County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

March 16, 2001

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

RE: Grading and Drainage Plan for National Electric Supply (G15-D59) (PWDN 10018) Dated January 25, 2001

Dear Mr. Bohannan:

The above referenced plan received January 30, 2001 is approved for building permit. Upon completion of the project the engineer will certify the project.

The following items are required by Bernalillo County.

1. Development of this property must conform to this plan. Any proposed changes will require a revision to the plan prior to initiating the proposed change.
2. Inspection required, applicant required to obtain permits from Bernalillo County Public Works Division (Phone 848-1520).
3. The old pond must be filled in with suitable material, and all garbage must be removed.

If you have any questions please contact me at 924-3982.

Sincerely,

Carlos A. Montoya
City/County Floodplain Administrator

C: Lynn Mazur, AMAFCA
Brian Kent, Bernalillo County
File

Brian Kent
<bkent@mercury.bernco.gov>

03/15/01 10:43 AM

To: "'Carlos Montoya'" <cmontoya@cabq.gov>

cc:

Subject: National Electric

Carlos,

These are our comments for the National Electric Grading and Drainage Plan, PWDN #10018.

BK

Based on the information provided on the grading and drainage plan, with engineer's seal dated 01/25/01, this plan appears to meet the requirements established for this area and is therefore acceptable.

Development of this property must conform to this plan. Any proposed changes will require a revision to the plan prior to initiating the proposed change.

Inspection required, applicant required to obtain permits from Bernalillo County Public Works Division. Phone (505)848-1520.

The old pond must be filled in with suitable material, and all garbage must be removed.

FP

BERNALILLO COUNTY

PWDP 10125

PWD SUBMITTAL

Use for all PWD applications EXCEPT Street Excavation

XX NEW SUBMITTAL

☐ RESUBMITTAL

☐ FINAL SIGNOFF

TODAY'S DATE 1/30/01

CASE NO: PWDN 10013

OWNER

OWNER	Rocky E. Lawrence	PHONE	(505) 345-3577
MAILING ADDRESS	702 Carmony Road, NE	CITY Alb.	ZIP 87107

AGENT

AGENT / CONTRACTOR	Tierra West, LLC	PHONE	(505) 858-3100
MAILING ADDRESS	8509 Jefferson, NE	CITY Alb.	ZIP 87113
STATE LICENSE NO.	EXP DATE	VOLUME	CLASS
ARCHITECT/ENGINEER	Ronald R. Bohannan	LICENSE NO. 7868	PHONE (505) 858-3100

SITE INFORMATION

SITE ADDRESS / DIRECTIONS	National Electric Supply	ZONE ATLAS NO.:	G-15 D59
	Northeast corner of Carmony Road and Alexander Drive		
LEGAL DESCRIPTION	Tract 2-B Land of J.R. Nance		
		LOT SIZE:	4.04 Acres
EXISTING BUILDING(S) AND USE:	National Electric Supply Bldg	PROPOSED BUILDING(S):	
UPC #	1-015-060-447-387-101-29		

TYPE OF SUBMITTAL

- ☐ REPLAT
- ☐ MINOR SUBDIVISION
- ☐ MAJOR SUBDIVISION
- ☐ CONSTRUCTION DRAWINGS
- XX GRADING & DRAINAGE PLAN
- ☐ AS-CONSTRUCTED GRADING & DRAINAGE PLAN
- ☐ VARIANCE REQUEST
- ☐ LAND DIVISION
- ☐ TRAFFIC IMPACT ANALYSIS / TRAFFIC STUDY
- ☐ INFRASTRUCTURE LIST / DESIGN REVIEW
- ☐ SPECIAL USE PERMIT
- ☐ BARRICADING PERMIT
- XX BUILDING PERMIT
- ☐ INSPECTION
- ☐ OTHER (Specify):

The issuance of a permit or a review or approval of plan specifications, computations, and shop drawings, shall not be interpreted to be a permit for, or an approval of any variance or violation of any of the provisions of any COUNTY or STATE codes, ordinances, standards, or policies. Nor shall such issuance of a permit or approval of plans, specifications, computations, and shop drawings prevent any authorized COUNTY representative or COUNTY inspector form thereafter requiring the correction of errors in said plans, specifications, computations, or shop drawings or from stopping construction operations which are being carried on thereunder when in violation of any COUNTY or STATE codes, ordinances, standards, or policies.

☐ Owner XX Agent ☐ Contractor Signature _____ Date 1/30/01

COUNTY

BERNALILLO COUNTY USE ONLY

C/R's		TOTAL FEE:	
		Receipt No.:	
		Received By:	

DRAINAGE REPORT

for

National Electric Supply

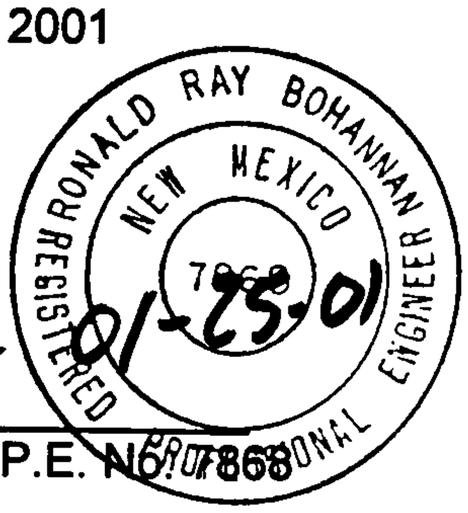
Prepared by

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

Prepared for

Rocky E. Lawrence
702 Carmony Road, NE
Albuquerque, NM 87107

January 25, 2001



Ronald R. Bohannan P.E. No. 7868

TABLE OF CONTENTS

APPENDICES

MAP POCKET

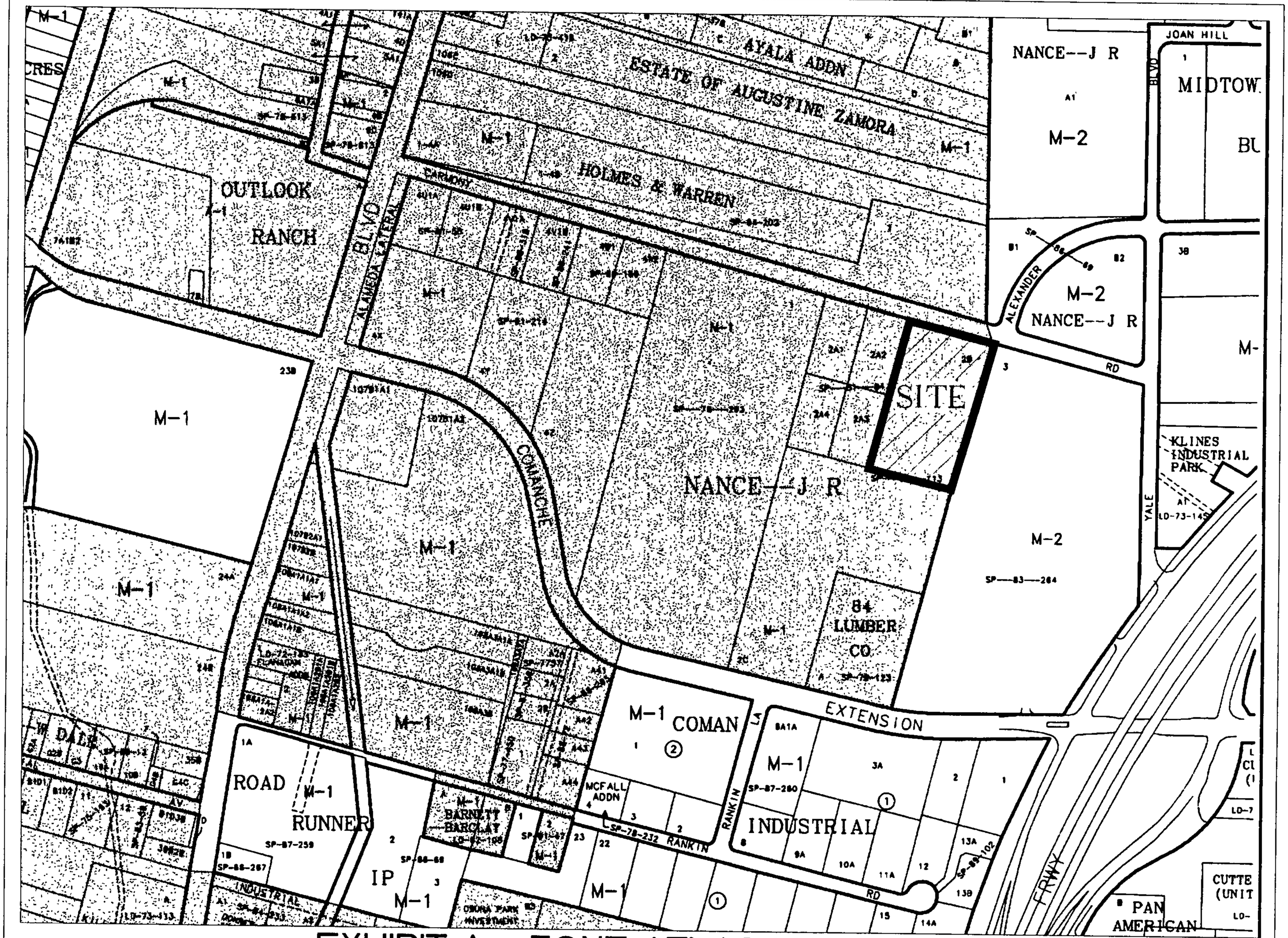


EXHIBIT A - ZONE ATLAS MAP: G-15-Z

Location

National Electric Supply is an existing, established industrial business. The 4.04-acre site is located on the northeast corner of Carmony Road and Alexander Drive. The site is shown on Exhibit A, Zone Atlas Map G-15, on page 1. The legal description is Tract 2-B Land of J.R. Nance. The purpose of this report is to provide the drainage analysis and management plan in connecting the National Electric Supply site's drainage into the new SAD 216 storm drain in Carmony Road and for new parking lot improvements. The new parking lot improvements will consist of the removal of an existing retention pond and the construction of a new detention pond along with repaving the entire parking lot.

Existing Drainage Conditions

The site is currently fully developed with a 56,880 square-foot building and a 100-percent paved parking lot. There is one onsite basin with a 100-year, 24-hour peak discharge of 18.49 cfs. There are no offsite flows that enter the site. Carmony Road, the road fronting the site, is currently under the SAD 216 construction. Before the construction of the SAD, the 18.49 cfs runoff sheet flowed into a retention pond located on the north side of the existing building and had no free discharge, refer to Exhibit C, Existing Basin Layout Map, on page 6. Due to the construction of the SAD in Carmony Road, the retention pond was filled and a new 24" RCP storm drain was stubbed out to the site to allow the developed flow to discharge into a new 84" RCP storm drain in Carmony Road, refer to Exhibit D, Storm Drain Layout Map, on page 7. The drainage basin parameters were set by the SAD 216 under developed conditions shown on Exhibit E, SAD Hymo Basin Parameter Worksheet, on page 8. The National Electric Supply site is located within Basin D-4 of Exhibit F, SAD Basin Map, on page 9, therefore, the developed land treatments for free discharge into the SAD must be less than or equal to 10% B, 10% C, and 80% D. These conditions have limited the free discharge

for the site to 16.95 cfs. Both Exhibit E and Exhibit F were obtained from the Larkin Group's Drainage Report for project SAD-BC-83-1 and SAD 216.

FEMA Map

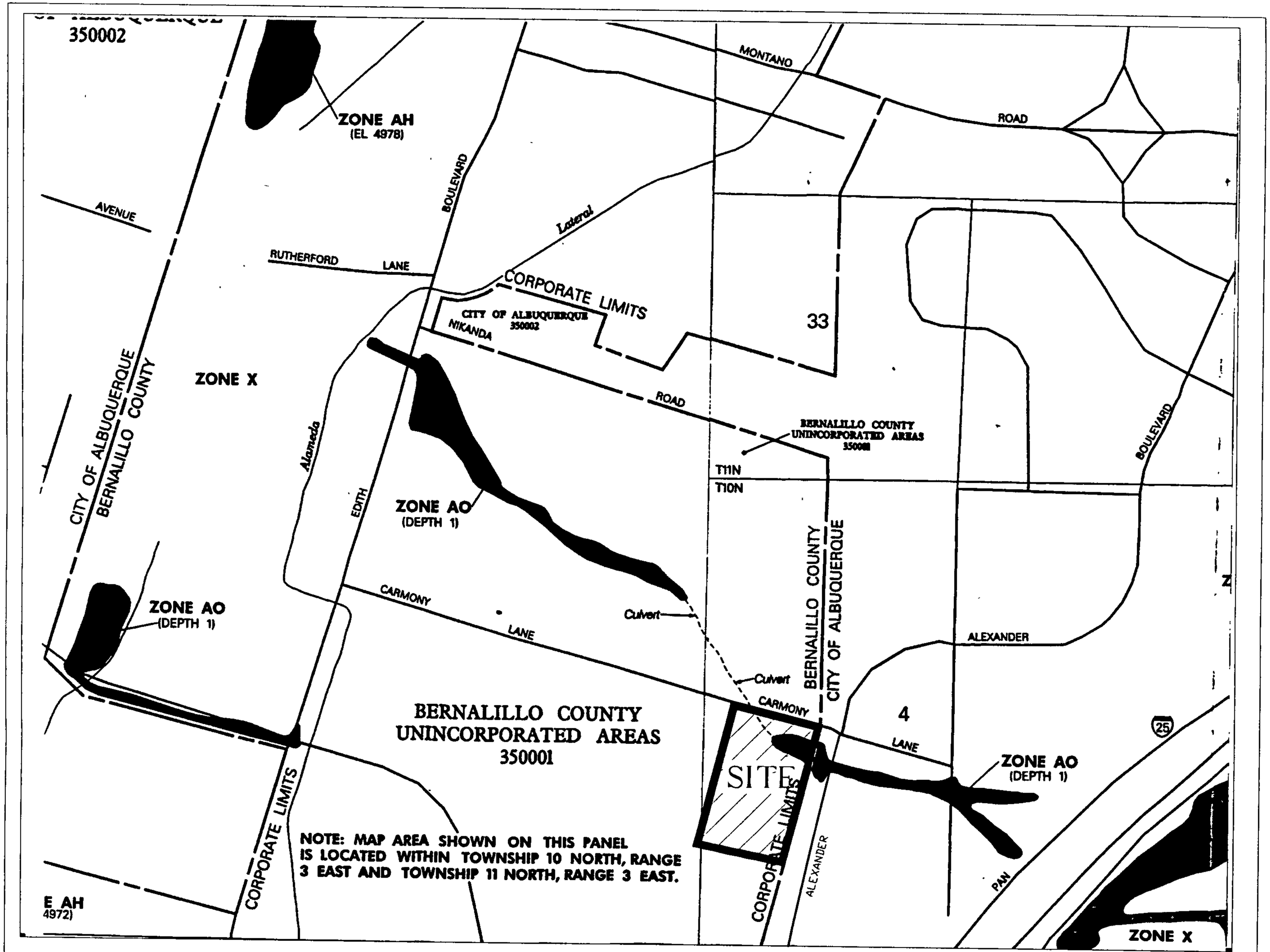
The site is located on FEMA Map Section 350001C Panel 138D, as shown on Exhibit B page 4. The map shows that the area of the retention pond lies within a 100-year flood plain. However, the SAD 216 has handled upland flows that are in the flood plain and routed those flows into the new 84" RCP. Therefore, the County is responsible for updating the new FEMA Map for this area.

On-Site Drainage Management Plan

As previously mentioned, SAD 216 is currently under construction. The SAD's basin parameters for the developed site restricted its free discharge to 16.95 cfs. Due to, the SAD restrictions, the construction of a small parking lot pond with a storage capacity of .0495 acre-feet is needed to match the discharge rate of the SAD. The pond's maximum water surface elevation is 5029.17 feet. A type double 'D' drop inlet and a 15" orifice plate will control the flow to the 16.95 cfs allowable from the detention pond. The new 24" RCP storm drain pipe will convey the flow from the pond to the new 84" storm drain pipe constructed by SAD 216 located in Carmony Road.

Criteria

The site was analyzed using the procedures outlined in the Development Process Manual Volume 2, Chapter 22. The AHYMO computer program was used to analyze all basins and the



FEMA MAP: 350001C-0138D

ponds. The existing and proposed conditions for all basins were analyzed for a 100-year, 24-hour rainfall event and an emergency overflow was designed for an additional 100-year, 24-hour storm.

Summary

By making the new parking lot improvements to the site it will allow for free discharge to the SAD 216. The new improvements consist of the removal of the existing retention pond and the construction of a new detention pond along with repaving the entire parking lot. A drop inlet will capture 100-percent of the flows generated within the developed site. A 15" orifice plate will control the flow to the 16.95 cfs allowable from the detention pond and the existing 40-foot wide drivepad will act as an emergency outflow weir located northwest of the drop inlet, refer to Exhibit D, Storm Drain Layout Map, on page 7. The new 24" RCP storm drain pipe will convey the flow from the pond to the new 84" storm drain pipe constructed by SAD 216 located in Carmony Road.

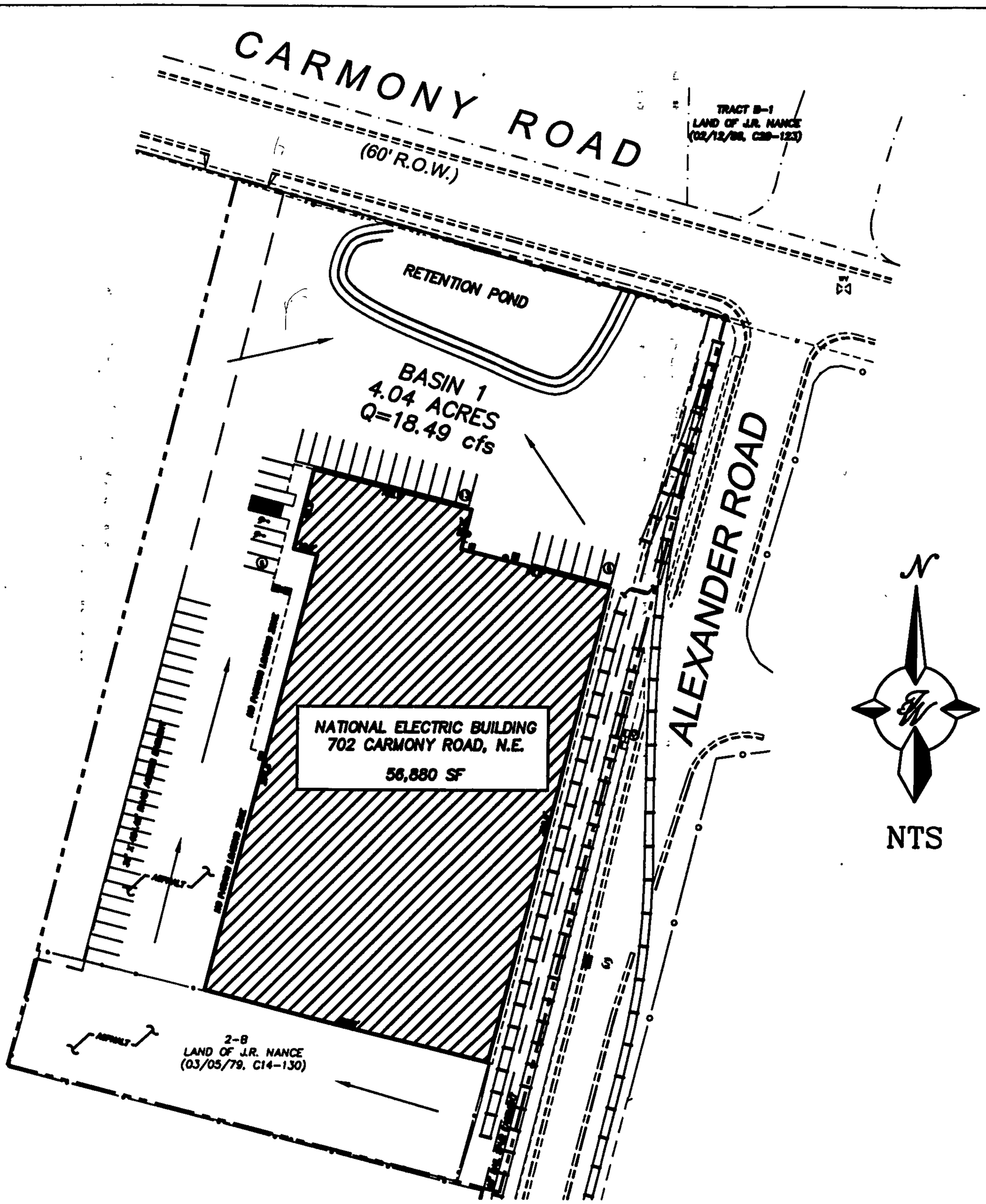


EXHIBIT C - EXISTING BASIN LAYOUT MAP

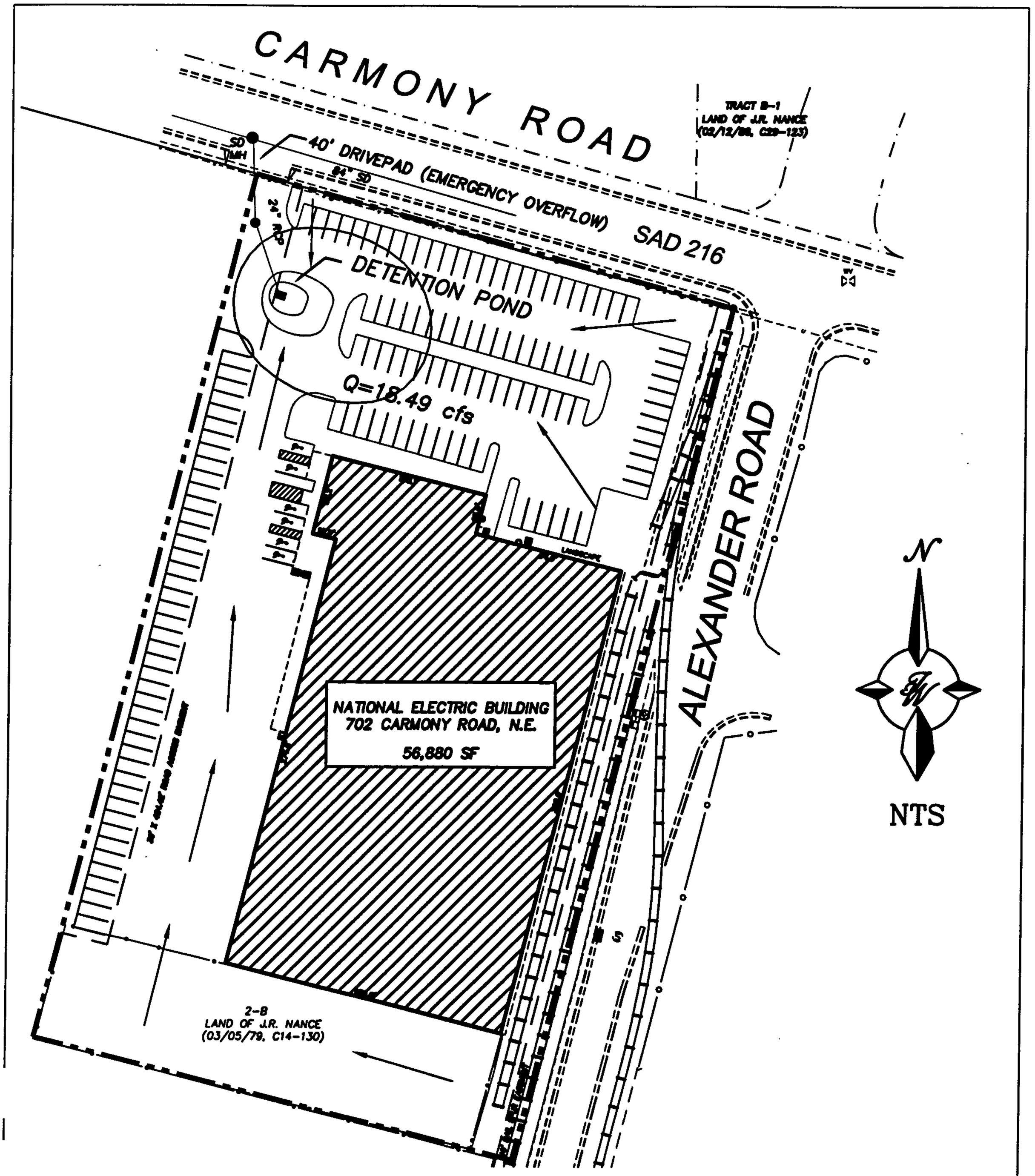


EXHIBIT D - STORM DRAIN LAYOUT MAP

EXHIBIT E - SAD HYMO BASIN PARAMETER WORKSHEET

AND

EXHIBIT F- SAD BASIN MAP

NOTE: THESE EXHIBITS ARE FROM THE SAD 216 HYDROLOGY SECTION AND SHOW THE ALLOWABLE DISCHARGE

TABLE NO. 2 - CONTD.

HYMO BASIN PARAMETER WORKSHEET

DEVELOPED CONDITIONS

PROJECT: SAD-BC-83-1 & SAD-216 BY: D.L.A. DATE: 7-3-91

Basin	Area (Sq. Mi.)	Length (ft.)	d Elev (ft.)	Slope (ft/ft)	K	V (ft/s) K√Slope	t(c) (hrs.) Length/V	t(p) (hrs.) 2/3 * t(c)	Surface Treatment Percent A	B	C	D
D-4	0.0475	100	7.0	0.070	2.0	5.29	0.005	0.003				
		200	4.0	0.020	2.0	2.83	0.020	0.013				
		300	3.0	0.010	2.0	2.00	0.042	0.028				
		650	2.0	0.003	2.0	1.11	0.163	0.109				
		700	7.0	0.010	3.0	3.00	0.065	0.043				
	TOTAL =						0.294	0.196	10	10	80	
D-5	0.0586	550	1.0	0.002	2.0	0.85	0.179	0.119				
		1,100	5.0	0.005	2.0	1.35	0.227	0.151				
		50	6.0	0.120	2.0	6.93	0.002	0.001				
		1,100	20.0	0.018	3.0	4.05	0.076	0.050				
	TOTAL =						0.483	0.322	10	10	80	
E-1	0.0506	600	6.0	0.010	2.0	2.00	0.083	0.056				
		1,500	24.0	0.016	3.0	3.79	0.110	0.073				
		700	3.0	0.004	3.0	1.96	0.099	0.066				
	TOTAL =						0.292	0.195	10	8	82	
K-1	0.0388	130	26.0	0.200	0.7	3.13	0.012	0.008				
		100	8.0	0.080	2.0	5.66	0.005	0.003				
		150	2.0	0.013	2.0	2.31	0.018	0.012				
		720	5.0	0.007	3.0	2.50	0.080	0.053				
		550	2.5	0.005	3.0	2.02	0.076	0.050				
	TOTAL =						0.190	0.127	10	10	80	

EXHIBIT E

SAD HYMO BASIN PARAMETER WORKSHEET

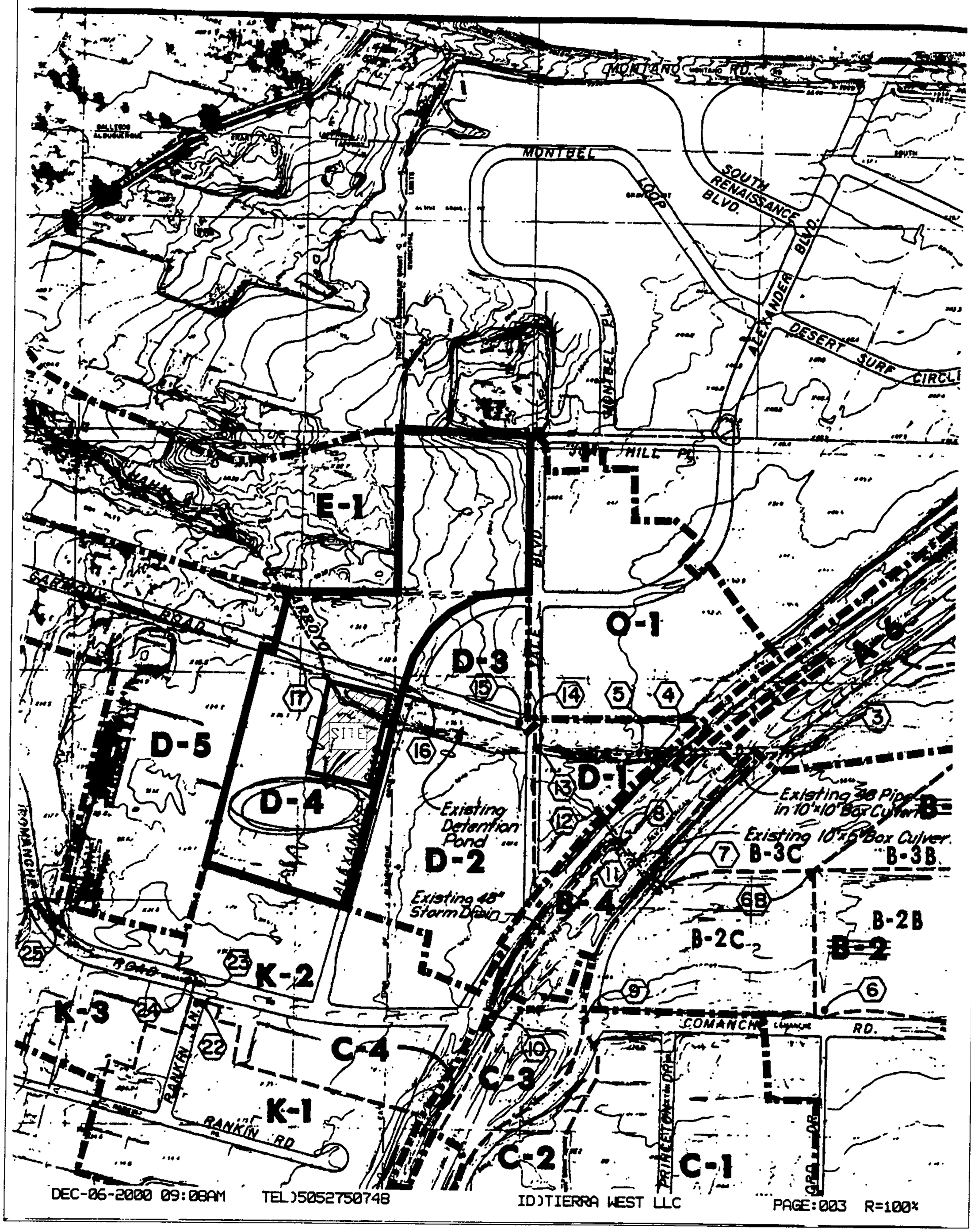


EXHIBIT F - SAD BASIN MAP

APPENDIX A

Runoff Data

DATA FOR HYDROLOGY CALCULATIONS

RUNOFF CALCULATIONS

THE SITE IS @ ZONE 2

LAND TREATMENT

VARIES (SEE ATTACHMENT)

DEPTH (INCHES) @ 100-YEAR STORM

P60 =	2.01	INCHES
P360 =	2.35	INCHES
P1440 =	2.75	INCHES

DEPTH (INCHES) @ 10-YEAR STORM (FACTOR 0.667)

P60 =	1.34	INCHES
P360 =	1.57	INCHES
P1440 =	1.83	INCHES

*** SEE THE SUMMARY OUTPUT FROM AHYMO CALCULATIONS**

*** ALSO SEE THE FOLLOWING SUMMARY TABLES**

LAND TREATMENT

BASIN	CONDITION	A	B	C	D
1	EXISTING	0	0	0	100
1	FUTURE	0	0	0	100
1	SAD DESIGN	0	10	10	80
	CRITERIA				

APPENDIX B

Pond Calculations

VOLUME CALCULATIONS

NEW POND

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 =	12.00	(@ Elevation 5028.50)
At =	6,400.00	(@ Elevation 5029.50)
Dt =	1.00	
C =	6388.00	
B Elev. =	28.50	

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
23.40	0.00	0.00000	0
24.40	1.00	0.00028	3.618
25.40	2.00	0.00055	6.929
26.40	3.00	0.00083	9.106
27.40	4.00	0.00110	10.855
28.50	5.10	0.00140	12.500
29.50	6.10	0.07350	13.826

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

C =	0.6	
Diameter (in	15	
Area (ft^2)=	1.22718463	
g =	32.2	
H (Ft) =	Depth of water above center of orifice	
Q (CFS)=	Flow	

APPENDIX C

Drop Inlet Calculations

DROP INLET CALCULATIONS

POND	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
1	Double - D	8.41	18.49	**0.2085**	**0.67**

ORIFICE EQUATION

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

NOTE: No clogging factor has been used in the effective area of the drop inlet because there is an emergency overflow at the drivepad.

STORM DRAIN INLET

EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

SINGLE 'D':

Area at the grate:

L = 38.375" - 7 (1/2" middle bars)
= 34.875"
= 2.906'

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

Area = 1.583 x 2.906
= 4.601 ft^2

Effective Area = 4.601- .5 (4.601) Clogging Factor
= 2.30 ft^2 at the grate

DOUBLE 'D':

Area at the grate:

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

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

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

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

APPENDIX D

Pipe Capacity

PIPE CAPACITY

Carmony Street has 24" SD Pipe - Site dev. Flows 16.95 cfs

D (in)	Slope (%)	Area (ft^2)	R	Provide (cfs)	Velocity (ft/s)
18	1	1.77	0.375	10.53	5.96
24	**1.65**	**3.14**	**0.5**	**29.14**	**9.27**
30	1	4.91	0.625	41.13	8.38
36	1	7.07	0.75	66.88	9.46
42	1	9.62	0.875	100.88	10.49
48	1	12.57	1	144.03	11.46
54	1	15.90	1.125	197.18	12.40
60	1	19.63	1.25	261.14	13.30
66	1	23.76	1.375	336.71	14.17
72	1	28.27	1.5	424.65	15.02

Manning's Formula:

Q=1.48 / n* AR^2/3s^1/2

V=Q*A

A= d^2*(3.14)/4 = 3.14

R=A/wp=d/4 = 0.5

s=1.65

d=24

Q= 29.14 cfs

V= 9.27 f/s

Q= discharge in cfs

V= velocity f/s

s= friction slope

A= area of conduit

R= hydraulic radius of conduit

n= 0.013

wp= wetted perimeter

d= diameter of pipe

Q(allowable) = 29.14 cfs > Q(required) = 16.95 cfs

APPENDIX E

Emergency Overflow Calculations

EMERGENCY OVERFLOW

Broad - Crested Weirs

Weir Equation

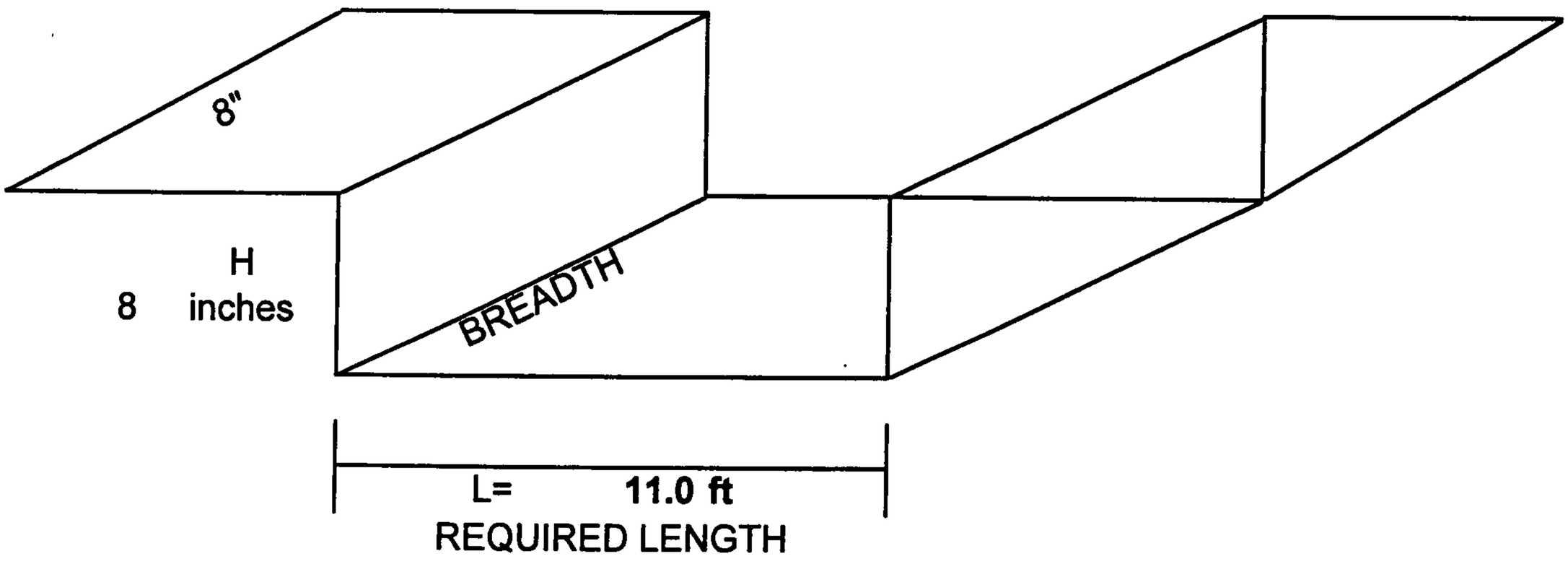
Q = CLH^(3/2)

Variables:

C = a constant value based on breast of crest of weir and head
L = length of weir
H = Height of water measured from center of orifice
Q = flow

Solve for L:

Q =	18.49	cfs
H =	8	inches
C =	3.08	constant
L =	**11.0**	**ft**



NOTE:
40 FT DRIVEPAD WILL BE USED AS EMERGENCY OUTFLOW

APPENDIX F

Runoff Summary Tables
for
Developed Drainage Basin

DRAINAGE BASIN

Developed

BASIN	CONDITION	AREA (SF)	AREA (AC)	AREA (MI^2)
1	EXISTING	174240.00	4.0000	0.00625
1	FUTURE	174240.00	4.0000	0.00625
1	SAD DESIGN	174240.00	4.0000	0.00625
	CRITERIA			

RUNOFF CALCULATION RESULTS

Developed

BASIN	CONDITION	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
1	EXISTING	18.49	12.22	0.839	0.533
1	FUTURE	18.49	12.22	0.839	0.533
1	SAD DESIGN	16.95	10.80	0.734	0.452
	CRITERIA				

DIFFERENCE	1.54	1.42	0.11	0.08

APPENDIX G

AHYMO Runoff Input and Summary Output
for
Developed Drainage Basin

```
**********************************************************************
*                          NATIONAL ELECTRIC                         *
*                             BASIN 1                                *
**********************************************************************
*  100-YEAR, 24-HR STORM  (UNDER EXISTING & FUTURE 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=0.05 HR
*
*
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=.00625 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
*
*
**********************************************************************
*                          NATIONAL ELECTRIC                         *
*                             BASIN 1                                *
**********************************************************************
* 10-YEAR, 24-HR STORM  (UNDER EXISTING & FUTURE 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=0.05 HR
*
*
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=.00625 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
*
*
*
FINISH
```

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02a RUN DATE (MON/DAY/YR) =01/08/2001
INPUT FILE = C:\MY FILES\20100\AHYMO\BASIN2.TXT USER NO.= AHYMO-I-9702a0100011K-SH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	100.10	-	1	.00625	18.49	.839	2.51715	1.500	4.624	RAIN24= 2.750
START										PER IMP= 100.00
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	100.10	-	1	.00625	12.22	.533	1.59950	1.500	3.056	RAIN24= 1.830
FINISH										PER IMP= 100.00

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02a
         RUN DATE (MON/DAY/YR) = 01/08/2001
         START TIME (HR:MIN:SEC) = 15:39:55     USER NO.= AHYMO-I-9702a0100011K-SH
         INPUT FILE = C:\MY FILES\20100\AHYMO\BASIN2.TXT


**********************************************************************
*                          NATIONAL ELECTRIC                         *
*                                                                    *
*                              BASIN 1                               *
**********************************************************************
*  100-YEAR, 24-HR STORM  (UNDER EXISTING & FUTURE 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=0.05 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=100.1 AREA=.00625 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 =  7.1
06420
      UNIT PEAK =   24.675    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 2.0100

      AREA =       .006250 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   100.10


    RUNOFF VOLUME =     2.51715 INCHES      =         .8390 ACRE-FEET
    PEAK DISCHARGE RATE =      18.49 CFS  AT   1.500 HOURS   BASIN AREA =    .0063 SQ. MI.

PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   100.10

    RUNOFF VOLUME =     2.51715 INCHES      =         .8390 ACRE-FEET
    PEAK DISCHARGE RATE =      18.49 CFS  AT   1.500 HOURS   BASIN AREA =    .0063 SQ. MI.


*
*
**********************************************************************
*                          NATIONAL ELECTRIC                         *
*                                                                    *
*                                BASIN 1                             *
**********************************************************************
```

```
* 10-YEAR, 24-HR STORM  (UNDER EXISTING & FUTURE 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=0.05 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    .0017    .0034    .0052    .0070    .0089    .0109
                      .0129    .0150    .0173    .0196    .0220    .0246    .0272
                      .0301    .0331    .0363    .0397    .0433    .0472    .0515
                      .0571    .0634    .0815    .1242    .1977    .3113    .4750
                      .6988    .8752    .9550   1.0215   1.0798   1.1320   1.1792
                     1.2223   1.2618   1.2982   1.3318   1.3628   1.3915   1.3979
                     1.4037   1.4092   1.4143   1.4191   1.4236   1.4279   1.4320
                     1.4359   1.4397   1.4433   1.4467   1.4501   1.4533   1.4564
                     1.4594   1.4624   1.4652   1.4680   1.4706   1.4733   1.4758
                     1.4783   1.4807   1.4831   1.4854   1.4877   1.4899   1.4921
                     1.4943   1.4964   1.4984   1.5004   1.5024   1.5044   1.5063
                     1.5082   1.5100   1.5119   1.5137   1.5154   1.5172   1.5189
                     1.5206   1.5223   1.5239   1.5255   1.5271   1.5287   1.5303
                     1.5318   1.5334   1.5349   1.5364   1.5378   1.5393   1.5407
                     1.5421   1.5435   1.5449   1.5463   1.5477   1.5490   1.5503
                     1.5517   1.5530   1.5543   1.5555   1.5568   1.5581   1.5593
                     1.5605   1.5618   1.5630   1.5642   1.5653   1.5665   1.5677
                     1.5689   1.5700   1.5711   1.5722   1.5734   1.5745   1.5756
                     1.5767   1.5778   1.5789   1.5799   1.5810   1.5821   1.5832
                     1.5843   1.5853   1.5864   1.5875   1.5885   1.5896   1.5906
                     1.5917   1.5927   1.5938   1.5948   1.5958   1.5969   1.5979
                     1.5989   1.5999   1.6010   1.6020   1.6030   1.6040   1.6050
                     1.6060   1.6070   1.6080   1.6090   1.6100   1.6109   1.6119
                     1.6129   1.6139   1.6148   1.6158   1.6168   1.6177   1.6187
                     1.6197   1.6206   1.6216   1.6225   1.6235   1.6244   1.6253
                     1.6263   1.6272   1.6281   1.6291   1.6300   1.6309   1.6318
                     1.6328   1.6337   1.6346   1.6355   1.6364   1.6373   1.6382
                     1.6391   1.6400   1.6409   1.6418   1.6427   1.6435   1.6444
                     1.6453   1.6462   1.6471   1.6479   1.6488   1.6497   1.6505
                     1.6514   1.6523   1.6531   1.6540   1.6548   1.6557   1.6565
                     1.6574   1.6582   1.6591   1.6599   1.6608   1.6616   1.6624
                     1.6633   1.6641   1.6649   1.6657   1.6666   1.6674   1.6682
                     1.6690   1.6698   1.6706   1.6715   1.6723   1.6731   1.6739
                     1.6747   1.6755   1.6763   1.6771   1.6779   1.6787   1.6795
                     1.6802   1.6810   1.6818   1.6826   1.6834   1.6842   1.6849
                     1.6857   1.6865   1.6872   1.6880   1.6888   1.6895   1.6903
                     1.6911   1.6918   1.6926   1.6933   1.6941   1.6949   1.6956
                     1.6964   1.6971   1.6978   1.6986   1.6993   1.7001   1.7008
                     1.7016   1.7023   1.7030   1.7038   1.7045   1.7052   1.7059
                     1.7067   1.7074   1.7081   1.7088   1.7095   1.7103   1.7110
                     1.7117   1.7124   1.7131   1.7138   1.7145   1.7152   1.7159
                     1.7166   1.7173   1.7180   1.7187   1.7194   1.7201   1.7208
                     1.7215   1.7222   1.7229   1.7236   1.7243   1.7250   1.7257
                     1.7263   1.7270   1.7277   1.7284   1.7290   1.7297   1.7304
                     1.7311   1.7317   1.7324   1.7331   1.7337   1.7344   1.7351
                     1.7357   1.7364   1.7371   1.7377   1.7384   1.7390   1.7397
                     1.7403   1.7410   1.7416   1.7423   1.7429   1.7436   1.7442
                     1.7449   1.7455   1.7462   1.7468   1.7474   1.7481   1.7487
                     1.7493   1.7500   1.7506   1.7512   1.7519   1.7525   1.7531
                     1.7538   1.7544   1.7550   1.7556   1.7563   1.7569   1.7575
                     1.7581   1.7587   1.7593   1.7600   1.7606   1.7612   1.7618
                     1.7624   1.7630   1.7636   1.7642   1.7648   1.7654   1.7661
                     1.7667   1.7673   1.7679   1.7685   1.7691   1.7696   1.7702
                     1.7708   1.7714   1.7720   1.7726   1.7732   1.7738   1.7744
                     1.7750   1.7756   1.7761   1.7767   1.7773   1.7779   1.7785
```

1.7791	1.7796	1.7802	1.7808	1.7814	1.7819	1.7825
1.7831	1.7837	1.7842	1.7848	1.7854	1.7859	1.7865
1.7871	1.7876	1.7882	1.7888	1.7893	1.7899	1.7905
1.7910	1.7916	1.7921	1.7927	1.7932	1.7938	1.7943
1.7949	1.7955	1.7960	1.7966	1.7971	1.7977	1.7982
1.7987	1.7993	1.7998	1.8004	1.8009	1.8015	1.8020
1.8025	1.8031	1.8036	1.8042	1.8047	1.8052	1.8058
1.8063	1.8068	1.8074	1.8079	1.8084	1.8090	1.8095
1.8100	1.8105	1.8111	1.8116	1.8121	1.8127	1.8132
1.8137	1.8142	1.8147	1.8153	1.8158	1.8163	1.8168
1.8173	1.8178	1.8184	1.8189	1.8194	1.8199	1.8204
1.8209	1.8214	1.8219	1.8225	1.8230	1.8235	1.8240
1.8245	1.8250	1.8255	1.8260	1.8265	1.8270	1.8275
1.8280	1.8285	1.8290	1.8295	1.8300		

```
*
*
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=.00625 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 =  7.1
06420
        UNIT PEAK =   24.675    CFS   UNIT VOLUME =    .9987      B =   526.28      P60 = 1.3400

        AREA =       .006250 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    PRINT HYD            ID=1 CODE=1

                                        PARTIAL HYDROGRAPH   100.10

        RUNOFF VOLUME =     1.59950 INCHES      =         .5332 ACRE-FEET
        PEAK DISCHARGE RATE =      12.22 CFS  AT   1.500 HOURS   BASIN AREA =    .0063 SQ. MI.


    *
    *
    *
    FINISH

        NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 15:39:55
```

```
**********************************************************************
*                          NATIONAL ELECTRIC                         *
*                             BASIN 1                                *
**********************************************************************
*       100-YEAR, 24-HR STORM  (ALLOWABLE 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=0.05 HR
*
*
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=.00625 SQ MI
                     PER A=0.00 PER B=10.00 PER C=10.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
**********************************************************************
*                          NATIONAL ELECTRIC                         *
*                             BASIN 1                                *
**********************************************************************
*       10-YEAR, 24-HR STORM  (ALLOWABLE 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=0.05 HR
*
*
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=.00625 SQ MI
                     PER A=0.00 PER B=10.00 PER C=10.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
*
FINISH
```

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02a RUN DATE (MON/DAY/YR) =01/08/2001
INPUT FILE = c:\my files\20100\ahymo\basin1.txt USER NO.= AHYMO-I-9702a0100011K-SH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	100.10	-	1	.00625	16.95	.734	2.20093	1.500	4.238	RAIN24= 2.750
START										PER IMP= 80.00
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	100.10	-	1	.00625	10.80	.452	1.35543	1.500	2.700	RAIN24= 1.830
FINISH										PER IMP= 80.00

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02a
         RUN DATE (MON/DAY/YR) = 01/08/2001
         START TIME (HR:MIN:SEC) = 22:05:10     USER NO.= AHYMO-I-9702a0100011K-SH
         INPUT FILE = c:\my files\20100\ahymo\basin1.txt

**********************************************************************
*                          NATIONAL ELECTRIC                         *
*                                                                    *
*                             BASIN 1                                *
**********************************************************************
*       100-YEAR, 24-HR STORM  (ALLOWABLE 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=0.05 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=100.1 AREA=.00625 SQ MI
PER A=0.00 PER B=10.00 PER C=10.00 PER D=80.00
TP=-0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.1
06420
UNIT PEAK = 19.740 CFS UNIT VOLUME = .9986 B = 526.28 P60 = 2.0100

AREA = .005000 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .119767HR TP = .133300HR K/TP RATIO = .898476 SHAPE CONSTANT, N = 3.9
44947
UNIT PEAK = 3.2960 CFS UNIT VOLUME = .9971 B = 351.48 P60 = 2.0100

AREA = .001250 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 100.10

RUNOFF VOLUME = 2.20093 INCHES = .7336 ACRE-FEET
PEAK DISCHARGE RATE = 16.95 CFS AT 1.500 HOURS BASIN AREA = .0063 SQ. MI.

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 100.10

RUNOFF VOLUME = 2.20093 INCHES = .7336 ACRE-FEET
PEAK DISCHARGE RATE = 16.95 CFS AT 1.500 HOURS BASIN AREA = .0063 SQ. MI.

```
*
*
**********************************************************************
*                          NATIONAL ELECTRIC                         *

*                                   BASIN 1                          *
**********************************************************************
*       10-YEAR, 24-HR STORM  (ALLOWABLE 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=0.05 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   .0017   .0034   .0052   .0070   .0089   .0109
   .0129   .0150   .0173   .0196   .0220   .0246   .0272
   .0301   .0331   .0363   .0397   .0433   .0472   .0515
   .0571   .0634   .0815   .1242   .1977   .3113   .4750
   .6988   .8752   .9550  1.0215  1.0798  1.1320  1.1792
  1.2223  1.2618  1.2982  1.3318  1.3628  1.3915  1.3979
  1.4037  1.4092  1.4143  1.4191  1.4236  1.4279  1.4320
  1.4359  1.4397  1.4433  1.4467  1.4501  1.4533  1.4564
  1.4594  1.4624  1.4652  1.4680  1.4706  1.4733  1.4758
  1.4783  1.4807  1.4831  1.4854  1.4877  1.4899  1.4921
  1.4943  1.4964  1.4984  1.5004  1.5024  1.5044  1.5063
  1.5082  1.5100  1.5119  1.5137  1.5154  1.5172  1.5189
  1.5206  1.5223  1.5239  1.5255  1.5271  1.5287  1.5303
  1.5318  1.5334  1.5349  1.5364  1.5378  1.5393  1.5407
  1.5421  1.5435  1.5449  1.5463  1.5477  1.5490  1.5503
  1.5517  1.5530  1.5543  1.5555  1.5568  1.5581  1.5593
  1.5605  1.5618  1.5630  1.5642  1.5653  1.5665  1.5677
  1.5689  1.5700  1.5711  1.5722  1.5734  1.5745  1.5756
  1.5767  1.5778  1.5789  1.5799  1.5810  1.5821  1.5832
  1.5843  1.5853  1.5864  1.5875  1.5885  1.5896  1.5906
  1.5917  1.5927  1.5938  1.5948  1.5958  1.5969  1.5979
  1.5989  1.5999  1.6010  1.6020  1.6030  1.6040  1.6050
  1.6060  1.6070  1.6080  1.6090  1.6100  1.6109  1.6119
  1.6129  1.6139  1.6148  1.6158  1.6168  1.6177  1.6187
  1.6197  1.6206  1.6216  1.6225  1.6235  1.6244  1.6253
  1.6263  1.6272  1.6281  1.6291  1.6300  1.6309  1.6318
  1.6328  1.6337  1.6346  1.6355  1.6364  1.6373  1.6382
  1.6391  1.6400  1.6409  1.6418  1.6427  1.6435  1.6444
  1.6453  1.6462  1.6471  1.6479  1.6488  1.6497  1.6505
  1.6514  1.6523  1.6531  1.6540  1.6548  1.6557  1.6565
  1.6574  1.6582  1.6591  1.6599  1.6608  1.6616  1.6624
  1.6633  1.6641  1.6649  1.6657  1.6666  1.6674  1.6682
  1.6690  1.6698  1.6706  1.6715  1.6723  1.6731  1.6739
  1.6747  1.6755  1.6763  1.6771  1.6779  1.6787  1.6795
  1.6802  1.6810  1.6818  1.6826  1.6834  1.6842  1.6849
  1.6857  1.6865  1.6872  1.6880  1.6888  1.6895  1.6903
  1.6911  1.6918  1.6926  1.6933  1.6941  1.6949  1.6956
  1.6964  1.6971  1.6978  1.6986  1.6993  1.7001  1.7008
  1.7016  1.7023  1.7030  1.7038  1.7045  1.7052  1.7059
  1.7067  1.7074  1.7081  1.7088  1.7095  1.7103  1.7110
  1.7117  1.7124  1.7131  1.7138  1.7145  1.7152  1.7159
  1.7166  1.7173  1.7180  1.7187  1.7194  1.7201  1.7208
  1.7215  1.7222  1.7229  1.7236  1.7243  1.7250  1.7257
  1.7263  1.7270  1.7277  1.7284  1.7290  1.7297  1.7304
  1.7311  1.7317  1.7324  1.7331  1.7337  1.7344  1.7351
  1.7357  1.7364  1.7371  1.7377  1.7384  1.7390  1.7397
  1.7403  1.7410  1.7416  1.7423  1.7429  1.7436  1.7442
```

```
1.7449  1.7455  1.7462  1.7468  1.7474  1.7481  1.7487
1.7493  1.7500  1.7506  1.7512  1.7519  1.7525  1.7531
1.7538  1.7544  1.7550  1.7556  1.7563  1.7569  1.7575
1.7581  1.7587  1.7593  1.7600  1.7606  1.7612  1.7618
1.7624  1.7630  1.7636  1.7642  1.7648  1.7654  1.7661
1.7667  1.7673  1.7679  1.7685  1.7691  1.7696  1.7702
1.7708  1.7714  1.7720  1.7726  1.7732  1.7738  1.7744
1.7750  1.7756  1.7761  1.7767  1.7773  1.7779  1.7785
1.7791  1.7796  1.7802  1.7808  1.7814  1.7819  1.7825
1.7831  1.7837  1.7842  1.7848  1.7854  1.7859  1.7865
1.7871  1.7876  1.7882  1.7888  1.7893  1.7899  1.7905
1.7910  1.7916  1.7921  1.7927  1.7932  1.7938  1.7943
1.7949  1.7955  1.7960  1.7966  1.7971  1.7977  1.7982
1.7987  1.7993  1.7998  1.8004  1.8009  1.8015  1.8020
1.8025  1.8031  1.8036  1.8042  1.8047  1.8052  1.8058
1.8063  1.8068  1.8074  1.8079  1.8084  1.8090  1.8095
1.8100  1.8105  1.8111  1.8116  1.8121  1.8127  1.8132
1.8137  1.8142  1.8147  1.8153  1.8158  1.8163  1.8168
1.8173  1.8178  1.8184  1.8189  1.8194  1.8199  1.8204
1.8209  1.8214  1.8219  1.8225  1.8230  1.8235  1.8240
1.8245  1.8250  1.8255  1.8260  1.8265  1.8270  1.8275
1.8280  1.8285  1.8290  1.8295  1.8300

*
*
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=.00625 SQ MI
                     PER A=0.00 PER B=10.00 PER C=10.00 PER D=80.00
                     TP=-0.1333 HR MASS RAINFALL=-1

        K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.1
06420
        UNIT PEAK =   19.740     CFS   UNIT VOLUME =     .9986        B =   526.28       P60 = 1.3400

        AREA =        .005000 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


        K =    .123717HR     TP =    .133300HR     K/TP RATIO =    .928113      SHAPE CONSTANT, N =  3.8
12062
        UNIT PEAK =   3.2112     CFS   UNIT VOLUME =     .9973        B =   342.44       P60 = 1.3400

        AREA =        .001250 SQ MI     IA =     .42500 INCHES     INF =    1.04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

PRINT HYD            ID=1 CODE=1

                                    PARTIAL HYDROGRAPH   100.10

    RUNOFF VOLUME =      1.35543 INCHES      =          .4518 ACRE-FEET
    PEAK DISCHARGE RATE =       10.80 CFS  AT    1.500 HOURS    BASIN AREA =    .0063 SQ. MI.


*
*
*
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 22:05:10
```

APPENDIX H

AHYMO Input and Summary Output
for
Ponding

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02a RUN DATE (MON/DAY/YR) =01/08/2001
INPUT FILE = C:\MY FILES\20100\AHYMO\POND2.TXT USER NO.= AHYMO-I-9702a0100011K-SH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										
RAINFALL TYPE= 2										TIME= .00
COMPUTE NM HYD	100.10	-	1	.00625	18.49	.839	2.51715	1.500	4.624	RAIN24= 2.750
ROUTE RESERVOIR	501.10	1	2	.00625	13.38	.841	2.52217	1.600	3.346	PER IMP= 100.00
FINISH										AC-FT= .049

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02a
         RUN DATE (MON/DAY/YR) = 01/08/2001
         START TIME (HR:MIN:SEC) = 23:08:25     USER NO.= AHYMO-I-9702a0100011K-SH
         INPUT FILE = C:\MY FILES\20100\AHYMO\POND2.TXT


**********************************************************************
*                          NATIONAL ELECTRIC                         *

*                            BASIN & POND                            *
**********************************************************************
*                    INPUT FILE FOR 100 YR, 24 HR                    *
**********************************************************************
*       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=0.05 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=100.1 AREA=0.00625 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 =  7.1
06420
      UNIT PEAK =   24.675     CFS   UNIT VOLUME =     .9987       B =   526.28      P60 = 2.0100

      AREA =       .006250 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
      RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   100.10


    RUNOFF VOLUME =      2.51715 INCHES      =         .8390 ACRE-FEET
    PEAK DISCHARGE RATE =      18.49 CFS  AT   1.500 HOURS   BASIN AREA =    .0063 SQ. MI.


*
*
*
*POND
*
ROUTE RESERVOIR      ID=2 HYD NO=501.1 INFLOW ID=1 CODE=24
                     OUTFLOW (CFS) STORAGE(AC-FT) ELEVATION(FT)
                               0.0000          0.00000          23.40
                               3.6180          0.00028          24.40
                               6.9290          0.00055          25.40
                               9.1060          0.00083          26.40
                               10.855          0.00110          27.40
                               12.500          0.00140          28.50
                               13.826          0.07350          29.50

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	23.40	.000	.00
1.20	.54	23.54	.000	.52
2.40	.78	23.40	.000	.00
3.60	.13	23.41	.000	.04
4.80	.11	23.43	.000	.10
6.00	.13	23.44	.000	.13
7.20	.13	23.44	.000	.13
8.40	.12	23.43	.000	.12
9.60	.11	23.43	.000	.11
10.80	.10	23.43	.000	.10
12.00	.10	23.43	.000	.10
13.20	.09	23.43	.000	.09
14.40	.09	23.42	.000	.09
15.60	.08	23.42	.000	.08
16.80	.08	23.42	.000	.08
18.00	.08	23.42	.000	.08
19.20	.07	23.42	.000	.07
20.40	.07	23.42	.000	.07
21.60	.07	23.42	.000	.07
22.80	.06	23.42	.000	.06
24.00	.06	23.42	.000	.06

PEAK DISCHARGE = 13.384 CFS - PEAK OCCURS AT HOUR 1.60
MAXIMUM WATER SURFACE ELEVATION = 29.166
MAXIMUM STORAGE = .0495 AC-FT INCREMENTAL TIME= .050000HRS

*
*
*

PRINT HYD ID=2 CODE=1

OUTFLOW HYDROGRAPH RESERVOIR 501.10

RUNOFF VOLUME = 2.52217 INCHES = .8407 ACRE-FEET
PEAK DISCHARGE RATE = 13.38 CFS AT 1.600 HOURS BASIN AREA = .0063 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 23:08:25