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

August 20, 2001

Paul Brasher, PE
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1
Albuquerque, NM 87110

Re: Avalon 3B Amended Grading Plan
Engineer's Stamp dated 8-9-01 (K9/D15)

Dear Mr. Brasher,

Based upon the information provided in your submittal dated 8-10-01, the above referenced Amended Grading Plan is approved for Preliminary Plat action by the DRB. This is the plan that must be certified prior to release of Financial Guaranty

Prior to Final Plat sign-off, the Subdivision Improvements Agreement (SIA) must be executed.

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

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

C: file

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AVALON UNIT 3B ZONE ATLAS/DRNG. FILE#: K-9/D15

DRB #: 99-325 (1000476) EPC#: _____ WORK ORDER #: 655781

LEGAL DESCRIPTION: AVALON UNIT 3B

CITY ADDRESS: BLUEWATER ROAD NW

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis Lorenz
ADDRESS: 2201 San Pedro NE Bldg. 1 Ste. 220 Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: Curb Inc CONTACT: Bo Johnson
ADDRESS: 6801 Indian School NE PHONE: 450-4616

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

SURVEYOR: Albuquerque Surveying CONTACT: Vladimir Jirick
ADDRESS: 2119 Menaul NE PHONE: 884-2036

CONTRACTOR: New Concepts CONTACT: Tom Lakeman
ADDRESS: 508 Paragon SE PHONE: 452-8910

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN
_____ CONCEPTUAL GRADING & DRAINAGE PLAN
XX GRADING PLAN AMENDED
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERTIFICATION
_____ OTHER _____

PRE-DESIGN MEETING:

_____ YES
XX NO
_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL
X PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D. APPROVAL
_____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
X 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
XX OTHER CHANGE ORDER APPROVAL

DATE SUBMITTED: August 8, 2001

BY: DENNIS LORENZ

RECEIVED
AUG 1 0 2001
HYDROLOGY SECTION

BRASHER & LORENZ, INC.
CONSULTING ENGINEERS

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

August 9, 2001

Nancy Musinski, P.E.
Public Works Department
Development & Building Services
600 Second St. NW
Albuquerque, NM 87103

RE	**Avalon Unit 3B (Revised) Grading and Drainage Plan** **City Project No.: 655781**

Dear Ms. Musinski:

I am responding to your 8-1-01 letter regarding the subject project.

We are requesting approval for Preliminary Plat at this time. A copy of your letter is attached for your reference. All three of your requirements have been incorporated into the plan. Please note that the minor changes were made to the plan and that Section A/5 was modified.

Should you have any questions, or require further information, please do not hesitate to give either myself or Dennis Lorenz a call.
Thank you,

Armando Nájera
Staff Engineer
Brasher & Lorenz, Inc.

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AUG 1 0 2001
HYDROLOGY SECTION

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

August 1, 2001

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE
Bldg. 1, Suite 220
Albuquerque, NM 87110

Re: Avalon Unit 3B [Revised] Grading Plan, Engineer's stamp dated 7-16-01 (K9/D15)

Dear Mr. Lorenz,

Based on the information provided in your submittal dated July 24, 2001, the above referenced plan cannot be approved for Preliminary Plat action by the DRB until the following issues are addressed:

1. In the original approved plan dated December 9, 1999, all lots drained to the street. For maintenance reasons and due to highly erosive soils, the City will not accept the revised plan that shows Block J Lots 12 through18 discharging overland through the backyards to Unser Diversion Pond 4. Please change the plan so that the lots discharge to the street.
2. As a result of grading the lots as required in Comment 1, a wall will likely be needed along the rear lot line. If this is the case, please provide a wall design and adequate spot elevations.
3. On Section A-5 at the bottom center of the sheet, the high point that separates the backyard swales is shown 12 inches off the property line. This is not acceptable. Please refer to the attached sketch for a sample design that the City would approve should you decide to use it.

If you have any questions, please call me at 924-3988 or Brad Bingham at 924-3986.

Sincerely,

Nancy Musinski, P.E.
Hydrology/Utility Development
City of Albuquerque Public Works

Enclosure

cc: Bo Johnson, PE - Curb, Inc.
DRB file 1000476
file

RECEIVED
AUG 1 0 2001
HYDROLOGY SECTION

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

August 1, 2001

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE
Bldg. 1, Suite 220
Albuquerque, NM 87110

Re: Avalon Unit 3B [Revised] Grading Plan, Engineer's stamp dated 7-16-01 (K9/D15)

Dear Mr. Lorenz,

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If you have any questions, please call me at 924-3988 or Brad Bingham at 924-3986.

Sincerely,

Nancy Musinski, P.E.
Hydrology/Utility Development
City of Albuquerque Public Works

Enclosure

cc: Bo Johnson, PE - Curb, Inc.
DRB file 1000476
file

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

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

TRANSMISSION OK

TX/RX NO	4968
CONNECTION TEL	98886188
SUBADDRESS	
CONNECTION ID	
ST. TIME	08/01 14:06
USAGE T	01'05
PGS.	3
RESULT	OK

City of Albuquerque
Public Works Department
505-924-3900 (main number)
505-924-3864 (fax number)
Development and Building Services (One Stop Shop)
Plaza Del Sol Building, 2nd Floor
600 2nd Street NW
Albuquerque, NM 87102

City of Albuquerque
Public Works Dept.
Dev. & Bldg. Srvcs.

Fax

To: DENNIS LORENZ, PE **From:** Nancy Musinski 924-3988

Fax: 888-6188 **Pages Sent:** (including this page) 3

Phone: **Date:** 8/01/01

Time: 2:15

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

AVALON 3B

Comments:

Dennis -

Original to follow via USPS.

Thanks,

Nancy M

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AVALON UNIT 3B ZONE ATLAS/DRNG. FILE#: K-9/D15

DRB #: 99-325 (1000476) EPC#: _____ WORK ORDER #: 655781

LEGAL DESCRIPTION: AVALON UNIT 3B

CITY ADDRESS: BLUEWATER ROAD NW

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis Lorenz
ADDRESS: 2201 San Pedro NE Bldg. 1 Ste. 220 Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: Curb Inc CONTACT: Bo Johnson
ADDRESS: 6801 Indian School NE PHONE: 450-4616

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

SURVEYOR: Albuquerque Surveying CONTACT: Vladimir Jirick
ADDRESS: 2119 Menaul NE PHONE: 884-2036

CONTRACTOR: New Concepts CONTACT: Tom Lakeman
ADDRESS: 508 Paragon SE PHONE: 452-8910

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN
_____ CONCEPTUAL GRADING & DRAINAGE PLAN
XX GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERTIFICATION
_____ OTHER _____

PRE-DESIGN MEETING:

_____ YES
XX NO
_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL
XX PRELIMINARY PLAT APPROVAL (REVISED)
_____ S. DEV. PLAN FOR SUB'D. APPROVAL
_____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
XX 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
XX OTHER CHANGE ORDER APPROVAL

DATE SUBMITTED: July 24, 2001

BY: DENNIS LORENZ

RECEIVED
JUL 24 2001
HYDROLOGY SECTION

BRASHER & LORENZ, INC.
CONSULTING ENGINEERS
2201 San Pedro NE Bldg 1 Suite 220 • Albuquerque, NM 87110 • Phone (505) 888-6088 • Fax (505) 888-6188 • www.brasherlorenz.com

July 24, 2001

Bradley Bingham, PE
Hydrology Section
City of Albuquerque
PO Box 1293
Albuquerque, New Mexico 87102

SUBJECT: AVALON UNIT 3B
MAP No. K-9
DRB Project #1000476 (DRB99-325)
CPN 655781

Dear Brad:

Submitted herewith for approval are 2 copies of the revised Grading Plan for the subject project. The Plan is revised to 1) reflect a platting change where 2 lots were eliminated and, 2) adjust the site elevations to balance earthwork. No other changes were made to the Plan. All proposed infrastructure remains the same as recommended in the approved Drainage Report and as outlined on the approved Infrastructure Listing.

If you need additional information, or if I can be of any assistance, please feel free to call.

Sincerely,

BRASHER & LORENZ, INC.

Dennis A. Lorenz, PE

/dl/99570
encl

RECEIVED
JUL 24 2001
HYDROLOGY SECTION

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

March 20, 2001

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Albuquerque, New Mexico 87110

RE: **Grading and Drainage Certification**
Avalon Subdivision UNIT 3A (K-9/D15)
Submitted for Release of Financial Guarantees
Engineers Stamp dated 8/14/2000
Engineer's Certification Stamp Dated 3/12/2001

Dear Mr. Lorenz:

Based upon the information provided in your submittal dated 3/13/2001, the above referenced plan is adequate to satisfy the Grading and Drainage Certification requirements for Release of Financial Guaranty for UNIT 3A.

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

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, P.E.
Senior Civil Engineer, Hydrology
Public Works Dept., C.O.A.

C: Arlene Portillo, PWD – #639781
File

17.00

Judy D. Woodward Bern. Co. COV R 17.00
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Page: 1 of 6
07/12/2000 01:44P
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K-09/D015

#2

(NO PUBLIC EASEMENT)

DRAINAGE COVENANT

#639781

This Drainage Covenant, between Curb Inc. ("Owner"), whose address is 6301 Indian School Rd NE; Albq. NM 87110 Ste 208 and the City of Albuquerque, New Mexico municipal corporation ("City"), whose address is P.O. Box 1293, Albuquerque, New Mexico 87103, is made in Albuquerque, Bernalillo County, New Mexico and is entered into as of the date Owner signs this Covenant.

1. Recital. Owner is the owner of certain real property described as: Tract B-34 Unit #5; Town of Atrisco Grant Filed 12/5/94; Vol D-117 & D-118

in Bernalillo County, New Mexico (the "Property"). (Give legal description and filing information.)

Pursuant to City ordinances, regulations and other applicable laws, the Owner is required to construct and maintain certain Drainage Facilities on the Property, and the parties wish to enter into this Agreement to establish the obligations and responsibilities of the parties.

2. Description and Construction of Drainage Facilities. Owner shall construct the following "Drainage Facility" within the Property at Owner's sole expense in accordance with the standard plans and specifications approved by the City pursuant to Drainage File No. K9-D15:

INTERIM RETENTION POND.

The Drainage Facility is more particularly described in the attached Exhibit A. The Owner will not permit the Drainage Facility to constitute a hazard to the health or safety of the general public.

3. Maintenance of Drainage Facility. The Owner will maintain the Drainage Facility at Owner's cost in accordance with the approved Drainage Report and plans.

4. City's Right of Entry. The City has the right to enter upon the Property at any time and perform whatever inspection, maintenance or repair of the Drainage Facility it deems appropriate, without liability to the Owner.

5. Demand for Construction or Repair. The City may send written notice ("Notice") to the Owner requiring the Owner to construct or repair the Drainage Facility

within 30 days ("Deadline") of receipt of the Notice, as provided in Section 11, and the Owner will comply promptly with the requirements of the Notice. The Owner will perform all required work by the Deadline, at Owner's sole expense.

6. Failure to Perform by Owner and Emergency Work by City. If the Owner fails to comply with the terms of the Notice by the Deadline, or if the City determines that an emergency condition exists, the City may perform the work itself. The City may assess the Owner for the cost of the work and for any other expenses or damages which result from Owner's failure to perform. The Owner agrees promptly to pay the City the amount assessed. If the Owner fails to pay the City within thirty (30) days after the City gives the Owner written notice of the amount due, the City may impose a lien against Owner's Property for the total resulting amount.

7. Liability of City for Repair after Notice or as a Result of Emergency. The City shall not be liable to the Owner for any damages resulting from the City's repair or maintenance following notice to the Owner as required in this agreement or in an emergency unless the damages are the result of the reckless conduct or gross negligence of the City.

8. Indemnification. Owner agrees to indemnify and save the City, its officials, agents and employees harmless from all claims, actions, suits and proceedings arising out of or resulting from the Owner's negligent maintenance, construction, repair or use of the Drainage Facility. To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

9. Cancellation of Agreement and Release of Covenant. This Agreement may be released if the Drainage Facility is no longer required for the protection of the public health, safety and welfare by the City filing "Notice of Release" with the Bernalillo County Clerk. The Notice of Release must be signed by the City's Chief Administrative Officer, or his designee, and the approval of the City Hydrologist must be endorsed thereon.

10. Assessment. Nothing in this agreement shall be construed to relieve the Owner, his heirs, assigns, and successors from an assessment against Owner's Property for improvements to the property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Drainage Facility will not reduce the amount assessed by the City.

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Page: 2 of 6
07/12/2000 01:44P
Judy D. Woodward Bern. Co. COV R 17.00 Bk-A7 Pg-7217

11. Notice. For purposes of given formal written notice to the Owner, Owner's address is:

Curb Inc
6301 Indian School Rd NE Ste 208
Albuquerque New Mexico 87110

Notice may be given to the Owner either in person or by mailing the notice by regular U.S. mail, postage paid. Notice will be considered to have been received by the Owner within three days after the notice is mailed if there is no actual evidence of receipt. The Owner may change Owner's address by given written notice of the change by Certified Mail, return receipt requested, to the City Public Works Department, P.O. Box 1293, Albuquerque, New Mexico, 87103.

12. Term. This Agreement shall continue until terminated by the City pursuant to Section 9 above.

13. Binding on Owner's Property. The covenants and obligations of the Owner said forth herein shall be binding on Owner, its heirs, personal representatives, assigns and successors and on Owner's Property and shall constitute covenants running the Owner's Property until released by the City.

14. Entire Agreement. This Agreement contains the entire agreement of the parties and supersedes any and all other agreements or understanding, oral or written, whether previous to the execution hereof or contemporaneous herewith regarding this subject matter.

15. Changes to Agreement. Changes to this Agreement are not binding unless made in writing, signed by both parties.

16. Construction and Severability. If any part of this Agreement is held to be invalid or unenforceable, the remainder of the Agreement will remain valid and enforceable if the remainder is reasonably capable of completion.

17. Captions. The captions to the sections or paragraphs of this Agreement are not part of this Agreement and will not affect the meaning of construction of any of its provisions.

Judy D. Woodward Bern Co. COV R 17.00
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Page: 3 of 6
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CITY OF ALBUQUERQUE:

By: _____
Lawrence Rael
Chief Administrative Officer
Dated: ~~7-7-00~~ 7-11-00

OWNER: CURB, INC.

By: _____
Its: PRESIDENT
Dated: 6/19/00

APPROVED:

_____ 7/11/00
Director, Public Works Dept.

REVIEWED BY:

_____ 7/11/00
City Engineer

CITY'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on July 11, 2000 by Fred J. Aguirre, for Lawrence Rael, Chief Administrative Officer for the City of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

_____
Notary Public
My Commission Expires:

11-15-2003

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Page: 4 of 6
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Judy D. Woodward Bern. Co. COV R 17.00 Bk-A7 Pg-7217

OWNER'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on JUNE 19, 2000, ~~19~~_____, by CHARLES A. HAEGELIN, PRESIDENT, on behalf of CURB, INC..

Notary Public

My Commission Expires:

OFFICIAL SEAL
RICHARD J. SQUIRES
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: 9-17-2003

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Page: 5 of 6
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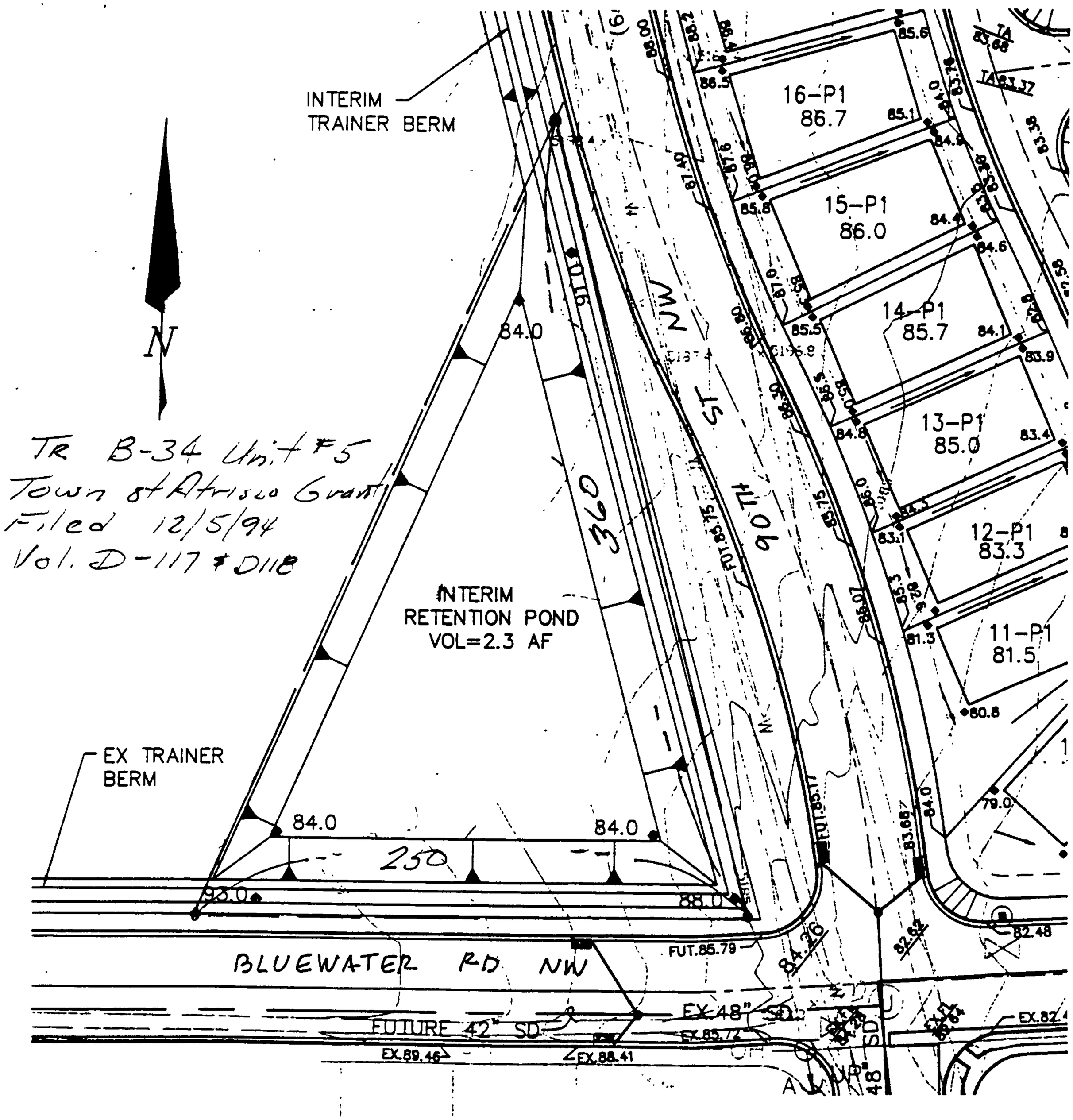
Judy D. Woodward Bern. Co. COV R 17.00 Bk-A7 Pg-7217

EXHIBIT "A"



Judy D. Woodward Bern. Co. COV R 17.00

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Page: 6 of 6
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AVALON UNIT 3A

GRADING & DRAINAGE PLAN

DENNIS A. LORENZ NEW MEXICO 9641 REGISTERED PROFESSIONAL ENGINEER 6-6-2000

BLi BRASHER & LORENZ, INC.
Consulting Engineers
2301 San Pedro NE Building 1 Suite 210
Albuquerque, New Mexico 87110
Ph: 505-[illegible] Fax: 505-[illegible]

DRAWN BY: R.M	DATE: JUNE, 2000
CHECKED BY: D.A.L.	SHEET OF
FILE: 99670PH1.DWG	

CONTRACT CONTROL FORM

PRELIMINARY REVIEW

Project # 639781

CCN # 20010005

Contact Person Terri

Phone No. 924-3997

New or Ext. #

Type of Agreement : Drainage Covenant

Description/Project: Avalon Subd Unit 3

Public Works/Div.: Project Review Section

Developer: CWB, Inc.

Contract Amount $ -0-

SIA Contract Period: 7-11-00 - 12-31-

Contract Amount $

SW'S Contract Period: -

Project Completed Date:

DRAFT CONTRACT:

Rec'd by Legal: Rejected/Returned to Dept.: 6/30/00 / KJL

Returned to Legal: 7-6-00 / Approved: Initials:

FINANCIAL GUARANTY:

Letter of Credit No.: Date: Attached: Yes No Initial

Other: Type Date: Attached: Yes No Initial

FINAL CONTRACT REVIEW

APPROVALS REQUIRED:

	Date Delivered	Returned to Dept.	Approved By	Approval Date:
~~Purchasing:~~ Hydro:	6-27-00		SMC	6-27-00
Asst. City Attorney:	6-28-00		KJL	7/6/00
CIP:				
City Attorney:				
CAO:				
Other:				
Council:	EC No.:	Approved:	Date:	

DISTRIBUTION:

	Date:	By:
User Department	7-12-00	
Vendor		
City Clerk	8/2/00	
Treasury		

RECEIVED
PORTLAND CITY CLERK
'02 AM 10:39

Revised 9/6/95 WP+125805/tsl

ADDENDUM TO COVER PAGE

6-27-00
(Date)

TO: Kevin Curran, Assistant City Attorney, Legal Department

FROM: Project Administrator, Project Review Sec., PWD

SUBJECT: PROJECT TITLE: AVALON SUBD UNIT 3 PROJECT # 639781

The attached documents have been review, approved, initialed and/or signed by the DRC Chairman and are submitted for your action as noted.

ITEM	ACTION: Review & Approval	ACTION: Reference
Procedure "A"		
Procedure "B"		
Procedure "B" Modified Non Work Order		
Procedure "C"		
Procedure "C" Modified		
Special Agreement		
Sidewalk Deferral Agreement		
Amendment		
Financial Guarantee		
Construction Paperwork:		
Contractors Proposal		
Performance/Warranty Bonds		
Labor/Material Bonds		
Certificate of Insurance		
Engineers Cost Estimate		
Extension		
Release/Agreement		
Release/Financial Guarantee		
Calling Notice		
Letter of Commitment		
Reduction Letter		
License Agreement		
Easement		
Monitoring Well Permit		
Agreement & Covenant		
Drainage Covenant	✓	
Revocable Permit		
Encroachment		
Permanent Easement		

Other:
1
2
3

Please Call Terri at 924-3997 if you have any questions regarding the above or when the documents are ready to be picked up.

ATTACHMENTS (1)

#591381

AGREEMENT AND COVENANT

10-8-99

K09/D015

This Agreement and Covenant, between the City of Albuquerque, New Mexico ("City") and Curb, Inc., ("User") is made in Albuquerque, New Mexico and is entered into as of the date of recording this Agreement with the Bernalillo County Clerk.

1. Recital. The User is the owner of certain real property ("User's Property") located at north of Bluewater Rd., east of 90th.St., in Albuquerque, New Mexico, and more particularly described as: (give legal description and filing information) the southerly 30.00 feet of Tracts B-9 and B-10, Town of Atrisco Grant, Unit No. 5, filed in the office of the Clerk of Bernalillo County, New Mexico on 12-5-1944 in D-117 and 118; and the southerly 30.00 feet of Tract B-8A, Town of Atrisco Grant, Unit No. 5, Unser Diversion Channel Corridor, filed in the office of the Clerk of Bernalillo County, New Mexico on 2-21-1996 in Vol. 96-C, Folio 77. See attached Exhibit "A".

The City is the owner of certain real property, easement or public right-of-way ("City's Property") in the vicinity of, contiguous to, abutting or within User's Property, and more particularly described as:

A Temporary Drainage Easement.

The User wishes to construct upon, improve or repair and to maintain the following "Improvement" on the City's Property (or already has done so):

A Water Diversion Berm.

A sketch of the proposed or existing Improvement is attached as Exhibit A and made a part of this Agreement.

The City agrees to permit the Improvement to exist on the City's Property provided the User complies with the terms of this Agreement.

2. City Use of City's Property and City Liability. The City has the right to enter upon the City's Property at any time and perform whatever inspection, installation, maintenance, repair, modification or removal ("Work") it deems appropriate without liability to the User. If the Work affects the Improvement the City will not be financially or otherwise responsible for rebuilding or repairing the Improvement. The User promptly will repair the Improvement to the City's satisfaction. The cost of repairing the Improvement will be paid by User.

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Page: 1 of 7
10/18/1999 02:34P
Judy D. Woodward Bern. Co. AGRE R 19.00 Bk-9914 Pg-1683

3. User's Responsibility for Improvement. The User will be solely responsible for constructing, maintaining, repairing and, if required, removing the Improvement, all in accordance with standards required by the City as per the approved Grading and Drainage Plan K9/D12 on file at the City Engineer's office. The User will be solely responsible for paying all related costs. The User will be solely responsible for paying all related costs. The User will not permit the Improvement to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the City's Property. The User will conform with all applicable laws, ordinances and regulations.

4. Use of the Improvement. If the City's Property is a public right-of-way, it shall be open to the use of the general public at all times, subject to reasonable curtailment during periods of construction, maintenance or repair.

5. Demand for Repair, Modification or Removal. The City may send written notice ("Notice") to the User requiring the User to repair, modify or remove the Improvement within 30 days ("Deadline") and the User will comply promptly with the requirements of the Notice. If removal is demanded, the City also may require the User to return the City's Property to its original condition by the Deadline. The User will perform all required work by the Deadline, at User's sole expense.

6. Failure to Perform by User and Emergency Work by City. If the User fails to comply with the terms of the Notice by the Deadline stated, or, if the City determines that an emergency condition exists, the City may perform the work itself. The City then may assess the User for the cost of the work and for any other expenses or damages which result from User's failure to perform. The User agrees promptly to pay the City the amount assessed. If the User fails to pay the City within thirty (30) days after the City gives the User written notice of the amount due, the City may impose a lien against User's Property for the total resulting amount.

7. Cancellation of Agreement and Release of Covenant. This Agreement may be canceled and User's covenants released by the City at will by the City's mailing to the User notice of the City's intention to record a Cancellation and Release with the Bernalillo County Clerk. The Cancellation and Release will be effective thirty (30) days after the date of mailing the notice to the User unless a later date is stated in the notice or the Cancellation and Release. After the effective date, the City will record the Cancellation and Release with the Bernalillo County Clerk.

8. Condemnation. If any part of the User's Property is ever condemned by the City, the User will forego all claims to compensation for any portion of User's structure which encroaches on City Property and for severance damage to the remaining portion of User's structure on User's Property.

Judy D. Woodward Bern. Co. RCDC

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9. Assessment. Nothing in this Agreement shall be construed to relieve the User, his heirs, assigns and successors from an assessment against User's Property for improvements to the City Property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Improvement will not reduce the amount assessed by the City.

10. Notice. For purposes of giving formal written notice to the User, User's address is:

Curb, Inc.
6301 Indian School Rd. NE Ste. 208
Albuquerque, New Mexico 87110

Notice may be given to the User either in person or by mailing the notice by regular U.S. mail, postage paid. Notice will be considered to have been received by the User within 3 days after the notice is mailed if there is no actual evidence of receipt. The User may change User's address by giving written notice of the change by certified mail, return receipt requested, to the City Engineer at P.O. Box 1293, Albuquerque, New Mexico 87103.

11. Indemnification. The User agrees to defend, indemnify and hold harmless the City, its officials, agents and employees from and against any and all claims, actions, suits or proceedings of any kind brought against said parties as a result of User's use of the City's Property. To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

12. Term. This Agreement shall continue until revoked by the City pursuant to Section 7 above.

13. Binding on User's Property. The covenants and obligations of the User set forth herein shall be binding on User, his heirs assigns and successors and on User's Property and constitute covenants running with User's Property until released by the City.

14. Entire Agreement. This Agreement contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral or written, whether previous to the execution hereof or contemporaneous herewith.

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Judy D Woodward Bern Co AGRE R 19.00 Bk-9914 Pg-1693

15. Changes of Agreement. Changes to this Agreement are not binding unless made in writing, signed by both parties.

16. Construction and Severability. If any part of this Agreement is held to be invalid or unenforceable, the remainder of the Agreement will remain valid and enforceable if the remainder is reasonably capable of completion.

17. Captions. The captions to the sections or paragraphs of this Agreement are not part of this Agreement and will not affect the meaning or construction of any of its provisions.

CITY OF ALBUQUERQUE:

By: _____
Chief Administrative Officer

Dated: 10-8-99

USER: Curb, Inc.

Charles A. Haegelin

By: Charles A Haegelin
Title: President

Dated: 9-10-99

APPROVED:

10/8/99

Director, Public Works Dept.

Reviewed by:

10/8/99

City Engineer

10-7-99

CITY'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on October 8, 1999, by Fred Aguirre, for Chief Administrative Officer for the City of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

Notary Public

My Commission Expires:

6-26-2000

rpd4\agmcov3.agm (Revised by Legal 8/97)

Judy D. Woodward Bern. Co. AGRE R 19.00
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Bk-9914 Pg-1683

USER'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on 9-10-99, 1999, by Charles A. Haegelin, President, on behalf of Curb, Inc.

Jane Alene Phillips
Notary Public

My Commission Expires:
9-5-01

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Bk-9914 Pg-1683
Judy D. Woodward Bern. Co. AGRE R 19.00

rpd4\agmcov3.agm (Revised by Legal 8/97)

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Judy D. Woodward Bern. Co. PLAT R 17.00 Bk-98C Pg-332

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EXHIBIT "A"
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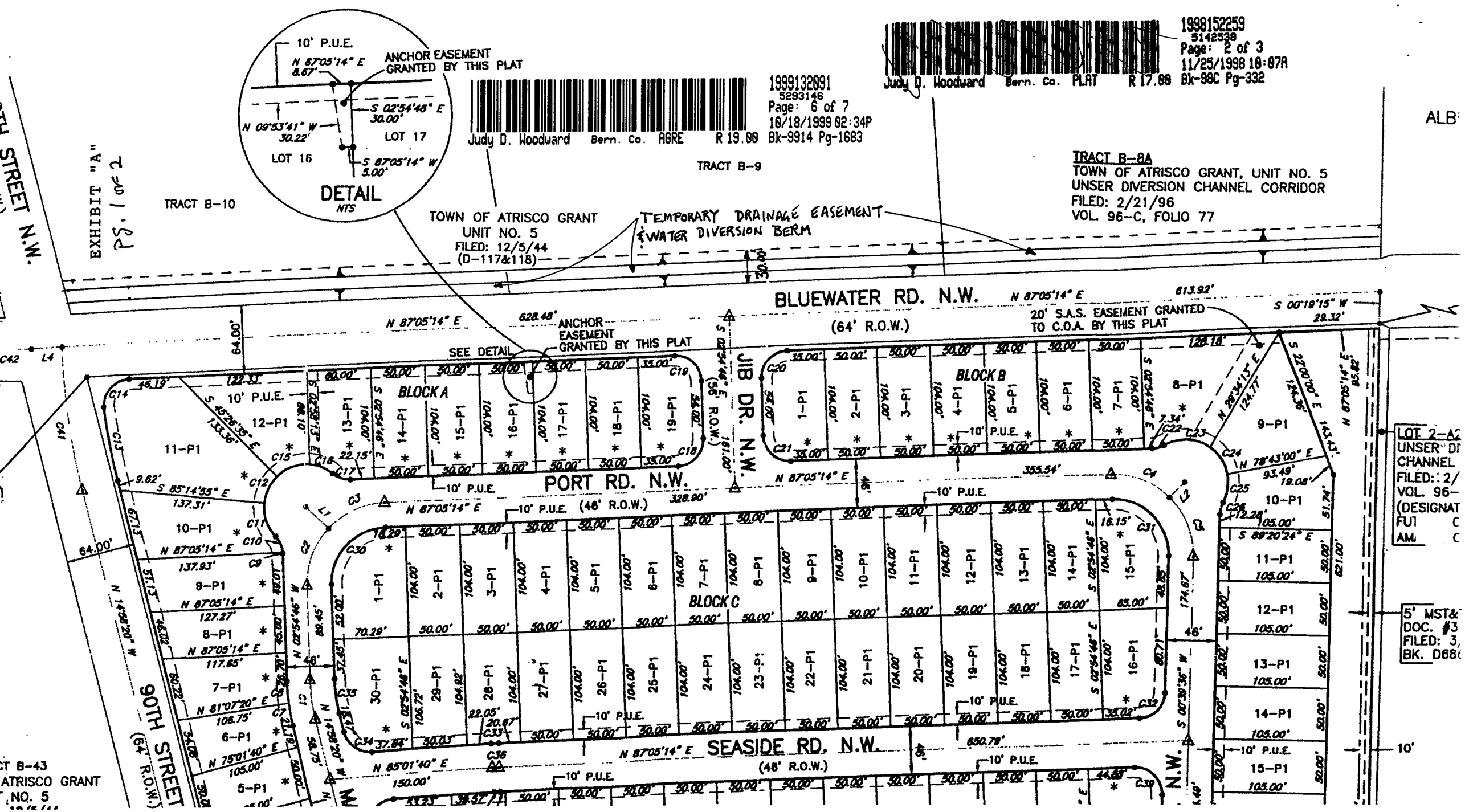

EXHIBIT "A"

Pg. 2 of 2

TEMPORARY EASEMENT

The southerly 30.00 feet of Tracts B-9 and B-10, Town of Atrisco Grant, Unit No. 5, filed in the office of the Clerk of Bernalillo County, New Mexico on 12-5-1944 in D-117 and 118; and the southerly 30.00 feet of Tract B-8A, Town of Atrisco Grant, Unit No. 5, Unser Diversion Channel Corridor, filed in the office of the Clerk of Bernalillo County, New Mexico on 2-21-1996 in Vol. 96-C, Folio 77

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Judy D. Woodward Bern. Co. EASE R 11.00 Bk-9914 Pg-1678

TEMPORARY EASEMENT

#-591381

THIS GRANT OF EASEMENT between Curb, Inc., a New Mexico corporation ("Grantor"), and the CITY OF ALBUQUERQUE, a New Mexico municipal corporation ("City"), whose address is P.O. Box 1293, Albuquerque, New Mexico, 87103.

1. **Grant of Easement.** The Grantor grants to the City an exclusive temporary easement for a ("Public Improvement") on, over, across and through the property described below ("Property"), together with the right of the City to operate, maintain, repair, replace and construct the Public Improvement and the right to remove trees, bushes, undergrowth and any other obstacles upon the Property if the City determines they interfere with the appropriate use of the easement. The Property is described as follows:

See attached Exhibit "B"

2. **Warranties.** Grantor covenants and warrants that it is the owner in fee simple of the Property and that it has a good lawful right to convey the Property or any part thereof and that the Grantor will forever warrant and defend the title to the Property against all claims from all persons or entities.

3. **Binding on Grantor's Property.** The grant and other provisions of this Easement constitute covenants running with title to the Property for the benefit of the City and its successors and assigns until terminated.

4. **Temporary.** This easement will be released by the City when the City Engineer determines that the Easement is no longer required.

WITNESS my hand and seal this 10th Day of September, 1999

GRANTOR: Curb, Inc.

By: Charles A. Haegelin
Charles A. Haegelin
President

STATE OF NEW MEXICO)
)ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on 9-10-99
by Charles A. Haegelin, Pres., on behalf of said corporation.

Notary Public

OFFICIAL SEAL
RICHARD J. SQUIRES
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: 9-17-2003

My Commission Expires:
9-17-2003

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Judy D. Woodward Bern. Co. PLAT R 17.00 Bk-98C Pg-332

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EXHIBIT "A"

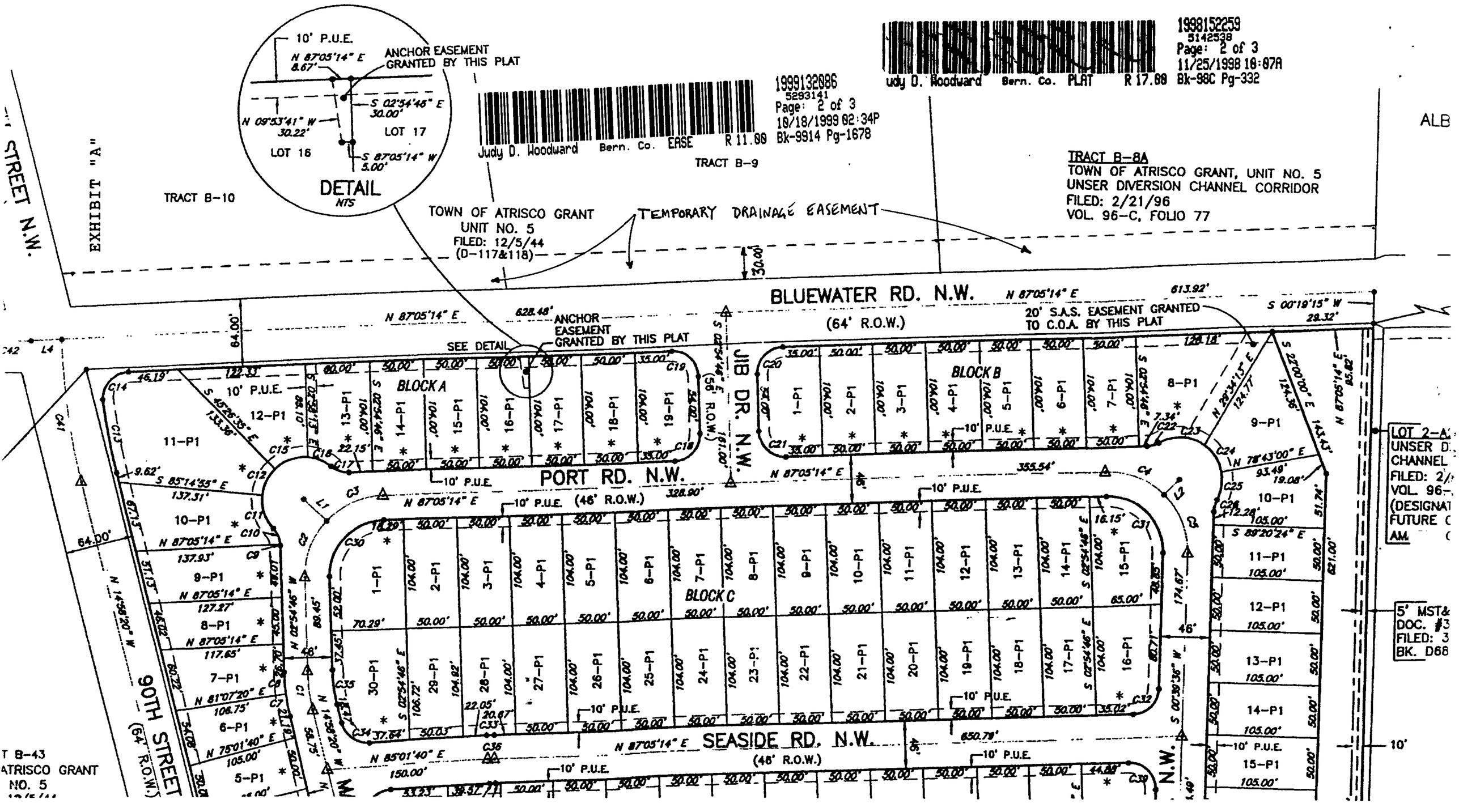

EXHIBIT "B"

TEMPORARY EASEMENT

The southerly 30.00 feet of Tracts B-9 and B-10, Town of Atrisco Grant, Unit No. 5, filed in the office of the Clerk of Bernalillo County, New Mexico on 12-5-1944 in D-117 and 118; and the southerly 30.00 feet of Tract B-8A, Town of Atrisco Grant, Unit No. 5, Unser Diversion Channel Corridor, filed in the office of the Clerk of Bernalillo County, New Mexico on 2-21-1996 in Vol. 96-C, Folio 77

Judy D. Woodward Bern. Co. EASE R 11.00
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CONTRACT CONTROL FORM

PRELIMINARY REVIEW

Project # 591381

CCN # 9900360

..tact Person Terri

Phone No. 924-3997

~~New~~ or Ext. #

Type of Agreement : Agreement and Covenant

Description/Project: Avalon Subd Unit 1A

Public Works/Div.: Project Review Section

Developer: Curb, Inc.

Contract Amount $ -0-

SIA Contract Period: 10-8-99 - Perm.

Contract Amount $

SW'S Contract Period: ____ - ____

Project Completed Date: ____

DRAFT CONTRACT:

Rec'd by Legal: ____ Rejected/Returned to Dept.: ____ / ____

Returned to Legal: ____ / ____ Approved: ____ Initials: ____

FINANCIAL GUARANTY:

Letter of Credit No.: ____ Date: ____ Attached: Yes___ No___ Initial____

Other: Type ____ Date: ____ Attached: Yes___ No___ Initial____

FINAL CONTRACT REVIEW

APPROVALS REQUIRED:

	Date Delivered	Returned to Dept.	Approved By	Approval Date:
~~Purchasing:~~ Hydro:	9-13-99		SMC	9-27-99
Asst. City Attorney:				10/6/99
CIP:				
City Attorney:	10-1-99			
~~CAO:~~ City Eng	10-7-99 BL			10/8/99
Other:				
Council:	EC No.:	Approved:		Date:

DISTRIBUTION:	Date:	By:
User Department		
Vendor		
City Clerk	10-19-99 BL	
Treasury		

Revised 9/6/95 WP+125805/tsl

ADDENDUM TO COVER PAGE

9-13-99
(Date)

TO: Kevin Curran, Assistant City Attorney, Legal Department

FROM: Project Administrator, Project Review Sec., PWD

SUBJECT: PROJECT TITLE: AVALON SUBD UNIT 1A PROJECT # 591381

The attached documents have been review, approved, initialed and/or signed by the DRC Chairman and are submitted for your action as noted.

ITEM	ACTION: Review & Approval	ACTION: Reference
Procedure "A"		
Procedure "B"		
Procedure "B" Modified Non Work Order		
Procedure "C"		
Procedure "C" Modified		
Special Agreement		
Sidewalk Deferral Agreement		
Amendment		
Financial Guarantee		
Construction Paperwork:		
Contractors Proposal		
Performance/Warranty Bonds		
Labor/Material Bonds		
Certificate of Insurance		
Engineers Cost Estimate		
Extension		
Release/Agreement		
Release/Financial Guarantee		
Calling Notice		
Letter of Commitment		
Reduction Letter		
License Agreement		
Easement		
Monitoring Well Permit		
Agreement & Covenant	✓	
Drainage Covenant		
Revocable Permit		
Encroachment		
Permanent Easement		

Other:
1
2
3

Please Call Terri at 924-3997 if you have any questions regarding the above or when the documents are ready to be picked up.

ATTACHMENTS (1)

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

September 15, 2000

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

RE: ***Amendment No. 1 Drainage Report and Revised Grading and Drainage Plan for Avalon Subdivision, Unit 3, (K9/D15) Engineer's Stamp Dated 8/14/00.***

Dear Mr. Lorenz:

Based on the information provided, the above referenced report and revised plans for Avalon Unit 3 are approved. The revised Grading plan and the Infrastructure List must be approved by the DRB since this will change Preliminary Plat to reclaim the lots.

The revised construction drawings for the Change Order must be submitted through the DRC process. Per our meeting of September 14, 2000, the revised Work Order plans will include a plate on the pond outfall pipe to restrict the discharge from the pond so that it remains the same.

As you are aware, the Grading and Drainage Certification of the plan that is approved by the DRB is required prior to release of the SIA or financial guarantees.

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

Sincerely,

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

c: Bo Johnson, P.E., Curb Inc.
File

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AVALON UNIT 3 ZONE ATLAS/DRNG. FILE #: K9-D15

DRB #: 99-325 EPC #: _____ WORK ORDER #: 639781

LEGAL DESCRIPTION: AVALON UNIT 3

CITY ADDRESS: BLUEWATER ROAD SW

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz

ADDRESS: 2201 San Pedro NE Bldg.1 Suite 210 Albuquerque, New Mexico 87110 PHONE: 888-6088 fax 6188

OWNER: CURB INC. CONTACT: B. JOHNSON

ADDRESS: 5905 AZUELO CT NW PHONE: 450-4616

ARCHITECT: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: ALDRICH LAND SURV. CONTACT: T. ALDRICH

ADDRESS: 4109 MONTGOMERY NE PHONE: 884-1990

CONTRACTOR: NEW CONCEPTS CONTACT: T. LAKEMAN

ADDRESS: 508 PARAGON SE PHONE: 452-8910

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

X YES
___ NO
___ COPY PROVIDED

RECEIVED
AUG 17 2000
HYDROLOGY SECTION

CHECK TYPE OF APPROVAL SOUGHT:

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

DATE SUBMITTED: 8-15-00

BY: Dennis A. Lorenz

needs to reanalyze whole system of ponds
Check entire basin that drains to it
w/ extra pond capacity - whole basin will
take advantage - share add'l capacity

Doug Andrews - Smith

rev. PP, Inf list
to DRB

rev. WO drops for
Change order
add restrict.
plate to keep
pond disch
the same

AMENDMENT NO. 1

DRAINAGE REPORT

FOR

AVALON SUBDIVISION, UNIT 3

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
NEW MEXICO
9647
REGISTERED PROFESSIONAL ENGINEER

Dennis A. Lorenz, PE
Principal 8·14·00

August 2000

RECEIVED
AUG 17 2000
HYDROLOGY

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CALCULATIONS	
STORM DRAINS	
POND DESIGN	
AHYMO OUTPUT FILES	
EXHIBITS (Located in back pocket)	
UNIT 3A, GRADING AND DRAINAGE PLAN	
UNIT 3B, GRADING AND DRAINAGE PLAN	

RECEIVED
AUG 17 2000
HYDROLOGY SECTION

PURPOSE AND SCOPE

The purpose of this Amendment is to document and present the design criteria for modification to the detention pond system that accepts developed runoff from Avalon, Unit 3. The approved Drainage Masterplan recommends the construction of a 2.2 acre foot detention pond at the southeast corner of the property. The detention pond is necessary to limit the discharge of developed runoff to pre-developed conditions of approximately 42 cfs, or 1.4 cfs/acre. Design of the proposed detention pond is outlined in the Drainage Report for Avalon Unit 3, and the Public Works Plans for Avalon Unit 3A, City Project Number 639781.

The proposed detention pond is designed to drain to the Unser Diversion Pond No. 3, through a 24-inch culvert that limits peak discharge to 42 cfs. Upon close inspection of the Unser Diversion System it was discovered that by modifying Pond No. 3 to provide additional storage equivalent to the developed runoff anticipated from Avalon Unit 3, the on-site detention pond could be eliminated.

The following analysis illustrates the proposed modifications to Pond No. 3. The modifications consist of raising the east berm and spillway to provide additional storage capacity. The 100-year water surface will be raised from 5148.60 to 5151.60, increasing retention storage from 2.73 acre-feet to 5.14 acre-feet. The spillway and east berm will be re-built to provide 2.0 feet of freeboard.

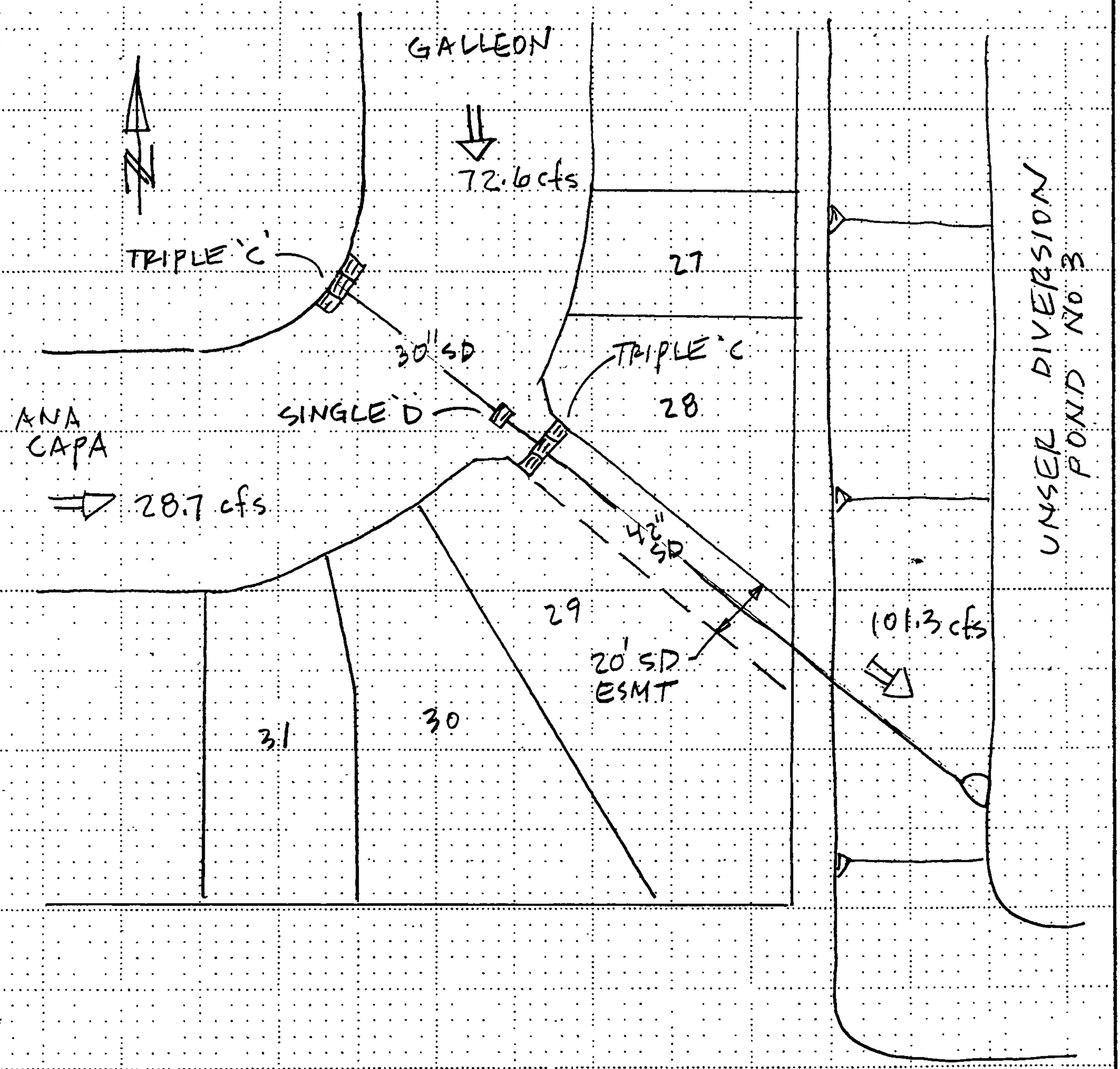
Elimination of the on-site detention pond allows reclamation of the area once reserved for ponding. The ponding area will be reconfigured to create 2 additional single family lots. A storm drain system will collect on-site runoff, which will be piped directly to the Unser Diversion Pond No. 3.

The following calculations illustrate the proposed modifications to the Unser Diversion Pond No. 3, and the on-site storm drainage system. Revised grading plans for Units 3A and 3B are located in the back pocket of the report.

CALCULATIONS

AVALON UNIT 3	99570	1/
	8-14-00	

STORM DRAIN @ AP 3 @ POND INLET



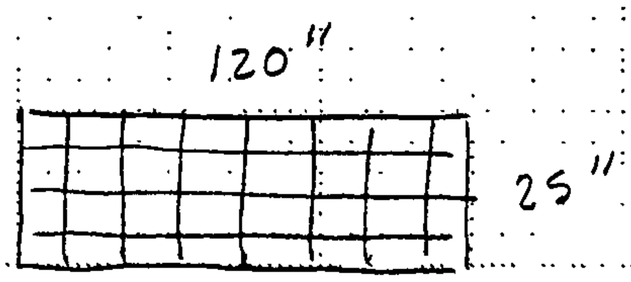
SCHEMATIC LAYOUT

NTS.

BRASHER & LORENZ, INC.

HYDRAULIC CALCULATIONS FOR SPECIAL INLET STRUCTURES

① TRIPLE 'C' INLET CAPACITY



GRATES $P = 290'' = 24.17'$

OPEN $A = 12.93$ SF

FIND DEPTH OVER GRATE W/O CURB OPENING:

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

$C = 0.6$

$A = 12.93$ SF

$Q_{100} = 101.3 \text{ CFS}/2 = 50.7$ CFS

SOLVING FOR h:

$$h = \left[\frac{50.7}{0.6(12.93)}\right]^2 / 2g = \underline{\underline{0.66'}}$$

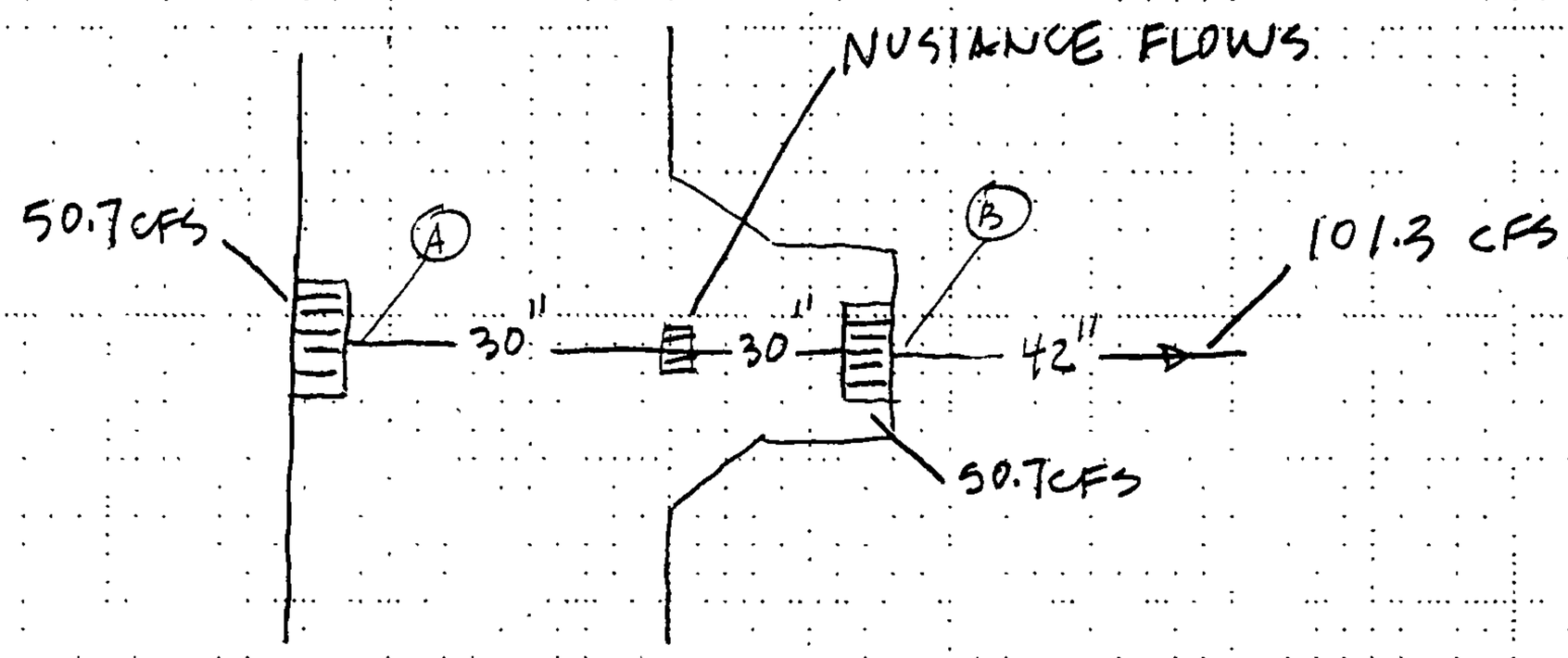
$h_{AVAIL} = 0.67$ FT

DETERMINE Q_{MAX} @ h_{MAX}:

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

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

(2) CHECK CONNECTOR PIPES FOR INLET CONTROL:



AT 1ST TRIPLE 'C' (A):

$Q_{100} = 101.3 \text{ CFS}/2 = 50.7 \text{ CFS}$

BY ORIFICE: $A_{30''} = 4.91 \text{ SF}$

$C = 0.6$

$$h = \left[\frac{50.7}{0.6(4.91)}\right]^2 / 2g = \underline{\underline{4.60'}}$$

$h_{AVAIL} = 10.26'$

$Q_{MAX} = 0.6(4.91)\sqrt{2g(10.26)} = 75.7 \text{ CFS}$ $\quad FS = \frac{75.7}{50.7} = 1.49$

AT 2ND TRIPLE 'C' (B):

$Q_{100} = 101.3 \text{ CFS}$ $\quad A_{42''} = 9.62 \text{ SF}$

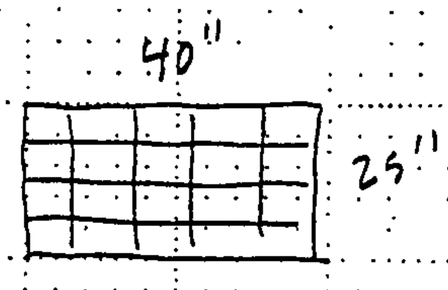
$$h = \left[\frac{101.3}{0.6(9.62)}\right]^2 / 2g = \underline{\underline{4.78'}}$$

$h_{AVAIL} = 9.65'$

$Q_{MAX} = 0.6(9.62)\sqrt{2g(9.65)} = 143.9 \text{ CFS}$ $\quad FS = \frac{143.9}{101.3} = 1.42$

③ CHECK SINGLE 'D'

PROVIDE SINGLE 'D' FOR NUISANCE Q



P = 130" = 10.83'
OPEN A = 4.31 SF
PER PLAN MAX h = 0.2 FT

Ⓐ CHECK BY WEIR

$Q = CLH^{3/2}$

L = P = 10.83'
H = 0.2'
C = 2.5

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

Ⓑ CHECK BY ORIFICE

$Q = CA\sqrt{2gh}$

h = 0.2'
A = 4.31 SF
C = 0.6

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

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

④ PIPE FLOW TO POND

Enter up to 10 pipes.
Enter <Return> only for flowrate and diameter to end.

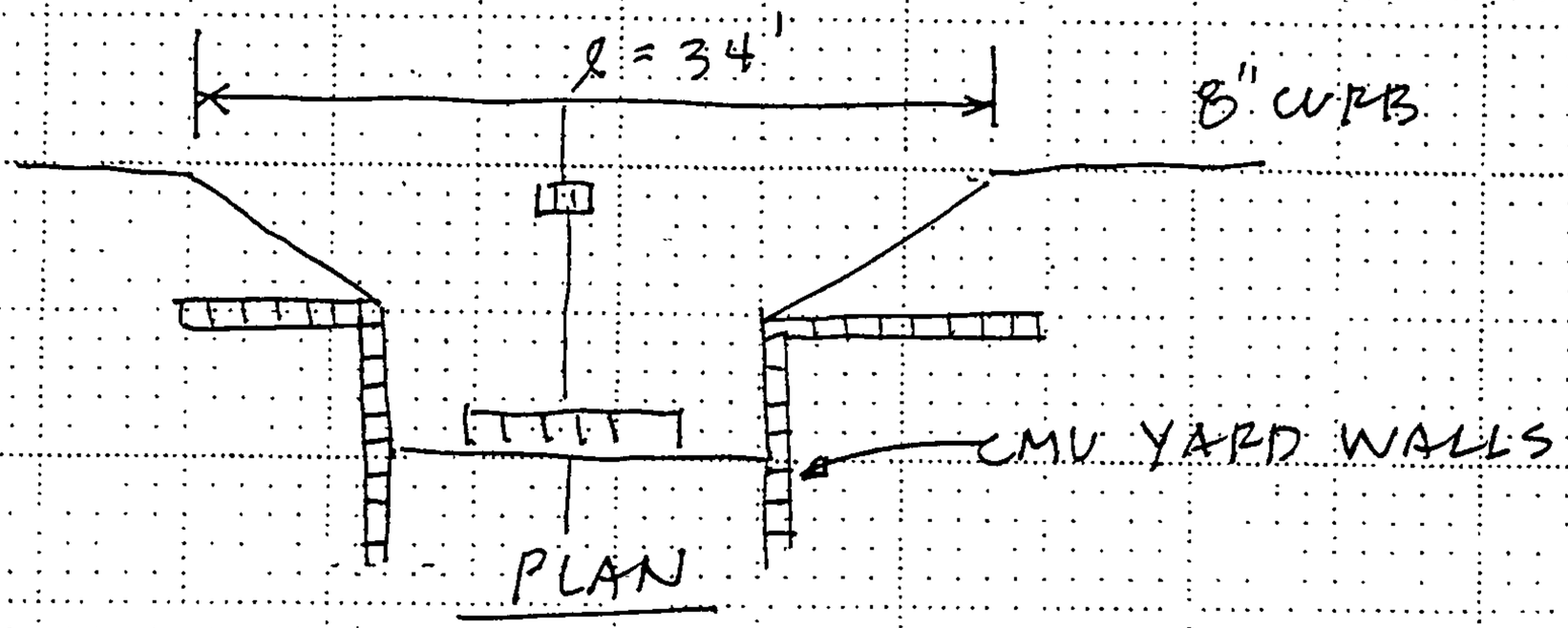
	FLOWRATE (CFS)	DIAMETER (IN)	FRICTION (FT^1/6)	SLOPE (%)	VELOCITY (FPS)
①	50.65	30.09	0.0130	1.50	10.25
②	101.30	39.03	0.0130	1.50	12.20

① 1ST TRIPLE 'C' USE 30" SD
② 2ND TRIPLE 'C' USE 42" SD TO UNSER DIV.

(5) EAST SPECIAL INLET - WEIR ENTRY & OVERFLOW

(A) WEIR INLET TO EAST TRIPLE 'C'

$Q_{100} = 101.3$ CFS / 2 = 50.7 CFS

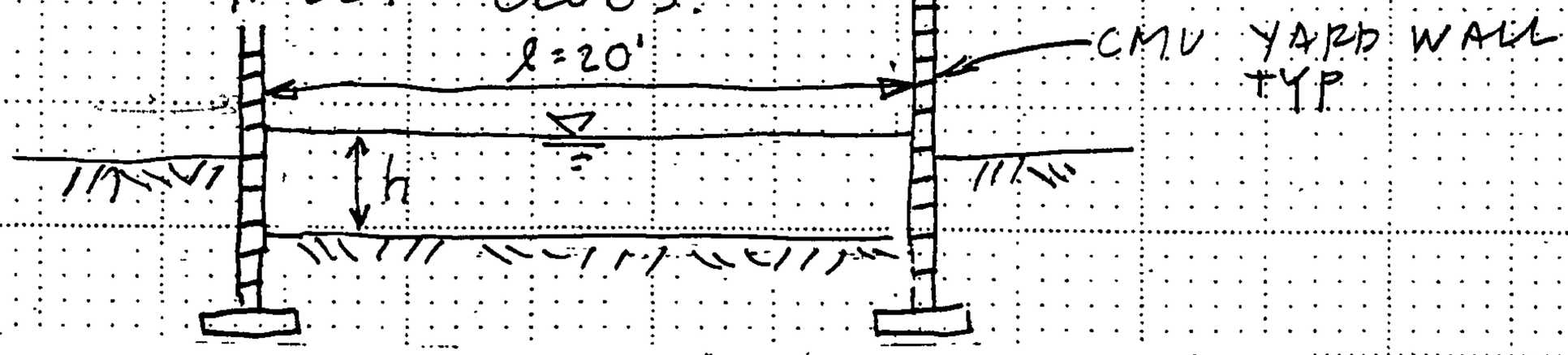


Enter up to 10 weirs.
Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
50.70	34.2	2.700	0.67

USE ℓ = 34'

(B) PROVIDE OVERFLOW @ BACK OF INLET DESIGN FOR Q_{100} = 101.3 CFS IN EVENT INLET CLOGS:



Enter up to 10 weirs.
Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
101.30	20.0	2.700	1.52

USE 18" SIDEWALLS

(6) MODIFICATIONS TO UNSER DIVERSION POND No 3

OBJECTIVE IS TO INCREASE STORAGE CAPACITY TO ACCOMMODATION DEV Q100 FROM AVALON UNIT 3

(A) UNSER DIVERSION POND 3

VOL = 2.73 AF
Q100 OUT = 68.6 cfs
WSE = 48.6
SPILLWAY = 51.2
BOTTOM = 42.56

(B) AVALON UNIT 3

A = 30 AC

EX Q100 = 38.9 CFS
EX V100 = 1.10 AF
DEV Q100 = 101.3 CFS
DEV V100 = 3.51 AF

(C) ADDL STORAGE REQUIREMENT

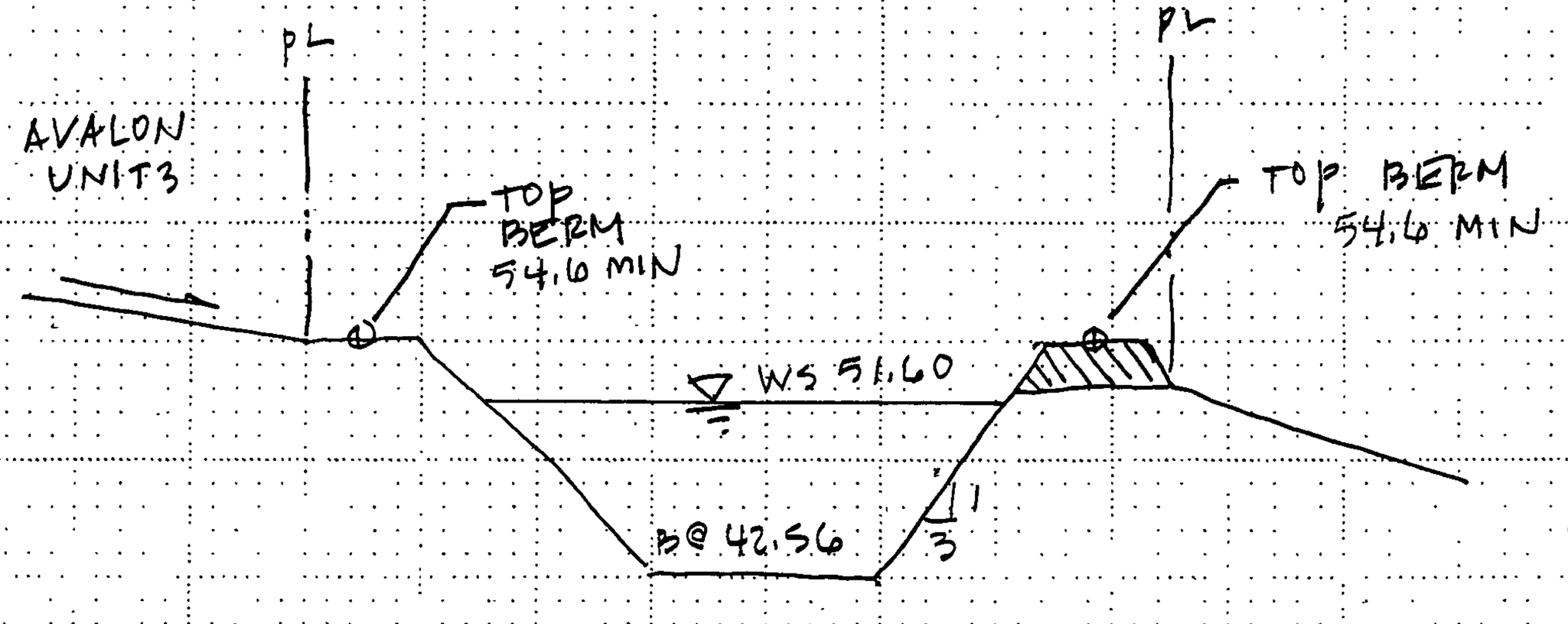
ADD'L VOL DUE TO DEV = 3.51 - 1.10 = 2.41 AF
IGNORING ROUTING, INCREASE POND 3 TO PROVIDE ADD'L 2.41 AF RETENTION STORAGE; WHICH IS CONSERVATIVE:

TOTAL POND 3 VOL = 2.73 + 2.41 = 5.14 AF

PER DEPTH / STORAGE DATA:

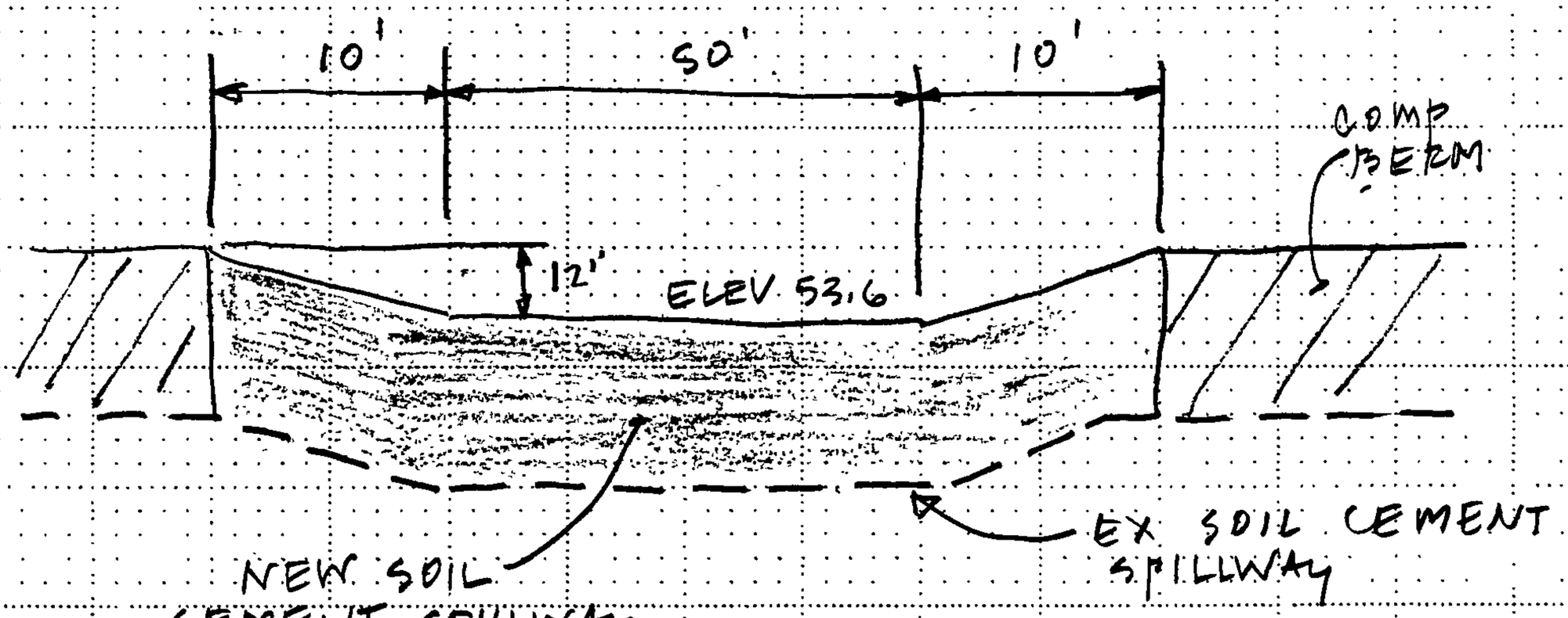
@ V = 5.14 AF WSE = 51.60 FT

AVALON UNIT 3	99570	7
	8-14-00	



TYP POND NO 3 SECTION (E-W

NTS



Q = 135 CFS

SPILLWAY SECTION

PER AS-BUILT DWGS NTS

BRASHER & LORENZ, INC.

REQUEST FOR
CONDITIONAL LETTER OF MAP REVISION
FOR
THE UNSER DIVERSION
AND
THE ATRISCO BUSINESS PARK

Albuquerque, New Mexico
January 1994

Sponsored by: **Albuquerque Metropolitan Arroyo Flood Control Authority**
2600 Prospect Avenue NE
Albuquerque, NM 87107

Prepared for: **Sunwest Bank Special Assets Department**
303 Roma Avenue NW
Albuquerque, NM 87102

and

The Bell Group
6901 Washington NE
Albuquerque, NM 87109

Prepared by: **Easterling & Associates, Inc.**
10131 Coors Road NW
Albuquerque, New Mexico 87114-4048

I, Charles M. Easterling, do hereby certify that this report was prepared by me or under my direction and that I am a duly registered Professional Engineer under the laws of the State of New Mexico.

Charles M. Easterling, P.E.
NMPE No. 6411

JAN 5 1994
Date

CHARLES M. EASTERLING
NEW MEXICO
6411
REGISTERED PROFESSIONAL ENGINEER

[redacted]4.
[redacted]
[redacted]

```
**ROUTE THE COMBINED FLOW THROUGH UNSER DIVERSION POND NO.3.
**IN THE INTERIM CONDITION THE LOWER PORTION OF THIS POND WILL BE USED FOR
**RETENTION. THE UPPER PORTION OF THE POND WILL BE USED FOR DETENTION
**ASSUME OUTFLOW STRUCTURE IS AN 8' X 8' CONCRETE BOX SOLID TO ELEVATION 47.5
**FLOW IS CONTROLLED BY WIER FLOW OVER THE TOP OF THE CONCRETE BOX TO
**ELEVATION 48.5. AT ELEVATIONS GREATER THAN 48.5 THE FLOW IS CONTROLLED
**BY ORIFICE CONTROL AT THE ENTRANCE TO THE 42" DIA. OUTLET PIPE.
**.10 ACRE*FT OF VOLUME WHICH REPRESENTS 5 X THE ESTIMATED ANNUAL AVERAGE
**SEDIMENT YIELD IS OMITED  FROM THE STAGE STORAGE CURVE
ROUTE RESERVOIR      ID=4 HYDROGRAPH NO=140.25  INFLOW ID=2  CODE=24
                     OUTFLOW(cfs)     STORAGE(ac ft)     ELEV(ft)
                              0              0.00          43.0
                           0.01            0.0688          44.0
                          0.011            0.4970          45.0
                          0.012            1.0426          46.0
                          0.013            1.6424          47.0
                          0.014            1.9702          47.5 TOP OF OUTLET STRUC
                           23.3            2.2979          48.0
                           66.0            2.6543          48.5
                           78.5            3.0106          49.0
                           85.3            3.7821          50.0
                           91.7            4.6138          51.0
                           93.2            4.7875          51.2 EMERGENCY SPILLWAY
                          194.2            5.5069          52.0
PRINT HYD            ID=4  CODE=1
**ROUTE THE OUTFLOW FROM THE POND THROUGH A 42" DIA STORM DRAIN UNDER BLUEWATER
**ROAD
COMPUTE RATING CURVE CID=1  VALLEY SECTION NO=1  CODE=-1  SLOPE=0.010
                     PIPE DIA=42  N=0.013
COMPUTE TRAVEL TIME ID=10  REACH=1  NUMBER OF VALLEY SECTIONS=1
                     LENGTH=168 FT  SLOPE=0.010
ROUTE                ID=10  HYDROGRAPH NO=140.26  INFLOW ID=4  DT=0.0
PRINT HYD            ID=10  CODE=1
**ROUTE THE OUTFLOW THROUGH UNSER DIVERSION POND NO. 2
**IN THE INTERIM CONDITION THE LOWER PORTION OF THIS POND WILL BE USED FOR
**RETENTION. THE UPPER PORTION OF THE POND WILL BE USED FOR DETENTION
**ASSUME OUTFLOW STRUCTURE IS AN 8' X 8' CONCRETE BOX SOLID TO ELEV 44.8
**FLOW IS CONTROLLED BY WEIR FLOW BETWEEN ELEV 44.8 AND 46.0  THEN IT IS
**CONTROLLED BY THE ENTRANCE OF THE 48" DIA OUTLET PIPE
ROUTE RESERVOIR      ID=5 HYDROGRAPH NO=140.27  INFLOW ID=10  CODE=24
                     OUTFLOW(cfs)     STORAGE(ac ft)     ELEV(ft)
                              0            0.0000          37.9
                           0.01            0.0003          38.0
                          0.011            0.1818          39.0
                          0.012            0.7343          40.0
                          0.013            1.5680          41.0
                          0.014            2.4956          42.0
                          0.015            3.5621          43.0
                          0.016            4.6788          44.0
                          0.017            5.8772          44.8 TOP OF OUTLET STR
                           38.6            6.5179          45.5
                           86.8            7.1586          46.0
                          169.3            8.5245          47.0
                          178.5            9.8262          47.9 EMERGENCY SPILLWAY
```

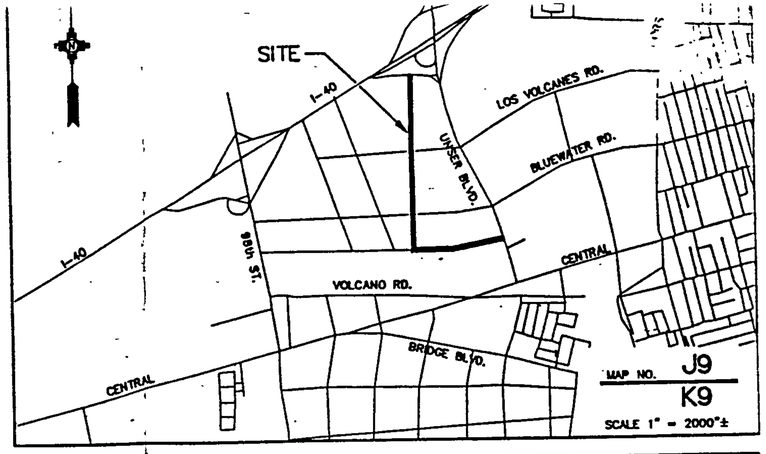
COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
STORE HYD	130.84	-	15	.00010	5.87	.485	90.96078	5.000	91.719		
MODIFY TIME	130.84	15	15	.00010	11.74	.485	90.94878	4.900	183.413		
ADD HYD	130.85	15&17	7	.32980	211.53	9.909	.56335	1.650	1.002		
ROUTE RESERVOIR	130.86	7	5	.32980	142.68	8.726	.49608	1.800	.676	AC-FT=	2.59
ROUTE	130.87	5	11	.32980	142.34	8.726	.49607	1.850	.674		
ROUTE RESERVOIR	130.88	11	5	.32980	75.56	5.468	.31088	2.100	.358	AC-FT=	4.51
ROUTE	130.89	5	10	.32980	78.05	5.468	.31088	2.100	.370		
COMPUTE NM HYD	140.10	-	1	.01960	18.50	.522	.49901	1.500	1.475	PER IMP=	.0
ROUTE	140.11	1	12	.01960	17.17	.522	.49908	1.550	1.368		
ROUTE	140.12	12	15	.01960	17.47	.522	.49909	1.600	1.393		
COMPUTE NM HYD	140.20	-	1	.08920	78.50	2.196	.46166	1.500	1.375	PER IMP=	.0
ADD HYD	140.21	15& 1	2	.10880	92.62	2.718	.46840	1.550	1.330		
DIVIDE HYD	140.22	2	17	.10880	100.03	2.935	.50587	1.550	1.437		
	140.23	AND	16	.10880	7.41	.217	.03747	1.550	.106		
ADD HYD	140.24	17&10	2	.43860	100.03	8.404	.35925	1.550	.356		
ROUTE RESERVOIR	140.25	2	4	.43860	68.61	6.433	.27502	2.250	.244	AC-FT=	2.72
ROUTE	140.26	4	10	.43860	68.47	6.433	.27502	2.250	.244		
ROUTE RESERVOIR	140.27	10	5	.43860	3.22	.557	.02380	5.650	.011	AC-FT=	5.93
ROUTE	130.28	5	10	.43860	3.23	.557	.02380	5.650	.011		
COMPUTE NM HYD	150.10	-	1	.15250	85.35	3.692	.45390	1.600	.874	PER IMP=	.0
DIVIDE HYD	150.11	1	17	.15250	89.62	3.876	.47660	1.600	.918		
	150.12	AND	16	.15250	4.27	.185	.02270	1.600	.044		
ADD HYD	150.13	10&17	10	.59110	89.62	4.433	.14062	1.600	.237		
ROUTE RESERVOIR	150.14	10	5	.59110	.02	.038	.00122	29.950	.000	AC-FT=	4.39

FINISH

CONSTRUCTION PLANS FOR

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

UNSER DIVERSION



SHEET INDEX

1. COVER PAGE
2. KEY MAP, UTILITY CONTACTS AND STOCKPILE SECTIONS
3. STORM DRAIN – PLAN AND PROFILE
4. STORM DRAIN – PLAN AND PROFILE
5. STORM DRAIN/POND CONNECTIONS – PLAN AND PROFILE
6. STORM DRAIN/POND CONNECTIONS – PLAN AND PROFILE
7. EARTHEN CHANNEL – PLAN AND PROFILE
8. POND 1 – GRADING PLAN
9. POND 2 – GRADING PLAN
10. POND 3 – GRADING PLAN
11. POND 4 – GRADING PLAN
12. POND 5 – GRADING PLAN
13. POND 6 – GRADING PLAN
14. OUTLET STRUCTURE – DETAILS AND SECTIONS
15. OUTLET STRUCTURE TRASH RACK – DETAILS AND SECTIONS
16. RUNDOWN STRUCTURE DETAILS AND SECTIONS
17. RUNDOWN STRUCTURE DETAILS AND SECTIONS
18. MISCELLANEOUS DETAILS AND SECTIONS
19. FENCE DETAILS AND LOW FLOW CHANNEL DETAILS

20.–25. PROJECT PLAT

ENERAL NOTES

ALL WORK DETAILED ON THESE PLANS, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON WITHIN THE PROJECT CONTRACT DOCUMENTS AND SPECIFICATIONS, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NEW MEXICO STATE HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 1994 EDITION.

ALL STORM DRAIN CONSTRUCTION AND WORK REQUIRED ON THE WATERLINE OWNED BY THE CITY OF ALBUQUERQUE, EXCEPT WHERE REVISED OR AMENDED BY THESE PLANS AND SPECIFICATIONS, SHALL BE DONE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, STANDARD DRAWINGS, AND SECTIONS 13 AND 18 OF THE GENERAL CONDITIONS OF THE CITY OF ALBUQUERQUE'S STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS AMENDED THROUGH UPDATE NO. 5.

TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT ONE CALL SYSTEM, INC., 260-1990, FOR LOCATION OF EXISTING UTILITIES.

THESE DRAWINGS REFLECT INFORMATION ON UTILITIES GATHERED BY SITE INSPECTION, DISCUSSIONS WITH MUNICIPAL OFFICIALS, AND PREVIOUS CONSTRUCTION DRAWINGS. IT IS POSSIBLE THAT THE EXACT LOCATION OF LINES AND UTILITY CONNECTION POINTS IN THE VICINITY OF THE REQUIRED WORK MAY BE DIFFERENT FROM THE LOCATION SHOWN ON THESE DRAWINGS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

ALL GAS, ELECTRIC, TELEPHONE LINES, CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY RELOCATIONS AND ADJUSTMENTS TO GRADE.

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND MAINTAIN IN SERVICE ALL EXISTING UTILITIES.

ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL REMAIN THE CONTRACTOR'S RESPONSIBILITY.

ALL EXCAVATION/CONSTRUCTION PERMITS WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR PERMITS.

THE CONTRACTOR SHALL EXERCISE REASONABLE CARE DURING CONSTRUCTION TO PREVENT THE MOVEMENT OF SEDIMENT FROM THE SITE INTO EXISTING STREETS OR ABUTTING PROPERTY. LOOSE SOIL STOCKPILES DURING CONSTRUCTION ACTIVITIES SHALL BE PROMPTLY CLEANED UP OR PROTECTED FROM BEING CARRIED DOWNSTREAM BY FLOWING WATER.

10. EXCEPT FOR THE STOCKPILE AREA SHOWN ON SHEET 2, ALL UNPAVED AREAS DISTURBED BY THE CONTRACTORS WORK SHALL BE REVEGETATED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION SECTION 1012 IN THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION, AS AMENDED THROUGH UPDATE No. 5.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL WASTE OR UNSUITABLE MATERIAL. A DISPOSAL SITE FOR ALL WASTE MATERIAL, INCLUDING TRASH THAT EXISTS ON THE SITE, SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPOVED BY THE FIELD ENGINEER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

12. THE CONTRACTOR WILL BE REQUIRED TO CONFINE HIS WORK WITHIN THE EASEMENT LIMITS AND / OR PUBLIC RIGHT-OF-WAY TO PRESERVE EXISTING VEGETATION AND PRIVATE PROPERTY. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE RIGHT-OF-WAY UNLESS THE EQUIPMENT OR MATERIAL IS PROPERLY SHIELDED UTILIZING CURRENT SAFETY DESIGN AND INSTALLATION METHODS. THE SAFETY DESIGN FOR THIS SHIELDING SHALL BE PROVIDED BY THE CONTRACTOR AND MUST BE APPROVED BY THE CITY OF ALBUQUERQUE BEFORE IMPLEMENTING. THERE WILL BE NO DIRECT MEASUREMENT OR PAYMENT FOR THE DESIGN, MATERIALS, INSTALLATION, AND REMOVAL OF THE SAFETY BARRIER.

13. CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION.

14. CONTRACTOR SHALL COORDINATE WITH THE CITY OF ALBUQUERQUE WATER SYSTEMS DIVISION A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO INITIATING ANY WORK AFFECTING ANY EXISTING PUBLIC OR PRIVATE WATERLINES.

15. THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, ARE INTENDED FOR USE ON THIS PROJECT AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF EASTERLING & ASSOCIATES, INC. IN THE EVENT OF UNAUTHORIZED USE, THE USER ASSUMES ALL RESPONSIBILITY AND LIABILITY WHICH RESULTS.

16. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE ENGINEER AND SHALL NOTIFY THE ENGINEER AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE ENGINEER. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATION OF THE PAVEMENT OR ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED.

17. MANHOLE STEPS WILL BE INSTALLED IN ALL STORM DRAIN MANHOLES AND JUNCTION BOXES AND CATCH BASINS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO OTHER CONTRACT ITEMS AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

18. THE CONTRACTOR SHALL ADEQUATELY SUPPORT AND PROTECT EXISTING UTILITIES AFFECTED BY THE CONTRACTORS EXCAVATION ACTIVITY. IN THE EVENT THAT EXISTING UTILITIES ARE DAMAGED BY THE CONTRACTORS OPERATIONS, THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE PROMPT REPAIR BY THE RESPECTIVE UTILITY AND SHALL BEAR THE COST OF REPAIRS.

19. THE CONTRACTOR SHALL REMOVE AND REPLACE ALL SECTIONS OF EXISTING PAVING, CURB, AND GUTTER, AND OR SIDEWALK DAMAGED DURING CONSTRUCTION OF THE PROJECT. THIS WORK SHALL BE PERFORMED AT NO COST TO THE OWNER.

20. ALL TRENCH EXCAVATION AND RELATED WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, STATE, AND LOCAL REGULATIONS, LAWS AND ORDINACES.

21. THE FOLLOWING DOCUMENTS PROVIDED THE BASIS FOR DESIGN OF THE PROJECT.
    1. MASTER DRAINAGE PLAN FOR THE ATRISCO BUSINESS PARK, OCTOBER 1993, EASTERLING AND ASSOCIATES.
    2. DESIGN ANALYSIS FOR THE AMAFCA, UNSER DIVERSION, SEPTEMBER 1993, EASTERLING AND ASSOCIATES.
    3. REQUEST FOR CONDITIONAL LETTER OF MAP REVISION FOR THE UNSER DIVERSION AND THE ATRISCO BUSINESS PARK, JANUARY 1994, EASTERLING AND ASSOCIATES.
    4. CONDITIONAL LETTER OF MAP REVISION FOR THE UNSER DIVERSION AND ATRISCO BUSINESS PARK, APRIL 1994, FEDERAL EMERGENCY MANAGEMENT AGENCY.

CHARLES M. EASTERLING NEW MEXICO 6411 REGISTERED PROFESSIONAL ENGINEER

RECORD DRAWING

I, Charles M. Easterling, hereby certify that these drawings has been revised in accordance with the information furnished by Surv-Tek, Inc. to reflect the construction as actually accomplished.

Charles M. Easterling, P.E. 5-8-97
N.M.P.E. No. 6411 Date:

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE

APPROVAL OF REVISIONS

MATIONS

AC	– ASBESTOS CEMENT	DD	– DEFLECT DOWN	FO	– FIBER OPTIC CABLE	PRC	– POINT OF REVERSE CURVATURE	SAS	– SANITARY SEWER
ARV	– AIR/VACUUM RELEASE VALVE	DIP	– DUCTILE IRON PIPE	G	– GAS	PRV	– PRESSURE RELIEF VALVE	SD	– STORM DRAIN
B	– BASELINE	DU	– DEFLECT UP	HP	– HIGH PRESSURE	PT	– POINT OF TANGENCY	TC	– TOP OF CURB
BC	– BEGIN CURVE	E	– EXISTING	I	– INSTALL	PUE	– PUBLIC UTILITY EASEMENT	T	– TELEPHONE
BCT	– BEGIN CROWN TRANSITION	EC	– END CURVE	LP	– LIGHT POLE	R/REL	– REMOVE & RELOCATE	TP	– TOP OF PIPE
C	– CONSTRUCT	ECT	– END CROWN TRANSITION	LT	– LEFT	R/RPLC	– REMOVE & REPLACE	TW	– TOP WIDTH
CAV	– COMBINATION AIR VALVE	ELEV	– ELEVATION	MH	– MANHOLE	PVC	– POLY VINYL CHLORIDE	UE	– UNDERGROUND ELECTRIC
CCP	– CONCRETE CYLINDER PIPE	F-F	– FACE TO FACE	PC	– POINT OF CURVATURE	R	– REMOVE	VCP	– VITRIFIED CLAY PIPE
CI	– CAST IRON	F/F	– FEET/FOOT	PCC	– POINT OF COMPOUND CURVATURE	REL	– RELOCATE	VER	– VERIFY LOCATION
CL	– CENTERLINE	FH	– FIRE HYDRANT	POC	– POINT ON CURVE	ROW	– RIGHT-OF-WAY	W OR WL	– WATERLINE
COA	– CITY OF ALBUQUERQUE	FL	– FLOW LINE	PP	– POWER POLE	RT	– RIGHT	X	– CROSSING

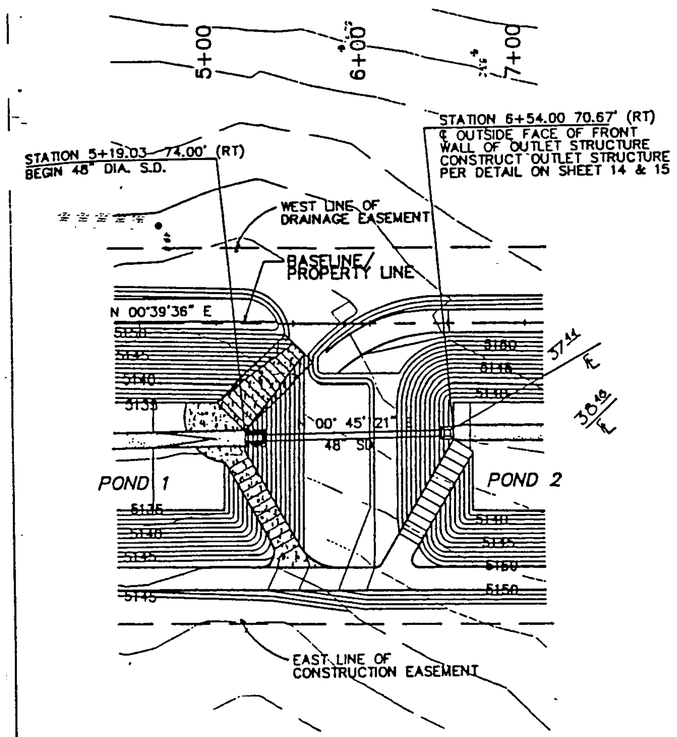
AMAFCA
APPROVED FOR CONSTRUCTION
11/21/96
LARRY A. BLAIR
EXECUTIVE ENGINEER

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H-7/8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

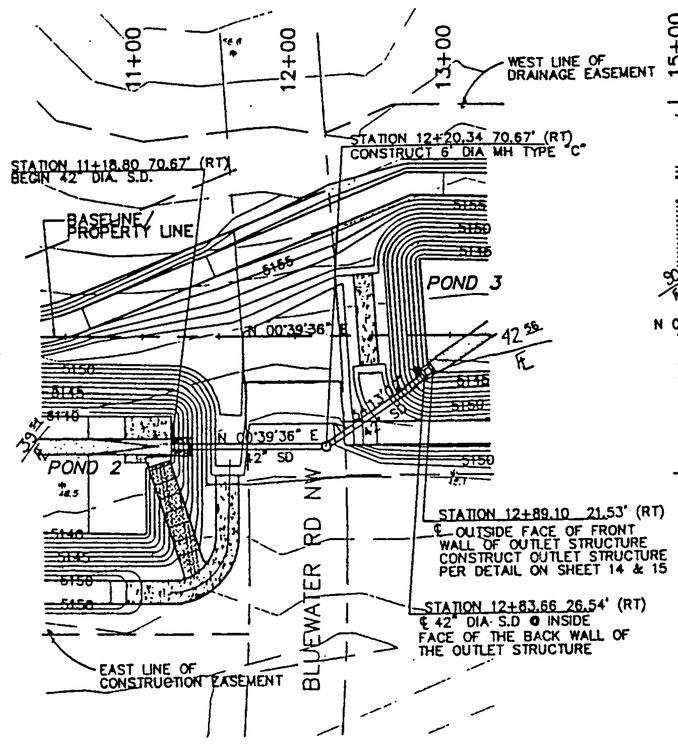
PROJECT NUMBER 3324.0

APPROVED FOR CONSTRUCTION
11/21/96
CITY HYDROLOGY DATE

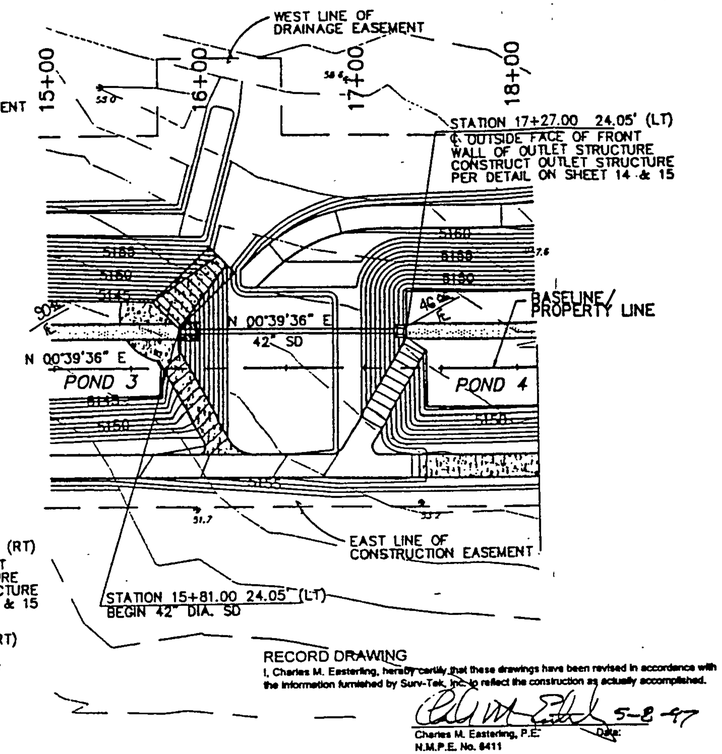
SHEET 1 OF 25



STORM DRAIN
STATION 5+19.00 TO STATION 6+54.00

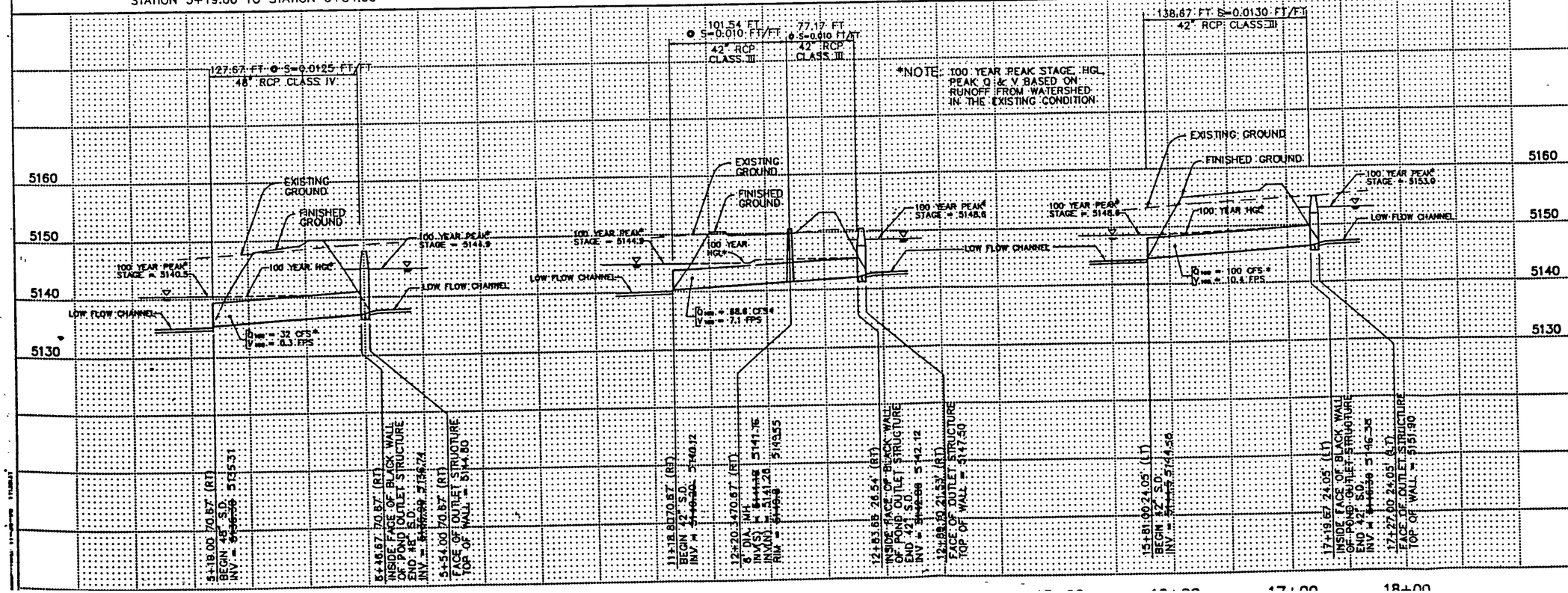


STORM DRAIN
STATION 11+18.00 TO STATION 12+89.10



RECORD DRAWING
I, Charles M. Easterling, hereby certify that these drawings have been revised in accordance with the information furnished by Surv-Tek, Inc. to reflect the construction as actually accomplished.
Charles M. Easterling, P.E. Date: 5-8-97
N.M.P.E. No. 8411

STORM DRAIN
STATION 15+81.00 TO STATION 17+27.00



CLASS "B", NATIVE MATERIALS CONFORMING TO THE CRITERIA FOR CLASS II OR CLASS III SOILS SHALL BE USED TO CONSTRUCT THE REQUIRED GRANULAR FOUNDATION. WITHIN THE 50 LF REACH IMEDIATELY DOWNSTREAM FROM EACH POND OUTLET THE BEDDING MATERIAL PLACED IN THE ZONE BETWEEN THE INVERT AND THE HAUNCH OF THE PIPE SHALL BE "LEAN FILL" CONFORMING TO THE REQUIREMENTS OF SECTION 207 OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS AMMENDED THROUGH UPDATE No. 5. FOUNDATION AND BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY PER ASTM D-1557. EXCEPT FOR THE FOLLOWING REACH:

STA. 5+19 – 6+46
STA. 11+19 – 12+83
STA. 15+81 – 17+19

WHICH SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM D-1557.

2. SEE SHEETS 8 THRU 11 FOR PONDS 1 THRU 4 GRADING PLANS AND SECTIONS.

3. STATIONING FOR THE STORM DRAIN IS BASED ON THE BASELINE/PROPERTY LINE. THIS LINE IS THE WEST LINE OF THE ATRISCO BUSINESS PARK

LEGEND

PROPOSED FEATURES

43.9 ⊕ SPOT ELEVATION
5135 CONTOUR
SOIL CEMENT PAVING
REINFORCED CONCRETE PAVING
BASE COURSE SURFACE
POND OUTLET STRUCTURE

EXISTING FEATURES

⊕49.8 SPOT ELEVATION
5150 CONTOUR

VERT. 1 inch = 10 ft.
HORIZ. 1 inch = 50 ft.

AS BUILT INFORM.
CONTRACTOR
BENCH MARKS
STATION NAME: 1-40-20A
N.M.S.H.C. BRASS TABLET LOCATED ON THE NORTH SIDE OF U.S. HWY. 1-40 ABOUT 445' EAST OF UNSER BLVD.
OVERPASS
SURVEY INFORMATION
FIELD NOTES
NO. BY DATE
TOPO GEO SERVICE 4-93
ENGINEERS SEAL
NO. DATE REMARKS BY

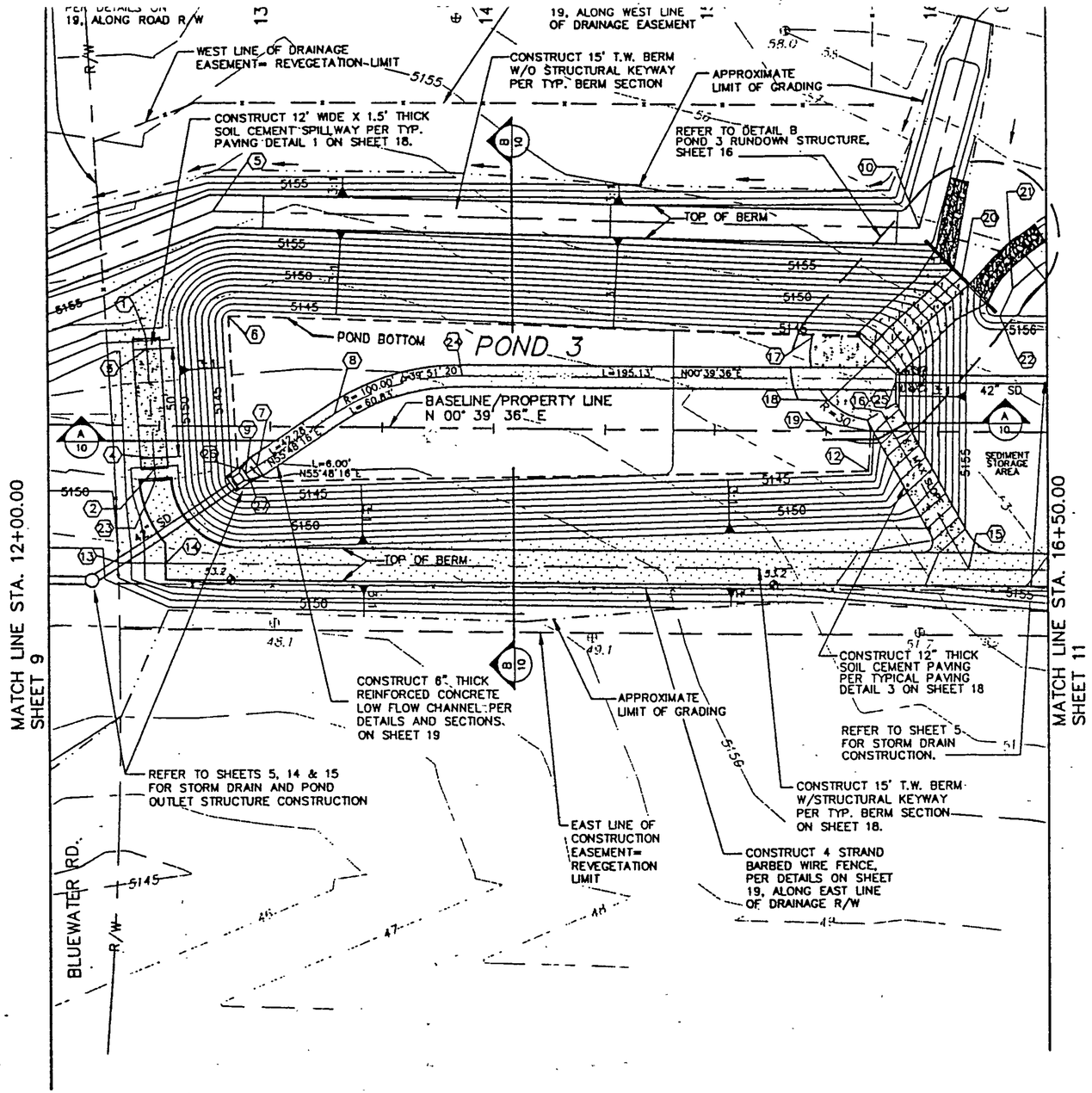
EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H-7/8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

ALBUQUERQUE METROPOLITON ARROYO FLOOD CONTROL AUTHORITY

TITLE: UNSER DIVERSION
STORM DRAIN - POND CONNEC
PLAN AND PROFILE

APPROVALS	ENGINEER	DATE	APPROVALS	ENGIN
AMAFCA				

PROJECT 7704.0 MAR-J9 SHEET

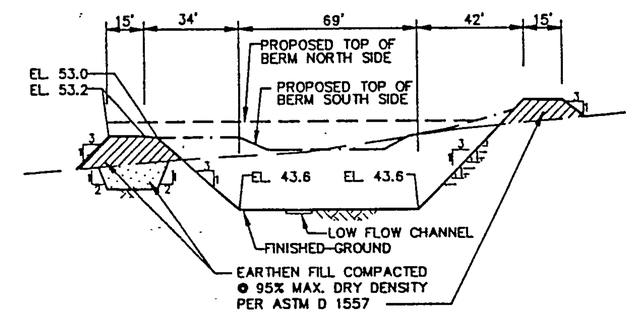


GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

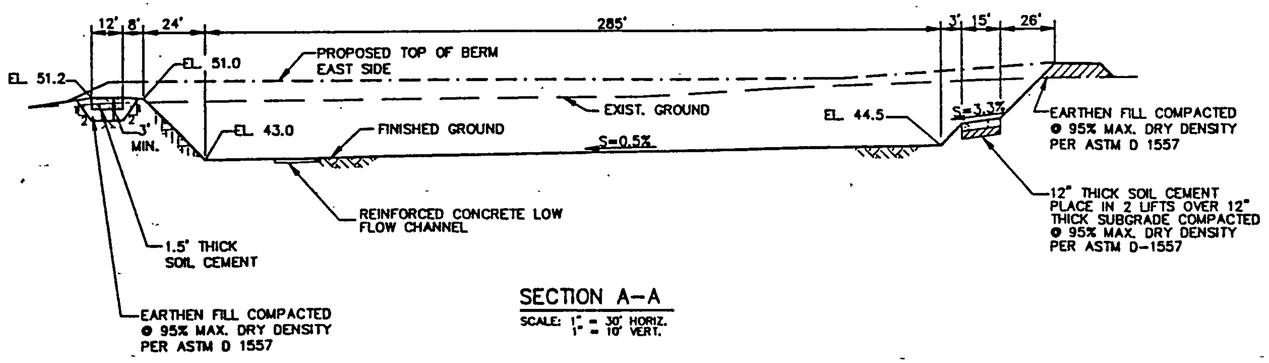
POND 3 POINT DATA

POINT I.D. NO.	STA.	OFFSET (FT)		ELEV.	POINT DESCRIPTION
1	12+43.9	40.3'	LT	5152.2	℄ SPILLWAY PAVING ⊙ W. EDGE OF PAVING
2	12+48.0	19.6'	RT	5152.2	℄ SPILLWAY PAVING ⊙ E. EDGE OF PAVING
3	12+44.2	35.3'	LT	5151.2	℄ SPILLWAY ⊙ W. TOE OF SLOPE
4	12+47.7	14.6'	RT	5151.2	℄ SPILLWAY ⊙ E. TOE OF SLOPE
5	12+73.4	99.3'	LT	5156.9	P.I., ℄ OF BERM
6	12+80.7	50.0'	LT	5143.3	S.W. CORNER OF POND BOTTOM
7	12+94.02	18.10'	RT	5142.80	℄ LOW FLOW CHANNEL ⊙ END OF TRANSITION
8	13+28.72	6.06'	LT	5143.01	℄ LOW FLOW CHANNEL ⊙ B.C.
9	12+89.10	21.53'	RT	5142.50	℄ LOW FLOW CHANNEL ⊙ FACE OF OUTLET STRUCTURE
10	15+91.0	93.2'	LT	5159.0	P.I., – ℄ OF BERM
11	16+15.5	189.4'	LT	5158.0	℄ BERM ⊙ DAYLIGHT
12	15+69.1	18.1'	RT	5144.5	N.E. CORNER OF POND BOTTOM
13	12+32.2	62.5'	RT	5150.0	℄ BERM ⊙ R/W LINE
14	12+53.4	62.5'	RT	5153.2	℄ BERM ⊙ TOP OF SLOPE
15	16+14.2	62.5'	RT	5155.3	℄ BERM AND MAINT. RAMP
16	15+74.7	8.9'	LT	5144.5	℄ MAINT. RAMP ⊙ EDGE OF POND BOTTOM
17	15+43.9	43.7'	LT	5144.5	W. EDGE OF POND BOTTOM ⊙ EDGE OF SOIL CEMENT PAVING
18	15+50.9	14.0'	LT	5144.5	℄ INLET STRUCTURE ⊙ S.E. EDGE OF SOIL CEMENT PAVING
19	15+69.8	0.0		5144.5	N. EDGE OF POND BOTTOM
20	16+10.2	71.2'	LT	5155.0	℄ INLET STRUCTURE ⊙ FACE OF CUTOFF WALL
21	16+33.5	65.3'	LT	5158.5	℄ OF BERM ⊙ ANGLE POINT
22	16+27.8	52.5'	LT	5158.0	℄ OF BERM ⊙ END TOP OF SLOPE
23	12+48.4	24.7'	RT	5153.2	℄ OF BERM ⊙ END TOP OF SLOPE
24	13+85.87	24.00'	LT	5143.32	℄ LOW FLOW CHANNEL ⊙ E.C.
25	15+81.00	24.00'	LT	5144.30	℄ LOW FLOW CHANNEL ⊙ END OF STORM DRAIN
26	12+85.5	19.2'	RT	5143.0	S. EDGE OF POND BOTTOM ⊙ EDGE OF OUTLET STRUCTURE
27	12+91.5	24.9'	RT	5143.0	E. EDGE OF POND BOTTOM ⊙ E. EDGE OF OUTLET STRUCTURE



SECTION B–B

SCALE: 1" = 30' HORIZ.
1" = 10' VERT.



SECTION A–A

SCALE: 1" = 30' HORIZ.
1" = 10' VERT.

LEGEND

PROPOSED FEATURES

- 43.9 ⊕ SPOT ELEVATION
- 5135 CONTOUR
- RIPRAP
- SOIL CEMENT PAVING
- AREA TO BE OVEREXCAVATED FOR BERM STRUCTURAL KEYWAY
- REINFORCED CONCRETE PAVING
- COMPACTED EARTHEN FILL
- POND OUTLET STRUCTURE
- PIPE GATE(BY OTHERS)
- BARBED WIRE FENCE

EXISTING FEATURES

- ⊕49.8 SPOT ELEVATION
- 5150 CONTOUR

RECORD DRAWING

I, Charles M. Easterling, hereby certify that these drawings have been revised in accordance with the information furnished by Surv-Tek, Inc. to reflect the constructions actually accomplished.

5-8-97
Charles M. Easterling, P.E. Date:
N.M.P.E. No. 6411

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H-7/8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

TITLE: UNSER DIVERSION
POND 3
GRADING PLAN AND SECTIONS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER
AMAFCA				

PROJECT NO. 3324.0 | MAP NO. Z-K9 | SHEET 10

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
INSPECTED BY
ACCEPTANCE BY
FIELD VERIFICATION BY
MAP VERIFICATION BY
CORRECTED BY
MICRO-FILM INFO

BENCH MARKS
STATION NAME: I-40-20A
N.M.S.H.C. BRASS TABLET LOCATED ON THE NORTH SIDE OF I-40 AND ABOUT 445' EAST OF UNSER BLVD.
U.S. HWY. I-40 AND ABOUT 445' EAST OF UNSER BLVD.
OVERPASS

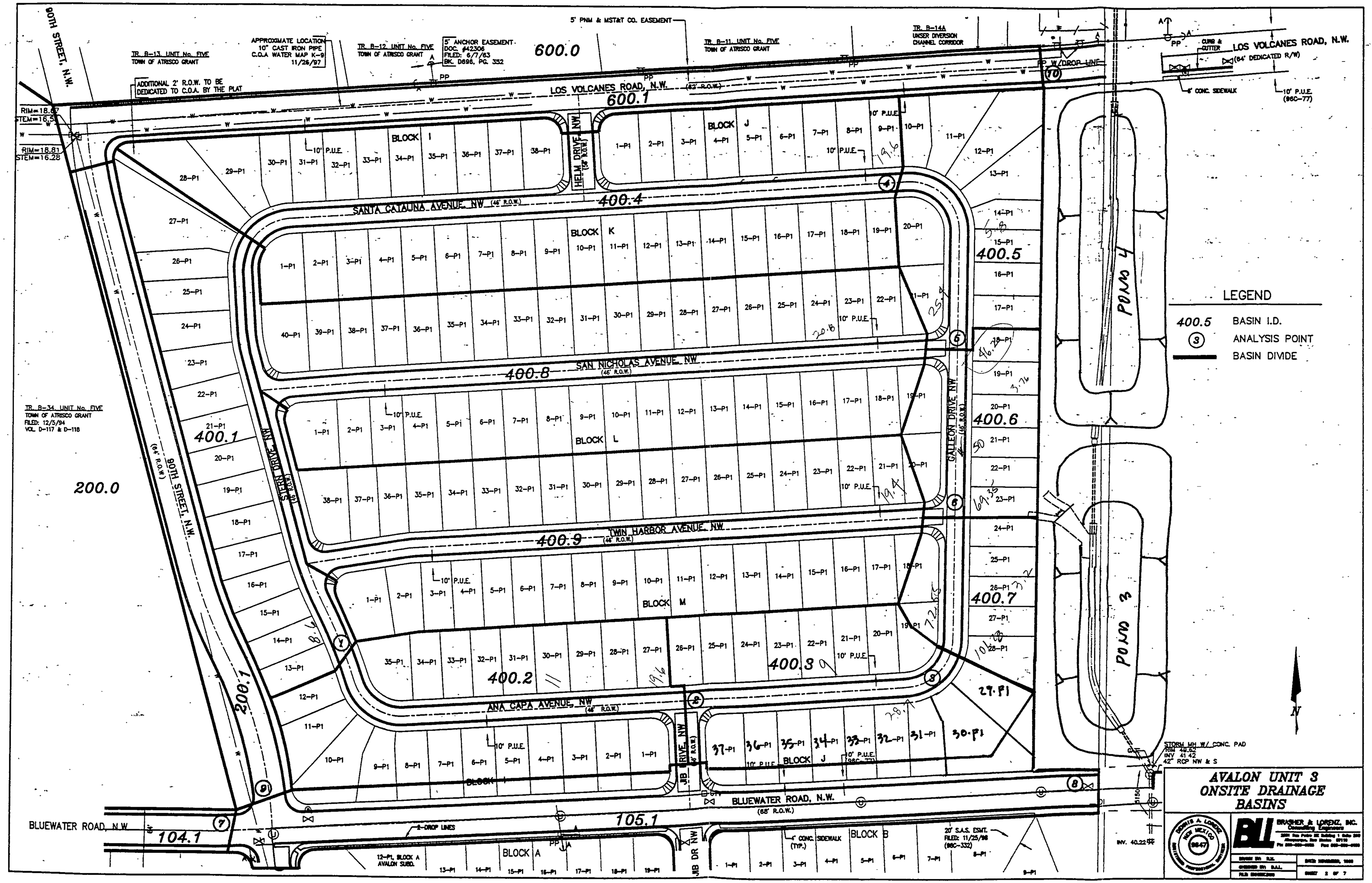
SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
TOPO	GEO SERVICE	04-93

ENGINEERS SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	

AHYMO OUTPUT FILES


90TH STREET, N.W.
LOS VOLCANES ROAD, N.W.
(82' R.O.W.)
600.0
600.1
5' PNM & MST&T CO. EASEMENT
TR. B-13 UNIT No. FIVE
TOWN OF ATRISCO GRANT
APPROXIMATE LOCATION
10" CAST IRON PIPE
C.O.A WATER MAP K-9
11/26/97
TR. B-12 UNIT No. FIVE
TOWN OF ATRISCO GRANT
5' ANCHOR EASEMENT
DOC. #42306
FILED: 6/7/83
BK. D696, PG. 352
TR. B-11 UNIT No. FIVE
TOWN OF ATRISCO GRANT
TR. B-14A
UNSER DIVERSION
CHANNEL CORRIDOR
ADDITIONAL 2' R.O.W. TO BE
DEDICATED TO C.O.A. BY THE PLAT
RIM=18.67
STEM=16.5
RIM=18.81
STEM=16.28
BLOCK I
BLOCK J
BLOCK K
BLOCK L
BLOCK M
HELM DRIVE, NW
(56' R.O.W.)
SANTA CATALINA AVENUE, NW
(46' R.O.W.)
400.4
400.5
400.6
400.7
400.8
SAN NICHOLAS AVENUE, NW
(46' R.O.W.)
400.1
GALLEON DRIVE, NW
(46' R.O.W.)
TWIN HARBOR AVENUE, NW
(46' R.O.W.)
400.9
SIERRA DRIVE, NW
(56' R.O.W.)
200.0
200.1
400.2
400.3
ANA CAPA AVENUE, NW
(46' R.O.W.)
JB DRIVE, NW
(56' R.O.W.)
BLOCK H
BLOCK J
BLUEWATER ROAD, N.W.
(65' R.O.W.)
105.1
104.1
BLUEWATER ROAD, N.W.
2-DROP LINES
12-P1, BLOCK A
AVALON SUBD.
BLOCK A
BLOCK B
4' CONC. SIDEWALK
(TYP.)
20' S.A.S. ESMT.
FILED: 11/25/98
(86C-332)
INV. 40.22
POND 4
POND 3
LEGEND
400.5 BASIN I.D.
3 ANALYSIS POINT
BASIN DIVIDE
STORM MH W/ CONC. PAD
RIM 40.62
INV 41.42
42" RCP NW & S
N
AVALON UNIT 3
ONSITE DRAINAGE
BASINS
BRASHER & LORENZ, INC.
Consulting Engineers
DENNIS A. LORENZ
NEW MEXICO
08-47
DRAWN BY: B.N.
DESIGNED BY: B.A.L.
FILE NUMBER:
DATE: NOVEMBER, 1999
SHEET 2 OF 7

```
*****************************************************************
*                          AVALON UNIT 3
*                        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 ON-SITE BASINS
*****************************************************************
* UNDEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD       ID=1  HYD NO=101.UNDEV  DA=0.04691 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
*****************************************************************
*** THE FOLLOWING ARE DEVELOPED ON-SITE BASINS
*****************************************************************
* BASIN 400.1 @ AP1
COMPUTE NM HYD       ID=2  HYD NO=400.1  DA=0.003783 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=2  CODE=20
* BASIN 400.2 @ AP2
COMPUTE NM HYD       ID=3  HYD NO=400.2  DA=0.004832 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 400.3 @ AP3
COMPUTE NM HYD       ID=4  HYD NO=400.3  DA=0.003979 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
* BASIN 400.4 @ AP4
COMPUTE NM HYD       ID=5  HYD NO=400.4  DA=0.008600 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=5  CODE=20
* BASIN 400.5 @ AP5
COMPUTE NM HYD       ID=6  HYD NO=400.5  DA=0.002531 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 400.6 @ AP6
COMPUTE NM HYD       ID=7  HYD NO=400.6  DA=0.001646 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
* BASIN 400.7 @ AP3
COMPUTE NM HYD       ID=8  HYD NO=400.7  DA=0.001400 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=8  CODE=20
* BASIN 400.8 @ AP5
COMPUTE NM HYD       ID=9  HYD NO=400.8  DA=0.009139 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
```

```
PRINT HYD            ID=9  CODE=20
* BASIN 400.9 @ AP6
COMPUTE NM HYD       ID=10  HYD NO=400.9  DA=0.008505 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
*** TOTAL FLOW @ AP2
ADD HYD              ID=12  HYD NO=400.10  ID I=2  ID II=3
PRINT HYD            ID=12  CODE=20
*** TOTAL FLOW @ AP3 (WEST)
ADD HYD              ID=13  HYD NO=400.11  ID I=4  ID II=12
PRINT HYD            ID=13  CODE=20
*** TOTAL FLOW @ AP5 (NORTH)
ADD HYD              ID=14  HYD NO=400.12  ID I=5  ID II=6
PRINT HYD            ID=14  CODE=20
*** TOTAL FLOW @ AP5
ADD HYD              ID=15  HYD NO=400.13  ID I=9  ID II=14
PRINT HYD            ID=15  CODE=20
*** TOTAL FLOW @ AP6 (NORTH)
ADD HYD              ID=16  HYD NO=400.14  ID I=7  ID II=15
PRINT HYD            ID=16  CODE=20
*** TOTAL FLOW @ AP6
ADD HYD              ID=17  HYD NO=400.15  ID I=10  ID II=16
PRINT HYD            ID=17  CODE=20
*** TOTAL FLOW @ AP3 (NORTH)
ADD HYD              ID=18  HYD NO=400.16  ID I=8  ID II=17
PRINT HYD            ID=18 CODE=20
*****************************************************************
*** TOTAL FLOW @ AP3
*** AP3 DRAINS BY SD TO THE UNSER DIVERSION POND NO 3
*****************************************************************
ADD HYD              ID=19  HYD NO=400.17  ID I=13  ID II=18
PRINT HYD            ID=19 CODE=20
*****************************************************************
*** THE FOLLOWING REPRESENT ADJACENT COLLECTOR STREETS
*****************************************************************
* BASIN 104.1 @ AP7 - BLUEWATER WEST OF 90TH
COMPUTE NM HYD       ID=22  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=22  CODE=20
* BASIN 105.1 @ AP8 - BLUEWATER @ EAST PL
COMPUTE NM HYD       ID=23  HYD NO=105.1  DA=0.003214 SQ MI
                     PER A=0  PER B=0  PER C=18  PER D=82
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=23  CODE=20
* BASIN 200.1 @ AP9 - 90TH AT BLUEWATER
COMPUTE NM HYD       ID=24  HYD NO=200.2 DA=0.00250 SQ MI
                     PER A=0  PER B=0  PER C=18  PER D=82
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=24  CODE=20
* BASIN 600.1 @ AP10 - LOS VOLCANES ROAD @ EAST PL
COMPUTE NM HYD       ID=25  HYD NO=600.1 DA=0.00375 SQ MI
                     PER A=0  PER B=0  PER C=18  PER D=82
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=25  CODE=20
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =08/14/2000
INPUT FILE = C:\AVALON\99570-S2.DAT 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	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	101.UNDEV	-	1	.04691	38.94	1.099	.43925	1.533	1.297	PER IMP= .00
COMPUTE NM HYD	400.10	-	2	.00378	8.63	.299	1.48257	1.500	3.565	PER IMP= 58.00
COMPUTE NM HYD	400.20	-	3	.00483	11.02	.382	1.48256	1.500	3.563	PER IMP= 58.00
COMPUTE NM HYD	400.30	-	4	.00398	9.08	.315	1.48257	1.500	3.564	PER IMP= 58.00
COMPUTE NM HYD	400.40	-	5	.00860	19.60	.680	1.48256	1.500	3.561	PER IMP= 58.00
COMPUTE NM HYD	400.50	-	6	.00253	5.78	.200	1.48256	1.500	3.568	PER IMP= 58.00
COMPUTE NM HYD	400.60	-	7	.00165	3.76	.130	1.48257	1.500	3.573	PER IMP= 58.00
COMPUTE NM HYD	400.70	-	8	.00140	3.20	.111	1.48256	1.500	3.575	PER IMP= 58.00
COMPUTE NM HYD	400.80	-	9	.00914	20.83	.723	1.48257	1.500	3.561	PER IMP= 58.00
COMPUTE NM HYD	400.90	-	10	.00851	19.38	.672	1.48256	1.500	3.561	PER IMP= 58.00
ADD HYD	400.10	2& 3	12	.00862	19.65	.681	1.48250	1.500	3.564	
ADD HYD	400.11	4&12	13	.01259	28.73	.996	1.48250	1.500	3.564	
ADD HYD	400.12	5& 6	14	.01113	25.38	.880	1.48251	1.500	3.563	
ADD HYD	400.13	9&14	15	.02027	46.20	1.603	1.48252	1.500	3.562	
ADD HYD	400.14	7&15	16	.02192	49.97	1.733	1.48251	1.500	3.562	
ADD HYD	400.15	10&16	17	.03042	69.35	2.405	1.48252	1.500	3.562	
ADD HYD	400.16	8&17	18	.03182	72.55	2.516	1.48251	1.500	3.563	
ADD HYD	400.17	13&18	19	.04442	101.28	3.512	1.48251	1.500	3.563	
COMPUTE NM HYD	104.10	-	22	.00278	7.31	.266	1.79069	1.500	4.110	PER IMP= 82.00
COMPUTE NM HYD	105.10	-	23	.00321	8.45	.307	1.79069	1.500	4.108	PER IMP= 82.00
COMPUTE NM HYD	200.20	-	24	.00250	6.58	.239	1.79069	1.500	4.110	PER IMP= 82.00
COMPUTE NM HYD	600.10	-	25	.00375	9.86	.358	1.79069	1.500	4.107	PER IMP= 82.00
FINISH										

```
AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
     RUN DATE (MON/DAY/YR) = 08/14/2000
     START TIME (HR:MIN:SEC) = 12:44:52     USER NO.= BRASHERE.I01
     INPUT FILE = C:\AVALON\99570-S2.DAT

*************************************************************************
*                              AVALON UNIT 3
*                            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 ON-SITE BASINS
*****************************************************************
* UNDEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD       ID=1  HYD NO=101.UNDEV  DA=0.04691 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 =   96.264    CFS   UNIT VOLUME =    .9995       B =   273.54      P60 = 1.8700
        AREA =      .046910 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      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        .9          4.000        .1
5.333       .0
           .667        .0          2.000       3.7          3.333        .2          4.666        .0

        RUNOFF VOLUME =      .43925 INCHES     =      1.0989 ACRE-FEET
        PEAK DISCHARGE RATE =      38.94 CFS  AT   1.533 HOURS   BASIN AREA =   .0469 SQ. MI.
```

```
*****************************************************************
*** THE FOLLOWING ARE DEVELOPED ON-SITE BASINS
*****************************************************************
* BASIN 400.1 @ AP1
COMPUTE NM HYD       ID=2  HYD NO=400.1  DA=0.003783 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 =   8.6626    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 1.8700
     AREA =      .002194 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 =   4.2274    CFS   UNIT VOLUME =    .9972       B =   354.67      P60 = 1.8700
     AREA =      .001589 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 400.10

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 =     1.48257 INCHES     =        .2991 ACRE-FEET
     PEAK DISCHARGE RATE =       8.63 CFS  AT   1.500 HOURS   BASIN AREA =   .0038 SQ. MI.


* BASIN 400.2 @ AP2
COMPUTE NM HYD       ID=3  HYD NO=400.2  DA=0.004832 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 =   11.065    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
     AREA =      .002803 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 =   5.3997    CFS   UNIT VOLUME =    .9980       B =   354.67      P60 = 1.8700
     AREA =      .002029 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 400.20

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	2.5	3.333	.1	5.333	.0		

RUNOFF VOLUME = 1.48256 INCHES = .3821 ACRE-FEET
PEAK DISCHARGE RATE = 11.02 CFS AT 1.500 HOURS BASIN AREA = .0048 SQ. MI.

* BASIN 400.3 @ AP3
COMPUTE NM HYD ID=4 HYD NO=400.3 DA=0.003979 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 = 9.1114 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 1.8700
AREA = .002308 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 = 4.4465 CFS UNIT VOLUME = .9975 B = 354.67 P60 = 1.8700
AREA = .001671 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 400.30

TIME FLOW HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS	TIME FLOW 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 = 1.48257 INCHES = .3146 ACRE-FEET
PEAK DISCHARGE RATE = 9.08 CFS AT 1.500 HOURS BASIN AREA = .0040 SQ. MI.

* BASIN 400.4 @ AP4
COMPUTE NM HYD ID=5 HYD NO=400.4 DA=0.008600 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 = 19.693 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .004988 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 = 9.6104 CFS UNIT VOLUME = .9991 B = 354.67 P60 = 1.8700
AREA = .003612 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=5 CODE=20

HYDROGRAPH FROM AREA 400.40

TIME FLOW HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS	TIME FLOW 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 = .6800 ACRE-FEET

PEAK DISCHARGE RATE = 19.60 CFS AT 1.500 HOURS BASIN AREA = .0086 SQ. MI.

* BASIN 400.5 @ AP5
COMPUTE NM HYD ID=6 HYD NO=400.5 DA=0.002531 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 = 5.7957 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
AREA = .001468 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 = 2.8284 CFS UNIT VOLUME = .9958 B = 354.67 P60 = 1.8700
AREA = .001063 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 400.50

TIME FLOW HRS	CFS	TIME FLOW HRS	CFS	TIME FLOW HRS	CFS	TIME FLOW HRS	CFS
.000	.0	1.333	1.3	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 = .2001 ACRE-FEET
PEAK DISCHARGE RATE = 5.78 CFS AT 1.500 HOURS BASIN AREA = .0025 SQ. MI.

* BASIN 400.6 @ AP6
COMPUTE NM HYD ID=7 HYD NO=400.6 DA=0.001646 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 = 3.7691 CFS UNIT VOLUME = .9965 B = 526.28 P60 = 1.8700
AREA = .000955 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 = 1.8394 CFS UNIT VOLUME = .9930 B = 354.67 P60 = 1.8700
AREA = .000691 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

HYDROGRAPH FROM AREA 400.60

TIME FLOW HRS	CFS	TIME FLOW HRS	CFS	TIME FLOW HRS	CFS	TIME FLOW HRS	CFS
.000	.0	1.333	.9	2.666	.1	4.000	.0
5.333	.0						
.667	.0	2.000	.8	3.333	.0	4.666	.0
5.999	.0						

RUNOFF VOLUME = 1.48257 INCHES = .1301 ACRE-FEET
PEAK DISCHARGE RATE = 3.76 CFS AT 1.500 HOURS BASIN AREA = .0016 SQ. MI.

* BASIN 400.7 @ AP3
COMPUTE NM HYD ID=8 HYD NO=400.7 DA=0.001400 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 = 3.2058 CFS UNIT VOLUME = .9961 B = 526.28 P60 = 1.8700
AREA = .000812 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 = 1.5645 CFS UNIT VOLUME = .9923 B = 354.67 P60 = 1.8700
AREA = .000588 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=8 CODE=20

HYDROGRAPH FROM AREA 400.70

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.7	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 = 1.48256 INCHES = .1107 ACRE-FEET
PEAK DISCHARGE RATE = 3.20 CFS AT 1.500 HOURS BASIN AREA = .0014 SQ. MI.

* BASIN 400.8 @ AP5
COMPUTE NM HYD ID=9 HYD NO=400.8 DA=0.009139 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 = 20.927 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .005301 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 10.213 CFS UNIT VOLUME = .9992 B = 354.67 P60 = 1.8700
AREA = .003838 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=9 CODE=20

HYDROGRAPH FROM AREA 400.80

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.3	4.000	.1	5.999	.1
.667	.0	2.666	.4	4.666	.1	6.666	.0
1.333	4.8	3.333	.1	5.333	.1		

```
RUNOFF VOLUME =      1.48257 INCHES      =          .7226 ACRE-FEET
PEAK DISCHARGE RATE =       20.83 CFS  AT   1.500 HOURS   BASIN AREA =   .0091 SQ. MI.


* BASIN 400.9 @ AP6
COMPUTE NM HYD        ID=10  HYD NO=400.9  DA=0.008505 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 =   19.475    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.8700
AREA =       .004933 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 =   9.5042    CFS   UNIT VOLUME =    .9991       B =   354.67      P60 = 1.8700
AREA =       .003572 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

                                    HYDROGRAPH FROM AREA   400.90

          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      =          .6725 ACRE-FEET
PEAK DISCHARGE RATE =       19.38 CFS  AT   1.500 HOURS   BASIN AREA =   .0085 SQ. MI.


*** TOTAL FLOW @ AP2
ADD HYD               ID=12  HYD NO=400.10  ID I=2  ID II=3
PRINT HYD             ID=12  CODE=20

                                    HYDROGRAPH FROM AREA   400.10

          TIME      FLOW            TIME      FLOW            TIME      FLOW            TIME      FLOW
TIME      FLOW
           HRS       CFS             HRS       CFS             HRS       CFS             HRS       CFS
HRS       CFS
          .000        .0           2.000       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      =          .6812 ACRE-FEET
PEAK DISCHARGE RATE =       19.65 CFS  AT   1.500 HOURS   BASIN AREA =   .0086 SQ. MI.


*** TOTAL FLOW @ AP3 (WEST)
ADD HYD               ID=13  HYD NO=400.11  ID I=4  ID II=12
PRINT HYD             ID=13  CODE=20

                                    HYDROGRAPH FROM AREA   400.11

          TIME      FLOW            TIME      FLOW            TIME      FLOW            TIME      FLOW
TIME      FLOW
           HRS       CFS             HRS       CFS             HRS       CFS             HRS       CFS
HRS       CFS
          .000        .0           2.000       5.9           4.000        .1           5.999        .1
          .667        .0           2.666        .5           4.666        .1           6.666        .0
```

```
 1.333       6.6        3.333        .2          5.333        .1

RUNOFF VOLUME =     1.48250 INCHES     =        .9958 ACRE-FEET
PEAK DISCHARGE RATE =      28.73 CFS  AT   1.500 HOURS   BASIN AREA =   .0126 SQ. MI.


*** TOTAL FLOW @ AP5 (NORTH)
ADD HYD              ID=14  HYD NO=400.12  ID I=5  ID II=6
PRINT HYD            ID=14  CODE=20

                                        HYDROGRAPH FROM AREA   400.12

          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      5.8          3.333        .2          5.333       .1

RUNOFF VOLUME =     1.48251 INCHES     =        .8801 ACRE-FEET
PEAK DISCHARGE RATE =      25.38 CFS  AT   1.500 HOURS   BASIN AREA =   .0111 SQ. MI.


*** TOTAL FLOW @ AP5
ADD HYD              ID=15  HYD NO=400.13  ID I=9  ID II=14
PRINT HYD            ID=15  CODE=20

                                        HYDROGRAPH FROM AREA   400.13

          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
TIME      FLOW
           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
HRS       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 =     1.48252 INCHES     =       1.6027 ACRE-FEET
PEAK DISCHARGE RATE =      46.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0203 SQ. MI.


*** TOTAL FLOW @ AP6 (NORTH)
ADD HYD              ID=16  HYD NO=400.14  ID I=7  ID II=15
PRINT HYD            ID=16  CODE=20

                                        HYDROGRAPH FROM AREA   400.14

          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
TIME      FLOW
           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
HRS       CFS
           .000       .0          2.000      10.2          4.000       .2          5.999       .3
           .667       .0          2.666        .9          4.666       .2          6.666       .0
          1.333      11.5          3.333        .3          5.333       .2

RUNOFF VOLUME =     1.48251 INCHES     =       1.7328 ACRE-FEET
PEAK DISCHARGE RATE =      49.97 CFS  AT   1.500 HOURS   BASIN AREA =   .0219 SQ. MI.


*** TOTAL FLOW @ AP6
ADD HYD              ID=17  HYD NO=400.15  ID I=10  ID II=16
PRINT HYD            ID=17  CODE=20

                                        HYDROGRAPH FROM AREA   400.15
```

```
          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
TIME      FLOW
           HRS      CFS           HRS      CFS           HRS      CFS           HRS      CFS
HRS       CFS
           .000       .0         2.000     14.2          4.000       .3         5.999       .4
           .667       .0         2.666      1.3          4.666       .3         6.666       .0
          1.333     15.9         3.333       .4          5.333       .3

        RUNOFF VOLUME =     1.48252 INCHES     =      2.4053 ACRE-FEET
        PEAK DISCHARGE RATE =      69.35 CFS  AT   1.500 HOURS   BASIN AREA =   .0304 SQ. MI.


     *** TOTAL FLOW @ AP3 (NORTH)
     ADD HYD              ID=18  HYD NO=400.16  ID I=8  ID II=17
     PRINT HYD            ID=18 CODE=20

                                        HYDROGRAPH FROM AREA   400.16

          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
TIME      FLOW
           HRS      CFS           HRS      CFS           HRS      CFS           HRS      CFS
HRS       CFS
           .000       .0         2.000     14.9          4.000       .3         5.999       .4
           .667       .0         2.666      1.4          4.666       .3         6.666       .0
          1.333     16.7         3.333       .4          5.333       .3

        RUNOFF VOLUME =     1.48251 INCHES     =      2.5160 ACRE-FEET
        PEAK DISCHARGE RATE =      72.55 CFS  AT   1.500 HOURS   BASIN AREA =   .0318 SQ. MI.


     ************************************************************
     *** TOTAL FLOW @ AP3
     *** AP3 DRAINS BY SD TO THE UNSER DIVERSION POND NO 3
     ************************************************************
     ADD HYD              ID=19  HYD NO=400.17  ID I=13  ID II=18
     PRINT HYD            ID=19 CODE=20

                                        HYDROGRAPH FROM AREA   400.17

          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
TIME      FLOW
           HRS      CFS           HRS      CFS           HRS      CFS           HRS      CFS
HRS       CFS
           .000       .0         2.000     20.7          4.000       .4         5.999       .5
           .667       .0         2.666      1.9          4.666       .4         6.666       .0
          1.333     23.3         3.333       .6          5.333       .5

        RUNOFF VOLUME =     1.48251 INCHES     =      3.5117 ACRE-FEET
        PEAK DISCHARGE RATE =     101.28 CFS  AT   1.500 HOURS   BASIN AREA =   .0444 SQ. MI.


     ************************************************************
     *** THE FOLLOWING REPRESENT ADJACENT COLLECTOR STREETS
     ************************************************************
     * BASIN 104.1 @ AP7 - BLUEWATER WEST OF 90TH
     COMPUTE NM HYD       ID=22  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
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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=22  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.

* BASIN 105.1 @ AP8 - BLUEWATER @ EAST PL
COMPUTE NM HYD      ID=23  HYD NO=105.1  DA=0.003214 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 =   10.405    CFS   UNIT VOLUME =    .9982       B =   526.28      P60 = 1.8700
AREA =      .002635 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 =   1.6845    CFS   UNIT VOLUME =    .9926       B =   388.14      P60 = 1.8700
AREA =      .000579 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=23  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       2.0         4.000        .0         5.999        .1
          .667        .0         2.666        .2         4.666        .0         6.666        .0
         1.333       2.4         3.333        .1         5.333        .0

RUNOFF VOLUME =     1.79069 INCHES     =        .3069 ACRE-FEET
PEAK DISCHARGE RATE =       8.45 CFS  AT   1.500 HOURS   BASIN AREA =   .0032 SQ. MI.

* BASIN 200.1 @ AP9 - 90TH AT BLUEWATER
COMPUTE NM HYD      ID=24  HYD NO=200.2 DA=0.00250 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 =   8.0935    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 1.8700
AREA =      .002050 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 =   1.3103    CFS   UNIT VOLUME =    .9908       B =   388.14      P60 = 1.8700
```

```
AREA =       .000450 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=24  CODE=20

                                   PARTIAL HYDROGRAPH   200.20

          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      1.5          3.333       .0          4.666       .0
5.999       .0

RUNOFF VOLUME =     1.79069 INCHES     =        .2388 ACRE-FEET
PEAK DISCHARGE RATE =       6.58 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.

* BASIN 600.1 @ AP10 - LOS VOLCANES ROAD @ EAST PL
COMPUTE NM HYD       ID=25  HYD NO=600.1 DA=0.00375 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 =   12.140    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
AREA =       .003075 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 =   1.9655    CFS   UNIT VOLUME =    .9941       B =   388.14      P60 = 1.8700
AREA =       .000675 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=25  CODE=20

                                   HYDROGRAPH FROM AREA   600.10

          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
TIME      FLOW
           HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
HRS       CFS
           .000       .0          2.000      2.3          4.000       .1          5.999       .1
           .667       .0          2.666       .2          4.666       .0          6.666       .0
          1.333      2.7          3.333       .1          5.333       .1

RUNOFF VOLUME =     1.79069 INCHES     =        .3581 ACRE-FEET
PEAK DISCHARGE RATE =       9.86 CFS  AT   1.500 HOURS   BASIN AREA =   .0038 SQ. MI.

FINISH

NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 12:44:52
```

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

June 12, 2000

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 3A, (K9/D15) Submitted for Grading Permit Approval, Engineer's Stamp Dated 6/2/00.***

Dear Mr. Lorenz:

Based on the information provided, the above referenced plan dated June 6, 2000 for Avalon Subdivision, Unit 3A, is approved for Rough Grading. However, for this plan to have status, it must be approved by the DRB. Therefore, this plan should be approved by DRB at the time of Final plat action.

As you are aware, the Grading and Drainage Certification of the plan that is approved by the DRB is required prior to release of the SIA or financial guarantees.

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

Sincerely,

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

c: Bo Johnson, P.E., Curb Inc.
DRB-99-325
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AVALON UNIT 3A ZONE ATLAS/DRNG. FILE #: K9 · D15

DRB #: 99-325 EPC #: _____ WORK ORDER #: 639781

LEGAL DESCRIPTION: AVALON SUBDIVISION UNIT 3A

CITY ADDRESS: BLUEWATER ROAD NW

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz

ADDRESS: 2201 San Pedro NE Bldg.1 Suite 210 Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: BO JOHNSON CONTACT: _____

ADDRESS: 5905 AZUELO CT NW PHONE: 450-4616

ARCHITECT: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: ALBQ SURVEYING CONTACT: VLAD JURICK

ADDRESS: 2119 MENAUL NE PHONE: 884-2036

CONTRACTOR: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER _____

PRE-DESIGN MEETING:

+ YES

____ 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

X GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 6·6·2000

BY: Dennis A. Lorenz

RECEIVED
JUN 07 2000
HYDROLOGY SECTION

LETTER OF TRANSMITTAL

BRASHER & LORENZ, INC.
CONSULTING ENGINEERS

2201 SAN PEDRO NE, BUILDING NO 1, SUITE 210 ALBUQUERQUE, NEW MEXICO 87110 PHONE (505) 888-6088 FAX (505) 888-6188

TO: FRED AGUIRRE
CITY ENGINEER

DATE: 6.9.00

SUBJECT: AVALON UNIT 3 CPN 639781

WE ARE SENDING YOU: _____ ATTACHED _____ UNDER SEPARATE COVER VIA _____ THE FOLLOWING _____

COPIES	DATE	DESCRIPTION
1		AGREEMENT W/ SLOPE EASEMENT

THESE ARE TRANSMITTED AS CHECKED BELOW:

___ FOR APPROVAL ___ FOR YOUR USE ___ AS REQUESTED ___ FOR REVIEW AND COMMENT

___ OTHER _____

REMARKS: AGREEMENT DISCRIBES ACCEPTABLE CONSTRUCTION W/IN SLOPE EASEMENT
CALL ME WITH QUESTIONS

RECEIVED
JUN 09 2000
HYDROLOGY SECTION

COPY TO: 99570

SIGNED: _____
DENNIS A. LORENZ, PE

IF ENCLOSURES ARE NOT AS NOTED, PLEASE CALL

7076

FEB 12 1998

THE LAW FIRM OF
KELEHER
&McLEOD
A PROFESSIONAL ASSOCIATION

William B. Keleher
Direct dial: 505-248-9102

February 10, 1998

Charles P. Price III, Esq.
MYERS, OLIVER & PRICE, PC
6400 Uptown Boulevard, NE #100W
Albuquerque, New Mexico 87110

Re: 1998 Partition with Van Attas - Haegelin, Curb, Inc.

Dear Chuck:

You requested a copy of the Agreement for Atrisco Business Park Storm Water Improvements which Agreement was the basis for the subsequent quitclaim deeds and grant of easement, with reversionary clause, on abandonment. A copy of the recorded Agreement, as recorded August 25, 1993, Bk. 93-23, pp. 3090-3110, is enclosed for your review and file.

With respect to the temporary slope easements, I am enclosing a copy of a letter of interpretation dated October 24, 1995, with the attached sketch. Note the terms of the slope easement reserve the easement for open space, landscaping and other purposes so long as the reserved rights do not interfere with AMAFCA's rights.

Yours very truly,

KELEHER & McLEOD, P.A.

By: Bill

WILLIAM B. KELEHER

WBK:lmc
Enclosure

cc: Michael L. Keleher
John G. Keleher
Thomas F. Keleher

49437

Russell Moore
William B. Keleher
Michael L. Keleher
Charles A. Pharris
Richard B. Cole
Arthur O. Beach
Thomas F. Keleher
Charles L. Moore
Robert H. Clark
Clyde F. Worthen
Spencer Reid
Elizabeth E. Whitefield
Robert C. Conklin
Patrick V. Apodaca
P. Scott Eaton
Margaret E. Davidson
Thomas C. Bird
Richard L. Alvidrez
Kurt Wihl
H. Ward Camp
Eric R. Burris
S. Charles Archuleta
Susan M. McCormack
David W. Peterson
Sean Olivas
Claudia Gayheart Crawford
Jacqueline M. Woodcock
Gary J. Van Luchene
Dusti D. Pofahl
Tracy J. Ahr
Kathleen Robertson
Kathryn Levy
James C. Jacobsen
Danny W. Jarrett
Kathleen M. Regan
Alfred Park

W. A. Keleher *(1886-1972)*
A.H. McLeod *(1902-1976)*

Of Counsel
L. Skip Vernon
Thomas G. Scarvie

Mailing Address
PO Drawer AA
Albuquerque NM 87103

Main Phone
505-346-4646

Street Address
Albuquerque Plaza
201 Third NW, 12th floor
Albuquerque NM 87102
Fax: 505-346-1370

414 Silver SW, 12th floor
Albuquerque NM 87102
Fax: 505-346-1345

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93093160

AGREEMENT FOR ATRISCO BUSINESS PARK STORM WATER IMPROVEMENTS

THIS AGREEMENT is entered as of the 16th day of July, 1993, by and among the City of Albuquerque, a municipal corporation, ("City"), Albuquerque Metropolitan Arroyo Flood Control Authority, a political subdivision of the State of New Mexico ("AMAFCA"), Sunwest Bank of Albuquerque, N.A., a national banking association ("Sunwest"), The Bell Group Inc., a New Mexico corporation ("Bell"), and William B. Keleher, Michael L. Keleher, John G. Keleher, Thomas F. Keleher, Clare Van Atta Oehmke, James Ellis, Mary Van Atta Ellis, Myrle Van Atta Redmond, Margaret Redmond Haughton, and Elizabeth Redmond Allbright (collectively, "KVA").

WHEREAS, Sunwest and Bell own real estate within Unit No. 2, Atrisco Business Park, a subdivision shown on the plat filed for record on June 14, 1972 in the records of Bernalillo County, New Mexico and recorded in Book D-5 Folio 157, a portion of which real estate has since 1973 been replatted (the "Sunwest-Bell Lands"); and

WHEREAS, the Sunwest-Bell Lands are currently partially encumbered by a floodplain as shown on Exhibit "A" attached hereto and incorporated herein by reference, and are therefore in need of storm water drainage facilities to reduce or eliminate the floodplain and address other drainage issues; and

WHEREAS, the reduction or elimination of the floodplain provides a public benefit in that it reduces the flood potential to existing facilities and development which have experienced flood problems in the last several years, and also creates developable land in an area zoned for commercial and industrial uses, and such uses will generate jobs and revenue for the community, and

WHEREAS, KVA owns real estate (The "KVA Lands") to the west of and abutting the Sunwest-Bell Lands, and

WHEREAS, AMAFCA is willing to construct, and for a period following such construction, operate and maintain storm water drainage facilities, desilting basins and sediment storage ponds, earthen swale, diversion dikes, maintenance road and underground culverts at the Los Volcanes and Bluewater Road crossings and appurtances, ("Stormwater Drainage Facilities") all as shown conceptually on Exhibit B, attached hereto and incorporated herein by reference (the "Unser Diversion") to reduce or eliminate the floodplain and address other drainage problems existing upon the Sunwest-Bell Lands, and

WHEREAS, AMAFCA's construction of the Unser Diversion is necessary because the City would be unable to finance such construction for several years, yet such construction is an

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

1993 AUG 25 PM 3:48

23 P 3090-3110
JUDY D. WOODWARD
COUNTY CLERK RECORDER

integral part of a larger AMAFCA and City drainage system identified as Amole del Norte Storm System, and

WHEREAS, the construction of the Unser Diversion facilitates conveyance of drainage to the Amole del Norte watershed and reduces the flows that would reach the Westbluff Outfall, thereby allowing the Westbluff Outfall to carry flows from other areas, and

WHEREAS, although the construction, operation and maintenance of the Unser Diversion will provide no present benefits to the Lands of KVA the Unser Diversion will ultimately provide, at such times as the KVA Lands are developed, benefits to the KVA Lands, and

WHEREAS, the City is willing to assume all responsibility for the operation and maintenance of the Unser Diversion following the expiration of the initial period of operation and maintenance by AMAFCA, and

WHEREAS, conceptual plans for the Unser Diversion have been prepared by Easterling & Associates, Inc., Professional Engineers ("Easterling") as shown on Exhibit "B"; and

WHEREAS, a Drainage Report prepared for Sunwest by Easterling will be approved by City and AMAFCA prior to commencement of construction of the Unser Diversion; and

WHEREAS, the contributions of Sunwest, Bell and KVA towards the construction of regional stormwater facilities necessary to control floodwater will be of material assistance to AMAFCA and the City in constructing regional stormwater and flood control facilities, all as more fully shown on Exhibit C attached hereto and incorporated herein by reference; and

WHEREAS, Sunwest and Bell have each agreed, as described in this Agreement, to make contributions of cash and provide for design work, and Sunwest, Bell and KVA have each agreed to grant to AMAFCA, right-of-way, either in fee or by easement, in order that the design and construction of the proposed Unser Diversion can proceed; and

WHEREAS, Sunwest and City have heretofore entered into Drainage Agreement #4383.82 dated September 14, 1992, and filed with the City Clerk's Office on September 14, 1992 as Document #09291792, for the construction of drains known as the Airport Storm Drain and the Coors Connection Storm Drain; and propose to enter into an agreement for the construction of the Airport Bluewater Storm Drain (the "Airport/Bluewater Storm Drain Agreement"); and

WHEREAS, the estimated right-of-way necessary for AMAFCA to construct the Unser Diversion, and to be granted to AMAFCA, either on a permanent or interim basis, by Sunwest, Bell and KVA is shown on Exhibit "D" attached hereto and incorporated herein by reference; and

WHEREAS, the flow of storm water from the Unser Diversion will require the construction of the Tierra Bayita Storm Drain, and the City has agreed, subject to passage of a bond issue, to

construct the Tierra Bayita Storm Drain with an anticipated construction start date no sooner than January 1, 1994; provided, however, that City funds for the Tierra Bayita Storm Drain are contingent upon passage of a bond issue and sale of the bonds by the City no earlier than November of 1993; and

WHEREAS, AMAFCA's long range plans anticipate that between the years 1995 and 2000 it will commence the construction of a drainage channel presently identified as the West Bluff Channel which is to be located on the north side of I-40 (the "West Bluff Channel"); and

WHEREAS, AMAFCA is currently negotiating with the City of Albuquerque to assume the responsibility for the West Bluff Channel; provided, however, that funds for right-of-way and construction for the West Bluff Channel are contingent upon passage of bond issues and sale of bonds by AMAFCA and the City in the future; and

WHEREAS, conditioned upon the agreement of Sunwest and Bell (i) to contribute funds to AMAFCA and grant right-of-way for the Unser Diversion, and (ii) contribute funds to the City for design modifications to the SAD 214 Pond now located on Parcel A-1 of the replat of the Atrisco Business Park, the connection of the SAD 214 Pond to the Tierra Bayita Storm Drain and the connection of the Unser Diversion to the Tierra Bayita Storm Drain/SAD 214 Pond (the "SAD 214 Pond Improvements"), all as shown conceptually on Exhibit "B", KVA has agreed to contribute right-of-way to AMAFCA in order that AMAFCA can construct the Unser Diversion.

NOW, THEREFORE, THE PARTIES HERETO IN CONSIDERATION OF THE MUTUAL PROMISES AND COVENANTS SET FORTH HEREIN AGREE AS FOLLOWS:

Section One - General:

1.1 The parties to this agreement each agree to the commitments contained herein for the construction of the Unser Diversion and the SAD 214 Pond Improvements.

1.2 Each party to this agreement agrees to timely provide its, his or her contribution as stated herein.

Section Two - AMAFCA Agrees:

2.1 To be responsible for the following regarding the Unser Diversion:

a. Conditioned upon receipt of required right-of-way easements or a quitclaim deed from Sunwest, Bell and KVA, and receipt of the funds required to be contributed by Sunwest and Bell pursuant to Sections 5.1 and 6.1, respectively, hereof, to pay for the construction of the Unser Diversion, currently estimated to be approximately $800,000.00.

b. In conjunction with the City, conduct timely review and approval of designs of the Unser Diversion.

c. Be the contracting agency for construction of the Unser Diversion. As contracting agency, AMAFCA

agrees that its responsibilities include, but are not limited to, the preparation of final construction documents, bid letting, associated activities, construction engineering, surveying and testing services, and final acceptance of the Unser Diversion.

d. Operate and maintain the Unser Diversion for thirty-six (36) months following completion and acceptance by AMAFCA or until completion of the Tierra Bayita Storm Drain by the City, whichever occurs first.

e. Upon acceptance by the City of the operation and maintenance of the Unser Diversion, AMAFCA shall convey the real estate acquired by it and assign the easements and other interests granted to AMAFCA for the Unser Diversion, to the City.

2.2 To request from the Federal Emergency Management Agency ("FEMA") a Conditional Letter of Map Revision ("CLOMR") upon completion of the preliminary design of the Unser Diversion, which request as prepared shall be a joint request of and executed by AMAFCA and the City. Upon receipt of the CLOMR, AMAFCA shall cause the design of the Unser Diversion, to be completed, bids to be let, construction to be commenced, and be completed as soon as possible thereafter.

2.3 As soon as possible following completion of the construction of the Unser Diversion AMAFCA agrees to request, and use its best efforts to obtain, a Letter of Map Revision ("LOMR") issued by FEMA, deleting the Sunwest-Bell lands as a floodplain. Such request shall be a joint request of and executed by AMAFCA and the City.

<u>Section Three - City Agrees</u>:

3.1 To join with AMAFCA in requesting from FEMA a CLOMR upon completion and approval of preliminary design of the Unser Diversion.

3.2 Conditioned upon receipt of funds required to be contributed by Sunwest and Bell, pursuant to Sections 5.1 and 6.1, respectively hereof to design the SAD 214 Pond Improvements.

3.3 To join with AMAFCA, as soon as possible following completion of the construction of the Unser Diversion, in requesting from FEMA, and to use its best efforts to obtain from FEMA, a LOMR.

3.4 Thirty-six (36) months after completion and acceptance by AMAFCA or upon the completion of the Tierra Bayita Storm Drain, whichever occurs first, and upon inspection and acceptance by the City to assume full and complete responsibility for the operation and maintenance of the Unser Diversion.

3.5 To operate and maintain the SAD 214 Pond Improvements after their completion and acceptance by the City.

3.6 Subject to passage of a bond issue and subsequent sale of the bonds, to construct, operate and maintain the SAD 214 Pond Improvements and the Tierra Bayita Storm Drain.

3.7 At such time as the Unser Diversion is funded, to accept from the owners of the Sunwest-Bell Lands applications for development including, but not limited to, subdivision approvals, zone changes and building permits on lands currently encumbered by the flood plan shown on Exhibit "A". The City makes no representation or warranty that the applications will be approved.

Section Four - City and AMAFCA jointly agree:

4.1 To work with each other in order to expedite the Unser Diversion, the SAD 214 Pond Improvements and the related improvements.

4.2 To keep Sunwest and Bell advised of the progress of the application for the CLOMR and the LOMR.

4.3 That (i) prior to the completion of the Unser Diversion, the SAD 214 Pond Improvements, the Tierra Bayita Storm Drain and the West Bluff Channel, the discharge of storm water from the KVA Lands shall be limited by the City Drainage Ordinance, and (ii) upon completion of the Unser Diversion, the SAD 214 Pond Improvements, the Tierra Bayita Storm Drain and the West Bluff Channel, stormwater discharge from the KVA Lands, following construction of improvements upon the KVA Lands, shall be permitted at a minimum of a design rate of 1.3 cubic feet per second per gross acre of KVA Lands.

4.4 To continue to plan for the construction of West Bluff Channel.

4.5 AMAFCA and the City make no representation or warranty that the application for CLOMR or the LOMR will be approved, it being understood only that AMAFCA and the City will use best efforts to seek approval of the applications.

4.6 Until the Unser Diversion is accepted by the City, AMAFCA shall be solely responsible for maintaining the premises upon which the Unser Diversion is being constructed in a safe condition. Until the Unser Diversion is accepted by the City, AMAFCA agrees to defend, indemnify and hold harmless the City and its officials, agents, and employees from any claims, actions, suits or other proceedings arising from or out of the negligent acts or omissions of its agents, representatives, contractors or subcontractors or arising from the failure of AMAFCA, its agents, representatives, contractors or subcontractors to

perform any act or duty required herein. After the Unser Diversion is accepted by the City, the City shall be solely responsible for maintaining the premises upon which the Unser Diversion has been constructed in a safe condition. After the Unser Diversion is accepted by the City, the City agrees to defend, indemnify and hold harmless AMAFCA and its officials, agents and employees from any claims, actions, suits or other proceedings arising from or out of the negligent acts or omissions of its agents, representatives, contractors or subcontractors or arising from the failure of the City, its agents, representatives contractors or subcontractors to perform any act or duty required herein. Provided, however, to the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give directions or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property. The indemnification required hereunder shall not be limited as a result of any applicable insurance coverage. Nothing herein is intended to impair any right or immunity under the laws of the State of New Mexico.

Section Five - Sunwest Agrees:

5.1 To contribute, (i) by quitclaim deed from land owned by Sunwest, land for the Unser Diversion, (ii) design services as described in paragraph 7.1 hereof at a cost presently estimated to be Forty-Seven Thousand One Hundred Eighty Six Dollars ($47,186), (iii) the costs described in Section 5.2 hereof, (iv) pay to AMAFCA Twenty-Eight Thousand Four Hundred Twenty-Five Dollars ($28,425) for the Unser Diversion, and (v) pay to the City an amount not to exceed Five Thousand Six Hundred Eighty-Five Dollars ($5,685) for the design of the SAD 214 Pond Improvements. The present estimate of the size of the land parcel required from Sunwest for the Unser Diversion has been estimated by Easterling at 8.4 acres, as shown on Exhibit "D." The exact size of the land area to be contributed by Sunwest is to be determined, subject to Sunwest's approval, when final design of the Unser Diversion has been completed.

5.2 Said land shall be granted by Sunwest to AMAFCA (and its successors and assigns) by quitclaim deed, prior to the commencement of the construction of the Unser Diversion. Costs of necessary surveys, title searches, plat preparations and filings shall be paid by Sunwest and Bell in such proportions as they have agreed. Sunwest will retain the right to landscape the areas contributed by it in order to help meet landscaping or other requirements that may be imposed on other land by the City of Albuquerque, County of Bernalillo, or other regulatory authorities, so long as (a) in the opinion of AMAFCA and the City, such landscaping does not interfere with or increase the flow of storm water or adversely affect the operation, maintenance and integrity of the Unser Diversion and (b) such landscaping is consistent with applicable City Ordinances then in effect; however, Sunwest shall have no obligation whatsoever to landscape such right-of-way. City does not, by this Agreement agree that any applicable zoning code requirements for landscaping or detached open space will be met by reason of the retained right to landscape the right-of-way.

5.3 To the extent any portion of the land granted by quitclaim deed is, from time to time, no longer used for Stormwater Drainage Facilities, in the opinion of the City, then all of the right, title and interests of AMAFCA, the City, and their successors and assigns will revert to the Grantor, its successors and assigns; provided, however, that if there has been constructed within such land utilities, (including but not limited to water or sanitary sewer facilities) the City will retain an easement for such utilities.

5.4 That so long as Sunwest is the owner of all or any part of the Sunwest-Bell Land, it will not object to rezoning or special use applications of KVA for all, or any portion of, the KVA Lands.

<u>Section Six - Bell Agrees:</u>

6.1 To contribute, (i) by quitclaim deed from land owned by Bell land for the Unser Diversion, (ii) design services as described in paragraph 7.1 hereof at a cost presently estimated to be Thirty-Five Thousand Eight Hundred Fifteen Dollars ($35,815), (iii) the costs described in Section 6.2 hereof, (iv) pay to AMAFCA Twenty-One Thousand Five Hundred Seventy-Five Dollars ($21,575) for the Unser Diversion, and (v) pay to the City an amount not to exceed Four Thousand Three Hundred Fifteen Dollars ($4,315) for the design of the SAD 214 Pond Improvements. The present estimate of the size of the land parcel required from Bell for the Unser Diversion has been estimated by Easterling as 1.8 acres, as shown

on Exhibit "D." The exact land area is to be determined, subject to Bell's approval, when design of the Unser Diversion has been completed.

6.2 Said land shall be granted by Bell to AMAFCA (and its successors and assigns) by quitclaim deed, prior to the commencement of the Unser Diversion. Costs of necessary surveys, title searches, plat preparations and filings shall be paid by Bell and Sunwest in such proportions as they have agreed. Bell will retain the right to landscape the areas contributed by it in order to help meet landscaping or other requirements that may be imposed on other land by the City of Albuquerque, County of Bernalillo or other regulatory authorities so long as (a) in the opinion of AMAFCA and the City, such landscaping does not interfere with or increase the flow of storm water, or adversely affect the operation, maintenance, and integrity of the Unser Diversion, and (b) such landscaping is consistent with applicable City ordinances then in effect; however, Bell shall have no obligation whatsoever to landscape such right of way. City does not by this Agreement agree that any applicable zoning code requirements for landscaping or detached open space will be met by reason of the retained right to landscape the right-of-way.

6.3 To the extent any portion of the land granted by quitclaim deed is, from time to time, no longer used for Stormwater Drainage Facilities, in the opinion of the City, then all of the right, title and interests of AMAFCA, the City, and their successors and assigns will revert to the Grantor, its successors and assigns; provided, however, that if there has been constructed within such land utilities (including but not limited to water or sanitary sewer facilities) the City will retain an easement for such utilities.

Section Seven - Sunwest and Bell Jointly Agree:

7.1 Sunwest and Bell agree to jointly engage, a professional engineering firm (the "Engineer"), to prepare a comprehensive drainage report and to design the Unser Diversion. Such drainage report and design shall meet professional standards and code requirements, and shall be approved by AMAFCA and the City in advance of any construction. All of the costs of the Engineer, the cost of necessary surveys, title searches, plat preparations, filing fees for all easements contributed by KVA, the services of the Engineer in providing all technical data and reports and review fees required for the CLOMR and LOMR to be issued by FEMA shall be paid for by Sunwest and Bell.

7.2 Sunwest and Bell each agree that it will not enter into any agreement, or execute, or permit to be executed on its behalf, any replat of lands owned by it which would cause either Bluewater Road NW or Los Volcanes Road NW to be realigned between the KVA Lands and the present intersection of such roads with Unser Boulevard NW. Each acknowledges that a material consideration in the agreement of KVA to contribute a disproportionate quantity of land to AMAFCA is access to the KVA Lands from Unser Boulevard by both Bluewater Road NW and Los Volcanes Road NW.

7.3 That all water and sewer extensions within Bluewater or Los Volcanes Road designed or constructed to serve the Sunwest-Bell Lands shall be (i) designed so as to permit such facilities to be extended to the KVA Lands and (ii) at such time as water and sewer facilities are constructed to serve a lot or tract within the Sunwest-Bell Lands, if such lot or tract is contiguous to the KVA Lands such water and sewer facilities shall be constructed within the public right-of-way to the east-west boundary line between the Sunwest-Bell Lands and the KVA Lands.

Section Eight - KVA Agrees:

8.1 To contribute from land owned by KVA right-of-way to AMAFCA for the Unser Diversion. The present size of the land parcel required has been estimated by Easterling as a permanent requirement of 6.4 acres and an interim requirement of 7.2 acres, as shown on Exhibit "D". An exact description of the land to be contributed for the right-of-way, not to exceed 13.6 acres, is to be determined when design of the Unser Diversion has been completed. The land required for the permanent area shall be granted by quitclaim deed. The land required for the interim area shall be granted by easement.

8.2 No cost of surveys, title searches, plat preparations, or filings for the easements from KVA shall be paid by KVA and such costs shall be paid by Sunwest and Bell. KVA will retain the right to landscape the areas contributed by quitclaim deed, in order to help meet landscaping or other requirements that may be imposed on other land by the City of Albuquerque, County of Bernalillo or other regulatory authorities as long as (a) in the opinion of AMAFCA and the City, such landscaping does not interfere with or increase the flow of storm waters or adversely affect the operation, maintenance, and integrity of the Unser Diversion and (b) such landscaping is consistent with applicable City ordinances then in effect; however, KVA shall have no obligation whatsoever to landscape such right of way.

City does not by this agreement agree that any applicable zoning code requirements for landscaping or detached open space will be met by reason of the retained right to landscape the right-of-way.

8.3 To the extent any portion of the land granted by quitclaim deed or easement is, from time to time, no longer necessary for Stormwater Drainage Facilities, in the opinion of the City, then all the right, title and interests of AMAFCA, the City and their successors and assigns will revert to the Grantors, their heirs, successors and assigns (and not to adjoining or abutting property owners) in the proportion of the ownership interests of KVA, as Grantors at the date of the execution of such quitclaim deed or easement.

Section Nine - All Parties Further Agree:

9.1 All parties will strive for prompt action and timely response.

9.2 If any situation arises which adversely affects a party's participating in the Agreement, said party will immediately, and in writing, notify the other parties.

9.3 Any circumstance, including the above, which materially affects this Agreement will be promptly and equitably resolved by all parties, and if necessary, an amendment to this Agreement shall be executed.

9.4 Unresolvable differences shall be referred to binding arbitration under the provisions of the New Mexico Uniform Arbitration Act; however, KVA shall not be required to increase its contribution by reason of such arbitration.

9.5 All storm drainage facilities will be designed and constructed to City, AMAFCA and professional standards and as constructed shall meet all applicable codes and professional standards.

9.6 AMAFCA shall consult with City regarding the execution of change orders and resolve contract claims relating to design and construction of the Unser Diversion. AMAFCA shall assume financial commitments resulting from any change order or resolution of a contract claim from construction of the Unser Diversion, unless such change order or claim is the result of actions by another party to this Agreement.

9.7 The Agreement shall not be assignable by any of the parties to this agreement without the written consent of the other parties to the Agreement, which shall not be unreasonably withheld.

9.8 Any future alteration to the Unser Diversion or any change or modification in operation which affects the Unser Diversion's capacity or functioning shall be agreed to, in writing, and in advance of such change or alteration, by all parties to this agreement.

9.9 Strict accountability shall be required for all funds received and disbursed under the terms of this agreement and upon request, any party shall furnish to the other an accounting of expenditures.

9.10 This agreement may be modified only by mutual written agreement of the parties hereto.

9.11 The parties understand and agree that the obligation of each party under this agreement shall be performed in compliance with all applicable laws, statutes and ordinances. Nothing herein is intended to constitute any agreement for the parties to perform any activity in violation of the Constitution or Laws of the State of New Mexico or the Ordinances of the City of Albuquerque.

9.12 If any clause or provision in this agreement is illegal, invalid, or unenforceable, under present or future laws effective during the term of this agreement, then and in that event, it is the intention of the parties hereto that the remainder of this agreement shall not be affected thereby.

9.13 No landowner granting a quitclaim deed or easement, nor any successor or assign of such landowner, shall have any responsibility for the design, construction, maintenance or operation of any improvements constructed pursuant to this agreement. All such responsibilities are acknowledged to be the responsibility of the City and AMAFCA.

9.14 It is specifically agreed between the parties executing this agreement that this agreement does not and is not intended to create in the public, or any member thereof, any rights whatsoever, such as, but not limited to, the rights of a third party beneficiary, or to authorize anyone not a party to the agreement to maintain a suit(s) for wrongful death(s), bodily and/or personal injury(ies) to person(s), damage(s), and/or any other claim(s) whatsoever pursuant to the provisions of this agreement.

9.15 That City and AMAFCA are expressly not committed to expenditure of any funds until such time as they are authorized by bond issue, budgeted, appropriated by their respective public bodies, and approved for expenditure.

9.16 Sunwest, Bell, and KVA are expressly not committed to contribute any right-of-way, execute any easements or expend any funds as otherwise required by this agreement, until such time as the City and AMAFCA are authorized to expend funding as herein provided and have notified Sunwest, Bell and KVA that such entity is fully authorized to proceed with construction.

9.17 Said right-of-way shall be conveyed to AMAFCA (and its successors and assigns) by quitclaim deed or easement,

in a form containing appropriate reversionary language, prior to construction of the Unser Diversion. The form of quitclaim deed and easement shall be substantially in the form shown on Exhibits "E" and "F", respectively attached hereto and incorporated herein by reference.

9.18 Each individual who is a co-owner of KVA Lands, in lieu of granting right-of-way by easement for the interim area, may, at his or her respective option, convey all or part of such right-of-way by quitclaim deed, and the balance of such right-of-way, if any, by easement. Such quitclaim deed shall contain reversionary language consistent with this agreement.

Section 10 - NOTICES:

Notices to the extent and the notices required or others as necessary under this agreement shall mailed first class mail, postage prepaid, or sent by fax as follows:

To AMAFCA:

Attn: Larry Blair
Executive Engineer
2600 Prospect Ave., NE
Albuquerque, NM 87107

To City:

Attn: Chief Administrative Officer
P.O. Box 1293
Albuquerque, NM 87103

To KVA:

William B. Keleher
Michael L. Keleher
Thomas F. Keleher
Attn: Michael L. Keleher
P.O. Drawer AA
Albuquerque, NM 87103
FAX (505) 247-4429

John G. Keleher
P. O. Box 2412
Aspen, CO 81612

Clare Van Atta Oehmke
2629 Pajarito Road, SW
Albuquerque, NM 87105

James Ellis
Mary Van Atta Ellis
3009 Colonnade Ct, NW
Albuquerque, NM 87107

Myrle Van Atta Redmond
Margaret Redmond Haughton
Elizabeth Redmond Allbright
3220 Texas, NE
Albuquerque, NM 87110

To Sunwest:

Attn: Patrick J. Romo
P.O. Box 25500
Albuquerque, NM 87125-0500
FAX (505) 765-2590

in a form containing appropriate reversionary language, prior to construction of the Unser Diversion. The form of quitclaim deed and easement shall be substantially in the form shown on Exhibits "E" and "F", respectively attached hereto and incorporated herein by reference.

9.18 Each individual who is a co-owner of KVA Lands, in lieu of granting right-of-way by easement for the interim area, may, at his or her respective option, convey all or part of such right-of-way by quitclaim deed, and the balance of such right-of-way, if any, by easement. Such quitclaim deed shall contain reversionary language consistent with this agreement.

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To AMAFCA:

Attn: Larry Blair
Executive Engineer
2600 Prospect Ave., NE
Albuquerque, NM 87107

To City:

Attn: Chief Administrative Officer
P.O. Box 1293
Albuquerque, NM 87103

To KVA:

William B. Keleher
Michael L. Keleher
Thomas F. Keleher
Attn: Michael L. Keleher
P.O. Drawer AA
Albuquerque, NM 87103
FAX (505) 247-4429

John G. Keleher
P. O. Box 2412
Aspen, CO 81612

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James Ellis
Mary Van Atta Ellis
3009 Colonnade Ct, NW
Albuquerque, NM 87107

Myrle Van Atta Redmond
Margaret Redmond Haughton
Elizabeth Redmond Allbright
3220 Texas, NE
Albuquerque, NM 87110

To Sunwest:

Attn: Patrick J. Romo
P.O. Box 25500
Albuquerque, NM 87125-0500
FAX (505) 765-2590

To Bell:

Hugh Bell
The Bell Group
6901 Washington, NE
Albuquerque, NM 87109

A party may designate by notice to the other parties a new address to which any notice may thereafter be given.

Section 11 - SUCCESSORS AND ASSIGNS:
The Agreement and the rights, interests, and obligation hereunder shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the undersigned have caused this agreement to be executed as of the day and year set forth above.

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

By _____
Its Chairman, Board of Directors
and

By _____
Its Secretary
Dated July 27, 1993

CITY OF ALBUQUERQUE

By _____
Its Chief Administrative Officer
Dated ~~July~~ August 27, 1993

SUNWEST BANK OF ALBUQUERQUE, N.A., a National Banking Association

By _____
Its _____
Dated July 15, 1993

THE BELL GROUP INC., a New Mexico corporation

By _____
Its PRESIDENT
Dated July 19, 1993

_____
William B. Keleher
Dated July 16, 1993

_____
Michael L. Keleher
Dated July 19, 1993

_____
John G. Keleher
Dated July 24, 1993

_____
Thomas F. Keleher
Dated July 14, 1993

Clare Van Atta Oehmke
Clare Van Atta Oehmke
Dated July 17, 1993

Mary Van Atta Ellis
Mary Van Atta Ellis
Dated July 19, 1993

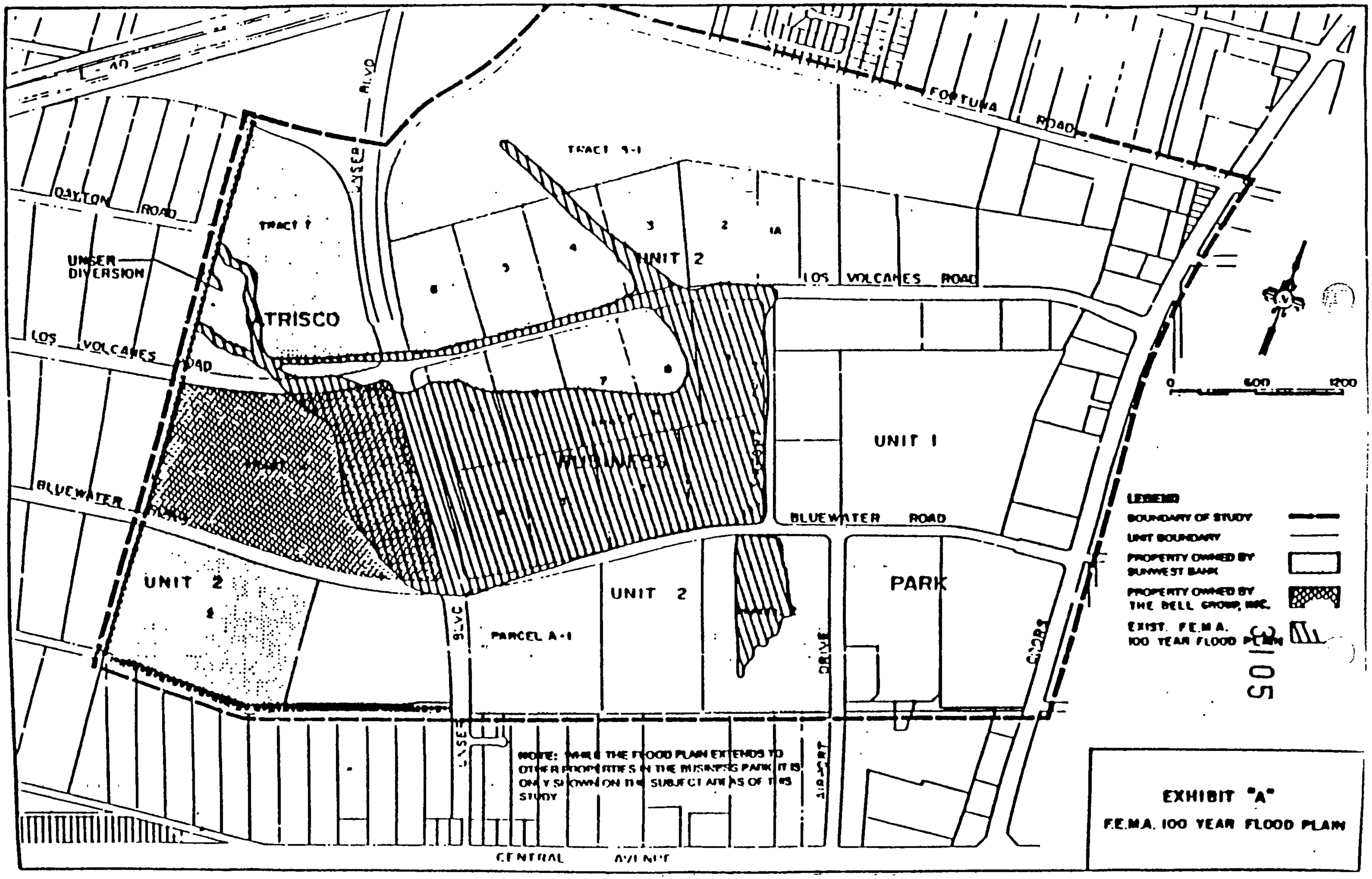
Myrle Van Atta Redmond
Myrle Van Atta Redmond
Dated ~~July~~ Aug. 6, 1993

James Ellis
James Ellis
Dated July 20, 1993

Elizabeth Redmond Allbright
Elizabeth Redmond Allbright
Dated ~~July~~ August 2, 1993

Margaret Redmond Haughton
Margaret Redmond Haughton
Dated ~~July~~ Aug. 4, 1993

1741


FORTUNA ROAD
TRACT 9-1
DAYTON ROAD
TRACT 1
UNSER DIVERSION
TRISCO
UNIT 2
LOS VOLCANES ROAD
LOS VOLCANES ROAD
0 600 1200
UNIT 1
BLUEWATER ROAD
BLUEWATER ROAD
LEGEND
BOUNDARY OF STUDY
UNIT BOUNDARY
PROPERTY OWNED BY SUNWEST BANK
PROPERTY OWNED BY THE BELL GROUP, INC.
EXIST. F.E.M.A. 100 YEAR FLOOD PLAIN
UNIT 2
UNIT 2
PARK
PARCEL A-1
UNSER BLVD
NOTE: WHILE THE FLOOD PLAIN EXTENDS TO OTHER PROPERTIES IN THE BUSINESS PARK, IT IS ONLY SHOWN ON THE SUBJECT AREAS OF THIS STUDY
CENTRAL AVENUE
EXHIBIT "A"
F.E.M.A. 100 YEAR FLOOD PLAIN

NOTE

ALL STORM DRAINS AND PONDS 1, 2, 3, 4, AND 6 ARE ASSUMED TO BE PERMANENT FACILITIES. THE DIVERSION DIKES LOCATED ALONG THE WESTERN SIDE OF THE PONDS ARE ASSUMED TO BE INTERIM FACILITIES, WHICH WILL BE PARTIALLY OR FULLY REPLACED BY ONSITE COLLECTION FACILITIES LOCATED ON ADJACENT PROPERTIES AT THE TIME OF THEIR DEVELOPMENT.

POND 5 IS ASSUMED TO BE AN INTERIM FACILITY REQUIRED TO DESILT WATER FROM THE UNDEVELOPED WATERSHED. CONTINGENT UPON THE DEVELOPMENT PLANS FOR PROPERTY LOCATED TO THE WEST OF THIS POND, AND THE ELIMINATION OF FLOWS FROM NORTH OF I-40, POND 5 MAY NOT BE REQUIRED AS A PERMANENT FACILITY.

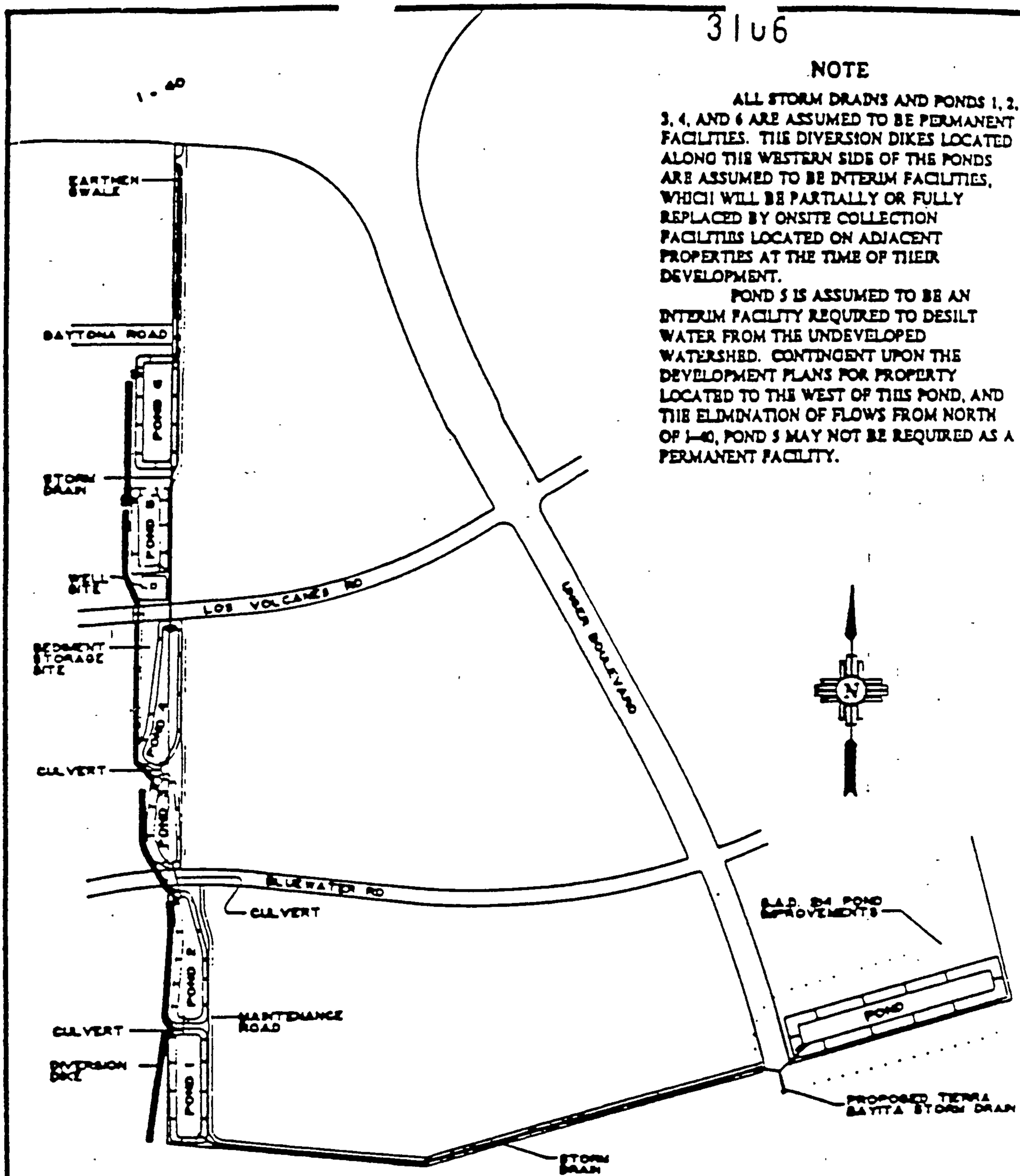


EXHIBIT "B"

UNSER DIVERSION
AND
S.A.D. 214 POND IMPROVEMENTS CONCEPTUAL LAYOUT

6-21-93

EXHIBIT "C" - Atrisco Business Park Offsite Proposed Drainage Expenditures Participation Matrix

	Estimated Date For Start Of Construction	Proposed Contribution Sunwest Bank Of Albuquerqu	Proposed Contribution The Bell Group Inc.	Proposed Contribution Keleher - Van Atta	Proposed Contribution George Brunacini	Proposed Contribution City of Albuq Econ Develo	Proposed Contribution City of Albuq Drainage	Proposed Contribution AMAFCA	TOTAL ESTIMATED COSTS	TOTAL PERCENTAGE
# 1 - Airport Drive Storm Drain	02/01/93									
Improvement Cost		$125,000			$25,000	$100,000	$224,100		$474,100	
Engineering Design Cost		4,500							4,500	
Total Estimated Project Cost		$129,500			$25,000	$100,000	$224,100		$478,600	
Project Participation Percentage		27.06%			5.22%	20.89%	46.83%			100.00%
#2 - Unser Diversion	10/01/93									
Value of Contributed Land (1)		$365,904	$78,406	$444,312					$888,624	
Improvement Cost		28,425	21,575					$753,658	803,658	
Engineering Design Cost		47,166	35,815						83,000	
Surveys, Titles, Plats, and Filings		8,528	6,473						15,000	
Total Estimated Project Cost		$450,042	$142,270	$444,312				$753,658	$1,790,282	
Project Participation Percentage		25.14%	7.95%	24.82%				42.10%		100.00%
# 3 - Tierra Bayita Storm Drain (2)	01/01/94									
Improvement Cost							$1,078,000		$1,078,000	
S.A.D. 214 Pond Modification Cost						29,887			$29,887	
S. D. (214 Pond to Tierra Bayita S.D.) Cost						36,497			$36,497	
S.D. (Unser to Tierra Bayita S.D.) Cost						19,143			$19,143	
Engineering Design Cost		$5,685	$4,315						$10,000	
Total Estimated Project Cost		$5,685	$4,315			$85,527	$1,078,000		$1,173,527	
Project Participation Percentage		0.48%	0.37%			7.29%	91.86%			100.00%
# 4 - Coors Connection Storm Drain	06/01/93									
Improvement Cost		$134,643							$134,643	
Engineering Design Cost		20,000							20,000	
Total Estimated Project Cost		$154,643							$154,643	
Project Participation Percentage		100.00%								100.00%
# 6 - Airport/Bluewater Storm Drain										
Improvement Cost	06/01/93	$55,210				$250,000			$305,210	
Engineering Design Cost		23,000							23,000	
Total Estimated Project Cost		$78,210				$250,000			$328,210	
Project Participation Percentage						76.17%				76.17%
TOTAL ESTIMATED COSTS		$819,000	$146,586	$444,312	$25,000	$435,527	$1,302,109	$753,658	$3,926,271	
TOTAL PARTICIPATION PERCENTAGE		20.84%	3.73%	11.32%	0.64%	11.10%	33.17%	19.20%		100.00%

(1) Value of Contributed Land:

	Acerage	Value/ Acre	Total Value
Sunwest Bank	8.4	$43,560	$365,904
The Bell Group Inc.	1.8	43,560	$78,406
Keleher-Van Atta	13.6	32,670	$444,312
TOTAL	23.8		$888,624

(2) Total Private Sector Cash, Land, and Engineering Design and Analysis Contribution Equals $1,433,977.00 or 36.53% of Total Estimated Costs.

(3) Tierra Bayita Storm Drain, SAD 214 modifications, and all connections to Tierra Bayita Storm Drain are assumed to be funded by City of Albuquerque 1993 Bond Issue.

(4) All of the above figures represent cash contributions unless noted otherwise and do not include New Mexico Gross Receipts Tax @ 5.8125%, C.O.A. Plan Review Fee @ 6.6%, Testing Fee @ 2%, Staking Fee @ 3%, and Inspection Fee @ 4%.

(5) The figures above represent approximate cost estimates based on conceptual design.

EXHIBIT "C"

3107

EXHIBIT "D"

6-8-93

UNSER DIVERSION ESTIMATED EASEMENT AREAS

PROPERTY OWNER	AREA 1 (ACRES)	AREA 2 (ACRES)	AREA 3 (ACRES)	TOTAL (ACRES)	TOTAL (PERCENT)
Sunwest Bank					
(Permanent)①	2.5	--	5.9	8.4	35.3
(Total)	2.5	--	5.9	8.4	35.3
Keleher-Van Atta					
(Permanent)①	2.3	3.6	0.5	6.4	26.9
(Interim)②	3.6	1.8	1.8	7.2	30.3
(Total)	5.9	5.4	2.3	13.6	57.1
The Bell Group	--	1.8	--	1.8	7.6
Total	8.4	7.2	8.2	23.8	100.0

Area 1 = North of Los Volcanes Road
Area 2 = Between Los Volcanes Road and Bluewater Road
Area 3 = South of Bluewater to the east line of Lot 2, Unit 2, Atrisco Business Park

① Estimated permanent easement area required to contain and facilitate maintenance of the permanent diversion facilities.

② Estimated easement area required to contain and facilitate maintenance of interim collection facilities and temporary sedimentation/retention ponds. These facilities will be required until the upstream watershed becomes developed. Subject to future drainage plans for the upstream watershed, some or all of the land required for these facilities has potential to be reclaimed for development.

EXHIBIT "D"

3108

QUITCLAIM DEED

_____ for consideration paid, quitclaims to ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY, a political subdivision of the State of New Mexico, Grantee, and its successors and assigns; whose address is 2600 Prospect Avenue, Albuquerque, New Mexico 87107, the following described real estate in Bernalillo County, New Mexico:

[DESCRIPTION TO BE FURNISHED]

Grantors Reserve all oil, gas and other minerals.

Title to the above described real estate, or portions thereof shall revert to the Grantors, their successors and assigns (and not to adjoining property owners) as and to the extent such real estate, or portion thereof, are from time to time declared unnecessary for drainage, flood control or stormwater facilities by the Board of Directors of Grantee, or, if the rights of Grantee have been assigned to the City of Albuquerque, by the City of Albuquerque.

IN WITNESS whereas this Quitclaim Deed has been executed this ____ day of _____, 1993.

[Execute by Landowners with appropriate acknowledgements.]

EXHIBIT "E"

GRANT OF EASEMENT
WITH REVERSIONARY CLAUSE ON ABANDONMENT 3410

FLOODWAY AND STORM DRAINAGE WORKS
UNSER DIVERSION

The undersigned Grantors, for good and valuable consideration, the receipt of which is hereby acknowledged, does hereby convey unto the ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY, a political subdivision of the State of New Mexico, Grantee, and its successors and assigns; an easement for the purpose of constructing, reconstructing, operating, and maintaining drainage, flood control, and storm water facilities, on, in, under, over and across the following described real estate:

[DESCRIPTION TO BE FURNISHED]

TO HAVE AND TO HOLD the said easement for the uses and purposes aforesaid, unto the Grantee, its successors and assigns, forever; PROVIDED, HOWEVER, that such portions of the easement granted herein shall, from time to time, revert to the Grantor, its successors or assigns, (and not to adjoining property owners) as and to the extent such real estate or portion thereof is declared unnecessary for drainage, flood control or stormwater facilities by the Board of Directors of Grantee, or, if the rights of Grantee have been assigned to the City of Albuquerque, by the City of Albuquerque.

IN WITNESS, Whereof this Grant of Easement has been executed this ____ day of _____, 1993.

[Execution by Landowners with appropriate acknowledgements.]

EXHIBIT "F"

GENEVA MEEKER, CHAIR
DANIEL W. COOK, VICE-CHAIR
RONALD O. BROWN, SECRETARY-TREASURER
MICHAEL MURPHY, ASST. SECRETARY-TREASURER
TIM EICHENBERG, DIRECTOR

LARRY A. BLAIR
EXECUTIVE ENGINEER

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT N.E. - ALBUQUERQUE, N.M. 87107
TELEPHONE (505) 884-2215

NEW OCT 31 1995

October 24, 1995

William Keleher, Esq.
P.O. Drawer AA
Albuquerque, N.M. 87103

Re: Unser Diversion, Slope Easements

Dear Mr. Keleher:

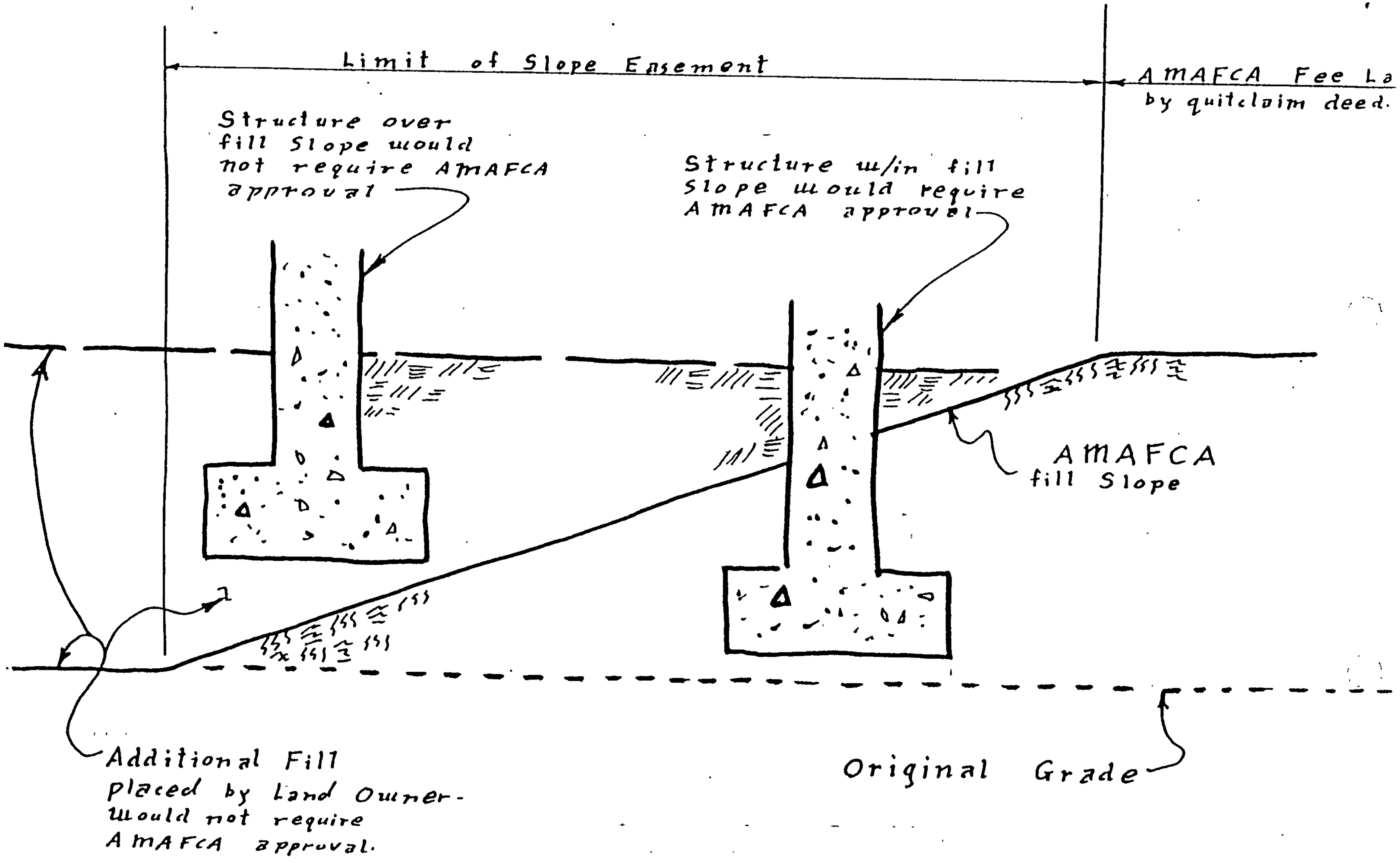
With respect to your inquiry about the language of the proposed easements for the Unser Diversion Channel Corridor, you have asked for an example. It is the intent of these easements to permit the fee land owner to fill against raised slopes that may be constructed by AMAFCA as part of the permanent diversion structure.

By way of example (as shown on the attached sketch), these easements would require that the land owner obtain permission from AMAFCA if it fills against the raised slope and then excavates a footing that penetrates below the engineered fill slope constructed by AMAFCA; however AMAFCA permission would not be required if fill is placed above the slope.

The requirement for this permission is to assure that no excavation would occur into the AMAFCA fill slope which might destroy the integrity of the flood control structure. Permission for such excavation would probably require that such excavation must be left open for a minimum time and AMAFCA may, at its option, not permit such excavation during the flood season from 15 May thru 15 October of any year.

Sincerely,

Larry Blair,
Executive Engineer


Limit of Slope Easement
AMAFCA Fee La
by quitclaim deed.
Structure over
fill Slope would
not require AMAFCA
approval
Structure w/in fill
Slope would require
AMAFCA approval
AMAFCA
fill Slope
Additional Fill
placed by Land Owner-
would not require
AMAFCA approval.
Original Grade

City of Albuquerque

December 13, 1999

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 3, Phases 1 and 2, (K9/D15) Submitted for Preliminary Plat Approval, Engineer's Stamp Dated 12/9/99.***

Dear Mr. Lorenz:

It appears that only very minor changes were made to the previously approved Grading and Drainage Plan. Therefore, based on the information provided, the above referenced plan for Avalon Unit 3, dated December 9, 1999, is approved for Preliminary Plat action by the DRB.

The above referenced plan is also approved for rough grading provided that a topsoil disturbance permit is obtained.

Prior to Final Plat sign-off, the Subdivision Improvements Agreement (SIA) must be in place. The Grading and Drainage Certification will be required prior to release of the SIA or financial guarantees for each Phase. The certification for Phase 2 must verify that the retaining walls are in place.

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, P.E., Curb Inc.
DRB-99-325
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AVALON UNIT 3 ZONE ATLAS/DRNG. FILE #: K9-D15

DRB #: 99-325 EPC #: — WORK ORDER #: —

LEGAL DESCRIPTION: TRACTS B8A, B9, B10 TOWN OF ATRISCO GRANT, UNIT 5

CITY ADDRESS: BLUEWATER RD NW

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz

ADDRESS: 2201 San Pedro NE Bldg.1 Suite 210 Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: CURB INC CONTACT: BO JOHNSON

ADDRESS: 6301 INDIAN SCHOOL #280 PHONE: 450-4616

ARCHITECT: NA CONTACT:

ADDRESS: PHONE:

SURVEYOR: ALBUQUERQUE SURVEYING CONTACT: VLAD JURICK

ADDRESS: 2119 MENAUL NE PHONE: 884-2036

CONTRACTOR: NA CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

X YES
___ NO
___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

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

RECEIVED DEC 10 1999 HYDROLOGY SECTION

DATE SUBMITTED: 12-10-99

BY: Dennis A. Lorenz

BRASHER & LORENZ, INC.
CONSULTING ENGINEERS

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

December 10, 1999

Janet Stephens, Chair
Development Review Board
City of Albuquerque
PO Box 1293
Albuquerque, New Mexico 87102

SUBJECT: AVALON UNIT 3
Preliminary Plat
DRB 99-325 Map Zone K-8

Dear Janet:

Submitted herewith for review and approval by DRB are 2 copies of the revised Preliminary Plat, Infrastructure Listings and Grading Plans. The plat has been slightly revised by modifying the following lot lines:

- Lots 12-P1 thru 25-P1, Block I
- Lots 14-P1 thru 28-P1, Block J

The lot lines were modified to improve lot distribution between phases. The phase boundary was revised accordingly. The Infrastructure Listings were modified to reflect the revised phase boundary. Hydrology has approved the Grading and Drainage Plan dated November 19, 1999. The revised Grading and Drainage Plan was submitted to Hydrology, and Susan Calongne has assured us it will be reviewed prior to the public hearing.

By copy of this letter I am distributing the revision to all DRB members. If you need additional information, or if I can be of any assistance, please feel free to call.

Sincerely,

BRASHER & LORENZ, INC.

Dennis A. Lorenz, PE

/dl/99570
encl
cc: Fred Aguirre, City Engineer
Roger Green, Utilities
Richard Dourte, Transportation
Ed Stang, Parks

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

December 3, 1999

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

RE: ***Drainage Report and Grading and Drainage Plan for Avalon Subdivision, Unit 3, Phases 1 and 2, (K9/D15) Submitted for Preliminary Plat Approval, Engineer's Stamp Dated 11/19/99.***

Dear Mr. Lorenz:

Based on the information provided, the above referenced plan for Avalon Subdivision, Unit 3, dated November 19, 1999, is approved for Preliminary Plat action by the DRB.

The above referenced plan is also approved for rough grading provided that it is approved by the DRB. As you are aware, a topsoil disturbance permit is required prior to any grading on the site.

Prior to Final Plat sign-off, the Subdivision Improvements Agreement (SIA) must be in place. The Grading and Drainage Certification will be required prior to release of the SIA or financial guarantees for each Phase. The certification for Phase 2 must verify that the retaining walls are in place.

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, P.E., Curb Inc.
DRB-99-325
File

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AVALON UNIT 3 ZONE ATLAS/DRNG. FILE #: K9/D015

DRB #: 99-325 EPC #: — WORK ORDER #: —

LEGAL DESCRIPTION: TR B8A, B9, B10 TOWN OF ATRISCO GRANT, UNITS

CITY ADDRESS: BLUEWATER RD NW

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz

ADDRESS: 2201 San Pedro NE Bldg.1 Suite 210 Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: CURB INC CONTACT: B. JOHNSON

ADDRESS: 6801 INDIAN SCHOOL NE PHONE: 881-9190

ARCHITECT: NA CONTACT:

ADDRESS: PHONE:

SURVEYOR: ALBQ SURVEYING CONTACT: V. JURIK

ADDRESS: 2119 MENAUL NE PHONE: 884-2036

CONTRACTOR: NA CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- ___ YES
- X NO
- ___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

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

DATE SUBMITTED: 11-19-99

BY: Dennis A. Lorenz

RECEIVED NOV 19 1999 HYDROLOGY SECTION

DRAINAGE REPORT

FOR

AVALON SUBDIVISION, UNIT 3

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

11-19-99

Dennis A. Lorenz, PE
Principal

November 1999

R D
NOV 1 9 1999
HYDROLOGY SECTION

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SOILS MAP - FIGURE 2
FLOOD INSURANCE RATE MAP - FIGURE 3

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STORM DRAINS
TRAINER DIKES
POND DESIGN
AHYMO OUTPUT FILES

EXHIBITS (Located in back pocket)

PHASE ONE GRADING AND DRAINAGE PLAN
PHASE TWO GRADING AND DRAINAGE PLAN
GRADING AND DRAINAGE DETAILS
EXISTING CONDITIONS
PHASE ONE WITH INTERIM OFF-SITE
PHASE TWO WITH INTERIM OFF-SITE
PHASE TWO WITH DEVELOPED OFF-SITE

RECEIVED
NOV 1 9 1999
HYDROLOGY SECTION

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 Unit 3, 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 30.0 acres in size and is located between Bluewater Road and Los Volcanes Road, and between 90th 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 B8A, B9, and B10, Unit 5, Town of Atrisco Grant. The site is bounded on the east by the Unser Diversion, on the south by Bluewater Road, on the west by 90th Street, and on the north by Los Volcanes Road.

On-site soils consist mainly of Bluepoint (BCC) and (BKD), 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 sever. Bluepoint is classified as Hydrologic soil group "A" and Pajarito in group "B".

As shown by the attached FIRM Panel, this site is not impacted by a designated flood hazard zone (see Figure 3).

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 Unit 3. Per this plan Avalon Unit 3 is limited to a 1.40 cfs/acre discharge into the Unser diversion.

2. Amole del Norte Storm Diversion Facilities- Phase III, prepared by Griener, Inc. This study analyzed the floodplain areas of the 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. Per this plan all areas that drain to the Amole are limited to a 2.05 cfs/acre discharge into the system.

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.

4. Drainage Masterplan for Avalon Subdivision, prepared by Brasher & Lorenz, Inc, April 1999. This report was prepared to support the development of Avalon, Units 1 and 2. The report resulted in the establishment of drainage criteria for Avalon and adjoining properties, and the construction of storm drains in Bluewater and 90th Street. The storm drains are programmed to connect to Amole Phase III, when available.

EXISTING DRAINAGE CONDITIONS

The undeveloped site is impacted by Basin 200, which is located west and north of the site and south of I-40, and drains easterly to the Unser Diversion (see Sheet 4 of 7). Basin 200 and the contributing on-site runoff drain to the Unser Diversion, which has adequate capacity for historic runoff.

Avalon Unit 1, located to the south, constructed the south one-half of Bluewater Road. Bluewater and Avalon Unit 1 drain to the Unser Diversion, located east of the project site.

Avalon Unit 2, located southwest from the site, drains to an interim retention pond, awaiting connection to the Amole system. Avalon Unit 2 constructed storm drains in Bluewater and 90th, which are an extension of the Amole, and will collect flows from Basin 200.0 in the future.

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.

Per the approved DMP for Avalon Subdivision, Unit 3 is limited to a 1.40 cfs/acre discharge into the Unser Diversion.

This project is to be constructed in 2 phases. Phase One consists of the southerly 14.0 acres of the project; Phase Two the northerly 16.0 acres. The project phasing plan and drainage management criteria is outlined below:

PHASE ONE WITH INTERIM OFF-SITE

Phase One consists of the southerly 14.0 acres of the project. The Phase One Plan (see sheet 1 in pocket) outlines the improvements recommended to manage excess runoff from the project site. In accordance with the DMP for Avalon Subdivision, 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, not to exceed 42cfs (1.40 cfs/acre), into the Unser Diversion. Perimeter street improvements will consist of the construction of the east one-half of 90th Street. The north one-half of Bluewater Road is currently under construction by a change order to Avalon Unit 2. Drop inlets with a connection to the Unser Diversion exist at the east end of Bluewater to collect street flow from Bluewater. Likewise, drop inlets will be provided at the 90th Street intersection with Bluewater, with a connection to the 54-inch storm drain in 90th Street. Phase One will construct all permanent storm drainage improvements required to support the future development of Phase Two.

Off-site improvements consist of the construction of an interim trainer along the north side of Phase One to direct existing off-site flows from Basin 600.0 (see Sheet 5 of 7) east to the Unser Diversion, and the construction of an interim trainer dike and an interim retention pond on Tract B34 to retain undeveloped runoff from Basin 200.0. Basin 200.0 is programmed by the Amole DMP to drain into the 54-inch storm drain in 90th Street. Since the 54-inch is inactive at this time (awaiting a 66-inch extension from Amole Phase III), interim retention ponding within the basin is required. The Avalon developers are also owners of Tract B34, allowing construction of the off-site interim improvements.

PHASE TWO WITH INTERIM OFF-SITE

Phase Two consists of the construction of the northerly 16.0 acres of the project. The Phase Two Plan (see sheet 2 in pocket) outlines the improvements recommended to manage excess runoff from the project site. Phase Two will rout all flows through the public street network to the storm drain improvements constructed by Phase One. As stated above, all flows will be routed through a permanent detention pond, to be built by Phase One, to the Unser Diversion.

Until upstream properties develop, the project must manage runoff from undeveloped Basins 200.0 and 600.0 (see Sheet 6 of 7). An interim trainer dike will be constructed along 90th Street to direct undeveloped flows to the interim retention pond located on Tract B34. Undeveloped flows from Basin 600.0 will be intercepted by the improved section of Los Volcanes Road and drain to the Unser Diversion.

PHASE TWO WITH DEVELOPED OFF-SITE

All off-site properties are required to develop in accordance with the approved DMP's (see Sheet 7 of 7). Basin 200.0 will develop by utilizing detention ponding, discharging at a controlled rate of 2.05cfs/acre into the 54-inch storm drain in 90th Street. Basin 600.0 is programmed to discharge to the Unser Diversion at a controlled rate of 1.40cfs/acre. All parcels are required to implement detention ponding, discharging into Los Volcanes Road.

Drop inlets will be constructed in Los Volcanes by Phase Two to drain undeveloped flows into the Unser Diversion. Upon development of Basin 600.0 additional drop inlets must be provided to drain developed flows.

TEMPORARY EROSION CONTROL PLAN

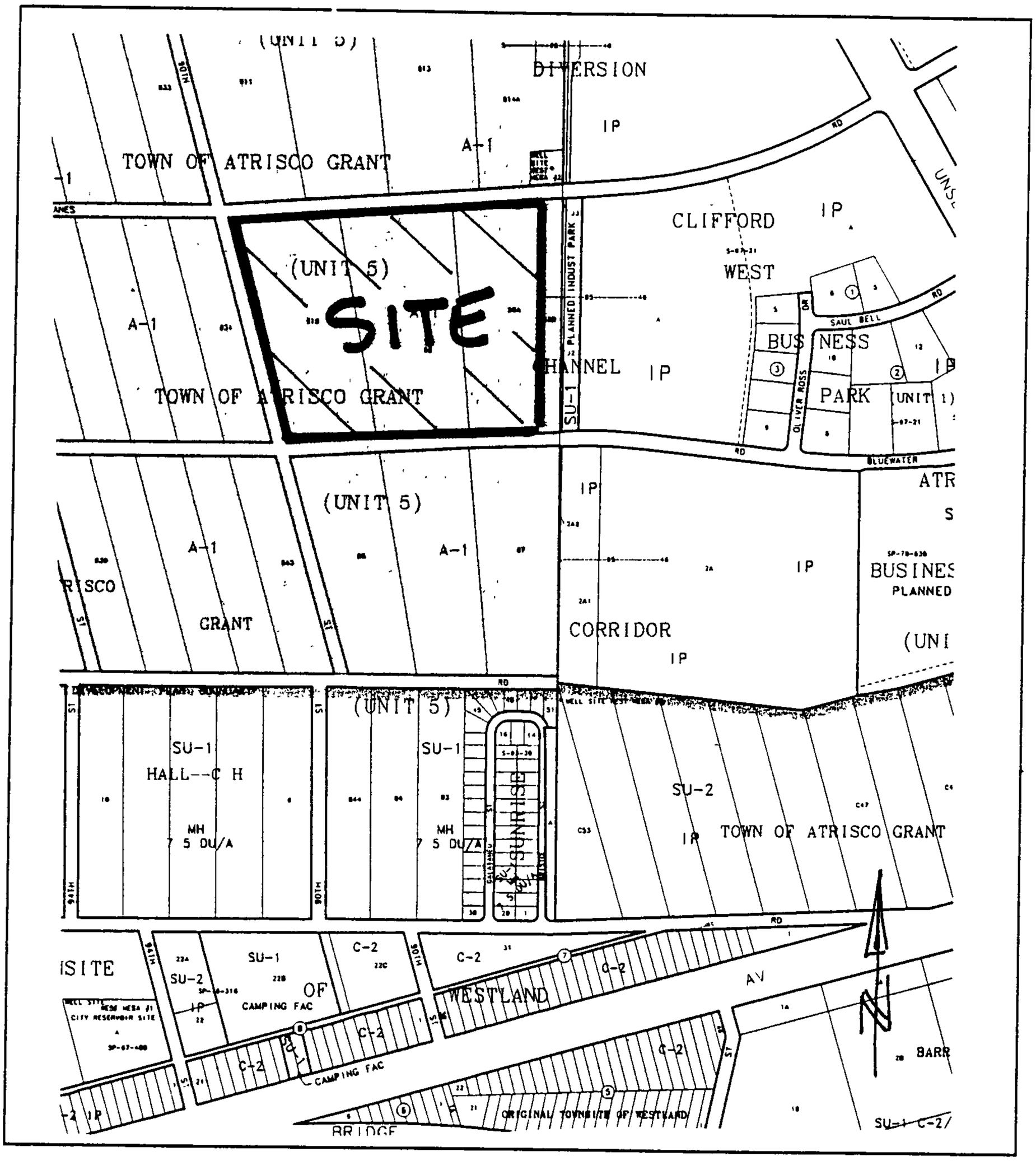
1. The intent of the Temporary Erosion Control Plan is to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction.

2. The Contractor shall submit a Temporary Erosion Control Plan and obtain a TopSoil Disturbance Permit from Environmental Health prior to performing any earthwork-related operations.

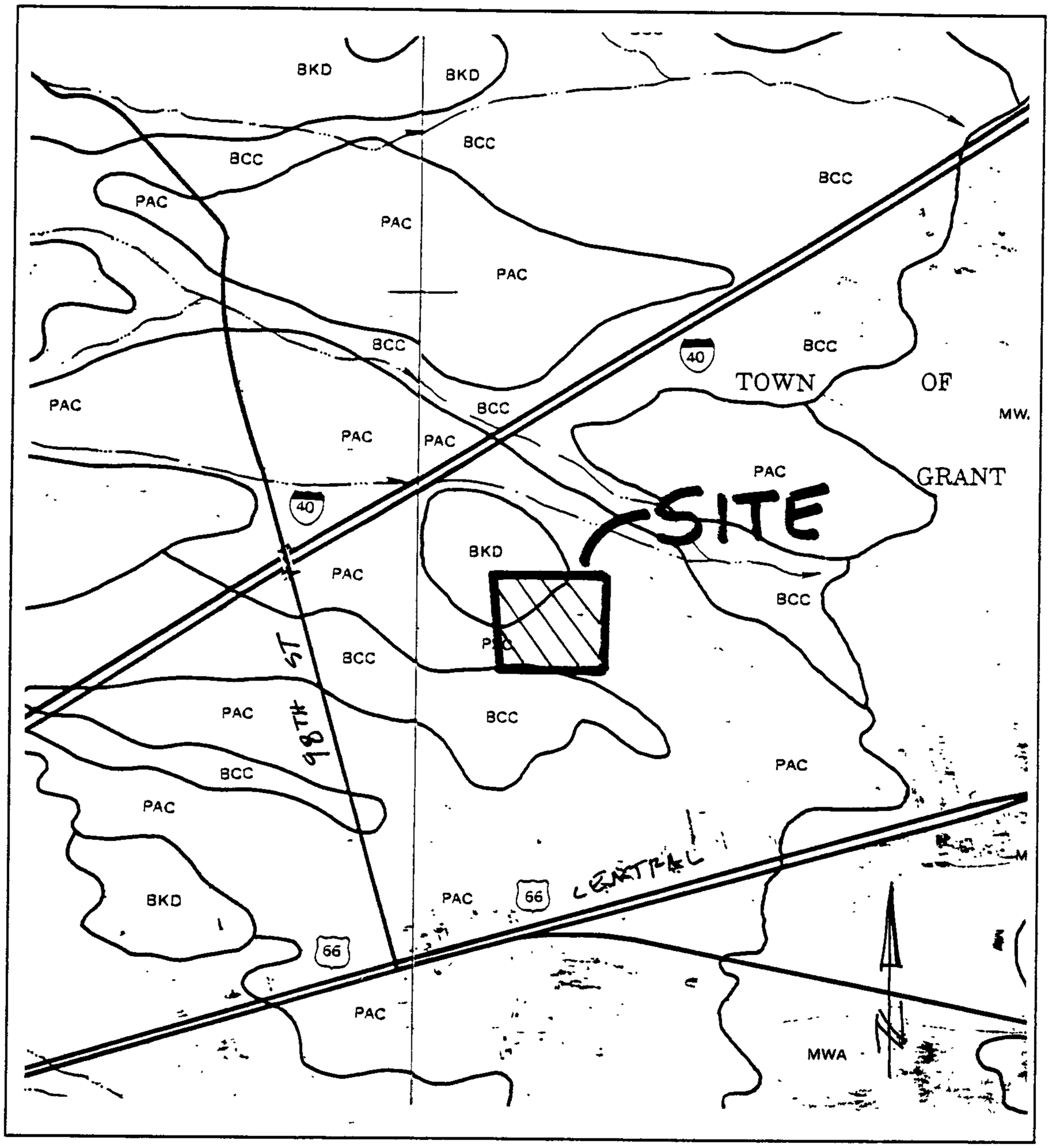
3. After the initial site clearing, the temporary erosion control facilities should be constructed per the Plan to direct excess runoff and sediment the outfall locations.

4. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

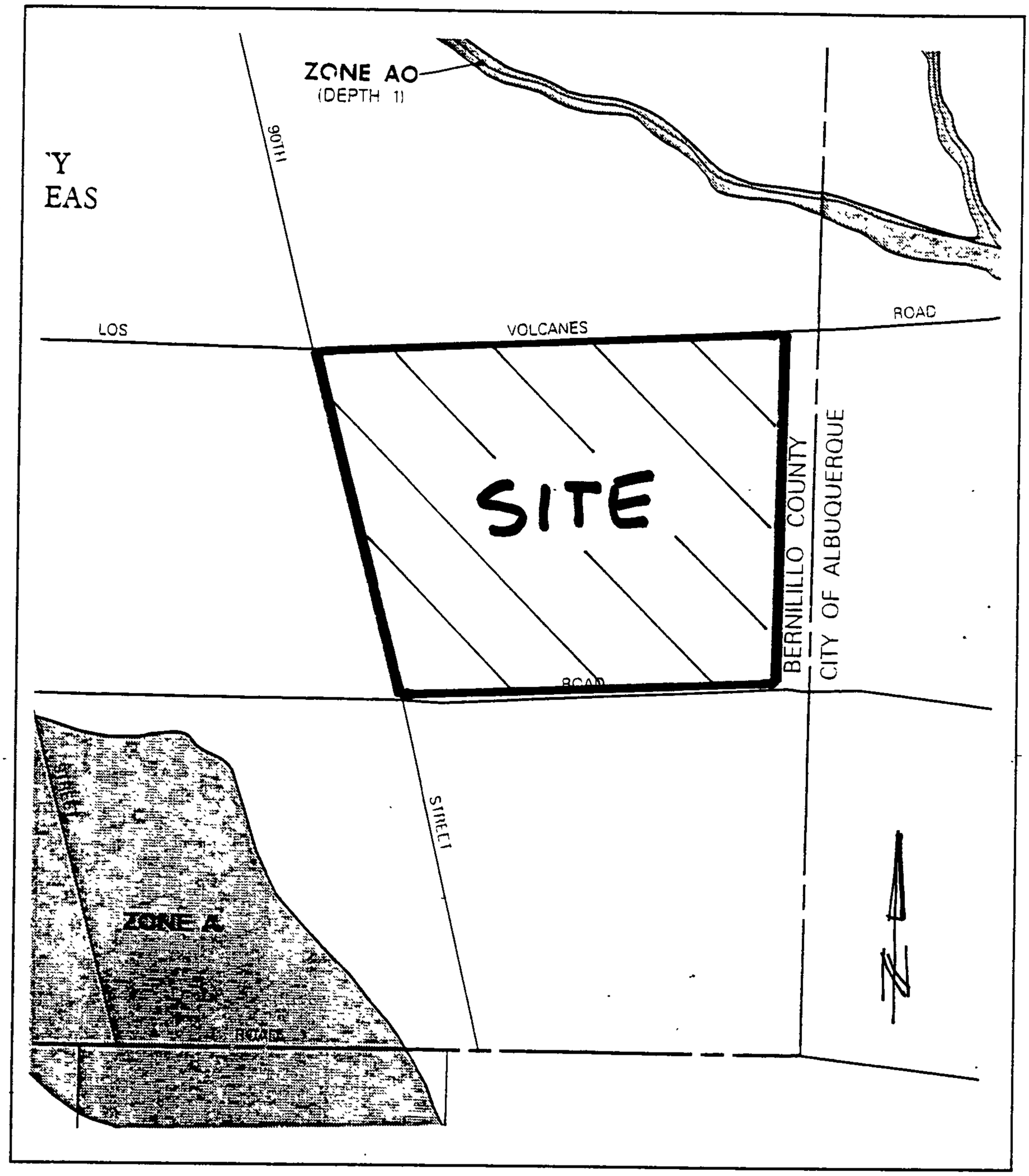
MAPS



LOCATION MAP
Figure 1



SOILS MAP
Figure 2



FLOOD INSURANCE RATE MAP
Figure 3

CALCULATIONS

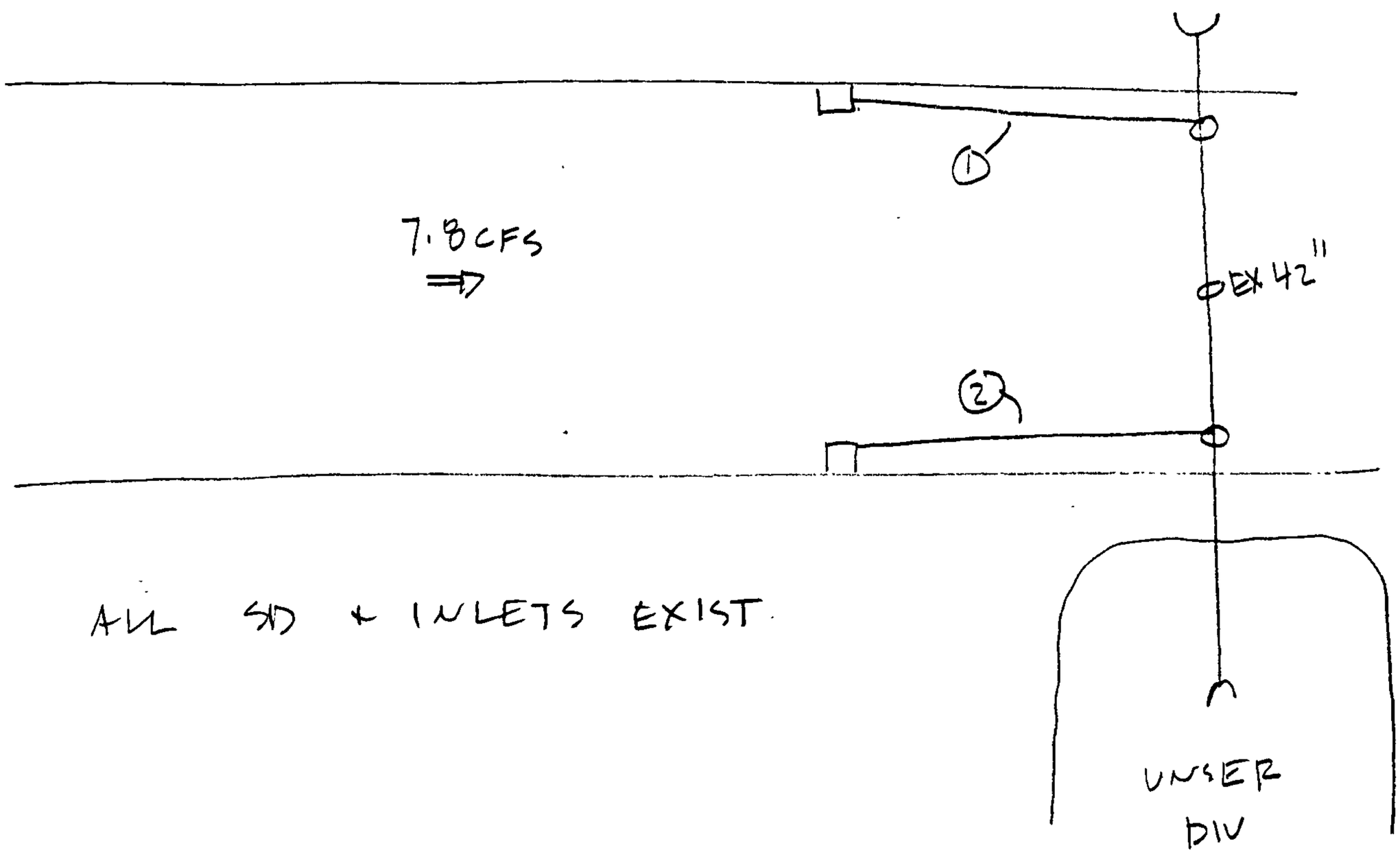
STREET DEPTHS

		AVALON SUBDIVISION				
			UNIT 3			
			Street Depths			
Street name		Analysis	Q 100	Slope	Width	Depth	Velocity
		Point	(cfs)	(%)	(ft)	(ft)	(fps)
ON-SITE							
Stern Dr		1	8.6	1.00	28	0.27	2.30
Ana Capa Ave		2	19.7	3.00	28	0.30	4.40
Ana Capa Ave		3w	27.5	5.52	28	0.34	4.80
Santa Catalina Ave		4	19.6	1.56	28	0.33	3.60
San Nicholas Ave		5w	20.8	2.42	28	0.31	4.20
Twin Harbor Ave		6w	19.4	2.62	28	0.30	4.20
Galleon Dr		5n	25.4	1.20	28	0.38	3.70
Galleon Dr		5s	46.2	1.20	28	0.49	4.70
Galleon Dr		6n	50.0	1.20	28	0.51	4.90
Galleon Dr		6s	69.4	1.20	28	0.58	5.6
Galleon Dr		3n	72.6	1.20	28	0.60	5.7
OFF-SITE							
90th		9	6.6	1.50	48	0.23	2.5
Bluewater		8	7.8	2.52	48	0.22	3.2
Los Volcanes		10	50.4	1.56	48	0.49	4.3

EG = 1.07
EG = 1.1'

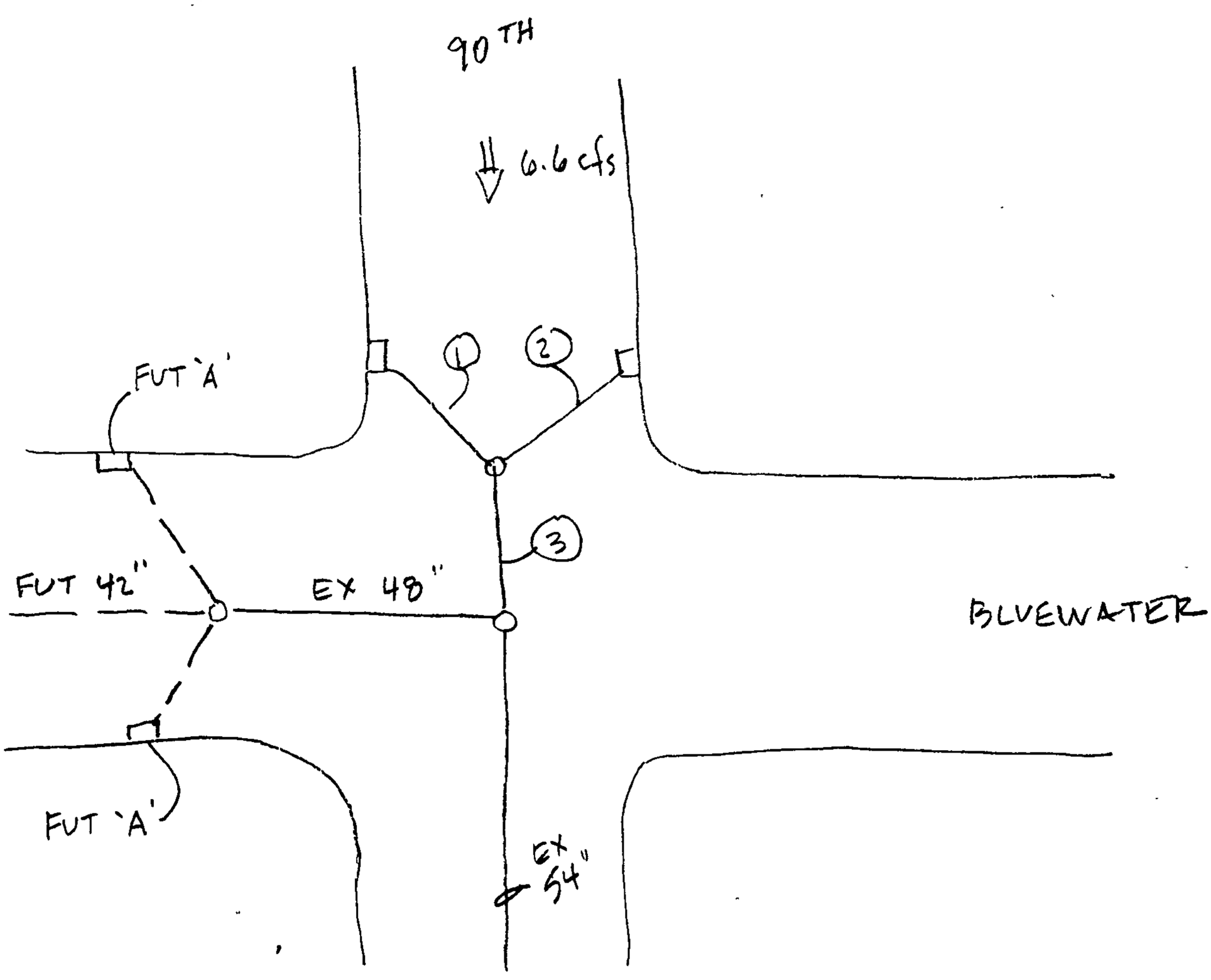
STORM DRAINS

			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase One @ Bluewater @ ap 8			EXISTING SYSTEM			
Pipe	Ap	Q 100	Inlet type	Q inlet	Q pipe	Pipe Dia	Q resid
Segment	No.	(cfs)		(cfs)	(cfs)	(in)	(cfs)
1	8n	3.9	ex A	3.9	3.9	ex 18	0
2	8s	3.9	ex A	3.9	3.9	ex 18	0

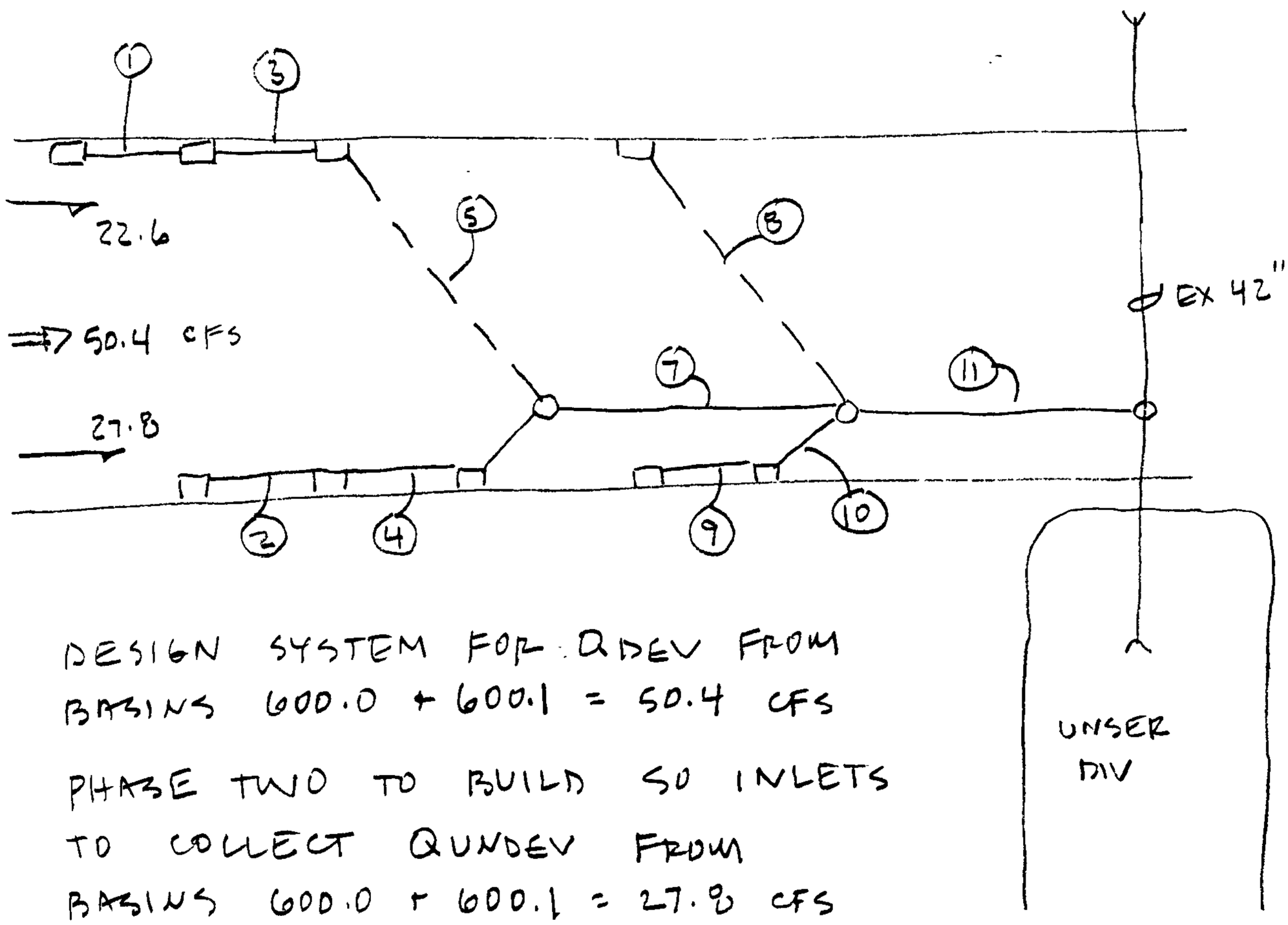


ALL SD + INLETS EXIST.

			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase One @ 90th @ 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	9	6.6	A	3.3(6.6)	3.3(6.6)	18	0
3	9	6.6	**	**	6.6	18	0



			AVALON SUBDIVISION				
			Storm Drain Capacities				
Condition:	Phase Two @ Los Volcanes @ ap 10						
Pipe	Ap	Q 100	Inlet type	Q inlet	Q pipe	Pipe Dia	Q resid
Segment	No.	(cfs)		(cfs)	(cfs)	(in)	(cfs)
1	10n	22.6	A	8.00	8.0	18	13.6
2	10s	27.8	A	8.00	9.0	18	19.8
3	10n	13.6	CC	6.0(14.0)	14.0	18	8.6
4	10s	19.8	CC	6.0(14.0)	14.0	18	13.8
5	10n	8.6	CC	4.5(18.5)	18.5	24	4.1
6	10s	13.8	CC	4.5(18.5)	18.5	24	9.3
7	10	37.0	**	**	37.0	24	13.4
8	10n	4.1	CC	4.1	4.1	18	0
9	10s	9.3	CC	5.1	5.0	18	4.3
10	10s	4.3	CC	4.3(9.3)	9.3	18	0
11	10	50.4	**	50.4	50.4	30	0

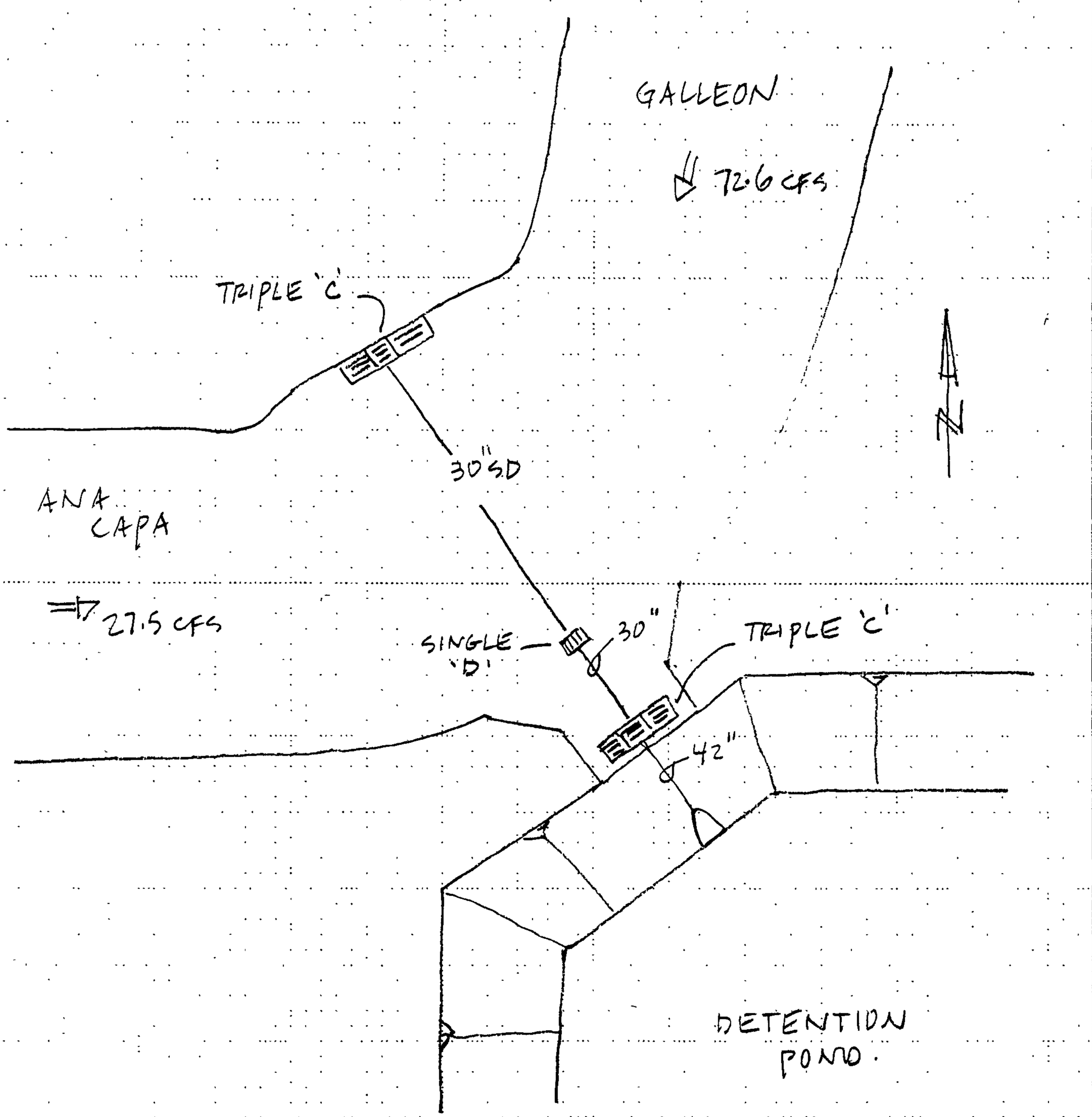


DESIGN SYSTEM FOR QDEV FROM
BASINS 600.0 + 600.1 = 50.4 CFS

PHASE TWO TO BUILD 50 INLETS
TO COLLECT QUNDEV FROM
BASINS 600.0 + 600.1 = 27.8 CFS
FUTURE DIS ON NORTH TO DRAIN
REMAINING 22.6 CFS

AVALON UNIT 3	99570	4/
	11-18-99	

STORM DRAIN @ AP 3 @ POND INLET

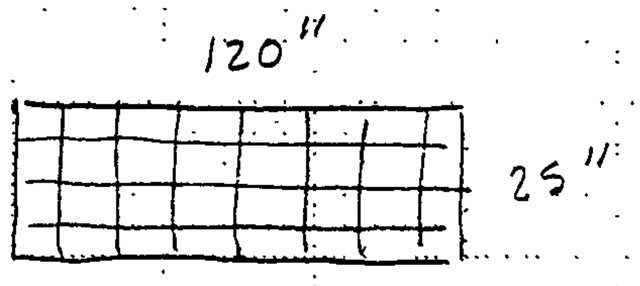


SCHEMATIC LAYOUT

BRASHER & LORENZ, INC.

HYDRAULIC CALCULATIONS FOR SPECIAL INLET STRUCTURES

① TRIPLE 'C' INLET CAPACITY



GRATES $P = 290" = 24.17'$

OPEN $A = 12.93$ SF

FIND DEPTH OVER GRATE W/O CURB OPENING:

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

$C = 0.6$

$A = 12.93$ SF

$Q_{100} = 100$ CFS$/2 = 50.0$ CFS

SOLVING FOR h:

$$h = \left[\frac{50.0}{0.6(12.93)}\right]^2 / 2g = \underline{\underline{0.64'}}$$

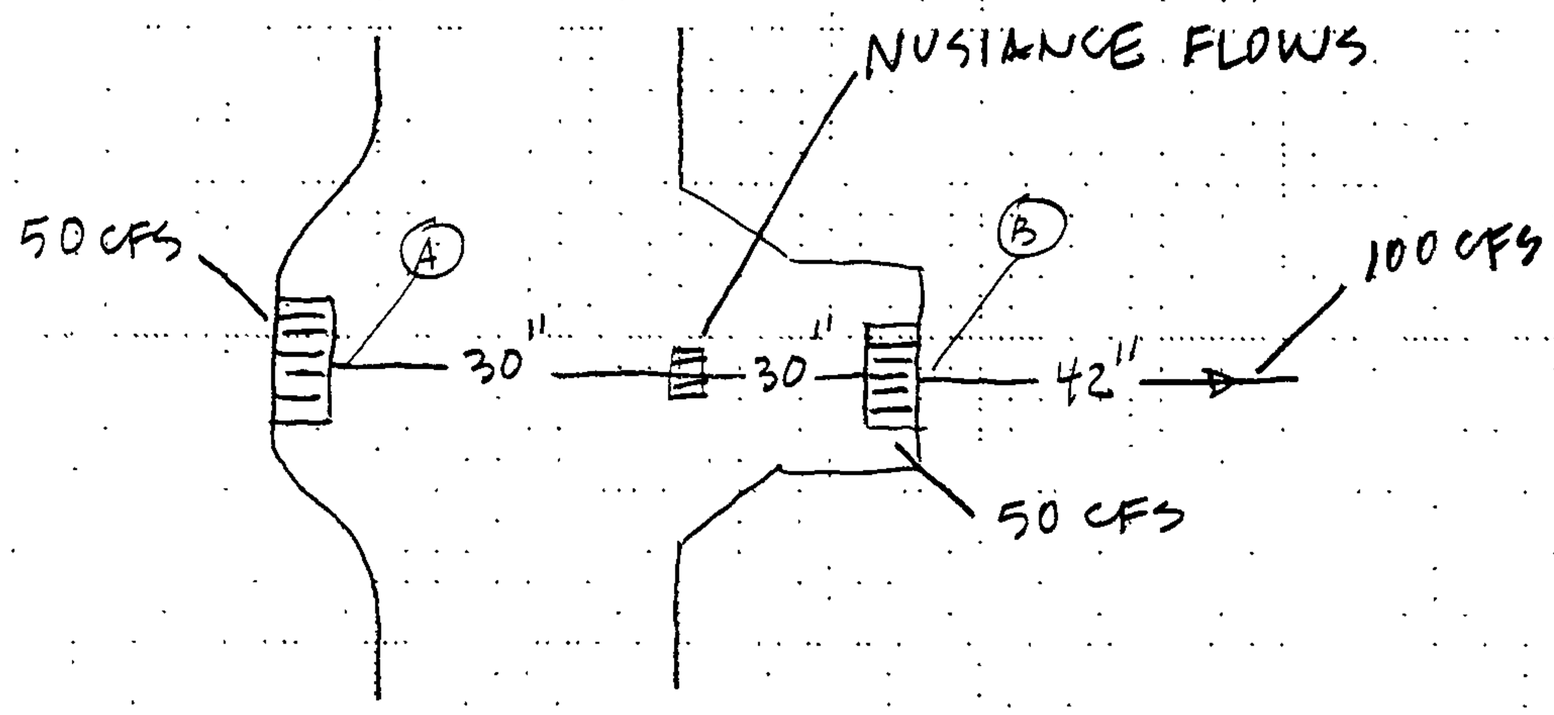
$h_{AVAIL} = 0.67$ FT

DETERMINE Q_{MAX} @ h_{MAX}:

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

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

(2) CHECK CONNECTOR PIPES FOR INLET CONTROL:



AT 1ST TRIPLE 'C' (A):

$Q_{100} = 100 \text{ CFS}/2 = 50.0 \text{ CFS}$

BY ORIFICE: $A_{30''} = 4.91 \text{ SF}$

$C = 0.6$

$$h = \left[\frac{50.0}{0.6(4.91)}\right]^2 / 2g = \underline{\underline{4.47'}}$$

$h_{AVAIL} = 10.26'$

$Q_{MAX} = 0.6(4.91)\sqrt{2g(10.26)} = 75.7 \text{ CFS}$ $\quad FS = \frac{75.7}{50} = 1.5$

AT 2ND TRIPLE 'C' (B):

$Q_{100} = 100.0 \text{ CFS}$ $\quad A_{42''} = 9.62 \text{ SF}$

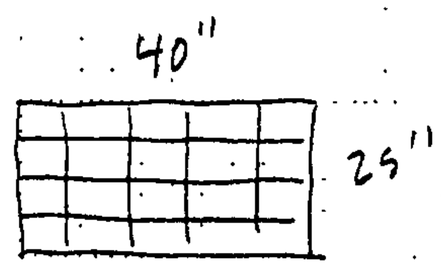
$$h = \left[\frac{100.0}{0.6(9.62)}\right]^2 / 2g = \underline{\underline{4.66'}}$$

$h_{AVAIL} = 9.65'$

$Q_{MAX} = 0.6(9.62)\sqrt{2g(9.65)} = 143.9 \text{ CFS}$ $\quad FS = \frac{143.9}{50} = 1.4$

③ CHECK SINGLE 'D'

PROVIDE SINGLE 'D' FOR NUISANCE Q



$P = 130'' = 10.83'$

OPEN $A = 4.31$ SF

PER PLAN MAX $h = 0.2$ FT

Ⓐ CHECK BY WEIR

$Q = CLH^{3/2}$

$L = P = 10.83'$

$H = 0.2'$

$C = 2.5$

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

Ⓑ CHECK BY ORIFICE

$Q = CA\sqrt{2gh}$

$h = 0.2'$

$A = 4.31$ SF

$C = 0.6$

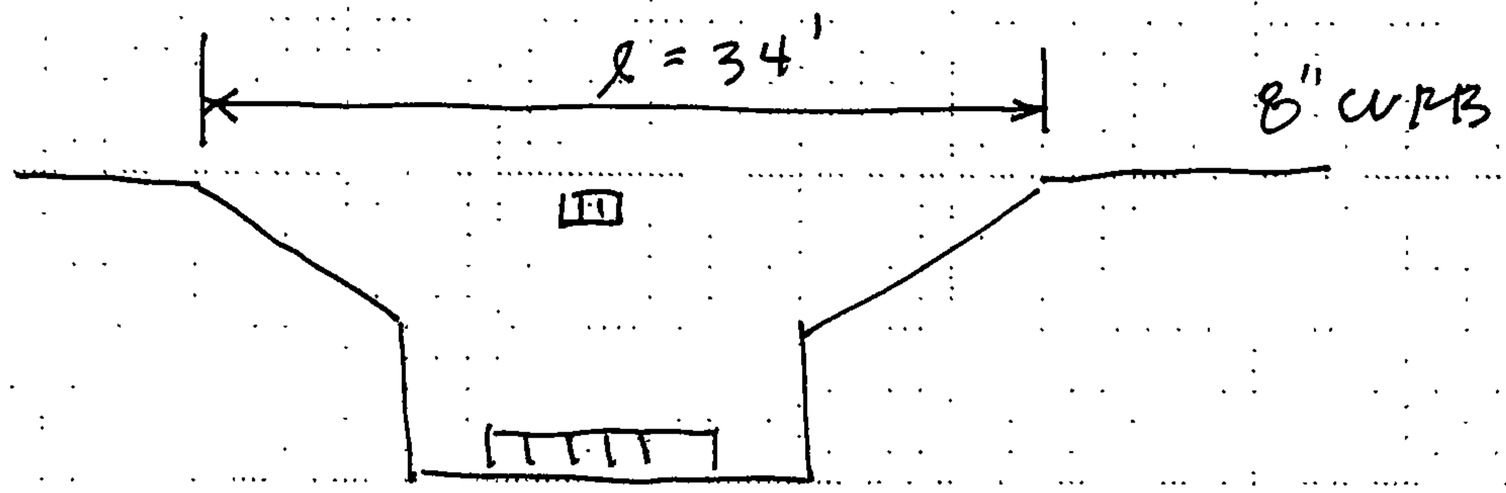
$Q_{MAX} = 0.6(4.31)\sqrt{2g(0.2)} = 9.3$ CFS

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

④ EAST SPECIAL INLET - WEIR ENTRY & OVERFLOW

Ⓐ WEIR INLET TO EAST TRIPLE 'C'

$Q_{100} = 100$ CFS/2 = 50.0 CFS



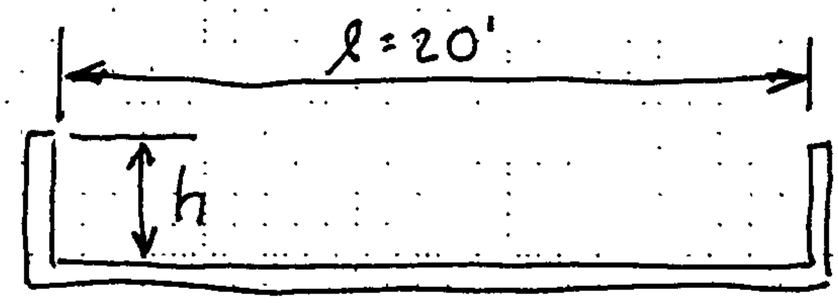
PLAN

Enter up to 10 weirs.
Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
50.00	33.8	2.700	0.67

USE ℓ = 34'

Ⓑ PROVIDE OVERFLOW @ BACK OF INLET DESIGN FOR Q_{100} = 100 CFS IN EVENT INLET CLOGS:



Enter up to 10 weirs.
Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
100.00	20.0	2.700	1.51

USE 18" SIDEWALLS

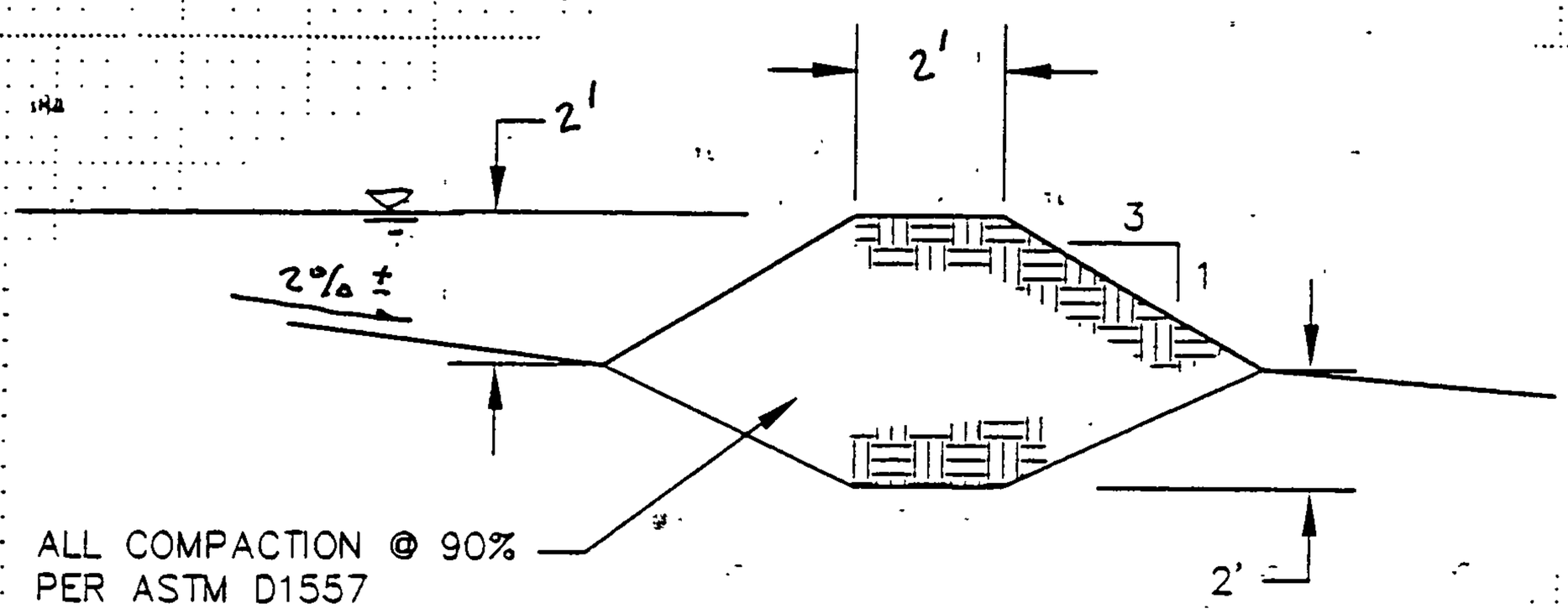
INTERIM TRAINER DIKES

(A) INTERIM TRAINER DIKES

DETERMINE CAPACITY @

(1) TR 34 @ 90TH ST. - Q_{100} = 83.0 CFS

(2) PHASE ONE INTERIM - Q_{100} = 40.5 CFS



INTERIM TRAINER DIKE SECTION

NATURAL CHANNELS

VARIABLES LIST:
Y - FLOW ELEVATION Q - FLOWRATE S - CHANNEL SLOPE

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

Q (CFS) ? 83.0 ✓
S (FT/FT) ? .020

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

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	102.0	.025			
100	100.0	.025			
109	102.0	.025			

RESULTS
==========
Y= 100.81 FT ✓
A= 18.02 SF
P= 44.41 FT
V= 4.61 FPS
F= 1.27 SUPER-CRITICAL FLOW

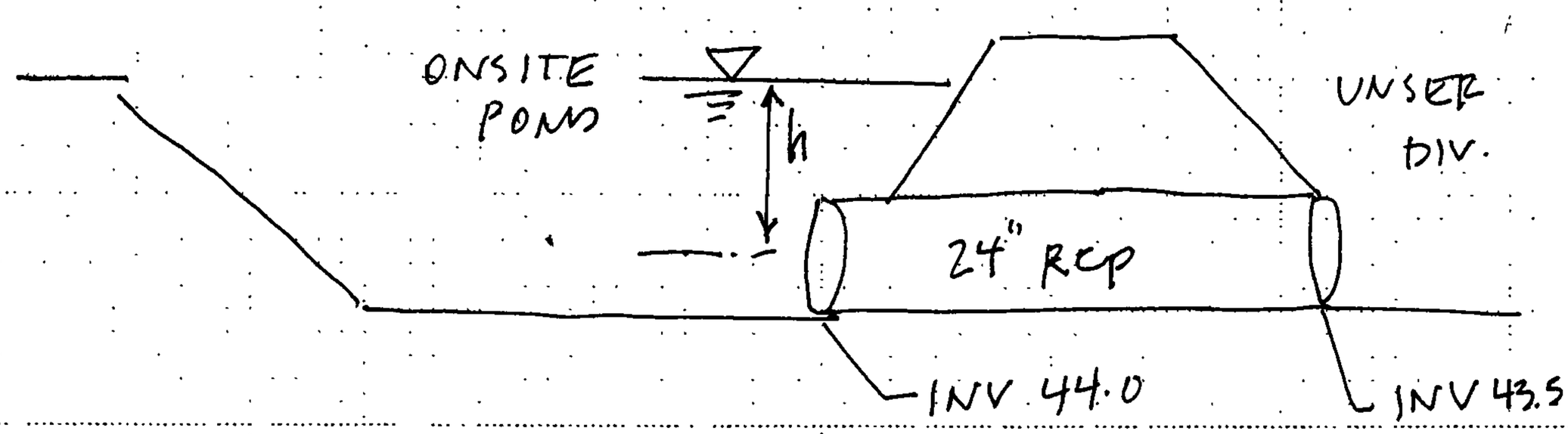
POND DESIGN

(1) ON-SITE DETENTION POND

DESIGN DETENTION POND TO LIMIT DISCHARGE FROM SITE TO 1.40 CFS/AC

$Q_{ALLOW} = 30.0\ AC\ (1.4\ CFS/AC) = 42.0\ CFS$ MAX

(A) USE 24" OUTLET TO UNSER DIVERSION:



SECTION.

DETERMINE POND DISCHARGE BY SUBMERGED ORIFACE:

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

$C = 0.6$
$A = 3.14\ SF$
$g = 32.2\ F/s^2$

(B) DEV STORAGE/DISCHARGE TABLE

DETERMINE ELEV, STORAGE, Q_{OUT} FOR ATYMO ROUTE REV:

(13) ROUTE RES TABLE

ELEV	AREA (SF)	VOL (CF)	VOL (AF)	h (FT)	Q_{OUT}
44	7169	0	0	0	0
45	8249	7709	0.1770	0.1	4.8
46	9404	16534	0.3800	1.0	15.1
47	10625	26547	0.6094	2.0	21.4
48	11921	37820	0.8682	3.0	26.2
49	13289	50425	1.1576	4.0	30.3
50	14729	64434	1.4792	5.0	33.8
51	16241	79919	1.8347	6.0	37.1
52	17825	96952	2.2257	7.0	40.0

PER ATTYMO

Q_{OUT} = 34.5 CFS

WSE = 50.2

VOL = 1.55 AF

② OFF-SITE INTERIM POND

PROVIDE INTERIM OFF-SITE RETENTION POND ON TRACT B.34 TO RETAIN UNDEVELOPED BASIN 200.0 FLOW

PER AHYMO:

BASIN 200.0 UNDEV

$Q_{100} = 83.0$ CFS

$V_{100} = 2.299$ AF

$V_{10\ DAY} = V_{100}$ FOR UNDEV COND.

PROVIDE 2.3 AF INTERIM RET POND

SEE SHEETS 1 & 2

AHYMO FILES

EXISTING CONDITIONS

TIME TO PEAK - BASIN 200.0 - EXISTING

$L = 2700'$ $H = 5280 - 5180 = 100'$ $S = 0.037$

$V = K\sqrt{3.7}$ $K = 2$

$V = 3.8$ fps

$t_c = L/V = 0.197$ HR

$t_p = 2/3\, t_c = 0.1316$

$\Rightarrow$ USE $t_p = 0.1333$ HR

```
*************************************************************************
*                              AVALON UNIT 3
*                            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 EXISTING ON-SITE AND OFF-SITE BASINS WHICH
*** PRESENTLY DRAIN THROUGH THE SITE TO THE UNSER DIVERSION
*****************************************************************
* UNDEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD       ID=1  HYD NO=101.UNDEV  DA=0.04691 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
* BASIN 200.0
COMPUTE NM HYD       ID=2  HYD NO=200.0  DA=0.1312 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
** TOTAL FLOW AT UNSER DIVERSION
ADD HYD              ID=3  HYD NO=101.1  ID I=1  ID II=2
PRINT HYD            ID=3  CODE=20
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/11/1999
INPUT FILE = C:\AVALON\99570-EX.DAT 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										
RAINFALL TYPE= 1										TIME= .00
										RAIN6= 2.200
COMPUTE NM HYD	101.UNDEV	-	1	.04691	38.94	1.099	.43925	1.533	1.297	PER IMP= .00
COMPUTE NM HYD	200.00	-	2	.13120	112.91	3.074	.43925	1.533	1.345	PER IMP= .00
ADD HYD	101.10	1& 2	3	.17811	151.85	4.173	.43925	1.533	1.332	
FINISH										

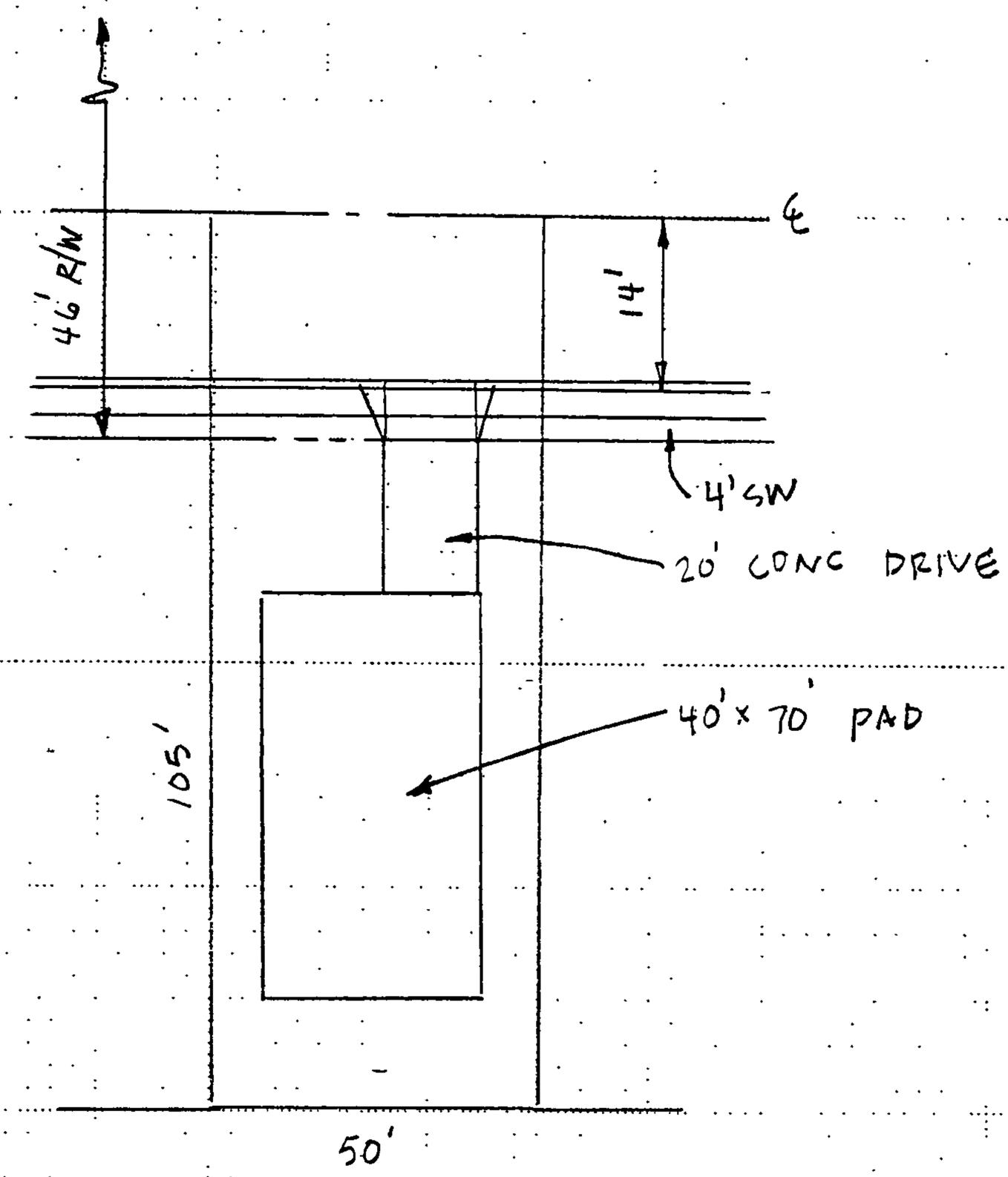
```
AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
     RUN DATE (MON/DAY/YR) = 11/11/1999
     START TIME (HR:MIN:SEC) = 11:34:23     USER NO.= BRASHERE.I01
     INPUT FILE = C:\AVALON\99570-EX.DAT

*************************************************************************
*                            AVALON UNIT 3
*                          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 EXISTING ON-SITE AND OFF-SITE BASINS WHICH
*** PRESENTLY DRAIN THROUGH THE SITE TO THE UNSER DIVERSION
*****************************************************************
* UNDEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD       ID=1  HYD NO=101.UNDEV  DA=0.04691 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 =   96.264    CFS   UNIT VOLUME =    .9995       B =   273.54      P60 = 1.8700
AREA =      .046910 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      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       .9          4.000       .1          5.333       .0
  .667       .0          2.000      3.7          3.333       .2          4.666       .0

RUNOFF VOLUME =      .43925 INCHES     =       1.0989 ACRE-FEET
PEAK DISCHARGE RATE =      38.94 CFS  AT   1.533 HOURS   BASIN AREA =   .0469 SQ. MI.


* BASIN 200.0
COMPUTE NM HYD      ID=2  HYD NO=200.0  DA=0.1312 SQ MI
                    PER A=100  PER B=0  PER C=0  PER D=0
                    TP=0.1333 HR  MASS RAIN=-1

K =   .155464HR    TP =   .133300HR    K/TP RATIO =  1.166272     SHAPE CONSTANT, N =  3.040297
UNIT PEAK =   280.60    CFS   UNIT VOLUME =    .9997       B =   285.09      P60 = 1.8700
AREA =      .131200 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

                                  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          1.333       .0          2.666      2.4          4.000       .1          5.333       .0
  .667       .0          2.000      10.1         3.333       .6          4.666       .0

RUNOFF VOLUME =      .43925 INCHES     =       3.0736 ACRE-FEET
PEAK DISCHARGE RATE =     112.91 CFS  AT   1.533 HOURS   BASIN AREA =   .1312 SQ. MI.


** TOTAL FLOW AT UNSER DIVERSION
ADD HYD             ID=3  HYD NO=101.1  ID I=1  ID II=2
PRINT HYD           ID=3  CODE=20

                                  PARTIAL HYDROGRAPH   101.10

 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      3.3          4.000       .2          5.333       .0
```

```
  .667        .0          2.000      13.7          3.333        .8          4.666        .0

RUNOFF VOLUME =       .43925 INCHES     =       4.1725 ACRE-FEET
PEAK DISCHARGE RATE =     151.85 CFS  AT   1.533 HOURS   BASIN AREA =   .1781 SQ. MI.


FINISH

NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 11:34:23
```

DEVELOPED SITE

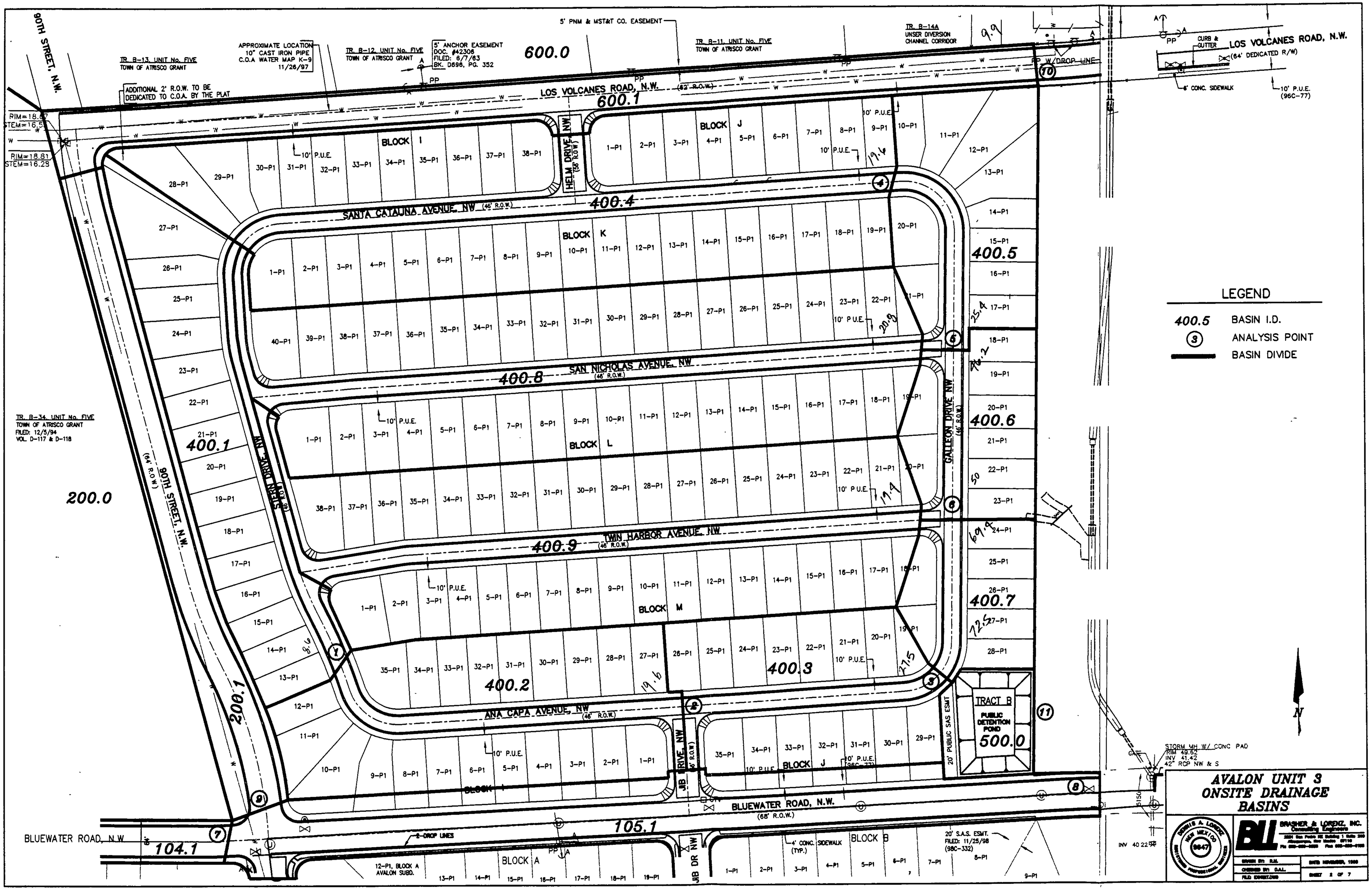
(1) LAND TREATMENT FACTORS



GROSS AREA = 50 x (105 + 23) = 6400 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%

ON-SITE DRAINAGE BASINS


90TH STREET, N.W.
TR. B-13, UNIT No. FIVE
TOWN OF ATRISCO GRANT
ADDITIONAL 2' R.O.W. TO BE DEDICATED TO C.O.A. BY THE PLAT
APPROXIMATE LOCATION 10" CAST IRON PIPE C.O.A WATER MAP K-9 11/26/97
TR. B-12, UNIT No. FIVE
TOWN OF ATRISCO GRANT
5' ANCHOR EASEMENT DOC. #42306 FILED: 6/7/83 BK. D696, PG. 352
600.0
5' PNM & MST&T CO. EASEMENT
TR. B-11, UNIT No. FIVE
TOWN OF ATRISCO GRANT
TR. B-14A
UNSER DIVERSION CHANNEL CORRIDOR
LOS VOLCANES ROAD, N.W.
(62' R.O.W.)
600.1
PP W/DROP LINE
CURB & GUTTER
(64' DEDICATED R/W)
6' CONC. SIDEWALK
10' P.U.E. (96C-77)
RIM=18.67
STEM=16.5
RIM=18.81
STEM=16.29
10' P.U.E.
BLOCK I
HELM DRIVE NW (58' R.O.W.)
BLOCK J
SANTA CATALINA AVENUE, NW (46' R.O.W.)
400.4
BLOCK K
400.5
400.8
SAN NICHOLAS AVENUE, NW (46' R.O.W.)
BLOCK L
400.6
TR. B-34, UNIT No. FIVE
TOWN OF ATRISCO GRANT
FILED: 12/5/94
VOL. D-117 & D-118
400.1
200.0
90TH STREET, N.W. (64' R.O.W.)
SIERRA DRIVE, NW (46' R.O.W.)
GALLEON DRIVE NW (46' R.O.W.)
400.9
TWIN HARBOR AVENUE, NW (46' R.O.W.)
BLOCK M
400.7
400.2
400.3
200.1
ANA CAPA AVENUE, NW (46' R.O.W.)
JIB DRIVE, NW (46' R.O.W.)
20' PUBLIC SAS ESMT
TRACT B
PUBLIC DETENTION POND
500.0
BLOCK H
BLOCK J
BLUEWATER ROAD, N.W.
(68' R.O.W.)
105.1
104.1
2-DROP LINES
4' CONC. SIDEWALK (TYP.)
BLOCK B
20' S.A.S. ESMT. FILED: 11/25/98 (98C-332)
12-P1, BLOCK A AVALON SUBD.
BLOCK A
JIB DR NW
STORM MH W/ CONC PAD RIM 42.52 INV 41.42 42" RCP NW & S
INV 40.22
LEGEND
400.5 BASIN I.D.
3 ANALYSIS POINT
BASIN DIVIDE
N
AVALON UNIT 3
ONSITE DRAINAGE
BASINS
BRASHER & LORENZ, INC.
Consulting Engineers
DENNIS A. LORENZ
NEW MEXICO
9647
REGISTERED PROFESSIONAL ENGINEER
DRAWN BY: R.M.
CHECKED BY: D.A.L.
FILE: EXHIBIT.DWG
DATE: NOVEMBER, 1999
SHEET 2 OF 7

```
*****************************************************************
*                          AVALON UNIT 3
*                        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 ON-SITE BASINS
*****************************************************************
* UNDEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD       ID=1  HYD NO=101.UNDEV  DA=0.04691 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
*****************************************************************
*** THE FOLLOWING ARE DEVELOPED ON-SITE BASINS
*****************************************************************
* BASIN 400.1 @ AP1
COMPUTE NM HYD       ID=2  HYD NO=400.1  DA=0.003783 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=2  CODE=20
* BASIN 400.2 @ AP2
COMPUTE NM HYD       ID=3  HYD NO=400.2  DA=0.004832 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 400.3 @ AP3
COMPUTE NM HYD       ID=4  HYD NO=400.3  DA=0.003448 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
* BASIN 400.4 @ AP4
COMPUTE NM HYD       ID=5  HYD NO=400.4  DA=0.008600 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=5  CODE=20
* BASIN 400.5 @ AP5
COMPUTE NM HYD       ID=6  HYD NO=400.5  DA=0.002531 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 400.6 @ AP6
COMPUTE NM HYD       ID=7  HYD NO=400.6  DA=0.001646 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
* BASIN 400.7 @ AP3
COMPUTE NM HYD       ID=8  HYD NO=400.7  DA=0.001400 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=8  CODE=20
* BASIN 400.8 @ AP5
COMPUTE NM HYD       ID=9  HYD NO=400.8  DA=0.009139 SQ MI
                     PER A=0  PER B=21  PER C=21  PER D=58
                     TP=0.1333 HR  MASS RAIN=-1
```

```
PRINT HYD            ID=9  CODE=20
* BASIN 400.9 @ AP6
COMPUTE NM HYD       ID=10  HYD NO=400.9  DA=0.008505 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 500.0 @ AP11
COMPUTE NM HYD       ID=11  HYD NO=500.0  DA=0.000769 SQ MI
                     PER A=0  PER B=0  PER C=0  PER D=100
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=11 CODE=20
*** TOTAL FLOW @ AP2
ADD HYD              ID=12  HYD NO=400.10  ID I=2  ID II=3
PRINT HYD            ID=12  CODE=20
*** TOTAL FLOW @ AP3 (WEST)
ADD HYD              ID=13  HYD NO=400.11  ID I=4  ID II=12
PRINT HYD            ID=13  CODE=20
*** TOTAL FLOW @ AP5 (NORTH)
ADD HYD              ID=14  HYD NO=400.12  ID I=5  ID II=6
PRINT HYD            ID=14  CODE=20
*** TOTAL FLOW @ AP5
ADD HYD              ID=15  HYD NO=400.13  ID I=9  ID II=14
PRINT HYD            ID=15  CODE=20
*** TOTAL FLOW @ AP6 (NORTH)
ADD HYD              ID=16  HYD NO=400.14  ID I=7  ID II=15
PRINT HYD            ID=16  CODE=20
*** TOTAL FLOW @ AP6
ADD HYD              ID=17  HYD NO=400.15  ID I=10  ID II=16
PRINT HYD            ID=17  CODE=20
*** TOTAL FLOW @ AP3 (NORTH)
ADD HYD              ID=18  HYD NO=400.16  ID I=8  ID II=17
PRINT HYD            ID=18 CODE=20
*** TOTAL FLOW @ AP3
ADD HYD              ID=19  HYD NO=400.17  ID I=13  ID II=18
PRINT HYD            ID=19 CODE=20
*** TOTAL FLOW @ AP11
ADD HYD              ID=20  HYD NO=400.18  ID I=11  ID II=19
PRINT HYD            ID=20 CODE=20
*****************************************************************
*** ROUTE SITE THROUGH DETENTION POND TO UNSER DIVERSION
*****************************************************************
* ALLOWABLE DISCHARGE IS 42.0 CFS PER DMP
ROUTE RESERVOIR      ID=21 HYD NO=500.2  INFLOW ID=20  CODE=10
                     OUT (CFS)   STORAGE (AC-FT)    ELEV (FT)
                     0           0                  44.0
                     4.8         0.1770             45.0
                     15.1        0.3800             46.0
                     21.4        0.6094             47.0
                     26.2        0.8682             48.0
                     30.3        1.1576             49.0
                     33.8        1.4792             50.0
                     37.1        1.8347             51.0
                     40.0        2.2257             52.0
PRINT HYD            ID=21  CODE=2
*****************************************************************
*** THE FOLLOWING REPRESENT ADJACENT COLLECTOR STREETS
*****************************************************************
```

```
* BASIN 104.1 @ AP7 - BLUEWATER WEST OF 90TH
COMPUTE NM HYD       ID=22  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=22  CODE=20
* BASIN 105.1 @ AP8 - BLUEWATER @ EAST PL
COMPUTE NM HYD       ID=23  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=23  CODE=20
* BASIN 200.1 @ AP9 - 90TH AT BLUEWATER
COMPUTE NM HYD       ID=24  HYD NO=200.2 DA=0.00250 SQ MI
                     PER A=0  PER B=0  PER C=18  PER D=82
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=24  CODE=20
* BASIN 600.1 @ AP10 - LOS VOLCANES ROAD @ EAST PL
COMPUTE NM HYD       ID=25  HYD NO=600.1 DA=0.00375 SQ MI
                     PER A=0  PER B=0  PER C=18  PER D=82
                     TP=0.1333 HR  MASS RAIN=-1
PRINT HYD            ID=25  CODE=20
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/18/1999
INPUT FILE = c:\avalon\99570-s.dat 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										
RAINFALL TYPE= 1										TIME= .00
										RAIN6= 2.200
COMPUTE NM HYD	101.UNDEV	-	1	.04691	38.94	1.099	.43925	1.533	1.297	PER IMP= .00
COMPUTE NM HYD	400.10	-	2	.00378	8.63	.299	1.48257	1.500	3.565	PER IMP= 58.00
COMPUTE NM HYD	400.20	-	3	.00483	11.02	.382	1.48256	1.500	3.563	PER IMP= 58.00
COMPUTE NM HYD	400.30	-	4	.00345	7.87	.273	1.48257	1.500	3.565	PER IMP= 58.00
COMPUTE NM HYD	400.40	-	5	.00860	19.60	.680	1.48256	1.500	3.561	PER IMP= 58.00
COMPUTE NM HYD	400.50	-	6	.00253	5.78	.200	1.48256	1.500	3.568	PER IMP= 58.00
COMPUTE NM HYD	400.60	-	7	.00165	3.76	.130	1.48257	1.500	3.573	PER IMP= 58.00
COMPUTE NM HYD	400.70	-	8	.00140	3.20	.111	1.48256	1.500	3.575	PER IMP= 58.00
COMPUTE NM HYD	400.80	-	9	.00914	20.83	.723	1.48257	1.500	3.561	PER IMP= 58.00
COMPUTE NM HYD	400.90	-	10	.00851	19.38	.672	1.48256	1.500	3.561	PER IMP= 58.00
COMPUTE NM HYD	500.00	-	11	.00077	2.16	.081	1.96548	1.500	4.386	PER IMP= 100.00
ADD HYD	400.10	2& 3	12	.00862	19.65	.681	1.48250	1.500	3.564	
ADD HYD	400.11	4&12	13	.01206	27.52	.954	1.48249	1.500	3.564	
ADD HYD	400.12	5& 6	14	.01113	25.38	.880	1.48251	1.500	3.563	
ADD HYD	400.13	9&14	15	.02027	46.20	1.603	1.48252	1.500	3.562	
ADD HYD	400.14	7&15	16	.02192	49.97	1.733	1.48251	1.500	3.562	
ADD HYD	400.15	10&16	17	.03042	69.35	2.405	1.48252	1.500	3.562	
ADD HYD	400.16	8&17	18	.03182	72.55	2.516	1.48251	1.500	3.563	
ADD HYD	400.17	13&18	19	.04388	100.07	3.470	1.48251	1.500	3.563	
ADD HYD	400.18	11&19	20	.04465	102.23	3.550	1.49082	1.500	3.577	
ROUTE RESERVOIR	500.20	20	21	.04465	34.49	3.550	1.49082	1.800	1.207	AC-FT= 1.554
COMPUTE NM HYD	104.10	-	22	.00278	7.31	.266	1.79069	1.500	4.110	PER IMP= 82.00
COMPUTE NM HYD	105.10	-	23	.00298	7.83	.284	1.79069	1.500	4.109	PER IMP= 82.00
COMPUTE NM HYD	200.20	-	24	.00250	6.58	.239	1.79069	1.500	4.110	PER IMP= 82.00
COMPUTE NM HYD	600.10	-	25	.00375	9.86	.358	1.79069	1.500	4.107	PER IMP= 82.00
FINISH										

```
AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
     RUN DATE (MON/DAY/YR) = 11/18/1999
     START TIME (HR:MIN:SEC) = 12:37:49     USER NO.= BRASHERE.I01
     INPUT FILE = c:\avalon\99570-s.dat

*************************************************************************
*                            AVALON UNIT 3
*                          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 ON-SITE BASINS
*****************************************************************
* UNDEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD     ID=1  HYD NO=101.UNDEV  DA=0.04691 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 =   96.264    CFS   UNIT VOLUME =    .9995       B =   273.54      P60 = 1.8700
AREA =      .046910 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      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       .9          4.000       .1          5.333       .0
      .667       .0          2.000      3.7          3.333       .2          4.666       .0

RUNOFF VOLUME =      .43925 INCHES     =       1.0989 ACRE-FEET
PEAK DISCHARGE RATE =      38.94 CFS  AT   1.533 HOURS   BASIN AREA =   .0469 SQ. MI.


*************************************************************
*** THE FOLLOWING ARE DEVELOPED ON-SITE BASINS
*************************************************************
* BASIN 400.1 @ AP1
COMPUTE NM HYD      ID=2  HYD NO=400.1  DA=0.003783 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 =   8.6626    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 1.8700
AREA =      .002194 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 =   4.2274    CFS   UNIT VOLUME =    .9972       B =   354.67      P60 = 1.8700
AREA =      .001589 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   400.10

     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       .0
      .667       .0          2.666       .2          4.666       .0          6.666       .0
     1.333      2.0          3.333       .0          5.333       .0

RUNOFF VOLUME =     1.48257 INCHES     =        .2991 ACRE-FEET
PEAK DISCHARGE RATE =       8.63 CFS  AT   1.500 HOURS   BASIN AREA =   .0038 SQ. MI.
```

```
* BASIN 400.2 @ AP2
COMPUTE NM HYD       ID=3  HYD NO=400.2  DA=0.004832 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 =   11.065    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
    AREA =      .002803 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 =   5.3997    CFS   UNIT VOLUME =    .9980       B =   354.67      P60 = 1.8700
    AREA =      .002029 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 400.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.3	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     =        .3821 ACRE-FEET
    PEAK DISCHARGE RATE =      11.02 CFS  AT   1.500 HOURS   BASIN AREA =   .0048 SQ. MI.

* BASIN 400.3 @ AP3
COMPUTE NM HYD       ID=4  HYD NO=400.3  DA=0.003448 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 =   7.8955    CFS   UNIT VOLUME =    .9978       B =   526.28      P60 = 1.8700
    AREA =      .002000 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 =   3.8531    CFS   UNIT VOLUME =    .9969       B =   354.67      P60 = 1.8700
    AREA =      .001448 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 400.30

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 = 1.48257 INCHES = .2726 ACRE-FEET
PEAK DISCHARGE RATE = 7.87 CFS AT 1.500 HOURS BASIN AREA = .0034 SQ. MI.

```
* BASIN 400.4 @ AP4
COMPUTE NM HYD      ID=5  HYD NO=400.4  DA=0.008600 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 =   19.693    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.8700
    AREA =      .004988 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 =   9.6104    CFS   UNIT VOLUME =    .9991       B =   354.67      P60 = 1.8700
    AREA =      .003612 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=5  CODE=20
```

HYDROGRAPH FROM AREA 400.40

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	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 = .6800 ACRE-FEET
PEAK DISCHARGE RATE = 19.60 CFS AT 1.500 HOURS BASIN AREA = .0086 SQ. MI.

```
* BASIN 400.5 @ AP5
COMPUTE NM HYD      ID=6  HYD NO=400.5  DA=0.002531 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 =   5.7957    CFS   UNIT VOLUME =    .9973       B =   526.28      P60 = 1.8700
    AREA =      .001468 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 =   2.8284    CFS   UNIT VOLUME =    .9958       B =   354.67      P60 = 1.8700
AREA =      .001063 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   400.50

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          1.333      1.3          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     =        .2001 ACRE-FEET
PEAK DISCHARGE RATE =       5.78 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.


* BASIN 400.6 @ AP6
COMPUTE NM HYD      ID=7  HYD NO=400.6  DA=0.001646 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 =   3.7691    CFS   UNIT VOLUME =    .9965       B =   526.28      P60 = 1.8700
AREA =      .000955 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 =   1.8394    CFS   UNIT VOLUME =    .9930       B =   354.67      P60 = 1.8700
AREA =      .000691 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

                                    HYDROGRAPH FROM AREA   400.60

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          1.333       .9          2.666       .1          4.000       .0          5.333       .0
  .667       .0          2.000       .8          3.333       .0          4.666       .0          5.999       .0

RUNOFF VOLUME =     1.48257 INCHES     =        .1301 ACRE-FEET
PEAK DISCHARGE RATE =       3.76 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


* BASIN 400.7 @ AP3
COMPUTE NM HYD      ID=8  HYD NO=400.7  DA=0.001400 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 =   3.2058    CFS   UNIT VOLUME =    .9961       B =   526.28      P60 = 1.8700
AREA =      .000812 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 =   1.5645    CFS   UNIT VOLUME =    .9923       B =   354.67      P60 = 1.8700
AREA =      .000588 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=8  CODE=20
```

HYDROGRAPH FROM AREA 400.70

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.7	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 =     1.48256 INCHES     =        .1107 ACRE-FEET
PEAK DISCHARGE RATE =       3.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0014 SQ. MI.


* BASIN 400.8 @ AP5
COMPUTE NM HYD      ID=9  HYD NO=400.8  DA=0.009139 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 =   20.927    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.8700
AREA =      .005301 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
UNIT PEAK =   10.213    CFS   UNIT VOLUME =    .9992       B =   354.67      P60 = 1.8700
AREA =      .003838 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=9  CODE=20
```

HYDROGRAPH FROM AREA 400.80

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	4.3	4.000	.1	5.999	.1		
.667	.0	2.666	.4	4.666	.1	6.666	.0		
1.333	4.8	3.333	.1	5.333	.1				

```
    RUNOFF VOLUME =      1.48257 INCHES      =         .7226 ACRE-FEET
    PEAK DISCHARGE RATE =       20.83 CFS  AT   1.500 HOURS   BASIN AREA =   .0091 SQ. MI.


* BASIN 400.9 @ AP6
COMPUTE NM HYD       ID=10  HYD NO=400.9  DA=0.008505 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 =   19.475    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.8700
    AREA =       .004933 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 =   9.5042    CFS   UNIT VOLUME =    .9991       B =   354.67      P60 = 1.8700
    AREA =       .003572 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

                                   HYDROGRAPH FROM AREA  400.90

     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      =         .6725 ACRE-FEET
    PEAK DISCHARGE RATE =       19.38 CFS  AT   1.500 HOURS   BASIN AREA =   .0085 SQ. MI.


* BASIN 500.0 @ AP11
COMPUTE NM HYD       ID=11  HYD NO=500.0  DA=0.000769 SQ MI
                     PER A=0  PER B=0  PER C=0  PER D=100
                     TP=0.1333 HR  MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.0361    CFS   UNIT VOLUME =    .9955       B =   526.28      P60 = 1.8700
    AREA =       .000769 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=11 CODE=20

                                OUTFLOW HYDROGRAPH RESERVOIR   500.00

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

.000	.0	1.333	.7	2.666	.0	4.000	.0	5.333	.0
.667	.0	2.000	.5	3.333	.0	4.666	.0	5.999	.0

RUNOFF VOLUME = 1.96548 INCHES = .0806 ACRE-FEET
PEAK DISCHARGE RATE = 2.16 CFS AT 1.500 HOURS BASIN AREA = .0008 SQ. MI.

*** TOTAL FLOW @ AP2
ADD HYD ID=12 HYD NO=400.10 ID I=2 ID II=3
PRINT HYD ID=12 CODE=20

HYDROGRAPH FROM AREA 400.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	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 = .6812 ACRE-FEET
PEAK DISCHARGE RATE = 19.65 CFS AT 1.500 HOURS BASIN AREA = .0086 SQ. MI.

*** TOTAL FLOW @ AP3 (WEST)
ADD HYD ID=13 HYD NO=400.11 ID I=4 ID II=12
PRINT HYD ID=13 CODE=20

HYDROGRAPH FROM AREA 400.11

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.6	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		
1.333	6.3	3.333	.2	5.333	.1				

RUNOFF VOLUME = 1.48249 INCHES = .9538 ACRE-FEET
PEAK DISCHARGE RATE = 27.52 CFS AT 1.500 HOURS BASIN AREA = .0121 SQ. MI.

*** TOTAL FLOW @ AP5 (NORTH)
ADD HYD ID=14 HYD NO=400.12 ID I=5 ID II=6
PRINT HYD ID=14 CODE=20

HYDROGRAPH FROM AREA 400.12

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	5.2	4.000	.1	5.999	.1		
.667	.0	2.666	.5	4.666	.1	6.666	.0		

1.333	5.8	3.333	.2	5.333	.1

RUNOFF VOLUME = 1.48251 INCHES = .8801 ACRE-FEET
PEAK DISCHARGE RATE = 25.38 CFS AT 1.500 HOURS BASIN AREA = .0111 SQ. MI.

*** TOTAL FLOW @ AP5
ADD HYD ID=15 HYD NO=400.13 ID I=9 ID II=14
PRINT HYD ID=15 CODE=20

HYDROGRAPH FROM AREA 400.13

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 = 1.48252 INCHES = 1.6027 ACRE-FEET
PEAK DISCHARGE RATE = 46.20 CFS AT 1.500 HOURS BASIN AREA = .0203 SQ. MI.

*** TOTAL FLOW @ AP6 (NORTH)
ADD HYD ID=16 HYD NO=400.14 ID I=7 ID II=15
PRINT HYD ID=16 CODE=20

HYDROGRAPH FROM AREA 400.14

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	10.2	4.000	.2	5.999	.3		
.667	.0	2.666	.9	4.666	.2	6.666	.0		
1.333	11.5	3.333	.3	5.333	.2				

RUNOFF VOLUME = 1.48251 INCHES = 1.7328 ACRE-FEET
PEAK DISCHARGE RATE = 49.97 CFS AT 1.500 HOURS BASIN AREA = .0219 SQ. MI.

*** TOTAL FLOW @ AP6
ADD HYD ID=17 HYD NO=400.15 ID I=10 ID II=16
PRINT HYD ID=17 CODE=20

HYDROGRAPH FROM AREA 400.15

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	14.2	4.000	.3	5.999	.4		
.667	.0	2.666	1.3	4.666	.3	6.666	.0		
1.333	15.9	3.333	.4	5.333	.3				

```
RUNOFF VOLUME =      1.48252 INCHES      =        2.4053 ACRE-FEET
PEAK DISCHARGE RATE =       69.35 CFS  AT   1.500 HOURS   BASIN AREA =   .0304 SQ. MI.


*** TOTAL FLOW @ AP3 (NORTH)
ADD HYD              ID=18  HYD NO=400.16  ID I=8  ID II=17
PRINT HYD            ID=18 CODE=20

                                    HYDROGRAPH FROM AREA   400.16

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          2.000     14.9          4.000       .3          5.999       .4
  .667       .0          2.666      1.4          4.666       .3          6.666       .0
 1.333      16.7          3.333       .4          5.333       .3

RUNOFF VOLUME =      1.48251 INCHES      =        2.5160 ACRE-FEET
PEAK DISCHARGE RATE =       72.55 CFS  AT   1.500 HOURS   BASIN AREA =   .0318 SQ. MI.


*** TOTAL FLOW @ AP3
ADD HYD              ID=19  HYD NO=400.17  ID I=13  ID II=18
PRINT HYD            ID=19 CODE=20

                                    HYDROGRAPH FROM AREA   400.17

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          2.000     20.5          4.000       .4          5.999       .5
  .667       .0          2.666      1.9          4.666       .4          6.666       .0
 1.333      23.0          3.333       .6          5.333       .5

RUNOFF VOLUME =      1.48251 INCHES      =        3.4698 ACRE-FEET
PEAK DISCHARGE RATE =      100.07 CFS  AT   1.500 HOURS   BASIN AREA =   .0439 SQ. MI.


*** TOTAL FLOW @ AP11
ADD HYD              ID=20  HYD NO=400.18  ID I=11  ID II=19
PRINT HYD            ID=20 CODE=20

                                    HYDROGRAPH FROM AREA   400.18

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          2.000     21.0          4.000       .4          5.999       .5
  .667       .0          2.666      1.9          4.666       .4          6.666       .0
 1.333      23.7          3.333       .6          5.333       .5
```

RUNOFF VOLUME = 1.49082 INCHES = 3.5504 ACRE-FEET
PEAK DISCHARGE RATE = 102.23 CFS AT 1.500 HOURS BASIN AREA = .0447 SQ. MI.

****
*** ROUTE SITE THROUGH DETENTION POND TO UNSER DIVERSION
****
* ALLOWABLE DISCHARGE IS 42.0 CFS PER DMP
ROUTE RESERVOIR ID=21 HYD NO=500.2 INFLOW ID=20 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	44.0
4.8	0.1770	45.0
15.1	0.3800	46.0
21.4	0.6094	47.0
26.2	0.8682	48.0
30.3	1.1576	49.0
33.8	1.4792	50.0
37.1	1.8347	51.0
40.0	2.2257	52.0

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	44.00	.000	.00
.33	.00	44.00	.000	.00
.67	.00	44.00	.000	.00
1.00	.00	44.00	.000	.00
1.33	23.68	44.58	.103	2.80
1.67	52.79	49.97	1.469	33.69
2.00	21.02	49.85	1.431	33.27
2.33	4.80	48.12	.903	26.70
2.67	1.94	46.09	.400	15.66
3.00	.96	45.01	.180	4.94
3.33	.61	44.56	.099	2.69
3.67	.48	44.32	.057	1.55
4.00	.43	44.20	.036	.97
4.33	.41	44.14	.025	.68
4.67	.42	44.11	.020	.54
5.00	.43	44.10	.018	.48
5.33	.46	44.10	.017	.46
5.67	.49	44.10	.017	.47
6.00	.54	44.10	.018	.50
6.33	.06	44.07	.013	.36
6.67	.01	44.04	.007	.18
7.00	.00	44.02	.003	.09
7.33	.00	44.01	.002	.04
7.67	.00	44.00	.001	.02
8.00	.00	44.00	.000	.01
8.33	.00	44.00	.000	.00

PEAK DISCHARGE = 34.493 CFS - PEAK OCCURS AT HOUR 1.80
MAXIMUM WATER SURFACE ELEVATION = 50.210
MAXIMUM STORAGE = 1.5538 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=21 CODE=2

OUTFLOW HYDROGRAPH RESERVOIR, 500.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.800	34.5	3.600	1.7	5.399	.5	7.199	.1
.067	.0	1.866	34.3	3.666	1.5	5.466	.5	7.266	.0
.133	.0	1.933	33.9	3.733	1.4	5.533	.5	7.333	.0
.200	.0	2.000	33.3	3.800	1.3	5.599	.5	7.399	.0
.267	.0	2.066	32.5	3.866	1.2	5.666	.5	7.466	.0
.333	.0	2.133	31.5	3.933	1.1	5.733	.5	7.533	.0
.400	.0	2.200	30.2	4.000	1.0	5.799	.5	7.599	.0
.467	.0	2.266	28.4	4.066	.9	5.866	.5	7.666	.0
.533	.0	2.333	26.7	4.133	.8	5.933	.5	7.733	.0
.600	.0	2.400	24.7	4.200	.8	5.999	.5	7.799	.0
.667	.0	2.466	22.6	4.266	.7	6.066	.5	7.866	.0
.733	.0	2.533	20.4	4.333	.7	6.133	.5	7.933	.0
.800	.0	2.600	17.9	4.400	.6	6.199	.5	7.999	.0
.867	.0	2.666	15.7	4.466	.6	6.266	.4	8.066	.0
.933	.0	2.733	12.7	4.533	.6	6.333	.4	8.133	.0
1.000	.0	2.800	9.9	4.600	.6	6.399	.3	8.199	.0
1.067	.0	2.866	7.8	4.666	.5	6.466	.3	8.266	.0
1.133	.0	2.933	6.2	4.733	.5	6.533	.2	8.332	.0
1.200	.1	3.000	4.9	4.800	.5	6.599	.2	8.399	.0
1.267	.7	3.066	4.3	4.866	.5	6.666	.2	8.466	.0
1.333	2.8	3.133	3.8	4.933	.5	6.733	.2	8.532	.0
1.400	9.9	3.200	3.4	4.999	.5	6.799	.1	8.599	.0
1.467	21.0	3.266	3.0	5.066	.5	6.866	.1	8.666	.0
1.533	28.1	3.333	2.7	5.133	.5	6.933	.1	8.732	.0
1.600	31.9	3.400	2.4	5.199	.5	6.999	.1	8.799	.0
1.667	33.7	3.466	2.1	5.266	.5	7.066	.1	8.866	.0
1.733	34.3	3.533	1.9	5.333	.5	7.133	.1	8.932	.0

RUNOFF VOLUME = 1.49082 INCHES = 3.5503 ACRE-FEET
PEAK DISCHARGE RATE = 34.49 CFS AT 1.800 HOURS BASIN AREA = .0447 SQ. MI.

****
*** THE FOLLOWING REPRESENT ADJACENT COLLECTOR STREETS
****
* BASIN 104.1 @ AP7 - BLUEWATER WEST OF 90TH
COMPUTE NM HYD ID=22 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=22  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.


* BASIN 105.1 @ AP8 - BLUEWATER @ EAST PL
COMPUTE NM HYD      ID=23  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=23  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.


* BASIN 200.1 @ AP9 - 90TH AT BLUEWATER
COMPUTE NM HYD       ID=24  HYD NO=200.2 DA=0.00250 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 =   8.0935    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 1.8700
AREA =      .002050 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 =   1.3103    CFS   UNIT VOLUME =    .9908       B =   388.14      P60 = 1.8700
AREA =      .000450 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=24  CODE=20

                                PARTIAL HYDROGRAPH   200.20

     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      1.5          3.333       .0          4.666       .0          5.999       .0

RUNOFF VOLUME =     1.79069 INCHES     =        .2388 ACRE-FEET
PEAK DISCHARGE RATE =        6.58 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.


* BASIN 600.1 @ AP10 - LOS VOLCANES ROAD @ EAST PL
COMPUTE NM HYD       ID=25  HYD NO=600.1 DA=0.00375 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 =   12.140    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
AREA =      .003075 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 =   1.9655    CFS   UNIT VOLUME =    .9941       B =   388.14      P60 = 1.8700
AREA =      .000675 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=25  CODE=20
```

HYDROGRAPH FROM AREA 600.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.3	4.000	.1	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.7	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.79069 INCHES = .3581 ACRE-FEET
PEAK DISCHARGE RATE = 9.86 CFS AT 1.500 HOURS BASIN AREA = .0038 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 12:37:49

PHASE ONE WITH INTERIM OFF-SITE

```
*************************************************************************
*                              AVALON UNIT 3
*                            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 WITH INTERIM OFF-SITE BASINS
*****************************************************************
* DEVELOPED SITE 14.0 ACRES
COMPUTE NM HYD        ID=1  HYD NO=101.UNDEV  DA=0.02188 SQ MI
                      PER A=0  PER B=21  PER C=21  PER D=58
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=1  CODE=20
* BASIN 200.0
COMPUTE NM HYD        ID=2  HYD NO=200.0  DA=0.09812 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
* BASIN 200.1 @ AP9 - 90 STREET
COMPUTE NM HYD        ID=3  HYD NO=200.1  DA=0.00122 SQ MI
                      PER A=0  PER B=0  PER C=18 PER D=82
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=3  CODE=20
* BASIN 600.0
COMPUTE NM HYD        ID=4  HYD NO=600.0  DA=0.04875 SQ MI
                      PER A=100  PER B=0  PER C=0  PER D=0
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=4  CODE=20
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/11/1999
INPUT FILE = C:\AVALON\99570-1.DAT 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	.02188	49.84	1.730	1.48256	1.500	3.559	PER IMP= 58.00
COMPUTE NM HYD	200.00	-	2	.09812	82.96	2.299	.43925	1.533	1.321	PER IMP= .00
COMPUTE NM HYD	200.10	-	3	.00122	3.22	.117	1.79069	1.500	4.121	PER IMP= 82.00
COMPUTE NM HYD	600.00	-	4	.04875	40.47	1.142	.43925	1.533	1.297	PER IMP= .00
FINISH										

```
AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
     RUN DATE (MON/DAY/YR) = 11/11/1999
     START TIME (HR:MIN:SEC) = 11:42:24     USER NO.= BRASHERE.I01
     INPUT FILE = C:\AVALON\99570-1.DAT

*************************************************************************
*                            AVALON UNIT 3
*                          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 WITH INTERIM OFF-SITE BASINS
*****************************************************************
* DEVELOPED SITE 14.0 ACRES
COMPUTE NM HYD     ID=1  HYD NO=101.UNDEV  DA=0.02188 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 =   50.102    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
AREA =      .012690 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
UNIT PEAK =   24.451    CFS   UNIT VOLUME =    .9999       B =   354.67      P60 = 1.8700
AREA =      .009190 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=20

                                   HYDROGRAPH FROM AREA 101.UNDEV

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          2.000     10.2          4.000       .2          5.999       .3
  .667       .0          2.666      1.0          4.666       .2          6.666       .0
 1.333      11.5          3.333       .3          5.333       .2

RUNOFF VOLUME =     1.48256 INCHES     =       1.7300 ACRE-FEET
PEAK DISCHARGE RATE =      49.84 CFS  AT   1.500 HOURS   BASIN AREA =   .0219 SQ. MI.


* BASIN 200.0
COMPUTE NM HYD      ID=2  HYD NO=200.0  DA=0.09812 SQ MI
                    PER A=100  PER B=0  PER C=0  PER D=0
                    TP=0.1333 HR  MASS RAIN=-1

K =   .159422HR    TP =   .133300HR    K/TP RATIO =  1.195964     SHAPE CONSTANT, N =  2.970381
UNIT PEAK =   205.66    CFS   UNIT VOLUME =    .9997       B =   279.40      P60 = 1.8700
AREA =      .098120 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

                                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          1.333       .0          2.666      1.9          4.000       .1          5.333       .0
  .667       .0          2.000      7.6          3.333       .5          4.666       .0

RUNOFF VOLUME =      .43925 INCHES     =       2.2986 ACRE-FEET
PEAK DISCHARGE RATE =      82.96 CFS  AT   1.533 HOURS   BASIN AREA =   .0981 SQ. MI.


* BASIN 200.1 @ AP9 - 90 STREET
COMPUTE NM HYD      ID=3  HYD NO=200.1  DA=0.00122 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 =   3.9496    CFS   UNIT VOLUME =    .9965       B =   526.28      P60 = 1.8700
    AREA =      .001000 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 =   .63943    CFS   UNIT VOLUME =    .9803       B =   388.14      P60 = 1.8700
    AREA =      .000220 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=3  CODE=20

                                PARTIAL HYDROGRAPH   200.10

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
      .000       .0          1.333       .9          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 =     1.79069 INCHES     =        .1165 ACRE-FEET
    PEAK DISCHARGE RATE =       3.22 CFS  AT   1.500 HOURS   BASIN AREA =   .0012 SQ. MI.


* BASIN 600.0
COMPUTE NM HYD      ID=4  HYD NO=600.0  DA=0.04875 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 =   100.04    CFS   UNIT VOLUME =    .9995       B =   273.54      P60 = 1.8700
    AREA =      .048750 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=4  CODE=20

                                HYDROGRAPH FROM AREA   600.00

     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      1.0          4.000       .1          5.333       .0
      .667       .0          2.000      3.8          3.333       .2          4.666       .0

    RUNOFF VOLUME =      .43925 INCHES     =       1.1420 ACRE-FEET
    PEAK DISCHARGE RATE =      40.47 CFS  AT   1.533 HOURS   BASIN AREA =   .0488 SQ. MI.


FINISH
```

```
NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 11:42:24
```

PHASE TWO WITH INTERIM OFF-SITE

```
*************************************************************************
*                              AVALON UNIT 3
*                            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 WITH INTERIM OFF-SITE BASINS
*****************************************************************
* DEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD        ID=1  HYD NO=101.UNDEV  DA=0.04688 SQ MI
                      PER A=0  PER B=21  PER C=21  PER D=58
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=1  CODE=20
* BASIN 200.0
COMPUTE NM HYD        ID=2  HYD NO=200.0  DA=0.1058 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
* BASIN 200.1 @ AP9 - 90TH STREET
COMPUTE NM HYD        ID=3  HYD NO=200.1  DA=0.00250 SQ MI
                      PER A=0  PER B=0  PER C=18  PER D=82
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=3  CODE=20
* BASIN 600.0
COMPUTE NM HYD        ID=4  HYD NO=600.0  DA=0.02547 SQ MI
                      PER A=100  PER B=0  PER C=0  PER D=0
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=4  CODE=20
* BASIN 600.1 @ AP10 - LOS VOLCANES ROAD
COMPUTE NM HYD        ID=5  HYD NO=600.1  DA=0.0375 SQ MI
                      PER A=0  PER B=0  PER C=18  PER D=82
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=5  CODE=20
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/11/1999
INPUT FILE = \AVALON\99570-2.DAT 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	.04688	106.77	3.707	1.48256	1.500	3.558	PER IMP= 58.00
COMPUTE NM HYD	200.00	-	2	.10580	89.82	2.479	.43925	1.533	1.327	PER IMP= .00
COMPUTE NM HYD	200.10	-	3	.00250	6.58	.239	1.79069	1.500	4.110	PER IMP= 82.00
COMPUTE NM HYD	600.00	-	4	.02547	21.15	.597	.43925	1.533	1.297	PER IMP= .00
COMPUTE NM HYD	600.10	-	5	.03750	98.42	3.581	1.79069	1.500	4.101	PER IMP= 82.00
FINISH										

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 11/11/1999
         START TIME (HR:MIN:SEC) = 12:17:08     USER NO.= BRASHERE.I01
         INPUT FILE = \AVALON\99570-2.DAT

*************************************************************************
*                            AVALON UNIT 3
*                          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 WITH INTERIM OFF-SITE BASINS
*****************************************************************
* DEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD       ID=1  HYD NO=101.UNDEV  DA=0.04688 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 =   107.35    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8700
AREA =      .027190 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 =   52.388    CFS   UNIT VOLUME =    1.000       B =   354.67      P60 = 1.8700
AREA =      .019690 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=20

                                   HYDROGRAPH FROM AREA 101.UNDEV

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          2.000     21.9          4.000       .5          5.999       .6
  .667       .0          2.666      2.1          4.666       .4          6.666       .0
 1.333     24.6          3.333       .7          5.333       .5

RUNOFF VOLUME =     1.48256 INCHES     =       3.7068 ACRE-FEET
PEAK DISCHARGE RATE =     106.77 CFS  AT   1.500 HOURS   BASIN AREA =   .0469 SQ. MI.


* BASIN 200.0
COMPUTE NM HYD      ID=2  HYD NO=200.0  DA=0.1058 SQ MI
                    PER A=100  PER B=0  PER C=0  PER D=0
                    TP=0.1333 HR  MASS RAIN=-1

K =   .158503HR    TP =   .133300HR    K/TP RATIO =  1.189070     SHAPE CONSTANT, N =  2.986225
UNIT PEAK =   222.79    CFS   UNIT VOLUME =    .9997       B =   280.70      P60 = 1.8700
AREA =      .105800 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

                                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          1.333       .0          2.666      2.0          4.000       .1          5.333       .0
  .667       .0          2.000      8.2          3.333       .5          4.666       .0

RUNOFF VOLUME =      .43925 INCHES     =       2.4785 ACRE-FEET
PEAK DISCHARGE RATE =      89.82 CFS  AT   1.533 HOURS   BASIN AREA =   .1058 SQ. MI.


* BASIN 200.1 @ AP9 - 90TH STREET
COMPUTE NM HYD      ID=3  HYD NO=200.1  DA=0.00250 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 =   8.0935    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 1.8700
    AREA =      .002050 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 =   1.3103    CFS   UNIT VOLUME =    .9908       B =   388.14      P60 = 1.8700
    AREA =      .000450 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=3  CODE=20

                                PARTIAL HYDROGRAPH   200.10

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
      .000       .0          1.333      1.8          2.666       .1          4.000       .0          5.333       .0
      .667       .0          2.000      1.5          3.333       .0          4.666       .0          5.999       .0

    RUNOFF VOLUME =     1.79069 INCHES     =        .2388 ACRE-FEET
    PEAK DISCHARGE RATE =       6.58 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.


* BASIN 600.0
COMPUTE NM HYD      ID=4  HYD NO=600.0  DA=0.02547 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 =   52.267    CFS   UNIT VOLUME =    .9994       B =   273.54      P60 = 1.8700
    AREA =      .025470 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=4  CODE=20

                                HYDROGRAPH FROM AREA   600.00

     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       .5          4.000       .0
      .667       .0          2.000      2.0          3.333       .1          4.666       .0

    RUNOFF VOLUME =      .43925 INCHES     =        .5967 ACRE-FEET
    PEAK DISCHARGE RATE =      21.15 CFS  AT   1.533 HOURS   BASIN AREA =   .0255 SQ. MI.


* BASIN 600.1 @ AP10 - LOS VOLCANES ROAD
```

```
COMPUTE NM HYD       ID=5  HYD NO=600.1  DA=0.0375 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 =   121.40    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8700
    AREA =      .030750 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 =   19.655    CFS   UNIT VOLUME =    .9998       B =   388.14      P60 = 1.8700
    AREA =      .006750 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=5  CODE=20

                                    HYDROGRAPH FROM AREA   600.10

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
      .000       .0          2.000     22.9          4.000       .5          5.999       .6
      .667       .0          2.666      2.0          4.666       .5          6.666       .0
     1.333     27.4          3.333       .7          5.333       .5

    RUNOFF VOLUME =      1.79069 INCHES      =       3.5814 ACRE-FEET
    PEAK DISCHARGE RATE =      98.42 CFS  AT   1.500 HOURS   BASIN AREA =   .0375 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 12:17:08
```

PHASE TWO WITH DEVELOPED OFF-SITE

```
*****************************************************************************
*                                AVALON UNIT 3
*                              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 WITH DEVELOPED OFF-SITE BASINS
*****************************************************************
* DEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD        ID=1  HYD NO=101.UNDEV  DA=0.04688 SQ MI
                      PER A=0  PER B=21  PER C=21  PER D=58
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=1  CODE=20
* BASIN 200.0 DEVELOPED IP ZONING
COMPUTE NM HYD        ID=2  HYD NO=200.0  DA=0.1539 SQ MI
                      PER A=0  PER B=7  PER C=8  PER D=85
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=2  CODE=20
* BASIN 200.1 @ AP9 - 90TH STREET
COMPUTE NM HYD        ID=3  HYD NO=200.1  DA=0.00250 SQ MI
                      PER A=0  PER B=0  PER C=18  PER D=82
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=3  CODE=20
* BASIN 600.0 DEVELOPED IP ZONING
COMPUTE NM HYD        ID=4  HYD NO=600.0  DA=0.04891 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 600.1 @ AP10 - LOS VOLCANES ROAD
COMPUTE NM HYD        ID=5  HYD NO=600.1  DA=0.00375 SQ MI
                      PER A=0  PER B=0  PER C=18  PER D=82
                      TP=0.1333 HR  MASS RAIN=-1
PRINT HYD             ID=5  CODE=20
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/18/1999
INPUT FILE = c:\avalon\99570-3.dat 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	NOTATION	
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.200
COMPUTE NM HYD	101.UNDEV	-	1	.04688	106.77	3.707	1.48256	1.500	3.558	PER IMP=	58.00
COMPUTE NM HYD	200.00	-	2	.15390	399.84	14.730	1.79461	1.500	4.059	PER IMP=	85.00
COMPUTE NM HYD	200.10	-	3	.00250	6.58	.239	1.79069	1.500	4.110	PER IMP=	82.00
COMPUTE NM HYD	600.00	-	4	.04891	127.84	4.681	1.79461	1.500	4.084	PER IMP=	85.00
COMPUTE NM HYD	600.10	-	5	.00375	9.86	.358	1.79069	1.500	4.107	PER IMP=	82.00
FINISH											

```
AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
     RUN DATE (MON/DAY/YR) = 11/18/1999
     START TIME (HR:MIN:SEC) = 11:40:38     USER NO.= BRASHERE.I01
     INPUT FILE = c:\avalon\99570-3.dat

*************************************************************************
*                            AVALON UNIT 3
*                          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 WITH DEVELOPED OFF-SITE BASINS
*****************************************************************
* DEVELOPED SITE 30.0195 ACRES
COMPUTE NM HYD       ID=1  HYD NO=101.UNDEV  DA=0.04688 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 =   107.35    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8700
AREA =      .027190 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 =   52.388    CFS   UNIT VOLUME =    1.000       B =   354.67      P60 = 1.8700
AREA =      .019690 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=20

                                   HYDROGRAPH FROM AREA 101.UNDEV

 TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
  HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS            HRS      CFS
  .000       .0          2.000     21.9          4.000       .5          5.999       .6
  .667       .0          2.666      2.1          4.666       .4          6.666       .0
 1.333     24.6          3.333       .7          5.333       .5

RUNOFF VOLUME =     1.48256 INCHES     =       3.7068 ACRE-FEET
PEAK DISCHARGE RATE =     106.77 CFS  AT   1.500 HOURS   BASIN AREA =   .0469 SQ. MI.


* BASIN 200.0 DEVELOPED IP ZONING
COMPUTE NM HYD      ID=2  HYD NO=200.0  DA=0.1539 SQ MI
                    PER A=0  PER B=7  PER C=8  PER D=85
                    TP=0.1333 HR  MASS RAIN=-1

K =   .074199HR    TP =   .133300HR    K/TP RATIO =   .556632     SHAPE CONSTANT, N =  6.917265
UNIT PEAK =   507.68    CFS   UNIT VOLUME =    .9995       B =   517.32      P60 = 1.8700
AREA =      .130815 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


K =   .115291HR    TP =   .133300HR    K/TP RATIO =   .864898     SHAPE CONSTANT, N =  4.109511
UNIT PEAK =   62.762    CFS   UNIT VOLUME =    1.000       B =   362.41      P60 = 1.8700
AREA =      .023085 SQ MI    IA =    .42000 INCHES    INF =   1.02600 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  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     94.8          4.000      2.2          5.999      2.7
  .667       .0          2.666      8.5          4.666      2.1          6.666       .1
 1.333    113.6          3.333      3.0          5.333      2.3          7.333       .0

RUNOFF VOLUME =     1.79461 INCHES     =      14.7301 ACRE-FEET
```

```
    PEAK DISCHARGE RATE =     399.84 CFS  AT   1.500 HOURS   BASIN AREA =   .1539 SQ. MI.


* BASIN 200.1 @ AP9 - 90TH STREET
COMPUTE NM HYD      ID=3  HYD NO=200.1  DA=0.00250 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 =   8.0935    CFS   UNIT VOLUME =    .9981       B =   526.28      P60 = 1.8700
    AREA =      .002050 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 =   1.3103    CFS   UNIT VOLUME =    .9908       B =   388.14      P60 = 1.8700
    AREA =      .000450 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=3  CODE=20

                                PARTIAL HYDROGRAPH   200.10

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     .000        .0          1.333      1.8          2.666       .1          4.000       .0          5.333       .0
     .667        .0          2.000      1.5          3.333       .0          4.666       .0          5.999       .0

    RUNOFF VOLUME =     1.79069 INCHES     =        .2388 ACRE-FEET
    PEAK DISCHARGE RATE =       6.58 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.


* BASIN 600.0 DEVELOPED IP ZONING
COMPUTE NM HYD      ID=4  HYD NO=600.0  DA=0.04891 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 =   164.13    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8700
    AREA =      .041574 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 =   19.632    CFS   UNIT VOLUME =    .9998       B =   356.70      P60 = 1.8700
    AREA =      .007337 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
```

HYDROGRAPH FROM AREA 600.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	30.0	4.000	.7	5.999	.9		
.667	.0	2.666	2.7	4.666	.7	6.666	.0		
1.333	36.3	3.333	.9	5.333	.7				

RUNOFF VOLUME = 1.79461 INCHES = 4.6813 ACRE-FEET
PEAK DISCHARGE RATE = 127.84 CFS AT 1.500 HOURS BASIN AREA = .0489 SQ. MI.

```
* BASIN 600.1 @ AP10 - LOS VOLCANES ROAD
COMPUTE NM HYD      ID=5  HYD NO=600.1  DA=0.00375 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 =   12.140    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
    AREA =      .003075 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 =   1.9655    CFS   UNIT VOLUME =    .9941       B =   388.14      P60 = 1.8700
    AREA =      .000675 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=5  CODE=20
```

HYDROGRAPH FROM AREA 600.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.3	4.000	.1	5.999	.1		
.667	.0	2.666	.2	4.666	.0	6.666	.0		
1.333	2.7	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.79069 INCHES = .3581 ACRE-FEET
PEAK DISCHARGE RATE = 9.86 CFS AT 1.500 HOURS BASIN AREA = .0038 SQ. MI.

```
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 11:40:39
```

BRASHER & LORENZ, INC.
2201 SAN PEDRO BLVD. NE BLDG 1, STE. 220
ALBUQUERQUE, NEW MEXICO 87110
Phone: (505) 888-6088
Fax: (505) 888-6188

FAX

To: FRED AGUIRRE

From: DENNIS LORENZ

Fax: 924-3864

Date: July 13, 2000

Phone:

Pages: 6 (including cover)

Re: AVALON UNIT 3A POND

MESSAGE:

FRED:

HERE IS OUR POND REDESIGN WHICH PROPOSES TO ENLARGE POND NO.3 OF THE UNSER DIVERSION. PER THE ATTACHED CALCULATIONS THE POND WILL BE ENLARGED BY 1.75 AF. THE EXCESS STORAGE AVAILIBLE IN THE POND IS 2.06 AF. OUR TOTAL DEVELOPED FLOW CONTRIBUTION TO THE SYSTEM IS 2.45 AF. THE RESULTING EXCESS STORAGE IS 1.36 SF.

THIS IS A CONSERVATIVE RETENTION ANALYSIS WHICH DOES NOT ACCOUNT FOR POND ROUTING THROUGH THE 42 INCH OUTLET PIPE WHICH DRAINS TO POND NO. 2.

PLEASE REVIEW AND CALL ME WITH YOUR COMMENTS.

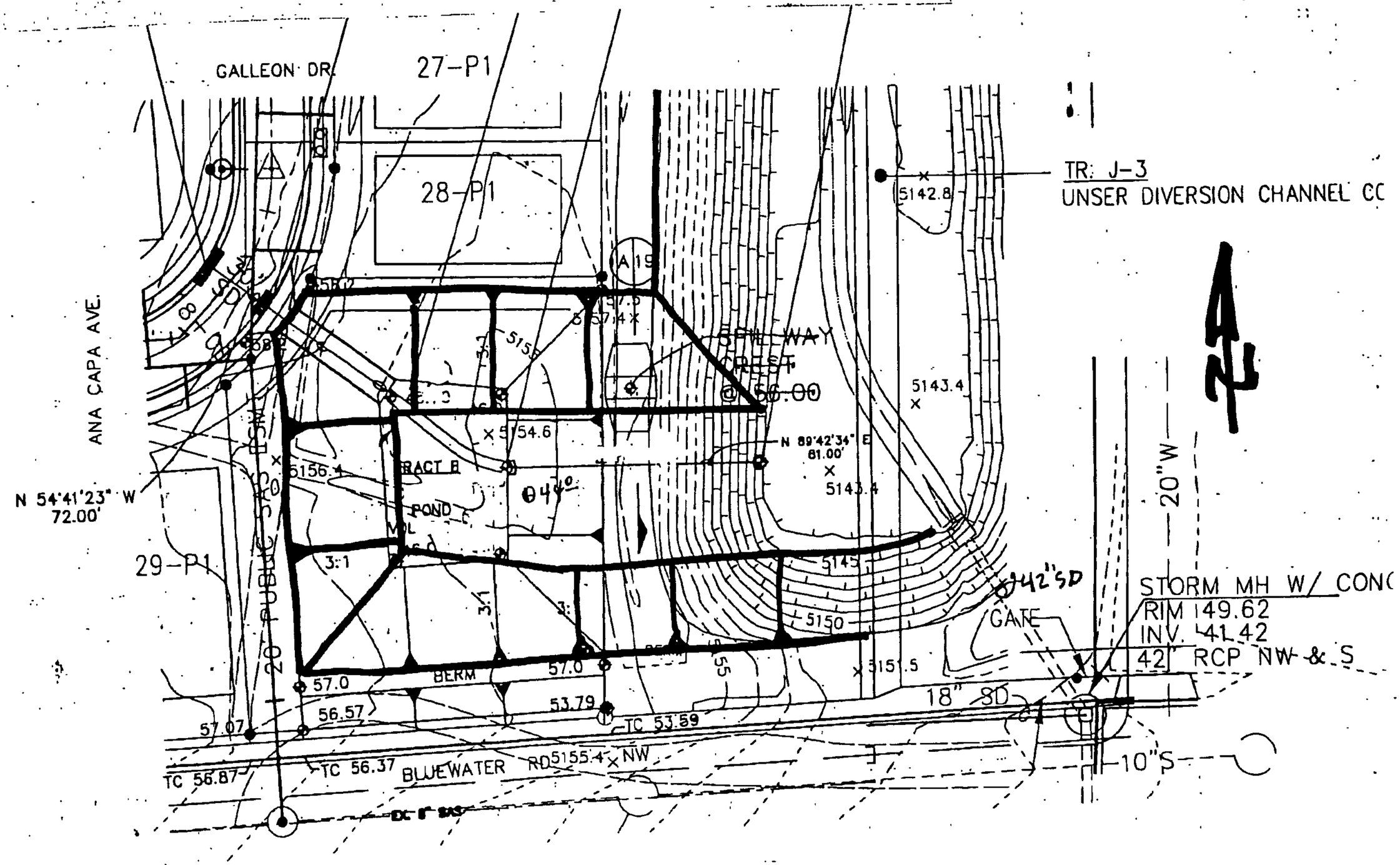
THANKS,

DENNIS

CC: BO JOHNSON 899-2851

ADDITION STORAGE

ELEV	A	VOL
44	7240	0
51	14250	76265
		= 1.75 AC



AVALON UNIT 3A	7-13-00		

PROJECT HYDROLOGY

SITE A = 30 AC ±

UNDEV : Q_{100} = 38.9 CFS
V_{100} = 1.10 AF

DEV : Q_{100} = 102.2 CFS
V_{100} = 3.55 AF
Q_{ALLOW} = 42.0 CFS (1.4 CFS/AC)

ADD'L VOL DUE TO DEV = -2.45 AF

ADD'L VOL PROPOSED BY POND EXPANSION = +1.75 AF

EXCESS VOL BELOW UNSER DIVERSION SPILLWAY = +2.06 AF

⇒ REMAINING EXCESS VOL = +1.36 AF

REQUEST FOR
CONDITIONAL LETTER OF MAP REVISION
FOR
THE UNSER DIVERSION
AND
THE ATRISCO BUSINESS PARK

Albuquerque, New Mexico
January 1994

Sponsored by: **Albuquerque Metropolitan Arroyo Flood Control Authority**
2600 Prospect Avenue NE
Albuquerque, NM 87107

Prepared for: **Sunwest Bank Special Assets Department**
303 Roma Avenue NW
Albuquerque, NM 87102

and

The Bell Group
6901 Washington NE
Albuquerque, NM 87109

Prepared by: **Easterling & Associates, Inc.**
10131 Coors Road NW
Albuquerque, New Mexico 87114-4048

I, Charles M. Easterling, do hereby certify that this report was prepared by me or under my direction and that I am a duly registered Professional Engineer under the laws of the State of New Mexico.

Charles M. Easterling, P.E.
NMPE No. 6411

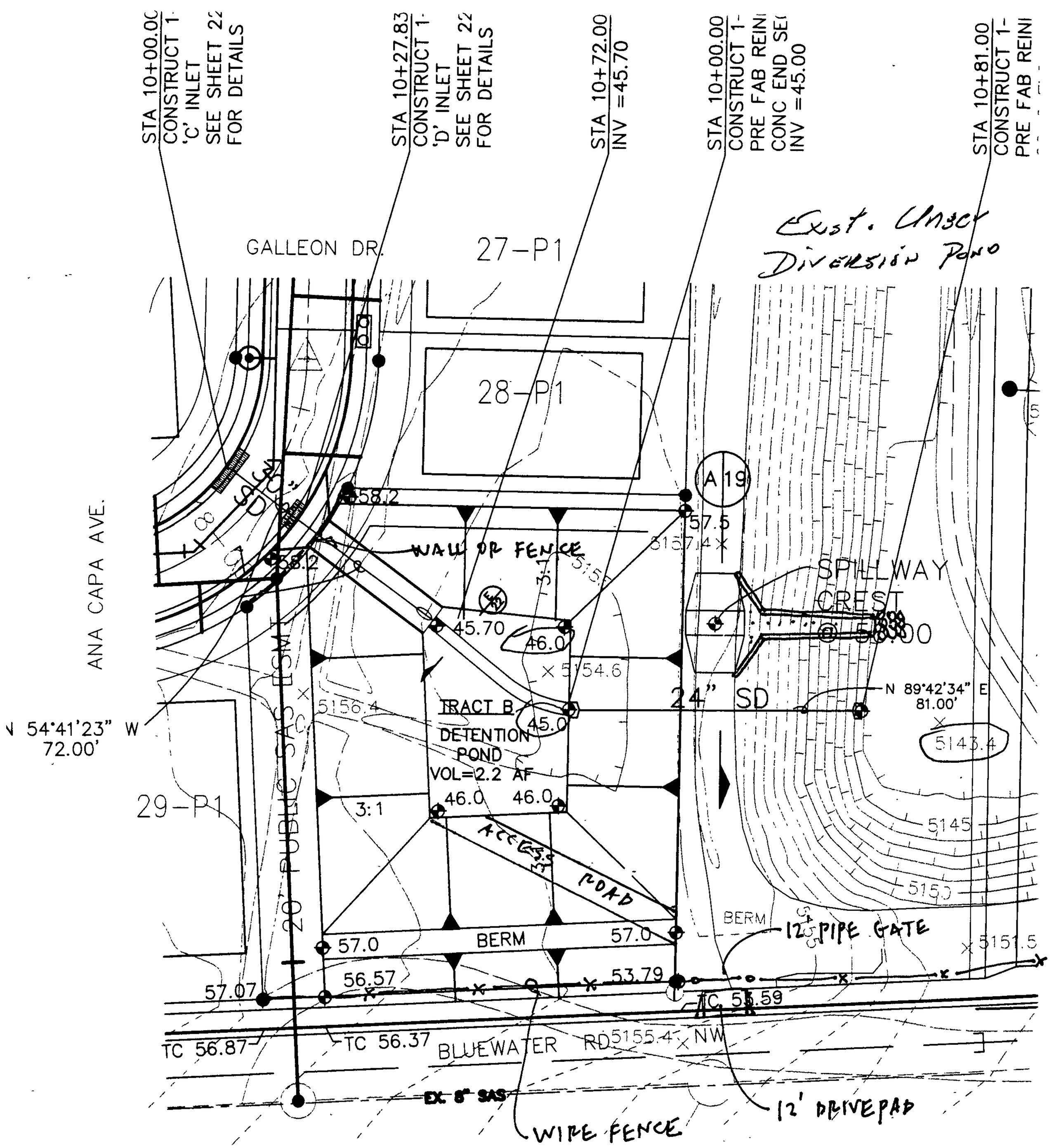
JAN 5 1994
Date

PAGE = 2

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
STORE HYD	130.84	-	15	.00010	5.87	.485	90.86078	5.000	91.719		
MODIFY TIME	130.84	15	15	.00010	11.74	.485	90.86878	4.900	183.413		
ADD HYD	130.85	15617	7	.32980	211.53	9.908	.56335	1.650	1.002		
ROUTE RESERVOIR	130.86	7	5	.32980	142.68	8.726	.49608	1.800	.676	AC-FT=	2.59
ROUTE	130.87	5	11	.32980	142.34	8.726	.49607	1.850	.674		
ROUTE RESERVOIR	130.88	11	5	.32980	75.56	5.468	.31088	2.100	.358	AC-FT=	4.51
ROUTE	130.89	5	10	.32980	78.05	5.468	.31088	2.100	.370		
COMPUTE NM HYD	140.10	-	1	.01960	18.50	.522	.49901	1.500	1.475	PER IMP=	.0
ROUTE	140.11	1	12	.01960	17.17	.522	.49908	1.550	1.368		
ROUTE	140.12	12	15	.01960	17.47	.522	.49909	1.600	1.393		
COMPUTE NM HYD	140.20	-	1	.08920	78.50	2.196	.46166	1.500	1.375	PER IMP=	.0
ADD HYD	140.21	156 1	2	.10880	92.62	2.718	.46840	1.550	1.330		
DIVIDE HYD	140.22	2	17	.10880	100.03	2.935	.50587	1.550	1.437		
	140.23	AND	16	.10880	7.41	.217	.03747	1.550	.106		
ADD HYD	140.24	17610	2	.43860	100.03	8.404	.35925	1.550	.356		
ROUTE RESERVOIR	140.25	2	4	.43860	68.61	6.433	.27502	2.250	.244	AC-FT=	2.72
ROUTE	140.26	4	10	.43860	68.47	6.433	.27502	2.250	.244		
ROUTE RESERVOIR	140.27	10	5	.43860	3.22	.557	.02380	5.650	.011	AC-FT=	5.93
ROUTE	130.28	5	10	.43860	3.23	.557	.02380	5.650	.011		
COMPUTE NM HYD	150.10	-	1	.15250	85.35	3.692	.45390	1.600	.876	PER IMP=	.0
DIVIDE HYD	150.11	1	17	.15250	89.62	3.876	.47660	1.600	.918		
	150.12	AND	16	.15250	4.27	.185	.02270	1.600	.044		
ADD HYD	150.13	10617	10	.59110	89.62	6.433	.14062	1.600	.237		
ROUTE RESERVOIR	150.14	10	5	.59110	.02	.038	.00122	29.950	.000	AC-FT=	6.39
FINISH											

POND NO 3 Qout = 68.61 CFS

```
** POND NO.4.
ADD HYD                ID=2  HYDROGRAPH NO=140.24  ID I=17  ID II=10
PRINT HYD              ID=2  CODE=1
**ROUTE THE COMBINED FLOW THROUGH UNSER DIVERSION POND NO.3.
**IN THE INTERIM CONDITION THE LOWER PORTION OF THIS POND WILL BE USED FOR
**RETENTION. THE UPPER PORTION OF THE POND WILL BE USED FOR DETENTION
**ASSUME OUTFLOW STRUCTURE IS AN 8' X 8' CONCRETE BOX SOLID TO ELEVATION 47.5
**FLOW IS CONTROLLED BY WIER FLOW OVER THE TOP OF THE CONCRETE BOX TO
**ELEVATION 48.5. AT ELEVATIONS GREATER THAN 48.5 THE FLOW IS CONTROLLED
**BY ORIFICE CONTROL AT THE ENTRANCE TO THE 42" DIA. OUTLET PIPE.
**.10 ACRE*FT OF VOLUME WHICH REPRESENTS 5 X THE ESTIMATED ANNUAL AVERAGE
**SEDIMENT YIELD IS OMITED  FROM THE STAGE STORAGE CURVE
ROUTE RESERVOIR        ID=4 HYDROGRAPH NO=140.25  INFLOW ID=2  CODE=24
                       OUTFLOW(cfs)    STORAGE(ac ft)    ELEV(ft)
                              0              0.00          43.0
                              0.01           0.0688        44.0
                              0.011          0.4970        45.0
                              0.012          1.0426        46.0
                              0.013          1.6424        47.0
                              0.014          1.9702        47.5 TOP OF OUTLET STRUC
                             23.3            2.2979        48.0
                             66.0            2.6543        48.5  WSE = 48.6
Qout = 68.6                  78.5            3.0106        49.0
VOL= 2.73 AF                 85.3            3.7821        50.0
EXCESS VOL= 2.06 AF          91.7            4.6138        51.0
                             93.2            4.7875        51.2 EMERGENCY SPILLWAY
                            194.2            5.5069        52.0
PRINT HYD              ID=4  CODE=1
**ROUTE THE OUTFLOW FROM THE POND THROUGH A 42" DIA STORM DRAIN UNDER BLUEWATER
**ROAD
COMPUTE RATING CURVE CID=1  VALLEY SECTION NO=1  CODE=-1  SLOPE=0.010
                     PIPE DIA=42  N=0.013
COMPUTE TRAVEL TIME  ID=10  REACH=1  NUMBER OF VALLEY SECTIONS=1
                     LENGTH=168 FT  SLOPE=0.010
ROUTE                ID=10  HYDROGRAPH NO=140.26  INFLOW ID=4  DT=0.0
PRINT HYD            ID=10  CODE=1
**ROUTE THE OUTFLOW THROUGH UNSER DIVERSION POND NO. 2
**IN THE INTERIM CONDITION THE LOWER PORTION OF THIS POND WILL BE USED FOR
**RETENTION. THE UPPER PORTION OF THE POND WILL BE USED FOR DETENTION
**ASSUME OUTFLOW STRUCTURE IS AN 8' X 8' CONCRETE BOX SOLID TO ELEV 44.8
**FLOW IS CONTROLLED BY WEIR FLOW BETWEEN ELEV 44.8 AND 46.0  THEN IT IS
**CONTROLLED BY THE ENTRANCE OF THE 48" DIA OUTLET PIPE
ROUTE RESERVOIR      ID=5 HYDROGRAPH NO=140.27  INFLOW ID=10  CODE=24
                     OUTFLOW(cfs)    STORAGE(ac ft)    ELEV(ft)
                            0            0.0000         37.9
                            0.01         0.0003         38.0
                            0.011        0.1818         39.0
                            0.012        0.7343         40.0
                            0.013        1.5680         41.0
                            0.014        2.4956         42.0
                            0.015        3.5621         43.0
                            0.016        4.6788         44.0
                            0.017        5.8772         44.8 TOP OF OUTLET STR
                           38.6          6.5179         45.5
                           86.8          7.1586         46.0
                          169.3          8.5245         47.0
                          178.5          9.8262         47.9 EMERGENCY SPILLWAY
```


STA 10+00.00
CONSTRUCT 1-
'C' INLET
SEE SHEET 22
FOR DETAILS
STA 10+27.83
CONSTRUCT 1-
'D' INLET
SEE SHEET 22
FOR DETAILS
STA 10+72.00
INV =45.70
STA 10+00.00
CONSTRUCT 1-
PRE FAB REIN
CONC END SE
INV =45.00
STA 10+81.00
CONSTRUCT 1-
PRE FAB REIN
Exist. Unsch
Diversion Pond
GALLEON DR.
27-P1
28-P1
29-P1
A19
ANA CAPA AVE.
WALL OR FENCE
SPILLWAY
CREST
24" SD
N 89°42'34" E
81.00'
N 54°41'23" W
72.00'
TRACT B
DETENTION
POND
VOL=2.2 AF
ACCESS ROAD
BERM
12' PIPE GATE
12' DRIVEPAD
WIRE FENCE
BLUEWATER RD
EX. 8" SAS
TC 56.87
TC 56.37
TC 56.59
57.07
56.57
53.79
57.0
45.70
46.0
45.0
58.2
57.5
5143.4
5145
5150
5151.5
5154.6
5156.4
5155.4
3:1

LINE 'A'

KPS:

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

December 5, 2002

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE Bldg. 1 Suite 220
Albuquerque, New Mexico 87110

RE: AVALON SUBDIVISION UNIT 3B (K-9/D15)
ENGINEERS CERTIFICATION
ENGINEERS STAMP DATED 8/9/2001
ENGINEERS CERTIFICATION DATED 11/26/2002

Dear Dennis:

Based upon the information provided your submittal dated 11/27/2002, the above referenced project is adequate to satisfy the Grading and Drainage Certification requirements for release of Financial Guaranty..

If you have any questions, please call me at 924-3981.

Sincerely,

Teresa A. Martin
Hydrology Plan Checker
Development & Building Ser. Division
BUS

C: Arlene Portillo # 655781
File

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

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/11/2002)

PROJECT TITLE: AVALON SUBDIVISION UNIT 3B
ZONE MAP/DRG. FILE #: K9 - D15
DRB #: 99 - 325
EPC#: —
WORK ORDER#: 655781

LEGAL DESCRIPTION: AVALON SUBDIVISION UNIT 3B
CITY ADDRESS: LOS VOLCANES RD NW

ENGINEERING FIRM: BRASHER + LORENZ
ADDRESS: 2201 SAN PEDRO NE
CITY, STATE: ALBQ NM
CONTACT: D. LORENZ
PHONE: 888-6088
ZIP CODE: 87110

OWNER: CWRB INC
ADDRESS: 6801 INDIAN SCHOOL NE
CITY, STATE: ALBQ NM SUITE 280
CONTACT: BO JOHNSON
PHONE: 450-4616
ZIP CODE: 87110

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

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

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

CHECK TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

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

RECEIVED
NOV 27 2002
HYDROLOGY SECTION

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

DATE SUBMITTED: 11.27.02
BY: DENNIS LORENZ

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

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

99570

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 20, 2001

Paul Brasher, PE
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1
Albuquerque, NM 87110

Re: Avalon 3B Amended Grading Plan
Engineer's Stamp dated 8-9-01 (K9/D15)

Dear Mr. Brasher,

Based upon the information provided in your submittal dated 8-10-01, the above referenced Amended Grading Plan is approved for Preliminary Plat action by the DRB. This is the plan that must be certified prior to release of Financial Guaranty.

Prior to Final Plat sign-off, the Subdivision Improvements Agreement (SIA) must be executed.

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

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

C: file

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NOV 27 2002
HYDROLOGY SECTION

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

City of Albuquerque
Planning Department
600 Second St. Plaza del Sol

99570

Certificate of Work Order Completion
October 4, 2002

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

Re: **Avalon Subdivision Unit 3B Project No. 6557.81 Map No. K-9**

Dear Sir:

This is to certify that Project No. 6557.81 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.

90th Street
24' FE(1) Collector Street (4'sidewlk east side) from Los Volcanes to N. property line Lot 20-P1, Blk 1.
Los Volcanes Rd
24' FE(6) major local street (s.side) from 90th Street to east side of Unser Diversion.
12" (7) sanitary sewer from 90th St to East side Unser Diversion.
Storm drain (5) 24"/30" storm sewer from Unser Diversion to 100 ft west
Helm Drive
36' FF (2) residential street, 6" waterline (3) from Los Volcanes to Santa Catalina.
San Nicholas Avenue
28' FF (2) residential street, 6" water line (3), 8 sanitary sewer (4) from Stern Drive to Galleon Drive.
Santa Catalina
28' FF (2) residential street, 6" waterline (3), 8" sanitary sewer (4) from Stern Drive to Galleon Drive.
Stern Drive
28' FF (2) residential street, 6" waterline (3), 8" sanitary sewer (4) from Santa Catalina to N. property line Lot 20-P1, Blk 1.
Galleon Drive
28' FF (2) residential street, 6" waterline (3), 8" sanitary sewer (4) from Santa Catalina to N. property line Lot 20-P1, Blk J.
Installed 6 street lights.

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,

Kevin Broderick, Principal Engineer
Planning Department

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NOV 27 2002
HYDROLOGY SECTION

c: Brasher & Lorenz
Sundance Mechanical
Master Scheduler
Project Administrator
Martin Barker, Materials Testing Lab
Orvis Bartow, Water Systems
Dave Harmon, Traffic Engineering, PWD
Josie Jaramillo, New Meter Sales, PWD
George King, Maps & Records, PWD
Project No. 6557.81

City of Albuquerque
Public Works Department
505-924-3900 (main number)
505-924-3864 (fax number)
Development and Building Services (One Stop Shop)
Plaza Del Sol Building, 2nd Floor
600 2nd Street NW
Albuquerque, NM 87102

City of Albuquerque
Public Works Dept.
Dev. & Bldg. Srvcs.

Fax

To: GLENN **From:** SUSAN

Fax: **Pages Sent:** (including this page) 3

Phone: **Date:**

Time:

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

Comments:

They're vacating the Slope easements west of the Unser Div. ponds and platting Lots. Let me know if this is unacceptable (I've already approved the Prelim. and final Plats)

— SMC

UNIT 3-B

UNIT 3-A

SCALE: 1" = 100'

100 50 0

TR. J-2
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)

TR. B-8E
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)

TR. J-2
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)

PERMANENT EASEMENT
SLOPE EASEMENT FOR FLOODWAY AND STORM DRAINAGE WORKS
DOC. #96124872
FILED: 11/15/96
BK. 96-30, PG. 6218-6225
TO BE VACATED BY FINAL PLAT (V-99-118)

TR. J-1
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77

TR. J-3
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)

SITE UNDER CONSTRUCTION
(NEW A.P.S. SCHOOL SITE)

TRACT B
DRAINAGE R.O.W.
GRANTED TO THE C.O.A. BY THE PLAT
21,416 SQ. FT.
(0.4916 ACRE)

20' PUBLIC SAS ESMT
GRANTED TO C.O.A. BY PLAT

ADDITIONAL 4' P.U.E.

20' S.A.S. ESMT.
FILED: 11/25/96
(96C-332)

STORM MH W/ CONC. PAD
RIM 49.62
INV. 41.42
42" RCP NW & S

GATE

INV. 40.22

42" CULVERT ON CONCRETE PAD

10' P.U.E.
(96C-77)

LOT 2-A2
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)

LOT 2-A
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77

GALLEON DRIVE NW (46' R.O.W.)

46' R/W

S 00°39'36" W

1,096.16'

311.43'

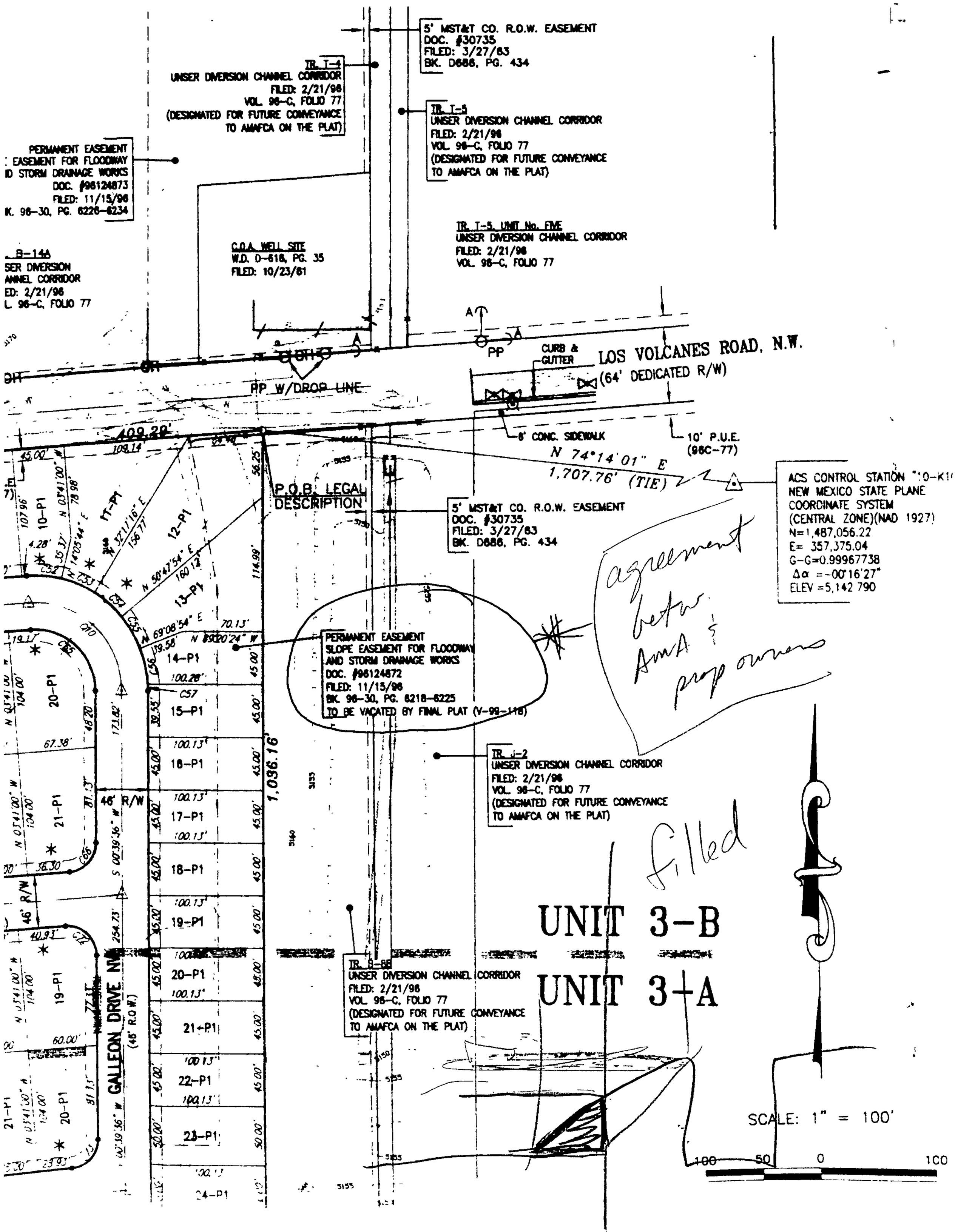
87°01'47" W

S 87°05'14" W

N 89°20'24" W

ILOCK B

D. N.W.


5' MST&T CO. R.O.W. EASEMENT
DOC. #30735
FILED: 3/27/63
BK. D686, PG. 434
TR. I-4
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)
TR. I-5
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)
PERMANENT EASEMENT
EASEMENT FOR FLOODWAY
ID STORM DRAINAGE WORKS
DOC. #96124873
FILED: 11/15/96
K. 96-30, PG. 6226-6234
B-14A
SER DIVERSION
ANNEL CORRIDOR
ED: 2/21/96
L. 96-C, FOLIO 77
C.O.A. WELL SITE
W.D. D-616, PG. 35
FILED: 10/23/61
TR. I-5, UNIT No. FIVE
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
PP W/DROP LINE
PP
CURB & GUTTER
LOS VOLCANES ROAD, N.W.
(64' DEDICATED R/W)
6' CONC. SIDEWALK
10' P.U.E.
(96C-77)
N 74°14'01" E
1,707.76' (TIE)
ACS CONTROL STATION
NEW MEXICO STATE PLANE
COORDINATE SYSTEM
(CENTRAL ZONE)(NAD 1927)
N=1,487,056.22
E= 357,375.04
G-G=0.99967738
Δα =-00°16'27"
ELEV =5,142.790
P.O.B. LEGAL DESCRIPTION
5' MST&T CO. R.O.W. EASEMENT
DOC. #30735
FILED: 3/27/63
BK. D686, PG. 434
PERMANENT EASEMENT
SLOPE EASEMENT FOR FLOODWAY
AND STORM DRAINAGE WORKS
DOC. #96124872
FILED: 11/15/96
BK. 96-30, PG. 6218-6225
TO BE VACATED BY FINAL PLAT (V-99-118)
agreement betw AMA & prop owners
TR. J-2
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)
filed
UNIT 3-B
UNIT 3-A
TR. B-8B
UNSER DIVERSION CHANNEL CORRIDOR
FILED: 2/21/96
VOL. 96-C, FOLIO 77
(DESIGNATED FOR FUTURE CONVEYANCE TO AMAFCA ON THE PLAT)
GALLEON DRIVE NW
(46' R.O.W.)
46' R/W
409.28'
1,036.16'
SCALE: 1" = 100'
100 50 0 100