MAP.dwg
June 24, 2014 – 8:41am

Bohannan Huston
www.bhinc.com 800.877.5332

## Scott Steffen

**From:** Rick Beltramo <rbeltramo@gcinm.com>
**Sent:** Friday, June 20, 2014 5:20 PM
**To:** Curtis Cherne
**Cc:** Scott Steffen
**Subject:** FW: Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

Curtis,

I believe that the response form the Gas Co. is adequate for our grading plan approval.

Thanks. RLB.

Rick Beltramo
Director of Engineering
Galway Construction, Inc.
The Trails

---

**From:** Paula Mcafee [mailto:Paula.McAfee@nmgco.com]
**Sent:** Friday, June 20, 2014 2:06 PM
**To:** Rick Beltramo
**Cc:** Kevin Williams; Joe Ponce
**Subject:** RE: Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

Rick,

Thank you very much for your responses to my questions below. Since the walls that you are proposing for the 8 lots will be built on your land and not on NMGCO's ROW, and since no grade change or modifications to the ROW will occur during construction or after construction, I do not have any problems with your proposal.

And, as we discussed on the phone, since the potential for water drainage on our easement is minimal and is actually less than currently occurs, I do not have an issue with your wall drains.

Although your construction should not impinge on our ROW, I would request that you notify New Mexico Gas when construction activity will commence near our pipelines. NMGCO will monitor the construction and communicate any issues they may see. Please notify the following people when your construction nears:

Kevin Williams – 505-697-3105
Joe Ponce – 505-220-0305

Or me at the information below:

RECEIVED
JUN 24 2014
LAND DEVELOPMENT SECTION

*Paula McAfee*
*New Mexico Gas Company*
*505-697-3372 (o)*

## Cherne, Curtis

**From:** Rick Beltramo <rbeltramo@gcinm.com>
**Sent:** Friday, June 20, 2014 5:20 PM
**To:** Cherne, Curtis
**Cc:** Scott Steffen
**Subject:** FW: Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

Curtis,

I believe that the response form the Gas Co. is adequate for our grading plan approval.

Thanks. RLB.

Rick Beltramo
Director of Engineering
Galway Construction, Inc.
The Trails

---

**From:** Paula Mcafee [mailto:Paula.McAfee@nmgco.com]
**Sent:** Friday, June 20, 2014 2:06 PM
**To:** Rick Beltramo
**Cc:** Kevin Williams; Joe Ponce
**Subject:** RE: Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

Rick,

Thank you very much for your responses to my questions below. Since the walls that you are proposing for the 8 lots will be built on your land and not on NMGCO's ROW, and since no grade change or modifications to the ROW will occur during construction or after construction, I do not have any problems with your proposal.

And, as we discussed on the phone, since the potential for water drainage on our easement is minimal and is actually less than currently occurs, I do not have an issue with your wall drains.

Although your construction should not impinge on our ROW, I would request that you notify New Mexico Gas when construction activity will commence near our pipelines. NMGCO will monitor the construction and communicate any issues they may see. Please notify the following people when your construction nears:

Kevin Williams – 505-697-3105
Joe Ponce – 505-220-0305

Or me at the information below:

*Paula McAfee*
*New Mexico Gas Company*
*505-697-3372 (o)*
*505-264-3604 (c)*

*paula·mcafee@nmgco·com*

---

**From:** Rick Beltramo [mailto:rbeltramo@gcinm.com]
**Sent:** Friday, June 13, 2014 4:33 PM
**To:** Paula Mcafee
**Subject:** RE: Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

Paula,

I have attached a new exhibit. This exhibit includes the added design survey information including topography of the gas line easement. I have responded to your questions in red below. I have also added more information to the plan for you to consider.

If possible I would like to call you Monday and discuss this new information and the responses to your questions. Ultimately I would like to obtain a letter form you stating that you approve of our proposed plan.

Thank you.

Rick Beltramo
Director of Engineering
Galway Construction, Inc.

---

**From:** Paula Mcafee [mailto:Paula.McAfee@nmgco.com]
**Sent:** Tuesday, June 10, 2014 2:18 PM
**To:** Rick Beltramo
**Subject:** FW: Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

---

**From:** Paula Mcafee
**Sent:** Tuesday, June 10, 2014 2:16 PM
**To:** 'beltramo@gcinm.com'
**Cc:** Brandon Kauffman
**Subject:** RE: Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

Mr. Beltramo,

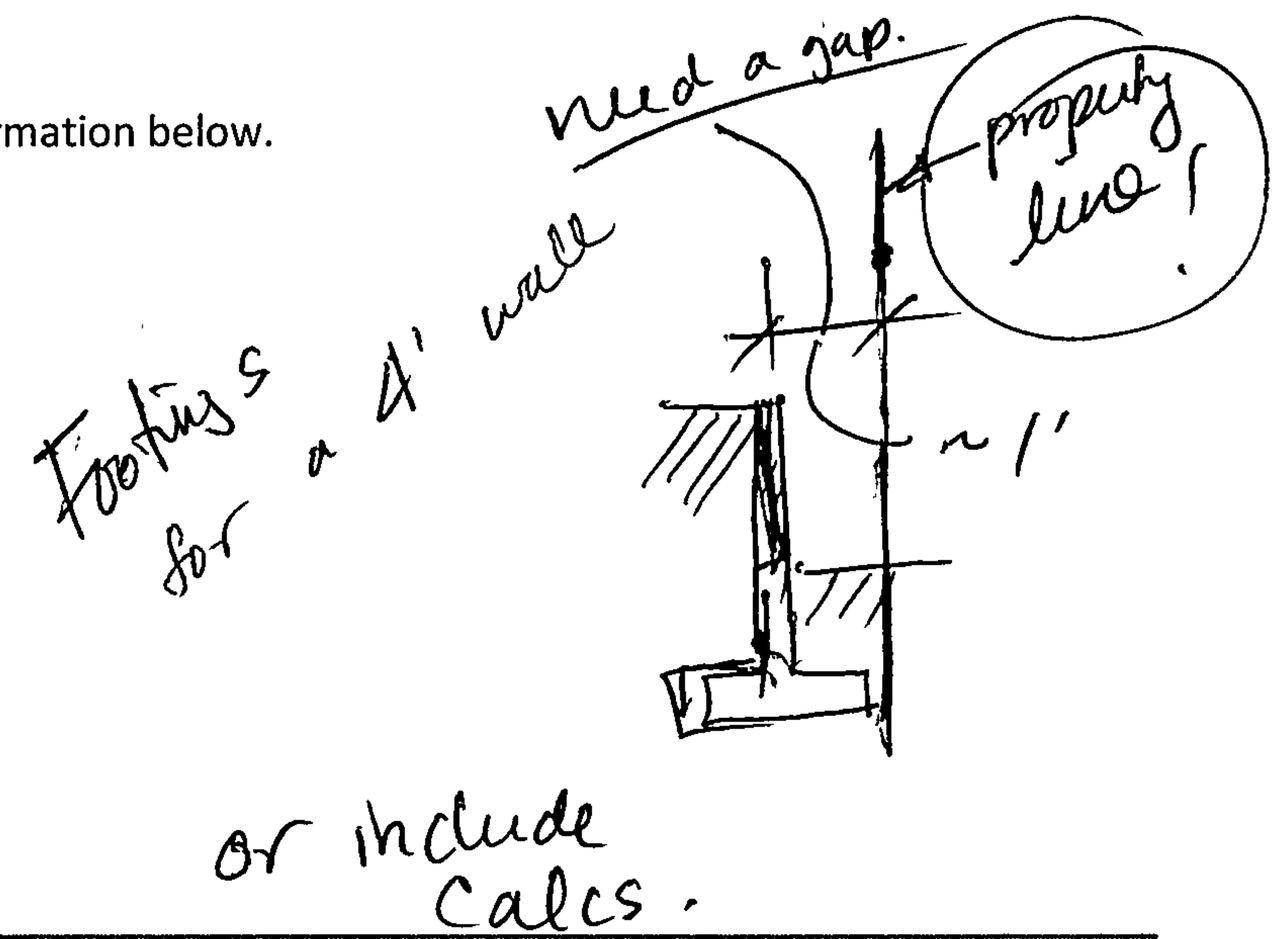
My name is Paula McAfee and I am in the Gas Transmission group here at New Mexico Gas Company. I have a few questions regarding your proposal. First off I was trying to figure out the grading plan and I see many proposed spot elevations but not existing. With respect to our 50' easement, how much grade change will there be for all of the lots that will back up to our transmission lines? So far I see 8 lots.
RESPONSE: The exhibit has been modified to include the new design survey, including the Gas Easement topography. At each lot I added the existing ground elevations at the easement, interpolated from the design survey. As it stands we will be matching the grades at the Gas Easement. The CMU block wall/ Retaining wall will make the adjustment to the proposed grades within the subdivision. Our wall will be constructed on our property and not on the Gas Easement. Therefore, no grade change. Yes, only 8 lots touch the Gas Easement. However, in between the 8 lots is an open space tract. That too shall match the existing Gas Easement grades.

Also, you are requesting drainage onto our easement via "wall drains" from these backyards. Do you have a drainage plan that shows existing and future drainage flows?
RESPONSE: I don't have a specific analysis of the flow across the Gas Easement. In summary, over 500 acres of undeveloped land drained across the easement. Now, The Trails will intercept all of that flow. The only flow crossing the easement will be form the backyards only of lots backing up to the Easement. I estimate the total runoff flow rate per back yard to be 0.1 cfs. By the way I am a civil engineer and have much experience in hydrology. Even the open space tract we are proposing to collect all of that flow and pond onsite.

Also, please be aware that we require NMGCO personnel to be present for any disturbance on these transmission rights of ways. These lines are high pressure transmission lines and require increased attention for safety concerns.
RESPONSE: The only grading on the Gas Easement itself would be or the purpose of making the Easement a usable trail system with a gravel surface. Grading would be minimal. Prior to accessing your Easement or construction we would obtain any approvals, permits, license agreements necessary and coordinate a time where Gas Co. personal can be onsite for the work.

Thank you for the information. I can be reached at the information below.

need a gap.




*Paula McAfee*
*New Mexico Gas Company*
*505-697-3372 (o)*
*505-264-3604 (c)*
*paula·mcafee@nmgco·com*

---

**From:** Jenniffer L. DeGreeff
**Sent:** Tuesday, June 10, 2014 9:25 AM
**To:** Paula Mcafee; Brandon Kauffman
**Cc:** Joe Herrera; Mark 'Pepe' Bouchard; Peter Ford
**Subject:** Encroachment agreement needed: Atrisco ML: Valle Prado Grading Plan Exhibit

Looks like this is in need of an encroachment agreement. In map 11n2e16a North of Woodmont & Rainbow intersection near MP 129 on the Atrisco mainlines. Can you guys work with Mr. Beltramo? Looks like he has set an aggressive timeline for completion.

Thanks,
Jenni

---

**From:** Rick Beltramo [mailto:rbeltramo@gcinm.com]
**Sent:** Tuesday, June 10, 2014 8:55 AM
**To:** Joe Herrera
**Subject:** FW: Valle Prado Grading Plan Exhibit

Joe,

**I will be at the city DRB hearing tomorrow**. I expect final comments. I would like to have approval in 2 weeks. Can I expect comments form the Gas Co. soon?

---

**From:** Rick Beltramo
**Sent:** Thursday, June 05, 2014 8:29 AM
**To:** 'Joe Herrera'
**Subject:** RE: Valle Prado Grading Plan Exhibit

Joe,

See if this works. If not, I will need to have Scott at BHI send the files.

RLB.

---

**From:** Joe Herrera [mailto:Joe.Herrera@nmgco.com]
**Sent:** Thursday, June 05, 2014 6:57 AM
**To:** Rick Beltramo
**Cc:** JL Murtagh
**Subject:** RE: Valle Prado Grading Plan Exhibit

Rick can you send me an AutoCAD file for the site so I can get on our GIS system. Thanks.

*Joe Herrera*
Project Manager-Gas Operations
New Mexico Gas Company-MS RR01
1109 Rio Rancho Blvd SE
Rio Rancho, NM 87124
Office - (505)891-6995
Cell - (505)401-7642
Fax - (505)896-8175
mailto:joe.herrera@nmgco.com

*Change is the Law of Life, and those who look only to the past or present are certain to miss the Future.*
*John F. Kennedy*

---

**From:** Rick Beltramo [mailto:rbeltramo@gcinm.com]
**Sent:** Wednesday, June 04, 2014 7:19 PM
**To:** Joe Herrera
**Cc:** JL Murtagh
**Subject:** Valle Prado Grading Plan Exhibit

Joe,

We are working on our next project at the Trails, Valle Prado. Valle Prado is a 60 lot subdivision to be constructed in 2 phases, units 1 and 2. The attached exhibit is the preliminary plat grading plan. Both Unit s 1 and 2 have lots that abut to the your gas line easement.

We would like the ability to:

1) Build a retaining wall next to, but not on the easement.

2) In some limited areas, slope grade onto the easement.
3) Allow backyards that are adjacent to the easement to be able to drain across the easement (back yard area drainage only).
4) Allow open space tract to continue to drain across easement, but with a smaller drainage area and therefore smaller flow rate.
5) Allow us to construct a pedestrian trail from Valle Prado to the existing park on the east side of the easement.
6) Allow the easement to be graded and graveled and used as a pedestrian trail.

Thanks. RLB.

Rick Beltramo
Director of Engineering
Galway Construction, Inc.
The Trails, LLC.

# CITY OF ALBUQUERQUE
## PLANNING DEPARTMENT

### HYDROLOGY DEVELOPMENT SECTION
DEVELOPMENT REVIEW BOARD MEMO

**DRB PROJECT NO: 1003445** **AGENDA ITEM NO: 6**

**SUBJECT:**

Site Plan for Building Permit

**ENGINEERING COMMENTS:**

The drainage plan shows a berm in the location of the sidewalk that leads to Vista Fuente. This should be addressed with the Building Permit submittal.

A recorded SIA with financial guarantees is required for site plan signature.

**SIGNED**:

Curtis Cherne
Hydrology Section
City Engineer Designee
AMAFCA Designee
924-3986

**DATE**: 6-25-14

wait to Review until site/lots are approved by Jack.

Jack reviewed quickly - looks ok RTH.

# City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNITS 1 AND 2 Building Permit #: _____ City Drainage #: C09D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: TRACTS 9 AND 0S-3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: BRIAN PATTERSON

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: BPATTERSON@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL
- x DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL G & D PLAN
- X GRADING PLAN
- ___ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ___ ENGINEER'S CERT (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERT (TCL)
- ___ ENGINEER'S CERT (DRB SITE PLAN)
- ___ ENGINEER'S CERT (ESC)
- ___ SO-19
- ___ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- ___ SIA/FINANCIAL GUARANTEE RELEASE
- X PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D APPROVAL
- ___ S. DEV. FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- X FINAL PLAT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM)
- ___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- X GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ GRADING CERTIFICATION
- ___ SO-19 APPROVAL
- ___ ESC PERMIT APPROVAL
- ___ ESC CERT. ACCEPTANCE
- ___ OTHER (SPECIFY)

RECEIVED JUN 24 2014 LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes ___ No ___ Copy Provided

DATE SUBMITTED: 6-24-14 By: BRIAN PATTERSON

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

# Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

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

visda/
call Prado

## CLIENT/COURIER TRANSMITTAL

**To:** Rita Harmon
Hydrology Section
City of Albuquerque
600 2nd St NW

**Requested by:** Scott Steffen

**Date:** August 13, 2014

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

**Phone:** 924-3695
**Job No.:** 20150013.010.01.cdp

**Job Name:** Valle Prado Unit 1

**DELIVERY VIA**

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

**PICK UP**

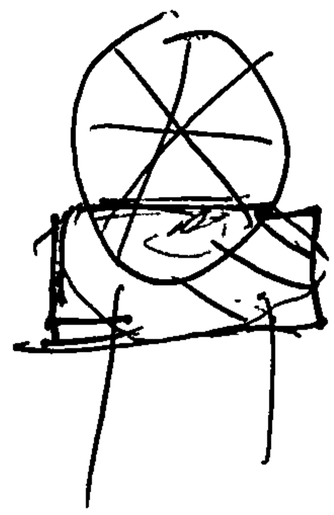
Item: _____

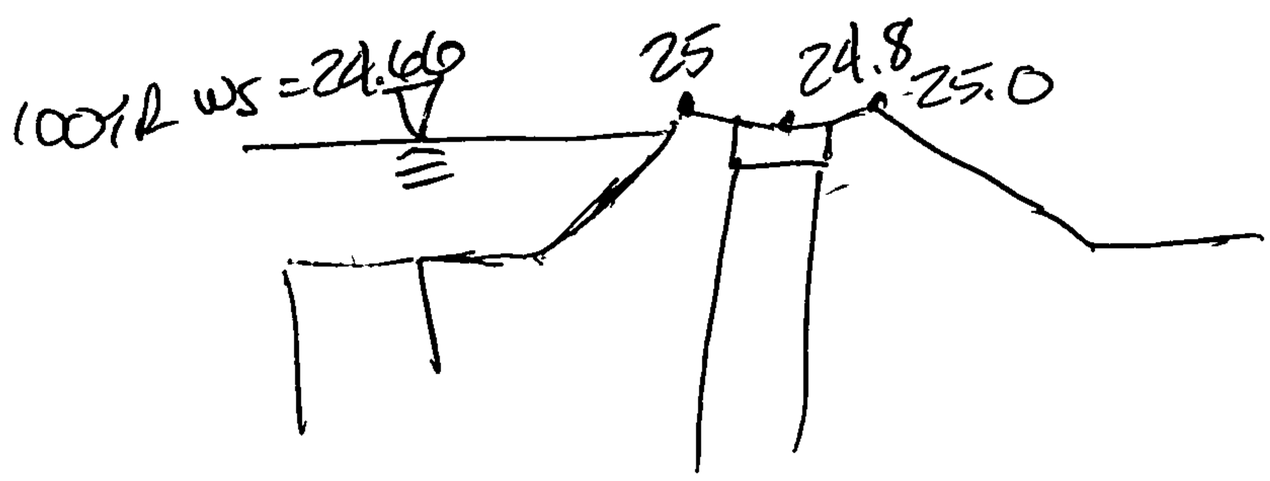
| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Pond H modifications |

**COMMENTS / INSTRUCTIONS**

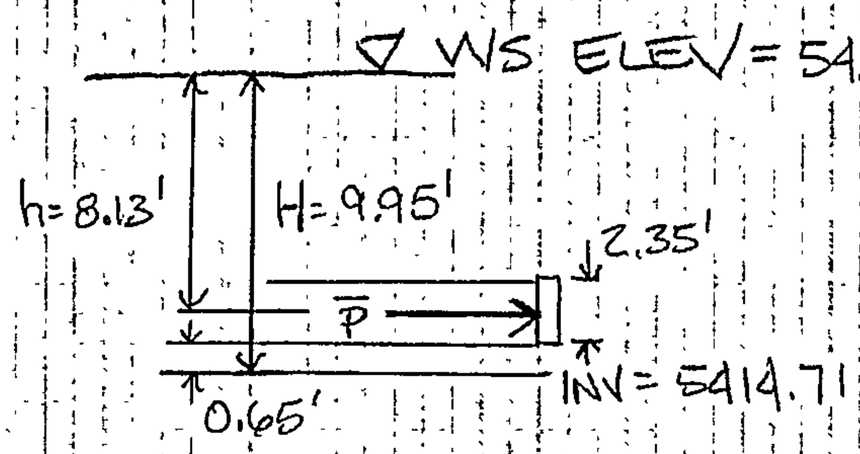
RECEIVED
AUG 13 2014
LAND DEVELOPMENT SECTION

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




100YR WS = 24.69
25
24.8
25.0

# FORCE ON POND H ORIFICE PLATE:




$A_{PIPE} = \pi r^2 = \pi(1.5)^2 = 7.07$ SF

$A_{ORIFICE} = 1.14$ SF

$A_{PLATE} = A_{PIPE} - A_{ORIFICE} = 5.93$ SF

$\bar{p} = h \times \gamma_{H_2O} = 8.13' \times 62.4$ lb/ft$^3$

$= 507$ lb/ft$^2$

$F = \bar{p} A_{PLATE} = 507$ lb/ft$^2 \times 5.93$ SF

$F = 3{,}006$ lbs

Bohannan Huston

PROJECT NAME Vale Prado U1 SHEET 1 OF 1

PROJECT NO. 20150013 BY SJS DATE 8/11/14

SUBJECT Pond H CH'D DATE

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

COMPUTE ORIFICE AREA

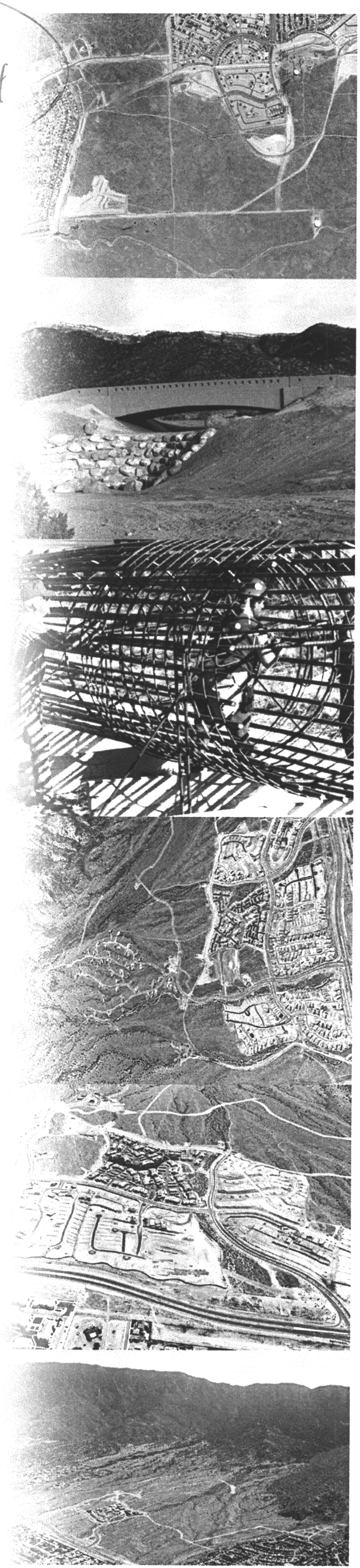
Q=26.8 CFS Max WSEL = 5421.90 Invert=5411.10 R=1.5' (36' Diameter pipe)

| Angle (degrees) | Angle (radians) | a (ft) | b (ft) | e (ft) | 2/3 e (ft) | A1 (sq ft) | A2 (sq ft) | 1/2 Orifice (sq ft) | A Total (sq ft) | Max WSEL | Invert Elevation | H (ft) | V (ft/s) | Q (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55.660 | 0.971 | 0.8462 | 1.2386 | 0.65 | 0.44 | 0.52 | 1.09 | 0.57 | 1.14 | 5421.90 | 5411.10 | 10.36 | 23.58 | 26.81 |

Approved
7/14/2014

# DRAINAGE REPORT
# FOR
# VALLE PRADO
# AT
# THE TRAILS UNITS 3A SUBDIVISION

UNITS 1 & 2
& master.



**JUNE 2014**

RECEIVED
JUN 24 2014
LAND DEVELOPMENT SECTION

**Prepared for:**

**Woodmont Paseo, LLC**

**6300 Riverside Plaza Lane. Suite 160**

**Bohannan Huston**

Engineering

Spatial Data

Advanced Technologies

# DRAINAGE REPORT
# FOR
# VALLE PRADO AT THE TRAIL UNIT 3A
# SUBDIVISION

**JUNE 23, 2014**

Prepared for:

**WOODMONT PASEO, LLC**
**6300 RIVERSIDE PLAZA LANE, SUITE 160**
**ALBUQUERQUE, NM 87120**

Prepared by:

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

Prepared By:

6-24-14

Brian C. Patterson, P.E. Date
Project Engineer

BRIAN C. PATTERSON
NEW MEXICO
20010
PROFESSIONAL ENGINEER

Bohannan Huston

P:\20150013\CDP\Reports\Valle Prado @ The Trails Units 3A DMP.docx

## TABLE OF CONTENTS

**I. PURPOSE** ..... **1**

**II. CONCEPTS AND METHODOLOGIES** ..... **1**

**III. SITE LOCATION AND CHARACTERISTICS** ..... **1**

**IV. DEVELOPED HYDRAULIC AND HYDROLOGIC CONDITIONS** ..... **1**

A. Offsite Flows ..... 2

B. Onsite Flows ..... 2

**V. CONCLUSION** ..... **3**

## APPENDICES

APPENDIX A – DEVELOPED CONDITIONS AHYMO SUMMARY, OUTPUT, AND INPUT FILES

APPENDIX B – STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

APPENDIX C – INROADS STORM DRAIN NETWORK FILE

APPENDIX D – POND CALCULATIONS

## EXHIBITS

EXHIBIT 1 – PRELIMINARY PLATS

EXHIBIT 2 – UNIT 1 & 2 BASIN MAP

EXHIBIT 3 – FULLY DEVELOPED BASIN MAP

EXHIBIT 4 – INLET AND STORM DRAIN NETWORK MAP

EXHIBIT 5 – GRADING PLAN

EXHIBIT 6 – SUPPLEMENTAL EXHIBITS FROM DMP

## I. PURPOSE

This report establishes a drainage management plan for Valle Prado Units 1 and 2 at the Trails Unit 3A. The proposed development consists of 61 single family detached residential lots on approximately 17 acres. This project is located within the Volcano Trails Sector Plan area, in northwest Albuquerque, east of Rainbow Blvd and north of Woodmont Avenue. Valle Prado Units 1 and 2 is in the Trails Units 1-3 Drainage Master Plan (DMP) area and has discharge of developed flows to an existing storm drain system that is in the Valle Vista Subdivision, just south of this proposed subdivision. The Trails drainage outfall is to the Boca Negra Dam through a storm drain in Universe Boulevard. Discharge to the Boca Negra Dam is limited by the Trails Universe storm drain capacity. Flows in excess of the storm drain capacity surge to detention ponds east of Universe Boulevard. This report is submitted in support of grading approval and preliminary plat approval by the DRB.

## II. CONCEPTS AND METHODOLOGIES

Drainage conditions were analyzed utilizing the 100-year, 24-hour storm event ($P_{60}$=1.84 in, $P_{360}$=2.20 in, $P_{1440}$=2.66 in), in accordance with the City of Albuquerque DPM. The use of the 24-hour storm event is consistent with the Trails Units 1-3 DMP. The Arid-lands Hydrologic Model (AHYMO) was utilized to determine peak flow rates for design of the storm drainage improvements within the project. The results are included in Appendix A. The storm drain inlets were sized using the 24-hour storm event (the 24-hour and 6-hour storm event produced the same Q). Street capacity and storm drain inlet calculations supporting this study are located in Appendix B.

## III. SITE LOCATION AND CHARACTERISTICS

Valle Prado Units 1 and 2 are currently undeveloped with grades ranging from one percent to three percent. The site generally slopes from west to east. It is bounded by Woodmont Avenue to the south, Rainbow Avenue to the east and undeveloped property to the north and west. Access to Valle Prado Units 1 and 2 will be from Woodmont Avenue and from Tree Line Avenue.

## IV. DEVELOPED HYDRAULIC AND HYDROLOGIC CONDITIONS

Valle Prado Units 1 and 2 is a proposed single-family residential development with 61 lots on 17 acres. Unit 1 consists of 32 lots on approximately 10 acres and Unit 2 consists of 29 lots on 7 acres. Proposed street and lot configurations are shown on the *Preliminary*

*Plat*, **Exhibit 1.** Valle Prado is encompassed by Tract 6 at the Trails Unit 3A, Tract 9 at the Trails Unit 3A and Tract OS-3, which is also represented by Basin E3, Basin E5 and a small portion of Basin C in the Trails Units 1-3 DMP.

The percent impervious land treatment for the proposed conditions is determined from Table A-5 of the DPM, Section 22.2. The cumulative percent impervious land treatment value used in the Trails DMP AHYMO analysis that encompasses Valle Prado area 44%. The Valle Prado percent impervious land treatment calculated in this report had a cumulative impervious land treatment value of 43%. Therefore the developed Q is less than the proposed developed Q from the DMP.

A. OFFSITE FLOWS

All offsite, upstream flows will be captured by Future Ponds A5 and A6 as described in the DMP. Plates (exhibits) from the DMP have been included in this submittal as supplemental information, see **Exhibit 6**. For detailed analysis of the offsite flows and future ponds, please see the DMP.

B. ONSITE FLOWS

Developed flows from Valle Prado Units 1 and 2 will be directed to the proposed Pond E (per DMP) where they will combine with future upstream flows from the storm drain network that is located within Woodmont Ave. These combined flows are described in **Appendix A**. For reference, see **Exhibits 2 and 3** for basin locations, **Exhibits 4 and 5** for the storm drain and inlet locations.

A plug will be installed to the existing 54" backbone storm drain that is located in Woodmont Ave just east of South Sky Street. This will allow the upstream flows in Woodmont Ave to be re-directed north where they will combine with developed flows from Valle Prado Units 1 and 2 and is described in greater detail below.

Basin 1 (8.9 cfs), Basin 2 (7.9 cfs), Basin 3 (11.2 cfs), Basin 4 (6.3 cfs), Basin 5 (~~1.2~~ 3.1 cfs), Offsite Basin 2 (0.6 cfs), Offsite Basin 3 (0.7 cfs), Offsite Basin 4 (0.9 cfs), Offsite Basin 5 (2.0 cfs) and Offsite Basin Well (2.3 cfs) are all basins within Valle Prado Units 1 and 2. Future Basin 1 (19.9 cfs), Future Basin 2 (13.5 cfs), Future Basin 3 (10.8 cfs) and Future Basin 4 (8.1 cfs) are future developed upstream basins that will impact Units 1 and 2, thus they have been included in all calculations related to Units 1 and 2. The total runoff from Valle Prado Units 1 and 2 (including future lots not included in Units 1 and 2) is 96.2 cfs. 98.5 (incl. well site) This is less than the Basin E3 and Basin E5 runoff (103.5 cfs) in the Trails Units 1-3 DMP.

vs. 6.08 in

0.44

Basins 1, 2, 3 & 5, Offsite Basin 3, Offsite Basin 4, Offsite Basin Well and Future Basins 1, 2 & 3 all drain to the proposed storm drain network located in South Sky Street, Red Bloom Road and Sandmark Road. This storm drain network combines with flows from the existing storm drain network in Woodmont Avenue and discharges into Pond E. Pond E has an available storage volume capacity of 6.4 ac-ft. and a maximum developed volume of 5.9 ac-ft. The first flush retention for the upstream basins that enter Pond E was calculated to need a volume of 1.3 ac-ft. This was done by calculating the cumulative impervious land treatment of the upstream basins (Basins E1.1, E1.2, E.2, E4 and E6 from the DMP as well as the basins listed in the beginning of the paragraph) for a %D of 47%. This is multiplied by 0.44" and then the corresponding area of 75.6 ac, which results in 1.3 ac-ft. Due to the existing infrastructure constraints, Pond E is able to achieve 0.9 ac-ft. of first flush volume, while having a maximum discharge of Q=21.2 cfs which is below that allowable discharge of Q=22.3 cfs as defined in the DMP. The maximum discharge from Pond E is accomplished by using a standpipe in the pond to control the outflow. Due to all of the upstream flows being conveyed through Pond E, the existing 12" orifice plate located at AP-E per the DMP that currently limits the developed flows downstream is not needed and shall be removed.

$\frac{1.3}{75.6} \times 12 = .21''$

A portion of Basin 4 and Future Basin 4 are intercepted by inlets located in Two Rock Road. These flows (Q=6.2 cfs) are conveyed north to an existing temporary pond. A temporary berm will be placed on the south side of the temporary pond to increase its capacity. In the future, this storm drain network will tie to an existing storm drain network located in Treeline Avenue. The remaining flows from Basin 4 and Future Basin 4 combine with flows from Offsite Basin 2 and enter a proposed retention pond that is located in Offsite Basin 2, just southeast of Two Rock Road.

In the interim condition, Valle Prado Unit 1, desiltation ponds will be placed just upstream of Red Bloom Road, Sandmark Road and South Sky St. These temporary ponds have been designed as a desiltation pond which will remove sedimentation before they enter the downstream streets.

## V. CONCLUSION

This report provides a detailed study of the developed runoff and street capacities for the proposed Valle Prado Units 1 and 2 at the Trails Unit 3A Subdivision. Included is the preliminary plat, basin map, grading plan, and all necessary hydrologic and hydraulic analyses. The proposed drainage plan for Valle Prado Units 1 and 2 can be safely conveyed by the existing and proposed improvements in this drainage plan. This drainage

plan maintains the overall drainage pattern of the area, is consistent with the Trails Units 1-3 DMP and allows for the safe management of storm runoff in the fully developed condition as well as interim conditions.

# APPENDICES

APPENDIX A: DEVELOPED CONDITIONS AHYMO SUMMARY, OUTPUT, AND INPUT FILES

APPENDIX B: STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

APPENDIX C: INROADS STORM DRAIN NETWORK FILE

APPENDIX D: POND CALCULATIONS

# APPENDIX A

# DEVELOPED CONDITIONS AHYMO SUMMARY, OUTPUT, AND INPUT FILES

Revised Appendix C for D.R.

NOTE → WOODMONT SD OBSOLETE - Replaced by REVISIONS ON NOV 13, + THEN ON NOV 19.

# City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNITS 1 AND 2 Building Permit #: _____ City Drainage #: C09D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: TRACTS 9 AND 0S-3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: BRIAN PATTERSON

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: BPATTERSON@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL G & D PLAN
____ GRADING PLAN
____ EROSION & SEDIMENT CONTROL PLAN (ESC)
____ ENGINEER'S CERT (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ ENGINEER'S CERT (TCL)
____ ENGINEER'S CERT (DRB SITE PLAN)
____ ENGINEER'S CERT (ESC)
____ SO-19
____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

____ SIA/FINANCIAL GUARANTEE RELEASE
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D APPROVAL
____ S. DEV. FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ CERTIFICATE OF OCCUPANCY (PERM)
____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ WORK ORDER APPROVAL
____ GRADING CERTIFICATION
____ SO-19 APPROVAL
____ ESC PERMIT APPROVAL
____ ESC CERT. ACCEPTANCE
X OTHER (SPECIFY) SUPPLEMENTAL SUBMITTAL

RECEIVED JUL 30 2014 LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 7-30-14 By: BRIAN PATTERSON

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

# Bohannan ▲ Huston

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

July 30, 2014

Ms. Rita Harmon, P.E.
City of Albuquerque
Planning Department
600 2nd Street NW
Albuquerque, NM 87103

Re: Supplemental Submittal for Valle Prado Units 1 and 2 – Revised Appendix C

Dear Ms. Harmon:

Per our conversations, this supplemental submittal for Valle Prado Units 1 and 2 is intended to provide the revised Appendix C. Appendix C has been revised to correctly indicated that SDP6 as a 48" SD pipe. Please feel free to contact me at 823-1000 with questions or comments.

Sincerely,

Brian C. Patterson, P.E.
Project Engineer
Community Development and Planning

BCP/
Enclosures

cc:

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION



**Engineering ▲**
**Spatial Data ▲**
**Advanced Technologies ▲**

Design Log

```
==================================================================
InRoads Storm & Sanitary Design Log

Drainage File:  P:\20150013\CDP\Control\Data\20150013sd.sdb

Design File:  P:\20150013\CDP\DESIGN\20150013_SD.DWG

Display Log:  P:\20150013\CDP\DESIGN\design.log

Date:  Friday, June 20, 2014 2:24:06 PM
==================================================================

Designing inlet IN17
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:     3.1000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:     3.1000 cfs               Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
             Spread:     6.9136 ft
    Depth in Gutter:     0.2452 ft          Assigned Bypass:        N/A

Designing pipe SDP17
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     3.1000 cfs              Flow From:   Upstream

             Status:      Fixed                      Slope:     0.0519 ft/ft
         Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
      Depth of Flow:     0.3640 ft             Flow Status:    Partial
     Critical Depth:     0.6600 ft                Capacity:    23.9383 cfs
           Velocity:     9.3220 ft/s
       Froude Number:    3.2382               Flow Regime: SuperCritical

Designing inlet IN18
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:     3.1000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:     6.2000 cfs               Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
             Spread:     1.6272 ft
    Depth in Gutter:     0.5842 ft          Assigned Bypass:        N/A

Designing pipe SDP18
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     6.2000 cfs              Flow From:   Upstream

             Status:      Fixed                      Slope:     0.0328 ft/ft
         Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
      Depth of Flow:     0.5250 ft             Flow Status:    Partial
     Critical Depth:     0.8800 ft                Capacity:    40.9856 cfs
           Velocity:     9.3996 ft/s
       Froude Number:    2.7105               Flow Regime: SuperCritical

Designing manhole SDMH8

  Results:
        Total Flow:     6.2000 cfs              Flow From:   Upstream

             Status:      Fixed
     Chamber Width:     4.0000 ft          Chamber Length:     4.0000 ft

Designing pipe SDP19

  Results:
        Total Flow:     6.2000 cfs              Flow From:   Upstream

             Status:      Fixed                      Slope:     0.0050 ft/ft
         Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
      Depth of Flow:     0.8640 ft             Flow Status:    Partial
     Critical Depth:     0.8800 ft                Capacity:    15.9965 cfs
           Velocity:     4.7633 ft/s
       Froude Number:    1.0369               Flow Regime:   Critical

Designing pipe dummy1
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    48.2000 cfs              Flow From: Injected Storm

             Status:      Fixed                      Slope:     0.0300 ft/ft
         Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
      Depth of Flow:     2.0000 ft             Flow Status:       Full
     Critical Depth:     2.0000 ft                Capacity:    39.1831 cfs
           Velocity:    15.3425 ft/s
       Froude Number:    0.0000               Flow Regime: Subcritical

Designing manhole SDMH9

  Results:
        Total Flow:    54.4000 cfs              Flow From:   Upstream
```

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

```
    Flow Downstream:    17.8000 cfs              Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
             Spread:     8.4005 ft
    Depth in Gutter:     0.2306 ft         Assigned Bypass:        N/A


Designing pipe SDP32
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    17.8000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0198 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     1.0690 ft             Flow Status:    Partial
    Critical Depth:     1.5200 ft                Capacity:    31.8345 cfs
          Velocity:    10.4052 ft/s
     Froude Number:     1.9823               Flow Regime: SuperCritical


   WARNING:  Pipe Too large for valid connection to inlet.
Designing inlet IN8
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     6.2000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:    6.2000 cfs              Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
             Spread:    10.8707 ft
    Depth in Gutter:     0.2833 ft         Assigned Bypass:        N/A


Designing pipe SDP39
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     6.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.2183 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.3600 ft             Flow Status:    Partial
    Critical Depth:     0.9600 ft                Capacity:    49.0820 cfs
          Velocity:    18.9366 ft/s
     Froude Number:     6.6172               Flow Regime: SuperCritical


Designing inlet IN7
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     6.2000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:    6.2000 cfs              Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
             Spread:    10.8679 ft
    Depth in Gutter:     0.2834 ft         Assigned Bypass:        N/A


Designing pipe SDP40
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     6.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0430 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.5470 ft             Flow Status:    Partial
    Critical Depth:     0.9600 ft                Capacity:    21.7900 cfs
          Velocity:    10.6114 ft/s
     Froude Number:     2.9446               Flow Regime: SuperCritical


Designing manhole SDMH16

  Results:
        Total Flow:    12.4000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     4.0000 ft         Chamber Length:     4.0000 ft


Designing pipe SDP38
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    12.4000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0678 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     0.6220 ft             Flow Status:    Partial
    Critical Depth:     1.2600 ft                Capacity:    58.8961 cfs
          Velocity:    14.8493 ft/s
     Froude Number:     3.9026               Flow Regime: SuperCritical


Designing manhole SDMH5

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     4.0000 ft         Chamber Length:     4.0000 ft


Designing pipe SDP5
```

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

```
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0510 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     1.1060 ft             Flow Status:    Partial
    Critical Depth:     1.8600 ft                Capacity:    51.0682 cfs
          Velocity:    16.9246 ft/s
      Froude Number:    3.1517                Flow Regime: SuperCritical


Designing manhole SDMH4

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     4.0000 ft          Chamber Length:     4.0000 ft


Designing pipe SDP4
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0401 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     1.1930 ft             Flow Status:    Partial
    Critical Depth:     1.8600 ft                Capacity:    45.3073 cfs
          Velocity:    15.4369 ft/s
      Froude Number:    2.7271                Flow Regime: SuperCritical


Designing manhole SDMH3

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     4.0000 ft          Chamber Length:     4.0000 ft


Designing pipe SDP3

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0124 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     2.0000 ft             Flow Status:       Full
    Critical Depth:     2.0000 ft                Capacity:    25.1673 cfs
          Velocity:     9.6130 ft/s
      Froude Number:    0.0000                Flow Regime: Subcritical


Designing inlet IN4
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.3000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:     7.3000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
            Spread:     2.2892 ft
   Depth in Gutter:     0.7958 ft         Assigned Bypass:        N/A


Designing pipe SDP16

  Results:
        Total Flow:     7.3000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0279 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.6740 ft             Flow Status:    Partial
    Critical Depth:     1.0400 ft                Capacity:    17.5454 cfs
          Velocity:     9.4650 ft/s
      Froude Number:    2.3233                Flow Regime: SuperCritical


Designing inlet IN3
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.3000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:     7.3000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
            Spread:     8.0398 ft
   Depth in Gutter:     0.3745 ft         Assigned Bypass:        N/A


Designing pipe SDP20
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     7.3000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.1533 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.4270 ft             Flow Status:    Partial
    Critical Depth:     1.0400 ft                Capacity:    41.1288 cfs
          Velocity:    17.5544 ft/s
      Froude Number:    5.5930                Flow Regime: SuperCritical
```



RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

```
Designing manhole SDMH14

  Results:
        Total Flow:    14.6000 cfs              Flow From:   Upstream

            Status:      Fixed
      Chamber Width:     4.0000 ft          Chamber Length:     4.0000 ft


Designing pipe SDP37
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    14.6000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0435 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     0.7630 ft             Flow Status:    Partial
    Critical Depth:     1.3700 ft                Capacity:    47.1811 cfs
          Velocity:    13.2340 ft/s
     Froude Number:     3.0991               Flow Regime: SuperCritical


Designing inlet IN6
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     5.3000 cfs              Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:     5.3000 cfs               Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
             Spread:    10.5787 ft
    Depth in Gutter:     0.2621 ft         Assigned Bypass:        N/A


Designing pipe SDP34

  Results:
        Total Flow:     5.3000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0208 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.6120 ft             Flow Status:    Partial
    Critical Depth:     0.8800 ft                Capacity:    15.1469 cfs
          Velocity:     7.8031 ft/s
     Froude Number:     2.0290               Flow Regime: SuperCritical


Designing inlet IN5
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     5.3000 cfs              Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:     5.3000 cfs               Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
             Spread:    10.5791 ft
    Depth in Gutter:     0.2621 ft         Assigned Bypass:        N/A


Designing pipe SDP35

  Results:
        Total Flow:     5.3000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0205 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.6140 ft             Flow Status:    Partial
    Critical Depth:     0.8800 ft                Capacity:    15.0379 cfs
          Velocity:     7.7693 ft/s
     Froude Number:     2.0164               Flow Regime: SuperCritical


Designing manhole SDMH15

  Results:
        Total Flow:    25.2000 cfs              Flow From:   Upstream

            Status:      Fixed
      Chamber Width:     4.0000 ft          Chamber Length:     4.0000 ft


Designing pipe SDP36

  Results:
        Total Flow:    25.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0051 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     2.0000 ft             Flow Status:       Full
    Critical Depth:     2.0000 ft                Capacity:    16.2150 cfs
          Velocity:     8.0214 ft/s
     Froude Number:     0.0000               Flow Regime: Subcritical


Designing manhole SDMH2

  Results:
        Total Flow:    55.4000 cfs              Flow From:   Upstream

            Status:      Fixed
      Chamber Width:     6.0000 ft          Chamber Length:     6.0000 ft
```

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

```
Designing pipe SDP29
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    55.4000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:    0.0450 ft/ft
        Pipe Width:    36.0000 in             Pipe Height:   36.0000 in
     Depth of Flow:     1.3030 ft             Flow Status:   Partial
    Critical Depth:     2.4100 ft                Capacity:  141.5240 cfs
          Velocity:    18.7926 ft/s
      Froude Number:    3.3294                Flow Regime: SuperCritical

Designing pipe SDP22
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    53.7000 cfs              Flow From: Injected Storm

            Status:      Fixed                      Slope:    0.0449 ft/ft
        Pipe Width:    30.0000 in             Pipe Height:   30.0000 in
     Depth of Flow:     1.4210 ft             Flow Status:   Partial
    Critical Depth:     2.3400 ft                Capacity:   86.9031 cfs
          Velocity:    18.6264 ft/s
      Froude Number:    3.0448                Flow Regime: SuperCritical

Designing manhole SDMH9

  Results:
        Total Flow:    53.7000 cfs              Flow From:   Upstream
            Status:      Fixed
     Chamber Width:     4.0000 ft          Chamber Length:    4.0000 ft

Designing pipe SDP8
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    53.7000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:    0.0792 ft/ft
        Pipe Width:    30.0000 in             Pipe Height:   30.0000 in
     Depth of Flow:     1.1980 ft             Flow Status:   Partial
    Critical Depth:     2.3400 ft                Capacity:  115.4195 cfs
          Velocity:    23.0779 ft/s
      Froude Number:    4.2176                Flow Regime: SuperCritical

Designing inlet IN1
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     5.4000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:    2.0000 ft
  Flow Downstream:      5.4000 cfs               Bypass To:    0.0000 cfs
      Percent Cap:    100.0000 %                 Capacity:    0.0000 cfs
            Spread:    15.3304 ft
  Depth in Gutter:      0.2122 ft         Assigned Bypass:       N/A

Designing pipe SDP21
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     5.4000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:    0.0743 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:   18.0000 in
     Depth of Flow:     0.4410 ft             Flow Status:   Partial
    Critical Depth:     0.8900 ft                Capacity:   28.6366 cfs
          Velocity:    12.4164 ft/s
      Froude Number:    3.8867                Flow Regime: SuperCritical

Designing pipe SDP18
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     5.4000 cfs              Flow From: Injected Storm

            Status:      Fixed                      Slope:    0.0743 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:   18.0000 in
     Depth of Flow:     0.4410 ft             Flow Status:   Partial
    Critical Depth:     0.8900 ft                Capacity:   28.6366 cfs
          Velocity:    12.4164 ft/s
      Froude Number:    3.8867                Flow Regime: SuperCritical

Designing manhole SDMH10

  Results:
        Total Flow:    64.5000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     6.0000 ft          Chamber Length:    6.0000 ft

Designing pipe SDP7
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    64.5000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:    0.0349 ft/ft
        Pipe Width:    48.0000 in             Pipe Height:   48.0000 in
     Depth of Flow:     1.3350 ft             Flow Status:   Partial
```



RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

```
     Critical Depth:     2.4200 ft                Capacity:   268.1574 cfs
           Velocity:    17.5423 ft/s
      Froude Number:     3.1342                Flow Regime: SuperCritical


Designing manhole SDMH7

  Results:
        Total Flow:    64.5000 cfs               Flow From:   Upstream

            Status:      Fixed
      Chamber Width:     6.0000 ft           Chamber Length:     6.0000 ft


Designing pipe SDP17
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    64.5000 cfs               Flow From:   Upstream

            Status:      Fixed                       Slope:     0.0537 ft/ft
        Pipe Width:    48.0000 in             Pipe Height:    48.0000 in
     Depth of Flow:     1.1930 ft             Flow Status:    Partial
     Critical Depth:    2.4200 ft                Capacity:   332.7718 cfs
           Velocity:    20.4846 ft/s
      Froude Number:     3.8958                Flow Regime: SuperCritical


Designing pipe tract7
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    31.2000 cfs               Flow From: Injected Storm

            Status:      Fixed                       Slope:     0.0338 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     1.2920 ft             Flow Status:    Partial
     Critical Depth:    1.8700 ft                Capacity:    41.5688 cfs
           Velocity:    14.5231 ft/s
      Froude Number:     2.4171                Flow Regime: SuperCritical


Designing manhole SDMH6

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed
      Chamber Width:     6.0000 ft           Chamber Length:     6.0000 ft


Designing pipe SDP6
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed                       Slope:     0.0535 ft/ft
        Pipe Width:    48.0000 in             Pipe Height:    48.0000 in
     Depth of Flow:     1.4690 ft             Flow Status:    Partial
     Critical Depth:    2.9600 ft                Capacity:   332.3646 cfs
           Velocity:    22.8495 ft/s
      Froude Number:     3.8672                Flow Regime: SuperCritical


Designing manhole SDMH12

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed
      Chamber Width:     6.0000 ft           Chamber Length:     6.0000 ft


Designing pipe SDP14
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed                       Slope:     0.0112 ft/ft
        Pipe Width:    48.0000 in             Pipe Height:    48.0000 in
     Depth of Flow:     2.3000 ft             Flow Status:    Partial
     Critical Depth:    2.9600 ft                Capacity:   152.1504 cfs
           Velocity:    12.7896 ft/s
      Froude Number:     1.6397                Flow Regime: SuperCritical


Designing pipe Valle vista

  Results:
        Total Flow:     6.5800 cfs               Flow From: Injected Storm

            Status:      Fixed                       Slope:     0.0087 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     0.7670 ft             Flow Status:    Partial
     Critical Depth:    0.9000 ft                Capacity:    21.0785 cfs
           Velocity:    5.9226 ft/s
      Froude Number:     1.3827                Flow Regime: SuperCritical


Designing manhole exSDMH1

  Results:
        Total Flow:   102.2800 cfs               Flow From:   Upstream

            Status:      Fixed
      Chamber Width:     8.0000 ft           Chamber Length:     8.0000 ft


Designing pipe SDP23
```

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

```
  Results:
        Total Flow:   102.2800 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0045 ft/ft
        Pipe Width:    54.0000 in             Pipe Height:    54.0000 in
     Depth of Flow:     2.9690 ft             Flow Status:    Partial
    Critical Depth:     2.9700 ft                Capacity:   132.3620 cfs
          Velocity:     9.1846 ft/s
      Froude Number:    1.0022                Flow Regime:   Critical

Designing inlet IN13
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.5000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:     7.5000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
            Spread:    17.1698 ft
   Depth in Gutter:     0.2414 ft         Assigned Bypass:        N/A

Designing pipe SDP26
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     7.5000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0526 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.5740 ft             Flow Status:    Partial
    Critical Depth:     1.0600 ft                Capacity:    24.0892 cfs
          Velocity:    12.0294 ft/s
      Froude Number:    3.2470                Flow Regime: SuperCritical

Designing inlet IN15
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.
   WARNING:  Pipe Too large for valid connection to inlet.

  Results:
       Gutter Flow:     3.4000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:    10.9000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
            Spread:     9.7794 ft
   Depth in Gutter:     0.2105 ft         Assigned Bypass:        N/A

Designing pipe SDP27
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    10.9000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.1374 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     0.4860 ft             Flow Status:    Partial
    Critical Depth:     1.1800 ft                Capacity:    83.8668 cfs
          Velocity:    18.4194 ft/s
      Froude Number:    5.5371                Flow Regime: SuperCritical

   WARNING:  Pipe Too large for valid connection to inlet.
Designing manhole SDMH11

  Results:
        Total Flow:   168.5800 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     8.0000 ft         Chamber Length:     8.0000 ft

Designing pipe SDP24
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:   168.5800 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0110 ft/ft
        Pipe Width:    54.0000 in             Pipe Height:    54.0000 in
     Depth of Flow:     3.0900 ft             Flow Status:    Partial
    Critical Depth:     3.7800 ft                Capacity:   206.4984 cfs
          Velocity:    14.4746 ft/s
      Froude Number:    1.5281                Flow Regime: SuperCritical

Designing inlet IN14
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.5000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:     7.5000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
            Spread:    17.1734 ft
   Depth in Gutter:     0.2414 ft         Assigned Bypass:        N/A

Designing pipe SDP28
   WARNING:  Full flow velocity is greater than maximum (10.0000)
```

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

```
  Results:
        Total Flow:     7.5000 cfs                Flow From:   Upstream

            Status:      Fixed                       Slope:     0.1111 ft/ft
        Pipe Width:    18.0000 in              Pipe Height:    18.0000 in
     Depth of Flow:     0.4710 ft              Flow Status:    Partial
    Critical Depth:     1.0600 ft                 Capacity:    35.0120 cfs
          Velocity:    15.7454 ft/s
      Froude Number:     4.7529                Flow Regime: SuperCritical


Designing inlet IN16
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.
   WARNING:  Pipe Too large for valid connection to inlet.

  Results:
       Gutter Flow:     3.4000 cfs                Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft              Inlet Width:     2.0000 ft
   Flow Downstream:   179.4800 cfs                Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
            Spread:     8.8491 ft
    Depth in Gutter:    0.2235 ft          Assigned Bypass:        N/A


Designing pipe SDP25

  Results:
        Total Flow:   179.4800 cfs                Flow From:   Upstream

            Status:      Fixed                       Slope:     0.0040 ft/ft
        Pipe Width:    60.0000 in              Pipe Height:    60.0000 in
     Depth of Flow:     5.0000 ft              Flow Status:        Full
    Critical Depth:     5.0000 ft                 Capacity:   164.7184 cfs
          Velocity:     9.1408 ft/s
      Froude Number:     0.0000                Flow Regime: Subcritical

   WARNING:  Pipe Too large for valid connection to inlet.


HGL/EGL Computations:

  Table A:
```

| Struct_ID | D | Q | L | V | d | dc | V^2/2g | Sf | Dn_Soffit | EGLdn | HGLdn | Tot_Loss | EGLup | HGLup | Rim_Elev. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (in) | (cfs) | (ft) | (ft/s) | (ft) | (ft) | (ft) | (ft/ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) |
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | 5449.00 | - |
| SDP25 | 60 | 179.48 | 76.79 | 9.14 | - | - | 1.30 | 0.0047 | 5448.90 | 5450.30 | 5449.00 | 0.36 | 5450.66 | 5449.36 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.66 | 5449.36 | 0.32 | 5450.98 | 5449.68 | 5452.43 |
| SDP24 | 54 | 168.58 | 11.31 | 10.60 | - | - | 1.75 | 0.0073 | 5448.70 | 5450.98 | 5449.68 | 0.08 | 5451.06 | 5449.32 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.06 | 5449.32 | 0.72 | 5451.78 | 5450.04 | 5452.75 |
| SDP23 | 54 | 102.28 | 96.07 | 6.43 | - | - | 0.64 | 0.0027 | 5448.86 | 5451.78 | 5450.04 | 0.26 | 5452.04 | 5451.40 | - |
| exSDMH1 | - | - | - | - | - | - | - | - | - | 5452.04 | 5451.40 | 0.54 | 5452.58 | 5451.94 | 5452.15 |
| SDP14 | 48 | 95.70 | 211.12 | 7.62 | - | - | 0.90 | 0.0044 | 5448.76 | 5452.58 | 5451.94 | 0.94 | 5453.52 | 5452.62 | - |
| SDMH12 | - | - | - | - | - | - | - | - | - | 5453.52 | 5452.62 | 0.09 | 5453.62 | 5452.71 | 5457.54 |
| SDP6 | 48 | 95.70 | 191.00 | 22.85 | - | - | 8.11 | 0.0044 | 5451.15 | 5453.62 | 5452.71 | - | 5466.62 | 5458.51 | - |
| SDMH6 | - | - | - | - | - | - | - | - | - | 5466.62 | 5458.51 | - | 5466.62 | 5458.51 | 5466.56 |
| SDP17 | 48 | 64.50 | 218.91 | 20.48 | 1.19 | 2.42 | 6.52 | - | 5461.14 | 5465.03 | 5458.51 | - | 5476.26 | 5469.74 | - |
| SDMH7 | - | - | - | - | - | - | - | - | - | 5476.26 | 5469.74 | - | 5476.26 | 5469.74 | 5476.70 |
| SDP7 | 48 | 64.50 | 113.96 | 17.54 | 1.33 | 2.42 | 4.78 | - | 5472.65 | 5474.77 | 5469.98 | - | 5478.53 | 5473.74 | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5478.53 | 5473.74 | - | 5478.53 | 5473.74 | 5481.96 |
| SDP8 | 30 | 53.70 | 72.29 | 23.08 | 1.20 | 2.34 | 8.28 | - | 5475.01 | 5482.02 | 5473.74 | - | 5487.29 | 5479.02 | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | 5487.29 | 5479.02 | - | 5487.29 | 5479.02 | 5484.73 |
| SDP22 | 30 | 53.70 | 178.48 | 18.63 | 1.42 | 2.34 | 5.39 | - | 5480.41 | 5484.72 | 5479.33 | - | 5492.64 | 5487.24 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5450.66 | 5449.36 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.66 | 5449.36 | 0.08 | 5450.74 | 5449.44 | 5452.43 |
| SDP28 | 18 | 7.50 | 20.13 | 4.24 | - | - | 0.28 | 0.0051 | 5449.43 | 5450.74 | 5449.44 | 0.10 | 5450.84 | 5450.56 | - |
| IN14 | - | - | - | - | - | - | - | - | - | 5450.84 | 5450.56 | - | 5450.84 | 5450.56 | 5452.93 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.06 | 5449.32 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.06 | 5449.32 | 0.37 | 5451.43 | 5449.69 | 5452.75 |
| SDP29 | 36 | 55.40 | 74.60 | 7.84 | - | - | 0.95 | 0.0069 | 5447.36 | 5451.43 | 5449.69 | 0.51 | 5451.95 | 5450.99 | - |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5451.95 | 5450.99 | 0.19 | 5452.13 | 5451.18 | 5454.09 |
| SDP3 | 24 | 30.20 | 97.93 | 9.61 | - | - | 1.44 | 0.0178 | 5449.50 | 5452.13 | 5451.18 | 1.75 | 5453.88 | 5452.44 | - |
| SDMH3 | - | - | - | - | - | - | - | - | - | 5453.88 | 5452.44 | 0.74 | 5454.62 | 5453.18 | 5455.53 |



RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SDP4 | 24 | 30.20 | 113.87 | 9.61 | - | - | 1.44 | 0.0178 | 5450.75 | 5454.62 | 5453.18 | 2.03 | 5456.65 | 5455.21 |
| - | | | | | | | | | | | | | | |
| SDMH4 | - | - | - | - | - | - | - | - | - | 5456.65 | 5455.21 | 0.52 | 5457.17 | 5455.73 |
| 5459.00 | | | | | | | | | | | | | | |
| SDP5 | 24 | 30.20 | 188.17 | 16.92 | - | - | 4.45 | 0.0178 | 5455.23 | 5457.17 | 5455.73 | - | 5468.16 | 5463.71 |
| - | | | | | | | | | | | | | | |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5468.16 | 5463.71 | - | 5468.16 | 5463.71 |
| 5467.07 | | | | | | | | | | | | | | |
| SDP32 | 24 | 17.80 | 55.56 | 10.41 | 1.07 | 1.52 | 1.68 | - | 5464.70 | 5465.45 | 5463.77 | - | 5466.51 | 5464.83 |
| - | | | | | | | | | | | | | | |
| IN11 | - | - | - | - | - | - | - | - | - | 5466.51 | 5464.83 | - | 5466.51 | 5464.83 |
| 5467.76 | | | | | | | | | | | | | | |
| SDP31 | 24 | 8.90 | 24.36 | 12.18 | 0.57 | 1.06 | 2.30 | - | 5465.76 | 5467.13 | 5464.83 | - | 5467.87 | 5465.57 |
| - | | | | | | | | | | | | | | |
| IN12 | - | - | - | - | - | - | - | - | - | 5467.87 | 5465.57 | - | 5467.87 | 5465.57 |
| 5469.00 | | | | | | | | | | | | | | |
| SDP30 | 18 | 5.50 | 13.60 | 15.01 | 0.39 | 0.90 | 3.50 | - | 5466.50 | 5469.07 | 5465.57 | - | 5470.56 | 5467.06 |
| - | | | | | | | | | | | | | | |
| IN10 | - | - | - | - | - | - | - | - | - | 5470.56 | 5467.06 | - | 5470.56 | 5467.06 |
| 5470.17 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.06 | 5449.32 |
| - | | | | | | | | | | | | | | |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.06 | 5449.32 | 0.32 | 5451.39 | 5449.64 |
| 5452.75 | | | | | | | | | | | | | | |
| SDP27 | 24 | 10.90 | 41.07 | 3.47 | - | - | 0.19 | 0.0023 | 5446.36 | 5451.39 | 5449.64 | 0.10 | 5451.48 | 5451.30 |
| - | | | | | | | | | | | | | | |
| IN15 | - | - | - | - | - | - | - | - | - | 5451.48 | 5451.30 | 0.16 | 5451.65 | 5451.46 |
| 5453.15 | | | | | | | | | | | | | | |
| SDP26 | 18 | 7.50 | 20.03 | 4.24 | - | - | 0.28 | 0.0051 | 5450.65 | 5451.65 | 5451.46 | 0.10 | 5451.75 | 5451.47 |
| - | | | | | | | | | | | | | | |
| IN13 | - | - | - | - | - | - | - | - | - | 5451.75 | 5451.47 | - | 5451.75 | 5451.47 |
| 5453.36 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5452.04 | 5451.40 |
| - | | | | | | | | | | | | | | |
| exSDMH1 | - | - | - | - | - | - | - | - | - | 5452.04 | 5451.40 | 0.17 | 5452.21 | 5451.57 |
| 5452.15 | | | | | | | | | | | | | | |
| Valle vista | 24 | 6.58 | 31.65 | 2.09 | - | - | 0.07 | 0.0008 | 5446.76 | 5452.21 | 5451.57 | 0.03 | 5452.24 | 5452.17 |
| - | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5466.62 | 5458.51 |
| - | | | | | | | | | | | | | | |
| SDMH6 | - | - | - | - | - | - | - | - | - | 5466.62 | 5458.51 | - | 5466.62 | 5458.51 |
| 5466.56 | | | | | | | | | | | | | | |
| tract7 | 24 | 31.20 | 31.45 | 14.52 | 1.29 | 1.87 | 3.28 | - | 5459.04 | 5461.79 | 5458.51 | - | 5462.57 | 5459.29 |
| - | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5478.53 | 5473.74 |
| - | | | | | | | | | | | | | | |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5478.53 | 5473.74 | - | 5478.53 | 5473.74 |
| 5481.96 | | | | | | | | | | | | | | |
| SDP21 | 18 | 5.40 | 30.86 | 12.42 | 0.44 | 0.89 | 2.40 | - | 5477.91 | 5479.25 | 5476.85 | - | 5481.17 | 5478.78 |
| - | | | | | | | | | | | | | | |
| IN1 | - | - | - | - | - | - | - | - | - | 5481.17 | 5478.78 | - | 5481.17 | 5478.78 |
| 5482.34 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5478.53 | 5473.74 |
| - | | | | | | | | | | | | | | |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5478.53 | 5473.74 | - | 5478.53 | 5473.74 |
| 5481.96 | | | | | | | | | | | | | | |
| SDP18 | 18 | 5.40 | 11.04 | 12.42 | 0.44 | 0.89 | 2.40 | - | 5477.91 | 5479.25 | 5476.85 | - | 5479.84 | 5477.45 |
| - | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.95 | 5450.99 |
| - | | | | | | | | | | | | | | |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5451.95 | 5450.99 | 0.31 | 5452.25 | 5451.30 |
| 5454.09 | | | | | | | | | | | | | | |
| SDP36 | 24 | 25.20 | 63.39 | 8.02 | - | - | 1.00 | 0.0124 | 5449.50 | 5452.25 | 5451.30 | 0.79 | 5453.04 | 5452.04 |
| - | | | | | | | | | | | | | | |
| SDMH15 | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 | 0.37 | 5453.41 | 5452.41 |
| 5454.87 | | | | | | | | | | | | | | |
| SDP37 | 24 | 14.60 | 275.54 | 13.23 | - | - | 2.72 | 0.0042 | 5449.90 | 5453.41 | 5452.41 | - | 5463.18 | 5460.46 |
| - | | | | | | | | | | | | | | |
| SDMH14 | - | - | - | - | - | - | - | - | - | 5463.18 | 5460.46 | - | 5463.18 | 5460.46 |
| 5464.26 | | | | | | | | | | | | | | |
| SDP16 | 18 | 7.30 | 23.64 | 9.47 | 0.67 | 1.04 | 1.39 | - | 5461.30 | 5461.87 | 5460.47 | - | 5462.47 | 5461.08 |
| - | | | | | | | | | | | | | | |
| IN4 | - | - | - | - | - | - | - | - | - | 5462.47 | 5461.08 | - | 5462.47 | 5461.08 |
| 5464.44 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5468.16 | 5463.71 |
| - | | | | | | | | | | | | | | |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5468.16 | 5463.71 | - | 5468.16 | 5463.71 |
| 5467.07 | | | | | | | | | | | | | | |
| SDP38 | 24 | 12.40 | 67.60 | 14.85 | 0.62 | 1.26 | 3.43 | - | 5464.70 | 5467.13 | 5463.71 | - | 5471.05 | 5467.62 |
| - | | | | | | | | | | | | | | |
| SDMH16 | - | - | - | - | - | - | - | - | - | 5471.05 | 5467.62 | - | 5471.05 | 5467.62 |
| 5471.50 | | | | | | | | | | | | | | |
| SDP39 | 18 | 6.20 | 6.27 | 18.94 | 0.36 | 0.96 | 5.57 | - | 5468.60 | 5473.19 | 5467.62 | - | 5473.93 | 5468.36 |
| - | | | | | | | | | | | | | | |
| IN8 | - | - | - | - | - | - | - | - | - | 5473.93 | 5468.36 | - | 5473.93 | 5468.36 |
| 5471.88 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5466.51 | 5464.83 |
| - | | | | | | | | | | | | | | |
| IN11 | - | - | - | - | - | - | - | - | - | 5466.51 | 5464.83 | - | 5466.51 | 5464.83 |
| 5467.76 | | | | | | | | | | | | | | |
| SDP33 | 18 | 5.50 | 16.54 | 11.86 | 0.46 | 0.90 | 2.19 | - | 5465.26 | 5467.01 | 5464.83 | - | 5467.47 | 5465.28 |
| - | | | | | | | | | | | | | | |
| IN9 | - | - | - | - | - | - | - | - | - | 5467.47 | 5465.28 | - | 5467.47 | 5465.28 |
| 5468.32 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 |
| - | | | | | | | | | | | | | | |
| SDMH15 | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 | 0.35 | 5453.39 | 5452.39 |
| 5454.87 | | | | | | | | | | | | | | |
| SDP34 | 18 | 5.30 | 23.65 | 3.00 | - | - | 0.14 | 0.0025 | 5452.55 | 5453.39 | 5452.39 | 0.06 | 5453.45 | 5453.31 |
| - | | | | | | | | | | | | | | |
| IN6 | - | - | - | - | - | - | - | - | - | 5453.45 | 5453.31 | - | 5453.45 | 5453.31 |
| 5455.36 | | | | | | | | | | | | | | |



RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 |
| - | | | | | | | | | | | | | | |
| SDMH15 | - | - | - | - | - | - | - | - | - | 5453.04 | 5452.04 | 0.58 | 5453.63 | 5452.63 |
| 5454.87 | | | | | | | | | | | | | | |
| SDP35 | 18 | 5.30 | 5.90 | 3.00 | - | - | 0.14 | 0.0025 | 5452.55 | 5453.63 | 5452.63 | 0.02 | 5453.64 | 5453.50 |
| - | | | | | | | | | | | | | | |
| IN5 | - | - | - | - | - | - | - | - | - | 5453.64 | 5453.50 | - | 5453.64 | 5453.50 |
| 5454.96 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5463.18 | 5460.46 |
| - | | | | | | | | | | | | | | |
| SDMH14 | - | - | - | - | - | - | - | - | - | 5463.18 | 5460.46 | - | 5463.18 | 5460.46 |
| 5464.26 | | | | | | | | | | | | | | |
| SDP20 | 18 | 7.30 | 5.98 | 17.55 | 0.43 | 1.04 | 4.79 | - | 5461.30 | 5465.25 | 5460.46 | - | 5465.62 | 5460.83 |
| - | | | | | | | | | | | | | | |
| IN3 | - | - | - | - | - | - | - | - | - | 5465.62 | 5460.83 | - | 5465.62 | 5460.83 |
| 5464.44 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5471.05 | 5467.62 |
| - | | | | | | | | | | | | | | |
| SDMH16 | - | - | - | - | - | - | - | - | - | 5471.05 | 5467.62 | - | 5471.05 | 5467.62 |
| 5471.50 | | | | | | | | | | | | | | |
| SDP40 | 18 | 6.20 | 24.85 | 10.61 | 0.55 | 0.96 | 1.75 | - | 5468.60 | 5469.40 | 5467.65 | - | 5470.30 | 5468.55 |
| - | | | | | | | | | | | | | | |
| IN7 | - | - | - | - | - | - | - | - | - | 5470.30 | 5468.55 | - | 5470.30 | 5468.55 |
| 5471.85 | | | | | | | | | | | | | | |

Table B:

| LOSSES | | | | | | | | -\|LOSS_COEFFICENTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Str_ID | Hf | Hb | Hstr | Hc | He | Hj | Total \| | Dstr | Ko | CD | Cd | Cq | Cp | |
| Cb | K | | | | | | | | | | | | | |
| Outfall | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP25 | 0.36 | - | - | - | - | - | 0.36 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| IN16 | - | - | 0.32 | - | - | - | 0.32 \| | 5.17 | 0.452 | 1.000 | 0.510 | 1.063 | 1.000 | |
| 1.000 | 0.245 | | | | | | | | | | | | | |
| SDP24 | 0.08 | - | - | - | - | - | 0.08 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH11 | - | - | 0.72 | - | - | - | 0.72 \| | 5.06 | 1.526 | 1.000 | 0.536 | 0.503 | 1.000 | |
| 1.000 | 0.412 | | | | | | | | | | | | | |
| SDP23 | 0.26 | - | - | - | - | - | 0.26 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| exSDMH1 | - | - | 0.54 | - | - | - | 0.54 \| | 6.64 | 1.526 | 1.000 | 0.632 | 0.872 | 1.000 | |
| 1.000 | 0.841 | | | | | | | | | | | | | |
| SDP14 | 0.94 | - | - | - | - | - | 0.94 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH12 | - | - | 0.09 | - | - | - | 0.09 \| | 5.57 | 0.173 | 1.000 | 0.610 | 1.000 | 1.000 | |
| 1.000 | 0.105 | | | | | | | | | | | | | |
| SDP6 | 0.85 | - | - | - | - | - | 0.85 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH6 | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP17 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH7 | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP7 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH10 | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP8 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH9 | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP22 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| IN16 | - | - | 0.08 | - | - | - | 0.08 \| | 5.17 | 1.422 | 1.000 | 0.510 | 0.082 | 1.000 | |
| 1.000 | 0.059 | | | | | | | | | | | | | |
| SDP28 | 0.10 | - | - | - | - | - | 0.10 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| IN14 | - | - | - | - | - | - | - \| | 1.13 | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH11 | - | - | 0.37 | - | - | - | 0.37 \| | 5.06 | 1.526 | 1.000 | 0.536 | 0.258 | 1.000 | |
| 1.000 | 0.211 | | | | | | | | | | | | | |
| SDP29 | 0.51 | - | - | - | - | - | 0.51 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH2 | - | - | 0.19 | - | - | - | 0.19 \| | 3.59 | 0.228 | 1.000 | 0.557 | 1.531 | 1.000 | |
| 1.000 | 0.194 | | | | | | | | | | | | | |
| SDP3 | 1.75 | - | - | - | - | - | 1.75 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH3 | - | - | 0.74 | - | - | - | 0.74 \| | 3.79 | 0.704 | 1.000 | 0.734 | 1.000 | 1.000 | |
| 1.000 | 0.517 | | | | | | | | | | | | | |
| SDP4 | 2.03 | - | - | - | - | - | 2.03 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH4 | - | - | 0.52 | - | - | - | 0.52 \| | 2.06 | 0.705 | 1.000 | 0.509 | 1.000 | 1.000 | |
| 1.000 | 0.359 | | | | | | | | | | | | | |
| SDP5 | 3.35 | - | - | - | - | - | 3.35 \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDMH5 | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP32 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| IN11 | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP31 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| IN12 | - | - | - | - | - | - | - \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| SDP30 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - | |
| - | - | | | | | | | | | | | | | |
| IN10 | - | - | - | - | - | - | - \| | 0.39 | - | - | - | - | - | |



RECEIVED
JUL 30 2014

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH11 | - | - | 0.32 | - | - | - | 0.32 | 5.06 | 0.178 | 1.000 | 0.536 | 1.951 | 1.000 | 1.000 |
| SDP27 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - |
| IN15 | - | - | 0.16 | - | - | - | 0.16 | 2.15 | 1.671 | 1.000 | 0.522 | 1.000 | 1.000 | 1.000 |
| SDP26 | 0.10 | - | - | - | - | - | 0.10 | - | - | - | - | - | - | - |
| IN13 | - | - | - | - | - | - | - | 1.61 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| exSDMH1 | - | - | 0.17 | - | - | - | 0.17 | 6.64 | 0.221 | 1.000 | 0.632 | 1.890 | 1.000 | 1.000 |
| Valle vista | 0.03 | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| tract7 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP21 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| IN1 | - | - | - | - | - | - | - | 0.44 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP18 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH2 | - | - | 0.31 | - | - | - | 0.31 | 3.59 | 1.547 | 1.000 | 0.557 | 0.371 | 1.000 | 1.000 |
| SDP36 | 0.79 | - | - | - | - | - | 0.79 | - | - | - | - | - | - | - |
| SDMH15 | - | - | 0.37 | - | - | - | 0.37 | 4.24 | 0.328 | 1.000 | 0.785 | 1.424 | 1.000 | 1.000 |
| SDP37 | 1.15 | - | - | - | - | - | 1.15 | - | - | - | - | - | - | - |
| SDMH14 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP16 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| IN4 | - | - | - | - | - | - | - | 0.67 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP38 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| SDMH16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP39 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| IN8 | - | - | - | - | - | - | - | 0.36 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IN11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP33 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| IN9 | - | - | - | - | - | - | - | 0.46 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH15 | - | - | 0.35 | - | - | - | 0.35 | 4.24 | 1.431 | 1.000 | 0.785 | 0.314 | 1.000 | 1.000 |
| SDP34 | 0.06 | - | - | - | - | - | 0.06 | - | - | - | - | - | - | - |
| IN6 | - | - | - | - | - | - | - | 1.81 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH15 | - | - | 0.58 | - | - | - | 0.58 | 4.24 | 1.170 | 1.000 | 0.785 | 0.637 | 1.000 | 1.000 |
| SDP35 | 0.02 | - | - | - | - | - | 0.02 | - | - | - | - | - | - | - |
| IN5 | - | - | - | - | - | - | - | 2.37 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH14 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP20 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - |
| IN3 | - | - | - | - | - | - | - | 0.43 | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



RECEIVED
JUL 30 2014

```
-       -
    SDMH16          -     -     -     -     -     -     -  |    -     -     -     -     -     -
-       -
    SDP40           -     -     -     -     -     -  SuperCrt |    -     -     -     -     -     -
-       -
    IN7             -     -     -     -     -     -     -  |  0.55    -     -     -     -     -
-       -
```

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

Status: Fixed
Chamber Width: 6.0000 ft  Chamber Length: 6.0000 ft

Designing pipe SDP20
WARNING: Full flow velocity is greater than maximum (10.0000)

Results:
Total Flow: 54.4000 cfs  Flow From: Upstream

Status: Fixed  Slope: 0.0520 ft/ft
Pipe Width: 36.0000 in  Pipe Height: 36.0000 in
Depth of Flow: 1.2390 ft  Flow Status: Partial
Critical Depth: 2.3900 ft  Capacity: 152.0957 cfs
Velocity: 19.7229 ft/s
Froude Number: 3.6005  Flow Regime: SuperCritical

HGL/EGL Computations:

Table A:

| Struct_ID | D (in) | Q (cfs) | L (ft) | V (ft/s) | d (ft) | dc (ft) | V^2/2g (ft) | Sf (ft/ft) | Dn_Soffit (ft) | EGLdn (ft) | HGLdn (ft) | Tot_Loss (ft) | EGLup (ft) | HGLup (ft) | Rim_Elev. (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | 5489.84 | - |
| SDP20 | 36 | 54.40 | 54.88 | 19.72 | 1.24 | 2.39 | 6.05 | - | 5491.60 | 5495.88 | 5489.84 | - | 5498.58 | 5492.53 | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | 5498.58 | 5492.53 | 1.11 | 5497.30 | 5493.64 | 5497.50 |
| dummy1 | 24 | 48.20 | 46.65 | 15.34 | - | - | 3.66 | 0.0454 | 5493.29 | 5497.30 | 5493.64 | 2.12 | 5499.42 | 5495.76 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5498.58 | 5492.53 | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | 5498.58 | 5492.53 | - | 5498.58 | 5492.53 | 5497.50 |
| SDP19 | 24 | 6.20 | 150.10 | 4.76 | 0.86 | 0.88 | 0.35 | - | 5493.39 | 5492.89 | 5492.53 | - | 5493.34 | 5492.98 | - |
| SDMH8 | - | - | - | - | - | - | - | - | - | 5493.34 | 5492.98 | - | 5493.34 | 5492.98 | 5496.27 |
| SDP18 | 24 | 6.20 | 36.63 | 9.40 | 0.53 | 0.88 | 1.37 | - | 5494.22 | 5494.36 | 5492.98 | - | 5495.14 | 5493.76 | - |
| IN18 | - | - | - | - | - | - | - | - | - | 5495.14 | 5493.76 | - | 5495.14 | 5493.76 | 5497.71 |
| SDP17 | 18 | 3.10 | 34.08 | 9.32 | 0.36 | 0.66 | 1.35 | - | 5494.71 | 5495.12 | 5493.76 | - | 5496.46 | 5495.11 | - |
| IN17 | - | - | - | - | - | - | - | - | - | 5496.46 | 5495.11 | - | 5496.46 | 5495.11 | 5498.74 |

Table B:

| LOSSES Str_ID | Hf | Hb | Hstr | Hc | He | Hj | Total | LOSS_COEFFICENTS Dstr | Ko | CD | Cd | Cq | Cp | Cb | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP20 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH9 | - | - | 1.11 | - | - | - | 1.11 | 1.24 | 0.575 | 1.000 | 0.294 | 1.088 | 1.000 | 1.000 | 0.184 |
| dummy1 | 2.12 | - | - | - | - | - | 2.12 | - | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP19 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP18 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP17 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN17 | - | - | - | - | - | - | - | 0.36 | - | - | - | - | - | - | - |

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

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:** Rita Harmon, PE
COA-PDS
Hydrology

**Requested by:** Brian Patterson

**Date:** 7-30-14

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

**Phone:**
**Job No.:** 20150013

**Job Name:**

**DELIVERY VIA**

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

**PICK UP**

Item: _____

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Drainage Info Sheet |
| 2 | 1 | Letter |
| 3 | 1 | Appendix C |

**COMMENTS / INSTRUCTIONS**

RECEIVED
JUL 30 2014
LAND DEVELOPMENT SECTION

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

```
*S  TIERRA VISTA UNIT 3A SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 24 HOUR STORM
*S
*  CREATED JUNE 20, 2014
*
*
*CONVERT TO NMHYMO
START                 TIME=0.0 HR  PUNCH CODE=0
*******************************************************
LOCATION        NM
*
*******************************************************
*
*******************************************************
*100 YEAR - 24 HOUR
RAINFALL              TYPE=2  RAIN QUARTER=0
                      RAIN ONE=1.84 IN  RAIN SIX=2.20 IN
                      RAIN DAY=2.66 IN  DT=0.10 HRS

*S
*S                    ***********************
*S                    *COMPUTE ONSITE BASINS*
*S                    ***********************
*S
*S
*S
*S COMPUTE BASIN 1 ******************************************************
*
COMPUTE NM HYD       ID=1 HYD=1  AREA=0.005  PER A=0 PER B=24
                     PER C=24 PER D=52  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=1   CODE=1
*
*S COMPUTE BASIN 2 ******************************************************
COMPUTE NM HYD       ID=2 HYD=2  AREA=0.004513  PER A=0 PER B=26
                     PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=2   CODE=1
*
*S COMPUTE BASIN 3 ******************************************************
COMPUTE NM HYD       ID=3 HYD=3  AREA=0.006875  PER A=0 PER B=31
                     PER C=31 PER D=38  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=3   CODE=1
*
*S COMPUTE BASIN 4 ******************************************************
COMPUTE NM HYD       ID=4 HYD=4  AREA=0.003594  PER A=0 PER B=26
                     PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=4   CODE=1
*
*S COMPUTE BASIN 5 ******************************************************
COMPUTE NM HYD       ID=5 HYD=5  AREA=0.001875  PER A=0 PER B=31.5
                     PER C=31.5 PER D=37  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=5   CODE=1
*
*S COMPUTE FUTURE BASIN 1 ***********************************************
COMPUTE NM HYD       ID=6 HYD=FB.1  AREA=0.010781  PER A=0 PER B=21
                     PER C=21 PER D=58  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=6   CODE=1
*
*S COMPUTE FUTURE BASIN 2 ***********************************************
COMPUTE NM HYD       ID=7 HYD=FB.2  AREA=0.0075  PER A=0 PER B=23
                     PER C=23 PER D=54  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=7   CODE=1
*
*S COMPUTE FUTURE BASIN 3 ***********************************************
COMPUTE NM HYD       ID=8 HYD=FB.3  AREA=0.005938  PER A=0 PER B=22.5
                     PER C=22.5 PER D=55  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=8   CODE=1
*
*S COMPUTE FUTURE BASIN 4 ***********************************************
COMPUTE NM HYD       ID=9 HYD=FB.4  AREA=0.004844  PER A=0 PER B=29.5
                     PER C=29.5 PER D=41  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=9   CODE=1
*
*S COMPUTE OFFSITE BASIN 2 **********************************************
COMPUTE NM HYD       ID=10 HYD=OFF.2  AREA=0.000938  PER A=80 PER B=20
                     PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=10   CODE=1
*
*S COMPUTE OFFSITE BASIN 3 **********************************************
COMPUTE NM HYD       ID=11 HYD=OFF.3  AREA=0.001094  PER A=76 PER B=24
                     PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=11   CODE=1
*
*S COMPUTE OFFSITE BASIN 4 **********************************************
COMPUTE NM HYD       ID=12 HYD=OFF.4  AREA=0.001406 PER A=80 PER B=20
                     PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=12   CODE=1
*
*S COMPUTE OFFSITE BASIN 5 **********************************************
COMPUTE NM HYD       ID=13 HYD=OFF.5  AREA=0.003281  PER A=95 PER B=5
                     PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=13   CODE=1
*
*S COMPUTE OFFSITE BASIN WELL *******************************************
COMPUTE NM HYD       ID=14 HYD=OFF.WELL  AREA=0.001563  PER A=0 PER B=40
                     PER C=40 PER D=20  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=14   CODE=1
*
*S
*
*S ADD BASINS 1 AND 2 TO CREATE TEMP A **********************************
ADD HYD              ID=15 HYD=TEMP.A ID I=1 II=2
PRINT HYD             ID=15 CODE=0
*
*S ADD BASINS TEMP A AND 3 TO CREATE TEMP 1.B*******************************
ADD HYD              ID=16 HYD=TEMP.B ID I=15 II=3
PRINT HYD             ID=16 CODE=0
*
*S ADD BASINS TEMP B AND 5 TO CREATE TEMP C*******************************
ADD HYD              ID=17 HYD=TEMP.C ID I=16 II=5
PRINT HYD             ID=17 CODE=0
*
*S ADD BASINS TEMP C AND FUTURE BASIN 1 TO CREATE TEMP D******************************
```

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02c
         RUN DATE (MON/DAY/YR) = 06/23/2014
         START TIME (HR:MIN:SEC) = 14:30:46     USER NO.= AHYMO-S-9702c1BohanHu-AH
         INPUT FILE = DEV_Cond.HYM

*S  TIERRA VISTA UNIT 3A SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 24 HOUR STORM
*S
*  CREATED JUNE 20, 2014
*
*
*CONVERT TO NMHYMO
START                    TIME=0.0 HR  PUNCH CODE=0
*******************************************************
LOCATION              NM
     Soil infiltration values (LAND FACTORS) for this location are not available.
     The following default values were used.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
           A            0.65                  1.67
           B            0.50                  1.25
           C            0.35                  0.83
           D            0.10                  0.04

*
*******************************************************
*
*******************************************************
*100 YEAR - 24 HOUR
RAINFALL                 TYPE=2  RAIN QUARTER=0
                                    RAIN ONE=1.84 IN  RAIN SIX=2.20 IN
                                    RAIN DAY=2.66 IN  DT=0.10 HRS

                    COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                    DT =    .100000 HOURS        END TIME =    24.000000 HOURS
                       .0000   .0060   .0124   .0193   .0266   .0347   .0435
                       .0532   .0640   .0764   .0908   .1071   .1906   .4476
                       .9796  1.3314  1.5028  1.6393  1.7527  1.8488  1.9308
                      1.9485  1.9639  1.9776  1.9899  2.0013  2.0117  2.0215
                      2.0306  2.0393  2.0475  2.0553  2.0627  2.0698  2.0766
                      2.0832  2.0895  2.0956  2.1015  2.1072  2.1128  2.1182
                      2.1234  2.1285  2.1335  2.1383  2.1431  2.1477  2.1522
                      2.1566  2.1610  2.1652  2.1694  2.1734  2.1774  2.1814
                      2.1852  2.1890  2.1927  2.1964  2.2000  2.2039  2.2078
                      2.2117  2.2155  2.2193  2.2231  2.2268  2.2305  2.2342
                      2.2379  2.2416  2.2452  2.2488  2.2524  2.2559  2.2595
                      2.2630  2.2665  2.2700  2.2734  2.2768  2.2802  2.2836
                      2.2870  2.2903  2.2937  2.2970  2.3002  2.3035  2.3068
                      2.3100  2.3132  2.3164  2.3196  2.3227  2.3259  2.3290
                      2.3321  2.3352  2.3383  2.3413  2.3444  2.3474  2.3504
                      2.3534  2.3563  2.3593  2.3622  2.3652  2.3681  2.3710
                      2.3739  2.3767  2.3796  2.3824  2.3853  2.3881  2.3909
                      2.3937  2.3965  2.3992  2.4020  2.4047  2.4074  2.4101
                      2.4128  2.4155  2.4182  2.4208  2.4235  2.4261  2.4287
                      2.4314  2.4340  2.4365  2.4391  2.4417  2.4442  2.4468
                      2.4493  2.4518  2.4543  2.4568  2.4593  2.4618  2.4643
                      2.4667  2.4692  2.4716  2.4740  2.4765  2.4789  2.4813
                      2.4837  2.4860  2.4884  2.4908  2.4931  2.4955  2.4978
                      2.5001  2.5024  2.5047  2.5070  2.5093  2.5116  2.5139
                      2.5161  2.5184  2.5206  2.5229  2.5251  2.5273  2.5295
                      2.5317  2.5339  2.5361  2.5383  2.5404  2.5426  2.5448
                      2.5469  2.5490  2.5512  2.5533  2.5554  2.5575  2.5596
                      2.5617  2.5638  2.5659  2.5680  2.5700  2.5721  2.5741
                      2.5762  2.5782  2.5803  2.5823  2.5843  2.5863  2.5883
                      2.5903  2.5923  2.5943  2.5963  2.5982  2.6002  2.6022
                      2.6041  2.6061  2.6080  2.6099  2.6119  2.6138  2.6157
                      2.6176  2.6195  2.6214  2.6233  2.6252  2.6271  2.6290
                      2.6308  2.6327  2.6346  2.6364  2.6383  2.6401  2.6419
                      2.6438  2.6456  2.6474  2.6492  2.6510  2.6528  2.6546
                      2.6564  2.6582  2.6600

*S
*S                  ************************
*S                  *COMPUTE ONSITE BASINS*
*S                  ************************
*s
*S
*S
*S COMPUTE BASIN 1 ******************************************************
*
COMPUTE NM HYD       ID=1 HYD=1  AREA=0.005  PER A=0 PER B=24
                                 PER C=24 PER D=52  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   7.9785    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =      .002600 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   4.9601    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =      .002400 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=1   CODE=1

                                     OUTFLOW HYDROGRAPH REACH     1.00


    RUNOFF VOLUME =     1.64591 INCHES     =        .4389 ACRE-FEET
    PEAK DISCHARGE RATE =       8.92 CFS  AT   1.500 HOURS   BASIN AREA =   .0050 SQ. MI.


*
*S COMPUTE BASIN 2 ******************************************************
COMPUTE NM HYD       ID=2 HYD=2  AREA=0.004513  PER A=0 PER B=26
                                 PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   6.6475    CFS   UNIT VOLUME =    1.004       B =   526.28      P60 = 1.8400
```

```
     AREA =       .002166 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   4.8501    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =       .002347 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=2   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     2.00

    RUNOFF VOLUME =     1.58072 INCHES     =        .3805 ACRE-FEET
    PEAK DISCHARGE RATE =       7.86 CFS  AT   1.500 HOURS   BASIN AREA =   .0045 SQ. MI.


*
*S COMPUTE BASIN 3 ****************************************************
COMPUTE NM HYD       ID=3 HYD=3  AREA=0.006875  PER A=0 PER B=31
                                 PER C=31 PER D=38  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   8.0169    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =       .002613 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   8.8093    CFS   UNIT VOLUME =    1.003       B =   354.44      P60 = 1.8400
     AREA =       .004263 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=3   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     3.00

    RUNOFF VOLUME =     1.41777 INCHES     =        .5198 ACRE-FEET
    PEAK DISCHARGE RATE =      11.22 CFS  AT   1.500 HOURS   BASIN AREA =   .0069 SQ. MI.


*
*S COMPUTE BASIN 4 ****************************************************
COMPUTE NM HYD       ID=4 HYD=4  AREA=0.003594  PER A=0 PER B=26
                                 PER C=26 PER D=48  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   5.2938    CFS   UNIT VOLUME =    1.004       B =   526.28      P60 = 1.8400
     AREA =       .001725 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   3.8624    CFS   UNIT VOLUME =    1.001       B =   354.44      P60 = 1.8400
     AREA =       .001869 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=4   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     4.00

    RUNOFF VOLUME =     1.58072 INCHES     =        .3030 ACRE-FEET
    PEAK DISCHARGE RATE =       6.26 CFS  AT   1.500 HOURS   BASIN AREA =   .0036 SQ. MI.


*
*S COMPUTE BASIN 5 ****************************************************
COMPUTE NM HYD       ID=5 HYD=5  AREA=0.001875  PER A=0 PER B=31.5
                                 PER C=31.5 PER D=37  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   2.1289    CFS   UNIT VOLUME =    1.001       B =   526.28      P60 = 1.8400
     AREA =       .000694 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   2.4413    CFS   UNIT VOLUME =    .9998       B =   354.44      P60 = 1.8400
     AREA =       .001181 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=5   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     5.00

    RUNOFF VOLUME =     1.40148 INCHES     =        .1401 ACRE-FEET
    PEAK DISCHARGE RATE =       3.05 CFS  AT   1.500 HOURS   BASIN AREA =   .0019 SQ. MI.


*
*S COMPUTE FUTURE BASIN 1 *********************************************
COMPUTE NM HYD       ID=6 HYD=FB.1  AREA=0.010781  PER A=0 PER B=21
                                 PER C=21 PER D=58  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   19.188    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =       .006253 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   9.3581    CFS   UNIT VOLUME =    1.003       B =   354.44      P60 = 1.8400
     AREA =       .004528 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000
```

```
PRINT HYD                    ID=6   CODE=1

                                        HYDROGRAPH FROM AREA FB.1

    RUNOFF VOLUME =      1.74368 INCHES      =        1.0026 ACRE-FEET
    PEAK DISCHARGE RATE =       19.93 CFS  AT   1.500 HOURS   BASIN AREA =   .0108 SQ. MI.


*
*S COMPUTE FUTURE BASIN 2 ****************************************************
COMPUTE NM HYD       ID=7 HYD=FB.2  AREA=0.0075  PER A=0 PER B=23
                              PER C=23 PER D=54  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   12.428    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =      .004050 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   7.1301    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =      .003450 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                    ID=7   CODE=1

                                        HYDROGRAPH FROM AREA FB.2

    RUNOFF VOLUME =      1.67850 INCHES      =         .6714 ACRE-FEET
    PEAK DISCHARGE RATE =       13.54 CFS  AT   1.500 HOURS   BASIN AREA =   .0075 SQ. MI.


*
*S COMPUTE FUTURE BASIN 3 ****************************************************
COMPUTE NM HYD       ID=8 HYD=FB.3  AREA=0.005938  PER A=0 PER B=22.5
                              PER C=22.5 PER D=55  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   10.022    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =      .003266 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   5.5224    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =      .002672 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                    ID=8   CODE=1

                                        HYDROGRAPH FROM AREA FB.3

    RUNOFF VOLUME =      1.69479 INCHES      =         .5367 ACRE-FEET
    PEAK DISCHARGE RATE =       10.79 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.


*
*S COMPUTE FUTURE BASIN 4 ****************************************************
COMPUTE NM HYD       ID=9 HYD=FB.4  AREA=0.004844  PER A=0 PER B=29.5
                              PER C=29.5 PER D=41  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   6.0945    CFS   UNIT VOLUME =    1.004       B =   526.28      P60 = 1.8400
     AREA =      .001986 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   5.9066    CFS   UNIT VOLUME =    1.002       B =   354.44      P60 = 1.8400
     AREA =      .002858 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                    ID=9   CODE=1

                                        HYDROGRAPH FROM AREA FB.4

    RUNOFF VOLUME =      1.46666 INCHES      =         .3789 ACRE-FEET
    PEAK DISCHARGE RATE =        8.07 CFS  AT   1.500 HOURS   BASIN AREA =   .0048 SQ. MI.


*
*S COMPUTE OFFSITE BASIN 2 ***************************************************
COMPUTE NM HYD       ID=10 HYD=OFF.2  AREA=0.000938  PER A=80 PER B=20
                              PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .203093HR    TP =   .171500HR    K/TP RATIO =  1.184216     SHAPE CONSTANT, N =  2.997519
     UNIT PEAK =   1.5403    CFS   UNIT VOLUME =     .9852       B =   281.62      P60 = 1.8400
     AREA =      .000938 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                    ID=10   CODE=1

                                        HYDROGRAPH FROM AREA OFF.2

    RUNOFF VOLUME =       .45840 INCHES      =         .0229 ACRE-FEET
    PEAK DISCHARGE RATE =         .62 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*
```

```
*S COMPUTE OFFSITE BASIN 3 ******************************************************
COMPUTE NM HYD       ID=11 HYD=OFF.3  AREA=0.001094  PER A=76 PER B=24
                           PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .201399HR    TP =   .171500HR    K/TP RATIO =  1.174338     SHAPE CONSTANT, N =  3.020870
     UNIT PEAK =   1.8086    CFS   UNIT VOLUME =    .9871       B =   283.52      P60 = 1.8400
     AREA =      .001094 SQ MI    IA =    .61400 INCHES    INF =   1.56920 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=11   CODE=1

                                   HYDROGRAPH FROM AREA OFF.3


    RUNOFF VOLUME =      .46712 INCHES     =        .0273 ACRE-FEET
    PEAK DISCHARGE RATE =        .74 CFS  AT   1.500 HOURS   BASIN AREA =   .0011 SQ. MI.


*

*S COMPUTE OFFSITE BASIN 4 ******************************************************
COMPUTE NM HYD       ID=12 HYD=OFF.4  AREA=0.001406 PER A=80 PER B=20
                           PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .203093HR    TP =   .171500HR    K/TP RATIO =  1.184216     SHAPE CONSTANT, N =  2.997519
     UNIT PEAK =   2.3088    CFS   UNIT VOLUME =    .9875       B =   281.62      P60 = 1.8400
     AREA =      .001406 SQ MI    IA =    .62000 INCHES    INF =   1.58600 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=12   CODE=1

                                   HYDROGRAPH FROM AREA OFF.4


    RUNOFF VOLUME =      .45840 INCHES     =        .0344 ACRE-FEET
    PEAK DISCHARGE RATE =        .93 CFS  AT   1.500 HOURS   BASIN AREA =   .0014 SQ. MI.


*

*S COMPUTE OFFSITE BASIN 5 ******************************************************
COMPUTE NM HYD       ID=13 HYD=OFF.5  AREA=0.003281  PER A=95 PER B=5
                           PER C=0 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .209446HR    TP =   .171500HR    K/TP RATIO =  1.221261     SHAPE CONSTANT, N =  2.914129
     UNIT PEAK =   5.2562    CFS   UNIT VOLUME =    .9902       B =   274.74      P60 = 1.8400
     AREA =      .003281 SQ MI    IA =    .64250 INCHES    INF =   1.64900 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=13   CODE=1

                                   HYDROGRAPH FROM AREA OFF.5


    RUNOFF VOLUME =      .42601 INCHES     =        .0745 ACRE-FEET
    PEAK DISCHARGE RATE =       1.99 CFS  AT   1.500 HOURS   BASIN AREA =   .0033 SQ. MI.


*

*S COMPUTE OFFSITE BASIN WELL ***************************************************
COMPUTE NM HYD       ID=14 HYD=OFF.WELL  AREA=0.001563  PER A=0 PER B=40
                           PER C=40 PER D=20  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =    .95926    CFS   UNIT VOLUME =    .9965       B =   526.28      P60 = 1.8400
     AREA =      .000313 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   2.5842    CFS   UNIT VOLUME =    .9998       B =   354.44      P60 = 1.8400
     AREA =      .001250 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD                  ID=14   CODE=1

                                   HYDROGRAPH FROM AREA OFF.WELL


    RUNOFF VOLUME =     1.12446 INCHES     =        .0937 ACRE-FEET
    PEAK DISCHARGE RATE =       2.26 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


*
*S
*
*S ADD BASINS 1 AND 2 TO CREATE TEMP A ******************************************
ADD HYD            ID=15 HYD=TEMP.A ID I=1 II=2
PRINT HYD           ID=15 CODE=0

                                   HYDROGRAPH FROM AREA TEMP.A
```

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| .100 | .0 | 5.100 | .1 | 10.100 | .1 | 15.100 | .1 | 20.100 | .1 |
| .200 | .0 | 5.200 | .1 | 10.200 | .1 | 15.200 | .1 | 20.200 | .1 |
| .300 | .0 | 5.300 | .1 | 10.300 | .1 | 15.300 | .1 | 20.300 | .1 |
| .400 | .0 | 5.400 | .1 | 10.400 | .1 | 15.400 | .1 | 20.400 | .1 |
| .500 | .0 | 5.500 | .1 | 10.500 | .1 | 15.500 | .1 | 20.500 | .1 |
| .600 | .0 | 5.600 | .1 | 10.600 | .1 | 15.600 | .1 | 20.600 | .1 |
| .700 | .0 | 5.700 | .1 | 10.700 | .1 | 15.700 | .1 | 20.700 | .1 |
| .800 | .0 | 5.800 | .1 | 10.800 | .1 | 15.800 | .1 | 20.800 | .1 |
| .900 | .0 | 5.900 | .1 | 10.900 | .1 | 15.900 | .1 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 1.100 | .0 | 6.100 | .1 | 11.100 | .1 | 16.100 | .1 | 21.100 | .1 |
| 1.200 | .6 | 6.200 | .1 | 11.200 | .1 | 16.200 | .1 | 21.200 | .1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.300 | 2.9 | 6.300 | .1 | 11.300 | .1 | 16.300 | .1 | 21.300 | .1 |
| 1.400 | 10.5 | 6.400 | .1 | 11.400 | .1 | 16.400 | .1 | 21.400 | .1 |
| 1.500 | 16.8 | 6.500 | .1 | 11.500 | .1 | 16.500 | .1 | 21.500 | .1 |
| 1.600 | 14.4 | 6.600 | .1 | 11.600 | .1 | 16.600 | .1 | 21.600 | .1 |
| 1.700 | 9.8 | 6.700 | .1 | 11.700 | .1 | 16.700 | .1 | 21.700 | .1 |
| 1.800 | 6.9 | 6.800 | .1 | 11.800 | .1 | 16.800 | .1 | 21.800 | .1 |
| 1.900 | 5.2 | 6.900 | .1 | 11.900 | .1 | 16.900 | .1 | 21.900 | .1 |
| 2.000 | 4.2 | 7.000 | .1 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 2.100 | 3.1 | 7.100 | .1 | 12.100 | .1 | 17.100 | .1 | 22.100 | .1 |
| 2.200 | 1.9 | 7.200 | .1 | 12.200 | .1 | 17.200 | .1 | 22.200 | .1 |
| 2.300 | 1.3 | 7.300 | .1 | 12.300 | .1 | 17.300 | .1 | 22.300 | .1 |
| 2.400 | 1.0 | 7.400 | .1 | 12.400 | .1 | 17.400 | .1 | 22.400 | .1 |
| 2.500 | .8 | 7.500 | .1 | 12.500 | .1 | 17.500 | .1 | 22.500 | .1 |
| 2.600 | .6 | 7.600 | .1 | 12.600 | .1 | 17.600 | .1 | 22.600 | .1 |
| 2.700 | .5 | 7.700 | .1 | 12.700 | .1 | 17.700 | .1 | 22.700 | .1 |
| 2.800 | .4 | 7.800 | .1 | 12.800 | .1 | 17.800 | .1 | 22.800 | .1 |
| 2.900 | .3 | 7.900 | .1 | 12.900 | .1 | 17.900 | .1 | 22.900 | .1 |
| 3.000 | .3 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .2 | 8.100 | .1 | 13.100 | .1 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .2 | 8.200 | .1 | 13.200 | .1 | 18.200 | .1 | 23.200 | .1 |
| 3.300 | .2 | 8.300 | .1 | 13.300 | .1 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .2 | 8.400 | .1 | 13.400 | .1 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .1 | 8.500 | .1 | 13.500 | .1 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .1 | 8.600 | .1 | 13.600 | .1 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .1 | 8.700 | .1 | 13.700 | .1 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .1 | 8.800 | .1 | 13.800 | .1 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .1 | 8.900 | .1 | 13.900 | .1 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .1 | 9.100 | .1 | 14.100 | .1 | 19.100 | .1 | 24.100 | .0 |
| 4.200 | .1 | 9.200 | .1 | 14.200 | .1 | 19.200 | .1 | 24.200 | .0 |
| 4.300 | .1 | 9.300 | .1 | 14.300 | .1 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .1 | 9.400 | .1 | 14.400 | .1 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .1 | 9.500 | .1 | 14.500 | .1 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .1 | 9.600 | .1 | 14.600 | .1 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .1 | 9.700 | .1 | 14.700 | .1 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .1 | 9.800 | .1 | 14.800 | .1 | 19.800 | .1 | | |
| 4.900 | .1 | 9.900 | .1 | 14.900 | .1 | 19.900 | .1 | | |

RUNOFF VOLUME = 1.61490 INCHES = .8193 ACRE-FEET
PEAK DISCHARGE RATE = 16.78 CFS AT 1.500 HOURS BASIN AREA = .0095 SQ. MI.

```
*
*S ADD BASINS TEMP A AND 3 TO CREATE TEMP 1.B*******************************
ADD HYD            ID=16 HYD=TEMP.B ID I=15 II=3
PRINT HYD           ID=16 CODE=0
```

HYDROGRAPH FROM AREA TEMP.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| .100 | .0 | 5.100 | .1 | 10.100 | .1 | 15.100 | .1 | 20.100 | .1 |
| .200 | .0 | 5.200 | .2 | 10.200 | .1 | 15.200 | .1 | 20.200 | .1 |
| .300 | .0 | 5.300 | .2 | 10.300 | .1 | 15.300 | .1 | 20.300 | .1 |
| .400 | .0 | 5.400 | .2 | 10.400 | .1 | 15.400 | .1 | 20.400 | .1 |
| .500 | .0 | 5.500 | .2 | 10.500 | .1 | 15.500 | .1 | 20.500 | .1 |
| .600 | .0 | 5.600 | .2 | 10.600 | .1 | 15.600 | .1 | 20.600 | .1 |
| .700 | .0 | 5.700 | .2 | 10.700 | .1 | 15.700 | .1 | 20.700 | .1 |
| .800 | .0 | 5.800 | .2 | 10.800 | .1 | 15.800 | .1 | 20.800 | .1 |
| .900 | .0 | 5.900 | .2 | 10.900 | .1 | 15.900 | .1 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 1.100 | .1 | 6.100 | .2 | 11.100 | .1 | 16.100 | .1 | 21.100 | .1 |
| 1.200 | 1.0 | 6.200 | .2 | 11.200 | .1 | 16.200 | .1 | 21.200 | .1 |
| 1.300 | 4.6 | 6.300 | .2 | 11.300 | .1 | 16.300 | .1 | 21.300 | .1 |
| 1.400 | 17.3 | 6.400 | .2 | 11.400 | .1 | 16.400 | .1 | 21.400 | .1 |
| 1.500 | 28.0 | 6.500 | .2 | 11.500 | .1 | 16.500 | .1 | 21.500 | .1 |
| 1.600 | 24.1 | 6.600 | .2 | 11.600 | .1 | 16.600 | .1 | 21.600 | .1 |
| 1.700 | 16.3 | 6.700 | .2 | 11.700 | .1 | 16.700 | .1 | 21.700 | .1 |
| 1.800 | 11.5 | 6.800 | .2 | 11.800 | .1 | 16.800 | .1 | 21.800 | .1 |
| 1.900 | 8.5 | 6.900 | .2 | 11.900 | .1 | 16.900 | .1 | 21.900 | .1 |
| 2.000 | 6.7 | 7.000 | .2 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 2.100 | 4.9 | 7.100 | .2 | 12.100 | .1 | 17.100 | .1 | 22.100 | .1 |
| 2.200 | 3.0 | 7.200 | .2 | 12.200 | .1 | 17.200 | .1 | 22.200 | .1 |
| 2.300 | 2.1 | 7.300 | .2 | 12.300 | .1 | 17.300 | .1 | 22.300 | .1 |
| 2.400 | 1.6 | 7.400 | .2 | 12.400 | .1 | 17.400 | .1 | 22.400 | .1 |
| 2.500 | 1.3 | 7.500 | .2 | 12.500 | .1 | 17.500 | .1 | 22.500 | .1 |
| 2.600 | 1.0 | 7.600 | .2 | 12.600 | .1 | 17.600 | .1 | 22.600 | .1 |
| 2.700 | .8 | 7.700 | .2 | 12.700 | .1 | 17.700 | .1 | 22.700 | .1 |
| 2.800 | .7 | 7.800 | .2 | 12.800 | .1 | 17.800 | .1 | 22.800 | .1 |
| 2.900 | .5 | 7.900 | .2 | 12.900 | .1 | 17.900 | .1 | 22.900 | .1 |
| 3.000 | .5 | 8.000 | .2 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .4 | 8.100 | .2 | 13.100 | .1 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .3 | 8.200 | .2 | 13.200 | .1 | 18.200 | .1 | 23.200 | .1 |
| 3.300 | .3 | 8.300 | .2 | 13.300 | .1 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .2 | 8.400 | .2 | 13.400 | .1 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .2 | 8.500 | .2 | 13.500 | .1 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .2 | 8.600 | .2 | 13.600 | .1 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .2 | 8.700 | .2 | 13.700 | .1 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .2 | 8.800 | .2 | 13.800 | .1 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .2 | 8.900 | .2 | 13.900 | .1 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .1 | 9.100 | .2 | 14.100 | .1 | 19.100 | .1 | 24.100 | .1 |
| 4.200 | .1 | 9.200 | .2 | 14.200 | .1 | 19.200 | .1 | 24.200 | .0 |
| 4.300 | .1 | 9.300 | .2 | 14.300 | .1 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .1 | 9.400 | .2 | 14.400 | .1 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .1 | 9.500 | .2 | 14.500 | .1 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .1 | 9.600 | .2 | 14.600 | .1 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .1 | 9.700 | .2 | 14.700 | .1 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .1 | 9.800 | .1 | 14.800 | .1 | 19.800 | .1 | | |
| 4.900 | .1 | 9.900 | .1 | 14.900 | .1 | 19.900 | .1 | | |

RUNOFF VOLUME = 1.53218 INCHES = 1.3392 ACRE-FEET
PEAK DISCHARGE RATE = 28.00 CFS AT 1.500 HOURS BASIN AREA = .0164 SQ. MI.

```
*
*S ADD BASINS TEMP B AND 5 TO CREATE TEMP C*******************************
ADD HYD            ID=17 HYD=TEMP.C ID I=16 II=5
PRINT HYD           ID=17 CODE=0
```

HYDROGRAPH FROM AREA TEMP.C

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .2 | 10.000 | .2 | 15.000 | .1 | 20.000 | .1 |
| .100 | .0 | 5.100 | .2 | 10.100 | .2 | 15.100 | .1 | 20.100 | .1 |
| .200 | .0 | 5.200 | .2 | 10.200 | .2 | 15.200 | .1 | 20.200 | .1 |
| .300 | .0 | 5.300 | .2 | 10.300 | .2 | 15.300 | .1 | 20.300 | .1 |
| .400 | .0 | 5.400 | .2 | 10.400 | .2 | 15.400 | .1 | 20.400 | .1 |
| .500 | .0 | 5.500 | .2 | 10.500 | .2 | 15.500 | .1 | 20.500 | .1 |
| .600 | .0 | 5.600 | .2 | 10.600 | .2 | 15.600 | .1 | 20.600 | .1 |
| .700 | .0 | 5.700 | .2 | 10.700 | .2 | 15.700 | .1 | 20.700 | .1 |
| .800 | .0 | 5.800 | .2 | 10.800 | .2 | 15.800 | .1 | 20.800 | .1 |
| .900 | .0 | 5.900 | .2 | 10.900 | .2 | 15.900 | .1 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .2 | 16.000 | .1 | 21.000 | .1 |
| 1.100 | .1 | 6.100 | .2 | 11.100 | .2 | 16.100 | .1 | 21.100 | .1 |
| 1.200 | 1.1 | 6.200 | .2 | 11.200 | .2 | 16.200 | .1 | 21.200 | .1 |
| 1.300 | 5.0 | 6.300 | .2 | 11.300 | .2 | 16.300 | .1 | 21.300 | .1 |
| 1.400 | 19.2 | 6.400 | .2 | 11.400 | .1 | 16.400 | .1 | 21.400 | .1 |
| 1.500 | 31.1 | 6.500 | .2 | 11.500 | .1 | 16.500 | .1 | 21.500 | .1 |
| 1.600 | 26.7 | 6.600 | .2 | 11.600 | .1 | 16.600 | .1 | 21.600 | .1 |
| 1.700 | 18.1 | 6.700 | .2 | 11.700 | .1 | 16.700 | .1 | 21.700 | .1 |
| 1.800 | 12.7 | 6.800 | .2 | 11.800 | .1 | 16.800 | .1 | 21.800 | .1 |
| 1.900 | 9.4 | 6.900 | .2 | 11.900 | .1 | 16.900 | .1 | 21.900 | .1 |
| 2.000 | 7.4 | 7.000 | .2 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 2.100 | 5.5 | 7.100 | .2 | 12.100 | .1 | 17.100 | .1 | 22.100 | .1 |
| 2.200 | 3.3 | 7.200 | .2 | 12.200 | .1 | 17.200 | .1 | 22.200 | .1 |
| 2.300 | 2.3 | 7.300 | .2 | 12.300 | .1 | 17.300 | .1 | 22.300 | .1 |
| 2.400 | 1.8 | 7.400 | .2 | 12.400 | .1 | 17.400 | .1 | 22.400 | .1 |
| 2.500 | 1.4 | 7.500 | .2 | 12.500 | .1 | 17.500 | .1 | 22.500 | .1 |
| 2.600 | 1.1 | 7.600 | .2 | 12.600 | .1 | 17.600 | .1 | 22.600 | .1 |
| 2.700 | .9 | 7.700 | .2 | 12.700 | .1 | 17.700 | .1 | 22.700 | .1 |
| 2.800 | .7 | 7.800 | .2 | 12.800 | .1 | 17.800 | .1 | 22.800 | .1 |
| 2.900 | .6 | 7.900 | .2 | 12.900 | .1 | 17.900 | .1 | 22.900 | .1 |
| 3.000 | .5 | 8.000 | .2 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .4 | 8.100 | .2 | 13.100 | .1 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .4 | 8.200 | .2 | 13.200 | .1 | 18.200 | .1 | 23.200 | .1 |
| 3.300 | .3 | 8.300 | .2 | 13.300 | .1 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .3 | 8.400 | .2 | 13.400 | .1 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .2 | 8.500 | .2 | 13.500 | .1 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .2 | 8.600 | .2 | 13.600 | .1 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .2 | 8.700 | .2 | 13.700 | .1 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .2 | 8.800 | .2 | 13.800 | .1 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .2 | 8.900 | .2 | 13.900 | .1 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .2 | 9.100 | .2 | 14.100 | .1 | 19.100 | .1 | 24.100 | .1 |
| 4.200 | .2 | 9.200 | .2 | 14.200 | .1 | 19.200 | .1 | 24.200 | .0 |
| 4.300 | .2 | 9.300 | .2 | 14.300 | .1 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .2 | 9.400 | .2 | 14.400 | .1 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .2 | 9.500 | .2 | 14.500 | .1 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .2 | 9.600 | .2 | 14.600 | .1 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .2 | 9.700 | .2 | 14.700 | .1 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .2 | 9.800 | .2 | 14.800 | .1 | 19.800 | .1 | | |
| 4.900 | .2 | 9.900 | .2 | 14.900 | .1 | 19.900 | .1 | | |

RUNOFF VOLUME = 1.51874 INCHES = 1.4793 ACRE-FEET
PEAK DISCHARGE RATE = 31.05 CFS AT 1.500 HOURS BASIN AREA = .0183 SQ. MI.

```
*
*S ADD BASINS TEMP C AND FUTURE BASIN 1 TO CREATE TEMP D************************
ADD HYD            ID=18 HYD=TEMP.D ID I=17 II=6
PRINT HYD           ID=18 CODE=0
```

HYDROGRAPH FROM AREA TEMP.D

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .3 | 10.000 | .3 | 15.000 | .2 | 20.000 | .2 |
| .100 | .0 | 5.100 | .3 | 10.100 | .3 | 15.100 | .2 | 20.100 | .2 |
| .200 | .0 | 5.200 | .3 | 10.200 | .3 | 15.200 | .2 | 20.200 | .2 |
| .300 | .0 | 5.300 | .3 | 10.300 | .3 | 15.300 | .2 | 20.300 | .2 |
| .400 | .0 | 5.400 | .3 | 10.400 | .3 | 15.400 | .2 | 20.400 | .2 |
| .500 | .0 | 5.500 | .3 | 10.500 | .3 | 15.500 | .2 | 20.500 | .2 |
| .600 | .0 | 5.600 | .3 | 10.600 | .3 | 15.600 | .2 | 20.600 | .2 |
| .700 | .0 | 5.700 | .3 | 10.700 | .3 | 15.700 | .2 | 20.700 | .2 |
| .800 | .0 | 5.800 | .3 | 10.800 | .3 | 15.800 | .2 | 20.800 | .2 |
| .900 | .0 | 5.900 | .3 | 10.900 | .3 | 15.900 | .2 | 20.900 | .2 |
| 1.000 | .0 | 6.000 | .3 | 11.000 | .3 | 16.000 | .2 | 21.000 | .2 |
| 1.100 | .1 | 6.100 | .3 | 11.100 | .3 | 16.100 | .2 | 21.100 | .2 |
| 1.200 | 1.9 | 6.200 | .4 | 11.200 | .3 | 16.200 | .2 | 21.200 | .2 |
| 1.300 | 8.8 | 6.300 | .4 | 11.300 | .3 | 16.300 | .2 | 21.300 | .2 |
| 1.400 | 31.9 | 6.400 | .4 | 11.400 | .3 | 16.400 | .2 | 21.400 | .2 |
| 1.500 | 51.0 | 6.500 | .4 | 11.500 | .3 | 16.500 | .2 | 21.500 | .2 |
| 1.600 | 43.7 | 6.600 | .4 | 11.600 | .3 | 16.600 | .2 | 21.600 | .2 |
| 1.700 | 29.7 | 6.700 | .3 | 11.700 | .3 | 16.700 | .2 | 21.700 | .2 |
| 1.800 | 21.0 | 6.800 | .3 | 11.800 | .3 | 16.800 | .2 | 21.800 | .2 |
| 1.900 | 15.8 | 6.900 | .3 | 11.900 | .3 | 16.900 | .2 | 21.900 | .2 |
| 2.000 | 12.6 | 7.000 | .3 | 12.000 | .3 | 17.000 | .2 | 22.000 | .2 |
| 2.100 | 9.3 | 7.100 | .3 | 12.100 | .3 | 17.100 | .2 | 22.100 | .2 |
| 2.200 | 5.6 | 7.200 | .3 | 12.200 | .3 | 17.200 | .2 | 22.200 | .2 |
| 2.300 | 3.9 | 7.300 | .3 | 12.300 | .3 | 17.300 | .2 | 22.300 | .2 |
| 2.400 | 3.0 | 7.400 | .3 | 12.400 | .3 | 17.400 | .2 | 22.400 | .2 |
| 2.500 | 2.3 | 7.500 | .3 | 12.500 | .3 | 17.500 | .2 | 22.500 | .2 |
| 2.600 | 1.9 | 7.600 | .3 | 12.600 | .3 | 17.600 | .2 | 22.600 | .2 |
| 2.700 | 1.5 | 7.700 | .3 | 12.700 | .3 | 17.700 | .2 | 22.700 | .2 |
| 2.800 | 1.2 | 7.800 | .3 | 12.800 | .2 | 17.800 | .2 | 22.800 | .2 |
| 2.900 | 1.0 | 7.900 | .3 | 12.900 | .2 | 17.900 | .2 | 22.900 | .2 |
| 3.000 | .8 | 8.000 | .3 | 13.000 | .2 | 18.000 | .2 | 23.000 | .2 |
| 3.100 | .7 | 8.100 | .3 | 13.100 | .2 | 18.100 | .2 | 23.100 | .2 |
| 3.200 | .6 | 8.200 | .3 | 13.200 | .2 | 18.200 | .2 | 23.200 | .2 |
| 3.300 | .5 | 8.300 | .3 | 13.300 | .2 | 18.300 | .2 | 23.300 | .2 |
| 3.400 | .5 | 8.400 | .3 | 13.400 | .2 | 18.400 | .2 | 23.400 | .2 |
| 3.500 | .4 | 8.500 | .3 | 13.500 | .2 | 18.500 | .2 | 23.500 | .2 |
| 3.600 | .4 | 8.600 | .3 | 13.600 | .2 | 18.600 | .2 | 23.600 | .2 |
| 3.700 | .4 | 8.700 | .3 | 13.700 | .2 | 18.700 | .2 | 23.700 | .2 |
| 3.800 | .3 | 8.800 | .3 | 13.800 | .2 | 18.800 | .2 | 23.800 | .2 |
| 3.900 | .3 | 8.900 | .3 | 13.900 | .2 | 18.900 | .2 | 23.900 | .2 |
| 4.000 | .3 | 9.000 | .3 | 14.000 | .2 | 19.000 | .2 | 24.000 | .2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4.100 | .3 | 9.100 | .3 | 14.100 | .2 | 19.100 | .2 | 24.100 | .1 |
| 4.200 | .3 | 9.200 | .3 | 14.200 | .2 | 19.200 | .2 | 24.200 | .1 |
| 4.300 | .3 | 9.300 | .3 | 14.300 | .2 | 19.300 | .2 | 24.300 | .0 |
| 4.400 | .3 | 9.400 | .3 | 14.400 | .2 | 19.400 | .2 | 24.400 | .0 |
| 4.500 | .3 | 9.500 | .3 | 14.500 | .2 | 19.500 | .2 | 24.500 | .0 |
| 4.600 | .3 | 9.600 | .3 | 14.600 | .2 | 19.600 | .2 | 24.600 | .0 |
| 4.700 | .3 | 9.700 | .3 | 14.700 | .2 | 19.700 | .2 | 24.700 | .0 |
| 4.800 | .3 | 9.800 | .3 | 14.800 | .2 | 19.800 | .2 | 24.800 | .0 |
| 4.900 | .3 | 9.900 | .3 | 14.900 | .2 | 19.900 | .2 | 24.900 | .0 |

RUNOFF VOLUME = 1.60222 INCHES = 2.4818 ACRE-FEET
PEAK DISCHARGE RATE = 50.98 CFS AT 1.500 HOURS BASIN AREA = .0290 SQ. MI.

```
*
*S ADD BASINS TEMP D AND FUTURE BASIN 2 TO CREATE TEMP E************************
ADD HYD            ID=19 HYD=TEMP.E ID I=18 II=7
PRINT HYD           ID=19 CODE=0
```

HYDROGRAPH FROM AREA TEMP.E

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .2 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .2 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .2 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .2 |
| .400 | .0 | 5.400 | .4 | 10.400 | .4 | 15.400 | .3 | 20.400 | .2 |
| .500 | .0 | 5.500 | .4 | 10.500 | .4 | 15.500 | .3 | 20.500 | .2 |
| .600 | .0 | 5.600 | .4 | 10.600 | .4 | 15.600 | .3 | 20.600 | .2 |
| .700 | .0 | 5.700 | .4 | 10.700 | .4 | 15.700 | .3 | 20.700 | .2 |
| .800 | .0 | 5.800 | .4 | 10.800 | .4 | 15.800 | .3 | 20.800 | .2 |
| .900 | .0 | 5.900 | .4 | 10.900 | .4 | 15.900 | .3 | 20.900 | .2 |
| 1.000 | .0 | 6.000 | .4 | 11.000 | .4 | 16.000 | .3 | 21.000 | .2 |
| 1.100 | .1 | 6.100 | .4 | 11.100 | .3 | 16.100 | .3 | 21.100 | .2 |
| 1.200 | 2.4 | 6.200 | .4 | 11.200 | .3 | 16.200 | .3 | 21.200 | .2 |
| 1.300 | 11.3 | 6.300 | .5 | 11.300 | .3 | 16.300 | .3 | 21.300 | .2 |
| 1.400 | 40.4 | 6.400 | .5 | 11.400 | .3 | 16.400 | .3 | 21.400 | .2 |
| 1.500 | 64.5 | 6.500 | .5 | 11.500 | .3 | 16.500 | .3 | 21.500 | .2 |
| 1.600 | 55.2 | 6.600 | .5 | 11.600 | .3 | 16.600 | .3 | 21.600 | .2 |
| 1.700 | 37.5 | 6.700 | .4 | 11.700 | .3 | 16.700 | .3 | 21.700 | .2 |
| 1.800 | 26.6 | 6.800 | .4 | 11.800 | .3 | 16.800 | .3 | 21.800 | .2 |
| 1.900 | 20.1 | 6.900 | .4 | 11.900 | .3 | 16.900 | .3 | 21.900 | .2 |
| 2.000 | 16.0 | 7.000 | .4 | 12.000 | .3 | 17.000 | .3 | 22.000 | .2 |
| 2.100 | 11.8 | 7.100 | .4 | 12.100 | .3 | 17.100 | .3 | 22.100 | .2 |
| 2.200 | 7.2 | 7.200 | .4 | 12.200 | .3 | 17.200 | .3 | 22.200 | .2 |
| 2.300 | 4.9 | 7.300 | .4 | 12.300 | .3 | 17.300 | .3 | 22.300 | .2 |
| 2.400 | 3.8 | 7.400 | .4 | 12.400 | .3 | 17.400 | .3 | 22.400 | .2 |
| 2.500 | 3.0 | 7.500 | .4 | 12.500 | .3 | 17.500 | .3 | 22.500 | .2 |
| 2.600 | 2.4 | 7.600 | .4 | 12.600 | .3 | 17.600 | .3 | 22.600 | .2 |
| 2.700 | 1.9 | 7.700 | .4 | 12.700 | .3 | 17.700 | .3 | 22.700 | .2 |
| 2.800 | 1.6 | 7.800 | .4 | 12.800 | .3 | 17.800 | .3 | 22.800 | .2 |
| 2.900 | 1.3 | 7.900 | .4 | 12.900 | .3 | 17.900 | .3 | 22.900 | .2 |
| 3.000 | 1.1 | 8.000 | .4 | 13.000 | .3 | 18.000 | .3 | 23.000 | .2 |
| 3.100 | .9 | 8.100 | .4 | 13.100 | .3 | 18.100 | .3 | 23.100 | .2 |
| 3.200 | .8 | 8.200 | .4 | 13.200 | .3 | 18.200 | .3 | 23.200 | .2 |
| 3.300 | .7 | 8.300 | .4 | 13.300 | .3 | 18.300 | .3 | 23.300 | .2 |
| 3.400 | .6 | 8.400 | .4 | 13.400 | .3 | 18.400 | .3 | 23.400 | .2 |
| 3.500 | .5 | 8.500 | .4 | 13.500 | .3 | 18.500 | .3 | 23.500 | .2 |
| 3.600 | .5 | 8.600 | .4 | 13.600 | .3 | 18.600 | .3 | 23.600 | .2 |
| 3.700 | .5 | 8.700 | .4 | 13.700 | .3 | 18.700 | .3 | 23.700 | .2 |
| 3.800 | .4 | 8.800 | .4 | 13.800 | .3 | 18.800 | .2 | 23.800 | .2 |
| 3.900 | .4 | 8.900 | .4 | 13.900 | .3 | 18.900 | .2 | 23.900 | .2 |
| 4.000 | .4 | 9.000 | .4 | 14.000 | .3 | 19.000 | .2 | 24.000 | .2 |
| 4.100 | .4 | 9.100 | .4 | 14.100 | .3 | 19.100 | .2 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .4 | 14.200 | .3 | 19.200 | .2 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .3 | 19.300 | .2 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .2 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .2 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .2 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .2 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .2 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .2 | 24.900 | .0 |

RUNOFF VOLUME = 1.61787 INCHES = 3.1532 ACRE-FEET
PEAK DISCHARGE RATE = 64.52 CFS AT 1.500 HOURS BASIN AREA = .0365 SQ. MI.

```
*
*S ADD BASINS TEMP E AND FUTURE BASIN 3 TO CREATE TEMP F************************
ADD HYD            ID=20 HYD=TEMP.F ID I=19 II=8
PRINT HYD           ID=20 CODE=0
```

HYDROGRAPH FROM AREA TEMP.F

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.8 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.3 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 47.2 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 75.3 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 64.4 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 43.8 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 31.1 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 23.5 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 18.7 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.100 | 13.9 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.4 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 5.8 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.4 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.5 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.8 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.2 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.8 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.5 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.2 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .6 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .5 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.62861 INCHES = 3.6899 ACRE-FEET
PEAK DISCHARGE RATE = 75.31 CFS AT 1.500 HOURS BASIN AREA = .0425 SQ. MI.

```
*
*S ADD BASINS TEMP F AND OFFSITE BASIN 3 TO CREATE TEMP G**********************
ADD HYD            ID=21 HYD=TEMP.G ID I=20 II=11
PRINT HYD           ID=21 CODE=0
```

HYDROGRAPH FROM AREA TEMP.G

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.8 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.3 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 47.6 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 76.1 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 65.1 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 44.2 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 31.4 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 23.7 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 18.9 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 13.9 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.4 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 5.8 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.5 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.5 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.8 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.3 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.8 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.5 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.3 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .6 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .5 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.59945 INCHES = 3.7172 ACRE-FEET
PEAK DISCHARGE RATE = 76.05 CFS AT 1.500 HOURS BASIN AREA = .0436 SQ. MI.

```
*
*S ADD BASINS TEMP G AND OFFSITE BASIN 4 TO CREATE TEMP H**********************
ADD HYD            ID=22 HYD=TEMP.H ID I=21 II=12
PRINT HYD           ID=22 CODE=0
```

HYDROGRAPH FROM AREA TEMP.H

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .4 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.8 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.3 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 48.1 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 77.0 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 66.0 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 44.8 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 31.8 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 23.9 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 19.0 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 14.0 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.5 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 5.9 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.5 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.6 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.9 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.3 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.9 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.5 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.3 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .7 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .6 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .4 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .4 | 14.400 | .3 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .4 | 14.500 | .3 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .3 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .3 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.56378 INCHES = 3.7516 ACRE-FEET
PEAK DISCHARGE RATE = 76.98 CFS AT 1.500 HOURS BASIN AREA = .0450 SQ. MI.

```
*
*S ADD BASINS TEMP H AND OFFSITE BASIN WELL TO CREATE TEMP I********************
ADD HYD              ID=23 HYD=TEMP.1 ID I=22 II=14
PRINT HYD             ID=23 CODE=0
```

HYDROGRAPH FROM AREA TEMP.1

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .5 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.9 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.5 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 49.4 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 79.2 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 68.0 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 46.2 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 32.7 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 24.5 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 19.4 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 14.3 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.7 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 6.1 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.6 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.7 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 2.9 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.4 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 1.9 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.6 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.3 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | .9 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .8 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .7 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .7 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .6 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .4 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .5 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .5 | 14.400 | .4 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .5 | 14.500 | .4 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .4 | 19.600 | .3 | 24.600 | .0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4.700 | .4 | 9.700 | .4 | 14.700 | .4 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.54902 INCHES = 3.8453 ACRE-FEET
PEAK DISCHARGE RATE = 79.24 CFS AT 1.500 HOURS BASIN AREA = .0465 SQ. MI.

```
*
*S ADD BASINS TEMP I AND OFFSITE BASIN 5 TO CREATE TEMP J***********************
ADD HYD            ID=24 HYD=TEMP.J ID I=23 II=13
PRINT HYD           ID=24 CODE=0
```

HYDROGRAPH FROM AREA TEMP.J

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .4 | 10.000 | .4 | 15.000 | .3 | 20.000 | .3 |
| .100 | .0 | 5.100 | .4 | 10.100 | .4 | 15.100 | .3 | 20.100 | .3 |
| .200 | .0 | 5.200 | .4 | 10.200 | .4 | 15.200 | .3 | 20.200 | .3 |
| .300 | .0 | 5.300 | .5 | 10.300 | .4 | 15.300 | .3 | 20.300 | .3 |
| .400 | .0 | 5.400 | .5 | 10.400 | .4 | 15.400 | .3 | 20.400 | .3 |
| .500 | .0 | 5.500 | .5 | 10.500 | .4 | 15.500 | .3 | 20.500 | .3 |
| .600 | .0 | 5.600 | .5 | 10.600 | .4 | 15.600 | .3 | 20.600 | .3 |
| .700 | .0 | 5.700 | .5 | 10.700 | .4 | 15.700 | .3 | 20.700 | .3 |
| .800 | .0 | 5.800 | .5 | 10.800 | .4 | 15.800 | .3 | 20.800 | .3 |
| .900 | .0 | 5.900 | .5 | 10.900 | .4 | 15.900 | .3 | 20.900 | .3 |
| 1.000 | .0 | 6.000 | .5 | 11.000 | .4 | 16.000 | .3 | 21.000 | .3 |
| 1.100 | .2 | 6.100 | .5 | 11.100 | .4 | 16.100 | .3 | 21.100 | .3 |
| 1.200 | 2.9 | 6.200 | .5 | 11.200 | .4 | 16.200 | .3 | 21.200 | .3 |
| 1.300 | 13.5 | 6.300 | .5 | 11.300 | .4 | 16.300 | .3 | 21.300 | .3 |
| 1.400 | 50.4 | 6.400 | .5 | 11.400 | .4 | 16.400 | .3 | 21.400 | .3 |
| 1.500 | 81.2 | 6.500 | .5 | 11.500 | .4 | 16.500 | .3 | 21.500 | .3 |
| 1.600 | 69.8 | 6.600 | .5 | 11.600 | .4 | 16.600 | .3 | 21.600 | .3 |
| 1.700 | 47.4 | 6.700 | .5 | 11.700 | .4 | 16.700 | .3 | 21.700 | .3 |
| 1.800 | 33.4 | 6.800 | .5 | 11.800 | .4 | 16.800 | .3 | 21.800 | .3 |
| 1.900 | 25.0 | 6.900 | .5 | 11.900 | .4 | 16.900 | .3 | 21.900 | .3 |
| 2.000 | 19.7 | 7.000 | .5 | 12.000 | .4 | 17.000 | .3 | 22.000 | .3 |
| 2.100 | 14.6 | 7.100 | .5 | 12.100 | .4 | 17.100 | .3 | 22.100 | .3 |
| 2.200 | 8.9 | 7.200 | .5 | 12.200 | .4 | 17.200 | .3 | 22.200 | .3 |
| 2.300 | 6.2 | 7.300 | .5 | 12.300 | .4 | 17.300 | .3 | 22.300 | .3 |
| 2.400 | 4.8 | 7.400 | .5 | 12.400 | .4 | 17.400 | .3 | 22.400 | .3 |
| 2.500 | 3.8 | 7.500 | .5 | 12.500 | .4 | 17.500 | .3 | 22.500 | .3 |
| 2.600 | 3.0 | 7.600 | .5 | 12.600 | .4 | 17.600 | .3 | 22.600 | .3 |
| 2.700 | 2.4 | 7.700 | .5 | 12.700 | .4 | 17.700 | .3 | 22.700 | .3 |
| 2.800 | 2.0 | 7.800 | .5 | 12.800 | .4 | 17.800 | .3 | 22.800 | .3 |
| 2.900 | 1.6 | 7.900 | .5 | 12.900 | .4 | 17.900 | .3 | 22.900 | .3 |
| 3.000 | 1.4 | 8.000 | .5 | 13.000 | .4 | 18.000 | .3 | 23.000 | .3 |
| 3.100 | 1.1 | 8.100 | .5 | 13.100 | .4 | 18.100 | .3 | 23.100 | .3 |
| 3.200 | 1.0 | 8.200 | .5 | 13.200 | .4 | 18.200 | .3 | 23.200 | .3 |
| 3.300 | .9 | 8.300 | .5 | 13.300 | .4 | 18.300 | .3 | 23.300 | .3 |
| 3.400 | .8 | 8.400 | .5 | 13.400 | .4 | 18.400 | .3 | 23.400 | .3 |
| 3.500 | .7 | 8.500 | .5 | 13.500 | .4 | 18.500 | .3 | 23.500 | .3 |
| 3.600 | .6 | 8.600 | .5 | 13.600 | .4 | 18.600 | .3 | 23.600 | .3 |
| 3.700 | .6 | 8.700 | .5 | 13.700 | .4 | 18.700 | .3 | 23.700 | .3 |
| 3.800 | .5 | 8.800 | .5 | 13.800 | .4 | 18.800 | .3 | 23.800 | .3 |
| 3.900 | .5 | 8.900 | .5 | 13.900 | .4 | 18.900 | .3 | 23.900 | .3 |
| 4.000 | .5 | 9.000 | .5 | 14.000 | .4 | 19.000 | .3 | 24.000 | .3 |
| 4.100 | .5 | 9.100 | .5 | 14.100 | .4 | 19.100 | .3 | 24.100 | .2 |
| 4.200 | .4 | 9.200 | .5 | 14.200 | .4 | 19.200 | .3 | 24.200 | .1 |
| 4.300 | .4 | 9.300 | .5 | 14.300 | .4 | 19.300 | .3 | 24.300 | .0 |
| 4.400 | .4 | 9.400 | .5 | 14.400 | .4 | 19.400 | .3 | 24.400 | .0 |
| 4.500 | .4 | 9.500 | .5 | 14.500 | .4 | 19.500 | .3 | 24.500 | .0 |
| 4.600 | .4 | 9.600 | .4 | 14.600 | .4 | 19.600 | .3 | 24.600 | .0 |
| 4.700 | .4 | 9.700 | .4 | 14.700 | .4 | 19.700 | .3 | 24.700 | .0 |
| 4.800 | .4 | 9.800 | .4 | 14.800 | .3 | 19.800 | .3 | 24.800 | .0 |
| 4.900 | .4 | 9.900 | .4 | 14.900 | .3 | 19.900 | .3 | 24.900 | .0 |

RUNOFF VOLUME = 1.47507 INCHES = 3.9198 ACRE-FEET
PEAK DISCHARGE RATE = 81.23 CFS AT 1.500 HOURS BASIN AREA = .0498 SQ. MI.

```
*
*S TEMP BASIN J REPLACES BASIN E3 AND E5 FROM THE DMP AHYMO FILE****************

COMPUTE NM HYD      ID=25  HYD NO=OFFSITE2  DA=.0805 SQ MI
                                  %A=100  %B=0.0  %C=0.0 %D=0.0
                                  TP=-.66 HR  RAIN=-1

    K =   .803590HR    TP =   .660000HR    K/TP RATIO =  1.217560     SHAPE CONSTANT, N =  2.922175
    UNIT PEAK =   33.592    CFS   UNIT VOLUME =    .9995       B =   275.41      P60 = 1.8400
    AREA =      .080500 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=25 CODE=10
```

HYDROGRAPH FROM AREA OFFSITE2

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 4.000 | 1.5 | 8.000 | .3 | 12.000 | .1 | 16.000 | .0 |
| 1.000 | .0 | 5.000 | .9 | 9.000 | .2 | 13.000 | .0 | 17.000 | .0 |
| 2.000 | 13.9 | 6.000 | .6 | 10.000 | .1 | 14.000 | .0 | 18.000 | .0 |
| 3.000 | 5.2 | 7.000 | .4 | 11.000 | .1 | 15.000 | .0 | | |

RUNOFF VOLUME = .41534 INCHES = 1.7832 ACRE-FEET
PEAK DISCHARGE RATE = 13.87 CFS AT 2.000 HOURS BASIN AREA = .0805 SQ. MI.

```
*
*
ROUTE RESERVOIR       ID=26 HYD=OFFPOND2  INFLOW ID=25 CODE=5
                                  OUTFLOW       STORAGE DEPTH
                                  0     0              0
```

| | | |
|---|---|---|
| 2.16 | 0.047 | 1 |
| 3.06 | 0.222 | 2 |
| 3.75 | 0.466 | 3 |
| 4.33 | 0.751 | 4 |
| 4.84 | 1.081 | 5 |

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

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | .00 | .000 | .00 |
| .50 | .00 | .00 | .000 | .00 |
| 1.00 | .00 | .00 | .000 | .00 |
| 1.50 | 3.77 | .41 | .019 | .88 |
| 2.00 | 13.87 | 2.49 | .342 | 3.40 |
| 2.50 | 9.71 | 3.78 | .689 | 4.20 |
| 3.00 | 5.22 | 4.18 | .809 | 4.42 |
| 3.50 | 2.80 | 4.11 | .787 | 4.39 |
| 4.00 | 1.50 | 3.80 | .695 | 4.22 |
| 4.50 | 1.13 | 3.39 | .579 | 3.98 |
| 5.00 | .92 | 2.98 | .461 | 3.74 |
| 5.50 | .75 | 2.52 | .348 | 3.42 |
| 6.00 | .61 | 2.08 | .241 | 3.11 |
| 6.50 | .49 | 1.55 | .144 | 2.66 |
| 7.00 | .40 | 1.08 | .061 | 2.23 |
| 7.50 | .33 | .34 | .016 | .73 |
| 8.00 | .26 | .16 | .008 | .35 |
| 8.50 | .22 | .12 | .005 | .25 |
| 9.00 | .17 | .09 | .004 | .20 |
| 9.50 | .14 | .07 | .003 | .16 |
| 10.00 | .12 | .06 | .003 | .13 |
| 10.50 | .09 | .05 | .002 | .11 |
| 11.00 | .08 | .04 | .002 | .09 |
| 11.50 | .06 | .03 | .002 | .07 |
| 12.00 | .05 | .03 | .001 | .06 |
| 12.50 | .04 | .02 | .001 | .05 |
| 13.00 | .03 | .02 | .001 | .04 |
| 13.50 | .03 | .01 | .001 | .03 |
| 14.00 | .02 | .01 | .001 | .02 |
| 14.50 | .02 | .01 | .000 | .02 |
| 15.00 | .01 | .01 | .000 | .02 |
| 15.50 | .01 | .01 | .000 | .01 |
| 16.00 | .01 | .00 | .000 | .01 |
| 16.50 | .01 | .00 | .000 | .01 |
| 17.00 | .01 | .00 | .000 | .01 |
| 17.50 | .01 | .00 | .000 | .01 |
| 18.00 | .00 | .00 | .000 | .00 |

PEAK DISCHARGE = 4.426 CFS - PEAK OCCURS AT HOUR 3.10
MAXIMUM WATER SURFACE ELEVATION = 4.188
MAXIMUM STORAGE = .8131 AC-FT INCREMENTAL TIME= .100000HRS

*
*
PRINT HYD ID=26 CODE=10
*
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.011
DIA=2.0 N=0.013

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .10 | .06 | .12 | .89 |
| .21 | .17 | .54 | 1.22 |
| .31 | .31 | 1.26 | 1.45 |
| .42 | .47 | 2.26 | 1.62 |
| .52 | .65 | 3.53 | 1.76 |
| .63 | .84 | 5.03 | 1.85 |
| .73 | 1.04 | 6.74 | 1.93 |
| .83 | 1.24 | 8.62 | 1.97 |
| .94 | 1.45 | 10.63 | 2.00 |
| 1.04 | 1.66 | 12.72 | 2.00 |
| 1.15 | 1.86 | 14.85 | 2.00 |
| 1.25 | 2.07 | 16.96 | 2.00 |
| 1.35 | 2.27 | 19.01 | 2.00 |
| 1.46 | 2.46 | 20.93 | 2.00 |
| 1.56 | 2.63 | 22.65 | 2.00 |
| 1.67 | 2.80 | 24.08 | 2.00 |
| 1.77 | 2.94 | 25.10 | 2.00 |
| 1.88 | 3.06 | 25.52 | 2.00 |
| 2.00 | 3.14 | 25.52 | 2.00 |

ROUTE MCUNGE ID=27 HYD=RTE.OFFPOND2 INFLOW ID=26
DT=0.0 L=900 NS=0 SLOPE=0.011
MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0

INFLOW END= 185 TABLE PTS= 19
DT= .100000 QMED= 2.21 CKMED= 6.2379
WIDTH MED= 1.62 NREACH= 1 DX= 900.00

| DEPTH (FT) | AREA (SQ FT) | Q (CFS) | TRAVEL TIME(HR) | WIDTH (FT) | ck (FPS) | VEL (FPS) | C | D | C1 | C2 | C3 | Q-M (CFS) | C1-M | C2-M | C3-M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .0 | .0 | .170 | .0 | 2.50 | .94 | 1.000 | .000 | 1.000 | .000 | .000 | .0 | 1.000 | .000 | .000 |
| .10 | .1 | .1 | .125 | .9 | 3.28 | 1.99 | 1.312 | .004 | .996 | .136 | -.133 | .0 | .999 | .021 | -.021 |
| .21 | .2 | .5 | .080 | 1.2 | 4.53 | 3.11 | 1.810 | .010 | .993 | .291 | -.284 | .3 | .994 | .203 | -.197 |
| .31 | .3 | 1.3 | .062 | 1.5 | 5.73 | 4.00 | 2.292 | .015 | .991 | .395 | -.386 | .9 | .992 | .347 | -.339 |
| .42 | .5 | 2.3 | .053 | 1.6 | 6.75 | 4.76 | 2.698 | .021 | .989 | .462 | -.451 | 1.7 | .990 | .431 | -.421 |
| .52 | .7 | 3.5 | .046 | 1.8 | 7.61 | 5.42 | 3.044 | .027 | .987 | .509 | -.496 | 2.9 | .988 | .488 | -.475 |
| .63 | .8 | 5.0 | .042 | 1.9 | 8.34 | 6.00 | 3.338 | .033 | .985 | .542 | -.527 | 4.3 | .986 | .527 | -.513 |
| .73 | 1.0 | 6.7 | .038 | 1.9 | 8.96 | 6.50 | 3.585 | .039 | .983 | .567 | -.550 | 5.9 | .984 | .556 | -.540 |
| .83 | 1.2 | 8.6 | .036 | 2.0 | 9.47 | 6.95 | 3.788 | .047 | .981 | .586 | -.567 | 7.7 | .982 | .578 | -.560 |
| .94 | 1.4 | 10.6 | .034 | 2.0 | 9.87 | 7.34 | 3.947 | .055 | .978 | .600 | -.578 | 9.6 | .980 | .594 | -.574 |
| 1.04 | 1.7 | 12.7 | .033 | 2.0 | 10.14 | 7.68 | 4.057 | .063 | .975 | .609 | -.585 | 11.7 | .977 | .606 | -.583 |
| 1.15 | 1.9 | 14.8 | .031 | 2.0 | 10.21 | 7.97 | 4.083 | .073 | .972 | .612 | -.584 | 13.8 | .974 | .612 | -.586 |
| 1.25 | 2.1 | 17.0 | .030 | 2.0 | 10.02 | 8.21 | 4.007 | .086 | .966 | .607 | -.574 | 15.9 | .969 | .611 | -.580 |
| 1.35 | 2.3 | 19.0 | .030 | 2.0 | 9.54 | 8.39 | 3.817 | .101 | .959 | .593 | -.552 | 18.0 | .963 | .602 | -.565 |
| 1.46 | 2.5 | 20.9 | .029 | 2.0 | 8.75 | 8.52 | 3.499 | .121 | .948 | .567 | -.515 | 20.0 | .954 | .583 | -.537 |
| 1.56 | 2.6 | 22.7 | .029 | 2.0 | 7.57 | 8.60 | 3.027 | .151 | .928 | .521 | -.449 | 21.8 | .940 | .549 | -.488 |
| 1.67 | 2.8 | 24.1 | .029 | 2.0 | 5.89 | 8.60 | 2.357 | .206 | .884 | .439 | -.323 | 23.4 | .912 | .489 | -.401 |
| 1.77 | 2.9 | 25.1 | .029 | 2.0 | 3.45 | 8.53 | 1.381 | .367 | .733 | .272 | -.005 | 24.6 | .842 | .378 | -.220 |

```
   1.88    3.1     25.5    .030    2.0     1.97   8.34     .787   .655   .463   .181   .356     25.3    .480   .181   .339
MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =   3 OCCURRED       1 TIMES.  AVERAGE NUMBER ITERATIONS =  1.1024
Equations solved using the Ponce correction to C2
*
PRINT HYD            ID=27 CODE=0
```

HYDROGRAPH FROM AREA RTE.OFFPOND2

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 3.800 | 4.3 | 7.600 | .7 | 11.400 | .1 | 15.200 | .0 |
| .100 | .0 | 3.900 | 4.3 | 7.700 | .6 | 11.500 | .1 | 15.300 | .0 |
| .200 | .0 | 4.000 | 4.2 | 7.800 | .5 | 11.600 | .1 | 15.400 | .0 |
| .300 | .0 | 4.100 | 4.2 | 7.900 | .4 | 11.700 | .1 | 15.500 | .0 |
| .400 | .0 | 4.200 | 4.1 | 8.000 | .4 | 11.800 | .1 | 15.600 | .0 |
| .500 | .0 | 4.300 | 4.1 | 8.100 | .3 | 11.900 | .1 | 15.700 | .0 |
| .600 | .0 | 4.400 | 4.0 | 8.200 | .3 | 12.000 | .1 | 15.800 | .0 |
| .700 | .0 | 4.500 | 4.0 | 8.300 | .3 | 12.100 | .1 | 15.900 | .0 |
| .800 | .0 | 4.600 | 3.9 | 8.400 | .3 | 12.200 | .1 | 16.000 | .0 |
| .900 | .0 | 4.700 | 3.9 | 8.500 | .3 | 12.300 | .1 | 16.100 | .0 |
| 1.000 | .0 | 4.800 | 3.9 | 8.600 | .2 | 12.400 | .0 | 16.200 | .0 |
| 1.100 | .0 | 4.900 | 3.8 | 8.700 | .2 | 12.500 | .0 | 16.300 | .0 |
| 1.200 | .0 | 5.000 | 3.8 | 8.800 | .2 | 12.600 | .0 | 16.400 | .0 |
| 1.300 | .0 | 5.100 | 3.7 | 8.900 | .2 | 12.700 | .0 | 16.500 | .0 |
| 1.400 | .0 | 5.200 | 3.6 | 9.000 | .2 | 12.800 | .0 | 16.600 | .0 |
| 1.500 | .4 | 5.300 | 3.6 | 9.100 | .2 | 12.900 | .0 | 16.700 | .0 |
| 1.600 | 1.6 | 5.400 | 3.5 | 9.200 | .2 | 13.000 | .0 | 16.800 | .0 |
| 1.700 | 2.6 | 5.500 | 3.4 | 9.300 | .2 | 13.100 | .0 | 16.900 | .0 |
| 1.800 | 2.6 | 5.600 | 3.4 | 9.400 | .2 | 13.200 | .0 | 17.000 | .0 |
| 1.900 | 3.1 | 5.700 | 3.3 | 9.500 | .2 | 13.300 | .0 | 17.100 | .0 |
| 2.000 | 3.3 | 5.800 | 3.3 | 9.600 | .2 | 13.400 | .0 | 17.200 | .0 |
| 2.100 | 3.6 | 5.900 | 3.2 | 9.700 | .2 | 13.500 | .0 | 17.300 | .0 |
| 2.200 | 3.8 | 6.000 | 3.1 | 9.800 | .1 | 13.600 | .0 | 17.400 | .0 |
| 2.300 | 3.9 | 6.100 | 3.1 | 9.900 | .1 | 13.700 | .0 | 17.500 | .0 |
| 2.400 | 4.1 | 6.200 | 3.0 | 10.000 | .1 | 13.800 | .0 | 17.600 | .0 |
| 2.500 | 4.2 | 6.300 | 2.9 | 10.100 | .1 | 13.900 | .0 | 17.700 | .0 |
| 2.600 | 4.3 | 6.400 | 2.8 | 10.200 | .1 | 14.000 | .0 | 17.800 | .0 |
| 2.700 | 4.3 | 6.500 | 2.7 | 10.300 | .1 | 14.100 | .0 | 17.900 | .0 |
| 2.800 | 4.4 | 6.600 | 2.6 | 10.400 | .1 | 14.200 | .0 | 18.000 | .0 |
| 2.900 | 4.4 | 6.700 | 2.5 | 10.500 | .1 | 14.300 | .0 | 18.100 | .0 |
| 3.000 | 4.4 | 6.800 | 2.4 | 10.600 | .1 | 14.400 | .0 | 18.200 | .0 |
| 3.100 | 4.4 | 6.900 | 2.3 | 10.700 | .1 | 14.500 | .0 | 18.300 | .0 |
| 3.200 | 4.4 | 7.000 | 2.3 | 10.800 | .1 | 14.600 | .0 | 18.400 | .0 |
| 3.300 | 4.4 | 7.100 | 2.2 | 10.900 | .1 | 14.700 | .0 | 18.500 | .0 |
| 3.400 | 4.4 | 7.200 | 1.9 | 11.000 | .1 | 14.800 | .0 | 18.600 | .0 |
| 3.500 | 4.4 | 7.300 | 1.3 | 11.100 | .1 | 14.900 | .0 | 18.700 | .0 |
| 3.600 | 4.4 | 7.400 | 1.0 | 11.200 | .1 | 15.000 | .0 | 18.800 | .0 |
| 3.700 | 4.3 | 7.500 | .8 | 11.300 | .1 | 15.100 | .0 | | |

```
RUNOFF VOLUME =       .41538 INCHES     =       1.7834 ACRE-FEET
PEAK DISCHARGE RATE =       4.43 CFS  AT   3.200 HOURS   BASIN AREA =   .0805 SQ. MI.


*
*
COMPUTE NM HYD       ID=28  HYD NO=BASIN.B  DA=.01998 SQ MI
                                %A=0  %B=34.0  %C=34.0 %D=32.0
                                TP=-.133 HR  RAIN=-1

K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   25.299    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
AREA =      .006394 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
UNIT PEAK =   36.207    CFS   UNIT VOLUME =    1.007       B =   354.44      P60 = 1.8400
AREA =      .013586 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=28 CODE=10
```

HYDROGRAPH FROM AREA BASIN.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 2.000 | 5.8 | 7.000 | .2 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 3.000 | .3 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |

```
RUNOFF VOLUME =     1.32000 INCHES     =       1.4066 ACRE-FEET
PEAK DISCHARGE RATE =      34.80 CFS  AT   1.500 HOURS   BASIN AREA =   .0200 SQ. MI.


*
*
ROUTE RESERVOIR       ID=29 HYD=POND.B  INFLOW ID=28 CODE=5
                                OUTFLOW       STORAGE DEPTH
                                0     0               5515
                                1.71  0.06            5516
                                2.42  0.24            5517
                                2.96  0.55            5518
                                3.42  0.99            5519
                                3.82  1.67            5520

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

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 5515.00 | .000 | .00 |
| .50 | .00 | 5515.00 | .000 | .00 |
| 1.00 | .00 | 5515.00 | .000 | .00 |
| 1.50 | 34.80 | 5517.54 | .407 | 2.71 |
| 2.00 | 5.83 | 5518.84 | .918 | 3.34 |
| 2.50 | .93 | 5518.75 | .880 | 3.31 |
| 3.00 | .31 | 5518.50 | .769 | 3.19 |
| 3.50 | .17 | 5518.23 | .649 | 3.06 |

| | | | | |
|---|---|---|---|---|
| 4.00 | .13 | 5517.94 | .531 | 2.93 |
| 4.50 | .12 | 5517.58 | .419 | 2.73 |
| 5.00 | .13 | 5517.24 | .315 | 2.55 |
| 5.50 | .14 | 5516.88 | .219 | 2.34 |
| 6.00 | .15 | 5516.42 | .136 | 2.01 |
| 6.50 | .16 | 5516.03 | .065 | 1.73 |
| 7.00 | .15 | 5515.40 | .024 | .68 |
| 7.50 | .15 | 5515.18 | .011 | .31 |
| 8.00 | .14 | 5515.11 | .007 | .20 |
| 8.50 | .14 | 5515.09 | .006 | .16 |
| 9.00 | .14 | 5515.08 | .005 | .14 |
| 9.50 | .13 | 5515.08 | .005 | .14 |
| 10.00 | .13 | 5515.08 | .005 | .13 |
| 10.50 | .12 | 5515.07 | .004 | .13 |
| 11.00 | .12 | 5515.07 | .004 | .12 |
| 11.50 | .12 | 5515.07 | .004 | .12 |
| 12.00 | .12 | 5515.07 | .004 | .12 |
| 12.50 | .11 | 5515.07 | .004 | .11 |
| 13.00 | .11 | 5515.07 | .004 | .11 |
| 13.50 | .11 | 5515.06 | .004 | .11 |
| 14.00 | .10 | 5515.06 | .004 | .11 |
| 14.50 | .10 | 5515.06 | .004 | .10 |
| 15.00 | .10 | 5515.06 | .004 | .10 |
| 15.50 | .10 | 5515.06 | .004 | .10 |
| 16.00 | .10 | 5515.06 | .003 | .10 |
| 16.50 | .09 | 5515.06 | .003 | .10 |
| 17.00 | .09 | 5515.06 | .003 | .09 |
| 17.50 | .09 | 5515.05 | .003 | .09 |
| 18.00 | .09 | 5515.05 | .003 | .09 |
| 18.50 | .09 | 5515.05 | .003 | .09 |
| 19.00 | .09 | 5515.05 | .003 | .09 |
| 19.50 | .08 | 5515.05 | .003 | .09 |
| 20.00 | .08 | 5515.05 | .003 | .08 |
| 20.50 | .08 | 5515.05 | .003 | .08 |
| 21.00 | .08 | 5515.05 | .003 | .08 |
| 21.50 | .08 | 5515.05 | .003 | .08 |
| 22.00 | .08 | 5515.05 | .003 | .08 |
| 22.50 | .08 | 5515.05 | .003 | .08 |
| 23.00 | .07 | 5515.04 | .003 | .08 |
| 23.50 | .07 | 5515.04 | .003 | .08 |
| 24.00 | .07 | 5515.04 | .003 | .07 |
| 24.50 | .00 | 5515.02 | .001 | .03 |
| 25.00 | .00 | 5515.01 | .000 | .01 |
| 25.50 | .00 | 5515.00 | .000 | .00 |

PEAK DISCHARGE = 3.357 CFS - PEAK OCCURS AT HOUR 2.10
MAXIMUM WATER SURFACE ELEVATION = 5518.863
MAXIMUM STORAGE = .9296 AC-FT INCREMENTAL TIME= .100000HRS

*
*
PRINT HYD ID=29 CODE=10

HYDROGRAPH FROM AREA POND.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 2.0 | 12.000 | .1 | 18.000 | .1 | 24.000 | .1 |
| 1.000 | .0 | 7.000 | .7 | 13.000 | .1 | 19.000 | .1 | 25.000 | .0 |
| 2.000 | 3.3 | 8.000 | .2 | 14.000 | .1 | 20.000 | .1 | 26.000 | .0 |
| 3.000 | 3.2 | 9.000 | .1 | 15.000 | .1 | 21.000 | .1 | | |
| 4.000 | 2.9 | 10.000 | .1 | 16.000 | .1 | 22.000 | .1 | | |
| 5.000 | 2.6 | 11.000 | .1 | 17.000 | .1 | 23.000 | .1 | | |

RUNOFF VOLUME = 1.31999 INCHES = 1.4066 ACRE-FEET
PEAK DISCHARGE RATE = 3.36 CFS AT 2.100 HOURS BASIN AREA = .0200 SQ. MI.

*
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.03
DIA=2.0 N=0.013

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .10 | .06 | .21 | .89 |
| .21 | .17 | .89 | 1.22 |
| .31 | .31 | 2.07 | 1.45 |
| .42 | .47 | 3.73 | 1.62 |
| .52 | .65 | 5.82 | 1.76 |
| .63 | .84 | 8.31 | 1.85 |
| .73 | 1.04 | 11.13 | 1.93 |
| .83 | 1.24 | 14.24 | 1.97 |
| .94 | 1.45 | 17.55 | 2.00 |
| 1.04 | 1.66 | 21.00 | 2.00 |
| 1.15 | 1.86 | 24.52 | 2.00 |
| 1.25 | 2.07 | 28.02 | 2.00 |
| 1.35 | 2.27 | 31.40 | 2.00 |
| 1.46 | 2.46 | 34.57 | 2.00 |
| 1.56 | 2.63 | 37.41 | 2.00 |
| 1.67 | 2.80 | 39.77 | 2.00 |
| 1.77 | 2.94 | 41.46 | 2.00 |
| 1.88 | 3.06 | 42.15 | 2.00 |
| 2.00 | 3.14 | 42.15 | 2.00 |

ROUTE MCUNGE ID=30 HYD=RTE.PONDB INFLOW ID=29
DT=0.0 L=1180 NS=0 SLOPE=0.03
MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0

INFLOW END= 261 TABLE PTS= 19
DT= .100000 QMED= 1.68 CKMED= 8.4416
WIDTH MED= 1.38 NREACH= 1 DX= 1180.00

| DEPTH (FT) | AREA (SQ FT) | Q (CFS) | TRAVEL TIME(HR) | WIDTH (FT) | ck (FPS) | VEL (FPS) | C | D | C1 | C2 | C3 | Q-M (CFS) | C1-M | C2-M | C3-M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .0 | .0 | .135 | .0 | 3.28 | 1.55 | 1.000 | .000 | 1.000 | .000 | .000 | .0 | 1.000 | .000 | .000 |
| .10 | .1 | .2 | .100 | .9 | 5.42 | 3.29 | 1.652 | .001 | .999 | .246 | -.245 | .0 | .999 | .065 | -.065 |
| .21 | .2 | .9 | .064 | 1.2 | 7.47 | 5.14 | 2.280 | .003 | .998 | .391 | -.389 | .5 | .999 | .309 | -.307 |
| .31 | .3 | 2.1 | .050 | 1.5 | 9.46 | 6.61 | 2.887 | .004 | .998 | .486 | -.484 | 1.4 | .998 | .442 | -.440 |
| .42 | .5 | 3.7 | .042 | 1.6 | 11.14 | 7.86 | 3.398 | .006 | .997 | .546 | -.543 | 2.9 | .998 | .519 | -.516 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .52 | .7 | 5.8 | .037 | 1.8 | 12.57 | 8.95 | 3.834 | .007 | .997 | .587 | -.584 | 4.7 | .997 | .568 | -.565 |
| .63 | .8 | 8.3 | .033 | 1.9 | 13.78 | 9.90 | 4.204 | .009 | .996 | .616 | -.613 | 7.0 | .997 | .603 | -.600 |
| .73 | 1.0 | 11.1 | .031 | 1.9 | 14.80 | 10.74 | 4.515 | .011 | .996 | .638 | -.634 | 9.7 | .996 | .629 | -.625 |
| .83 | 1.2 | 14.2 | .029 | 2.0 | 15.64 | 11.48 | 4.771 | .013 | .995 | .654 | -.650 | 12.7 | .996 | .647 | -.643 |
| .94 | 1.4 | 17.5 | .027 | 2.0 | 16.29 | 12.13 | 4.971 | .015 | .995 | .666 | -.661 | 15.9 | .995 | .661 | -.656 |
| 1.04 | 1.7 | 21.0 | .026 | 2.0 | 16.75 | 12.69 | 5.110 | .018 | .994 | .674 | -.668 | 19.3 | .995 | .671 | -.665 |
| 1.15 | 1.9 | 24.5 | .025 | 2.0 | 16.86 | 13.16 | 5.143 | .021 | .993 | .676 | -.669 | 22.7 | .994 | .676 | -.670 |
| 1.25 | 2.1 | 28.0 | .024 | 2.0 | 16.54 | 13.56 | 5.047 | .024 | .992 | .671 | -.663 | 26.3 | .993 | .674 | -.667 |
| 1.35 | 2.3 | 31.4 | .024 | 2.0 | 15.76 | 13.86 | 4.808 | .028 | .990 | .657 | -.648 | 29.7 | .991 | .666 | -.657 |
| 1.46 | 2.5 | 34.6 | .023 | 2.0 | 14.44 | 14.08 | 4.407 | .034 | .988 | .632 | -.620 | 33.0 | .989 | .647 | -.636 |
| 1.56 | 2.6 | 37.4 | .023 | 2.0 | 12.50 | 14.20 | 3.813 | .042 | .983 | .588 | -.571 | 36.0 | .986 | .615 | -.600 |
| 1.67 | 2.8 | 39.8 | .023 | 2.0 | 9.73 | 14.21 | 2.969 | .058 | .971 | .503 | -.475 | 38.6 | .979 | .556 | -.534 |
| 1.77 | 2.9 | 41.5 | .023 | 2.0 | 5.70 | 14.09 | 1.739 | .103 | .928 | .296 | -.224 | 40.6 | .960 | .435 | -.395 |
| 1.88 | 3.1 | 42.1 | .024 | 2.0 | 3.25 | 13.77 | .991 | .183 | .831 | .080 | .088 | 41.8 | .838 | .088 | .074 |

MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) = 3 OCCURRED 1 TIMES. AVERAGE NUMBER ITERATIONS = 1.1036
Equations solved using the Ponce correction to C2
*
PRINT HYD ID=30 CODE=0

HYDROGRAPH FROM AREA RTE.PONDB

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.300 | 2.5 | 10.600 | .1 | 15.900 | .1 | 21.200 | .1 |
| .100 | .0 | 5.400 | 2.4 | 10.700 | .1 | 16.000 | .1 | 21.300 | .1 |
| .200 | .0 | 5.500 | 2.4 | 10.800 | .1 | 16.100 | .1 | 21.400 | .1 |
| .300 | .0 | 5.600 | 2.3 | 10.900 | .1 | 16.200 | .1 | 21.500 | .1 |
| .400 | .0 | 5.700 | 2.2 | 11.000 | .1 | 16.300 | .1 | 21.600 | .1 |
| .500 | .0 | 5.800 | 2.2 | 11.100 | .1 | 16.400 | .1 | 21.700 | .1 |
| .600 | .0 | 5.900 | 2.1 | 11.200 | .1 | 16.500 | .1 | 21.800 | .1 |
| .700 | .0 | 6.000 | 2.0 | 11.300 | .1 | 16.600 | .1 | 21.900 | .1 |
| .800 | .0 | 6.100 | 2.0 | 11.400 | .1 | 16.700 | .1 | 22.000 | .1 |
| .900 | .0 | 6.200 | 1.9 | 11.500 | .1 | 16.800 | .1 | 22.100 | .1 |
| 1.000 | .0 | 6.300 | 1.9 | 11.600 | .1 | 16.900 | .1 | 22.200 | .1 |
| 1.100 | .0 | 6.400 | 1.8 | 11.700 | .1 | 17.000 | .1 | 22.300 | .1 |
| 1.200 | .0 | 6.500 | 1.7 | 11.800 | .1 | 17.100 | .1 | 22.400 | .1 |
| 1.300 | .5 | 6.600 | 1.6 | 11.900 | .1 | 17.200 | .1 | 22.500 | .1 |
| 1.400 | 1.7 | 6.700 | 1.3 | 12.000 | .1 | 17.300 | .1 | 22.600 | .1 |
| 1.500 | 2.6 | 6.800 | 1.1 | 12.100 | .1 | 17.400 | .1 | 22.700 | .1 |
| 1.600 | 2.9 | 6.900 | .9 | 12.200 | .1 | 17.500 | .1 | 22.800 | .1 |
| 1.700 | 3.2 | 7.000 | .7 | 12.300 | .1 | 17.600 | .1 | 22.900 | .1 |
| 1.800 | 3.2 | 7.100 | .6 | 12.400 | .1 | 17.700 | .1 | 23.000 | .1 |
| 1.900 | 3.3 | 7.200 | .5 | 12.500 | .1 | 17.800 | .1 | 23.100 | .1 |
| 2.000 | 3.3 | 7.300 | .4 | 12.600 | .1 | 17.900 | .1 | 23.200 | .1 |
| 2.100 | 3.4 | 7.400 | .4 | 12.700 | .1 | 18.000 | .1 | 23.300 | .1 |
| 2.200 | 3.4 | 7.500 | .3 | 12.800 | .1 | 18.100 | .1 | 23.400 | .1 |
| 2.300 | 3.3 | 7.600 | .3 | 12.900 | .1 | 18.200 | .1 | 23.500 | .1 |
| 2.400 | 3.3 | 7.700 | .3 | 13.000 | .1 | 18.300 | .1 | 23.600 | .1 |
| 2.500 | 3.3 | 7.800 | .2 | 13.100 | .1 | 18.400 | .1 | 23.700 | .1 |
| 2.600 | 3.3 | 7.900 | .2 | 13.200 | .1 | 18.500 | .1 | 23.800 | .1 |
| 2.700 | 3.3 | 8.000 | .2 | 13.300 | .1 | 18.600 | .1 | 23.900 | .1 |
| 2.800 | 3.2 | 8.100 | .2 | 13.400 | .1 | 18.700 | .1 | 24.000 | .1 |
| 2.900 | 3.2 | 8.200 | .2 | 13.500 | .1 | 18.800 | .1 | 24.100 | .1 |
| 3.000 | 3.2 | 8.300 | .2 | 13.600 | .1 | 18.900 | .1 | 24.200 | .1 |
| 3.100 | 3.2 | 8.400 | .2 | 13.700 | .1 | 19.000 | .1 | 24.300 | .1 |
| 3.200 | 3.1 | 8.500 | .2 | 13.800 | .1 | 19.100 | .1 | 24.400 | .0 |
| 3.300 | 3.1 | 8.600 | .2 | 13.900 | .1 | 19.200 | .1 | 24.500 | .0 |
| 3.400 | 3.1 | 8.700 | .2 | 14.000 | .1 | 19.300 | .1 | 24.600 | .0 |
| 3.500 | 3.1 | 8.800 | .1 | 14.100 | .1 | 19.400 | .1 | 24.700 | .0 |
| 3.600 | 3.0 | 8.900 | .1 | 14.200 | .1 | 19.500 | .1 | 24.800 | .0 |
| 3.700 | 3.0 | 9.000 | .1 | 14.300 | .1 | 19.600 | .1 | 24.900 | .0 |
| 3.800 | 3.0 | 9.100 | .1 | 14.400 | .1 | 19.700 | .1 | 25.000 | .0 |
| 3.900 | 3.0 | 9.200 | .1 | 14.500 | .1 | 19.800 | .1 | 25.100 | .0 |
| 4.000 | 2.9 | 9.300 | .1 | 14.600 | .1 | 19.900 | .1 | 25.200 | .0 |
| 4.100 | 2.9 | 9.400 | .1 | 14.700 | .1 | 20.000 | .1 | 25.300 | .0 |
| 4.200 | 2.9 | 9.500 | .1 | 14.800 | .1 | 20.100 | .1 | 25.400 | .0 |
| 4.300 | 2.8 | 9.600 | .1 | 14.900 | .1 | 20.200 | .1 | 25.500 | .0 |
| 4.400 | 2.8 | 9.700 | .1 | 15.000 | .1 | 20.300 | .1 | 25.600 | .0 |
| 4.500 | 2.7 | 9.800 | .1 | 15.100 | .1 | 20.400 | .1 | 25.700 | .0 |
| 4.600 | 2.7 | 9.900 | .1 | 15.200 | .1 | 20.500 | .1 | 25.800 | .0 |
| 4.700 | 2.7 | 10.000 | .1 | 15.300 | .1 | 20.600 | .1 | 25.900 | .0 |
| 4.800 | 2.6 | 10.100 | .1 | 15.400 | .1 | 20.700 | .1 | 26.000 | .0 |
| 4.900 | 2.6 | 10.200 | .1 | 15.500 | .1 | 20.800 | .1 | 26.100 | .0 |
| 5.000 | 2.6 | 10.300 | .1 | 15.600 | .1 | 20.900 | .1 | | |
| 5.100 | 2.5 | 10.400 | .1 | 15.700 | .1 | 21.000 | .1 | | |
| 5.200 | 2.5 | 10.500 | .1 | 15.800 | .1 | 21.100 | .1 | | |

RUNOFF VOLUME = 1.32010 INCHES = 1.4067 ACRE-FEET
PEAK DISCHARGE RATE = 3.36 CFS AT 2.100 HOURS BASIN AREA = .0200 SQ. MI.

*
*
ADD HYD ID=31 HYD=OFF.B ID I=30 II=27
PRINT HYD ID=31 CODE=10

HYDROGRAPH FROM AREA OFF.B

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 5.2 | 12.000 | .2 | 18.000 | .1 | 24.000 | .1 |
| 1.000 | .0 | 7.000 | 3.0 | 13.000 | .2 | 19.000 | .1 | 25.000 | .0 |
| 2.000 | 6.6 | 8.000 | .6 | 14.000 | .1 | 20.000 | .1 | 26.000 | .0 |
| 3.000 | 7.6 | 9.000 | .3 | 15.000 | .1 | 21.000 | .1 | | |
| 4.000 | 7.2 | 10.000 | .3 | 16.000 | .1 | 22.000 | .1 | | |
| 5.000 | 6.3 | 11.000 | .2 | 17.000 | .1 | 23.000 | .1 | | |

RUNOFF VOLUME = .59525 INCHES = 3.1899 ACRE-FEET
PEAK DISCHARGE RATE = 7.62 CFS AT 2.900 HOURS BASIN AREA = .1005 SQ. MI.

*
*
COMPUTE NM HYD ID=32 HYD NO=BASINE1.1 DA=.02753 SQ MI
%A=0.0 %B=33.0 %C=33.0 %D=34.0
TP=-0.133 HR RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 37.038 CFS UNIT VOLUME = 1.030 B = 526.28 P60 = 1.8400
AREA = .009360 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR

```
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
UNIT PEAK =   48.422    CFS   UNIT VOLUME =    1.007       B =   354.44      P60 = 1.8400
AREA =      .018170 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD          ID=32 CODE=10

                    HYDROGRAPH FROM AREA BASINE1.1

TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
 HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
 .000       .0          5.000       .2         10.000       .2         15.000       .1         20.000       .1
1.000       .0          6.000       .2         11.000       .2         16.000       .1         21.000       .1
2.000      8.3          7.000       .2         12.000       .2         17.000       .1         22.000       .1
3.000       .4          8.000       .2         13.000       .2         18.000       .1         23.000       .1
4.000       .2          9.000       .2         14.000       .2         19.000       .1         24.000       .1

RUNOFF VOLUME =     1.35259 INCHES     =       1.9860 ACRE-FEET
PEAK DISCHARGE RATE =      48.45 CFS  AT   1.500 HOURS   BASIN AREA =   .0275 SQ. MI.

*
*
ADD HYD                      ID=33 HYD=OFF.E11 ID I=32 II=31
PRINT HYD                   ID=33 CODE=10

                    HYDROGRAPH FROM AREA OFF.E11

TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
 HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
 .000       .0          6.000       5.4         12.000       .3         18.000       .2         24.000       .2
1.000       .0          7.000       3.2         13.000       .3         19.000       .2         25.000       .0
2.000     14.9          8.000       .8         14.000       .3         20.000       .2         26.000       .0
3.000      8.1          9.000       .5         15.000       .3         21.000       .2
4.000      7.4         10.000       .5         16.000       .3         22.000       .2
5.000      6.5         11.000       .4         17.000       .2         23.000       .2

RUNOFF VOLUME =      .75812 INCHES     =       5.1758 ACRE-FEET
PEAK DISCHARGE RATE =      51.42 CFS  AT   1.500 HOURS   BASIN AREA =   .1280 SQ. MI.

*
*
COMPUTE NM HYD      ID=34  HYD NO=BASINE1.2  DA=.00588 SQ MI
                                %A=0.0  %B=33.0  %C=33.0 %D=34.0
                                TP=-0.133 HR  RAIN=-1

K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   7.9108    CFS   UNIT VOLUME =    1.029       B =   526.28      P60 = 1.8400
AREA =      .001999 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
UNIT PEAK =   10.342    CFS   UNIT VOLUME =    1.006       B =   354.44      P60 = 1.8400
AREA =      .003881 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD          ID=34 CODE=10

                    HYDROGRAPH FROM AREA BASINE1.2

TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
 HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
 .000       .0          5.000       .0         10.000       .0         15.000       .0         20.000       .0
1.000       .0          6.000       .0         11.000       .0         16.000       .0         21.000       .0
2.000      1.8          7.000       .0         12.000       .0         17.000       .0         22.000       .0
3.000       .1          8.000       .0         13.000       .0         18.000       .0         23.000       .0
4.000       .0          9.000       .0         14.000       .0         19.000       .0         24.000       .0

RUNOFF VOLUME =     1.35259 INCHES     =        .4242 ACRE-FEET
PEAK DISCHARGE RATE =      10.36 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.

*
*
COMPUTE NM HYD      ID=35  HYD NO=BASIN.E2  DA=.01348 SQ MI
                                %A=0.0  %B=18.0  %C=18.0 %D=64.0
                                TP=-.133 HR  RAIN=-1

K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   34.137    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
AREA =      .008627 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
UNIT PEAK =   12.933    CFS   UNIT VOLUME =    1.006       B =   354.44      P60 = 1.8400
AREA =      .004853 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD          ID=35 CODE=10

                    HYDROGRAPH FROM AREA BASIN.E2

TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
 HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
 .000       .0          5.000       .2         10.000       .2         15.000       .1         20.000       .1
1.000       .0          6.000       .2         11.000       .2         16.000       .1         21.000       .1
2.000      6.1          7.000       .2         12.000       .2         17.000       .1         22.000       .1
3.000       .3          8.000       .2         13.000       .1         18.000       .1         23.000       .1
4.000       .2          9.000       .2         14.000       .1         19.000       .1         24.000       .1

RUNOFF VOLUME =     1.84145 INCHES     =       1.3239 ACRE-FEET
PEAK DISCHARGE RATE =      27.42 CFS  AT   1.500 HOURS   BASIN AREA =   .0135 SQ. MI.
```

```
*
*
ADD HYD                        ID=36 HYD=E2.E12 ID I=34 II=35
PRINT HYD                     ID=36 CODE=10
```

HYDROGRAPH FROM AREA E2.E12

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .2 | 10.000 | .2 | 15.000 | .2 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .2 | 16.000 | .2 | 21.000 | .1 |
| 2.000 | 7.9 | 7.000 | .3 | 12.000 | .2 | 17.000 | .2 | 22.000 | .1 |
| 3.000 | .4 | 8.000 | .2 | 13.000 | .2 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .2 | 19.000 | .1 | 24.000 | .1 |

```
RUNOFF VOLUME =     1.69294 INCHES     =      1.7480 ACRE-FEET
PEAK DISCHARGE RATE =      37.77 CFS  AT   1.500 HOURS   BASIN AREA =   .0194 SQ. MI.


*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.002
                                     DIA=3.0  N=0.013
```

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .16 | .14 | .16 | 1.33 |
| .31 | .39 | .68 | 1.83 |
| .47 | .71 | 1.58 | 2.18 |
| .63 | 1.07 | 2.84 | 2.44 |
| .78 | 1.46 | 4.43 | 2.63 |
| .94 | 1.89 | 6.33 | 2.78 |
| 1.09 | 2.33 | 8.48 | 2.89 |
| 1.25 | 2.79 | 10.84 | 2.96 |
| 1.41 | 3.26 | 13.36 | 2.99 |
| 1.56 | 3.72 | 15.99 | 3.00 |
| 1.72 | 4.19 | 18.67 | 3.00 |
| 1.88 | 4.65 | 21.33 | 3.00 |
| 2.03 | 5.10 | 23.90 | 3.00 |
| 2.19 | 5.53 | 26.32 | 3.00 |
| 2.35 | 5.93 | 28.48 | 3.00 |
| 2.50 | 6.30 | 30.27 | 3.00 |
| 2.66 | 6.62 | 31.56 | 3.00 |
| 2.81 | 6.89 | 32.09 | 3.00 |
| 3.00 | 7.07 | 32.09 | 3.00 |

```
ROUTE MCUNGE          ID=37 HYD=RTE.E12 INFLOW ID=36
                      DT=0.0  L=800 NS=0  SLOPE=0.01
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0

     INFLOW END= 249            TABLE PTS= 19
     DT=  .100000               QMED=       18.89  CKMED=      5.7936
     WIDTH MED=        3.00     NREACH=  1         DX=      800.00
```

| DEPTH (FT) | AREA (SQ FT) | Q (CFS) | TRAVEL TIME(HR) | WIDTH (FT) | ck (FPS) | VEL (FPS) | C | D | C1 | C2 | C3 | Q-M (CFS) | C1-M | C2-M | C3-M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .00 | .0 | .0 | .271 | .0 | 2.22 | .53 | 1.000 | .000 | 1.000 | .000 | .000 | .0 | 1.000 | .000 | .000 |
| .16 | .1 | .2 | .200 | 1.3 | 2.21 | 1.11 | .993 | .007 | .993 | .000 | .007 | .0 | .999 | .000 | .001 |
| .31 | .4 | .7 | .128 | 1.8 | 2.53 | 1.74 | 1.138 | .018 | .983 | .072 | -.055 | .4 | .989 | .030 | -.019 |
| .47 | .7 | 1.6 | .099 | 2.2 | 3.20 | 2.24 | 1.441 | .028 | .977 | .190 | -.167 | 1.1 | .979 | .135 | -.115 |
| .63 | 1.1 | 2.8 | .084 | 2.4 | 3.77 | 2.66 | 1.696 | .039 | .972 | .269 | -.240 | 2.2 | .974 | .232 | -.206 |
| .78 | 1.5 | 4.4 | .073 | 2.6 | 4.25 | 3.03 | 1.913 | .049 | .967 | .325 | -.292 | 3.6 | .969 | .299 | -.268 |
| .94 | 1.9 | 6.3 | .066 | 2.8 | 4.66 | 3.35 | 2.098 | .061 | .961 | .367 | -.328 | 5.4 | .964 | .348 | -.312 |
| 1.09 | 2.3 | 8.5 | .061 | 2.9 | 5.01 | 3.63 | 2.253 | .073 | .956 | .399 | -.355 | 7.4 | .959 | .385 | -.343 |
| 1.25 | 2.8 | 10.8 | .057 | 3.0 | 5.29 | 3.88 | 2.381 | .087 | .950 | .423 | -.373 | 9.6 | .953 | .413 | -.366 |
| 1.41 | 3.3 | 13.4 | .054 | 3.0 | 5.51 | 4.10 | 2.481 | .101 | .944 | .442 | -.385 | 12.1 | .947 | .434 | -.381 |
| 1.56 | 3.7 | 16.0 | .052 | 3.0 | 5.67 | 4.29 | 2.550 | .118 | .936 | .455 | -.391 | 14.7 | .940 | .450 | -.390 |
| 1.72 | 4.2 | 18.7 | .050 | 3.0 | 5.70 | 4.45 | 2.567 | .136 | .926 | .460 | -.386 | 17.3 | .932 | .459 | -.390 |
| 1.88 | 4.7 | 21.3 | .048 | 3.0 | 5.60 | 4.59 | 2.519 | .159 | .914 | .456 | -.370 | 20.0 | .921 | .460 | -.380 |
| 2.03 | 5.1 | 23.9 | .047 | 3.0 | 5.33 | 4.69 | 2.399 | .187 | .896 | .442 | -.338 | 22.6 | .906 | .451 | -.357 |
| 2.19 | 5.5 | 26.3 | .047 | 3.0 | 4.89 | 4.76 | 2.199 | .224 | .869 | .416 | -.285 | 25.1 | .884 | .432 | -.316 |
| 2.35 | 5.9 | 28.5 | .046 | 3.0 | 4.23 | 4.80 | 1.903 | .281 | .824 | .372 | -.195 | 27.4 | .851 | .398 | -.248 |
| 2.50 | 6.3 | 30.3 | .046 | 3.0 | 3.29 | 4.81 | 1.482 | .383 | .733 | .302 | -.034 | 29.4 | .790 | .343 | -.133 |
| 2.66 | 6.6 | 31.6 | .047 | 3.0 | 1.93 | 4.77 | .868 | .682 | .465 | .216 | .319 | 30.9 | .652 | .260 | .088 |
| 2.81 | 6.9 | 32.1 | .048 | 3.0 | 1.10 | 4.66 | .495 | 1.216 | .103 | .262 | .635 | 31.8 | .123 | .255 | .623 |

```
MAXIMUM NO. ITERATIONS FOR SOLUTION (KKMAX) =  11 OCCURRED       1 TIMES.  AVERAGE NUMBER ITERATIONS =  1.0628
Equations solved using the Ponce correction to C2
*
PRINT HYD             ID=37 CODE=0
```

HYDROGRAPH FROM AREA RTE.E12

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .2 | 10.000 | .2 | 15.000 | .2 | 20.000 | .1 |
| .100 | .0 | 5.100 | .2 | 10.100 | .2 | 15.100 | .2 | 20.100 | .1 |
| .200 | .0 | 5.200 | .2 | 10.200 | .2 | 15.200 | .2 | 20.200 | .1 |
| .300 | .0 | 5.300 | .2 | 10.300 | .2 | 15.300 | .2 | 20.300 | .1 |
| .400 | .0 | 5.400 | .2 | 10.400 | .2 | 15.400 | .2 | 20.400 | .1 |
| .500 | .0 | 5.500 | .2 | 10.500 | .2 | 15.500 | .2 | 20.500 | .1 |
| .600 | .0 | 5.600 | .2 | 10.600 | .2 | 15.600 | .2 | 20.600 | .1 |
| .700 | .0 | 5.700 | .2 | 10.700 | .2 | 15.700 | .2 | 20.700 | .1 |
| .800 | .0 | 5.800 | .2 | 10.800 | .2 | 15.800 | .2 | 20.800 | .1 |
| .900 | .0 | 5.900 | .2 | 10.900 | .2 | 15.900 | .2 | 20.900 | .1 |
| 1.000 | .0 | 6.000 | .2 | 11.000 | .2 | 16.000 | .2 | 21.000 | .1 |
| 1.100 | .0 | 6.100 | .2 | 11.100 | .2 | 16.100 | .2 | 21.100 | .1 |
| 1.200 | .4 | 6.200 | .3 | 11.200 | .2 | 16.200 | .2 | 21.200 | .1 |
| 1.300 | 6.0 | 6.300 | .3 | 11.300 | .2 | 16.300 | .2 | 21.300 | .1 |
| 1.400 | 22.3 | 6.400 | .3 | 11.400 | .2 | 16.400 | .2 | 21.400 | .1 |
| 1.500 | 31.2 | 6.500 | .3 | 11.500 | .2 | 16.500 | .2 | 21.500 | .1 |
| 1.600 | 31.3 | 6.600 | .3 | 11.600 | .2 | 16.600 | .2 | 21.600 | .1 |
| 1.700 | 20.5 | 6.700 | .3 | 11.700 | .2 | 16.700 | .2 | 21.700 | .1 |
| 1.800 | 13.8 | 6.800 | .3 | 11.800 | .2 | 16.800 | .2 | 21.800 | .1 |
| 1.900 | 10.9 | 6.900 | .3 | 11.900 | .2 | 16.900 | .2 | 21.900 | .1 |
| 2.000 | 8.6 | 7.000 | .3 | 12.000 | .2 | 17.000 | .2 | 22.000 | .1 |
| 2.100 | 6.5 | 7.100 | .3 | 12.100 | .2 | 17.100 | .2 | 22.100 | .1 |
| 2.200 | 3.7 | 7.200 | .3 | 12.200 | .2 | 17.200 | .2 | 22.200 | .1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.300 | 2.4 | 7.300 | .3 | 12.300 | .2 | 17.300 | .2 | 22.300 | .1 |
| 2.400 | 1.8 | 7.400 | .2 | 12.400 | .2 | 17.400 | .2 | 22.400 | .1 |
| 2.500 | 1.4 | 7.500 | .2 | 12.500 | .2 | 17.500 | .2 | 22.500 | .1 |
| 2.600 | 1.1 | 7.600 | .2 | 12.600 | .2 | 17.600 | .2 | 22.600 | .1 |
| 2.700 | .9 | 7.700 | .2 | 12.700 | .2 | 17.700 | .2 | 22.700 | .1 |
| 2.800 | .7 | 7.800 | .2 | 12.800 | .2 | 17.800 | .2 | 22.800 | .1 |
| 2.900 | .6 | 7.900 | .2 | 12.900 | .2 | 17.900 | .2 | 22.900 | .1 |
| 3.000 | .5 | 8.000 | .2 | 13.000 | .2 | 18.000 | .1 | 23.000 | .1 |
| 3.100 | .4 | 8.100 | .2 | 13.100 | .2 | 18.100 | .1 | 23.100 | .1 |
| 3.200 | .4 | 8.200 | .2 | 13.200 | .2 | 18.200 | .2 | 23.200 | .1 |
| 3.300 | .3 | 8.300 | .2 | 13.300 | .2 | 18.300 | .1 | 23.300 | .1 |
| 3.400 | .3 | 8.400 | .2 | 13.400 | .2 | 18.400 | .1 | 23.400 | .1 |
| 3.500 | .3 | 8.500 | .2 | 13.500 | .2 | 18.500 | .1 | 23.500 | .1 |
| 3.600 | .3 | 8.600 | .2 | 13.600 | .2 | 18.600 | .1 | 23.600 | .1 |
| 3.700 | .2 | 8.700 | .2 | 13.700 | .2 | 18.700 | .1 | 23.700 | .1 |
| 3.800 | .2 | 8.800 | .2 | 13.800 | .2 | 18.800 | .1 | 23.800 | .1 |
| 3.900 | .2 | 8.900 | .2 | 13.900 | .2 | 18.900 | .1 | 23.900 | .1 |
| 4.000 | .2 | 9.000 | .2 | 14.000 | .2 | 19.000 | .1 | 24.000 | .1 |
| 4.100 | .2 | 9.100 | .2 | 14.100 | .2 | 19.100 | .1 | 24.100 | .1 |
| 4.200 | .2 | 9.200 | .2 | 14.200 | .2 | 19.200 | .1 | 24.200 | .1 |
| 4.300 | .2 | 9.300 | .2 | 14.300 | .2 | 19.300 | .1 | 24.300 | .0 |
| 4.400 | .2 | 9.400 | .2 | 14.400 | .2 | 19.400 | .1 | 24.400 | .0 |
| 4.500 | .2 | 9.500 | .2 | 14.500 | .2 | 19.500 | .1 | 24.500 | .0 |
| 4.600 | .2 | 9.600 | .2 | 14.600 | .2 | 19.600 | .1 | 24.600 | .0 |
| 4.700 | .2 | 9.700 | .2 | 14.700 | .2 | 19.700 | .1 | 24.700 | .0 |
| 4.800 | .2 | 9.800 | .2 | 14.800 | .2 | 19.800 | .1 | 24.800 | .0 |
| 4.900 | .2 | 9.900 | .2 | 14.900 | .2 | 19.900 | .1 | 24.900 | .0 |

RUNOFF VOLUME = 1.63074 INCHES = 1.6838 ACRE-FEET
PEAK DISCHARGE RATE = 31.30 CFS AT 1.600 HOURS BASIN AREA = .0194 SQ. MI.

```
*
*
COMPUTE NM HYD      ID=38  HYD NO=BASIN.E4  DA=.00577 SQ MI
                                %A=0.0  %B=5.0  %C=5.0 %D=90.0
                                TP=-0.133 HR  RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   20.548    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
     AREA =      .005193 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
     UNIT PEAK =   1.5377    CFS   UNIT VOLUME =    .9989       B =   354.44      P60 = 1.8400
     AREA =      .000577 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=38 CODE=10
```

HYDROGRAPH FROM AREA BASIN.E4

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 2.000 | 3.4 | 7.000 | .1 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 3.000 | .2 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |

RUNOFF VOLUME = 2.26513 INCHES = .6971 ACRE-FEET
PEAK DISCHARGE RATE = 13.11 CFS AT 1.500 HOURS BASIN AREA = .0058 SQ. MI.

```
*
*
ADD HYD                     ID=39 HYD=AP1 ID I=38 II=33
PRINT HYD                  ID=39 CODE=10
```

HYDROGRAPH FROM AREA AP1

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 5.5 | 12.000 | .4 | 18.000 | .3 | 24.000 | .2 |
| 1.000 | .0 | 7.000 | 3.4 | 13.000 | .4 | 19.000 | .3 | 25.000 | .0 |
| 2.000 | 18.3 | 8.000 | .9 | 14.000 | .4 | 20.000 | .3 | 26.000 | .0 |
| 3.000 | 8.2 | 9.000 | .7 | 15.000 | .3 | 21.000 | .3 | | |
| 4.000 | 7.5 | 10.000 | .6 | 16.000 | .3 | 22.000 | .3 | | |
| 5.000 | 6.6 | 11.000 | .5 | 17.000 | .3 | 23.000 | .2 | | |

RUNOFF VOLUME = .82312 INCHES = 5.8729 ACRE-FEET
PEAK DISCHARGE RATE = 64.53 CFS AT 1.500 HOURS BASIN AREA = .1338 SQ. MI.

```
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                                     DIA=4.0  N=0.013
```

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .21 | .25 | 1.21 | 1.78 |
| .42 | .69 | 5.27 | 2.44 |
| .63 | 1.25 | 12.26 | 2.91 |
| .83 | 1.90 | 22.05 | 3.25 |
| 1.04 | 2.60 | 34.43 | 3.51 |
| 1.25 | 3.36 | 49.13 | 3.71 |
| 1.46 | 4.15 | 65.82 | 3.85 |
| 1.67 | 4.96 | 84.15 | 3.94 |
| 1.88 | 5.79 | 103.74 | 3.99 |
| 2.08 | 6.62 | 124.15 | 4.00 |
| 2.29 | 7.45 | 144.94 | 4.00 |
| 2.50 | 8.27 | 165.61 | 4.00 |
| 2.71 | 9.06 | 185.62 | 4.00 |
| 2.92 | 9.82 | 204.35 | 4.00 |

| | | | |
|---|---|---|---|
| 3.13 | 10.54 | 221.12 | 4.00 |
| 3.34 | 11.20 | 235.07 | 4.00 |
| 3.54 | 11.77 | 245.05 | 4.00 |
| 3.75 | 12.24 | 249.15 | 4.00 |
| 4.00 | 12.57 | 249.15 | 4.00 |

```
ROUTE MCUNGE          ID=40 HYD=RTE.E1E4 INFLOW ID=39
                      DT=0.0  L=400 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
     ZERO VALUE HYDROGRAPH OR SHORT ROUTE - ROUTING BYPASSED
*
PRINT HYD             ID=40 CODE=0
```

HYDROGRAPH FROM AREA RTE.E1E4

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.300 | 6.3 | 10.600 | .5 | 15.900 | .3 | 21.200 | .3 |
| .100 | .0 | 5.400 | 6.2 | 10.700 | .5 | 16.000 | .3 | 21.300 | .3 |
| .200 | .0 | 5.500 | 6.1 | 10.800 | .5 | 16.100 | .3 | 21.400 | .3 |
| .300 | .0 | 5.600 | 6.0 | 10.900 | .5 | 16.200 | .3 | 21.500 | .3 |
| .400 | .0 | 5.700 | 5.9 | 11.000 | .5 | 16.300 | .3 | 21.600 | .3 |
| .500 | .0 | 5.800 | 5.7 | 11.100 | .5 | 16.400 | .3 | 21.700 | .3 |
| .600 | .0 | 5.900 | 5.6 | 11.200 | .5 | 16.500 | .3 | 21.800 | .3 |
| .700 | .0 | 6.000 | 5.5 | 11.300 | .5 | 16.600 | .3 | 21.900 | .3 |
| .800 | .0 | 6.100 | 5.4 | 11.400 | .5 | 16.700 | .3 | 22.000 | .3 |
| .900 | .0 | 6.200 | 5.3 | 11.500 | .5 | 16.800 | .3 | 22.100 | .3 |
| 1.000 | .0 | 6.300 | 5.1 | 11.600 | .5 | 16.900 | .3 | 22.200 | .3 |
| 1.100 | .2 | 6.400 | 4.9 | 11.700 | .5 | 17.000 | .3 | 22.300 | .3 |
| 1.200 | 3.7 | 6.500 | 4.8 | 11.800 | .4 | 17.100 | .3 | 22.400 | .3 |
| 1.300 | 14.9 | 6.600 | 4.6 | 11.900 | .4 | 17.200 | .3 | 22.500 | .3 |
| 1.400 | 53.4 | 6.700 | 4.2 | 12.000 | .4 | 17.300 | .3 | 22.600 | .3 |
| 1.500 | 64.5 | 6.800 | 3.9 | 12.100 | .4 | 17.400 | .3 | 22.700 | .3 |
| 1.600 | 47.4 | 6.900 | 3.6 | 12.200 | .4 | 17.500 | .3 | 22.800 | .3 |
| 1.700 | 33.3 | 7.000 | 3.4 | 12.300 | .4 | 17.600 | .3 | 22.900 | .3 |
| 1.800 | 25.3 | 7.100 | 3.1 | 12.400 | .4 | 17.700 | .3 | 23.000 | .2 |
| 1.900 | 21.2 | 7.200 | 2.7 | 12.500 | .4 | 17.800 | .3 | 23.100 | .3 |
| 2.000 | 18.3 | 7.300 | 2.1 | 12.600 | .4 | 17.900 | .3 | 23.200 | .2 |
| 2.100 | 14.1 | 7.400 | 1.8 | 12.700 | .4 | 18.000 | .3 | 23.300 | .2 |
| 2.200 | 11.4 | 7.500 | 1.5 | 12.800 | .4 | 18.100 | .3 | 23.400 | .2 |
| 2.300 | 10.3 | 7.600 | 1.3 | 12.900 | .4 | 18.200 | .3 | 23.500 | .2 |
| 2.400 | 9.7 | 7.700 | 1.2 | 13.000 | .4 | 18.300 | .3 | 23.600 | .2 |
| 2.500 | 9.3 | 7.800 | 1.0 | 13.100 | .4 | 18.400 | .3 | 23.700 | .2 |
| 2.600 | 8.9 | 7.900 | 1.0 | 13.200 | .4 | 18.500 | .3 | 23.800 | .2 |
| 2.700 | 8.7 | 8.000 | .9 | 13.300 | .4 | 18.600 | .3 | 23.900 | .2 |
| 2.800 | 8.5 | 8.100 | .9 | 13.400 | .4 | 18.700 | .3 | 24.000 | .2 |
| 2.900 | 8.4 | 8.200 | .8 | 13.500 | .4 | 18.800 | .3 | 24.100 | .2 |
| 3.000 | 8.2 | 8.300 | .8 | 13.600 | .4 | 18.900 | .3 | 24.200 | .1 |
| 3.100 | 8.1 | 8.400 | .8 | 13.700 | .4 | 19.000 | .3 | 24.300 | .1 |
| 3.200 | 8.0 | 8.500 | .7 | 13.800 | .4 | 19.100 | .3 | 24.400 | .1 |
| 3.300 | 8.0 | 8.600 | .7 | 13.900 | .4 | 19.200 | .3 | 24.500 | .0 |
| 3.400 | 7.9 | 8.700 | .7 | 14.000 | .4 | 19.300 | .3 | 24.600 | .0 |
| 3.500 | 7.8 | 8.800 | .7 | 14.100 | .4 | 19.400 | .3 | 24.700 | .0 |
| 3.600 | 7.8 | 8.900 | .7 | 14.200 | .4 | 19.500 | .3 | 24.800 | .0 |
| 3.700 | 7.7 | 9.000 | .7 | 14.300 | .4 | 19.600 | .3 | 24.900 | .0 |
| 3.800 | 7.6 | 9.100 | .6 | 14.400 | .4 | 19.700 | .3 | 25.000 | .0 |
| 3.900 | 7.5 | 9.200 | .6 | 14.500 | .4 | 19.800 | .3 | 25.100 | .0 |
| 4.000 | 7.5 | 9.300 | .6 | 14.600 | .4 | 19.900 | .3 | 25.200 | .0 |
| 4.100 | 7.4 | 9.400 | .6 | 14.700 | .4 | 20.000 | .3 | 25.300 | .0 |
| 4.200 | 7.3 | 9.500 | .6 | 14.800 | .4 | 20.100 | .3 | 25.400 | .0 |
| 4.300 | 7.2 | 9.600 | .6 | 14.900 | .4 | 20.200 | .3 | 25.500 | .0 |
| 4.400 | 7.1 | 9.700 | .6 | 15.000 | .3 | 20.300 | .3 | 25.600 | .0 |
| 4.500 | 7.0 | 9.800 | .6 | 15.100 | .3 | 20.400 | .3 | 25.700 | .0 |
| 4.600 | 6.9 | 9.900 | .6 | 15.200 | .3 | 20.500 | .3 | 25.800 | .0 |
| 4.700 | 6.9 | 10.000 | .6 | 15.300 | .3 | 20.600 | .3 | 25.900 | .0 |
| 4.800 | 6.8 | 10.100 | .5 | 15.400 | .3 | 20.700 | .3 | 26.000 | .0 |
| 4.900 | 6.7 | 10.200 | .5 | 15.500 | .3 | 20.800 | .3 | 26.100 | .0 |
| 5.000 | 6.6 | 10.300 | .5 | 15.600 | .3 | 20.900 | .3 | | |
| 5.100 | 6.5 | 10.400 | .5 | 15.700 | .3 | 21.000 | .3 | | |
| 5.200 | 6.4 | 10.500 | .5 | 15.800 | .3 | 21.100 | .3 | | |

```
RUNOFF VOLUME =       .82312 INCHES     =       5.8729 ACRE-FEET
PEAK DISCHARGE RATE =      64.53 CFS  AT   1.500 HOURS   BASIN AREA =   .1338 SQ. MI.


*
*
ADD HYD                     ID=41 HYD=AP2 ID I=37 II=40
PRINT HYD                   ID=41 CODE=10
```

HYDROGRAPH FROM AREA AP2

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 5.7 | 12.000 | .6 | 18.000 | .4 | 24.000 | .4 |
| 1.000 | .0 | 7.000 | 3.6 | 13.000 | .6 | 19.000 | .4 | 25.000 | .0 |
| 2.000 | 27.0 | 8.000 | 1.1 | 14.000 | .5 | 20.000 | .4 | 26.000 | .0 |
| 3.000 | 8.7 | 9.000 | .9 | 15.000 | .5 | 21.000 | .4 | | |
| 4.000 | 7.7 | 10.000 | .8 | 16.000 | .5 | 22.000 | .4 | | |
| 5.000 | 6.8 | 11.000 | .7 | 17.000 | .5 | 23.000 | .4 | | |

```
RUNOFF VOLUME =       .92521 INCHES     =       7.5566 ACRE-FEET
PEAK DISCHARGE RATE =      95.72 CFS  AT   1.500 HOURS   BASIN AREA =   .1531 SQ. MI.


*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                                     DIA=4.0  N=0.013
```

RATING CURVE PIPE SECTION 1.0

| WATER SURFACE ELEV | FLOW AREA SQ FT | FLOW RATE CFS | MAX WIDTH FT |
|---|---|---|---|
| .00 | .00 | .00 | .00 |
| .21 | .25 | 1.21 | 1.78 |
| .42 | .69 | 5.27 | 2.44 |
| .63 | 1.25 | 12.26 | 2.91 |
| .83 | 1.90 | 22.05 | 3.25 |
| 1.04 | 2.60 | 34.43 | 3.51 |
| 1.25 | 3.36 | 49.13 | 3.71 |

| | | | |
|---|---|---|---|
| 1.46 | 4.15 | 65.82 | 3.85 |
| 1.67 | 4.96 | 84.15 | 3.94 |
| 1.88 | 5.79 | 103.74 | 3.99 |
| 2.08 | 6.62 | 124.15 | 4.00 |
| 2.29 | 7.45 | 144.94 | 4.00 |
| 2.50 | 8.27 | 165.61 | 4.00 |
| 2.71 | 9.06 | 185.62 | 4.00 |
| 2.92 | 9.82 | 204.35 | 4.00 |
| 3.13 | 10.54 | 221.12 | 4.00 |
| 3.34 | 11.20 | 235.07 | 4.00 |
| 3.54 | 11.77 | 245.05 | 4.00 |
| 3.75 | 12.24 | 249.15 | 4.00 |
| 4.00 | 12.57 | 249.15 | 4.00 |

```
ROUTE MCUNGE          ID=42 HYD=RTE.E1E4 INFLOW ID=41
                      DT=0.0  L=600 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
     ZERO VALUE HYDROGRAPH OR SHORT ROUTE - ROUTING BYPASSED
*
PRINT HYD             ID=42 CODE=0
```

HYDROGRAPH FROM AREA RTE.E1E4

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.300 | 6.5 | 10.600 | .7 | 15.900 | .5 | 21.200 | .4 |
| .100 | .0 | 5.400 | 6.4 | 10.700 | .7 | 16.000 | .5 | 21.300 | .4 |
| .200 | .0 | 5.500 | 6.3 | 10.800 | .7 | 16.100 | .5 | 21.400 | .4 |
| .300 | .0 | 5.600 | 6.2 | 10.900 | .7 | 16.200 | .5 | 21.500 | .4 |
| .400 | .0 | 5.700 | 6.1 | 11.000 | .7 | 16.300 | .5 | 21.600 | .4 |
| .500 | .0 | 5.800 | 6.0 | 11.100 | .7 | 16.400 | .5 | 21.700 | .4 |
| .600 | .0 | 5.900 | 5.9 | 11.200 | .7 | 16.500 | .5 | 21.800 | .4 |
| .700 | .0 | 6.000 | 5.7 | 11.300 | .7 | 16.600 | .5 | 21.900 | .4 |
| .800 | .0 | 6.100 | 5.6 | 11.400 | .7 | 16.700 | .5 | 22.000 | .4 |
| .900 | .0 | 6.200 | 5.5 | 11.500 | .7 | 16.800 | .5 | 22.100 | .4 |
| 1.000 | .0 | 6.300 | 5.4 | 11.600 | .7 | 16.900 | .5 | 22.200 | .4 |
| 1.100 | .2 | 6.400 | 5.2 | 11.700 | .6 | 17.000 | .5 | 22.300 | .4 |
| 1.200 | 4.2 | 6.500 | 5.1 | 11.800 | .6 | 17.100 | .5 | 22.400 | .4 |
| 1.300 | 20.9 | 6.600 | 4.8 | 11.900 | .6 | 17.200 | .5 | 22.500 | .4 |
| 1.400 | 75.7 | 6.700 | 4.5 | 12.000 | .6 | 17.300 | .5 | 22.600 | .4 |
| 1.500 | 95.7 | 6.800 | 4.1 | 12.100 | .6 | 17.400 | .5 | 22.700 | .4 |
| 1.600 | 78.7 | 6.900 | 3.8 | 12.200 | .6 | 17.500 | .5 | 22.800 | .4 |
| 1.700 | 53.8 | 7.000 | 3.6 | 12.300 | .6 | 17.600 | .5 | 22.900 | .4 |
| 1.800 | 39.2 | 7.100 | 3.4 | 12.400 | .6 | 17.700 | .5 | 23.000 | .4 |
| 1.900 | 32.1 | 7.200 | 3.0 | 12.500 | .6 | 17.800 | .5 | 23.100 | .4 |
| 2.000 | 27.0 | 7.300 | 2.3 | 12.600 | .6 | 17.900 | .4 | 23.200 | .4 |
| 2.100 | 20.7 | 7.400 | 2.0 | 12.700 | .6 | 18.000 | .4 | 23.300 | .4 |
| 2.200 | 15.1 | 7.500 | 1.7 | 12.800 | .6 | 18.100 | .4 | 23.400 | .4 |
| 2.300 | 12.7 | 7.600 | 1.5 | 12.900 | .6 | 18.200 | .4 | 23.500 | .4 |
| 2.400 | 11.5 | 7.700 | 1.4 | 13.000 | .6 | 18.300 | .4 | 23.600 | .4 |
| 2.500 | 10.6 | 7.800 | 1.3 | 13.100 | .6 | 18.400 | .4 | 23.700 | .4 |
| 2.600 | 10.0 | 7.900 | 1.2 | 13.200 | .6 | 18.500 | .4 | 23.800 | .4 |
| 2.700 | 9.6 | 8.000 | 1.1 | 13.300 | .6 | 18.600 | .4 | 23.900 | .4 |
| 2.800 | 9.2 | 8.100 | 1.1 | 13.400 | .6 | 18.700 | .4 | 24.000 | .4 |
| 2.900 | 8.9 | 8.200 | 1.0 | 13.500 | .6 | 18.800 | .4 | 24.100 | .3 |
| 3.000 | 8.7 | 8.300 | 1.0 | 13.600 | .6 | 18.900 | .4 | 24.200 | .2 |
| 3.100 | 8.5 | 8.400 | 1.0 | 13.700 | .6 | 19.000 | .4 | 24.300 | .1 |
| 3.200 | 8.4 | 8.500 | 1.0 | 13.800 | .6 | 19.100 | .4 | 24.400 | .1 |
| 3.300 | 8.3 | 8.600 | .9 | 13.900 | .6 | 19.200 | .4 | 24.500 | .1 |
| 3.400 | 8.2 | 8.700 | .9 | 14.000 | .5 | 19.300 | .4 | 24.600 | .0 |
| 3.500 | 8.1 | 8.800 | .9 | 14.100 | .5 | 19.400 | .4 | 24.700 | .0 |
| 3.600 | 8.0 | 8.900 | .9 | 14.200 | .5 | 19.500 | .4 | 24.800 | .0 |
| 3.700 | 7.9 | 9.000 | .9 | 14.300 | .5 | 19.600 | .4 | 24.900 | .0 |
| 3.800 | 7.9 | 9.100 | .9 | 14.400 | .5 | 19.700 | .4 | 25.000 | .0 |
| 3.900 | 7.8 | 9.200 | .9 | 14.500 | .5 | 19.800 | .4 | 25.100 | .0 |
| 4.000 | 7.7 | 9.300 | .8 | 14.600 | .5 | 19.900 | .4 | 25.200 | .0 |
| 4.100 | 7.6 | 9.400 | .8 | 14.700 | .5 | 20.000 | .4 | 25.300 | .0 |
| 4.200 | 7.5 | 9.500 | .8 | 14.800 | .5 | 20.100 | .4 | 25.400 | .0 |
| 4.300 | 7.4 | 9.600 | .8 | 14.900 | .5 | 20.200 | .4 | 25.500 | .0 |
| 4.400 | 7.3 | 9.700 | .8 | 15.000 | .5 | 20.300 | .4 | 25.600 | .0 |
| 4.500 | 7.2 | 9.800 | .8 | 15.100 | .5 | 20.400 | .4 | 25.700 | .0 |
| 4.600 | 7.1 | 9.900 | .8 | 15.200 | .5 | 20.500 | .4 | 25.800 | .0 |
| 4.700 | 7.1 | 10.000 | .8 | 15.300 | .5 | 20.600 | .4 | 25.900 | .0 |
| 4.800 | 7.0 | 10.100 | .8 | 15.400 | .5 | 20.700 | .4 | 26.000 | .0 |
| 4.900 | 6.9 | 10.200 | .8 | 15.500 | .5 | 20.800 | .4 | 26.100 | .0 |
| 5.000 | 6.8 | 10.300 | .7 | 15.600 | .5 | 20.900 | .4 | | |
| 5.100 | 6.7 | 10.400 | .7 | 15.700 | .5 | 21.000 | .4 | | |
| 5.200 | 6.6 | 10.500 | .7 | 15.800 | .5 | 21.100 | .4 | | |

```
     RUNOFF VOLUME =      .92521 INCHES     =       7.5566 ACRE-FEET
     PEAK DISCHARGE RATE =      95.72 CFS  AT   1.500 HOURS   BASIN AREA =   .1531 SQ. MI.


*
ADD HYD                       ID=43 HYD=AP3 ID I=42 II=24
PRINT HYD                   ID=43 CODE=10
```

HYDROGRAPH FROM AREA AP3

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 6.3 | 12.000 | 1.0 | 18.000 | .8 | 24.000 | .6 |
| 1.000 | .0 | 7.000 | 4.1 | 13.000 | 1.0 | 19.000 | .7 | 25.000 | .0 |
| 2.000 | 46.7 | 8.000 | 1.6 | 14.000 | .9 | 20.000 | .7 | 26.000 | .0 |
| 3.000 | 10.1 | 9.000 | 1.3 | 15.000 | .9 | 21.000 | .7 | | |
| 4.000 | 8.2 | 10.000 | 1.2 | 16.000 | .8 | 22.000 | .7 | | |
| 5.000 | 7.3 | 11.000 | 1.1 | 17.000 | .8 | 23.000 | .6 | | |

```
     RUNOFF VOLUME =     1.06019 INCHES     =      11.4764 ACRE-FEET
     PEAK DISCHARGE RATE =     176.95 CFS  AT   1.500 HOURS   BASIN AREA =   .2030 SQ. MI.


PLOT HYD                  ID=43
FLOW RATE (CFS)
177..------*-------------------------------------------------------------------------------------------------------------.
       .
.      .
       .
```

```
.
.        .
.        .
.        .
.        .
.        .
.        .      *
.        .
.
142..----------------------------------------------------------------------------------------------------------.
.        .
.        .
.        .
.        .
.        .      *
.        .
.        .
.        .
.        .
.        .
.        .
.
106..----------------------------------------------------------------------------------------------------------.
.        .      *
.        .
.        .
.        .
.        .
.        .
.        .
.        .
.        .
.        .
.        .      *
.
71..-----------------------------------------------------------------------------------------------------------.
.        .
.        .
.        .
.        .
.        .      *
.        .
.        .
.        .      *
.        .
.        .
.        .
.
35..-----*---*--------------------------------------------------------------------------------------------------.
.        .
.        .
.        .
.        .      *
.        .
.        .      **
.        .       *
.        .        ****
.        .    *          ***************
.        .                              ******
.
0..******-----------------------------**************************************************************************.
      .00      2.17      4.35      6.52      8.70      10.88     13.05     15.23     17.40     19.57     21.75     23.92
26.10
                                                TIME HOURS
```

```
*
COMPUTE NM HYD      ID=44  HYD NO=BASIN.OFF6  DA=.0014 SQ MI
                                   %A=0.0  %B=0  %C=100.0 %D=0
                                   TP=-0.133 HR  RAIN=-1

     K =   .105291HR    TP =   .133000HR    K/TP RATIO =   .791661     SHAPE CONSTANT, N =  4.531123
     UNIT PEAK =   4.0963    CFS   UNIT VOLUME =    1.011       B =   389.14      P60 = 1.8400
     AREA =      .001400 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD           ID=44 CODE=10
```

HYDROGRAPH FROM AREA BASIN.OFF6

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 1.000 | .0 | 2.000 | .3 | 3.000 | .0 | | |

RUNOFF VOLUME = .96928 INCHES = .0724 ACRE-FEET
PEAK DISCHARGE RATE = 2.33 CFS AT 1.500 HOURS BASIN AREA = .0014 SQ. MI.

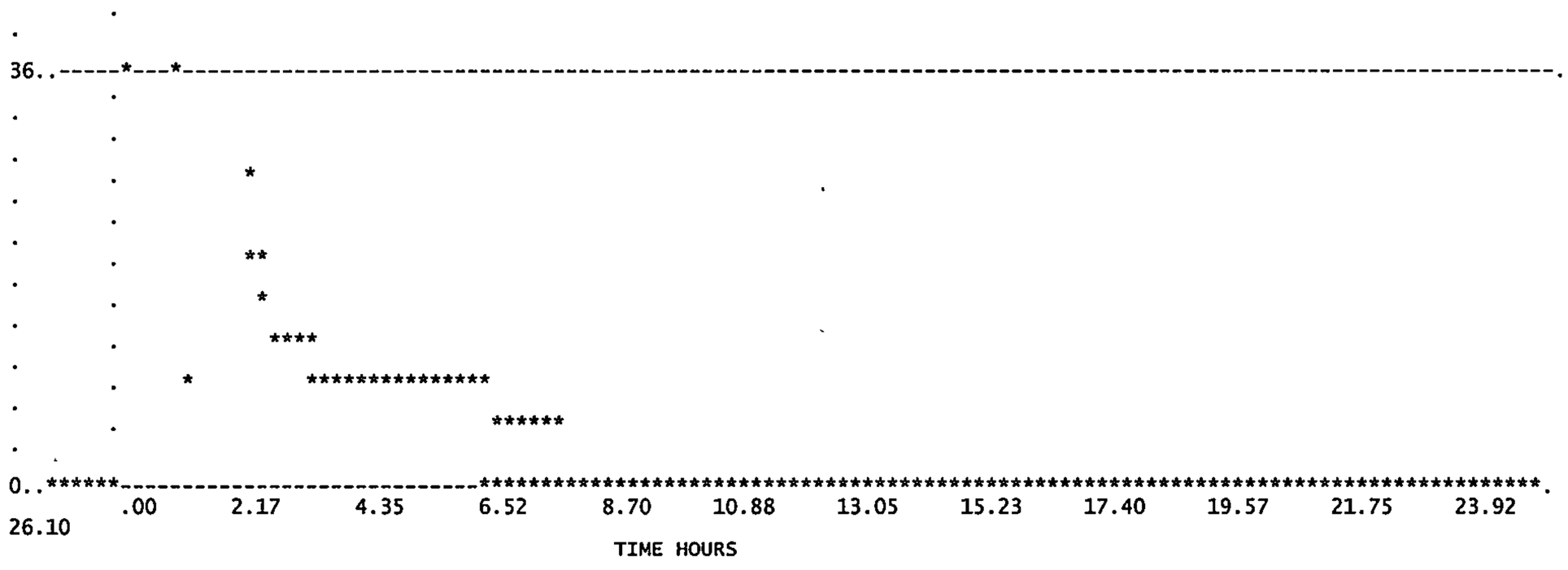
```
*
ADD HYD                    ID=45 HYD=POND ID I=43 II=44
PRINT HYD                ID=45 CODE=10
```

HYDROGRAPH FROM AREA POND

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 6.000 | 6.3 | 12.000 | 1.0 | 18.000 | .8 | 24.000 | .6 |
| 1.000 | .0 | 7.000 | 4.1 | 13.000 | 1.0 | 19.000 | .7 | 25.000 | .0 |
| 2.000 | 46.9 | 8.000 | 1.6 | 14.000 | .9 | 20.000 | .7 | 26.000 | .0 |
| 3.000 | 10.1 | 9.000 | 1.3 | 15.000 | .9 | 21.000 | .7 | | |
| 4.000 | 8.2 | 10.000 | 1.2 | 16.000 | .8 | 22.000 | .7 | | |
| 5.000 | 7.3 | 11.000 | 1.1 | 17.000 | .8 | 23.000 | .6 | | |

RUNOFF VOLUME = 1.05957 INCHES = 11.5488 ACRE-FEET
PEAK DISCHARGE RATE = 179.27 CFS AT 1.500 HOURS BASIN AREA = .2044 SQ. MI.

```
PLOT HYD                ID=45
FLOW RATE (CFS)
179..------*-------------------------------------------------------------------------------------------------------.
        .
.       .
.       .
.       .
.       .
.       .
.       .
.       .
.       .
.       .      *
.       .
.       .
143..-------------------------------------------------------------------------------------------------------------.
        .
.       .
.       .
.       .
.       .      *
.       .
.       .
.       .
.       .
.       .
.       .
.       .
108..-------------------------------------------------------------------------------------------------------------.
        .      *
.       .
.       .
.       .
.       .
.       .
.       .
.       .
.       .
.       .
.       .
.       .
72..--------*-----------------------------------------------------------------------------------------------------.
        .
.       .
.       .
.       .
.       .      *
.       .
.       .
.       .
.       .      *
.       .
.       .
```




ROUTE RESERVOIR ID=46 HYD=POND.E INFLOW ID=45 CODE=5

| OUTFLOW | STORAGE | DEPTH |
|---|---|---|
| 0 | 0.04 | 5444 |
| 0.01 | 0.23 | 5444.5 |
| 0.02 | 0.43 | 5445 |
| 0.03 | 0.66 | 5445.5 |
| 0.04 | 0.91 | 5446 |
| 0.5 | 1.20 | 5446.5 |
| 1.3 | 1.52 | 5447 |
| 2.2 | 1.88 | 5447.5 |
| 3.3 | 2.26 | 5448 |
| 6.7 | 2.68 | 5448.5 |
| 8.7 | 3.12 | 5449 |
| 10.8 | 3.60 | 5449.5 |
| 13.1 | 4.10 | 5450 |
| 15.5 | 4.65 | 5450.5 |
| 18.0 | 5.22 | 5451 |
| 20.7 | 5.82 | 5451.5 |
| 23.5 | 6.44 | 5452 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| .00 | .00 | 5444.00 | .040 | .00 |
| .50 | .00 | 5444.00 | .040 | .00 |
| 1.00 | .00 | 5444.00 | .040 | .00 |
| 1.50 | 179.27 | 5447.88 | 2.172 | 3.04 |
| 2.00 | 46.93 | 5451.38 | 5.675 | 20.05 |
| 2.50 | 14.45 | 5451.52 | 5.848 | 20.83 |
| 3.00 | 10.09 | 5451.24 | 5.506 | 19.29 |
| 3.50 | 8.79 | 5450.92 | 5.130 | 17.60 |
| 4.00 | 8.15 | 5450.62 | 4.784 | 16.09 |
| 4.50 | 7.65 | 5450.34 | 4.473 | 14.73 |
| 5.00 | 7.26 | 5450.09 | 4.198 | 13.53 |
| 5.50 | 6.81 | 5449.85 | 3.953 | 12.42 |
| 6.00 | 6.26 | 5449.63 | 3.730 | 11.40 |
| 6.50 | 5.60 | 5449.42 | 3.525 | 10.47 |
| 7.00 | 4.13 | 5449.20 | 3.312 | 9.54 |
| 7.50 | 2.24 | 5448.94 | 3.071 | 8.48 |
| 8.00 | 1.64 | 5448.66 | 2.822 | 7.35 |
| 8.50 | 1.45 | 5448.41 | 2.605 | 6.09 |
| 9.00 | 1.35 | 5448.21 | 2.440 | 4.75 |
| 9.50 | 1.27 | 5448.07 | 2.318 | 3.77 |
| 10.00 | 1.21 | 5447.96 | 2.228 | 3.21 |
| 10.50 | 1.15 | 5447.85 | 2.149 | 2.98 |
| 11.00 | 1.11 | 5447.76 | 2.077 | 2.77 |
| 11.50 | 1.06 | 5447.67 | 2.011 | 2.58 |
| 12.00 | 1.03 | 5447.59 | 1.951 | 2.41 |
| 12.50 | .99 | 5447.52 | 1.897 | 2.25 |
| 13.00 | .96 | 5447.45 | 1.847 | 2.12 |
| 13.50 | .93 | 5447.39 | 1.801 | 2.00 |
| 14.00 | .91 | 5447.33 | 1.759 | 1.90 |
| 14.50 | .89 | 5447.28 | 1.719 | 1.80 |
| 15.00 | .86 | 5447.23 | 1.683 | 1.71 |
| 15.50 | .84 | 5447.18 | 1.650 | 1.62 |
| 16.00 | .83 | 5447.14 | 1.618 | 1.55 |
| 16.50 | .81 | 5447.10 | 1.590 | 1.47 |
| 17.00 | .79 | 5447.06 | 1.563 | 1.41 |
| 17.50 | .77 | 5447.03 | 1.538 | 1.35 |
| 18.00 | .75 | 5446.99 | 1.516 | 1.29 |
| 18.50 | .74 | 5446.96 | 1.494 | 1.24 |
| 19.00 | .73 | 5446.93 | 1.475 | 1.19 |
| 19.50 | .71 | 5446.90 | 1.456 | 1.14 |
| 20.00 | .70 | 5446.87 | 1.439 | 1.10 |
| 20.50 | .69 | 5446.85 | 1.423 | 1.06 |
| 21.00 | .68 | 5446.83 | 1.409 | 1.02 |
| 21.50 | .67 | 5446.80 | 1.395 | .99 |
| 22.00 | .66 | 5446.78 | 1.382 | .96 |
| 22.50 | .64 | 5446.77 | 1.370 | .93 |
| 23.00 | .63 | 5446.75 | 1.359 | .90 |
| 23.50 | .62 | 5446.73 | 1.349 | .87 |
| 24.00 | .62 | 5446.72 | 1.339 | .85 |
| 24.50 | .07 | 5446.68 | 1.316 | .79 |
| 25.00 | .01 | 5446.64 | 1.286 | .72 |
| 25.50 | .00 | 5446.59 | 1.259 | .65 |
| 26.00 | .00 | 5446.55 | 1.233 | .58 |
| 26.50 | .00 | 5446.52 | 1.210 | .53 |
| 27.00 | .00 | 5446.48 | 1.190 | .48 |

| | | | | |
|---|---|---|---|---|
| 27.50 | .00 | 5446.45 | 1.170 | .45 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 28.00 | .00 | 5446.42 | 1.152 | .42 |
| 28.50 | .00 | 5446.39 | 1.135 | .40 |
| 29.00 | .00 | 5446.36 | 1.119 | .37 |
| 29.50 | .00 | 5446.34 | 1.105 | .35 |
| 30.00 | .00 | 5446.31 | 1.091 | .33 |
| 30.50 | .00 | 5446.29 | 1.078 | .31 |
| 31.00 | .00 | 5446.27 | 1.065 | .29 |
| 31.50 | .00 | 5446.25 | 1.054 | .27 |
| 32.00 | .00 | 5446.23 | 1.043 | .25 |
| 32.50 | .00 | 5446.21 | 1.033 | .24 |
| 33.00 | .00 | 5446.20 | 1.024 | .22 |
| 33.50 | .00 | 5446.18 | 1.015 | .21 |
| 34.00 | .00 | 5446.17 | 1.007 | .19 |
| 34.50 | .00 | 5446.15 | .999 | .18 |
| 35.00 | .00 | 5446.14 | .992 | .17 |
| 35.50 | .00 | 5446.13 | .985 | .16 |
| 36.00 | .00 | 5446.12 | .979 | .15 |
| 36.50 | .00 | 5446.11 | .973 | .14 |
| 37.00 | .00 | 5446.10 | .967 | .13 |
| 37.50 | .00 | 5446.09 | .962 | .12 |
| 38.00 | .00 | 5446.08 | .957 | .11 |
| 38.50 | .00 | 5446.07 | .952 | .11 |
| 39.00 | .00 | 5446.07 | .948 | .10 |
| 39.50 | .00 | 5446.06 | .944 | .09 |
| 40.00 | .00 | 5446.05 | .940 | .09 |
| 40.50 | .00 | 5446.05 | .937 | .08 |
| 41.00 | .00 | 5446.04 | .933 | .08 |
| 41.50 | .00 | 5446.04 | .930 | .07 |
| 42.00 | .00 | 5446.03 | .927 | .07 |
| 42.50 | .00 | 5446.03 | .925 | .06 |
| 43.00 | .00 | 5446.02 | .922 | .06 |
| 43.50 | .00 | 5446.02 | .920 | .06 |
| 44.00 | .00 | 5446.01 | .918 | .05 |
| 44.50 | .00 | 5446.01 | .916 | .05 |
| 45.00 | .00 | 5446.01 | .914 | .05 |
| 45.50 | .00 | 5446.00 | .912 | .04 |
| 46.00 | .00 | 5446.00 | .910 | .04 |
| 46.50 | .00 | 5446.00 | .908 | .04 |
| 47.00 | .00 | 5445.99 | .907 | .04 |
| 47.50 | .00 | 5445.99 | .905 | .04 |
| 48.00 | .00 | 5445.99 | .903 | .04 |
| 48.50 | .00 | 5445.98 | .902 | .04 |
| 49.00 | .00 | 5445.98 | .900 | .04 |
| 49.50 | .00 | 5445.98 | .899 | .04 |
| 50.00 | .00 | 5445.97 | .897 | .04 |
| 50.50 | .00 | 5445.97 | .895 | .04 |
| 51.00 | .00 | 5445.97 | .894 | .04 |
| 51.50 | .00 | 5445.96 | .892 | .04 |
| 52.00 | .00 | 5445.96 | .890 | .04 |
| 52.50 | .00 | 5445.96 | .889 | .04 |
| 53.00 | .00 | 5445.95 | .887 | .04 |
| 53.50 | .00 | 5445.95 | .886 | .04 |
| 54.00 | .00 | 5445.95 | .884 | .04 |
| 54.50 | .00 | 5445.94 | .882 | .04 |
| 55.00 | .00 | 5445.94 | .881 | .04 |
| 55.50 | .00 | 5445.94 | .879 | .04 |

| TIME (HRS) | INFLOW (CFS) | ELEV (FEET) | VOLUME (AC-FT) | OUTFLOW (CFS) |
|---|---|---|---|---|
| 56.00 | .00 | 5445.94 | .878 | .04 |
| 56.50 | .00 | 5445.93 | .876 | .04 |
| 57.00 | .00 | 5445.93 | .874 | .04 |
| 57.50 | .00 | 5445.93 | .873 | .04 |
| 58.00 | .00 | 5445.92 | .871 | .04 |
| 58.50 | .00 | 5445.92 | .870 | .04 |
| 59.00 | .00 | 5445.92 | .868 | .04 |
| 59.50 | .00 | 5445.91 | .866 | .04 |

PEAK DISCHARGE = 21.160 CFS - PEAK OCCURS AT HOUR 2.30
MAXIMUM WATER SURFACE ELEVATION = 5451.582
MAXIMUM STORAGE = 5.9219 AC-FT INCREMENTAL TIME= .100000HRS

*

PRINT HYD ID=46 CODE=10

HYDROGRAPH FROM AREA POND.E

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 12.000 | 2.4 | 24.000 | .8 | 36.000 | .1 | 48.000 | .0 |
| 1.000 | .0 | 13.000 | 2.1 | 25.000 | .7 | 37.000 | .1 | 49.000 | .0 |
| 2.000 | 20.0 | 14.000 | 1.9 | 26.000 | .6 | 38.000 | .1 | 50.000 | .0 |
| 3.000 | 19.3 | 15.000 | 1.7 | 27.000 | .5 | 39.000 | .1 | 51.000 | .0 |
| 4.000 | 16.1 | 16.000 | 1.5 | 28.000 | .4 | 40.000 | .1 | 52.000 | .0 |
| 5.000 | 13.5 | 17.000 | 1.4 | 29.000 | .4 | 41.000 | .1 | 53.000 | .0 |
| 6.000 | 11.4 | 18.000 | 1.3 | 30.000 | .3 | 42.000 | .1 | 54.000 | .0 |
| 7.000 | 9.5 | 19.000 | 1.2 | 31.000 | .3 | 43.000 | .1 | 55.000 | .0 |
| 8.000 | 7.3 | 20.000 | 1.1 | 32.000 | .3 | 44.000 | .1 | 56.000 | .0 |
| 9.000 | 4.8 | 21.000 | 1.0 | 33.000 | .2 | 45.000 | .0 | 57.000 | .0 |
| 10.000 | 3.2 | 22.000 | 1.0 | 34.000 | .2 | 46.000 | .0 | 58.000 | .0 |
| 11.000 | 2.8 | 23.000 | .9 | 35.000 | .2 | 47.000 | .0 | 59.000 | .0 |

RUNOFF VOLUME = .98388 INCHES = 10.7238 ACRE-FEET
PEAK DISCHARGE RATE = 21.16 CFS AT 2.300 HOURS BASIN AREA = .2044 SQ. MI.

PLOT HYD ID=46
FLOW RATE (CFS)

```
21..----*-------------------------------------------------------------------------------------------------------.
        .    **
.
        .     *
.
        .    **
.
```

```
          .     **
.         .      *
.         .   *  *
.         .      *
.         .      **
.         .       *
.
17..---*---*------------------------------------------------------------------------------------------------------.
          .       *
.         .        *
.         .        *
.         .        *
.         .        **
.         .   *     *
.         .         *
.         .          *
.         .          *
.
13..----------*-------------------------------------------------------------------------------------------------.
          .          *
.         .          *
.         .          **
.         .           *
.         .           **
.         .   *        *
.         .            **
.         .             *
.         .             *
.
8..---------------*-------------------------------------------------------------------------------------------.
          .              *
.         .              *
.         .               *
.         .               *
.         .               *
.         .                *
.         .                *
.         .                *
.         .                 *
.
4..------------------*-----------------------------------------------------------------------------------------.
          .                 **
.         .                  **
.         .   *               ***
.         .                     ***
.         .                       ****
.         .                           *****
.         .                                *********
.         .                                        ***********
.         .                                                  ****************
.
0..***------------------------------------------------------------------*****************************************************-.
      .00      4.99      9.98      14.98     19.97     24.96     29.95     34.94     39.93     44.93     49.92     54.91
59.90
                                                TIME HOURS
```

```
*
COMPUTE NM HYD      ID=47  HYD NO=BASIN.E6  DA=.00488 SQ MI
                                   %A=0.0  %B=5.0  %C=5.0 %D=90.0
                                   TP=-0.133 HR  RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   17.379    CFS   UNIT VOLUME =    1.030       B =   526.28      P60 = 1.8400
     AREA =      .004392 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

     K =   .118257HR    TP =   .133000HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989065
```

```
UNIT PEAK =   1.3005    CFS   UNIT VOLUME =    .9989       B =   354.44      P60 = 1.8400
AREA =      .000488 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD          ID=47 CODE=10
```

HYDROGRAPH FROM AREA BASIN.E6

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 5.000 | .1 | 10.000 | .1 | 15.000 | .1 | 20.000 | .1 |
| 1.000 | .0 | 6.000 | .1 | 11.000 | .1 | 16.000 | .1 | 21.000 | .1 |
| 2.000 | 2.9 | 7.000 | .1 | 12.000 | .1 | 17.000 | .1 | 22.000 | .1 |
| 3.000 | .1 | 8.000 | .1 | 13.000 | .1 | 18.000 | .1 | 23.000 | .1 |
| 4.000 | .1 | 9.000 | .1 | 14.000 | .1 | 19.000 | .1 | 24.000 | .1 |

```
RUNOFF VOLUME =     2.26512 INCHES     =        .5895 ACRE-FEET
PEAK DISCHARGE RATE =      11.09 CFS  AT   1.500 HOURS   BASIN AREA =   .0049 SQ. MI.

*
ADD HYD                     ID=48 HYD=TOTALE ID I=46 II=47
PRINT HYD                  ID=46 CODE=10
```

HYDROGRAPH FROM AREA POND.E

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|---|---|---|---|
| .000 | .0 | 12.000 | 2.4 | 24.000 | .8 | 36.000 | .1 | 48.000 | .0 |
| 1.000 | .0 | 13.000 | 2.1 | 25.000 | .7 | 37.000 | .1 | 49.000 | .0 |
| 2.000 | 20.0 | 14.000 | 1.9 | 26.000 | .6 | 38.000 | .1 | 50.000 | .0 |
| 3.000 | 19.3 | 15.000 | 1.7 | 27.000 | .5 | 39.000 | .1 | 51.000 | .0 |
| 4.000 | 16.1 | 16.000 | 1.5 | 28.000 | .4 | 40.000 | .1 | 52.000 | .0 |
| 5.000 | 13.5 | 17.000 | 1.4 | 29.000 | .4 | 41.000 | .1 | 53.000 | .0 |
| 6.000 | 11.4 | 18.000 | 1.3 | 30.000 | .3 | 42.000 | .1 | 54.000 | .0 |
| 7.000 | 9.5 | 19.000 | 1.2 | 31.000 | .3 | 43.000 | .1 | 55.000 | .0 |
| 8.000 | 7.3 | 20.000 | 1.1 | 32.000 | .3 | 44.000 | .1 | 56.000 | .0 |
| 9.000 | 4.8 | 21.000 | 1.0 | 33.000 | .2 | 45.000 | .0 | 57.000 | .0 |
| 10.000 | 3.2 | 22.000 | 1.0 | 34.000 | .2 | 46.000 | .0 | 58.000 | .0 |
| 11.000 | 2.8 | 23.000 | .9 | 35.000 | .2 | 47.000 | .0 | 59.000 | .0 |

```
RUNOFF VOLUME =      .98388 INCHES     =      10.7238 ACRE-FEET
PEAK DISCHARGE RATE =      21.16 CFS  AT   2.300 HOURS   BASIN AREA =   .2044 SQ. MI.

*
*
FINISH

NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 14:30:47
```

```
ADD HYD              ID=18 HYD=TEMP.D ID I=17 II=6
PRINT HYD             ID=18 CODE=0
*
*S ADD BASINS TEMP D AND FUTURE BASIN 2 TO CREATE TEMP E*******************************
ADD HYD              ID=19 HYD=TEMP.E ID I=18 II=7
PRINT HYD             ID=19 CODE=0
*
*S ADD BASINS TEMP E AND FUTURE BASIN 3 TO CREATE TEMP F*******************************
ADD HYD              ID=20 HYD=TEMP.F ID I=19 II=8
PRINT HYD             ID=20 CODE=0
*
*S ADD BASINS TEMP F AND OFFSITE BASIN 3 TO CREATE TEMP G*******************************
ADD HYD              ID=21 HYD=TEMP.G ID I=20 II=11
PRINT HYD             ID=21 CODE=0
*
*S ADD BASINS TEMP G AND OFFSITE BASIN 4 TO CREATE TEMP H*******************************
ADD HYD              ID=22 HYD=TEMP.H ID I=21 II=12
PRINT HYD             ID=22 CODE=0
*
*S ADD BASINS TEMP H AND OFFSITE BASIN WELL TO CREATE TEMP I*******************************
ADD HYD              ID=23 HYD=TEMP.1 ID I=22 II=14
PRINT HYD             ID=23 CODE=0
*
*S ADD BASINS TEMP I AND OFFSITE BASIN 5 TO CREATE TEMP J*******************************
ADD HYD              ID=24 HYD=TEMP.J ID I=23 II=13
PRINT HYD             ID=24 CODE=0
*
*S TEMP BASIN J REPLACES BASIN E3 AND E5 FROM THE DMP AHYMO FILE***********************

COMPUTE NM HYD       ID=25  HYD NO=OFFSITE2  DA=.0805 SQ MI
                            %A=100  %B=0.0  %C=0.0 %D=0.0
                            TP=-.66 HR  RAIN=-1
PRINT HYD            ID=25 CODE=10
*
*
ROUTE RESERVOIR    ID=26 HYD=OFFPOND2  INFLOW ID=25 CODE=5
                            OUTFLOW       STORAGE DEPTH
                            0     0                0
                            2.16  0.047            1
                            3.06  0.222            2
                            3.75  0.466            3
                            4.33  0.751            4
                            4.84  1.081            5
*
*
 PRINT HYD                  ID=26 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.011
                             DIA=2.0  N=0.013
ROUTE MCUNGE          ID=27 HYD=RTE.OFFPOND2 INFLOW ID=26
                      DT=0.0  L=900 NS=0  SLOPE=0.011
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=27 CODE=0
*
*
COMPUTE NM HYD       ID=28  HYD NO=BASIN.B  DA=.01998 SQ MI
                            %A=0  %B=34.0  %C=34.0 %D=32.0
                            TP=-.133 HR  RAIN=-1
PRINT HYD            ID=28 CODE=10
*
*
ROUTE RESERVOIR    ID=29 HYD=POND.B  INFLOW ID=28 CODE=5
                            OUTFLOW       STORAGE DEPTH
                            0     0                5515
                            1.71  0.06             5516
                            2.42  0.24             5517
                            2.96  0.55             5518
                            3.42  0.99             5519
                            3.82  1.67             5520
*
*
PRINT HYD                   ID=29 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.03
                             DIA=2.0  N=0.013
ROUTE MCUNGE          ID=30 HYD=RTE.PONDB INFLOW ID=29
                      DT=0.0  L=1180 NS=0  SLOPE=0.03
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=30 CODE=0
*
*
ADD HYD            ID=31 HYD=OFF.B ID I=30 II=27
PRINT HYD                  ID=31 CODE=10
*
*
COMPUTE NM HYD       ID=32  HYD NO=BASINE1.1  DA=.02753 SQ MI
                            %A=0.0  %B=33.0  %C=33.0 %D=34.0
                            TP=-0.133 HR  RAIN=-1
PRINT HYD            ID=32 CODE=10
*
*
ADD HYD              ID=33 HYD=OFF.E11 ID I=32 II=31
PRINT HYD                  ID=33 CODE=10
*
*
COMPUTE NM HYD       ID=34  HYD NO=BASINE1.2  DA=.00588 SQ MI
                            %A=0.0  %B=33.0  %C=33.0 %D=34.0
                            TP=-0.133 HR  RAIN=-1
PRINT HYD            ID=34 CODE=10
*
*
COMPUTE NM HYD       ID=35  HYD NO=BASIN.E2  DA=.01348 SQ MI
                            %A=0.0  %B=18.0  %C=18.0 %D=64.0
                            TP=-.133 HR  RAIN=-1
PRINT HYD            ID=35 CODE=10
```

```
*
*
ADD HYD              ID=36 HYD=E2.E12 ID I=34 II=35
PRINT HYD                  ID=36 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.002
                           DIA=3.0  N=0.013
ROUTE MCUNGE          ID=37 HYD=RTE.E12 INFLOW ID=36
                      DT=0.0  L=800 NS=0  SLOPE=0.01
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=37 CODE=0
*
*
COMPUTE NM HYD       ID=38  HYD NO=BASIN.E4  DA=.00577 SQ MI
                           %A=0.0  %B=5.0  %C=5.0 %D=90.0
                           TP=-0.133 HR  RAIN=-1
PRINT HYD            ID=38 CODE=10
*
*
ADD HYD              ID=39 HYD=AP1 ID I=38 II=33
PRINT HYD                  ID=39 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                           DIA=4.0  N=0.013
ROUTE MCUNGE          ID=40 HYD=RTE.E1E4 INFLOW ID=39
                      DT=0.0  L=400 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=40 CODE=0
*
*
ADD HYD            ID=41 HYD=AP2 ID I=37 II=40
PRINT HYD                  ID=41 CODE=10
*
*
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1   SLP=0.026
                           DIA=4.0  N=0.013
ROUTE MCUNGE          ID=42 HYD=RTE.E1E4 INFLOW ID=41
                      DT=0.0  L=600 NS=0  SLOPE=0.026
                      MATCODE=0 REGCODE=0 CCODE=0 MM CODE=0
*
PRINT HYD             ID=42 CODE=0
*
ADD HYD               ID=43 HYD=AP3 ID I=42 II=24
PRINT HYD                  ID=43 CODE=10
PLOT HYD                   ID=43
*
COMPUTE NM HYD       ID=44  HYD NO=BASIN.OFF6  DA=.0014 SQ MI
                           %A=0.0  %B=0  %C=100.0 %D=0
                           TP=-0.133 HR  RAIN=-1
PRINT HYD            ID=44 CODE=10
*
ADD HYD               ID=45 HYD=POND ID I=43 II=44
PRINT HYD                  ID=45 CODE=10
PLOT HYD                   ID=45
*
*
ROUTE RESERVOIR      ID=46 HYD=POND.E  INFLOW ID=45 CODE=5
                           OUTFLOW       STORAGE DEPTH
                           0     0.04            5444
                           0.01  0.23            5444.5
                           0.02  0.43            5445
                           0.03  0.66            5445.5
                           0.04  0.91            5446
                           0.5   1.20            5446.5
                           1.3   1.52            5447
                           2.2   1.88            5447.5
                           3.3   2.26            5448
                           6.7   2.68            5448.5
                           8.7   3.12            5449
                           10.8  3.60            5449.5
                           13.1  4.10            5450
                           15.5  4.65            5450.5
                           18.0  5.22            5451
                           20.7  5.82            5451.5
                           23.5  6.44            5452
*
PRINT HYD                  ID=46 CODE=10
PLOT HYD                   ID=46
*
COMPUTE NM HYD       ID=47  HYD NO=BASIN.E6  DA=.00488 SQ MI
                           %A=0.0  %B=5.0  %C=5.0 %D=90.0
                           TP=-0.133 HR  RAIN=-1
PRINT HYD            ID=47 CODE=10
*
ADD HYD             ID=48 HYD=TOTALE ID I=46 II=47
PRINT HYD                  ID=46 CODE=10
*
*
FINISH
```

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02c RUN DATE (MON/DAY/YR) =06/23/2014
INPUT FILE = DEV_Cond.HYM USER NO.= AHYMO-S-9702c1BohanHu-AH

| 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 TIERRA VISTA UNIT 3A SUBDIVISION DRAINAGE BASIN (D) PROPOSED | | | | | | | | | | | |
| *S 100 YEAR - 24 HOUR STORM | | | | | | | | | | | |
| *S | | | | | | | | | | | |
| START | | | | | | | | | | TIME= | .00 |
| LOCATION | | DEFAULT | | | | | | | | | |
| RAINFALL TYPE= 2 | | | | | | | | | | RAIN24= | 2.660 |
| *S | | | | | | | | | | | |
| *S | ********** | | | | | | | | | | |
| *S | *COMPUTE ONSITE BASINS* | | | | | | | | | | |
| *S | ********** | | | | | | | | | | |
| *S | | | | | | | | | | | |
| *S | | | | | | | | | | | |
| *S | | | | | | | | | | | |
| *S COMPUTE BASIN 1 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | 1.00 | - | 1 | .00500 | 8.92 | .439 | 1.64591 | 1.500 | 2.788 | PER IMP= | 52.00 |
| *S COMPUTE BASIN 2 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | 2.00 | - | 2 | .00451 | 7.86 | .380 | 1.58072 | 1.500 | 2.721 | PER IMP= | 48.00 |
| *S COMPUTE BASIN 3 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | 3.00 | - | 3 | .00688 | 11.22 | .520 | 1.41777 | 1.500 | 2.550 | PER IMP= | 38.00 |
| *S COMPUTE BASIN 4 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | 4.00 | - | 4 | .00359 | 6.26 | .303 | 1.58072 | 1.500 | 2.722 | PER IMP= | 48.00 |
| *S COMPUTE BASIN 5 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | 5.00 | - | 5 | .00188 | 3.05 | .140 | 1.40148 | 1.500 | 2.541 | PER IMP= | 37.00 |
| *S COMPUTE FUTURE BASIN 1 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | FB.1 | - | 6 | .01078 | 19.93 | 1.003 | 1.74368 | 1.500 | 2.888 | PER IMP= | 58.00 |
| *S COMPUTE FUTURE BASIN 2 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | FB.2 | - | 7 | .00750 | 13.54 | .671 | 1.67850 | 1.500 | 2.821 | PER IMP= | 54.00 |
| *S COMPUTE FUTURE BASIN 3 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | FB.3 | - | 8 | .00594 | 10.79 | .537 | 1.69479 | 1.500 | 2.839 | PER IMP= | 55.00 |
| *S COMPUTE FUTURE BASIN 4 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | FB.4 | - | 9 | .00484 | 8.07 | .379 | 1.46666 | 1.500 | 2.602 | PER IMP= | 41.00 |
| *S COMPUTE OFFSITE BASIN 2 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | OFF.2 | - | 10 | .00094 | .62 | .023 | .45840 | 1.500 | 1.035 | PER IMP= | .00 |
| *S COMPUTE OFFSITE BASIN 3 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | OFF.3 | - | 11 | .00109 | .74 | .027 | .46712 | 1.500 | 1.056 | PER IMP= | .00 |
| *S COMPUTE OFFSITE BASIN 4 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | OFF.4 | - | 12 | .00141 | .93 | .034 | .45840 | 1.500 | 1.033 | PER IMP= | .00 |
| *S COMPUTE OFFSITE BASIN 5 ********** | | | | | | | | | | | |
| COMPUTE NM HYD | OFF.5 | - | 13 | .00328 | 1.99 | .075 | .42601 | 1.500 | .948 | PER IMP= | .00 |
| *S COMPUTE OFFSITE BASIN WELL ********** | | | | | | | | | | | |
| COMPUTE NM HYD | OFF.WELL | - | 14 | .00156 | 2.26 | .094 | 1.12446 | 1.500 | 2.256 | PER IMP= | 20.00 |
| *S | | | | | | | | | | | |
| *S ADD BASINS 1 AND 2 TO CREATE TEMP A ********** | | | | | | | | | | | |
| ADD HYD | TEMP.A | 1& 2 | 15 | .00951 | 16.78 | .819 | 1.61490 | 1.500 | 2.757 | | |
| *S ADD BASINS TEMP A AND 3 TO CREATE TEMP 1.B********** | | | | | | | | | | | |
| ADD HYD | TEMP.B | 15& 3 | 16 | .01639 | 28.00 | 1.339 | 1.53218 | 1.500 | 2.670 | | |
| *S ADD BASINS TEMP B AND 5 TO CREATE TEMP C********** | | | | | | | | | | | |
| ADD HYD | TEMP.C | 16& 5 | 17 | .01826 | 31.05 | 1.479 | 1.51874 | 1.500 | 2.657 | | |
| *S ADD BASINS TEMP C AND FUTURE BASIN 1 TO CREATE TEMP D********** | | | | | | | | | | | |

| 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 = 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ADD HYD | TEMP.D | 17& 6 | 18 | .02904 | 50.98 | 2.482 | 1.60222 | 1.500 | 2.743 | | |
| *S ADD BASINS TEMP D AND FUTURE BASIN 2 TO CREATE TEMP E********** | | | | | | | | | | | |
| ADD HYD | TEMP.E | 18& 7 | 19 | .03654 | 64.52 | 3.153 | 1.61787 | 1.500 | 2.759 | | |
| *S ADD BASINS TEMP E AND FUTURE BASIN 3 TO CREATE TEMP F********** | | | | | | | | | | | |
| ADD HYD | TEMP.F | 19& 8 | 20 | .04248 | 75.31 | 3.690 | 1.62861 | 1.500 | 2.770 | | |
| *S ADD BASINS TEMP F AND OFFSITE BASIN 3 TO CREATE TEMP G********** | | | | | | | | | | | |
| ADD HYD | TEMP.G | 20&11 | 21 | .04358 | 76.05 | 3.717 | 1.59945 | 1.500 | 2.727 | | |
| *S ADD BASINS TEMP G AND OFFSITE BASIN 4 TO CREATE TEMP H********** | | | | | | | | | | | |
| ADD HYD | TEMP.H | 21&12 | 22 | .04498 | 76.98 | 3.752 | 1.56378 | 1.500 | 2.674 | | |
| *S ADD BASINS TEMP H AND OFFSITE BASIN WELL TO CREATE TEMP I********** | | | | | | | | | | | |
| ADD HYD | TEMP.1 | 22&14 | 23 | .04655 | 79.24 | 3.845 | 1.54902 | 1.500 | 2.660 | | |
| *S ADD BASINS TEMP I AND OFFSITE BASIN 5 TO CREATE TEMP J********** | | | | | | | | | | | |
| ADD HYD | TEMP.J | 23&13 | 24 | .04983 | 81.23 | 3.920 | 1.47507 | 1.500 | 2.547 | | |
| *S TEMP BASIN J REPLACES BASIN E3 AND E5 FROM THE DMP AHYMO FILE********** | | | | | | | | | | | |
| COMPUTE NM HYD | OFFSITE2 | - | 25 | .08050 | 13.87 | 1.783 | .41534 | 2.000 | .269 | PER IMP= | .00 |
| ROUTE RESERVOIR | OFFPOND2 | 25 | 26 | .08050 | 4.43 | 1.783 | .41534 | 3.100 | .086 | AC-FT= | .813 |
| ROUTE MCUNGE | RTE.OFFPOND2 | 26 | 27 | .08050 | 4.43 | 1.783 | .41538 | 3.200 | .086 | CCODE = | .2 |
| COMPUTE NM HYD | BASIN.B | - | 28 | .01998 | 34.80 | 1.407 | 1.32000 | 1.500 | 2.721 | PER IMP= | 32.00 |
| ROUTE RESERVOIR | POND.B | 28 | 29 | .01998 | 3.36 | 1.407 | 1.31999 | 2.100 | .263 | AC-FT= | .930 |
| ROUTE MCUNGE | RTE.PONDB | 29 | 30 | .01998 | 3.36 | 1.407 | 1.32010 | 2.100 | .263 | CCODE = | .2 |
| ADD HYD | OFF.B | 30&27 | 31 | .10048 | 7.62 | 3.190 | .59525 | 2.900 | .118 | | |
| COMPUTE NM HYD | BASINE1.1 | - | 32 | .02753 | 48.45 | 1.986 | 1.35259 | 1.500 | 2.750 | PER IMP= | 34.00 |
| ADD HYD | OFF.E11 | 32&31 | 33 | .12801 | 51.42 | 5.176 | .75812 | 1.500 | .628 | | |
| COMPUTE NM HYD | BASINE1.2 | - | 34 | .00588 | 10.36 | .424 | 1.35259 | 1.500 | 2.752 | PER IMP= | 34.00 |
| COMPUTE NM HYD | BASIN.E2 | - | 35 | .01348 | 27.42 | 1.324 | 1.84145 | 1.500 | 3.178 | PER IMP= | 64.00 |
| ADD HYD | E2.E12 | 34&35 | 36 | .01936 | 37.77 | 1.748 | 1.69294 | 1.500 | 3.049 | | |
| ROUTE MCUNGE | RTE.E12 | 36 | 37 | .01936 | 31.30 | 1.684 | 1.63074 | 1.600 | 2.526 | CCODE = | .2 |
| COMPUTE NM HYD | BASIN.E4 | - | 38 | .00577 | 13.11 | .697 | 2.26513 | 1.500 | 3.550 | PER IMP= | 90.00 |
| ADD HYD | AP1 | 38&33 | 39 | .13378 | 64.53 | 5.873 | .82312 | 1.500 | .754 | | |
| ROUTE MCUNGE | RTE.E1E4 | 39 | 40 | .13378 | 64.53 | 5.873 | .82312 | 1.500 | .754 | CCODE = | .0 |
| ADD HYD | AP2 | 37&40 | 41 | .15314 | 95.72 | 7.557 | .92521 | 1.500 | .977 | | |
| ROUTE MCUNGE | RTE.E1E4 | 41 | 42 | .15314 | 95.72 | 7.557 | .92521 | 1.500 | .977 | CCODE = | .0 |
| ADD HYD | AP3 | 42&24 | 43 | .20297 | 176.95 | 11.476 | 1.06019 | 1.500 | 1.362 | | |
| COMPUTE NM HYD | BASIN.OFF6 | - | 44 | .00140 | 2.33 | .072 | .96928 | 1.500 | 2.597 | PER IMP= | .00 |
| ADD HYD | POND | 43&44 | 45 | .20437 | 179.27 | 11.549 | 1.05957 | 1.500 | 1.371 | | |
| ROUTE RESERVOIR | POND.E | 45 | 46 | .20437 | 21.16 | 10.724 | .98388 | 2.300 | .162 | AC-FT= | 5.922 |
| COMPUTE NM HYD | BASIN.E6 | - | 47 | .00488 | 11.09 | .590 | 2.26512 | 1.500 | 3.550 | PER IMP= | 90.00 |
| ADD HYD | TOTALE | 46&47 | 48 | .20925 | 22.92 | 11.313 | 1.01376 | 2.000 | .171 | | |
| FINISH | | | | | | | | | | | |

27 - Routed offsite Pond 2
25 - offsite Basin 2

```
                                                    DEV_COND.SUM
AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -                          - VERSION:  1997.02c      RUN DATE (MON/DAY/YR) =06/23/2014
INPUT FILE = DEV_Cond.HYM                                                                 USER NO.= AHYMO-S-9702c1BohanHu-AH

                            FROM  TO                    PEAK        RUNOFF                TIME TO    CFS      PAGE =   1
                HYDROGRAPH   ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK     PER
COMMAND       IDENTIFICATION  NO.  NO.     (SQ MI)     (CFS)       (AC-FT)    (INCHES)   (HOURS)   ACRE     NOTATION

*S  TIERRA VISTA UNIT 3A SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 6 HOUR STORM
*S
START                                                                                                        TIME=       .00
LOCATION                        DEFAULT
RAINFALL  TYPE= 1                                                                                            RAIN6=    2.200
*S
*S                    ************************
*S                    *COMPUTE ONSITE BASINS*
*S                    ************************
*S
*S
*S
*S COMPUTE BASIN 1 ****************************************************
COMPUTE NM HYD          1.00   -     1        .00500        8.92        .375      1.40680    1.500    2.788 PER IMP=  52.00
*S COMPUTE BASIN 2 ****************************************************
COMPUTE NM HYD          2.00   -     2        .00451        7.86        .327      1.36001    1.500    2.721 PER IMP=  48.00
*S COMPUTE BASIN 3 ****************************************************
COMPUTE NM HYD          3.00   -     3        .00688       11.22        .456      1.24304    1.500    2.550 PER IMP=  38.00
*S COMPUTE BASIN 4 ****************************************************
COMPUTE NM HYD          4.00   -     4        .00359        6.26        .261      1.36001    1.500    2.722 PER IMP=  48.00
*S COMPUTE BASIN 5 ****************************************************
COMPUTE NM HYD          5.00   -     5        .00188        3.05        .123      1.23134    1.500    2.541 PER IMP=  37.00
*S COMPUTE FUTURE BASIN 1 *********************************************
COMPUTE NM HYD          FB.1   -     6        .01078       19.93        .849      1.47698    1.500    2.888 PER IMP=  58.00
*S COMPUTE FUTURE BASIN 2 *********************************************
COMPUTE NM HYD          FB.2   -     7        .00750       13.54        .572      1.43019    1.500    2.821 PER IMP=  54.00
*S COMPUTE FUTURE BASIN 3 *********************************************
COMPUTE NM HYD          FB.3   -     8        .00594       10.79        .457      1.44189    1.500    2.839 PER IMP=  55.00
*S COMPUTE FUTURE BASIN 4 *********************************************
COMPUTE NM HYD          FB.4   -     9        .00484        8.07        .330      1.27813    1.500    2.602 PER IMP=  41.00
*S COMPUTE OFFSITE BASIN 2 ********************************************
COMPUTE NM HYD         OFF.2   -    10        .00094         .62        .023       .45840    1.500    1.035 PER IMP=    .00
*S COMPUTE OFFSITE BASIN 3 ********************************************
COMPUTE NM HYD         OFF.3   -    11        .00109         .74        .027       .46712    1.500    1.056 PER IMP=    .00
*S COMPUTE OFFSITE BASIN 4 ********************************************
COMPUTE NM HYD         OFF.4   -    12        .00141         .93        .034       .45840    1.500    1.033 PER IMP=    .00
*S COMPUTE OFFSITE BASIN 5 ********************************************
COMPUTE NM HYD         OFF.5   -    13        .00328        1.99        .075       .42601    1.500     .948 PER IMP=    .00
*S COMPUTE OFFSITE BASIN WELL *****************************************
COMPUTE NM HYD      OFF.WELL   -    14        .00156        2.26        .086      1.03249    1.500    2.256 PER IMP=  20.00
*S
*S ADD BASINS 1 AND 2 TO CREATE TEMP A ********************************
ADD HYD               TEMP.A  1& 2  15        .00951       16.78        .702      1.38453    1.500    2.757
*S ADD BASINS TEMP A AND 3 TO CREATE TEMP 1.B*************************
ADD HYD               TEMP.B 15& 3  16        .01639       28.00       1.158      1.32516    1.500    2.670
*S ADD BASINS TEMP B AND 5 TO CREATE TEMP C*************************
ADD HYD               TEMP.C 16& 5  17        .01826       31.05       1.281      1.31551    1.500    2.657
*S ADD BASINS TEMP C AND FUTURE BASIN 1 TO CREATE TEMP D**********************
```

```
                            FROM  TO                    PEAK        RUNOFF                TIME TO    CFS      PAGE =   2
                HYDROGRAPH   ID   ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK     PER
COMMAND       IDENTIFICATION  NO.  NO.     (SQ MI)     (CFS)       (AC-FT)    (INCHES)   (HOURS)   ACRE     NOTATION

ADD HYD               TEMP.D 17& 6  18        .02904       50.98       2.131      1.37543    1.500    2.743
*S ADD BASINS TEMP D AND FUTURE BASIN 2 TO CREATE TEMP E**********************
ADD HYD               TEMP.E 18& 7  19        .03654       64.52       2.703      1.38666    1.500    2.759
*S ADD BASINS TEMP E AND FUTURE BASIN 3 TO CREATE TEMP F**********************
ADD HYD               TEMP.F 19& 8  20        .04248       75.31       3.159      1.39437    1.500    2.770
*S ADD BASINS TEMP F AND OFFSITE BASIN 3 TO CREATE TEMP G**********************
ADD HYD               TEMP.G 20&11  21        .04358       76.05       3.186      1.37109    1.500    2.727
*S ADD BASINS TEMP G AND OFFSITE BASIN 4 TO CREATE TEMP H**********************
ADD HYD               TEMP.H 21&12  22        .04498       76.98       3.221      1.34256    1.500    2.674
*S ADD BASINS TEMP H AND OFFSITE BASIN WELL TO CREATE TEMP I*******************
ADD HYD               TEMP.1 22&14  23        .04655       79.24       3.307      1.33215    1.500    2.660
*S ADD BASINS TEMP I AND OFFSITE BASIN 5 TO CREATE TEMP J**********************
ADD HYD               TEMP.J 23&13  24        .04983       81.23       3.381      1.27248    1.500    2.547
*S TEMP BASIN J REPLACES BASIN E3 AND E5 FROM THE DMP AHYMO FILE***************
COMPUTE NM HYD      OFFSITE2   -    25        .08050       13.87       1.783       .41534    2.000     .269 PER IMP=    .00
ROUTE RESERVOIR     OFFPOND2   25   26        .08050        4.43       1.783       .41534    3.100     .086 AC-FT=     .813
ROUTE MCUNGE    RTE.OFFPOND2   26   27        .08050        4.43       1.783       .41538    3.200     .086 CCODE =      .2
COMPUTE NM HYD       BASIN.B   -    28        .01998       34.80       1.250      1.17286    1.500    2.721 PER IMP=  32.00
ROUTE RESERVOIR       POND.B   28   29        .01998        3.36       1.250      1.17284    2.100     .263 AC-FT=     .930
ROUTE MCUNGE        RTE.PONDB  29   30        .01998        3.36       1.250      1.17295    2.100     .263 CCODE =      .2
ADD HYD                OFF.B 30&27  31        .10048        7.62       3.033       .56599    2.900     .118
COMPUTE NM HYD     BASINE1.1   -    32        .02753       48.45       1.756      1.19625    1.500    2.750 PER IMP=  34.00
ADD HYD              OFF.E11 32&31  33        .12801       51.42       4.790       .70153    1.500     .628
COMPUTE NM HYD     BASINE1.2   -    34        .00588       10.36        .375      1.19625    1.500    2.752 PER IMP=  34.00
COMPUTE NM HYD      BASIN.E2   -    35        .01348       27.42       1.112      1.54716    1.500    3.178 PER IMP=  64.00
ADD HYD               E2.E12 34&35  36        .01936       37.77       1.487      1.44056    1.500    3.049
ROUTE MCUNGE         RTE.E12   36   37        .01936       31.30       1.423      1.37837    1.600    2.526 CCODE =      .2
COMPUTE NM HYD      BASIN.E4   -    38        .00577       13.11        .570      1.85129    1.500    3.550 PER IMP=  90.00
ADD HYD                  AP1 38&33  39        .13378       64.53       5.359       .75112    1.500     .754
ROUTE MCUNGE        RTE.E1E4   39   40        .13378       64.53       5.359       .75112    1.500     .754 CCODE =      .0
ADD HYD                  AP2 37&40  41        .15314       95.72       6.782       .83041    1.500     .977
ROUTE MCUNGE        RTE.E1E4   41   42        .15314       95.72       6.782       .83041    1.500     .977 CCODE =      .0
ADD HYD                  AP3 42&24  43        .20297      176.95      10.164       .93893    1.500    1.362
COMPUTE NM HYD    BASIN.OFF6   -    44        .00140        2.33        .072      .96928    1.500    2.597 PER IMP=    .00
ADD HYD                 POND 43&44  45        .20437      179.27      10.236       .93914    1.500    1.371
ROUTE RESERVOIR       POND.E   45   46        .20437       21.16       9.438       .86588    2.300     .162 AC-FT=    5.922
COMPUTE NM HYD      BASIN.E6   -    47        .00488       11.09        .482      1.85129    1.500    3.550 PER IMP=  90.00
ADD HYD                TOTALE 46&47  48        .20925       22.92       9.919       .88886    2.000     .171
FINISH
```

Pond E Vol

# APPENDIX B

# STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

Bohannan Huston

Woodmont just west of Nightshine St.txt

MANNING'S N = 0.017  SLOPE = 0.043

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 12.0 | 0.1 | 9.0 | 70.2 | 0.7 |
| 2.0 | 9.4 | 0.7 | 6.0 | 40.0 | 0.7 | 10.0 | 70.6 | 0.7 |
| 3.0 | 9.8 | 0.7 | 7.0 | 68.0 | 0.1 | 11.0 | 80.0 | 0.9 |
| 4.0 | 10.0 | 0.0 | 8.0 | 70.0 | 0.0 | | | |

INLETS #1 & #2

LOCATED IN WOODMONT AVE JUST WEST OF NIGHTSHINE ST

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.059 | 1.645 | 1.498 | 2.484 | 0.085 |
| 0.100 | 0.100 | 0.156 | 0.372 | 3.290 | 2.379 | 4.048 | 0.188 |
| 0.150 | 0.150 | 0.366 | 0.992 | 6.318 | 2.712 | 6.996 | 0.264 |
| 0.200 | 0.200 | 0.795 | 2.439 | 11.423 | 3.067 | 12.021 | 0.346 |
| 0.250 | 0.250 | 1.476 | 5.345 | 16.527 | 3.621 | 17.047 | 0.454 |
| 0.300 | 0.300 | 2.408 | 10.099 | 21.631 | 4.194 | 22.072 | 0.574 |
| 0.350 | 0.350 | 3.591 | 17.072 | 26.735 | 4.754 | 27.098 | 0.702 |
| 0.400 | 0.400 | 5.026 | 26.606 | 31.839 | 5.294 | 32.123 | 0.836 |
| 0.450 | 0.450 | 6.711 | 39.021 | 36.943 | 5.814 | 37.148 | 0.976 |
| 0.500 | 0.500 | 8.648 | 54.623 | 42.048 | 6.316 | 42.174 | 1.120 |
| 0.550 | 0.550 | 10.837 | 73.701 | 47.152 | 6.801 | 47.199 | 1.269 |
| 0.600 | 0.600 | 13.276 | 96.534 | 52.256 | 7.271 | 52.224 | 1.422 |
| 0.650 | 0.650 | 15.967 | 123.390 | 57.360 | 7.728 | 57.250 | 1.579 |
| 0.700 | 0.700 | 18.976 | 150.934 | 65.282 | 7.954 | 64.219 | 1.684 |
| 0.750 | 0.750 | 22.310 | 188.306 | 70.214 | 8.440 | 69.151 | 1.858 |
| 0.800 | 0.800 | 25.891 | 230.648 | 75.147 | 8.908 | 74.082 | 2.034 |
| 0.850 | 0.850 | 29.719 | 278.186 | 80.079 | 9.361 | 79.014 | 2.213 |

BASIN E4 - 13.1 CFS ✓

10% BASIN E-6 - 1.1 CFS

14.2 CFS

STREET CAPACITY

$$\frac{17.1-10.1}{0.7-0.57} = \frac{17.1-14.2}{0.7-x} \Rightarrow \frac{7}{0.13} = \frac{2.9}{0.7-x} \Rightarrow 0.377 = 4.9 - 7x \Rightarrow x = 0.65' < 0.9' \checkmark \text{ok}$$

INLET CAPACITY

$$\frac{17.1-10.1}{0.35-0.3} = \frac{17.1-14.2}{0.35-x} \Rightarrow \frac{7}{0.05} = \frac{2.9}{0.35-x} \Rightarrow 0.145 = 2.45 - 7x \Rightarrow 0.33'$$

@ S = 4.3%, d = 0.33'

2% - 4.2 CFS

5% - 5.8 CFS

$$\frac{5-2}{5.8-4.2} = \frac{5-4.3}{5.8-x} \Rightarrow \frac{3}{1.6} = \frac{0.7}{5.8-x} = 1.12 = 17.4 - 3x$$

x = 5.4 CFS

(PER DWBLE 'A')

RESIDUAL

14.2 - 2(5.4 CFS) = 3.4 CFS Bypass

MANNING'S N = 0.017 SLOPE = 0.035

INLETS #3 & #4

LOCATED BETWEEN LOTS 6/7 & 13/14

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 11.5 | 0.1 | 9.0 | 37.7 | 0.7 |
| 2.0 | 8.9 | 0.7 | 6.0 | 23.5 | 0.4 | 10.0 | 38.1 | 0.7 |
| 3.0 | 9.3 | 0.7 | 7.0 | 35.5 | 0.1 | 11.0 | 47.0 | 0.9 |
| 4.0 | 9.5 | 0.0 | 8.0 | 37.5 | 0.0 | | | |

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.053 | 1.645 | 1.352 | 2.484 | 0.078 |
| 0.100 | 0.100 | 0.156 | 0.336 | 3.290 | 2.146 | 4.048 | 0.172 |
| 0.150 | 0.150 | 0.366 | 0.895 | 6.318 | 2.447 | 6.996 | 0.243 |
| 0.200 | 0.200 | 0.795 | 2.200 | 11.423 | 2.767 | 12.021 | 0.319 |
| 0.250 | 0.250 | 1.476 | 4.822 | 16.527 | 3.267 | 17.047 | 0.416 |
| 0.300 | 0.300 | 2.408 | 9.112 | 21.631 | 3.784 | 22.072 | 0.523 |
| 0.350 | 0.350 | 3.591 | 15.403 | 26.735 | 4.289 | 27.098 | 0.636 |
| 0.400 | 0.400 | 4.981 | 25.259 | 28.839 | 5.072 | 29.123 | 0.800 |
| 0.450 | 0.450 | 6.391 | 38.187 | 28.942 | 5.975 | 29.148 | 1.005 |
| 0.500 | 0.500 | 7.803 | 53.133 | 29.045 | 6.809 | 29.174 | 1.221 |
| 0.550 | 0.550 | 9.217 | 69.956 | 29.148 | 7.590 | 29.199 | 1.446 |
| 0.600 | 0.600 | 10.631 | 88.543 | 29.251 | 8.328 | 29.224 | 1.679 |
| 0.650 | 0.650 | 12.047 | 108.801 | 29.354 | 9.031 | 29.250 | 1.919 |
| 0.700 | 0.700 | 13.536 | 121.534 | 33.273 | 8.979 | 32.217 | 1.954 |
| 0.750 | 0.750 | 15.270 | 135.503 | 38.202 | 8.874 | 37.144 | 1.975 |
| 0.800 | 0.800 | 17.250 | 153.138 | 43.131 | 8.877 | 42.072 | 2.026 |

FUTURE BASIN 1 - 19.9 CFS

45% BASIN 1 - 4.0 CFS

1/2 RESIDUAL FROM INLET 1 & 2 - 1.7 CFS ?

25.6 CFS

Bypass from inlet 1

STREET CAPACITY

d = 0.80' < 0.85' ✓

INLET CAPACITY

d. x = 0.40'

@ S = 3.5%, x = 0.40'

2% - 6 CFS

5% - 8.5 CFS

$$\frac{5-2}{8.5-6} = \frac{5-3.5}{8.5-x} \Rightarrow \frac{3}{2.5} = \frac{1.5}{8.5-x} \Rightarrow 3.75 = 25.5 - 3x$$

x = 7.3 CFS

(PER DOUBLE 'A')

RESIDUAL

25.6 - 2(7.3) ≈ 11.0 CFS

MANNING'S N = 0.017  SLOPE = 0.025

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 11.5 | 0.1 | 9.0 | 37.7 | 0.7 |
| 2.0 | 8.9 | 0.7 | 6.0 | 23.5 | 0.4 | 10.0 | 38.1 | 0.7 |
| 3.0 | 9.3 | 0.7 | 7.0 | 35.5 | 0.1 | 11.0 | 47.0 | 0.9 |
| 4.0 | 9.5 | 0.0 | 8.0 | 37.5 | 0.0 | | | |

INLETS #5 & #6

LOCATED NEAR THE INTERSECTION OF RED BLOOM & ~~HALE~~ ~~BRAJO~~ SOUTHSKY ?

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.044 | 1.645 | 1.138 | 2.484 | 0.070 |
| 0.100 | 0.100 | 0.156 | 0.282 | 3.290 | 1.806 | 4.048 | 0.151 |
| 0.150 | 0.150 | 0.366 | 0.753 | 6.318 | 2.060 | 6.996 | 0.216 |
| 0.200 | 0.200 | 0.795 | 1.852 | 11.423 | 2.329 | 12.021 | 0.284 |
| 0.250 | 0.250 | 1.476 | 4.059 | 16.527 | 2.750 | 17.047 | 0.368 |
| 0.300 | 0.300 | 2.408 | 7.670 | 21.631 | 3.185 | 22.072 | 0.458 |
| 0.350 | 0.350 | 3.591 | 12.965 | 26.735 | 3.610 | 27.098 | 0.553 |
| 0.400 | 0.400 | 4.981 | 21.263 | 28.839 | 4.269 | 29.123 | 0.683 |
| 0.450 | 0.450 | 6.391 | 32.144 | 28.942 | 5.029 | 29.148 | 0.843 |
| 0.500 | 0.500 | 7.803 | 44.726 | 29.045 | 5.732 | 29.174 | 1.011 |
| 0.550 | 0.550 | 9.217 | 58.887 | 29.148 | 6.389 | 29.199 | 1.185 |
| 0.600 | 0.600 | 10.631 | 74.533 | 29.251 | 7.011 | 29.224 | 1.364 |
| 0.650 | 0.650 | 12.047 | 91.585 | 29.354 | 7.602 | 29.250 | 1.549 |
| 0.700 | 0.700 | 13.536 | 102.303 | 33.273 | 7.558 | 32.217 | 1.588 |
| 0.750 | 0.750 | 15.270 | 114.062 | 38.202 | 7.470 | 37.144 | 1.618 |
| 0.800 | 0.800 | 17.250 | 128.907 | 43.131 | 7.473 | 42.072 | 1.669 |

RESIDUAL INLETS 3 & 4 - 11.0 CFS
5% BASIN 1 - 4.9 CFS

15.9 CFS

STREET CAPACITY

$$\frac{21.3-13}{0.68-0.55} = \frac{21.3-15.9}{0.68-x} \Rightarrow \frac{8.3}{0.13} = \frac{5.4}{0.68-x} \Rightarrow 0.702 = 5.644 - 8.3x$$

$$x = 0.60' < 0.65' \checkmark$$

INLET CAPACITY

$$\frac{21.3-13}{0.40-0.35} = \frac{21.3-15.9}{0.40-x} \Rightarrow \frac{8.3}{0.05} = \frac{5.4}{0.4-x} \Rightarrow 0.27 = 3.32 - 8.3x$$

$$x = 0.37'$$

@ S = 2.5%, d = 0.37'

2% - 4.9 CFS
5% - 7.0 CFS

$$\frac{5.2}{7-4.9} = \frac{5.25}{7-x} = \frac{3}{2.1} = \frac{2.5}{7-x} = 21-3x = 5.25 \Rightarrow \underline{\underline{x = 5.3 \text{ CFS}}}$$

(PER DWG 'A')

RESIDUAL

$$15.9 - 2(5.3 \text{ CFS}) = \underline{\underline{5.3 \text{ CFS}}}$$

MANNING'S N = 0.017 SLOPE = 0.067

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 11.5 | 0.1 | 9.0 | 37.7 | 0.7 |
| 2.0 | 8.9 | 0.7 | 6.0 | 23.5 | 0.4 | 10.0 | 38.1 | 0.7 |
| 3.0 | 9.3 | 0.7 | 7.0 | 35.5 | 0.1 | 11.0 | 52.0 | 1.0 |
| 4.0 | 9.5 | 0.0 | 8.0 | 37.5 | 0.0 | | | |

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.073 | 1.645 | 1.865 | 2.484 | 0.104 |
| 0.100 | 0.100 | 0.156 | 0.463 | 3.290 | 2.960 | 4.048 | 0.236 |
| 0.150 | 0.150 | 0.366 | 1.234 | 6.318 | 3.375 | 6.996 | 0.327 |
| 0.200 | 0.200 | 0.795 | 3.035 | 11.423 | 3.817 | 12.021 | 0.427 |
| 0.250 | 0.250 | 1.476 | 6.652 | 16.527 | 4.507 | 17.047 | 0.566 |
| 0.300 | 0.300 | 2.408 | 12.569 | 21.631 | 5.220 | 22.072 | 0.724 |
| 0.350 | 0.350 | 3.591 | 21.247 | 26.735 | 5.917 | 27.098 | 0.894 |
| 0.400 | 0.400 | 4.981 | 34.844 | 28.839 | 6.996 | 29.123 | 1.161 |
| 0.450 | 0.450 | 6.391 | 52.676 | 28.942 | 8.242 | 29.148 | 1.507 |
| 0.500 | 0.500 | 7.803 | 73.294 | 29.045 | 9.393 | 29.174 | 1.872 |
| 0.550 | 0.550 | 9.217 | 96.501 | 29.148 | 10.470 | 29.199 | 2.255 |
| 0.600 | 0.600 | 10.631 | 122.140 | 29.251 | 11.489 | 29.224 | 2.653 |
| 0.650 | 0.650 | 12.047 | 150.084 | 29.354 | 12.458 | 29.250 | 3.064 |
| 0.700 | 0.700 | 13.536 | 167.625 | 33.281 | 12.383 | 32.224 | 3.085 |
| 0.750 | 0.750 | 15.271 | 186.869 | 38.222 | 12.237 | 37.165 | 3.079 |
| 0.800 | 0.800 | 17.253 | 211.180 | 43.164 | 12.240 | 42.106 | 3.130 |

INLETS #7 & #8

LOCATED NEAR THE INTERSECTION OF VALLE PRADO AND SANDMARK

FUTURE BASIN 3 - 10.8 CFS ✓
58% BASIN 3 - 6.5 CFS ✓
OFFSITE BASIN 3 - 0.7 CFS

18 CFS

STREET CAPACITY

$$\frac{21.25-12.6}{0.89-0.72} = \frac{21.3-18}{0.89-x} \Rightarrow \frac{8.7}{0.17} = \frac{3.3}{0.89-x} \Rightarrow 7.743 = 0.561 - 8.7x$$

$x = 0.82' < 0.85'$ ✓ ok

INLET CAPACITY

$$\frac{21.3-12.6}{0.35-0.3} = \frac{21.3-18}{0.35-x} \Rightarrow \frac{8.7}{0.05} = \frac{3.3}{0.35-x} \Rightarrow 3.05 - 8.7x = 0.165$$

$x = 0.33'$

@ $S = 0.67'$, $d = 0.33'$

5% - 5.5 CFS
9% - 7 CFS

$$\frac{7-5.5}{9-5} = \frac{7-x}{9-6.7} \Rightarrow \frac{1.5}{4} = \frac{7-x}{2.3} \Rightarrow 28-4x = 3.45 \Rightarrow x = 6.2 \text{ CFS}$$

(PER DOUBLE 'A')

RESIDUAL

$18.0 - 2(6.2) = 5.6$ CFS

MANNING'S N = 0.017 SLOPE = 0.008

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 11.5 | 0.1 | 9.0 | 37.7 | 0.7 |
| 2.0 | 8.9 | 0.7 | 6.0 | 23.5 | 0.4 | 10.0 | 38.1 | 0.7 |
| 3.0 | 9.3 | 0.7 | 7.0 | 35.5 | 0.1 | 11.0 | 47.0 | 0.9 |
| 4.0 | 9.5 | 0.0 | 8.0 | 37.5 | 0.0 | | | |

INLETS #9 & #10

LOCATED IN SANDMARK NEAR SOUTH SKY STREET

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.025 | 1.645 | 0.646 | 2.484 | 0.056 |
| 0.100 | 0.100 | 0.156 | 0.160 | 3.290 | 1.026 | 4.048 | 0.116 |
| 0.150 | 0.150 | 0.366 | 0.428 | 6.318 | 1.170 | 6.996 | 0.171 |
| 0.200 | 0.200 | 0.795 | 1.052 | 11.423 | 1.323 | 12.021 | 0.227 |
| 0.250 | 0.250 | 1.476 | 2.305 | 16.527 | 1.562 | 17.047 | 0.288 |
| 0.300 | 0.300 | 2.408 | 4.356 | 21.631 | 1.809 | 22.072 | 0.351 |
| 0.350 | 0.350 | 3.591 | 7.364 | 26.735 | 2.051 | 27.098 | 0.415 |
| 0.400 | 0.400 | 4.981 | 12.076 | 28.839 | 2.425 | 29.123 | 0.491 |
| 0.450 | 0.450 | 6.391 | 18.257 | 28.942 | 2.856 | 29.148 | 0.577 |
| 0.500 | 0.500 | 7.803 | 25.403 | 29.045 | 3.255 | 29.174 | 0.665 |
| 0.550 | 0.550 | 9.217 | 33.446 | 29.148 | 3.629 | 29.199 | 0.755 |
| 0.600 | 0.600 | 10.631 | 42.332 | 29.251 | 3.982 | 29.224 | 0.847 |
| 0.650 | 0.650 | 12.047 | 52.017 | 29.354 | 4.318 | 29.250 | 0.940 |
| 0.700 | 0.700 | 13.536 | 58.104 | 33.273 | 4.293 | 32.217 | 0.987 |
| 0.750 | 0.750 | 15.270 | 64.783 | 38.202 | 4.242 | 37.144 | 1.030 |
| 0.800 | 0.800 | 17.250 | 73.214 | 43.131 | 4.244 | 42.072 | 1.080 |

FUTURE BASIN 2 - 13.5 CFS

BASIN 2 - 7.9 CFS

Q = 21.4 CFS

STREET CAPACITY

$$\frac{25.4-18.3}{0.66-0.58} = \frac{25.4-21.4}{0.66-x} = \frac{7.1}{0.08} = \frac{4}{0.66-x} \Rightarrow 0.32 = 4.688-7.1x$$

$$x = 0.62' < 0.85' \checkmark$$

INLET CAPACITY

$$\frac{25.4-18.3}{0.50-0.45} = \frac{25.4-21.4}{0.50-x} \Rightarrow \frac{7.1}{0.05} = \frac{4}{0.5-x} \Rightarrow 3.55-7.1x = 0.2$$

$$x = 0.47'$$

@ S = 0.8%, d = 0.47'

0.2% - 4 CFS

2% - 8.5 CFS

$$\frac{2-0.2}{9.5-4} = \frac{2-0.8}{8.5-x} \Rightarrow \frac{1.8}{4.5} = \frac{1.2}{8.5-x} \Rightarrow 5.4 = 15.3-1.8x$$

$$x = 5.5 \text{ CFS}$$

(PER DUBLE 'A')

RESIDUAL

21.4 CFS - 2(5.5) ⇒ 10.4 CFS

MANNING'S N = 0.017 SLOPE = 0.008

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 11.5 | 0.1 | 9.0 | 37.7 | 0.7 |
| 2.0 | 8.9 | 0.7 | 6.0 | 23.5 | 0.4 | 10.0 | 38.1 | 0.7 |
| 3.0 | 9.3 | 0.7 | 7.0 | 35.5 | 0.1 | 11.0 | 47.0 | 0.9 |
| 4.0 | 9.5 | 0.0 | 8.0 | 37.5 | 0.0 | | | |

INLETS #11 & #12

LOCATED NEAR SANDMARK AND SOUTH SKY ST

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.025 | 1.645 | 0.646 | 2.484 | 0.056 |
| 0.100 | 0.100 | 0.156 | 0.160 | 3.290 | 1.026 | 4.048 | 0.116 |
| 0.150 | 0.150 | 0.366 | 0.428 | 6.318 | 1.170 | 6.996 | 0.171 |
| 0.200 | 0.200 | 0.795 | 1.052 | 11.423 | 1.323 | 12.021 | 0.227 |
| 0.250 | 0.250 | 1.476 | 2.305 | 16.527 | 1.562 | 17.047 | 0.288 |
| 0.300 | 0.300 | 2.408 | 4.356 | 21.631 | 1.809 | 22.072 | 0.351 |
| 0.350 | 0.350 | 3.591 | 7.364 | 26.735 | 2.051 | 27.098 | 0.415 |
| 0.400 | 0.400 | 4.981 | 12.076 | 28.839 | 2.425 | 29.123 | 0.491 |
| 0.450 | 0.450 | 6.391 | 18.257 | 28.942 | 2.856 | 29.148 | 0.577 |
| 0.500 | 0.500 | 7.803 | 25.403 | 29.045 | 3.255 | 29.174 | 0.665 |
| 0.550 | 0.550 | 9.217 | 33.446 | 29.148 | 3.629 | 29.199 | 0.755 |
| 0.600 | 0.600 | 10.631 | 42.332 | 29.251 | 3.982 | 29.224 | 0.847 |
| 0.650 | 0.650 | 12.047 | 52.017 | 29.354 | 4.318 | 29.250 | 0.940 |
| 0.700 | 0.700 | 13.536 | 58.104 | 33.273 | 4.293 | 32.217 | 0.987 |
| 0.750 | 0.750 | 15.270 | 64.783 | 38.202 | 4.242 | 37.144 | 1.030 |
| 0.800 | 0.800 | 17.250 | 73.214 | 43.131 | 4.244 | 42.072 | 1.080 |

RESIDUAL FROM INLETS 11 & 12 — 10.4 CFS

INLET CAPACITY

$$\frac{12.1-7.4}{0.40-0.35} = \frac{12.1-10.4}{0.40-x} \Rightarrow \frac{4.7}{0.05} = \frac{1.7}{0.40-x} \Rightarrow 0.085 = 1.88 - 4.7x$$

$$x = 0.38'$$

@ S = 0.96, d = 0.38'

for double PLT. D-6 { 0.26 - 2.4 CFS
2.040 - 5.4 CFS

$$\frac{2-0.2}{5.4-2.4} = \frac{2-0.8}{5.4-x} \Rightarrow \frac{1.8}{3} = \frac{1.2}{5.4-x} = 3.6 = 9.72 - 1.8x$$

$$x = 3.4 \text{ CFS}$$

(PER DOUBLE 'A')

RESIDUAL

$$10.4 - 2(3.4) = 3.6 \text{ CFS}$$

MANNING'S N = 0.017  SLOPE = 0.018

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 14.0 | 0.1 | 9.0 | 64.2 | 0.7 |
| 2.0 | 11.4 | 0.7 | 6.0 | 38.0 | 0.6 | 10.0 | 64.6 | 0.7 |
| 3.0 | 11.8 | 0.7 | 7.0 | 62.0 | 0.1 | 11.0 | 76.0 | 0.9 |
| 4.0 | 12.0 | 0.0 | 8.0 | 64.0 | 0.0 | | | |

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.038 | 1.645 | 0.969 | 2.484 | 0.065 |
| 0.100 | 0.100 | 0.156 | 0.241 | 3.290 | 1.539 | 4.048 | 0.137 |
| 0.150 | 0.150 | 0.366 | 0.642 | 6.318 | 1.755 | 6.996 | 0.198 |
| 0.200 | 0.200 | 0.795 | 1.578 | 11.423 | 1.985 | 12.021 | 0.261 |
| 0.250 | 0.250 | 1.476 | 3.458 | 16.527 | 2.343 | 17.047 | 0.335 |
| 0.300 | 0.300 | 2.408 | 6.534 | 21.631 | 2.714 | 22.072 | 0.415 |
| 0.350 | 0.350 | 3.591 | 11.046 | 26.735 | 3.076 | 27.098 | 0.497 |
| 0.400 | 0.400 | 5.026 | 17.214 | 31.839 | 3.425 | 32.123 | 0.582 |
| 0.450 | 0.450 | 6.711 | 25.247 | 36.943 | 3.762 | 37.148 | 0.670 |
| 0.500 | 0.500 | 8.648 | 35.341 | 42.048 | 4.086 | 42.174 | 0.760 |
| 0.550 | 0.550 | 10.837 | 47.684 | 47.152 | 4.400 | 47.199 | 0.851 |
| 0.600 | 0.600 | 13.276 | 62.457 | 52.256 | 4.704 | 52.224 | 0.944 |
| 0.650 | 0.650 | 15.887 | 83.077 | 53.359 | 5.229 | 53.250 | 1.075 |
| 0.700 | 0.700 | 18.576 | 102.824 | 57.287 | 5.535 | 56.226 | 1.177 |
| 0.750 | 0.750 | 21.511 | 124.252 | 62.232 | 5.776 | 61.170 | 1.269 |
| 0.800 | 0.800 | 24.693 | 148.602 | 67.176 | 6.018 | 66.113 | 1.363 |
| 0.850 | 0.850 | 28.122 | 176.030 | 72.121 | 6.259 | 71.057 | 1.459 |

INLETS #13 & #14

LOCATED IN SOUTH SKY

NEAR WOODMONT

RESIDUAL (INLETS 5 & 6) - 5.3 CFS

RESIDUAL (INLETS 7 & 8) - 5.6 CFS

RESIDUAL (INLETS 11 & 12) - 3.6 CFS

BASIN 5 - 3.1 CFS

OFFSITE BASIN 4 - 0.9 CFS

OFFSITE BASIN WEST - 2.3 CFS

42% BASIN 3 - 4.7 CFS

25.5 CFS

STREET CAPACITY

OK

INLET CAPACITY

d = 0.45'

@ S = 1.8%, d = 0.45'

0.2% - 3.5 CFS

2.0% - 8.0 CFS

$$\frac{2-0.2}{8-3.5} = \frac{2-1.8}{8-x} \Rightarrow \frac{1.8}{4.5} = \frac{0.2}{8-x} = 0.9 = 14.4 - 1.8x$$

x = 7.5 CFS

(PER DWBLE 'A')

RESIDUAL

25.5 - 2(7.5) = 10.5 CFS

MANNING'S N = 0.017  SLOPE = 0.028

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 14.0 | 0.1 | 9.0 | 64.2 | 0.7 |
| 2.0 | 11.4 | 0.7 | 6.0 | 38.0 | 0.6 | 10.0 | 64.6 | 0.7 |
| 3.0 | 11.8 | 0.7 | 7.0 | 62.0 | 0.1 | 11.0 | 76.0 | 0.9 |
| 4.0 | 12.0 | 0.0 | 8.0 | 64.0 | 0.0 | | | |

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.047 | 1.645 | 1.209 | 2.484 | 0.073 |
| 0.100 | 0.100 | 0.156 | 0.300 | 3.290 | 1.919 | 4.048 | 0.157 |
| 0.150 | 0.150 | 0.366 | 0.800 | 6.318 | 2.189 | 6.996 | 0.225 |
| 0.200 | 0.200 | 0.795 | 1.968 | 11.423 | 2.475 | 12.021 | 0.295 |
| 0.250 | 0.250 | 1.476 | 4.313 | 16.527 | 2.922 | 17.047 | 0.383 |
| 0.300 | 0.300 | 2.408 | 8.150 | 21.631 | 3.385 | 22.072 | 0.478 |
| 0.350 | 0.350 | 3.591 | 13.776 | 26.735 | 3.836 | 27.098 | 0.579 |
| 0.400 | 0.400 | 5.026 | 21.469 | 31.839 | 4.272 | 32.123 | 0.684 |
| 0.450 | 0.450 | 6.711 | 31.488 | 36.943 | 4.692 | 37.148 | 0.792 |
| 0.500 | 0.500 | 8.648 | 44.078 | 42.048 | 5.097 | 42.174 | 0.904 |
| 0.550 | 0.550 | 10.837 | 59.472 | 47.152 | 5.488 | 47.199 | 1.018 |
| 0.600 | 0.600 | 13.276 | 77.897 | 52.256 | 5.867 | 52.224 | 1.135 |
| 0.650 | 0.650 | 15.887 | 103.615 | 53.359 | 6.522 | 53.250 | 1.312 |
| 0.700 | 0.700 | 18.576 | 128.244 | 57.287 | 6.904 | 56.226 | 1.441 |
| 0.750 | 0.750 | 21.511 | 154.969 | 62.232 | 7.204 | 61.170 | 1.557 |
| 0.800 | 0.800 | 24.693 | 185.339 | 67.176 | 7.506 | 66.113 | 1.676 |
| 0.850 | 0.850 | 28.122 | 219.548 | 72.121 | 7.807 | 71.057 | 1.798 |

INLETS #15 & #16

LOCATED IN SOUTH SKY NEAR WOODMONT

RESIDUAL (INLETS 13 & 14) - 10.5 CFS

STREET CAPACITY

$$\frac{13.8-8.2}{0.58-0.48} = \frac{13.8-10.5}{0.58-x} \Rightarrow \frac{5.6}{0.1} = \frac{3.3}{0.58-x} \Rightarrow 0.33 = 3.248-5.6x$$

$$x = 0.52'$$

INLET CAPACITY

$$\frac{13.8-8.2}{0.35-0.3} = \frac{13.8-10.5}{0.35-x} \Rightarrow \frac{5.6}{0.05} = \frac{3.3}{0.35-x} \Rightarrow 0.1165 = 1.96-5.6x$$

$$x = 0.32'$$

@ S = 2.8%, d = 0.32'

2% - 3 CFS

5% - 4.4 CFS

$$\frac{5-2}{4.4-3} = \frac{5-2.8}{4.4-x} \Rightarrow \frac{3}{1.4} = \frac{2.2}{4.4-x} \Rightarrow 3.08 = 13.2-3x \Rightarrow x = 3.4 \text{ CFS}$$

(PER DOUBLE 'A')

RESIDUAL

$$10.5-2(3.4) = 3.7 \text{ CFS}$$

MANNING'S N = 0.017  SLOPE = 0.050

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.0 | 0.9 | 5.0 | 11.5 | 0.1 | 9.0 | 37.7 | 0.7 |
| 2.0 | 8.9 | 0.7 | 6.0 | 23.5 | 0.4 | 10.0 | 38.1 | 0.7 |
| 3.0 | 9.3 | 0.7 | 7.0 | 35.5 | 0.1 | 11.0 | 47.0 | 0.9 |
| 4.0 | 9.5 | 0.0 | 8.0 | 37.5 | 0.0 | | | |

INLET #17 & #18

LOCATED IN TWO ROCK NEAR LONGWALKS

| WSEL FT. | DEPTH INC | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID PLUS OBSTRUCTIONS | TOTAL ENERGY (FT) |
|---|---|---|---|---|---|---|---|
| 0.050 | 0.050 | 0.039 | 0.063 | 1.645 | 1.616 | 2.484 | 0.091 |
| 0.100 | 0.100 | 0.156 | 0.401 | 3.290 | 2.565 | 4.048 | 0.202 |
| 0.150 | 0.150 | 0.366 | 1.070 | 6.318 | 2.925 | 6.996 | 0.283 |
| 0.200 | 0.200 | 0.795 | 2.630 | 11.423 | 3.308 | 12.021 | 0.370 |
| 0.250 | 0.250 | 1.476 | 5.763 | 16.527 | 3.905 | 17.047 | 0.487 |
| 0.300 | 0.300 | 2.408 | 10.891 | 21.631 | 4.523 | 22.072 | 0.618 |
| 0.350 | 0.350 | 3.591 | 18.410 | 26.735 | 5.126 | 27.098 | 0.759 |
| 0.400 | 0.400 | 4.981 | 30.191 | 28.839 | 6.062 | 29.123 | 0.972 |
| 0.450 | 0.450 | 6.391 | 45.642 | 28.942 | 7.141 | 29.148 | 1.243 |
| 0.500 | 0.500 | 7.803 | 63.506 | 29.045 | 8.138 | 29.174 | 1.530 |
| 0.550 | 0.550 | 9.217 | 83.614 | 29.148 | 9.072 | 29.199 | 1.830 |
| 0.600 | 0.600 | 10.631 | 105.829 | 29.251 | 9.954 | 29.224 | 2.141 |
| 0.650 | 0.650 | 12.047 | 130.042 | 29.354 | 10.794 | 29.250 | 2.462 |
| 0.700 | 0.700 | 13.536 | 145.260 | 33.273 | 10.731 | 32.217 | 2.491 |
| 0.750 | 0.750 | 15.270 | 161.958 | 38.202 | 10.606 | 37.144 | 2.500 |
| 0.800 | 0.800 | 17.250 | 183.035 | 43.131 | 10.610 | 42.072 | 2.551 |

97% FUTURE BASIN 4 - 7.0 CFS

INLET CAPACITY

$d = 0.26'$ ; $S = 5\%$ ⇒ $X = 3.1$ CFS

~~(PER DOUBLE 'A')~~ single

RESIDUAL

$7.0 - 2(3.1) = 0.8$ CFS

new report changed to 2.2

# APPENDIX C

# INROADS STORM DRAIN NEWTOWRK FILE

OBS

Replaced w/ New Submittal of Appdx C

Bohannan Huston

Design Log

```
==============================================================
InRoads Storm & Sanitary Design Log

Drainage File:  P:\20150013\CDP\Control\Data\20150013sd.sdb

Design File:  P:\20150013\CDP\DESIGN\20150013_SD.DWG

Display Log:  P:\20150013\CDP\DESIGN\design.log

Date:  Friday, June 20, 2014 2:24:06 PM
==============================================================

Designing inlet IN17
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:     3.1000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft            Inlet Width:     2.0000 ft
   Flow Downstream:      3.1000 cfs             Bypass To:     0.0000 cfs
       Percent Cap:    100.0000 %                Capacity:     0.0000 cfs
            Spread:      6.9136 ft
   Depth in Gutter:      0.2452 ft        Assigned Bypass:        N/A

Designing pipe SDP17
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:    3.1000 cfs              Flow From:   Upstream

             Status:      Fixed                     Slope:     0.0519 ft/ft
         Pipe Width:    18.0000 in            Pipe Height:    18.0000 in
      Depth of Flow:     0.3640 ft            Flow Status:    Partial
    Critical Depth:      0.6600 ft               Capacity:    23.9383 cfs
           Velocity:     9.3220 ft/s
      Froude Number:     3.2382               Flow Regime: SuperCritical

Designing inlet IN18
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:     3.1000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft            Inlet Width:     2.0000 ft
   Flow Downstream:      6.2000 cfs             Bypass To:     0.0000 cfs
       Percent Cap:    100.0000 %                Capacity:     0.0000 cfs
            Spread:      1.6272 ft
   Depth in Gutter:      0.5842 ft        Assigned Bypass:        N/A

Designing pipe SDP18
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:    6.2000 cfs              Flow From:   Upstream

             Status:      Fixed                     Slope:     0.0328 ft/ft
         Pipe Width:    24.0000 in            Pipe Height:    24.0000 in
      Depth of Flow:     0.5250 ft            Flow Status:    Partial
    Critical Depth:      0.8800 ft               Capacity:    40.9856 cfs
           Velocity:     9.3996 ft/s
      Froude Number:     2.7105               Flow Regime: SuperCritical

Designing manhole SDMH8

  Results:
         Total Flow:    6.2000 cfs              Flow From:   Upstream

             Status:      Fixed
       Chamber Width:    4.0000 ft         Chamber Length:     4.0000 ft

Designing pipe SDP19

  Results:
         Total Flow:    6.2000 cfs              Flow From:   Upstream

             Status:      Fixed                     Slope:     0.0050 ft/ft
         Pipe Width:    24.0000 in            Pipe Height:    24.0000 in
      Depth of Flow:     0.8640 ft            Flow Status:    Partial
    Critical Depth:      0.8800 ft               Capacity:    15.9965 cfs
           Velocity:     4.7633 ft/s
      Froude Number:     1.0369               Flow Regime:   Critical

Designing pipe dummy1
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:   48.2000 cfs              Flow From: Injected Storm

             Status:      Fixed                     Slope:     0.0300 ft/ft
         Pipe Width:    24.0000 in            Pipe Height:    24.0000 in
      Depth of Flow:     2.0000 ft            Flow Status:       Full
    Critical Depth:      2.0000 ft               Capacity:    39.1831 cfs
           Velocity:    15.3425 ft/s
      Froude Number:     0.0000               Flow Regime: Subcritical

Designing manhole SDMH9

  Results:
         Total Flow:   54.4000 cfs              Flow From:   Upstream
```

OBS
see Resubmittal of this on July 30, 2014

```
            Status:      Fixed
      Chamber Width:     6.0000 ft          Chamber Length:     6.0000 ft


Designing pipe SDP20
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    54.4000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0520 ft/ft
        Pipe Width:    36.0000 in             Pipe Height:    36.0000 in
     Depth of Flow:     1.2390 ft             Flow Status:    Partial
    Critical Depth:     2.3900 ft                Capacity:   152.0957 cfs
          Velocity:    19.7229 ft/s
      Froude Number:     3.6005               Flow Regime: SuperCritical



HGL/EGL Computations:

  Table A:
```

| Struct_ID | D (in) | Q (cfs) | L (ft) | V (ft/s) | d (ft) | dc (ft) | VA2/2g (ft) | Sf (ft/ft) | Dn_Soffit (ft) | EGLdn (ft) | HGLdn (ft) | Tot_Loss (ft) | EGLup (ft) | HGLup (ft) | Rim_Elev. (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | 5489.84 | - |
| SDP20 | 36 | 54.40 | 54.88 | 19.72 | 1.24 | 2.39 | 6.05 | - | 5491.60 | 5495.88 | 5489.84 | - | 5498.58 | 5492.53 | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | 5498.58 | 5492.53 | 1.11 | 5497.30 | 5493.64 | 5497.50 |
| dummy1 | 24 | 48.20 | 46.65 | 15.34 | - | - | 3.66 | 0.0454 | 5493.29 | 5497.30 | 5493.64 | 2.12 | 5499.42 | 5495.76 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5498.58 | 5492.53 | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | 5498.58 | 5492.53 | - | 5498.58 | 5492.53 | 5497.50 |
| SDP19 | 24 | 6.20 | 150.10 | 4.76 | 0.86 | 0.88 | 0.35 | - | 5493.39 | 5492.89 | 5492.53 | - | 5493.34 | 5492.98 | - |
| SDMH8 | - | - | - | - | - | - | - | - | - | 5493.34 | 5492.98 | - | 5493.34 | 5492.98 | 5496.27 |
| SDP18 | 24 | 6.20 | 36.63 | 9.40 | 0.53 | 0.88 | 1.37 | - | 5494.22 | 5494.36 | 5492.98 | - | 5495.14 | 5493.76 | - |
| IN18 | - | - | - | - | - | - | - | - | - | 5495.14 | 5493.76 | - | 5495.14 | 5493.76 | 5497.71 |
| SDP17 | 18 | 3.10 | 34.08 | 9.32 | 0.36 | 0.66 | 1.35 | - | 5494.71 | 5495.12 | 5493.76 | - | 5496.46 | 5495.11 | - |
| IN17 | - | - | - | - | - | - | - | - | - | 5496.46 | 5495.11 | - | 5496.46 | 5495.11 | 5498.74 |

Table B:

| LOSSES Str_ID | Hf | Hb | Hstr | Hc | He | Hj | Total | LOSS_COEFFICENTS Dstr | Ko | CD | Cd | Cq | Cp | Cb | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP20 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH9 | - | - | 1.11 | - | - | - | 1.11 | 1.24 | 0.575 | 1.000 | 0.294 | 1.088 | 1.000 | 1.000 | 0.184 |
| dummy1 | 2.12 | - | - | - | - | - | 2.12 | - | - | - | - | - | - | - | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDMH9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP19 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| SDMH8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP18 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SDP17 | - | - | - | - | - | - | SuperCrt | - | - | - | - | - | - | - | - |
| IN17 | - | - | - | - | - | - | - | 0.36 | - | - | - | - | - | - | - |

Design Log

```
==============================================================
InRoads Storm & Sanitary Design Log

Drainage File:  P:\20150013\CDP\Control\Data\20150013sd.sdb

Design File:  P:\20150013\CDP\DESIGN\20150013_SD.DWG

Display Log:  P:\20150013\CDP\DESIGN\design.log

Date:  Friday, June 20, 2014 2:23:08 PM
==============================================================

Designing inlet IN10
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:     5.5000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:     5.5000 cfs               Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
             Spread:     2.0517 ft
    Depth in Gutter:     0.7170 ft         Assigned Bypass:        N/A


Designing pipe SDP30
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:     5.5000 cfs              Flow From:   Upstream

             Status:      Fixed                       Slope:     0.0504 ft/ft
         Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
      Depth of Flow:     0.4920 ft             Flow Status:    Partial
     Critical Depth:     0.9000 ft                Capacity:    23.5939 cfs
           Velocity:    10.8748 ft/s
       Froude Number:     3.2039               Flow Regime: SuperCritical


Designing inlet IN12
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.
   WARNING:  Pipe Too large for valid connection to inlet.

  Results:
        Gutter Flow:     3.4000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:     8.9000 cfs               Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
             Spread:     1.6820 ft
    Depth in Gutter:     0.6053 ft         Assigned Bypass:        N/A


Designing pipe SDP31
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:     8.9000 cfs              Flow From:   Upstream

             Status:      Fixed                       Slope:     0.0510 ft/ft
         Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
      Depth of Flow:     0.5650 ft             Flow Status:    Partial
     Critical Depth:     1.0600 ft                Capacity:    51.0724 cfs
           Velocity:    12.1772 ft/s
       Froude Number:     3.3740               Flow Regime: SuperCritical


   WARNING:  Pipe Too large for valid connection to inlet.
Designing inlet IN9
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:     5.5000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
    Flow Downstream:     5.5000 cfs               Bypass To:     0.0000 cfs
        Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
             Spread:    10.2744 ft
    Depth in Gutter:     0.2727 ft         Assigned Bypass:        N/A


Designing pipe SDP33
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:     5.5000 cfs              Flow From:   Upstream

             Status:      Fixed                       Slope:     0.0643 ft/ft
         Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
      Depth of Flow:     0.4620 ft             Flow Status:    Partial
     Critical Depth:     0.9000 ft                Capacity:    26.6409 cfs
           Velocity:    11.8580 ft/s
       Froude Number:     3.6179               Flow Regime: SuperCritical


Designing inlet IN11
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.
   WARNING:  Pipe Too large for valid connection to inlet.

  Results:
        Gutter Flow:     3.4000 cfs              Flow From: Injected Storm

             Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
```

```
     Flow Downstream:    17.8000 cfs              Bypass To:     0.0000 cfs
         Percent Cap:   100.0000 %                 Capacity:     0.0000 cfs
              Spread:     8.4005 ft
     Depth in Gutter:     0.2306 ft         Assigned Bypass:        N/A

Designing pipe SDP32

  Results:
        Total Flow:    17.8000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0119 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     1.2570 ft             Flow Status:    Partial
    Critical Depth:     1.5200 ft                Capacity:    24.6875 cfs
          Velocity:     8.5535 ft/s
      Froude Number:    1.4540                Flow Regime: SuperCritical

   WARNING:  Pipe Too large for valid connection to inlet.
Designing inlet IN8
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     6.2000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
     Flow Downstream:   6.2000 cfs              Bypass To:     0.0000 cfs
         Percent Cap:  100.0000 %                 Capacity:     0.0000 cfs
              Spread:   10.8707 ft
     Depth in Gutter:    0.2833 ft         Assigned Bypass:        N/A

Designing pipe SDP10
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     6.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0477 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.5320 ft             Flow Status:    Partial
    Critical Depth:     0.9600 ft                Capacity:    22.9437 cfs
          Velocity:    11.0188 ft/s
      Froude Number:    3.1065                Flow Regime: SuperCritical

Designing inlet IN7
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     6.2000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
     Flow Downstream:  12.4000 cfs              Bypass To:     0.0000 cfs
         Percent Cap:  100.0000 %                 Capacity:     0.0000 cfs
              Spread:   10.9004 ft
     Depth in Gutter:    0.2829 ft         Assigned Bypass:        N/A

Designing pipe SDP9
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    12.4000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0856 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     0.5860 ft             Flow Status:    Partial
    Critical Depth:     1.2600 ft                Capacity:    66.1898 cfs
          Velocity:    16.1265 ft/s
      Froude Number:    4.3799                Flow Regime: SuperCritical

Designing manhole SDMH5

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     6.0000 ft          Chamber Length:     6.0000 ft

Designing pipe SDP5
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0428 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     1.1680 ft             Flow Status:    Partial
    Critical Depth:     1.8600 ft                Capacity:    46.8182 cfs
          Velocity:    15.8349 ft/s
      Froude Number:    2.8399                Flow Regime: SuperCritical

Designing manhole SDMH4

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     4.0000 ft          Chamber Length:     4.0000 ft

Designing pipe SDP4
   WARNING:  Full flow velocity is greater than maximum (10.0000)
```

```
  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0311 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     1.3000 ft             Flow Status:    Partial
    Critical Depth:     1.8600 ft                Capacity:    39.9070 cfs
          Velocity:    13.9584 ft/s
      Froude Number:    2.3119                Flow Regime: SuperCritical

Designing manhole SDMH3

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     4.0000 ft          Chamber Length:     4.0000 ft

Designing pipe SDP3

  Results:
        Total Flow:    30.2000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0142 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     2.0000 ft             Flow Status:       Full
    Critical Depth:     2.0000 ft                Capacity:    26.9661 cfs
          Velocity:     9.6130 ft/s
      Froude Number:    0.0000                Flow Regime: Subcritical

Designing inlet IN4
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.3000 cfs              Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:     7.3000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
            Spread:     2.4727 ft
   Depth in Gutter:     0.7598 ft          Assigned Bypass:        N/A

Designing pipe SDP16
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     7.3000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0444 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.5920 ft             Flow Status:    Partial
    Critical Depth:     1.0400 ft                Capacity:    22.1365 cfs
          Velocity:    11.2342 ft/s
      Froude Number:    2.9785                Flow Regime: SuperCritical

Designing inlet IN3
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.3000 cfs              Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:    14.6000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
            Spread:     8.0398 ft
   Depth in Gutter:     0.3745 ft          Assigned Bypass:        N/A

Designing pipe SDP15
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    14.6000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0353 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     0.8080 ft             Flow Status:    Partial
    Critical Depth:     1.3700 ft                Capacity:    42.4851 cfs
          Velocity:    12.2572 ft/s
      Froude Number:    2.7762                Flow Regime: SuperCritical

Designing inlet IN6
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     5.3000 cfs              Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
   Flow Downstream:     5.3000 cfs               Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
            Spread:    10.5787 ft
   Depth in Gutter:     0.2621 ft          Assigned Bypass:        N/A

Designing pipe SDP12
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     5.3000 cfs              Flow From:   Upstream
```

```
            Status:      Fixed                          Slope:     0.0370 ft/ft
        Pipe Width:    18.0000 in                Pipe Height:    18.0000 in
     Depth of Flow:     0.5240 ft                Flow Status:    Partial
    Critical Depth:     0.8800 ft                   Capacity:    20.2031 cfs
          Velocity:     9.6153 ft/s
      Froude Number:    2.7342                   Flow Regime: SuperCritical


Designing inlet IN5
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:    5.3000 cfs                 Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft                Inlet Width:     2.0000 ft
   Flow Downstream:     25.2000 cfs                Bypass To:     0.0000 cfs
       Percent Cap:    100.0000 %                   Capacity:     0.0000 cfs
            Spread:     10.5791 ft
   Depth in Gutter:      0.2621 ft          Assigned Bypass:        N/A


Designing pipe SDP11
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:   25.2000 cfs                 Flow From:   Upstream

            Status:      Fixed                          Slope:     0.0379 ft/ft
        Pipe Width:    24.0000 in                Pipe Height:    24.0000 in
     Depth of Flow:     1.0830 ft                Flow Status:    Partial
    Critical Depth:     1.7600 ft                   Capacity:    44.0669 cfs
          Velocity:    14.4944 ft/s
      Froude Number:    2.7376                   Flow Regime: SuperCritical


Designing manhole SDMH2

  Results:
         Total Flow:   55.4000 cfs                 Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     6.0000 ft           Chamber Length:     6.0000 ft


Designing pipe SDP29
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
         Total Flow:   55.4000 cfs                 Flow From:   Upstream

            Status:      Fixed                          Slope:     0.0568 ft/ft
        Pipe Width:    36.0000 in                Pipe Height:    36.0000 in
     Depth of Flow:     1.2220 ft                Flow Status:    Partial
    Critical Depth:     2.4100 ft                   Capacity:   158.9833 cfs
          Velocity:    20.4576 ft/s
      Froude Number:    3.7651                   Flow Regime: SuperCritical


Designing inlet IN2
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:    5.4000 cfs                 Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft                Inlet Width:     2.0000 ft
   Flow Downstream:      5.4000 cfs                Bypass To:     0.0000 cfs
       Percent Cap:    100.0000 %                   Capacity:     0.0000 cfs
            Spread:      8.5217 ft
   Depth in Gutter:      0.3018 ft          Assigned Bypass:        N/A


Designing pipe SDP22

  Results:
         Total Flow:    5.4000 cfs                 Flow From:   Upstream

            Status:      Fixed                          Slope:     0.0070 ft/ft
        Pipe Width:    18.0000 in                Pipe Height:    18.0000 in
     Depth of Flow:     0.8480 ft                Flow Status:    Partial
    Critical Depth:     0.8900 ft                   Capacity:     8.8187 cfs
          Velocity:     5.2344 ft/s
      Froude Number:    1.1088                   Flow Regime: SuperCritical


Designing inlet IN1
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
        Gutter Flow:    5.4000 cfs                 Flow From: Injected Storm

            Status:      Fixed
       Inlet Length:     6.5000 ft                Inlet Width:     2.0000 ft
   Flow Downstream:      5.4000 cfs                Bypass To:     0.0000 cfs
       Percent Cap:    100.0000 %                   Capacity:     0.0000 cfs
            Spread:     15.3304 ft
   Depth in Gutter:      0.2122 ft          Assigned Bypass:        N/A


Designing pipe SDP21

  Results:
         Total Flow:    5.4000 cfs                 Flow From:   Upstream

            Status:      Fixed                          Slope:     0.0218 ft/ft
        Pipe Width:    18.0000 in                Pipe Height:    18.0000 in
     Depth of Flow:     0.6100 ft                Flow Status:    Partial
    Critical Depth:     0.8900 ft                   Capacity:    15.5216 cfs
```

```
          Velocity:     7.9849 ft/s
      Froude Number:    2.0803                  Flow Regime: SuperCritical

Designing pipe SDP8
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    53.7000 cfs               Flow From: Injected Storm

            Status:      Fixed                       Slope:     0.0448 ft/ft
        Pipe Width:    30.0000 in              Pipe Height:    30.0000 in
     Depth of Flow:     1.4220 ft              Flow Status:    Partial
    Critical Depth:     2.3400 ft                 Capacity:    86.8484 cfs
          Velocity:    18.6104 ft/s
      Froude Number:    3.0407                  Flow Regime: SuperCritical

Designing manhole SDMH10

  Results:
        Total Flow:    64.5000 cfs               Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     6.0000 ft           Chamber Length:     6.0000 ft

Designing pipe SDP7
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    64.5000 cfs               Flow From:   Upstream

            Status:      Fixed                       Slope:     0.0493 ft/ft
        Pipe Width:    36.0000 in              Pipe Height:    36.0000 in
     Depth of Flow:     1.3840 ft              Flow Status:    Partial
    Critical Depth:     2.5700 ft                 Capacity:   148.1250 cfs
          Velocity:    20.2218 ft/s
      Froude Number:    3.4539                  Flow Regime: SuperCritical

Designing pipe dummy

  Results:
        Total Flow:    31.2000 cfs               Flow From: Injected Storm

            Status:      Fixed                       Slope:     0.0100 ft/ft
        Pipe Width:    24.0000 in              Pipe Height:    24.0000 in
     Depth of Flow:     2.0000 ft              Flow Status:       Full
    Critical Depth:     2.0000 ft                 Capacity:    22.6224 cfs
          Velocity:     9.9313 ft/s
      Froude Number:    0.0000                  Flow Regime: Subcritical

Designing manhole SDMH6

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     6.0000 ft           Chamber Length:     6.0000 ft

Designing pipe SDP6
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed                       Slope:     0.0402 ft/ft
        Pipe Width:    54.0000 in              Pipe Height:    54.0000 in
     Depth of Flow:     1.5090 ft              Flow Status:    Partial
    Critical Depth:     2.8700 ft                 Capacity:   394.4065 cfs
          Velocity:    20.4347 ft/s
      Froude Number:    3.4331                  Flow Regime: SuperCritical

Designing manhole exSDMH1

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     8.0000 ft           Chamber Length:     8.0000 ft

Designing pipe SDP23

  Results:
        Total Flow:    95.7000 cfs               Flow From:   Upstream

            Status:      Fixed                       Slope:     0.0045 ft/ft
        Pipe Width:    54.0000 in              Pipe Height:    54.0000 in
     Depth of Flow:     2.8350 ft              Flow Status:    Partial
    Critical Depth:     2.8700 ft                 Capacity:   132.3620 cfs
          Velocity:     9.0633 ft/s
      Froude Number:    1.0252                  Flow Regime:   Critical

Designing inlet IN13
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.5000 cfs               Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft              Inlet Width:     2.0000 ft
   Flow Downstream:     7.5000 cfs                Bypass To:     0.0000 cfs
       Percent Cap:   100.0000 %                   Capacity:     0.0000 cfs
            Spread:    17.1698 ft
    Depth in Gutter:    0.2414 ft          Assigned Bypass:          N/A
```

```
Designing pipe SDP26
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     7.5000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0526 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.5740 ft             Flow Status:    Partial
    Critical Depth:     1.0600 ft                Capacity:    24.0892 cfs
          Velocity:    12.0294 ft/s
      Froude Number:     3.2470               Flow Regime: SuperCritical


Designing inlet IN15
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.
   WARNING:  Pipe Too large for valid connection to inlet.

  Results:
       Gutter Flow:     3.4000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
  Flow Downstream:    10.9000 cfs               Bypass To:     0.0000 cfs
      Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
           Spread:     9.7794 ft
  Depth in Gutter:     0.2105 ft         Assigned Bypass:        N/A


Designing pipe SDP27
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:    10.9000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.1313 ft/ft
        Pipe Width:    24.0000 in             Pipe Height:    24.0000 in
     Depth of Flow:     0.4920 ft             Flow Status:    Partial
    Critical Depth:     1.1800 ft                Capacity:    81.9765 cfs
          Velocity:    18.1036 ft/s
      Froude Number:     5.4064               Flow Regime: SuperCritical


   WARNING:  Pipe Too large for valid connection to inlet.
Designing manhole SDMH11

  Results:
        Total Flow:   162.0000 cfs              Flow From:   Upstream

            Status:      Fixed
     Chamber Width:     8.0000 ft          Chamber Length:     8.0000 ft


Designing pipe SDP24
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:   162.0000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0080 ft/ft
        Pipe Width:    54.0000 in             Pipe Height:    54.0000 in
     Depth of Flow:     3.4040 ft             Flow Status:    Partial
    Critical Depth:     3.7100 ft                Capacity:   175.8883 cfs
          Velocity:    12.5471 ft/s
      Froude Number:     1.2101               Flow Regime: SuperCritical


Designing inlet IN14
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.

  Results:
       Gutter Flow:     7.5000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
  Flow Downstream:     7.5000 cfs               Bypass To:     0.0000 cfs
      Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
           Spread:    17.1734 ft
  Depth in Gutter:     0.2414 ft         Assigned Bypass:        N/A


Designing pipe SDP28
   WARNING:  Full flow velocity is greater than maximum (10.0000)

  Results:
        Total Flow:     7.5000 cfs              Flow From:   Upstream

            Status:      Fixed                      Slope:     0.0741 ft/ft
        Pipe Width:    18.0000 in             Pipe Height:    18.0000 in
     Depth of Flow:     0.5240 ft             Flow Status:    Partial
    Critical Depth:     1.0600 ft                Capacity:    28.5872 cfs
          Velocity:    13.6065 ft/s
      Froude Number:     3.8691               Flow Regime: SuperCritical


Designing inlet IN16
   WARNING:  Spread is greater than maximum spread (2.5000 ft )
   WARNING:  Inlet forced to capture all flow, ignoring capacity calculations.
   WARNING:  Pipe Too large for valid connection to inlet.

  Results:
       Gutter Flow:     3.4000 cfs              Flow From: Injected Storm

            Status:      Fixed
      Inlet Length:     6.5000 ft             Inlet Width:     2.0000 ft
  Flow Downstream:   172.9000 cfs               Bypass To:     0.0000 cfs
      Percent Cap:   100.0000 %                  Capacity:     0.0000 cfs
           Spread:     8.8491 ft
```

Depth in Gutter: 0.2235 ft  Assigned Bypass: N/A

Designing pipe SDP25

Results:

| | | | |
|---|---|---|---|
| Total Flow: | 172.9000 cfs | Flow From: | Upstream |
| Status: | Fixed | Slope: | 0.0040 ft/ft |
| Pipe Width: | 54.0000 in | Pipe Height: | 54.0000 in |
| Depth of Flow: | 4.5000 ft | Flow Status: | Full |
| Critical Depth: | 4.5000 ft | Capacity: | 124.3718 cfs |
| Velocity: | 10.8713 ft/s | | |
| Froude Number: | 0.0000 | Flow Regime: | Subcritical |

WARNING: Pipe Too large for valid connection to inlet.

HGL/EGL Computations:

Table A:

| Struct_ID | D (in) | Q (cfs) | L (ft) | V (ft/s) | d (ft) | dc (ft) | V^2/2g (ft) | Sf (ft/ft) | Dn_Soffit (ft) | EGLdn (ft) | HGLdn (ft) | Tot_Loss (ft) | EGLup (ft) | HGLup (ft) | Rim_Elev. (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outfall | - | - | - | - | - | - | - | - | - | - | - | - | - | 5448.40 | - |
| (Alternate HGL and EGL Used) | | | | | | | | | | | | | 5450.24 | 5448.40 | |
| SDP25 | 54 | 172.90 | 76.79 | 10.87 | - | - | 1.84 | 0.0077 | 5448.40 | 5450.24 | 5448.40 | 0.59 | 5450.83 | 5448.99 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.83 | 5448.99 | 0.48 | 5451.31 | 5449.47 | 5452.43 |
| SDP24 | 54 | 162.00 | 13.50 | 10.19 | - | - | 1.61 | 0.0068 | 5448.70 | 5451.31 | 5449.47 | 0.09 | 5451.40 | 5449.79 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.40 | 5449.79 | 0.68 | 5452.08 | 5450.47 | 5452.81 |
| SDP23 | 54 | 95.70 | 96.09 | 6.02 | - | - | 0.56 | 0.0024 | 5448.86 | 5452.08 | 5450.47 | 0.23 | 5452.31 | 5451.74 | - |
| exSDMH1 | - | - | - | - | - | - | - | - | - | 5452.31 | 5451.74 | 0.56 | 5452.86 | 5452.30 | 5452.15 |
| SDP6 | 54 | 95.70 | 450.36 | 20.43 | - | - | 6.49 | 0.0024 | 5449.26 | 5452.86 | 5452.30 | - | 5470.58 | 5464.09 | - |
| SDMH6 | - | - | - | - | - | - | - | - | - | 5470.58 | 5464.09 | - | 5470.58 | 5464.09 | 5470.58 |
| SDP7 | 36 | 64.50 | 283.93 | 20.22 | 1.38 | 2.57 | 6.35 | - | 5465.68 | 5470.44 | 5464.09 | - | 5484.11 | 5477.75 | - |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5484.11 | 5477.75 | - | 5484.11 | 5477.75 | 5482.42 |
| SDP8 | 30 | 53.70 | 180.18 | 18.61 | 1.42 | 2.34 | 5.38 | - | 5479.06 | 5483.37 | 5477.99 | - | 5491.30 | 5485.92 | - |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5450.83 | 5448.99 | - |
| IN16 | - | - | - | - | - | - | - | - | - | 5450.83 | 5448.99 | 0.11 | 5450.94 | 5449.11 | 5452.43 |
| (Alternate HGL and EGL Used) | | | | | | | | | | | | | 5449.49 | 5449.21 | |
| SDP28 | 18 | 7.50 | 20.06 | 13.61 | - | - | 2.88 | 0.0051 | 5449.43 | 5449.49 | 5449.21 | - | 5452.33 | 5449.45 | - |
| IN14 | - | - | - | - | - | - | - | - | - | 5452.33 | 5449.45 | - | 5452.33 | 5449.45 | 5452.93 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.40 | 5449.79 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.40 | 5449.79 | 0.38 | 5451.78 | 5450.17 | 5452.81 |
| SDP29 | 36 | 55.40 | 74.87 | 7.84 | - | - | 0.95 | 0.0069 | 5447.36 | 5451.78 | 5450.17 | 0.52 | 5452.29 | 5451.34 | - |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5452.29 | 5451.34 | 0.15 | 5452.45 | 5451.49 | 5454.21 |
| SDP3 | 24 | 30.20 | 88.76 | 9.61 | - | - | 1.44 | 0.0178 | 5450.31 | 5452.45 | 5451.49 | 1.58 | 5454.03 | 5452.59 | - |
| SDMH3 | - | - | - | - | - | - | - | - | - | 5454.03 | 5452.59 | 0.37 | 5454.40 | 5452.96 | 5455.50 |
| SDP4 | 24 | 30.20 | 106.88 | 9.61 | - | - | 1.44 | 0.0178 | 5451.60 | 5454.40 | 5452.96 | 1.90 | 5456.30 | 5454.87 | - |
| SDMH4 | - | - | - | - | - | - | - | - | - | 5456.30 | 5454.87 | 0.65 | 5456.95 | 5455.51 | 5458.80 |
| SDP5 | 24 | 30.20 | 186.35 | 15.83 | - | - | 3.90 | 0.0178 | 5454.90 | 5456.95 | 5455.51 | - | 5465.72 | 5461.83 | - |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5465.72 | 5461.83 | - | 5465.72 | 5461.83 | 5466.66 |
| SDP32 | 24 | 17.80 | 49.95 | 8.55 | 1.26 | 1.52 | 1.14 | - | 5464.74 | 5465.13 | 5464.00 | - | 5465.65 | 5464.52 | - |
| IN11 | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - | 5465.65 | 5464.52 | 5467.76 |
| SDP31 | 24 | 8.90 | 28.04 | 12.18 | 0.57 | 1.06 | 2.30 | - | 5465.26 | 5466.82 | 5464.52 | - | 5467.37 | 5465.06 | - |
| IN12 | - | - | - | - | - | - | - | - | - | 5467.37 | 5465.06 | - | 5467.37 | 5465.06 | 5469.00 |
| SDP30 | 18 | 5.50 | 20.01 | 10.87 | 0.49 | 0.90 | 1.84 | - | 5466.00 | 5466.90 | 5465.06 | - | 5467.51 | 5465.67 | - |
| IN10 | - | - | - | - | - | - | - | - | - | 5467.51 | 5465.67 | - | 5467.51 | 5465.67 | 5470.17 |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5451.40 | 5449.79 | - |
| SDMH11 | - | - | - | - | - | - | - | - | - | 5451.40 | 5449.79 | 0.32 | 5451.71 | 5450.10 | 5452.81 |
| SDP27 | 24 | 10.90 | 38.83 | 3.47 | - | - | 0.19 | 0.0023 | 5446.36 | 5451.71 | 5450.10 | 0.09 | 5451.80 | 5451.62 | - |
| IN15 | - | - | - | - | - | - | - | - | - | 5451.80 | 5451.62 | 0.20 | 5452.00 | 5451.82 | 5453.15 |
| SDP26 | 18 | 7.50 | 20.03 | 4.24 | - | - | 0.28 | 0.0051 | 5450.15 | 5452.00 | 5451.82 | 0.10 | 5452.10 | 5451.82 | - |
| IN13 | - | - | - | - | - | - | - | - | - | 5452.10 | 5451.82 | - | 5452.10 | 5451.82 | 5453.36 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5470.58 | 5464.09 |
| - | | | | | | | | | | | | | | |
| SDMH6 | - | - | - | - | - | - | - | - | - | 5470.58 | 5464.09 | 1.05 | 5466.68 | 5465.14 |
| 5470.58 | | | | | | | | | | | | | | |
| dummy | 24 | 31.20 | 70.96 | 9.93 | - | - | 1.53 | 0.0190 | 5464.58 | 5466.68 | 5465.14 | 1.35 | 5468.02 | 5466.49 |
| - | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5484.11 | 5477.75 |
| - | | | | | | | | | | | | | | |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5484.11 | 5477.75 | - | 5484.11 | 5477.75 |
| 5482.42 | | | | | | | | | | | | | | |
| SDP21 | 18 | 5.40 | 29.79 | 7.98 | 0.61 | 0.89 | 0.99 | - | 5478.04 | 5478.75 | 5477.75 | - | 5478.69 | 5477.70 |
| - | | | | | | | | | | | | | | |
| IN1 | - | - | - | - | - | - | - | - | - | 5478.69 | 5477.70 | - | 5478.69 | 5477.70 |
| 5482.34 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5484.11 | 5477.75 |
| - | | | | | | | | | | | | | | |
| SDMH10 | - | - | - | - | - | - | - | - | - | 5484.11 | 5477.75 | - | 5484.11 | 5477.75 |
| 5482.42 | | | | | | | | | | | | | | |
| SDP22 | 18 | 5.40 | 30.96 | 5.23 | 0.85 | 0.89 | 0.43 | - | 5478.03 | 5478.18 | 5477.75 | - | 5477.98 | 5477.56 |
| - | | | | | | | | | | | | | | |
| IN2 | - | - | - | - | - | - | - | - | - | 5477.98 | 5477.56 | - | 5477.98 | 5477.56 |
| 5481.96 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5452.29 | 5451.34 |
| - | | | | | | | | | | | | | | |
| SDMH2 | - | - | - | - | - | - | - | - | - | 5452.29 | 5451.34 | 0.28 | 5452.58 | 5451.62 |
| 5454.21 | | | | | | | | | | | | | | |
| SDP11 | 24 | 25.20 | 62.96 | 8.02 | - | - | 1.00 | 0.0124 | 5450.31 | 5452.58 | 5451.62 | 0.78 | 5453.36 | 5452.36 |
| - | | | | | | | | | | | | | | |
| IN5 | - | - | - | - | - | - | - | - | - | 5453.36 | 5452.36 | 0.27 | 5453.63 | 5452.63 |
| 5454.96 | | | | | | | | | | | | | | |
| SDP15 | 24 | 14.60 | 275.46 | 12.26 | - | - | 2.33 | 0.0042 | 5452.46 | 5453.63 | 5452.63 | - | 5463.08 | 5460.75 |
| - | | | | | | | | | | | | | | |
| IN3 | - | - | - | - | - | - | - | - | - | 5463.08 | 5460.75 | - | 5463.08 | 5460.75 |
| 5464.44 | | | | | | | | | | | | | | |
| SDP16 | 18 | 7.30 | 51.63 | 11.23 | 0.59 | 1.04 | 1.96 | - | 5461.44 | 5462.71 | 5460.75 | - | 5464.48 | 5462.52 |
| - | | | | | | | | | | | | | | |
| IN4 | - | - | - | - | - | - | - | - | - | 5464.48 | 5462.52 | - | 5464.48 | 5462.52 |
| 5468.04 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5465.72 | 5461.83 |
| - | | | | | | | | | | | | | | |
| SDMH5 | - | - | - | - | - | - | - | - | - | 5465.72 | 5461.83 | - | 5465.72 | 5461.83 |
| 5466.66 | | | | | | | | | | | | | | |
| SDP9 | 24 | 12.40 | 75.03 | 16.13 | 0.59 | 1.26 | 4.04 | - | 5462.76 | 5465.87 | 5461.83 | - | 5471.25 | 5467.21 |
| - | | | | | | | | | | | | | | |
| IN7 | - | - | - | - | - | - | - | - | - | 5471.25 | 5467.21 | - | 5471.25 | 5467.21 |
| 5471.12 | | | | | | | | | | | | | | |
| SDP10 | 18 | 6.20 | 30.43 | 11.02 | 0.53 | 0.96 | 1.89 | - | 5468.12 | 5469.09 | 5467.21 | - | 5470.30 | 5468.41 |
| - | | | | | | | | | | | | | | |
| IN8 | - | - | - | - | - | - | - | - | - | 5470.30 | 5468.41 | - | 5470.30 | 5468.41 |
| 5471.88 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 |
| - | | | | | | | | | | | | | | |
| IN11 | - | - | - | - | - | - | - | - | - | 5465.65 | 5464.52 | - | 5465.65 | 5464.52 |
| 5467.76 | | | | | | | | | | | | | | |
| SDP33 | 18 | 5.50 | 23.04 | 11.86 | 0.46 | 0.90 | 2.19 | - | 5464.76 | 5466.70 | 5464.52 | - | 5466.97 | 5464.78 |
| - | | | | | | | | | | | | | | |
| IN9 | - | - | - | - | - | - | - | - | - | 5466.97 | 5464.78 | - | 5466.97 | 5464.78 |
| 5468.32 | | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - | - | - | - | - | - | 5453.36 | 5452.36 |
| - | | | | | | | | | | | | | | |
| IN5 | - | - | - | - | - | - | - | - | - | 5453.36 | 5452.36 | 0.13 | 5453.49 | 5452.49 |
| 5454.96 | | | | | | | | | | | | | | |
| SDP12 | 18 | 5.30 | 28.02 | 3.00 | - | - | 0.14 | 0.0025 | 5451.96 | 5453.49 | 5452.49 | 0.07 | 5453.56 | 5453.42 |
| - | | | | | | | | | | | | | | |
| IN6 | - | - | - | - | - | - | - | - | - | 5453.56 | 5453.42 | - | 5453.56 | 5453.42 |
| 5455.36 | | | | | | | | | | | | | | |

Table B:

| LOSSES | | | | | | | | -\|LOSS_COEFFICENTS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Str_ID | Hf | Hb | Hstr | Hc | He | Hj | Total \| | Dstr | Ko | CD | Cd | Cq | Cp |
| Cb K | | | | | | | | | | | | | |
| Outfall | - | - | - | - | - | - | - \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| SDP25 | 0.59 | - | - | - | - | - | 0.59 \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| IN16 | - | - | 0.48 | - | - | - | 0.48 \| | 4.79 | 0.469 | 1.000 | 0.519 | 1.065 | 1.000 |
| 1.000 0.259 | | | | | | | | | | | | | |
| SDP24 | 0.09 | - | - | - | - | - | 0.09 \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| SDMH11 | - | - | 0.68 | - | - | - | 0.68 \| | 5.52 | 1.526 | 1.000 | 0.565 | 0.489 | 1.000 |
| 1.000 0.422 | | | | | | | | | | | | | |
| SDP23 | 0.23 | - | - | - | - | - | 0.23 \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| exSDMH1 | - | - | 0.56 | - | - | - | 0.56 \| | 6.98 | 1.526 | 1.000 | 0.651 | 1.000 | 1.000 |
| 1.000 0.993 | | | | | | | | | | | | | |
| SDP6 | 1.07 | - | - | - | - | - | 1.07 \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| SDMH6 | - | - | - | - | - | - | - \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| SDP7 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| SDMH10 | - | - | - | - | - | - | - \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| SDP8 | - | - | - | - | - | - | SuperCrt \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| New Branch | - | - | - | - | - | - | - \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |
| IN16 | - | - | 0.11 | - | - | - | 0.11 \| | 4.79 | 1.445 | 1.000 | 0.519 | 0.083 | 1.000 |
| 1.000 0.062 | | | | | | | | | | | | | |
| SDP28 | 0.10 | - | - | - | - | - | 0.10 \| | - | - | - | - | - | - |
| - - | | | | | | | | | | | | | |

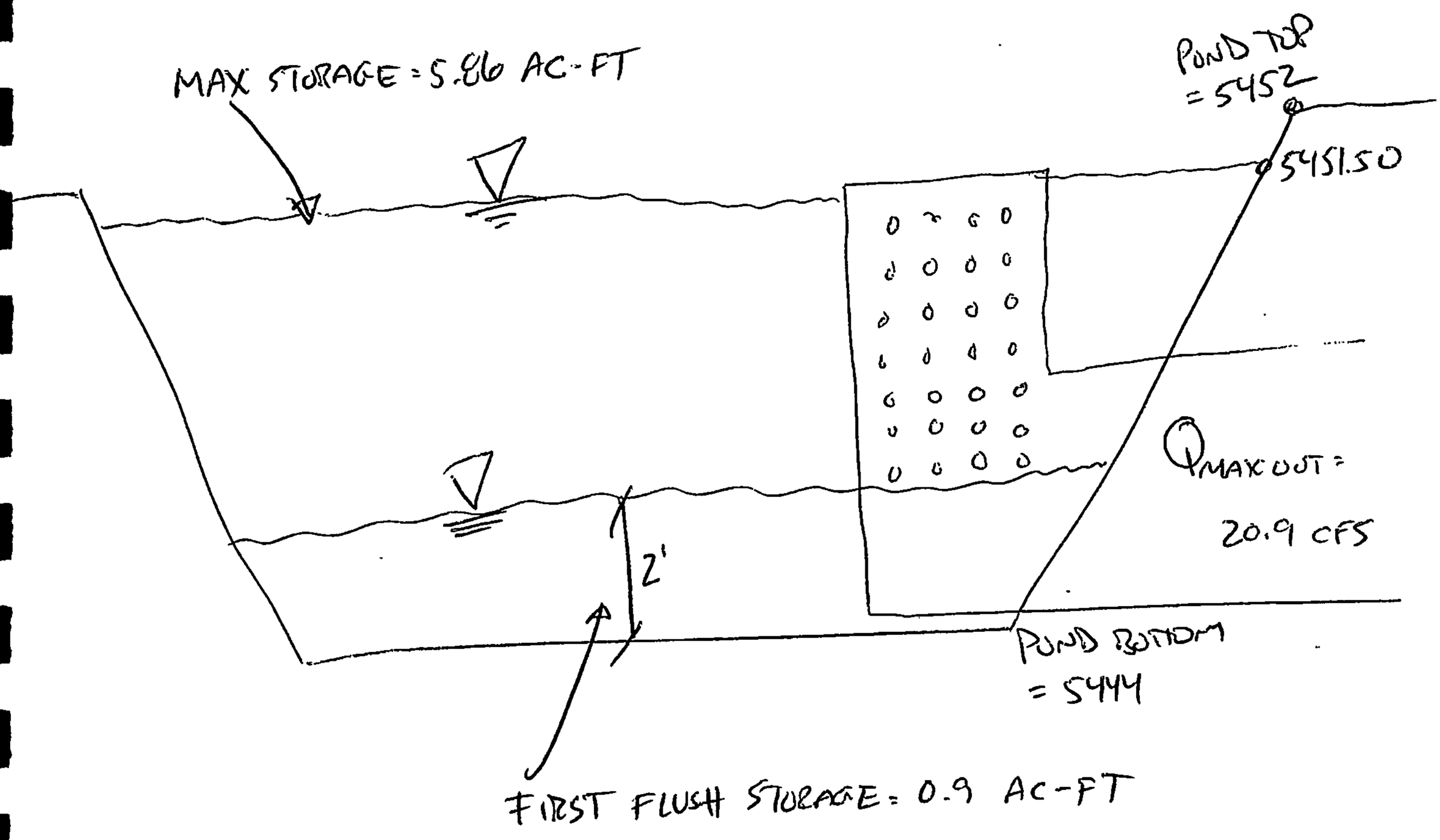
```
    IN14              -     -     -     -     -     -     -  |  0.52     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDMH11            -     -  0.38     -     -     -  0.38  |  5.52 1.522 1.000 0.565 0.274 1.000
1.000  0.236
    SDP29          0.52     -     -     -     -     -  0.52  |     -     -     -     -     -     -
-     -
    SDMH2             -     -  0.15     -     -     -  0.15  |  3.13 0.200 1.000 0.513 1.554 1.000
1.000  0.159
    SDP3           1.58     -     -     -     -     -  1.58  |     -     -     -     -     -     -
-     -
    SDMH3             -     -  0.37     -     -     -  0.37  |  3.09 0.394 1.000 0.649 1.000 1.000
1.000  0.256
    SDP4           1.90     -     -     -     -     -  1.90  |     -     -     -     -     -     -
-     -
    SDMH4             -     -  0.65     -     -     -  0.65  |  2.07 0.887 1.000 0.510 1.000 1.000
1.000  0.452
    SDP5           3.32     -     -     -     -     -  3.32  |     -     -     -     -     -     -
-     -
    SDMH5             -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP32             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN11              -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP31             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN12              -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP30             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN10              -     -     -     -     -     -     -  |  0.49     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDMH11            -     -  0.32     -     -     -  0.32  |  5.52 0.178 1.000 0.565 1.949 1.000
1.000  0.196
    SDP27          0.09     -     -     -     -     -  0.09  |     -     -     -     -     -     -
-     -
    IN15              -     -  0.20     -     -     -  0.20  |  2.97 1.671 1.000 0.634 1.000 1.000
1.000  1.058
    SDP26          0.10     -     -     -     -     -  0.10  |     -     -     -     -     -     -
-     -
    IN13              -     -     -     -     -     -     -  |  2.46     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDMH6             -     -  1.05     -     -     -  1.05  |  1.51 1.240 1.000 0.260 0.504 1.000
1.000  0.162
    dummy          1.35     -     -     -     -     -  1.35  |     -     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDMH10            -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP21             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN1               -     -     -     -     -     -     -  |  0.61     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDMH10            -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP22             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN2               -     -     -     -     -     -     -  |  0.85     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDMH2             -     -  0.28     -     -     -  0.28  |  3.13 1.545 1.000 0.513 0.373 1.000
1.000  0.296
    SDP11          0.78     -     -     -     -     -  0.78  |     -     -     -     -     -     -
-     -
    IN5               -     -  0.27     -     -     -  0.27  |  1.90 0.371 1.000 0.485 1.487 1.000
1.000  0.267
    SDP15          1.15     -     -     -     -     -  1.15  |     -     -     -     -     -     -
-     -
    IN3               -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP16             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN4               -     -     -     -     -     -     -  |  0.59     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDMH5             -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP9              -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN7               -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP10             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN8               -     -     -     -     -     -     -  |  0.53     -     -     -     -     -
-     -
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    IN11              -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    SDP33             -     -     -     -     -     - SuperCrt |     -     -     -     -     -     -
-     -
    IN9               -     -     -     -     -     -     -  |  0.46     -     -     -     -     -
-     -
```

```
  New Branch          -     -     -     -     -     -     -  |     -     -     -     -     -     -
-     -
    IN5               -     -  0.13     -     -     -  0.13  |  1.90 1.670 1.000 0.485 0.163 1.000
1.000   0.132
    SDP12          0.07     -     -     -     -     -  0.07  |     -     -     -     -     -     -
-     -
    IN6               -     -     -     -     -     -     -  |  2.06     -     -     -     -     -
-     -
```

# APPENDIX D

# POND CALCULATIONS

| Elevation | Incremental Volume cu ft | Cumulative Volume cu ft | Acre-Feet | Surface Area sq ft |
|---|---|---|---|---|
| 5444.0000 | 1568.2282 | 1568.2282 | 0.0360 | 15828.3262 |
| 5444.5000 | 8285.7378 | 9853.9660 | 0.2262 | 17325.4063 |
| 5445.0000 | 9050.4504 | 18904.4164 | 0.4340 | 18887.1758 |
| 5445.5000 | 9847.5069 | 28751.9232 | 0.6601 | 20513.6338 |
| 5446.0000 | 10676.9071 | 39428.8303 | 0.9052 | 22204.7773 |
| 5446.5000 | 12834.2065 | 52263.0368 | 1.1998 | 26979.2153 |
| 5447.0000 | 14124.2988 | 66387.3357 | 1.5240 | 29514.1531 |
| 5447.5000 | 15399.4843 | 81786.8199 | 1.8776 | 32095.0762 |
| 5448.0000 | 16706.8739 | 98493.6938 | 2.2611 | 34743.6692 |
| 5448.5000 | 18047.7496 | 116541.4434 | 2.6754 | 37454.4863 |
| 5449.0000 | 19405.8291 | 135947.2725 | 3.1209 | 40169.0725 |
| 5449.5000 | 20759.1742 | 156706.4467 | 3.5975 | 42865.4768 |
| 5450.0000 | 22145.0972 | 178851.5439 | 4.1059 | 45773.5906 |
| 5450.5000 | 23541.3372 | 202392.8811 | 4.6463 | 48371.2620 |
| 5451.0000 | 24835.1596 | 227228.0407 | 5.2164 | 50974.3999 |
| 5451.5000 | 26138.8147 | 253366.8553 | 5.8165 | 53558.9067 |
| 5452.0000 | 27370.0400 | 280736.8954 | 6.4448 | 55875.6489 |



**Valle Prado Pond E**
Job # 20150013
6/18/2014

| Water Depth ft | 1st Row Head ft | Perforation Q cfs | Open Top Q cfs | | Cumulative Q |
|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00000 |
| 0.50 | 0.50 | 0.53 | 0.00 | 0.50 | 0.53481 |
| 1.00 | 1.00 | 0.76 | 0.00 | 1.00 | 1.29114 |
| 1.50 | 1.50 | 0.93 | 0.00 | 1.50 | 2.21746 |
| 2.00 | 2.00 | 1.07 | 0.00 | 2.00 | 3.28708 |
| 2.50 | 2.50 | 1.20 | 0.00 | 2.50 | 4.48295 |
| 3.00 | 3.00 | 1.31 | 0.00 | 3.00 | 5.79296 |
| 3.50 | 3.50 | 1.41 | 0.00 | 3.50 | 7.20793 |
| 4.00 | 4.00 | 1.51 | 0.00 | 4.00 | 8.72060 |
| 4.50 | 4.50 | 1.60 | 0.00 | 4.50 | 10.32503 |
| 5.00 | 5.00 | 1.69 | 0.00 | 5.00 | 12.01625 |
| 5.50 | 5.50 | 1.77 | 0.00 | 5.50 | 13.79001 |
| 6.00 | 6.00 | 1.85 | 0.00 | 6.00 | 15.64264 |
| 6.50 | 6.50 | 1.93 | 24.07 | 6.50 | 41.63735 |
| 7.00 | 7.00 | 2.00 | 34.04 | 7.00 | 53.60706 |
| 7.50 | 7.50 | 2.07 | 41.68 | 7.50 | 63.32758 |
| 8.00 | 8.00 | 2.14 | 48.13 | 8.00 | 71.91540 |
| 8.50 | 8.50 | 2.21 | 53.81 | 8.50 | 79.80178 |
| 9.00 | 9.00 | 2.27 | 58.95 | 9.00 | 87.20709 |
| 9.50 | 9.50 | 2.33 | 63.67 | 9.50 | 94.26158 |
| 10.00 | 10.00 | 2.39 | 68.07 | 10.00 | 101.04968 |
| 10.50 | 10.50 | 2.45 | 72.20 | 10.50 | 107.62963 |
| 11.00 | 11.00 | 2.51 | 76.10 | 11.00 | 111.53507 |
| 11.50 | 11.50 | 2.56 | 79.82 | 11.50 | 117.75813 |
| 12.00 | 12.00 | 2.62 | 83.37 | 12.00 | 123.87223 |
| 12.50 | 12.50 | 2.67 | 86.77 | 12.50 | 129.89644 |
| 13.00 | 13.00 | 2.73 | 90.05 | 13.00 | 135.84607 |
| 13.50 | 13.50 | 2.78 | 93.21 | 13.50 | 141.73362 |
| 14.00 | 14.00 | 2.83 | 96.27 | 14.00 | 147.56941 |

| | | |
|---|---|---|
| **Orifice Coefficient =** | 0.6 | |
| Stand Pipe Diameter | 36 | in |
| Stand Pipe Height | 6 | ft |
| Stand Pipe Area | 7.068583 | sq ft |
| Open Top | yes | |
| Hole Size | 3 | in |
| Hole Area | 7.069 | sq in |
| # of Holes/Row | 4.00 | |
| Clogging Factor | 20.0% | |
| Row Area | 28.27 | sq in |
| Net Row Area | 22.62 | sq in |
| Row Spacing | 6.00 | in |
| Top Row Depth | 5.50 | ft |
| # of Rows | 11.00 | |

**Valle Prado Pond E**
Job # 20150013
6/18/2014

| Water Depth ft | 1st Row Head ft | Perforation Q cfs | Open Top Q cfs | | Cumulative Q |
|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00000 |
| 0.50 | 0.50 | 0.80 | 0.00 | 0.50 | 0.80221 |
| 1.00 | 1.00 | 1.13 | 0.00 | 1.00 | 1.93672 |
| 1.50 | 1.50 | 1.39 | 0.00 | 1.50 | 3.32619 |
| 2.00 | 2.00 | 1.60 | 0.00 | 2.00 | 4.93062 |
| 2.50 | 2.50 | 1.79 | 0.00 | 2.50 | 6.72443 |
| 3.00 | 3.00 | 1.97 | 0.00 | 3.00 | 8.68944 |
| 3.50 | 3.50 | 2.12 | 0.00 | 3.50 | 10.81190 |
| 4.00 | 4.00 | 2.27 | 0.00 | 4.00 | 13.08090 |
| 4.50 | 4.50 | 2.41 | 0.00 | 4.50 | 15.48755 |
| 5.00 | 5.00 | 2.54 | 0.00 | 5.00 | 18.02437 |
| 5.50 | 5.50 | 2.66 | 0.00 | 5.50 | 20.68501 |
| 6.00 | 6.00 | 2.78 | 0.00 | 6.00 | 23.46397 |
| 6.50 | 6.50 | 2.89 | 24.07 | 6.50 | 50.42281 |
| 7.00 | 7.00 | 3.00 | 34.04 | 7.00 | 63.39306 |
| 7.50 | 7.50 | 3.11 | 41.68 | 7.50 | 74.14923 |
| 8.00 | 8.00 | 3.21 | 48.13 | 8.00 | 83.80667 |
| 8.50 | 8.50 | 3.31 | 53.81 | 8.50 | 92.79559 |
| 9.00 | 9.00 | 3.40 | 58.95 | 9.00 | 101.33540 |
| 9.50 | 9.50 | 3.50 | 63.67 | 9.50 | 109.55548 |
| 10.00 | 10.00 | 3.59 | 68.07 | 10.00 | 117.53945 |
| 10.50 | 10.50 | 3.68 | 72.20 | 10.50 | 125.34480 |
| 11.00 | 11.00 | 3.76 | 76.10 | 11.00 | 133.01296 |
| 11.50 | 11.50 | 3.85 | 79.82 | 11.50 | 140.57483 |
| 12.00 | 12.00 | 3.93 | 83.37 | 12.00 | 144.12407 |
| 12.50 | 12.50 | 4.01 | 86.77 | 12.50 | 151.45829 |
| 13.00 | 13.00 | 4.09 | 90.05 | 13.00 | 158.74495 |
| 13.50 | 13.50 | 4.17 | 93.21 | 13.50 | 165.99600 |
| 14.00 | 14.00 | 4.24 | 96.27 | 14.00 | 173.22126 |

| Orifice Coefficient = | 0.6 | |
|---|---|---|
| Stand Pipe Diameter | 36 | in |
| Stand Pipe Height | 6 | ft |
| Stand Pipe Area | 7.068583 | sq ft |
| Open Top | yes | |
| Hole Size | 3 | in |
| Hole Area | 7.069 | sq in |
| # of Holes/Row | 6.00 | |
| Clogging Factor | 20.0% | |
| Row Area | 42.41 | sq in |
| Net Row Area | 33.93 | sq in |
| Row Spacing | 6.00 | in |
| Top Row Depth | 5.50 | ft |
| # of Rows | 11.00 | |

| Elevation | Incremental Volume | Cumulative Volume | Acre-Feet | Surface Area | |
|---|---|---|---|---|---|
| | cu ft | cu ft | | sq ft | |
| 5483.0000 | 1115.3467 | 1115.3467 | 0.0256 | 7050.4670 | |
| 5483.1400 | 1201.9074 | 2317.2541 | 0.0532 | 8711.1526 | |
| 5483.2800 | 1237.0744 | 3554.3285 | 0.0816 | 8960.8313 | |
| 5483.4200 | 1271.8172 | 4826.1456 | 0.1108 | 9207.4788 | |
| 5483.5600 | 1306.1526 | 6132.2982 | 0.1408 | 9451.5640 | |
| 5483.7000 | 1340.2220 | 7472.5202 | 0.1715 | 9694.2437 | |
| 5483.8400 | 1374.1049 | 8846.6251 | 0.2031 | 9935.6050 | |
| 5483.9800 | 1407.8028 | 10254.4279 | 0.2354 | 10175.6379 | |
| 5484.1200 | 1440.8498 | 11695.2777 | 0.2685 | 10407.0244 | |
| 5484.2600 | 1473.2020 | 13168.4797 | 0.3023 | 10639.0813 | |
| 5484.4000 | 1505.8416 | 14674.3213 | 0.3369 | 10873.3003 | |
| 5484.5400 | 1538.7832 | 16213.1045 | 0.3722 | 11109.6760 | 24 HR |
| 5484.6800 | 1572.0268 | 17785.1313 | 0.4083 | 11348.2048 | |
| 5484.8200 | 1605.5723 | 19390.7035 | 0.4451 | 11588.8999 | |
| 5484.9600 | 1639.4197 | 21030.1233 | 0.4828 | 11831.7444 | |
| 5485.0000 | 474.6648 | 21504.7881 | 0.4937 | 11901.5244 | 10 DAY |

$$\forall_{24} = 0.38 \text{ AC-FT} \quad (\text{PER AHYMO}) \ @ \ \text{ELEV} \cong 5484.50$$

$$\forall_{10\text{-DAY}} = \forall_{360} + A_D \left( P_{10\text{DAY}} - P_{360} \right) \Big/ 12 \text{ IN/FT}$$

$$= 0.34 + 1.23 \left( \frac{3.67 - 2.20}{12} \right)$$

$$= 0.49 \text{ AC-FT} \quad @ \ \text{ELEV} \cong 5485$$

| Elevation | Incremental Volume cu ft | Cumulative Volume cu ft | Acre-Feet | Surface Area sq ft |
|---|---|---|---|---|
| 5491.5000 | 9776.1411 | 9776.1411 | 0.2244 | 14354.6699 |
| 5491.7500 | 3992.7634 | 13768.9045 | 0.3161 | 17601.3752 |
| 5492.0000 | 4815.8113 | 18584.7158 | 0.4266 | 21023.0403 |
| 5492.2500 | 5553.6682 | 24138.3840 | 0.5541 | 22791.9275 |
| 5492.5000 | 5839.0067 | 29977.3907 | 0.6882 | 23919.3940 |
| 5492.7500 | 6120.3224 | 36097.7131 | 0.8287 | 25042.4551 |
| 5493.0000 | 0.0000 | 36097.7131 | 0.0000 | 0.0000 |

NORTH TEMPORARY POND

$\forall_{required} = 0.30$ AC-FT

↳ Water depth of 0.25'

# EXHIBITS

EXHIBIT 1: PRELIMINARY PLAT

EXHIBIT 2: UNIT 1 & 2 BASIN MAP

EXHIBIT 3: FULLY DEVELOPED BASIN MAP

EXHIBIT 4: INLET AND STORM DRAIN NETWORK MAP

EXHIBIT 5: GRADING PLAN

EXHIBIT 6: SUPPLEMENTAL EXHIBITS FROM DMP

# EXHIBIT 1

# PRELIMINARY PLAT

Bohannan Huston

# EXHIBIT 2

# UNIT 1 & 2 BASIN MAP

Bohannan Huston

# EXHIBIT 3

# FULLY DEVELOPED BASIN MAP

Bohannan Huston

# EXHIBIT 4

# INLET AND STORM DRAIN NETWORK MAP

Bohannan Huston

# EXHIBIT 5

# GRADING PLAN

Bohannan Huston

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

P8

Richard J. Berry, Mayor

November 21, 2014

Scott Steffen, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Units 1** - Tracts 9 and OS-3 **(File: C09D011)**
**Revised Grading and Drainage Plan, Engineer's Stamp Date 11-4-2014**

Dear Mr. Steffen:

Based upon the information provided in your submittals received 11-6-14, the above referenced submittals are approved for Grading Permit with the following conditions:

1) Remove parallel lines shown between open space Tract D and lot 25. They appear to be errors.
2) The wall between lots 25 and 26 needs to be delineated as a retaining wall

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

It is noted that the major changes from the previously approved plan are changes in retaining wall locations adjacent to the well house, and the removal of retaining walls adjacent to Pond E by lowering grade. The lower grade calls for mountable curb in front of Lot 32. If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

THIS SUBMITTAL
Revised Retaining walls

Orig: Drainage file
c.pdf Addressee via Email, Monica Ortiz



C09D011_GP_Appr3_ret walls change.doc

*Albuquerque - Making History 1706-2006*

Revision to walls P3

# City of Albuquerque

## Planning Department

## Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: VALLE PRADO UNIT 1 Building Permit #: _____ City Drainage #: C09D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: TRACTS 9 AND 0S-3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- X GRADING PLAN
- ____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ ENGINEER'S CERT (ESC)
- ____ SO-19
- ____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- X GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ GRADING CERTIFICATION
- ____ ~~SO-19 APPROVAL~~
- ____ ESC PERMIT APPROVAL
- ____ ESC CERT. ACCEPTANCE
- ____ OTHER (SPECIFY)

RECEIVED NOV - 6 2014 LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 11/5/14 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

## Scott Steffen

**From:** Scott Steffen
**Sent:** Wednesday, November 05, 2014 10:54 AM
**To:** Cherne, Curtis
**Cc:** Ortiz, Monica; 'Rick Beltramo'
**Subject:** Valle Prado Unit 1 grading plan
**Attachments:** Valle Prado Unit 1 GP_Rev1.pdf

Curtis,

Attached is the revised grading plan for Valle Prado Unit 1. The revision covers the regrading of Lots 25-32. I have included the original approved grading plan for reference.

You should receive a hard copy this afternoon.

I am available to meet to discuss if you have questions.

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

RECEIVED
NOV - 6 2014
LAND DEVELOPMENT SECTION

# Bohannan Huston

Engineering
Spatial Data
Advanced Technologies

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:** Curtis Cherne
Hydrology Section
City of Albuquerque
600 2nd St NW

**Requested by:** Scott Steffen

**Date:** November 5, 2014

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

**Phone:** 924-3986
**Job No.:** 20140164.005.01.cdp

**Job Name:** Valle Prado Unit 1 grading plan

**DELIVERY VIA**

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

**PICK UP**

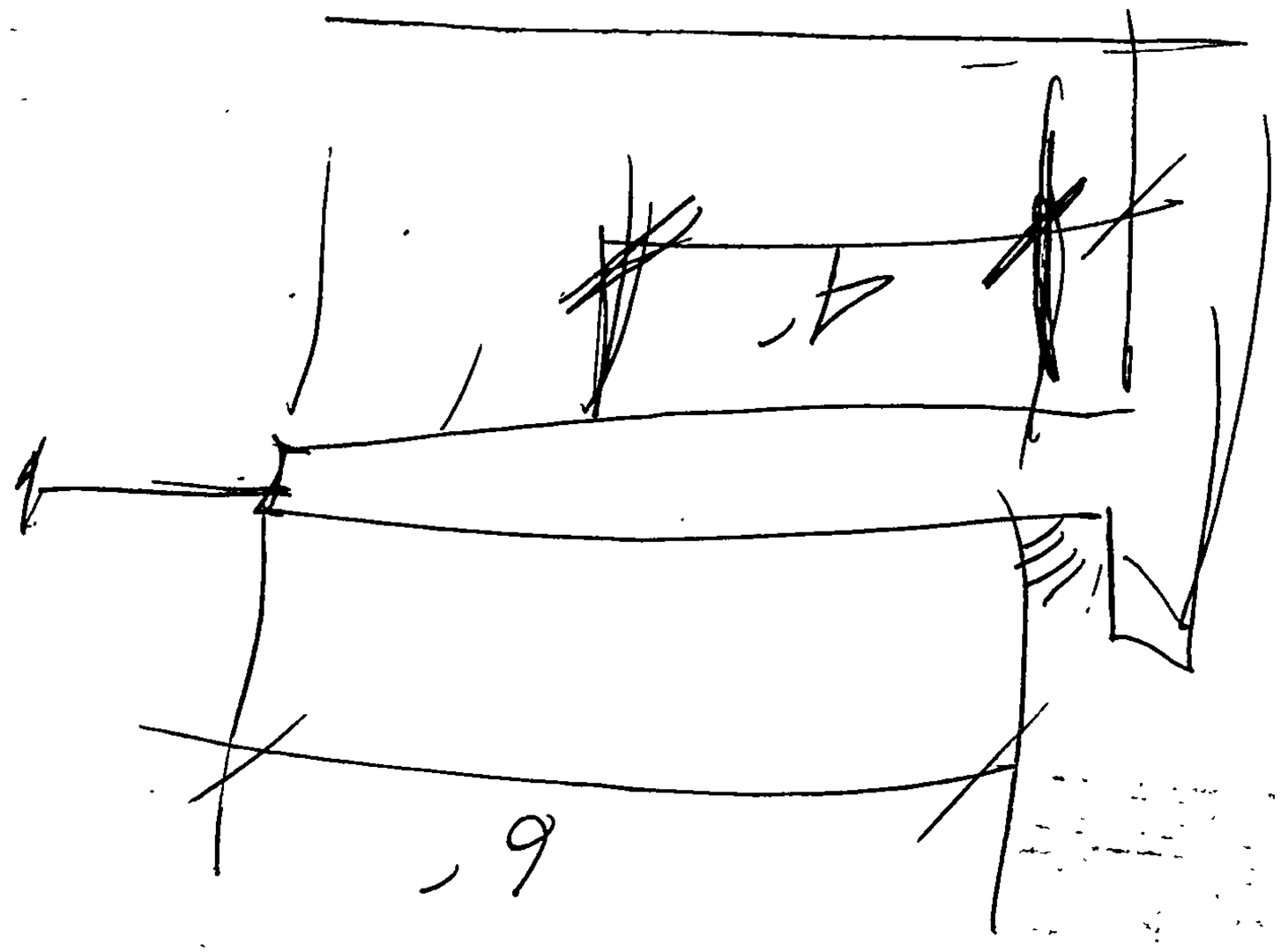
Item: _____

| ITEM NO. | QUANTITY | DESCRIPTION |
|---|---|---|
| 1 | 1 | Unit 1 grading plan revision #1 |

**COMMENTS / INSTRUCTIONS**

RECEIVED
NOV - 6 2014
LAND DEVELOPMENT SECTION

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



# EXHIBIT 6

# SUPPLEMENTAL EXHIBITS FROM DMP

# Bohannan Huston

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

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

**Las Cruces**
425 S. Telshor Blvd.
Suite C-103
Las Cruces, NM
88011-8237

voice: 575.532.8670
facsimile: 575.532.8680

**Denver**
Meridian One
9785 Maroon Circle
Suite 140
Englewood, CO
80112-5928

voice: 303.799.5103
facsimile: 303.799.5104
toll free: 877.799.5103

**www.bhinc.com**

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

May 30, 2014

Brian Patterson, PE
**BOHANNAN-HUSTON, INC.**
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Prado Units 1&2** - Tracts 9 and OS-3
**Drainage Report for Valle Prado at the Trails Units 3A**
**Engineer's Stamp Date 5-2-2014 (File: C09D011)**

Dear Mr. Patterson:

Based upon the information provided in your submittal received 5-2-14, the above referenced plan cannot be approved for Preliminary Plat Approval, Site Plan for Subdivision, or Grading Permit by the DRB until the following comments are addressed. The **Drainage Report for Valle Prado at the Trails Units 3A** is herein referred to as "the Report," and the **Amendment to The Drainage Master Plan for the Trails Units 1,2, and 3(April 2014)** is herein referred to as "the DMP."

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Pertaining to the drainage concept presented in the Report and its congruency with the DMP:

1. Hydrology is concerned about grading next to the high pressure gas lines. There is a 8' maximum grade difference along the gas line easement as well as 2 roads that cross the easement. Please submit grading plans to PNM for comment and request that they submit a letter to the COA Planning Department indicating acceptance.
2. There is an inconsistency in the AHYMO output file in the DMP verses the Table shown on Plate 2 of the DMP that needs to be resolved. The AHYMO indicates AP-E as 15.5 cfs, whereas the table indicates 22.3 cfs.
3. Hydrology would like the 12" orifice plate at AP-E, south of Woodmont, to be removed. If the orifice plate is not removed and the pond outlet is less than 24" diameter effective area, a sluice gate type restriction plate or similar device should be built with this project per the DMP (bottom of page 6).
4. DMP Basins E5, E3, and part of C in Tracts 9,6, and 10 appear to encompass the basins shown on the Fully Developed Basin Map in the Report. Please overlay the basins so that basin boundaries and flows can be better understood and compared.
5. The Fully Developed Basin Map in the Report should label Ponds A5 and A6, all future roads, and show conditions and contours beyond northeast boundary. Also, A5 should be shown extending to Woodmont Avenue.
6. Provide a table showing basin area (in acre) and flows on the Fully Developed Basin Map.
7. The Fully Developed Basin Map should show Woodmont Avenue extending all the way to the north end of Future Basin 1, along with the storm drain. Flows from Basin E6 of

the DMP should be accounted for in the Report, as this basin contains half of Woodmont Avenue. Inlets in Woodmont should be sized and located.

8. DMP shows Basin E5 as 42% impervious land treatment and should be the same value used in the corresponding basins in the Report.
9. Pond E is noted as a future pond. However, the DMP shows the south and southwest portion of Basin E5 draining to Pond E, rather than a storm drain. Therefore Pond E needs to be sized correctly to contain flows delineated in the DMP. Furthermore, Pond E could be used to pick up the "first flush" required by the drainage ordinance. Pond calculations need to be provided.
10. The Temporary Sedimentation Ponds located in Future Basins 1,2, 3, and 4 need to be sized to pick up the correct volumes. They seem to be temporary ponds that pick up offsite flows rather than sedimentation ponds.
11. Basin 2 should not have a pond.
12. How does Basin 6 drain?
13. How does the well site drain? It appears to need a retaining wall to support 6 feet of fill but an existing wall is already in place.
14. How does Hooded Sage Street drain to Pond E? Will there be fill in this area? Lot 32 at edge of pond shows a FG elev = 5466.9 along pond while the pond contour is 5457 at the rim in the same area.
15. Inlets need to be sized using the 6 hour storm.
16. Hydrology prefers storm drains to be located in the middle of the street. Connecting to the corner of an inlet is not desirable.

Pertaining to Grading Plan:

17. What are the boundaries of Unit 3A?
18. Woodmont Avenue needs to be included in the Grading Plan with the 54" SD extending past the edge of pavement.
19. Some or all of Pond E should be constructed with this project and shown on the grading plan. Pond volume, WSEL, and emergency overflow should be shown as well. Show grade lines along Sunhorn Road adjacent to the pond.
20. Hooded Sage Street should not extend into Pond easement, nor can a street be supported by a retaining wall.
21. The Temporary Sedimentation Ponds located in Future Basins 1,2, 3, and 4 need to be shown on Grading Plan with the pond volume, WSEL, and emergency overflow indicated.
22. The berms near the Temporary Ponds need to be detailed and dimensioned.
23. Show street slopes. Some street slopes seem to be high.
24. Show contours in well site and beyond northeast boundary, inside of gas line easement.
25. Spot elevations where Redbloom Road terminates do not tie into existing grades.
26. A retaining wall is needed between Lot 4 and Lot 13 in Unit 2.
27. Add Flow Line elevations at end of Sandmark where it connects to South Sky Street to show that inlets are in the sump condition.

# CITY OF ALBUQUERQUE

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

# City of Albuquerque

## Planning Department
## Development & Building Services Division
## DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNITS 1 AND 2 Building Permit #: _____ City Drainage #: C09D011

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: TRACTS 9 AND 0S-3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: BRIAN PATTERSON

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: BPATTERSON@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

X DRAINAGE REPORT
X DRAINAGE PLAN 1st SUBMITTAL
___ DRAINAGE PLAN RESUBMITTAL
___ CONCEPTUAL G & D PLAN
X GRADING PLAN
___ EROSION & SEDIMENT CONTROL PLAN (ESC)
___ ENGINEER'S CERT (HYDROLOGY)
___ CLOMR/LOMR
___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ ENGINEER'S CERT (TCL)
___ ENGINEER'S CERT (DRB SITE PLAN)
___ ENGINEER'S CERT (ESC)
___ SO-19
___ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

___ SIA/FINANCIAL GUARANTEE RELEASE
X PRELIMINARY PLAT APPROVAL
X S. DEV. PLAN FOR SUB'D APPROVAL
___ S. DEV. FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
X FINAL PLAT APPROVAL
___ CERTIFICATE OF OCCUPANCY (PERM)
___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
X GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ WORK ORDER APPROVAL
___ GRADING CERTIFICATION
___ SO-19 APPROVAL
___ ESC PERMIT APPROVAL
___ ESC CERT. ACCEPTANCE
___ OTHER (SPECIFY)

61 X 10 = 610
+50
660

RECEIVED
MAY 02 2014
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes ___ No ___ Copy Provided

DATE SUBMITTED: 5-2-14 By: BRIAN PATTERSON

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

Current DRC
Project No _____

ORIGINAL

Date Submitted: July 7, 2014
Date Site Plan for Bldg Permit Approv _____
Date Site Plan for Sub Approved. _____
Date Preliminary Plat Approved: 7-16-14
Date Preliminary Plat Expires: 7-16-15

DRB Project No. 1004404

Figure 12

INFRASTRUCTURE LIST

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

VALLE PRADO UNIT 2
(REPLAT OF TRACT 10, UNIT 3A AT THE TRAILS UNIT 2 AND TRACT 6 VALLE PRADO UNIT 2)

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 DRC Chair determines that 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 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.

| SIA Sequence # | COA DRC Project # | Size | Type of Improvement | Location | From | To | Private Inspector | City Inspector | City Cnst Engineer |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PAVING** | | | | | | |
| | | 52' F-F | RESIDENTIAL (NORMAL LOCAL) PAVING W/PCC CURB & GUTTER, PCC 6' WIDE SIDEWALK ON BOTH SIDES* | SOUTH SKY STREET | WOODMONT AVENUE | REDBLOOM ROAD | / | / | / |
| | | 30' F-F | RESIDENTIAL (NORMAL LOCAL) PAVING CURB & GUTTER, PCC 4' WIDE SIDEWALK ON WEST SIDE AND PCC 6' WIDE SIDEWALK ON EAST SIDE* | SOUTH SKY STREET | REDBLOOM ROAD | SANDMARK ROAD | / | / | / |
| | | 28' F-F | RESIDENTIAL PAVING W/ PCC CURB & GUTTER. PCC 4' WIDE SIDEWALK ON WEST SIDE AND PCC 6' WIDE SIDEWALK ON EAST SIDE* | SOUTH SKY STREET | SANDMARK ROAD | LOT 24 | / | / | / |
| | | 28' F-F | RESIDENTIAL PAVING W/ PCC CURB & GUTTER, PCC 4' WIDE SIDEWALK ON BOTH SIDES* | SANDMARK ROAD | RAINSPOT STREET | SOUTH SKY STREET | / | / | / |
| | | 28' F-F | RESIDENTIAL PAVING W/ PCC CURB & GUTTER, PCC 4' WIDE SIDEWALK ON WEST SIDE AND PCC 6' WIDE SIDEWALK ON EAST SIDE* | SOUTH SKY STREET | RAINSPOT STREET | LOT 15 | / | / | / |
| | | 28' F-F | RESIDENTIAL PAVING W/ PCC CURB & GUTTER, PCC 4' WIDE SIDEWALK ON BOTH SIDES* | RAINSPOT STREET | SANDMARK ROAD | TWO ROCK ROAD | / | / | / |
| | | 28' F-F | RESIDENTIAL PAVING W/ PCC CURB & GUTTER, PCC 4' WIDE SIDEWALK ON BOTH SIDES* | TWO ROCK ROAD | LOT 25 | SOUTH STUB TERMINUS | / | / | / |
| | | 36' RADIUS | TEMPORARY TURNAROUND | TRACT A, UNIT 2<br>TRACT F, UNIT 1 | NORTH END OF<br>TWO ROCK ROAD | | / | / | / |

* SIDEWALKS TO BE BUILT/DEFERRED IN ACCORDANCE W/APPROVED SIDEWALK EXHIBIT

| SIA Sequence # | COA DRC Project # | Size | Type of Improvement | Location | From | To | Private Inspector | City Inspector | City Cnst Engineer |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PUBLIC STORM DRAIN IMPROVEMENTS** | | | | | | |
| | | 24" - 60" DIA | RCP W/ MH & INLETS | SOUTH SKY STREET | WOODMONT AVENUE | 60' NORTH OF SANDMARK ROAD | / | / | / |
| | | 24" DIA | RCP W/ MH & INLETS | SANDMARK ROAD | SOUTH SKY STREET | 60' WEST OF SOUTH SKY ROAD | / | / | / |
| | | 24" DIA | RCP W/ MH & INLETS | TWO ROCK ROAD | LOT 25/26 | FUTURE LONGWALK STREET | / | / | / |
| | | 24" DIA | RCP W/ MH & INLETS | FUTURE LONGWALK STREET | TWO ROCK ROAD | FUTURE TREE LINE AVENUE | / | / | / |
| | | | tied to Valle Prado Unit 1 or 2 | | | | | | |
| | | | REMOVE EXISTING ORIFICE PLATE | WOODMONT AVENUE | EXISTING SD MANHOLE AP-E TRAILS 1-3 DMP | | / | / | / |
| | | | PLUG EXISTING 48" STORM DRAIN OUTFALL TO EAST | WOODMONT AVENUE | EXISTING SD MANHOLE AT SOUTH SKY STREET INTERSECTION | | / | / | / |
| | | 5.9 AC-FT | POND E W/AGREEMENT AND COVENANT | TRACT OS-3 | | | / | / | / |
| | | 0.49 AC-FT | POND (Private) W/AGREEMENT AND COVENANT AND DRAINAGE EASEMENT | TRACT D VALLE PRADO UNIT 1 | | | / | / | / |
| | | | TEMPORARY POND (Temporary) W/AGREEMENT AND COVENANT AND DRAINAGE EASEMENT | TRACT A VALLE PRADO UNIT 2 | | | / | / | / |
| | | | MODIFIY POND H INLET AND OUTLET PER APRIL 2014 AMENDED TRAILS, UNITS 1-3 DMP | POND H | WEST END OF TEMPE AVENUE | | / | / | / |
| | | 48" | 75 LF RCP STORM DRAIN | UNIVERSE BLVD | SDMH STA 11+40.47 CPN 730084 | SDMH STA 12+19.66 CPN 730084 | / | / | / |

NOTE: CERTIFICATION OF THE GRADING AND DRAINAGE PLAN IS REQUIRED FOR RELEASE OF FINANCIAL GUARANTEES

| SIA Sequence # | COA DRC Project # | Size | Type of Improvement | Location | From | To | Private Inspector | City Inspector | City Cnst Engineer |
|---|---|---|---|---|---|---|---|---|---|
| | | | **PUBLIC WATERLINE IMPROVEMENTS** | | | | | | |
| | | 8" DIA | WATERLINE W/ NEC VALVES FH'S, MJ'S & RJ'S | SANDMARK ROAD | RAINSPOT STREET | SOUTH SKY STREET | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | SOUTH SKY STREET | RAINSPOT STREET | LOT 15 | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | RAINSPOT STREET | SANDMARK ROAD | TWO ROCK ROAD | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | TWO ROCK ROAD | LOT 25 | RAINSPOT STREET | / | / | / |
| | | 4" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | TWO ROCK ROAD | RAINSPOT STREET | SOUTH STUB TERMINUS | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC VALVES FH'S, MJ'S & RJ'S | FUTURE LONGWALK STREET | TWO ROCK ROAD | FUTURE TREE LINE AVENUE | / | / | / |
| | | 8" DIA | WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S | FUTURE TREE LINE AVENUE | FUTURE LONGWALK STREET | EX 8" WATERLINE AT WEST TERMINUS SANTA FE AT THE TRAILS | / | / | / |
| | | | **PUBLIC SANITARY SEWER IMPROVEMENTS** | | | | | | |
| | | 8" DIA | SANITARY SEWER W/ NEC MH'S & SERVICES | SANDMARK ROAD | RAINSPOT STREET | SOUTH SKY STREET | / | / | / |
| | | 8" DIA | SANITARY SEWER W/ NEC. MH'S & SERVICES | SOUTH SKY STREET | RAINSPOT STREET | LOT 15 | / | / | / |
| | | 8" DIA | SANITARY SEWER W/ NEC. MH'S & SERVICES | RAINSPOT STREET | SOUTH SKY STREET | TWO ROCK ROAD | / | / | / |
| | | 8" DIA | SANITARY SEWER W/ NEC. MH'S & SERVICES | TWO ROCK ROAD | LOT 25 | SOUTH STUB TERMINUS | / | / | / |

| AGENT/OWNER | DEVELOPMENT REVIEW BOARD MEMBER APPROVALS | | | |
|---|---|---|---|---|
| CHRISTIAN J. SHOLTIS 7/7/2014<br>PREPARED BY: PRINT NAME DATE | DRB CHAIR | DATE | Carol S. Dumont<br>PARKS & ~~GENERAL SERVICES~~ Recreation | DATE 7-16-14 |
| BOHANNAN HUSTON, INC.<br>FIRM | TRANSPORTATION DEVELOPMENT | DATE 07-16-14 | AMAFCA | DATE |
| 7.14.14<br>SIGNATURE | ABCWUA | DATE 07/16/14 | CITY ENGINEER | DATE 7-16-14 |
| MAXIMUM TIME ALLOWED TO CONSTRUCT IMPROVEMENTS WITHOUT A DRB EXTENSION | | | | DATE |

DESIGN REVIEW COMMITTEE REVISIONS

| REVISION | DATE | DRC CHAIR | USER DEPARTMENT | AGENT/OWNER |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

Sed. Ponds

Note on Paving Plan (R&P)

Refer to Grading Plan

but Temp Pond (Tumbleweed)

& Private Pond do need

to be shown since

on I.L. List.

Discharge Detail to Private Pond

to be shown

Figure 6: Notice of DRC Session

Processing Date 10/29/14

Project#: 740582 Zone Atlas: C-9 DRB#: 1004404

Project Name: Valle Prado unit 2

☒ Scheduled with DRC on Wed NOV 5, 2014 at 3:30
☐ No DRC Meeting Scheduled. Please return at comments by

Project Location: W. of Rainbow btwn Woodmont and treeline

TYPE OF PROJECT: ☒-AHBA ☐-CIP ☐-SAD/PID ☐-ABCWUA

**PROJECT COORDINATOR:** Phone:

Company:

Design Engineer: Bohannan Huston Phone: 823-1000

Company: Scott Steffen

**The Project Is Scheduled For the Following DRC Session:**

☐-Pre-Design Review ☐- Final Plan Review ☐-
☒-Preliminary Plan Review ☐- Signature Review ☐-Route for Signature

**The Project Relates to City Infrastructure Systems:**

☒-Water ☒-San. Sewer ☒-Paving ☒-Storm Drainage ☐- Sidewalk.

**The Attached Package Includes:**

Indicated below are the Departments/Divisions that have received project documents and/or are invited to attend. (It will be the Project Coordinator's responsibility to notify consulting engineering firms of date and time of scheduled DRC meetings).

D- Drawings MU- Markups M- Memo Only E- Estimate R- Report

| | | | D | MU | M | E | R |
|---|---|---|---|---|---|---|---|
| DRC Chairman | Stephen | Design Review Section | ☒ | ☐ | ☐ | ☐ | ☐ |
| Traffic Dev. | Racquel | Transportation Development | ☒ | ☐ | ☐ | ☐ | ☐ |
| Utility Dev. | Kristopher/Alan | Utility Development | ☒ | ☐ | ☐ | ☐ | ☐ |
| Utility Des. | (CIP)Kris | Utility Design | ☐ | ☐ | ☐ | ☐ | ☐ |
| Hydr. Dev. | Rita | Hydrology Development | ☒ | ☐ | ☐ | ☐ | ☐ |
| Hydr. Des. | (CIP) | Hydrology Design | ☐ | ☐ | ☐ | ☐ | ☐ |
| Const. Mgmnt | | Construction Division | ☐ | ☐ | ☐ | ☐ | ☐ |
| Const. Div. | (CIP)Dave Harrison | Construction Division | ☐ | ☐ | ☐ | ☐ | ☐ |
| Jesse Valdez / Matt Yannoni | | Traffic Operations Division | ☐ | ☐ | ☐ | ☐ | ☐ |
| Brett Frauenglass | | Risk Management | ☒ | ☐ | ☐ | ☐ | ☐ |
| Stephen James | | City Architect | ☐ | ☐ | ☐ | ☐ | ☐ |
| | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| Parks & Rec. | | Parks & Recreation Department | ☐ | ☐ | ☐ | ☐ | ☐ |
| Project Manager | | | ☐ | ☐ | ☐ | ☐ | ☐ |

Notified Becky. of DRC meeting date & time on NOV 5, 2014 Wednesday at 3:30 via front counter

Keep ~~ponds that~~ temp & private pond

Don't show Sediment Pond, but refer to Grad Plan.

# City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNITS 1 AND 2 Building Permit #: _____ City Drainage #: _____

DRB#: 1004404 EPC#: _____ Work Order#: _____

Legal Description: TRACTS 9 AND OS-3

City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO

Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120

Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

RECEIVED JUL 10 2014 LAND DEVELOPMENT SECTION

**TYPE OF SUBMITTAL:**

____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL G & D PLAN
X GRADING PLAN
____ EROSION & SEDIMENT CONTROL PLAN (ESC)
____ ENGINEER'S CERT (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ ENGINEER'S CERT (TCL)
____ ENGINEER'S CERT (DRB SITE PLAN)
____ ENGINEER'S CERT (ESC)
____ SO-19
____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

____ SIA/FINANCIAL GUARANTEE RELEASE
X PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D APPROVAL
____ S. DEV. FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ CERTIFICATE OF OCCUPANCY (PERM)
____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ WORK ORDER APPROVAL
____ GRADING CERTIFICATION
____ SO-19 APPROVAL
____ ESC PERMIT APPROVAL
____ ESC CERT. ACCEPTANCE
____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 7/10/14 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

# City of Albuquerque

## Planning Department
## Development & Building Services Division
## DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: DMP FOR VALLE PRADO UNITS 1 AND 2 Building Permit #: _____ City Drainage #: C09D011
DRB#: 1004404 EPC#: _____ Work Order#: _____
Legal Description: TRACTS 9 AND OS-3
City Address: _____

**Engineering Firm:** BOHANNAN HUSTON INC Contact: SCOTT STEFFEN
Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109
Phone#: 823-1000 Fax#: _____ E-mail: SSTEFFEN@BHINC.COM

**Owner:** WOODMONT PASEO, LLC Contact: RICK BELTRAMO
Address: 6330 RIVERSIDE PLAZA LANE #160 ALBUQUERQUE NM 87120
Phone#: 505-761-9911 Fax#: _____ E-mail: _____

**Architect:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**Surveyor:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**Contractor:** _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

**TYPE OF SUBMITTAL:**

____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL G & D PLAN
X GRADING PLAN
____ EROSION & SEDIMENT CONTROL PLAN (ESC)
____ ENGINEER'S CERT (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ ENGINEER'S CERT (TCL)
____ ENGINEER'S CERT (DRB SITE PLAN)
____ ENGINEER'S CERT (ESC)
____ SO-19
____ OTHER (SPECIFY)

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

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

____ SO-19 APPROVAL
____ ESC PERMIT APPROVAL
____ ESC CERT. ACCEPTANCE
____ OTHER (SPECIFY)

RECEIVED
JUN 30 2014
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided
DATE SUBMITTED: 6/27/14 By: SCOTT STEFFEN

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

## Scott Steffen

**From:** Scott Steffen
**Sent:** Thursday, July 10, 2014 10:17 AM
**To:** Harmon Rita T. (rharmon@cabq.gov)
**Subject:** Valle Prado DRB 104404
**Attachments:** Valle PradoU2 Infrastructure List.pdf; DRAINAGE INFO SHEET.pdf; Valle Prado Grading Plan.pdf; Valle Prado Storm Drain Exhibit.pdf; Valle PradoU1 Infrastructure List.pdf

Rita,

Attached are the revised Valle Prado Unit 1 and 2 grading plans and infrastructure lists, and the revised storm drain exhibit.

A hard copy should be delivered this morning.

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

RECEIVED
JUL 10 2014
LAND DEVELOPMENT SECTION

## Scott Steffen

**From:** Scott Steffen
**Sent:** Friday, June 27, 2014 10:18 AM
**To:** 'Cherne, Curtis'
**Cc:** Harmon Rita T. (rharmon@cabq.gov)
**Subject:** Valle Prado Unit 1
**Attachments:** Valle Prado Unit 1 Grading Plan.pdf

Curtis,

Attached is the Valle Prado Unit 1 grading plan. The only change from what was submitted on Tuesday June 24th is pulling back Hooded Sage Street to the Lot 29/30 property line.

A hard copy should be delivered either this afternoon or Monday morning.

Let me know if you have any questions.

Thanks,

Scott J. Steffen
Vice President
Community Development and Planning
**Bohannan Huston**
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

RECEIVED
JUN 30 2014
LAND DEVELOPMENT SECTION

## Brian Patterson

**From:** Brian Patterson
**Sent:** Tuesday, June 24, 2014 10:28 AM
**To:** Cherne, Curtis (CCherne@cabq.gov)
**Cc:** Brian Patterson; Scott Steffen
**Subject:** Files To Share from Brian Patterson

Curtis,

Below is the link for the digital submittal for the Valle Prado DMP.

Brian

Use the following link to download files.

http://sfspublic.bhinc.com/EmailAccess.aspx?tk=TKbpattersonD2462014102650

NOTE: These files will expire in 7 days from the time this email was generated.

Using Gmail and IE? Please right click on the link and select Open in new window.

RECEIVED
JUN 24 2014
LAND DEVELOPMENT SECTION

## Cherne, Curtis

**From:** Cloud, Jack W.
**Sent:** Tuesday, July 08, 2014 4:06 PM
**To:** Cherne, Curtis
**Subject:** FW: VALLE PRADO REAR LOT RETAINING WALL DESIGN

---

**From:** Rick Beltramo [mailto:rbeltramo@gcinm.com]
**Sent:** Tuesday, July 08, 2014 3:40 PM
**To:** Cloud, Jack W.
**Subject:** RE: VALLE PRADO REAR LOT RETAINING WALL DESIGN

OK. Thanks. RLB.

---

**From:** Cloud, Jack W. [mailto:jcloud@cabq.gov]
**Sent:** Tuesday, July 08, 2014 3:29 PM
**To:** Rick Beltramo
**Subject:** RE: VALLE PRADO REAR LOT RETAINING WALL DESIGN

While your plan does not have a wall greater than 6' it does have walls which would exceed that in order to comply with the Building Code and thus would require a Variance. That would not be an appropriate condition for approval, nor would a condition for future compliance with the sector plan. The proposal for tiered walls sounds like it will work, but it needs to be on the Grading Plan which is approved by the Development Review Board concurrently with the Preliminary Plat [**§ 14-14-3-4(C)(2)**].

---

**From:** Rick Beltramo [mailto:rbeltramo@gcinm.com]
**Sent:** Tuesday, July 08, 2014 1:56 PM
**To:** Cloud, Jack W.
**Subject:** VALLE PRADO REAR LOT RETAINING WALL DESIGN

Jack,

I received a voice mail message from Mikaela stating that she discussed the proposed "view fence" idea with you and that this option would not be allowed on rear yards. In the 5 specific cases this will be allowed for side yards.

I believe that it is still possible to obtain preliminary plat approval on the basis that the proposed grading plan meets the minimum criteria of the sector plan. That is our plan does not have a wall greater than 6' total height. Out intent is to, after DRB approval, amend the grading plan to adjust the walls to be tiered in such a way at to have 3' maximum retaining walls, leaving the ability to have a 3' garden wall. Such a change would not affect street grades or pad grades.

Would such an approach work for you? We would accept conditions that would clarify the wall requirements and compliance with the sector plan. I only ask this because we are very much behind schedule on this project.

RLB.

Tumbleweed pond northwest of the end of Treeline Road.

Southeast corner of Pond E where offsite flows have eroded the side of the pond.

## Cherne, Curtis

**From:** Rick Beltramo <rbeltramo@gcinm.com>
**Sent:** Friday, August 15, 2014 10:08 AM
**To:** Cherne, Curtis
**Subject:** Pond "E" Easement and Covenant Agreement

Curtis,

I cannot find an easement and covenant agreement for pond "E". I researched our files and the latest title report. Therefore, we need to create them.

I would like to use the plat to record the easement as the final boundary may change during the final plat review process. Is it possible to record a maintenance covenant agreement after the plat is recorded?

Can you send me the latest word file that you use for such things?

Thanks. RLB.

Rick Beltramo
Director of Engineering
Galway Construction, Inc.