19.00

646981

AGREEMENT AND COVENANT

12-14-00

K-21/D009F

This Agreement and Covenant, between the City of Albuquerque, New Mexico ("City") and Sam's East, Inc., an Arkansas Corporation, ("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 Chico and Eubank, in Albuquerque, New Mexico, and more particularly described as: (give legal description and filing information)

Lot 4, The Lenkurt Properties filed for record on 4/13/99 in Vol. 99C, Fol. 84C records of Bernalillo County Clerk, Bernalillo County, New Mexico.

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

SEE ATTACHED EXHIBIT "A"

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 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, so long as the work does not unreasonably interfere with the operation of the Improvement.

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 K21/D09F on file at the City Engineer's office. 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. The User will not interfere with the purpose of the City's Easement 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. Demand for Repair, Modification or Removal. The City may send written notice ("Notice") to

2001004335
5454983
Page: 1 of 7
01/16/2001 10:14A

the User requiring the User to repair, modify or remove the Improvement within 30 days ("Deadline") or such longer period of time if reasonably required and the User will comply promptly with the requirements of the Notice. The User will perform all required work by the Deadline, at User's sole expense.

5. 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.

6. Cancellation of Agreement and Release of Covenant. Upon prior written approval of the City Engineer, this Agreement may be canceled and User's covenants released by the City 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.

7. 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.

8. 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.

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

Sam's East, Inc.
2001 S.E. 10th Street
Bentonville, AR 72712-6489
Attn: Randy Crossno

with copy to:
Tierra West LLC
Attn. Ron Bohannan
8509 Jefferson NE
Albuquerque, NM 87113

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.

10. 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.

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

12. 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.

13. 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.

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

15. 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.

16. 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: _____
for Chief Administrative Officer

Dated: 1-9-01

USER: Sam's East, Inc., an Arkansas corp.

By: _____
Title: Assistant Vice President

Dated: 10-13-00

Approved as to legal terms only
by _____
Wal-Mart Legal Team
Date: 10-13-00

x:\pubprop\share\agrekjc\samsagr2.cov

APPROVED:

Director, Public Works Dept. 12/14/00

Reviewed by:

City Engineer 12/12/00

11/14/00

CITY'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on December 14, 2000, by Fred J. Aguirre for Chief Administrative Officer for the City of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

Gloria D. Saavedra
Notary Public

My Commission Expires:

11-15-2003

USER'S ACKNOWLEDGMENT

STATE OF ARKANSAS)
) ss.
COUNTY OF BENTONVILLE)

This instrument was acknowledged before me on Oct-13, 2000, by ROBERT M. BEDARD ASST. V. PRES, on behalf of SAM'S EAST, INC.

Bianca Maria Thornton
Notary Public

My Commission Expires:

7-1-2010

"OFFICIAL SEAL"
BIANCA MARIA THORNTON
Notary Public, State of Arkansas
County of Benton
My Commission Exp. 07/01/2010

x:\pubprop\share\agrekjc\samsagr2.cov

EXHIBIT "A"
PG. 1 OF 3

LEGAL DESCRIPTION

An Easement situate within Section 21, Township 10 North, Range 4 East, New Mexico Principal Meridian, City of Albuquerque, Bernalillo County, New Mexico, lying within Lot 4, The Lenkurt Properties as the same is shown and designated on said plat filed for record in the office of the County Clerk of Bernalillo County, New Mexico on April 13, 1999 in Volume 99C, Folio 84, and being more particularly described by survey performed by Russ P. Hugg, New Mexico Professional Surveyor number 9750 using plat bearings and ground distances as follows:

BEGINNING at the Southwest corner of the easement herein described, whence the Southwest corner of said Lot 4, The Lenkurt Properties bears S 84°11'34" W, 94.90 feet; Thence,

N 00°14'29" E, 44.64 feet to a point; Thence,

N 90°00'00" E, 45.84 feet to a point of curvature; Thence,

Northeasterly, 39.27 feet along the arc of a curve to the left (said curve having a radius of 25.00 feet, a central angle of 90°00'00" and a chord which bears N 45°00'00" E, 35.36 feet) to a point of tangency; Thence,

N 00°00'00" E, 277.14 feet to a point of curvature; Thence,

Northeasterly, 25.00 feet along the arc of a curve to the right (said curve having a radius of 15.00 feet, a central angle of 95°30'30" and a chord which bears N 47°45'15" E, 22.21 feet) to a point of tangency; Thence,

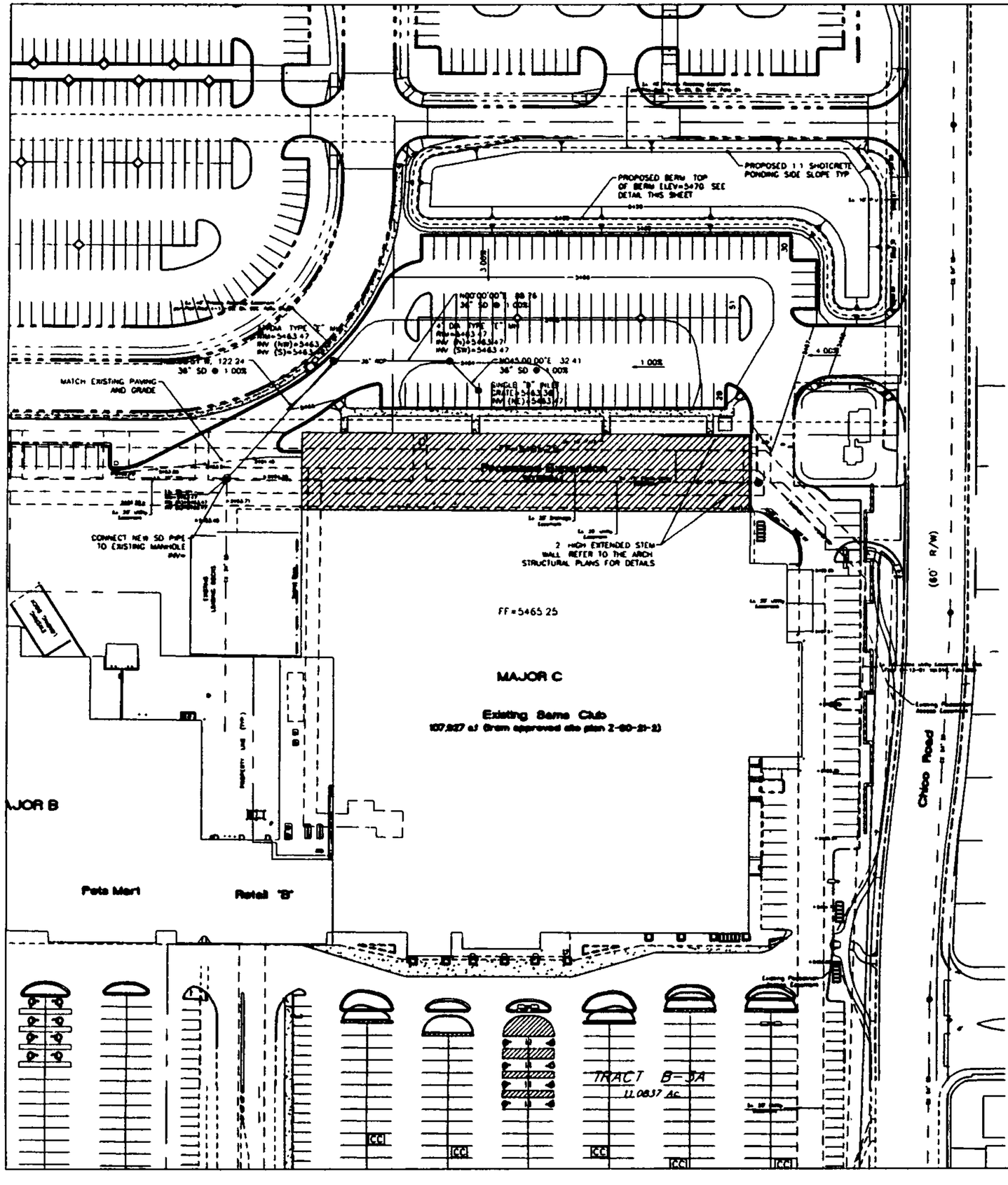
S 84°29'30" E, 24.84 feet to a point of curvature; Thence,

Southeasterly, 19.54 feet along the arc of a curve to the right (said curve having a radius of 15.00 feet, a central angle of 74°38'38" and a chord which bears S 47°10'11" E, 18.19 feet) to a point of tangency; Thence,

S 00°14'29" W, 283.42 feet to the Southeast corner of the easement herein described; Thence,

N 89°45'31" W, 135.47 feet to the point of beginning of the easement herein described.

Said easement contains 0.6024 acres, more or less.



NOTICE TO CONTRACTORS

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

2 ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

3 TWO WORKING DAYS PRIOR TO ANY EXCAVATION CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234 FOR LOCATION OF EXISTING UTILITIES

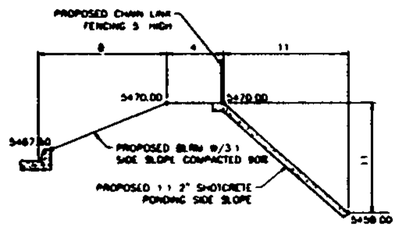
4 PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS SHOULD A CONFLICT EXIST THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY

5 BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE

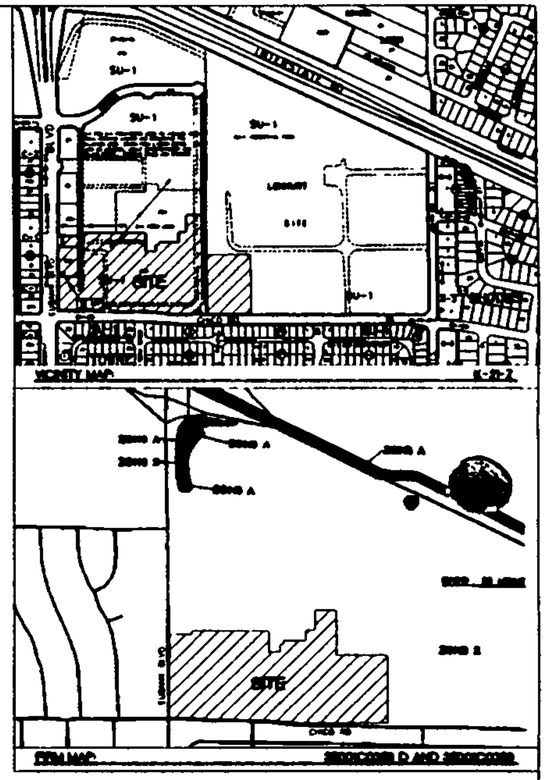
6 [illegible] FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER

7 WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS

8 CONTRACTOR IS RESPONSIBLE TO PROVIDE UTILITY STUBS 5' FROM BUILDING



SECTION A-A
NTS



LEGAL DESCRIPTION
TRACT B-3A TOWNE PARK PLAZA AND LOT 4 LENHART PROPERTIES

LEGEND
- EXISTING CURB
- FUTURE IMPROVEMENTS
- EXISTING BUILDING
- PROPOSED EXPANSION
- PROPOSED CURB
- BOUNDARY LINE

CAUTION:
EXISTING UTILITIES ARE NOT SHOWN IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS

GRAPHIC SCALE
40 20 0 20 40
SCALE 1"=40'

ENGINEER'S SEAL

RONALD R BOHANNAN P.E. 7868

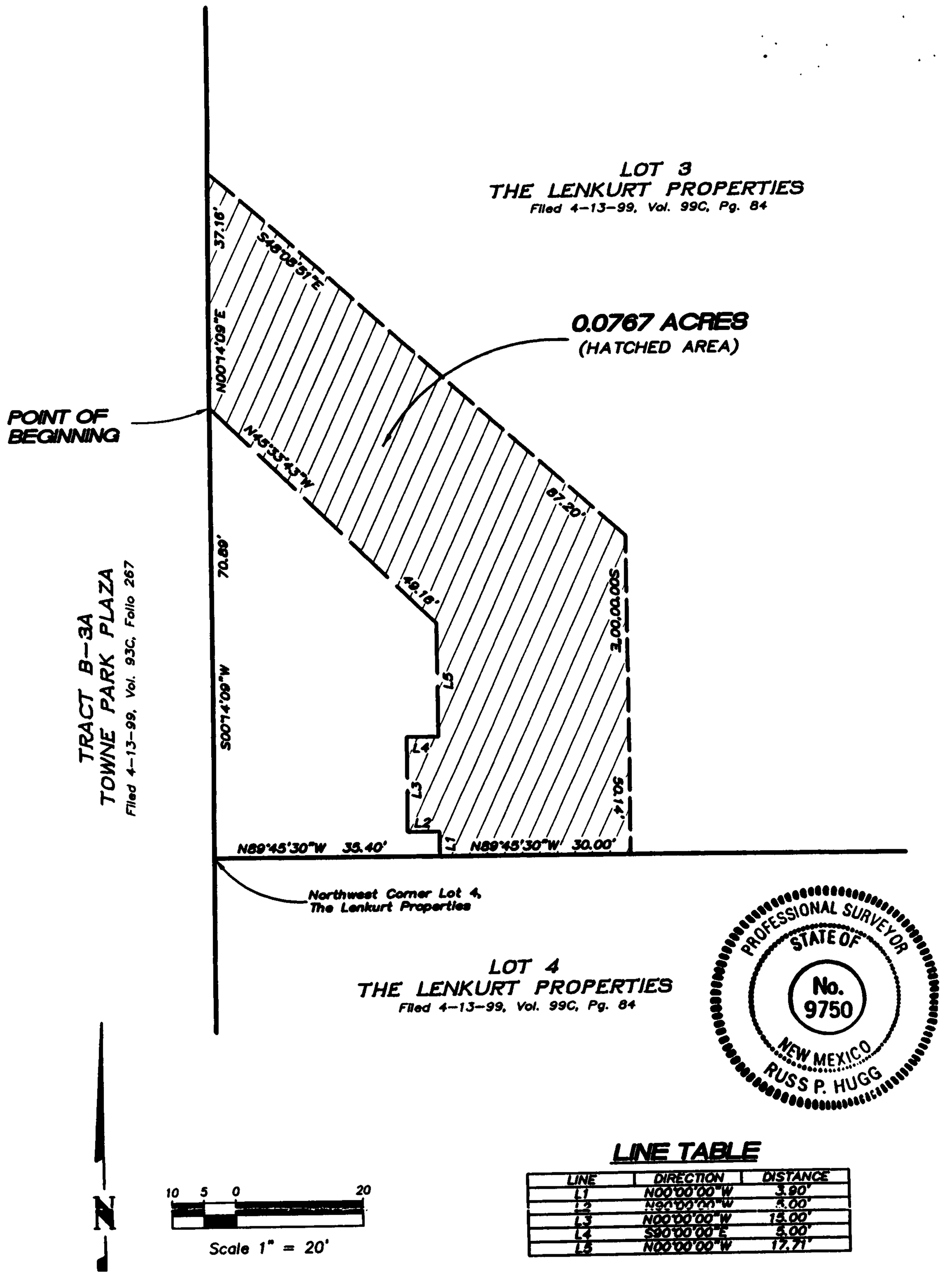
ALBUQUERQUE SAM'S EXPANSION, NM# 6672

CONCEPTUAL GRADING AND DRAINAGE PLAN

TIERRA WEST, LLC
8509 JEFFERSON NE
ALBUQUERQUE NEW MEXICO 87113
(505)858-3100

DRAWN BY JDN
DATE 5-23-00
REVISION DATE
SHEET # 5
JOB # 990029

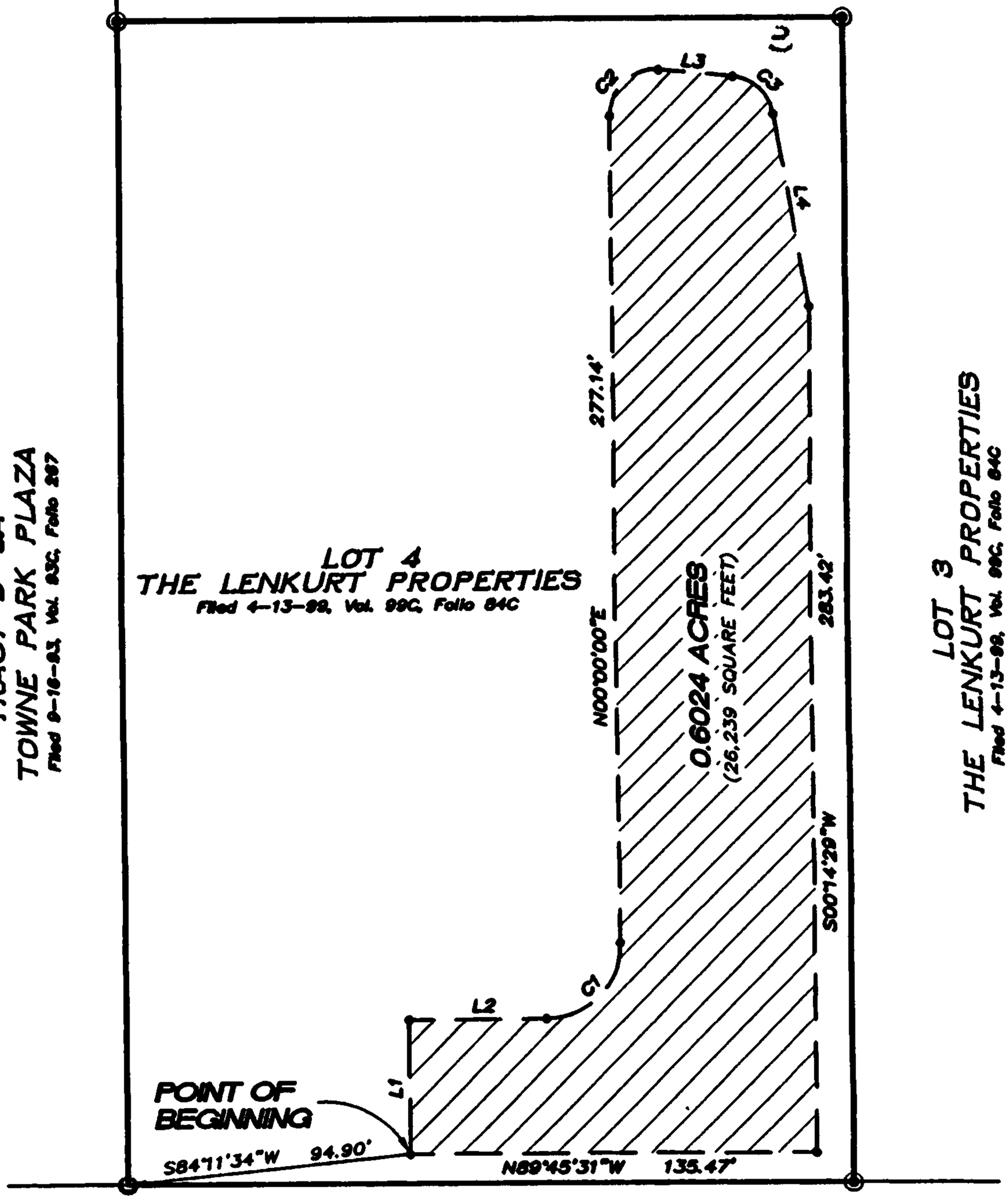
EXHIBIT "A" PAGE 3 OF 3



LINE TABLE

LINE	DIRECTION	DISTANCE
L1	N00°00'00"W	3.90'
L2	N90°00'00"W	5.00'
L3	N00°00'00"W	13.00'
L4	S90°00'00"E	5.00'
L5	N00°00'00"W	12.71'

EXHIBIT "A"
PG. 2 OF 2



LINE TABLE

LINE	DIRECTION	DISTANCE
L1	N00°14'29"E	44.64'
L2	N90°00'00"E	45.84'
L3	S84°29'30"E	24.84'
L4	S09°30'31"E	65.08'

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	25.00'	39.27'	25.00'	35.36'	N45°00'00"E	90°00'00"
C2	15.00'	25.00'	16.52'	22.21'	N47°43'15"E	95°30'30"
C3	15.00'	19.54'	11.44'	18.19'	S47°10'11"E	74°38'38"

SURV TEK, INC.
Consulting Surveyors
Phone: 505-897-3366
Fax: 505-897-9977

CONTRACT CONTROL FORM

PRELIMINARY REVIEW

Project # 646981
CCN# 20010071 3
Contact Person Terri
Phone No. 924-3996
(New) ~~or Ext.~~ #

Type of Agreement: AGREEMENT + COVENANT

Description/Project Name: SAM'S CLUB EXPANSION
Public Works Dept./Div.: PROJECT REVIEW SECTION
Developer: SAM'S EAST, INC.
Contract Amount $ -0- SIA Contract Period: 12-14-00 - 12-31-20
Contract Amount $ S/W Contract Period: -

DRAFT CONTRACT:
Rec'd by Legal: Rejected/Returned to Dept.: 11/27/00 /
Returned to Legal: 11/29/00 AUP / Appproved: 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
Utilitiy Div				
Hydrology Div	10-31-00		BLB	11/3/00
Transportation Div				
DRC Chairman	11-08-00 AUP		KB	11-14-00
Legal Dept	11-20-00 AUP			12/27/00
City Engineer	12-11-00 AUP		FA	12-14-00
PWD Director				
Finance				
City Clerk				
CAO				

of 11/20/:

DISTRIBUTION:

	Date:	By:
User Department.	12-29-00	AUP
Vendor		
City Clerk	1/19/01	
Treasury		
Other:		

ALBUQUERQUE CITY CLERK
01 JAN 19 PM 3:16

ADDENDUM TO COVER PAGE

10-31-00
(Date)

TO: Kevin Curran, Assistant City Attorney, Legal Department

FROM: Project Administrator, Project Review Sec., PWD

SUBJECT: PROJECT TITLE: SAM'S CLUB EXPANSION PROJECT # 646981

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

11/14/00

ITEM	ACTION		
	Review & Approval	Reference	Comments
Procedure "A"	☐☐☐	☐☐	
Procedure "B"	☐☐☐	☐☐	
Procedure "B" Modified Non Work Order	☐☐☐	☐☐	
Procedure "C"	☐☐☐	☐☐	
Procedure "C" Modified	☐☐☐	☐☐	
Special Agreement	☐☐☐	☐☐	
Sidewalk Deferral Agreement	☐☐☐	☐☐	
Amendment	☐☐☐	☐☐	
Assignment	☐☐☐	☐☐	
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	☐☐☐	☐☐	
Monitoring Well Permit	☐☐☐	☐☐	
Agreement & Covenant	☑☐☐	☐☐	
Drainage Covenant	☐☐☐	☐☐	
Revocable Permit	☐☐☐	☐☐	
Encroachment	☐☐☐	☐☐	
Permanent Easement	☐☐☐	☐☐	
Temporary Easement	☐☐☐	☐☐	

Other:

Please Call Terri at 924-3996 if you have any questions regarding the above or when the documents are ready to be picked up.

No. of Attachments (1)

City of Albuquerque

July 18, 2000

Ron Bohannan, PE
Tierra West LLC
8509 Jefferson NE
Albuquerque, NM 87113

Re: Sam's Club East - Albuquerque Store #6672-01 Drainage Report
Engineer's Stamp dated 7-14-00 (K21/D09F)

Dear Mr. Bohannan,

Based upon the information provided in your resubmittal dated 7-17-00, the above referenced plan is approved for Site Development Plan for Subdivision, Site Development Plan for Building Permit and Building Permit.

Please be advised that the Grading Permit cannot be approved until the Site Plan is signed off by DRB.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

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

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Senior Engineer, Hydrology

C: file

TIERRA WEST, LLC

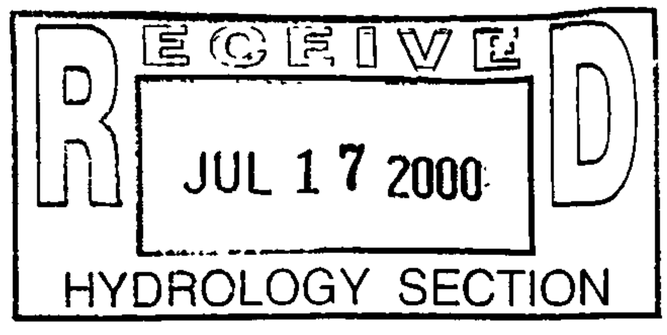
8509 Jefferson NE
Albuquerque, NM 87113

(505) 858-3100
fax (505) 858-1118

e-mail: twdms@aol.com
1-800-245-3102

July 14, 2000

Mr. Brad Bingham
Senior Engineer/Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103



RE: Sam's Club East (K21/D09F)

Dear Mr. Bingham:

We have addressed the comments from your letter dated July 11, 2000, and several phone conversations in the following manner:

1. Please stamp the Grading Plan and make sure that it has the same date as the report. Also, the north arrow should point to plan left, not as shown.
   The Grading Plan and drainage report have the same stamp date. Also, the north arrow has been corrected on the Grading Plan and in the report exhibits.

2. Please add and label the pipe work needed for interim and ultimate conditions. Also, add any reference to orifice plates as needed.
   We labeled all pipes needed and included the orifice plate at the pond. We have revised the AHYMO to show the pond draining to the Towne Park Plaza storm drain system. The pond discharges 7.48 cfs to the system. However, the peak flow from the pond reaches the system after the peak has passed for Towne Park Plaza. Consequently, the pond only increases the flow to Eubank by 0.1 cfs. We are no longer showing an ultimate and interim solution. Since the pond has no adverse affect on Towne Park Plaza, it will continue to drain there in the future. A storm drain connection to the Cinemark system is no longer needed.

3. You will need to adjust the invert at your proposed Double D inlet and also provide inverts at all pertinent manholes as well.
   We have shown inverts at all inlets and manholes on the site.

4. Show the Water Surface Elevation in the pond
   This is now shown on the Grading Plan.

5. Demonstrate downstream capacity within the Towne Park Plaza storm drain system for the discharge from the pond.
   This has been shown in the new AHYMO included in the drainage report. The system has capacity for the additional flows.

6. Clean up the notes on the Grading Plan and various typos in the drainage report.
   The notes on the Grading Plan were revised and the drainage report checked.

We addressed all your comments and, if possible, we would like approval for Building Permit as well as Site Plan for Subdivision and Site Plan for Building Permit. If you have any questions regarding this matter, please do not hesitate to call me.

Sincerely,

Sara Lavy

Sara Lavy

Enclosures

cc: Mohsen Ghadimkhani

JN: 990029
scl

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Sam's Club East **ZONE ATLAS/DRNG. FILE #:** K-21/D9F

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

LEGAL DESCRIPTION: *Tract B3A Towne Park Plaza*

CITY ADDRESS: Northeast Corner of Chico and Eubank

ENGINEERING FIR TIERRA WEST, LLC **CONTACT:** RONALD R. BOHANNAN OR SARA LAVY

ADDRESS: 8509 Jefferson NE, ABQ, NM 87113 **PHONE:** (505) 858-3100

OWNER: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

ARCHITECT: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

SURVEYOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

CONTRACTOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- _____ YES
- X NO
- _____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- _____ SKETCH PLAN APPROVAL
- _____ PRELIMINARY PLAT APPROVAL
- X S. DEV. PLAN FOR SUB'D. APPROVAL
- X S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- _____ SECTOR PLAN APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY APPROVAL
- X GRADING PERMIT APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ S. A. D. DRAINAGE REPORT
- _____ DRAINAGE REQUIREMENTS
- _____ *OTHER*

DATE SUBMITTED: 7/14/00

BY: *SARA LAVY*

RECEIVED
JUL 17 2000
HYDROLOGY SECTION

DRAINAGE REPORT

for

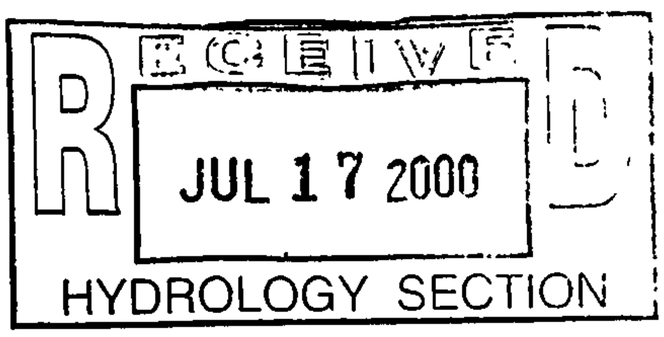
Sam's Club East
Store # 6672-01

Prepared by

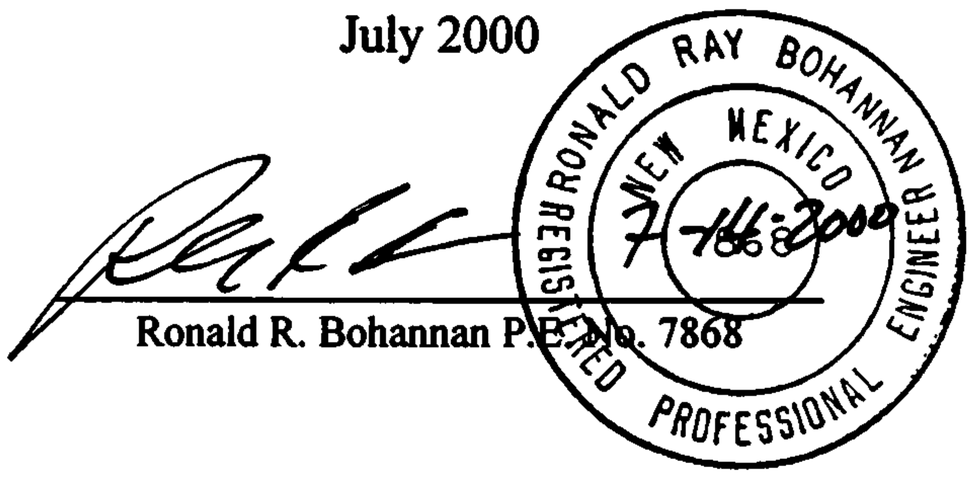
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

Prepared for

Sam's Club, Inc.
2001 Southeast 10th Street
Bentonville, AR 72712-6489



July 2000



Ronald R. Bohannan P.E. No. 7868

CITY OF Albuquerque

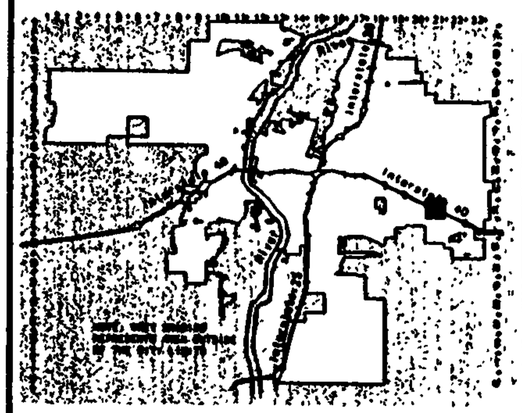
AGIS Albuquerque Geographic Information System

PLANNING DEPARTMENT

AGIS

GRAPHIC SCALE IN FEET

250 0 500 1000



Zone Atlas Page
K-21-Z

Map Amended through
September 16, 1999

Location

The site is located at the northeast corner of Eubank Boulevard and Chico Road and is shown on the attached Zone Atlas Map K-21. The site is the location of an existing Sam's Club and Lot 4 of the adjacent Lenkurt site. The proposed improvements include an expansion of the Sam's Club on the north side of the building and a service station in the southwest corner of the site. The purpose of this report is to provide the drainage analysis and management plan for the new improvements.

Existing Drainage Conditions

The majority of the site is currently developed. There is an existing Sam' Club and parking lot on the site. The drainage was analyzed by Bohannan-Huston Inc. in the "Master Drainage Report for Towne Park Plaza" in 1991 (K21-D9A). We are not changing the existing drainage patterns of this site.

Lot 4 of the Lenkurt site is undeveloped at this time. A drainage plan for Cinemark was approved and includes this site. That report was done by Bohannan-Huston Inc. in 1999 and is titled "Cinemark Drainage Report" (K21-D9). Lot 4 has been bought by Sam's Club and will be used for additional parking for the site.

No flows enter the site from the south or west sides of the site. A large offsite basin of approximately 180 cfs enters Lot 4 from Chico Road (east of the site). A new detention pond will be constructed east of the expansion to contain these flows. The undeveloped Lenkurt site discharges 9.7 cfs to the existing Wal-Mart and Home Base site. This flow comes from east of the Wal-Mart site. Most of the offsite flow is located on Lot 4 and will be accounted for in Basin 1100-A. In the future, when Cinemark is developed, the remainder of the off-site flow will be contained on-site. In the interim, the portion of the 9.7 cfs that is not within Lot 4 will continue its existing drainage pattern.

FIRM Map and Soil Conditions

The site is located on FIRM Maps 35001C0358 D and 359 D. The maps shows that the site does not lie within any 100 year flood plains.

ZONE AO
(DEPTH 1)

HOTEL

CIRCLE

STREET

ANGELIN

TOMASITA

FREEWAY

MARCELLA

40

ZONE A

ZONE A

ZONE X

ZONE A

ZONE A

40

21

CAMINO DE LENKURT

STREET

DON

GRETTA

ZONE X

SITE

FIRM MAP 35001C0358 D AND 359 D

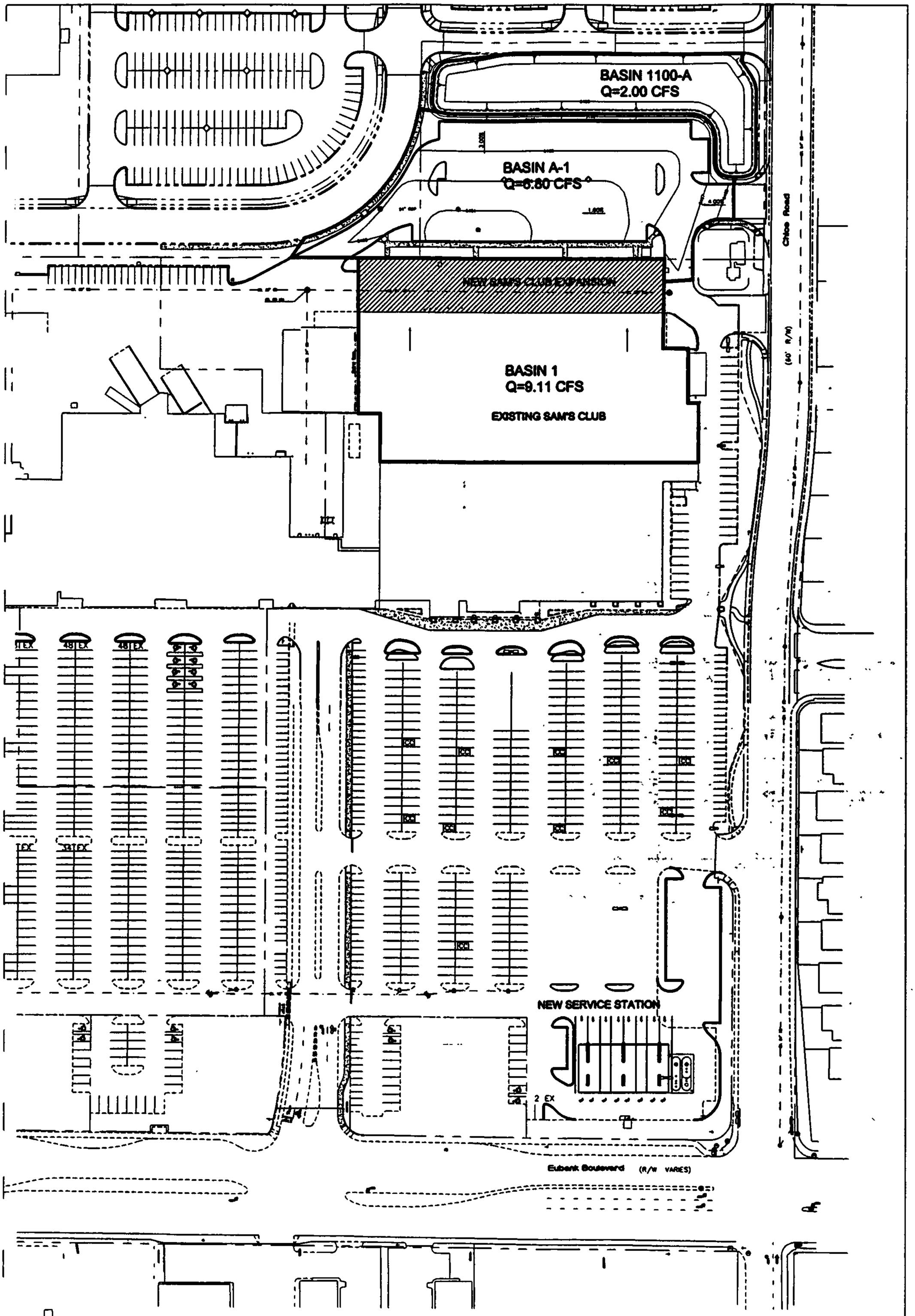
The site contains one soil from the Soil Conservation Service Soil Survey of Bernalillo County. The soil is a Tijeras gravelly fine sandy loam. This soil has moderate runoff and a moderate hazard of water erosion.

On-Site Drainage Management Plan

The onsite drainage management is to continue the existing drainage patterns on the Sam's Club site and construct a pond to contain the offsite flows that enter Lot 4. The new service station and the expansion are located on the existing Sam's Club site and do not change the existing drainage patterns or rates. The new service station does not change the land treatments for the site and will continue to drain in the same manner as previously designed. Currently, the Sam's Club drains through roof drains to the rear of the building. A storm drain collects the flows and they are routed through the Towne Park Shopping Center to the storm drain system in Eubank Boulevard. The expansion interferes with the existing storm drain line behind Sam's Club and will cause the storm drain to be rerouted to Lot 4. The new expansion will continue allowing roof drains to drain into the parking lot. There will be no increase in flows because of the expansion, as the land treatment has not changed. The new relocated storm drain will collect the flows from the expansion and the new parking lot and connect to the existing Towne Park Plaza system.

Lot 4 has been divided into two basins. Basin 1 has a developed flow of 9.11 cfs and consists of the roof drainage from the Sam's Club. Basin A-1 consists of the new parking lot behind Sam's Club and has a developed flow of 6.80 cfs. Both basins will drain to a new drop inlet located in the parking lot that will collect 15.91 cfs. This inlet will connect to the Towne Park Plaza storm drain system. The pipe calculations and the AHYMO show the system has capacity for the flows.

Basin 1100-A has a developed flow of 2.00 cfs and consists of the pond area for the offsite overflow from Chico Road. The drainage report for Cinemark showed all of Lot 4 as a pond for the offsite flows. This pond has been reduced in area to allow for the expansion but increased in depth to continue to provide the required volume of approximately four acre-feet. The new pond was incorporated into the Cinemark AHYMO for the offsite basins. This shows the pond has capacity for the overflow from Chico Road.



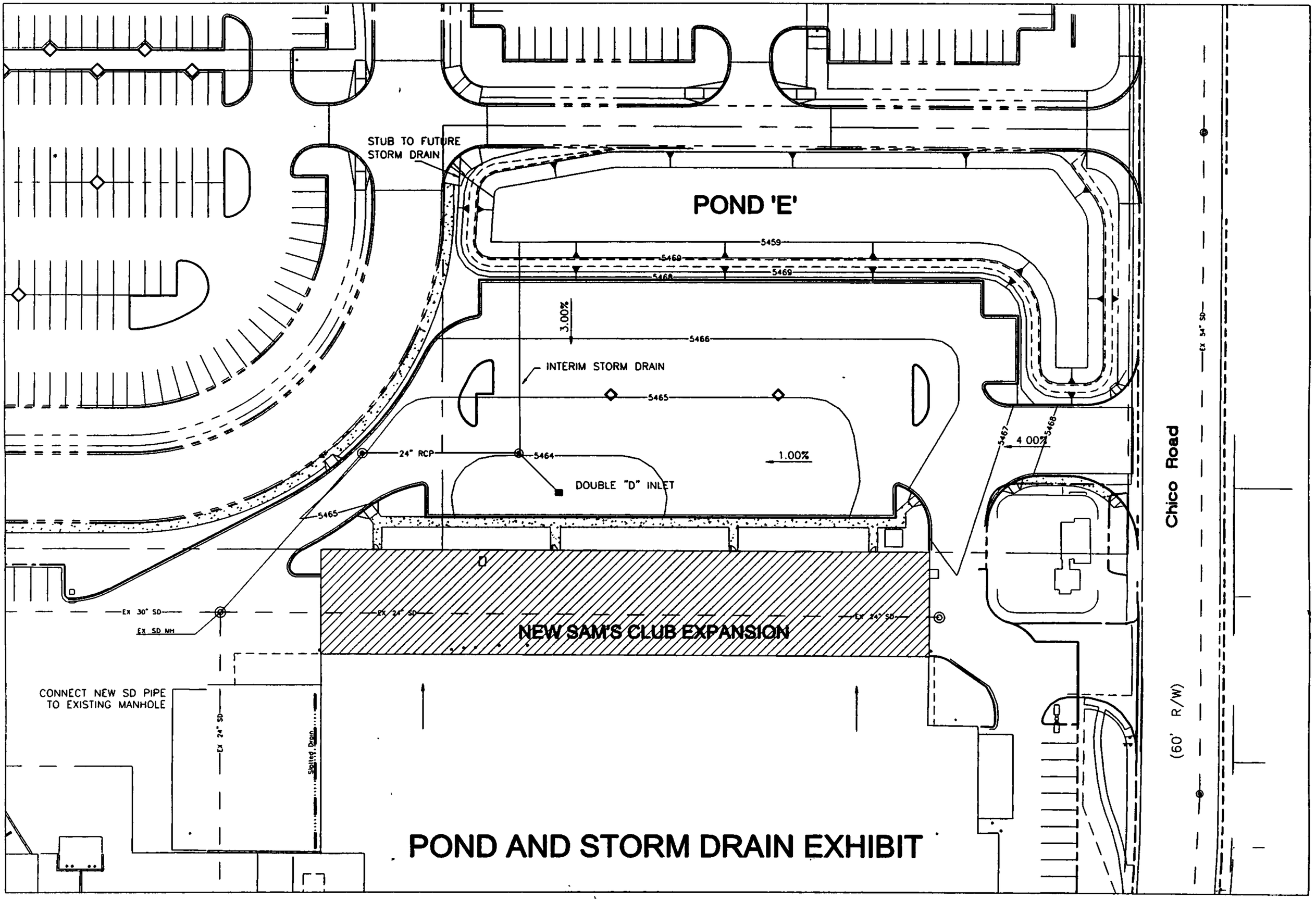
PROPOSED BASIN LAYOUT

The Cinemark report shows the outfall from the pond connecting to a new storm drain system built with the Cinemark project. However, the Cinemark project has not been constructed to date and the storm drain connection not possible. Consequently, the pond will discharge to the existing Towne Park Plaza storm drain system. The pond does not affect the Towne Park Plaza system because the peak flow time is later than the peak flow from Towne Park Plaza. The Towne Park Plaza storm drain system was originally designed for 17 cfs in the 24" pipe behind Sam's Club. The on-site basins have a total flow of 15.91 cfs and the peak discharge with the pond is increased to 16.01 cfs. This is an increase of 0.1 cfs and less than the system was designed for. We feel that the pond will not adversely affect the Towne Park Plaza system.

In the event of a storm greater than a 100-year storm, the pond will discharge through a 62' wide emergency overflow. The overflow will flow north behind the Sam's Club and will not flood any buildings.

Summary

A new service station and Sam's Club expansion are being added to the existing Sam's Club site. These improvements will not change the existing drainage patterns or flows. Lot 4 of the Lenkurt property has been bought by Sam's Club and is part of this submittal. Lot 4 will consist of a new parking lot and a new pond. The pond and upland flows were analyzed in a previous report by Bohannan-Huston, Inc. for the Cinemark project. The pond will have the same volume and has been analyzed with the Cinemark AHYMO. The new parking lot will discharge 7.48 cfs to the Towne Park Plaza storm drain system that is being relocated with this project. The Towne Park 24" storm drain has capacity for the additional flow.



POND AND STORM DRAIN EXHIBIT

Runoff Calculations

Drainage Basins

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
A-1	63961.00	1.4683	0.002294
1100-A	26878.00	0.6170	0.000964
1	81632.00	1.8740	0.002928

Runoff Calculation Results

BASIN	Q-100 CFS	V-100 AC-FT
A-1	6.80	0.314
1100-A	2.00	0.074
1	9.11	0.431

RUNOFF CALCULATIONS

The site is @ Zone 3

LAND TREATMENT

Basin	A (%)	B (%)	C (%)	D (%)
A-1	0	10	0	90
1100-A	0	30	0	70
1	0	0	0	100

DEPTH (INCHES) @ 100-YEAR STORM

P_{60} = 2.14 inches

P_{360} = 2.56 inches

P_{1440} = 3.10 inches

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 2.14 x 0.667
= 1.43 inches

P_{360} = 1.73

P_{1440} = 2.07

Storm Sewer

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
1	24	1.3	3.14	0.5	25.86	16.01	5.10
2	15	3.5	1.23	0.3125	12.12	7.48	6.10

Max Outflow from Basin A-1, Basin 1 and Pond Outflow = 16.01 cfs

Manning's Equation:

Q = 1.49/n * A * R^(2/3) * S^(1/2)

A = Area
R = D/4
S = Slope
n = 0.013

DROP INLET CALCULATIONS

	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
	Double 'D'	4.21	15.91	0.6160	0.67

Basin A-1 and Basin 1 = 6.80 + 9.11 = 15.91 cfs

ORIFICE EQUATION

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

STORM DRAIN INLET
EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

DOUBLE D:

Area at the grate:

L = 76.75" - 14 (1/2" middle bars) - 6" center piece
= 63.75"
= 5.3125'

W = 25.5" - 13 (1/2 middle bars)
= 19"
= 1.583'

Area = 1.583' x 5.3125'
= 8.410 ft^2

Effective Area = 8.410 - .5 (8.410)
= 4.205 ft^2

Ponding Calculations

VOLUME CALCULATIONS

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
D - Water Depth
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

Volume = $Ab * D + 0.5 * C * D^2$
C = (At - Ab) / Dt

Ab = 15,208.32 @ Elevation = 5460
At = 23,167.31 @ Elevation = 5469
Dt = 9.00
C = 884.33

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
5460.00	0.0	0.0000	0.000
5461.00	1.0	0.3593	2.006
5462.00	2.0	0.7389	3.305
5463.00	3.0	1.1388	4.221
5464.00	4.0	1.5590	4.971
5465.00	5.0	1.9994	5.622
5466.00	6.0	2.4602	6.205
5467.00	7.0	2.9413	6.738
5468.00	8.0	3.4427	7.232
5469.00	9.0	3.9644	7.694

<u>Orifice Equation</u>
Q = CA SQRT(2gH)

C = 0.6
Diameter (i 10
Area (ft^2) 0.545
g = 32.2
H (Ft) = Depth of water above center of orifice
Q (CFS)= Flow

Emergency Overflow for Pond 'E'

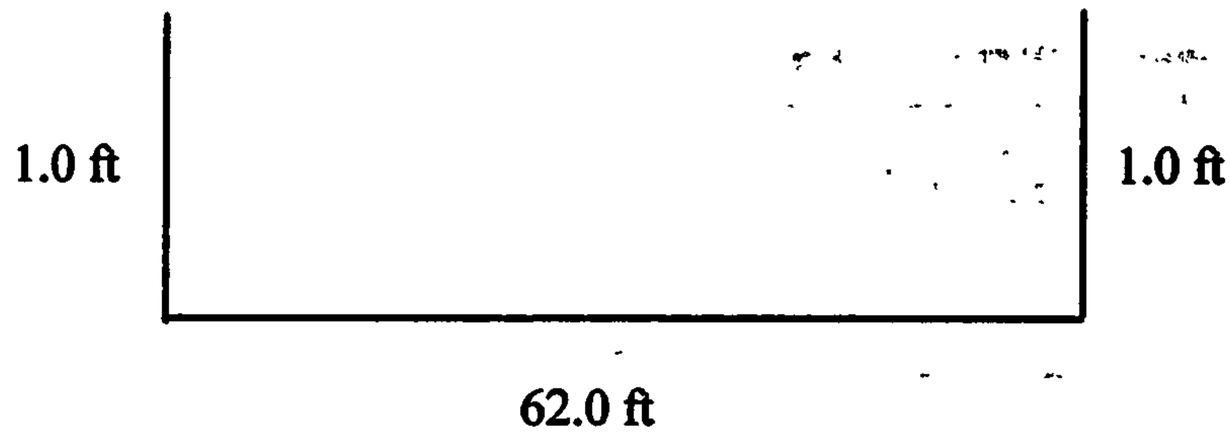
Weir Equation:

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

Q= 182.05 cfs
C = 2.95
H = 1.00 ft
L = Length of weir

$$L=\frac{182.05}{2.95(1.0)^{3/2}}$$

L = 61.71 ft
Use 62.0 feet for length of weir



AHYMO
Summary and Output

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02a RUN DATE (MON/DAY/YR) =07/13/2000
INPUT FILE = A:POND-INT.DAT USER NO.= AHYMO-I-9702a0100011K-SH

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= 2										RAIN24=	3.100
COMPUTE NM HYD	104.00	-	12	.04955	96.18	4.533	1.71541	1.533	3.033	PER IMP=	50.00
COMPUTE NM HYD	105.00	-	16	.01810	51.06	2.661	2.75634	1.533	4.408	PER IMP=	100.00
COMPUTE NM HYD	106.00	-	17	.03425	68.27	3.405	1.86416	1.567	3.115	PER IMP=	48.00
COMPUTE NM HYD	107.00	-	19	.01986	51.82	2.293	2.16527	1.500	4.077	PER IMP=	70.00
ADD HYD	107.10	17&19	13	.05411	115.01	5.699	1.97468	1.533	3.321		
ROUTE	107.12	13	18	.05411	104.96	5.688	1.97098	1.600	3.031		
COMPUTE NM HYD	108.00	-	13	.02297	54.58	2.367	1.93234	1.500	3.712	PER IMP=	60.00
ROUTE	104.02	12	17	.04955	83.59	4.521	1.71080	1.600	2.636		
ADD HYD	105.10	16&17	19	.06765	129.86	7.182	1.99054	1.567	2.999		
ADD HYD	107.20	19&18	17	.12176	233.61	12.870	1.98185	1.567	2.998		
ADD HYD	108.10	13&17	16	.14473	279.59	15.237	1.97399	1.567	3.018		
DIVIDE HYD	CB3	16	17	.09993	88.00	10.520	1.97399	1.400	1.376		
	108.13	and	18	.04480	191.59	4.717	1.97399	1.567	6.681		
COMPUTE NM HYD	301.00	-	31	.05794	99.24	6.312	2.04268	1.633	2.676	PER IMP=	62.00
ROUTE	CB3.02	17	32	.09993	88.16	10.511	1.97233	1.467	1.379		
ROUTE	108.12	18	13	.04480	156.87	4.717	1.97410	1.633	5.471		
ADD HYD	301.10	13&31	33	.10274	256.12	11.029	2.01277	1.633	3.895		
DIVIDE HYD	CB8	33	34	.04229	34.00	4.540	2.01277	1.433	1.256		
	301.03	and	35	.06045	222.12	6.489	2.01277	1.633	5.741		
ADD HYD	CB8.1	34&32	36	.14222	122.16	15.051	1.98436	1.467	1.342		
ROUTE	CB8.12	36	31	.14222	122.56	15.040	1.98287	1.467	1.347		
ROUTE	301.02	35	32	.06045	204.21	6.490	2.01285	1.700	5.278		
COMPUTE NM HYD	302.00	-	33	.02999	43.91	2.770	1.73180	1.633	2.288	PER IMP=	49.00
DIVIDE HYD	CB9	32	35	.01624	30.00	1.743	2.01285	1.533	2.887		
	301.06	and	36	.04421	174.21	4.746	2.01285	1.700	6.157		
ADD HYD	CB9.1	31&35	34	.15846	152.02	16.783	1.98594	1.533	1.499		
ROUTE	CB9.12	34	31	.15846	152.00	16.769	1.98423	1.833	1.499		
ADD HYD	302.10	33&36	34	.07420	216.59	7.516	1.89926	1.700	4.561		
ROUTE	301.12	34	32	.07420	206.67	7.510	1.89764	1.766	4.352		
COMPUTE NM HYD	303.00	-	33	.08070	128.73	8.788	2.04190	1.667	2.493	PER IMP=	62.00
ADD HYD	303.10	33&32	34	.15490	330.97	16.298	1.97280	1.733	3.339		
DIVIDE HYD	CB10	34	32	.03779	10.00	3.976	1.97280	1.333	.414		
	303.13	and	33	.11712	320.97	12.323	1.97280	1.733	4.282		
ADD HYD	CB10.1	31&32	35	.19624	162.00	20.744	1.98203	1.833	1.290		
ROUTE	CB10.12	35	36	.19624	162.00	20.705	1.97829	2.033	1.290		
COMPUTE NM HYD	304.00	-	31	.01342	32.85	1.591	2.22262	1.533	3.824	PER IMP=	75.00
ROUTE	304.03	31	32	.01342	22.87	1.583	2.21110	1.600	2.662		
COMPUTE NM HYD	305.00	-	31	.03919	59.45	3.425	1.63841	1.633	2.370	PER IMP=	43.00
ADD HYD	305.10	31&32	35	.05261	82.29	5.007	1.78450	1.633	2.444		
ADD HYD	305.20	35&33	32	.16973	390.03	17.330	1.91443	1.733	3.591		
DIVIDE HYD	305.30	32	33	.13208	209.83	13.485	1.91443	1.567	2.482		
	305.40	and	34	.03765	180.20	3.844	1.91443	1.733	7.478		
COMPUTE NM HYD	1300.00	-	1	.00910	27.16	1.255	2.58599	1.500	4.664	PER IMP=	90.00
ROUTE RESERVOIR	1300.01	1	2	.00910	3.86	1.255	2.58594	2.133	.663	AC-FT=	.677
COMPUTE NM HYD	1100.A	-	3	.00097	2.00	.074	1.44107	1.500	3.241	PER IMP=	30.00
ADD HYD	1100.01	3&34	4	.03862	181.00	3.918	1.90260	1.733	7.324		

ROUTE RESERVOIR	1100.02	4	5	.03862	7.48	3.913	1.90014	1.966	.303	AC-FT= 3.724
COMPUTE NM HYD	100.10	-	1	.00293	9.11	.431	2.75761	1.500	4.859	PER IMP= 100.00
COMPUTE NM HYD	100.A	-	2	.00229	6.80	.314	2.56953	1.500	4.632	PER IMP= 90.00
ADD HYD	101.A	1& 2	3	.00522	15.91	.745	2.67499	1.500	4.759	
ADD HYD	101.A1	5& 3	4	.04384	16.01	4.658	1.99245	1.500	.571	
ROUTE	201.10	4	20	.04384	15.91	4.658	1.99233	1.500	.567	
FINISH										

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02a
         RUN DATE (MON/DAY/YR) = 07/13/2000
         START TIME (HR:MIN:SEC) = 15:28:23     USER NO.= AHYMO-I-9702a0100011K-SH
         INPUT FILE = A:POND-INT.DAT

**********************************************************************
*                          SAM'S CLUB EAST                           *
**********************************************************************
*                INTERIM OUTFALL TO TOWNE PARK PLAZA                 *
**********************************************************************
*           100-YEAR, 24-HR STORM  (PONDING CALCULATIONS)            *
**********************************************************************
START                TIME=0.0
*
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.07 IN RAIN SIX=2.56 IN
                     RAIN DAY=3.10 IN DT=0.03333 HR

               COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT =     .033330 HOURS        END TIME =    19.964670 HOURS
   .0000   .0032   .0065   .0098   .0132   .0166   .0202
   .0238   .0275   .0313   .0352   .0392   .0433   .0475
   .0519   .0563   .0609   .0656   .0705   .0756   .0808
   .0862   .0918   .0976   .1037   .1100   .1166   .1235
   .1308   .1385   .1465   .1523   .1584   .1649   .1790
   .2104   .2587   .3281   .4229   .5474   .7062   .9040
  1.1453  1.3693  1.4629  1.5419  1.6121  1.6760  1.7348
  1.7895  1.8405  1.8884  1.9334  1.9759  2.0160  2.0540
  2.0900  2.1241  2.1565  2.1872  2.2164  2.2239  2.2309
  2.2376  2.2440  2.2502  2.2561  2.2618  2.2673  2.2727
  2.2779  2.2829  2.2878  2.2926  2.2973  2.3018  2.3062
  2.3106  2.3148  2.3190  2.3230  2.3270  2.3309  2.3347
  2.3385  2.3422  2.3458  2.3494  2.3529  2.3563  2.3597
  2.3631  2.3664  2.3696  2.3728  2.3760  2.3791  2.3822
  2.3852  2.3882  2.3912  2.3941  2.3970  2.3998  2.4026
  2.4054  2.4082  2.4109  2.4136  2.4163  2.4189  2.4215
  2.4241  2.4267  2.4292  2.4317  2.4342  2.4366  2.4391
  2.4415  2.4439  2.4463  2.4486  2.4510  2.4533  2.4556
  2.4578  2.4601  2.4623  2.4645  2.4667  2.4689  2.4711
  2.4732  2.4754  2.4775  2.4796  2.4817  2.4837  2.4858
  2.4878  2.4899  2.4919  2.4939  2.4959  2.4978  2.4998
  2.5018  2.5037  2.5056  2.5075  2.5094  2.5113  2.5132
  2.5150  2.5169  2.5187  2.5206  2.5224  2.5242  2.5260
  2.5278  2.5296  2.5313  2.5331  2.5348  2.5366  2.5383
  2.5400  2.5417  2.5434  2.5451  2.5468  2.5485  2.5501
  2.5518  2.5535  2.5551  2.5567  2.5584  2.5600  2.5615
  2.5630  2.5646  2.5661  2.5676  2.5691  2.5706  2.5721
  2.5736  2.5751  2.5766  2.5781  2.5796  2.5811  2.5826
  2.5841  2.5856  2.5870  2.5885  2.5900  2.5914  2.5929
  2.5944  2.5958  2.5973  2.5987  2.6002  2.6016  2.6030
  2.6045  2.6059  2.6073  2.6088  2.6102  2.6116  2.6130
  2.6144  2.6158  2.6172  2.6186  2.6200  2.6214  2.6228
  2.6242  2.6256  2.6270  2.6284  2.6298  2.6311  2.6325
  2.6339  2.6353  2.6366  2.6380  2.6393  2.6407  2.6421
  2.6434  2.6448  2.6461  2.6474  2.6488  2.6501  2.6515
  2.6528  2.6541  2.6554  2.6568  2.6581  2.6594  2.6607
  2.6620  2.6634  2.6647  2.6660  2.6673  2.6686  2.6699
  2.6712  2.6725  2.6737  2.6750  2.6763  2.6776  2.6789
  2.6802  2.6814  2.6827  2.6840  2.6852  2.6865  2.6878
  2.6890  2.6903  2.6916  2.6928  2.6941  2.6953  2.6966
  2.6978  2.6990  2.7003  2.7015  2.7028  2.7040  2.7052
  2.7064  2.7077  2.7089  2.7101  2.7113  2.7126  2.7138
  2.7150  2.7162  2.7174  2.7186  2.7198  2.7210  2.7222
  2.7234  2.7246  2.7258  2.7270  2.7282  2.7294  2.7305
  2.7317  2.7329  2.7341  2.7353  2.7364  2.7376  2.7388
```

2.7399	2.7411	2.7423	2.7434	2.7446	2.7458	2.7469
2.7481	2.7492	2.7504	2.7515	2.7527	2.7538	2.7549
2.7561	2.7572	2.7584	2.7595	2.7606	2.7618	2.7629
2.7640	2.7651	2.7663	2.7674	2.7685	2.7696	2.7707
2.7719	2.7730	2.7741	2.7752	2.7763	2.7774	2.7785
2.7796	2.7807	2.7818	2.7829	2.7840	2.7851	2.7862
2.7873	2.7883	2.7894	2.7905	2.7916	2.7927	2.7938
2.7948	2.7959	2.7970	2.7980	2.7991	2.8002	2.8013
2.8023	2.8034	2.8044	2.8055	2.8066	2.8076	2.8087
2.8097	2.8108	2.8118	2.8129	2.8139	2.8150	2.8160
2.8171	2.8181	2.8191	2.8202	2.8212	2.8222	2.8233
2.8243	2.8253	2.8264	2.8274	2.8284	2.8294	2.8305
2.8315	2.8325	2.8335	2.8345	2.8355	2.8366	2.8376
2.8386	2.8396	2.8406	2.8416	2.8426	2.8436	2.8446
2.8456	2.8466	2.8476	2.8486	2.8496	2.8506	2.8516
2.8526	2.8535	2.8545	2.8555	2.8565	2.8575	2.8585
2.8594	2.8604	2.8614	2.8624	2.8634	2.8643	2.8653
2.8663	2.8672	2.8682	2.8692	2.8701	2.8711	2.8721
2.8730	2.8740	2.8749	2.8759	2.8768	2.8778	2.8788
2.8797	2.8807	2.8816	2.8825	2.8835	2.8844	2.8854
2.8863	2.8873	2.8882	2.8891	2.8901	2.8910	2.8920
2.8929	2.8938	2.8947	2.8957	2.8966	2.8975	2.8985
2.8994	2.9003	2.9012	2.9021	2.9031	2.9040	2.9049
2.9058	2.9067	2.9077	2.9086	2.9095	2.9104	2.9113
2.9122	2.9131	2.9140	2.9149	2.9158	2.9167	2.9176
2.9185	2.9194	2.9203	2.9212	2.9221	2.9230	2.9239
2.9248	2.9257	2.9266	2.9275	2.9283	2.9292	2.9301
2.9310	2.9319	2.9328	2.9336	2.9345	2.9354	2.9363
2.9372	2.9380	2.9389	2.9398	2.9406	2.9415	2.9424
2.9433	2.9441	2.9450	2.9459	2.9467	2.9476	2.9484
2.9493	2.9502	2.9510	2.9519	2.9527	2.9536	2.9544
2.9553	2.9562	2.9570	2.9579	2.9587	2.9596	2.9604
2.9612	2.9621	2.9629	2.9638	2.9646	2.9655	2.9663
2.9671	2.9680	2.9688	2.9697	2.9705	2.9713	2.9722
2.9730	2.9738	2.9747	2.9755	2.9763	2.9771	2.9780
2.9788	2.9796	2.9804	2.9813	2.9821	2.9829	2.9837
2.9845	2.9854	2.9862	2.9870	2.9878	2.9886	2.9894
2.9902	2.9911	2.9919	2.9927	2.9935	2.9943	2.9951
2.9959	2.9967	2.9975	2.9983	2.9991	2.9999	3.0007
3.0015	3.0023	3.0031	3.0039	3.0047	3.0055	3.0063
3.0071	3.0079	3.0087	3.0095	3.0103		

```
*
**********************************************************************
* BASIN 104
**********************************************************************
*
  COMPUTE NM HYD       ID=12 HYD NO=104 AREA=0.04955 SQ MI
                       PER A=40.00 PER B=8.00 PER C=2.00 PER D=50.00
                       TP=-0.1649 HR MASS RAINFALL=-1

       K =   .089871HR    TP =   .164900HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =
7.106420
       UNIT PEAK =   79.069    CFS   UNIT VOLUME =    1.000       B =   526.28      P60 = 2.0700
       AREA =      .024775 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
       RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


       K =   .188637HR    TP =   .164900HR    K/TP RATIO =  1.143948     SHAPE CONSTANT, N =
3.095848
       UNIT PEAK =   43.502    CFS   UNIT VOLUME =    .9997       B =   289.55      P60 = 2.0700
       AREA =      .024775 SQ MI    IA =    .61400 INCHES    INF =   1.56920 INCHES PER HOUR
       RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

  PRINT HYD            ID=12 CODE=1

                                PARTIAL HYDROGRAPH   104.00
```

```
      RUNOFF VOLUME =     1.71541 INCHES      =       4.5332 ACRE-FEET
      PEAK DISCHARGE RATE =      96.18 CFS  AT   1.533 HOURS   BASIN AREA =   .0496 SQ. MI.


  *
  ********************************************************************************
  * BASIN 105
  ********************************************************************************
  *
  COMPUTE NM HYD      ID=16 HYD NO=105 AREA=0.01810 SQ MI
                      PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                      TP=-0.1665 HR MASS RAINFALL=-1

      K =   .090743HR    TP =   .166500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =
7.106420
      UNIT PEAK =   57.211    CFS   UNIT VOLUME =    1.000       B =   526.28      P60 = 2.0700
      AREA =      .018100 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

  PRINT HYD           ID=16 CODE=1

                                  PARTIAL HYDROGRAPH   105.00


      RUNOFF VOLUME =     2.75634 INCHES      =       2.6608 ACRE-FEET
      PEAK DISCHARGE RATE =      51.06 CFS  AT   1.533 HOURS   BASIN AREA =   .0181 SQ. MI.


  *
  ********************************************************************************
  * BASIN 106
  ********************************************************************************
  *
  COMPUTE NM HYD      ID=17 HYD NO=106 AREA=0.03425 SQ MI
                      PER A=0.00 PER B=26.00 PER C=26.00 PER D=48.00
                      TP=-0.1968 HR MASS RAINFALL=-1

      K =   .107256HR    TP =   .196800HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =
7.106420
      UNIT PEAK =   43.963    CFS   UNIT VOLUME =    .9998       B =   526.28      P60 = 2.0700
      AREA =      .016440 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

      K =   .177854HR    TP =   .196800HR    K/TP RATIO =   .903729     SHAPE CONSTANT, N =
3.920589
      UNIT PEAK =   31.660    CFS   UNIT VOLUME =    .9996       B =   349.84      P60 = 2.0700
      AREA =      .017810 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

  PRINT HYD           ID=17 CODE=1

                                  PARTIAL HYDROGRAPH   106.00


      RUNOFF VOLUME =     1.86416 INCHES      =       3.4052 ACRE-FEET
      PEAK DISCHARGE RATE =      68.27 CFS  AT   1.567 HOURS   BASIN AREA =   .0343 SQ. MI.


  *
  ********************************************************************************
  * BASIN 107
```

```
**********************************************************************
*
COMPUTE NM HYD       ID=19 HYD NO=107 AREA=0.01986 SQ MI
                     PER A=10.00 PER B=20.00 PER C=0.00 PER D=70.00
                     TP=-0.1333 HR MASS RAINFALL=-1

      K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =
7.106420
      UNIT PEAK =   54.886    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 2.0700
      AREA =      .013902 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


      K =   .141422HR    TP =   .133300HR    K/TP RATIO =  1.060927     SHAPE CONSTANT, N =
3.328408
      UNIT PEAK =   13.748    CFS   UNIT VOLUME =    .9991       B =   307.59      P60 = 2.0700
      AREA =      .005958 SQ MI    IA =    .55000 INCHES    INF =   1.39000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=19 CODE=1

                                   PARTIAL HYDROGRAPH   107.00

    RUNOFF VOLUME =     2.16527 INCHES      =       2.2934 ACRE-FEET
    PEAK DISCHARGE RATE =      51.82 CFS  AT   1.500 HOURS   BASIN AREA =   .0199 SQ. MI.


*
**********
*
* ADD BASIN 106 TO BASIN 107
*
ADD HYD              ID=13 HYD NO=107.1 ID I=17 ID II=19
PRINT HYD            ID=13 CODE=1

                                   PARTIAL HYDROGRAPH   107.10

    RUNOFF VOLUME =     1.97468 INCHES      =       5.6986 ACRE-FEET
    PEAK DISCHARGE RATE =     115.01 CFS  AT   1.533 HOURS   BASIN AREA =   .0541 SQ. MI.


*
* ROUTE HYD 107.1 THRU 105/108
*
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                     MIN ELEV=0        MAX ELEV=0.67
                     CH SLOPE=0.0193   FP SLOPE=0.0193
                     N=0.017           DIST=60
                     DIST      ELEV        DIST      ELEV
                      0        0.67         0.1       0
                     30        0.60        59.9       0
                     60        0.67

                          RATING CURVE VALLEY SECTION  1.0
                            WATER       FLOW        FLOW        TOP
                          SURFACE       AREA        RATE       WIDTH
                           ELEV         SQ FT       CFS        FT
                             .00          .00         .00         .00
                             .04          .06         .05        3.53
                             .07          .25         .32        7.05
                             .11          .56         .95       10.58
                             .14          .99        2.04       14.10
                             .18         1.55        3.69       17.63
```

.21	2.24	6.01	21.15
.25	3.05	9.06	24.68
.28	3.98	12.94	28.20
.32	5.03	17.71	31.73
.35	6.22	23.46	35.25
.39	7.52	30.25	38.78
.42	8.95	38.15	42.30
.46	10.50	47.23	45.83
.49	12.18	57.54	49.35
.53	13.98	69.17	52.88
.56	15.91	82.16	56.40
.60	17.96	96.57	59.93
.63	20.08	116.11	59.99
.67	22.19	137.10	60.00

*

COMPUTE TRAVEL TIME ID=18 REACH NO=1 NO VS=1 L=1350 SLOPE=0.0193

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.062	.05	.4611
.071	.249	.32	.2905
.106	.559	.95	.2217
.141	.994	2.04	.1830
.176	1.554	3.69	.1577
.212	2.238	6.01	.1397
.247	3.045	9.06	.1260
.282	3.978	12.94	.1153
.317	5.034	17.71	.1066
.353	6.215	23.46	.0993
.388	7.520	30.25	.0932
.423	8.950	38.15	.0880
.458	10.504	47.23	.0834
.494	12.182	57.54	.0794
.529	13.984	69.17	.0758
.564	15.911	82.16	.0726
.599	17.962	96.57	.0697
.635	20.077	116.11	.0648
.670	22.193	137.10	.0607

*

ROUTE ID=18 HYD NO=107.12 INFLOW ID=13

PRINT HYD ID=18 CODE=1

PARTIAL HYDROGRAPH 107.12

RUNOFF VOLUME = 1.97098 INCHES = 5.6880 ACRE-FEET

PEAK DISCHARGE RATE = 104.96 CFS AT 1.600 HOURS BASIN AREA = .0541 SQ. MI.

*

****

* BASIN 108

****

*

COMPUTE NM HYD ID=13 HYD NO=108 AREA=0.02297 SQ MI
PER A=30.00 PER B=7.00 PER C=3.00 PER D=60.00
TP=-0.1333 HR MASS RAINFALL=-1

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

UNIT PEAK = 54.412 CFS UNIT VOLUME = .9992 B = 526.28 P60 = 2.0700

AREA = .013782 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR

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

K = .150333HR TP = .133300HR K/TP RATIO = 1.127777 SHAPE CONSTANT, N = 3.137813
UNIT PEAK = 20.187 CFS UNIT VOLUME = .9992 B = 292.87 P60 = 2.0700
AREA = .009188 SQ MI IA = .60125 INCHES INF = 1.53350 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=13 CODE=1

PARTIAL HYDROGRAPH 108.00

RUNOFF VOLUME = 1.93234 INCHES = 2.3672 ACRE-FEET
PEAK DISCHARGE RATE = 54.58 CFS AT 1.500 HOURS BASIN AREA = .0230 SQ. MI.

*
****
*
* ROUTE HYD 104 THRU 105
*
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
MIN ELEV=0 MAX ELEV=1.00
CH SLOPE=0.008 FP SLOPE=0.008
N=0.017 DIST=100

DIST	ELEV	DIST	ELEV
0	1.0	20.0	0.67
20.1	0.0	50.0	0.60
79.9	0.0	80.0	0.67
100.0	1.0		

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.05	.14	.09	5.26
.11	.55	.60	10.52
.16	1.25	1.77	15.78
.21	2.22	3.82	21.05
.26	3.46	6.92	26.31
.32	4.98	11.25	31.57
.37	6.78	16.98	36.83
.42	8.86	24.24	42.09
.47	11.21	33.18	47.35
.53	13.85	43.94	52.61
.58	16.75	56.66	57.87
.63	19.89	73.58	59.99
.68	23.06	92.35	61.72
.74	26.47	109.01	68.10
.79	30.23	128.20	74.48
.84	34.31	150.06	80.86
.89	38.74	174.72	87.24
.95	43.50	202.32	93.62
1.00	48.59	233.00	100.00

*
COMPUTE TRAVEL TIME ID=17 REACH NO=1 NO VS=1 L=1200 SLOPE=0.008

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS

.053	.138	.09	.4875
.105	.554	.60	.3071
.158	1.246	1.77	.2344
.211	2.215	3.82	.1935
.263	3.461	6.92	.1667
.316	4.984	11.25	.1476
.368	6.784	16.98	.1332
.421	8.861	24.24	.1219
.474	11.215	33.18	.1127
.526	13.846	43.94	.1050
.579	16.753	56.66	.0986
.632	19.888	73.58	.0901
.684	23.058	92.35	.0832
.737	26.474	109.01	.0810
.789	30.227	128.20	.0786
.842	34.314	150.06	.0762
.895	38.738	174.72	.0739
.947	43.498	202.32	.0717
1.000	48.593	233.00	.0695

```
*
ROUTE                ID=17 HYD NO=104.02 INFLOW ID=12
PRINT HYD            ID=17 CODE=1
```

PARTIAL HYDROGRAPH 104.02

RUNOFF VOLUME = 1.71080 INCHES = 4.5210 ACRE-FEET
PEAK DISCHARGE RATE = 83.59 CFS AT 1.600 HOURS BASIN AREA = .0496 SQ. MI.

```
*
**************************************
*
* ADD HYD 104.02 TO BASIN 105
*
ADD HYD              ID=19 HYD NO=105.1 ID I=16 ID II=17
PRINT HYD            ID=19 CODE=1
```

PARTIAL HYDROGRAPH 105.10

RUNOFF VOLUME = 1.99054 INCHES = 7.1818 ACRE-FEET
PEAK DISCHARGE RATE = 129.86 CFS AT 1.567 HOURS BASIN AREA = .0677 SQ. MI.

```
*
* ADD HYD 105.1 TO HYD 107.12
*
ADD HYD              ID=17 HYD NO=107.2 ID I=19 ID II=18
PRINT HYD            ID=17 CODE=1
```

PARTIAL HYDROGRAPH 107.20

RUNOFF VOLUME = 1.98185 INCHES = 12.8698 ACRE-FEET
PEAK DISCHARGE RATE = 233.61 CFS AT 1.567 HOURS BASIN AREA = .1218 SQ. MI.

```
*
* ADD HYD 107.2 TO HYD 108
* TOTAL FLOW ENTERING JUAN TABO'S CATTLE GUARD
*
ADD HYD              ID=16 HYD NO=108.1 ID I=13 ID II=17
PRINT HYD            ID=16 CODE=1
```

PARTIAL HYDROGRAPH 108.10

RUNOFF VOLUME = 1.97399 INCHES = 15.2370 ACRE-FEET
PEAK DISCHARGE RATE = 279.59 CFS AT 1.567 HOURS BASIN AREA = .1447 SQ. MI.

```
*
****************************************
*
* DIVIDE HYD 108.1 BY INFLOW OF CATCH BASINS AND CATTLE GUARD IN JUAN TABO
* CATTLE GUARD AND CATCH BASINS BETWEEN MH# S-993 TO MH# S-903
*
DIVIDE HYD          INFLOW ID=16 Q=88 ID I=17  HYD NO=CB3
                                      ID II=18 HYD NO=108.13
PRINT HYD           ID=17 CODE=1
```

HYDROGRAPH FROM AREA CB3

RUNOFF VOLUME = 1.97399 INCHES = 10.5200 ACRE-FEET
PEAK DISCHARGE RATE = 88.00 CFS AT 1.400 HOURS BASIN AREA = .0999 SQ. MI.

```
PRINT HYD           ID=18 CODE=1
```

PARTIAL HYDROGRAPH 108.13

RUNOFF VOLUME = 1.97399 INCHES = 4.7170 ACRE-FEET
PEAK DISCHARGE RATE = 191.59 CFS AT 1.567 HOURS BASIN AREA = .0448 SQ. MI.

```
*
************************************************************************
* BASIN 301
************************************************************************
*
COMPUTE NM HYD      ID=31 HYD NO=301 AREA=0.05794 SQ MI
                    PER A=11.00 PER B=15.00 PER C=12.00 PER D=62.00
                    TP=-0.2713 HR MASS RAINFALL=-1

        K = .147859HR   TP = .271300HR   K/TP RATIO = .545000   SHAPE CONSTANT, N =
7.106420
        UNIT PEAK = 69.684   CFS   UNIT VOLUME = .9999   B = 526.28   P60 = 2.0700
        AREA = .035923 SQ MI   IA = .10000 INCHES   INF = .04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

        K = .269656HR   TP = .271300HR   K/TP RATIO = .993940   SHAPE CONSTANT, N =
3.552084
        UNIT PEAK = 26.303   CFS   UNIT VOLUME = .9995   B = 324.11   P60 = 2.0700
        AREA = .022017 SQ MI   IA = .49605 INCHES   INF = 1.23895 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

    PRINT HYD           ID=31 CODE=1
```

HYDROGRAPH FROM AREA 301.00

RUNOFF VOLUME = 2.04268 INCHES = 6.3121 ACRE-FEET
PEAK DISCHARGE RATE = 99.24 CFS AT 1.633 HOURS BASIN AREA = .0579 SQ. MI.

```
*
****************************************
*
* ROUTING HYD CB3 FOR 36" IN BUENA VENTURA STREET
* FROM MH# S-973 TO MH# S-993 IN BUENA VENTURA STREET
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.024
                     DIA=3 FT N=0.014
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.16	.14	.50	1.33
.31	.39	2.18	1.83
.47	.71	5.08	2.18
.63	1.07	9.14	2.44
.78	1.46	14.26	2.63
.94	1.89	20.35	2.78
1.09	2.33	27.27	2.89
1.25	2.79	34.86	2.96
1.41	3.26	42.97	2.99
1.56	3.72	51.43	3.00
1.72	4.19	60.04	3.00
1.88	4.65	68.60	3.00
2.03	5.10	76.89	3.00
2.19	5.53	84.65	3.00
2.35	5.93	91.60	3.00
2.50	6.30	97.38	3.00
2.66	6.62	101.51	3.00
2.81	6.89	103.21	3.00
3.00	7.07	103.21	3.00

```
*
COMPUTE TRAVEL TIME  ID=32 REACH NO=1 NO VS=1 L=1246 SLOPE=0.024
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.156	.140	.50	.0966
.313	.391	2.18	.0619
.469	.706	5.08	.0481
.625	1.068	9.14	.0405
.782	1.465	14.26	.0355
.938	1.889	20.35	.0321
1.094	2.332	27.27	.0296
1.251	2.790	34.86	.0277
1.407	3.255	42.97	.0262
1.563	3.724	51.43	.0251
1.720	4.191	60.04	.0242
1.876	4.650	68.60	.0235
2.032	5.097	76.89	.0229
2.189	5.525	84.65	.0226
2.345	5.928	91.60	.0224
2.501	6.297	97.38	.0224
2.658	6.622	101.51	.0226
2.814	6.887	103.21	.0231
3.000	7.069	103.21	.0237

```
*
ROUTE                ID=32 HYD NO=CB3.02 INFLOW ID=17
PRINT HYD            ID=32 CODE=1
```

HYDROGRAPH FROM AREA CB3.02

RUNOFF VOLUME = 1.97233 INCHES = 10.5112 ACRE-FEET
PEAK DISCHARGE RATE = 88.16 CFS AT 1.467 HOURS BASIN AREA = .0999 SQ. MI.

```
*
*********************************************
*
* ROUTE 108.13 THRU 301:  40' WIDTH
* HYD 108.13 THRU 301 ON BUENA VENTURA STREET
*
COMPUTE RATING CURVE CID=1 VS NO=1   NO SEGS=1
                     MIN ELEV=0      MAX ELEV=1.00
                     CH SLOPE=0.016  FP SLOPE=0.016
                     N=0.017         DIST=200
                     DIST     ELEV       DIST     ELEV
                      0       1.0        80.0     0.67
                     80.1     0.0       100.0     0.40
                    119.9     0.0       120.0     0.67
                    200.0     1.0
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.05	.14	.13	5.25
.11	.55	.85	10.51
.16	1.24	2.50	15.76
.21	2.21	5.39	21.01
.26	3.46	9.77	26.26
.32	4.98	15.89	31.52
.37	6.77	23.97	36.77
.42	8.82	35.24	39.93
.47	10.93	50.22	39.94
.53	13.03	67.22	39.96
.58	15.13	86.12	39.97
.63	17.24	106.80	39.99
.68	19.39	117.07	46.89
.74	22.53	113.18	72.41
.79	27.01	125.57	97.93
.84	32.84	149.24	123.44
.89	40.01	183.18	148.96
.95	48.52	227.53	174.48
1.00	58.37	282.89	200.00

```
*
COMPUTE TRAVEL TIME  ID=13 REACH NO=1 NO VS=1 L=1250 SLOPE=0.016
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.138	.13	.3591
.105	.553	.85	.2262
.158	1.244	2.50	.1726
.211	2.212	5.39	.1425
.263	3.456	9.77	.1228
.316	4.976	15.89	.1087
.368	6.773	23.97	.0981
.421	8.824	35.24	.0870
.474	10.926	50.22	.0755
.526	13.029	67.22	.0673

```
                                .579      15.132       86.12       .0610
                                .632      17.236      106.80       .0560
                                .684      19.390      117.07       .0575
                                .664      18.573      113.18       .0570
                                .789      27.012      125.57       .0747
                                .842      32.838      149.24       .0764
                                .895      40.006      183.18       .0758
                                .947      48.518      227.53       .0740
                               1.000      58.373      282.89       .0716
*
ROUTE                ID=13 HYD NO=108.12 INFLOW ID=18
PRINT HYD            ID=13 CODE=1

                                    PARTIAL HYDROGRAPH   108.12

    RUNOFF VOLUME =     1.97410 INCHES     =       4.7173 ACRE-FEET
    PEAK DISCHARGE RATE =     156.87 CFS  AT   1.633 HOURS   BASIN AREA =    .0448 SQ. MI.

*
*****************************************
*
* ADD BASIN 301 TO HYD 108.12
* TOTAL OF JANE AND BUENA VENTURA
*
ADD HYD              ID=33 HYD NO=301.1 ID I=13 ID II=31
PRINT HYD            ID=33 CODE=1

                                    HYDROGRAPH FROM AREA   301.10

    RUNOFF VOLUME =     2.01277 INCHES     =      11.0294 ACRE-FEET
    PEAK DISCHARGE RATE =     256.12 CFS  AT   1.633 HOURS   BASIN AREA =    .1027 SQ. MI.


*
* DIVIDE BASIN 301 BY MAXIMUM INFLOW OF CATCH BASIN
* BETWEEN MH# S-973 AND MH# S-993 ON BUENA VENTURA STREET
*
DIVIDE HYD           INFLOW ID=33 Q=34 ID I=34  HYD NO=CB8
                                       ID II=35 HYD NO=301.03
PRINT HYD            ID=34 CODE=1

                                    HYDROGRAPH FROM AREA CB8

    RUNOFF VOLUME =     2.01277 INCHES     =       4.5400 ACRE-FEET
    PEAK DISCHARGE RATE =      34.00 CFS  AT   1.433 HOURS   BASIN AREA =    .0423 SQ. MI.

PRINT HYD            ID=35 CODE=1

                                    HYDROGRAPH FROM AREA   301.03

    RUNOFF VOLUME =     2.01277 INCHES     =       6.4894 ACRE-FEET
    PEAK DISCHARGE RATE =     222.12 CFS  AT   1.633 HOURS   BASIN AREA =    .0605 SQ. MI.

*
* ADD HYD CB8 TO HYD CB3.02
*
```

```
ADD HYD              ID=36 HYD NO=CB8.1 ID I=34 ID II=32
PRINT HYD            ID=36 CODE=1
```

HYDROGRAPH FROM AREA CB8.1

RUNOFF VOLUME = 1.98436 INCHES = 15.0512 ACRE-FEET
PEAK DISCHARGE RATE = 122.16 CFS AT 1.467 HOURS BASIN AREA = .1422 SQ. MI.

```
*
*****************************************
*
* ROUTE HYD CB8.1 FOR 48" PIPE IN JANE STREET
* FROM MH# S-772 TO MH# S-973 IN JANE STREET
* Q(CAP)=146 CFS
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.012
                     DIA=4 FT N=0.014
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	.77	1.78
.42	.69	3.33	2.44
.63	1.25	7.73	2.91
.83	1.90	13.91	3.25
1.04	2.60	21.72	3.51
1.25	3.36	30.99	3.71
1.46	4.15	41.52	3.85
1.67	4.96	53.09	3.94
1.88	5.79	65.44	3.99
2.08	6.62	78.32	4.00
2.29	7.45	91.43	4.00
2.50	8.27	104.47	4.00
2.71	9.06	117.09	4.00
2.92	9.82	128.91	4.00
3.13	10.54	139.49	4.00
3.34	11.20	148.29	4.00
3.54	11.77	154.59	4.00
3.75	12.24	157.18	4.00
4.00	12.57	157.18	4.00

```
*
COMPUTE TRAVEL TIME  ID=31 REACH NO=1 NO VS=1 L=944 SLOPE=0.012
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	.77	.0855
.417	.695	3.33	.0548
.625	1.255	7.73	.0425
.834	1.898	13.91	.0358
1.042	2.604	21.72	.0314
1.251	3.358	30.99	.0284
1.459	4.146	41.52	.0262
1.668	4.960	53.09	.0245
1.876	5.788	65.44	.0232
2.084	6.621	78.32	.0222
2.293	7.451	91.43	.0214
2.501	8.267	104.47	.0208
2.710	9.062	117.09	.0203

2.918	9.823	128.91	.0200
3.127	10.539	139.49	.0198
3.335	11.195	148.29	.0198
3.544	11.773	154.59	.0200
3.752	12.243	157.18	.0204
4.000	12.566	157.18	.0210

*

ROUTE ID=31 HYD NO=CB8.12 INFLOW ID=36
PRINT HYD ID=31 CODE=1

HYDROGRAPH FROM AREA CB8.12

RUNOFF VOLUME = 1.98287 INCHES = 15.0398 ACRE-FEET
PEAK DISCHARGE RATE = 122.56 CFS AT 1.467 HOURS BASIN AREA = .1422 SQ. MI.

*

* ROUTE 301.03 THRU 302 ON JANE STREET: 40' WIDTH

*

COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
MIN ELEV=0 MAX ELEV=1.50
CH SLOPE=0.0056 FP SLOPE=0.0056
N=0.017 DIST=200

DIST	ELEV	DIST	ELEV
0	1.50	80.0	0.67
80.1	0.0	119.9	0.00
120.9	0.67	200.0	1.50

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	39.80
.08	3.15	3.78	39.93
.16	6.30	11.98	40.06
.24	9.47	23.53	40.19
.32	12.65	37.98	40.32
.39	15.84	55.04	40.45
.47	19.04	74.51	40.58
.55	22.25	96.25	40.71
.63	25.46	120.14	40.84
.71	28.85	131.76	48.67
.79	33.29	139.99	63.80
.87	38.92	157.87	78.93
.95	45.75	184.07	94.07
1.03	53.78	218.32	109.20
1.11	62.99	260.79	124.33
1.18	73.41	311.86	139.47
1.26	85.02	372.01	154.60
1.34	97.82	441.75	169.73
1.42	111.82	521.63	184.87
1.50	127.01	612.19	200.00

*

COMPUTE TRAVEL TIME ID=32 REACH NO=1 NO VS=1 L=900 SLOPE=0.0056

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.079	3.147	3.78	.2082
.158	6.305	11.98	.1315
.237	9.472	23.53	.1006
.316	12.650	37.98	.0833

```
                          .395      15.838       55.04       .0719
                          .474      19.037       74.51       .0639
                          .553      22.245       96.25       .0578
                          .632      25.464      120.14       .0530
                          .711      28.849      131.76       .0547
                          .789      33.289      139.99       .0595
                          .868      38.923      157.87       .0616
                          .947      45.752      184.07       .0621
                         1.026      53.776      218.32       .0616
                         1.105      62.995      260.79       .0604
                         1.184      73.408      311.86       .0588
                         1.263      85.016      372.01       .0571
                         1.342      97.818      441.75       .0554
                         1.421     111.816      521.63       .0536
                         1.500     127.008      612.19       .0519
*
ROUTE                 ID=32 HYD NO=301.02 INFLOW ID=35
PRINT HYD             ID=32 CODE=1

                                  HYDROGRAPH FROM AREA    301.02

     RUNOFF VOLUME =      2.01285 INCHES      =        6.4897 ACRE-FEET
     PEAK DISCHARGE RATE =     204.21 CFS  AT    1.700 HOURS    BASIN AREA =    .0605 SQ. MI.

     *

*
**********************************************************************
* BASIN 302
**********************************************************************
*
COMPUTE NM HYD        ID=33 HYD NO=302 AREA=0.02999 SQ MI
                      PER A=30.00 PER B=14.00 PER C=7.00 PER D=49.00
                      TP=-0.2725 HR MASS RAINFALL=-1

     K =    .148513HR     TP =    .272500HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =
7.106420
     UNIT PEAK =    28.380     CFS   UNIT VOLUME =     .9996        B =    526.28       P60 = 2.0700
     AREA =       .014695 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


     K =    .295635HR     TP =    .272500HR     K/TP RATIO =  1.084900      SHAPE CONSTANT, N =
3.256680
     UNIT PEAK =    16.957     CFS   UNIT VOLUME =     .9992        B =    302.12       P60 = 2.0700
     AREA =       .015295 SQ MI     IA =     .56765 INCHES     INF =    1.43941 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD             ID=33 CODE=1

                                  HYDROGRAPH FROM AREA    302.00

     RUNOFF VOLUME =      1.73180 INCHES      =        2.7699 ACRE-FEET
     PEAK DISCHARGE RATE =      43.91 CFS  AT    1.633 HOURS    BASIN AREA =    .0300 SQ. MI.


*
*****************************************
*
* DIVIDE 301.03 BY MAXIMUM INFLOW OF JANE STREET'S CATCH BASINS
*
DIVIDE HYD            INFLOW ID=32 Q=30 ID I=35  HYD NO=CB9
                                        ID II=36 HYD NO=301.06
PRINT HYD             ID=35 CODE=1
```

HYDROGRAPH FROM AREA CB9

RUNOFF VOLUME = 2.01285 INCHES = 1.7433 ACRE-FEET
PEAK DISCHARGE RATE = 30.00 CFS AT 1.533 HOURS BASIN AREA = .0162 SQ. MI.

```
PRINT HYD          ID=36 CODE=1
```

HYDROGRAPH FROM AREA 301.06

RUNOFF VOLUME = 2.01285 INCHES = 4.7463 ACRE-FEET
PEAK DISCHARGE RATE = 174.21 CFS AT 1.700 HOURS BASIN AREA = .0442 SQ. MI.

```
*
* ADD PIPE HYD CB8.1 TO PIPE HYD CB9
* TOTAL FLOW IN CHICO AND JANE
*
ADD HYD            ID=34 HYD NO=CB9.1 ID I=31 IDII=35
PRINT HYD          ID=34 CODE=1
```

HYDROGRAPH FROM AREA CB9.1

RUNOFF VOLUME = 1.98594 INCHES = 16.7831 ACRE-FEET
PEAK DISCHARGE RATE = 152.02 CFS AT 1.533 HOURS BASIN AREA = .1585 SQ. MI.

```
*
*****************************************
*
* ROUTE HYD CB9.1 FOR 48" PIPE IN CHICO ROAD
* FROM MH# S-743 TO MH# S-772
* Q(CAP) = 169 CFS
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.016
                     DIA = 4 FT N=0.014
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	39.80
.21	.25	.88	1.78
.42	.69	3.84	2.44
.63	1.25	8.93	2.91
.83	1.90	16.06	3.25
1.04	2.60	25.08	3.51
1.25	3.36	35.79	3.71
1.46	4.15	47.94	3.85
1.67	4.96	61.30	3.94
1.88	5.79	75.56	3.99
2.08	6.62	90.44	4.00
2.29	7.45	105.58	4.00
2.50	8.27	120.64	4.00
2.71	9.06	135.21	4.00
2.92	9.82	148.86	4.00
3.13	10.54	161.07	4.00
3.34	11.20	171.23	4.00
3.54	11.77	178.50	4.00
3.75	12.24	181.49	4.00

```
                                        4.00        12.57       181.49        4.00
*
COMPUTE TRAVEL TIME   ID=31 REACH NO=1 NO VS=1 L=1331 SLOPE=0.016

                              TRAVEL TIME TABLE
                                        REACH=  1.0

                              WATER       AVERAGE      FLOW         TRAVEL
                              DEPTH       AREA         RATE         TIME
                              FEET        SQ.FT.       CFS          HRS
                                 .208         .250          .88        .1044
                                 .417         .695         3.84        .0669
                                 .625        1.255         8.93        .0520
                                 .834        1.898        16.06        .0437
                                1.042        2.604        25.08        .0384
                                1.251        3.358        35.79        .0347
                                1.459        4.146        47.94        .0320
                                1.668        4.960        61.30        .0299
                                1.876        5.788        75.56        .0283
                                2.084        6.621        90.44        .0271
                                2.293        7.451       105.58        .0261
                                2.501        8.267       120.64        .0253
                                2.710        9.062       135.21        .0248
                                2.918        9.823       148.86        .0244
                                3.127       10.539       161.07        .0242
                                3.335       11.195       171.23        .0242
                                3.544       11.773       178.50        .0244
                                3.752       12.243       181.49        .0249
                                4.000       12.566       181.49        .0256
*
ROUTE                 ID=31 HYD NO=CB9.12 INFLOW ID=34
PRINT HYD             ID=31 CODE=1

                                        HYDROGRAPH FROM AREA CB9.12


    RUNOFF VOLUME =      1.98423 INCHES      =       16.7687 ACRE-FEET
    PEAK DISCHARGE RATE =      152.00 CFS  AT    1.833 HOURS   BASIN AREA =    .1585 SQ. MI.


*
* ADD HYD 302 TO HYD 301.06
ADD HYD               ID=34 HYD NO=302.1 ID I=33 ID II=36
PRINT HYD             ID=34 CODE=1

                                        HYDROGRAPH FROM AREA   302.10

    RUNOFF VOLUME =      1.89926 INCHES      =        7.5163 ACRE-FEET
    PEAK DISCHARGE RATE =      216.59 CFS  AT    1.700 HOURS   BASIN AREA =    .0742 SQ. MI.


*
* ROUTE 302.1 THRU 303 ON CHICO STREET
*
COMPUTE RATING CURVE CID=1 VS NO=1     NO SEGS=1
                     MIN ELEV=0        MAX ELEV=1.00
                     CH SLOPE=0.0172   FP SLOPE=0.0172
                     N=0.017           DIST=88
                     DIST       ELEV        DIST      ELEV
                      0         1.00       20.0       0.67
                     20.1       0.0        44.0       0.48
                     67.9       0.0        68.0       0.67
                     88.0       1.00
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.05	.14	.14	5.26
.11	.55	.88	10.51
.16	1.25	2.60	15.77
.21	2.21	5.59	21.03
.26	3.46	10.14	26.28
.32	4.98	16.49	31.54
.37	6.78	24.87	36.80
.42	8.85	35.51	42.06
.47	11.21	48.61	47.31
.53	13.73	67.49	47.96
.58	16.25	89.29	47.97
.63	18.78	113.43	47.99
.68	21.32	136.80	49.72
.74	24.10	155.15	56.10
.79	27.22	177.14	62.48
.84	30.68	202.85	68.86
.89	34.47	232.43	75.24
.95	38.60	266.04	81.62
1.00	43.06	303.85	88.00

*

COMPUTE TRAVEL TIME ID=32 REACH NO=1 NO VS=1 L=1280 SLOPE=0.0172

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.138	.14	.3546
.105	.553	.88	.2234
.158	1.245	2.60	.1705
.211	2.213	5.59	.1407
.263	3.459	10.14	.1213
.316	4.980	16.49	.1074
.368	6.779	24.87	.0969
.421	8.854	35.51	.0887
.474	11.206	48.61	.0820
.526	13.727	67.49	.0723
.579	16.252	89.29	.0647
.632	18.777	113.43	.0589
.684	21.315	136.80	.0554
.737	24.100	155.15	.0552
.789	27.221	177.14	.0546
.842	30.677	202.85	.0538
.895	34.469	232.43	.0527
.947	38.597	266.04	.0516
1.000	43.061	303.85	.0504

*

ROUTE ID=32 HYD NO=301.12 INFLOW ID=34

PRINT HYD ID=32 CODE=1

HYDROGRAPH FROM AREA 301.12

RUNOFF VOLUME = 1.89764 INCHES = 7.5099 ACRE-FEET

PEAK DISCHARGE RATE = 206.67 CFS AT 1.766 HOURS BASIN AREA = .0742 SQ. MI.

*

****

* BASIN 303

```
**********************************************************************
*
COMPUTE NM HYD       ID=33 HYD NO=303 AREA=0.08070 SQ MI
                     PER A=11.00 PER B=15.00 PER C=12.00 PER D=62.00
                     TP=-0.3042 HR MASS RAINFALL=-1

        K =   .166204HR    TP =   .304200HR    K/TP RATIO =   .546364     SHAPE CONSTANT, N =
7.083708
        UNIT PEAK =   86.385    CFS   UNIT VOLUME =    .9999       B =   525.21      P60 = 2.0700
        AREA =      .050034 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


        K =   .299341HR    TP =   .304200HR    K/TP RATIO =   .984026     SHAPE CONSTANT, N =
3.588462
        UNIT PEAK =   32.937    CFS   UNIT VOLUME =    .9996       B =   326.73      P60 = 2.0700
        AREA =      .030666 SQ MI    IA =    .49605 INCHES    INF =   1.23895 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

    PRINT HYD          ID=33 CODE=1

                                        HYDROGRAPH FROM AREA   303.00

    RUNOFF VOLUME =     2.04190 INCHES     =       8.7883 ACRE-FEET
    PEAK DISCHARGE RATE =     128.73 CFS  AT   1.667 HOURS   BASIN AREA =   .0807 SQ. MI.


*
*****************************************
*
* ADD BASIN 303 TO HYD 302.12
*
ADD HYD              ID=34 HYD NO=303.1 ID I=33 ID II=32
PRINT HYD            ID=34 CODE=1

                                        HYDROGRAPH FROM AREA   303.10

    RUNOFF VOLUME =     1.97280 INCHES     =      16.2982 ACRE-FEET
    PEAK DISCHARGE RATE =     330.97 CFS  AT   1.733 HOURS   BASIN AREA =   .1549 SQ. MI.


*
* DIVIDE HYD 303.1 BY MAXIMUM INFLOW OF CHICO'S CATCH BASINS
* BETWEEN MH# S-743 AND MH# S-772
*
DIVIDE HYD           INFLOW ID=34 Q=10 ID I=32  HYD NO=CB10
                                       ID II=33 HYD NO=303.13
PRINT HYD            ID=32 CODE=1

                                        HYDROGRAPH FROM AREA CB10

    RUNOFF VOLUME =     1.97280 INCHES     =       3.9756 ACRE-FEET
    PEAK DISCHARGE RATE =      10.00 CFS  AT   1.333 HOURS   BASIN AREA =   .0378 SQ. MI.


PRINT HYD            ID=33 CODE=1

                                        HYDROGRAPH FROM AREA   303.13

    RUNOFF VOLUME =     1.97280 INCHES     =      12.3225 ACRE-FEET
```

PEAK DISCHARGE RATE = 320.97 CFS AT 1.733 HOURS BASIN AREA = .1171 SQ. MI.

```
*
* ADD PIPE HY CB9.12 WITH CB10
* TOTAL PIPE FLOW AT CHICO AND MORRIS
*
ADD HYD              ID=35 HYD NO=CB10.1 ID I=31 ID II=32
PRINT HYD            ID=35 CODE=1
```

HYDROGRAPH FROM AREA CB10.1

RUNOFF VOLUME = 1.98203 INCHES = 20.7443 ACRE-FEET
PEAK DISCHARGE RATE = 162.00 CFS AT 1.833 HOURS BASIN AREA = .1962 SQ. MI.

```
*
**********************************************
*
* ROUTING PIPE HYD CB10.1 FOR 54" PIPE IN CHICO ROAD
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.014
                     DIA=4.5 FT N=0.014
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.23	.32	1.13	2.00
.47	.88	4.92	2.75
.70	1.59	11.44	3.27
.94	2.40	20.57	3.66
1.17	3.30	32.12	3.95
1.41	4.25	45.83	4.17
1.64	5.25	61.40	4.33
1.88	6.28	78.50	4.44
2.11	7.32	96.77	4.49
2.35	8.38	115.81	4.50
2.58	9.43	135.20	4.50
2.81	10.46	154.48	4.50
3.05	11.47	173.15	4.50
3.28	12.43	190.62	4.50
3.52	13.34	206.27	4.50
3.75	14.17	219.28	4.50
3.99	14.90	228.59	4.50
4.22	15.50	232.42	4.50
4.50	15.90	232.42	4.50

```
*
COMPUTE TRAVEL TIME  ID=36 REACH NO=1 NO VS=1 L=2523 SLOPE=0.014
```

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.235	.316	1.13	.1955
.469	.880	4.92	.1253
.704	1.588	11.44	.0973
.938	2.402	20.57	.0818
1.173	3.296	32.12	.0719
1.407	4.249	45.83	.0650
1.641	5.248	61.40	.0599

1.876	6.277	78.50	.0560
2.111	7.325	96.77	.0530
2.345	8.380	115.81	.0507
2.579	9.430	135.20	.0489
2.814	10.463	154.48	.0475
3.049	11.468	173.15	.0464
3.283	12.432	190.62	.0457
3.518	13.338	206.27	.0453
3.752	14.169	219.28	.0453
3.987	14.900	228.59	.0457
4.221	15.495	232.42	.0467
4.500	15.904	232.42	.0480

```
*
ROUTE                ID=36 HYD NO=CB10.12 INFLOW ID=35
PRINT HYD            ID=36 CODE=1

                                   HYDROGRAPH FROM AREA CB10.12

    RUNOFF VOLUME =      1.97829 INCHES      =       20.7051 ACRE-FEET
    PEAK DISCHARGE RATE =     162.00 CFS  AT    2.033 HOURS   BASIN AREA =    .1962 SQ. MI.

    *
    ************************************************************************
    * BASIN 304
    ************************************************************************
    *
    COMPUTE NM HYD       ID=31 HYD NO=304 AREA=0.01342 SQ MI
                         PER A=25.00 PER B=0.00 PER C=0.00 PER D=75.00
                         TP=-0.1520 HR MASS RAINFALL=-1

        K =    .082840HR     TP =    .152000HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =
7.106420
        UNIT PEAK =    34.848     CFS    UNIT VOLUME =     .9998        B =    526.28       P60 = 2.0700
        AREA =       .010065 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


        K =    .180897HR     TP =    .152000HR     K/TP RATIO =  1.190112      SHAPE CONSTANT, N =
2.983819
        UNIT PEAK =    6.1913     CFS    UNIT VOLUME =     .9976        B =    280.50       P60 = 2.0700
        AREA =       .003355 SQ MI     IA =     .65000 INCHES     INF =    1.67000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

    PRINT HYD            ID=31 CODE=1

                                   HYDROGRAPH FROM AREA   304.00

    RUNOFF VOLUME =      2.22262 INCHES      =        1.5908 ACRE-FEET
    PEAK DISCHARGE RATE =      32.85 CFS  AT    1.533 HOURS   BASIN AREA =    .0134 SQ. MI.


*
*****************************************
*
* ROUTING BASIN 304 THRU BASIN 305 ON MORRIS STREET
*
COMPUTE RATING CURVE CID=1 VS NO=1    NO SEGS=1
                     MIN ELEV=0       MAX ELEV=0.67
                     CH SLOPE=0.0084  FP SLOPE=0.0084
                     N=0.017          DIST=48
                     DIST    ELEV        DIST     ELEV
                     0       0.67         0.1      0
```

24	0.48	47.9	0
48	0.67		

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.04	.06	.03	3.52
.07	.25	.21	7.04
.11	.56	.62	10.57
.14	.99	1.34	14.09
.18	1.55	2.44	17.61
.21	2.24	3.96	21.13
.25	3.04	5.97	24.66
.28	3.97	8.53	28.18
.32	5.03	11.68	31.70
.35	6.21	15.46	35.22
.39	7.51	19.94	38.74
.42	8.94	25.15	42.27
.46	10.50	31.13	45.79
.49	12.16	38.58	47.95
.53	13.85	47.89	47.96
.56	15.54	57.97	47.97
.60	17.24	68.79	47.98
.63	18.93	80.33	47.99
.67	20.62	92.57	48.00

*

COMPUTE TRAVEL TIME ID=32 REACH NO=1 NO VS=1 L=1660 SLOPE=0.0084

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.062	.03	.8595
.071	.248	.21	.5415
.106	.559	.62	.4132
.141	.994	1.34	.3411
.176	1.553	2.44	.2939
.212	2.236	3.96	.2603
.247	3.043	5.97	.2349
.282	3.974	8.53	.2149
.317	5.030	11.68	.1986
.353	6.210	15.46	.1852
.388	7.514	19.94	.1738
.423	8.943	25.15	.1640
.458	10.495	31.13	.1555
.494	12.162	38.58	.1453
.529	13.853	47.89	.1334
.564	15.545	57.97	.1237
.599	17.236	68.79	.1155
.635	18.929	80.33	.1087
.670	20.621	92.57	.1027

*

ROUTE ID=32 HYD NO=304.03 INFLOW ID=31
PRINT HYD ID=32 CODE=1

HYDROGRAPH FROM AREA 304.03

RUNOFF VOLUME = 2.21110 INCHES = 1.5826 ACRE-FEET
PEAK DISCHARGE RATE = 22.87 CFS AT 1.600 HOURS BASIN AREA = .0134 SQ. MI.

```
*
**********************************************************************
* BASIN 305
**********************************************************************
*
COMPUTE NM HYD       ID=31 HYD NO=305 AREA=0.03919 SQ MI
                     PER A=25.00 PER B=23.00 PER C=9.00 PER D=43.00
                     TP=-0.2442 HR MASS RAINFALL=-1

          K =    .133089HR     TP =    .244200HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =
7.106420
          UNIT PEAK =   36.317     CFS   UNIT VOLUME =     .9997        B =   526.28       P60 = 2.0700
          AREA =       .016852 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


          K =    .256918HR     TP =    .244200HR     K/TP RATIO =  1.052081      SHAPE CONSTANT, N =
3.355912
          UNIT PEAK =   28.326     CFS   UNIT VOLUME =     .9996        B =   309.66       P60 = 2.0700
          AREA =       .022338 SQ MI     IA =     .54211 INCHES     INF =   1.36789 INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=31 CODE=1

                                          HYDROGRAPH FROM AREA   305.00

     RUNOFF VOLUME =      1.63841 INCHES      =        3.4245 ACRE-FEET
     PEAK DISCHARGE RATE =       59.45 CFS  AT    1.633 HOURS   BASIN AREA =    .0392 SQ. MI.


*
*****************************************
*
* ADD HYD 304.03 TO BASIN 305
*
ADD HYD              ID=35 HYD NO=305.1 ID I=31 ID II=32
PRINT HYD            ID=35 CODE=1

                                          HYDROGRAPH FROM AREA   305.10

     RUNOFF VOLUME =      1.78450 INCHES      =        5.0070 ACRE-FEET
     PEAK DISCHARGE RATE =       82.29 CFS  AT    1.633 HOURS   BASIN AREA =    .0526 SQ. MI.


*
* ADD HYD 305.1 TO HYD 303.13
* TOTAL AT CHICO AND MORRIS
*
ADD HYD              ID=32 HYD NO=305.2 ID I=35 ID II=33
PRINT HYD            ID=32 CODE=1

                                          HYDROGRAPH FROM AREA   305.20

     RUNOFF VOLUME =      1.91443 INCHES      =       17.3296 ACRE-FEET
     PEAK DISCHARGE RATE =      390.03 CFS  AT    1.733 HOURS   BASIN AREA =    .1697 SQ. MI.


*
DIVIDE HYD           ID=32 Q=209.83 ID=33 HYD=305.3
                                    ID=34 HYD=305.4
PRINT HYD            ID=33 CODE=1
```

```
                                        HYDROGRAPH FROM AREA   305.30

    RUNOFF VOLUME =      1.91443 INCHES      =       13.4854 ACRE-FEET
    PEAK DISCHARGE RATE =     209.83 CFS  AT    1.567 HOURS   BASIN AREA =    .1321 SQ. MI.


PRINT HYD            ID=34 CODE=1

                                        HYDROGRAPH FROM AREA   305.40

    RUNOFF VOLUME =      1.91443 INCHES      =        3.8442 ACRE-FEET
    PEAK DISCHARGE RATE =     180.20 CFS  AT    1.733 HOURS   BASIN AREA =    .0377 SQ. MI.


*
**********************************************************************
* BASIN 1300 (ON-SITE FLOW)
**********************************************************************
*
COMPUTE NM HYD       ID=1 HYD NO=1300 AREA=0.0091 SQ MI
                     PER A=0.00 PER B=5.00 PER C=5.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1

      K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000     SHAPE CONSTANT, N =
7.106420
      UNIT PEAK =    32.335    CFS   UNIT VOLUME =     .9990       B =    526.28      P60 = 2.0700
      AREA =       .008190 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


      K =    .120467HR     TP =    .133300HR     K/TP RATIO =    .903729     SHAPE CONSTANT, N =
3.920589
      UNIT PEAK =   2.3883    CFS   UNIT VOLUME =     .9949       B =    349.84      P60 = 2.0700
      AREA =       .000910 SQ MI    IA =     .42500 INCHES    INF =    1.04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=1 CODE=1

                                        HYDROGRAPH FROM AREA  1300.00

    RUNOFF VOLUME =      2.58599 INCHES      =        1.2551 ACRE-FEET
    PEAK DISCHARGE RATE =      27.16 CFS  AT    1.500 HOURS   BASIN AREA =    .0091 SQ. MI.


*
*****************************************
*
* ROUTE BASIN 1300 THROUGH POND 'A' ON CINEMARK SITE
*
ROUTE RESERVOIR      ID=2 HYD NO=1300.01 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)   ELEVATION(FT)
                         0.00              0.0000          5459.80
                         0.50              0.0001          5460.00
                         1.27              0.0108          5461.00
                         1.84              0.0585          5462.00
                         2.27              0.1505          5463.00
                         2.63              0.2653          5464.00
                         2.95              0.3875          5465.00
                         3.23              0.5057          5466.00
                         3.49              0.6066          5467.00
```

3.74	0.6675	5468.00
4.01	0.6874	5469.20

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5459.80	.000	.00
.80	.00	5459.80	.000	.00
1.60	18.73	5465.33	.427	3.04
2.40	1.25	5467.54	.640	3.63
3.20	.34	5465.61	.459	3.12
4.00	.25	5464.17	.286	2.68
4.80	.23	5462.88	.139	2.22
5.60	.24	5461.38	.029	1.49
6.40	.24	5459.89	.000	.23
7.20	.23	5459.89	.000	.23
8.00	.22	5459.89	.000	.22
8.80	.20	5459.88	.000	.20
9.60	.20	5459.88	.000	.20
10.40	.19	5459.88	.000	.19
11.20	.18	5459.87	.000	.18
12.00	.17	5459.87	.000	.17
12.80	.17	5459.87	.000	.17
13.60	.16	5459.86	.000	.16
14.40	.16	5459.86	.000	.16
15.20	.15	5459.86	.000	.15
16.00	.15	5459.86	.000	.15
16.80	.14	5459.86	.000	.14
17.60	.14	5459.85	.000	.14
18.40	.13	5459.85	.000	.13
19.20	.13	5459.85	.000	.13

PEAK DISCHARGE = 3.863 CFS - PEAK OCCURS AT HOUR 2.13
MAXIMUM WATER SURFACE ELEVATION = 5468.547
MAXIMUM STORAGE = .6766 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA 1300.01

RUNOFF VOLUME = 2.58594 INCHES = 1.2550 ACRE-FEET
PEAK DISCHARGE RATE = 3.86 CFS AT 2.133 HOURS BASIN AREA = .0091 SQ. MI.

*
****
* BASIN 1100-A
****
*

COMPUTE NM HYD ID=3 HYD NO=1100.A AREA=0.000965 SQ MI
PER A=0.00 PER B=70.00 PER C=0 PER D=30.00
TP=-0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 1.1430 CFS UNIT VOLUME = .9897 B = 526.28 P60 = 2.0700
AREA = .000290 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .132811HR TP = .133300HR K/TP RATIO = .996335 SHAPE CONSTANT, N = 3.543441
UNIT PEAK = 1.6393 CFS UNIT VOLUME = .9921 B = 323.49 P60 = 2.0700
AREA = .000676 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR

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

PRINT HYD ID=3 CODE=1

HYDROGRAPH FROM AREA 1100.A

RUNOFF VOLUME = 1.44107 INCHES = .0742 ACRE-FEET
PEAK DISCHARGE RATE = 2.00 CFS AT 1.500 HOURS BASIN AREA = .0010 SQ. MI.

```
*
*****************************************
*
* ADD THE CHICO ROAD OVERFLOW TO BASIN 1100-A
*
ADD HYD              ID=4 HYD NO=1100.01 ID I=3 ID II=34
PRINT HYD            ID=4 CODE=1
```

HYDROGRAPH FROM AREA 1100.01

RUNOFF VOLUME = 1.90260 INCHES = 3.9184 ACRE-FEET
PEAK DISCHARGE RATE = 181.00 CFS AT 1.733 HOURS BASIN AREA = .0386 SQ. MI.

```
*
* ROUTE CHICO ROAD OVERFLOW PLUS BASIN 1100-A THROUGH POND 'E'
*
ROUTE RESERVOIR      ID=5 HYD NO=1100.02 INFLOW ID=4 CODE=24
```

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEVATION(FT)
0.000	0.0000	5460.00
2.006	0.3593	5461.00
3.305	0.7389	5462.00
4.221	1.1388	5463.00
4.971	1.5590	5464.00
5.622	1.9994	5465.00
6.205	2.4602	5466.00
6.738	2.9413	5467.00
7.232	3.4427	5468.00
7.694	3.9644	5469.00

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5460.00	.000	.00
.80	.00	5460.00	.000	.00
1.60	91.22	5460.60	.214	1.20
2.40	.07	5468.05	3.467	7.25
3.20	.01	5467.13	3.005	6.80
4.00	.01	5466.23	2.572	6.33
4.80	.01	5465.37	2.170	5.84
5.60	.01	5464.55	1.801	5.33
6.40	.01	5463.78	1.466	4.81
7.20	.01	5463.07	1.167	4.27
8.00	.01	5462.41	.905	3.68
8.80	.01	5461.84	.680	3.10
9.60	.01	5461.36	.496	2.48
10.40	.01	5460.98	.350	1.96
11.20	.01	5460.68	.243	1.35
12.00	.01	5460.47	.168	.94
12.80	.01	5460.32	.117	.65
13.60	.01	5460.23	.081	.45

```
   14.40        .01   5460.16       .056       .31
   15.20        .01   5460.11       .039       .22
   16.00        .01   5460.08       .027       .15
   16.80        .00   5460.05       .019       .11
   17.60        .00   5460.04       .014       .08
   18.40        .00   5460.03       .010       .05
   19.20        .00   5460.02       .007       .04
 PEAK DISCHARGE =        7.481 CFS - PEAK OCCURS AT HOUR    1.97
 MAXIMUM WATER SURFACE ELEVATION =     5468.540
 MAXIMUM STORAGE =         3.7244 AC-FT      INCREMENTAL TIME=     .033330HRS

*
PRINT HYD             ID=5 CODE=1

                                        HYDROGRAPH FROM AREA  1100.02

    RUNOFF VOLUME =     1.90014 INCHES     =       3.9133 ACRE-FEET
    PEAK DISCHARGE RATE =       7.48 CFS  AT   1.966 HOURS   BASIN AREA =   .0386 SQ. MI.

*
**********************************************************************
* BASIN 1 (TOWNE PARK PLAZA)
**********************************************************************
*
COMPUTE NM HYD        ID=1 HYD NO=100.1 AREA=0.002928 SQ MI
                      PER A=0.00 PER B=0.00 PER C=0 PER D=100.00
                      TP=-0.1333 HR MASS RAINFALL=-1

      K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =
7.106420
      UNIT PEAK =   11.560    CFS   UNIT VOLUME =     .9984       B =   526.28      P60 = 2.0700
      AREA =       .002928 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  .033330

PRINT HYD             ID=1 CODE=1

                                      PARTIAL HYDROGRAPH   100.10

    RUNOFF VOLUME =     2.75761 INCHES     =         .4306 ACRE-FEET
    PEAK DISCHARGE RATE =       9.11 CFS  AT   1.500 HOURS   BASIN AREA =   .0029 SQ. MI.

*
**********************************************************************
* BASIN A-1 (TOWNE PARK PLAZA)
**********************************************************************
*
COMPUTE NM HYD        ID=2 HYD NO=100.A AREA=0.002294 SQ MI
                      PER A=0.00 PER B=10.00 PER C=0 PER D=90.00
                      TP=-0.1333 HR MASS RAINFALL=-1

      K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =
7.106420
      UNIT PEAK =   8.1511    CFS   UNIT VOLUME =     .9981       B =   526.28      P60 = 2.0700
      AREA =       .002065 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


      K =   .132811HR    TP =   .133300HR    K/TP RATIO =   .996335     SHAPE CONSTANT, N =
3.543441
      UNIT PEAK =   .55670    CFS   UNIT VOLUME =     .9759       B =   323.49      P60 = 2.0700
      AREA =       .000229 SQ MI    IA =     .50000 INCHES    INF =   1.25000 INCHES PER HOUR
```

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

```
PRINT HYD            ID=2 CODE=1
```

HYDROGRAPH FROM AREA 100.A

RUNOFF VOLUME = 2.56953 INCHES = .3144 ACRE-FEET
PEAK DISCHARGE RATE = 6.80 CFS AT 1.500 HOURS BASIN AREA = .0023 SQ. MI.

```
*
**********************************
* ADD BASINS 1 AND BASIN A-1
**********************************
*
ADD HYD              ID=3 HYD NO=101.A ID I=1 ID II=2
PRINT HYD            ID=3 CODE=1
```

HYDROGRAPH FROM AREA 101.A

RUNOFF VOLUME = 2.67499 INCHES = .7450 ACRE-FEET
PEAK DISCHARGE RATE = 15.91 CFS AT 1.500 HOURS BASIN AREA = .0052 SQ. MI.

```
*
************************************************
* ADD POND OUTFLOW TO BASINS 1 AND BASIN A-1
************************************************
*
ADD HYD              ID=4 HYD NO=101.A1 ID I=5 ID II=3
PRINT HYD            ID=4 CODE=1
```

HYDROGRAPH FROM AREA 101.A1

RUNOFF VOLUME = 1.99245 INCHES = 4.6583 ACRE-FEET
PEAK DISCHARGE RATE = 16.01 CFS AT 1.500 HOURS BASIN AREA = .0438 SQ. MI.

```
*
************************************************
* ROUTING POND 'E' AND LOT 4 THRU 24" PIPE
************************************************
*
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1
                     SLP=0.013 DIA=2.0 FT N=0.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.10	.06	.14	.89
.21	.17	.59	1.22
.31	.31	1.37	1.45
.42	.47	2.46	1.62
.52	.65	3.83	1.76
.63	.84	5.47	1.85
.73	1.04	7.33	1.93
.83	1.24	9.37	1.97
.94	1.45	11.55	2.00
1.04	1.66	13.83	2.00

1.15	1.86	16.14	2.00
1.25	2.07	18.44	2.00
1.35	2.27	20.67	2.00
1.46	2.46	22.76	2.00
1.56	2.63	24.62	2.00
1.67	2.80	26.18	2.00
1.77	2.94	27.29	2.00
1.88	3.06	27.75	2.00
2.00	3.14	27.75	2.00

*

COMPUTE TRAVEL TIME ID=20 REACH NO=1 NO VS=1 L=244 SLOPE=0.013

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.104	.062	.14	.0313
.208	.174	.59	.0200
.313	.314	1.37	.0156
.417	.475	2.46	.0131
.521	.651	3.83	.0115
.625	.839	5.47	.0104
.730	1.037	7.33	.0096
.834	1.240	9.37	.0090
.938	1.447	11.55	.0085
1.042	1.655	13.83	.0081
1.146	1.863	16.14	.0078
1.251	2.067	18.44	.0076
1.355	2.265	20.67	.0074
1.459	2.456	22.76	.0073
1.563	2.635	24.62	.0073
1.668	2.799	26.18	.0072
1.772	2.943	27.29	.0073
1.876	3.061	27.75	.0075
2.000	3.142	27.75	.0077

*

ROUTE ID=20 HYD NO=201.1 INFLOW ID=4

PRINT HYD ID=20 CODE=1

PARTIAL HYDROGRAPH 201.10

RUNOFF VOLUME = 1.99233 INCHES = 4.6580 ACRE-FEET

PEAK DISCHARGE RATE = 15.91 CFS AT 1.500 HOURS BASIN AREA = .0438 SQ. MI.

*

*

*

*

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 15:28:25

File

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

Records Withdrawal Form

K21/D9A1
Project No. K21/D9F **Date:** 04-21-05
ABQ. WAL-MART EXPN: 835-02
Project Title: SAM'S CLUB EXPN

a. File b. Mylars c. Redlines/Comments
d. Other 24x36" SHT (2) REDACTED

Requested by: FRED C. ARFMAN, ARFMAN P.A. **Phone No.:** 268-8828
Name and Company

Comments:
FOR BOND REDUCTION

Anticipated Return Date: _____

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

Delivery Picked Up By:

Name: Jimmy Pick **Organization:** ABQ. REPROGRAPHICS
Print

Signed: _____ **Date:** 04-21-05

Office Use Only

Return Acknowledged:

Received By: _____ **Date:** 4-25-05
Print

K-21/D9F

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 18, 2001

Ronald R. Bohannan, P.E.
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

RE: SAM'S CLUB EXPANSION (K-21/D9F)
(Chico & Eubank NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 7/14/2000
ENGINEERS CERTIFICATION DATED 9/4/2001

Dear Mr. Bohannan:

Based upon the information provided in your Engineers Certification submittal dated 9/14/2001, the above referenced site is approved for Permanent Certificate of Occupancy.

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin

Teresa A. Martin
Hydrology Plan Checker
Public Works Department

DWB

C: Vickie Chavez, COA
approval file
drainage file

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Sam's Club Expansion **ZONE ATLAS/DRNG. FILE #:** K-21/D9F

DRB #: *00450-00000-00774,00775* **EPC #:** _____ **WORK ORDER #:** *6469.81*

LEGAL DESCRIPTION: *Tract B3A Towne Park Plaza*

CITY ADDRESS: Northeast Corner of Chico and Cubank, 300 Eubank Boulevard NE

ENGINEERING FIRM:	TIERRA WEST, LLC	**CONTACT:**	RONALD R. BOHANNAN OR SARA LAVY
ADDRESS:	8509 Jefferson NE, ABQ, NM 87113	**PHONE:**	(505) 858-3100
OWNER:	Sam's Club East	**CONTACT:**	Mohsen Ghadimkhani
ADDRESS:	300 Eubank NE	**PHONE:**	(501) 273-4940
ARCHITECT:	Harrison French Architects	**CONTACT:**	Trish
ADDRESS:	502 SW "A" Street, Bentonville, AR 72712	**PHONE:**	(501) 273-7780
SURVEYOR:	Jaynes Corporation	**CONTACT:**	Steve Young
ADDRESS:	P. O. Box 26841, ABQ 87125	**PHONE:**	345-8591
CONTRACTOR:	Jaynes Corporation	**CONTACT:**	Scott Anderson
ADDRESS:	P. O. Box 26841, ABQ 87125	**PHONE:**	345-8591

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN
_____ CONCEPTUAL GRADING & DRAINAGE PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
__X__ ENGINEER'S CERTIFICATION
__X__ OTHER: Grading & Drainage As-Builts

PRE-DESIGN MEETING:

_____ YES
__X__ NO
_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAN 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
__X__ CERTIFICATE OF OCCUPANCY APPROVAL
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ S. A. D. DRAINAGE REPORT
_____ DRAINAGE REQUIREMENTS
_____ *OTHER*

DATE SUBMITTED: 9/4/01

BY: *Ronald R. Bohannan, PE*

RECEIVED
SEP 14 2001
HYDROLOGY SECTION

TIERRA WEST, LLC

8509 Jefferson NE
Albuquerque, NM 87113

(505) 858-3100
fax (505) 858-1118

e-mail: twdms@aol.com
1-800-245-3102

K-21/D9F

September 4, 2001

Mr. Brad Bingham
Senior Engineer / Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

RE: Final Certification of Drainage for Certificate of Occupancy
Sam's Club Expansion (K21/D09F), 300 Eubank Boulevard NE
Albuquerque, New Mexico

Dear Mr. Bingham:

We are requesting a Final Certification of Drainage for Certificate of Occupancy. Enclosed please find one copy of the as-built Grading and Drainage Plan and Information Sheet for the Sam's Expansion at Eubank and Copper. Jaynes Corporation completed the on-site paving and curb and gutter. Landscaping for the site is complete, and construction of the on-site pond is complete. The drainage outfall is existing and functional. Jaynes Corporation supplied as-built information, and we field verified the improvements.

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

Sincerely,

Ronald R. Bohannan, PE

RECEIVED
SEP 14 2001
HYDROLOGY SECTION

Enclosures

cc: Mohsen Ghadimkhani
Scott Anderson

JN 990029
RRB:js

1999misc#6 9929bb070501

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 29, 2001

Ronald R. Bohannan, P.E.
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

RE: SAM'S CLUB EAST (GAS STATION) (K-21/D9F)
(Eubank Blvd NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 4/17/2001
ENGINEERS CERTIFICATION DATED 6/26/2001

Dear Mr. Bohannan:

Based upon the information provided in your Engineers Certification submittal dated 6/26/2001, the above referenced site is approved for a Permanent Certificate of Occupancy.

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin
Hydrology Plan Checker
Public Works Department

BB

C: Vickie Chavez, CAO
drainage file
approval file

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Sam's Club Expansion **ZONE ATLAS/DRNG. FILE #:** K-21/D9F

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

LEGAL DESCRIPTION: *Tract B3A Towne Park Plaza*

CITY ADDRESS: Northeast Corner of Chico and Eubank, 300 Eubank Boulevard, NE

ENGINEERING FIR	TIERRA WEST, LLC	**CONTACT:**	RONALD R. BOHANNAN OR SARA LAVY
ADDRESS:	8509 Jefferson NE, ABQ, NM 87113	**PHONE:**	(505) 858-3100
OWNER:	Sam's Club East	**CONTACT:**	Mohsen Ghadimkhani
ADDRESS:	300 Eubank NE	**PHONE:**	(501) 273-4940
ARCHITECT:	Harrison French Architects	**CONTACT:**	Trish
ADDRESS:	502 SW "A" Street, Bentonville, AR 72712	**PHONE:**	(501) 273-7780
SURVEYOR:		**CONTACT:**	
ADDRESS:		**PHONE:**	
CONTRACTOR:	Jaynes Corporation	**CONTACT:**	Scott Anderson
ADDRESS:	P.O. Box 26841, Alb. 87125	**PHONE:**	345-8591

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- _____ YES
- X NO
- _____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- _____ SKETCH PLAN 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
- X CERTIFICATE OF OCCUPANCY APPROVAL
- _____ GRADING PERMIT APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ S. A. D. DRAINAGE REPORT
- _____ DRAINAGE REQUIREMENTS
- _____ *OTHER*

RECEIVED
JUN 26 2001
HYDROLOGY SECTION

DATE SUBMITTED: 6/26/01

BY: *Ron Wright*

TIERRA WEST, LLC

8509 Jefferson NE
Albuquerque, NM 87113

(505) 858-3100
fax (505) 858-1118

e-mail: twdms@aol.com
1-800-245-3102

June 26, 2001

Mr. Brad Bingham
Senior Engineer/Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

RE: Final Certification of Drainage for Certificate of Occupancy
Sam's Club Expansion Gas Station (K21/D09F), 300A Eubank Boulevard, NE

Dear Mr. Bingham:

We are requesting a Final Certification of Drainage for Certificate of Occupancy. Enclosed please find one copy of the as-built Grading and Drainage Plan for the Sam's Expansion Gas Station at Eubank and Copper. Kachina Petroleum, Inc. and Jaynes Corporation have completed the on-site paving and curb and gutter. Landscaping for the site is complete. The drainage outfall for the gas station is existing and functional. As-built information was supplied by Jaynes Corporation and we have field verified the improvements.

An Administrative Amendment for the gas station was processed in April, because the station was constructed 12 feet south of the approved site plan. A new grading and drainage plan for the gas station dated 4-17-01 was included with the AA package. This plan has not been approved by Hydrology but the drainage pattern is the same and the grades have not changed more than 18 inches. We have shown the as-built grades on the new grading plan (dated 4-17-01) but have also included the approved grading and drainage plan as requested.

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

Sincerely,

Ronald R. Bohannan, PE

Enclosures

cc: Mohsen Ghadimkhani
Scott Anderson
Lee Woodmansee

JN: 990029
scl

RECEIVED
JUN 26 2001
HYDROLOGY SECTION

9929 9929 final CO hydrology gas station ltr

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Public Works Department
Transportation Development Services Section

October 18, 2001

Ron Bohannan, Professional Engineer
Tierra West, LLC
8509 Jefferson NE
Albuquerque, NM 87113

Re: Certification Submittal for Final Building Certificate of Occupancy for
Sam's Club Expansion, [K21 / D09F]
300 Eubank Blvd., NE
Certification Letter Dated 09/04/01

Dear Mr. Bohannan:

The TCL / Letter of Certification submitted is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to Building and Safety and final C.O. has been logged in by Vicki Chavez in the Building Safety Section downstairs.

Sincerely,

Mike Zamora
Commercial Plan Checker
Development and Building Services
Public Works Department

c: Terri Martin
Office File

MZ:gds

TIERRA WEST, LLC

8509 Jefferson NE
Albuquerque, NM 87113

(505) 858-3100
fax (505) 858-1118

e-mail: twdms@aol.com
1-800-245-3102

September 4, 2001

Mr. Mike Zamora
Public Works Department
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

RE: Final Certification of Transportation for Certificate of Occupancy
Sam's Club Expansion (K21/D09F), 300 Eubank Boulevard NE

Dear Mr. Zamora:

We are requesting a Final Certification of Transportation for Certificate of Occupancy. Enclosed please find one copy of the as-built Site Plan (Traffic Circulation Plan) for the Sam's Expansion at Eubank and Copper. Jaynes Corporation has completed the on-site paving, curb and gutter, and parking lot striping. Landscaping for the site is complete. The drainage outfall for the site is in place and functional, and the pond for off-site flows has been constructed. All work is in substantial compliance with the approved plans. As-built information was supplied by Jaynes Corporation and field verified by our office.

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

Sincerely,

Ronald R. Bohannan, PE

Enclosures

cc: Mohsen Ghadimkhani
Scott Anderson

JN: 990029
RRB:js

1999misc#6 9929mz070501

10/ 101 - Called in GT to Vicki - ASDP out
10/ 101-Sent letter for GT

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 1, 2001

Ronald R. Bohannan, P.E.
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

RE: SAM'S CLUB EAST EXPANSION GAS STATION (K-21/D9F)
(EUBANK & CHICO NE)
CERTIFICATE OF OCCUPANCY APPROVAL-*Temporary*
ENGINEERS STAMP DATED 4/17/2001
ENGINEERS CERTIFICATION DATED 5/30/2001

Dear Mr. Bohannan:

Based on the information provided in your May 31, 2001 submittal, the above referenced project is approved for a TEMPORARY Certificate of Occupancy.

A Temporary Certificate of Occupancy has been issued for 60 days, allowing the remaining drainage issues in your May 31, 2001 Engineers Certification to be completed within this time scope.

When these remaining issues have been fully completed, are in substantial compliance, and an Engineers Certification has been resubmitted to the City's Hydrology office for approval, a Permanent Certificate of Occupancy can be issued.

If I can be of further assistance, please feel free to contact me at 924-3981.

Sincerely,

Teresa A. Martin
Hydrology Plan Checker
C.O.A./Public Works Department

c: Vickie Chavez, COA
Drainage File
Approval File

SIERRA WEST, LLC

8509 Jefferson NE
Albuquerque, NM 87113

(505) 858-3100
fax (505) 858-1118

e-mail: twdms@aol.com
1-800-245-3102

May 29, 2001

Mr. Brad Bingham
Senior Engineer/Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

RE: 60-Day Temporary Certification of Drainage for Certificate of Occupancy
Sam's Club Expansion Gas Station (K21/D09F), 300A Eubank Boulevard, NE

Dear Mr. Bingham:

We are requesting a 60-day temporary Certification of Drainage for Certificate of Occupancy. Enclosed please find one copy of the as-built Grading and Drainage Plan for the Sam's Expansion Gas Station at Eubank and Copper. Kachina Petroleum, Inc. and Jaynes Corporation has completed the on-site paving and curb and gutter. Landscaping for the site is underway. The drainage outfall for the gas station is existing and functional. As-built information was supplied by Jaynes Corporation and we have field verified the improvements.

An Administrative Amendment for the gas station was processed in April, because the station was constructed 12 feet south of the approved site plan. A new grading and drainage plan for the gas station dated 4-17-01 was included with the AA package. This plan has not been approved by Hydrology but the drainage pattern is the same and the grades have not changed more than 18 inches. We have shown the as-built grades on the new grading plan (dated 4-17-01) but have also included the approved grading and drainage plan as requested.

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

Sincerely,

Ronald R. Bohannan, PE

Enclosures

cc: Mohsen Ghadimkhani
Scott Anderson
Lee Woodmansee

JN: 990029
scl

RECEIVED
MAY 31 2001
HYDROLOGY SECTION

9923 9929\amp CO hydrology gas station ltr

DRAINAGE INFORMATION SHEET

PROJECT TITLE: *Sam's Club Gas Station* ZONE ATLAS/DRNG. FILE #: *K-21/D19*

DRB #: *1000317* EPC #: _____ WORK ORDER #: *N/A*

LEGAL DESCRIPTION: *Tract B3A Towne Park Plaza*

CITY ADDRESS: *300-A Eubank Blvd. NE*

ENGINEERING FIRM:	*TIERRA WEST, LLC*	CONTACT:	*RONALD R. BOHANNAN*
ADDRESS:	*8509 Jefferson NE, ABQ, NM 87113*	PHONE:	*(505) 858-3100*
OWNER:	*Sam's Club Inc.*	CONTACT:	
ADDRESS:	*8525 Jefferson, NE 87113*	PHONE:	*(505) 298-5308*
ARCHITECT:	*Harrison French Architecture*	CONTACT:	
ADDRESS:	*502 SW A Street, Bentonville AK 72712*	PHONE:	*(501) 273-7780*
SURVEYOR:	*Jaynes Corporation*	CONTACT:	*Scott Anderson*
ADDRESS:	*P.O. Box 26841, Alb. 87125*	PHONE:	*(505) 345-8591*
CONTRACTOR:	*Kachina Petroleum Inc.*	CONTACT:	*Tracy Neil*
ADDRESS:	*9600 Bell, SE 87123*	PHONE:	*(505) 292-3090*

TYPE OF SUBMITTAL:

- _____ DRAINAGE REPORT
- _____ DRAINAGE PLAN
- _____ CONCEPTUAL GRADING & DRAINAGE PLAN
- _____ GRADING PLAN
- _____ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION
- X OTHER (G & D As-builts)

PRE-DESIGN MEETING:

- _____ YES
- X NO
- _____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- _____ SKETCH PLAN 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 (60-Day Temp. Certificate of Occupancy)*

DATE SUBMITTED *May 29, 2001*

BY: *RONALD R. BOHANNAN*

RECEIVED
MAY 31 2001
HYDROLOGY SECTION

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 21, 1995

Jerry Domke
Dunaway Associates West Inc.
4500 Lakeshore Drive, STE 250
Tempe, Arizona 85282

RE: DRAINAGE PLAN FOR SAM'S CLUB ADDITION (K21-D9F)
ENGINEER'S STAMP DATED 5/30/95.

Dear Mr. Domke:

Based on the information provided on your July 12, 1995 submittal, the above referenced site is approved for Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J Montoya

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File