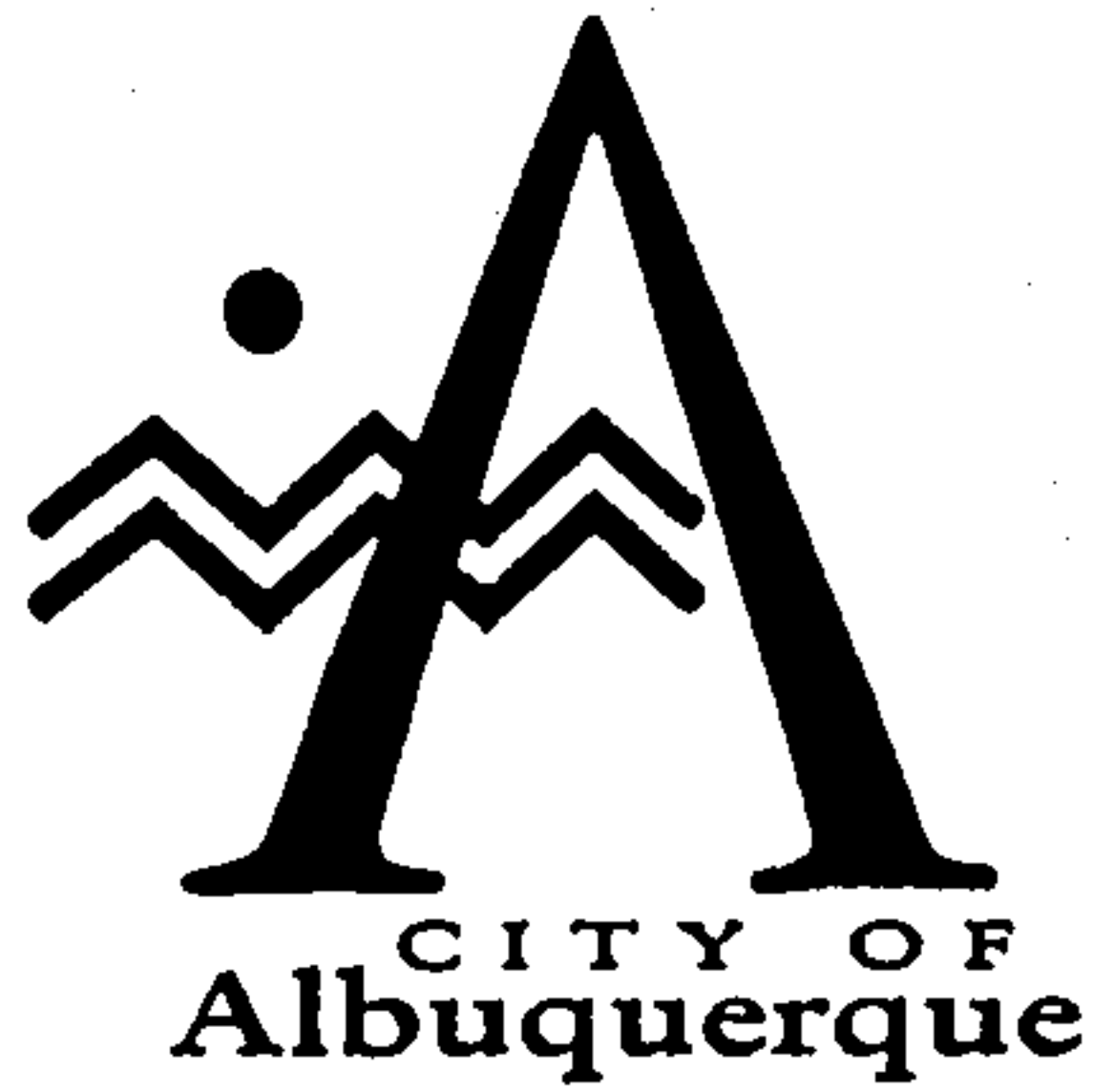




October 6, 1998

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

**RE: *Revised Grading and Drainage Plan for Avalon Subdivision, Units 1-A and 1-B
(K9/D12), Engineer's Stamp Dated 9/29/98.***

Dear Mr. Lorenz:

Based on the information provided on September 29, 1998, the above referenced revised plan is approved for Preliminary and Final Plat action.

As you are aware, the revised grading plan must be approved by the DRB. The Grading and Drainage Certification will be required prior to release of financial guarantees for each Unit.

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

Sincerely,

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

c: Bo Johnson, Curb Inc.
File

Good for You, Albuquerque!



BRASHER & LORENZ, INC.
CONSULTING ENGINEERS

2201 SAN PEDRO NE BUILDING 1 SUITE 210 ALBUQUERQUE, NM 87110 PHONE (505) 888-6088 FAX (505) 888-6188

April 14, 1999

Susan M. Calongne
City/County Floodplain Administrator
Hydrology Section
PO Box 1293
Albuquerque, NM 87103

SUBJECT: AVALON SUBDIVISION
(K9/D12), DRB 98-50

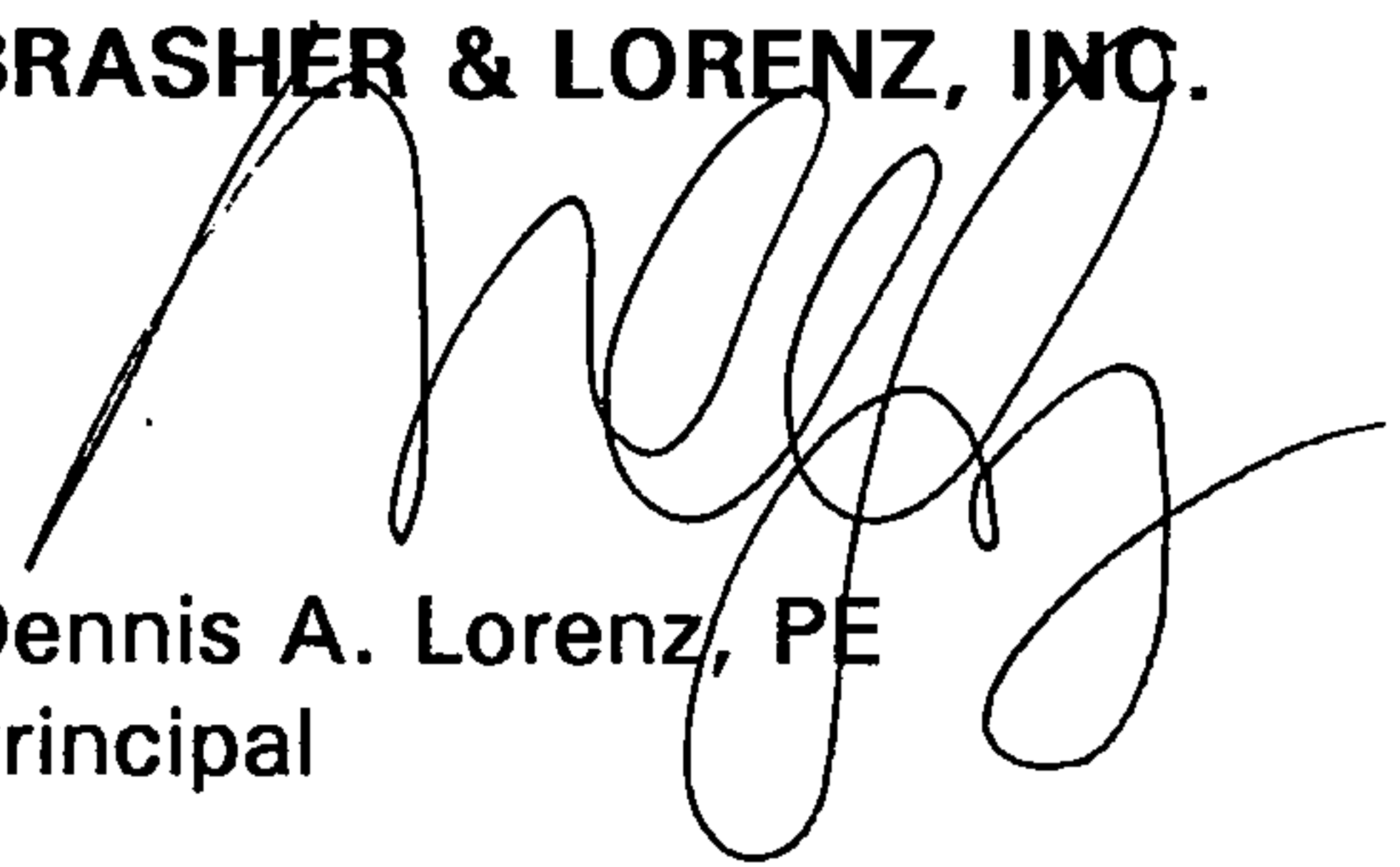
Dear Susan:

Submitted herewith for review and approval is one copy of the Amended Drainage Report for Avalon Subdivision. The report has been amended to reflect geometric platting changes to Unit 2. The recommendations and infrastructure requirements for Unit 2 are essentially the same as before; the changes consist of lot line geometry and residential street layout revisions. No changes were made to Unit 1, nor the Masterplan drainage concepts.

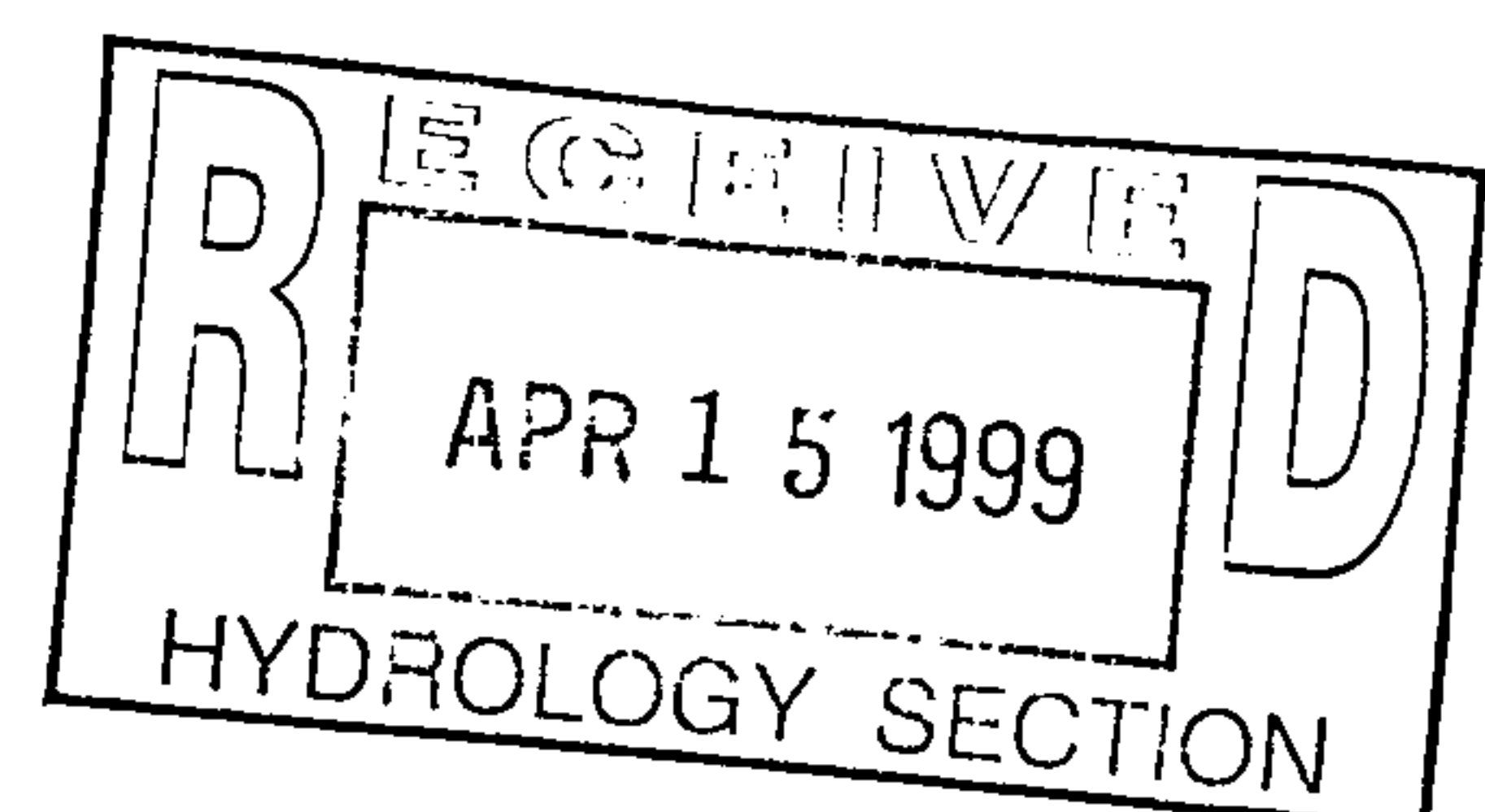
If you have any questions regarding the submittal package, please feel free to call.

Sincerely,

BRASHER & LORENZ, INC.


Dennis A. Lorenz, PE
Principal

/dl/99504
encl



Author: Dalbli@aol.com at INTERNET
Date: 5/14/99 1:17 PM
Priority: Normal
BCC: Susan Calongne at CABQ-DOWNTOWN
TO: scalongne@cabq.gov at INTERNET
Subject: Re: Avalon subd. Unit 2
Susan:

I talked to Ron Bohannon regarding the off-site flows from Phase 2 of his mobile home park. He says that downstream capacity is available in the park for future developed flows, but we will need a temporary pond for the interim. I will get this from Ron in writing next week, along with a plan revision showing the interim pond location and size.

Have a good weekend.

Dennis

Author: Susan Calongne at CABQ-DOWNTOWN

Date: 5/12/99 4:34 PM

Priority: Normal

TO: dalbli@aol.com at INTERNET, BokayConst@aol.com at INTERNET

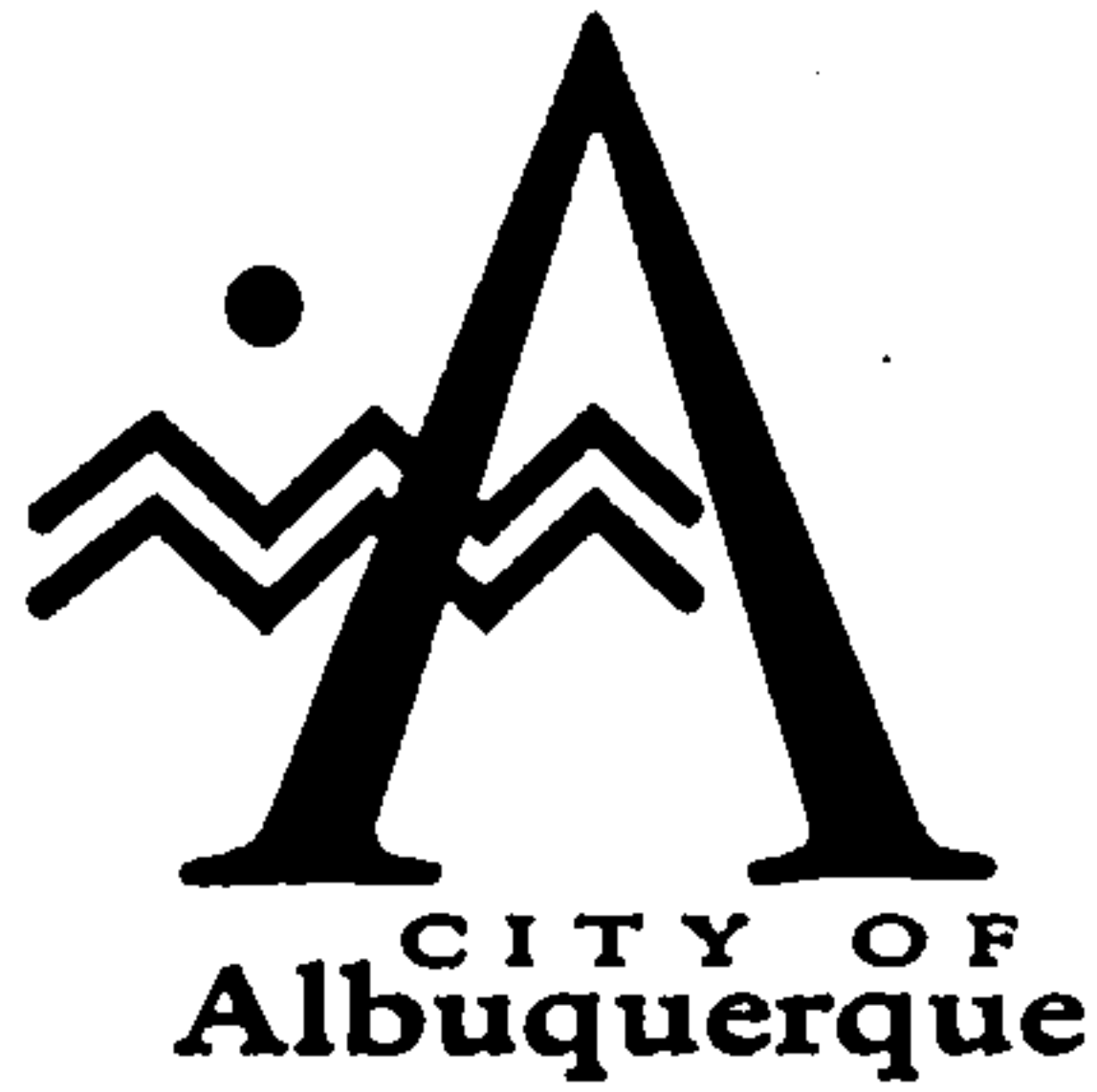
Subject: Avalon subd. Unit 2

Dennis:

I thought the West Ridge Mobile Home Park plans showed that the small pond on the northwest corner of Avalon and 94th was to drain to the proposed storm drain in 94th. The Avalon report moved the storm drain in 94th to 90th (via Bluewater). The revised Avalon Phase 2 plans don't include an outfall for that pond, therefore I will need something from Ron Bohannon to show that the pond can drain to the south, not the east. When the area between Bluewater and Avalon, west of 94th, is developed, where will this runoff go? Did the Mobile Home Park construct a storm drain pipe far enough north to catch these flows? Or will they have to revise their grading plan? Or add a storm drain? Please coordinate with Ron and provide any documentation on this to my office.

Thanks,

Susan



September 14, 1998

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

***RE: Revised Grading and Drainage Plan for Avalon Subdivision, Unit 1 (K9/D12),
Engineer's Stamp Dated 8/5/98.***

Dear Mr. Lorenz:

Based on the information provided on September 1, 1998, the above referenced revised plan is approved for Final Plat action.

Since the grades have changed by more than 18" in some areas, the revised grading plan must be approved by the DRB. As you are aware, the Grading and Drainage Certification will be required prior to release of financial guarantees for this Unit.

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

Sincerely,

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

c: Bo Johnson, Curb Inc.
File

Good for You, Albuquerque!





March 23, 1998

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE
Building 1, Suite 210
Albuquerque, New Mexico 87110

**RE: Drainage Report and Grading and Drainage Plan for Avalon Subdivision (K9/D12)
Submitted for Preliminary Plat Approval, Engineer's Stamp Dated 3/16/98.**

Dear Mr. Lorenz:

Based on the information provided to my office on March 17, 1998, the above referenced plan is approved for Preliminary Plat action.

The above referenced plan is also approved for rough grading, however, no grading will be allowed within the existing FEMA floodplain located on Phase 2 unless construction of the Mobile Home Park pond has begun. If construction of the Mobile Home Park pond has not begun by the time Phase 2 is to be developed, then Phase 2 will be responsible for ponding the runoff from the floodplain. As you are aware, a topsoil disturbance permit is required prior to any grading on the site.

The Grading and Drainage Certification will be required prior to release of financial guarantees for each Phase.

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

Sincerely,

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

c: Bo Johnson, Curb Inc.
DRB-98-50
☒ File

Good for You, Albuquerque!





City of Albuquerque

October 14, 1999

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

***RE: Amendment No. 1 to the Drainage Masterplan for Avalon Subdivision, (K9/D12)
Submitted for Revised Infrastructure List and Work Order Approval, Engineer's Stamp
Dated 9/29/99.***

Dear Mr. Lorenz:

Based on the information provided, the above referenced Amendment to the Drainage Masterplan is adequate to justify revising the Infrastructure List and Work Order drawings for Avalon Subdivision. Please let me know what I can do to help make the changes to the Work Order plans.

The analysis indicates that the Avalon Subdivision will accept 8.5 cfs from Basin 1 of the West Ridge Mobile Home Park when that portion is developed in the future. The remaining runoff from Basin 1 must be diverted east onto North Ridge Avenue so that the downstream street capacities are not exceeded. Attached is a copy of a letter from Ron Bohannon indicating that a speed hump will be placed in West Ridge Street to turn the runoff to the east when Basin 1 is developed.

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

Sincerely,

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

Attachment

c: Bo K. Johnson, P.E., Curb Inc.
Ron Bohannon, P.E., Tierra West
File

**Tierra West, LLC**

October 14, 1999

Ms. Susan Calongne
Hydrology Department
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: West Ridge Mobile Home Park, K9/D6

Dear Ms. Calongne:

As you know, Tierra West is working with Dennis Lorenz to remove the storm drain requirement in Avalon Avenue. To ensure that the Phase 2 drainage follows the correct path, we will install an 4" speed hump on West Ridge Street to act as a water block. The bump will be placed immediately after the intersection of North Ridge Avenue. This will ensure that the water turns and flows down North Ridge Avenue as proposed.

If you have any questions regarding this matter, please do not hesitate to call me.

Sincerely,

Ronald R. Bohannon, P.E.

cc: Fred Seeley

JN: 960073
scl

960073: 9673calongne-speedhump.ltr

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AVALON SUBDIVISION ZONE ATLAS/DRNG. FILE #: K-9

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

LEGAL DESCRIPTION: 90TH ST. NW

CITY ADDRESS: LOTS B5-B7, B39-B43, UNITS, TOWN OF ATRISCO GRANT

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg. 1 Suite 210
 ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: CURB INC CONTACT: C. HAEGELIN
 ADDRESS: 6301 INDIAN SCHOOL NE PHONE: 881-9190

ARCHITECT: NA CONTACT: _____
 ADDRESS: _____ PHONE: _____

SURVEYOR: ALBQ SURVEYING CONTACT: V. JIRIK
 ADDRESS: 2119 MENAUL NE PHONE: 884-2036

CONTRACTOR: NA CONTACT: _____
 ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

☒ DRAINAGE REPORT

☐ DRAINAGE PLAN

☐ CONCEPTUAL GRADING & DRAINAGE PLAN

☐ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION

☐ OTHER _____

PRE-DESIGN MEETING:

☒ YES

☐ NO

☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL

☒ PRELIMINARY PLAT APPROVAL

☐ S. DEV. PLAN FOR SUB'D. APPROVAL

☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

☐ SECTOR PLAN APPROVAL

☐ FINAL PLAT APPROVAL

☐ FOUNDATION PERMIT APPROVAL

☐ BUILDING PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY APPROVAL

☐ GRADING PERMIT APPROVAL

☐ PAVING PERMIT APPROVAL

☐ S.A.D. DRAINAGE REPORT

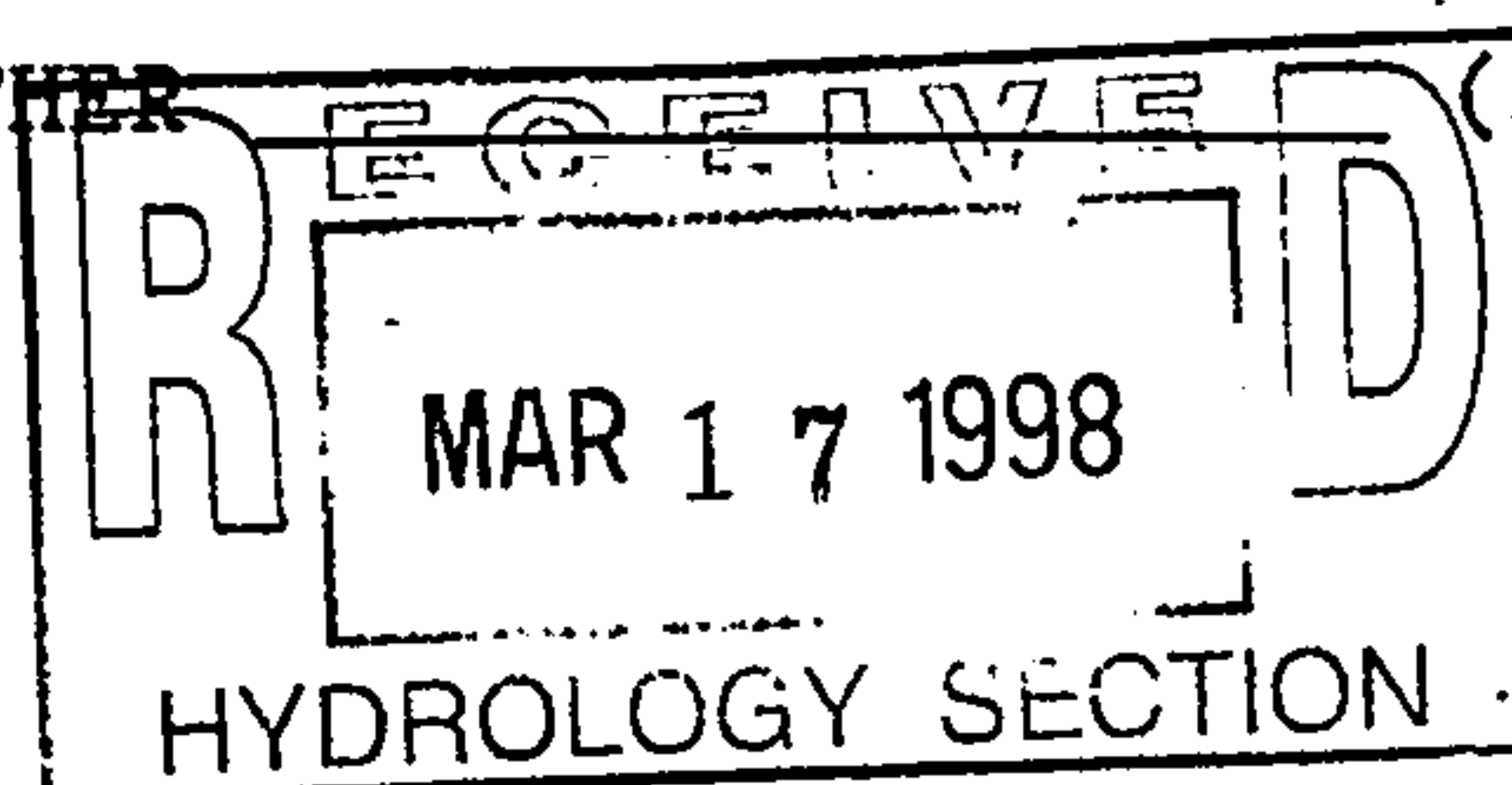
☐ DRAINAGE REQUIREMENTS

☐ OTHER _____ (SPECIFY)

DATE SUBMITTED:

3-17-98

BY:

Dennis A. Lorenz



City of Albuquerque

September 1, 1999

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

***RE: Grading and Drainage Certification Plan for Units 1-A and 1-B, Avalon Subdivision,
(K9/D12), Engineer's Certification Stamp Dated 7/26/99.***

Dear Mr. Lorenz:

The above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement, per the Infrastructure List dated October 6, 1998, for the release of Financial Guarantees, or the SIA, for Units 1-A and 1-B of the Avalon Subdivision.

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

Sincerely,

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

c: Terri Martin, City Project No. 591381
Bo Johnson, P.E., Curb Inc.
File

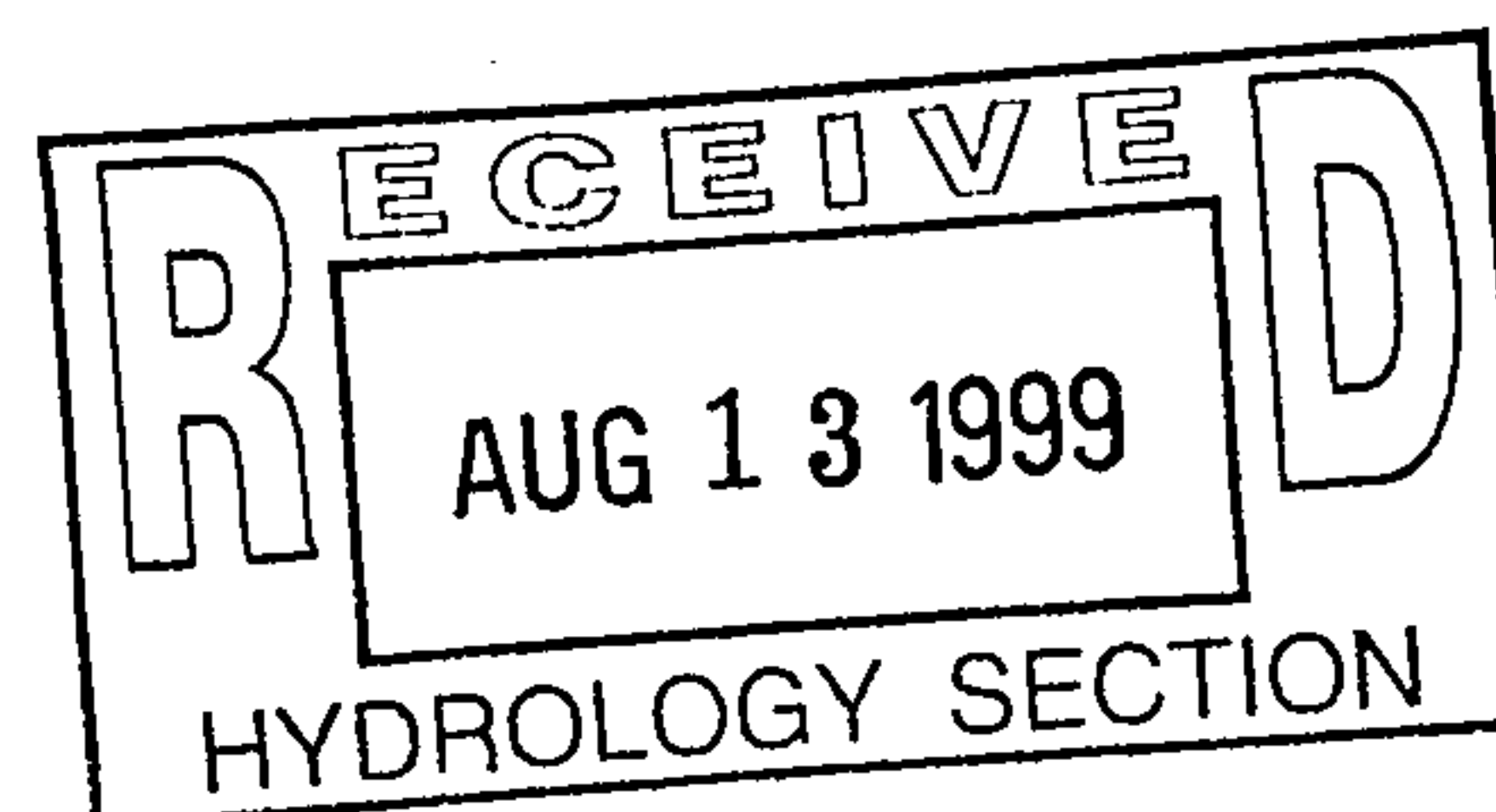


City of Albuquerque
P.O. Box 1293 Albuquerque, NM 87103
Public Works Department

July 13, 1999
Certificate of Work Order Completion

City Engineer
 600 Second St.
 Plaza Del Sol
 Albuquerque, NM 87102

Re: Avalon Sub'd Unit 1 City Project No: 5913.81



Dear Sir:

This is to certify that Project No. 5913.81 has been completed according to approved plans and construction specifications. Please be advised this Certificate of Work-Order Completion does not constitute acceptance of the city infrastructure until all requirements of the subdivision improvements agreement have been satisfied and a Certificate of Completion and Acceptance is issued by the City Engineer.

The project is described as follows:

The project includes the public works improvements that were required for construction of the Avalon Subdivision Unit I at the southeast corner of Bluewater Road and 90th Street NW.

East Half of 90th Street

24 foot wide street with collector pavement section from Bluewater Rd. to south tract line. Includes standard curb and gutter and four foot sidewalk on east side. Includes 54 inch storm sewer from Bluewater Road to the south tract line with manholes, lateral pipes and inlets per DRC. Also includes 36-inch storm sewer from drop inlets at south end of 90th St. to Phase 2 interim retention pond.

South Half of Bluewater Rd.

24 foot wide street with collector pavement section from 90th Street to east tract line. Includes standard curb and gutter and four foot sidewalk on south side. Includes 12-inch waterline with valves, fittings, services and hydrants per DRC. Also includes 8-inch sanitary sewer with manholes and services per DRC. Includes 30-inch storm sewer from Unser Diversion for 200 feet west with manholes, lateral pipes and inlets per DRC.

Bluewater Road (Temporary)

24 foot wide street with temporary pavement section from East Property Line for 1350 feet to existing pavement. Includes 8-inch sanitary sewer with manholes per DRC.

Jib Drive

36 foot wide street with residential pavement section from Bluewater Road to Port Road. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC.

Port Road

28 foot wide street with residential pavement section from Mainsail Drive to Spinnaker Drive. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC. Also includes

8-inch sanitary sewer with manholes and services per DRC.

Seaside Road

28 foot wide street with residential pavement section from Mainsail Drive to Spinnaker Drive. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC. Also includes 8-inch sanitary sewer with manholes and services per DRC.

Starboard Drive (36-foot)

36 foot wide street with residential pavement section from 90th Street to Mainsail Drive. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC. Also includes 8-inch sanitary sewer with manholes and services per DRC.

Starboard Drive (28-foot)

28 foot wide street with residential pavement section from Mainsail Drive to Spinnaker Drive. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC. Also includes 8-inch sanitary sewer with manholes and services per DRC.

Schooner Road

28 foot wide street with residential pavement from Mainsail Drive to Spinnaker Drive. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC. Also includes 8-inch sanitary sewer with manholes and services per DRC.

Mainsail Drive

28 foot wide street with residential pavement from Schooner Road to Port Road. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC. Also includes 8-inch sanitary sewer with manholes and services per DRC.

Spinnaker Drive

28 foot wide street with residential pavement from Schooner Road to Port Road. Includes mountable or standard curb and gutter and four foot sidewalk along both sides with sidewalk to be deferred along the fronts of the developable lots. Includes 6-inch waterline with valves, fittings, services and hydrants per DRC. Also includes 8-inch sanitary sewer with manholes and services per DRC. Includes 24-inch storm sewer from the drop inlet on the west side of Spinnaker to the drop inlet on the east side of Spinnaker. Also includes 30-inch storm sewer from the drop inlet on the east side of Spinnaker to the manhole in the easement on the east side of Spinnaker. Includes manholes, lateral pipes and inlets per DRC.

20-inch waterline in Easement

Waterline from Bluewater Road to existing 12-inch waterline along south tract line. Includes valves and fittings per DRC.

8-inch Sanitary Sewer in Easement

Sanitary Sewer from Port Road to Bluewater Road. Includes manholes per DRC.

36-inch Storm Drain in Easement

36-inch storm drain from Spinnaker to the Detention Pond. Includes manholes, lateral pipes and inlets per DRC.

Detention Pond

Detention Pond in the excess Unser Diversion easement.

Interim Retention Pond

Interim retention pond and erosion control berms located on Phase 2 to retain undeveloped Phase 2 flows.

Interim Trainer Dike

Interim trainer dike on north side of Bluewater from 94th Street to the Unser Diversion.

Retaining Walls

As detailed on the approved grading plan.

Deferred Improvements

I 0-foot asphalt trail from 90th Street to the Unser Diversion and from Avalon to Bluewater. City will begin Avalon Sub'd Unit 1

Page 2

maintenance of the trails 3 years after the filing of the Phase I Final Plat but not before the completion of Phase 2 improvements. Sidewalks will be deferred along the fronts of all lots until the construction of homes on a lot-by-lot basis.

The contractor's correction period will begin the date of the City Engineers Certificate of Completion and Acceptance letter and is effective for a period of one (1) year.

Sincerely,



Peter Chang, P.E.

Chief Construction Engineer
Public Works Department

c: New Concepts
Brasher & Lorenz
Master Scheduler
Project Administrator
Martin Barker, Materials Testing Lab
Sam Hall, Water Systems
Ray Chavez, Traffic Engineering, PWD
Josie Jaramillo, New Meter Sales, PWD
Richard Zamora, Maps & Records, PWD
Project No. 5913.81
Warranty:Contract



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 26, 1999

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

***RE: Revised Report and Grading and Drainage Plan for Avalon Subdivision, Unit II,
(K9/D12) Submitted for Preliminary Plat Approval, Engineer's Stamp Dated 4/2/99.***

Dear Mr. Lorenz:

Based on the information provided on April 15, 1999, the above referenced revised plan is approved for Preliminary Plat action.

Your plan proposed to eliminate the 24" storm drain in Jetty Court from the west property line to the end of the cul-de-sac. It appears that the drainage basin to the west was designed to drain east in the fully developed condition. Therefore, before this storm drain may be deleted from your Infrastructure List, an additional analysis is required to demonstrate that the Mobile Home Park to the south has the capacity for this runoff.

As you are aware, the Grading and Drainage Certification will be required prior to release of financial guarantees or the Subdivision Improvements Agreement for this Unit.

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

Sincerely,

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

c: Bo Johnson, Curb Inc.
File



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 21, 2000

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

**RE: *Grading and Drainage Certification Plan for Avalon Subdivision, Unit II, (K9/D12)
Submitted for Release of Financial Guarantees, Engineer's Certification Stamp Dated
11/18/99.***

Dear Mr. Lorenz:

The above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement, per the Infrastructure List dated May 26, 1999, for the release of Financial Guarantees, or the SIA, for Unit 2 of the Avalon Subdivision.

The receipt of the Letter of Map Revision (LOMR) from FEMA dated January 24, 2000 removed the floodplain from this site. Therefore, the LOMR requirement on the Infrastructure List has also been satisfied.

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

Sincerely,

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

c: Terri Martin, DRB 98-50, City Project No. 615581
Bo Johnson, P.E., Curb Inc.
File

DRAINAGE MASTERPLAN

FOR

AVALON SUBDIVISION

Albuquerque, New Mexico

Prepared For:

CURB, INC.

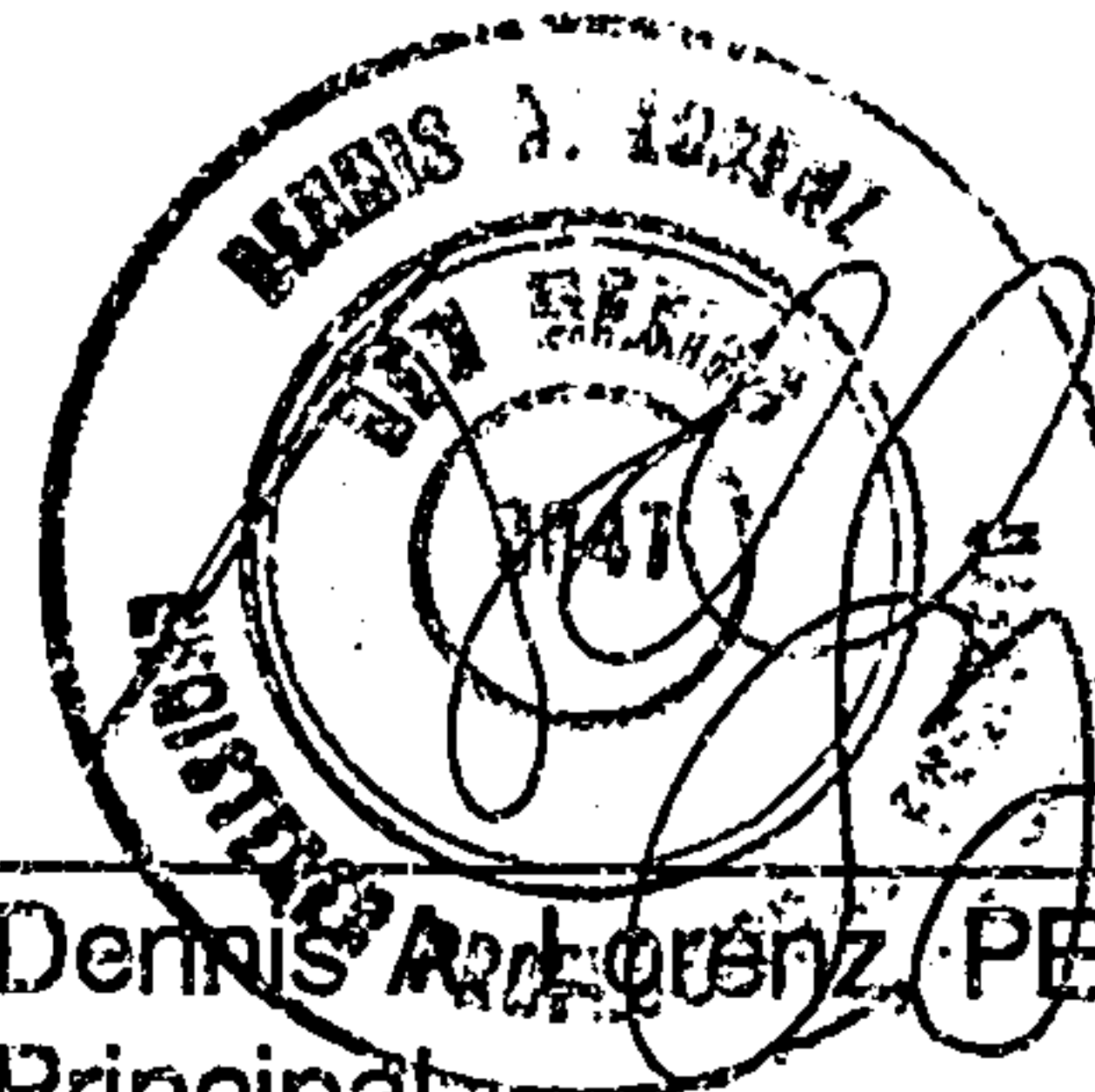
6301 Indian School NE, Suite 680
Albuquerque, New Mexico 87110

Prepared By:

BRASHER & LORENZ, INC.

Consulting Engineers

2201 San Pedro NE, Building No. 1; Suite 210
Albuquerque, New Mexico 87110



Dennis A. Lorenz, PE
Principal

February 1998

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PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as Avalon Subdivision, a single family residential subdivision. Paving, landscaping, utility, grading, and drainage improvements will be provided to support the project. The scope of this plan is to provide drainage criteria for the safe management of excess runoff, and illustrate the grading, paving and drainage improvements required to support the project.

SITE DESCRIPTION

The project site is approximately 49.7 acres in size and is located between Bluewater Road and Avalon Road, and between 94th Street and the Unser Diversion System (See Figure 1). Presently the site is undeveloped. The site is vegetated with native grasses and shrubs. Site terrain slopes west to east at approximately 2 percent. The site is presently described as Tracts B5, B6, B7, and B39 through B43, Unit 5, town of Atrisco Grant. The site is bounded on the east by the Unser Diversion, on the south by Avalon Road, on the west by 94th Street, and on the north by Bluewater Road.

On-site soils consist mainly of Bluepoint (BCC) and Pajarito (PAC) soils (See Figure 2). These soils are found on gently sloping areas of the west mesa. Slopes range from 1 to 9 percent. Runoff is typically slow, and the hazard of wind erosion severe. Bluepoint is classified as Hydrologic soil group "A" and Pajarito in group "B".

As shown by the attached FIRM Panel, this site is impacted by a designated flood hazard zone which flows through the western portion of the site (see Figure 3). The floodplain watershed originates north of Interstate 40 and drains southeasterly.

EXISTING DRAINAGE MASTERPLANS

The drainage criteria for this site is established by the following Drainage Masterplans:

1. **Master Drainage Plan for the Atrisco Business Park**, prepared by Easterling & Associates, Inc, October 22, 1993. This DMP was prepared to support development of IP zoned property located south of I-40, north of Central Ave, west of Unser Boulevard and east of the subject project site. The DMP recommended construction of the Unser Diversion, which removed the study area from the 100 year floodplain. The Unser Diversion is located along the east boundary of Avalon Subdivision.
2. **Amole del Norte Storm Diversion Facilities- Phase III**, prepared by Griener, Inc. This study analyzed the floodplain areas Tierra Bayita Watershed. The study resulted in the construction of the storm drain and channel extensions from the

North/South Coors ponding areas. Phase III is programmed to extend a 66 inch storm drain up 90th Street to Avalon Subdivision and adjoining properties.

3. **Drainage Report for West Ridge Mobile Home Park**, prepared by Tierra West, LLC, January 1998. This report was prepared to support the development of a mobile home park. The MHP is effected by off-site drainage basins originating north of I-40, including a floodplain. The report recommends construction of storm drains and an interim retention pond near the intersection of Bluewater and 94th Street to remove downstream properties from the floodplain encumbrance.

EXISTING DRAINAGE CONDITIONS

The undeveloped site is impacted by 2 watersheds:

1. Basin 200 which is located north of the site and south of I-40, drains easterly to the Unser Diversion. Basin 200 and the contributing on-site runoff drain to the Unser Diversion which has adequate capacity for historic runoff.
2. Basin 300 which originates north of I-40 and west of 98th Street, and flows through the property. Basin 300 results in a floodplain on the property. The West Ridge Mobile Home Park proposes an interim retention pond to remove the floodplain from the property.

PROPOSED CONDITIONS

As shown by the Plan, the project consists of the development of the property into a single family residential subdivision, with associated paving, utility landscaping and drainage improvements. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and on-site drainage basins are identified. All drainage improvements recommended by the Plan are detailed on Grading and Drainage Plan located in the back pocket of this report.

As stated in the previous section, the site is impacted by 2 off-site watersheds. The project is also, by virtue of geometry, divided into 2 phases, the acreage west of 90th Street, and the acreage east of 90th Street. The western portion of the project is programmed to drain to the Amole Del Norte storm drain which will be extended up 90th street to Bluewater. Construction is not yet scheduled, but is expected by 1999. The western phase proposes the construction of large diameter storm drains in Bluewater and 90th Street to drain developed flows from off-site Basins 200.0, 300.0 and 300.2, with connections to on-site storm drains. A storm drain will also be constructed from a proposed detention pond located within the West Ridge MHP (Basin 300.1) along the west project interface, to an on-site detention pond located near 90th Street. Due to downstream limitation in the Amole system, discharge from the watershed is limited to 2.05 cfs per acre, which translates into an allowable discharge from the west phase of

49.4 cfs. This limitation results in a future on-site detention pond with a storage capacity of approximately 1.3 acre feet.

The eastern phase and off-site Basin 400.0 are programmed to drain east to the Unser Diversion. The Unser Diversion was designed to remove the floodplains from downstream properties, however, capacity apparently does not exist to allow free discharge from the upstream watershed. Per the DMP the east phase is allowed to discharge 35.8 cfs into the Unser Diversion. This results in a ponding requirement of approximately 1.26 acre feet. The entire east phase will drain into the detention pond via an internal storm drain. The detention pond will drain at a controlled rate into the Unser Diversion.

Off-site Basin 200 will also be intercepted by Bluewater Road. Bluewater street improvements will convey the undeveloped surface runoff to the Unser Diversion. Future developed flows will be routed direct to the Unser Diversion.

PROJECT PHASING

PHASE ONE

Phase One consists of the acreage located east of 90th Street. The Phase One Plan (see sheets 1 and 2 in pocket) outlines the improvements recommended to manage excess runoff from the project site. In accordance with the DMP for Atrisco Business Park, Phase One will rout all flows through a permanent detention pond located at the southeast corner of the site. The pond will discharge at a controlled rate of 38.5 cfs into the Unser Diversion. Perimeter street improvements will consist of the construction of the south one-half of Bluewater Road and the full width section of 90th Street. A 54 inch storm drain will be constructed in 90th Street from Bluewater, south to the Avalon Corridor, for future connection to the Amole System. A single drop inlet with a connection to the Unser Diversion is required at the east end of Bluewater to collect street flow from the south one-half of Bluewater.

Off-site improvements consist of the construction of an interim trainer along the north side of Bluewater to direct existing flows east to the Unser Diversion, and the construction of interim trainer dikes and an interim retention pond on Phase Two to retain runoff from undeveloped Phase Two acreage. The Phase Two pond will also provide an outfall for the 54 inch storm drain to be constructed in 90th Street, pending construction of the Amole System.

PHASE TWO

Phase Two consists of the construction of the acreage located between 90th and 94 Streets. The Phase Two Plan (see sheet 3 in pocket) outlines the improvements recommended to manage excess runoff from the project site. In accordance with the DMP for the Amole del Norte Diversion Facilities Phase II and the DMP for West Ridge MHP, Phase Two is limited to a discharge rate of 2.05 cfs/acre, or 49.4 cfs. Phase Two

*off-site
easements*

will rout all flows through a permanent detention pond located at the proposed park site, which will drain to the future Amole System. If the Amole System is not available at the time of development of Phase Two, an interim retention pond will be construction, sized to retain the 100 year, 10 day volume generated by the subdivision.

Phase Two will rely on the retention pond proposed by West Ridge MHP to remove the existing floodplain, and the interim trainer dike constructed along Bluewater by Phase One. Bluewater Road will be constructed (one-half width) from 90th Street to 94th Street. A future 42 inch storm drain is proposed in Bluewater, to be constructed when off-site Basins 200.0 and 300.2 develop. With the construction of Bluewater drop inlets will be constructed along the south side of the street at 90th Street to collect street flows.

In anticipation of development of Basin 300.1, which is an extension of the West Ridge MHP, Phase Two will provide an 18 inch storm drain from the west property line, through Jetty Court to the Phase Two ponding site located at the park.

FUTURE CONDITIONS

Upon the construction of the Amole del Norte storm drain the 42 inch storm drain in Bluewater can be constructed allowing developing properties connection to the system. All interim retention ponds can then be converted to permanent detention ponds. Other than Phase Two, off-site basin draining to the Amole System include Basins 300.0, 300.1, 300.2 and 200.0. All basins will be required to rout developed flows through permanent detention ponds per the approved DMP's.

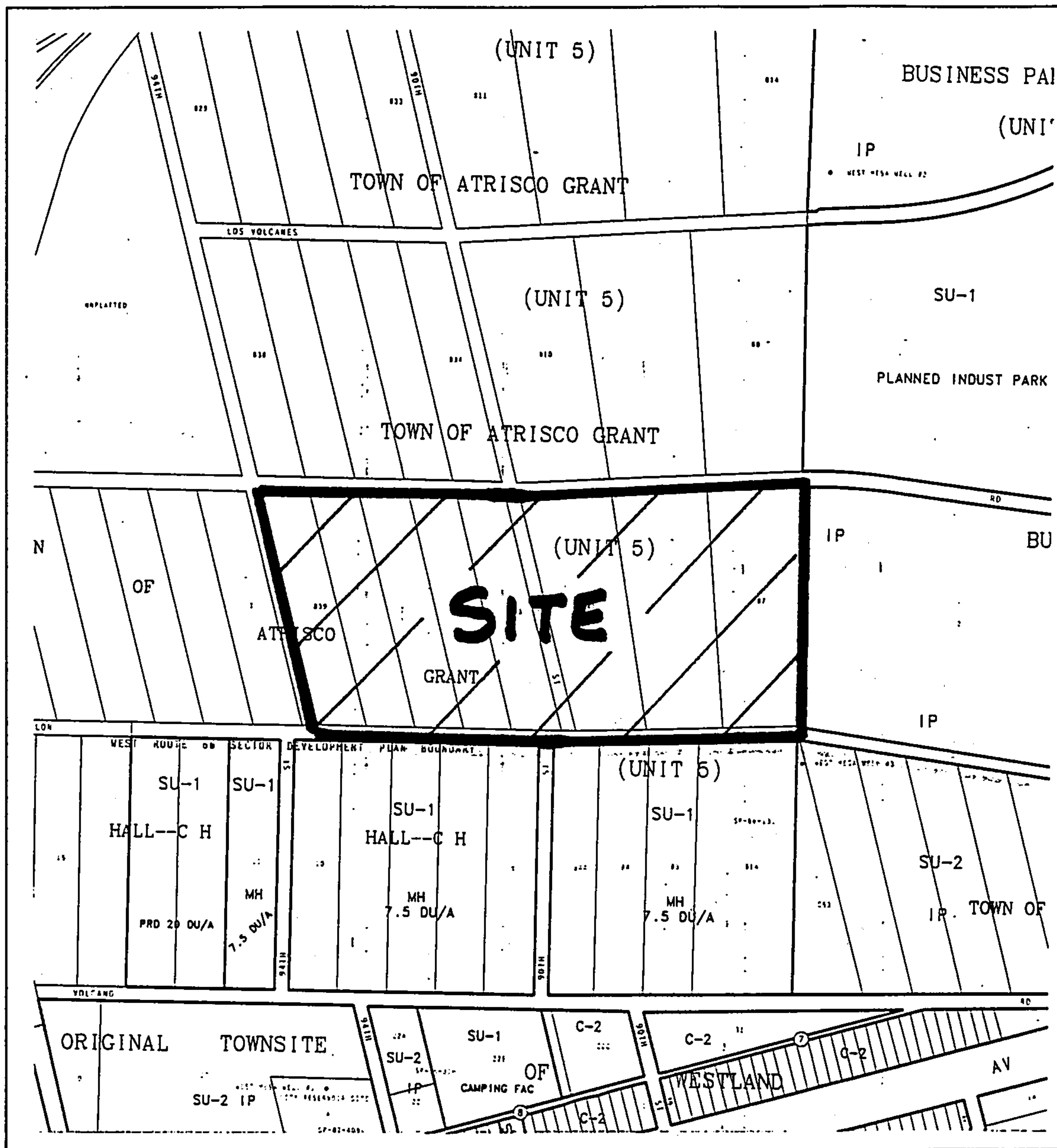
*a permanent
conversion for
ponds*

TEMPORARY EROSION CONTROL PLAN

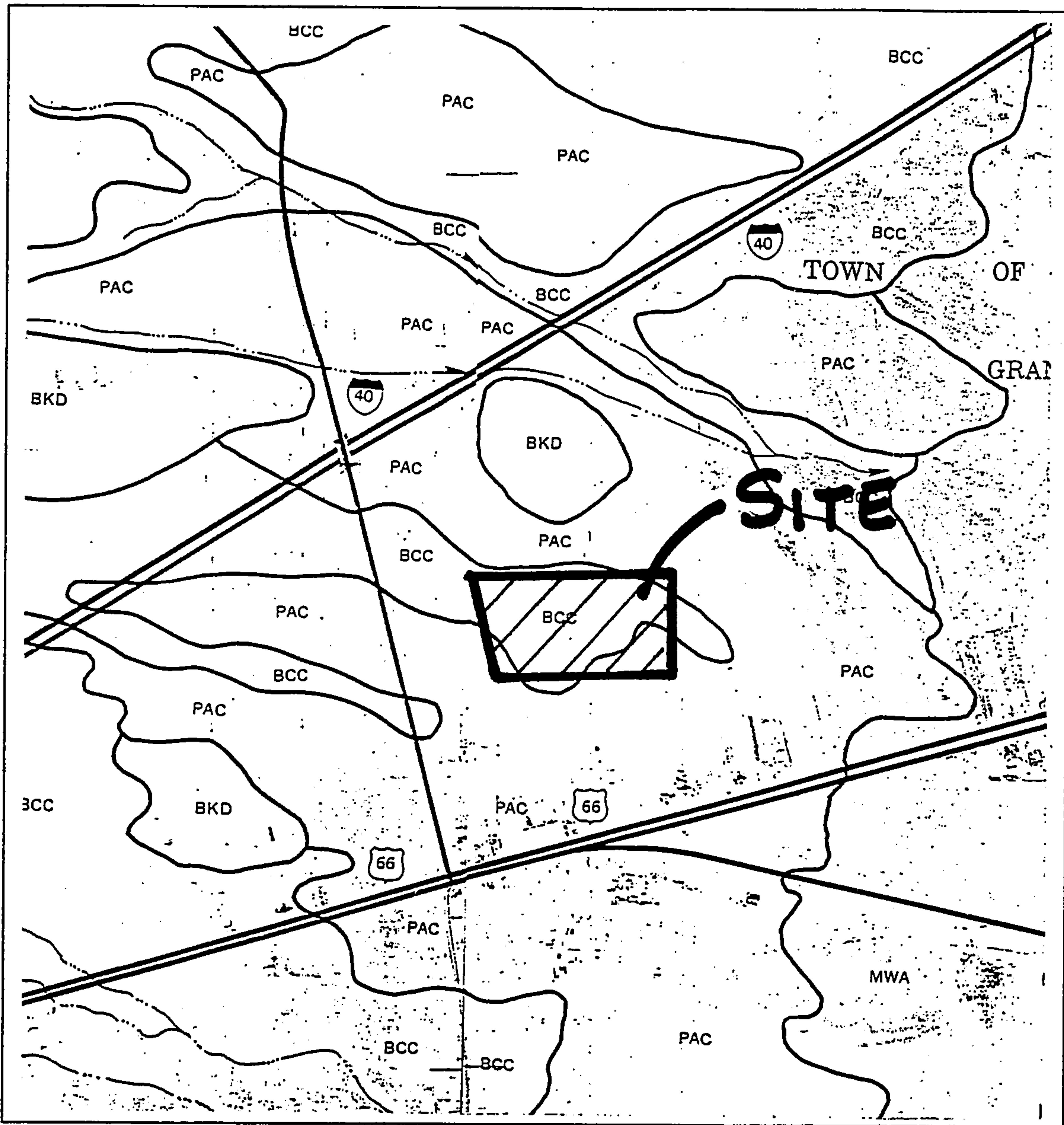
1. The intent of the Temporary Erosion Control Plan is to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction.
2. The Contractor shall submit a Temporary Erosion Control Plan and obtain a Top Soil Disturbance Permit from Environmental Health prior to performing any earthwork related operations.
3. After the initial site clearing, the temporary erosion control facilities should be constructed per the Plan to direct excess runoff and sediment the outfall locations.
4. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

APPENDIX

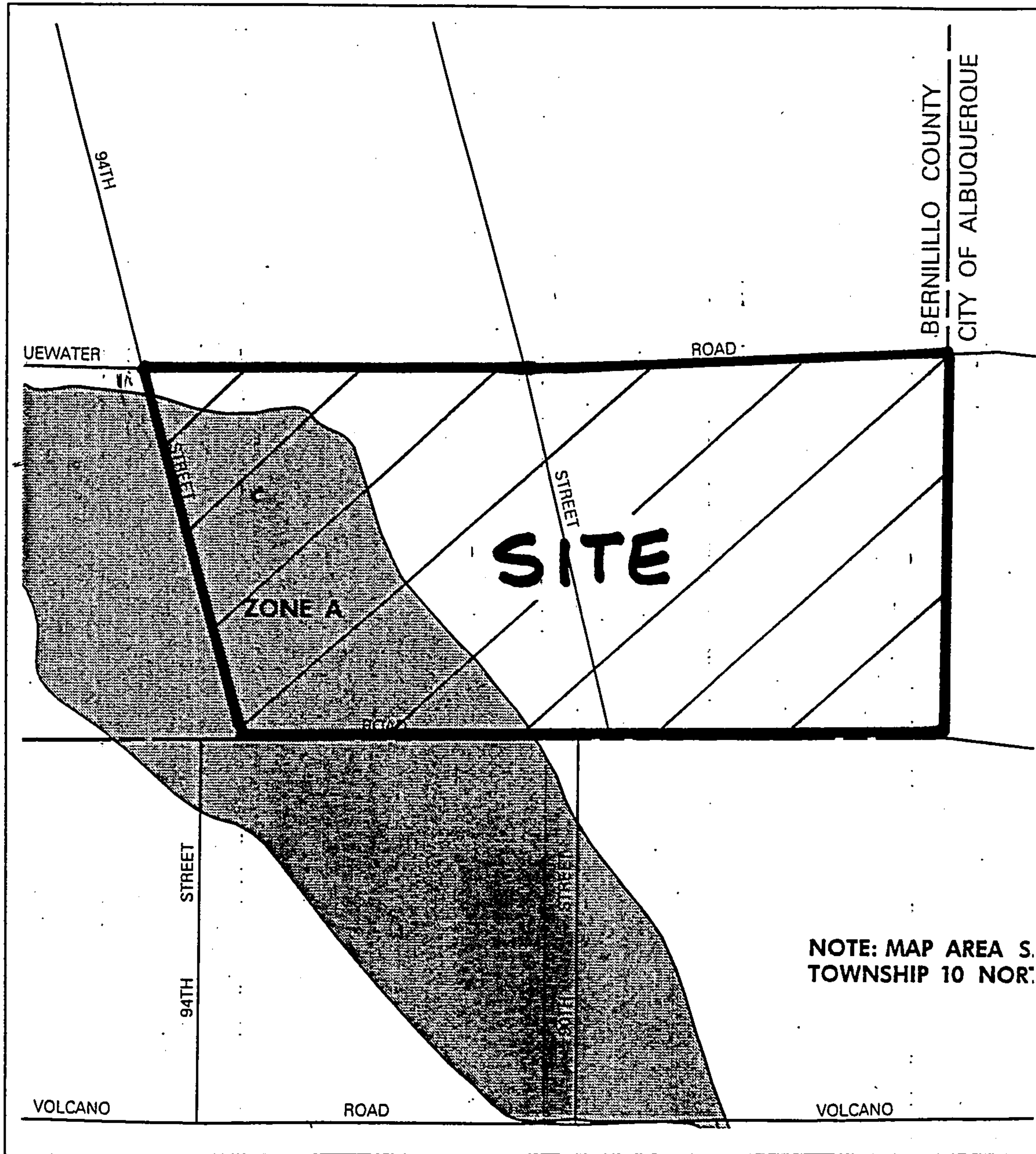
MAPS



LOCATION MAP
Figure 1



SOILS MAP
Figure 2



FLOOD INSURANCE RATE MAP
Figure 3

CALCULATIONS

STORM DRAINAGE DESIGN CALCULATIONS

FOR

AVALON SUBDIVISION, UNIT 1

Albuquerque, New Mexico

Prepared by:

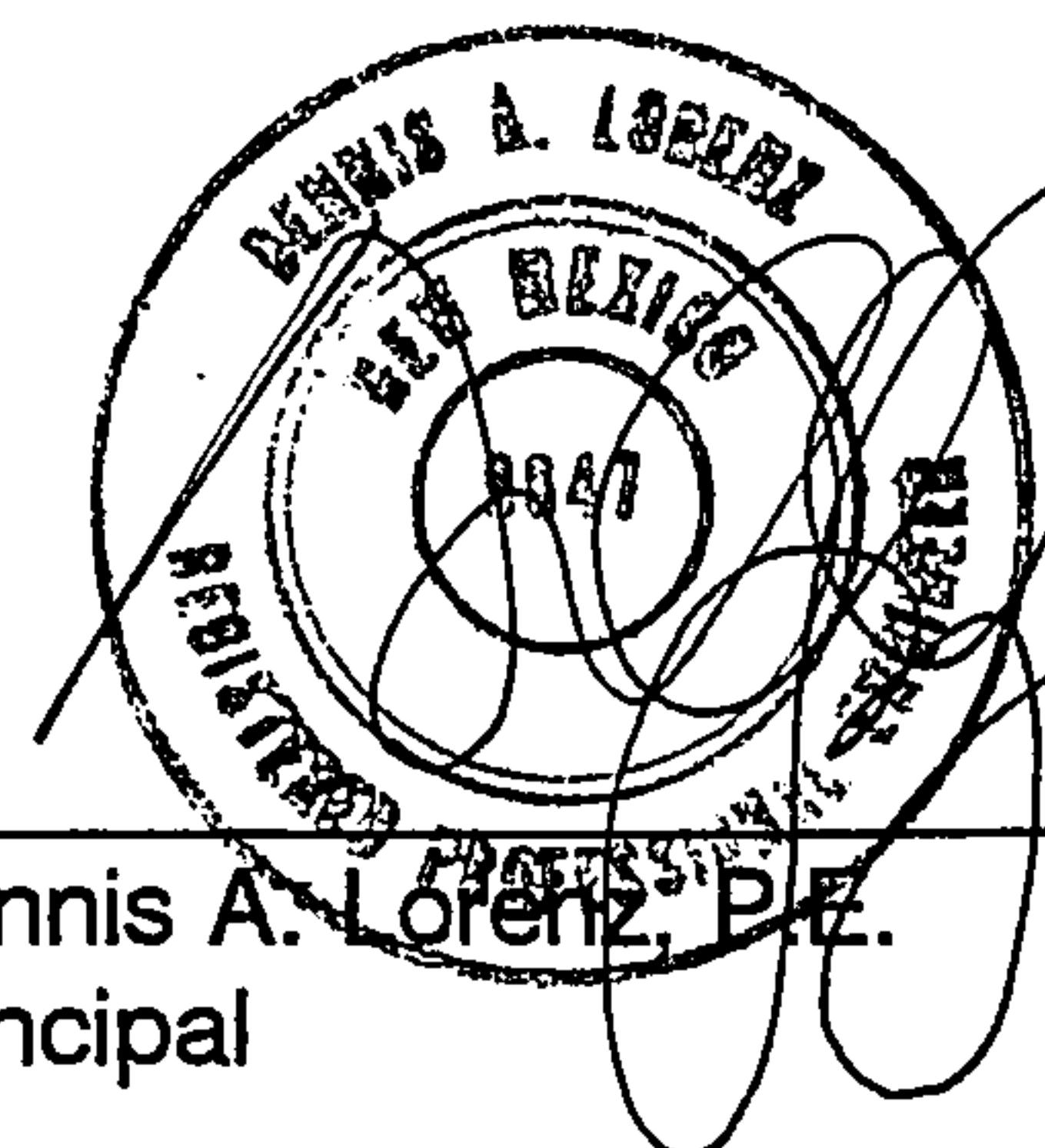
BRASHER & LORENZ, INC.

Consulting Engineers

2201 San Pedro NE Building 1, Suite 210

Albuquerque, New Mexico 87110

August 1998

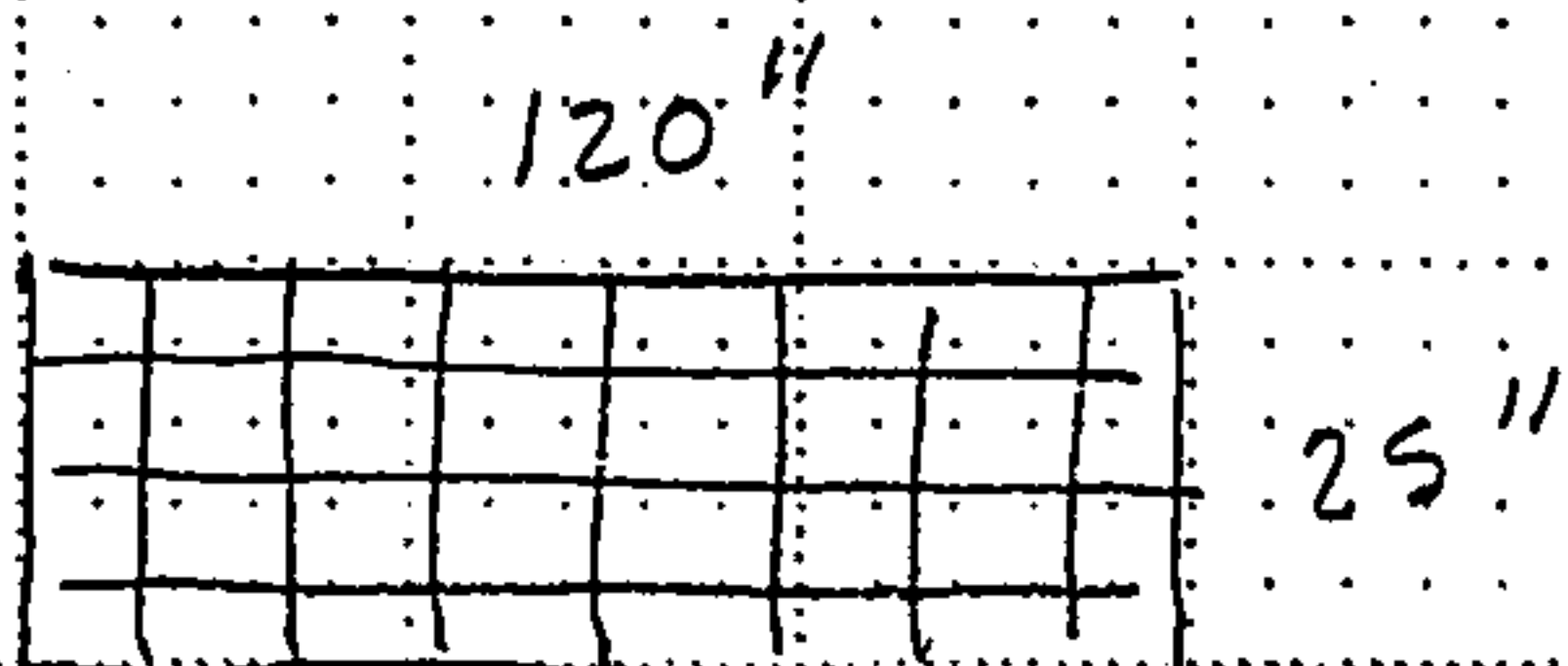


Dennis A. Lorenz, P.E.
Principal

8-5-98

HYDRAULIC CALCULATIONS FOR SPECIAL INLET STRUCTURES

① TRIPLE 'C' INLET CAPACITY.



GRATES

$$P = 290'' = 24.17'$$

$$\text{OPEN } A = 12.93 \text{ SF}$$

FIND DEPTH OVER GRATE W/O CURB OPENING:

BY ORIFICE EQN: $Q = CA\sqrt{2gh}$

$$C = 0.6$$

$$A = 12.93 \text{ SF}$$

$$Q_{100} = 84.3 \text{ CFS} / 2 = 42.15 \text{ CFS}$$

SOLVING FOR h :

$$h = \left[\frac{42.15}{0.6(12.93)} \right]^2 / 2g = \underline{\underline{0.46'}}$$

$$h_{\text{AVAIL}} = 0.67 \text{ FT}$$

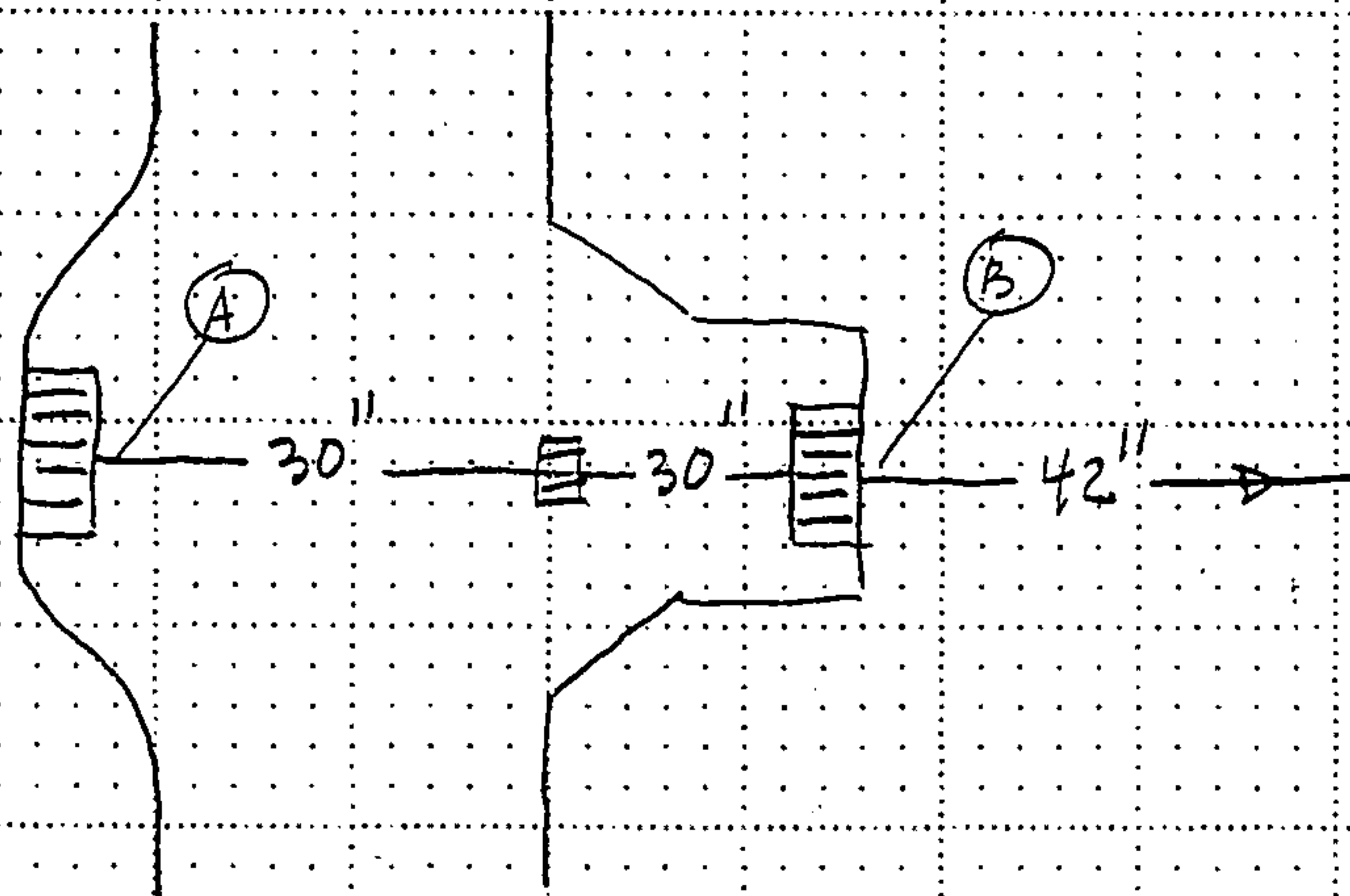
DETERMINE Q_{MAX} @ h_{MAX} :

$$Q_{\text{MAX}} = 0.6(12.93)\sqrt{2g(.67)} = 51.0 \text{ CFS} > Q_{100}$$

⇒ THIS IS CONSERVATIVE IN THAT IT DOES NOT CONSIDER CURB OPENING.

8-5-98

② CHECK CONNECTOR PIPES FOR INLET CONTROL:



AT 1ST TRIPLE 'C' (A):

$$Q_{100} = 84.3 \text{ CFS} / 2 = 42.15 \text{ CFS}$$

BY ORIFICE:

$$A_{30"} = 4.91 \text{ SF}$$

$$C = 0.6$$

$$h = \left[\frac{42.15}{0.6(4.91)} \right]^2 / 2g = 3.18'$$

$$h_{\text{AVAIL}} = 10.26'$$

$$Q_{\text{MAX}} = 0.6(4.91) \sqrt{2g(10.26)} = 75.7 \text{ CFS} \quad F_s = \frac{75.7}{42.15} = 1.8$$

AT 2ND TRIPLE 'C' (B):

$$Q_{100} = 84.3 \text{ CFS}$$

$$A_{42"} = 9.62 \text{ SF}$$

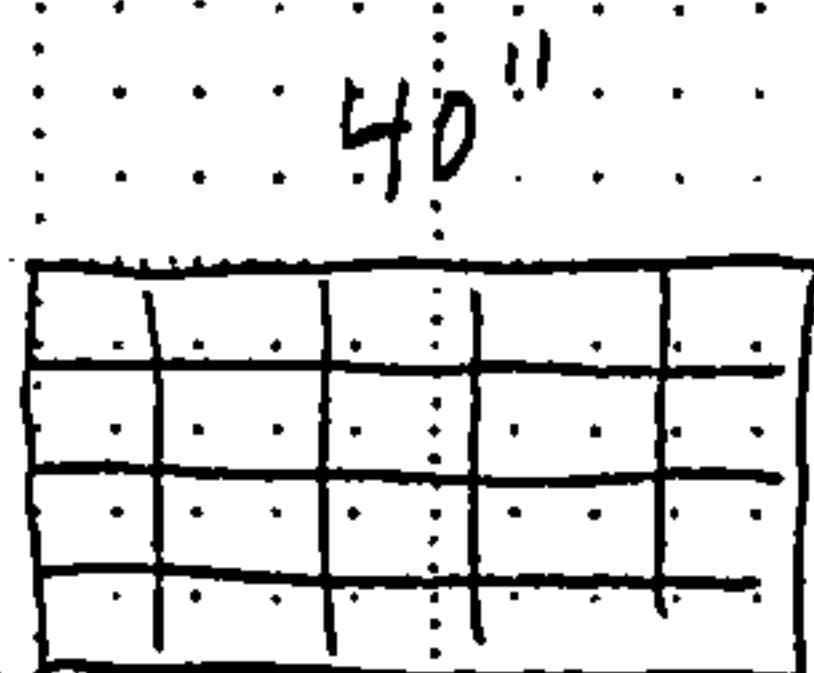
$$h = \left[\frac{84.3}{0.6(9.62)} \right]^2 / 2g = 3.31'$$

$$h_{\text{AVAIL}} = 9.65'$$

$$Q_{\text{MAX}} = 0.6(9.62) \sqrt{2g(9.65)} = 143.9 \text{ CFS} \quad F_s = \frac{143.9}{84.3} = 1.7$$

8-5-98

- (3) CHECK SINGLE 'D'
PROVIDE SINGLE 'D' FOR NUISANCE Q



$$P = 130'' = 10.83'$$

$$\text{OPEN } A = 4.31 \text{ SF}$$

$$\text{PER PLAN MAX } h = 0.2 \text{ FT}$$

- (A) CHECK BY WEIR

$$Q = CLH^{3/2}$$

$$L = P = 10.83'$$

$$H = 0.2'$$

$$C = 2.5$$

$$Q_{\text{MAX}} = 2.5(10.83)(0.2)^{3/2} = 2.4 \text{ CFS}$$

- (B) CHECK BY ORIFICE

$$Q = CA\sqrt{2gh}$$

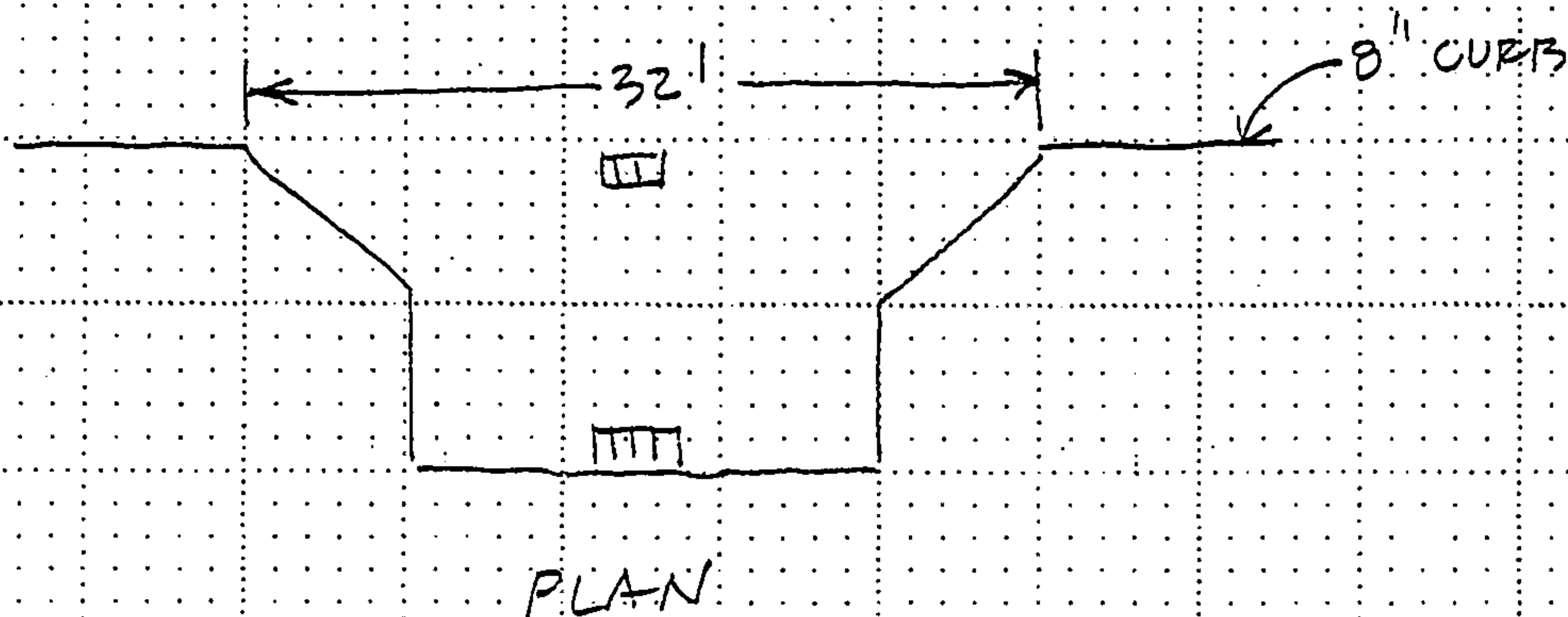
$$h = 0.2'$$

$$A = 4.31 \text{ SF}$$

$$C = 0.6$$

$$Q_{\text{MAX}} = 0.6(4.31)\sqrt{2g(0.2)} = 9.3 \text{ CFS}$$

BE CONSERVATIVE USE $Q_{\text{MAX}} = 2.4 \text{ CFS}$

$$Q_{100} = 84.3 \text{ CFS} / 2 = 42.15 \text{ CFS}$$


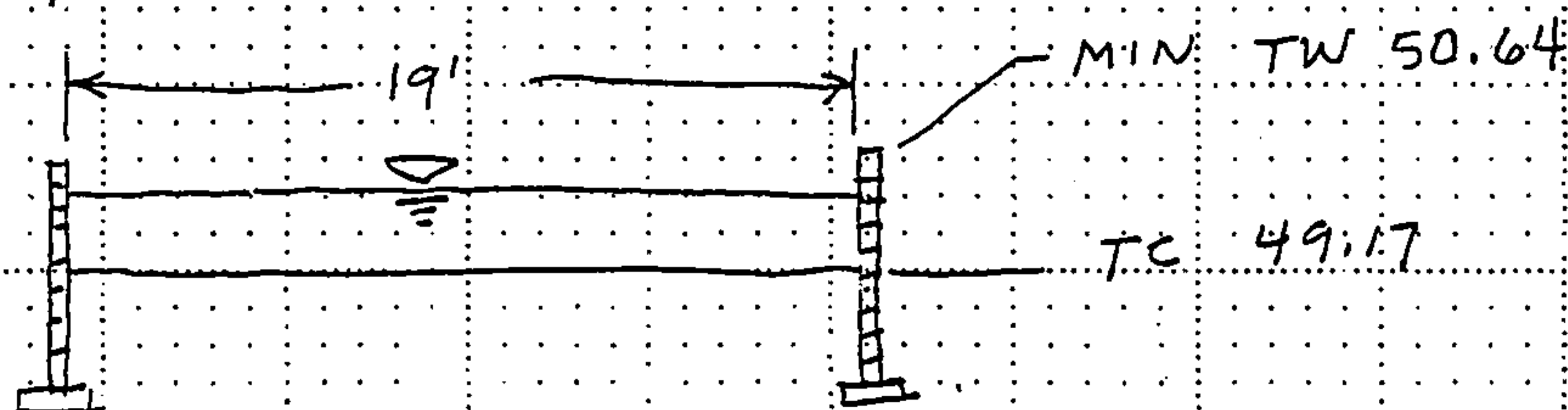
WEIRS

Enter <Return> only for flowrate and length to end.

	FLOWRATE (CFS)	LENGTH (FT)	CORFF (-)	HEAD (FT)
Q ₁₀₀	42.15	30.7	2.500	0.67
Q _{MAX}	43.87	32.0	2.500	0.67

MAX WSE = 50.71

③ OVERFLOW WEIR AT BACK OF TRIPLE 'C' DESIGN FOR $Q_{100} = 84.3$ CFS IN EVENT SYSTEM FAILS.


$$\text{MAX WSE} = 50.64$$

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
84.30	19.0	2.500	1.47

FINAL AHYMO OUTPUT

*
* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

* THIS RUN IS FOR PHASE ONE DEVELOPMENT. IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED. INTERIM RETENTION PONDS WILL BE PROVIDED
* FOR BASIN 300 & 300.1 BY WEST RIDGE MHP. AN INTERIM RETENTION POND
* WILL BE CONSTRUCTED ON PHASE TWO. A TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION

* EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES

COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=1 CODE=20

* UNDEVELOPED PHASE TWO 24.11 ACRES - WILL BE RETAINED IN INTERIM POND

COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=2 CODE=20

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ AP1

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=3 CODE=20

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=4 CODE=20

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4

PRINT HYD ID=5 CODE=20

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=6 CODE=20

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=7 CODE=20

* TOTAL FLOW @ AP2

ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7

PRINT HYD ID=8 CODE=20

* TOTAL FLOW @ AP3 NORTH

ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8

PRINT HYD ID=9 CODE=20

* BASIN 101.3 @ AP3

COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=10 CODE=20
 * BASIN 101.4A @ AP4
 COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=11 CODE=20
 * BASIN 101.4B @ AP5
 COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=12 CODE=20
 * TOTAL FLOW @ AP5
 ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20
 * BASIN 101.4C @ AP3
 COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=14 CODE=20
 * TOTAL FLOW @ AP3 SOUTH
 ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20
 ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10
 * TOTAL FLOW @ AP3
 ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16
 PRINT HYD ID=17 CODE=20
 * BASIN 101.5 @ AP6
 COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=18 CODE=20
 * TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

 * ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

 * ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
 ROUTE RESERVOIR ID=20 HYD NO=101.6 INFLOW ID=19 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	37.5
4.0	0.0214	38.0
16.9	0.1460	40.0
23.5	0.3596	42.0
28.7	0.6756	44.0
33.0	1.1403	46.0
36.8	1.6584	48.0

 PRINT HYD ID=20 CODE=2
 * BASIN 103.1 - 90TH STREET FLOW @ AP12
 COMPUTE NM HYD ID=21 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=21 CODE=20
 * BASIN 105.1 - BLUEWATER STREET FLOW @ AP15
 COMPUTE NM HYD ID=22 HYD NO=105.1 DA=0.002976 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

```
PRINT HYD          ID=22 CODE=20
*****
* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS
*****
* DEVELOPED OFF-SITE BASIN 200 - DIRECTED BY TRAINER DIKE
* TO UNSER DIVERSION
COMPUTE NM HYD      ID=23  HYD NO=200.0  DA=0.1078 SQ MI
                    PER A=100 PER B=0  PER C=0  PER D=0
                    TP=0.2231 HR  MASS RAIN=-1

PRINT HYD          ID=23 CODE=20
* UNDEVELOPED OFF-SITE BASIN 300 - RETAINED BY INTERIM POND
* CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD      ID=24  HYD NO=300.0  DA=0.5422 SQ MI
                    PER A=95 PER B=0  PER C=2  PER D=3
                    TP=0.4118 HR  MASS RAIN=-1

PRINT HYD          ID=24 CODE=20
* UNDEVELOPED OFF-SITE BASIN 300.1 - RETAINED BY INTERIM PON
* CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD      ID=25  HYD NO=300.1  DA=0.0131 SQ MI
                    PER A=100 PER B=0  PER C=0  PER D=0
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD          ID=25 CODE=20
FINISH
```

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 08/06/1998
START TIME (HR:MIN:SEC) = 07:39:13 USER NO.= BRASHERE.I01
INPUT FILE = a:7076-ph1.dat

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

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

* THIS RUN IS FOR PHASE ONE DEVELOPMENT. IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED. INTERIM RETENTION PONDS WILL BE PROVIDED
* FOR BASIN 300 & 300.1 BY WEST RIDGE MHP. AN INTERIM RETENTION POND
* WILL BE CONSTRUCTED ON PHASE TWO. A TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION

* EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES
COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 82.084 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700

AREA = .040000 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA 101.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.8	4.000	.1		
.667	.0	2.000	3.1	3.333	.2	4.666	.0		

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

* UNDEVELOPED PHASE TWO 24.11 ACRES - WILL BE RETAINED IN INTERIM POND
COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 77.364 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700
AREA = .037700 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 102.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.7	4.000	.0		
.667	.0	2.000	2.9	3.333	.2	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .8832 ACRE-FEET
PEAK DISCHARGE RATE = 31.30 CFS AT 1.533 HOURS BASIN AREA = .0377 SQ. MI.

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ AP1

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 19.443 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .004925 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 9.4886 CFS UNIT VOLUME = .9991 B = 354.67 P60 = 1.8700
AREA = .003566 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=3 CODE=20

HYDROGRAPH FROM AREA 101.1A

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	4.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.5	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .6714 ACRE-FEET
 PEAK DISCHARGE RATE = 19.35 CFS AT 1.500 HOURS BASIN AREA = .0085 SQ. MI.

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 6.2720 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 1.8700
 AREA = .001589 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 3.0608 CFS UNIT VOLUME = .9962 B = 354.67 P60 = 1.8700
 AREA = .001150 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=4 CODE=20

HYDROGRAPH FROM AREA 101.1B

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.4	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.3	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2166 ACRE-FEET
 PEAK DISCHARGE RATE = 6.25 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4
 PRINT HYD ID=5 CODE=20

HYDROGRAPH FROM AREA 101.1B1

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	5.2	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	5.9	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48252 INCHES = .8879 ACRE-FEET
 PEAK DISCHARGE RATE = 25.60 CFS AT 1.500 HOURS BASIN AREA = .0112 SQ. MI.

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.4339 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
AREA = .001376 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.6518 CFS UNIT VOLUME = .9953 B = 354.67 P60 = 1.8700
AREA = .000997 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=20

HYDROGRAPH FROM AREA 101.1C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.2	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.1	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .1876 ACRE-FEET
PEAK DISCHARGE RATE = 5.42 CFS AT 1.500 HOURS BASIN AREA = .0024 SQ. MI.

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.612 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003701 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 7.1307 CFS UNIT VOLUME = .9986 B = 354.67 P60 = 1.8700
AREA = .002680 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=7 CODE=20

PARTIAL HYDROGRAPH 101.20

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.3	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .5045 ACRE-FEET
PEAK DISCHARGE RATE = 14.55 CFS AT 1.500 HOURS BASIN AREA = .0064 SQ. MI.

* TOTAL FLOW @ AP2

ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7
PRINT HYD ID=8 CODE=20

PARTIAL HYDROGRAPH 101.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	8.2	4.000	.2	5.999	.2		
.667	.0	2.666	.8	4.666	.2	6.666	.0		
1.333	9.2	3.333	.2	5.333	.2				

RUNOFF VOLUME = 1.48252 INCHES = 1.3925 ACRE-Feet
PEAK DISCHARGE RATE = 40.15 CFS AT 1.500 HOURS BASIN AREA = .0176 SQ. MI.

* TOTAL FLOW @ AP3 NORTH

ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8
PRINT HYD ID=9 CODE=20

PARTIAL HYDROGRAPH 101.31

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	9.3	4.000	.2	5.999	.2		
.667	.0	2.666	.9	4.666	.2	6.666	.0		
1.333	10.5	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48251 INCHES = 1.5801 ACRE-Feet
PEAK DISCHARGE RATE = 45.57 CFS AT 1.500 HOURS BASIN AREA = .0200 SQ. MI.

* BASIN 101.3 @ AP3

COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 12.842 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003253 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 6.2669 CFS UNIT VOLUME = .9982 B = 354.67 P60 = 1.8700
AREA = .002355 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=10 CODE=20

PARTIAL HYDROGRAPH 101.30

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.6	4.000	.1	5.999	.1		

.667	.0	2.666	.2	4.666	.1	6.666	.0
1.333	2.9	3.333	.1	5.333	.1		

RUNOFF VOLUME = 1.48256 INCHES = .4434 ACRE-FEET
PEAK DISCHARGE RATE = 12.79 CFS AT 1.500 HOURS BASIN AREA = .0056 SQ. MI.

* BASIN 101.4A @ AP4

COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 7.8336 CFS UNIT VOLUME = .9978 B = 526.28 P60 = 1.8700
AREA = .001984 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 3.8229 CFS UNIT VOLUME = .9969 B = 354.67 P60 = 1.8700
AREA = .001437 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=11 CODE=20

HYDROGRAPH FROM AREA 101.4A

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.8	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.6	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2705 ACRE-FEET
PEAK DISCHARGE RATE = 7.81 CFS AT 1.500 HOURS BASIN AREA = .0034 SQ. MI.

* BASIN 101.4B @ AP5

COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.3747 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002375 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 4.5750 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
AREA = .001719 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=12 CODE=20

HYDROGRAPH FROM AREA 101.4B

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS

.000	.0	2.000	1.9	4.000	.0	5.999	.0
.667	.0	2.666	.2	4.666	.0	6.666	.0
1.333	2.1	3.333	.1	5.333	.0		

RUNOFF VOLUME = 1.48257 INCHES = .3237 ACRE-FEET
 PEAK DISCHARGE RATE = 9.34 CFS AT 1.500 HOURS BASIN AREA = .0041 SQ. MI.

* TOTAL FLOW @ AP5

ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20

HYDROGRAPH FROM AREA 101.4B1

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	3.5	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.9	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .5942 ACRE-FEET
 PEAK DISCHARGE RATE = 17.14 CFS AT 1.500 HOURS BASIN AREA = .0075 SQ. MI.

* BASIN 101.4C @ AP3

COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.7931 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002227 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.2911 CFS UNIT VOLUME = .9972 B = 354.67 P60 = 1.8700
 AREA = .001613 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=14 CODE=20

HYDROGRAPH FROM AREA 101.4C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.0		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3036 ACRE-FEET
 PEAK DISCHARGE RATE = 8.76 CFS AT 1.500 HOURS BASIN AREA = .0038 SQ. MI.

* TOTAL FLOW @ AP3 SOUTH

ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20

PARTIAL HYDROGRAPH 101.40

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.3	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	6.0	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .8978 ACRE-FEET
 PEAK DISCHARGE RATE = 25.90 CFS AT 1.500 HOURS BASIN AREA = .0114 SQ. MI.

ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10
 * TOTAL FLOW @ AP3
 ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16
 PRINT HYD ID=17 CODE=20

PARTIAL HYDROGRAPH 101.42

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	17.2	4.000	.4	5.999	.4		
.667	.0	2.666	1.6	4.666	.3	6.666	.0		
1.333	19.4	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 2.9213 ACRE-FEET
 PEAK DISCHARGE RATE = 84.26 CFS AT 1.500 HOURS BASIN AREA = .0369 SQ. MI.

* BASIN 101.5 @ AP6
 COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.6701 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002449 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.7191 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
 AREA = .001774 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=18 CODE=20

PARTIAL HYDROGRAPH 101.50

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.0	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3339 ACRE-FEET
 PEAK DISCHARGE RATE = 9.63 CFS AT 1.500 HOURS BASIN AREA = .0042 SQ. MI.

* TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

PARTIAL HYDROGRAPH 101.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	19.2	4.000	.4	5.999	.5		
.667	.0	2.666	1.8	4.666	.4	6.666	.0		
1.333	21.6	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FEET
 PEAK DISCHARGE RATE = 93.89 CFS AT 1.500 HOURS BASIN AREA = .0412 SQ. MI.

 * ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

 * ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
 ROUTE RESERVOIR ID=20 HYD NO=101.6 INFLOW ID=19 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	37.5
4.0	0.0214	38.0
16.9	0.1460	40.0
23.5	0.3596	42.0
28.7	0.6756	44.0
33.0	1.1403	46.0
36.8	1.6584	48.0

* * * * *

TIME	INFLOW	ELEV	VOLUME	OUTFLOW
(HRS)	(CFS)	(FEET)	(AC-FT)	(CFS)
.00	.00	37.50	.000	.00
.33	.00	37.50	.000	.00
.67	.00	37.50	.000	.00
1.00	.00	37.50	.000	.00
1.33	21.59	38.69	.065	8.47
1.67	48.51	46.15	1.179	33.28
2.00	19.22	45.77	1.086	32.50
2.33	4.40	43.16	.543	26.52
2.67	1.77	38.86	.075	9.53
3.00	.88	37.64	.006	1.11
3.33	.54	37.57	.003	.59
3.67	.44	37.56	.002	.45
4.00	.39	37.55	.002	.40
4.33	.38	37.55	.002	.38
4.67	.38	37.55	.002	.38
5.00	.39	37.55	.002	.39
5.33	.42	37.55	.002	.42
5.67	.45	37.56	.002	.44
6.00	.49	37.56	.003	.48
6.33	.05	37.51	.001	.10
6.67	.01	37.50	.000	.02

PEAK DISCHARGE = 33.704 CFS - PEAK OCCURS AT HOUR 1.77
 MAXIMUM WATER SURFACE ELEVATION = 46.371
 MAXIMUM STORAGE = 1.2363 AC-FT INCREMENTAL TIME= .033330HRS

X

PRINT HYD

ID=20 CODE=2

PARTIAL HYDROGRAPH 101.60

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	17.9	2.800	4.0	4.200	.4	5.599	.4
.067	.0	1.467	24.7	2.866	2.2	4.266	.4	5.666	.4
.133	.0	1.533	29.7	2.933	1.5	4.333	.4	5.733	.5
.200	.0	1.600	32.1	3.000	1.1	4.400	.4	5.799	.5
.267	.0	1.667	33.3	3.066	.9	4.466	.4	5.866	.5
.333	.0	1.733	33.7	3.133	.8	4.533	.4	5.933	.5
.400	.0	1.800	33.7	3.200	.7	4.600	.4	5.999	.5
.467	.0	1.866	33.5	3.266	.6	4.666	.4	6.066	.5
.533	.0	1.933	33.1	3.333	.6	4.733	.4	6.133	.4
.600	.0	2.000	32.5	3.400	.5	4.800	.4	6.199	.3
.667	.0	2.066	31.8	3.466	.5	4.866	.4	6.266	.2
.733	.0	2.133	30.9	3.533	.5	4.933	.4	6.333	.1
.800	.0	2.200	29.8	3.600	.5	4.999	.4	6.399	.1
.867	.0	2.266	28.6	3.666	.4	5.066	.4	6.466	.0
.933	.0	2.333	26.5	3.733	.4	5.133	.4	6.533	.0
1.000	.0	2.400	24.6	3.800	.4	5.199	.4	6.599	.0
1.067	.0	2.466	22.1	3.866	.4	5.266	.4	6.666	.0
1.133	.0	2.533	19.0	3.933	.4	5.333	.4	6.733	.0
1.200	.3	2.600	15.4	4.000	.4	5.399	.4	6.799	.0
1.267	3.1	2.666	9.5	4.066	.4	5.466	.4	6.866	.0
1.333	8.5	2.733	6.1	4.133	.4	5.533	.4		

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FEET
 PEAK DISCHARGE RATE = 33.70 CFS AT 1.766 HOURS BASIN AREA = .0412 SQ. MI.

* BASIN 103.1 - 90TH STREET FLOW @ AP12

COMPUTE NM HYD ID=21 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.8478 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002241 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
 UNIT PEAK = 1.4324 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
 AREA = .000492 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=21 CODE=20

PARTIAL HYDROGRAPH 103.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.7	4.000	.0	5.999	.0		

.667 .0 2.666 .1 4.666 .0 6.666 .0
1.333 2.0 3.333 .0 5.333 .0

RUNOFF VOLUME = 1.79069 INCHES = .2610 ACRE-Feet
PEAK DISCHARGE RATE = 7.19 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* BASIN 105.1 - BLUEWATER STREET FLOW @ AP15
COMPUTE NM HYD ID=22 HYD NO=105.1 DA=0.002976 SQ MI
PER A=0 PER B=0 PER C=18 PER D=82
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.6345 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002440 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
UNIT PEAK = 1.5598 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
AREA = .000536 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=22 CODE=20

PARTIAL HYDROGRAPH 105.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2842 ACRE-Feet
PEAK DISCHARGE RATE = 7.83 CFS AT 1.500 HOURS BASIN AREA = .0030 SQ. MI.

* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS

* DEVELOPED OFF-SITE BASIN 200 - DIRECTED BY TRAINER DIKE

* TO UNSER DIVERSION

COMPUTE NM HYD ID=23 HYD NO=200.0 DA=0.1078 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.2231 HR MASS RAIN=-1

K = .264881HR TP = .223100HR K/TP RATIO = 1.187275 SHAPE CONSTANT, N = 2.990392
UNIT PEAK = 135.79 CFS UNIT VOLUME = .9999 B = 281.04 P60 = 1.8700
AREA = .107800 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=23 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	17.6	4.000	.7	5.999	.1	7.999	.0

.667	.0	2.666	3.6	4.666	.3	6.666	.0
1.333	.0	3.333	1.5	5.333	.1	7.333	.0

RUNOFF VOLUME = .43925 INCHES = 2.5254 ACRE-FEET
PEAK DISCHARGE RATE = 57.73 CFS AT 1.600 HOURS BASIN AREA = .1078 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300 - RETAINED BY INTERIM POND

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=24 HYD NO=300.0 DA=0.5422 SQ MI
PER A=95 PER B=0 PER C=2 PER D=3
TP=0.4118 HR MASS RAIN=-1

K = .237533HR TP = .411800HR K/TP RATIO = .576817 SHAPE CONSTANT, N = 6.612116
UNIT PEAK = 19.852 CFS UNIT VOLUME = .9994 B = 502.58 P60 = 1.8700
AREA = .016266 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .411391HR TP = .411800HR K/TP RATIO = .999007 SHAPE CONSTANT, N = 3.533849
UNIT PEAK = 412.26 CFS UNIT VOLUME = 1.000 B = 322.79 P60 = 1.8700
AREA = .525934 SQ MI IA = .64381 INCHES INF = 1.65268 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=24 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.666	33.4	5.333	2.7	7.999	.3	10.666	.0
.667	.0	3.333	13.6	5.999	1.7	8.666	.2	11.332	.0
1.333	.5	4.000	7.8	6.666	.9	9.332	.1	11.999	.0
2.000	164.7	4.666	4.5	7.333	.5	9.999	.1	12.665	.0

RUNOFF VOLUME = .49289 INCHES = 14.2530 ACRE-FEET
PEAK DISCHARGE RATE = 206.55 CFS AT 1.800 HOURS BASIN AREA = .5422 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300.1 - RETAINED BY INTERIM PON

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=25 HYD NO=300.1 DA=0.0131 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 26.882 CFS UNIT VOLUME = .9991 B = 273.54 P60 = 1.8700
AREA = .013100 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=25 CODE=20

HYDROGRAPH FROM AREA 300.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	.0	2.666	.3	4.000	.0		
.667	.0	2.000	1.0	3.333	.1	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .3069 ACRE-FOOT
PEAK DISCHARGE RATE = 10.88 CFS AT 1.533 HOURS BASIN AREA = .0131 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 07:39:21

STREET DEPTHS

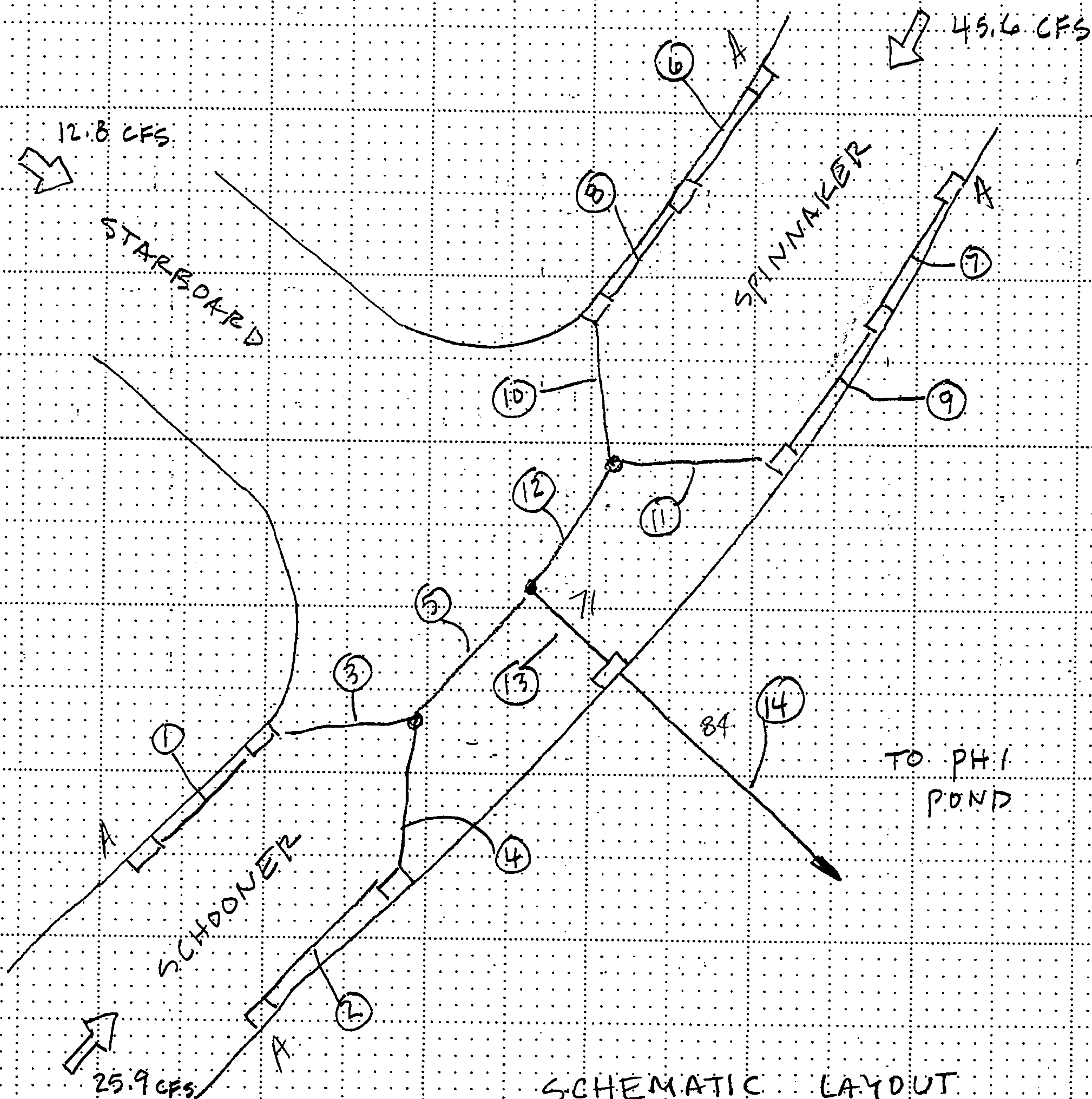
		AVALON SUBDIVISION					
			Street Depths				
Street name		Analysis	Q 100	Slope	Width	Depth	Velocity
		Point	(cfs)	(%)	(ft)	(ft)	(fps)
PHASE ONE							
Port		1	19.4	2.33	28	0.31	4.09
Spinnaker		2 north	25.6	0.50	28	0.46	2.88
Seaside		2 west	14.6	2.73	28	0.28	3.85
Spinnaker		2 south	40.2	0.50	28	0.56	3.45
Spinnaker		3 north	45.6	0.50	28	0.59	3.63
Starboard		3 west	12.8	2.40	28	0.27	3.55
Mainsail		4	7.8	1.56	28	0.24	2.67
Schooner		5	17.1	1.50	28	0.32	3.40
Schooner		3 south	25.9	0.80	28	0.42	3.33
Schooner/Spinnaker		3	84.3	*	28	*	*
PHASE TWO							
Halyard		7	14	2.30	28	0.28	3.57
Leeward		8 north	19.5	0.90	28	0.37	3.08
Harbor		8 west	13.4	2.30	28	0.28	3.53
Leeward		8 south	32.9	0.90	28	0.45	3.79
Leeward		9 north	46.3	0.90	28	0.52	4.35
Starboard		9 west	13.1	1.90	28	0.28	3.29
Leeward/Starboard		9	59.4	1.90	28	0.49	6.01
Ketch		10	9.2	1.40	28	0.33	3.41
Jetty		11	20.6	2.20	28	0.32	4.11
Off-site							
90th		12	7.2	1.50	48	0.24	2.58
Bluewater		14	7.3	2.40	48	0.22	3.09
Bluewater		15	7.8	2.44	48	0.22	3.16

STORM DRAINS

ALLOWABLE DISCHARGE RATES					
Per the approved DMP's for the study area, downstream capacity is limited.					
The Amole basin is limited to 2.05 cfs/acre and the Unser Diversion basin is limited to 1.40 cfs/acre.					
The following tables report the allowable discharges from contributing basins:					
I. AMOLE BASIN					
	BASIN	AREA (ac)	Q100 (cfs)	Qallow (cfs)	
	300.0	10.69	19.95	19.95 (I-40 basin)	
	300.1	8.38	30.17	17.60	
	300.2	53.70	219.00	110.09	
	200.0	24.90	101.68	51.05	
	PhaseTwo	24.11	97.82	49.40	
II. UNSER DIVERSION BASIN					
	BASIN	AREA (ac)	Q100 (cfs)	Qallow (cfs)	
	400.0	30.00	122.59	42.00	
	Phase One	25.60	93.89	35.84	

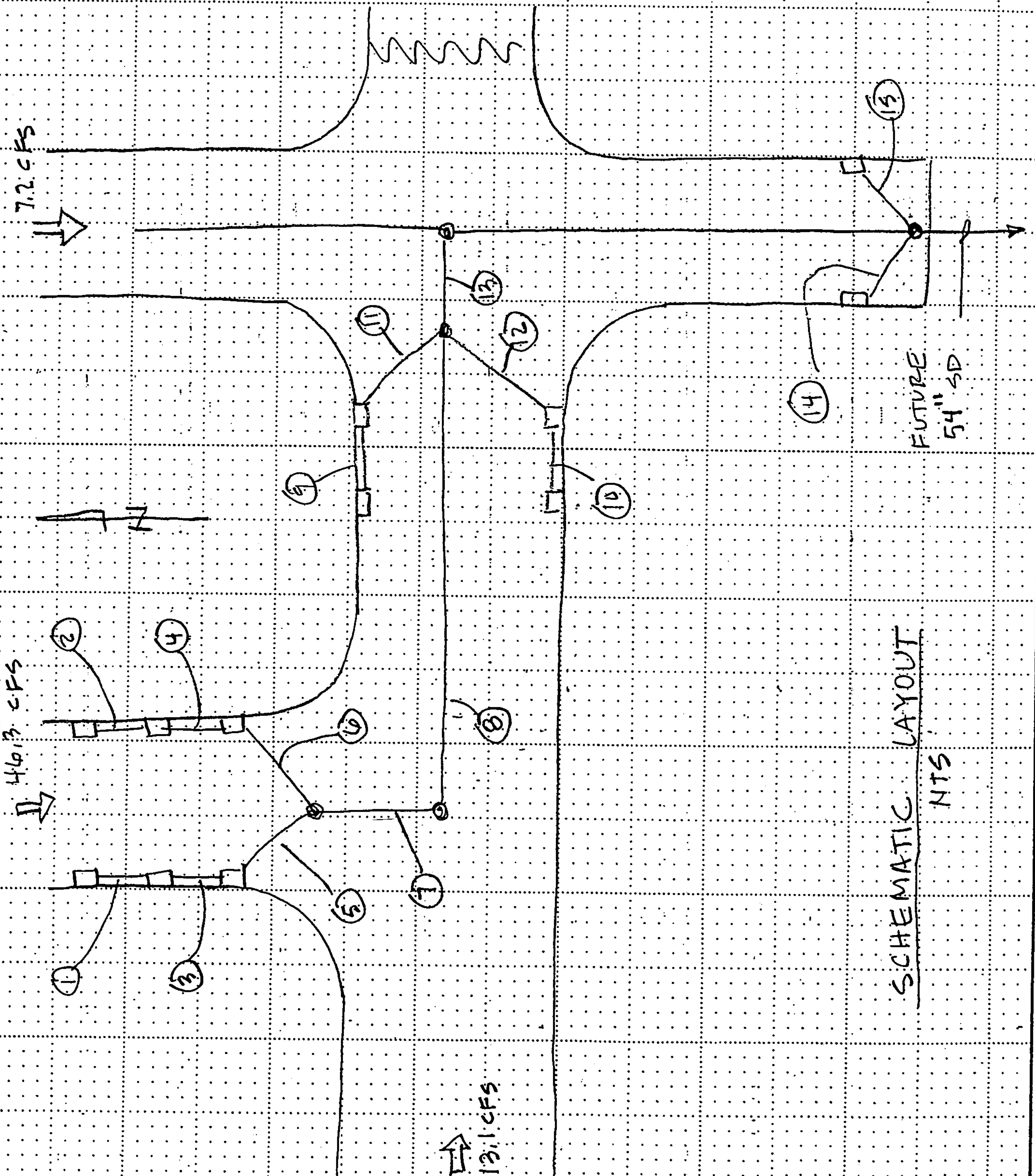
			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase One @ ap 3						
Pipe	Ap	Q 100	Inlet type	Q inlet	Q pipe	Pipe Dia	Q resid
Segment	No.	(cfs)		(cfs)	(cfs)	(in)	(cfs)
1,2	3s	25.9	A	7(14)	7(14)	18	11.9
3,4	3s	11.9	CC	5.85(11.9)	12.85(25.9)	18	25.9
5	3s	25.9	**	**	25.9	24	0
6,7	3n	45.6	C	10(20)	10(20)	18	25.6
8,9	3n	25.6	CC	7(14)	17(34)	18	11.6
10,11	3n	11.6	CC	5.8(11.6)	22.8(45.6)	24	0
12	3n	45.6	**	**	45.6	30	0
13	3	71.5	**	**	71.5	33	0
14	3	12.8	CC	12.8*	84.3	36	0
* Inlet located in sump							

PHASE ONE STORM DRAIN AT AP 3



			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase Two @ ap 9						
Pipe	Ap	Q 100	Inlet type	Q inlet	Q pipe	Pipe Dia	Q resid
Segment	No.	(cfs)		(cfs)	(cfs)	(in)	(cfs)
1,2	9n	46.3	A	10(20)	10(20)	18	26.3
3,4	9n	26.3	CC	6(12)	16(32)	18	14.3
5,6	9n	14.3	CC	5(10)	21(42)	24	4.3
7,8	9	42.0	**	**	42	30	0
9,10	9	17.4	A	3.5(7)	3.5(7)	18	10.4
11,12	9	10.4	CC	5.2(10.4)	8.7(17.4)	18	0
13	9	59.4	**	**	59.4	30	0
14,15	12	7.2	A	3.6(7.2)	3.6(7.2)	18	0

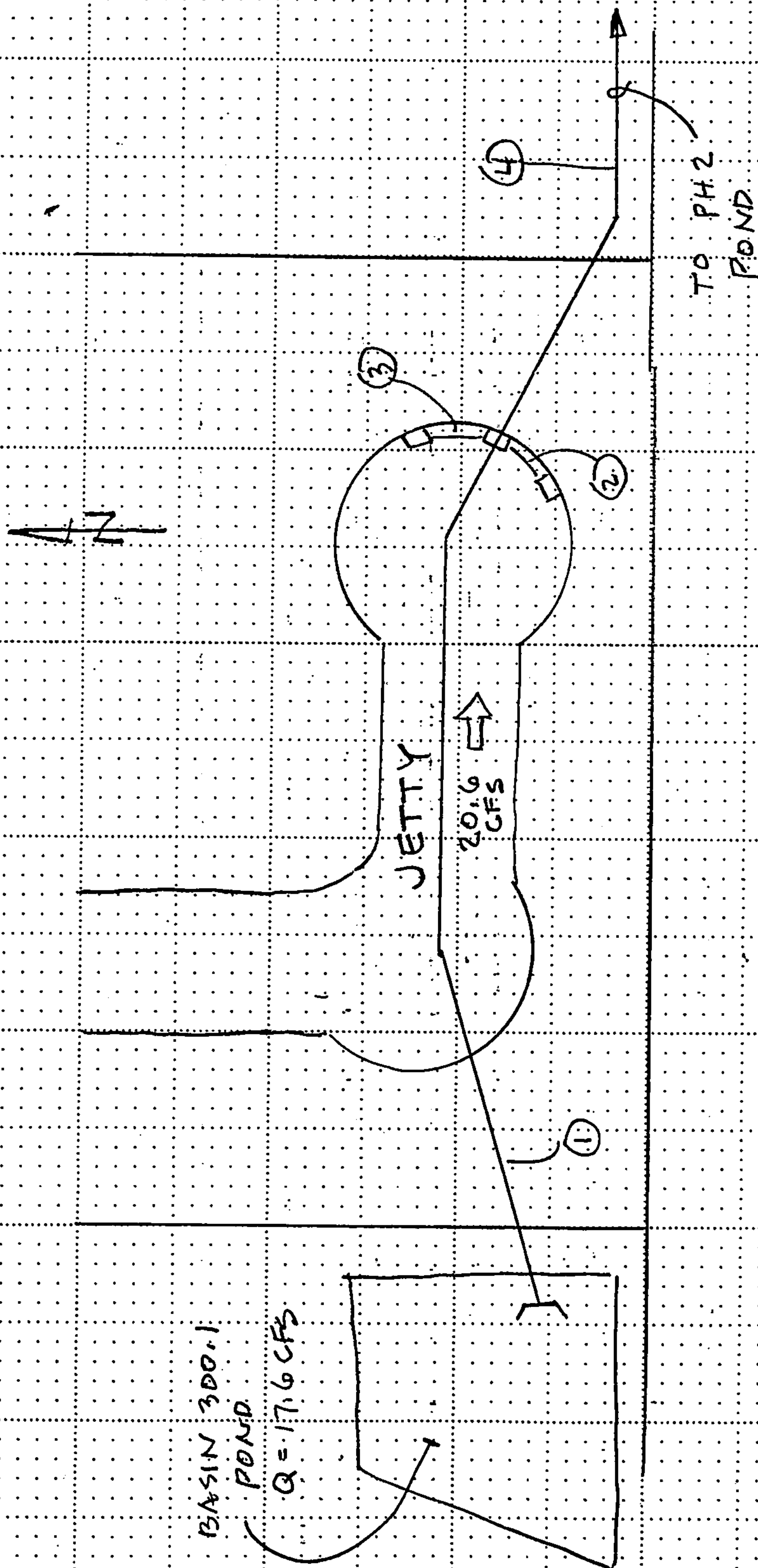
PHASE TWO STORM DRAIN AT AP 9



SCHEMATIC LAYOUT
NTS

			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition: Phase Two @ ap 11							
Pipe Segment	Ap No.	Q 100 (cfs)	Inlet type	Q inlet (cfs)	Q pipe (cfs)	Pipe Dia (in)	Q resid (cfs)
1	**	17.6	**	**	17.6	18	0
2,3	11	20.6	A	3.5(7)	3.5(7)	18	13.6
4	11	13.6	CC	13.6*	20.6(20.6)	24	0
* Inlet located in sump							

PHASE TWO STORM DRAIN AT AP 11

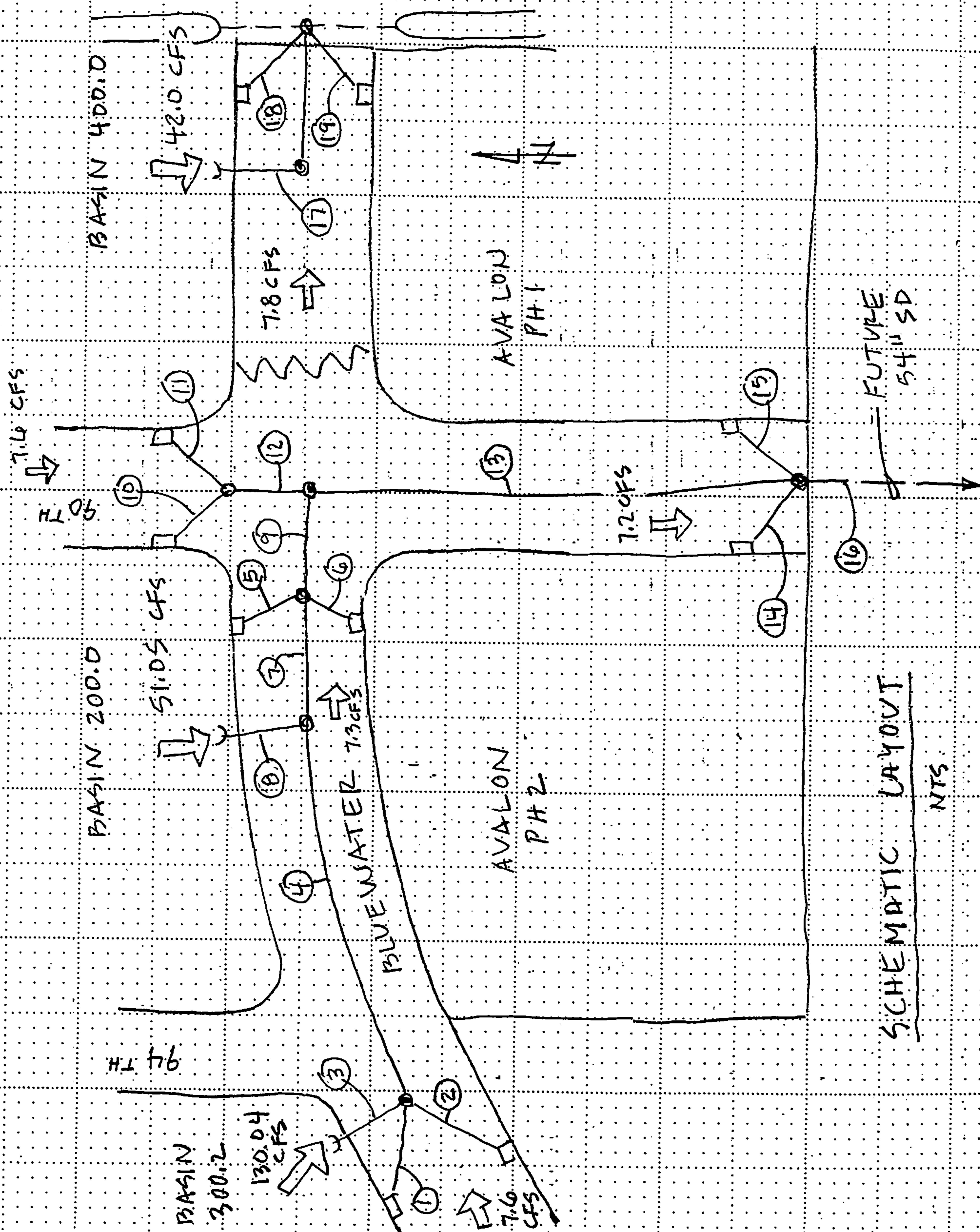


SCHEMATIC LAYOUT

NTS

			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Future Off-site						
Pipe	Ap	Q 100	Inlet type	Q inlet	Q pipe	Pipe Dia	Q resid
Segment	No.	(cfs)		(cfs)	(cfs)	(in)	(cfs)
1,2	13	7.60	A	3.8(7.6)	3.8(7.6)	18	0
3	13	130.04	Stub	**	130.04	42	0
4	13	137.64	**	**	137.64	42	0
5,6	14	7.30	A	3.65(7.3)	3.65(7.3)	18	0
7	14	188.69	Stub	**	188.69	48	0
8	14	51.05	**	**	51.05	30	0
9	14	196.00	**	**	196.00	54	0
10,11	14	7.60	A	3.8(7.6)	3.8(7.6)	18	0
12	14	7.60	**	**	7.60	18	0
13	12	203.60	**	**	203.60	54	0
14,15	12	7.20	A	3.6(7.2)	3.6(7.2)	18	0
16	12	201.80	**	**	201.80	54	0
17	15	42.00	Stub	**	42.00	30	0
18,19	15	7.80	A	3.9(7.8)	3.9(7.8)	18	0

FUTURE OFF-SITE STORM DRAIN IN BLUEWATER



SCHEMATIC LAYOUT

NTS

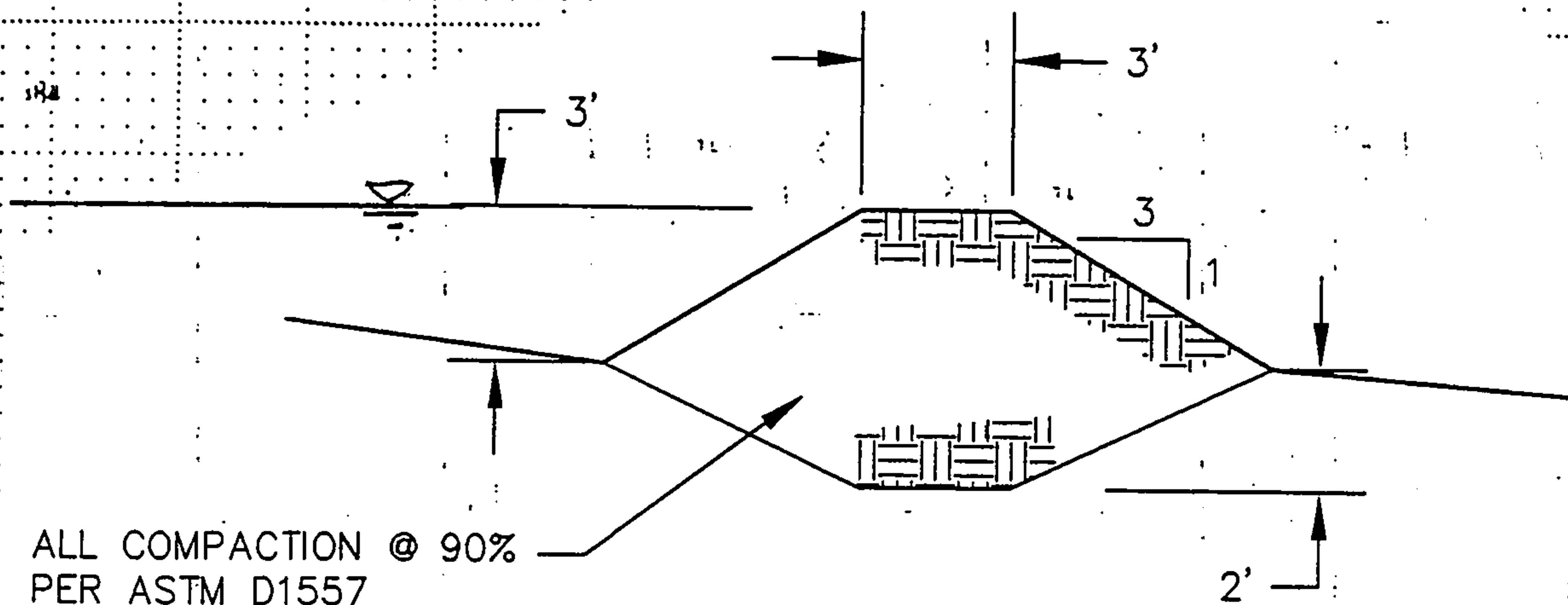
OFF-SITE TRAINER DIKES

○ INTERIM TRAINER DIKES

DETERMINE CAPACITY @

① BLUEWATER

② PHASE ONE INTERIM POND @ 90TH



INTERIM TRAINER DIKE SECTION

① BLUEWATER

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION Q - FLOWRATE S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y, Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

Q (CFS) ? 57.73

S (FT/FT) ? .02

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	103	.025			
150	100	.025			
159	103	.025			

RESULTS

Y= 100.72 FT
A= 13.63 SF
P= 38.14 FT
V= 4.23 FPS
F= 1.25 SUPER-CRITICAL FLOW

② PHASE 1 POND @ 90 TH

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION Q - FLOWRATE S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y, Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

Q (CFS) ? 31.3

S (FT/FT) ? .015

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	103	.025			
150	100	.025			
159	103	.025			

RESULTS

Y= 100.60 FT
A= 9.60 SF
P= 32.00 FT
V= 3.26 FPS
F= 1.05 SUPER-CRITICAL FLOW

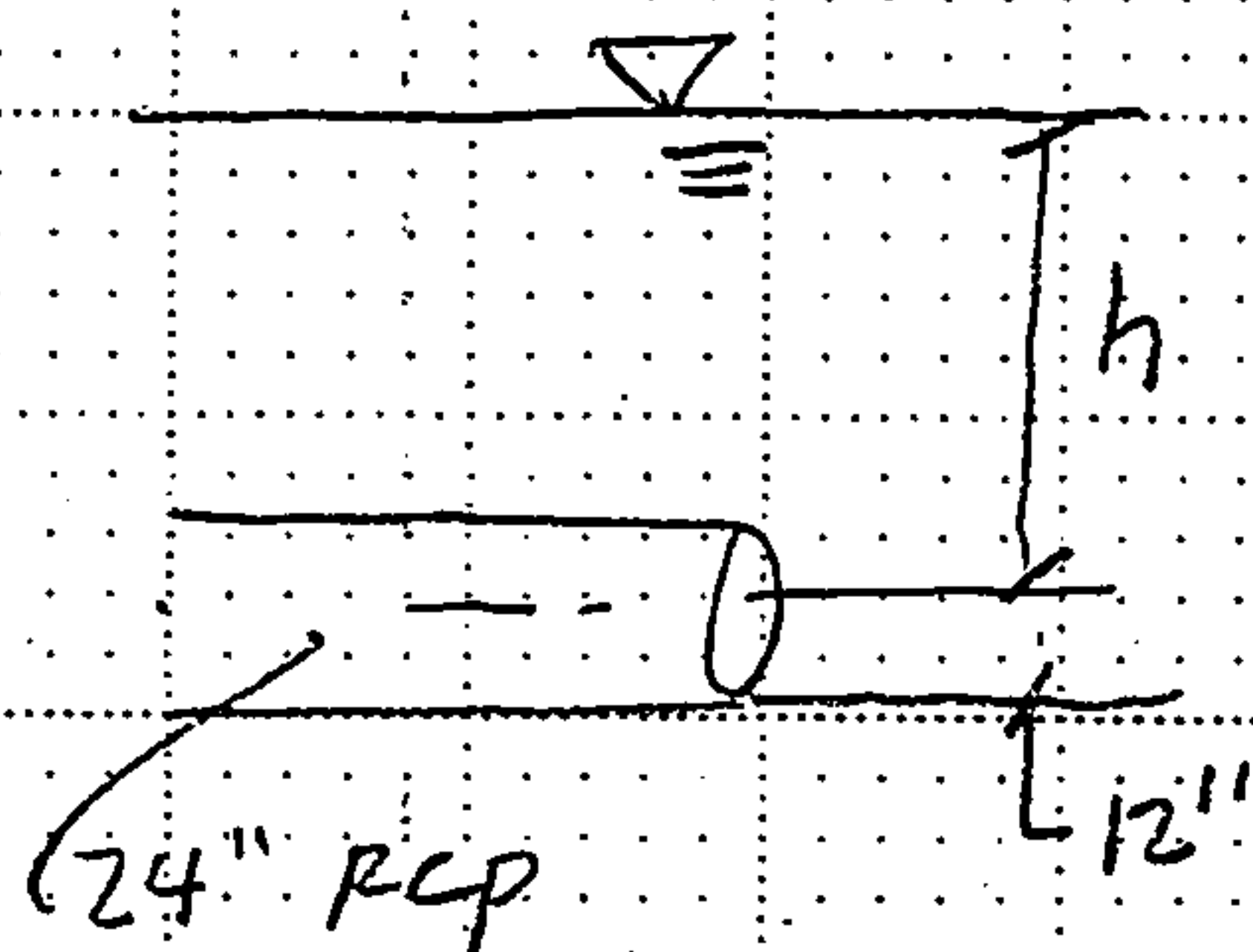
POND DESIGNS

② PHASE ONE POND REQUIREMENT

DISCHARGE IS LIMITED TO UNSUB DIVERSION

PER DMP $Q_{ALLOW} = 35.8 \text{ CFS}$

SIZE POND & OUTLET TO UNSUB DIV.



$$Q = CA\sqrt{2gh}$$

$$C = 0.6$$

$$A = 3.14 \text{ SF}$$

$$g = 32.2 \text{ f/s}^2$$

POND BOTTOM @ 43.0

ELEV	A(SF)	H(FT)	Q(CFS)	VOL(AF)
39.0	5200	—	0	0
40.0	5848	—	5.0	0.1268
41.0	6532	1	15.1	0.2693
42.0	7252	2	21.4	0.4288
43.0	8008	3	26.2	0.6064
44.0	8800	4	30.3	0.8035
45.0	9628	5	33.8	1.0212
46.0	10492	6	37.0	1.2608

⇒ PER AH4 MO $Q_{OUT} = 36.9 \text{ CFS}$ VOL = 1.2559 AF

② INTERIM POND REQUIREMENT PHASE 2

RETAIN ALL EXCESS RUNOFF PENDING
AWOLE EXTENSION TO SITE

PHASE 2 AREA = 24.1 AC

$$A_D = 24.1(0.58) = 13.98 \text{ AC}$$

$$VOL_{360} = 2.9809 \text{ AF}$$

PER DPM $V_{10 \text{ DAY}} = V_{360} + A_D (P_{10 \text{ DAY}} - P_{360}) / 12$

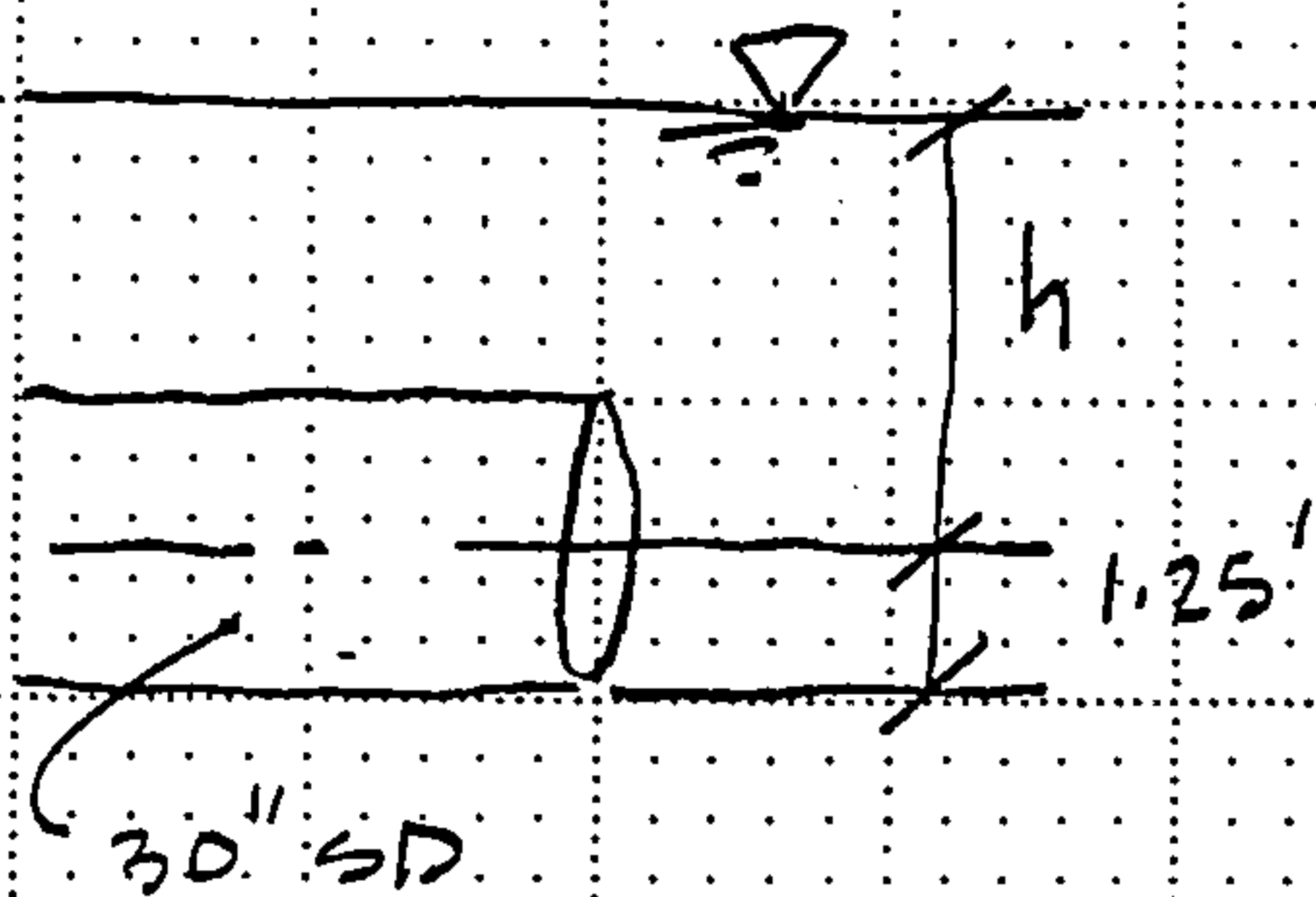
$$V_{10 \text{ DAY}} = 2.9809 + 13.98(3.67 - 2.20) / 12$$

$$= 4.6935 \text{ AF}$$

③ FUTURE PHASE TWO POND REQUIREMENT

PER DMP FOR WEST RIDGE MHP, DISCHARGE
IS LIMITED TO 2.05 CFS/AC OR 49.4 CFS
FOR PHASE TWO.

SIZE POND & OUTLET TO AWOLE 66" SD
@ 90TH



AVALON SUBDIVISION

3

7076

PHASE TWO DET. POND

ELEV A (SF) H (FT) Q (CFS) VOL (AF)

63.0 5696 - 0 0

64.0 6650 - 5.0 0.1417

65.0 7676 0.75 20.5 0.3070

66.0 8774 1.75 31.3 0.4983

67.0 9944 2.75 39.2 0.7181

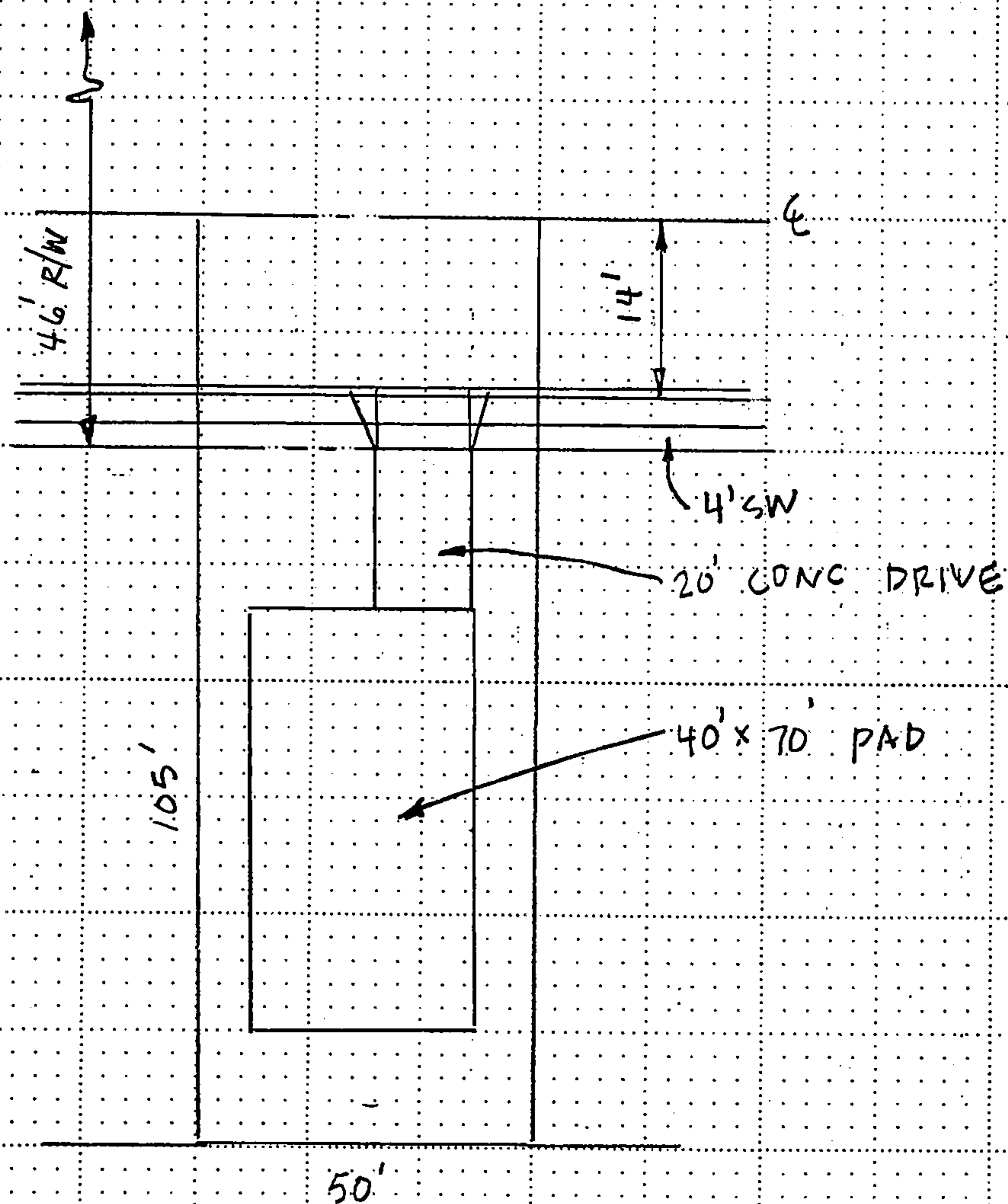
68.0 11186 3.75 45.8 0.9689

69.0 12500 4.75 51.5 1.2532

→ PER ANY MD: Q OUT = VOL =

AHYMO OUTPUT FILES

① LAND TREATMENT FACTORS



$$\text{GROSS AREA} = 50 \times (105 + 23) = 6400 \text{ SF}$$

DISCR.	AREA	B	C	D	A
STREET	700	0	0	700	0
SIDEWALK	200	0	0	200	0
DRIVE + PAD	2800	0	0	2800	0
OPEN SPACE	2700	1350	1350	0	0
TOTAL	6400	1350	1350	3700	0
PERCENT	100%	21%	21%	58%	0%

EXISTING CONDITIONS

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

* EXISTING DRAINAGE BASINS

* UNDEVELOPED BASIN 200

COMPUTE NM HYD ID=1 HYD NO=200.0 DA=0.1525 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.2313 HR MASS RAIN=-1

PRINT HYD ID=1 CODE=20

* UNDEVELOPED BASIN 300

COMPUTE NM HYD ID=2 HYD NO=300.0 DA=0.5943 SQ MI
PER A=95 PER B=0 PER C=3 PER D=2
TP=0.5417 HR MASS RAIN=-1

PRINT HYD ID=2 CODE=20

FINISH

RUN DATE (MON/DAY/YR) =03/14/1998
USER NO.= BRASHERE.I01

	TIME TO	CFS	PAGE =	1
RUNOFF	PEAK	PER		
(INCHES)	(HOURS)	ACRE	NOTATION	
			TIME=	.00
			RAIN6=	2.200
.43925	1.633	.830	PER IMP=	.00
.48157	1.933	.449	PER IMP=	2.00

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 03/14/1998
START TIME (HR:MIN:SEC) = 23:49:21 USER NO.= BRASHERE.I01
INPUT FILE = A:7076-EX.DAT

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
 RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT = .033330 HOURS END TIME = 5.999400 HOURS

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

* EXISTING DRAINAGE BASINS

* UNDEVELOPED BASIN 200

COMPUTE NM HYD ID=1 HYD NO=200.0 DA=0.1525 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0
 TP=0.2313 HR MASS RAIN=-1

K = .265337HR TP = .231300HR K/TP RATIO = 1.147154 SHAPE CONSTANT, N = 3.087705
UNIT PEAK = 190.47 CFS UNIT VOLUME = .9999 B = 288.90 P60 = 1.8700
AREA = .152500 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	25.6	4.000	1.0	5.999	.1	7.999	.0
.667	.0	2.666	5.1	4.666	.4	6.666	.0		
1.333	.0	3.333	2.2	5.333	.2	7.333	.0		

RUNOFF VOLUME = .43925 INCHES = 3.5726 ACRE-FEET
 PEAK DISCHARGE RATE = 81.00 CFS AT 1.633 HOURS BASIN AREA = .1525 SQ. MI.

* UNDEVELOPED BASIN 300

COMPUTE NM HYD ID=2 HYD NO=300.0 DA=0.5943 SQ MI
 PER A=95 PER B=0 PER C=3 PER D=2
 TP=0.5417 HR MASS RAIN=-1

K = .312462HR TP = .541700HR K/TP RATIO = .576817 SHAPE CONSTANT, N = 6.612116
 UNIT PEAK = 11.028 CFS UNIT VOLUME = .9988 B = 502.58 P60 = 1.8700
 AREA = .011886 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .539972HR TP = .541700HR K/TP RATIO = .996809 SHAPE CONSTANT, N = 3.541732
 UNIT PEAK = 347.67 CFS UNIT VOLUME = 1.000 B = 323.36 P60 = 1.8700
 AREA = .582414 SQ MI IA = .64082 INCHES INF = 1.64429 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	3.333	16.9	6.666	2.1	9.999	.2	13.332	.0
.667	.0	4.000	10.7	7.333	1.3	10.666	.2	13.999	.0
1.333	.1	4.666	7.0	7.999	.9	11.332	.1	14.665	.0
2.000	167.4	5.333	4.7	8.666	.6	11.999	.1	15.332	.0
2.666	56.8	5.999	3.2	9.332	.4	12.665	.0	15.998	.0

RUNOFF VOLUME = .48157 INCHES = 15.2638 ACRE-FEET
 PEAK DISCHARGE RATE = 170.64 CFS AT 1.933 HOURS BASIN AREA = .5943 SQ. MI.

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 23:49:23

TIME TO PEAK - EXISTING CONDITION

① BASIN 200.0

$L = 4300$

$H = 120'$

$K = 2$

$LCA = 2600$

$S = 2.8\%$

$K_N = 0.033$

$$t_c = \left((12000 - 4300) / (72000)(2) \sqrt{0.028} \right) +$$

$$\left((4300 - 4000)(0.033) \left(\frac{2600}{4300} \right)^{0.33} / 552.2 (0.028)^{0.165} \right)$$

$t_c = 0.347 \text{ hr}$

$t_p = 2/3 t_c = 0.2313 \text{ hr}$

② BASIN 300.0

$L = 11200$

$H = 250$

$K = 2$

$LCA = 6600$

$S = 2.2\%$

$K_N = 0.033$

$$t_c = \left((12000 - 11200) / 72000 (2) \sqrt{0.022} \right) +$$

$$\left((11200 - 4000)(0.033) \left(\frac{6600}{11200} \right)^{0.33} / 552.2 (0.022)^{0.165} \right)$$

$t_c = 0.8125 \text{ hr}$

$t_p = 2/3 t_c = 0.5417 \text{ hr}$

PHASE ONE

* AVALON SUBDIVISION

* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87

RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

* THIS RUN IS FOR PHASE ONE DEVELOPMENT. IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED. INTERIM RETENTION PONDS WILL BE PROVIDED
* FOR BASIN 300 & 300.1 BY WEST RIDGE MHP. AN INTERIM RETENTION POND
* WILL BE CONSTRUCTED ON PHASE TWO. A TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION

* EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES

COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI

PER A=100 PER B=0 PER C=0 PER D=0

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=1 CODE=20

* UNDEVELOPED PHASE TWO 24.11 ACRES - WILL BE RETAINED IN INTERIM POND

COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI

PER A=100 PER B=0 PER C=0 PER D=0

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=2 CODE=20

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ AP1

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI

PER A=0 PER B=21 PER C=21 PER D=58

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=3 CODE=20

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI

PER A=0 PER B=21 PER C=21 PER D=58

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=4 CODE=20

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4

PRINT HYD ID=5 CODE=20

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI

PER A=0 PER B=21 PER C=21 PER D=58

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=6 CODE=20

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI

PER A=0 PER B=21 PER C=21 PER D=58

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=7 CODE=20

* TOTAL FLOW @ AP2

ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7

PRINT HYD ID=8 CODE=20

* TOTAL FLOW @ AP3 NORTH

ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8

PRINT HYD ID=9 CODE=20

* BASIN 101.3 @ AP3

COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=10 CODE=20
 * BASIN 101.4A @ AP4
 COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=11 CODE=20
 * BASIN 101.4B @ AP5
 COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=12 CODE=20
 * TOTAL FLOW @ AP5
 ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20
 * BASIN 101.4C @ AP3
 COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=14 CODE=20
 * TOTAL FLOW @ AP3 SOUTH
 ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20
 ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10
 * TOTAL FLOW @ AP3
 ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16
 PRINT HYD ID=17 CODE=20
 * BASIN 101.5 @ AP6
 COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=18 CODE=20
 * TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

 * ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

 * ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
 ROUTE RESERVOIR ID=20 HYD NO=101.6 INFLOW ID=19 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	39.0
5.0	0.1268	40.0
15.1	0.2693	41.0
21.4	0.4288	42.0
26.2	0.6064	43.0
30.3	0.8035	44.0
33.8	1.0212	45.0
37.0	1.2608	46.0

 PRINT HYD ID=20 CODE=2
 * BASIN 103.1 - 90TH STREET FLOW @ AP12
 COMPUTE NM HYD ID=21 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=21 CODE=20
 * BASIN 105.1 - BLUEWATER STREET FLOW @ AP15
 COMPUTE NM HYD ID=22 HYD NO=105.1 DA=0.002976 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=22 CODE=20

* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS

* DEVELOPED OFF-SITE BASIN 200 - DIRECTED BY TRAINER DIKE

* TO UNSER DIVERSION

COMPUTE NM HYD ID=23 HYD NO=200.0 DA=0.1078 SQ MI

PER A=100 PER B=0 PER C=0 PER D=0

TP=0.2231 HR MASS RAIN=-1

PRINT HYD ID=23 CODE=20

* UNDEVELOPED OFF-SITE BASIN 300 - RETAINED BY INTERIM POND

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=24 HYD NO=300.0 DA=0.5422 SQ MI

PER A=95 PER B=0 PER C=2 PER D=3

TP=0.4118 HR MASS RAIN=-1

PRINT HYD ID=24 CODE=20

* UNDEVELOPED OFF-SITE BASIN 300.1 - RETAINED BY INTERIM PON

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=25 HYD NO=300.1 DA=0.0131 SQ MI

PER A=100 PER B=0 PER C=0 PER D=0

TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=25 CODE=20

FINISH

RUN DATE (MON/DAY/YR) =03/16/1998
USER NO.= BRASHERE.I01

[illegible]

AHYMO PROGRAM (AHYMO194) - AMAPCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 03/16/1998
START TIME (HR:MIN:SEC) = 15:06:24 USER NO.= BRASHERE.I01
INPUT FILE = a:7076-ph1.dat

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT = .033330 HOURS END TIME = 5.999400 HOURS

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

* THIS RUN IS FOR PHASE ONE DEVELOPMENT. IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED. INTERIM RETENTION PONDS WILL BE PROVIDED
* FOR BASIN 300 & 300.1 BY WEST RIDGE MHP. AN INTERIM RETENTION POND
* WILL BE CONSTRUCTED ON PHASE TWO. A TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION

* EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES

COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 82.084 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700

AREA = .040000 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA 101.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.8	4.000	.1		
.667	.0	2.000	3.1	3.333	.2	4.666	.0		

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

* UNDEVELOPED PHASE TWO 24.11 ACRES - WILL BE RETAINED IN INTERIM POND

COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 77.364 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700
AREA = .037700 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 102.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.7	4.000	.0		
.667	.0	2.000	2.9	3.333	.2	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .8832 ACRE-FEET
PEAK DISCHARGE RATE = 31.30 CFS AT 1.533 HOURS BASIN AREA = .0377 SQ. MI.

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ AP1

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 19.443 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .004925 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 9.4886 CFS UNIT VOLUME = .9991 B = 354.67 P60 = 1.8700
AREA = .003566 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=3 CODE=20

HYDROGRAPH FROM AREA 101.1A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.5	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .6714 ACRE-FEET
 PEAK DISCHARGE RATE = 19.35 CFS AT 1.500 HOURS BASIN AREA = .0085 SQ. MI.

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 6.2720 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 1.8700
 AREA = .001589 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 3.0608 CFS UNIT VOLUME = .9962 B = 354.67 P60 = 1.8700
 AREA = .001150 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=4 CODE=20

HYDROGRAPH FROM AREA 101.1B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.4	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.3	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2166 ACRE-FEET
 PEAK DISCHARGE RATE = 6.25 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4
 PRINT HYD ID=5 CODE=20

HYDROGRAPH FROM AREA 101.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.2	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	5.9	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48252 INCHES = .8879 ACRE-FEET
 PEAK DISCHARGE RATE = 25.60 CFS AT 1.500 HOURS BASIN AREA = .0112 SQ. MI.

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.4339 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
AREA = .001376 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.6518 CFS UNIT VOLUME = .9953 B = 354.67 P60 = 1.8700
AREA = .000997 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=20

HYDROGRAPH FROM AREA 101.1C

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.2	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.1	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .1876 ACRE-FEET
PEAK DISCHARGE RATE = 5.42 CFS AT 1.500 HOURS BASIN AREA = .0024 SQ. MI.

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.612 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003701 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 7.1307 CFS UNIT VOLUME = .9986 B = 354.67 P60 = 1.8700
AREA = .002680 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=7 CODE=20

PARTIAL HYDROGRAPH 101.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.3	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .5045 ACRE-FEET
PEAK DISCHARGE RATE = 14.55 CFS AT 1.500 HOURS BASIN AREA = .0064 SQ. MI.

* TOTAL FLOW @ AP2

ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7
PRINT HYD ID=8 CODE=20

PARTIAL HYDROGRAPH 101.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	8.2	4.000	.2	5.999	.2		
.667	.0	2.666	.8	4.666	.2	6.666	.0		
1.333	9.2	3.333	.2	5.333	.2				

RUNOFF VOLUME = 1.48252 INCHES = 1.3925 ACRE-FEET
PEAK DISCHARGE RATE = 40.15 CFS AT 1.500 HOURS BASIN AREA = .0176 SQ. MI.

* TOTAL FLOW @ AP3 NORTH

ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8
PRINT HYD ID=9 CODE=20

PARTIAL HYDROGRAPH 101.31

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	9.3	4.000	.2	5.999	.2		
.667	.0	2.666	.9	4.666	.2	6.666	.0		
1.333	10.5	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48251 INCHES = 1.5801 ACRE-FEET
PEAK DISCHARGE RATE = 45.57 CFS AT 1.500 HOURS BASIN AREA = .0200 SQ. MI.

* BASIN 101.3 @ AP3

COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 12.842 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003253 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 6.2669 CFS UNIT VOLUME = .9982 B = 354.67 P60 = 1.8700
AREA = .002355 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=10 CODE=20

PARTIAL HYDROGRAPH 101.30

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.6	4.000	.1	5.999	.1		

.667 .0 2.666 .2 4.666 .1 6.666 .0
1.333 2.9 3.333 .1 5.333 .1

RUNOFF VOLUME = 1.48256 INCHES = .4434 ACRE-FEET
PEAK DISCHARGE RATE = 12.79 CFS AT 1.500 HOURS BASIN AREA = .0056 SQ. MI.

* BASIN 101.4A @ AP4

COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 7.8336 CFS UNIT VOLUME = .9978 B = 526.28 P60 = 1.8700
AREA = .001984 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 3.8229 CFS UNIT VOLUME = .9969 B = 354.67 P60 = 1.8700
AREA = .001437 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=11 CODE=20

HYDROGRAPH FROM AREA 101.4A

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.8	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.6	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2705 ACRE-FEET
PEAK DISCHARGE RATE = 7.81 CFS AT 1.500 HOURS BASIN AREA = .0034 SQ. MI.

* BASIN 101.4B @ AP5

COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.3747 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002375 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 4.5750 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
AREA = .001719 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=12 CODE=20

HYDROGRAPH FROM AREA 101.4B

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS

.000	.0	2.000	1.9	4.000	.0	5.999	.0
.667	.0	2.666	.2	4.666	.0	6.666	.0
1.333	2.1	3.333	.1	5.333	.0		

RUNOFF VOLUME = 1.48257 INCHES = .3237 ACRE-FEET
 PEAK DISCHARGE RATE = 9.34 CFS AT 1.500 HOURS BASIN AREA = .0041 SQ. MI.

* TOTAL FLOW @ AP5

ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20

HYDROGRAPH FROM AREA 101.4B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.5	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.9	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .5942 ACRE-FEET
 PEAK DISCHARGE RATE = 17.14 CFS AT 1.500 HOURS BASIN AREA = .0075 SQ. MI.

* BASIN 101.4C @ AP3

COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.7931 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002227 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.2911 CFS UNIT VOLUME = .9972 B = 354.67 P60 = 1.8700
 AREA = .001613 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=14 CODE=20

HYDROGRAPH FROM AREA 101.4C

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.0		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3036 ACRE-FEET
 PEAK DISCHARGE RATE = 8.76 CFS AT 1.500 HOURS BASIN AREA = .0038 SQ. MI.

* TOTAL FLOW @ AP3 SOUTH

ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20

PARTIAL HYDROGRAPH 101.40

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.3	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	6.0	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .8978 ACRE-FEET
 PEAK DISCHARGE RATE = 25.90 CFS AT 1.500 HOURS BASIN AREA = .0114 SQ. MI.

ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10

* TOTAL FLOW @ AP3

ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16

PRINT HYD ID=17 CODE=20

PARTIAL HYDROGRAPH 101.42

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	17.2	4.000	.4	5.999	.4		
.667	.0	2.666	1.6	4.666	.3	6.666	.0		
1.333	19.4	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 2.9213 ACRE-FEET
 PEAK DISCHARGE RATE = 84.26 CFS AT 1.500 HOURS BASIN AREA = .0369 SQ. MI.

* BASIN 101.5 @ AP6

COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI

PER A=0 PER B=21 PER C=21 PER D=58

TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.6701 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002449 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.7191 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
 AREA = .001774 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=18 CODE=20

PARTIAL HYDROGRAPH 101.50

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.0	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3339 ACRE-FEET
 PEAK DISCHARGE RATE = 9.63 CFS AT 1.500 HOURS BASIN AREA = .0042 SQ. MI.

* TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

PARTIAL HYDROGRAPH 101.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	19.2	4.000	.4	5.999	.5		
.667	.0	2.666	1.8	4.666	.4	6.666	.0		
1.333	21.6	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FeET
 PEAK DISCHARGE RATE = 93.89 CFS AT 1.500 HOURS BASIN AREA = .0412 SQ. MI.

 * ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

 * ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
 ROUTE RESERVOIR ID=20 HYD NO=101.6 INFLOW ID=19 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	39.0
5.0	0.1268	40.0
15.1	0.2693	41.0
21.4	0.4288	42.0
26.2	0.6064	43.0
30.3	0.8035	44.0
33.8	1.0212	45.0
37.0	1.2608	46.0

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	39.00	.000	.00
.33	.00	39.00	.000	.00
.67	.00	39.00	.000	.00
1.00	.00	39.00	.000	.00
1.33	21.59	39.71	.090	3.56
1.67	48.51	45.84	1.223	36.49
2.00	19.22	45.14	1.054	34.24
2.33	4.40	42.50	.518	23.82
2.67	1.77	40.26	.164	7.62
3.00	.88	39.58	.073	2.89
3.33	.54	39.28	.036	1.41
3.67	.44	39.16	.020	.78
4.00	.39	39.11	.014	.53
4.33	.38	39.09	.011	.43
4.67	.38	39.08	.010	.40
5.00	.39	39.08	.010	.39
5.33	.42	39.08	.010	.40
5.67	.45	39.09	.011	.43
6.00	.49	39.09	.012	.46
6.33	.05	39.06	.007	.29

6.67	.01	39.02	.003	.11
7.00	.00	39.01	.001	.04
7.33	.00	39.00	.000	.01
7.67	.00	39.00	.000	.00

PEAK DISCHARGE = 36.935 CFS - PEAK OCCURS AT HOUR 1.73
 MAXIMUM WATER SURFACE ELEVATION = 45.980
 MAXIMUM STORAGE = 1.2559 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=20 CODE=2

PARTIAL HYDROGRAPH 101.60

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.667	36.5	3.333	1.4	4.999	.4	6.666	.1
.067	.0	1.733	36.9	3.400	1.2	5.066	.4	6.733	.1
.133	.0	1.800	36.7	3.466	1.1	5.133	.4	6.799	.1
.200	.0	1.866	36.1	3.533	1.0	5.199	.4	6.866	.1
.267	.0	1.933	35.3	3.600	.9	5.266	.4	6.933	.0
.333	.0	2.000	34.2	3.666	.8	5.333	.4	6.999	.0
.400	.0	2.066	32.9	3.733	.7	5.399	.4	7.066	.0
.467	.0	2.133	31.3	3.800	.7	5.466	.4	7.133	.0
.533	.0	2.200	29.2	3.866	.6	5.533	.4	7.199	.0
.600	.0	2.266	26.7	3.933	.6	5.599	.4	7.266	.0
.667	.0	2.333	23.8	4.000	.5	5.666	.4	7.333	.0
.733	.0	2.400	20.9	4.066	.5	5.733	.4	7.399	.0
.800	.0	2.466	17.5	4.133	.5	5.799	.4	7.466	.0
.867	.0	2.533	14.2	4.200	.5	5.866	.4	7.533	.0
.933	.0	2.600	10.4	4.266	.4	5.933	.4	7.599	.0
1.000	.0	2.666	7.6	4.333	.4	5.999	.5	7.666	.0
1.067	.0	2.733	5.7	4.400	.4	6.066	.5	7.733	.0
1.133	.0	2.800	4.6	4.466	.4	6.133	.4	7.799	.0
1.200	.1	2.866	3.9	4.533	.4	6.199	.4	7.866	.0
1.267	.9	2.933	3.4	4.600	.4	6.266	.3	7.933	.0
1.333	3.6	3.000	2.9	4.666	.4	6.333	.3	7.999	.0
1.400	12.8	3.066	2.5	4.733	.4	6.399	.2	8.066	.0
1.467	23.5	3.133	2.1	4.800	.4	6.466	.2		
1.533	31.1	3.200	1.9	4.866	.4	6.533	.2		
1.600	34.9	3.266	1.6	4.933	.4	6.599	.1		

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FEET
 PEAK DISCHARGE RATE = 36.93 CFS AT 1.733 HOURS BASIN AREA = .0412 SQ. MI.

* BASIN 103.1 - 90TH STREET FLOW @ AP12

COMPUTE NM HYD ID=21 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.8478 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002241 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
 UNIT PEAK = 1.4324 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
 AREA = .000492 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=21 CODE=20

PARTIAL HYDROGRAPH 103.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.7	4.000	.0	5.999	.0		
.667	.0	2.666	.1	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2610 ACRE-FEET
PEAK DISCHARGE RATE = 7.19 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* BASIN 105.1 - BLUEWATER STREET FLOW @ AP15

COMPUTE NM HYD ID=22 HYD NO=105.1 DA=0.002976 SQ MI
PER A=0 PER B=0 PER C=18 PER D=82
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.6345 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002440 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
UNIT PEAK = 1.5598 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
AREA = .000536 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=22 CODE=20

PARTIAL HYDROGRAPH 105.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2842 ACRE-FEET
PEAK DISCHARGE RATE = 7.83 CFS AT 1.500 HOURS BASIN AREA = .0030 SQ. MI.

* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS

* DEVELOPED OFF-SITE BASIN 200 - DIRECTED BY TRAINER DIKE

* TO UNSER DIVERSION

COMPUTE NM HYD ID=23 HYD NO=200.0 DA=0.1078 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.2231 HR MASS RAIN=-1

K = .264881HR TP = .223100HR K/TP RATIO = 1.187275 SHAPE CONSTANT, N = 2.990392
UNIT PEAK = 135.79 CFS UNIT VOLUME = .9999 B = 281.04 P60 = 1.8700
AREA = .107800 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=23 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	17.6	4.000	.7	5.999	.1	7.999	.0
.667	.0	2.666	3.6	4.666	.3	6.666	.0		
1.333	.0	3.333	1.5	5.333	.1	7.333	.0		

RUNOFF VOLUME = .43925 INCHES = 2.5254 ACRE-FEET
 PEAK DISCHARGE RATE = 57.73 CFS AT 1.600 HOURS BASIN AREA = .1078 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300 - RETAINED BY INTERIM POND

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=24 HYD NO=300.0 DA=0.5422 SQ MI
 PER A=95 PER B=0 PER C=2 PER D=3
 TP=0.4118 HR MASS RAIN=-1

K = .237533HR TP = .411800HR K/TP RATIO = .576817 SHAPE CONSTANT, N = 6.612116
 UNIT PEAK = 19.852 CFS UNIT VOLUME = .9994 B = 502.58 P60 = 1.8700
 AREA = .016266 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .411391HR TP = .411800HR K/TP RATIO = .999007 SHAPE CONSTANT, N = 3.533849
 UNIT PEAK = 412.26 CFS UNIT VOLUME = 1.000 B = 322.79 P60 = 1.8700
 AREA = .525934 SQ MI IA = .64381 INCHES INF = 1.65268 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=24 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.666	33.4	5.333	2.7	7.999	.3	10.666	.0
.667	.0	3.333	13.6	5.999	1.7	8.666	.2	11.332	.0
1.333	.5	4.000	7.8	6.666	.9	9.332	.1	11.999	.0
2.000	164.7	4.666	4.5	7.333	.5	9.999	.1	12.665	.0

RUNOFF VOLUME = .49289 INCHES = 14.2530 ACRE-FEET
 PEAK DISCHARGE RATE = 206.55 CFS AT 1.800 HOURS BASIN AREA = .5422 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300.1 - RETAINED BY INTERIM PON

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=25 HYD NO=300.1 DA=0.0131 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0
 TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
 UNIT PEAK = 26.882 CFS UNIT VOLUME = .9991 B = 273.54 P60 = 1.8700
 AREA = .013100 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=25 CODE=20

HYDROGRAPH FROM AREA 300.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.3	4.000	.0		
.667	.0	2.000	1.0	3.333	.1	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .3069 ACRE-FOOT
PEAK DISCHARGE RATE = 10.88 CFS AT 1.533 HOURS BASIN AREA = .0131 SQ. MI.

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 15:06:29

TIME TO PEAK - INTERIM COND.

① BASIN 200.0

$L = 4050$

$H = 1.14$

$K = 2$

$LCA = 2600$

$S = 2.8\%$

$K_N = 0.033$

$$t_c = \left((12000 - 4050) / 72000 (2) \sqrt{0.028} \right) + \left((4050 - 4000) (0.033) \left(\frac{2600}{4050} \right)^{0.33} / 552.2 (0.028)^{0.165} \right)$$

$t_c = 0.3346 \text{ hr}$

$t_p = \frac{2}{3} t_c = 0.2231 \text{ hr}$

② BASIN 300.0

$L = 9350$

$H = 1.86$

$K = 2$

$LCA = 4750$

$S = 2.0\%$

$K_N = 0.033$

$$t_c = \left((12000 - 9350) / 72000 (2) \sqrt{0.02} \right) + \left((9350 - 4000) (0.033) \left(\frac{4750}{9350} \right)^{0.33} / 552.2 (0.02)^{0.165} \right)$$

$t_c = 0.6177 \text{ hr}$

$t_p = \frac{2}{3} t_c = 0.4118 \text{ hr}$

PHASE TWO

```

*****
*                               AVALON SUBDIVISION
*                               PROJECT HYDROLOGY
*****
START          TIME=0.0  PUNCH CODE=0
RAINFALL       TYPB=1  RAIN QUARTER=0.0  RAIN ONE=1.87
               RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS
*****
* THIS RUN IS FOR PHASE TWO DEVELOPMENT.  IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED.  INTERIM RETENTION POND WILL BE PROVIDED
* BY WEST RIDGE MHP.  AN INTERIM TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION
* A PUBLIC STORM DRAIN WILL BE EXTENDED IN 90TH STREET TO BLUEWATER
*****
* EXISTING ON-SITE BASINS
*****
* UNDEVELOPED PHASE ONE 25.60 ACRES
COMPUTE NM HYD  ID=1  HYD NO=101.UNDEV  DA=0.0400 SQ MI
                PER A=100  PER B=0  PER C=0  PER D=0
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD       ID=1  CODE=20
* UNDEVELOPED PHASE TWO 24.11 ACRES
COMPUTE NM HYD  ID=2  HYD NO=102.UNDEV  DA=0.0377 SQ MI
                PER A=100  PER B=0  PER C=0  PER D=0
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD       ID=2  CODE=20
*****
* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS
*****
* BASIN 101.1A @ AP1
COMPUTE NM HYD  ID=3  HYD NO=101.1A  DA=0.008491 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD       ID=3  CODE=20
* BASIN 101.1B @ AP2
COMPUTE NM HYD  ID=4  HYD NO=101.1B  DA=0.002739 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD       ID=4  CODE=20
* TOTAL FLOW @ AP2 NORTH
ADD HYD         ID=5  HYD NO=101.1B1  ID I=3  ID II=4
PRINT HYD       ID=5  CODE=20
* BASIN 101.1C @ AP3
COMPUTE NM HYD  ID=6  HYD NO=101.1C  DA=0.002373 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD       ID=6  CODE=20
* BASIN 101.2 @ AP2
COMPUTE NM HYD  ID=7  HYD NO=101.2  DA=0.006381 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD       ID=7  CODE=20
* TOTAL FLOW @ AP2
ADD HYD         ID=8  HYD NO=101.1  ID I=5  ID II=7
PRINT HYD       ID=8  CODE=20
* TOTAL FLOW @ AP3 NORTH
ADD HYD         ID=9  HYD NO=101.31  ID I=6  ID II=8
PRINT HYD       ID=9  CODE=20
* BASIN 101.3 @ AP3

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COMPUTE NM HYD      ID=10  HYD NO=101.3  DA=0.005608 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1
PRINT HYD           ID=10  CODE=20
* BASIN 101.4A @ AP4
COMPUTE NM HYD      ID=11  HYD NO=101.4A  DA=0.003421 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1
PRINT HYD           ID=11  CODE=20
* BASIN 101.4B @ AP5
COMPUTE NM HYD      ID=12  HYD NO=101.4B  DA=0.004094 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1
PRINT HYD           ID=12  CODE=20
* TOTAL FLOW @ AP5
ADD HYD             ID=13  HYD NO=101.4B1  ID I=11  ID II=12
PRINT HYD           ID=13  CODE=20
* BASIN 101.4C @ AP3
COMPUTE NM HYD      ID=14  HYD NO=101.4C  DA=0.003840 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1
PRINT HYD           ID=14  CODE=20
* TOTAL FLOW @ AP3 SOUTH
ADD HYD             ID=15  HYD NO=101.4  ID I=13  ID II=14
PRINT HYD           ID=15  CODE=20
ADD HYD             ID=16  HYD NO=101.41  ID I=9  ID II=10
* TOTAL FLOW @ AP3
ADD HYD             ID=17  HYD NO=101.42  ID I=15  ID II=16
PRINT HYD           ID=17  CODE=20
* BASIN 101.5 @ AP6
COMPUTE NM HYD      ID=18  HYD NO=101.5  DA=0.004223 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1
PRINT HYD           ID=18  CODE=20
* TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
ADD HYD             ID=19  HYD NO=101  ID I=17  ID II=18
PRINT HYD           ID=19  CODE=20
*****
*** ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION
*****
* ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
ROUTE RESERVOIR     ID=20  HYD NO=101.6  INFLOW ID=19  CODE=10
                    OUT (CFS)  STORAGE (AC-FT)  ELEV (FT)
                    0          0              39.0
                    5.0        0.1268         40.0
                    15.1       0.2693         41.0
                    21.4       0.4288         42.0
                    26.2       0.6064         43.0
                    30.3       0.8035         44.0
                    33.8       1.0212         45.0
                    37.0       1.2608         46.0
PRINT HYD           ID=20  CODE=2
*****
* THE FOLLOWING ARE PHASE TWO DEVELOPED ON-SITE BASINS
*****
* BASIN 102.1A @ AP7
COMPUTE NM HYD      ID=21  HYD NO=102.1A  DA=0.006149 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1
PRINT HYD           ID=21  CODE=20

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* BASIN 102.1B @ AP8
COMPUTE NM HYD      ID=22 HYD NO=102.1B  DA=0.002395 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=22  CODE=20

* TOTAL FLOW @ AP8 NORTH
ADD HYD             ID=23  HYD NO=102.1B1  ID I=21  ID II=22
PRINT HYD           ID=23  CODE=20

* BASIN 102.1C @ AP9
COMPUTE NM HYD      ID=24  HYD NO=102.1C  DA=0.002057 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=24  CODE=20

* BASIN 102.2 @ AP8
COMPUTE NM HYD      ID=25  HYD NO=102.2  DA=0.005879 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=25  CODE=20

* TOTAL FLOW @ AP8
ADD HYD             ID=26  HYD NO=102.1B1  ID I=23  ID II=25
PRINT HYD           ID=26  CODE=20

* TOTAL FLOW @ AP9 NORTH
ADD HYD             ID=27  HYD NO=102.11  ID I=25  ID II=26
PRINT HYD           ID=27  CODE=20

* BASIN 102.3 @ AP9
COMPUTE NM HYD      ID=28  HYD NO=102.3  DA=0.005741 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=28  CODE=20

* TOTAL FLOW @ AP9
ADD HYD             ID=29  HYD NO=102.12  ID I=27  ID II=28
PRINT HYD           ID=29  CODE=20

* BASIN 102.4A @ AP10
COMPUTE NM HYD      ID=30  HYD NO=102.4A  DA=0.004028 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=30  CODE=20

* BASIN 102.4B @ AP11
COMPUTE NM HYD      ID=31  HYD NO=102.4B  DA=0.004987 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=31  CODE=20

* TOTAL FLOW @ AP11
ADD HYD             ID=32  HYD NO=102.41  ID I=30  ID II=31
PRINT HYD           ID=32  CODE=20

* BASIN 102.5 @ AP12
COMPUTE NM HYD      ID=33  HYD NO=102.5  DA=0.004687 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=33  CODE=20
ADD HYD             ID=34  HYD NO=102.42  ID I=32  ID II=33
PRINT HYD           ID=34  CODE=20

* BASIN 103.1 @ AP12
COMPUTE NM HYD      ID=35  HYD NO=103.1  DA=0.002733 SQ MI
                    PER A=0  PER B=0  PER C=18  PER D=82
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=35  CODE=20
ADD HYD             ID=36  HYD NO=102.43  ID I=29  ID II=35
PRINT HYD           ID=36  CODE=20
*****

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* TOTAL FLOW AT PHASE TWO DETENTION POND @ AP12
*****
ADD HYD          ID=37  HYD NO=102  ID I=34  ID II=36
PRINT HYD        ID=37  CODE=20
*****
* ROUTE FUTURE PHASE TWO THROUGH DETENTION POND TO AMOLE
*****
* ALLOWABLE DISCHARGE IS 49.4 CFS PER DMP FOR WEST RIDGE MHP
ROUTE RESERVOIR  ID=38  HYD NO=108  INFLOW ID=37  CODE=10
                OUT (CFS)  STORAGE (AC-FT)  ELEV (FT)
                0          0              63.0
                5.0        0.1417         64.0
                20.5       0.3070         65.0
                31.3       0.4983         66.0
                39.2       0.7181         67.0
                45.8       0.9689         68.0
                51.5       1.2532         69.0
PRINT HYD        ID=38  CODE=2
*****
* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS
*****
* UNDEVELOPED OFF-SITE BASIN 200 - INTERIM TRAINER DIKE
* WILL DIRECT FLOW TO UNSER DIVERSION
COMPUTE NM HYD   ID=39  HYD NO=200.0  DA=0.1078 SQ MI
                PER A=100 PER B=0  PER C=0  PER D=0
                TP=0.2231 HR  MASS RAIN=-1
PRINT HYD        ID=39  CODE=20
* UNDEVELOPED OFF-SITE BASIN 300 - PONDED BY INTERIM RETENTION
* POND CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD   ID=40  HYD NO=300.0  DA=0.5422 SQ MI
                PER A=95  PER B=0  PER C=2  PER D=3
                TP=0.4118 HR  MASS RAIN=-1
PRINT HYD        ID=40  CODE=20
* UNDEVELOPED OFF-SITE BASIN 300.1 - PONDED BY INTERIM RETENTION
* POND CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD   ID=41  HYD NO=300.1  DA=0.0131 SQ MI
                PER A=100 PER B=0  PER C=0  PER D=0
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD        ID=41  CODE=20
* OFF-SITE BASIN 104.1 @ AP14 - BLUEWATER STREET FLOW
COMPUTE NM HYD   ID=42  HYD NO=104.1  DA=0.002781 SQ MI
                PER A=0  PER B=0  PER C=18  PER D=82
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD        ID=42  CODE=20
* OFF-SITE BASIN 105.1 @ AP15 - BLUEWATER STREET FLOW
COMPUTE NM HYD   ID=43  HYD NO=105.1  DA=0.002976 SQ MI
                PER A=0  PER B=0  PER C=18  PER D=82
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD        ID=43  CODE=20
FINISH

```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = a:7076-ph2.dat

RUN DATE (MON/DAY/YR) =03/16/1998
USER NO.= BRASHERE.I01

		FROM	TO		PEAK	RUNOFF		TIME TO	CFS	PAGE =	1	
COMMAND	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	AREA (SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE	NOTATION		
START											TIME=	.00
RAINFALL TYPE= 1											RAIN6=	2.200
COMPUTE NM HYD	101.UNDEV	-	1	.04000	33.21	.937	.43925	1.533	1.297	PER IMP=	.00	
COMPUTE NM HYD	102.UNDEV	-	2	.03770	31.30	.883	.43925	1.533	1.297	PER IMP=	.00	
COMPUTE NM HYD	101.1A	-	3	.00849	19.35	.671	1.48256	1.500	3.561	PER IMP=	58.00	
COMPUTE NM HYD	101.1B	-	4	.00274	6.25	.217	1.48256	1.500	3.567	PER IMP=	58.00	
ADD HYD	101.1B1	3& 4	5	.01123	25.60	.888	1.48252	1.500	3.562			
COMPUTE NM HYD	101.1C	-	6	.00237	5.42	.188	1.48256	1.500	3.569	PER IMP=	58.00	
COMPUTE NM HYD	101.20	-	7	.00638	14.55	.505	1.48256	1.500	3.562	PER IMP=	58.00	
ADD HYD	101.10	5& 7	8	.01761	40.15	1.392	1.48252	1.500	3.562			
ADD HYD	101.31	6& 8	9	.01998	45.57	1.580	1.48251	1.500	3.563			
COMPUTE NM HYD	101.30	-	10	.00561	12.79	.443	1.48256	1.500	3.562	PER IMP=	58.00	
COMPUTE NM HYD	101.4A	-	11	.00342	7.81	.270	1.48256	1.500	3.565	PER IMP=	58.00	
COMPUTE NM HYD	101.4B	-	12	.00409	9.34	.324	1.48257	1.500	3.564	PER IMP=	58.00	
ADD HYD	101.4B1	11&12	13	.00752	17.14	.594	1.48249	1.500	3.565			
COMPUTE NM HYD	101.4C	-	14	.00384	8.76	.304	1.48256	1.500	3.565	PER IMP=	58.00	
ADD HYD	101.40	13&14	15	.01136	25.90	.898	1.48249	1.500	3.565			
ADD HYD	101.41	9&10	16	.02559	58.36	2.023	1.48251	1.500	3.563			
ADD HYD	101.42	15&16	17	.03695	84.26	2.921	1.48250	1.500	3.563			
COMPUTE NM HYD	101.50	-	18	.00422	9.63	.334	1.48256	1.500	3.564	PER IMP=	58.00	
ADD HYD	101.00	17&18	19	.04117	93.89	3.255	1.48250	1.500	3.563			
ROUTE RESERVOIR	101.60	19	20	.04117	36.93	3.255	1.48250	1.733	1.402	AC-FT=	1.256	
COMPUTE NM HYD	102.1A	-	21	.00615	14.02	.486	1.48256	1.500	3.562	PER IMP=	58.00	
COMPUTE NM HYD	102.1B	-	22	.00240	5.47	.189	1.48257	1.500	3.569	PER IMP=	58.00	
ADD HYD	102.1B1	21&22	23	.00854	19.49	.676	1.48250	1.500	3.564			
COMPUTE NM HYD	102.1C	-	24	.00206	4.70	.163	1.48256	1.500	3.570	PER IMP=	58.00	
COMPUTE NM HYD	102.20	-	25	.00588	13.40	.465	1.48257	1.500	3.562	PER IMP=	58.00	
ADD HYD	102.1B1	23&25	26	.01442	32.89	1.140	1.48251	1.500	3.563			
ADD HYD	102.11	25&26	27	.02030	46.29	1.605	1.48251	1.500	3.563			
COMPUTE NM HYD	102.30	-	28	.00574	13.09	.454	1.48256	1.500	3.562	PER IMP=	58.00	
ADD HYD	102.12	27&28	29	.02604	59.38	2.059	1.48251	1.500	3.563			
COMPUTE NM HYD	102.4A	-	30	.00403	9.19	.318	1.48256	1.500	3.564	PER IMP=	58.00	
COMPUTE NM HYD	102.4B	-	31	.00499	11.37	.394	1.48257	1.500	3.563	PER IMP=	58.00	
ADD HYD	102.41	30&31	32	.00902	20.56	.713	1.48250	1.500	3.564			
COMPUTE NM HYD	102.50	-	33	.00469	10.69	.371	1.48256	1.500	3.564	PER IMP=	58.00	
ADD HYD	102.42	32&33	34	.01370	31.25	1.083	1.48251	1.500	3.564			
COMPUTE NM HYD	103.10	-	35	.00273	7.19	.261	1.79069	1.500	4.110	PER IMP=	82.00	
ADD HYD	102.43	29&35	36	.02878	66.57	2.320	1.51177	1.500	3.615			
ADD HYD	102.00	34&36	37	.04248	97.82	3.404	1.50233	1.500	3.598			
ROUTE RESERVOIR	108.00	37	38	.04248	48.27	3.404	1.50233	1.667	1.775	AC-FT=	1.092	
COMPUTE NM HYD	200.00	-	39	.10780	57.73	2.525	.43925	1.600	.837	PER IMP=	.00	
COMPUTE NM HYD	300.00	-	40	.54220	206.55	14.253	.49289	1.800	.595	PER IMP=	3.00	
COMPUTE NM HYD	300.10	-	41	.01310	10.88	.307	.43925	1.533	1.298	PER IMP=	.00	
COMPUTE NM HYD	104.10	-	42	.00278	7.31	.266	1.79069	1.500	4.110	PER IMP=	82.00	
COMPUTE NM HYD	105.10	-	43	.00298	7.83	.284	1.79069	1.500	4.109	PER IMP=	82.00	
FINISH												

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 03/16/1998
START TIME (HR:MIN:SEC) = 15:08:59 USER NO.= BRASHERE.I01
INPUT FILE = a:7076-ph2.dat

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

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

* THIS RUN IS FOR PHASE TWO DEVELOPMENT. IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED. INTERIM RETENTION POND WILL BE PROVIDED
* BY WEST RIDGE MHP. AN INTERIM TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION
* A PUBLIC STORM DRAIN WILL BE EXTENDED IN 90TH STREET TO BLUEWATER

* EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES

COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 82.084 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700

AREA = .040000 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA 101.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.8	4.000	.1		
.667	.0	2.000	3.1	3.333	.2	4.666	.0		

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

* UNDEVELOPED PHASE TWO 24.11 ACRES

COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 77.364 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700
AREA = .037700 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 102.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.7	4.000	.0		
.667	.0	2.000	2.9	3.333	.2	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .8832 ACRE-FEET
PEAK DISCHARGE RATE = 31.30 CFS AT 1.533 HOURS BASIN AREA = .0377 SQ. MI.

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ API

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 19.443 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .004925 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 9.4886 CFS UNIT VOLUME = .9991 B = 354.67 P60 = 1.8700
AREA = .003566 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=3 CODE=20

HYDROGRAPH FROM AREA 101.1A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.5	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .6714 ACRE-FEET
 PEAK DISCHARGE RATE = 19.35 CFS AT 1.500 HOURS BASIN AREA = .0085 SQ. MI.

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 6.2720 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 1.8700
 AREA = .001589 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 3.0608 CFS UNIT VOLUME = .9962 B = 354.67 P60 = 1.8700
 AREA = .001150 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=4 CODE=20

HYDROGRAPH FROM AREA 101.1B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.4	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.3	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2166 ACRE-FEET
 PEAK DISCHARGE RATE = 6.25 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4
 PRINT HYD ID=5 CODE=20

HYDROGRAPH FROM AREA 101.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.2	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	5.9	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48252 INCHES = .8879 ACRE-FEET
 PEAK DISCHARGE RATE = 25.60 CFS AT 1.500 HOURS BASIN AREA = .0112 SQ. MI.

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.4339 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
AREA = .001376 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.6518 CFS UNIT VOLUME = .9953 B = 354.67 P60 = 1.8700
AREA = .000997 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=20

HYDROGRAPH FROM AREA 101.1C

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.2	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.1	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .1876 ACRE-Feet
PEAK DISCHARGE RATE = 5.42 CFS AT 1.500 HOURS BASIN AREA = .0024 SQ. MI.

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.612 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003701 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 7.1307 CFS UNIT VOLUME = .9986 B = 354.67 P60 = 1.8700
AREA = .002680 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=7 CODE=20

PARTIAL HYDROGRAPH 101.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.3	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .5045 ACRE-Feet
PEAK DISCHARGE RATE = 14.55 CFS AT 1.500 HOURS BASIN AREA = .0064 SQ. MI.

* TOTAL FLOW @ AP2

ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7
PRINT HYD ID=8 CODE=20

PARTIAL HYDROGRAPH 101.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	8.2	4.000	.2	5.999	.2		
.667	.0	2.666	.8	4.666	.2	6.666	.0		
1.333	9.2	3.333	.2	5.333	.2				

RUNOFF VOLUME = 1.48252 INCHES = 1.3925 ACRE-FEET
PEAK DISCHARGE RATE = 40.15 CFS AT 1.500 HOURS BASIN AREA = .0176 SQ. MI.

* TOTAL FLOW @ AP3 NORTH

ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8
PRINT HYD ID=9 CODE=20

PARTIAL HYDROGRAPH 101.31

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	9.3	4.000	.2	5.999	.2		
.667	.0	2.666	.9	4.666	.2	6.666	.0		
1.333	10.5	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48251 INCHES = 1.5801 ACRE-FEET
PEAK DISCHARGE RATE = 45.57 CFS AT 1.500 HOURS BASIN AREA = .0200 SQ. MI.

* BASIN 101.3 @ AP3

COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 12.842 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003253 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 6.2669 CFS UNIT VOLUME = .9982 B = 354.67 P60 = 1.8700
AREA = .002355 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=10 CODE=20

PARTIAL HYDROGRAPH 101.30

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.6	4.000	.1	5.999	.1		

.667	.0	2.666	.2	4.666	.1	6.666	.0
1.333	2.9	3.333	.1	5.333	.1		

RUNOFF VOLUME = 1.48256 INCHES = .4434 ACRE-FEET
PEAK DISCHARGE RATE = 12.79 CFS AT 1.500 HOURS BASIN AREA = .0056 SQ. MI.

* BASIN 101.4A @ AP4

COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 7.8336 CFS UNIT VOLUME = .9978 B = 526.28 P60 = 1.8700
AREA = .001984 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 3.8229 CFS UNIT VOLUME = .9969 B = 354.67 P60 = 1.8700
AREA = .001437 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=11 CODE=20

HYDROGRAPH FROM AREA 101.4A

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.8	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.6	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2705 ACRE-FEET
PEAK DISCHARGE RATE = 7.81 CFS AT 1.500 HOURS BASIN AREA = .0034 SQ. MI.

* BASIN 101.4B @ AP5

COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.3747 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002375 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 4.5750 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
AREA = .001719 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=12 CODE=20

HYDROGRAPH FROM AREA 101.4B

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS

.000	.0	2.000	1.9	4.000	.0	5.999	.0
.667	.0	2.666	.2	4.666	.0	6.666	.0
1.333	2.1	3.333	.1	5.333	.0		

RUNOFF VOLUME = 1.48257 INCHES = .3237 ACRE-FEET
 PEAK DISCHARGE RATE = 9.34 CFS AT 1.500 HOURS BASIN AREA = .0041 SQ. MI.

* TOTAL FLOW @ AP5

ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20

HYDROGRAPH FROM AREA 101.4B1

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	3.5	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.9	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .5942 ACRE-FEET
 PEAK DISCHARGE RATE = 17.14 CFS AT 1.500 HOURS BASIN AREA = .0075 SQ. MI.

* BASIN 101.4C @ AP3

COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.7931 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002227 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.2911 CFS UNIT VOLUME = .9972 B = 354.67 P60 = 1.8700
 AREA = .001613 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=14 CODE=20

HYDROGRAPH FROM AREA 101.4C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.0		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3036 ACRE-FEET
 PEAK DISCHARGE RATE = 8.76 CFS AT 1.500 HOURS BASIN AREA = .0038 SQ. MI.

* TOTAL FLOW @ AP3 SOUTH

ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20

PARTIAL HYDROGRAPH 101.40

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	5.3	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	6.0	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .8978 ACRE-FEET
 PEAK DISCHARGE RATE = 25.90 CFS AT 1.500 HOURS BASIN AREA = .0114 SQ. MI.

ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10
 * TOTAL FLOW @ AP3
 ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16
 PRINT HYD ID=17 CODE=20

PARTIAL HYDROGRAPH 101.42

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	17.2	4.000	.4	5.999	.4		
.667	.0	2.666	1.6	4.666	.3	6.666	.0		
1.333	19.4	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 2.9213 ACRE-FEET
 PEAK DISCHARGE RATE = 84.26 CFS AT 1.500 HOURS BASIN AREA = .0369 SQ. MI.

* BASIN 101.5 @ AP6
 COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.6701 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002449 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.7191 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
 AREA = .001774 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=18 CODE=20

PARTIAL HYDROGRAPH 101.50

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	2.0	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3339 ACRE-FEET
 PEAK DISCHARGE RATE = 9.63 CFS AT 1.500 HOURS BASIN AREA = .0042 SQ. MI.

* TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

PARTIAL HYDROGRAPH 101.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	19.2	4.000	.4	5.999	.5		
.667	.0	2.666	1.8	4.666	.4	6.666	.0		
1.333	21.6	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FEET
 PEAK DISCHARGE RATE = 93.89 CFS AT 1.500 HOURS BASIN AREA = .0412 SQ. MI.

 *** ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

* ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
 ROUTE RESERVOIR ID=20 HYD NO=101.6 INFLOW ID=19 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	39.0
5.0	0.1268	40.0
15.1	0.2693	41.0
21.4	0.4288	42.0
26.2	0.6064	43.0
30.3	0.8035	44.0
33.8	1.0212	45.0
37.0	1.2608	46.0

* * * * *

TIME	INFLOW	ELEV	VOLUME	OUTFLOW
(HRS)	(CFS)	(FEET)	(AC-FT)	(CFS)
.00	.00	39.00	.000	.00
.33	.00	39.00	.000	.00
.67	.00	39.00	.000	.00
1.00	.00	39.00	.000	.00
1.33	21.59	39.71	.090	3.56
1.67	48.51	45.84	1.223	36.49
2.00	19.22	45.14	1.054	34.24
2.33	4.40	42.50	.518	23.82
2.67	1.77	40.26	.164	7.62
3.00	.88	39.58	.073	2.89
3.33	.54	39.28	.036	1.41
3.67	.44	39.16	.020	.78
4.00	.39	39.11	.014	.53
4.33	.38	39.09	.011	.43
4.67	.38	39.08	.010	.40
5.00	.39	39.08	.010	.39
5.33	.42	39.08	.010	.40
5.67	.45	39.09	.011	.43
6.00	.49	39.09	.012	.46
6.33	.05	39.06	.007	.29

6.67	.01	39.02	.003	.11
7.00	.00	39.01	.001	.04
7.33	.00	39.00	.000	.01
7.67	.00	39.00	.000	.00

PEAK DISCHARGE = 36.935 CFS - PEAK OCCURS AT HOUR 1.73
 MAXIMUM WATER SURFACE ELEVATION = 45.980
 MAXIMUM STORAGE = 1.2559 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=20 CODE=2

PARTIAL HYDROGRAPH 101.60

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.667	36.5	3.333	1.4	4.999	.4	6.666	.1
.067	.0	1.733	36.9	3.400	1.2	5.066	.4	6.733	.1
.133	.0	1.800	36.7	3.466	1.1	5.133	.4	6.799	.1
.200	.0	1.866	36.1	3.533	1.0	5.199	.4	6.866	.1
.267	.0	1.933	35.3	3.600	.9	5.266	.4	6.933	.0
.333	.0	2.000	34.2	3.666	.8	5.333	.4	6.999	.0
.400	.0	2.066	32.9	3.733	.7	5.399	.4	7.066	.0
.467	.0	2.133	31.3	3.800	.7	5.466	.4	7.133	.0
.533	.0	2.200	29.2	3.866	.6	5.533	.4	7.199	.0
.600	.0	2.266	26.7	3.933	.6	5.599	.4	7.266	.0
.667	.0	2.333	23.8	4.000	.5	5.666	.4	7.333	.0
.733	.0	2.400	20.9	4.066	.5	5.733	.4	7.399	.0
.800	.0	2.466	17.5	4.133	.5	5.799	.4	7.466	.0
.867	.0	2.533	14.2	4.200	.5	5.866	.4	7.533	.0
.933	.0	2.600	10.4	4.266	.4	5.933	.4	7.599	.0
1.000	.0	2.666	7.6	4.333	.4	5.999	.5	7.666	.0
1.067	.0	2.733	5.7	4.400	.4	6.066	.5	7.733	.0
1.133	.0	2.800	4.6	4.466	.4	6.133	.4	7.799	.0
1.200	.1	2.866	3.9	4.533	.4	6.199	.4	7.866	.0
1.267	.9	2.933	3.4	4.600	.4	6.266	.3	7.933	.0
1.333	3.6	3.000	2.9	4.666	.4	6.333	.3	7.999	.0
1.400	12.8	3.066	2.5	4.733	.4	6.399	.2	8.066	.0
1.467	23.5	3.133	2.1	4.800	.4	6.466	.2		
1.533	31.1	3.200	1.9	4.866	.4	6.533	.2		
1.600	34.9	3.266	1.6	4.933	.4	6.599	.1		

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FEET
 PEAK DISCHARGE RATE = 36.93 CFS AT 1.733 HOURS BASIN AREA = .0412 SQ. MI.

* THE FOLLOWING ARE PHASE TWO DEVELOPED ON-SITE BASINS

* BASIN 102.1A @ AP7

COMPUTE NM HYD ID=21 HYD NO=102.1A DA=0.006149 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 14.080 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
 AREA = .003566 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480

UNIT PEAK = 6.8714 CFS UNIT VOLUME = .9984 B = 354.67 P60 = 1.8700
 AREA = .002583 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=21 CODE=20

HYDROGRAPH FROM AREA 102.1A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.9	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.2	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .4862 ACRE-FEET
 PEAK DISCHARGE RATE = 14.02 CFS AT 1.500 HOURS BASIN AREA = .0061 SQ. MI.

* BASIN 102.1B @ AP8

COMPUTE NM HYD ID=22 HYD NO=102.1B DA=0.002395 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 5.4842 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
 AREA = .001389 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 2.6764 CFS UNIT VOLUME = .9953 B = 354.67 P60 = 1.8700
 AREA = .001006 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=22 CODE=20

HYDROGRAPH FROM AREA 102.1B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.3	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.1	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48257 INCHES = .1894 ACRE-FEET
 PEAK DISCHARGE RATE = 5.47 CFS AT 1.500 HOURS BASIN AREA = .0024 SQ. MI.

* TOTAL FLOW @ AP8 NORTH

ADD HYD ID=23 HYD NO=102.1B1 ID I=21 ID II=22
 PRINT HYD ID=23 CODE=20

HYDROGRAPH FROM AREA 102.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.5	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48250 INCHES = .6755 ACRE-FEET
PEAK DISCHARGE RATE = 19.49 CFS AT 1.500 HOURS BASIN AREA = .0085 SQ. MI.

* BASIN 102.1C @ AP9

COMPUTE NM HYD ID=24 HYD NO=102.1C DA=0.002057 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 4.7103 CFS UNIT VOLUME = .9969 B = 526.28 P60 = 1.8700
AREA = .001193 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.2987 CFS UNIT VOLUME = .9948 B = 354.67 P60 = 1.8700
AREA = .000864 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=24 CODE=20

HYDROGRAPH FROM AREA 102.1C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.1	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.0	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .1626 ACRE-FEET
PEAK DISCHARGE RATE = 4.70 CFS AT 1.500 HOURS BASIN AREA = .0021 SQ. MI.

* BASIN 102.2 @ AP8

COMPUTE NM HYD ID=25 HYD NO=102.2 DA=0.005879 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 13.462 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003410 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 6.5697 CFS UNIT VOLUME = .9984 B = 354.67 P60 = 1.8700
AREA = .002469 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=25 CODE=20

PARTIAL HYDROGRAPH 102.20

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	2.7	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		

1.333 3.1 3.333 .1 5.333 .1

RUNOFF VOLUME = 1.48257 INCHES = .4649 ACRE-FEET
PEAK DISCHARGE RATE = 13.40 CFS AT 1.500 HOURS BASIN AREA = .0059 SQ. MI.

* OTOAL FLOW @ AP8

ADD HYD ID=26 HYD NO=102.1B1 ID I=23 ID II=25
PRINT HYD ID=26 CODE=20

HYDROGRAPH FROM AREA 102.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	6.7	4.000	.1	5.999	.2		
.667	.0	2.666	.6	4.666	.1	6.666	.0		
1.333	7.6	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48251 INCHES = 1.1404 ACRE-FEET
PEAK DISCHARGE RATE = 32.89 CFS AT 1.500 HOURS BASIN AREA = .0144 SQ. MI.

* TOTAL FLOW @ AP9 NORTH

ADD HYD ID=27 HYD NO=102.11 ID I=25 ID II=26
PRINT HYD ID=27 CODE=20

PARTIAL HYDROGRAPH 102.11

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	9.5	4.000	.2	5.999	.2		
.667	.0	2.666	.9	4.666	.2	6.666	.0		
1.333	10.6	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48251 INCHES = 1.6052 ACRE-FEET
PEAK DISCHARGE RATE = 46.29 CFS AT 1.500 HOURS BASIN AREA = .0203 SQ. MI.

* BASIN 102.3 @ AP9

COMPUTE NM HYD ID=28 HYD NO=102.3 DA=0.005741 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 13.146 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003330 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 6.4155 CFS UNIT VOLUME = .9984 B = 354.67 P60 = 1.8700
AREA = .002411 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=28 CODE=20

PARTIAL HYDROGRAPH 102.30

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.7	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.0	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .4539 ACRE-FEET
 PEAK DISCHARGE RATE = 13.09 CFS AT 1.500 HOURS BASIN AREA = .0057 SQ. MI.

* TOTAL FLOW @ AP9

ADD HYD ID=29 HYD NO=102.12 ID I=27 ID II=28
 PRINT HYD ID=29 CODE=20

PARTIAL HYDROGRAPH 102.12

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	12.2	4.000	.2	5.999	.3		
.667	.0	2.666	1.1	4.666	.2	6.666	.0		
1.333	13.7	3.333	.3	5.333	.3				

RUNOFF VOLUME = 1.48251 INCHES = 2.0591 ACRE-FEET
 PEAK DISCHARGE RATE = 59.38 CFS AT 1.500 HOURS BASIN AREA = .0260 SQ. MI.

* BASIN 102.4A @ AP10

COMPUTE NM HYD ID=30 HYD NO=102.4A DA=0.004028 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.2236 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002336 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.5012 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
 AREA = .001692 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=30 CODE=20

HYDROGRAPH FROM AREA 102.4A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.9	4.000	.0	5.999	.0		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.1	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3185 ACRE-FEET
 PEAK DISCHARGE RATE = 9.19 CFS AT 1.500 HOURS BASIN AREA = .0040 SQ. MI.

* BASIN 102.4B @ AP11

COMPUTE NM HYD ID=31 HYD NO=102.4B DA=0.004987 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 11.420 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 1.8700
 AREA = .002892 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 5.5729 CFS UNIT VOLUME = .9980 B = 354.67 P60 = 1.8700
 AREA = .002095 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=31 CODE=20

HYDROGRAPH FROM AREA 102.4B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.3	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.6	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48257 INCHES = .3943 ACRE-FEET
 PEAK DISCHARGE RATE = 11.37 CFS AT 1.500 HOURS BASIN AREA = .0050 SQ. MI.

* TOTAL FLOW @ AP11

ADD HYD ID=32 HYD NO=102.41 ID I=30 ID II=31
 PRINT HYD ID=32 CODE=20

PARTIAL HYDROGRAPH 102.41

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.2	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.7	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48250 INCHES = .7128 ACRE-FEET
 PEAK DISCHARGE RATE = 20.56 CFS AT 1.500 HOURS BASIN AREA = .0090 SQ. MI.

* BASIN 102.5 @ AP12

COMPUTE NM HYD ID=33 HYD NO=102.5 DA=0.004687 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 10.733 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002718 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480

UNIT PEAK = 5.2377 CFS UNIT VOLUME = .9978 B = 354.67 P60 = 1.8700
 AREA = .001969 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=33 CODE=20

PARTIAL HYDROGRAPH 102.50

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.2	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.5	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3706 ACRE-FEET
 PEAK DISCHARGE RATE = 10.69 CFS AT 1.500 HOURS BASIN AREA = .0047 SQ. MI.

ADD HYD ID=34 HYD NO=102.42 ID I=32 ID II=33
 PRINT HYD ID=34 CODE=20

PARTIAL HYDROGRAPH 102.42

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	6.4	4.000	.1	5.999	.2		
.667	.0	2.666	.6	4.666	.1	6.666	.0		
1.333	7.2	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48251 INCHES = 1.0834 ACRE-FEET
 PEAK DISCHARGE RATE = 31.25 CFS AT 1.500 HOURS BASIN AREA = .0137 SQ. MI.

* BASIN 103.1 @ AP12

COMPUTE NM HYD ID=35 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.8478 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002241 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
 UNIT PEAK = 1.4324 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
 AREA = .000492 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=35 CODE=20

PARTIAL HYDROGRAPH 103.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.7	4.000	.0	5.999	.0		
.667	.0	2.666	.1	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2610 ACRE-FEET
PEAK DISCHARGE RATE = 7.19 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

ADD HYD ID=36 HYD NO=102.43 ID I=29 ID II=35
PRINT HYD ID=36 CODE=20

PARTIAL HYDROGRAPH 102.43

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	13.8	4.000	.3	5.999	.4		
.667	.0	2.666	1.3	4.666	.3	6.666	.0		
1.333	15.7	3.333	.4	5.333	.3				

RUNOFF VOLUME = 1.51177 INCHES = 2.3201 ACRE-FEET
PEAK DISCHARGE RATE = 66.57 CFS AT 1.500 HOURS BASIN AREA = .0288 SQ. MI.

* TOTAL FLOW AT PHASE TWO DETENTION POND @ AP12

ADD HYD ID=37 HYD NO=102 ID I=34 ID II=36
PRINT HYD ID=37 CODE=20

PARTIAL HYDROGRAPH 102.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	20.2	4.000	.4	5.999	.5		
.667	.0	2.666	1.9	4.666	.4	6.666	.0		
1.333	22.8	3.333	.6	5.333	.4				

RUNOFF VOLUME = 1.50233 INCHES = 3.4035 ACRE-FEET
PEAK DISCHARGE RATE = 97.82 CFS AT 1.500 HOURS BASIN AREA = .0425 SQ. MI.

* ROUTE FUTURE PHASE TWO THROUGH DETENTION POND TO AMOLE

* ALLOWABLE DISCHARGE IS 49.4 CFS PER DMP FOR WEST RIDGE MHP

ROUTE RESERVOIR ID=38 HYD NO=108 INFLOW ID=37 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	63.0
5.0	0.1417	64.0
20.5	0.3070	65.0
31.3	0.4983	66.0
39.2	0.7181	67.0
45.8	0.9689	68.0
51.5	1.2532	69.0

* * * * *

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

.00	.00	63.00	.000	.00
.33	.00	63.00	.000	.00
.67	.00	63.00	.000	.00
1.00	.00	63.00	.000	.00
1.33	22.84	63.68	.097	3.42
1.67	50.47	68.43	1.092	48.27
2.00	20.22	67.00	.718	39.18
2.33	4.60	64.62	.244	14.56
2.67	1.86	63.85	.120	4.24
3.00	.92	63.47	.067	2.37
3.33	.57	63.27	.038	1.33
3.67	.46	63.16	.023	.81
4.00	.41	63.11	.016	.57
4.33	.40	63.09	.013	.47
4.67	.40	63.09	.012	.43
5.00	.42	63.08	.012	.42
5.33	.45	63.09	.012	.43
5.67	.48	63.09	.013	.45
6.00	.52	63.10	.014	.48
6.33	.06	63.06	.009	.32
6.67	.01	63.03	.004	.14
7.00	.00	63.01	.001	.05
7.33	.00	63.00	.001	.02
7.67	.00	63.00	.000	.01
8.00	.00	63.00	.000	.00

PEAK DISCHARGE = 48.265 CFS - PEAK OCCURS AT HOUR 1.67
 MAXIMUM WATER SURFACE ELEVATION = 68.433
 MAXIMUM STORAGE = 1.0919 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=38 CODE=2

PARTIAL HYDROGRAPH 108.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.733	47.9	3.466	1.1	5.199	.4	6.933	.1
.067	.0	1.800	46.6	3.533	1.0	5.266	.4	6.999	.1
.133	.0	1.866	44.5	3.600	.9	5.333	.4	7.066	.0
.200	.0	1.933	41.9	3.666	.8	5.399	.4	7.133	.0
.267	.0	2.000	39.2	3.733	.7	5.466	.4	7.199	.0
.333	.0	2.066	35.5	3.800	.7	5.533	.4	7.266	.0
.400	.0	2.133	31.7	3.866	.6	5.599	.4	7.333	.0
.467	.0	2.200	26.0	3.933	.6	5.666	.4	7.399	.0
.533	.0	2.266	20.8	4.000	.6	5.733	.5	7.466	.0
.600	.0	2.333	14.6	4.066	.5	5.799	.5	7.533	.0
.667	.0	2.400	10.3	4.133	.5	5.866	.5	7.599	.0
.733	.0	2.466	7.5	4.200	.5	5.933	.5	7.666	.0
.800	.0	2.533	5.6	4.266	.5	5.999	.5	7.733	.0
.867	.0	2.600	4.7	4.333	.5	6.066	.5	7.799	.0
.933	.0	2.666	4.2	4.400	.5	6.133	.5	7.866	.0
1.000	.0	2.733	3.8	4.466	.4	6.199	.4	7.933	.0
1.067	.0	2.800	3.4	4.533	.4	6.266	.4	7.999	.0
1.133	.0	2.866	3.0	4.600	.4	6.333	.3	8.066	.0
1.200	.1	2.933	2.7	4.666	.4	6.399	.3	8.133	.0
1.267	.9	3.000	2.4	4.733	.4	6.466	.2	8.199	.0
1.333	3.4	3.066	2.1	4.800	.4	6.533	.2	8.266	.0
1.400	15.2	3.133	1.9	4.866	.4	6.599	.2	8.332	.0
1.467	31.6	3.200	1.7	4.933	.4	6.666	.1		
1.533	42.0	3.266	1.5	4.999	.4	6.733	.1		
1.600	47.0	3.333	1.3	5.066	.4	6.799	.1		

1.667 48.3 3.400 1.2 5.133 .4 6.866 .1

RUNOFF VOLUME = 1.50233 INCHES = 3.4035 ACRE-FEET
PEAK DISCHARGE RATE = 48.27 CFS AT 1.667 HOURS BASIN AREA = .0425 SQ. MI.

* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS

* UNDEVELOPED OFF-SITE BASIN 200 - INTERIM TRAINER DIKE

* WILL DIRECT FLOW TO UNSER DIVERSION

COMPUTE NM HYD ID=39 HYD NO=200.0 DA=0.1078 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.2231 HR MASS RAIN=-1

K = .264881HR TP = .223100HR K/TP RATIO = 1.187275 SHAPE CONSTANT, N = 2.990392
UNIT PEAK = 135.79 CFS UNIT VOLUME = .9999 B = 281.04 P60 = 1.8700
AREA = .107800 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=39 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	17.6	4.000	.7	5.999	.1	7.999	.0
.667	.0	2.666	3.6	4.666	.3	6.666	.0		
1.333	.0	3.333	1.5	5.333	.1	7.333	.0		

RUNOFF VOLUME = .43925 INCHES = 2.5254 ACRE-FEET
PEAK DISCHARGE RATE = 57.73 CFS AT 1.600 HOURS BASIN AREA = .1078 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300 - PONDED BY INTERIM RETENTION

* POND CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=40 HYD NO=300.0 DA=0.5422 SQ MI
PER A=95 PER B=0 PER C=2 PER D=3
TP=0.4118 HR MASS RAIN=-1

K = .237533HR TP = .411800HR K/TP RATIO = .576817 SHAPE CONSTANT, N = 6.612116
UNIT PEAK = 19.852 CFS UNIT VOLUME = .9994 B = 502.58 P60 = 1.8700
AREA = .016266 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .411391HR TP = .411800HR K/TP RATIO = .999007 SHAPE CONSTANT, N = 3.533849
UNIT PEAK = 412.26 CFS UNIT VOLUME = 1.000 B = 322.79 P60 = 1.8700
AREA = .525934 SQ MI IA = .64381 INCHES INF = 1.65268 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=40 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.666	33.4	5.333	2.7	7.999	.3	10.666	.0

.667	.0	3.333	13.6	5.999	1.7	8.666	.2	11.332	.0
1.333	.5	4.000	7.8	6.666	.9	9.332	.1	11.999	.0
2.000	164.7	4.666	4.5	7.333	.5	9.999	.1	12.665	.0

RUNOFF VOLUME = .49289 INCHES = 14.2530 ACRE-FEET
 PEAK DISCHARGE RATE = 206.55 CFS AT 1.800 HOURS BASIN AREA = .5422 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300.1 - PONDED BY INTERIM RETENTION

* POND CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=41 HYD NO=300.1 DA=0.0131 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0
 TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
 UNIT PEAK = 26.882 CFS UNIT VOLUME = .9991 B = 273.54 P60 = 1.8700
 AREA = .013100 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=41 CODE=20

HYDROGRAPH FROM AREA 300.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	.0	2.666	.3	4.000	.0		
.667	.0	2.000	1.0	3.333	.1	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .3069 ACRE-FEET
 PEAK DISCHARGE RATE = 10.88 CFS AT 1.533 HOURS BASIN AREA = .0131 SQ. MI.

* OFF-SITE BASIN 104.1 @ AP14 - BLUEWATER STREET FLOW

COMPUTE NM HYD ID=42 HYD NO=104.1 DA=0.002781 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.0032 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002280 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
 UNIT PEAK = 1.4576 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
 AREA = .000501 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=42 CODE=20

PARTIAL HYDROGRAPH 104.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.7	4.000	.0	5.999	.0		
.667	.0	2.666	.1	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2656 ACRE-FEET
PEAK DISCHARGE RATE = 7.31 CFS AT 1.500 HOURS BASIN AREA = .0028 SQ. MI.

* OFF-SITE BASIN 105.1 @ AP15 - BLUEWATER STREET FLOW
COMPUTE NM HYD ID=43 HYD NO=105.1 DA=0.002976 SQ MI
PER A=0 PER B=0 PER C=18 PER D=82
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.6345 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002440 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
UNIT PEAK = 1.5598 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
AREA = .000536 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=43 CODE=20

PARTIAL HYDROGRAPH 105.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2842 ACRE-FEET
PEAK DISCHARGE RATE = 7.83 CFS AT 1.500 HOURS BASIN AREA = .0030 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 15:09:06

FUTURE DEVELOPED OFFSITE

```

*****
*                               AVALON SUBDIVISION
*                               PROJECT HYDROLOGY
*****
START      TIME=0.0  PUNCH CODE=0
RAINFALL    TYPE=1  RAIN QUARTER=0.0  RAIN ONE=1.87
            RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS
*****
* THIS RUN PREDICTS FUTURE DEVELOPED HYDROLOGY TO DETERMINE STORM
* DRAIN REQUIREMENTS FOR BLUEWATER AND 90TH STREET.  ALL OFF-SITE
* BASINS ARE ASSUMED TO BE IP ZONING, EXCEPT FOR BASIN 300.1,
* WHICH IS MH
*****
* DEVELOPED OFF-SITE BASINS
*****
* DEVELOPED BASIN 300.0
COMPUTE NM HYD  ID=1  HYD NO=300.0  DA=0.0167 SQ MI
                PER A=75  PER B=0  PER C=10  PER D=15
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=1  CODE=20
* DEVELOPED BASIN 300.1
COMPUTE NM HYD  ID=2  HYD NO=300.1  DA=0.0131 SQ MI
                PER A=0  PER B=20  PER C=20  PER D=60
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=2  CODE=20
* DEVELOPED BASIN 300.2
COMPUTE NM HYD  ID=3  HYD NO=300.2  DA=0.0839 SQ MI
                PER A=0  PER B=7  PER C=8  PER D=85
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=3  CODE=20
* BASIN 200.0
COMPUTE NM HYD  ID=4  HYD NO=200.0  DA=0.0389 SQ MI
                PER A=0  PER B=7  PER C=8  PER D=85
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=4  CODE=20
* BASIN 400.0
COMPUTE NM HYD  ID=6  HYD NO=400.0  DA=0.0469 SQ MI
                PER A=0  PER B=7  PER C=8  PER D=85
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=6  CODE=20
FINISH

```

RUN DATE (MON/DAY/YR) =03/15/1998
USER NO.= BRASHERE.I01

START											TIME=	.00
RAINFALL TYPE= 1											RAIN6=	2.200
COMPUTE NM HYD	300.00	-	1	.01670	19.95	.631	.70854	1.500	1.867	PER IMP=	15.00	
COMPUTE NM HYD	300.10	-	2	.01310	30.17	1.052	1.50556	1.500	3.599	PER IMP=	60.00	
COMPUTE NM HYD	300.20	-	3	.08390	219.00	8.030	1.79461	1.500	4.078	PER IMP=	85.00	
COMPUTE NM HYD	200.00	-	4	.03890	101.68	3.723	1.79461	1.500	4.084	PER IMP=	85.00	
COMPUTE NM HYD	400.00	-	6	.04690	122.59	4.489	1.79461	1.500	4.084	PER IMP=	85.00	
FINISH												

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 03/15/1998
START TIME (HR:MIN:SEC) = 10:06:45 USER NO.= BRASHERE.I01
INPUT FILE = A:7076-OS.DAT

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT =	.033330 HOURS	END TIME =	5.999400 HOURS
.0000	.0016	.0033	.0050
.0122	.0141	.0160	.0180
.0266	.0289	.0312	.0337
.0443	.0472	.0502	.0534
.0675	.0715	.0758	.0809
.1334	.1771	.2398	.3254
.9780	1.1804	1.2649	1.3363
1.5600	1.6061	1.6493	1.6900
1.8314	1.8623	1.8915	1.9193
1.9630	1.9682	1.9732	1.9780
1.9953	1.9993	2.0031	2.0068
2.0207	2.0240	2.0272	2.0303
2.0420	2.0448	2.0475	2.0502
2.0605	2.0629	2.0653	2.0677
2.0768	2.0790	2.0812	2.0833
2.0916	2.0936	2.0956	2.0976
2.1051	2.1070	2.1088	2.1106
2.1176	2.1193	2.1210	2.1227
2.1292	2.1308	2.1324	2.1340
2.1401	2.1416	2.1431	2.1446
2.1504	2.1518	2.1532	2.1546
2.1600	2.1614	2.1627	2.1640
2.1692	2.1705	2.1718	2.1731
2.1780	2.1792	2.1804	2.1817
2.1864	2.1876	2.1887	2.1899
2.1944	2.1956	2.1967	2.1978
			2.1989
			2.2000

* THIS RUN PREDICTS FUTURE DEVELOPED HYDROLOGY TO DETERMINE STORM
* DRAIN REQUIREMENTS FOR BLUEWATER AND 90TH STREET. ALL OFF-SITE
* BASINS ARE ASSUMED TO BE IP ZONING, EXCEPT FOR BASIN 300.1,
* WHICH IS MH

* DEVELOPED OFF-SITE BASINS

* DEVELOPED BASIN 300.0
COMPUTE NM HYD ID=1 HYD NO=300.0 DA=0.0167 SQ MI
PER A=75 PER B=0 PER C=10 PER D=15
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.8899 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002505 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR

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

K = .156882HR TP = .133300HR K/TP RATIO = 1.176908 SHAPE CONSTANT, N = 3.014745
UNIT PEAK = 30.139 CFS UNIT VOLUME = .9993 B = 283.02 P60 = 1.8700
AREA = .014195 SQ MI IA = .61471 INCHES INF = 1.57118 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = .70854 INCHES = .6311 ACRE-FEET
PEAK DISCHARGE RATE = 19.95 CFS AT 1.500 HOURS BASIN AREA = .0167 SQ. MI.

* DEVELOPED BASIN 300.1

COMPUTE NM HYD ID=2 HYD NO=300.1 DA=0.0131 SQ MI
PER A=0 PER B=20 PER C=20 PER D=60
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 31.032 CFS UNIT VOLUME = .9990 B = 526.28 P60 = 1.8700
AREA = .007860 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 13.942 CFS UNIT VOLUME = .9995 B = 354.67 P60 = 1.8700
AREA = .005240 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 300.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	6.3	4.000	.1	5.999	.2		
.667	.0	2.666	.6	4.666	.1	6.666	.0		
1.333	7.1	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.50556 INCHES = 1.0519 ACRE-FEET
PEAK DISCHARGE RATE = 30.17 CFS AT 1.500 HOURS BASIN AREA = .0131 SQ. MI.

* DEVELOPED BASIN 300.2

COMPUTE NM HYD ID=3 HYD NO=300.2 DA=0.0839 SQ MI
PER A=0 PER B=7 PER C=8 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .073012HR TP = .133300HR K/TP RATIO = .547724 SHAPE CONSTANT, N = 7.061206

UNIT PEAK = 280.42 CFS UNIT VOLUME = .9993 B = 524.15 P60 = 1.8700
AREA = .071315 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .117053HR TP = .133300HR K/TP RATIO = .878118 SHAPE CONSTANT, N = 4.042817
UNIT PEAK = 33.801 CFS UNIT VOLUME = 1.000 B = 358.01 P60 = 1.8700
AREA = .012585 SQ MI IA = .42000 INCHES INF = 1.02600 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=3 CODE=20

HYDROGRAPH FROM AREA 300.20

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	51.5	4.000	1.2	5.999	1.5		
.667	.0	2.666	4.6	4.666	1.1	6.666	.0		
1.333	62.2	3.333	1.6	5.333	1.3	7.333	.0		

RUNOFF VOLUME = 1.79461 INCHES = 8.0302 ACRE-FEET
PEAK DISCHARGE RATE = 219.00 CFS AT 1.500 HOURS BASIN AREA = .0839 SQ. MI.

* BASIN 200.0

COMPUTE NM HYD ID=4 HYD NO=200.0 DA=0.0389 SQ MI
PER A=0 PER B=7 PER C=8 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 130.54 CFS UNIT VOLUME = .9993 B = 526.28 P60 = 1.8700
AREA = .033065 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .117592HR TP = .133300HR K/TP RATIO = .882159 SHAPE CONSTANT, N = 4.022934
UNIT PEAK = 15.614 CFS UNIT VOLUME = .9996 B = 356.70 P60 = 1.8700
AREA = .005835 SQ MI IA = .42000 INCHES INF = 1.02600 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=4 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	23.9	4.000	.5	5.999	.7		
.667	.0	2.666	2.1	4.666	.5	6.666	.0		
1.333	28.9	3.333	.8	5.333	.6				

RUNOFF VOLUME = 1.79461 INCHES = 3.7232 ACRE-FEET
PEAK DISCHARGE RATE = 101.68 CFS AT 1.500 HOURS BASIN AREA = .0389 SQ. MI.

* BASIN 400.0

COMPUTE NM HYD ID=6 HYD NO=400.0 DA=0.0469 SQ MI
PER A=0 PER B=7 PER C=8 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 157.39 CFS UNIT VOLUME = .9993 B = 526.28 P60 = 1.8700
 AREA = .039865 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .117592HR TP = .133300HR K/TP RATIO = .882159 SHAPE CONSTANT, N = 4.022934
 UNIT PEAK = 18.825 CFS UNIT VOLUME = .9998 B = 356.70 P60 = 1.8700
 AREA = .007035 SQ MI IA = .42000 INCHES INF = 1.02600 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=20

HYDROGRAPH FROM AREA 400.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	28.8	4.000	.7	5.999	.8		
.667	.0	2.666	2.6	4.666	.6	6.666	.0		
1.333	34.8	3.333	.9	5.333	.7				

RUNOFF VOLUME = 1.79461 INCHES = 4.4889 ACRE-FEET
 PEAK DISCHARGE RATE = 122.59 CFS AT 1.500 HOURS BASIN AREA = .0469 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 10:06:47

DRAINAGE MASTERPLAN

FOR

AVALON SUBDIVISION

Albuquerque, New Mexico

Prepared For:

CURB, INC.

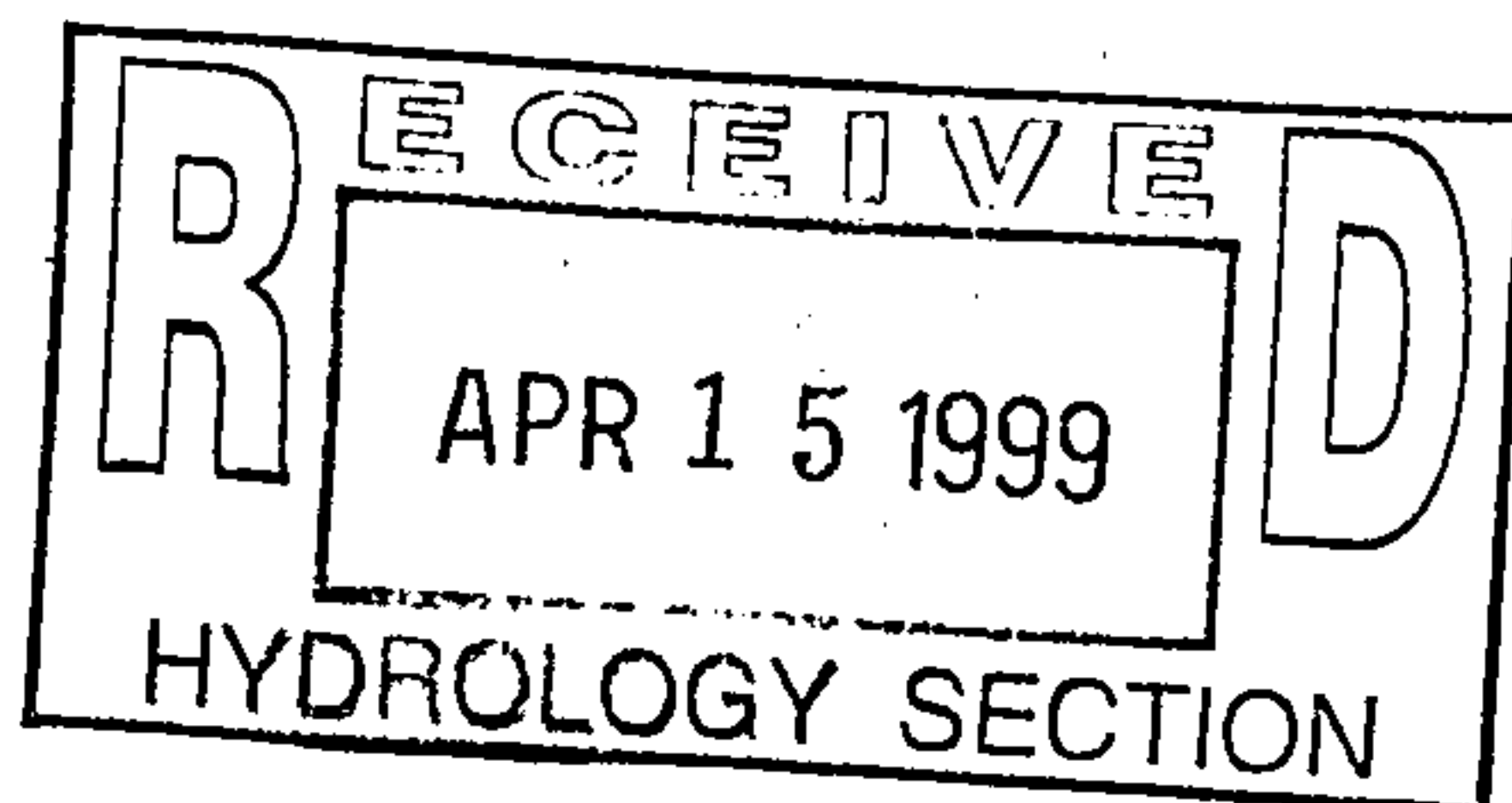
6301 Indian School NE, Suite 680
Albuquerque, New Mexico 87110

Prepared By:

BRASHER & LORENZ, INC.

Consulting Engineers

2201 San Pedro NE, Building No. 1, Suite 210
Albuquerque, New Mexico 87110



AMENDED
April 1999

A circular professional engineer seal for the State of New Mexico. The seal contains the text "DENNIS A. LORENZ", "NEW MEXICO", and "8147". There is a signature over the seal. To the right of the seal, the date "4.2.99" is handwritten.

Dennis A. Lorenz, P.E.
Principal

K-9/D12

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PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as Avalon Subdivision, a single family residential subdivision. Paving, landscaping, utility, grading, and drainage improvements will be provided to support the project. The scope of this plan is to provide drainage criteria for the safe management of excess runoff, and illustrate the grading, paving and drainage improvements required to support the project.

SITE DESCRIPTION

The project site is approximately 49.7 acres in size and is located between Bluewater Road and Avalon Road, and between 94th Street and the Unser Diversion System (See Figure 1). Presently the site is undeveloped. The site is vegetated with native grasses and shrubs. Site terrain slopes west to east at approximately 2 percent. The site is presently described as Tracts B5, B6, B7, and B39 through B43, Unit 5, town of Atrisco Grant. The site is bounded on the east by the Unser Diversion, on the south by Avalon Road, on the west by 94th Street, and on the north by Bluewater Road.

On-site soils consist mainly of Bluepoint (BCC) and Pajarito (PAC) soils (See Figure 2). These soils are found on gently sloping areas of the west mesa. Slopes range from 1 to 9 percent. Runoff is typically slow, and the hazard of wind erosion severe. Bluepoint is classified as Hydrologic soil group "A" and Pajarito in group "B".

As shown by the attached FIRM Panel, this site is impacted by a designated flood hazard zone which flows through the western portion of the site (see Figure 3). The floodplain watershed originates north of Interstate 40 and drains southeasterly.

EXISTING DRAINAGE MASTERPLANS

The drainage criteria for this site is established by the following Drainage Masterplans:

1. **Master Drainage Plan for the Atrisco Business Park**, prepared by Easterling & Associates, Inc, October 22, 1993. This DMP was prepared to support development of IP zoned property located south of I-40, north of Central Ave, west of Unser Boulevard and east of the subject project site. The DMP recommended construction of the Unser Diversion, which removed the study area from the 100 year floodplain. The Unser Diversion is located along the east boundary of Avalon Subdivision.
2. **Amole del Norte Storm Diversion Facilities- Phase III**, prepared by Griener, Inc. This study analyzed the floodplain areas Tierra Bayita Watershed. The study resulted in the construction of the storm drain and channel extensions from the

North/South Coors ponding areas. Phase III is programmed to extend a 66 inch storm drain up 90th Street to Avalon Subdivision and adjoining properties.

3. **Drainage Report for West Ridge Mobile Home Park**, prepared by Tierra West, LLC, January 1998. This report was prepared to support the development of a mobile home park. The MHP is effected by off-site drainage basins originating north of I-40, including a floodplain. The report recommends construction of storm drains and an interim retention pond near the intersection of Bluewater and 94th Street to remove downstream properties from the floodplain encumbrance.

EXISTING DRAINAGE CONDITIONS

The undeveloped site is impacted by 2 watersheds:

1. Basin 200 which is located north of the site and south of I-40, drains easterly to the Unser Diversion. Basin 200 and the contributing on-site runoff drain to the Unser Diversion which has adequate capacity for historic runoff.
2. Basin 300 which originates north of I-40 and west of 98th Street, and flows through the property. Basin 300 results in a floodplain on the property. The West Ridge Mobile Home Park proposes an interim retention pond to remove the floodplain from the property.

PROPOSED CONDITIONS

As shown by the Plan, the project consists of the development of the property into a single family residential subdivision, with associated paving, utility landscaping and drainage improvements. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and on-site drainage basins are identified. All drainage improvements recommended by the Plan are detailed on Grading and Drainage Plan located in the back pocket of this report.

As stated in the previous section, the site is impacted by 2 off-site watersheds. The project is also, by virtue of geometry, divided into 2 phases, the acreage west of 90th Street, and the acreage east of 90th Street. The western portion of the project is programmed to drain to the Amole Del Norte storm drain which will be extended up 90th street to Bluewater. Construction is not yet scheduled, but is expected by 1999. The western phase proposes the construction of large diameter storm drains in Bluewater and 90th Street to drain developed flows from off-site Basins 200.0, 300.0 and 300.2, with connections to on-site storm drains. Due to downstream limitation in the Amole system, discharge from the watershed is limited to 2.05 cfs per acre, which translates into an allowable discharge from the west phase of 49.4 cfs. This limitation results in a future on-site detention pond with a storage capacity of approximately 1.0 acre feet.

The eastern phase and off-site Basin 400.0 are programmed to drain east to the Unser Diversion. The Unser Diversion was designed to remove the floodplains from downstream properties, however, capacity apparently does not exist to allow free discharge from the upstream watershed. Per the DMP the east phase is allowed to discharge 35.8 cfs into the Unser Diversion. This results in a ponding requirement of approximately 1.26 acre feet. The entire east phase will drain into the detention pond via an internal storm drain. The detention pond will drain at a controlled rate into the Unser Diversion.

Off-site Basin 200 will also be intercepted by Bluewater Road. Bluewater street improvements will convey the undeveloped surface runoff to the Unser Diversion. Future developed flows will be routed direct to the Unser Diversion.

PROJECT PHASING

PHASE ONE

Phase One consists of the acreage located east of 90th Street. The Phase One Plan (see sheets 1 and 2 in pocket) outlines the improvements recommended to manage excess runoff from the project site. In accordance with the DMP for Atrisco Business Park, Phase One will rout all flows through a permanent detention pond located at the southeast corner of the site. The pond will discharge at a controlled rate of 38.5 cfs into the Unser Diversion. Perimeter street improvements will consist of the construction of the south one-half of Bluewater Road and the full width section of 90th Street. A 54 inch storm drain will be constructed in 90th Street from Bluewater, south to the Avalon Corridor, for future connection to the Amole System. A single drop inlet with a connection to the Unser Diversion is required at the east end of Bluewater to collect street flow from the south one-half of Bluewater.

Off-site improvements consist of the construction of an interim trainer along the north side of Bluewater to direct existing flows east to the Unser Diversion, and the construction of interim trainer dikes and an interim retention pond on Phase Two to retain runoff from undeveloped Phase Two acreage. The Phase Two pond will also provide an outfall for the 54 inch storm drain to be constructed in 90th Street, pending construction of the Amole System.

PHASE TWO

Phase Two consists of the construction of the acreage located between 90th and 94 Streets. The Phase Two Plan (see sheet 3 in pocket) outlines the improvements recommended to manage excess runoff from the project site. In accordance with the DMP for the Amole del Norte Diversion Facilities Phase II and the DMP for West Ridge MHP, Phase Two is limited to a discharge rate of 2.05 cfs/acre, or 49.4 cfs. Phase Two will rout all flows through a permanent detention pond located at the proposed park site, which will drain to the future Amole System. If the Amole System is not available at the time of development of Phase Two, an interim retention pond will be construction, sized

to retain the 100 year, 10 day volume generated by the subdivision.

Phase Two will rely on the retention pond proposed by West Ridge MHP to remove the existing floodplain, and the interim trainer dike constructed along Bluewater by Phase One. Bluewater Road will be constructed (one-half width) from 90th Street to 94th Street. A future 42 inch storm drain is proposed in Bluewater, to be constructed when off-site Basins 200.0 and 300.2 develop. With the construction of Bluewater drop inlets will be constructed along the south side of the street at 90th Street to collect street flows.

FUTURE CONDITIONS

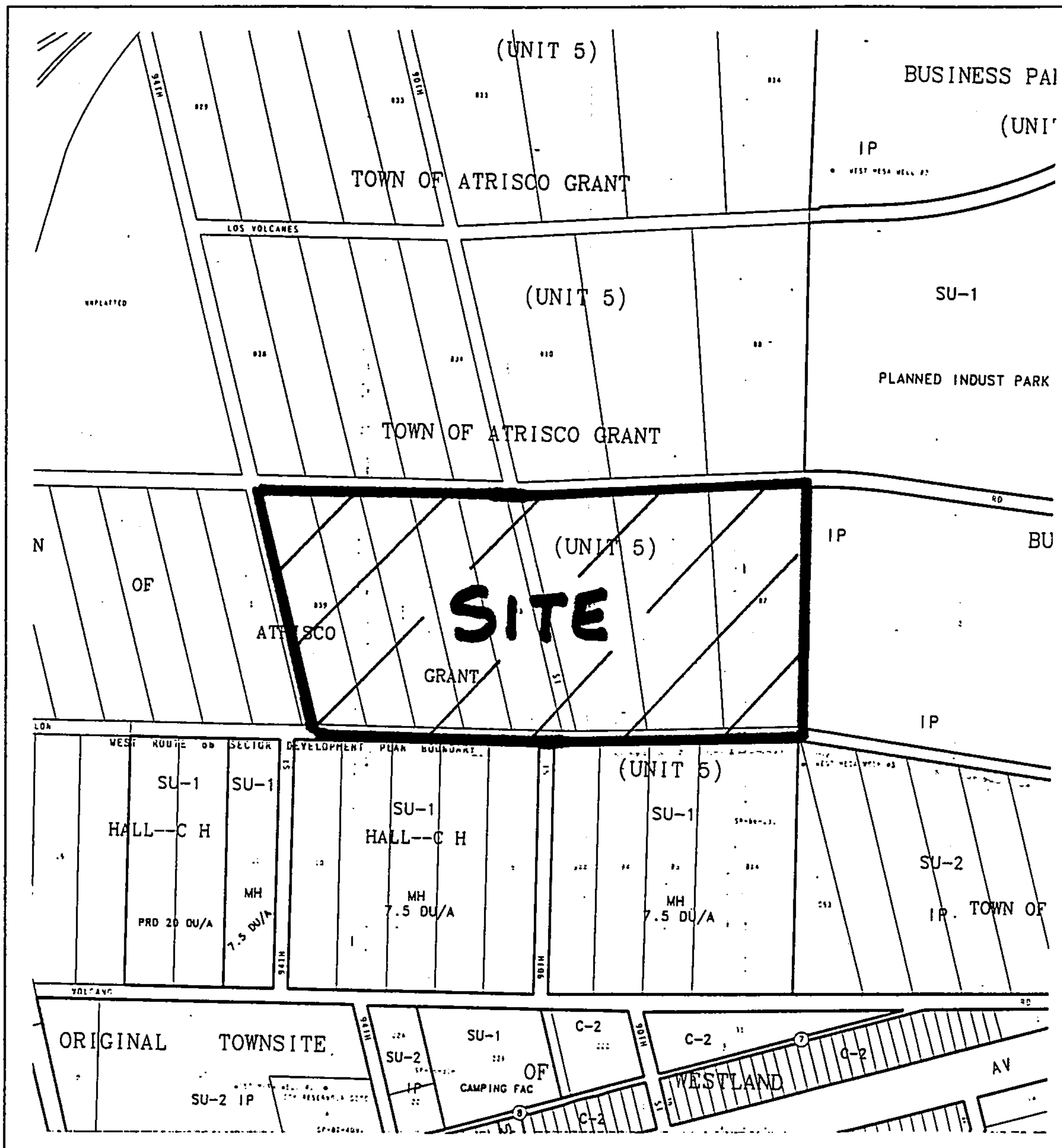
Upon the construction of the Amole del Norte storm drain the 42 inch storm drain in Bluewater can be constructed allowing developing properties connection to the system. All interim retention ponds can then be converted to permanent detention ponds. Other than Phase Two, off-site basins draining to the Amole System include Basins 300.0, 300.1, 300.2 and 200.0. All basins will be required to rout developed flows through permanent detention ponds per the approved DMP's.

TEMPORARY EROSION CONTROL PLAN

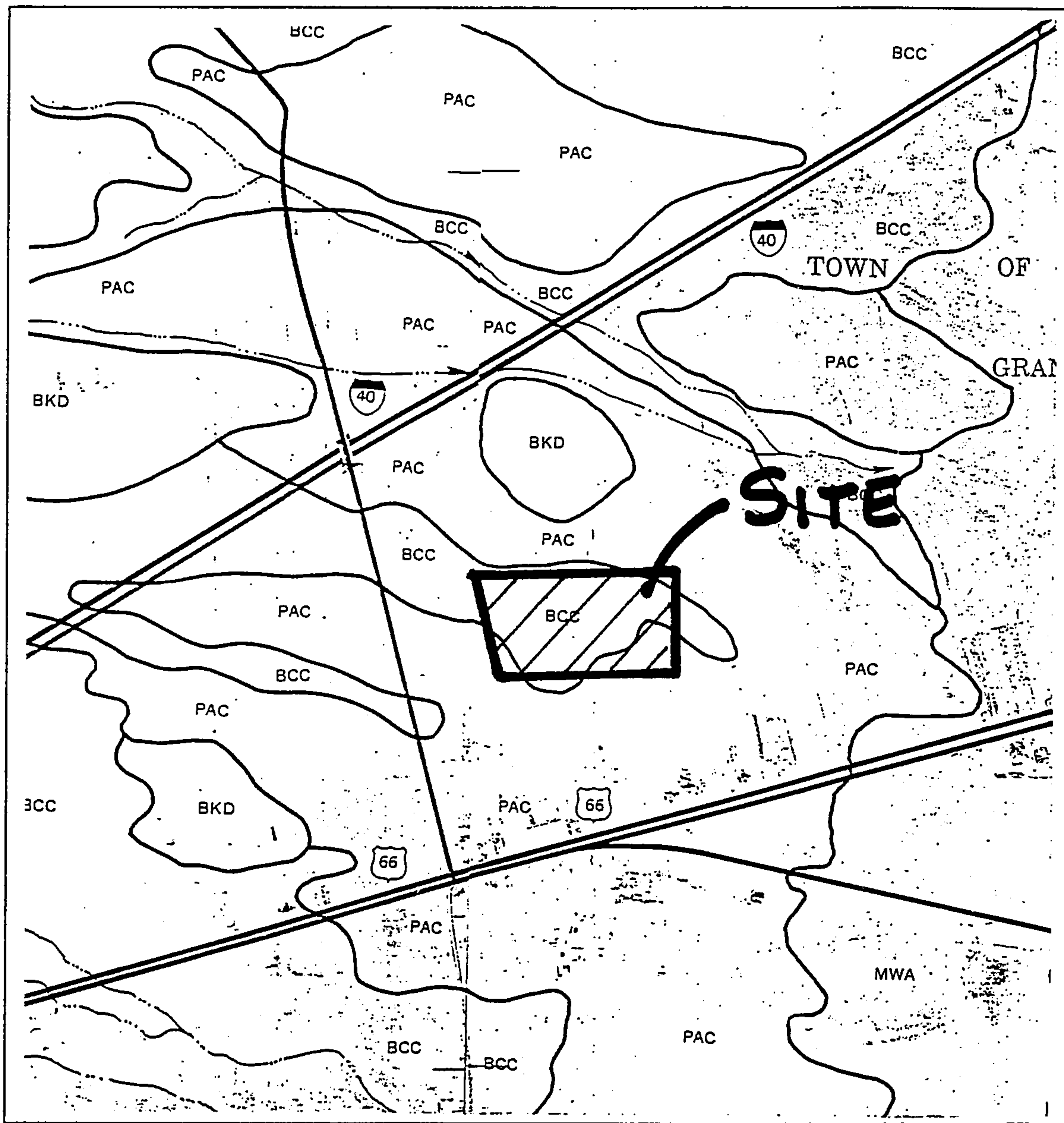
1. The intent of the Temporary Erosion Control Plan is to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction.
2. The Contractor shall submit a Temporary Erosion Control Plan and obtain a Top Soil Disturbance Permit from Environmental Health prior to performing any earthwork related operations.
3. After the initial site clearing, the temporary erosion control facilities should be constructed per the Plan to direct excess runoff and sediment the outfall locations.
4. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

APPENDIX

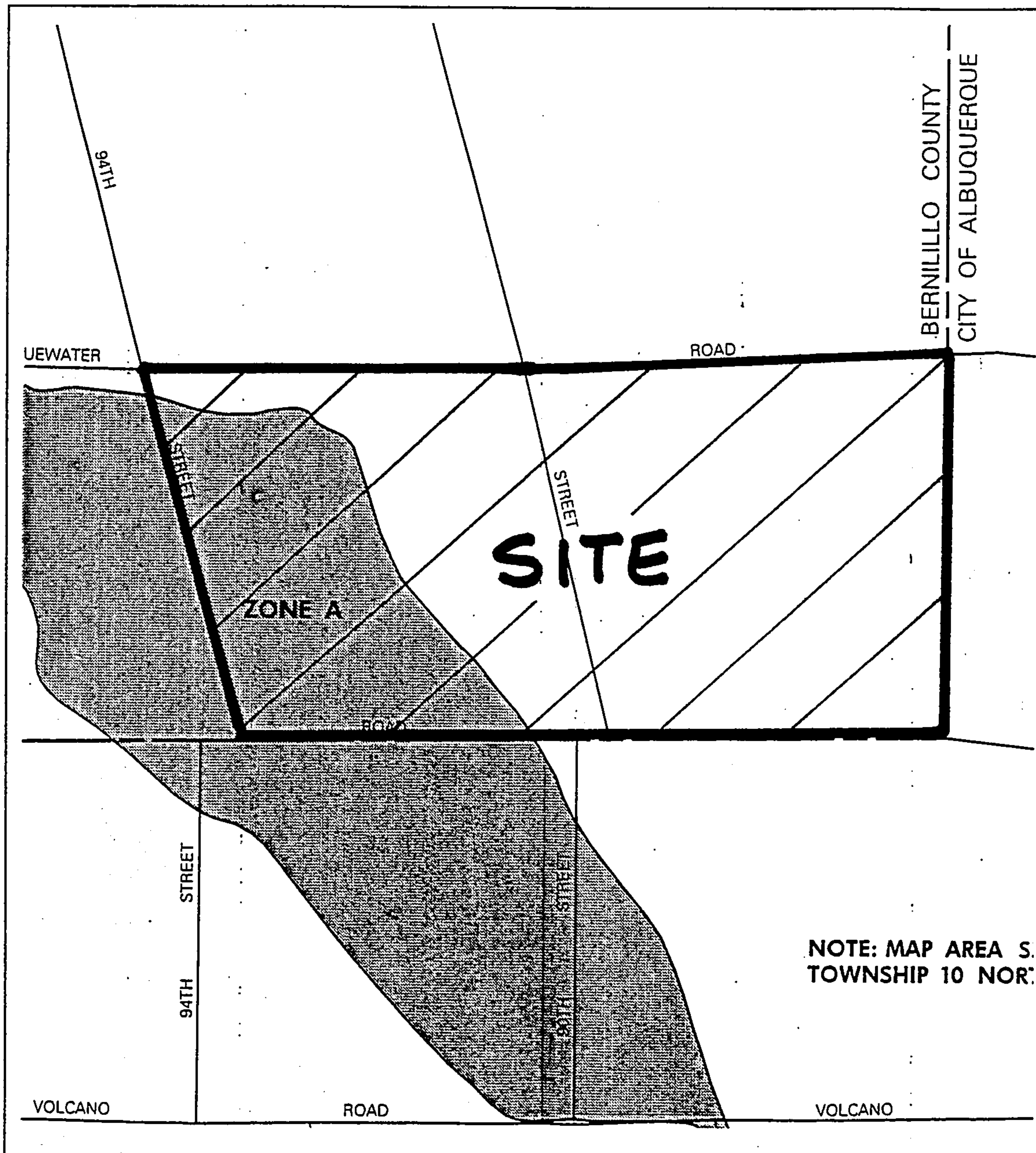
MAPS



LOCATION MAP
Figure 1



SOILS MAP
Figure 2



FLOOD INSURANCE RATE MAP
Figure 3

CALCULATIONS

STREET DEPTHS

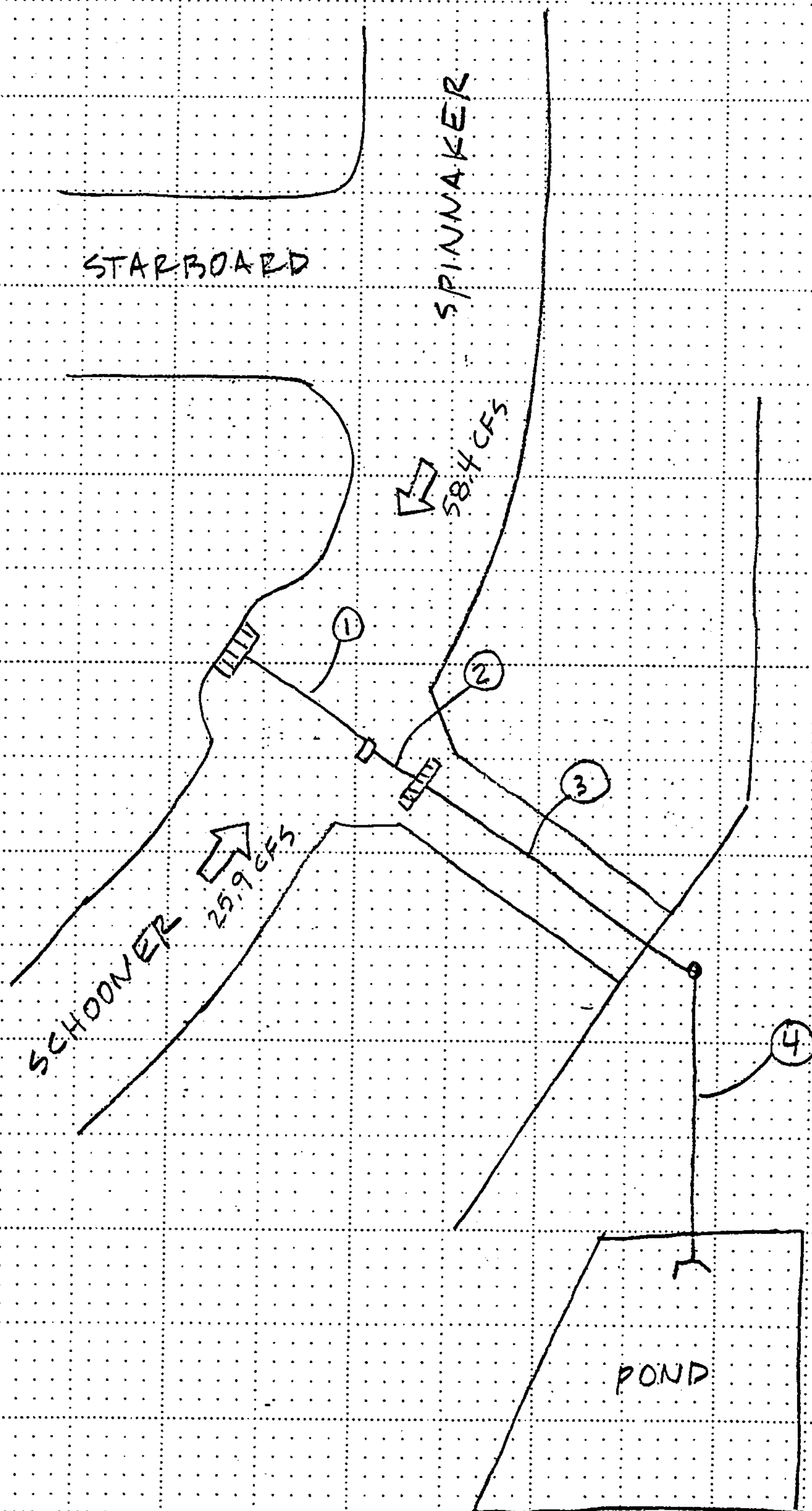
		AVALON SUBDIVISION					
			Street Depths				
Street name		Analysis	Q 100	Slope	Width	Depth	Velocity
		Point	(cfs)	(%)	(ft)	(ft)	(fps)
PHASE ONE							
Port		1	19.4	2.33	28	0.31	4.09
Spinnaker		2 north	25.6	0.50	28	0.46	2.88
Seaside		2 west	14.6	2.73	28	0.28	3.85
Spinnaker		2 south	40.2	0.50	28	0.56	3.45
Spinnaker		3 north	45.6	0.50	28	0.59	3.63
Starboard		3 west	12.8	2.40	28	0.27	3.55
Mainsail		4	7.8	1.56	28	0.24	2.67
Schooner		5	17.1	1.50	28	0.32	3.40
Schooner		3 south	25.9	0.80	28	0.42	3.33
Schooner/Spinnaker		3	84.3	*	28	*	*
PHASE TWO							
Halyard		7	14.7	2.00	28	0.29	3.49
Leeward		8 north	19.8	2.80	28	0.30	4.35
Harbor		8 west	11.3	2.40	28	0.26	3.44
Leeward		8 south	31.1	1.20	28	0.41	4.04
Leeward		9 north	34.5	1.20	28	0.43	4.22
Starboard		9 west	16.8	0.70	28	0.36	2.69
Leeward/Starboard		9	51.3	0.70	28	0.58	4.20
Ketch		10	5.9	3.10	28	0.19	3.22
Jetty		11	19.9	2.00	28	0.32	3.94
Off-site							
90th		12	7.2	1.50	48	0.24	2.58
Bluewater		14	7.3	2.40	48	0.22	3.09
Bluewater		15	7.8	2.44	48	0.22	3.16

STORM DRAINS

	ALLOWABLE DISCHARGE RATES				
Per the approved DMP's for the study area, downstream capacity is limited.					
The Amole basin is limited to 2.05 cfs/acre and the Unser Diversion basin is limited to 1.40 cfs/acre.					
The following tables report the allowable discharges from contributing basins:					
I. AMOLE BASIN					
	BASIN	AREA (ac)	Q100 (cfs)	Qallow (cfs)	
	300.0	10.69	19.95	19.95 (I-40 basin)	
	300.1	8.38	30.17	17.60	
	300.2	53.70	219.00	110.09	
	200.0	24.90	101.68	51.05	
	PhaseTwo	24.11	97.82	49.40	
II. UNSER DIVERSION BASIN					
	BASIN	AREA (ac)	Q100 (cfs)	Qallow (cfs)	
	400.0	30.00	122.59	42.00	
	Phase One	25.60	93.89	35.84	

			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase One @ ap 3						
Pipe Segment	Ap No.	Q 100 (cfs)	Inlet type	Q inlet (cfs)	Q pipe (cfs)	Pipe Dia (in)	Q resid (cfs)
1	3w	42.1	Spec	42.1	42.1	30	0
2	3e	42.2	D	2.4	44.6	30	39.8
3	3e	39.8	Spec	39.8	84.3	42	0
4	3e	84.3	na	84.3	84.3	42	0
* Inlet located in sump							

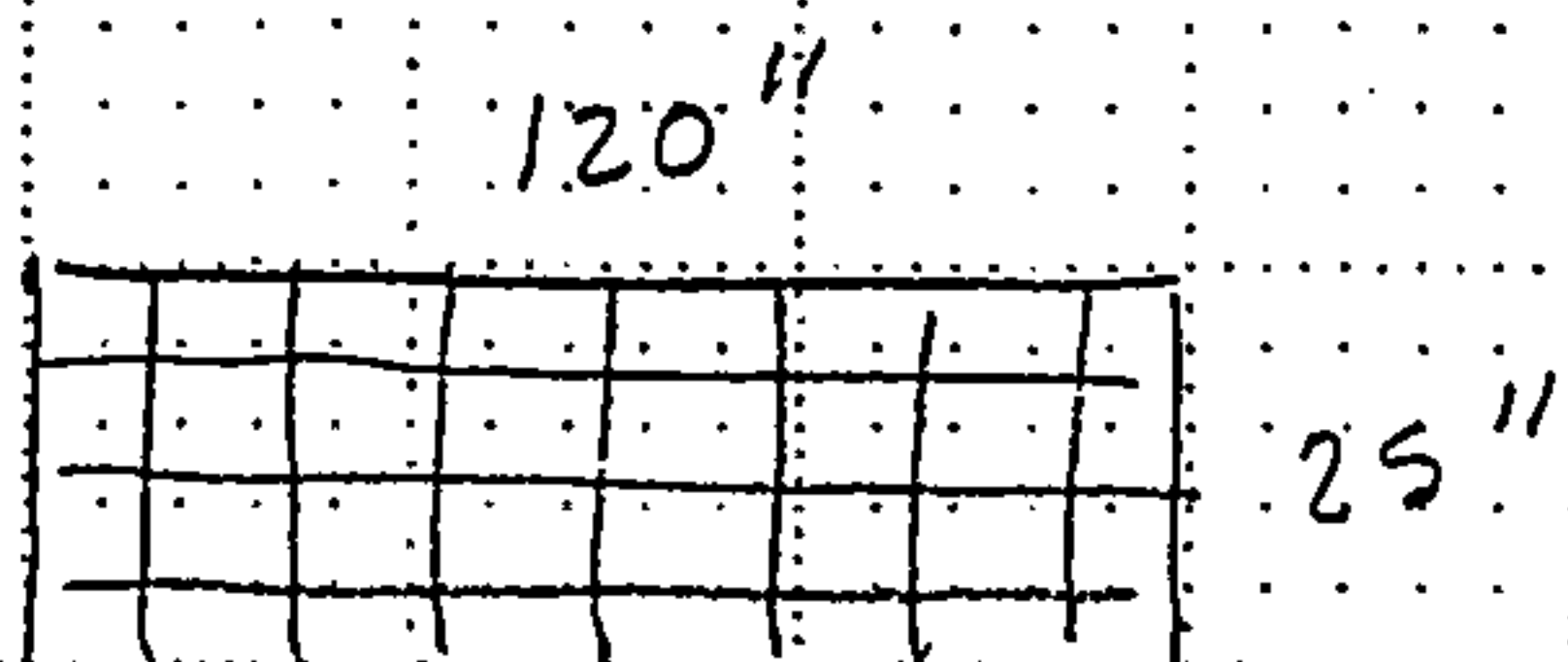
PHASE ONE STORM DRAIN @ AP 3:



SCHEMATIC
LAYOUT
NTS

HYDRAULIC CALCULATIONS FOR SPECIAL INLET STRUCTURES

① TRIPLE 'C' INLET CAPACITY



GRATES

$$P = 290'' = 24.17'$$

$$\text{OPEN } A = 12.93 \text{ SF}$$

FIND DEPTH OVER GRATE W/O CURBS OPENING:

BY ORIFICE EQN: $Q = CA\sqrt{2gh}$

$$C = 0.6$$

$$A = 12.93 \text{ SF}$$

$$Q_{100} = 84.3 \text{ CFS} / 2 = 42.15 \text{ CFS}$$

SOLVING FOR h :

$$h = \left[\frac{42.15}{0.6(12.93)} \right]^2 / 2g = \underline{\underline{0.46'}}$$

$$h_{\text{AVAIL}} = 0.67 \text{ FT}$$

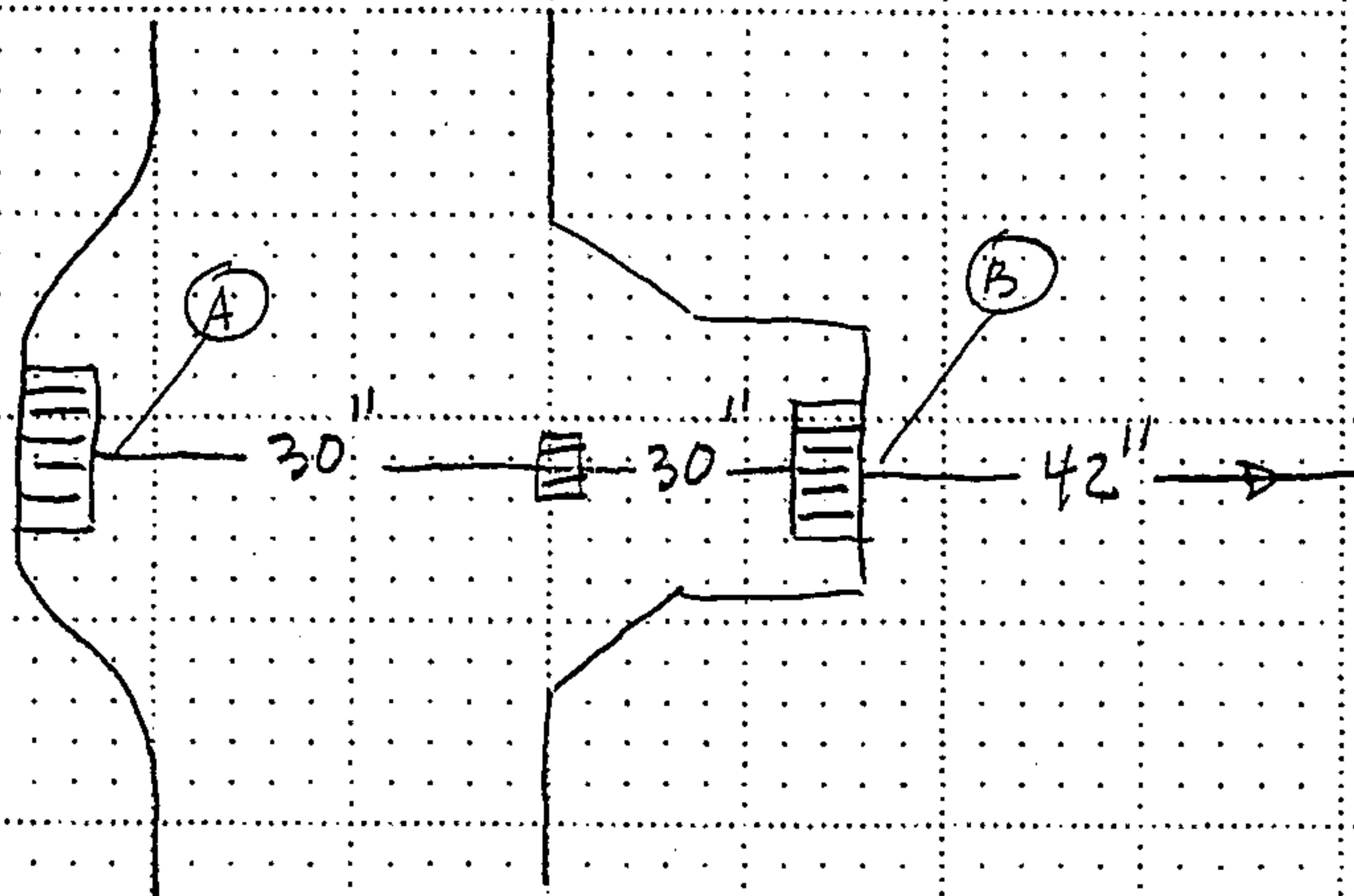
DETERMINE Q_{MAX} @ h_{MAX} :

$$Q_{\text{MAX}} = 0.6(12.93)\sqrt{2g(.67)} = 51.0 \text{ CFS} > Q_{100}$$

⇒ THIS IS CONSERVATIVE IN THAT IT DOES NOT CONSIDER CURBS OPENING.

8-5-98

(2) CHECK CONNECTOR PIPES FOR INLET CONTROL



AT 1ST TRIPLE 'C' (A):

$$Q_{100} = 84.3 \text{ CFS} / 2 = 42.15 \text{ CFS}$$

BY ORIFICE:

$$A_{30"} = 4.91 \text{ SF}$$

$$C = 0.6$$

$$h = \left[\frac{42.15}{0.6(4.91)} \right]^2 / 2g = 3.18'$$

$$h_{\text{AVAIL}} = 10.26'$$

$$Q_{\text{MAX}} = 0.6(4.91) \sqrt{2g(10.26)} = 75.7 \text{ CFS} \quad F_s = \frac{75.7}{42.15} = 1.8$$

AT 2ND TRIPLE 'C' (B):

$$Q_{100} = 84.3 \text{ CFS}$$

$$A_{42"} = 9.62 \text{ SF}$$

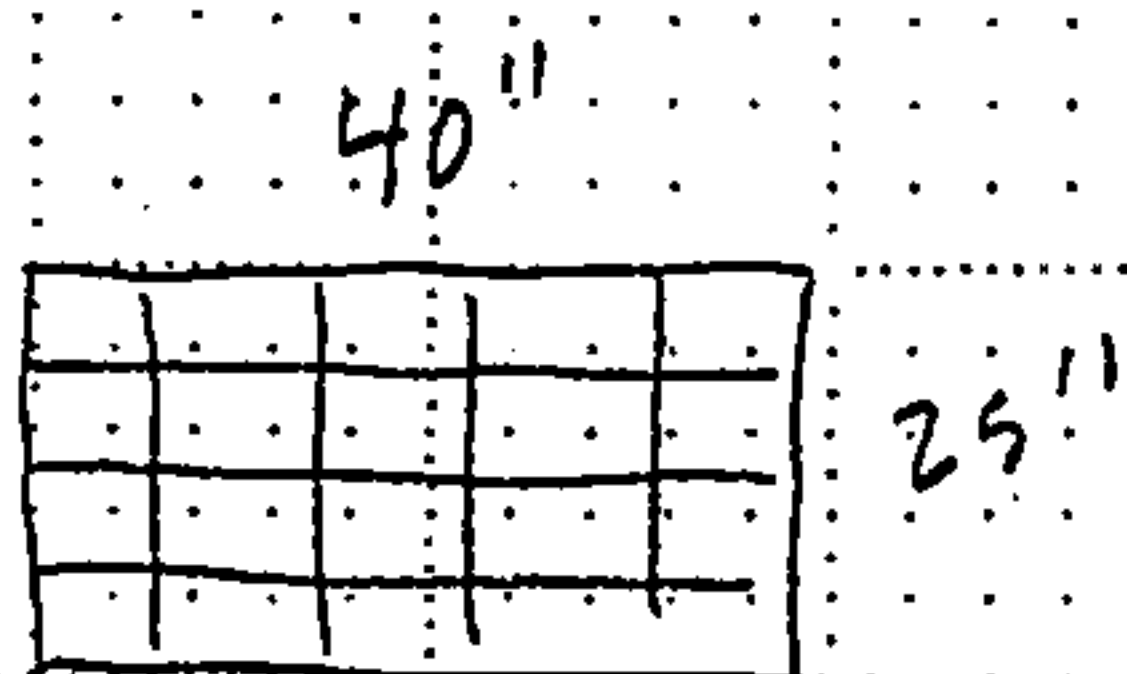
$$h = \left[\frac{84.3}{0.6(9.62)} \right]^2 / 2g = 3.31'$$

$$h_{\text{AVAIL}} = 9.65'$$

$$Q_{\text{MAX}} = 0.6(9.62) \sqrt{2g(9.65)} = 143.9 \text{ CFS} \quad F_s = \frac{143.9}{84.3} = 1.7$$

8-5-98

- ③ CHECK SINGLE 'D'
PROVIDE SINGLE 'D' FOR NUISANCE Q



$$P = 130'' = 10.83'$$

$$\text{OPEN } A = 4.31 \text{ SF}$$

$$\text{PER PLAN MAX } h = 0.2 \text{ FT}$$

- ④ CHECK BY WEIR

$$Q = CLH^{3/2}$$

$$L = P = 10.83'$$

$$H = 0.2'$$

$$C = 2.5$$

$$Q_{\text{MAX}} = 2.5(10.83)(0.2)^{3/2} = 2.4 \text{ CFS}$$

- ⑤ CHECK BY ORIFICE

$$Q = CA\sqrt{2gh}$$

$$h = 0.2'$$

$$A = 4.31 \text{ SF}$$

$$C = 0.6$$

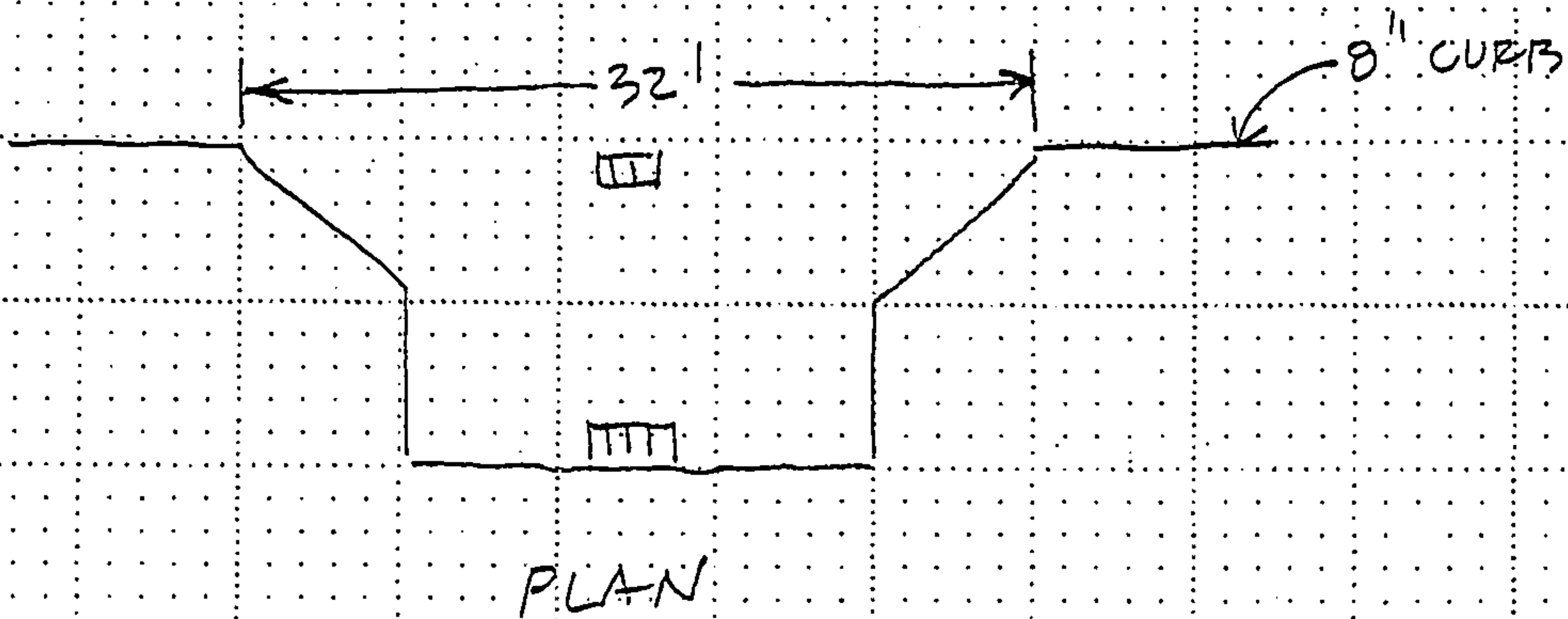
$$Q_{\text{MAX}} = 0.6(4.31)\sqrt{2g(0.2)} = 9.3 \text{ CFS}$$

BE CONSERVATIVE USE $Q_{\text{MAX}} = 2.4 \text{ CFS}$

(4) EAST SPECIAL INLET + OVERFLOW

(A) TRIPLE 'C' INLET CHANNEL

$$Q_{100} = 84.3 \text{ CFS} / 2 = 42.15 \text{ CFS}$$



WEIRS

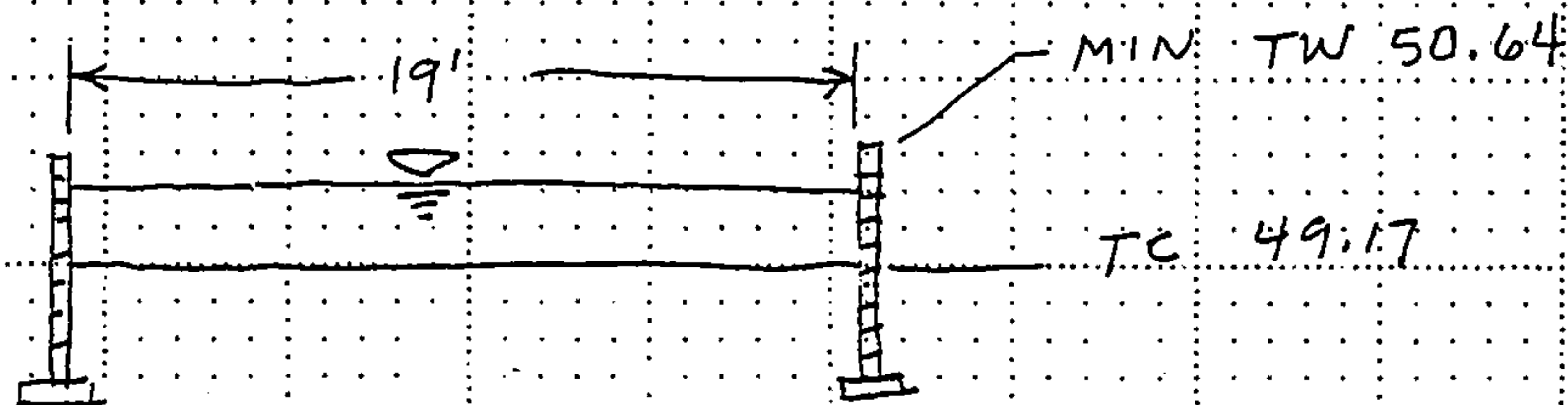
Enter up to 10 weirs.

Enter <Return> only for flowrate and length to end.

	FLOWRATE (CFS)	LENGTH (FT)	CORFF (-)	HEAD (FT)
Q_{100}	42.15	30.7	2.500	0.67
Q_{MAX}	43.87	32.0	2.500	0.67

$$MAX \text{ WSE} = \underline{50.71}$$

(B) OVERFLOW WEIR AT BACK OF TRIPLE 'C' DESIGN FOR $Q_{100} = 84.3 \text{ CFS}$ IN EVENT SYSTEM FAILS

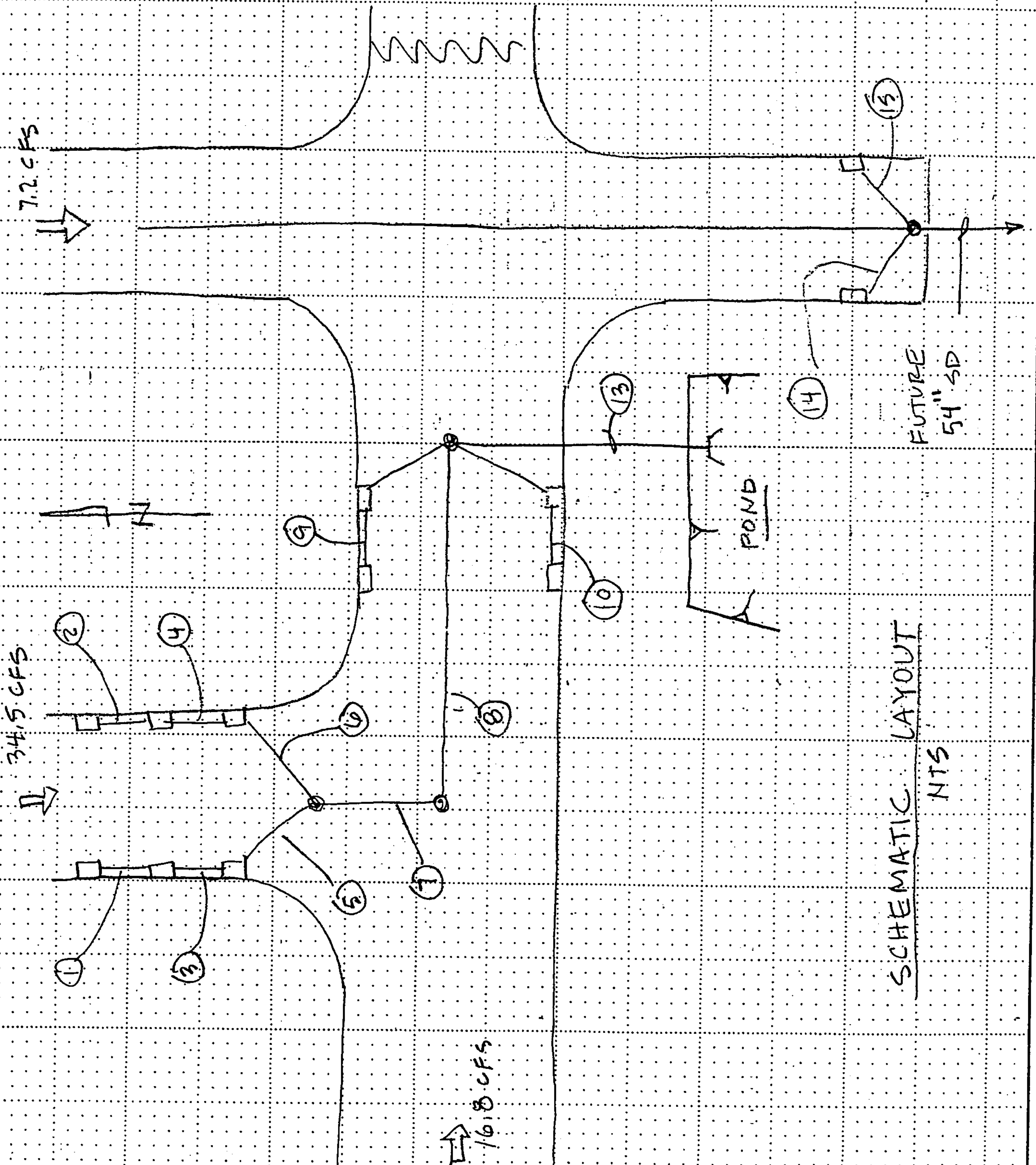


$$MAX \text{ WSE} = \underline{50.64}$$

	FLOWRATE (CFS)	LENGTH (FT)	CORFF (-)	HEAD (FT)
	84.30	19.0	2.500	1.47

			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase Two @ ap 9						
Pipe Segment	Ap No.	Q 100 (cfs)	Inlet type	Q inlet (cfs)	Q pipe (cfs)	Pipe Dia (in)	Q resid (cfs)
1,2	9n	34.5	A	6(12)	6(12)	18	22.5
3,4	9n	22.5	CC	6(12)	12(24)	18	10.5
5,6	9n	10.5	CC	5(10)	17(34)	24	0.5
7,8	9	34.0	**	**	34	30	0
9,10	9	16.8	A	5(10)	5(10)	18	6.8
11,12	9	6.8	CC	3.4(6.8)	8.4(16.8)	18	0
13	9	51.3	**	**	51.3	30	0
14,15	12	7.2	A	3.6(7.2)	3.6(7.2)	18	0

PHASE TWO STORM DRAIN AT AP 9



			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase Two @ ap 11						
Pipe	Ap	Q 100	Inlet type	Q inlet	Q pipe	Pipe Dia	Q resid
Segment	No.	(cfs)		(cfs)	(cfs)	(in)	(cfs)
1	11	19.9	CC	19.9*	19.9	24	0
* Inlet located in sump							

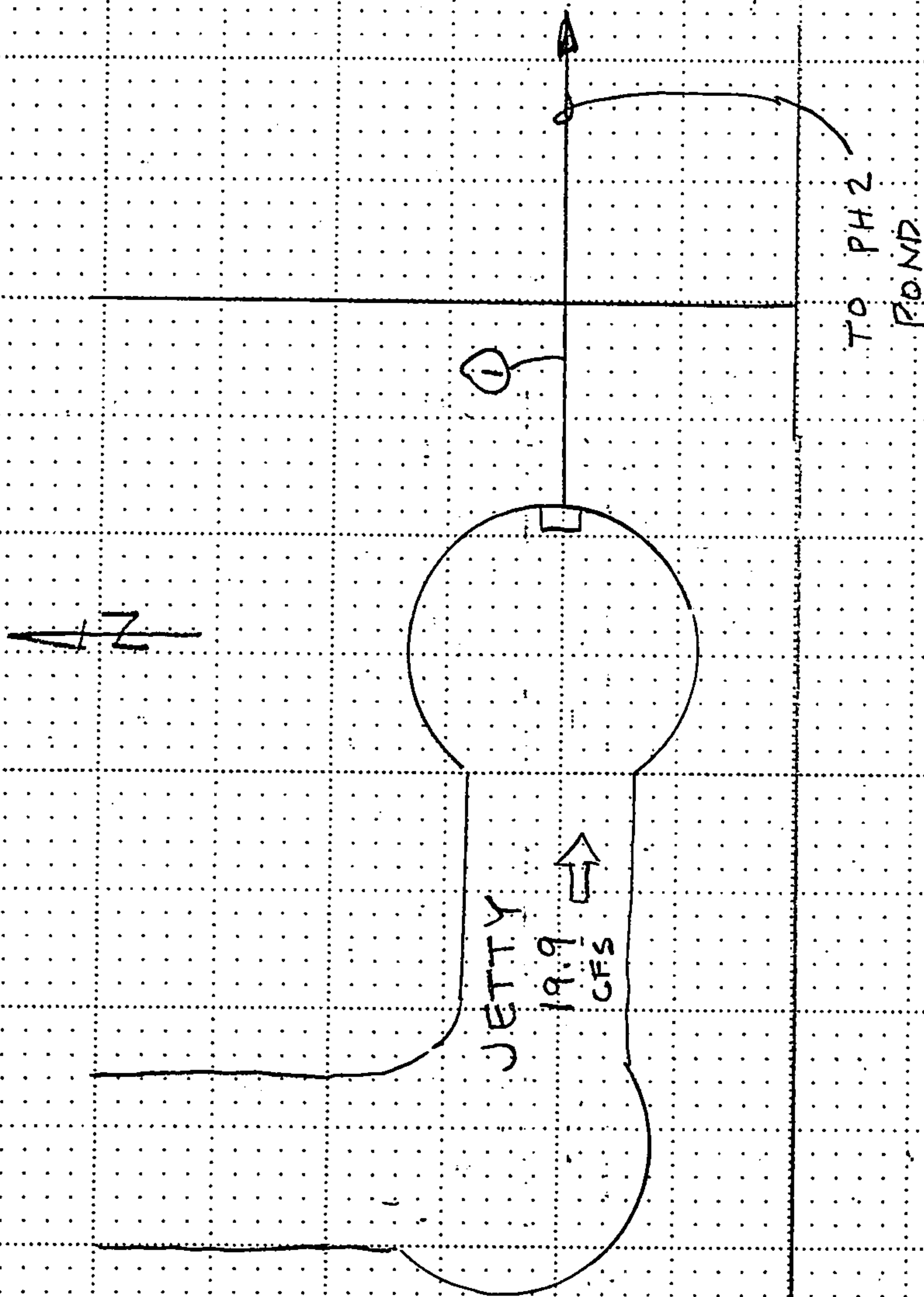
AVALON

SUBDIVISION

11/

7076

PHASE TWO STORM DRAIN AT AP 11

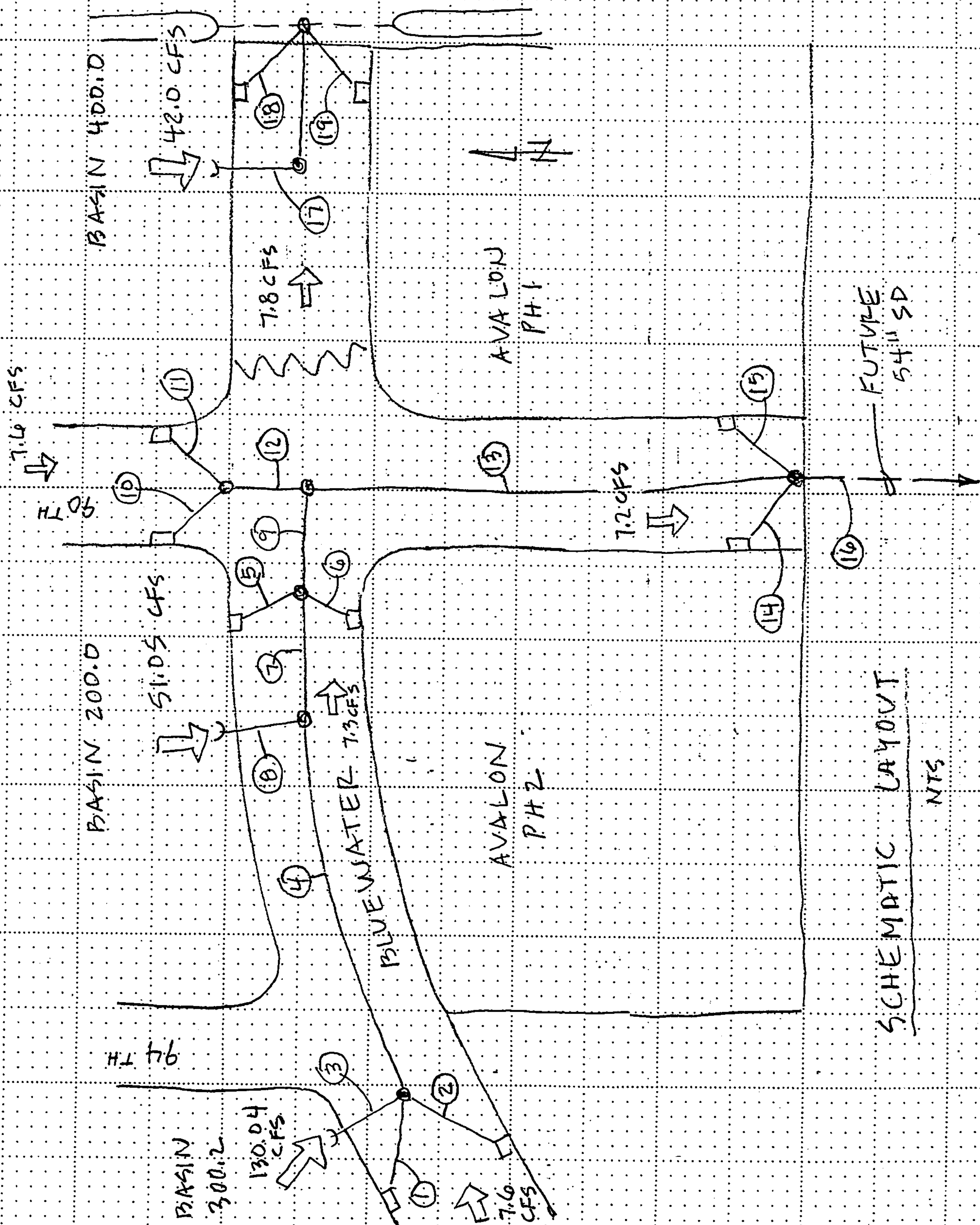


SCHEMATIC LAYOUT

NTS

			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Future Off-site						
Pipe	Ap	Q 100	Inlet type	Q inlet	Q pipe	Pipe Dia	Q resid
Segment	No.	(cfs)		(cfs)	(cfs)	(in)	(cfs)
1,2	13	7.60	A	3.8(7.6)	3.8(7.6)	18	0
3	13	130.04	Stub	**	130.04	42	0
4	13	137.64	**	**	137.64	42	0
5,6	14	7.30	A	3.65(7.3)	3.65(7.3)	18	0
7	14	188.69	Stub	**	188.69	48	0
8	14	51.05	**	**	51.05	30	0
9	14	196.00	**	**	196.00	54	0
10,11	14	7.60	A	3.8(7.6)	3.8(7.6)	18	0
12	14	7.60	**	**	7.60	18	0
13	12	203.60	**	**	203.60	54	0
14,15	12	7.20	A	3.6(7.2)	3.6(7.2)	18	0
16	12	201.80	**	**	201.80	54	0
17	15	42.00	Stub	**	42.00	30	0
18,19	15	7.80	A	3.9(7.8)	3.9(7.8)	18	0

FUTURE OFF-SITE STORM DRAIN IN BLUEWATER



SCHMATIC LAYOUT

NTS

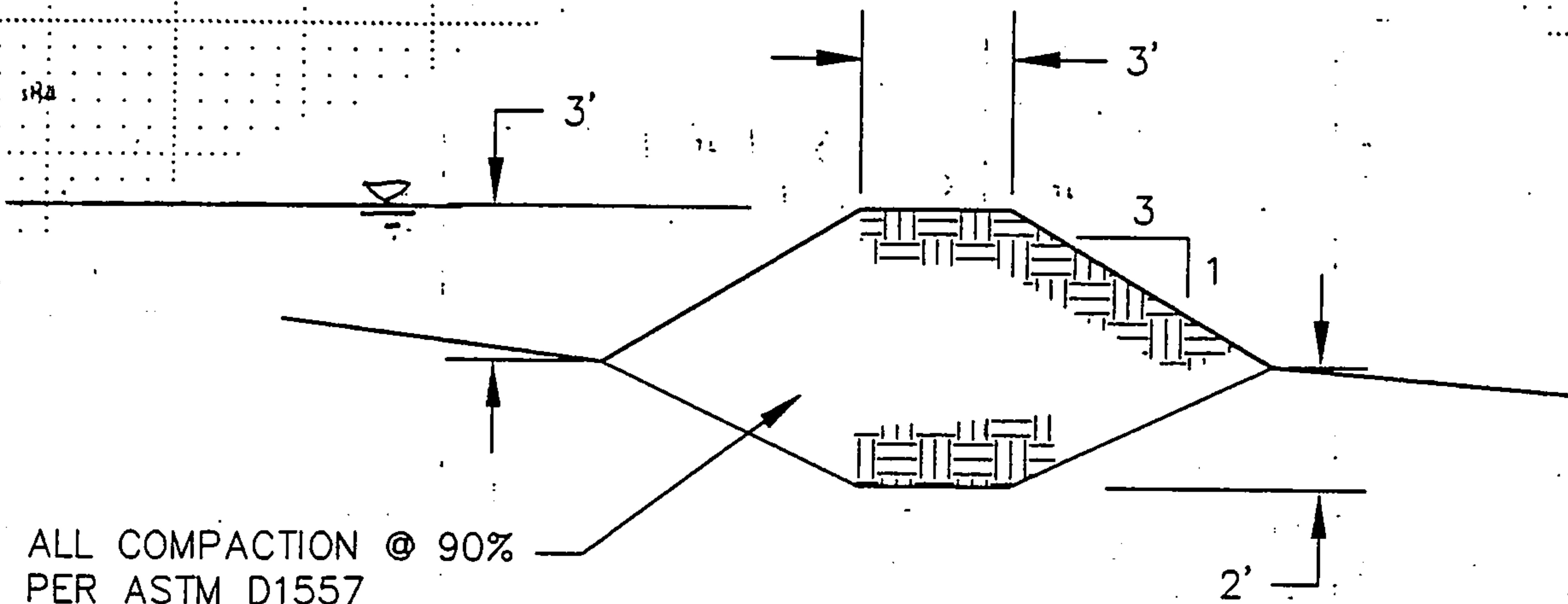
OFF-SITE TRAINER DIKES

○ INTERIM TRAINER DIKES

DETERMINE CAPACITY @

(1) BLUEWATER

(2) PHASE ONE INTERIM POND @ 90TH



INTERIM TRAINER DIKE SECTION

① BLUEWATER

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION Q - FLOWRATE S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y, Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

Q (CFS) ? 57.73

S (FT/FT) ? .02

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	103	.025			
150	100	.025			
159	103	.025			

RESULTS

=====

Y= 100.72 FT
A= 13.63 SF
P= 38.14 FT
V= 4.23 FPS
F= 1.25 SUPER-CRITICAL FLOW

② PHASE 1 POND @ 90 TH.

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION Q - FLOWRATE S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y, Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

Q (CFS) ? 31.3

S (FT/FT) ? .015

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	103	.025			
150	100	.025			
159	103	.025			

RESULTS

=====

Y= 100.60 FT
A= 9.60 SF
P= 32.00 FT
V= 3.26 FPS
F= 1.05 SUPER-CRITICAL FLOW

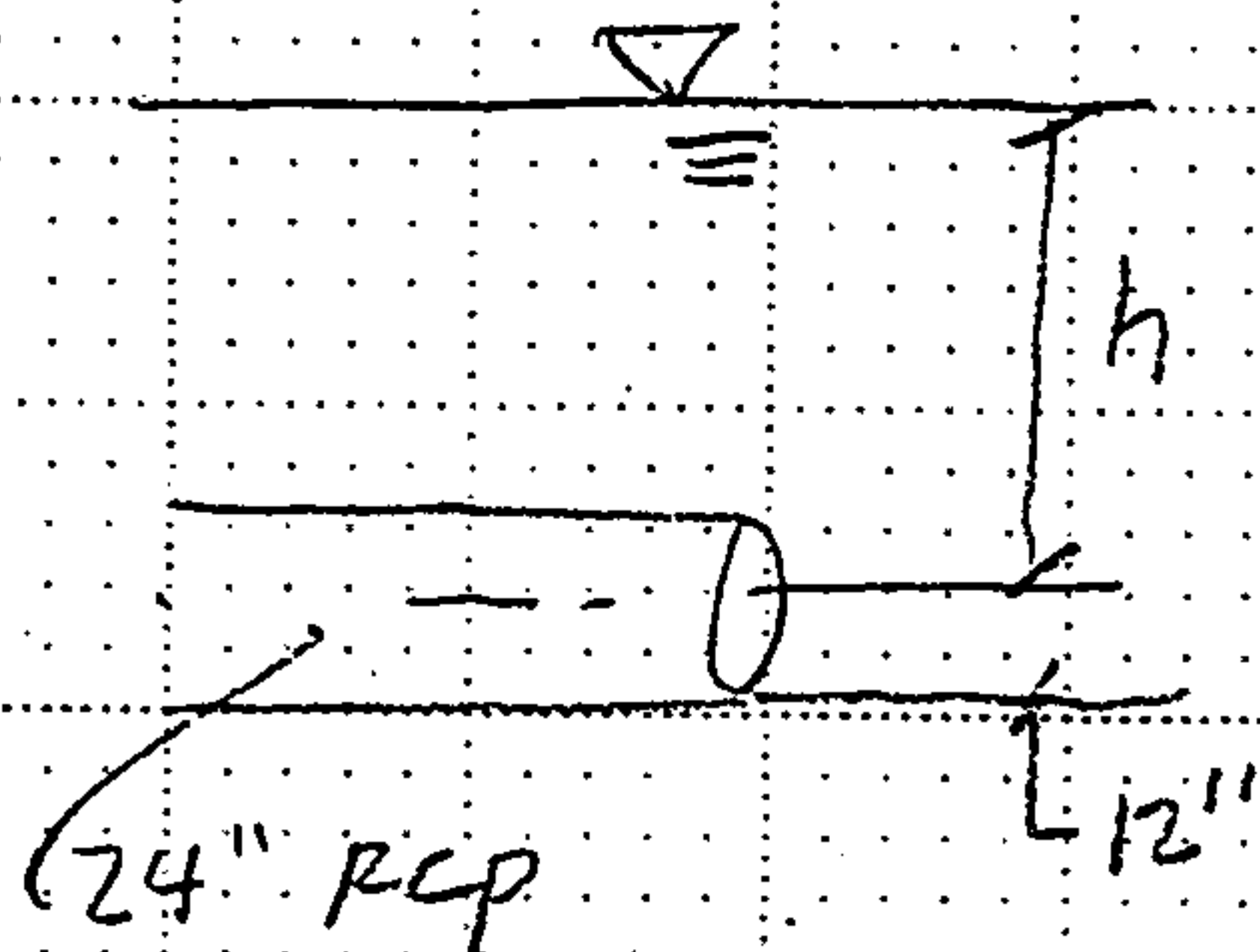
POND DESIGNS

② PHASE ONE POND REQUIREMENT

DISCHARGE IS LIMITED TO UNSUB DIVERSION

PER DMP $Q_{ALLOW} = 35.8 \text{ CFS}$

SIZE POND & OUTLET TO UNSUB DIV.



$$Q = CA\sqrt{2gh}$$

$$C = 0.6$$

$$A = 3.14 \text{ SF}$$

$$g = 32.2 \text{ f/s}^2$$

POND BOTTOM @ 43.0

ELEV	H(FT)	Q(CFS)	VOL (AF)
37.5	—	0	0
38.0	—	4.0	0.0214
40.0	1.5	16.9	0.1460
42.0	3.5	23.5	0.3596
44.0	5.5	28.7	0.6756
46.0	6.5	33.0	1.1403
48.0	8.5	36.8	1.6584

⇒ PER AHQ MO $Q_{OUT} = 33.7 \text{ CFS}$ VOL = 1.23 AF

② INTERIM POND REQUIREMENT PHASE 2

RETAIN ALL EXCESS RUNOFF PENDING
AWOLE EXTENSION TO SITE

$$\text{PHASE 2 AREA} = 24.1 \text{ AC}$$

$$A_D = 24.1(0.58) = 13.98 \text{ AC}$$

$$VOL_{360} = 3.404 \text{ AF}$$

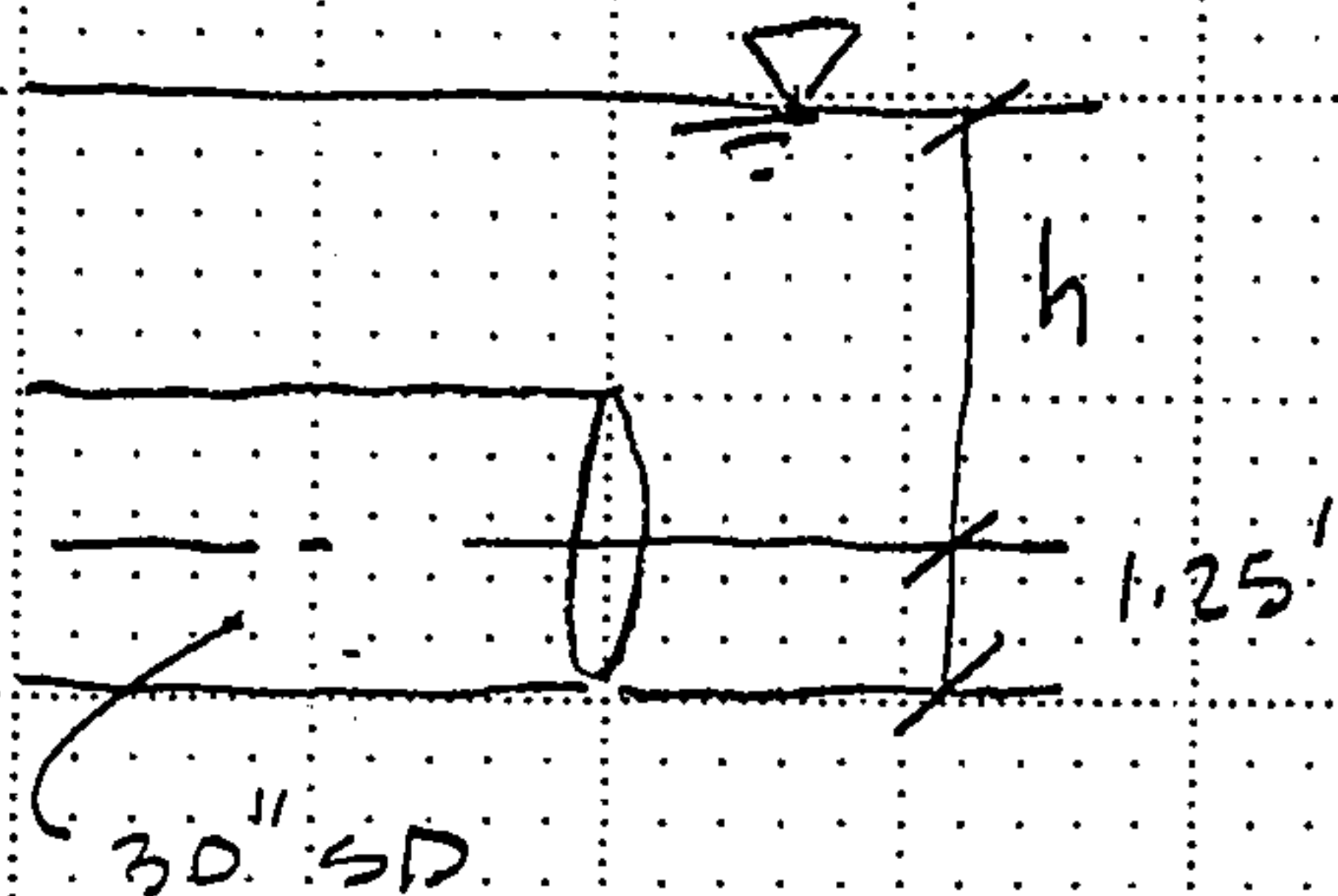
$$\text{PER DPM } V_{10 \text{ DAY}} = V_{360} + A_D (P_{10 \text{ DAY}} - P_{360}) / 12$$

$$\begin{aligned} V_{10 \text{ DAY}} &= 3.404 + 13.98(3.67 - 2.20) / 12 \\ &= 5.117 \text{ AF} \end{aligned}$$

③ FUTURE PHASE TWO POND REQUIREMENT

PER DMP FOR WEST RIDGE MHP, DISCHARGE
IS LIMITED TO 2.05 CFS/AC OR 49.4 CFS
FOR PHASE TWO.

SIZE POND & OUTLET TO AWOLE 66" SD
@ 90TH



PHASE TWO DET. POND

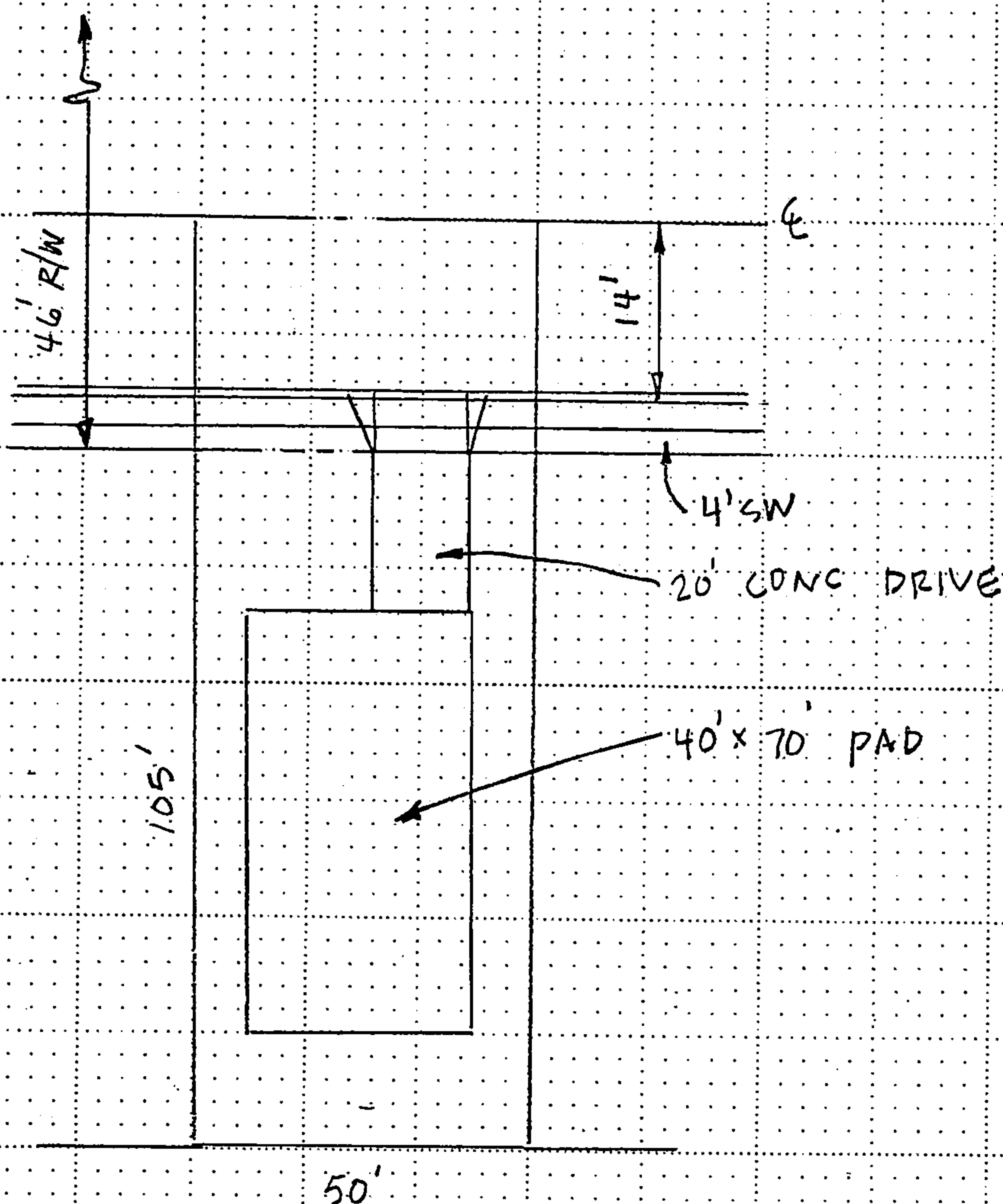
ELEV H (FT) Q (CFS) VOL (AF)

63.0	-	0	0
64.0	-	5.0	0.11417
65.0	0.75	20.5	0.3070
66.0	1.75	31.3	0.4983
67.0	2.75	39.2	0.7181
68.0	3.75	45.8	0.9689
69.0	4.75	51.5	1.2532

⇒ PER HYDRO Q OUT = 45.8 CFS VOL = 0.97 AF

AHYMO OUTPUT FILES

① LAND TREATMENT FACTORS



$$\text{GROSS AREA} = 50 \times (105 + 23) = 6400 \text{ SF}$$

DISCR.	AREA	B	C	D	A
STREET	700	0	0	700	0
SIDEWALK	200	0	0	200	0
DRIVE + PAD	2800	0	0	2800	0
OPEN SPACE	2700	1350	1350	0	0
TOTAL	6400	1350	1350	3700	0
PERCENT	100%	21%	21%	58%	0%

EXISTING CONDITIONS

* AVALON SUBDIVISION

* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87

RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

* EXISTING DRAINAGE BASINS

* UNDEVELOPED BASIN 200

COMPUTE NM HYD ID=1 HYD NO=200.0 DA=0.1525 SQ MI

PER A=100 PER B=0 PER C=0 PER D=0

TP=0.2313 HR MASS RAIN=-1

PRINT HYD ID=1 CODE=20

* UNDEVELOPED BASIN 300

COMPUTE NM HYD ID=2 HYD NO=300.0 DA=0.5943 SQ MI

PER A=95 PER B=0 PER C=3 PER D=2

TP=0.5417 HR MASS RAIN=-1

PRINT HYD ID=2 CODE=20

FINISH

RUN DATE (MON/DAY/YR) =03/14/1998
USER NO.= BRASHERE.I01

		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
START									TIME=	.00
RAINFALL TYPE= 1									RAIN6=	2.200
COMPUTE NM HYD	200.00	-	1	.15250	81.00	3.573	.43925	1.633	.830	PER IMP= .00
COMPUTE NM HYD	300.00	-	2	.59430	170.64	15.264	.48157	1.933	.449	PER IMP= 2.00
FINISH										

INPUT FILE = A:7076-EX.DAT

RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

212500 212501 212502 212503 212504 212505

TP=0.2313 HR MASS RAIN=-1

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .0333330

PARTIAL HYDROGRAPH 200.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	25.6	4.000	1.0	5.999	.1	7.999	.0
.667	.0	2.666	5.1	4.666	.4	6.666	.0		
1.333	.0	3.333	2.2	5.333	.2	7.333	.0		

RUNOFF VOLUME = .43925 INCHES = 3.5726 ACRE-FEET
 PEAK DISCHARGE RATE = 81.00 CFS AT 1.633 HOURS BASIN AREA = .1525 SQ. MI.

* UNDEVELOPED BASIN 300

COMPUTE NM HYD ID=2 HYD NO=300.0 DA=0.5943 SQ MI
 PER A=95 PER B=0 PER C=3 PER D=2
 TP=0.5417 HR MASS RAIN=-1

K = .312462HR TP = .541700HR K/TP RATIO = .576817 SHAPE CONSTANT, N = 6.612116
 UNIT PEAK = 11.028 CFS UNIT VOLUME = .9988 B = 502.58 P60 = 1.8700
 AREA = .011886 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .539972HR TP = .541700HR K/TP RATIO = .996809 SHAPE CONSTANT, N = 3.541732
 UNIT PEAK = 347.67 CFS UNIT VOLUME = 1.000 B = 323.36 P60 = 1.8700
 AREA = .582414 SQ MI IA = .64082 INCHES INF = 1.64429 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	3.333	16.9	6.666	2.1	9.999	.2	13.332	.0
.667	.0	4.000	10.7	7.333	1.3	10.666	.2	13.999	.0
1.333	.1	4.666	7.0	7.999	.9	11.332	.1	14.665	.0
2.000	167.4	5.333	4.7	8.666	.6	11.999	.1	15.332	.0
2.666	56.8	5.999	3.2	9.332	.4	12.665	.0	15.998	.0

RUNOFF VOLUME = .48157 INCHES = 15.2638 ACRE-FEET
 PEAK DISCHARGE RATE = 170.64 CFS AT 1.933 HOURS BASIN AREA = .5943 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 23:49:23

TIME TO PEAK - EXISTING CONDITIONS

① BASIN 200.0

$L = 4300$

$H = 120'$

$K = 2$

$LCA = 2600$

$S = 2.8\%$

$K_N = 0.033$

$$t_c = \left((12000 - 4300) / (72000)(2) \sqrt{0.028} \right) +$$

$$\left((4300 - 4000)(0.033) \left(\frac{2600}{4300} \right)^{0.33} / 552.2 (0.028)^{0.165} \right)$$

$t_c = 0.347 \text{ hr}$

$t_p = 2/3 t_c = 0.2313 \text{ hr}$

② BASIN 300.0

$L = 11200$

$H = 250$

$K = 2$

$LCA = 6600$

$S = 2.2\%$

$K_N = 0.033$

$$t_c = \left((12000 - 11200) / 72000 (2) \sqrt{0.022} \right) +$$

$$\left((11200 - 4000)(0.033) \left(\frac{6600}{11200} \right)^{0.33} / 552.2 (0.022)^{0.165} \right)$$

$t_c = 0.8125 \text{ hr}$

$t_p = 2/3 t_c = 0.5417 \text{ hr}$

PHASE ONE

```

*****
*                               AVALON SUBDIVISION
*                               PROJECT HYDROLOGY
*****
START          TIME=0.0  PUNCH CODE=0
RAINFALL       TYPE=1  RAIN QUARTER=0.0  RAIN ONE=1.87
               RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS
*****
* THIS RUN IS FOR PHASE ONE DEVELOPMENT.  IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED.  INTERIM RETENTION PONDS WILL BE PROVIDED
* FOR BASIN 300 & 300.1 BY WEST RIDGE MHP.  AN INTERIM RETENTION POND
* WILL BE CONSTRUCTED ON PHASE TWO.  A TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION
*****
*****
* EXISTING ON-SITE BASINS
*****
* UNDEVELOPED PHASE ONE 25.60 ACRES
COMPUTE NM HYD  ID=1  HYD NO=101.UNDEV  DA=0.0400 SQ MI
                PER A=100  PER B=0  PER C=0  PER D=0
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=1  CODE=20
* UNDEVELOPED PHASE TWO 24.11 ACRES - WILL BE RETAINED IN INTERIM POND
COMPUTE NM HYD  ID=2  HYD NO=102.UNDEV  DA=0.0377 SQ MI
                PER A=100  PER B=0  PER C=0  PER D=0
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=2  CODE=20
*****
* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS
*****
* BASIN 101.1A @ AP1
COMPUTE NM HYD  ID=3  HYD NO=101.1A  DA=0.008491 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=3  CODE=20
* BASIN 101.1B @ AP2
COMPUTE NM HYD  ID=4  HYD NO=101.1B  DA=0.002739 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=4  CODE=20
* TOTAL FLOW @ AP2 NORTH
ADD HYD        ID=5  HYD NO=101.1B1  ID I=3  ID II=4
PRINT HYD      ID=5  CODE=20
* BASIN 101.1C @ AP3
COMPUTE NM HYD  ID=6  HYD NO=101.1C  DA=0.002373 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=6  CODE=20
* BASIN 101.2 @ AP2
COMPUTE NM HYD  ID=7  HYD NO=101.2  DA=0.006381 SQ MI
                PER A=0  PER B=21  PER C=21  PER D=58
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=7  CODE=20
* TOTAL FLOW @ AP2
ADD HYD        ID=8  HYD NO=101.1  ID I=5  ID II=7
PRINT HYD      ID=8  CODE=20
* TOTAL FLOW @ AP3 NORTH
ADD HYD        ID=9  HYD NO=101.31  ID I=6  ID II=8
PRINT HYD      ID=9  CODE=20
* BASIN 101.3 @ AP3

```

COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=10 CODE=20
 * BASIN 101.4A @ AP4
 COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=11 CODE=20
 * BASIN 101.4B @ AP5
 COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=12 CODE=20
 * TOTAL FLOW @ AP5
 ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20
 * BASIN 101.4C @ AP3
 COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=14 CODE=20
 * TOTAL FLOW @ AP3 SOUTH
 ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20
 ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10
 * TOTAL FLOW @ AP3
 ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16
 PRINT HYD ID=17 CODE=20
 * BASIN 101.5 @ AP6
 COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=18 CODE=20
 * TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

 * ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

 * ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
 ROUTE RESERVOIR ID=20 HYD NO=101.6 INFLOW ID=19 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	37.5
4.0	0.0214	38.0
16.9	0.1460	40.0
23.5	0.3596	42.0
28.7	0.6756	44.0
33.0	1.1403	46.0
36.8	1.6584	48.0

 PRINT HYD ID=20 CODE=2
 * BASIN 103.1 - 90TH STREET FLOW @ AP12
 COMPUTE NM HYD ID=21 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1
 PRINT HYD ID=21 CODE=20
 * BASIN 105.1 - BLUEWATER STREET FLOW @ AP15
 COMPUTE NM HYD ID=22 HYD NO=105.1 DA=0.002976 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=22 CODE=20

* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS

* DEVELOPED OFF-SITE BASIN 200 - DIRECTED BY TRAINER DIKE
* TO UNSER DIVERSION
COMPUTE NM HYD ID=23 HYD NO=200.0 DA=0.1078 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.2231 HR MASS RAIN=-1
PRINT HYD ID=23 CODE=20
* UNDEVELOPED OFF-SITE BASIN 300 - RETAINED BY INTERIM POND
* CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD ID=24 HYD NO=300.0 DA=0.5422 SQ MI
PER A=95 PER B=0 PER C=2 PER D=3
TP=0.4118 HR MASS RAIN=-1
PRINT HYD ID=24 CODE=20
* UNDEVELOPED OFF-SITE BASIN 300.1 - RETAINED BY INTERIM PON
* CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD ID=25 HYD NO=300.1 DA=0.0131 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1
PRINT HYD ID=25 CODE=20
FINISH

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 08/06/1998
START TIME (HR:MIN:SEC) = 07:39:13 USER NO.= BRASHERE.I01
INPUT FILE = a:7076-ph1.dat

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT = .033330 HOURS END TIME = 5.999400 HOURS

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

* THIS RUN IS FOR PHASE ONE DEVELOPMENT. IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED. INTERIM RETENTION PONDS WILL BE PROVIDED
* FOR BASIN 300 & 300.1 BY WEST RIDGE MHP. AN INTERIM RETENTION POND
* WILL BE CONSTRUCTED ON PHASE TWO. A TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION

* EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES

COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 82.084 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700

AREA = .040000 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA 101.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.8	4.000	.1		
.667	.0	2.000	3.1	3.333	.2	4.666	.0		

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

* UNDEVELOPED PHASE TWO 24.11 ACRES - WILL BE RETAINED IN INTERIM POND

COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 77.364 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700
AREA = .037700 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 102.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.7	4.000	.0		
.667	.0	2.000	2.9	3.333	.2	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .8832 ACRE-FEET
PEAK DISCHARGE RATE = 31.30 CFS AT 1.533 HOURS BASIN AREA = .0377 SQ. MI.

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ AP1

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 19.443 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .004925 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 9.4886 CFS UNIT VOLUME = .9991 B = 354.67 P60 = 1.8700
AREA = .003566 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=3 CODE=20

HYDROGRAPH FROM AREA 101.1A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.5	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .6714 ACRE-FEET
 PEAK DISCHARGE RATE = 19.35 CFS AT 1.500 HOURS BASIN AREA = .0085 SQ. MI.

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 6.2720 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 1.8700
 AREA = .001589 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 3.0608 CFS UNIT VOLUME = .9962 B = 354.67 P60 = 1.8700
 AREA = .001150 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=4 CODE=20

HYDROGRAPH FROM AREA 101.1B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.4	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.3	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2166 ACRE-FEET
 PEAK DISCHARGE RATE = 6.25 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4
 PRINT HYD ID=5 CODE=20

HYDROGRAPH FROM AREA 101.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.2	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	5.9	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48252 INCHES = .8879 ACRE-FEET
 PEAK DISCHARGE RATE = 25.60 CFS AT 1.500 HOURS BASIN AREA = .0112 SQ. MI.

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.4339 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
AREA = .001376 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.6518 CFS UNIT VOLUME = .9953 B = 354.67 P60 = 1.8700
AREA = .000997 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=20

HYDROGRAPH FROM AREA 101.1C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.2	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.1	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .1876 ACRE-FEET
PEAK DISCHARGE RATE = 5.42 CFS AT 1.500 HOURS BASIN AREA = .0024 SQ. MI.

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.612 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003701 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 7.1307 CFS UNIT VOLUME = .9986 B = 354.67 P60 = 1.8700
AREA = .002680 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=7 CODE=20

PARTIAL HYDROGRAPH 101.20

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.3	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .5045 ACRE-FEET
PEAK DISCHARGE RATE = 14.55 CFS AT 1.500 HOURS BASIN AREA = .0064 SQ. MI.

* TOTAL FLOW @ AP2

ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7
PRINT HYD ID=8 CODE=20

PARTIAL HYDROGRAPH 101.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	8.2	4.000	.2	5.999	.2		
.667	.0	2.666	.8	4.666	.2	6.666	.0		
1.333	9.2	3.333	.2	5.333	.2				

RUNOFF VOLUME = 1.48252 INCHES = 1.3925 ACRE-FEET
PEAK DISCHARGE RATE = 40.15 CFS AT 1.500 HOURS BASIN AREA = .0176 SQ. MI.

* TOTAL FLOW @ AP3 NORTH

ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8
PRINT HYD ID=9 CODE=20

PARTIAL HYDROGRAPH 101.31

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	9.3	4.000	.2	5.999	.2		
.667	.0	2.666	.9	4.666	.2	6.666	.0		
1.333	10.5	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48251 INCHES = 1.5801 ACRE-FEET
PEAK DISCHARGE RATE = 45.57 CFS AT 1.500 HOURS BASIN AREA = .0200 SQ. MI.

* BASIN 101.3 @ AP3

COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 12.842 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003253 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 6.2669 CFS UNIT VOLUME = .9982 B = 354.67 P60 = 1.8700
AREA = .002355 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=10 CODE=20

PARTIAL HYDROGRAPH 101.30

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.6	4.000	.1	5.999	.1		

.667	.0	2.666	.2	4.666	.1	6.666	.0
1.333	2.9	3.333	.1	5.333	.1		

RUNOFF VOLUME = 1.48256 INCHES = .4434 ACRE-FEET
PEAK DISCHARGE RATE = 12.79 CFS AT 1.500 HOURS BASIN AREA = .0056 SQ. MI.

* BASIN 101.4A @ AP4

COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 7.8336 CFS UNIT VOLUME = .9978 B = 526.28 P60 = 1.8700
AREA = .001984 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 3.8229 CFS UNIT VOLUME = .9969 B = 354.67 P60 = 1.8700
AREA = .001437 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=11 CODE=20

HYDROGRAPH FROM AREA 101.4A

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.8	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.6	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2705 ACRE-FEET
PEAK DISCHARGE RATE = 7.81 CFS AT 1.500 HOURS BASIN AREA = .0034 SQ. MI.

* BASIN 101.4B @ AP5

COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.3747 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002375 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 4.5750 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
AREA = .001719 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=12 CODE=20

HYDROGRAPH FROM AREA 101.4B

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS

.000	.0	2.000	1.9	4.000	.0	5.999	.0
.667	.0	2.666	.2	4.666	.0	6.666	.0
1.333	2.1	3.333	.1	5.333	.0		

RUNOFF VOLUME = 1.48257 INCHES = .3237 ACRE-FEET
 PEAK DISCHARGE RATE = 9.34 CFS AT 1.500 HOURS BASIN AREA = .0041 SQ. MI.

* TOTAL FLOW @ AP5

ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20

HYDROGRAPH FROM AREA 101.4B1

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	3.5	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.9	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .5942 ACRE-FEET
 PEAK DISCHARGE RATE = 17.14 CFS AT 1.500 HOURS BASIN AREA = .0075 SQ. MI.

* BASIN 101.4C @ AP3

COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.7931 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002227 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.2911 CFS UNIT VOLUME = .9972 B = 354.67 P60 = 1.8700
 AREA = .001613 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=14 CODE=20

HYDROGRAPH FROM AREA 101.4C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.0		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3036 ACRE-FEET
 PEAK DISCHARGE RATE = 8.76 CFS AT 1.500 HOURS BASIN AREA = .0038 SQ. MI.

* TOTAL FLOW @ AP3 SOUTH

ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20

PARTIAL HYDROGRAPH 101.40

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.3	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	6.0	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .8978 ACRE-FEET
 PEAK DISCHARGE RATE = 25.90 CFS AT 1.500 HOURS BASIN AREA = .0114 SQ. MI.

ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10
 * TOTAL FLOW @ AP3
 ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16
 PRINT HYD ID=17 CODE=20

PARTIAL HYDROGRAPH 101.42

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	17.2	4.000	.4	5.999	.4		
.667	.0	2.666	1.6	4.666	.3	6.666	.0		
1.333	19.4	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 2.9213 ACRE-FEET
 PEAK DISCHARGE RATE = 84.26 CFS AT 1.500 HOURS BASIN AREA = .0369 SQ. MI.

* BASIN 101.5 @ AP6
 COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.6701 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002449 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.7191 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
 AREA = .001774 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=18 CODE=20

PARTIAL HYDROGRAPH 101.50

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.0	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3339 ACRE-FEET
 PEAK DISCHARGE RATE = 9.63 CFS AT 1.500 HOURS BASIN AREA = .0042 SQ. MI.

* TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

PARTIAL HYDROGRAPH 101.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	19.2	4.000	.4	5.999	.5		
.667	.0	2.666	1.8	4.666	.4	6.666	.0		
1.333	21.6	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FEET
 PEAK DISCHARGE RATE = 93.89 CFS AT 1.500 HOURS BASIN AREA = .0412 SQ. MI.

 * ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

* ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP

ROUTE RESERVOIR	ID=20	HYD NO=101.6	INFLOW ID=19	CODE=10
	OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)	
	0	0	37.5	
	4.0	0.0214	38.0	
	16.9	0.1460	40.0	
	23.5	0.3596	42.0	
	28.7	0.6756	44.0	
	33.0	1.1403	46.0	
	36.8	1.6584	48.0	

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	37.50	.000	.00
.33	.00	37.50	.000	.00
.67	.00	37.50	.000	.00
1.00	.00	37.50	.000	.00
1.33	21.59	38.69	.065	8.47
1.67	48.51	46.15	1.179	33.28
2.00	19.22	45.77	1.086	32.50
2.33	4.40	43.16	.543	26.52
2.67	1.77	38.86	.075	9.53
3.00	.88	37.64	.006	1.11
3.33	.54	37.57	.003	.59
3.67	.44	37.56	.002	.45
4.00	.39	37.55	.002	.40
4.33	.38	37.55	.002	.38
4.67	.38	37.55	.002	.38
5.00	.39	37.55	.002	.39
5.33	.42	37.55	.002	.42
5.67	.45	37.56	.002	.44
6.00	.49	37.56	.003	.48
6.33	.05	37.51	.001	.10
6.67	.01	37.50	.000	.02

PEAK DISCHARGE = 33.704 CFS - PEAK OCCURS AT HOUR 1.77
 MAXIMUM WATER SURFACE ELEVATION = 46.371
 MAXIMUM STORAGE = 1.2363 AC-FT INCREMENTAL TIME= .033330HRS

X

PRINT HYD

ID=20 CODE=2

PARTIAL HYDROGRAPH 101.60

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	17.9	2.800	4.0	4.200	.4	5.599	.4
.067	.0	1.467	24.7	2.866	2.2	4.266	.4	5.666	.4
.133	.0	1.533	29.7	2.933	1.5	4.333	.4	5.733	.5
.200	.0	1.600	32.1	3.000	1.1	4.400	.4	5.799	.5
.267	.0	1.667	33.3	3.066	.9	4.466	.4	5.866	.5
.333	.0	1.733	33.7	3.133	.8	4.533	.4	5.933	.5
.400	.0	1.800	33.7	3.200	.7	4.600	.4	5.999	.5
.467	.0	1.866	33.5	3.266	.6	4.666	.4	6.066	.5
.533	.0	1.933	33.1	3.333	.6	4.733	.4	6.133	.4
.600	.0	2.000	32.5	3.400	.5	4.800	.4	6.199	.3
.667	.0	2.066	31.8	3.466	.5	4.866	.4	6.266	.2
.733	.0	2.133	30.9	3.533	.5	4.933	.4	6.333	.1
.800	.0	2.200	29.8	3.600	.5	4.999	.4	6.399	.1
.867	.0	2.266	28.6	3.666	.4	5.066	.4	6.466	.0
.933	.0	2.333	26.5	3.733	.4	5.133	.4	6.533	.0
1.000	.0	2.400	24.6	3.800	.4	5.199	.4	6.599	.0
1.067	.0	2.466	22.1	3.866	.4	5.266	.4	6.666	.0
1.133	.0	2.533	19.0	3.933	.4	5.333	.4	6.733	.0
1.200	.3	2.600	15.4	4.000	.4	5.399	.4	6.799	.0
1.267	3.1	2.666	9.5	4.066	.4	5.466	.4	6.866	.0
1.333	8.5	2.733	6.1	4.133	.4	5.533	.4		

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-Feet
 PEAK DISCHARGE RATE = 33.70 CFS AT 1.766 HOURS BASIN AREA = .0412 SQ. MI.

* BASIN 103.1 - 90TH STREET FLOW @ AP12

COMPUTE NM HYD ID=21 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.8478 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002241 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
 UNIT PEAK = 1.4324 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
 AREA = .000492 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=21 CODE=20

PARTIAL HYDROGRAPH 103.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	1.7	4.000	.0	5.999	.0		

.667 .0 2.666 .1 4.666 .0 6.666 .0
1.333 2.0 3.333 .0 5.333 .0

RUNOFF VOLUME = 1.79069 INCHES = .2610 ACRE-Feet
PEAK DISCHARGE RATE = 7.19 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* BASIN 105.1 - BLUEWATER STREET FLOW @ AP15

COMPUTE NM HYD ID=22 HYD NO=105.1 DA=0.002976 SQ MI
PER A=0 PER B=0 PER C=18 PER D=82
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.6345 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002440 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
UNIT PEAK = 1.5598 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
AREA = .000536 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=22 CODE=20

PARTIAL HYDROGRAPH 105.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2842 ACRE-Feet
PEAK DISCHARGE RATE = 7.83 CFS AT 1.500 HOURS BASIN AREA = .0030 SQ. MI.

* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS

* DEVELOPED OFF-SITE BASIN 200 - DIRECTED BY TRAINER DIKE

* TO UNSER DIVERSION

COMPUTE NM HYD ID=23 HYD NO=200.0 DA=0.1078 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.2231 HR MASS RAIN=-1

K = .264881HR TP = .223100HR K/TP RATIO = 1.187275 SHAPE CONSTANT, N = 2.990392
UNIT PEAK = 135.79 CFS UNIT VOLUME = .9999 B = 281.04 P60 = 1.8700
AREA = .107800 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=23 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	17.6	4.000	.7	5.999	.1	7.999	.0

.667	.0	2.666	3.6	4.666	.3	6.666	.0
1.333	.0	3.333	1.5	5.333	.1	7.333	.0

RUNOFF VOLUME = .43925 INCHES = 2.5254 ACRE-FEET
 PEAK DISCHARGE RATE = 57.73 CFS AT 1.600 HOURS BASIN AREA = .1078 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300 - RETAINED BY INTERIM POND

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=24 HYD NO=300.0 DA=0.5422 SQ MI
 PER A=95 PER B=0 PER C=2 PER D=3
 TP=0.4118 HR MASS RAIN=-1

K = .237533HR TP = .411800HR K/TP RATIO = .576817 SHAPE CONSTANT, N = 6.612116
 UNIT PEAK = 19.852 CFS UNIT VOLUME = .9994 B = 502.58 P60 = 1.8700
 AREA = .016266 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .411391HR TP = .411800HR K/TP RATIO = .999007 SHAPE CONSTANT, N = 3.533849
 UNIT PEAK = 412.26 CFS UNIT VOLUME = 1.000 B = 322.79 P60 = 1.8700
 AREA = .525934 SQ MI IA = .64381 INCHES INF = 1.65268 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=24 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.666	33.4	5.333	2.7	7.999	.3	10.666	.0
.667	.0	3.333	13.6	5.999	1.7	8.666	.2	11.332	.0
1.333	.5	4.000	7.8	6.666	.9	9.332	.1	11.999	.0
2.000	164.7	4.666	4.5	7.333	.5	9.999	.1	12.665	.0

RUNOFF VOLUME = .49289 INCHES = 14.2530 ACRE-FEET
 PEAK DISCHARGE RATE = 206.55 CFS AT 1.800 HOURS BASIN AREA = .5422 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300.1 - RETAINED BY INTERIM PON

* CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=25 HYD NO=300.1 DA=0.0131 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0
 TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
 UNIT PEAK = 26.882 CFS UNIT VOLUME = .9991 B = 273.54 P60 = 1.8700
 AREA = .013100 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=25 CODE=20

HYDROGRAPH FROM AREA 300.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	.0	2.666	.3	4.000	.0		
.667	.0	2.000	1.0	3.333	.1	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .3069 ACRE-FEET
PEAK DISCHARGE RATE = 10.88 CFS AT 1.533 HOURS BASIN AREA = .0131 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 07:39:21

TIME TO PEAK - INTERIM COND.

① BASIN 200.0

$L = 4050$

$H = 11.4$

$K = 2$

$LCA = 2600$

$S = 2.8\%$

$K_N = 0.033$

$$t_c = \left((12000 - 4050) / 72000 (2) \sqrt{0.028} \right) + \left((4050 - 4000) (0.033) \left(\frac{2600}{4050} \right)^{0.33} / 552.2 (0.028)^{0.165} \right)$$

$t_c = 0.3346 \text{ hr}$

$t_p = 7/3 t_c = 0.2231 \text{ hr}$

② BASIN 300.0

$L = 9350$

$H = 18.6$

$K = 2$

$LCA = 4750$

$S = 2.0\%$

$K_N = 0.033$

$$t_c = \left((12000 - 9350) / 72000 (2) \sqrt{0.02} \right) + \left((9350 - 4000) (0.033) \left(\frac{4750}{9350} \right)^{0.33} / 552.2 (0.02)^{0.165} \right)$$

$t_c = 0.6177 \text{ hr}$

$t_p = 7/3 t_c = 0.4118 \text{ hr}$

PHASE TWO

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

* THIS RUN IS FOR PHASE TWO DEVELOPMENT. IT ASSUMES ALL OFF-SITE
* BASINS ARE UNDEVELOPED. INTERIM RETENTION POND WILL BE PROVIDED
* BY WEST RIDGE MHP. AN INTERIM TRAINER DIKE WILL BE CONSTRUCTED
* ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION
* A PUBLIC STORM DRAIN WILL BE EXTENDED IN 90TH STREET TO BLUEWATER

* EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES

COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=1 CODE=20

* UNDEVELOPED PHASE TWO 24.11 ACRES

COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=2 CODE=20

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ AP1

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=3 CODE=20

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=4 CODE=20

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4

PRINT HYD ID=5 CODE=20

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=6 CODE=20

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

PRINT HYD ID=7 CODE=20

* TOTAL FLOW @ AP2

ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7

PRINT HYD ID=8 CODE=20

* TOTAL FLOW @ AP3 NORTH

ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8

PRINT HYD ID=9 CODE=20

* BASIN 101.3 @ AP3

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COMPUTE NM HYD      ID=10  HYD NO=101.3  DA=0.005608 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=10  CODE=20

* BASIN 101.4A @ AP4
COMPUTE NM HYD      ID=11  HYD NO=101.4A  DA=0.003421 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=11  CODE=20

* BASIN 101.4B @ AP5
COMPUTE NM HYD      ID=12  HYD NO=101.4B  DA=0.004094 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=12  CODE=20

* TOTAL FLOW @ AP5
ADD HYD             ID=13  HYD NO=101.4B1  ID I=11  ID II=12
PRINT HYD           ID=13  CODE=20

* BASIN 101.4C @ AP3
COMPUTE NM HYD      ID=14  HYD NO=101.4C  DA=0.003840 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=14  CODE=20

* TOTAL FLOW @ AP3 SOUTH
ADD HYD             ID=15  HYD NO=101.4  ID I=13  ID II=14
PRINT HYD           ID=15  CODE=20
ADD HYD             ID=16  HYD NO=101.41  ID I=9  ID II=10
* TOTAL FLOW @ AP3
ADD HYD             ID=17  HYD NO=101.42  ID I=15  ID II=16
PRINT HYD           ID=17  CODE=20

* BASIN 101.5 @ AP6
COMPUTE NM HYD      ID=18  HYD NO=101.5  DA=0.004223 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=18  CODE=20

* TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
ADD HYD             ID=19  HYD NO=101  ID I=17  ID II=18
PRINT HYD           ID=19  CODE=20
*****
*** ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION
*****
* ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
ROUTE RESERVOIR    ID=20  HYD NO=101.6  INFLOW ID=19  CODE=10
                   OUT (CFS)  STORAGE (AC-FT)  ELEV (FT)
                   0          0          37.5
                   4.0        0.0214        38.0
                   16.9       0.1460        3400
                   23.5       0.3596        42.0
                   28.7       0.6756        44.0
                   33.0       1.1403        46.0
                   36.8       1.6584        48.0

PRINT HYD           ID=20  CODE=2
*****
* THE FOLLOWING ARE PHASE TWO DEVELOPED ON-SITE BASINS
*****
* BASIN 102.1A @ AP7
COMPUTE NM HYD      ID=21  HYD NO=102.1A  DA=0.006438 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=21  CODE=20

* BASIN 102.1B @ AP8

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COMPUTE NM HYD      ID=22 HYD NO=102.1B  DA=0.002234 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=22  CODE=20
* TOTAL FLOW @ AP8 NORTH
ADD HYD             ID=23  HYD NO=102.1B1  ID I=21  ID II=22
PRINT HYD           ID=23  CODE=20
* BASIN 102.1C @ AP9
COMPUTE NM HYD      ID=24  HYD NO=102.1C  DA=0.001500 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=24  CODE=20
* BASIN 102.2 @ AP8
COMPUTE NM HYD      ID=25  HYD NO=102.2  DA=0.004969 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=25  CODE=20
* TOTAL FLOW @ AP8
ADD HYD             ID=26  HYD NO=102.1B1  ID I=23  ID II=25
PRINT HYD           ID=26  CODE=20
* TOTAL FLOW @ AP9 NORTH
ADD HYD             ID=27  HYD NO=102.11  ID I=24  ID II=26
PRINT HYD           ID=27  CODE=20
* BASIN 102.3 @ AP9
COMPUTE NM HYD      ID=28  HYD NO=102.3  DA=0.007359 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=28  CODE=20
* TOTAL FLOW @ AP9
ADD HYD             ID=29  HYD NO=102.12  ID I=27  ID II=28
PRINT HYD           ID=29  CODE=20
* BASIN 102.4A @ AP10
COMPUTE NM HYD      ID=30  HYD NO=102.4A  DA=0.002578 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=30  CODE=20
* BASIN 102.4B @ AP11
COMPUTE NM HYD      ID=31  HYD NO=102.4B  DA=0.006156 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=31  CODE=20
* TOTAL FLOW @ AP11
ADD HYD             ID=32  HYD NO=102.41  ID I=30  ID II=31
PRINT HYD           ID=32  CODE=20
* BASIN 102.5 @ AP12
COMPUTE NM HYD      ID=33  HYD NO=102.5  DA=0.004687 SQ MI
                    PER A=0  PER B=21  PER C=21  PER D=58
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=33  CODE=20
ADD HYD             ID=34  HYD NO=102.42  ID I=32  ID II=33
PRINT HYD           ID=34  CODE=20
* BASIN 103.1 @ AP12
COMPUTE NM HYD      ID=35  HYD NO=103.1  DA=0.002733 SQ MI
                    PER A=0  PER B=0  PER C=18  PER D=82
                    TP=0.1333 HR  MASS RAIN=-1

PRINT HYD           ID=35  CODE=20
ADD HYD             ID=36  HYD NO=102.43  ID I=29  ID II=35
PRINT HYD           ID=36  CODE=20
*****
* TOTAL FLOW AT PHASE TWO DETENTION POND @ AP12

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*****
ADD HYD          ID=37  HYD NO=102  ID I=34  ID II=36
PRINT HYD        ID=37  CODE=20
*****
* ROUTE FUTURE PHASE TWO THROUGH DETENTION POND TO AMOLE
*****
* ALLOWABLE DISCHARGE IS 49.4 CFS PER DMP FOR WEST RIDGE MHP
ROUTE RESERVOIR  ID=38  HYD NO=108  INFLOW ID=37  CODE=10
                OUT (CFS)  STORAGE (AC-FT)  ELEV (FT)
                0          0              63.0
                5.0        0.1417         64.0
                20.5       0.3070         65.0
                31.3       0.4983         66.0
                39.2       0.7181         67.0
                45.8       0.9689         68.0
                51.5       1.2532         69.0
PRINT HYD        ID=38  CODE=2
*****
* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS
*****
* UNDEVELOPED OFF-SITE BASIN 200 - INTERIM TRAINER DIKE
* WILL DIRECT FLOW TO UNSER DIVERSION
COMPUTE NM HYD   ID=39  HYD NO=200.0  DA=0.1078 SQ MI
                PER A=100 PER B=0  PER C=0  PER D=0
                TP=0.2231 HR  MASS RAIN=-1
PRINT HYD        ID=39  CODE=20
* UNDEVELOPED OFF-SITE BASIN 300 - PONDED BY INTERIM RETENTION
* POND CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD   ID=40  HYD NO=300.0  DA=0.5422 SQ MI
                PER A=95  PER B=0  PER C=2  PER D=3
                TP=0.4118 HR  MASS RAIN=-1
PRINT HYD        ID=40  CODE=20
* UNDEVELOPED OFF-SITE BASIN 300.1 - PONDED BY INTERIM RETENTION
* POND CONSTRUCTED BY WEST RIDGE MHP
COMPUTE NM HYD   ID=41  HYD NO=300.1  DA=0.0131 SQ MI
                PER A=100 PER B=0  PER C=0  PER D=0
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD        ID=41  CODE=20
* OFF-SITE BASIN 104.1 @ AP14 - BLUEWATER STREET FLOW
COMPUTE NM HYD   ID=42  HYD NO=104.1  DA=0.002781 SQ MI
                PER A=0  PER B=0  PER C=18  PER D=82
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD        ID=42  CODE=20
* OFF-SITE BASIN 105.1 @ AP15 - BLUEWATER STREET FLOW
COMPUTE NM HYD   ID=43  HYD NO=105.1  DA=0.002976 SQ MI
                PER A=0  PER B=0  PER C=18  PER D=82
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD        ID=43  CODE=20
FINISH

```

RUN DATE (MON/DAY/YR) =04/02/1999
USER NO.= BRASHERE.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	101.UNDEV	-	1	.04000	33.21	.937	.43925	1.533	1.297	PER IMP= .00
COMPUTE NM HYD	102.UNDEV	-	2	.03770	31.30	.883	.43925	1.533	1.297	PER IMP= .00
COMPUTE NM HYD	101.1A	-	3	.00849	19.35	.671	1.48256	1.500	3.561	PER IMP= 58.00
COMPUTE NM HYD	101.1B	-	4	.00274	6.25	.217	1.48256	1.500	3.567	PER IMP= 58.00
ADD HYD	101.1B1	3& 4	5	.01123	25.60	.888	1.48252	1.500	3.562	
COMPUTE NM HYD	101.1C	-	6	.00237	5.42	.188	1.48256	1.500	3.569	PER IMP= 58.00
COMPUTE NM HYD	101.20	-	7	.00638	14.55	.505	1.48256	1.500	3.562	PER IMP= 58.00
ADD HYD	101.10	5& 7	8	.01761	40.15	1.392	1.48252	1.500	3.562	
ADD HYD	101.31	6& 8	9	.01998	45.57	1.580	1.48251	1.500	3.563	
COMPUTE NM HYD	101.30	-	10	.00561	12.79	.443	1.48256	1.500	3.562	PER IMP= 58.00
COMPUTE NM HYD	101.4A	-	11	.00342	7.81	.270	1.48256	1.500	3.565	PER IMP= 58.00
COMPUTE NM HYD	101.4B	-	12	.00409	9.34	.324	1.48257	1.500	3.564	PER IMP= 58.00
ADD HYD	101.4B1	11&12	13	.00752	17.14	.594	1.48249	1.500	3.565	
COMPUTE NM HYD	101.4C	-	14	.00384	8.76	.304	1.48256	1.500	3.565	PER IMP= 58.00
ADD HYD	101.40	13&14	15	.01136	25.90	.898	1.48249	1.500	3.565	
ADD HYD	101.41	9&10	16	.02559	58.36	2.023	1.48251	1.500	3.563	
ADD HYD	101.42	15&16	17	.03695	84.26	2.921	1.48250	1.500	3.563	
COMPUTE NM HYD	101.50	-	18	.00422	9.63	.334	1.48256	1.500	3.564	PER IMP= 58.00
ADD HYD	101.00	17&18	19	.04117	93.89	3.255	1.48250	1.500	3.563	
ROUTE RESERVOIR	101.60	19	20	.04117	33.70	3.255	1.48250	1.766	1.279	AC-FT= 1.236
COMPUTE NM HYD	102.1A	-	21	.00644	14.68	.509	1.48257	1.500	3.562	PER IMP= 58.00
COMPUTE NM HYD	102.1B	-	22	.00223	5.10	.177	1.48256	1.500	3.569	PER IMP= 58.00
ADD HYD	102.1B1	21&22	23	.00867	19.78	.686	1.48250	1.500	3.563	
COMPUTE NM HYD	102.1C	-	24	.00150	3.43	.119	1.48257	1.500	3.575	PER IMP= 58.00
COMPUTE NM HYD	102.20	-	25	.00497	11.33	.393	1.48257	1.500	3.563	PER IMP= 58.00
ADD HYD	102.1B1	23&25	26	.01364	31.11	1.079	1.48250	1.500	3.563	
ADD HYD	102.11	24&26	27	.01514	34.54	1.197	1.48249	1.500	3.564	
COMPUTE NM HYD	102.30	-	28	.00736	16.77	.582	1.48257	1.500	3.561	PER IMP= 58.00
ADD HYD	102.12	27&28	29	.02250	51.31	1.779	1.48250	1.500	3.563	
COMPUTE NM HYD	102.4A	-	30	.00258	5.89	.204	1.48256	1.500	3.567	PER IMP= 58.00
COMPUTE NM HYD	102.4B	-	31	.00616	14.03	.487	1.48257	1.500	3.562	PER IMP= 58.00
ADD HYD	102.41	30&31	32	.00873	19.92	.691	1.48250	1.500	3.564	
COMPUTE NM HYD	102.50	-	33	.00469	10.69	.371	1.48256	1.500	3.564	PER IMP= 58.00
ADD HYD	102.42	32&33	34	.01342	30.61	1.061	1.48250	1.500	3.564	
COMPUTE NM HYD	103.10	-	35	.00273	7.19	.261	1.79069	1.500	4.110	PER IMP= 82.00
ADD HYD	102.43	29&35	36	.02523	58.50	2.040	1.51587	1.500	3.623	
ADD HYD	102.00	34&36	37	.03865	89.11	3.101	1.50428	1.500	3.602	
ROUTE RESERVOIR	108.00	37	38	.03865	45.83	3.101	1.50428	1.667	1.853	AC-FT= .970
COMPUTE NM HYD	200.00	-	39	.10780	57.73	2.525	.43925	1.600	.837	PER IMP= .00
COMPUTE NM HYD	300.00	-	40	.54220	206.55	14.253	.49289	1.800	.595	PER IMP= 3.00
COMPUTE NM HYD	300.10	-	41	.01310	10.88	.307	.43925	1.533	1.298	PER IMP= .00
COMPUTE NM HYD	104.10	-	42	.00278	7.31	.266	1.79069	1.500	4.110	PER IMP= 82.00
COMPUTE NM HYD	105.10	-	43	.00298	7.83	.284	1.79069	1.500	4.109	PER IMP= 82.00
FINISH										

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
 RUN DATE (MON/DAY/YR) = 04/02/1999
 START TIME (HR:MIN:SEC) = 11:55:21 USER NO.= BRASHERE.I01
 INPUT FILE = \AVALON\99504.DAT

 * AVALON SUBDIVISION
 * PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
 RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
 RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

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

 * THIS RUN IS FOR PHASE TWO DEVELOPMENT. IT ASSUMES ALL OFF-SITE
 * BASINS ARE UNDEVELOPED. INTERIM RETENTION POND WILL BE PROVIDED
 * BY WEST RIDGE MHP. AN INTERIM TRAINER DIKE WILL BE CONSTRUCTED
 * ALONG BLUEWATER ROAD TO DIRECT BASIN 200 TO THE UNSER DIVERSION
 * A PUBLIC STORM DRAIN WILL BE EXTENDED IN 90TH STREET TO BLUEWATER

 * EXISTING ON-SITE BASINS

* UNDEVELOPED PHASE ONE 25.60 ACRES

COMPUTE NM HYD ID=1 HYD NO=101.UNDEV DA=0.0400 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0
 TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
 UNIT PEAK = 82.084 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700

AREA = .040000 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA 101.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.8	4.000	.1		
.667	.0	2.000	3.1	3.333	.2	4.666	.0		

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

* UNDEVELOPED PHASE TWO 24.11 ACRES

COMPUTE NM HYD ID=2 HYD NO=102.UNDEV DA=0.0377 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 77.364 CFS UNIT VOLUME = .9995 B = 273.54 P60 = 1.8700
AREA = .037700 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 102.UNDEV

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.0	2.666	.7	4.000	.0		
.667	.0	2.000	2.9	3.333	.2	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .8832 ACRE-FEET
PEAK DISCHARGE RATE = 31.30 CFS AT 1.533 HOURS BASIN AREA = .0377 SQ. MI.

* THE FOLLOWING ARE PHASE ONE DEVELOPED ON-SITE BASINS

* BASIN 101.1A @ AP1

COMPUTE NM HYD ID=3 HYD NO=101.1A DA=0.008491 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 19.443 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .004925 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 9.4886 CFS UNIT VOLUME = .9991 B = 354.67 P60 = 1.8700
AREA = .003566 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=3 CODE=20

HYDROGRAPH FROM AREA 101.1A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.5	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .6714 ACRE-FEET
PEAK DISCHARGE RATE = 19.35 CFS AT 1.500 HOURS BASIN AREA = .0085 SQ. MI.

* BASIN 101.1B @ AP2

COMPUTE NM HYD ID=4 HYD NO=101.1B DA=0.002739 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 6.2720 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 1.8700
AREA = .001589 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 3.0608 CFS UNIT VOLUME = .9962 B = 354.67 P60 = 1.8700
AREA = .001150 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD

ID=4 CODE=20

HYDROGRAPH FROM AREA 101.1B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.4	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.3	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2166 ACRE-FEET
PEAK DISCHARGE RATE = 6.25 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

* TOTAL FLOW @ AP2 NORTH

ADD HYD ID=5 HYD NO=101.1B1 ID I=3 ID II=4
PRINT HYD ID=5 CODE=20

HYDROGRAPH FROM AREA 101.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.2	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	5.9	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48252 INCHES = .8879 ACRE-FEET
PEAK DISCHARGE RATE = 25.60 CFS AT 1.500 HOURS BASIN AREA = .0112 SQ. MI.

* BASIN 101.1C @ AP3

COMPUTE NM HYD ID=6 HYD NO=101.1C DA=0.002373 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.4339 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
AREA = .001376 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.6518 CFS UNIT VOLUME = .9953 B = 354.67 P60 = 1.8700
AREA = .000997 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=20

HYDROGRAPH FROM AREA 101.1C

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.2	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.1	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .1876 ACRE-FEET
PEAK DISCHARGE RATE = 5.42 CFS AT 1.500 HOURS BASIN AREA = .0024 SQ. MI.

* BASIN 101.2 @ AP2

COMPUTE NM HYD ID=7 HYD NO=101.2 DA=0.006381 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.612 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003701 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 7.1307 CFS UNIT VOLUME = .9986 B = 354.67 P60 = 1.8700
AREA = .002680 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=7 CODE=20

PARTIAL HYDROGRAPH 101.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.3	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48256 INCHES = .5045 ACRE-FEET
PEAK DISCHARGE RATE = 14.55 CFS AT 1.500 HOURS BASIN AREA = .0064 SQ. MI.

* TOTAL FLOW @ AP2
 ADD HYD ID=8 HYD NO=101.1 ID I=5 ID II=7
 PRINT HYD ID=8 CODE=20

PARTIAL HYDROGRAPH 101.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	8.2	4.000	.2	5.999	.2		
.667	.0	2.666	.8	4.666	.2	6.666	.0		
1.333	9.2	3.333	.2	5.333	.2				

RUNOFF VOLUME = 1.48252 INCHES = 1.3925 ACRE-FEET
 PEAK DISCHARGE RATE = 40.15 CFS AT 1.500 HOURS BASIN AREA = .0176 SQ. MI.

* TOTAL FLOW @ AP3 NORTH
 ADD HYD ID=9 HYD NO=101.31 ID I=6 ID II=8
 PRINT HYD ID=9 CODE=20

PARTIAL HYDROGRAPH 101.31

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	9.3	4.000	.2	5.999	.2		
.667	.0	2.666	.9	4.666	.2	6.666	.0		
1.333	10.5	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48251 INCHES = 1.5801 ACRE-FEET
 PEAK DISCHARGE RATE = 45.57 CFS AT 1.500 HOURS BASIN AREA = .0200 SQ. MI.

* BASIN 101.3 @ AP3
 COMPUTE NM HYD ID=10 HYD NO=101.3 DA=0.005608 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 12.842 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
 AREA = .003253 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 6.2669 CFS UNIT VOLUME = .9982 B = 354.67 P60 = 1.8700
 AREA = .002355 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=10 CODE=20

PARTIAL HYDROGRAPH 101.30

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.6	4.000	.1	5.999	.1		

.667	.0	2.666	.2	4.666	.1	6.666	.0
1.333	2.9	3.333	.1	5.333	.1		

RUNOFF VOLUME = 1.48256 INCHES = .4434 ACRE-FEET
PEAK DISCHARGE RATE = 12.79 CFS AT 1.500 HOURS BASIN AREA = .0056 SQ. MI.

* BASIN 101.4A @ AP4

COMPUTE NM HYD ID=11 HYD NO=101.4A DA=0.003421 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 7.8336 CFS UNIT VOLUME = .9978 B = 526.28 P60 = 1.8700
AREA = .001984 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 3.8229 CFS UNIT VOLUME = .9969 B = 354.67 P60 = 1.8700
AREA = .001437 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=11 CODE=20

HYDROGRAPH FROM AREA 101.4A

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.8	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.6	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2705 ACRE-FEET
PEAK DISCHARGE RATE = 7.81 CFS AT 1.500 HOURS BASIN AREA = .0034 SQ. MI.

* BASIN 101.4B @ AP5

COMPUTE NM HYD ID=12 HYD NO=101.4B DA=0.004094 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.3747 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002375 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 4.5750 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
AREA = .001719 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=12 CODE=20

HYDROGRAPH FROM AREA 101.4B

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS

.000	.0	2.000	1.9	4.000	.0	5.999	.0
.667	.0	2.666	.2	4.666	.0	6.666	.0
1.333	2.1	3.333	.1	5.333	.0		

RUNOFF VOLUME = 1.48257 INCHES = .3237 ACRE-FEET
 PEAK DISCHARGE RATE = 9.34 CFS AT 1.500 HOURS BASIN AREA = .0041 SQ. MI.

* TOTAL FLOW @ AP5

ADD HYD ID=13 HYD NO=101.4B1 ID I=11 ID II=12
 PRINT HYD ID=13 CODE=20

HYDROGRAPH FROM AREA 101.4B1

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	3.5	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.9	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .5942 ACRE-FEET
 PEAK DISCHARGE RATE = 17.14 CFS AT 1.500 HOURS BASIN AREA = .0075 SQ. MI.

* BASIN 101.4C @ AP3

COMPUTE NM HYD ID=14 HYD NO=101.4C DA=0.003840 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.7931 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002227 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.2911 CFS UNIT VOLUME = .9972 B = 354.67 P60 = 1.8700
 AREA = .001613 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=14 CODE=20

HYDROGRAPH FROM AREA 101.4C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.0		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3036 ACRE-FEET
 PEAK DISCHARGE RATE = 8.76 CFS AT 1.500 HOURS BASIN AREA = .0038 SQ. MI.

* TOTAL FLOW @ AP3 SOUTH

ADD HYD ID=15 HYD NO=101.4 ID I=13 ID II=14
 PRINT HYD ID=15 CODE=20

PARTIAL HYDROGRAPH 101.40

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.3	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	6.0	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .8978 ACRE-FEET
 PEAK DISCHARGE RATE = 25.90 CFS AT 1.500 HOURS BASIN AREA = .0114 SQ. MI.

ADD HYD ID=16 HYD NO=101.41 ID I=9 ID II=10
 * TOTAL FLOW @ AP3
 ADD HYD ID=17 HYD NO=101.42 ID I=15 ID II=16
 PRINT HYD ID=17 CODE=20

PARTIAL HYDROGRAPH 101.42

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	17.2	4.000	.4	5.999	.4		
.667	.0	2.666	1.6	4.666	.3	6.666	.0		
1.333	19.4	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 2.9213 ACRE-FEET
 PEAK DISCHARGE RATE = 84.26 CFS AT 1.500 HOURS BASIN AREA = .0369 SQ. MI.

* BASIN 101.5 @ AP6
 COMPUTE NM HYD ID=18 HYD NO=101.5 DA=0.004223 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.6701 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002449 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 4.7191 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
 AREA = .001774 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=18 CODE=20

PARTIAL HYDROGRAPH 101.50

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.0	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3339 ACRE-FEET
 PEAK DISCHARGE RATE = 9.63 CFS AT 1.500 HOURS BASIN AREA = .0042 SQ. MI.

* TOTAL FLOW AT PHASE ONE DETENTION POND @ AP6
 ADD HYD ID=19 HYD NO=101 ID I=17 ID II=18
 PRINT HYD ID=19 CODE=20

PARTIAL HYDROGRAPH 101.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	19.2	4.000	.4	5.999	.5		
.667	.0	2.666	1.8	4.666	.4	6.666	.0		
1.333	21.6	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FEET
 PEAK DISCHARGE RATE = 93.89 CFS AT 1.500 HOURS BASIN AREA = .0412 SQ. MI.

 *** ROUTE PHASE ONE THROUGH DETENTION POND TO UNSER DIVERSION

 * ALLOWABLE DISCHARGE IS 35.8 CFS PER DMP FOR ABP
 ROUTE RESERVOIR ID=20 HYD NO=101.6 INFLOW ID=19 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	37.5
4.0	0.0214	38.0
16.9	0.1460	3400
23.5	0.3596	42.0
28.7	0.6756	44.0
33.0	1.1403	46.0
36.8	1.6584	48.0

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	37.50	.000	.00
.33	.00	37.50	.000	.00
.67	.00	37.50	.000	.00
1.00	.00	37.50	.000	.00
1.33	21.59	1202.43	.065	8.47
1.67	48.51	46.15	1.179	33.28
2.00	19.22	45.77	1.086	32.50
2.33	4.40	43.16	.543	26.52
2.67	1.77	1478.76	.075	9.53
3.00	.88	37.64	.006	1.11
3.33	.54	37.57	.003	.59
3.67	.44	37.56	.002	.45
4.00	.39	37.55	.002	.40
4.33	.38	37.55	.002	.38
4.67	.38	37.55	.002	.38
5.00	.39	37.55	.002	.39
5.33	.42	37.55	.002	.42
5.67	.45	37.56	.002	.44
6.00	.49	37.56	.003	.48
6.33	.05	37.51	.001	.10
6.67	.01	37.50	.000	.02

PEAK DISCHARGE = 33.704 CFS - PEAK OCCURS AT HOUR 1.77
MAXIMUM WATER SURFACE ELEVATION = 46.371
MAXIMUM STORAGE = 1.2363 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=20 CODE=2

PARTIAL HYDROGRAPH 101.60

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	17.9	2.800	4.0	4.200	.4	5.599	.4
.067	.0	1.467	24.7	2.866	2.2	4.266	.4	5.666	.4
.133	.0	1.533	29.7	2.933	1.5	4.333	.4	5.733	.5
.200	.0	1.600	32.1	3.000	1.1	4.400	.4	5.799	.5
.267	.0	1.667	33.3	3.066	.9	4.466	.4	5.866	.5
.333	.0	1.733	33.7	3.133	.8	4.533	.4	5.933	.5
.400	.0	1.800	33.7	3.200	.7	4.600	.4	5.999	.5
.467	.0	1.866	33.5	3.266	.6	4.666	.4	6.066	.5
.533	.0	1.933	33.1	3.333	.6	4.733	.4	6.133	.4
.600	.0	2.000	32.5	3.400	.5	4.800	.4	6.199	.3
.667	.0	2.066	31.8	3.466	.5	4.866	.4	6.266	.2
.733	.0	2.133	30.9	3.533	.5	4.933	.4	6.333	.1
.800	.0	2.200	29.8	3.600	.5	4.999	.4	6.399	.1
.867	.0	2.266	28.6	3.666	.4	5.066	.4	6.466	.0
.933	.0	2.333	26.5	3.733	.4	5.133	.4	6.533	.0
1.000	.0	2.400	24.6	3.800	.4	5.199	.4	6.599	.0
1.067	.0	2.466	22.1	3.866	.4	5.266	.4	6.666	.0
1.133	.0	2.533	19.0	3.933	.4	5.333	.4	6.733	.0
1.200	.3	2.600	15.4	4.000	.4	5.399	.4	6.799	.0
1.267	3.1	2.666	9.5	4.066	.4	5.466	.4	6.866	.0
1.333	8.5	2.733	6.1	4.133	.4	5.533	.4		

RUNOFF VOLUME = 1.48250 INCHES = 3.2552 ACRE-FeET
PEAK DISCHARGE RATE = 33.70 CFS AT 1.766 HOURS BASIN AREA = .0412 SQ. MI.

* THE FOLLOWING ARE PHASE TWO DEVELOPED ON-SITE BASINS

* BASIN 102.1A @ AP7

COMPUTE NM HYD ID=21 HYD NO=102.1A DA=0.006438 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.742 CFS UNIT VOLUME = .9987 B = 526.28 P60 = 1.8700
AREA = .003734 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 7.1944 CFS UNIT VOLUME = .9986 B = 354.67 P60 = 1.8700
AREA = .002704 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=21 CODE=20

HYDROGRAPH FROM AREA 102.1A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.4	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48257 INCHES = .5091 ACRE-FEET
 PEAK DISCHARGE RATE = 14.68 CFS AT 1.500 HOURS BASIN AREA = .0064 SQ. MI.

* BASIN 102.1B @ AP8

COMPUTE NM HYD ID=22 HYD NO=102.1B DA=0.002234 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 5.1156 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
 AREA = .001296 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 2.4965 CFS UNIT VOLUME = .9953 B = 354.67 P60 = 1.8700
 AREA = .000938 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=22 CODE=20

HYDROGRAPH FROM AREA 102.1B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.2	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.0	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .1766 ACRE-FEET
 PEAK DISCHARGE RATE = 5.10 CFS AT 1.500 HOURS BASIN AREA = .0022 SQ. MI.

* TOTAL FLOW @ AP8 NORTH

ADD HYD ID=23 HYD NO=102.1B1 ID I=21 ID II=22
 PRINT HYD ID=23 CODE=20

HYDROGRAPH FROM AREA 102.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.5	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48250 INCHES = .6857 ACRE-FEET
 PEAK DISCHARGE RATE = 19.78 CFS AT 1.500 HOURS BASIN AREA = .0087 SQ. MI.

* BASIN 102.1C @ AP9

COMPUTE NM HYD ID=24 HYD NO=102.1C DA=0.001500 SQ MI

PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 3.4348 CFS UNIT VOLUME = .9961 B = 526.28 P60 = 1.8700
AREA = .000870 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 1.6762 CFS UNIT VOLUME = .9923 B = 354.67 P60 = 1.8700
AREA = .000630 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=24 CODE=20

HYDROGRAPH FROM AREA 102.1C

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	.8	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	.7	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48257 INCHES = .1186 ACRE-FEET
PEAK DISCHARGE RATE = 3.43 CFS AT 1.500 HOURS BASIN AREA = .0015 SQ. MI.

* BASIN 102.2 @ AP8

COMPUTE NM HYD ID=25 HYD NO=102.2 DA=0.004969 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 11.378 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 1.8700
AREA = .002882 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 5.5528 CFS UNIT VOLUME = .9980 B = 354.67 P60 = 1.8700
AREA = .002087 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=25 CODE=20

PARTIAL HYDROGRAPH 102.20

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	2.3	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.6	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48257 INCHES = .3929 ACRE-FEET
PEAK DISCHARGE RATE = 11.33 CFS AT 1.500 HOURS BASIN AREA = .0050 SQ. MI.

* TOTAL FLOW @ AP8

ADD HYD ID=26 HYD NO=102.1B1 ID I=23 ID II=25
PRINT HYD ID=26 CODE=20

HYDROGRAPH FROM AREA 102.1B1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	6.4	4.000	.1	5.999	.2		
.667	.0	2.666	.6	4.666	.1	6.666	.0		
1.333	7.2	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48250 INCHES = 1.0785 ACRE-FEET
PEAK DISCHARGE RATE = 31.11 CFS AT 1.500 HOURS BASIN AREA = .0136 SQ. MI.

* TOTAL FLOW @ AP9 NORTH

ADD HYD ID=27 HYD NO=102.11 ID I=24 ID II=26
PRINT HYD ID=27 CODE=20

PARTIAL HYDROGRAPH 102.11

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	7.1	4.000	.1	5.999	.2		
.667	.0	2.666	.7	4.666	.1	6.666	.0		
1.333	7.9	3.333	.2	5.333	.2				

RUNOFF VOLUME = 1.48249 INCHES = 1.1971 ACRE-FEET
PEAK DISCHARGE RATE = 34.54 CFS AT 1.500 HOURS BASIN AREA = .0151 SQ. MI.

* BASIN 102.3 @ AP9

COMPUTE NM HYD ID=28 HYD NO=102.3 DA=0.007359 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 16.851 CFS UNIT VOLUME = .9987 B = 526.28 P60 = 1.8700
AREA = .004268 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 8.2236 CFS UNIT VOLUME = .9988 B = 354.67 P60 = 1.8700
AREA = .003091 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=28 CODE=20

PARTIAL HYDROGRAPH 102.30

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.4	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.9	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48257 INCHES = .5819 ACRE-FEET

PEAK DISCHARGE RATE = 16.77 CFS AT 1.500 HOURS BASIN AREA = .0074 SQ. MI.

* TOTAL FLOW @ AP9

ADD HYD ID=29 HYD NO=102.12 ID I=27 ID II=28
PRINT HYD ID=29 CODE=20

PARTIAL HYDROGRAPH 102.12

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	10.5	4.000	.2	5.999	.3		
.667	.0	2.666	1.0	4.666	.2	6.666	.0		
1.333	11.8	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48250 INCHES = 1.7790 ACRE-FEET
PEAK DISCHARGE RATE = 51.31 CFS AT 1.500 HOURS BASIN AREA = .0225 SQ. MI.

* BASIN 102.4A @ AP10

COMPUTE NM HYD ID=30 HYD NO=102.4A DA=0.002578 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.9033 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 1.8700
AREA = .001495 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 2.8809 CFS UNIT VOLUME = .9958 B = 354.67 P60 = 1.8700
AREA = .001083 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=30 CODE=20

HYDROGRAPH FROM AREA 102.4A

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.4	2.666	.1	4.000	.0	5.333	.0
.667	.0	2.000	1.2	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.48256 INCHES = .2038 ACRE-FEET
PEAK DISCHARGE RATE = 5.89 CFS AT 1.500 HOURS BASIN AREA = .0026 SQ. MI.

* BASIN 102.4B @ AP11

COMPUTE NM HYD ID=31 HYD NO=102.4B DA=0.006156 SQ MI
PER A=0 PER B=21 PER C=21 PER D=58
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.096 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003570 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 6.8792 CFS UNIT VOLUME = .9984 B = 354.67 P60 = 1.8700
 AREA = .002586 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=31 CODE=20

HYDROGRAPH FROM AREA 102.4B

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	2.9	4.000	.1	5.999	.1		
.667	.0	2.666	.3	4.666	.1	6.666	.0		
1.333	3.2	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48257 INCHES = .4868 ACRE-FEET
 PEAK DISCHARGE RATE = 14.03 CFS AT 1.500 HOURS BASIN AREA = .0062 SQ. MI.

* TOTAL FLOW @ AP11
 ADD HYD ID=32 HYD NO=102.41 ID I=30 ID II=31
 PRINT HYD ID=32 CODE=20

PARTIAL HYDROGRAPH 102.41

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	4.1	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.6	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.48250 INCHES = .6906 ACRE-FEET
 PEAK DISCHARGE RATE = 19.92 CFS AT 1.500 HOURS BASIN AREA = .0087 SQ. MI.

* BASIN 102.5 @ AP12
 COMPUTE NM HYD ID=33 HYD NO=102.5 DA=0.004687 SQ MI
 PER A=0 PER B=21 PER C=21 PER D=58
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 10.733 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002718 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 5.2377 CFS UNIT VOLUME = .9978 B = 354.67 P60 = 1.8700
 AREA = .001969 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=33 CODE=20

PARTIAL HYDROGRAPH 102.50

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
------	------	------	------	------	------	------	------	------	------

HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	2.2	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.5	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.48256 INCHES = .3706 ACRE-FEET
 PEAK DISCHARGE RATE = 10.69 CFS AT 1.500 HOURS BASIN AREA = .0047 SQ. MI.

ADD HYD ID=34 HYD NO=102.42 ID I=32 ID II=33
 PRINT HYD ID=34 CODE=20

PARTIAL HYDROGRAPH 102.42

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	6.3	4.000	.1	5.999	.2		
.667	.0	2.666	.6	4.666	.1	6.666	.0		
1.333	7.0	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48250 INCHES = 1.0611 ACRE-FEET
 PEAK DISCHARGE RATE = 30.61 CFS AT 1.500 HOURS BASIN AREA = .0134 SQ. MI.

* BASIN 103.1 @ AP12

COMPUTE NM HYD ID=35 HYD NO=103.1 DA=0.002733 SQ MI
 PER A=0 PER B=0 PER C=18 PER D=82
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 8.8478 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
 AREA = .002241 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
 UNIT PEAK = 1.4324 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
 AREA = .000492 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=35 CODE=20

PARTIAL HYDROGRAPH 103.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.7	4.000	.0	5.999	.0		
.667	.0	2.666	.1	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2610 ACRE-FEET
 PEAK DISCHARGE RATE = 7.19 CFS AT 1.500 HOURS BASIN AREA = .0027 SQ. MI.

ADD HYD ID=36 HYD NO=102.43 ID I=29 ID II=35
 PRINT HYD ID=36 CODE=20

PARTIAL HYDROGRAPH 102.43

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	12.2	4.000	.2	5.999	.3		
.667	.0	2.666	1.1	4.666	.2	6.666	.0		
1.333	13.8	3.333	.3	5.333	.3				

RUNOFF VOLUME = 1.51587 INCHES = 2.0400 ACRE-FEET
 PEAK DISCHARGE RATE = 58.50 CFS AT 1.500 HOURS BASIN AREA = .0252 SQ. MI.

* TOTAL FLOW AT PHASE TWO DETENTION POND @ AP12

ADD HYD ID=37 HYD NO=102 ID I=34 ID II=36
 PRINT HYD ID=37 CODE=20

PARTIAL HYDROGRAPH 102.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	18.4	4.000	.4	5.999	.5		
.667	.0	2.666	1.7	4.666	.4	6.666	.0		
1.333	20.8	3.333	.5	5.333	.4				

RUNOFF VOLUME = 1.50428 INCHES = 3.1011 ACRE-FEET
 PEAK DISCHARGE RATE = 89.11 CFS AT 1.500 HOURS BASIN AREA = .0387 SQ. MI.

* ROUTE FUTURE PHASE TWO THROUGH DETENTION POND TO AMOLE

* ALLOWABLE DISCHARGE IS 49.4 CFS PER DMP FOR WEST RIDGE MHP

ROUTE RESERVOIR ID=38 HYD NO=108 INFLOW ID=37 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	63.0
5.0	0.1417	64.0
20.5	0.3070	65.0
31.3	0.4983	66.0
39.2	0.7181	67.0
45.8	0.9689	68.0
51.5	1.2532	69.0

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	63.00	.000	.00
.33	.00	63.00	.000	.00
.67	.00	63.00	.000	.00
1.00	.00	63.00	.000	.00
1.33	20.84	63.62	.088	3.12
1.67	45.97	68.01	.970	45.83
2.00	18.44	66.49	.607	35.20
2.33	4.19	64.43	.213	11.67
2.67	1.69	63.79	.113	3.97

3.00	.83	63.44	.062	2.20
3.33	.52	63.24	.035	1.22
3.67	.42	63.15	.021	.74
4.00	.38	63.10	.015	.52
4.33	.36	63.09	.012	.43
4.67	.37	63.08	.011	.39
5.00	.38	63.08	.011	.38
5.33	.41	63.08	.011	.39
5.67	.44	63.08	.012	.41
6.00	.47	63.09	.012	.44
6.33	.05	63.06	.008	.29
6.67	.01	63.02	.003	.12
7.00	.00	63.01	.001	.05
7.33	.00	63.00	.001	.02
7.67	.00	63.00	.000	.01
8.00	.00	63.00	.000	.00

PEAK DISCHARGE = 45.832 CFS - PEAK OCCURS AT HOUR 1.67

MAXIMUM WATER SURFACE ELEVATION = 68.006

MAXIMUM STORAGE = .9705 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD

ID=38 CODE=2

PARTIAL HYDROGRAPH 108.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.667	45.8	3.333	1.2	4.999	.4	6.666	.1
.067	.0	1.733	45.1	3.400	1.1	5.066	.4	6.733	.1
.133	.0	1.800	43.4	3.466	1.0	5.133	.4	6.799	.1
.200	.0	1.866	41.2	3.533	.9	5.199	.4	6.866	.1
.267	.0	1.933	38.6	3.600	.8	5.266	.4	6.933	.1
.333	.0	2.000	35.2	3.666	.7	5.333	.4	6.999	.0
.400	.0	2.066	31.9	3.733	.7	5.399	.4	7.066	.0
.467	.0	2.133	27.2	3.800	.6	5.466	.4	7.133	.0
.533	.0	2.200	22.2	3.866	.6	5.533	.4	7.199	.0
.600	.0	2.266	16.5	3.933	.6	5.599	.4	7.266	.0
.667	.0	2.333	11.7	4.000	.5	5.666	.4	7.333	.0
.733	.0	2.400	8.5	4.066	.5	5.733	.4	7.399	.0
.800	.0	2.466	6.3	4.133	.5	5.799	.4	7.466	.0
.867	.0	2.533	4.9	4.200	.5	5.866	.4	7.533	.0
.933	.0	2.600	4.4	4.266	.4	5.933	.4	7.599	.0
1.000	.0	2.666	4.0	4.333	.4	5.999	.4	7.666	.0
1.067	.0	2.733	3.5	4.400	.4	6.066	.4	7.733	.0
1.133	.0	2.800	3.2	4.466	.4	6.133	.4	7.799	.0
1.200	.1	2.866	2.8	4.533	.4	6.199	.4	7.866	.0
1.267	.8	2.933	2.5	4.600	.4	6.266	.3	7.933	.0
1.333	3.1	3.000	2.2	4.666	.4	6.333	.3	7.999	.0
1.400	13.3	3.066	2.0	4.733	.4	6.399	.2	8.066	.0
1.467	29.3	3.133	1.7	4.800	.4	6.466	.2	8.133	.0
1.533	39.9	3.200	1.5	4.866	.4	6.533	.2	8.199	.0
1.600	44.6	3.266	1.4	4.933	.4	6.599	.1	8.266	.0

RUNOFF VOLUME = 1.50428 INCHES = 3.1011 ACRE-FEET

PEAK DISCHARGE RATE = 45.83 CFS AT 1.667 HOURS BASIN AREA = .0387 SQ. MI.

* THE FOLLOWING ARE UNDEVELOPED OFF-SITE BASINS

* UNDEVELOPED OFF-SITE BASIN 200 - INTERIM TRAINER DIKE
 * WILL DIRECT FLOW TO UNSER DIVERSION
 COMPUTE NM HYD ID=39 HYD NO=200.0 DA=0.1078 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0
 TP=0.2231 HR MASS RAIN=-1

K = .264881HR TP = .223100HR K/TP RATIO = 1.187275 SHAPE CONSTANT, N = 2.990392
 UNIT PEAK = 135.79 CFS UNIT VOLUME = .9999 B = 281.04 P60 = 1.8700
 AREA = .107800 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=39 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	17.6	4.000	.7	5.999	.1	7.999	.0
.667	.0	2.666	3.6	4.666	.3	6.666	.0		
1.333	.0	3.333	1.5	5.333	.1	7.333	.0		

RUNOFF VOLUME = .43925 INCHES = 2.5254 ACRE-Feet
 PEAK DISCHARGE RATE = 57.73 CFS AT 1.600 HOURS BASIN AREA = .1078 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300 - PONDED BY INTERIM RETENTION
 * POND CONSTRUCTED BY WEST RIDGE MHP
 COMPUTE NM HYD ID=40 HYD NO=300.0 DA=0.5422 SQ MI
 PER A=95 PER B=0 PER C=2 PER D=3
 TP=0.4118 HR MASS RAIN=-1

K = .237533HR TP = .411800HR K/TP RATIO = .576817 SHAPE CONSTANT, N = 6.612116
 UNIT PEAK = 19.852 CFS UNIT VOLUME = .9994 B = 502.58 P60 = 1.8700
 AREA = .016266 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .411391HR TP = .411800HR K/TP RATIO = .999007 SHAPE CONSTANT, N = 3.533849
 UNIT PEAK = 412.26 CFS UNIT VOLUME = 1.000 B = 322.79 P60 = 1.8700
 AREA = .525934 SQ MI IA = .64381 INCHES INF = 1.65268 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=40 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.666	33.4	5.333	2.7	7.999	.3	10.666	.0
.667	.0	3.333	13.6	5.999	1.7	8.666	.2	11.332	.0
1.333	.5	4.000	7.8	6.666	.9	9.332	.1	11.999	.0
2.000	164.7	4.666	4.5	7.333	.5	9.999	.1	12.665	.0

RUNOFF VOLUME = .49289 INCHES = 14.2530 ACRE-Feet
 PEAK DISCHARGE RATE = 206.55 CFS AT 1.800 HOURS BASIN AREA = .5422 SQ. MI.

* UNDEVELOPED OFF-SITE BASIN 300.1 - PONDED BY INTERIM RETENTION

* POND CONSTRUCTED BY WEST RIDGE MHP

COMPUTE NM HYD ID=41 HYD NO=300.1 DA=0.0131 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 26.882 CFS UNIT VOLUME = .9991 B = 273.54 P60 = 1.8700
AREA = .013100 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=41 CODE=20

HYDROGRAPH FROM AREA 300.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	.0	2.666	.3	4.000	.0		
.667	.0	2.000	1.0	3.333	.1	4.666	.0		

RUNOFF VOLUME = .43925 INCHES = .3069 ACRE-FEET
PEAK DISCHARGE RATE = 10.88 CFS AT 1.533 HOURS BASIN AREA = .0131 SQ. MI.

* OFF-SITE BASIN 104.1 @ AP14 - BLUEWATER STREET FLOW

COMPUTE NM HYD ID=42 HYD NO=104.1 DA=0.002781 SQ MI
PER A=0 PER B=0 PER C=18 PER D=82
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.0032 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
AREA = .002280 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
UNIT PEAK = 1.4576 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
AREA = .000501 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=42 CODE=20

PARTIAL HYDROGRAPH 104.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.7	4.000	.0	5.999	.0		
.667	.0	2.666	.1	4.666	.0	6.666	.0		
1.333	2.0	3.333	.0	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2656 ACRE-FEET
PEAK DISCHARGE RATE = 7.31 CFS AT 1.500 HOURS BASIN AREA = .0028 SQ. MI.

* OFF-SITE BASIN 105.1 @ AP15 - BLUEWATER STREET FLOW

COMPUTE NM HYD ID=43 HYD NO=105.1 DA=0.002976 SQ MI
PER A=0 PER B=0 PER C=18 PER D=82
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 9.6345 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
 AREA = .002440 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
 UNIT PEAK = 1.5598 CFS UNIT VOLUME = .9917 B = 388.14 P60 = 1.8700
 AREA = .000536 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=43 CODE=20

PARTIAL HYDROGRAPH 105.10

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	2.000	1.8	4.000	.0	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = 1.79069 INCHES = .2842 ACRE-FEET
 PEAK DISCHARGE RATE = 7.83 CFS AT 1.500 HOURS BASIN AREA = .0030 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 11:55:32

FUTURE DEVELOPED OFFSITE

```

*****
*                               AVALON SUBDIVISION
*                               PROJECT HYDROLOGY
*****
START          TIME=0.0  PUNCH CODE=0
RAINFALL       TYPE=1  RAIN QUARTER=0.0  RAIN ONE=1.87
               RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS
*****
* THIS RUN PREDICTS FUTURE DEVELOPED HYDROLOGY TO DETERMINE STORM
* DRAIN REQUIREMENTS FOR BLUEWATER AND 90TH STREET.  ALL OFF-SITE
* BASINS ARE ASSUMED TO BE IP ZONING, EXCEPT FOR BASIN 300.1,
* WHICH IS MH
*****
* DEVELOPED OFF-SITE BASINS
*****
* DEVELOPED BASIN 300.0
COMPUTE NM HYD  ID=1  HYD NO=300.0  DA=0.0167 SQ MI
                PER A=75  PER B=0  PER C=10  PER D=15
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=1  CODE=20
* DEVELOPED BASIN 300.1
COMPUTE NM HYD  ID=2  HYD NO=300.1  DA=0.0131 SQ MI
                PER A=0  PER B=20  PER C=20  PER D=60
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=2  CODE=20
* DEVELOPED BASIN 300.2
COMPUTE NM HYD  ID=3  HYD NO=300.2  DA=0.0839 SQ MI
                PER A=0  PER B=7  PER C=8  PER D=85
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=3  CODE=20
* BASIN 200.0
COMPUTE NM HYD  ID=4  HYD NO=200.0  DA=0.0389 SQ MI
                PER A=0  PER B=7  PER C=8  PER D=85
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=4  CODE=20
* BASIN 400.0
COMPUTE NM HYD  ID=6  HYD NO=400.0  DA=0.0469 SQ MI
                PER A=0  PER B=7  PER C=8  PER D=85
                TP=0.1333 HR  MASS RAIN=-1
PRINT HYD      ID=6  CODE=20
FINISH

```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
 INPUT FILE = A:7076-OS.DAT

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RUN DATE (MON/DAY/YR) =03/15/1998
USER NO.= BRASHERE.I01

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[illegible]

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 03/15/1998
START TIME (HR:MIN:SEC) = 10:06:45 USER NO.= BRASHERE.I01
INPUT FILE = A:7076-OS.DAT

* AVALON SUBDIVISION
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

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

* THIS RUN PREDICTS FUTURE DEVELOPED HYDROLOGY TO DETERMINE STORM
* DRAIN REQUIREMENTS FOR BLUEWATER AND 90TH STREET. ALL OFF-SITE
* BASINS ARE ASSUMED TO BE IP ZONING, EXCEPT FOR BASIN 300.1,
* WHICH IS MH

* DEVELOPED OFF-SITE BASINS

* DEVELOPED BASIN 300.0

COMPUTE NM HYD ID=1 HYD NO=300.0 DA=0.0167 SQ MI
PER A=75 PER B=0 PER C=10 PER D=15
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 9.8899 CFS UNIT VOLUME = .9982 B = 526.28 P60 = 1.8700
AREA = .002505 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR

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

K = .156882HR TP = .133300HR K/TP RATIO = 1.176908 SHAPE CONSTANT, N = 3.014745
UNIT PEAK = 30.139 CFS UNIT VOLUME = .9993 B = 283.02 P60 = 1.8700
AREA = .014195 SQ MI IA = .61471 INCHES INF = 1.57118 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA 300.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	3.0	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.0	6.666	.0		
1.333	2.2	3.333	.1	5.333	.0				

RUNOFF VOLUME = .70854 INCHES = .6311 ACRE-FEET
PEAK DISCHARGE RATE = 19.95 CFS AT 1.500 HOURS BASIN AREA = .0167 SQ. MI.

* DEVELOPED BASIN 300.1

COMPUTE NM HYD ID=2 HYD NO=300.1 DA=0.0131 SQ MI
PER A=0 PER B=20 PER C=20 PER D=60
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 31.032 CFS UNIT VOLUME = .9990 B = 526.28 P60 = 1.8700
AREA = .007860 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 13.942 CFS UNIT VOLUME = .9995 B = 354.67 P60 = 1.8700
AREA = .005240 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA 300.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	6.3	4.000	.1	5.999	.2		
.667	.0	2.666	.6	4.666	.1	6.666	.0		
1.333	7.1	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.50556 INCHES = 1.0519 ACRE-FEET
PEAK DISCHARGE RATE = 30.17 CFS AT 1.500 HOURS BASIN AREA = .0131 SQ. MI.

* DEVELOPED BASIN 300.2

COMPUTE NM HYD ID=3 HYD NO=300.2 DA=0.0839 SQ MI
PER A=0 PER B=7 PER C=8 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .073012HR TP = .133300HR K/TP RATIO = .547724 SHAPE CONSTANT, N = 7.061206

UNIT PEAK = 280.42 CFS UNIT VOLUME = .9993 B = 524.15 P60 = 1.8700
AREA = .071315 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .117053HR TP = .133300HR K/TP RATIO = .878118 SHAPE CONSTANT, N = 4.042817
UNIT PEAK = 33.801 CFS UNIT VOLUME = 1.000 B = 358.01 P60 = 1.8700
AREA = .012585 SQ MI IA = .42000 INCHES INF = 1.02600 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=3 CODE=20

HYDROGRAPH FROM AREA 300.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	51.5	4.000	1.2	5.999	1.5		
.667	.0	2.666	4.6	4.666	1.1	6.666	.0		
1.333	62.2	3.333	1.6	5.333	1.3	7.333	.0		

RUNOFF VOLUME = 1.79461 INCHES = 8.0302 ACRE-FEET
PEAK DISCHARGE RATE = 219.00 CFS AT 1.500 HOURS BASIN AREA = .0839 SQ. MI.

* BASIN 200.0

COMPUTE NM HYD ID=4 HYD NO=200.0 DA=0.0389 SQ MI
PER A=0 PER B=7 PER C=8 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 130.54 CFS UNIT VOLUME = .9993 B = 526.28 P60 = 1.8700
AREA = .033065 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .117592HR TP = .133300HR K/TP RATIO = .882159 SHAPE CONSTANT, N = 4.022934
UNIT PEAK = 15.614 CFS UNIT VOLUME = .9996 B = 356.70 P60 = 1.8700
AREA = .005835 SQ MI IA = .42000 INCHES INF = 1.02600 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=4 CODE=20

PARTIAL HYDROGRAPH 200.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	23.9	4.000	.5	5.999	.7		
.667	.0	2.666	2.1	4.666	.5	6.666	.0		
1.333	28.9	3.333	.8	5.333	.6				

RUNOFF VOLUME = 1.79461 INCHES = 3.7232 ACRE-FEET
PEAK DISCHARGE RATE = 101.68 CFS AT 1.500 HOURS BASIN AREA = .0389 SQ. MI.

* BASIN 400.0

COMPUTE NM HYD ID=6 HYD NO=400.0 DA=0.0469 SQ MI
PER A=0 PER B=7 PER C=8 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 157.39 CFS UNIT VOLUME = .9993 B = 526.28 P60 = 1.8700
 AREA = .039865 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .117592HR TP = .133300HR K/TP RATIO = .882159 SHAPE CONSTANT, N = 4.022934
 UNIT PEAK = 18.825 CFS UNIT VOLUME = .9998 B = 356.70 P60 = 1.8700
 AREA = .007035 SQ MI IA = .42000 INCHES INF = 1.02600 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=20

HYDROGRAPH FROM AREA 400.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	28.8	4.000	.7	5.999	.8		
.667	.0	2.666	2.6	4.666	.6	6.666	.0		
1.333	34.8	3.333	.9	5.333	.7				

RUNOFF VOLUME = 1.79461 INCHES = 4.4889 ACRE-FEET
 PEAK DISCHARGE RATE = 122.59 CFS AT 1.500 HOURS BASIN AREA = .0469 SQ. MI.

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 10:06:47