CITY OF
Albuquerque
Public Works Department

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

April 18, 1997

Ronald Bohannan
Tierra West
4421 McCleod Rd. Suite D
Albuquerque, New Mexico 87109

RE: ENGINEER CERTIFICATION FOR PRICE/COSTCO (F16-D5G) ENGINEER'S CERTIFICATION STATEMENT DATED 4/15/97

Dear Mr. Bohannan:

Based on the information provided on your April 15,1997 submittal, Engineer Certification for the above referenced site is acceptable.

If I can be of further assistance, please feel free to contact me 924-3986.

C: Andrew Garcia
File

Sincerely

Bernie J. Montoya CE
Engineering Associate

CITY OF
Albuquerque

August 5, 1996

Martin J. Chávez, Mayor

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

RE: PRICE/COSTCO (F16-D5G). UPDATED DRAINAGE REPORT FOR FINAL PLAT AND BUILDING PERMIT APPROVALS. ENGINEER'S STAMP DATED 7-16-96.

Dear Mr. Biazar:

Based on the updated information provided on your July 30, 1996 submittal, the above referenced project is approved for Final Plat and Building Permit.

Prior to Certificate of Occupancy, an Engineer's Certification is required.

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

CITY OF
Albuquerque

July 3, 1996

Martin J. Chávez, Mayor

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

RE: PRICE/COSTCO (F16-D5G) GRADING AND DRAINAGE PLAN FOR FINAL PLAT AND BUILDING PERMIT APPROVALS. ENGINEER'S STAMP DATED 6-24-96.

Dear Mr. Biazar:

Based on the information provided on your June 27, 1996 submittal, the above referenced project is approved for Final Plat and Building Permit.

Prior to Certificate of Occupancy, an Engineer's Certification is required.

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 REPORT

for

Renaissance Tract 4B and 4C

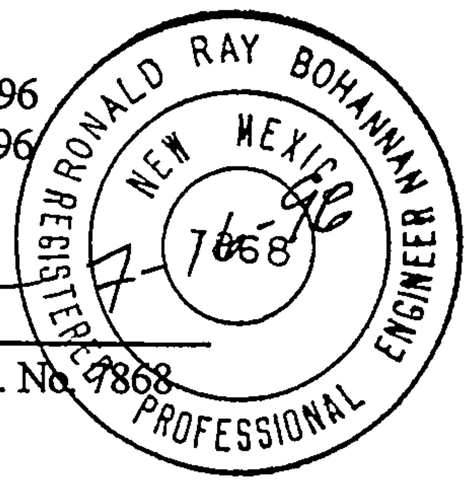
Prepared by

Tierra West Development Management Sevices
4421 McLeod Road NE, Suite D
Albuquerque, New Mexico 87109

Prepared for

Jack S. Frank
Price/Costco Asst. V.P.
Director of Development
999 Lake Drive
Issaquah, WA 98027

April 1996
Revised June 1996
Revised July 1996



Ronald R. Bohannan P.E. No. 7868

Location

Tract 4, Renaissance is located east of Alexander Boulevard between Montano Road and Renaissance Boulevard, NE. Price/Costco is proposing to build a new 159,587 square foot building on a portion of Tract 4 that has been designated as Tract 4B. The site is shown on the attached Zone Atlas Map F-16 and contains a total of 23.4 acres of which Price/Costco will occupy approximately 14.8 acres. A future development has been shown on the balance of the property on Tract 4 and designated as Tract 4A. The adjoining Tract 4A is located to the east of Tract 4B between Century Boulevard and the realignment of Mercantile Avenue and Renaissance Boulevard. Tract 4A contains 8.6 acres and has two proposed commercial buildings totaling 75,000 SF. Tract 4C contains 1.46 acres and is located at the southwest corner of Tract 4. It will be used by Price/Costco for additional parking. The purpose of this report is to provide the drainage analysis and management plan to construct the new Price/Costco building as well as subdividing Tract 4 into three parcels.

Existing Drainage Conditions

The site is currently undeveloped. All of the undeveloped flows sheet flow to the corner of Alexander and Renaissance to a temporary pond. This pond fills and then discharges clean water to both Alexander and Renaissance Boulevards.

The undeveloped flow has been divided into two basins. Basin 1 contains the Price/Costco site and Tract 4C, while basin 2 delineates Tract 4A which will be developed in the future. The undeveloped flow of Tract 4A will be routed to a new desilting pond and then allowed to spill over to the Price/Costco site. The developed flows of Tract 4A will be routed to the storm drain in Renaissance Boulevard upon development of Tract 4A. Basin 1 has a runoff flow of 33.73 cfs while Basin 2 has a runoff flow of 21.08 cfs.

FEMA Map and Soil Condition

The site is located on FEMA Map section 350002 panel 16 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 different soil types from the Soil Conservation Service Survey of Bernilillo 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 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 site is being developed in two phases. Phase 1 will build Tract 4B on which Price/Costco will be located. A temporary desilting basin and minor grading will be performed on Tract 4A (Phase 2) to direct the undeveloped flow to the desilting pond. These flows will drop any sediment in the desilting pond and enter the site being built for Price/Costco. When Tract 4A is developed the developed flows will be detained on-site in a parking lot pond and then directed to the storm sewer in Renaissance Boulevard. All the sites are subject to a limited discharge due to downstream constraints.

Phase 1

According to the Renaissance Master Plan only 0.1 cfs/acre can be discharged from the site. The site is 14.8 acres, consequently 1.48 cfs of runoff is allowed for Tract 4B. The entire site has been divided into nine different detention basins and ten different ponds. Basins 1, 2, 4-9 fall within Tract 4B and Tract 4C in order to pond the storm water and allow the release rate to be controlled to the allowable 1.48 cfs or less. Orifice plates have been used in the drop inlets to

reduce the amount of discharge. Two storm drain lines collect the runoff from the nine basins and convey it to the storm drain lines in Alexander Boulevard. The two different routes are routed to pond 2 which limits the combined discharge to 1.37 cfs which is less than 1.48 cfs and within the guidelines established by the Renaissance Master Plan.

The following is a tabulation of the routing used to collect all of the flows.

Route 1

Pond 6 will drain to pond 7 with a discharge of 0.04 cfs.

Pond 7 will drain to pond 8 with a discharge of 0.06 cfs.

Pond 8 will drain to ponds 9 and 10 which act as one large pond with a discharge of 0.06 cfs.

Ponds 9 and 10 will drain to pond 1 with a discharge of 2.15 cfs.

Route 2

Pond 5 will drain to pond 4 with a discharge of 3.64 cfs.

Pond 4 will drain to pond 1 with a discharge of 6.87 cfs.

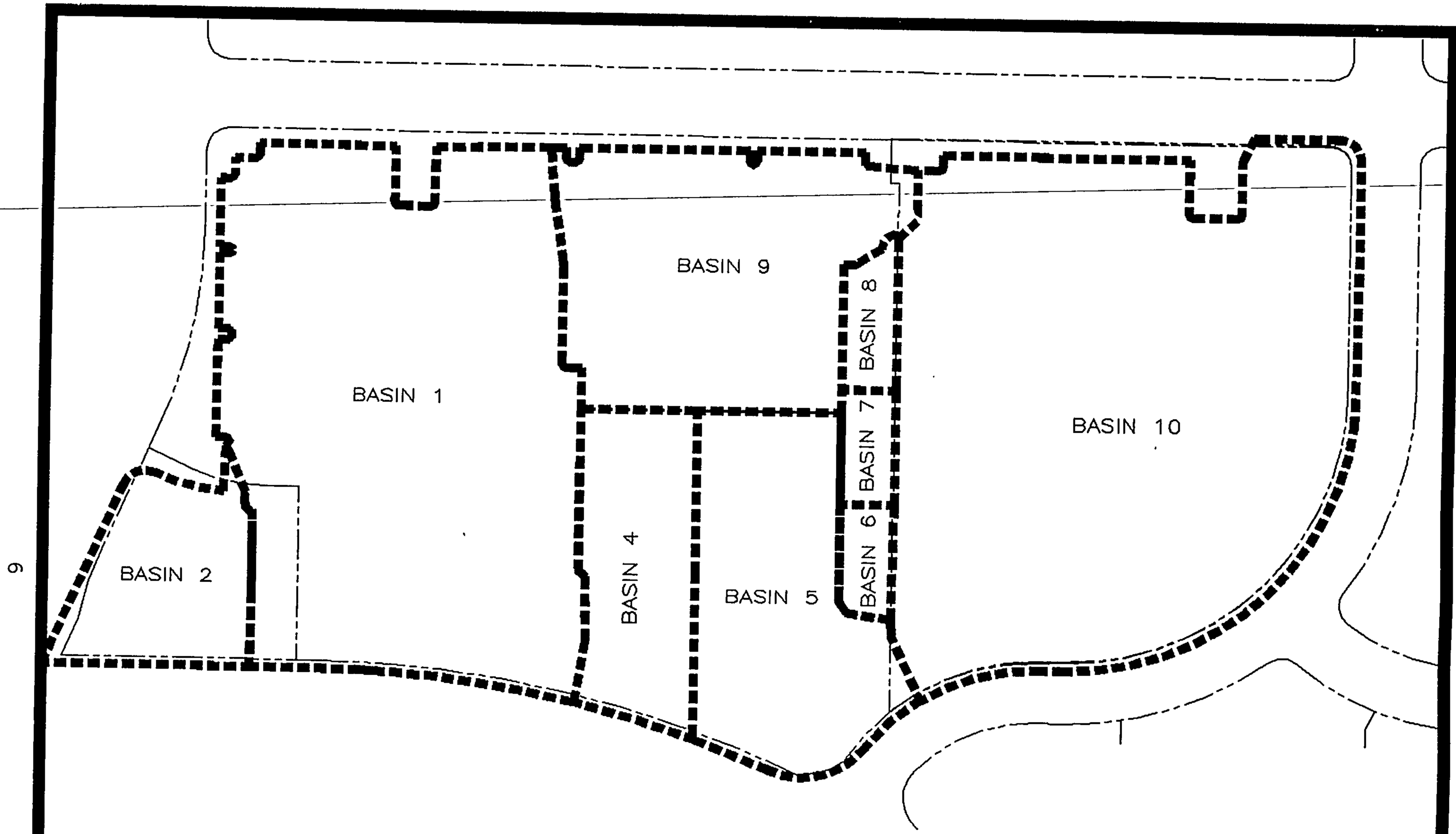
Pond 1 will drain to pond 2 with a discharge of 0.99 cfs.

Pond 2 will outflow to an existing manhole in Alexander Boulevard at a rate of 1.37 cfs limited by a 4 inch orifice plate. The storm sewer in Alexander drains to the Renaissance Detention Pond.

The existing runoff from Basin 10 (Tract 4A) will be captured in a proposed desilting pond within Tract 4A. A proposed berm on the east side of Tract 4B between 4B and 4A will also ensure that no upland flows enter Tract 4B from the east.

Phase 2

A final development plan will be submitted for Tract 4A prior to the build out of the tract. The plan shown is conceptual only.



PHASE 1
BASIN LAYOUT

Tract 4A:

The drainage management plan has shown Tract 4A will be divided into five different basins as shown on the Drainage and Grading Plan. Orifice plates have been used in the drop inlets to reduce the amount of discharge to only 0.1 cfs/acre. The runoff will be drained from the site in two different routes.

Route 1

Basin A and basin E of Tract 4A will drain to basin 9 located within Tract 4B and then be routed to Alexander Boulevard.

Route 2

Pond D will drain into pond C with a discharge flow of 0.05 cfs.

Pond C will drain to pond B with a discharge flow of 3.69 cfs.

Pond B will drain into the existing drop inlet in Renaissance Boulevard with a discharge flow of 0.83 cfs limited by a 3½ inch orifice plate. This is less than the allowable discharge of 0.86 cfs.

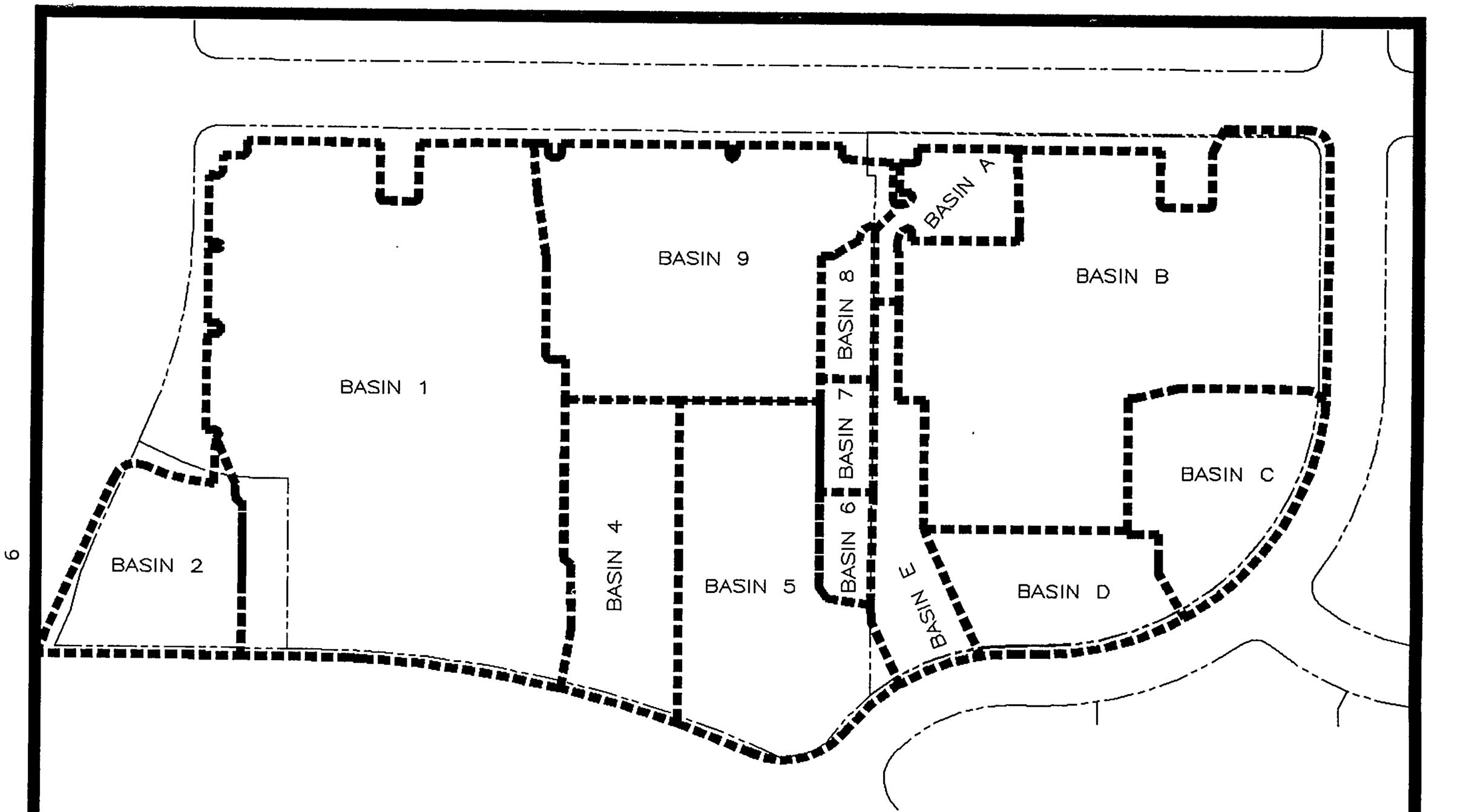
Summary

Phase 1

Tract 4B contains eight basins which will be routed through nine ponds and will limit the developed flow to 1.37 cfs. A 4 inch orifice plate on the last pond limits the flow from the site. All upland flows will be diverted using berms to direct the runoff to the new desilting pond located adjacent to Tract 4B. Clean water will spill over from Tract 4A into the site to the ponding areas.

Phase 2

Tract 4A will be divided into five different basins. Two of the basins will drain to Tract 4B and be routed to an existing manhole in Alexander Boulevard. The other three basins are routed through three ponds and are limited to a 0.83 cfs discharge by a proposed 3½ inch orifice plate. These flows will be routed to the storm drain in Renaissance Boulevard. Upon final development a new submittal will be made on the phase 2 project.



ULTIMATE (PHASE 2)

BASIN LAYOUT

RUNOFF CALCULATIONS

The site is @ Zone 2

LAND TREATMENT

Proposed
D = 90 %
B = 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.

TRACT 4 - EXISTING

DRAINAGE BASINS - EXISTING

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
1	645090.49	14.8092	0.023139
2	403132.88	9.2547	0.014460

BASINS RUNOFF CALCULATION RESULTS - EXISTING

BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
1	33.73	13.84	0.96	0.343
2	21.08	8.65	0.6	0.215

PHASE 1

DRAINAGE BASINS - PROPOSED

SUB-BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
1	304535.25	6.9912	0.010924
2	53578.32	1.2300	0.001922
4	60440.28	1.3875	0.002168
5	91550.02	2.1017	0.003284
6	10274.83	0.2359	0.000369
7	10660.89	0.2447	0.000382
8	12621.95	0.2898	0.000453
9	166445.07	3.8211	0.005970
10	357069.51	8.1972	0.012808

BASINS RUNOFF CALCULATION RESULTS - PROPOSED

SUB-BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
1	31.38	20.33	1.261	0.787
2	2.84	1.16	0.080	0.029
4	6.24	4.04	0.250	0.156
5	9.45	6.12	0.379	0.236
6	1.08	0.7	0.043	0.027
7	1.11	0.72	0.044	0.028
8	1.32	0.85	0.052	0.033
9	17.16	11.11	0.689	0.430
10	18.89	7.74	0.532	0.191

NOTE: BASIN 3 DOES NOT EXIST AND HAS BEEN DELIBERATELY LEFT OUT

PHASE 2 - TRACT 4A

DRAINAGE BASINS - PROPOSED

SUB-BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
A	24634.58	0.5655	0.000884
B	205654.18	4.7212	0.007377
C	51910.10	1.1917	0.001862
D	46278.70	1.0624	0.001660
E	28591.95	0.6564	0.001026

BASINS RUNOFF CALCULATION RESULTS - PROPOSED

SUB-BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
A	2.56	1.65	0.102	0.064
B	21.2	13.73	0.851	0.531
C	5.36	3.47	0.215	0.134
D	4.78	3.1	0.192	0.12
E	2.96	1.92	0.118	0.074

SEE THE FOLLOWING SHEET FOR SAMPLE CALCULATION ON THE BASINS RUNOFF

DROP INLET CALCULATIONS

Orifice Equation

Q = CA sqrt(2gH)

C = 0.6

g = 32.2

PRICE/COSTCO (TRACT 4B)

POND	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
1	4.60	31.38	2.0073	2
2	2.30	2.84	0.0658	1.5
4	2.30	6.24	0.3175	0.5
5	2.30	9.45	0.7281	0.75
6	2.30	1.08	0.0095	0.75
7	2.30	1.11	0.0100	0.75
8	2.30	1.32	0.0142	0.75
9	4.21	17.16	0.7166	1.5

TRACT 4A

POND	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
B	4.21	21.2	1.0938	1.5
C	2.30	5.36	0.2343	1
D	2.30	4.78	0.1863	1.26

VOLUME OF DESILTING POND

VOLUME = (AREA OF TOP * AREA OF BOTTOM)/2 * DEPTH

Tract 4A

AREA OF TOP (FT^2) =	30000
AREA OF BOTTOM (FT^2) =	27264
SIDE SLOPE =	4:1
DEPTH (FT) =	1
VOLUME PROVIDED (CFS) =	28632
VOLUME REQUIRED (CFS) =	23123.92

OVERFLOW FOR DESILTING POND

Tract 4A

WEIR EQUATION Q = CLH^3/2	
Q (BASIN A AND E) =	5.52
C =	2.95
H (FT) =	0.5
L (FT) =	?

L (FT) = 5.292514

USE 5 FEET 4 INCHES FOR LENGTH OF SPILLWAY

TRACT 4B PONDS - PROPOSED

POND	AREA (SF)	AREA (AC)	AREA (MI^2)
1	95529.95	2.1931	0.003427
2	14508.43	0.3331	0.000520
4	8800.00	0.2020	0.000316
5	12935.75	0.2970	0.000464
6	10274.83	0.2359	0.000369
7	10660.89	0.2447	0.000382
8	12621.95	0.2898	0.000453
9	11396.54	0.2616	0.000409
10	23810.36	0.5466	0.000854

POND	DROP INLET	ORIFICE DIAMETER (IN)	MAX WT. HEIGHT (FT)	OUTFLOW (CFS)
1	Two Single 'D'	3.5	32.49	0.99
2	Single 'D'	4	31.17	1.37
4	Single 'D'	13	34.28	6.87
5	Single 'D'	8	37.59	3.64
6	Single 'D'	1	37.39	0.06
7	Single 'D'	1	37.37	0.05
8	Single 'D'	1	37.39	0.06
9	Single 'D'	8		
10	Double 'D'	5	37.64	2.15

SAMPLE POND VOLUME CALCULATIONS (POND 1)

A_b = Bottom of Pond Surface Area (ft^2)
A_t = Top of Pond Surface Area (ft^2)
D = Water Depth in Pond (ft)
C = Change in Surface Area / Water Depth
D_I = Water depth from bottom of inlet to top of inlet

Volume in Pond (ft^3) = $A_b * D_I + 0.5 * C * D^2$

$C = (A_t - A_b) / D$

A_b = 13.59 ft^2
A_t = 102960.78 ft^2
D = 1.75
C = 58826.97

OUTFLOW CALCULATIONS

$Q=CA\sqrt{2gH}$

C = 0.6
$A = \pi r^2$
r = radius of orifice (ft)
g = 32.2
H = height of water measured from center of orifice plate (ft)
Q = outflow (cfs)

POND 1

TOP OF POND AREA (SF)=	95529.95
BOTTOM OF POND AREA (SF)=	13.59
TOTAL DEPTH (FT) =	2
C (CHANGE IN SURFACE AREA)=	47758.18
DIAMETER OF ORIFICE (IN)=	3.5
AREA OF ORIFICE (SF) =	0.066813

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
22.9200	0.0000	0.0000	0.0000
30.5000	7.5800	0.0024	0.8857
30.5200	7.6000	0.0026	0.8869
30.7200	7.8000	0.0290	0.8985
30.9200	8.0000	0.0992	0.9099
31.1200	8.2000	0.2133	0.9212
31.3200	8.4000	0.3712	0.9324
31.5200	8.6000	0.5730	0.9434
31.7200	8.8000	0.8187	0.9543
31.9200	9.0000	1.1082	0.9651
32.1200	9.2000	1.4415	0.9758
32.3200	9.4000	1.8188	0.9863
32.5000	9.5800	2.1957	0.9957

POND 2

TOP OF POND AREA (SF)=	14508.43
BOTTOM OF POND AREA (SF)=	6.8
TOTAL DEPTH (FT) =	1.5
C (CHANGE IN SURFACE AREA)=	9667.753
DIAMETER OF ORIFICE (IN)=	4
AREA OF ORIFICE (SF) =	0.087266

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
20.4100	0.0000	0.0000	0.0000
30.0000	9.5900	0.0015	1.2899
30.1000	9.6900	0.0026	1.2967
30.2000	9.7900	0.0060	1.3035
30.3000	9.8900	0.0115	1.3102
30.4000	9.9900	0.0193	1.3170
30.5000	10.0900	0.0293	1.3236
30.6000	10.1900	0.0415	1.3303
30.7000	10.2900	0.0560	1.3369
30.8000	10.3900	0.0726	1.3435
30.9000	10.4900	0.0915	1.3501
31.0000	10.5900	0.1126	1.3566
31.1000	10.6900	0.1359	1.3631
31.2000	10.7900	0.1615	1.3695
31.3000	10.8900	0.1892	1.3760
31.4000	10.9900	0.2192	1.3824
31.5000	11.0900	0.2514	1.3887

POND 4

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
31.3400	0.0000	0.0000	0.0000
32.3400	1.0000	0.0002	3.0047
33.3400	2.0000	0.0003	5.3596
33.8400	2.5000	0.0004	6.2109
33.9400	2.6000	0.0024	6.3675
34.0400	2.7000	0.0085	6.5203
34.1400	2.8000	0.0186	6.6696
34.2400	2.9000	0.0327	6.8157
34.34	3.0000	0.0509	6.9587

TOP OF POND AREA (SF)=	8800
BOTTOM OF POND AREA (SF)=	6.8
TOTAL DEPTH (FT) =	0.5
C (CHANGE IN SURFACE AREA)=	17586.4
DIAMETER OF ORIFICE (IN)=	13
AREA OF ORIFICE (SF) =	0.921751

POND 5

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
32.5700	0.0000	0.0000	0.0000
33.5700	1.0000	0.0002	1.3723
34.5700	2.0000	0.0003	2.1698
35.5700	3.0000	0.0005	2.7446
36.5700	4.0000	0.0006	3.2184
36.9200	4.3500	0.0007	3.3685
36.9700	4.4000	0.0012	3.3894
37.0700	4.5000	0.0052	3.4308
37.1700	4.6000	0.0132	3.4717
37.2700	4.7000	0.0252	3.5122
37.3700	4.8000	0.0413	3.5522
37.4700	4.9000	0.0613	3.5917
37.5700	5.0000	0.0854	3.6308
37.6700	5.1000	0.1135	3.6695

POND 6

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
34.4200	0.0000	0.0000	0.0000
35.4200	1.0000	0.0002	0.0257
36.4200	2.0000	0.0003	0.0368
36.9200	2.5000	0.0004	0.0412
37.0200	2.6000	0.0020	0.0420
37.1200	2.7000	0.0067	0.0428
37.2200	2.8000	0.0145	0.0436
37.3200	2.9000	0.0255	0.0444
37.4200	3.0000	0.0397	0.0452
37.5200	3.1000	0.0570	0.0459
37.6200	3.2000	0.0774	0.0467
37.6700	3.2500	0.0888	0.0470

POND 7

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
32.9200	0.0000	0.0000	0.0000
33.9200	1.0000	0.0002	0.0257
34.9200	2.0000	0.0003	0.0368
36.9200	4.0000	0.0006	0.0522
37.0200	4.1000	0.0023	0.0529
37.1200	4.2000	0.0071	0.0536
37.2200	4.3000	0.0153	0.0542
37.3200	4.4000	0.0267	0.0548
37.4200	4.5000	0.0414	0.0555
37.5200	4.6000	0.0593	0.0561
37.6200	4.7000	0.0805	0.0567
37.6700	4.7500	0.0923	0.0570

POND 8

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
31.3200	0.0000	0.0000	0.0000
32.3200	1.0000	0.0002	0.0257
33.3200	2.0000	0.0003	0.0368
34.3200	3.0000	0.0005	0.0452
35.3200	4.0000	0.0006	0.0522
36.9200	5.6000	0.0009	0.0619
37.0200	5.7000	0.0028	0.0625
37.1200	5.8000	0.0086	0.0630
37.2200	5.9000	0.0183	0.0636
37.3200	6.0000	0.0318	0.0641
37.4200	6.1000	0.0491	0.0646
37.5200	6.2000	0.0704	0.0652
37.6200	6.3000	0.0955	0.0657
37.6700	6.3500	0.1095	0.0660

POND 9 + 10

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
26.71	0	0.0000	0.0000
28.71	2	0.0003	0.8788
30.71	4	0.0008	1.2784
32.71	6	0.0015	1.5800
34.71	8	0.0021	1.8326
36.17	9.46	0.0025	1.9970
36.21	9.5	0.0032	2.0013
36.31	9.6	0.0105	2.0120
36.41	9.7	0.0258	2.0227
36.51	9.8	0.0493	2.0333
36.61	9.9	0.0808	2.0439
36.71	10	0.1204	2.0544
36.81	10.1	0.1681	2.0649
36.91	10.2	0.2239	2.0753
37.01	10.3	0.2877	2.0857
37.11	10.4	0.3596	2.0960
37.17	10.46	0.4067	2.1021
37.27	10.56	0.4147	2.1124
37.37	10.66	0.4390	2.1225
37.47	10.76	0.4794	2.1327
37.57	10.86	0.5360	2.1427
37.67	10.96	0.6087	2.1528

POND B

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
36.5100	0.0000	0.0000	0.0000
37.5100	1.0000	0.0003	0.2973
38.5100	2.0000	0.0006	0.4381
39.5100	3.0000	0.0009	0.5435
40.5100	4.0000	0.0012	0.6316
41.5100	5.0000	0.0016	0.7088
41.8500	5.3400	0.0017	0.7332
41.9100	5.4000	0.0030	0.7374
42.0100	5.5000	0.0112	0.7444
42.1100	5.6000	0.0268	0.7513
42.2100	5.7000	0.0499	0.7582
42.3100	5.8000	0.0804	0.7650
42.4100	5.9000	0.1183	0.7717
42.5100	6.0000	0.1637	0.7784
42.6100	6.1000	0.2165	0.7850
42.7100	6.2000	0.2768	0.7916
42.8100	6.3000	0.3445	0.7981
42.9100	6.4000	0.4197	0.8045
43.0100	6.5000	0.5023	0.8109
43.1100	6.6000	0.5923	0.8173
43.2100	6.7000	0.6898	0.8236
43.3500	6.8400	0.8387	0.8323

POND C

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
38.8300	0.0000	0.0000	0.0000
39.8300	1.0000	0.0002	1.3723
40.8300	2.0000	0.0003	2.1698
41.8300	3.0000	0.0005	2.7446
42.8300	4.0000	0.0006	3.2184
43.6300	4.8000	0.0007	3.5522
43.7300	4.9000	0.0020	3.5917
43.8300	5.0000	0.0058	3.6308
43.9300	5.1000	0.0121	3.6695
44.0000	5.1700	0.0180	3.6964

POND D

ELEV (FT)	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
40.8400	0.0000	0.0000	0.0000
41.8400	1.0000	0.0002	0.0263
42.8400	2.0000	0.0003	0.0371
43.3400	2.5000	0.0004	0.0415
43.4400	2.6000	0.0017	0.0423
43.5400	2.7000	0.0057	0.0432
43.6400	2.8000	0.0124	0.0439
43.7400	2.9000	0.0217	0.0447
43.8400	3.0000	0.0337	0.0455
43.9400	3.1000	0.0483	0.0462
44.0400	3.2000	0.0656	0.0470
44.1400	3.3000	0.0856	0.0477
44.2400	3.4000	0.1082	0.0484
44.3400	3.5000	0.1334	0.0491
44.4400	3.6000	0.1614	0.0498
44.5400	3.7000	0.1919	0.0505
44.6000	3.7600	0.2116	0.0509

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =04/08/1996

INPUT FILE = a:exist.dat USER NO.= R_BOHANN.I01

PAGE = 1

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	.02314	33.73	.960	.77824	1.533	2.278	PER IMP=	.00
COMPUTE NM HYD	100.20	-	1	.01446	21.08	.600	.77824	1.533	2.278	PER IMP=	.00
START										TIME=	.00
RAINFALL TYPE= 2										RAIN24=	1.830
COMPUTE NM HYD	110.10	-	1	.02314	13.84	.343	.27831	1.533	.935	PER IMP=	.00
COMPUTE NM HYD	110.20	-	1	.01446	8.65	.215	.27831	1.533	.935	PER IMP=	.00
FINISH											

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/12/1996

INPUT FILE = a:9441p.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	.01092	31.38	1.261	2.16378	1.510	4.489	PER IMP=	90.00
COMPUTE NM HYD	100.20	-	1	.00192	2.84	.080	.77901	1.532	2.310	PER IMP=	.00
COMPUTE NM HYD	100.40	-	1	.00217	6.24	.250	2.16382	1.510	4.499	PER IMP=	90.00
COMPUTE NM HYD	100.50	-	1	.00328	9.45	.379	2.16381	1.510	4.495	PER IMP=	90.00
COMPUTE NM HYD	100.60	-	1	.00037	1.08	.043	2.16395	1.510	4.562	PER IMP=	90.00
COMPUTE NM HYD	100.70	-	1	.00038	1.11	.044	2.16394	1.510	4.558	PER IMP=	90.00
COMPUTE NM HYD	100.80	-	1	.00045	1.32	.052	2.16392	1.510	4.552	PER IMP=	90.00
COMPUTE NM HYD	100.90	-	1	.00597	17.16	.689	2.16379	1.510	4.491	PER IMP=	90.00
COMPUTE NM HYD	100.10	-	1	.01281	18.89	.532	.77901	1.532	2.305	PER IMP=	.00
START										TIME=	.00
RAINFALL TYPE= 2										RAIN24=	1.830
COMPUTE NM HYD	110.10	-	1	.01092	20.33	.787	1.35005	1.510	2.907	PER IMP=	90.00
COMPUTE NM HYD	110.20	-	1	.00192	1.16	.029	.27917	1.532	.947	PER IMP=	.00
COMPUTE NM HYD	110.40	-	1	.00217	4.04	.156	1.35007	1.510	2.913	PER IMP=	90.00
COMPUTE NM HYD	110.50	-	1	.00328	6.12	.236	1.35007	1.510	2.911	PER IMP=	90.00
COMPUTE NM HYD	110.60	-	1	.00037	.70	.027	1.35016	1.510	2.947	PER IMP=	90.00
COMPUTE NM HYD	110.70	-	1	.00038	.72	.028	1.35015	1.510	2.944	PER IMP=	90.00
COMPUTE NM HYD	110.80	-	1	.00045	.85	.033	1.35015	1.510	2.942	PER IMP=	90.00
COMPUTE NM HYD	110.90	-	1	.00597	11.11	.430	1.35006	1.510	2.909	PER IMP=	90.00
COMPUTE NM HYD	110.10	-	1	.01281	7.74	.191	.27917	1.532	.944	PER IMP=	.00
FINISH											

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =04/15/1996

INPUT FILE = a:4ap.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	.00088	2.56	.102	2.16386	1.510	4.519	PER IMP=	90.00
COMPUTE NM HYD	100.20	-	1	.00738	21.20	.851	2.16379	1.510	4.490	PER IMP=	90.00
COMPUTE NM HYD	100.30	-	1	.00186	5.36	.215	2.16382	1.510	4.501	PER IMP=	90.00
COMPUTE NM HYD	100.40	-	1	.00166	4.78	.192	2.16382	1.510	4.503	PER IMP=	90.00
COMPUTE NM HYD	100.50	-	1	.00103	2.96	.118	2.16385	1.510	4.514	PER IMP=	90.00
START										TIME=	.00
RAINFALL TYPE= 2										RAIN24=	1.830
COMPUTE NM HYD	110.10	-	1	.00088	1.65	.064	1.35010	1.510	2.924	PER IMP=	90.00
COMPUTE NM HYD	110.20	-	1	.00738	13.73	.531	1.35006	1.510	2.908	PER IMP=	90.00
COMPUTE NM HYD	110.30	-	1	.00186	3.47	.134	1.35008	1.510	2.914	PER IMP=	90.00
COMPUTE NM HYD	110.40	-	1	.00166	3.10	.120	1.35008	1.510	2.915	PER IMP=	90.00
COMPUTE NM HYD	110.50	-	1	.00103	1.92	.074	1.35010	1.510	2.921	PER IMP=	90.00
FINISH											

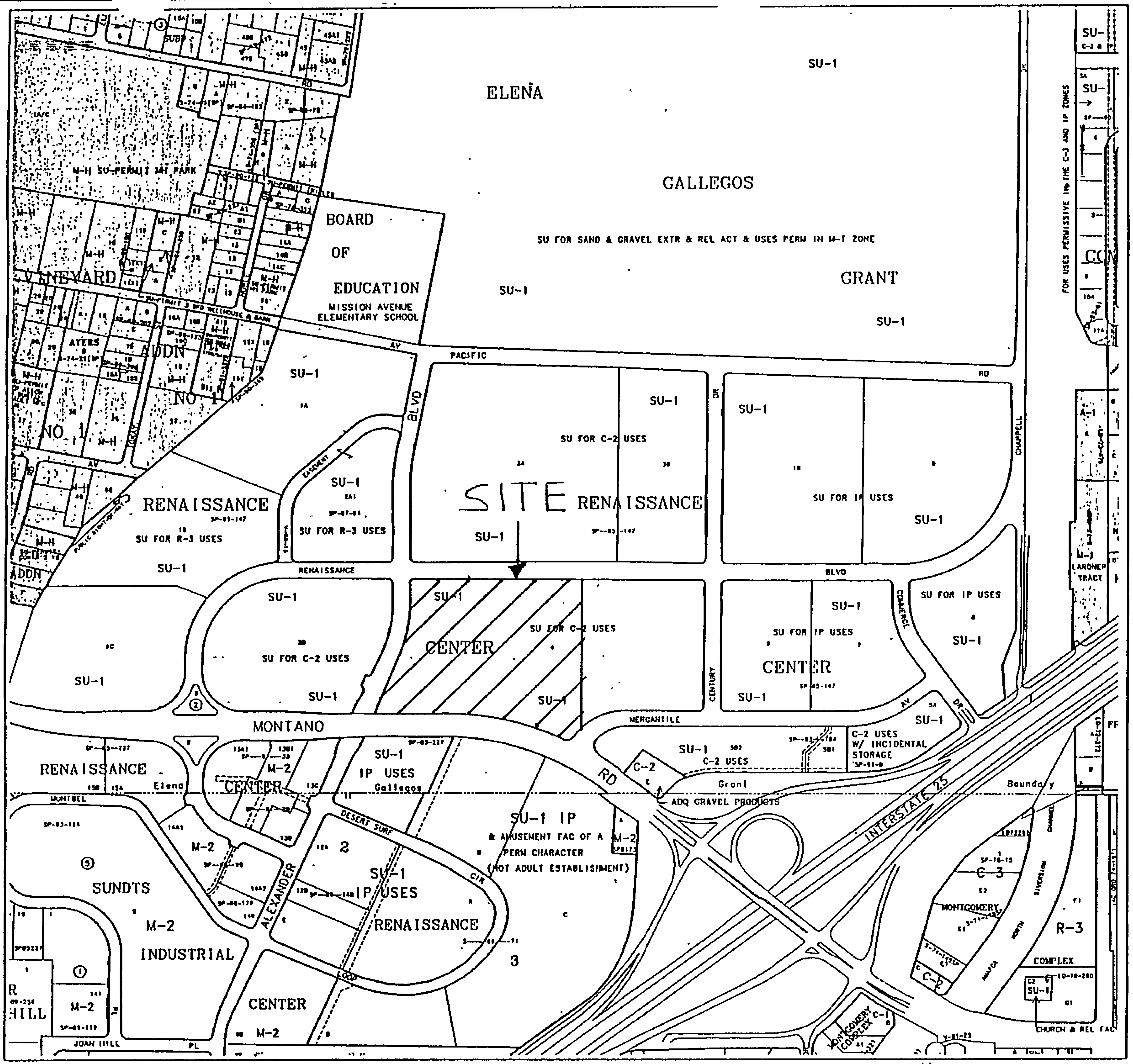
AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/12/1996
INPUT FILE = a:3pond.dat USER NO.= R_BOHANN.I01

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	101.60	-	1	.00037	1.07	.045	2.27939	1.500	4.526	PER IMP=	90.00
ROUTE RESERVOIR	501.60	1	2	.00037	.04	.045	2.27790	2.333	.190	AC-FT=	.032
COMPUTE NM HYD	101.70	-	3	.00038	1.11	.046	2.27939	1.500	4.526	PER IMP=	90.00
ADD HYD	106.70	2& 3	1	.00075	1.15	.091	2.27866	1.500	2.392		
ROUTE RESERVOIR	501.70	1	2	.00075	.06	.085	2.12116	3.000	.115	AC-FT=	.037
COMPUTE NM HYD	101.80	-	3	.00045	1.31	.055	2.27938	1.500	4.521	PER IMP=	90.00
ADD HYD	107.80	2& 3	1	.00120	1.36	.140	2.18069	1.500	1.771		
ROUTE RESERVOIR	501.80	1	2	.00120	.06	.100	1.55272	3.366	.084	AC-FT=	.044
COMPUTE NM HYD	101.90	-	3	.00788	22.49	.958	2.27928	1.500	4.460	PER IMP=	90.00
ADD HYD	108.90	2& 3	1	.00908	22.56	1.058	2.18298	1.500	3.880		
ROUTE RESERVOIR	501.90	1	4	.00908	2.15	1.058	2.18351	2.200	.370	AC-FT=	.586
COMPUTE NM HYD	101.50	-	1	.00328	9.38	.399	2.27929	1.500	4.465	PER IMP=	90.00
ROUTE RESERVOIR	501.50	1	2	.00328	3.64	.399	2.27987	1.766	1.732	AC-FT=	.092
COMPUTE NM HYD	101.40	-	3	.00217	6.20	.264	2.27930	1.500	4.470	PER IMP=	90.00
ADD HYD	105.40	2& 3	1	.00545	9.75	.663	2.27965	1.500	2.794		
ROUTE RESERVOIR	501.40	1	2	.00545	6.87	.663	2.27974	1.667	1.968	AC-FT=	.039
COMPUTE NM HYD	101.10	-	3	.01092	31.18	1.328	2.27927	1.500	4.459	PER IMP=	90.00
ADD HYD	109.10	3& 4	1	.02001	33.25	2.386	2.23580	1.500	2.596		
ADD HYD	104.20	2& 1	1	.02546	39.91	3.049	2.24520	1.500	2.450		
ROUTE RESERVOIR	501.30	1	3	.02546	1.00	1.531	1.12717	6.199	.061	AC-FT=	2.184
COMPUTE NM HYD	101.20	-	5	.00192	5.50	.234	2.27930	1.500	4.471	PER IMP=	90.00
ADD HYD	102.10	5& 3	1	.02738	6.44	1.764	1.20804	1.500	.367		
ROUTE RESERVOIR	501.20	1	2	.02738	1.37	1.763	1.20725	2.233	.078	AC-FT=	.153
FINISH											

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =04/17/1996

INPUT FILE = A:POND4A.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											
RAINFALL TYPE= 2										TIME=	.00
COMPUTE NM HYD	101.40	-	1	.00166	4.75	.202	2.27930	1.500	4.473	RAIN24=	2.750
ROUTE RESERVOIR	501.40	1	2	.00166	.05	.076	.86398	3.000	.047	PER IMP=	90.00
COMPUTE NM HYD	101.30	-	3	.00186	5.33	.226	2.27930	1.500	4.472	AC-FT=	.161
ADD HYD	104.30	2& 3	1	.00352	5.38	.303	1.61223	1.500	2.385	PER IMP=	90.00
ROUTE RESERVOIR	501.30	1	2	.00352	3.69	.303	1.61217	1.600	1.637		
COMPUTE NM HYD	101.20	-	3	.00738	21.06	.897	2.27928	1.500	4.461	AC-FT=	.016
ADD HYD	103.20	2& 3	1	.01090	24.70	1.200	2.06371	1.500	3.542	PER IMP=	90.00
ROUTE RESERVOIR	501.20	1	2	.01090	.83	1.199	2.06354	2.533	.119		
FINISH										AC-FT=	.831



SCALE IN FEET

250 0 500 1000

PHOTOCOPY--NOT TO SCALE

North

AGIS
Albuquerque Geographic Information System
City of Albuquerque

© Planning Department
Map Amended through July 11, 1994

NOTE: GREY SHADING REPRESENTS AREA OUTSIDE OF THE CITY LIMITS

LEGAL DESCRIPTION

T11N

R3E

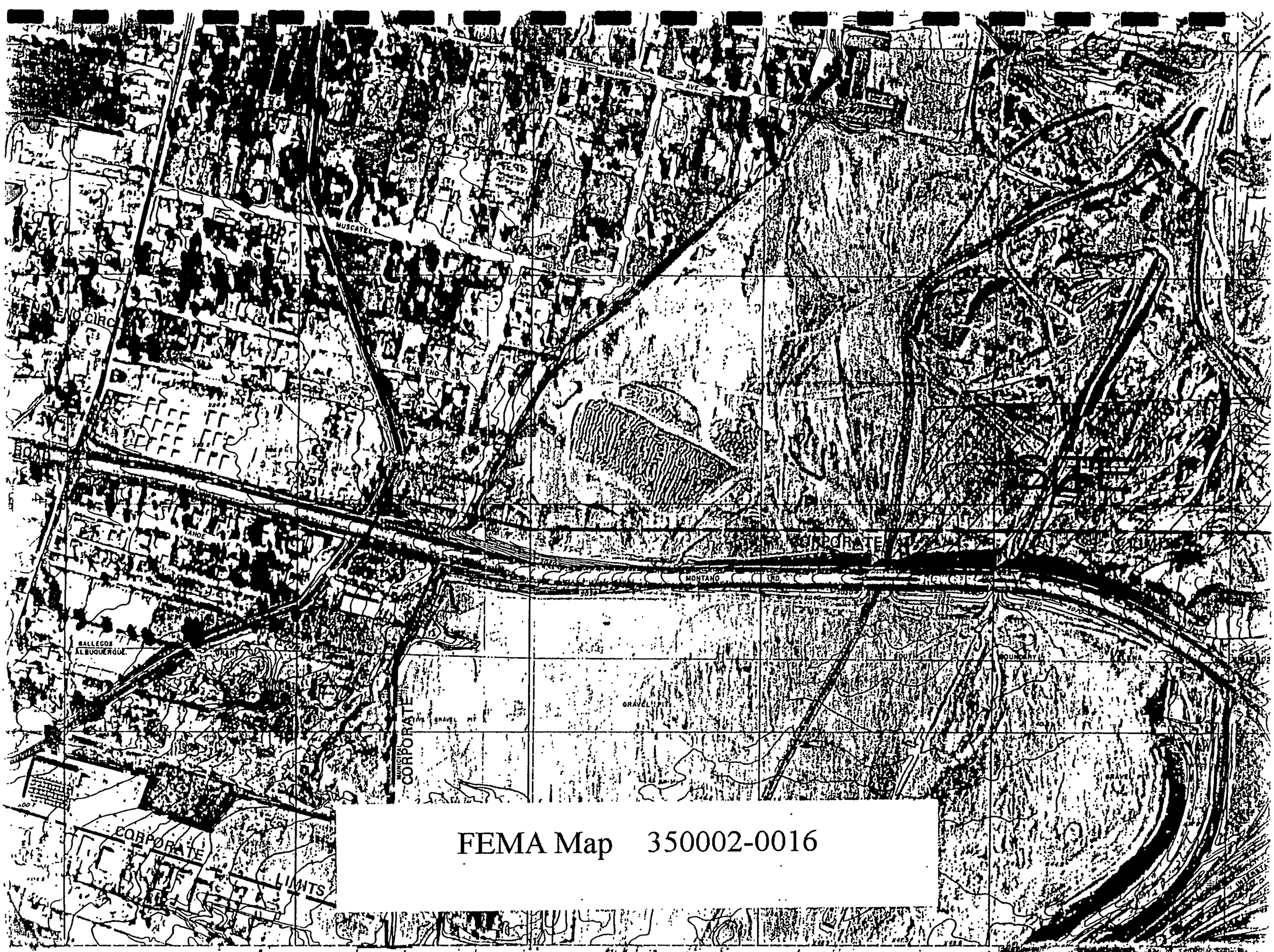
SEC 34

UNIFORM PROPERTY CODE

1-016-061

F-16-Z

2.15cfs



FEMA Map 350002-0016