CITY OF ALBUQUERQUE

February 6, 2015

Ronald R. Bohannan, PE
Bohannan-Huston
7500 Jefferson St NE Courtyard I
Albuquerque, NM 87109

Re: Frito Lay Maintenance Building
1550 Mission Ave NE
Request Permanent C.O. - Accepted
Engineer's Stamp dated: 9-10-98 (F16D051)
Certification dated: 1-29-15

Dear Mr. Bohannan,

Based on the Certification received 2/03/2015, the site is acceptable for release of Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3695 or Rudy Rael at 924-3977.

Sincerely,

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

C: RR/CC
email

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: Frito Lay Maintenance Building City Drainage #: F16/D51

DRB#: EPC#: Work Order#:

Legal Description: Tract 9-A-1-A, Renaissance Center

City Address: 1550 Mission Ave. NE

Engineering Firm: Tierra West LLC Contact: Ronald R. Bohannan

Address: 5571 Midway Park Place, NE, Albuquerque, NM 87109

Phone#: 505-858-3100 Fax#: E-mail: rrb@tierrawestllc.com

Owner: Frito-Lay North America, Inc. Contact: Issac Johnson

Address: 7701 Legacy Drive, Plano, TX 75024

Phone#: 972-334-3987 Fax#: E-mail: Isaac.D.Johnson@pepsico.com

Architect: Scott Anderson Architects Contact: Scott Anderson

Address: 7604 Rio Penasco NW, Suite 204, Albuquerque, NM 87120

Phone#: 505-401-7575 Fax#: E-mail: andersonscottc@comcast.net

Surveyor: Contact:

Address:

Phone#: Fax#: E-mail:

Contractor: Contact:

Address:

Phone#: Fax#: E-mail:

TYPE OF SUBMITTAL:

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

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

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

RECEIVED FEB 0 3 2015 LAND DEVELOPMENT SECTION

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

DATE SUBMITTED: 1-29=15 By: JG for Jon Niski

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

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

CITY OF
Albuquerque

September 10, 1998

Ronald R. Bohannan, P.E.
Tierra West
4421 McLeod Rd. NE, Suite D
Albuquerque, New Mexico 87109

RE: Grading and Drainage Plan for Tract 9-A-1-A and Tract 9-A-1-B, North Renaissance Center (F16/D51) Engineer's Stamp Dated 9/10/98.

Dear Mr. Bohannan:

Based on the information provided with the submittals of August 20, 1998 and September 10, 1998, the above referenced plan is approved for Site Development Plan for Building Permit, Grading Permit, Building Permit and SO# 19 release.

Please attach a copy of the above referenced approved plan to the construction sets prior to sign-off by City Hydrology. A separate permit is required for construction within City right-of-way. A copy of this approval letter must be on hand when applying for the Excavation Permit.

As you are aware, the engineer's Certification is required prior to Certificate of Occupancy release for this site.

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

Sincerely,

Susan Calongne

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

c: Andrew Garcia, City Hydrology
Arlene Portillo
D. Salas, St. Maint.
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: *Tract 9-A-1-A and Tract 9-A-1-B* **ZONE ATLAS/DRNG. FILE #:** *F-16* / 05I

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

LEGAL DESCRIPTION: *Tract 9-A-1-A and Tract 9-A-1-B of North Renaissance Center*

CITY ADDRESS: *South of Mission Avenue near Chappell Drive*

ENGINEERING FIRM: *TIERRA WEST, LLC* **CONTACT:** *RONALD R. BOHANNAN*

ADDRESS: *4421 McCleod Rd. NE Suite D, 87109* **PHONE:** *(505) 883-7592*

OWNER: *Union Pension Transaction Trust 93-2 NM* **CONTACT:** *Jim Trump*

ADDRESS: *4411 McLeod NE, Suite G* **PHONE:** *(505)872-1662*

ARCHITECT: *DCSW* **CONTACT:** *Stace McGee*

ADDRESS: *320 Central Ave SW, 87102* **PHONE:** *(505)843-9636*

SURVEYOR: *Precision Surveys* **CONTACT:** *Larry Medrano*

ADDRESS: *2929 Coors Blvd NW Suite 309* **PHONE:** *(505)839-0569*

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

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAN APPROVAL
- ___ PRELIMINARY PLAT APPROVAL
- ___ 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*

PRE-DESIGN MEETING:

- ___ YES
- X NO
- ___ COPY PROVIDED

RECEIVED
AUG 20 1998
HYDROLOGY SECTION

So 19

DATE SUBMITTED: *08/20/98*

BY: *Sara McCollam*

Tierra West, LLC

September 10, 1998

Ms. Susan Calongne, PE
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: Drainage Report for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves), F16-D5I

Dear Ms. Calongne:

We are resubmitting the Tract 9-A-1-B (Chavez-Grieves) and Tract 9-A-1-A (Frito Lay) drainage report and grading plan for your review and approval. We have addressed the comments from Smith Engineering Company in the following manner:

1. We have updated the Grading and Drainage Plan to show the current flows and water surface elevations for the ponds.

2. There is no need to build the future curb as the flowline elevation is the elevation at the top of the pond. This entire site will be graded when Phase I is constructed. The pond will be contained without the additional curb.

3. We have added a spot elevation, as requested, to show that a high point exists before the entrance. There is also a line indicating the top of the pond elevation to show there is a grade break at that location.

4. At your request, we have revised the grading plan to show a water block at the entrance to the Chavez-Grieves site. We have also lowered the drop inlet elevation to ensure the site will drain properly.

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

Sincerely,

Sara McCollam

Sara McCollam

RECEIVED
SEP 1 0 1998
HYDROLOGY SECTION

Enclosures

cc: James K. Trump, Jr.

JN: 980044
scm

980044: 9844resubmittal2.ltr

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

Smith Engineering Company

A Full Service Engineering Company

September 3, 1998

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

Re: Drainage Report for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves)
Tierra West, Report stamp dated August 19, 1998 and Plan stamp dated August 20, 1998
Drainage File # F16/D51
Request for Site Development Plan for Building Permit Approval, Building Permit, and Grading Permit
SEC Job # 198624.B13

Dear Ms. Calongne:

Smith Engineering Company (SEC) has reviewed the resubmittal for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves) dated August 20, 1998. All of the previous review comments were addressed. Some small but important additions should be added to the grading plan as listed below:

1. Please update the Grading and Drainage Plan to show the updated "Qout" and "W.S.E." values at the proposed detention basins as updated in the report.
2. Please add a note to the Grading and Drainage Plan indicating that the curb located west of Pond #1 will be built at the same time as the temporary asphalt curb along the west edge of Pond #1 (see attached figure).
3. Please add a spot elevation in the entrance driveway just north of Pond #1 with an elevation above the 100-year water surface elevation of Pond #1=67.69 ft (see attached figure). This will ensure that Pond #1 will not overflow to Mission Avenue during the 100-year event.
4. Please lower the grate elevation of DI#6 from an elevation of 70.00 ft to an elevation that will drain the spot elevation of 69.83 ft shown near the water block at the south driveway of the Chaves-Grieves property (see attached figure).

Thank you for the opportunity to review this drainage report. If you have any questions please feel free to contact me at 884-0700.

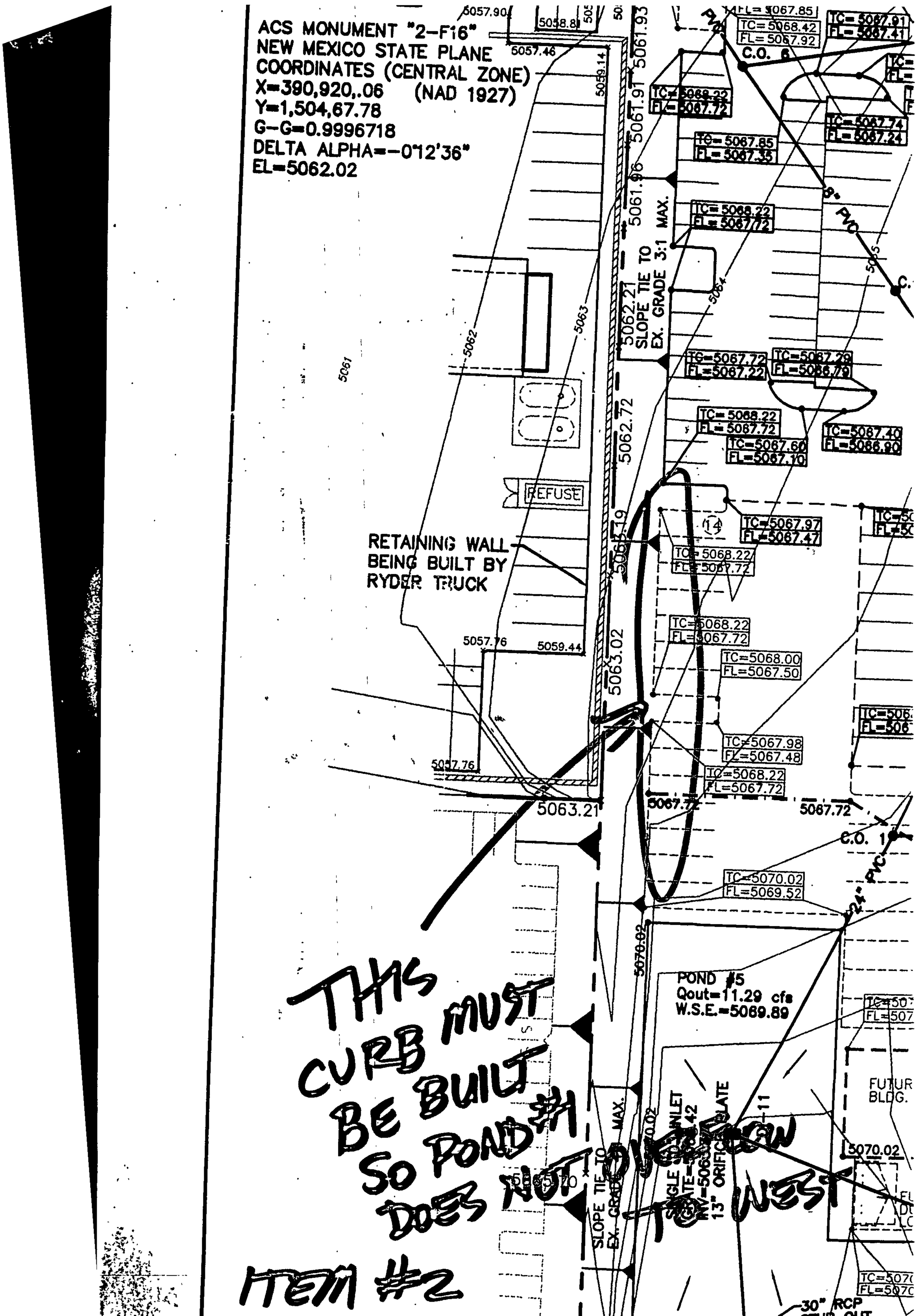
Sincerely,

Smith Engineering Company

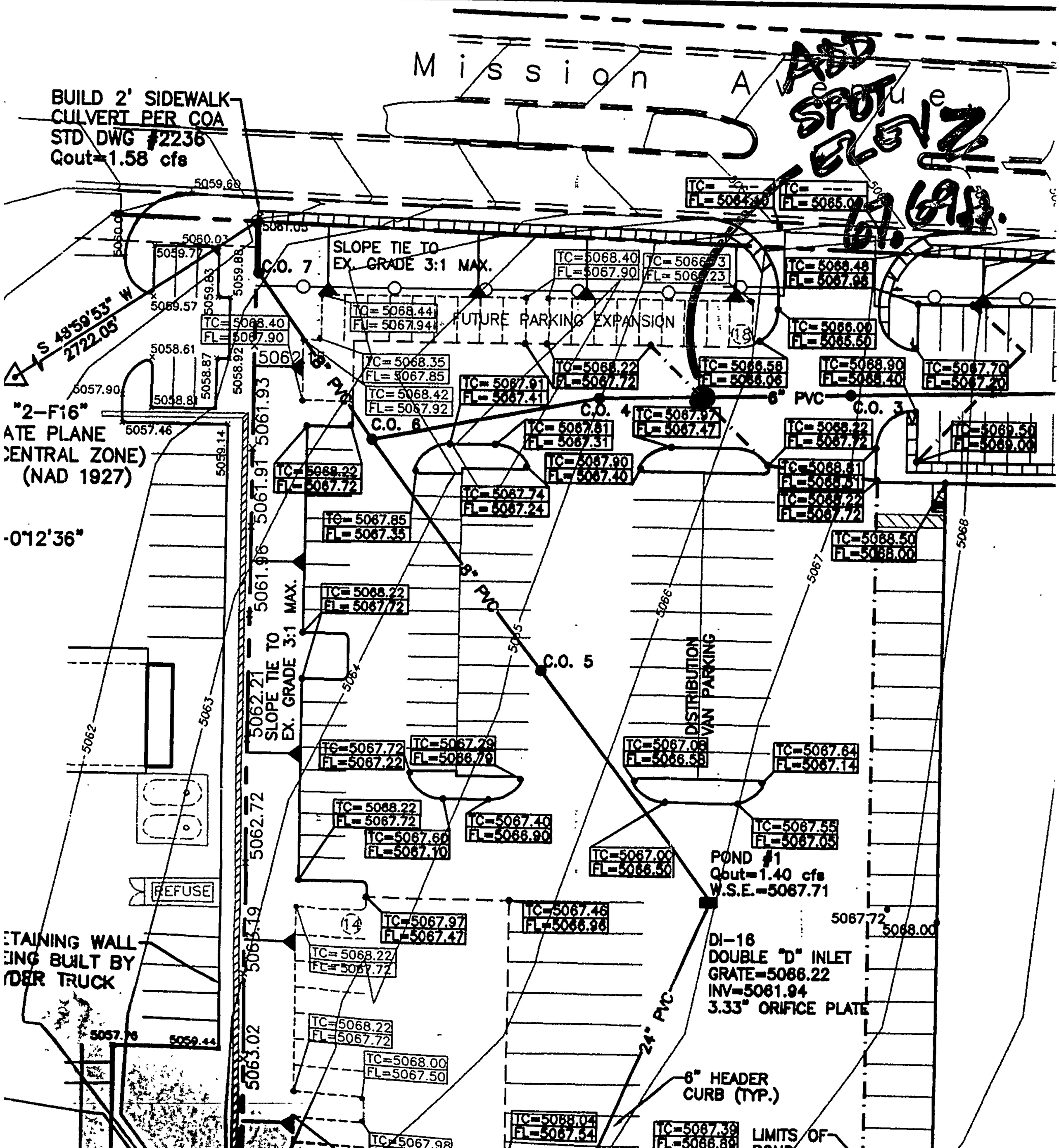
Stephen Paul Kemna

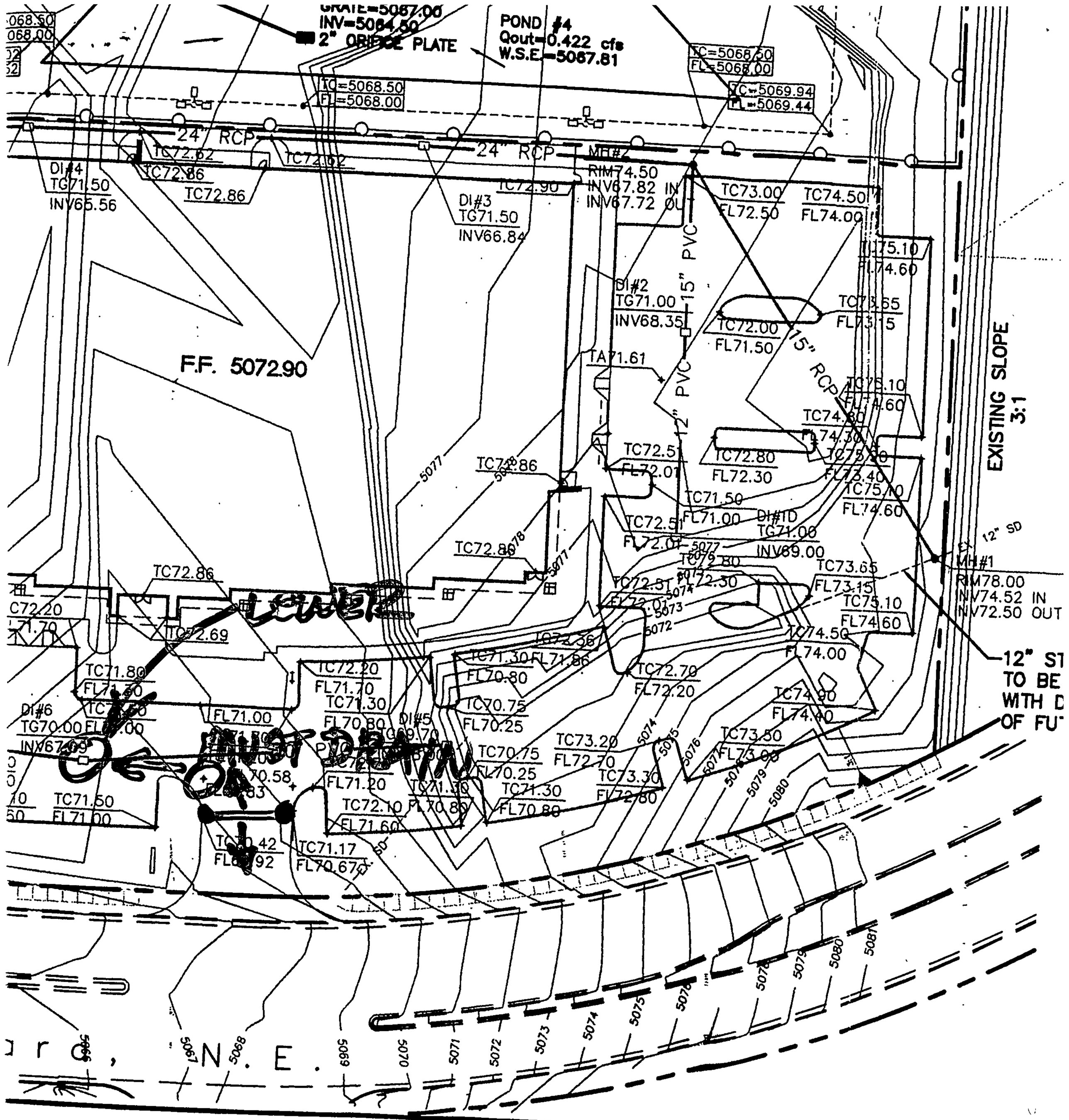
Stephen P. Kemna, P.E.

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376


ACS MONUMENT "2-F16"
NEW MEXICO STATE PLANE
COORDINATES (CENTRAL ZONE)
X=390,920,.06 (NAD 1927)
Y=1,504,67.78
G-G=0.9996718
DELTA ALPHA=-0°12'36"
EL=5062.02
C.O. 6
C.O. 1
REFUSE
RETAINING WALL BEING BUILT BY RYDER TRUCK
SLOPE TIE TO EX. GRADE 3:1 MAX.
POND #5
Qout=11.29 cfs
W.S.E.=5069.89
FUTUR BLDG.
24" PVC
30" RCP
THIS CURB MUST BE BUILT SO POND #1 DOES NOT DRAIN TO WEST
ITEM #2

ITEM #3


Mission Avenue
BUILD 2' SIDEWALK
CULVERT PER COA
STD DWG #2236
Qout=1.58 cfs
SLOPE TIE TO
EX. GRADE 3:1 MAX.
C.O. 7
FUTURE PARKING EXPANSION
C.O. 6
C.O. 4
C.O. 3
C.O. 5
8" PVC
24" PVC
DISTRIBUTION VAN PARKING
POND #1
Qout=1.40 cfs
W.S.E.=5067.71
DI-16
DOUBLE "D" INLET
GRATE=5066.22
INV=5061.94
3.33" ORIFICE PLATE
6" HEADER
CURB (TYP.)
LIMITS OF
REFUSE
"2-F16"
ATE PLANE
CENTRAL ZONE)
(NAD 1927)
-012'36"
S 48°59'53" W
2722.05'
ETAINING WALL
EING BUILT BY
VDER TRUCK
SPOT ELEV
61.68


GRATE=5067.00
INV=5064.50
2" ORIFICE PLATE
POND #4
Qout=0.422 cfs
W.S.E.=5067.81
TC=5068.50
FL=5068.00
TC=5069.94
FL=5069.44
24" RCP
MH#2
RIM74.50
INV67.82 IN
INV67.72 OUT
DI#4
TG71.50
INV65.56
DI#3
TG71.50
INV66.84
DI#2
TG71.00
INV68.35
15" PVC
15" RCP
12" PVC
TC73.00
FL72.50
TC74.50
FL74.00
TC75.10
FL74.60
TC73.65
FL73.15
TC72.00
FL71.50
TA71.61
F.F. 5072.90
EXISTING SLOPE 3:1
12" SD
MH#1
RIM78.00
INV74.52 IN
INV72.50 OUT
12" ST
TO BE
WITH D
OF FU
DI#6
TG70.00
INV67.09
DI#5
TG69.70
DI#1D
TG71.00
INV69.00
TC71.50
FL71.00
TC72.80
FL72.30
TC72.51
FL72.01
TC73.20
FL72.70
TC73.30
FL72.80
TC73.50
TC74.90
FL74.40
TC71.80
FL71.30
TC72.20
FL71.70
TC71.30
FL70.80
TC70.75
FL70.25
TC72.10
FL71.60
TC71.17
FL70.67
TC72.70
FL72.20
TC72.86
TC72.69
TC71.50
FL71.00
FL71.00
5067
5068
5069
5070
5071
5072
5073
5074
5075
5076
5077
5078
5079
5080
5081

ITEM #4

FAX

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
DEVELOPMENT AND BUILDING SERVICES
(ONE STOP SHOP)
600 2ND STREET - PLAZA DEL SOL - 2ND FLOOR WEST
FAX NO. 924-3864

DATE: 9-8-98

TIME: 4:40

NO. OF PAGES: 5
(INCLUDING COVER PAGE)

TO: SARAH

FROM: SUSAN C.

COMMENTS: Attached are Smith's Comments re: Frito Lay - Please have the plan updated to address #1 and #2. for #3 - instead of a spot elevation, maybe a water block or high point can be shown. for #4 - show a water block. the grate elev. is ok, water can go in the other grate
I'll hold onto this file - if the revised plan can get back to me in a few days, I won't have to disapprove the plan and wait for a resubmittal.
Call me if you have questions - 924-3982

- Smc

Smith Engineering Company

A Full Service Engineering Company

September 3, 1998

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

Re: Drainage Report for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves)
Tierra West, Report stamp dated August 19, 1998 and Plan stamp dated August 20, 1998
Drainage File # F16/D51
Request for Site Development Plan for Building Permit Approval, Building Permit, and Grading Permit
SEC Job # 198624.B13

Dear Ms. Calongne:

Smith Engineering Company (SEC) has reviewed the resubmittal for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves) dated August 20, 1998. All of the previous review comments were addressed. Some small but important additions should be added to the grading plan as listed below:

1. Please update the Grading and Drainage Plan to show the updated "Qout" and "W.S.E." values at the proposed detention basins as updated in the report.
2. Please add a note to the Grading and Drainage Plan indicating that the curb located west of Pond #1 will be built at the same time as the temporary asphalt curb along the west edge of Pond #1 (see attached figure).
3. Please add a spot elevation in the entrance driveway just north of Pond #1 with an elevation above the 100-year water surface elevation of Pond #1=67.69 ft (see attached figure). This will ensure that Pond #1 will not overflow to Mission Avenue during the 100-year event.
4. Please lower the grate elevation of DI#6 from an elevation of 70.00 ft to an elevation that will drain the spot elevation of 69.83 ft shown near the water block at the south driveway of the Chaves-Grieves property (see attached figure).

Thank you for the opportunity to review this drainage report. If you have any questions please feel free to contact me at 884-0700.

Sincerely,

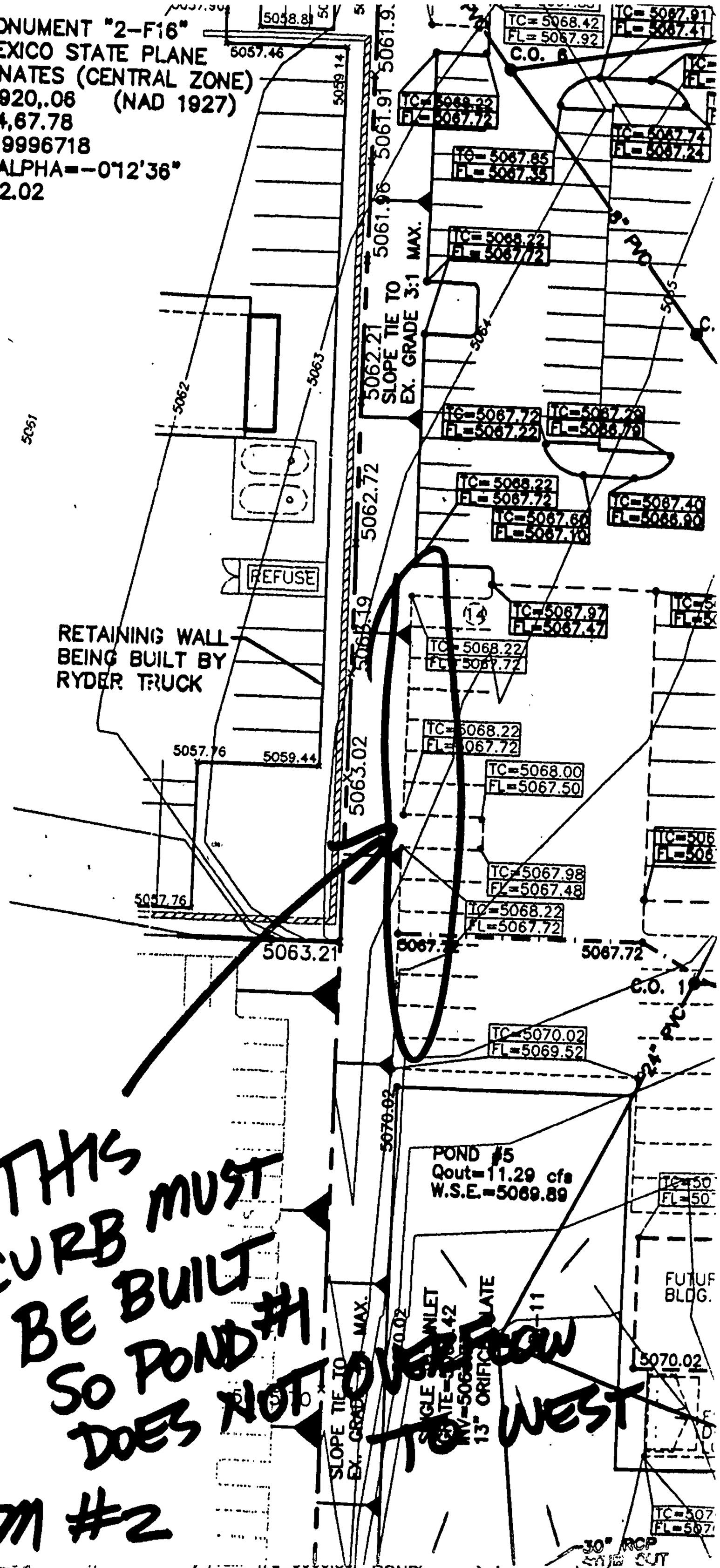
Smith Engineering Company

Stephen Paul Kemna

Stephen P. Kemna, P.E.

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

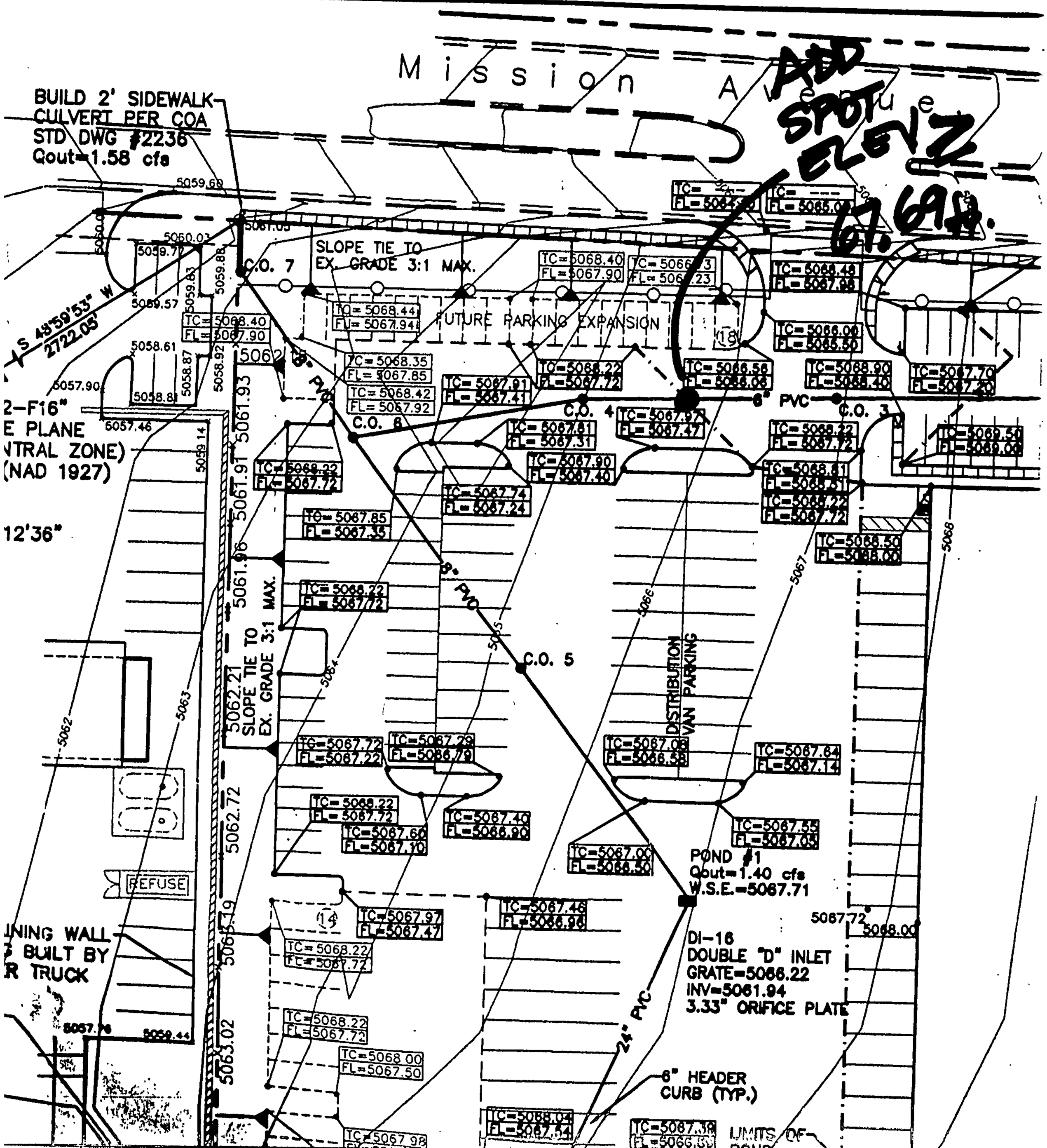
ACS MONUMENT "2-F16"
NEW MEXICO STATE PLANE
COORDINATES (CENTRAL ZONE)
X=390,920,.06 (NAD 1927)
Y=1,504,67.78
G-G=0.9996718
DELTA ALPHA=-0°12'36"
EL=5062.02

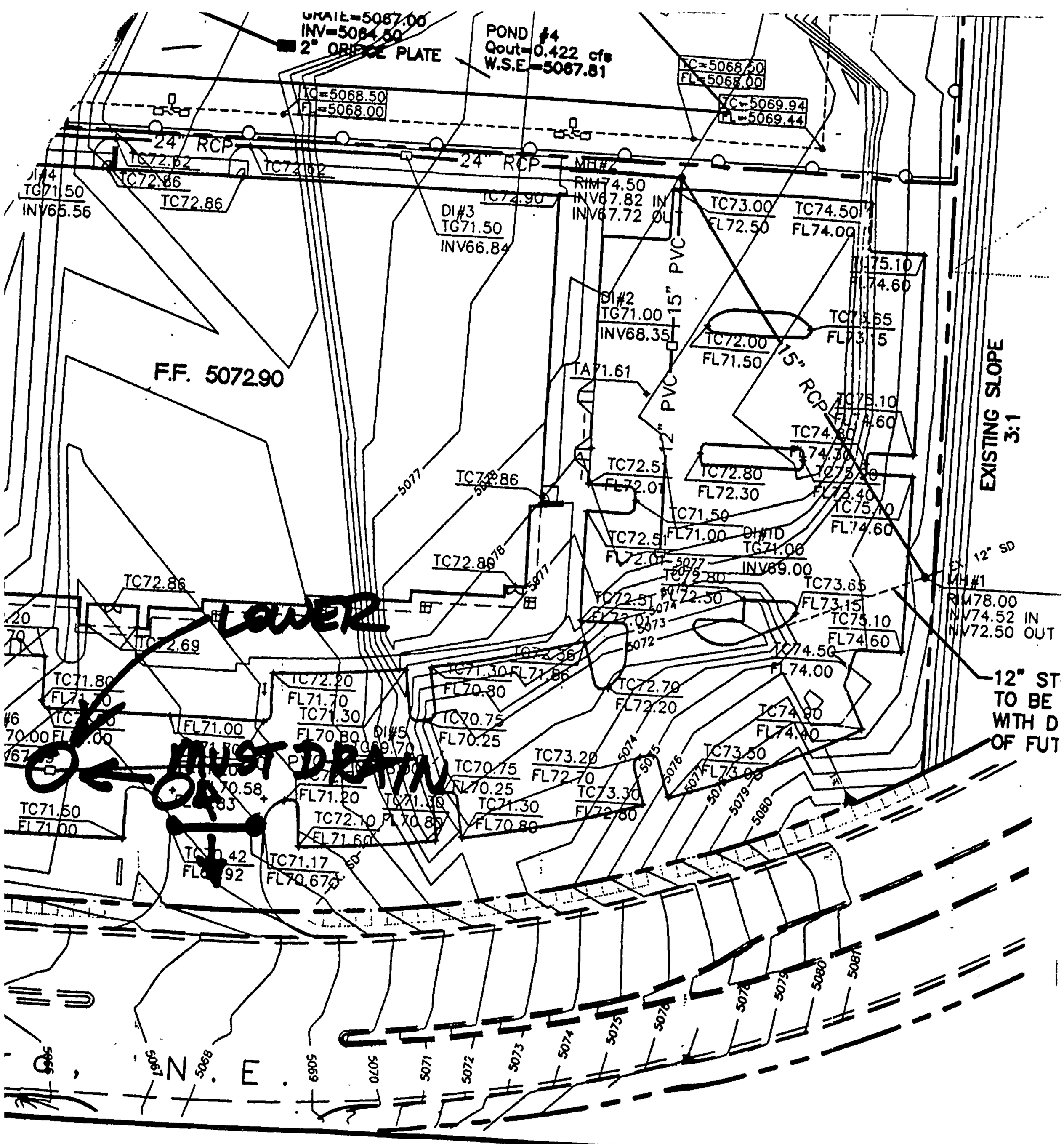


THIS CURB MUST BE BUILT SO POND #1 DOES NOT OVERFLOW TO WEST

ITEM #2

ITEM #3


Mission Ave
ADD SPOT ELEV
67.69±
BUILD 2' SIDEWALK CULVERT PER COA STD DWG #2236 Qout=1.58 cfs
SLOPE TIE TO EX. GRADE 3:1 MAX.
FUTURE PARKING EXPANSION
C.O. 7
C.O. 6
C.O. 4
C.O. 3
C.O. 5
6" PVC
8" PVC
24" PVC
DISTRIBUTION VAN PARKING
POND #1
Qout=1.40 cfs
W.S.E.=5067.71
DI-16
DOUBLE "D" INLET
GRATE=5066.22
INV=5061.94
3.33" ORIFICE PLATE
6" HEADER CURB (TYP.)
REFUSE
S 48°59'53" W
2722.05'
2-F16"
E PLANE
NTRAL ZONE)
(NAD 1927)
12'36"
NING WALL
BUILT BY
R TRUCK


GRATE=5067.00
INV=5064.50
2" ORIFICE PLATE
POND #4
Qout=0.422 cfs
W.S.E.=5067.81
TC=5068.50
FL=5068.00
TC=5068.50
FL=5068.00
TC=5069.94
FL=5069.44
24" RCP
24" RCP
MH#2
RIM74.50
INV67.82 IN
INV67.72 OUT
DI#4
TG71.50
INV65.56
TC72.62
TC72.86
TC72.86
TC72.62
TC72.90
DI#3
TG71.50
INV66.84
TC73.00
FL72.50
TC74.50
FL74.00
15" PVC
DI#2
TG71.00
INV68.35
TC72.00
FL71.50
TC73.65
FL73.15
F.F. 5072.90
TA71.61
12" PVC
15" RCP
TC75.10
FL74.60
TC74.80
FL74.30
TC72.51
FL72.01
TC72.80
FL72.30
TC75.10
FL74.60
EXISTING SLOPE
3:1
TC72.86
TC71.50
FL71.00
DI#1D
TG71.00
INV69.00
TC72.86
TC72.86
TC72.80
FL72.50
TC73.65
FL73.15
TC75.10
FL74.60
12" SD
MH#1
RIM78.00
INV74.52 IN
INV72.50 OUT
TC72.69
TC74.50
FL74.00
12" ST
TO BE
WITH D
OF FUT
TC71.80
FL71.70
TC72.20
FL71.70
TC71.30
FL70.80
TC71.30
FL70.80
TC72.70
FL72.20
TC74.80
FL74.40
FL71.00
DI#5
TC70.75
FL70.25
TC73.20
FL72.70
TC73.50
TC70.75
FL70.25
TC71.30
FL70.80
TC73.30
FL72.80
TC71.50
FL71.00
FL71.20
TC72.10
FL71.60
TC71.17
FL70.67
LOWER
MUST DRAIN
OR
N. E.

ITEM #4

Tierra West, LLC

August 20, 1998

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

Re: Drainage Report for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves), F16-D5I

Dear Ms. Calongne:

We are resubmitting the Tract 9-A-1-B (Chavez-Grieves) and Tract 9-A-1-A (Frito Lay) drainage report and grading plan for your review and approval. We have addressed the comments from Smith Engineering Company in the following manner.

1. (#7) We have provided the existing grades on the east side of Tract 9-A-1-B and the southeast side of Tract 9-A-1-A.

   (#9) We have revised Basin D to include only the landscape area and water block, which has reduced the flow from the basin to 0.66 cfs. We have also reduced the outflow from the ponds on Frito Lay to 0.87 cfs. The total outflow from the site is 1.53 cfs that is less than the allowable of 1.69 cfs.

2. The storm drain system on Tract 9-A-1-B (Chavez-Grieves) will not be built until that tract is developed. However, they will provide a stub from Pond #5 on the Frito Lay site to the Chavez-Grieves site. In the future, when they develop Tract 9-A-1-B, they will construct the storm drain to tie into the Frito Lay site. We have revised the grading plan to show the size of the storm drains on the Chavez-Grieves site.

3. A culvert analysis, with Manning's equation, was used to check the pipe sizes on the Frito Lay property and we have included it in the drainage report in the appendix under "Storm Sewer."

4. A City of Albuquerque benchmark has been added to the grading plan.

5. They will remove the existing detention pond and the 12" storm drain when they develop Tract 9-A-1-B. Until they develop that tract, the existing interim solution will remain intact. We have called out the removal on the plans.

6. We have revised the grading plan to show the shape of the ponds more clearly with the top of pond elevation and bottom of pond elevations.

RECEIVED
AUG 20 1998
HYDROLOGY SECTION

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

7. We show a cross-lot drainage easement on the plat for Tracts 9-A-1-B and 9-A-1-A. We have shown the ponds that accept the offsite drainage from the adjoining tracts (Pond 1 and Pond 5) on the plat. We have included the plat with this submittal. A note concerning the cross-lot drainage easement and Ponds 1 and 5 has been added to the grading plan.

8. The 100-year ponding depth in the parking lot adjacent to Frito Lay is 1.5 feet. This depth does not exceed the height of the curb as it is only 1.5' deep near the outfall grate.

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

Sincerely,

Sara McCollam

Sara McCollam

Enclosures

cc: James K. Trump, Jr.

JN: 980044
scm

DRAINAGE REPORT

for

Frito Lay and Chavez-Grieves
(Tracts 9-A-1-A and 9-A-1-B)

Prepared by

Tierra West, LLC
4421 McLeod Road NE, Suite D
Albuquerque, New Mexico 87109

Prepared for

Build New Mexico
4411 McLeod Rd NE, Suite G
Albuquerque, New Mexico 87109

RECEIVED
AUG 20 1998
HYDROLOGY SECTION

July 1998

Ronald R. Bohannan P.E. No. 7868

RONALD RAY BOHANNAN
NEW MEXICO
7868
REGISTERED PROFESSIONAL ENGINEER
8-19-98

TABLE OF CONTENTS

Zone Atlas Map F-16 1

Location 2

Existing Drainage Conditions 2

Existing Basin Layout 3

FEMA Map and Soil Conditions 4

On-Site Drainage Management Plan 4

FIRM Map 35001C0138 D 5

Proposed Basin Layout 7

Pond Layout 8

Summary 9

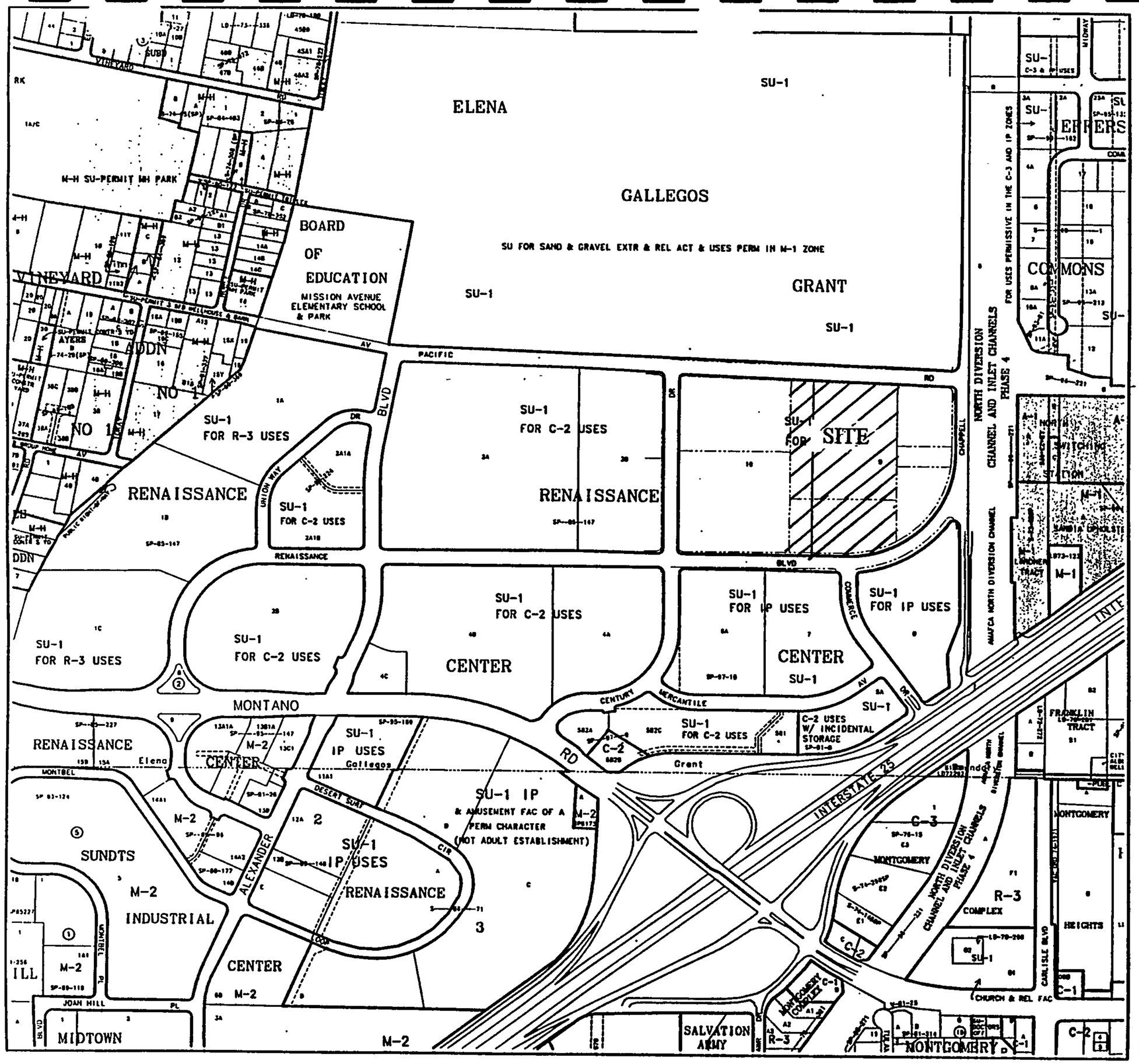
Runoff Calculations 10

Storm Sewer 14

Pond Calculations 21

AHYMO Runoff Input and Summary Output for Developed Drainage Basins 27

AHYMO Input and Output for Ponding 37



GRAPHIC SCALE IN FEET

250 0 500 1000

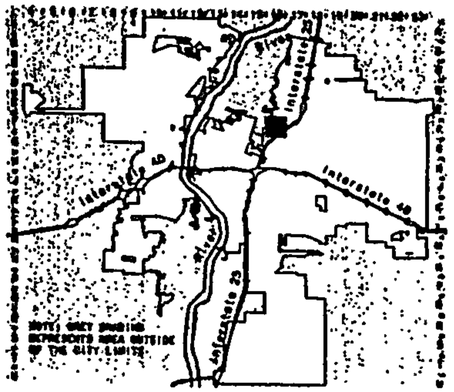
CITY OF Albuquerque

Albuquerque Geographic Information System

PLANNING DEPARTMENT

©Copyright 1997

Map Amended through February 15, 1997



LEGAL DESCRIPTION

T11N

R3E

SEC 34

UNIFORM PROPERTY CODE

1-018-061

F-16-Z

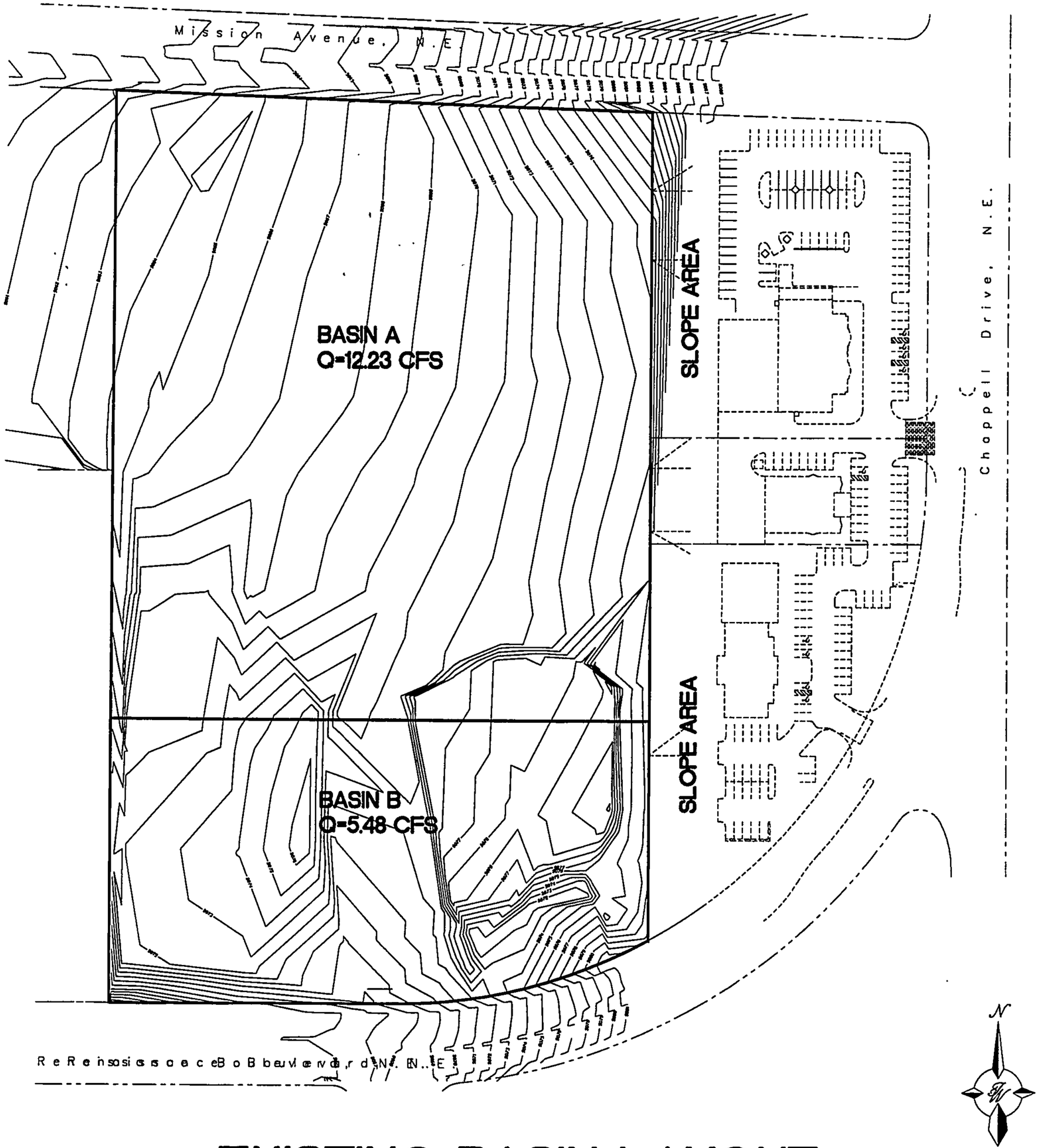
Location

The site is the proposed location of a Frito Lay distribution warehouse and a new office building. The Frito Lay site is the proposed location of an office and warehouse building with a future expansion area for an additional warehouse. The site is located south of Mission Avenue between Culture Drive and Chappell Drive. It is located on Zone Atlas Map F-16 and contains approximately 12.13 acres. The legal description of the Frito Lay site and the Chavez-Grieves office building site is Tract 9-A-1-A and Tract 9-A-1-B of the Renaissance Center, respectively. A plat showing the new tracts has been included for your information. The purpose of this report is to provide the drainage analysis and management plan for the FritoLay facility.

Existing Drainage Conditions

The site is part of the existing Renaissance Master Drainage Plan which states that only 0.1 cfs/acre may be discharged from the site. The site is also part of a master plan for Tract 9 of the Renaissance Center (F16/D51). The master plan for Tract 9 divides the tract into four tracts and two phases. Phase I of Tract 9 which includes Tracts 9-B, 9-C, and 9-D discharges 9.79 cfs into Tract 9A (Phase 2). Tract 9A has since been divided into two additional tracts, Tract 9-A-1-A which will be the FritoLay site, and Tract 9-A-1-B which is the location of the proposed Chavez-Grieves Engineers office building (see DRB 96-495). Currently, there is a desilting pond on Tract 9-A-1-B which accepts the offsite flows from Phase 1 and discharges the flow to Renaissance Boulevard.

Tract 9A (Frito Lay and Chavez-Grieves) is currently undeveloped. There are two existing drainage basins on the site. Undeveloped basin A consists of the Frito Lay site with a flow rate of 12.23 cfs and sheet flows northwest towards Mission Avenue. Undeveloped basin B consists of the Chavez-Grieves site which drains southwest towards Renaissance Boulevard.



EXISTING BASIN LAYOUT

The existing site to the east has slope ties to the FritoLay and Chavez-Grieves sites. These slope ties create an offsite basin which has an undeveloped discharge of 2.32 cfs. No flows enter the site from the west because of the natural slope of the topography and no flows enter the site from the north because Mission Avenue intercepts any offsite flows. The flows from Tracts 9B, 9C, 9D enter Tract 9-A-1-B (Chavez-Grieves office building) from an existing 12" storm drain which discharges in an existing sedimentation basin.

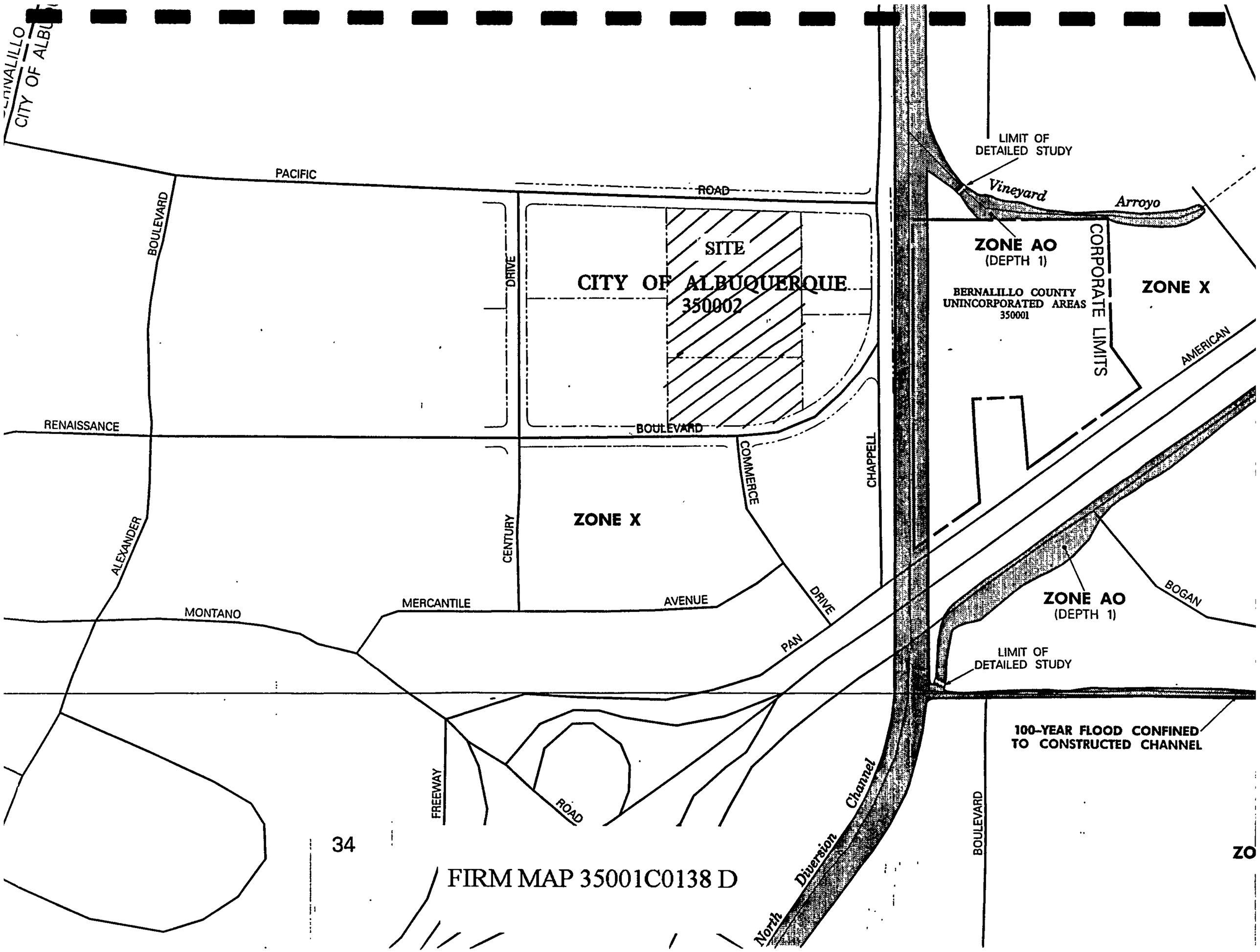
FEMA Map and Soil Conditions

The site is located on FIRM Map 350010138 D as shown on the attached excerpt. The map shows that the site does not lie within any 100 year flood plains.

The site contains two soil types from the Soil Conservation Service Soil Survey of Bernalillo County. These are a Wink-Embudo complex and a Bluepoint-Kokan association. The Wink-Embudo complex has a moderate hazard of water erosion and medium runoff. The Bluepoint-Kokan association has slow runoff and a moderate to severe hazard of water erosion. However, the site is the location of an old gravel pit and the existing soils are a blend of native materials.

On-Site Drainage Management Plan

The Chavez-Grieves office building site will free discharge the developed on-site flows to a 30" pipe that will drain the upper portion of Tracts 9B, 9C, and 9D along with the Chavez-Grieves site (Tract 9-A-1-B) to the FritoLay site. The FritoLay site will accept the 9.79 cfs from Phase I (Tracts 9B, 9C, and 9D). The 12" pipe that discharges from Phase I will connect to the proposed 30" system on the Chavez-Grieves site. The 30" pipe will route the combined flows of 24.97 cfs to Pond 5 on the Frito Lay site. All the offsite flows and the on-site flows entering the FritoLay site will be ponded and released at a controlled rate of 0.1 cfs/acre.


BERNALILLO
CITY OF ALBU
PACIFIC
ROAD
BOULEVARD
DRIVE
SITE
CITY OF ALBUQUERQUE
350002
LIMIT OF
DETAILED STUDY
Vineyard
Arroyo
ZONE AO
(DEPTH 1)
CORPORATE LIMITS
ZONE X
BERNALILLO COUNTY
UNINCORPORATED AREAS
350001
AMERICAN
RENAISSANCE
BOULEVARD
COMMERCE
CHAPPELL
ZONE X
CENTURY
ALEXANDER
MERCANTILE
AVENUE
DRIVE
MONTANO
PAN
BOGAN
ZONE AO
(DEPTH 1)
LIMIT OF
DETAILED STUDY
100-YEAR FLOOD CONFINED
TO CONSTRUCTED CHANNEL
FREEWAY
ROAD
North Diversion Channel
BOULEVARD
ZO
34
FIRM MAP 35001C0138 D

The site has been divided into seven on-site basins (Basins 1-7) and one off-site basin (Basin 8) on the Frito Lay site and eleven on-site basins on the Chavez-Grieves site (Basins A-K) in order to pond the drainage and control the rate of runoff. Basins 1 thru 6 collect the on-site flows generated by FritoLay. Basin 7 consists of the on-site landscaped area located on the north side of the Frito Lay site and will sheet flow 0.99 cfs to Mission Avenue. Basin 8 consists of the off-site flows generated by the slope area of Tracts 9B, 9C, and 9D. Basins A-C and E-K describe the developed basins on the Chavez-Grieves site. These basins will free discharge to a proposed on-site storm drain system that will convey the flows to the proposed ponds on the Frito Lay site. Basin D will free discharge 0.66 cfs to Renaissance Avenue. The basin delineations are shown on the attached "Developed Basin Layout" and the pond locations are shown on the "Pond Layout" exhibit.

The 0.87 cfs combined outflow from Ponds 1 and 2 will be conveyed via a 6" PVC pipe to a proposed 24" sidewalk culvert that will transport the flow to Mission Avenue. Basin D from the Chavez-Grieves site will free discharge 0.66 cfs to Renaissance Boulevard. The total runoff from the site will be 1.53 cfs. The site, including Tracts 9-B, 9-C, and 9-D and Tracts 9-A-1-A and 9-A-1-B contains 16.92 acres. Per the Renaissance Master Plan, this site has an allowable discharge of 1.69 cfs. The proposed discharge of 1.53 cfs is below the discharge permitted by the Renaissance Master Drainage Plan.

The pond routing and discharge rates are described below. Orifice plates will be used in the drop inlets to control the outflow from each pond.

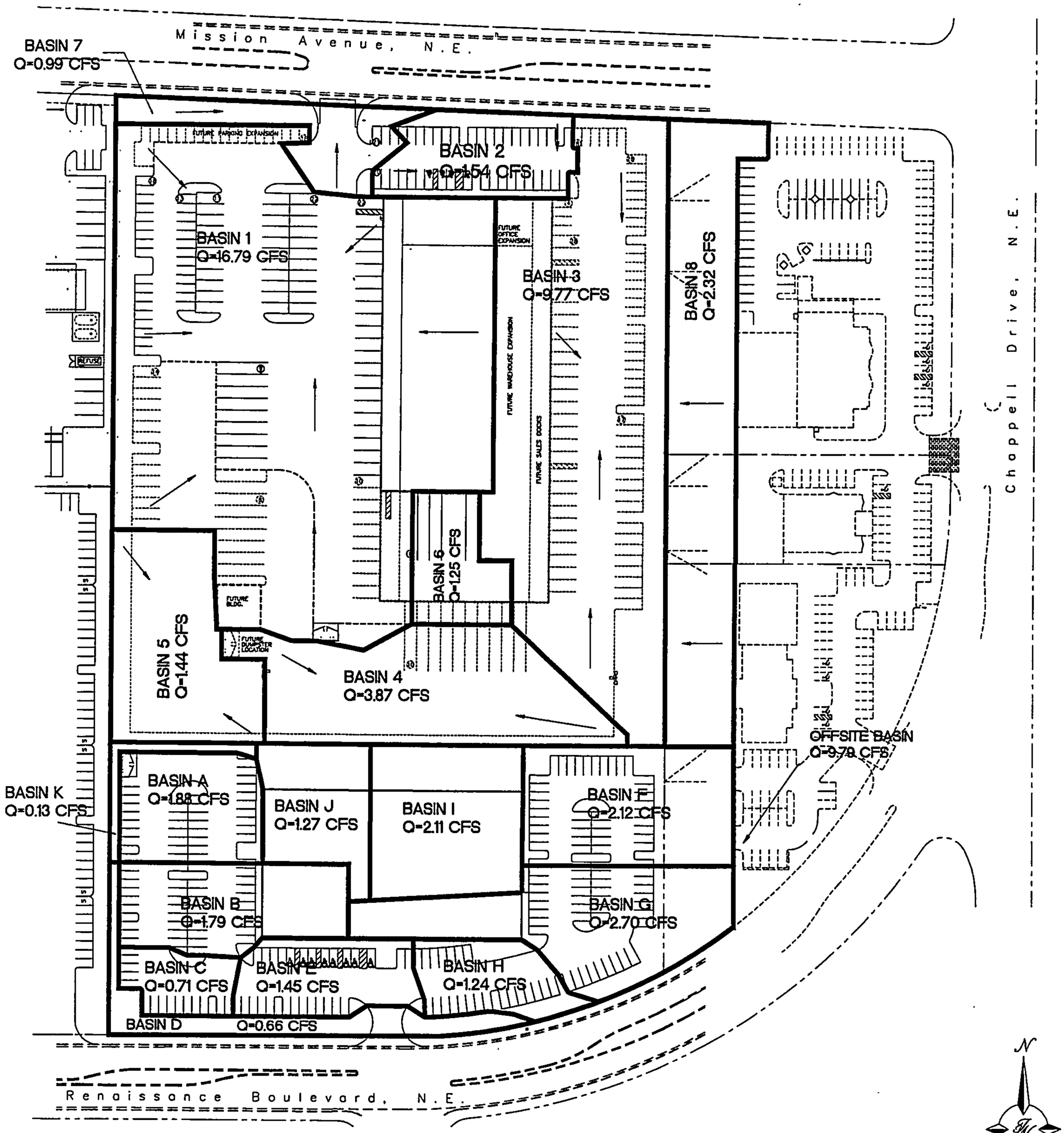
Route 1

Tracts 9-B, 9-C, and 9-D discharge 9.79 cfs via a 12" pipe to the Chavez-Grieves site.

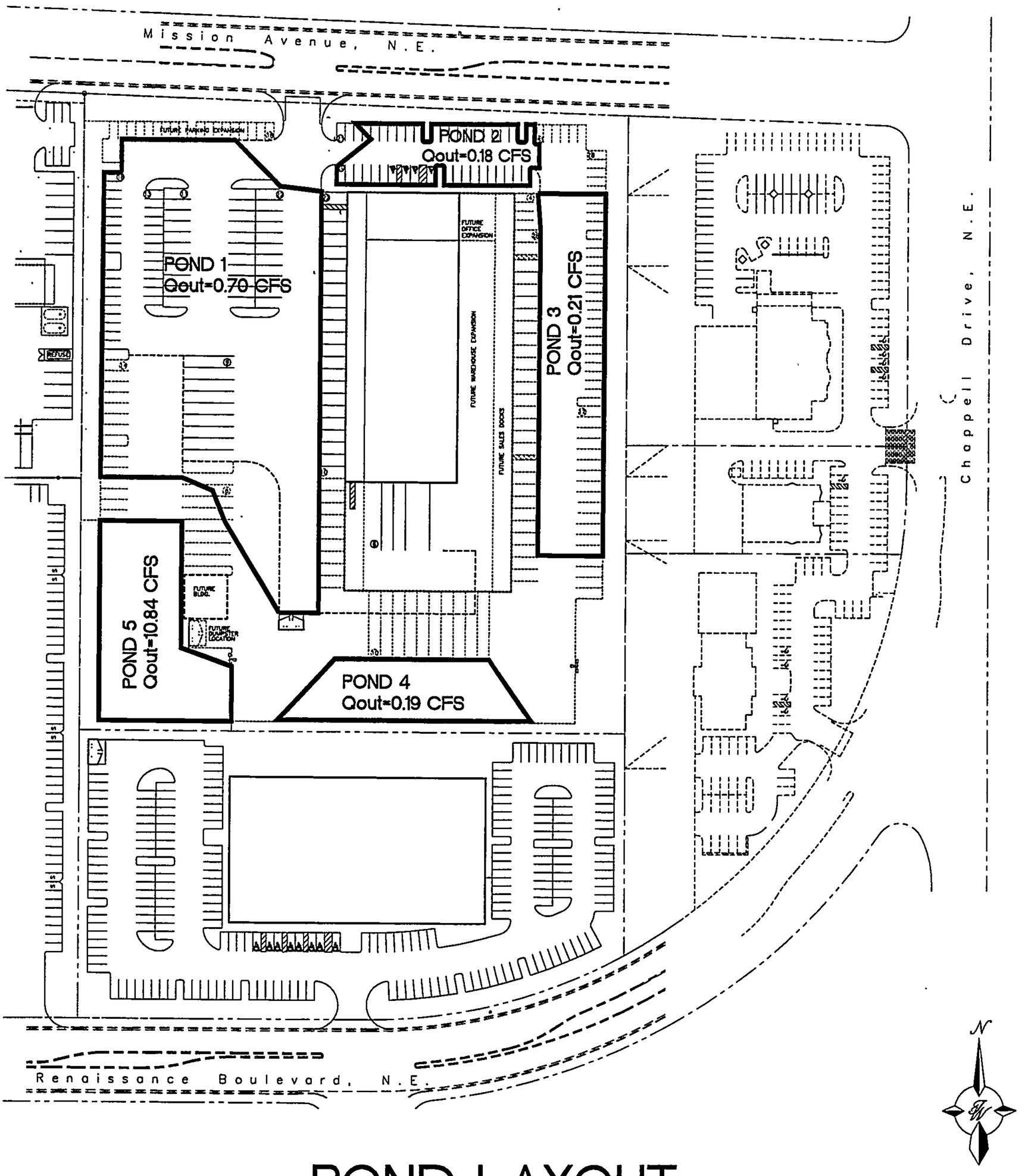
Chavez-Grieves (Tract 9-A-1-B) will free discharge 24.97 cfs via a 30" pipe to Pond 5.

Pond 4 will drain to Pond 5 at a rate of 0.19 cfs limited by a 2" orifice plate.

Pond 5 will drain to Pond 1 at a rate of 10.84 cfs limited by a 13.0" orifice plate.



PROPOSED BASIN LAYOUT


Mission Avenue, N.E.
FUTURE PARKING EXPANSION
POND 2
Qout=0.18 CFS
POND 1
Qout=0.70 CFS
FUTURE OFFICE EXPANSION
FUTURE WAREHOUSE EXPANSION
FUTURE SALES DOCKS
POND 3
Qout=0.21 CFS
Chappell Drive, N.E.
POND 5
Qout=10.84 CFS
FUTURE BLDG.
FUTURE DUMPSTER LOCATION
POND 4
Qout=0.19 CFS
Renaissance Boulevard, N.E.
N

POND LAYOUT

Pond 1 will drain to Mission Avenue at a rate of 0.70 cfs limited by 4.75" orifice plate.

Route 2

Basin 8 will drain to Pond 3 at a rate of 2.32 cfs.

Pond 3 will drain to Pond 2 at a rate of 0.21 cfs limited by a 2" orifice plate.

Pond 2 will drain to Mission Avenue at a rate of 0.18 cfs limited by 1-2/3" orifice plate.

The outflow from Pond 1 and Pond 2 will be combined for a total developed flow to Mission Avenue of 0.87 cfs.

The entrance northwest entrance to the FritoLay site will act as an emergency overflow in the event of a storm greater than 100 year. Pond 1 and Pond 2 are the final ponds in the series and will overflow out the entrance.

Summary

Tract 9-A-1-A consists of the proposed FritoLay site containing 8.38 acres, and Tract 9-A-1-B is the location of the proposed Chavez-Grieves office building containing 3.75 acres. The Frito Lay site is the outfall for four tracts that drain through a series of storm sewer to a central pond on site. Tracts 9B, 9C, and 9D drain to Tract 9-A-1-B (Chavez-Grieves) via a 12" pipe. These flows, along with the flows generated by Chavez-Grieves, are collected in a 30" storm sewer and discharged to Pond 1 on-site. Pond 1 and Pond 2 will discharge a combined flow of 0.87 cfs to Mission Avenue via a sidewalk culvert. Mission Avenue drains west per the approved Andrew, Asbury, and Roberts Master Drainage Plan to a central off-site pond.

Runoff Calculations

RUNOFF CALCULATIONS

The site is @ Zone 2

LAND TREATMENT

Proposed
B = 90%
D = 10 %

Existing
B = 100%

DEPTH (INCHES) @ 100-YEAR STORM

P_{60} = 2.01 inches

P_{360} = 2.35 inches

P_{1440} = 2.75 inches

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 2.01 x 0.667
= 1.34 inches

P_{360} = 1.57

P_{1440} = 1.83

See the summary output from AHYMO calculations.

Also see the following summary tables.

Drainage Basins

Existing

BASIN	AREA (SF)	AREA (AC)	AREA (MI²)
A	364950.23	8.3781	0.013091
B	163319.11	3.7493	0.005858

Proposed - Frito Lay

BASIN	AREA (SF)	AREA (AC)	AREA (MI²)
1	163901.98	3.7627	0.005879
2	16055.23	0.3686	0.000576
3	95300.05	2.1878	0.003418
4	37701.13	0.8655	0.001352
5	27427.76	0.6297	0.000984
6	11527.64	0.2646	0.000413
7	13036.44	0.2993	0.000468
8	44201.79	1.0147	0.001586
Total	409152.02	9.3928	0.014676

Proposed - Chavez-Grieves

BASIN	AREA (SF)	AREA (AC)	AREA (MI²)
A	18169.00	0.4171	0.000652
B	17346.00	0.3982	0.000622
C	6763.00	0.1553	0.000243
D	11122.01	0.2553	0.000399
E	13965.46	0.3206	0.000501
F	24573.00	0.5641	0.000881
G	31350.00	0.7197	0.001125
H	13412.00	0.3079	0.000481
I	21621.64	0.4964	0.000776
J	12954.43	0.2974	0.000465
K	2401.93	0.0551	0.000086
Total	173678.47	3.9871	0.006230

Runoff Calculation Results

Existing

BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
A	12.23	4.59	0.543	0.194
B	5.48	2.06	0.243	0.087

Proposed - Frito Lay

BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
1	16.49	10.87	0.715	0.447
2	1.54	0.97	0.063	0.039
3	9.77	6.32	0.415	0.260
4	3.87	2.51	0.164	0.103
5	1.44	0.59	0.041	0.015
6	1.25	0.83	0.054	0.034
7	0.99	0.54	0.036	0.020
8	2.32	0.95	0.066	0.024
Total	37.67	23.58	1.554	0.942

Proposed - Chavez-Grieves

BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
A	1.88	1.21	0.079	0.050
B	1.79	1.16	0.076	0.047
C	0.71	0.46	0.030	0.018
D	0.66	0.30	0.020	0.009
E	1.45	0.93	0.061	0.038
F	2.12	1.26	0.084	0.049
G	2.70	1.61	0.107	0.063
H	1.24	0.76	0.050	0.030
I	2.11	1.33	0.087	0.054
J	1.27	0.80	0.052	0.032
K	0.13	0.06	0.004	0.001
Total	16.06	9.88	0.650	0.391

Storm Sewer

Pipe Capacity

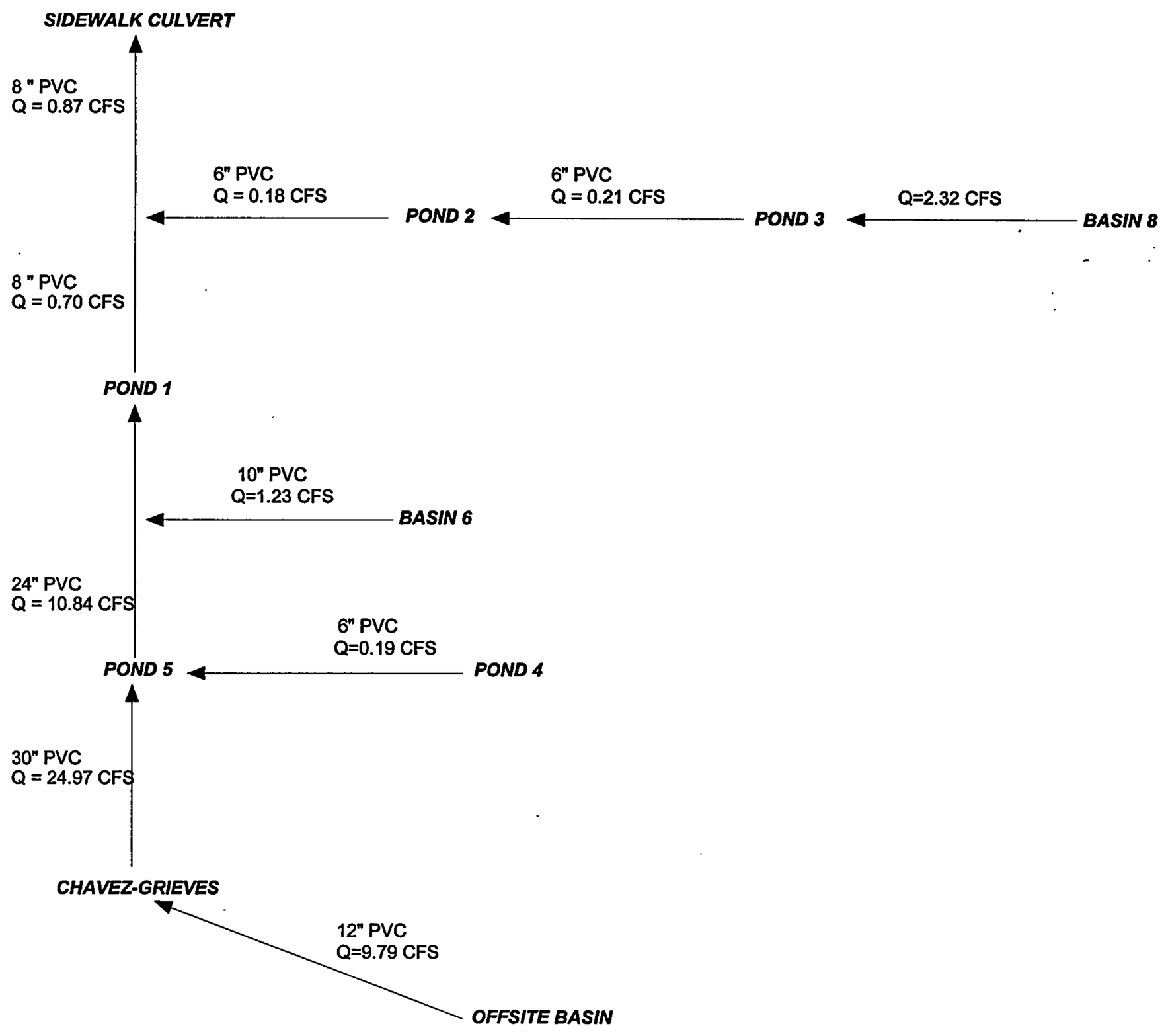
Manning's Equation:

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

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

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
Chavez-Grieves							
CB1 to CB2	12	0.84	0.79	0.25	3.27	2.70	3.44
CB2 to MH2	15	0.84	1.23	0.3125	5.94	4.82	3.93
MH1 to MH2	15	2.6	1.23	0.3125	10.44	9.79	7.98
MH2 to CB3	24	0.84	3.14	0.5	20.79	14.61	4.65
CB3 to CB4	24	0.84	3.14	0.5	20.79	16.72	5.32
CB4 to CB10	24	0.84	3.14	0.5	20.79	17.99	5.73
CB5 to CB6	10	0.65	0.55	0.208333	1.77	1.24	2.27
CB6 to CB7	12	0.65	0.79	0.25	2.88	2.50	3.18
CB7 to CB8	15	0.65	1.23	0.3125	5.22	3.21	2.62
CB8 to CB9	15	0.65	1.23	0.3125	5.22	5.00	4.07
CB9 to CB 10	18	0.65	1.77	0.375	8.49	6.88	3.89
Frito Lay							
CB10 to CB11	30	0.6	4.91	0.625	31.86	24.97	5.09
CB11 TO CO1	24	0.54	3.14	0.5	16.67	10.84	3.45
CB13 TO CO1	10	0.43	0.55	0.208333	1.44	1.23	2.26
CO1 TO CB16	24	0.54	3.14	0.5	16.67	11.66	3.71
CB12 TO CB11	6	0.44	0.20	0.125	0.37	0.19	0.97
CB14 TO CB15	6	0.57	0.20	0.125	0.42	0.21	1.07
CB15 to CO6	6	0.53	0.20	0.125	0.41	0.18	0.92
CB16 to CO6	8	0.52	0.35	0.166667	0.87	0.70	2.01
CO5 TO Culvert	8	0.52	0.35	0.166667	0.87	0.87	2.49

RUNOFF FLOW PATH



DROP INLET CALCULATIONS

BASIN	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
1	DOUBLE 'D'	4.21	16.79	0.686	1.50
2	SINGLE 'D'	2.30	1.54	0.019	1.00
3	SINGLE 'D'	2.30	9.77	0.778	1.50
4	SINGLE 'D'	2.30	3.87	0.122	1.00
5	SINGLE 'D'	2.30	1.44	0.017	1.60
A	SINGLE 'D'	2.30	1.88	0.029	1.29
B	SINGLE 'D'	2.30	1.79	0.026	1.29
C	SINGLE 'D'	2.30	0.71	0.004	1.29
E	SINGLE 'D'	2.30	1.26	0.013	1.00
F	SINGLE 'D'	2.30	2.12	0.037	1.01
G	SINGLE 'D'	2.30	1.7	0.024	1.20
H	SINGLE 'D'	2.30	1.24	0.013	1.50
I	SINGLE 'D'	2.30	2.11	0.036	0.50
J	SINGLE 'D'	2.30	1.27	0.013	0.50
K	SINGLE 'D'	2.30	0.13	0.000	1.50

<u>ORIFICE EQUATION</u>

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

SIDEWALK CULVERT

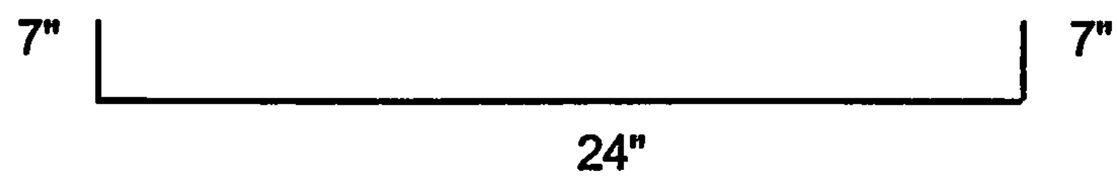
<u>Orifice Equation:</u>

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

Solve for Q
C = 0.6
A = 0.5833*2 = 1.167 ft^2
g = 32.2
H = Height of water measured from center of orifice

$$Q = 0.6(1.167)\sqrt{2*32.2*\frac{0.5833}{2}}$$

Q=3.04 cfs
Use a 24" sidewalk culvert
3.04 cfs > 1.59 cfs



STORM DRAIN INLET

EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

DOUBLE 'D':

Area at the grate:

L $= 76.75'' - 14\ (1/2''_{\text{middle bars}}) - 6''_{\text{center piece}}$
$= 63.75''$
$= 5.3125'$

W $= 25.5'' - 13\ (1/2_{\text{middle bars}})$
$= 19''$
$= 1.583'$

Area $= 1.583' \times 5.3125'$
$= 8.410\ ft^2$

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

STORM DRAIN INLET

EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

SINGLE 'D':

Area at the grate:

L = 38.375" - 7 (1/2" $_{\text{middle bars}}$)
= 34.875"
= 2.906'

W = 25.5" - 13 (1/2 $_{\text{middle bars}}$)
= 19"
= 1.583'

Area = 1.583' x 2.906'
= 4.601 ft^2

Effective Area = 4.601 - 0.5 (4.601)
= 2.30 ft^2

Effective Area = 2.30 ft^2

Pond
Calculations

VOLUME CALCULATIONS

POND 1

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 =	13.59
At =	86,017.47
Dt =	1.50
C =	57335.92

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
61.89	0	0	0.0000
66.22	4.33	0.0014	0.5962
66.42	4.53	0.0277	0.6102
66.62	4.73	0.1068	0.6240
66.82	4.93	0.2385	0.6374
67.02	5.13	0.4228	0.6506
67.22	5.33	0.6598	0.6635
67.42	5.53	0.9494	0.6762
67.62	5.73	1.2917	0.6886
67.72	5.93	1.6867	0.7008

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

C =	0.6
Diameter (in	3.33
Area (ft^2)=	0.060481
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

VOLUME CALCULATIONS

POND 2

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 =	6.80
At =	11,409.73
Dt =	1.00
C =	11402.93

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
62.97	0	0	0.0000
68.00	5.03	0.0008	0.1625
68.20	5.23	0.0061	0.1657
68.40	5.43	0.0218	0.1689
68.60	5.63	0.0480	0.1720
68.80	5.83	0.0847	0.1751
69.00	6.03	0.1318	0.1781

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

C =	0.6
Diameter (in	1.6667
Area (ft^2)=	0.015151
g =	32.2

H (Ft) = Depth of water above center of orifice
Q (CFS)= Flow

VOLUME CALCULATIONS

POND 3

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 =	6.80
At =	25,249.57
Dt =	1.50
C =	16828.51

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
63.81	0	0	0.0000
66.31	2.5	0.0004	0.1633
66.51	2.7	0.0081	0.1699
66.71	2.9	0.0314	0.1763
66.91	3.1	0.0700	0.1825
67.11	3.3	0.1241	0.1884
67.31	3.5	0.1937	0.1942
67.51	3.7	0.2787	0.1998
67.71	3.9	0.3792	0.2052
67.81	4	0.4352	0.2079

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

C =	0.6
Diameter (in	2
Area (ft^2)=	0.021817
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

VOLUME CALCULATIONS

POND 4

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 =	6.80
At =	13,396.15
Dt =	1.00
C =	13389.35

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
64.50	0	0	0.000
67.00	2.5	0.0004	0.163
67.20	2.7	0.0062	0.170
67.40	2.9	0.0247	0.176
67.60	3.1	0.0554	0.182
67.80	3.3	0.0985	0.188
68.00	3.5	0.1538	0.194

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

C =	0.6
Diameter (in	2
Area (ft^2)=	0.021817
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

VOLUME CALCULATIONS

POND 5

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 =	6.80
At =	20,910.48
Dt =	1.60
C =	13064.80

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
63.32	0	0	0.000
68.42	5.1	0.0008	9.476
68.62	5.3	0.0060	9.681
68.82	5.5	0.0241	9.883
69.02	5.7	0.0541	10.080
69.22	5.9	0.0961	10.274
69.42	6.1	0.1501	10.464
69.62	6.3	0.2161	10.650
69.82	6.5	0.2941	10.834
70.02	6.7	0.3842	11.014

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

C =	0.6
Diameter (in	13
Area (ft^2)=	0.921752
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

AHYMO
Runoff Input
and
Summary Output
for
Proposed and Existing
Drainage Basins

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/06/1998

INPUT FILE = A:E.DAT USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.350
COMPUTE NM HYD	100.A	-	1	.01309	12.23	.543	.77821	1.633	1.460	PER IMP= .00
COMPUTE NM HYD	100.B	-	1	.00586	5.48	.243	.77821	1.633	1.462	PER IMP= .00
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.570
COMPUTE NM HYD	110.A	-	1	.01309	4.59	.194	.27828	1.633	.548	PER IMP= .00
COMPUTE NM HYD	110.B	-	1	.00586	2.06	.087	.27828	1.633	.549	PER IMP= .00
FINISH										

```
*****************************************************************
*                    FRITO-LAY & CHAVEZ-GRIEVES                 *
*****************************************************************
*       100-YEAR, 6-HR STORM  (UNDER EXISTING CONDITIONS)       *
*****************************************************************
*
START                TIME=0.0
*
* BASIN A (FRITO-LAY)
*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.013091 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B (CHAVEZ-GRIEVES)
*
COMPUTE NM HYD       ID=1 HYD NO=100.B AREA=0.005858 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
*
*****************************************************************
*        10-YEAR, 6-HR STORM  (UNDER EXISTING CONDITIONS)       *
*****************************************************************
*
START                TIME=0.0
*
* BASIN A
*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.34 IN RAIN SIX=1.57 IN
                     RAIN DAY=1.83 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=110.A AREA=0.013091 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD       ID=1 HYD NO=110.B AREA=0.005858 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =08/18/1998
INPUT FILE = a:p.dat USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	100.10	-	1	.00588	16.79	.715	2.27928	1.500	4.461	PER IMP= 90.00
COMPUTE NM HYD	100.20	-	1	.00058	1.54	.063	2.06253	1.500	4.188	PER IMP= 77.00
COMPUTE NM HYD	100.30	-	1	.00342	9.77	.415	2.27929	1.500	4.465	PER IMP= 90.00
COMPUTE NM HYD	100.40	-	1	.00135	3.87	.164	2.27931	1.500	4.478	PER IMP= 90.00
COMPUTE NM HYD	100.50	-	1	.00098	1.44	.041	.77821	1.533	2.291	PER IMP= .00
COMPUTE NM HYD	100.60	-	1	.00041	1.25	.054	2.44618	1.500	4.733	PER IMP= 100.00
COMPUTE NM HYD	100.70	-	1	.00047	.99	.036	1.44543	1.500	3.302	PER IMP= 40.00
COMPUTE NM HYD	100.80	-	1	.00159	2.32	.066	.77821	1.533	2.285	PER IMP= .00
COMPUTE NM HYD	100.A	-	1	.00065	1.88	.079	2.27935	1.500	4.501	PER IMP= 90.00
COMPUTE NM HYD	100.B	-	1	.00062	1.79	.076	2.27935	1.500	4.503	PER IMP= 90.00
COMPUTE NM HYD	100.C	-	1	.00024	.71	.030	2.27944	1.500	4.547	PER IMP= 90.00
COMPUTE NM HYD	100.D	-	1	.00040	.66	.020	.94505	1.500	2.586	PER IMP= 10.00
COMPUTE NM HYD	100.E	-	1	.00050	1.45	.061	2.27936	1.500	4.511	PER IMP= 90.00
COMPUTE NM HYD	100.F	-	1	.00088	2.12	.084	1.77897	1.500	3.759	PER IMP= 60.00
COMPUTE NM HYD	100.G	-	1	.00113	2.70	.107	1.77896	1.500	3.754	PER IMP= 60.00
COMPUTE NM HYD	100.H	-	1	.00048	1.24	.050	1.94579	1.500	4.028	PER IMP= 70.00
COMPUTE NM HYD	100.I	-	1	.00078	2.11	.087	2.11255	1.500	4.249	PER IMP= 80.00
COMPUTE NM HYD	100.J	-	1	.00047	1.27	.052	2.11259	1.500	4.275	PER IMP= 80.00
COMPUTE NM HYD	100.K	-	1	.00009	.13	.004	.77821	1.533	2.438	PER IMP= .00
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 1.830
COMPUTE NM HYD	110.10	-	1	.00588	10.87	.447	1.42509	1.500	2.889	PER IMP= 90.00
COMPUTE NM HYD	110.20	-	1	.00058	.97	.039	1.25949	1.500	2.625	PER IMP= 77.00
COMPUTE NM HYD	110.30	-	1	.00342	6.32	.260	1.42510	1.500	2.891	PER IMP= 90.00
COMPUTE NM HYD	110.40	-	1	.00135	2.51	.103	1.42511	1.500	2.897	PER IMP= 90.00
COMPUTE NM HYD	110.50	-	1	.00098	.59	.015	.27828	1.533	.941	PER IMP= .00
COMPUTE NM HYD	110.60	-	1	.00041	.83	.034	1.55258	1.500	3.129	PER IMP= 100.00
COMPUTE NM HYD	110.70	-	1	.00047	.54	.020	.78803	1.500	1.817	PER IMP= 40.00
COMPUTE NM HYD	110.80	-	1	.00638	11.08	.450	1.32315	1.500	2.712	PER IMP= 82.00
COMPUTE NM HYD	110.90	-	1	.00159	.95	.024	.27828	1.533	.938	PER IMP= .00
COMPUTE NM HYD	110.A	-	1	.00065	1.21	.050	1.42514	1.500	2.910	PER IMP= 90.00
COMPUTE NM HYD	110.B	-	1	.00062	1.16	.047	1.42514	1.500	2.910	PER IMP= 90.00
COMPUTE NM HYD	110.C	-	1	.00024	.46	.018	1.42520	1.500	2.937	PER IMP= 90.00
COMPUTE NM HYD	110.D	-	1	.00040	.30	.009	.40574	1.533	1.173	PER IMP= 10.00

COMPUTE NM HYD	110.E	-	1	.00050	.93	.038	1.42515	1.500	2.916	PER IMP=	90.00
COMPUTE NM HYD	110.F	-	1	.00088	1.26	.049	1.04285	1.500	2.242	PER IMP=	60.00
COMPUTE NM HYD	110.G	-	1	.00113	1.61	.063	1.04285	1.500	2.239	PER IMP=	60.00
COMPUTE NM HYD	110.H	-	1	.00048	.76	.030	1.17030	1.500	2.476	PER IMP=	70.00
COMPUTE NM HYD	110.I	-	1	.00078	1.33	.054	1.29770	1.500	2.685	PER IMP=	80.00
COMPUTE NM HYD	110.J	-	1	.00047	.80	.032	1.29773	1.500	2.699	PER IMP=	80.00
COMPUTE NM HYD	110.K	-	1	.00009	.06	.001	.27828	1.533	1.003	PER IMP=	.00

FINISH

```
*************************************************************
*                          FRITO-LAY                        *
*************************************************************
*       100-YEAR, 24-HR STORM  (UNDER PROPOSED CONDITIONS)  *
*************************************************************
*
START                TIME=0.0
*
* BASIN 1
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=0.005879 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 2
*
COMPUTE NM HYD       ID=1 HYD NO=100.2 AREA=0.000576 SQ MI
                     PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 3
*
COMPUTE NM HYD       ID=1 HYD NO=100.3 AREA=0.003418 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 4
*
COMPUTE NM HYD       ID=1 HYD NO=100.4 AREA=0.001352 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 5
*
COMPUTE NM HYD       ID=1 HYD NO=100.5 AREA=0.000984 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 6
*
COMPUTE NM HYD       ID=1 HYD NO=100.6 AREA=0.000413 SQ MI
                     PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 7
*
COMPUTE NM HYD       ID=1 HYD NO=100.7 AREA=0.000468 SQ MI
                     PER A=0.00 PER B=60.00 PER C=0.00 PER D=40.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
```

```
* BASIN 8
*
COMPUTE NM HYD       ID=1 HYD NO=100.8 AREA=0.001586 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*****************************************************************
*                          CHAVEZ-GRIEVES                       *
*****************************************************************
*
* BASIN A
*
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.000652 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD       ID=1 HYD NO=100.B AREA=0.000622 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN C
*
COMPUTE NM HYD       ID=1 HYD NO=100.C AREA=0.000243 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN D
*
COMPUTE NM HYD       ID=1 HYD NO=100.D AREA=0.000399 SQ MI
                     PER A=0.00 PER B=90.00 PER C=0.00 PER D=10.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN E
*
COMPUTE NM HYD       ID=1 HYD NO=100.E AREA=0.000501 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN F
*
COMPUTE NM HYD       ID=1 HYD NO=100.F AREA=0.000881 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN G
*
COMPUTE NM HYD       ID=1 HYD NO=100.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
```

```
* BASIN H
*
COMPUTE NM HYD        ID=1 HYD NO=100.H AREA=0.000481 SQ MI
                      PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN I
*
COMPUTE NM HYD        ID=1 HYD NO=100.I AREA=0.000776 SQ MI
                      PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN J
*
COMPUTE NM HYD        ID=1 HYD NO=100.J AREA=0.000465 SQ MI
                      PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN K
*
COMPUTE NM HYD        ID=1 HYD NO=100.K AREA=0.000086 SQ MI
                      PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
*
*****************************************************************
*       10-YEAR, 24-HR STORM  (UNDER PROPOSED CONDITIONS)       *
*****************************************************************
*
START                 TIME=0.0
*
* BASIN 1
*
RAINFALL              TYPE=2 RAIN QUARTER=0.0 IN
                      RAIN ONE=1.34 IN RAIN SIX=1.57 IN
                      RAIN DAY=1.83 IN DT=0.03333 HR
COMPUTE NM HYD        ID=1 HYD NO=110.1 AREA=0.005879 SQ MI
                      PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 2
*
COMPUTE NM HYD        ID=1 HYD NO=110.2 AREA=0.000576 SQ MI
                      PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 3
*
COMPUTE NM HYD        ID=1 HYD NO=110.3 AREA=0.003418 SQ MI
                      PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 4
```

```
*
COMPUTE NM HYD        ID=1 HYD NO=110.4 AREA=0.001352 SQ MI
                      PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 5
*
COMPUTE NM HYD        ID=1 HYD NO=110.5 AREA=0.000984 SQ MI
                      PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 6
*
COMPUTE NM HYD        ID=1 HYD NO=110.6 AREA=0.000413 SQ MI
                      PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 7
*
COMPUTE NM HYD        ID=1 HYD NO=110.7 AREA=0.000468 SQ MI
                      PER A=0.00 PER B=60.00 PER C=0.00 PER D=40.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 8
*
COMPUTE NM HYD        ID=1 HYD NO=110.8 AREA=0.006381 SQ MI
                      PER A=0.00 PER B=18.00 PER C=0.00 PER D=82.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN 9
*
COMPUTE NM HYD        ID=1 HYD NO=110.9 AREA=0.001586 SQ MI
                      PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
*************************************************************
*                      CHAVEZ-GRIEVES                       *
*************************************************************
*
* BASIN A
*
COMPUTE NM HYD        ID=1 HYD NO=110.A AREA=0.000652 SQ MI
                      PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD        ID=1 HYD NO=110.B AREA=0.000622 SQ MI
                      PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                      TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD             ID=1 CODE=1
*
* BASIN C
```

```
*
COMPUTE NM HYD       ID=1 HYD NO=110.C AREA=0.000243 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN D
*
COMPUTE NM HYD       ID=1 HYD NO=110.D AREA=0.000399 SQ MI
                     PER A=0.00 PER B=90.00 PER C=0.00 PER D=10.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN E
*
COMPUTE NM HYD       ID=1 HYD NO=110.E AREA=0.000501 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN F
*
COMPUTE NM HYD       ID=1 HYD NO=110.F AREA=0.000881 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN G
*
COMPUTE NM HYD       ID=1 HYD NO=110.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN H
*
COMPUTE NM HYD       ID=1 HYD NO=110.H AREA=0.000481 SQ MI
                     PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN I
*
COMPUTE NM HYD       ID=1 HYD NO=110.I AREA=0.000776 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN J
*
COMPUTE NM HYD       ID=1 HYD NO=110.J AREA=0.000465 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN K
*
COMPUTE NM HYD       ID=1 HYD NO=110.K AREA=0.000086 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
```

```
PRINT HYD            ID=1 CODE=1
*
*
FINISH
```

AHYMO
Input and Output
for
Ponding

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =08/18/1998
INPUT FILE = a:pond3.dat USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	101.10	-	1	.00094	2.66	.117	2.34321	1.500	4.415	PER IMP= 90.00
ROUTE RESERVOIR	501.10	1	2	.00094	2.53	.117	2.34292	1.500	4.206	AC-FT= .001
COMPUTE NM HYD	102.00	-	1	.00008	.22	.009	2.34321	1.500	4.593	PER IMP= 90.00
ADD HYD	102.10	1& 2	3	.00102	2.75	.126	2.32930	1.500	4.234	
ROUTE RESERVOIR	502.10	3	1	.00102	2.62	.126	2.32930	1.550	4.039	AC-FT= .001
COMPUTE NM HYD	102.20	-	2	.00106	2.99	.132	2.34321	1.500	4.410	PER IMP= 90.00
ADD HYD	102.30	1& 2	3	.00208	5.56	.259	2.33625	1.500	4.189	
ROUTE RESERVOIR	502.30	3	1	.00208	3.86	.259	2.33626	1.600	2.904	AC-FT= .021
COMPUTE NM HYD	103.00	-	2	.00035	.99	.043	2.34321	1.500	4.453	PER IMP= 90.00
ROUTE RESERVOIR	503.00	2	3	.00035	.99	.043	2.34260	1.500	4.455	AC-FT= .000
ADD HYD	103.10	1& 3	2	.00242	4.78	.302	2.33716	1.500	3.087	
COMPUTE NM HYD	104.00	-	1	.00043	1.21	.053	2.34321	1.500	4.446	PER IMP= 90.00
ADD HYD	104.10	1& 2	3	.00285	5.99	.355	2.33796	1.500	3.290	
ROUTE RESERVOIR	502.30	3	1	.00285	5.96	.355	2.33796	1.500	3.269	AC-FT= .001
COMPUTE NM HYD	105.00	-	2	.00100	2.82	.125	2.34321	1.500	4.413	PER IMP= 90.00
ADD HYD	105.10	1& 2	3	.00385	8.78	.480	2.33925	1.500	3.566	
ROUTE RESERVOIR	505.10	3	1	.00385	8.75	.480	2.33925	1.500	3.557	AC-FT= .001
COMPUTE NM HYD	106.00	-	2	.00037	1.05	.046	2.34321	1.500	4.453	PER IMP= 90.00
ADD HYD	106.10	1& 2	3	.00422	9.81	.526	2.33954	1.500	3.636	
ROUTE RESERVOIR	506.10	3	20	.00422	9.79	.526	2.33954	1.500	3.631	AC-FT= .001
COMPUTE NM HYD	100.A	-	1	.00065	1.85	.081	2.34321	1.500	4.430	PER IMP= 90.00
COMPUTE NM HYD	100.B	-	2	.00062	1.76	.078	2.34322	1.500	4.430	PER IMP= 90.00
COMPUTE NM HYD	100.C	-	3	.00024	.70	.030	2.34322	1.500	4.473	PER IMP= 90.00
COMPUTE NM HYD	100.D	-	4	.00040	.66	.020	.95168	1.500	2.571	PER IMP= 10.00
COMPUTE NM HYD	100.E	-	5	.00050	1.42	.063	2.34321	1.500	4.442	PER IMP= 90.00
COMPUTE NM HYD	100.F	-	6	.00088	2.09	.086	1.82139	1.500	3.710	PER IMP= 60.00
COMPUTE NM HYD	100.G	-	7	.00113	2.67	.109	1.82139	1.500	3.704	PER IMP= 60.00
COMPUTE NM HYD	100.H	-	8	.00048	1.22	.051	1.99533	1.500	3.969	PER IMP= 70.00
COMPUTE NM HYD	100.I	-	9	.00078	2.08	.090	2.16927	1.500	4.184	PER IMP= 80.00
COMPUTE NM HYD	100.J	-	10	.00047	1.25	.054	2.16927	1.500	4.211	PER IMP= 80.00
COMPUTE NM HYD	100.K	-	11	.00009	.13	.004	.77774	1.500	2.417	PER IMP= .00
ADD HYD	101.20	1& 2	1	.00127	3.61	.159	2.34274	1.500	4.430	
ADD HYD	101.20	1& 3	1	.00152	4.31	.190	2.34268	1.500	4.437	
ADD HYD	101.20	1& 5	1	.00202	5.73	.252	2.34270	1.500	4.438	

ADD HYD	101.20	1& 6	1	.00290	7.82	.338	2.18418	1.500	4.217		
ADD HYD	101.20	1& 7	1	.00402	10.49	.447	2.08268	1.500	4.074		
ADD HYD	101.20	1& 8	1	.00451	11.71	.498	2.07330	1.500	4.062		
ADD HYD	101.20	1& 9	1	.00528	13.79	.588	2.08736	1.500	4.080		
ADD HYD	101.20	1&10	1	.00575	15.04	.642	2.09394	1.500	4.091		
ADD HYD	101.20	1&11	21	.00583	15.18	.645	2.07451	1.500	4.066		
ADD HYD	108.10	20&21	8	.01005	24.97	1.171	2.18570	1.500	3.883		
COMPUTE NM HYD	104.00	-	4	.00135	3.81	.169	2.34321	1.500	4.405	PER IMP=	90.00
ROUTE RESERVOIR	504.10	4	2	.00135	.19	.169	2.34298	2.350	.219	AC-FT=	.115
COMPUTE NM HYD	105.00	-	5	.00098	1.44	.041	.77774	1.500	2.286	PER IMP=	.00
ADD HYD	105.80	5& 8	5	.01103	26.41	1.212	2.06009	1.500	3.741		
ADD HYD	105.40	5& 2	2	.01238	26.59	1.381	2.09097	1.500	3.355		
ROUTE RESERVOIR	505.10	2	5	.01238	10.84	1.381	2.09124	1.800	1.368	AC-FT=	.298
COMPUTE NM HYD	106.00	-	6	.00041	1.23	.055	2.51716	1.500	4.651	PER IMP=	100.00
ADD HYD	105.60	5& 6	5	.01280	11.63	1.437	2.10496	1.550	1.420		
COMPUTE NM HYD	109.00	-	9	.00159	2.32	.066	.77774	1.500	2.281	PER IMP=	.00
COMPUTE NM HYD	103.00	-	3	.00342	9.61	.427	2.34321	1.500	4.394	PER IMP=	90.00
ADD HYD	103.90	9& 3	3	.00500	11.93	.493	1.84695	1.500	3.724		
ROUTE RESERVOIR	503.10	3	1	.00500	.21	.463	1.73488	2.750	.064	AC-FT=	.382
COMPUTE NM HYD	102.00	-	2	.00058	1.52	.065	2.11709	1.500	4.127	PER IMP=	77.00
ADD HYD	103.90	2& 1	1	.00558	1.71	.528	1.77429	1.500	.479		
ROUTE RESERVOIR	502.10	1	2	.00558	.18	.417	1.39966	29.650	.050	AC-FT=	.112
COMPUTE NM HYD	101.00	-	1	.00588	16.52	.735	2.34321	1.500	4.391	PER IMP=	90.00
ADD HYD	101.10	1& 5	1	.01868	28.12	2.171	2.17995	1.500	2.352		
ROUTE RESERVOIR	501.10	1	3	.01868	.70	1.624	1.63022	2.900	.058	AC-FT=	1.561
ADD HYD	101.10	3& 2	1	.02426	.87	2.040	1.57718	3.100	.056		
FINISH											

```
*****************************************************************
*                              FRITO-LAY                        *
*****************************************************************
*          100-YEAR, 24-HR STORM  (PONDING CALCULATIONS)        *
*****************************************************************
START                TIME=0.0
*
*****************************************************************
*            OFFSITE FLOWS FROM TRACTS 9B, 9C, AND 9D           *
                     *
*****************************************************************
*
*****************
*    BASIN 1    *
*****************
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.050 HR
COMPUTE NM HYD       ID=1 HYD NO=101.1 AREA=0.000940 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
* BASIN 1 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=501.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00               0.0000          94.90
                         2.47               0.00040         97.40
                         2.53               0.00069         97.50
                         2.59               0.00155         97.60
                         2.64               0.00247         97.70
                         2.69               0.00494         97.80
                         2.74               0.00748         97.90
*
*****************
*    BASIN 2    *
*****************
*
COMPUTE NM HYD       ID=1 HYD NO=102.0 AREA=0.000075 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 1 AND BASIN 2
*
ADD HYD              ID=3 HYD NO=102.1 ID=1 ID=2
*
* BASIN 2 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00               0.0000          93.90
                         2.53               0.00041         95.00
                         2.80               0.00315         96.50
                         3.04               0.01121         97.00
                         3.26               0.02458         97.50
                         3.47               0.04326         98.00
                         3.55               0.05223         98.20
*
******************
*    BASIN 2A    *
```

```
******************
*
COMPUTE NM HYD       ID=2 HYD NO=102.2 AREA=0.001060 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 2 AND BASIN 2A
*
ADD HYD              ID=3 HYD NO=102.3 ID=1 ID=2
*
* BASIN 2A PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00               0.0000          92.42
                         3.66               0.00081         97.50
                         3.70               0.00158         97.60
                         3.74               0.00385         97.70
                         3.78               0.00763         97.80
                         3.81               0.01291         97.90
                         3.85               0.01970         98.00
                         3.89               0.02799         98.10
                         3.92               0.03778         98.20
*
*****************
*    BASIN 3    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=103.0 AREA=0.000347 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
*
* BASIN 3 PONDING
*
ROUTE RESERVOIR      ID=3 HYD NO=503.0 INFLOW ID=2 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00               0.0000          97.10
                         2.47               0.00040         99.60
                         2.53               0.00077         99.70
                         2.59               0.00184         99.80
                         2.64               0.00362         99.90
                         2.69               0.00610        100.00
                         2.74               0.00929        100.10
*
* ADD POND 2A AND POND 3
*
ADD HYD              ID=2 HYD NO=103.1 ID=1 ID=3
*
*****************
*    BASIN 4    *
*****************
*
COMPUTE NM HYD       ID=1 HYD NO=104.0 AREA=0.000425 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 2A AND POND 3 AND BASIN 4
*
ADD HYD              ID=3 HYD NO=104.1 ID=1 ID=2
```

```
*
* BASIN 4 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00                0.0000          89.66
                         8.06                0.00157         99.50
                         8.10                0.00195         99.60
                         8.15                0.00306         99.70
                         8.19                0.00490         99.80
                         8.23                0.00748         99.90
                         8.27                0.01078        100.00
*
*****************
*    BASIN 5    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=105.0 AREA=0.000998 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 4 AND BASIN 5
*
ADD HYD              ID=3 HYD NO=105.1 ID=1 ID=2
*
* BASIN 5 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=505.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00                0.0000          87.93
                        10.17                0.00170         98.63
                        10.22                0.00242         98.73
                        10.27                0.00455         98.83
                        10.32                0.00809         98.93
                        10.35                0.01140         99.00
*
*****************
*    BASIN 6    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=106.0 AREA=0.000370 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 5 AND BASIN 6
*
ADD HYD              ID=3 HYD NO=106.1 ID=1 ID=2
*
* BASIN 6 PONDING
*
ROUTE RESERVOIR      ID=20 HYD NO=506.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00                0.00000         96.10
                        13.07                0.00198         98.54
                        13.12                0.00241         98.64
                        13.18                0.00368         98.74
                        13.23                0.00578         98.84
                        13.28                0.00870         98.94
                        13.34                0.01247         99.04
*
```

```
*****************************************************************
*                          ON-SITE PONDING                      *
*****************************************************************
*
************************
*   CHAVEZ-GRIEVES     *
************************
*
* BASIN A
*
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.000652 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD       ID=2 HYD NO=100.B AREA=0.000622 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN C
*
COMPUTE NM HYD       ID=3 HYD NO=100.C AREA=0.000243 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN D
*
COMPUTE NM HYD       ID=4 HYD NO=100.D AREA=0.000399 SQ MI
                     PER A=0.00 PER B=90.00 PER C=0.00 PER D=10.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=4 CODE=1
*
* BASIN E
*
COMPUTE NM HYD       ID=5 HYD NO=100.E AREA=0.000501 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=5 CODE=1
*
* BASIN F
*
COMPUTE NM HYD       ID=6 HYD NO=100.F AREA=0.000881 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=6 CODE=1
*
* BASIN G
*
COMPUTE NM HYD       ID=7 HYD NO=100.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=7 CODE=1
*
* BASIN H
*
COMPUTE NM HYD       ID=8 HYD NO=100.H AREA=0.000481 SQ MI
```

```
                        PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=8 CODE=1
*
* BASIN I
*
COMPUTE NM HYD          ID=9 HYD NO=100.I AREA=0.000776 SQ MI
                        PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=9 CODE=1
*
* BASIN J
*
COMPUTE NM HYD          ID=10 HYD NO=100.J AREA=0.000465 SQ MI
                        PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=10 CODE=1
*
* BASIN K
*
COMPUTE NM HYD          ID=11 HYD NO=100.K AREA=0.000086 SQ MI
                        PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=11 CODE=1
*
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=2
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=3
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=5
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=6
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=7
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=8
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=9
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=10
ADD HYD                 ID=21 HYD NO=101.2 ID=1 ID=11
*
PRINT HYD               ID=21 CODE=1
*
*****************************************************************
* ADD OFF-SITE FLOWS FROM TRACTS 9B, 9C, AND 9D AND CHAVEZ-GRIEVES *
*****************************************************************
*
ADD HYD                 ID=8 HYD NO=108.1 ID=20 ID=21
PRINT HYD               ID=8 CODE=1
*
****************
*   BASIN 4    *
****************
*
COMPUTE NM HYD          ID=4 HYD NO=104.0 AREA=0.001352 SQ MI
                        PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=4 CODE=1
*
* BASIN 4 PONDING
*
ROUTE RESERVOIR         ID=2 HYD NO=504.1 INFLOW ID=4 CODE=24
                        OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                            0.000             0.0000          65.00
                            0.163             0.0004          67.00
                            0.170             0.0062          67.20
```

```
                        0.176              0.0247          67.40
                        0.182              0.0554          67.60
                        0.188              0.0985          67.80
                        0.194              0.1538          68.00
*
****************
*   BASIN 5    *
****************
*
COMPUTE NM HYD       ID=5 HYD NO=105.0 AREA=0.000984 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=5 CODE=1
*
* ADD FLOWS FROM BASIN 5, POND 4 AND BASIN 8 (CHAVEZ-GRIEVES)
*
ADD HYD              ID=5 HYD NO=105.8 ID=5 ID=8
ADD HYD              ID=2 HYD NO=105.4 ID=5 ID=2
PRINT HYD            ID=2 CODE=1
*
* BASIN 5 PONDING
*
ROUTE RESERVOIR      ID=5 HYD NO=505.1 INFLOW ID=2 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.000              0.0000          63.32
                         9.476              0.0008          68.42
                         9.681              0.0060          68.62
                         9.883              0.0241          68.82
                        10.080              0.0541          69.02
                        10.274              0.0961          69.22
                        10.464              0.1501          69.42
                        10.650              0.2161          69.62
                        10.834              0.2941          69.82
                        11.014              0.3842          70.02
*
****************
*   BASIN 6    *
****************
*
COMPUTE NM HYD       ID=6 HYD NO=106.0 AREA=0.000413 SQ MI
                     PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=6 CODE=1
*
* ADD BASIN 6 AND POND 5
*
ADD HYD              ID=5 HYD NO=105.6 ID=5 ID=6
*
****************
*   BASIN 9    *
****************
*
COMPUTE NM HYD       ID=9 HYD NO=109.0 AREA=0.001586 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=9 CODE=1
*
****************
*   BASIN 3    *
****************
```

```
*
COMPUTE NM HYD       ID=3 HYD NO=103.0 AREA=0.003418 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=3 CODE=1
*
*
* ADD OFF-SITE FLOWS FROM BASIN 9 TO BASIN 3
*
ADD HYD              ID=3 HYD NO=103.9 ID=9 ID=3
PRINT HYD            ID=3 CODE=1
*
* BASIN 3 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=503.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.0000            0.0000          63.81
                         0.1633            0.0004          66.31
                         0.1699            0.0081          66.51
                         0.1763            0.0314          66.71
                         0.1825            0.0700          66.91
                         0.1884            0.1241          67.11
                         0.1942            0.1937          67.31
                         0.1998            0.2787          67.51
                         0.2052            0.3792          67.71
                         0.2079            0.4352          67.81
*
****************
*   BASIN 2    *
****************
*
COMPUTE NM HYD       ID=2 HYD NO=102.0 AREA=0.000576 SQ MI
                     PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=2 CODE=1
*
*
* ADD FLOWS FROM POND 3 TO BASIN 2
*
ADD HYD              ID=1 HYD NO=103.9 ID=2 ID=1
PRINT HYD            ID=1 CODE=1
*
* BASIN 2 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=502.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.0000            0.0000          62.62
                         0.1625            0.0008          68.00
                         0.1657            0.0061          68.20
                         0.1689            0.0218          68.40
                         0.1720            0.0480          68.60
                         0.1751            0.0847          68.80
                         0.1781            0.1318          69.00
*
****************
*   BASIN 1    *
****************
*
COMPUTE NM HYD       ID=1 HYD NO=101.0 AREA=0.005879 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
```

```
                    TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD           ID=1 CODE=1
*
* ADD POND 5 TO BASIN 1
*
ADD HYD             ID=1 HYD NO=101.1 ID=1 ID=5
PRINT HYD           ID=1 CODE=1
*
* BASIN 1 PONDING
*
ROUTE RESERVOIR     ID=3 HYD NO=501.1 INFLOW ID=1 CODE=24
                    OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.0000            0.0000          61.89
                        0.5962            0.0014          66.22
                        0.6102            0.0277          66.42
                        0.6240            0.1068          66.62
                        0.6374            0.2385          66.82
                        0.6506            0.4228          67.02
                        0.6635            0.6598          67.22
                        0.6762            0.9494          67.42
                        0.6886            1.2917          67.62
                        0.7008            1.6867          67.72
*
* ADD POND 2 AND POND 1
*
ADD HYD             ID=1 HYD NO=101.1 ID=3 ID=2
PRINT HYD           ID=1 CODE=1
*
*
FINISH
```

```
AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
     RUN DATE (MON/DAY/YR) = 08/18/1998
     START TIME (HR:MIN:SEC) = 13:15:33     USER NO.= R_BOHANN.I01
     INPUT FILE = a:pond3.dat

*****************************************************************
*                          FRITO-LAY                            *
*****************************************************************
*          100-YEAR, 24-HR STORM  (PONDING CALCULATIONS)        *
*****************************************************************
START                TIME=0.0
*
*****************************************************************
*            OFFSITE FLOWS FROM TRACTS 9B, 9C, AND 9D           *
*****************************************************************
*
*****************
*    BASIN 1    *
*****************
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.050 HR

                COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =     .050000 HOURS        END TIME =     24.000000 HOURS
                   .0000    .0024    .0049    .0075    .0102    .0130    .0158
                  .0188    .0219    .0252    .0286    .0321    .0358    .0397
                  .0439    .0482    .0529    .0578    .0631    .0689    .0751
                  .0836    .0930    .1201    .1842    .2944    .4649    .7103
                 1.0460   1.3107   1.4303   1.5302   1.6176   1.6959   1.7667
                 1.8313   1.8906   1.9452   1.9955   2.0421   2.0851   2.0946
                 2.1034   2.1115   2.1191   2.1262   2.1330   2.1394   2.1455
                 2.1513   2.1569   2.1622   2.1673   2.1723   2.1771   2.1817
                 2.1862   2.1905   2.1948   2.1989   2.2028   2.2067   2.2105
                 2.2142   2.2178   2.2213   2.2248   2.2282   2.2315   2.2347
                 2.2379   2.2410   2.2440   2.2470   2.2500   2.2529   2.2557
                 2.2585   2.2613   2.2640   2.2666   2.2693   2.2719   2.2744
                 2.2769   2.2794   2.2818   2.2842   2.2866   2.2889   2.2913
                 2.2935   2.2958   2.2980   2.3002   2.3024   2.3046   2.3067
                 2.3088   2.3109   2.3129   2.3150   2.3170   2.3190   2.3209
                 2.3229   2.3248   2.3267   2.3286   2.3305   2.3323   2.3342
                 2.3360   2.3378   2.3396   2.3414   2.3431   2.3449   2.3466
                 2.3483   2.3500   2.3517   2.3534   2.3551   2.3569   2.3586
                 2.3602   2.3619   2.3636   2.3653   2.3669   2.3686   2.3703
                 2.3719   2.3736   2.3752   2.3768   2.3785   2.3801   2.3817
                 2.3833   2.3849   2.3865   2.3881   2.3897   2.3913   2.3929
                 2.3944   2.3960   2.3976   2.3991   2.4007   2.4022   2.4038
                 2.4053   2.4068   2.4084   2.4099   2.4114   2.4129   2.4144
                 2.4159   2.4174   2.4189   2.4204   2.4219   2.4234   2.4248
                 2.4263   2.4278   2.4292   2.4307   2.4322   2.4336   2.4350
                 2.4365   2.4379   2.4394   2.4408   2.4422   2.4436   2.4450
                 2.4464   2.4478   2.4493   2.4506   2.4520   2.4534   2.4548
                 2.4562   2.4576   2.4589   2.4603   2.4617   2.4630   2.4644
                 2.4658   2.4671   2.4685   2.4698   2.4711   2.4725   2.4738
                 2.4751   2.4765   2.4778   2.4791   2.4804   2.4817   2.4830
                 2.4843   2.4856   2.4869   2.4882   2.4895   2.4908   2.4921
                 2.4934   2.4946   2.4959   2.4972   2.4984   2.4997   2.5010
```

2.5022	2.5035	2.5047	2.5060	2.5072	2.5085	2.5097
2.5109	2.5122	2.5134	2.5146	2.5158	2.5170	2.5183
2.5195	2.5207	2.5219	2.5231	2.5243	2.5255	2.5267
2.5279	2.5291	2.5303	2.5314	2.5326	2.5338	2.5350
2.5361	2.5373	2.5385	2.5396	2.5408	2.5420	2.5431
2.5443	2.5454	2.5466	2.5477	2.5488	2.5500	2.5511
2.5523	2.5534	2.5545	2.5556	2.5568	2.5579	2.5590
2.5601	2.5612	2.5623	2.5635	2.5646	2.5657	2.5668
2.5679	2.5690	2.5701	2.5711	2.5722	2.5733	2.5744
2.5755	2.5766	2.5776	2.5787	2.5798	2.5809	2.5819
2.5830	2.5841	2.5851	2.5862	2.5872	2.5883	2.5893
2.5904	2.5914	2.5925	2.5935	2.5946	2.5956	2.5966
2.5977	2.5987	2.5997	2.6008	2.6018	2.6028	2.6038
2.6049	2.6059	2.6069	2.6079	2.6089	2.6099	2.6109
2.6119	2.6129	2.6139	2.6149	2.6159	2.6169	2.6179
2.6189	2.6199	2.6209	2.6219	2.6229	2.6238	2.6248
2.6258	2.6268	2.6278	2.6287	2.6297	2.6307	2.6316
2.6326	2.6336	2.6345	2.6355	2.6364	2.6374	2.6384
2.6393	2.6403	2.6412	2.6421	2.6431	2.6440	2.6450
2.6459	2.6469	2.6478	2.6487	2.6497	2.6506	2.6515
2.6524	2.6534	2.6543	2.6552	2.6561	2.6571	2.6580
2.6589	2.6598	2.6607	2.6616	2.6625	2.6634	2.6644
2.6653	2.6662	2.6671	2.6680	2.6689	2.6698	2.6707
2.6715	2.6724	2.6733	2.6742	2.6751	2.6760	2.6769
2.6778	2.6786	2.6795	2.6804	2.6813	2.6821	2.6830
2.6839	2.6848	2.6856	2.6865	2.6874	2.6882	2.6891
2.6900	2.6908	2.6917	2.6925	2.6934	2.6942	2.6951
2.6959	2.6968	2.6976	2.6985	2.6993	2.7002	2.7010
2.7019	2.7027	2.7035	2.7044	2.7052	2.7061	2.7069
2.7077	2.7085	2.7094	2.7102	2.7110	2.7119	2.7127
2.7135	2.7143	2.7151	2.7160	2.7168	2.7176	2.7184
2.7192	2.7200	2.7209	2.7217	2.7225	2.7233	2.7241
2.7249	2.7257	2.7265	2.7273	2.7281	2.7289	2.7297
2.7305	2.7313	2.7321	2.7329	2.7337	2.7344	2.7352
2.7360	2.7368	2.7376	2.7384	2.7392	2.7399	2.7407
2.7415	2.7423	2.7431	2.7438	2.7446	2.7454	2.7462
2.7469	2.7477	2.7485	2.7492	2.7500		

```
COMPUTE NM HYD       ID=1 HYD NO=101.1 AREA=0.000940 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   3.3401    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 2.0100
    AREA =       .000846 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =    .22912    CFS   UNIT VOLUME =    .9417       B =   324.91      P60 = 2.0100
    AREA =       .000094 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

* BASIN 1 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=501.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          94.90
                         2.47              0.00040         97.40
                         2.53              0.00069         97.50
```

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

```
*
* ADD POND 2 AND BASIN 2A
*
ADD HYD              ID=3 HYD NO=102.3 ID=1 ID=2
*
* BASIN 2A PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          92.42
                         3.66              0.00081         97.50
                         3.70              0.00158         97.60
                         3.74              0.00385         97.70
                         3.78              0.00763         97.80
                         3.81              0.01291         97.90
                         3.85              0.01970         98.00
                         3.89              0.02799         98.10
                         3.92              0.03778         98.20
```

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	92.42	.000	.00
1.20	.15	92.62	.000	.14
2.40	.28	92.64	.000	.16
3.60	.04	92.47	.000	.04
4.80	.03	92.47	.000	.03
6.00	.04	92.48	.000	.04
7.20	.04	92.47	.000	.04
8.40	.04	92.47	.000	.04
9.60	.03	92.47	.000	.03
10.80	.03	92.46	.000	.03
12.00	.03	92.46	.000	.03
13.20	.03	92.46	.000	.03
14.40	.03	92.46	.000	.03
15.60	.02	92.45	.000	.02
16.80	.02	92.45	.000	.02
18.00	.02	92.45	.000	.02
19.20	.02	92.45	.000	.02
20.40	.02	92.45	.000	.02
21.60	.02	92.45	.000	.02
22.80	.02	92.45	.000	.02
24.00	.02	92.44	.000	.02

PEAK DISCHARGE = 3.857 CFS - PEAK OCCURS AT HOUR 1.60
MAXIMUM WATER SURFACE ELEVATION = 98.017
MAXIMUM STORAGE = .0211 AC-FT INCREMENTAL TIME= .050000HRS

```
*
*****************
*    BASIN 3    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=103.0 AREA=0.000347 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   1.2330    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
AREA =       .000312 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
UNIT PEAK =   .84578E-01CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
AREA =       .000035 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
*
* BASIN 3 PONDING
*
ROUTE RESERVOIR      ID=3 HYD NO=503.0 INFLOW ID=2 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          97.10
                         2.47              0.00040         99.60
                         2.53              0.00077         99.70
                         2.59              0.00184         99.80
                         2.64              0.00362         99.90
                         2.69              0.00610        100.00
                         2.74              0.00929        100.10

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

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

     .00        .00      97.10       .000       .00
    1.20        .03      97.13       .000       .03
    2.40        .03      97.13       .000       .03
    3.60        .01      97.11       .000       .01
    4.80        .01      97.11       .000       .01
    6.00        .01      97.11       .000       .01
    7.20        .01      97.11       .000       .01
    8.40        .01      97.11       .000       .01
    9.60        .01      97.11       .000       .01
   10.80        .01      97.11       .000       .01
   12.00        .00      97.10       .000       .00
 PEAK DISCHARGE =          .989 CFS - PEAK OCCURS AT HOUR    1.50
 MAXIMUM WATER SURFACE ELEVATION =       98.101
 MAXIMUM STORAGE =          .0002 AC-FT      INCREMENTAL TIME=     .050000HRS

*
* ADD POND 2A AND POND 3
*
ADD HYD              ID=2 HYD NO=103.1 ID=1 ID=3
*
*****************
*    BASIN 4    *
*****************
*
COMPUTE NM HYD       ID=1 HYD NO=104.0 AREA=0.000425 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   1.5101    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 2.0100
```

```
AREA =        .000383 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
UNIT PEAK =   .10359    CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
AREA =        .000043 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
* ADD POND 2A AND POND 3 AND BASIN 4
*
ADD HYD              ID=3 HYD NO=104.1 ID=1 ID=2
*
* BASIN 4 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          89.66
                         8.06              0.00157         99.50
                         8.10              0.00195         99.60
                         8.15              0.00306         99.70
                         8.19              0.00490         99.80
                         8.23              0.00748         99.90
                         8.27              0.01078        100.00

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

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

     .00         .00     89.66       .000       .00
    1.20         .20     89.89       .000       .19
    2.40         .24     90.05       .000       .32
    3.60         .05     89.73       .000       .06
    4.80         .05     89.72       .000       .05
    6.00         .06     89.73       .000       .06
    7.20         .05     89.72       .000       .05
    8.40         .05     89.72       .000       .05
    9.60         .05     89.72       .000       .05
   10.80         .04     89.71       .000       .04
   12.00         .04     89.71       .000       .04
   13.20         .04     89.70       .000       .04
   14.40         .04     89.70       .000       .04
   15.60         .03     89.70       .000       .03
   16.80         .03     89.70       .000       .03
   18.00         .03     89.70       .000       .03
   19.20         .03     89.70       .000       .03
   20.40         .03     89.69       .000       .03
   21.60         .03     89.69       .000       .03
   22.80         .03     89.69       .000       .03
   24.00         .02     89.69       .000       .02
 PEAK DISCHARGE =        5.957 CFS - PEAK OCCURS AT HOUR    1.50
 MAXIMUM WATER SURFACE ELEVATION =       96.933
 MAXIMUM STORAGE =          .0012 AC-FT      INCREMENTAL TIME=     .050000HRS

*
*****************
*    BASIN 5    *
*****************
```

```
*
COMPUTE NM HYD        ID=2 HYD NO=105.0 AREA=0.000998 SQ MI
                      PER A=0.00 PER B=10.00 PER C=0.00 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 =   3.5461    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 2.0100
    AREA =       .000898 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .24325    CFS   UNIT VOLUME =    .9487       B =   324.91      P60 = 2.0100
    AREA =       .000100 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
* ADD POND 4 AND BASIN 5
*
ADD HYD               ID=3 HYD NO=105.1 ID=1 ID=2
*
* BASIN 5 PONDING
*
ROUTE RESERVOIR       ID=1 HYD NO=505.1 INFLOW ID=3 CODE=24
                      OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                          0.00               0.0000          87.93
                         10.17               0.00170         98.63
                         10.22               0.00242         98.73
                         10.27               0.00455         98.83
                         10.32               0.00809         98.93
                         10.35               0.01140         99.00

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

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

   .00         .00     87.93      .000       .00
  1.20         .26     88.19      .000       .25
  2.40         .43     88.42      .000       .47
  3.60         .08     88.00      .000       .07
  4.80         .06     87.99      .000       .06
  6.00         .07     88.01      .000       .07
  7.20         .07     88.01      .000       .07
  8.40         .07     88.00      .000       .07
  9.60         .06     87.99      .000       .06
 10.80         .06     87.99      .000       .06
 12.00         .05     87.99      .000       .05
 13.20         .05     87.98      .000       .05
 14.40         .05     87.98      .000       .05
 15.60         .05     87.98      .000       .05
 16.80         .04     87.97      .000       .04
 18.00         .04     87.97      .000       .04
 19.20         .04     87.97      .000       .04
 20.40         .04     87.97      .000       .04
 21.60         .04     87.97      .000       .04
 22.80         .04     87.97      .000       .04
 24.00         .03     87.97      .000       .03
PEAK DISCHARGE =        8.754 CFS - PEAK OCCURS AT HOUR    1.50
MAXIMUM WATER SURFACE ELEVATION =       97.140
```

```
 MAXIMUM STORAGE =          .0015 AC-FT      INCREMENTAL TIME=     .050000HRS

*
*****************
*    BASIN 6    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=106.0 AREA=0.000370 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   1.3147    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
    AREA =       .000333 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .90184E-01CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
    AREA =       .000037 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
* ADD POND 5 AND BASIN 6
*
ADD HYD              ID=3 HYD NO=106.1 ID=1 ID=2
*
* BASIN 6 PONDING
*
ROUTE RESERVOIR      ID=20 HYD NO=506.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.00000         96.10
                        13.07              0.00198         98.54
                        13.12              0.00241         98.64
                        13.18              0.00368         98.74
                        13.23              0.00578         98.84
                        13.28              0.00870         98.94
                        13.34              0.01247         99.04

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	96.10	.000	.00
1.20	.28	96.15	.000	.26
2.40	.51	96.20	.000	.51
3.60	.07	96.11	.000	.07
4.80	.07	96.11	.000	.07
6.00	.08	96.12	.000	.08
7.20	.08	96.11	.000	.08
8.40	.07	96.11	.000	.07
9.60	.07	96.11	.000	.07
10.80	.06	96.11	.000	.06
12.00	.06	96.11	.000	.06
13.20	.05	96.11	.000	.05
14.40	.05	96.11	.000	.05
15.60	.05	96.11	.000	.05
16.80	.05	96.11	.000	.05
18.00	.05	96.11	.000	.05

```
   19.20        .04     96.11       .000       .04
   20.40        .04     96.11       .000       .04
   21.60        .04     96.11       .000       .04
   22.80        .04     96.11       .000       .04
   24.00        .04     96.11       .000       .04
 PEAK DISCHARGE =        9.794 CFS - PEAK OCCURS AT HOUR    1.50
 MAXIMUM WATER SURFACE ELEVATION =       97.928
 MAXIMUM STORAGE =         .0015 AC-FT      INCREMENTAL TIME=     .050000HRS

*
*****************************************************************
*                          ON-SITE PONDING                      *
*****************************************************************
*
************************
*   CHAVEZ-GRIEVES     *
************************
*
* BASIN A
*
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.000652 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   2.3167    CFS   UNIT VOLUME =    .9941       B =   526.28      P60 = 2.0100
    AREA =       .000587 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .15892    CFS   UNIT VOLUME =    .9143       B =   324.91      P60 = 2.0100
    AREA =       .000065 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1 CODE=1

                                        HYDROGRAPH FROM AREA 100.A

    RUNOFF VOLUME =     2.34321 INCHES     =        .0815 ACRE-FEET
    PEAK DISCHARGE RATE =       1.85 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


*
* BASIN B
*
COMPUTE NM HYD       ID=2 HYD NO=100.B AREA=0.000622 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   2.2101    CFS   UNIT VOLUME =    .9941       B =   526.28      P60 = 2.0100
    AREA =       .000560 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .15161    CFS   UNIT VOLUME =    .9143       B =   324.91      P60 = 2.0100
```

```
    AREA =       .000062 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1 CODE=1

                                        HYDROGRAPH FROM AREA 100.A

    RUNOFF VOLUME =     2.34321 INCHES     =        .0815 ACRE-FEET
    PEAK DISCHARGE RATE =       1.85 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.

*
* BASIN C
*
COMPUTE NM HYD      ID=3 HYD NO=100.C AREA=0.000243 SQ MI
                    PER A=0.00 PER B=10.00 PER C=0.00 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 =   .86344    CFS   UNIT VOLUME =    .9865       B =   526.28      P60 = 2.0100
    AREA =       .000219 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .59229E-01CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
    AREA =       .000024 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1 CODE=1

                                        HYDROGRAPH FROM AREA 100.A

    RUNOFF VOLUME =     2.34321 INCHES     =        .0815 ACRE-FEET
    PEAK DISCHARGE RATE =       1.85 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.

*
* BASIN D
*
COMPUTE NM HYD      ID=4 HYD NO=100.D AREA=0.000399 SQ MI
                    PER A=0.00 PER B=90.00 PER C=0.00 PER D=10.00
                    TP=-0.1333 HR MASS RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .15753    CFS   UNIT VOLUME =    .9361       B =   526.28      P60 = 2.0100
    AREA =       .000040 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .87528    CFS   UNIT VOLUME =    .9862       B =   324.91      P60 = 2.0100
    AREA =       .000359 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=4 CODE=1
```

```
                                        HYDROGRAPH FROM AREA 100.D

    RUNOFF VOLUME =       .95168 INCHES      =         .0203 ACRE-FEET
    PEAK DISCHARGE RATE =         .66 CFS  AT   1.500 HOURS   BASIN AREA =   .0004 SQ. MI.


*
* BASIN E
*
COMPUTE NM HYD       ID=5 HYD NO=100.E AREA=0.000501 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   1.7802    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 2.0100
    AREA =       .000451 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .12211    CFS   UNIT VOLUME =    .8894       B =   324.91      P60 = 2.0100
    AREA =       .000050 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=5 CODE=1

                                        HYDROGRAPH FROM AREA 100.E


    RUNOFF VOLUME =      2.34321 INCHES      =         .0626 ACRE-FEET
    PEAK DISCHARGE RATE =        1.42 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.


*
* BASIN F
*
COMPUTE NM HYD       ID=6 HYD NO=100.F AREA=0.000881 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 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 =   2.0869    CFS   UNIT VOLUME =    .9941       B =   526.28      P60 = 2.0100
    AREA =       .000529 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .85895    CFS   UNIT VOLUME =    .9862       B =   324.91      P60 = 2.0100
    AREA =       .000352 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=6 CODE=1

                                        HYDROGRAPH FROM AREA 100.F


    RUNOFF VOLUME =      1.82139 INCHES      =         .0856 ACRE-FEET
```

```
    PEAK DISCHARGE RATE =        2.09 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*
* BASIN G
*
COMPUTE NM HYD       ID=7 HYD NO=100.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 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 =   2.6649    CFS   UNIT VOLUME =    .9951       B =   526.28      P60 = 2.0100
    AREA =       .000675 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   1.0968    CFS   UNIT VOLUME =    .9896       B =   324.91      P60 = 2.0100
    AREA =       .000450 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=7 CODE=1

                                        HYDROGRAPH FROM AREA 100.G


    RUNOFF VOLUME =     1.82139 INCHES     =        .1093 ACRE-FEET
    PEAK DISCHARGE RATE =        2.67 CFS  AT   1.500 HOURS   BASIN AREA =   .0011 SQ. MI.


*
* BASIN H
*
COMPUTE NM HYD       ID=8 HYD NO=100.H AREA=0.000481 SQ MI
                     PER A=0.00 PER B=30.00 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 =   1.3293    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
    AREA =       .000337 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .35172    CFS   UNIT VOLUME =    .9652       B =   324.91      P60 = 2.0100
    AREA =       .000144 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=8 CODE=1

                                        HYDROGRAPH FROM AREA 100.H


    RUNOFF VOLUME =     1.99533 INCHES     =        .0512 ACRE-FEET
    PEAK DISCHARGE RATE =        1.22 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.
```

```
*
* BASIN I
*
COMPUTE NM HYD       ID=9 HYD NO=100.I AREA=0.000776 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   2.4510    CFS   UNIT VOLUME =    .9951       B =   526.28      P60 = 2.0100
    AREA =       .000621 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =    .37829    CFS   UNIT VOLUME =    .9652       B =   324.91      P60 = 2.0100
    AREA =       .000155 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=9 CODE=1

                                        HYDROGRAPH FROM AREA 100.I

    RUNOFF VOLUME =      2.16927 INCHES      =         .0898 ACRE-FEET
    PEAK DISCHARGE RATE =        2.08 CFS  AT   1.500 HOURS   BASIN AREA =   .0008 SQ. MI.

*
* BASIN J
*
COMPUTE NM HYD       ID=10 HYD NO=100.J AREA=0.000465 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   1.4687    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
    AREA =       .000372 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =    .22668    CFS   UNIT VOLUME =    .9417       B =   324.91      P60 = 2.0100
    AREA =       .000093 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=10 CODE=1

                                        HYDROGRAPH FROM AREA 100.J

    RUNOFF VOLUME =      2.16927 INCHES      =         .0538 ACRE-FEET
    PEAK DISCHARGE RATE =        1.25 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.

*
* BASIN K
*
COMPUTE NM HYD       ID=11 HYD NO=100.K AREA=0.000086 SQ MI
```

```
                    PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                    TP=-0.1333 HR MASS RAINFALL=-1

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =    .20962    CFS   UNIT VOLUME =    .9417       B =   324.91      P60 = 2.0100
    AREA =       .000086 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

PRINT HYD           ID=11 CODE=1

                                        HYDROGRAPH FROM AREA 100.K

    RUNOFF VOLUME =       .77774 INCHES     =         .0036 ACRE-FEET
    PEAK DISCHARGE RATE =      .13 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


*
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=2
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=3
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=5
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=6
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=7
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=8
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=9
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=10
ADD HYD             ID=21 HYD NO=101.2 ID=1 ID=11
*
PRINT HYD           ID=21 CODE=1

                                    PARTIAL HYDROGRAPH   101.20


    RUNOFF VOLUME =     2.07451 INCHES     =         .6453 ACRE-FEET
    PEAK DISCHARGE RATE =      15.18 CFS  AT   1.500 HOURS   BASIN AREA =   .0058 SQ. MI.


*
*****************************************************************
* ADD OFF-SITE FLOWS FROM TRACTS 9B, 9C, AND 9D AND CHAVEZ-GRIEVES *
*****************************************************************
*
ADD HYD             ID=8 HYD NO=108.1 ID=20 ID=21
PRINT HYD           ID=8 CODE=1

                                    PARTIAL HYDROGRAPH   108.10


    RUNOFF VOLUME =     2.18570 INCHES     =        1.1712 ACRE-FEET
    PEAK DISCHARGE RATE =      24.97 CFS  AT   1.500 HOURS   BASIN AREA =   .0100 SQ. MI.


*
****************
*   BASIN 4    *
****************
*
```

```
COMPUTE NM HYD       ID=4 HYD NO=104.0 AREA=0.001352 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =    4.8040    CFS   UNIT VOLUME =    .9971       B =   526.28      P60 = 2.0100
    AREA =       .001217 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =    .32954    CFS   UNIT VOLUME =    .9604       B =   324.91      P60 = 2.0100
    AREA =       .000135 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

PRINT HYD            ID=4 CODE=1

                                    PARTIAL HYDROGRAPH   104.00


    RUNOFF VOLUME =      2.34321 INCHES      =        .1690 ACRE-FEET
    PEAK DISCHARGE RATE =        3.81 CFS  AT   1.500 HOURS   BASIN AREA =    .0014 SQ. MI.


*
* BASIN 4 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=504.1 INFLOW ID=4 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.000             0.0000          65.00
                         0.163             0.0004          67.00
                         0.170             0.0062          67.20
                         0.176             0.0247          67.40
                         0.182             0.0554          67.60
                         0.188             0.0985          67.80
                         0.194             0.1538          68.00

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

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

   .00        .00       65.00       .000       .00
  1.20        .11       65.65       .000       .05
  2.40        .15       67.86       .115       .19
  3.60        .03       67.81       .101       .19
  4.80        .02       67.74       .085       .19
  6.00        .03       67.66       .069       .18
  7.20        .03       67.59       .053       .18
  8.40        .02       67.49       .038       .18
  9.60        .02       67.38       .023       .18
 10.80        .02       67.21       .008       .17
 12.00        .02       65.24       .000       .02
 13.20        .02       65.22       .000       .02
 14.40        .02       65.21       .000       .02
 15.60        .02       65.20       .000       .02
 16.80        .02       65.19       .000       .02
 18.00        .01       65.18       .000       .01
 19.20        .01       65.17       .000       .01
```

```
   20.40        .01     65.17       .000       .01
   21.60        .01     65.16       .000       .01
   22.80        .01     65.15       .000       .01
   24.00        .01     65.15       .000       .01
 PEAK DISCHARGE =          .190 CFS - PEAK OCCURS AT HOUR    2.35
 MAXIMUM WATER SURFACE ELEVATION =       67.859
 MAXIMUM STORAGE =          .1148 AC-FT      INCREMENTAL TIME=     .050000HRS

*
****************
*   BASIN 5    *
****************
*
COMPUTE NM HYD       ID=5 HYD NO=105.0 AREA=0.000984 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   2.3984    CFS   UNIT VOLUME =    .9957       B =   324.91      P60 = 2.0100
    AREA =       .000984 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=5 CODE=1

                                   PARTIAL HYDROGRAPH   105.00


    RUNOFF VOLUME =       .77774 INCHES      =        .0408 ACRE-FEET
    PEAK DISCHARGE RATE =       1.44 CFS  AT   1.500 HOURS   BASIN AREA =   .0010 SQ. MI.


*
* ADD FLOWS FROM BASIN 5, POND 4 AND BASIN 8 (CHAVEZ-GRIEVES)
*
ADD HYD              ID=5 HYD NO=105.8 ID=5 ID=8
ADD HYD              ID=2 HYD NO=105.4 ID=5 ID=2
PRINT HYD            ID=2 CODE=1

                                   PARTIAL HYDROGRAPH   105.40


    RUNOFF VOLUME =     2.09097 INCHES      =       1.3809 ACRE-FEET
    PEAK DISCHARGE RATE =      26.59 CFS  AT   1.500 HOURS   BASIN AREA =   .0124 SQ. MI.


*
* BASIN 5 PONDING
*
ROUTE RESERVOIR      ID=5 HYD NO=505.1 INFLOW ID=2 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.000             0.0000          63.32
                         9.476             0.0008          68.42
                         9.681             0.0060          68.62
                         9.883             0.0241          68.82
                        10.080             0.0541          69.02
                        10.274             0.0961          69.22
                        10.464             0.1501          69.42
                        10.650             0.2161          69.62
```

```
                    10.834              0.2941          69.82
                    11.014              0.3842          70.02

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

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

   .00        .00     63.32      .000       .00
  1.20        .69     63.68      .000       .67
  2.40       1.30     68.78      .020      9.84
  3.60        .35     63.43      .000       .20
  4.80        .33     63.49      .000       .31
  6.00        .36     63.51      .000       .36
  7.20        .35     63.51      .000       .35
  8.40        .33     63.50      .000       .33
  9.60        .32     63.49      .000       .32
 10.80        .31     63.49      .000       .31
 12.00        .15     63.40      .000       .15
 13.20        .14     63.39      .000       .14
 14.40        .13     63.39      .000       .13
 15.60        .12     63.39      .000       .12
 16.80        .12     63.38      .000       .12
 18.00        .11     63.38      .000       .11
 19.20        .11     63.38      .000       .11
 20.40        .10     63.38      .000       .10
 21.60        .10     63.37      .000       .10
 22.80        .10     63.37      .000       .10
 24.00        .09     63.37      .000       .09
 PEAK DISCHARGE =        10.841 CFS - PEAK OCCURS AT HOUR    1.80
 MAXIMUM WATER SURFACE ELEVATION =        69.828
 MAXIMUM STORAGE =          .2977 AC-FT      INCREMENTAL TIME=     .050000HRS

*
****************
*   BASIN 6    *
****************
*
COMPUTE NM HYD       ID=6 HYD NO=106.0 AREA=0.000413 SQ MI
                     PER A=0.00 PER B=0.00 PER C=0.00 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 =    1.6305    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 2.0100
    AREA =       .000413 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

PRINT HYD            ID=6 CODE=1

                                    PARTIAL HYDROGRAPH   106.00

    RUNOFF VOLUME =      2.51716 INCHES      =         .0554 ACRE-FEET
    PEAK DISCHARGE RATE =        1.23 CFS  AT   1.500 HOURS   BASIN AREA =    .0004 SQ. MI.

*
* ADD BASIN 6 AND POND 5
*
```

```
ADD HYD              ID=5 HYD NO=105.6 ID=5 ID=6
*
****************
*   BASIN 9    *
****************
*
COMPUTE NM HYD       ID=9 HYD NO=109.0 AREA=0.001586 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   3.8657    CFS   UNIT VOLUME =    .9978       B =   324.91      P60 = 2.0100
    AREA =       .001586 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=9 CODE=1

                                   PARTIAL HYDROGRAPH   109.00


    RUNOFF VOLUME =       .77774 INCHES     =        .0658 ACRE-FEET
    PEAK DISCHARGE RATE =       2.32 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


*
****************
*   BASIN 3    *
****************
*
COMPUTE NM HYD       ID=3 HYD NO=103.0 AREA=0.003418 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   12.145    CFS   UNIT VOLUME =    .9983       B =   526.28      P60 = 2.0100
    AREA =       .003076 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .83311    CFS   UNIT VOLUME =    .9843       B =   324.91      P60 = 2.0100
    AREA =       .000342 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=3 CODE=1

                                   PARTIAL HYDROGRAPH   103.00


    RUNOFF VOLUME =     2.34321 INCHES     =        .4271 ACRE-FEET
    PEAK DISCHARGE RATE =       9.61 CFS  AT   1.500 HOURS   BASIN AREA =   .0034 SQ. MI.


*
*
* ADD OFF-SITE FLOWS FROM BASIN 9 TO BASIN 3
*
ADD HYD              ID=3 HYD NO=103.9 ID=9 ID=3
```

PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 103.90

RUNOFF VOLUME = 1.84695 INCHES = .4929 ACRE-FEET
PEAK DISCHARGE RATE = 11.93 CFS AT 1.500 HOURS BASIN AREA = .0050 SQ. MI.

*
* BASIN 3 PONDING
*
ROUTE RESERVOIR ID=1 HYD NO=503.1 INFLOW ID=3 CODE=24

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEVATION(FT)
0.0000	0.0000	63.81
0.1633	0.0004	66.31
0.1699	0.0081	66.51
0.1763	0.0314	66.71
0.1825	0.0700	66.91
0.1884	0.1241	67.11
0.1942	0.1937	67.31
0.1998	0.2787	67.51
0.2052	0.3792	67.71
0.2079	0.4352	67.81

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	63.81	.000	.00
1.20	.27	65.87	.000	.13
2.40	.48	67.71	.379	.21
3.60	.06	67.70	.375	.20
4.80	.05	67.67	.360	.20
6.00	.07	67.64	.346	.20
7.20	.06	67.62	.332	.20
8.40	.06	67.59	.318	.20
9.60	.05	67.56	.304	.20
10.80	.05	67.53	.289	.20
12.00	.05	67.50	.274	.20
13.20	.04	67.46	.259	.20
14.40	.04	67.43	.244	.20
15.60	.04	67.39	.229	.20
16.80	.04	67.36	.213	.20
18.00	.04	67.32	.198	.19
19.20	.04	67.28	.182	.19
20.40	.03	67.23	.167	.19
21.60	.03	67.19	.151	.19
22.80	.03	67.14	.135	.19
24.00	.03	67.09	.120	.19
25.20	.00	67.03	.101	.19
26.40	.00	66.96	.083	.18
27.60	.00	66.88	.065	.18
28.80	.00	66.79	.047	.18

PEAK DISCHARGE = .205 CFS - PEAK OCCURS AT HOUR 2.75
MAXIMUM WATER SURFACE ELEVATION = 67.715
MAXIMUM STORAGE = .3821 AC-FT INCREMENTAL TIME= .050000HRS

```
*
****************
*   BASIN 2    *
****************
*
COMPUTE NM HYD       ID=2 HYD NO=102.0 AREA=0.000576 SQ MI
                     PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   1.7510    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 2.0100
    AREA =       .000444 SQ MI   IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =    .32291    CFS   UNIT VOLUME =    .9604       B =   324.91      P60 = 2.0100
    AREA =       .000132 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=2 CODE=1

                                   PARTIAL HYDROGRAPH   102.00

    RUNOFF VOLUME =     2.11709 INCHES     =        .0650 ACRE-FEET
    PEAK DISCHARGE RATE =       1.52 CFS  AT   1.500 HOURS   BASIN AREA =   .0006 SQ. MI.


*
*
* ADD FLOWS FROM POND 3 TO BASIN 2
*
ADD HYD              ID=1 HYD NO=103.9 ID=2 ID=1
PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   103.90

    RUNOFF VOLUME =     1.77429 INCHES     =        .5280 ACRE-FEET
    PEAK DISCHARGE RATE =       1.71 CFS  AT   1.500 HOURS   BASIN AREA =   .0056 SQ. MI.


*
* BASIN 2 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=502.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.0000            0.0000          62.62
                         0.1625            0.0008          68.00
                         0.1657            0.0061          68.20
                         0.1689            0.0218          68.40
                         0.1720            0.0480          68.60
                         0.1751            0.0847          68.80
                         0.1781            0.1318          69.00

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	62.62	.000	.00
1.20	.17	64.53	.000	.06
2.40	.26	68.64	.055	.17
3.60	.21	68.66	.060	.17
4.80	.21	68.69	.064	.17
6.00	.21	68.71	.068	.17
7.20	.21	68.73	.071	.17
8.40	.21	68.75	.075	.17
9.60	.21	68.77	.079	.17
10.80	.21	68.78	.082	.17
12.00	.21	68.80	.085	.18
13.20	.21	68.81	.088	.18
14.40	.20	68.83	.091	.18
15.60	.20	68.84	.094	.18
16.80	.20	68.85	.096	.18
18.00	.20	68.86	.099	.18
19.20	.20	68.87	.101	.18
20.40	.20	68.88	.103	.18
21.60	.20	68.89	.105	.18
22.80	.19	68.89	.107	.18
24.00	.19	68.90	.109	.18
25.20	.19	68.91	.110	.18
26.40	.18	68.91	.110	.18
27.60	.18	68.91	.111	.18
28.80	.18	68.91	.111	.18

```
PEAK DISCHARGE =          .177 CFS - PEAK OCCURS AT HOUR   29.65
MAXIMUM WATER SURFACE ELEVATION =        68.914
MAXIMUM STORAGE =          .1115 AC-FT       INCREMENTAL TIME=      .050000HRS

*
****************
*   BASIN 1    *
****************
*
COMPUTE NM HYD       ID=1 HYD NO=101.0 AREA=0.005879 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   20.890    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 2.0100
    AREA =       .005291 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .132088HR    TP =    .133300HR    K/TP RATIO =    .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   1.4330    CFS   UNIT VOLUME =    .9921       B =   324.91      P60 = 2.0100
    AREA =       .000588 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   101.00

    RUNOFF VOLUME =     2.34321 INCHES      =        .7347 ACRE-FEET
    PEAK DISCHARGE RATE =      16.52 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.
```

```
*
* ADD POND 5 TO BASIN 1
*
ADD HYD              ID=1 HYD NO=101.1 ID=1 ID=5
PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   101.10

    RUNOFF VOLUME =      2.17995 INCHES      =       2.1712 ACRE-FEET
    PEAK DISCHARGE RATE =      28.12 CFS  AT   1.500 HOURS   BASIN AREA =   .0187 SQ. MI.

*
* BASIN 1 PONDING
*
ROUTE RESERVOIR      ID=3 HYD NO=501.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.0000            0.0000          61.89
                         0.5962            0.0014          66.22
                         0.6102            0.0277          66.42
                         0.6240            0.1068          66.62
                         0.6374            0.2385          66.82
                         0.6506            0.4228          67.02
                         0.6635            0.6598          67.22
                         0.6762            0.9494          67.42
                         0.6886            1.2917          67.62
                         0.7008            1.6867          67.72

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	61.89	.000	.00
1.20	1.16	66.22	.001	.60
2.40	10.57	67.68	1.520	.70
3.60	.32	67.69	1.553	.70
4.80	.41	67.68	1.527	.70
6.00	.48	67.67	1.503	.70
7.20	.47	67.67	1.482	.69
8.40	.44	67.66	1.458	.69
9.60	.42	67.66	1.432	.69
10.80	.40	67.65	1.404	.69
12.00	.24	67.64	1.367	.69
13.20	.22	67.63	1.322	.69
14.40	.21	67.61	1.275	.69
15.60	.20	67.58	1.227	.69
16.80	.19	67.55	1.178	.68
18.00	.18	67.52	1.129	.68
19.20	.17	67.50	1.079	.68
20.40	.17	67.47	1.028	.68
21.60	.16	67.44	.977	.68
22.80	.15	67.40	.926	.68
24.00	.15	67.37	.874	.67
25.20	.00	67.32	.810	.67
26.40	.00	67.28	.743	.67
27.60	.00	67.23	.677	.66

```
   28.80        .00     67.18        .612        .66
 PEAK DISCHARGE =          .697 CFS - PEAK OCCURS AT HOUR    2.90
 MAXIMUM WATER SURFACE ELEVATION =       67.688
 MAXIMUM STORAGE =        1.5606 AC-FT      INCREMENTAL TIME=     .050000HRS

*
* ADD POND 2 AND POND 1
*
ADD HYD              ID=1 HYD NO=101.1 ID=3 ID=2
PRINT HYD            ID=1 CODE=1

                          PARTIAL HYDROGRAPH   101.10

   RUNOFF VOLUME =     1.57718 INCHES     =       2.0402 ACRE-FEET
   PEAK DISCHARGE RATE =        .87 CFS  AT   3.100 HOURS   BASIN AREA =   .0243 SQ. MI.


*
*
FINISH

   NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 13:15:34
```

DRAINAGE INFORMATION

5I

PROJECT TITLE: CHAVEZ-GRIEVES BUILDING ZONE ATLAS/DRNG. FILE #: F-16-Z

DRB#: ~~96-495~~ 97-88 EPC #: Z-84-13-1 WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT-9-A-1 RENAISSANCE CENTER

CITY ADDRESS: INTERSECTION OF RENAISSANCE BLVD. AND COMMERCE DR.

ENGINEERING FIRM: Chavez-Grieves CONTACT: James Alarid

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: Union Pension Transaction Trust 92-3 NM CONTACT: JIM TRUMP

ADDRESS: 4411 MCLEOD RD. NE SUITE G PHONE: 872-1662

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

_X_ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

_X_ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

____ YES

_X_ NO

____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

_X_ SITE DEV. PLAN FOR BLDG. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ OTHER

DATE SUBMITTED: April 3, 1998

BY: James Alarid

RECEIVED
APR 03 1998
HYDROLOGY SECTION

CHAVEZ • GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE
5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

PRELIMINARY
GRADING AND DRAINAGE PLAN

FOR

CHAVEZ-GRIEVES BUILDING

Albuquerque, New Mexico

March 1998

RECEIVED
APR 0 3 1998
HYDROLOGY SECTION

CHAVEZ • GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE
5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

PRELIMINARY
GRADING AND DRAINAGE PLAN

FOR

CHAVEZ-GRIEVES BUILDING

Albuquerque, New Mexico

JOSEPH L. DeFRONZO
NEW MEXICO
12663
REGISTERED PROFESSIONAL ENGINEER

3-31-98

RECEIVED
APR 03 1998
HYDROLOGY SECTION

March 1998

CHAVEZ-GRIEVES BUILDING DRAINAGE REPORT

platted?

LOCATION

This site is located at the corner of Renaissance Boulevard and Commerce Drive within Renaissance Center in Albuquerque, New Mexico.

LEGAL DESCRIPTION

The legal description of the project is Tract 9-A-1-B Renaissance Center located in Albuquerque, Bernalillo County, New Mexico.

SURROUNDING DEVELOPMENT

The site is bordered on the west by the Federal Express building and on the east by the Mechanical Contractors Association building. The property to the north will soon be developed by the Frito Lay Company. Renaissance Boulevard borders the site on the south.

FLOOD HAZARD ZONES

As shown on Panel 35001C0138 of the National Flood Insurance Rate Maps for the City of Albuquerque, dated September 20, 1996, the site does not lie within a designated flood zone. where?

RELATED REPORTS

Two drainage reports are on file for properties adjacent to this site. One is the "Drainage Report for Federal Express," by Tierra West Development Management Services, revision date May 22, 1997. The second is the "Drainage Report for Tract 9 of Renaissance Center," by Tierra West Development Management Services," dated October 1996. A master drainage study for the Renaissance Center development was completed by Andrews, Ashbury and Robert, Inc., in March 1985. info from reports

EXISTING SITE CONDITIONS AND DRAINAGE PATTERN

The existing site is currently a vacant lot with some dirt from adjacent construction activities stockpiled in areas. Runoff from the site currently flows offsite to the north and the south. The site receives 9.92 (cfs) of peak runoff from the properties to the east. This offsite flow is routed

RECEIVED
APR 0 3 1998
HYDROLOGY SECTION

onsite through a 12" storm drain and is detained in an existing pond on the property. The pond has a 3" drain which discharges to Renaissance Boulevard through an existing sidewalk culvert. The peak runoff from the undeveloped 3.75 acre site is 8.55 (cfs). from property to east, this site, or both?

PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN

The developed site will consist of a 42,150 square-foot office building, associated parking and landscaping. The majority of the developed site will be drained to the north through a series of drop inlets in the parking lots. The runoff to the north will be collected on the future Frito Lay site and accommodated in their detention system. Coordination of this storm drain system between Chavez-Grieves and Tierra West Development Management Services, consultant for Frito Lay, is ongoing as the grading and drainage plan for each site is being developed. A cross lot drainage easement will be required for the proposed drainage scheme. The acquisition of the required cross lot drainage easement is in progress.

Sized for dev. flows? / Controlled discharge?

The site also receives offsite flows from the 3:1 slope to the east of the property. This area sheet flows onto the property and is intercepted in the onsite storm drain system as shown on sheet C2 in the appendices as part of Basins F and G. The 12" storm drain will be tied into a new manhole and diverted into the new storm drain system.

exist 9.9 cfs from east follows this?

The master plan for Renaissance Center only allows 0.1 (cfs) per acre to be discharged from a newly developed site. Two small detention ponds will be constructed along Renaissance Boulevard to reduce the offsite flows from Basin D from 1.18 (cfs) to 0.37 (cfs) to comply with the approved master plan.

HYDROLOGY/HYDRAULICS

The runoff calculations and design have been done in accordance with Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993.

pond calcs? Volume? Easement?

APPENDIX A

HYDROLOGIC COMPUTATIONS

RECEIVED
APR 0 3 1998
HYDROLOGY SECTION

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.
5639 Jefferson Street NE, Albuquerque, New Mexico 87109 *Phone (505) 344-4080 - Fax (505) 343-8759*

RUNOFF CALCULATIONS - SIMPLIFIED PROCEDURE

By: James Alarid Date: March 26, 1998
Project: CHAVEZ-GRIEVES BUILDING Zone Atlas: C-17-Z

This procedure is in accordance with the City of Albuquerque Development Process Manual, Volume 2, Section 22.2, "Hydrology", peak discharge rate for small watersheds less than forty acres in size.

Precipitation Zone from Figure A-1: 2
Land treatment descriptions are in Table A-4.

1. RUNOFF RATE COMPUTATION

Use Equation a-10: $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$

Values of Q_{pi} are from Table A-9, and are in CFS/acre. Area values are in acres.

BASIN	Q_{PA}	A_A	Q_{PB}	A_B	Q_{PC}	A_C	Q_{PD}	A_D	Q_P	% D
EXISTING RATE OF RUNOFF (CFS)										
BASIN A	1.56	0.00	2.28	3.75	3.14	0.00	4.70	0.00	8.55	
TOTAL									**8.55**	
DEVELOPED RATE OF RUNOFF (CFS)										
BASIN A	1.560	0.000	2.280	0.046	3.140	0.000	4.700	0.371	1.85	89%
BASIN B	1.560	0.000	2.280	0.024	3.140	0.000	4.700	0.375	1.82	94%
BASIN C	1.560	0.000	2.280	0.011	3.140	0.000	4.700	0.144	0.70	93%
BASIN D	1.560	0.000	2.280	0.288	3.140	0.000	4.700	0.112	1.18	28%
BASIN E	1.560	0.000	2.280	0.036	3.140	0.000	4.700	0.243	1.22	87%
BASIN F	1.560	0.000	2.280	0.282	3.140	0.000	4.700	0.282	1.97	50%
BASIN G	1.560	0.000	2.280	0.289	3.140	0.000	4.700	0.432	2.69	60%
BASIN H	1.560	0.000	2.280	0.095	3.140	0.000	4.700	0.212	1.21	69
BASIN I	1.560	0.000	2.280	0.136	3.140	0.000	4.700	0.713	3.66	84
TOTAL									**16.31**	

2. RUNOFF VOLUME COMPUTATION

Use Equation a-5 to compute weighted excess precipitation:

Weighted E = "E" = $(E_A A_A + E_B A_B + E_C A_C + E_D A_D)/(A_A + A_B + A_C + A_D)$

$(A_A + A_B + A_C + A_D) = \sum A_i$

Use Equation a-6 to compute the volume:

V_{360} = "E" x $(A_A + A_B + A_C + A_D)$ x 3630 feet^3/acre·inch

Values of E_i are from Table A-8, and are in inches. Area values are in acres.

BASIN	E_A	A_A	E_B	A_B	E_C	A_C	E_D	A_D	$\sum A_i$	"E"	V_{360}
EXISTING VOLUME OF RUNOFF (CUBIC FEET)											
BASIN A	0.53	0.000	0.78	3.750	1.13	0.000	2.12	0.000	3.750	0.78	10618
TOTAL											**10618**
DEVELOPED VOLUME OF RUNOFF (CUBIC FEET)											
BASIN A	0.53	0.000	0.78	0.046	1.13	0.000	2.12	0.371	0.417	1.97	2985
BASIN B	0.53	0.000	0.78	0.024	1.13	0.000	2.12	0.375	0.399	2.04	2954
BASIN C	0.53	0.000	0.78	0.011	1.13	0.000	2.12	0.144	0.155	2.02	1139
BASIN D	0.53	0.000	0.78	0.288	1.13	0.000	2.12	0.112	0.400	1.16	1677
BASIN E	0.53	0.000	0.78	0.036	1.13	0.000	2.12	0.243	0.279	1.95	1972
BASIN F	0.53	0.000	0.78	0.282	1.13	0.000	2.12	0.282	0.564	1.45	2969
BASIN G	0.53	0.000	0.78	0.289	1.13	0.000	2.12	0.432	0.721	1.58	4143
BASIN H	0.53	0.000	0.78	0.095	1.13	0.000	2.12	0.212	0.307	1.71	1900
BASIN I	0.53	0.000	0.78	0.136	1.13	0.000	2.12	0.713	0.849	1.91	5872
TOTAL											**25612**

DI #1 & 6
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\c-g bldg.fm2
Worksheet	STORM DRAIN SYSTEM
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	0.010000	ft/ft
Depth	0.67	ft
Diameter	8.00	in

Results		
Discharge	1.31	cfs
Flow Area	0.35	ft²
Wetted Perimeter	2.09	ft
Top Width	0.00	ft
Critical Depth	0.54	ft
Percent Full	100.00	
Critical Slope	0.010208	ft/ft
Velocity	3.75	ft/s
Velocity Head	0.22	ft
Specific Energy	FULL	ft
Froude Number	FULL	
Maximum Discharge	1.41	cfs
Full Flow Capacity	1.31	cfs
Full Flow Slope	0.010000	ft/ft

> 1.22 (cfs) ok

DI #2
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\c-g bldg.fm2
Worksheet	STORM DRAIN SYSTEM
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	0.010000	ft/ft
Depth	0.83	ft
Diameter	10.00	in

Results		
Discharge	2.44	cfs
Flow Area	0.55	ft²
Wetted Perimeter	2.51	ft
Top Width	0.11	ft
Critical Depth	0.69	ft
Percent Full	99.60	
Critical Slope	0.010245	ft/ft
Velocity	4.47	ft/s
Velocity Head	0.31	ft
Specific Energy	1.14	ft
Froude Number	0.35	
Maximum Discharge	2.55	cfs
Full Flow Capacity	2.37	cfs
Full Flow Slope	0.010549	ft/ft
Flow is subcritical.		

> 1.92 (CFS) OK

DI #3
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\c-g bldg.fm2
Worksheet	STORM DRAIN SYSTEM
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	0.010000	ft/ft
Depth	1.00	ft
Diameter	12.00	in

Results		
Discharge	3.86	cfs
Flow Area	0.79	ft^2
Wetted Perimeter	3.14	ft
Top Width	0.3e-7	ft
Critical Depth	0.83	ft
Percent Full	100.00	
Critical Slope	0.009687	ft/ft
Velocity	4.91	ft/s
Velocity Head	0.38	ft
Specific Energy	1.38	ft
Froude Number	0.17e-3	
Maximum Discharge	4.15	cfs
Full Flow Capacity	3.86	cfs
Full Flow Slope	0.010000	ft/ft
Flow is subcritical.		

> 3.74 (cfs) ok

DI #4
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\c-g bldg.fm2
Worksheet	STORM DRAIN SYSTEM
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	0.010000	ft/ft
Depth	1.25	ft
Diameter	15.00	in

Results		
Discharge	7.00	cfs
Flow Area	1.23	ft²
Wetted Perimeter	3.93	ft
Top Width	0.00	ft
Critical Depth	1.06	ft
Percent Full	100.00	
Critical Slope	0.009451	ft/ft
Velocity	5.70	ft/s
Velocity Head	0.51	ft
Specific Energy	FULL	ft
Froude Number	FULL	
Maximum Discharge	7.53	cfs
Full Flow Capacity	7.00	cfs
Full Flow Slope	0.010000	ft/ft

> 5.59 (cfs) ok

DI #5
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\c-g bldg.fm2
Worksheet	STORM DRAIN SYSTEM
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	0.010000	ft/ft
Depth	1.50	ft
Diameter	18.00	in

Results		
Discharge	11.38	cfs
Flow Area	1.77	ft²
Wetted Perimeter	4.71	ft
Top Width	0.37e-7	ft
Critical Depth	1.29	ft
Percent Full	100.00	
Critical Slope	0.009283	ft/ft
Velocity	6.44	ft/s
Velocity Head	0.64	ft
Specific Energy	2.14	ft
Froude Number	0.16e-3	
Maximum Discharge	12.24	cfs
Full Flow Capacity	11.38	cfs
Full Flow Slope	0.010000	ft/ft
Flow is subcritical.		

> 9.25 (cfs) ok

MH #1
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\c-g bldg.fm2
Worksheet	STORM DRAIN SYSTEM
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	0.062500	ft/ft
Depth	1.25	ft
Diameter	15.00	in

Results		
Discharge	17.49	cfs
Flow Area	1.23	ft²
Wetted Perimeter	3.93	ft
Top Width	0.33e-7	ft
Critical Depth	1.24	ft
Percent Full	100.00	
Critical Slope	0.058561	ft/ft
Velocity	14.26	ft/s
Velocity Head	3.16	ft
Specific Energy	4.41	ft
Froude Number	0.41e-3	
Maximum Discharge	18.82	cfs
Full Flow Capacity	17.49	cfs
Full Flow Slope	0.062500	ft/ft
Flow is subcritical.		

> 9.92 (CFS) OK

DI #7 & #8
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\c-g bldg.fm2
Worksheet	STORM DRAIN SYSTEM
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	0.010000	ft/ft
Depth	1.75	ft
Diameter	21.00	in

Results		
Discharge	17.16	cfs
Flow Area	2.41	ft²
Wetted Perimeter	5.50	ft
Top Width	0.56e-7	ft
Critical Depth	1.52	ft
Percent Full	100.00	
Critical Slope	0.009159	ft/ft
Velocity	7.14	ft/s
Velocity Head	0.79	ft
Specific Energy	2.54	ft
Froude Number	0.19e-3	
Maximum Discharge	18.46	cfs
Full Flow Capacity	17.16	cfs
Full Flow Slope	0.010000	ft/ft
Flow is subcritical.		

> 13.82 (CFS) (DI#7) & 15.79 (CFS) (DI#8) OK

DRAWINGS

DRAINAGE INFORMATION SHEET

PROJECT TITLE: *Frito Lay* ZONE ATLAS/DRNG. FILE #: *F16/D5I*

DRB #: *97-88* EPC #: WORK ORDER #: *none*

LEGAL DESCRIPTION: *Tract 9-A-1-A*

CITY ADDRESS: *1550 Mission Avenue, NE*

ENGINEERING FIRM: *TIERRA WEST, LLC* CONTACT: *RONALD R. BOHANNAN*

ADDRESS: *4421 McCleod Rd. NE Suite D, 87109* PHONE: *(505) 883-7592*

OWNER: *Union Pension Transaction Trust 93-2* CONTACT: *James K. Trump, Jr.*

ADDRESS: *4441 McLeod Rd. NE Suite G, 87109* PHONE: *(505) 872-1662*

ARCHITECT: *N/A* CONTACT:

ADDRESS: PHONE:

SURVEYOR: *Walker Land Surveying* CONTACT: *Steve Walker*

ADDRESS: *424 Shirk SW 87105* PHONE: *(505) 266-6209*

CONTRACTOR: *Henderson Construction* CONTACT: *Mark Henderson*

ADDRESS: *PO Box 53176, 87153* PHONE: *(505) 292-8955*

TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION
- X OTHER, GRADING AND DRAINAGE PLAN, 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: March 18,1999

BY: *Ronald R. Bohannan, P.E.*

RECEIVED
MAR 19 1999
HYDROLOGY SECTION

Tierra West, LLC

March 18, 1999

Mr. John Murray, P.E.
City of Albuquerque
Public Works Dept.
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: 30-Day Temporary Certification of Drainage
Frito Lay Site, Tract 9-A-1-B, North Renaissance Center
1550 Mission Avenue, NE

F16005I

Dear John:

Enclosed please find one copy of the as-built Grading and Drainage Plan and information sheet for the Frito Lay Site at North Renaissance Center. Henderson Construction has completed paving, curb and gutter at the site, as well as the required entrance paving improvements on Mission Avenue. Installation of the sanitary sewer, storm sewer and water service improvements are also complete. Landscaping for the site is underway, and the outfall for the site is in place and functional.

All work completed is in substantial compliance with the approved plans. As-built grading information was supplied by Walker Surveying. We are therefore requesting a 30 Day Temporary Certification of Drainage for Certification of Occupancy.

Should you have any questions, please do not hesitate to contact our office.

Sincerely,

Ronald R. Bohannan, P. E.

Enclosure

cc: James K. Trump, Jr.
Henderson Construction

JN: 980044
RRB/rw

RECEIVED
MAR 1 9 1999
HYDROLOGY SECTION

980044:H2o

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services

May 28, 2015

Rick Bennett, R.A.
RBA Architecture, NE
1104 Park Ave, SW
Albuquerque, NM 8787102

Re: Dreamstyle Warehouse
1525 Renaissance Blvd NE
Traffic Circulation Layout
Engineer's/Architect's Stamp dated 5-12-15 (F16-D051A)

Dear Mr. Bennett,

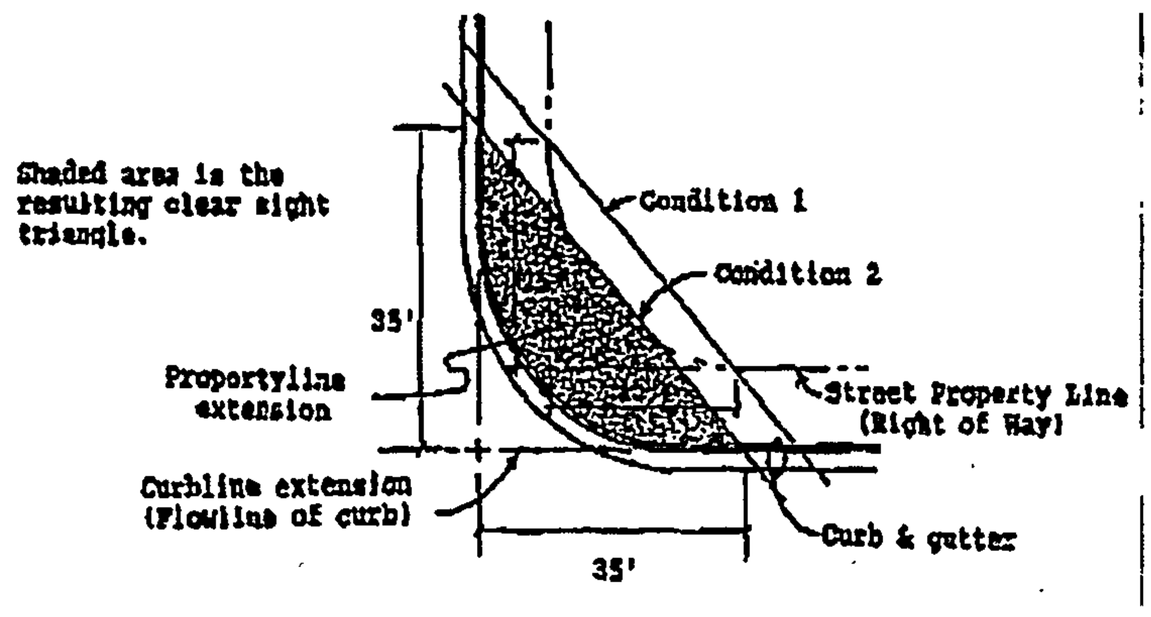
Based upon the information provided in your submittal received 5-19-15, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. Identify and dimension the right of way width, medians, curb cuts and street widths on Renaissance Blvd.
2. Label the compact parking spaces by placing the words **"COMPACT"** on the pavement of each space. Only 30% of the required parking spaces are allowed to be compact designated, revise as necessary.
3. Please identify and detail the bicycle rack.
4. The handicap accessible spaces must be a minimum of 8.5 feet in width.
5. The handicap accessible spaces must include an 8-foot wide van access aisle; all other aisles should be 5 feet in width.
6. The ADA van accessible sign must have the required language per 66-7-352.4C NMSA 1978 **"Violators Are Subject to a Fine and/or Towing."**
7. The ADA access aisle shall have the words **"NO PARKING"** in capital letters, each of which shall be at least one foot high and at least two inches wide, placed at the rear of the parking space so as to be close to where an adjacent vehicle's rear tire would be placed. (66-1-4.1.B NMSA 1978)
8. Please detail the Private Entrance off of Renaissance Blvd, per COA Standard Drawing No. 2426. Detail ADA ramps with truncated domes from public sidewalk to pedestrian walkway entrance to proposed building.

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

CITY OF ALBUQUERQUE

9. Per the DPM, a 6 ft. wide ADA accessible pedestrian pathway is required from the public sidewalk to the building entrances. Please clearly show this pathway and provide details of walkway and 6 ft. ADA landing at top of the ramp.
10. Design delivery vehicle route needs to be shown.
11. Service vehicle and/or refuse vehicle maneuvering must be contained on-site; provide a copy of refuse approval (if applicable). Detail Refuge truck route.
12. It is not apparent what type of pavement surface is being proposed. A hard driving surface will be required as part of this proposed project for parking area and drive aisles.
13. Please provide a sight distance exhibit for entrance from Renaissance Blvd. (see the *Development Process Manual, Chapter 23, Section 3, Part D.5 Intersection Sight Distance*).



14. Please add the following note to the clear sight triangle: "Landscaping and signage will not interfere with clear sight requirements. Therefore, signs, walls, trees, and shrubbery between 3 and 8 feet tall (as measured from the gutter pan) will not be acceptable in this area."
15. Provide the address of the proposed building on the Site Plan.
16. Please add the Vicinity Map and Zone Atlas Map number on the Site Plan itself.
17. Please include two copies of the traffic circulation layout at the next submittal.

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

CITY OF ALBUQUERQUE
Albuquerque - Making History 1706-2006
PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

CITY OF ALBUQUERQUE

Resubmit acceptable package along with fully completed Drainage Transportation Information Sheet to front counter personnel for log in and evaluation by Transportation. If you have any questions, please contact me at (505) 924-3924.

Sincerely,

Jeanne Wolfenbarger, P.E.
Senior Engineer, Planning Dept.
Development Review Services

c: File
CO Clerk

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

CITY OF ALBUQUERQUE

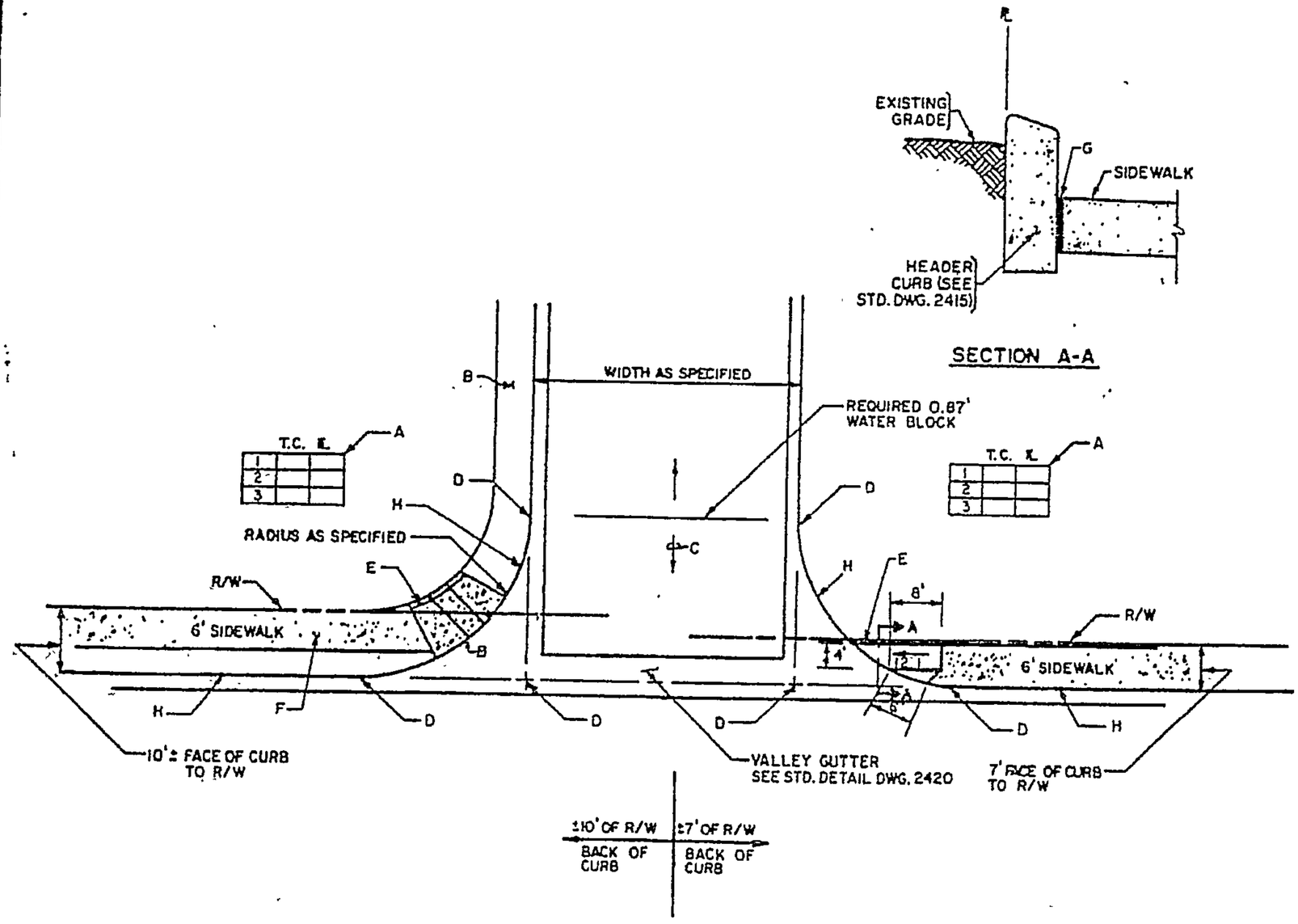
Albuquerque - Making History 1706-2006

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov



PRIVATE ENTRANCE

GENERAL NOTES:

1. THESE DETAILS ARE PROVIDED FOR HIGH TRAFFIC VOLUME PRIVATE ENTRANCES TO COMMERCIAL SITES AND THE LIKE, IN LIEU OF STANDARD DRIVEPADS.

CONSTRUCTION NOTES:

A. INCLUDE QUARTER POINT ELEVATIONS. SEE STD. DETAIL DWG. 2420.

B. WHERE INTERIOR SIDEWALK CONNECTION IS TO BE PROVIDED - CONSTRUCT CURB ACCESS RAMPS AS PER. STD. DETAIL DWGS 2418 & 2441.

C. INITIAL GRADE TO BE 4% OR LESS WHEN CONNECTING TO COLLECTOR OR ARTERIAL STREETS. 6% OR LESS WHEN CONNECTING TO LOCAL STREETS

D. INCLUDE ELEVATIONS AT EACH END OF CURB RETURN AND INTERSECTIONS OF PROJECTED FLOWLINES. SEE STD. DWG. 2420.

E. AT PROPERTY LINE, CONSTRUCT HEADER CURB. SEE STD. DWG 2415

F. IF SIDEWALK IS AGAINST CURB, THE SIDEWALK SHOULD BE TRANSITIONED TO KEEP THE CURB ACCESS RAMP IN THE LOCATION SHOWN

G. 1/2" EXPANSION JOINT MATERIAL.

H. THEORETICAL FACE OF CURB OR FLOWLINE

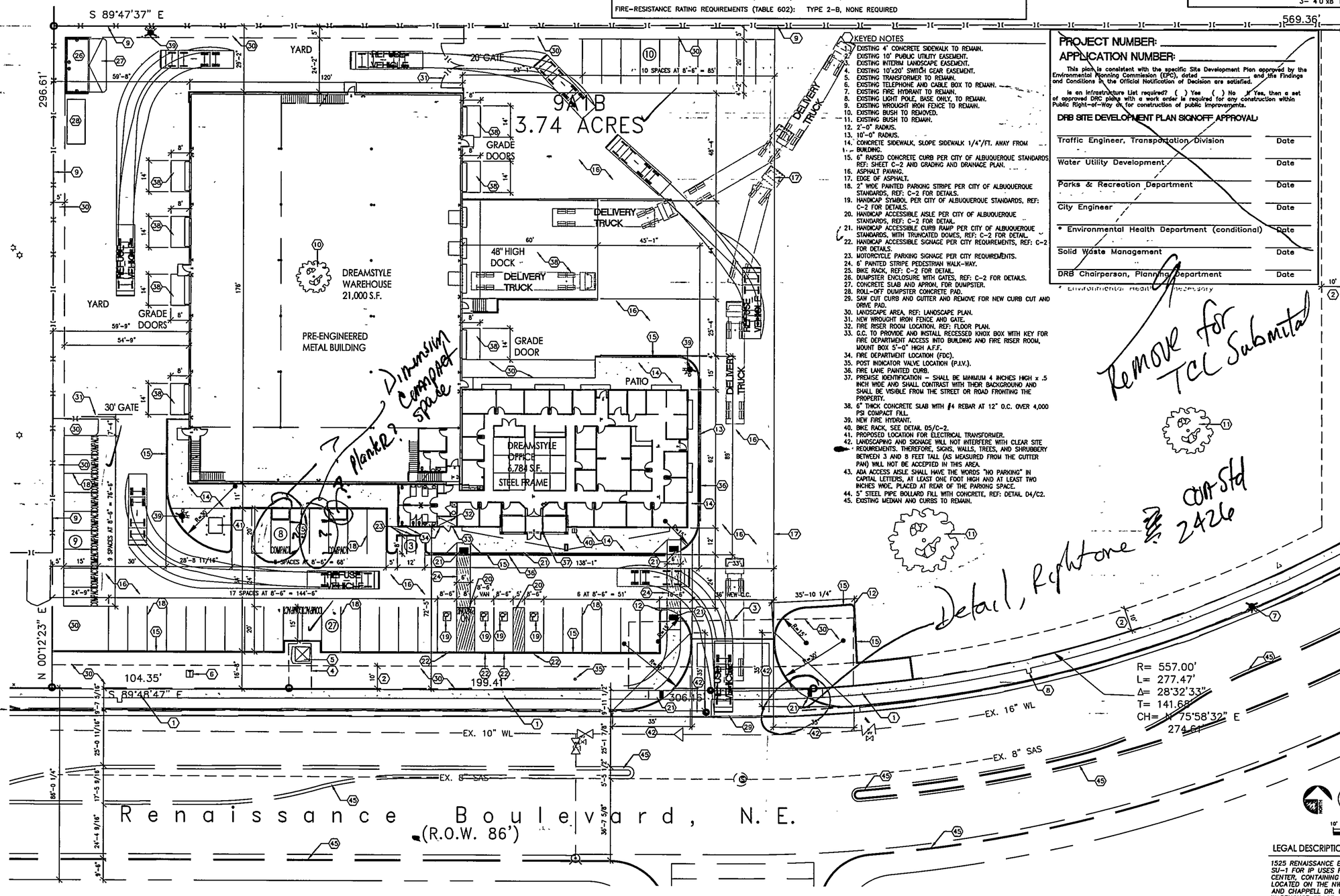
REVISIONS	CITY OF ALBUQUERQUE
1/91 11/14/91 4/4/94	PAVING PRIVATE ENTRANCE DETAILS - ILLUSTRATING TWO SEPRATE R/W CONDITIONS. DWG. 2426 AUG. 1986

INTERNATIONAL BUILDING CODE 2009

OCCUPANCY AND USE CLASSIFICATION:	B-OFFICE S2-STORAGE BUILDING WITH AUTOMATIC SPRINKLER SYSTEM
TYPE OF CONSTRUCTION (TABLE 503):	2-B
ALLOWABLE HEIGHT AND BUILDING AREA (TABLE 503):	3 STORY, 23,000 S.F. (B GROUP)
SECTION 907 FIRE ALARM AND DETECTION SYSTEM:	NOT REQUIRED FOR B GROUP
ACTUAL BUILDING AREA:	B, OFFICE (1ST FLOOR) = 6,784 S.F. S2, WAREHOUSE =21,00 S.F. B, OFFICE (2ND FLOOR WH) = 2,565 S.F. TOTAL GROSS BUILDING S.F. =30,349 S.F.(GROSS S.F.)
FIRE-RESISTANCE RATING REQUIREMENTS (TABLE 601):	TYPE 2-B, NONE REQUIRED
FIRE-RESISTANCE RATING REQUIREMENTS (TABLE 602):	TYPE 2-B, NONE REQUIRED

PARKING REQUIREMENTS

PARKING REQUIRED:	FIRST FLOOR OFFICE AREA: 6,784 S.F./200 = 34 SPACES FIRST FLOOR WAREHOUSE AREA: 21,00 S.F./2000 = 11 SPACES SECOND FLOOR OFFICE WH AREA: 2,565 S.F./300 = 9 SPACES TOTAL PARKING SPACES: = 54 SPACES	
HC. SPACES REQUIRED:	51 TO 100 SPACES = 4 HC. SPACES (1 VAN SPACE)	
PARKING PROVIDED:	37- 8'6"x20' PARKING SPACES 13- 8'6"x15' PARKING SPACES 4- 8'0"x20' H.C. PARKING SPACES	
TOTAL PARKING PROVIDED:	54 3- 4'0"x8' MOTORCYCLE SPACES	



KEYED NOTES

1. EXISTING 4' CONCRETE SIDEWALK TO REMAIN.
2. EXISTING 10' PUBLIC UTILITY EASEMENT.
3. EXISTING INTERIM LANDSCAPE EASEMENT.
4. EXISTING 10'x20' SWITCH GEAR EASEMENT.
5. EXISTING TRANSFORMER TO REMAIN.
6. EXISTING TELEPHONE AND CABLE BOX TO REMAIN.
7. EXISTING FIRE HYDRANT TO REMAIN.
8. EXISTING LIGHT POLE, BASE ONLY, TO REMAIN.
9. EXISTING WROUGHT IRON FENCE TO REMAIN.
10. EXISTING BUSH TO REMOVED.
11. EXISTING BUSH TO REMAIN.
12. 2'-0" RADIUS.
13. 10'-0" RADIUS.
14. CONCRETE SIDEWALK, SLOPE SIDEWALK 1/4"/FT. AWAY FROM BUILDING.
15. 6" RAISED CONCRETE CURB PER CITY OF ALBUQUERQUE STANDARDS REF: SHEET C-2 AND GRADING AND DRAINAGE PLAN.
16. ASPHALT PAVING.
17. EDGE OF ASPHALT.
18. 2" WIDE PAINTED PARKING STRIPE PER CITY OF ALBUQUERQUE STANDARDS, REF: C-2 FOR DETAILS.
19. HANDICAP SYMBOL PER CITY OF ALBUQUERQUE STANDARDS, REF: C-2 FOR DETAILS.
20. HANDICAP ACCESSIBLE AISLE PER CITY OF ALBUQUERQUE STANDARDS, REF: C-2 FOR DETAIL.
21. HANDICAP ACCESSIBLE CURB RAMP PER CITY OF ALBUQUERQUE STANDARDS, WITH TRUNCATED DOMES, REF: C-2 FOR DETAIL.
22. HANDICAP ACCESSIBLE SIGNAGE PER CITY REQUIREMENTS, REF: C-2 FOR DETAILS.
23. MOTORCYCLE PARKING SIGNAGE PER CITY REQUIREMENTS.
24. 6' PAINTED STRIPE PEDESTRIAN WALK-WAY.
25. BIKE RACK, REF: C-2 FOR DETAIL.
26. DUMPSTER ENCLOSURE WITH GATES, REF: C-2 FOR DETAILS.
27. CONCRETE SLAB AND APRON, FOR DUMPSTER.
28. ROLL-OFF DUMPSTER CONCRETE PAD.
29. SAW CUT CURB AND GUTTER AND REMOVE FOR NEW CURB CUT AND DRIVE PAD.
30. LANDSCAPE AREA, REF: LANDSCAPE PLAN.
31. NEW WROUGHT IRON FENCE AND GATE.
32. FIRE RISER ROOM LOCATION. REF: FLOOR PLAN.
33. G.C. TO PROVIDE AND INSTALL RECESSED KNOX BOX WITH KEY FOR FIRE DEPARTMENT ACCESS INTO BUILDING AND FIRE RISER ROOM, MOUNT BOX 5'-0" HIGH A.F.F.
34. FIRE DEPARTMENT LOCATION (FDC).
35. POST INDICATOR VALVE LOCATION (P.I.V.).
36. FIRE LANE PAINTED CURB.
37. PREMISE IDENTIFICATION -- SHALL BE MINIMUM 4 INCHES HIGH x .5 INCH WIDE AND SHALL CONTRAST WITH THEIR BACKGROUND AND SHALL BE VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.
38. 6" THICK CONCRETE SLAB WITH #4 REBAR AT 12" O.C. OVER 4,000 PSI COMPACT FILL.
39. NEW FIRE HYDRANT.
40. BIKE RACK, SEE DETAIL 05/C-2.
41. PROPOSED LOCATION FOR ELECTRICAL TRANSFORMER.
42. LANDSCAPING AND SIGNAGE WILL NOT INTERFERE WITH CLEAR SITE REQUIREMENTS. THEREFORE, SIGNS, WALLS, TREES, AND SHRUBBERY BETWEEN 3 AND 8 FEET TALL (AS MEASURED FROM THE GUTTER PAN) WILL NOT BE ACCEPTED IN THIS AREA.
43. ADA ACCESS AISLE SHALL HAVE THE WORDS "NO PARKING" IN CAPITAL LETTERS, AT LEAST ONE FOOT HIGH AND AT LEAST TWO INCHES WIDE, PLACED AT REAR OF THE PARKING SPACE.
44. 5" STEEL PIPE BOLLARD FILL WITH CONCRETE, REF: DETAIL 04/C2.
45. EXISTING MEDIAN AND CURBS TO REMAIN.

PROJECT NUMBER: _____

APPLICATION NUMBER: _____

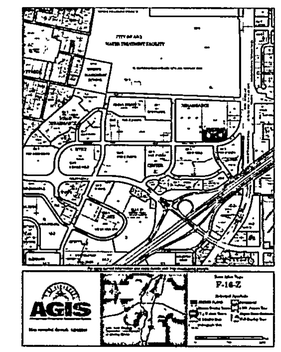
This plan is consistent with the specific Site Development Plan approved by the Environmental Planning Commission (EPC), dated _____ and the Findings and Conditions in the Official Notification of Decision are satisfied.

Is an Infrastructure List required? ( ) Yes ( ) No If Yes, then a set of approved DRC plans with a work order is required for any construction within Public Right-of-Way or for construction of public improvements.

DRB SITE DEVELOPMENT PLAN SIGNOFF APPROVAL

Traffic Engineer, Transportation Division	Date
Water Utility Development	Date
Parks & Recreation Department	Date
City Engineer	Date
* Environmental Health Department (conditional)	Date
Solid Waste Management	Date
DRB Chairperson, Planning Department	Date

* Environmental Health - if necessary



1 SITE PLAN
1"=20'-0"
BAR SCALE
10' 0 20' 40'
(IN FEET)

LEGAL DESCRIPTION

1525 RENAISSANCE BLVD, ALBUQUERQUE, NM 87107
SU-1 FOR IP USES FOR LOT 9A1B RENAISSANCE CENTER, CONTAINING APPROXIMATELY 3.74 ACRES AND LOCATED ON THE NW CORNER OF RENAISSANCE BLVD. AND CHAPPELL DR. USES TO INCLUDE OFFICES WITH WAREHOUSE SPACE.

DREAMSTYLE WAREHOUSE
SITE PLAN
ALBUQUERQUE, NM
PROJECT #1465

REVISION DATE

STATE OF NEW MEXICO
RICHARD P. BENNETT
No. 1240
05/12/15
REGISTERED ARCHITECT

RBA ARCHITECTURE, PC
ARCHITECTURE INTERIOR DESIGN
1400 Park Ave. SW
Albuquerque, NM 87102
505.243.1500
www.rba-pc.com

DATE
5-12-2015

SHEET NUMBER
C-1

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services

February 6, 2015

Jonathan D Niski, R.A.
Tierra West
5571 Midway Park Place NE
Albuquerque, NM 87109

Re: Frito Lay Main**tenance Building, 1550 Mission Ave NE**
Certificate of Occupancy – Transportation Development
Engineer's Stamp dated 01-25-98(F16-D051)
Certification dated 01-29-15

Dear Mr. Niski,

Based upon the information provided in your submittal received 02-03-15, Transportation Development has no objection to the issuance of a Permanent Certificate of Occupancy. This letter serves as a "green tag" from Transportation Development for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

If you have any questions, please contact me at (505)924-3991.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development Review Services

c: File
CO Clerk

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

City of Albuquerque

Planning Department

Development & Building Services Division

RAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: Frito Lay Maintenance Building City Drainage #: F16/D51

DRB#: EPC#: Work Order#:

Legal Description: Tract 9-A-1-A, Renaissance Center

City Address: 1550 Mission Ave. NE

Engineering Firm: Tierra West LLC Contact: Ronald R. Bohannan

Address: 5571 Midway Park Place, NE, Albuquerque, NM 87109

Phone#: 505-858-3100 Fax#: E-mail: rrb@tierrawestllc.com

Owner: Frito-Lay North America, Inc. Contact: Issac Johnson

Address: 7701 Legacy Drive, Plano, TX 75024

Phone#: 972-334-3987 Fax#: E-mail: Isaac.D.Johnson@pepsico.com

Architect: Scott Anderson Architects Contact: Scott Anderson

Address: 7604 Rio Penasco NW, Suite 204, Albuquerque, NM 87120

Phone#: 505-401-7575 Fax#: E-mail: andersonscottc@comcast.net

Surveyor: Contact:

Address:

Phone#: Fax#: E-mail:

Contractor: Contact:

Address:

Phone#: Fax#: E-mail:

TYPE OF SUBMITTAL:

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

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

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

RECEIVED
FEB 0 3 2015
LAND DEVELOPMENT SECTION

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

DATE SUBMITTED: 1-29=15 By: JG for Jon Niski

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

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

gw

TIERRA WEST, LLC

5571 Midway Park Place NE Albuquerque, NM 87109
(505) 858-3100 Fax (505) 858-1118 1-800-245-3102
tierrawestllc.com

January 29, 2015

Ms. Kristal Metro, P.E.
Development and Building Services
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: SITE PLAN FOR BUILDING PERMIT
CERTIFICATION FOR PERMANENT CERTIFICATE OF OCCUPANCY
FRITO LAY, 1550 MISSION AVE NE, ALBUQUERQUE, NM 87107
MAINTENANCE BUILDING

Dear Ms. Metro:

I, Jonathan D. Niski, NMPE #18713, of the firm Tierra West LLC, hereby request approval of the AA Approved Site Plan for issuance of the Permanent Certificate of Occupancy for the Maintenance Building of the project referenced above. This project is in substantial compliance as inspected on January 28, 2015, and is in accordance with the design intent of the AA Approved Site Plan dated 8/25/98. This certification is submitted in support of the request for Permanent Certificate of Occupancy.

The record information presented hereon is not necessarily complete and intended only to verify substantial compliance of the traffic aspects of this project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.

Enclosed, please find the information sheet, As-Built AA Approved Site Plan. Therefore, we request approval of the Site Plan for Building Permit for a Permanent Certificate of Occupancy for the building.

If you have any questions or need additional information regarding this matter, please do not hesitate to contact me.

Sincerely,

JONATHAN D. NISKI
NEW MEXICO
18713
PROFESSIONAL ENGINEER

Jonathan D. Niski, P.E.

Enclosures

JN: 2012068
JDN/JG/bf

Z:\2012\2012068 - Frito Lay\Correspondence\2012068 Kristal Metro Perm CO Letter 1-28-15 doc

CITY OF ALBUQUERQUE

August 21, 2014

Mr. Ronald Bohannan
5571 Midway Park Place NE
Albuquerque, NM 87109

Re: Frito Lay Maintenance Building
Grading and Drainage Plan
Engineer's Stamp Date 8-20-14 (~~F16D005I~~) F16D005I

Dear Mr. Bohannan,

Based upon the information provided in your submittal received August 6 and 20, 2014, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

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 924-3994.

Sincerely,

Amy L. D. Niese, P.E.
Senior Engineer, Hydrology
Planning Department

C: e-mail

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

gw

TIERRA WEST, LLC

5571 Midway Park Place NE Albuquerque, NM 87109
(505) 858-3100 Fax (505) 858-1118 1-800-245-3102
tierrawestllc.com

August 6, 2014

Mr. Curtis Cherne
City Hydrologist
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

RE: GRADING PLAN FOR BUILDING PERMIT SUBMITTAL (F16/D51)
FRITO LAY, 1550 MISSION AVE. NE

Dear Mr. Cherne:

Tierra West LLC, on behalf of our client, respectfully submits and requests approval of the enclosed Grading Plan for Building Permit. Frito Lay proposes to construct the maintenance building proposed in the original Building Permit Set that was shown as a future expansion. The only difference is the location of the building. Since the building was already accounted for in the original submittal there is not an increase in impervious area or storm water runoff from the site.

This project was approved for grading and drainage September 10, 1998 and the construction of this building will not alter that grading plan. There exists retention ponds on the site that act as water harvesting areas and capture the first flush storm water prior to the storm water entering the storm sewer system.

Please review the enclosed Grading Plan and let us know if you have any comments or questions. Otherwise please approve the Grading Plan for Building Permit.

Sincerely,

Ronald R. Bohannan, P.E.

RECEIVED
AUG 06 2014
LAND DEVELOPMENT SECTION

Enclosure/s

JN: 2012068
RRB/jn/jf

Z:\2012\2012068 Frito Lay\Working Documents\2012068 14-08-06 Curtis Cherne drainage submittal letter.docx

Attention: Amy Niese

City of Albuquerque

Planning Department

Development & Building Services Division

RAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

F16D051

Project Title: Frito Lay Maintenance Building City Drainage #: ~~F16/D51~~

DRB#: EPC#: Work Order#:

Legal Description: Tract 9-A-1-A, Renaissance Center

City Address: 1550 Mission Ave. NE

Engineering Firm: Tierra West LLC Contact: Ronald R. Bohannan

Address: 5571 Midway Park Place, NE, Albuquerque, NM 87109

Phone#: 505-858-3100 Fax#: E-mail: rrb@tierrawestllc.com

Owner: Frito-Lay North America, Inc. Contact: Issac Johnson

Address: 7701 Legacy Drive, Plano, TX 75024

Phone#: 972-334-3987 Fax#: E-mail: Isaac.D.Johnson@pepsico.com

Architect: Scott Anderson Architects Contact: Scott Anderson

Address: 7604 Rio Penasco NW, Suite 204, Albuquerque, NM 87120

Phone#: 505-401-7575 Fax#: E-mail: andersonscottc@comcast.net

Surveyor: Contact:

Address:

Phone#: Fax#: E-mail:

Contractor: Contact:

Address:

Phone#: Fax#: E-mail:

TYPE OF SUBMITTAL:

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

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

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

RECEIVED AUG 20 2014 LAND DEVELOPMENT SECTION

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

DATE SUBMITTED: 8-20-14 By: Jonathan Niski, P.E.

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

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

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

July 2 , 1999

Ronald R. Bohanan, P.E.
Tierra West, LLC
4421 McLeod NE
Suite D
Albuquerque, NM 87109

RE: FRITO LAY, 1550 MISSION AVENUE NE (F16-D51). ENGINEER'S CERTIFICATION FOR CERTIFICATE OF OCCUPANCY APPROVAL. ENGINEER'S STAMP DATED MAY 12, 1999.

Dear Mr. Bohanan:

Based on the information provided in your May 12, 1999 submittal, the above referenced project is approved for Certificate of Occupancy.

If I can be of further assistance, please feel free to call me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: File

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: *Frito Lay* ZONE ATLAS/DRNG. FILE #: *F16/D51* D51

DRB #: *97-88* EPC #: WORK ORDER #: *none*

LEGAL DESCRIPTION: *Tract 9-A-1-A* (existing file)

CITY ADDRESS: *1550 Mission Avenue, NE*

ENGINEERING FIRM: *TIERRA WEST, LLC* CONTACT: *RONALD R. BOHANNAN*

ADDRESS: *4421 McCleod Rd. NE Suite D, 87109* PHONE: *(505) 883-7592*

OWNER: *Union Pension Transaction Trust 93-2* CONTACT: *James K. Trump, Jr.*

ADDRESS: *4441 McLeod Rd. NE Suite G, 87109* PHONE: *(505) 872-1662*

ARCHITECT: *N/A* CONTACT:

ADDRESS: PHONE:

SURVEYOR: *Walker Land Surveying* CONTACT: *Steve Walker*

ADDRESS: *424 Shirk SW 87105* PHONE: *(505) 266-6209*

CONTRACTOR: *Henderson Construction* CONTACT: *Mark Henderson*

ADDRESS: *PO Box 53176, 87153* PHONE: *(505) 292-8955*

6/2
30 day
Renewal

TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION
- X OTHER, GRADING AND DRAINAGE PLAN, 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: May 12, 1999

BY: *Ronald R. Bohannan, P.E.*

RECEIVED
MAY 12 1999
HYDROLOGY SECTION

Tierra West, LLC

May 12, 1999

Mr. John Murray, P.E.
City of Albuquerque
Public Works Dept.
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: Certification of Drainage
Frito Lay Site, Tract 9-A-1-B, North Renaissance Center
1550 Mission Avenue, NE

Dear John:

Enclosed please find one copy of the as-built Grading and Drainage Plan and information sheet for the Frito Lay Site at North Renaissance Center. Henderson Construction has completed paving, curb and gutter at the site, as well as the required entrance paving improvements on Mission Avenue. Installation of the sanitary sewer, storm sewer and water service improvements are also complete. Landscaping for the site is complete, and the future development areas re-seeded. The outfall for the site is in place and functional.

All work completed is in substantial compliance with the approved plans. As-built grading information was supplied by Walker Surveying. We are therefore requesting Certification of Drainage for Certification of Occupancy.

Should you have any questions, please do not hesitate to contact our office.

Sincerely,

Ronald R. Bohannan, P. E.

Enclosure

cc: James K. Trump, Jr.
Henderson Construction

JN: 980044
RRB/rw

RECEIVED
MAY 12 1999
HYDROLOGY SECTION

980044.H2o1

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

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

December 5, 1997

Ronald Bohannan, P.E.
Tierra West, LLC
4421 McLeod Rd. NE
Suite D
Albuquerque, NM 87109

RE: TRACT 9-D OF RENAISSANCE CENTER. 4901 AND 4921 CHAPPELL DRIVE NE (F16-D51). ENGINEER'S CERTIFICATIONS FOR CERTIFICATE OF OCCUPANCY APPROVAL. ENGINEER'S CERTIFICATION DATED SEPTEMBER 19, 1997 FOR 4901 CHAPPELL AND NOVEMBER 7, 1997 FOR 4921 CHAPPELL.

Dear Mr. Bohannan:

Based on the information provided on your November 10 and 18, 1997 submittals, the above referenced projects are approved for Certificate of Occupancy.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill, P.E.
Hydrology

c: Andrew-Garcia
File

DRAINAGE INFORMATION SHEET

F-16/D51

PROJECT TITLE: *Tract 9-D of renaissance Center* **ZONE ATLAS/DRNG. FILE #:** ~~F-16-D51~~

DRB #: *96-495* **EPC #:** **WORK ORDER #:** *N/A*

LEGAL DESCRIPTION: *Tract 9-D of Renaissance Center*

CITY ADDRESS: *4901 Chappell Rd. NW. Albuquerque NM 87109*

ENGINEERING FIRM: *TIERRA WEST, LLC* **CONTACT:** *RONALD R. BOHANNAN OR SHAHAB BIAZAR*

ADDRESS: *4421 McCleod Rd. NE Suite D, 87109* **PHONE:** *(505) 883-7592*

OWNER: *Mechanical Contractors Association of NM* **CONTACT:** *William S. Green*

ADDRESS: *6001 Marble N..E. Albuquerque NM 87111* **PHONE:** *(505) 265-8704*

ARCHITECT: *Claudio Vigil Architects* **CONTACT:** *Cladio Vigil*

ADDRESS: *1305 Tijereas N.W. Albuquerque NM* **PHONE:** *(505) 842-1113*

SURVEYOR: *Walker Surveying* **CONTACT:** *Steve Walker*

ADDRESS: *424 Shirk Lane, S.W. Albuquerque NM. 87105* **PHONE:** *(505) 266-6209*

CONTRACTOR: *Summit Construction* **CONTACT:** *Tony Tomas*

ADDRESS: *P.O. Box 25703, 900 Hazelding S.E. Albuq. NM* **PHONE:** *(505) 842-8113*

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- X DRAINAGE PLAN (as-built)
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN (as-built)
- ____ 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 (final)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ S. A. D. DRAINAGE REPORT
- ____ DRAINAGE REQUIREMENTS
- ____ *OTHER*

RECEIVED
NOV 18 1997
HYDROLOGY SECTION

DATE SUBMITTED: November 12, 1997

BY: *Ronald R. Bohannan P.E.*

Tierra West, LLC

November 12, 1997

Mrs. Lisa Manwill
City Public Works
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Final Certification of Occupancy for Tract 9-D Renaissance Center
Mechanical Contractors Association of New Mexico

Dear Lisa:

Enclosed please find one copy of the as-built Grading and Drainage Plan for Tract 9-D, Renaissance Center, 4901 Chappell Drive NE. We are requesting final certification of occupancy for the site. The site has been paved and the landscaping is complete. Walker Surveying has provided the as-built grades and field inspection has verified that the project has been completed in substantial compliance with the approved plan as designed.

Should you have any questions, please do not hesitate to contact our office.

Sincerely,

Ronald R. Bohannan, P.E.

Enclosure

cc: James K. Trump, Jr
Summit Construction

JN: 960038
RRB/rw

Drainage.

RECEIVED
NOV 18 1997
HYDROLOGY SECTION

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Tract 9-D of Renaissance Center **ZONE ATLAS/DRNG. FILE #:** F-16-D-51

DRB #: 96-495 **EPC #:** **WORK ORDER #:** N/A

LEGAL DESCRIPTION: Tract 9 of Renaissance Center

CITY ADDRESS: 4901 CHAPPELL RD. NW. ALBUQUERQUE NM

ENGINEERING FIRM: TIERRA WEST DEV. MAGT. SER. **CONTACT:** RONALD R. BOHANNAN OR SHAHAB BIAZAR

ADDRESS: 4421 McLeod Rd. NE Suite D, 87109 **PHONE:** (505) 883-7592

OWNER: Union Pension Transaction Trust 93-2 **CONTACT:** Jim Trump

ADDRESS: 4441 McLeod Rd. NE Suite G, 87109 **PHONE:** (505) 872-1662

ARCHITECT: CLAUDIO VIGIL ARCHITECTS **CONTACT:** CLAUDIO VIGIL

ADDRESS: 1305 TIJERAS NW NM **PHONE:** (505) 842- 1113

SURVEYOR: WALKER SURVEYING **CONTACT:** Steve Walker

ADDRESS: 424 SHIRK Ln. SW 87105 **PHONE:** (505) 266-6209

CONTRACTOR: SUMMIT CONSTRUCTION **CONTACT:** TONY TOMAS

ADDRESS: P.O. BOX 25703, 900 HAZELDINE S.E. N.M. **PHONE:** (505) 842-8113

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- X DRAINAGE PLAN (AS - BUILT)
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN (AS - BUILT)
- ____ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION
- ____ OTHER

PRE-DESIGN MEETING:

- ____ YES
- X NO
- ____ COPY PROVIDED

All they need is Temp. Andrew called w. Calf shelab and gave verbal.

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
- X *OTHER* 30 Day Temp. Certification for MCA 4901 Chappel Rd. NE Bldg. Permit # 9701714

30 day Temp CO issued on 9-19-97

DATE SUBMITTED: September 19, 1997

BY: RONALD R. BOHANNAN

RECEIVED
SEP 19 1997
HYDROLOGY SECTION

Tierra West, LLC

September 19, 1997

Mrs. Lisa Manwell
City Public Works
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: 30 Day Temporary Certification of Occupancy for Tract 9 Renaissance, F16-D51
4901 Chappell Drive, NE (MCA)

Dear Lisa:

Enclosed please find one copy of the as-built Grading Plan for Tract 9D, Renaissance Center, 4901 Chappell Drive NE. We are requesting a 30 day temporary certification of occupancy for the site. The site is paved and the landscaping is being completed. The as-built grades were provided by Walker Surveying. The grades are built according to the grading & drainage plan and the water conveys to the drop inlets and finally to the pond, as designed.

Should you have any questions, please do not hesitate to contact our office.

Sincerely,

Ronald R. Bohannan, P.E.

Enclosure

cc: James K. Trump, Jr
Summit Construction

Job No 960038
RRB/sb

certify3.ltr

RECEIVED
SEP 19 1997
HYDROLOGY SECTION

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

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

Records Withdrawal Form

Project No. F-16 / D-51 **Date:** 11/6/03

Project Title: Renaissance Center Tr. 9

a. File b. Mylars c. Redlines/Comments
d. Other _____

Requested by: Arnell Friedt CH2MHILL **Phone No.:** 884-5600
Name and Company

Comments: Copy File

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: E. Romer **Organization:** AR 884-0862
Print

Signed: ER **Date:** 11/6/03

Office Use Only

Return Acknowledged:

Received By: _____ **Date:** _____
Print

CITY OF
Albuquerque

April 28, 1998

James E. Millington, P.E.
Joseph L. DeFronzo, P.E.
Chavez-Grieves Consulting Engineers, Inc.
5639 Jefferson NE
Albuquerque, New Mexico 87109

RE: Conceptual Grading and Drainage Plan for Chavez-Grieves Building, Tract 9-A-1, Renaissance Center (F16/D5I) Engineer's Stamp Dated 4/3/98 on Plan and 3/31/98 on Report.

Dear Mr. Millington and Mr. DeFronzo:

Prior to Site Development Plan for Building Permit approval for the above referenced site, the following comments must be addressed:

1. It appears on the Zone Atlas page that this site extends farther to the north. Is there a plat action associated with this submittal, or has the Tract already been subdivided? The entire site must be addressed.

2. Please provide a copy of a portion of FIRM Panel 138 showing the site delineated on it.

3. The report refers to other drainage studies, therefore any pertinent information from these studies must be provided in this report.

4. The report states that only 0.1 cfs/acre is allowed to discharge from any Renaissance site. Does the 9.92 cfs from the property to the east conform to this controlled release rate? If not, how will this be mitigated?

5. It appears that most of this site will free discharge onto the Frito Lay site. Provide the design, capacity calculations and easement for the pond on the Frito Lay site that is used to control the discharge from this site.

6. The plan shows proposed private storm drains. What do these connect to? Show the outfall system.

7. Provide existing grades around the perimeter of the site to show how the proposed grading will tie into existing.

April 28, 1998

8. The report states that off-site flows from the 3:1 slope to the east will enter this site. Is this in addition to what discharges through the 12" storm drain? On the plan, show existing and proposed contours to the east of the site. Is grading proposed/allowed in this area?

9. How will the runoff from Basin D be intercepted in the small detention ponds? The contours show this area sloping toward the street.

10. The percentage of land treatment D appears to be low for Basins F and G.

11. Provide existing and/or proposed street grades on the grading plan. More spot elevations on the site will be required prior to building permit release.

Please provide a copy of the plat with the resubmittal. If you have any questions, call me at 924-3982.

Sincerely,

Susan Calongne

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

c: DRB 97-88
Jim Trump, Owner
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: *DISTRIBUTION MANAGEMENT CORP.* **ZONE ATLAS/DRNG. FILE #:** *F-16-Z / D5I1*

DRB #: *96-495* **EPC #:** *N/A* **WORK ORDER #:** *N/A*

LEGAL DESCRIPTION: *TRACT 9-B RENAISSANCE CENTER*

CITY ADDRESS: *4921 CHAPPELL DRIVE NE 87107*

ENGINEERING FIRM: *TIERRA WEST, LLC* **CONTACT:** *RONALD R. BOHANNAN OR SHAHAB BIAZAR*

ADDRESS: *4421 McCleod Rd. NE Suite D, 87109* **PHONE:** *(505) 883-7592*

OWNER: *STEPHEN A. GREIGO* **CONTACT:** *STEPHEN A. GRIEGO*

ADDRESS: *2800 SAN MATEO NE, SUITE 100, 87110* **PHONE:** *(505) 881-7273*

ARCHITECT: *CLAUDIO VIGIL* **CONTACT:** *CLAUDIO VIGIL*

ADDRESS: *1305 TIJERAS NW 87102-2882* **PHONE:** *(505) 842-1113*

SURVEYOR: *HALL ENGINEERING* **CONTACT:** *RICHARD HALL*

ADDRESS: *6840 2NW 87107* **PHONE:** *(505) 345-1064*

CONTRACTOR: *HENDERSON CONSTRUCTION* **CONTACT:** *MARIA RODRIGUEZ-GUY*

ADDRESS: *PO BOX 53176 87153-3176* **PHONE:** *(505) 292-8955*

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION
- X OTHER (AS-BUILT DRAINAGE PLAN)

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

30 day Temp CO issued 11/12/97

RECEIVED NOV 10 1997 HYDROLOGY SECTION

DATE SUBMITTED: NOVEMBER 7, 1997

BY: *RONALD R. BOHANNAN P.E.*

Tierra West, LLC

November 7, 1997

Mrs. Lisa Manwill
City Public Works
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Final Certification of Occupancy for Tract 9-B Renaissance Center
Distribution Management Corp. 4921 Chappell Drive, NE

Dear Lisa:

Enclosed please find one copy of the as-built Grading and Drainage Plan for Tract 9-B, Renaissance Center, 4921 Chappell Drive NE. We are requesting final certification of occupancy for the site. The site has been paved and the landscaping is complete. Hall Engineering has provided the as-built grades and field inspection has verified that the project has been completed in substantial compliance with the approved plan as designed.

Should you have any questions, please do not hesitate to contact our office.

Sincerely,

Ronald R. Bohannan, P.E.

Enclosure

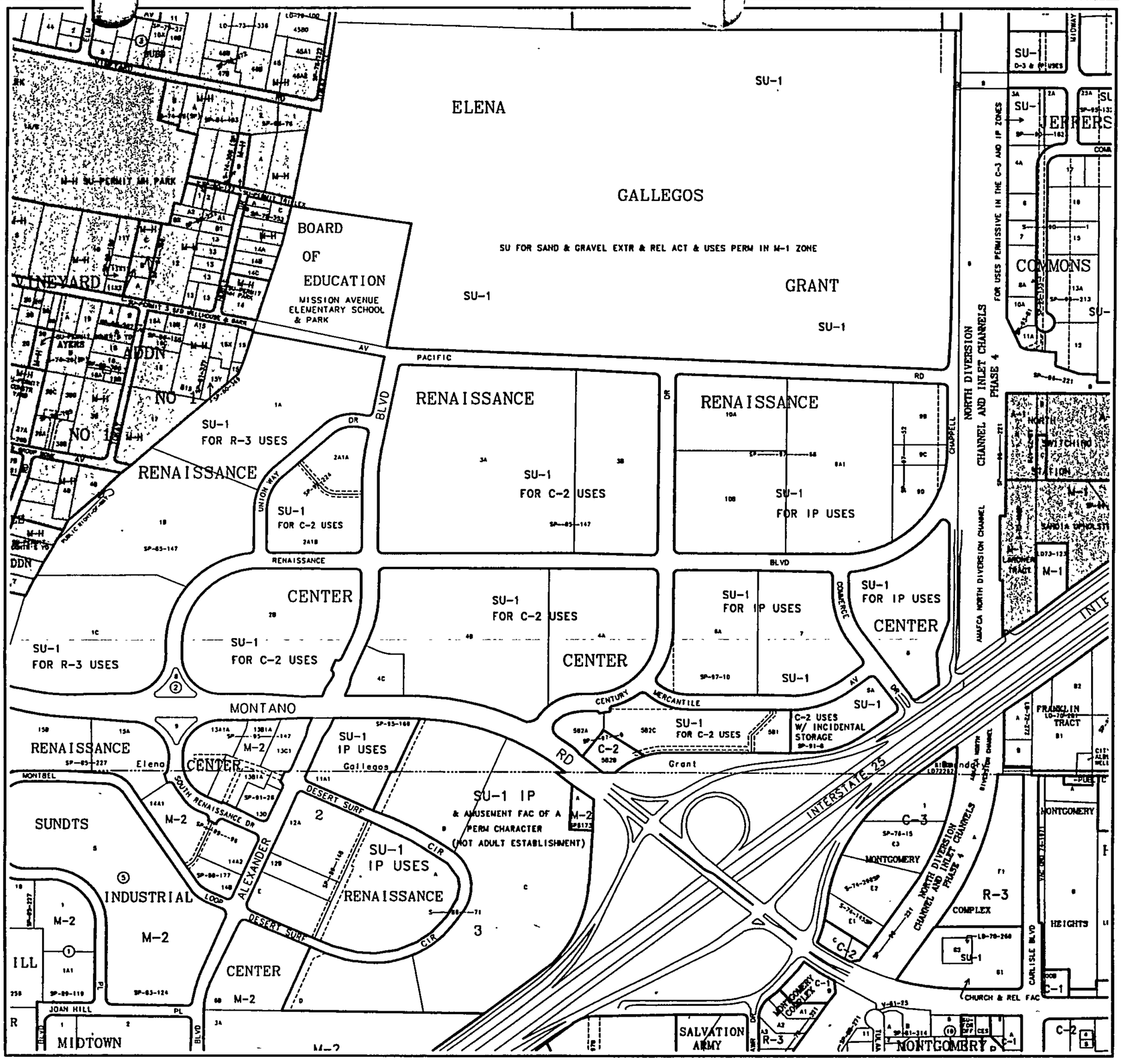
cc: James K. Trump, Jr
Henderson Construction

JN: 960038
RRB/rw

RECEIVED
NOV 10 1997
HYDROLOGY SECTION

certify. Ltr.

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol



GRAPHIC SCALE IN FEET

250 0 500 1000

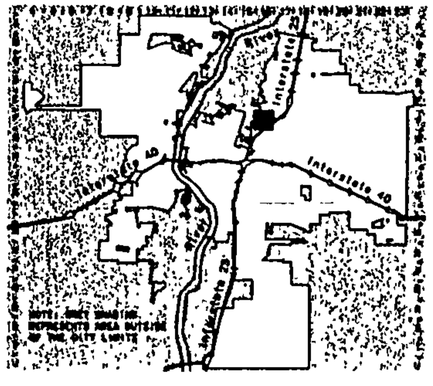
CITY OF Albuquerque

Albuquerque Geographic Information System

PLANNING DEPARTMENT

© Copyright 1997

Map Amended through June 19, 1997



LEGAL DESCRIPTION

T11N

R3E

SEC 34

UNIFORM PROPERTY CODE

1-010-061

F-16-Z

CITY OF
Albuquerque

January 23, 1997

Martin J. Chávez, Mayor

Shahab Biazar
Tierra West Dev.
4421 McLeod Rd. NE
Suite D
Albuquerque, NM 87109

RE: TRACT 9 OF RENAISSANCE CENTER - PHASE 1 (F16-D5I). UPDATED GRADING AND DRAINAGE PLANS FOR SITE DEVELOPMENT, FINAL PLAT, BUILDING PERMIT, SO #19 PERMIT APPROVALS. ENGINEER'S STAMP DATED 1-13-97.

Dear Shahab:

Based on the information provided on your January 15, 1997 submittal, the above referenced plan is approved for Site Development Plan for Subdivision, Site Development Plan for Building Permit, Final Plat, Building Permit, SO #19 Permit.

Please note that the Plat cannot be signed off until a copy of the executed Encroachment Agreement from AMAFCA is provided.

A copy of this approval letter must be on hand when applying for the excavation permit.

Prior to Certificate of Occupancy, an Engineer's Certification will be required. Also, provide a copy of the inspector's "green tag" for the sidewalk culvert with the Engineer's Certification.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Arlene Portillo
Andrew Garcia
File

CITY OF
Albuquerque

October 24, 1996

Martin J. Chávez, Mayor

Ronald Bohannan
Tierra West Dev.
4421 McLeod Rd. NE
Suite D
Albuquerque, NM 87109

RE: TRACT 9 OF RENAISSANCE CENTER - PHASE 1 (F16-D5I). DRAINAGE REPORT FOR SITE DEVELOPMENT FOR SUBDIVISION, SITE DEVELOPMENT FOR BUILDING PERMIT, FINAL PLAT, AND BUILDING PERMIT APPROVALS. ENGINEER'S STAMP DATED OCTOBER 16, 1996.

Dear Ron:

Based on the information provided on your October 18, 1996 submittal, the above referenced plan is approved for Site Development Plan for Subdivision, Site Development Plan for Building Permit, Final Plat, and Building Permit

Please note that the Plat cannot be signed off until a copy of the executed Encroachment Agreement from AMAFCA is provided.

A SO #19 Permit is required to construct the side walk culvert along Chappell Drive. Please submit two copies of sheet 3 and request SO #19 Permit approval on the Drainage Information Sheet.

Prior to Certificate of Occupancy, an Engineer's Certification will be required. Also, provide a copy of the inspector's "green tag" for the sidewalk culvert with the Engineer's Certification.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Tract 9 of Renaissance Center ZONE ATLAS/DRNG. FILE #: F-16 / 145 i

DRB #: 96-495 EPC #: WORK ORDER #:

LEGAL DESCRIPTION: Tract 9 of Renaissance Center

CITY ADDRESS:

ENGINEERING FIRM: TIERRA WEST DEV. MAGT. SER. CONTACT: RONALD R. BOHANNAN OR SHAHAB BIAZAR

ADDRESS: 4421 McLeod Rd. NE Suite D, 87109 PHONE: (505) 883-7592

OWNER: Union Pension Transaction Trust 93-2 CONTACT: Jim Trump

ADDRESS: 4441 McLeod Rd. NE Suite G, 87109 PHONE: (505) 872-1662

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: PRECISION SURVEYS CONTACT: LARRY MEDRANO

ADDRESS: 2929 COORS blvd NW SUITE 309 PHONE: (505) 839-0569

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

___ YES
X NO
___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAN APPROVAL
___ PRELIMINARY PLAT APPROVAL
X S. DEV. PLAN FOR SUB'D. APPROVAL
X S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
X 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: *10/17/96*

BY: *SHAHAB BIAZAR*

RECEIVED OCT 18 1996

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Tract 9 of Renaissance Center ZONE ATLAS/DRNG. FILE #: F-16 / D5I

DRB #: *96-495* EPC #: WORK ORDER #:

LEGAL DESCRIPTION: Tract 9 of Renaissance Center

CITY ADDRESS:

ENGINEERING FIRM: TIERRA WEST DEV. MAGT. SER. CONTACT: RONALD R. BOHANNAN OR SHAHAB BIAZAR

ADDRESS: 4421 McLeod Rd. NE Suite D, 87109 PHONE: (505) 883-7592

OWNER: Union Pension Transaction Trust 93-2 CONTACT: Jim Trump

ADDRESS: 4441 McLeod Rd. NE Suite G, 87109 PHONE: (505) 872-1662

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: PRECISION SURVEYS CONTACT: LARRY MEDRANO

ADDRESS: 2929 COORS blvd NW SUITE 309 PHONE: (505) 839-0569

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- ___ YES
- X NO
- ___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAN APPROVAL
- ___ PRELIMINARY PLAT APPROVAL
- X S. DEV. PLAN FOR SUB'D. APPROVAL
- X S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- X 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
- X *SO-19*

DATE SUBMITTED: *01/14/97*

BY: *SHAHAB BIAZAR*

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

Records Withdrawal Form

Project No. F16/D51 **Date:** 4/26/07

Project Title: Tract 9 Renaissance Center

a. File b. Mylars c. Redlines/Comments
d. Other _____

Requested by: Keli Krueger Tierra West LLC **Phone No.:** 858-3100
Name and Company

Comments:

Anticipated Return Date: ASAP

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: MIKE **Organization:** MESA REPRO
Print

Signed: M martin **Date:** 4 27

Office Use Only

Return Acknowledged:

Received By: [signature] **Date:** 4-30-07
Print

CITY OF
Albuquerque

August 17, 1998

Ronald R. Bohannan, P.E.
Tierra West
4421 McLeod Rd. NE, Suite D
Albuquerque, New Mexico 87109

RE: Grading and Drainage Plan for Tract 9-A-1-A and Tract 9-A-1-B, North Renaissance Center (F16/D51) Engineer's Stamp Dated 7/17/98.

Dear Mr. Bohannan:

The above referenced plan was reviewed by Smith Engineering Company. Attached is the comment letter from Steve Kemna, P.E. It appears that the above referenced plan cannot be approved until his comments are addressed.

The main issue is that the runoff from the total site exceeds the allowable discharge per the Master Drainage Plan. Phasing must also be addressed. Are both Tracts to be developed at once? The 100-year depth of the proposed ponds in the parking lots should not exceed the height of the curbs.

If you have any questions regarding these comments, please call me at 924-3982.

Sincerely,

Susan Calongne

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

c: Jim Trump, Owner
File

Smith Engineering Company

A Full Service Engineering Company

August 14, 1998

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

Re: Drainage Report for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves)
Tierra West, Report dated July 1998 and Plans July 17, 1998
Drainage File # F16/D51
Request for Site Development Plan for Building Permit Approval, Building Permit, and Grading Permit
SEC Job # 198624.B13

Dear Ms. Calongne:

Smith Engineering Company (SEC) has reviewed the submittal for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves) dated July 1998. This submittal is for building and grading permit approval. The review comments are as follows:

1. Most of the COA comments dated April 28, 1998 concerning Tract 9-A-1-B (Chavez-Grieves) were addressed with the new submittal. Specifically, comments # 1, 2, 3, 4, 5, 6, 8, 10, and 11 were addressed. The comments that were not adequately addressed are discussed below:

   Comment #7 - "Provide existing grades around the perimeter of the site to show how the proposed grading will tie into existing". The grading and drainage plan dated July 17, 1998 provided in the back of the drainage report does not show the existing contours to the east of Tract 9-A-1-B and the southeast portion of Tract 9-A-1-A.

   Comment #9 - "How will the runoff from Basin D be intercepted in the small detention ponds? The contours show this area sloping toward the street." The response to this comment says that Basin D will discharge 1.22 cfs into Renaissance Blvd. If 1.59 cfs discharges to Mission Ave. and 1.22 cfs flows to Renaissance Blvd., then the total site discharge is 2.81 cfs which exceeds the 0.1 cfs/ac restriction imposed by the Master Drainage Study for the area (total area is 15.9 acres including Tracts 9B, 9C, and 9D).

2. Please discuss the phasing of the storm drain located between MH#1 and DI#10. Will this storm drain be built when the Frito Lay property is developed? Please label the grading plan with the size of the storm drains on the Chavez-Grieves property.
3. Please show that the 6 inch storm drains exiting Ponds #1, 2, and 3 have the capacity to convey the 100-year peak outflow (using a culvert analysis and not simply the orifice equation).
4. Please reference the COA BM used for control on this project.
5. Will the exiting detention pond and 12 inch storm drain on the southeast corner of the Chavez-Grieves property be removed? If yet, then please call out removal on plans.
6. Please show spot elevations along the top of slope and bottom of slope for pond #3 and spot elevations along the bottom of slope for pond #5.
7. Please show specific storm drain easements for offsite flows on both Tracts 9-A-1-A and 9-A-1-B. Show these easements on the grading plan and the plat.

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

8. It should be noted that the 100-year ponding in the parking lots adjacent to the Frito Lay office building reaches a depth of 1.5 feet.

Thank you for the opportunity to review this drainage report. If you have any questions please feel free to contact me at 884-0700.

Sincerely,

Smith Engineering Company

Stephen Paul Kemna

Stephen P. Kemna, P.E.

DRAINAGE INFORMATION SHEET

D-51

PROJECT TITLE: *Tract 9-A-1-A and Tract 9-A-1-B* **ZONE ATLAS/DRNG. FILE #:** *F-16*

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

LEGAL DESCRIPTION: *Tract 9-A-1-A and Tract 9-A-1-B of North Renaissance Center*

CITY ADDRESS: *South of Mission Avenue near Chappell Drive*

ENGINEERING FIRM: *TIERRA WEST, LLC* **CONTACT:** *RONALD R. BOHANNAN*

ADDRESS: *4421 McCleod Rd. NE Suite D, 87109* **PHONE:** *(505) 883-7592*

OWNER: *Union Pension Transaction Trust 93-2 NM* **CONTACT:** *Jim Trump*

ADDRESS: *4411 McLeod NE, Suite G* **PHONE:** *(505)872-1662*

ARCHITECT: *DCSW* **CONTACT:** *Stace McGee*

ADDRESS: *320 Central Ave SW, 87102* **PHONE:** *(505)843-9636*

SURVEYOR: *Precision Surveys* **CONTACT:** *Larry Medrano*

ADDRESS: *2929 Coors Blvd NW Suite 309* **PHONE:** *(505)839-0569*

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
- ___ 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*

RECEIVED
JUL 17 1998
HYDROLOGY SECTION

DATE SUBMITTED: *07/16/98*

BY: *Sara McCollam*

Tierra West, LLC

July 16, 1998

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

Re: Drainage Report for Tract 9-A-1-A (Frito Lay) and Tract 9-A-1-B (Chavez-Grieves), F16-D5I

Dear Ms. Calongne:

We are resubmitting the Tract 9-A-1-B (Chavez-Grieves) drainage report and grading plan for your review and approval. Chavez-Grieves has indicated that they do not plan to occupy the site and the Trust would like to complete the drainage submittal and obtain approval. We have combined the Chavez-Grieves report with the drainage report for Tract 9-A-1-A (Frito Lay) to the north.

1. Tract 9A is being subdivided into two tracts, Tract 9-A-1-A and Tract 9-A-1-B. The plat has been included with this submittal for your reference. Both tracts are being addressed with this report.

2. The grading plan has been modified to show the FIRM map.

3. The drainage reports for the adjacent sites and the master plan for Tract 9 have been referenced and information from each report has been provided in the current drainage report.

4. The 9.92 cfs from Tracts 9B, 9C, and 9D has been included in the pond calculations for the Frito Lay (Tract 9-A-1-A) site. The discharge from these tracts will be ponded and released at the 0.1 cfs/acre discharge rate for the Renaissance Center.

5. The grading plan and ponding calculations for the Frito Lay (Tract 9-A-1-A) site have been provided with this submittal. The plat shows an easement for Tracts 9B, 9C, 9D and Tract 9-A-1-B to drain to Tract 9-A-1-A (Frito Lay).

6. The proposed storm drain on the Chavez-Grieves (Tract 9-A-1-B) site will connect to a proposed storm drain system on the Frito Lay site (Tract 9-A-1-A). This storm drain will connect to a proposed sidewalk culvert and discharge 1.59 cfs to Mission Avenue.

7. The grading plan for Chavez-Grieves (Tract 9-A-1-B) has been revised to show

4421 McLeod Rd. NE, Suite D • Albuquerque, NM 87109 • (505) 883-7592
fax (505) 883-7034 • e-mail: twdms@aol

more spot elevations around the perimeter of the site.

8. The slope tie area to the tracts on the east side of the site is a separate basin from the 9.92 cfs entering the site in the storm sewer. Currently, the 3:1 slope tie area is existing. We propose no changes to the grades in this area and the grading plan has been revised to show the existing contours.

9. Basin D will discharge 1.22 cfs into Renaissance Boulevard.

10. The percentage of land treatment D is low for Basins F and G because these basins include the large landscaped slope tie area on the east side of the site.

11. The existing street grades and additional spot elevations have been added to the grading plan.

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

Sincerely,

Sara McCollam

Sara McCollam

Enclosures

cc: James K. Trump, Jr.

JN: 980044
scm

980044: 9844chavez-hyd-comment.ltr

DRAINAGE REPORT

for

Frito Lay and Chavez-Grieves
(Tracts 9-A-1-A and 9-A-1-B)

Prepared by

Tierra West, LLC
4421 McLeod Road NE, Suite D
Albuquerque, New Mexico 87109

Prepared for

Build New Mexico
4411 McLeod Rd NE, Suite G
Albuquerque, New Mexico 87109

July 1998

RONALD RAY BOHANNAN
NEW MEXICO
7868
REGISTERED PROFESSIONAL ENGINEER

Ronald R. Bohannan P.E. No. 7868

TABLE OF CONTENTS

Zone Atlas Map F-16 1

Location 2

Existing Drainage Conditions 2

Existing Basin Layout 3

FEMA Map and Soil Conditions 4

On-Site Drainage Management Plan 4

FIRM Map 35001C0138 D 5

Proposed Basin Layout 7

Pond Layout 8

Summary 9

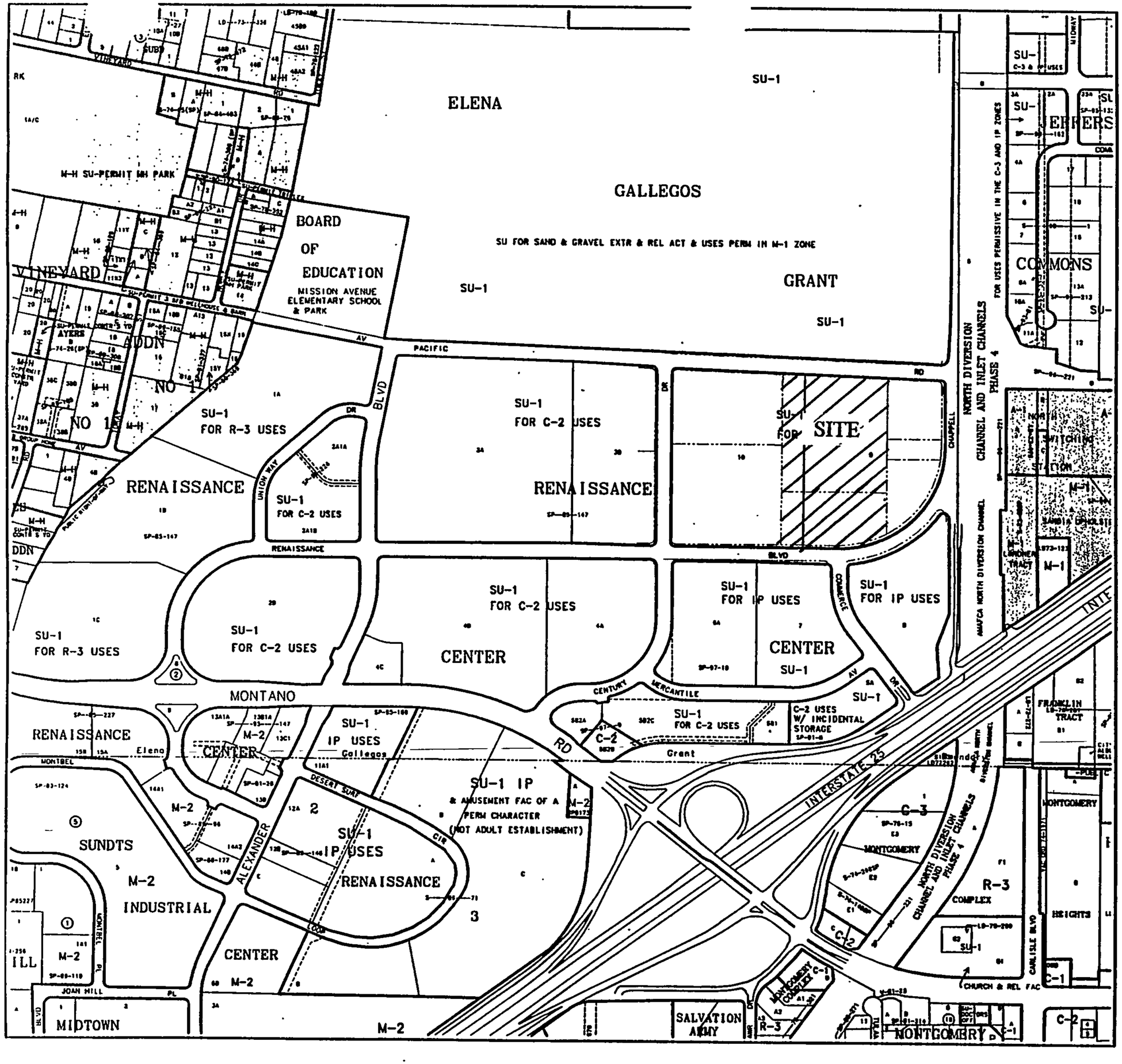
Runoff Calculations 10

Storm Sewer 14

Pond Calculations 21

AHYMO Runoff Input and Summary Output for Developed Drainage Basins 27

AHYMO Input and Output for Ponding 37



GRAPHIC SCALE IN FEET

250 0 500 1000

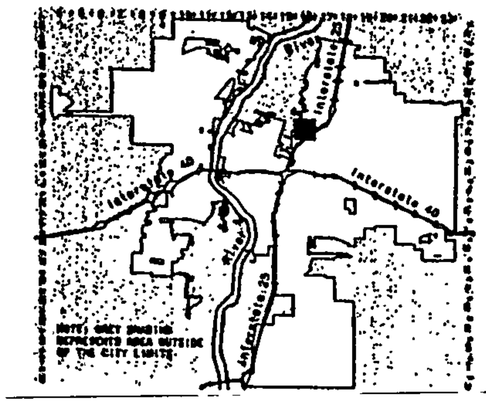
City of Albuquerque

Albuquerque Geographic Information System

PLANNING DEPARTMENT

©Copyright 1997

Map Amended through February 15, 1997



LEGAL DESCRIPTION

T11N

R3E

SEC 34

UNIFORM PROPERTY CODE

1-018-061

F-16-Z

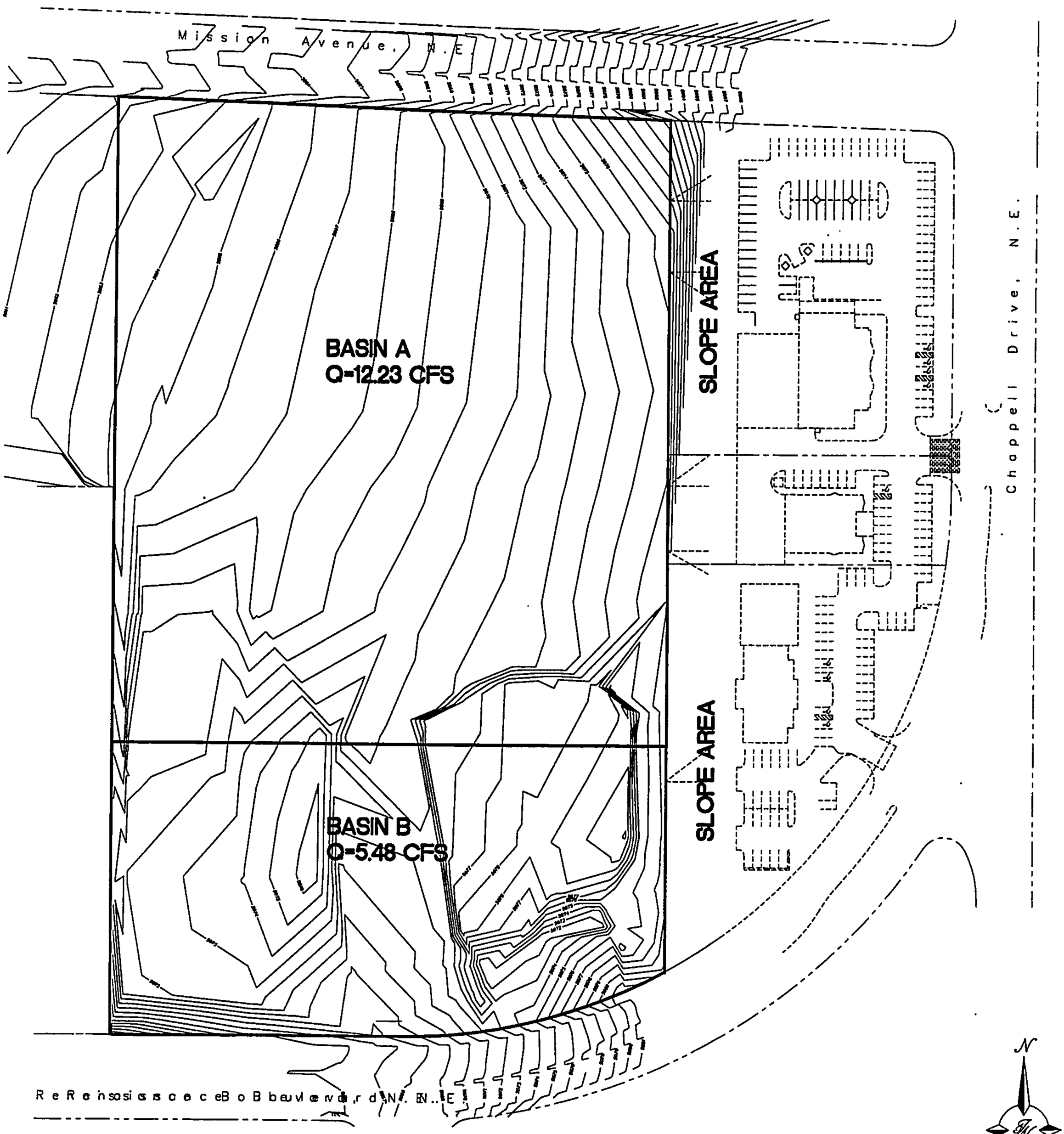
Location

The site is the proposed location of a Frito Lay distribution warehouse and a new office building. The Frito Lay site is the proposed location of an office and warehouse building with a future expansion area for an additional warehouse. The site is located south of Mission Avenue between Culture Drive and Chappell Drive. It is located on Zone Atlas Map F-16 and contains approximately 12.13 acres. The legal description of the Frito Lay site and the Chavez-Grieves office building site is Tract 9-A-1-A and Tract 9-A-1-B of the Renaissance Center, respectively. A plat showing the new tracts has been included for your information. The purpose of this report is to provide the drainage analysis and management plan for the FritoLay facility.

Existing Drainage Conditions

The site is part of the existing Renaissance Master Drainage Plan which states that only 0.1 cfs/acre may be discharged from the site. The site is also part of a master plan for Tract 9 of the Renaissance Center (F16/D51). The master plan for Tract 9 divides the tract into four tracts and two phases. Phase I of Tract 9 which includes Tracts 9-B, 9-C, and 9-D discharges 9.79 cfs into Tract 9A (Phase 2). Tract 9A has since been divided into two additional tracts, Tract 9-A-1-A which will be the FritoLay site, and Tract 9-A-1-B which is the location of the proposed Chavez-Grieves Engineers office building (see DRB 96-495). Currently, there is a desilting pond on Tract 9-A-1-B which accepts the offsite flows from Phase 1 and discharges the flow to Renaissance Boulevard.

Tract 9A (Frito Lay and Chavez-Grieves) is currently undeveloped. There are two existing drainage basins on the site. Undeveloped basin A consists of the Frito Lay site with a flow rate of 12.23 cfs and sheet flows northwest towards Mission Avenue. Undeveloped basin B consists of the Chavez-Grieves site which drains southwest towards Renaissance Boulevard.



EXISTING BASIN LAYOUT

The existing site to the east has slope ties to the FritoLay and Chavez-Grieves sites. These slope ties create an offsite basin which has an undeveloped discharge of 2.32 cfs. No flows enter the site from the west because of the natural slope of the topography and no flows enter the site from the north because Mission Avenue intercepts any offsite flows. The flows from Tracts 9B, 9C, 9D enter Tract 9-A-1-B (Chavez-Grieves office building) from an existing 12" storm drain which discharges in an existing sedimentation basin.

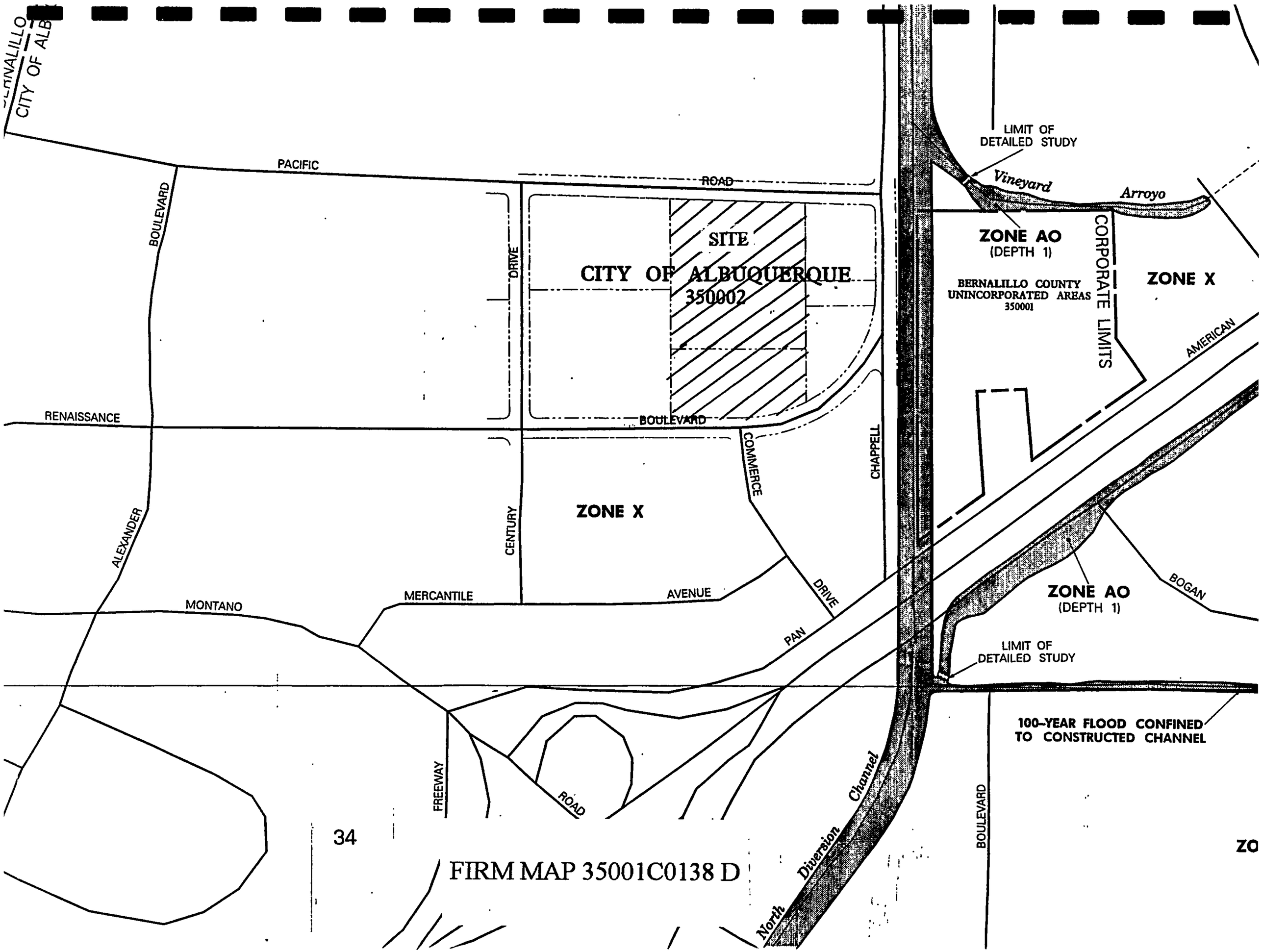
FEMA Map and Soil Conditions

The site is located on FIRM Map 350010138 D as shown on the attached excerpt. The map shows that the site does not lie within any 100 year flood plains.

The site contains two soil types from the Soil Conservation Service Soil Survey of Bernalillo County. These are a Wink-Embudo complex and a Bluepoint-Kokan association. The Wink-Embudo complex has a moderate hazard of water erosion and medium runoff. The Bluepoint-Kokan association has slow runoff and a moderate to severe hazard of water erosion. However, the site is the location of an old gravel pit and the existing soils are a blend of native materials.

On-Site Drainage Management Plan

The Chavez-Grieves office building site will free discharge the developed on-site flows to a 30" pipe that will drain the upper portion of Tracts 9B, 9C, and 9D along with the Chavez-Grieves site (Tract 9-A-1-B) to the FritoLay site. The FritoLay site will accept the 9.79 cfs from Phase I (Tracts 9B, 9C, and 9D). The 12" pipe that discharges from Phase I will connect to the proposed 30" system on the Chavez-Grieves site. The 30" pipe will route the combined flows of 26.00 cfs to Pond 5 on the Frito Lay site. All the offsite flows and the on-site flows entering the FritoLay site will be ponded and released at a controlled rate of 0.1 cfs/acre.


BERNALILLO
CITY OF ALB
PACIFIC
ROAD
BOULEVARD
DRIVE
SITE
CITY OF ALBUQUERQUE
350002
RENAISSANCE
BOULEVARD
COMMERCE
CHAPPELL
ZONE X
CENTURY
ALEXANDER
MERCANTILE
AVENUE
DRIVE
MONTANO
PAN
FREEWAY
ROAD
LIMIT OF
DETAILED STUDY
Vineyard
Arroyo
ZONE AO
(DEPTH 1)
CORPORATE LIMITS
BERNALILLO COUNTY
UNINCORPORATED AREAS
350001
ZONE X
AMERICAN
BOGAN
ZONE AO
(DEPTH 1)
LIMIT OF
DETAILED STUDY
100-YEAR FLOOD CONFINED
TO CONSTRUCTED CHANNEL
North Diversion Channel
BOULEVARD
ZO
34
FIRM MAP 35001C0138 D

The site has been divided into seven on-site basins (Basins 1-7) and one off-site basin (Basin 8) on the Frito Lay site and eleven on-site basins on the Chavez-Grieves site (Basins A-K) in order to pond the drainage and control the rate of runoff. Basins 1 thru 6 collect the on-site flows generated by FritoLay. Basin 7 consists of the on-site landscaped area located on the north side of the Frito Lay site and will sheet flow 0.99 cfs to Mission Avenue. Basin 8 consists of the off-site flows generated by the slope area of Tracts 9B, 9C, and 9D. Basins A-K describe the developed basins on the Chavez-Grieves site. These basins will free discharge to a proposed on-site storm drain system that will convey the flows to the proposed ponds on the Frito Lay site. The basin delineations are shown on the attached "Developed Basin Layout" and the pond locations are shown on the "Pond Layout" exhibit.

The 1.59 cfs combined outflow from Ponds 1 and 2 will be conveyed via a 6" PVC pipe to a proposed 24" sidewalk culvert that will transport the flow to Mission Avenue. The total runoff from the site will be 1.59 cfs. The site, including Tracts 9-B, 9-C, and 9-D and Tracts 9-A-1-A and 9-A-1-B contains 16.92 acres. Per the Renaissance Master Plan, this site has an allowable discharge of 1.69 cfs. The proposed discharge of 1.59 cfs is below the discharge permitted by the Renaissance Master Drainage Plan.

The pond routing and discharge rates are described below. Orifice plates will be used in the drop inlets to control the outflow from each pond.

Route 1

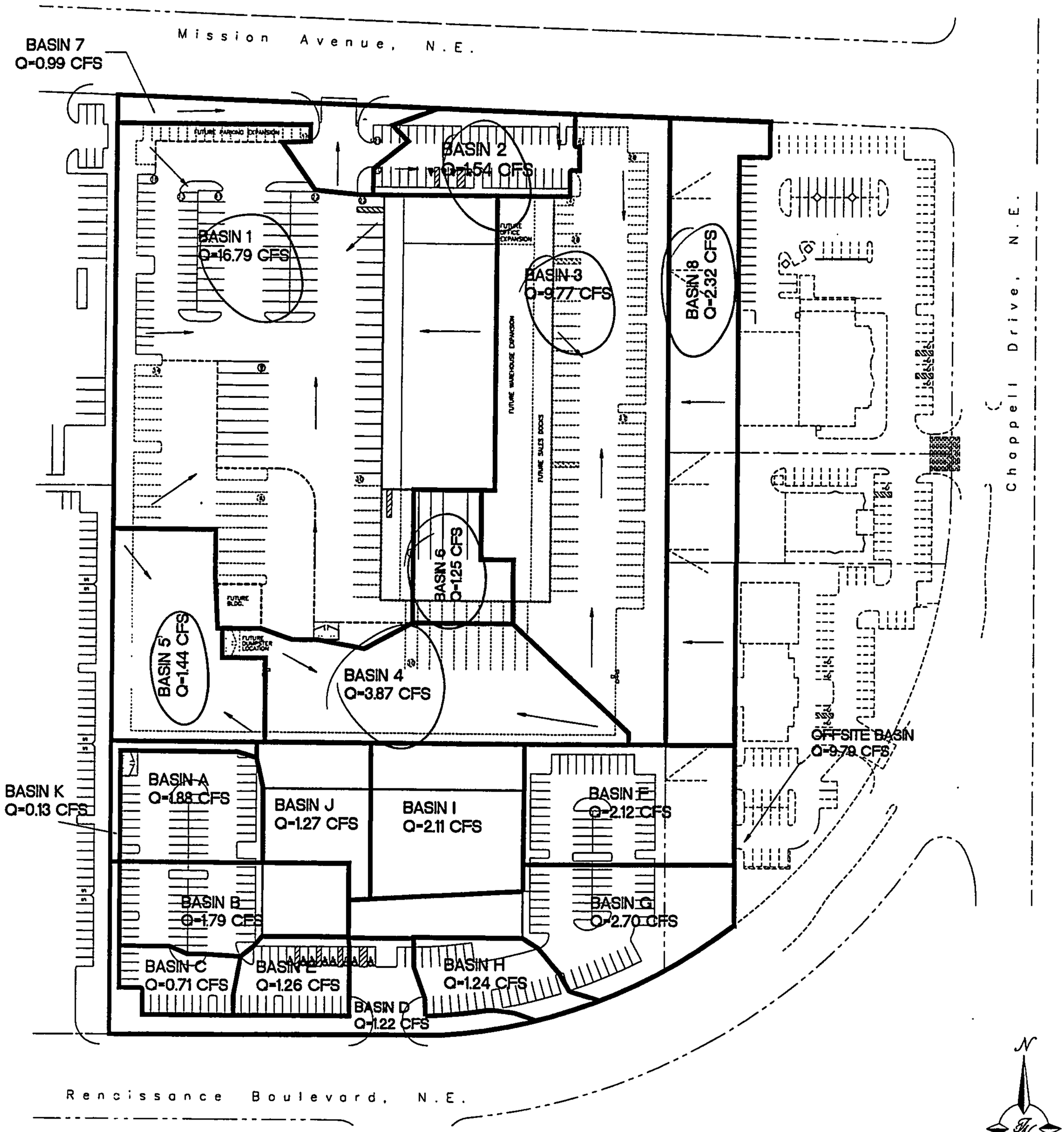
Tracts 9-B, 9-C, and 9-D discharge 9.79 cfs via a 12" pipe to the Chavez-Grieves site.

Chavez-Grieves (Tract 9-A-1-B) will free discharge 26.00 cfs via a 30" pipe to Pond 5.

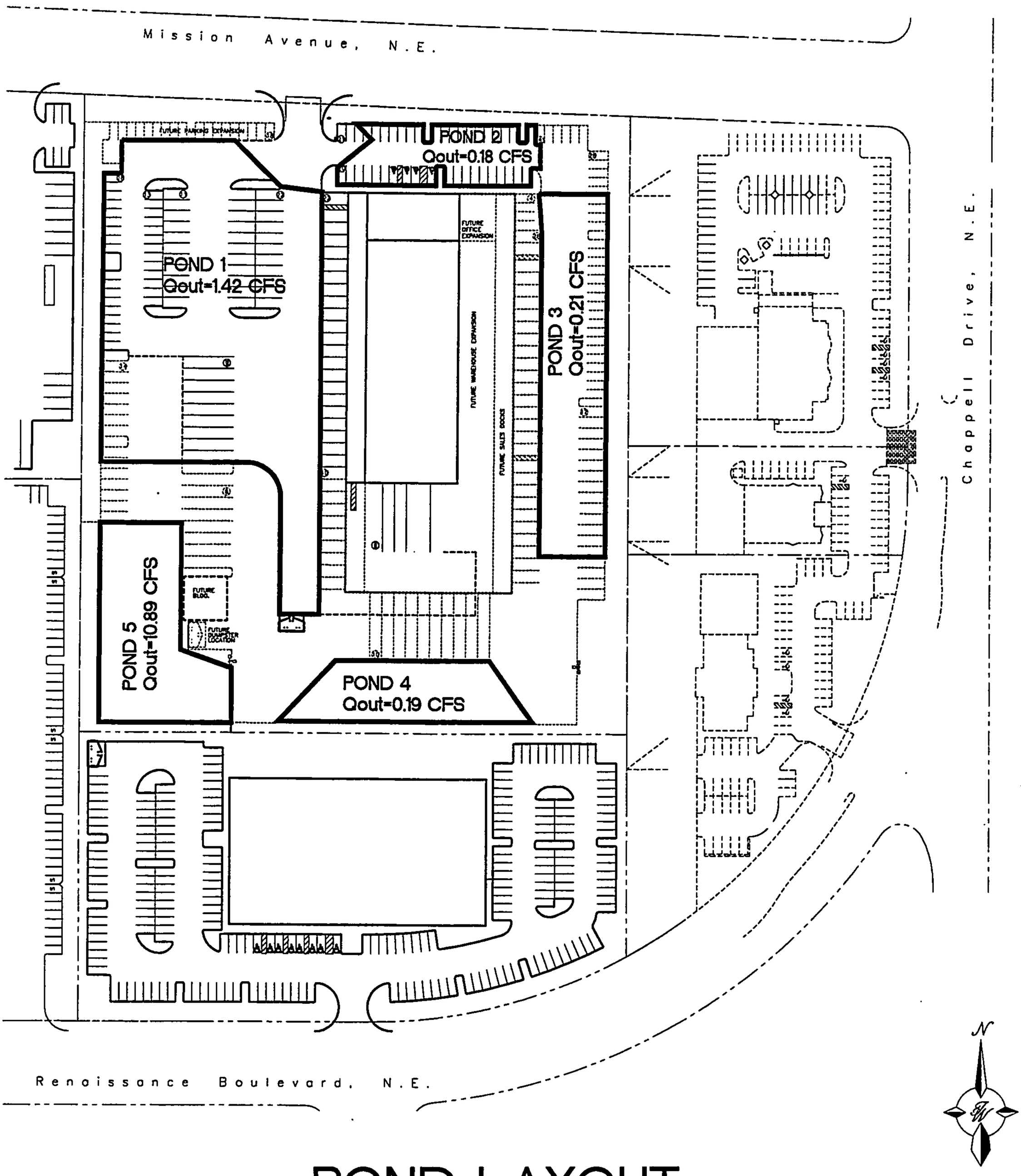
Pond 4 will drain to Pond 5 at a rate of 0.19 cfs limited by a 2" orifice plate.

Pond 5 will drain to Pond 1 at a rate of 10.89 cfs limited by a 13.0" orifice plate.

Pond 1 will drain to Mission Avenue at a rate of 1.42 cfs limited by 4.75" orifice plate.



PROPOSED BASIN LAYOUT


Mission Avenue, N.E.
POND 2
Qout=0.18 CFS
POND 1
Qout=1.42 CFS
POND 3
Qout=0.21 CFS
POND 5
Qout=10.89 CFS
POND 4
Qout=0.19 CFS
Chappell Drive, N.E.
Renaissance Boulevard, N.E.
N

POND LAYOUT

Route 2

Basin 8 will drain to Pond 3 at a rate of 2.32 cfs.

Pond 3 will drain to Pond 2 at a rate of 0.21 cfs limited by a 2" orifice plate.

Pond 2 will drain to Mission Avenue at a rate of 0.18 cfs limited by 1-2/3" orifice plate.

The outflow from Pond 1 and Pond 2 will be combined for a total developed flow from the site of 1.59 cfs which is less than the allowable of 1.69 cfs.

The entrance northwest entrance to the FritoLay site will act as an emergency overflow in the event of a storm greater than 100 year. Pond 1 and Pond 2 are the final ponds in the series and will overflow out the entrance.

Summary

Tract 9-A-1-A consists of the proposed FritoLay site containing 8.38 acres, and Tract 9-A-1-B is the location of the proposed Chavez-Grieves office building containing 3.75 acres. The Frito Lay site is the outfall for four tracts that drain through a series of storm sewer to a central pond on site. Tracts 9B, 9C, and 9D drain to Tract 9-A-1-B (Chavez-Grieves) via a 12" pipe. These flows, along with the flows generated by Chavez-Grieves are collected in a 30" storm sewer and discharged to Pond 1 on-site. Pond 1 and Pond 2 will discharge a combined flow of 1.59 cfs to Mission Avenue via a sidewalk culvert. Mission Avenue drains west per the approved Andrew, Asbury, and Roberts Master Drainage Plan to a central off-site pond.

Runoff Calculations

RUNOFF CALCULATIONS

The site is @ Zone 2

LAND TREATMENT

Proposed
B = 90%
D = 10 %

Existing
B = 100%

DEPTH (INCHES) @ 100-YEAR STORM

P_{60} = 2.01 inches

P_{360} = 2.35 inches

P_{1440} = 2.75 inches

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 2.01 x 0.667
= 1.34 inches

P_{360} = 1.57

P_{1440} = 1.83

See the summary output from AHYMO calculations.

Also see the following summary tables.

Drainage Basins

Existing

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
A	364950.23	8.3781	0.013091
B	163319.11	3.7493	0.005858

Proposed - Frito Lay

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
1	163901.98	3.7627	0.005879
2	16055.23	0.3686	0.000576
3	95300.05	2.1878	0.003418
4	37701.13	0.8655	0.001352
5	27427.76	0.6297	0.000984
6	11527.64	0.2646	0.000413
7	13036.44	0.2993	0.000468
8	44201.79	1.0147	0.001586
Total	409152.02	9.3928	0.014676

Proposed - Chavez-Grieves

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
A	18169.00	0.4171	0.000652
B	17346.00	0.3982	0.000622
C	6763.00	0.1553	0.000243
D	17450.00	0.4006	0.000626
E	12142.00	0.2787	0.000436
F	24573.00	0.5641	0.000881
G	31350.00	0.7197	0.001125
H	13412.00	0.3079	0.000481
I	21621.64	0.4964	0.000776
J	12954.43	0.2974	0.000465
K	2401.93	0.0551	0.000086
Total	178183.00	4.0905	0.006391

Runoff Calculation Results

Existing

BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
A	12.23	4.59	0.543	0.194
B	5.48	2.06	0.243	0.087

Proposed - Frito Lay

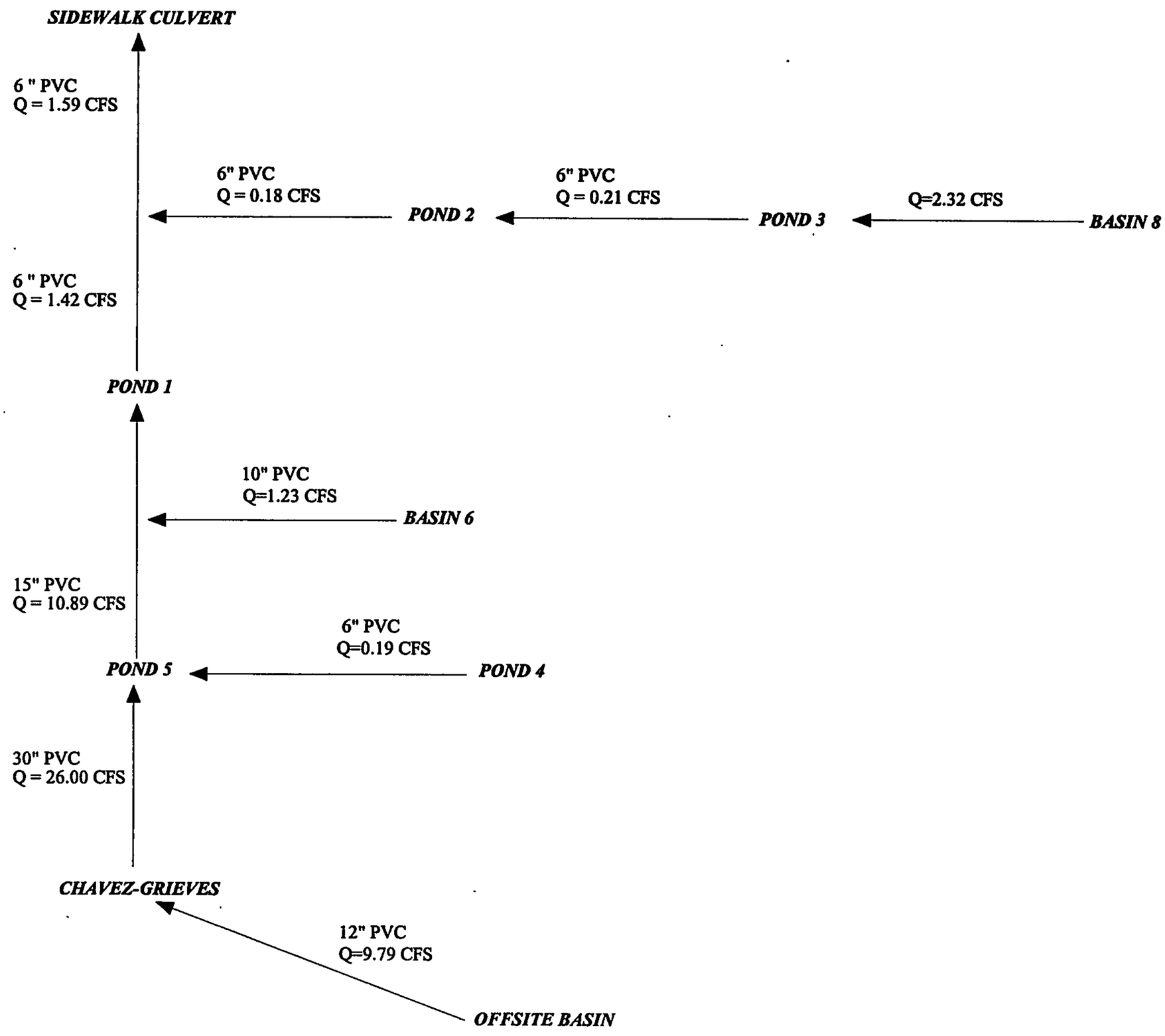
BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
1	16.49	10.87	0.715	0.447
2	1.54	0.97	0.063	0.039
3	9.77	6.32	0.415	0.260
4	3.87	2.51	0.164	0.103
5	1.44	0.59	0.041	0.015
6	1.25	0.83	0.054	0.034
7	0.99	0.54	0.036	0.020
8	2.32	0.95	0.066	0.024
Total	37.67	23.58	1.554	0.942

Proposed - Chavez-Grieves

BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
A	1.88	1.21	0.079	0.050
B	1.79	1.16	0.076	0.047
C	0.71	0.46	0.030	0.018
D	1.22	0.64	0.043	0.022
E	1.26	0.81	0.053	0.033
F	2.12	1.26	0.084	0.049
G	2.70	1.61	0.107	0.063
H	1.24	0.76	0.050	0.030
I	2.11	1.33	0.087	0.054
J	1.27	0.80	0.052	0.032
K	0.13	0.06	0.004	0.001
Total	16.43	10.10	0.665	0.399

Storm Sewer

RUNOFF FLOW PATH



Pipe Capacity

Manning's Equation:

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

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

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
CB1 to CB2	12	0.84	0.79	0.25	3.27	2.70	3.44
CB2 to MH2	15	0.84	1.23	0.3125	5.94	4.82	3.93
MH1 to MH2	15	2.6	1.23	0.3125	10.44	9.79	7.98
MH2 to CB3	24	0.84	3.14	0.5	20.79	14.61	4.65
CB3 to CB4	24	0.84	3.14	0.5	20.79	16.72	5.32
CB4 to CB10	24	0.84	3.14	0.5	20.79	17.99	5.73
CB5 to CB6	10	0.65	0.55	0.208333	1.77	1.24	2.27
CB6 to CB7	12	0.65	0.79	0.25	2.88	2.50	3.18
CB7 to CB8	15	0.65	1.23	0.3125	5.22	3.21	2.62
CB8 to CB9	15	0.65	1.23	0.3125	5.22	5.00	4.07
CB9 to CB 10	18	0.65	1.77	0.375	8.49	6.88	3.89
CB10 to Frito Lay	30	0.6	4.91	0.625	31.86	25.45	5.18

DROP INLET CALCULATIONS

BASIN	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
1	DOUBLE 'D'	4.21	16.79	0.686	1.50
2	SINGLE 'D'	2.30	1.54	0.019	1.00
3	SINGLE 'D'	2.30	9.77	0.778	1.50
4	SINGLE 'D'	2.30	3.87	0.122	1.00
5	SINGLE 'D'	2.30	1.44	0.017	1.60
A	SINGLE 'D'	2.30	1.88	0.029	1.29
B	SINGLE 'D'	2.30	1.79	0.026	1.29
C	SINGLE 'D'	2.30	0.71	0.004	1.29
E	SINGLE 'D'	2.30	1.26	0.013	1.00
F	SINGLE 'D'	2.30	2.12	0.037	1.01
G	SINGLE 'D'	2.30	1.7	0.024	1.20
H	SINGLE 'D'	2.30	1.24	0.013	1.50
I	SINGLE 'D'	2.30	2.11	0.036	0.50
J	SINGLE 'D'	2.30	1.27	0.013	0.50
K	SINGLE 'D'	2.30	0.13	0.000	1.50

<u>ORIFICE EQUATION</u>

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

SIDEWALK CULVERT

<u>Orifice Equation:</u>

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

Solve for Q
C = 0.6
A = 0.5833*2 = 1.167 ft^2
g = 32.2
H = Height of water measured from center of orifice

$$Q = 0.6(1.167)\sqrt{2*32.2*\frac{0.5833}{2}}$$

Q=3.04 cfs
Use a 24" sidewalk culvert
3.04 cfs > 1.59 cfs

STORM DRAIN INLET

EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

DOUBLE 'D':

Area at the grate:

L = 76.75" - 14 (1/2" $_{\text{middle bars}}$) - 6" $_{\text{center piece}}$
= 63.75"
= 5.3125'

W = 25.5" - 13 (1/2 $_{\text{middle bars}}$)
= 19"
= 1.583'

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

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

STORM DRAIN INLET

EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

SINGLE 'D':

Area at the grate:

L = 38.375" - 7 (1/2" $_{\text{middle bars}}$)
= 34.875"
= 2.906'

W = 25.5" - 13 (1/2 $_{\text{middle bars}}$)
= 19"
= 1.583'

Area = 1.583' x 2.906'
= 4.601 ft^2

Effective Area = 4.601 - 0.5 (4.601)
= 2.30 ft^2

Effective Area = 2.30 ft^2

Pond
Calculations

VOLUME CALCULATIONS

POND 1

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 =	13.59
At =	77,304.76
Dt =	1.50
C =	51527.45

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
61.89	0	0	0.0000
66.22	4.33	0.0014	1.2045
66.42	4.53	0.0251	1.2333
66.62	4.73	0.0961	1.2614
66.82	4.93	0.2145	1.2889
67.02	5.13	0.3801	1.3159
67.22	5.33	0.5931	1.3423
67.42	5.53	0.8534	1.3682
67.62	5.73	1.1610	1.3936
67.72	5.93	1.5160	1.4186

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

C =	0.6
Diameter (in	4.75
Area (ft^2)=	0.123059
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

VOLUME CALCULATIONS

POND 2

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 =	6.80
At =	11,409.73
Dt =	1.00
C =	11402.93

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
62.97	0	0	0.0000
68.00	5.03	0.0008	0.1625
68.20	5.23	0.0061	0.1657
68.40	5.43	0.0218	0.1689
68.60	5.63	0.0480	0.1720
68.80	5.83	0.0847	0.1751
69.00	6.03	0.1318	0.1781

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

C =	0.6	
Diameter (in	1.6667	1'8"
Area (ft^2)=	0.015151	
g =	32.2	
H (Ft) =	Depth of water above center of orifice	
Q (CFS)=	Flow	

VOLUME CALCULATIONS

POND 3

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 =	6.80
At =	25,249.57
Dt =	1.50
C =	16828.51

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
63.81	0	0	0.0000
66.31	2.5	0.0004	0.1633
66.51	2.7	0.0081	0.1699
66.71	2.9	0.0314	0.1763
66.91	3.1	0.0700	0.1825
67.11	3.3	0.1241	0.1884
67.31	3.5	0.1937	0.1942
67.51	3.7	0.2787	0.1998
67.71	3.9	0.3792	0.2052
67.81	4	0.4352	0.2079

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

C =	0.6
Diameter (in	2
Area (ft^2)=	0.021817
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

VOLUME CALCULATIONS

POND 4

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 =	6.80
At =	13,396.15
Dt =	1.00
C =	13389.35

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
64.50	0	0	0.000
67.00	2.5	0.0004	0.163
67.20	2.7	0.0062	0.170
67.40	2.9	0.0247	0.176
67.60	3.1	0.0554	0.182
67.80	3.3	0.0985	0.188
68.00	3.5	0.1538	0.194

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

C =	0.6
Diameter (in	2
Area (ft^2)=	0.021817
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

VOLUME CALCULATIONS

POND 5

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 =	6.80
At =	20,910.48
Dt =	1.60
C =	13064.80

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
63.32	0	0	0.000
68.42	5.1	0.0008	9.476
68.62	5.3	0.0060	9.681
68.82	5.5	0.0241	9.883
69.02	5.7	0.0541	10.080
69.22	5.9	0.0961	10.274
69.42	6.1	0.1501	10.464
69.62	6.3	0.2161	10.650
69.82	6.5	0.2941	10.834
70.02	6.7	0.3842	11.014

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

C =	0.6
Diameter (in	13
Area (ft^2)=	0.921752
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

AHYMO
Runoff Input
and
Summary Output
for
Proposed and Existing
Drainage Basins

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/06/1998

INPUT FILE = A:E.DAT USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.350
COMPUTE NM HYD	100.A	-	1	.01309	12.23	.543	.77821	1.633	1.460	PER IMP=	.00
COMPUTE NM HYD	100.B	-	1	.00586	5.48	.243	.77821	1.633	1.462	PER IMP=	.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.570
COMPUTE NM HYD	110.A	-	1	.01309	4.59	.194	.27828	1.633	.548	PER IMP=	.00
COMPUTE NM HYD	110.B	-	1	.00586	2.06	.087	.27828	1.633	.549	PER IMP=	.00
FINISH											

```
*****************************************************************
*                    FRITO-LAY & CHAVEZ-GRIEVES                 *
*****************************************************************
*      100-YEAR, 6-HR STORM  (UNDER EXISTING CONDITIONS)        *
*****************************************************************
*
START                TIME=0.0
*
* BASIN A (FRITO-LAY)
*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.013091 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B (CHAVEZ-GRIEVES)
*
COMPUTE NM HYD       ID=1 HYD NO=100.B AREA=0.005858 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
*
*****************************************************************
*       10-YEAR, 6-HR STORM  (UNDER EXISTING CONDITIONS)        *
*****************************************************************
*
START                TIME=0.0
*
* BASIN A
*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.34 IN RAIN SIX=1.57 IN
                     RAIN DAY=1.83 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=110.A AREA=0.013091 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD       ID=1 HYD NO=110.B AREA=0.005858 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.24 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/08/1998

INPUT FILE = A:P.DAT USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	100.10	-	1	.00588	16.79	.715	2.27928	1.500	4.461	PER IMP= 90.00
COMPUTE NM HYD	100.20	-	1	.00058	1.54	.063	2.06253	1.500	4.188	PER IMP= 77.00
COMPUTE NM HYD	100.30	-	1	.00342	9.77	.415	2.27929	1.500	4.465	PER IMP= 90.00
COMPUTE NM HYD	100.40	-	1	.00135	3.87	.164	2.27931	1.500	4.478	PER IMP= 90.00
COMPUTE NM HYD	100.50	-	1	.00098	1.44	.041	.77821	1.533	2.291	PER IMP= .00
COMPUTE NM HYD	100.60	-	1	.00041	1.25	.054	2.44618	1.500	4.733	PER IMP= 100.00
COMPUTE NM HYD	100.70	-	1	.00047	.99	.036	1.44543	1.500	3.302	PER IMP= 40.00
COMPUTE NM HYD	100.80	-	1	.00159	2.32	.066	.77821	1.533	2.285	PER IMP= .00
COMPUTE NM HYD	100.A	-	1	.00065	1.88	.079	2.27935	1.500	4.501	PER IMP= 90.00
COMPUTE NM HYD	100.B	-	1	.00062	1.79	.076	2.27935	1.500	4.503	PER IMP= 90.00
COMPUTE NM HYD	100.C	-	1	.00024	.71	.030	2.27944	1.500	4.547	PER IMP= 90.00
COMPUTE NM HYD	100.D	-	1	.00063	1.22	.043	1.27863	1.500	3.046	PER IMP= 30.00
COMPUTE NM HYD	100.E	-	1	.00044	1.26	.053	2.27938	1.500	4.521	PER IMP= 90.00
COMPUTE NM HYD	100.F	-	1	.00088	2.12	.084	1.77897	1.500	3.759	PER IMP= 60.00
COMPUTE NM HYD	100.G	-	1	.00113	2.70	.107	1.77896	1.500	3.754	PER IMP= 60.00
COMPUTE NM HYD	100.H	-	1	.00048	1.24	.050	1.94579	1.500	4.028	PER IMP= 70.00
COMPUTE NM HYD	100.I	-	1	.00078	2.11	.087	2.11255	1.500	4.249	PER IMP= 80.00
COMPUTE NM HYD	100.J	-	1	.00047	1.27	.052	2.11259	1.500	4.275	PER IMP= 80.00
COMPUTE NM HYD	100.K	-	1	.00009	.13	.004	.77821	1.533	2.438	PER IMP= .00
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 1.830
COMPUTE NM HYD	110.10	-	1	.00588	10.87	.447	1.42509	1.500	2.889	PER IMP= 90.00
COMPUTE NM HYD	110.20	-	1	.00058	.97	.039	1.25949	1.500	2.625	PER IMP= 77.00
COMPUTE NM HYD	110.30	-	1	.00342	6.32	.260	1.42510	1.500	2.891	PER IMP= 90.00
COMPUTE NM HYD	110.40	-	1	.00135	2.51	.103	1.42511	1.500	2.897	PER IMP= 90.00
COMPUTE NM HYD	110.50	-	1	.00098	.59	.015	.27828	1.533	.941	PER IMP= .00
COMPUTE NM HYD	110.60	-	1	.00041	.83	.034	1.55258	1.500	3.129	PER IMP= 100.00
COMPUTE NM HYD	110.70	-	1	.00047	.54	.020	.78803	1.500	1.817	PER IMP= 40.00
COMPUTE NM HYD	110.80	-	1	.00638	11.08	.450	1.32315	1.500	2.712	PER IMP= 82.00
COMPUTE NM HYD	110.90	-	1	.00159	.95	.024	.27828	1.533	.938	PER IMP= .00
COMPUTE NM HYD	110.A	-	1	.00065	1.21	.050	1.42514	1.500	2.910	PER IMP= 90.00
COMPUTE NM HYD	110.B	-	1	.00062	1.16	.047	1.42514	1.500	2.910	PER IMP= 90.00
COMPUTE NM HYD	110.C	-	1	.00024	.46	.018	1.42520	1.500	2.937	PER IMP= 90.00
COMPUTE NM HYD	110.D	-	1	.00063	.64	.022	.66059	1.500	1.590	PER IMP= 30.00
COMPUTE NM HYD	110.E	-	1	.00044	.81	.033	1.42515	1.500	2.920	PER IMP= 90.00
COMPUTE NM HYD	110.F	-	1	.00088	1.26	.049	1.04285	1.500	2.242	PER IMP= 60.00
COMPUTE NM HYD	110.G	-	1	.00113	1.61	.063	1.04285	1.500	2.239	PER IMP= 60.00
COMPUTE NM HYD	110.H	-	1	.00048	.76	.030	1.17030	1.500	2.476	PER IMP= 70.00
COMPUTE NM HYD	110.I	-	1	.00078	1.33	.054	1.29770	1.500	2.685	PER IMP= 80.00
COMPUTE NM HYD	110.J	-	1	.00047	.80	.032	1.29773	1.500	2.699	PER IMP= 80.00
COMPUTE NM HYD	110.K	-	1	.00009	.06	.001	.27828	1.533	1.003	PER IMP= .00
FINISH										

```
*****************************************************************
*                          FRITO-LAY                            *
*****************************************************************
*       100-YEAR, 24-HR STORM  (UNDER PROPOSED CONDITIONS)      *
*****************************************************************
*
START                TIME=0.0
*
* BASIN 1
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=0.005879 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 2
*
COMPUTE NM HYD       ID=1 HYD NO=100.2 AREA=0.000576 SQ MI
                     PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 3
*
COMPUTE NM HYD       ID=1 HYD NO=100.3 AREA=0.003418 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 4
*
COMPUTE NM HYD       ID=1 HYD NO=100.4 AREA=0.001352 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 5
*
COMPUTE NM HYD       ID=1 HYD NO=100.5 AREA=0.000984 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 6
*
COMPUTE NM HYD       ID=1 HYD NO=100.6 AREA=0.000413 SQ MI
                     PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 7
*
COMPUTE NM HYD       ID=1 HYD NO=100.7 AREA=0.000468 SQ MI
                     PER A=0.00 PER B=60.00 PER C=0.00 PER D=40.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
```

```
* BASIN 8
*
COMPUTE NM HYD       ID=1 HYD NO=100.8 AREA=0.001586 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*************************************************************
*                     CHAVEZ-GRIEVES                        *
*************************************************************
*
* BASIN A
*
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.000652 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD       ID=1 HYD NO=100.B AREA=0.000622 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN C
*
COMPUTE NM HYD       ID=1 HYD NO=100.C AREA=0.000243 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN D
*
COMPUTE NM HYD       ID=1 HYD NO=100.D AREA=0.000626 SQ MI
                     PER A=0.00 PER B=70.00 PER C=0.00 PER D=30.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN E
*
COMPUTE NM HYD       ID=1 HYD NO=100.E AREA=0.000436 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN F
*
COMPUTE NM HYD       ID=1 HYD NO=100.F AREA=0.000881 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN G
*
COMPUTE NM HYD       ID=1 HYD NO=100.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
```

```
* BASIN H
*
COMPUTE NM HYD       ID=1 HYD NO=100.H AREA=0.000481 SQ MI
                     PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN I
*
COMPUTE NM HYD       ID=1 HYD NO=100.I AREA=0.000776 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN J
*
COMPUTE NM HYD       ID=1 HYD NO=100.J AREA=0.000465 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN K
*
COMPUTE NM HYD       ID=1 HYD NO=100.K AREA=0.000086 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
*****************************************************************
*       10-YEAR, 24-HR STORM  (UNDER PROPOSED CONDITIONS)       *
*****************************************************************
*
START                TIME=0.0
*
* BASIN 1
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.34 IN RAIN SIX=1.57 IN
                     RAIN DAY=1.83 IN DT=0.03333 HR
COMPUTE NM HYD       ID=1 HYD NO=110.1 AREA=0.005879 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 2
*
COMPUTE NM HYD       ID=1 HYD NO=110.2 AREA=0.000576 SQ MI
                     PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 3
*
COMPUTE NM HYD       ID=1 HYD NO=110.3 AREA=0.003418 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 4
```

```
*
COMPUTE NM HYD       ID=1 HYD NO=110.4 AREA=0.001352 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 5
*
COMPUTE NM HYD       ID=1 HYD NO=110.5 AREA=0.000984 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 6
*
COMPUTE NM HYD       ID=1 HYD NO=110.6 AREA=0.000413 SQ MI
                     PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 7
*
COMPUTE NM HYD       ID=1 HYD NO=110.7 AREA=0.000468 SQ MI
                     PER A=0.00 PER B=60.00 PER C=0.00 PER D=40.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 8
*
COMPUTE NM HYD       ID=1 HYD NO=110.8 AREA=0.006381 SQ MI
                     PER A=0.00 PER B=18.00 PER C=0.00 PER D=82.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN 9
*
COMPUTE NM HYD       ID=1 HYD NO=110.9 AREA=0.001586 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*************************************************************
*                     CHAVEZ-GRIEVES                        *
*************************************************************
*
* BASIN A
*
COMPUTE NM HYD       ID=1 HYD NO=110.A AREA=0.000652 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD       ID=1 HYD NO=110.B AREA=0.000622 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN C
```

```
*
COMPUTE NM HYD       ID=1 HYD NO=110.C AREA=0.000243 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN D
*
COMPUTE NM HYD       ID=1 HYD NO=110.D AREA=0.000626 SQ MI
                     PER A=0.00 PER B=70.00 PER C=0.00 PER D=30.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN E
*
COMPUTE NM HYD       ID=1 HYD NO=110.E AREA=0.000436 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN F
*
COMPUTE NM HYD       ID=1 HYD NO=110.F AREA=0.000881 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN G
*
COMPUTE NM HYD       ID=1 HYD NO=110.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN H
*
COMPUTE NM HYD       ID=1 HYD NO=110.H AREA=0.000481 SQ MI
                     PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN I
*
COMPUTE NM HYD       ID=1 HYD NO=110.I AREA=0.000776 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN J
*
COMPUTE NM HYD       ID=1 HYD NO=110.J AREA=0.000465 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN K
*
COMPUTE NM HYD       ID=1 HYD NO=110.K AREA=0.000086 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
```

```
PRINT HYD            ID=1 CODE=1
*
*
FINISH
```

AHYMO
Input and Output
for
Ponding

```
*****************************************************************
*                              FRITO-LAY                        *
*****************************************************************
*          100-YEAR, 24-HR STORM  (PONDING CALCULATIONS)        *
*****************************************************************
START                TIME=0.0
*
*****************************************************************
*            OFFSITE FLOWS FROM TRACTS 9B, 9C, AND 9D           *
                     *
*****************************************************************
*
*****************
*    BASIN 1    *
*****************
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.050 HR
COMPUTE NM HYD       ID=1 HYD NO=101.1 AREA=0.000940 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
* BASIN 1 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=501.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00               0.0000          94.90
                         2.47               0.00040         97.40
                         2.53               0.00069         97.50
                         2.59               0.00155         97.60
                         2.64               0.00247         97.70
                         2.69               0.00494         97.80
                         2.74               0.00748         97.90
*
*****************
*    BASIN 2    *
*****************
*
COMPUTE NM HYD       ID=1 HYD NO=102.0 AREA=0.000075 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 1 AND BASIN 2
*
ADD HYD              ID=3 HYD NO=102.1 ID=1 ID=2
*
* BASIN 2 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00               0.0000          93.90
                         2.53               0.00041         95.00
                         2.80               0.00315         96.50
                         3.04               0.01121         97.00
                         3.26               0.02458         97.50
                         3.47               0.04326         98.00
                         3.55               0.05223         98.20
*
******************
*    BASIN 2A    *
```

```
******************
*
COMPUTE NM HYD       ID=2 HYD NO=102.2 AREA=0.001060 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 2 AND BASIN 2A
*
ADD HYD              ID=3 HYD NO=102.3 ID=1 ID=2
*
* BASIN 2A PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          92.42
                         3.66              0.00081         97.50
                         3.70              0.00158         97.60
                         3.74              0.00385         97.70
                         3.78              0.00763         97.80
                         3.81              0.01291         97.90
                         3.85              0.01970         98.00
                         3.89              0.02799         98.10
                         3.92              0.03778         98.20
*
*****************
*    BASIN 3    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=103.0 AREA=0.000347 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
*
* BASIN 3 PONDING
*
ROUTE RESERVOIR      ID=3 HYD NO=503.0 INFLOW ID=2 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          97.10
                         2.47              0.00040         99.60
                         2.53              0.00077         99.70
                         2.59              0.00184         99.80
                         2.64              0.00362         99.90
                         2.69              0.00610        100.00
                         2.74              0.00929        100.10
*
* ADD POND 2A AND POND 3
*
ADD HYD              ID=2 HYD NO=103.1 ID=1 ID=3
*
*****************
*    BASIN 4    *
*****************
*
COMPUTE NM HYD       ID=1 HYD NO=104.0 AREA=0.000425 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 2A AND POND 3 AND BASIN 4
*
ADD HYD              ID=3 HYD NO=104.1 ID=1 ID=2
```

```
*
* BASIN 4 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00                0.0000          89.66
                         8.06                0.00157         99.50
                         8.10                0.00195         99.60
                         8.15                0.00306         99.70
                         8.19                0.00490         99.80
                         8.23                0.00748         99.90
                         8.27                0.01078        100.00
*
*****************
*    BASIN 5    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=105.0 AREA=0.000998 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 4 AND BASIN 5
*
ADD HYD              ID=3 HYD NO=105.1 ID=1 ID=2
*
* BASIN 5 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=505.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00                0.0000          87.93
                        10.17                0.00170         98.63
                        10.22                0.00242         98.73
                        10.27                0.00455         98.83
                        10.32                0.00809         98.93
                        10.35                0.01140         99.00
*
*****************
*    BASIN 6    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=106.0 AREA=0.000370 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
* ADD POND 5 AND BASIN 6
*
ADD HYD              ID=3 HYD NO=106.1 ID=1 ID=2
*
* BASIN 6 PONDING
*
ROUTE RESERVOIR      ID=20 HYD NO=506.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                         0.00                0.00000         96.10
                        13.07                0.00198         98.54
                        13.12                0.00241         98.64
                        13.18                0.00368         98.74
                        13.23                0.00578         98.84
                        13.28                0.00870         98.94
                        13.34                0.01247         99.04
*
```

```
*****************************************************************
*                          ON-SITE PONDING                      *
*****************************************************************
*
************************
*   CHAVEZ-GRIEVES     *
************************
*
* BASIN A
*
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.000652 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN B
*
COMPUTE NM HYD       ID=2 HYD NO=100.B AREA=0.000622 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN C
*
COMPUTE NM HYD       ID=3 HYD NO=100.C AREA=0.000243 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
* BASIN D
*
COMPUTE NM HYD       ID=4 HYD NO=100.D AREA=0.000626 SQ MI
                     PER A=0.00 PER B=70.00 PER C=0.00 PER D=30.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=4 CODE=1
*
* BASIN E
*
COMPUTE NM HYD       ID=5 HYD NO=100.E AREA=0.000436 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=5 CODE=1
*
* BASIN F
*
COMPUTE NM HYD       ID=6 HYD NO=100.F AREA=0.000881 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=6 CODE=1
*
* BASIN G
*
COMPUTE NM HYD       ID=7 HYD NO=100.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 PER D=60.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=7 CODE=1
*
* BASIN H
*
COMPUTE NM HYD       ID=8 HYD NO=100.H AREA=0.000481 SQ MI
```

```
                        PER A=0.00 PER B=30.00 PER C=0.00 PER D=70.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=8 CODE=1
*
* BASIN I
*
COMPUTE NM HYD          ID=9 HYD NO=100.I AREA=0.000776 SQ MI
                        PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=9 CODE=1
*
* BASIN J
*
COMPUTE NM HYD          ID=10 HYD NO=100.J AREA=0.000465 SQ MI
                        PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=10 CODE=1
*
* BASIN K
*
COMPUTE NM HYD          ID=11 HYD NO=100.K AREA=0.000086 SQ MI
                        PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=11 CODE=1
*
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=2
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=3
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=4
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=5
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=6
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=7
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=8
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=9
ADD HYD                 ID=1 HYD NO=101.2 ID=1 ID=10
ADD HYD                 ID=21 HYD NO=101.2 ID=1 ID=11
*
PRINT HYD               ID=21 CODE=1
*
*****************************************************************
* ADD OFF-SITE FLOWS FROM TRACTS 9B, 9C, AND 9D AND CHAVEZ-GRIEVES *
*****************************************************************
*
ADD HYD                 ID=8 HYD NO=108.1 ID=20 ID=21
PRINT HYD               ID=8 CODE=1
*
****************
*   BASIN 4    *
****************
*
COMPUTE NM HYD          ID=4 HYD NO=104.0 AREA=0.001352 SQ MI
                        PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                        TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=4 CODE=1
*
* BASIN 4 PONDING
*
ROUTE RESERVOIR         ID=2 HYD NO=504.1 INFLOW ID=4 CODE=24
                        OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                            0.000             0.0000          65.00
                            0.163             0.0004          67.00
```

```
                        0.170              0.0062          67.20
                        0.176              0.0247          67.40
                        0.182              0.0554          67.60
                        0.188              0.0985          67.80
                        0.194              0.1538          68.00
*
****************
*   BASIN 5    *
****************
*
COMPUTE NM HYD       ID=5 HYD NO=105.0 AREA=0.000984 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=5 CODE=1
*
* ADD FLOWS FROM BASIN 5, POND 4 AND BASIN 8 (CHAVEZ-GRIEVES)
*
ADD HYD              ID=5 HYD NO=105.8 ID=5 ID=8
ADD HYD              ID=2 HYD NO=105.4 ID=5 ID=2
PRINT HYD            ID=2 CODE=1
*
* BASIN 5 PONDING
*
ROUTE RESERVOIR      ID=5 HYD NO=505.1 INFLOW ID=2 CODE=24
                     OUTFLOW(CFS)       STORAGE(AC-FT)  ELEVATION(FT)
                        0.000              0.0000          63.32
                        9.476              0.0008          68.42
                        9.681              0.0060          68.62
                        9.883              0.0241          68.82
                       10.080              0.0541          69.02
                       10.274              0.0961          69.22
                       10.464              0.1501          69.42
                       10.650              0.2161          69.62
                       10.834              0.2941          69.82
                       11.014              0.3842          70.02
*
****************
*   BASIN 6    *
****************
*
COMPUTE NM HYD       ID=6 HYD NO=106.0 AREA=0.000413 SQ MI
                     PER A=0.00 PER B=0.00 PER C=0.00 PER D=100.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=6 CODE=1
*
* ADD BASIN 6 AND POND 5
*
ADD HYD              ID=5 HYD NO=105.6 ID=5 ID=6
*
****************
*   BASIN 9    *
****************
*
COMPUTE NM HYD       ID=9 HYD NO=109.0 AREA=0.001586 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=9 CODE=1
*
****************
*   BASIN 3    *
```

```
****************
*
COMPUTE NM HYD       ID=3 HYD NO=103.0 AREA=0.003418 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=3 CODE=1
*
*
* ADD OFF-SITE FLOWS FROM BASIN 9 TO BASIN 3
*
ADD HYD              ID=3 HYD NO=103.9 ID=9 ID=3
PRINT HYD            ID=3 CODE=1
*
* BASIN 3 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=503.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.0000            0.0000          63.81
                         0.1633            0.0004          66.31
                         0.1699            0.0081          66.51
                         0.1763            0.0314          66.71
                         0.1825            0.0700          66.91
                         0.1884            0.1241          67.11
                         0.1942            0.1937          67.31
                         0.1998            0.2787          67.51
                         0.2052            0.3792          67.71
                         0.2079            0.4352          67.81
*
****************
*   BASIN 2    *
****************
*
COMPUTE NM HYD       ID=2 HYD NO=102.0 AREA=0.000576 SQ MI
                     PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=2 CODE=1
*
*
* ADD FLOWS FROM POND 3 TO BASIN 2
*
ADD HYD              ID=1 HYD NO=103.9 ID=2 ID=1
PRINT HYD            ID=1 CODE=1
*
* BASIN 2 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=502.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.0000            0.0000          62.62
                         0.1625            0.0008          68.00
                         0.1657            0.0061          68.20
                         0.1689            0.0218          68.40
                         0.1720            0.0480          68.60
                         0.1751            0.0847          68.80
                         0.1781            0.1318          69.00
*
****************
*   BASIN 1    *
****************
*
COMPUTE NM HYD       ID=1 HYD NO=101.0 AREA=0.005879 SQ MI
```

```
                    PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
                    TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD           ID=1 CODE=1
*
* ADD POND 5 TO BASIN 1
*
ADD HYD             ID=1 HYD NO=101.1 ID=1 ID=5
PRINT HYD           ID=1 CODE=1
*
* BASIN 1 PONDING
*
ROUTE RESERVOIR     ID=3 HYD NO=501.1 INFLOW ID=1 CODE=24
                    OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                     0.0000            0.0000          61.89
                     1.2045            0.0014          66.22
                     1.2333            0.0251          66.42
                     1.2614            0.0961          66.62
                     1.2889            0.2145          66.82
                     1.3159            0.3801          67.02
                     1.3423            0.5931          67.22
                     1.3682            0.8534          67.42
                     1.3936            1.1610          67.62
                     1.4186            1.5160          67.72
*
* ADD POND 2 AND POND 1
*
ADD HYD             ID=1 HYD NO=101.1 ID=3 ID=2
PRINT HYD           ID=1 CODE=1
*
*
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/08/1998
INPUT FILE = A:POND3.DAT USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 2										RAIN24= 2.750
COMPUTE NM HYD	101.10	-	1	.00094	2.66	.117	2.34321	1.500	4.415	PER IMP= 90.00
ROUTE RESERVOIR	501.10	1	2	.00094	2.53	.117	2.34292	1.500	4.206	AC-FT= .001
COMPUTE NM HYD	102.00	-	1	.00008	.22	.009	2.34321	1.500	4.593	PER IMP= 90.00
ADD HYD	102.10	1& 2	3	.00102	2.75	.126	2.32930	1.500	4.234	
ROUTE RESERVOIR	502.10	3	1	.00102	2.62	.126	2.32930	1.550	4.039	AC-FT= .001
COMPUTE NM HYD	102.20	-	2	.00106	2.99	.132	2.34321	1.500	4.410	PER IMP= 90.00
ADD HYD	102.30	1& 2	3	.00208	5.56	.259	2.33625	1.500	4.189	
ROUTE RESERVOIR	502.30	3	1	.00208	3.86	.259	2.33626	1.600	2.904	AC-FT= .021
COMPUTE NM HYD	103.00	-	2	.00035	.99	.043	2.34321	1.500	4.453	PER IMP= 90.00
ROUTE RESERVOIR	503.00	2	3	.00035	.99	.043	2.34260	1.500	4.455	AC-FT= .000
ADD HYD	103.10	1& 3	2	.00242	4.78	.302	2.33716	1.500	3.087	
COMPUTE NM HYD	104.00	-	1	.00043	1.21	.053	2.34321	1.500	4.446	PER IMP= 90.00
ADD HYD	104.10	1& 2	3	.00285	5.99	.355	2.33796	1.500	3.290	
ROUTE RESERVOIR	502.30	3	1	.00285	5.96	.355	2.33796	1.500	3.269	AC-FT= .001
COMPUTE NM HYD	105.00	-	2	.00100	2.82	.125	2.34321	1.500	4.413	PER IMP= 90.00
ADD HYD	105.10	1& 2	3	.00385	8.78	.480	2.33925	1.500	3.566	
ROUTE RESERVOIR	505.10	3	1	.00385	8.75	.480	2.33925	1.500	3.557	AC-FT= .001
COMPUTE NM HYD	106.00	-	2	.00037	1.05	.046	2.34321	1.500	4.453	PER IMP= 90.00
ADD HYD	106.10	1& 2	3	.00422	9.81	.526	2.33954	1.500	3.636	
ROUTE RESERVOIR	506.10	3	20	.00422	9.79	.526	2.33954	1.500	3.631	AC-FT= .001
COMPUTE NM HYD	100.A	-	1	.00065	1.85	.081	2.34321	1.500	4.430	PER IMP= 90.00
COMPUTE NM HYD	100.B	-	2	.00062	1.76	.078	2.34322	1.500	4.430	PER IMP= 90.00
COMPUTE NM HYD	100.C	-	3	.00024	.70	.030	2.34322	1.500	4.473	PER IMP= 90.00
COMPUTE NM HYD	100.D	-	4	.00063	1.21	.043	1.29956	1.500	3.022	PER IMP= 30.00
COMPUTE NM HYD	100.E	-	5	.00044	1.24	.054	2.34321	1.500	4.446	PER IMP= 90.00
COMPUTE NM HYD	100.F	-	6	.00088	2.09	.086	1.82139	1.500	3.710	PER IMP= 60.00
COMPUTE NM HYD	100.G	-	7	.00113	2.67	.109	1.82139	1.500	3.704	PER IMP= 60.00
COMPUTE NM HYD	100.H	-	8	.00048	1.22	.051	1.99533	1.500	3.969	PER IMP= 70.00
COMPUTE NM HYD	100.I	-	9	.00078	2.08	.090	2.16927	1.500	4.184	PER IMP= 80.00
COMPUTE NM HYD	100.J	-	10	.00047	1.25	.054	2.16927	1.500	4.211	PER IMP= 80.00
COMPUTE NM HYD	100.K	-	11	.00009	.13	.004	.77774	1.500	2.417	PER IMP= .00
ADD HYD	101.20	1& 2	1	.00127	3.61	.159	2.34274	1.500	4.430	
ADD HYD	101.20	1& 3	1	.00152	4.31	.190	2.34268	1.500	4.437	
ADD HYD	101.20	1& 4	1	.00214	5.52	.233	2.03789	1.500	4.023	

ADD HYD	101.20	1& 5	1	.00258	6.76	.287	2.08940	1.500	4.095	
ADD HYD	101.20	1& 6	1	.00346	8.85	.373	2.02107	1.500	3.997	
ADD HYD	101.20	1& 7	1	.00459	11.52	.482	1.97202	1.500	3.925	
ADD HYD	101.20	1& 8	1	.00507	12.74	.533	1.97418	1.500	3.929	
ADD HYD	101.20	1& 9	1	.00584	14.82	.623	2.00006	1.500	3.963	
ADD HYD	101.20	1&10	1	.00631	16.07	.677	2.01249	1.500	3.981	
ADD HYD	101.20	1&11	21	.00639	16.20	.681	1.99586	1.500	3.960	
ADD HYD	108.10	20&21	8	.01061	26.00	1.206	2.13242	1.500	3.829	
COMPUTE NM HYD	104.00	-	4	.00135	3.81	.169	2.34321	1.500	4.405	PER IMP= 90.00
ROUTE RESERVOIR	504.10	4	2	.00135	.19	.169	2.34298	2.350	.219	AC-FT= .115
COMPUTE NM HYD	105.00	-	5	.00098	1.44	.041	.77774	1.500	2.286	PER IMP= .00
ADD HYD	105.80	5& 8	5	.01159	27.44	1.247	2.01741	1.500	3.698	
ADD HYD	105.40	5& 2	2	.01294	27.62	1.416	2.05141	1.500	3.33	

PAGE = 2

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ROUTE RESERVOIR	505.10	2	5	.01294	10.89	1.422	2.06045	1.800	1.314	AC-FT= .321
COMPUTE NM HYD	106.00	-	6	.00041	1.23	.055	2.51716	1.500	4.651	PER IMP= 100.00
ADD HYD	105.60	5& 6	5	.01336	11.66	1.478	2.07455	1.550	1.364	
COMPUTE NM HYD	109.00	-	9	.00159	2.32	.066	.77774	1.500	2.281	PER IMP= .00
COMPUTE NM HYD	103.00	-	3	.00342	9.61	.427	2.34321	1.500	4.394	PER IMP= 90.00
ADD HYD	103.90	9& 3	3	.00500	11.93	.493	1.84695	1.500	3.724	
ROUTE RESERVOIR	503.10	3	1	.00500	.21	.463	1.73488	2.750	.064	AC-FT= .382
COMPUTE NM HYD	102.00	-	2	.00058	1.52	.065	2.11709	1.500	4.127	PER IMP= 77.00
ADD HYD	103.90	2& 1	1	.00558	1.71	.528	1.77429	1.500	.479	
ROUTE RESERVOIR	502.10	1	2	.00558	.18	.417	1.39966	29.650	.050	AC-FT= .112
COMPUTE NM HYD	101.00	-	1	.00588	16.52	.735	2.34321	1.500	4.391	PER IMP= 90.00
ADD HYD	101.10	1& 5	1	.01924	28.15	2.213	2.15665	1.500	2.286	
ROUTE RESERVOIR	501.10	1	3	.01924	1.42	2.213	2.15672	2.550	.115	AC-FT= 1.513
ADD HYD	101.10	3& 2	1	.02482	1.59	2.629	1.98649	2.600	.100	

FINISH

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 07/15/1998
         START TIME (HR:MIN:SEC) = 15:19:07     USER NO.= R_BOHANN.I01
         INPUT FILE = A:POND3.DAT

*****************************************************************
*                           FRITO-LAY                           *
*****************************************************************
*          100-YEAR, 24-HR STORM  (PONDING CALCULATIONS)        *
*****************************************************************
START                TIME=0.0
*
*****************************************************************
*            OFFSITE FLOWS FROM TRACTS 9B, 9C, AND 9D           *
*****************************************************************
*
*****************
*    BASIN 1    *
*****************
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                     RAIN DAY=2.75 IN DT=0.050 HR
```

COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT = .050000 HOURS END TIME = 24.000000 HOURS

.0000	.0024	.0049	.0075	.0102	.0130	.0158
.0188	.0219	.0252	.0286	.0321	.0358	.0397
.0439	.0482	.0529	.0578	.0631	.0689	.0751
.0836	.0930	.1201	.1842	.2944	.4649	.7103
1.0460	1.3107	1.4303	1.5302	1.6176	1.6959	1.7667
1.8313	1.8906	1.9452	1.9955	2.0421	2.0851	2.0946
2.1034	2.1115	2.1191	2.1262	2.1330	2.1394	2.1455
2.1513	2.1569	2.1622	2.1673	2.1723	2.1771	2.1817
2.1862	2.1905	2.1948	2.1989	2.2028	2.2067	2.2105
2.2142	2.2178	2.2213	2.2248	2.2282	2.2315	2.2347
2.2379	2.2410	2.2440	2.2470	2.2500	2.2529	2.2557
2.2585	2.2613	2.2640	2.2666	2.2693	2.2719	2.2744
2.2769	2.2794	2.2818	2.2842	2.2866	2.2889	2.2913
2.2935	2.2958	2.2980	2.3002	2.3024	2.3046	2.3067
2.3088	2.3109	2.3129	2.3150	2.3170	2.3190	2.3209
2.3229	2.3248	2.3267	2.3286	2.3305	2.3323	2.3342
2.3360	2.3378	2.3396	2.3414	2.3431	2.3449	2.3466
2.3483	2.3500	2.3517	2.3534	2.3551	2.3569	2.3586
2.3602	2.3619	2.3636	2.3653	2.3669	2.3686	2.3703
2.3719	2.3736	2.3752	2.3768	2.3785	2.3801	2.3817
2.3833	2.3849	2.3865	2.3881	2.3897	2.3913	2.3929
2.3944	2.3960	2.3976	2.3991	2.4007	2.4022	2.4038
2.4053	2.4068	2.4084	2.4099	2.4114	2.4129	2.4144
2.4159	2.4174	2.4189	2.4204	2.4219	2.4234	2.4248
2.4263	2.4278	2.4292	2.4307	2.4322	2.4336	2.4350
2.4365	2.4379	2.4394	2.4408	2.4422	2.4436	2.4450
2.4464	2.4478	2.4493	2.4506	2.4520	2.4534	2.4548
2.4562	2.4576	2.4589	2.4603	2.4617	2.4630	2.4644
2.4658	2.4671	2.4685	2.4698	2.4711	2.4725	2.4738
2.4751	2.4765	2.4778	2.4791	2.4804	2.4817	2.4830
2.4843	2.4856	2.4869	2.4882	2.4895	2.4908	2.4921
2.4934	2.4946	2.4959	2.4972	2.4984	2.4997	2.5010
2.5022	2.5035	2.5047	2.5060	2.5072	2.5085	2.5097

2.5109	2.5122	2.5134	2.5146	2.5158	2.5170	2.5183
2.5195	2.5207	2.5219	2.5231	2.5243	2.5255	2.5267
2.5279	2.5291	2.5303	2.5314	2.5326	2.5338	2.5350
2.5361	2.5373	2.5385	2.5396	2.5408	2.5420	2.5431
2.5443	2.5454	2.5466	2.5477	2.5488	2.5500	2.5511
2.5523	2.5534	2.5545	2.5556	2.5568	2.5579	2.5590
2.5601	2.5612	2.5623	2.5635	2.5646	2.5657	2.5668
2.5679	2.5690	2.5701	2.5711	2.5722	2.5733	2.5744
2.5755	2.5766	2.5776	2.5787	2.5798	2.5809	2.5819
2.5830	2.5841	2.5851	2.5862	2.5872	2.5883	2.5893
2.5904	2.5914	2.5925	2.5935	2.5946	2.5956	2.5966
2.5977	2.5987	2.5997	2.6008	2.6018	2.6028	2.6038
2.6049	2.6059	2.6069	2.6079	2.6089	2.6099	2.6109
2.6119	2.6129	2.6139	2.6149	2.6159	2.6169	2.6179
2.6189	2.6199	2.6209	2.6219	2.6229	2.6238	2.6248
2.6258	2.6268	2.6278	2.6287	2.6297	2.6307	2.6316
2.6326	2.6336	2.6345	2.6355	2.6364	2.6374	2.6384
2.6393	2.6403	2.6412	2.6421	2.6431	2.6440	2.6450
2.6459	2.6469	2.6478	2.6487	2.6497	2.6506	2.6515
2.6524	2.6534	2.6543	2.6552	2.6561	2.6571	2.6580
2.6589	2.6598	2.6607	2.6616	2.6625	2.6634	2.6644
2.6653	2.6662	2.6671	2.6680	2.6689	2.6698	2.6707
2.6715	2.6724	2.6733	2.6742	2.6751	2.6760	2.6769
2.6778	2.6786	2.6795	2.6804	2.6813	2.6821	2.6830
2.6839	2.6848	2.6856	2.6865	2.6874	2.6882	2.6891
2.6900	2.6908	2.6917	2.6925	2.6934	2.6942	2.6951
2.6959	2.6968	2.6976	2.6985	2.6993	2.7002	2.7010
2.7019	2.7027	2.7035	2.7044	2.7052	2.7061	2.7069
2.7077	2.7085	2.7094	2.7102	2.7110	2.7119	2.7127
2.7135	2.7143	2.7151	2.7160	2.7168	2.7176	2.7184
2.7192	2.7200	2.7209	2.7217	2.7225	2.7233	2.7241
2.7249	2.7257	2.7265	2.7273	2.7281	2.7289	2.7297
2.7305	2.7313	2.7321	2.7329	2.7337	2.7344	2.7352
2.7360	2.7368	2.7376	2.7384	2.7392	2.7399	2.7407
2.7415	2.7423	2.7431	2.7438	2.7446	2.7454	2.7462
2.7469	2.7477	2.7485	2.7492	2.7500		

```
COMPUTE NM HYD       ID=1 HYD NO=101.1 AREA=0.000940 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   3.3401    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 2.0100
    AREA =       .000846 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .22912    CFS   UNIT VOLUME =    .9417       B =   324.91      P60 = 2.0100
    AREA =       .000094 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

* BASIN 1 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=501.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          94.90
                         2.47              0.00040         97.40
                         2.53              0.00069         97.50
                         2.59              0.00155         97.60
```

2.64	0.00247	97.70
2.69	0.00494	97.80
2.74	0.00748	97.90

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	94.90	.000	.00
1.20	.07	94.97	.000	.07
2.40	.10	95.00	.000	.10
3.60	.02	94.92	.000	.02
4.80	.01	94.92	.000	.01
6.00	.02	94.92	.000	.02
7.20	.02	94.92	.000	.02
8.40	.02	94.92	.000	.02
9.60	.02	94.92	.000	.02
10.80	.01	94.91	.000	.01
12.00	.01	94.91	.000	.01
13.20	.01	94.91	.000	.01
14.40	.01	94.91	.000	.01
15.60	.01	94.91	.000	.01
16.80	.01	94.91	.000	.01
18.00	.01	94.91	.000	.01
19.20	.01	94.91	.000	.01
20.40	.01	94.91	.000	.01
21.60	.01	94.91	.000	.01
22.80	.01	94.91	.000	.01
24.00	.01	94.91	.000	.01

```
PEAK DISCHARGE =          2.530 CFS - PEAK OCCURS AT HOUR    1.50
MAXIMUM WATER SURFACE ELEVATION =        97.500
MAXIMUM STORAGE =           .0007 AC-FT      INCREMENTAL TIME=     .050000HRS

*
*****************
*    BASIN 2    *
*****************
*
COMPUTE NM HYD       ID=1 HYD NO=102.0 AREA=0.000075 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   .26649    CFS   UNIT VOLUME =    .9593       B =   526.28      P60 = 2.0100
   AREA =       .000068 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


   K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
   UNIT PEAK =   .18281E-01CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
   AREA =       .000008 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
* ADD POND 1 AND BASIN 2
*
ADD HYD              ID=3 HYD NO=102.1 ID=1 ID=2
*
* BASIN 2 PONDING
```

```
*
ROUTE RESERVOIR     ID=1 HYD NO=502.1 INFLOW ID=3 CODE=24
                    OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.00              0.0000          93.90
                        2.53              0.00041         95.00
                        2.80              0.00315         96.50
                        3.04              0.01121         97.00
                        3.26              0.02458         97.50
                        3.47              0.04326         98.00
                        3.55              0.05223         98.20

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

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

   .00        .00     93.90      .000       .00
  1.20        .08     93.93      .000       .07
  2.40        .11     93.97      .000       .16
  3.60        .02     93.91      .000       .02
  4.80        .02     93.91      .000       .02
  6.00        .02     93.91      .000       .02
  7.20        .02     93.91      .000       .02
  8.40        .02     93.91      .000       .02
  9.60        .02     93.91      .000       .02
 10.80        .02     93.91      .000       .02
 12.00        .01     93.91      .000       .01
 13.20        .01     93.91      .000       .01
 14.40        .01     93.91      .000       .01
 15.60        .01     93.90      .000       .01
 16.80        .01     93.90      .000       .01
 18.00        .01     93.90      .000       .01
 19.20        .01     93.90      .000       .01
 20.40        .01     93.90      .000       .01
 21.60        .01     93.90      .000       .01
 22.80        .01     93.90      .000       .01
 24.00        .01     93.90      .000       .01
 PEAK DISCHARGE =        2.623 CFS - PEAK OCCURS AT HOUR    1.55
 MAXIMUM WATER SURFACE ELEVATION =       95.519
 MAXIMUM STORAGE =         .0014 AC-FT      INCREMENTAL TIME=     .050000HRS

*
******************
*    BASIN 2A    *
******************
*
COMPUTE NM HYD      ID=2 HYD NO=102.2 AREA=0.001060 SQ MI
                    PER A=0.00 PER B=10.00 PER C=0.00 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 =   3.7664    CFS   UNIT VOLUME =    .9966       B =   526.28      P60 = 2.0100
    AREA =      .000954 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .25837    CFS   UNIT VOLUME =    .9487       B =   324.91      P60 = 2.0100
    AREA =      .000106 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000
```

```
*
* ADD POND 2 AND BASIN 2A
*
ADD HYD              ID=3 HYD NO=102.3 ID=1 ID=2
*
* BASIN 2A PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.00              0.0000          92.42
                         3.66              0.00081         97.50
                         3.70              0.00158         97.60
                         3.74              0.00385         97.70
                         3.78              0.00763         97.80
                         3.81              0.01291         97.90
                         3.85              0.01970         98.00
                         3.89              0.02799         98.10
                         3.92              0.03778         98.20

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

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

   .00        .00     92.42      .000       .00
  1.20        .15     92.62      .000       .14
  2.40        .28     92.64      .000       .16
  3.60        .04     92.47      .000       .04
  4.80        .03     92.47      .000       .03
  6.00        .04     92.48      .000       .04
  7.20        .04     92.47      .000       .04
  8.40        .04     92.47      .000       .04
  9.60        .03     92.47      .000       .03
 10.80        .03     92.46      .000       .03
 12.00        .03     92.46      .000       .03
 13.20        .03     92.46      .000       .03
 14.40        .03     92.46      .000       .03
 15.60        .02     92.45      .000       .02
 16.80        .02     92.45      .000       .02
 18.00        .02     92.45      .000       .02
 19.20        .02     92.45      .000       .02
 20.40        .02     92.45      .000       .02
 21.60        .02     92.45      .000       .02
 22.80        .02     92.45      .000       .02
 24.00        .02     92.44      .000       .02
 PEAK DISCHARGE =        3.857 CFS - PEAK OCCURS AT HOUR    1.60
 MAXIMUM WATER SURFACE ELEVATION =       98.017
 MAXIMUM STORAGE =          .0211 AC-FT      INCREMENTAL TIME=     .050000HRS

*
******************
*    BASIN 3     *
******************
*
COMPUTE NM HYD       ID=2 HYD NO=103.0 AREA=0.000347 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   1.2330    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
AREA =      .000312 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
UNIT PEAK =   .84578E-01CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
AREA =      .000035 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
*
* BASIN 3 PONDING
*
ROUTE RESERVOIR     ID=3 HYD NO=503.0 INFLOW ID=2 CODE=24
                    OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.00              0.0000          97.10
                        2.47              0.00040         99.60
                        2.53              0.00077         99.70
                        2.59              0.00184         99.80
                        2.64              0.00362         99.90
                        2.69              0.00610        100.00
                        2.74              0.00929        100.10

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

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

   .00        .00     97.10      .000       .00
  1.20        .03     97.13      .000       .03
  2.40        .03     97.13      .000       .03
  3.60        .01     97.11      .000       .01
  4.80        .01     97.11      .000       .01
  6.00        .01     97.11      .000       .01
  7.20        .01     97.11      .000       .01
  8.40        .01     97.11      .000       .01
  9.60        .01     97.11      .000       .01
 10.80        .01     97.11      .000       .01
 12.00        .00     97.10      .000       .00
PEAK DISCHARGE =         .989 CFS - PEAK OCCURS AT HOUR    1.50
MAXIMUM WATER SURFACE ELEVATION =       98.101
MAXIMUM STORAGE =         .0002 AC-FT      INCREMENTAL TIME=     .050000HRS

*
* ADD POND 2A AND POND 3
*
ADD HYD             ID=2 HYD NO=103.1 ID=1 ID=3
*
******************
*    BASIN 4     *
******************
*
COMPUTE NM HYD      ID=1 HYD NO=104.0 AREA=0.000425 SQ MI
                    PER A=0.00 PER B=10.00 PER C=0.00 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 =   1.5101    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 2.0100
AREA =      .000383 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
```

```
COMPUTE NM HYD       ID=2 HYD NO=105.0 AREA=0.000998 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   3.5461    CFS   UNIT VOLUME =    .9959      B =   526.28      P60 = 2.0100
    AREA =      .000898 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905    SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .24325    CFS   UNIT VOLUME =    .9487      B =   324.91      P60 = 2.0100
    AREA =      .000100 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    *
    * ADD POND 4 AND BASIN 5
    *
    ADD HYD              ID=3 HYD NO=105.1 ID=1 ID=2
    *
    * BASIN 5 PONDING
    *
    ROUTE RESERVOIR      ID=1 HYD NO=505.1 INFLOW ID=3 CODE=24
                         OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                            0.00               0.0000          87.93
                           10.17               0.00170         98.63
                           10.22               0.00242         98.73
                           10.27               0.00455         98.83
                           10.32               0.00809         98.93
                           10.35               0.01140         99.00

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

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

     .00        .00     87.93      .000       .00
    1.20        .26     88.19      .000       .25
    2.40        .43     88.42      .000       .47
    3.60        .08     88.00      .000       .07
    4.80        .06     87.99      .000       .06
    6.00        .07     88.01      .000       .07
    7.20        .07     88.01      .000       .07
    8.40        .07     88.00      .000       .07
    9.60        .06     87.99      .000       .06
   10.80        .06     87.99      .000       .06
   12.00        .05     87.99      .000       .05
   13.20        .05     87.98      .000       .05
   14.40        .05     87.98      .000       .05
   15.60        .05     87.98      .000       .05
   16.80        .04     87.97      .000       .04
   18.00        .04     87.97      .000       .04
   19.20        .04     87.97      .000       .04
   20.40        .04     87.97      .000       .04
   21.60        .04     87.97      .000       .04
   22.80        .04     87.97      .000       .04
   24.00        .03     87.97      .000       .03
PEAK DISCHARGE =        8.754 CFS - PEAK OCCURS AT HOUR    1.50
MAXIMUM WATER SURFACE ELEVATION =       97.140
MAXIMUM STORAGE =         .0015 AC-FT      INCREMENTAL TIME=     .050000HRS
```

```
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
UNIT PEAK =   .10359    CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
AREA =      .000043 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
* ADD POND 2A AND POND 3 AND BASIN 4
*
ADD HYD              ID=3 HYD NO=104.1 ID=1 ID=2
*
* BASIN 4 PONDING
*
ROUTE RESERVOIR     ID=1 HYD NO=502.3 INFLOW ID=3 CODE=24
                    OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.00              0.0000          89.66
                        8.06              0.00157         99.50
                        8.10              0.00195         99.60
                        8.15              0.00306         99.70
                        8.19              0.00490         99.80
                        8.23              0.00748         99.90
                        8.27              0.01078        100.00

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

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

     .00       .00      89.66      .000      .00
    1.20       .20      89.89      .000      .19
    2.40       .24      90.05      .000      .32
    3.60       .05      89.73      .000      .06
    4.80       .05      89.72      .000      .05
    6.00       .06      89.73      .000      .06
    7.20       .05      89.72      .000      .05
    8.40       .05      89.72      .000      .05
    9.60       .05      89.72      .000      .05
   10.80       .04      89.71      .000      .04
   12.00       .04      89.71      .000      .04
   13.20       .04      89.70      .000      .04
   14.40       .04      89.70      .000      .04
   15.60       .03      89.70      .000      .03
   16.80       .03      89.70      .000      .03
   18.00       .03      89.70      .000      .03
   19.20       .03      89.70      .000      .03
   20.40       .03      89.69      .000      .03
   21.60       .03      89.69      .000      .03
   22.80       .03      89.69      .000      .03
   24.00       .02      89.69      .000      .02
 PEAK DISCHARGE =        5.957 CFS - PEAK OCCURS AT HOUR    1.50
 MAXIMUM WATER SURFACE ELEVATION =       96.933
 MAXIMUM STORAGE =          .0012 AC-FT      INCREMENTAL TIME=     .050000HRS

*
******************
*    BASIN 5     *
******************
*
```

```
*
*****************
*    BASIN 6    *
*****************
*
COMPUTE NM HYD       ID=2 HYD NO=106.0 AREA=0.000370 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   1.3147    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
    AREA =      .000333 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905    SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .90184E-01CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
    AREA =      .000037 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
* ADD POND 5 AND BASIN 6
*
ADD HYD              ID=3 HYD NO=106.1 ID=1 ID=2
*
* BASIN 6 PONDING
*
ROUTE RESERVOIR      ID=20 HYD NO=506.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.00               0.00000         96.10
                       13.07               0.00198         98.54
                       13.12               0.00241         98.64
                       13.18               0.00368         98.74
                       13.23               0.00578         98.84
                       13.28               0.00870         98.94
                       13.34               0.01247         99.04

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	96.10	.000	.00
1.20	.28	96.15	.000	.26
2.40	.51	96.20	.000	.51
3.60	.07	96.11	.000	.07
4.80	.07	96.11	.000	.07
6.00	.08	96.12	.000	.08
7.20	.08	96.11	.000	.08
8.40	.07	96.11	.000	.07
9.60	.07	96.11	.000	.07
10.80	.06	96.11	.000	.06
12.00	.06	96.11	.000	.06
13.20	.05	96.11	.000	.05
14.40	.05	96.11	.000	.05
15.60	.05	96.11	.000	.05
16.80	.05	96.11	.000	.05
18.00	.05	96.11	.000	.05
19.20	.04	96.11	.000	.04

```
   20.40        .04     96.11       .000       .04
   21.60        .04     96.11       .000       .04
   22.80        .04     96.11       .000       .04
   24.00        .04     96.11       .000       .04
 PEAK DISCHARGE =        9.794 CFS - PEAK OCCURS AT HOUR    1.50
 MAXIMUM WATER SURFACE ELEVATION =       97.928
 MAXIMUM STORAGE =         .0015 AC-FT      INCREMENTAL TIME=     .050000HRS

*
*****************************************************************
*                          ON-SITE PONDING                      *
*****************************************************************
*
*************************
*   CHAVEZ-GRIEVES      *
*************************
*
* BASIN A
*
COMPUTE NM HYD       ID=1 HYD NO=100.A AREA=0.000652 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   2.3167    CFS   UNIT VOLUME =    .9941       B =   526.28      P60 = 2.0100
    AREA =       .000587 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .15892    CFS   UNIT VOLUME =    .9143       B =   324.91      P60 = 2.0100
    AREA =       .000065 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1 CODE=1

                                        HYDROGRAPH FROM AREA 100.A


    RUNOFF VOLUME =     2.34321 INCHES     =        .0815 ACRE-FEET
    PEAK DISCHARGE RATE =       1.85 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


*
* BASIN B
*
COMPUTE NM HYD       ID=2 HYD NO=100.B AREA=0.000622 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   2.2101    CFS   UNIT VOLUME =    .9941       B =   526.28      P60 = 2.0100
    AREA =       .000560 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .15161    CFS   UNIT VOLUME =    .9143       B =   324.91      P60 = 2.0100
    AREA =       .000062 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
```

```
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1 CODE=1

                                        HYDROGRAPH FROM AREA 100.A


    RUNOFF VOLUME =     2.34321 INCHES     =        .0815 ACRE-FEET
    PEAK DISCHARGE RATE =       1.85 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


*
* BASIN C
*
COMPUTE NM HYD      ID=3 HYD NO=100.C AREA=0.000243 SQ MI
                    PER A=0.00 PER B=10.00 PER C=0.00 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 =   .86344    CFS   UNIT VOLUME =    .9865       B =   526.28      P60 = 2.0100
    AREA =      .000219 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .59229E-01CFS   UNIT VOLUME =    .8744       B =   324.91      P60 = 2.0100
    AREA =      .000024 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1 CODE=1

                                        HYDROGRAPH FROM AREA 100.A


    RUNOFF VOLUME =     2.34321 INCHES     =        .0815 ACRE-FEET
    PEAK DISCHARGE RATE =       1.85 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


*
* BASIN D
*
COMPUTE NM HYD      ID=4 HYD NO=100.D AREA=0.000626 SQ MI
                    PER A=0.00 PER B=70.00 PER C=0.00 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 =   .74144    CFS   UNIT VOLUME =    .9832       B =   526.28      P60 = 2.0100
    AREA =      .000188 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   1.0681    CFS   UNIT VOLUME =    .9880       B =   324.91      P60 = 2.0100
    AREA =      .000438 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=4 CODE=1
```

HYDROGRAPH FROM AREA 100.D

RUNOFF VOLUME = 1.29956 INCHES = .0434 ACRE-FEET
PEAK DISCHARGE RATE = 1.21 CFS AT 1.500 HOURS BASIN AREA = .0006 SQ. MI.

```
*
* BASIN E
*
COMPUTE NM HYD      ID=5 HYD NO=100.E AREA=0.000436 SQ MI
                    PER A=0.00 PER B=10.00 PER C=0.00 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 = 1.5492 CFS UNIT VOLUME = .9928 B = 526.28 P60 = 2.0100
AREA = .000392 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .132088HR TP = .133300HR K/TP RATIO = .990905 SHAPE CONSTANT, N = 3.563124
UNIT PEAK = .10627 CFS UNIT VOLUME = .8744 B = 324.91 P60 = 2.0100
AREA = .000044 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

```
PRINT HYD           ID=5 CODE=1
```

HYDROGRAPH FROM AREA 100.E

RUNOFF VOLUME = 2.34321 INCHES = .0545 ACRE-FEET
PEAK DISCHARGE RATE = 1.24 CFS AT 1.500 HOURS BASIN AREA = .0004 SQ. MI.

```
*
* BASIN F
*
COMPUTE NM HYD      ID=6 HYD NO=100.F AREA=0.000881 SQ MI
                    PER A=0.00 PER B=40.00 PER C=0.00 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 = 2.0869 CFS UNIT VOLUME = .9941 B = 526.28 P60 = 2.0100
AREA = .000529 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .132088HR TP = .133300HR K/TP RATIO = .990905 SHAPE CONSTANT, N = 3.563124
UNIT PEAK = .85895 CFS UNIT VOLUME = .9862 B = 324.91 P60 = 2.0100
AREA = .000352 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

```
PRINT HYD           ID=6 CODE=1
```

HYDROGRAPH FROM AREA 100.F

RUNOFF VOLUME = 1.82139 INCHES = .0856 ACRE-FEET

```
    PEAK DISCHARGE RATE =       2.09 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*
* BASIN G
*
COMPUTE NM HYD       ID=7 HYD NO=100.G AREA=0.001125 SQ MI
                     PER A=0.00 PER B=40.00 PER C=0.00 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 =   2.6649    CFS   UNIT VOLUME =    .9951       B =   526.28      P60 = 2.0100
    AREA =       .000675 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   1.0968    CFS   UNIT VOLUME =    .9896       B =   324.91      P60 = 2.0100
    AREA =       .000450 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=7 CODE=1

                                   HYDROGRAPH FROM AREA 100.G


    RUNOFF VOLUME =     1.82139 INCHES     =        .1093 ACRE-FEET
    PEAK DISCHARGE RATE =       2.67 CFS  AT   1.500 HOURS   BASIN AREA =   .0011 SQ. MI.


*
* BASIN H
*
COMPUTE NM HYD       ID=8 HYD NO=100.H AREA=0.000481 SQ MI
                     PER A=0.00 PER B=30.00 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 =   1.3293    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
    AREA =       .000337 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .35172    CFS   UNIT VOLUME =    .9652       B =   324.91      P60 = 2.0100
    AREA =       .000144 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=8 CODE=1

                                   HYDROGRAPH FROM AREA 100.H


    RUNOFF VOLUME =     1.99533 INCHES     =        .0512 ACRE-FEET
    PEAK DISCHARGE RATE =       1.22 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.
```

```
*
* BASIN I
*
COMPUTE NM HYD       ID=9 HYD NO=100.I AREA=0.000776 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000    SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   2.4510    CFS   UNIT VOLUME =    .9951       B =   526.28      P60 = 2.0100
    AREA =       .000621 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905    SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .37829    CFS   UNIT VOLUME =    .9652       B =   324.91      P60 = 2.0100
    AREA =       .000155 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=9 CODE=1

                                    HYDROGRAPH FROM AREA 100.I

    RUNOFF VOLUME =     2.16927 INCHES     =        .0898 ACRE-FEET
    PEAK DISCHARGE RATE =       2.08 CFS  AT   1.500 HOURS   BASIN AREA =   .0008 SQ. MI.

*
* BASIN J
*
COMPUTE NM HYD       ID=10 HYD NO=100.J AREA=0.000465 SQ MI
                     PER A=0.00 PER B=20.00 PER C=0.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000    SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   1.4687    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.0100
    AREA =       .000372 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905    SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .22668    CFS   UNIT VOLUME =    .9417       B =   324.91      P60 = 2.0100
    AREA =       .000093 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=10 CODE=1

                                    HYDROGRAPH FROM AREA 100.J

    RUNOFF VOLUME =     2.16927 INCHES     =        .0538 ACRE-FEET
    PEAK DISCHARGE RATE =       1.25 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.

*
* BASIN K
*
COMPUTE NM HYD       ID=11 HYD NO=100.K AREA=0.000086 SQ MI
```

```
                    PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                    TP=-0.1333 HR MASS RAINFALL=-1

    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .20962    CFS   UNIT VOLUME =    .9417       B =   324.91      P60 = 2.0100
    AREA =      .000086 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=11 CODE=1

                                    HYDROGRAPH FROM AREA 100.K


    RUNOFF VOLUME =      .77774 INCHES     =        .0036 ACRE-FEET
    PEAK DISCHARGE RATE =        .13 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.



*
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=2
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=3
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=4
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=5
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=6
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=7
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=8
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=9
ADD HYD             ID=1 HYD NO=101.2 ID=1 ID=10
ADD HYD             ID=21 HYD NO=101.2 ID=1 ID=11
*
PRINT HYD           ID=21 CODE=1

                                  PARTIAL HYDROGRAPH   101.20


    RUNOFF VOLUME =     1.99586 INCHES     =        .6805 ACRE-FEET
    PEAK DISCHARGE RATE =      16.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0064 SQ. MI.



*
*********************************************************************
* ADD OFF-SITE FLOWS FROM TRACTS 9B, 9C, AND 9D AND CHAVEZ-GRIEVES *
*********************************************************************
*
ADD HYD             ID=8 HYD NO=108.1 ID=20 ID=21
PRINT HYD           ID=8 CODE=1

                                  PARTIAL HYDROGRAPH   108.10


    RUNOFF VOLUME =     2.13242 INCHES     =       1.2064 ACRE-FEET
    PEAK DISCHARGE RATE =      26.00 CFS  AT   1.500 HOURS   BASIN AREA =   .0106 SQ. MI.



*
*****************
*   BASIN 4     *
*****************
```

```
*
COMPUTE NM HYD       ID=4 HYD NO=104.0 AREA=0.001352 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   4.8040    CFS   UNIT VOLUME =    .9971       B =   526.28      P60 = 2.0100
    AREA =      .001217 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905    SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .32954    CFS   UNIT VOLUME =    .9604       B =   324.91      P60 = 2.0100
    AREA =      .000135 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=4 CODE=1

                                   PARTIAL HYDROGRAPH   104.00


    RUNOFF VOLUME =     2.34321 INCHES     =        .1690 ACRE-FEET
    PEAK DISCHARGE RATE =       3.81 CFS  AT   1.500 HOURS   BASIN AREA =   .0014 SQ. MI.


*
* BASIN 4 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=504.1 INFLOW ID=4 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.000             0.0000          65.00
                         0.163             0.0004          67.00
                         0.170             0.0062          67.20
                         0.176             0.0247          67.40
                         0.182             0.0554          67.60
                         0.188             0.0985          67.80
                         0.194             0.1538          68.00

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	65.00	.000	.00
1.20	.11	65.65	.000	.05
2.40	.15	67.86	.115	.19
3.60	.03	67.81	.101	.19
4.80	.02	67.74	.085	.19
6.00	.03	67.66	.069	.18
7.20	.03	67.59	.053	.18
8.40	.02	67.49	.038	.18
9.60	.02	67.38	.023	.18
10.80	.02	67.21	.008	.17
12.00	.02	65.24	.000	.02
13.20	.02	65.22	.000	.02
14.40	.02	65.21	.000	.02
15.60	.02	65.20	.000	.02
16.80	.02	65.19	.000	.02
18.00	.01	65.18	.000	.01

```
   19.20        .01     65.17       .000       .01
   20.40        .01     65.17       .000       .01
   21.60        .01     65.16       .000       .01
   22.80        .01     65.15       .000       .01
   24.00        .01     65.15       .000       .01
 PEAK DISCHARGE =          .190 CFS - PEAK OCCURS AT HOUR    2.35
 MAXIMUM WATER SURFACE ELEVATION =       67.859
 MAXIMUM STORAGE =          .1148 AC-FT      INCREMENTAL TIME=     .050000HRS

*
****************
*   BASIN 5    *
****************
*
COMPUTE NM HYD       ID=5 HYD NO=105.0 AREA=0.000984 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1

   K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
   UNIT PEAK =   2.3984    CFS   UNIT VOLUME =    .9957       B =   324.91      P60 = 2.0100
   AREA =       .000984 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=5 CODE=1

                                   PARTIAL HYDROGRAPH   105.00


   RUNOFF VOLUME =      .77774 INCHES     =        .0408 ACRE-FEET
   PEAK DISCHARGE RATE =       1.44 CFS  AT   1.500 HOURS   BASIN AREA =   .0010 SQ. MI.


*
* ADD FLOWS FROM BASIN 5, POND 4 AND BASIN 8 (CHAVEZ-GRIEVES)
*
ADD HYD              ID=5 HYD NO=105.8 ID=5 ID=8
ADD HYD              ID=2 HYD NO=105.4 ID=5 ID=2
PRINT HYD            ID=2 CODE=1

                                   PARTIAL HYDROGRAPH   105.40


   RUNOFF VOLUME =     2.05141 INCHES     =       1.4162 ACRE-FEET
   PEAK DISCHARGE RATE =      27.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0129 SQ. MI.


*
* BASIN 5 PONDING
*
ROUTE RESERVOIR      ID=5 HYD NO=505.1 INFLOW ID=2 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.000             0.0000          63.32
                         9.476             0.0008          68.42
                         9.681             0.0060          68.62
                         9.883             0.0241          68.82
                        10.080             0.0541          69.02
                        10.274             0.0961          69.22
                        10.464             0.1501          69.42
```

10.650	0.2161	69.62
10.834	0.2941	69.82
11.014	0.3842	70.02

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	63.32	.000	.00
1.20	.70	63.69	.000	.68
2.40	1.33	68.96	.045	10.02
3.60	.35	63.43	.000	.20
4.80	.33	63.49	.000	.31
6.00	.36	63.51	.000	.36
7.20	.35	63.51	.000	.35
8.40	.34	63.50	.000	.34
9.60	.32	63.49	.000	.32
10.80	.31	63.49	.000	.31
12.00	.15	63.40	.000	.15
13.20	.14	63.39	.000	.14
14.40	.13	63.39	.000	.13
15.60	.13	63.39	.000	.13
16.80	.12	63.38	.000	.12
18.00	.11	63.38	.000	.11
19.20	.11	63.38	.000	.11
20.40	.11	63.38	.000	.11
21.60	.10	63.37	.000	.10
22.80	.10	63.37	.000	.10
24.00	.09	63.37	.000	.09

PEAK DISCHARGE = 10.887 CFS - PEAK OCCURS AT HOUR 1.80
MAXIMUM WATER SURFACE ELEVATION = 69.879
MAXIMUM STORAGE = .3208 AC-FT INCREMENTAL TIME= .050000HRS

```
*
****************
*   BASIN 6    *
****************
*
COMPUTE NM HYD      ID=6 HYD NO=106.0 AREA=0.000413 SQ MI
                    PER A=0.00 PER B=0.00 PER C=0.00 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 =   1.6305    CFS   UNIT VOLUME =    .9928      B =   526.28      P60 = 2.0100
   AREA =      .000413 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=6 CODE=1

                                PARTIAL HYDROGRAPH   106.00


   RUNOFF VOLUME =     2.51716 INCHES     =        .0554 ACRE-FEET
   PEAK DISCHARGE RATE =       1.23 CFS  AT   1.500 HOURS   BASIN AREA =   .0004 SQ. MI.



*
* ADD BASIN 6 AND POND 5
```

```
*
ADD HYD              ID=5 HYD NO=105.6 ID=5 ID=6
*
****************
*   BASIN 9    *
****************
*
COMPUTE NM HYD       ID=9 HYD NO=109.0 AREA=0.001586 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905    SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   3.8657    CFS   UNIT VOLUME =    .9978      B =   324.91      P60 = 2.0100
    AREA =      .001586 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=9 CODE=1

                                PARTIAL HYDROGRAPH   109.00


    RUNOFF VOLUME =      .77774 INCHES     =        .0658 ACRE-FEET
    PEAK DISCHARGE RATE =      2.32 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


*
****************
*   BASIN 3    *
****************
*
COMPUTE NM HYD       ID=3 HYD NO=103.0 AREA=0.003418 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   12.145    CFS   UNIT VOLUME =    .9983      B =   526.28      P60 = 2.0100
    AREA =      .003076 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905    SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .83311    CFS   UNIT VOLUME =    .9843      B =   324.91      P60 = 2.0100
    AREA =      .000342 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=3 CODE=1

                                PARTIAL HYDROGRAPH   103.00


    RUNOFF VOLUME =     2.34321 INCHES     =        .4271 ACRE-FEET
    PEAK DISCHARGE RATE =      9.61 CFS  AT   1.500 HOURS   BASIN AREA =   .0034 SQ. MI.


*
*
* ADD OFF-SITE FLOWS FROM BASIN 9 TO BASIN 3
*
```

```
ADD HYD              ID=3 HYD NO=103.9 ID=9 ID=3
PRINT HYD            ID=3 CODE=1

                                PARTIAL HYDROGRAPH   103.90


    RUNOFF VOLUME =     1.84695 INCHES     =        .4929 ACRE-FEET
    PEAK DISCHARGE RATE =      11.93 CFS  AT   1.500 HOURS   BASIN AREA =   .0050 SQ. MI.



*
* BASIN 3 PONDING
*
ROUTE RESERVOIR      ID=1 HYD NO=503.1 INFLOW ID=3 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                        0.0000            0.0000          63.81
                        0.1633            0.0004          66.31
                        0.1699            0.0081          66.51
                        0.1763            0.0314          66.71
                        0.1825            0.0700          66.91
                        0.1884            0.1241          67.11
                        0.1942            0.1937          67.31
                        0.1998            0.2787          67.51
                        0.2052            0.3792          67.71
                        0.2079            0.4352          67.81

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

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

     .00        .00     63.81      .000       .00
    1.20        .27     65.87      .000       .13
    2.40        .48     67.71      .379       .21
    3.60        .06     67.70      .375       .20
    4.80        .05     67.67      .360       .20
    6.00        .07     67.64      .346       .20
    7.20        .06     67.62      .332       .20
    8.40        .06     67.59      .318       .20
    9.60        .05     67.56      .304       .20
   10.80        .05     67.53      .289       .20
   12.00        .05     67.50      .274       .20
   13.20        .04     67.46      .259       .20
   14.40        .04     67.43      .244       .20
   15.60        .04     67.39      .229       .20
   16.80        .04     67.36      .213       .20
   18.00        .04     67.32      .198       .19
   19.20        .04     67.28      .182       .19
   20.40        .03     67.23      .167       .19
   21.60        .03     67.19      .151       .19
   22.80        .03     67.14      .135       .19
   24.00        .03     67.09      .120       .19
   25.20        .00     67.03      .101       .19
   26.40        .00     66.96      .083       .18
   27.60        .00     66.88      .065       .18
   28.80        .00     66.79      .047       .18
PEAK DISCHARGE =          .205 CFS - PEAK OCCURS AT HOUR    2.75
MAXIMUM WATER SURFACE ELEVATION =       67.715
MAXIMUM STORAGE =          .3821 AC-FT      INCREMENTAL TIME=     .050000HRS
```

```
*
****************
*   BASIN 2    *
****************
*
COMPUTE NM HYD       ID=2 HYD NO=102.0 AREA=0.000576 SQ MI
                     PER A=0.00 PER B=23.00 PER C=0.00 PER D=77.00
                     TP=-0.1333 HR MASS RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   1.7510    CFS   UNIT VOLUME =    .9928       B =   526.28      P60 = 2.0100
    AREA =      .000444 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
    UNIT PEAK =   .32291    CFS   UNIT VOLUME =    .9604       B =   324.91      P60 = 2.0100
    AREA =      .000132 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=2 CODE=1

                                   PARTIAL HYDROGRAPH   102.00


    RUNOFF VOLUME =     2.11709 INCHES     =        .0650 ACRE-FEET
    PEAK DISCHARGE RATE =       1.52 CFS  AT   1.500 HOURS   BASIN AREA =   .0006 SQ. MI.


*
*
* ADD FLOWS FROM POND 3 TO BASIN 2
*
ADD HYD              ID=1 HYD NO=103.9 ID=2 ID=1
PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   103.90


    RUNOFF VOLUME =     1.77429 INCHES     =        .5280 ACRE-FEET
    PEAK DISCHARGE RATE =       1.71 CFS  AT   1.500 HOURS   BASIN AREA =   .0056 SQ. MI.


*
* BASIN 2 PONDING
*
ROUTE RESERVOIR      ID=2 HYD NO=502.1 INFLOW ID=1 CODE=24
                     OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                         0.0000            0.0000          62.62
                         0.1625            0.0008          68.00
                         0.1657            0.0061          68.20
                         0.1689            0.0218          68.40
                         0.1720            0.0480          68.60
                         0.1751            0.0847          68.80
                         0.1781            0.1318          69.00

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	62.62	.000	.00
1.20	.17	64.53	.000	.06
2.40	.26	68.64	.055	.17
3.60	.21	68.66	.060	.17
4.80	.21	68.69	.064	.17
6.00	.21	68.71	.068	.17
7.20	.21	68.73	.071	.17
8.40	.21	68.75	.075	.17
9.60	.21	68.77	.079	.17
10.80	.21	68.78	.082	.17
12.00	.21	68.80	.085	.18
13.20	.21	68.81	.088	.18
14.40	.20	68.83	.091	.18
15.60	.20	68.84	.094	.18
16.80	.20	68.85	.096	.18
18.00	.20	68.86	.099	.18
19.20	.20	68.87	.101	.18
20.40	.20	68.88	.103	.18
21.60	.20	68.89	.105	.18
22.80	.19	68.89	.107	.18
24.00	.19	68.90	.109	.18
25.20	.19	68.91	.110	.18
26.40	.18	68.91	.110	.18
27.60	.18	68.91	.111	.18
28.80	.18	68.91	.111	.18

```
PEAK DISCHARGE =          .177 CFS - PEAK OCCURS AT HOUR   29.65
MAXIMUM WATER SURFACE ELEVATION =       68.914
MAXIMUM STORAGE =          .1115 AC-FT      INCREMENTAL TIME=     .050000HRS

*
****************
*   BASIN 1    *
****************
*
COMPUTE NM HYD       ID=1 HYD NO=101.0 AREA=0.005879 SQ MI
                     PER A=0.00 PER B=10.00 PER C=0.00 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 =   20.890    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 2.0100
   AREA =      .005291 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

   K =   .132088HR    TP =   .133300HR    K/TP RATIO =   .990905     SHAPE CONSTANT, N =  3.563124
   UNIT PEAK =   1.4330    CFS   UNIT VOLUME =    .9921       B =   324.91      P60 = 2.0100
   AREA =      .000588 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1 CODE=1

                                PARTIAL HYDROGRAPH   101.00

   RUNOFF VOLUME =     2.34321 INCHES     =        .7347 ACRE-FEET
   PEAK DISCHARGE RATE =      16.52 CFS  AT   1.500 HOURS   BASIN AREA =   .0059 SQ. MI.
```

```
*
* ADD POND 5 TO BASIN 1
*
ADD HYD            ID=1 HYD NO=101.1 ID=1 ID=5
PRINT HYD          ID=1 CODE=1

                              PARTIAL HYDROGRAPH   101.10


   RUNOFF VOLUME =     2.15665 INCHES     =      2.2125 ACRE-FEET
   PEAK DISCHARGE RATE =     28.15 CFS  AT   1.500 HOURS   BASIN AREA =   .0192 SQ. MI.


*
* BASIN 1 PONDING
*
ROUTE RESERVOIR    ID=3 HYD NO=501.1 INFLOW ID=1 CODE=24
                   OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                       0.0000            0.0000          61.89
                       1.2045            0.0014          66.22
                       1.2333            0.0251          66.42
                       1.2614            0.0961          66.62
                       1.2889            0.2145          66.82
                       1.3159            0.3801          67.02
                       1.3423            0.5931          67.22
                       1.3682            0.8534          67.42
                       1.3936            1.1610          67.62
                       1.4186            1.5160          67.72

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

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

   .00        .00     61.89      .000       .00
  1.20       1.17     64.78      .001       .80
  2.40      10.76     67.70     1.458      1.41
  3.60        .32     67.70     1.452      1.41
  4.80        .41     67.67     1.356      1.41
  6.00        .48     67.65     1.262      1.40
  7.20        .47     67.62     1.171      1.39
  8.40        .45     67.57     1.078      1.39
  9.60        .42     67.51      .984      1.38
 10.80        .40     67.44      .889      1.37
 12.00        .24     67.37      .785      1.36
 13.20        .22     67.28      .674      1.35
 14.40        .21     67.19      .562      1.34
 15.60        .20     67.09      .451      1.32
 16.80        .19     66.97      .339      1.31
 18.00        .18     66.84      .229      1.29
 19.20        .18     66.66      .120      1.27
 20.40        .17     66.32      .013      1.22
 21.60        .16     62.47      .000       .16
 22.80        .16     62.45      .000       .16
 24.00        .15     62.43      .000       .15
PEAK DISCHARGE =        1.418 CFS - PEAK OCCURS AT HOUR    2.55
```

```
 MAXIMUM WATER SURFACE ELEVATION =       67.719
 MAXIMUM STORAGE =        1.5129 AC-FT      INCREMENTAL TIME=     .050000HRS

*
* ADD POND 2 AND POND 1
*
ADD HYD             ID=1 HYD NO=101.1 ID=3 ID=2
PRINT HYD           ID=1 CODE=1

                                PARTIAL HYDROGRAPH   101.10


    RUNOFF VOLUME =     1.98649 INCHES     =       2.6291 ACRE-FEET
    PEAK DISCHARGE RATE =       1.59 CFS  AT   2.600 HOURS   BASIN AREA =   .0248 SQ. MI.


*
*
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 15:19:08
```