15.52 Ac

15.1W

16.37 Ac

15.2W

13.90 Ac

40.80 Ac

15.3E

16.1W

21.30 Ac

30.99 Ac

16.3E

SED=0.22 Ac.ft.

16.2W

42.54 Ac

17.1W

5.56 Ac

17.3W

26.62 Ac

17.2W

30.94 Ac

17.4E

48.37 Ac

SED=0.26 Ac.ft.

14.2E

4.26 Ac

SED=0.05 Ac.ft.

EXIST CMC
Q = 37.2 cfs
S = 0.0000 ft/ft

CONNECTS TO MAIN CANAL
SEE PLATE 9
AND PLATE 4 & 5

EXIST CMC
STA. 690+80
BEGIN CONC LINING
BD = 88.97
TOP LINING = 88.08

EXIST LINED CHANEL
Q = 50 cfs
d = 2.5 ft
S = 0.00014 ft/ft

EXIST CMC
STA. 700+38
BD = 83.84

EXIST DROP STRUCTURE
STA. 707+48
BD = 81.55 (HIGH)
= 78.08 (LOW)

EXIST 48" CMP
STA. 707+00

EXIST CMC
STA. 710+98
END CONC SECTION
BD = 78.05

EXISTING BRIDGE

EXIST CRSD
STA. 32+50
BD = 71.3 (1956)

EXIST CRSD
Q = 100 cfs
d = 4.39 ft
S = 0.00053 ft/ft

EXIST CRSD
STA. 21+24
BD = 71.29 (1956)

ETOPIKA BYPASS-
DISCHARGE CORRALES MAIN
CANAL TO RIO GRANDE
SEE PLATE 9

MRGCD SURVEY
WS = 75.05
BD = 73.75
DESIGN = 71.71

MRGCD SURVEY
TB = 80.55
WS = 77.97
BD = 73.90

MATCH LINE
TO PLATE 3

RIO GRANDE

ALBUQUERQUE

LA ORILLA ROAD

STA. 22+62

30" CPC

12 cfs

127 cfs

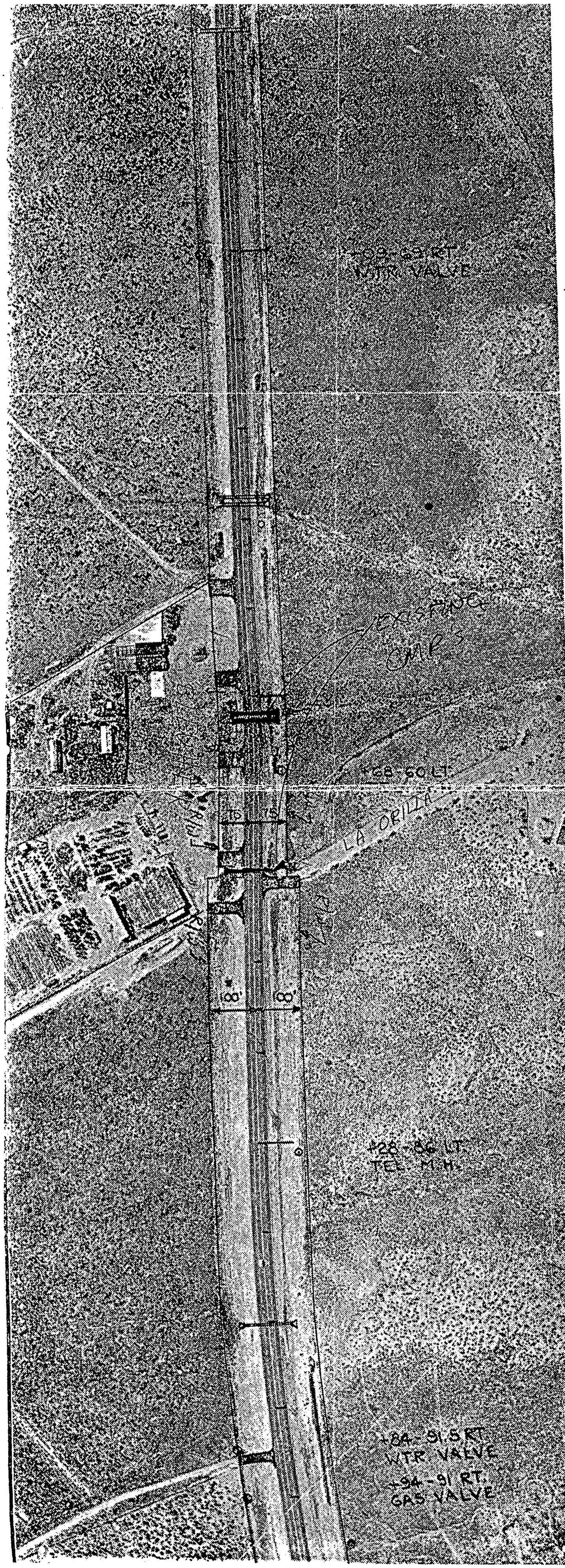
102 cfs

81 cfs

30 cfs

JAN 19 1989

RECEIVED
HYDROLOGY SECTION



↘ STA. 185+08 1-30 x 10 C.P.C. IN PLACE,
NOR., EXTEND 12' LT. & 12' RT. w/1-30"
REINF. CONC. PIPE CL. II, BUILD END
SECTIONS LT. & RT., SER. ES-1

E 12/D 6

194+70 T.O. Rt.

190+00

62.0
↘ STA. 195+~~59.5~~ 2-30" x 75' C.P.C. IN PLACE
↘ NOR., EXTEND 6' LT. & 12' RT. w/ 2-30"
↘ REINF. CONC. PIPE CL II, BUILD END SECTS
↘ LT. & RT., SER. ES-1

STA. 197+50 RT.
BUILD 30' T.O.
STA. 199+55 RT.
BUILD 30' T.O.

STA. 198+50 =
303+46 ℄ R/W MK.
RT. & LT. OF ℄

Mile Post 6
196+16

↘ STA. 200+38.5 2-30" x 75' C.P.C. IN PLACE
↘ NOR., EXTEND 6' LT. & 12' RT. w/ 2-30"
↘ REINF. CONC. PIPE - CL II, BUILD END
↘ SECTIONS LT. & RT., SER. ES-1

200+00

Sta. 201+35 Rt.
Build 30' T.O.
STA. 203+70 RT.
BUILD 30' T.O.

↘ STA. 204+00 1-30" x 75' C.P.C. IN PLACE,
↘ NOR., EXTEND 12' RT. & 12' LT. (SK. 45° LT.)
↘ w/ 1-30" REINF. CONC. PIPE - CL. II, BUILT
↘ END SECTIONS LT. & RT., SER. ES-1
STA. 204+04 ℄ =
309+00 ℄ R/W MKR (LT.)
74.7' LT. OF ℄

Sta. 204+30 Lt.
Build ~~24~~ T.O.
204+85
Sta. ~~204+80 Rt~~.
Build 20' T.O.

STA. 204+79 ℄ =
309+75 ℄ R/W MKRS
75' & 100' RT. OF ℄

STA. 204+30 T.O. LT.
75' LT. OF ℄
1-24" C.P.C. x 30'
w/ E.S. RT. & LT.

210+00

↘ STA. 214+09 1-30" x 76' C.P.C. IN PLACE, N
↘ EXTEND 8' LT. & 14' RT. w/ 1-30" REINF.
↘ CONC. PIPE - CL II, BUILD END SECTIO
↘ LT. & RT., SER ES-1

216+00
Sta. ~~217+00~~ Rt.
Build 16' T.O.

From NMSHD Coors "As Built"
Widening Project.

RECEIVED
JAN 19 1989
HYDROLOGY SECTION

SUBBASIN STORMWATER RUNOFF

SUBBASIN NO.	AREA ac	LENGTH feet	ELEVATION DIFFERENCE feet	Tc min	DEVELOPED % COMM/ % IMPER	EXISTING % IMPERVIOUS	EXISTING CONDITION PEAK FLOW cfs	EXISTING CONDITION VOLUME ac ft	DEVELOPED CONDITION PEAK FLOW cfs	DEVELOPED CONDITION VOLUME ac ft	PERVIOUS AREAS SCS CURVE NO. EXISTING	PERVIOUS AREAS SCS CURVE NO. DEVELOPED	SEDIMENT STORAGE REQUIRED	DOWNSTREAM STRUCTURE CAPACITY	ALLOWABLE MAXIMUM DISCHARGE cfs	MAXIMUM DISCHARGE PER ACRE cfs/acre	DETENTION POND VOLUME ac ft	DETENTION POND VOLUME ac ft/acre
2.1 W	362.40	5000	185	19.57	50/64	10	114.1	11.55	543.2	32.33	67.0	48.7	0.85	--	n/a	n/a	n/a	n/a
3.1 W	33.18	2800	31	19.92	80/75	30	23.1	1.46	58.0	3.44	57.0	44.0	0.08	--	6.0	0.18	2.60	0.078
4.1 W	82.56	3800	29	29.09	80/75	20	31.1	2.85	116.7	8.58	60.7	44.0	0.19	20	20.0	0.24	5.50	0.067
4.2 E	15.08	650	26	3.95	100/85	10	8.4	0.47	73.7	2.12	64.5	44.0	0.04	--	74.0	4.91	0.00	0.000
5.1 W	124.60	4700	80	25.16	90/80	25	99.5	7.77	204.7	13.86	58.8	44.0	0.46	184	184.0	1.48	0.53	0.004
5.2 E	13.68	700	30	4.07	100/85	10	7.4	0.43	64.1	1.86	64.5	44.0	0.03	--	64.0	4.68	0.00	0.000
6.1 E	38.11	1750	40	10.50	50/64	10	12.3	1.04	77.8	3.39	64.5	44.5	0.09	--	78.0	2.05	0.00	0.000
8.1 W	14.12	850	14	6.83	80/75	30	15.0	0.64	37.7	1.49	57.0	44.0	0.03	20	20.0	1.42	0.24	0.017
8.2 W	48.26**	2700	114	11.57	0/42	0	13.7	1.07	0.0	--	68.0	--	--	--	0.0	0.00	--	--
8.3 E	70.00	2000	51	11.15	20/52	5	19.8	1.69	109.7	5.06	66.2	49.0	0.16	--	110.0	1.57	0.00	0.000
10.1 W	124.43	4050	73	21.94	100/85	12	71.6	7.60	232.9	14.71	65.7	44.0	0.56	45	71.6	0.58	6.52	0.052
10.2 E	40.19	2900	49	17.40	100/85	2	9.3	0.76	85.8	4.73	67.4	44.0	0.09	--	85.8	2.13	0.00	0.000
11.1 W	46.39	2200	116	9.07	100/85	18	44.3	3.95	138.4	5.46	64.2	44.0	0.25	20	44.3	0.95	1.47	0.032
11.2 E	7.79	700	15	5.31	100/85	30	11.0	0.37	30.7	0.99	57.0	44.0	0.02	--	30.7	3.94	0.00	0.000
12.1 W	34.19	2150	118	8.78	20/52	3	10.3	0.79	63.3	2.46	67.0	49.0	0.08	35	35.0	1.02	0.33	0.010
12.2 W	14.35	1700	90	7.43	50/64	3	4.3	0.33	33.2	1.27	67.0	44.5	0.03	20	20.0	1.39	0.17	0.012
12.3 E	13.28	1100	10	10.47	80/75	3	3.9	0.31	31.9	1.38	67.0	44.0	0.03	--	31.9	2.40	0.00	0.000
13.1 W	12.78	1000	12	8.74	25/45	3	3.9	0.30	20.5	0.80	67.0	52.0	0.03	35	20.5	1.60	0.00	0.000
13.2 E	9.47	750	14	5.91	80/75	3	3.1	0.22	29.1	1.01	67.0	44.0	0.02	--	29.1	3.07	0.00	0.000
14.1 W	29.25	2300	80	11.02	0/15	3	8.4	0.68	13.4	0.90	67.0	62.7	0.07	1600	13.4	0.46	0.00	0.000
14.2 E	4.26	550	10	4.70	80/75	3	1.7	0.11	16.7	0.50	67.0	44.0	0.01	--	16.7	3.92	0.00	0.000
15.1 W	16.37	1400	72	6.47	0/15	8	5.0	0.43	9.0	0.50	65.2	62.7	0.04	35	9.0	0.55	0.00	0.000
15.2 W	40.80	2200	108	9.33	0/15	8	12.1	1.05	21.3	1.26	65.2	62.7	0.10	35	21.3	0.52	0.00	0.000
15.3 E	13.90	950	20	6.77	80/75	3	4.2	0.33	36.9	1.47	67.0	44.0	0.03	--	36.9	2.65	0.00	0.000
16.1 W	21.30	1800	105	7.48	0/15	3	6.4	0.49	11.6	0.66	67.0	62.7	0.05	70	11.6	0.54	0.00	0.000
16.2 W	42.54	2300	106	9.89	0/15	8	12.6	1.10	21.4	1.32	65.2	62.7	0.10	70	21.4	0.50	0.00	0.000
16.3 E	30.99	1100	28	7.04	80/75	6	9.3	0.78	83.3	3.26	66.0	44.0	0.07	--	83.3	2.69	0.00	0.000
17.1 W	6.56	1000	38	5.61	0/15	3	2.2	0.16	4.2	0.21	67.0	62.7	0.02	35	4.2	0.64	0.00	0.000
17.2 W	30.94	2450	116	10.27	0/15	3	9.0	0.71	15.0	0.95	67.0	62.7	0.07	35	15.0	0.48	0.00	0.000
17.3 W	26.62	2800	111	12.19	0/15	8	7.3	0.68	11.9	0.80	65.2	62.7	0.06	70	11.9	0.45	0.00	0.000
17.4 E	48.37	1350	38	7.93	50/64	10	17.7	1.33	112.8	4.31	64.5	44.6	0.11	--	112.8	2.33	0.00	0.000
18.1 W	224.57	6050	119	28.90	0/35	6	87.0	9.14	150.8	13.25	73.1	65.0	0.53	70	17.2/70.0	0.08/0.31	10.55/4.76	.047/.02
18.2 W	93.32	2900	113	12.61	20/52	2	30.8	2.60	143.9	6.81	69.7	53.0	0.22	70	12.0/69.0	0.13/0.74	5.13/1.37	.055/.01
18.3 E	44.84	1900	32	12.58	50/64	6	12.5	1.11	61.2	2.86	66.0	51.2	0.11	--	12.6/61.0	0.28/1.36	1.66/0.00	.037/.00
19.1 W	39.01	2600	114	11.08	50/64	4	13.6	1.15	75.4	3.47	69.6	49.8	0.09	31	6.3/31.0	0.16/0.79	2.59/0.85	.066/.02
19.2 W	75.33	3250	119	14.10	80/75	6	34.6	3.33	158.1	7.99	74.4	58.7	0.18	35	35.0	0.46	4.06	0.054
19.3 E	35.54	750	29	11.88	20/52	8	9.9	0.91	49.1	2.27	65.2	51.2	0.08	--	9.9/49.0	0.28/1.38	1.30/0.00	.037/.00
19.4 E	29.88	1750	29	11.88	100/90	70	62.9	2.98	80.8	3.73	61.0	44.0	0.07	--	15.0/14.0	0.50/0.47	1.36/3.50	.046/.11
20.1 W	22.59	2250	106	9.64	50/64	10	7.7	0.35	49.1	2.02	71.4	56.0	0.05	35	35.0	1.55	0.18	0.008
20.2 W	45.12	1600	114	6.32	0/42	6	20.5	1.76	71.9	2.98	72.2	62.2	0.11	35	16.9/35.0	0.37/0.78	1.41/0.50	.031/.01
20.3 W	62.77	4250	109	19.88	0/42	12	32.1	3.12	63.0	4.44	74.8	68.0	0.15	70	14.8/63.0	0.25/1.00	2.64/0.00	.042/.00
20.4 W	21.02	500	64	2.06	0/42	10	7.1	0.38	14.0	0.50	77.0	70.0	0.05	70	3.4/14.0	0.16/0.67	0.21/0.00	.010/.00
20.5 E	92.83	2000	78	9.65	20/52	3	27.6	2.17	145.0	5.96	67.0	51.2	0.22	--	28.0/145.0	0.30/1.56	3.41/0.00	.037/.00
20.6 E	33.00	2400	23	18.72	50/64	10	8.6	0.88	50.1	2.91	64.5	44.5	0.08	--	11.0/52.0	0.33/1.58	0.36/0.00	.011/.00
21.1 E	101.72	3000	78	15.13	0/42	15	40.0	3.14	112.1	6.01	62.7	52.7	0.24	--	28.0/112.0	0.28/1.10	3.35/0.00	.033/.00

*DEVELOPED CONDITION DATA IS BASED ON LOCAL AREA PLANNING STUDIES AND MAPS.

**AREA FLOWS TO CALABACILLAS ARROYO AT DEVELOPED CONDITIONS

NOTE: WHERE TWO NUMBERS ARE SHOWN, THE FIRST NUMBER INDICAT CRITERIA FOR OPTION A-1 OR A-2, AND THE SECOND NUMBER INDICAT CRITERIA FOR OPTION B OR OPTION C.

C18/D000

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

DESIGN MEMORANDUM

for the

NORTH COORS DRAINAGE MANAGEMENT PLAN MIDDLE AREA

HYDROLOGY
(FULLY DEVELOPED CONDITIONS)
HYDRAULICS
SEDIMENT CONTROL

FEBRUARY 1997

Smith Engineering Company

A Full Service Engineering Company

Prepared by:
Smith Engineering Company
6400 Uptown Blvd. NE, Suite 500E
Albuquerque, New Mexico 87110

SEC # 195104

MICHAEL MURPHY, CHAIR
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Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

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

MEMORANDUM

Date: March 4, 1997

TO: Distribution

FR: Kurt Browning, AMAFCA KB

RE: Amendment to North Coors Drainage Management - Middle Area

---

Enclosed please find a copy of the referenced plan, prepared by Smith Engineering, for review and comment. Prior to presentation to the AMAFCA Board of Directors for adoption, one public meeting is anticipated. Please send written comments to AMAFCA.

The existing North Coors DMP was adopted by AMAFCA in 1985. That plan resulted in the construction of three new outfalls to the Rio Grande: the Montano Outlet, the La Orilla Outlet, and the Calabacillas Outlet. The Montano Outlet has been turned over to the City. The other two projects consisted of substantial improvements to the MRGCD's Corrales Main Canal, and provided much needed conveyance from our Piedras Marcadas Dam, the Coors/PdN interchange, the Coors/Alameda intersection, and areas along and west of Coors. Please see figures in report.

An amendment to the DMP for the middle area or central portion was prepared for several reasons:

1. The capacity and integrity of the Corrales Main Canal (La Orilla Outlet) must be maintained. Required upstream detention is critical given the increased development recently.
2. Opportunities exist to provide regional facilities such as additional ponds (NMSHTD property) and diversions to the Calabacillas via the City's SAD.
3. Hydrology, hydraulics and sediment issues needed updating.
4. The drainage watershed is developing in fragments. No single developer can be expected to prepare a comprehensive plan or amendment. Guidance and criteria are needed to direct development and discharge constraints.
5. The Eagle Ranch Storm Drain was expected to handle substantial flows coming from the west. Its design was marginal at the time; with new hydrology, it is not adequate. A parallel pipe and additional ponding are

being planned for by the City's SAD 224.

6. Portions of the watershed were originally planned to drain to the Calabacillas Arroyo by Bellamah Development, however, this never occurred.

Appendix E contains the existing conditions report. Presently, AMAFCA has entered into discussions with the NMSHTD, regarding the need for a regional pond at the northeast corner of the Coors/PdN interchange.

Thank you for your review and any input that you can provide. Should you have any questions, please call.

Encl

Distribution:

Mr. Dan Hogan, COA PWD Hydrology
Mr. Fred Aguirre, COA Development Review, One Stop
Mr. Lee Lunsford, COA SAD Engineer
Mr. David Stoliker, Bernalillo County Engineering Manager
Mr. Roger Paul, Bernalillo County Development Review Section Manager
Mr. Michael Barnes, NMSHTD Dist III, District Engineer
Ms. Rae Van Hoven, NMSHTD Dist III Drainage
Mr. Subhas Shah, Middle Rio Grande Conservancy District

RESOLUTION 1997-9

MODIFICATION OF NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA

WHEREAS, Resolution 1984-7 tentatively adopted the North Coors Drainage Management Plan draft, dated May 7, 1984, and

WHEREAS, Resolution 1985-4 adopted the North Coors Drainage Management Plan, April 1985, but deferred a decision regarding the south portion of the Plan area, and

WHEREAS, Resolution 1986-5 was adopted and defined the south portion of the Plan area to include a stormwater outlet to the Rio Grande in the vicinity of Montano Road; and

WHEREAS, AMAFCA has subsequently constructed the North Coors Calabacillas Outlet on the northern portion of the Plan area, and the North Coors La Orilla Outlet on the middle portion of the Plan area, and the North Coors Montano Outlet on the southern portion of the Plan area; and

WHEREAS, hydrologic criteria used for the North Coors Drainage Management Plan has been changed due to the adoption of revised procedures by the City of Albuquerque, Bernalillo County, and AMAFCA; and

WHEREAS, subsequent study and coordination has revealed that the safe function of constructed drainage facilities can only be maintained by the implementation of discharge controls in future development in the watershed.

WHEREAS, there has been significant development and infrastructure construction within the North Coors Middle Area that warrants comprehensive drainage re-assessment,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY:

1. The North Coors Drainage Management Plan - Middle Area, dated November 1996, is hereby adopted as a modification to the North Coors Drainage Management Plan. The Plan is intended to serve as a guide for design and construction of drainage facilities between approximately the Calabacillas Arroyo on the north and La Orilla road on the south. Land development in this area may proceed in accordance with drainage constraints imposed by the Plan. Temporary drainage facilities may be required until identified permanent facilities are in place.

2. The previously adopted North Coors Drainage Plan, April 1985 and Revised June 1986, shall continue to guide design and construction for the northern area and southern area of the Plan area.

ALBUQUERQUE METROPOLITAN ARROYO
FLOOD CONTROL AUTHORITY

_____
Michael Murphy Chairman, Board of Directors

ATTEST:

_____
Linda Olmsted , Secretary-Treasurer

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

DESIGN MEMORANDUM

for the

NORTH COORS DRAINAGE MANAGEMENT PLAN MIDDLE AREA

HYDROLOGY
(FULLY DEVELOPED CONDITIONS)
HYDRAULICS
SEDIMENT CONTROL

FEBRUARY 1997

Prepared by:
Smith Engineering Company
6400 Uptown Blvd. NE, Suite 500E
Albuquerque, New Mexico 87110

SEC# 195104

This report was prepared by me, Clifford E. Anderson, NM PE & PS No. 6472. On May 30, 1996 and November 15, 1996, I conducted on-site reviews of this study area, and had in my possession the topographic maps of the area. It appears that a substantial quality of site grading has occurred that is not reflected on the existing topographic maps. Where possible, updated site plans were obtained from public agencies and used for this report. This Plan reflects the information on current and proposed plans that Smith Engineering Company obtained. Because of the high level of ongoing development in the area, actual conditions in this watershed are changing and may continue to change.

2/26/97

Clifford E. Anderson Date
NM PE & PS No. 6472

North Coors Drainage Management Plan

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PLATE 2 - Developed Conditions and Proposed Facilities
Drainage Basin Boundary Map

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North Coors Drainage Management Plan

Executive Summary

Plan Area

The North Coors Drainage Management Plan - Middle Area includes 1.9 square miles area adjacent to Coors Boulevard from the Calabacillas Arroyo on the North to La Orilla Road on the south. The Plan Area is defined as follows:

On the North,	Calabacillas Arroyo
On the West,	Piedras Marcadas Dam Watershed, Eagle Ranch Road, and residential development
On the South,	La Orilla Road
On the East,	the Corrales Main Canal

(See Figure 1.)

Related Planning Documents

This Plan is influenced by the following major plans and studies:

- The Albuquerque / Bernalillo County Comprehensive Plan (adopted 1959)
- The Northwest Mesa Area Plan (City of Albuquerque and Bernalillo County, adopted 1980)
- Coors Corridor Sector Plan, (City of Albuquerque and Bernalillo County, adopted 1984)
- Drainage Management Plan Western Albuquerque Metropolitan Area (AMAFCA, 1975)
- North Coors Drainage Management Plan (AMAFCA, 1985, revised 1986)

Major Natural and Constructed Features

- *Coors Boulevard* - Coors Boulevard is a four to six lane arterial which traverses the entire length of the Plan Area from south to north. It serves as the principal arterial serving Albuquerque's Northwest Mesa. There are plans to further expand the road to accommodate increased traffic volumes.
- *Paseo del Norte* - This major arterial crosses the study area from east to west.
- *The Rio Grande* - The Rio Grande lies to the east of the Middle Area. The river is the ultimate discharge point for all runoff from the drainage basin.
- *The Corrales Main Canal* - The Corrales Main Canal provides irrigation water to fields in Bernalillo and Sandoval Counties. The canal begins at the Albuquerque Main Canal just south of the Town of Bernalillo. Within the Middle Area, the canal lies east of Coors Road and at the eastern extent of the study area. Right-of-way for the canal is owned by the Middle Rio Grande Conservancy District.

Existing Stormwater Drainage Facilities

- In 1984, AMAFCA constructed the Piedras Marcadas Dam. This facility detains stormwater that previously reached the study area. A gated outlet of the dam allows the dam to drain to the Corrales Main Canal / La Orilla Outlet.

- In 1986, AMAFCA constructed the North Coors La Orilla Outlet Channel on the alignment of the Corrales Main Channel. The outlet has a maximum capacity of 389 cfs. The existing facility functions to convey both irrigation water and stormwater flows.

- In 1987, the New Mexico State Highway and Transportation Department constructed a 6' x 10' concrete box culvert under the Coors Boulevard/Paseo del Norte interchange at the Corrales Main Canal alignment. This culvert connects to the La Orilla outlet. AMAFCA currently maintains the box culvert.

Proposed Construction

- In conjunction with design of Special Assessment District 214, the City of Albuquerque is proposing to expand the capacity of the Cactus Hills Detention Pond and construct a new storm sewer to divert flows to the Calabacillas Arroyo. This project will divert flow that would otherwise reach the Middle area and eventually impact the La Orilla facility.

- The "Report on Stormwater Drainage for a Proposed Pond at the Northwest Corner Coors Boulevard NW and Paseo del Norte NW" proposes that a pond with a capacity of 35.2 acre feet be constructed on Tract 2 of Black Ranch.

- Major new developments are proposed in the study area including the following:

  - Bosque Meadows Subdivision , east of Coors Boulevard and south of Eagle Ranch Road

  - Eagle Ridge Apartments, west of Coors Boulevard and north of Eagle Ranch Road.

Hydrologic and Hydraulic Modeling

The 1.9 square mile study area was subdivided into 66 sub-basins for the purposes of evaluating flow rates. The 100-year, 24-hour rainfall event was used to compute peak discharge rates and flows to facilities. Sub-basin properties came from existing topographic mapping, and plans and reports from 38 individual project studies. Flows were evaluated along the Corrales Main Canal/La Orilla Outlet using the Corps of Engineers HEC-2 computer program. *The Plan contains tables that quantify the allowable discharge from each of the sub-basins under fully developed conditions. Discharge controls are required so that the capacity of the existing La Orilla Outlet is not exceeded.*

Sediment Yield and Control Criteria

The North Coors La Orilla Outlet is constructed at a slope of 0.0006 feet per foot. This slope results in slow velocities that can cause suspended sand and silt particles to settle to the channel bottom. In order to protect the channel conveyance capacity, it is necessary to control sediment from areas that discharge to the Corrales Main Canal/La Orilla Outlet.

Recommended Elements of Plan Implementation

- Maximum discharge rates shall be as specified in Tables A and B.
- A detention pond on Tract 2 Black Ranch should be constructed.
- An existing detention pond at the southeast corner of the Coors/Paseo del Norte interchange shall be maintained by the New Mexico State Highway and Transportation Department.
- The Cactus Hills Subdivision Detention Pond which is maintained and operated by the City of Albuquerque should be expanded and a new outlet to the Calabacillas Arroyo should be constructed (which is being pursued by the City of Albuquerque).
- Future development of Basin 8.3E will require retention ponding with no discharge to the Corrales Main Canal (which is already being enforced by the Bernalillo County Public Works Department and by the Albuquerque Metropolitan Arroyo Flood Control Authority).
- The Corrales Main Canal north of the existing concrete box culvert at Paseo del Norte does not need to be lined or expanded for future flood control purposes.
- The existing earth-lined section of the Corrales Main Canal/La Orilla Outlet between the road to SIPI and the Piedras Marcadas Dam Outlet may be lined when warranted by adjacent development.
- All basins which discharge to the Corrales Main Canal/La Orilla Outlet will require sediment control ponds.
- The Piedras Marcadas Dam should continue to function with a normally closed gate.

Conclusions

With the improvements and controls in place, the Corrales Main Canal/La Orilla Outlet will convey the expected 100-year discharge with adequate capacity to meet local and national flood protection standards.

DRAINAGE BASIN BOUNDARY

DRAINAGE BASIN BOUNDARY

DRAINAGE BASIN BOUNDARY

BASE MAP FROM

North

750 375 0 750

Scale: 1" = 750'

Albuquerque Sheets

B-11	B-12	B-13
C-11	C-12	C-13
D-11	D-12	D-13

Smith Engineering Company
A Full Service Engineering Company

FIGURE 1
VICINITY MAP

SEC - 4

NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA

Project Configuration

The project location and configuration as described in the *Design Memorandum for the North Coors Drainage Management Plan* (Design Memorandum-84) dated October 19, 1984 is not changed, for the North Area and South Area, by this revision. For the Middle Area, the drainage basins and site conditions have been updated to reflect the existing facilities within the watershed and any future controls that are planned. All documents that have provided revisions to the Middle Area are superseded by this document.

Introduction

The North Coors Drainage Management Plan (NCDMP) Middle Area comprises 1.9 square miles of residential and commercial development located in the northwest sector of the City of Albuquerque. The existing drainage system within this area was established based on a previously adopted master plan entitled the "North Coors Drainage Management Plan," and the accompanying technical reports that are titled Design Memorandum. The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) is updating the North Coors Drainage Management Plan/Design Memorandum for the Middle Area, to provide updated guidance regarding allowable discharge rates and capacity restrictions to the existing and future drainage facilities. Some of the existing facilities were planned and designed using older hydrologic criteria and may require additional discharge restrictions to safely convey flows generated under the current AMAFCA/City of Albuquerque/Bernalillo County criteria. Hydrologic and hydraulic analyses contained herein were performed for existing facilities and for anticipated future facilities and site conditions.

Study Area

The study area is located in the northwest sector of the City of Albuquerque. The area is bounded on the north by the Calabacillas Arroyo; on the south by La Orilla Road; on the west by the Piedras Marcadas Dam Watershed, Eagle Ranch Road, and residential development; and on the east by the Corrales Main Canal. A vicinity map of the study area is included as Figure 1.

Scope of Report

This drainage management plan includes the analysis of the future drainage system and the evaluation of the performance of that system. The study includes the following tasks:

- Data Collection and Review
- Evaluation of Existing Hydrologic Conditions *
- Evaluation of Existing Hydraulic Conditions *

- Evaluation of Future Hydrologic Conditions
- Evaluation of Future Hydraulic Conditions
- Establishing Sediment Control Criteria
- Coordination with Affected Parties and Agencies

* Existing hydraulic and hydrologic conditions are evaluated in the separately bound report that accompanies this plan titled "Report on Existing Conditions for Revisions to the North Coors Drainage Management Plan Middle Area."

Goals

The purpose of this report is to assess the future drainage basins, analyze capacity constraints of the La Orilla Outlet and provide recommendations for a drainage system which will accommodate developed conditions stormwater runoff in the Middle Area during the 100-year, 24-hour storm event. The results of the study will provide technical background data, hydrologic and hydraulic computations, and system capacity criteria to guide future design. This effort includes a hydrologic and hydraulic analysis of the developed drainage system, and an analysis of drainage improvements necessary to convey stormwater and mitigate potential flooding caused by future conditions.

Past Studies

Many drainage reports addressing portions of the Middle Area have been conducted in conjunction with development projects in the plan area. These reports examine the effect of local development on hydrology, hydraulics, and storm drain systems. Data from 38 reports have been reviewed by Smith Engineering Company (SEC), and a separate volume containing excerpts from these reference documents is included with this report.

Mapping

New photographic mapping, dated July 1996, was generated by Thomas R. Mann & Associates (TRM) for the purposes of this amendment. The new aerial photography was used to determine existing land use in the study area. Existing topographic mapping (2 foot contour interval from mapping completed in 1973) was added to the photographic mapping as a scaled overlay. The topographic mapping was used to assist in the delineation of drainage basins, with supplemental field investigation and review of existing drainage plans. The mapped area is slightly larger than the study area and covers portions of 10 sections (City of Albuquerque/County of Bernalillo Zone Atlas B-11, B-12, B-13, B-14, C-11, C-12, C-13, D-11, D-12, D-13.) The mapping services provided for this plan included:

- Preparation of 1"=500' scale mylar reproducible composite using aerial photographs overlaid with existing 2' contours in a 24" x 36" format.

- Preparation of aerial photography contact prints. These were used to assess land use in conjunction with the hydrologic modeling effort and to aid in viewing planimetric features (housing, utilities, streets, etc.)

Area Construction

The Middle Area of the North Coors Drainage Management Plan is impacted by the following constructed facilities that serve to alter historic flows. Please see Plates 1 and 2 for locations.

- The Corrales Main Canal was constructed in the early 1930's. Modifications and improvements have occurred to this channel since this time. Most significantly, in 1986, AMAFCA improved this channel with sections of earth lining, concrete and gunnite from the access road to the Southwest Polytechnic Institute to the La Orilla Outlet to the Rio Grande, located 500 feet north of La Orilla Road. This AMAFCA project was the "North Coors La Orilla Outlet to the Rio Grande" that was constructed at the location of the Middle Rio Grande Conservancy District (MRGCD) Corrales Main Canal. Included within this construction were two concrete box culverts and several side inlet structures to convey flow to the channel from adjacent properties. The AMAFCA project included the accommodation of irrigation flows in the Corrales Main Canal and stormwater flows from upstream watersheds. The AMAFCA project also included a storm drain outlet (principal spillway w/gate normally closed) that receives flow directly from the Piedras Marcadas Dam.

- Paradise Boulevard was constructed in the 1950's at the southern extent of Black Ranch Tract 2. Drainage from the west was conveyed along Paradise Boulevard, where it crossed Coors Blvd. and entered Black Ranch Tract 2.

- Coors Boulevard NW was constructed in the 1940's and 50's approximately 500 feet west of the Corrales Main Canal. There are culverts located along Coors Boulevard that convey stormwater to various properties east of the road. The culverts commonly discharge directly onto the eastern side properties. See Plate 1 for the location of these culverts.

- Irving Boulevard, constructed in the 1970's and 1980's, conveys some surface drainage from lands to the west to the intersection of Coors Boulevard. From this intersection, the stormwater is conveyed southward along Coors Boulevard, or is conveyed across Coors Boulevard and is then carried southward. All of the water that reaches the Coors Boulevard/Irving Boulevard intersection is projected to reach Black Ranch Tract 2. This water is then conveyed to the Corrales Main Canal, where it enters the canal or flows over the canal.

- The construction of Paseo del Norte and the grade separated intersection at Coors Boulevard, by the New Mexico State Highway and Transportation Department (NMSH&TD) in 1987-1988, has further defined the drainage basin that existed with Paradise Boulevard. The Paseo del Norte project also included construction of a six foot by ten foot (6'x10') concrete box

culvert (CBC) under Paseo del Norte along the alignment of the Corrales Main Canal. The CBC connects to the North Coors La Orilla Outlet, constructed by AMAFCA. Two 36-inch culverts were extended from Black Ranch Tract 2 to the CBC with the Paseo del Norte construction. The CBC carries both the irrigation flows from the canal and the stormwater flows from upstream watersheds. Under an agreement with the MRGCD and the NMSH&TD, AMAFCA currently maintains the CBC.

- As a part of the Paseo del Norte project, the NMSH&TD constructed a detention pond at the southwest corner of Paseo del Norte and Coors Blvd. This pond has approximately 3 ac-ft of storage. Flows from sub-basin 11.1W flow to this pond. This includes street flow from Paseo del Norte that is collected in catch basins upstream of the pond. There are two 30-inch culverts extended from this pond that discharge into the CBC previously referred herein.

- The City of Albuquerque has constructed the Eagle Ranch Road Storm Sewer in the watershed west of Coors Boulevard and north of Paradise Boulevard. This storm sewer conveys stormwater to the Calabacillas Arroyo, located approximately ¾ miles north of the Coors Boulevard / Paseo del Norte intersection. The storm sewer provides a drainage outlet for significant upstream development, that would historically reach the Corrales Main Canal.

- The City of Albuquerque through a private development project has extended the paving of Eagle Ranch Road approximately 1000 feet south of the All Saints Road / Eagle Ranch Road intersection. The paving of this road has also included the construction of curb and gutter. The properties to the west of this section of Eagle Ranch Road now drain to the Piedras Marcadas Dam.

- In the historic basin 11.2E, there is a storm drain with catch basins that connect directly to the CBC at the Corrales Main Canal. There are two catch basins located on either side of Coors Boulevard at a low spot between Paseo Del Norte and the road to the Southwest Indian Polytechnic Institute (SIPI). There are also two catch basins along a private road 1100 feet south of Paseo del Norte that drains to the Corrales Main Canal.

- The recently developed Riverfronte Estates is located immediately upstream of the Corrales Main Canal at the northeast extent of the basin boundary. This development required that "each lot shall be graded such that all stormwater generated on site and on the adjacent street paving shall be contained in on-site ponding." There is active construction at this location, and it was not possible to verify compliance with these requirements from visual observation of the site. If the ponding condition is not met, there will be an increased chance of overtopping the Corrales Main Canal and flooding of lands to the south. Because of existing Corrales Main Canal capacity restrictions, any ponding deficiency at Riverfronte Estates will not impact the developed condition flows in the Corrales Main Canal south of Paseo del Norte. Currently, the ponding requirements are being enforced and inspected by the Bernalillo County Public Works Department. Hydrology for this report assumed that the Riverfronte Estates ponds were in place and functioning.

- The Alban Hills area located west of Coors Boulevard has developed at a density that is consistent with the Coors Corridor Sector Plan. Discussions with representatives of the Alban Hills home owners association indicate that the subdivision will not likely exceed a development density of one dwelling unit per five acres because of existing building covenants for the subdivision. This development density is consistent with City of Albuquerque / Bernalillo County planning documents. Existing aerial photography shows that this density has not been exceeded.

Existing Stormwater Discharge Controls

- There is significant residential and commercial development that has occurred and is occurring in the historic watershed. Many of the developments include detention ponds to collect stormwater and release it at a controlled rate. These flow restrictions are imposed by the allowable discharge requirements of the existing North Coors Drainage Management Plan. Developments located above the Eagle Ranch Road Storm Sewer frequently include storm water connections directly to the storm drain without ponding because this facility was designed to accommodate unrestricted discharge.

- The design criteria for the North Coors La Orilla Outlet and restrictions in the North Coors Drainage Management Plan have placed control of sediment requirements on upstream development. *This criteria was included in the La Orilla Outlet plans, based on consultation with the MRGCD, to address concerns for maintenance of irrigation flows and control of potential pollutants*. Developments that drain to the North Coors La Orilla Outlet were expected to meet the following criteria:

  ⇒ Minimum Pond Storage = 0.0024 acre-ft per acre of upstream drainage basin (this is sediment storage exclusive of hydraulic routing)
  ⇒ Velocity of Sediment Fall = 0.002 ft/sec
  ⇒ Max Horizontal Velocity in Sediment Pond = 0.5 ft/sec at 50% of 100 year storm peak discharge
  ⇒ Retention Time in Pond (sec) = Depth of Pond (ft) / 0.002 ft/sec
  ⇒ Design flows based on 50% of 100 year storm peak discharges

These restrictions minimize the sediment and stormwater pollutants that can reach the canal during normal flow and flood conditions.

Proposed Construction

- The City of Albuquerque is currently in the design phase of a Special Assessment District (SAD 224) project to mitigate some localized flooding problems in the vicinity of Congress Avenue, Irving Boulevard, and Eagle Ranch Road. The proposed improvements include expanding the Cactus Hills Subdivision detention pond storage by a factor of 1.6 This would

increase the current capacity of the pond from 9.93 acre-feet to 16 acre-ft. The project also calls for a new 66 inch outlet to be installed with the pond. The flows from the pond would then be diverted through the 66 inch pipe to the Calabacillas Arroyo. With this construction, 211 cfs would be diverted out of the Corrales Main Canal watershed to the Calabacillas Arroyo. This proposed project will reduce potential flooding in the vicinity of Congress Avenue, Irving Boulevard, and Eagle Ranch Road.

- The "Report on Stormwater Drainage for a Proposed Pond at the northeast corner Coors Boulevard NW and Paseo del Norte NW," (C.E. Anderson, May 1995) analyzed the need for a stormwater detention pond at the Black Ranch Tract 2 property. In that report, it was identified that 554 cfs of peak flow and 45.6 ac-ft of stormwater runoff would reach Tract 2 from a 100-year storm event. With this criteria, a pond with the following properties was computed:

Pond Properties at Tract 2

Volume	= 35.2 ac-ft
Peak Discharge	= 37.4 cfs
100-Year Water Surface Elevation	= 5001.0 ft
Area of 100-year Water Surface	= 5.78 acres

- An approach similar to the existing adjacent Riverfronte Estates is anticipated with the historic sub-basin 8.3E. Sub-basin 8.3E is a future residential development site that should develop in a manner similar to Riverfronte Estates. Because of the nearly flat slope in the area there is little means for draining the area. For an initial trial model, it was assumed that the area would develop at the same density as Riverfronte Estates without retention ponds. The amount of stormwater generated by this scenario would cause the capacity of this section of the Corrales Main Canal to be exceeded. A recommended scenario would require that Basin 8.3E develop at the same density as Riverfronte Estates with retention ponds for streets and lots. This situation would allow the Corrales Main Canal to convey irrigation flows without failure during a 100-year storm event.

- Future planning calls for the widening of Coors Boulevard in the vicinity of the study area. This could provide for additional north and south bound lanes. This increase in roadway width will likely include the installation of storm drain and catch basins along Coors Boulevard. The increase in runoff from the subsequent impervious area will only slightly increase the existing condition peak flows at the Black Ranch Tract 2 property. This improvement is represented as Basins 505A and 506A in the hydrologic modeling.

- Bosque Meadows Subdivision is a planned development that is represented as basins 16.3NRTH, 16.3STH and 17.4E in the hydrologic modeling. The proposed project is a 104 lot subdivision on approximately 17.3 acres. This subdivision is planned to develop in a manner consistent with concepts discussed in the Coors Corridor Sector Plan. The proposed

drainage concept is to accept and route the offsite flows through the project, collecting all on-site flows and routing the combined flows to a proposed channel on the east side of the project. The proposed channel will convey the runoff south through a storm drain pipe that will take the flows offsite and into the Corrales Main Canal. The proposed plan includes several ponds that will be used to control both stormwater, and offsite and onsite sediment.

- Eagle Ridge Apartments is a proposed development that is represented as basins 12.1W and 12.2W in the hydrologic modeling. The apartment complex is proposed to develop at a rate of 42% land treatment B and 58% land treatment D. The proposed drainage concept for basin 12.1W is to route the developed flows through a series of ponds to achieve an allowable discharge rate of 12 cfs. The 12 cfs will be released into the Corrales Main Canal through a pipe culvert under Coors Boulevard. Basin 12.2W includes the future extension of Eagle Ranch Road and an area above the emergency spillway from the Piedras Marcadas dam. Flows generated from this area will be collected at the southern extent of the property and conveyed south approximately 500 feet. The flows will then be collected in pipe culverts and routed east under Coors into the Corrales Main Canal.

North Coors Drainage Management Plan and Changing Hydrology Criteria

When the "North Coors Drainage Management Plan" was adopted in 1985, the community hydrology procedures were based on the City of Albuquerque Development Process Manual. Procedures used SCS Curve Number methodology with a rainfall peak intensity occurring in the first 30 minutes of a 6-hour storm and infiltration parameters (Curve Numbers) utilizing tables developed by national handbooks. Subsequent research and documentation revealed local underestimation of flow rates and volumes with this approach. In April 1993, the City of Albuquerque, AMAFCA and Bernalillo County adopted a new Section 22.2, Hydrology - Development Process Manual, that substantially changed the application and results of hydrology studies.

The new procedures reflect current understanding of expected runoff. The construction of the CBC by the NMSH&TD and the La Orilla Outlet by AMAFCA was based on the North Coors Drainage Management Plan and the runoff quantities computed with the 1985 procedures. The capacity of these existing facilities cannot be readily increased.

The North Coors Drainage Management Plan required discharge controls from most watersheds and proposed that control be based on the design flow capacities of facilities implemented by the plan. Many of the watersheds in the plan area are only partially developed and existing condition flows are substantially less than flows that might result from ultimate development. While changing hydrology criteria increases the estimate of flows computed from the watersheds in this area, there is an opportunity to restrict discharge to available downstream capacity, as is required by AMAFCA, City of Albuquerque and Bernalillo County regulations.

Hydrology Criteria

The updated hydrologic analysis of the Middle Area utilizes the methodology of the City of Albuquerque's Development Process Manual - Volume 2, Design Criteria - Section 22.2, Hydrology, dated January 1993 (DPM 22.2). The principal design storm is the 100-year, 24-hour event. Rainfall depths were obtained from the NOAA Atlas 2 that is referenced in the DPM 22.2. The computer program, AHYMO (version 1/94) was used to compute the runoff for the study area using procedures outlined in the DPM 22.2. The AHYMO program utilizes a unit hydrograph procedure along with initial abstraction and uniform infiltration losses. The COMPUTE NM HYD function of AHYMO was used to generate sub-basin hydrographs for the watershed. The ROUTE MCUNGE function was used for arroyo and channel routing; this function utilizes the Muskingum Cunge channel routing methodolgy.

The time-to-peak (Tp) for each sub-basin was computed using the SCS Upland Method for sub-basin reach lengths less than 4,000 feet as described in the DPM 22.2. Where the sub-basin reach length was greater than 4,000 feet, the time-to-peak was calculated using the transition equation as described in the DPM 22.2. Flow paths generally followed existing streets, natural drainage paths, swales, and/or parking lots. Numerous existing retention and detention ponds were included in the hydrologic model where field inspection indicated that the ponds were in place and functioning. In some cases, additional field measurements were performed with this study to verify pond volumes and discharge sizes.

Land use was determined from aerial photographs and field reconnaissance. Each sub-basin was divided into the following land use categories: commercial, residential, schools, unpaved cleared areas, and natural areas. Each land use category was further classified with up to four land treatments (Natural or Landscaped, Disturbed Soil, Grass, and Impervious.) The percentages of land treatments used for the hydrology are summarized in Table D. The determination of the percentage of impervious (Type D) land treatment is based on Table A-5, DPM 22.2.

Hydrologic Assumptions for Future Watershed Conditions

Developed land use conditions were assumed for the hydrologic modeling of the study area. Where vacant or undeveloped parcels presently exist, the Albuquerque/Bernalillo County Comprehensive Plan and Zone Atlas Map was used to predict future land use conditions. Proposed detention basins were modeled where flow from a future developed area exceeded the capacity of the facility that it is draining to. Proposed land uses and basin delineations were developed from the existing North Coors Drainage Management Plan from updated hydrologic studies of the study area and from available drainage plans for existing and proposed developments.

Description of Drainage Area

The Middle Area of the North Coors Drainage Management Plan comprises a drainage basin of about 1.9 square miles. The majority of the watershed is within the City of Albuquerque limits. The southwest portion of the study area is outside the City limits and falls under the jurisdiction of

Bernalillo County. The Corrales Main Canal, also known as the North Coors La Orilla Outlet, borders the study area on the east and is the major drainage channel within the watershed. The Corrales Main Canal has a seasonal base flow of 38 cfs used for irrigation purposes. The base flow in the canal is controlled by the gate diversion structure and inverted siphon upstream of the Calabacillas Arroyo, at the north boundary of the study area. These upstream facilities are designed so that any irrigation flows in excess of 38 cfs must flow directly to the Rio Grande and cannot be conveyed to the study area.

The drainage basins from the North Coors Drainage Management Plan were reviewed with this study. On-site observation of the development and drainage facilities was performed to evaluate changes to existing conditions not reflected by the North Coors Drainage Management Plan. Even the contributing watershed area required reassessment. The North Coors Drainage Management Plan topographic mapping did not reflect most of the new development and it was necessary to obtain drainage plans for the developments from the City of Albuquerque and AMAFCA records. The drainage basin analysis for the "Report on Existing Drainage Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo del Norte (Anderson, 1995) served as a primary resource for the drainage basin analysis. This was supplemented by the report entitled "Paradise Golf Course Drainage Plan," Easterling & Associates, 1996. Additional hydrologic analysis came from the drainage study for SAD 224 (Wilson & Company 1996.) Additional changes in the watershed development made subsequent to these reports were incorporated into the hydrologic model.

This study needed to create a model that reflected the level of development that would occur some years in the future. Smith Engineering Company was able to locate master drainage plans that described future conditions for several currently undeveloped areas. The physical conditions described in these plans were used when other more detailed plans were not available. Where drainage master planning did not exist, such as at portions of The Knolls of Paradise Hills subdivision and Alban Hills, drainage was based on existing topographic mapping and typical residential development for the area.

A significant facility to be evaluated was the Eagle Ranch Road Storm Sewer. This facility was constructed prior to 1993, and much of the upstream development draining to this facility was approved and /or constructed prior to 1993. Because 1993 marks a time when significant changes were made to the required hydrologic procedures for a 100-year event, it was expected that major differences in flow rates reaching the storm drain would be found when evaluating the watershed under current criteria. It was necessary to determine if the Eagle Ranch Road Storm Sewer was being fully utilized or if capacity remained to accept additional flows. Design drawings for the storm drain were obtained from the City of Albuquerque and used in the hydrologic modeling.

A new developed conditions watershed model was created using the AHYMO computer program (AHYMO 194). Information from 38 drainage plans and reports were incorporated into this study. These reports define the development that has occurred in the watershed. Some of the existing plans filed for this study were based on hydrology developed prior to the adoption of the DPM Chapter 22.2, Hydrology in 1993. Therefore, it was not deemed appropriate to use the flow rates

published in these reports. Instead, flow rates were established by the current DPM 22.2 procedures using the AHYMO computer program. The computer analysis used sub-basins modeled to simulate the physical conditions described in the reports. Where future land uses, grading and facilities were described in the reports, they were incorporated into the new computer model. The new model contains 66 sub-basins, and 16 existing or future stormwater detention ponds. In many cases, these sub-basins included multiple basins identified in the existing drainage plans. The sub-basin locations are shown on Plates 1 and 2 of this plan.

Upon executing the 100-year rainfall simulation with the model, with out proposed facilities in place locations were identified where flows divided so that some flow went to constructed facilities, up to the designed limit, then any excess flows were carried overland to other sub-basins. Modeling identified 12 locations in the watershed where this divided flow condition occurs. At 2 locations of the 12, the flows divide so that some flow is carried out of the watershed study area. This occurs at hydrograph CB6.73 which includes basins 413, 414, and 415 (with discharges to the Calabacillas Arroyo) and hydrograph CB9.1 which includes basin 412 (pipe flow in existing 60" SD to the Calabacillas Arroyo). It is expected that some of the divided flows are a consequence of applying current hydrologic criteria to existing facilities designed and constructed under earlier criteria.

Computer printouts of the input file and output summary file for the watershed are contained in Appendix A. Plates 1 and 2 are watershed maps showing the watershed sub-basins and main features. This analysis shows that 382 cfs of peak flow and 136 acre-feet of stormwater runoff would reach the La Orilla Outlet from a 100-year storm event.

Hydraulic Modeling

A hydraulic model of the Corrales Main Canal was developed by using the U.S. Army Corps of Engineer's water surface profile program, HEC-2 (Version 4.6.0, February 1991). The input for the existing conditions HEC-2 model was developed from construction drawings for the channel. The following as-built plans were used for the model:

⇒ Corrales Main Canal STA 598+00 - 658+00, State of New Mexico - Middle Rio Grand Conservancy District (MRGCD), 1933 Revision 1982, Sheet #A-46.2

⇒ North Coors Drainage La Orilla Outlet to the Rio Grande, Albuquerque Metropolitan Arroyo Flood Control Authority, October 1986, Sheets # 5, 6, 7, 8 and 9 of 46

⇒ Paseo del Norte over Coors Boulevard - Corrales Canal, New Mexico State Highway and Transportation Department, March 1986, Sheets # 5-14, 5-14A, 5-14B, 5-15, 5-16, and 5-17

These plans were obtained from AMAFCA, MRGCD, and State Highway and Transportation Department archives. The facilities described in these plans appear to be in place and functioning.

Results of Hydraulics

Through the execution of the HEC-2 model, it was determined that upstream of the NMSHTD box culvert there is not enough capacity within the channel for the 100-year flows under existing conditions. It was determined that the existing channel in this area has an approximate flowing-full capacity of 91 cfs (with no freeboard). The existing condition flows entering the canal from basin 8.3E will exceed this rate and overtop the canal; overtopping depths average 3.5 feet. A visual inspection of the canal determined that there is presently less than 2 feet of freeboard in this section of the channel under normal irrigation conditions and no capacity for stormwater flows. It is likely that adjacent properties to the south and east of the canal could experience flooding during the 100-year event due to general overtopping flows or a breach in the canal bank. The exact location for such flooding is difficult to predict due to the age and condition of the existing earth channel bank. The area of such flooding would be confined to the region east of the Corrales Main Canal and north of Paseo del Norte.

The future development of basin 8.3E with retention ponds would eliminate stormwater flow to the canal upstream of Paseo del Norte. For both the NMSHTD box culvert, and for the North Coors La Orilla Outlet, the HEC-2 analysis indicates that the 100-year developed condition flows are conveyed with not less than 2 feet of freeboard. This freeboard is the minimum amount required under current Federal Emergency Management Agency (FEMA) design criteria for flood control channels with levee conditions. Developed condition design flows are comparable to the published design capacity of the designed facilities. With the peak flow controls that are identified with the hydrologic modeling, the developed conditions stormwater discharges from a 100-year storm will not exceed the published design capacity of the canal or CBC. See Table A for a comparison of the developed conditions flows and the design capacity in the channel.

The analysis of the flooding flows includes the irrigation flow as a base flow. At the upstream boundary of the study area an existing siphon-bypass structure diverts excess irrigation flows directly to the Rio Grande (the Calabacillas Outlet Structure) so that the irrigation flow rate is controlled to a maximum rate of 38 cfs. It was determined that during flood conditions an additional 12 cfs could be conveyed through the inverted siphon of the Corrales Main Canal. A peak flow of 50 cfs is included in the 100 year input hydrograph for the canal irrigation flows in the AHYMO model. There is an existing channel check structure for irrigation flows located at station 700+02. This check structure was modeled in the fully closed position so that the highest expected water surface elevation is computed. When this check structure gate is opened, the water surface would be lowered.

The outlet pipe from the Piedras Marcadas Dam flows directly to the Corrales Main Canal in the study area. This flow is controlled by a "normally closed" gate that is only opened when capacity in the Corrales Main Canal is available. Therefore, it is not necessary to include flow from the dam when modeling peak flows in the Corrales Main Canal. Input data and the summary of results from the HEC-2 runs are included in Appendix B.

Sediment Yield and Control Criteria

The slope of the Corrales Main Canal - North Coors La Orilla Outlet is at 0.0006 feet per foot. This very flat slope results in flow velocities that are frequently between 1.5 and 2.0 feet per second for 100-year peak flows. Other storm events will produce slower velocities. The channel irrigation check structure at Station 700+02, causes even lower localized velocities. Except for fine clay particles, sands and silts that enter the channel will be deposited in the channel bed with subsequent loss of channel capacity. An additional concern is the pollutants that may be carried with the stormwater. When the North Coors La Orilla Outlet Plans were developed, the design required the removal of coarse silt from flows entering the Corrales Main Canal at a rate of 50 percent of a 100-year storm peak discharge. The sediment removal criteria was established based on with consultation with the Middle Rio Grande Conservancy District (NRGCD) and incorporated into the Construction Drawings for the North Coors Drainage Channel and Outlet into Rio Grande Vicinity La Orilla Road (Scanlon & Associates, 1986). Removal of sediment also provides a substantial level of removal of other pollutants that precipitate with the sediments.

The removal of coarse silt at 50% of the 100-year storm discharge (Q_{100}) requires that sediment control ponds be placed prior to final discharge to the canal. These sediment control ponds provide the following functions:

- Control of retention time so that coarse silt particles can fall to the bottom of the pond.
- Control of pond velocities so that deposited sediment is not reintroduced into the pond flow.
- Storage of sediment so that it can be removed periodically following storm events.

The size of sediment control ponds should be based on inflow rates and velocities, allowable discharge, and quantity of sediment received. Sediment control ponds may also serve to control peak discharge to the canal where allowable inflow capacities of the canal are exceeded by the expected rate of runoff.

The design of sediment control ponds for this Plan must include the following design criteria:

A. Minimum Sediment Storage Capacity

This is the storage volume established in the bottom of sediment control ponds for the storage of sediment that will collect during a storm event. This volume does not include volume required to maintain maximum flow velocities or provide flow attenuation. The design criteria is based on 50 percent of the 100-year peak inflow (50% of Q_{100}).

- For areas with 0 to 10 percent impervious areas (paving, roofs, walks, etc.):

  Sediment Storage = 134 cubic feet/acre watershed

- For areas with 10 to 65 percent impervious areas:

  Sediment Storage = (154 - 2 * % Imp) cubic feet/acre watershed

- For areas with 65 to 100 percent impervious areas:

  Sediment Storage = 24 cubic feet/acre watershed

These values represent 50 percent of the quantity of sediment that might be expected from a typical watershed during a 100 year storm event. Where design of the full 100-year storm is required for flood prevention, values of two times those should be utilized. For some areas, the more detailed and complex procedures from the AMAFCA Sediment and Erosion Design Guide (1994) should be used to determine sediment yield, but a minimum value of 24 cubic feet per acre of watershed, to account for accumulation of wind-generated sediments and local sediment debris, should be used.

B. Control of Retention Time to Drop Coarse Silt:

Minimum fall velocity = 0.002 ft/sec based on coarse silt

This criteria when combined with the expected flow depth and horizontal velocity will establish the length of the pond.

Length of pond (ft) = (depth (ft)/fall velocity (ft/sec)) x horizontal velocity (ft/sec)
* For depth requirements see "C" below.

For many configurations this criteria will also establish the minimum pond area based on the pond inflow:

Area pond (sq.ft.) = pond inflow (cfs)/fall velocity(ft/sec)

The pond inflow should be based on 50% of the 100-year peak flow (50% of Q_{100}).

*Note that under this criteria, the creation of deeper ponds will not generally serve to reduce pond areas or lengths.

C. Control of Pond Velocities:

Studies of sediment transportation show that fine materials can be reintroduced into flowing water when horizontal velocities exceed 0.5 ft/sec. Therefore, the horizontal

velocity in the sediment control ponds must not exceed 0.5 ft/sec at 50% of the 100-year peak pond inflow.

This criteria when combined with the inflow rate and the pond width will establish the minimum sediment pond depth as follows:

Min pond depth (ft) = pond inflow (cfs)/pond width (ft)/max horizontal velocity (ft/sec)

The pond inflow should be based on 50% of the 100-year peak flow (50% of Q_{100}). Note that the pond depth must be in addition to depth required for sediment storage.

The sizing of sediment control ponds is dependent upon the design inflow (50% of Q_{100}) and does not depend on the allowable discharge. However, the size of any ponding to achieve peak flow attenuation will depend upon the allowable outflow. The size of the sediment ponds is not a function of the average inflow and outflow, because, when the inflow exceeds the outflow, a vertical velocity for the rising pond surface is created. This vertical velocity causes a subsequent reduction in the effective particle fall rate that offsets any reduction in horizontal flow rate.

Note that:

$$\text{Area} = ((Q_{in} + Q_{out}) / 2) / (\text{fall velocity} - ((Q_{in} - Q_{out}) / \text{Area} / 2)$$

Can be reduced to:

$$\text{Area} = Q_{in} / \text{fall velocity}$$

Appendix C contains a design procedure and a corresponding example (see last page of Appendix C) to size a Sediment Control Pond given the sediment criteria outline above. The design procedure presented is for sizing for the sediment control function only and does not account for any required reduction for allowable pond discharge.

Recommended Elements or Controls for Plan Implementation

- The allowable discharge rates summarized on Table B and Table C and detailed in Appendix A, must be used to guide upstream development. Where developed flows would exceed these rates, on-site detention ponding will be required.

- The proposed detention pond on Tract 2 of Black Ranch should be constructed.

- The existing detention pond at the southeast corner of Coors Boulevard and Paseo del Norte in the NMSH&TD right-of-way should continue to be maintained.

- The Cactus Hills Subdivision detention pond and new outlet pipe to the Calabacillas Arroyo should be constructed, as proposed by the City of Albuquerque.

- Future construction in Basin 8.3E (north of Corrales Main Canal and east of Coors Boulevard) should provide for retention ponding with capacity for a 100-year, 10-day event.

- The Corrales Main Canal north of the existing concrete box culvert at Paseo del Norte does not need to be lined or expanded for future flood control purposes or to receive developed condition flows. This does not preclude improvements that may be required to address irrigation canal maintenance or local drainage problems that may exist.

- The existing earth-lined segment of the Corrales Main Canal/North Coors La Orilla Outlet between the road to the Southwestern Indian Polytechnic Institute and the Piedras Marcadas Dam Outlet, may be lined when warranted by adjacent development. A future channel realignment may also be possible in this area, subject to approval of the MRGCD.

- All basins that discharge to the Corrales Main Canal/North Coors La Orilla Outlet must be constructed with sediment control ponds. Sediment control rates should be based on 50 percent of the 100-year peak flows with control of coarse silt.

- The Piedras Marcadas Dam should continue to function with a normally closed gate, so that discharge from the dam does not increase peak flows in the Corrales Main Canal/North Coors La Orilla Outlet.

Conclusions

With the proposed improvements and controls in place and functioning in the watershed study area, the Corrales Main Canal/La Orilla Outlet will intercept the 100-year developed condition flow that reaches the canal downstream of Paseo del Norte. There are no known conditions that cause flow to cross over the canal. The Corrales Main Canal/La Orilla Outlet in this reach will therefore carry the expected 100-year discharge with no less that 2 feet of freeboard. See Table A for comparison of the design capacity of these facilities with the proposed developed conditions hydrology.

TABLE A
HYDRAULIC SUMMARY
NORTH COORS DRAINAGE MANAGEMENT PLAN (NCDMP) - MIDDLE AREA
FLOWS IN COORS BOULEVARD / PASEO DEL NORTE INTERCHANGE CBC AND
FLOWS IN NORTH COORS LA ORILLA OUTLET

Location	Station (ft)	Design Capacity (2 ft Freeboard) (cfs)	Q_{100} Developed Conditions (Proposed Improvements In Place) (cfs)
Upstream End CBC	632+75	285	85
Road to SIPI	645+00	263	134
Stout Subdivision	660+00	273	153
Outlet from Piedras Marcadas Dam	672+56	305	301
Check Structure	700+02	330	321
Riverside Drain Overchute	713+75	389	382

TABLE B
HYDROLOGY SUMMARY - PEAK FLOWS
NORTH COORS DRAINAGE MANAGEMENT PLAN (NCDMP) - MIDDLE AREA

BASINS THAT DISCHARGE DIRECTLY TO
THE CORRALES MAIN CANAL / LA ORILLA OUTLET

Basin	Original NCDMP (cfs)	Future Controls	AHYMO Computed Sub-Basin Flows (cfs)	*Allowable Discharge By This Plan (cfs)
8.3W	156	Yes	59	0
101EA - 506A	337	Yes	457	38
11.1W	176	Yes	114	43
11.2E	35	No	74	74
12.1W	79	Yes	97	12
12.2W	42	Yes	16	15
12.3E	44	Yes	62	10
13.1W	26	Yes	21	8
13.2E	36	No	34	34
14.1W	33	No	67	67
15.1W	21	No	30	30
15.2W	50	No	75	75
15.3E	50	Yes	30	30
16.1W And 16.3NRTH	26	No	70	70
16.2W And 16.3 STH	51	Yes	151	35
16.3E	109	No	26	26
17.1W	10	No	11	11
17.4E	136	Yes	87	87
Numeric Total	1669		1481	665
Total Not Controlled	280		387	387
Routed Total	389		381	*Based on existing downstream capacity.

Note: All of these discharge areas will require sediment control ponds.

TABLE C
AHYMO PARAMETER SUMMARY SHEET

BASIN #	AREA	LAND TREATMENTS				Tp	Q100 * DEVELOPED	ALLOWABLE PEAK DISCHARGE	V100 DEVELOPED
		A	B	C	D				
	(SQMI)					(MIN)	(CFS)	(CFS)	(AC-FT)
8.3E	0.05305	80	0	10	10	0.1333	59	0 ***	1.9
101EA	0.037	10	39	25	26	0.15	62	62	2.3
102EA	0.0447	18	59	13	10	0.216	46	46	2
103EA	0.0067	10	37	23	30	0.1333	12	12	0.43
104EA	0.0248	10	39	25	26	0.133	44	44	1.5
105EA	0.0236	10	39	25	26	0.176	35	35	1.5
106EA	0.0263	19	63	11	7	0.194	28	28	1.1
107EA	0.0213	20	64	10	6	0.181	23	23	0.86
108EA	0.047	17	58	13	12	0.254	44	44	2.2
109EA	0.009	16	51	10	23	0.133	15	15	0.5
110EA	0.006	5	15	10	70	0.133	14	14	0.6
104	0.0672	10	25	15	50	0.2191	107	107	5.5
105	0.1027	10	25	15	50	0.1876	203	203	8.3
106	0.0954	10	25	15	50	0.1463	190	190	7.8
106A1	0.00846	0	27.74	27.74	44.52	0.1333	18	14	0.7
107	0.0291	10	29.2	15	45.8	0.1333	59	59	2.3
108	0.024	10	27.4	15	47.6	0.1332	49	49	1.9
109	0.0207	20	22.5	15	42.5	0.1333	40	40	1.5
201	0.0258	10	25	15	50	0.1333	54	54	2.1
202	0.0288	10	27.7	15	47.3	0.1333	59	59	2.3
301	0.0182	10	25	15	50	0.1579	35	35	1.5
302	0.0043	0	10	0	90	0.1333	12	12	0.5
303	0.0669	0	10	0	90	0.1773	156	125	7.7
304	0.0349	0	10	0	90	0.1333	94	94	4
305	0.0391	0	10	0	90	0.1394	102	102	4.5
401	0.0236	10	22.3	15	52.7	0.1333	50	50	2
402	0.0088	0	28.6	28.7	42.7	0.1333	19	19	0.7
403	0.0144	0	22.9	22.9	54.2	0.1333	33	33	1.3
404	0.0161	10	25.1	15	49.9	0.1333	34	34	1.3
405	0.027	10	42	10	38	0.1333	51	51	1.9
406	0.0107	10	25	15	50	0.1333	22	22	0.9
407	0.0224	0	10	0	90	0.1333	60	60	2.6
408	0.0066	0	10	0	90	0.1333	18	4	0.8
409	0.0098	0	10	0	90	0.1333	26	26	1.1
410	0.0047	0	10	0	90	0.1333	13	13	0.5
411	0.0092	0	10	0	90	0.1333	25	25	1.1
412	0.0133	0	10	0	90	0.1449	34	34	1.5
413	0.0156	0	10	0	90	0.1333	42	42	1.8
414	0.00297	0	10	0	90	0.1333	8	8	0.3
415	0.0119	0	10	0	90	0.1333	32	32	1.4
501	0.01	0	10	0	90	0.306	17	17	1.2
502	0.0435	0	10	0	90	0.1333	117	117	5.1
503	0.0235	0	10	0	90	0.2284	49	49	2.7

TABLE C
AHYMO PARAMETER SUMMARY SHEET

BASIN #	AREA	LAND TREATMENTS A	B	C	D	Tp	Q100 * DEVELOPED	ALLOWABLE PEAK DISCHARGE	V100 DEVELOPED
	(SQMI)					(MIN)	(CFS)	(CFS)	(AC-FT)
504	0.0257	0	10	0	90	0.2025	57	29	3
505	0.0497	15	10	5	70	0.2066	108	108	5.8
505A	0.0056	0	10	0	90	0.1333	15	15	0.6
506	0.0559	10	30	30	30	0.2045	80	80	3.7
506A	0.00802	0	10	0	90	0.1868	18	18	0.9
11.1W	0.04607	10	10	0	80	0.1333	114	43 **	4.9
11.2E	0.02769	0	10	0	90	0.1333	74	74 **	3.2
12.1W	0.04399	0	42	0	58	0.1333	97	12 **	3.9
12.2W	0.00691	0	42	0	58	0.1333	15	15 **	0.6
12.3E	0.02616	0	25	0	75	0.14	62	10 **	2.7
13.1W	0.0102	25	20	0	55	0.1333	21	8 **	0.8
13.2E	0.0148	15	15	0	70	0.1333	34	34 **	1.4
14.1W	0.05117	60	10	10	15	0.1333	67	67 **	2.2
15.1W	0.0256	67	10	15	8	0.1333	30	30 **	0.9
15.2W	0.0638	67	10	15	8	0.1333	75	75 **	2.3
15.3E	0.0123	0	25	0	75	0.1333	30	30 **	1.3
16.1W	0.0333	67	10	15	8	0.1333	39	39 **	1.2
16.2W	0.0665	67	10	15	8	0.1333	78	24 **	2.4
16.3E	0.0112	0	20	20	60	0.13333	26	26 **	1
16.3NRTH	0.01565	0	52	4	44	0.1333	31	31 **	1.2
16.3STH	0.03122	0	23.7	16.5	59.8	0.1333	72	11 **	2.9
17.4E	0.05517	0	37.1	0	62.9	0.1333	87	87 **	3.5
17.1W	0.0103	73	10	10	7	0.1333	11	11 **	0.4

*Q100 Developed flows represent expected discharge values prior to implemented flow restrictions where the "Q100 Developed" is larger than the "Allowable Peak Discharge," on-site detention ponding is required.

** Sediment control ponds are required for any areas that discharge to the Corrales Main Canal / La Orilla Outlet.

*** Future retention ponding for a 100-year 10-day event is required.

TABLE D

100-YR. ROUTING RESULTS FOR RECOMMENDED DETENTION PONDS BASED ON FUTURE DEVELOPMENT CONDITIONS

(AHYMO194 Model Results)

AHYMO Analysis Point No..	Inflow Peak Discharge (cfs)	Inflow Time to Peak (hours)	Outflow Peak Discharge (cfs)	Outflow Time to Peak (hours)	Principal Spillway Description	Emergency Spillway Description	Pond Invert Elevation (ft a.m.s.l.)	Principal Spillway Elevation (ft a.m.s.l.)	Emergency Spillway Elevation (ft a.m.s.l.)	Top of Embankment Elevation (ft a.m.s.l.)	Maximum Water Surface Elevation (ft a.m.s.l.)	Freeboard (ft)	Maximum Storage Volume with No Freeboard (ac-ft)	Maximum Storage Volume at Peak ** (ac-ft)	Total Inflow Runoff Volume (ac-ft)	Total Outflow Runoff Volume (ac-ft)	Total Storage Time (days/hours)
109.RES (a)	583.5	1.6	176.7	2.03	1 60" RCP	Congress Avenue	5069	5069	5078	5078	5076.4	1.6	15.9	13.4	36.6	36.6	20 Hr
506.RES (b)	457.2	1.8	30.5	3.27	1 36" RCP	Corrales Main Canal	4992.8	4992.8	5001	5001	4998.3	2.7	35.4	21.2	34.9	34.9	20 Hr

** An allowance for sediment accumulation would be required in addition to this value.

(a) Congress Avenue Pond (Preliminary Pond Design by Wilson & Company Engineers)

(b) Black Ranch Tract 2 Pond (Preliminary Pond Design by Smith Engineering Company)

TABLE E
OFF SITE PONDING
NORTH COORS DRAINAGE MANAGEMENT PLAN (NCDMP) - MIDDLE AREA

Pond Designation	Contributing Basins	Inflow Rate (cfs)	Outflow Rate (cfs)	Pond Storage (ac-ft)
NMSH & TD Pond (11.1W.RES)	11.1W	115	45	3
Black Ranch Tract 2 Pond (506.RES)	501 - 506A	457	31	35
Congress Avenue Pond (109.RES)	101EA - 109	584	177	16
Paradise Hills Golf Course Pond (107EA.8)	101EA - 108EA	230	145	5

APPENDIX A

HYDROLOGY

- **Developed Conditions for Middle Area - Input Data and Summary Table**

***Note - A diskette with the AHYMO model has been provided to AMAFCA**

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= 2.650
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3 HR										
*S SUB-BASIN 8.3E										
*S RIVERFRONTE ESTATES										
COMPUTE NM HYD	8.3W-318	-	3	.05305	59.34	1.922	.67914	1.533	1.748	PER IMP= 10.00
*S** ADD FLOW IN CORRALES MAIN CANAL COMING FROM CALABACILLAS SIPHON ***										
STORE HYD	136.00	-	5	.00010	50.00	96.240	18044.95000	3.950	781.250	
*S BASE FLOW = 38 CFS IRRIGATION + 12 CFS WHICH CAME THROUGH SIPHON										
*S DURING 100 YEAR FLOOD.										
MODIFY TIME	136.00	5	5	.00010	50.00	96.711	18133.27000	3.950	781.250	
S ROUTE BASE FLOW DOWN CANAL TO 8.3 DISCHARGE POINT. **										
ROUTE MCUNGE	12.00	5	6	.00010	49.13	96.708	18132.74000	4.550	767.713	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	12.00	6	6	.00010	49.13	96.708	18132.74000	4.550	767.713	
ADD HYD	139.00	6& 3	6	.05315	97.34	67.218	23.71287	1.533	2.862	
*S ROUTE 8.3E DOWN CANAL TO 8.1 DISCHARGE POINT. **										
ROUTE MCUNGE	13.00	6	5	.05315	82.22	67.214	23.71136	1.533	2.417	CCODE = .2
MODIFY TIME	13.00	5	5	.05315	82.22	67.214	23.71136	1.533	2.417	
*S ROUTE 8.3E DOWN CANAL TO DISCHARGE POINT OF PROPOSED POND AT BLACK RANCH.**										
ROUTE MCUNGE	14.00	5	83	.05315	58.78	67.175	23.69755	1.900	1.728	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	14.00	83	83	.05315	58.78	67.175	23.69755	1.900	1.728	
*S CONTRIBUTING BASINS FROM PARADISE HILLS GOLF COURSE										
*S SOURCE: EASTERLING & ASSOCIATES,INC.										
*S SINGLE FAMILY RESIDENTIAL, APPROXIMATELY 2 DU'S PER ACRE										
COMPUTE NM HYD	101EA	-	1	.03700	61.63	2.278	1.15431	1.533	2.603	PER IMP= 26.00
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	102.00	-	2	.04470	45.64	1.986	.83306	1.600	1.595	PER IMP= 10.00
S ROUTE THE FLOW FROM 101EA THRU 102EA **										
ROUTE MCUNGE	101EA.1	1	3	.03700	56.98	2.255	1.14293	1.733	2.406	CCODE = .1
ADD HYD	102EA.1	2& 3	4	.08170	95.07	4.241	.97340	1.700	1.818	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE, INCLUDES SMALL PORTION OF LYONS										
COMPUTE NM HYD	103EA	-	5	.00670	12.31	.434	1.21488	1.500	2.871	PER IMP= 30.00
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	104EA	-	6	.02480	44.27	1.527	1.15445	1.500	2.789	PER IMP= 26.00
S ROUTE 103EA THRU 104EA **										
ROUTE MCUNGE	103EA.4	5	7	.00670	11.69	.432	1.20828	1.633	2.726	CCODE = .1
ADD HYD	103EA.4	7& 6	9	.03150	49.74	1.959	1.16590	1.533	2.467	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	105EA	-	10	.02360	35.41	1.453	1.15411	1.567	2.344	PER IMP= 26.00
S ROUTE FLOW COMING FROM 103EA.4 THRU 105EA **										
ROUTE MCUNGE	104EA.5	9	11	.03150	48.61	1.953	1.16256	1.600	2.411	CCODE = .1
ADD HYD	104EA.5	10&11	12	.05510	82.07	3.406	1.15894	1.600	2.327	
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	106EA	-	13	.02630	27.56	1.088	.77549	1.567	1.637	PER IMP= 7.00
S ROUTE FLOW COMING FROM 104EA.55 THRU 106EA **										
ROUTE MCUNGE	101EA.1	12	14	.05510	79.74	3.393	1.15469	1.667	2.261	CCODE = .1
ADD HYD	104EA.5	14&13	15	.08140	103.57	4.481	1.03217	1.667	1.988	
S ROUTE FLOW COMING FROM 102EA THRU 106EA **										
ROUTE MCUNGE	102EA.6	4	16	.08170	94.96	4.239	.97294	1.733	1.816	CCODE = .2
ADD HYD	106EA.25	15&16	17	.16310	193.46	8.720	1.00250	1.700	1.853	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	107EA	-	19	.02130	23.18	.856	.75365	1.567	1.701	PER IMP= 6.00
S ROUTE FLOW COMING FROM 106EA.25 THRU 107EA **										
ROUTE MCUNGE	107EA.6	17	2	.16310	187.19	8.678	.99767	1.800	1.793	CCODE = .1
ADD HYD	107EA.6	2&19	3	.18440	197.72	9.535	.96949	1.800	1.675	
*S GOLF COURSE, PARKING LOT AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	108EA	-	7	.04700	43.68	2.177	.86868	1.633	1.452	PER IMP= 12.00
ADD HYD	107EA.8	3& 7	8	.23140	230.18	11.712	.94901	1.800	1.554	
S ROUTE COMBINED 107EA.8 THRU RESERVOIR (DUCK POND & EMPTY HOLE) **										
ROUTE RESERVOIR	107EA.8	8	9	.23140	147.60	7.745	.62755	1.966	.997	AC-FT= 5.352

*S

*S OUTFLOW(CFS)	STORAGE(AF)	ELEV(FT)
*S 0.00	0.00	5241.0
*S 0.01	0.22	5242.0
*S 0.02	0.54	5243.0
*S 0.03	0.95	5244.0
*S 0.035	1.20	5244.5
*S 0.04	1.44	5245.0

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
*S 0.045	2.70		5245.5							
*S 0.05	3.96		5246.0							
*S 14.00	4.19		5246.1							
*S 27.00	4.41		5246.2							
*S 52.00	4.64		5246.3							
*S 76.00	4.86		5246.4							
*S 108.00	5.08		5246.5							
*S 139.00	5.30		5246.6							
*S 177.00	5.53		5246.7							
*S 215.00	5.75		5246.8							
*S 258.00	5.98		5246.9							
*S 300.00	6.20		5247.0							
*S 500.00	9.00		5250.0							
*S 1000.00	12.00		5255.0							
*S										
*S GOLF COURSE, AND OTHER RECREATION										
COMPUTE NM HYD	109EA	-	10	.00900	14.67	.502	1.04606	1.500	2.547	PER IMP= 23.00
S ROUTE FLOW COMING FROM RESERVOIR THRU 109EA **										
ROUTE MCUNGE	109EA.78	9	11	.23140	146.31	7.731	.62646	2.033	.988	CCODE = .1
ADD HYD	109EA.87	10&11	12	.24040	148.41	8.234	.64217	2.033	.965	
*S PKG LOT, CLUBHOUSE, ENTR. RD, PROSHOP, BED & BRKFST										
COMPUTE NM HYD	110EA	-	13	.00600	14.45	.594	1.85495	1.500	3.764	PER IMP= 70.00
ADD HYD	110EA.1	12&13	14	.24640	151.41	8.827	.67170	2.033	.960	
ROUTE MCUNGE	103.22	14	3	.24640	145.61	8.745	.66547	2.200	.923	CCODE = .1
*S RESIDENTIAL										
COMPUTE NM HYD	104.00	-	1	.06720	106.53	5.455	1.52211	1.600	2.477	PER IMP= 50.00
ADD HYD	104.10	1& 3	2	.31360	167.55	14.200	.84903	2.166	.835	
*S ROUTING 104.1 ON CADDIE RD										
ROUTE MCUNGE	104.12	2	3	.31360	164.38	14.161	.84670	2.266	.819	CCODE = .1
COMPUTE NM HYD	105.00	-	1	.10270	203.07	8.343	1.52320	1.533	3.090	PER IMP= 50.00
*S**** HYD 105.1 IS AP #2		*****								
ADD HYD	105.10	1& 3	2	.41630	263.42	22.504	1.01359	1.567	.989	
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND										
ROUTE MCUNGE	105.12	2	4	.41630	261.17	22.488	1.01285	1.600	.980	CCODE = .2
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	106.00	-	1	.09540	189.50	7.750	1.52323	1.533	3.104	PER IMP= 50.00
*S SUB-BASIN 106A IS SKY CREST ESTATES										
COMPUTE NM HYD	106A1	-	7	.00846	18.13	.678	1.50231	1.500	3.349	PER IMP= 44.52
*S ROUTING RESERVOIR WITH 21" DIAM ORIFACE										
*S EXISTING POND AT SW CORNER OF ARROWHEAD AVE AND CHANTILLY RD										
ROUTE RESERVOIR	106A1.RES	7	9	.00846	14.30	.677	1.50088	1.567	2.642	AC-FT= .126
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5057								
*S 4.675	0.062	5058								
*S 16.379	0.140	5059								
*S 22.510	0.235	5060								
*S 27.298	0.349	5061	EXISTING TOP OF POND							
*S										
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE DOWN CHANTILLY ROAD TO CONGRESS										
ROUTE MCUNGE	106A.1	9	10	.00846	14.30	.676	1.49818	1.600	2.642	CCODE = .1
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	107.00	-	2	.02910	59.13	2.256	1.45384	1.500	3.175	PER IMP= 45.80
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND										
ROUTE MCUNGE	107.02	2	3	.02910	56.56	2.251	1.45067	1.600	3.037	CCODE = .1
ADD HYD	107.10	4& 3	2	.44540	317.73	24.739	1.04145	1.600	1.115	
ADD HYD	107.20	1& 2	3	.54080	487.26	32.490	1.12644	1.567	1.408	
ADD HYD	107.30	3&10	11	.54926	500.79	33.166	1.13217	1.567	1.425	
*S RESIDENTIAL										
COMPUTE NM HYD	108.00	-	1	.02400	49.43	1.899	1.48367	1.500	3.218	PER IMP= 47.60
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND										
*S THRU CACTUS HILLS										
ROUTE MCUNGE	108.02	1	2	.02400	48.32	1.897	1.48175	1.567	3.146	CCODE = .1
ADD HYD	108.10	2&11	4	.57326	549.11	35.062	1.14680	1.567	1.497	
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN										
COMPUTE NM HYD	109.00	-	1	.02070	39.89	1.514	1.37182	1.500	3.011	PER IMP= 42.50
*S**** HYD 109.1 IS AP #3		*****								
ADD HYD	109.10	1& 4	2	.59396	583.48	36.577	1.15465	1.567	1.535	
*S FUTURE DETENTION BASIN IN BASIN 109										
ROUTE RESERVOIR	109.RES	2	66	.59396	176.73	36.164	1.14161	2.033	.465	AC-FT= 13.437
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								

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
*S	0	0		5069						
*S	7	0.98		5070						
*S	25	2.41		5071						
*S	52	3.97		5072						
*S	82	5.65		5073						
*S	112	7.45		5074						
*S	140	9.37		5075						
*S	160	11.42		5076						
*S	178	13.59		5077						
*S	195	15.89		5078						
*S										
COMPUTE NM HYD	201.00	-	1	.02580	54.08	2.096	1.52345	1.500	3.275	PER IMP= 50.00
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND										
ROUTE MCUNGE	201.02	1	2	.02580	51.37	2.083	1.51381	1.600	3.111	CCODE = .1
COMPUTE NM HYD	202.00	-	1	.02880	59.18	2.271	1.47869	1.500	3.211	PER IMP= 47.30
*S**** HYD 202.1 IS AP #4	*****									
ADD HYD	202.10	1& 2	4	.05460	99.41	4.354	1.49529	1.567	2.845	
*S EXISTING DROP INLET IN BASIN 202										
ROUTE RESERVOIR	202.RES1	4	2	.05460	86.55	4.354	1.49528	1.633	2.477	AC-FT= .149
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	5138.7							
*S	20.12	0.0009	5139.7							
*S	24.07	0.0019	5140.7							
*S	41.69	0.0028	5141.7							
*S	53.82	0.0037	5142.7							
*S	63.69	0.0047	5143.7							
*S	70.59	0.0054	5144.5							
*S	74.58	0.0111	5145.0							
*S	81.98	0.0603	5146.0							
*S	83.46	0.1024	5146.2							
*S	87.97	0.1700	5146.5							
*S	94.77	0.2611	5147.0							
*S										
*S EXISTING DETENTION BASIN IN BASIN 401										
*S ROUTING RESERVOIR WITH 21" ORIFACE										
ROUTE RESERVOIR	202.RES2	2	4	.05460	73.37	4.363	1.49836	1.733	2.100	AC-FT= 1.099
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	5114							
*S	11.58	0.0026	5115							
*S	16.38	0.0052	5116							
*S	20.06	0.0078	5117							
*S	23.16	0.0091	5118							
*S	25.89	0.0521	5119							
*S	28.37	0.1097	5120							
*S	30.64	0.1829	5121							
*S	32.75	0.2747	5122							
*S	34.74	0.3856	5123							
*S	36.62	0.5174	5124							
*S	38.41	0.6717	5125							
*S	40.11	0.8496	5126							
*S	41.76	1.03	5127	EXISTING TOP OF POND						
*S	61	1.08	5127.25							
*S	94	1.13	5127.5							
*S	136	1.18	5127.75							
*S	185	1.23	5128							
*S										
DIVIDE HYD	202.03	4	8	.05217	41.76	4.169	1.49836	1.700	1.251	
	OLF.2	AND	11	.00243	31.61	.194	1.49836	1.733	20.364	
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD										
ROUTE MCUNGE	202.02	8	6	.05217	41.76	4.168	1.49785	1.766	1.251	CCODE = .1
*S RESIDENTIAL										
COMPUTE NM HYD	301.00	-	1	.01820	34.94	1.478	1.52307	1.533	3.000	PER IMP= 50.00
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304										
ROUTE MCUNGE	301.02	1	2	.01820	33.06	1.472	1.51609	1.667	2.839	CCODE = .1
*S METHODIST CHURCH PROPERTY										
COMPUTE NM HYD	302.00	-	1	.00430	11.56	.498	2.17219	1.500	4.202	PER IMP= 90.00
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304										
ROUTE MCUNGE	302.02	1	5	.00430	10.63	.495	2.15810	1.667	3.862	CCODE = .1
ADD HYD	302.10	2& 5	4	.02250	43.69	1.967	1.63879	1.667	3.034	
*S COMMERCIAL										

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
COMPUTE NM HYD	303.00	-	1	.06690	156.35	7.746	2.17094	1.533	3.652	PER IMP= 90.00
*S EXISTING DETENTION BASIN IN BASIN 303										
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE										
ROUTE RESERVOIR	303.RES	1	5	.06690	124.69	7.736	2.16812	1.667	2.912	AC-FT= 2.227
*S										

*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)	
*S	0	0	5099	
*S	11.58	0.15	5100	
*S	16.37	0.30	5101	
*S	20.06	0.45	5102	
*S	23.16	0.60	5103	
*S	25.89	0.75	5104	
*S	26.00	0.91	5105	
*S	27.00	1.07	5106	
*S	28.00	1.23	5107	
*S	29.00	1.39	5108	
*S	30.00	1.55	5109	
*S	31.00	1.71	5110	
*S	32.00	1.87	5111	
*S	33.00	2.03	5112	
*S	34.00	2.11	5112.5	EXISTING TOP OF POND
*S	53.00	2.15	5112.75	
*S	86.00	2.19	5113	
*S	128.0	2.23	5113.25	

*S										
DIVIDE HYD	303.03	5	8	.05430	34.00	6.279	2.16812	1.633	.978	
	OLF.3	AND	12	.01260	90.69	1.456	2.16812	1.667	11.251	
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE										
ROUTE MCUNGE	303.02	8	2	.05430	34.00	6.274	2.16633	1.733	.978	CCODE = .1
ROUTE MCUNGE	OLF.32	12	16	.01260	70.28	1.432	2.13116	1.766	8.718	CCODE = .1
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL										
COMPUTE NM HYD	304.00	-	1	.03490	93.74	4.043	2.17217	1.500	4.197	PER IMP= 90.00
ADD HYD	304.10	1& 4	7	.05740	111.27	6.010	1.96309	1.533	3.029	
ADD HYD	304.20	7&16	5	.07000	138.52	7.441	1.99333	1.766	3.092	
*S DIVIDE AT MH# S-702										
DIVIDE HYD	CB1	5	4	.02868	20.00	3.049	1.99333	1.333	1.090	
	304.13	AND	7	.04131	118.52	4.392	1.99333	1.766	4.482	
ADD HYD	CB1.1	2& 4	5	.08299	54.00	9.323	2.10654	1.733	1.017	
ADD HYD	CB1.2	5& 6	2	.13516	95.76	13.491	1.87158	1.766	1.107	
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL										
COMPUTE NM HYD	305.00	-	17	.03910	102.46	4.529	2.17200	1.500	4.094	PER IMP= 90.00
*S CACTUS RIDGE										
COMPUTE NM HYD	401.00	-	1	.02360	50.44	1.974	1.56819	1.500	3.340	PER IMP= 52.70
ADD HYD	401.10	1&11	3	.02603	51.99	2.168	1.56169	1.733	3.121	
*S DIVIDE HYD 401.1 BY MAXIMUM INFLOW OF CATCH BASINS, WEST OF										
*S SUB-BASIN 401,ALONG PARADISE ROAD (7 CB AT 10 CFS EACH)										
DIVIDE HYD	CB2	3	4	.02603	51.99	2.168	1.56169	1.733	3.121	
	401.13	AND	5	.00000	.00	.000	.00000	-.033	.000	
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS										
COMPUTE NM HYD	402.00	-	1	.00880	18.66	.692	1.47507	1.500	3.314	PER IMP= 42.70
ADD HYD	402.10	5& 1	6	.00880	18.66	.692	1.47507	1.500	3.314	
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD										
*S**** OLF HYD 402.2 IS AP #5 *****										
ADD HYD	402.20	6& 7	18	.05011	125.15	5.084	1.90232	1.766	3.902	
*S ROUTING 402.2 TO DETENTION POND IN 503										
ROUTE MCUNGE	402.23	18	20	.05011	115.63	5.065	1.89487	1.833	3.605	CCODE = .1
ADD HYD	305.10	17&20	19	.08921	190.61	9.594	2.01633	1.567	3.338	
*S**** PIPE HYD CB2.1 IS AP #6 *****										
ADD HYD	CB2.1	2& 4	6	.16119	147.75	15.659	1.82154	1.733	1.432	
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS										
COMPUTE NM HYD	403.00	-	1	.01440	32.61	1.266	1.64809	1.500	3.538	PER IMP= 54.20
*S DIVIDE HYD 403 BY MAXIMUM INFLOW OF POND INLET IN WEST PARK APARTMENTS										
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND										
DIVIDE HYD	CB3	1	2	.00551	3.00	.484	1.64809	1.300	.851	
	403.13	AND	99	.00889	29.61	.782	1.64809	1.500	5.201	
ADD HYD	CB3.1	6& 2	5	.16669	150.75	16.143	1.81581	1.733	1.413	
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732										
*S Q(CAP) = 144 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB3.13	5	2	.16669	139.38	16.112	1.81238	1.800	1.306	CCODE = .2
*S LESLIE HOMES										
COMPUTE NM HYD	404.00	-	1	.01610	33.73	1.307	1.52179	1.500	3.273	PER IMP= 49.90

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	
ADD HYD	CB4.1	1	& 2	5	.18279	158.31	17.419	1.78678	1.567	1.353		
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531												
*S Q(CAP) = 184 CFS, AT SLOPE=0.005												
ROUTE MCUNGE	CB4.13	5		2	.18279	156.59	17.392	1.78396	1.600	1.339	CCODE =	.2
*S SUB-BASIN 405 IS PART OF CACTUS HILLS												
COMPUTE NM HYD	405.00	-		1	.02700	50.96	1.887	1.31061	1.500	2.949	PER IMP=	38.00
*S DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *												
DIVIDE HYD	CB5	1		6	.02581	40.00	1.804	1.31061	1.467	2.422		
	405.03	AND		7	.00119	10.96	.083	1.31061	1.500	14.335		
*S ROUTING 405.03 TO CONGRESS AVE												
ROUTE MCUNGE	405.02	7		15	.00119	10.13	.084	1.32313	1.600	13.244	CCODE =	.2
*S SUB-BASIN 405 HAS TRANSVERSE DRAIN WITH 36" PIPE TO 60" SD												
ADD HYD	CB5.1	6	& 2	5	.20860	195.35	19.195	1.72540	1.567	1.463		
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932												
*S Q(CAP) = 184 CFS, AT SLOPE=0.005												
ROUTE MCUNGE	CB5.13	5		2	.20860	194.89	19.182	1.72424	1.600	1.460	CCODE =	.2
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND												
*S Q(CAP) = 233 CFS, AT SLOPE=0.008												
ROUTE MCUNGE	CB5.23	2		25	.20860	194.58	19.172	1.72334	1.600	1.457	CCODE =	.2
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL												
COMPUTE NM HYD	406.00	-		1	.01070	22.44	.869	1.52345	1.500	3.276	PER IMP=	50.00
ADD HYD	406.10	15	& 1	6	.01189	28.81	.954	1.50330	1.567	3.785		
*S ROUTING 406.1 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD												
ROUTE MCUNGE	406.12	6		3	.01189	27.86	.956	1.50735	1.633	3.659	CCODE =	.2
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL												
COMPUTE NM HYD	407.00	-		1	.02240	60.17	2.595	2.17217	1.500	4.197	PER IMP=	90.00
*S CUBBY HOLE DETENTION BASIN												
*S ROUTING RESERVOIR WITH 12" ORIFACE												
ROUTE RESERVOIR	407.RES	1		5	.02240	67.98	2.592	2.16995	1.500	4.742	AC-FT=	.176
*S												

*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S	0	0	5063
*S	3.78	0.0387	5064
*S	5.35	0.0597	5065
*S	6.55	0.0808	5066
*S	7.56	0.1019	5067
*S	8.46	0.1230	5068
*S	9.26	0.1440	5069
*S	10.00	0.1651	5070
*S	29	0.170	5070.25
*S	62	0.175	5070.5
*S	104	0.180	5070.75
*S	153	0.185	5071

*S

DIVIDE HYD	407.03	5		89	.01270	10.00	1.470	2.16995	1.433	1.230		
	OLF.4	AND		13	.00970	57.98	1.123	2.16995	1.500	9.339		
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962												
*S Q(CAP) = 260 CFS, AT SLOPE=0.01												
ROUTE MCUNGE	CB5.33	25		85	.20860	193.86	19.169	1.72306	1.633	1.452	CCODE =	.2
ADD HYD	407.10	3	&13	17	.02159	76.91	2.079	1.80499	1.500	5.564		
*S SUB-BASIN 408 IS STATE FARM INSURANCE												
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD												
COMPUTE NM HYD	408.00	-		14	.00660	17.74	.765	2.17218	1.500	4.200	PER IMP=	90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 408												
*S ROUTING RESERVOIR WITH 12" WEIR												
ROUTE RESERVOIR	408.RES	14		18	.00660	3.71	.747	2.12308	2.066	.878	AC-FT=	.441
*S												

*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)	
*S	0	0	5050.8	
*S	1.08	0.2198	5052.3	EXISTING TOP OF POND
*S	1.66	0.2931	5052.8	
*S	2.31	0.3663	5053.3	
*S	3.02	0.4396	5053.8	
*S	22	0.4763	5054.05	

*S

ADD HYD	408.10	17	&18	14	.02819	77.78	2.826	1.87945	1.500	4.310		
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D												
COMPUTE NM HYD	409.00	-		1	.00980	26.33	1.135	2.17218	1.500	4.199	PER IMP=	90.00
*S DIVIDE HYD 409 BY 36" STUB OUT PIPE CAPACITY *												
DIVIDE HYD	CB6	1		28	.00977	25.00	1.131	2.17218	1.500	4.000		
	409.03	AND		15	.00003	1.33	.004	2.17220	1.500	61.149		
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B												

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
COMPUTE NM HYD	411.00	-	1	.00920	24.72	1.066	2.17218	1.500	4.199	PER IMP= 90.00
*S DIVIDE HYD 411 BY INLET CAPACITY *										
DIVIDE HYD	CB7	1	2	.00732	10.00	.848	2.17218	1.367	2.135	
	411.03	AND	7	.00188	14.72	.218	2.17218	1.500	12.221	
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A										
COMPUTE NM HYD	410.00	-	1	.00470	12.64	.544	2.17219	1.500	4.201	PER IMP= 90.00
*S DIVIDE HYD 410 BY INLET CAPACITY *										
DIVIDE HYD	CB8	1	9	.00454	10.00	.526	2.17219	1.467	3.440	
	410.03	AND	16	.00016	2.64	.018	2.17219	1.500	26.014	
ADD HYD	411.10	7&16	3	.00204	17.36	.236	2.17218	1.500	13.292	
*S ASSUME OLF HYD 411.2 PONDS										
ADD HYD	411.20	3&15	16	.00207	18.69	.240	2.17218	1.500	14.078	
ADD HYD	CB7.1	2&85	21	.21591	203.86	20.017	1.73828	1.633	1.475	
ADD HYD	CB8.1	21& 9	2	.22046	211.48	20.543	1.74722	1.600	1.499	
*S ROUTE CB8.1 IN 60" PIPE TO SUB-BASIN 411 (JUST BEFORE										
*S CALABACILLAS ARROYO OUTFALL)										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB8.12	2	9	.22046	210.87	20.521	1.74534	1.633	1.495	CCODE = .2
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3										
COMPUTE NM HYD	412.00	-	1	.01330	34.03	1.541	2.17185	1.500	3.998	PER IMP= 90.00
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO										
*S**** HYD CB9.1 IS AP #9 *****										
ADD HYD	CB9.1	1& 9	98	.23376	233.00	22.062	1.76961	1.633	1.557	
ADD HYD	OUT.1	98&99	99	.24265	250.79	22.844	1.76515	1.600	1.615	
*S SAD 224-PROJECT INCLUDES ENLARGING POND ON CONGRESS AVE										
*S INSTALLATION OF 66" OUTLET PIPE FROM POND-FLOWS ROUTED TO										
*S CALABACILLAS ARROYO										
*S Q(CAP) =233 CFS, AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.23	66	2	.59396	176.68	36.150	1.14118	2.066	.465	CCODE = 1.0
ADD HYD	CB6.33	2&89	86	.60666	186.68	37.620	1.16272	2.066	.481	
*S** ROUTE PROPOSED PIPE UNTIL IT REACHES EAGLE RANCH ROAD AGAIN ***										
*S Q(CAP) =233 CFS AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.33	86	8	.60666	186.64	37.611	1.16243	2.066	.481	CCODE = 1.0
ADD HYD	CB6.43	28& 8	9	.61643	192.36	38.742	1.17842	2.033	.488	
S SUB-BASIN 413 IS WEST OF EAGLE RANCH COMMERCIAL										
COMPUTE NM HYD	413.00	-	3	.01560	41.95	1.807	2.17218	1.500	4.202	PER IMP= 90.00
S SUB-BASIN 414 IS WEST OF EAGLE RANCH COMMMERCIAL										
COMPUTE NM HYD	414.00	-	10	.00297	8.00	.344	2.17220	1.500	4.209	PER IMP= 90.00
ADD HYD	CB6.53	3&10	5	.01857	49.96	2.151	2.17219	1.500	4.203	
ADD HYD	CB6.63	5& 9	11	.63500	204.18	40.893	1.20749	1.966	.502	
*S SUB-BASIN 415 IS WEST OF EAGLE RANCH - COMMERCIAL *										
COMPUTE NM HYD	415.00	-	1	.01190	32.01	1.379	2.17218	1.500	4.203	PER IMP= 90.00
ADD HYD	OUT.2	1&11	98	.64690	212.50	42.272	1.22523	1.933	.513	
ADD HYD	OUT.3	98&99	99	.88955	429.17	65.115	1.37251	1.667	.754	
*S EAGLE RANCH ROAD										
*S 86 FT ROW										
COMPUTE NM HYD	501.00	-	1	.01000	17.39	1.156	2.16736	1.700	2.718	PER IMP= 90.00
ADD HYD	501.10	14& 1	3	.03819	86.04	3.982	1.95483	1.500	3.520	
*S ROUTE OLF 501.1 THRU 505 IN IRVING BLVD **										
ROUTE MCUNGE	501.12	3	7	.03819	84.97	3.975	1.95120	1.600	3.476	CCODE = .2
*S COMMERCIAL										
COMPUTE NM HYD	502.00	-	1	.04350	116.84	5.039	2.17217	1.500	4.197	PER IMP= 90.00
*S DIVIDE HYD 305.1 IN PARADISE BLVD BY ASSUMED 18" CAPACITY *										
DIVIDE HYD	402.24	19	2	.02639	20.00	2.838	2.01633	1.333	1.184	
	402.25	AND	3	.06282	170.61	6.756	2.01633	1.567	4.243	
ADD HYD	502.10	2& 1	5	.06989	136.84	7.877	2.11333	1.500	3.059	
*S EXISTING DETENTION BASIN IN SUB-BASIN 502										
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	502.RES	5	8	.06989	78.74	7.820	2.09783	1.667	1.760	AC-FT= 2.311
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5030								
*S 38.9526	2.1993	5038								
*S 58	2.268	5038.25								
*S 91	2.337	5038.5								
*S										
*S COMMERCIAL										
COMPUTE NM HYD	503.00	-	1	.02350	48.51	2.719	2.16951	1.600	3.225	PER IMP= 90.00
ADD HYD	503.10	1& 3	2	.08632	217.63	9.475	2.05803	1.567	3.939	
*S EXISTING DETENTION BASIN IN SUB-BASIN 503										
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	503.RES	2	5	.08632	152.55	9.206	1.99958	1.866	2.761	AC-FT= 4.697
*S										

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*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	5000							
*S	10.1924	4.2712	5010							
*S	29	4.378	5010.25							
*S	62	4.485	5010.5							
*S	104	4.592	5010.75							
*S	153	4.698	5011							
*S	209	4.805	5011.25							
*S										
ADD HYD	503.10	5& 8	10	.15621	211.81	17.026	2.04354	1.833	2.119	
*S COMMERCIAL										
COMPUTE NM HYD	504.00	-	1	.02570	56.52	2.975	2.17024	1.567	3.436	PER IMP= 90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 504										
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	504.RES	1	3	.02570	29.03	2.966	2.16363	1.800	1.765	AC-FT= .875
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	5001							
*S	38.9526	1.1742	5007							
*S										
ADD HYD	504.10	3&10	11	.18191	240.76	19.991	2.06051	1.833	2.068	
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL										
COMPUTE NM HYD	505.00	-	1	.04970	107.89	5.752	2.17012	1.567	3.392	PER IMP= 90.00
ADD HYD	505.10	1& 7	2	.08789	191.55	9.727	2.07499	1.600	3.405	
*S COORS BOULEVARD ROW										
COMPUTE NM HYD	505A	-	1	.00560	15.06	.649	2.17219	1.500	4.201	PER IMP= 90.00
*S ROUTE 505A IN FUTURE STORM DRAIN THROUGH 506A										
*S ASSUME PIPE SIZE OF 48" AND SLOPE=0.008 FT/FT										
ROUTE MCUNGE	505A.1	1	31	.00560	14.41	.648	2.16799	1.567	4.021	CCODE = 1.0
*S ROUTE OLF HYD 505.1 THRU 506 ON COORS BLVD **										
ROUTE MCUNGE	505.12	2	9	.08789	181.55	9.663	2.06133	1.733	3.227	CCODE = .1
ADD HYD	505.20	11& 9	2	.26981	399.75	29.654	2.06077	1.766	2.315	
*S ASSUME A FUTURE PIPE SIZE AND SLOPE; 96" AND 0.009 FT/FT										
ROUTE MCUNGE	505.22	2	3	.26981	397.98	29.638	2.05968	1.800	2.305	CCODE = .1
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW										
COMPUTE NM HYD	506.00	-	1	.05590	80.04	3.683	1.23538	1.600	2.237	PER IMP= 30.00
*S COORS BOULEVARD ROW										
COMPUTE NM HYD	506A	-	29	.00800	18.31	.926	2.17069	1.567	3.576	PER IMP= 90.00
ADD HYD	506.10	1& 3	2	.32571	442.08	33.321	1.91821	1.800	2.121	
ADD HYD	506.12	2&31	27	.33131	448.49	33.969	1.92243	1.800	2.115	
ADD HYD	506.20	27&29	2	.33931	457.20	34.895	1.92828	1.800	2.105	
*S PROPOSED DETENTION BASIN WITHIN EXISTING STATE HWY DEPT R-O-W										
*S ROUTING RESERVOIR WITH 36" DIAM ORIFACE										
*S MAXIMUM: HIGH ELEV = 5001 , LOW ELEV = 4992.8 , OUTFLOW = 38 CFS										
ROUTE RESERVOIR	506.RES	2	10	.33931	30.53	34.362	1.89882	3.266	.141	AC-FT= 21.176
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	4993							
*S	13.2	1.1324	4994							
*S	18.7	4.4968	4995							
*S	22.9	9.3777	4996							
*S	26.5	14.3639	4997							
*S	29.6	19.4554	4998							
*S	32.4	24.6522	4999							
*S	35.0	29.9543	5000							
*S	37.5	35.3617	5001							
*S	39.7	40.8744	5002							
*S	41.9	46.4318	5003							
*S	43.9	52.1551	5004							
ADD HYD	900.00	83&10	20	.39246	84.55	101.537	4.85099	2.033	.337	
ROUTE MCUNGE	901.00	20	7	.39246	84.49	101.515	4.84997	2.066	.336	CCODE = .2
*S THE ALBUQUERQUE WEST COMMERCIAL DEVELOPMENT AREA										
*S INCLUDES SECTIONS OF PASEO DEL NORTE AND STATE HIGHWAY DEPT. ROW										
*S BASIN 11.1W										
COMPUTE NM HYD	11.1W	-	1	.04607	114.38	4.869	1.98167	1.500	3.879	PER IMP= 80.00
*S ROUTE RESERVOIR THROUGH NMSH&TD POND AT SW CORNER OF PDN AND COORS										
*S ROUTE RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.										
ROUTE RESERVOIR	11.1W.RES	1	2	.04607	42.57	4.847	1.97259	1.766	1.444	AC-FT= 1.821
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	4996							
*S	28	1.30	4998							

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*S	66	2.66		5000						
*S DIVIDE HYD 11.1W.RES BY MAXIMUM PIPE OUTFLOW *										
DIVIDE HYD	11.1W.RES1	2	18	.04607	42.57	4.847	1.97259	1.766	1.444	
	OLF.5	AND	30	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE THE FLOW FROM THE POND THROUGH CULVERT PIPES UNDER COORS **										
ROUTE MCUNGE	903.00	18	8	.04607	42.45	4.842	1.97067	1.800	1.440	CCODE = 1.0
ADD HYD	904.00	8& 7	9	.43853	123.93	106.357	4.54748	1.933	.442	
MODIFY TIME	904.00	9	9	.43853	123.93	106.357	4.54748	1.933	.442	
*S ROUTE FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **										
ROUTE MCUNGE	18.00	9	3	.43853	123.85	106.341	4.54680	1.966	.441	CCODE = .2
*S BASE FLOW CORRECTION										
MODIFY TIME	18.00	3	3	.43853	123.85	106.341	4.54680	1.966	.441	
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW										
*S CORRECTED TO 38 CFS MIN.										
*S INCLUDES SECTION OF COORS AND PASEO DEL NORTE										
COMPUTE NM HYD	11.2E-325	-	7	.02769	74.38	3.208	2.17217	1.500	4.197	PER IMP= 90.00
ADD HYD	326.00	3& 7	5	.46622	145.43	109.549	4.40576	1.833	.487	
*S EAGLE RIDGE APARTMENT COMPLEX/UPPER HALF THAT DRAINS DIRECTLY										
*S TO THE CORRALES MAIN CANAL VIA FUTURE STORM DRAIN										
COMPUTE NM HYD	12.1W	-	3	.04399	96.66	3.852	1.64198	1.500	3.433	PER IMP= 58.00
*S ROUTE FLOW FROM 12.1W THROUGH FUTURE DETENTION POND **										
ROUTE RESERVOIR	12.1W.RES	3	9	.04399	11.95	3.801	1.62000	2.133	.425	AC-FT= 2.392
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	0								
*S 4	0.59	1.0								
*S 9	1.29	2.0								
*S 12	2.41	2.5								
*S ROUTE FLOW IN CANAL TO AREA 12.1AW DISCHARGE POINT. **										
ROUTE MCUNGE	19.00	5	10	.46622	132.52	109.292	4.39541	1.900	.444	CCODE = .2
*S BASE FLOW CORRECTION										
MODIFY TIME	19.00	10	10	.46622	132.52	109.292	4.39541	1.900	.444	
ADD HYD	12.1W.1	10& 9	11	.51021	144.09	113.093	4.15612	1.900	.441	
*S EAGLE RIDGE APARTMENT COMPLEX/LOWER HALF THAT										
*S DRAINS TO THE SWALE ALONG COORS BOULEVARD										
COMPUTE NM HYD	12.2W	-	1	.00691	15.20	.605	1.64199	1.500	3.436	PER IMP= 58.00
*S DIVIDE HYD NO BY ALLOWABLE DISCHARGE SWALE ALONG COORS **										
*S HYD NO 603.01 IS THE Q THAT REACHES THE SWALE										
DIVIDE HYD	12.2W.1	1	5	.00691	15.20	.605	1.64199	1.500	3.436	
	OLF.7	AND	31	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE THE FLOW LEAVING THE LOWER HALF OF THE EAGLE RIDGE APARTMENT										
*S SITE THROUGH A NATURAL SWALE THAT FLOWS SOUTH ALONG THE WEST										
*S SIDE OF COORS BOULEVARD.										
ROUTE MCUNGE	12.2W.2	5	8	.00691	14.57	.603	1.63753	1.567	3.296	CCODE = .1
*S ROUTE FLOW DOWN CANAL TO AREA 12.3 DISCHARGE POINT. **										
ROUTE MCUNGE	22.00	11	9	.51021	128.97	112.747	4.14342	2.033	.395	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	22.00	9	9	.51021	128.97	112.747	4.14342	2.033	.395	
ADD HYD	12.1W.3	8& 9	12	.51712	132.61	113.350	4.10993	2.000	.401	
COMPUTE NM HYD	12.3E	-	1	.02616	62.41	2.684	1.92349	1.500	3.728	PER IMP= 75.00
*S FLOW FROM 12.3E ENTERS FUTURE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE										
ROUTE RESERVOIR	12.3E.RES	1	15	.02616	10.14	2.649	1.89869	2.100	.606	AC-FT= 1.558
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	100								
*S 3	0.39	101								
*S 6	0.77	102								
*S 7	1.16	103								
*S 10	1.54	104								
ADD HYD	330.00	15&12	2	.54328	142.60	116.000	4.00345	2.033	.410	
*S ROUTE FLOW IN CANAL FROM 8.1W TO 12.3E TO AREA 13 DISCHARGE POINT.**										
ROUTE MCUNGE	23.00	2	5	.54328	133.30	115.751	3.99489	2.033	.383	CCODE = .2
MODIFY TIME	23.00	5	5	.54328	133.30	115.751	3.99489	2.033	.383	
*S FUTURE COMMERCIAL AREA										
COMPUTE NM HYD	13.1W	-	10	.01020	20.67	.833	1.53060	1.500	3.167	PER IMP= 55.00
*S FLOW FROM 13.1W ENTERS FUTURE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE										
ROUTE RESERVOIR	13.1W.RES	10	11	.01020	8.06	.830	1.52544	1.733	1.234	AC-FT= .303
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	100								
*S 2.6	0.1	101								
*S 6.0	0.2	102								
*S 8.0	0.3	103								

$$\frac{24 \text{ cf}}{\text{ac}}$$

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*S BOSQUE DEL PUEBLO COMMERCIAL AREA											
COMPUTE NM HYD	13.2E-332	-	1	.01480	34.12	1.424	1.80359	1.500	3.602	PER IMP=	70.00
ADD HYD	333.00	1&11	12	.02500	38.97	2.253	1.69010	1.500	2.436		
ADD HYD	334.00	5&12	2	.56828	149.96	118.005	3.89350	1.567	.412		
*S SUB-BASIN 14.1W											
*S ALBAN HILLS											
COMPUTE NM HYD	14.1W-335	-	3	.05117	66.95	2.233	.81824	1.500	2.044	PER IMP=	15.00
ROUTE MCUNGE	25.00	3	5	.05117	65.96	2.229	.81662	1.567	2.014	CCODE =	.1
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **											
ROUTE MCUNGE	26.00	2	10	.56828	138.67	117.743	3.88486	2.033	.381	CCODE =	.2
MODIFY TIME	26.00	10	10	.56828	138.67	117.743	3.88486	2.033	.381		
ADD HYD	338.00	5&10	2	.61945	198.38	119.972	3.63141	1.567	.500		
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **											
ROUTE MCUNGE	27.00	2	7	.61945	173.59	119.637	3.62128	1.567	.438	CCODE =	.2
MODIFY TIME	27.00	7	7	.61945	173.59	119.637	3.62128	1.567	.438		
*S AREA 8.1W TO 14.2E ROUTED DOWN CANAL TO AREA 15 DISCH. POINT WITH											
*S BASE FLOW CORRECTED.											
COMPUTE NM HYD	15.1W	-	3	.02560	30.05	.936	.68537	1.533	1.834	PER IMP=	8.00
ROUTE MCUNGE	28.00	3	10	.02560	28.87	.932	.68233	1.600	1.762	CCODE =	.1
*S SUB-BASIN 15.2W											
*S ALBAN HILLS											
COMPUTE NM HYD	15.2W-340	-	3	.06380	74.90	2.332	.68537	1.533	1.834	PER IMP=	8.00
ROUTE MCUNGE	29.00	3	5	.06380	73.97	2.327	.68373	1.567	1.812	CCODE =	.1
ADD HYD	186.00	10& 5	3	.08940	100.22	3.258	.68333	1.567	1.752		
*S SUB-BASIN 15.3E											
*S FUTURE COMMERCIAL DEVELOPMENT											
COMPUTE NM HYD	15.3E	-	10	.01230	30.23	1.262	1.92365	1.500	3.840	PER IMP=	75.00
ADD HYD	342.00	3&10	5	.10170	125.43	4.520	.83334	1.567	1.927		
ADD HYD	343.00	5& 7	10	.72115	299.01	124.157	3.22811	1.567	.648		
*S SUB-BASIN 16.1W											
*S ALBAN HILLS											
COMPUTE NM HYD	16.1W	-	3	.03330	39.08	1.217	.68537	1.533	1.834	PER IMP=	8.00
*S BOSQUE MEADOWS SUBDIVISION											
COMPUTE NM HYD	16.3NRTH	-	1	.01565	31.37	1.186	1.42116	1.500	3.132	PER IMP=	44.00
ADD HYD	16.3N.1	1& 3	30	.04895	70.22	2.403	.92061	1.500	2.242		
*S ROUTE AREA 8.1W TO 15.3W DOWN CANAL TO BUSHEL ROAD DISCHARGE POINT. **											
ROUTE MCUNGE	27.10	10	32	.72115	255.73	123.621	3.21418	1.567	.554	CCODE =	.2
MODIFY TIME	27.10	32	32	.72115	255.73	123.621	3.21418	1.567	.554		
ADD HYD	16.3N.1	32&30	33	.77010	318.57	126.025	3.06839	1.567	.646		
*S SUB-BASIN 16.2W											
*S ALBAN HILLS											
COMPUTE NM HYD	16.2W	-	3	.06650	78.14	2.431	.68537	1.533	1.836	PER IMP=	8.00
*S FUTURE RESIDENTIAL DEVELOPMENT											
COMPUTE NM HYD	16.3E	-	5	.01120	26.18	1.037	1.73544	1.500	3.652	PER IMP=	60.00
*S BOSQUE MEADOWS SUBDIVISION											
COMPUTE NM HYD	16.3STH	-	1	.03122	72.24	2.865	1.72082	1.500	3.616	PER IMP=	59.80
ADD HYD	16.3STH.1	1& 3	34	.09772	149.92	5.296	1.01619	1.500	2.397		
*S ROUTE 16.2 AND 16.3STH THROUGH FUTURE DETENTION POND @ BOSQUE MEADOWS											
ROUTE RESERVOIR	16.3STH.RES	34	35	.09772	35.48	5.308	1.01849	1.866	.567	AC-FT=	2.380
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)									
*S 0.00	0.00000	4988.58									
*S 18.53	0.01074	4991.08									
*S 20.96	0.01407	4991.50									
*S 23.53	0.32155	4992.00									
*S 25.85	0.62903	4992.50									
*S 27.97	0.93650	4993.00									
*S 29.95	1.24398	4993.50									
*S 31.80	1.55145	4994.00									
*S 33.55	1.85893	4994.50									
*S 35.22	2.16641	4995.00									
*S 35.60	2.47388	4995.50									
ADD HYD	16.3STH.2	35& 5	36	.10892	54.69	6.345	1.09221	1.533	.785		
COMPUTE NM HYD	17.1W	-	3	.01030	11.44	.354	.64407	1.533	1.735	PER IMP=	7.00
COMPUTE NM HYD	17.4E	-	1	.03843	87.32	3.532	1.72317	1.500	3.550	PER IMP=	62.90
ADD HYD	17.4E.1	1& 3	37	.04873	98.66	3.886	1.49508	1.500	3.164		
*S ROUTE 8.1W TO 16.2NRTH FROM BUSHEL ROAD DOWN CANAL TO FINAL DISCHARGE POINT.											
ROUTE MCUNGE	32.00	33	5	.77010	236.52	125.079	3.04536	1.567	.480	CCODE =	.2
MODIFY TIME	32.00	5	5	.77010	236.52	125.079	3.04536	1.567	.480		
ADD HYD	348.00	5&36	40	.87902	289.93	131.424	2.80334	1.567	.515		
ADD HYD	353.00	37&40	41	.92775	380.22	135.309	2.73463	1.533	.640		
FINISH											

```
*
* 24 HOUR ALB. DPM  RAINFALL DISTRIBUTION (DPM.RAINTABLE) LAG 3.0 HOURS
*
START                TIME=0.00 HR  PUNCH CODE=0  PRINT LINES=-6
*                    ***********************************************
*                    *   NORTH COORS DRAINAGE MANAGEMENT PLAN    *
*                    *   100 YEAR STORM - 24 HOUR DURATION       *
*                    *   IMPROVED CORRALES MAIN CANAL            *
*                    *            MIDDLE AREA                    *
*                    *   CALABACILLAS ARROYO TO LA ORILLA OUTLET *
*                    *   UPDATED FOR 1996 DRAINAGE CRITERIA      *
*                    ***********************************************
*
* SMITH ENGINEERING COMPANY
* 6400 UPTOWN BLVD SUITE 500E
* ALBUQUERQUE, NEW MEXICO 87112
* (505) 884-0700
*
*  THE MODEL IS BROKEN UP INTO DIFFERENT SEGMENTS BASED UPON THE
*  NUMBER OF ASTERISKS.  THE CODING IS AS FOLLOWS:
*                       * * * MAJOR BASIN * * *
*                      ***** ANALYSIS POINT *****
*                         **** SUB-BASIN ****
*                       *** ADD HYDROGRAPHS ***
*                            ** ROUTING **
*                        * DIVIDE HYDROGRAPHS *
*
* THE LAND TREATMENT CLASSIFICATIONS IS AS FOLLOWS:
*                   TYPE A= BACKYARD PONDING, LANDSCAPE, AND UNDEVELOPED
*                   TYPE B= GRASS
*                   TYPE C= COMPACTED SOIL
*                   TYPE D= IMPERVIOUS AREAS (ROOFS,PAVEMENT)
*
RAINFALL               TYPE=2
                       QUARTER=0
                       ONE=1.90 IN
                       SIX=2.20 IN
                       DAY=2.65 IN
                       DT=0.03333 HR
*
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3 HR
*
**** SUB-BASIN 8.3E ****
*
*S SUB-BASIN 8.3E
*S RIVERFRONTE ESTATES
*
COMPUTE NM HYD         ID=3 HYD NO=8.3W-318
                       DA=0.05305 SQ MI
                             A=80
                             B=0
                             C=10
                             D=10
                       TP=0.1333 HR  MASSRAIN=-1
*
* AREA 8.3 E RUNOFF HYDROGRAPH. ENTERS CANAL DIRECTLY.
* ********** SIDE INLET DESIGN Q *********
*
PRINT HYD              ID=3 CODE=1
*
*S** ADD FLOW IN CORRALES MAIN CANAL COMING FROM CALABACILLAS SIPHON ***
*
STORE HYD              ID=5 HYD NO=136 INC=0.05 HR  AREA=0.0001 SQ MI
                       FLOW RATES=  38  38  38
                          38   38   38   38   38   38   38   38   38   38   38
                          38   38   38   38   38   38   38   38   38   38   38
                          38   38   38   38   38   38   38   38   38   38   38
                          38   38   38   38   38   38   38   38   38   38   38
                          38   38   38   38   38   38   38   38   38   38   38
                          38   38   38   38   38   39   40   41   44   45   46
                          46   47   47   47   48   49   49   49   49   49   50
                          50   50   50   50   50   50   49   49   49   49   49
                          49   48   48   48   47   47   46   46   45   45   45
                          44   44   44   44   43   43   43   43   43   42   42
```

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42  42  42  42  42  42  42  42  42  41  41
41  41  41  41  41  41  41  41  41  41  41
41  41  41  41  41  41  41  41  41  41  41
41  41  41  41  41  41  41  41  41  40  40
40  40  40  40  40  40  40  40  40  40  39
39  39  39  39  39  39  39  39  39  39  39
39  39  39  39  39  39  39  39  39  39  39
39  39  39  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38
```

```
ADD HYD              ID=6 HYD NO=139 ID=6 ID=3
*
PRINT HYD            ID=6 CODE=0
*
*S ROUTE 8.3E DOWN CANAL TO 8.1 DISCHARGE POINT. **
*
ROUTE MCUNGE         ID=5 HYD NO=13 INFLOW ID=6  DT=0.0 HR
                     LENGTH=750.0   NS=0   SLOPE=0.0006
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.3E ROUTED DOWNSTREAM AND BASE FLOW CORRECTED TO 38 CFS MIN.
*
PRINT HYD            ID=5 CODE=0
*
*S ROUTE 8.3E DOWN CANAL TO DISCHARGE POINT OF PROPOSED POND AT BLACK RANCH.**
*
ROUTE MCUNGE         ID=83 HYD NO=14 INFLOW ID=5  DT=0.0 HR
                     LENGTH=3250.0   NS=0   SLOPE=0.0006
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=83 CODE=0
*
*S BASE FLOW CORRECTION.
*
MODIFY TIME          ID=83  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.3E ROUTED DOWN CANAL TO NEXT AP AND BASE
* FLOW CORRECTED.
*
PRINT HYD            ID=83 CODE=0
*
*S CONTRIBUTING BASINS FROM PARADISE HILLS GOLF COURSE
*S SOURCE: EASTERLING & ASSOCIATES,INC.
*
**** SUB-BASIN 101EA ****
*
*S SINGLE FAMILY RESIDENTIAL, APPROXIMATELY 2 DU'S PER ACRE
*
COMPUTE NM HYD       ID=1  HYD NO=101EA
                     DA=0.0370 SQ MI
                           A=10
                           B=39
                           C=25
                           D=26
                     TP=0.15 HR  MASSRAIN=-1
*
PRINT HYD            ID=1 CODE=1
*
**** SUB-BASIN 102EA ****
*
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD       ID=2  HYD NO 102EA
                     DA=0.0447 SQ MI
                             A=18
                             B=59
                             C=13
                             D=10
                     TP=0.216 HR MASSRAIN=-1
*
PRINT HYD            ID=2 CODE=1
*
*S* ROUTE THE FLOW FROM 101EA THRU 102EA **
*
COMPUTE RATING CURVE  CID=1 VS NO=1     NO SEGS=1
                      MIN ELEV=100.0    MAX ELEV=101.0 FT
                      CH SLP=0.0133     FP SLP=0.0133
                      N=0.030           DIST=40 FT
                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
```

```
                    40.0      101.0

ROUTE MCUNGE        ID=3 HYD NO=101EA.1 INFLOW ID=1  DT=0.0 HR
                    LENGTH=2050   NS=0   SLOPE=0.0133
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=3        CODE=1
*
*** ADD 102EA AND 101EA.1 AT CONFLUENCE OF 102EA AND 106EA ***
*
ADD HYD             ID=4    HYD NO=102EA.1
                    ID I=2  ID II=3
PRINT HYD           ID=4    CODE=1
*
**** SUB-BASIN 103EA ****
*
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE, INCLUDES SMALL PORTION OF LYONS
*
COMPUTE NM HYD      ID=5  HYD NO=103EA
                    DA=0.0067 SQ MI
                            A=10
                            B=37
                            C=23
                            D=30
                    TP=0.133 HR  MASSRAIN=-1
*
PRINT HYD           ID=5 CODE=1
*
**** SUB-BASIN 104EA ****
*
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD      ID=6  HYD NO=104EA
                    DA=0.0248 SQ MI
                            A=10
                            B=39
                            C=25
                            D=26
                    TP=0.133 HR MASSRAIN=-1
*
PRINT HYD           ID=6 CODE=1
*
*S* ROUTE 103EA THRU 104EA **
*
COMPUTE RATING CURVE  CID=1 VS NO=1     NO SEGS=2
                      MIN ELEV=100.0    MAX ELEV=101.8
                      CH SLP=0.050      FP SLP=0.050
                      N=0.020           DIST=33
                      N=0.030           DIST=38
                      DIST      ELEV
                      0.0       101.33
                      20.0      100.50
                      32.0      100.00
                      33.0      100.80
                      38.0      101.80
*
ROUTE MCUNGE        ID=7 HYD NO=103EA.4 INFLOW ID=5  DT=0.0 HR
                    LENGTH=1900   NS=0   SLOPE=0.050
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=7        CODE=1
*
*** ADD ROUTED 103EA.4 TO 104EA ***
*
ADD HYD             ID=9 HYD NO=103EA.4
                    ID I=7 ID II=6
PRINT HYD           ID=9 CODE=1
*
**** SUB-BASIN 105EA ****
*
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD      ID=10  HYD NO=105EA
                    DA=0.0236 SQ MI
                            A=10
                            B=39
                            C=25
                            D=26
```

```
                    TP=0.176 HR  MASSRAIN=-1
*
PRINT HYD           ID=10  CODE=1
*
*S* ROUTE FLOW COMING FROM 103EA.4 THRU 105EA **
*
COMPUTE RATING CURVE  CID=1 VS NO=1     NO SEGS=2
                      MIN ELEV=100.0    MAX ELEV=101.8
                      CH SLP=0.0111     FP SLP=0.0111
                      N=0.020           DIST=33
                      N=0.030           DIST=38
                      DIST      ELEV
                      0.0       101.33
                      20.0      100.50
                      32.0      100.00
                      33.0      100.80
                      38.0      101.80
ROUTE MCUNGE          ID=11 HYD NO=104EA.5 INFLOW ID=9  DT=0.0 HR
                      LENGTH=900 NS=0 SLOPE=0.0111
                      MATCODE=0 REGCODE=0 CCODE=0
PRINT HYD             ID=11 CODE=1
*
** ADD 104EA.5 FLOW ROUTED THRU 105EA TO BASIN 105EA HYDROGRAPH **
*
ADD HYD               ID=12    HYD NO=104EA.5
                      ID I=10  ID II=11
PRINT HYD             ID=12    CODE=1
*
**** SUB-BASIN 106EA ****
*
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD        ID=13  HYD NO=106EA
                      DA=0.0263 SQ MI
                             A=19
                             B=63
                             C=11
                             D=7
                      TP=0.194 HR  MASSRAIN=-1
PRINT HYD             ID=13  CODE=1
*
*S* ROUTE FLOW COMING FROM 104EA.55 THRU 106EA **
*
COMPUTE RATING CURVE  CID=1 VS NO=1     NO SEGS=1
                      MIN ELEV=100.0    MAX ELEV=101.0 FT
                      CH SLP=0.0100     FP SLP=0.0100
                      N=0.030           DIST=40 FT
                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0
ROUTE MCUNGE          ID=14 HYD NO=101EA.1 INFLOW ID=12 DT=0.0 HR
                      LENGTH=1000 NS=0 SLOPE=0.0100
                      MATCODE=0 REGCODE=0 CCODE=0
PRINT HYD             ID=14  CODE=1
*
** ADD 106EA.1 FLOW ROUTED THRU 106EA TO BASIN 106EA HYDROGRAPH **
*
ADD HYD               ID=15 HYD NO = 104EA.5
                      ID I=14 ID II=13
PRINT HYD             ID=15 CODE=1
*
*S* ROUTE FLOW COMING FROM 102EA THRU 106EA **
*
COMPUTE RATING CURVE  CID=1 VS NO=1     NO SEGS=1
                      MIN ELEV=100.0    MAX ELEV=101.0 FT
                      CH SLP=0.0104     FP SLP=0.0104
                      N=0.030           DIST=40 FT
                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0
ROUTE MCUNGE          ID=16 HYD NO=102EA.6 INFLOW ID=4 DT=0.0 HR
                      LENGTH=575 NS=0 SLOPE=0.0104
```

```
                        MATCODE=0 REGCODE=0 CCODE=0
PRINT HYD               ID=16 CODE=1
*
** ADD ROUTED 102EA.6 TO ROUTED 104EA.5 HYD **
*
ADD HYD                 ID=17    HYD NO=106EA.25
                        ID I=15  ID II=16
PRINT HYD               ID=17    CODE=1
*
**** SUB-BASIN 107EA ****
*
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD          ID=19  HYD NO=107EA
                        DA=0.0213 SQ MI
                               A=20
                               B=64
                               C=10
                               D=6
                        TP=0.181 HR  MASSRAIN=-1
*
PRINT HYD               ID=19                CODE=1
*
*S* ROUTE FLOW COMING FROM 106EA.25 THRU 107EA **
*
COMPUTE RATING CURVE  CID=1 VS NO=1      NO SEGS=1
                      MIN ELEV=100.0     MAX ELEV=103.5 FT
                      CH SLP=0.0094      FP SLP=0.0094
                      N=0.030            DIST=55 FT
                      DIST       ELEV
                      0.0        103.5
                      10.0       100.0
                      45.0       100.0
                      55.0       103.5

ROUTE MCUNGE            ID=2 HYD NO=107EA.6 INFLOW ID=17  DT=0.0 HR
                        LENGTH=1600 NS=0 SLOPE=0.0094
                        MATCODE=0 REGCODE=0 CCODE=0
PRINT HYD               ID=2 CODE=1
*
** ADD ROUTED 106EA.5 TO BASIN 107EA HYD **
*
ADD HYD                 ID=3     HYD NO = 107EA.6
                        ID I=2   ID II=19
PRINT HYD               ID=3     CODE=1
*
**** SUB-BASIN 108EA ****
*
*S GOLF COURSE, PARKING LOT AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD          ID=7  HYD NO=108EA
                        DA=0.0470 SQ MI
                               A=17
                               B=58
                               C=13
                               D=12
                        TP=0.254 HR  MASS RAIN=-1
PRINT HYD               ID=7 CODE=0
*
*** ADD 107EA TO BASIN 108EA HYD ***
*
ADD HYD                  ID=8     HYD NO = 107EA.8
                         ID I=3   ID II=7
PRINT HYD                ID=8     CODE=1
*
*S* ROUTE COMBINED 107EA.8 THRU RESERVOIR (DUCK POND & EMPTY HOLE) **
*
ROUTE RESERVOIR         ID=9   HYD=107EA.8  INFLOW=8   CODE=5
                        OUTFLOW(CFS)  STORAGE(AF)   ELEV(FT)
                          0.00            0.00        5241.0
                          0.01            0.22        5242.0
                          0.02            0.54        5243.0
                          0.03            0.95        5244.0
                          0.035           1.20        5244.5
                          0.04            1.44        5245.0
                          0.045           2.70        5245.5
```

```
                    0.05          3.96        5246.0
                   14.00          4.19        5246.1
                   27.00          4.41        5246.2
                   52.00          4.64        5246.3
                   76.00          4.86        5246.4
                  108.00          5.08        5246.5
                  139.00          5.30        5246.6
                  177.00          5.53        5246.7
                  215.00          5.75        5246.8
                  258.00          5.98        5246.9
                  300.00          6.20        5247.0
                  500.00          9.00        5250.0
                 1000.00         12.00        5255.0
*S
*S  OUTFLOW(CFS)  STORAGE(AF)   ELEV(FT)
*S     0.00          0.00         5241.0
*S     0.01          0.22         5242.0
*S     0.02          0.54         5243.0
*S     0.03          0.95         5244.0
*S     0.035         1.20         5244.5
*S     0.04          1.44         5245.0
*S     0.045         2.70         5245.5
*S     0.05          3.96         5246.0
*S    14.00          4.19         5246.1
*S    27.00          4.41         5246.2
*S    52.00          4.64         5246.3
*S    76.00          4.86         5246.4
*S   108.00          5.08         5246.5
*S   139.00          5.30         5246.6
*S   177.00          5.53         5246.7
*S   215.00          5.75         5246.8
*S   258.00          5.98         5246.9
*S   300.00          6.20         5247.0
*S   500.00          9.00         5250.0
*S  1000.00         12.00         5255.0
*S
*
**** SUB-BASIN 109EA ****
*
*S GOLF COURSE, AND OTHER RECREATION
*
COMPUTE NM HYD       ID=10  HYD NO=109EA
                     DA=0.009 SQ MI
                            A=16
                            B=51
                            C=10
                            D=23
                     TP=0.133 HR  MASSRAIN=-1
PRINT HYD            ID=10 CODE=1
*
*S* ROUTE FLOW COMING FROM RESERVOIR THRU 109EA **
*
COMPUTE RATING CURVE  CID=1 VS NO=1     NO SEGS=1
                     MIN ELEV=100.0    MAX ELEV=101.0 FT
                     CH SLP=0.018      FP SLP=0.018
                     N=0.030           DIST=40 FT
                     DIST      ELEV
                     0.0       101.0
                     10.0      100.0
                     30.0      100.0
                     40.0      101.0

ROUTE MCUNGE         ID=11 HYD NO=109EA.78 INFLOW ID=9  DT=0.0 HR
                     LENGTH=500 NS=0 SLOPE=0.018
                     MATCODE=0 REGCODE=0 CCODE=0
PRINT HYD            ID=11 CODE=1
*
*** ADD ROUTED POND OUTFLOW TO BASIN 109EA HYD ***
*
ADD HYD              ID=12     HYD NO=109EA.87
                     ID I=10   ID II=11
PRINT HYD            ID=12     CODE=1
*
**** SUB-BASIN 110EA  ****
*
*S PKG LOT, CLUBHOUSE, ENTR. RD, PROSHOP, BED & BRKFST
```

```
*
COMPUTE NM HYD        ID=13  HYD NO=110EA
                      DA=0.006 SQ MI
                             A=5
                             B=15
                             C=10
                             D=70
                      TP=0.133 HR MASSRAIN=-1
PRINT HYD             ID=13  CODE=1
*
** ADD SUB-BASIN 109EA TO SUB-BASIN 110EA
*
ADD HYD                ID=14     HYD NO=110EA.1
                       ID I=12   ID II=13
PRINT HYD              ID=14     CODE=1
*
* INPUT MODEL FROM MAY 30, 1995 "PROPOSED POND AT THE
* NORTHWEST CORNER COORS BOULEVARD NW AND PASEO DEL NORTE NW"
* SOURCE: SMITH ENGINEERING COMPANY 3/95
*
*
** ROUTE (103) 110EA.1 THROUGH 104 **
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=3.67
                      CH SLOPE=0.0143  FP SLOPE=0.0143
                      N=0.017          DIST=48
                      DIST     ELEV          DIST      ELEV
                       0       3.67          0.1        0
                      24       0.48         47.9        0
                      48       3.67

ROUTE MCUNGE          ID=3   HYD NO=103.22 INFLOW ID=14
                      DT=0.0  L=2650
                      NS=0  SLOPE=0.0143   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3   CODE=1
*
**** SUB-BASIN 104 ****
*S RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
COMPUTE NM HYD        ID=1  HYD NO = 104
                      DA= 0.0672  SQUARE MI
                                A=10
                                B=25
                                C=15
                                D=50
                      TP=0.2191 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 104 TO HYD 103.22 ***
ADD HYD               ID=2   HYD NO=104.1   ID I=1  ID II=3
PRINT HYD             ID=2   CODE=1
*
** ROUTE 104.1 THRU 105 **
*S ROUTING 104.1 ON CADDIE RD
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0368  FP SLOPE=0.0368
                      N=0.017          DIST=48
                      DIST     ELEV          DIST      ELEV
                       0       2.67          0.1        0
                      24       0.48         47.9        0
                      48       2.67

ROUTE MCUNGE          ID=3   HYD NO=104.12 INFLOW ID=2
                      DT=0.0  L=1850
                      NS=0  SLOPE=0.0368   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3   CODE=1
*
**** SUB-BASIN 105 ****
* RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
```

```
COMPUTE NM HYD          ID=1  HYD NO = 105
                        DA= 0.1027  SQUARE MI
                                  A=10
                                  B=25
                                  C=15
                                  D=50
                        TP=0.1482  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD 105 TO HYD 104.12 ***
*S**** HYD 105.1 IS AP #2     *****
*
ADD HYD                 ID=2   HYD NO=105.1   ID I=1  ID II=3
PRINT HYD               ID=2   CODE=1
*
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=2
                        CH SLOPE=0.0251  FP SLOPE=0.0251
                        N=0.017          DIST=48
                        DIST     ELEV          DIST      ELEV
                         0       2.00          0.1        0
                        24       0.48         47.9        0
                        48       2.00

ROUTE MCUNGE            ID=4   HYD NO=105.12 INFLOW ID=2
                        DT=0.0  L=1950
                        NS=0  SLOPE=0.0251   MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=4   CODE=1
*
**** SUB-BASIN 106 ****
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD          ID=1  HYD NO = 106
                        DA= 0.0954  SQUARE MI
                                  A=10
                                  B=25
                                  C=15
                                  D=50
                        TP=0.1463  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
**** SUB-BASIN 106A1 ****
*
*S SUB-BASIN 106A IS SKY CREST ESTATES
* SOURCE: D. MARK GOODWIN & ASSOCIATES, SKY CREST ESTATES DRNGE REPORT 2/95
*
COMPUTE NM HYD          ID=7  HYD NO=106A1
                        DA=0.00846 SQUARE MI
                                A=0
                                B=27.74
                                C=27.74
                                D=44.52
                        TP=0.1333  HR MASSRAIN=-1
PRINT HYD               ID=7  CODE=1
** ROUTE RESERVOIR **
*S ROUTING RESERVOIR WITH 21" DIAM ORIFACE
*S EXISTING POND AT SW CORNER OF ARROWHEAD AVE AND CHANTILLY RD
*
ROUTE RESERVOIR         ID=9   HYD NO=106A1.RES   INFLOW=7   CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0              5057
                           4.675             0.062          5058
                          16.379             0.140          5059
                          22.510             0.235          5060
                          27.298             0.349          5061
*S
*S          OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S               0               0              5057
*S             4.675             0.062          5058
*S            16.379             0.140          5059
*S            22.510             0.235          5060
*S            27.298             0.349          5061  EXISTING TOP OF POND
*S
```

```
*
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE DOWN CHANTILLY ROAD TO CONGRESS
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2
                      CH SLOPE=0.109   FP SLOPE=0.109
                      N=0.017          DIST=8.1
                      DIST  ELEV       DIST      ELEV
                       0     2          0.1        0
                       8     0          8.1        2

ROUTE MCUNGE          ID=10   HYD NO=106A.1 INFLOW ID=9
                      DT=0.0  L=550
                      NS=0  SLOPE=0.109   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=10   CODE=1
*
**** SUB-BASIN 107 ****
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD        ID=2  HYD NO = 107
                      DA= 0.0291  SQUARE MI
                                A=10
                                B=29.2
                                C=15
                                D=45.8
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=2  CODE=1
*
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=4.67
                      CH SLOPE=0.0216  FP SLOPE=0.0216
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       4.67         0.1        0
                      24       0.48        47.9        0
                      48       4.67

ROUTE MCUNGE          ID=3   HYD NO=107.02 INFLOW ID=2
                      DT=0.0  L=925
                      NS=0  SLOPE=0.0216   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3   CODE=1
*
*** ADD HYD 107.02 TO HYD 105.12 ***
*
ADD HYD               ID=2     HYD NO=107.1   ID I=4  ID II=3
PRINT HYD             ID=2     CODE=1
*
*** ADD HYD 107.1 TO HYD 106 ***
*
ADD HYD               ID=3     HYD NO=107.2   ID I=1  ID II=2
PRINT HYD             ID=3     CODE=1
*
*** ADD HYD 107.2 TO HYD 106A1.01 ***
*
ADD HYD               ID=11     HYD NO=107.3   ID I=3  ID II=10
PRINT HYD             ID=11     CODE=1
*
**** SUB-BASIN 108 ****
*S RESIDENTIAL
*
COMPUTE NM HYD        ID=1  HYD NO=108
                      DA= 0.0240  SQUARE MI
                              A=10
                              B=27.4
                              C=15
                              D=47.6
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND
*S THRU CACTUS HILLS
*
```

```
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.04    FP SLOPE=0.04
                      N=0.017          DIST=48
                      DIST     ELEV    DIST      ELEV
                       0       2.67     0.1        0
                      24       0.48    47.9        0
                      48       2.67

ROUTE MCUNGE          ID=2   HYD NO=108.02 INFLOW ID=1
                      DT=0.0  L=825
                      NS=0  SLOPE=0.04     MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2   CODE=1
*
*** ADD HYD 108.02 TO HYD 107.3 ***
*
ADD HYD               ID=4     HYD NO=108.1   ID I=2  ID II=11
PRINT HYD             ID=4     CODE=1
*
**** SUB-BASIN 109 ****
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN
*
COMPUTE NM HYD        ID=1  HYD NO = 109
                      DA= 0.0207  SQUARE MI
                                A=20
                                B=22.5
                                C=15
                                D=42.5
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 109 TO HYD 108.1 ***
*S**** HYD 109.1 IS AP #3     *****
*
ADD HYD               ID=2     HYD NO=109.1   ID I=1  ID II=4
PRINT HYD             ID=2     CODE=1
*
*S FUTURE DETENTION BASIN IN BASIN 109
* SOURCE: WILSON & CO, AHYMO FOR SPECIAL ASSESMENT DISTRICT 224
*
ROUTE RESERVOIR       ID=66   HYD NO=109.RES   INFLOW=2   CODE=1
                       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0              5069
                            7              0.98            5070
                           25              2.41            5071
                           52              3.97            5072
                           82              5.65            5073
                          112              7.45            5074
                          140              9.37            5075
                          160             11.42            5076
                          178             13.59            5077
                          195             15.89            5078
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5069
*S            7              0.98            5070
*S           25              2.41            5071
*S           52              3.97            5072
*S           82              5.65            5073
*S          112              7.45            5074
*S          140              9.37            5075
*S          160             11.42            5076
*S          178             13.59            5077
*S          195             15.89            5078
*S
*
* * * BASIN 200 * * *
*
**** SUB-BASIN 201 ****
* RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
COMPUTE NM HYD        ID=1  HYD NO = 201
                      DA= 0.0258  SQUARE MI
                              A=10
```

```
                              B=25
                              C=15
                              D=50
                        TP=0.1333  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
** ROUTE 201 THRU 202 **
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0241  FP SLOPE=0.0241
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67         0.1        0
                      24       0.48        47.9        0
                      48       2.67

ROUTE MCUNGE          ID=2   HYD NO=201.02 INFLOW ID=1
                      DT=0.0  L=1080
                      NS=0  SLOPE=0.0241   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2   CODE=1
*
**** SUB-BASIN 202 ****
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, BASIN E
*
COMPUTE NM HYD        ID=1  HYD NO = 202
                      DA= 0.0288  SQUARE MI
                                A=10
                                B=27.7
                                C=15
                                D=47.3
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 202 TO HYD 201.02 ***
*S**** HYD 202.1 IS AP #4     *****
*
ADD HYD               ID=4     HYD NO=202.1   ID I=1  ID II=2
PRINT HYD             ID=4     CODE=1
*
*S EXISTING DROP INLET IN BASIN 202
* SOURCE: B.H. FEB, 1992 CACTUS RIDGE DRAINAGE REPORT, HYMO PRINTOUT
*
ROUTE RESERVOIR       ID=2   HYD NO=202.RES1   INFLOW=4   CODE=1
                      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0               0              5138.7
                        20.12           0.0009           5139.7
                        24.07           0.0019           5140.7
                        41.69           0.0028           5141.7
                        53.82           0.0037           5142.7
                        63.69           0.0047           5143.7
                        70.59           0.0054           5144.5
                        74.58           0.0111           5145.0
                        81.98           0.0603           5146.0
                        83.46           0.1024           5146.2
                        87.97           0.1700           5146.5
                        94.77           0.2611           5147.0
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S          0               0              5138.7
*S        20.12           0.0009           5139.7
*S        24.07           0.0019           5140.7
*S        41.69           0.0028           5141.7
*S        53.82           0.0037           5142.7
*S        63.69           0.0047           5143.7
*S        70.59           0.0054           5144.5
*S        74.58           0.0111           5145.0
*S        81.98           0.0603           5146.0
*S        83.46           0.1024           5146.2
*S        87.97           0.1700           5146.5
*S        94.77           0.2611           5147.0
*S
*S EXISTING DETENTION BASIN IN BASIN 401
*S ROUTING RESERVOIR WITH 21" ORIFACE
```

```
* SOURCE: B.H. FEB, 1992 CACTUS RIDGE DRAINAGE REPORT, HYMO PRINTOUT
*
ROUTE RESERVOIR        ID=4   HYD NO=202.RES2   INFLOW=2   CODE=1
                      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                           0               0              5114
                         11.58           0.0026         5115
                         16.38           0.0052         5116
                         20.06           0.0078         5117
                         23.16           0.0091         5118
                         25.89           0.0521         5119
                         28.37           0.1097         5120
                         30.64           0.1829         5121
                         32.75           0.2747         5122
                         34.74           0.3856         5123
                         36.62           0.5174         5124
                         38.41           0.6717         5125
                         40.11           0.8496         5126
                         41.76           1.03           5127
                          61             1.08           5127.25
                          94             1.13           5127.5
                         136             1.18           5127.75
                         185             1.23           5128
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5114
*S          11.58           0.0026           5115
*S          16.38           0.0052           5116
*S          20.06           0.0078           5117
*S          23.16           0.0091           5118
*S          25.89           0.0521           5119
*S          28.37           0.1097           5120
*S          30.64           0.1829           5121
*S          32.75           0.2747           5122
*S          34.74           0.3856           5123
*S          36.62           0.5174           5124
*S          38.41           0.6717           5125
*S          40.11           0.8496           5126
*S          41.76           1.03             5127      EXISTING TOP OF POND
*S           61             1.08             5127.25
*S           94             1.13             5127.5
*S          136             1.18             5127.75
*S          185             1.23             5128
*S
* DIVIDE HYD 202.RES2 BY MAXIMUM PIPE OUTFLOW *
DIVIDE HYD             INFLOW ID=4   Q=41.76    ID I=8    HYD NO=202.03
                                                ID II=11  HYD NO=OLF.2
PRINT HYD              ID=8  CODE=1
PRINT HYD              ID=11 CODE=1
*
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD
* PIPE SIZE AND SLOPE WAS NOT DETERMINED
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.05
                                DIAM=3 FT  N=0.015
ROUTE MCUNGE           ID=6  HYD NO=202.02  INFLOW ID=8
                       DT=0.0  L=760
                       NS=0  SLOPE=0.05     MATCODE=0
                       REGCODE=0      CCODE=0

PRINT HYD              ID=6  CODE=1
*
* * * BASIN 300 * * *
*
**** SUB-BASIN 301 ****
*S RESIDENTIAL
*
COMPUTE NM HYD         ID=1  HYD NO = 301
                       DA= 0.0182  SQUARE MI
                              A=10
                              B=25
                              C=15
                              D=50
                       TP=0.1579 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304
```

```
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0      MAX ELEV=0.67
                      CH SLOPE=0.0499 FP SLOPE=0.0499
                      N=0.017         DIST=48
                      DIST    ELEV    DIST    ELEV
                       0      0.67     0.1      0
                      24      0.48    47.9      0
                      48      0.67

ROUTE MCUNGE          ID=2   HYD NO=301.02 INFLOW ID=1
                      DT=0.0  L=1765
                      NS=0  SLOPE=0.0499   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2   CODE=1
*
**** SUB-BASIN 302 ****
*S METHODIST CHURCH PROPERTY
*
COMPUTE NM HYD        ID=1  HYD NO = 302
                      DA= 0.0043  SQUARE MI
                              A=0
                              B=10
                              C=0
                              D=90
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0      MAX ELEV=2.67
                      CH SLOPE=0.0443 FP SLOPE=0.0443
                      N=0.017         DIST=48
                      DIST    ELEV    DIST    ELEV
                       0      2.67     0.1      0
                      24      0.48    47.9      0
                      48      2.67

ROUTE MCUNGE          ID=5   HYD NO=302.02 INFLOW ID=1
                      DT=0.0  L=2165
                      NS=0  SLOPE=0.0443   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=5   CODE=1
*
*** ADD HYD 301.02 AND 302.02 ***
*
ADD HYD               ID=4     HYD NO=302.1   ID I=2  ID II=5
PRINT HYD             ID=4     CODE=1
*
**** SUB-BASIN 303 ****
*S COMMERCIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 303
                      DA= 0.0669  SQUARE MI
                              A=0
                              B=10
                              C=0
                              D=90
                      TP=0.1773 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S EXISTING DETENTION BASIN IN BASIN 303
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE
* ASSUME NO SEDIMENT VOLUME DISPLACEMENT
* SOURCE OF TOTAL POND CAPACITY AND SIZE OF OUTLET PIPE:
* SOURCE: ISAACSON AND ARFMAN OCT, 1990 DRAINAGE REPORT
*
ROUTE RESERVOIR       ID=5   HYD NO=303.RES   INFLOW=1   CODE=1
                      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                           0               0              5099
                         11.58             0.15           5100
                         16.37             0.30           5101
                         20.06             0.45           5102
                         23.16             0.60           5103
                         25.89             0.75           5104
```

```
                    26.00          0.91        5105
                    27.00          1.07        5106
                    28.00          1.23        5107
                    29.00          1.39        5108
                    30.00          1.55        5109
                    31.00          1.71        5110
                    32.00          1.87        5111
                    33.00          2.03        5112
                    34.00          2.11        5112.5    EXISTING TOP OF POND
                    53.00          2.15        5112.75
                    86.00          2.19        5113
                    128.0          2.23        5113.25

*S
*S      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S          0               0              5099
*S         11.58            0.15           5100
*S         16.37            0.30           5101
*S         20.06            0.45           5102
*S         23.16            0.60           5103
*S         25.89            0.75           5104
*S         26.00            0.91           5105
*S         27.00            1.07           5106
*S         28.00            1.23           5107
*S         29.00            1.39           5108
*S         30.00            1.55           5109
*S         31.00            1.71           5110
*S         32.00            1.87           5111
*S         33.00            2.03           5112
*S         34.00            2.11           5112.5 EXISTING TOP OF POND
*S         53.00            2.15           5112.75
*S         86.00            2.19           5113
*S         128.0            2.23           5113.25
*S
* DIVIDE HYD 303.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD          INFLOW ID=5   Q=34    ID I=8    HYD NO=303.03
                                          ID II=12  HYD NO=OLF.3
PRINT HYD           ID=8  CODE=1
PRINT HYD           ID=12 CODE=1
*
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE
* PIPE SIZE AND SLOPE WERE NOT DETERMINED
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.015
                            DIAM=3 FT  N=0.015
ROUTE MCUNGE          ID=2  HYD NO=303.02  INFLOW ID=8
                      DT=0.0  L=1000
                      NS=0  SLOPE=0.015    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2  CODE=1
*
** ROUTE OLF.3 THRU 305 TO PARADISE BLVD **
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0128  FP SLOPE=0.0128
                      N=0.017          DIST=48
                      DIST     ELEV    DIST      ELEV
                       0       2.67     0.1        0
                      24       0.48    47.9        0
                      48       2.67

ROUTE MCUNGE          ID=16    HYD NO=OLF.32 INFLOW ID=12
                      DT=0.0  L=1250
                      NS=0  SLOPE=0.0128   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=16    CODE=1
*
**** SUB-BASIN 304 ****
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 304
                      DA= 0.0349  SQUARE MI
                                A=0
                                B=10
```

```
                                C=0
                                D=90
                        TP=0.1333 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD 304 TO HYD 302.1 ***
*
ADD HYD                 ID=7     HYD NO=304.1   ID I=1  ID II=4
PRINT HYD               ID=7     CODE=1
*
*** ADD HYD 304.1 TO HYD OLF.32 ***
*
ADD HYD                 ID=5     HYD NO=304.2   ID I=7  ID II=16
PRINT HYD               ID=5     CODE=1
*
* DIVIDE HYD 304.1 BY MAXIMUM INFLOW OF CATCH BASINS *
*S DIVIDE AT MH# S-702
*
DIVIDE HYD              INFLOW ID=5   Q=20     ID I=4    HYD NO=CB1
                                             ID II=7    HYD NO=304.13
PRINT HYD               ID=4  CODE=1
PRINT HYD               ID=7  CODE=1
*
*** ADD PIPE HYD 303.02 TO HYD CB1 ***
*
ADD HYD                 ID=5     HYD NO=CB1.1   ID I=2  ID II=4
PRINT HYD               ID=5     CODE=1
*
*** ADD HYD 304.2 TO HYD 202.02 ***
*
ADD HYD                 ID=2     HYD NO=CB1.2   ID I=5  ID II=6
PRINT HYD               ID=2     CODE=1
*
**** SUB-BASIN 305 ****
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL
*
COMPUTE NM HYD          ID=17  HYD NO = 305
                        DA= 0.0391  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                        TP=0.1394 HR   MASSRAIN=-1
PRINT HYD               ID=17  CODE=1
*
*
* * * BASIN 400 * * *
*
**** SUB-BASIN 401 ****
*S CACTUS RIDGE
* SOURCE OF AREA: B.H. FEB 1992 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 401
                        DA= 0.0236  SQUARE MI
                                A=10
                                B=22.3
                                C=15
                                D=52.7
                        TP=0.1333 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD OLF.2 TO SUB-BASIN 401 ***
*
ADD HYD                 ID=3     HYD NO=401.1  ID I=1  ID II=11
PRINT HYD               ID=3     CODE=1
*
*S DIVIDE HYD 401.1 BY MAXIMUM INFLOW OF CATCH BASINS, WEST OF
*S SUB-BASIN 401,ALONG PARADISE ROAD (7 CB AT 10 CFS EACH)
*
DIVIDE HYD              INFLOW ID=3   Q=70     ID I=4    HYD NO=CB2
                                             ID II=5    HYD NO=401.13
PRINT HYD               ID=4  CODE=1
PRINT HYD               ID=5  CODE=1
*
**** SUB-BASIN 402 ****
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS
```

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* SOURCE: D.M.G. MAY 1994 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 402
                        DA= 0.0088  SQUARE MI
                                A=0
                                B=28.6
                                C=28.7
                                D=42.7
                        TP=0.1333  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD OLF HYD 401.13 TO 402 ***
*
ADD HYD                 ID=6     HYD NO=402.1   ID I=5  ID II=1
PRINT HYD               ID=6     CODE=1
*
*
*** ADD OLF HYD 304.13 TO OLF HYD 402.1 ***
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD
*S**** OLF HYD 402.2 IS AP #5     *****
*
ADD HYD                 ID=18     HYD NO=402.2   ID I=6  ID II=7
PRINT HYD               ID=18     CODE=1
*
** ROUTE 402.2 THRU 502 ON PARADISE BLVD **
*S ROUTING 402.2 TO DETENTION POND IN 503
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0548  FP SLOPE=0.0548
                      N=0.017          DIST=48
                      DIST     ELEV    DIST      ELEV
                       0       2.67     0.1        0
                      24       0.48    47.9        0
                      48       2.67

ROUTE MCUNGE          ID=20    HYD NO=402.23 INFLOW ID=18
                      DT=0.0  L=1350
                      NS=0  SLOPE=0.0548   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=20    CODE=1
*
*** ADD OLF HYD 402.23 TO 305 ***
*
ADD HYD                 ID=19     HYD NO=305.1  ID I=17  ID II=20
PRINT HYD               ID=19     CODE=1
*
*** ADD HYD CB1.2 TO HYD CB2 ***
*S**** PIPE HYD CB2.1 IS AP #6     *****
*
ADD HYD                 ID=6     HYD NO=CB2.1   ID I=2  ID II=4
PRINT HYD               ID=6     CODE=1
*
**** SUB-BASIN 403 ****
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS
* SOURCE: D.M.G. MAY 1994 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 403
                        DA= 0.0144  SQUARE MI
                                A=0
                                B=22.9
                                C=22.9
                                D=54.2
                        TP=0.1333  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*S DIVIDE HYD 403 BY MAXIMUM INFLOW OF POND INLET IN WEST PARK APARTMENTS
* SOURCE OF DIVIDE IS D.M.G. MAY, 1994 DRAINAGE REPORT
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND
*
DIVIDE HYD              INFLOW ID=1   Q=3      ID I=2     HYD NO=CB3
                                              ID II=99   HYD NO=403.13
PRINT HYD               ID=2   CODE=1
PRINT HYD               ID=99  CODE=1
*
*** ADD HYD CB2.1 TO HYD CB3 ***
```

```
*
ADD HYD                 ID=5     HYD NO=CB3.1    ID I=6  ID II=2
PRINT HYD               ID=5     CODE=1
*
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732
*S Q(CAP) = 144 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                              DIAM=4.5 FT  N=0.013
ROUTE MCUNGE            ID=2  HYD NO=CB3.13  INFLOW ID=5
                        DT=0.0  L=1678
                        NS=0  SLOPE=0.005    MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=2  CODE=1
*
**** SUB-BASIN 404 ****
*S LESLIE HOMES
* SOURCE: D.M.G. JAN 1993 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 404
                        DA= 0.0161  SQUARE MI
                                A=10
                                B=25.1
                                C=15
                                D=49.9
                        TP=0.1333  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD 404 TO HYD CB3.13 ***
* ASSUME ALL SUB-BASIN 404 ENTERS SD
*
ADD HYD                 ID=5     HYD NO=CB4.1    ID I=1  ID II=2
PRINT HYD               ID=5     CODE=1
*
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                              DIAM=5 FT  N=0.015
ROUTE MCUNGE            ID=2  HYD NO=CB4.13  INFLOW ID=5
                        DT=0.0  L=1051
                        NS=0  SLOPE=0.005    MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=2  CODE=1
*
**** SUB-BASIN 405 ****
*S SUB-BASIN 405 IS PART OF CACTUS HILLS
* SOURCE: D.M.G. JAN 1993 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 405
                        DA= 0.0270  SQUARE MI
                                A=10
                                B=42
                                C=10
                                D=38
                        TP=0.1333 HR MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*S  DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *
*
DIVIDE HYD              INFLOW ID=1   Q=40    ID I=6    HYD NO=CB5
                                              ID II=7   HYD NO=405.03
PRINT HYD               ID=6  CODE=1
PRINT HYD               ID=7  CODE=1
*
*S ROUTING 405.03 TO CONGRESS AVE
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=2.67
                        CH SLOPE=0.004   FP SLOPE=0.004
                        N=0.017          DIST=48
                        DIST     ELEV    DIST      ELEV
                         0       2.67     0.1        0
                        24       0.48    47.9        0
                        48       2.67
```

```
ROUTE MCUNGE          ID=15  HYD NO=405.02 INFLOW ID=7
                      DT=0.0  L=500
                      NS=0  SLOPE=0.004    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=15  CODE=1
*
*** ADD HYD CB5 TO HYD CB4.13 ***
*S SUB-BASIN 405 HAS TRANSVERSE DRAIN WITH 36" PIPE TO 60" SD
*
ADD HYD               ID=5     HYD NO=CB5.1   ID I=6  ID II=2
PRINT HYD             ID=5     CODE=1
*
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                           DIAM=5.5 FT  N=0.015
ROUTE MCUNGE          ID=2  HYD NO=CB5.13  INFLOW ID=5
                      DT=0.0  L=454
                      NS=0  SLOPE=0.005    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2  CODE=1
*
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND
*S Q(CAP) = 233 CFS, AT SLOPE=0.008
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.008
                           DIAM=5 FT  N=0.015
ROUTE MCUNGE          ID=25  HYD NO=CB5.23  INFLOW ID=2
                      DT=0.0  L=690
                      NS=0  SLOPE=0.008    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=11 CODE=1
*
**** SUB-BASIN 406 ****
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 406
                      DA= 0.0107  SQUARE MI
                              A=10
                              B=25
                              C=15
                              D=50
                      TP=0.1333  HR MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD 405.1 TO HYD 406 ***
*
ADD HYD               ID=6     HYD NO=406.1  ID I=15  ID II=1
PRINT HYD             ID=6     CODE=1
*
*S ROUTING 406.1 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=3
                      CH SLOPE=0.0083  FP SLOPE=0.0083
                      N=0.017          DIST=48
                      DIST     ELEV         DIST     ELEV
                       0       3.00          0.1       0
                      24       0.48         47.9       0
                      48       3.00

ROUTE MCUNGE          ID=3   HYD NO=406.12 INFLOW ID=6
                      DT=0.0  L=600
                      NS=0  SLOPE=0.0083  MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3   CODE=1
*
**** SUB-BASIN 407 ****
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL
* INCLUDES AREA FROM IRVING BLVD
*
COMPUTE NM HYD        ID=1  HYD NO = 407
                      DA= 0.0224  SQUARE MI
                              A=0
                              B=10
```

```
                                C=0
                                D=90
                          TP=0.1333  HR   MASSRAIN=-1
PRINT HYD                 ID=1  CODE=1
*
* EXISTING DETENTION BASIN IN BASIN 407
*S CUBBY HOLE DETENTION BASIN
*S ROUTING RESERVOIR WITH 12" ORIFACE
* SOURCE: D.M.G. JAN, 1993 DRAINAGE REPORT, PG 42
*
ROUTE RESERVOIR           ID=5   HYD NO=407.RES   INFLOW=1   CODE=1
                           OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                                0               0              5063
                               3.78            0.0387          5064
                               5.35            0.0597          5065
                               6.55            0.0808          5066
                               7.56            0.1019          5067
                               8.46            0.1230          5068
                               9.26            0.1440          5069
                              10.00            0.1651          5070
                               29              0.170           5070.25
                               62              0.175           5070.5
                              104              0.180           5070.75
                              153              0.185           5071
*S
*S        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S             0               0              5063
*S            3.78            0.0387          5064
*S            5.35            0.0597          5065
*S            6.55            0.0808          5066
*S            7.56            0.1019          5067
*S            8.46            0.1230          5068
*S            9.26            0.1440          5069
*S           10.00            0.1651          5070
*S            29              0.170           5070.25
*S            62              0.175           5070.5
*S           104              0.180           5070.75
*S           153              0.185           5071
*S
* DIVIDE HYD 407.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD                INFLOW ID=5   Q=10    ID I=89    HYD NO=407.03
                                                ID II=13   HYD NO=OLF.4
PRINT HYD                 ID=27 CODE=1
PRINT HYD                 ID=13 CODE=1
*
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962
*S Q(CAP) = 260 CFS, AT SLOPE=0.01
*
COMPUTE RATING CURVE      CID=1 VS NO=1 CODE=-1 SLP=0.01
                                DIAM=5 FT  N=0.015
ROUTE MCUNGE              ID=85  HYD NO=CB5.33  INFLOW ID=25
                          DT=0.0  L=739
                          NS=0  SLOPE=0.01     MATCODE=0
                          REGCODE=0      CCODE=0
PRINT HYD                 ID=7  CODE=1
*
*** ADD HYD 406.12 TO HYD OLF.4 ***
*
ADD HYD                   ID=17    HYD NO=407.1   ID I=3  ID II=13
PRINT HYD                 ID=17    CODE=1
*
**** SUB-BASIN 408 ****
*S SUB-BASIN 408 IS STATE FARM INSURANCE
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD
* SOURCE: EASTERLING FEB 1987 PLANS
*
COMPUTE NM HYD            ID=14  HYD NO = 408
                          DA= 0.0066  SQUARE MI
                                  A=0
                                  B=10
                                  C=0
                                  D=90
                          TP=0.1333  HR   MASSRAIN=-1
PRINT HYD                 ID=14 CODE=1
*
```

```
*S EXISTING DETENTION BASIN IN SUB-BASIN 408
*S ROUTING RESERVOIR WITH 12" WEIR
* SOURCE: EASTERLING FEB, 1987 START FARM INS PLANS
*
ROUTE RESERVOIR        ID=18   HYD NO=408.RES   INFLOW=14   CODE=1
                       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0             5050.80
                          1.08            0.2198          5052.30
                          1.66            0.2931          5052.80
                          2.31            0.3663          5053.30
                          3.02            0.4396          5053.80
                         22.00            0.4763          5054.05
*S
*S      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S         0               0              5050.8
*S        1.08            0.2198          5052.3    EXISTING TOP OF POND
*S        1.66            0.2931          5052.8
*S        2.31            0.3663          5053.3
*S        3.02            0.4396          5053.8
*S         22             0.4763          5054.05
*S
*
*** ADD HYD 408.RES TO HYD 407.1 ***
*
ADD HYD                ID=14    HYD NO=408.1   ID I=17  ID II=18
PRINT HYD              ID=14    CODE=1
*
**** SUB-BASIN 409 ****
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D
*
COMPUTE NM HYD         ID=1  HYD NO = 409
                       DA= 0.0098  SQUARE MI
                              A=0
                              B=10
                              C=0
                              D=90
                       TP=0.1333 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*S DIVIDE HYD 409 BY 36" STUB OUT PIPE CAPACITY *
*
DIVIDE HYD             INFLOW ID=1    Q=25  ID I=28   HYD NO=CB6
                                             ID II=15  HYD NO=409.03
PRINT HYD              ID=28 CODE=1
PRINT HYD              ID=15 CODE=1
*
**** SUB-BASIN 411 ****
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B
*
COMPUTE NM HYD         ID=1  HYD NO = 411
                       DA= 0.0092  SQUARE MI
                              A=0
                              B=10
                              C=0
                              D=90
                       TP=0.1333  HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*S DIVIDE HYD 411 BY INLET CAPACITY *
DIVIDE HYD              INFLOW ID=1   Q=10   ID I=2   HYD NO=CB7
                                             ID II=7  HYD NO=411.03
PRINT HYD               ID=2  CODE=1
PRINT HYD               ID=7  CODE=1
*
**** SUB-BASIN 410 ****
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A
*
COMPUTE NM HYD         ID=1  HYD NO = 410
                       DA= 0.0047  SQUARE MI
                              A=0
                              B=10
                              C=0
                              D=90
                       TP=0.1333  HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
```

```
*S DIVIDE HYD 410 BY INLET CAPACITY *
DIVIDE HYD            INFLOW ID=1   Q=10    ID I=9    HYD NO=CB8
                                             ID II=16  HYD NO=410.03
PRINT HYD             ID=9  CODE=1
PRINT HYD             ID=16 CODE=1
*
*** ADD HYD 411.03 TO HYD 410.03 ***
*
ADD HYD               ID=3    HYD NO=411.1   ID I=7  ID II=16
PRINT HYD             ID=3    CODE=1
*
*** ADD HYD 411.1 TO HYD 409.03 ***
*S ASSUME OLF HYD 411.2 PONDS
*
ADD HYD               ID=16    HYD NO=411.2   ID I=3  ID II=15
PRINT HYD             ID=16    CODE=1
*
*** ADD HYD CB5.33 TO HYD CB7 ***
*
ADD HYD               ID=21     HYD NO=CB7.1   ID I=2  ID II=85
PRINT HYD             ID=21     CODE=1
*
*** ADD HYD CB8 TO HYD CB7.1 ***
*
ADD HYD               ID=2      HYD NO=CB8.1   ID I=21  ID II=9
PRINT HYD             ID=2      CODE=1
*
*S ROUTE CB8.1 IN 60" PIPE TO SUB-BASIN 411 ( JUST BEFORE
*S CALABACILLAS ARROYO OUTFALL)
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                            DIAM=5.5 FT  N=0.013
ROUTE MCUNGE          ID=9  HYD NO=CB8.12  INFLOW ID=2
                      DT=0.0  L=1263
                      NS=0  SLOPE=0.005    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=9  CODE=1
*
**** SUB-BASIN 412 ****
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3
*
COMPUTE NM HYD        ID=1  HYD NO = 412
                      DA= 0.0133  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                      TP=0.1449 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD CB9 TO HYD CB8.12 ***
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO
*S****  HYD CB9.1 IS AP #9     *****
*
ADD HYD               ID=98     HYD NO=CB9.1   ID I=1  ID II=9
PRINT HYD             ID=98     CODE=1
*
ADD HYD               ID=99   HYD NO=OUT.1 ID=98 ID=99
PRINT HYD             ID=99  CODE=1
*
*S SAD 224-PROJECT INCLUDES ENLARGING POND ON CONGRESS AVE
*S INSTALLATION OF 66" OUTLET PIPE FROM POND-FLOWS ROUTED TO
*S CALABACILLAS ARROYO
* SOURCE: WILSON & COMPANY ENGINEERS
*
*** ROUTE PROPOSED PIPE UNTIL CUBBY HOLE DETENTION POND ***
*S Q(CAP) =233 CFS, AT SLOPE = 0.008
*
COMPUTE RATING CURVE   CID=1   NO=1     CODE=-1     SLP=0.008
                               DIAM=5.5 FT          N=0.013
ROUTE MCUNGE            ID=2   HYD NO=CB6.23        INFLOW ID=66
                        DT=0.0 L=690
                        NS=0   SLOPE=0.008  MATCODE=0
                        REGCODE=0           CCODE=1
PRINT HYD               ID=2                CODE=1
```

```
*
*** ADD HYD 407 TO PROPOSED PIPE SYSTEM ***
*
ADD HYD                 ID=86   HYD NO=CB6.33    ID I=2  ID II=89
PRINT HYD               ID=86   CODE=1
*
*S** ROUTE PROPOSED PIPE UNTIL IT REACHES EAGLE RANCH ROAD AGAIN ***
*S Q(CAP) =233 CFS AT SLOPE = 0.008
*
COMPUTE RATING CURVE   CID=1   NO=1     CODE=-1     SLP=0.008
                               DIAM=5.5 FT          N=0.013
ROUTE MCUNGE            ID=8  HYD NO=CB6.33        INFLOW ID=86
                        DT=0.0 L=300
                        NS=0   SLOPE=0.008  MATCODE=0
                        REGCODE=0           CCODE=1
PRINT HYD               ID=8                CODE=1
*
** ADD BASIN 409 TO PROPOSED PIPE **
*
ADD HYD                ID=9    HYD NO=CB6.43    ID I=28 ID II=8
PRINT HYD              ID=9    CODE=1
*
**** SUB-BASIN 413 ****
*S SUB-BASIN 413 IS WEST OF EAGLE RANCH COMMERCIAL*
*
COMPUTE NM HYD         ID=3     HYD NO= 413
                       DA=0.0156  SQUARE MI
                                  A=0
                                  B=10
                                  C=0
                                  D=90
                        TP=0.133 HR MASSRAIN=-1
PRINT HYD               ID=3 CODE=1
*
**** SUB-BASIN 414 ****
*S SUB-BASIN 414 IS WEST OF EAGLE RANCH COMMMERCIAL*
*
COMPUTE NM HYD         ID=10    HYD NO=414
                       DA=0.00297 SQUARE MI
                                  A=0
                                  B=10
                                  C=0
                                  D=90
                        TP=0.133 HR MASSRAIN=-1
PRINT HYD               ID=10 CODE=1
*
*** ADD 413 AND 414 ***
*
ADD HYD                 ID=5    HYD NO=CB6.53   ID I=3 ID II=10
PRINT HYD               ID=5    CODE=1
*
*** ADD 413 AND 414 TO PROPOSED PIPE ***
*
ADD HYD                 ID=11     HYD NO=CB6.63   ID=5  ID=9
PRINT HYD               ID=11     CODE=1
*
**** SUB-BASIN 415 ****
*S SUB-BASIN 415 IS WEST OF EAGLE RANCH - COMMERCIAL *
*
COMPUTE NM HYD          ID=1    HYD NO=415
                        DA=0.0119 SQUARE MI
                                  A=0
                                  B=10
                                  C=0
                                  D=90
                        TP=0.133 HR MASSRAIN=-1
PRINT HYD               ID=1 CODE=1
*
ADD HYD                 ID=98 HYD NO=OUT.2   ID I=1 ID II=11
PRINT HYD               ID=98 CODE=1
*
ADD HYD                 ID=99 HYD NO=OUT.3 ID=98 ID=99
PRINT HYD               ID=99 CODE=1
*
* * * BASIN 500 * * *
*
```

```
**** SUB-BASIN 501 ****
*S EAGLE RANCH ROAD
*S 86 FT ROW
*
COMPUTE NM HYD          ID=1  HYD NO = 501
                        DA= 0.01  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                        TP=0.3060 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD 501 TO OLF HYD 408.1 ***
*
ADD HYD                 ID=3    HYD NO=501.1  ID I=14   ID II=1
PRINT HYD               ID=3    CODE=1
*
*S ROUTE OLF 501.1 THRU 505 IN IRVING BLVD **
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=3
                        CH SLOPE=0.021   FP SLOPE=0.021
                        N=0.017          DIST=48
                        DIST     ELEV    DIST      ELEV
                         0       3.00     0.1       0
                        24       0.48    47.9       0
                        48       3.00

ROUTE MCUNGE            ID=7   HYD NO=501.12 INFLOW ID=3
                        DT=0.0  L=1000
                        NS=0  SLOPE=0.021    MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=7   CODE=1
*
**** SUB-BASIN 502 ****
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 502
                        DA= 0.0435  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                        TP=0.1333 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*S DIVIDE HYD 305.1 IN PARADISE BLVD BY ASSUMED 18" CAPACITY *
*
DIVIDE HYD              INFLOW ID=19   Q=20      ID I=2    HYD NO=402.24
                                                ID II=3   HYD NO=402.25
PRINT HYD               ID=2   CODE=1
PRINT HYD               ID=3   CODE=1
*
*** ADD OLF HYD 402.24 TO SUB-BASIN 502 ***
*
ADD HYD                 ID=5     HYD NO=502.1     ID I=2   ID II=1
PRINT HYD               ID=5     CODE=1
*
*S EXISTING DETENTION BASIN IN SUB-BASIN 502
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR         ID=8    HYD NO=502.RES   INFLOW=5    CODE=1
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0              5030
                            38.9526         2.1993         5038
                            58              2.268          5038.25
                            91              2.337          5038.5
*S
*S        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S             0               0              5030
*S            38.9526          2.1993         5038
*S            58               2.268          5038.25
*S            91               2.337          5038.5
```

```
*S
**** SUB-BASIN 503 ****
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 503
                        DA= 0.0235  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                        TP=0.2284 HR MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD OLF HYD 402.25 TO HYD SUB-BASIN 503 ***
*
ADD HYD                 ID=2      HYD NO=503.1     ID I=1   ID II=3
PRINT HYD               ID=2      CODE=1
*
*S EXISTING DETENTION BASIN IN SUB-BASIN 503
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR         ID=5    HYD NO=503.RES   INFLOW=2    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0               5000
                          10.1924         4.2712            5010
                           29             4.378             5010.25
                           62             4.485             5010.5
                          104             4.592             5010.75
                          153             4.698             5011
                          209             4.805             5011.25
*S
*S      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S          0               0               5000
*S        10.1924         4.2712            5010
*S         29             4.378             5010.25
*S         62             4.485             5010.5
*S        104             4.592             5010.75
*S        153             4.698             5011
*S        209             4.805             5011.25
*S
*
*** ADD HYD 502.RES TO HYD 503.RES  ***
*
ADD HYD                 ID=10    HYD NO=503.1  ID I=5  ID II=8
PRINT HYD               ID=10    CODE=1
*
**** SUB-BASIN 504 ****
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD          ID=1  HYD NO = 504
                        DA= 0.0257  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                        TP=0.2025 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*S EXISTING DETENTION BASIN IN SUB-BASIN 504
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR         ID=3    HYD NO=504.RES   INFLOW=1    CODE=1
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0               5001
                           38.9526         1.1742            5007
*S
*S      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S          0               0               5001
*S        38.9526         1.1742            5007
*S
*
*** ADD HYD 503.1 TO HYD 504.RES  ***
```

```
*
ADD HYD              ID=11      HYD NO=504.1  ID I=3   ID II=10
PRINT HYD            ID=11     CODE=1
*
**** SUB-BASIN 505 ****
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL
*
COMPUTE NM HYD       ID=1  HYD NO = 505
                     DA= 0.0497  SQUARE MI
                             A=0
                             B=10
                             C=0
                             D=90
                     TP=0.2066 HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
*** ADD HYD 505 TO OLF HYD 501.12 ***
*
ADD HYD              ID=2      HYD NO=505.1  ID I=1  ID II=7
PRINT HYD            ID=2      CODE=1
*
**** SUB-BASIN 505A ****
*S COORS BOULEVARD ROW
*
COMPUTE NM HYD       ID=1  HYD NO = 505A
                     DA= 0.0056  SQUARE MI
                             A=0
                             B=10
                             C=0
                             D=90
                     TP=0.1333 HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
*S ROUTE 505A IN FUTURE STORM DRAIN THROUGH 506A
*S ASSUME PIPE SIZE OF 48" AND SLOPE=0.008 FT/FT
COMPUTE RATING CURVE   CID=1   NO=1     CODE=-1     SLP=0.008
                               DIAM=4 FT          N=0.013
ROUTE MCUNGE            ID=31   HYD NO=505A.1        INFLOW ID=1
                        DT=0.0 L=1500
                        NS=0   SLOPE=0.008  MATCODE=0
                        REGCODE=0           CCODE=1
PRINT HYD               ID=31                CODE=1

*S ROUTE OLF HYD 505.1 THRU 506 ON COORS BLVD **
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.012   FP SLOPE=0.012
                      N=0.017          DIST=80
                      DIST     ELEV         DIST      ELEV
                       0       2.67         0.1        0
                      40       0.80        79.9        0
                      80       2.67
ROUTE MCUNGE          ID=9   HYD NO=505.12 INFLOW ID=2
                      DT=0.0  L=2150
                      NS=0  SLOPE=0.012    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=9  CODE=1
*
*** ADD OLF HYD 505.12 TO HYD 504.1 ***
*
ADD HYD               ID=2      HYD NO=505.2    ID I=11   ID II=9
PRINT HYD             ID=2      CODE=1
*
** ROUTE 505.2 THRU 506'S LOW SPOT **
*S ASSUME A FUTURE PIPE SIZE AND SLOPE; 96" AND 0.009 FT/FT
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.009
                            DIAM=8 FT  N=0.013
ROUTE MCUNGE          ID=3  HYD NO=505.22  INFLOW ID=2
                      DT=0.0  L=700
                      NS=0  SLOPE=0.009    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3  CODE=1
*
```

```
**** SUB-BASIN 506 ****
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW
*
COMPUTE NM HYD          ID=1  HYD NO = 506
                        DA= 0.0559 SQUARE MI
                                  A=10
                                  B=30
                                  C=30
                                  D=30
                        TP=0.2045 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
**** SUB-BASIN 506A ****
*S COORS BOULEVARD ROW
*
COMPUTE NM HYD          ID=29  HYD NO = 506A
                        DA= 0.008  SQUARE MI
                                 A=0
                                 B=10
                                 C=0
                                 D=90
                        TP=0.18684 HR   MASSRAIN=-1
PRINT HYD               ID=29  CODE=1
*
*** ADD OLF HYD 505.12 TO HYD 506 ***
*
ADD HYD                 ID=2      HYD NO=506.1   ID I=1  ID II=3
PRINT HYD               ID=2      CODE=1
*
*** ADD HYD 506.1 TO HYD 505A.1 ***
*
ADD HYD                 ID=27      HYD NO=506.12   ID I=2  ID II=31
PRINT HYD               ID=27      CODE=1
*
*** ADD HYD 506.12 TO HYD 506A ***
*
ADD HYD                 ID=2      HYD NO=506.2   ID I=27  ID II=29
PRINT HYD               ID=2      CODE=1

*S PROPOSED DETENTION BASIN WITHIN EXISTING STATE HWY DEPT R-O-W
*S ROUTING RESERVOIR WITH 36" DIAM ORIFACE
*S MAXIMUM:  HIGH ELEV = 5001 , LOW ELEV = 4992.8 , OUTFLOW = 38 CFS
* AREA ORIFACE IS 2.75 SF
ROUTE RESERVOIR         ID=10   HYD NO=506.RES   INFLOW=2   CODE=1
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                              0               0              4993
                             13.2            1.1324          4994
                             18.7            4.4968          4995
                             22.9            9.3777          4996
                             26.5           14.3639          4997
                             29.6           19.4554          4998
                             32.4           24.6522          4999
                             35.0           29.9543          5000
                             37.5           35.3617          5001
                             39.7           40.8744          5002
                             41.9           46.4318          5003
                             43.9           52.1551          5004
*S
*S        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S             0               0              4993
*S            13.2            1.1324          4994
*S            18.7            4.4968          4995
*S            22.9            9.3777          4996
*S            26.5           14.3639          4997
*S            29.6           19.4554          4998
*S            32.4           24.6522          4999
*S            35.0           29.9543          5000
*S            37.5           35.3617          5001
*S            39.7           40.8744          5002
*S            41.9           46.4318          5003
*S            43.9           52.1551          5004
*
*** ADD THE FLOW FROM THE POND ON BLACK RANCH TRACT 2 TO THE CANAL AT THE ***
*** CBC UNDER PASEO DEL NORTE ***
*
ADD HYD                 ID=20 HYD NO=900 ID=83 ID=10
```

```
*
** ROUTE THE FLOW FROM TRACT 2 POND AND BASIN 8.3 THROUGH THE 6'X 10' CBC TO
** POINT WHERE FLOW FROM POND AT SW CORNER OF PASEO DEL NORTE ENTERS THE CBC
*
COMPUTE RATING CURVE  CID=1  VS NO=1       NO SEGS=1
                      MIN ELEV=0           MAX ELEV=6
                      CH SLOPE=0.001332    FP SLOPE=0.001332
                      N=0.013          DIST=10
                      DIST     ELEV          DIST      ELEV
                       0       6.00          0.1        0
                      10       0            10.1        6

ROUTE MCUNGE          ID=7   HYD NO=901 INFLOW ID=20
                      DT=0.0  L=925
                      NS=0  SLOPE=0.001332  MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=7   CODE=1
*
**** BASIN 11.1W ****
*
*S THE ALBUQUERQUE WEST COMMERCIAL DEVELOPMENT AREA
*S INCLUDES SECTIONS OF PASEO DEL NORTE AND STATE HIGHWAY DEPT. ROW
*S BASIN 11.1W
*
COMPUTE NM HYD        ID=1   HYD NO=11.1W
                      DA=0.04607 SQ MI
                            A=10
                            B=10
                            C=0
                            D=80
                      TP=0.1333 HR MASSRAIN=-1
PRINT HYD             ID=1  CODE=0
*
*S ROUTE RESERVOIR THROUGH NMSH&TD POND AT SW CORNER OF PDN AND COORS
*S ROUTE RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.
*
ROUTE RESERVOIR       ID=2  HYD NO=11.1W.RES  INFLOW=1    CODE=1
                      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0                0           4996
                           28             1.30           4998
                           66             2.66           5000
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0            4996
*S           28              1.30          4998
*S           66              2.66          5000
*
*S DIVIDE HYD 11.1W.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD            INFLOW ID=2   Q=66      ID I=18    HYD NO=11.1W.RES1
                                              ID II=30   HYD NO=OLF.5
PRINT HYD             ID=18   CODE=1
PRINT HYD             ID=30   CODE=1

*S ROUTE THE FLOW FROM THE POND THROUGH CULVERT PIPES UNDER COORS **
* THE EQUIVALENT DIAMETER OF THE TWO PIPES IS USED. ASSUME A SLOPE OF.5%
*
COMPUTE RATING CURVE  CID=1   NO=1  CODE=-1 SLP=0.002
                      DIAM=3.5 FT       N=0.024
ROUTE MCUNGE          ID=8    HYD NO=903   INFLOW ID=18
                      DT=0.0  L=300
                      NS=0    SLOPE=0.005  MATCODE=0
                      RECODE=0             CCODE=1
PRINT HYD             ID=8                 CODE=1
*
*** ADD THE FLOW FROM NMSHTD POND TO CANAL ***
*
ADD HYD              ID=9 HYD NO=904 ID=8 ID=7
*
* *S BASE FLOW CORRECTION
*
MODIFY TIME           ID=9 TIME SHIFT=0.0001 BASE FLOW=-38 CFS
*
*S ROUTE FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **
*
COMPUTE RATING CURVE  CID=1  VS NO=1      NO SEGS=1
```

```
                        MIN ELEV=0          MAX ELEV=6
                        CH SLOPE=0.001332   FP SLOPE=0.001332
                        N=0.013          DIST=10
                        DIST     ELEV         DIST      ELEV
                         0       6.00         0.1        0
                        10       0           10.1        6

ROUTE MCUNGE            ID=3   HYD NO=18 INFLOW ID=9
                        DT=0.0  L=600
                        NS=0  SLOPE=0.001332  MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=3 CODE=1
*
*S BASE FLOW CORRECTION
*
MODIFY TIME             ID=3 TIME SHIFT=0.0001 BASE FLOW=-38 CFS
*
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW
*S CORRECTED TO 38 CFS MIN.
*
PRINT HYD               ID=3 CODE=1
*
**** SUB-BASIN 11.2E ****
*
* FLOW FROM SUB-BASIN 11.2E ENTER THE CBC DIRECTLY THROUGH STORM DRAIN
*S INCLUDES SECTION OF COORS AND PASEO DEL NORTE
*
COMPUTE NM HYD          ID=7 HYD NO=11.2E-325
                        DA=0.02769 SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                        TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD               ID=7 CODE=0
*
*** ADD 11.2E TO CANAL FLOW. ***
*
ADD HYD                 ID=5 HYD NO=326 ID=3 ID=7
*
* FLOWS FROM 8.1W TO 11.2E IN CANAL.
*
PRINT HYD               ID=5 CODE=0
*
**** SUB-BASIN 12.1W ****
*
*S EAGLE RIDGE APARTMENT COMPLEX/UPPER HALF THAT DRAINS DIRECTLY
*S TO THE CORRALES MAIN CANAL VIA FUTURE STORM DRAIN
*  SOURCE: ISAACSON & ARFMAN EAGLE RIDGE APARTMENTS DRAINAGE PLAN
*
COMPUTE NM HYD          ID=3   HYD NO=12.1W
                        DA=0.04399 SQ MI
                              A=0
                              B=42
                              C=0
                              D=58
                        TP=0.1333 MASSRAIN=-1
PRINT HYD               ID=3  CODE=1
*
*S ROUTE FLOW FROM 12.1W THROUGH FUTURE DETENTION POND **
* ROUTING RESERVOIR WITH 21" ORIFACE
ROUTE RESERVOIR         ID=9  HYD NO=12.1W.RES  INFLOW=3    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                              0               0            0
                              4              0.59          1.0
                              9              1.29          2.0
                             12              2.41          2.5
*
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              0
*S            4              0.59            1.0
*S            9              1.29            2.0
*S           12              2.41            2.5
*
*S ROUTE FLOW IN CANAL TO AREA 12.1AW DISCHARGE POINT. **
```

```
* ROUTE FROM STA 643+33.62 TO 650+83.62
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=12.1     NO SEGS=1
                     MIN ELEV=4985.30    MAX ELEV=4995.14
                     CH SLOPE=0.0003     FP SLOPE=0.0003
                     N=0.045             DIST=86
                     DIST     ELEV
                     0        4993.58
                     12       4993.00
                     35       4985.55
                     45       4985.30
                     72       4993.10
                     86       4995.14

ROUTE MCUNGE         ID=10  HYD NO=19 INFLOW ID=5  DT=0.0 HR
                     LENGTH=750   NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=10  CODE=1
*
*S BASE FLOW CORRECTION
*
MODIFY TIME          ID=10 TIME SHIFT=0.0001 BASE FLOW=-38 CFS
*
*** ADD AREA 12.1AW TO CANAL FLOW ***
*
ADD HYD              ID=11 HYD NO=12.1W.1 ID=10 ID=9

**** SUB-BASIN 12.2W ****
*
*S EAGLE RIDGE APARTMENT COMPLEX/LOWER HALF THAT
*S DRAINS TO THE SWALE ALONG COORS BOULEVARD
* SOURCE: ISAACSON & ARFMAN EAGLE RIDGE APARTMENTS DRAINAGE PLAN
*
COMPUTE NM HYD       ID=1    HYD NO=12.2W
                     DA=0.00691 SQ MI
                           A=0
                           B=42
                           C=0
                           D=58
                     TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD            ID=1   CODE=0
*
*S DIVIDE HYD NO BY ALLOWABLE DISCHARGE SWALE ALONG COORS **
*S HYD NO 603.01 IS THE Q THAT REACHES THE SWALE
*
DIVIDE HYD           INFLOW ID=1   Q=20     ID I=5     HYD NO=12.2W.1
                                            ID II=31   HYD NO=OLF.7
PRINT HYD            ID=5    CODE=1
PRINT HYD            ID=31   CODE=1
*
*S ROUTE THE FLOW LEAVING THE LOWER HALF OF THE EAGLE RIDGE APARTMENT
*S SITE THROUGH A NATURAL SWALE THAT FLOWS SOUTH ALONG THE WEST
*S SIDE OF COORS BOULEVARD.
*
COMPUTE RATING CURVE CID=1 VS NO=1     NO SEGS=1
                     MIN ELEV=100      MAX ELEV=105
                     CH SLOPE=0.005    FP SLOPE=0.005
                     N=0.030           DIST=16.0
                     DIST        ELEV
                      0.0       105.0
                      3.0       100.0
                     13.0       100.0
                     16.0       105.0

ROUTE MCUNGE         ID=8  HYD NO=12.2W.2  INFLOW ID=5
                     DT=0.0  L=500 FT
                     NS=0  SLOPE=0.005  MATCODE=0
                     REGCODE=0  CCODE=0
PRINT HYD            ID=8 CODE=1
*
*S ROUTE FLOW DOWN CANAL TO AREA 12.3 DISCHARGE POINT. **
* ROUTE FROM STA 650+83.62 TO 660+70
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE & OUTLET CONST PLANS
*
```

```
COMPUTE RATING CURVE ID=1 VS NO=12.4    NO SEGS=1
                     MIN ELEV=4985.30   MAX ELEV=4995.14
                     CH SLOPE=0.0003    FP SLOPE=0.0003
                     N=0.045            DIST=86
                     DIST    ELEV
                     0       4993.58
                     12      4993.00
                     35      4985.55
                     45      4985.30
                     72      4993.10
                     86      4995.14

ROUTE MCUNGE         ID=9 HYD NO=22 INFLOW ID=11  DT=0.0 HR
                     LENGTH=986   NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=9   CODE=1
*
*S BASE FLOW CORRECTION.
*
MODIFY TIME          ID=9  TIME SHIFT=0.0001 BASE FLOW=-38 CFS
*
* AREAS 8.1W TO 12.1W ROUTED DOWN CANAL WITH CORRECTED BASE FLOW.
*
PRINT HYD            ID=9  CODE=1
*
*** ADD FLOW FROM AREA 12.1W TO CANAL ***
*
ADD HYD              ID=12 HYD NO=12.1W.3 ID=8 ID=9
*
**** SUB-BASIN 12.3E ****
*
COMPUTE NM HYD       ID=1  HYD NO=12.3E
                     DA=0.02616 SQ MI
                            A=0
                            B=25
                            C=0
                            D=75
                     TP=0.140 HR  MASSRAIN=-1
*
PRINT HYD            ID=1  CODE=0
*
*S FLOW FROM 12.3E ENTERS FUTURE DETENTION BASIN
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE
*
ROUTE RESERVOIR       ID=15 HYD NO=12.3E.RES  INFLOW=1    CODE=1
                      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                           0                0              100
                           3              0.39             101
                           6              0.77             102
                           7              1.16             103
                          10              1.54             104

*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0                0              100
*S      3              0.39             101
*S      6              0.77             102
*S      7              1.16             103
*S     10              1.54             104
*
*** ADD AREA 12.3E TO CANAL FLOW. ***
*
ADD HYD              ID=2  HYD NO=330 ID=15 ID=12
*
* FLOWS FROM AREA 8.1W TO 12.3E IN CANAL.
*
PRINT HYD            ID=2 CODE=1
*
*S ROUTE FLOW IN CANAL FROM 8.1W TO 12.3E TO AREA 13 DISCHARGE POINT.**
*
COMPUTE RATING CURVE ID=1 VS NO=12.3    NO SEGS=1
                     MIN ELEV=4985.50   MAX ELEV=4993.2
                     CH SLOPE=0.0003    FP SLOPE=0.0003
                     N=0.045            DIST=85
                     DIST    ELEV
                     0       4993.20
                     15      4993.00
```

```
                    38      4986.10
                    51      4985.50
                    74      4993.00
                    85      4993.10

ROUTE MCUNGE        ID=5 HYD NO=23 INFLOW ID=2  DT=0.0 HR
                    LENGTH=642   NS=0   SLOPE=0.0003
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME         ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREAS 8.1W TO 12.3E ROUTED DOWN CANAL WITH BASE FLOW CORRECTED.
*
PRINT HYD           ID=5 CODE=0
*
**** SUB-BASIN 13.1W ****
*
*S FUTURE COMMERCIAL AREA
*
COMPUTE NM HYD      ID=10  HYD NO=13.1W
                    DA=0.0102 SQ MI
                          A=25
                          B=20
                          C=0
                          D=55
                    TP=0.1333 HR  MASSRAIN=-1

PRINT HYD           ID=10  CODE=0
*
*S FLOW FROM 13.1W ENTERS FUTURE DETENTION BASIN
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE
*
ROUTE RESERVOIR      ID=11 HYD NO=13.1W.RES  INFLOW=10    CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0                0              100
                          2.6              0.1            101
                          6.0              0.2            102
                          8.0              0.3            103

*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S       0                0              100
*S      2.6               0.1            101
*S      6.0               0.2            102
*S      8.0               0.3            103
*
* AREA 13.1W ROUTED THROUGH DETENTION BASIN.
*
PRINT HYD           ID=11 CODE=0
*
**** SUB-BASIN 13.2E ****
*
*S BOSQUE DEL PUEBLO COMMERCIAL AREA
* SOURCE: GREINER ENGINEERING, BOSQUE DEL PUEBLO DRAINAGE REPORT
*
COMPUTE NM HYD      ID=1  HYD NO=13.2E-332
                    DA=0.0148 SQ MI
                          A=15
                          B=15
                          C=0
                          D=70
                    TP=0.1333 HR  MASSRAIN=-1

PRINT HYD           ID=1  CODE=0
*
* AREA 13.2E.  ENTERS MAIN CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD           ID=1 CODE=0
*
*** ADD AREA 13.1W TO 13.2E ***
*
ADD HYD             ID=12 HYD NO=333 ID=1 ID=11
*
```

```
*** ADD AREAS 13.1W AND 13.2E TO CANAL FLOW ***
*
ADD HYD              ID=2 HYD NO=334 ID=5 ID=12
*
* AREA 13.2E AND 13.1W ADDED INTO CANAL.  FLOW FROM AREAS 8.1W TO
* 13.2E IN CANAL.
*
PRINT HYD            ID=2 CODE=0
*
*** SUB-BASIN 14.1W ****
*
*S SUB-BASIN 14.1W
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=14.1W-335
                     DA=0.05117 SQ MI
                            A=60
                            B=10
                            C=15
                            D=15
                     TP=0.1333 HR  MASSRAIN=-1
*
* AREA 14.1W RUNOFF HYDROGRAPH
*
PRINT HYD            ID=3 CODE=0
*
** ROUTE 14.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=14.1   NO SEGS=3
                     MIN ELEV=100      MAX ELEV=104
                     CH SLOPE=0.0250   FP SLOPE=0.0250
                     N=0.045           DIST=10
                     N=-0.040          DIST=40
                     N=0.045           DIST=160
                     DIST    ELEV      DIST    ELEV      DIST    ELEV
                     0       104.0     10.0    102.0     20      100.0
                     40      102.0     160     104.0

ROUTE MCUNGE         ID=5 HYD NO=25 INFLOW ID=3  DT=0.0 HR
                     LENGTH=400.0   NS=0   SLOPE=0.025
                     MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 14.1W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD            ID=5 CODE=0
*
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **
* ROUTE FROM STA 667+12 TO 672+19
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=13.2   NO SEGS=1
                     MIN ELEV=4986     MAX ELEV=4994.32
                     CH SLOPE=0.0003   FP SLOPE=0.0003
                     N=0.045           DIST=83
                     DIST    ELEV
                     0       4994.32
                     4       4993.20
                     16      4993.00
                     39      4986.00
                     48      4986.00
                     73      4993.20
                     83      4994.00

ROUTE MCUNGE         ID=10 HYD NO=26 INFLOW ID=2  DT=0.0 HR
                     LENGTH=640.0   NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=10 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=10  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 13.2E ROUTED DOWN TO AREA 14 DISCHARGE POINT WITH BASE
* FLOW CORRECTED.
*
PRINT HYD            ID=10 CODE=0
```

```
*
*** ADD AREA 14.1W TO CANAL FLOW. ***
*
ADD HYD              ID=2 HYD NO=338 ID=5 ID=10
*
* FLOW FROM 8.1W TO 14.2E IN CANAL.
*
PRINT HYD            ID=2 CODE=0
*
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **
* ROUTE FROM STA 672+19 TO 680+12
* SOURCE:SCANLON & ASSOCIATE, NORTH COORS DRAINAGE AND OUTLET CONST. PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=13.2   NO SEGS=1
                     MIN ELEV=4985     MAX ELEV=4997.10
                     CH SLOPE=0.0003   FP SLOPE=0.0003
                     N=0.040           DIST=58
                     DIST    ELEV
                      0       4994.00
                     14       4992.80
                     27       4985.00
                     36       4985.00
                     42       4988.50
                     54       4997.00
                     58       4997.10

ROUTE MCUNGE         ID=7 HYD NO=27 INFLOW ID=2  DT=0.0 HR
                     LENGTH=793  NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=7  CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=7 TIME SHIFT=0.0001 BASE FLOW=-38 CFS
*
*S AREA 8.1W TO 14.2E ROUTED DOWN CANAL TO AREA 15 DISCH. POINT WITH
*S BASE FLOW CORRECTED.
*
PRINT HYD            ID=7 CODE=0
*
**** SUB-BASIN 15.1W ****
*
COMPUTE NM HYD       ID=3  HYD NO=15.1W
                     DA=0.0256 SQ MI
                           A=67
                           B=10
                           C=15
                           D=8
                     TP=0.1333 HR  MASSRAIN=-1
*
* AREA 15.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD            ID=3  CODE=0
*
** ROUTE AREA 15.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=15.1    NO SEGS=3
                     MIN ELEV=100.0     MAX ELEV=103.0
                     CH SLOPE=0.016     FP SLOPE=0.016
                     N=0.045            DIST=70.0
                     N=-0.040           DIST=110.0
                     N=0.045            DIST=260
                     DIST   ELEV    DIST   ELEV    DIST   ELEV
                     0      103.0   70     101.0   90     100.0
                     110    101.0   260    103.0

ROUTE MCUNGE         ID=10  HYD NO=28 INFLOW ID=3   DT=0.0 HR
                     LENGTH=525.0   NS=0   SLOPE=0.016
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=10  CODE=0
*
**** SUB-BASIN 15.2W ****
*
*S SUB-BASIN 15.2W
*S ALBAN HILLS
*
```

```
COMPUTE NM HYD        ID=3 HYD NO=15.2W-340
                      DA=0.0638 SQ MI
                            A=67
                            B=10
                            C=15
                            D=8
                      TP=0.1333 HR  MASSRAIN=-1
*
* AREA 15.2W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD             ID=3 CODE=0
*
* ROUTE 15.2W DOWN SECONDARY CHANNEL TO CANAL.
*
COMPUTE RATING CURVE ID=1 VS NO=15.2   NO SEGS=3
                     MIN ELEV=100.0    MAX ELEV=102
                     CH SLOPE=0.0286   FP SLOPE=0.0286
                     N=0.045           DIST=50.0
                     N=-0.040          DIST=130.0
                     N=0.045           DIST=180.0
                     DIST    ELEV      DIST    ELEV      DIST    ELEV
                     0       102.0     50      101.0     110     100.0
                     130     101.0     180     102.0
ROUTE MCUNGE          ID=5 HYD NO=29 INFLOW ID=3  DT=0.0 HR
                      LENGTH=350.0   NS=0   SLOPE=0.0286
                      MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 15.2W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD             ID=5 CODE=0
*
*** ADD AREA 15.2W TO 15.1W. ***
*
ADD HYD               ID=3 HYD NO=186 ID=10 ID=5
*
* AREA 15.1W ADDED TO 15.2W.
*
PRINT HYD             ID=3 CODE=0
*
**** SUB-BASIN 15.3E ****
*
*S SUB-BASIN 15.3E
*S FUTURE COMMERCIAL DEVELOPMENT
*
COMPUTE NM HYD        ID=10 HYD NO=15.3E
                      DA=0.0123 SQ MI
                            A=0
                            B=25
                            C=0
                            D=75
                      TP=0.1333 HR  MASSRAIN=-1
*
* AREA 15.3E COMPOSITE RUNOFF HYDROGAPH.
*
PRINT HYD             ID=10 CODE=0
*
*** ADD 15.3E TO 15.1W AND 15.2W. ***
*
ADD HYD               ID=5 HYD NO=342 ID=3 ID=10
*
* AREA 15.1W + 15.2W + 15.3E.  ENTERS CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD             ID=5 CODE=0
*
*** ADD 15.1W, 15.2W AND 15.3E TO CANAL FLOW. ***
*
ADD HYD               ID=10 HYD NO=343 ID=5 ID=7
*
* FLOW FROM 8.1W TO 15.3E IN CANAL.
*
PRINT HYD             ID=10 CODE=0
*
**** SUB-BASIN 16.1W ****
*
*S SUB-BASIN 16.1W
```

```
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=16.1W
                     DA=0.0333 SQ MI
                             A=67
                             B=10
                             C=15
                             D=8
                     TP=0.1333 HR  MASSRAIN=-1
*
* AREA 16.1W RUNOFF HYDROGRAPH.
*
PRINT HYD            ID=3 CODE=0
*
**** SUB-BASIN 16.3NRTH ****
*
*S BOSQUE MEADOWS SUBDIVISION
* SOURCE: TIERRA WEST DEVELOPMENT
* NOTE:CONTAINS BASINS 116.31, 116.32, 101.10, 115.31, 115.32, 101.20
COMPUTE NM HYD       ID=1  HYD NO=16.3NRTH
                     DA=0.01565 SQ MI
                             A=0
                             B=52
                             C=4
                             D=44
                     TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD            ID=1   CODE=1
*
ADD HYD              ID=30 HYD NO=16.3N.1 ID=1 ID=3
PRINT HYD            ID=30 CODE=1
*
*S ROUTE AREA 8.1W TO 15.3W DOWN CANAL TO BUSHEL ROAD DISCHARGE POINT. **
* ROUTE FROM STA 680+12 TO 689+62
* SOURCE:SCANLON & ASSOCIATE, NORTH COORS DRAINAGE AND OUTLET CONST. PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=13.2   NO SEGS=1
                     MIN ELEV=4985     MAX ELEV=4997.10
                     CH SLOPE=0.0003   FP SLOPE=0.0003
                     N=0.040           DIST=58
                     DIST    ELEV
                      0       4994.00
                     14       4992.80
                     27       4985.00
                     36       4985.00
                     42       4988.50
                     54       4997.00
                     58       4997.10

ROUTE MCUNGE         ID=32 HYD NO=27.1 INFLOW ID=10  DT=0.0 HR
                     LENGTH=950  NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=32  CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=32 TIME SHIFT=0.0001 BASE FLOW=-38 CFS
*
ADD HYD              ID=33 HYD NO=16.3N.1 ID=32 ID=30
PRINT HYD            ID=33 CODE=1
*
**** SUB-BASIN 16.2W ****
*
*S SUB-BASIN 16.2W
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3  HYD NO=16.2W
                     DA=0.0665 SQ MI
                             A=67
                             B=10
                             C=15
                             D=8
                     TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD            ID=3  CODE=1
*
```

```
**** SUB-BASIN 16.3E ****
*
*S FUTURE RESIDENTIAL DEVELOPMENT
*
COMPUTE NM HYD       ID=5 HYD NO=16.3E
                     DA=0.0112 SQ MI
                           A=0
                           B=20
                           C=20
                           D=60
                     TP=0.1333 HR  MASSRAIN=-1
*
* AREA 16.3E RUNOFF HYDROGRAPH
*
PRINT HYD            ID=5   CODE=1
*
**** SUB-BASIN 16.3STH ****
*
*S BOSQUE MEADOWS SUBDIVISION
* SOURCE: TIERRA WEST DEVELOPMENT
* NOTE:CONTAINS BASINS 100.6, 100.5, 100.4, 100.3, 100.1, 100.2, 116.33,
* 116.34, 100.7
*
COMPUTE NM HYD       ID=1  HYD NO=16.3STH
                     DA=0.031221 SQ MI
                           A=0
                           B=23.7
                           C=16.5
                           D=59.8
                     TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD            ID=1   CODE=1
*
ADD HYD              ID=34 HYD NO=16.3STH.1 ID=1 ID=3
PRINT HYD            ID=34 CODE=1
*
*S ROUTE 16.2 AND 16.3STH THROUGH FUTURE DETENTION POND @ BOSQUE MEADOWS
*
ROUTE RESERVOIR      ID=35  HYD NO=16.3STH.RES  INFLOW=34    CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0.00            0.00000        4988.58
                         18.53            0.01074        4991.08
                         20.96            0.01407        4991.50
                         23.53            0.32155        4992.00
                         25.85            0.62903        4992.50
                         27.97            0.93650        4993.00
                         29.95            1.24398        4993.50
                         31.80            1.55145        4994.00
                         33.55            1.85893        4994.50
                         35.22            2.16641        4995.00
                         35.60            2.47388        4995.50
*
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0.00            0.00000        4988.58
*S     18.53            0.01074        4991.08
*S     20.96            0.01407        4991.50
*S     23.53            0.32155        4992.00
*S     25.85            0.62903        4992.50
*S     27.97            0.93650        4993.00
*S     29.95            1.24398        4993.50
*S     31.80            1.55145        4994.00
*S     33.55            1.85893        4994.50
*S     35.22            2.16641        4995.00
*S     35.60            2.47388        4995.50
*
PRINT HYD            ID=35 CODE=1
*
ADD HYD              ID=36 HYD NO=16.3STH.2 ID=35 ID=5
PRINT HYD            ID=36 CODE=1
*
**** SUB-BASIN 17.1 ****
*
COMPUTE NM HYD       ID=3 HYD NO=17.1W
                     DA=0.0103 SQ MI
                           A=73
                           B=10
```

```
                              C=10
                              D=7
                    TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD           ID=3 CODE=0
*
***** SUB-BASIN 17.4E ****
*
* COORS 8-PAC SITE
* SOURCE: TIERRA WEST DEVELOPMENT
* NOTE: CONTAINS BASINS 117.42, 117.41, 117.43, 117.44, 117.45
*
COMPUTE NM HYD      ID=1  HYD NO=17.4E
                    DA=0.03843 SQ MI
                           A=0
                           B=37.1
                           C=0
                           D=62.9
                    TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD           ID=1 CODE=1
*
ADD HYD             ID=37 HYD NO=17.4E.1 ID=1 ID=3
PRINT HYD           ID=37 CODE=1
*
*
*S ROUTE 8.1W TO 16.2NRTH FROM BUSHEL ROAD DOWN CANAL TO FINAL DISCHARGE POINT.
* ROUTE FROM STA 689+62 TO 705+62
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONSTRUCTION PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=16.3   NO SEGS=1
                     MIN ELEV=4984     MAX ELEV=4993.10
                     CH SLOPE=0.00032  FP SLOPE=0.00032
                     N=0.045           DIST=73
                     DIST    ELEV
                     0       4992.20
                     12      4991.90
                     27      4984.00
                     40      4984.00
                     56      4991.90
                     73      4993.10

ROUTE MCUNGE        ID=5  HYD NO=32 INFLOW ID=33   DT=0.0 HR
                    LENGTH=1600   NS=0   SLOPE=0.00032
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=5  CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME         ID=5   TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
*
PRINT HYD           ID=5  CODE=0
*
*** ADD 16.2W,16.3NRTH TO CANAL FLOW. ***
*
ADD HYD             ID=40 HYD NO=348 ID=5 ID=36
*
* FLOWS FROM 8.1W TO 16.3NRTH IN CANAL.
*
PRINT HYD           ID=40 CODE=0
*
*** ADD AREA 17.4E, 17.1W TO CANAL ***
*
ADD HYD             ID=41 HYD NO=353 ID=37 ID=40
*
* MIDDLE AREA HYDROGRAPH, AREAS 8.1W TO 17.4E.  DESIGN FLOW AT
* LA ORILLA OUTLET.
*
PRINT HYD           ID=41 CODE=0
PLOT HYD            ID=41
*
* THIS HYDROGRAPH GOES TO THE RIVERSIDE DRAIN & TO THE RIO
* GRANDE BYPASS
*
FINISH
```

APPENDIX B

HYDRAULICS

- **Developed Conditions HEC-2 Model and Summary Table**

***Note - A diskette with the HEC-2 model has been provided to AMAFCA**

- **As-Built Plans**

Corrales Main Canal, State of New Mexico
Middle Rio Grande Conservancy District

Corrales Main Canal, Plan & Profile 10' X 6' CBC
Albuquerque Metropolitan Arroyo Flood Control Authority

North Coors Drainage La Orilla Outlet
Albuquerque Metropolitan Arroyo Flood Control Authority

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.0;  February 1991       *
 *                                        *
 *  RUN DATE    20NOV96     TIME   02:50:56 *
 *****************************************
```


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*******************************
*  U.S. ARMY CORPS OF ENGINEERS
*  HYDROLOGIC ENGINEERING CENTE
*  609 SECOND STREET, SUITE D
*  DAVIS, CALIFORNIA 95616-4687
*         (916) 756-1104
*******************************
```


```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                   X
X     X  X        X     X             X
X     X  XXXXXXX   XXXXX              XXXXXXX
```



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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
*************************************
```

THIS RUN EXECUTED 20NOV96 02:50:56

```
T1      NORTH COORS DMP WATER SURFACE PROFILE
T2      FILE 85104MIDH2.4, 12' BOTTOM WIDTH AND 3:1 SIDE SLOPE
T3      MIDDLE SECTION - END AT DROP STR. AT STA 714+19-EARTH & GUNNITE

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
     1.0       2.0       0.0       0.0       -1        0.0       0.0       0.0       85.6      0.0
J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
     0.0       0.0      -1.0       0.0       0.0       1.0      -1.0       0.0       0.0       0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

   38.0      43.0       1.0       5.0       8.0       4.0      26.0      25.0       3.0      42.0
    39        17        68

NC    .013      .013      .013      .1        .3        0.0       0.0       0.0       0.0       0.0
QT    1.0       381

  ALL CROSS SECTIONS ORIENTATED LOOKING DOWNSTREAM
  CROSS SECTION 714+19 IS AT THE DOWNSTREAM END OF THE NORTH COORS DRAINAGE
  CHANNEL
  SOURCE:CONSTRUCTION DRAWINGS, SCANLON & ASSOCIATES 1986

X1    714.19         4      93.99     106.01       0.0       0.0       0.0       0.0       0.0       0.0
GR     91.25     93.99      83.03      94.00     83.03     106.0     91.25    106.01

X1    713.68       0.0       0.0       0.0        51        51        51       0.0      .0306      0.0

X1    713.18       0.0       0.0       0.0        50        50        50       0.0       .030      0.0

NC      .035      .035      .035
X1    712.68       4.0      70.0     130.0        50        50        50       0.0       0.0       0.0
GR     91.10      70.0      83.08     94.0      83.08     106.0     91.10    130.0

X1    711.79       0.0       0.0       0.0        89        89        89       0.0      .0534      0.0
```

```
X1   710.90      0.0      0.0      0.0      89       89       89       0.0      .0534    0.0
1
     20NOV96     02:50:56                                                      PAGE     2

X1   710.00      0.0      0.0      0.0      90       90       90       0.0      .054     0.0
X1   709.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   708.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   707.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   706.87      0.0      0.0      0.0      13.0     13.0     13.0     0.0      .0078    0.0
QT     1.0       330
X1   706.72      4.0     93.99    106.01    15.0     15.0     15.0
GR    91.45     93.99     83.32     94.00   83.32   106.00    91.45    106.01
NC     .013      .013      .013
X1   706.32      0.0      0.0      0.0      40.0     40.0     40.0     0.0      .024     0.0
NC     .035      .035      .035
X1   706.17      4.0     70.00    130.00    15.0     15.0     15.0
GR    91.48     70.00     83.29     94.00   83.29   106.00    91.48    130.00
X1   706.00      0.0      0.0      0.0      17       17       17       0.0      :0102    0.0
X1   705.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   704.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   703.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   702.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   701.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   700.50      0.0      0.0      0.0      50       50       50       0.0      .030     0.0
X1   700.12      0.0      0.0      0.0      38       38       38       0.0      .0228    0.0
X1   700.05      6.0     70.00    130.0      7        7        7       0.0      .0042    0.0
X3     10        0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0      0.0
GR    91.86     70.00     86.86     85.00   83.86    94.00    83.86    106.00    86.86   115.00
GR    91.86    130.00

SB     1.25      1.56      3.0       0       .01      0        .01      0        0        0
X1   699.97       0         0        0        8        8        8       0       .0048    0.0
X2     0          0         1.0     84.86    86.86    0        0       0        0        0
X3     10         0         0        0        0        0        0       0        0        0
BT     4.0       70.0      91.86     0       85.00    86.86    0       115.0    86.86    0
BT    130.0      91.86
1
     20NOV96     02:50:56                                                      PAGE     3

X1   699.87      4.0      70.0     130.0     10       10       10
GR    91.87     70.00     83.70     94.00   83.70    106.0    91.87    130.0
X1   699.55      0.0      0.0      0.0      32       32       32       0.0      .0192    0.0
X1   699.00      0.0      0.0      0.0      55       55       55       0.0      .033     0.0
X1   698.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   697.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   696.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   695.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
X1   694.00      0.0      0.0      0.0      100      100      100      0.0      .060     0.0
```

X1	693.00	0.0	0.0	0.0	100	100	100	0.0	.060	0.0
X1	692.00	0.0	0.0	0.0	100	100	100	0.0	.060	0.0
QT	1.0	304								
X1	690.34	0.0	0.0	0.0	66	66	66	0.0	.0396	0.0
NC	.019	.019	.019							
X1	689.86	4	89.45	110.55	48.0	48.0	48.0			
GR	92.48	89.45	84.55	97.08	84.55	102.92	92.48	110.55		
X1	688.92	4	86.95	112.05	94.0	94.0	94.0			
GR	92.54	86.95	84.58	96.58	84.58	103.42	92.54	112.05		
X1	687.86	4	86.45	114.55	106.0	106.0	106.0			
GR	92.60	86.45	84.54	96.08	84.54	103.92	92.60	114.55		
X1	686.86	4	83.95	116.05	100.0	100.0	100.0			
GR	93.50	83.95	84.57	96.58	84.57	102.42	92.80	116.05		
X1	685.86	4	84.45	117.55	100.0	100.0	100.0			
GR	93.20	84.45	84.61	96.08	84.61	103.92	92.60	117.55		
X1	684.86	4	83.45	113.55	100.0	100.0	100.0			
GR	93.63	83.45	84.76	96.08	84.76	103.92	93.88	113.55		
X1	683.86	4	84.95	114.05	100.0	100.0	100.0			
GR	93.69	84.95	84.87	96.58	84.87	103.42	93.94	114.05		
X1	682.86	4	82.95	114.05	100.0	100.0	100.0			
GR	93.75	82.95	84.90	96.58	84.90	103.42	93.99	114.05		

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X1	681.86	4	85.95	113.05	100.0	100.0	100.0			
GR	93.81	85.95	84.87	96.58	84.87	103.42	94.05	113.05		
X1	680.86	4	86.95	110.05	100.0	100.0	100.0			
GR	93.25	86.95	84.87	96.58	84.87	103.42	94.05	110.05		
X1	679.86	4	87.95	110.05	100.0	100.0	100.0			
GR	93.31	87.95	84.91	96.58	84.91	103.42	94.11	110.05		
X1	678.86	4	87.45	111.55	100.0	100.0	100.0			
GR	93.11	87.45	85.48	96.08	85.48	103.92	95.27	111.55		
X1	677.86	4	86.45	111.55	100.0	100.0	100.0			
GR	93.05	86.45	85.26	96.08	85.26	103.92	95.21	111.55		
X1	676.86	4	86.45	111.55	100.0	100.0	100.0			
GR	93.17	86.45	85.30	96.08	85.30	103.92	95.33	111.55		
X1	675.86	4	83.95	114.05	100.0	100.0	100.0			
GR	92.89	83.95	85.71	96.58	85.71	103.42	92.89	114.05		
X1	674.86	4	83.95	115.05	100.0	100.0	100.0			
GR	93.00	83.95	85.80	96.58	85.80	103.42	93.00	115.05		
X1	673.86	4	84.95	117.05	100.0	100.0	100.0			
GR	94.80	84.95	85.32	96.58	85.32	103.42	94.10	117.05		
X1	673.01	4	80.45	115.55	85.0	85.0	85.0			
GR	94.10	80.45	85.33	96.08	85.33	103.92	93.50	115.55		
X1	672.86	4	93.99	106.01	15.0	15.0	15.0			
GR	93.41	93.99	85.34	94.00	85.34	106.00	93.41	106.01		
X1	672.46	0	0.00	0.00	40.0	40.0	40.0	0.00	.024	0.0
X1	672.31	4	70.00	130.00	15.0	15.0	15.0			
GR	93.44	70.00	85.74	94.00	85.74	106.00	93.44	130.00		
QT	1.0	304								
X1	672.00	0.0	0.0	0.0	31	31	31	0.0	.0093	0.0

X1	671.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	670.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	669.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	668.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0

X1	667.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
QT	1.0	281								
X1	666.11	0.0	0.0	0.0	89	89	89	0.0	.0267	0.0
X1	665.96	4.0	93.99	106.01	15	15	15			
GR	93.63	93.99	85.63	94.00	85.63	106.00	93.63	106.01		
X1	665.56	0	0	0	40	40	40	0.0	.0120	0.0
X1	665.41	4.0	70.00	130.00	15	15	15			
GR	93.65	70.00	85.65	94.00	85.65	106.00	93.65	130.00		
X1	665.00	0.0	0.0	0.0	41	41	41	0.0	.0123	0.0
X1	664.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	663.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	662.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	661.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
QT	1.0	273								
X1	660.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	659.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	658.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	657.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	656.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	655.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	654.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	653.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	652.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	651.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	650.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	649.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0

X1	648.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	647.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	646.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	645.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	644.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	643.33	0.0	0.0	0.0	100	100	100	0.0	.030	0.0

```
QT      1.0        262

  STA 643+33 IS THE UPSTREAM END OF THE NORTH COORS DRAINAGE CHANNEL
  SOURCE:CONSTRUCTION DRAWINGS, SCANLON & ASSOCIATES 1986

  BEGIN 6'X 10' NEW MEXICO STATE HIGHWAY DEPARTMENT CONCRETE BOX CULVERT
  SLOPE OF BOX CULVERT=.001332 FT/FT MANNING'S N VALUE=0.013

NC     0.013      0.013      0.013
X1    643.00          4          0       10.1         33         33         33          0          0          0
GR      92.5          0       86.5        0.1       86.5         10       92.5       10.1
X1    642.00          4          0       10.1        100        100        100          0          0          0
GR      92.6          0      86.63        0.1      86.63         10       92.6       10.1
X1    641.00          4          0       10.1        100        100        100          0          0          0
GR      92.8          0      86.76        0.1      86.76         10       92.8       10.1
X1    640.00          4          0       10.1        100        100        100          0          0          0
GR      92.9          0      86.90          0.      86.90         10       92.9       10.1
X1    639.00          4          0       10.1        100        100        100          0          0          0
GR        93          0      87.03        0.1      87.03         10         93       10.1
X1    638.00          4          0       10.1        100        100        100          0          0          0
GR      93.2          0      87.17        0.1      87.17         10       93.2       10.1
X1    637.00          4          0       10.1        100        100        100          0          0          0
GR      93.3          0       87.3        0.1       87.3         10       93.3       10.1
X1    636.00          4          0       10.1        100        100        100          0          0          0
GR      93.4          0      87.43        0.1      87.43         10       93.4       10.1
QT      1.0         85          0
X1    635.00          4          0       10.1        100        100        100          0          0          0
GR      93.6          0      87.57        0.1      87.57         10       93.6       10.1
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X1    634.00          4          0       10.1        100        100        100          0          0          0
GR      93.7          0       87.7        0.1       87.7         10       93.7       10.1
X1    633.00          4          0       10.1        100        100        100          0          0          0
GR      93.8          0      87.83        0.1      87.83         10       93.8       10.1
QT      1.0         85
X1    632.75          4          0       10.1         25         25         25          0          0          0
GR        94          0      87.86        0.1      87.86         10         94       10.1

  STA 632+75 IS THE NORTHERN END OF THE 6' X 10' CBC

  BEGIN STA 632+45 THE SOUTHERN END OF THE CORRALES ACEQUIA CHANNEL
  FROM STA 632+75 TO STA 632+45 IS A RIP-RAP TRANSITION TO THE CBC

NC      0.03       0.03       0.03
QT       1.0         82
X1    632.45          4          0         20         30         30         30          0          0          0
GR      91.4          0      87.88          7      87.88         13       91.4         20

NC     .0225      .0225      .0225

  FROM STA 632+00 TO STA 575+00 IS THE CORRALES ACEQUIA CHANNEL ALONG THE
  NORTHERN END OF THE MIDDLE AREA
  TYPICAL CROSS SECTION OF CHANNEL IS TRAPEZOIDAL WITH D=3.5 FT B=6 FT
  Z=2 N=0.0225 AND SLOPE=0.0006
  SOURCE:MIDDLE RIO GRANDE CONSERVANCY DISTRICT PLAN AND PROFILE SHEETS 1/82

X1    632.00          4          0         20         45         45         45
GR      91.41         0      87.91          7      87.91         13      91.41         20
X1    631.00          4          0         20        100        100        100          0        .06          0
```

GR	91.47	0	87.97	7	87.97	13	91.47	20			
X1	630.00	0	0	0	100	100	100	0	.06	0	
X1	629.00	0	0	0	100	100	100	0	.06	0	
X1	628.00	0	0	0	100	100	100	0	.06	0	
X1	627.00	0	0	0	100	100	100	0	.06	0	
X1	626.00	0	0	0	100	100	100	0	.06	0	
X1	625.00	0	0	0	100	100	100	0	.06	0	

X1	624.00	0	0	0	100	100	100	0	.06	0
X1	623.00	0	0	0	100	100	100	0	.06	0
X1	622.00	0	0	0	100	100	100	0	.06	0
X1	621.00	0	0	0	100	100	100	0	.06	0
X1	620.00	0	0	0	100	100	100	0	.06	0
X1	621.00	0	0	0	100	100	100	0	.06	0
X1	620.00	0	0	0	100	100	100	0	.06	0
X1	619.00	0	0	0	100	100	100	0	.06	0
X1	618.00	0	0	0	100	100	100	0	.06	0
X1	617.00	0	0	0	100	100	100	0	.06	0
X1	616.00	0	0	0	100	100	100	0	.06	0
X1	615.00	0	0	0	100	100	100	0	.06	0
X1	614.00	0	0	0	100	100	100	0	.06	0
X1	613.00	0	0	0	100	100	100	0	.06	0
X1	612.00	0	0	0	100	100	100	0	.06	0
X1	611.00	0	0	0	100	100	100	0	.06	0
X1	610.00	0	0	0	100	100	100	0	.06	0
X1	609.00	0	0	0	100	100	100	0	.06	0
X1	608.00	0	0	0	100	100	100	0	.06	0
X1	607.00	0	0	0	100	100	100	0	.06	0
X1	606.00	0	0	0	100	100	100	0	.06	0
X1	605.00	0	0	0	100	100	100	0	.06	0
X1	604.00	0	0	0	100	100	100	0	.06	0
X1	603.00	0	0	0	100	100	100	0	.06	0

QT	1.0	97								
X1	602.00	0	0	0	100	100	100	0	.06	0
X1	601.00	0	0	0	100	100	100	0	.06	0
X1	600.00	0	0	0	100	100	100	0	.06	0

X1	599.00	0	0	0	100	100	100	0	.06	0
X1	598.00	0	0	0	100	100	100	0	.06	0
X1	597.00	0	0	0	100	100	100	0	.06	0
X1	596.00	0	0	0	100	100	100	0	.06	0
X1	595.00	0	0	0	100	100	100	0	.06	0
X1	594.00	0	0	0	100	100	100	0	.06	0
X1	593.00	0	0	0	100	100	100	0	.06	0
X1	592.00	0	0	0	100	100	100	0	.06	0
X1	591.00	0	0	0	100	100	100	0	.06	0
X1	590.00	0	0	0	100	100	100	0	.06	0
X1	589.00	0	0	0	100	100	100	0	.06	0
X1	588.00	0	0	0	100	100	100	0	.06	0
X1	587.00	0	0	0	100	100	100	0	.06	0
X1	586.00	0	0	0	100	100	100	0	.06	0
X1	585.00	0	0	0	100	100	100	0	.06	0
X1	584.00	0	0	0	100	100	100	0	.06	0
X1	583.00	0	0	0	100	100	100	0	.06	0
X1	582.00	0	0	0	100	100	100	0	.06	0
X1	581.00	0	0	0	100	100	100	0	.06	0
X1	580.00	0	0	0	100	100	100	0	.06	0
X1	579.00	0	0	0	100	100	100	0	.06	0

X1	578.00	0	0	0	100	100	100	0	.06	0
X1	577.00	0	0	0	100	100	100	0	.06	0
X1	576.00	0	0	0	100	100	100	0	.06	0
X1	575.00	4	0	20	100	100	100	0	.06	0
GR	94.83	0	91.33	7	91.33	13	94.83	20		
X1	574.00	0	0	0	100	100	100	0	.06	0
X1	573.00	0	0	0	100	100	100	0	.06	0
X1	572.00	0	0	0	100	100	100	0	.06	0
X1	571.00	0	0	0	100	100	100	0	.06	0
X1	570.00	0	0	0	100	100	100	0	.06	0
X1	569.00	0	0	0	100	100	100	0	.06	0
X1	568.00	0	0	0	100	100	100	0	.06	0
X1	567.00	0	0	0	100	100	100	0	.06	0
QT	1.0	50								

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV= .100 CEHV= .300
*SECNO 714.190
3720 CRITICAL DEPTH ASSUMED

714.190	3.14	86.17	86.17	85.60	87.76	1.59	.00	.00	91.25
381.0	.0	381.0	.0	.0	37.7	.0	.0	.0	91.25
.00	.00	10.11	.00	.000	.013	.000	.000	83.03	94.00
.002980	0.	0.	0.	0	10	0	.00	12.01	106.00

*SECNO 713.680

713.680	3.75	86.81	86.20	.00	87.92	1.11	.12	.05	91.28
381.0	.0	381.0	.0	.0	45.0	.0	.0	.0	91.28
.00	.00	8.46	.00	.000	.013	.000	.000	83.06	94.00
.001797	51.	51.	51.	5	5	0	.00	12.01	106.00

*SECNO 713.180

713.180	3.89	86.98	86.24	.00	88.01	1.03	.09	.01	91.31
381.0	.0	381.0	.0	.0	46.7	.0	.1	.0	91.31
.00	.00	8.16	.00	.000	.013	.000	.000	83.09	94.00
.001621	50.	50.	50.	2	11	0	.00	12.01	106.00

*SECNO 712.680

3301 HV CHANGED MORE THAN HVINS

712.680	4.96	88.04	85.61	.00	88.17	.13	.06	.09	91.10
381.0	.0	381.0	.0	.0	133.1	.0	.2	.1	91.10
.01	.00	2.86	.00	.000	.035	.000	.000	83.08	79.16
.001016	50.	50.	50.	3	14	0	.00	41.68	120.84

*SECNO 711.790

711.790	5.00	88.13	85.67	.00	88.26	.12	.09	.00	91.15
381.0	.0	381.0	.0	.0	134.8	.0	.5	.1	91.15
.02	.00	2.83	.00	.000	.035	.000	.000	83.13	79.04
.000983	89.	89.	89.	2	8	0	.00	41.92	120.96

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 710.900

710.900	5.03	88.22	85.72	.00	88.34	.12	.09	.00	91.21
381.0	.0	381.0	.0	.0	136.3	.0	.8	.2	91.21
.03	.00	2.80	.00	.000	.035	.000	.000	83.19	78.93
.000954	89.	89.	89.	0	8	0	.00	42.13	121.07

*SECNO 710.000

710.000	5.07	88.31	85.77	.00	88.43	.12	.08	.00	91.26
381.0	.0	381.0	.0	.0	137.7	.0	1.0	.3	91.26
.03	.00	2.77	.00	.000	.035	.000	.000	83.24	78.83
.000928	90.	90.	90.	0	8	0	.00	42.33	121.17

*SECNO 709.000

709.000	5.10	88.40	85.83	.00	88.52	.12	.09	.00	91.32
381.0	.0	381.0	.0	.0	139.1	.0	1.4	.4	91.32
.04	.00	2.74	.00	.000	.035	.000	.000	83.30	78.73
.000902	100.	100.	100.	0	8	0	.00	42.54	121.27

*SECNO 708.000

708.000	5.13	88.49	85.88	.00	88.61	.11	.09	.00	91.38
381.0	.0	381.0	.0	.0	140.5	.0	1.7	.5	91.38
.06	.00	2.71	.00	.000	.035	.000	.000	83.36	78.64
.000878	100.	100.	100.	0	8	0	.00	42.73	121.36

*SECNO 707.000

707.000	5.16	88.58	85.94	.00	88.70	.11	.09	.00	91.44
381.0	.0	381.0	.0	.0	141.7	.0	2.0	.6	91.44
.07	.00	2.69	.00	.000	.035	.000	.000	83.42	78.55
.000858	100.	100.	100.	0	8	0	.00	42.90	121.45

*SECNO 706.870

706.870	5.17	88.59	85.96	.00	88.71	.11	.01	.00	91.45
381.0	.0	381.0	.0	.0	141.9	.0	2.0	.6	91.45
.07	.00	2.69	.00	.000	.035	.000	.000	83.43	78.54
.000855	13.	13.	13.	0	11	0	.00	42.92	121.46

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 706.720

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .39

706.720	5.06	88.38	86.18	.00	88.83	.46	.02	.10	91.45
330.0	.0	330.0	.0	.0	60.7	.0	2.1	.6	91.45
.07	.00	5.44	.00	.000	.035	.000	.000	83.32	93.99
.004264	15.	15.	15.	2	11	0	.00	12.01	106.01

*SECNO 706.320

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.71

706.320	5.09	88.43	86.20	.00	88.88	.45	.05	.00	91.47
330.0	.0	330.0	.0	.0	61.1	.0	2.1	.6	91.47
.07	.00	5.40	.00	.000	.013	.000	.000	83.34	93.99
.000579	40.	40.	40.	2	11	0	.00	12.01	106.01

*SECNO 706.170

706.170	5.57	88.86	85.63	.00	88.93	.07	.01	.04	91.48
330.0	.0	330.0	.0	.0	157.9	.0	2.2	.7	91.48
.07	.00	2.09	.00	.000	.035	.000	.000	83.29	77.67
.000475	15.	15.	15.	2	14	0	.00	44.67	122.33

*SECNO 706.000

706.000	5.57	88.87	85.64	.00	88.94	.07	.01	.00	91.49
330.0	.0	330.0	.0	.0	157.8	.0	2.2	.7	91.49
.07	.00	2.09	.00	.000	.035	.000	.000	83.30	77.67
.000475	17.	17.	17.	0	18	0	.00	44.65	122.33

*SECNO 705.000

705.000	5.56	88.92	85.70	.00	88.99	.07	.05	.00	91.55
330.0	.0	330.0	.0	.0	157.2	.0	2.6	.8	91.55
.09	.00	2.10	.00	.000	.035	.000	.000	83.36	77.71

.000480	100.	100.	100.	0	18	0	.00	44.58	122.29

*SECNO 704.000

704.000	5.55	88.97	85.76	.00	89.04	.07	.05	.00	91.61
330.0	.0	330.0	.0	.0	156.7	.0	3.0	.9	91.61
.10	.00	2.11	.00	.000	.035	.000	.000	83.42	77.75
.000485	100.	100.	100.	0	18	0	.00	44.50	122.25

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 703.000

703.000	5.53	89.01	85.82	.00	89.08	.07	.05	.00	91.67
330.0	.0	330.0	.0	.0	156.2	.0	3.3	1.0	91.67
.11	.00	2.11	.00	.000	.035	.000	.000	83.48	77.78
.000489	100.	100.	100.	0	18	0	.00	44.44	122.22

*SECNO 702.000

702.000	5.52	89.06	85.88	.00	89.13	.07	.05	.00	91.73
330.0	.0	330.0	.0	.0	155.7	.0	3.7	1.1	91.73
.13	.00	2.12	.00	.000	.035	.000	.000	83.54	77.82
.000494	100.	100.	100.	0	18	0	.00	44.37	122.18

*SECNO 701.000

701.000	5.51	89.11	85.94	.00	89.18	.07	.05	.00	91.79
330.0	.0	330.0	.0	.0	155.2	.0	4.0	1.2	91.79
.14	.00	2.13	.00	.000	.035	.000	.000	83.60	77.85
.000498	100.	100.	100.	0	18	0	.00	44.31	122.15

*SECNO 700.500

700.500	5.51	89.14	85.97	.00	89.21	.07	.02	.00	91.82
330.0	.0	330.0	.0	.0	155.0	.0	4.2	1.2	91.82
.15	.00	2.13	.00	.000	.035	.000	.000	83.63	77.86
.000500	50.	50.	50.	0	18	0	.00	44.28	122.14

*SECNO 700.120

700.120	5.50	89.16	85.99	.00	89.23	.07	.02	.00	91.84
330.0	.0	330.0	.0	.0	154.8	.0	4.3	1.3	91.84
.15	.00	2.13	.00	.000	.035	.000	.000	83.65	77.87
.000501	38.	38.	38.	0	18	0	.00	44.25	122.13

*SECNO 700.050

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 91.86 ELREA= 91.86

700.050	5.29	89.16	86.19	.00	89.23	.08	.00	.00	91.86
330.0	.0	330.0	.0	.0	147.7	.0	4.4	1.3	91.86
.15	.00	2.23	.00	.000	.035	.000	.000	83.86	78.11
.000576	7.	7.	7.	0	18	0	.00	43.77	121.89

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

5070, VARIABLE ELCHU OR ELCHD ON SB CARD NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	3.00	.00	.01	.00	.01	.00	83.86	83.86

*SECNO 699.970
PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
**********	89.23	.00	332.	0.	0.	0.	84.86	86.86	45.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 91.87 ELREA= 91.87

699.970	5.35	89.22	.00	.00	89.30	.08	.06	.00	91.87
330.0	.0	330.0	.0	.0	150.1	.0	4.4	1.3	91.87
.15	.00	2.20	.00	.000	.035	.000	.000	83.87	77.95
.000551	8.	8.	8.	2	0	11	.00	44.11	122.05

*SECNO 699.870

699.870	5.53	89.23	86.04	.00	89.30	.07	.01	.00	91.87
330.0	.0	330.0	.0	.0	156.0	.0	4.4	1.3	91.87
.15	.00	2.12	.00	.000	.035	.000	.000	83.70	77.77
.000491	10.	10.	10.	0	14	0	.00	44.46	122.23

*SECNO 699.550

699.550	5.53	89.25	86.06	.00	89.32	.07	.02	.00	91.89
330.0	.0	330.0	.0	.0	156.1	.0	4.5	1.3	91.89
.16	.00	2.11	.00	.000	.035	.000	.000	83.72	77.76
.000490	32.	32.	32.	0	18	0	.00	44.48	122.24

*SECNO 699.000

699.000	5.52	89.27	86.09	.00	89.34	.07	.03	.00	91.92
330.0	.0	330.0	.0	.0	155.8	.0	4.7	1.4	91.92
.17	.00	2.12	.00	.000	.035	.000	.000	83.75	77.78
.000493	55.	55.	55.	0	18	0	.00	44.44	122.22

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 698.000

698.000	5.51	89.32	86.15	.00	89.39	.07	.05	.00	91.98
330.0	.0	330.0	.0	.0	155.4	.0	5.1	1.5	91.98
.18	.00	2.12	.00	.000	.035	.000	.000	83.81	77.81
.000497	100.	100.	100.	0	18	0	.00	44.38	122.19

*SECNO 697.000

697.000	5.50	89.37	86.21	.00	89.44	.07	.05	.00	92.04
330.0	.0	330.0	.0	.0	154.9	.0	5.5	1.6	92.04
.19	.00	2.13	.00	.000	.035	.000	.000	83.87	77.84
.000501	100.	100.	100.	0	18	0	.00	44.32	122.16

*SECNO 696.000

696.000	5.49	89.42	86.27	.00	89.49	.07	.05	.00	92.10
330.0	.0	330.0	.0	.0	154.4	.0	5.8	1.7	92.10
.20	.00	2.14	.00	.000	.035	.000	.000	83.93	77.87
.000505	100.	100.	100.	0	18	0	.00	44.26	122.13

*SECNO 695.000									
695.000	5.48	89.47	86.33	.00	89.54	.07	.05	.00	92.16
330.0	.0	330.0	.0	.0	154.0	.0	6.2	1.8	92.16
.22	.00	2.14	.00	.000	.035	.000	.000	83.99	77.90
.000509	100.	100.	100.	0	18	0	.00	44.20	122.10
*SECNO 694.000									
694.000	5.47	89.52	86.40	.00	89.60	.07	.05	.00	92.22
330.0	.0	330.0	.0	.0	153.6	.0	6.5	1.9	92.22
.23	.00	2.15	.00	.000	.035	.000	.000	84.05	77.93
.000512	100.	100.	100.	0	14	0	.00	44.15	122.07
*SECNO 693.000									
693.000	5.46	89.58	86.46	.00	89.65	.07	.05	.00	92.28
330.0	.0	330.0	.0	.0	153.2	.0	6.9	2.0	92.28
.24	.00	2.15	.00	.000	.035	.000	.000	84.11	77.95
.000516	100.	100.	100.	0	14	0	.00	44.10	122.05

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 692.000									
692.000	5.45	89.63	86.52	.00	89.70	.07	.05	.00	92.34
330.0	.0	330.0	.0	.0	152.8	.0	7.2	2.1	92.34
.26	.00	2.16	.00	.000	.035	.000	.000	84.17	77.98
.000519	100.	100.	100.	0	14	0	.00	44.05	122.02
*SECNO 690.340									
690.340	5.46	89.67	86.44	.00	89.73	.06	.03	.00	92.38
304.0	.0	304.0	.0	.0	152.6	.0	7.5	2.2	92.38
.27	.00	1.99	.00	.000	.035	.000	.000	84.21	77.99
.000442	66.	66.	66.	0	18	0	.00	44.01	122.01

*SECNO 689.860

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .52

689.860	4.80	89.35	88.11	.00	89.92	.57	.04	.15	92.48
304.0	.0	304.0	.0	.0	50.3	.0	7.6	2.2	92.48
.27	.00	6.04	.00	.000	.019	.000	.000	84.55	92.45
.001648	48.	48.	48.	2	14	0	.00	15.09	107.55
*SECNO 688.920									
688.920	5.14	89.72	87.83	.00	90.05	.33	.11	.02	92.54
304.0	.0	304.0	.0	.0	65.5	.0	7.7	2.2	92.54
.27	.00	4.64	.00	.000	.019	.000	.000	84.58	90.36
.000848	94.	94.	94.	2	14	0	.00	18.63	108.99
*SECNO 687.860									
687.860	5.36	89.90	87.58	.00	90.13	.24	.07	.01	92.60
304.0	.0	304.0	.0	.0	78.1	.0	7.9	2.3	92.60
.28	.00	3.89	.00	.000	.019	.000	.000	84.54	89.68
.000545	106.	106.	106.	2	11	0	.00	21.31	110.99
*SECNO 686.860									
686.860	5.37	89.94	87.84	.00	90.19	.25	.06	.00	93.50
304.0	.0	304.0	.0	.0	75.7	.0	8.0	2.3	92.80
.29	.00	4.01	.00	.000	.019	.000	.000	84.57	88.98

.000618	100.	100.	100.	2	14	0	.00	22.34	111.32

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 685.860									
685.860	5.46	90.07	87.55	.00	90.25	.18	.05	.01	93.20
304.0	.0	304.0	.0	.0	88.4	.0	8.2	2.4	92.60
.30	.00	3.44	.00	.000	.019	.000	.000	84.61	88.69
.000414	100.	100.	100.	2	11	0	.00	24.54	113.23
*SECNO 684.860									
684.860	5.31	90.07	87.80	.00	90.32	.24	.05	.02	93.63
304.0	.0	304.0	.0	.0	76.7	.0	8.4	2.4	93.88
.30	.00	3.96	.00	.000	.019	.000	.000	84.76	88.51
.000571	100.	100.	100.	2	11	0	.00	21.02	109.53
*SECNO 683.860									
683.860	5.23	90.10	88.08	.00	90.40	.29	.06	.01	93.69
304.0	.0	304.0	.0	.0	70.1	.0	8.6	2.5	93.94
.31	.00	4.34	.00	.000	.019	.000	.000	84.87	89.66
.000719	100.	100.	100.	1	14	0	.00	19.90	109.57
*SECNO 682.860									
682.860	5.31	90.21	88.06	.00	90.47	.26	.07	.00	93.75
304.0	.0	304.0	.0	.0	74.5	.0	8.8	2.5	93.99
.32	.00	4.08	.00	.000	.019	.000	.000	84.90	88.40
.000627	100.	100.	100.	2	14	0	.00	21.22	109.63
*SECNO 681.860									
681.860	5.38	90.25	88.13	.00	90.55	.30	.07	.01	93.81
304.0	.0	304.0	.0	.0	69.1	.0	8.9	2.6	94.05
.32	.00	4.40	.00	.000	.019	.000	.000	84.87	90.19
.000728	100.	100.	100.	2	14	0	.00	18.87	109.06
*SECNO 680.860									
680.860	5.43	90.30	88.21	.00	90.64	.34	.08	.01	93.25
304.0	.0	304.0	.0	.0	64.8	.0	9.1	2.6	94.05
.33	.00	4.69	.00	.000	.019	.000	.000	84.87	90.33
.000842	100.	100.	100.	1	14	0	.00	17.01	107.35

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 679.860									
679.860	5.46	90.37	88.28	.00	90.73	.36	.09	.00	93.31
304.0	.0	304.0	.0	.0	63.5	.0	9.2	2.7	94.11
.33	.00	4.79	.00	.000	.019	.000	.000	84.91	90.97
.000880	100.	100.	100.	0	14	0	.00	16.39	107.36
*SECNO 678.860									
678.860	4.98	90.46	88.62	.00	90.82	.37	.09	.00	93.11
304.0	.0	304.0	.0	.0	62.7	.0	9.4	2.7	95.27
.34	.00	4.85	.00	.000	.019	.000	.000	85.48	90.45

.000932	100.	100.	100.	0	11	0	.00	17.35	107.80

*SECNO 677.860

677.860	5.36	90.62	88.38	.00	90.91	.29	.08	.01	93.05
304.0	.0	304.0	.0	.0	70.8	.0	9.5	2.7	95.21
.35	.00	4.29	.00	.000	.019	.000	.000	85.26	89.45
.000677	100.	100.	100.	2	14	0	.00	18.58	108.03

*SECNO 676.860

676.860	5.39	90.69	88.43	.00	90.98	.28	.07	.00	93.17
304.0	.0	304.0	.0	.0	71.3	.0	9.7	2.8	95.33
.35	.00	4.26	.00	.000	.019	.000	.000	85.30	89.47
.000663	100.	100.	100.	0	11	0	.00	18.56	108.03

*SECNO 675.860

675.860	5.09	90.80	88.78	.00	91.04	.24	.06	.00	92.89
304.0	.0	304.0	.0	.0	76.8	.0	9.8	2.8	92.89
.36	.00	3.96	.00	.000	.019	.000	.000	85.71	87.63
.000612	100.	100.	100.	2	11	0	.00	23.33	110.95

*SECNO 674.860

674.860	5.07	90.87	88.84	.00	91.10	.24	.06	.00	93.00
304.0	.0	304.0	.0	.0	77.8	.0	10.0	2.9	93.00
.37	.00	3.91	.00	.000	.019	.000	.000	85.80	87.70
.000599	100.	100.	100.	0	14	0	.00	23.90	111.60

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 673.860

673.860	5.63	90.95	88.47	.00	91.16	.21	.05	.00	94.80
304.0	.0	304.0	.0	.0	82.5	.0	10.2	2.9	94.10
.37	.00	3.68	.00	.000	.019	.000	.000	85.32	89.67
.000479	100.	100.	100.	2	14	0	.00	22.49	112.16

*SECNO 673.010

673.010	5.72	91.05	88.25	.00	91.20	.15	.03	.01	94.10
304.0	.0	304.0	.0	.0	97.2	.0	10.4	3.0	93.50
.38	.00	3.13	.00	.000	.019	.000	.000	85.33	85.89
.000325	85.	85.	85.	2	11	0	.00	26.17	112.06

*SECNO 672.860

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

672.860	5.60	90.94	88.05	.00	91.26	.32	.01	.05	93.41
304.0	.0	304.0	.0	.0	67.2	.0	10.4	3.0	93.41
.38	.00	4.52	.00	.000	.019	.000	.000	85.34	93.99
.000809	15.	15.	15.	2	11	0	.00	12.01	106.01

*SECNO 672.460

672.460	5.61	90.97	88.07	.00	91.29	.32	.03	.00	93.43
304.0	.0	304.0	.0	.0	67.2	.0	10.5	3.0	93.43
.39	.00	4.52	.00	.000	.019	.000	.000	85.36	93.99
.000810	40.	40.	40.	0	11	0	.00	12.01	106.01

*SECNO 672.310

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.65

672.310	5.52	91.26	87.95	.00	91.32	.06	.00	.03	93.44
304.0	.0	304.0	.0	.0	161.4	.0	10.5	3.0	93.44
.39	.00	1.88	.00	.000	.019	.000	.000	85.74	76.78
.000116	15.	15.	15.	2	18	0	.00	46.44	123.22

*SECNO 672.000

672.000	5.52	91.27	87.96	.00	91.32	.06	.00	.00	93.45
304.0	.0	304.0	.0	.0	161.4	.0	10.6	3.0	93.45
.39	.00	1.88	.00	.000	.019	.000	.000	85.75	76.78
.000116	31.	31.	31.	1	18	0	.00	46.43	123.22

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 671.000

671.000	5.50	91.28	87.99	.00	91.33	.06	.01	.00	93.48
304.0	.0	304.0	.0	.0	160.3	.0	11.0	3.1	93.48
.41	.00	1.90	.00	.000	.019	.000	.000	85.78	76.86
.000118	100.	100.	100.	0	18	0	.00	46.28	123.14

*SECNO 670.000

670.000	5.48	91.29	88.02	.00	91.35	.06	.01	.00	93.51
304.0	.0	304.0	.0	.0	159.4	.0	11.4	3.3	93.51
.42	.00	1.91	.00	.000	.019	.000	.000	85.81	76.92
.000120	100.	100.	100.	0	18	0	.00	46.16	123.08

*SECNO 669.000

669.000	5.46	91.30	88.05	.00	91.36	.06	.01	.00	93.54
304.0	.0	304.0	.0	.0	158.5	.0	11.7	3.4	93.54
.44	.00	1.92	.00	.000	.019	.000	.000	85.84	76.97
.000121	100.	100.	100.	0	18	0	.00	46.05	123.03

*SECNO 668.000

668.000	5.44	91.31	88.08	.00	91.37	.06	.01	.00	93.57
304.0	.0	304.0	.0	.0	157.7	.0	12.1	3.5	93.57
.45	.00	1.93	.00	.000	.019	.000	.000	85.87	77.03
.000123	100.	100.	100.	0	18	0	.00	45.94	122.97

*SECNO 667.000

667.000	5.43	91.33	88.11	.00	91.38	.06	.01	.00	93.60
304.0	.0	304.0	.0	.0	156.9	.0	12.5	3.6	93.60
.46	.00	1.94	.00	.000	.019	.000	.000	85.90	77.09
.000125	100.	100.	100.	0	18	0	.00	45.82	122.91

*SECNO 666.110

666.110	5.42	91.34	88.04	.00	91.39	.05	.01	.00	93.63
281.0	.0	281.0	.0	.0	156.1	.0	12.8	3.7	93.63
.48	.00	1.80	.00	.000	.019	.000	.000	85.93	77.14
.000108	89.	89.	89.	0	18	0	.00	45.72	122.86

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 665.960

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .39

665.960	5.56	91.19	88.20	.00	91.47	.28	.00	.07	93.63
281.0	.0	281.0	.0	.0	66.8	.0	12.8	3.7	93.63
.48	.00	4.21	.00	.000	.019	.000	.000	85.63	93.99
.000704	15.	15.	15.	2	11	0	.00	12.01	106.01

*SECNO 665.560

665.560	5.58	91.22	88.21	.00	91.49	.27	.03	.00	93.64
281.0	.0	281.0	.0	.0	66.9	.0	12.9	3.7	93.64
.48	.00	4.20	.00	.000	.019	.000	.000	85.64	93.99
.000701	40.	40.	40.	1	14	0	.00	12.01	106.01

*SECNO 665.410

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.93

665.410	5.83	91.48	87.78	.00	91.52	.04	.00	.02	93.65
281.0	.0	281.0	.0	.0	171.8	.0	12.9	3.7	93.65
.48	.00	1.64	.00	.000	.019	.000	.000	85.65	76.52
.000082	15.	15.	15.	2	18	0	.00	46.97	123.48

*SECNO 665.000

665.000	5.82	91.48	87.80	.00	91.52	.04	.00	.00	93.66
281.0	.0	281.0	.0	.0	171.7	.0	13.1	3.7	93.66
.49	.00	1.64	.00	.000	.019	.000	.000	85.66	76.52
.000082	41.	41.	41.	1	18	0	.00	46.95	123.48

*SECNO 664.000

664.000	5.80	91.49	87.83	.00	91.53	.04	.01	.00	93.69
281.0	.0	281.0	.0	.0	170.4	.0	13.5	3.8	93.69
.51	.00	1.65	.00	.000	.019	.000	.000	85.69	76.61
.000084	100.	100.	100.	0	18	0	.00	46.78	123.39

*SECNO 663.000

663.000	5.77	91.50	87.85	.00	91.54	.04	.01	.00	93.72
281.0	.0	281.0	.0	.0	169.4	.0	13.9	4.0	93.72
.53	.00	1.66	.00	.000	.019	.000	.000	85.72	76.67
.000085	100.	100.	100.	0	18	0	.00	46.65	123.33

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 662.000

662.000	5.75	91.51	87.88	.00	91.55	.04	.01	.00	93.75
281.0	.0	281.0	.0	.0	168.3	.0	14.2	4.1	93.75
.54	.00	1.67	.00	.000	.019	.000	.000	85.75	76.74
.000086	100.	100.	100.	0	18	0	.00	46.52	123.26

*SECNO 661.000

661.000	5.73	91.51	87.91	.00	91.56	.04	.01	.00	93.78
281.0	.0	281.0	.0	.0	167.3	.0	14.6	4.2	93.78
.56	.00	1.68	.00	.000	.019	.000	.000	85.78	76.81
.000088	100.	100.	100.	0	18	0	.00	46.39	123.19

*SECNO 660.000

660.000	5.71	91.52	87.91	.00	91.57	.04	.01	.00	93.81
273.0	.0	273.0	.0	.0	166.3	.0	15.0	4.3	93.81
.58	.00	1.64	.00	.000	.019	.000	.000	85.81	76.87
.000084	100.	100.	100.	0	18	0	.00	46.26	123.13

*SECNO 659.000									
659.000	5.69	91.53	87.94	.00	91.57	.04	.01	.00	93.84
273.0	.0	273.0	.0	.0	165.4	.0	15.4	4.4	93.84
.59	.00	1.65	.00	.000	.019	.000	.000	85.84	76.93
.000085	100.	100.	100.	0	18	0	.00	46.14	123.07
*SECNO 658.000									
658.000	5.67	91.54	87.97	.00	91.58	.04	.01	.00	93.87
273.0	.0	273.0	.0	.0	164.4	.0	15.8	4.5	93.87
.61	.00	1.66	.00	.000	.019	.000	.000	85.87	76.99
.000087	100.	100.	100.	0	18	0	.00	46.01	123.01
*SECNO 657.000									
657.000	5.65	91.55	88.00	.00	91.59	.04	.01	.00	93.90
273.0	.0	273.0	.0	.0	163.4	.0	16.2	4.6	93.90
.63	.00	1.67	.00	.000	.019	.000	.000	85.90	77.06
.000088	100.	100.	100.	0	18	0	.00	45.88	122.94

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 656.000									
656.000	5.63	91.56	88.03	.00	91.60	.04	.01	.00	93.93
273.0	.0	273.0	.0	.0	162.5	.0	16.5	4.7	93.93
.64	.00	1.68	.00	.000	.019	.000	.000	85.93	77.12
.000090	100.	100.	100.	0	18	0	.00	45.75	122.88
*SECNO 655.000									
655.000	5.60	91.57	88.06	.00	91.61	.04	.01	.00	93.96
273.0	.0	273.0	.0	.0	161.5	.0	16.9	4.8	93.96
.66	.00	1.69	.00	.000	.019	.000	.000	85.96	77.19
.000091	100.	100.	100.	0	18	0	.00	45.63	122.81
*SECNO 654.000									
654.000	5.58	91.58	88.09	.00	91.62	.04	.01	.00	93.99
273.0	.0	273.0	.0	.0	160.5	.0	17.3	4.9	93.99
.68	.00	1.70	.00	.000	.019	.000	.000	85.99	77.25
.000093	100.	100.	100.	0	18	0	.00	45.50	122.75
*SECNO 653.000									
653.000	5.56	91.58	88.12	.00	91.63	.05	.01	.00	94.02
273.0	.0	273.0	.0	.0	159.6	.0	17.6	5.0	94.02
.69	.00	1.71	.00	.000	.019	.000	.000	86.02	77.31
.000094	100.	100.	100.	0	18	0	.00	45.37	122.69
*SECNO 652.000									
652.000	5.54	91.59	88.15	.00	91.64	.05	.01	.00	94.05
273.0	.0	273.0	.0	.0	158.6	.0	18.0	5.1	94.05
.71	.00	1.72	.00	.000	.019	.000	.000	86.05	77.38
.000096	100.	100.	100.	0	18	0	.00	45.25	122.62
*SECNO 651.000									
651.000	5.52	91.60	88.18	.00	91.65	.05	.01	.00	94.08
273.0	.0	273.0	.0	.0	157.7	.0	18.4	5.2	94.08
.72	.00	1.73	.00	.000	.019	.000	.000	86.08	77.44
.000097	100.	100.	100.	0	18	0	.00	45.12	122.56

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 650.000									
650.000	5.50	91.61	88.21	.00	91.66	.05	.01	.00	94.11
273.0	.0	273.0	.0	.0	156.8	.0	18.7	5.3	94.11
.74	.00	1.74	.00	.000	.019	.000	.000	86.11	77.50
.000099	100.	100.	100.	0	18	0	.00	45.00	122.50
*SECNO 649.000									
649.000	5.48	91.62	88.24	.00	91.67	.05	.01	.00	94.14
273.0	.0	273.0	.0	.0	155.8	.0	19.1	5.4	94.14
.76	.00	1.75	.00	.000	.019	.000	.000	86.14	77.56
.000100	100.	100.	100.	0	18	0	.00	44.88	122.44
*SECNO 648.000									
648.000	5.46	91.63	88.27	.00	91.68	.05	.01	.00	94.17
273.0	.0	273.0	.0	.0	154.9	.0	19.4	5.5	94.17
.77	.00	1.76	.00	.000	.019	.000	.000	86.17	77.62
.000102	100.	100.	100.	0	18	0	.00	44.76	122.38
*SECNO 647.000									
647.000	5.44	91.64	88.30	.00	91.69	.05	.01	.00	94.20
273.0	.0	273.0	.0	.0	154.0	.0	19.8	5.6	94.20
.79	.00	1.77	.00	.000	.019	.000	.000	86.20	77.68
.000104	100.	100.	100.	0	18	0	.00	44.64	122.32
*SECNO 646.000									
646.000	5.42	91.65	88.33	.00	91.70	.05	.01	.00	94.23
273.0	.0	273.0	.0	.0	153.1	.0	20.1	5.7	94.23
.80	.00	1.78	.00	.000	.019	.000	.000	86.23	77.74
.000105	100.	100.	100.	0	18	0	.00	44.52	122.26
*SECNO 645.000									
645.000	5.40	91.66	88.36	.00	91.71	.05	.01	.00	94.26
273.0	.0	273.0	.0	.0	152.3	.0	20.5	5.8	94.26
.82	.00	1.79	.00	.000	.019	.000	.000	86.26	77.80
.000107	100.	100.	100.	0	18	0	.00	44.40	122.20

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 644.000									
644.000	5.38	91.67	88.39	.00	91.72	.05	.01	.00	94.29
273.0	.0	273.0	.0	.0	151.4	.0	20.8	5.9	94.29
.83	.00	1.80	.00	.000	.019	.000	.000	86.29	77.86
.000109	100.	100.	100.	0	18	0	.00	44.28	122.14
*SECNO 643.330									
643.330	5.36	91.68	88.42	.00	91.73	.05	.01	.00	94.32
273.0	.0	273.0	.0	.0	150.5	.0	21.2	6.0	94.32
.85	.00	1.81	.00	.000	.019	.000	.000	86.32	77.92
.000110	100.	100.	100.	0	18	0	.00	44.16	122.08
*SECNO 643.000									

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .40

643.000	4.92	91.42	89.28	.00	91.86	.44	.01	.12	92.50
262.0	.0	262.0	.0	.0	49.1	.0	21.3	6.1	92.50
.85	.00	5.34	.00	.000	.013	.000	.000	86.50	.02
.000647	33.	33.	33.	2	11	0	.00	10.06	10.08

*SECNO 642.000

642.000	4.84	91.47	89.41	.00	91.93	.46	.07	.00	92.60
262.0	.0	262.0	.0	.0	48.2	.0	21.4	6.1	92.60
.86	.00	5.43	.00	.000	.013	.000	.000	86.63	.02
.000678	100.	100.	100.	1	11	0	.00	10.06	10.08

*SECNO 641.000

641.000	4.77	91.53	89.54	.00	92.00	.47	.07	.00	92.80
262.0	.0	262.0	.0	.0	47.7	.0	21.5	6.1	92.80
.86	.00	5.50	.00	.000	.013	.000	.000	86.76	.02
.000700	100.	100.	100.	0	11	0	.00	10.06	10.08

*SECNO 640.000

640.000	4.70	91.60	89.67	.00	92.08	.48	.07	.00	92.90
262.0	.0	262.0	.0	.0	47.2	.0	21.6	6.1	92.90
.87	.00	5.55	.00	.000	.013	.000	.000	86.90	.00
.000721	100.	100.	100.	0	11	0	.00	10.08	10.08

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 639.000

639.000	4.63	91.66	89.82	.00	92.16	.50	.07	.01	93.00
262.0	.0	262.0	.0	.0	46.2	.0	21.7	6.2	93.00
.87	.00	5.67	.00	.000	.013	.000	.000	87.03	.02
.000760	100.	100.	100.	1	11	0	.00	10.06	10.08

*SECNO 638.000

638.000	4.55	91.72	89.95	.00	92.24	.52	.08	.00	93.20
262.0	.0	262.0	.0	.0	45.5	.0	21.8	6.2	93.20
.88	.00	5.76	.00	.000	.013	.000	.000	87.17	.02
.000794	100.	100.	100.	0	14	0	.00	10.05	10.08

*SECNO 637.000

637.000	4.49	91.79	90.08	.00	92.32	.53	.08	.00	93.30
262.0	.0	262.0	.0	.0	44.9	.0	21.9	6.2	93.30
.88	.00	5.84	.00	.000	.013	.000	.000	87.30	.02
.000823	100.	100.	100.	0	14	0	.00	10.05	10.08

*SECNO 636.000

636.000	4.44	91.87	90.21	.00	92.41	.54	.08	.00	93.40
262.0	.0	262.0	.0	.0	44.3	.0	22.0	6.2	93.40
.88	.00	5.91	.00	.000	.013	.000	.000	87.43	.03
.000851	100.	100.	100.	0	14	0	.00	10.05	10.07

*SECNO 635.000

635.000	4.88	92.45	88.89	.00	92.49	.05	.03	.05	93.60
85.0	.0	85.0	.0	.0	48.7	.0	22.1	6.2	93.60
.90	.00	1.75	.00	.000	.013	.000	.000	87.57	.02
.000070	100.	100.	100.	2	14	0	.00	10.06	10.08

*SECNO 634.000

634.000	4.75	92.45	89.01	.00	92.50	.05	.01	.00	93.70
85.0	.0	85.0	.0	.0	47.4	.0	22.2	6.3	93.70
.92	.00	1.79	.00	.000	.013	.000	.000	87.70	.02
.000075	100.	100.	100.	2	14	0	.00	10.06	10.08

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 633.000

633.000	4.63	92.46	89.14	.00	92.51	.05	.01	.00	93.80
85.0	.0	85.0	.0	.0	46.2	.0	22.3	6.3	93.80
.93	.00	1.84	.00	.000	.013	.000	.000	87.83	.02
.000080	100.	100.	100.	0	14	0	.00	10.06	10.08

*SECNO 632.750

632.750	4.60	92.46	89.18	.00	92.51	.05	.00	.00	94.00
85.0	.0	85.0	.0	.0	45.9	.0	22.4	6.3	94.00
.93	.00	1.85	.00	.000	.013	.000	.000	87.86	.03
.000082	25.	25.	25.	0	14	0	.00	10.05	10.07

*SECNO 632.450
3280 CROSS SECTION 632.45 EXTENDED 1.09 FEET

632.450	4.61	92.49	89.38	.00	92.52	.02	.00	.00	91.40
82.0	.0	82.0	.0	.0	67.7	.0	22.4	6.3	91.40
.94	.00	1.21	.00	.000	.030	.000	.000	87.88	.00
.000149	30.	30.	30.	2	17	0	.00	20.00	20.00

*SECNO 632.000
3280 CROSS SECTION 632.00 EXTENDED 1.09 FEET

632.000	4.59	92.50	89.41	.00	92.52	.02	.00	.00	91.41
82.0	.0	82.0	.0	.0	67.3	.0	22.5	6.3	91.41
.95	.00	1.22	.00	.000	.023	.000	.000	87.91	.00
.000085	45.	45.	45.	0	17	0	.00	20.00	20.00

*SECNO 631.000
3280 CROSS SECTION 631.00 EXTENDED .98 FEET

631.000	4.48	92.51	89.53	.00	92.53	.02	.01	.00	91.53
82.0	.0	82.0	.0	.0	65.1	.0	22.6	6.4	91.53
.97	.00	1.26	.00	.000	.023	.000	.000	88.03	.00
.000094	100.	100.	100.	0	17	0	.00	20.00	20.00

*SECNO 630.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3280 CROSS SECTION 630.00 EXTENDED .93 FEET

630.000	4.43	92.52	89.59	.00	92.54	.03	.01	.00	91.59
82.0	.0	82.0	.0	.0	64.0	.0	22.8	6.4	91.59
1.00	.00	1.28	.00	.000	.023	.000	.000	88.09	.00
.000099	100.	100.	100.	0	17	0	.00	20.00	20.00

*SECNO 629.000
3280 CROSS SECTION 629.00 EXTENDED .88 FEET

629.000	4.38	92.53	89.65	.00	92.55	.03	.01	.00	91.65
82.0	.0	82.0	.0	.0	63.0	.0	22.9	6.5	91.65
1.02	.00	1.30	.00	.000	.023	.000	.000	88.15	.00
.000104	100.	100.	100.	0	17	0	.00	20.00	20.00

*SECNO 628.000
3280 CROSS SECTION 628.00 EXTENDED .83 FEET

628.000	4.33	92.54	89.71	.00	92.56	.03	.01	.00	91.71
82.0	.0	82.0	.0	.0	62.0	.0	23.1	6.5	91.71
1.04	.00	1.32	.00	.000	.023	.000	.000	88.21	.00
.000109	100.	100.	100.	0	22	0	.00	20.00	20.00

*SECNO 627.000
3280 CROSS SECTION 627.00 EXTENDED .78 FEET

627.000	4.28	92.55	89.77	.00	92.57	.03	.01	.00	91.77
82.0	.0	82.0	.0	.0	61.0	.0	23.2	6.6	91.77
1.06	.00	1.34	.00	.000	.023	.000	.000	88.27	.00
.000114	100.	100.	100.	0	22	0	.00	20.00	20.00

*SECNO 626.000
3280 CROSS SECTION 626.00 EXTENDED .73 FEET

626.000	4.23	92.56	89.83	.00	92.59	.03	.01	.00	91.83
82.0	.0	82.0	.0	.0	60.1	.0	23.3	6.6	91.83
1.08	.00	1.37	.00	.000	.023	.000	.000	88.33	.00
.000120	100.	100.	100.	0	22	0	.00	20.00	20.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 625.000
3280 CROSS SECTION 625.00 EXTENDED .68 FEET

625.000	4.18	92.57	89.89	.00	92.60	.03	.01	.00	91.89
82.0	.0	82.0	.0	.0	59.1	.0	23.5	6.6	91.89
1.10	.00	1.39	.00	.000	.023	.000	.000	88.39	.00
.000126	100.	100.	100.	0	22	0	.00	20.00	20.00

*SECNO 624.000
3280 CROSS SECTION 624.00 EXTENDED .63 FEET

624.000	4.13	92.58	89.95	.00	92.61	.03	.01	.00	91.95
82.0	.0	82.0	.0	.0	58.1	.0	23.6	6.7	91.95
1.12	.00	1.41	.00	.000	.023	.000	.000	88.45	.00
.000132	100.	100.	100.	0	22	0	.00	20.00	20.00

*SECNO 623.000
3280 CROSS SECTION 623.00 EXTENDED .58 FEET

623.000	4.08	92.59	90.02	.00	92.63	.03	.01	.00	92.01
82.0	.0	82.0	.0	.0	57.2	.0	23.7	6.7	92.01
1.14	.00	1.43	.00	.000	.023	.000	.000	88.51	.00
.000138	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 622.000
3280 CROSS SECTION 622.00 EXTENDED .54 FEET

622.000	4.04	92.61	90.07	.00	92.64	.03	.01	.00	92.07
82.0	.0	82.0	.0	.0	56.3	.0	23.9	6.8	92.07
1.16	.00	1.46	.00	.000	.023	.000	.000	88.57	.00
.000145	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 621.000
3280 CROSS SECTION 621.00 EXTENDED .49 FEET

621.000	3.99	92.62	90.13	.00	92.66	.03	.01	.00	92.13
82.0	.0	82.0	.0	.0	55.3	.0	24.0	6.8	92.13
1.18	.00	1.48	.00	.000	.023	.000	.000	88.63	.00
.000153	100.	100.	100.	0	18	0	.00	20.00	20.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 620.000
3280 CROSS SECTION 620.00 EXTENDED .45 FEET

620.000	3.95	92.64	90.19	.00	92.67	.04	.02	.00	92.19
82.0	.0	82.0	.0	.0	54.4	.0	24.1	6.9	92.19
1.19	.00	1.51	.00	.000	.023	.000	.000	88.69	.00
.000161	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 621.000
3280 CROSS SECTION 621.00 EXTENDED .40 FEET

621.000	3.90	92.65	90.25	.00	92.69	.04	.02	.00	92.25
82.0	.0	82.0	.0	.0	53.5	.0	24.3	6.9	92.25
1.21	.00	1.53	.00	.000	.023	.000	.000	88.75	.00
.000169	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 620.000
3280 CROSS SECTION 620.00 EXTENDED .36 FEET

620.000	3.86	92.67	90.31	.00	92.71	.04	.02	.00	92.31
82.0	.0	82.0	.0	.0	52.7	.0	24.4	7.0	92.31
1.23	.00	1.56	.00	.000	.023	.000	.000	88.81	.00
.000177	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 619.000
3280 CROSS SECTION 619.00 EXTENDED .32 FEET

619.000	3.82	92.69	90.37	.00	92.72	.04	.02	.00	92.37
82.0	.0	82.0	.0	.0	51.8	.0	24.5	7.0	92.37
1.25	.00	1.58	.00	.000	.023	.000	.000	88.87	.00
.000186	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 618.000
3280 CROSS SECTION 618.00 EXTENDED .27 FEET

618.000	3.77	92.70	90.43	.00	92.74	.04	.02	.00	92.43
82.0	.0	82.0	.0	.0	51.0	.0	24.6	7.1	92.43
1.27	.00	1.61	.00	.000	.023	.000	.000	88.93	.00
.000196	100.	100.	100.	0	18	0	.00	20.00	20.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 617.000
3280 CROSS SECTION 617.00 EXTENDED .23 FEET

617.000	3.73	92.72	90.49	.00	92.76	.04	.02	.00	92.49
82.0	.0	82.0	.0	.0	50.2	.0	24.7	7.1	92.49
1.28	.00	1.63	.00	.000	.023	.000	.000	88.99	.00
.000206	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 616.000
3280 CROSS SECTION 616.00 EXTENDED .19 FEET

616.000	3.69	92.74	90.55	.00	92.79	.04	.02	.00	92.55
82.0	.0	82.0	.0	.0	49.4	.0	24.8	7.2	92.55
1.30	.00	1.66	.00	.000	.023	.000	.000	89.05	.00
.000216	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 615.000
3280 CROSS SECTION 615.00 EXTENDED .15 FEET

615.000	3.65	92.76	90.61	.00	92.81	.04	.02	.00	92.61
82.0	.0	82.0	.0	.0	48.6	.0	25.0	7.2	92.61
1.32	.00	1.69	.00	.000	.023	.000	.000	89.11	.00
.000226	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 614.000
3280 CROSS SECTION 614.00 EXTENDED .12 FEET

614.000	3.62	92.79	90.67	.00	92.83	.05	.02	.00	92.67
82.0	.0	82.0	.0	.0	47.8	.0	25.1	7.2	92.67
1.33	.00	1.71	.00	.000	.023	.000	.000	89.17	.00
.000237	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 613.000
3280 CROSS SECTION 613.00 EXTENDED .08 FEET

613.000	3.58	92.81	90.73	.00	92.86	.05	.02	.00	92.73
82.0	.0	82.0	.0	.0	47.1	.0	25.2	7.3	92.73
1.35	.00	1.74	.00	.000	.023	.000	.000	89.23	.00
.000249	100.	100.	100.	0	18	0	.00	20.00	20.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 612.000
3280 CROSS SECTION 612.00 EXTENDED .04 FEET

612.000	3.54	92.83	90.79	.00	92.88	.05	.03	.00	92.79
82.0	.0	82.0	.0	.0	46.4	.0	25.3	7.3	92.79
1.36	.00	1.77	.00	.000	.023	.000	.000	89.29	.00
.000261	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 611.000
3280 CROSS SECTION 611.00 EXTENDED .01 FEET

611.000	3.51	92.86	90.85	.00	92.91	.05	.03	.00	92.85
82.0	.0	82.0	.0	.0	45.7	.0	25.4	7.4	92.85
1.38	.00	1.79	.00	.000	.023	.000	.000	89.35	.00
.000273	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 610.000									
610.000	3.48	92.89	90.92	.00	92.94	.05	.03	.00	92.91
82.0	.0	82.0	.0	.0	45.0	.0	25.5	7.4	92.91
1.39	.00	1.82	.00	.000	.023	.000	.000	89.41	.05
.000284	100.	100.	100.	0	14	0	.00	19.91	19.95
*SECNO 609.000									
609.000	3.45	92.92	90.97	.00	92.97	.05	.03	.00	92.97
82.0	.0	82.0	.0	.0	44.4	.0	25.6	7.5	92.97
1.41	.00	1.85	.00	.000	.023	.000	.000	89.47	.11
.000295	100.	100.	100.	0	14	0	.00	19.78	19.89
*SECNO 608.000									
608.000	3.41	92.94	91.03	.00	93.00	.05	.03	.00	93.03
82.0	.0	82.0	.0	.0	43.8	.0	25.7	7.5	93.03
1.42	.00	1.87	.00	.000	.023	.000	.000	89.53	.17
.000307	100.	100.	100.	0	14	0	.00	19.66	19.83
*SECNO 607.000									
607.000	3.38	92.97	91.09	.00	93.03	.06	.03	.00	93.09
82.0	.0	82.0	.0	.0	43.2	.0	25.8	7.6	93.09
1.44	.00	1.90	.00	.000	.023	.000	.000	89.59	.23
.000318	100.	100.	100.	0	14	0	.00	19.54	19.77

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 606.000									
606.000	3.36	93.01	91.15	.00	93.06	.06	.03	.00	93.15
82.0	.0	82.0	.0	.0	42.7	.0	25.9	7.6	93.15
1.45	.00	1.92	.00	.000	.023	.000	.000	89.65	.29
.000330	100.	100.	100.	0	14	0	.00	19.42	19.71
*SECNO 605.000									
605.000	3.33	93.04	91.21	.00	93.10	.06	.03	.00	93.21
82.0	.0	82.0	.0	.0	42.1	.0	26.0	7.7	93.21
1.47	.00	1.95	.00	.000	.023	.000	.000	89.71	.34
.000341	100.	100.	100.	0	14	0	.00	19.31	19.66
*SECNO 604.000									
604.000	3.30	93.07	91.27	.00	93.13	.06	.03	.00	93.27
82.0	.0	82.0	.0	.0	41.6	.0	26.1	7.7	93.27
1.48	.00	1.97	.00	.000	.023	.000	.000	89.77	.40
.000352	100.	100.	100.	0	14	0	.00	19.21	19.60
*SECNO 603.000									
603.000	3.28	93.11	91.33	.00	93.17	.06	.04	.00	93.33
82.0	.0	82.0	.0	.0	41.1	.0	26.2	7.7	93.33
1.50	.00	1.99	.00	.000	.023	.000	.000	89.83	.45
.000364	100.	100.	100.	0	14	0	.00	19.11	19.55
*SECNO 602.000									
602.000	3.24	93.13	91.55	.00	93.22	.09	.04	.01	93.39
97.0	.0	97.0	.0	.0	40.6	.0	26.3	7.8	93.39
1.51	.00	2.39	.00	.000	.023	.000	.000	89.89	.51
.000528	100.	100.	100.	1	8	0	.00	18.99	19.49
*SECNO 601.000									
601.000	3.23	93.18	91.61	.00	93.27	.09	.05	.00	93.45

97.0	.0	97.0	.0	.0	40.2	.0	26.4	7.8	93.45
1.52	.00	2.41	.00	.000	.023	.000	.000	89.95	.55
.000542	100.	100.	100.	0	8	0	.00	18.91	19.45

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 600.000

600.000	3.23	93.24	91.66	.00	93.33	.09	.05	.00	93.51
97.0	.0	97.0	.0	.0	40.2	.0	26.5	7.9	93.51
1.53	.00	2.41	.00	.000	.023	.000	.000	90.01	.54
.000541	100.	100.	100.	0	11	0	.00	18.91	19.46

*SECNO 599.000

599.000	3.22	93.29	91.72	.00	93.38	.09	.05	.00	93.57
97.0	.0	97.0	.0	.0	40.1	.0	26.6	7.9	93.57
1.54	.00	2.42	.00	.000	.023	.000	.000	90.07	.55
.000545	100.	100.	100.	0	11	0	.00	18.89	19.45

*SECNO 598.000

598.000	3.22	93.35	91.78	.00	93.44	.09	.05	.00	93.63
97.0	.0	97.0	.0	.0	40.0	.0	26.7	8.0	93.63
1.55	.00	2.43	.00	.000	.023	.000	.000	90.13	.57
.000549	100.	100.	100.	0	11	0	.00	18.87	19.43

*SECNO 597.000

597.000	3.21	93.40	91.84	.00	93.49	.09	.06	.00	93.69
97.0	.0	97.0	.0	.0	39.9	.0	26.7	8.0	93.69
1.56	.00	2.43	.00	.000	.023	.000	.000	90.19	.58
.000553	100.	100.	100.	0	11	0	.00	18.85	19.42

*SECNO 596.000

596.000	3.21	93.46	91.90	.00	93.55	.09	.06	.00	93.75
97.0	.0	97.0	.0	.0	39.8	.0	26.8	8.0	93.75
1.58	.00	2.44	.00	.000	.023	.000	.000	90.25	.59
.000556	100.	100.	100.	0	11	0	.00	18.83	19.41

*SECNO 595.000

595.000	3.20	93.51	91.96	.00	93.60	.09	.06	.00	93.81
97.0	.0	97.0	.0	.0	39.7	.0	26.9	8.1	93.81
1.59	.00	2.44	.00	.000	.023	.000	.000	90.31	.60
.000559	100.	100.	100.	0	11	0	.00	18.81	19.40

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 594.000

594.000	3.20	93.57	92.02	.00	93.66	.09	.06	.00	93.87
97.0	.0	97.0	.0	.0	39.6	.0	27.0	8.1	93.87
1.60	.00	2.45	.00	.000	.023	.000	.000	90.37	.60
.000562	100.	100.	100.	0	11	0	.00	18.79	19.40

*SECNO 593.000

593.000	3.19	93.62	92.08	.00	93.72	.09	.06	.00	93.93

97.0	.0	97.0	.0	.0	39.6	.0	27.1	8.2	93.93
1.61	.00	2.45	.00	.000	.023	.000	.000	90.43	.61
.000565	100.	100.	100.	0	11	0	.00	18.78	19.39

*SECNO 592.000

592.000	3.19	93.68	92.14	.00	93.77	.09	.06	.00	93.99
97.0	.0	97.0	.0	.0	39.5	.0	27.2	8.2	93.99
1.62	.00	2.46	.00	.000	.023	.000	.000	90.49	.62
.000568	100.	100.	100.	0	11	0	.00	18.76	19.38

*SECNO 591.000

591.000	3.19	93.74	92.20	.00	93.83	.09	.06	.00	94.05
97.0	.0	97.0	.0	.0	39.4	.0	27.3	8.3	94.05
1.63	.00	2.46	.00	.000	.023	.000	.000	90.55	.63
.000570	100.	100.	100.	0	11	0	.00	18.75	19.37

*SECNO 590.000

590.000	3.18	93.79	92.26	.00	93.89	.09	.06	.00	94.11
97.0	.0	97.0	.0	.0	39.4	.0	27.4	8.3	94.11
1.64	.00	2.46	.00	.000	.023	.000	.000	90.61	.63
.000572	100.	100.	100.	0	11	0	.00	18.74	19.37

*SECNO 589.000

589.000	3.18	93.85	92.32	.00	93.95	.09	.06	.00	94.17
97.0	.0	97.0	.0	.0	39.3	.0	27.5	8.3	94.17
1.65	.00	2.47	.00	.000	.023	.000	.000	90.67	.64
.000575	100.	100.	100.	0	11	0	.00	18.73	19.36

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 588.000

588.000	3.18	93.91	92.38	.00	94.00	.09	.06	.00	94.23
97.0	.0	97.0	.0	.0	39.3	.0	27.6	8.4	94.23
1.67	.00	2.47	.00	.000	.023	.000	.000	90.73	.64
.000576	100.	100.	100.	0	11	0	.00	18.72	19.36

*SECNO 587.000

587.000	3.18	93.97	92.44	.00	94.06	.09	.06	.00	94.29
97.0	.0	97.0	.0	.0	39.2	.0	27.6	8.4	94.29
1.68	.00	2.47	.00	.000	.023	.000	.000	90.79	.65
.000578	100.	100.	100.	0	11	0	.00	18.71	19.35

*SECNO 586.000

586.000	3.17	94.02	92.50	.00	94.12	.10	.06	.00	94.35
97.0	.0	97.0	.0	.0	39.2	.0	27.7	8.5	94.35
1.69	.00	2.47	.00	.000	.023	.000	.000	90.85	.65
.000580	100.	100.	100.	0	11	0	.00	18.70	19.35

*SECNO 585.000

585.000	3.17	94.08	92.56	.00	94.18	.10	.06	.00	94.41
97.0	.0	97.0	.0	.0	39.2	.0	27.8	8.5	94.41
1.70	.00	2.48	.00	.000	.023	.000	.000	90.91	.66
.000582	100.	100.	100.	0	11	0	.00	18.69	19.34

*SECNO 584.000

584.000	3.17	94.14	92.62	.00	94.24	.10	.06	.00	94.47
97.0	.0	97.0	.0	.0	39.1	.0	27.9	8.6	94.47
1.71	.00	2.48	.00	.000	.023	.000	.000	90.97	.66
.000583	100.	100.	100.	0	11	0	.00	18.68	19.34

*SECNO 583.000

583.000	3.17	94.20	92.68	.00	94.29	.10	.06	.00	94.53
97.0	.0	97.0	.0	.0	39.1	.0	28.0	8.6	94.53
1.72	.00	2.48	.00	.000	.023	.000	.000	91.03	.66
.000584	100.	100.	100.	0	11	0	.00	18.67	19.34

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 582.000

582.000	3.17	94.26	92.74	.00	94.35	.10	.06	.00	94.59
97.0	.0	97.0	.0	.0	39.1	.0	28.1	8.6	94.59
1.73	.00	2.48	.00	.000	.023	.000	.000	91.09	.67
.000585	100.	100.	100.	0	11	0	.00	18.67	19.33

*SECNO 581.000

581.000	3.17	94.32	92.80	.00	94.41	.10	.06	.00	94.65
97.0	.0	97.0	.0	.0	39.0	.0	28.2	8.7	94.65
1.74	.00	2.49	.00	.000	.023	.000	.000	91.15	.67
.000587	100.	100.	100.	0	11	0	.00	18.66	19.33

*SECNO 580.000

580.000	3.16	94.37	92.86	.00	94.47	.10	.06	.00	94.71
97.0	.0	97.0	.0	.0	39.0	.0	28.3	8.7	94.71
1.76	.00	2.49	.00	.000	.023	.000	.000	91.21	.67
.000588	100.	100.	100.	0	11	0	.00	18.66	19.33

*SECNO 579.000

579.000	3.16	94.43	92.92	.00	94.53	.10	.06	.00	94.77
97.0	.0	97.0	.0	.0	39.0	.0	28.4	8.8	94.77
1.77	.00	2.49	.00	.000	.023	.000	.000	91.27	.67
.000589	100.	100.	100.	0	11	0	.00	18.65	19.33

*SECNO 578.000

578.000	3.16	94.49	92.98	.00	94.59	.10	.06	.00	94.83
97.0	.0	97.0	.0	.0	39.0	.0	28.5	8.8	94.83
1.78	.00	2.49	.00	.000	.023	.000	.000	91.33	.68
.000590	100.	100.	100.	0	11	0	.00	18.65	19.32

*SECNO 577.000

577.000	3.16	94.55	93.04	.00	94.65	.10	.06	.00	94.89
97.0	.0	97.0	.0	.0	38.9	.0	28.5	8.9	94.89
1.79	.00	2.49	.00	.000	.023	.000	.000	91.39	.68
.000590	100.	100.	100.	0	11	0	.00	18.64	19.32

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 576.000

576.000	3.16	94.61	93.10	.00	94.71	.10	.06	.00	94.95
97.0	.0	97.0	.0	.0	38.9	.0	28.6	8.9	94.95
1.80	.00	2.49	.00	.000	.023	.000	.000	91.45	.68
.000591	100.	100.	100.	0	11	0	.00	18.64	19.32

*SECNO 575.000

575.000	3.29	94.68	93.04	.00	94.76	.09	.05	.00	94.89
97.0	.0	97.0	.0	.0	41.2	.0	28.7	8.9	94.89
1.81	.00	-2.36	.00	.000	.023	.000	.000	91.39	.44
.000508	100.	100.	100.	0	11	0	.00	19.11	19.56

*SECNO 574.000

574.000	3.28	94.73	93.11	.00	94.81	.09	.05	.00	94.95
97.0	.0	97.0	.0	.0	41.2	.0	28.8	9.0	94.95
1.82	.00	2.35	.00	.000	.023	.000	.000	91.45	.44
.000506	100.	100.	100.	0	8	0	.00	19.12	19.56

*SECNO 573.000

573.000	3.27	94.78	93.17	.00	94.86	.09	.05	.00	95.01
97.0	.0	97.0	.0	.0	40.9	.0	28.9	9.0	95.01
1.84	.00	2.37	.00	.000	.023	.000	.000	91.51	.47
.000515	100.	100.	100.	0	8	0	.00	19.07	19.53

*SECNO 572.000

572.000	3.26	94.83	93.23	.00	94.92	.09	.05	.00	95.07
97.0	.0	97.0	.0	.0	40.8	.0	29.0	9.1	95.07
1.85	.00	2.38	.00	.000	.023	.000	.000	91.57	.48
.000521	100.	100.	100.	0	8	0	.00	19.03	19.52

*SECNO 571.000

571.000	3.25	94.88	93.29	.00	94.97	.09	.05	.00	95.13
97.0	.0	97.0	.0	.0	40.6	.0	29.1	9.1	95.13
1.86	.00	2.39	.00	.000	.023	.000	.000	91.63	.50
.000526	100.	100.	100.	0	8	0	.00	19.00	19.50

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 570.000

570.000	3.24	94.93	93.35	.00	95.02	.09	.05	.00	95.19
97.0	.0	97.0	.0	.0	40.5	.0	29.2	9.2	95.19
1.87	.00	2.40	.00	.000	.023	.000	.000	91.69	.52
.000532	100.	100.	100.	0	8	0	.00	18.97	19.48

*SECNO 569.000

569.000	3.24	94.99	93.41	.00	95.07	.09	.05	.00	95.25
97.0	.0	97.0	.0	.0	40.3	.0	29.3	9.2	95.25
1.88	.00	2.40	.00	.000	.023	.000	.000	91.75	.53
.000536	100.	100.	100.	0	8	0	.00	18.94	19.47

*SECNO 568.000

568.000	3.23	95.04	93.46	.00	95.13	.09	.05	.00	95.31
97.0	.0	97.0	.0	.0	40.2	.0	29.4	9.3	95.31
1.89	.00	2.41	.00	.000	.023	.000	.000	91.81	.54
.000541	100.	100.	100.	0	11	0	.00	18.91	19.46

*SECNO 567.000

567.000	3.22	95.09	93.52	.00	95.18	.09	.05	.00	95.37
97.0	.0	97.0	.0	.0	40.1	.0	29.5	9.3	95.37
1.91	.00	2.42	.00	.000	.023	.000	.000	91.87	.56
.000545	100.	100.	100.	0	11	0	.00	18.89	19.44

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THIS RUN EXECUTED 20NOV96 02:51:01

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HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MIDDLE SECTION - END AT

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH
*	714.190	381.00	86.17	29.80	3.14	12.01	10.11	37.69	87.76	83.03	.00	13.00
	713.680	381.00	86.81	17.97	3.75	12.01	8.46	45.01	87.92	83.06	51.00	13.00
	713.180	381.00	86.98	16.21	3.89	12.01	8.16	46.69	88.01	83.09	50.00	13.00
	712.680	381.00	88.04	10.16	4.96	41.68	2.86	133.12	88.17	83.08	50.00	35.00
	711.790	381.00	88.13	9.83	5.00	41.92	2.83	134.77	88.26	83.13	89.00	35.00
	710.900	381.00	88.22	9.54	5.03	42.13	2.80	136.27	88.34	83.19	89.00	35.00
	710.000	381.00	88.31	9.28	5.07	42.33	2.77	137.68	88.43	83.24	90.00	35.00
	709.000	381.00	88.40	9.02	5.10	42.54	2.74	139.13	88.52	83.30	100.00	35.00
	708.000	381.00	88.49	8.78	5.13	42.73	2.71	140.48	88.61	83.36	100.00	35.00
	707.000	381.00	88.58	8.58	5.16	42.90	2.69	141.72	88.70	83.42	100.00	35.00
	706.870	381.00	88.59	8.55	5.17	42.92	2.69	141.87	88.71	83.43	13.00	35.00
*	706.720	330.00	88.38	42.64	5.06	12.01	5.44	60.71	88.83	83.32	15.00	35.00
*	706.320	330.00	88.43	5.79	5.09	12.01	5.40	61.07	88.88	83.34	40.00	13.00
	706.170	330.00	88.86	4.75	5.57	44.67	2.09	157.95	88.93	83.29	15.00	35.00
	706.000	330.00	88.87	4.75	5.57	44.65	2.09	157.83	88.94	83.30	17.00	35.00
	705.000	330.00	88.92	4.80	5.56	44.58	2.10	157.23	88.99	83.36	100.00	35.00
	704.000	330.00	88.97	4.85	5.55	44.50	2.11	156.68	89.04	83.42	100.00	35.00

SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH
703.000	330.00	89.01	4.89	5.53	44.44	2.11	156.16	89.08	83.48	100.00	35.00
702.000	330.00	89.06	4.94	5.52	44.37	2.12	155.67	89.13	83.54	100.00	35.00
701.000	330.00	89.11	4.98	5.51	44.31	2.13	155.19	89.18	83.60	100.00	35.00
700.500	330.00	89.14	5.00	5.51	44.28	2.13	154.97	89.21	83.63	50.00	35.00
700.120	330.00	89.16	5.01	5.50	44.25	2.13	154.80	89.23	83.65	38.00	35.00
700.050	330.00	89.16	5.76	5.29	43.77	2.23	147.68	89.23	83.86	7.00	35.00
699.970	330.00	89.22	5.51	5.35	44.11	2.20	150.12	89.30	83.87	8.00	35.00

	699.870	330.00	89.23	4.91	5.53	44.46	2.12	156.01	89.30	83.70	10.00	35.00
	699.550	330.00	89.25	4.90	5.53	44.48	2.11	156.15	89.32	83.72	32.00	35.00
	699.000	330.00	89.27	4.93	5.52	44.44	2.12	155.84	89.34	83.75	55.00	35.00
	698.000	330.00	89.32	4.97	5.51	44.38	2.12	155.35	89.39	83.81	100.00	35.00
	697.000	330.00	89.37	5.01	5.50	44.32	2.13	154.89	89.44	83.87	100.00	35.00
	696.000	330.00	89.42	5.05	5.49	44.26	2.14	154.44	89.49	83.93	100.00	35.00
	695.000	330.00	89.47	5.09	5.48	44.20	2.14	154.02	89.54	83.99	100.00	35.00
	694.000	330.00	89.52	5.12	5.47	44.15	2.15	153:61	89.60	84.05	100.00	35.00
	693.000	330.00	89.58	5.16	5.46	44.10	2.15	153.22	89.65	84.11	100.00	35.00
	692.000	330.00	89.63	5.19	5.45	44.05	2.16	152.85	89.70	84.17	100.00	35.00
	690.340	304.00	89.67	4.42	5.46	44.01	1.99	152.61	89.73	84.21	66.00	35.00
*	689.860	304.00	89.35	16.48	4.80	15.09	6.04	50.33	89.92	84.55	48.00	19.00
	688.920	304.00	89.72	8.48	5.14	18.63	4.64	65.46	90.05	84.58	94.00	19.00
	687.860	304.00	89.90	5.45	5.36	21.31	3.89	78.07	90.13	84.54	106.00	19.00
	686.860	304.00	89.94	6.18	5.37	22.34	4.01	75.74	90.19	84.57	100.00	19.00
	685.860	304.00	90.07	4.14	5.46	24.54	3.44	88.37	90.25	84.61	100.00	19.00
	684.860	304.00	90.07	5.71	5.31	21.02	3.96	76.68	90.32	84.76	100.00	19.00
	683.860	304.00	90.10	7.19	5.23	19.90	4.34	70.12	90.40	84.87	100.00	19.00
	682.860	304.00	90.21	6.27	5.31	21.22	4.08	74.48	90.47	84.90	100.00	19.00

	SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH
	681.860	304.00	90.25	7.28	5.38	18.87	4.40	69.12	90.55	84.87	100.00	19.00
	680.860	304.00	90.30	8.42	5.43	17.01	4.69	64.82	90.64	84.87	100.00	19.00
	679.860	304.00	90.37	8.80	5.46	16.39	4.79	63.47	90.73	84.91	100.00	19.00
	678.860	304.00	90.46	9.32	4.98	17.35	4.85	62.69	90.82	85.48	100.00	19.00
	677.860	304.00	90.62	6.77	5.36	18.58	4.29	70.83	90.91	85.26	100.00	19.00
	676.860	304.00	90.69	6.63	5.39	18.56	4.26	71.31	90.98	85.30	100.00	19.00
	675.860	304.00	90.80	6.12	5.09	23.33	3.96	76.77	91.04	85.71	100.00	19.00
	674.860	304.00	90.87	5.99	5.07	23.90	3.91	77.82	91.10	85.80	100.00	19.00
	673.860	304.00	90.95	4.79	5.63	22.49	3.68	82.54	91.16	85.32	100.00	19.00
	673.010	304.00	91.05	3.25	5.72	26.17	3.13	97.22	91.20	85.33	85.00	19.00
*	672.860	304.00	90.94	8.09	5.60	12.01	4.52	67.22	91.26	85.34	15.00	19.00
	672.460	304.00	90.97	8.10	5.61	12.01	4.52	67.21	91.29	85.36	40.00	19.00
*	672.310	304.00	91.26	1.16	5.52	46.44	1.88	161.40	91.32	85.74	15.00	19.00
	672.000	304.00	91.27	1.16	5.52	46.43	1.88	161.36	91.32	85.75	31.00	19.00
	671.000	304.00	91.28	1.18	5.50	46.28	1.90	160.25	91.33	85.78	100.00	19.00
	670.000	304.00	91.29	1.20	5.48	46.16	1.91	159.39	91.35	85.81	100.00	19.00

	669.000	304.00	91.30	1.21	5.46	46.05	1.92	158.54	91.36	85.84	100.00	19.00
	668.000	304.00	91.31	1.23	5.44	45.94	1.93	157.70	91.37	85.87	100.00	19.00
	667.000	304.00	91.33	1.25	5.43	45.82	1.94	156.88	91.38	85.90	100.00	19.00
	666.110	281.00	91.34	1.08	5.42	45.72	1.80	156.15	91.39	85.93	89.00	19.00
*	665.960	281.00	91.19	7.04	5.56	12.01	4.21	66.76	91.47	85.63	15.00	19.00
	665.560	281.00	91.22	7.01	5.58	12.01	4.20	66.89	91.49	85.64	40.00	19.00
*	665.410	281.00	91.48	.82	5.83	46.97	1.64	171.84	91.52	85.65	15.00	19.00
	665.000	281.00	91.48	.82	5.82	46.95	1.64	171:71	91.52	85.66	41.00	19.00
	664.000	281.00	91.49	.84	5.80	46.78	1.65	170.38	91.53	85.69	100.00	19.00
	663.000	281.00	91.50	.85	5.77	46.65	1.66	169.35	91.54	85.72	100.00	19.00

	SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH
	662.000	281.00	91.51	.86	5.75	46.52	1.67	168.34	91.55	85.75	100.00	19.00
	661.000	281.00	91.51	.88	5.73	46.39	1.68	167.33	91.56	85.78	100.00	19.00
	660.000	273.00	91.52	.84	5.71	46.26	1.64	166.34	91.57	85.81	100.00	19.00
	659.000	273.00	91.53	.85	5.69	46.14	1.65	165.44	91.57	85.84	100.00	19.00
	658.000	273.00	91.54	.87	5.67	46.01	1.66	164.43	91.58	85.87	100.00	19.00
	657.000	273.00	91.55	.88	5.65	45.88	1.67	163.44	91.59	85.90	100.00	19.00
	656.000	273.00	91.56	.90	5.63	45.75	1.68	162.45	91.60	85.93	100.00	19.00
	655.000	273.00	91.57	.91	5.60	45.63	1.69	161.48	91.61	85.96	100.00	19.00
	654.000	273.00	91.58	.93	5.58	45.50	1.70	160.52	91.62	85.99	100.00	19.00
	653.000	273.00	91.58	.94	5.56	45.37	1.71	159.56	91.63	86.02	100.00	19.00
	652.000	273.00	91.59	.96	5.54	45.25	1.72	158.61	91.64	86.05	100.00	19.00
	651.000	273.00	91.60	.97	5.52	45.12	1.73	157.68	91.65	86.08	100.00	19.00
	650.000	273.00	91.61	.99	5.50	45.00	1.74	156.75	91.66	86.11	100.00	19.00
	649.000	273.00	91.62	1.00	5.48	44.88	1.75	155.83	91.67	86.14	100.00	19.00
	648.000	273.00	91.63	1.02	5.46	44.76	1.76	154.93	91.68	86.17	100.00	19.00
	647.000	273.00	91.64	1.04	5.44	44.64	1.77	154.03	91.69	86.20	100.00	19.00
	646.000	273.00	91.65	1.05	5.42	44.52	1.78	153.14	91.70	86.23	100.00	19.00
	645.000	273.00	91.66	1.07	5.40	44.40	1.79	152.26	91.71	86.26	100.00	19.00
	644.000	273.00	91.67	1.09	5.38	44.28	1.80	151.39	91.72	86.29	100.00	19.00
	643.330	273.00	91.68	1.10	5.36	44.16	1.81	150.53	91.73	86.32	100.00	19.00
*	643.000	262.00	91.42	6.47	4.92	10.06	5.34	49.08	91.86	86.50	33.00	13.00
	642.000	262.00	91.47	6.78	4.84	10.06	5.43	48.23	91.93	86.63	100.00	13.00
	641.000	262.00	91.53	7.00	4.77	10.06	5.50	47.67	92.00	86.76	100.00	13.00
	640.000	262.00	91.60	7.21	4.70	10.08	5.55	47.20	92.08	86.90	100.00	13.00
	639.000	262.00	91.66	7.60	4.63	10.06	5.67	46.22	92.16	87.03	100.00	13.00

638.000	262.00	91.72	7.94	4.55	10.05	5.76	45.49	92.24	87.17	100.00	13.00

1
20NOV96 02:50:56 PAGE 45

SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH
637.000	262.00	91.79	8.23	4.49	10.05	5.84	44.89	92.32	87.30	100.00	13.00
636.000	262.00	91.87	8.51	4.44	10.05	5.91	44.33	92.41	87.43	100.00	13.00
635.000	85.00	92.45	.70	4.88	10.06	1.75	48.67	92.49	87.57	100.00	13.00
634.000	85.00	92.45	.75	4.75	10.06	1.79	47:41	92.50	87.70	100.00	13.00
633.000	85.00	92.46	.80	4.63	10.06	1.84	46.18	92.51	87.83	100.00	13.00
632.750	85.00	92.46	.82	4.60	10.05	1.85	45.87	92.51	87.86	25.00	13.00
632.450	82.00	92.49	1.49	4.61	20.00	1.21	67.66	92.52	87.88	30.00	30.00
632.000	82.00	92.50	.85	4.59	20.00	1.22	67.30	92.52	87.91	45.00	22.50
631.000	82.00	92.51	.94	4.48	20.00	1.26	65.13	92.53	88.03	100.00	22.50
630.000	82.00	92.52	.99	4.43	20.00	1.28	64.03	92.54	88.09	100.00	22.50
629.000	82.00	92.53	1.04	4.38	20.00	1.30	63.03	92.55	88.15	100.00	22.50
628.000	82.00	92.54	1.09	4.33	20.00	1.32	62.03	92.56	88.21	100.00	22.50
627.000	82.00	92.55	1.14	4.28	20.00	1.34	61.04	92.57	88.27	100.00	22.50
626.000	82.00	92.56	1.20	4.23	20.00	1.37	60.06	92.59	88.33	100.00	22.50
625.000	82.00	92.57	1.26	4.18	20.00	1.39	59.09	92.60	88.39	100.00	22.50
624.000	82.00	92.58	1.32	4.13	20.00	1.41	58.13	92.61	88.45	100.00	22.50
623.000	82.00	92.59	1.38	4.08	20.00	1.43	57.19	92.63	88.51	100.00	22.50
622.000	82.00	92.61	1.45	4.04	20.00	1.46	56.26	92.64	88.57	100.00	22.50
621.000	82.00	92.62	1.53	3.99	20.00	1.48	55.34	92.66	88.63	100.00	22.50
620.000	82.00	92.64	1.61	3.95	20.00	1.51	54.44	92.67	88.69	100.00	22.50
621.000	82.00	92.65	1.69	3.90	20.00	1.53	53.55	92.69	88.75	100.00	22.50
620.000	82.00	92.67	1.77	3.86	20.00	1.56	52.68	92.71	88.81	100.00	22.50
619.000	82.00	92.69	1.86	3.82	20.00	1.58	51.82	92.72	88.87	100.00	22.50
618.000	82.00	92.70	1.96	3.77	20.00	1.61	50.99	92.74	88.93	100.00	22.50
617.000	82.00	92.72	2.06	3.73	20.00	1.63	50.17	92.76	88.99	100.00	22.50
616.000	82.00	92.74	2.16	3.69	20.00	1.66	49.37	92.79	89.05	100.00	22.50

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SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH
615.000	82.00	92.76	2.26	3.65	20.00	1.69	48.59	92.81	89.11	100.00	22.50
614.000	82.00	92.79	2.37	3.62	20.00	1.71	47.84	92.83	89.17	100.00	22.50
613.000	82.00	92.81	2.49	3.58	20.00	1.74	47.10	92.86	89.23	100.00	22.50
612.000	82.00	92.83	2.61	3.54	20.00	1.77	46.39	92.88	89.29	100.00	22.50
611.000	82.00	92.86	2.73	3.51	20.00	1.79	45.70	92.91	89.35	100.00	22.50

610.000	82.00	92.89	2.84	3.48	19.91	1.82	45.04	92.94	89.41	100.00	22.50
609.000	82.00	92.92	2.95	3.45	19.78	1.85	44.41	92.97	89.47	100.00	22.50
608.000	82.00	92.94	3.07	3.41	19.66	1.87	43.80	93.00	89.53	100.00	22.50
607.000	82.00	92.97	3.18	3.38	19.54	1.90	43.21	93.03	89.59	100.00	22.50
606.000	82.00	93.01	3.30	3.36	19.42	1.92	42.65	93.06	89.65	100.00	22.50
605.000	82.00	93.04	3.41	3.33	19.31	1.95	42.12	93.10	89.71	100.00	22.50
604.000	82.00	93.07	3.52	3.30	19.21	1.97	41.61	93.13	89.77	100.00	22.50
603.000	82.00	93.11	3.64	3.28	19.11	1.99	41.13	93.17	89.83	100.00	22.50
602.000	97.00	93.13	5.28	3.24	18.99	2.39	40.57	93.22	89.89	100.00	22.50
601.000	97.00	93.18	5.42	3.23	18.91	2.41	40.18	93.27	89.95	100.00	22.50
600.000	97.00	93.24	5.41	3.23	18.91	2.41	40.20	93.33	90.01	100.00	22.50
599.000	97.00	93.29	5.45	3.22	18.89	2.42	40.11	93.38	90.07	100.00	22.50
598.000	97.00	93.35	5.49	3.22	18.87	2.43	40.00	93.44	90.13	100.00	22.50
597.000	97.00	93.40	5.53	3.21	18.85	2.43	39.90	93.49	90.19	100.00	22.50
596.000	97.00	93.46	5.56	3.21	18.83	2.44	39.81	93.55	90.25	100.00	22.50
595.000	97.00	93.51	5.59	3.20	18.81	2.44	39.72	93.60	90.31	100.00	22.50
594.000	97.00	93.57	5.62	3.20	18.79	2.45	39.64	93.66	90.37	100.00	22.50
593.000	97.00	93.62	5.65	3.19	18.78	2.45	39.57	93.72	90.43	100.00	22.50
592.000	97.00	93.68	5.68	3.19	18.76	2.46	39.50	93.77	90.49	100.00	22.50
591.000	97.00	93.74	5.70	3.19	18.75	2.46	39.44	93.83	90.55	100.00	22.50
590.000	97.00	93.79	5.72	3.18	18.74	2.46	39.38	93.89	90.61	100.00	22.50

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20NOV96 02:50:56

SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH
589.000	97.00	93.85	5.75	3.18	18.73	2.47	39.33	93.95	90.67	100.00	22.50
588.000	97.00	93.91	5.76	3.18	18.72	2.47	39.28	94.00	90.73	100.00	22.50
587.000	97.00	93.97	5.78	3.18	18.71	2.47	39.24	94.06	90.79	100.00	22.50
586.000	97.00	94.02	5.80	3.17	18.70	2.47	39.20	94.12	90.85	100.00	22.50
585.000	97.00	94.08	5.82	3.17	18.69	2.48	39.16	94.18	90.91	100.00	22.50
584.000	97.00	94.14	5.83	3.17	18.68	2.48	39.12	94.24	90.97	100.00	22.50
583.000	97.00	94.20	5.84	3.17	18.67	2.48	39.09	94.29	91.03	100.00	22.50
582.000	97.00	94.26	5.85	3.17	18.67	2.48	39.06	94.35	91.09	100.00	22.50
581.000	97.00	94.32	5.87	3.17	18.66	2.49	39.03	94.41	91.15	100.00	22.50
580.000	97.00	94.37	5.88	3.16	18.66	2.49	39.01	94.47	91.21	100.00	22.50
579.000	97.00	94.43	5.89	3.16	18.65	2.49	38.98	94.53	91.27	100.00	22.50
578.000	97.00	94.49	5.90	3.16	18.65	2.49	38.96	94.59	91.33	100.00	22.50
577.000	97.00	94.55	5.90	3.16	18.64	2.49	38.94	94.65	91.39	100.00	22.50
576.000	97.00	94.61	5.91	3.16	18.64	2.49	38.92	94.71	91.45	100.00	22.50

575.000	97.00	94.68	5.08	3.29	19.11	2.36	41.17	94.76	91.39	100.00	22.50
574.000	97.00	94.73	5.06	3.28	19.12	2.35	41.20	94.81	91.45	100.00	22.50
573.000	97.00	94.78	5.15	3.27	19.07	2.37	40.95	94.86	91.51	100.00	22.50
572.000	97.00	94.83	5.21	3.26	19.03	2.38	40.77	94.92	91.57	100.00	22.50
571.000	97.00	94.88	5.26	3.25	19.00	2.39	40.62	94.97	91.63	100.00	22.50
570.000	97.00	94.93	5.32	3.24	18.97	2.40	40.48	95.02	91.69	100.00	22.50
569.000	97.00	94.99	5.36	3.24	18.94	2.40	40.34	95.07	91.75	100.00	22.50
568.000	97.00	95.04	5.41	3.23	18.91	2.41	40:22	95.13	91.81	100.00	22.50
567.000	97.00	95.09	5.45	3.22	18.89	2.42	40.10	95.18	91.87	100.00	22.50

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 714.190 PROFILE= 1 CRITICAL DEPTH ASSUMED

WARNING SECNO= 706.720 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 706.320 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 689.860 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 672.860 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 672.310 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 665.960 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 665.410 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 643.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

PARADISE BLVD. EXT.

ALAMEDA GRANT LINE

NORTH COORS BLVD.

FAMILY SKATING CENTER

STA. 634+44.01

STA. 634+90.06

STA. 634+43.99

STA. 641+98.77

STA. 642+18.29

STA. 642+43.80

STA. 642+59.10

STA. 642+82.24

POT Sta. 656+38.60

PLAN

PROFILE

5000

4990

4980

600+00

610+00

620+00

630+00

640+00

650+00

660+00

TYPICAL SECTION
STA. 598+00 TO END

PLATE I - PLAN-PROFILE U. S. B. R. STANDARD

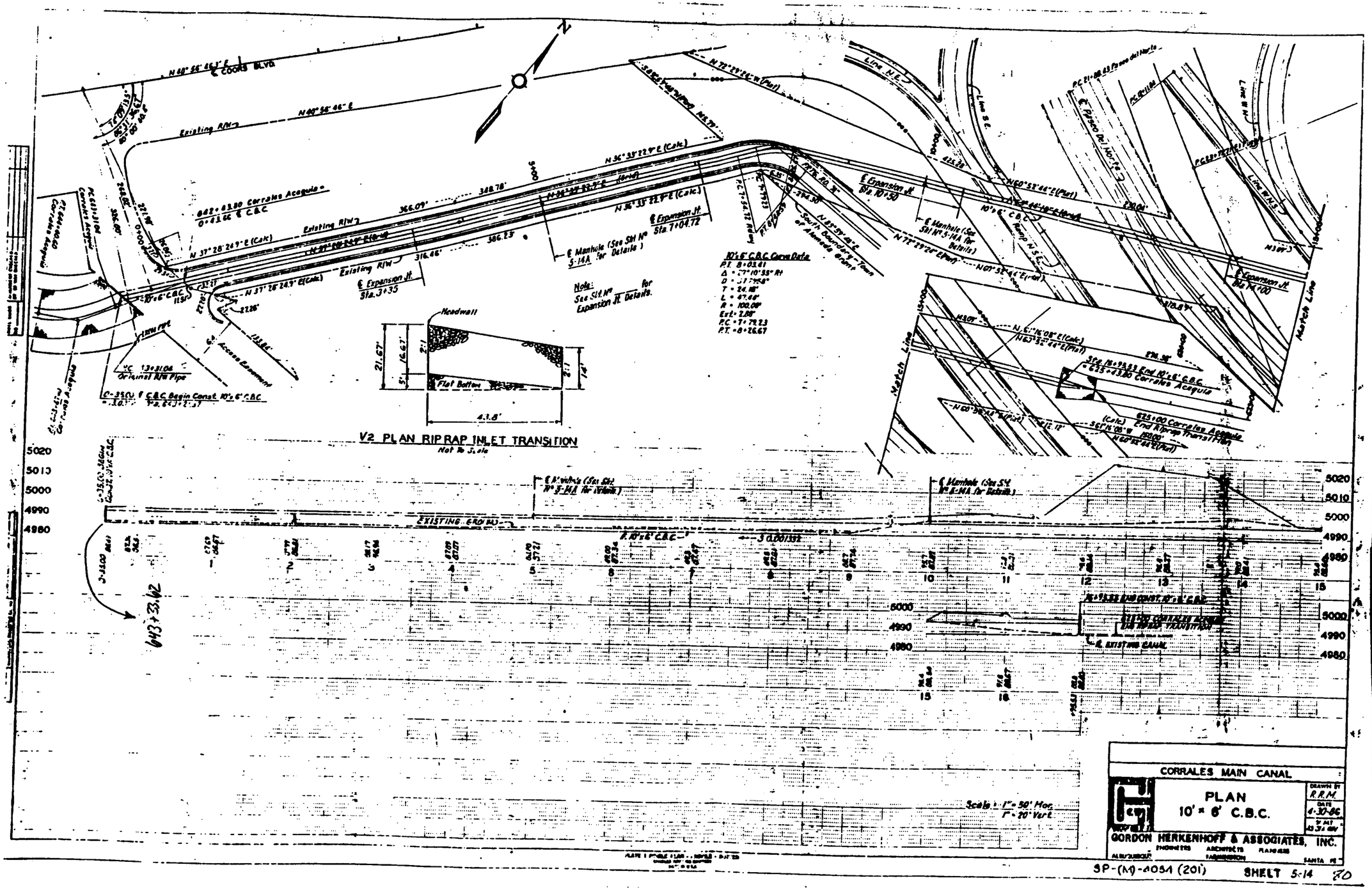
STATE OF NEW MEXICO
MIDDLE RIO GRANDE CONSERVANCY DISTRICT

CORRALES MAIN CANAL
STA. 598+00-658+00

(REVISED)

DRAWN B. BAKER | RECOMMENDED
CHECKED | APPROVED

A-46.2 | ALBUQUERQUE, NEW MEXICO | JAN., 1950



CORRALES MAIN CANAL

PLAN
10' x 6' C.B.C.

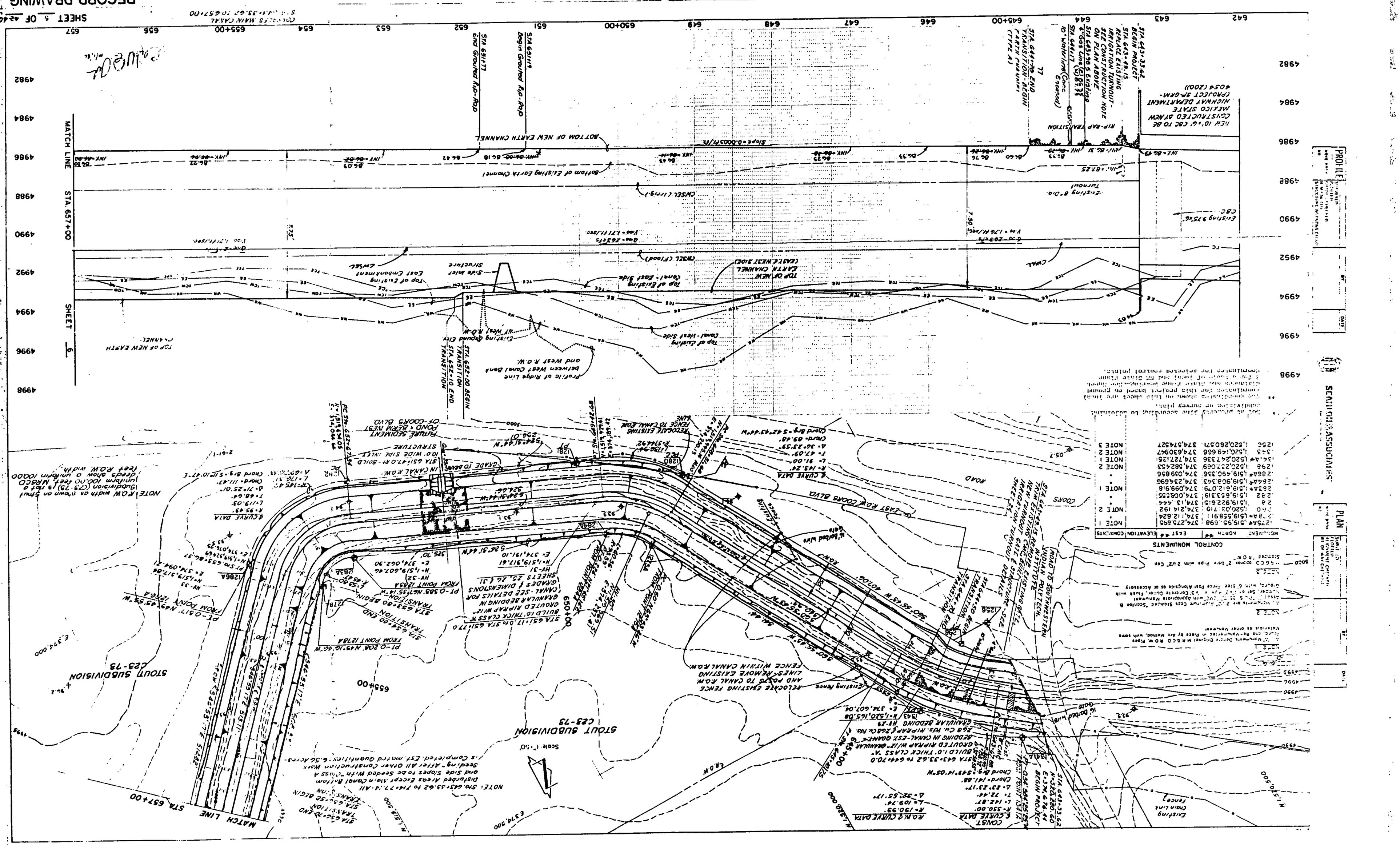
DRAWN BY R.R.M.
DATE 4-30-86
SCALE AS SHOWN

GORDON HERKENHOFF & ASSOCIATES, INC.
ENGINEERS ARCHITECTS PLANNERS
ALBUQUERQUE FARMINGTON SANTA FE

SP-(M)-4051 (201) SHEET 5-14 70

RECORD DRAWING

SHEET 5 OF 42 46


STA. 657+00
MATCH LINE
SHEET 6
STA. 655+00
STA. 650+00
STA. 649
STA. 648
STA. 647
STA. 646
STA. 645+00
STA. 644
STA. 643
STA. 642
4982
4984
4986
4988
4990
4992
4994
4996
4998
Bottom of Existing Earth Channel
Slope = 0.0003 ft/ft
CWSEL (Irrig.)
CWSEL (Flood)
Existing 8'Dia. Turnout
Existing 975 cfs CBC
TOP OF NEW EARTH CHANNEL
Top of Existing Canal - East Side
Top of Existing Canal - West Side
Existing Ground Elev. at West R.O.W.
Profile of Ridge Line between West Canal Bank and West R.O.W.
Existing Ground Elev. at East R.O.W.
Existing Fence
RELOCATE EXISTING FENCE AND POSTS TO CANAL ROW LINES- REMOVE EXISTING FENCE WITHIN CANAL ROW.
Existing Chain Link Fence
Existing Irr. Gate
Existing Irr. Bolted Weir
Existing Irr. Bolted Weir
Existing Irr. Bolted Weir

RECORD DRAWING

SHEET 6 OF 42

CORRALES MAIN CANAL
STA 657+00 TO 672+00

MATCH LINE STA. 672+00

MATCH LINE STA. 657+00

SHEET 7

SHEET 5

PROFILE

PLAN

SCALE: 1" = 50'

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

BOHANNAN HUSTON INC. ASSOCIATES

DESIGNED
DRAWN
CHECKED
QUALITY CHECKED
SUPERVISOR
STRUCTURE: MORALES/CHAVEZ

DATE

BY

NO

REMOVE EXISTING CMC

NEW 6' CHAIN LINK FENCE

NEW 12' ACCESS GATE

NEW 6' CLEAR CURVE

NEW 8' REMOVAL EASEMENT

NEW 12' ACCESS GATE

NEW 6' CLEAR CURVE

NEW 8' REMOVAL EASEMENT

NOTE: R.O.W. width as shown on layout drawing (C23-24) is not a uniform 100.00 feet. MRGCD deeds show a uniform 100.00 feet R.O.W. width.

CONTROL MONUMENTS

MONUMENT	NORTH	EAST	ELEVATION	COMMENTS
1270	1,519,010.555	374,496.841		NOTE 2
1271	1,519,069.964	374,416.910		NOTE 1
1277A	1,519,211.671	374,484.080		NOTE 2
1285	1,519,138.700	374,413.442		NOTE 2
1303	1,518,241.811	373,926.565		NOTE 1
13IIA*	1,518,302.537	373,846.856		NOTE 1

NOTE 1
All monuments Dennis Diamond w/RCCD 8 W.W. Pipes found, one #4 monument 6" Pipes by disc stamped, with some Notations as other Monument

NOTE 2
All monuments are 2 1/2" Aluminum Pipes Stamped 8 Assoc. PLS 5217 CMC = Concrete Monument Number, Set on 1'x3' Pipe with Concrete with Finish Ground, with 6' Steel Fence 1' Above Ground as Accessory

MRGCD Bipolar 2" Galv Pipe with 2 1/2" Cap Stamped "R.O.W."

Survey of Tracts 1 & 2 in W½ NW¼ Sec 13 No 4071 Gate Jewell, NM 13 No 4071 (1986) (Not Recorded)

Scale: 1" = 50'

"SCANLON ASSOCIATES"

PLAN	DATE	BY
SURVEYED		
PLOTTED		
DRAWN	CHECKED	
QUANTITIES	CHECKED	
SHEET SHEETS NO.		

PROFILE	DATE	BY
SURVEYED		
PLOTTED		
DRAWN	CHECKED	
QUANTITIES	CHECKED	
NOTE BOOK NO.	SHEET NUMBERS CHKD	

ARCHEOLOGICAL SITE
DO NOT DISTURB

NOTE: DO NOT DISTURB THIS TREE. PLACE SHOTCRETE CHANNEL LINING AROUND TREE TRUNK

Survey of Tracts 1 & 2 in W½ NW¼ Sec. 19 by Gale Jewel NM LS No. 4071 (Jan. 1986) (Not Recorded)

Scale: 1" = 50'

"Rhonda" N 1,518,052.055 E 375,738.1034

STA 672+85.0 32' DIA. SHOTCRETE CHANNEL LINING

STA 672+85.0 CMC FROM CANAL

MATCH LINE STA. 672+00

MATCH LINE STA. 687+00

675+00

680+00

685+00

HV-37 N=1,518,027.74 E= 373,765.29

HV-38 N=1,517,868.58 E= 373,698.60

HV-39 N=1,517,180.46 E= 373,544.43

HV-40 N=1,516,683.50 E= 373,578.40

1304 PC

1305 PT

1312

1313A

1324 PT

1325 PC

1333

1334A

R=236.50' L=71.92' Δ=17°25'52"

R=336.50' L=102.39' Δ=17°25'52"

R=236.41' L=69.70' Δ=16°59'00"

R=336.41' L=97.76' Δ=16°39'00"

312°58'17"W 501.81'

312°58'17"W 80.37'

312°58'17"W 421.44'

S05°41'07"E 635.51'

S05°41'07"E 635.25'

S05°41'07"E 635.31'

PT - 1334A N06°41'11"E FROM POINT 1334-A

PT - 1334 N06°41'04"E FROM POINT 1313A

COR TRACT 1

COR TRACT 2

R.O.W.

Grade to Drain in Canal R.O.W.

Existing 3' Dia. Tree

Stn 686+52 End Shotcrete Start Thurmond Shotcrete

BEARING BASED ON PT to PC LINE ACROSS PLAT-SURVEY BOUNDARIES

ANNEXATION PLAT FOR MANN TRACTS C2G-10

Future Sediment Pond & Berm

36" RCP OUTLET FROM P. CDAR MARCADANTE SE 6 DET. M.H.'S SHEETS 28 & 29

STA 673+30.0 RT - BUILD 6.0' WIDE SIDE INLET STRUCTURE TO BE 673+85.0 BUILD 12.0' WIDE CLASS 'A' GROUTED RIP RAP W/12" GRANULAR BEDDING IN CANALSEE DETAILS FOR GRADES & DIMENSIONS SHEETS 25 & 26

STA: 680+69.5 Rt - BUILD 16.0' WIDE SIDE INLET STRUCTURE USE "TINTED CONCRETE" SEE DETAILS SHEETS 25, 26

2G Stake N 1,517,231.26 E 373,538.26

N 1,517,500

N 1,517,000

E 374,000

E 373,500

E 373,150

℄ CURVE DATA

R= 286.48'
L= 87.22'
T= 43.93'
Δ= 17°26'36"
Chord= 86.88'
Chord Brg.= S 21°41'36"W

℄ CURVE DATA

R= 286.48'
L= 83.28'
T= 41.94'
Δ= 16°39'25"
Chord= 82.99'
Chord Brg.= S 04°38'36"W

CONTROL MONUMENTS

MONUMENT	NORTH**	EAST**	ELEVATION	COMMENTS
1304	1,517,980.942	373,773.421		NOTE 2
1305	1,517,914.339	373,746.919		"
1312	1,518,031.568	373,687.183		"
1313A*	1,517,938.793	373,649.323		NOTE 1
1324	1,517,151.709	373,581.432		NOTE 2
1325	1,517,219.943	373,586.970		"
1333	1,517,242.379	373,499.519		"
1334A*	1,517,142.563	373,480.671		NOTE 1

NOTE 1
All "A" Monuments Denote Original M.R.G.C.D. R.O.W. Pipes Found, and Re-Monumented in Place by Arc Metals, with same Materials as other Monument

NOTE 2
All Monuments are 2 1/2" Aluminum Caps Stamped "Scanlon & Assoc." P.L.S. 15177 "CMC" with Appropriate Monument Number, Set on 1 1/2" Pipe in a 3' Concrete Collar, Flush with Ground, with 6' Steel Fence Post Angle as an Accessory

NOTE 3
M.R.G.C.D. approx. 2" Galv. Pipe with 2 1/2" Cap Stamped "R.O.W."

* Not at property line according to adjoining analysis on or survey plat.

** The coordinates shown on this sheet are local coordinates for this project based on ground distances and State Plane bearings. See Sheet 2 for a table of local and SP State Plane Coordinates for selected control points.

Profile of Ridge Line between West Side Canal Bank and West R.O.W.

Profile of Ridge Line between West Side Canal Bank and West R.O.W.

STA 672+85.0 END RIP-RAP TRANSITION - BEGIN SHOTCRETE CHANNEL (TYPE 'B')

TOP OF NEW EARTH CHANNEL

TOP OF NEW SHOTCRETE & NEW EARTH EMBANKMENT - (EAST SIDE)

E 93.10 W 93.76 EL=93.76

E 93.24 W 94.04 EL=92.90

E 93.60 W 94.93 EL=92.40

Top of Existing East Embankment

Existing Ground Elev. at West R.O.W.

Top of Existing Canal - West Side

Top of Existing Canal - East Side

Side Inlet Structure

CWSEL

CWSEL (Flood)

CWSEL (Irrig.)

Q100 = 305 cfs V100 = 3.83 ft./sec.

Q100 = 305 cfs V100 = 3.94 ft./sec.

Q100 = 305 cfs V100 = 3.65 ft./sec.

Remove Existing 48" Dia. CMC

INV: 85.15

85.75

85.34

85.80

85.29

85.51

84.87

84.90

84.76

84.57

0.25' Typ.

BOTTOM OF NEW SHOTCRETE CHANNEL (TYPE B)

Bottom of Existing Earth Channel

FILL

Placed Additional Fill Ro: Archeological Site East & West Side

STA 672+00 END EARTH CHANNEL (TYPE 'A') BEGIN RIP RAP TRANSITION

STA 672+84 -/+ 3' x 99'

Cut-off Wall

STA 686+53 End Shotcrete Begin Fibermesh Shotcrete

SHEET 6

SHEET 8

4996
4994
4992
4990
4988
4986
4984
4982
4980

672 673 674 675+00 676 677 678 679 680+00 681 682 683 684 685+00 686 687

CORRALES MAIN CANAL STA. 672+00 TO 687+00

SHEET ___ OF ___

RECORD DRAWING

RECORD DRAWING

CONRAILS MAIN CANAL
STA 701+00 TO 713+16.44

SHEET 9-RL OF 42.46

NO	DATE	REVISIONS REMARKS	BY

MATCH LINE STA. 701+00.00 SHEET 8

STA 701+23.0 END TYPE "D" CHANNEL BEGIN BOX CULVERT

STA 704+27.0 END BOX CULVERT BEGIN TYPE "E" CHANNEL

STA 705+00 BEGIN TYPE "D" CHANNEL

STA 707+00 END TYPE "D" CHANNEL

STA 711+44 REINFORCED CONCRETE SIDE OUTLET CHANNEL - SEE DETAILS SHT 44 OF 46

STA 712+50 REINFORCED CONC. STOP BLOCKS - SEE PLAN ABOVE

STA 713+16.44 BEGIN HINGWALLS

STA 712+47.30 END DROP STRUCTURE BEGIN TRANSITION CURVE

STA 712+57.30 BEGIN CHANNEL DEPTH TRANSITION

STA 711+00 END TRANSITION

STA 710+90 BEGIN TRANSITION

STA 713+16.44 BEGIN CONCRETE OVER CAUTE

BEGIN DROP STRUCTURE

Existing Ground @ & Drop Structure

Bottom of Existing Concrete Channel

Top of Existing Concrete Channel

SEE CONSTR. NOTE ON PLAN ABOVE

Slope = 0.00032 ft/ft

Slope = 0.00038 ft/ft

Slope = 0.00032 ft/ft

Slope = 0.00032 ft/ft

Slope = 0.00032 ft/ft

Q100 = 3.07 cfs

Q100 = 3.10 cfs

Q100 = 3.35 cfs

Q100 = 2.88 ft./sec.

Q100 = 4.07 cfs

V100 = 4.07 ft/sec

V100 = 3.10 ft/sec

INV = 83.14

INV = 83.54

CWSEL (Flood)

CWSEL (Fltg)

CWSEL

CWSEL (Flood) with stop blocks removed

CWSEL (Flood) with stop blocks in place

CWSEL (Fltg) with stop blocks in place

CWSEL (Fltg) with stop blocks removed

TOP OF NEW CONCRETE CHANNEL & EMBANKMENT

TOP OF NEW EARTH EMBANKMENT & TOP OF NEW CONCRETE CHANNEL

TOP OF EXISTING CONCRETE CHANNEL

Top of Existing East Embankment

Existing Ground Elev. at West R.O.W.

Existing Wood Fence

Existing Wire Fence

Existing Chain Link Fence

Existing Rail Road

Existing Utility Pole

Existing Guy Wire

Existing Gate

Existing Concrete Drop

Existing Concrete Structure

Existing Concrete Wall

Existing Concrete Headwall

Existing Concrete Apron

Existing Concrete Curb

Existing Concrete Sidewalk

Existing Concrete Steps

Existing Concrete Pad

Existing Concrete Footing

Existing Concrete Foundation

Existing Concrete Slab

Existing Concrete Pier

Existing Concrete Abutment

Existing Concrete Retaining Wall

Existing Concrete Culvert

Existing Concrete Bridge

Existing Concrete Tunnel

Existing Concrete Aqueduct

Existing Concrete Flume

Existing Concrete Weir

Existing Concrete Spillway

Existing Concrete Stilling Basin

Existing Concrete Energy Dissipator

Existing Concrete Baffle Blocks

Existing Concrete Chute Blocks

Existing Concrete Sill

Existing Concrete Transition

Existing Concrete Wingwall

Existing Concrete Cutoff Wall

Existing Concrete Key Wall

Existing Concrete Shear Key

Existing Concrete Construction Joint

Existing Concrete Expansion Joint

Existing Concrete Contraction Joint

Existing Concrete Reinforcement

Existing Concrete Steel

Existing Concrete Rebar

Existing Concrete Mesh

Existing Concrete Tie

Existing Concrete Strut

Existing Concrete Brace

Existing Concrete Column

Existing Concrete Beam

Existing Concrete Girder

Existing Concrete Slab

Existing Concrete Deck

Existing Concrete Pavement

Existing Concrete Sidewalk

Existing Concrete Curb

Existing Concrete Gutter

Existing Concrete Median

Existing Concrete Island

Existing Concrete Traffic Barrier

Existing Concrete Guardrail

Existing Concrete Fence

Existing Concrete Wall

Existing Concrete Building

Existing Concrete Structure

Existing Concrete Foundation

APPENDIX C

SEDIMENT CONTROL POND DESIGN

- **A design procedure to size a sediment control pond**

  - **Sediment control pond design example**

A DESIGN PROCEDURE TO SIZE A SEDIMENT CONTROL POND

GENERAL ASSUMPTIONS

1. The design procedure presented here is for sizing a sediment control pond and does not account for water and sediment routing to reduce flows to a specified allowable discharge. This procedure accounts for sediment deposition based on the following assumptions and criteria:

A. Minimum Sediment Storage Capacity:

- For storage of sediment that will collect during a storm event

  Design basis: 50% of Q_{100}

- For areas with 0 to 10 percent impervious area:

  Sediment Storage = 134 cubic feet/acre watershed

- For areas with 10 to 65 percent impervious area:

  Sediment Storage = (154 - 2 x % IMP) cubic feet/acre watershed

- For areas with 65 to 100 percent impervious area:

  Sediment Storage = 24 cubic feet/acre watershed

Sediment storage is based on the following:

Pacific Southwest Inter-Agency Committee (PSIAC) Method with:

Rating = 65 @ 10% Imp
Average Annual Sediment Yield = 0.75 acre-feet/sq.mi.
100-year Sediment Yield = 3.75 acre-feet /sq.mi.

Rating = 25@ 65% Imp
Average Annual Sediment Yield = 0.2 acre-feet/sq.mi.
100-year storm sediment yield = 1.0 acre-feet/sq.mi.

and on the following estimates of sediment bulking factors for a 100-year storm event.

B.F. = 1.15 at 10% IMP or Sediment 28.3% by weight
B.F. = 1.008 at 65% IMP or Sediment 2.0% by weight

Alternate procedures: Use the details identified in AMAFCA's Sediment and Erosion Design Guide (1994). Use a minimum of 24 cubic feet per acre to account for sediment accumulation from wind-generated sediment and local debris accumulation.

B. Control of Retention Time to Drop Coarse Silt:

Minimum Fall Velocity = 0.002ft/sec
Length of Pond (ft) = ((depth(ft)/fall velocity/(ft/sec)) x horizontal velocity (ft/sec)
Pond Area (sq.ft.) pond inflow (cfs)/full velocity (ft/sec)
Use pond inflow based on 50% of Q_{100}

C. Control of Pond Velocities:

Maximum horizontal velocity = 0.5 ft/sec
Min pond depth(ft) = pond inflow (cfs)/pond width (ft)/max horizontal velocity (ft/sec)
Use pond inflow based on 50% of Q_{100}

COMPUTATION PROCEDURE BASED ON EFFECTIVE FLOW ASSUMPTIONS

Two slightly different computation procedures are provided based on the effective flow area in the sediment pond area relative to the inlet width and the pond width (perpendicular to the flow direction).

If the inlet width is approximately the same as the pond width, or a baffle as shown in Figure 1 is used to spread the flow to the pond width, the entire pond width may be assumed as effective flow (Goldman, Steven, J., Jackson, Katherine, Bursztynsky, Taras A., 1986). However, if the inlet flow width is narrow in comparison to the pond width, and a baffle is not used to spread the flow, the effective flow width may be assumed to occur at 12 1/2 degrees. (Resource Consultants, Inc., November 1994). The latter assumption implies that sediment deposition will only occur in the effective flow area because the ineffective flow areas may be assumed to have zero velocity and therefore the sediment will not be transported to those areas for deposition. Additional baffles may be used to expand the effective more rapidly than would be implied by the 12% expansion.

The computation procedures for both conditions are provided here to accommodate full effective flow and partial effective flow pond areas, the slight difference in computations between the two conditions is noted in Step 2.

<u>Sediment Trap Ponds with Full Effective Flow and Partial Effective Flow</u>

1. Compute required pond surface area:

$$As = Qw/Vs$$

where:

As = required pond surface area (sq ft)
Qw = water discharge (cfs)
Vs = fall velocity of sediment (ft/sec)

2. Compute pond length (L) based on width (W) or, pond width (W) based on length (L) per the required pond surface area (As):

For Full Effective Flow:

$$L = As / W \qquad W = As / L$$

For Partial Effective Flow:

Assume an L and solve for W by the following equation:

$$W = L / 2.25 + As / L - L / 4.5$$

(Based on a trapezoidal shape at 12.5 degrees of flow expansion)

Note - The pond length should be greater than the pond width for best performance (sediment deposition)

3. Compute minimum pond flow depth (D_f) based on maximum horizontal velocity of 0.5 ft/sec. Note: 2 ft depth is recommended as a minimum because in shallow depths, deposited sediment will be more likely to be resuspended. In addition, this may allow for some assurance of capacity to accommodate periodic maintenance/sediment removal in the pond.

$$Df\ (min) = Qw / w / 0.5\ ft/sec$$

4. Compute volume of water:

$$VOLw = L\ W\ D = As\ D$$

5. Compute volume of sediment based on drainage area:

VOLs = area (ac) * 134 cu ft / ac	at 0< % Imp <10% or
VOLs = area (ac) * (154 - 2 * % Imp)	at 10% < % Imp <65% or
VOLs = area (ac) * 24 cu ft / ac	at 65% < % Imp < 100%

6. Compute total pond volume.

Add VOLs and VOLw to determine the total pond volume (VOL_T)

$$VOL_T = VOL_W + VOL_s$$

7. Compute the endsill height for sediment storage

$$Sill\text{-}h = VOL_s / A_s$$

THE SEDIMENT CONTROL POND HAS NOW BEEN SIZED FOR THE GIVEN CRITERIA AND ASSUMPTIONS

SEDIMENT CONTROL POND EXAMPLE

Basin Area = 0.01565 sq.mi = 10 acres
Qpeak = 32 cfs Qpeak @ 50% = 16 cfs = Q_w
Basin with 40% impervious Area

1. **Compute required pond surface area**

   $As = Q_w/V_s$
   As = (16 cfs)/(0.002) = 8,000 sq.ft.

2. **Compute pond length (L) based on width (W) and required pond surface area (As)**

   L=As/w try W = 75 ft
   L=(8,000 sq.ft.)/ (75 ft) = 107 ft

3. **Compute minimum pond flow depth**

   $D_f = Q_w / w / 0.5$
   D_f = 16 cfs / 75 ft / 0.5 ft = 0.43 ft use 2.0 ft

4. **Compute volume of water**

   VOLwater = LWD
   VOL water = (107 ft)(75 ft)(2 ft) = 16,050 cu.ft

5. **Compute volume of sediment based on drainage area**
   Use formula for 10% < % IMP < 65% for this example.

   VOLsediment = area (ac) * (154 - 2 * % Imp)
   VOL sediment = (10 ac)(154 - 2 * 40%) cfs/ac) = 740 cu.ft.

6. **Compute total pond volume**

   VOLt = VOLsediment + VOLwater = 16,050 + 740 = 16,790 cu.ft.

7. **Compute the endsill height for sediment storage**

   Sill -h = VOLs / As
   Sill -h = 740 cf.ft. / 8,000 sqft = 0.0925 ft use 3.0 inches = 0.25 ft.

8. **Pond dimensions: W = 75 ft. L = 107 ft. D = 2.0 + 0.125 = 2.125 ft.**
   End sill height = 1.25 inches (min)

THE SEDIMENT CONTROL POND HAS NOW BEEN SIZED FOR THE GIVEN CRITERIA AND ASSUMPTIONS

APPENDIX D

REFERENCES

Goldman, Steven, J., Jackson, Katherine, Bursztynsky, Taras, A., 1986. Erosion and Sediment Control Handbook. McGraw-Hill Book Company.

Resource Consultants, & Engineers, November 1994. Sediment and Erosion Design Guide. Albuquerque Metropolitan Arroyo Flood Control Authority.

Scanlon & Associates, Inc., 1986. Drawings for the Construction of North Coors Drainage Channel and Outlet Into the Rio Grande, Vicinity La Orilla Road. Albuquerque Metropolitan Arroyo Flood Control Authority.

Scanlon & Associates, Inc., October 19, 1984. Design Memorandum for the North Coors Drainage Management Plan Volume 1, Project Configuration - Hydrology - Right-of-Way - Cost Estimates. Albuquerque Metropolitan Arroyo Flood Control Authority.

Smith Engineering Company, May 30, 1995. Report on Stormwater Drainage for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo del Norte NW. Albuquerque Metropolitan Arroyo Flood Control Authority.

Smith Engineering Company, September 11, 1995. Report on Existing Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo del Norte NW. Albuquerque Metropolitan Arroyo Flood Control Authority.

Smith Engineering Company, August 9, 1996. Report on Existing Conditions for Revisions to the North Coors Drainage Management Plan - Middle Area. Albuquerque Metropolitan Arroyo Flood Control Authority.

Scanlon & Associates, Inc., April, 1985. North Coors Drainage Management Plan. Albuquerque Metropolitan Arroyo Flood Control Authority.

Coors Corridor Sector Plan, City of Albuquerque, Municipal Development Department, Planning Division, adopted by the City Council April, 1984.

APPENDIX E

- **Existing Conditions Report for Revisions to the North Coors Drainage Management Plan (text only)**

Smith Engineering Company

A Full Service Engineering Company

August 9, 1996

Mr. Larry Blair, P.E., Executive Engineer
Albuquerque Metropolitan Arroyo Flood Control Authority
2600 Prospect NE
Albuquerque, New Mexico 87112

Re: Existing Conditions Report for Revisions to the North Coors Drainage Management Plan
(Ref: SEC 195104)

Dear Mr. Blair:

In response to your request, we have prepared this plan which examines the existing drainage conditions for the area that encompasses the North Coors Drainage Management Plan-Middle Area. Our investigation required reviewing and updating the original Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) plan entitled "Design Memorandum for the North Coors Drainage Management Plan," dated October 19, 1994. Our plan also utilizes the "Report on Stormwater Drainage for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo-Del-Norte NW" (by C.E. Anderson, Smith Engineering Company, May, 30, 1995, and it's supplement titled "Report on Existing Drainage Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and PDN NW." Our research included an investigation of the development and facilities constructed in this watershed. From this data we created a new existing conditions watershed model. Another major element of our investigation was to determine the effect of 100-year peak flow runoff on the Corrales Main Canal. We were concerned with issues related to the capacity of the canal and the effect of existing conditions runoff being discharged to it. Our analysis of the canal included a updated HEC-2 model that includes cross-sections of the canal from the Calabacillas Arroyo to the La Orilla Outlet.

This submittal is a part of a project to prepare a plan amendment for the North Coors Drainage Management Plan. The existing conditions report was provided as a separate document in order to provide documentation for a Federal Emergency Management Agency (FEMA) flood insurance rate map revision application for the upstream Piedras Marcadas Dam. This FEMA application is being prepared for AMAFCA by another engineering consultant. A developed conditions report and plan revision is in progress and will be a future submittal to AMAFCA.

Sincerely,

Smith Engineering Company

Clifford E, Anderson, P.E., P.S.
Vice President

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

REPORT ON EXISTING CONDITIONS
for
REVISIONS TO THE NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA

Report Prepared for

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY (AMAFCA)

Prepared by:

Smith Engineering Company
6400 Uptown Blvd. NE, Suite 500 E
Albuquerque, New Mexico 87110
Tel: 505/884-0700

SEC #195104

This report was prepared by me, Clifford E. Anderson, NM PE & PS No. 6472. On May 30, 1996, I conducted an on-site review of this study area, and had in my possession the topographic maps of the area. It appears that a substantial quality of site grading has occurred that is not reflected on the existing topographic maps. Where possible, updated site plans were obtained from public agencies and used for this report. This plan reflects the information on current and proposed plans that we obtained. Because of the high level of ongoing development in the area, actual conditions in this watershed are changing and may continue to change.

Clifford E. Anderson 8/9/96

Clifford E. Anderson **Date**

NM PE & PS No. 6472

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FIGURES 1 and 2

APPENDICES A, B, and C

REPORT ON EXISTING DRAINAGE CONDITIONS
for
REVISIONS TO THE NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA

Introduction:

The North Coors Drainage Management Plan (NCDMP) Middle Area comprises 1.94 square miles of residential and commercial development located in the northwest sector of the City of Albuquerque. The existing drainage system within this area is governed by a previously adopted master plan entitled the "North Coors Drainage Management Plan," and the accompanying technical reports that are titled Design Memorandum. The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) is updating the North Coors Drainage Management Plan/Design Memorandum for the Middle Area, to provide future analysis and guidance regarding allowable discharge rates and capacity restrictions to the existing and future drainage facilities. Some of the existing facilities were planned and designed using older hydrologic criteria and may require additional discharge restrictions to safely convey flows generated under the current AMAFCA/City of Albuquerque/Bernalillo criteria. Hydrologic and hydraulic analyses were performed for existing conditions, and it was determined that the capacity of the existing facilities will be exceeded at three locations:

a. The existing detention basin within the Cactus Hills Subdivision on Congress Ave.,
b. The portion of the Corrales Main Canal from the Calabacillas Arroyo to the New Mexico State Highway Department (NMSHTD) concrete box culvert,
c. Inlet Structure at Black Ranch Tract 2 near the upstream entrance of the NMSHTD concrete box culvert.

Study Area:

The study area is located in the northwest sector of the City of Albuquerque. The area is bounded on the north by the Calabacillas Arroyo; on the south by La Orilla road; on the west by the Piedras Marcadas Dam Watershed, Eagle Ranch Road, and residential development; and on the east by the Corrales Main Canal. A vicinity map of the study area is shown in Figure 3.

Scope of Report:

This report includes the analysis of the existing drainage system and the evaluation of the present performance of this system. The study includes the following tasks:

- Data Collection and Review
- Evaluation of Existing Hydrologic Conditions
- Evaluation of Existing Hydraulic Conditions
- Coordination with Affected Parties and Agencies

Goals:

The purpose of this report is to assess the existing drainage system and provide recommendations for a drainage system which will mitigate existing conditions flooding in the Middle Area during the 100-year, 24-hour storm event. The results of the study will provide technical background data and conceptual ideas for future developed conditions analysis and for future design. This effort includes a hydrologic and hydraulic analysis of the existing drainage system, and an analysis of drainage improvements necessary to relieve or remove flooding caused by existing conditions. The hydrologic and hydraulic analysis of the future development and improvements necessary to accommodate future development are to be included in a separate volume.

Past Studies:

Many drainage studies addressing portions of the Middle Area have been conducted. These studies examine the effect of local development on hydrology, hydraulics, and storm drain systems. These studies have been reviewed by Smith Engineering Company (SEC), and a separate volume of these reference documents is included with this report. Where these studies included facilities that have been constructed at the time of this report, they are included in the updated hydrologic and hydraulic analysis. The following studies pertain to the Middle Area:

April 1996	- Paradise Golf Course - Easterling & Associates
March 1996	- Precision Tune Site - Per Se Engineering
February 1996	- Piedras Marcadas Spillway - Richard J. Heggen, P.E.
December 1995	- Eagle Ridge Apartments - Isaacson & Arfman
June 1995	- Riverfronte Estates - Brasher & Lorenz, Inc.
March 1995	- Kindercare Learning Center - Isaacson & Arfman
March 1995	- Riverside Animal Hospital - Tierra West Development
February 1995	- Sky Crest Estates - D. Mark Goodwin & Associates
January 1995	- Replat of a Portion of Albuquerque West, Unit 2 Lot C
July 1990	- Black Ranch Tract 3 - Easterling & Associates
February 1989	- Bosque Del Pueblo - Greiner Engineering
January 1986	- Coors 8-Pac - Bohannan-Huston, Inc.

Mapping:

New photographic mapping, dated July, 1996, was generated by Thomas R. Mann & Associates (TRM) for the purposes of this study. The new aerial photography was used to determine existing land use in the study area. Existing topographic mapping (2' contour interval from mapping) was used to assist in the delineation of drainage basins with supplemental field investigation and review of existing drainage plans. The mapped area is slightly larger than the study area and covers portions of 10 Zone Atlas sections. The mapping services provided for this study included:

- Preparation of 1"=500' scale mylar reproducible composite aerial photographs overlaid with existing 2' contours in a 24" x 36" format.
- Preparation of aerial photography and contact printing used to assess land use in conjunction with the hydrologic modeling effort and to aid in viewing planimetric features (housing, utilities, streets, etc.).

Area Construction:

The Middle Area of the North Coors Drainage Management Plan is impacted by the following constructed facilities that serve to alter historic flows.

1. The Corrales Main Canal was constructed in the early 1930's. Modifications and improvements have occurred to this channel since this time. Most significantly, in 1986, AMAFCA improved this channel with sections of earth lining, concrete and gunnite from the access road to the Southwest Polytechnic Institute to the La Orilla Outlet to the Rio Grande located 500 feet north of La Orilla Road. This AMAFCA project was the "North Coors La Orilla Outlet to the Rio Grande." Included within this construction were 2 concrete box culverts and several side inlet structures to convey flow to the canal from adjacent properties. The AMAFCA project included the accommodation of irrigation flows to the Corrales Main Canal and stormwater flows from upstream watersheds. The AMAFCA project also included a storm drain outlet that received flow directly from the Piedras Marcadas Dam.

2. Paradise Boulevard was constructed in the 1950's at the southern extent of Black Ranch Tract 2. Drainage from the west was conveyed along Paradise Boulevard, where it crossed Coors Blvd. and entered Black Ranch Tract 2.

3. Coors Blvd. NW was constructed in the 1940's and 50's approximately 500 feet

west of the Corrales Main Canal. There are culverts located along Coors that convey stormwater to various properties east of the road. The culverts commonly discharge directly onto the eastern side properties. See Figure 1 for the location of these culverts.

4. Irving Boulevard, constructed in the 1970's and 1980's, conveys some surface drainage from lands to the west to the intersection of Coors Blvd. From this intersection, the stormwater is conveyed southward along Coors Blvd, or is conveyed across Coors Blvd. and is then carried southward. All of the water that reaches the Coors Blvd./Irving Blvd. intersection is projected to reach Black Ranch Tract 2. This water is then conveyed to the Corrales Main Canal, where it enters the canal or flows over the canal.

5. The construction of Paseo-del-Norte and the grade separated intersection, constructed in 1987-1988, have further defined the drainage basin that existed with Paradise Blvd. The Paseo-del-Norte project also included construction of a six foot by ten foot (6'x10') Concrete Box Culvert (CBC) under Paseo-del-Norte along the alignment of the Corrales Main Canal. The CBC connects to the North Coors La Orilla Outlet, constructed by AMAFCA. Two 36-inch culverts were extended from Black Ranch Tract 2 to the CBC with the Paseo-Del-Norte Construction. The CBC carries both the irrigation flows of the Corrales Main Canal and the stormwater flows from upstream watersheds.

6. As a part of the Paseo-del-Norte project the NMSH&TD constructed a detention pond at the southwest corner of Paseo-del-Norte and Coors Blvd. This pond has approximately 3 ac-ft of storage. Flows from sub-basin 11.1 flow to this pond. This includes street flow from Paseo-del-Norte that is collected in catch basins upstream of the pond. There are two 30-inch culverts extended from this pond that discharge into the CBC.

7. The City of Albuquerque has constructed the Eagle Ranch Road Storm Sewer in the watershed west of Coors Boulevard and north of Paradise Boulevard. This storm sewer conveys stormwater to the Calabacillas Arroyo, located approximately 3/4 miles north of Coors/PDN intersection. The storm sewer provides a drainage outlet for significant upstream development, that would historically reach the Corrales Main Canal.

8. The City of Albuquerque has extended the paving of Eagle Ranch Road

approximately 1000 feet south of the All Saints Rd./Eagle Ranch intersection. The paving of this road has also included the construction of curb and gutter. The properties to the west of this section of Eagle Ranch now drain to the Piedras Marcadas Dam.

9. In the historic basin 11.2E there is a storm drain with catch basins that tie in directly to the CBC at the Corrales Main Canal. There are two catch basins located on either side of Coors Blvd at the low spot between Paseo Del Norte and the road to the Southwest Indian Polytechnic Institute (SIPI). There is also two catch basins along a private road that drains to the Corrales Main Canal.

10. The Alban Hills area located west of Coors Boulevard has developed at a rate that is consistent with the Coors Corridor Sector Plan. Discussions with local home owners of the Alban Hills area indicate that the subdivision will not likely exceed a development density of one dwelling unit per five acres because of existing building covenants for the subdivision. Existing aerial photography shows that this density has not been exceeded.

11. There is significant residential and commercial development that has occurred and is occurring in the historic watershed. Many of the developments include detention ponds to collect stormwater and release it at a controlled rate. These flow restrictions are imposed by the allowable discharge requirements of the existing North Coors Drainage Management Plan. Developments located above the Eagle Ranch Road Storm Sewer frequently include storm water connections directly to the storm drain because this facility was designed to accommodate unrestricted discharge.

12. The design criteria for the North Coors La Orilla Outlet and restrictions in the North Coors Drainage Management Plan have placed control of sediment requirements on upstream development. Developments that drain to the North Coors La Orilla Outlet must meet the following criteria:
Minimum Pond Storage = 0.0024 acre-ft per acre of upstream drainage basin
Velocity of Sediment Fall = 0.002 ft/sec @ 50% of Q100 (Course Silt)
Max Horizontal Velocity in Sediment Pond = 0.5 ft/sec @ 50% of Q100
Retention Time in Pond (sec) = Depth of pond (ft) / 0.002 ft/sec
These restrictions minimize the sediment that can reach the canal during normal flow and flood conditions.

Hydrology Criteria:

The hydrologic analysis of the Middle Area utilizes the methodology of the City of Albuquerque's Development Process Manual - Volume 2, Design Criteria - Section 22.2, Hydrology, dated January 1993 (DPM 22.2). The principal design storm is the 100-year, 24-hour event. Rainfall depth was obtained from the NOAA Atlas 2 that is referenced in the DPM 22.2. The computer program, AHYMO (ver. 1/94) was used to compute the runoff for the study area. The AHYMO program utilizes a unit hydrograph procedure along with initial abstraction and uniform infiltration losses.

The COMPUTE NM HYD function of AHYMO was used to generate sub-basin hydrographs for the watershed. The ROUTE MCUNGE function was used for arroyo and channel routing; this function utilizes the Muskingum Cunge methodology.

The time-to-peak (Tp) for each sub-basin was computed using the SCS Upland Method for sub-basin reach lengths less than 4,000 feet. Where the subbasin reach length was greater than 4,000 feet, the time-to-peak was calculated using the transition equation as described in the DPM 22.2. Flow paths generally followed existing streets, natural drainage paths, swales, and/or parking lots. Numerous existing retention and detention ponds were included in the hydrologic model where field inspection indicated that the ponds were in place and functioning. In some cases, additional field measurements were required to verify pond volumes and discharge sizes.

Description of Drainage Area

The Middle Area of the North Coors Drainage Management Plan comprises a drainage basin of about 1.94 square miles. The majority of the watershed is within the City of Albuquerque limits. The southwest portion of the study area is outside the City limits and falls under the jurisdiction of Bernallilo County. The Corrales Main Canal borders the study area on the east and is the major drainage channel within the watershed. The Corrales Main Canal has a seasonal base flow of 38 cfs used for irrigation purposes. The base flow in the canal is controlled by a gate diversion structure and inverted siphon upstream of the Calabacillas Arroyo, at the north boundary of the study area. These upstream facilities are designed so that any irrigation flows in excess of 38 cfs must flow directly to the Rio Grande and cannot be conveyed to the study area.

The drainage basins from the North Coors Drainage Management Plan were reviewed with this study. On-site observation of the development and drainage facilities was performed to evaluate changes to existing conditions not reflected by the North Coors Drainage Management Plan. Even the contributing watershed area required reassessment. The North Coors Drainage Management Plan

topographic mapping did not reflect most of the new development and it was necessary to obtain drainage plans for the developments from the City of Albuquerque and AMAFCA records. The drainage basin analysis for the "Report on Existing Drainage Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo del Norte (Anderson, 1995) served as a primary resource for the drainage basin analysis. This was supplemented by the report entitled "Paradise Golf Course Drainage Plan," Easterling & Associates, 1996. Additional changes in the watershed development made subsequent to these reports were incorporated into the hydrologic model. A total of 38 drainage plans and reports were used for this study. These reports define the development that has occurred in the entire watershed. Some of the record plans needed for this study were based on hydrology developed prior to the adoption of the Chapter 22.2, Hydrology in 1993. Therefore, it was not deemed appropriate to use the flow rates published in these reports. Instead, flow rates were established by the currently approved procedures using the AHYMO computer program with the sub-basins modeled to simulate the physical conditions described in the reports. Where future land uses, grading and facilities were described in the reports but were not actually constructed at the time of this report, they were not included in the existing conditions modeling. The new model contains 59 sub-basins, and 13 existing stormwater detention ponds. Whenever possible, these sub-basins included multiple basins identified in the existing drainage plans. Upon executing the 100-year rainfall simulation with the model, locations were identified where flows divided so that some flow went to constructed facilities, up to the designed limit, then any excess flows were carried overland to other sub-basins. Modeling identified 12 locations in the watershed where this divided flow condition occurs. At 3 locations of the 12, the flows divide so that flow is carried out of the watershed study area. This occurs at Hyd No. Overfl.2 (discharges onto Black Ranch Tract 12), CB6.73 (discharges to Calabacillas Arroyo), and CB9.1 (pipe flow in existing 60" SD to Calabacillas Arroyo). It is expected that the divided flows are a consequence of applying current hydrologic criteria to existing facilities designed and constructed under earlier criteria.

The recently developed Riverfronte Estates is located immediately upstream of the Corrales Main Canal at the northeast extent for the basin boundary. This development required that "each lot shall be graded such that all stormwater generated on site and on the adjacent street paving shall be contained in on-site ponding." There is active construction at this location, and it was not possible to verify compliance with these requirements from visual observation of the site. If the ponding condition is not met, there will be an increased chance of overtopping the Corrales Main Canal and flooding of lands to the south. Because of existing channel capacity restrictions, any ponding deficiency at Riverfronte Estates will not impact the existing condition flows in the Corrales Main Canal south of Paseo del Norte. Hydrology for this report assumed that the Riverfronte Estates ponds were in place and functioning.

The most severe case of divided flow is at the existing detention pond within the Cactus Hills

Subdivision on Congress Avenue. This pond does not have the capacity for the flows that reach it. It was determined from the model that approximately 171 cfs bypasses this pond and continues down Congress Avenue to Irving Blvd. and Eagle Ranch Road. These flows eventually make their way to the natural shallow ponding area on Black Ranch Tract 2. A percentage of this flow is then detained in the pond and discharged to the concrete box culvert. The remaining flow then overtops the ponding area and discharges over the embankment into the canal. The current capacity of this canal is approximately 91 cfs. The base flow in the canal must be added to the amount of stormwater flow that will reach it during a 100-year storm event. Therefore, it is expected that the canal will fill to its capacity, and then any additional flow will overtop the canal and discharge onto Black Ranch Tract 12. It was determined from the modeling that 4 acre-ft with a peak flow of 53 cfs will reach Tract 12. This poses a problem for the stability of the canal and for potential damage at Tract 12. Black Ranch Tract 12 is currently undeveloped and a 100-year storm would probably cause moderate soil disturbance and local retention ponding. As for the canal, there is the possibility of bank failure, for the entire reach between the Calabacillas and Paseo-del-Norte. Bank failure could cause more flows to reach Tract 12 , but would lessen flows to the Corrales Main Canal. For the purposes of this study it is assumed that bank failure would not occur for any flows up to the bank flow condition, in order to determine the maximum existing flows to the Corrales Main Canal downstream of Paseo del Norte.

The City of Albuquerque is currently in the design phase of a Special Assessment District (SAD 224) project to mitigate some localized flooding problems in the vicinity of Congress Avenue, Irving Boulevard, and Eagle Ranch Road. The proposed improvements include expanding the Cactus Hills Subdivision detention pond storage by a factor of 1.6. This would increase the current capacity of the pond from 9.93 ac-ft to 16 ac-ft. The project also calls for a 66" outlet to be installed in the pond. The flows from the pond would then be diverted through the 66" pipe to the Calabacillas Arroyo. Given this situation, 170 cfs could be diverted out of the Corrales Main Canal watershed to the arroyo. This proposed project would reduce potential flooding along Congress Avenue, Irving Boulevard, and Eagle Ranch Road. Existing flows to Black Ranch Tract 2 would be reduced by only 6 percent as a result of the upstream pond expansion, however th volume of existing conditions runoff would be reduced by 33 percent. These lower flows would also reduce the potential for overtopping flows to Tract 12.

The "Report on Existing Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo-del-Norte NW," included the sizing of a 8.7 acre-ft pond at Black Ranch Tract 2. With the proposed upstream Cactus Hills pond improvements in place the existing conditions pond at Tract 2 would be receive a peak flow of 187 cfs and a volume of 23.8 ac-ft. Additional runoff caused by future development would generate additional runoff to this pond.

The existing conditions model reflects the level of development that currently exists in the Middle Area of the North Coors Drainage Management Plan. With the use of all available drainage plans and reports, and based on 5 site visits, the model should closely represent the existing conditions in the watershed.

Computer printouts of the input files and output summary files for the Middle Area hydrology are contained in Appendix A. Figures 1 and 2 are basin maps showing the 59 watershed basins and main features. This analysis shows that 280 cfs of peak flow and 117 acre-feet of stormwater runoff would reach the La Orilla Outlet from a 100-year storm event.

Hydraulic Modeling:

A hydraulic model of the Corrales Main Canal was developed using the U.S. Army Corps of Engineer's water surface profile model, HEC-2 (Version 4.6.0, February 1991). The input for the existing conditions HEC-2 model was developed from construction drawings for the channel. The following as-built plans were used for the model: Corrales Main Canal STA 598+00-658+00, State of New Mexico-Middle Rio Grande Conservancy District (MRGCD), June 1933, Sheet #A-46.2; the North Coors Drainage La Orilla Outlet to the Rio Grande, Albuquerque Metropolitan Arroyo Flood Control Authority, October 1986, Sheets #5-9 of 46; and Paseo del Norte over Coors Boulevard-Corrales Canal, New Mexico State Highway Department, March 1986, Sheet #5-14. These plans were obtained from AMAFCA, MRGCD, and State Highway Department archives. The facilities described in these plans appear to be in place and functioning.

Results of Hydraulics:

Through the execution of the HEC-2 model, it was determined that there is at least two feet of freeboard in the channel from the 10'x6' concrete box culvert downstream to the La Orilla Outlet. Upstream of the NMSHTD box culvert there is not enough capacity within the channel for the 100-year flows. It was determined that the existing channel in this area has an approximate flowing-full capacity of 91 cfs. The flows entering the canal from basin 8.3 will exceed this rate and overtop the canal, overtopping depths average at 3.5 feet. A visual inspection of the canal determined that there is presently less than 2 feet of freeboard in this section of the channel. It is possible that adjacent properties to the south and east of the canal could experience flooding during the 100-year event due to general overtopping flows or a breach in the canal bank. The exact location for such flooding is difficult to predict due to the age and condition of the existing earth channel bank. The area of such flooding would be confined to the region east of the Corrales Main Canal and North of Paseo del Norte. For both the NMSHTD box culvert and, for the North Coors La Orilla Outlet, the HEC-2 analysis indicates that the 100-year existing condition flows are conveyed with not less than 2 feet

of freeboard. The existing condition design flows are less than the published design capacity of the designed facilities. These flow rates are summarized in the following table:

LOCATION	*STATION*	*DESIGN CAPACITY (2 FT FB)*	*Q100 EXISTING CONDITIONS*
Beginning of North Coors La Orilla Outlet Channel	643+33	263 CFS	197 CFS
Side Inlet Structure Basin 12 Discharge Point	661+00	273 CFS	182 CFS
36" RCP Outlet from Piedras Marcadas Dam	672+56	305 CFS	266 CFS
12' X 6' Concrete Box Culvert @ road to Roberson Ranch	706+24	330 CFS	316 CFS
Beginning of Drop Structure at La Orilla Outlet	713+75	365 CFS	280 CFS

The analysis of the flooding flows includes the irrigation flow as a base flow. At the upstream boundary of the study area an existing siphon-bypass structure diverts excess irrigation flows directly to the Rio Grande (the Calabacillas Outlet Structure) so that the irrigation flow rate is controlled to a maximum rate of 38 cfs. There is an existing channel check structure for irrigation flows located at station 699+97. This check structure was modeled in the fully closed position so that the highest expected water surface elevation is computed. When this check structure gate is opened, the water surface would be lowered.

The outlet pipe from the Piedras Marcadas Dam flows directly to the Corrales Main Canal in the

study area. This flow is controlled by a "normally closed" gate that is only opened when capacity in the Corrales Main Canal is available. Therefore, it is not necessary to include flow from the dam when modeling peak flows in the Corrales Main Canal.

Conclusions:

Downstream of Paseo-del-Norte, the Corrales Main Canal intercepts the 100-year existing condition flows that reach the canal. There are no known conditions that cause flows to cross over the canal. The Corrales Main Canal in this reach is designed to carry the expected 100-year discharge with not less than 2-feet of freeboard.

92127573

0002697

GRANT OF EASEMENT
UNDERGROUND STORM DRAINAGE WORKS
CORRALES MAIN CANAL EAST OF COORS

The undersigned grantors (Grantors), being the owners of the property described herein, for good and valuable consideration, the receipt of which is hereby acknowledged, do grant, bargain, sell and convey unto the ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY, a political subdivision of the State of New Mexico (Grantee), and its successors and assigns, the permanent right and easement to construct, operate and maintain a subsurface drain and appurtenances on, in, under, over and across the following described real estate.

The land in which the foregoing rights and easements are granted is located in the County of Bernalillo and State of New Mexico and is more particularly described in Exhibit "A" attached hereto and incorporated herein by reference.

TO HAVE AND TO HOLD the said right and easement for the uses and purposes aforesaid, unto the Grantee, its successors and assigns, except that any portion of the easement granted herein shall revert to the Grantors, their successors or assigns, as and to the extent said portion is declared unnecessary for flood control or drainage by the Board of Directors of the Albuqeurque Metropolitan Arroyo Flood Control Authority. Any reversion shall be conveyed by quitclaim deed.

THERE IS RESERVED to the Grantors, their successors and assigns, the right to use said lands for roadways, parking lots, open space, landscaping and other purposes which will not interfere with the rights and easements hereby granted.

AMAFCA covenants and agrees that it will reduce existing drainage and/or ponding easements affecting Grantor's properties that will be benefitted by AMAFCA's rights upon presentation to AMAFCA by Grantor of engineering studies reasonably acceptable to AMAFCA justifying such reduction. This covenant shall run with the land and inure to the benefit of Grantor's assigns and successors-in-interest to properties of Grantors that will be benefitted by AMAFCA's rights.

Grantors reserve and retain to themselves, their heirs, successors, assigns and grantees, the right to cross any of the lands described in Exhibit "A" for streets and roads, and to erect and construct, or permit others to erect and construct, bridges and crossings over and across easement area hereby granted, subject to required approval.

WITNESS our hands and seals this 10 day of December, 1992.

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

92 DEC 18 AM 9:54

92-30 2697
2712

JAMES M. LYNCH
CLERK & RECORDER
DEPUTY

William E. Black as Trustee
under the Last Will and
Testamant of June Black,
Deceased for benefit of
Gladys Black Smart

By: William E. Black
William E. Black

William E. Black as Trustee
under the Last Will and
Testament of June Black,
Deceased for the benefit of
Amy Gayle Black

By: William E. Black
William E. Black

William E. Black as Trustee
under the Last Will and
Testament of June Black,
Deceased for the benefit
of Sally Black Ruscitti

By: William E. Black
William E. Black

William E. Black as Trustee
under the Last Will and
Testament of June Black,
Deceased for the benefit
Randolph E. Black

By: William E. Black
William E. Black

William E. Black as Trustee
under the Last Will and
Testament of June Black,
Deceased for the benefit of
June Briscoe Groff

By: William E. Black
William E. Black

William E. Black as Trustee
under the Last Will and
Testament of June Black,
Deceased for the benefit of
Robert Briscoe II

By: William E. Black
William E. Black

Amy Gayle Black
Amy Gayle Black, a
single woman

Sally Black Ruscitti
Sally Black Ruscitti, a married
woman dealing with her sole
separate property

Randolph E. Black
Randolph E. Black, a married
man dealing with his sole and
separate property

June Briscoe Groff
June Briscoe Groff, a married
woman dealing with her sole and
separate property

Robert Briscoe II

Robert Briscoe II, a married man dealing with his sole and separate property

Jennifer L. Briscoe Spradlin

Jennifer L. Briscoe Spradlin, a a married woman dealing with her sole and separate property

William E. Black, as Trustee under Trust dated December 23, 1981 for the benefit of Warren A. Smart II.

By: William E. Black
William E. Black

Willaim E. Black, as Trustee under Trust dated December 23, 1981 for the benefit Kathryn Smart Morgan

By: William E. Black
William E. Black

William E. Black, as Trustee under Trust dated December 23, 1981 for the benefit of Sharon Smart Kellum

By: William E. Black
William E. Black

ACKNOWLEDGMENT AND ACCEPTANCE OF EASEMENT

The Albuquerque Metropolitan Arroyo Flood Control authority hereby accepts the foregoing Easement, on the terms and conditions set forth above and affirms its representations and agreements set forth above.

ALBUQUERQUE METROPOLITAN ARROYO
FLOOD CONTROL AUTHORITY

ATTEST:
Daniel W. Cook
Secretary-Treasurer

By: R. Ward Hunnicutt
R. Ward Hunnicutt
Its Chairman

0002700

ACKNOWLEDGEMENTS

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December, 1992, by William E. Black, Trustee of separate trusts established under the Last Will and Testament of June Black, Deceased for the benefit of Gladys Black Smart, Amy Gayle Black, Sally Black Ruscitti, Randolph E. Black, June Briscoe Groff and Robert Briscoe II, respectively.

My commission expires:

1/16/93

Shelley J. Mapstone
Notary Public

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December, 1992 by Amy Gayle Black, a single woman.

My Commission expires:

1/16/93

Shelley J. Mapstone
Notary Public

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December, 1992, by Sally Black Ruscitti, a married woman dealing with her sole and separate property.

My commission expires:

1/16/93

Shelley J. Mapstone
Notary Public

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December, 1992, by Randolph E. Black, a married man dealing with his sole and separate property.

My commission expires:

1/16/93

Shelley J. Mapstone
Notary Public

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December, 1992, by June Briscoe Groff, a married woman dealing with her sole and separate property.

My commission expires:

1/16/93

Shelley J. Mapstone
Notary Public

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December 1992, by Robert Briscoe II, a married man dealing with his sole and separate property.

My commission expires:

1/16/93

Shelley J. Mapstone
Notary Public

0002702

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December, 1992, by Jennifer L. Briscoe Spradlin, a married woman dealing with her sole and separate property.

My commission expires:

1/16/93 Shelley J. Mapstone
Notary Public

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

The foregoing instrument was acknowledged before me this 9th day of ~~November~~ December, 1992, by William E. Black, Trustee under Trusts dated December 23, 1981, for the benefit of Warren A. Smart II, Kathryn Smart Morgan and Sharon Smart Kellum, respectively.

My commission expires:

1/16/93 Shelley J. Mapstone
Notary Public

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

The foregoing instrument was acknowledged before me this 10 day of December, 1992, R. Ward Hunnicutt, Chairman of the Board of Directors of the Albuquerque Metropolitan Arroyo Flood Control Authority, a political subdivision of the State of New Mexico.

My commission expires:

24 May 96

OFFICIAL SEAL
ROGER FLEGEL
NOTARY PUBLIC - STATE OF NEW MEXICO
Notary Public Filed With Secretary of State
My Commission Expires 24 May 96

Notary Public

0002703

LEGAL DESCRIPTION - 15' STORM DRAIN EASEMENT

That certain parcel of land situate within the Town of Alameda Grant in projected Section 8, Township 11 North, Range 3 East, New Mexico Principal Meridian, Bernalillo County, New Mexico, being and comprising a portion of that portion of the Corrales Main Canal right of way relinquished by Quit Claim Deed filed June 30, 1988, in Volume D337A, page 73, as Document No. 8859156, more particularly described by survey performed by Russ P. Hugg, New Mexico Professional Surveyor Number 9750, on March 15, 1992, using New Mexico State Plane, Central Zone, (NAD27) grid bearings and ground distances as follows:

BEGINNING at the Northwest corner of the parcel herein described, being the Southwest corner of Lot 1, Northeast Portion of Black Ranch, as the same is shown and designated on the plat entitled "REPLAT MAP FOR TRACT C-2, NORTHEAST PORTION OF BLACK RANCH, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on June 15, 1989, in Volume C39, folio 88, a point on the Southeasterly right of way line of Coors Road N.W. (a 5/8" rebar and cap stamped LS 2455 found in place), whence (1) the New Mexico Highway Commission Control Monument "NM-448-N12" bears N 22° 55' 57" E, 645.42 feet distant, (2) the New Mexico Highway Commission Control Monument "NM-448-N11" bears S 35° 58' 00" W, 2732.70 feet distant, and (3) the Northwest corner of Tract 13, Black Ranch as the same is shown and designated on a Plat of Survey entitled " BLACK RANCH, BERNALILLO COUNTY, NEW MEXICO", prepared by Bohannan, Huston and Westman in July, 1976, said Tract 13 being further identified as Item 6 in the Deed of Distribution of Personal Representatives filed in the office of the County Clerk of Bernalillo County, New Mexico, on March 19, 1980, in Book D116A, pages 753 through 758(a 5/8" rebar and cap stamped LS 3517 found in place) bears S 33° 55' 48" W, 50.09 feet distant; Thence,

S 57° 10' 27" E, 233.42 feet along the Southwesterly line of said Lot 1 to the Southeast corner of said Lot 1 and the Northwest corner of the parcel herein described, a point on the Northwesterly right of way of the Corrales Acequia (a 5/8" rebar and cap stamped LS 2455 found in place); Thence,

S 34° 42' 46" E, 15.01 feet along said Northwesterly right of way line of the Corrales Acequia to the Southeast corner of the parcel herein described (a 5/8" rebar and cap stamped LS 9750 set); Thence,

N 57° 10' 27" W, 232.95 feet to the Southwest corner of the parcel herein described, a point on said Southeasterly right of way line of Coors Road N.W.(a 5/8" rebar and cap stamped LS 9750 set); Thence,

N 32° 49' 29" W, 15.00 feet along said Southeasterly right of way line of Coors Road N.W. to the Southwest corner of said Lot 1 and the Northwest corner and point of beginning of the parcel herein described.

Said parcel contains 0.0804 acre, more or less.

GENERAL NOTES

1. Bearings are grid, based on the New Mexico State Plane Coordinate System, Central Zone (NAD27), and rotated to grid between the New Mexico State Highway Commission Control Monuments "NM-448-N10" and "NM-448-N11". Said bearing between "NM-448-N10" and "NM-448-N11" being N 36° 58' 14" E.

2. All distances shown hereon are ground distances.

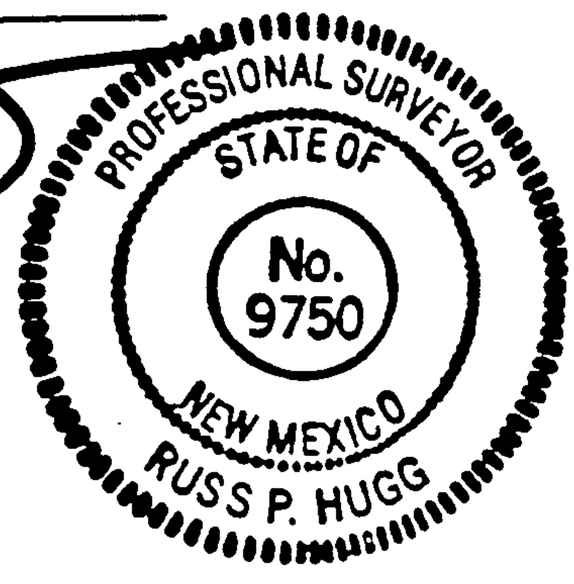
3. All corners are a 5/8" rebar and plastic cap stamped "HUGG LS 5823" or "HUGG LS 9750", unless otherwise indicated.

4. Recorded or unrecorded easements other than those which appear on recorde plats and are shown hereon, are not covered by this survey.

SURVEYORS CERTIFICATION

I, Russ P. Hugg, New Mexico Professional Surveyor Number 9750, hereby certify that this plat of survey was prepared from field notes of an actual ground survey performed by me or under my supervision; that it meets the Standards for Land Surveys in New Mexico as adopted by the New Mexico State Board of Registration for Professional Engineers and Professional Surveyors on August 24, 1989; that the bearings are based on the plat or deed of record unless otherwise indicated hereon; that it shows all easements shown on the plat or deed of record; that it shows all visible encroachments onto or from adjoining property or abutting streets with extent of such encroachment; that it shows the location of permanent improvements pertinent to the survey; and that it is true and correct to the best of my knowledge and belief.

Russ P. Hugg
NMPS No. 9750
July 10, 1992



0002706

N

Scale 1"= 100'

"NM-448-N12"

S15.42

ROAD

RANCH

BLACK

LOT 3

LOT 2C

LOT 2B

PORTION OF

COORS

N 22°33'37"E

LOT 2A

NORTHEAST

CD-02A

L96

L97

L95

L33

L35

ACEQUIA

L36

L94

297.66'

L51

LOT 1

L93

N39°21'27"E

L113

Point of Beginning

S57°10'27"E

N87°10'27"W

L116

L112

15'

L111

L 233.94

232.83

L114

L115

L92

L37

L50

L32

CORRALES

TRACT 14

30' STORM SEWER EASEMENT

L91

L90

CD-02B

L89

L31

L38

TRACT 13

TRACT 13

BLACK RANCH

(Unplatted)

BOSQUE DELL ACRES

C32

L39

CD-02C

TRACT 12

SURV-TEK, Inc.

6643 Paradise Blvd. N.W. Albuquerque, New Mexico 87114

Fax: 505-897-3377

Phone: 505-897-3366

LINE TABLE

LINE	DIRECTION	DISTANCE
L29	N18°44'36"W	225.09'
L30	N18°44'36"W	87.41'
L31	N30°41'34"E	100.13'
L32	N34°42'46"E	50.12'
L33	N48°59'03"E	159.51'
L34	S40°41'30"E	78.42'
L35	N64°06'57"E	178.29'
L36	S44°59'09"W	61.48'
L37	S39°30'48"W	256.04'
L38	S24°51'35"W	203.05'
L39	S01°13'50"W	65.74'
L40	S01°17'15"W	29.67'
L41	S07°18'42"W	154.25'
L42	S19°22'54"W	123.54'
L43	S66°21'09"W	55.25'
L44	S60°42'09"W	105.58'
L45	S40°26'24"W	127.00'
L46	S12°14'36"E	168.86'
L47	S01°06'48"E	191.18'
L48	S02°53'42"E	63.76'
L49	N54°42'24"W	63.94'
L50	N34°42'46"E	50.11'
L51	S44°59'09"W	149.98'
L52	S66°21'09"W	82.99'
L53	S22°25'59"W	6.87'
L54	N31°10'11"E	230.62'
L55	N31°10'11"E	49.81'
L56	N02°53'42"W	110.19'
L57	N02°53'42"E	196.69'
L58	N14°06'06"E	44.55'
L59	N04°53'26"E	109.86'
L61	S21°49'04"E	75.10'
L62	S22°10'28"E	50.11'
L63	S24°29'02"E	50.22'
L64	S16°22'10"E	50.05'
L65	N18°44'36"W	94.09'
L66	N00°17'47"W	48.82'
L67	S18°38'32"E	8.86'
L68	S67°28'49"E	13.25'
L69	N02°21'10"E	131.89'
L70	N21°11'01"E	158.23'
L71	N24°43'12"E	93.19'
L72	N26°09'10"E	75.16'
L73	N34°35'24"E	65.21'
L74	N34°44'35"E	181.15'
L75	N66°09'36"E	120.66'
L76	S81°49'56"W	84.50'
L77	N30°17'56"E	60.75'
L78	N 46°31'30"E	214.60'
L79	N 45°54'06"E	102.38
L80	S 50°15'56"W	214.15
L85	N11°31'13"W	49.03'
L86	N02°55'53"E	64.08'
L87	N14°50'30"E	46.04'
L88	N00°14'52"E	112.00'
L89	N19°56'32"E	42.89'
L90	N28°44'13"E	58.40'
L91	S57°10'27"E	10.00'
L92	N57°10'27"W	10.00'
L93	N37°16'03"E	138.88'
L94	N43°59'17"E	142.71'
L95	N41°51'33"E	93.28'
L96	N69°39'46"E	36.13'
L97	N62°35'27"E	45.00'
L98	N43°59'17"E	6.54'
L99	N43°59'17"E	11.13'
L100	N41°51'33"E	35.72'
L101	N69°39'46"E	44.81'
L102	S48°59'03"W	66.51'
L103	S48°59'03"W	93.00'
L104	S39°21'27"W	10.90'
L105	S39°21'27"W	140.93'
L106	S39°21'27"W	145.83'
L107	S57°10'27"E	14.57'
L108	S57°10'27"E	2.97'
L109	S44°56'31"E	13.60'
L110	S21°56'47"E	5.54'
L111	S48°59'03"W	66.51
L112	N 32°55'48"E	15.00'
L113	N 32°55'48"E	15.00'
L114	S 34°42'46"W	15.00'
L115	S 34°42'46"W	15.00'
L116	S 33°55'48"W	50.09'
L117	S 82°07'53"W	30.16'
L118	N 02°00'34"W	43.03'
L119	N 87°59'26"E	30.00'
L120	S 02°00'34"E	39.95'

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD	BEARING
C27	350.00'	159.85'	158.46'	S05°39'35"E
C28	805.00'	281.20'	279.78'	S17°25'54"W
C29	350.00'	334.10'	321.56'	S54°47'07"W
C30	335.00'	186.31'	183.92'	N66°11'55"E
C31	250.00'	184.86'	180.68'	N29°04'55"E
C32	218.11'	115.89'	114.54'	S15°28'13"W
C33	350.00'	62.06'	61.97'	S13°39'49"W
C34	350.00'	97.79'	97.47'	S00°34'47"W
C35	250.00'	79.71'	79.37'	S17°01'56"W
C36	250.00'	105.15'	104.38'	S38°12'57"W
C38	218.11'	44.88'	44.80'	S06°08'35"W

SURV-TEK, Inc.
6643 Paradise Blvd. N.W. Albuquerque, New Mexico 87114
Fax: 505-897-3377
Phone: 505-897-3366

0002708

LEGAL DESCRIPTION - 15' STORM DRAIN EASEMENT

That certain parcel of land situate within the Town of Alameda Grant in projected Section 8, Township 11 North, Range 3 East, New Mexico Principal Meridian, Bernalillo County, New Mexico, being and comprising a portion of Lot 1, Northeast Portion of Black Ranch, as the same is shown and designated on the plat entitled "REPLAT MAP FOR TRACT C-2, NORTHEAST PORTION OF BLACK RANCH, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on June 15, 1989, in Volume C39, folio 88, more particularly described by survey performed by Russ P. Hugg, New Mexico Professional Surveyor Number 9750, on March 15, 1992, using New Mexico State Plane, Central Zone, (NAD27) grid bearings and ground distances as follows:

BEGINNING a the Southwest corner of said Lot 1 and the Southwest corner of the parcel herein described, a point on the Southeasterly right of way line of Coors Road N.W. (a 5/8" rebar and cap stamped LS 2455 found in place), whence (1) the New Mexico Highway Commission Control Monument "NM-448-N12" bears N 22° 55' 57" E, 645.42 feet distant, (2) the New Mexico Highway Commission Control Monument "NM-448-N11" bears S 35° 58' 00" W, 2732.70 feet distant, and (3) the Northwest corner of Tract 13, Black Ranch as the same is shown and designated on a Plat of Survey entitled " BLACK RANCH, BERNALILLO COUNTY, NEW MEXICO", prepared by Bohannan, Huston and Westman in July, 1976, said Tract 13 being further identified as Item 6 in the Deed of Distribution of Personal Representatives filed in the office of the County Clerk of Bernalillo County, New Mexico, on March 19, 1980, in Book D116A, pages 753 through 758 (a 5/8" rebar and cap stamped LS 3517 found in place) bears S 33° 55' 48" W, 50.09 feet distant; Thence,

N 32° 49' 29" E, 15.00 feet along said Southeasterly right of way line of Coors Road N.W. to the most Northerly corner of the parcel herein described (a 5/8" rebar and cap stamped LS 9750 set); Thence,

S 57° 10' 27" E, 233.94 feet to the most easterly corner of the parcel herein described, a point on the Southeasterly line of said Lot 1 and the Northwesterly right of way line of the Corrales Acequia (a 5/8" rebar and cap stamped LS 9750 set); Thence,

S 34° 42' 46" W, 15.01 feet to the Southeast corner of said Lot 1 and the Southeast corner of the parcel herein described (a 5/8" rebar and cap stamped LS 2455 found in place); Thence,

N 57° 10' 27" W, 233.42 feet along the Southwesterly line of said Lot 1 to the Southwest corner and point of beginning of the parcel herein described.

Said parcel contains 0.0804 acre, more or less.

GENERAL NOTES

1. Bearings are grid, based on the New Mexico State Plane Coordinate System, Central Zone (NAD27), and rotated to grid between the New Mexico State Highway Commission Control Monuments "NM-448-N10" and "NM-448-N11". Said bearing between "NM-448-N10" and "NM-448-N11" being N 36° 58' 14" E.

2. All distances shown hereon are ground distances.

3. All corners are a 5/8" rebar and plastic cap stamped "HUGG LS 5823" or "HUGG LS 9750", unless otherwise indicated.

4. Recorded or unrecorded easements other than those which appear on recorde plats and are shown hereon, are not covered by this survey.

SURVEYORS CERTIFICATION

I, Russ P. Hugg, New Mexico Professional Surveyor Number 9750, hereby certify that this plat of survey was prepared from field notes of an actual ground survey performed by me or under my supervision; that it meets the Standards for Land Surveys in New Mexico as adopted by the New Mexico State Board of Registration for Professional Engineers and Professional Surveyors on August 24, 1989; that the bearings are based on the plat or deed of record unless otherwise indicated hereon; that it shows all easements shown on the plat or deed of record; that it shows all visible encroachments onto or from adjoining property or abutting streets with extent of such encroachment; that it shows the location of permanent improvements pertinent to the survey; and that it is true and correct to the best of my knowledge and belief.

Russ P. Hugg
NMPS No. 9750
July 10, 1992

PROFESSIONAL SURVEYOR
STATE OF
No. 9750
NEW MEXICO
RUSS P. HUGG

0002711

N

Scale 1"= 100'

"NM-448-N12"

615.42'

ROAD

RANCH

BLACK

LOT 3

LOT 2C

LOT 2B

PORTION OF

COORS

N 22°55'37"E

LOT 2A

NORTHEAST

CD-02A

L96

L97

L95

L33

L35

ACEQUIA

L36

L94

297.66'

L51

LOT 1

L93

L113

S57°10'27"E

N57°10'27"W

L116

L112

15'

L115

233.94'

232.83'

L114

L92

N39°21'27"E

L37

L50

L32

CORRALES

30' STORM SEWER EASEMENT

L91

L90

CD-02B

L89

L31

TRACT 14

TRACT 13

TRACT 1 3

BLACK RANCH

(Unplatted)

C32

L38

L39

CD-02C

TRACT 12

BOSQUE DELL ACRES

SURV-TEK, Inc.

5643 Paradise Blvd. N.W. Albuquerque, New Mexico 87114

Fax 505-897-3377

Phone: 505-897-3366

0002712

LINE TABLE

LINE	DIRECTION	DISTANCE
L29	N18°44'36"W	225.09'
L30	N18°44'36"W	87.41'
L31	N30°41'34"E	100.13'
L32	N34°42'46"E	50.12'
L33	N48°59'03"E	159.51'
L34	S40°41'30"E	78.42'
L35	N64°06'57"E	178.29'
L36	S44°59'09"W	61.48'
L37	S39°30'48"W	256.04'
L38	S24°51'35"W	203.05'
L39	S01°13'50"W	65.74'
L40	S01°17'15"W	29.67'
L41	S07°18'42"W	154.25'
L42	S19°22'54"W	123.54'
L43	S66°21'09"W	55.25'
L44	S60°42'09"W	105.58'
L45	S40°26'24"W	127.00'
L46	S12°14'36"E	168.86'
L47	S01°06'48"E	191.18'
L48	S02°53'42"E	63.76'
L49	N54°42'24"W	63.94'
L50	N34°42'46"E	50.11'
L51	S44°59'09"W	149.98'
L52	S66°21'09"W	82.99'
L53	S22°25'59"W	6.87'
L54	N31°10'11"E	230.62'
L55	N31°10'11"E	49.81'
L56	N02°53'42"W	110.19'
L57	N02°53'42"E	196.69'
L58	N14°06'06"E	44.55'
L59	N04°53'26"E	109.86'
L61	S21°49'04"E	75.10'
L62	S22°10'28"E	50.11'
L63	S24°29'02"E	50.22'
L64	S16°22'10"E	50.05'
L65	N18°44'36"W	94.09'
L66	N00°17'47"W	48.82'
L67	S18°38'32"E	8.86'
L68	S67°28'49"E	13.25'
L69	N02°21'10"E	131.89'
L70	N21°11'01"E	158.23'
L71	N24°43'12"E	93.19'
L72	N26°09'10"E	75.16'
L73	N34°35'24"E	65.21'
L74	N34°44'35"E	181.15'
L75	N66°09'36"E	120.66'
L76	S81°49'56"W	84.50'
L77	N30°17'56"E	60.75'
L78	N 46°31' 30"E	214.60'
L79	N 45°54'06"E	102.38
L80	S 50°15'56"W	214.15
L85	N11°31'13"W	49.03'
L86	N02°55'53"E	64.08'
L87	N14°50'30"E	46.04'
L88	N00°14'52"E	112.00'
L89	N19°56'32"E	42.89'
L90	N28°44'13"E	58.40'
L91	S57°10'27"E	10.00'
L92	N57°10'27"W	10.00'
L93	N37°16'03"E	138.88'
L94	N43°59'17"E	142.71'
L95	N41°51'33"E	93.28'
L96	N69°39'46"E	36.13'
L97	N62°35'27"E	45.00'
L98	N43°59'17"E	6.54'
L99	N43°59'17"E	11.13'
L100	N41°51'33"E	35.72'
L101	N69°39'46"E	44.81'
L102	S48°59'03"W	66.51'
L103	S48°59'03"W	93.00'
L104	S39°21'27"W	10.90'
L105	S39°21'27"W	140.93'
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CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD	BEARING
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5643 Paradise Blvd. N.W. Albuquerque, New Mexico 87114
Fax: 505-897-3377
Phone: 505-897-3366

AMAFCA

2600 Prospect Ave. NE
Albuquerque, NM 87107
Ph: (505) 884-2215
Fax: (505) 884-0214

LETTER OF TRANSMITTAL

To: City Planning, Development & Building Services

Attention: Richard Dourte, City Engineer

From: Lynn Mazur, AMAFCA Engineer

Date: January 19, 2010

Re: **NMDOT PdN / Coors Project Agreement**
City Project No. 800391

We are sending you __X____ Attached _____ Under separate cover via _____

Item No.	Quantity	Description
1.	1	Draft of Agreement with City/AMAFCA/Owner

REMARKS:

Attached is the final draft of the agreement for the referenced project. Note that I tracked only the most recent changes, including:

- Section 2 - Grant of permanent easements will be by plat. The temporary construction easements will be granted to AMAFCA by document.
- Paragraph 2.4 – Specify a time for replatting.
- Paragraph 3.4 – Remove City as co-obligee on DOT's contractor's warranty bond.
- Paragraph 3.6 – AMAFCA responsibility to rectify faulty workmanship with DOT.
- Paragraph 4.6 – City will not impose additional requirements for owner during replat.

I have also attached the exhibits. The exhibit for the City permanent easement (Exhibit C, Sh. 1) is not final. Does the City have dedication language that we can add to the exhibit? Note that the triangular piece in the upper left corner is not part of the Price REIT property, so it will not be part of this agreement. AMAFCA will coordinate separately with the apartment owner to vacate this piece of the easement and grant a new access easement by plat. Only a small portion of the existing easement is required for the access road to the Apartment Pond. We are not changing the size or location of the existing trail that will become the access road, but we discovered that the existing trail was built outside of the trail easement and is encroaching on the apartment property.

The exhibit for the AMAFCA permanent easement is not complete (Exhibit C, Sh. 2). This sheet is attached as a place-holder.

Action items to complete the draft agreement so that we can send it to the owner:

1. All – review and get comments to me. If we need to get together to go over it again, I am willing to do that.

2. City – provide easement dedication language.

3. AMAFCA – finalize permanent easements exhibit.

Cc: Kevin Curran, Assistant City Attorney
Marcus Rael, AMAFCA Attorney
Brad Bingham, City Hydrologist
Loren Hines, AMAFCA Real Estate Manager

AGREEMENT FOR GRANTING OF EASEMENTS, AND CONSTRUCTION, MAINTENANCE, TRANSFER AND ASSUMPTION OF THE PARADISE STORM DRAIN PROJECT

THIS AGREEMENT is made and entered into this _____ day of _____, 2010, by and among The Price REIT, Inc., a Maryland corporation ("PRICE"), the Albuquerque Metropolitan Arroyo Flood Control Authority, a political subdivision of the State of New Mexico ("AMAFCA"), and the City of Albuquerque, a municipal corporation ("CITY"), hereinafter referred to collectively as the "PARTIES."

RECITALS:

WHEREAS, AMAFCA has entered into an agreement with the New Mexico Department of Transportation ("NMDOT") to include construction of drainage facilities in the vicinity of the Paseo del Norte and Coors Boulevard interchange in a proposed NMDOT roadway improvements project; and

WHEREAS, AMAFCA engaged Smith Engineering Company, Inc. to design the drainage facilities and, during the design phase, identified drainage deficiencies in Paradise Boulevard and the PRICE property west of Coors Boulevard; and

WHEREAS, Smith Engineering performed a hydraulic analysis on existing and proposed drainage facilities as shown on Exhibit "A" and designed additional drainage structures, hereinafter referred to collectively as the "PROJECT", to improve the function of the drainage facilities in Paradise Boulevard and the PRICE property; and

WHEREAS, when the PRICE property was developed, the property owner granted a drainage easement to the CITY for two detention ponds and an underground storm drain system that receive both public and private storm water runoff and agreed to maintain the ponds and storm drain via document entitled "Grant of Easement Agreement and Covenant," recorded in

the Office of the County Clerk of Bernalillo County, New Mexico, on June 8, 1989, in Misc. Bk. 756A, Pages 165-170 as Document No. 8950271, and shown on the Plat for The Plaza at Paseo del Norte, Tracts A-1-A, A-2-A, A-3-A, A-4-A, B-1, C-1, D and E, recorded in the Office of the County Clerk of Bernalillo County, New Mexico, on February 27, 1997, in Volume 97C, Folio 65 as Document No. 97020510 ("Existing Easement"); and

WHEREAS, upon completion of the PROJECT, it is in the public interest for the CITY to maintain major drainage infrastructure that receives public water, and the CITY has the expertise, capacity and capability to assume maintenance of the storm drain, detention ponds and additional proposed facilities in the PROJECT; and

WHEREAS, additional permanent drainage easements and temporary construction easements are required for the PROJECT; and

WHEREAS, the PARTIES are agreeable to the construction of the PROJECT through AMAFCA's agreement with the NMDOT, the granting of easements and transfer of maintenance responsibilities to the CITY for the storm drain, detention ponds and additional proposed facilities in the PROJECT, subject to the terms, conditions, and schedule provided herein.

NOW THERERFORE, IN CONSIDERATION OF THE PROMISES AND COVENANTS CONTAINED HEREIN, THE PARTIES HERETO AGREE AS FOLLOWS:

SECTION ONE: PURPOSE OF THE AGREEMENT IS TO:

1.1. Provide for the granting of additional permanent drainage easement by PRICE to the CITY and AMAFCA and temporary construction easements by PRICE to AMAFCA.

1.2. Provide for the assumption of ownership and maintenance of the PROJECT by the CITY after PROJECT completion by NMDOT, including establishment of the responsibilities of each party for 1.) funding the construction, and 2.) maintenance of the facilities upon completion of the PROJECT.

SECTION TWO: PRICE AGREES TO:

2.1. Grant Temporary Construction Easements at no cost to AMAFCA~~,~~ as shown on Exhibit "A" and substantially in the form attached as Exhibit "B," for the construction of the drainage facilities in the NMDOT project and the facilities in PROJECT that is the subject of this Agreement.

2.2. Grant an additional permanent drainage easement by platting action at no cost to the CITY, as shown on Exhibit "A" and substantially in the form attached as Exhibit "C," for the facilities in the PROJECT.

2.3. Grant a permanent drainage easement by platting action at no cost to AMAFCA, as shown on Exhibit "A" and substantially in the form attached as Exhibit "~~D~~C," for the manholes and pipes adjacent to the Coors Boulevard right-of-way, which will be assignable at AMAFCA's option to the NMDOT. Said facilities are not part of the PROJECT or CITY maintenance responsibility.

~~2.4. Grant a temporary access easement at no cost to AMAFCA, its successors and assigns, substantially in the form attached as Exhibit "E," for access to the manholes adjacent to the Coors Boulevard right-of-way and to the Movie Pond until such time a permanent access easement is granted by the replatting action.~~

~~2.5.~~2.4. Apply for a vacation of the Existing Easement and replat to the CITY's Development Review Board ("DRB") within ? months of the date of this Agreement.

SECTION THREE: AMAFCA AGREES TO:

3.1 Provide for and fully fund the construction of the PROJECT, which funding shall be limited to:

a. Grading in the Apartment Pond and construction of a Ported Riser Water Quality Outlet Structure as shown on Exhibit "A".

b. Construction of a berm in the southern right-of-way of Paradise Boulevard and curb along the drivepad opening in the Paradise Boulevard cul-de-sac to direct storm water runoff to a rundown to the Movie Pond as shown on Exhibit "A".

c. Grading in the Movie Pond and construction of a Ported Riser Water Quality Outlet Structure and the installation of two hundred ninety (290) linear feet of 36-inch outlet pipe as shown on Exhibit "A".

3.2. Provide one (1) set of "As-Built" drawings to the CITY upon completion of the PROJECT in format as provided by the NMDOT.

3.3. Submit the construction drawings to the CITY Engineer for CITY approval. Approval shall not be unreasonably withheld by the CITY.

3.4. Ask that the NMDOT require its contractor to: 1.) name the CITY and PRICE as additional insureds with regard to public liability insurance in the amount of at least $~~1~~2,000,000.00; ~~2.) name the CITY as an additional obligee on the contractor's performance/warranty bond which bond will allow the CITY to make demand on the bond~~

~~within one year of the CITY's acceptance of the PROJECT for maintenance of the PROJECT;~~ and 2~~3~~.) obtain the proper barricading permits from the CITY.

3.5. Assure that the PROJECT is constructed in substantial compliance with the approved Construction Drawings and Contract Documents. AMAFCA will keep the CITY reasonably informed on all aspects of the PROJECT during construction, including, but not limited to, notification of all regular or special construction meetings, coordination on any modifications or change orders made during construction, and participation in the final inspection of the PROJECT.

~~3.5.~~3.6. Cause to be rectified with NMDOT any faulty workmanship on the PROJECT by NMDOT's contractor within one (1) year of completion of the PROJECT.

~~3.6.~~3.7. ~~Provide~~Prepare the plat ~~exhibits and legal descriptions~~ for all proposed easements and provide easement documents for the temporary construction easement~~ and permanent drainage easement in the adjacent to Coors Boulevard right-of-way.~~

~~3.7.~~3.8. Accept the temporary construction easement as conveyed by documents with legal descriptions and the permanent drainage easement adjacent to Coors Boulevard right-of-way as granted by plat from PRICE~~as conveyed by documents with legal descriptions.~~

SECTION FOUR: THE CITY AGREES TO:

4.1. Review and, if appropriate, approve construction plans for the PROJECT, CITY Project No. 800391.

4.2. Provide AMAFCA with any and all technical assistance as may be required by AMAFCA during the construction of the PROJECT.

4.3. Accept the permanent drainage easement from PRICE, as granted by plat, ~~conveyed by document with metes and bounds description~~ substantially in the form attached as Exhibit "C".

4.4. Provide an executed and approved Letter of Acceptance for the maintenance of the PROJECT to AMAFCA upon completion of the PROJECT, CITY Project No. 800391, and as-built certification by NMDOT.

4.5. Release the Existing Easement subject to a vacation action to be approved by the DRB.

~~4.5.~~4.6. Impose no additional impacts or requirements for PRICE for platting action at the DRB.

SECTION FIVE: PARTIES AGREE TO:

5.1. Cooperate in order to expedite the construction of the PROJECT.

5.2. If any situation arises which adversely affects any PARTY's participation in this Agreement, the affected PARTY will immediately notify the other PARTIES in writing.

5.3. If any circumstance arises which materially affects any provision of this Agreement, the PARTIES mutually agree to promptly and equitably resolve it, including executing an amendment to this Agreement if necessary.

5.4. If any claim or circumstance arises under the terms of this Agreement which results in additional financial requirements by any PARTY, it will be promptly and openly discussed by the PARTIES. Resolution of such claim or circumstance, if any, will be the sole

responsibility of the PARTY otherwise responsible for fulfilling the term of this Agreement under which the claim or circumstance arises.

The PARTIES expressly agree that PRICE's and AMAFCA's liability under this Agreement shall terminate upon receipt of the letter of acceptance of the PROJECT by the CITY.

5.5 This Agreement may be modified only by the mutual written agreement of the PARTIES hereto.

5.7 The PARTIES understand and agree the obligations of each PARTY under this Agreement shall be performed in compliance with all applicable laws, statutes and ordinances. Nothing herein is intended to constitute any agreement for the PARTIES to perform any activity in violation of the Constitution or Laws of the State of New Mexico, the Resolutions of AMAFCA, or the Ordinances of the City of Albuquerque.

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

5.9 It is specifically agreed among the PARTIES executing this Agreement that this Agreement does not, and is not intended to, create in the public, or any member thereof, any rights whatsoever, such as, but not limited to, the rights of a third party beneficiary, or to authorize anyone not a party to this Agreement to maintain a suit(s) for wrongful death(s) and/or any other claim(s) whatsoever pursuant to any provision of this Agreement.

5.10 Each PARTY shall be solely responsible for any and all liability arising from personal injury including death(s) or damage to property arising from an act or failure to act of the respective PARTY, its officials, agents, contractors and employees pursuant to this Agreement. Liabilities of each the CITY and AMAFCA shall be subject to the immunities and limitations of the Tort Claims Act, Section 41-4-1, et seq., N.M.S.A. 1978 and any amendments thereto.

5.11 This Agreement is subject to approval and execution by the PRICE Board of Directors, the AMAFCA Board of Directors, and the Chief Administrative Officer of the CITY and shall not be binding upon the PARTIES until executed by all PARTIES. Upon execution by the PARTIES, the covenants, terms and conditions of this Agreement shall be binding upon and inure the benefit of the PARTIES hereto, their successors and assigns.

5.12 The effective date of this Agreement shall be the date this Agreement is executed by all PARTIES.

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

Albuquerque Metropolitan Arroyo Flood Control Authority

By: _____ Date: _____

Ronald D. Brown, Chair
AMAFCA Board of Directors

Attest:

By: _____ Date: _____

Danny Hernandez, Secretary/Treasurer
AMAFCA Board of Directors

ACKNOWLEDGMENT

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

This instrument was acknowledged before me on _____, 2010, by Ronald D. Brown, Chair of the Board of Directors, on behalf of the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), a political subdivision of the State of New Mexico.

_____
Notary Public

My Commission Expires:

_____

City of Albuquerque

Recommended:

By: _____ Date: _____
Richard Dourte, P.E.
City Engineer

Recommended:

By: _____ Date: _____
Michael Riordan, P. E.
Acting Director, Department of Municipal Development

APPROVED AS TO FORM

By: _____ Date: _____
City Attorney

By: _____ Date: _____
David Campbell
Chief Administrative Officer

ACKNOWLEDGMENT

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

This instrument was acknowledged before me on _____, 2010, by David Campbell, Chief Administrative Officer for the City of Albuquerque, a New Mexico municipal corporation.

_____
Notary Public

My Commission Expires:

_____

The Price REIT, Inc.

By: _____
John Visconsi
Vice President

ACKNOWLEDGMENT

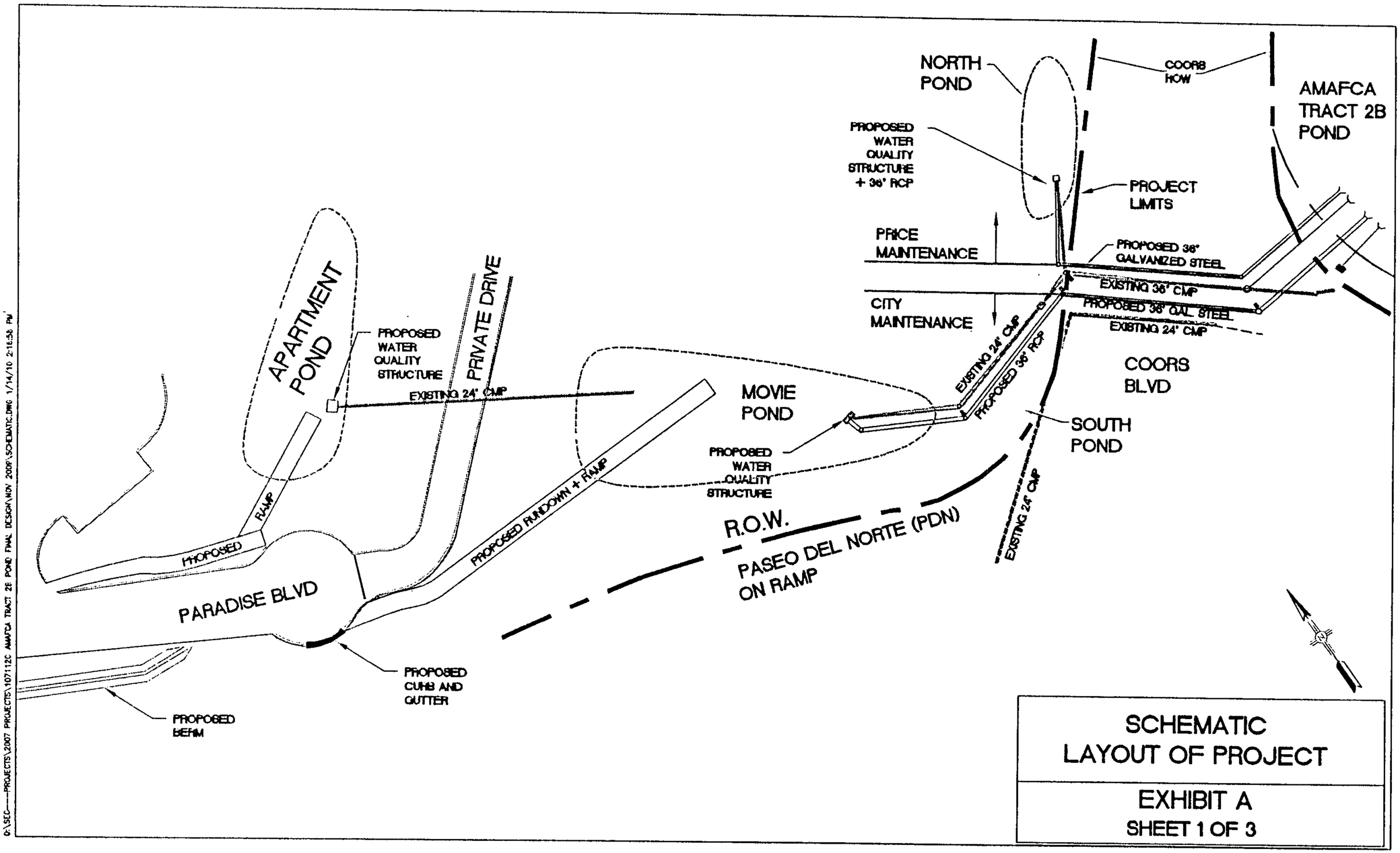
STATE OF _____)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on _____, 2010, by John Visconsi, Vice President of The Price REIT, Inc., a Maryland corporation.

_____
Notary Public

My Commission Expires:

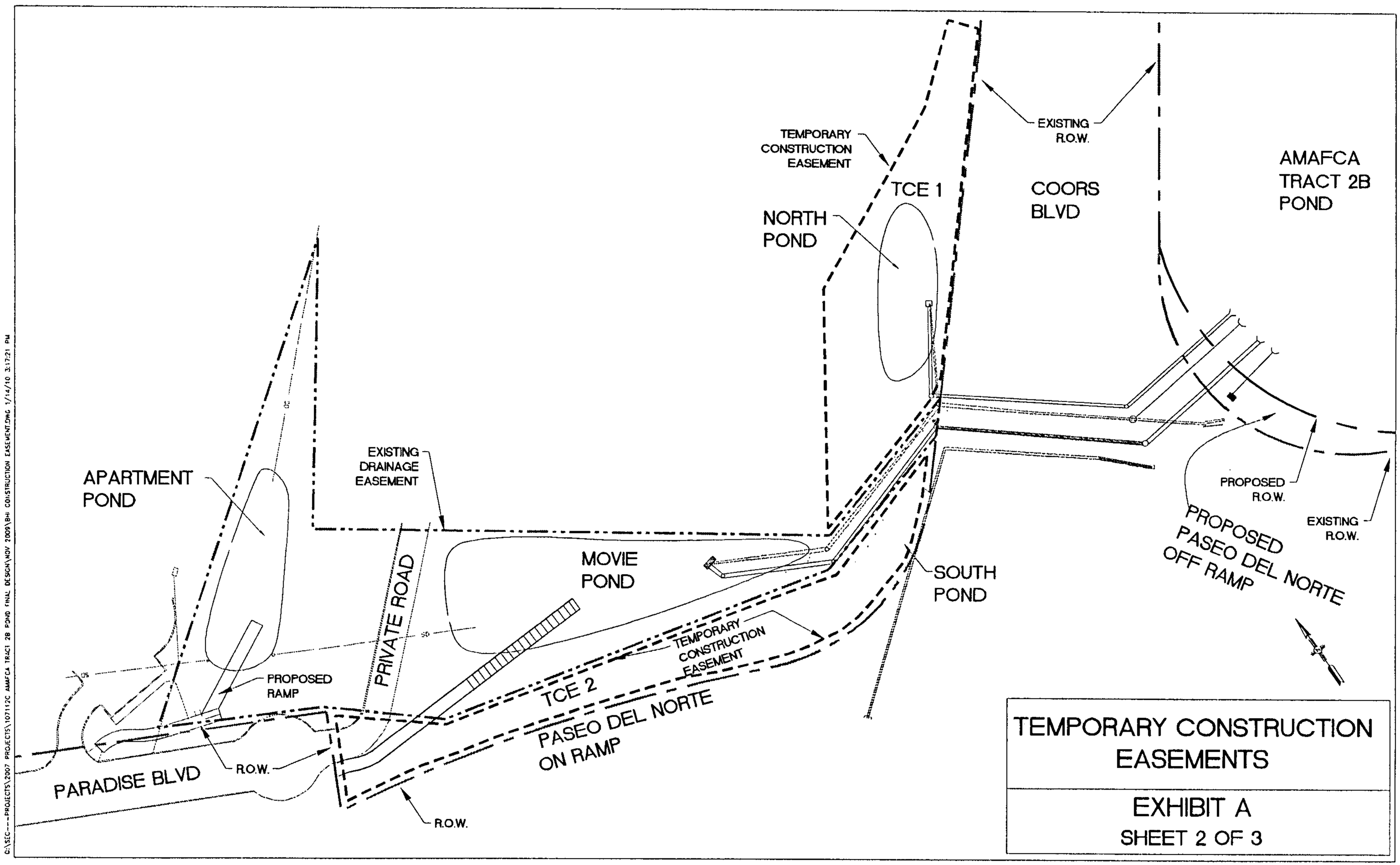
_____



SCHEMATIC
LAYOUT OF PROJECT

EXHIBIT A
SHEET 1 OF 3

G:\SEC----PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\SCHEMATIC.DWG 1/14/10 2:16:38 PM

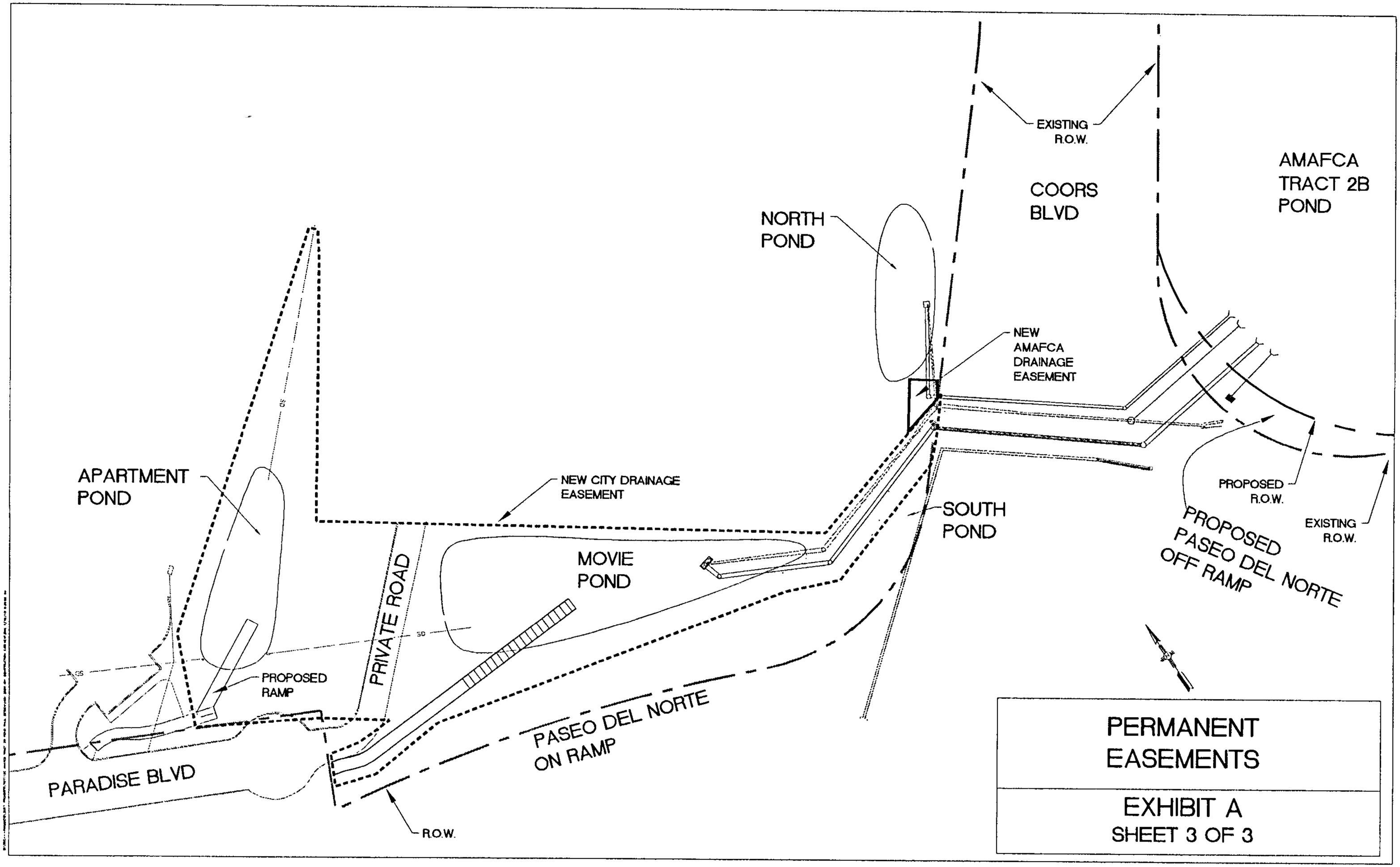


C:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\BH CONSTRUCTION EASEMENT.DWG 1/14/10 3:17:21 PM

TEMPORARY CONSTRUCTION EASEMENTS

EXHIBIT A

SHEET 2 OF 3



PERMANENT EASEMENTS

EXHIBIT A

SHEET 3 OF 3

EXHIBIT B

GRANT OF TEMPORARY CONSTRUCTION EASEMENT

The Price REIT, Inc., a Maryland corporation ("Grantor"), for good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant unto the ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY and its assigns ("AMAFCA"), the right of entry, occupancy, and use of the real estate described and delineated on Exhibit "A" attached hereto and incorporated herein by reference, the "Temporary Easement Area". Use of said Temporary Easement Area by AMAFCA shall be for all purposes necessary to facilitate construction of drainage facilities in the vicinity of the Paseo del Norte and Coors Boulevard interchange in a proposed New Mexico Department of Transportation roadway improvements project ("Project"). Without limiting the generality of the foregoing, it is specifically provided:

(A) Grantor covenants that Grantor is the owner in fee simple of the Temporary Easement Area, which is a southerly portion of Tract A1A as shown on the Plat for The Plaza at Paseo del Norte, Tracts A-1-A, A-2-A, A-3-A, A-4-A, B-1, C-1, D and E, recorded in the Office of the County Clerk of Bernalillo County, New Mexico, on February 27, 1997, in Volume 97C, Folio 65 as Document No. 97020510, and that Grantor has a good lawful right to grant this Easement.

(B) AMAFCA and its assigns shall have the right to patrol and police said Temporary Easement Area during the period of this Temporary Easement.

(C) This Temporary Easement shall not be filed for public record and this Temporary Easement shall be for the duration of the Project or of the uses by AMAFCA and its assigns, whichever is earlier and shall expire upon the conveyance of a permanent easement to be maintained by AMAFCA and its assigns.

(D) Prior to completion of the Project, AMAFCA and/or its assigns shall revegetate the Temporary Easement Area with standard Project seeding.

Witness our hand and seal this ___day of _____2010.

Grantor: The Price REIT, Inc., a Maryland corporation

By: _____
John Visconsi, Vice President

STATE OF _____)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on _____, 2010, by John Visconsi, Vice President of The Price REIT, Inc., a Maryland corporation.

_____
Notary Public

My Commission Expires:

_____

EXHIBIT A

DESCRIPTION

An A.M.A.F.C.A. Temporary Construction Easement 2 (TCE 2) within the projected Section 18, Township 11 North, Range 3 East N.M.P.M., also being a portion of TRACT A-1-A of THE PLAZA AT PASEO DEL NORTE, Bernalillo County, New Mexico as the same is shown and designated on the plat thereof, recorded in the office of the County Clerk of Bernalillo County, New Mexico on February 27, 1997 in Book 97C, Page 65,

BEGINNING at a point on the east boundary line of said TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard, Thence

257.84 feet along the arc of a curve to the right having a radius of 197.00 feet, a central angle of 74°59'31" and a chord bearing South 78°27'30" West a distance of 239.83 feet to a point of tangency, also being a point on the southerly boundary line of said TRACT A-1-A, also being a point on the north right-of-way line of Paseo del Norte; thence

North 64°02'44" West a distance of 16.69 feet to a point on the southerly boundary line of said Tract A-1-A, also being a point on the north right-of-way line of Paseo del Norte; Thence

427.96 feet along the arc of a curve to the left having a radius of 1677.02 feet, a central angle of 14°37'17" and a chord bearing North 71°21'22" West a distance of 426.80 feet to a point of non-tangency, to the southwesterly corner of said TCE 2, also being a point on the southerly boundary line of said TRACT A-1-A, also being a point on the north right-of-way line of Paseo del Norte; thence

North 29°06'45" East a distance of 99.09 feet to the northwesterly corner of said TCE 2, also being a point on the southerly boundary line of said TRACT A-1-A; Thence

South 48°57'29" East a distance of 117.79 feet; Thence

South 74°02'12" East a distance of 403.33 feet; Thence

North 75°43'30" East a distance of 169.10 feet to the northeasterly corner of said TCE 2, also being a point on the southeastly boundary line of said Tract A-1-A, also being a point on the west right-of-way line of Coors Boulevard; Thence

South 43°49'21" West a distance of 49.57 feet to the POINT OF BEGINNING.

Easement contains 0.8825 acres, more or less.

SURVEYOR'S CERTIFICATION

I, Timothy M. Solinski, a New Mexico Professional Surveyor No. 17531, do hereby certify that this Easement Plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the Minimum Standards for Surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is an Easement Survey for use in granting a new easement.

Timothy M. Solinski — Date 1-8-10
NM Professional Surveyor No. 17531

TIMOTHY SOLINSKI
NEW MEXICO
17531
LICENSED PROFESSIONAL SURVEYOR

Bohannan Huston

A.M.A.F.C.A.
EASEMENT EXHIBIT

TCE 2

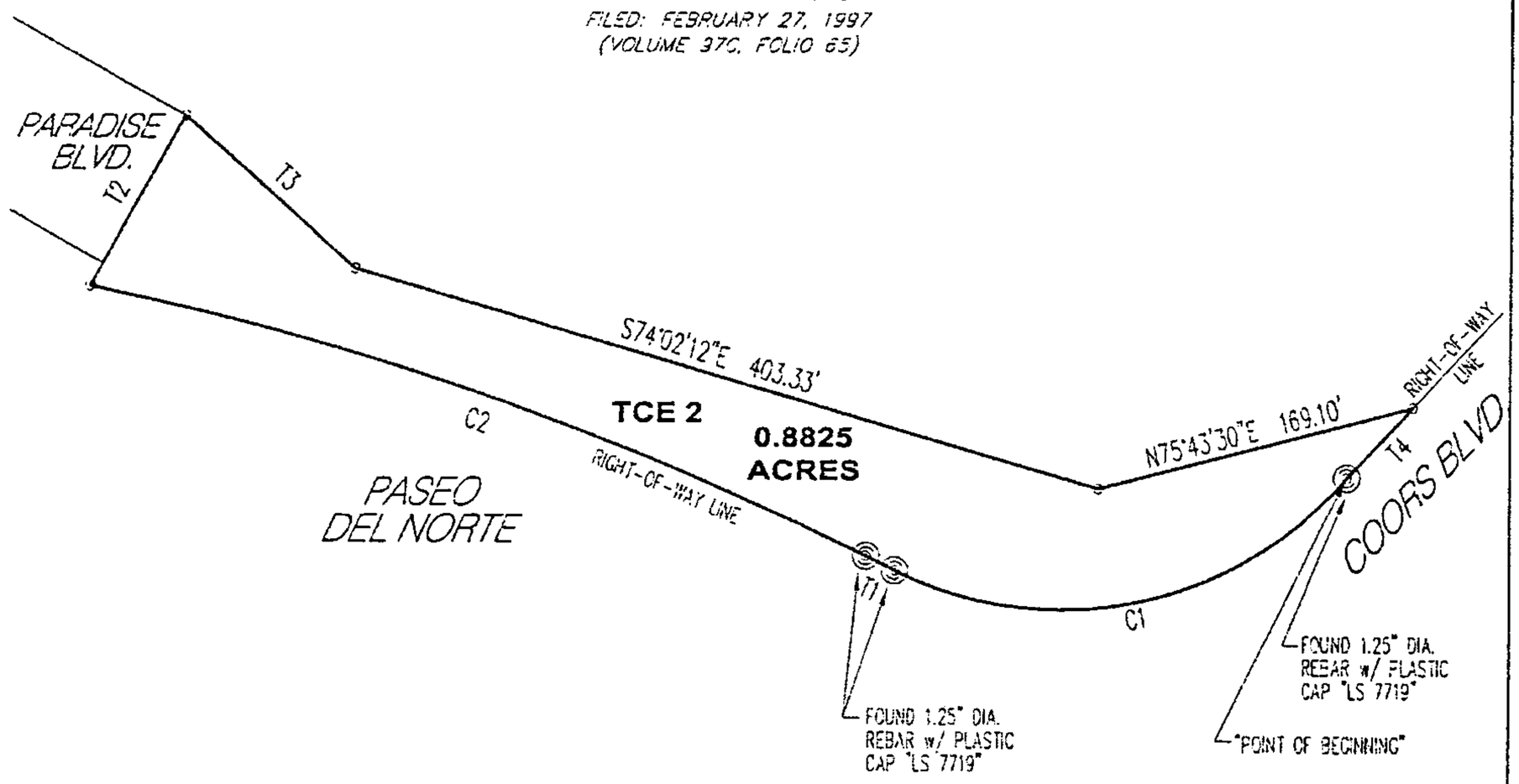
BHI #: 20100065 001.01

EXHIBIT B

P:\20100065\SURVEY\GRAPHICS\20100065

EXHIBIT A

TRACT A-1-A
THE PLAZA AT PASEO DEL NORTE
FILED: FEBRUARY 27, 1997
(VOLUME 97C, FOLIO 65)



Curve Data						
ID	DELTA	TANGENT	ARC	RADIUS	CHORD	CHORD BRG
C1	74°59'31"	151.14'	257.84'	197.00'	239.83'	S78°27'30"W
C2	14°37'17"	215.15'	427.96'	1677.02'	426.80'	N71°21'22"W

Tangent Data		
ID	BEARING	DISTANCE
T1	N64°02'44"W	16.69'
T2	N29°06'45"E	99.09'
T3	S48°57'29"E	117.79'
T4	S43°49'21"W	49.57'

N

100 50 0 100

SCALE: 1" = 100'

Bohannan Huston

A.M.A.F.C.A.
EASEMENT EXHIBIT

TCE 2

BHI #: 20100065.001.01

EXHIBIT B

P:\20100065\SURVEY\GRAPHICS\20100065

EXHIBIT A

DESCRIPTION

An A.M.A.F.C.A. Temporary Construction Easement 1 (TCE 1) within the projected Section 18, Township 11 North, Range 3 East N.M.P.M., also being a portion of TRACT A-1-A of THE PLAZA AT PASEO DEL NORTE, Bernalillo County, New Mexico as the same is shown and designated on the plat thereof, recorded in the office of the County Clerk of Bernalillo County, New Mexico on February 27, 1997 in Book 97C, Page 65,

BEGINNING at a point on the east boundary line of said TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard, Thence

South 43°49'25" West a distance of 353.13 feet to a point on the southeasterly boundary line of said TCE 1, also being a point on the TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard; Thence

South 75°43'30" West a distance of 174.05 feet to the southwesterly corner of said TCE 1; Thence

North 36°00'47" East a distance of 244.34 feet to the northwesterly corner of said TCE 1; Thence

North 65°43'23" East a distance of 80.59 feet; Thence

North 66°54'44" East a distance of 69.27 feet; Thence

North 65°10'02" East a distance of 55.76 feet; Thence

North 52°17'46" East a distance of 88.83 feet to the northerly corner of said TCE 1; Thence

South 36°33'50" East a distance of 33.07 feet to a point on the easterly boundary line of said TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard; Thence

South 40°57'39" West a distance of 13.42 feet to the POINT OF BEGINNING.

Easement contains 0.2969 acres, more or less.

SURVEYOR'S CERTIFICATION

I, Timothy M. Solinski, a New Mexico Professional Surveyor No. 17531, do hereby certify that this Easement Plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the Minimum Standards for Surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is an Easement Survey for use in granting a new easement.

1-8-10

Timothy M. Solinski — Date
NM Professional Surveyor No. 17531

TIMOTHY SOLINSKI
NEW MEXICO
17531
LICENSED PROFESSIONAL SURVEYOR

Bohannan Huston

A.M.A.F.C.A.
EASEMENT EXHIBIT

TCE 1

BHI #: 20100065.001.01

EXHIBIT B

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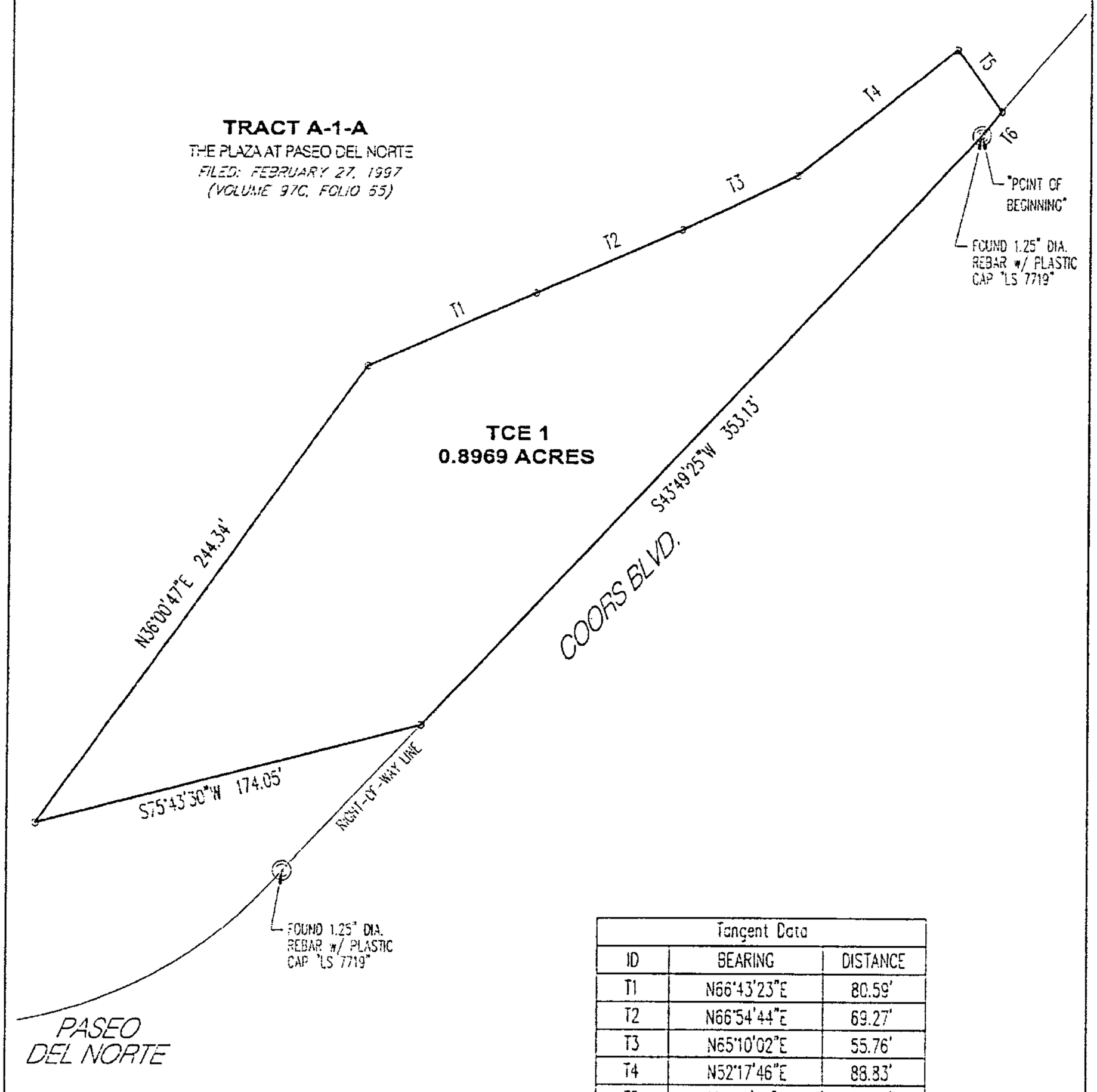
EXHIBIT A



Tangent Data		
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T2	N66°54'44"E	69.27'
T3	N65°10'02"E	55.76'
T4	N52°17'46"E	88.83'
T5	S36°33'50"E	33.07'
T6	S40°57'39"W	13.42'

N

60 30 0 60

SCALE: 1" = 60'

Bohannan Huston

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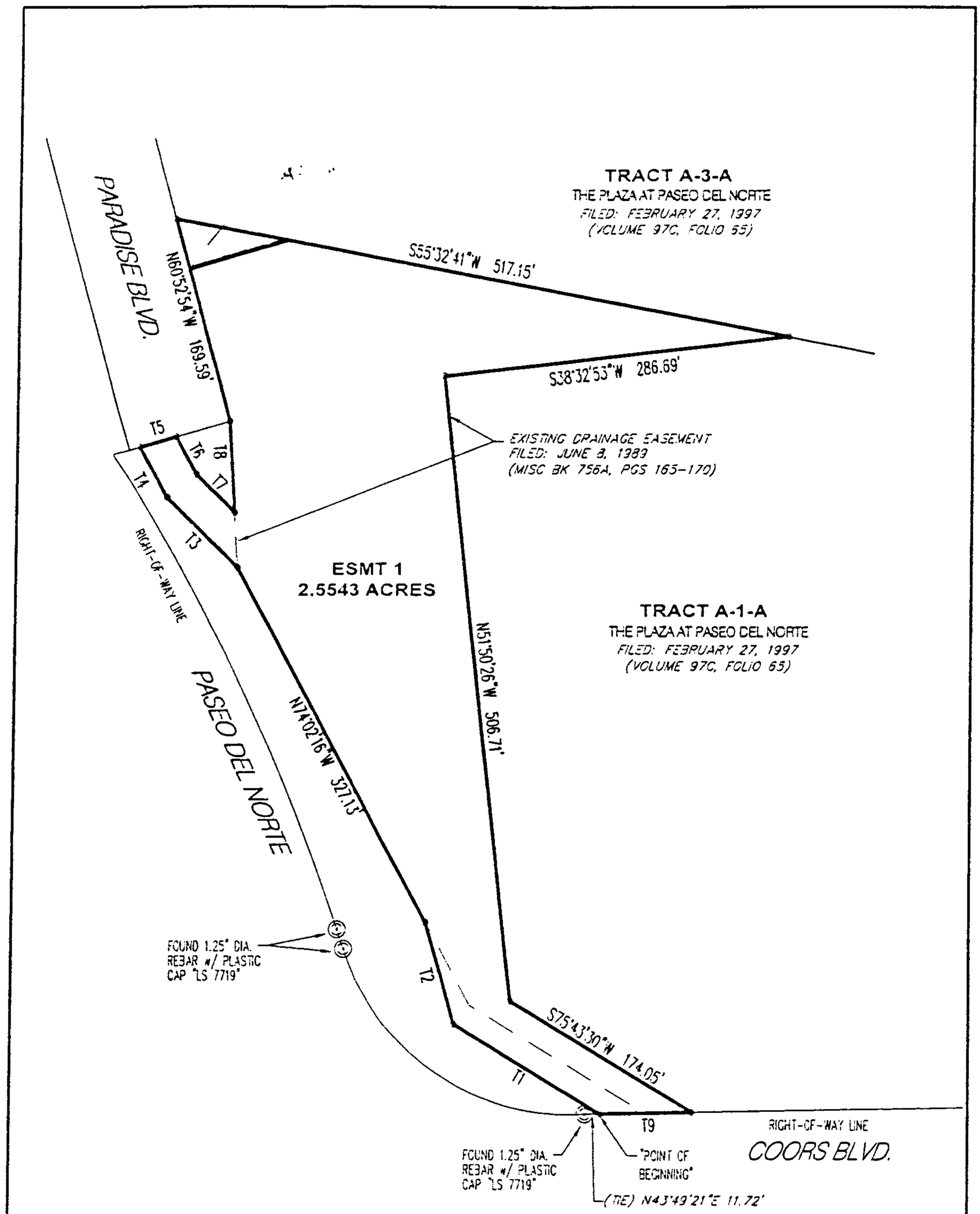
A.M.A.F.C.A.
EASEMENT EXHIBIT

TCE 1

BHI #: 20100065.001.01

EXHIBIT B

Sheet 5 of 5



Tangent Data		
ID	BEARING	DISTANCE
T1	S75°43'30"W	140.35'
T2	N61°12'23"W	85.49'
T3	S28°30'32"W	81.68'
T4	N74°34'42"W	46.25'
T5	S29°06'45"W	30.88'
T6	N74°34'42"W	34.49'
T7	S28°30'32"W	44.52'
T8	N48°57'29"W	73.41'
T9	S43°49'24"W	75.70'

100 50 0 100

SCALE: 1" = 100'

Bohannan Huston

CITY
EASEMENT EXHIBIT

ESMT 1

BHI #: 20100065.001.01

EXHIBIT C

Sheet 1 of 2

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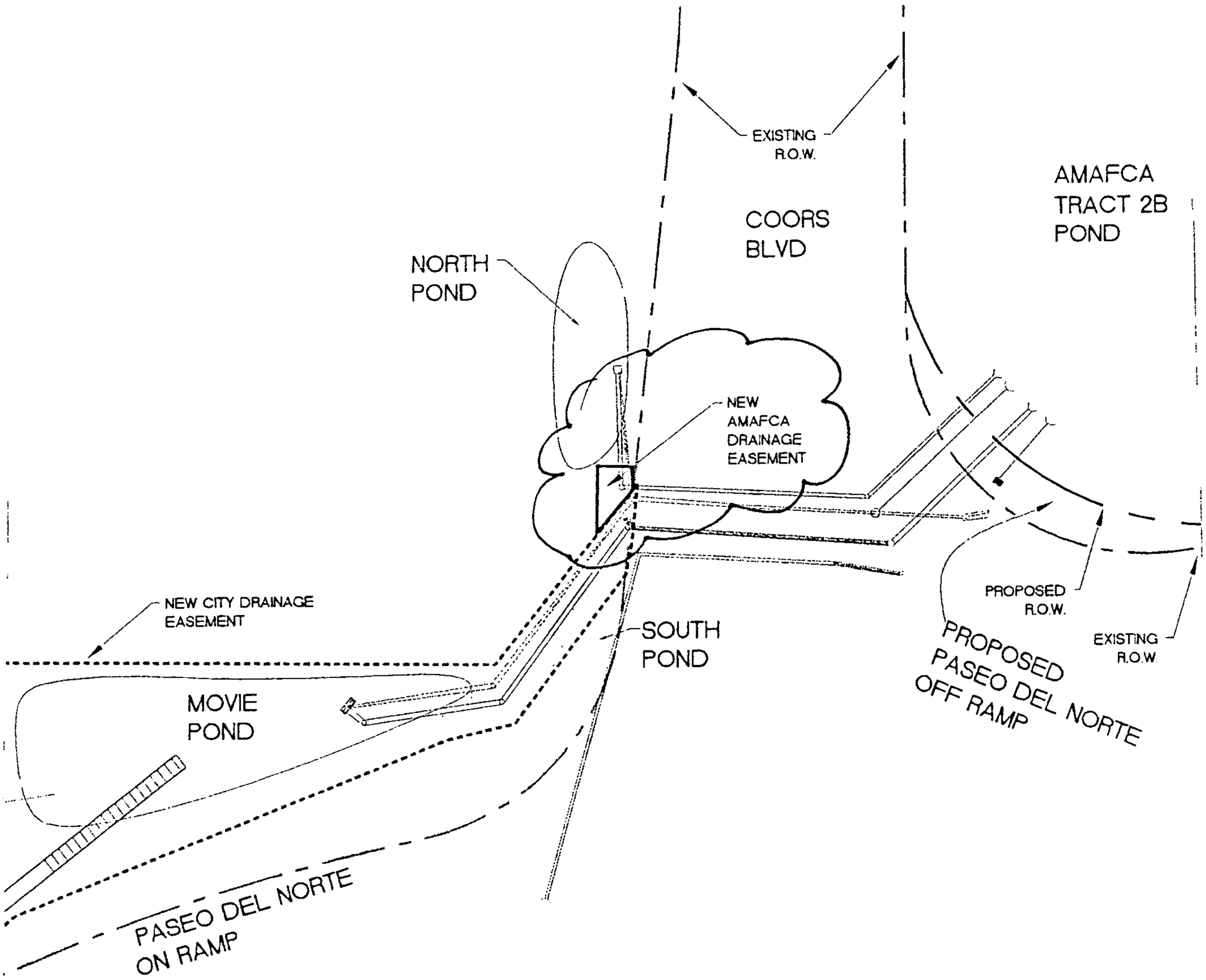


Bohannan Huston Inc.

A.M.A.F.C.A
EASEMENT EXHIBIT

ESMT 1

BHI #: 20100065.001.01

EXHIBIT C

Sheet 2 of 2

P:\20100065\SURVEY\GRAPHICS\20100065_EasementExhibit_ESMT1.dwg

C-13/2000

MEMO

Item 13

To: Board of Directors

From: Lynn Mazur, P.E., C.F.M., Development Review Engineer LM

Date: February 18, 2010

Re: Paseo del Norte / Coors Pond Project – Consideration of *Agreement for Granting of Easements, and Construction, Maintenance, Transfer and Assumption of the Paradise Storm Drain Project,* by and among AMAFCA, the City of Albuquerque, and Price REIT, Inc.

approved

Construction plans for the AMAFCA bid lot have been completed and delivered to the New Mexico Department of Transportation (NMDOT) for inclusion in the Paseo del Norte / Coors Road Way Improvement Project, PCN A300060 (Project). The NMDOT will let the Project in mid-April, and construction will commence in June. The primary elements of the AMAFCA bid lot were presented in previous Board meetings and were subject of the existing agreement, dated October 27, 2009, between NMDOT and AMAFCA. The subject of the referenced agreement for this item is the tributary drainage facilities west of Coors Boulevard. The only additional obligations for AMAFCA under this agreement that are above and beyond the obligations under the NMDOT agreement are acceptance of easements and preparation of a plat.

The Project will construct improvements to drainage facilities west of Coors Boulevard in the shopping center, owned by Price REIT, Inc., as well as along Paradise Boulevard to improve the efficiency of the tributary system to convey storm water runoff to the AMAFCA detention pond on the northeast quadrant of PdN and Coors and to rectify existing drainage deficiencies. As Project coordination progressed between the City and Price REIT, it became evident that an agreement to spell out easement and maintenance requirements of the upstream ponds and storm drain system was necessary.

When the shopping center was developed, a drainage easement was granted to the City of Albuquerque for two detention pond facilities, identified as the Apartment Pond and the Movie Pond, and associated storm drain outfalls. Sheet 1 of Exhibit "A" in the agreement shows a schematic of the drainage facilities. The easement document, dated June 1989, specifies that the owner will maintain the facilities and reserves the right for the City to enter "...for inspection, installation, maintenance, repair or modification and the right to remove trees, bushes, undergrowth and any other obstacles if the City determines they interfere with the ... proper functioning of the Drainage Facility as designed".

Most of the construction for the proposed improvements will be in the existing drainage easement or City right-of-way. However, some of the work will require additional easement from Price REIT as follows:

Easement Name	Grantee	Method	Purpose
Temporary Construction Easement (TCE)	AMAFCA	Document	Construction activities outside existing easement.
Permanent Drainage Easement (City Easement)	City	Plat	Create one easement, including 1989 easement and additional easement for new Movie Pond outfall pipe.
Permanent Drainage Easement (AMAFCA Easement)	AMAFCA (to be assigned to NMDOT)	Plat	NMDOT access to manhole and pipe from North Pond where it crosses under Coors.

These easements are depicted on Sheets 2 and 3 of Exhibit "A" of the agreement.

Staff met with the local property manager for Price REIT in July 2009 to discuss the Project and the request for the easements. We followed up with a letter to the regional property management agency, Kimco Realty in Arizona, and explained that the proposed improvements would benefit the owner by cleaning up the ponds and easing maintenance efforts.

In subsequent discussions with the City, staff suggested that the City assume maintenance of the facilities since they receive storm water from public rights-of-way. The City was agreeable to assumption of maintenance on condition that the existing 1989 easement be vacated at a public hearing by the Development Review Board (DRB) and that the new drainage easement, encompassing the existing easement and the proposed City Easement, be granted by plat. The agreement specifies that AMAFCA will be responsible for preparing the plat.

Staff discussed the conditions of the agreement with our contact at Kimco Realty, Mr. Eliot Stedman, and sent it to him with the TCE document. We requested that if the owner agreed with the terms and conditions of the agreement, the agreement and TCE be signed by the owner and returned to AMAFCA. He said he would forward the package to the Real Estate Committee of the Price REIT Board of Directors with his recommendation. We have since learned that Mr. Stedman is no longer with the company. The administrative assistant familiar with the Project said that the head of the committee was reviewing the agreement package. We will continue coordination efforts with the owner's representative.

The attached agreement has been reviewed by City and AMAFCA legal counsel and staff. In the interest of keeping the Project on track, we recommend approval of the agreement, substantially the same as attached. If Price REIT responds with significant changes, we will return to the Board for approval of the revised section(s).

Recommend: Board approve the *Agreement for Granting of Easements, and Construction, Maintenance, Transfer and Assumption of the Paradise Storm Drain Project,* by and among AMAFCA, the City of Albuquerque, and Price REIT, Inc., substantially the same as attached.

AGREEMENT FOR GRANTING OF EASEMENTS, AND CONSTRUCTION, MAINTENANCE, TRANSFER AND ASSUMPTION OF THE PARADISE STORM DRAIN PROJECT

THIS AGREEMENT is made and entered into this _____ day of _____, 2010, by and among The Price REIT, Inc., a Maryland corporation ("PRICE"), the Albuquerque Metropolitan Arroyo Flood Control Authority, a political subdivision of the State of New Mexico ("AMAFCA"), and the City of Albuquerque, a municipal corporation ("CITY"), hereinafter referred to collectively as the "PARTIES."

RECITALS:

WHEREAS, AMAFCA has entered into an agreement with the New Mexico Department of Transportation ("NMDOT") to include construction of drainage facilities in the vicinity of the Paseo del Norte and Coors Boulevard interchange in a proposed NMDOT roadway improvements project; and

WHEREAS, AMAFCA engaged Smith Engineering Company, Inc. to design the drainage facilities and, during the design phase, identified drainage deficiencies in Paradise Boulevard and the PRICE property west of Coors Boulevard; and

WHEREAS, Smith Engineering performed a hydraulic analysis on existing and proposed drainage facilities as shown on Exhibit "A" and designed additional drainage structures, hereinafter referred to collectively as the "PROJECT", to improve the function of the drainage facilities in Paradise Boulevard and the PRICE property; and

WHEREAS, when the PRICE property was developed, the property owner granted a drainage easement to the CITY for two detention ponds and an underground storm drain system that receive both public and private storm water runoff and agreed to maintain the ponds and storm drain via document entitled "Grant of Easement Agreement and Covenant," recorded in

the Office of the County Clerk of Bernalillo County, New Mexico, on June 8, 1989, in Misc. Bk. 756A, Pages 165-170 as Document No. 8950271, and shown on the Plat for The Plaza at Paseo del Norte, Tracts A-1-A, A-2-A, A-3-A, A-4-A, B-1, C-1, D and E, recorded in the Office of the County Clerk of Bernalillo County, New Mexico, on February 27, 1997, in Volume 97C, Folio 65 as Document No. 97020510 ("Existing Easement"); and

WHEREAS, upon completion of the PROJECT, it is in the public interest for the CITY to maintain major drainage infrastructure that receives public water, and the CITY has the expertise, capacity and capability to assume maintenance of the storm drain, detention ponds and additional proposed facilities in the PROJECT; and

WHEREAS, additional permanent drainage easements and temporary construction easements are required for the PROJECT; and

WHEREAS, the PARTIES are agreeable to the construction of the PROJECT through AMAFCA's agreement with the NMDOT, the granting of easements and transfer of maintenance responsibilities to the CITY for the storm drain, detention ponds and additional proposed facilities in the PROJECT, subject to the terms, conditions, and schedule provided herein.

NOW THERERFORE, IN CONSIDERATION OF THE PROMISES AND COVENANTS CONTAINED HEREIN, THE PARTIES HERETO AGREE AS FOLLOWS:

SECTION ONE: PURPOSE OF THE AGREEMENT IS TO:

1.1. Provide for the granting of additional permanent drainage easement by PRICE to the CITY and AMAFCA and temporary construction easements by PRICE to AMAFCA.

1.2. Provide for the assumption of ownership and maintenance of the PROJECT by the CITY after PROJECT completion by NMDOT, including establishment of the responsibilities of each party for 1.) funding the construction, and 2.) maintenance of the facilities upon completion of the PROJECT.

SECTION TWO: PRICE AGREES TO:

2.1. Grant Temporary Construction Easements at no cost to AMAFCA, as shown on Exhibit "A" and substantially in the form attached as Exhibit "B," for the construction of the drainage facilities in the NMDOT project and the facilities in PROJECT that is the subject of this Agreement.

2.2. Grant an additional permanent drainage easement by platting action at no cost to the CITY, as shown on Exhibit "A" and as described on Exhibit "C," for the facilities in the PROJECT.

2.3. Grant a permanent drainage easement by platting action at no cost to AMAFCA, as shown on Exhibit "A" and as described on Exhibit "C," for the manholes and pipes adjacent to the Coors Boulevard right-of-way, which will be assignable at AMAFCA's option to the NMDOT. Said facilities are not part of the PROJECT or CITY maintenance responsibility.

2.4. Apply for a vacation of the Existing Easement and replat to the CITY's Development Review Board ("DRB") within eight (8) months of the date of this Agreement.

SECTION THREE: AMAFCA AGREES TO:

3.1 Provide for and fully fund the construction of the PROJECT, which funding shall be limited to:

a. Grading in the Apartment Pond and construction of a Ported Riser Water Quality Outlet Structure as shown on Exhibit "A".

b. Construction of a berm in the southern right-of-way of Paradise Boulevard and curb along the drivepad opening in the Paradise Boulevard cul-de-sac to direct storm water runoff to a rundown to the Movie Pond as shown on Exhibit "A".

c. Grading in the Movie Pond and construction of a Ported Riser Water Quality Outlet Structure and the installation of two hundred ninety (290) linear feet of 36-inch outlet pipe as shown on Exhibit "A".

3.2. Provide one (1) set of "As-Built" drawings to the CITY upon completion of the PROJECT in format as provided by the NMDOT.

3.3. Submit the construction drawings to the CITY Engineer for CITY approval. Approval shall not be unreasonably withheld by the CITY.

3.4. Ask that the NMDOT require its contractor to: 1.) name the CITY and PRICE as additional insureds with regard to public liability insurance in the amount of at least $2,000,000.00; and 2.) obtain the proper barricading permits from the CITY.

3.5. Assure that the PROJECT is constructed in substantial compliance with the approved Construction Drawings and Contract Documents. AMAFCA will keep the CITY reasonably informed on all aspects of the PROJECT during construction, including, but not

limited to, notification of all regular or special construction meetings, coordination on any modifications or change orders made during construction, and participation in the final inspection of the PROJECT.

3.6. At the request of the CITY, make demand on the NMDOT's contractor's warranty bond for faulty materials and/or workmanship.

3.7. Prepare the plat for all proposed easements and provide easement documents for the temporary construction easement.

3.8. Accept the temporary construction easement as conveyed by documents with legal descriptions and the permanent drainage easement adjacent to Coors Boulevard right-of-way as granted by plat from PRICE.

SECTION FOUR: THE CITY AGREES TO:

4.1. Review and, if appropriate, approve construction plans for the PROJECT, CITY Project No. 800391.

4.2. Provide AMAFCA with any and all technical assistance as may be required by AMAFCA during the construction of the PROJECT.

4.3. Accept the permanent drainage easement from PRICE, as granted by plat, as described on Exhibit "C".

4.4. Provide an executed and approved Letter of Acceptance for the maintenance of the PROJECT to AMAFCA upon completion of the PROJECT, CITY Project No. 800391, and as-built certification by NMDOT.

4.5. Release the Existing Easement subject to a vacation action to be approved by the DRB.

SECTION FIVE: PARTIES AGREE TO:

5.1. Cooperate in order to expedite the construction of the PROJECT.

5.2. If any situation arises which adversely affects any PARTY's participation in this Agreement, the affected PARTY will immediately notify the other PARTIES in writing.

5.3. If any circumstance arises which materially affects any provision of this Agreement, the PARTIES mutually agree to promptly and equitably resolve it, including executing an amendment to this Agreement if necessary.

5.4. If any claim or circumstance arises under the terms of this Agreement which results in additional financial requirements by any PARTY, it will be promptly and openly discussed by the PARTIES. Resolution of such claim or circumstance, if any, will be the sole responsibility of the PARTY otherwise responsible for fulfilling the term of this Agreement under which the claim or circumstance arises.

The PARTIES expressly agree that PRICE's and AMAFCA's liability under this Agreement shall terminate upon receipt of the letter of acceptance of the PROJECT by the CITY.

5.5 This Agreement may be modified only by the mutual written agreement of the PARTIES hereto.

5.7 The PARTIES understand and agree the obligations of each PARTY under this Agreement shall be performed in compliance with all applicable laws, statutes and ordinances. Nothing herein is intended to constitute any agreement for the PARTIES to perform any activity

in violation of the Constitution or Laws of the State of New Mexico, the Resolutions of AMAFCA, or the Ordinances of the City of Albuquerque.

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

5.9 It is specifically agreed among the PARTIES executing this Agreement that this Agreement does not, and is not intended to, create in the public, or any member thereof, any rights whatsoever, such as, but not limited to, the rights of a third party beneficiary, or to authorize anyone not a party to this Agreement to maintain a suit(s) for wrongful death(s) and/or any other claim(s) whatsoever pursuant to any provision of this Agreement.

5.10 Each PARTY shall be solely responsible for any and all liability arising from personal injury including death(s) or damage to property arising from an act or failure to act of the respective PARTY, its officials, agents, contractors and employees pursuant to this Agreement. Liabilities of each the CITY and AMAFCA shall be subject to the immunities and limitations of the Tort Claims Act, Section 41-4-1, et seq., N.M.S.A. 1978 and any amendments thereto.

5.11 This Agreement is subject to approval and execution by the PRICE Board of Directors, the AMAFCA Board of Directors, and the Chief Administrative Officer of the CITY and shall not be binding upon the PARTIES until executed by all PARTIES. Upon execution by the PARTIES, the covenants, terms and conditions of this Agreement shall be binding upon and inure the benefit of the PARTIES hereto, their successors and assigns.

5.12 The effective date of this Agreement shall be the date this Agreement is executed by all PARTIES.

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

Albuquerque Metropolitan Arroyo Flood Control Authority

By: _____ Date: _____
Janet Saiers, Chair
AMAFCA Board of Directors

Attest:

By: _____ Date: _____
Ronald D. Brown, Secretary/Treasurer
AMAFCA Board of Directors

ACKNOWLEDGMENT

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

This instrument was acknowledged before me on _____, 2010, by Janet Saiers, Chair of the Board of Directors, on behalf of the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), a political subdivision of the State of New Mexico.

_____
Notary Public

My Commission Expires:

_____

AGREEMENT FOR GRANTING OF EASEMENTS AND CONSTRUCTION, MAINTENANCE, TRANSFER AND ASSUMPTION OF THE PARADISE STORM DRAIN PROJECT

City of Albuquerque

Recommended:

By: _____ Date: _____
Richard Dourte, P.E.
City Engineer

Recommended:

By: _____ Date: _____
Michael Riordan, P. E.
Acting Director, Department of Municipal Development

APPROVED AS TO FORM

By: _____ Date: _____
City Attorney

By: _____ Date: _____
David S. Campbell
Chief Administrative Officer

ACKNOWLEDGMENT

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

This instrument was acknowledged before me on _____, 2010, by David S. Campbell, Chief Administrative Officer for the City of Albuquerque, a New Mexico municipal corporation.

_____
Notary Public

My Commission Expires:

_____

AGREEMENT FOR GRANTING OF EASEMENTS AND CONSTRUCTION, MAINTENANCE, TRANSFER AND ASSUMPTION OF THE PARADISE STORM DRAIN PROJECT

The Price REIT, Inc.

By: _____
John Visconsi
Vice President

ACKNOWLEDGMENT

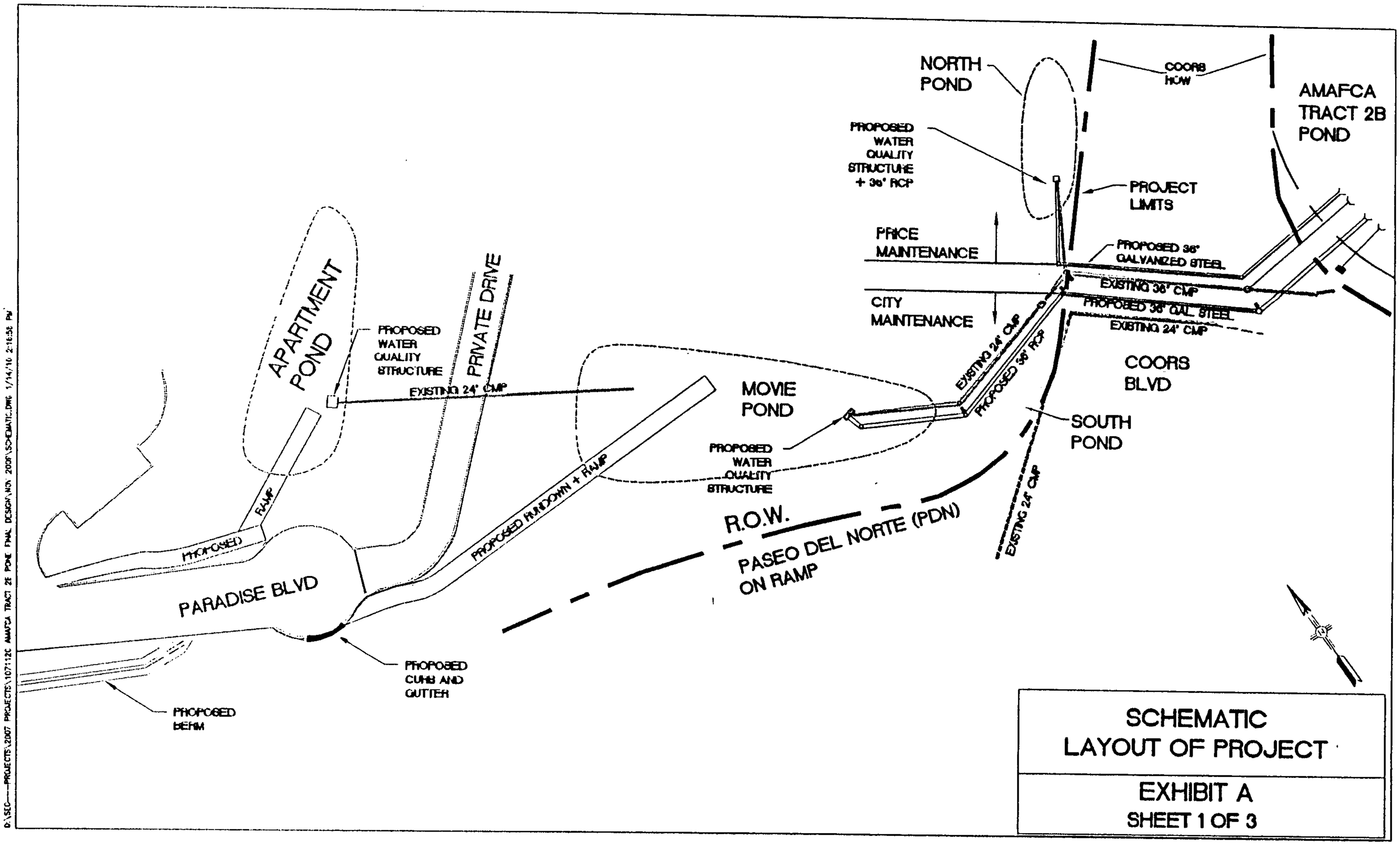
STATE OF _____)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on _____, 2010, by John Visconsi, Vice President of The Price REIT, Inc., a Maryland corporation.

_____
Notary Public

My Commission Expires:

_____

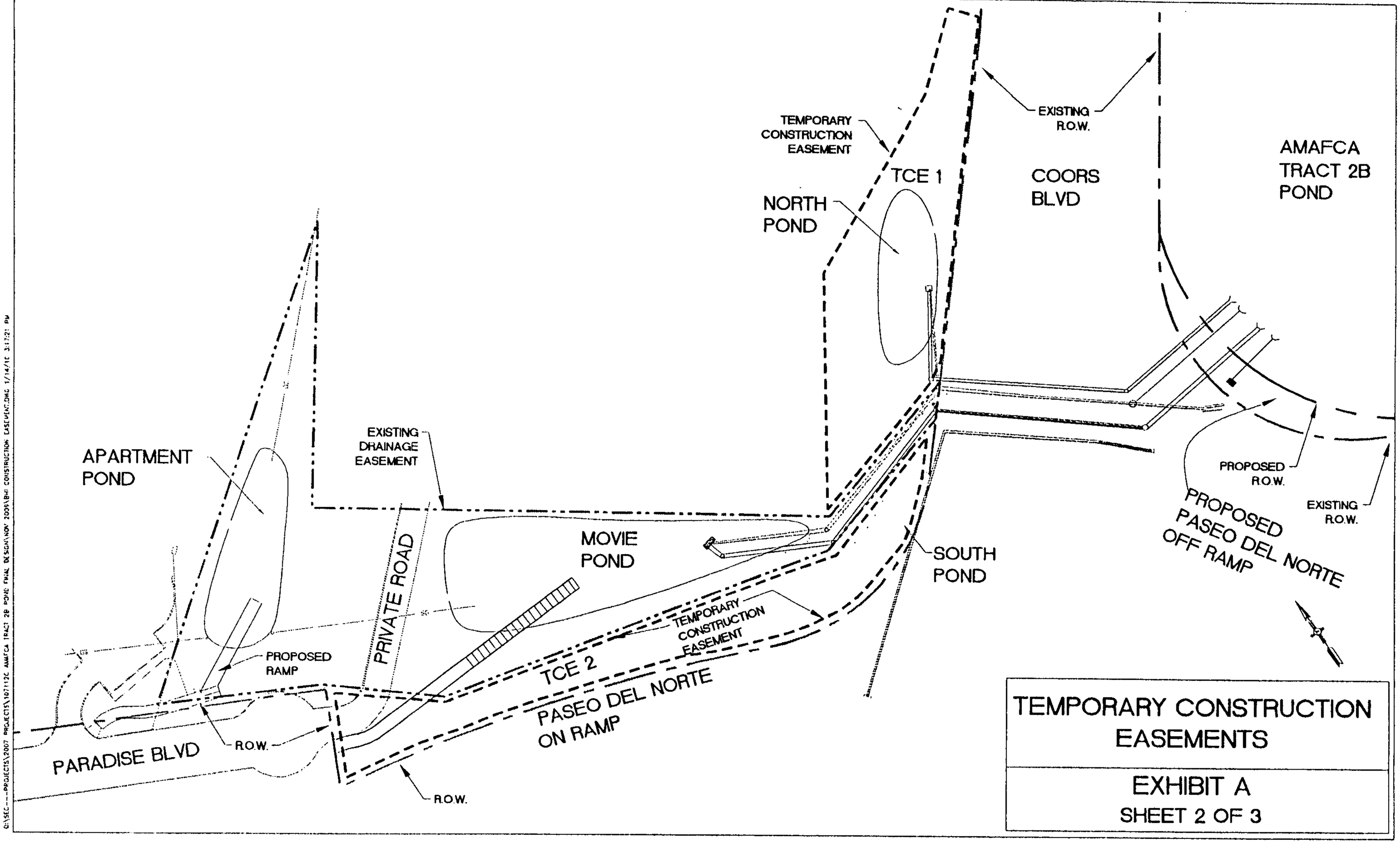


D:\SEC——PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2E POND FINAL DESIGN\NOV 2008\SCHEMATIC.DWG 1/14/10 2:16:38 PM

SCHEMATIC LAYOUT OF PROJECT

EXHIBIT A

SHEET 1 OF 3

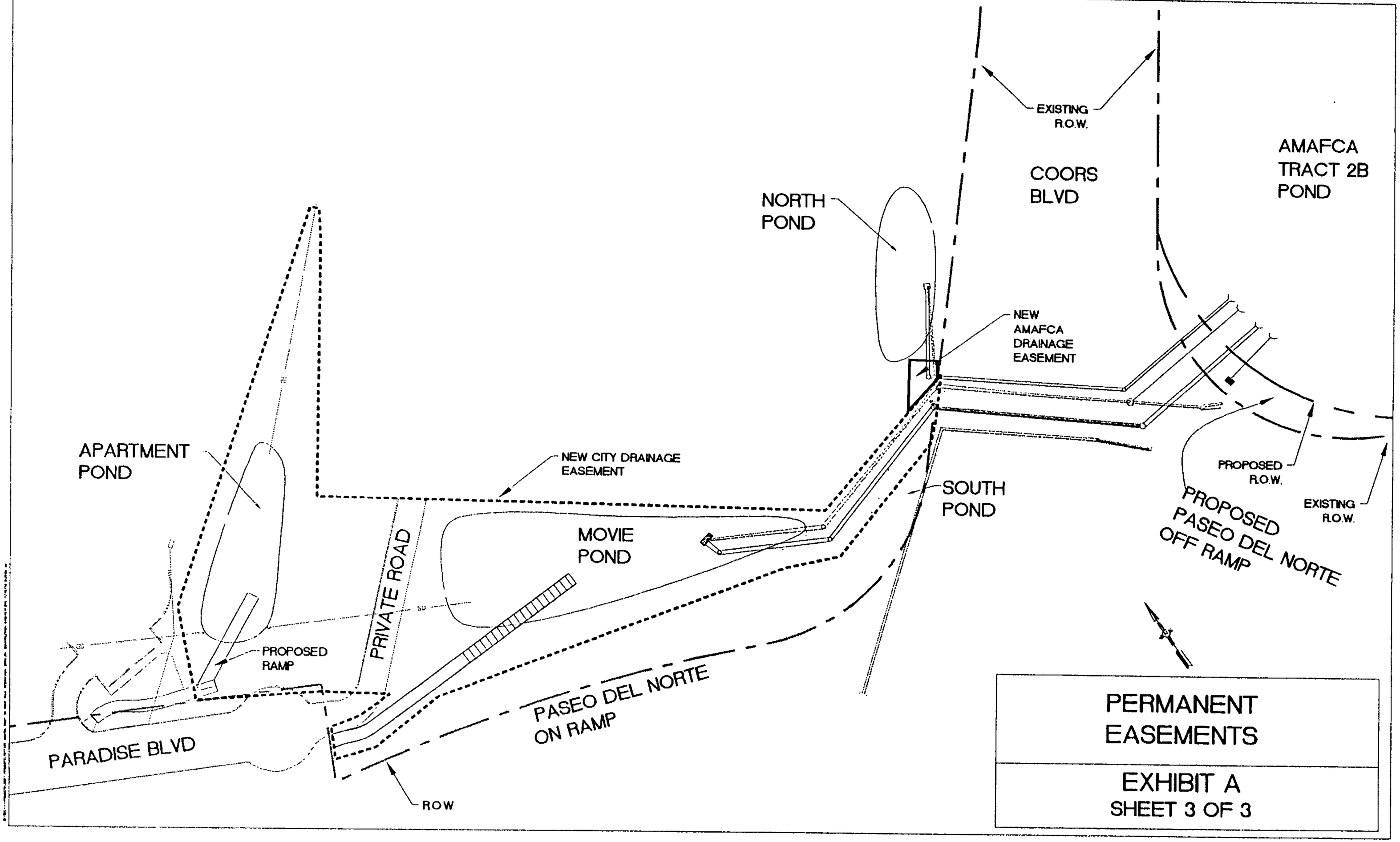


TEMPORARY CONSTRUCTION EASEMENTS

EXHIBIT A

SHEET 2 OF 3

G:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\BH CONSTRUCTION EASEMENT.DWG 1/14/10 3:17:21 PM



PERMANENT EASEMENTS

EXHIBIT A
SHEET 3 OF 3

EXHIBIT B

GRANT OF TEMPORARY CONSTRUCTION EASEMENT

The Price REIT, Inc., a Maryland corporation ("Grantor"), for good and valuable consideration, the receipt of which is hereby acknowledged, does hereby grant unto the ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY and its assigns ("AMAFCA"), the right of entry, occupancy, and use of the real estate described and delineated on Exhibit "A" attached hereto and incorporated herein by reference, the "Temporary Easement Area". Use of said Temporary Easement Area by AMAFCA shall be for all purposes necessary to facilitate construction of drainage facilities in the vicinity of the Paseo del Norte and Coors Boulevard interchange in a proposed New Mexico Department of Transportation roadway improvements project ("Project"). Without limiting the generality of the foregoing, it is specifically provided:

(A) Grantor covenants that Grantor is the owner in fee simple of the Temporary Easement Area, which is a southerly portion of Tract A1A as shown on the Plat for The Plaza at Paseo del Norte, Tracts A-1-A, A-2-A, A-3-A, A-4-A, B-1, C-1, D and E, recorded in the Office of the County Clerk of Bernalillo County, New Mexico, on February 27, 1997, in Volume 97C, Folio 65 as Document No. 97020510, and that Grantor has a good lawful right to grant this Easement.

(B) AMAFCA and its assigns shall have the right to patrol and police said Temporary Easement Area during the period of this Temporary Easement.

(C) This Temporary Easement shall not be filed for public record and this Temporary Easement shall be for the duration of the Project or of the uses by AMAFCA and its assigns, whichever is earlier and shall expire upon the conveyance of a permanent easement to be maintained by AMAFCA and its assigns.

(D) Prior to completion of the Project, AMAFCA and/or its assigns shall revegetate the Temporary Easement Area with standard Project seeding.

Witness our hand and seal this ___day of _____2010.

Grantor: The Price REIT, Inc., a Maryland corporation

By: _____
John Visconsi, Vice President

STATE OF _____)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on _____, 2010, by John Visconsi, Vice President of The Price REIT, Inc., a Maryland corporation.

_____
Notary Public

My Commission Expires:

_____

EXHIBIT A

DESCRIPTION

An A.M.A.F.C.A. Temporary Construction Easement 2 (TCE 2) within the projected Section 18, Township 11 North, Range 3 East N.M.P.M., also being a portion of TRACT A-1-A of THE PLAZA AT PASEO DEL NORTE, Bernalillo County, New Mexico as the same is shown and designated on the plat thereof, recorded in the office of the County Clerk of Bernalillo County, New Mexico on February 27, 1997 in Book 97C, Page 65,

BEGINNING at a point on the east boundary line of said TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard, Thence

257.84 feet along the arc of a curve to the right having a radius of 197.00 feet, a central angle of 74°59'31" and a chord bearing South 78°27'30" West a distance of 239.83 feet to a point of tangency, also being a point on the southerly boundary line of said TRACT A-1-A, also being a point on the north right-of-way line of Paseo del Norte; thence

North 64°02'44" West a distance of 16.59 feet to a point on the southerly boundary line of said Tract A-1-A, also being a point on the north right-of-way line of Paseo del Norte; Thence

427.95 feet along the arc of a curve to the left having a radius of 1677.02 feet, a central angle of 14°37'17" and a chord bearing North 71°21'22" West a distance of 426.80 feet to a point of non-tangency, to the southwesterly corner of said TCE 2, also being a point on the southerly boundary line of said TRACT A-1-A, also being a point on the north right-of-way line of Paseo del Norte; thence

North 29°06'45" East a distance of 99.09 feet to the northwesterly corner of said TCE 2, also being a point on the southerly boundary line of said TRACT A-1-A; Thence

South 48°57'29" East a distance of 117.79 feet; Thence

South 74°02'12" East a distance of 403.33 feet; Thence

North 75°43'30" East a distance of 159.10 feet to the northeasterly corner of said TCE 2, also being a point on the southeastly boundary line of said Tract A-1-A, also being a point on the west right-of-way line of Coors Boulevard; Thence

South 43°49'21" West a distance of 49.57 feet to the POINT OF BEGINNING.

Easement contains 0.8825 acres, more or less.

SURVEYOR'S CERTIFICATION

I, Timothy M. Solinski, a New Mexico Professional Surveyor No. 17531, do hereby certify that this Easement Plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the Minimum Standards for Surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is an Easement Survey for use in granting a new easement.

1-8-10
Timothy M. Solinski — Date
NM Professional Surveyor No. 17531

TIMOTHY SOLINSKI
NEW MEXICO
17531
LICENSED PROFESSIONAL SURVEYOR

Bohannan Huston

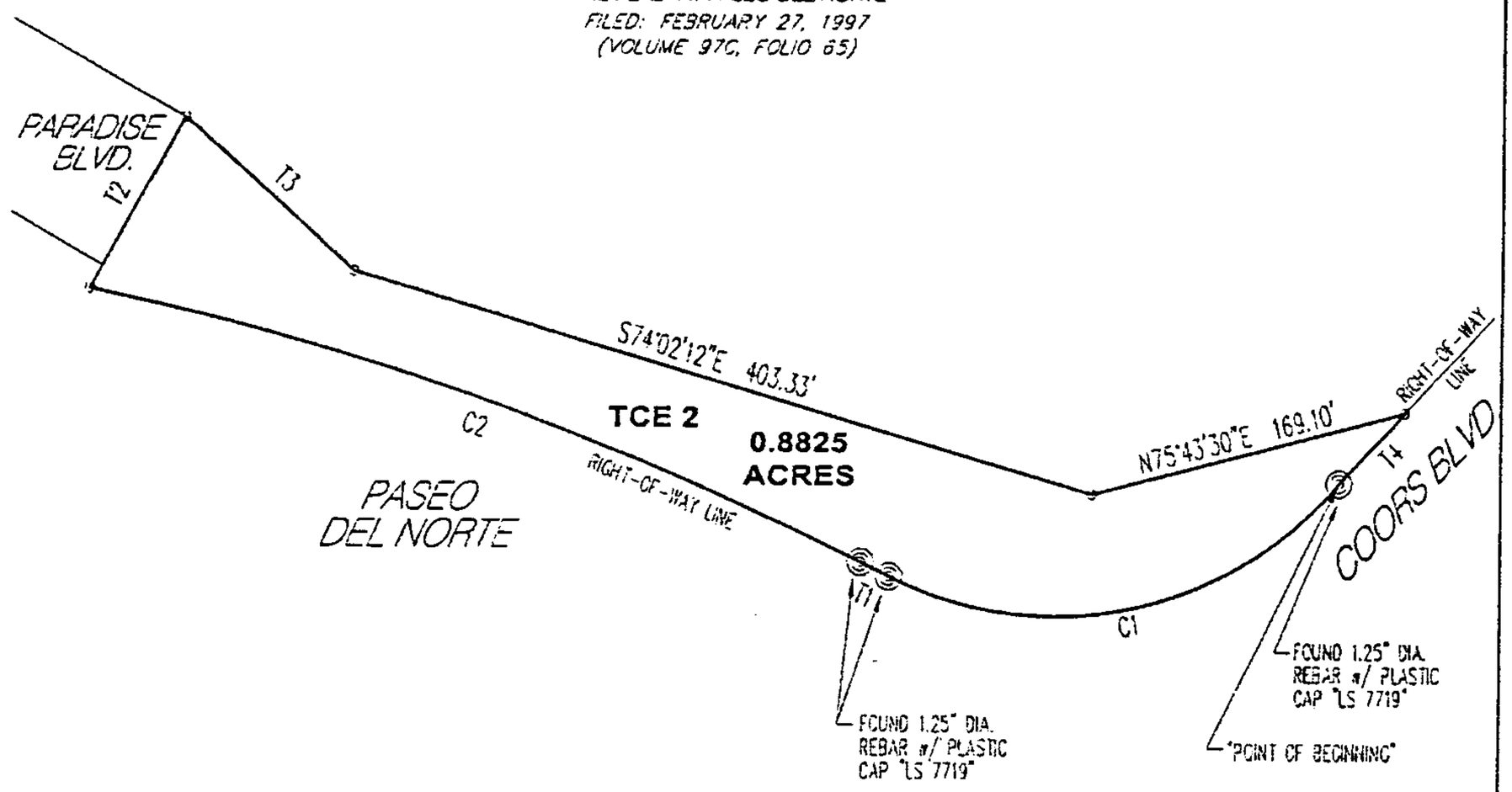
A.M.A.F.C.A.
EASEMENT EXHIBIT
TCE 2
BHI #: 20100065.001.01

EXHIBIT B
Sheet 2 of 5

P:\20100065\SURVEY\GRAPHICS\20100065

EXHIBIT A

TRACT A-1-A
THE PLAZA AT PASEO DEL NORTE
FILED: FEBRUARY 27, 1997
(VOLUME 97C, FOLIO 65)



Curve Data						
ID	DELTA	TANGENT	ARC	RADIUS	CHORD	CHORD BRG
C1	74°59'31"	151.14'	257.84'	197.00'	239.83'	S76°27'30"W
C2	14°37'17"	215.15'	427.96'	1677.02'	426.80'	N71°21'22"W

Tangent Data		
ID	BEARING	DISTANCE
T1	N64°02'44"W	16.69'
T2	N29°06'45"E	99.09'
T3	S48°57'29"E	117.79'
T4	S43°49'21"W	49.57'

N

100 50 0 100

SCALE: 1" = 100'

Bohannan Huston

A.M.A.F.C.A. EASEMENT EXHIBIT	
TCE 2	**EXHIBIT B**
BHI #: 20100065.001.01	**Sheet 3 of 5**

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EXHIBIT A

DESCRIPTION

An A.M.A.F.C.A. Temporary Construction Easement 1 (TCE 1) within the projected Section 18, Township 11 North, Range 3 East N.M.P.M., also being a portion of TRACT A-1-A of THE PLAZA AT PASEO DEL NORTE, Bernalillo County, New Mexico as the same is shown and designated on the plat thereof, recorded in the office of the County Clerk of Bernalillo County, New Mexico on February 27, 1997 in Book 97C, Page 65,

BEGINNING at a point on the east boundary line of said TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard, Thence

South 43°49'25" West a distance of 353.13 feet to a point on the southeasterly boundary line of said TCE 1, also being a point on the TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard; Thence

South 75°43'30" West a distance of 174.05 feet to the southwesterly corner of said TCE 1; Thence

North 36°00'47" East a distance of 244.34 feet to the northwesterly corner of said TCE 1; Thence

North 65°43'23" East a distance of 80.59 feet; Thence

North 66°54'44" East a distance of 69.27 feet; Thence

North 65°10'02" East a distance of 55.76 feet; Thence

North 52°17'46" East a distance of 88.83 feet to the northerly corner of said TCE 1; Thence

South 36°33'50" East a distance of 33.07 feet to a point on the easterly boundary line of said TRACT A-1-A, also being a point on the west right-of-way line of Coors Boulevard; Thence

South 40°57'39" West a distance of 13.42 feet to the POINT OF BEGINNING.

Easement contains 0.8969 acres, more or less.

SURVEYOR'S CERTIFICATION

I, Timothy M. Solinski, a New Mexico Professional Surveyor No. 17531, do hereby certify that this Easement Plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the Minimum Standards for Surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is an Easement Survey for use in granting a new easement.

1-8-10

Timothy M. Solinski — Date
NM Professional Surveyor No. 17531

TIMOTHY SOLINSKI
NEW MEXICO
17531
LICENSED PROFESSIONAL SURVEYOR

Bohannan Huston

A.M.A.F.C.A.
EASEMENT EXHIBIT

TCE 1

BHI #: 20100065.001.01

EXHIBIT B

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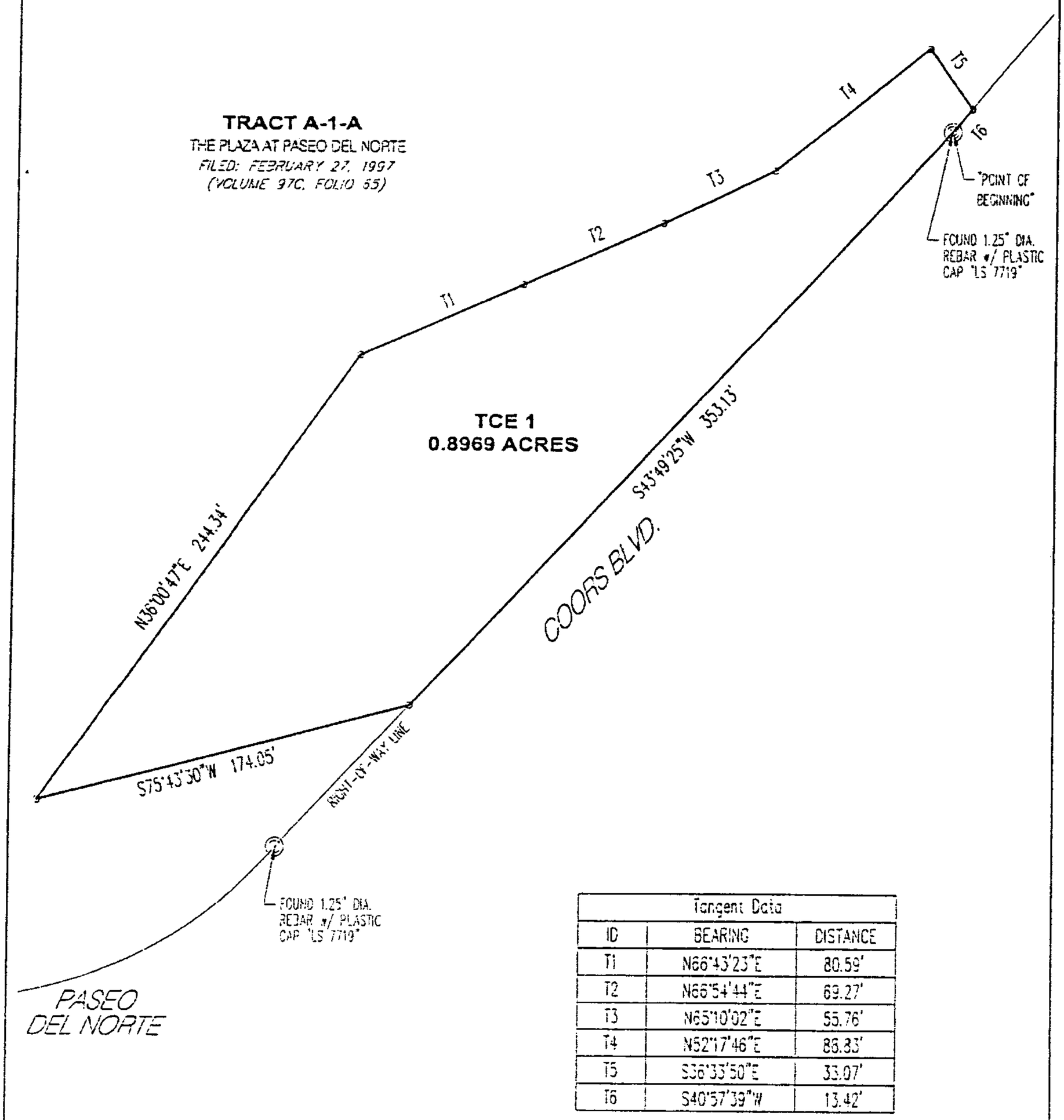
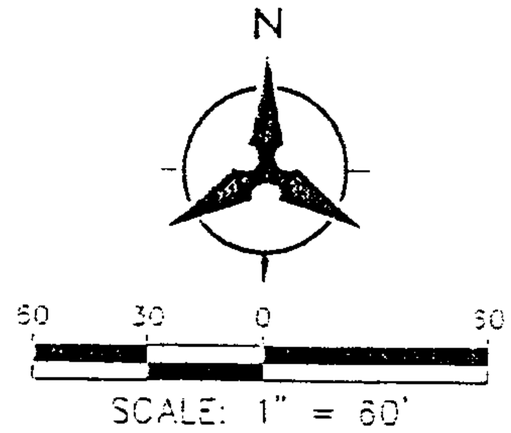
EXHIBIT A



Tangent Data		
ID	BEARING	DISTANCE
T1	N66°43'23"E	80.59'
T2	N66°54'44"E	69.27'
T3	N65°10'02"E	55.76'
T4	N52°17'46"E	86.83'
T5	S36°33'50"E	33.07'
T6	S40°57'39"W	13.42'



Bohannan Huston

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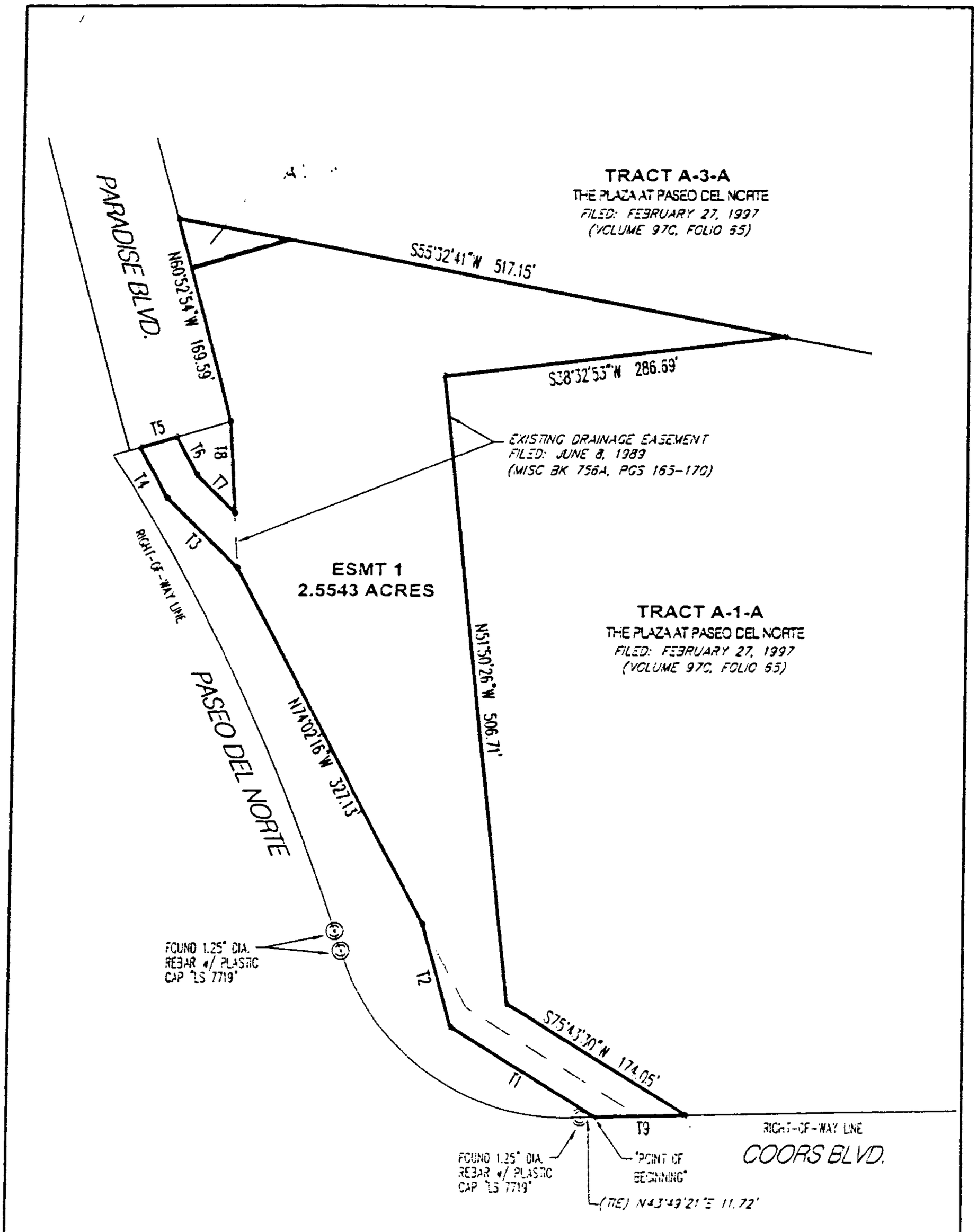
A.M.A.F.C.A.
EASEMENT EXHIBIT

TCE 1

BHI #: 20100065.001.01

EXHIBIT B

Sheet 5 of 5



Tangent Data		
ID	BEARING	DISTANCE
T1	S75°43'30"W	140.35'
T2	N61°12'25"W	85.49'
T3	S88°30'32"W	81.68'
T4	N74°34'42"W	46.25'
T5	S29°06'45"W	30.38'
T6	N74°34'42"W	34.49'
T7	S88°30'32"W	44.52'
T8	N48°57'29"W	73.41'
T9	S43°49'24"W	75.70'

Bohannan Huston

CITY
EASEMENT EXHIBIT

ESMT 1

BHI #: 20100065.001.01

EXHIBIT C

Sheet 1 of 2

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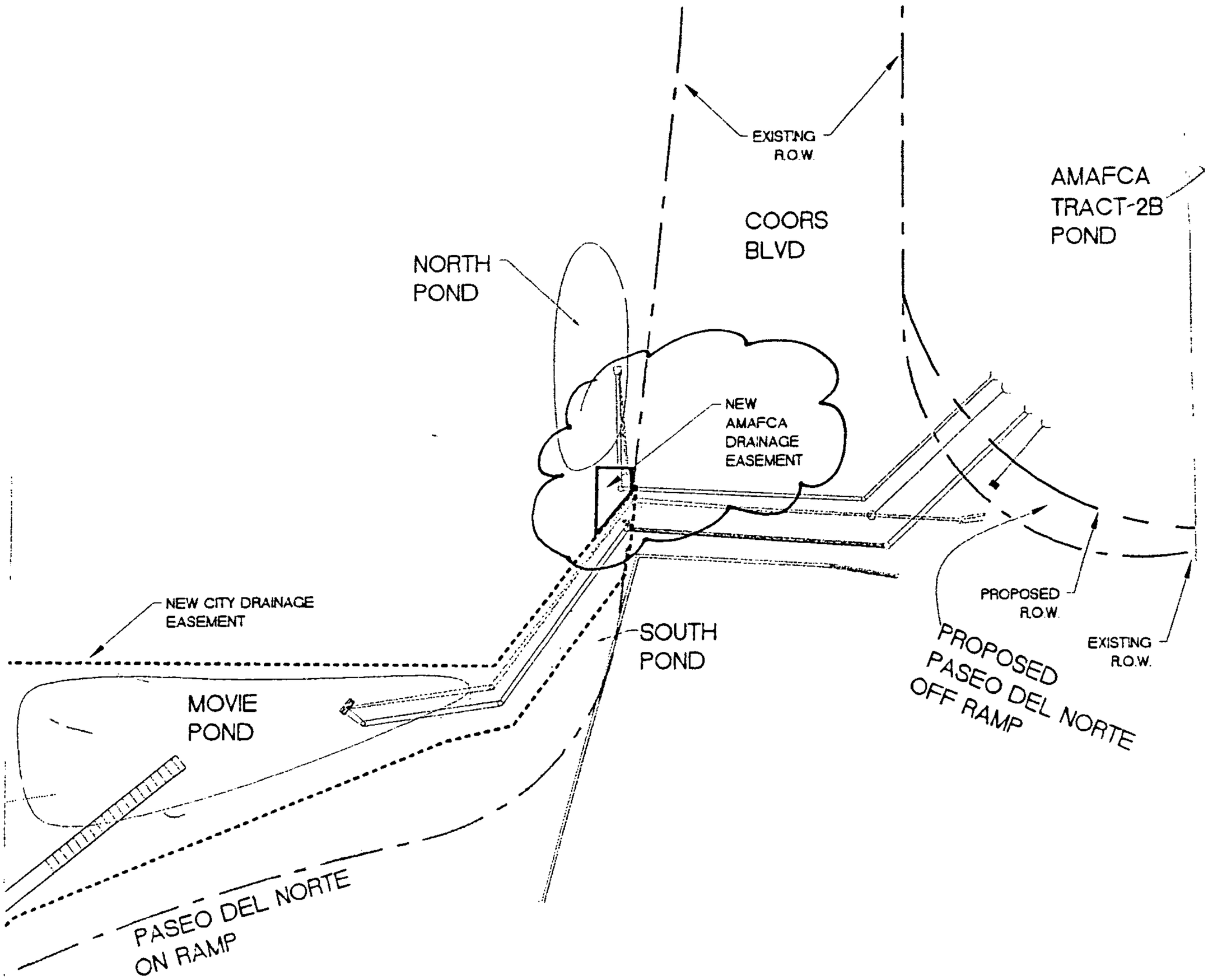

Bohannan Huston

A.M.A.F.C.A.
EASEMENT EXHIBIT

ESMT 1

BHI #. 20100065.001.01

EXHIBIT C

Sheet 2 of 2

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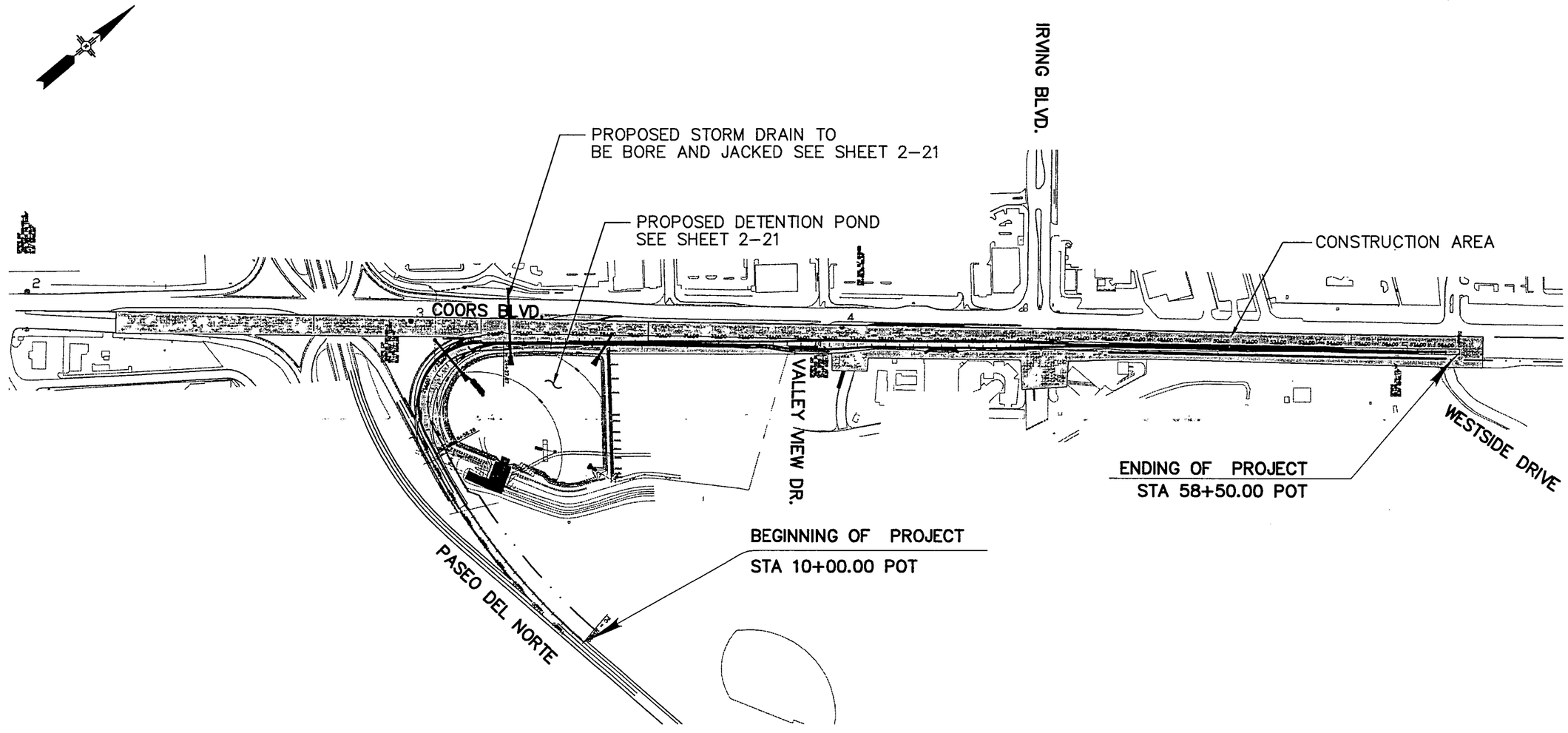
_EasementExhibit_ESMT1.dwg

2155 LOUISIANA BLVD., NE
SUITE 9500
ALBUQUERQUE, NM 87110
MAIN: (505) 830-5400
FAX: (505) 830-5454

HDR ENGINEERING INC. | ONE COMPANY *Many Solutions*



SUGGESTED SEQUENCE OF CONSTRUCTION:

PHASE A: TRAFFIC CONTROL MANAGEMENT.

PHASE B: INSTALL STORM OUTFALL W/SHOULDER CLOSURE.

PHASE C: CURB & GUTTER AND PAVEMENT INSTALLATION W/ SHOULDER CLOSURE.

PHASE D: PERMANENT SIGNING AND STRIPING BY ONE LANE CLOSURE DURING NON-PEAK HOURS (9:00 AM-3:00PM).

PHASE D: INSTALLATION OF DRAINAGE DETENTION POND (OFF-LINE SIMULTANEOUS DURING PHASE A/B/C).

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT
OF TRANSPORTATION

PASEO DEL NORTE WB/COORS BLVD.
NB RAMP IMPROVEMENTS
CONSTRUCTION PHASING PLAN

2155 LOUISIANA BLVD., NE
SUITE 9500
ALBUQUERQUE, NM 87110
MAIN: (505) 830-5400
FAX: (505) 830-5454

HDR ENGINEERING INC.

ONE COMPANY
Many Solutions

BEGINNING OF PROJECT
℄ STA. 10+00.00,
N=1521830.00
E=1517436.94

PASEO DEL NORTE

℄ CONSTRUCTION

EXISTING RCB

ROW LINE

EXISTING AMAFCA
DRAINAGE CHANNEL

BEGIN RAMP
PROPOSED 8' WIDE CONCRETE RAMP W.N.S. PROPOSED ℄ PASEO DEL NORTE

INSTALL 32.58 FT 18" CMP
CONNECT TO EXISTING DROP
INLET INV = 4997.98±

PROPOSED SLOPE LIMITS

STA. 18+69.51 RT 4.48
INSTALL NEW DROP INLET FOR
"TYPE A CURBS"
PER NMDOT STD DWG BDIC-001
GRATE ELEV = 5001.34
18" INV OUT = 4997.34

STA. 22+25.74, 93.20 LT
INSTALL TYPE "E" MANHOLE
RIM ELEVATION 5006.00
INV = 4998.18

INSTALL 138.57 FT 24" CMP

STA 22+18.89 RT 60.59
INSTALL 36" END SECTION
INV = 4998.00

PROPOSED ROW

REMOVE & DISPOSE
EXISTING DROP INLET

REMOVE & DISPOSE
EXISTING 24" CMP
WEST OF NEW
MANHOLE

EXISTING MANHOLE
RIM ELEVATION 5005.21
INV = 4999.63

MATCHLINE STA 23+50
SEE SHEET 10-2

SCALE: HORZ. 1"= 50'
VERT. 1"= 5'

LOW POINT ELEV = 5001.59
LOW POINT STA = 18+04.37
PVI STA = 18+58.27
PVI ELEV = 5001.39
200.00' VC
A.D. = 1.11
K = 180.51

BVCS: 17+58.27
BVCE: 5001.65
EVCS: 19+58.27
EVCE: 5002.24

-0.26%

EXISTING PROFILE GRADE

PROPOSED PROFILE GRADE ⊙ ℄ CONSTRUCTION

MATCHLINE STA 23+50
SEE SHEET 10-2

16+00	16+50	17+00	17+50	18+00	18+50	19+00	19+50	20+00	20+50	21+00	21+50	22+00	22+50	23+00	23+50
5002.0 5002.05	5002.0 5001.92	5001.6 5001.79	5001.5 5001.67	5001.4 5001.59	5001.4 5001.64	5001.8 5001.84	5001.0 5002.17	5000.1 5002.60	5000.0 5003.02	5000.0 5003.45	4999.4 5003.88	5000.6 5004.30	5001.4 5004.73	5003.0 5005.16	5005.3

5015 5010 5005 5000 4995 4990 4985

2155 LOUISIANA BLVD., NE
SUITE 9500
ALBUQUERQUE, NM 87110
MAIN: (505) 830-5400
FAX: (505) 830-5454
HDR ENGINEERING INC.
ONE COMPANY
Many Solutions

STA. 28+07.74 LT 11.02
INSTALL NEW TYPE 'C' 8 FT MH
PER COA STD DWG 2101
RIM ELEV = 5009.00
INV. IN ELEV.=5002.48
INV. OUT ELEV.=5002.48

STA. 29+11.05 LT 9.59
INSTALL NEW TYPE 'C' 8 FT MH
PER COA STD DWG 2101
RIM ELEV = 5011.42
INV. IN ELEV.=5004.50
INV. OUT ELEV.=5004.50

STA. 33+61.22 LT 20.26
INSTALL NEW TYPE 'C' 8 FT MH
PER COA STD DWG 2101
RIM ELEV = 5020.09
48" INV IN = 5013.99

STA. 34+58.12 RT 15.00
INSTALL NEW TYPE 'A' DROP INLET
PER NMDOT STD DWG BDIC-001
GRATE ELEV = 5020.82
18" INV OUT = 5016.82

INSTALL 101.25 FT 18" CMP

℄ SURVEY (COORS ROAD)

℄ CONSTRUCTION

COORS BLVD.

MATCHLINE STA 23+50
SEE SHEET 10-1

MATCHLINE STA 37+50
SEE SHEET 10-3

called out as 36" bore+jack on 50% submittal

ELEV 5088.89'

ELEV 5013.45'

ELEV 5021.93'

ELEV 5024.33'

ELEV 5025.99'

ELEV 5024.91' OR ELEV 5027.04'

21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00

5006 5007 5004 5005

5007.56

5007.66

5007.65

NEW 48" RCP

INVERT ELEVATION = 4999.0

INVERT ELEVATION = 4999.80

NEW 48" RCP

NEW 48" RCP

NEW 48" RCP

3-24"X CPC'S
W/ CONC. BLANKE
SAFETY CROSS BA
BOTH ENDS

SCALE: HORZ. 1"= 50'
VERT. 1"= 5'

EXISTING PROFILE GRADE

PROPOSED PROFILE GRADE

SEE SHEET 2-9 FOR DETAILED OUTLET DWG

PIPE L = 222.61' S = .0.0085FT/FT DIA 48"RCP

PIPE L = 78.58' S = 0.0439FT/FT DIA 48"RCP

PIPE L = 450.11' S = 0.0209FT/FT DIA 48" RCP

PIPE L = 450.00' S = 0.0093FT/FT DIA 48" RCP

5030 5025 5020 5015 5010 5005 5000 4995

25+00 25+50 26+00 26+50 27+00 27+50 28+00 28+50 29+00 29+50 30+00 30+50 31+00 31+50 32+00 32+50 33+00 33+50 34+00 34+50 35+00 35+50 36+00 36+50 37+00 37+50

2155 LOUISIANA BLVD., NE
SUITE 9500
ALBUQUERQUE, NM 87110
MAIN: (505) 830-5400
FAX: (505) 830-5454
HDR ENGINEERING INC.
ONE COMPANY
Many Solutions

STA. 38+10.85 LT 1.94
INSTALL NEW TYPE 'C' 8 FT MH
PER COA STD DWG 2101
RIM ELEV = 5024.39
48" INV IN = 5018.29
18" INV. IN ELEV.=5021.00

REMOVE & DISPOSE EXISTING MH

SMH +74-88

SMH +74-60 ELEV

STA. 42+61.86 RT 4.48
INSTALL NEW TYPE 'C' 8 FT MH
RIM ELEV = 5031.18
24" INV IN = 5022.50±
48" INV OUT = 5019.75
18" INV. IN = 5024.50

REMOVE END SECTION AT EXISTING 24" CMP
INSTALL NEW SAFETY GRATE PER NMDOT STD DWG BBG-032
EXTEND EXISTING 24" CMP CULVERT
17.50 FT AT 45° RT AHEAD
INV=5024.00±

SMH +74-88.51 ELEV 5036.

REMOVE END SECTION AT EXISTING 24" CMP
INSTALL NEW SAFETY GRATE PER NMDOT STD. DWG BBG-032
EXTEND EXISTING 24" CMP CULVERT
10.00 FT AT 45° RT BEHIND
INV=5025.5±

PEDT +74-76.01

SMH +27-88.65

REMOVE END SECTION AT EXISTING 24" CMP
INSTALL NEW SAFETY GRATE PER NMDOT STD. DWG BBG-032
EXTEND EXISTING 24" CMP CULVERT
10.00 FT AT 45° RT AHEAD
INV=5026.5±

℄ SURVEY (COORS RD.)

SMH +43-33.89' ELEV 5042.18'

℄ CONSTRUCTION

MATCHLINE STA 37+50
SEE SHEET 10-2

MATCHLINE STA 51+50
SEE SHEET 10-4

COORS BLVD.

35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00

N40°26'47"E
315.51'

N38°36'14"E
292.73'

INSTALL 49.28 FT 18" CMP

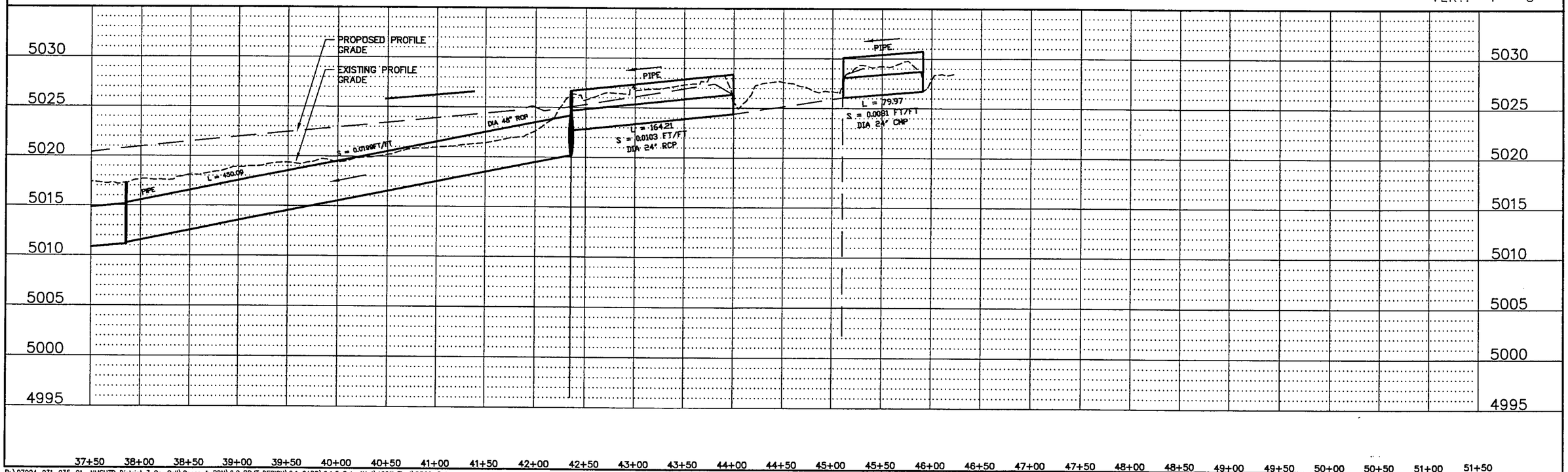
NEW 48" RCP

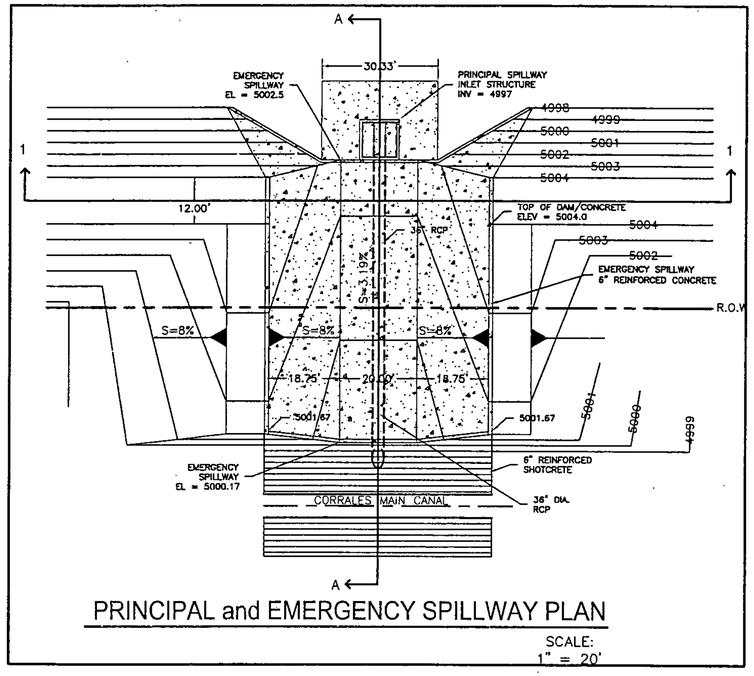
CONNECT EXISTING 24" CMP
TO NEW TYPE 'C' 8 FT MH
INV=5022.50±

IRVING BLVD.

STA. 37+58.99 RT 6.00
INSTALL NEW TYPE 'A' DROP INLET
PER NMDOT STD DWG BDIC-001
GRATE ELEV = 5026.12
18" INV OUT = 5022.12

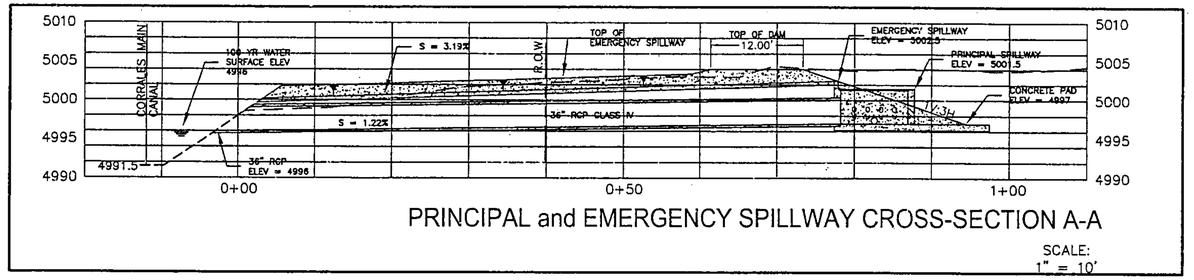
SCALE: HORZ. 1"= 50'
VERT. 1"= 5'





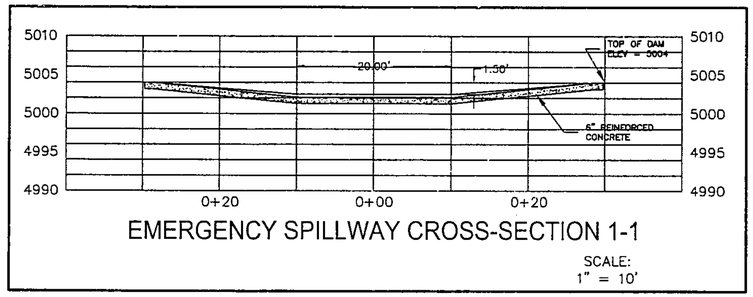
PRINCIPAL and EMERGENCY SPILLWAY PLAN

SCALE:
1" = 20'



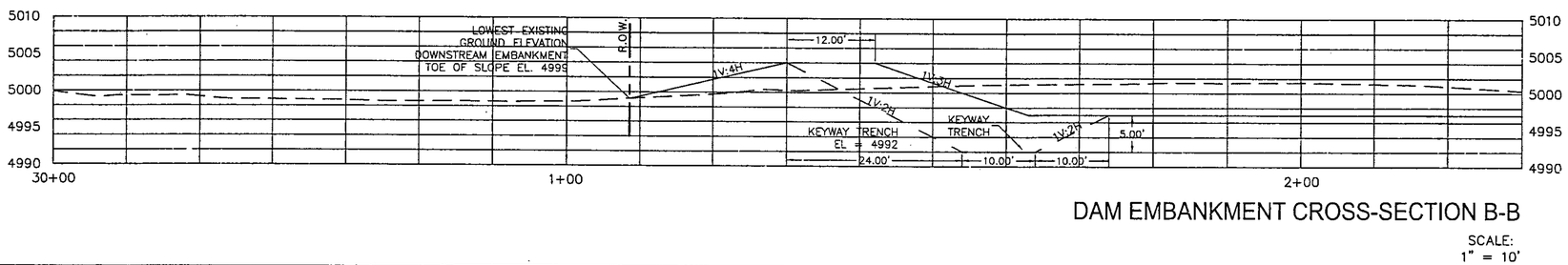
PRINCIPAL and EMERGENCY SPILLWAY CROSS-SECTION A-A

SCALE:
1" = 10'



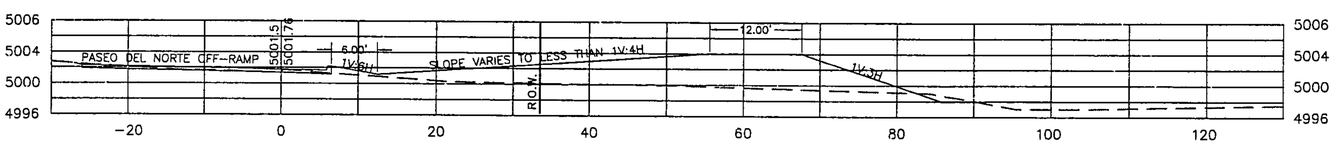
EMERGENCY SPILLWAY CROSS-SECTION 1-1

SCALE:
1" = 10'



DAM EMBANKMENT CROSS-SECTION B-B

SCALE:
1" = 10'



DAM EMBANKMENT CROSS-SECTION C-C

SCALE:
1" = 10'

F.H.W.A. REGION NO. 6	SHEET NO.
NEW MEXICO PROJECT NO.	
-	

CADD

BUILD NOTES

R10 INSTALL INLET: INSTALL INLET PER SECTION 300. SEE DETAIL SHEET X.

PRELIMINARY
NOT FOR CONSTRUCTION
6/28/04

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF
TRANSPORTATION

AMAFCA – PASEO DEL NORTE/ COORS BLVD. STORM WATER DETENTION POND

F.H.W.A. REGION NO. 6	SHEET NO.
NEW MEXICO PROJECT NO.	
–	2–8

CADD

CPGPS CIP
"NMSHTD DS0403-3
GPS 2003 PS 12350"
17+56.74-15.48'
ELEV 5006.06'

18" VERTICAL OUTFALL PIPE–6' TALL
18" VERTICAL OUTFALL PIPE
DETENTION POND INV. 5005.75
POND SPILL ELEV. 5008
EXISTING 30" CMP
EXISTING 30" CMP
EXISTING MANHOLE RIM ELEV 5005.21 INV. 4999.63
EXISTING 36" CMP
PROPOSED MANHOLE 6' DIA INV. 4998.18
EXISTING DROP INLET
5004.42
EXISTING RIGHT OF WAY
5003.53
5002.65
PROPOSED RIGHT OF WAY
EXISTING PROPOSED
DETENTION POND INV. 5004.34
BUILD END SECTION INVERT 5004
POND SPILL ELEV. 5008
BORE & JACK 240 LF–36" RCP AT 0.019 ft/ft
PROPOSED 6' SIDEWALK
COORS BLVD. NORTHBOUND
5006.20
5005.31
1V:3H
1V:4H
BUILD END SECTION INVERT 4999
BUILD 10'x25' RIP–RAP
BUILD 154 LF 36" RCP INV. 4998
BUILD 10'x25' RIP–RAP
PROPOSED 48" RCP STORM DRAIN INV = 4999.8
BUILD 10'x25' RIP–RAP
5007.56
5007.66
5007.65
5007.77
TRACT 2–B PROPERTYLINE
5007.84
5008.04
GRADE SLOPE FOR 10' FROM PROPERTY LINE TO NORTH TOP OF DAM. MAX SLOPE = 1V:2H.
10.00'
5008.47
5008.91
5008.95
5008.88
12.00' TOP WIDTH FOR ENTIRE EMBANKMENT.
5009.00
5008.53
5008.90
30' RADIUS
EMERGENCY SPILLWAY CREST ELEV=5002.5
TOP OF EMBANKMENT ELEV=5004
PRINCIPAL SPILLWAY (UNGATED) CREST=5001.5 INV = 4997.0
EXISTING RIP–RAP AND STRUCTURES TO BE REMOVED.
REINFORCED CONCRETE (6") EMERGENCY SPILLWAY (UNGATED)
30.33'
28.33'
5001.76
EXISTING CMP'S INV ELEV=4996.48
2–EXISTING 36" CMP's TO BE REMOVED
5001.54
EXISTING CMP'S INV ELEV=4994.48
EXISTING 10'x6' CBC TOW 4999.90 INV. 4991.45
EXISTING 36" CMP TO REMAIN INV. 4999.20
BUILD 86 LF 36" RCP
18.75'
18.75'
20.00'
6" REINFORCED SHOTCRETE
0.0008 ft/ft
MRGCD R.O.W.
CORRALES MAIN CANAL
PASEO DEL NORTE
OFF-RAMP
SWALE
A
B
C
1
2
3

50' 25' 0 50' 100'
SCALE: 1" = 50'

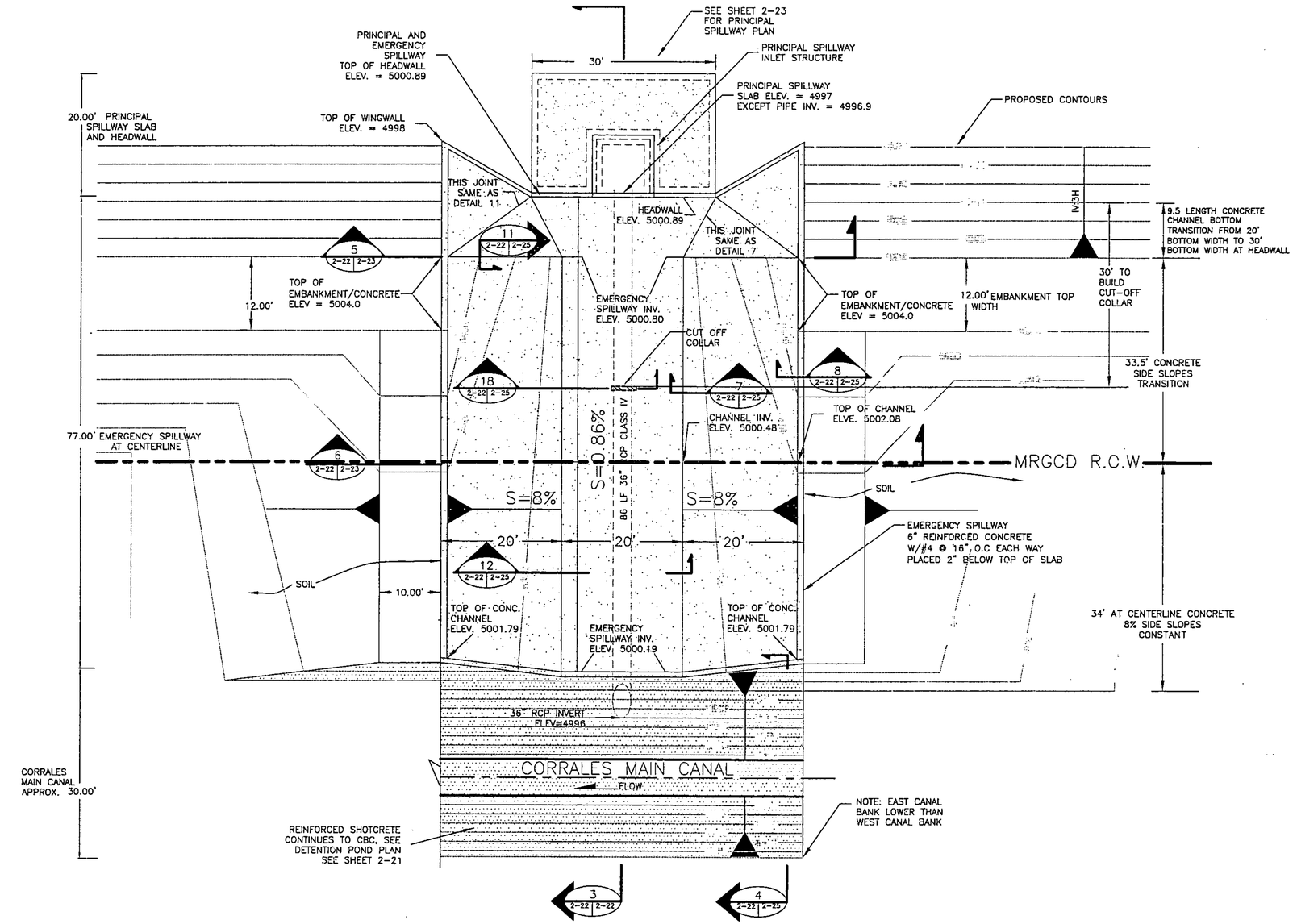
Smith Engineering Company
A Full Service Engineering Company
5486 Osborn Boulevard, N.E. Suite 300E Albuquerque, New Mexico 87110

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS (OR CHANGE NOTICES)

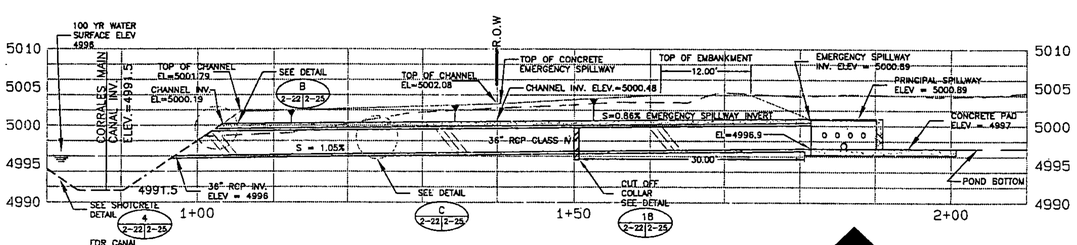
NEW MEXICO DEPARTMENT OF TRANSPORTATION

AMAFCA – PASEO DEL NORTE/ COORS BLVD. STORM WATER DETENTION POND



PRINCIPAL and EMERGENCY SPILLWAY PLAN

SCALE: 1" = 10'



PRINCIPAL and EMERGENCY SPILLWAY PROFILE

SCALE: 1" = 10'

3 2-22 2-22

GENERAL NOTES

1. ALL STRUCTURAL CONCRETE TO BE 4000 PSI UNLESS OTHERWISE NOTED ON PLANS.
2. ALL REINFORCING STEEL TO BE GRADE 60.
3. ALL EXPOSED EDGES ON CAST -IN-PLACE CONCRETE STUCTURES WILL HAVE A 1" CHAMFER UNLESS OTHERWISE NOTED ON PLANS.
4. ALL CONCRETE SHALL BE "BRUSH" FINISHED.

F.H.W.A. REGION NO. 6	SHEET NO.
NEW MEXICO PROJECT NO. -	

CADD

PRELIMINARY
NOT FOR CONSTRUCTION
1/28/05

Smith Engineering Company
A Full Service Engineering Company
2201 San Pedro Boulevard, N.E., Bldg. #4, Suite 200 Albuquerque, New Mexico 87110

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS (OR CHANGE NOTICES)

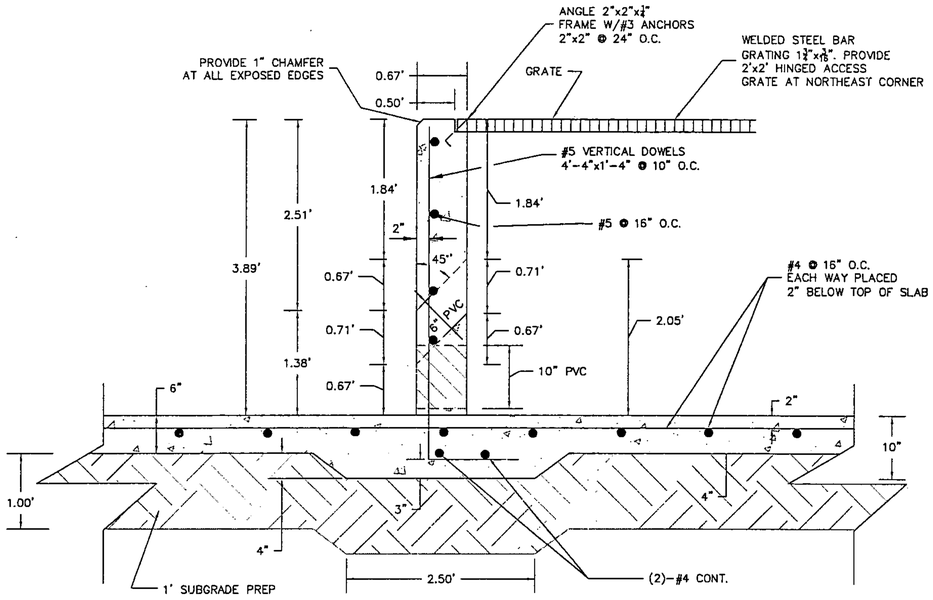
NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY
PASEO DEL NORTE/COORS BLVD
STORM WATER DETENTION POND

PRINCIPAL AND EMERGENCY SPILLWAY PLAN AND PROFILE

NEW MEXICO PROJECT NO. - SHEET NO. 2-22

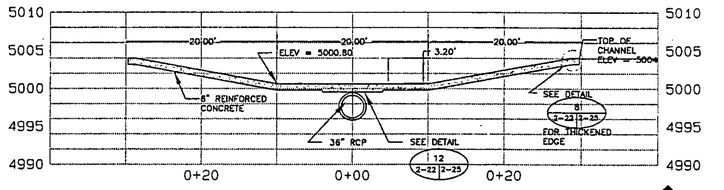
Z:\DRAWINGS\50010\07 AMAFCA TRACT 2-B POND\LOOD SCULPTURE 3\MLETTER\DETAILS.DWG,3-22



PRINCIPAL SPILLWAY DETAIL SECTION

SCALE: 1" = 1'

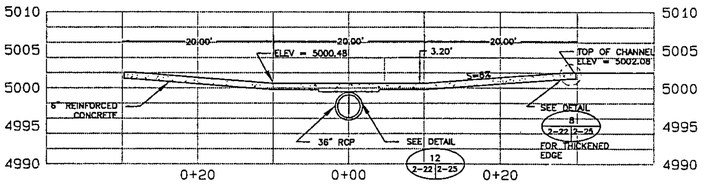
15 | 2-23 | 2-23



PRINCIPAL AND EMERGENCY SPILLWAY CROSS-SECTION

SCALE: 1" = 10'

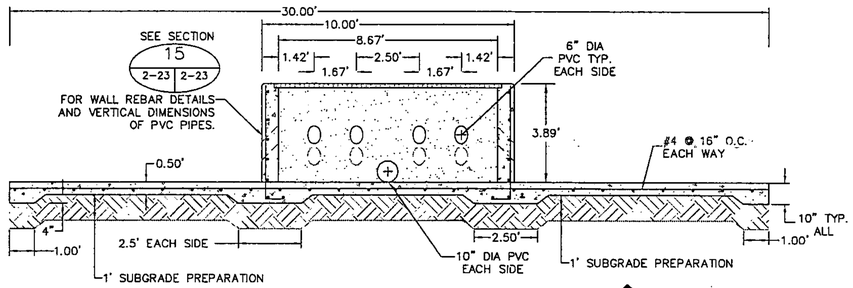
5 | 2-22 | 2-23



PRINCIPAL AND EMERGENCY SPILLWAY CROSS-SECTION

SCALE: 1" = 10'

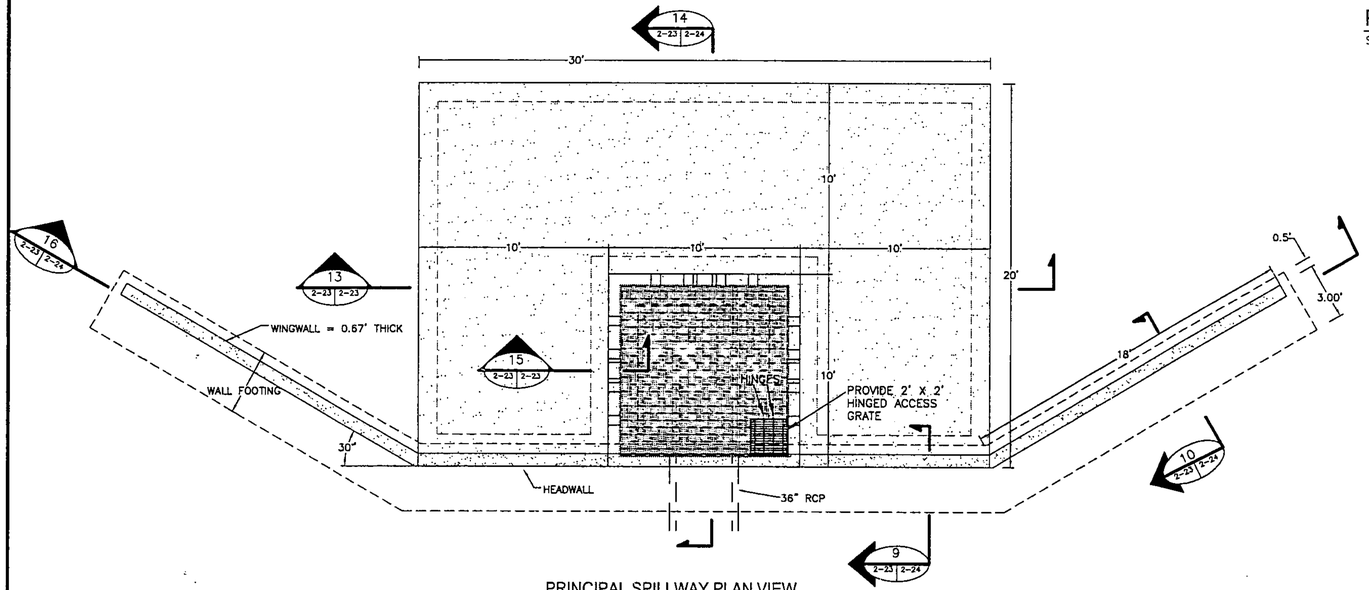
6 | 2-22 | 2-23



PRINCIPAL SPILLWAY SECTION

SCALE: 1" = 3'

13 | 2-23 | 2-23



PRINCIPAL SPILLWAY PLAN VIEW

SCALE: 1" = 4'

F.H.W.A. REGION NO. 6 | SHEET NO.
NEW MEXICO PROJECT NO. | –

CADD

GENERAL NOTES

1. ALL STRUCTURAL CONCRETE TO BE 4000 PSI UNLESS OTHERWISE NOTED ON PLANS.
2. ALL REINFORCING STEEL TO BE GRADE 60.
3. ALL EXPOSED EDGES ON CAST –IN–PLACE CONCRETE STUCTURES WILL HAVE A 1" CHAMFER UNLESS OTHERWISE NOTED ON PLANS.
4. ALL CONCRETE SHALL BE "BRUSH" FINISHED.

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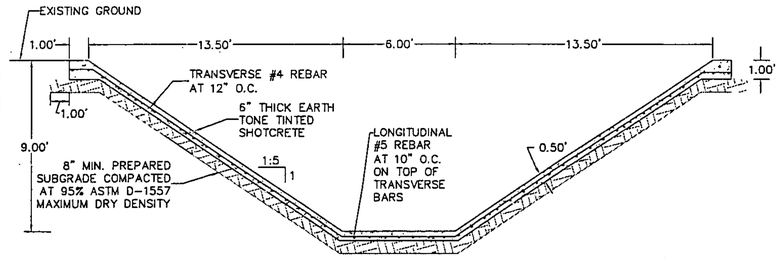
NEW MEXICO DEPARTMENT OF
TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY
PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

SPILLWAY DETAILS

NEW MEXICO PROJECT NO. – SHEET NO. 2-23

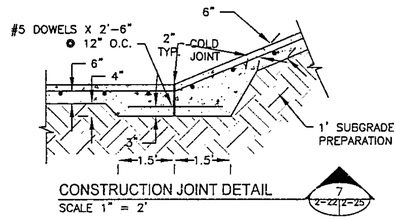
I:\ROADWAY\DESIGN\ALAMEDA TRACT 2-B POND\DGN\SPILLWAY DETAILS.DGN 2-23-05



CORRALES MAIN CANAL CROSS-SECTION DETAIL

SCALE: 1" = 4'

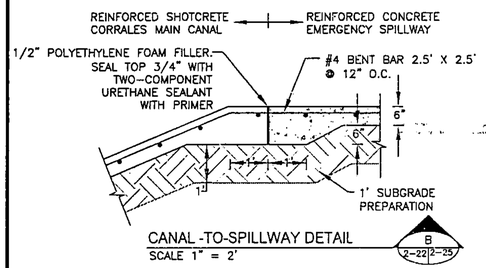
4 | 2-22 | 2-25



CONSTRUCTION JOINT DETAIL

SCALE 1" = 2'

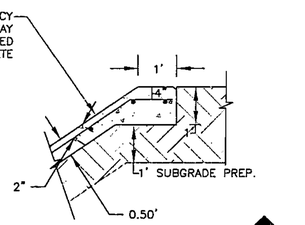
7 | 2-22 | 2-25



CANAL -TO-SPILLWAY DETAIL

SCALE 1" = 2'

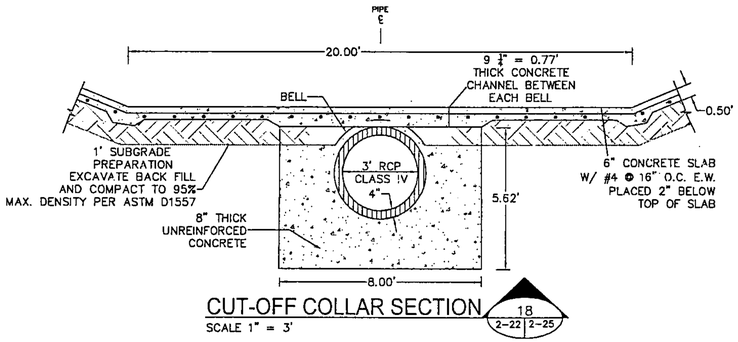
B | 2-22 | 2-25



DETAIL SECTION

SCALE 1" = 2'

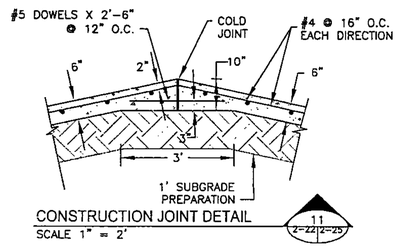
8 | 2-22 | 2-25



CUT-OFF COLLAR SECTION

SCALE 1" = 3'

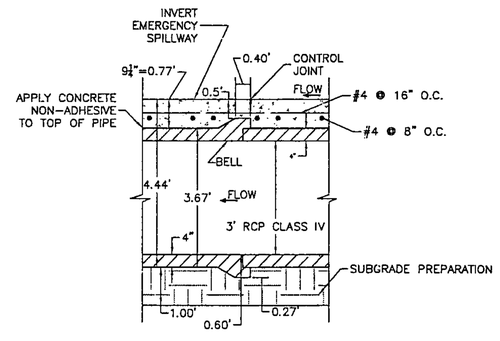
18 | 2-22 | 2-25



CONSTRUCTION JOINT DETAIL

SCALE 1" = 2'

11 | 2-22 | 2-25



CROSS SECTION

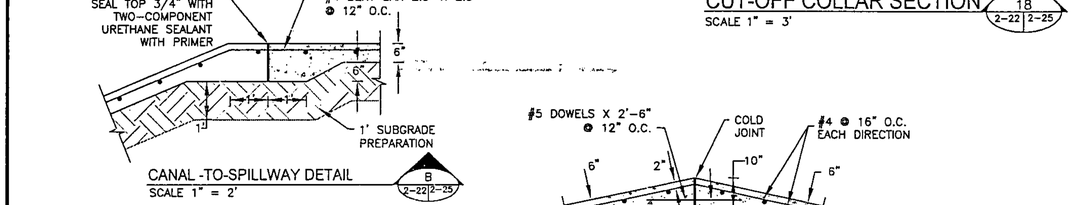
SCALE 1" = 3'

12 | 2-22 | 2-25

PROFILE DETAIL

SCALE: 1" = 2'

C | 2-22 | 2-25



EMBANKMENT CROSS-SECTION

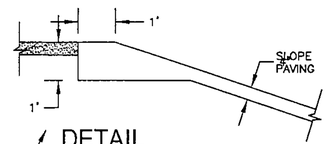
SCALE: 1" = 10'

2 | 2-21 | 2-25

(a)

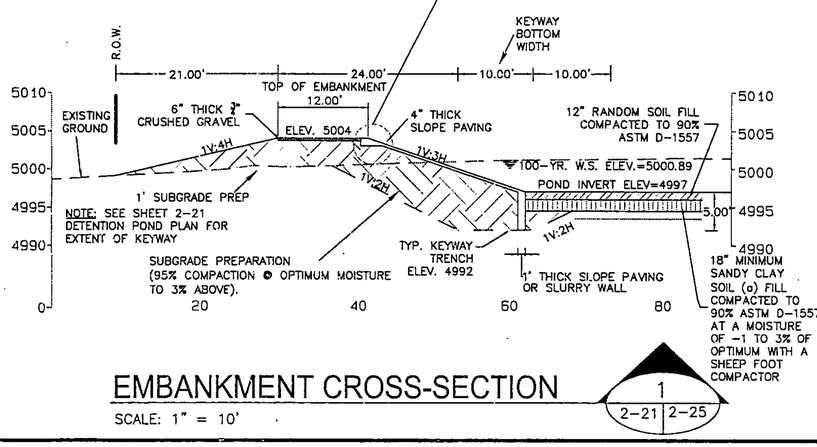
SIEVE SIZE	%PASSING
1"	100
#4	90-100
#40	80-100
#200	50-90

PLASTICITY INDEX 35 OR LESS
PERMEABILITY $1X10^{-7}$ OR LESS CM/SEC



DETAIL

SCALE: 1"-2'



EMBANKMENT CROSS-SECTION

SCALE: 1" = 10'

1 | 2-21 | 2-25

F.H.W.A. REGION NO. 6	SHEET NO.
NEW MEXICO PROJECT NO. -	

CADD

GENERAL NOTES

1. ALL STRUCTURAL CONCRETE TO BE 4000 PSI UNLESS OTHERWISE NOTED ON PLANS.
2. ALL REINFORCING STEEL TO BE GRADE 60.
3. ALL EXPOSED EDGES ON CAST -IN-PLACE CONCRETE STUCTURES WILL HAVE A 1" CHAMFER UNLESS OTHERWISE NOTED ON PLANS.
4. ALL CONCRETE SHALL BE "BRUSH" FINISHED.
5. SLOPE PAVING.

PRELIMINARY

NOT FOR CONSTRUCTION

1/28/05

Smith Engineering Company
A Full Service Engineering Company
2201 San Pedro Boulevard, N.E., Bldg. #4, Suite 200 Albuquerque, New Mexico 87110

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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

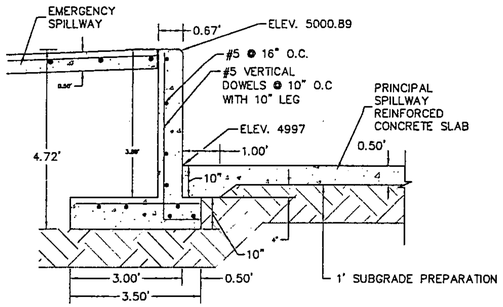
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY
PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

DETAILS

NEW MEXICO PROJECT NO. -

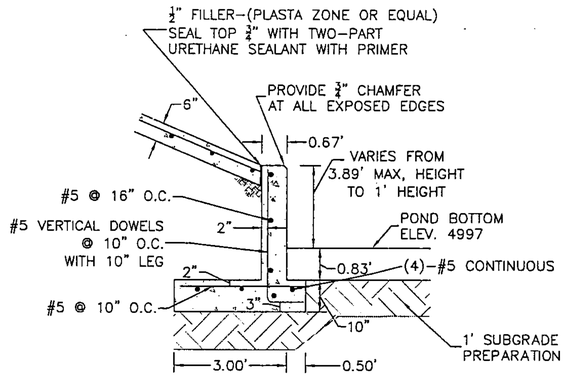
SHEET NO. 2-25

X:\ENGINEERING\3501007 JAMPA TRACT 2-A PCNM\CADD SET\SYSTEM 3\ALTERNATE4.DWG\3-25



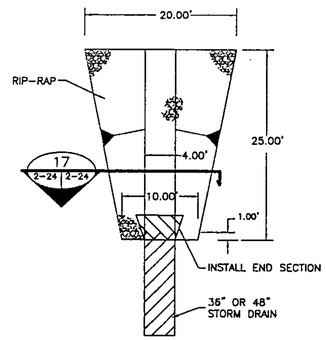
HEADWALL DETAIL SECTION

SCALE: 1" = 2'

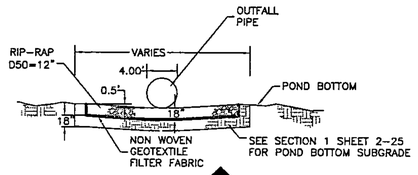


WINGWALL DETAIL

SCALE: 1" = 2'



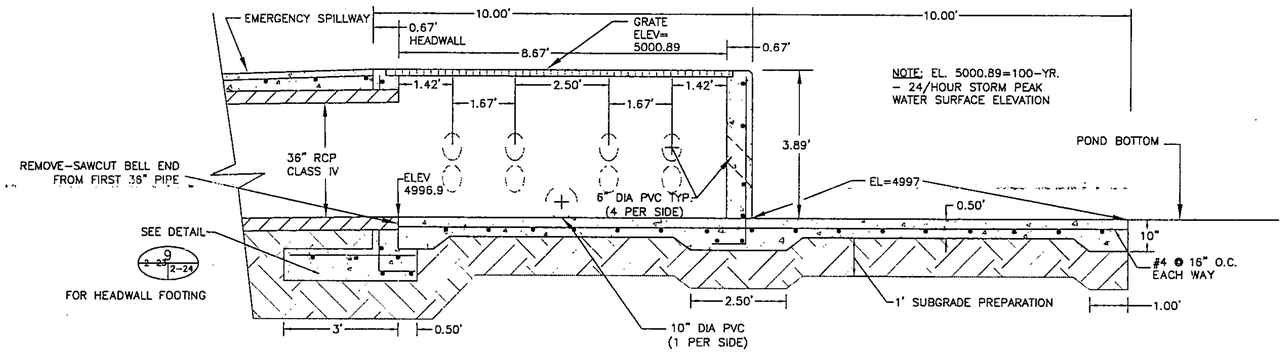
PLAN



SECTION

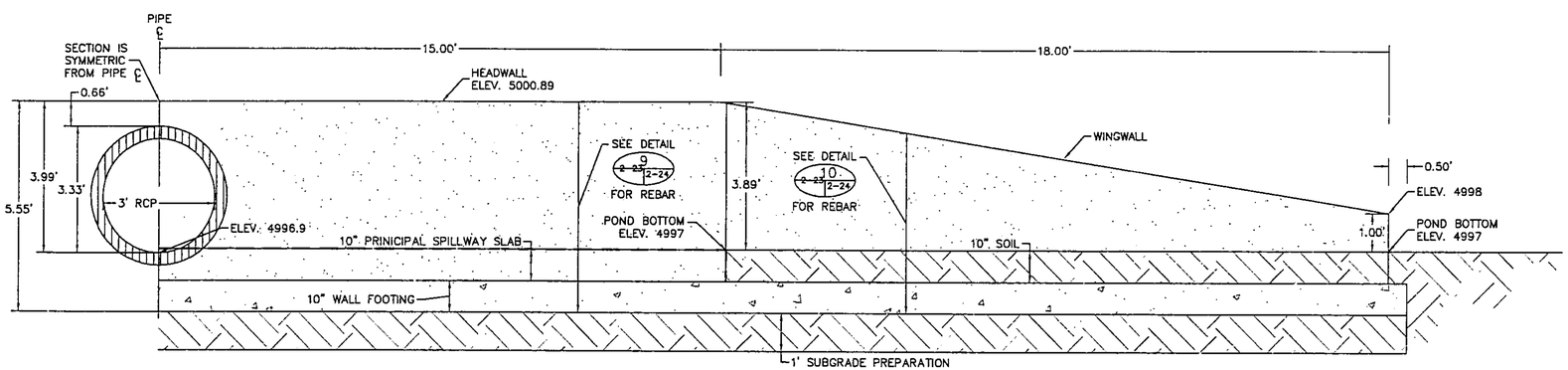
ENERGY DISSIPATOR DETAILS

SCALE: 1" = 10'



PRINCIPAL SPILLWAY DETAILS SECTION

SCALE: 1" = 2'



PRINCIPAL SPILLWAY HEADWALL/WINGWALL PROFILE SECTION

SCALE: 1" = 2'

F.H.W.A. REGION NO. 6	SHEET NO.
NEW MEXICO PROJECT NO. –	

CADD

GENERAL NOTES

1. ALL STRUCTURAL CONCRETE TO BE 4000 PSI UNLESS OTHERWISE NOTED ON PLANS.
2. ALL REINFORCING STEEL TO BE GRADE 60.
3. ALL EXPOSED EDGES ON CAST –IN–PLACE CONCRETE STUCTURES WILL HAVE A 1" CHAMFER UNLESS OTHERWISE NOTED ON PLANS.
4. ALL CONCRETE SHALL BE "BRUSH" FINISHED.

PRELIMINARY

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1/28/05

Smith Engineering Company
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NO.	DATE	REV. BY	DESCRIPTION

REVISIONS (OR CHANGE NOTICES)

New Mexico DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY
PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

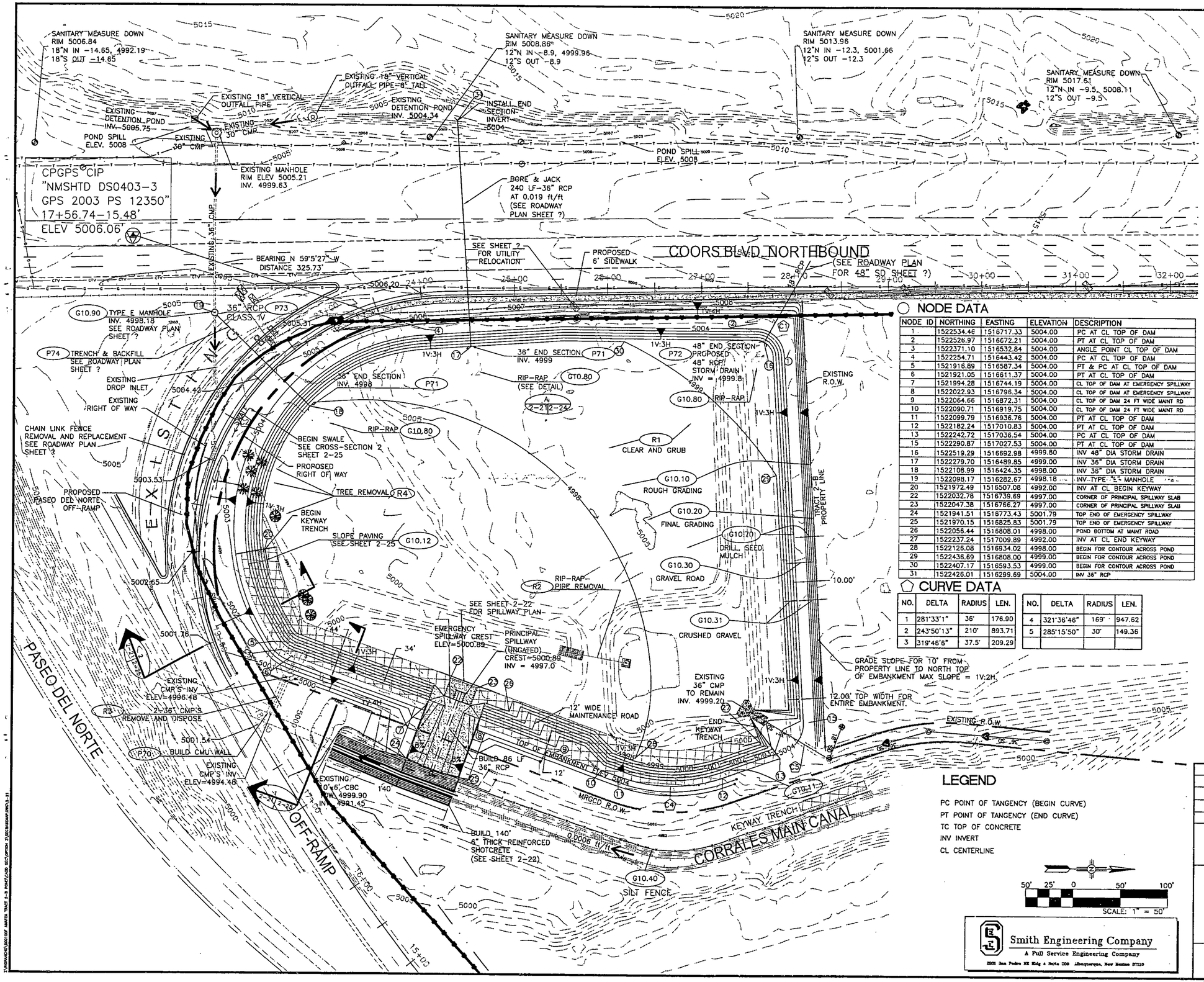
DETAILS

NEW MEXICO PROJECT NO. –

SHEET NO. 2–24

F.H.W.A. REGION NO. 6	SHEET NO.
NEW MEXICO PROJECT NO. -	

CADD



KEYED NOTES:

- G10.10 ROUGH GRADING: CONTRACTOR SHALL ROUGH GRADE SITE TO BOTTOM OF SUBGRADE PREP. DEPTH PER DETAILS. PAYMENT INCLUDES CUT AND DISPOSAL OF EXCESS SOIL.
- G10.11 KEYWAY TRENCH: BUILD 635 LF KEYWAY TRENCH PER SECTIONS 1 AND 2 SHEET 2-25.
- G10.12 SLOPE PAVING: INSTALL 4" THICK SLOPE PAVING ON 1V:3H EMBANKMENT SLOPE FROM BEGINNING TO END OF KEYWAY TRENCH. SEE CROSS-SECTION 1, SHEET 2-25.
- G10.20 FINAL GRADING: CONTRACTOR SHALL INSTALL SOILS TO DENSITY AND COMPACTION DEFINED IN DETAILS, TO ELEVATIONS.
- G10.30 GRAVEL ROAD: BUILD 12' WIDE 6" THICK ¾" CRUSHED GRAVEL ROAD ENTIRE EMBANKMENT LENGTH AND MAINTENANCE ROAD TO POND BOTTOM.
- G10.31 CRUSHED GRAVEL: APPLY 1" 1½" THICK ¾"CRUSHED GRAVEL WITH AT LEAST 50% FRACTIONAL FACED GRAVEL TO ALL GRADED SLOPES WITHIN R.O.W.
- G10.40 SILT FENCE: INSTALL SILT FENCE (640 LF).
- G10.70 DRILL, SEED, MULCH: ALL GRADED SLOPES AND POND BOTTOM WITHIN R.O.W. DRILL AND SEED WITH HAY MILLET MULCH PER C.O.A SECTION 1012.
- G10.80 RIP-RAP: BUILD RIP-RAP EROSION PAD PER DETAIL A SHEET 2-24.
- G10.90 TYPE E MANHOLE: BUILD TYPE E MANHOLE PER C.O.A. STD. DWG. 2102.
- P70 BUILD CMU WALL: BUILD CMU WALL TO SEAL HOLES IN BOX CULVERT WALL.
- P71 36" END SECTION: INSTALL 36" RCP END SECTION.
- P72 48" END SECTION: INSTALL 48" RCP END SECTION.
- P73 36" RCP CLASS IV: INSTALL 140 LF 36" RCP CLASS IV.
- P74 TRENCH AND BACKFILL: TRENCH, BEDDING, BACKFILL AND COMPACTION 140 LF.
- R1 CLEAR AND GRUB: CONTRACTOR SHALL CLEAR AND GRUB ENTIRE AREA WITHIN R.O.W. LINES. MAN-MADE TRASH REMOVAL IS INCIDENTAL.
- R2 RIP-RAP-PIPE REMOVAL: REMOVE AND DISPOSE OF PIPE AND RE-USE RIP-RAP.
- R3 2-36" CMP'S REMOVE AND DISPOSE: REMOVE AND DISPOSE OF 90 LF 36" CMP. BACKFILL AND COMPACTION INCIDENTAL.
- R4 TREE REMOVAL: CONTRACTOR SHALL CUT DOWN AND REMOVE ALL TREES AND ROOTS WITHIN R.O.W. LINES.

NODE DATA

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1522534.46	1516717.33	5004.00	PC AT CL TOP OF DAM
2	1522526.97	1516672.21	5004.00	PT AT CL TOP OF DAM
3	1522371.10	1516532.84	5004.00	ANGLE POINT CL TOP OF DAM
4	1522254.71	1516443.42	5004.00	PC AT CL TOP OF DAM
5	1521916.89	1516587.34	5004.00	PT & PC AT CL TOP OF DAM
6	1521921.05	1516611.37	5004.00	PT AT CL TOP OF DAM
7	1521994.28	1516744.19	5004.00	CL TOP OF DAM AT EMERGENCY SPILLWAY
8	1522022.93	1516796.34	5004.00	CL TOP OF DAM AT EMERGENCY SPILLWAY
9	1522064.66	1516872.31	5004.00	CL TOP OF DAM 24 FT WIDE MAINT RD
10	1522090.71	1516919.75	5004.00	CL TOP OF DAM 24 FT WIDE MAINT RD
11	1522099.79	1516936.76	5004.00	PT AT CL TOP OF DAM
12	1522182.24	1517010.83	5004.00	PT AT CL TOP OF DAM
13	1522242.72	1517036.54	5004.00	PC AT CL TOP OF DAM
15	1522290.87	1517027.53	5004.00	PT AT CL TOP OF DAM
16	1522519.29	1516892.98	4999.80	INV 48" DIA STORM DRAIN
17	1522279.70	1516489.85	4999.00	INV 36" DIA STORM DRAIN
18	1522108.99	1516424.35	4998.00	INV 36" DIA STORM DRAIN
19	1522098.17	1516282.67	4998.18	INV-TYPE "E" MANHOLE
20	1521972.49	1515507.08	4992.00	INV AT CL BEGIN KEYWAY
22	1522032.78	1516739.69	4997.00	CORNER OF PRINCIPAL SPILLWAY SLAB
23	1522047.38	1516766.27	4997.00	CORNER OF PRINCIPAL SPILLWAY SLAB
24	1521941.51	1516773.43	5001.79	TOP END OF EMERGENCY SPILLWAY
25	1521970.15	1516825.83	5001.79	TOP END OF EMERGENCY SPILLWAY
26	1522056.44	1516808.01	4998.00	POND BOTTOM AT MAINT ROAD
27	1522237.24	1517009.89	4992.00	INV AT CL END KEYWAY
28	1522125.08	1516934.02	4998.00	BEGIN FOR CONTOUR ACROSS POND
29	1522436.69	1516808.00	4999.00	BEGIN FOR CONTOUR ACROSS POND
30	1522407.17	1516593.53	4999.00	BEGIN FOR CONTOUR ACROSS POND
31	1522426.01	1516299.69	5004.00	INV 36" RCP

CURVE DATA

NO.	DELTA	RADIUS	LEN.
1	281°33'1"	36'	176.90
2	243°50'13"	210'	893.71
3	319°46'6"	37.5'	209.29
4	321°36'46"	169'	947.62
5	285°15'50"	30'	149.36

LEGEND

PC POINT OF TANGENCY (BEGIN CURVE)
PT POINT OF TANGENCY (END CURVE)
TC TOP OF CONCRETE
INV INVERT
CL CENTERLINE

50' 25' 0 50' 100'
SCALE: 1" = 50'

PRELIMINARY
NOT FOR CONSTRUCTION
1/28/05

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY
PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

DETENTION POND PLAN

Smith Engineering Company
A Full Service Engineering Company
2201 San Pedro NE Bldg 4 Suite 200 Albuquerque, New Mexico 87110

NEW MEXICO PROJECT NO. - SHEET NO. 2-21

AMAFCA

2600 Prospect Ave. NE
Albuquerque, NM 87107
Ph: (505) 884-2215
Fax: (505) 884-0214

MEMORANDUM

To: City Planning Department
Development & Building Services
Attention: Brad Bingham, City Hydrologist
From: Lynn Mazur, AMAFCA Engineer *LM*
Date: April 8, 2009

Re: **Coors / PdN Tract 2-B Pond**

REMARKS:

Over the past few months, we have discussed the joint project between the New Mexico Department of Transportation (NMDOT) and AMAFCA. The NMDOT is planning a roadway and drainage improvement project at the Coors /Paseo del Norte (PdN) intersection, and AMAFCA has requested that they include expansion of the AMAFCA pond on Tract 2-B in the project. AMAFCA also requested our consultant, Smith Engineering Company (Smith), to investigate drainage west of Coors to see how we can get more stormwater runoff to the pond.

The purpose of this memo is to relay information gathered by Smith and AMAFCA staff, request use of a City Drainage Easement and request City requirements for proceeding with the project.

Paradise Drainage System and Easement

The drainage history of the area west of Coors, bounded by Paradise, Eagle Ranch and Irving, dates back to the late 1980's with the Market Center development. As the apartments and shopping center developed, a storm drain in Paradise and three detention ponds were constructed. These facilities are hydraulically connected and drain to a 36-inch NMDOT culvert under Coors that outfalls to the existing Tract 2-B pond. A drainage easement was granted to the City for the two larger ponds and the pond outfall (see attached document). I assume the easement was granted to the City since these ponds receive public water. The document is also a maintenance covenant that states that the owner is responsible for maintaining the facilities in the easement.

Trouble in Paradise

The summer storms in 2006 produced a large amount of runoff and sediment in the PdN westbound ramp and Paradise. A field investigation revealed some immediate roadway and drainage deficiencies in Paradise which AMAFCA proposes to remedy with the NMDOT project, if the timing works out. AMAFCA recently requested Smith to perform a hydraulic analysis on the pond system using a SWMM model.

Smith performed a rough field survey of the ponds, outlet structures and outfall pipes to determine the current physical model parameters. The analysis indicates that in a 100-year storm, all three ponds will overflow and cause flooding in Paradise and Coors. The one 36-inch culvert under Coors also does not have adequate capacity. An addendum report will be submitted to the

City soon.

Proposed Improvements
In addition to excavating the Tract 2-B pond an additional four feet, we need two additional 48-inch culverts under Coors to convey runoff to the pond from west of Coors. I have attached a schematic layout showing the locations of the culverts. One culvert is proposed as an additional outfall from the large pond next to the movie theater. This culvert will require a wider easement than the existing City easement. The riser pipe on the existing outfall pipe from the movie pond will need to be upgraded to allow more outflow.

We also propose improvements in Paradise east of Eagle Ranch as follows:
Asphalt Curb - The existing asphalt curb along the south side is broken and missing in places. We propose replacing it to help keep runoff in the roadway. This will be an interim improvement until the property on the south side of Paradise develops.
Concrete Curb - The drivepad in the cul-de-sac is allowing stormwater runoff to flow down to the PdN westbound ramp. We propose to close off the opening with new concrete curb. This will be a permanent improvement.
Rundown to Movie Pond – The stormwater runoff on the south side of Paradise needs to be conveyed to an outfall. We propose constructing a surface rundown from the end of the Paradise cul-de-sac to the movie pond. This could be an interim or permanent improvement. The undeveloped property south of Paradise is programmed to drain to the apartment pond, but that facility does not have capacity. The developer should construct a storm drain to the movie pond or try to use the surface rundown.

We request guidance from the City on how to include the proposed improvements in the NMDOT project. Do we need to go through DRC? Do we need to use City specs for construction? (The DOT likes to use their own item numbers.) Timing will be an issue since the NMDOT cannot delay their project to include the plans for the Paradise improvements.

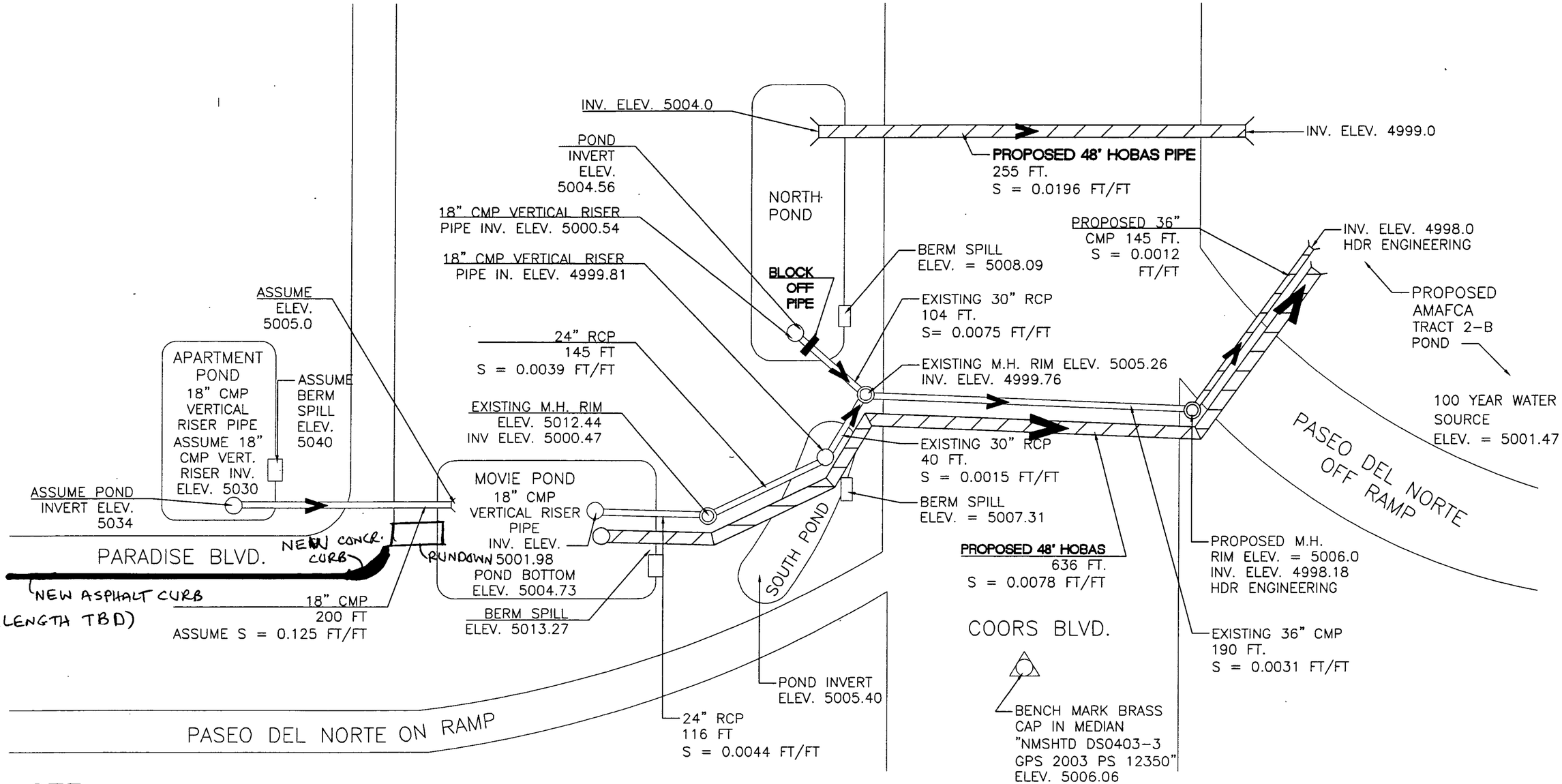
Easements and Maintenance
AMAFCA will maintain the Tract 2-B pond, and the NMDOT will maintain the culverts under Coors.

We are proposing new drainage facilities in the existing City easement, but the easement document is unclear on City rights to do that. It mentions the right to install and modify, but then, will the owner be responsible for maintaining the new facilities along with the existing facilities?

The new 48-inch outfall from the movie pond will require a wider easement than the existing City easement. AMAFCA requests guidance on who should approach the owner for that. We will be contacting the owner for a Temporary Construction Easement and a permanent Drainage Easement for the new culvert from the private pond west of Coors. We recommend one request and propose that AMAFCA do it.

Coors Blvd and Paseo Del Norte

1 inch = 150 feet



Q:\SEC----PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND\FINAL DESIGN\AMEND 1\CAD\OPTION 4.DWG 3/10/09 8:23:49 AM

NOTE:

ALL ELEVATIONS SHOWN (UNLESS NOTED) WERE SURVEYED BY SMITH ENGINEERING COMPANY ON 03-09-09

N

NOT TO SCALE

OPTION DESCRIPTION:
PROPOSE 48-IN. ORIFICE IN MOVIE POND ON A PROPOSED 48-IN. HOBAS PIPE FROM MOVIE POND TO AMAFCA TRACT 2B POND, ADD A 36-IN. ORIFICE IN MOVIE POND ON EXISTING 24-IN. AND 30-IN. RCP'S FROM MOVIE POND THAT REMAIN, ADD PROPOSED 48-IN. HOBAS PIPE FROM NORTH POND TO AMAFCA TRACT 2B POND, BLOCK OFF 30-IN. PIPE FROM NORTH POND

OPTION 4
SWMM MODEL SCHEMATIC

PREPARED BY SMITH ENGINEERING COMPANY 107112C-120

PREPARED FOR:
ALBUQUERQUE METRO ARROYO FLOOD CONTROL AUTHORITY (AMAFCA)

MARCH 13, 2009

FIGURE 9

Esmt for Apt. Pond & Movie Pond

165

GRANT OF EASEMENT, AGREEMENT AND COVENANT

8950271

This Agreement, between the City of Albuquerque, New Mexico, a municipal corporation, ("City") and Market Center West Associates, a California General Partnership, ("Developer") is made in Albuquerque, New Mexico and is entered into as of the date of recording this agreement with the Bernalillo County Clerk.

1. *Recital.* The Developer is the owner of certain real property ("Developer's Property") located at the intersection of Coors Road (NM State Road 448) and Paseo del Norte NW, in Albuquerque, New Mexico, and more particularly described as:

> Tract A-1, Market Centre West, as the same is shown and designated on the First Replat Map of Market Centre West filed in the office of the Clerk of Bernalillo County, New Mexico in Volume C37, Folio ~~124~~ 125, on October 13, 1988.

Pursuant to City ordinances, regulations and other applicable laws, the Developer is required to construct certain public drainage facilities ("Drainage Facility") on the Developer's Property and to grant the City a permanent easement as legally described in Exhibit A ("Easement") for the Drainage Facility. The City shall be the owner of the Drainage Facility. The Developer desires to deviate from City standards by planting vegetation in the pond areas of the Drainage Facility and, therefore, the City requires that the Developer maintain the Drainage Facility. The City agrees to permit the vegetation to exist in the Easement provided the Developer complies with the terms of this Agreement. The parties wish to enter into this Agreement to establish their respective obligations and responsibilities.

2. *Grant of Easement.* The Developer grants to the City a permanent easement with warranty covenants as such covenants are defined in §47-1-37 NMSA 1978 in, over, upon, under and across the Developer's Property for a Drainage Facility.

The grant of the Easement includes the right of the City to enter upon the Easement at any time for inspection, installation, maintenance, repair or modification and the right to remove trees, bushes, undergrowth and any other obstacles if the City determines they interfere with the appropriate use of the Easement or interfere with the proper functioning of the Drainage Facility as designed. This grant includes the right of access to the easement across the Developer's adjoining property.

Developer agrees for itself and its successors in interest that it has received valuable consideration and that the grant of this Easement is not a gift or donation.

3. *Warranty.* Developer covenants and warrants that it is the owner in fee simple of the Developer's Property and that it has a good lawful right to convey the Developer's Property or any part thereof, that the Developer's Property is free from all encumbrances except encumbrances of record and taxes due and owing the Treasurer of Bernalillo County. and that the Developer will forever warrant and defend the title to the Easement against all claims from all persons or entities.

4. ***Description and Construction of Drainage Facilities.*** Developer shall construct the following Drainage Facility within the Easement at Developer's sole expense in accordance with the standards, plans and specifications approved by the City: Two detention ponds and inlet and discharge lines as more particularly described in the attached Exhibit B.

5. ***Maintenance of Drainage Facility.*** The Developer will maintain the Drainage Facility at Developer's sole cost in accordance with the approved Amended Drainage Report for Market Center West dated March 21, 1989 prepared by Bohannon Houston and plans. The Developer will not permit the Drainage Facility to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the Easement and Drainage Facility. The Developer's maintenance of the Drainage Facility will conform with all applicable laws, ordinances and regulations.

6. ***Indemnification.*** The Developer agrees to defend, indemnify and hold harmless the City, its officials, agents and employees from and against any and all claims, actions, suits or proceedings of any kind brought against said parties arising from or out of the negligent acts or omissions of the Developer, its agents, representatives, contractors or subcontractors or arising from the failure of the Developer, its agents, representatives, contractors or subcontractors to perform any act or duty required of the Developer herein; provided, however, to the extent, if at all, §56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property. The City agrees that it shall be responsible for bodily injury or property damage resulting from its negligent acts or the negligent acts of its agents or employees.

7. ***Demand for Construction or Repair.*** The City may send written notice ("Notice") to the Developer requiring the Developer to reconstruct or repair the Drainage Facility within thirty (30) days ("Deadline") of receipt of the Notice, and the Developer will comply promptly with the requirements of the Notice. The Developer will perform all required work by the Deadline, at Developer's sole expense.

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

9. ***Liability of City for Repair after Notice or as a Result of Emergency.*** The City shall not be liable to the Developer for any damages resulting from the City's repair or maintenance following notice to the Developer as required in this Agreement or in an emergency unless the damages are the result of the negligence of the City, its agents or employees.

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

Lee Shapiro
5963 La Place Ct. #110
Carlsbad, CA 92009

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

11. *Binding on Developer's Property.* The grant, covenants and obligations of the Developer set forth herein shall be binding on Developer, its heirs, assigns and successors and on Developer's Property and constitute covenants running with Developer's Property until released by the City. If the Developer sells the Developer's Property, the Developer may request that the City release the Developer from the personal obligations imposed upon it herein. The City shall release the Developer if the Developer provides the City with an acceptable fully executed, recorded Assignment to and Assumption of this Agreement and the obligations contained herein by such subsequent purchaser. Nothing contained herein shall be construed to effectuate a release of the Easement granted hereby or the covenants contained herein running with Developer's Property.

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

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

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

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

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

Walter H. Nickerson Jr., City Engineer
Eng. Group/Public Works Dept

CITY OF ALBUQUERQUE:

Approved:

By: Clarence V. Lithgow
Clarence V. Lithgow
Chief Administrative Officer
Dated: 6/6/89

DEVELOPER: Market Center West Associates
By: SES/Beck & Associates, Inc.

By: Dracy Greenwald VP
~~Its: General Partner~~
Dated: May 17, 1989

Dracy Greenwald VP per Telephone 5/26/89

*17. Subsequent Replat. If Developer's Property is later subdivided by the Developer and the replat is approved by the City, then the Developer's Property as used herein shall be amended to refer to such smaller tract(s) underlying the Easement as reflected on the replat; PROVIDED HOWEVER, THAT DEVELOPER SHALL NOT SUBDIVIDE DEVELOPER'S PROPERTY FOR PURPOSES OF ISOLATING THE EASEMENT AS A SEPARATE LEGAL PARCEL.

* TO ACCOMODATE A FUTURE PURCHASER OR LENDER

STATE OF ~~NEW MEXICO~~ NEVADA
COUNTY OF ~~BERNALILLO~~ CLARK } ss.

The foregoing was acknowledged before me this 17 day of MAY, 1989, by Tracy Greenwald, VP of SES/BECL & Associates, Inc. General Partner of Market Center West Associates, a California General Partnership, on behalf of said partnership.

MARTI CATALFANO
Notary Public - State of Nevada
COUNTY OF CLARK
My Appointment Expires:
December 16, 1989

Marti Catalfano
Notary Public

My commission expires:

12-16-89

STATE OF NEW MEXICO
COUNTY OF BERNALILLO } ss.

The foregoing instrument was acknowledged before me this 6th day of June, 1989, by Clarence V. Lithgow, Chief Administrative Officer of the City of Albuquerque, New Mexico, a municipal corporation, on behalf of said corporation.

Barbara R. Martinez
Notary Public

My commission expires:

10-31-92

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

89 JUN -8 AM 9:57

M5256A PG 165-170

GLADYS M. DAVIS
CO. CLERK & RECORDER

BY _____ DEPUTY

EXHIBIT "A"

DESCRIPTION 169

A certain tract of land situate within the Town of Alameda Grant, within projected Section 18, T11N, R3E, N.M.P.M., City of Albuquerque, Bernalillo County, New Mexico, being a portion of Tract A-1, MARKET CENTRE WEST as the same is shown and designated on the plat filed in the office of the County Clerk of Bernalillo County, New Mexico on October 13, 1988 in Volume C37, Folio 125 together with a portion of Paradise Blvd., N.W. and being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

BEGINNING at the most southerly corner of the tract herein described, being a point on the southwesterly boundary of said Tract A-1 and a point on the northerly right-of-way of said Paradise Blvd., N.W., whence the most southerly corner of said Tract A-1, being the intersection of the said northerly right-of-way of Paradise Blvd., N.W. and the westerly right-of-way of New Mexio State Road 448 (Coors Road N.W.) bears S60°52'41"E, 158.91 feet, thence from said point of beginning along the southwesterly boundary of the tract herein described,
N74°03'09"W, 306.79 feet to a point within the said Paradise Blvd., N.W. right-of-way, thence,
N48°58'22"W, 117.79 feet to a point on the southwesterly boundary of said Tract A-1, being also the said northerly right-of-way of Paradise Blvd. N.W.; thence continuing along the said southwesterly boundary of Tract A-1,
N60°53'47"W, 169.59 feet to the most westerly corner of the tract herein described; thence leaving said right-of-way and said Tract A-1 boundary,
N55°31'48"E, 517.15 feet to the most northerly corner of the tract herein described; thence along the northeasterly boundary of the tract herein described,
S38°32'00"W, 286.69 feet to a point; thence,
S51°51'19"E, 506.71 feet to a point; thence,
N75°42'37"E, 174.05 feet to a point on the said northerly right-of-way of New Mexico State Road 448 being the most easterly corner of the tract herein described; thence along said northerly right-of-way,
S43°48'31"W, 37.85 feet to a point; thence leaving said right-of-way and continuing along the said southwesterly boundary of the tract herein described,
S75°42'37"W, 169.10 feet to a point; thence,
N74°03'09"W, 96.54 feet to the point and place of beginning.

Tract contains 2.3954 acres, more or less.

Bohannan-Huston, Inc.
Courtyard I
7500 Jefferson Street, NE
Albuquerque, NM 87109

Thomas G. Klingenhagen
N.M.P.S. No. 5978

5-30-89
Date

REGISTERED LAND SURVEYOR
STATE OF NEW MEXICO
5978
TOM KLINGENHAGEN

Market Centre West
Detention Pond Easement
Job No. 89135.12

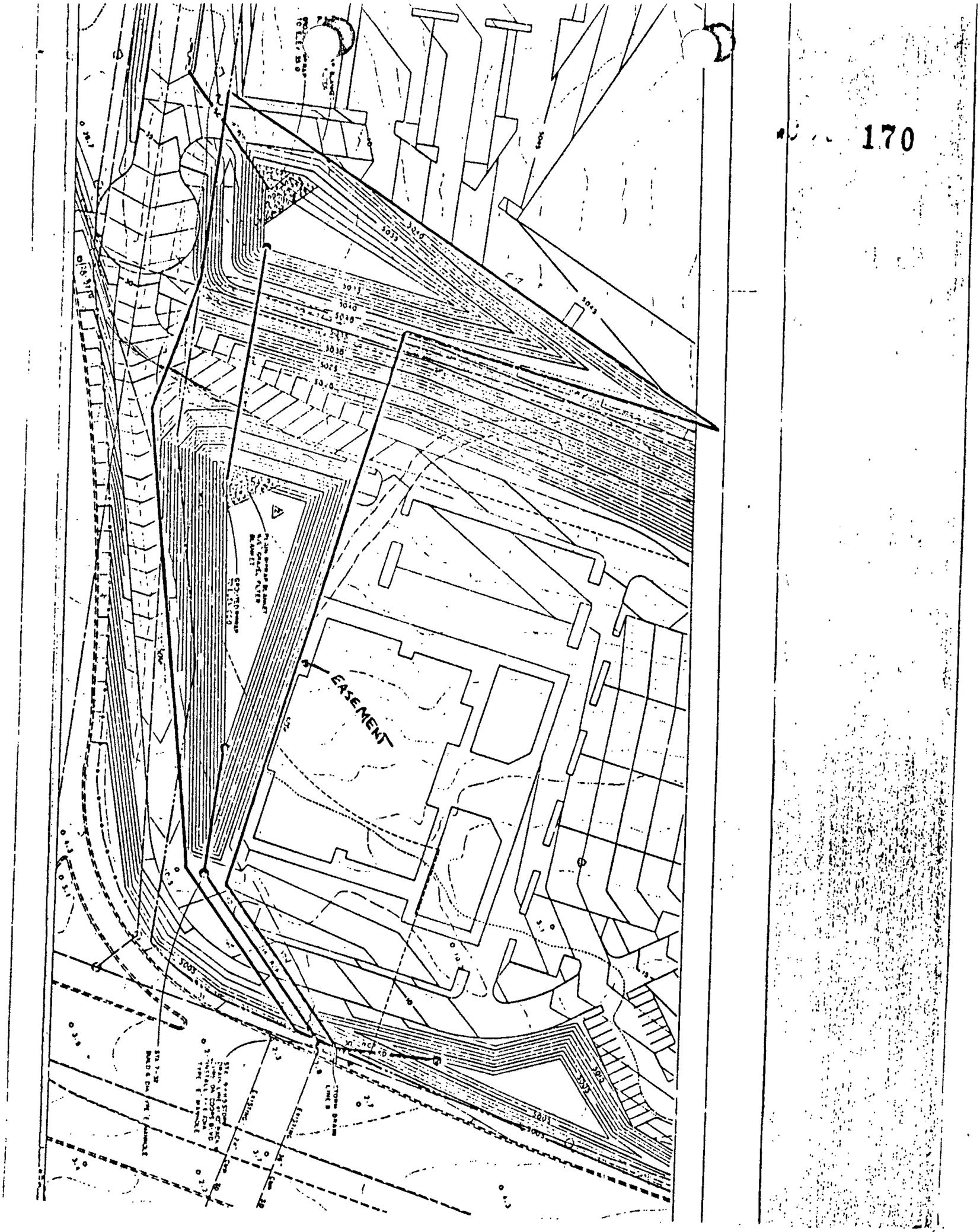


EXHIBIT "B"

Ronald D. Brown, Chairman
Janet Saiers, Vice Chair
Danny Hernandez, Secretary Treasurer
Tim Eichenberg, Asst. Secretary Treasurer
Daniel F. Lyon, Director

John P. Kelly, P.E.
Executive Engineer

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority
2600 Prospect N.E., Albuquerque, NM 87107
Phone: (505) 884-2215 Fax: (505) 884-0214

C-13/D000

November 3, 2009

Mr. Bradley L. Bingham, P.E., C.F.M.
City of Albuquerque Planning Dept.
Development & Building Services Division
600 2nd Street NW
Albuquerque, NM 87102

Mr. Reza Afaghpour, P.E.
NMDOT Drainage Bureau
P.O. Box 91750
Albuquerque, NM 87199-1750

Re: Addendum No. 2 to Final Design Report for Proposed AMAFCA Detention Pond at Paseo del Norte and Coors Blvd., Smith Engineering, dated June 28, 2004 as related to NMDOT Contract No. A300060

Dear Mr. Bingham and Mr. Afaghpour:

This letter report serves as Addendum No. 2 to the referenced report and Addendum No. 1, dated April 2009, both prepared by Smith Engineering Company (Smith). As we prepared final drainage plans to be included in the Paseo del Norte (PdN) / Coors Roadway Improvement Project (HSIP-0448(17)5), utility conflicts and construction issues necessitated redesign of the culvert crossings under Coors Boulevard.

The Addendum No. 1 report recommended two new 48-inch culverts - one from the North Pond straight across Coors to the AMAFCA Pond and one further south from the Movie Pond to the AMAFCA Pond (see attached Option 4 Schematic). The revised design downsized both 48-inch culverts to 36-inch and moved the North Pond culvert crossing further south. The following sections describe the justification and analyses for the revised drainage design.

Utility Conflicts

1. Fiber Optic

AMAFCA had all major utilities potholed at the proposed culvert locations. One utility that was a primary potential conflict is Qwest fiber optic conduits in the southbound Coors lanes. One fiber optic line serves the Federal Aviation Administration (FAA) office on Louisiana Boulevard, and the Qwest representative informed us that relocating that line could be a major disruption of service to the FAA. No matter which method of culvert installation was used, a 48-inch pipe would conflict with the fiber optic.

Qwest provided AMAFCA with a profile sketch showing a sag in the lines at the location of the existing culvert crossings. We believe that the lines were lowered with construction of

the PdN / Coors interchange when the existing 24-inch and 36-inch culverts were installed in Coors. To avoid conflict with this utility crossing, we downsized both culverts to 36-inch and moved the North Pond outfall further south so that they would cross the Qwest lines at the sag location.

2. Gas Line

Another major utility conflict is with an 8-inch New Mexico Gas Company line next to the northbound Coors lanes. It will have to be relocated, even with the downsized culverts. However, it is located in a median and next to a striped off lane in Coors where travel lanes will not have to be closed. The gas line conflict was a factor in moving the North Pond outfall further south. The line can be lowered in one location, instead of two, outside of traffic lanes.

3. Water Line

A 12-inch Albuquerque-Bernalillo County Water Utility Authority line will have to be lowered northeast of the westbound PdN to northbound Coors ramp. It was not a factor in the drainage re-design since it is out of the travel lanes but is noted for information.

Construction Methods

AMAFCA considered two options for installing the culverts across Coors – open trenching and boring and jacking. Both have advantages and disadvantages to consider as follows:

Construction Method	Advantages	Disadvantages
Open trenching	Can find and relocate utilities during construction. More control.	Lane closures will inconvenience public.
	Common method = cheaper cost.	Longer construction time.
Boring & Jacking	Little or no inconvenience to the public.	Not as much visual control. Cannot see utilities.
	Faster method.	More expensive.

AMAFCA staff had discussions with Mr. Tony Abbo, Traffic Engineer at New Mexico Department of Transportation (NMDOT), about the cost to the traveling public to close traffic lanes in Coors versus the cost of redesigning and sacrificing some hydraulic capacity of the culverts to allow boring and jacking of the culverts. The boring and jacking operation will add to the construction cost of the AMAFCA bid lot but will allow traffic lanes to remain open. AMAFCA agreed that it is in the best public interest to allow Coors traffic lanes to remain open as much as possible during construction and authorized Smith to re-design the drainage system.

Hydraulic Analysis

Smith said that a 36-inch outfall from the North Pond was adequate in the initial design, but AMAFCA had requested a larger pipe size in this location to accommodate any unforeseen increase in future flow. So, downsizing this outfall will not cause the detention pond to overflow.

The downsizing of the southern culvert from the Movie Pond may cause the South Pond to overflow onto Coors in a large event storm since these ponds are hydraulically connected. It will not be a significant amount and will only affect the southbound Coors to westbound PdN ramp. There is no significant impact on the traveling public or to private property.

Smith prepared a detailed SWMM hydraulic model in Addendum No. 1 that evaluated the detention ponds and four culvert options; therefore, I did not request them to re-evaluate the revised culvert layout. As a conservative estimate, the current recommended schematic most closely resembles Option 3 from the Addendum No. 1 report. As shown on the attached Table 4 from the report, the SWMM model showed the South Pond spilling 5 cfs with only one 36-inch pipe crossing. The current design will leave the existing 36-inch culvert in place and add an additional 36-inch culvert outfall from the Movie Pond, so there will be more hydraulic capacity than what was modeled and, possibly, no overflow onto Coors.

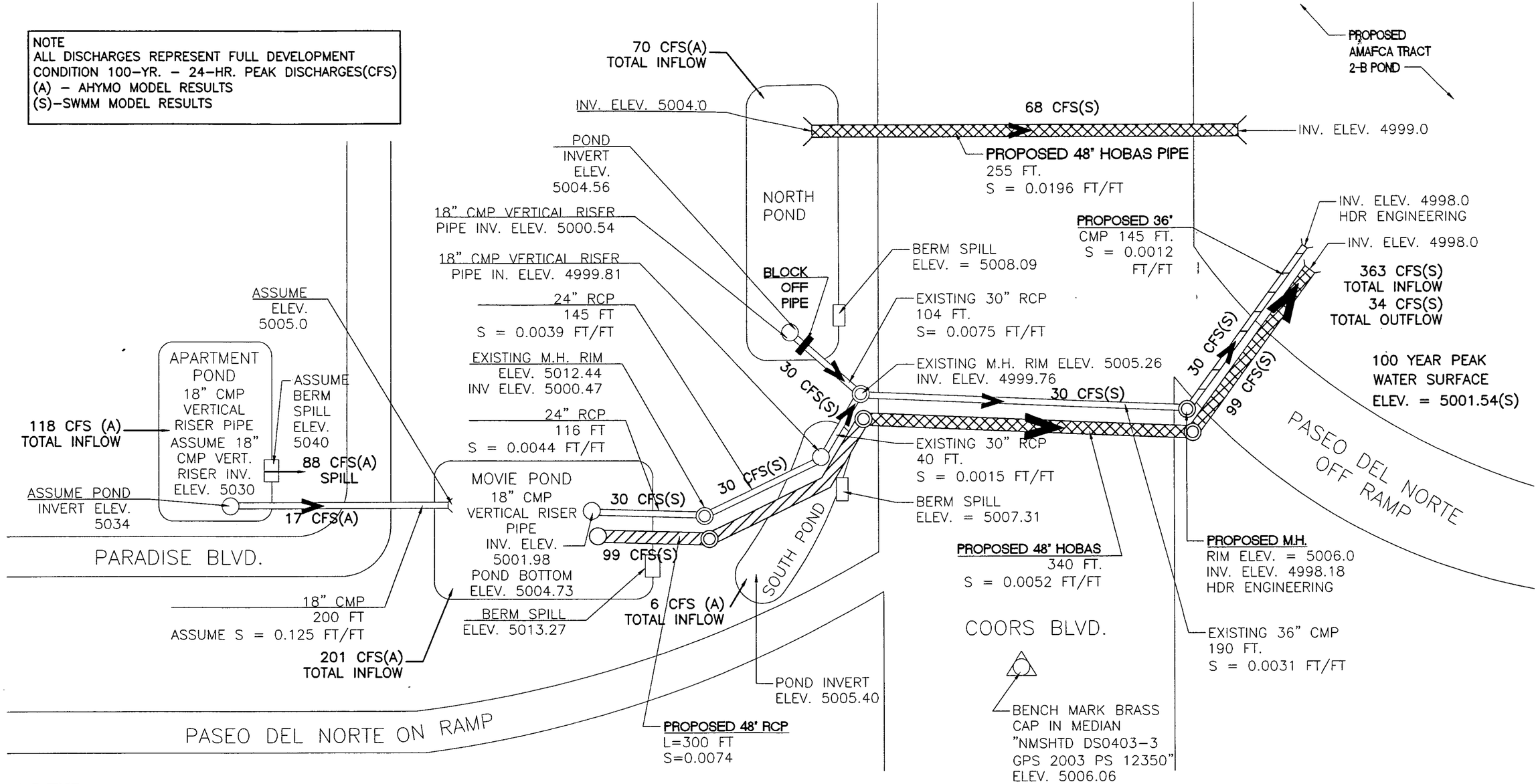
If you have any questions or comments, please call me at 884-2215.

Sincerely,
AMAFCA

Lynn M. Mazur, P.E., C.F.M.
Project Manager

Cc: Tony Abbo, NMDOT District 3
John Kelly, AMAFCA
Pat Stovall, Smith Engineering

NOTE
ALL DISCHARGES REPRESENT FULL DEVELOPMENT CONDITION 100-YR. - 24-HR. PEAK DISCHARGES(CFS)
(A) - AHYMO MODEL RESULTS
(S)-SWMM MODEL RESULTS



NOTE:
ALL ELEVATIONS SHOWN (UNLESS NOTED) WERE SURVEYED BY SMITH ENGINEERING COMPANY ON 03-09-09

NOT TO SCALE

OPTION DESCRIPTION:
PROPOSE 48-IN. ORIFICE IN MOVIE POND ON A PROPOSED 48-IN. RCP AND HOBAS PIPE FROM MOVIE POND TO AMAFCA TRACT 2B POND, ADD A 36-IN. ORIFICE IN MOVIE POND ON EXISTING 24-IN. AND 30-IN. RCP'S FROM MOVIE POND THAT REMAIN, ADD PROPOSED 48-IN. HOBAS PIPE FROM NORTH POND TO AMAFCA TRACT 2B POND, BLOCK OFF 30-IN. PIPE FROM NORTH POND

OPTION 4
SWMM MODEL SCHEMATIC

PREPARED BY SMITH ENGINEERING COMPANY 107112C-120

PREPARED FOR:
ALBUQUERQUE METRO ARROYO FLOOD CONTROL AUTHORITY (AMAFCA)

MARCH 13, 2009 **FIGURE 9**

Q:\SEC----PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\AMEND 1\CAD\OPTION 4.DWG 4/17/09 10:10:20 AM

TABLE 4

SWMM MODEL DETENTION POND SUMMARY

(Movie Pond, South Pond, North Pond)

100-yr. 24-yr. full development condition summary for 3 detention ponds and storm drains

See Figures 5, 6, 7, 8 and 9for Schematic Locations of Ponds, Pipes and Manholes

OPTIONS	Units	EXISTING CONDITIONS				OPTION 1 - only add 48-in. Hobas Pipe (North Pond to AMAFCA Tract 2B Pond)				OPTION 2A - Propose 18-in. Orifice in Movie Pond, add proposed 48-in. Hobas Pipe, block off 30-in. pipe from North Pond, upsize existing 30-in. and 24-in. RCP's from Movie Pond to 36-in. RCP's				OPTION 2B - Propose 24-in. Orifice in Movie Pond, add proposed 48-in. Hobas Pipe, block off 30-in. pipe from North Pond, upsize existing 30-in. and 24-in. RCP's from Movie Pond to 36-in. RCP's				OPTION 2C - Propose 36-in. Orifice in Movie Pond, add proposed 48-in. Hobas Pipe, block off 30-in. pipe from North Pond, upsize existing 30-in. and 24-in. RCP's from Movie Pond to 36-in. RCP's				OPTION 3C - Propose 36-in. Orifice in Movie Pond, Propose enlarge storage curve M2, add proposed 48-in. Hobas Pipe, block off 30-in. pipe from North Pond, upsize existing 30-in. and 24-in. RCP's from Movie Pond to 36-in. RCP's				~~OPTION 4 - Propose 48-in. Orifice in Movie Pond on a proposed 48-in. RCP and HOBAS Pipe from Movie Pond to AMAFCA Tract 2B Pond, add a 36-in. orifice in Movie Pond on existing 24-in. and 30-in. RCP's from Movie Pond that remain, add proposed 48-in. Hobas Pipe from North Pond to AMAFCA Tract 2B Pond, block off existing 30-in. pipe from North Pond~~			
DATA / RESULT DESCRIPTION		Existing Reservoir Empty	Existing Reservoir Empty	Existing Reservoir Empty	Pipe and Manhole Results	Existing Reservoir Empty	Existing Reservoir Empty	Existing Reservoir Empty	Pipe and Manhole Results	Existing Reservoir Empty	Existing Reservoir Empty	Existing Reservoir Empty	Pipe and Manhole Results	Existing Reservoir Empty	Existing Reservoir Empty	Existing Reservoir Empty	Pipe and Manhole Results	Existing Reservoir Empty	Existing Reservoir Empty	Existing Reservoir Empty	Pipe and Manhole Results	Existing Reservoir Empty	Existing Reservoir Empty	Existing Reservoir Empty	Pipe and Manhole Results	Existing Reservoir Empty	Existing Reservoir Empty	Existing Reservoir Empty	Pipe and Manhole Results
Detention Pond Name		**Movie**	**South**	**North**		**Movie**	**South**	**North**		**Movie**	**South**	**North**		**Movie**	**South**	**North**		**Movie**	**South**	**North**		**Movie**	**South**	**North**		**Movie**	**South**	**North**	
Reservoir Invert Elevation	ft a.m.s.l.	5004.00	5005.40	5004.00		5004.00	5005.40	5004.00		5004.00	5005.40	5004.00		5004.00	5005.40	5004.00		5004.00	5005.40	5004.00		5004.00	5005.40	5004.00		5004.00	5005.40	5004.00	
Principal Spillway Elevation	ft a.m.s.l.	5012.73	5005.40	5009.50		5012.73	5005.40	5009.50		5012.73	5005.40	5009.50		5012.73	5005.40	5009.50		5012.73	5005.40	5009.50		5012.73	5005.40	5009.50		5012.73	5005.40	5009.50	
Emergency Spillway Elevation	ft a.m.s.l.	5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09	
Top of Embankment Elevation	ft a.m.s.l.	5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09		5013.27	5007.31	5008.09	
Maximum Water Surface Elevation	ft a.m.s.l.	5014	5003.96	5009.5		5014	5002.35	5002.43		5014	5002.73	5002.6		5014	5007.27	5002.6		5014	5006.62	5002.6		5012.05	5008	5002.6		5009.65	5003.85	5002.6	
Maximum Water Depth	ft	10	-1.44	5.5		10	-3.05	-1.57		10	-2.67	-1.4		10	1.87	-1.4		10	1.22	-1.4		8.05	2.6	-1.4		5.65	-1.55	-1.4	
Freeboard to Principal Spillway Elevation *	ft	-1.27	1.44	0		-1.27	3.05	7.07		-1.27	2.67	6.9		-1.27	-1.87	6.9		-1.27	-1.22	6.9		0.68	-2.6	6.9		3.08	1.55	6.9	
Freeboard to Emergency Spillway Elevation *	**ft**	**-0.73**	**3.35**	**-1.41**		**-0.73**	**4.96**	**5.66**		**-0.73**	**4.58**	**5.49**		**-0.73**	**0.04**	**5.49**		**-0.73**	**0.69**	**5.49**		**1.22**	**-0.69**	**5.49**		**3.62**	**3.46**	**5.49**	
Freeboard to Top of Embankment *	ft	-0.73	3.35	-1.41		-0.73	4.96	5.66		-0.73	4.58	5.49		-0.73	0.04	5.49		-0.73	0.69	5.49		1.22	-0.69	5.49		3.62	3.46	5.49	
Emergency Spillway Spill Discharge	cfs	116	0	46		113	0	0		96	0	0		78	0	0		55	0	0		0	5	0		0	0	0	
Final Proposed HDR 36-inch Pipe Discharge to Tract 2B Pond	cfs	--	--	--	36	--	--	--	22	--	--	--	27	--	--	--	38	--	--	--	43	--	--	--	41	--	--	--	29
Proposed North Pond 48-inch HOBAS Pipe Discharge	cfs	--	--	--	NA	--	--	--	60	--	--	--	68	--	--	--	68	--	--	--	68	--	--	--	68	--	--	--	68
Proposed Movie Pond 48-inch HOBAS Pipe Discharge		--	--	--	NA	--	--	--	NA	--	--	--	NA	--	--	--	NA	--	--	--	NA	--	--	--	NA	--	--	--	99
Manholes Surcharge (HGL at Rim Elev.) (MH# or N for No)	MH #	--	--	--	N	--	--	--	N	--	--	--	N	--	--	--	N	--	--	--	MH2	--	--	--	MH2	--	--	--	MH1

* Negative freeboard depth indicates water surface greater than referenced elevation

CONCLUSIONS -

1. Movie Pond Spills with all options except Options 3C and 4, South Pond Spills 5 cfs for Options 2B, 2C and 3C but not with Option 4
2. Proposed 48-inch. Hobas Pipe from North Pond to AMAFCA Pond will eliminate flooding from North Pond for all Options
3. Blocking off the existing North Pond 30-inch RCP and upsizing the existing 24-in. and 30-in. RCP's to 36-in. RCP's will not prevent the existing Movie Pond from spilling.
4. South Pond 100-yr. inflow hydrograph volume from drainage basin 504.B is 0.292 ac-ft., total storage volume of South Pond is 0.10 ac-ft.. Therefore, blocking of South Pond 18-in. outfall pipe would cause the pond to spill.
5. Option 4 is best Option to eliminate flooding from all ponds.

AMAFCA

2600 Prospect Ave. NE
Albuquerque, NM 87107
Ph: (505) 884-2215
Fax: (505) 884-0214

LETTER OF TRANSMITTAL

To: City Planning, Development & Building Services

Attention: Brad Bingham

From: Lynn Mazur

Date: November 23, 2009

Re: **NMDOT PdN / Coors Construction Plans**
City Project No. 800391

We are sending you __X____ Attached _____ Under separate cover via _____

Item No.	Quantity	Description
1.	1	Half-size set of plans

REMARKS:

Attached are the final plans for the referenced project, which includes work in City R/W and easement west of Coors Blvd. The DOT bids projects with 11" x 17" plans sets, but if you want full size, let me know, and I'll get a set for you. I think the DOT plans to let the project in mid-December or early January.

The City work is shown on sheets 4-11 through 4-17. I think the only things that have changed since you have seen these are the ramps into the Movie and Apartment Ponds. Pat Stovall and I met with Wilfred Gallegos to discuss the access ramps and maintenance, and we sent him the final layout a few weeks ago.

Please review the plans at your earliest convenience. Remember, the outfall from the North Pond is the owner's responsibility, and the culverts under Coors are the DOT's. If you have changes, we can include them in the addendum or change order. We will have to issue one or the other to replace sheets 4-11 through 4-17 with sheets that include the City Engineer's approval stamp and the City Project No.

165

GRANT OF EASEMENT, AGREEMENT AND COVENANT

8950271

This Agreement, between the City of Albuquerque, New Mexico, a municipal corporation, ("City") and Market Center West Associates, a California General Partnership, ("Developer") is made in Albuquerque, New Mexico and is entered into as of the date of recording this agreement with the Bernalillo County Clerk.

1. ***Recital.*** The Developer is the owner of certain real property ("Developer's Property") located at the Intersection of Coors Road (NM State Road 448) and Paseo del Norte NW, in Albuquerque, New Mexico, and more particularly described as:

> Tract A-1, Market Centre West, as the same is shown and designated on the First Replat Map of Market Centre West filed in the office of the Clerk of Bernalillo County, New Mexico in Volume C37, Folio ~~124~~ 125, on October 13, 1988.

Pursuant to City ordinances, regulations and other applicable laws, the Developer is required to construct certain public drainage facilities ("Drainage Facility") on the Developer's Property and to grant the City a permanent easement as legally described in Exhibit A ("Easement") for the Drainage Facility. The City shall be the owner of the Drainage Facility. The Developer desires to deviate from City standards by planting vegetation in the pond areas of the Drainage Facility and, therefore, the City requires that the Developer maintain the Drainage Facility. The City agrees to permit the vegetation to exist in the Easement provided the Developer complies with the terms of this Agreement. The parties wish to enter into this Agreement to establish their respective obligations and responsibilities.

2. ***Grant of Easement.*** The Developer grants to the City a permanent easement with warranty covenants as such covenants are defined in §47-1-37 NMSA 1978 in, over, upon, under and across the Developer's Property for a Drainage Facility.

The grant of the Easement includes the right of the City to enter upon the Easement at any time for inspection, installation, maintenance, repair or modification and the right to remove trees, bushes, undergrowth and any other obstacles if the City determines they interfere with the appropriate use of the Easement or interfere with the proper functioning of the Drainage Facility as designed. This grant includes the right of access to the easement across the Developer's adjoining property.

Developer agrees for itself and its successors in interest that it has received valuable consideration and that the grant of this Easement is not a gift or donation.

3. ***Warranty.*** Developer covenants and warrants that it is the owner in fee simple of the Developer's Property and that it has a good lawful right to convey the Developer's Property or any part thereof, that the Developer's Property is free from all encumbrances except encumbrances of record and taxes due and owing the Treasurer of Bernalillo County, and that the Developer will forever warrant and defend the title to the Easement against all claims from all persons or entities.

4. ***Description and Construction of Drainage Facilities.*** Developer shall construct the following Drainage Facility within the Easement at Developer's sole expense in accordance with the standards, plans and specifications approved by the City: Two detention ponds and inlet and discharge lines as more particularly described in the attached Exhibit B.

5. ***Maintenance of Drainage Facility.*** The Developer will maintain the Drainage Facility at Developer's sole cost in accordance with the approved Amended Drainage Report for Market Center West dated March 21, 1989 prepared by Bohannon Houston and plans. The Developer will not permit the Drainage Facility to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the Easement and Drainage Facility. The Developer's maintenance of the Drainage Facility will conform with all applicable laws, ordinances and regulations.

6. ***Indemnification.*** The Developer agrees to defend, indemnify and hold harmless the City, its officials, agents and employees from and against any and all claims, actions, suits or proceedings of any kind brought against said parties arising from or out of the negligent acts or omissions of the Developer, its agents, representatives, contractors or subcontractors or arising from the failure of the Developer, its agents, representatives, contractors or subcontractors to perform any act or duty required of the Developer herein; provided, however, to the extent, if at all, §56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the Indemnitee, or the agents or employees of the Indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property. The City agrees that it shall be responsible for bodily injury or property damage resulting from its negligent acts or the negligent acts of its agents or employees.

7. ***Demand for Construction or Repair.*** The City may send written notice ("Notice") to the Developer requiring the Developer to reconstruct or repair the Drainage Facility within thirty (30) days ("Deadline") of receipt of the Notice, and the Developer will comply promptly with the requirements of the Notice. The Developer will perform all required work by the Deadline, at Developer's sole expense.

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

9. ***Liability of City for Repair after Notice or as a Result of Emergency.*** The City shall not be liable to the Developer for any damages resulting from the City's repair or maintenance following notice to the Developer as required in this Agreement or in an emergency unless the damages are the result of the negligence of the City, its agents or employees.

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

Lee Shapiro
5963 La Place Ct. #110
Carlsbad, CA 92009

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

11. *Binding on Developer's Property*. The grant, covenants and obligations of the Developer set forth herein shall be binding on Developer, its heirs, assigns and successors and on Developer's Property and constitute covenants running with Developer's Property until released by the City. If the Developer sells the Developer's Property, the Developer may request that the City release the Developer from the personal obligations imposed upon it herein. The City shall release the Developer if the Developer provides the City with an acceptable fully executed, recorded Assignment to and Assumption of this Agreement and the obligations contained herein by such subsequent purchaser. Nothing contained herein shall be construed to effectuate a release of the Easement granted hereby or the covenants contained herein running with Developer's Property.

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

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

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

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

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

Walter H. Nickerson Jr.

CITY OF ALBUQUERQUE:

Approved:

Walter H. Nickerson Jr., City Engineer
Eng. Group/Public Works Dept.

DEVELOPER: Market Center West Associates
By: SES/Beck & Associates, Inc.

By: Clarence V. Lithgow
Clarence V. Lithgow
Chief Administrative Officer
Dated: 6/6/89

By: Gracy Greenwald VP
~~Its: General Partner~~
Dated: May 17, 1989

Left at Gracy Greenwald per telephone 5/26/89

*17. Subsequent Replat. If Developer's Property is later subdivided by the Developer and the replat is approved by the City, then the Developer's Property as used herein shall be amended to refer to such smaller tract(s) underlying the Easement as reflected on the replat; PROVIDED HOWEVER, THAT DEVELOPER SHALL NOT SUBDIVIDE DEVELOPER'S PROPERTY FOR PURPOSES OF ISOLATING THE EASEMENT AS A SEPARATE LEGAL PARCEL.

TO ACCOMMODATE A FUTURE PURCHASER OR LENDER.

STATE OF ~~NEW MEXICO~~ NEVADA
COUNTY OF ~~BERNALILLO~~ CLARK } ss.

The foregoing was acknowledged before me this 17 day of MAY, 1989, by Tracy Greenwald, VP of SES/BECL & Associates, Inc, General Partner of Market Center West Associates, a California General Partnership, on behalf of said partnership.

MARTI CATALFANO
Notary Public - State of Nevada
COUNTY OF CLARK
My Appointment Expires:
December 16, 1989

Marti Catalfano
Notary Public

My commission expires:

12-16-89

STATE OF NEW MEXICO
COUNTY OF BERNALILLO } ss.

The foregoing instrument was acknowledged before me this 6th day of June, 1989, by Clarence V. Lithgow, Chief Administrative Officer of the City of Albuquerque, New Mexico, a municipal corporation, on behalf of said corporation.

Darlene R. Montoya
Notary Public

My commission expires:

10-31-92

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

89 JUN -8 AM 9:57

M/S 256A PG 165-170

GLADYS M. DAVIS
CO. CLERK & RECORDER

EXHIBIT "A"

DESCRIPTION 169

A certain tract of land situate within the Town of Alameda Grant, within projected Section 18, T11N, R3E, N.M.P.M., City of Albuquerque, Bernalillo County, New Mexico, being a portion of Tract A-1, MARKET CENTRE WEST as the same is shown and designated on the plat filed in the office of the County Clerk of Bernalillo County, New Mexico on October 13, 1988 in Volume C37, Folio 125 together with a portion of Paradise Blvd., N.W. and being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

BEGINNING at the most southerly corner of the tract herein described, being a point on the southwesterly boundary of said Tract A-1 and a point on the northerly right-of-way of said Paradise Blvd., N.W., whence the most southerly corner of said Tract A-1, being the intersection of the said northerly right-of-way of Paradise Blvd., N.W. and the westerly right-of-way of New Mexio State Road 448 (Coors Road N.W.) bears S60°52'41"E, 158.91 feet, thence from said point of beginning along the southwesterly boundary of the tract herein described,
N74°03'09"W, 306.79 feet to a point within the said Paradise Blvd., N.W. right-of-way, thence,
N48°58'22"W, 117.79 feet to a point on the southwesterly boundary of said Tract A-1, being also the said northerly right-of-way of Paradise Blvd. N.W.; thence continuing along the said southwesterly boundary of Tract A-1,
N60°53'47"W, 169.59 feet to the most westerly corner of the tract herein described; thence leaving said right-of-way and said Tract A-1 boundary,
N55°31'48"E, 517.15 feet to the most northerly corner of the tract herein described; thence along the northeasterly boundary of the tract herein described,
S38°32'00"W, 286.69 feet to a point; thence,
S51°51'19"E, 506.71 feet to a point; thence,
N75°42'37"E, 174.05 feet to a point on the said northerly right-of-way of New Mexico State Road 448 being the most easterly corner of the tract herein described; thence along said northerly right-of-way,
S43°48'31"W, 37.85 feet to a point; thence leaving said right-of-way and continuing along the said southwesterly boundary of the tract herein described,
S75°42'37"W, 169.10 feet to a point; thence,
N74°03'09"W, 96.54 feet to the point and place of beginning.

Tract contains 2.3954 acres, more or less.

Bohannan-Huston, Inc.
Couryard I
7500 Jefferson Street, NE
Albuquerque, NM 87109

Thomas G. Klingenhagen
N.M.P.S. No. 5978

5-30-89
Date

REGISTERED LAND SURVEYOR
STATE OF NEW MEXICO
5978
TOM KLINGENHAGEN

Market Centre West
Detention Pond Easement
Job No. 89135.12

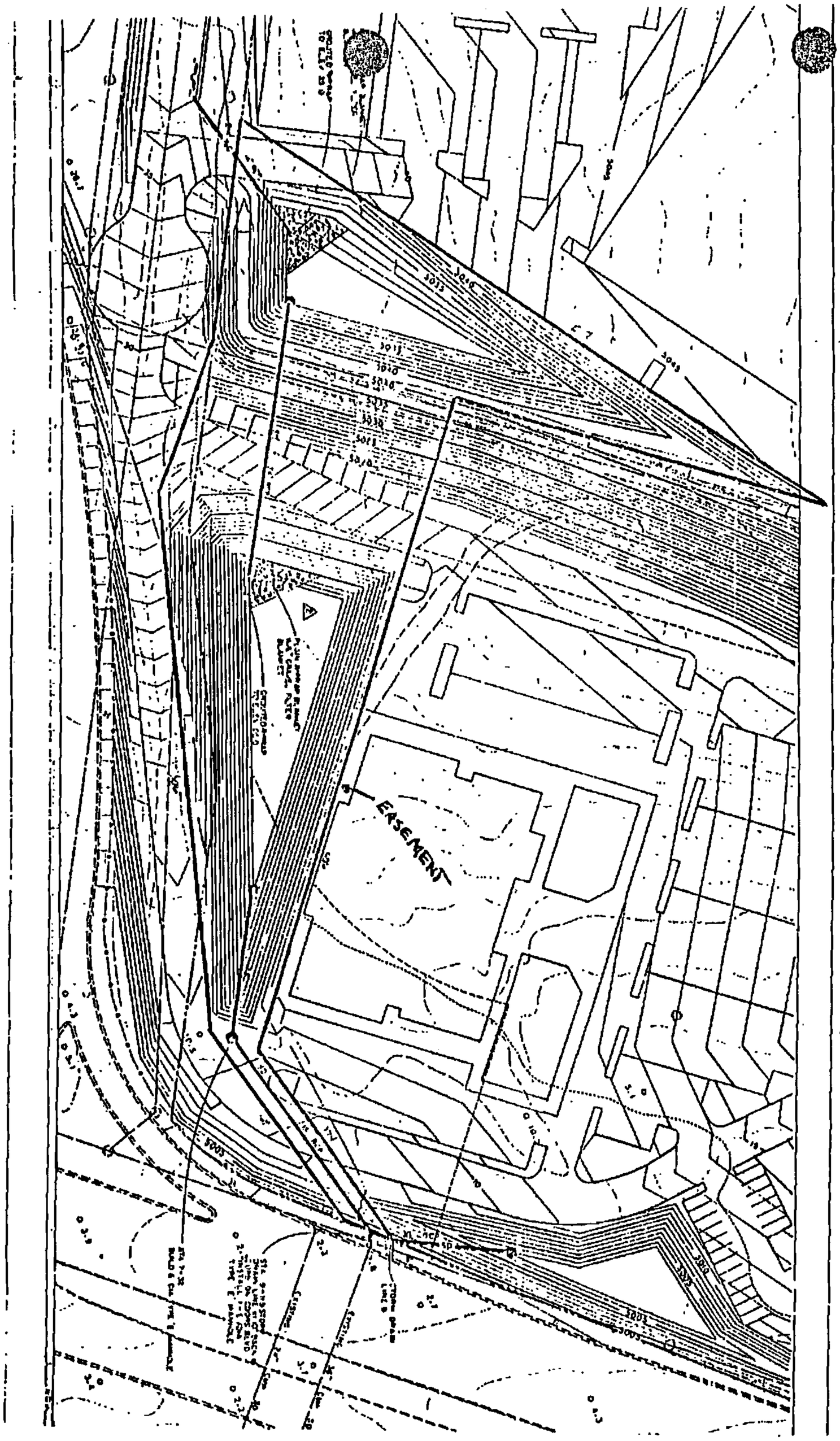


EXHIBIT "B"

A105'15

8950270

165

GRANT OF EASEMENT, AGREEMENT AND COVENANT

8950271

This Agreement, between the City of Albuquerque, New Mexico, a municipal corporation, ("City") and Market Center West Associates, a California General Partnership, ("Developer") is made in Albuquerque, New Mexico and is entered into as of the date of recording this agreement with the Bernalillo County Clerk.

1. ***Recital.*** The Developer is the owner of certain real property ("Developer's Property") located at the intersection of Coors Road (NM State Road 448) and Paseo del Norte NW, in Albuquerque, New Mexico, and more particularly described as:

> Tract A-1, Market Centre West, as the same is shown and designated on the First Replat Map of Market Centre West filed in the office of the Clerk of Bernalillo County, New Mexico in Volume C37, Folio 124, on October 13, 1988.

Pursuant to City ordinances, regulations and other applicable laws, the Developer is required to construct certain public drainage facilities ("Drainage Facility") on the Developer's Property and to grant the City a permanent easement as legally described in Exhibit A ("Easement") for the Drainage Facility. The City shall be the owner of the Drainage Facility. The Developer desires to deviate from City standards by planting vegetation in the pond areas of the Drainage Facility and, therefore, the City requires that the Developer maintain the Drainage Facility. The City agrees to permit the vegetation to exist in the Easement provided the Developer complies with the terms of this Agreement. The parties wish to enter into this Agreement to establish their respective obligations and responsibilities.

2. ***Grant of Easement.*** The Developer grants to the City a permanent easement with warranty covenants as such covenants are defined in §47-1-37 NMSA 1978 in, over, upon, under and across the Developer's Property for a Drainage Facility.

The grant of the Easement includes the right of the City to enter upon the Easement at any time for inspection, installation, maintenance, repair or modification and the right to remove trees, bushes, undergrowth and any other obstacles if the City determines they interfere with the appropriate use of the Easement or interfere with the proper functioning of the Drainage Facility as designed. This grant includes the right of access to the easement across the Developer's adjoining property.

Developer agrees for itself and its successors in interest that it has received valuable consideration and that the grant of this Easement is not a gift or donation.

3. ***Warranty.*** Developer covenants and warrants that it is the owner in fee simple of the Developer's Property and that it has a good lawful right to convey the Developer's Property or any part thereof, that the Developer's Property is free from all encumbrances except encumbrances of record and taxes due and owing the Treasurer of Bernalillo County, and that the Developer will forever warrant and defend the title to the Easement against all claims from all persons or entities.

4. ***Description and Construction of Drainage Facilities.*** Developer shall construct the following Drainage Facility within the Easement at Developer's sole expense in accordance with the standards, plans and specifications approved by the City: Two detention ponds and inlet and discharge lines as more particularly described in the attached Exhibit B.

5. ***Maintenance of Drainage Facility.*** The Developer will maintain the Drainage Facility at Developer's sole cost in accordance with the approved Amended Drainage Report for Market Center West dated March 21, 1989 prepared by Bohannon Houston and plans. The Developer will not permit the Drainage Facility to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the Easement and Drainage Facility. The Developer's maintenance of the Drainage Facility will conform with all applicable laws, ordinances and regulations.

6. ***Indemnification.*** The Developer agrees to defend, indemnify and hold harmless the City, its officials, agents and employees from and against any and all claims, actions, suits or proceedings of any kind brought against said parties arising from or out of the negligent acts or omissions of the Developer, its agents, representatives, contractors or subcontractors or arising from the failure of the Developer, its agents, representatives, contractors or subcontractors to perform any act or duty required of the Developer herein; provided, however, to the extent, if at all, §56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property. The City agrees that it shall be responsible for bodily injury or property damage resulting from its negligent acts or the negligent acts of its agents or employees.

7. ***Demand for Construction or Repair.*** The City may send written notice ("Notice") to the Developer requiring the Developer to reconstruct or repair the Drainage Facility within thirty (30) days ("Deadline") of receipt of the Notice, and the Developer will comply promptly with the requirements of the Notice. The Developer will perform all required work by the Deadline, at Developer's sole expense.

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

9. ***Liability of City for Repair after Notice or as a Result of Emergency.*** The City shall not be liable to the Developer for any damages resulting from the City's repair or maintenance following notice to the Developer as required in this Agreement or in an emergency unless the damages are the result of the negligence of the City, its agents or employees.

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

Lee Shapiro
5963 La Place Ct. #110
Carlsbad, CA 92009

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

11. *Binding on Developer's Property.* The grant, covenants and obligations of the Developer set forth herein shall be binding on Developer, its heirs, assigns and successors and on Developer's Property and constitute covenants running with Developer's Property until released by the City. If the Developer sells the Developer's Property, the Developer may request that the City release the Developer from the personal obligations imposed upon it herein. The City shall release the Developer if the Developer provides the City with an acceptable fully executed, recorded Assignment to and Assumption of this Agreement and the obligations contained herein by such subsequent purchaser. Nothing contained herein shall be construed to effectuate a release of the Easement granted hereby or the covenants contained herein running with Developer's Property.

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

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

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

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

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

Walter H. Nickerson Jr.

Walter H. Nickerson, Jr., City Engineer
Eng. Group/Public Works Dept

CITY OF ALBUQUERQUE:

Approved:

By: Clarence V. Lithgow
Clarence V. Lithgow
Chief Administrative Officer
Dated: 6/6/89

DEVELOPER: Market Center West Associates
By: SES/Beck & Associates, Inc.

By: Gracy Greenwald VP
~~Its: General Partner~~
Dated: May 17, 1989

Gracy Greenwald
per telephone 5/26/89

*17. Subsequent Replat. If Developer's Property is later subdivided by the Developer and the replat is approved by the City, then the Developer's Property as used herein shall be amended to refer to such smaller tract(s) underlying the Easement as reflected on the replat; PROVIDED HOWEVER, THAT DEVELOPER SHALL NOT SUBDIVIDE DEVELOPER'S PROPERTY FOR PURPOSES OF ISOLATING THE EASEMENT AS A SEPARATE LEGAL PARCEL.

TO ACCOMODATE A FUTURE PURCHASER OR LENDER

STATE OF ~~NEW MEXICO~~ NEVADA
COUNTY OF ~~BERNALILLO~~ CLARK } ss.

The foregoing was acknowledged before me this 17 day of MAY, 1989, by Tracy Greenwald, VP of SES/BECL & Associates, Inc. General Partner of Market Center West Associates, a California General Partnership, on behalf of said partnership.

MARTI CATALFANO
Notary Public - State of Nevada
COUNTY OF CLARK
My Appointment Expires:
December 16, 1989

Marti Catalfano
Notary Public

My commission expires:

12-16-89

STATE OF NEW MEXICO
COUNTY OF BERNALILLO } ss.

The foregoing instrument was acknowledged before me this 6th day of June, 1989, by Clarence V. Lithgow, Chief Administrative Officer of the City of Albuquerque, New Mexico, a municipal corporation, on behalf of said corporation.

Dolores R. Martinez
Notary Public

My commission expires:

10-31-92

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

89 JUN -8 AM 9:57

RS 256A PG 165-170

GLADYS M. DAVIS
CO. CLERK & RECORDER

DEPUTY

EXHIBIT "A"

DESCRIPTION 169

A certain tract of land situate within the Town of Alameda Grant, within projected Section 18, T11N, R3E, N.M.P.M., City of Albuquerque, Bernalillo County, New Mexico, being a portion of Tract A-1, MARKET CENTRE WEST as the same is shown and designated on the plat filed in the office of the County Clerk of Bernalillo County, New Mexico on October 13, 1988 in Volume C37, Folio 125 together with a portion of Paradise Blvd., N.W. and being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

BEGINNING at the most southerly corner of the tract herein described, being a point on the southwesterly boundary of said Tract A-1 and a point on the northerly right-of-way of said Paradise Blvd., N.W., whence the most southerly corner of said Tract A-1, being the intersection of the said northerly right-of-way of Paradise Blvd., N.W. and the westerly right-of-way of New Mexio State Road 448 (Coors Road N.W.) bears S60°52'41"E, 158.91 feet, thence from said point of beginning along the southwesterly boundary of the tract herein described,
N74°03'09"W, 306.79 feet to a point within the said Paradise Blvd., N.W. right-of-way, thence,
N48°58'22"W, 117.79 feet to a point on the southwesterly boundary of said Tract A-1, being also the said northerly right-of-way of Paradise Blvd. N.W.; thence continuing along the said southwesterly boundary of Tract A-1,
N60°53'47"W, 169.59 feet to the most westerly corner of the tract herein described; thence leaving said right-of-way and said Tract A-1 boundary,
N55°31'48"E, 517.15 feet to the most northerly corner of the tract herein described; thence along the northeasterly boundary of the tract herein described,
S38°32'00"W, 286.69 feet to a point; thence,
S51°51'19"E, 506.71 feet to a point; thence,
N75°42'37"E, 174.05 feet to a point on the said northerly right-of-way of New Mexico State Road 448 being the most easterly corner of the tract herein described; thence along said northerly right-of-way,
S43°48'31"W, 37.85 feet to a point; thence leaving said right-of-way and continuing along the said southwesterly boundary of the tract herein described,
S75°42'37"W, 169.10 feet to a point; thence,
N74°03'09"W, 96.54 feet to the point and place of beginning.

Tract contains 2.3954 acres, more or less.

Bohannan-Huston, Inc.
Courtyard I
7500 Jefferson Street, NE
Albuquerque, NM 87109

Thomas G. Klingenhagen
N.M.P.S. No. 5978

5-30-89
Date

REGISTERED LAND SURVEYOR
STATE OF NEW MEXICO
5978
TOM KLINGENHAGEN

Market Centre West
Detention Pond Easement
Job No. 89135.12

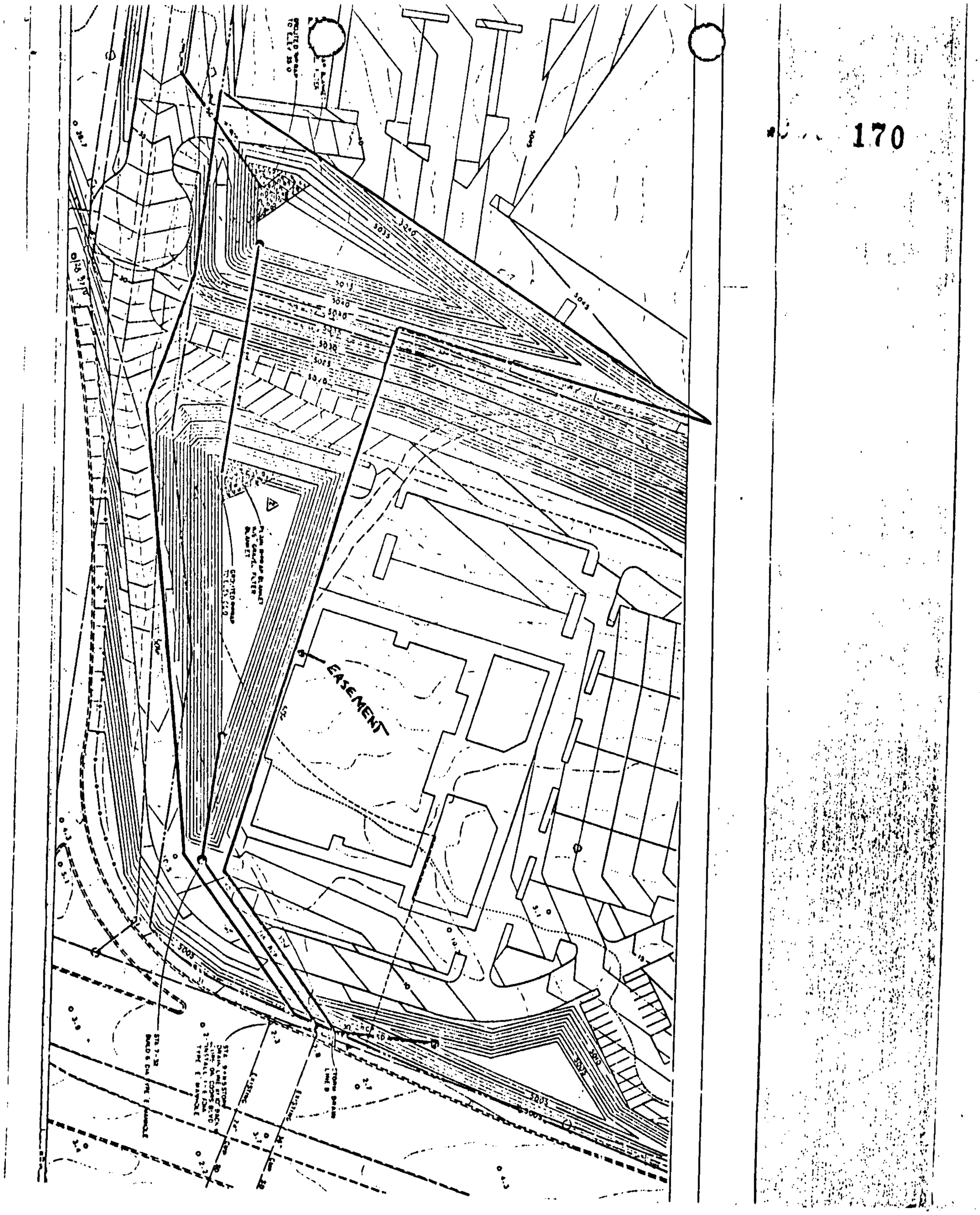


EXHIBIT "B"

AMAFCA
2600 Prospect Ave. NE
Albuquerque, NM 87107
Ph: (505) 884-2215
Fax: (505) 884-0214

MEMORANDUM

To: File – PdN / Coors Tract 2B Pond & Brad Bingham

From: Lynn Mazur, AMAFCA Review Engineer

Subject: Paradise Field Visit May 6

Date: May 8, 2009

Brad Bingham, City Hydrologist, and I investigated Paradise Boulevard to determine feasible improvements with the Coors Pond project.

Curb on South Side – Not feasible
The cost-benefit ratio of just adding asphalt curb makes this option impractical. A primary consideration is the possibility that the property south of Paradise will develop in a year. The owner will be required to improve the road adjacent to his property, and he would be tearing out new curb. He will also be required to install storm drain and inlets.

Berm – Feasible
Brad suggested that a better option would be to repair the existing berm next to the right-of-way where runoff has broken through to the PdN ramp. It will be compacted soil.

Clean PdN Inlet – Not feasible
We saw a drop inlet next to the ramp that has been covered in silt. Recent storms partially uncovered it. We thought that digging it out and placing riprap around it could be part of this project, but I think the outlet pipe must be silted in, too. If we make the improvements on Paradise proposed with this project, the runoff to the inlet will be greatly reduced, so it may not be necessary. I will inform DOT maintenance that it is there if they want to maintain it.

Curb Around Cul-de-sac – Feasible
The curb cut on the south side of the cul-de-sac has caused erosion by allowing runoff to run down the slope to PdN ramp. We will include removing the edge curb stones and adding concrete curb around the opening in the project.

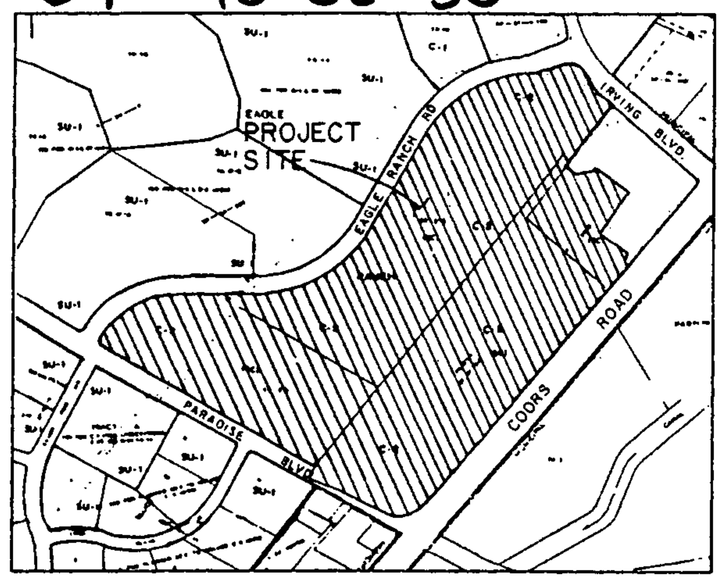
Rundown to Movie Pond – Feasible
Brad suggested that adding the rundown at the end of the cul-de-sac may not be feasible. We will need to acquire more easement beyond the existing City easement. It looks like if the runoff is contained in the road, it will go down the private access road behind the shopping center to the parking lot behind the movie theater. From there, it will travel south to the movie pond rundown, which is not adequately sized. A more direct path with a rundown from the cul-de-sac is a better option that AMAFCA will pursue.

Brad will speak to the City assistant attorney to find out if constructing improvements in the existing City easement will be allowed under the terms of the Grant of Easement document and if the City will agree to maintain the rundown and the movie pond outlet pipes.

90C-151 (1)

90C-151(1)

SP-10-02-50



LOCATION MAP
ZONE ATLAS MAP C-13-Z
NOT TO SCALE

SUBDIVISION DATA

1. DRB Number: 87-621
2. Zone Atlas Index Number: C-13
3. Gross subdivision acreage: 64.9918 acres
4. Number of tracts created: three (3) tracts
5. No streets were created, however 1.3687 acres of public road right-of-way were vacated by V-89-8 & V-90-28
6. These properties are within the New Mexico Utilities, Inc. (N.M.U., Inc.) franchise area. Water and sanitary sewer capabilities are based on the N.M.U., Inc. facilities, not the City of Albuquerque. Water and sanitary sewer infrastructure improvements must, however, be approved by both City of Albuquerque and N.M.U., Inc.

NOTES

1. Bearings are based on New Mexico State Plane Grid Bearings (Central Zone).
2. All distances are ground distances. Ground to grid factor = 0.99967008).
3. The purpose and intent of this plat is to grant easements and accept vacated right-of-way.
4. No corners were staked, this plat prepared from existing plats of record.
5. 1/2" rebar with yellow plastic survey cap stamped "LS 4078", found October 1987, designated by ●
6. 1 1/2" aluminum cap stamped "CSC 7270", found October 1987, designated by ■

APPROVALS

PLAT NUMBER SP-90-109

PLANNING DIRECTOR		DATE 6/26/90
CITY ENGINEER		DATE 10-31-89
A.M.A.F.C.A.		DATE 10-31-89
TRAFFIC ENGINEER		DATE 11/11/90
CITY SURVEYOR		DATE 10-30-89
PROPERTY MANAGEMENT		DATE 11-8-89
NEW MEXICO UTILITIES, INC.		DATE 10/31/89
PARKS & RECREATION DEPARTMENT	RP 4/16/90	DATE 10-30-89
PUBLIC SERVICE COMPANY OF NEW MEXICO		DATE 10-30-89
U.S. WEST COMMUNICATIONS	ABS (4-4-90)	DATE 10/27/89
GAS COMPANY OF NEW MEXICO	RWK 6-26-90	DATE 10-31-89
UTILITY DEVELOPMENT		DATE

DESCRIPTION

A certain tract of land situate within the Town of Alameda Grant, within projected Section 18, Township 11 North, Range 3 East, New Mexico Principal Meridian, City of Albuquerque, Bernalillo County, New Mexico, being and comprising all of Tracts "A-1", "B", and "C" of MARKET CENTRE WEST, as the same are shown and designated on the plat filed for record in the office of the County Clerk of Bernalillo County, New Mexico, on October 13, 1988, in Volume C37, Folio 125, together with a portion of the present Paradise Boulevard N.W. right-of-way vacated by V-89-8 together with a portion of the present Eagle Ranch Road N.W. right-of-way also vacated by V-89-8 and being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

BEGINNING at a point on curve at the northeast corner of said Tract "C", said corner being also a point on the southerly right-of-way line of Irving Boulevard N.W., from whence the USC and GS Monument R. Alameda A-3 (having New Mexico State Plane Grid Coordinates: Central Zone, X=377,094.67 and Y=1,523,108.34) bears S53°28'24"E. 968.82 feet, and from said point of beginning leaving said southerly right-of-way line and running thence entirely along the southeasterly boundary of said Tract "C" and partially along the southeasterly boundary of said Tract "B",
S38°31'51"W. 675.43 feet to a point on the northeasterly boundary line of said Tract "A-1"; thence along the said northeasterly boundary line of Tract "A-1",
S51°28'27"E. 90.70 feet to a point; thence,
N83°32'18"E. 69.31 feet to a point; thence,
S51°30'38"E. 16.28 feet to a point; thence,
N38°31'44"E. 12.99 feet to a point; thence,
S51°17'44"E. 165.98 feet to a point; thence,
S38°29'49"W. 5.49 feet to a point; thence,
S51°27'24"E. 42.26 feet to a point; thence,
S39°12'46"W. 119.57 feet to a point; thence,
S51°22'57"E. 217.89 feet to a point on the westerly right-of-way line of New Mexico State Road No. 448 (Coors Road N.W.) being the northeasterly corner of said Tract "A-1"; thence, running southwesterly along said State Road right-of-way line and also along the southeasterly boundary of said Tract "A-1",
S38°36'19"W. 22.00 feet to a point of curvature; thence,
61.29 feet along the arc of a curve to the right having a radius of 38.00 feet, a central angle of 92°24'55", and a long chord which bears S05°15'41"E. 54.86 feet to a point of tangency; thence,
S40°56'46"W. 237.84 feet to a point; thence,
S49°04'34"W. 35.36 feet to a point; thence,
S40°56'46"W. 185.41 feet to a point of curvature; thence,
58.09 feet along the arc of a curve to the right having a radius of 38.00 feet, a central angle of 87°35'05", and a long chord which bears S84°44'19"W. 52.60 feet to a point of non-tangency; thence,
S38°36'19"W. 44.00 feet to a point of curvature; thence,
61.29 feet along the arc of a curve to the right having a radius of 38.00 feet, a central angle of 92°24'55", and a long chord which bears S05°15'41"E. 54.86 feet to a point of non-tangency; thence,
S40°56'46"W. 409.78 feet to a point; thence,
S43°48'31"W. 440.55 feet to a point of curvature; thence partially along the said southeasterly boundary of said Tract "A-1" and entirely along the said westerly right-of-way line of said State Road 448,
257.85 feet along the arc of a curve to the right having a radius of 197.00 feet, a central angle of 74°59'36", and a long chord which bears S78°26'35"W. 239.83 feet to a point of tangency within the said present Paradise Boulevard N.W. right-of-way; thence leaving said westerly right-of-way line and running thence along the southerly boundary of the tract herein described,
N64°03'37"W. 16.69 feet to a point of tangency; thence,
427.96 feet along the arc of a curve to the left having a radius of 1677.02 feet, a central angle of 14°37'17", and a long chord which bears N71°22'15"W a distance of 426.80 feet to a point of non-tangency; thence,
N29°05'52"E. 99.09 feet to a point on the southwesterly boundary line of said Tract "A-1" and also being a point on the northerly right-of-way line of Paradise Boulevard, N.W.; thence running northwesterly along said Paradise Boulevard N.W. right-of-way line and also along the southwesterly boundary of said Tract "A-1",
N60°53'47"W. 1,233.74 feet to a point of curvature; thence,
39.27 feet along the arc of a curve to the right having a radius of 25.00 feet, a central angle of 90°00'00", and a long chord which bears N15°53'47"W. 35.36 feet to a point of compound curvature on the easterly right-of-way of Eagle Ranch Ranch Road, N.W., and also being a point on the westerly boundary of said Tract "A-1"; thence running northeasterly along said Eagle Ranch Road, N.W. right-of-way, and also along the westerly boundary of said Tract "A-1",
28.23 feet along the arc of a curve to the right having a radius of 465.05 feet, a central angle of 03°28'41", and a long chord which bears N30°50'33"E. 28.23 feet to a point of non-tangency; thence,
N59°17'48"E. 20.87 feet to a point of curvature; thence,
40.00 feet along the arc of a curve to the right having a radius of 456.05 feet, a central angle of 05°01'31", and a long chord which bears N37°26'13"E. 39.99 feet to a point of non-tangency; thence,
S48°47'40"E. 12.00 feet to a point; thence,
N41°12'21"E. 20.00 feet to a point; thence,
N48°47'38"W. 12.00 feet to a point of curvature; thence,
40.00 feet along the arc of a curve to the right having a radius of 456.05 feet, a central angle of 05°01'31", and a long chord which bears N44°58'30"E. 39.99 feet to a point of non-tangency; thence,
N23°05'55"E. 20.87 feet to a point of curvature; thence,
330.47 feet along the arc of a curve to the right having a radius of 465.05 feet, a central angle of 40°42'52", and a long chord which bears N70°11'15"E. 323.56 feet to a point of tangency; thence,
S89°27'19"E. 389.28 feet to a point of curvature; thence,
479.73 feet along the arc of a curve to the left having a radius of 888.00 feet, a central angle of 39°57'04", and a long chord which bears N70°34'09"E. 470.07 feet to a point of non-tangency; thence,
N63°27'51"E. 36.36 feet to a point of curvature; thence,
100.00 feet along the arc of a curve to the left having a radius of 697.00 feet, a central angle of 08°13'13", and a long chord which bears N43°34'07"E. 99.91 feet to a point of reverse curvature; thence,
46.64 feet along the arc of a curve to the right having a radius of 30.00 feet, a central angle of 89°04'21", and a long chord which bears N83°59'41"E. 42.08 feet to a point of non-tangency; thence,
N38°31'51"E. 56.00 feet to a point; thence,
N51°28'09"W. 16.51 feet to a point of curvature; thence,
42.75 feet along the arc of a curve to the right having a radius of 30.00 feet, a central angle of 81°39'11", and a long chord which bears N10°38'34"W. 39.23 feet to a point of tangency; thence,
N30°11'02"E. 16.00 feet to a point of curvature; thence,
N54°19'53"E. 22.00 feet to a point of curvature; thence,
N30°11'02"E. 70.00 feet to a point of curvature; thence,
S59°48'58"E. 12.00 feet to a point of curvature; thence,
N30°11'02"E. 40.00 feet to a point of curvature; thence,
N59°48'58"W. 12.00 feet to a point of curvature; thence,
N30°11'02"E. 70.00 feet to a point of curvature; thence,
N06°03'10"E. 22.00 feet to a point of curvature; thence,
N30°11'02"E. 316.83 feet to a point of curvature; thence,
643.55 feet along the arc of a curve to the right having a radius of 664.03 feet, a central angle of 55°31'43", and a long chord which bears N57°56'53"E. 618.66 feet to a point of compound curvature; thence,
20.17 feet along the arc of a curve to the right having a radius of 631.08 feet, a central angle of 01°49'52", and a long chord which bears N86°36'27"E. 20.17 feet to a point of reverse curvature; thence leaving said easterly right-of-way of Eagle Ranch Ranch Road, N.W. and running thence along the northerly boundary of the tract herein described,
8.91 feet along the arc of a curve to the left having a radius of 160.00 feet, a central angle of 03°11'20", and a long chord which bears N73°28'17"E. 8.90 feet to a point of compound curvature; thence,
148.65 feet along the arc of a curve to the left having a radius of 639.00 feet, a central angle of 13°19'45", and a long chord which bears N65°12'44"E. 148.32 feet to a point of tangency; thence,
N58°32'52"E. 16.04 feet to a point of curvature; thence,
130.90 feet along the arc of a curve to the right having a radius of 90.00 feet, a central angle of 96°03'58", and a long chord which bears S73°25'09"E. 133.84 feet to a point of compound curvature; thence,
26.77 feet along the arc of a curve to the right having a radius of 290.00 feet, a central angle of 05°17'22", and a long chord which bears S22°44'29"E. 26.76 feet to a point of compound curvature; thence,
45.89 feet along the arc of a curve to the left having a radius of 160.00 feet, a central angle of 16°26'02", and a long chord which bears S28°18'50"E. 45.73 feet to a point of compound curvature; thence,
103.54 feet along the arc of a curve to the left having a radius of 901.30 feet, a central angle of 06°34'56", and a long chord which bears S39°49'19"E. 103.49 feet to a point on curve (non-tangent) on the southerly right-of-way line of said Irving Boulevard, N.W.; thence running along said southerly right-of-way line,
51.03 feet along the arc of a curve to the right having a radius of 631.08 feet, a central angle of 04°38'00", and a long chord which bears S55°19'22"E. 51.02 feet to the point and place of beginning.

Tract contains 64.9918 acres, more or less.

THIS IS TO CERTIFY THAT TAXES ARE CURRENT AND PAID ON UPC# 4 CODES
PROPERTY OWNER OF RECORD: MARKET CENTER WEST ASSOC.
BERNALILLO COUNTY TREASURER'S OFFICE: Chris Simpson 6-18-90

1-013-064-192-335-20210 (1)
20213 (2)
20214 (3)
20212 (4)
20211 (5)

State of New Mexico } SS
County of Bernalillo }
This instrument was filed for record on
JUN 28 1990
At 1:53 o'clock P.M. Recorded in Vol 90C of records of said County Folio 151 143
Clerk & Recorder
Deputy Clerk

90499860

PLAT OF

THE PLAZA AT PASEO DEL NORTE

FORMERLY

MARKET CENTRE WEST

ALBUQUERQUE, NEW MEXICO

SEPTEMBER, 1989

Free Consent and Dedication

The foregoing replat of that certain tract of land situate within the Town of Alameda Grant and projected Section 18, Township 11 North, Range 3 East, New Mexico Principal Meridian, City of Albuquerque, Bernalillo County, New Mexico, being and comprising all of Tracts "A-1", "B", and "C" of MARKET CENTRE WEST, as the same are shown and designated on the plat filed for record in the office of the County Clerk of Bernalillo County, New Mexico, on October 13, 1988, in Volume C37, Folio 125, together with a portion of the present Paradise Boulevard N.W. right-of-way and a portion of the present Eagle Ranch Road N.W. right-of-way and now herein shown and comprising THE PLAZA AT PASEO DEL NORTE is with the free consent and in accordance with the desires of the undersigned owner(s) and/or proprietors(s) thereof and said owner(s) and/or proprietor(s) do hereby grant all easements shown on this plat. Electrical, Power, and Communication easements are reserved for overhead distribution lines for pole type utilities, and buried distribution lines, conduits, and pipes for underground utilities and other related equipment where shown or indicated, including the right of ingress and egress for construction and maintenance, and the right to trim interfering trees and shrubs. The owners of Lots A, B, and C hereby grant to each other and their successors and assigns of interest reciprocal easements for parking, access, drainage, and utilities.

OWNER:

MARKET CENTER WEST ASSOCIATES
a California General Partnership

Lee VP
SES/Beck & Associates, Inc.

GLENFED Development Corp.

State of California)
)ss.
County of Los Angeles)

The foregoing instrument was acknowledged before me this 17th day of OCTOBER, 1989 by LEE A SUSPIRO on behalf of SES/Beck & Associates, Inc., a Delaware Corporation.

By: Pamela A. Kulina My commission expires: 07/30/1993

State of California)
)ss.
County of Los Angeles)

The foregoing instrument was acknowledged before me this 12TH day of OCTOBER, 1989 by MICHAEL D. KENNEY on behalf of GLENFED Development Corp., a California Corporation.

By: Marguerite Hanson My commission expires: 4/10/90

OFFICIAL SEAL
MARGUERITE HANSON
NOTARY PUBLIC - CALIFORNIA
Principal Office in
LOS ANGELES COUNTY
My Commission Expires April 10, 1990

SURVEYOR'S CERTIFICATION

I, A. Dwain Weaver, a registered Professional New Mexico Surveyor, certify that this plat was prepared by me or under my supervision, shows all easements of record, meets the minimum requirements for monumentation and surveys contained in the Albuquerque Subdivision Ordinance, and is true and accurate to the best of my knowledge and belief.

A. Dwain Weaver

A. Dwain Weaver
P.L.S. No. 6544

Bohannan-Huston, Inc.
Courtyard I
7500 Jefferson N.E.
Albuquerque, NM 87109

A. DWAIN WEAVER
NEW MEXICO
6544
REGISTERED PROFESSIONAL LAND SURVEYOR

JOB NO. 8913505

BOHANNAN HUSTON INC.

SHEET 1 OF 3

C-13/D050

90C-151(1)

90C-151(1)

90C-151(2)

90C-151(2)

State of New Mexico } SS
County of Bernalillo }
This instrument was filed for record on
JUN 28 1990
At 5 o'clock p.m. Recorded in Vol 90 C
of records of said County-Folio 151 2043
Clerk & Recorder
Deputy

9049860

PLAT OF
THE PLAZA AT PASEO DEL NORTE
FORMERLY
MARKET CENTRE WEST
ALBUQUERQUE, NEW MEXICO
SEPTEMBER, 1989

SCALE: 1" = 200'

ACS Brass Tablet Stamped "ACS 4-B13, 1986"
N.M. State Plane Coordinates (Central Zone)
X = 375,489.27 Y = 1,525,104.55
Ground-to-Grid Factor = 0.9996705
ΔCK = -00°14'25"
Elev. = 5169.51

USC&GS Brass Tablet "R. Alameda A-3"
N.M. State Plane Coordinates (Central Zone)
X = 377,094.67 Y = 1,523,108.34
Ground-to-Grid Factor = 0.99967685
ΔCK = -00°14'13"
Elev. = 5027.05

TRACT 2-D EAGLE RANCH FILED: JUNE 4, 1981 (C18-94)

TRACT 13A EAGLE RANCH FILED: MAY 16, 1986 (C30-35)

TRACT 14A EAGLE RANCH FILED: MAY 16, 1986 (C30-35)

TRACT 17B EAGLE RANCH FILED: DEC. 19, 1984 (C25-185)

TRACT 17A EAGLE RANCH FILED: DEC. 19, 1984 (C25-185)

TRACT B
TRACT B
6.5161 Ac.

TRACT C
TRACT C
3.5390 Ac.

TRACT D MARKET CENTRE WEST FILED: OCT. 13, 1988 (C37-125)

TRACT E MARKET CENTRE WEST FILED: OCT. 13, 1988 (C37-125)

TRACT A-1
TRACT A
54.9367 Ac.

0.5131 OF RIGHT-OF-WAY VACATED BY V-89-8 & V-90-28

0.8556 OF RIGHT-OF-WAY VACATED BY V-89-8 & V-90-28

EAGLE RANCH RD., N.W.

IRVING BLVD., N.W. (100' R-O-W)

PARADISE BLVD., N.W. (100' R-O-W)

PASEO DEL NORTE (R-O-W VARIES)

NEW MEXICO STATE RD. No. 448 (COORS RD., N.W.) (182' R-O-W)

ACCESS CONTROLLED

S89°27'19"E 389.28

N60°53'47"W 1233.74

S40°56'46"W 409.78 (428.45')

S43°48'31"W 40.55

S38°31'51"W 675.43

S51°27'33"E 283.25

N60°53'47"W

S53°28'24"E 968.82

N00°01'10"E 1614.92

EXISTING 10' PNM & U.S. WEST UTILITY EASEMENT FILED: JULY 25, 1988 (C37-12)

EXISTING 10' PNM EASEMENT FILED: MAY 20, 1980 (C16-158)

EXISTING 100' PNM POWERLINE EASEMENT FILED: MAY 6, 1957 (0385-303)

10' UTILITY EASEMENT GRANTED TO PNM & U.S. WEST WITH THE FILING OF THIS PLAT

10' EASEMENT GRANTED TO N.M. UTILITIES WITH THE FILING OF THIS PLAT

20' EASEMENT GRANTED TO N.M. UTILITIES WITH THE FILING OF THIS PLAT

30' EASEMENT GRANTED TO N.M. UTILITIES WITH THE FILING OF THIS PLAT

EXISTING 15' UTILITY EASEMENT APRIL 6, 1961 (NOT RECORDED)

EXISTING 3' MOUNTAIN STATES TELEPHONE & TELEGRAPH EASEMENT FILED: JULY 15, 1960 (0552-151)

EXISTING 10' UTILITY EASEMENT FILED: FEB. 10, 1986 (0296-907)

EXISTING 7' UTILITY EASEMENT FILED: OCT. 29, 1973 (0952-393) FILED: APRIL 21, 1961 (0591-401)

STORM DRAINAGE EASEMENT GRANTED BY DOCUMENT FILED: JUNE 8, 1989 (MISC. 756A PG. 165-170) (2.3954 AC.)

20' EASEMENT GRANTED TO NMUI WITH THE FILING OF THIS PLAT

EXISTING PUBLIC DRAINAGE EASEMENT VACATED BY V-89-57

10' EASEMENT GRANTED TO GAS CO. OF N.M. WITH THE FILING OF THIS PLAT

20' EASEMENT GRANTED TO GAS CO. OF N.M. WITH THE FILING OF THIS PLAT

SEE DETAIL "A"
SEE DETAIL "B"
SEE DETAIL "C"
SEE DETAIL "D"
SEE DETAIL "E"
SEE DETAIL "F"
SEE DETAIL "G" SHEET 3 OF 3
SEE DETAIL "H" SHEET 3 OF 3
SEE DETAIL "I" SHEET 3 OF 3
SEE DETAIL "J" SHEET 3 OF 3
SEE DETAIL "K" SHEET 3 OF 3
SEE DETAIL "L" SHEET 3 OF 3
SEE TYPICAL DETAIL "D"
SEE TYPICAL DETAIL "E"
SEE TYPICAL DETAIL "F"
SEE TYPICAL DETAIL "C"

DETAIL "A"
SCALE: 1"=100'

DETAIL "B"
SCALE: 1"=100'

DETAIL "C"
NO SCALE

DETAIL "D"
NO SCALE

DETAIL "E"
NO SCALE

DETAIL "F"
NO SCALE

NOTE:
T NUMBERS REFER TO EASEMENTS INCLUDING WATER SERVICE LINES AND FIRE LINES. FOR CLARIFICATION REFER TO THE T NUMBERS AND THEN TO SHEET 3 WHICH SHOWS THE CENTER LINE TANGENT OF EACH EASEMENT.

JOB NO. 8913505

JOHNSON HASTON INC.

SHEET 2 OF 3

C 3/2000

90C-151(2)

90C-151(2)

Drainage Review and Analysis
of the
Proposed Detention Pond (Tract 2-B)
located at the NE corner of
Paseo Del Norte and Coors Blvd.
as identified in the

"Design Memorandum
for the
North Coors Drainage
Management Plan Middle Area,
La Orilla to Calabacillas,
Hydrology (Fully Developed Conditions)
Hydraulics Sediment Control).
Prepared by Smith Engineering Company,
February 1997"

Prepared for:

Albuquerque Metropolitan Arroyo Flood Control Authority

Prepared by:

Smith Engineering Company

SEC Project Number 100109E

June 9, 2003

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY of Hydrologic and Hydraulic Analyses at key locations.

2. LETTER REPORT Summarizing the Drainage Analyses and AHYMO model review

Table 1 – Elevation Volume Calculations for Proposed Tract 2-B Pond (located at end of Letter Report)

ALL FIGURES LOCATED IN MAP POCKET

Figure 1 – Drainage Basin Map

Figure 2 – AHYMO Modeling Schematic

Figure 3 – Existing Tract 2-B Pond

Figure 4 – Conceptual Tract 2-B Pond

Diskette in Pocket that contains all 3 AHYMO models as described in the report
(update1.dat, update2.txt, update3.txt)

APPENDIX 1

AHYMO SUMMARY TABLES FROM:

1. "Design Memorandum for the North Coors Drainage Management Plan Middle Area, La Orilla to Calabacillas,
Hydrology (Fully Developed Conditions) Hydraulics Sediment Control). Prepared by Smith Engineering Company,
February 1997"

AHYMO model name is update1.dat

2. Revised Model to Correct Problems Discovered during review of the "update1.dat" Model

AHYMO model name is update2.txt (revised May and June 2003)

3. Revised Model update2.txt to include proposed AMAFCA Drainage Management Controls

AHYMO model name is update3.txt (revised June 2003)

APPENDIX 2

PRELIMINARY HYDRAULIC RESULTS FOR THE EXISTING AND PROPOSED 36-INCH CUVLERTS UNDER COORS BLVD. FROM BASIN 504 TO THE PROPOSED TRACT 2-B POND

This Appendix contains the Culvert Master Results for the referenced culverts

EXECUTIVE SUMMARY

This is very brief summary of the results of the drainage analyses conducted and described in more detail in the subsequent Letter Report.

Purpose – The NMSH&TD will soon develop improvements to the Coors Blvd. and Paseo Del Norte Intersection. The anticipated drainage outfall for those improvements and a much greater drainage area, will the Proposed Tract 2-B pond that will be located at the NE intersection of Paseo Del Norte and Coors Blvd. AMAFCA is coordinating the design of the pond and its inflows with the adjacent property owners and the NMSH&TD. The purpose of this analyses is to re-evaluate the drainage assumptions and AHYMO hydrologic model developed for the :

> "Design Memorandum for the North Coors Drainage Management Plan Middle Area, La Orilla to Calabacillas, Hydrology (Fully Developed Conditions) Hydraulics Sediment Control). Prepared by Smith Engineering Company, February 1997" .

The peak discharges were determined at key locations with respect to the upcoming NMSH&TD improvements near the Tract 2-B pond.

Results – The analysis results indicate that the intersection of Irving Blvd. and Coors Blvd. will have a flooding problem based on the future development conditions and the limited drainage infrastructure at that location. In addition, the existing 36-inch CMP under Coors Blvd located just north of Paseo Del Norte is also inadequate to convey the 100-yr. peak discharge to the Tract 2-B pond. Therefore, AMAFCA has developed several Proposed Drainage Management Controls to help reduce the flows at the locations described. These proposed controls are as follows:

<u>Proposed Drainage Management Controls – (Proposed by AMAFCA)</u>

Please refer to **Figure 1** (map pocket) for a graphical location of the basins and locations described here. Most of these basins are undeveloped at this time.

1. Basins that must outfall to the existing pond in Basin 303, and/or must be controlled and outfall into the existing Eagle Ranch Road Storm Drain System. No bypass flow on Paradise Blvd. will be allowed.

   These Basins include: 302, 303 and 304

2. Basins anticipated to have most runoff outfall to the existing Congress Heights Storm Drain system. Any excess flow towards Irving Blvd. must be controlled to a very small release rate due to limited downstream capacity at the Intersection of Coors and Irving Blvd.

   These Basins include: 410 and 411

6400 Uptown Blvd. NE, Suite 500E Albuquerque, New Mexico 87110 Telephone 505/884-0700 Fax 505/884-2376
E-mail pats@secnm.com

3. Basins that must outfall to the existing Congress Ave. Storm Drain System and may require controlled release to maintain capacity of the Congress Ave. Storm Drain. No flow from these basins shall be allowed to bypass the Congress Ave. Storm Drain System.

These Basins include: 406 and 407

The following Table is a summary of the 100-yr. Storm Peak Discharge and Runoff Volume Summary from the AHYMO models, without and with the proposed AMAFCA Drainage Management Controls

100-yr. Storm Peak Discharge and Runoff Volume Summary at Key Analysis Points

Location	100-yr. Qp Future Development (update2.txt) and Analysis Point No. ( )	100-yr. Qp Future Development **with** proposed AMAFCA Drainage Management Controls (update3.txt) and Analysis Point No. ( )
Irving Blvd. at West Side of Coors Blvd.	85 cfs (AP 501.10)	38 cfs (AP 501.10)
Coors Blvd. & Irving West Side of Intersection without Basin 505A	190 cfs (AP 505.10)	133 cfs (AP 505.10)
Coors Blvd. & Irving Total Discharge at Intersection	Not computed	143 cfs (AP 505A.9)
Detention Pond in Basin 504 – Existing 36-in. CMP outfall under Coors to Tract 2-B Pond	257 cfs (AP 504.10)	161 cfs (AP 504.10)
Proposed Tract 2-B AMAFCA Pond (NE corner of Paseo Del Norte and Coors Blvd.)	469 cfs (AP 506.20) Inflow Volume = 35 ac-ft	333 cfs (AP 506.20) Inflow Volume = 30 ac-ft

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E-mail pats@secnm.com

LETTER REPORT

June 9, 2003

Ms. Lynn Mazur, P.E.
Albuquerque Metropolitan Arroyo Flood Control Authority
2600 Prospect Avenue NE
Albuquerque, New Mexico 87107

RE: Submittal :

Drainage Review and Analysis of the *Proposed Detention Pond* (Tract 2-B)
located at the NE corner of Paseo Del Norte and Coors Blvd. as identified in the report titled

"Design Memorandum for the North Coors Drainage Management Plan Middle Area,
La Orilla to Calabacillas, Hydrology (Fully Developed Conditions)
Hydraulics Sediment Control). Prepared by Smith Engineering Company, February 1997"

This is Task Order Number 5 of our 1999 Engineering On-Call
Engineering Services Contract
AMAFCA Contract No. 1999-36, SEC Project Number 100109E

Dear Ms. Mazur,

I have completed the tasks as outlined in Task Order No.'s 3 and 5 for the referenced project. Since both Task orders are on the same project, I will address both together in this document. At your request, I am submitting 5 copies of this document.

Task 1 –

1. Obtain more recent ortho-photo-topography if possible as compared to that used in the original North Coors Drainage Management Plan, 1997.

The 1999 Lidar Mapping for the area was obtained from AMAFCA and is presented on **Figure 1** attached to this submittal.

2. Review the North Coors DMP (Feb. 1997).

I have reviewed the DMP with emphasis on the AHYMO model with respect to the other information prepared for this submittal. I will describe my findings with Task 2.

3. Review the conceptual pond design prepared by Pat Conley for AMAFCA in July 1999.

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I reviewed the basic information prepared by Pat Conley regarding the Pond conceptual design, required volume and critical elevations. The information he prepared is still valid with respect to:

A. The modifications I have made to the DMP AHYMO model that will be described in more detail with Task 2.

B. The current topographic mapping and survey information recently prepared by Wilson and Company for the property currently under construction on Tract 2-B (interim detention pond) and the commercial properties just north of Tract 2-B. At this time, the site is under construction. This will be described further with Task 4.

Task 2 –

1. Verify basin boundaries and flow paths in the field to determine flow that will reach Coors Blvd from the west, at the proposed 96-in. storm drain (DMP) under Coors Blvd.. That storm drain will cross Coors Blvd. and discharge into the proposed Tract 2-B AMAFCA pond.

2. Resolve the question - "can the 400 cfs as computed with the AHYMO model in the DMP, reach the proposed 96-inch storm drain under Coors Blvd. to the proposed AMAFCA pond.

Response to 1. and 2. and items from Task 1 –

Please note that there is currently a 36-inch CMP under Coors Blvd. at the location of the proposed 96-inch CMP. This 36-inch CMP begins at a vertical stand pipe located in a detention pond built on the west side of Coors Blvd. located in Basin 504. There are also storm drain inlets in Coors Blvd. near this 36-in. CMP however, these inlets appear to drain into another storm drain that outfalls directly into the Corrales Main Box culvert near Paseo Del Norte.

Figure 1 is a drainage basin map was prepared using the 1999 Lidar Mapping and the basins as delineated in the DMP (Feb. 1997). The AHYMO model from the DMP was reviewed in detail to understand which basins were modeled as contributors to the proposed Tract 2-B pond, and which basins will outfall to the inlet of the previously proposed 96-inch storm drain under Coors Blvd from the west side to the proposed Tract 2-B pond.

The DMP model is very complex due to the number of storm drains and associated "DIVIDE HYD" commands used to model flows collected in storm drains and conveyed to other locations that do not correspond with the topographic drainage divides. The model was very difficult to follow, therefore, I prepared an AHYMO Modeling Schematic that is presented as **Figure 2.**

I have delineated the drainage basins on **Figure 1** that I assumed will discharge to the Tract 2-B pond, and those that will end up at the west side of Coors immediately across from the

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Tract 2-B pond. I copied the AHYMO model from the DMP - file name update1.txt, into a file named update2.txt, and modified several items as described here:

The following changes were NOTED, AND/OR applied to this model (update2.txt) to correct errors or changes discovered during review of update1.txt -

1. The area of basin 504 was 0.0257 sq mi (wrong), correct is 0.0426 sq mi

2. All of Basin 305 was previously added to Tract 2B Pond (proposed AMAFCA pond), however, only 2/3 of that basin will reach proposed AMAFCA pond due to inlets in the Paseo Del Norte on ramp that collect flows that outfall to the NMSH&TD pond at the southwest intersection of PDN and Coors Blvd., therefore, add a DIVIDE HYD command to correct.

3. Detention Pond 502.RES actually outfalls into Detention Pond 503.RES. However, in Update1.txt, it was added after 503.RES. Therefore, it is now added prior to Pond 503.res routing. 503.res is the detention pond located immediately south of the movie theater at the very southern end of basin 503.

4. Basins 409, 410 and 411 were divided and a fraction of those basins were lost (computed but not used) in the update1.txt model. The lost fraction of Basins 410 AND 411 could possibly drain to Tract 2-B AMAFCA Pond. The lost Hyd's and fractional areas and volumes lost are as follows:

HYD NO.'S	410.03	411.03	
DRAINAGE AREAS (sq mi)	0.00016	0.00188	TOTAL = 0.00204
RUNOFF VOLUME (ac-ft)	0.018	0.218	TOTAL = 0.236

Basin 409 drains into Eagle Ranch Blvd. and then north to the Calabacillas Arroyo.

See the AHYMO model schematic – **Figure 2** for these HYD NO's. and **Figure 1.** These lost HYD's have not been added into the model (update2.txt).

Therefore, during the final design of the Tract 2-B pond, an additional 0.236 ac-ft could be added to account for the volume of those basins that may contribute to the pond. Please refer to **Figure 1** for the Drainage Basin Map.

DISCUSSION OF DRAINAGE BASINS AND OUTFALL LOCATIONS -

Tract 2-B Pond - Basins that either fully or partially (divided flow to a storm drain) outfall to the proposed Tract 2-B Pond.

201, 202, 301, 302, 303, 304, 305, 401, 402, 405, 406, 407, 408, 501, 502, 503, 504, 505, 505A, 506, 506A

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E-mail pats@secnm.com

AHYMO Analysis Point = AP 506.20 into Tract 2-B Pond (update2.txt)
100-yr. 24-hour Qp = 469 cfs

Tract 2-B Pond Routing Results (update2.txt)
AHYMO Analysis Point = AP 506.res
100-yr. 24-hour Qp = 30.5 cfs
Maximum storage volume at peak stage = 21.09 ac-ft
Peak water surface elevation = 4998.31

The pond routing results presented here are based on the pond routing data from the original DMP (Feb. 1997, update1.txt) and the results are nearly identical to that previously evaluated by and presented as a conceptual design by Pat Conley (1999).

Basins that the DMP assumed would reach the west side of Coors Blvd. to the proposed 96-inch. Storm Drain.

All basins listed above except 505A, 506, 506A (udpate1.txt)
AHYMO Analysis Point No. in update1.txt = AP 505.20
100-yr. 24-hour Qp = 400 cfs

Basins (or fractions of those basins) that this present analysis assumes will reach the location of the proposed 96-inch storm drain on the west side of Coors Blvd. (now there is an existing 36-inch CMP under Coors Blvd)

201, 202, 301, 302, 303, 304, 305, 401, 402, 502, 503, 504,

Analysis Point in update2.txt = AP 504.10 (update2.txt)
100-yr. 24-hour Qp = 257 (cfs)

Basins that contribute to the Intersection of Coors and Irving and the flow may split.

There are existing catch basins on the northwest and southwest curb returns at the intersection of Coors and Irving Blvd. Those basins connect to 30-inch storm drain across Coors Blvd. at the south side of the intersection of Coors and Irving. That storm drain outfalls to the road side ditch on the west side of Coors just south of Irving. In the near future, that storm drain will discharge to a proposed storm drain 30 to 48-inch storm drain that will begin on the west side of Coors at Irving Blvd. and will continue south and outfall to the Tract 2-B pond. Wilson and Company has designed that storm drain and it is under review by the NMSH&TD.

The following basins will flow down Irving Blvd. from west towards Coors Blvd. or along Coors Blvd. (basins 505 and 505A) and in a 100-yr. storm will most likely split at the intersection of

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Coors and Irving, with maybe 50% flowing across Coors (surface flow and in the existing 30-inch storm drain) and 50% flowing south on Coors towards Paseo Del Norte.

501, 405, 406, 407, 408

AHYMO Analysis Point No. = 501.10 (update2.txt)
100-yr. 24-hour Qp = 85 cfs

At present time, flow from the Coors / Irving Intersection and Coors Blvd. does not enter the existing 36-inch CMP (outfall of Basin 504) under Coors that outfalls to the Tract 2-B pond.

The basins at the Coors / Irving Intersection including basin 505 and the previous basins are:

501, 405, 406, 407, 408, 505, (excluding 505A)

AHYMO Analysis Point No. = AP 505.10 (update2.txt)
100-yr. Qp = 190 (cfs)

Note that basin 505A although not added into Analysis Point 505.10 would not significantly add to the peak for that analysis point as its time to peak and location will allow it to peak sooner than the other basins that contribute to the analysis point.

Further analysis of the drainage at the intersection of Coors Blvd. and Irving is beyond the scope of this analysis.

Wilson and Company assumed that the 30-inch storm drain at the intersection of Irving and Coors that outfalls to the east side of Coors just south of Irving Blvd., will collect 30 cfs. Consequently, 190 cfs – 30 cfs is 160 cfs that will flow into the intersection of Coors and Irving Blvd.

Therefore, the proposed redesign of Coors Blvd (the NMSH&TD) north of Paseo Del Norte, should plan for collection of flows from AP 505.10, and collection of the flows that will spill from that analysis point into Basin 506A, and conveyance to the Tract 2-B Pond.

AHYMO Summary Tables

Appendix 1 contains the AHYMO Summary Tables from the Original DMP and this revised analysis. In addition, it contains selected pages from the output file that summarize the Tract 2-B proposed pond routing.

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E-mail pats@secnm.com

DRAINAGE MANAGEMENT OPTIONS PROPOSED BY AMAFCA

Due to the magnitude of the 100-yr. peak discharges that will reach the intersection of Irving and Coors Blvd. and also the existing 36-inch CMP under Coors Blvd. from Basin 504, AMAFCA has proposed several drainage management options to reduce the storm runoff to those locations. The proposed options will limit the storm runoff from basins that are mostly undeveloped at this time, and that contribute to the locations described. The following is a summary of the proposed options.

Proposed Drainage Management of Selected Basins – (Proposed by AMAFCA)

Please refer to **Figure 1** (map pocket) for a graphical location of the basins and locations described here.

1. Basins that must outfall to the existing pond in Basin 303, and/or must be controlled and outfall into the existing Eagle Ranch Road Storm Drain System. No bypass flow on Paradise Blvd. will be allowed.

These Basins include: 302, 303 and 304

2. Basins anticipated to have most runoff outfall to the existing Congress Heights Storm Drain system. Any excess flow towards Irving Blvd. must be controlled to a very small release rate due to limited downstream capacity at the Intersection of Coors and Irving Blvd.

These Basins include: 410 and 411

3. Basins that must outfall to the existing Congress Ave. Storm Drain System and may require controlled release to maintain capacity of the Congress Ave. Storm Drain. No flow from these basins shall be allowed to bypass the Congress Ave. Storm Drain System.
These Basins include: 406 and 407

The proposed drainage management controls were simulated in the update3.txt AHYMO model which was developed from a copy of the update2.txt AHYMO model. **Figure 2** illustrates the changes required to develop the update3.txt model. **Appendix 1** contains a copy of the AHYMO Summary Table.

The following Table is a summary of the 100-yr. Storm Peak Discharge and Runoff Volume Summary without and with the proposed AMAFCA Drainage Management Controls.

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100-yr. Storm Peak Discharge and Runoff Volume Summary at Key Analysis Points

Location	100-yr. Qp Future Development (update2.txt) and Analysis Point No. ( )	100-yr. Qp Future Development **with** proposed AMAFCA Drainage Management Controls (update3.txt) and Analysis Point No. ( )
Irving Blvd. at West Side of Coors Blvd.	85 cfs (AP 501.10)	38 cfs (AP 501.10)
Coors Blvd. & Irving West Side of Intersection without Basin 505A	190 cfs (AP 505.10)	133 cfs (AP 505.10)
Coors Blvd. & Irving Total Discharge at Intersection	Not computed	143 cfs (AP 505A.9)
Detention Pond in Basin 504 – Existing 36-in. CMP outfall under Coors to Tract 2-B Pond	257 cfs (AP 504.10)	161 cfs (AP 504.10)
Proposed Tract 2-B AMAFCA Pond (NE corner of Paseo Del Norte and Coors Blvd.)	469 cfs (AP 506.20) Inflow Volume = 35 ac-ft	333 cfs (AP 506.20) Inflow Volume = 30 ac-ft

PRELIMINARY HYDRAULIC ANALYSIS OF THE EXISTING 36-INCH AND PROPOSED CULVERTS LOCATED IN THE EXISTING DETENTION POND ON THE WEST SIDE OF COORS ROAD WITHIN BASIN 504.
(Previous DMP Location Of The Proposed 96-Inch Storm Drain)

The culvert hydraulic analyses were completed for two cases that are:

CASE 1.
The proposed drainage management options *are not enforced* and therefore the future development condition peak discharge of **257 cfs** will reach the 36-inch CMP.

CASE 2.
The proposed drainage management options *are enforced* and the future development condition peak discharge that will reach the 36-inch CMP is **161 cfs**.

Based on the revised discharge that will reach this location as compared to the original Drainage Management Plan, a preliminary culvert hydraulic analysis was conducted using the

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E-mail pats@secnm.com

Culvert Master Program. A brief summary is provided here and the complete analysis results are included in **Appendix 2**.

Figure 4 illustrates the cross-section of the existing 36-inch CMP under Coors Blvd. and the Tract 2-B Pond with important elevations. The pertinent information and culvert hydraulic analysis is summarized here:

CASE 1.
The proposed drainage management options *are not enforced* and therefore the future development condition peak discharge of **257 cfs** will reach the 36-inch CMP.

AHYMO Analysis Point No. = 504.10
100-yr. 24-hour Qp = 257 cfs

Capacity of 1-36-inch CMP (existing) = 80 cfs with no freeboard at inlet
If additional 36-inch CMP's are installed, 257 cfs / 80 cfs = 3.2 culverts with no freeboard

Due the lower Manning's roughness coefficient of RCP compared to CMP, 1-36-inch RCP could pass 125 cfs with no freeboard.

Therefore, to allow for clogging and freeboard, assume the 1-existing 36-inch CMP will remain, and therefore, 257 cfs – 80 cfs = 177 cfs to pass through 2 – 36 inch RCP's or 88.5 cfs per culvert. These 36-inch RCP's would easily pass the remaining discharge with approximately 3 feet of freeboard remaining.

Summary of Preliminary Culvert Hydraulic Analysis

1 existing 36-inch CMP (needs to be cleaned out) and 2 proposed 36-inch RCP's will easily convey the 100-yr. Qp into the Tract 2-B pond including the maximum tail water (100-yr water surface) on the outfall of the pipes within the Tract 2-B pond.

CASE 2.
The proposed drainage management options *are enforced* and the future development condition peak discharge that will reach the 36-inch CMP is **161 cfs**.

Based on the culvert hydraulic analyses presented for Case 1, the existing 36-inch CMP combined with 1 additional 36-inch RCP would have adequate capacity to convey 161 cfs to the Tract 2-B pond.

If the location of the 36-inch CMP is moved north a few hundred feet, it is possible that one larger diameter pipe may be feasible instead of 2 - 36-inch diameter pipes. The decision to cross Coors Blvd. with additional pipes and or a different location must be determined by or with the NMSH&TD.

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Task 3 –

1. Obtain and review existing as-builts for utilities in or near Coors Blvd from PDN north to Irving Blvd. These have been requested from the NMSH&TD but have not been provided at this time.

2. Meet with the NMSH&TD to obtain their preliminary plans for the re-design of Coors Blvd north of Paseo Del Norte.

I have contacted the NMSH&TD and the Dept. has not developed any plans as of this date.

Task 4 –

1. Prepare a map of proposed utilities and conceptual design of proposed Pond as previously prepared by Pat Conley.

Figure 3 is a current topographic map of the temporary pond site (the temporary ponds have been rough graded as of this date) as prepared by Wilson and Company for the development of the Tract 2-B pond site and the properties just north of Tract 2-B. This map also shows the existing utilities adjacent to Tract 2-B.

Figure 4 is a the Tract 2-B pond site with the conceptual pond design as previously prepared by Pat Conley. This map also shows the existing utilities adjacent to Tract 2-B.

An elevation-storage computation was completed based on conceptual pond shown on **Figure 4** to determine if the maximum peak storage volume of 21 ac-ft (as determined in the original DMP) will be available. The elevation – storage computations are listed in **Table 1**.

The following table is a summary of the AHYMO Reservoir Routing Results for the Tract 2-B Pond from the update2.txt model (without AMAFCA's proposed Drainage Management Controls) and from the update3.txt model (includes AMAFCA's proposed Drainage Management Controls).

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TRACT 2-B POND AHYMO MODEL ROUTING RESULTS

For 100-yr. Storm and Full Basin Development Conditions

AHYMO model	Pond Invert Elevation	Maximum Water Surface Elevation	Maximum Water Depth	Maximum Storage Volume at Peak Stage	Pond Storage Volume at Elev. 5003	Peak Inflow	Peak Outflow
	(ft a.m.s.l)	(ft a. m.s.l.)	(ft)	(ac-ft)	(ac-ft)	(cfs)	(cfs)
Update2.txt (without Proposed AMAFCA Controls)	4993	4998.31	5.3	21.1	46.4	469	31
Update3.txt (with Proposed AMAFCA Controls)	4993.73	4997.35	3.6	16.9	44.7	333	28

Therefore, the conceptual pond design as previously determined is more than adequate. The elevations of the proposed storm drains from the property to the north of Tract 2-B appear to fit well with the outlet elevation of the 2-36-inch CMP's that are the outfall from the Tract 2-B pond to the concrete box culvert of the Corrales Main Canal.

CLOSING

I would be glad to discuss this submittal with you at your convenience. You may reach me at 884-0700.

Sincerely,

Pat Stovall, P.E.
Smith Engineering Company

Z:\Projects\100109C & ECoorsPDN Pond\report\lynnlet6-9-03.doc

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TABLE 1

ELEVATION-VOLUME CALCULATIONS FOR PROPOSED TRACT 2-B POND

Principal and Emergency Spillway discharge curves were not developed for this Conceptual Analysis
grey box means must input data

Contour Elevation	Contour Area	Incremental Volume	Incremental Volume	**Cumulative Volume**	Principal Spillway Discharge	Emergency Spillway Discharge	**Total Discharge**
	Principal Spillway Orifice Diameter (inches)				0		
	Number of Orifices				0		
(ft)	(sq ft)	(cu ft)	(ac-ft)	(ac-ft)	(cfs)	(cfs)	(cfs)
	0			0.0000	(a)	(b)	
4993.73	0	0	0.0000	0.0000	0.0		0.0
4994	183,250	91625	2.1034	2.1034	0.0		0.0
4995	188,246	185748	4.2642	6.3676	0.0		0.0
4996	193,298	190772	4.3795	10.7471	0.0		0.0
4997	198,407	195853	4.4962	15.2433	0.0		0.0
4998	203,573	200990	4.6141	19.8574	0.0		0.0
4999	208,795	206184	4.7333	24.5907	0.0		0.0
5000	214,073	211434	4.8539	29.4446	0.0		0.0
5001	219,408	216741	4.9757	34.4202	0.0		0.0
5002	224,800	222104	5.0988	39.5191	0.0		0.0
5003	230,248	227524	5.2232	44.7423	0.0		0.0

Total Volume (ft^3) = 1,948,974
Total Volume (ac-ft) = 44.74

APPENDIX 1

AHYMO SUMMARY TABLES FROM :

1.

DESIGN MEMORANDUM FOR THE :

NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA (La Orilla to Calabacillas), Hydrology (Fully Developed Conditions) Hydraulics Sediment Control.

February 1997

Smith Engineering Company

AHYMO model filename update1.dat (run date 11 – 20 – 1996)

2.

REVISED MODEL TO CORRECT PROBLEMS DISCOVERED DURING REVIEW OF THE UPDATE1.TXT MODEL

Smith Engineering Company

AHYMO model filename update2.txt (revised May and June 2003)

3.

REVISED MODEL UPDATE2.TXT TO INCLUDE PROPOSED AMAFCA DRAINAGE MANAGEMENT CONTROLS

Smith Engineering Company

AHYMO model filename update3.txt (revised June 2003)

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APPENDIX 1

AHYMO SUMMARY TABLES FROM :

1.

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February 1997

Smith Engineering Company

AHYMO model filename update1.dat (run date 11 – 20 – 1996)

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UPDATE1.TXT

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/20/1996
INPUT FILE = UPDATE1.DAT USER NO.= C_ANDRSN.101

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= 2.650
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3 HR										
*S SUB-BASIN 8.3E										
*S RIVERFRONTE ESTATES										
COMPUTE NM HYD	8.3W-318	-	3	.05305	59.34	1.922	.67914	1.533	1.748	PER IMP= 10.00
*S** ADD FLOW IN CORRALES MAIN CANAL COMING FROM CALABACILLAS SIPHON ***										
STORE HYD	136.00	-	5	.00010	50.00	96.240	18044.95000	3.950	781.250	
*S BASE FLOW = 38 CFS IRRIGATION + 12 CFS WHICH CAME THROUGH SIPHON										
*S DURING 100 YEAR FLOOD.										
MODIFY TIME	136.00	5	5	.00010	50.00	96.711	18133.27000	3.950	781.250	
S ROUTE BASE FLOW DOWN CANAL TO 8.3 DISCHARGE POINT. **										
ROUTE MCUNGE	12.00	5	6	.00010	49.13	96.708	18132.74000	4.550	767.713	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	12.00	6	6	.00010	49.13	96.708	18132.74000	4.550	767.713	
ADD HYD	139.00	6& 3	6	.05315	97.34	67.218	23.71287	1.533	2.862	
*S ROUTE 8.3E DOWN CANAL TO 8.1 DISCHARGE POINT. **										
ROUTE MCUNGE	13.00	6	5	.05315	82.22	67.214	23.71136	1.533	2.417	CCODE = .2
MODIFY TIME	13.00	5	5	.05315	82.22	67.214	23.71136	1.533	2.417	
*S ROUTE 8.3E DOWN CANAL TO DISCHARGE POINT OF PROPOSED POND AT BLACK RANCH.**										
ROUTE MCUNGE	14.00	5	83	.05315	58.78	67.175	23.69755	1.900	1.728	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	14.00	83	83	.05315	58.78	67.175	23.69755	1.900	1.728	
*S CONTRIBUTING BASINS FROM PARADISE HILLS GOLF COURSE										
*S SOURCE: EASTERLING & ASSOCIATES,INC.										
*S SINGLE FAMILY RESIDENTIAL, APPROXIMATELY 2 DU'S PER ACRE										
COMPUTE NM HYD	101EA	-	1	.03700	61.63	2.278	1.15431	1.533	2.603	PER IMP= 26.00
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	102.00	-	2	.04470	45.64	1.986	.83306	1.600	1.595	PER IMP= 10.00
S ROUTE THE FLOW FROM 101EA THRU 102EA **										
ROUTE MCUNGE	101EA.1	1	3	.03700	56.98	2.255	1.14293	1.733	2.406	CCODE = .1
ADD HYD	102EA.1	2& 3	4	.08170	95.07	4.241	.97340	1.700	1.818	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE, INCLUDES SMALL PORTION OF LYONS										
COMPUTE NM HYD	103EA	-	5	.00670	12.31	.434	1.21488	1.500	2.871	PER IMP= 30.00
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	104EA	-	6	.02480	44.27	1.527	1.15445	1.500	2.789	PER IMP= 26.00
S ROUTE 103EA THRU 104EA **										
ROUTE MCUNGE	103EA.4	5	7	.00670	11.69	.432	1.20828	1.633	2.726	CCODE = .1
ADD HYD	103EA.4	7& 6	9	.03150	49.74	1.959	1.16590	1.533	2.467	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	105EA	-	10	.02360	35.41	1.453	1.15411	1.567	2.344	PER IMP= 26.00
S ROUTE FLOW COMING FROM 103EA.4 THRU 105EA **										
ROUTE MCUNGE	104EA.5	9	11	.03150	48.61	1.953	1.16256	1.600	2.411	CCODE = .1
ADD HYD	104EA.5	10&11	12	.05510	82.07	3.406	1.15894	1.600	2.327	
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	106EA	-	13	.02630	27.56	1.088	.77549	1.567	1.637	PER IMP= 7.00
S ROUTE FLOW COMING FROM 104EA.55 THRU 106EA **										
ROUTE MCUNGE	101EA.1	12	14	.05510	79.74	3.393	1.15469	1.667	2.261	CCODE = .1
ADD HYD	104EA.5	14&13	15	.08140	103.57	4.481	1.03217	1.667	1.988	
S ROUTE FLOW COMING FROM 102EA THRU 106EA **										
ROUTE MCUNGE	102EA.6	4	16	.08170	94.96	4.239	.97294	1.733	1.816	CCODE = .2
ADD HYD	106EA.25	15&16	17	.16310	193.46	8.720	1.00250	1.700	1.853	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	107EA	-	19	.02130	23.18	.856	.75365	1.567	1.701	PER IMP= 6.00
S ROUTE FLOW COMING FROM 106EA.25 THRU 107EA **										
ROUTE MCUNGE	107EA.6	17	2	.16310	187.19	8.678	.99767	1.800	1.793	CCODE = .1
ADD HYD	107EA.6	2&19	3	.18440	197.72	9.535	.96949	1.800	1.675	
*S GOLF COURSE, PARKING LOT AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	108EA	-	7	.04700	43.68	2.177	.86868	1.633	1.452	PER IMP= 12.00
ADD HYD	107EA.8	3& 7	8	.23140	230.18	11.712	.94901	1.800	1.554	
S ROUTE COMBINED 107EA.8 THRU RESERVOIR (DUCK POND & EMPTY HOLE) **										
ROUTE RESERVOIR	107EA.8	8	9	.23140	147.60	7.745	.62755	1.966	.997	AC-FT= 5.352

*S

*S OUTFLOW(CFS)	STORAGE(AF)	ELEV(FT)
*S 0.00	0.00	5241.0
*S 0.01	0.22	5242.0
*S 0.02	0.54	5243.0
*S 0.03	0.95	5244.0
*S 0.035	1.20	5244.5
*S 0.04	1.44	5245.0

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
*S 0.045	2.70		5245.5							
*S 0.05	3.96		5246.0							
*S 14.00	4.19		5246.1							
*S 27.00	4.41		5246.2							
*S 52.00	4.64		5246.3							
*S 76.00	4.86		5246.4							
*S 108.00	5.08		5246.5							
*S 139.00	5.30		5246.6							
*S 177.00	5.53		5246.7							
*S 215.00	5.75		5246.8							
*S 258.00	5.98		5246.9							
*S 300.00	6.20		5247.0							
*S 500.00	9.00		5250.0							
*S 1000.00	12.00		5255.0							
*S										
*S GOLF COURSE, AND OTHER RECREATION										
COMPUTE NM HYD	109EA	-	10	.00900	14.67	.502	1.04606	1.500	2.547	PER IMP= 23.00
S ROUTE FLOW COMING FROM RESERVOIR THRU 109EA **										
ROUTE MCUNGE	109EA.78	9	11	.23140	146.31	7.731	.62646	2.033	.988	CCODE = .1
ADD HYD	109EA.87	10&11	12	.24040	148.41	8.234	.64217	2.033	.965	
*S PKG LOT, CLUBHOUSE, ENTR. RD, PROSHOP, BED & BRKFST										
COMPUTE NM HYD	110EA	-	13	.00600	14.45	.594	1.85495	1.500	3.764	PER IMP= 70.00
ADD HYD	110EA.1	12&13	14	.24640	151.41	8.827	.67170	2.033	.960	
ROUTE MCUNGE	103.22	14	3	.24640	145.61	8.745	.66547	2.200	.923	CCODE = .1
*S RESIDENTIAL										
COMPUTE NM HYD	104.00	-	1	.06720	106.53	5.455	1.52211	1.600	2.477	PER IMP= 50.00
ADD HYD	104.10	1& 3	2	.31360	167.55	14.200	.84903	2.166	.835	
*S ROUTING 104.1 ON CADDIE RD										
ROUTE MCUNGE	104.12	2	3	.31360	164.38	14.161	.84670	2.266	.819	CCODE = .1
COMPUTE NM HYD	105.00	-	1	.10270	203.07	8.343	1.52320	1.533	3.090	PER IMP= 50.00
*S**** HYD 105.1 IS AP #2	*****									
ADD HYD	105.10	1& 3	2	.41630	263.42	22.504	1.01359	1.567	.989	
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND										
ROUTE MCUNGE	105.12	2	4	.41630	261.17	22.488	1.01285	1.600	.980	CCODE = .2
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	106.00	-	1	.09540	189.50	7.750	1.52323	1.533	3.104	PER IMP= 50.00
*S SUB-BASIN 106A IS SKY CREST ESTATES										
COMPUTE NM HYD	106A1	-	7	.00846	18.13	.678	1.50231	1.500	3.349	PER IMP= 44.52
*S ROUTING RESERVOIR WITH 21" DIAM ORIFACE										
*S EXISTING POND AT SW CORNER OF ARROWHEAD AVE AND CHANTILLY RD										
ROUTE RESERVOIR	106A1.RES	7	9	.00846	14.30	.677	1.50088	1.567	2.642	AC-FT= .126
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5057								
*S 4.675	0.062	5058								
*S 16.379	0.140	5059								
*S 22.510	0.235	5060								
*S 27.298	0.349	5061	EXISTING TOP OF POND							
*S										
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE DOWN CHANTILLY ROAD TO CONGRESS										
ROUTE MCUNGE	106A.1	9	10	.00846	14.30	.676	1.49818	1.600	2.642	CCODE = .1
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	107.00	-	2	.02910	59.13	2.256	1.45384	1.500	3.175	PER IMP= 45.80
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND										
ROUTE MCUNGE	107.02	2	3	.02910	56.56	2.251	1.45067	1.600	3.037	CCODE = .1
ADD HYD	107.10	4& 3	2	.44540	317.73	24.739	1.04145	1.600	1.115	
ADD HYD	107.20	1& 2	3	.54080	487.26	32.490	1.12644	1.567	1.408	
ADD HYD	107.30	3&10	11	.54926	500.79	33.166	1.13217	1.567	1.425	
*S RESIDENTIAL										
COMPUTE NM HYD	108.00	-	1	.02400	49.43	1.899	1.48367	1.500	3.218	PER IMP= 47.60
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND										
*S THRU CACTUS HILLS										
ROUTE MCUNGE	108.02	1	2	.02400	48.32	1.897	1.48175	1.567	3.146	CCODE = .1
ADD HYD	108.10	2&11	4	.57326	549.11	35.062	1.14680	1.567	1.497	
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN										
COMPUTE NM HYD	109.00	-	1	.02070	39.89	1.514	1.37182	1.500	3.011	PER IMP= 42.50
*S**** HYD 109.1 IS AP #3	*****									
ADD HYD	109.10	1& 4	2	.59396	583.48	36.577	1.15465	1.567	1.535	
*S FUTURE DETENTION BASIN IN BASIN 109										
ROUTE RESERVOIR	109.RES	2	66	.59396	176.73	36.164	1.14161	2.033	.465	AC-FT= 13.437
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								

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
*S	0	0		5069						
*S	7	0.98		5070						
*S	25	2.41		5071						
*S	52	3.97		5072						
*S	82	5.65		5073						
*S	112	7.45		5074						
*S	140	9.37		5075						
*S	160	11.42		5076						
*S	178	13.59		5077						
*S	195	15.89		5078						
*S										
COMPUTE NM HYD	201.00	-	1	.02580	54.08	2.096	1.52345	1.500	3.275	PER IMP= 50.00
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND										
ROUTE MCUNGE	201.02	1	2	.02580	51.37	2.083	1.51381	1.600	3.111	CCODE = .1
COMPUTE NM HYD	202.00	-	1	.02880	59.18	2.271	1.47869	1.500	3.211	PER IMP= 47.30
*S**** HYD 202.1 IS AP #4 *****										
ADD HYD	202.10	1& 2	4	.05460	99.41	4.354	1.49529	1.567	2.845	
*S EXISTING DROP INLET IN BASIN 202										
ROUTE RESERVOIR	202.RES1	4	2	.05460	86.55	4.354	1.49528	1.633	2.477	AC-FT= .149
*S										

*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S	0	0	5138.7
*S	20.12	0.0009	5139.7
*S	24.07	0.0019	5140.7
*S	41.69	0.0028	5141.7
*S	53.82	0.0037	5142.7
*S	63.69	0.0047	5143.7
*S	70.59	0.0054	5144.5
*S	74.58	0.0111	5145.0
*S	81.98	0.0603	5146.0
*S	83.46	0.1024	5146.2
*S	87.97	0.1700	5146.5
*S	94.77	0.2611	5147.0

*S

*S EXISTING DETENTION BASIN IN BASIN 401
*S ROUTING RESERVOIR WITH 21" ORIFACE

ROUTE RESERVOIR	202.RES2	2	4	.05460	73.37	4.363	1.49836	1.733	2.100	AC-FT= 1.099

*S

*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)	
*S	0	0	5114	
*S	11.58	0.0026	5115	
*S	16.38	0.0052	5116	
*S	20.06	0.0078	5117	
*S	23.16	0.0091	5118	
*S	25.89	0.0521	5119	
*S	28.37	0.1097	5120	
*S	30.64	0.1829	5121	
*S	32.75	0.2747	5122	
*S	34.74	0.3856	5123	
*S	36.62	0.5174	5124	
*S	38.41	0.6717	5125	
*S	40.11	0.8496	5126	
*S	41.76	1.03	5127	EXISTING TOP OF POND
*S	61	1.08	5127.25	
*S	94	1.13	5127.5	
*S	136	1.18	5127.75	
*S	185	1.23	5128	

*S

DIVIDE HYD	202.03	4	8	.05217	41.76	4.169	1.49836	1.700	1.251	
	OLF.2	AND	11	.00243	31.61	.194	1.49836	1.733	20.364	
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD										
ROUTE MCUNGE	202.02	8	6	.05217	41.76	4.168	1.49785	1.766	1.251	CCODE = .1
*S RESIDENTIAL										
COMPUTE NM HYD	301.00	-	1	.01820	34.94	1.478	1.52307	1.533	3.000	PER IMP= 50.00
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304										
ROUTE MCUNGE	301.02	1	2	.01820	33.06	1.472	1.51609	1.667	2.839	CCODE = .1
*S METHODIST CHURCH PROPERTY										
COMPUTE NM HYD	302.00	-	1	.00430	11.56	.498	2.17219	1.500	4.202	PER IMP= 90.00
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304										
ROUTE MCUNGE	302.02	1	5	.00430	10.63	.495	2.15810	1.667	3.862	CCODE = .1
ADD HYD	302.10	2& 5	4	.02250	43.69	1.967	1.63879	1.667	3.034	
*S COMMERCIAL										

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	
COMPUTE NM HYD	303.00	-		1	.06690	156.35	7.746	2.17094	1.533	3.652	PER IMP=	90.00
*S EXISTING DETENTION BASIN IN BASIN 303												
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE												
ROUTE RESERVOIR	303.RES	1		5	.06690	124.69	7.736	2.16812	1.667	2.912	AC-FT=	2.227
*S												
*S	OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)								
*S	0	0		5099								
*S	11.58	0.15		5100								
*S	16.37	0.30		5101								
*S	20.06	0.45		5102								
*S	23.16	0.60		5103								
*S	25.89	0.75		5104								
*S	26.00	0.91		5105								
*S	27.00	1.07		5106								
*S	28.00	1.23		5107								
*S	29.00	1.39		5108								
*S	30.00	1.55		5109								
*S	31.00	1.71		5110								
*S	32.00	1.87		5111								
*S	33.00	2.03		5112								
*S	34.00	2.11		5112.5 EXISTING TOP OF POND								
*S	53.00	2.15		5112.75								
*S	86.00	2.19		5113								
*S	128.0	2.23		5113.25								
*S												
DIVIDE HYD	303.03	5		8	.05430	34.00	6.279	2.16812	1.633	.978		
	OLF.3	AND		12	.01260	90.69	1.456	2.16812	1.667	11.251		
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE												
ROUTE MCUNGE	303.02	8		2	.05430	34.00	6.274	2.16633	1.733	.978	CCODE =	.1
ROUTE MCUNGE	OLF.32	12		16	.01260	70.28	1.432	2.13116	1.766	8.718	CCODE =	.1
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL												
COMPUTE NM HYD	304.00	-		1	.03490	93.74	4.043	2.17217	1.500	4.197	PER IMP=	90.00
ADD HYD	304.10	1& 4		7	.05740	111.27	6.010	1.96309	1.533	3.029		
ADD HYD	304.20	7&16		5	.07000	138.52	7.441	1.99333	1.766	3.092		
*S DIVIDE AT MH# S-702												
DIVIDE HYD	CB1	5		4	.02868	20.00	3.049	1.99333	1.333	1.090		
	304.13	AND		7	.04131	118.52	4.392	1.99333	1.766	4.482		
ADD HYD	CB1.1	2& 4		5	.08299	54.00	9.323	2.10654	1.733	1.017		
ADD HYD	CB1.2	5& 6		2	.13516	95.76	13.491	1.87158	1.766	1.107		
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL												
COMPUTE NM HYD	305.00	-		17	.03910	102.46	4.529	2.17200	1.500	4.094	PER IMP=	90.00
*S CACTUS RIDGE												
COMPUTE NM HYD	401.00	-		1	.02360	50.44	1.974	1.56819	1.500	3.340	PER IMP=	52.70
ADD HYD	401.10	1&11		3	.02603	51.99	2.168	1.56169	1.733	3.121		
*S DIVIDE HYD 401.1 BY MAXIMUM INFLOW OF CATCH BASINS, WEST OF												
*S SUB-BASIN 401,ALONG PARADISE ROAD (7 CB AT 10 CFS EACH)												
DIVIDE HYD	CB2	3		4	.02603	51.99	2.168	1.56169	1.733	3.121		
	401.13	AND		5	.00000	.00	.000	.00000	-.033	.000		
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS												
COMPUTE NM HYD	402.00	-		1	.00880	18.66	.692	1.47507	1.500	3.314	PER IMP=	42.70
ADD HYD	402.10	5& 1		6	.00880	18.66	.692	1.47507	1.500	3.314		
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD												
*S**** OLF HYD 402.2 IS AP #5 *****												
ADD HYD	402.20	6& 7		18	.05011	125.15	5.084	1.90232	1.766	3.902		
*S ROUTING 402.2 TO DETENTION POND IN 503												
ROUTE MCUNGE	402.23	18		20	.05011	115.63	5.065	1.89487	1.833	3.605	CCODE =	.1
ADD HYD	305.10	17&20		19	.08921	190.61	9.594	2.01633	1.567	3.338		
*S**** PIPE HYD CB2.1 IS AP #6 *****												
ADD HYD	CB2.1	2& 4		6	.16119	147.75	15.659	1.82154	1.733	1.432		
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS												
COMPUTE NM HYD	403.00	-		1	.01440	32.61	1.266	1.64809	1.500	3.538	PER IMP=	54.20
*S DIVIDE HYD 403 BY MAXIMUM INFLOW OF POND INLET IN WEST PARK APARTMENTS												
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND												
DIVIDE HYD	CB3	1		2	.00551	3.00	.484	1.64809	1.300	.851		
	403.13	AND		99	.00889	29.61	.782	1.64809	1.500	5.201		
ADD HYD	CB3.1	6& 2		5	.16669	150.75	16.143	1.81581	1.733	1.413		
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732												
*S Q(CAP) = 144 CFS, AT SLOPE=0.005												
ROUTE MCUNGE	CB3.13	5		2	.16669	139.38	16.112	1.81238	1.800	1.306	CCODE =	.2
*S LESLIE HOMES												
COMPUTE NM HYD	404.00	-		1	.01610	33.73	1.307	1.52179	1.500	3.273	PER IMP=	49.90

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
ADD HYD	CB4.1	1& 2	5	.18279	158.31	17.419	1.78678	1.567	1.353	
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB4.13	5	2	.18279	156.59	17.392	1.78396	1.600	1.339	CCODE = .2
*S SUB-BASIN 405 IS PART OF CACTUS HILLS										
COMPUTE NM HYD	405.00	-	1	.02700	50.96	1.887	1.31061	1.500	2.949	PER IMP= 38.00
*S DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *										
DIVIDE HYD	CB5	1	6	.02581	40.00	1.804	1.31061	1.467	2.422	
	405.03	AND	7	.00119	10.96	.083	1.31061	1.500	14.335	
*S ROUTING 405.03 TO CONGRESS AVE										
ROUTE MCUNGE	405.02	7	15	.00119	10.13	.084	1.32313	1.600	13.244	CCODE = .2
*S SUB-BASIN 405 HAS TRANSVERSE DRAIN WITH 36" PIPE TO 60" SD										
ADD HYD	CB5.1	6& 2	5	.20860	195.35	19.195	1.72540	1.567	1.463	
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB5.13	5	2	.20860	194.89	19.182	1.72424	1.600	1.460	CCODE = .2
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND										
*S Q(CAP) = 233 CFS, AT SLOPE=0.008										
ROUTE MCUNGE	CB5.23	2	25	.20860	194.58	19.172	1.72334	1.600	1.457	CCODE = .2
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	406.00	-	1	.01070	22.44	.869	1.52345	1.500	3.276	PER IMP= 50.00
ADD HYD	406.10	15& 1	6	.01189	28.81	.954	1.50330	1.567	3.785	
*S ROUTING 406.1 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD										
ROUTE MCUNGE	406.12	6	3	.01189	27.86	.956	1.50735	1.633	3.659	CCODE = .2
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL										
COMPUTE NM HYD	407.00	-	1	.02240	60.17	2.595	2.17217	1.500	4.197	PER IMP= 90.00
*S CUBBY HOLE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 12" ORIFACE										
ROUTE RESERVOIR	407.RES	1	5	.02240	67.98	2.592	2.16995	1.500	4.742	AC-FT= .176
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5063								
*S 3.78	0.0387	5064								
*S 5.35	0.0597	5065								
*S 6.55	0.0808	5066								
*S 7.56	0.1019	5067								
*S 8.46	0.1230	5068								
*S 9.26	0.1440	5069								
*S 10.00	0.1651	5070								
*S 29	0.170	5070.25								
*S 62	0.175	5070.5								
*S 104	0.180	5070.75								
*S 153	0.185	5071								
*S										
DIVIDE HYD	407.03	5	89	.01270	10.00	1.470	2.16995	1.433	1.230	
	OLF.4	AND	13	.00970	57.98	1.123	2.16995	1.500	9.339	
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962										
*S Q(CAP) = 260 CFS, AT SLOPE=0.01										
ROUTE MCUNGE	CB5.33	25	85	.20860	193.86	19.169	1.72306	1.633	1.452	CCODE = .2
ADD HYD	407.10	3&13	17	.02159	76.91	2.079	1.80499	1.500	5.564	
*S SUB-BASIN 408 IS STATE FARM INSURANCE										
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD										
COMPUTE NM HYD	408.00	-	14	.00660	17.74	.765	2.17218	1.500	4.200	PER IMP= 90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 408										
*S ROUTING RESERVOIR WITH 12" WEIR										
ROUTE RESERVOIR	408.RES	14	18	.00660	3.71	.747	2.12308	2.066	.878	AC-FT= .441
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5050.8								
*S 1.08	0.2198	5052.3	EXISTING TOP OF POND							
*S 1.66	0.2931	5052.8								
*S 2.31	0.3663	5053.3								
*S 3.02	0.4396	5053.8								
*S 22	0.4763	5054.05								
*S										
ADD HYD	408.10	17&18	14	.02819	77.78	2.826	1.87945	1.500	4.310	
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D										
COMPUTE NM HYD	409.00	-	1	.00980	26.33	1.135	2.17218	1.500	4.199	PER IMP= 90.00
*S DIVIDE HYD 409 BY 36" STUB OUT PIPE CAPACITY *										
DIVIDE HYD	CB6	1	28	.00977	25.00	1.131	2.17218	1.500	4.000	
	409.03	AND	15	.00003	1.33	.004	2.17220	1.500	61.149	
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B										

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
COMPUTE NM HYD	411.00	-	1	.00920	24.72	1.066	2.17218	1.500	4.199	PER IMP= 90.00
*S DIVIDE HYD 411 BY INLET CAPACITY *										
DIVIDE HYD	CB7	1	2	.00732	10.00	.848	2.17218	1.367	2.135	
	411.03	AND	7	.00188	14.72	.218	2.17218	1.500	12.221	
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A										
COMPUTE NM HYD	410.00	-	1	.00470	12.64	.544	2.17219	1.500	4.201	PER IMP= 90.00
*S DIVIDE HYD 410 BY INLET CAPACITY *										
DIVIDE HYD	CB8	1	9	.00454	10.00	.526	2.17219	1.467	3.440	
	410.03	AND	16	.00016	2.64	.018	2.17219	1.500	26.014	
ADD HYD	411.10	7&16	3	.00204	17.36	.236	2.17218	1.500	13.292	
*S ASSUME OLF HYD 411.2 PONDS										
ADD HYD	411.20	3&15	16	.00207	18.69	.240	2.17218	1.500	14.078	
ADD HYD	CB7.1	2&85	21	.21591	203.86	20.017	1.73828	1.633	1.475	
ADD HYD	CB8.1	21& 9	2	.22046	211.48	20.543	1.74722	1.600	1.499	
*S ROUTE CB8.1 IN 60" PIPE TO SUB-BASIN 411 (JUST BEFORE										
*S CALABACILLAS ARROYO OUTFALL)										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB8.12	2	9	.22046	210.87	20.521	1.74534	1.633	1.495	CCODE = .2
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3										
COMPUTE NM HYD	412.00	-	1	.01330	34.03	1.541	2.17185	1.500	3.998	PER IMP= 90.00
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO										
*S**** HYD CB9.1 IS AP #9 *****										
ADD HYD	CB9.1	1& 9	98	.23376	233.00	22.062	1.76961	1.633	1.557	
ADD HYD	OUT.1	98&99	99	.24265	250.79	22.844	1.76515	1.600	1.615	
*S SAD 224-PROJECT INCLUDES ENLARGING POND ON CONGRESS AVE										
*S INSTALLATION OF 66" OUTLET PIPE FROM POND-FLOWS ROUTED TO										
*S CALABACILLAS ARROYO										
*S Q(CAP) =233 CFS, AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.23	66	2	.59396	176.68	36.150	1.14118	2.066	.465	CCODE = 1.0
ADD HYD	CB6.33	2&89	86	.60666	186.68	37.620	1.16272	2.066	.481	
*S** ROUTE PROPOSED PIPE UNTIL IT REACHES EAGLE RANCH ROAD AGAIN ***										
*S Q(CAP) =233 CFS AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.33	86	8	.60666	186.64	37.611	1.16243	2.066	.481	CCODE = 1.0
ADD HYD	CB6.43	28& 8	9	.61643	192.36	38.742	1.17842	2.033	.488	
S SUB-BASIN 413 IS WEST OF EAGLE RANCH COMMERCIAL										
COMPUTE NM HYD	413.00	-	3	.01560	41.95	1.807	2.17218	1.500	4.202	PER IMP= 90.00
S SUB-BASIN 414 IS WEST OF EAGLE RANCH COMMMERCIAL										
COMPUTE NM HYD	414.00	-	10	.00297	8.00	.344	2.17220	1.500	4.209	PER IMP= 90.00
ADD HYD	CB6.53	3&10	5	.01857	49.96	2.151	2.17219	1.500	4.203	
ADD HYD	CB6.63	5& 9	11	.63500	204.18	40.893	1.20749	1.966	.502	
*S SUB-BASIN 415 IS WEST OF EAGLE RANCH - COMMERCIAL *										
COMPUTE NM HYD	415.00	-	1	.01190	32.01	1.379	2.17218	1.500	4.203	PER IMP= 90.00
ADD HYD	OUT.2	1&11	98	.64690	212.50	42.272	1.22523	1.933	.513	
ADD HYD	OUT.3	98&99	99	.88955	429.17	65.115	1.37251	1.667	.754	
*S EAGLE RANCH ROAD										
*S 86 FT ROW										
COMPUTE NM HYD	501.00	-	1	.01000	17.39	1.156	2.16736	1.700	2.718	PER IMP= 90.00
ADD HYD	501.10	14& 1	3	.03819	86.04	3.982	1.95483	1.500	3.520	
*S ROUTE OLF 501.1 THRU 505 IN IRVING BLVD **										
ROUTE MCUNGE	501.12	3	7	.03819	84.97	3.975	1.95120	1.600	3.476	CCODE = .2
*S COMMERCIAL										
COMPUTE NM HYD	502.00	-	1	.04350	116.84	5.039	2.17217	1.500	4.197	PER IMP= 90.00
*S DIVIDE HYD 305.1 IN PARADISE BLVD BY ASSUMED 18" CAPACITY *										
DIVIDE HYD	402.24	19	2	.02639	20.00	2.838	2.01633	1.333	1.184	
	402.25	AND	3	.06282	170.61	6.756	2.01633	1.567	4.243	
ADD HYD	502.10	2& 1	5	.06989	136.84	7.877	2.11333	1.500	3.059	
*S EXISTING DETENTION BASIN IN SUB-BASIN 502										
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	502.RES	5	8	.06989	78.74	7.820	2.09783	1.667	1.760	AC-FT= 2.311
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5030								
*S 38.9526	2.1993	5038								
*S 58	2.268	5038.25								
*S 91	2.337	5038.5								
*S										
*S COMMERCIAL										
COMPUTE NM HYD	503.00	-	1	.02350	48.51	2.719	2.16951	1.600	3.225	PER IMP= 90.00
ADD HYD	503.10	1& 3	2	.08632	217.63	9.475	2.05803	1.567	3.939	
*S EXISTING DETENTION BASIN IN SUB-BASIN 503										
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	503.RES	2	5	.08632	152.55	9.206	1.99958	1.866	2.761	AC-FT= 4.697
*S										

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
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	5000							
*S	10.1924	4.2712	5010							
*S	29	4.378	5010.25							
*S	62	4.485	5010.5							
*S	104	4.592	5010.75							
*S	153	4.698	5011							
*S	209	4.805	5011.25							
*S										
ADD HYD	503.10	5& 8	10	.15621	211.81	17.026	2.04354	1.833	2.119	
*S COMMERCIAL										
COMPUTE NM HYD	504.00	-	1	.02570	56.52	2.975	2.17024	1.567	3.436	PER IMP= 90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 504										
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	504.RES	1	3	.02570	29.03	2.966	2.16363	1.800	1.765	AC-FT= .875
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	5001							
*S	38.9526	1.1742	5007							
*S										
ADD HYD	504.10	3&10	11	.18191	240.76	19.991	2.06051	1.833	2.068	
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL										
COMPUTE NM HYD	505.00	-	1	.04970	107.89	5.752	2.17012	1.567	3.392	PER IMP= 90.00
ADD HYD	505.10	1& 7	2	.08789	191.55	9.727	2.07499	1.600	3.405	
*S COORS BOULEVARD ROW										
COMPUTE NM HYD	505A	-	1	.00560	15.06	.649	2.17219	1.500	4.201	PER IMP= 90.00
*S ROUTE 505A IN FUTURE STORM DRAIN THROUGH 506A										
*S ASSUME PIPE SIZE OF 48" AND SLOPE=0.008 FT/FT										
ROUTE MCUNGE	505A.1	1	31	.00560	14.41	.648	2.16799	1.567	4.021	CCODE = 1.0
*S ROUTE OLF HYD 505.1 THRU 506 ON COORS BLVD **										
ROUTE MCUNGE	505.12	2	9	.08789	181.55	9.663	2.06133	1.733	3.227	CCODE =
ADD HYD	505.20	11& 9	2	.26981	399.75	29.654	2.06077	1.766	2.315	
*S ASSUME A FUTURE PIPE SIZE AND SLOPE; 96" AND 0.009 FT/FT										
ROUTE MCUNGE	505.22	2	3	.26981	397.98	29.638	2.05968	1.800	2.305	CCODE =
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW										
COMPUTE NM HYD	506.00	-	1	.05590	80.04	3.683	1.23538	1.600	2.237	PER IMP= 30.(
*S COORS BOULEVARD ROW										
COMPUTE NM HYD	506A	-	29	.00800	18.31	.926	2.17069	1.567	3.576	PER IMP= 90.(
ADD HYD	506.10	1& 3	2	.32571	442.08	33.321	1.91821	1.800	2.121	
ADD HYD	506.12	2&31	27	.33131	448.49	33.969	1.92243	1.800	2.115	
ADD HYD	506.20	27&29	2	.33931	457.20	34.895	1.92828	1.800	2.105	
*S PROPOSED DETENTION BASIN WITHIN EXISTING STATE HWY DEPT R-O-W										
*S ROUTING RESERVOIR WITH 36" DIAM ORIFACE										
*S MAXIMUM: HIGH ELEV = 5001 , LOW ELEV = 4992.8 , OUTFLOW = 38 CFS										
ROUTE RESERVOIR	506.RES	2	10	.33931	30.53	34.362	1.89882	3.266	.141	AC-FT= 21.17
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	4993							
*S	13.2	1.1324	4994							
*S	18.7	4.4968	4995							
*S	22.9	9.3777	4996							
*S	26.5	14.3639	4997							
*S	29.6	19.4554	4998							
*S	32.4	24.6522	4999							
*S	35.0	29.9543	5000							
*S	37.5	35.3617	5001							
*S	39.7	40.8744	5002							
*S	41.9	46.4318	5003							
*S	43.9	52.1551	5004							
ADD HYD	900.00	83&10	20	.39246	84.55	101.537	4.85099	2.033	.337	
ROUTE MCUNGE	901.00	20	7	.39246	84.49	101.515	4.84997	2.066	.336	CCODE = .2
*S THE ALBUQUERQUE WEST COMMERCIAL DEVELOPMENT AREA										
*S INCLUDES SECTIONS OF PASEO DEL NORTE AND STATE HIGHWAY DEPT. ROW										
*S BASIN 11.1W										
COMPUTE NM HYD	11.1W	-	1	.04607	114.38	4.869	1.98167	1.500	3.879	PER IMP= 80.00
*S ROUTE RESERVOIR THROUGH NMSH&TD POND AT SW CORNER OF PDN AND COORS										
*S ROUTE RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.										
ROUTE RESERVOIR	11.1W.RES	1	2	.04607	42.57	4.847	1.97259	1.766	1.444	AC-FT= 1.821
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	0	0	4996							
*S	28	1.30	4998							

TRACT 2-B POND
PROPOPOSED

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
*S	66	2.66		5000						
*S DIVIDE HYD 11.1W.RES BY MAXIMUM PIPE OUTFLOW *										
DIVIDE HYD	11.1W.RES1	2	18	.04607	42.57	4.847	1.97259	1.766	1.444	
	OLF.5	AND	30	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE THE FLOW FROM THE POND THROUGH CULVERT PIPES UNDER COORS **										
ROUTE MCUNGE	903.00	18	8	.04607	42.45	4.842	1.97067	1.800	1.440	CCODE = 1.0
ADD HYD	904.00	8& 7	9	.43853	123.93	106.357	4.54748	1.933	.442	
MODIFY TIME	904.00	9	9	.43853	123.93	106.357	4.54748	1.933	.442	
*S ROUTE FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **										
ROUTE MCUNGE	18.00	9	3	.43853	123.85	106.341	4.54680	1.966	.441	CCODE = .2
*S BASE FLOW CORRECTION										
MODIFY TIME	18.00	3	3	.43853	123.85	106.341	4.54680	1.966	.441	
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW										
*S CORRECTED TO 38 CFS MIN.										
*S INCLUDES SECTION OF COORS AND PASEO DEL NORTE										
COMPUTE NM HYD	11.2E-325	-	7	.02769	74.38	3.208	2.17217	1.500	4.197	PER IMP= 90.00
ADD HYD	326.00	3& 7	5	.46622	145.43	109.549	4.40576	1.833	.487	
*S EAGLE RIDGE APARTMENT COMPLEX/UPPER HALF THAT DRAINS DIRECTLY										
*S TO THE CORRALES MAIN CANAL VIA FUTURE STORM DRAIN										
COMPUTE NM HYD	12.1W	-	3	.04399	96.66	3.852	1.64198	1.500	3.433	PER IMP= 58.00
*S ROUTE FLOW FROM 12.1W THROUGH FUTURE DETENTION POND **										
ROUTE RESERVOIR	12.1W.RES	3	9	.04399	11.95	3.801	1.62000	2.133	.425	AC-FT= 2.392
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	0								
*S 4	0.59	1.0								
*S 9	1.29	2.0								
*S 12	2.41	2.5								
*S ROUTE FLOW IN CANAL TO AREA 12.1AW DISCHARGE POINT. **										
ROUTE MCUNGE	19.00	5	10	.46622	132.52	109.292	4.39541	1.900	.444	CCODE = .2
*S BASE FLOW CORRECTION										
MODIFY TIME	19.00	10	10	.46622	132.52	109.292	4.39541	1.900	.444	
ADD HYD	12.1W.1	10& 9	11	.51021	144.09	113.093	4.15612	1.900	.441	
*S EAGLE RIDGE APARTMENT COMPLEX/LOWER HALF THAT										
*S DRAINS TO THE SWALE ALONG COORS BOULEVARD										
COMPUTE NM HYD	12.2W	-	1	.00691	15.20	.605	1.64199	1.500	3.436	PER IMP= 58.00
*S DIVIDE HYD NO BY ALLOWABLE DISCHARGE SWALE ALONG COORS **										
*S HYD NO 603.01 IS THE Q THAT REACHES THE SWALE										
DIVIDE HYD	12.2W.1	1	5	.00691	15.20	.605	1.64199	1.500	3.436	
	OLF.7	AND	31	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE THE FLOW LEAVING THE LOWER HALF OF THE EAGLE RIDGE APARTMENT										
*S SITE THROUGH A NATURAL SWALE THAT FLOWS SOUTH ALONG THE WEST										
*S SIDE OF COORS BOULEVARD.										
ROUTE MCUNGE	12.2W.2	5	8	.00691	14.57	.603	1.63753	1.567	3.296	CCODE = .1
*S ROUTE FLOW DOWN CANAL TO AREA 12.3 DISCHARGE POINT. **										
ROUTE MCUNGE	22.00	11	9	.51021	128.97	112.747	4.14342	2.033	.395	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	22.00	9	9	.51021	128.97	112.747	4.14342	2.033	.395	
ADD HYD	12.1W.3	8& 9	12	.51712	132.61	113.350	4.10993	2.000	.401	
COMPUTE NM HYD	12.3E	-	1	.02616	62.41	2.684	1.92349	1.500	3.728	PER IMP= 75.00
*S FLOW FROM 12.3E ENTERS FUTURE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE										
ROUTE RESERVOIR	12.3E.RES	1	15	.02616	10.14	2.649	1.89869	2.100	.606	AC-FT= 1.558
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	100								
*S 3	0.39	101								
*S 6	0.77	102								
*S 7	1.16	103								
*S 10	1.54	104								
ADD HYD	330.00	15&12	2	.54328	142.60	116.000	4.00345	2.033	.410	
*S ROUTE FLOW IN CANAL FROM 8.1W TO 12.3E TO AREA 13 DISCHARGE POINT.**										
ROUTE MCUNGE	23.00	2	5	.54328	133.30	115.751	3.99489	2.033	.383	CCODE = .2
MODIFY TIME	23.00	5	5	.54328	133.30	115.751	3.99489	2.033	.383	
*S FUTURE COMMERCIAL AREA										
COMPUTE NM HYD	13.1W	-	10	.01020	20.67	.833	1.53060	1.500	3.167	PER IMP= 55.00
*S FLOW FROM 13.1W ENTERS FUTURE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE										
ROUTE RESERVOIR	13.1W.RES	10	11	.01020	8.06	.830	1.52544	1.733	1.234	AC-FT= .303
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	100								
*S 2.6	0.1	101								
*S 6.0	0.2	102								
*S 8.0	0.3	103								

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	
*S BOSQUE DEL PUEBLO COMMERCIAL AREA											
COMPUTE NM HYD	13.2E-332	-	1	.01480	34.12	1.424	1.80359	1.500	3.602	PER IMP=	70.00
ADD HYD	333.00	1&11	12	.02500	38.97	2.253	1.69010	1.500	2.436		
ADD HYD	334.00	5&12	2	.56828	149.96	118.005	3.89350	1.567	.412		
*S SUB-BASIN 14.1W											
*S ALBAN HILLS											
COMPUTE NM HYD	14.1W-335	-	3	.05117	66.95	2.233	.81824	1.500	2.044	PER IMP=	15.00
ROUTE MCUNGE	25.00	3	5	.05117	65.96	2.229	.81662	1.567	2.014	CCODE =	.1
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **											
ROUTE MCUNGE	26.00	2	10	.56828	138.67	117.743	3.88486	2.033	.381	CCODE =	.2
MODIFY TIME	26.00	10	10	.56828	138.67	117.743	3.88486	2.033	.381		
ADD HYD	338.00	5&10	2	.61945	198.38	119.972	3.63141	1.567	.500		
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **											
ROUTE MCUNGE	27.00	2	7	.61945	173.59	119.637	3.62128	1.567	.438	CCODE =	.2
MODIFY TIME	27.00	7	7	.61945	173.59	119.637	3.62128	1.567	.438		
*S AREA 8.1W TO 14.2E ROUTED DOWN CANAL TO AREA 15 DISCH. POINT WITH											
*S BASE FLOW CORRECTED.											
COMPUTE NM HYD	15.1W	-	3	.02560	30.05	.936	.68537	1.533	1.834	PER IMP=	8.00
ROUTE MCUNGE	28.00	3	10	.02560	28.87	.932	.68233	1.600	1.762	CCODE =	.1
*S SUB-BASIN 15.2W											
*S ALBAN HILLS											
COMPUTE NM HYD	15.2W-340	-	3	.06380	74.90	2.332	.68537	1.533	1.834	PER IMP=	8.00
ROUTE MCUNGE	29.00	3	5	.06380	73.97	2.327	.68373	1.567	1.812	CCODE =	.1
ADD HYD	186.00	10& 5	3	.08940	100.22	3.258	.68333	1.567	1.752		
*S SUB-BASIN 15.3E											
*S FUTURE COMMERCIAL DEVELOPMENT											
COMPUTE NM HYD	15.3E	-	10	.01230	30.23	1.262	1.92365	1.500	3.840	PER IMP=	75.00
ADD HYD	342.00	3&10	5	.10170	125.43	4.520	.83334	1.567	1.927		
ADD HYD	343.00	5& 7	10	.72115	299.01	124.157	3.22811	1.567	.648		
*S SUB-BASIN 16.1W											
*S ALBAN HILLS											
COMPUTE NM HYD	16.1W	-	3	.03330	39.08	1.217	.68537	1.533	1.834	PER IMP=	8.00
*S BOSQUE MEADOWS SUBDIVISION											
COMPUTE NM HYD	16.3NRTH	-	1	.01565	31.37	1.186	1.42116	1.500	3.132	PER IMP=	44.00
ADD HYD	16.3N.1	1& 3	30	.04895	70.22	2.403	.92061	1.500	2.242		
*S ROUTE AREA 8.1W TO 15.3W DOWN CANAL TO BUSHEL ROAD DISCHARGE POINT. **											
ROUTE MCUNGE	27.10	10	32	.72115	255.73	123.621	3.21418	1.567	.554	CCODE =	.2
MODIFY TIME	27.10	32	32	.72115	255.73	123.621	3.21418	1.567	.554		
ADD HYD	16.3N.1	32&30	33	.77010	318.57	126.025	3.06839	1.567	.646		
*S SUB-BASIN 16.2W											
*S ALBAN HILLS											
COMPUTE NM HYD	16.2W	-	3	.06650	78.14	2.431	.68537	1.533	1.836	PER IMP=	8.00
*S FUTURE RESIDENTIAL DEVELOPMENT											
COMPUTE NM HYD	16.3E	-	5	.01120	26.18	1.037	1.73544	1.500	3.652	PER IMP=	60.00
*S BOSQUE MEADOWS SUBDIVISION											
COMPUTE NM HYD	16.3STH	-	1	.03122	72.24	2.865	1.72082	1.500	3.616	PER IMP=	59.80
ADD HYD	16.3STH.1	1& 3	34	.09772	149.92	5.296	1.01619	1.500	2.397		
*S ROUTE 16.2 AND 16.3STH THROUGH FUTURE DETENTION POND @ BOSQUE MEADOWS											
ROUTE RESERVOIR	16.3STH.RES	34	35	.09772	35.48	5.308	1.01849	1.866	.567	AC-FT=	2.380
*S OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)								
*S 0.00	0.00000		4988.58								
*S 18.53	0.01074		4991.08								
*S 20.96	0.01407		4991.50								
*S 23.53	0.32155		4992.00								
*S 25.85	0.62903		4992.50								
*S 27.97	0.93650		4993.00								
*S 29.95	1.24398		4993.50								
*S 31.80	1.55145		4994.00								
*S 33.55	1.85893		4994.50								
*S 35.22	2.16641		4995.00								
*S 35.60	2.47388		4995.50								
ADD HYD	16.3STH.2	35& 5	36	.10892	54.69	6.345	1.09221	1.533	.785		
COMPUTE NM HYD	17.1W	-	3	.01030	11.44	.354	.64407	1.533	1.735	PER IMP=	7.00
COMPUTE NM HYD	17.4E	-	1	.03843	87.32	3.532	1.72317	1.500	3.550	PER IMP=	62.90
ADD HYD	17.4E.1	1& 3	37	.04873	98.66	3.886	1.49508	1.500	3.164		
*S ROUTE 8.1W TO 16.2NRTH FROM BUSHEL ROAD DOWN CANAL TO FINAL DISCHARGE POINT.											
ROUTE MCUNGE	32.00	33	5	.77010	236.52	125.079	3.04536	1.567	.480	CCODE =	.2
MODIFY TIME	32.00	5	5	.77010	236.52	125.079	3.04536	1.567	.480		
ADD HYD	348.00	5&36	40	.87902	289.93	131.424	2.80334	1.567	.515		
ADD HYD	353.00	37&40	41	.92775	380.22	135.309	2.73463	1.533	.640		
FINISH											

APPENDIX 1

AHYMO SUMMARY TABLES FROM :

2.

REVISED MODEL TO CORRECT PROBLEMS DISCOVERED DURING REVIEW OF THE UPDATE1.TXT MODEL

Smith Engineering Company

AHYMO model filename update2.txt (revised May and June 2003)

6400 Uptown Blvd. NE, Suite 500E Albuquerque, New Mexico 87110 Telephone 505/884-0700 Fax 505/884-2376
E-mail pats@secnm.com

UPDATE2.TXT MAY 21 2003

```
*
* 24 HOUR ALB. DPM  RAINFALL DISTRIBUTION (DPM.RAINTABLE) LAG 3.0 HOURS
*
START                TIME=0.00 HR  PUNCH CODE=0  PRINT LINES=-6
*
*S FILENAME - UPDATE2.TXT (a copy of update1.txt)
*S
*S DESCRIPTION - This model update2.txt (prepared 5-20-03)
*S               is a copy of file update1.txt (11-20-1996)
*S               that was prepared for:
*S                  ****************************************
*S                  *   NORTH COORS DRAINAGE MANAGEMENT PLAN    *
*S                  *   100 YEAR STORM - 24 HOUR DURATION       *
*S                  *   IMPROVED CORRALES MAIN CANAL            *
*S                  *            MIDDLE AREA                    *
*S                  *   CALABACILLAS ARROYO TO LA ORILLA OUTLET *
*S                  *   UPDATED FOR 1996 DRAINAGE CRITERIA      *
*S                  ****************************************
*S IMPORTANT CHANGES :
*S The following changes were applied to this model (update2.txt) to
*S    correct for errors or changes discovered during review of update1.txt
*S
*S  1. The area of basin 504 was 0.0257 sq mi (wrong),correct is 0.0426 sq mi
*S
*S  2. All of  Basin 305 was previously added to Tract 2B Pond (proposed
*S     AMAFCA pond), however, only 2/3 of that basin will reach proposed
*S     AMAFCA pond, therefore, add a DIVIDE HYD command to correct
*S
*S  3. Detention Pond 502.RES actually outfalls into Detention Pond 503.RES
*S     However, in Update1.txt, it was added after 503.RES.  Therefore,
*S     it is now added prior to Pond 503.res routing.
*S
*S  4. Basins 409, 410 and 411 were divided and a fraction of those basins
*S     were lost in the update1.txt model.  A the lost fraction of Basins
*S     410 AND 411 could possibly drain to Tract 2-B AMAFCA Pond.  The lost
*S     Hyd's and fractional areas and volumes lost are as follows:
*S         HYD NO.'S                    410.03 and 411.03
*S         DRAINAGE AREAS (sq mi)    0.00016    0.00188      TOTAL = 0.00204
*S         RUNOFF VOLUME  (ac-ft)    0.018      0.218        TOTAL = 0.236
*S
*S      THESE LOST HYD'S HAVE NOT BEEN ADDED INTO THIS MODEL.
*S
* SMITH ENGINEERING COMPANY
* 6400 UPTOWN BLVD SUITE 500E
* ALBUQUERQUE, NEW MEXICO 87112
* (505) 884-0700
*
*  THE MODEL IS BROKEN UP INTO DIFFERENT SEGMENTS BASED UPON THE
*  NUMBER OF ASTERISKS.  THE CODING IS AS FOLLOWS:
*                          * * * MAJOR BASIN * * *
*                        ***** ANALYSIS POINT *****
*                           **** SUB-BASIN ****
*                         *** ADD HYDROGRAPHS ***
*                              ** ROUTING **
*                          * DIVIDE HYDROGRAPHS *
*
* THE LAND TREATMENT CLASSIFICATIONS IS AS FOLLOWS:
```

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 AHYMO PROGRAM SUMMARY TABLE (AHYMO_97)                    - VERSION:  1997.02c      RUN DATE (MON/DAY/YR) =05/21/2003
INPUT FILE = Z:\Projects\100109~1\ahymo\update2.txt                                 USER NO.= AHYMO-S-9702c01SEC01A-AH

                                FROM  TO                    PEAK        RUNOFF                    TIME TO   CFS       PAGE =   1
                     HYDROGRAPH   ID   ID         AREA      DISCHARGE   VOLUME       RUNOFF       PEAK      PER
COMMAND          IDENTIFICATION   NO.  NO.      (SQ MI)     (CFS)     (AC-FT)     (INCHES)     (HOURS)   ACRE     NOTATION

START                                                                                                    TIME=       .00
*S FILENAME - UPDATE2.TXT (a copy of update1.txt)
*S
*S DESCRIPTION - This model update2.txt (prepared 5-20-03)
*S               is a copy of file update1.txt (11-20-1996)
*S               that was prepared for:
*S                  ********************************************
*S                  *   NORTH COORS DRAINAGE MANAGEMENT PLAN     *
*S                  *   100 YEAR STORM - 24 HOUR DURATION        *
*S                  *   IMPROVED CORRALES MAIN CANAL             *
*S                  *            MIDDLE AREA                     *
*S                  *   CALABACILLAS ARROYO TO LA ORILLA OUTLET  *
*S                  *   UPDATED FOR 1996 DRAINAGE CRITERIA       *
*S                  ********************************************
*S IMPORTANT CHANGES :
*S
*S The following changes were NOTED, AND/OR applied to this model(update2.txt)
*S
*S  1. The area of basin 504 was 0.0257 sq mi (wrong),correct is 0.0426 sq mi
*S
*S  2. All of  Basin 305 was previously added to Tract 2B Pond (proposed
*S     AMAFCA pond), however, only 2/3 of that basin will reach proposed
*S     AMAFCA pond, therefore, add a DIVIDE HYD command to correct
*S
*S  3. Detention Pond 502.RES actually outfalls into Detention Pond 503.RES
*S     However, in Update1.txt, it was added after 503.RES.  Therefore,
*S     it is now added prior to Pond 503.res routing.
*S
*S  4. Basins 409, 410 and 411 were divided and a fraction of those basins
*S     were lost in the update1.txt model.  A the lost fraction of Basins
*S     410 AND 411 could possibly drain to Tract 2-B AMAFCA Pond.  The lost
*S     Hyd's and fractional areas and volumes lost are as follows:
*S         HYD NO.'S                  410.03 and 411.03
*S         DRAINAGE AREAS (sq mi)     0.00016    0.00188      TOTAL = 0.00204
*S         RUNOFF VOLUME  (ac-ft)     0.018      0.218        TOTAL = 0.236
*S
*S     THESE LOST HYD'S HAVE NOT BEEN ADDED INTO THIS MODEL.
*S
RAINFALL  TYPE= 2                                                                                        RAIN24=   2.650
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3 HR
*S SUB-BASIN 8.3E
*S RIVERFRONTE ESTATES
COMPUTE NM HYD      8.3W-318    -     3        .05305       59.34       1.922       .67914    1.533    1.748 PER IMP=  10.00
*S** ADD FLOW IN CORRALES MAIN CANAL COMING FROM CALABACILLAS SIPHON ***
STORE HYD             136.00    -     5        .00010       50.00      96.240  18044.95000    3.950  781.250
*S BASE FLOW = 38 CFS IRRIGATION + 12 CFS WHICH CAME THROUGH SIPHON
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*S DURING 100 YEAR FLOOD.
MODIFY TIME          136.00    5    5        .00010        50.00      96.711  18133.27000    3.950  781.250 SHIFT=      .000
*S* ROUTE BASE FLOW DOWN CANAL TO 8.3 DISCHARGE POINT. **
ROUTE MCUNGE         12.00     5    6        .00010        49.14      96.708  18132.75000    4.550  767.839 CCODE =       .2
*S BASE FLOW CORRECTION.
MODIFY TIME          12.00     6    6        .00010        49.14      96.708  18132.75000    4.550  767.839 SHIFT=      .000
ADD HYD              139.00  6& 3   6        .05315        97.34      67.218     23.71289    1.533    2.862
*S ROUTE 8.3E DOWN CANAL TO 8.1 DISCHARGE POINT. **
ROUTE MCUNGE         13.00     6    5        .05315        82.02      67.195     23.70470    1.533    2.411 CCODE =       .2
MODIFY TIME          13.00     5    5        .05315        82.02      67.195     23.70470    1.533    2.411 SHIFT=      .000
*S ROUTE 8.3E DOWN CANAL TO DISCHARGE POINT OF PROPOSED POND AT BLACK RANCH.**
ROUTE MCUNGE         14.00     5   83        .05315        58.60      67.158     23.69172    1.900    1.723 CCODE =       .2
*S BASE FLOW CORRECTION.
MODIFY TIME          14.00    83   83        .05315        58.60      67.158     23.69172    1.900    1.723 SHIFT=      .000
*S CONTRIBUTING BASINS FROM PARADISE HILLS GOLF COURSE
*S SOURCE: EASTERLING & ASSOCIATES,INC.
*S SINGLE FAMILY RESIDENTIAL, APPROXIMATELY 2 DU'S PER ACRE
COMPUTE NM HYD       101EA     -    1        .03700        61.63       2.278      1.15431    1.533    2.603 PER IMP=   26.00
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
COMPUTE NM HYD       102.00    -    2        .04470        45.64       1.986       .83306    1.600    1.595 PER IMP=   10.00
*S* ROUTE THE FLOW FROM 101EA THRU 102EA **
ROUTE MCUNGE       101EA.1     1    3        .03700        58.58       2.256      1.14312    1.766    2.474 CCODE =       .1
ADD HYD            102EA.1   2& 3   4        .08170        92.25       4.242       .97348    1.733    1.764
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE, INCLUDES SMALL PORTION OF LYONS
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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
COMPUTE NM HYD	103EA	-	5	.00670	12.31	.434	1.21488	1.500	2.871	PER IMP= 30.00
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	104EA	-	6	.02480	44.27	1.527	1.15445	1.500	2.789	PER IMP= 26.00
S ROUTE 103EA THRU 104EA **										
ROUTE MCUNGE	103EA.4	5	7	.00670	12.32	.434	1.21466	1.567	2.872	CCODE = .2
ADD HYD	103EA.4	7& 6	9	.03150	53.91	1.961	1.16726	1.533	2.674	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	105EA	-	10	.02360	35.41	1.453	1.15411	1.567	2.344	PER IMP= 26.00
S ROUTE FLOW COMING FROM 103EA.4 THRU 105EA **										
ROUTE MCUNGE	104EA.5	9	11	.03150	53.77	1.961	1.16698	1.567	2.667	CCODE = .2
ADD HYD	104EA.5	10&11	12	.05510	89.18	3.413	1.16146	1.567	2.529	
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	106EA	-	13	.02630	27.56	1.088	.77549	1.567	1.637	PER IMP= 7.00
S ROUTE FLOW COMING FROM 104EA.55 THRU 106EA **										
ROUTE MCUNGE	101EA.1	12	14	.05510	88.49	3.411	1.16085	1.633	2.509	CCODE = .2
ADD HYD	104EA.5	14&13	15	.08140	115.07	4.499	1.03634	1.600	2.209	
S ROUTE FLOW COMING FROM 102EA THRU 106EA **										
ROUTE MCUNGE	102EA.6	4	16	.08170	92.19	4.240	.97316	1.766	1.763	CCODE = .2
ADD HYD	106EA.25	15&16	17	.16310	174.33	8.739	1.00469	1.700	1.670	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	107EA	-	19	.02130	23.18	.856	.75365	1.567	1.701	PER IMP= 6.00
S ROUTE FLOW COMING FROM 106EA.25 THRU 107EA **										
ROUTE MCUNGE	107EA.6	17	2	.16310	173.29	8.740	1.00479	1.766	1.660	CCODE = .2
ADD HYD	107EA.6	2&19	3	.18440	189.31	9.596	.97578	1.700	1.604	

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*S GOLF COURSE, PARKING LOT AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
COMPUTE NM HYD         108EA    -     7        .04700        43.68       2.177       .86868    1.633    1.452 PER IMP=  12.00
ADD HYD              107EA.8  3& 7    8        .23140       230.91      11.774       .95403    1.700    1.559
*S* ROUTE COMBINED 107EA.8 THRU RESERVOIR (DUCK POND & EMPTY HOLE) **
ROUTE RESERVOIR      107EA.8    8     9        .23140       145.75       7.807       .63257    1.933     .984 AC-FT=    5.341
*S
*S  OUTFLOW(CFS)  STORAGE(AF)   ELEV(FT)
*S     0.00           0.00        5241.0
*S     0.01           0.22        5242.0
*S     0.02           0.54        5243.0
*S     0.03           0.95        5244.0
*S     0.035          1.20        5244.5
*S     0.04           1.44        5245.0
*S     0.045          2.70        5245.5
*S     0.05           3.96        5246.0
*S    14.00           4.19        5246.1
*S    27.00           4.41        5246.2
*S    52.00           4.64        5246.3
*S    76.00           4.86        5246.4
*S   108.00           5.08        5246.5
*S   139.00           5.30        5246.6
*S   177.00           5.53        5246.7
*S   215.00           5.75        5246.8
*S   258.00           5.98        5246.9
*S   300.00           6.20        5247.0
*S   500.00           9.00        5250.0
*S  1000.00          12.00        5255.0
*S
*S GOLF COURSE, AND OTHER RECREATION
COMPUTE NM HYD         109EA    -    10        .00900        14.67        .502       1.04606    1.500    2.547 PER IMP=  23.00
*S* ROUTE FLOW COMING FROM RESERVOIR THRU 109EA **
ROUTE MCUNGE        109EA.78    9    11        .23140       145.35       7.812       .63303    1.933     .981 CCODE =     .2
ADD HYD             109EA.87 10&11   12        .24040       148.00       8.315       .64849    1.933     .962
*S PKG LOT, CLUBHOUSE, ENTR. RD, PROSHOP, BED & BRKFST
COMPUTE NM HYD         110EA    -    13        .00600        14.45        .594       1.85495    1.500    3.764 PER IMP=  70.00
ADD HYD              110EA.1 12&13   14        .24640       151.64       8.908       .67787    1.933     .962
ROUTE MCUNGE          103.22   14     3        .24640       149.72       8.851       .67353    2.166     .949 CCODE =     .1
*S RESIDENTIAL
COMPUTE NM HYD         104.00    -     1        .06720       106.53       5.455      1.52211    1.600    2.477 PER IMP=  50.00
ADD HYD                104.10 1& 3     2        .31360       173.11      14.306       .85537    2.166     .863
*S ROUTING 104.1 ON CADDIE RD
ROUTE MCUNGE           104.12    2     3        .31360       172.57      14.293       .85458    2.266     .860 CCODE =     .1
COMPUTE NM HYD         105.00    -     1        .10270       203.07       8.343      1.52320    1.533    3.090 PER IMP=  50.00
*S**** HYD 105.1 IS AP #2      *****
ADD HYD                105.10 1& 3     2        .41630       250.61      22.636      1.01953    1.567     .941
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND
ROUTE MCUNGE           105.12    2     4        .41630       249.96      22.610      1.01836    1.667     .938 CCODE =     .1
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL

                                 FROM   TO                    PEAK      RUNOFF                          TIME TO   CFS        PAGE =   3
                    HYDROGRAPH    ID    ID         AREA     DISCHARGE   VOLUME      RUNOFF              PEAK     PER
COMMAND          IDENTIFICATION   NO.   NO.      (SQ MI)     (CFS)     (AC-FT)    (INCHES)            (HOURS)  ACRE      NOTATION
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COMPUTE NM HYD        106.00   -     1        .09540       189.50       7.750      1.52323    1.533    3.104 PER IMP=  50.00
*S SUB-BASIN 106A IS SKY CREST ESTATES
COMPUTE NM HYD         106A1   -     7        .00846        18.13        .678      1.50231    1.500    3.349 PER IMP=  44.52
*S ROUTING RESERVOIR WITH 21" DIAM ORIFACE
*S EXISTING POND AT SW CORNER OF ARROWHEAD AVE AND CHANTILLY RD
ROUTE RESERVOIR    106A1.RES    7    9        .00846        14.30        .677      1.50088    1.567    2.642 AC-FT=     .126
*S
*S         OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S                0                0              5057
*S            4.675            0.062              5058
*S           16.379            0.140              5059
*S           22.510            0.235              5060
*S           27.298            0.349              5061   EXISTING TOP OF POND
*S
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE DOWN CHANTILLY ROAD TO CONGRESS
ROUTE MCUNGE           106A.1    9   10        .00846        14.30        .677      1.50053    1.600    2.642 CCODE =     .1
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL
COMPUTE NM HYD        107.00   -     2        .02910        59.13       2.256      1.45384    1.500    3.175 PER IMP=  45.80
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND
ROUTE MCUNGE           107.02    2    3        .02910        58.73       2.253      1.45137    1.600    3.154 CCODE =     .1
ADD HYD                107.10  4& 3   2        .44540       303.44      24.863      1.04665    1.633    1.064
ADD HYD                107.20  1& 2   3        .54080       440.42      32.613      1.13072    1.600    1.272
ADD HYD                107.30  3&10  11        .54926       454.72      33.290      1.13642    1.600    1.294
*S RESIDENTIAL
COMPUTE NM HYD        108.00   -     1        .02400        49.43       1.899      1.48367    1.500    3.218 PER IMP=  47.60
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND
*S THRU CACTUS HILLS
ROUTE MCUNGE           108.02    1    2        .02400        49.36       1.898      1.48268    1.567    3.214 CCODE =     .1
ADD HYD                108.10  2&11   4        .57326       502.39      35.188      1.15091    1.600    1.369
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN
COMPUTE NM HYD        109.00   -     1        .02070        39.89       1.514      1.37182    1.500    3.011 PER IMP=  42.50
*S**** HYD 109.1 IS AP #3     *****
ADD HYD                109.10  1& 4   2        .59396       531.62      36.702      1.15861    1.600    1.399
*S FUTURE DETENTION BASIN IN BASIN 109
ROUTE RESERVOIR      109.RES    2   66        .59396       177.30      36.290      1.14560    2.066     .466 AC-FT=   13.505
*S
*S         OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S                0                0              5069
*S                7             0.98              5070
*S               25             2.41              5071
*S               52             3.97              5072
*S               82             5.65              5073
*S              112             7.45              5074
*S              140             9.37              5075
*S              160            11.42              5076
*S              178            13.59              5077
*S              195            15.89              5078
*S
COMPUTE NM HYD        201.00   -     1        .02580        54.08       2.096      1.52345    1.500    3.275 PER IMP=  50.00
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND
ROUTE MCUNGE           201.02    1    2        .02580        54.04       2.095      1.52261    1.533    3.273 CCODE =     .2
COMPUTE NM HYD        202.00   -     1        .02880        59.18       2.271      1.47869    1.500    3.211 PER IMP=  47.30
*S**** HYD 202.1 IS AP #4     *****
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ADD HYD                 202.10  1& 2    4        .05460       111.38       4.366       1.49944     1.533     3.188
*S EXISTING DROP INLET IN BASIN 202
ROUTE RESERVOIR      202.RES1     4     2        .05460        90.73       4.366       1.49944     1.600     2.597 AC-FT=      .207
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S              0                0             5138.7
*S          20.12              0.0009          5139.7
*S          24.07              0.0019          5140.7
*S          41.69              0.0028          5141.7
*S          53.82              0.0037          5142.7
*S          63.69              0.0047          5143.7
*S          70.59              0.0054          5144.5
*S          74.58              0.0111          5145.0
*S          81.98              0.0603          5146.0
*S          83.46              0.1024          5146.2
*S          87.97              0.1700          5146.5
*S          94.77              0.2611          5147.0
*S
*S EXISTING DETENTION BASIN IN BASIN 401
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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
*S ROUTING RESERVOIR WITH 21" ORIFACE										
ROUTE RESERVOIR	202.RES2	2	4	.05460	78.86	4.367	1.49949	1.733	2.257	AC-FT= 1.107
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)						
*S	0	0		5114						
*S	11.58	0.0026		5115						
*S	16.38	0.0052		5116						
*S	20.06	0.0078		5117						
*S	23.16	0.0091		5118						
*S	25.89	0.0521		5119						
*S	28.37	0.1097		5120						
*S	30.64	0.1829		5121						
*S	32.75	0.2747		5122						
*S	34.74	0.3856		5123						
*S	36.62	0.5174		5124						
*S	38.41	0.6717		5125						
*S	40.11	0.8496		5126						
*S	41.76	1.03		5127	EXISTING TOP OF POND					
*S	61	1.08		5127.25						
*S	94	1.13		5127.5						
*S	136	1.18		5127.75						
*S	185	1.23		5128						
*S										
DIVIDE HYD	202.03	4	8	.05163	41.76	4.129	1.49949	1.700	1.264	
	OLF.2	and	11	.00297	37.10	.238	1.49949	1.733	19.519	
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD										
ROUTE MCUNGE	202.02	8	6	.05163	41.76	4.127	1.49888	1.733	1.264	CCODE = .1
*S RESIDENTIAL										
COMPUTE NM HYD	301.00	-	1	.01820	34.94	1.478	1.52307	1.533	3.000	PER IMP= 50.00

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*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304
ROUTE MCUNGE          301.02    1    2        .01820        34.78       1.476       1.52068    1.700     2.986 CCODE =      .1
*S METHODIST CHURCH PROPERTY
COMPUTE NM HYD        302.00    -    1        .00430        11.56        .498       2.17219    1.500     4.202 PER IMP=   90.00
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304
ROUTE MCUNGE          302.02    1    5        .00430        11.51        .497       2.16698    1.733     4.182 CCODE =      .1
ADD HYD               302.10  2& 5   4        .02250        45.44       1.973       1.64420    1.700     3.155
*S COMMERCIAL
COMPUTE NM HYD        303.00    -    1        .06690       156.35       7.746       2.17094    1.533     3.652 PER IMP=   90.00
*S EXISTING DETENTION BASIN IN BASIN 303
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE
ROUTE RESERVOIR     303.RES    1    5        .06690       124.69       7.736       2.16812    1.667     2.912 AC-FT=     2.227
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                0              5099
*S          11.58               0.15           5100
*S          16.37               0.30           5101
*S          20.06               0.45           5102
*S          23.16               0.60           5103
*S          25.89               0.75           5104
*S          26.00               0.91           5105
*S          27.00               1.07           5106
*S          28.00               1.23           5107
*S          29.00               1.39           5108
*S          30.00               1.55           5109
*S          31.00               1.71           5110
*S          32.00               1.87           5111
*S          33.00               2.03           5112
*S          34.00               2.11           5112.5 EXISTING TOP OF POND
*S          53.00               2.15           5112.75
*S          86.00               2.19           5113
*S          128.0               2.23           5113.25
*S
DIVIDE HYD            303.03    5    8        .05430        34.00       6.279       2.16812    1.633      .978
                       OLF.3  and   12        .01260        90.69       1.456       2.16812    1.667    11.251
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE
ROUTE MCUNGE          303.02    8    2        .05430        34.00       6.273       2.16592    1.700      .978 CCODE =      .1
ROUTE MCUNGE          OLF.32   12   16        .01260        80.47       1.436       2.13837    1.800     9.983 CCODE =      .1
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL
COMPUTE NM HYD        304.00    -    1        .03490        93.74       4.043       2.17217    1.500     4.197 PER IMP=   90.00
ADD HYD               304.10  1& 4   7        .05740       101.20       6.016       1.96521    1.533     2.755
ADD HYD               304.20  7&16   5        .07000       148.50       7.453       1.99637    1.800     3.315
*S DIVIDE AT MH# S-702

                                    FROM  TO                    PEAK      RUNOFF                TIME TO   CFS       PAGE =   5
                         HYDROGRAPH  ID   ID        AREA      DISCHARGE  VOLUME     RUNOFF      PEAK     PER
COMMAND       IDENTIFICATION        NO.  NO.     (SQ MI)      (CFS)     (AC-FT)   (INCHES)   (HOURS)   ACRE     NOTATION

DIVIDE HYD                CB1      5    4        .02872        20.00       3.058       1.99637    1.333     1.088
                       304.13  and   7        .04127       128.50       4.394       1.99637    1.800     4.865
ADD HYD                 CB1.1   2& 4   5        .08303        54.00       9.331       2.10726    1.700     1.016
ADD HYD                 CB1.2   5& 6   2        .13466        95.76      13.459       1.87400    1.733     1.111
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL
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COMPUTE NM HYD        305.00   -    17        .03910       102.46       4.529      2.17200    1.500    4.094 PER IMP=  90.00
*S DIVIDE HYD 305 BY 67 PERCENT THAT WILL REACH PROPOSED TRACT 2B AMAFCA POND
DIVIDE HYD            305.69   17   17        .02620        68.64       3.035      2.17200    1.500    4.094
                      305.68  and   57        .01290        33.81       1.495      2.17200    1.500    4.094
*S
*S 305.69 IS THE REVISED AREA OF BASIN 305 (67%) THAT WILL REACH
*S         TRACT 2-B PROPOSED AMAFCA POND
*S
*S 305.68 IS THE REVISED AREA OF BASIN 305 (33%) THAT WILL FLOW TO THE
*S        EXISTING NMSH&TD POND AT THE SW CORNER OF PDN AND COORS
*S
*S note -- HAVE NOT MODIFED THIS MODEL TO ACTUALLY ADD 305.68 TO THE
*S        NMSH&TD POND
*S CACTUS RIDGE
COMPUTE NM HYD        401.00   -    1         .02360        50.44       1.974      1.56819    1.500    3.340 PER IMP=  52.70
ADD HYD               401.10  1&11  3         .02657        57.48       2.211      1.56051    1.733    3.380
*S DIVIDE HYD 401.1 BY MAXIMUM INFLOW OF CATCH BASINS, WEST OF
*S SUB-BASIN 401,ALONG PARADISE ROAD (7 CB AT 10 CFS EACH)
DIVIDE HYD              CB2    3    4         .02657        57.48       2.211      1.56051    1.733    3.380
                      401.13  and   5         .00000          .00        .000       .00000    -.033     .000
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS
COMPUTE NM HYD        402.00   -    1         .00880        18.66        .692      1.47507    1.500    3.314 PER IMP=  42.70
ADD HYD               402.10  5& 1  6         .00880        18.66        .692      1.47507    1.500    3.314
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD
*S**** OLF HYD 402.2 IS AP #5     *****
ADD HYD               402.20  6& 7  18        .05007       134.44       5.087      1.90475    1.800    4.195
*S ROUTING 402.2 TO DETENTION POND IN 503
ROUTE MCUNGE          402.23   18   20        .05007       133.77       5.085      1.90423    1.866    4.174 CCODE =    .1
ADD HYD               305.10 17&20  19        .07627       158.74       8.120      1.99621    1.567    3.252
*S**** PIPE HYD CB2.1 IS AP #6     *****
ADD HYD                CB2.1  2& 4   6        .16123       153.24      15.670      1.82234    1.733    1.485
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS
COMPUTE NM HYD        403.00   -    1         .01440        32.61       1.266      1.64809    1.500    3.538 PER IMP=  54.20
*S DIVIDE HYD 403 BY MAXIMUM INFLOW OF POND INLET IN WEST PARK APARTMENTS
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND
DIVIDE HYD              CB3    1    2         .00551         3.00        .484      1.64809    1.300     .851
                      403.13  and   99        .00889        29.61        .782      1.64809    1.500    5.201
ADD HYD                CB3.1  6& 2   5        .16673       156.24      16.154      1.81659    1.733    1.464
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732
*S Q(CAP) = 144 CFS, AT SLOPE=0.005
ROUTE MCUNGE          CB3.13    5    2         .16673       139.83      16.079      1.80815    1.766    1.310 CCODE =    .2
*S LESLIE HOMES
COMPUTE NM HYD        404.00   -    1         .01610        33.73       1.307      1.52179    1.500    3.273 PER IMP=  49.90
ADD HYD                CB4.1  1& 2   5        .18283       156.27      17.386      1.78293    1.567    1.336
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
ROUTE MCUNGE          CB4.13    5    2         .18283       153.87      17.354      1.77973    1.600    1.315 CCODE =    .2
*S SUB-BASIN 405 IS PART OF CACTUS HILLS
COMPUTE NM HYD        405.00   -    1         .02700        50.96       1.887      1.31061    1.500    2.949 PER IMP=  38.00
*S  DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *
DIVIDE HYD              CB5    1    6         .02581        40.00       1.804      1.31061    1.467    2.422
                      405.03  and   7         .00119        10.96        .083      1.31061    1.500   14.335
*S ROUTING 405.03 TO CONGRESS AVE
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ROUTE MCUNGE          405.02    7   15        .00119        10.31       .086      1.34366    1.600   13.489 CCODE =      .2
*S SUB-BASIN 405 HAS TRANSVERSE DRAIN WITH 36" PIPE TO 60" SD
ADD HYD               CB5.1  6& 2   5        .20864       191.44     19.158      1.72171    1.600    1.434
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
ROUTE MCUNGE          CB5.13    5   2         .20864       191.16     19.145      1.72056    1.600    1.432 CCODE =      .2
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND
*S Q(CAP) = 233 CFS, AT SLOPE=0.008
ROUTE MCUNGE          CB5.23    2   25        .20864       189.59     19.135      1.71966    1.600    1.420 CCODE =      .2
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL
COMPUTE NM HYD        406.00    -   1         .01070        22.44       .869      1.52345    1.500    3.276 PER IMP=   50.00
ADD HYD               406.10 15& 1   6        .01189        28.59       .955      1.50535    1.567    3.756
*S ROUTING 406.1 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD

                                  FROM  TO                    PEAK      RUNOFF                TIME TO   CFS       PAGE =   6
                       HYDROGRAPH  ID   ID        AREA      DISCHARGE  VOLUME     RUNOFF      PEAK     PER
COMMAND          IDENTIFICATION    NO.  NO.     (SQ MI)      (CFS)    (AC-FT)   (INCHES)    (HOURS)   ACRE     NOTATION

ROUTE MCUNGE          406.12    6   3         .01189        27.80       .954      1.50443    1.633    3.652 CCODE =      .2
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL
COMPUTE NM HYD        407.00    -   1         .02240        60.17      2.595      2.17217    1.500    4.197 PER IMP=   90.00
*S CUBBY HOLE DETENTION BASIN
*S ROUTING RESERVOIR WITH 12" ORIFACE
ROUTE RESERVOIR      407.RES    1   5         .02240        67.98      2.592      2.16995    1.500    4.742 AC-FT=       .176
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S              0                0             5063
*S           3.78             0.0387           5064
*S           5.35             0.0597           5065
*S           6.55             0.0808           5066
*S           7.56             0.1019           5067
*S           8.46             0.1230           5068
*S           9.26             0.1440           5069
*S          10.00             0.1651           5070
*S             29             0.170            5070.25
*S             62             0.175            5070.5
*S            104             0.180            5070.75
*S            153             0.185            5071
*S
DIVIDE HYD            407.03    5   89        .01270        10.00      1.470      2.16995    1.433    1.230
                       OLF.4  and  13        .00970        57.98      1.123      2.16995    1.500    9.339
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962
*S Q(CAP) = 260 CFS, AT SLOPE=0.01
ROUTE MCUNGE          CB5.33   25   85        .20864       189.56     19.118      1.71813    1.633    1.420 CCODE =      .1
ADD HYD               407.10  3&13  17        .02159        76.03      2.077      1.80338    1.500    5.501
*S SUB-BASIN 408 IS STATE FARM INSURANCE
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD
COMPUTE NM HYD        408.00    -   14        .00660        17.74       .765      2.17218    1.500    4.200 PER IMP=   90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 408
*S ROUTING RESERVOIR WITH 12" WEIR
ROUTE RESERVOIR      408.RES   14   18        .00660         3.71       .747      2.12308    2.066     .878 AC-FT=       .441
*S
*S      OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
```

```
*S        0              0          5050.8
*S      1.08         0.2198          5052.3    EXISTING TOP OF POND
*S      1.66         0.2931          5052.8
*S      2.31         0.3663          5053.3
*S      3.02         0.4396          5053.8
*S        22         0.4763          5054.05
*S
ADD HYD              408.10 17&18  14       .02819      76.90     2.824    1.87822   1.500    4.262
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D
COMPUTE NM HYD       409.00   -     1       .00980      26.33     1.135    2.17218   1.500    4.199 PER IMP=  90.00
*S DIVIDE HYD 409 BY 36" STUB OUT PIPE CAPACITY *
DIVIDE HYD             CB6    1   28       .00977      25.00     1.131    2.17218   1.500    4.000
                     409.03  and  15       .00003       1.33      .004    2.17220   1.500   61.149
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B
COMPUTE NM HYD       411.00   -     1       .00920      24.72     1.066    2.17218   1.500    4.199 PER IMP=  90.00
*S DIVIDE HYD 411 BY INLET CAPACITY *
DIVIDE HYD             CB7    1    2       .00732      10.00      .848    2.17218   1.367    2.135
                     411.03  and   7       .00188      14.72      .218    2.17218   1.500   12.221
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A
COMPUTE NM HYD       410.00   -     1       .00470      12.64      .544    2.17219   1.500    4.201 PER IMP=  90.00
*S DIVIDE HYD 410 BY INLET CAPACITY *
DIVIDE HYD             CB8    1    9       .00454      10.00      .526    2.17219   1.467    3.440
                     410.03  and  16       .00016       2.64      .018    2.17219   1.500   26.014
ADD HYD              411.10  7&16   3       .00204      17.36      .236    2.17218   1.500   13.292
*S ASSUME OLF HYD 411.2 PONDS
ADD HYD              411.20  3&15  16       .00207      18.69      .240    2.17218   1.500   14.078
ADD HYD               CB7.1  2&85  21       .21596     199.56    19.966    1.73352   1.633    1.444
ADD HYD               CB8.1 21& 9   2       .22050     206.95    20.492    1.74255   1.633    1.466
*S ROUTE CB8.1 IN 60" PIPE TO SUB-BASIN 411 ( JUST BEFORE
*S CALABACILLAS ARROYO OUTFALL)
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
ROUTE MCUNGE         CB8.12    2    9       .22050     205.64    20.467    1.74043   1.667    1.457 CCODE =    .2
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3
COMPUTE NM HYD       412.00   -     1       .01330      34.03     1.541    2.17185   1.500    3.998 PER IMP=  90.00
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO
*S****  HYD CB9.1 IS AP #9     *****
ADD HYD               CB9.1  1& 9  98       .23380     225.50    22.008    1.76498   1.633    1.507

                                FROM  TO                          PEAK      RUNOFF                TIME TO   CFS        PAGE =   7
                        HYDROGRAPH   ID  ID          AREA      DISCHARGE    VOLUME     RUNOFF      PEAK     PER
COMMAND              IDENTIFICATION   NO.  NO.      (SQ MI)      (CFS)     (AC-FT)   (INCHES)    (HOURS)  ACRE      NOTATION

ADD HYD               OUT.1 98&99  99       .24269     242.23    22.790    1.76069   1.633    1.560
*S SAD 224-PROJECT INCLUDES ENLARGING POND ON CONGRESS AVE
*S INSTALLATION OF 66" OUTLET PIPE FROM POND-FLOWS ROUTED TO
*S CALABACILLAS ARROYO
*S Q(CAP) =233 CFS, AT SLOPE = 0.008
ROUTE MCUNGE          CB6.23   66    2       .59396     177.28    36.276    1.14516   2.100     .466 CCODE =    1.0
ADD HYD               CB6.33  2&89  86       .60666     187.28    37.746    1.16662   2.100     .482
*S** ROUTE PROPOSED PIPE UNTIL IT REACHES EAGLE RANCH ROAD AGAIN ***
*S Q(CAP) =233 CFS AT SLOPE = 0.008
ROUTE MCUNGE          CB6.33   86    8       .60666     187.28    37.746    1.16662   2.100     .482 CCODE =    .0
ADD HYD               CB6.43 28& 8   9       .61643     192.52    38.877    1.18255   2.066     .488
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*S SUB-BASIN 413 IS WEST OF EAGLE RANCH COMMERCIAL*
COMPUTE NM HYD        413.00   -     3        .01560      41.95      1.807     2.17218   1.500    4.202 PER IMP=   90.00
*S SUB-BASIN 414 IS WEST OF EAGLE RANCH COMMMERCIAL*
COMPUTE NM HYD        414.00   -    10        .00297       8.00       .344     2.17220   1.500    4.209 PER IMP=   90.00
ADD HYD               CB6.53  3&10   5        .01857      49.96      2.151     2.17219   1.500    4.203
ADD HYD               CB6.63  5& 9  11        .63500     203.81     41.029     1.21149   2.000     .502
*S SUB-BASIN 415 IS WEST OF EAGLE RANCH - COMMERCIAL *
COMPUTE NM HYD        415.00   -     1        .01190      32.01      1.379     2.17218   1.500    4.203 PER IMP=   90.00
ADD HYD                OUT.2  1&11  98        .64690     211.53     42.407     1.22916   1.966     .511
ADD HYD                OUT.3 98&99  99        .88959     421.23     65.197     1.37417   1.700     .740
*S EAGLE RANCH ROAD
*S 86 FT ROW
COMPUTE NM HYD        501.00   -     1        .01000      17.39      1.156     2.16736   1.700    2.718 PER IMP=   90.00
ADD HYD               501.10  14& 1   3        .03819      85.16      3.980     1.95392   1.500    3.484
*S ROUTE OLF 501.1 THRU 505 IN IRVING BLVD **
ROUTE MCUNGE          501.12    3     7        .03819      83.27      3.972     1.95007   1.600    3.407 CCODE =     .1
*S COMMERCIAL
COMPUTE NM HYD        502.00   -     1        .04350     116.84      5.039     2.17217   1.500    4.197 PER IMP=   90.00
*S DIVIDE HYD 305.1 IN PARADISE BLVD BY ASSUMED 18" CAPACITY *
DIVIDE HYD            402.24   19    2        .02307      20.00      2.456     1.99621   1.367    1.355
                      402.25  and    3        .05320     138.74      5.664     1.99621   1.567    4.075
ADD HYD               502.10  2& 1   5        .06657     136.84      7.496     2.11119   1.500    3.212
*S EXISTING DETENTION BASIN IN SUB-BASIN 502
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE
ROUTE RESERVOIR      502.RES    5     8        .06657      76.87      7.446     2.09734   1.667    1.804 AC-FT=     2.307
*S
*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                0              5030
*S           38.9526          2.1993           5038
*S           58               2.268            5038.25
*S           91               2.337            5038.5
*S
*S COMMERCIAL
COMPUTE NM HYD        503.00   -     1        .02350      48.51      2.719     2.16951   1.600    3.225 PER IMP=   90.00
ADD HYD               503.10  1& 3   2        .07670     185.76      8.383     2.04931   1.567    3.784
*S
*S NOTE - THE FOLLOWING IS A CHANGE FROM UPDATE1.TXT
*S
*S 502.RES ACTUALLY DISCHARGES INTO 503.RES, SO NEED TO ADD IT HERE
*S
ADD HYD               503.19  2& 8   2        .14327     222.37     15.829     2.07163   1.667    2.425
*S
*S EXISTING DETENTION BASIN IN SUB-BASIN 503
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE
ROUTE RESERVOIR      503.RES    2     5        .14327     209.53     15.098     1.97589   1.866    2.285 AC-FT=     4.806
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S            0                0              5000
*S          10.1924          4.2712           5010
*S           29              4.378            5010.25
*S           62              4.485            5010.5
*S          104              4.592            5010.75
*S          153              4.698            5011
```

FLOW AT INTERSECTION OF IRVING AND COORS EXCLUDING BASINS 505, 505A

```
*S          209              4.805           5011.25
*S
*S  DON'T NEED FOLLOWING ADD DUE TO PREVIOUS ADD OF 503.19
*S
*S*** ADD HYD 502.RES TO HYD 503.RES  ***
*S
*SADD HYD               ID=10    HYD NO=503.1  ID I=5  ID II=8
*SPRINT HYD             ID=10    CODE=1
*S
```


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
*S COMMERCIAL										
COMPUTE NM HYD	504.00	-	1	.04260	93.68	4.931	2.17023	1.567	3.436	PER IMP= 90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 504										
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	504.RES	1	3	.04260	48.12	4.916	2.16363	1.800	1.765	AC-FT= 1.450

```
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S            0                 0              5001
*S         38.9526           1.1742            5007
*S
*S  DON'T USE FOLLOWING ADD, CHANGE IT TO CORRECT ID NO'S (IMMEDIATELY BELOW)
*S** ADD HYD 503.1 TO HYD 504.RES  ***
*S
*SADD HYD               ID=11     HYD NO=504.1  ID I=3   ID II=10
*SPRINT HYD             ID=11     CODE=1
*S
*S THIS IS REVISED ADD, CORRECTED ID NO'S
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ADD HYD	504.10	3& 5	11	.18587	257.07	20.014	2.01892	1.866	2.161

```
*S
*S    $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $
*S
*S HYD. 504.10 IS THE TOTAL HYDROGRAPH ON THE WEST SIDE OF COORS
*S THAT REACHES THE EXISTING 36" CMP THAT PASSES UNDER COORS TO THE
*S TRACT 2-B POND - PROPOSED AMAFCA POND
*S
*S    $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $
*S
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL
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COMPUTE NM HYD	505.00	-	1	.04970	107.89	5.752	2.17012	1.567	3.392 PER IMP= 90.00
ADD HYD	505.10	1& 7	2	.08789	189.85	9.725	2.07449	1.600	3.375

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*S COORS BOULEVARD ROW
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COMPUTE NM HYD	505A	-	1	.00560	15.06	.649	2.17219	1.500	4.201 PER IMP= 90.00

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*S ROUTE 505A IN FUTURE STORM DRAIN THROUGH 506A
*S ASSUME PIPE SIZE OF 48" AND SLOPE=0.008 FT/FT
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ROUTE MCUNGE	505A.1	1	31	.00560	14.58	.647	2.16519	1.600	4.068 CCODE = 1.0

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*S ROUTE OLF HYD 505.1 THRU 506 ON COORS BLVD **
```

ROUTE MCUNGE	505.12	2	9	.08789	180.28	9.685	2.06603	1.800	3.205 CCODE = .1
ADD HYD	505.20	11& 9	2	.27376	415.28	29.698	2.03404	1.866	2.370

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*S ASSUME A FUTURE PIPE SIZE AND SLOPE; 96" AND 0.009 FT/FT
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FLOW AT INTERSECTION OF IRVING AT COORS

INCLUDING BASIN 505 AND EXCLUDING 505A

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ROUTE MCUNGE          505.22    2    3        .27376       413.22      29.669      2.03200     1.866     2.358 CCODE =      .1
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW
COMPUTE NM HYD        506.00    -    1        .05590        80.04       3.683      1.23538     1.600     2.237 PER IMP=   30.00
*S COORS BOULEVARD ROW
COMPUTE NM HYD          506A    -   29        .00800        18.31        .926      2.17069     1.567     3.576 PER IMP=   90.00
ADD HYD               506.10  1& 3    2        .32966       454.08      33.352      1.89692     1.800     2.152
ADD HYD               506.12  2&31   27        .33526       460.67      33.998      1.90140     1.800     2.147
ADD HYD               506.20 27&29    2        .34326       469.38      34.924      1.90767     1.800     2.137
*S PROPOSED DETENTION BASIN WITHIN EXISTING STATE HWY DEPT R-O-W
*S ROUTING RESERVOIR WITH 36" DIAM ORIFACE
*S MAXIMUM:  HIGH ELEV = 5001 , LOW ELEV = 4992.8 , OUTFLOW = 38 CFS
ROUTE RESERVOIR       506.RES    2   10        .34326        30.48      34.337      1.87560     3.166      .139 AC-FT=   21.090
*S
*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S                0                0             4993
*S             13.2             1.1324             4994
*S             18.7             4.4968             4995
*S             22.9             9.3777             4996
*S             26.5            14.3639             4997
*S             29.6            19.4554             4998
*S             32.4            24.6522             4999
*S             35.0            29.9543             5000
*S             37.5            35.3017             5001
*S             39.7            40.8744             5002
*S             41.9            46.4318             5003
*S             43.9            52.1551             5004
ADD HYD               900.00 83&10   20        .39641        83.89     101.495      4.80065     2.066      .331
ROUTE MCUNGE          901.00   20    7        .39641        83.83     101.471      4.79951     2.100      .330 CCODE =      .2
*S THE ALBUQUERQUE WEST COMMERCIAL DEVELOPMENT AREA
*S INCLUDES SECTIONS OF PASEO DEL NORTE AND STATE HIGHWAY DEPT. ROW
*S BASIN 11.1W
COMPUTE NM HYD        147.00    -    1        .04607       114.38       4.869      1.98167     1.500     3.879 PER IMP=   80.00
*S ROUTE RESERVOIR THROUGH NMSH&TD POND AT SW CORNER OF PDN AND COORS

                                FROM   TO                    PEAK        RUNOFF                 TIME TO    CFS       PAGE =    9
                     HYDROGRAPH   ID    ID         AREA     DISCHARGE    VOLUME      RUNOFF       PEAK      PER
COMMAND        IDENTIFICATION     NO.   NO.      (SQ MI)      (CFS)     (AC-FT)    (INCHES)    (HOURS)    ACRE      NOTATION

*S ROUTE RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.
ROUTE RESERVOIR       147.RES    1    2        .04607        42.57       4.847      1.97259     1.766     1.444 AC-FT=     1.821
*S
*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S                0                0             4996
*S              28               1.30             4998
*S              66               2.66             5000
*S DIVIDE HYD 147.RES BY MAXIMUM PIPE OUTFLOW *
DIVIDE HYD          147.RES1    2   18        .04607        42.57       4.847      1.97259     1.766     1.444
                      OLF.5  and   30        .00000          .00        .000       .00000     -.033      .000
*S ROUTE THE FLOW FROM THE POND THROUGH CULVERT PIPES UNDER COORS **
ROUTE MCUNGE          903.00   18    8        .04607        42.19       4.834      1.96754     1.833     1.431 CCODE =      1.0
ADD HYD               904.00  8& 7    9        .44248       122.97     106.306      4.50466     1.966      .434
*S SECTION OF BASIN 11.1W THAT DRAINS TO CULVERT UNDER COORS
COMPUTE NM HYD          147A    -   18        .00528         4.48        .126       .44920     1.533     1.328 PER IMP=    .00
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TRACT 2-B Pond

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*S ROUTE 11.1A THROUGH A 24" CMP PIPE UNDER COORS TO CANAL CBC **
ROUTE MCUNGE          147A.1   18   12        .00528         4.40       .126       .44640    1.567    1.303 CCODE =     1.0
*S** ADD THE FLOW FROM 11.1A TO CANAL **
ADD HYD               147.12  9&12   9        .44776       123.61     106.431      4.45684   1.933     .431
*S BASE FLOW CORRECTION
MODIFY TIME           147.12    9    9        .44776       123.61     106.431      4.45684   1.933     .431 SHIFT=      .000
*S ROUTE FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **
ROUTE MCUNGE           18.00    9    3        .44776       123.55     106.413      4.45608   1.966     .431 CCODE =      .2
*S BASE FLOW CORRECTION
MODIFY TIME            18.00    3    3        .44776       123.55     106.413      4.45608   1.966     .431 SHIFT=      .000
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW
*S CORRECTED TO 38 CFS MIN.
*S INCLUDES SECTION OF COORS AND PASEO DEL NORTE
COMPUTE NM HYD     11.2E-325    -     7        .02769         74.38      3.208      2.17217   1.500    4.197 PER IMP=   90.00
ADD HYD               326.00  3& 7   5        .47545       145.22     109.621      4.32307   1.833     .477
*S EAGLE RIDGE APARTMENT COMPLEX/UPPER HALF THAT DRAINS DIRECTLY
*S TO THE CORRALES MAIN CANAL VIA FUTURE STORM DRAIN
COMPUTE NM HYD         12.1W    -     3        .04399         96.66      3.852      1.64198   1.500    3.433 PER IMP=   58.00
*S ROUTE FLOW FROM 12.1W THROUGH FUTURE DETENTION POND **
ROUTE RESERVOIR    12.1W.RES    3     9        .04399         11.95      3.801      1.62000   2.133     .425 AC-FT=     2.392
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S             0               0              0
*S             4              0.69            1.0
*S             9              1.29            2.0
*S            12              2.41            2.5
*S ROUTE FLOW IN CANAL TO AREA 12.1AW DISCHARGE POINT. **
ROUTE MCUNGE           19.00   5    10        .47545       132.34     109.361      4.31282   1.900     .435 CCODE =      .2
*S BASE FLOW CORRECTION
MODIFY TIME            19.00   10   10        .47545       132.34     109.361      4.31282   1.900     .435 SHIFT=      .000
ADD HYD              12.1W.1 10& 9  11        .51944       143.92     113.162      4.08477   1.900     .433
*S EAGLE RIDGE APARTMENT COMPLEX/LOWER HALF THAT
*S DRAINS TO THE SWALE ALONG COORS BOULEVARD
COMPUTE NM HYD         12.2W    -     1        .00691         15.20       .605      1.64199   1.500    3.436 PER IMP=   58.00
*S DIVIDE HYD NO BY ALLOWABLE DISCHARGE SWALE ALONG COORS **
*S HYD NO 603.01 IS THE Q THAT REACHES THE SWALE
DIVIDE HYD             12.2W.1   1    5        .00691         15.20       .605      1.64199   1.500    3.436
                         OLF.7  and   31        .00000           .00       .000       .00000   -.033     .000
*S ROUTE THE FLOW LEAVING THE LOWER HALF OF THE EAGLE RIDGE APARTMENT
*S SITE THROUGH A NATURAL SWALE THAT FLOWS SOUTH ALONG THE WEST
*S SIDE OF COORS BOULEVARD.
ROUTE MCUNGE           12.2W.2   5    8        .00691         14.91       .604      1.63947   1.533    3.372 CCODE =     .2
*S ROUTE FLOW DOWN CANAL TO AREA 12.3 DISCHARGE POINT. **
ROUTE MCUNGE           22.00   11   9        .51944         129.04     112.808      4.07199   2.033     .388 CCODE =      .2
*S BASE FLOW CORRECTION.
MODIFY TIME            22.00    9   9        .51944         129.04     112.808      4.07199   2.033     .388 SHIFT=      .000
ADD HYD              12.1W.3 8& 9  12        .52635         132.54     113.412      4.04005   2.000     .393
COMPUTE NM HYD         12.3E    -     1        .02616         62.41       2.684     1.92349   1.500    3.728 PER IMP=   75.00
*S FLOW FROM 12.3E ENTERS FUTURE DETENTION BASIN
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE
ROUTE RESERVOIR    12.3E.RES    1    15        .02616         10.14       2.649     1.89869   2.100     .606 AC-FT=     1.558
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0               0              100
*S      3              0.39            101
```

```
*S      6                0.77          102
*S      7                1.16          103
*S     10                1.54          104
```

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
										PAGE = 10
ADD HYD	330.00	15&12	2	.55251	142.50	116.061	3.93866	2.000	.403	
*S ROUTE FLOW IN CANAL FROM 8.1W TO 12.3E TO AREA 13 DISCHARGE POINT.**										
ROUTE MCUNGE	23.00	2	5	.55251	133.25	115.810	3.93013	2.033	.377	CCODE = .2
MODIFY TIME	23.00	5	5	.55251	133.25	115.810	3.93013	2.033	.377	SHIFT= .000
*S FUTURE COMMERCIAL AREA										
COMPUTE NM HYD	13.1W	-	10	.01020	20.67	.833	1.53060	1.500	3.167	PER IMP= 55.00
*S FLOW FROM 13.1W ENTERS FUTURE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE										
ROUTE RESERVOIR	13.1W.RES	10	11	.01020	8.06	.830	1.52544	1.733	1.234	AC-FT= .303
*S OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)							
*S 0	0		100							
*S 2.6	0.1		101							
*S 6.0	0.2		102							
*S 8.0	0.3		103							
*S BOSQUE DEL PUEBLO COMMERCIAL AREA										
COMPUTE NM HYD	13.2E-332	-	1	.01480	34.12	1.424	1.80359	1.500	3.602	PER IMP= 70.00
ADD HYD	333.00	1&11	12	.02500	38.97	2.253	1.69010	1.500	2.436	
ADD HYD	334.00	5&12	2	.57751	151.53	118.063	3.83316	1.567	.410	
*S SUB-BASIN 14.1W										
*S ALBAN HILLS										
COMPUTE NM HYD	14.1W-335	-	3	.05117	66.95	2.233	.81824	1.500	2.044	PER IMP= 15.00
ROUTE MCUNGE	25.00	3	5	.05117	66.55	2.227	.81589	1.567	2.032	CCODE = .1
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **										
ROUTE MCUNGE	26.00	2	10	.57751	138.73	117.804	3.82474	2.033	.375	CCODE = .2
MODIFY TIME	26.00	10	10	.57751	138.73	117.804	3.82474	2.033	.375	SHIFT= .000
ADD HYD	338.00	5&10	2	.62868	200.39	120.030	3.57984	1.567	.498	
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **										
ROUTE MCUNGE	27.00	2	7	.62868	175.46	119.716	3.57047	1.567	.436	CCODE = .2
MODIFY TIME	27.00	7	7	.62868	175.46	119.716	3.57047	1.567	.436	SHIFT= .000
*S AREA 8.1W TO 14.2E ROUTED DOWN CANAL TO AREA 15 DISCH. POINT WITH										
*S BASE FLOW CORRECTED.										
COMPUTE NM HYD	15.1W	-	3	.02560	30.05	.936	.68537	1.533	1.834	PER IMP= 8.00
ROUTE MCUNGE	28.00	3	10	.02560	29.23	.930	.68080	1.633	1.784	CCODE = .1
*S SUB-BASIN 15.2W										
*S ALBAN HILLS										
COMPUTE NM HYD	15.2W-340	-	3	.06380	74.90	2.332	.68537	1.533	1.834	PER IMP= 8.00
ROUTE MCUNGE	29.00	3	5	.06380	74.46	2.327	.68384	1.567	1.824	CCODE = .1
ADD HYD	186.00	10& 5	3	.08940	101.72	3.256	.68297	1.600	1.778	
*S SUB-BASIN 15.3E										
*S FUTURE COMMERCIAL DEVELOPMENT										
COMPUTE NM HYD	15.3E	-	10	.01230	30.23	1.262	1.92365	1.500	3.840	PER IMP= 75.00
*S FLOW FROM 15.3E ENTERS FUTURE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE										
ADD HYD	342.00	3&10	5	.10170	123.45	4.518	.83302	1.567	1.897	
ADD HYD	343.00	5& 7	10	.73038	298.91	124.234	3.18930	1.567	.639	

```
*S SUB-BASIN 16.1W
*S ALBAN HILLS
COMPUTE NM HYD         16.1W    -      3        .03330        39.08        1.217        .68537    1.533    1.834 PER IMP=    8.00
*S BOSQUE MEADOWS SUBDIVISION
COMPUTE NM HYD       16.3NRTH   -      1        .01565        31.37        1.186       1.42116    1.500    3.132 PER IMP=   44.00
ADD HYD               16.3N.1  1& 3   30        .04895        70.22        2.403        .92061    1.500    2.242
*S ROUTE 16.1W AND 16.3NRTH THROUGH FUTURE DETENTION POND
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0                 0            100
*S      5              0.60            101
*S     13              1.10            102
*S     25              1.59            103
*S ROUTE AREA 8.1W TO 15.3W DOWN CANAL TO BUSHEL ROAD DISCHARGE POINT. **
ROUTE MCUNGE           27.10   10   32        .73038       255.73      123.665      3.17467    1.567     .547 CCODE =      .2
MODIFY TIME            27.10   32   32        .73038       255.73      123.665      3.17467    1.567     .547 SHIFT=      .000
ADD HYD              16.3N.1 32&30  33        .77933       318.58      126.068      3.03310    1.567     .639
*S SUB-BASIN 16.2W
*S ALBAN HILLS
COMPUTE NM HYD         16.2W    -      3        .06650        78.14        2.431        .68537    1.533    1.836 PER IMP=    8.00
*S FUTURE RESIDENTIAL DEVELOPMENT
COMPUTE NM HYD         16.3E    -      5        .01120        26.18        1.037       1.73544    1.500    3.652 PER IMP=   60.00
*S FUTURE DETENTION POND AT BASIN 16.3E
*S ROUTING RESERVOIR WITH 18" DIAMETER ORIFACE
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0                 0            100
*S      3              0.35            101
*S      8              0.82            102
*S BOSQUE MEADOWS SUBDIVISION
```


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
COMPUTE NM HYD	16.3STH	-	1	.03122	72.24	2.865	1.72082	1.500	3.616	PER IMP= 59.80
ADD HYD	16.3STH.1	1& 3	34	.09772	149.92	5.296	1.01619	1.500	2.397	
*S ROUTE 16.2 AND 16.3STH THROUGH FUTURE DETENTION POND @ BOSQUE MEADOWS										
ROUTE RESERVOIR	16.3STH.RES	34	35	.09772	35.48	5.308	1.01849	1.866	.567	AC-FT= 2.380
*S OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)							
*S 0.00	0.00000		4988.58							
*S 18.53	0.01074		4991.08							
*S 20.96	0.01407		4991.50							
*S 23.53	0.32155		4992.00							
*S 25.85	0.62903		4992.50							
*S 27.97	0.93650		4993.00							
*S 29.95	1.24398		4993.50							
*S 31.80	1.55145		4994.00							
*S 33.55	1.85893		4994.50							
*S 35.22	2.16641		4995.00							
*S 35.60	2.47388		4995.50							
ADD HYD	16.3STH.2	35& 5	36	.10892	54.69	6.345	1.09221	1.533	.785	
COMPUTE NM HYD	17.1W	-	3	.01030	11.44	.354	.64407	1.533	1.735	PER IMP= 7.00
COMPUTE NM HYD	17.4E	-	1	.03843	87.32	3.532	1.72317	1.500	3.550	PER IMP= 62.90
ADD HYD	17.4E.1	1& 3	37	.04873	98.66	3.886	1.49508	1.500	3.164	

```
*S FUTURE DETENTION POND AT COORS 8-PAC SITE
*S ROUTING RESERVOIR WITH 48" DIAMETER ORIFACE
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                  0           100
*S            15                0.20           101
*S            21                0.60           102
*S            43                1.05           103
*S            70                1.20           103.8
*S
*S ROUTE 8.1W TO 16.2NRTH FROM BUSHEL ROAD DOWN CANAL TO FINAL DISCHARGE POINT.
ROUTE MCUNGE          32.00   33    5       .77933      236.50     125.173     3.01156   1.567     .474 CCODE =      .2
MODIFY TIME           32.00    5    5       .77933      236.50     125.173     3.01156   1.567     .474 SHIFT=      .000
ADD HYD              348.00  5&36   40       .88825      289.91     131.518     2.77620   1.567     .510
ADD HYD              353.00 37&40   41       .93698      375.57     135.403     2.70957   1.533     .626
FINISH
```

UPDATE2.TXT

OUTPUT FILE

```
*** ADD HYD 506.12 TO HYD 506A ***
*
ADD HYD              ID=2      HYD NO=506.2   ID I=27  ID II=29
PRINT HYD            ID=2      CODE=1

                          OUTFLOW HYDROGRAPH RESERVOIR   506.20

    RUNOFF VOLUME =     1.90767 INCHES      =      34.9243 ACRE-FEET
    PEAK DISCHARGE RATE =     469.38 CFS  AT   1.800 HOURS   BASIN AREA =   .3433 SQ. MI.
```

TRACT 2-B POND

```
*S PROPOSED DETENTION BASIN WITHIN EXISTING STATE HWY DEPT R-O-W
*S ROUTING RESERVOIR WITH 36" DIAM ORIFACE
*S MAXIMUM:  HIGH ELEV = 5001 , LOW ELEV = 4992.8 , OUTFLOW = 38 CFS
* AREA ORIFACE IS 2.75 SF
ROUTE RESERVOIR      ID=10   HYD NO=506.RES   INFLOW=2   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0               0              4993
                         13.2            1.1324          4994
                         18.7            4.4968          4995
                         22.9            9.3777          4996
                         26.5           14.3639          4997
                         29.6           19.4554          4998
                         32.4           24.6522          4999
                         35.0           29.9543          5000
                         37.5           35.3617          5001
                         39.7           40.8744          5002
                         41.9           46.4318          5003
                         43.9           52.1551          5004

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

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

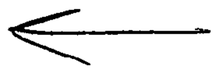
   .00         .00    4993.00        .000        .00
   .03         .00    4993.00        .000        .00
   .07         .00    4993.00        .000        .00
   .10         .00    4993.00        .000        .00
   .13         .00    4993.00        .000        .00
   .17         .00    4993.00        .000        .00
   .20         .00    4993.00        .000        .00
   .23         .00    4993.00        .000        .00
   .27         .00    4993.00        .000        .00
   .30         .00    4993.00        .000        .00
   .33         .00    4993.00        .000        .00
   .37         .00    4993.00        .000        .00
   .40         .00    4993.00        .000        .00
   .43         .00    4993.00        .000        .00
   .47         .00    4993.00        .000        .00
```

RESERVOIR ROUTING OUTPUT

UPDATE 2. TXT

(HRS)	(CFS)	(FEET)	(AC-FT)	(CFS)
18.66	3.73	4994.05	1.291	13.46
18.70	3.72	4994.04	1.264	13.42
18.73	3.72	4994.03	1.238	13.37
18.76	3.71	4994.02	1.211	13.33
18.80	3.70	4994.02	1.185	13.29
18.83	3.69	4994.01	1.158	13.24
18.86	3.69	4994.00	1.132	13.20
18.90	3.68	4993.98	1.106	12.90
18.93	3.68	4993.96	1.081	12.60
18.96	3.67	4993.93	1.057	12.32
19.00	3.66	4993.91	1.034	12.05
19.03	3.65	4993.89	1.011	11.78
19.06	3.64	4993.87	.989	11.53
19.10	3.64	4993.85	.967	11.28
19.13	3.63	4993.84	.947	11.04
19.16	3.63	4993.82	.927	10.80
19.20	3.62	4993.80	.907	10.57
19.23	3.61	4993.78	.888	10.35
19.26	3.60	4993.77	.870	10.14
19.30	3.60	4993.75	.852	9.93
19.33	3.59	4993.74	.835	9.73
19.36	3.58	4993.72	.818	9.54
19.40	3.58	4993.71	.802	9.35
19.43	3.57	4993.69	.787	9.17
19.46	3.57	4993.68	.771	8.99
19.50	3.56	4993.67	.757	8.82
19.53	3.55	4993.66	.742	8.65
19.56	3.55	4993.64	.729	8.49
19.60	3.54	4993.63	.715	8.34
19.63	3.54	4993.62	.702	8.18
19.66	3.53	4993.61	.690	8.04
19.70	3.52	4993.60	.677	7.90
19.73	3.52	4993.59	.665	7.76
19.76	3.51	4993.58	.654	7.62
19.80	3.50	4993.57	.643	7.49
19.83	3.50	4993.56	.632	7.37
19.86	3.49	4993.55	.621	7.24
19.90	3.49	4993.54	.611	7.13
19.93	3.48	4993.53	.601	7.01
19.96	3.48	4993.52	.592	6.90

PEAK DISCHARGE = 30.481 CFS - PEAK OCCURS AT HOUR 3.17
MAXIMUM WATER SURFACE ELEVATION = 4998.314
MAXIMUM STORAGE = 21.0900 AC-FT INCREMENTAL TIME= .033330HRS



```
*S
*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S              0                0               4993
*S             13.2             1.1324           4994
*S             18.7             4.4968           4995
*S             22.9             9.3777           4996
*S             26.5            14.3639           4997
```

2 OF 2

APPENDIX 1

AHYMO SUMMARY TABLES FROM :

3.

REVISED MODEL UPDATE2.TXT TO INCLUDE PROPOSED AMAFCA DRAINAGE MANAGEMENT CONTROLS

Smith Engineering Company

AHYMO model filename update3.txt (revised June 2003)

6400 Uptown Blvd. NE, Suite 500E Albuquerque, New Mexico 87110 Telephone 505/884-0700 Fax 505/884-2376
E-mail pats@secnm.com

```
 AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -                    - VERSION:  1997.02c      RUN DATE (MON/DAY/YR) =06/04/2003
INPUT FILE = Z:\Projects\100109-1\ahymo\update3.txt                                  USER NO.= AHYMO-S-9702c01SEC01A-AH
START                                                                                              TIME=       .00
 *S FILENAME - UPDATE3.TXT
 *S            (a copy of update2.txt, which is a copy of update1.txt)
*S
*S DESCRIPTION - This model update3.txt (prepared 6-3 and 6-4-03)
*S              is a copy of original file update1.txt (11-20-1996)
*S              that was prepared for:
*S                 ******************************************
*S                 *   DESIGN MEMORANDUM FOR THE REVISION TO  *
*S                 *   NORTH COORS DRAINAGE MANAGEMENT PLAN   *
*S                 *   MIDDLE AREA (La Orilla to Calabacillas)*
*S                 *   HYDROLOGY (FULLY DEVELOPED CONDITIONS) *
*S                 *   HYDRAULICS SEDIMENT CONTROL.           *
*S                 *   FEBRUARY 1997. SMITH ENGINEERING COMPANY*
*S                 *   SEC Proj. No. 195104
*S                 *   100 YEAR STORM - 24 HOUR DURATION      *
*S                 *   IMPROVED CORRALES MAIN CANAL           *
*S                 *            MIDDLE AREA                   *
*S                 *   CALABACILLAS ARROYO TO LA ORILLA OUTLET*
*S                 *   UPDATED FOR 1996 DRAINAGE CRITERIA     *
*S                 ******************************************
*S
*S  CURRENT SEC PROJECT NO. = 100109C (June 2003)
*S
*S UPDATE3.TXT is a model that includes the following proposed drainage
*S            management decisions by AMAFCA (JUNE 2003)
*S after AMAFCA's review of the UPDATE2.TXT model, due to the large
*S discharges in that model at the intersection of Irving and Coors Blvd.
*S and the large discharge at the detention pond on the west side of Coors
*S near the movie theater in basin 504.  That pond outfalls to a
*S 36"cmp that flows east to
*S the Tract 2-B Pond site located at the northeast corner of Coors and
*S Paseo Del Norte.  These proposed drainage management decisions could be
*S enforced by the City of Albuquerque as development begins in the basins
*S described below.  The basins are currently undeveloped, therefore, these
*S management decisions could be imposed on the developments because the
*S downstream drainage capacities are inadequate to take the flows from these
*S basins.
*S
*S IMPORTANT CHANGES TO MODEL UPDATE3.TXT (update3.txt also contains the
*S          corrections as described below for model update2.txt)
*S
*S    PROPOSED DRAINAGE MANAGEMENT LIMITATIONS (PROPOSED BY AMAFCA JUNE 2003)
*S
*S    1.  NO RUNOFF FROM BASINS 406 AND 407 WILL BE ALLOWED TO DISCHARGE
*S        INTO IRVING BLVD. AS STREET FLOW.  ALL FLOW FROM THESE BASINS
*S        SHOULD BE COLLECTED AS REQUIRED AND DISCHARGE INTO THE CONGRESS
*S        AVE. STORM DRAIN SYSTEM THAT OUTFALLS TO THE CALABACILLAS ARROYO
*S
```

```
*S    2.  MOST OF THE RUNOFF FROM BASINS 410 AND 411 ARE ANTICIPATED TO
*S        DISCHARGE INTO THE CONGRESS AVE. STORM DRAIN THAT PASSES THROUGH
*S        BASIN 411 ALONG THE REAR LOT LINE.  IF ANY FLOWS FROM THESE BASINS
*S        MUST DISCHARGE TO IRVING BLVD, THESE MUST BE LIMITED TO A VERY SMALL
*S        RELEASE RATE DUE TO LIMITED DOWNSTREAM CAPACITY AT THE INTERSECTION
*S        OF IRVING AND COORS BLVD.
*S
*S    3.  ALL RUNOFF FROM BASINS 302, 303 AND 304 SHOULD BE COLLECTED IN THE
*S        DETENTION POND LOCATED NEAR THE BOTTOM OF BASIN 303, AND THE
*S        ENTIRE VOLUME SHALL OUTFALL TO THE EXISTING STORM DRAIN SYSTEM
*S        FROM THAT POND TO THE EAGLE RANCH BLVD. STORM DRAIN SYSTEM
*S
*S IMPORTANT CHANGES TO MODEL UPDATE2.TXT:
*S
*S The following changes were NOTED, AND/OR applied to this model(update2.txt)
*S
*S  1. The area of basin 504 was 0.0257 sq mi (wrong),correct is 0.0426 sq mi
*S
*S  2. All of  Basin 305 was previously added to Tract 2B Pond (proposed
*S      AMAFCA pond), however, only 2/3 of that basin will reach proposed
*S      AMAFCA pond, therefore, add a DIVIDE HYD command to correct
*S
*S  3. Detention Pond 502.RES actually outfalls into Detention Pond 503.RES
*S     However, in Update1.txt, it was added after 503.RES.  Therefore,
*S     it is now added prior to Pond 503.res routing.
*S
*S  4. Basins 409, 410 and 411 were divided and a fraction of those basins
*S     were lost in the update1.txt model.  A the lost fraction of Basins
*S     410 AND 411 could possibly drain to Tract 2-B AMAFCA Pond.  The lost
*S     Hyd's and fractional areas and volumes lost are as follows:
*S         HYD NO.'S                  410.03 and 411.03
*S         DRAINAGE AREAS (sq mi)     0.00016    0.00188      TOTAL = 0.00204
*S         RUNOFF VOLUME  (ac-ft)     0.018      0.218        TOTAL = 0.236
*S
*S     THESE LOST HYD'S HAVE NOT BEEN ADDED INTO THIS MODEL.
*S
```

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 = 2 NOTATION
RAINFALL TYPE= 2										RAIN24= 2.650
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3 HR										
*S SUB-BASIN 8.3E										
*S RIVERFRONTE ESTATES										
COMPUTE NM HYD	8.3W-318	-	3	.05305	59.34	1.922	.67914	1.533	1.748	PER IMP= 10.00
*S** ADD FLOW IN CORRALES MAIN CANAL COMING FROM CALABACILLAS SIPHON ***										
STORE HYD	136.00	-	5	.00010	50.00	96.240	18044.95000	3.950	781.250	
*S BASE FLOW = 38 CFS IRRIGATION + 12 CFS WHICH CAME THROUGH SIPHON										
*S DURING 100 YEAR FLOOD.										
MODIFY TIME	136.00	5	5	.00010	50.00	96.711	18133.27000	3.950	781.250	SHIFT= .000
S ROUTE BASE FLOW DOWN CANAL TO 8.3 DISCHARGE POINT. **										
ROUTE MCUNGE	12.00	5	6	.00010	49.14	96.708	18132.75000	4.550	767.839	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	12.00	6	6	.00010	49.14	96.708	18132.75000	4.550	767.839	SHIFT= .000
ADD HYD	139.00	6& 3	6	.05315	97.34	67.218	23.71289	1.533	2.862	
*S ROUTE 8.3E DOWN CANAL TO 8.1 DISCHARGE POINT. **										
ROUTE MCUNGE	13.00	6	5	.05315	82.02	67.195	23.70470	1.533	2.411	CCODE = .2
MODIFY TIME	13.00	5	5	.05315	82.02	67.195	23.70470	1.533	2.411	SHIFT= .000
*S ROUTE 8.3E DOWN CANAL TO DISCHARGE POINT OF PROPOSED POND AT BLACK RANCH.**										
ROUTE MCUNGE	14.00	5	83	.05315	58.60	67.158	23.69172	1.900	1.723	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	14.00	83	83	.05315	58.60	67.158	23.69172	1.900	1.723	SHIFT= .000
*S CONTRIBUTING BASINS FROM PARADISE HILLS GOLF COURSE										
*S SOURCE: EASTERLING & ASSOCIATES,INC.										
*S SINGLE FAMILY RESIDENTIAL, APPROXIMATELY 2 DU'S PER ACRE										
COMPUTE NM HYD	101EA	-	1	.03700	61.63	2.278	1.15431	1.533	2.603	PER IMP= 26.00
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	102.00	-	2	.04470	45.64	1.986	.83306	1.600	1.595	PER IMP= 10.00
S ROUTE THE FLOW FROM 101EA THRU 102EA **										
ROUTE MCUNGE	101EA.1	1	3	.03700	58.58	2.256	1.14312	1.766	2.474	CCODE = .1
ADD HYD	102EA.1	2& 3	4	.08170	92.25	4.242	.97348	1.733	1.764	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE, INCLUDES SMALL PORTION OF LYONS										
COMPUTE NM HYD	103EA	-	5	.00670	12.31	.434	1.21488	1.500	2.871	PER IMP= 30.00
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	104EA	-	6	.02480	44.27	1.527	1.15445	1.500	2.789	PER IMP= 26.00
S ROUTE 103EA THRU 104EA **										
ROUTE MCUNGE	103EA.4	5	7	.00670	12.32	.434	1.21466	1.567	2.872	CCODE = .2
ADD HYD	103EA.4	7& 6	9	.03150	53.91	1.961	1.16726	1.533	2.674	
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	105EA	-	10	.02360	35.41	1.453	1.15411	1.567	2.344	PER IMP= 26.00
S ROUTE FLOW COMING FROM 103EA.4 THRU 105EA **										
ROUTE MCUNGE	104EA.5	9	11	.03150	53.77	1.961	1.16698	1.567	2.667	CCODE = .2
ADD HYD	104EA.5	10&11	12	.05510	89.18	3.413	1.16146	1.567	2.529	
*S GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	106EA	-	13	.02630	27.56	1.088	.77549	1.567	1.637	PER IMP= 7.00
S ROUTE FLOW COMING FROM 104EA.55 THRU 106EA **										
ROUTE MCUNGE	101EA.1	12	14	.05510	88.49	3.411	1.16085	1.633	2.509	CCODE = .2
ADD HYD	104EA.5	14&13	15	.08140	115.07	4.499	1.03634	1.600	2.209	

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*S* ROUTE FLOW COMING FROM 102EA THRU 106EA **
ROUTE MCUNGE          102EA.6    4   16        .08170        92.19        4.240        .97316    1.766    1.763 CCODE =      .2
ADD HYD               106EA.25 15&16  17        .16310       174.33        8.739       1.00469    1.700    1.670
*S SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
COMPUTE NM HYD          107EA    -    19        .02130        23.18         .856        .75365    1.567    1.701 PER IMP=   6.00
*S* ROUTE FLOW COMING FROM 106EA.25 THRU 107EA **
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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 = 3 NOTATION
ROUTE MCUNGE	107EA.6	17	2	.16310	173.29	8.740	1.00479	1.766	1.660	CCODE = .2
ADD HYD	107EA.6	2&19	3	.18440	189.31	9.596	.97578	1.700	1.604	
*S GOLF COURSE, PARKING LOT AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE										
COMPUTE NM HYD	108EA	-	7	.04700	43.68	2.177	.86868	1.633	1.452	PER IMP= 12.00
ADD HYD	107EA.8	3& 7	8	.23140	230.91	11.774	.95403	1.700	1.559	
S ROUTE COMBINED 107EA.8 THRU RESERVOIR (DUCK POND & EMPTY HOLE) **										
ROUTE RESERVOIR	107EA.8	8	9	.23140	145.75	7.807	.63257	1.933	.984	AC-FT= 5.341

```
*S
*S  OUTFLOW(CFS)  STORAGE(AF)   ELEV(FT)
*S      0.00          0.00        5241.0
*S      0.01          0.22        5242.0
*S      0.02          0.54        5243.0
*S      0.03          0.95        5244.0
*S     0.035          1.20        5244.5
*S      0.04          1.44        5245.0
*S     0.045          2.70        5245.5
*S      0.05          3.96        5246.0
*S     14.00          4.19        5246.1
*S     27.00          4.41        5246.2
*S     52.00          4.64        5246.3
*S     76.00          4.86        5246.4
*S    108.00          5.08        5246.5
*S    139.00          5.30        5246.6
*S    177.00          5.53        5246.7
*S    215.00          5.75        5246.8
*S    258.00          5.98        5246.9
*S    300.00          6.20        5247.0
*S    500.00          9.00        5250.0
*S   1000.00         12.00        5255.0
*S
*S GOLF COURSE, AND OTHER RECREATION
COMPUTE NM HYD          109EA    -    10        .00900        14.67         .502       1.04606    1.500    2.547 PER IMP=  23.00
*S* ROUTE FLOW COMING FROM RESERVOIR THRU 109EA **
ROUTE MCUNGE         109EA.78    9   11        .23140       145.35        7.812        .63303    1.933     .981 CCODE =      .2
ADD HYD              109EA.87 10&11  12        .24040       148.00        8.315        .64849    1.933     .962
*S PKG LOT, CLUBHOUSE, ENTR. RD, PROSHOP, BED & BRKFST
COMPUTE NM HYD          110EA    -    13        .00600        14.45         .594       1.85495    1.500    3.764 PER IMP=  70.00
ADD HYD              110EA.1 12&13  14        .24640       151.64        8.908        .67787    1.933     .962
ROUTE MCUNGE          103.22   14    3        .24640       149.72        8.851        .67353    2.166     .949 CCODE =      .1
*S RESIDENTIAL
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COMPUTE NM HYD        104.00   -     1        .06720      106.53       5.455      1.52211    1.600     2.477 PER IMP=  50.
ADD HYD               104.10  1& 3   2        .31360      173.11      14.306       .85537    2.166      .863
*S ROUTING 104.1 ON CADDIE RD
ROUTE MCUNGE          104.12   2     3        .31360      172.57      14.293       .85458    2.266      .860 CCODE =
COMPUTE NM HYD        105.00   -     1        .10270      203.07       8.343      1.52320    1.533     3.090 PER IMP=
*S**** HYD 105.1 IS AP #2     *****
ADD HYD               105.10  1& 3   2        .41630      250.61      22.636      1.01953    1.567      .941
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND
ROUTE MCUNGE          105.12   2     4        .41630      249.96      22.610      1.01836    1.667      .938 CCODE =       .1
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL
COMPUTE NM HYD        106.00   -     1        .09540      189.50       7.750      1.52323    1.533     3.104 PER IMP=  50.00
*S SUB-BASIN 106A IS SKY CREST ESTATES
COMPUTE NM HYD         106A1   -     7        .00846       18.13        .678      1.50231    1.500     3.349 PER IMP=  44.52
*S ROUTING RESERVOIR WITH 21" DIAM ORIFACE
*S EXISTING POND AT SW CORNER OF ARROWHEAD AVE AND CHANTILLY RD
ROUTE RESERVOIR    106A1.RES   7     9        .00846       14.30        .677      1.50088    1.567     2.642 AC-FT=       .126
*S
*S          OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                  0              5057
*S             4.675              0.062          5058
*S            16.379              0.140          5059
*S            22.510              0.235          5060
*S            27.298              0.349          5061  EXISTING TOP OF POND
*S
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE DOWN CHANTILLY ROAD TO CONGRESS
ROUTE MCUNGE           106A.1   9    10        .00846       14.30        .677      1.50053    1.600     2.642 CCODE =       .1
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL
COMPUTE NM HYD        107.00   -     2        .02910       59.13       2.256      1.45384    1.500     3.175 PER IMP=  45.80
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND
ROUTE MCUNGE          107.02   2     3        .02910       58.73       2.253      1.45137    1.600     3.154 CCODE =       .1
ADD HYD               107.10  4& 3   2        .44540      303.44      24.863      1.04665    1.633     1.064
ADD HYD               107.20  1& 2   3        .54080      440.42      32.613      1.13072    1.600     1.272
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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
ADD HYD	107.30	3&10	11	.54926	454.72	33.290	1.13642	1.600	1.294	
*S RESIDENTIAL										
COMPUTE NM HYD	108.00	-	1	.02400	49.43	1.899	1.48367	1.500	3.218	PER IMP= 47.60
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND										
*S THRU CACTUS HILLS										
ROUTE MCUNGE	108.02	1	2	.02400	49.36	1.898	1.48268	1.567	3.214	CCODE = .1
ADD HYD	108.10	2&11	4	.57326	502.39	35.188	1.15091	1.600	1.369	
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN										
COMPUTE NM HYD	109.00	-	1	.02070	39.89	1.514	1.37182	1.500	3.011	PER IMP= 42.50
*S**** HYD 109.1 IS AP #3	*****									
ADD HYD	109.10	1& 4	2	.59396	531.62	36.702	1.15861	1.600	1.399	
*S FUTURE DETENTION BASIN IN BASIN 109										
ROUTE RESERVOIR	109.RES	2	66	.59396	177.30	36.290	1.14560	2.066	.466	AC-FT= 13.505
*S										

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*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                 0               5069
*S             7               0.98              5070
*S            25               2.41              5071
*S            52               3.97              5072
*S            82               5.65              5073
*S           112               7.45              5074
*S           140               9.37              5075
*S           160              11.42              5076
*S           178              13.59              5077
*S           195              15.89              5078
*S
COMPUTE NM HYD        201.00    -     1        .02580      54.08      2.096      1.52345    1.500    3.275 PER IMP=  50.00
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND
ROUTE MCUNGE          201.02    1     2        .02580      54.04      2.095      1.52261    1.533    3.273 CCODE =      .2
COMPUTE NM HYD        202.00    -     1        .02880      59.18      2.271      1.47869    1.500    3.211 PER IMP=  47.30
*S**** HYD 202.1 IS AP #4      *****
ADD HYD               202.10   1& 2   4        .05460     111.38      4.366      1.49944    1.533    3.188
*S EXISTING DROP INLET IN BASIN 202
ROUTE RESERVOIR     202.RES1    4     2        .05460      90.73      4.366      1.49944    1.600    2.597 AC-FT=     .207
*S
*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                 0               5138.7
*S           20.12              0.0009             5139.7
*S           24.07              0.0019             5140.7
*S           41.69              0.0028             5141.7
*S           53.82              0.0037             5142.7
*S           63.69              0.0047             5143.7
*S           70.59              0.0054             5144.5
*S           74.58              0.0111             5145.0
*S           81.98              0.0603             5146.0
*S           83.46              0.1024             5146.2
*S           87.97              0.1700             5146.5
*S           94.77              0.2611             5147.0
*S
*S EXISTING DETENTION BASIN IN BASIN 401
*S ROUTING RESERVOIR WITH 21" ORIFACE
ROUTE RESERVOIR     202.RES2    2     4        .05460      78.86      4.367      1.49949    1.733    2.257 AC-FT=    1.107
*S
*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                 0               5114
*S           11.58              0.0026             5115
*S           16.38              0.0052             5116
*S           20.06              0.0078             5117
*S           23.16              0.0091             5118
*S           25.89              0.0521             5119
*S           28.37              0.1097             5120
*S           30.64              0.1829             5121
*S           32.75              0.2747             5122
*S           34.74              0.3856             5123
*S           36.62              0.5174             5124
*S           38.41              0.6717             5125
*S           40.11              0.8496             5126
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*S          41.76              1.03          5127      EXISTING TOP OF POND
*S           61                1.08          5127.25
*S           94                1.13          5127.5
*S          136                1.18          5127.75
*S          185                1.23          5128
*S
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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 = 5 NOTATION
DIVIDE HYD	202.03	4	8	.05163	41.76	4.129	1.49949	1.700	1.264	
	OLF.2	and	11	.00297	37.10	.238	1.49949	1.733	19.519	
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD										
ROUTE MCUNGE	202.02	8	6	.05163	41.76	4.127	1.49888	1.733	1.264	CCODE = .1
*S RESIDENTIAL										
*S										
*S UPDATE3.txt REVISION - FOR BASIN 301, change ID TO ID=33										
*S										
COMPUTE NM HYD	301.00	-	33	.01820	34.94	1.478	1.52307	1.533	3.000	PER IMP= 50.00
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304										
ROUTE MCUNGE	301.02	1	2	.02880	59.05	2.268	1.47685	1.633	3.204	CCODE = .1
*S METHODIST CHURCH PROPERTY										
COMPUTE NM HYD	302.00	-	1	.00430	11.56	.498	2.17219	1.500	4.202	PER IMP= 90.00
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304										
ROUTE MCUNGE	302.02	1	5	.00430	11.51	.497	2.16698	1.733	4.182	CCODE = .1
ADD HYD	302.10	2& 5	4	.03310	65.72	2.765	1.56650	1.633	3.103	
*S COMMERCIAL										
COMPUTE NM HYD	303.00	-	1	.06690	156.35	7.746	2.17094	1.533	3.652	PER IMP= 90.00
*S EXISTING DETENTION BASIN IN BASIN 303										
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE										
ROUTE RESERVOIR	303.RES	1	5	.06690	124.69	7.736	2.16812	1.667	2.912	AC-FT= 2.227

```
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S            0                0              5099
*S          11.58              0.15           5100
*S          16.37              0.30           5101
*S          20.06              0.45           5102
*S          23.16              0.60           5103
*S          25.89              0.75           5104
*S          26.00              0.91           5105
*S          27.00              1.07           5106
*S          28.00              1.23           5107
*S          29.00              1.39           5108
*S          30.00              1.55           5109
*S          31.00              1.71           5110
*S          32.00              1.87           5111
*S          33.00              2.03           5112
*S          34.00              2.11           5112.5 EXISTING TOP OF POND
*S          53.00              2.15           5112.75
*S          86.00              2.19           5113
*S          128.0              2.23           5113.25
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*S
DIVIDE HYD          303.03    5    8        .05430       34.00       6.279      2.16812    1.633     .978
                     OLF.3  and   12        .01260       90.69       1.456      2.16812    1.667   11.251
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE
ROUTE MCUNGE        303.02    8    2        .05430       34.00       6.273      2.16592    1.700     .978 CCODE =      .1
ROUTE MCUNGE        OLF.32   12   16        .01260       80.47       1.436      2.13837    1.800    9.983 CCODE =      .1
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL
COMPUTE NM HYD      304.00    -    1        .03490       93.74       4.043      2.17217    1.500    4.197 PER IMP=  90.00
ADD HYD             304.10  1& 4   7        .06800      123.16       6.809      1.87735    1.600    2.830
ADD HYD             304.20  7&16   5        .08060      153.94       8.245      1.91814    1.800    2.984
*S DIVIDE AT MH# S-702
DIVIDE HYD              CB1    5    4        .03103       20.00       3.175      1.91814    1.333    1.007
                    304.13  and    7        .04956      133.94       5.070      1.91814    1.800    4.222
ADD HYD              CB1.1  2& 4   5        .08534       54.00       9.448      2.07582    1.700     .989
ADD HYD              CB1.2  5& 6   2        .13697       95.76      13.575      1.85834    1.733    1.092
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL
COMPUTE NM HYD      305.00    -   17        .03910      102.46       4.529      2.17200    1.500    4.094 PER IMP=  90.00
*S DIVIDE HYD 305 BY 67 PERCENT THAT WILL REACH PROPOSED TRACT 2B AMAFCA POND
DIVIDE HYD          305.69   17   17        .02620       68.64       3.035      2.17200    1.500    4.094
                    305.68  and   57        .01290       33.81       1.495      2.17200    1.500    4.094
*S
*S 305.69 IS THE REVISED AREA OF BASIN 305 (67%) THAT WILL REACH
*S         TRACT 2-B PROPOSED AMAFCA POND
*S
*S 305.68 IS THE REVISED AREA OF BASIN 305 (33%) THAT WILL FLOW TO THE
*S        EXISTING NMSH&TD POND AT THE SW CORNER OF PDN AND COORS
*S
*S note - HAVE NOT MODIFED THIS MODEL TO ACTUALLY ADD 305.68 TO THE
*S        NMSH&TD POND
*S CACTUS RIDGE

                                 FROM  TO                    PEAK        RUNOFF                 TIME TO    CFS       PAGE =   6
                    HYDROGRAPH    ID   ID         AREA     DISCHARGE    VOLUME      RUNOFF      PEAK      PER
COMMAND        IDENTIFICATION     NO.  NO.      (SQ MI)     (CFS)      (AC-FT)    (INCHES)    (HOURS)    ACRE      NOTATION


COMPUTE NM HYD      401.00    -    1        .02360       50.44       1.974      1.56819    1.500    3.340 PER IMP=  52.70
ADD HYD             401.10  1&11   3        .02657       57.48       2.211      1.56051    1.733    3.380
*S DIVIDE HYD 401.1 BY MAXIMUM INFLOW OF CATCH BASINS, WEST OF
*S SUB-BASIN 401,ALONG PARADISE ROAD (7 CB AT 10 CFS EACH)
DIVIDE HYD              CB2    3    4        .02657       57.48       2.211      1.56051    1.733    3.380
                    401.13  and    5        .00000         .00        .000       .00000    -.033     .000
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS
COMPUTE NM HYD      402.00    -    1        .00880       18.66        .692      1.47507    1.500    3.314 PER IMP=  42.70
ADD HYD             402.10  5& 1   6        .00880       18.66        .692      1.47507    1.500    3.314
*S
*S  UPDATE3.txt  proposed drainage management change
*s
*S            commented out HYD 402.2 in update3.txt to remove all flow
*S            from basins 302, 303 and 304 from reaching the detention
*S            pond in Basin 504 that outfalls to the proposed Tract 2-B Pond
*S
*S
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*S UPDATE3.TXT REVISION -  ADD BASIN 301 TO APPROPRIATE FRACTION
*S                         OF BASIN 401 AND ALL OF BASIN 402
*S
ADD HYD              402.66  6&33  18        .02700        53.01       2.171      1.50742    1.533    3.068
*S
*S ROUTING 402.2 TO DETENTION POND IN 503
ROUTE MCUNGE         402.23   18   20        .02700        52.85       2.169      1.50613    1.633    3.059 CCODE =      .1
ADD HYD              305.10 17&20  19        .05320       104.37       5.203      1.83404    1.567    3.066
*S**** PIPE HYD CB2.1 IS AP #6     *****
ADD HYD               CB2.1  2& 4   6        .16354       153.24      15.786      1.80995    1.733    1.464
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS
COMPUTE NM HYD       403.00   -     1        .01440        32.61       1.266      1.64809    1.500    3.538 PER IMP=  54.20
*S DIVIDE HYD 403 BY MAXIMUM INFLOW OF POND INLET IN WEST PARK APARTMENTS
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND
DIVIDE HYD              CB3    1    2        .00551         3.00        .484      1.64809    1.300     .851
                     403.13  and   99        .00889        29.61        .782      1.64809    1.500    5.201
ADD HYD               CB3.1  6& 2   5        .16904       156.24      16.270      1.80468    1.733    1.444
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732
*S Q(CAP) = 144 CFS, AT SLOPE=0.005
ROUTE MCUNGE         CB3.13    5    2        .16904       139.83      16.195      1.79632    1.766    1.292 CCODE =      .2
*S LESLIE HOMES
COMPUTE NM HYD       404.00   -     1        .01610        33.73       1.307      1.52179    1.500    3.273 PER IMP=  49.90
ADD HYD               CB4.1  1& 2   5        .18514       156.27      17.502      1.77245    1.567    1.319
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
ROUTE MCUNGE         CB4.13    5    2        .18514       153.87      17.470      1.76926    1.600    1.299 CCODE =      .2
*S SUB-BASIN 405 IS PART OF CACTUS HILLS
COMPUTE NM HYD       405.00   -     1        .02700        50.96       1.887      1.31061    1.500    2.949 PER IMP=  38.00
*S  DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *
DIVIDE HYD              CB5    1    6        .02581        40.00       1.804      1.31061    1.467    2.422
                     405.03  and   7        .00119        10.96        .083      1.31061    1.500   14.335
*S ROUTING 405.03 TO CONGRESS AVE
ROUTE MCUNGE         405.02    7   15        .00119        10.31        .086      1.34366    1.600   13.489 CCODE =      .2
*S SUB-BASIN 405 HAS TRANSVERSE DRAIN WITH 36" PIPE TO 60" SD
ADD HYD               CB5.1  6& 2   5        .21095       191.44      19.274      1.71315    1.600    1.418
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
ROUTE MCUNGE         CB5.13    5    2        .21095       191.16      19.261      1.71200    1.600    1.416 CCODE =      .2
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND
*S Q(CAP) = 233 CFS, AT SLOPE=0.008
ROUTE MCUNGE         CB5.23    2   25        .21095       189.59      19.251      1.71110    1.600    1.404 CCODE =      .2
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL
COMPUTE NM HYD       406.00   -     1        .01070        22.44        .869      1.52345    1.500    3.276 PER IMP=  50.00
ADD HYD              406.10 15& 1   6        .01189        28.59        .955      1.50535    1.567    3.756
*S ROUTING 406.1 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD
ROUTE MCUNGE         406.12    6    3        .01189        27.80        .954      1.50443    1.633    3.652 CCODE =      .2
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL
COMPUTE NM HYD       407.00   -     1        .02240        60.17       2.595      2.17217    1.500    4.197 PER IMP=  90.00
*S CUBBY HOLE DETENTION BASIN
*S ROUTING RESERVOIR WITH 12" ORIFACE
ROUTE RESERVOIR     407.RES    1    5        .02240        67.98       2.592      2.16995    1.500    4.742 AC-FT=      .176
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
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```
*S            0              0          5063
*S         3.78         0.0387          5064
*S         5.35         0.0597          5065
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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


```
*S         6.55         0.0808          5066
*S         7.56         0.1019          5067
*S         8.46         0.1230          5068
*S         9.26         0.1440          5069
*S        10.00         0.1651          5070
*S           29          0.170        5070.25
*S           62          0.175         5070.5
*S          104          0.180        5070.75
*S          153          0.185          5071
*S
DIVIDE HYD          407.03    5   89      .01270      10.00     1.470     2.16995   1.433   1.230
                     OLF.4  and   13      .00970      57.98     1.123     2.16995   1.500   9.339
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962
*S Q(CAP) = 260 CFS, AT SLOPE=0.01
ROUTE MCUNGE        CB5.33   25   85      .21095     189.56    19.234     1.70957   1.633   1.404 CCODE =      .1
ADD HYD             407.10 3&13   17      .02159      76.03     2.077     1.80338   1.500   5.501
*S SUB-BASIN 408 IS STATE FARM INSURANCE
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD
COMPUTE NM HYD      408.00    -   14      .00660      17.74      .765     2.17218   1.500   4.200 PER IMP=  90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 408
*S ROUTING RESERVOIR WITH 12" WEIR
ROUTE RESERVOIR     408.RES   14   18      .00660       3.71      .747     2.12308   2.066    .878 AC-FT=     .441
*S
*S     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0              0          5050.8
*S         1.08         0.2198          5052.3    EXISTING TOP OF POND
*S         1.66         0.2931          5052.8
*S         2.31         0.3663          5053.3
*S         3.02         0.4396          5053.8
*S           22         0.4763          5054.05
*S
*S
*S  UPDATE3.TXT  -  COMMMENT OUT HYD 408.10 TO REMOVE ANY FRACTIONS
*S                  OF BASINS 406 AND 407 FROM REACHING THE INTERSECTION
*S                  OF IRVING AND COORS BLVD.
*S
*S
*S  UPDATE3.TXT REVISION - ADD BASIN 408 WITH THE EXCESS FLOW FROM
*S               BASIN 405 THAT IS NOT COLLECTED BY THE EAGLE RANCH
*S               BLVD. STORM DRAIN THIS FLOW WILL DRAIN EAST ON IRVING
*S
ADD HYD             408.66 14&15   14      .00779      24.08      .850     2.04515   1.567   4.828
*S
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D
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COMPUTE NM HYD        409.00   -     1        .00980      26.33      1.135      2.17218    1.500     4.199 PER IMP=  90.00
*S DIVIDE HYD 409 BY 36" STUB OUT PIPE CAPACITY *
DIVIDE HYD              CB6    1    28        .00977      25.00      1.131      2.17218    1.500     4.000
                      409.03  and   15        .00003       1.33       .004      2.17220    1.500    61.149
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B
COMPUTE NM HYD        411.00   -     1        .00920      24.72      1.066      2.17218    1.500     4.199 PER IMP=  90.00
*S DIVIDE HYD 411 BY INLET CAPACITY *
DIVIDE HYD              CB7    1     2        .00732      10.00       .848      2.17218    1.367     2.135
                      411.03  and    7        .00188      14.72       .218      2.17218    1.500    12.221
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A
COMPUTE NM HYD        410.00   -     1        .00470      12.64       .544      2.17219    1.500     4.201 PER IMP=  90.00
*S DIVIDE HYD 410 BY INLET CAPACITY *
DIVIDE HYD              CB8    1     9        .00454      10.00       .526      2.17219    1.467     3.440
                      410.03  and   16        .00016       2.64       .018      2.17219    1.500    26.014
ADD HYD               411.10  7&16   3        .00204      17.36       .236      2.17218    1.500    13.292
*S ASSUME OLF HYD 411.2 PONDS
ADD HYD               411.20  3&15  16        .00207      18.69       .240      2.17218    1.500    14.078
ADD HYD                CB7.1  2&85  21        .21826     199.56     20.081      1.72508    1.633     1.429
ADD HYD                CB8.1 21& 9   2        .22281     206.95     20.607      1.73420    1.633     1.451
*S ROUTE CB8.1 IN 60" PIPE TO SUB-BASIN 411 ( JUST BEFORE
*S CALABACILLAS ARROYO OUTFALL)
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
ROUTE MCUNGE          CB8.12   2     9        .22281     205.64     20.582      1.73207    1.667     1.442 CCODE =    .2
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3
COMPUTE NM HYD        412.00   -     1        .01330      34.03      1.541      2.17185    1.500     3.998 PER IMP=  90.00
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO
*S****  HYD CB9.1 IS AP #9     *****
```

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 = 8 NOTATION
ADD HYD	CB9.1	1& 9	98	.23611	225.50	22.123	1.75685	1.633	1.492	
ADD HYD	OUT.1	98&99	99	.24500	242.23	22.905	1.75290	1.633	1.545	
*S SAD 224-PROJECT INCLUDES ENLARGING POND ON CONGRESS AVE										
*S INSTALLATION OF 66" OUTLET PIPE FROM POND-FLOWS ROUTED TO										
*S CALABACILLAS ARROYO										
*S Q(CAP) =233 CFS, AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.23	66	2	.59396	177.28	36.276	1.14516	2.100	.466	CCODE = 1.0
ADD HYD	CB6.33	2&89	86	.60666	187.28	37.746	1.16662	2.100	.482	
*S** ROUTE PROPOSED PIPE UNTIL IT REACHES EAGLE RANCH ROAD AGAIN ***										
*S Q(CAP) =233 CFS AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.33	86	8	.60666	187.28	37.746	1.16662	2.100	.482	CCODE = .0
ADD HYD	CB6.43	28& 8	9	.61643	192.52	38.877	1.18255	2.066	.488	
S SUB-BASIN 413 IS WEST OF EAGLE RANCH COMMERCIAL										
COMPUTE NM HYD	413.00	-	3	.01560	41.95	1.807	2.17218	1.500	4.202	PER IMP= 90.00
S SUB-BASIN 414 IS WEST OF EAGLE RANCH COMMMERCIAL										
COMPUTE NM HYD	414.00	-	10	.00297	8.00	.344	2.17220	1.500	4.209	PER IMP= 90.00
ADD HYD	CB6.53	3&10	5	.01857	49.96	2.151	2.17219	1.500	4.203	
ADD HYD	CB6.63	5& 9	11	.63500	203.81	41.029	1.21149	2.000	.502	
*S SUB-BASIN 415 IS WEST OF EAGLE RANCH - COMMERCIAL *										
COMPUTE NM HYD	415.00	-	1	.01190	32.01	1.379	2.17218	1.500	4.203	PER IMP= 90.00

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ADD HYD              OUT.2  1&11  98      .64690      211.53     42.407     1.22916   1.966    .511
ADD HYD              OUT.3 98&99  99      .89190      421.23     65.312     1.37303   1.700    .738
*S EAGLE RANCH ROAD
*S 86 FT ROW
COMPUTE NM HYD       501.00   -    1      .01000       17.39      1.156     2.16736   1.700   2.718 PER IMP=  90.00
*S
*S UPDATE3.TXT REVISION - HYD. 501.1 IS THE FLOW ON IRVING BLVD. THAT WILL
*S                        REACH THE WEST SIDE OF INTERSECTION OF COORS BLVD.
*S                        (DOES NOT YET INCLUDE BASINS 505 AND 505A
*S
ADD HYD              501.10 14& 1   3      .01779       37.83      2.006     2.11383   1.600   3.322
*S ROUTE OLF 501.1 THRU 505 IN IRVING BLVD **
ROUTE MCUNGE         501.12   3     7      .01779       37.36      2.004     2.11134   1.667   3.280 CCODE =      .1
*S COMMERCIAL
COMPUTE NM HYD       502.00   -     1      .04350      116.84      5.039     2.17217   1.500   4.197 PER IMP=  90.00
*S DIVIDE HYD 305.1 IN PARADISE BLVD BY ASSUMED 18" CAPACITY *
DIVIDE HYD           402.24   19    2      .02778       20.00      2.717     1.83404   1.367   1.125
                     402.25  and    3      .02542       84.37      2.486     1.83404   1.567   5.187
ADD HYD              502.10  2& 1   5      .07128      136.84      7.757     2.04039   1.500   3.000
*S EXISTING DETENTION BASIN IN SUB-BASIN 502
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE
ROUTE RESERVOIR      502.RES   5     8      .07128       76.78      7.701     2.02568   1.667   1.683 AC-FT=    2.307
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S            0                0              5030
*S          38.9526          2.1993           5038
*S          58               2.268            5038.25
*S          91               2.337            5038.5
*S
*S COMMERCIAL
COMPUTE NM HYD       503.00   -     1      .02350       48.51      2.719     2.16951   1.600   3.225 PER IMP=  90.00
ADD HYD              503.10  1& 3   2      .04892      131.39      5.205     1.99520   1.567   4.197
*S
*S NOTE - THE FOLLOWING IS A CHANGE FROM UPDATE1.TXT
*S
*S 502.RES ACTUALLY DISCHARGES INTO 503.RES, SO NEED TO ADD IT HERE
*S
ADD HYD              503.19  2& 8   2      .12020      186.60     12.906     2.01328   1.667   2.426
*S
*S EXISTING DETENTION BASIN IN SUB-BASIN 503
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE
ROUTE RESERVOIR      503.RES   2     5      .12020      113.04     12.116     1.89008   1.833   1.469 AC-FT=    4.612
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S            0                0              5000
*S          10.1924          4.2712           5010
*S          29               4.378            5010.25
*S          62               4.485            5010.5
*S          104              4.592            5010.75
*S          153              4.698            5011
*S          209              4.805            5011.25
*S
*S  DON'T NEED FOLLOWING ADD DUE TO PREVIOUS ADD OF 503.19
```

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

```
*S
*S*** ADD HYD 502.RES TO HYD 503.RES  ***
*S
*SADD HYD              ID=10    HYD NO=503.1  ID I=5  ID II=8
*SPRINT HYD            ID=10    CODE=1
*S
*S COMMERCIAL
COMPUTE NM HYD       504.00   -     1        .04260       93.68       4.931      2.17023    1.567    3.436 PER IMP=  90.00
*S EXISTING DETENTION BASIN IN SUB-BASIN 504
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE
ROUTE RESERVOIR     504.RES    1    3        .04260       48.12       4.916      2.16363    1.800    1.765 AC-FT=    1.450
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S            0                0               5001
*S         38.9526          1.1742             5007
*S
*S  DON'T USE FOLLOWING ADD, CHANGE IT TO CORRECT ID NO'S (IMMEDIATELY BELOW)
*S** ADD HYD 503.1 TO HYD 504.RES  ***
*S
*SADD HYD              ID=11      HYD NO=504.1  ID I=3   ID II=10
*SPRINT HYD            ID=11     CODE=1
*S
*S THIS IS REVISED ADD, CORRECTED ID NO'S
ADD HYD                504.10  3& 5  11        .16280      161.03      17.032      1.96166    1.833    1.546
*S
*S    $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $
*S
*S HYD. 504.10 IS THE TOTAL HYDROGRAPH ON THE WEST SIDE OF COORS
*S THAT REACHES THE EXISTING 36" CMP THAT PASSES UNDER COORS TO THE
*S TRACT 2-B POND – PROPOSED AMAFCA POND
*S
*S    $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $
*S
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL
COMPUTE NM HYD       505.00   -     1        .04970      107.89       5.752      2.17012    1.567    3.392 PER IMP=  90.00
*S
*S UPDATE3.TXT REVISION – HYD 505.10 IS THE FLOW AT THE WEST SIDE OF THE
*S                        COORS BLVD. AND IRVING BLVD. THAT INCLUDES
*S                        THE FLOW FROM IRVING BLVD.  HOWEVER, THIS DOES NOT
*S                        YET INCLUDE BASIN 505A
*S
ADD HYD                505.10  1& 7   2        .06749      132.96       7.756      2.15462    1.600    3.078
*S
*S UPDATE3.TXT REVISION – SAVE 505.1 IN AN ALTERNATE ID NO.
*S              TO LATER ADD TO 505A TO FIND TOTAL Q
*S              AT THE INTERSECTION OF IRIVING AND COORS BLVD.
*S              AT AP 505A.9
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*S
ADD HYD              505.10  1& 7  45        .06749       132.96       7.756      2.15462    1.600     3.078
*S
*S
*S COORS BOULEVARD ROW OF WAY      BASIN 505A
COMPUTE NM HYD         505A   -     1        .00560        15.06        .649      2.17219    1.500     4.201 PER IMP=  90.00
*S
*S  NOTE - ACTUALLY 1 / 2 OF BASIN 505A WILL FLOW TO THE WEST SIDE OF
*S         COORS AT IRVING AND THE OTHER HALF TO THE EAST SIDE OF COORS
*S         AND IRVING BLVD.
*S
*S UPDATE3.TXT REVISION - ADD 505.1 IN AN ALTERNATE ID NO.
*S              TO 505A TO FIND TOTAL Q
*S              AT THE INTERSECTION OF IRIVING AND COORS BLVD.
*S              AT AP 505A.9 (includes Irving Q, basins 505 and 505a)
*S
ADD HYD              505A.9  1&45  46        .07309       143.35       8.405      2.15597    1.600     3.064
*S
*S ROUTE 505A IN FUTURE STORM DRAIN THROUGH 506A
*S ASSUME PIPE SIZE OF 48" AND SLOPE=0.008 FT/FT
ROUTE MCUNGE         505A.1    1   31        .00560        14.58        .647      2.16519    1.600     4.068 CCODE =     1.0
*S ROUTE OLF HYD 505.1 THRU 506 ON COORS BLVD **
ROUTE MCUNGE         505.12    2    9        .06749       131.21       7.729      2.14712    1.766     3.038 CCODE =      .1
ADD HYD              505.20 11& 9   2        .23029       288.04      24.761      2.01602    1.833     1.954
*S ASSUME A FUTURE PIPE SIZE AND SLOPE; 96" AND 0.009 FT/FT
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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	PAGE = 10
ROUTE MCUNGE	505.22	2	3	.23029	284.66	24.743	2.01452	1.866	1.931	CCODE =	.1
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW											
COMPUTE NM HYD	506.00	-	1	.05590	80.04	3.683	1.23538	1.600	2.237	PER IMP=	30.00
*S COORS BOULEVARD ROW											
COMPUTE NM HYD	506A	-	29	.00800	18.31	.926	2.17069	1.567	3.576	PER IMP=	90.00
ADD HYD	506.10	1& 3	2	.28619	319.54	28.426	1.86233	1.866	1.745		
ADD HYD	506.12	2&31	27	.29179	325.14	29.072	1.86815	1.866	1.741		
ADD HYD	506.20	27&29	2	.29979	332.58	29.999	1.87622	1.866	1.733		

INFLOW

```
*S
*S
*S PROPOSED TRACT 2-B DETENTION BASIN WITHIN AMAFCA R-O-W
*S ROUTING RESERVOIR WITH 1- 36" DIAM ORIFICE (THERE ARE NOW 2 PIPES)
*S MAXIMUM:  HIGH ELEV = 5003 , LOW ELEV = 4993.73 , OUTFLOW = 38 CFS
*S AREA ORIFICE IS 2.75 SF
*S
*S The following "STORAGE & ELEVATION" DATA ARE FROM THE CONCEPTUAL DESIGN
*S AS PREPARED BY SMITH ENGINEERING JUNE 2003 AND SHOWN ON FIGURE 4 OF
*S THE REPORT BY SMITH ENGINEERING REGARDING THE TRACT 2-B POND PREPARED
*S IN JUNE 2003.  THE OUTFLOW DATA ARE FROM THE ORIGINAL DMP MODEL AND WERE
*S APPARENTLY BASED ON ONLY 1-36-INCH CMP.
*S
ROUTE RESERVOIR      506.RES   2   10        .29979        27.59       29.085      1.81906    3.200      .144 AC-FT=   16.868
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→ USED IN THIS RESERVOIR ROUTING

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*S
*S HYD 506.RES IS THE RESULT OF THE TRACT 2-B CONCEPTUAL RESERVOIR ROUTING
*S STORAGE – ELEV. DATA AS PREPARED FOR THE JUNE 2003 POND CONCEPTUAL DESIGN
*S
*S THE FOLLOWING DATA ARE FROM THE ORIGINAL UPDATE1.DAT MODEL
*S THE ELEVATION – STORAGE DATA IS VERY  CLOSE TO THAT OF THE CONCEPTUAL
*S DESIGN DATA OF JUNE 2003
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                0              4993
*S            13.2             1.1324          4994
*S            18.7             4.4968          4995
*S            22.9             9.3777          4996
*S            26.5            14.3639          4997
*S            29.6            19.4554          4998
*S            32.4            24.6522          4999
*S            35.0            29.9543          5000
*S            37.5            35.3617          5001
*S            39.7            40.8744          5002
*S            41.9            46.4318          5003
*S            43.9            52.1551          5004
ADD HYD              900.00 83&10  20       .35294       80.44      96.243     5.11290   2.033    .356
ROUTE MCUNGE         901.00   20   7        .35294       80.38      96.223     5.11183   2.100    .356 CCODE =     .2
*S THE ALBUQUERQUE WEST COMMERCIAL DEVELOPMENT AREA
*S INCLUDES SECTIONS OF PASEO DEL NORTE AND STATE HIGHWAY DEPT. ROW
*S BASIN 11.1W
COMPUTE NM HYD       147.00   -    1        .04607      114.38       4.869     1.98167   1.500    3.879 PER IMP=  80.00
*S ROUTE RESERVOIR THROUGH NMSH&TD POND AT SW CORNER OF PDN AND COORS
*S ROUTE RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.
ROUTE RESERVOIR    147.RES    1    2        .04607       42.57       4.847     1.97259   1.766    1.444 AC-FT=    1.821
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                0              4996
*S            28              1.30             4998
*S            66              2.66             5000
*S DIVIDE HYD 147.RES BY MAXIMUM PIPE OUTFLOW *
DIVIDE HYD         147.RES1    2   18        .04607       42.57       4.847     1.97259   1.766    1.444
                     OLF.5  and   30        .00000         .00        .000      .00000    -.033     .000
*S ROUTE THE FLOW FROM THE POND THROUGH CULVERT PIPES UNDER COORS **
ROUTE MCUNGE         903.00   18    8        .04607       42.19       4.834     1.96754   1.833    1.431 CCODE =    1.0
ADD HYD              904.00  8& 7   9        .39901      119.66     101.057     4.74879   1.933     .469
*S SECTION OF BASIN 11.1W THAT DRAINS TO CULVERT UNDER COORS
COMPUTE NM HYD        147A    -    18        .00528        4.48        .126      .44920    1.533    1.328 PER IMP=   .00
*S ROUTE 11.1A THROUGH A 24" CMP PIPE UNDER COORS TO CANAL CBC **
ROUTE MCUNGE         147A.1   18   12        .00528        4.40        .126      .44640    1.567    1.303 CCODE =    1.0
*S** ADD THE FLOW FROM 11.1A TO CANAL **
ADD HYD              147.12  9&12   9        .40429      120.37     101.183     4.69265   1.933     .465
*S BASE FLOW CORRECTION
MODIFY TIME          147.12    9    9        .40429      120.37     101.183     4.69265   1.933     .465 SHIFT=     .000
*S ROUTE FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **
```

SEE TABLE 1 IN REPORT FOR COMPARISON

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	PEAK AREA (SQ MI)	RUNOFF DISCHARGE (CFS)	VOLUME (AC-FT)	TIME TO RUNOFF (INCHES)	CFS PEAK (HOURS)	PER ACRE	NOTATION
ROUTE MCUNGE	18.00	9	3	.40429	120.27	101.167	4.69194	1.966	.465	CCODE = .2
*S BASE FLOW CORRECTION										
MODIFY TIME	18.00	3	3	.40429	120.27	101.167	4.69194	1.966	.465	SHIFT= .000
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW										
*S CORRECTED TO 38 CFS MIN.										
*S INCLUDES SECTION OF COORS AND PASEO DEL NORTE										
COMPUTE NM HYD	11.2E-325	-	7	.02769	74.38	3.208	2.17217	1.500	4.197	PER IMP= 90.00
ADD HYD	326.00	3& 7	5	.43198	142.60	104.375	4.53042	1.800	.516	
*S EAGLE RIDGE APARTMENT COMPLEX/UPPER HALF THAT DRAINS DIRECTLY										
*S TO THE CORRALES MAIN CANAL VIA FUTURE STORM DRAIN										
COMPUTE NM HYD	12.1W	-	3	.04399	96.66	3.852	1.64198	1.500	3.433	PER IMP= 58.00
*S ROUTE FLOW FROM 12.1W THROUGH FUTURE DETENTION POND **										
ROUTE RESERVOIR	12.1W.RES	3	9	.04399	11.95	3.801	1.62000	2.133	.425	AC-FT= 2.392
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	0								
*S 4	0.59	1.0								
*S 9	1.29	2.0								
*S 12	2.41	2.5								
*S ROUTE FLOW IN CANAL TO AREA 12.1AW DISCHARGE POINT. **										
ROUTE MCUNGE	19.00	5	10	.43198	129.62	104.162	4.52117	1.900	.469	CCODE = .2
*S BASE FLOW CORRECTION										
MODIFY TIME	19.00	10	10	.43198	129.62	104.162	4.52117	1.900	.469	SHIFT= .000
ADD HYD	12.1W.1	10& 9	11	.47597	141.20	107.963	4.25304	1.900	.464	
*S EAGLE RIDGE APARTMENT COMPLEX/LOWER HALF THAT										
*S DRAINS TO THE SWALE ALONG COORS BOULEVARD										
COMPUTE NM HYD	12.2W	-	1	.00691	15.20	.605	1.64199	1.500	3.436	PER IMP= 58.00
*S DIVIDE HYD NO BY ALLOWABLE DISCHARGE SWALE ALONG COORS **										
*S HYD NO 603.01 IS THE Q THAT REACHES THE SWALE										
DIVIDE HYD	12.2W.1	1	5	.00691	15.20	.605	1.64199	1.500	3.436	
	OLF.7	and	31	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE THE FLOW LEAVING THE LOWER HALF OF THE EAGLE RIDGE APARTMENT										
*S SITE THROUGH A NATURAL SWALE THAT FLOWS SOUTH ALONG THE WEST										
*S SIDE OF COORS BOULEVARD.										
ROUTE MCUNGE	12.2W.2	5	8	.00691	14.91	.604	1.63947	1.533	3.372	CCODE = .2
*S ROUTE FLOW DOWN CANAL TO AREA 12.3 DISCHARGE POINT. **										
ROUTE MCUNGE	22.00	11	9	.47597	126.43	107.676	4.24174	2.033	.415	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	22.00	9	9	.47597	126.43	107.676	4.24174	2.033	.415	SHIFT= .000
ADD HYD	12.1W.3	8& 9	12	.48288	129.99	108.280	4.20450	1.966	.421	
COMPUTE NM HYD	12.3E	-	1	.02616	62.41	2.684	1.92349	1.500	3.728	PER IMP= 75.00
*S FLOW FROM 12.3E ENTERS FUTURE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE										
ROUTE RESERVOIR	12.3E.RES	1	15	.02616	10.14	2.649	1.89869	2.100	.606	AC-FT= 1.558
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	100								
*S 3	0.39	101								
*S 6	0.77	102								
*S 7	1.16	103								

```
*S     10                1.54          104
ADD HYD               330.00 15&12   2        .50904       139.94      110.929      4.08600    2.000      .430
*S ROUTE FLOW IN CANAL FROM 8.1W TO 12.3E TO AREA 13 DISCHARGE POINT.**
ROUTE MCUNGE           23.00    2    5        .50904       130.88      110.724      4.07844    2.033      .402 CCODE =      .2
MODIFY TIME            23.00    5    5        .50904       130.88      110.724      4.07844    2.033      .402 SHIFT=       .000
*S FUTURE COMMERCIAL AREA
COMPUTE NM HYD         13.1W    -    10       .01020        20.67       .833        1.53060    1.500     3.167 PER IMP=   55.00
*S FLOW FROM 13.1W ENTERS FUTURE DETENTION BASIN
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE
ROUTE RESERVOIR    13.1W.RES   10   11       .01020        8.06        .830        1.52544    1.733     1.234 AC-FT=      .303
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S       0                0            100
*S     2.6              0.1            101
*S     6.0              0.2            102
*S     8.0              0.3            103
*S BOSQUE DEL PUEBLO COMMERCIAL AREA
COMPUTE NM HYD     13.2E-332    -     1        .01480       34.12       1.424       1.80359    1.500     3.602 PER IMP=   70.00
ADD HYD.              333.00  1&11   12       .02500       38.97       2.253       1.69010    1.500     2.436
ADD HYD               334.00  5&12   2        .53404      149.64      112.978      3.96664    1.533      .438
*S SUB-BASIN 14.1W
*S ALBAN HILLS
COMPUTE NM HYD     14.1W-335    -     3        .05117       66.95       2.233       .81824     1.500     2.044 PER IMP=   15.00
ROUTE MCUNGE           25.00    3    5        .05117       66.55       2.227       .81589     1.567     2.032 CCODE =      .1
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **
```

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 MCUNGE	26.00	2	10	.53404	136.58	112.766	3.95921	2.033	.400	CCODE =	.2
MODIFY TIME	26.00	10	10	.53404	136.58	112.766	3.95921	2.033	.400	SHIFT=	.000
ADD HYD	338.00	5&10	2	.58521	198.56	114.993	3.68436	1.567	.530		
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **											
ROUTE MCUNGE	27.00	2	7	.58521	173.87	114.727	3.67584	1.567	.464	CCODE =	.2
MODIFY TIME	27.00	7	7	.58521	173.87	114.727	3.67584	1.567	.464	SHIFT=	.000
*S AREA 8.1W TO 14.2E ROUTED DOWN CANAL TO AREA 15 DISCH. POINT WITH											
*S BASE FLOW CORRECTED.											
COMPUTE NM HYD	15.1W	-	3	.02560	30.05	.936	.68537	1.533	1.834	PER IMP=	8.00
ROUTE MCUNGE	28.00	3	10	.02560	29.23	.930	.68080	1.633	1.784	CCODE =	.1
*S SUB-BASIN 15.2W											
*S ALBAN HILLS											
COMPUTE NM HYD	15.2W-340	-	3	.06380	74.90	2.332	.68537	1.533	1.834	PER IMP=	8.00
ROUTE MCUNGE	29.00	3	5	.06380	74.46	2.327	.68384	1.567	1.824	CCODE =	.1
ADD HYD	186.00	10& 5	3	.08940	101.72	3.256	.68297	1.600	1.778		
*S SUB-BASIN 15.3E											
*S FUTURE COMMERCIAL DEVELOPMENT											
COMPUTE NM HYD	15.3E	-	10	.01230	30.23	1.262	1.92365	1.500	3.840	PER IMP=	75.00
*S FLOW FROM 15.3E ENTERS FUTURE DETENTION BASIN											
*S ROUTING RESERVOIR WITH 15" DIAMETER ORIFACE											
ADD HYD	342.00	3&10	5	.10170	123.45	4.518	.83302	1.567	1.897		
ADD HYD	343.00	5& 7	10	.68691	297.32	119.245	3.25495	1.567	.676		
*S SUB-BASIN 16.1W											
*S ALBAN HILLS											

```
COMPUTE NM HYD        16.1W   -     3        .03330        39.08        1.217        .68537    1.533    1.834 PER IMP=    8.00
*S BOSQUE MEADOWS SUBDIVISION
COMPUTE NM HYD      16.3NRTH  -     1        .01565        31.37        1.186       1.42116    1.500    3.132 PER IMP=   44.00
ADD HYD              16.3N.1  1& 3  30        .04895        70.22        2.403        .92061    1.500    2.242
*S ROUTE 16.1W AND 16.3NRTH THROUGH FUTURE DETENTION POND
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0                0            100
*S      5              0.60           101
*S     13              1.10           102
*S     25              1.59           103
*S ROUTE AREA 8.1W TO 15.3W DOWN CANAL TO BUSHEL ROAD DISCHARGE POINT. **
ROUTE MCUNGE          27.10   10   32        .68691       254.35      118.740       3.24116    1.567     .579 CCODE =     .2
MODIFY TIME           27.10   32   32        .68691       254.35      118.740       3.24116    1.567     .579 SHIFT=     .000
ADD HYD              16.3N.1 32&30  33        .73586       317.19      121.143       3.08679    1.567     .674
*S SUB-BASIN 16.2W
*S ALBAN HILLS
COMPUTE NM HYD        16.2W   -     3        .06650        78.14        2.431        .68537    1.533    1.836 PER IMP=    8.00
*S FUTURE RESIDENTIAL DEVELOPMENT
COMPUTE NM HYD        16.3E   -     5        .01120        26.18        1.037       1.73544    1.500    3.652 PER IMP=   60.00
*S FUTURE DETENTION POND AT BASIN 16.3E
*S ROUTING RESERVOIR WITH 18" DIAMETER ORIFACE
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0                0            100
*S      3              0.35           101
*S      8              0.82           102
*S BOSQUE MEADOWS SUBDIVISION
COMPUTE NM HYD      16.3STH   -     1        .03122        72.24        2.865       1.72082    1.500    3.616 PER IMP=   59.80
ADD HYD            16.3STH.1  1& 3  34        .09772       149.92        5.296       1.01619    1.500    2.397
*S ROUTE 16.2 AND 16.3STH THROUGH FUTURE DETENTION POND @ BOSQUE MEADOWS
ROUTE RESERVOIR  16.3STH.RES   34   35        .09772        35.48        5.308       1.01849    1.866     .567 AC-FT=     2.380
*S OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S      0.00          0.00000         4988.58
*S     18.53          0.01074         4991.08
*S     20.96          0.01407         4991.50
*S     23.53          0.32155         4992.00
*S     25.85          0.62903         4992.50
*S     27.97          0.93650         4993.00
*S     29.95          1.24398         4993.50
*S     31.80          1.55145         4994.00
*S     33.55          1.85893         4994.50
*S     35.22          2.16641         4995.00
*S     35.60          2.47388         4995.50
ADD HYD            16.3STH.2 35& 5   36        .10892        54.69        6.345       1.09221    1.533     .785
COMPUTE NM HYD        17.1W   -     3        .01030        11.44         .354        .64407    1.533    1.735 PER IMP=    7.00
COMPUTE NM HYD        17.4E   -     1        .03843        87.32        3.532       1.72317    1.500    3.550 PER IMP=   62.90
ADD HYD              17.4E.1  1& 3  37        .04873        98.66        3.886       1.49508    1.500    3.164
*S FUTURE DETENTION POND AT COORS 8-PAC SITE
*S ROUTING RESERVOIR WITH 48" DIAMETER ORIFACE
```

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

PAGE = 13

```
*S        OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                  0             100
*S            15                0.20             101
*S            21                0.60             102
*S            43                1.05             103
*S            70                1.20             103.8
*S
*S ROUTE 8.1W TO 16.2NRTH FROM BUSHEL ROAD DOWN CANAL TO FINAL DISCHARGE POINT.
ROUTE MCUNGE           32.00   33    5       .73586      235.46     120.359     3.06680    1.567     .500 CCODE =      .2
MODIFY TIME            32.00    5    5       .73586      235.46     120.359     3.06680    1.567     .500 SHIFT=      .000
ADD HYD               348.00  5&36   40       .84478      288.87     126.703     2.81221    1.567     .534
ADD HYD               353.00 37&40   41       .89351      374.86     130.589     2.74037    1.533     .656
FINISH
```

```
*
*** ADD OLF HYD 505.12 TO HYD 506 ***
*
ADD HYD                ID=2      HYD NO=506.1    ID I=1  ID II=3
PRINT HYD              ID=2      CODE=1

                                  OUTFLOW HYDROGRAPH RESERVOIR   506.10


    RUNOFF VOLUME =      1.86233 INCHES      =       28.4256 ACRE-FEET
    PEAK DISCHARGE RATE =     319.54 CFS  AT    1.866 HOURS    BASIN AREA =    .2862 SQ. MI.



*
*** ADD HYD 506.1 TO HYD 505A.1 ***
*
ADD HYD                ID=27     HYD NO=506.12   ID I=2  ID II=31
PRINT HYD              ID=27     CODE=1

                                  OUTFLOW HYDROGRAPH RESERVOIR   506.12


    RUNOFF VOLUME =      1.86815 INCHES      =       29.0723 ACRE-FEET
    PEAK DISCHARGE RATE =     325.14 CFS  AT    1.866 HOURS    BASIN AREA =    .2918 SQ. MI.
```

TRACT 2-B
POND
RESERVOIR
ROUTING
OUTPUT

```
*
*** ADD HYD 506.12 TO HYD 506A ***
*
ADD HYD                ID=2      HYD NO=506.2    ID I=27  ID II=29
PRINT HYD              ID=2      CODE=1

                                    OUTFLOW HYDROGRAPH RESERVOIR   506.20


    RUNOFF VOLUME =      1.87622 INCHES      =       29.9985 ACRE-FEET
    PEAK DISCHARGE RATE =     332.58 CFS  AT    1.866 HOURS    BASIN AREA =    .2998 SQ. MI.



*S
*S
*S PROPOSED TRACT 2-B DETENTION BASIN WITHIN AMAFCA R-O-W
*S ROUTING RESERVOIR WITH 1- 36" DIAM ORIFICE (THERE ARE NOW 2 PIPES)
*S MAXIMUM:  HIGH ELEV = 5003 , LOW ELEV = 4993.73 , OUTFLOW = 38 CFS
*S AREA ORIFICE IS 2.75 SF
*S
*S The following "STORAGE & ELEVATION" DATA ARE FROM THE CONCEPTUAL DESIGN
*S AS PREPARED BY SMITH ENGINEERING JUNE 2003 AND SHOWN ON FIGURE 4 OF
```

UPDATE 3.TXT

*S THE REPORT BY SMITH ENGINEERING REGARDING THE TRACT 2-B POND PREPARED
*S IN JUNE 2003. THE OUTFLOW DATA ARE FROM THE ORIGINAL DMP MODEL AND WERE
*S APPARENTLY BASED ON ONLY 1-36-INCH CMP.
*S
ROUTE RESERVOIR ID=10 HYD NO=506.RES INFLOW=2 CODE=1

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0	0	4993.73
13.2	2.1034	4994
18.7	6.3676	4995
22.9	10.7471	4996
26.5	15.2433	4997
29.6	19.8574	4998
32.4	24.5907	4999
35.0	29.4446	5000
37.5	34.4202	5001
39.7	39.5191	5002
41.9	44.7423	5003

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4993.73	.000	.00
.03	.00	4993.73	.000	.00
.07	.00	4993.73	.000	.00
.10	.00	4993.73	.000	.00
.13	.00	4993.73	.000	.00
.17	.00	4993.73	.000	.00
.20	.00	4993.73	.000	.00
.23	.00	4993.73	.000	.00
.27	.00	4993.73	.000	.00
.30	.00	4993.73	.000	.00
.33	.00	4993.73	.000	.00
.37	.00	4993.73	.000	.00
.40	.00	4993.73	.000	.00
.43	.00	4993.73	.000	.00
.47	.00	4993.73	.000	.00
.50	.00	4993.73	.000	.00
.53	.00	4993.73	.000	.00
.57	.00	4993.73	.000	.00
.60	.00	4993.73	.000	.00
.63	.00	4993.73	.000	.00
.67	.00	4993.73	.000	.00
.70	.00	4993.73	.000	.00
.73	.00	4993.73	.000	.00
.77	.00	4993.73	.000	.00
.80	.00	4993.73	.000	.00
.83	.00	4993.73	.000	.00
.87	.00	4993.73	.000	.00
.90	.00	4993.73	.000	.00
.93	.00	4993.73	.000	.00
.97	.00	4993.73	.000	.00

UPDATE 3.TXT

19.10	3.70	4993.87	1.111	6.97
19.13	3.69	4993.87	1.102	6.92
19.16	3.69	4993.87	1.093	6.86
19.20	3.68	4993.87	1.084	6.81
19.23	3.67	4993.87	1.076	6.75
19.26	3.66	4993.87	1.068	6.70
19.30	3.66	4993.87	1.059	6.65
19.33	3.65	4993.86	1.051	6.60
19.36	3.65	4993.86	1.043	6.55
19.40	3.64	4993.86	1.035	6.50
19.43	3.63	4993.86	1.027	6.45
19.46	3.62	4993.86	1.020	6.40
19.50	3.62	4993.86	1.012	6.35
19.53	3.61	4993.86	1.005	6.30
19.56	3.61	4993.86	.997	6.26
19.60	3.60	4993.86	.990	6.21
19.63	3.60	4993.86	.983	6.17
19.66	3.59	4993.86	.976	6.12
19.70	3.58	4993.85	.969	6.08
19.73	3.58	4993.85	.962	6.04
19.76	3.57	4993.85	.955	5.99
19.80	3.56	4993.85	.949	5.95
19.83	3.56	4993.85	.942	5.91
19.86	3.55	4993.85	.936	5.87
19.90	3.55	4993.85	.929	5.83
19.93	3.54	4993.85	.923	5.79
19.96	3.54	4993.85	.917	5.75

PEAK DISCHARGE = 27.592 CFS - PEAK OCCURS AT HOUR 3.20
MAXIMUM WATER SURFACE ELEVATION = 4997.352
MAXIMUM STORAGE = 16.8682 AC-FT INCREMENTAL TIME= .033330HRS

```
*S
*S HYD 506.RES IS THE RESULT OF THE TRACT 2-B CONCEPTUAL RESERVOIR ROUTING
*S STORAGE – ELEV. DATA AS PREPARED FOR THE JUNE 2003 POND CONCEPTUAL DESIGN
*S
*S THE FOLLOWING DATA ARE FROM THE ORIGINAL UPDATE1.DAT MODEL
*S THE ELEVATION – STORAGE DATA IS VERY  CLOSE TO THAT OF THE CONCEPTUAL
*S DESIGN DATA OF JUNE 2003
*S
*S       OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
*S             0                0              4993
*S            13.2             1.1324          4994
*S            18.7             4.4968          4995
*S            22.9             9.3777          4996
*S            26.5            14.3639          4997
*S            29.6            19.4554          4998
*S            32.4            24.6522          4999
*S            35.0            29.9543          5000
*S            37.5            35.3617          5001
*S            39.7            40.8744          5002
*S            41.9            46.4318          5003
*S            43.9            52.1551          5004
*
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Smith Engineering Company
A Full Service Engineering Company

APPENDIX 2

PRELIMINARY HYDRAULIC RESULTS

FOR THE EXISTING AND PROPOSED

36-INCH CULVERTS UNDER COORS BLVD.

FROM BASIN 504 TO THE PROPOSED TRACT 2-B POND

This Appendix Contains the Culvert Master Preliminary Results for the referenced culverts.

6400 Uptown Blvd. NE, Suite 500E Albuquerque, New Mexico 87110 Telephone 505/884-0700 Fax 505/884-2376
E-mail pats@secnm.com

N. COORS DMP REVIEW

PROJECT PROPOSED PIPE SUMMARY SHEET NO. 1 OF 2

SUBJECT BASIN 504 - Detention Pond PROJECT NO. -

BY PS DATE 5/20/03 CHECKED BY _____ DATE 1/1

PURPOSE - COMPUTE THE NUMBER OF ADDITIONAL 36" CULVERTS REQUIRED TO PASS 100-YR. Qp FROM WEST SIDE OF COORS (NEAR MOVIE THEATER) TO EAST SIDE OF COORS TO THE AMAFCA PROPOSED POND (Tract 2-B)

AHYMO AP = 504.10 100-YR. Qp = 257 cfs

CAPACITY OF EXIST (36" CMP) = 80 cfs
AT MAX. AVAIL HEADWATER
(culvert MASTER Results)

CAPACITY OF PROPOSED (36" RCP) = 125 cfs
(culvert MASTER Results) (30" RCP) = 52 cfs

DETERMINE NO. OF PIPES REQUIRED = 257 TOTAL
- 80
Q Remaining => = 177
- 125
Q Remaining 52
- 52
= 0

CONCLUSION -

1. Keep 1-36-in. EXISTING CMP (no Freeboard)
2. INSTALL 1-36-in. RCP (no Freeboard)
3. INSTALL 1-30-in RCP (with 3' Freeboard)

RECOMMENDATION -

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PROJECT _____ SHEET NO. 2 OF 2

SUBJECT _____ PROJECT NO. _____

BY _____ DATE / / CHECKED BY _____ DATE / /

RECOMMENDATION —

TO Provide For Freeboard and clogging.

257 Total

— 80

@ remaining 177

ASSUME 177 cfs / 2 36" RCP's

= 88.50 cfs / pipe

with ≈ 3 Ft freeboard on each pipe

Therefore 1 Ea. 36" CMP

2 Proposed 36" RCP's

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PROJECT N. Coors DMP SHEET NO. ____ OF ____

SUBJECT Survey of 36" CMP under Coors TO AMAFCA Pond PROJECT NO. ____

BY JM Splitt DATE 5/20/03 CHECKED BY PS DATE 5/20/03

SEC - TOPO SURVEY OF EXISTING 36-INCH CMP UNDER COORS TO TRACT B POND

+	HI	−	ELEV	DESC
$12\frac{10}{}$	$112\frac{10}{}$ 5009.10		4997 (a) 100 EC	T.O.P. (E SIDE)
		$12\frac{56}{}$ (62 TOP OF GRATE)	$39\frac{54}{}$ 4996.54	INV (W SIDE)
$4\frac{97}{}$			$107\frac{13}{}$ 5004.13	TOP OF LOWER BEAM
$6\frac{27}{}$			$105\frac{83}{}$ 5002.83	INV SWALE (N)
$0\frac{61}{}$			$111\frac{49}{}$ 5008.49	TOP OF C/G (W)
$4\frac{87}{}$			$107\frac{23}{}$ 5004.23	INV SWALE (S)

(a) See Cross-Section Stated, (NEXT PAGE)
T/B ELEV. assumed Based on Wilson's Survey

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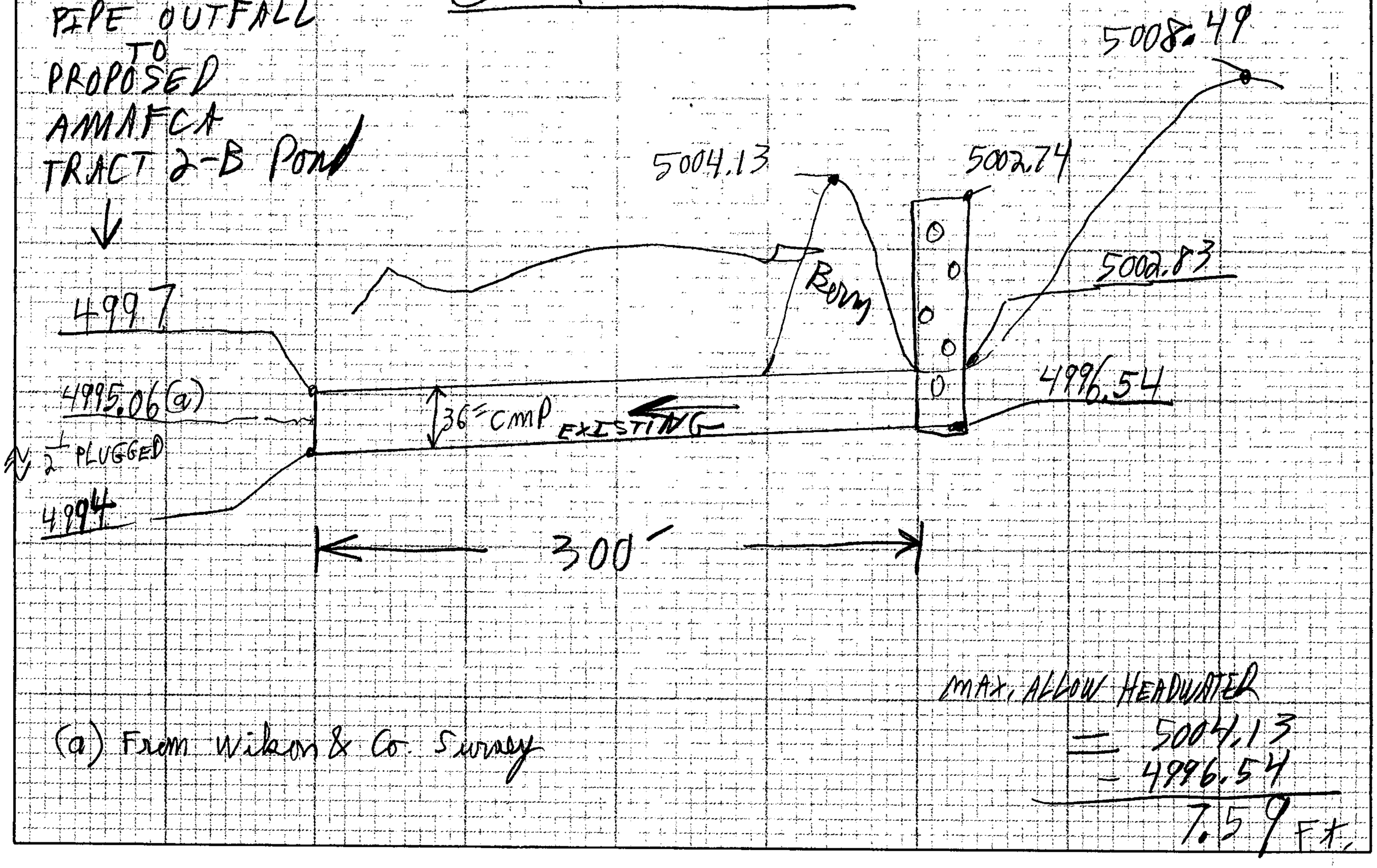
PROJECT Mr. Coors Dr. NW
SUBJECT 36" Pipe Under
BY Based on Survey DATE
SHEET NO. To AMAFCA Pond 95
PROJECT NO. PS
CHECKED BY DATE 5 2013

COORS BLVD.

PIPE OUTFALL TO PROPOSED AMAFCA TRACT 2-B POND



MAX. ALLOW HEADWATER
= 5004.13
− 4996.54
7.59 Ft.

(a) From Wilson & Co. Survey

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Culvert Calculator Report
Ex. 36-in. CMP under Coors Blvd.

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	7.59 ft	Headwater Depth/ Height	7.39
Computed Headwater Elevation	5,018.70 ft	Discharge	80.00 cfs
Inlet Control HW Elev	5,003.45 ft	Tailwater Elevation	5,001.00 ft
Outlet Control HW Elev	5,018.70 ft	Control Type	Outlet Control

Grades			
Upstream Invert	4,996.54 ft	Downstream Invert	4,994.00 ft
Length	300.00 ft	Constructed Slope	0.008467 ft/ft

Hydraulic Profile			
Profile	Pressure	Depth, Downstream	7.00 ft
Slope Type	N/A	Normal Depth	N/A ft
Flow Regime	N/A	Critical Depth	2.77 ft
Velocity Downstream	11.32 ft/s	Critical Slope	0.042506 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	3.00 ft
Section Size	36 inch	Rise	3.00 ft
Number Sections			

Outlet Control Properties			
Outlet Control HW Elev	5,018.70 ft	Upstream Velocity Head	1.99 ft
Ke	0.50	Entrance Loss	1.00 ft

Inlet Control Properties			
Inlet Control HW Elev	5,003.45 ft	Flow Control	Submerged
Inlet Type	Headwall	Area Full	7.1 ft²
K	0.00780	HDS 5 Chart	2
M	2.00000	HDS 5 Scale	1
C	0.03790	Equation Form	1
Y	0.69000		

AHYMO ANALYSIS POINT = 504.10

THIS IS WEST SIDE OF COOR BLVD AT. INLET TO THE EXISTING 36"=CMP UNDER COORS TO TRACT 2-B (AMAFCA PROPOSED POND)

100-YR. Qp = 257 cfs

NO. OF 36"=CMP'S REQUIRED = $\frac{257}{80}$ 36"=CMP
= 3.2 CULVERTS

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PROPOSED

Culvert Calculator Report
~~Ex.~~ 36-in. ~~CMP~~ RCP under Coors Blvd.

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	7.59 ft	Headwater Depth/ Height	4.47
Computed Headwater Elevation	5,009.94 ft	Discharge	88.50 cfs
Inlet Control HW Elev	5,004.78 ft	Tailwater Elevation	5,001.00 ft
Outlet Control HW Elev	5,009.94 ft	Control Type	Outlet Control

$= \frac{177 \text{ CFS}}{2}$

Grades			
Upstream Invert	4,996.54 ft	Downstream Invert	4,994.00 ft
Length	300.00 ft	Constructed Slope	0.008467 ft/ft

Hydraulic Profile			
Profile	Pressure	Depth, Downstream	7.00 ft
Slope Type	N/A	Normal Depth	N/A ft
Flow Regime	N/A	Critical Depth	2.84 ft
Velocity Downstream	12.52 ft/s	Critical Slope	0.015230 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	3.00 ft
Section Size	36 inch	Rise	3.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev	5,009.94 ft	Upstream Velocity Head	2.44 ft
Ke	0.50	Entrance Loss	1.22 ft

Inlet Control Properties			
Inlet Control HW Elev	5,004.78 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	7.1 ft²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

PROPOSED

Culvert Calculator Report
~~Ex. 36-in. CMP~~ RCP under Coors Blvd.

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	7.59 ft	Headwater Depth/ Height	7.43
Computed Headwater Elevation	5,018.83 ft	Discharge	125.00 cfs
Inlet Control HW Elev	5,010.98 ft	Tailwater Elevation	5,001.00 ft
Outlet Control HW Elev	5,018.83 ft	Control Type	Outlet Control

Grades			
Upstream Invert	4,996.54 ft	Downstream Invert	4,994.00 ft
Length	300.00 ft	Constructed Slope	0.008467 ft/ft

Hydraulic Profile			
Profile	Pressure	Depth, Downstream	7.00 ft
Slope Type	N/A	Normal Depth	N/A ft
Flow Regime	N/A	Critical Depth	2.96 ft
Velocity Downstream	17.68 ft/s	Critical Slope	0.031867 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	3.00 ft
Section Size	36 inch	Rise	3.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev	5,018.83 ft	Upstream Velocity Head	4.86 ft
Ke	0.50	Entrance Loss	2.43 ft

Inlet Control Properties			
Inlet Control HW Elev	5,010.98 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	7.1 ft²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Culvert Calculator Report
Ex. 36-in. CMP under Coors Blvd.

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	7.59 ft	Headwater Depth/ Height	10.70
Computed Headwater Elevation	5,028.65 ft	Discharge	100.00 cfs
Inlet Control HW Elev	5,006.18 ft	Tailwater Elevation	5,001.00 ft
Outlet Control HW Elev	5,028.65 ft	Control Type	Outlet Control

FAILS

Grades			
Upstream Invert	4,996.54 ft	Downstream Invert	4,994.00 ft
Length	300.00 ft	Constructed Slope	0.008467 ft/ft

Hydraulic Profile			
Profile	Pressure	Depth, Downstream	7.00 ft
Slope Type	N/A	Normal Depth	N/A ft
Flow Regime	N/A	Critical Depth	2.90 ft
Velocity Downstream	14.15 ft/s	Critical Slope	0.067076 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	3.00 ft
Section Size	36 inch	Rise	3.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev	5,028.65 ft	Upstream Velocity Head	3.11 ft
Ke	0.50	Entrance Loss	1.56 ft

Inlet Control Properties			
Inlet Control HW Elev	5,006.18 ft	Flow Control	Submerged
Inlet Type	Headwall	Area Full	7.1 ft²
K	0.00780	HDS 5 Chart	2
M	2.00000	HDS 5 Scale	1
C	0.03790	Equation Form	1
Y	0.69000		

Culvert Calculator Report

PROPOSED ~~Ex.~~ 36-in. ~~CMP~~ RCP under Coors Blvd.

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	7.59	ft	Headwater Depth/ Height	3.92	
Computed Headwater Elevation	5,008.30	ft	Discharge	80.00	cfs
Inlet Control HW Elev	5,003.64	ft	Tailwater Elevation	5,001.00	ft
Outlet Control HW Elev	5,008.30	ft	Control Type	Outlet Control	

Grades					
Upstream Invert	4,996.54	ft	Downstream Invert	4,994.00	ft
Length	300.00	ft	Constructed Slope	0.008467	ft/ft

Hydraulic Profile					
Profile	Pressure		Depth, Downstream	7.00	ft
Slope Type	N/A		Normal Depth	N/A	ft
Flow Regime	N/A		Critical Depth	2.77	ft
Velocity Downstream	11.32	ft/s	Critical Slope	0.012471	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	3.00	ft
Section Size	36 inch		Rise	3.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev	5,008.30	ft	Upstream Velocity Head	1.99	ft
Ke	0.50		Entrance Loss	1.00	ft

Inlet Control Properties					
Inlet Control HW Elev	5,003.64	ft	Flow Control	Submerged	
Inlet Type	Square edge w/headwall		Area Full	7.1	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

PROPOSED

Culvert Calculator Report
~~Ex. 36~~ 30 RCP -in. ~~CMP~~ under Coors Blvd.

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	7.59 ft	Headwater Depth/ Height	4.76
Computed Headwater Elevation	5,008.44 ft	Discharge	52.00 cfs
Inlet Control HW Elev	5,002.67 ft	Tailwater Elevation	5,001.00 ft
Outlet Control HW Elev	5,008.44 ft	Control Type	Outlet Control

Grades			
Upstream Invert	4,996.54 ft	Downstream Invert	4,994.00 ft
Length	300.00 ft	Constructed Slope	0.008467 ft/ft

Hydraulic Profile			
Profile	Pressure	Depth, Downstream	7.00 ft
Slope Type	N/A	Normal Depth	N/A ft
Flow Regime	N/A	Critical Depth	2.32 ft
Velocity Downstream	10.59 ft/s	Critical Slope	0.013906 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.50 ft
Section Size	30 inch	Rise	2.50 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev	5,008.44 ft	Upstream Velocity Head	1.74 ft
Ke	0.50	Entrance Loss	0.87 ft

Inlet Control Properties			
Inlet Control HW Elev	5,002.67 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	4.9 ft²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

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37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

PROPOSED

Culvert Calculator Report
~~Ex. 36~~ 24 RCP ~~-in. CMP~~ under Coors Blvd.

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	7.59 ft	Headwater Depth/ Height	13.35
Computed Headwater Elevation	5,023.24 ft	Discharge	52.00 cfs
Inlet Control HW Elev	5,008.78 ft	Tailwater Elevation	5,001.00 ft
Outlet Control HW Elev	5,023.24 ft	Control Type	Outlet Control

Grades			
Upstream Invert	4,996.54 ft	Downstream Invert	4,994.00 ft
Length	300.00 ft	Constructed Slope	0.008467 ft/ft

Hydraulic Profile			
Profile	Pressure	Depth, Downstream	7.00 ft
Slope Type	N/A	Normal Depth	N/A ft
Flow Regime	N/A	Critical Depth	1.98 ft
Velocity Downstream	16.55 ft/s	Critical Slope	0.048931 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev	5,023.24 ft	Upstream Velocity Head	4.26 ft
Ke	0.50	Entrance Loss	2.13 ft

Inlet Control Properties			
Inlet Control HW Elev	5,008.78 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	3.1 ft²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

DISKETTE THAT CONTAINS

3 AHYMO_97 MODELS :

Each model is for the 100-yr. 24-hour return period storm for Future (full development) conditions

Model names and brief descriptions:

update1.dat (original DMP model)

update2.txt (modified DMP model to correct some minor errors discovered in update1.dat

update3.txt (modified update2.txt to include proposed Drainage Management Controls as proposed by AMAFCA

PROJECT CONTROL NUMBER: A300060

GENERAL NOTES

1. FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A DETAILED CONSTRUCTION SCHEDULE TO THE CITY OF ALBUQUERQUE (COA) CONSTRUCTION COORDINATION DIVISION.
   TWO (2) DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR WILL OBTAIN A BARRICADING PERMIT FROM THE CITY OF ALBUQUERQUE CONSTRUCTION COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER 924-3400(COA) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF SPECIFICATIONS (COA)
2. THE CONTRACTOR WILL NOTIFY THE FIELD ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK. IN ORDER THAT THE CITY SURVEYOR MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. THE CONTRACTOR WILL NOTIFY THE ENGINEER IF A MONUMENT IS DISTURBED. REPLACEMENT WILL BE DONE ONLY BY THE CITY SURVEY SECTION. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATION OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR WILL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4 OF SPECIFICATIONS (COA)
3. THE SPECIFICATIONS USED FOR THIS PROJECT ARE THE NM DEPARTMENT OF TRANSPORTATION (NMDOT) STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION 2007 EDITION UNLESS OTHERWISE NOTED ON PLANS.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSING OF ALL DEBRIS, INCLUDING, BUT NOT LIMITED TO HAZARDOUS WASTE AT DISPOSAL SITES APPROVED BY GOVERNMENTAL AGENCIES REGULATING THE DISPOSAL OF SUCH MATERIALS.
5. NOT USED
6. NOT USED
7. THE ABCWUA (ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY, 857-8200) WILL BE NOTIFIED BY THE CONTRACTOR SEVEN (7) WORKING DAYS IN ADVANCE OF ANY WORK WHICH MAY AFFECT THE EXISTING PUBLIC WATER FACILITIES. REFER TO SECTION 18 OF SPECIFICATION (COA)
8. NOT USED
9. ALL SIGNS AND CODING WILL BE IN ACCORDANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" CURRENT EDITION PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION.
10. THE CONTRACTOR IS TO EXERCISE CARE TO AVOID DISTURBING ANY EXISTING UNDERGROUND UTILITIES. IT WILL BE HIS RESPONSIBILITY TO COORDINATE WITH THE UTILITY COMPANIES IN ORDER TO PREVENT ANY SERVICE DISRUPTION.
11. WHEN ABUTTING NEW PAVEMENT TO EXISTING INTERSECTING STREETS, SAW CUT EXISTING PAVEMENT TO A STRAIGHT LINE AND AT RIGHT ANGLES AND REMOVE ANY BROKEN OR CRACKED PAVEMENT. NO DIRECT PAYMENT WILL BE MADE FOR SAWCUTTING.
12. ALL GAS VALVES, GAS MANHOLES, ELECTRICAL MANHOLES, TELEPHONE MANHOLES, AND UTILITY POLES WILL BE ADJUSTED TO GRADE BY EACH UTILITY COMPANY.
13. WHEN REMOVAL OF EXISTING CURB AND GUTTER OR SIDEWALK IS REQUIRED, REMOVE BACK TO NEAREST SUITABLE JOINT UNLESS OTHERWISE DIRECTED BY THE SEC FIELD ENGINEER.
14. THE CONTRACTOR WILL NOTIFY NEW MEXICO ONE CALL SYSTEM 260-1990 TWO (2) WORKING DAYS PRIOR TO COMMENCING WORK IN NEW AREAS.
15. CONTRACTOR WILL MAKE ALL WATER VALVES AND MANHOLES ACCESSIBLE TO THE A.B.C.W.U.A. AT ALL TIMES.
16. CONTRACTOR WILL PLACE BITUMINOUS MATERIAL WITH THE USE OF A LAYDOWN MACHINE WHERE PAVEMENT IS 8 FEET IN WIDTH OR WIDER.
17. ALL SUBGRADE AND SUBBASE MATERIAL ENCOUNTERED IN PAVEMENT REMOVAL AND REPLACEMENT THAT IS DETERMINED BY THE FIELD ENGINEER TO MEET THE SPECIFICATIONS, CAN BE REUSED. HOWEVER, THE MATERIAL WILL BE PROCESSED AND COMPACTED TO MEET MOISTURE CONTENT AND PERCENT COMPACTION REQUIRED BY THE SPECIFICATIONS.
18. CONTRACTOR WILL NOT PAVE OVER ANY SURFACE FEATURE, I.E., GAS VLAVE, MANHOLE COVER, ETC. WITHOUT PRIOR APPROVAL FROM THE FIELD ENGINEER.
19. CONTRACTOR WILL CONFINE HIS WORK WITHIN THE CONSTRUCTION EASEMENT LIMITS AND/OR RIGHT-OF-WAY, OR PROVIDE COPIES OF AGREEMENTS WITH ADJACENT LANDOWNERS TO AMAFCA.
20. ALL WATER VALVES AND FIRE HYDRANTS REMOVED TO BE SALVAGED AND RETURNED TO THE A.B.C.W.U.A.
21. MINIMUM BOTTOM WIDTH OF TRENCHES FOR RIGID PIPE SHALL BE EQUAL TO THE OUTSIDE DIAMETER PLUS 16 INCHES. BEDDING MATERIAL SHALL BE CLASS II, III, OR IV UNLESS OTHERWISE SPECIFICALLY NOTED ON THE PLANS.
22. MINIMUM BOTTOM WIDTH OF TRENCHES FOR NON-RIGID PIPE SHALL BE EQUAL TO THE OUTSIDE DIAMETER PLUS 12 INCHES. BEDDING MATERIAL SHALL BE CLASS I, II, OR III.
23. THE CONTRACTOR AGREES TO TAKE NECESSARY SAFETY PRECAUTIONS AS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES TO PROTECT PEDESTRIAN AND VEHICULAR TRAFFIC IN THE CONSTRUCTION AREA, WHICH WILL INCLUDE BUT ARE NOT LIMITED TO: MAINTAINING ADEQUATE WARNING SIGNS, BARRICADES, LIGHTS, GUARD FENCES, WALKS AND BRIDGES.
24. ALL STRUCTURAL CONCRETE TO BE 3,000 PSI UNLESS OTHERWISE NOTED ON PLANS.
25. ALL REINFORCING STEEL TO BE GRADE 60.
26. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES WILL HAVE A 1" CHAMFER UNLESS OTHERWISE NOTED.
27. NOT USED.
28. ALL SPLICES IN REINFORCING STEEL TO BE 2-FOOT 6-INCH MINIMUM UNLESS OTHERWISE NOTED.
29. PRIOR TO CONSTRUCTION, THE CONTRACTOR WILL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL CONFLICTING UTILITIES. SHOULD A CONFLICT EXIST BETWEEN THE FIELD INFORMATION AND THE PLANS, THE CONTRACTOR WILL NOTIFY THE FIELD ENGINEER SO THE CONFLICT CAN BE RESOLVED WITH MINIMUM AMOUNT OF DELAY.
30. THE REPLACEMENT OF THE EXISTING UTILITIES AND THE INSTALLATION OF NEW UTILITY LINES WILL BE COMPLETE IN ADVANCE OF STARTING THE PAVEMENT WORK. TEMPORARY PAVEMENT WILL BE PLACED IN ALL TRENCHES REQUIRED FOR THE UTILITY REPLACEMENTS IN THOSE AREAS THAT MUST MAINTAIN TRAFFIC UNTIL THE FINAL PAVEMENT WORK STARTS IN EACH AREA. TEMPORARY STRIPING SHALL BE THE CONTRACTOR'S RESPONSIBILITY. MAINTENANCE OF THE TEMPORARY PAVING AND STRIPING WILL BE AT THE CONTRACTOR'S EXPENSE.
31. TACK COAT FOR SURFACE COURSE REQUIREMENTS WILL BE DETERMINED BY THE FIELD ENGINEER.
32. ALL NEW STREET PAVING, DRIVEWAYS, SIDEWALKS, AND CURB AND GUTTERS, ABUTTING EXISTING AREAS SHALL MATCH THE ELEVATION OF THOSE AREAS.
33. ALL CROSSWALKS, LEGENDS, SYMBOLS SHALL BE INTERSECTION GRADE REFLECTIVE PLASTIC TAPE, ALL LANE LINES SHALL BE HIGH DURABLE REFLECTIVE PAINT.
34. ALL EXCAVATED MATERIAL THAT IS NOT REQUIRE TO BE REUSED MUST BE REMOVED FROM THE PROJECT AREA WITHIN FOUR DAYS OF EXCAVATION. SPOIL PILES WILL BE ALLOWED ONLY AS DIRECTED BY THE FIELD ENGINEER.
35. THE CONTRACTOR WILL COORDINATE THE CONSTRUCTION ACTIVITIES WITH ALL OTHER CONTRACTORS AND UTILITY COMPANIES WORKING IN THE SAME AREA. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE THEIR ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCE CAUSED BY UTILITY COMPANY WORK CREWS.
36. ALL CONSTRUCTION EASEMENTS ON PRIVATE PROPERTY WILL BE OBTAINED BY AMAFCA PRIOR TO THE BEGINNING OF CONSTRUCTION.
37. EXISTING MEDIAN CURB AND GUTTER AND STANDARD CURB AND GUTTER, NOT DISTURBED BY CONTRACTOR, BUT OUT OF ALIGNMENT, DISPLACED VERTICALLY, BADLY BROKEN AND/OR DETERIORATED, WILL BE REPLACED AS DIRECTED BY THE FIELD ENGINEER AND PAID FOR AT CONTRACT UNIT PRICE.
38. ALL TRAFFIC CONTROL DEVICES REQUIRED FOR DRIVEWAY CLOSURES, UTILITY CONSTRUCTION OR FOR OTHER REASONS AND NOT SHOWN ON THE SIGNING PLANS WILL BE FURNISHED BY THE CONTRACTOR AND WILL BE PAID AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS AND BID PROPOSAL. PRIOR TO PLACING THE TRAFFIC CONTROL DEVICES, THE CONTRACTOR WILL NOTIFY THE AFFECTED OWNERS IN ACCORDANCE WITH THE SPECIFICATIONS. CONTRACTOR MUST MAKE PROVISIONS TO PROVIDE ACCESS TO PROPERTIES. REFER TO SECTIONS 701,702,703 OF THE SPECIFICATIONS.
39. ALL UTILITY LINES WHICH ARE NOT SPECIFICALLY DESIGNATED TO BE REMOVED AND REPLACED ON THE PLANS, WILL BE MAINTAINED IN SERVICE. SHORING, SHEETING AND OTHER MEANS OF SUPPORT SHALL BE EMPLOYED BY THE CONTRACTOR TO PREVENT DAMAGE OR LOSS OF THESE EXISTING UTILITIES. MEAN AND CABLE OR OTHER ADEQUATE SUPPORTS WILL BE USED OR TEMPORARY SUPPORT OF ALL UTILITY LINES WHICH CROSS THE TRENCH. ANY DAMAGE TO EXITING UTILITIES WILL PROMPTLY BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR WILL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SIGNIFICANT DEVIATION OF EXPOSED UTILITIES FROM THE LOCATIONS SHOWN ON THE PLANS SO THAT CONFLICTS CAN BE RESOLVED IN A TIMELY MANNER.
40. THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO EXISTING NMDOT/COA/BC INFRASTRUCTURE (C & G, PAVING, ETC.) DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS, AND WILL REPAIR OR REPLACE SAME AT HIS OWN EXPENSE. HE WILL SUITABLY PROTECT THE CURB AND GUTTER FROM INCIDENTAL SPLASHING DURING THE TACK COAT APPLICATION AND WILL BE RESPONSIBLE FOR CLEANING SAME AT HIS OWN COST SHOULD SPLASHING OCCUR.
41. ALL INTERFERING PORTIONS OF ABANDONED UTILITY LINES WHICH ARE EXPOSED AS A RESULT OF CONSTRUCTION WILL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
42. THE CONTRACTOR WILL BE RESPONSIBLE FOR SECURING NPDES PERMITS AND OTHER PERMITS AS REQUIRED BY APPLICABLE CITY, COUNTY, STATE, AND FEDERAL REGULATIONS.
43. CONTRACTOR WILL SURVEY AND LOG EXISTING ELEVATIONS OF CURB-AND-GUTTER, SIDEWALK, AND PAVEMENT WHICH WILL BE REMOVED FOR CONSTRUCTION OF IMPROVEMENTS. CONTRACTOR WILL REPLACE REMOVED CURB-AND-GUTTER, SIDEWALK, DRIVE PADS, AND PAVEMENT TO ELEVATIONS PRIOR TO REMOVAL UNLESS OTHERWISE INDICATED ON THE PLANS.
44. CONTRACTOR WILL CONSTRUCT TEMPORARY ASPHALT PAVEMENT AS DIRECTED BY THE NMDOT TRAFFIC ENGINEER TO PROVIDE ACCESS TO LOCAL BUSINESS, ETC. TEMPORARY PAVEMENT SHALL BE REMOVED AND DISPOSED OF PRIOR TO PLACEMENT OF FULL WIDTH PAVEMENT SECTION. TEMPORARY PAVING SHALL BE PER NMDOT SPECIFICATIONS.
45. ALL ASPHALTIC CONCRETE SHALL BE SP TYPE III PMBP, PER NMDOT SECTION 423.
46. NOT USED
47. ALL RIP-RAP MATERIAL USED ON THIS PROJECT SHALL BE A NATURAL ROCK MATERIAL CONFORMING TO THE SIZE AND MATERIAL PROPERTY REQUIREMENTS SET FORTH IN THE NMDOT STANDARD SPECIFICATIONS. NO BROKEN CONCRETE OR RUBBLE WILL BE ACCEPTED.
48. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
49. ALL STRIPING REMOVED OR DAMAGED MUST BE REPLACED WITH PREFORM THERMAL PLASTIC. STRIPING ERADICATION SHALL BE ACCOMPLISHED BY WATER BLASTING OR SURFACE PLANNING OF THE ROADWAY TO A MAXIMUM DEPTH OF 0.25 INCHES (MAXIMUM) AND FOR A WIDTH EQUAL TO TWO TIMES THE WIDTH OF THE STRIPE OR MARKING TO BE REMOVED.
50. FOR STORM DRAIN CONSTRUCTION, RCP PIPE JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION WILL DETERMINE JOINTS TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.
51. AMAFCA FIELD ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY WORK WITHIN THE AMAFCA R/W. TELEPHONE (505)884-2215.
52. ALL SUB-GRADE, BACKFILL, AND EMBANKMENT SHALL BE COMPACTED TO 95% (± 2% OF OPTIMUM MOISTURE PER ASTM-D 1557) WITHIN THE AMAFCA R/W. TESTING REPORTS SHALL BE PROVIDED TO AMAFCA FIELD ENGINEER.
53. AMAFCA FIELD ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO FINAL INSPECTION OF ANY FACILITIES WITHIN THE AMAFCA R/W.
54. ALL DISTURBED GROUND AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 632000 CLASS A SEEDING.
55. ANY MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY A NM LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE. AMAFCA SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY MONUMENT PLACEMENT.

ESTIMATE OF QUANTITIES

SEE SHEET 4-21.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE:	F'C = 3000 PSI
B. REINFORCING STEEL:	ASTM A615 GRADE 60
C. MOISTURE AND DENSITY CONTROL:	ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO WITHIN 2 PERCENT.

LIST OF INCIDENTALS

1. SHEETS 4-3, 4-10, 4-11, 4-15 - HINGES, LOCK PLATE AND LOCK INCLUDING MATERIALS AND INSTALLATION ARE INCIDENTAL TO SPILLWAY GRATES.
2. SHEET 4-3 - CONCRETE PLUG OF EXISTING 36-INCH CMP FROM PRINCIPAL SPILLWAY IS INCIDENTAL TO PRINCIPAL SPILLWAY CONSTRUCTION.
3. SHEETS 4-3, 4-10, 4-11, 4-16 - 6-INCH AND 10-INCH DIA. PVC PIPES ARE INCIDENTAL TO STRUCTURE.
4. SHEET 4-7 CONCRETE PLUG IS INCIDENTAL TO NORTH POND INLET CONSTRUCTION.
5. SHEET 4-7 FINISH AND ROUGH GRADING TO MATCH SURROUNDING GROUND/LANDSCAPING IS INCIDENTAL TO INLET/PIPE/MANHOLE CONSTRUCTION FOR NORTH POND, SOUTH POND AND BORE PITS.
6. SHEET 4-15 - DAMAGE OR REPLACEMENT OF IRRIGATION SYSTEM IS INCIDENTAL TO MAINTENANCE ROAD CONSTRUCTION.

INDEX OF SHEETS (AMAFCA BID LOT)

Sheet Number	Sheet Title
4-1	GENERAL NOTES AND QUANTITIES
4-2	DETENTION POND PLAN
4-3	PRINCIPAL SPILLWAY
4-4	PRINCIPAL SPILLWAY DETAILS
4-5	EMERGENCY SPILLWAY
4-6	POND DETAILS
4-7	PLAN 36-IN. STORMDRAINS
4-8	PLAN AND PROFILE 36-IN. STORMDRAIN STA. 22+31.31
4-9	PLAN AND PROFILE 36-IN. STORMDRAIN STA. 21+96.70
4-10	PLAN AND PROFILE 36-IN. STORMDRAIN STA. 21+96.70 & DETAILS STA. 22+31.31
4-11	PLAN AND DETAILS MOVIE POND INLET
4-12	PLAN AND PROFILE PARADISE BLVD. RUNDOWN - 1
4-13	PLAN AND PROFILE PARADISE BLVD. RUNDOWN - 2
4-14	PARADISE BLVD. RUNDOWN DETAILS
4-15	PLAN AND PROFILE APARTMENT POND MAINT. ROAD - 1
4-16	PLAN APARTMENT POND MAINT. ROAD - 2 AND DETAILS
4-17	PARADISE BLVD BERM
4-18	TEMPORARY CONSTRUCTION EASEMENTS
4-19	TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES
4-20	STORM WATER POLLUTION PREVENTION PLAN
4-21	ESTIMATED STRUCTURE QUANTITIES SCHEDULE

BUILD/PAY NOTE:

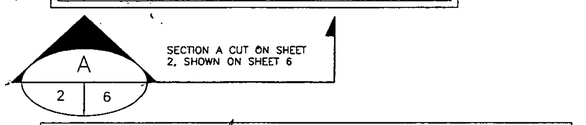
(621000) MOBILIZATION: STD SPEC SECT 621

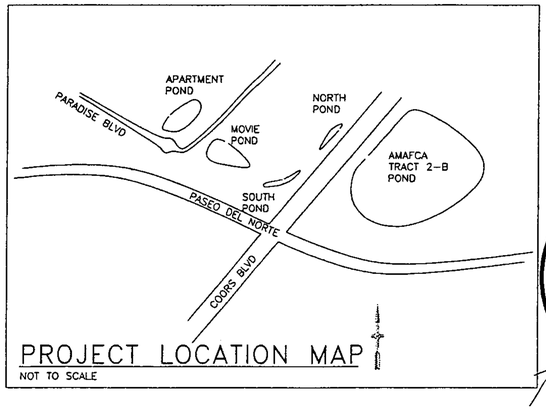
(801000) CONSTRUCTION STAKING BY CONTRACTOR: STD SPEC SECT 801

(802000) POST CONSTRUCTION PLANS: STD SPEC SECT 802

(901000) CONTRACTOR PROCESS QUALITY CONTROL - INCLUDES TESTING: STD SPEC SECT 901

NOTE: BAR SCALES ARE ACCURATE ON 11"X17" SIZE PLANS.
WRITTEN SCALES (EX: 1"=30') ARE ONLY ACCURATE FOR 24" X 36" PLAN SIZE.





PROJECT LOCATION MAP
NOT TO SCALE

Lynn Mazur
APPROVED FOR CONSTRUCTION IN AMAFCA R.O.W.
AMAFCA - LYNN MAZUR, P.E.

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER
1-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

CITY OF ALBUQUERQUE (COA)
STANDARD DRAWINGS REQUIRED

DWG. 2250	DRAINAGE STATIONARY AND REMOVABLE POST DETAIL
DWG. 2251	DRAINAGE PIPE GATE DETAIL
DWG. 2415A	PAVING CURB AND GUTTER & CURB CUT DETAILS
DWG. 2415B	PAVING CURB AND GUTTER & TEMPORARY PAVING SECTION
DWG. 2425	PAVING DRIVEPADS

STANDARD SERIALS AND DRAWINGS REQUIRED

206-01-1/1	FILL HEIGHT AND BEDDING DETAILS FOR CONCRETE PIPE CULVERTS	603-01-2/7	TEMPORARY EROSION SEDIMENT CONTROL MEASURES CHECK DAMS	603-01-7/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES OFFSITE TRACKING PREVENTION AND DIVERSION DIKE	623-17A-3/6	INTERSTATE TRAFFIC LANE SHOULDER DROP INLET (WELDED GRATE) GRATE AND FRAME DETAILS FOR 4' X 4' DROP INLET
206-03-1/1	MAX. AND MIN. COVER - STEEL-ROUND PIPES CORRUGATED METAL AND STRUCTURAL PLATES	603-01-3/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES SILT FENCE	609-01-1/1	SIDEWALK CURB AND GUTTER	662-01-1/3	PRECAST CONCRETE MANHOLE TYPE "C" FOR STORM SEWERS
206-07-1/1	CORRUGATED METAL CULVERT AND PIPE ARCHES BEDDING AND BACKFILL DETAILS	603-01-4/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES CULVERT & DROP INLET PROTECTION	623-06-1/1	MEDIAN DROP INLET 5'-0" X 5'-0" DETAILS AND QUANTITIES	662-01-2/3	PRECAST CONCRETE MANHOLE TYPE "E" FOR STORM SEWERS
570-02-1/2	CULVERT PIPE END SECTIONS (METAL)	603-01-5/7	T.E.S.C.M. SEDIMENT BASIN, SEDIMENT TRAP & EARTH DIKE	623-17A-1/6	INTERSTATE TRAFFIC LANE SHOULDER DROP INLET (WELDED GRATE) GRATE DETAILS FOR 4' X 4' DROP INLET	662-01-3/3	PRECAST CONCRETE MANHOLE FRAME LID DETAILS AND STEP DETAILS
570-02-2/2	CULVERT PIPE END SECTIONS (CONCRETE)	603-01-6/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES PIPE SLOPE DRAIN & SURFACE ROUGHENING	623-17A-2/6	INTERSTATE TRAFFIC LANE SHOULD DROP INLET (WELDED GRATE) FRAME DETAILS FOR 4' X 4' DROP INLET	702-01-1/3	CONSTRUCTION SIGN FACE DETAILS
602-01-1/1	WIRE ENCLOSED RIPRAP CLASS A					702-01-2/3	CHANNELIZATION DEVICES AND PORTABLE SIGN SUPPORTS FOR CONSTRUCTION, MAINTENANCE, UTILITIES, AND INCIDENT MANAGEMENT OPERATIONS.
602-02-1/1	EROSION CONTROL AT CULVERT OUTLETS						
603-01-1/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES						

DRAWING SCALE:

DESIGNED BY: PATRICK STOVALL, PE

NEW MEXICO PROJECT NO. HSIP-0448(17)5

NEW MEXICO DEPARTMENT OF TRANSPORTATION
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

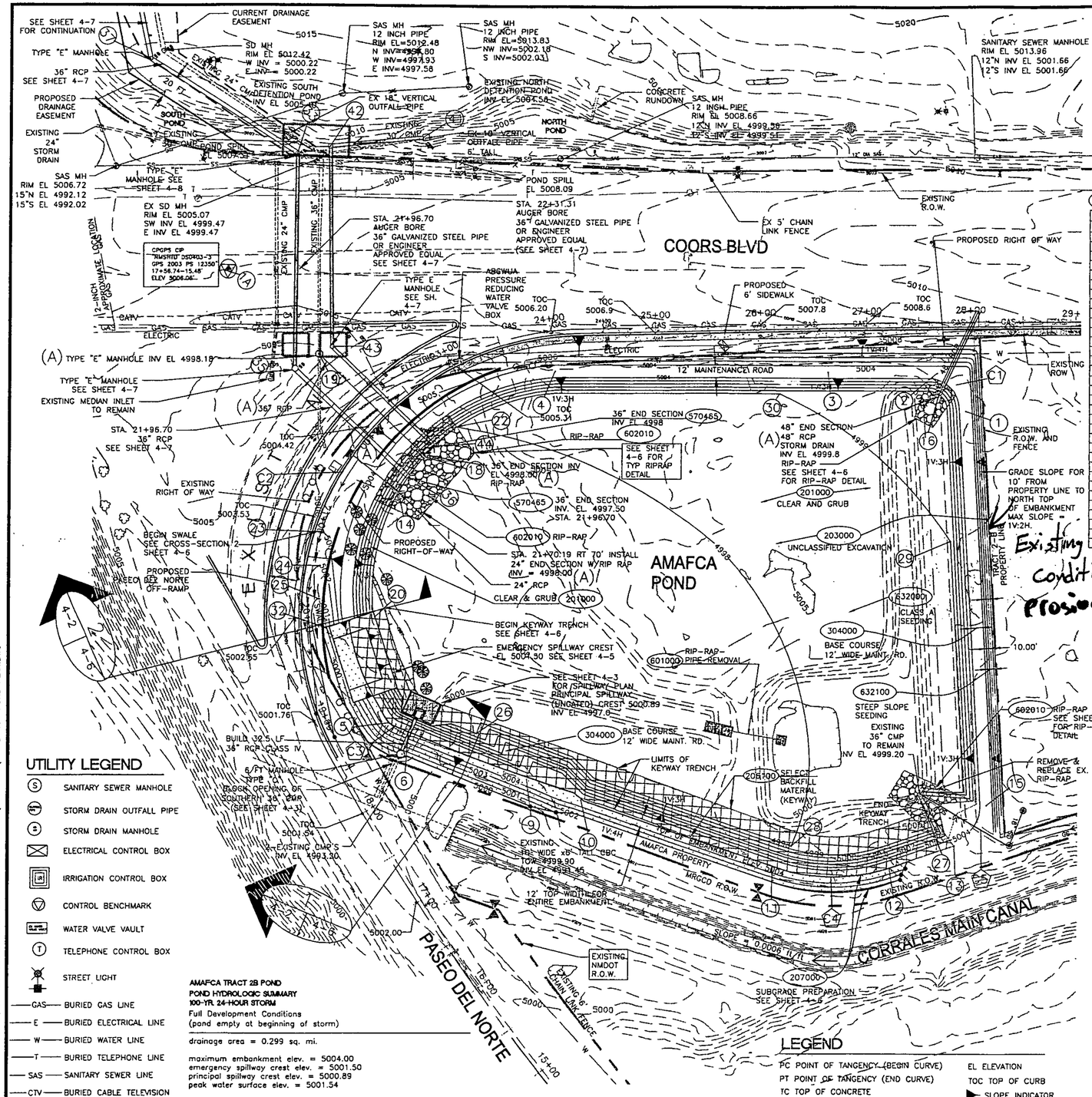
PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

GENERAL NOTES AND QUANTITIES

SHEET NO. 4-1

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-1 GENERAL NOTES AND QUANTITIES.DWG

PROJECT CONTROL NUMBER: A300060



CURVE DATA

NO.	DELTA	RADIUS	LEN.	NO.	DELTA	RADIUS	LEN.
1	273°37'42"	36'	54.2	4	321°36'45"	169'	113.1
2	245°27'56"	210'	419.8	5	285°15'50"	30'	39.1
3	324°56'43"	37.5'	13.4				

NODE DATA

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION	PDN STATION	OFF-SET (FT.)
1A	1522086.32	1516164.15	5006.06	CONTROL PT-NMSHTD DS0403-3	22+65.09	202.19 LT
1	1522523.27	1516730.71	5004.00	PC AT CL TOP OF DAM	27+95.46	84.48 RT
2	1522526.30	1516685.19	5004.00	PT AT CL TOP OF DAM	27+67.92	48.39 RT
3	1522448.46	1516614.70	5004.00	ANGLE POINT CL TOP OF DAM	26+62.42	46.17 RT
4	1522254.71	1516443.42	5004.00	PC AT CL TOP OF DAM	22+99.70	38.80 RT
5	1521916.44	1516592.57	5004.00	PC AT CL TOP OF DAM	18+64.01	64.46 RT
6	1521924.25	1516611.40	5004.00	PT AT CL TOP OF DAM	18+45.80	76.05 RT
7	NOT USED					
8	NOT USED					
9	1521978.55	1516719.64	5004.00	CL TOP OF DAM 24 FT WIDE MAINT RD	17+45.37	149.57 RT
10	1522004.36	1516768.63	5004.00	CL TOP OF DAM BEGIN MAINT RD	16+97.41	182.61 RT
11	1522099.79	1516936.76	5004.00	PT AT CL TOP OF DAM	15+22.04	295.32 RT
12	1522182.24	1517010.93	5004.00	PT AT CL TOP OF DAM	14+39.56	381.35 RT
13	1522242.72	1517036.54	5004.00	PC AT CL TOP OF DAM	14+11.35	442.43 RT
14	1522067.56	1516433.25	4998.00	INVERT ELEV 24" PIPE (A)	21+68.63	62.59 RT
15	1522290.87	1517027.53	5004.00	PT AT CL TOP OF DAM	14+22.22	490.40 RT
16	1522513.50	1516702.00	4999.80	INV 48" DIA STORM DRAIN	27+69.29	69.42 RT
17	NOT USED					
18	1522108.93	1516424.60	4998.00	INV 36" DIA STORM DRAIN (A)	22+18.89	60.59 RT
19	1522098.17	1516282.67	4998.18	INV TYPE "E" MANHOLE (A)	22+17.07	81.50 LT
20	1521972.50	1516507.33	4992.00	INV AT KEYWAY CL BEGIN KEYWAY	20+01.71	76.20 RT
21	NOT USED					
22	1522114.72	1516424.15	4998.00	BEGIN CONTOUR ACROSS POND	22+26.30	60.33 RT
23	1521987.53	1516412.52	5003.00	SOIL SWALE INVERT	22+88.08	12.13 RT
24	1521965.96	1516436.26	5002.00	SOIL SWALE INVERT	20+54.79	19.38 RT
25	1521943.89	1516459.18	5001.00	SOIL SWALE INVERT	20+20.74	22.34 RT
26	1521971.87	1516665.29	4998.00	POND BOTTOM AT MAINT ROAD	18+11.55	131.37 RT
27	1522237.24	1517009.89	4992.00	INV AT KEYWAY CL END KEYWAY	14+45.52	436.30 RT
28	1522126.08	1516934.02	4998.00	BEGIN CONTOUR ACROSS POND	15+27.30	321.36 RT
29	1522436.69	1516808.00	4999.00	BEGIN CONTOUR ACROSS POND	27+80.52	209.05 RT
30	1522401.09	1516600.48	4999.00	BEGIN CONTOUR ACROSS POND	26+16.88	65.78 RT
31	NOT USED					
32	1521929.95	1516483.09	5000.00	SOIL SWALE INVERT	19+90.80	27.94 RT
33-44	SEE SHEET 4-7					

UTILITY LEGEND

- (S) SANITARY SEWER MANHOLE
- STORM DRAIN OUTFALL PIPE
- (D) STORM DRAIN MANHOLE
- ELECTRICAL CONTROL BOX
- IRRIGATION CONTROL BOX
- CONTROL BENCHMARK
- WATER VALVE VAULT
- (T) TELEPHONE CONTROL BOX
- STREET LIGHT
- GAS BURIED GAS LINE
- E BURIED ELECTRICAL LINE
- W BURIED WATER LINE
- T BURIED TELEPHONE LINE
- SAS SANITARY SEWER LINE
- CTV BURIED CABLE TELEVISION

AMAFCA TRACT 2B POND
POND HYDROLOGIC SUMMARY
100-YR. 24-HOUR STORM
Full Development Conditions
(pond empty at beginning of storm)

drainage area = 0.299 sq. mi.

maximum embankment elev. = 5004.00
emergency spillway crest elev. = 5001.50
principal spillway crest elev. = 5000.89
peak water surface elev. = 5001.54

inflow peak discharge = 363 cfs
principal spillway (36-inch CMP) outflow peak discharge = 34 cfs
principal spillway (36-inch CMP) peak velocity = 13 ft/sec
emergency spillway peak discharge = 0 cfs

maximum pond volume at elev. 5004.00 = 29.08 ac-ft
hydrograph inflow volume = 27.02 ac-ft
storage volume at peak water surface elev. = 16.17 ac-ft

LEGEND

- PC POINT OF TANGENCY (BEGIN CURVE)
- PT POINT OF TANGENCY (END CURVE)
- TC TOP OF CONCRETE
- INV INVERT
- R.O.W. MARKERS
- CL CENTERLINE
- SUBGRADE PREPARATION UNDER EMBANKMENT
- EL ELEVATION
- TOC TOP OF CURB
- SLOPE INDICATOR (TOP — BOTTOM)

BUILD/PAY NOTE:

- 201000 CLEAR AND GRUB: CONTRACTOR SHALL CLEAR AND GRUB ENTIRE AREA WITHIN AMAFCA R.O.W. LINES . MAN-MADE TRASH REMOVAL IS INCIDENTAL. TREE REMOVAL: CONTRACTOR SHALL CUT DOWN AND REMOVE ALL TREES AND ROOTS WITHIN AMAFCA R.O.W. LINES. STD SPEC SECT 201
- 203000 UNCLASSIFIED EXCAVATION: -INCLUDES EXCAVATION, PROVIDING BORROW, CONSTRUCTING EMBANKMENT, HAULING, DISPOSING, PLACING, AND COMPACTING MATERIALS. NOTE – SEE DETAILS SHEET 4-6 FOR EMBANKMENT SECTION. STD SPEC SECT 203
- 206100 SELECT BACKFILL MATERIAL : THE KEYWAY TRENCH SUBGRADE CLAY LAYER SHALL BE AT 90% OF MAXIMUM DENSITY AND THE CLAY LAYER GRADATION AS SPECIFIED PER DETAILS ON SHEET 4-6. SOIL MIXING OF CLAY WITH SOILS TO OBTAIN GRADATION IS INCLUDED WITH THIS ITEM. STD SPEC SECT 206 SEE 207000 SUBGRADE PREPARATION.
- 207000 SUBGRADE PREPARATION: INCLUDES COMPACTING AND FINISHING THE SUBGRADE PREPARATION TO WITHIN 0.1 FT OF THE SPECIFIED ELEVATION. NOTE – SUBGRADE PREPARATION UNDER EMBANKMENT SHALL BE AT 95% OF MAXIMUM DENSITY TO KEYWAY TRENCH SUBGRADE. THE KEYWAY TRENCH SUBGRADE CLAY LAYER AND ENTIRE POND BOTTOM SHALL BE AT 90% OF MAXIMUM DENSITY AND THE CLAY LAYER GRADATION AS SPECIFIED PER DETAILS ON SHEET 4-6. STD SPEC SECT 207
- 304000 BASE COURSE: BUILD 12' WIDE 6" THICK ¾" GROUND BASE COURSE ROAD ENTIRE EMBANKMENT LENGTH AND MAINTENANCE ROAD TO POND BOTTOM. STD SPEC SECT 304.
- 570465 36" END SECTION: INSTALL 36" RCP END SECTION PER STD SPEC SECT 570 AND STD DWG. 570-02-2/2.
- 601000 RIP-RAP-PIPE REMOVAL: REMOVE AND DISPOSE OF PIPE AND RE-USE RIP-RAP PER STD SPEC SECT 601.
- 602010 RIP-RAP: BUILD CLASS B RIP-RAP EROSION PAD AND CLASS 1 GEOTEXTILE FILTER FABRIC PER STD. SPEC. SECTION 604 PER DETAIL 17 SHEET 4-6 AND STD SPEC SECT 602 AND STD DWG. 602-01-1/1.
- 632000 CLASS A SEEDING: DRILL, SEED, MULCH: POND BOTTOM AND SLOPE 1V:3H OR FLATTER WITHIN R.O.W. DRILL AND SEED WITH HAY MILLET MULCH PER STD SPEC SECT 632.
- 632100 STEEP SLOPE SEEDING: CRUSHED GRAVEL SEEDED WITH (CLASS A) GRAVEL MULCH: APPLY 1½"-2" THICK ¾"CRUSHED GRAVEL WITH AT LEAST 50% FRACTIONAL FACED GRAVEL TO ALL POND EMBANKMENT GRADED SLOPES STEEPER THAN 1V:3H WITHIN R.O.W. STD SPEC SECT 632. GRAVEL COLOR SHALL BE SANTA ANA TAN, OR APPROVED EQUAL.

SCALE: 1" = 50'
DRAWING SCALE:

DESIGNED BY: PATRICK STOVALL, PE
NEW MEXICO PROJECT NO. HSIP – 0448(17)5

CONSTRUCTION NOTES:

1. CONSTRUCTION YARD: MAY BE LOCATED WITHIN POND AREA – MUST COORDINATE WITH AMAFCA CONSTRUCTION ENGINEER.
2. SOIL STOCK PILE AREA: MAY BE LOCATED WITHIN POND AREA – MUST COORDINATE WITH AMAFCA CONSTRUCTION ENGINEER.
3. EXCESS SOIL TO BE REMOVED FROM SITE AND HAUL DISPOSAL LOCATION: MUST BE COORDINATED WITH AMAFCA CONSTRUCTION ENGINEER.

(A) BID ITEMS THAT ARE NOT INCLUDED IN AMAFCA BID LOT:

PIPES, END SECTIONS, MANHOLES, AND RIPRAP NOT INCLUDED IN AMAFCA BID LOT.

PATRICK L. STOVALL — NEW MEXICO — No. 13830 — PROFESSIONAL ENGINEER
11-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

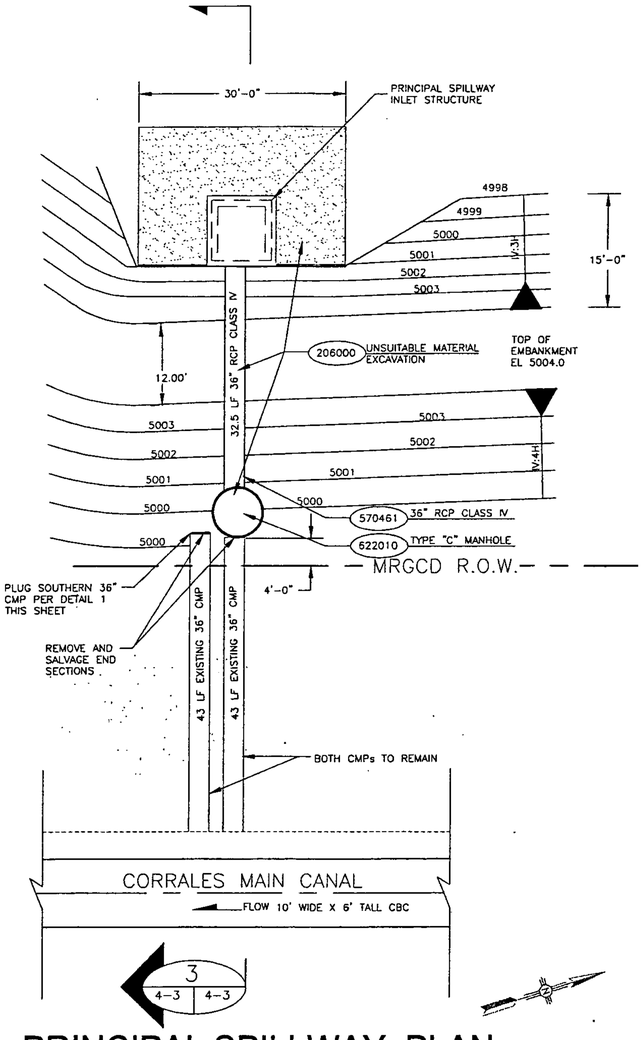
DETENTION POND PLAN

SHEET NO. 4-2

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\ DETENTION POND PLAN.DWG

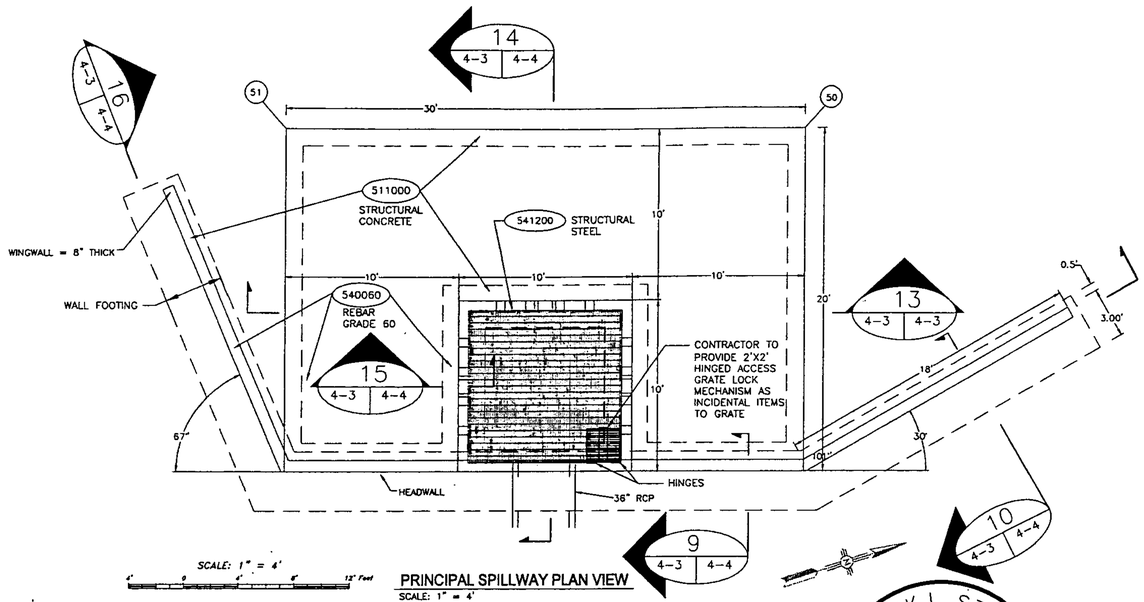
○ NODE TABLE

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION	PDN STATION	OFF-SET (FEET)
50	1521964.24	1516509.95	4997.00	TOP OF CONCRETE SLAB	18+53.19	96.69 RT
51	1521951.83	1516584.61	4997.00	TOP OF CONCRETE SLAB	18+87.96	115.32 RT



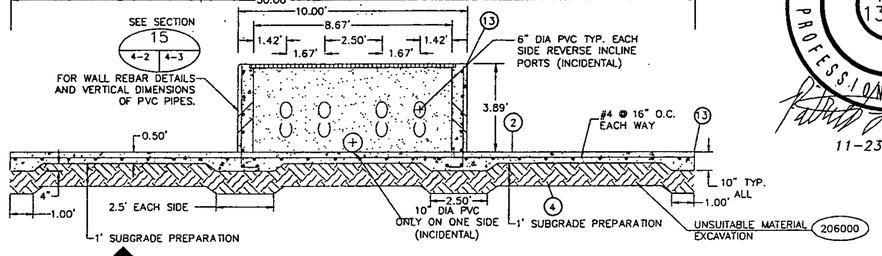
PRINCIPAL SPILLWAY PLAN

SCALE: 1" = 10'



PRINCIPAL SPILLWAY PLAN VIEW

SCALE: 1" = 4'



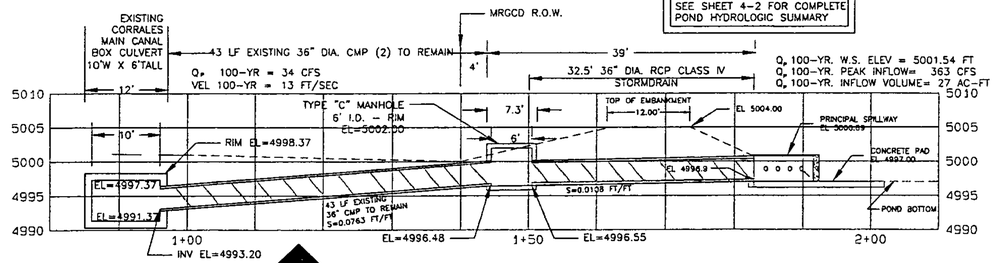
13 4-3 4-3 PRINCIPAL SPILLWAY SECTION

SCALE: 1" = 3'

SCALE: 1" = 3'
3' 0 3' 6' 9' Feet

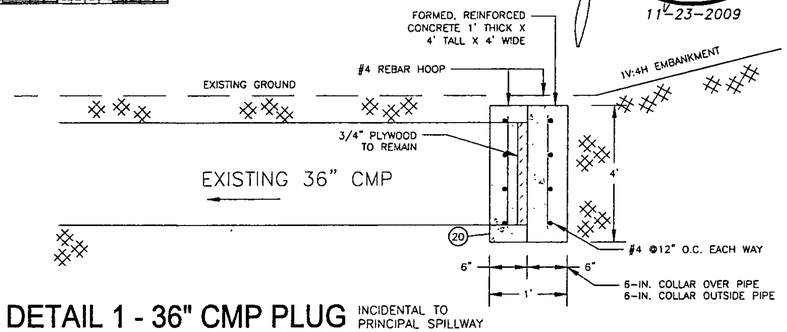
SCALE: 1" = 10'
10' 0 10' 20' 30' Feet

SEE SHEET 4-2 FOR COMPLETE POND HYDROLOGIC SUMMARY



3 4-3 4-3 PRINCIPAL SPILLWAY PROFILE

SCALE: 1" = 10'



DETAIL 1 - 36" CMP PLUG

INCIDENTAL TO PRINCIPAL SPILLWAY

NOT TO SCALE

PATRICK L. STOVALL — NEW MEXICO — No. 13830 — PROFESSIONAL ENGINEER

11-23-2009

JOHN D. JAQUESS — NEW MEXICO — No. 6290 — PROFESSIONAL ENGINEER & SURVEYOR

11-23-2009

BUILD/PAY NOTE:

PROJECT CONTROL NUMBER: A300060

(206000) UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATION, PLACING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES –INCLUDES MANHOLES. STD SPEC SECT 206

(511000) STRUCTURAL CONCRETE CLASS A: PAYMENT DOES NOT INCLUDE REBAR. STD SPEC SECT 509, 510, 511

(540060) REBAR GRADE 60: STD SPEC SECT 540

(570461) 36" RCP CLASS IV: INSTALL 33 LF 36" RCP CLASS IV. STD SPEC SECT 570

(541200) STRUCTURAL STEEL FOR MISCELLANEOUS ITEMS: GRATE– USE MC NICHOLS SERIES GRATE – GW (19W4) ITEM NO. GW175, OR ENGINEER APPROVED ALTERNATIVE. SEE DESIGN DATA "D" THIS SHEET. STD SPEC SECT 541. HINGES AND LOCK/LOCK PLATE ARE INCIDENTAL TO GRATE

(662010) TYPE "C" MANHOLE: INSTALL NEW TYPE "C" 6 FT DIA. MANHOLE PER STD SPEC SECT 662 AND STD. DWG 662-01-1/3.

○ KEYED NOTES

2. EXPOSED NON-VERTICAL CONCRETE SHALL BE FINISHED WITH A TINE FINISH TRANSVERSE TO FLOW
4. COMPACTED SUB-GRADE – 95% MODIFIED PROCTOR. PER ASTM D1557
13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.
20. PLYWOOD AND REINFORCED CONCRETE ARE INCIDENTAL TO PRINCIPAL SPILLWAY AND NOT A PAY ITEM.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE: F'C = 3000 PSI

B. REINFORCING STEEL: ASTM A615 GRADE 60

C. MOISTURE AND DENSITY CONTROL: ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO ±2 PERCENT.

D. SPECIFICATIONS FOR PRINCIPAL SPILLWAY:
RECTANGULAR BAR GRATING

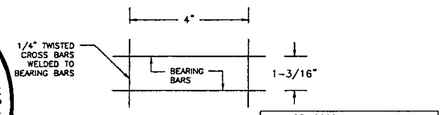
PREFABRICATED RECTANGULAR BAR PANELS:
MATERIAL: HOT DIPPED GALVANIZED STEEL
WELDED BEARING BARS AND 1/4 INCH SQUARE TWISTED CROSS BARS.

BEARING BAR SIZE: 1 – 3/4 INCH HEIGHT, 3/16 INCH WIDTH.
BAR SPACING: 1 – 3/16 INCH CENTER TO CENTER WITH 4 INCHES BETWEEN 1/4 INCH SQUARE TWISTED CROSS BARS.

NO. OF PANELS: 3
LENGTH OF EACH PANEL: 8 FEET AND 11 INCHES (a)
WIDTH OF EACH PANEL: 35 – 13/16 INCHES (a)
WEIGHT: 12.5 LBS./SQ. FT. (a)
TOTAL WEIGHT: 8'11" X 8'11" (12.5 LBS./SQ FT) = 994 LBS (a)

(a) CONTRACTOR TO VERIFY PANEL LENGTHS, WIDTHS AND 2' X 2' ACCESS GRATE WITH MANUFACTURER.

USE McNICHOLS SERIES – GW(19W4), ITEM NO. – GW 175 OR ENGINEER APPROVED EQUAL.



11-23-2009
Smith Engineering Company

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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PRINCIPAL SPILLWAY

4-3
SHEET NO.

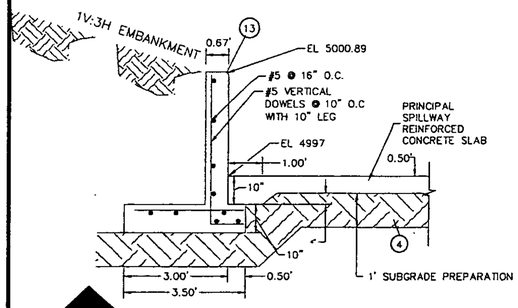
DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP-0448(17)5

O:\SEC----PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-3 PRINCIPAL SPILLWAY.DWG

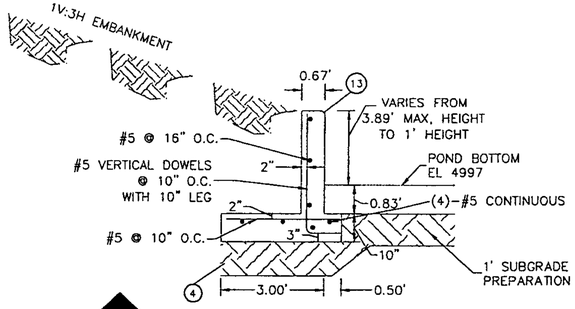
PROJECT CONTROL NUMBER: A300060



9 | 4-3 | 4-4

HEADWALL DETAIL SECTION

SCALE: 1" = 2'

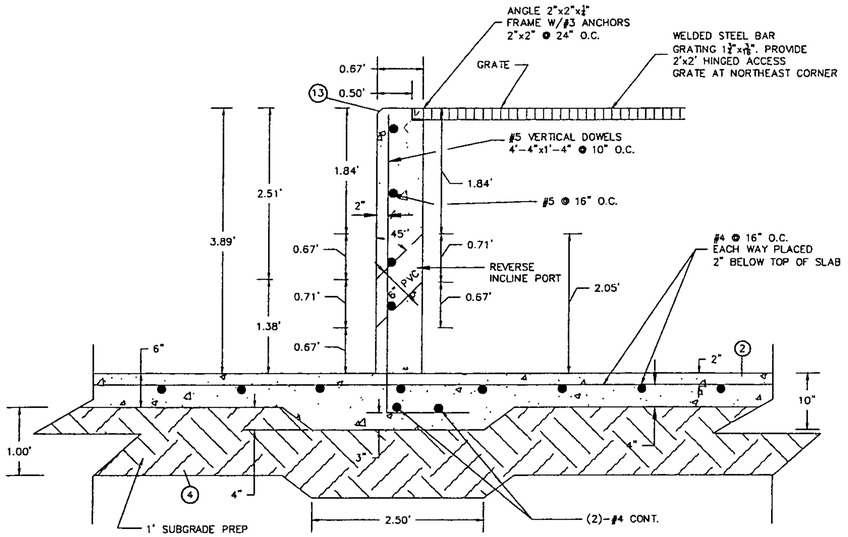


10 | 4-3 | 4-4

WINGWALL DETAIL

SCALE: 1" = 2'

SCALE: 1" = 2'

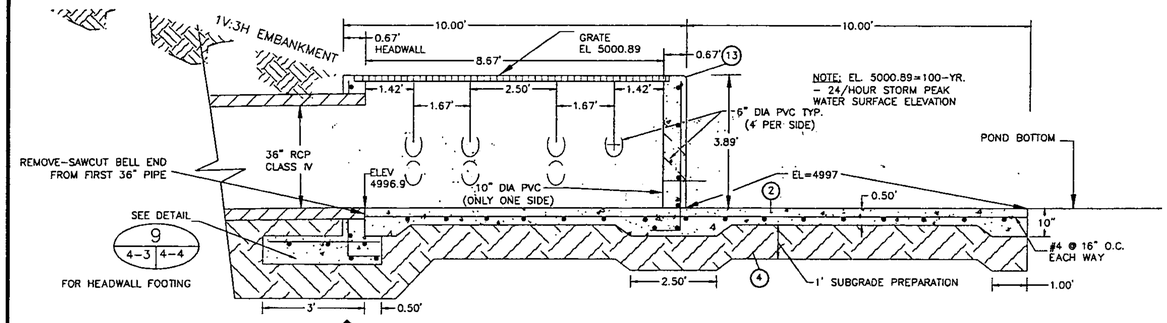


15 | 4-3 | 4-4

PRINCIPAL SPILLWAY DETAIL SECTION

SCALE: 1" = 1'

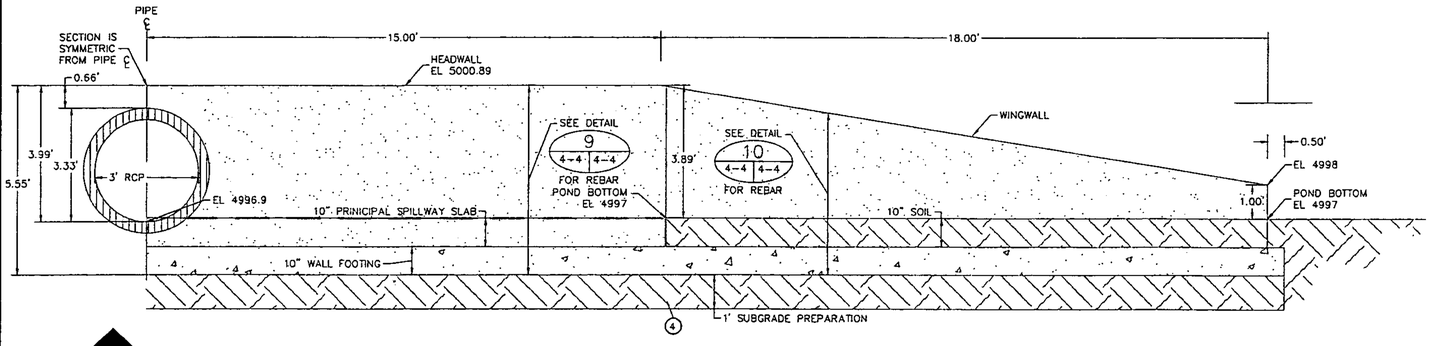
SCALE: 1" = 1'



14 | 4-3 | 4-4

PRINCIPAL SPILLWAY DETAILS SECTION

SCALE: 1" = 2'



16 | 4-3 | 4-4

PRINCIPAL SPILLWAY HEADWALL/WINGWALL PROFILE SECTION

SCALE: 1" = 2'

OKEYED NOTES

2. EXPOSED NON-VERTICAL CONCRETE SHALL BE FINISHED WITH A TINE FINISH TRANSVERSE TO FLOW

4. COMPACTED SUB-GRADE - 95% MODIFIED PROCTOR, PER ASTM01557

13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE:	F'C = 3000 PSI
B. REINFORCING STEEL:	ASTM A615 GRADE 60
C. MOISTURE AND DENSITY CONTROL:	ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO ±2 PERCENT.

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER

11-23-2009

JOHN D. JAQUESS NEW MEXICO No. 6290 PROFESSIONAL ENGINEER & SURVEYOR

11-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PRINICIPAL SPILLWAY DETAILS

4-4

SHEET NO.

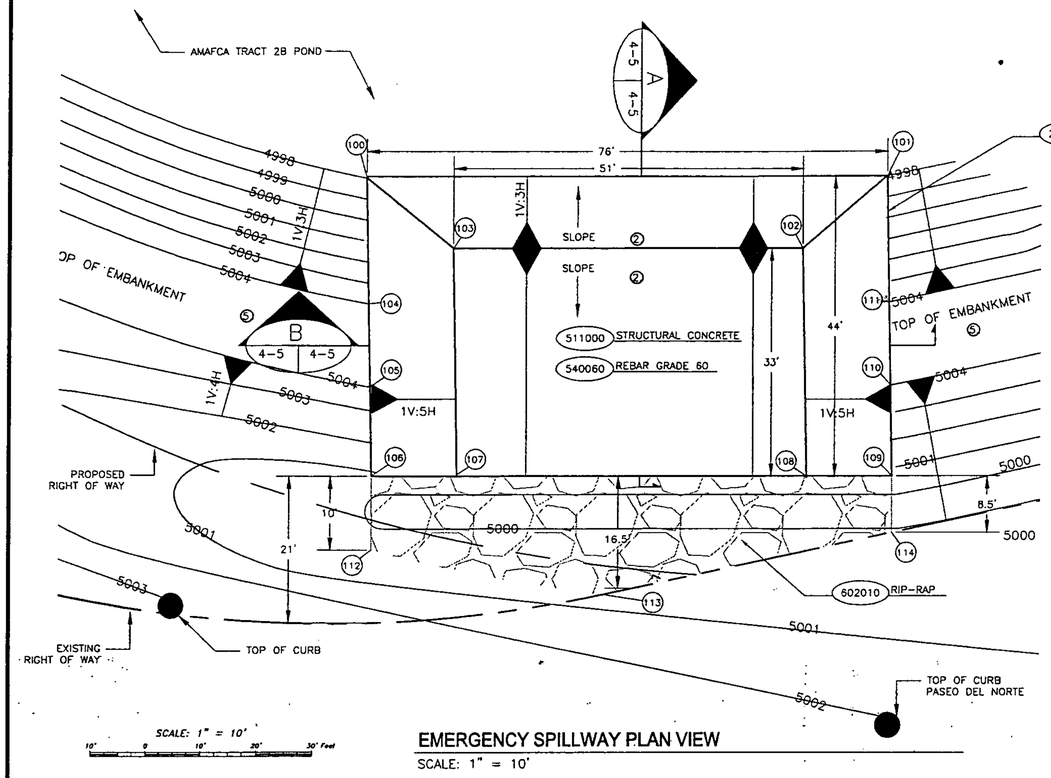
DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP-0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-4 PRINCIPAL SPILLWAY DETAILS.DWG

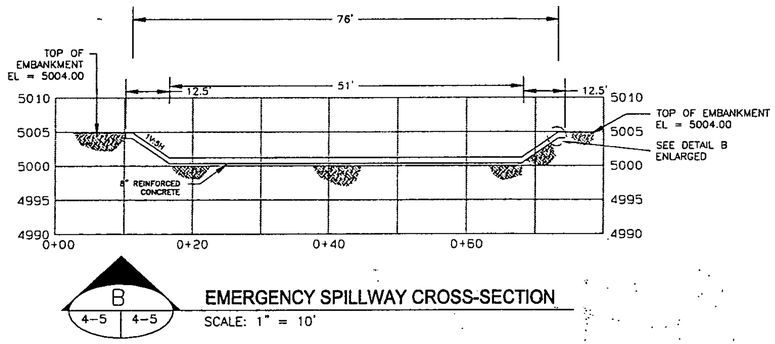
PROJECT CONTROL NUMBER: A300060



SCALE: 1" = 10'

EMERGENCY SPILLWAY PLAN VIEW

SCALE: 1" = 10'



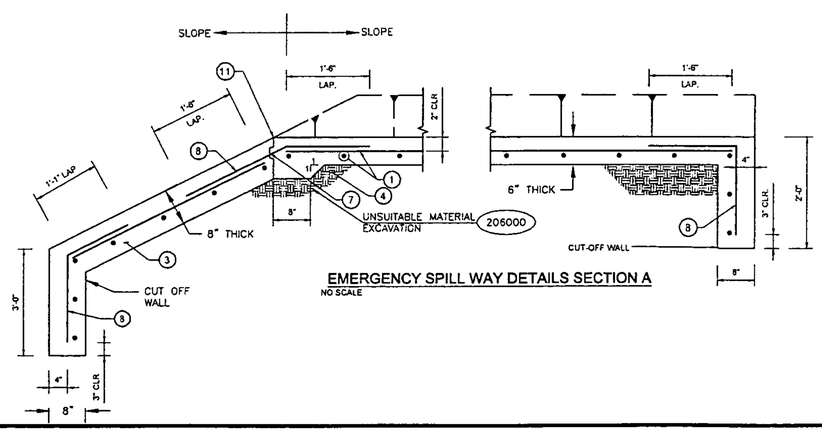
B
4-5
4-5

EMERGENCY SPILLWAY CROSS-SECTION

SCALE: 1" = 10'

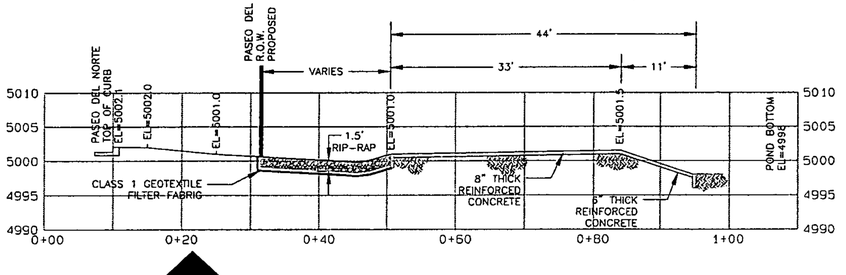
○ EMERGENCY SPILLWAY NODE TABLE

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION	PON STA.	OFF-SET (FT)
100	1521974.64	1516502.81	4998.0	TOP OF CONC AT POND BOTTOM	21+08.32	74.78 RT
101	1521994.10	1516572.42	4998.0	TOP OF CONC AT POND BOTTOM	19+01.41	85.41 RT
102	1521939.44	1516556.93	5001.5	TOP OF CONCRETE	19+19.15	74.70 RT
103	1521959.93	1516510.22	5001.5	TOP OF CONCRETE	19+87.59	67.93 RT
104	1521957.45	1516495.64	5004.0	TOP OF CONCRETE	20+00.24	57.18 RT
105	1521946.17	1516490.93	5004.0	TOP OF CONCRETE	19+95.70	45.55 RT
106	1521934.03	1516485.86	5001.0	TOP OF CONCRETE	19+91.16	32.97 RT
107	1521929.00	1516497.31	5001.0	TOP OF CONCRETE	19+77.29	35.99 RT
108	1521908.51	1516544.03	5001.0	TOP OF CONCRETE	19+18.14	41.72 RT
109	1521903.49	1516555.47	5001.0	TOP OF CONCRETE	19+03.41	41.44 RT
110	1521915.86	1516560.64	5004.0	TOP OF CONCRETE	19+02.88	54.83 RT
111	1521927.09	1516565.32	5004.0	TOP OF CONCRETE	19+02.35	67.00 RT
112	1521904.00	1516509.65	5000.5	END RIPRAP TOP ELEV	19+87.81	22.60 RT
113	1521904.51	1516509.95	5000.7	END RIPRAP TOP ELEV	19+50.38	22.60 RT
114	1521896.01	1516552.35	5000.0	END RIPRAP TOP ELEV	19+03.70	33.17 RT



EMERGENCY SPILL WAY DETAILS SECTION A

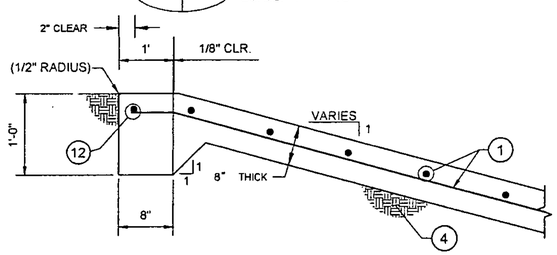
NO SCALE



A
4-5
4-5

EMERGENCY SPILLWAY PROFILE

SCALE: 1" = 10'



ENLARGED END SECTION B

NO SCALE

BUILD/PAY NOTE:

206000 UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATION, PLACING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES –INCLUDES MANHOLES. STD SPEC SECT 206

511000 STRUCTURAL CONCRETE CLASS A: PAYMENT DOES NOT INCLUDE REBAR. STD SPEC SECT 509, 510, 511

540060 REBAR GRADE 60 STD SPEC SECT 540.

602010 RIP-RAP: BUILD CLASS B RIP-RAP EROSION PAD AND CLASS 1 GEOTEXTILE FILTER FABRIC PER STD. SPEC. SECTION 604 STD SPEC SECT 602 AND STD DWG. 602-01-1/1.

OKEYED NOTES

1. SPILLWAYS SHALL BE CONSTRUCTED OF 6" THICK CONCRETE WITH #5 BARS AT 15" O.C.
2. EXPOSED NON-VERTICAL CONCRETE SHALL BE FINISHED WITH A TINE FINISH TRANSVERSE TO FLOW
3. 8" CHANNEL LINING
4. COMPACTED SUB-GRADE – 95% MODIFIED PROCTOR. PER ASTMD1557
5. MAINTENANCE ROAD
6. NOT USED
7. ALLOWABLE CONSTRUCTION JOINT WITH KEYWAY
8. #5 DOWEL @ 15" O.C.
9. #5 CORNER BAR, TYP.
10. NOT USED
11. TOOLED 1/4" RADIUS BOTH SIDES WITH NP-1 SEALANT OR APPROVED EQUAL
12. #8 ON 6" STAND CHAIR
13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE:	F'C = 3000 PSI
B. REINFORCING STEEL:	ASTM A615 GRADE 60
C. MOISTURE AND DENSITY CONTROL:	ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO ±2 PERCENT.

PATRICK L. STOVALL
NEW MEXICO
No. 13830
PROFESSIONAL ENGINEER

11-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

EMERGENCY SPILLWAY

SHEET NO. 4-5

DRAWING SCALE:

DESIGNED BY: PATRICK STOVALL, PE

NEW MEXICO PROJECT NO. HSIP-0448(17)5

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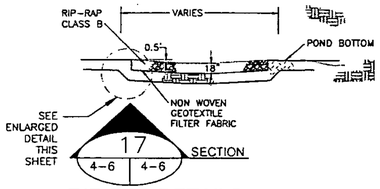
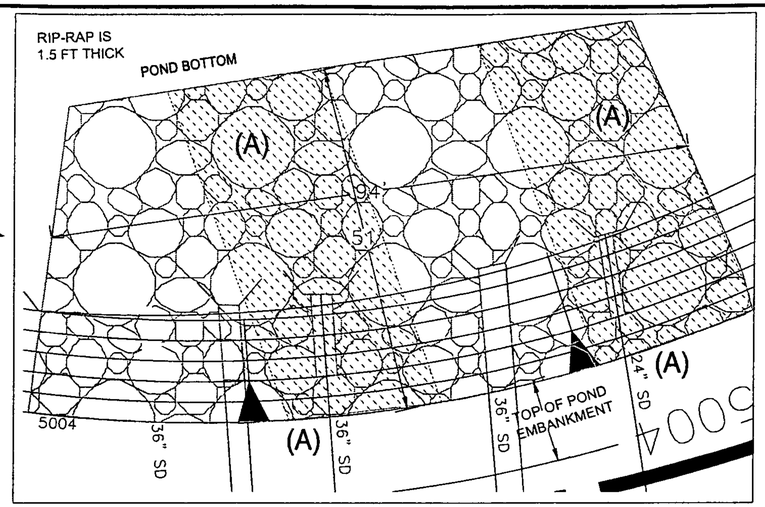


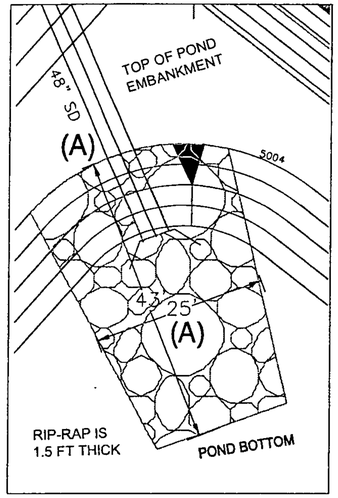
RIP-RAP DETAILS

SCALE: 1" = 10'



DETAIL RIP-RAP PLAN VIEW

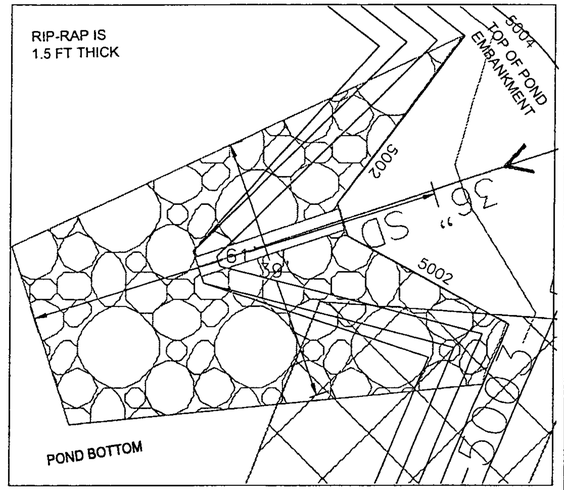
SCALE: 1"=10'



DETAIL RIP-RAP PLAN VIEW STA. 28+07 - COORS BLVD.

SCALE: 1"=10'

PROJECT CONTROL NUMBER: A300060

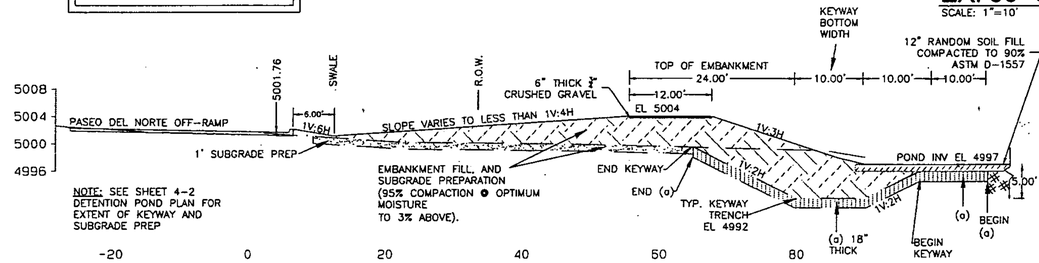


DETAIL RIP-RAP PLAN VIEW EX. 36" SD - NE CORNER OF POND

SCALE: 1"=10'

SCALE: 1" = 10'

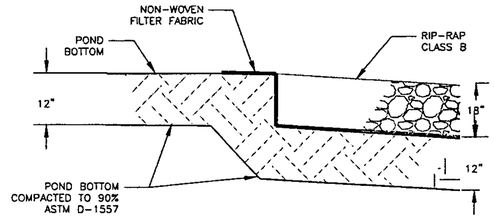
(A) NOT INCLUDED IN AMAFCA BID LOT



2 / 4-2 | 4-6

EMBANKMENT CROSS-SECTION

SCALE: 1" = 10' VERTICAL AND HORIZONTAL



DETAIL RIP-RAP END ENLARGEMENT

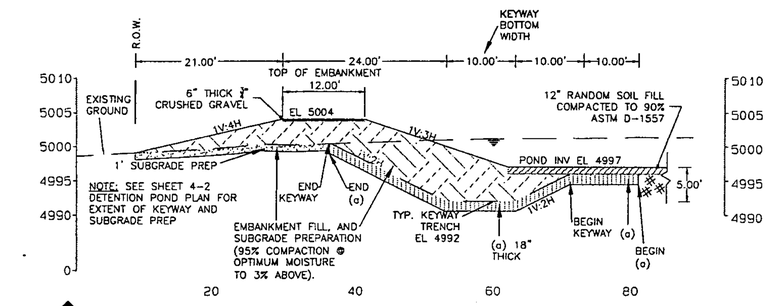
NOT TO SCALE

(a) 18" MINIMUM SANDY CLAY SOIL FILL COMPACTED TO 90% ASTM D-1557 AT A MOISTURE OF -1 TO 3% OF OPTIMUM WITH A SHEEP FOOT COMPACTOR

(a)

SIEVE SIZE	%PASSING
1"	100
#4	90-100
#40	80-100
#200	50-90

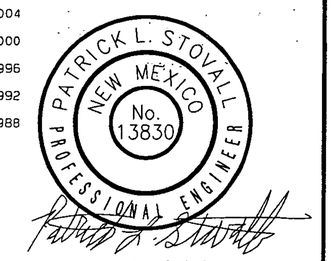
PLASTICITY INDEX 35 OR LESS
PERMEABILITY $1X10^{-7}$ OR LESS CM/SEC



1 / 4-2 | 4-6

EMBANKMENT CROSS-SECTION

SCALE: 1" = 10' VERTICAL AND HORIZONTAL



11-23-2009

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Smith Engineering Company

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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

POND DETAILS

SHEET NO. 4-6

DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP-0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-6 POND DETAILS.DWG

BUILD/PAY NOTES:

(201000) CLEAR AND GRUB: CONTRACTOR SHALL CLEAR AND GRUB AREA WITHIN LIMITS SHOWN. MAN-MADE TRASH REMOVAL IS INCIDENTAL, TREE REMOVAL STD SPEC SEC 201.

(206000) UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATION, PLACING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES -INCLUDES MANHOLES. STD SPEC SECT 206

(417000) MISCELLANEOUS PAVING: REBUILD ASPHALT PARKING LOT TO SAME TYPE AND THICKNESS AS EXISTING ASPHALT. STD SPEC SECT 416

(516000) FLOWABLE FILL: STD SPEC SECT 516.

(570437) 24" CMP (REPLACE CMP 10 LF REMOVED) STD SPEC SECT 570

(570449) 30" CMP (REPLACE CMP 40 LF REMOVED) STD SPEC SECT 570

(570461) 36" RCP STD SPEC SECT 570

(570461) 36" GALVANIZED STEEL PIPE STD SPEC SECT 570 (OR ENGINEER APPROVED EQUAL)

(601000) REMOVE AND DISPOSE 35 LF 24" CMP STD SPEC SECT 601

(601110) REMOVAL OF SURFACING: EXISTING ASPHALT PARKING LOT STD SPEC SECT 601.

(607220) REMOVE & REBUILD CHAIN LINK FENCE. STD SPEC SECT 607

(609478) CONCRETE VERTICAL CURB & GUTTER TYPE D 6"x18": REMOVE EXISTING WHERE NECESSARY AND REPLACE IN KIND. STD SPEC SECT 609.

(632000) CLASS A SEEDING: DRILL, SEED, MULCH: POND BOTTOM AND SLOPE 1V:3H OR FLATTER WITHIN R.O.W. DRILL AND SEED WITH HAY MILLET MULCH PER STD SPEC SECT 632.

(632300) WATERING: WATER SOD DURING CONSTRUCTION STD SPEC SECT 632

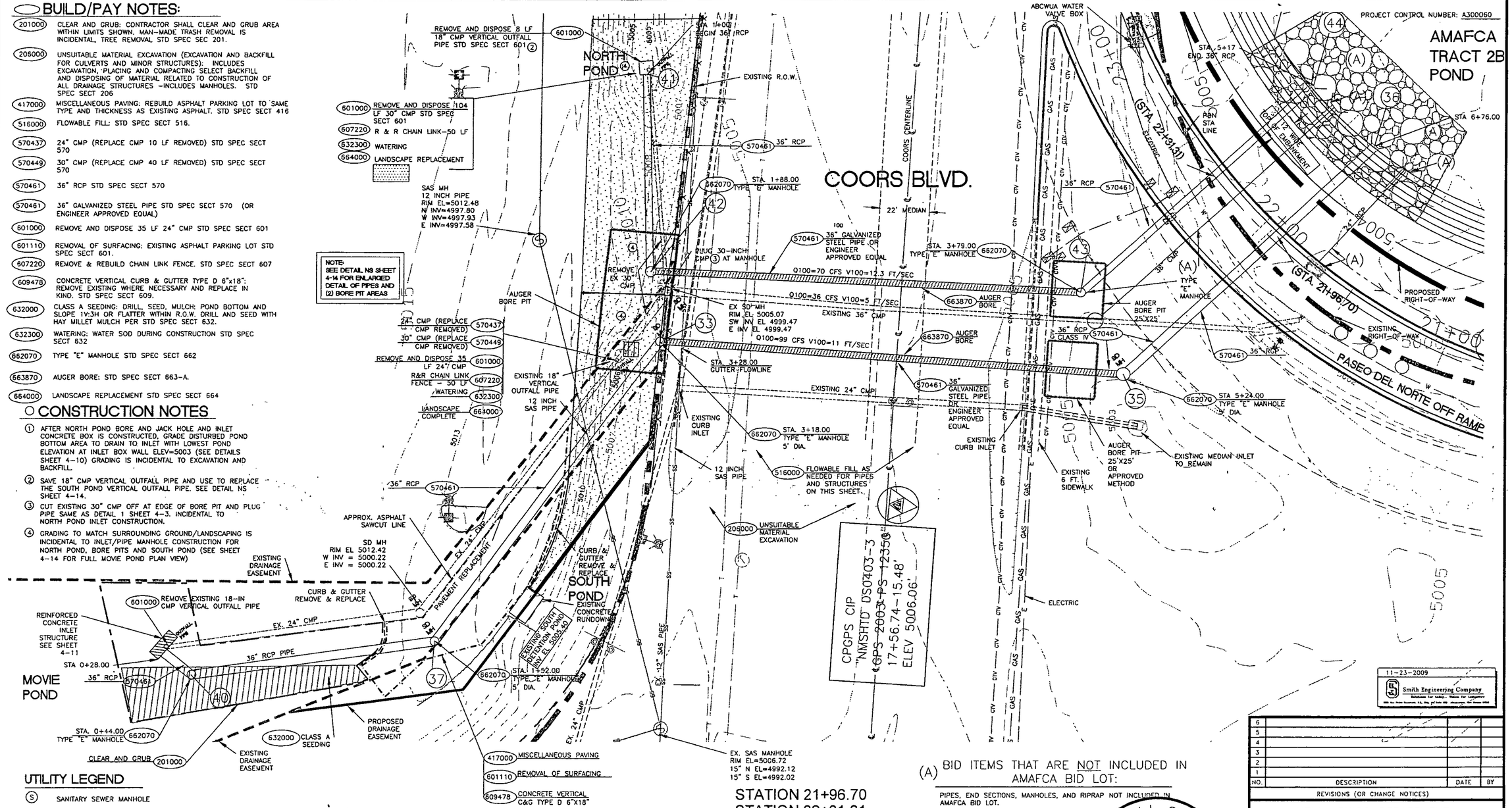
(662070) TYPE "E" MANHOLE STD SPEC SECT 662

(663870) AUGER BORE: STD SPEC SECT 663-A.

(664000) LANDSCAPE REPLACEMENT STD SPEC SECT 664

CONSTRUCTION NOTES

1. AFTER NORTH POND BORE AND JACK HOLE AND INLET CONCRETE BOX IS CONSTRUCTED, GRADE DISTURBED POND BOTTOM AREA TO DRAIN TO INLET WITH LOWEST POND ELEVATION AT INLET BOX WALL ELEV=5003 (SEE DETAILS SHEET 4-10) GRADING IS INCIDENTAL TO EXCAVATION AND BACKFILL.
2. SAVE 18" CMP VERTICAL OUTFALL PIPE AND USE TO REPLACE THE SOUTH POND VERTICAL OUTFALL PIPE. SEE DETAIL NS SHEET 4-14.
3. CUT EXISTING 30" CMP OFF AT EDGE OF BORE PIT AND PLUG PIPE SAME AS DETAIL 1 SHEET 4-3. INCIDENTAL TO NORTH POND INLET CONSTRUCTION.
4. GRADING TO MATCH SURROUNDING GROUND/LANDSCAPING IS INCIDENTAL TO INLET/PIPE MANHOLE CONSTRUCTION FOR NORTH POND, BORE PITS AND SOUTH POND (SEE SHEET 4-14 FOR FULL MOVIE POND PLAN VIEW)



UTILITY LEGEND

- (S) SANITARY SEWER MANHOLE
- STORM DRAIN OUTFALL PIPE
- STORM DRAIN MANHOLE
- ELECTRICAL CONTROL BOX
- IRRIGATION CONTROL BOX
- CONTROL BENCHMARK
- WATER VALVE VAULT
- (T) TELEPHONE CONTROL BOX
- STREET LIGHT
- TRAFFIC SIGN
- GAS — BURIED GAS LINE
- E — BURIED ELECTRICAL LINE
- W — BURIED WATER LINE
- T — BURIED TELEPHONE LINE
- SAS — SANITARY SEWER LINE
- CTV — CABLE TELEVISION

(A) BID ITEMS THAT ARE NOT INCLUDED IN AMAFCA BID LOT:

PIPES, END SECTIONS, MANHOLES, AND RIPRAP NOT INCLUDED IN AMAFCA BID LOT.

STATION 21+96.70
STATION 22+31.31
PLAN - 36" RCP AND GALVANIZED STEEL PIPE

SCALE: 1"=20'

NODE DATA

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
33	1522208.99	1516124.33	4998.93	MANHOLE INVERT
34	NOT USED			
35	1522071.69	1516278.13	4998.40	MANHOLE INVERT
36	1522084.18	1516428.44	4998.00	INVERT 36" RCP
37	1522163.60	1515964.02	4999.54	MANHOLE INVERT
38	NOT USED			
39	NOT USED			
40	1522217.84	1515869.37	4999.94	MANHOLE INVERT
41	1522307.58	1516191.99	5002.17	PT AT INV AT INLET STRUCTURE
42	1522236.54	1516139.95	4998.67	MANHOLE INVERT
43	1522112.00	1516285.60	4998.37	MANHOLE INVERT
44	1522122.37	1516423.03	4998.00	INV 36" GALVANIZED STEEL PIPE

*SEE PLAN & PROFILE SHEETS FOR NMDOT PDN STATIONING

DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP - 0448(17)5

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER

11-23-2009

11-23-2009

Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

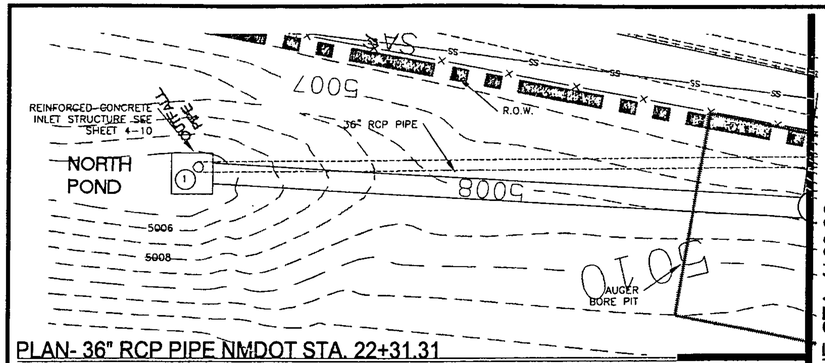
PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN 36-IN. STORMDRAINS
STA. 21+96.70
STA. 22+31.31

SHEET NO. 4-7

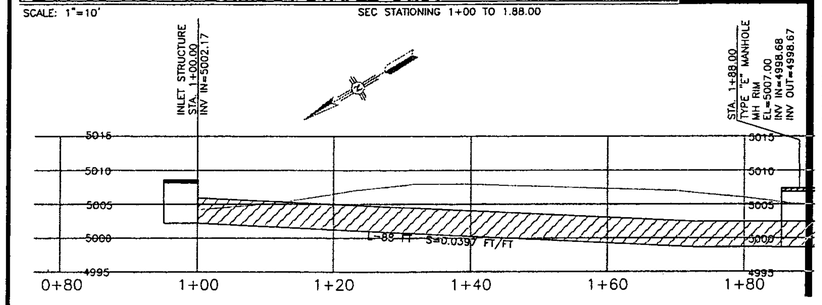
Q:\SEC---PROJECTS\2007 PROJECTS\1071126 AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\PLAN 36-IN. STORMDRAINS.DWG

PROJECT CONTROL NUMBER: A300060

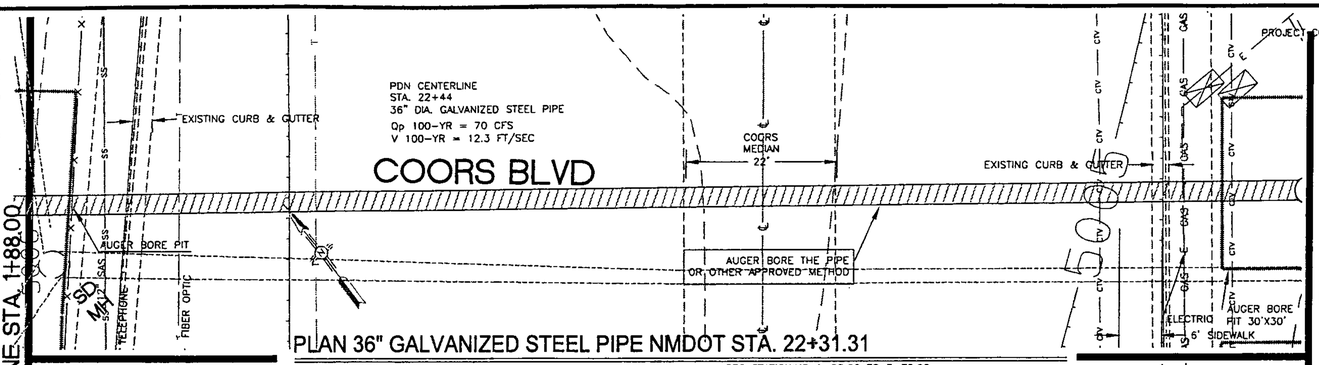


PLAN- 36" RCP PIPE NMDOT STA. 22+31.31

SCALE: 1"=10' SEC STATIONING 1+00 TO 1.88.00

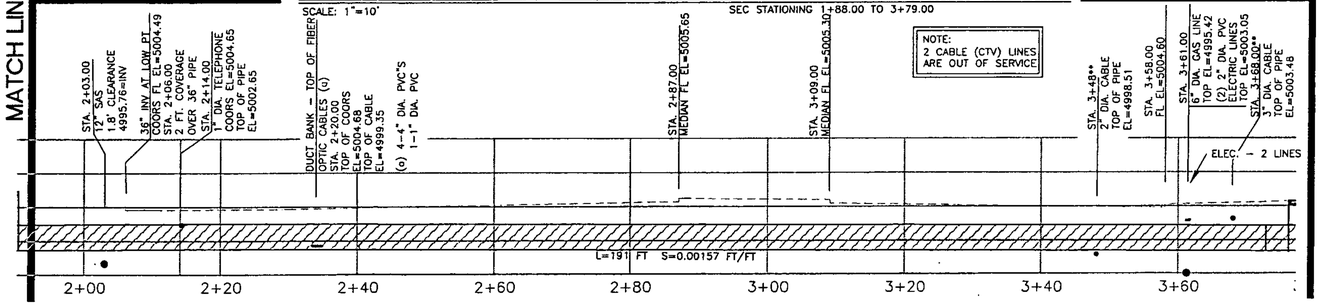


MATCH LINE STA. 1+88.00



PLAN 36" GALVANIZED STEEL PIPE NMDOT STA. 22+31.31

SCALE: 1"=10' SEC STATIONING 1+88.00 TO 3+79.00



MATCH LINE STA. 3+79.00

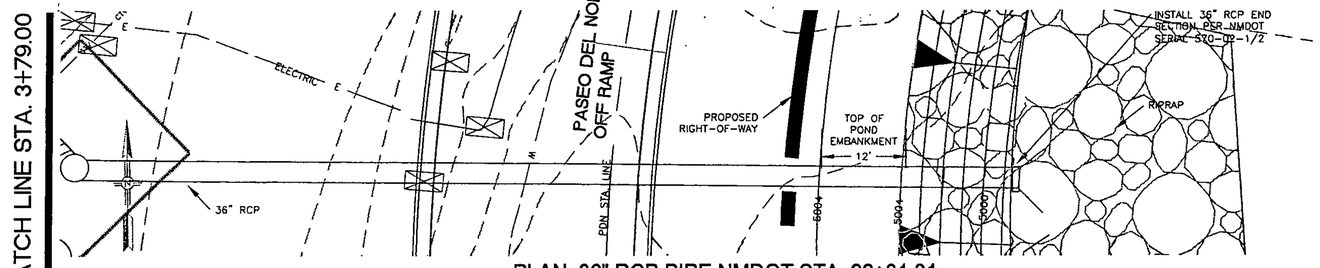
PROFILE - 36" RCP PIPE NMDOT STA. 22+31.31

SCALE: 1"=10' VERTICAL 1"=10' HORIZONTAL SEC STATIONING 1+00 TO 1.88.00

PROFILE 36" GALVANIZED STEEL PIPE NMDOT STA. 21+31.31

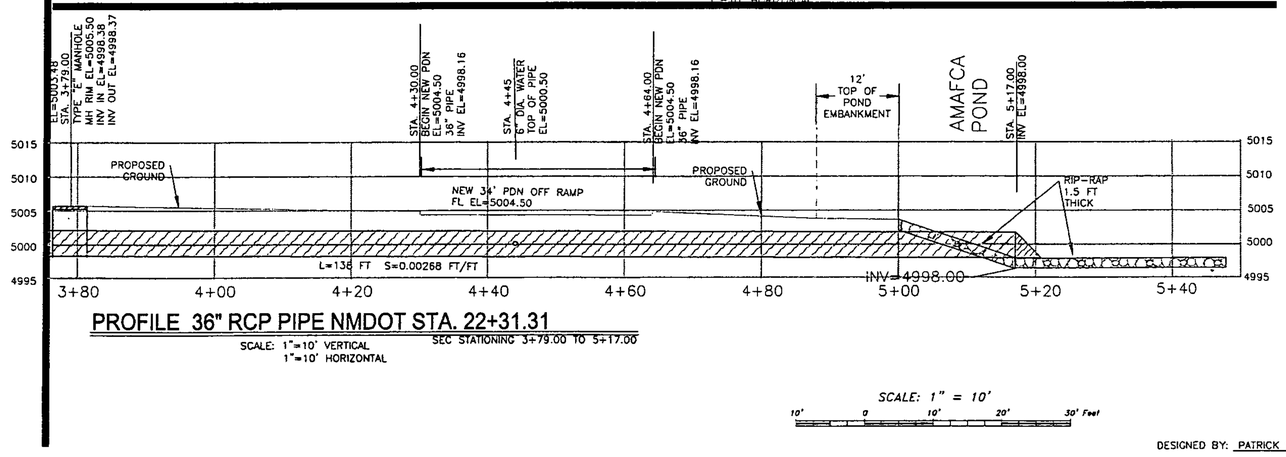
SCALE: 1"=10' VERTICAL 1"=10' HORIZONTAL SEC STATIONING 1+88.00 TO 3+79.00

MATCH LINE STA. 3+79.00



PLAN 36" RCP PIPE NMDOT STA. 22+31.31

SCALE: 1"=10' VERTICAL 1"=10' HORIZONTAL SEC STATIONING 3+79.00 TO 5+17.00



PROFILE 36" RCP PIPE NMDOT STA. 22+31.31

SCALE: 1"=10' VERTICAL 1"=10' HORIZONTAL SEC STATIONING 3+79.00 TO 5+17.00

SCALE: 1" = 10'

10' 0 10' 20' 30' Feet

UTILITY ELEVATIONS

ALL UTILITY LOCATIONS, TYPES, MATERIALS AND DEPTHS TO TOP OF UTILITY DETERMINED BY ABASTO UTILITY LOCATING CO., LLC (OCT & NOV 2009) EXCEPT SAS, SAS MH'S WERE SURVEYED BY BOHANNON HUSTON, INC. - AUG. 2009. TOP OF UTILITY ELEVATIONS COMPUTED BY SMITH ENGINEERING COMPANY.

NOTE:

UTILITY LOCATION

**ASSUMED FROM SOUTH PIPE INFO (THESE WILL NOT BE POTHOLED PER AMAFCA)

CONSTRUCTION NOTES

1. AFTER NORTH POND BORE PIT HOLE AND INLET CONCRETE BOX IS CONSTRUCTED, GRADE DISTURBED POND BOTTOM AREA TO DRAIN TO INLET WITH LOWEST POND ELEVATION AT INLET BOX WALL ELEV=5003.00 (SEE DETAILS SHEET 4-10) GRADING IS INCIDENTAL TO EXCAVATION AND BACKFILL.

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER

11-23-2009

11-23-2009
Smith Engineering Company

NO	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN AND PROFILE
36-IN. STORMDRAIN
STA. 22+31.31

SHEET NO. 4-8

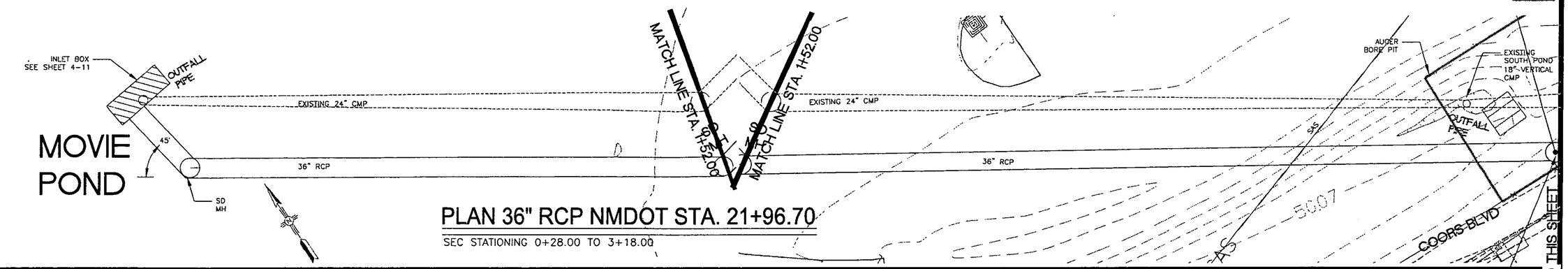
DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP-0448(17)5

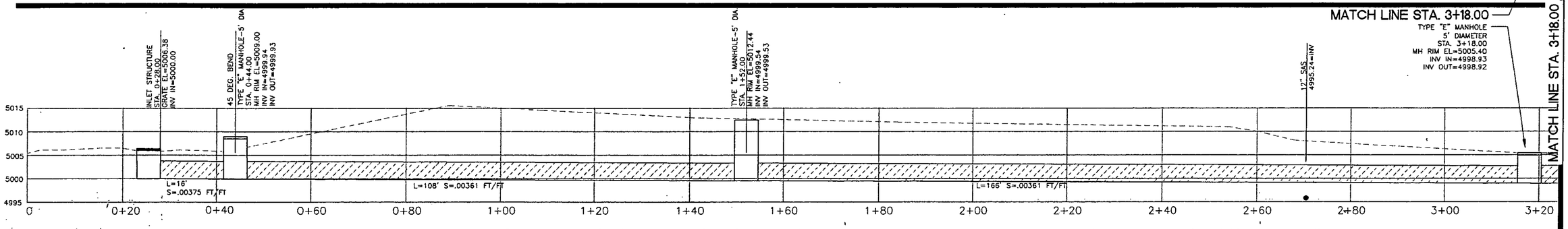
Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-8 PLAN AND PROF 48-IN SD.DWG

PROJECT CONTROL NUMBER: A300060



PLAN 36" RCP NMDOT STA. 21+96.70

SEC STATIONING 0+28.00 TO 3+18.00

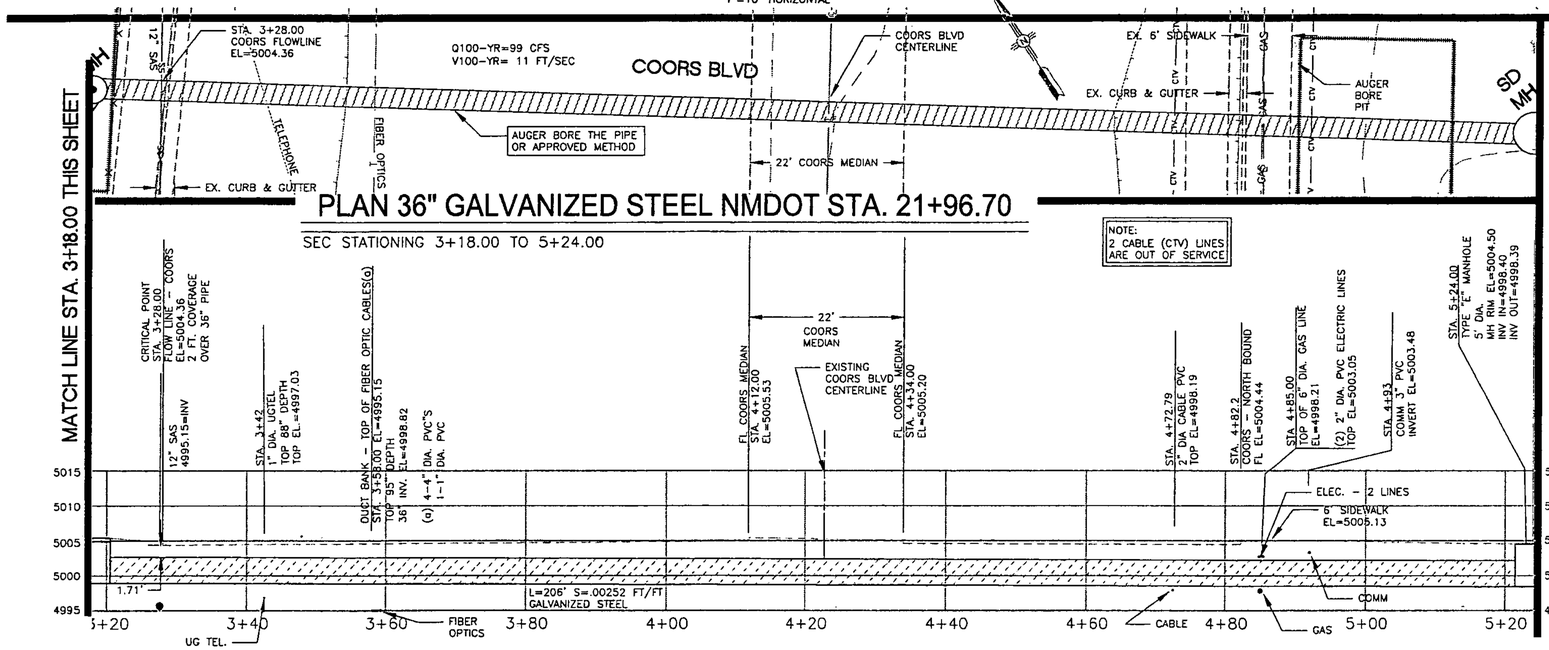


PROFILE 36" RCP NMDOT STA. 21+96.70

SCALE: 1"=10' VERTICAL
1"=10' HORIZONTAL

SEC STATIONING 0+28.00 TO 3+18.00

SCALE: 1" = 10



PROFILE 36" GALVANIZED STEEL PIPE NMDOT STA. 21+96.70

SEC STATIONING 3+18.00 TO 5+24.00

UTILITY ELEVATIONS

ALL UTILITY LOCATIONS, TYPES, MATERIALS AND DEPTHS TO TOP OF UTILITY DETERMINED BY ABASTO UTILITY LOCATING CO., LLC (OCT & NOV 2009) EXCEPT SAS, SAS MH'S WERE SURVEYED BY BOHANNON HUSTON, INC. - AUG. 2009. TOP OF UTILITY ELEVATIONS COMPUTED BY SMITH ENGINEERING COMPANY.

PATRICK L. STOVALL
NEW MEXICO
No. 13830
PROFESSIONAL ENGINEER

11-23-2009

Smith Engineering Company

11-23-2009

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN AND PROFILE
36-IN. STORM DRAIN
STA. 21+96.70

SHEET NO. 4-9

DESIGNED BY: PATRICK STOVALL, PE

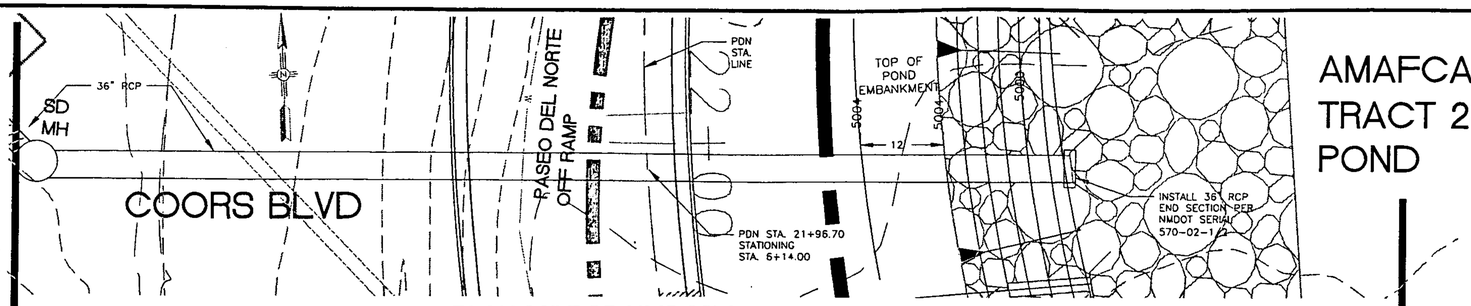
DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP 0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-9 PLAN AND PROFILE STA 21+93.14.DWG

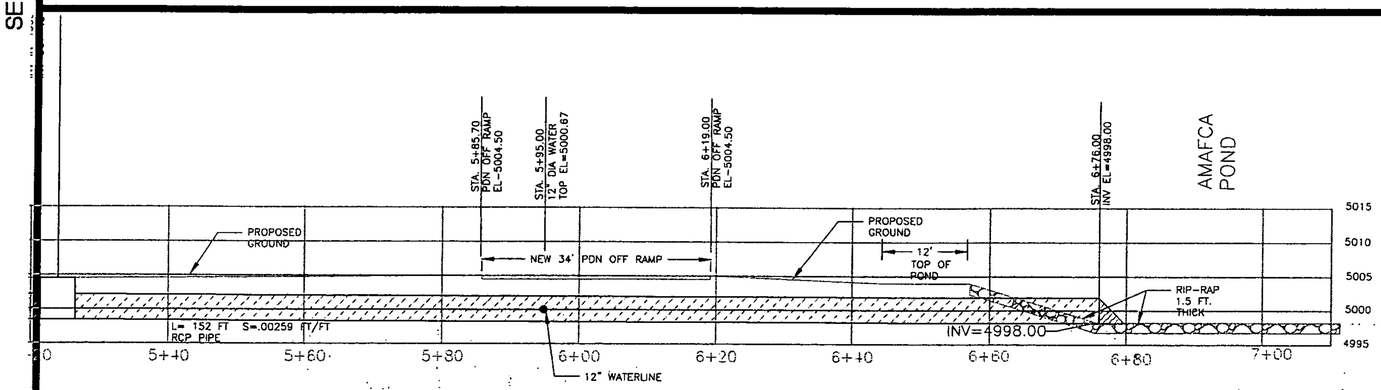
PROJECT CONTROL NUMBER: A300060

MATCH LINE STA. 5+24.00
SEE PAGE 4-9



PLAN 36" RCP NMDOT STA. 21+96.70

SCALE: 1"=10' HORIZONTAL SEC STATIONING 5+24.00 TO 6+76.00



PROFILE 36" RCP NMDOT STA. 21+96.70

SCALE: 1"=10' VERTICAL
1"=10' HORIZONTAL SEC STATIONING 5+24.00 TO 6+76.00

SCALE: 1" = 10

KEYED NOTES

4. COMPACTED SUB-GRADE - 95% MODIFIED PROCTOR. PER ASTMD1557

13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.

AMAFCA TRACT 2B POND

BUILD/PAY NOTE:

206000 UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATION, PLACING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES -INCLUDES MANHOLES. STD SPEC SECT 206

511000 STRUCTURAL CONCRETE CLASS A: PAYMENT DOES NOT INCLUDE REBAR. STD SPEC SECT 509, 510, 511

540060 REBAR GRADE 60: STD SPEC SECT 540

541200 STRUCTURAL STEEL: INSTALL 1-4'X4' SHOULDER DROP INLET FRAME AND GRATE PER NMDOT STD. DWG. 623-06-1/1. ONLY FRAME AND GRATE DETAILS FROM THE STD. DWG. APPLY.

KEYED NOTES

2. EXPOSED NON-VERTICAL CONCRETE SHALL BE FINISHED WITH A TINE FINISH TRANSVERSE TO FLOW

4. COMPACTED SUB-GRADE - 95% MODIFIED PROCTOR. PER ASTMD1557

13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE:	F'C = 3000 PSI
B. REINFORCING STEEL:	ASTM A615 GRADE 60
C. MOISTURE AND DENSITY CONTROL:	ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO ±2 PERCENT.

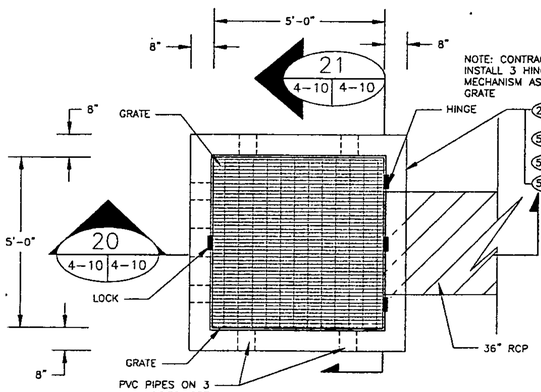
PATRICK L. STOVALL — NEW MEXICO — No. 13830 — PROFESSIONAL ENGINEER
11-23-2009

UTILITY ELEVATIONS

ALL UTILITY LOCATIONS, TYPES, MATERIALS AND DEPTHS TO TOP OF UTILITY DETERMINED BY ABASTO UTILITY LOCATING CO., LLC (OCT & NOV 2009) EXCEPT SAS, SAS MH'S WERE SURVEYED BY BOHANNON HUSTON, INC. - AUG. 2009. TOP OF UTILITY ELEVATIONS COMPUTED BY SMITH ENGINEERING COMPANY.

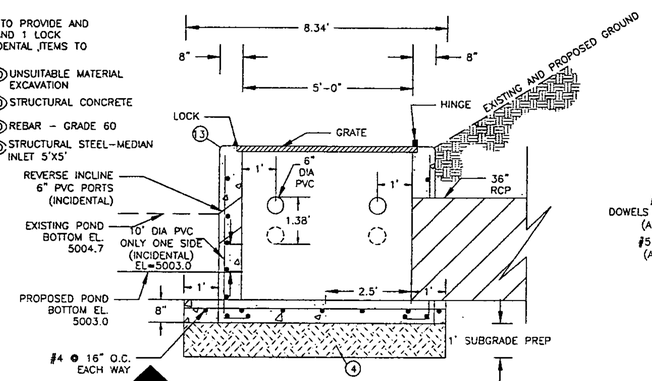
JOHN D. JAQUESS — NEW MEXICO — No. 6290 — PROFESSIONAL ENGINEER & SURVEYOR
11-23-2009

11-23-2009
Smith Engineering Company



PLAN VIEW INLET STRUCTURE STA. 22+31.31

SCALE: 1" = 2' (NORTH POND)

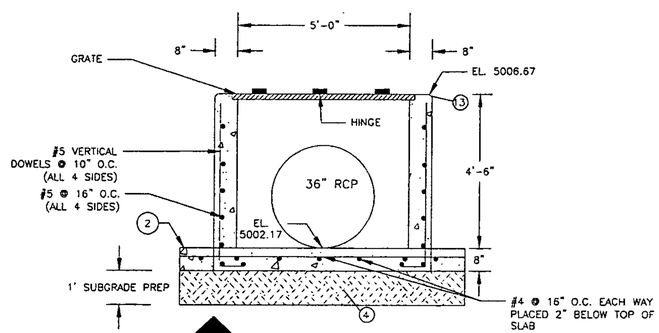


SCALE: 1" = 2'

20 4-10 4-10

PROFILE INLET STRUCTURE STA. 22+31.31

SCALE: 1" = 2' (NORTH POND)



21 4-10 4-10

SECTION STA. 22+31.31

SCALE: 1" = 2' (NORTH POND)

NO.	DESCRIPTION	DATE	BY
6			
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN AND PROFILE
36-IN. STORM DRAIN
STA. 21+96.70
AND DETAILS STA. 22+31.31

SHEET NO. 4-10

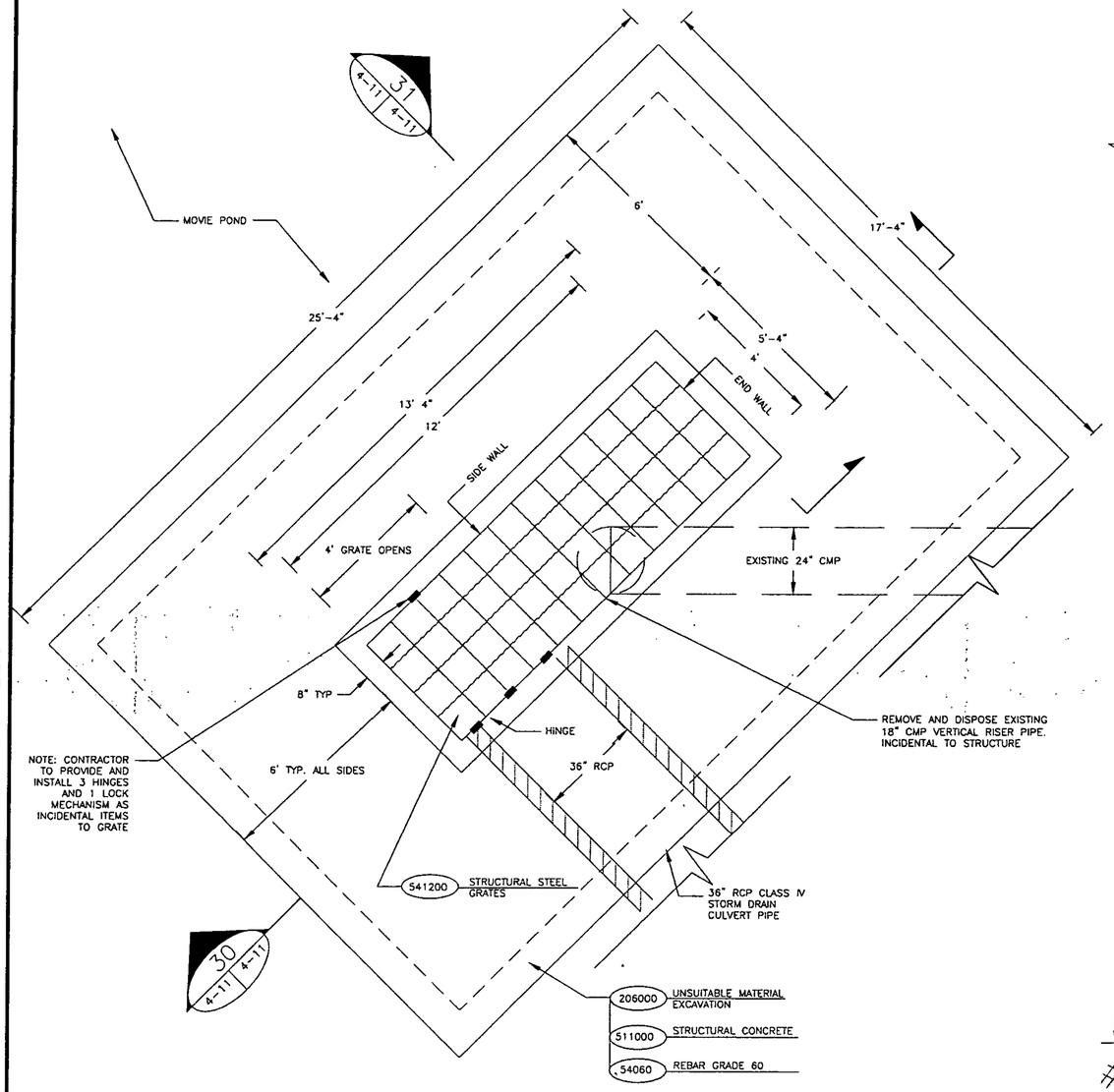
DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP - 0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-10 PLAN AND PROFILE STA 21+93.14.DWG

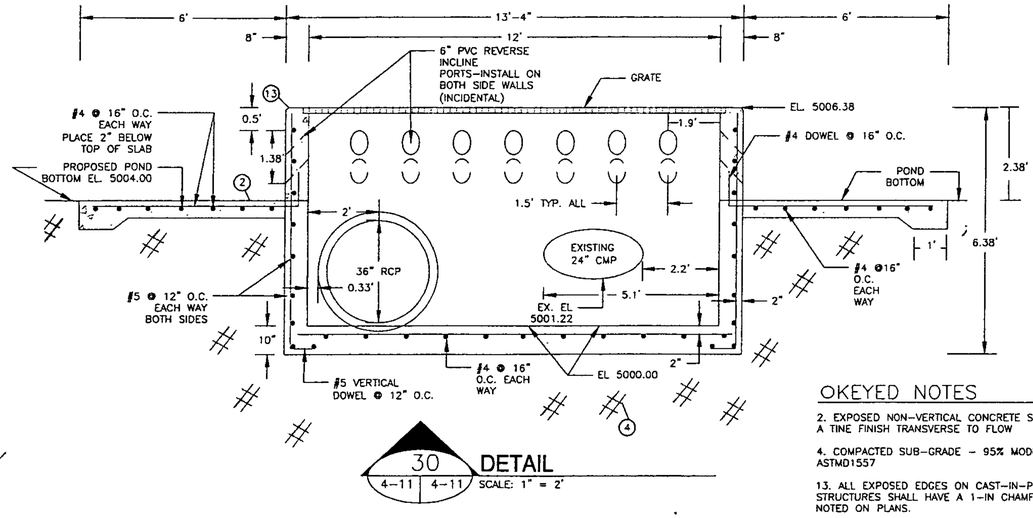
PROJECT CONTROL NUMBER: A300060



PLAN VIEW - MOVIE POND INLET STRUCTURE

SCALE: 1" = 2'

SCALE: 1" = 2'
2' 0 2' 4' 6 Feet



BUILD/PAY NOTE:

206000 UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATION, PLACING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES -INCLUDES MANHOLES. STD SPEC SECT 206

511000 STRUCTURAL CONCRETE CLASS A: PAYMENT DOES NOT INCLUDE REBAR. STD SPEC SECT 509, 510, 511

540060 REBAR GRADE 60: STD SPEC SECT 540

541200 STRUCTURAL STEEL: INSTALL 3-4'X4' SHOULDER DROP INLET FRAMES AND GRATES PER NMDOT STD. DWG. 623-17A-1/6, 2/6, 3/6. ONLY FRAME AND GRATE DETAILS FROM THE STD. DWG. APPLY.

OKEYED NOTES

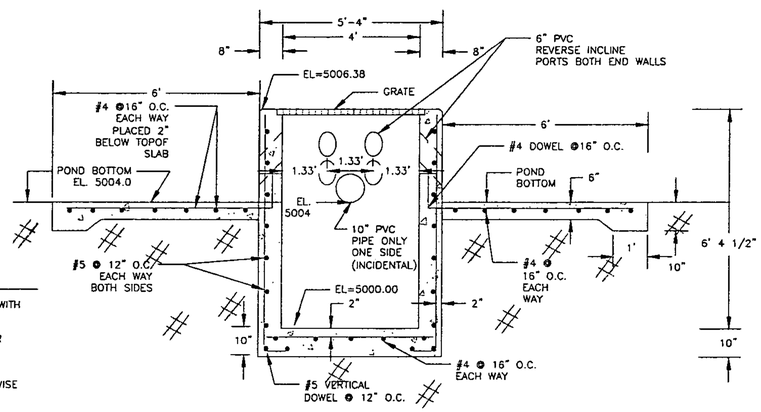
2. EXPOSED NON-VERTICAL CONCRETE SHALL BE FINISHED WITH A TINE FINISH TRANSVERSE TO FLOW

4. COMPACTED SUB-GRADE - 95% MODIFIED PROCTOR. PER ASTMD1557

13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE:	F'C = 3000 PSI
B. REINFORCING STEEL:	ASTM A615 GRADE 60
C. MOISTURE AND DENSITY CONTROL:	ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO ±2 PERCENT.



OKEYED NOTES

2. EXPOSED NON-VERTICAL CONCRETE SHALL BE FINISHED WITH A TINE FINISH TRANSVERSE TO FLOW

4. COMPACTED SUB-GRADE - 95% MODIFIED PROCTOR. PER ASTMD1557

13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE:	F'C = 3000 PSI
B. REINFORCING STEEL:	ASTM A615 GRADE 60
C. MOISTURE AND DENSITY CONTROL:	ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO ±2 PERCENT.

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER
11-23-2009

JOHN D. JAQUESS NEW MEXICO No. 6290 PROFESSIONAL ENGINEER & SURVEYOR
11-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN AND DETAILS MOVIE POND INLET

DRAWING SCALE:

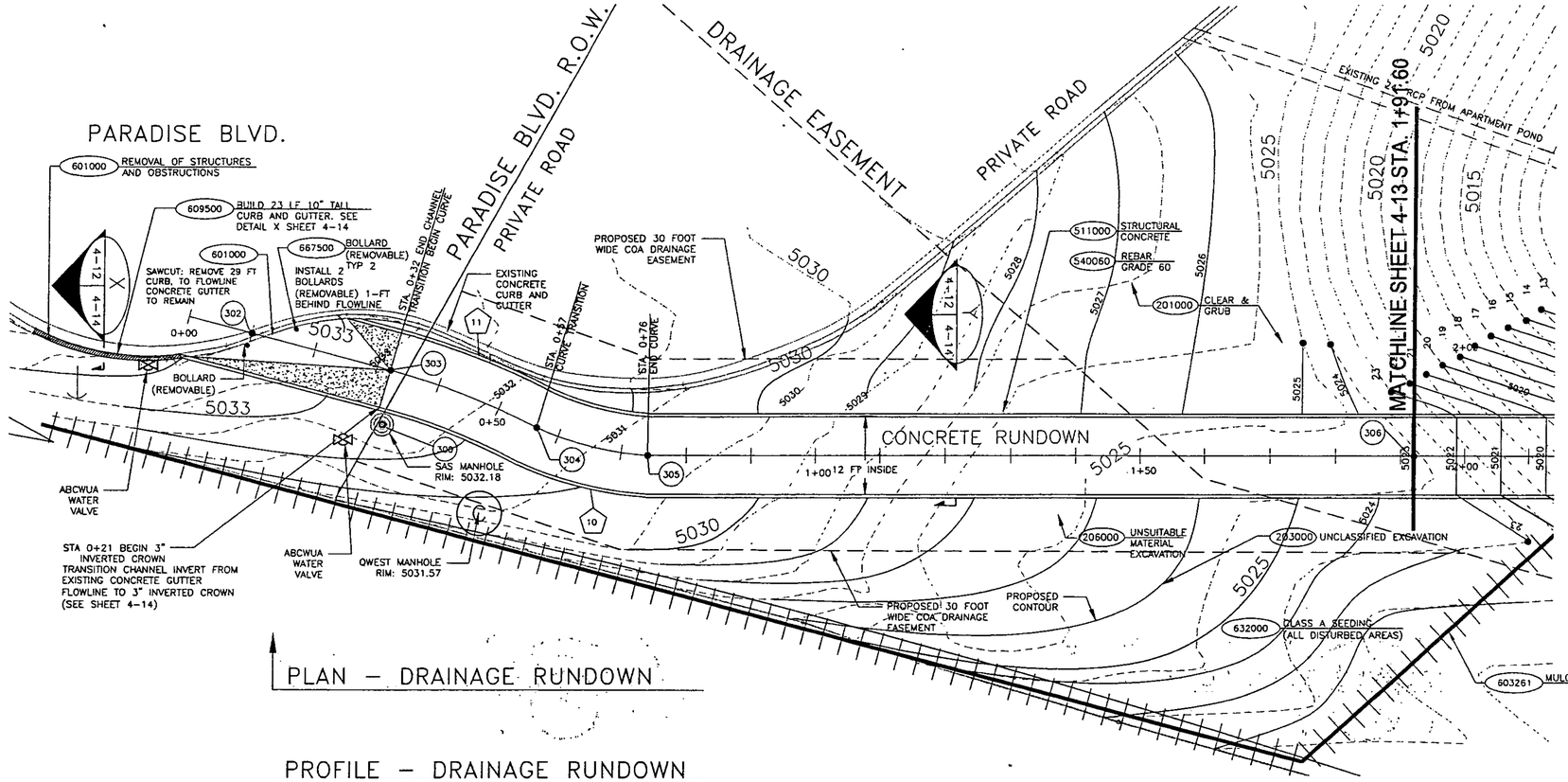
DESIGNED BY: PATRICK STOVALL, PE

NEW MEXICO PROJECT NO. HSIP - 0448(17)5

SHEET NO. 4-11

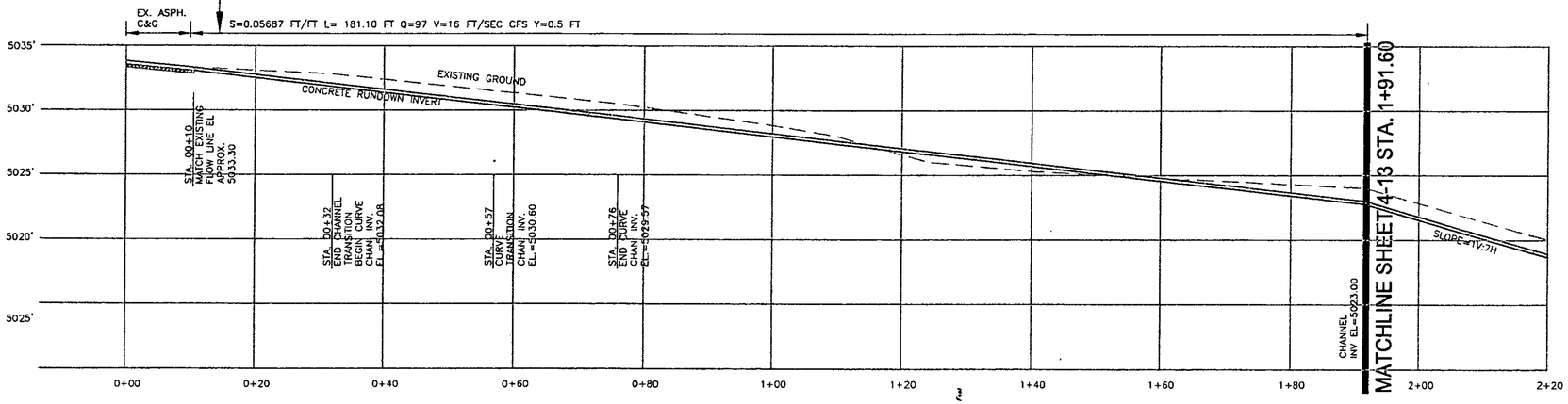
Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-11 PLAN AND DETAILS MOVE POND INLET.DWG

PROJECT CONTROL NUMBER: A300060



PLAN – DRAINAGE RUNDOWN

PROFILE – DRAINAGE RUNDOWN



BUILD/PAY NOTES:

(201000) CLEAR AND GRUB: CONTRACTOR SHALL CLEAR AND GRUB WITHIN LIMITS SHOWN. MAN-MADE TRASH REMOVAL IS INCIDENTAL. TREE REMOVAL: CONTRACTOR SHALL CUT DOWN AND REMOVE ALL TREES AND ROOTS. STD SPEC SECT 201

(203000) UNCLASSIFIED EXCAVATION: INCLUDES EXCAVATION, PROVIDING BORROW, CONSTRUCTING EMBANKMENT, HAULING, DISPOSING, PLACING, AND COMPACTING MATERIALS. SECTION. STD SPEC SECT 203

(206000) UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATON, PLACING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES –INCLUDES MANHOLES. STD SPEC SECT 206

(511000) STRUCTURAL CONCRETE CLASS A: PAYMENT DOES NOT INCLUDE REBAR. STD SPEC SECT 509, 510, 511

(540060) REBAR GRADE 60 STD SPEC SECT 540

(601000) REMOVAL OF STRUCTURES AND OBSTRUCTIONS: REMOVE AND DISPOSE OF 23 LF EXISTING CONCRETE GUTTER AND SAWCUT 20 FT. OF CURB. STD SPEC SECT 601

(603261) INSTALL MULCH SOCK STD SPEC SECT 603

(609500) STANDARD CURB AND GUTTER: MODIFY TO 10-IN TALL CURB. STD SPEC SECT 609. COA STD. DWGS 2415A AND 2415B.

(632000) CLASS A SEEDING: DRILL, SEED, MULCH: SEED WITH HAY MILLET MULCH PER STD SPEC SECT 632.

(667500) BOLLARD (REMOVABLE): INSTALL 2. PER COA STD DWG 2250.

PATRICK L. STOVALL
NEW MEXICO
No. 13830
PROFESSIONAL ENGINEER
11-10-2009

NODE DATA NOTE: *IMPORTANT* LOCAL COORDINATE SYSTEM

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
300	1522281.56	1515443.79	5032.18	CENTER OF SAS MH COVER
301	1522257.22	1515642.44	5020.88	CENTER OF SAS MH COVER
302	1522295.68	1515423.62	MATCH EX.	CL INV. OF CONC RUNDOWN ELEV. 5033.30
303	1522290.01	1515445.02	5032.08	END CHAN. TRANS. BEGIN CURVE
304	1522281.16	1515467.61	5030.60	CURVE TRANSITION
305	1522276.87	1515484.61	5029.57	END CURVE
306	1522276.87	1515802.27	5023.00	MATCHLINE

CURVE DATA

NO.	DELTA	RADIUS	LEN.
10	75°50'34"	49'	17.8
11	68°38'53"	100'	24.5

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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3			
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN AND PROFILE
PARADISE BLVD.
RUNDOWN – 1

SHEET NO. 4-12

SCALE: 1" = 5'

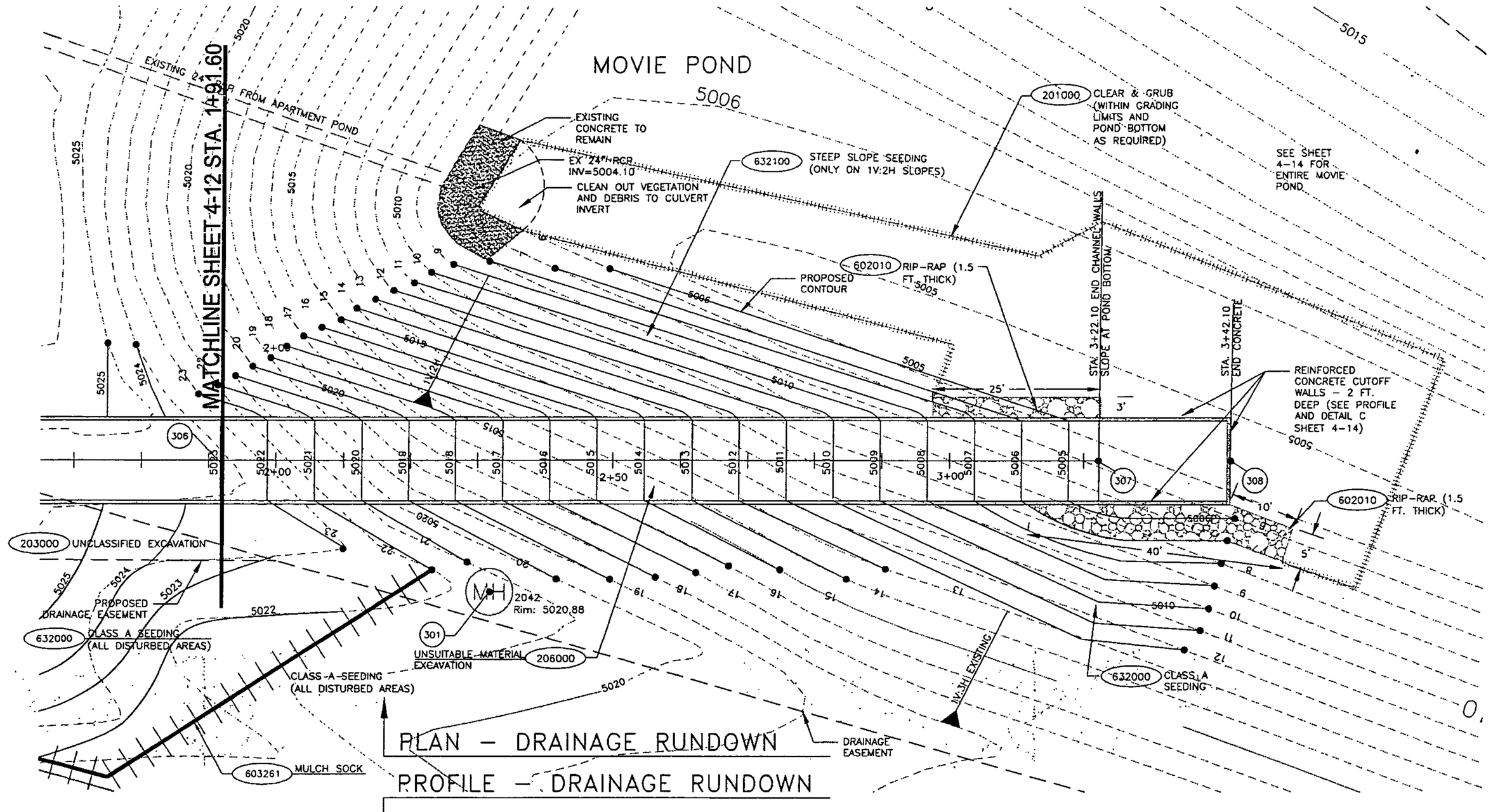
SCALE: 1" = 10'

DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

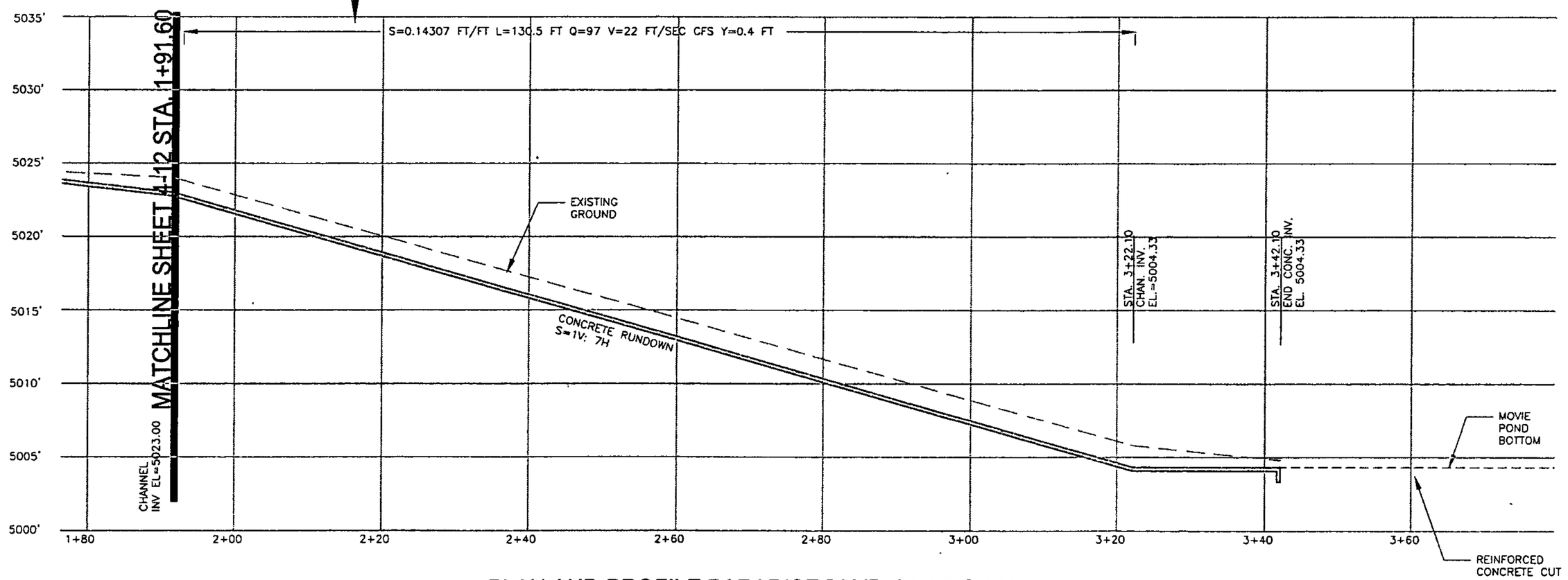
NEW MEXICO PROJECT NO. HSIP-0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-12 A-PLAN AND PROFILE RUNDOWN.DWG



PLAN - DRAINAGE RUNDOWN

PROFILE - DRAINAGE RUNDOWN



PLAN AND PROFILE PARADISE BLVD. RUNDOWN - 2

SCALE: 1"=5' VERTICAL
1"=10' HORIZONTAL

PROJECT CONTROL NUMBER: A300060

BUILD/PAY NOTES:

(201000) CLEAR AND GRUB: CONTRACTOR SHALL CLEAR AND GRUB WITHIN LIMITS SHOWN. MAN-MADE TRASH REMOVAL IS INCIDENTAL. TREE REMOVAL: CONTRACTOR SHALL CUT DOWN AND REMOVE ALL TREES AND ROOTS. STD SPEC SECT 201

(203000) UNCLASSIFIED EXCAVATION: INCLUDES EXCAVATION, PROVIDING BORROW, CONSTRUCTING EMBANKMENT, HAULING, DISPOSING, PLACING, AND COMPACTING MATERIALS. SECTION. STD SPEC SECT 203

(206000) UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATON, PLACEING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES -INCLUDES MANHOLES. STD SPEC SECT 206

(602010) RIP-RAP: BUILD CLASS B RIP-RAP EROSION PAD AND CLASS 1 GEOTEXTILE FILTER FABRIC PER STD. SPEC. SECTION 604 STD SPEC SECT 602 AND STD DWG. 602-01-1/1.

(603261) INSTALL MULCH SOCK: STD SPEC SECT 603

(632000) CLASS A SEEDING: DRILL, SEED, MULCH: SEED WITH HAY MILLET MULCH PER STD SPEC SECT 632.

(632100) STEEP SLOPE SEEDING: CRUSHED GRAVEL SEEDED WITH (CLASS A) GRAVEL MULCH: APPLY 1½"-2" THICK ¾"CRUSHED GRAVEL WITH AT LEAST 50% FRACTIONAL FACED GRAVEL TO ALL POND EMBANKMENT GRADED SLOPES STEEPER THAN 1V:3H STD SPEC SECT 632. GRAVEL COLOR SHALL BE SANTA ANA TAN, OR APPROVED EQUAL.

NODE DATA

NOTE: *IMPORTANT* LOCAL COORDINATE SYSTEM

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
301	1522257.22	1515642.44	5020.88	CENTER OF SAS MH COVER
307	1522276.87	1515732.77	5004.33	END SLOPE AT END OF CHANNEL
308	1522276.87	1515752.27	5004.33	END CONCRETE

11-23-2009
Smith Engineering Company

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER
11-23-2009

SCALE: 1" = 5'
SCALE: 1" = 10'
DRAWING SCALE:

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

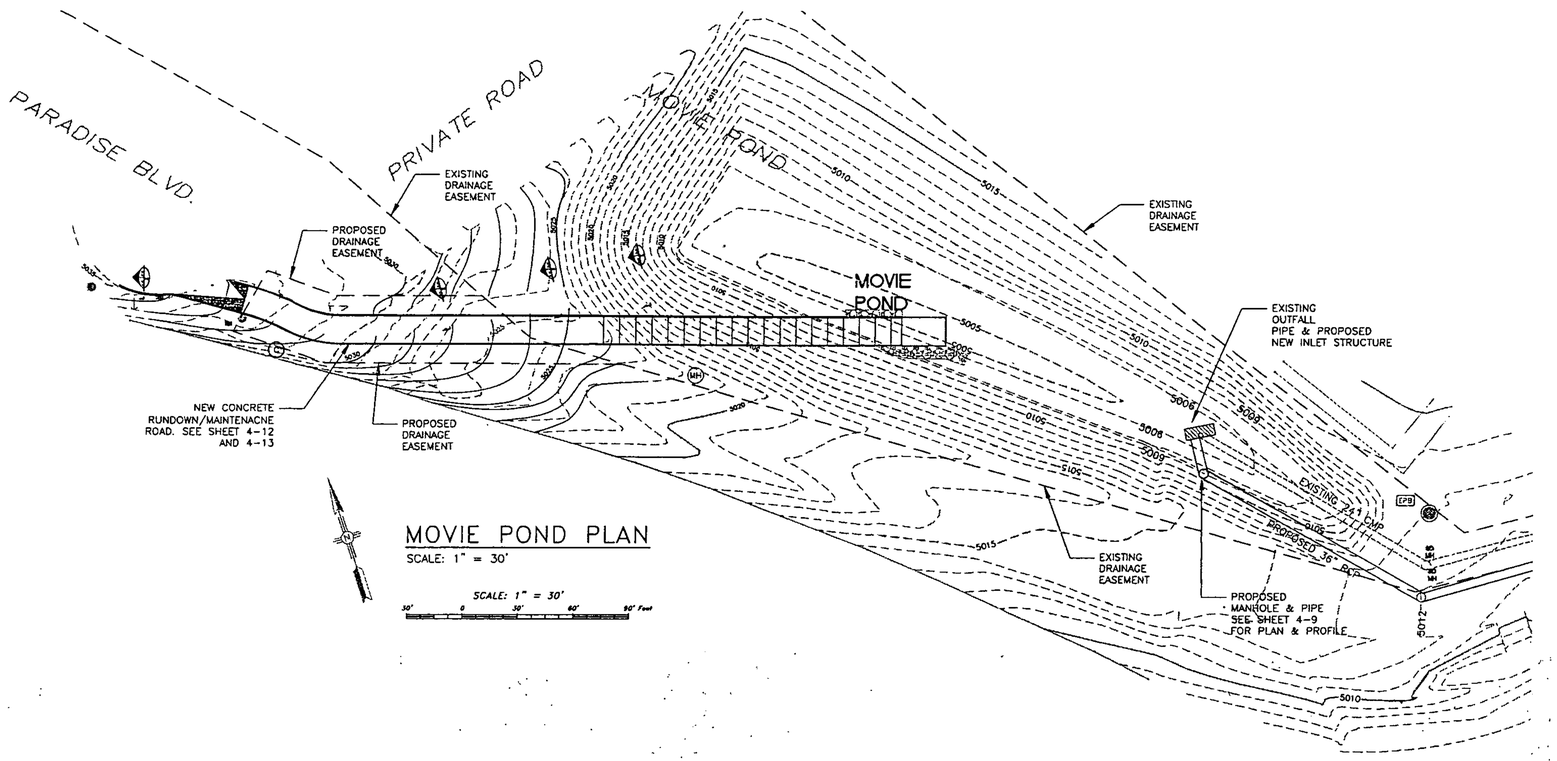
PLAN AND PROFILE PARADISE BLVD. RUNDOWN-2

SHEET NO. 4-13

DESIGNED BY: PATRICK STOVALL, PE

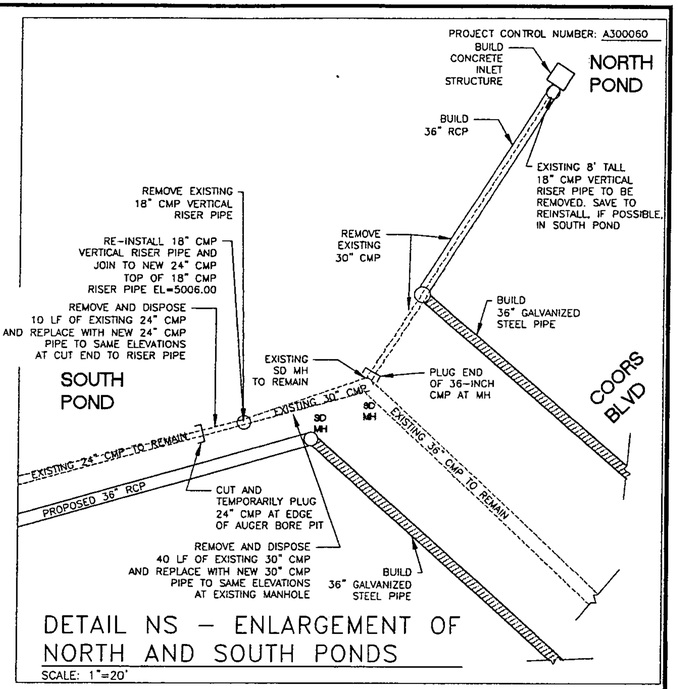
NEW MEXICO PROJECT NO. HSIP - 0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-13 PLAN AND PROFILE PARADISE BLVD. RUNDOWN - 2.DWG

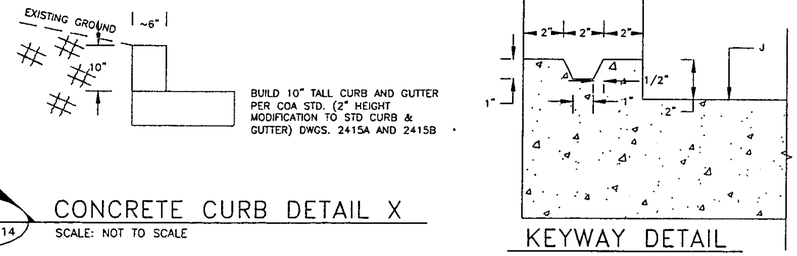


MOVIE POND PLAN

SCALE: 1" = 30'



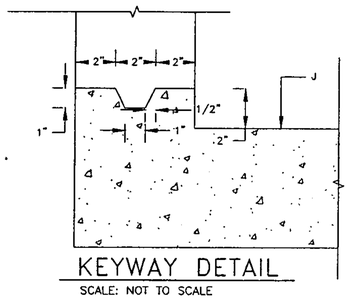
DETAIL NS – ENLARGEMENT OF NORTH AND SOUTH PONDS



X
4-12 | 4-14

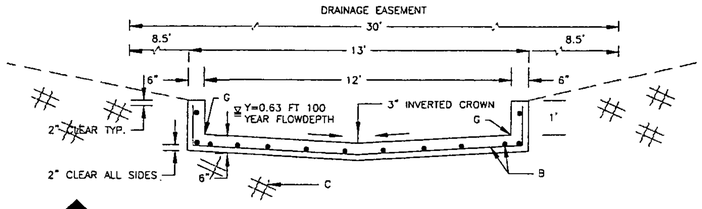
CONCRETE CURB DETAIL X

SCALE: NOT TO SCALE



KEYWAY DETAIL

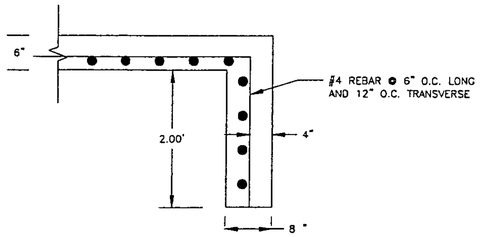
SCALE: NOT TO SCALE



Y
4-12 | 4-14

TYPICAL SECTION CONCRETE RUNDOWN/MAINTENANCE ROAD

SCALE: 1"=2'



DETAIL C – CONCRETE CHANNEL CUT-OFF WALL

SCALE: 1" = 1"

CONCRETE RUNDOWN/ GENERAL NOTES:

6. UNLESS OTHERWISE DETAILED ON PLANS, ISOLATE UPSTREAM AND DOWNSTREAM ENDS OF LINING FROM OTHER STRUCTURES AND FACILITIES USING THE EXPANSION JOINT DETAIL.

CONCRETE RUNDOWN/ CONSTRUCTION NOTES:

B. NO. 4 REBARS AT 6" O.C. LONG AND 12" O.C. TRANSVERSE.

C. 6" COMPACTED SOIL 95% PER ASTM D 1557.

G. KEYED CONSTRUCTION JOINT.

J. CHANNEL SURFACE

11-23-2009
Smith Engineering Company

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER
11-10-2009

NO.	DESCRIPTION	DATE	BY
6			
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PARADISE BLVD. RUNDOWN DETAILS

4-14

SHEET NO.

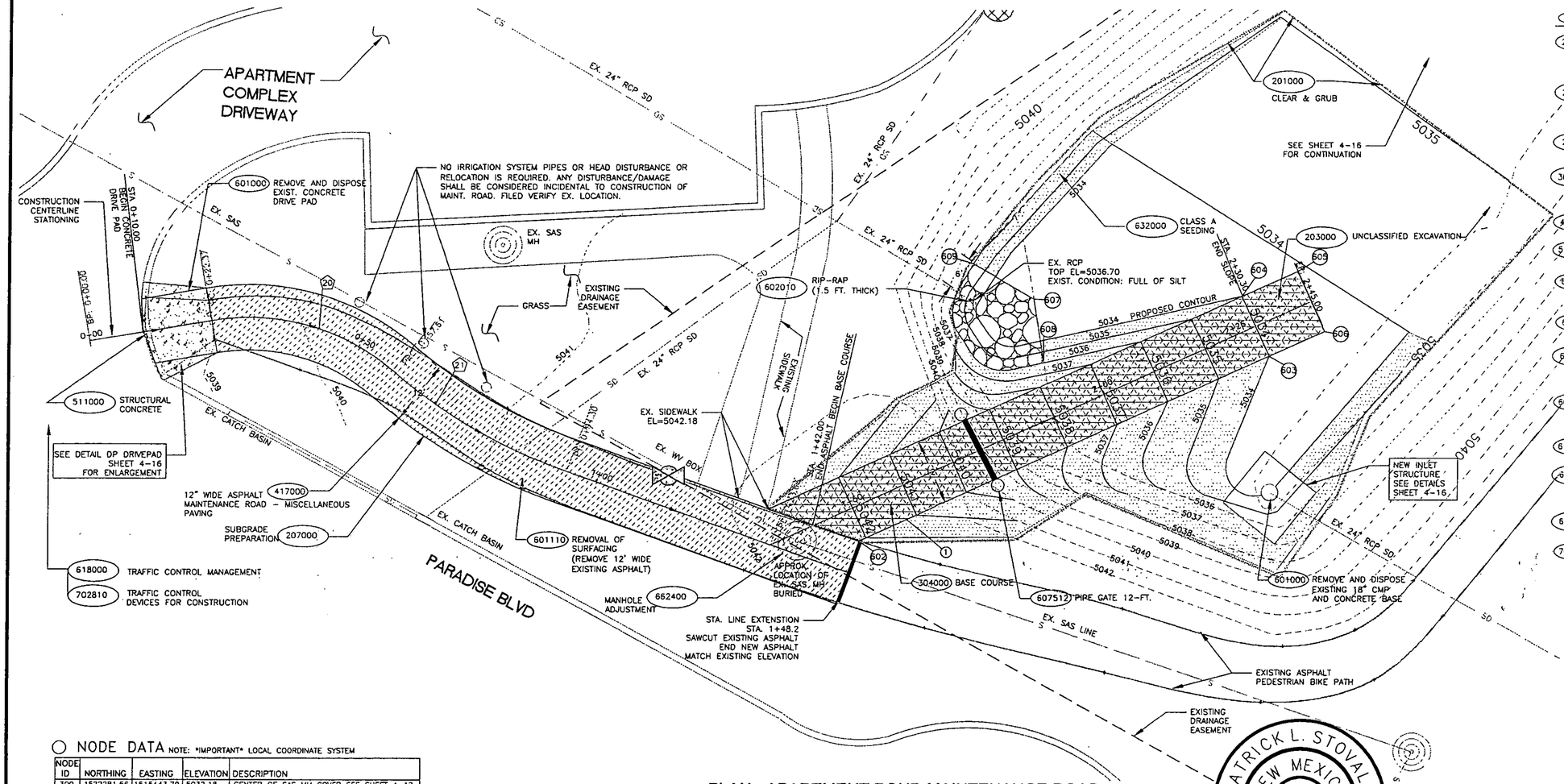
DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP-0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-14 PARADISE BLVD. RUNDOWN DETAILS.DWG

PROJECT CONTROL NUMBER: A300060



BUILD/PAY NOTES:

- 201000 CLEAR AND GRUB: CONTRACTOR SHALL CLEAR AND GRUB WITHIN LIMITS SHOWN. MAN-MADE TRASH REMOVAL IS INCIDENTAL. TREE REMOVAL: CONTRACTOR SHALL CUT DOWN AND REMOVE ALL TREES AND ROOTS. STD SPEC SECT 201
- 203000 UNCLASSIFIED EXCAVATION: INCLUDES EXCAVATION, PROVIDING BORROW, CONSTRUCTING EMBANKMENT, HAULING, DISPOSING, PLACING, AND COMPACTING MATERIALS. STD SPEC SECT 203.
- 207000 SUBGRADE PREPARATION: INCLUDES COMPACTING AND FINISHING THE SUBGRADE PREPARATION TO WITHIN 0.1 FT OF THE SPECIFIED ELEVATION. STD SPEC SECT 207
- 304000 BASE COURSE: BUILD 12' WIDE 6" THICK ¾" GROUND BASE COURSE MAINTENANCE ROAD . STD SPEC SECT 304.
- 417000 MISCELLANEOUS PAVING: REBUILD ASPHALT PATH TO 4-INCH THICKNESS. STD SPEC SECT 416.
- 511000 STRUCTURAL CONCRETE CLASS A: PAYMENT DOES NOT INCLUDE REBAR. STD SPEC SECT 509, 510, 511
- 601000 REMOVE AND DISPOSE 7 LF 18" CMP AND CONCRETE BASE, ALSO REMOVE AND DISPOSE EXISTING CONCRETE DRIVEPAD PER STD SPEC SECT 601.
- 601110 REMOVAL OF SURFACING: EXISTING ASPHALT PATH. STD SPEC SECT 601.
- 602010 RIP-RAP: BUILD CLASS B RIP-RAP EROSION PAD AND CLASS 1 GEOTEXTILE FILTER FABRIC PER STD. SPEC. SECTION 604 AND STD SPEC SECT 602 AND STD DWG. 602-01-1/1.
- 607512 PIPE GATE 12-FT.: BUILD 12-FT. PIPE GATE PER C.O.A. STD. DWG 2251. STD SPEC SECT 607
- 618000 TRAFFIC CONTROL MANAGEMENT. STD SPEC SECT 618.
- 632000 CLASS A SEEDING: DRILL, SEED, MULCH: SLOPES AS SHOWN DRILL AND SEED WITH HAY MILLET MULCH PER STD SPEC SECT 632.
- 662400 MANHOLE ADJUSTMENT: STD SPEC SECT 662.
- 702810 TRAFFIC CONTROL DEVICES FOR CONSTRUCTION: INSTALL 20 TRAFFIC CONES. STD SPEC SECT. 702.

CONSTRUCTION NOTES

1. THERE MAY BE A BURIED IRRIGATION SYSTEM THAT MAY BE DAMAGED DURING MAINTENANCE ROAD CONSTRUCTION. IF SO, REPLACEMENT/ REPAIR WILL BE INCIDENTAL TO MAINTENANCE ROAD CONSTRUCTION.

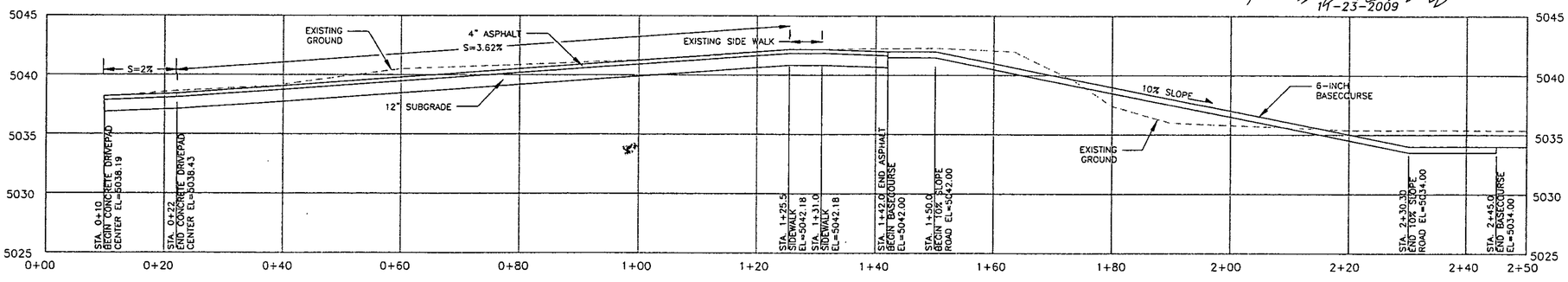
NODE DATA NOTE: *IMPORTANT* LOCAL COORDINATE SYSTEM

NODE ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
300	1522281.56	1515443.79	5032.18	CENTER OF SAS MH COVER SEE SHEET 4-12
301	1522490.09	1515231.36	5020.88	CENTER OF SAS MH COVER SEE SHEET 4-13
602	1522408.34	1515391.52	5042.00	BEGIN BASECOURSE
603	1522442.10	1515465.63	5034.00	LIMITS OF RESEEDING AND BASECOURSE
604	1522453.02	1515460.66	5034.00	LIMITS OF RESEEDING AND BASECOURSE
605	1522457.58	1515470.67	5034.00	EDGE OF BASECOURSE
606	1522446.66	1515475.64	5034.00	EDGE OF BASECOURSE
607	1522452.55	1515422.97	5034.00	LIMITS OF RIPRAP
608	1522440.89	1515424.84	5036.00	LIMITS OF RIPRAP
609	1522458.98	1515412.04	5036.00	LIMITS OF RIPRAP

CURVE DATA

NO.	DELTA	RADIUS	LEN.
20	50°28'32"	40'	35.2
21	21°1'10"	100'	36.7

PLAN - APARTMENT POND MAINTENANCE ROAD



PROFILE- APARTMENT POND MAINTENANCE ROAD

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER
11-23-2009

VERTICAL SCALE: 1" = 5'
HORIZONAL SCALE: 1" = 10'
10' 0 10' 20' 30' Feet

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
6			
5			
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN AND PROFILE APARTMENT POND MAINTENANCE ROAD-1

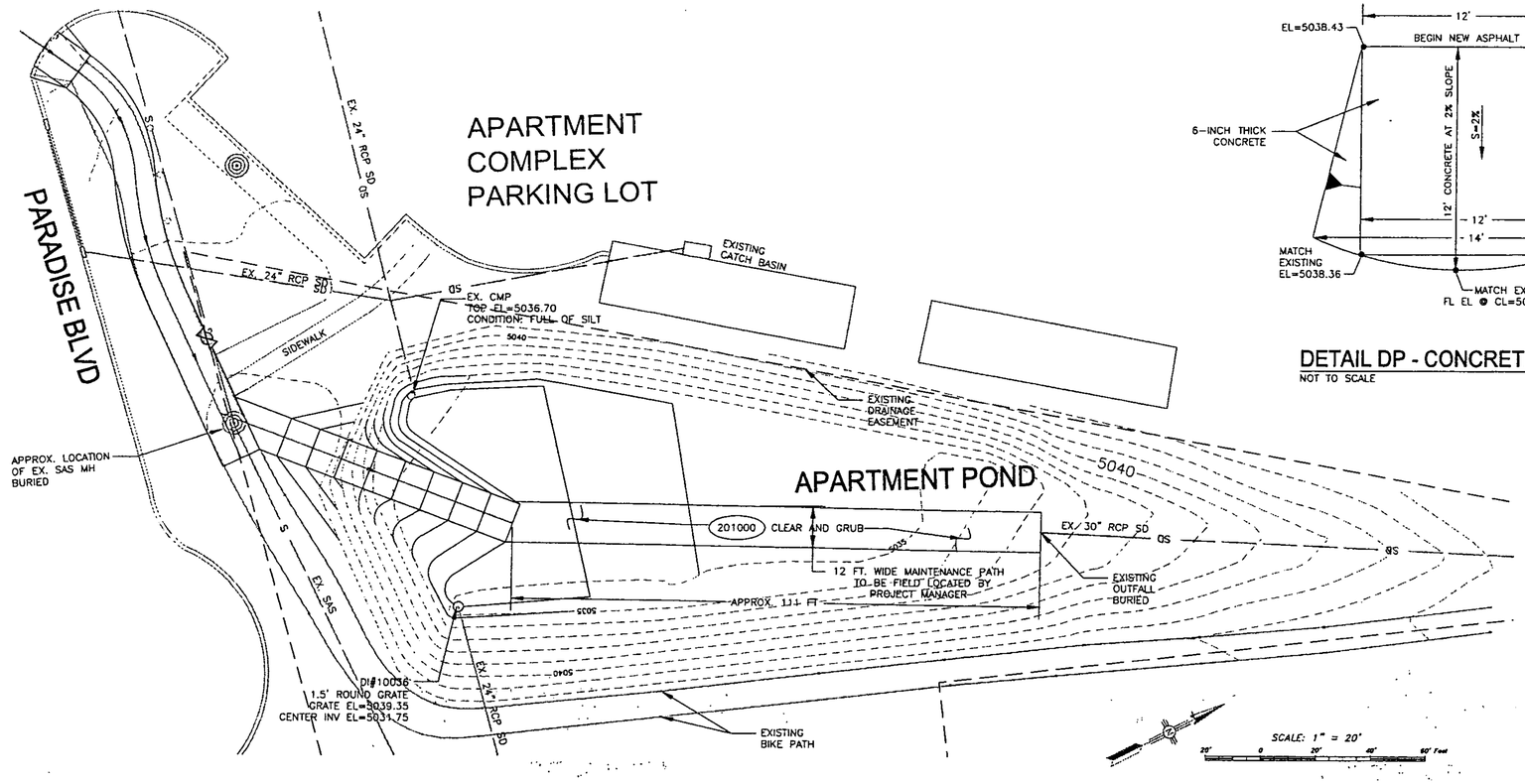
DESIGNED BY: PATRICK STOVALL, PE

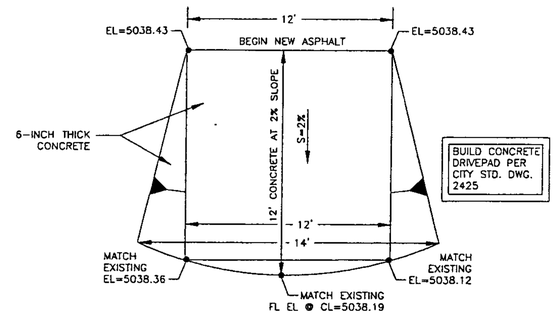
DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP-0448(17)5

SHEET NO. 4-15

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-15 PLAN AND PRFILE APARTMENT POND MAINT ROAD - 1.DWG





DETAIL DP - CONCRETE DRIVEPAD
NOT TO SCALE

ONTROL NUMBER: A300060

BUILD/PAY NOTE:

201000 CLEAR AND GRUB: CONTRACTOR SHALL CLEAR AND GRUB ENTIRE AREA WITHIN AMAFCA R.O.W. LINES . MAN-MADE TRASH REMOVAL IS INCIDENTAL. TREE REMOVAL: CONTRACTOR SHALL CUT DOWN AND REMOVE ALL TREES AND ROOTS WITHIN AMAFCA R.O.W. LINES. STD SPEC SECT 201

206000 UNSUITABLE MATERIAL EXCAVATION (EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES): INCLUDES EXCAVATION, PLACING AND COMPACTING SELECT BACKFILL AND DISPOSING OF MATERIAL RELATED TO CONSTRUCTION OF ALL DRAINAGE STRUCTURES -INCLUDES MANHOLES. STD SPEC SECT 206

511000 STRUCTURAL CONCRETE CLASS A: PAYMENT DOES NOT INCLUDE REBAR. STD SPEC SECT 509, 510, 511

540060 REBAR GRADE 60: STD SPEC SECT 540

541200 STRUCTURAL STEEL: INSTALL 1-4'X4' SHOULDER DROP INLET FRAMES AND GRATES PER NMDOT STD. DWG. 623-06-1/1. ONLY FRAME AND GRATE DETAILS FROM THE STD. DWG. APPLY.

CONSTRUCTION NOTES:

1. CONSTRUCTION YARD: MAY BE LOCATED WITHIN POND AREA - MUST COORDINATE WITH AMAFCA CONSTRUCTION ENGINEER.
2. SOIL STOCK PILE AREA: MAY BE LOCATED WITHIN POND AREA - MUST COORDINATE WITH AMAFCA CONSTRUCTION ENGINEER.
3. EXCESS SOIL TO BE REMOVED FROM SITE AND HAUL DISPOSAL LOCATION: MUST BE COORDINATED WITH AMAFCA CONSTRUCTION ENGINEER.

OKEYED NOTES

2. EXPOSED NON-VERTICAL CONCRETE SHALL BE FINISHED WITH A TINE FINISH TRANSVERSE TO FLOW

4. COMPACTED SUB-GRADE - 95% MODIFIED PROCTOR. PER ASTMD1557

13. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1-IN CHAMFER UNLESS OTHERWISE NOTED ON PLANS.

DESIGN DATA

A. CAST-IN-PLACE CONCRETE: F'C = 3000 PSI

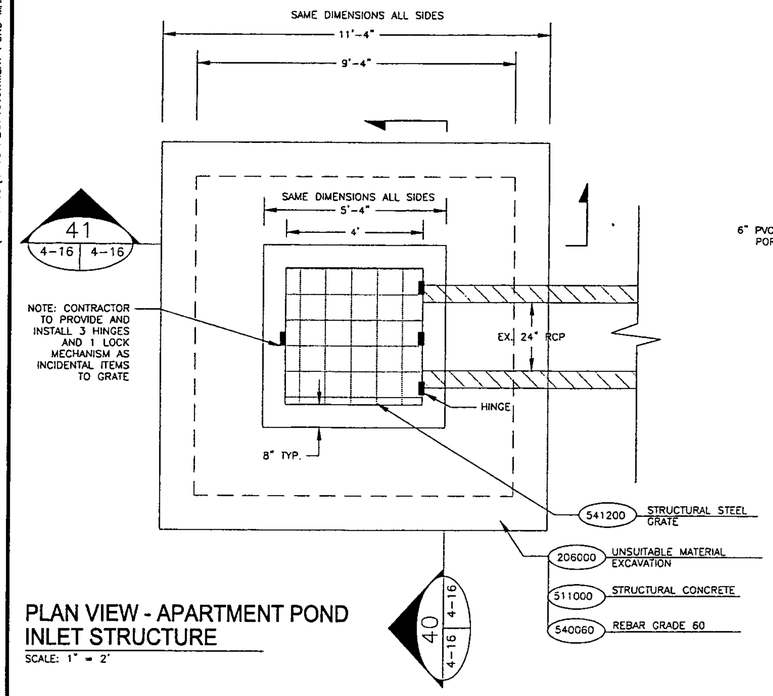
B. REINFORCING STEEL: ASTM A615 GRADE 60

C. MOISTURE AND DENSITY CONTROL: ASTM D-1557 ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS OF 8" MAXIMUM AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHALL BE OPTIMUM TO ±2 PERCENT.

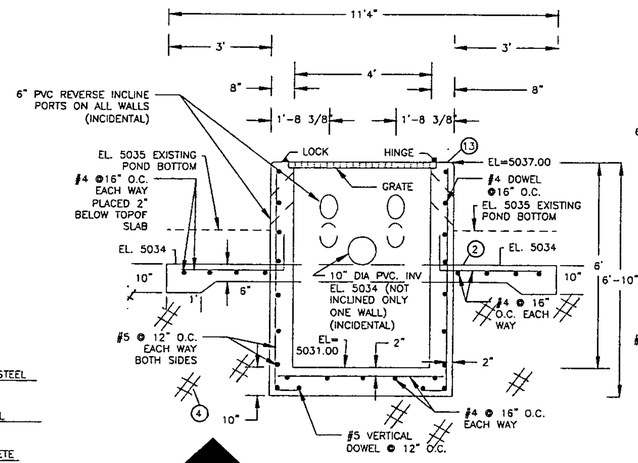
PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER
11-23-2009

JOHN D. JAQUESS NEW MEXICO No. 6290 PROFESSIONAL ENGINEER & SURVEYOR
11-23-2009

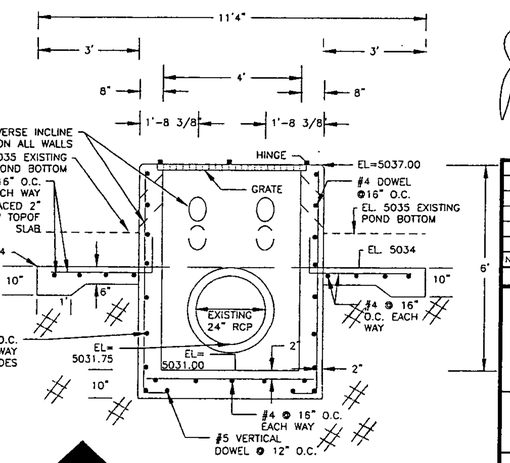
11-23-2009
Smith Engineering Company



PLAN VIEW - APARTMENT POND INLET STRUCTURE
SCALE: 1" = 2'



DETAIL - APARTMENT POND
41 | 4-16 | 4-16 SCALE: 1" = 2'



DETAIL - APARTMENT POND
40 | 4-16 | 4-16 SCALE: 1" = 2'

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN APARTMENT POND MAINTENANCE ROAD - 2 AND DETAILS

SHEET NO. 4-16

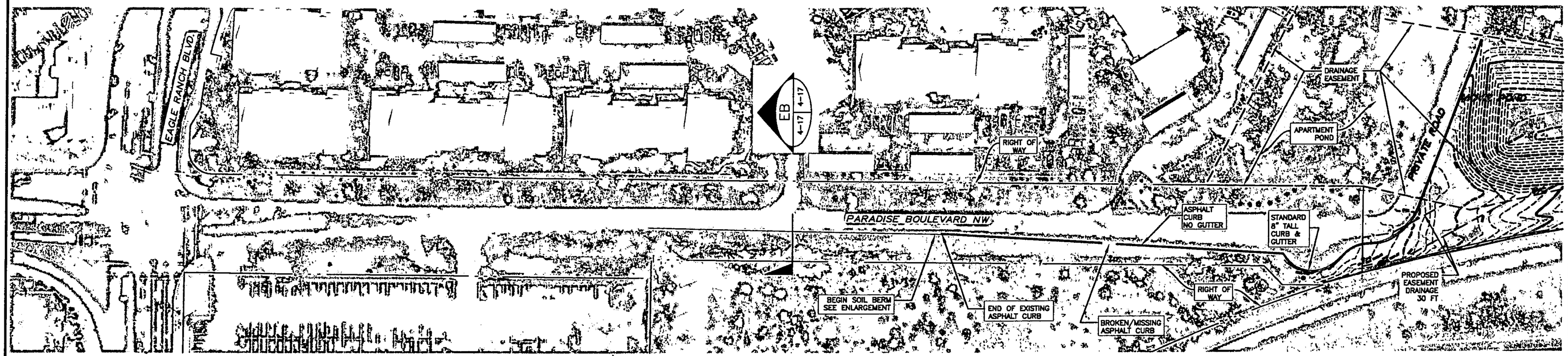
DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

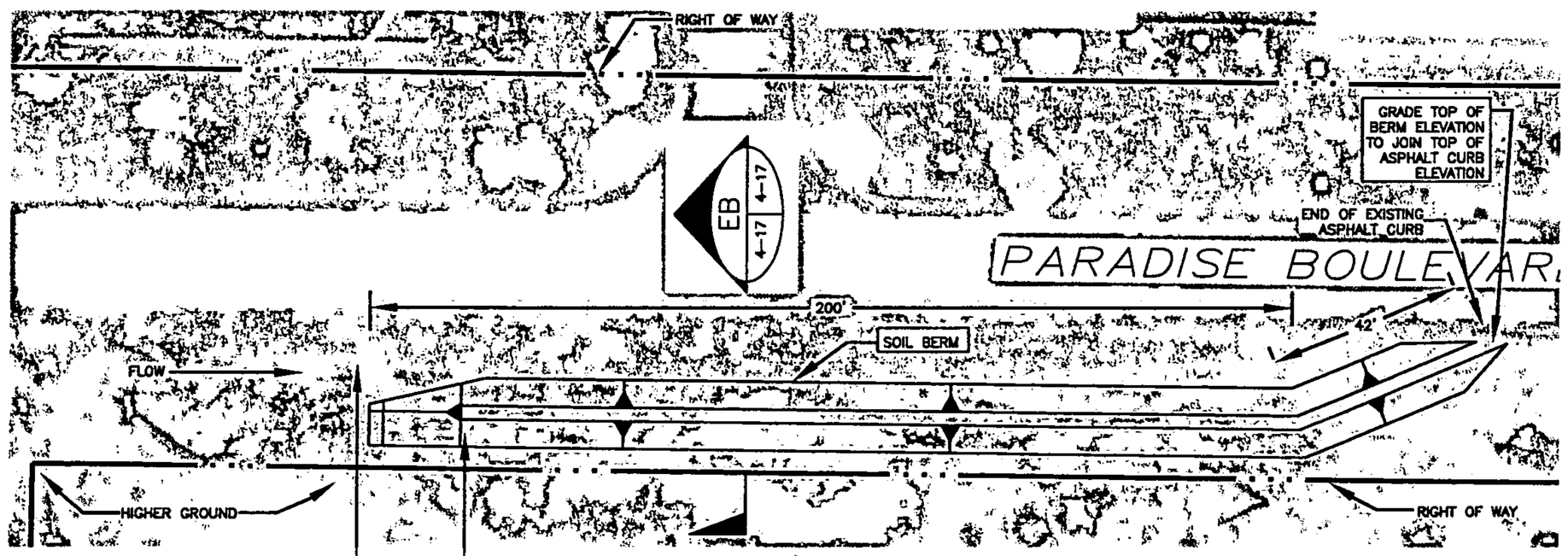
NEW MEXICO PROJECT NO. HSIP-0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\10712C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-16 PLAN APARTMENT POND MAINT ROAD - 2 AND DETAILS.DWG

PROJECT CONTROL NUMBER: A300060

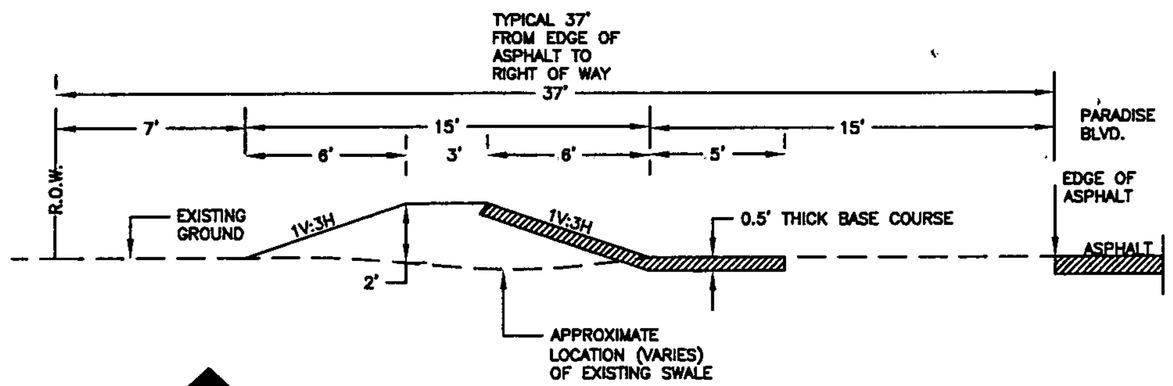


SCALE: 1" = 50'



PLAN – PARADISE BLVD TEMPORARY SOIL DIVERSION BERM

SCALE: 1"=20'



EB 4-17 4-17

SCALE: 1"=4'

BUILD/PAY NOTES:

(203000) UNCLASSIFIED EXCAVATION: INCLUDES EXCAVATION, PROVIDING BORROW, CONSTRUCTING EMBANKMENT, HAULING, DISPOSING, PLACING, AND COMPACTING MATERIALS. GRADING SECTION. STD SPEC SECT 203

(304000) BASECOURSE: STD SPEC SECT 304.

(618000) TRAFFIC CONTROL MANAGEMENT

(702810) TRAFFIC CONTROL DEVICES FOR CONSTRUCTION: INSTALL 30 TRAFFIC CONES. STD SPEC SECT 702.

DRAWING SCALE:

DESIGNED BY: PATRICK STOVALL, PE

NEW MEXICO PROJECT NO. HSIP-0448(17)5

PATRICK L. STOVALL NEW MEXICO No. 13830 PROFESSIONAL ENGINEER

11-23-2009

11-23-2009

Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

PLAN AND DETAILS PARADISE BLVD. BERM

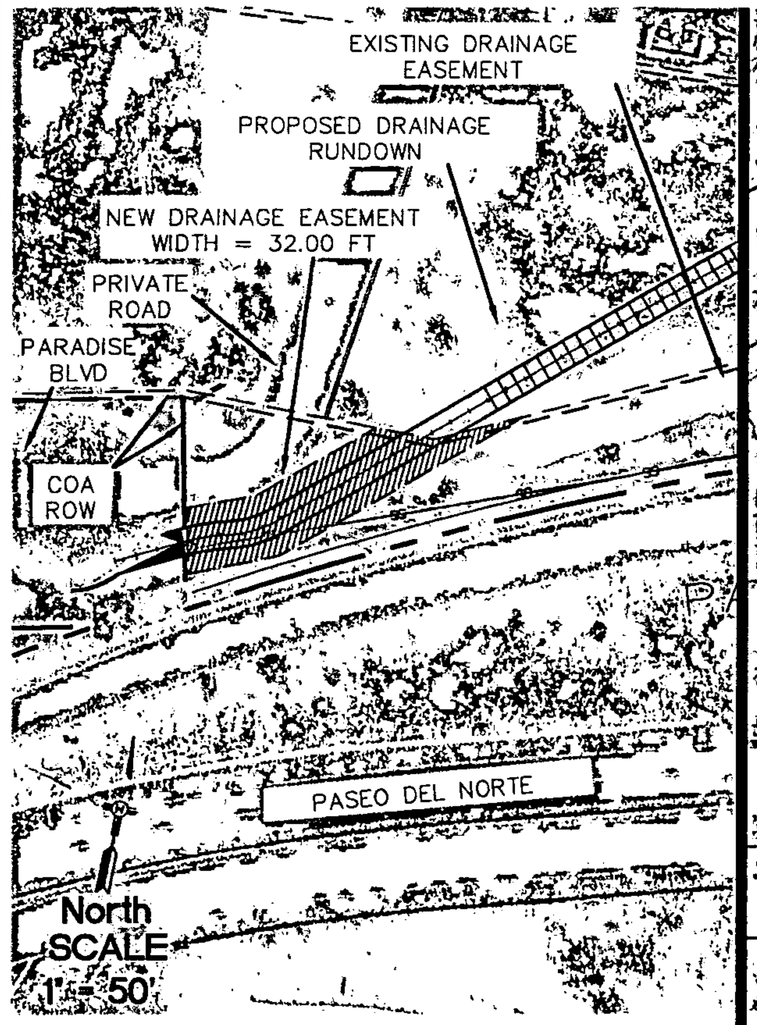
SHEET NO. 4-17

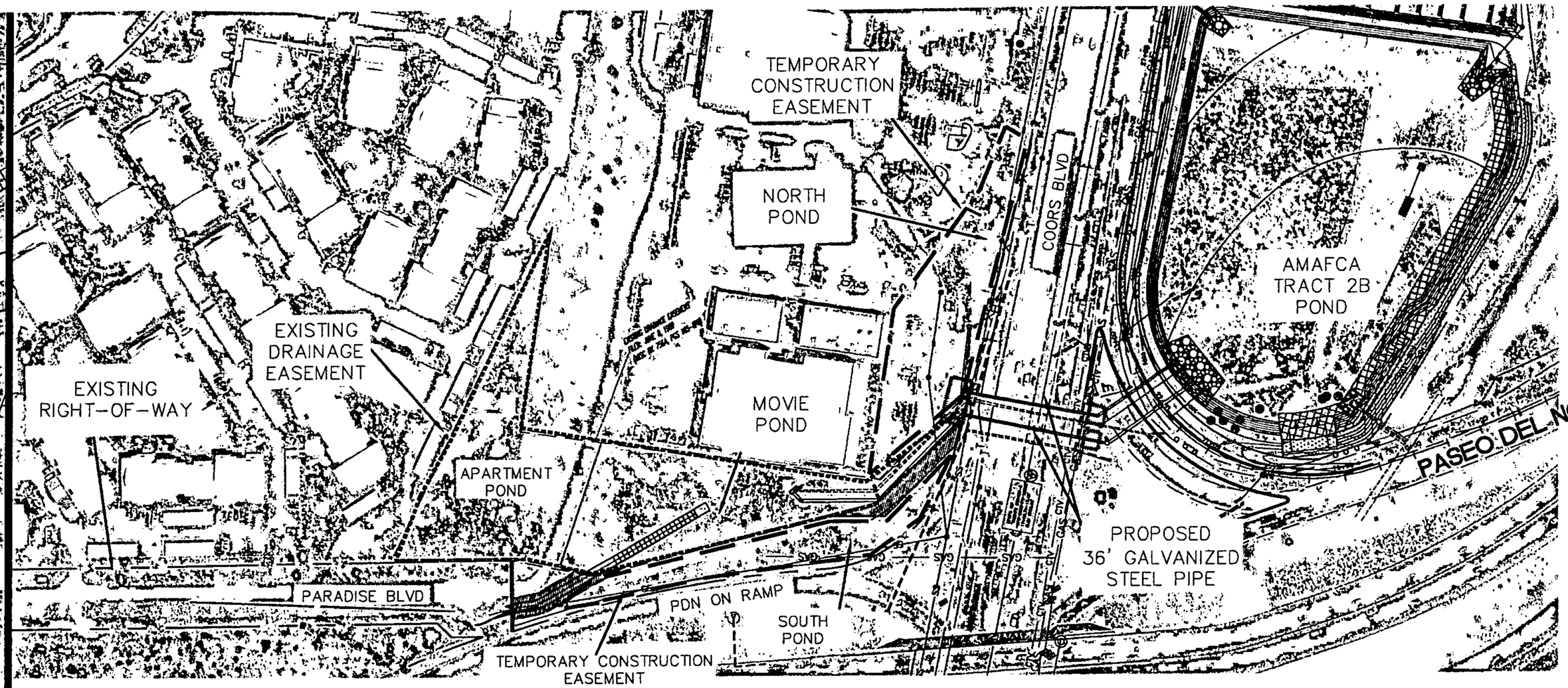
Q:\SEC----PROJECTS\2007 PROJECTS\107112C ANAFCA TRACT 28 POND FINAL DESIGN\NOV 2009\4-17 PARADISE BLVD BERM.DWG

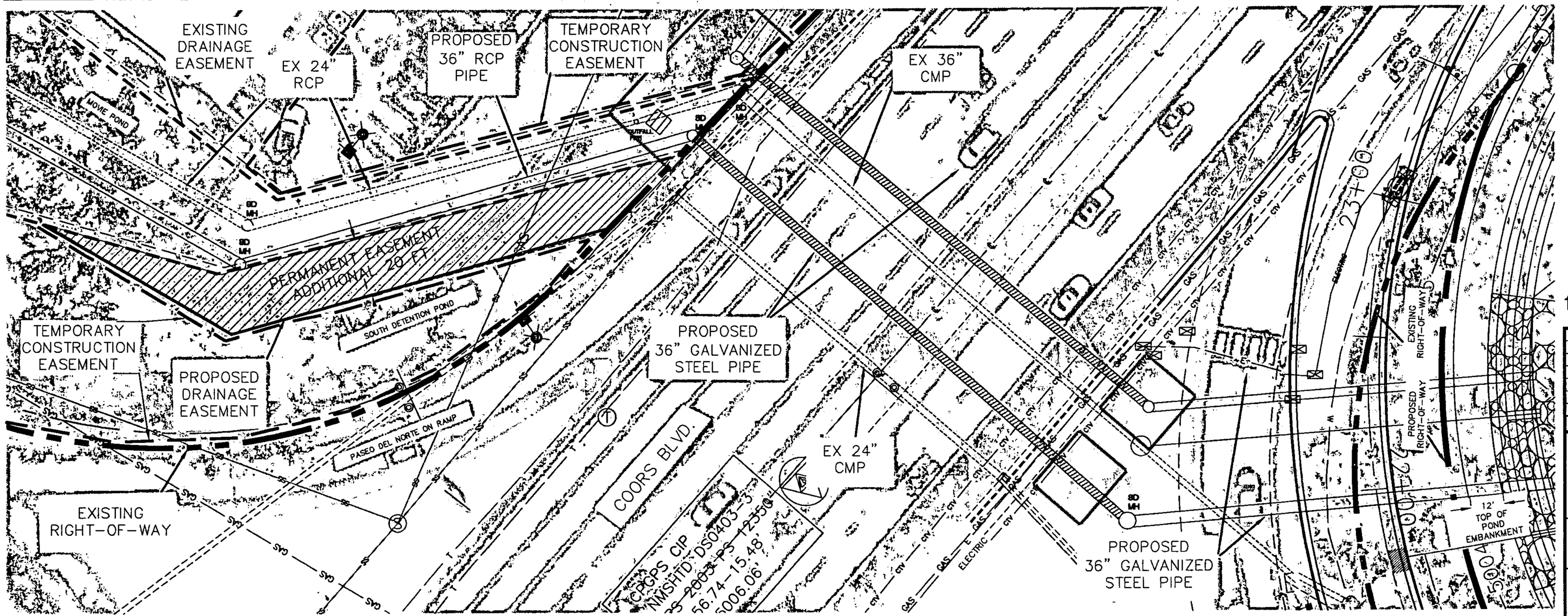
PROJECT CONTROL NUMBER: A300060

LEGEND

- Temporary Construction Easements
- Proposed Drainage Easement
- Existing Drainage Easement
- Additional Permanent Drainage Easement







PATRICK L. STOVALL
NEW MEXICO
No. 13830
PROFESSIONAL ENGINEER
11-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

TEMPORARY CONSTRUCTION EASEMENTS

SHEET NO. 4-18

DRAWING SCALE:

DESIGNED BY: PATRICK STOVALL, PE

NEW MEXICO PROJECT NO. HSIP - 0448(17)5

G:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-18 TEMPORARY CONSTRUCTION EASEMENTS.DWG

PROJECT CONTROL NUMBER: A300060

BUILD/PAY NOTE:

603261 INSTALL MULCH SOCK: 15 LF. STD SPEC SECT 603.

603200 SILT FENCE: 2047 LF SILT FENCE ON AMAFCA R.O.W. STD SPEC SECT 603.

603280 SWPPP MANAGEMENT: STD SPEC SECT 306. SEE SHEET 4-20

NOTE - SEE SHEET 4-12 FOR ADDITIONAL MEASURES

COORS BOULEVARD

COORS BLVD. NORTHBOUND

CPGPS OP
"NAD83(93)" DS04103-3
N=2003.79-12350.17=58.74-15.48"
ELEV 5006.06'

SILT FENCE 603200

NOTE: SILT FENCE WILL BE INSTALLED ON AMAFCA R.O.W.

NOTE: SILT FENCE IS TO REMAIN AFTER PROJECT COMPLETION.

603280 SWPPP MANAGEMENT

603261 INSTAL 15 LF MULCH SOCK IN FRONT OF 2 EXISTING CULVERTS

EXISTING R.O.W

TOP OF EMBANKMENT ELEV 5004

PROPOSED R.O.W

CORRALES MAIN CANAL

EXISTING NMDOT R.O.W.

EXISTING 6' CHAIN LINK FENCE

PASEO DEL NORTE

UTILITY LEGEND

- S SANITARY SEWER MANHOLE
- SD STORM DRAIN OUTFALL PIPE
- S STORM DRAIN MANHOLE
- ELECTRICAL CONTROL BOX
- IRRIGATION CONTROL BOX
- CONTROL BENCHMARK
- WATER VALVE VAULT
- T TELEPHONE CONTROL BOX
- STREET LIGHT

- GAS BURIED GAS LINE
- E BURIED ELECTRICAL LINE
- W BURIED WATER LINE
- T BURIED TELEPHONE LINE
- SAS SANITARY SEWER LINE
- CTV CABLE TELEVISION

LEGEND

PC POINT OF TANGENCY (BEGIN CURVE)
PT POINT OF TANGENCY (END CURVE)
TC TOP OF CONCRETE
INV INVERT
CL CENTERLINE
EL ELEVATION
TOC TOP OF CURB
SLOPE INDICATOR
TOP
BOTTOM
SILT FENCE
MULCH SOCK

SCALE: 1" = 50'

50' 0 50' 100 150' Feet

DRAWING SCALE:

DESIGNED BY: PATRICK STOVALL, PE

NEW MEXICO PROJECT NO. HSIP-0448(17)5

PATRICK L. STOVALL
NEW MEXICO
No. 13830
PROFESSIONAL ENGINEER

11-23-2009

11-23-2009

Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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1			

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

SHEET NO. 4-19

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-19 TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.DWG

PROJECT CONTROL NUMBER: A300060

STORM WATER POLLUTION PREVENTION PLAN INFORMATION

SITE DESCRIPTION & NOI INPUTS

NATURE OF ACTIVITY	DETENTION POND CONSTRUCTION
GENERAL LOCATION AND SITE MAP	REFER TO DETENTION POND TEMPORARY EROSION AND SEDIMENT CONTROL PLAN (TESCP)
DISTURBED AND UNDISTURBED AREA	6.5 ACRES WITHIN R.O.W.
STRUCTURAL & NON-STRUCTURAL CONTROLS	REFER TO TESCP
LOCATIONS WHERE STABILIZATION WILL OCCUR	REFER TO DETENTION POND PLAN AND TESCP
PERMANENT EROSION CONTROL MEASURES	REFER TO DETENTION POND PLAN
TOTAL SITE AREA	6.5 ACRES, AREA WITHIN THE R.O.W.
RECEIVING WATER	CORRALES MAIN CANAL
TOTAL DISTURBED AREA	6.5 ACRES, AREA WITHIN THE RIGHT-OF-WAY
LATITUDE	35 DEG 10.52 MIN 37 SEC NORTH (FROM USGS 1:24000 SCALE MAP)
LONGITUDE	106 DEG 39 MIN 57.84 SEC WEST (FROM USGS 1:24000 SCALE MAP)
IS DISCHARGE CONSISTENT WITH APPROVED TMDL	NOT APPLICABLE - DISCHARGE TO CORRALES MAIN CANAL
ENDANGERED SPECIES INFORMATION (CRITERION)	A

DRAINAGE PARAMETERS

DRAINAGE PATTERNS	ALL TO POND BOTTOM SEE DETENTION POND PLAN
APPROXIMATE SLOPES AFTER MAJOR GRADING	REFER TO DETENTION POND PLAN
RAINFALL 2-YEAR, 24-HOUR, inch	1.19
2-YEAR, 1-HOUR, inch	0.67
INTENSITY, INCHES/HOUR FOR T_c = 10 minutes	1.98
HYDROLOGICAL SOIL GROUP	A
CURVE NUMBER (CN), UNDISTURBED AREA	49
CURVE NUMBER (CN), DISTURBED AREA	77
RUNOFF COEFFICIENT, PRIOR TO CONSTRUCTION	0.25
RUNOFF COEFFICIENT, DURING CONSTRUCTION	0.30
RUNOFF COEFFICIENT, AFTER CONSTRUCTION	0.25

Pre–Construction

SOIL LOSS COMPUTATION

Benchmark: Preconst (check one) — Client: NMDOT
Alternative Treatment: None — Location: PASEO/COORS
Rainfall Factor (RUSLE): 10 — County: BERNALILLO
Soil Name & Tex: BCC — Date: 11/23/2009
Soil Loss Tolerance (T): t/ac/yr — Field Office: N/A
Wind Climate Factor: — Planner: STOVALL
RUSLE C factor (field 1): 0.25 — Crop Rotation: N/A
(field 2): — Mgt. Condition: N/A
(field 3):
(field 4):
(field 5):
(field 6):
Type of Land: Disturbed Land

WATER EROSION (RUSLE)-sheet and rill erosion — R x K x LS x C x P = A

Field (num)	Size (ac)	Rainfall R (factor)	Soil K (factor)	Slope (%)	Length (ft)	Length-Slope LS (factor)	Cover-Mgt C (factor)	Support Practices P (factor)	Soil Loss A (t/ac/yr)	Tons by Field (t/yr)
1	6.5	25	0.2	1.34	670	0.22	0.25	1	0.275	1.8

Post–Construction

SOIL LOSS COMPUTATION

Benchmark: Postcons (check one) — Client: NMDOT
Alternative Treatment: Mulch sock — Location: PASEO/COORS
Rainfall Factor (RUSLE): 15 — County: BERNALILLO
Soil Name & Tex: Haplarids-Torriorthens-Rockla — Date: 11/23/2009
Soil Loss Tolerance (T): t/ac/yr — Field Office: N/A
Wind Climate Factor: — Planner: STOVALL
RUSLE C factor (field 1): > 0.75 — Crop Rotation: N/A
(field 2): — Mgt. Condition: N/A
(field 3):
(field 4):
(field 5):
(field 6):
Type of Land: Disturbed Land

WATER EROSION (RUSLE)-sheet and rill erosion — R x K x LS x C x P = A

Field (num)	Size (ac)	Rainfall R (factor)	Soil K (factor)	Slope (%)	Length (ft)	Length-Slope LS (factor)	Cover-Mgt C (factor)	Support Practices P (factor)	Soil Loss A (t/ac/yr)	Tons by Field (t/yr)
1	6.5	25	0.2	0.49	615	0.09	0.75	1	0.3	2.2

GENERAL NOTES:

1. THE 2003 EDITION OF NMDOT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) HANDBOOK AND SECTION 603 - TEMPORARY EROSION & SEDIMENT CONTROL OF THE 2000 EDITION OF THE NEW MEXICO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION - SHALL BE USED AS MINIMUM REQUIREMENTS TO DEVELOP OR MODIFY THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).

2. THE NPDES PERMIT NUMBER FOR THE PROJECT OR A COPY OF THE NOTICE OF INTENT (NOI), IF A PERMIT NUMBER HAS NOT YET BEEN ASSIGNED, SHALL BE POSTED AT THE PROJECT SITE OR THE FIELD OFFICE AT ALL TIMES DURING CONSTRUCTION.

3. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ALL MAINTENANCE AND INSPECTION REPORTS SHALL BE SIGNED BY A QUALIFIED INSPECTOR ASSIGNED BY CONTRACTOR. THE SWPPP AND THE INSPECTION REPORTS SHALL BE AVAILABLE TO EPA REPRESENTATIVE AT ALL TIMES DURING CONSTRUCTION.

4. ALL DRAINAGE INFORMATION NEEDED TO COMPLETE THE NOTICE OF INTENT (NOI) ARE PROVIDED IN THIS PLAN.

5. BMPS SHOWN ON TESCP ARE DETERMINED USING THE EQUATIONS SHOWN ON THIS SHEET AND OTHER HYDROLOGIC MODELS AS SPECIFIED IN THE DEPARTMENT'S DRAINAGE MANUALS LATEST EDITION. BMPS CONTROL SEDIMENT SO THAT NO ADDITIONAL SEDIMENT RESULTING FROM CONSTRUCTION ACTIVITIES DISCHARGE TO WATERWAYS.

REVISED UNIVERSAL SOIL LOSS EQUATION (RUSLE)

RUNOFF DISCHARGE & VOLUME CALCULATION:

THE FOLLOWING PROCEDURES SHOULD BE USED TO CALCULATE THE RUNOFF DISCHARGE AND VOLUME TO DESIGN THE EROSION CONTROL MEASURES:

DISCHARGE: $Q = CIA$
WHERE, Q = DISCHARGE, cfs
C = RUNOFF COEFFICIENT
I = RAINFALL INTENSITY, in/hr
A = AREA OF THE SITE, acres

VOLUME: $V = (Q\ ft^3/sec)(Tc\ min)(60\ sec/min)$
WHERE, V = VOLUME, ft^3
$Tc = 0.0078\ L^{0.77}\ S^{-0.385}$ minutes
Assume Tc = 10 min. for basins within the project limits
L = LENGTH OF WATERSHED, ft
S = SLOPE, ft/ft

PATRICK L. STOVALL — NEW MEXICO — No. 13830 — PROFESSIONAL ENGINEER
11-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD
STORM WATER DETENTION POND

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

SHEET NO. 4–20

DESIGNED BY: PATRICK STOVALL, PE
DRAWING SCALE:
NEW MEXICO PROJECT NO. HSIP – 0448(17)5

Q:\SEC---PROJECTS\2007 PROJECTS\10711\2C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-20 STORM WATER POLLUTION PREVENTION PLAN.DWG

QUANTITIES - AMAFCA BID LOT
November 23, 2009

PROJECT CONTROL NUMBER: A300060

ESTIMATED STRUCTURE QUANTITIES

ALG	STATION	STRUCTURE DESCRIPTION	SKEW	201000 CLEARING AND GRUBBING LS.	203000 UNCLASSIFIED EXCAVATION CU.YD.	206000 ERADITABLE MATERIAL EXCAVATION (b) CU.YD.	206100 SELECT BACKFILL MATERIAL CU.YD.	207000 SUBGRADE PREPARATION SQ.YD.	304000 BASE COURSE TONS	417000 MISCELLANEOUS PAVING SQ.YD.	511000 STRUCTURAL CONCRETE CLASS A CY.YD.	516000 FLOWABLE FILL CY.YD.	540060 #4 REBAR REINFORCING BARS GRADE 60 LBS.	540060 #5 REBAR REINFORCING BARS GRADE 60 LBS.	540060 #6 REBAR REINFORCING BARS GRADE 60 LBS.	540060 TOTAL LBS.	541200 STRUCTURAL STEEL FOR MISCELLANEOUS STRUCTURES LBS.	570437 24 IN. STORM DRAIN CULVERT PIPE LIN. FT.	570449 30 IN. STORM DRAIN CULVERT PIPE LIN. FT.	570461 36 IN. STORM DRAIN CULVERT PIPE LIN. FT.	570465 36 IN. STORM DRAIN CULVERT PIPE END SECTION EACH	601000 REMOVAL OF STRUCTURES AND OBSTRUCTIONS L.S.	601110 REMOVAL OF SURFACING SQ.YD.	602010 RIPRAP CLASS B CU.YD.	602200 SILT FENCE LIN.FT.	602281 MULCH BLOCK LIN.FT.	602290 SWPPP MANAGEMENT L.S.	607220 REMOVE AND REBUILD CHAIN LINK FENCE LIN.FT.	607512 PIPE GATE 12 FT EACH	609478 CONCRETE CURB AND GUTTER TYPE D 6" X 18" LIN.FT.	609500 STANDARD CURB & GUTTER (30-in.) LIN.FT.	616000 TRAFFIC CONTROL ALLOWANCE LIN.FT.	621000 MOBILIZATION L.S.	632000 CLASS A SEEDING ACRE	632100 STEEP SLOPE SEEDING ACRE	632300 MULCHING ACRE	667010 MANHOLE TYPE C 6 FT. DIA 0-4 FT. DEEP EACH	667070 MANHOLE TYPE E 8 FT. DIA 0 TO 6 FT DEEP EACH	667400 MANHOLE ADJUSTMENT EACH	663870 BORING AND JACKING (c) LIN.FT.	664000 LANDSCAPE COMPLETE L.S.	667500 RIP-RAP (grouted) EACH	702810 TRAFFIC CONTROL DEVICES (FOR CONSTRUCTION traffic control) L.S.	801000 CONSTRUCTION STAKED BY CONTRACTOR L.S.	802000 POST CONSTRUCTION PLANS L.S.	901000 CONTRACTOR PROCESS QUALITY CONTROL L.S.
	(a)	AMAFCA POND TO MOVE POND and NORTH POND										10.0															1.0								1.0									1.0	1.0	1.0
	(a)	AMAFCA R.O.W. ENTIRE AREA (6.8 acres)	---	1.0																					732.0	2047.0	15.0																				
	(a)	ROUGH GRADING - POND BOTTOM, SIDE SLOPES AND EMBANKMENT	---		43224.0																																									
	(a)	KEYWAY TRENCH 16-INCH CLAY LAYER	---				1222.0																																								
	(a)	SUBGRADE PREP UNDER EMBANKMENT	---					1222.0																																							
	(a)	POND BOTTOM SEEDING	---																																											
	(a)	EMBANKMENT SLOPES SEEDING CRUSHED GRAVEL	---																																											
	(a)	TOP OF EMBANKMENT 12 FT. MAINTENANCE RD	---						728.9																																						
	(a)	36 IN. RCP STORM DRAIN PIPE (from P.Spec. Spillway)	---			27.0															33.0																										
	22+31.31	36-IN. RCP STORM DRAIN PIPE (AMAFCA POND TO NORTH POND)	---			2196.0															226.0	1.0			67.0																						
	22+31.31	36-IN. GALVANIZED STEEL PIPE - OR - ENGINEER APPROVED ALTERNATE (WIDER COORS BLVD)																																												
	21+96.70	36 IN. RCP STORM DRAIN PIPE (AMAFCA POND TO MOVE POND)	---			4877.0															432.0	1.0			67.0																						
	21+96.70	36-IN. GALVANIZED STEEL PIPE - OR - ENGINEER APPROVED ALTERNATE (WIDER COORS BLVD)	---																																											
	(a)	REMOVE RIP RAP AND PIPE IN AMAFCA POND	---																				1.0																								
	(b)	REMOVE 30-in CMP and 18-in CMP From North POND (1), 24-IN. CMP IN South POND (1) AND 18-IN CMP IN Move POND (1)	---																				3.0																								
	(a)	REPLACE 24-IN. AND 30-IN. CMP'S IN SOUTH POND	---			20.0													35.0	48.0																												
	(a)	PRINCIPAL SPILLWAY (rubgrvella, walls, slab, grate) grate is not an RMDOT grate, see Sheet 4-3 for details	---			37.0					27.0		650.0	537.0		994.0																														
	(a)	EMERGENCY SPILLWAY	---			120.0					96.0			4965.0	235.0									68.0																								
	22+31.31	NORTH POND INLET STRUCTURE (only use the grate and frame (rural) from RMDOT Std Dwg 623-06-1(1)	---			42.0					4.3		81.0	302.0		1110.0																														
	21+96.70	MOVE POND INLET STRUCTURE (only use the grates and frames Type II from RMDOT Std Dwg 623-17A-1(8, -2(8, -3(8)	---			185.0					19.6		452.0	451.0		3829.0																														
	(a)	NORTH POND - REPLACE LANDSCAPING / IRR PIPES	---																																											
	(a)	SOUTH POND - REPLACE LANDSCAPING IRR PIPES	---																																											
	(a)	MOVE PARKING LOT ASPHALT REMOVE / REPLACE	---							335.0															335.0																						
	(a)	PARADISE BLVD TO MOVE POND																																													
	(a)	RUNDOWN TO MOVE POND CONCRETE (Paradise Blvd.)	---	1.0	35.0	518.0					38.0		8195.0									1.0		15.0		258.0																						
	(a)	SOIL BERM (Paradise Blvd)	---		161.0				34.5																																						
	(a)	APARTMENT POND																																												
	(a)	MAINTENANCE ROAD - Paradise Blvd. to Pond Bottom	---	1.0	85.0			58.0	43.0	165.0	3.2											2.0	188.0	15.0					1.0																		
	(b)	APARTMENT POND INLET STRUCTURE (only use the gate and frame (rural) from RMDOT Std Dwg 623-06-1(1)	---			42.0					5.5		127.0	209.0		1110.0																														
		TOTAL:		3.0	43285.0	8071.0	1222.0	1278.0	868.4	500.0	243.0	10.0	10515.0	8464.0	235.0	17214.0	7843.0	35.0	48.0	691.0	2.0	7.0	503.0	365.0	2047.0	274.0	1.0	100.0	1.0	110.0	23.0	2.0	1.0	6.3	0.2	0.6	1.0	6.0	1.0	387.0	2.0	2.0	2.0	1.0	1.0	1.0
		USE:		3.0	43,285.0	8,071.0	1,222.0	1,278.0	868.4	500.0	243.0	10.0	10,515.0	8,464.0	235.0	17,214.0	7,843.0	35.0	48.0	691.0	2.0	7.0	503.0	365.0	2,047.0	274.0	1.0	100.0	1.0	110.0	23.0	2.0	1.0	6.3	0.2	0.6	1.0	6.0	1.0	387.0	2.0	2.0	2.0	1.0	1.0	1.0

(a) See Plans for Location and Node Tables with coordinate and elevation data
(b) EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES
(c) AUGER BORE / SCRE AND JACK - ITEM COST ASSUMES PIPE MATERIAL, LABOR, EQUIPMENT (complete in place)

PATRICK L. STOVALL
NEW MEXICO
No. 13830
PROFESSIONAL ENGINEER
11-23-2009

11-23-2009
Smith Engineering Company

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

NEW MEXICO DEPARTMENT OF TRANSPORTATION

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY

PASEO DEL NORTE/COORS BLVD STORM WATER DETENTION POND

ESTIMATED STRUCTURE QUANTITIES SCHEDULE

DESIGNED BY: PATRICK STOVALL, PE

DRAWING SCALE:

NEW MEXICO PROJECT NO. HSIP-0448(17)5

SHEET NO. 4-21

Q:\SEC---PROJECTS\2007 PROJECTS\107112C AMAFCA TRACT 2B POND FINAL DESIGN\NOV 2009\4-21 ESTIMATED STRUCTURE QUANTITIES SCHEDULE.DWG

C13/D000

REPORT ON EXISTING CONDITIONS
for
REVISIONS TO THE NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA

Report Prepared for

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY (AMAFCA)

Prepared by:

Smith Engineering Company
6400 Uptown Blvd. NE, Suite 500 E
Albuquerque, New Mexico 87110
Tel: 505/884-0700

SEC #195104

Smith Engineering Company

A Full Service Engineering Company

Smith Engineering Company

A Full Service Engineering Company

August 9, 1996

Mr. Larry Blair, P.E., Executive Engineer
Albuquerque Metropolitan Arroyo Flood Control Authority
2600 Prospect NE
Albuquerque, New Mexico 87112

Re: Existing Conditions Report for Revisions to the North Coors Drainage Management Plan
(Ref: SEC 195104)

Dear Mr. Blair:

In response to your request, we have prepared this plan which examines the existing drainage conditions for the area that encompasses the North Coors Drainage Management Plan-Middle Area. Our investigation required reviewing and updating the original Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) plan entitled "Design Memorandum for the North Coors Drainage Management Plan," dated October 19, 1994. Our plan also utilizes the "Report on Stormwater Drainage for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo-Del-Norte NW" (by C.E. Anderson, Smith Engineering Company, May, 30, 1995, and it's supplement titled "Report on Existing Drainage Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and PDN NW." Our research included an investigation of the development and facilities constructed in this watershed. From this data we created a new existing conditions watershed model. Another major element of our investigation was to determine the effect of 100-year peak flow runoff on the Corrales Main Canal. We were concerned with issues related to the capacity of the canal and the effect of existing conditions runoff being discharged to it. Our analysis of the canal included a updated HEC-2 model that includes cross-sections of the canal from the Calabacillas Arroyo to the La Orilla Outlet.

This submittal is a part of a project to prepare a plan amendment for the North Coors Drainage Management Plan. The existing conditions report was provided as a separate document in order to provide documentation for a Federal Emergency Management Agency (FEMA) flood insurance rate map revision application for the upstream Piedras Marcadas Dam. This FEMA application is being prepared for AMAFCA by another engineering consultant. A developed conditions report and plan revision is in progress and will be a future submittal to AMAFCA.

Sincerely,

Smith Engineering Company

Clifford E, Anderson, P.E., P.S.
Vice President

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

REPORT ON EXISTING CONDITIONS
for
REVISIONS TO THE NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA

Report Prepared for

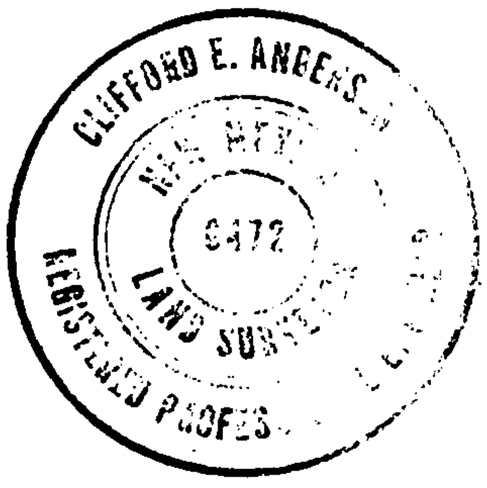
ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY (AMAFCA)

Prepared by:

Smith Engineering Company
6400 Uptown Blvd. NE, Suite 500 E
Albuquerque, New Mexico 87110
Tel: 505/884-0700

SEC #195104

This report was prepared by me, Clifford E. Anderson, NM PE & PS No. 6472. On May 30, 1996, I conducted an on-site review of this study area, and had in my possession the topographic maps of the area. It appears that a substantial quality of site grading has occurred that is not reflected on the existing topographic maps. Where possible, updated site plans were obtained from public agencies and used for this report. This plan reflects the information on current and proposed plans that we obtained. Because of the high level of ongoing development in the area, actual conditions in this watershed are changing and may continue to change.



9/9/96

Clifford E. Anderson **Date**

NM PE & PS No. 6472

Smith Engineering Company

A Full Service Engineering Company

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Conclusions 11

FIGURES 1 and 2

APPENDICES A, B, and C

REPORT ON EXISTING DRAINAGE CONDITIONS
for
REVISIONS TO THE NORTH COORS DRAINAGE MANAGEMENT PLAN
MIDDLE AREA

Introduction:

The North Coors Drainage Management Plan (NCDMP) Middle Area comprises 1.94 square miles of residential and commercial development located in the northwest sector of the City of Albuquerque. The existing drainage system within this area is governed by a previously adopted master plan entitled the "North Coors Drainage Management Plan," and the accompanying technical reports that are titled Design Memorandum. The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) is updating the North Coors Drainage Management Plan/Design Memorandum for the Middle Area, to provide future analysis and guidance regarding allowable discharge rates and capacity restrictions to the existing and future drainage facilities. Some of the existing facilities were planned and designed using older hydrologic criteria and may require additional discharge restrictions to safely convey flows generated under the current AMAFCA/City of Albuquerque/Bernalillo criteria. Hydrologic and hydraulic analyses were performed for existing conditions, and it was determined that the capacity of the existing facilities will be exceeded at three locations:

a. The existing detention basin within the Cactus Hills Subdivision on Congress Ave.,
b. The portion of the Corrales Main Canal from the Calabacillas Arroyo to the New Mexico State Highway Department (NMSHTD) concrete box culvert,
c. Inlet Structure at Black Ranch Tract 2 near the upstream entrance of the NMSHTD concrete box culvert.

Study Area:

The study area is located in the northwest sector of the City of Albuquerque. The area is bounded on the north by the Calabacillas Arroyo; on the south by La Orilla road; on the west by the Piedras Marcadas Dam Watershed, Eagle Ranch Road, and residential development; and on the east by the Corrales Main Canal. A vicinity map of the study area is shown in Figure 3.

Scope of Report:

This report includes the analysis of the existing drainage system and the evaluation of the present performance of this system. The study includes the following tasks:

- Data Collection and Review
- Evaluation of Existing Hydrologic Conditions
- Evaluation of Existing Hydraulic Conditions
- Coordination with Affected Parties and Agencies

Goals:

The purpose of this report is to assess the existing drainage system and provide recommendations for a drainage system which will mitigate existing conditions flooding in the Middle Area during the 100-year, 24-hour storm event. The results of the study will provide technical background data and conceptual ideas for future developed conditions analysis and for future design. This effort includes a hydrologic and hydraulic analysis of the existing drainage system, and an analysis of drainage improvements necessary to relieve or remove flooding caused by existing conditions. The hydrologic and hydraulic analysis of the future development and improvements necessary to accommodate future development are to be included in a separate volume.

Past Studies:

Many drainage studies addressing portions of the Middle Area have been conducted. These studies examine the effect of local development on hydrology, hydraulics, and storm drain systems. These studies have been reviewed by Smith Engineering Company (SEC), and a separate volume of these reference documents is included with this report. Where these studies included facilities that have been constructed at the time of this report, they are included in the updated hydrologic and hydraulic analysis. The following studies pertain to the Middle Area:

April 1996	- Paradise Golf Course - Easterling & Associates
March 1996	- Precision Tune Site - Per Se Engineering
February 1996	- Piedras Marcadas Spillway - Richard J. Heggen, P.E.
December 1995	- Eagle Ridge Apartments - Isaacson & Arfman
June 1995	- Riverfronte Estates - Brasher & Lorenz, Inc.
March 1995	- Kindercare Learning Center - Isaacson & Arfman
March 1995	- Riverside Animal Hospital - Tierra West Development
February 1995	- Sky Crest Estates - D. Mark Goodwin & Associates
January 1995	- Replat of a Portion of Albuquerque West, Unit 2 Lot C
July 1990	- Black Ranch Tract 3 - Easterling & Associates
February 1989	- Bosque Del Pueblo - Greiner Engineering
January 1986	- Coors 8-Pac - Bohannan-Huston, Inc.

Mapping:

New photographic mapping, dated July, 1996, was generated by Thomas R. Mann & Associates (TRM) for the purposes of this study. The new aerial photography was used to determine existing land use in the study area. Existing topographic mapping (2' contour interval from mapping) was used to assist in the delineation of drainage basins with supplemental field investigation and review of existing drainage plans. The mapped area is slightly larger than the study area and covers portions of 10 Zone Atlas sections. The mapping services provided for this study included:

- Preparation of 1"=500' scale mylar reproducible composite aerial photographs overlaid with existing 2' contours in a 24" x 36" format.
- Preparation of aerial photography and contact printing used to assess land use in conjunction with the hydrologic modeling effort and to aid in viewing planimetric features (housing, utilities, streets, etc.).

Area Construction:

The Middle Area of the North Coors Drainage Management Plan is impacted by the following constructed facilities that serve to alter historic flows.

1. The Corrales Main Canal was constructed in the early 1930's. Modifications and improvements have occurred to this channel since this time. Most significantly, in 1986, AMAFCA improved this channel with sections of earth lining, concrete and gunnite from the access road to the Southwest Polytechnic Institute to the La Orilla Outlet to the Rio Grande located 500 feet north of La Orilla Road. This AMAFCA project was the "North Coors La Orilla Outlet to the Rio Grande." Included within this construction were 2 concrete box culverts and several side inlet structures to convey flow to the canal from adjacent properties. The AMAFCA project included the accommodation of irrigation flows to the Corrales Main Canal and stormwater flows from upstream watersheds. The AMAFCA project also included a storm drain outlet that received flow directly from the Piedras Marcadas Dam.

2. Paradise Boulevard was constructed in the 1950's at the southern extent of Black Ranch Tract 2. Drainage from the west was conveyed along Paradise Boulevard, where it crossed Coors Blvd. and entered Black Ranch Tract 2.

3. Coors Blvd. NW was constructed in the 1940's and 50's approximately 500 feet

west of the Corrales Main Canal. There are culverts located along Coors that convey stormwater to various properties east of the road. The culverts commonly discharge directly onto the eastern side properties. See Figure 1 for the location of these culverts.

4. Irving Boulevard, constructed in the 1970's and 1980's, conveys some surface drainage from lands to the west to the intersection of Coors Blvd. From this intersection, the stormwater is conveyed southward along Coors Blvd, or is conveyed across Coors Blvd. and is then carried southward. All of the water that reaches the Coors Blvd./Irving Blvd. intersection is projected to reach Black Ranch Tract 2. This water is then conveyed to the Corrales Main Canal, where it enters the canal or flows over the canal.

5. The construction of Paseo-del-Norte and the grade separated intersection, constructed in 1987-1988, have further defined the drainage basin that existed with Paradise Blvd. The Paseo-del-Norte project also included construction of a six foot by ten foot (6'x10') Concrete Box Culvert (CBC) under Paseo-del-Norte along the alignment of the Corrales Main Canal. The CBC connects to the North Coors La Orilla Outlet, constructed by AMAFCA. Two 36-inch culverts were extended from Black Ranch Tract 2 to the CBC with the Paseo-Del-Norte Construction. The CBC carries both the irrigation flows of the Corrales Main Canal and the stormwater flows from upstream watersheds.

6. As a part of the Paseo-del-Norte project the NMSH&TD constructed a detention pond at the southwest corner of Paseo-del-Norte and Coors Blvd. This pond has approximately 3 ac-ft of storage. Flows from sub-basin 11.1 flow to this pond. This includes street flow from Paseo-del-Norte that is collected in catch basins upstream of the pond. There are two 30-inch culverts extended from this pond that discharge into the CBC.

7. The City of Albuquerque has constructed the Eagle Ranch Road Storm Sewer in the watershed west of Coors Boulevard and north of Paradise Boulevard. This storm sewer conveys stormwater to the Calabacillas Arroyo, located approximately 3/4 miles north of Coors/PDN intersection. The storm sewer provides a drainage outlet for significant upstream development, that would historically reach the Corrales Main Canal.

8. The City of Albuquerque has extended the paving of Eagle Ranch Road

approximately 1000 feet south of the All Saints Rd./Eagle Ranch intersection. The paving of this road has also included the construction of curb and gutter. The properties to the west of this section of Eagle Ranch now drain to the Piedras Marcadas Dam.

9. In the historic basin 11.2E there is a storm drain with catch basins that tie in directly to the CBC at the Corrales Main Canal. There are two catch basins located on either side of Coors Blvd at the low spot between Paseo Del Norte and the road to the Southwest Indian Polytechnic Institute (SIPI). There is also two catch basins along a private road that drains to the Corrales Main Canal.

10. The Alban Hills area located west of Coors Boulevard has developed at a rate that is consistent with the Coors Corridor Sector Plan. Discussions with local home owners of the Alban Hills area indicate that the subdivision will not likely exceed a development density of one dwelling unit per five acres because of existing building covenants for the subdivision. Existing aerial photography shows that this density has not been exceeded.

11. There is significant residential and commercial development that has occurred and is occurring in the historic watershed. Many of the developments include detention ponds to collect stormwater and release it at a controlled rate. These flow restrictions are imposed by the allowable discharge requirements of the existing North Coors Drainage Management Plan. Developments located above the Eagle Ranch Road Storm Sewer frequently include storm water connections directly to the storm drain because this facility was designed to accommodate unrestricted discharge.

12. The design criteria for the North Coors La Orilla Outlet and restrictions in the North Coors Drainage Management Plan have placed control of sediment requirements on upstream development. Developments that drain to the North Coors La Orilla Outlet must meet the following criteria:
Minimum Pond Storage = 0.0024 acre-ft per acre of upstream drainage basin
Velocity of Sediment Fall = 0.002 ft/sec @ 50% of Q100 (Course Silt)
Max Horizontal Velocity in Sediment Pond = 0.5 ft/sec @ 50% of Q100
Retention Time in Pond (sec) = Depth of pond (ft) / 0.002 ft/sec
These restrictions minimize the sediment that can reach the canal during normal flow and flood conditions.

Hydrology Criteria:

The hydrologic analysis of the Middle Area utilizes the methodology of the City of Albuquerque's Development Process Manual - Volume 2, Design Criteria - Section 22.2, Hydrology, dated January 1993 (DPM 22.2). The principal design storm is the 100-year, 24-hour event. Rainfall depth was obtained from the NOAA Atlas 2 that is referenced in the DPM 22.2. The computer program, AHYMO (ver. 1/94) was used to compute the runoff for the study area. The AHYMO program utilizes a unit hydrograph procedure along with initial abstraction and uniform infiltration losses.

The COMPUTE NM HYD function of AHYMO was used to generate sub-basin hydrographs for the watershed. The ROUTE MCUNGE function was used for arroyo and channel routing; this function utilizes the Muskingum Cunge methodology.

The time-to-peak (Tp) for each sub-basin was computed using the SCS Upland Method for sub-basin reach lengths less than 4,000 feet. Where the subbasin reach length was greater than 4,000 feet, the time-to-peak was calculated using the transition equation as described in the DPM 22.2. Flow paths generally followed existing streets, natural drainage paths, swales, and/or parking lots. Numerous existing retention and detention ponds were included in the hydrologic model where field inspection indicated that the ponds were in place and functioning. In some cases, additional field measurements were required to verify pond volumes and discharge sizes.

Description of Drainage Area

The Middle Area of the North Coors Drainage Management Plan comprises a drainage basin of about 1.94 square miles. The majority of the watershed is within the City of Albuquerque limits. The southwest portion of the study area is outside the City limits and falls under the jurisdiction of Bernallilo County. The Corrales Main Canal borders the study area on the east and is the major drainage channel within the watershed. The Corrales Main Canal has a seasonal base flow of 38 cfs used for irrigation purposes. The base flow in the canal is controlled by a gate diversion structure and inverted siphon upstream of the Calabacillas Arroyo, at the north boundary of the study area. These upstream facilities are designed so that any irrigation flows in excess of 38 cfs must flow directly to the Rio Grande and cannot be conveyed to the study area.

The drainage basins from the North Coors Drainage Management Plan were reviewed with this study. On-site observation of the development and drainage facilities was performed to evaluate changes to existing conditions not reflected by the North Coors Drainage Management Plan. Even the contributing watershed area required reassessment. The North Coors Drainage Management Plan

topographic mapping did not reflect most of the new development and it was necessary to obtain drainage plans for the developments from the City of Albuquerque and AMAFCA records. The drainage basin analysis for the "Report on Existing Drainage Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo del Norte (Anderson, 1995) served as a primary resource for the drainage basin analysis. This was supplemented by the report entitled "Paradise Golf Course Drainage Plan," Easterling & Associates, 1996. Additional changes in the watershed development made subsequent to these reports were incorporated into the hydrologic model. A total of 38 drainage plans and reports were used for this study. These reports define the development that has occurred in the entire watershed. Some of the record plans needed for this study were based on hydrology developed prior to the adoption of the Chapter 22.2, Hydrology in 1993. Therefore, it was not deemed appropriate to use the flow rates published in these reports. Instead, flow rates were established by the currently approved procedures using the AHYMO computer program with the sub-basins modeled to simulate the physical conditions described in the reports. Where future land uses, grading and facilities were described in the reports but were not actually constructed at the time of this report, they were not included in the existing conditions modeling. The new model contains 59 sub-basins, and 13 existing stormwater detention ponds. Whenever possible, these sub-basins included multiple basins identified in the existing drainage plans. Upon executing the 100-year rainfall simulation with the model, locations were identified where flows divided so that some flow went to constructed facilities, up to the designed limit, then any excess flows were carried overland to other sub-basins. Modeling identified 12 locations in the watershed where this divided flow condition occurs. At 3 locations of the 12, the flows divide so that flow is carried out of the watershed study area. This occurs at Hyd No. Overfl.2 (discharges onto Black Ranch Tract 12), CB6.73 (discharges to Calabacillas Arroyo), and CB9.1 (pipe flow in existing 60" SD to Calabacillas Arroyo). It is expected that the divided flows are a consequence of applying current hydrologic criteria to existing facilities designed and constructed under earlier criteria.

The recently developed Riverfronte Estates is located immediately upstream of the Corrales Main Canal at the northeast extent for the basin boundary. This development required that "each lot shall be graded such that all stormwater generated on site and on the adjacent street paving shall be contained in on-site ponding." There is active construction at this location, and it was not possible to verify compliance with these requirements from visual observation of the site. If the ponding condition is not met, there will be an increased chance of overtopping the Corrales Main Canal and flooding of lands to the south. Because of existing channel capacity restrictions, any ponding deficiency at Riverfronte Estates will not impact the existing condition flows in the Corrales Main Canal south of Paseo del Norte. Hydrology for this report assumed that the Riverfronte Estates ponds were in place and functioning.

The most severe case of divided flow is at the existing detention pond within the Cactus Hills

Subdivision on Congress Avenue. This pond does not have the capacity for the flows that reach it. It was determined from the model that approximately 171 cfs bypasses this pond and continues down Congress Avenue to Irving Blvd. and Eagle Ranch Road. These flows eventually make their way to the natural shallow ponding area on Black Ranch Tract 2. A percentage of this flow is then detained in the pond and discharged to the concrete box culvert. The remaining flow then overtops the ponding area and discharges over the embankment into the canal. The current capacity of this canal is approximately 91 cfs. The base flow in the canal must be added to the amount of stormwater flow that will reach it during a 100-year storm event. Therefore, it is expected that the canal will fill to its capacity, and then any additional flow will overtop the canal and discharge onto Black Ranch Tract 12. It was determined from the modeling that 4 acre-ft with a peak flow of 53 cfs will reach Tract 12. This poses a problem for the stability of the canal and for potential damage at Tract 12. Black Ranch Tract 12 is currently undeveloped and a 100-year storm would probably cause moderate soil disturbance and local retention ponding. As for the canal, there is the possibility of bank failure, for the entire reach between the Calabacillas and Paseo-del-Norte. Bank failure could cause more flows to reach Tract 12 , but would lessen flows to the Corrales Main Canal. For the purposes of this study it is assumed that bank failure would not occur for any flows up to the bank flow condition, in order to determine the maximum existing flows to the Corrales Main Canal downstream of Paseo del Norte.

The City of Albuquerque is currently in the design phase of a Special Assessment District (SAD 224) project to mitigate some localized flooding problems in the vicinity of Congress Avenue, Irving Boulevard, and Eagle Ranch Road. The proposed improvements include expanding the Cactus Hills Subdivision detention pond storage by a factor of 1.6. This would increase the current capacity of the pond from 9.93 ac-ft to 16 ac-ft. The project also calls for a 66" outlet to be installed in the pond. The flows from the pond would then be diverted through the 66" pipe to the Calabacillas Arroyo. Given this situation, 170 cfs could be diverted out of the Corrales Main Canal watershed to the arroyo. This proposed project would reduce potential flooding along Congress Avenue, Irving Boulevard, and Eagle Ranch Road. Existing flows to Black Ranch Tract 2 would be reduced by only 6 percent as a result of the upstream pond expansion, however th volume of existing conditions runoff would be reduced by 33 percent. These lower flows would also reduce the potential for overtopping flows to Tract 12.

The "Report on Existing Conditions for a Proposed Pond at the Northeast Corner Coors Boulevard NW and Paseo-del-Norte NW," included the sizing of a 8.7 acre-ft pond at Black Ranch Tract 2. With the proposed upstream Cactus Hills pond improvements in place the existing conditions pond at Tract 2 would be receive a peak flow of 187 cfs and a volume of 23.8 ac-ft. Additional runoff caused by future development would generate additional runoff to this pond.

The existing conditions model reflects the level of development that currently exists in the Middle Area of the North Coors Drainage Management Plan. With the use of all available drainage plans and reports, and based on 5 site visits, the model should closely represent the existing conditions in the watershed.

Computer printouts of the input files and output summary files for the Middle Area hydrology are contained in Appendix A. Figures 1 and 2 are basin maps showing the 59 watershed basins and main features. This analysis shows that 280 cfs of peak flow and 117 acre-feet of stormwater runoff would reach the La Orilla Outlet from a 100-year storm event.

Hydraulic Modeling:

A hydraulic model of the Corrales Main Canal was developed using the U.S. Army Corps of Engineer's water surface profile model, HEC-2 (Version 4.6.0, February 1991). The input for the existing conditions HEC-2 model was developed from construction drawings for the channel. The following as-built plans were used for the model: Corrales Main Canal STA 598+00-658+00, State of New Mexico-Middle Rio Grande Conservancy District (MRGCD), June 1933, Sheet #A-46.2; the North Coors Drainage La Orilla Outlet to the Rio Grande, Albuquerque Metropolitan Arroyo Flood Control Authority, October 1986, Sheets #5-9 of 46; and Paseo del Norte over Coors Boulevard-Corrales Canal, New Mexico State Highway Department, March 1986, Sheet #5-14. These plans were obtained from AMAFCA, MRGCD, and State Highway Department archives. The facilities described in these plans appear to be in place and functioning.

Results of Hydraulics:

Through the execution of the HEC-2 model, it was determined that there is at least two feet of freeboard in the channel from the 10'x6' concrete box culvert downstream to the La Orilla Outlet. Upstream of the NMSHTD box culvert there is not enough capacity within the channel for the 100-year flows. It was determined that the existing channel in this area has an approximate flowing-full capacity of 91 cfs. The flows entering the canal from basin 8.3 will exceed this rate and overtop the canal, overtopping depths average at 3.5 feet. A visual inspection of the canal determined that there is presently less than 2 feet of freeboard in this section of the channel. It is possible that adjacent properties to the south and east of the canal could experience flooding during the 100-year event due to general overtopping flows or a breach in the canal bank. The exact location for such flooding is difficult to predict due to the age and condition of the existing earth channel bank. The area of such flooding would be confined to the region east of the Corrales Main Canal and North of Paseo del Norte. For both the NMSHTD box culvert and, for the North Coors La Orilla Outlet, the HEC-2 analysis indicates that the 100-year existing condition flows are conveyed with not less than 2 feet

of freeboard. The existing condition design flows are less than the published design capacity of the designed facilities. These flow rates are summarized in the following table:

LOCATION	*STATION*	*DESIGN CAPACITY (2 FT FB)*	*Q100 EXISTING CONDITIONS*
Beginning of North Coors La Orilla Outlet Channel	643+33	263 CFS	197 CFS
Side Inlet Structure Basin 12 Discharge Point	661+00	273 CFS	182 CFS
36" RCP Outlet from Piedras Marcadas Dam	672+56	305 CFS	266 CFS
12' X 6' Concrete Box Culvert @ road to Roberson Ranch	706+24	330 CFS	316 CFS
Beginning of Drop Structure at La Orilla Outlet	713+75	365 CFS	280 CFS

The analysis of the flooding flows includes the irrigation flow as a base flow. At the upstream boundary of the study area an existing siphon-bypass structure diverts excess irrigation flows directly to the Rio Grande (the Calabacillas Outlet Structure) so that the irrigation flow rate is controlled to a maximum rate of 38 cfs. There is an existing channel check structure for irrigation flows located at station 699+97. This check structure was modeled in the fully closed position so that the highest expected water surface elevation is computed. When this check structure gate is opened, the water surface would be lowered.

The outlet pipe from the Piedras Marcadas Dam flows directly to the Corrales Main Canal in the

study area. This flow is controlled by a "normally closed" gate that is only opened when capacity in the Corrales Main Canal is available. Therefore, it is not necessary to include flow from the dam when modeling peak flows in the Corrales Main Canal.

Conclusions:

Downstream of Paseo-del-Norte, the Corrales Main Canal intercepts the 100-year existing condition flows that reach the canal. There are no known conditions that cause flows to cross over the canal. The Corrales Main Canal in this reach is designed to carry the expected 100-year discharge with not less than 2-feet of freeboard.

BOHANNAN-HUSTON INC.
COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NM 87109
TEL (505) 823-1000 FAX (505) 821-0892

LARRY W. HUSTON, C.P.
MICHIAL M. EMERY, P.E.
BRIAN G. BURNETT, P.E.
KERRY L. DAVIS, P.E.
LARRY A. LARRAÑAGA, P.E.
HOWARD C. STONE, P.E.

PRINCIPALS

WILLIAM L. VREEKE, P.E.
GORDON A. WALHOOD, JR., P.E.
MARY E. CARTER
GEORGE RADNOVICH, R.L.A.
SILAS V. SUAZO
JAMES R. TOPMILLER, P.E.

August 29, 1996

Mr. Carlos Adorisio
Micheal Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Re: Additional Information Requested to Support a Letter of Map Revision Request on the Piedras Marcadas Detention Dam Case No.: 96-06-330P

Dear Mr. Adorisio:

In your letter to Ms. Susan M. Calogne dated May 21, 1996, you requested additional information regarding the Piedras Marcadas Detention Dam LOMR Case No.: 96-06-330P. The following is in response to your list of required items:

ITEM 1. Included with this letter is the as-built plan, certified by a registered professional engineer, of the principal spillway of the Piedras Marcadas Dam.

ITEM 2. Included with this letter is the "Report on Existing Conditions for Revisions to the North Coors Drainage Management Plan Middle Area." This report includes hydrologic backup to support the base flood discharges between the Piedras Marcadas Dam and the Corrales Main Canal, HEC-2 files to show the channel can convey these base flood discharges, and the methodology and equations used to handle sediment transport during the base flood discharge. A diskette with all the supporting files is also included with this letter.

ITEM 3. Included with this letter is the "Bosque Del Rio Drainage Report for the Preliminary Plat." This report provides drainage information associated with the base flood for the areas between the Corrales Main Canal and the Rio Grande. In addition to this report, per our conversation, the area of the flood plain that is not removed by the drainage improvements has been calculated using hydrology based on Section 22.2 of the City of Albuquerque Design Process Manual (DPM).

To calculate the area not removed from the floodplain the following procedure was followed:

1. It was determined from visiting the site that a portion of the floodplain can not drain to the Corrales Riverside Drain. The topography is such that the floodplain and the Corrales Riverside Drain is separated by an earthen levee.

2. Based on the Bosque Del Rio Drainage Report and the field visit the drainage basins that will contribute to this low lying area was delineated (see Exhibit 1). Using AHYMO and Section 22.2 of the DPM the runoff volume from the 100-year storm event was calculated.

3. From the elevations and topography shown on the Floodway Map, the elevation that this volume of water would rise to was calculated.

This calculation affects the amount of flood plain that is removed from the FIRM Map and the Floodway Map Figures 13 and 14 respectively. The revised Figures 13 and 14 are included with this letter. Also, a diskette with the AHYMO file and the calculations to support this change is included with this letter.

If you have any additional questions, please contact David Bishop or me at (505) 823-1000.

Sincerely,

Craig W. Hoover, P.E.
Project Manager
Water Resources Group

CWH/sh
Enclosures

cc: Susan Calongne, CoA
John Kelly, AMAFCA

Basin 1

Area = 0.2123 mi² ≅ 135.923 acre

Low Point 4978.10' (See Figure 1 from "Report on Existing Conditions" - Smith)

Point of Analysis to Hydraulically most distant point = 3,300'

Reach less than 4,000' use SCS Upland Method

* Slopes are very flat and drainage paths are not well defined so the K= factors have been reduced to reflect this condition. from Reference "Flood Hydraulogy Manual - U.S. Department of the Interior Bureau of Reclamation.

See Attached Spread Sheet for Time of Concentration & Time to Peak

T_p = 0.664 hrs

See Attached HYMO Summary table

Q_p = 59.15

Volume = 6.88 ≅ acre-ft · $\frac{43,560 ft^2}{acre}$ = 299,824 ft³

Assum Volume is an Elliptical Depresion

$V = 4/9 \pi \bar{a} \bar{b} h$

Break Basins into 5 areas that will pond.

See Spread Sheet and Exhibit 1

$$\bar{a} = \frac{a_{bottom} + a_{TOP}}{2} \qquad \bar{b} = \frac{b_{bottom} + b_{TOP}}{2}$$

Area Remaining in Flood Plain up to Elevation = 4979.00

Note: Hydrology Based on Section 22.2 of the City of Albuquerque Design Process Manual.

BOHANNAN-HUSTON INC.

PROJECT NAME Piedras Marcadas Dam LOMR SHEET 1 OF _____

PROJECT NO. _____ BY DEB DATE 8/27/96

SUBJECT _____ CH'D _____ DATE _____

Basin 2

Area = 0.0745 mi^2 ≅ 47.746 acres

Low Point = 4978.20' (See figure 1 from "Report on Existing Conditions - Smith")

Point of Analysis to hydraulically most distant point = 1,950'

Reach Less than 4,000' use SCS Upland Method

*Slopes are very flat and drainage paths are not well defined so the K-factors have been reduced to reflect this condition.

from Reference: "Flood Hydrology Manual - U.S. Department of the Interior Bureau of Reclamation

See Attached Spread Sheet for Time of Concentration & Time to Peak

T_p = 1.056 hrs

See Attached AHYMO Summary table:

Q_p = 11.46

Volume = 2.214 acre-ft $\cdot \frac{43{,}560\ ft^2}{acre} = 96{,}442\ ft^3$

See Spread Sheet for Volume Calculations

BOHANNAN-HUSTON INC.

PROJECT NAME _____ SHEET 2 OF _____

PROJECT NO. _____ BY _____ DATE _____

SUBJECT _____ CH'D _____ DATE _____

Piedras Marcadas Detention Dam		L.O.M.R.				
Time to Peak Spreadsheet						
Revised DPM procedure						
Description	Var.	Unit		BASINS	BASINS	
Basin				1.0	2	
Basin Area		Acres		135.923	47.746	
Total Reach	L	Feet		3300.0	1950.0	
Overland Reach	L1	Feet		400.0	400.0	
Overland K	K1			0.7	0.7	
Overland Slope	S1	Percent		0.77	1.14	
Adj. Overland Slope	S1'	Percent		0.769	1.142	
Gully Reach	L2	Feet		1600.0	1550.0	
Gully K	K2			1.500	1.500	
Gully Slope	S2	Percent		0.510	0.040	
Adj. Gully Slope	S2'	Percent		0.510	0.040	
Arroyo Reach	L3	Feet		1300.0	0.0	
Arroyo K	K3			2.500	2.500	
Arroyo Slope	S3	Percent		0.131	0.219	
Adj. Arroyo Slope	S3'	Percent		0.131	0.219	
Lca	Lca	Feet		0.0	0.0	
Base Discharge	Qb	cfs		0.0	0.0	
Ground Slope S	S	Percent		0.392	0.266	
Adjusted Slope S'	S'	Percent		0.392	0.266	
K	K			1.471	0.663	
K'	K'			1.471	0.663	
K"	K"			0.000	0.000	
K"'	K"'			0.000	0.000	
Kn	Kn			0.055	0.055	
Orig. TC	TC	Hrs.		0.995	1.584	
Adjusted TC	TC'	Hrs.		0.995	1.584	
Time Lag	Lg	Hrs.		-	-	
Time to Peak	TP	Hrs.		0.664	1.056	

AHYMO SUMMARY TABLE (AHYMO993) - AMAFCA VERSION OF HYMO - SEPTEMBER, 1993 RUN DATE (MON/DAY/YR) =08/28/1996
INPUT FILE = BASIN1.HYM USER NO.= D_BISHOP.S93

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	
*S*SUMMARY	BASIN 1.0 - EXISTING WITH BULKING										
START										TIME=	.00
RAINFALL TYPE= 2										RAIN24=	2.660
*S********** CALC BASIN 1 FLOW **********											
SEDIMENT BULK										PK BF =	1.10
COMPUTE NM HYD	100.10	-	1	.21230	59.15	6.883	.60786	2.066	.435	PER IMP=	5.00
SEDIMENT BULK										PK BF =	1.10
COMPUTE NM HYD	100.10	-	2	.07430	11.46	2.214	.55872	2.466	.241	PER IMP=	3.00
FINISH											

```
    AHYMO PROGRAM (AHYMO993) - AMAFCA VERSION OF HYMO - SEPTEMBER, 1993
         RUN DATE (MON/DAY/YR) = 08/28/1996
         START TIME (HR:MIN:SEC) = 08:26:14     USER NO.= D_BISHOP.S93
         INPUT FILE = BASIN1.HYM

********
*S*SUMMARY              BASIN 1.0 - EXISTING WITH BULKING
******** 100 YEAR STORM
********
*
********
********
START                 0.00
****************************
RAINFALL              TYPE=2 RAIN QUARTER=0.0 RAIN ONE=1.84
                      RAIN SIX=2.2 RAIN DAY=2.66 DT=0.03333

                 COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                 DT =     .033330 HOURS       END TIME =    19.964670 HOURS
                    .0000   .0020   .0040   .0060   .0081   .0102   .0124
                    .0146   .0169   .0193   .0217   .0241   .0266   .0292
                    .0319   .0347   .0375   .0404   .0435   .0466   .0498
                    .0532   .0566   .0603   .0640   .0680   .0721   .0764
                    .0809   .0857   .0908   .0959   .1013   .1071   .1196
                    .1475   .1905   .2522   .3364   .4471   .5883   .7640
                    .9786  1.1777  1.2608  1.3311  1.3935  1.4503  1.5026
                   1.5512  1.5965  1.6391  1.6791  1.7169  1.7525  1.7863
                   1.8183  1.8486  1.8774  1.9047  1.9306  1.9370  1.9429
                   1.9485  1.9538  1.9589  1.9639  1.9686  1.9731  1.9775
                   1.9818  1.9859  1.9899  1.9938  1.9976  2.0012  2.0048
                   2.0083  2.0117  2.0150  2.0183  2.0215  2.0246  2.0276
                   2.0306  2.0336  2.0364  2.0393  2.0420  2.0448  2.0474
                   2.0501  2.0527  2.0552  2.0577  2.0602  2.0627  2.0651
                   2.0674  2.0698  2.0721  2.0744  2.0766  2.0788  2.0810
                   2.0832  2.0853  2.0874  2.0895  2.0915  2.0936  2.0956
                   2.0976  2.0996  2.1015  2.1034  2.1053  2.1072  2.1091
                   2.1109  2.1128  2.1146  2.1164  2.1182  2.1199  2.1217
                   2.1234  2.1251  2.1268  2.1285  2.1302  2.1318  2.1335
                   2.1351  2.1367  2.1383  2.1399  2.1415  2.1431  2.1446
                   2.1461  2.1477  2.1492  2.1507  2.1522  2.1537  2.1552
                   2.1566  2.1581  2.1595  2.1609  2.1624  2.1638  2.1652
                   2.1666  2.1680  2.1693  2.1707  2.1721  2.1734  2.1748
                   2.1761  2.1774  2.1787  2.1800  2.1813  2.1826  2.1839
                   2.1852  2.1865  2.1877  2.1890  2.1902  2.1915  2.1927
                   2.1939  2.1952  2.1964  2.1976  2.1988  2.2000  2.2013
                   2.2026  2.2039  2.2052  2.2065  2.2078  2.2091  2.2103
                   2.2116  2.2129  2.2142  2.2155  2.2167  2.2180  2.2193
                   2.2205  2.2218  2.2230  2.2243  2.2255  2.2268  2.2280
                   2.2293  2.2305  2.2318  2.2330  2.2342  2.2354  2.2367
                   2.2379  2.2391  2.2403  2.2415  2.2428  2.2440  2.2452
                   2.2464  2.2476  2.2488  2.2500  2.2512  2.2524  2.2536
                   2.2547  2.2559  2.2571  2.2583  2.2595  2.2606  2.2618
                   2.2630  2.2641  2.2653  2.2665  2.2676  2.2688  2.2699
                   2.2711  2.2722  2.2734  2.2745  2.2757  2.2768  2.2779
                   2.2791  2.2802  2.2813  2.2825  2.2836  2.2847  2.2858
                   2.2870  2.2881  2.2892  2.2903  2.2914  2.2925  2.2936
                   2.2947  2.2958  2.2969  2.2980  2.2991  2.3002  2.3013
                   2.3024  2.3035  2.3046  2.3057  2.3067  2.3078  2.3089
                   2.3100  2.3110  2.3121  2.3132  2.3142  2.3153  2.3164
                   2.3174  2.3185  2.3195  2.3206  2.3216  2.3227  2.3237
                   2.3248  2.3258  2.3269  2.3279  2.3290  2.3300  2.3310
                   2.3321  2.3331  2.3341  2.3352  2.3362  2.3372  2.3382
                   2.3392  2.3403  2.3413  2.3423  2.3433  2.3443  2.3453
                   2.3463  2.3473  2.3483  2.3493  2.3503  2.3513  2.3523
```

```
2.3533  2.3543  2.3553  2.3563  2.3573  2.3583  2.3593
2.3603  2.3612  2.3622  2.3632  2.3642  2.3651  2.3661
2.3671  2.3681  2.3690  2.3700  2.3710  2.3719  2.3729
2.3738  2.3748  2.3758  2.3767  2.3777  2.3786  2.3796
2.3805  2.3815  2.3824  2.3834  2.3843  2.3852  2.3862
2.3871  2.3881  2.3890  2.3899  2.3909  2.3918  2.3927
2.3936  2.3946  2.3955  2.3964  2.3973  2.3983  2.3992
2.4001  2.4010  2.4019  2.4028  2.4038  2.4047  2.4056
2.4065  2.4074  2.4083  2.4092  2.4101  2.4110  2.4119
2.4128  2.4137  2.4146  2.4155  2.4164  2.4173  2.4181
2.4190  2.4199  2.4208  2.4217  2.4226  2.4234  2.4243
2.4252  2.4261  2.4270  2.4278  2.4287  2.4296  2.4304
2.4313  2.4322  2.4331  2.4339  2.4348  2.4356  2.4365
2.4374  2.4382  2.4391  2.4399  2.4408  2.4416  2.4425
2.4434  2.4442  2.4450  2.4459  2.4467  2.4476  2.4484
2.4493  2.4501  2.4510  2.4518  2.4526  2.4535  2.4543
2.4551  2.4560  2.4568  2.4576  2.4585  2.4593  2.4601
2.4609  2.4618  2.4626  2.4634  2.4642  2.4651  2.4659
2.4667  2.4675  2.4683  2.4691  2.4700  2.4708  2.4716
2.4724  2.4732  2.4740  2.4748  2.4756  2.4764  2.4772
2.4780  2.4788  2.4796  2.4804  2.4812  2.4820  2.4828
2.4836  2.4844  2.4852  2.4860  2.4868  2.4876  2.4884
2.4892  2.4899  2.4907  2.4915  2.4923  2.4931  2.4939
2.4946  2.4954  2.4962  2.4970  2.4978  2.4985  2.4993
2.5001  2.5008  2.5016  2.5024  2.5032  2.5039  2.5047
2.5055  2.5062  2.5070  2.5078  2.5085  2.5093  2.5100
2.5108  2.5116  2.5123  2.5131  2.5138  2.5146  2.5153
2.5161  2.5168  2.5176  2.5183  2.5191  2.5198  2.5206
2.5213  2.5221  2.5228  2.5236  2.5243  2.5250  2.5258
2.5265  2.5273  2.5280  2.5287  2.5295  2.5302  2.5309
2.5317  2.5324  2.5331  2.5339  2.5346  2.5353  2.5361
2.5368  2.5375  2.5382  2.5390  2.5397  2.5404  2.5411
2.5418  2.5426  2.5433  2.5440  2.5447  2.5454  2.5462
2.5469  2.5476  2.5483  2.5490  2.5497  2.5504  2.5511
2.5518  2.5526  2.5533  2.5540  2.5547  2.5554  2.5561
2.5568  2.5575  2.5582  2.5589  2.5596  2.5603  2.5610
2.5617  2.5624  2.5631  2.5638  2.5645  2.5652  2.5659
2.5665  2.5672  2.5679  2.5686  2.5693  2.5700  2.5707
2.5714  2.5721  2.5727  2.5734  2.5741  2.5748  2.5755
2.5761  2.5768  2.5775  2.5782  2.5789  2.5795  2.5802
2.5809  2.5816  2.5822  2.5829  2.5836

*S************************ CALC BASIN 1 FLOW ***************
SEDIMENT BULK         TYPE=1 FACTOR=1.1
COMPUTE NM HYD        ID=1 HYD NO=100.1 DA=.2123
                      PER A=85 PER B=6 PER C=4 PER D=5
                      TP=-0.664  RAIN=-1

    K =    .375469HR     TP =    .664000HR     K/TP RATIO =    .565466      SHAPE CONSTANT, N =  6.780277
    UNIT PEAK =    8.1650     CFS    UNIT VOLUME =     .9984        B =    510.75       P60 = 1.8400
    AREA =       .010615 SQ MI     IA =     .10000 INCHES     INF =     .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330


    K =    .714806HR     TP =    .664000HR     K/TP RATIO =  1.076515      SHAPE CONSTANT, N =  3.281311
    UNIT PEAK =    92.340     CFS    UNIT VOLUME =     .9998        B =    304.01       P60 = 1.8400
    AREA =       .201685 SQ MI     IA =     .62789 INCHES     INF =    1.60811 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

    BULKING FACTOR APPLIED TO HYDROGRAPH.  FACTOR =  1.10000 AT PEAK FLOW.

PRINT HYD             ID=1 CODE=10

                                  PARTIAL HYDROGRAPH   100.10
```

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	5.3	7.999	.9	11.999	.3	15.998	.2
.333	.0	4.333	4.4	8.333	.8	12.332	.3	16.332	.2
.667	.0	4.666	3.7	8.666	.7	12.665	.3	16.665	.2
1.000	.0	5.000	3.2	8.999	.7	12.999	.3	16.998	.2
1.333	.0	5.333	2.7	9.332	.6	13.332	.3	17.332	.2
1.666	28.8	5.666	2.4	9.666	.6	13.665	.2	17.665	.2
2.000	58.4	5.999	2.0	9.999	.5	13.999	.2	17.998	.2
2.333	50.3	6.333	1.8	10.332	.5	14.332	.2	18.331	.2
2.666	31.7	6.666	1.6	10.666	.4	14.665	.2	18.665	.2
3.000	19.0	6.999	1.4	10.999	.4	14.998	.2	18.998	.2
3.333	11.8	7.333	1.2	11.332	.4	15.332	.2	19.331	.2
3.666	7.6	7.666	1.1	11.665	.3	15.665	.2	19.665	.2

RUNOFF VOLUME = .60786 INCHES = 6.8825 ACRE-FEET
PEAK DISCHARGE RATE = 59.15 CFS AT 2.066 HOURS BASIN AREA = .2123 SQ. MI.

****
********** CALC BASIN 2 FLOW **********

```
SEDIMENT BULK        TYPE=1 FACTOR=1.1
COMPUTE NM HYD       ID=2 HYD NO=100.1 DA=.0743
                     PER A=89 PER B=5 PER C=3 PER D=3
                     TP=-1.056  RAIN=-1
```

K = .577222HR TP = 1.056000HR K/TP RATIO = .546612 SHAPE CONSTANT, N = 7.079581
UNIT PEAK = 1.1082 CFS UNIT VOLUME = .9883 B = 525.01 P60 = 1.8400
AREA = .002229 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = 1.264391HR TP = 1.056000HR K/TP RATIO = 1.197340 SHAPE CONSTANT, N = 2.967241
UNIT PEAK = 19.051 CFS UNIT VOLUME = .9976 B = 279.14 P60 = 1.8400
AREA = .072071 SQ MI IA = .63299 INCHES INF = 1.62237 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

BULKING FACTOR APPLIED TO HYDROGRAPH. FACTOR = 1.10000 AT PEAK FLOW.

```
PRINT HYD            ID=2 CODE=10
```

PARTIAL HYDROGRAPH 100.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	4.000	3.9	7.999	.6	11.999	.2	15.998	.1
.333	.0	4.333	3.0	8.333	.5	12.332	.2	16.332	.1
.667	.0	4.666	2.3	8.666	.5	12.665	.2	16.665	.1
1.000	.0	5.000	1.8	8.999	.4	12.999	.2	16.998	.1
1.333	.0	5.333	1.4	9.332	.4	13.332	.2	17.332	.1
1.666	3.2	5.666	1.1	9.666	.4	13.665	.2	17.665	.1
2.000	8.4	5.999	1.0	9.999	.3	13.999	.1	17.998	.1
2.333	11.2	6.333	.9	10.332	.3	14.332	.1	18.331	.1
2.666	11.0	6.666	.8	10.666	.3	14.665	.1	18.665	.1
3.000	9.1	6.999	.7	10.999	.3	14.998	.1	18.998	.1
3.333	6.9	7.333	.7	11.332	.3	15.332	.1	19.331	.1
3.666	5.2	7.666	.6	11.665	.2	15.665	.1	19.665	.1

RUNOFF VOLUME = .55872 INCHES = 2.2140 ACRE-FEET
PEAK DISCHARGE RATE = 11.46 CFS AT 2.466 HOURS BASIN AREA = .0743 SQ. MI.

```
FINISH
```

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 08:26:15

CALCULATED AREAS: BASIN1

AREA	UNITS
5937695.357	SQ. FEET
659743.929	SQ. YARDS
0.213	SQ. MILES
136.311	ACRES

CALCULATED AREAS: BASIN1

AREA	UNITS
5912670.956	SQ. FEET
656963.440	SQ. YARDS
0.212	SQ. MILES
135.736	ACRES

CALCULATED AREAS: BASIN1

AREA	UNITS
5912061.003	SQ. FEET
656895.667	SQ. YARDS
0.212	SQ. MILES
135.722	ACRES

CALCULATED AREAS: BASIN2

AREA	UNITS
2070320.099	SQ. FEET
230035.567	SQ. YARDS
0.074	SQ. MILES
47.528	ACRES

CALCULATED AREAS: BASIN2

AREA	UNITS
2093762.076	SQ. FEET
232640.231	SQ. YARDS
0.075	SQ. MILES
48.066	ACRES

CALCULATED AREAS: BASIN2

AREA	UNITS
2075431.648	SQ. FEET
230603.516	SQ. YARDS
0.074	SQ. MILES
47.645	ACRES

Basin 1

Average Area

0.2123 miles^2

135.923 acres

Basin 2

Average Area

0.0743 miles^2

47.746 acres

PIEDRAS MARCADAS DETENTION DAM LOMR

BASIN 1.0

AREA 1

ELEV.	a (ft.)	b (ft.)	h (ft.)	VOL. (ft^3)
4978.1000	300.0000	75.0000	0.0000	0.0000
4978.2000	325.0000	95.0000	0.1000	3708.8333
4978.3000	350.0000	115.0000	0.2000	8621.9467
4978.4000	375.0000	135.0000	0.3000	14844.0600
4978.5000	400.0000	155.0000	0.4000	22479.8933
4978.6000	425.0000	175.0000	0.5000	31634.1667
4978.7000	450.0000	195.0000	0.6000	42411.6000
4978.8000	475.0000	215.0000	0.7000	54916.9133
4978.9000	500.0000	235.0000	0.8000	69254.8267
4979.0000	500.0000	280.0000	0.9000	89221.4400

AREA 2

ELEV.	a (ft.)	b (ft.)	h (ft.)	VOL. (ft^3)
4978.6000	350.0000	95.0000	0.0000	0.0000
4978.7000	420.0000	115.0000	0.1000	5644.4080
4978.8000	550.0000	125.0000	0.2000	13823.0400
4978.9000	650.0000	190.0000	0.3000	29845.2000
4979.0000	655.0000	221.0000	0.4000	44342.6368

TOTAL
BASIN 1.0 = 133564.0768

BASIN 2.0

AREA 1

ELEV.	a (ft.)	b (ft.)	h (ft.)	VOL. (ft^3)
4978.2000	110.0000	50.0000	0.0000	0.0000
4978.3000	120.0000	60.0000	0.1000	883.1387
4978.4000	130.0000	70.0000	0.2000	2010.6240
4978.5000	140.0000	80.0000	0.3000	3403.4000
4978.6000	150.0000	90.0000	0.4000	5082.4107

AREA 2

ELEV.	a (ft.)	b (ft.)	h (ft.)	VOL. (ft^3)
4978.6000	300.0000	50.0000	0.0000	0.0000
4978.7000	340.0000	90.0000	0.1000	3127.6373
4978.8000	340.0000	90.0000	0.2000	26975.8720
4978.9000	365.0000	115.0000	0.3000	43932.6580
4979.0000	450.0000	200.0000	0.4000	75607.8400

AREA 3

ELEV.	a (ft.)	b (ft.)	h (ft.)	VOL. (ft^3)
4978.6000	500.0000	370.0000	0.0000	0.0000
4978.7000	580.0000	470.0000	0.1000	31667.3280
4978.8000	630.0000	560.0000	0.2000	73366.8320
4978.9000	720.0000	650.0000	0.3000	130313.5680
4979.0000	761.0000	665.0000	0.4000	182231.6496

TOTAL
BASIN 2.0 = 262921.9003

TOTAL
AREA = 396485.9771

BOHANNAN-HUSTON INC.
ENGINEERS ARCHITECTS PHOTOGRAMMETRISTS SURVEYORS
COURTYARD I, 7500 JEFFERSON NE ALBUQUERQUE, NM 87109 TEL: (505)823-1000 FAX: (505)821-0892

CLIENT/COURIER TRANSMITTAL FORM

To: Susan Calongne
Hydrology Dept.
City of Albuquerque

Requested By: David Bishop
Date: 9/2/96
Time Due: ☐ This A.M. ☐ This P.M.
☐ Rush ____ ☒ By Tomorrow
Job No.: 95362C1 2107
Job Name: Piedras Marcadas Dam LOMR

DELIVERY VIA

☒ Courier ☐ Federal Express
☐ Mail ☐ UPS
☐ Other ____

PICK UP

Item: ____

ITEM NO.	QUANTITY	DESCRIPTION
1	1	Cover letter and Enclosures

COMMENTS / INSTRUCTIONS

Received By: Yolanda P. Lopez Date: 9/3/96 Time: ____

Misc/Courier Rqst Form 10/94

HYDROLOGY SECTION
PLANNING DEPARTMENT
DEVELOPMENT & BUILDING SERVICES DIVISION
600 SECOND STREET NW SUITE 201
ALBUQUERQUE, NM 87102
505-924-3982

Records Withdrawal Form

Requested by: Doug Hughes @ MGA Phone No.: 821-9313
Name and Company

Hydrology File: Borrowed Files

a. File b. Microfilm c. other _____

Hydrology File: _____

a. File b. Microfilm c. other _____

Hydrology File: _____

a. File b. Microfilm c. other _____

Hydrology File: _____

a. File b. Microfilm c. other _____

Hydrology File: _____

a. File b. Microfilm c. other _____

Hydrology File: _____

a. File b. Microfilm c. other _____

Hydrology File: _____

a. File b. Microfilm c. other _____

Picked Up By:

Name: _____ Organization: _____
Print

Signed: _____ Date: _____

Office Use Only

Return Acknowledged:

Received by: _____ Date: _____

APPENDIX A

Hydrology Models
(Using AHYMO Computer Program)

- Existing Conditions for Middle Area
  Using Procedures from Chapter 22.2
  Development Process Manual

- Existing Conditions for Middle Area and
  Proposed Expansion of Cactus Hills Subdivision
  Pond with 66" Storm Drain Outlet

BASIN #	AREA SQ MI	LAND TREATMENTS A	B	C	D	Tc (MIN)	Q100 EXISTING (CFS)	V100 EXISTING (AC-FT)
8.3E	0.05305	80	0	10	10	0.13333	59.33	1.922
101EA	0.037	10	39	25	26	0.15	61.63	2.278
102EA	0.0447	18	59	13	10	0.216	45.64	1.986
103EA	0.0067	10	37	23	30	0.1333	12.31	0.434
104EA	0.0366	10	39	25	26	0.133	65.33	2.253
105EA	0.0236	10	39	25	26	0.176	35.41	1.453
106EA	0.0263	19	63	11	7	0.194	27.56	1.088
107EA	0.0213	20	64	10	6	0.181	23.18	0.856
108EA	0.047	17	58	13	12	0.254	43.68	2.177
109EA	0.006	16	51	10	23	0.133	9.78	0.335
110EA	0.006	5	15	10	70	0.133	14.45	0.594
104	0.0672	20	25	15	40	0.2191	94.78	4.764
105	0.1027	73	10	5	12	0.1876	94.85	3.926
106	0.0954	80	5	5	10	0.1904	81.76	3.4
106A1	0.00846	0	27.74	27.74	44.52	0.1333	18.13	0.678
107	0.0291	10	29.2	15	45.8	0.1333	59.13	2.256
108	0.024	10	27.4	15	47.6	0.1332	49.43	1.899
109	0.0207	20	22.5	15	42.5	0.1333	39.89	1.514
201	0.0258	75	10	5	10	0.1333	28.91	0.934
202	0.0288	10	27.7	15	47.3	0.1333	59.18	2.271
301	0.0182	10	25	15	50	0.1579	34.94	1.478
302	0.0043	20	30	0	50	0.1333	8.5	0.335
303	0.0669	51	16.6	0	32.4	0.1773	87.44	3.907
304	0.0349	80	5	5	10	0.1429	36.76	1.244
305	0.0391	25	20	10	45	0.1807	63.05	2.893
401	0.0236	10	22.3	15	52.7	0.1333	50.44	1.974
402	0.0088	0	28.6	28.7	42.7	0.1333	18.66	0.692
403	0.0144	0	22.9	22.9	54.2	0.1333	32.61	1.266
404	0.0161	10	25.1	15	49.9	0.1333	33.73	1.307
405	0.027	10	42	10	38	0.1333	50.96	1.887
406	0.0107	90	0	5	5	0.1333	10.53	0.322
407	0.0224	50	10	10	30	0.1333	35.06	1.29
408	0.0066	20	10	0	70	0.1333	15.06	0.631
409	0.0098	20	10	5	60	0.1333	21.51	0.882
410	0.0047	45	5	20	30	0.1333	7.69	0.279
411	0.0092	45	5	20	30	0.1333	15.03	0.547
412	0.0133	45	5	20	30	0.1449	20.68	0.79
501	0.01	0	10	0	90	0.306	17.39	1.156
502	0.0435	10	10	20	60	0.1333	98.97	3.953
503	0.0235	0	10	0	90	0.2284	48.51	2.719
504	0.0257	0	10	5	85	0.2025	55.27	2.881
505	0.0497	15	10	5	70	0.2066	92.07	4.807
506	0.0559	50	5	25	20	0.2045	62.07	2.825
11.1W	0.04607	60	5	5	30	0.1333	68.9	2.571
11.1AW	0.005275	100	0	0	0	0.1333	4.48	0.126

BASIN #	AREA SQ MI	LAND TREATMENTS A	B	C	D	Tc (MIN)	Q100 EXISTING (CFS)	V100 EXISTING (AC-FT)
11.2E	0.02769	15	10	0	75	0.1333	65.94	2.786
12.1W	0.03024	100	0	0	0	0.1333	25.68	0.724
12.2W	0.032	90	0	7	3	0.1333	30.82	0.911
12.3E	0.02616	84.6	0	0	15.4	0.2143	21.42	1.032
13.2E	0.02206	30	15	0	55	0.17911	37.54	1.787
14.1W	0.05117	85	0	10	5	0.1333	52.49	1.595
15.1W	0.0256	77	5	15	3	0.1333	27.06	0.791
15.2W	0.0638	77	5	15	3	0.1333	67.44	1.971
15.3E	0.0189	80.1	0	0	19.9	0.1333	23.22	0.832
16.1W	0.0333	77	5	15	3	0.1333	35.19	1.029
16.2W	0.0665	77	5	15	3	0.1333	70.37	2.055
16.3E	0.0484	74.5	9.3	5	11.2	0.13333	55.13	1.808
17.1W	0.0103	90	0	10	0	0.1333	9.62	0.269
17.4E	0.02409	90	0	4	6	0.1333	23.93	0.743

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =08/07/1996
INPUT FILE = NCDMPEX.DAT USER NO.= C_ANDRSN.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
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3.0 HR.											
RAINFALL TYPE= 2										RAIN24=	2.650
*S 100-YEAR STORM											
*S ONE-HOUR=1.90											
*S SIX-HOUR=2.20											
*S 24-HOUR=2.65											
*S AREA OF FUTURE EXPANSION FOR RIVERFRONTE ESTATES											
COMPUTE NM HYD	134.00	-	3	.05305	59.33	1.922	.67914	1.533	1.748	PER IMP=	10.00
STORE HYD	136.00	-	5	.00010	50.00	96.240	18044.95000	3.950	781.250		
MODIFY TIME	136.00	5	5	.00010	50.00	96.711	18133.27000	3.950	781.250		
ROUTE MCUNGE	12.00	5	6	.00010	49.13	96.708	18132.74000	4.550	767.713	CCODE =	.2
MODIFY TIME	12.00	6	6	.00010	49.13	96.708	18132.74000	4.550	767.713		
ADD HYD	139.00	6& 3	6	.05315	97.33	67.218	23.71287	1.533	2.861		
ROUTE MCUNGE	13.00	6	5	.05315	82.22	67.214	23.71136	1.533	2.417	CCODE =	.2
MODIFY TIME	13.00	5	5	.05315	82.22	67.214	23.71136	1.533	2.417		
ROUTE MCUNGE	14.00	5	99	.05315	58.78	67.175	23.69757	1.900	1.728	CCODE =	.2
MODIFY TIME	14.00	99	99	.05315	58.78	67.175	23.69757	1.900	1.728		
COMPUTE NM HYD	101EA	-	1	.03700	61.63	2.278	1.15431	1.533	2.603	PER IMP=	26.00
COMPUTE NM HYD	102EA	-	2	.04470	45.64	1.986	.83306	1.600	1.595	PER IMP=	10.00
ROUTE MCUNGE	101A.1	1	3	.03700	56.98	2.255	1.14293	1.733	2.406	CCODE =	.1
ADD HYD	102EA.1	2& 3	4	.08170	95.07	4.241	.97340	1.700	1.818		
COMPUTE NM HYD	103EA	-	5	.00670	12.31	.434	1.21488	1.500	2.871	PER IMP=	30.00
COMPUTE NM HYD	104EA	-	6	.03660	65.33	2.253	1.15445	1.500	2.789	PER IMP=	26.00
ROUTE MCUNGE	103EA.4	5	7	.00670	12.30	.434	1.21423	1.533	2.869	CCODE =	.2
ROUTE MCUNGE	105EA.41	7	8	.00670	11.45	.430	1.20422	1.700	2.670	CCODE =	.1
ADD HYD	103EA.4	8& 6	9	.04330	65.69	2.684	1.16215	1.533	2.371		
COMPUTE NM HYD	105EA	-	10	.02360	35.41	1.453	1.15411	1.567	2.344	PER IMP=	26.00
ROUTE MCUNGE	1041EA.5	9	11	.04330	64.32	2.676	1.15872	1.600	2.321	CCODE =	.1
ADD HYD	104EA.5	10&11	12	.06690	98.62	4.128	1.15709	1.567	2.303		
COMPUTE NM HYD	106EA	-	13	.02630	27.56	1.088	.77549	1.567	1.637	PER IMP=	7.00
ROUTE MCUNGE	101EA.1	12	14	.06690	95.81	4.113	1.15288	1.667	2.238	CCODE =	.1
ADD HYD	104EA.5	14&13	15	.09320	119.65	5.201	1.04638	1.667	2.006		
ROUTE MCUNGE	102EA.6	4	16	.08170	94.96	4.239	.97294	1.733	1.816	CCODE =	.2
ADD HYD	106EA.25	15&16	17	.17490	208.12	9.441	1.01208	1.700	1.859		
COMPUTE NM HYD	107EA	-	19	.02130	23.18	.856	.75365	1.567	1.701	PER IMP=	6.00
ROUTE MCUNGE	107EA.6	17	2	.17490	207.92	9.434	1.01139	1.766	1.858	CCODE =	.2
ADD HYD	107EA.6	2&19	3	.19620	220.22	10.290	.98341	1.766	1.754		
COMPUTE NM HYD	108EA	-	7	.04700	43.68	2.177	.86868	1.633	1.452	PER IMP=	12.00
ADD HYD	107EA.8	3& 7	8	.24320	256.37	12.468	.96124	1.733	1.647		
ROUTE RESERVOIR	107EA.8	8	9	.24320	161.63	8.500	.65532	1.933	1.038	AC-FT=	5.437
COMPUTE NM HYD	109EA	-	10	.00600	9.78	.335	1.04606	1.500	2.548	PER IMP=	23.00
ROUTE MCUNGE	109EA.78	9	11	.24320	161.43	8.503	.65555	1.966	1.037	CCODE =	.2
ADD HYD	109EA.87	10&11	12	.24920	163.06	8.838	.66495	1.966	1.022		
COMPUTE NM HYD	110EA	-	13	.00600	14.45	.594	1.85495	1.500	3.764	PER IMP=	70.00
ADD HYD	110EA.1	12&13	14	.25520	166.46	9.431	.69293	1.966	1.019		
*S ROUTING 110EA.1 ON GOLF COURSE RD AND BRYAN AVE											
ROUTE MCUNGE	103.22	14	3	.25520	159.20	9.367	.68818	2.166	.975	CCODE =	.1
*S RESIDENTIAL											
COMPUTE NM HYD	104.00	-	1	.06720	94.78	4.764	1.32932	1.600	2.204	PER IMP=	40.00
ADD HYD	104.10	1& 3	2	.32240	180.71	14.131	.82182	2.133	.876		
*S ROUTING 104.1 ON CADDIE RD											
ROUTE MCUNGE	104.12	2	3	.32240	175.68	14.066	.81805	2.266	.851	CCODE =	.1
COMPUTE NM HYD	105.00	-	1	.10270	94.85	3.926	.71675	1.567	1.443	PER IMP=	12.00
*S**** HYD 105.1 IS AP #2	*****										
ADD HYD	105.10	1& 3	2	.42510	184.75	17.992	.79357	2.266	.679		
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND											
ROUTE MCUNGE	105.12	2	4	.42510	180.35	17.935	.79105	2.366	.663	CCODE =	.1
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL											
COMPUTE NM HYD	106.00	-	1	.09540	81.76	3.400	.66822	1.567	1.339	PER IMP=	10.00
*S SUB-BASIN 106A1 IS SKY CREST ESTATES											
COMPUTE NM HYD	106A1	-	7	.00846	18.13	.678	1.50231	1.500	3.349	PER IMP=	44.52
*S ROUTING RESERVOIR WITH 21" DIAMETER ORIFACE											
ROUTE RESERVOIR	106A1.RES	7	9	.00846	14.30	.677	1.50088	1.567	2.642	AC-FT=	.126

*S

*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S 0	0	5057
*S 4.675	0.062	5058
*S 16.379	0.140	5059
*S 22.510	0.235	5060

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	
*S	27.298	0.349	5061								
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE TO DISCHARGE ON CONGRESS AVE.											
ROUTE MCUNGE	106A1.01	9	10	.00846	14.21	.676	1.49868	1.633	2.624	CCODE =	.1
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL											
COMPUTE NM HYD	107.00	-	2	.02910	59.13	2.256	1.45384	1.500	3.175	PER IMP=	45.80
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND											
ROUTE MCUNGE	107.02	2	3	.02910	56.67	2.246	1.44744	1.567	3.043	CCODE =	.1
ADD HYD	107.10	4& 3	2	.45420	192.15	20.181	.83310	1.733	.661		
ADD HYD	107.20	1& 2	3	.54960	248.84	23.581	.80448	1.700	.707		
ADD HYD	107.30	3&10	11	.55806	261.58	24.257	.81501	1.700	.732		
*S RESIDENTIAL											
COMPUTE NM HYD	108.00	-	1	.02400	49.43	1.899	1.48367	1.500	3.218	PER IMP=	47.60
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND THRU CACTUS HILLS											
ROUTE MCUNGE	108.02	1	2	.02400	48.32	1.897	1.48175	1.567	3.146	CCODE =	.1
ADD HYD	108.10	2&11	4	.58206	293.69	26.154	.84250	1.667	.788		
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN											
COMPUTE NM HYD	109.00	-	1	.02070	39.89	1.514	1.37182	1.500	3.011	PER IMP=	42.50
*S**** HYD 109.1 IS AP #3 *****											
ADD HYD	109.10	1& 4	2	.60276	316.29	27.668	.86068	1.633	.820		
*S ROUTING RESERVOIR WITH 12" DIAM ORIFACE											
ROUTE RESERVOIR	109.RES	2	3	.60276	177.17	25.856	.80430	2.433	.459	AC-FT=	11.519
*S											
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)									
*S 11.35	9.9306	5078	EXISTING TOP OF POND								
*S 154	11.37	5079									
*S 210	11.73	5079.25									
DIVIDE HYD	109.03	3	9	.32481	11.35	13.933	.80430	1.900	.055		
	OLF.1	AND	10	.27795	165.82	11.923	.80430	2.433	.932		
COMPUTE NM HYD	201.00	-	1	.02580	28.91	.934	.67914	1.533	1.751	PER IMP=	10.00
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND											
ROUTE MCUNGE	201.02	1	2	.02580	28.74	.939	.68212	1.600	1.741	CCODE =	.2
COMPUTE NM HYD	202.00	-	1	.02880	59.18	2.271	1.47869	1.500	3.211	PER IMP=	47.30
*S**** HYD 202.1 IS AP #4 *****											
ADD HYD	202.10	1& 2	4	.05460	86.00	3.210	1.10229	1.533	2.461		
*S EXISTING DROP INLET IN BASIN 202											
ROUTE RESERVOIR	202.RES1	4	2	.05460	79.08	3.210	1.10229	1.567	2.263	AC-FT=	.041
*S											
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)									
*S 74.58	0.0111	5145.0									
*S 81.98	0.0603	5146.0									
*S ROUTING RESERVOIR WITH 21" ORIFACE											
ROUTE RESERVOIR	202.RES2	2	4	.05460	39.39	3.210	1.10227	1.733	1.127	AC-FT=	.774
*S											
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)									
*S 38.41	0.6717	5125									
*S 40.11	0.8496	5126									
DIVIDE HYD	202.03	4	8	.05460	39.39	3.210	1.10227	1.733	1.127		
	OLF.2	AND	11	.00000	.00	.000	.00000	-.033	.000		
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD											
ROUTE MCUNGE	202.02	8	6	.05460	39.38	3.208	1.10163	1.733	1.127	CCODE =	.2
*S RESIDENTIAL											
COMPUTE NM HYD	301.00	-	1	.01820	34.94	1.478	1.52307	1.533	3.000	PER IMP=	50.00
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304											
ROUTE MCUNGE	301.02	1	2	.01820	34.56	1.475	1.51956	1.567	2.967	CCODE =	.2
*S METHODIST CHURCH PROPERTY											
COMPUTE NM HYD	302.00	-	1	.00430	8.50	.335	1.45878	1.500	3.087	PER IMP=	50.00
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304											
ROUTE MCUNGE	302.02	1	5	.00430	7.85	.331	1.44422	1.700	2.853	CCODE =	.1
ADD HYD	302.10	2& 5	4	.02250	40.24	1.806	1.50516	1.633	2.795		
*S COMMERCIAL											
COMPUTE NM HYD	303.00	-	1	.06690	87.44	3.907	1.09493	1.567	2.042	PER IMP=	32.40
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE											
ROUTE RESERVOIR	303.RES	1	5	.06690	29.57	3.903	1.09392	1.900	.691	AC-FT=	1.482
*S											
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)									
*S 29.00	1.39	5108									
*S 30.00	1.55	5109									
DIVIDE HYD	303.03	5	8	.06690	29.57	3.903	1.09392	1.900	.691		
	OLF.3	AND	16	.00000	.00	.000	.00000	-.033	.000		
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE											
ROUTE MCUNGE	303.02	8	2	.06690	29.57	3.902	1.09363	1.900	.691	CCODE =	.2
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL											

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
COMPUTE NM HYD	304.00	-	1	.03490	36.76	1.244	.66837	1.533	1.646	PER IMP= 10.00
ADD HYD	304.10	1& 4	7	.05740	72.58	3.050	.99638	1.567	1.976	
ADD HYD	304.20	7&16	5	.05740	72.58	3.050	.99638	1.567	1.976	
*S DIVIDE AT MH# S-702										
DIVIDE HYD	CB1	5	4	.03571	20.00	1.897	.99638	1.433	.875	
	304.13	AND	7	.02169	52.58	1.153	.99638	1.567	3.787	
ADD HYD	CB1.1	2& 4	5	.10261	49.57	5.799	1.05979	1.900	.755	
ADD HYD	CB1.2	5& 6	2	.15721	88.40	9.007	1.07432	1.833	.879	
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL										
COMPUTE NM HYD	305.00	-	17	.03910	63.05	2.893	1.38713	1.567	2.520	PER IMP= 45.00
*S CACTUS RIDGE SUBDIVISION										
COMPUTE NM HYD	401.00	-	1	.02360	50.44	1.974	1.56819	1.500	3.340	PER IMP= 52.70
ADD HYD	401.10	1&11	3	.02360	50.44	1.974	1.56819	1.500	3.340	
DIVIDE HYD	CB2	3	4	.02360	50.44	1.974	1.56819	1.500	3.340	
	401.13	AND	5	.00000	.00	.000	.00000	-.033	.000	
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS										
COMPUTE NM HYD	402.00	-	1	.00880	18.66	.692	1.47507	1.500	3.314	PER IMP= 42.70
ADD HYD	402.10	5& 1	6	.00880	18.66	.692	1.47507	1.500	3.314	
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD										
*S**** OLF HYD 402.2 IS AP #5 *****										
ADD HYD	402.20	6& 7	18	.03049	68.54	1.845	1.13451	1.567	3.512	
*S ROUTING 402.2 TO DETENTION POND IN 503										
ROUTE MCUNGE	402.23	18	20	.03049	66.51	1.837	1.12950	1.633	3.408	CCODE = .1
ADD HYD	305.10	17&20	19	.06959	121.01	4.730	1.27424	1.600	2.717	
*S**** PIPE HYD CB2.1 IS AP #6 *****										
ADD HYD	CB2.1	2& 4	6	.18081	122.66	10.981	1.13878	1.567	1.060	
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS										
COMPUTE NM HYD	403.00	-	1	.01440	32.61	1.266	1.64809	1.500	3.538	PER IMP= 54.20
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND										
DIVIDE HYD	CB3	1	2	.00551	3.00	.484	1.64809	1.300	.851	
	403.13	AND	4	.00889	29.61	.782	1.64809	1.500	5.201	
ADD HYD	CB3.1	6& 2	5	.18631	125.66	11.465	1.15383	1.567	1.054	
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732										
*S Q(CAP) = 144 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB3.13	5	2	.18631	125.26	11.446	1.15193	1.600	1.051	CCODE = .2
*S LESLIE HOMES										
COMPUTE NM HYD	404.00	-	1	.01610	33.73	1.307	1.52179	1.500	3.273	PER IMP= 49.90
ADD HYD	CB4.1	1& 2	5	.20241	153.14	12.753	1.18135	1.567	1.182	
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB4.13	5	2	.20241	151.89	12.736	1.17978	1.600	1.173	CCODE = .2
*S SUB-BASIN 405 IS PART OF CACTUS HILLS										
COMPUTE NM HYD	405.00	-	1	.02700	50.96	1.887	1.31061	1.500	2.949	PER IMP= 38.00
*S DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *										
DIVIDE HYD	CB5	1	6	.02581	40.00	1.804	1.31061	1.467	2.422	
	405.03	AND	7	.00119	10.96	.083	1.31061	1.500	14.335	
*S ROUTING 405.03 TO CONGRESS AVE										
ROUTE MCUNGE	405.02	7	15	.00119	10.13	.084	1.32313	1.600	13.244	CCODE = .2
ADD HYD	CB5.1	6& 2	5	.22822	190.20	14.540	1.19457	1.567	1.302	
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB5.13	5	2	.22822	190.01	14.530	1.19379	1.600	1.301	CCODE = .2
*S TOTAL PIPE FLOW IN 60" SD AT DETENTION POND										
*S**** PIPE HYD CB5.2 IS AP #7 *****										
ADD HYD	CB5.2	9& 2	5	.55303	197.51	28.463	.96503	1.600	.558	
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND										
*S Q(CAP) = 233 CFS, AT SLOPE=0.008										
ROUTE MCUNGE	CB5.23	5	2	.55303	196.33	28.437	.96412	1.600	.555	CCODE = .2
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	406.00	-	1	.01070	10.53	.322	.56338	1.533	1.538	PER IMP= 5.00
ADD HYD	405.10	15&10	14	.27914	165.82	12.007	.80652	2.433	.928	
ADD HYD	406.10	14& 1	6	.28984	166.21	12.329	.79754	2.433	.896	
*S ROUTING 406 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD										
ROUTE MCUNGE	406.12	6	3	.28984	164.72	12.299	.79561	2.500	.888	CCODE = .1
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL										
*S INCLUDES AREA FROM IRVING BLVD										
COMPUTE NM HYD	407.00	-	1	.02240	35.06	1.290	1.07951	1.500	2.445	PER IMP= 30.00
*S CUBBY HOLE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 12" ORIFACE										
ROUTE RESERVOIR	407.RES	1	5	.02240	37.93	1.289	1.07877	1.500	2.645	AC-FT= .171
*S										
*S OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)										

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
*S 29		0.170		5070.25						
*S 62		0.175		5070.5						
DIVIDE HYD	407.03	5	7	.01643	10.00	.945	1.07877	1.500	.951	
	OLF.4	AND	13	.00597	27.93	.343	1.07877	1.500	7.313	
*S TOTAL PIPE FLOW IN 60" SD AT DETENTION POND										
*S**** PIPE HYD CB5.3 IS AP #8 *****										
ADD HYD	CB5.3	7& 2	6	.56946	206.33	29.382	.96743	1.600	.566	
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962										
*S Q(CAP) = 260 CFS, AT SLOPE=0.01										
ROUTE MCUNGE	CB5.33	6	7	.56946	205.88	29.355	.96655	1.633	.565	CCODE = .1
ADD HYD	407.10	3&13	17	.29581	164.72	12.642	.80132	2.500	.870	
*S SUB-BASIN 408 IS STATE FARM INSURANCE										
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD										
COMPUTE NM HYD	408.00	-	14	.00660	15.06	.631	1.79218	1.500	3.566	PER IMP= 70.00
*S ROUTING RESERVOIR WITH 12" WEIR										
ROUTE RESERVOIR	408.RES	14	18	.00660	2.40	.617	1.75390	2.100	.569	AC-FT= .376
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 1.08	0.2198	5052.3	EXISTING TOP OF POND							
*S 2.31	0.3663	5053.3								
*S 3.02	0.4396	5053.8								
ADD HYD	408.10	17&18	14	.30241	166.76	13.259	.82211	2.500	.862	
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D										
COMPUTE NM HYD	409.00	-	1	.00980	21.51	.882	1.68771	1.500	3.429	PER IMP= 63.16
DIVIDE HYD	CB6	1	2	.00980	21.51	.882	1.68771	1.500	3.429	
	409.03	AND	15	.00000	.00	.000	.00000	-.033	.000	
ADD HYD	CB6.1	2& 7	5	.57926	218.82	30.238	.97875	1.633	.590	
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B										
COMPUTE NM HYD	411.00	-	1	.00920	15.03	.547	1.11419	1.500	2.552	PER IMP= 30.00
DIVIDE HYD	CB7	1	2	.00838	10.00	.498	1.11419	1.433	1.865	
	411.03	AND	7	.00082	5.03	.049	1.11419	1.500	9.537	
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A										
COMPUTE NM HYD	410.00	-	1	.00470	7.69	.279	1.11420	1.500	2.555	PER IMP= 30.00
DIVIDE HYD	CB8	1	9	.00470	7.69	.279	1.11420	1.500	2.555	
	410.03	AND	16	.00000	.00	.000	.00000	-.033	.000	
ADD HYD	411.10	7&16	3	.00082	5.03	.049	1.11419	1.500	9.537	
*S ASSUME OLF HYD 411.2 PONDS										
ADD HYD	411.20	3&15	16	.00082	5.03	.049	1.11419	1.500	9.537	
ADD HYD	CB7.1	2& 5	1	.58764	228.40	30.735	.98068	1.633	.607	
ADD HYD	CB8.1	1& 9	2	.59234	233.30	31.015	.98174	1.633	.615	
*S ROUTE CB7.1 IN 60" PIPE TO SUB-BASIN 411 (JUST BEFORE CALABACILLAS ARROYO OU										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	C88.12	2	9	.59234	231.40	30.956	.97989	1.633	.610	CCODE = .2
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3										
COMPUTE NM HYD	412.00	-	1	.01330	20.68	.790	1.11408	1.533	2.429	PER IMP= 30.00
*S OLF HYD 412.03 IS OFF-SITE FLOW TO CALAB. ARROYO										
DIVIDE HYD	CB9	1	2	.01076	10.00	.639	1.11409	1.433	1.452	
	412.03	AND	13	.00254	10.68	.151	1.11409	1.533	6.562	
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO										
*S**** HYD CB9.1 IS AP #9 *****										
ADD HYD	CB9.1	2& 9	6	.60310	241.40	31.595	.98228	1.633	.625	
*S EAGLE RANCH ROAD										
COMPUTE NM HYD	501.00	-	1	.01000	17.39	1.156	2.16736	1.700	2.718	PER IMP= 90.00
ADD HYD	501.10	14& 1	3	.31241	169.14	14.415	.86517	2.466	.846	
ROUTE MCUNGE	501.12	3	7	.31241	168.65	14.389	.86361	2.533	.843	CCODE = .1
*S COMMERCIAL										
COMPUTE NM HYD	502.00	-	1	.04350	98.97	3.953	1.70391	1.500	3.555	PER IMP= 60.00
DIVIDE HYD	402.24	19	2	.03209	20.00	2.181	1.27424	1.400	.974	
	402.25	AND	3	.03751	101.01	2.549	1.27424	1.600	4.208	
ADD HYD	502.10	2& 1	5	.07559	118.97	6.134	1.52151	1.500	2.459	
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	502.RES	5	8	.07559	51.19	6.099	1.51280	1.833	1.058	AC-FT= 2.243
*S										
*S OUTFLO .CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 38.9526	2.1993	5038								
*S 58	2.268	5038.25								
*S COMMERCIAL										
COMPUTE NM HYD	503.00	-	1	.02350	48.51	2.719	2.16951	1.600	3.225	PER IMP= 90.00
ADD HYD	503.10	1& 3	2	.06101	149.51	5.268	1.61910	1.600	3.829	
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	503.RES	2	5	.06101	9.65	5.007	1.53877	2.233	.247	AC-FT= 4.042
*S										

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*S	OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)						
*S	0	0		5000						
*S	10.1924	4.2712		5010						
ADD HYD	503.10	5& 8	10	.13659	59.59	11.105	1.52440	1.833	.682	
*S COMMERCIAL										
COMPUTE NM HYD	504.00	-	1	.02570	55.27	2.881	2.10211	1.567	3.361	PER IMP= 85.00
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	504.RES	1	3	.02570	28.40	2.873	2.09587	1.800	1.727	AC-FT= .856
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)						
*S	0	0		5001						
*S	38.9526	1.1742		5007						
ADD HYD	504.10	3&10	11	.16229	87.92	13.978	1.61489	1.833	.846	
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL										
COMPUTE NM HYD	505.00	-	1	.04970	92.07	4.807	1.81358	1.567	2.895	PER IMP= 70.00
ADD HYD	505.10	1& 7	2	.36211	174.38	19.196	.99399	2.533	.752	
ROUTE MCUNGE	505.12	2	9	.36211	171.51	19.131	.99060	2.666	.740	CCODE = .1
ADD HYD	505.20	11& 9	2	.52440	213.27	33.109	1.18381	1.766	.635	
*S ROUTE 505.2 IN 36" PIPE THRU 506'S LOW SPOT; 0.009 FT/FT										
ROUTE MCUNGE	505.22	2	3	.52440	197.45	32.864	1.17507	3.333	.588	CCODE = .1
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW										
COMPUTE NM HYD	506.00	-	1	.05590	62.07	2.825	.94768	1.600	1.735	PER IMP= 20.00
ADD HYD	506.10	1& 3	2	.58030	198.43	35.690	1.15316	3.333	.534	
*S NATURAL PONDING AREA ON BLACK RANCH TRACT 2										
ROUTE RESERVOIR	506.RES	2	80	.58030	198.30	35.675	1.15268	3.333	.534	AC-FT= .456
*S	OUTFLOW(CFS)	STORAGE(AC-FT)		ELEV(FT)						
*S	.0	0		4996						
*S	15.0	0.09183		4997						
*S	34.0	0.18365		4998						
*S	66.0	0.27548		4999						
*S	74.5	0.31772		4999.2						
*S	87.7	0.33792		4999.4						
*S	103.2	0.35812		4999.6						
*S	118.0	0.37833		4999.8						
*S	140.0	0.39850		5000.0						
*S	157.7	0.41873		5000.2						
*S	180.8	0.43893		5000.4						
*S	201.2	0.45913		5000.6						
*S DIVIDE HYD 506.RES BY RATING CURVE										
*S OVERFL.1 IS THE OVERFLOW THAT IS NOT DETAINED IN THE NATURAL PONDING AREA										
DIVIDE HYD	506.RES01	80	65	.42130	99.72	25.900	1.15268	3.333	.370	
	OVERFL.1	AND	68	.15901	98.58	9.775	1.15268	3.333	.969	
*S										
*S TOTAL FLOW	DIVIDED FLOW									
*S	66.0	66								
*S	74.5	70								
*S	87.7	75								
*S	103.2	80								
*S	118.0	82								
*S	140.0	90								
*S	157.7	92								
*S	180.8	98								
*S	201.2	100								
*S ROUTE RESERVOIR THROUGH OUTLET PIPES TO CORRALES MAIN CANAL										
ROUTE MCUNGE	506.RES1	65	73	.42130	99.71	25.897	1.15255	3.333	.370	CCODE = .2
*S ADD THE OVERLAND FLOW TO THE MAIN CANAL										
ADD HYD	900.00	99&68	91	.21216	138.31	76.950	6.80067	3.333	1.019	
DIVIDE HYD	800.00	91	77	.20218	91.00	73.330	6.80067	2.366	.703	
	OVERFL.2	AND	88	.00998	47.31	3.620	6.80067	3.333	7.406	
*S ADD FLOW FROM OUTLET PIPES TO FLOW IN THE MAIN CANAL										
ADD HYD	901.00	77&73	20	.62347	190.71	99.227	2.98410	3.333	.478	
*S HYD NO OVERFL.2 IS THE FLOW THAT JUMPS OVER THE CANAL AND DISCHARGES ON TO										
*S BLACK RANCH TRACT 2										
*S ROUTE THIS FLOW THROUGH THE CONCRETE BOX CULVERT TO THE INTERSECTION OF										
*S THE 36" PIPES FROM THE POND AT THE SW CORNER OF COORS AND PDN										
ROUTE MCUNGE	17.01	20	21	.62347	190.67	99.196	2.98318	3.366	.478	CCODE = .2
*S SUB-BASIN 11.1W										
*S WEST OF COORS BOULEVARD AND INCLUDES SECTION OF PASEO DEL NORTE										
*S COMMERCIAL AND STATE HIGHWAY DEPARTMENT ROW										
COMPUTE NM HYD	147.00	-	5	.04607	68.90	2.571	1.04655	1.500	2.337	PER IMP= 30.00
*S ROUTING RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.										

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ROUTE RESERVOIR	147.RES	5	7	.04607	23.62	2.563	1.04314	1.766	.801	AC-FT= 1.096
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	4996								
*S 28	1.30	4998								
*S 66	2.66	5000								
DIVIDE HYD	147.RES1	7	25	.04607	23.62	2.563	1.04314	1.766	.801	
	OLF.5 AND		30	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE 147.RES1 THROUGH 2 30" CULVERT PIPES UNDER COORS TO CANAL CBC **										
ROUTE MCUNGE	147.10	25	3	.04607	23.60	2.563	1.04293	1.800	.800	CCODE = .2
*S** ADD THE FLOW FROM NMSHTD POND TO CANAL ***										
ADD HYD	147.12	3&21	10	.66954	199.97	101.759	2.84968	2.533	.467	
*S SECTION OF BASIN 11.1W THAT DRAINS TO CULVERT UNDER COORS										
COMPUTE NM HYD	147A	-	18	.00528	4.48	.126	.44920	1.533	1.328	PER IMP= .00
*S ROUTE 11.1A THROUGH A 24" CULVERT PIPE UNDER COORS TO CANAL CBC **										
ROUTE MCUNGE	147A.1	18	12	.00528	4.49	.126	.44919	1.533	1.331	CCODE = .2
*S** ADD THE FLOW FROM 11.1A TO CANAL ***										
ADD HYD	147.12	10&12	9	.67482	200.12	101.885	2.83091	2.533	.463	
*S BASE FLOW CORRECTION.										
MODIFY TIME	147.12	9	9	.67482	200.12	101.885	2.83091	2.533	.463	
*S AREAS 8.1W TO 11.A ROUTED IN CANAL AND BASE FLOW CORRECTED.										
*S ROUTE CANAL FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **										
ROUTE MCUNGE	18.00	9	3	.67482	196.33	101.433	2.81835	4.533	.455	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	18.00	3	3	.67482	196.33	101.433	2.81835	4.533	.455	
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW CORRECTED										
*S TO 38 CFS MIN.										
*S SUB-BASIN 11.2E										
*S INCLUDES PASEO-DEL-NORTE/COORS INTERSECTION ROW AND BUSINESSES ON EAST										
*S SIDE OF COORS BOULEVARD										
COMPUTE NM HYD	154.00	-	7	.02769	65.94	2.786	1.88678	1.500	3.721	PER IMP= 75.00
*S** ADD 11.2E TO CANAL FLOW. ***										
ADD HYD	326.00	3& 7	5	.70251	196.61	104.220	2.78164	4.533	.437	
*S SUB-BASIN 12.1W										
*S UNDEVELOPED LAND ZONED SU-1, FUTURE SITE OF EAGLE RIDGE APARTMENTS										
COMPUTE NM HYD	156.00	-	3	.03024	25.68	.724	.44920	1.533	1.327	PER IMP= .00
ROUTE MCUNGE	19.00	3	7	.03024	25.32	.724	.44888	1.533	1.308	CCODE = .1
*S SUB-BASIN 12.2 W										
*S INCLUDES EAGLE RANCH ROAD/EMERGENCY SPILLWAY OF PIEDRAS MARCADAS DAM										
COMPUTE NM HYD	158.00	-	1	.03200	30.82	.911	.53392	1.533	1.505	PER IMP= 3.00
ROUTE MCUNGE	20.00	1	8	.03200	28.42	.901	.52785	1.700	1.388	CCODE = .1
*S ROUTE AREA 8.1W TO 11.2E DOWN CANAL TO AREA 12 DISCHARGE POINT. **										
ROUTE MCUNGE	21.00	5	10	.70251	188.96	103.972	2.77502	5.266	.420	CCODE = .2
MODIFY TIME	21.00	10	10	.70251	188.96	103.972	2.77502	5.266	.420	
ADD HYD	162.00	7&10	2	.73275	188.96	104.696	2.67902	5.266	.403	
*S ROUTE FLOWS DOWN CANAL TO AREA 12.2W DISCHARGE POINT. **										
ROUTE MCUNGE	22.00	2	7	.73275	182.01	104.390	2.67121	5.366	.388	CCODE = .2
MODIFY TIME	22.00	7	7	.73275	182.01	104.390	2.67121	5.366	.388	
ADD HYD	165.00	7& 8	3	.76475	182.02	105.291	2.58153	5.366	.372	
*S UNDEVELOPED PROPERTY ZONED SPECIAL USE (SU-1)										
COMPUTE NM HYD	166.00	-	7	.02616	21.42	1.032	.73967	1.600	1.280	PER IMP= 15.40
ADD HYD	330.00	3& 7	8	.79091	182.11	106.323	2.52061	5.366	.360	
ROUTE MCUNGE	23.00	8	5	.79091	177.65	106.107	2.51547	5.399	.351	CCODE = .2
MODIFY TIME	23.00	5	5	.79091	177.65	106.107	2.51547	5.399	.351	
*S ALBAN HILLS										
COMPUTE NM HYD	170.00	-	3	.00000	.00	.000	.56342	1.533	1.774	PER IMP= 5.00
ROUTE MCUNGE	24.00	3	8	.79091	.00	.000	.00000	-.033	.000	CCODE = .2
*S BOSQUE DEL PUEBLO COMMERCIAL SITE										
COMPUTE NM HYD	172.00	-	3	.02206	37.54	1.787	1.51855	1.567	2.659	PER IMP= 55.00
ADD HYD	333.00	3& 8	10	.81297	37.54	1.787	.04121	1.567	.072	
ADD HYD	334.00	5&10	1	1.60387	177.83	107.894	1.26132	5.399	.173	
*S ALBAN HILLS										
COMPUTE NM HYD	174.00	-	3	.05117	52.49	1.595	.58460	1.533	1.603	PER IMP= 5.00
*S ROUTE 14.1W DOWN SECONDARY CHANNEL TO CANAL. **										
ROUTE MCUNGE	25.00	3	5	.05117	51.71	1.594	.58409	1.567	1.579	CCODE = .1
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **										
ROUTE MCUNGE	26.00	1	10	1.60387	174.27	107.743	1.25956	5.433	.170	CCODE = .2
MODIFY TIME	26.00	10	10	1.60387	174.27	107.743	1.25956	5.433	.170	
ADD HYD	338.00	5&10	2	1.65504	178.12	109.337	1.23868	1.567	.168	
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **										
ROUTE MCUNGE	27.00	2	7	1.65504	169.90	109.098	1.23597	5.466	.160	CCODE = .2
MODIFY TIME	27.00	7	7	1.65504	169.90	109.098	1.23597	5.466	.160	
*S ALBAN HILLS										

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COMPUTE NM HYD	182.00	-	3	.02560	27.06	.791	.57930	1.533	1.651	PER IMP=	3.00
*S ROUTE AREA 15.1W DOWN SECONDARY CHANNEL TO CANAL. **											
ROUTE MCUNGE	28.00	3	10	.02560	25.86	.787	.57635	1.600	1.578	CCODE =	.1
*S ALBAN HILLS											
COMPUTE NM HYD	184.00	-	3	.06380	67.44	1.971	.57930	1.533	1.652	PER IMP=	3.00
*S ROUTE 15.2W DOWN SECONDARY CHANNEL TO CANAL. **											
ROUTE MCUNGE	29.00	3	5	.06380	66.45	1.965	.57744	1.567	1.628	CCODE =	.1
ADD HYD	186.00	10& 5	3	.08940	89.72	2.752	.57712	1.600	1.568		
COMPUTE NM HYD	187.00	-	10	.01890	23.22	.832	.82504	1.500	1.920	PER IMP=	19.90
ADD HYD	342.00	3&10	5	.10830	110.45	3.583	.62039	1.567	1.594		
ADD HYD	343.00	5& 7	10	1.76334	266.52	112.681	1.19817	1.567	.236		
*S ALBAN HILLS											
COMPUTE NM HYD	189.00	-	3	.03330	35.19	1.029	.57930	1.533	1.651	PER IMP=	3.00
*S ROUTE AREA 16.1W DOWN SECONDARY CHANNEL TO CANAL.**											
ROUTE MCUNGE	30.00	3	5	.03330	35.16	1.027	.57828	1.567	1.650	CCODE =	.2
*S ALBAN HILLS											
COMPUTE NM HYD	191.00	-	3	.06650	70.37	2.055	.57930	1.533	1.653	PER IMP=	3.00
*S ROUTE AREA 16.2W DOWN SECONDARY CHANNEL TO CANAL. **											
ROUTE MCUNGE	31.00	3	7	.06650	68.72	2.037	.57442	1.600	1.615	CCODE =	.1
ADD HYD	193.00	5& 7	3	.09980	102.32	3.064	.57571	1.600	1.602		
COMPUTE NM HYD	194.00	-	5	.04840	55.13	1.808	.70032	1.533	1.780	PER IMP=	11.20
ADD HYD	347.00	5& 3	7	.14820	151.10	4.872	.61641	1.567	1.593		
*S ROUTE 8.1W TO 15.2E DOWN CANAL TO AREA 16 DISCHARGE POINT. **											
ROUTE MCUNGE	32.00	10	5	1.76334	186.11	111.876	1.18961	1.600	.165	CCODE =	.2
MODIFY TIME	32.00	5	5	1.76334	186.11	111.876	1.18961	1.600	.165		
ADD HYD	348.00	5& 7	5	1.91154	336.23	116.749	1.14517	1.567	.275		
*S ROUTE AREA 8.1W TO 16.3E DOWN CANAL TO AREA 17 DISCHARGE POINT. **											
ROUTE MCUNGE	33.00	5	7	1.91154	257.56	115.994	1.13776	1.567	.211	CCODE =	.2
MODIFY TIME	33.00	7	7	1.91154	257.56	115.994	1.13776	1.567	.211		
*S ALBAN HILLS											
COMPUTE NM HYD	200.00	-	3	.01030	9.62	.269	.49005	1.533	1.459	PER IMP=	.00
*S ROUTE AREA 17.1W DOWN SECONDARY CHANNEL TO CANAL. **											
ROUTE MCUNGE	34.00	3	10	.01030	8.84	.265	.48326	1.733	1.340	CCODE =	.1
COMPUTE NM HYD	208.00	-	3	.02409	23.93	.743	.57830	1.533	1.552	PER IMP=	6.00
ADD HYD	353.00	3&10	5	.03439	23.93	1.008	.54983	1.533	1.087		
ADD HYD	354.00	5& 7	10	1.94593	280.08	117.002	1.12737	1.567	.225		
FINISH											

```
*
* 24 HOUR ALB. DPM  RAINFALL DISTRIBUTION (DPM.RAINTABLE) LAG 3.0 HOURS
START               TIME=0.00 HR  PUNCH CODE=0  PRINT LINES=-6
*                   ***********************************************
*                   *    NORTH COORS DRAINAGE MANAGEMENT PLAN     *
*                   *     100 YEAR STORM - 24 HOUR DURATION       *
*                   *       IMPROVED CORRALES MAIN CANAL          *
*                   *                MIDDLE AREA                  *
*                   *  CALABACILLAS ARROYO TO LA ORILLA OUTLET    *
*                   *     UPDATED FOR 1996 DRAINAGE CRITERIA      *
*                   ***********************************************
*
* SMITH ENGINEERING COMPANY
* 6400 UPTOWN BLVD SUITE 500E
* ALBUQUERQUE, NEW MEXICO 87112
* (505) 884-0700
*
* THE LAND TREATMENT CLASSIFICATIONS IS AS FOLLOWS:
*                   TYPE A= BACKYARD PONDING, LANDSCAPE, AND UNDISTURBED
*                   TYPE B= GRASS
*                   TYPE C= COMPACTED SOIL
*                   TYPE D= IMPERVIOUS AREAS (ROOFS,PAVEMENT)
*
* THE MODEL IS BROKEN UP INTO DIFFERENT SEGMENTS BASED UPON THE
* NUMBER OF ASTERISKS.  THE CODING IS AS FOLLOWS:
*
*                        * * * MAJOR BASIN * * *
*                       ***** ANALYSIS POINT *****
*                         **** SUB-BASIN ****
*                        *** ADD HYDROGRAPHS ***
*                            ** ROUTING **
*                         * DIVIDE HYDROGRAPHS *
*
*
* RAINFALL BASED ON  TYPE=2  RAIN QUARTER=0.0  RAIN ONE=1.90
*                    RAIN SIX=2.2   RAIN DAY=2.65   DT=0.03333
*                    WITH RAINFALL SHIFTED 3.0 HOURS FOR BASE FLOW
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3.0 HR.
*
RAINFALL            TYPE=2
                    QUARTER=0
                    ONE= 1.90 IN
                    SIX= 2.20 IN
                    DAY= 2.65 IN
                    DT = 0.03333 HR
*S 100-YEAR STORM
*S ONE-HOUR=1.90
*S SIX-HOUR=2.20
*S 24-HOUR=2.65
*
**** SUB-BASIN 8.3E ****
*
*S AREA OF FUTURE EXPANSION FOR RIVERFRONTE ESTATES
*
COMPUTE NM HYD      ID=3 HYD NO=134
                    DA=0.05305 SQ MI
                        A=80
                        B=0
                        C=10
                        D=10
                    TP=0.133333 HR  MASSRAIN=-1
*
* AREA 8.3 E RUNOFF HYDROGRAPH. ENTERS CANAL DIRECTLY.
* ********** SIDE INLET DESIGN Q *********
*
PRINT HYD           ID=3 CODE=1
*
* ADD FLOW IN CORRALES MAIN CANAL COMING FROM CALABACILLAS SYPHON
*
STORE HYD           ID=5 HYD NO=136 INC=0.05 HR  AREA=0.0001 SQ MI
                    FLOW RATES=  38  38  38
                       38   38   38  38  38  38  38  38  38  38  38
                       38   38   38  38  38  38  38  38  38  38  38
                       38   38   38  38  38  38  38  38  38  38  38
```

```
38  38  38  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38  38  38  39  40  41  44  45  46
46  47  47  47  48  49  49  49  49  49  50
50  50  50  50  50  50  49  49  49  49  49
49  48  48  48  47  47  46  46  45  45  45
44  44  44  44  43  43  43  43  43  42  42
42  42  42  42  42  42  42  42  42  41  41
41  41  41  41  41  41  41  41  41  41  41
41  41  41  41  41  41  41  41  41  41  41
41  41  41  41  41  41  41  41  41  40  40
40  40  40  40  40  40  40  40  40  40  39
39  39  39  39  39  39  39  39  39  39  39
39  39  39  39  39  39  39  39  39  39  39
39  39  39  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38
```

```
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=6  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
PRINT HYD            ID=6 CODE=0
*
*** ADD AREA 8.3E TO CANAL FLOW.***
*
ADD HYD              ID=6 HYD NO=139 ID=6 ID=3
*.
* AREA 8.3E ADDED TO BASE FLOW IN CANAL.
*
PRINT HYD            ID=6 CODE=0
*
** ROUTE 8.3E DOWN CANAL TO 8.1 DISCHARGE POINT. **
*
ROUTE MCUNGE         ID=5 HYD NO=13 INFLOW ID=6  DT=0.0 HR
                     LENGTH=750.0   NS=0   SLOPE=0.0006
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.3E ROUTED DS AND BASE FLOW CORRECTED TO 38 CFS MIN.
*
PRINT HYD            ID=5 CODE=0
*
** ROUTE 8.3E DOWN CANAL TO AREA 10 DISCHARGE POINT. **
*
ROUTE MCUNGE         ID=99 HYD NO=14 INFLOW ID=5  DT=0.0 HR
                     LENGTH=3250.0   NS=0   SLOPE=0.0006
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=99 TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* 8.3E ROUTED DOWN CANAL TO NEXT AP AND BASE FLOW CORRECTED.
*
PRINT HYD            ID=99 CODE=0
*
* * * BASIN 100A * * *
*
* UPDATED HYDROLOGY FOR THE PARADISE HILLS GOLF COURSE
* SOURCE: EASTERLING & ASSOCIATES, PARADISE HILLS GOLF COURSE DRNGE REPORT
*
**** SUB-BASIN 101EA ****
*
COMPUTE NM HYD       ID=1  HYD NO=101EA
                     DA=0.0370 SQ MI
                          A=10.0
                          B=39.0
                          C=25.0
                          D=26.0
                     TP=0.15 HR MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
**** SUB-BASIN 102EA ****
*
COMPUTE NM HYD       ID=2  HYD NO=102EA
                     DA=0.0447 SQ MI
                          A=18.0
                          B=59.0
                          C=13.0
                          D=10.0
                     TP=0.216 HR MASSRAIN=-1
PRINT HYD            ID=2 CODE=1
*
** ROUTE 101EA THROUGH 102EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.0133   FP SLP=0.0133
```

```
                    N=0.030   DIST=40 FT

                    DIST      ELEV
                    0.0       101.0
                    10.0      100.0
                    30.0      100.0
                    40.0      101.0
*
ROUTE MCUNGE        ID=3   HYD NO=101A.1 INFLOW ID=1
                    DT=0.0  L=2050
                    NS=0  SLOPE=0.0133   MATCODE=0
                    REGCODE=0      CCODE=0

PRINT HYD           ID=3        CODE=1
*
*** ADD 102EA AND 101EA1 AT CONFLUENCE OF 102EA AND 10E6A ***
*
ADD HYD             ID=4       HYD NO = 102EA.1
                    ID I=2     ID II=3

PRINT HYD           ID=4       CODE=1
*
**** SUB-BASIN 103EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE,
* ALSO INCLUDES A SMALL PORTION OF LYONS BLVD
*
COMPUTE NM HYD      ID=5  HYD NO=103EA
                    DA=0.0067 SQ MI
                         A=10.0
                         B=37.0
                         C=23.0
                         D=30.0
                    TP=0.133 HR MASSRAIN=-1
PRINT HYD           ID=5 CODE=1
*
**** SUB-BASIN 104EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD      ID=6  HYD NO=104EA
                    DA=0.0366 SQ MI
                         A=10.0
                         B=39.0
                         C=25.0
                         D=26.0
                    TP=0.133 HR MASSRAIN=-1
PRINT HYD           ID=6 CODE=1
*
** ROUTE 103EA THRU 104EA ***
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=2
                     MIN ELEV=100.0 FT      MAX ELEV=101.8 FT
                    CH SLP=0.050   FP SLP=0.050
                    N=0.020   DIST=33 FT
                    N=0.030   DIST=38 FT

                    DIST      ELEV
                    0.0       101.33
                    20.0      100.50
                    32.0      100.00
                    33.0      100.80
                    38.0      101.80

ROUTE MCUNGE        ID=7   HYD NO=103EA.4 INFLOW ID=5
                    DT=0.0  L=400
                    NS=0  SLOPE=0.050   MATCODE=0
                    REGCODE=0      CCODE=0

PRINT HYD           ID=7 CODE=1
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=2
                    MIN ELEV=100.0 FT      MAX ELEV=101.8 FT
                    CH SLP=0.0107   FP SLP=0.0107
                    N=0.020   DIST=33 FT
                    N=0.030   DIST=38 FT
```

```
                        DIST      ELEV
                        0.0       101.33
                        20.0      100.50
                        32.0      100.00
                        33.0      100.80
                        38.0      101.80

ROUTE MCUNGE            ID=8   HYD NO=105EA.41 INFLOW ID=7
                        DT=0.0  L=1500
                        NS=0  SLOPE=0.0107   MATCODE=0
                        REGCODE=0      CCODE=0

PRINT HYD               ID=8 CODE=1
*
*** ADD ROUTED 103EA.4 AND 104EA ***
*
ADD HYD                 ID=9       HYD NO = 103EA.4
                        ID I=8     ID II=6

PRINT HYD               ID=9       CODE=1
*
**** SUB-BASIN 105EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD          ID=10  HYD NO=105EA
                        DA=0.0236 SQ MI
                             A=10.0
                             B=39.0
                             C=25.0
                             D=26.0
                        TP=0.176 HR   MASSRAIN=-1
PRINT HYD               ID=10   CODE=1
*
** ROUTE FLOW COMING FROM 103EA.4 THRU 105EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1      NO SEGS=2
                        MIN ELEV=100.0 FT      MAX ELEV=101.8 FT
                        CH SLP=0.0111   FP SLP=0.0111
                        N=0.020   DIST=33 FT
                        N=0.030   DIST=38 FT

                        DIST      ELEV
                        0.0       101.33
                        20.0      100.50
                        32.0      100.00
                        33.0      100.80
                        38.0      101.80

ROUTE MCUNGE            ID=11   HYD NO=1041EA.5 INFLOW ID=9
                        DT=0.0  L=900
                        NS=0  SLOPE=0.0111   MATCODE=0
                        REGCODE=0      CCODE=0

PRINT HYD               ID=11        CODE=1
*
*** ADD 104EA.5 FLOW ROUTED THRU 105EA TO BASIN 105EA HYDROGRAPH ***
*
ADD HYD                 ID=12       HYD NO = 104EA.5
                        ID I=10     ID II=11

PRINT HYD               ID=12 CODE=1
*
****SUB-BASIN 106EA ****
*
* GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD          ID=13  HYD NO=106EA
                        DA=0.0263 SQ MI
                             A=19.0
                             B=63.0
                             C=11.0
                             D=7.0
                        TP=0.194 HR  MASSRAIN=-1
PRINT HYD               ID=13 CODE=1
```

```
*
** ROUTE FLOW 104EA.5 THRU 106EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.0100   FP SLP=0.0100
                      N=0.030   DIST=40 FT

                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0

ROUTE MCUNGE          ID=14   HYD NO=101EA.1 INFLOW ID=12
                      DT=0.0  L=1000
                      NS=0  SLOPE=0.0100   MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=14 CODE=1
*
*** ADD 106EA.1 FLOW ROUTED THRU 106EA TO BASIN 106EA HYDROGRAPH ***
*
ADD HYD               ID=15       HYD NO = 104EA.5
                      ID I=14     ID II=13

PRINT HYD             ID=15 CODE=1
*
** ROUTE FLOW COMING FROM 102EA THRU 106EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.0104   FP SLP=0.0104
                      N=0.030   DIST=40 FT

                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0

ROUTE MCUNGE          ID=16   HYD NO=102EA.6 INFLOW ID=4
                      DT=0.0  L=575
                      NS=0  SLOPE=0.0104   MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=16 CODE=1
*
*** ADD ROUTED 102EA.6 TO ROUTED 104EA.5 HYD ***
*
ADD HYD               ID=17       HYD NO = 106EA.25
                      ID I=15     ID II=16

PRINT HYD             ID=17 CODE=1
*
**** SUB-BASIN 107EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD        ID=19  HYD NO=107EA
                      DA=0.0213 SQ MI
                            A=20.0
                            B=64.0
                            C=10.0
                            D=6.0
                      TP=0.181 HR  MASSRAIN=-1
PRINT HYD             ID=19 CODE=1
*
** ROUTE FLOW COMING FROM 106EA.25 THRU 107EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.5 FT
                      CH SLP=0.0094   FP SLP=0.0094
                      N=0.030   DIST=55 FT

                      DIST      ELEV
```

```
                    0.0       101.5
                    10.0      100.0
                    45.0      100.0
                    55.0      101.5

ROUTE MCUNGE        ID=2   HYD NO=107EA.6 INFLOW ID=17
                    DT=0.0  L=1600
                    NS=0  SLOPE=0.0094   MATCODE=0
                    REGCODE=0      CCODE=0

PRINT HYD           ID=2 CODE=1
*
*** ADD ROUTED 106EA.5 TO  BASIN 107EA HYD ***
*
ADD HYD             ID=3       HYD NO = 107EA.6
                    ID I=2     ID II=19
*
PRINT HYD           ID=3 CODE=1
*
**** SUB-BASIN 108EA ****
*
* GOLF COURSE, PARKING LOT AND SINGLE FAMILY RESIDENTIAL @ 2 DU/ACRE
*
COMPUTE NM HYD      ID=7  HYD NO=108EA
                    DA=0.0470 SQ MI
                          A=17.0
                          B=58.0
                          C=13.0
                          D=12.0
                    TP=0.254 HR  MASSRAIN=-1
PRINT HYD           ID=7 CODE=1
*
*** ADD 107EA TO BASIN HYD 108EA ***
*
ADD HYD              ID=8       HYD NO = 107EA.8
                     ID I=3     ID II=7

PRINT HYD            ID=8 CODE=1
*
** ROUTE 107EA.8 THRU RESERVOIR (DUCK POND & EMPTY HOLE) **
*
ROUTE RESERVOIR     ID=9   HYD=107EA.8  INFLOW=8   CODE=5

                    OUTFLOW(CFS)  STORAGE(AF)   ELEV(FT)
                      0.00           0.00        5241.0
                      0.01           0.22        5242.0
                      0.02           0.54        5243.0
                      0.03           0.95        5244.0
                      0.035          1.20        5244.5
                      0.04           1.44        5245.0
                      0.045          2.70        5245.5
                      0.05           3.96        5246.0
                     14.00           4.19        5246.1
                     27.00           4.41        5246.2
                     52.00           4.64        5246.3
                     76.00           4.86        5246.4
                    108.00           5.08        5246.5
                    139.00           5.30        5246.6
                    177.00           5.53        5246.7
                    215.00           5.75        5246.8
                    258.00           5.98        5246.9
                    300.00           6.20        5247.0
                    500.00           9.00        5250.0
                   1000.00          12.00        5255.0
*
**** SUB-BASIN 109EA ****
*
* GOLF COURSE, AND OTHER RECREATION
*
COMPUTE NM HYD      ID=10  HYD NO=109EA
                    DA=0.006 SQ MI
                         A=16.0
                         B=51.0
                         C=10.0
                         D=23.0
                    TP=0.133 HR  MASSRAIN=-1
```

```
PRINT HYD            ID=10 CODE=1
*
** ROUTE FLOW COMING FROM RESERVOIR THRU 109EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.018   FP SLP=0.018
                      N=0.030   DIST=40 FT

                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0

ROUTE MCUNGE          ID=11   HYD NO=109EA.78 INFLOW ID=9
                      DT=0.0  L=500
                      NS=0  SLOPE=0.018   MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=11        CODE=1
*
*** ADD ROUTED POND OUTFLOW TO BASIN 109EA HYD ***
*
ADD HYD               ID=12       HYD NO = 109EA.87
                      ID I=10     ID II=11

PRINT HYD             ID=12       CODE=1
*
**** SUB-BASIN 110EA ****
*
* PKG LOT, CLUBHOUSE, ENTR. RD, PROSHOP, BED & BRKFST
*
COMPUTE NM HYD        ID=13  HYD NO=110EA
                      DA=0.006 SQ MI
                           A=5.0
                           B=15.0
                           C=10.0
                           D=70.0
                      TP=0.133 HR  MASSRAIN=-1
PRINT HYD             ID=13 CODE=1
*
*** ADD SUB-BASIN 109EA TO SUB-BASIN 110EA ***
*
ADD HYD               ID=14    HYD NO= 110EA.1
                      ID I=12  ID II=13
PRINT HYD             ID=14    CODE=1
*
* INPUT MODEL FROM SEPT 11, 1995 MODEL "REPORT ON EXISTING DRAINAGE
* CONDITIONS FOR A PROPOSED POND AT THE NORTHEAST CORNER COORS BOULEVARD
* NW AND PASEO-DEL-NORTE NW
* SOURCE: SMITH ENGINEERING COMPANY
*
** ROUTE 110EA.1 THROUGH 104 **
*S ROUTING 110EA.1 ON GOLF COURSE RD AND BRYAN AVE
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0143  FP SLOPE=0.0143
                      N=0.033          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67          0.1       0
                      24       0.48         47.9       0
                      48       2.67

ROUTE MCUNGE          ID=3   HYD NO=103.22 INFLOW ID=14
                      DT=0.0  L=2650
                      NS=0  SLOPE=0.0143   MATCODE=0
                      REGCODE=0  CCODE=0
PRINT HYD             ID=3   CODE=1
*
**** SUB-BASIN 104 ****
*
*S RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
```

```
COMPUTE NM HYD          ID=1  HYD NO = 104
                        DA= 0.0672  SQUARE MI
                                  A=20
                                  B=25
                                  C=15
                                  D=40
                        TP=0.2191 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD 104 TO HYD 103.22 ***
*
ADD HYD                 ID=2   HYD NO=104.1   ID I=1  ID II=3
PRINT HYD               ID=2   CODE=1
*
** ROUTE 104.1 THRU 105 **
*S ROUTING 104.1 ON CADDIE RD
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=2.67
                        CH SLOPE=0.0368  FP SLOPE=0.0368
                        N=0.033          DIST=48
                        DIST     ELEV          DIST      ELEV
                         0       2.67           0.1       0
                        24       0.48          47.9       0
                        48       2.67
*
ROUTE MCUNGE            ID=3   HYD NO=104.12 INFLOW ID=2
                        DT=0.0  L=1850
                        NS=0  SLOPE=0.0368   MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=3   CODE=1
*
**** SUB-BASIN 105 ****
*
* RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
COMPUTE NM HYD          ID=1  HYD NO = 105
                        DA= 0.1027  SQUARE MI
                                  A=73
                                  B=10
                                  C=5
                                  D=12
                        TP=0.1876  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD 105 TO HYD 104.12 ***
*S**** HYD 105.1 IS AP #2     *****
*
ADD HYD                 ID=2   HYD NO=105.1   ID I=1  ID II=3
PRINT HYD               ID=2   CODE=1
*
** ROUTE 105.1 ON CONGRESS AVE TO EXISTING DET POND **
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=2
                        CH SLOPE=0.0251  FP SLOPE=0.0251
                        N=0.020          DIST=48
                        DIST     ELEV          DIST      ELEV
                         0       2.00           0.1       0
                        24       0.48          47.9       0
                        48       2.00
*
ROUTE MCUNGE            ID=4   HYD NO=105.12 INFLOW ID=2
                        DT=0.0  L=1950
                        NS=0  SLOPE=0.0251   MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=4   CODE=1
*
**** SUB-BASIN 106 ****
*
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD          ID=1  HYD NO = 106
                        DA= 0.0954  SQUARE MI
```

```
                                A=80
                                B=5
                                C=5
                                D=10
                        TP=0.1904  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
**** SUB-BASIN 106A1 ****
*
*S SUB-BASIN 106A1 IS SKY CREST ESTATES
* SOURCE: D. MARK GOODWIN & ASSOCIATES, SKY CREST ESTATES DRNGE REPORT 2/95
*
COMPUTE NM HYD          ID=7  HYD NO = 106A1
                        DA= 0.00846  SQUARE MI
                                A=0
                                B=27.74
                                C=27.74
                                D=44.52
                        TP=0.1333  HR   MASSRAIN=-1
PRINT HYD               ID=7 CODE=1
*
** ROUTE RESERVOIR **
*S ROUTING RESERVOIR WITH 21" DIAMETER ORIFACE
* EXISTING POND @ SW CORNER OF ARROWHEAD AVE. AND CHANTILLY RD.
*
ROUTE RESERVOIR         ID=9   HYD NO=106A1.RES   INFLOW=7   CODE=1
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                              0               0              5057
                            4.675           0.062          5058
                           16.379           0.140          5059
                           22.510           0.235          5060
                           27.298           0.349          5061
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5057
*S          4.675           0.062          5058
*S         16.379           0.140          5059
*S         22.510           0.235          5060
*S         27.298           0.349          5061
*
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE TO DISCHARGE ON CONGRESS AVE.
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=2
                        CH SLOPE=0.109  FP SLOPE=0.109
                        N=0.017          DIST=8.1
                        DIST     ELEV         DIST      ELEV
                         0        2            0.1        0
                         8        0            8.1        2
*
ROUTE MCUNGE            ID=10   HYD NO=106A1.01 INFLOW ID=9
                        DT=0.0  L=925
                        NS=0  SLOPE=0.0216   MATCODE=0
                        REGCODE=0       CCODE=0
PRINT HYD               ID=10   CODE=1
*
**** SUB-BASIN 107 ****
*
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD          ID=2  HYD NO = 107
                        DA= 0.0291  SQUARE MI
                                A=10
                                B=29.2
                                C=15
                                D=45.8
                        TP=0.1333 HR   MASSRAIN=-1
PRINT HYD               ID=2 CODE=1
*
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=2.67
                        CH SLOPE=0.0216  FP SLOPE=0.0216
                        N=0.017          DIST=48
                        DIST     ELEV         DIST      ELEV
```

```
                      0       2.67         0.1        0
                     24       0.48        47.9        0
                     48       2.67
*
ROUTE MCUNGE         ID=3   HYD NO=107.02 INFLOW ID=2
                     DT=0.0  L=925
                     NS=0  SLOPE=0.0216   MATCODE=0
                     REGCODE=0      CCODE=0
PRINT HYD            ID=3   CODE=1
*
*** ADD HYD 107.02 TO HYD 105.12 ***
*
ADD HYD              ID=2     HYD NO=107.1   ID I=4  ID II=3
PRINT HYD            ID=2     CODE=1
*
*** ADD HYD 107.1 TO HYD 106 ***
*
ADD HYD              ID=3     HYD NO=107.2   ID I=1  ID II=2
PRINT HYD            ID=3     CODE=1
*
*** ADD HYD 107.2 TO HYD 106A1.01 ***
*
ADD HYD              ID=11     HYD NO=107.3   ID I=3  ID II=10
PRINT HYD            ID=11     CODE=1
*
**** SUB-BASIN 108 ****
*
*S RESIDENTIAL
*
COMPUTE NM HYD       ID=1  HYD NO = 108
                     DA= 0.0240  SQUARE MI
                               A=10
                               B=27.4
                               C=15
                               D=47.6
                     TP=0.1333  HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND THRU CACTUS HILLS
*
COMPUTE RATING CURVE CID=1  VS NO=1   NO SEGS=1
                     MIN ELEV=0       MAX ELEV=2.67
                     CH SLOPE=0.04    FP SLOPE=0.04
                     N=0.017          DIST=48
                     DIST     ELEV         DIST      ELEV
                      0       2.67         0.1        0
                     24       0.48        47.9        0
                     48       2.67
*
ROUTE MCUNGE         ID=2   HYD NO=108.02 INFLOW ID=1
                     DT=0.0  L=825
                     NS=0  SLOPE=0.04     MATCODE=0
                     REGCODE=0      CCODE=0
PRINT HYD            ID=2   CODE=1
*
*** ADD HYD 108.02 TO HYD 107.3 ***
*
ADD HYD              ID=4     HYD NO=108.1   ID I=2  ID II=11
PRINT HYD            ID=4     CODE=1
*
**** SUB-BASIN 109 ****
*
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN
*
COMPUTE NM HYD       ID=1  HYD NO = 109
                     DA= 0.0207  SQUARE MI
                               A=20
                               B=22.5
                               C=15
                               D=42.5
                     TP=0.1333  HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
*** ADD HYD 109 TO HYD 108.1 ***
*S**** HYD 109.1 IS AP #3     *****
*
```

```
ADD HYD              ID=2     HYD NO=109.1   ID I=1  ID II=4
PRINT HYD            ID=2     CODE=1
*
*  EXISTING DETENTION BASIN IN BASIN 109
*S ROUTING RESERVOIR WITH 12" DIAM ORIFACE
* SOURCE: D.M.G. JAN, 1993 DRAINAGE REPORT, PG 24
*
ROUTE RESERVOIR      ID=3   HYD NO=109.RES   INFLOW=2   CODE=1
                      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                           0               0              5069
                         3.78            0.6143           5070
                         5.35            1.5084           5071
                         6.55            2.4797           5072
                         7.56            3.5283           5073
                         8.46            4.6542           5074
                         9.26            5.8574           5075
                        10.00            7.1379           5076
                        10.70            8.4956           5077
                        11.35            9.9306           5078
                           30            10.29            5078.25
                           63            10.65            5078.5
                          105            11.01            5078.75
                          154            11.37            5079
                          210            11.73            5079.25
                          271            12.09            5079.5
                          337            12.45            5079.75
                          408            12.81            5080
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*            0               0              5069
*          3.78            0.6143           5070
*          5.35            1.5084           5071
*          6.55            2.4797           5072
*          7.56            3.5283           5073
*          8.46            4.6542           5074
*          9.26            5.8574           5075
*         10.00            7.1379           5076
*         10.70            8.4956           5077
*S        11.35            9.9306           5078     EXISTING TOP OF POND
*           30            10.29            5078.25
*           63            10.65            5078.5
*          105            11.01            5078.75
*S         154            11.37            5079
*S         210            11.73            5079.25
*          271            12.09            5079.5
*          337            12.45            5079.75
*          408            12.81            5080
*
* DIVIDE HYD 109.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD           INFLOW ID=3   Q=11.35   ID I=9   HYD NO=109.03
                                             ID II=10   HYD NO=OLF.1
PRINT HYD            ID=9  CODE=1
PRINT HYD            ID=10 CODE=1
*
* * * BASIN 200 * * *
*
**** SUB-BASIN 201 ****
*
* RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
COMPUTE NM HYD       ID=1  HYD NO = 201
                     DA= 0.0258  SQUARE MI
                               A=75
                               B=10
                               C=5
                               D=10
                     TP=0.1333  HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
** ROUTE 201 THRU 202 **
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE CID=1  VS NO=1   NO SEGS=1
                     MIN ELEV=0       MAX ELEV=2.67
```

```
                      CH SLOPE=0.0241  FP SLOPE=0.0241
                      N=0.017          DIST=48
                      DIST     ELEV          DIST      ELEV
                       0       2.67           0.1       0
                      24       0.48          47.9       0
                      48       2.67
*
ROUTE MCUNGE          ID=2   HYD NO=201.02 INFLOW ID=1
                      DT=0.0  L=1080
                      NS=0  SLOPE=0.0241   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2   CODE=1
*
**** SUB-BASIN 202 ****
*
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, BASIN E
*
COMPUTE NM HYD        ID=1  HYD NO = 202
                      DA= 0.0288  SQUARE MI
                                A=10
                                B=27.7
                                C=15
                                D=47.3
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 202 TO HYD 201.02 ***
*S**** HYD 202.1 IS AP #4     *****
*
ADD HYD               ID=4     HYD NO=202.1   ID I=1  ID II=2
PRINT HYD             ID=4     CODE=1
*
*S EXISTING DROP INLET IN BASIN 202
* SOURCE: B.H. FEB, 1992 CACTUS RIDGE DRAINAGE REPORT, HYMO PRINTOUT
*
ROUTE RESERVOIR       ID=2   HYD NO=202.RES1   INFLOW=4   CODE=1
                       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0                0              5138.7
                         20.12             0.0009         5139.7
                         24.07             0.0019         5140.7
                         41.69             0.0028         5141.7
                         53.82             0.0037         5142.7
                         63.69             0.0047         5143.7
                         70.59             0.0054         5144.5
                         74.58             0.0111         5145.0
                         81.98             0.0603         5146.0
                         83.46             0.1024         5146.2
                         87.97             0.1700         5146.5
                         94.77             0.2611         5147.0
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*           0                0              5138.7
*          20.12             0.0009         5139.7
*          24.07             0.0019         5140.7
*          41.69             0.0028         5141.7
*          53.82             0.0037         5142.7
*          63.69             0.0047         5143.7
*          70.59             0.0054         5144.5
*S         74.58             0.0111         5145.0
*S         81.98             0.0603         5146.0
*          83.46             0.1024         5146.2
*          87.97             0.1700         5146.5
*          94.77             0.2611         5147.0
*
*  EXISTING DETENTION BASIN IN BASIN 401
*S ROUTING RESERVOIR WITH 21' ORIFACE
* SOURCE: B.H. FEB, 1992 CACTUS RIDGE DRAINAGE REPORT, HYMO PRINTOUT
*
ROUTE RESERVOIR       ID=4   HYD NO=202.RES2   INFLOW=2   CODE=1
                       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0                0              5114
                         11.58             0.0026         5115
                         16.38             0.0052         5116
                         20.06             0.0078         5117
                         23.16             0.0091         5118
                         25.89             0.0521         5119
```

```
                    28.37          0.1097         5120
                    30.64          0.1829         5121
                    32.75          0.2747         5122
                    34.74          0.3856         5123
                    36.62          0.5174         5124
                    38.41          0.6717         5125
                    40.11          0.8496         5126
                    41.76          1.03           5127
                     61            1.08           5127.25
                     94            1.13           5127.5
                    136            1.18           5127.75
                    185            1.23           5128
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*            0               0               5114
*          11.58           0.0026            5115
*          16.38           0.0052            5116
*          20.06           0.0078            5117
*          23.16           0.0091            5118
*          25.89           0.0521            5119
*          28.37           0.1097            5120
*          30.64           0.1829            5121
*          32.75           0.2747            5122
*          34.74           0.3856            5123
*          36.62           0.5174            5124
*S         38.41           0.6717            5125
*S         40.11           0.8496            5126
*          41.76           1.03              5127      EXISTING TOP OF POND
*           61             1.08              5127.25
*           94             1.13              5127.5
*          136             1.18              5127.75
*          185             1.23              5128
*
* DIVIDE HYD 202.RES2 BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD          INFLOW ID=4   Q=41.76    ID I=8    HYD NO=202.03
                                             ID II=11  HYD NO=OLF.2
PRINT HYD           ID=8  CODE=1
PRINT HYD           ID=11 CODE=1
*
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD
* PIPE SIZE AND SLOPE WAS NOT DETERMINED
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.05
                            DIAM=3 FT  N=0.015
ROUTE MCUNGE          ID=6  HYD NO=202.02  INFLOW ID=8
                      DT=0.0  L=760
                      NS=0  SLOPE=0.05     MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=6  CODE=1
*
* * * BASIN 300 * * *
*
**** SUB-BASIN 301 ****
*
*S RESIDENTIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 301
                      DA= 0.0182  SQUARE MI
                                A=10
                                B=25
                                C=15
                                D=50
                      TP=0.1579 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0499  FP SLOPE=0.0499
                      N=0.017          DIST=48
                      DIST     ELEV        DIST      ELEV
                       0       2.67         0.1       0
                      24       0.48        47.9       0
```

```
                    48      2.67
*
ROUTE MCUNGE        ID=2   HYD NO=301.02 INFLOW ID=1
                    DT=0.0  L=1765
                    NS=0  SLOPE=0.0499   MATCODE=0
                    REGCODE=0      CCODE=0
PRINT HYD           ID=2   CODE=1
*
**** SUB-BASIN 302 ****
*
*S METHODIST CHURCH PROPERTY
*
COMPUTE NM HYD      ID=1  HYD NO = 302
                    DA= 0.0043  SQUARE MI
                              A=20
                              B=30
                              C=0
                              D=50
                    TP=0.1333  HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                    MIN ELEV=0        MAX ELEV=2.67
                    CH SLOPE=0.0443  FP SLOPE=0.0443
                    N=0.017           DIST=48
                    DIST     ELEV          DIST      ELEV
                     0       2.67          0.1        0
                    24       0.48         47.9        0
                    48       2.67
*
ROUTE MCUNGE        ID=5   HYD NO=302.02 INFLOW ID=1
                    DT=0.0  L=2165
                    NS=0  SLOPE=0.0443   MATCODE=0
                    REGCODE=0      CCODE=0
PRINT HYD           ID=5   CODE=1
*
*** ADD HYD 301.02 AND 302.02 ***
*
ADD HYD             ID=4     HYD NO=302.1   ID I=2  ID II=5
PRINT HYD           ID=4     CODE=1
*
**** SUB-BASIN 303 ****
*
*S COMMERCIAL
*
COMPUTE NM HYD      ID=1  HYD NO = 303
                    DA= 0.0669  SQUARE MI
                              A=51
                              B=16.6
                              C=0
                              D=32.4
                    TP=0.1773 HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
*  EXISTING DETENTION BASIN IN BASIN 303
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE
*  ASSUME NO SEDIMENT VOLUME DISPLACEMENT
*  SOURCE OF TOTAL POND CAPACITY AND SIZE OF OUTLET PIPE:
*  SOURCE: ISAACSON AND ARFMAN OCT, 1990 DRAINAGE REPORT
*
ROUTE RESERVOIR     ID=5   HYD NO=303.RES   INFLOW=1   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                        0                0              5099
                       11.58             0.15           5100
                       16.37             0.30           5101
                       20.06             0.45           5102
                       23.16             0.60           5103
                       25.89             0.75           5104
                       26.00             0.91           5105
                       27.00             1.07           5106
                       28.00             1.23           5107
                       29.00             1.39           5108
                       30.00             1.55           5109
                       31.00             1.71           5110
```

```
                    32.00          1.87          5111
                    33.00          2.03          5112
                    34.00          2.11          5112.5    EXISTING TOP OF POND
                    53.00          2.15          5112.75
                    86.00          2.19          5113
                    128.0          2.23          5113.25

*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*             0               0              5099
*           11.58            0.15            5100
*           16.37            0.30            5101
*           20.06            0.45            5102
*           23.16            0.60            5103
*           25.89            0.75            5104
*           26.00            0.91            5105
*           27.00            1.07            5106
*           28.00            1.23            5107
*S          29.00            1.39            5108
*S          30.00            1.55            5109
*          31.00            1.71            5110
*          32.00            1.87            5111
*          33.00            2.03            5112
*          34.00            2.11            5112.5
*          53.00            2.15            5112.75
*          86.00            2.19            5113
*          128.0            2.23            5113.25
*
* DIVIDE HYD 303.RES BY MAXIMUM PIPE OUTFLOW *
*                    CHANGE ID12 TO ID 16 FOR EXIST COND
*
DIVIDE HYD           INFLOW ID=5   Q=34    ID I=8    HYD NO=303.03
                                          ID II=16  HYD NO=OLF.3
PRINT HYD            ID=8  CODE=1
*                    CHANGE ID12 TO ID 16 FOR EXIST COND
PRINT HYD            ID=16 CODE=1
*
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE
* PIPE SIZE AND SLOPE WERE NOT DETERMINED
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=0.015
                           DIAM=3 FT  N=0.015
ROUTE MCUNGE         ID=2  HYD NO=303.02  INFLOW ID=8
                     DT=0.0  L=1000
                     NS=0  SLOPE=0.015    MATCODE=0
                     REGCODE=0      CCODE=0
PRINT HYD            ID=2  CODE=1
*
** ROUTE OLF.3 THRU 305 TO PARADISE BLVD **
* DELETE ROUTE FOR EXISTING CONDITIONS
* COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
*                       MIN ELEV=0       MAX ELEV=2.67
*                       CH SLOPE=0.0128  FP SLOPE=0.0128
*                       N=0.017          DIST=48
*                       DIST     ELEV         DIST      ELEV
*                        0       2.67          0.1        0
*                       24       0.48         47.9        0
*                       48       2.67
* *
* ROUTE MCUNGE          ID=16    HYD NO=OLF.32 INFLOW ID=12
*                       DT=0.0  L=1250
*                       NS=0  SLOPE=0.0128   MATCODE=0
*                       REGCODE=0      CCODE=0
* PRINT HYD             ID=16    CODE=1
*
**** SUB-BASIN 304 ****
*
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL
*
COMPUTE NM HYD       ID=1  HYD NO = 304
                     DA=0.0349  SQUARE MI
                               A=80
                               B=5
                               C=5
                               D=10
                     TP=0.1429 HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
```

```
*
*** ADD HYD 304 TO HYD 302.02 ***
*
ADD HYD              ID=7     HYD NO=304.1   ID I=1  ID II=4
PRINT HYD            ID=7     CODE=1
*
*** ADD HYD 304.1 TO HYD OLF.32 ***
*
ADD HYD              ID=5     HYD NO=304.2   ID I=7  ID II=16
PRINT HYD            ID=5     CODE=1
*
* DIVIDE HYD 304.1 BY MAXIMUM INFLOW OF CATCH BASINS *
*S DIVIDE AT MH# S-702
*
DIVIDE HYD           INFLOW ID=5   Q=20    ID I=4    HYD NO=CB1
                                          ID II=7   HYD NO=304.13
PRINT HYD            ID=4  CODE=1
PRINT HYD            ID=7  CODE=1
*
*** ADD PIPE HYD 303.02 TO HYD CB1 ***
*
ADD HYD              ID=5     HYD NO=CB1.1   ID I=2  ID II=4
PRINT HYD            ID=5     CODE=1
*
*** ADD HYD 304 TO HYD 302.02 ***
*
ADD HYD              ID=2     HYD NO=CB1.2   ID I=5  ID II=6
PRINT HYD            ID=2     CODE=1
*
**** SUB-BASIN 305 ****
*
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL
*
COMPUTE NM HYD       ID=17  HYD NO = 305
                     DA= 0.0391  SQUARE MI
                               A=25
                               B=20
                               C=10
                               D=45
                     TP=0.1807 HR   MASSRAIN=-1
PRINT HYD            ID=17  CODE=1
*
*
* * * BASIN 400 * * *
*
**** SUB-BASIN 401 ****
*
*S CACTUS RIDGE SUBDIVISION
*
* SOURCE OF AREA: B.H. FEB 1992 DRAINAGE REPORT
*
COMPUTE NM HYD       ID=1  HYD NO = 401
                     DA= 0.0236 SQUARE MI
                               A=10
                               B=22.3
                               C=15
                               D=52.7
                     TP=0.1333 HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
*** ADD HYD OLF.2 TO SUB-BASIN 401 ***
*
ADD HYD              ID=3     HYD NO=401.1  ID I=1  ID II=11
PRINT HYD            ID=3     CODE=1
*
* DIVIDE HYD 401 BY MAXIMUM INFLOW OF CATCH BASINS, WEST OF SUB-BASIN 401,
* ALONG PARADISE ROAD (7 CB AT 10 CFS EACH)
*
DIVIDE HYD           INFLOW ID=3   Q=70    ID I=4    HYD NO=CB2
                                           ID II=5   HYD NO=401.13
PRINT HYD            ID=4  CODE=1
PRINT HYD            ID=5  CODE=1
*
**** SUB-BASIN 402 ****
*
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS
```

```
* SOURCE: D.M.G. MAY 1994 DRAINAGE REPORT
*
COMPUTE NM HYD        ID=1  HYD NO = 402
                      DA=0.0088  SQUARE MI
                                 A=0
                                 B=28.6
                                 C=28.7
                                 D=42.7
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1 CODE=1
*
*** ADD OLF HYD 401.13 TO 402 ***
*
ADD HYD               ID=6     HYD NO=402.1   ID I=5  ID II=1
PRINT HYD             ID=6     CODE=1
*
*** ADD OLF HYD 304.13 TO OLF HYD 402.1 ***
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD
*S**** OLF HYD 402.2 IS AP #5     *****
*
ADD HYD               ID=18     HYD NO=402.2   ID I=6  ID II=7
PRINT HYD             ID=18     CODE=1
*
** ROUTE 402.2 THRU 502 ON PARADISE BLVD **
*S ROUTING 402.2 TO DETENTION POND IN 503
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0548  FP SLOPE=0.0548
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67         0.1        0
                      24       0.48        47.9        0
                      48       2.67
*
ROUTE MCUNGE          ID=20    HYD NO=402.23 INFLOW ID=18
                      DT=0.0  L=1350
                      NS=0  SLOPE=0.0548   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=20    CODE=1
*
*** ADD OLF HYD 402.23 TO 305 ***
*
ADD HYD               ID=19     HYD NO=305.1  ID I=17  ID II=20
PRINT HYD             ID=19     CODE=1
*
*** ADD HYD CB1.2 TO HYD CB2 ***
*S**** PIPE HYD CB2.1 IS AP #6     *****
*
ADD HYD               ID=6     HYD NO=CB2.1   ID I=2  ID II=4
PRINT HYD             ID=6     CODE=1
*
**** SUB-BASIN 403 ****
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS
* SOURCE: D.M.G. MAY 1994 DRAINAGE REPORT
*
COMPUTE NM HYD        ID=1  HYD NO = 403
                      DA= 0.0144  SQUARE MI
                                 A=0
                                 B=22.9
                                 C=22.9
                                 D=54.2
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
* DIVIDE HYD 403 BY MAXIMUM INFLOW OF POND INLET IN WEST PARK APARTMENTS
* SOURCE OF DIVIDE IS D.M.G. MAY, 1994 DRAINAGE REPORT
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND
*
DIVIDE HYD            INFLOW ID=1   Q=3      ID I=2    HYD NO=CB3
                                             ID II=4   HYD NO=403.13
PRINT HYD             ID=2  CODE=1
PRINT HYD             ID=4  CODE=1
*
*** ADD HYD CB2.1 TO HYD CB3 ***
*
```

```
ADD HYD              ID=5     HYD NO=CB3.1   ID I=6  ID II=2
PRINT HYD            ID=5     CODE=1
*
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732
*S Q(CAP) = 144 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                           DIAM=4.5 FT  N=0.013
ROUTE MCUNGE          ID=2  HYD NO=CB3.13  INFLOW ID=5
                      DT=0.0  L=1678
                      NS=0  SLOPE=0.005    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2  CODE=1
*
**** SUB-BASIN 404 ****
*
*S LESLIE HOMES
* SOURCE: D.M.G. JAN 1993 DRAINAGE REPORT
*
COMPUTE NM HYD        ID=1  HYD NO = 404
                      DA= 0.0161  SQUARE MI
                                A=10
                                B=25.1
                                C=15
                                D=49.9
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 404 TO HYD CB3.1 ***
* ASSUME ALL SUB-BASIN 404 ENTERS SD
*
ADD HYD               ID=5     HYD NO=CB4.1   ID I=1  ID II=2
PRINT HYD             ID=5     CODE=1
*
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                           DIAM=5 FT  N=0.015
ROUTE MCUNGE          ID=2  HYD NO=CB4.13  INFLOW ID=5
                      DT=0.0  L=1051
                      NS=0  SLOPE=0.005    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2  CODE=1
*
**** SUB-BASIN 405 ****
*S SUB-BASIN 405 IS PART OF CACTUS HILLS
* SOURCE: D.M.G. JAN 1993 DRAINAGE REPORT
*
COMPUTE NM HYD        ID=1  HYD NO = 405
                      DA=0.0270  SQUARE MI
                                A=10
                                B=42
                                C=10
                                D=38
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S  DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *
*
DIVIDE HYD            INFLOW ID=1   Q=40    ID I=6    HYD NO=CB5
                                           ID II=7    HYD NO=405.03
PRINT HYD             ID=6  CODE=1
PRINT HYD             ID=7  CODE=1
*
*S ROUTING 405.03 TO CONGRESS AVE
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.004  FP SLOPE=0.004
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67         0.1        0
                      24       0.48        47.9        0
                      48       2.67
*
```

```
ROUTE MCUNGE          ID=15  HYD NO=405.02 INFLOW ID=7
                      DT=0.0  L=500
                      NS=0  SLOPE=0.004    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=15  CODE=1
*
*** ADD HYD CB5 TO HYD CB4.13 ***
* SUB-BASIN 405 HAS TRANSVERSE DRAIN WITH 36" PIPE TO 60" SD
*
ADD HYD               ID=5     HYD NO=CB5.1   ID I=6  ID II=2
PRINT HYD             ID=5     CODE=1
*
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                            DIAM=5.5 FT  N=0.015
ROUTE MCUNGE          ID=2  HYD NO=CB5.13  INFLOW ID=5
                      DT=0.0  L=454
                      NS=0  SLOPE=0.005    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2  CODE=1
*
*** ADD PIPE HYD CB5.13 TO 109.03 ***
*S TOTAL PIPE FLOW IN 60" SD AT DETENTION POND
*S**** PIPE HYD CB5.2 IS AP #7     *****
*
ADD HYD               ID=5     HYD NO=CB5.2   ID I=9  ID II=2
PRINT HYD             ID=5     CODE=1
*
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND
*S Q(CAP) = 233 CFS, AT SLOPE=0.008
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.008
                            DIAM=5 FT  N=0.015
ROUTE MCUNGE          ID=2  HYD NO=CB5.23  INFLOW ID=5
                      DT=0.0  L=690
                      NS=0  SLOPE=0.008    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2  CODE=1
*
**** SUB-BASIN 406 ****
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 406
                      DA= 0.0107  SQUARE MI
                                A=90
                                B=0
                                C=5
                                D=5
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD OLF.1 TO HYD 405.02 ***
*
ADD HYD               ID=14    HYD NO=405.1  ID I=15  ID II=10
PRINT HYD             ID=14    CODE=1
*
*** ADD 405.1 TO HYD 406 ***
*
ADD HYD               ID=6     HYD NO=406.1  ID I=14  ID II=1
PRINT HYD             ID=6     CODE=1
*
*S ROUTING 406 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=3
                      CH SLOPE=0.0083  FP SLOPE=0.0083
                      N=0.017          DIST=48
                      DIST     ELEV          DIST      ELEV
                       0       3.00           0.1       0
                      24       0.48          47.9       0
                      48       3.00
*
ROUTE MCUNGE          ID=3   HYD NO=406.12 INFLOW ID=6
                      DT=0.0  L=600
```

```
                    NS=0  SLOPE=0.0083  MATCODE=0
                    REGCODE=0      CCODE=0
PRINT HYD           ID=3   CODE=1
*
**** SUB-BASIN 407 ****
*
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL
*S INCLUDES AREA FROM IRVING BLVD
*
COMPUTE NM HYD      ID=1  HYD NO = 407
                    DA= 0.0224  SQUARE MI
                              A=50
                              B=10
                              C=10
                              D=30
                    TP=0.1333  HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
* EXISTING DETENTION BASIN IN BASIN 407
*S CUBBY HOLE DETENTION BASIN
*S ROUTING RESERVOIR WITH 12" ORIFACE
* SOURCE: D.M.G. JAN, 1993 DRAINAGE REPORT, PG 42
*
ROUTE RESERVOIR     ID=5   HYD NO=407.RES   INFLOW=1   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                        0               0               5063
                        3.78            0.0387          5064
                        5.35            0.0597          5065
                        6.55            0.0808          5066
                        7.56            0.1019          5067
                        8.46            0.1230          5068
                        9.26            0.1440          5069
                       10.00            0.1651          5070
                        29              0.170           5070.25
                        62              0.175           5070.5
                       104              0.180           5070.75
                       153              0.185           5071
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*           0               0               5063
*           3.78            0.0387          5064
*           5.35            0.0597          5065
*           6.55            0.0808          5066
*           7.56            0.1019          5067
*           8.46            0.1230          5068
*           9.26            0.1440          5069
*          10.00            0.1651          5070
*S          29              0.170           5070.25
*S          62              0.175           5070.5
*          104              0.180           5070.75
*          153              0.185           5071
*
* DIVIDE HYD 407.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD          INFLOW ID=5   Q=10    ID I=7    HYD NO=407.03
                                          ID II=13  HYD NO=OLF.4
PRINT HYD           ID=7  CODE=1
PRINT HYD           ID=13 CODE=1
*
*** ADD PIPE HYD CB5.23 TO 407.RES ***
*S TOTAL PIPE FLOW IN 60" SD AT DETENTION POND
*S**** PIPE HYD CB5.3 IS AP #8     *****
*
ADD HYD             ID=6     HYD NO=CB5.3   ID I=7  ID II=2
PRINT HYD           ID=6     CODE=1
*
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962
*S Q(CAP) = 260 CFS, AT SLOPE=0.01
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.01
                           DIAM=5 FT  N=0.015
ROUTE MCUNGE        ID=7  HYD NO=CB5.33  INFLOW ID=6
                    DT=0.0  L=739
                    NS=0  SLOPE=0.01     MATCODE=0
                    REGCODE=0      CCODE=0
PRINT HYD           ID=7  CODE=1
```

```
*
*** ADD HYD 406.12 TO HYD OLF.4 ***
*
ADD HYD              ID=17    HYD NO=407.1   ID I=3  ID II=13
PRINT HYD            ID=17    CODE=1
*
**** SUB-BASIN 408 ****
*
*S SUB-BASIN 408 IS STATE FARM INSURANCE
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD
* SOURCE: EASTERLING FEB 1987 PLANS
*
COMPUTE NM HYD       ID=14  HYD NO = 408
                     DA= 0.0066  SQUARE MI
                               A=20
                               B=10
                               C=0
                               D=70
                     TP=0.1333  HR   MASSRAIN=-1
PRINT HYD            ID=14  CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 408
*S ROUTING RESERVOIR WITH 12" WEIR
* SOURCE: EASTERLING FEB, 1987 START FARM INS PLANS
*
ROUTE RESERVOIR      ID=18   HYD NO=408.RES   INFLOW=14   CODE=1
                      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0                0              5050.8
                         1.08             0.2198          5052.3
                         1.66             0.2931          5052.8
                         2.31             0.3663          5053.3
                         3.02             0.4396          5053.8
                          22              0.4763          5054.05
*S
*S     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*         0               0              5050.8
*S       1.08            0.2198          5052.3    EXISTING TOP OF POND
*        1.66            0.2931          5052.8
*S       2.31            0.3663          5053.3
*S       3.02            0.4396          5053.8
*        22              0.4763          5054.05
*
*** ADD HYD 408.RES TO HYD 407.1 ***
*
ADD HYD              ID=14    HYD NO=408.1   ID I=17  ID II=18
PRINT HYD            ID=14    CODE=1
*
**** SUB-BASIN 409 ****
*
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D
*
COMPUTE NM HYD       ID=1  HYD NO = 409
                     DA= 0.0098  SQUARE MI
                               A=20
                               B=10
                               C=5
                               D=60
                     TP=0.1333 HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
* DIVIDE HYD 409 BY 36" STUB OUT PIPE CAPACITY *
*
DIVIDE HYD           INFLOW ID=1   Q=25    ID I=2    HYD NO=CB6
                                          ID II=15   HYD NO=409.03
PRINT HYD            ID=2  CODE=1
PRINT HYD            ID=15 CODE=1
*
*** ADD HYD CB6 TO HYD CB5.33 ***
*
ADD HYD              ID=5     HYD NO=CB6.1   ID I=2  ID II=7
PRINT HYD            ID=5     CODE=1
*
**** SUB-BASIN 411 ****
*
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B
*
```

```
COMPUTE NM HYD        ID=1  HYD NO =411
                      DA= 0.0092  SQUARE MI
                                A=45
                                B=5
                                C=20
                                D=30
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
* DIVIDE HYD 411 BY INLET CAPACITY *
*
DIVIDE HYD            INFLOW ID=1   Q=10    ID I=2    HYD NO=CB7
                                           ID II=7   HYD NO=411.03
PRINT HYD             ID=2  CODE=1
PRINT HYD             ID=7  CODE=1
*
**** SUB-BASIN 410 ****
*
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A
*
COMPUTE NM HYD        ID=1  HYD NO = 410
                      DA= 0.0047  SQUARE MI
                                A=45
                                B=5
                                C=20
                                D=30
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
* DIVIDE HYD 410 BY INLET CAPACITY *
*
DIVIDE HYD            INFLOW ID=1   Q=10    ID I=9    HYD NO=CB8
                                           ID II=16  HYD NO=410.03
PRINT HYD             ID=9  CODE=1
PRINT HYD             ID=16 CODE=1
*
*** ADD HYD 411.03 TO HYD 410.03 ***
*
ADD HYD               ID=3    HYD NO=411.1   ID I=7  ID II=16
PRINT HYD             ID=3    CODE=1
*
*** ADD HYD 411.1 TO HYD 409.03 ***
*S ASSUME OLF HYD 411.2 PONDS
*
ADD HYD               ID=16   HYD NO=411.2   ID I=3  ID II=15
PRINT HYD             ID=16   CODE=1
*
*** ADD HYD CB7 TO HYD CB6.1 ***
*
ADD HYD               ID=1    HYD NO=CB7.1   ID I=2  ID II=5
PRINT HYD             ID=1    CODE=1
*
*** ADD HYD CB8 TO HYD CB7.1 ***
*
ADD HYD               ID=2    HYD NO=CB8.1   ID I=1  ID II=9
PRINT HYD             ID=2    CODE=1
*
*S ROUTE CB7.1 IN 60" PIPE TO SUB-BASIN 411 ( JUST BEFORE CALABACILLAS ARROYO OUTFALL
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                            DIAM=5.5 FT  N=0.013
ROUTE MCUNGE          ID=9  HYD NO=CB8.12  INFLOW ID=2
                      DT=0.0  L=1263
                      NS=0  SLOPE=0.005    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=9  CODE=1
*
**** SUB-BASIN 412 ****
*
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3
*
COMPUTE NM HYD        ID=1  HYD NO = 412
                      DA= 0.0133  SQUARE MI
                                A=45
                                B=5
```

```
                          C=20
                          D=30
                    TP=0.1449 HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
* DIVIDE HYD 412 BY INLET CAPACITY of 24" STUB OUT *
*S OLF HYD 412.03 IS OFF-SITE FLOW TO CALAB. ARROYO
*
DIVIDE HYD          INFLOW ID=1   Q=10    ID I=2    HYD NO=CB9
                                          ID II=13  HYD NO=412.03
PRINT HYD           ID=2  CODE=1
PRINT HYD           ID=13  CODE=1
*
*** ADD HYD CB9 TO HYD CB8.12 ***
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO
*S****  HYD CB9.1 IS AP #9     *****
*
ADD HYD             ID=6     HYD NO=CB9.1   ID I=2  ID II=9
PRINT HYD           ID=6     CODE=1
*
*
* * * BASIN 500 * * *
*
**** SUB-BASIN 501 ****
*
*S EAGLE RANCH ROAD
* 86 FT ROW
*
COMPUTE NM HYD      ID=1  HYD NO = 501
                    DA= 0.01  SQUARE MI
                              A=0
                              B=10
                              C=0
                              D=90
                    TP=0.3060 HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
*** ADD HYD 501 TO OLF HYD 408.1 ***
*
ADD HYD             ID=3    HYD NO=501.1  ID I=14   ID II=1
PRINT HYD           ID=3    CODE=1
*
** ROUTE OLF 501.1 THRU 505 IN IRVING BLVD **
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                    MIN ELEV=0       MAX ELEV=3
                    CH SLOPE=0.021   FP SLOPE=0.021
                    N=0.017          DIST=48
                    DIST     ELEV         DIST      ELEV
                     0       3.00          0.1       0
                    24       0.48         47.9       0
                    48       3.00
*
ROUTE MCUNGE        ID=7   HYD NO=501.12 INFLOW ID=3
                    DT=0.0  L=1000
                    NS=0  SLOPE=0.021    MATCODE=0
                    REGCODE=0      CCODE=0
PRINT HYD           ID=7   CODE=1
*
**** SUB-BASIN 502 ****
*
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD      ID=1  HYD NO = 502
                    DA= 0.0435  SQUARE MI
                              A=10
                              B=10
                              C=20
                              D=60
                    TP=0.1333 HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
* DIVIDE HYD 305.1 IN PARADISE BLVD BY ASSUMED 18" CAPACITY *
*
DIVIDE HYD          INFLOW ID=19   Q=20      ID I=2    HYD NO=402.24
```

```
                                                ID II=3    HYD NO=402.25
PRINT HYD              ID=2   CODE=1
PRINT HYD              ID=3   CODE=1
*
*** ADD OLF HYD 402.24 TO SUB-BASIN 502 ***
*
ADD HYD                ID=5     HYD NO=502.1     ID I=2   ID II=1
PRINT HYD              ID=5     CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 502
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR        ID=8    HYD NO=502.RES   INFLOW=5    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0              5030
                          38.9526          2.1993           5038
                          58               2.268            5038.25
                          91               2.337            5038.5
*S
*S        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*              0               0              5030
*S            38.9526          2.1993           5038
*S            58               2.268            5038.25
*             91               2.337            5038.5
*
**** SUB-BASIN 503 ****
*
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD         ID=1  HYD NO = 503
                       DA= 0.0235  SQUARE MI
                                 A=0
                                 B=10
                                 C=0
                                 D=90
                       TP=0.2284 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*** ADD OLF HYD 402.25 TO HYD SUB-BASIN 503 ***
*
ADD HYD                ID=2      HYD NO=503.1     ID I=1   ID II=3
PRINT HYD              ID=2      CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 503
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR        ID=5    HYD NO=503.RES   INFLOW=2    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0              5000
                           10.1924          4.2712           5010
                           29               4.378            5010.25
                           62               4.485            5010.5
                          104               4.592            5010.75
                          153               4.698            5011
                          209               4.805            5011.25
*S
*S        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5000
*S          10.1924          4.2712           5010
*             29               4.378            5010.25
*             62               4.485            5010.5
*            104               4.592            5010.75
*            153               4.698            5011
*            209               4.805            5011.25
*
*** ADD HYD 502.RES TO HYD 503.RES  ***
*
ADD HYD                ID=10    HYD NO=503.1  ID I=5  ID II=8
PRINT HYD              ID=10    CODE=1
*
**** SUB-BASIN 504 ****
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
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*
COMPUTE NM HYD          ID=1  HYD NO = 504
                        DA= 0.0257  SQUARE MI
                                  A=0
                                  B=10
                                  C=5
                                  D=85
                        TP=0.2025 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 504
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR         ID=3    HYD NO=504.RES   INFLOW=1    CODE=1
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0              5001
                           38.9526         1.1742           5007
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5001
*S         38.9526         1.1742           5007
*
*** ADD HYD 503.1 TO HYD 504.RES  ***
*
ADD HYD                 ID=11     HYD NO=504.1  ID I=3   ID II=10
PRINT HYD               ID=11     CODE=1
*
**** SUB-BASIN 505 ****
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL
*
COMPUTE NM HYD          ID=1  HYD NO = 505
                        DA= 0.0497  SQUARE MI
                                  A=15
                                  B=10
                                  C=5
                                  D=70
                        TP=0.2066 HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD HYD 505 TO OLF HYD 501.12 ***
*
ADD HYD                 ID=2      HYD NO=505.1  ID I=1  ID II=7
PRINT HYD               ID=2      CODE=1
*
** ROUTE OLF HYD 505.1 THRU 506 ON COORS BLVD **
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=2.67
                        CH SLOPE=0.012   FP SLOPE=0.012
                        N=0.017          DIST=80
                        DIST     ELEV         DIST      ELEV
                         0       2.67         0.1        0
                        40       0.80         79.9       0
                        80       2.67
*
ROUTE MCUNGE            ID=9   HYD NO=505.12 INFLOW ID=2
                        DT=0.0  L=2150
                        NS=0  SLOPE=0.012    MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=9  CODE=1
*
*** ADD OLF HYD 505.12 TO HYD 504.1 ***
*
ADD HYD                 ID=2      HYD NO=505.2    ID I=11   ID II=9
PRINT HYD               ID=2      CODE=1
*
** ROUTE 505.2 THRU 506'S LOW SPOT **
*S ROUTE 505.2 IN 36" PIPE THRU 506'S LOW SPOT; 0.009 FT/FT
*
COMPUTE RATING CURVE    CID=1 VS NO=1 CODE=-1 SLP=0.009
                                DIAM=3 FT  N=0.013
ROUTE MCUNGE            ID=3  HYD NO=505.22  INFLOW ID=2
                        DT=0.0  L=700
                        NS=0  SLOPE=0.009    MATCODE=0
                        REGCODE=0      CCODE=0
```

```
PRINT HYD              ID=3  CODE=1
*
**** SUB-BASIN 506 ****
*
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW
*
COMPUTE NM HYD         ID=1  HYD NO = 506
                       DA= 0.0559 SQUARE MI
                                 A=50
                                 B=5
                                 C=25
                                 D=20
                       TP=0.2045 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*** ADD OLF HYD 505.12 TO HYD 506 ***
*
ADD HYD                ID=2      HYD NO=506.1   ID I=1  ID II=3
PRINT HYD              ID=2      CODE=1
*
*S NATURAL PONDING AREA ON BLACK RANCH TRACT 2
* ROUTING RESERVOIR WITH 2 36" DIAMETER ORIFACES
*
ROUTE RESERVOIR        ID=80    HYD NO = 506.RES   INFLOW=2    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0              4996
                            15             0.09183          4997
                            34             0.18365          4998
                            66             0.27548          4999
                            74.5           0.31772        4999.2
                            87.65          0.33792        4999.4
                            103.2          0.35812        4999.6
                            118            0.37833        4999.8
                            140            0.39850        5000.0
                            157.7          0.41873        5000.2
                            180.8          0.43893        5000.4
                            201.2          0.45913        5000.6
*S  OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S        0               0              4996
*S     15.0            0.09183           4997
*S     34.0            0.18365           4998
*S     66.0            0.27548           4999
*S     74.5            0.31772         4999.2
*S     87.7            0.33792         4999.4
*S    103.2            0.35812         4999.6
*S    118.0            0.37833         4999.8
*S    140.0            0.39850         5000.0
*S    157.7            0.41873         5000.2
*S    180.8            0.43893         5000.4
*S    201.2            0.45913         5000.6
*
*
*S DIVIDE HYD 506.RES BY RATING CURVE
*S OVERFL.1 IS THE OVERFLOW THAT IS NOT DETAINED IN THE NATURAL PONDING AREA
*
DIVIDE HYD             ID=80   CODE=999        ID=65    HYD NO=506.RES01
                                               ID=68   HYD NO=OVERFL.1
                       TOTAL FLOW          DIVIDED FLOW
                          66.0                  66
                          74.5                  70
                          87.7                  75
                         103.2                  80
                         118.0                  82
                         140.0                  90
                         157.7                  92
                         180.8                  98
                         201.2                 100
*S
*S TOTAL FLOW          DIVIDED FLOW
*S    66.0                  66
*S    74.5                  70
*S    87.7                  75
*S   103.2                  80
*S   118.0                  82
*S   140.0                  90
*S   157.7                  92
```

```
*S   180.8                    98
*S   201.2                   100
*
PRINT HYD              ID=65   CODE=1
PRINT HYD              ID=68   CODE=1
*
*S ROUTE RESERVOIR THROUGH OUTLET PIPES TO CORRALES MAIN CANAL
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.009
                            DIAM=3.54 FT  N=0.013
ROUTE MCUNGE           ID=73  HYD NO=506.RES1  INFLOW ID=65
                       DT=0.0  L=150
                       NS=0  SLOPE=0.009    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=73  CODE=1
*
*S ADD THE OVERLAND FLOW TO THE MAIN CANAL
*
ADD HYD                ID=91 HYD NO=900 ID=99 ID=68
*
* DIVIDE HYD 900 IN CORRALES CANAL BY THE CAPACITY OF THE CANAL AT A DEPTH OF
* 3.5 FT
*
DIVIDE HYD             INFLOW ID=91   Q=91      ID I=77    HYD NO=800
                                                ID II=88   HYD NO=OVERFL.2
PRINT HYD              ID=77   CODE=1
PRINT HYD              ID=88   CODE=1
*
*S ADD FLOW FROM OUTLET PIPES TO FLOW IN THE MAIN CANAL
*
ADD HYD                ID=20 HYD NO=901 ID=77 ID=73
PRINT HYD              ID=20 CODE=1
*S HYD NO OVERFL.2 IS THE FLOW THAT JUMPS OVER THE CANAL AND DISCHARGES ON TO
*S BLACK RANCH TRACT 2
*
*S ROUTE THIS FLOW THROUGH THE CONCRETE BOX CULVERT TO THE INTERSECTION OF
*S THE 36" PIPES FROM THE POND AT THE SW CORNER OF COORS AND PDN
*
COMPUTE RATING CURVE ID=1 VS NO=11.2     NO SEGS=1
                     MIN ELEV=4987.43    MAX ELEV=4993.4
                     CH SLOPE=0.001332   FP SLOPE=0.001332
                     N=0.013             DIST=10.1
                     DIST        ELEV
                      0.0       4993.40
                      0.1       4987.43
                     10.0       4987.43
                     10.1       4993.40

ROUTE MCUNGE           ID=21 HYD NO=17.01 INFLOW ID=20  DT=0.0 HR
                       LENGTH=900.0   NS=0   SLOPE=0.001332
                       MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD              ID=21 CODE=0
*
**** SUB-BASIN 11.W ****
*
*S SUB-BASIN 11.1W
*S WEST OF COORS BOULEVARD AND INCLUDES SECTION OF PASEO DEL NORTE
*S COMMERCIAL AND STATE HIGHWAY DEPARTMENT ROW
*
COMPUTE NM HYD         ID=5 HYD NO=147
                       DA=0.04607 SQ MI
                           A=60
                           B=5
                           C=5
                           D=30
                       TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD              ID=5 CODE=1
*
* FLOW FROM 11.1W ENTERS DET POND AT SW CORNER OF PDN AND COORS
*S ROUTING RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.
*
ROUTE RESERVOIR        ID=7   HYD NO=147.RES   INFLOW=5   CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0              4996
```

```
                        28              1.30            4998
                        66              2.66            5000
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              4996
*S           28             1.30             4998
*S           66             2.66             5000
*
PRINT HYD             ID=7 CODE=1
*
* DIVIDE HYD 147.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD            INFLOW ID=7   Q=66    ID I=25   HYD NO=147.RES1
                                            ID II=30   HYD NO=OLF.5
PRINT HYD             ID=25  CODE=1
PRINT HYD             ID=30  CODE=1
*
*S ROUTE 147.RES1 THROUGH 2 30" CULVERT PIPES UNDER COORS TO CANAL CBC **
* THE EQUIVALENT DIAMETER OF THE TWO PIPES IS USED. ASSUME A SLOPE OF 1%
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.01
                              DIAM=3.5 FT  N=0.013
ROUTE MCUNGE          ID=3  HYD NO=147.1  INFLOW ID=25
                      DT=0.0  L=300
                      NS=0  SLOPE=0.01    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3  CODE=1
*
*S** ADD THE FLOW FROM NMSHTD POND TO CANAL ***
*
ADD HYD               ID=10 HYD NO=147.12 ID=3 ID=21
*
**** SUB-BASIN 11.1AW ****
*
*S SECTION OF BASIN 11.1W THAT DRAINS TO CULVERT UNDER COORS
*
COMPUTE NM HYD        ID=18 HYD NO=147A
                      DA=0.005275 SQ MI
                          A=100
                          B=0
                          C=0
                          D=0
                      TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD             ID=18 CODE=1
*
*S ROUTE 11.1A THROUGH A 24" CULVERT PIPE UNDER COORS TO CANAL CBC **
* ASSUME A SLOPE OF 1%
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.01
                              DIAM=2 FT  N=0.013
ROUTE MCUNGE          ID=12  HYD NO=147A.1  INFLOW ID=18
                      DT=0.0  L=300
                      NS=0  SLOPE=0.01    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=52  CODE=1
*
*S** ADD THE FLOW FROM 11.1A TO CANAL ***
*
ADD HYD               ID=9 HYD NO=147.12 ID=10 ID=12
*
*S BASE FLOW CORRECTION.
*
MODIFY TIME           ID=9  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
*S AREAS 8.1W TO 11.A ROUTED IN CANAL AND BASE FLOW CORRECTED.
*
PRINT HYD             ID=9 CODE=0
*
*S ROUTE CANAL FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **
*
ROUTE MCUNGE          ID=3 HYD NO=18 INFLOW ID=9  DT=0.0 HR
                      LENGTH=750.0   NS=0   SLOPE=0.0006
                      MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD             ID=3 CODE=0
*
```

```
*S BASE FLOW CORRECTION.
*
MODIFY TIME          ID=3  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW CORRECTED
*S TO 38 CFS MIN.
*
PRINT HYD            ID=3 CODE=0
*
**** SUB-BASIN 11.2E ****
*
*S SUB-BASIN 11.2E
*S INCLUDES PASEO-DEL-NORTE/COORS INTERSECTION ROW AND BUSINESSES ON EAST
*S SIDE OF COORS BOULEVARD
*
* FLOWS FROM BASIN 11.2E ENTER THE 6'X 10' CBC DIRECTLY THROUGH STORM DRAIN
* INLETS
*
COMPUTE NM HYD       ID=7 HYD NO=154
                     DA=0.02769 SQ MI
                          A=15
                          B=10
                          C=0
                          D=75
                     TP=0.133333 HR  MASSRAIN=-1
*
PRINT HYD            ID=7 CODE=1
*
*S** ADD 11.2E TO CANAL FLOW. ***
*
ADD HYD              ID=5 HYD NO=326 ID=3 ID=7
*
* FLOWS FROM 8.1W TO 11.2E IN CANAL.
*
PRINT HYD            ID=5 CODE=0
*
**** SUB-BASIN 12.1W ****
*
*S SUB-BASIN 12.1W
*S UNDEVELOPED LAND ZONED SU-1, FUTURE SITE OF EAGLE RIDGE APARTMENTS
*
COMPUTE NM HYD       ID=3 HYD NO=156
                     DA=0.03024 SQ MI
                          A=100
                          B=0
                          C=0
                          D=0
                     TP=0.1333 HR MASSRAIN=-1
*
PRINT HYD            ID=3 CODE=1
*
** ROUTE 12.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE  ID=1 VS NO=12.1 NO SEG=3 MIN ELEV=100 MAX ELEV=103
                     CH SLOPE=0.044 FP SLOPE=0.044 N=0.045 DIST=50
                     N=-0.040 DIST=90  N=0.045 DIST=140
                     DIST    ELEV      DIST    ELEV      DIST    ELEV
                     0       103       50      101       70      100
                     90      101       140     103
ROUTE MCUNGE         ID=7 HYD NO=19 INFLOW ID=3  DT=0.0 HR
                     LENGTH=90.0   NS=0   SLOPE=0.044
                     MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 12.1W ROUTED DOWN SECONDARY CHANNEL. ENTERS
* CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD            ID=7 CODE=0
*
**** SUB-BASIN 12.2W ****
*
*S SUB-BASIN 12.2 W
*S INCLUDES EAGLE RANCH ROAD/EMERGENCY SPILLWAY OF PIEDRAS MARCADAS DAM
*
COMPUTE NM HYD       ID=1 HYD NO=158
                     DA=0.03200 SQ MI
```

```
                          A=90
                          B=0
                          C=7
                          D=3
                    TP=0.133333 HR  MASSRAIN=-1
*
* AREA 12.2W COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD           ID=1 CODE=1
*
** ROUTE 12.2W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=12.2 NO SEG=3 MIN ELEV=100 MAX ELEV=103
                    CH SLOPE=0.0075 FP SLOPE=0.0075 N=0.0045 DIST=10
                    N=-0.040 DIST=150 N=0.045 DIST=200
                    DIST    ELEV      DIST    ELEV      DIST    ELEV
                    0       103       10      101       80      100
                    150     101       200     103
ROUTE MCUNGE        ID=8 HYD NO=20 INFLOW ID=1  DT=0.0 HR
                    LENGTH=800.0   NS=0   SLOPE=0.0075
                    MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 12.2W ROUTED DOWN SECONDARY CHANNEL.  ENTERS
* CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD           ID=8 CODE=0
*
*S ROUTE AREA 8.1W TO 11.2E DOWN CANAL TO AREA 12 DISCHARGE POINT. **
* ROUTE FROM STA 643+33.62 TO 650+83.62
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE & OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=12.3     NO SEGS=1
                    MIN ELEV=4985.30    MAX ELEV=4995.14
                    CH SLOPE=0.0003     FP SLOPE=0.0003
                    N=0.045             DIST=86
                    DIST    ELEV
                    0       4993.58
                    12      4993.00
                    35      4985.55
                    45      4985.30
                    72      4993.10
                    86      4995.14

ROUTE MCUNGE        ID=10 HYD NO=21 INFLOW ID=5  DT=0.0 HR
                    LENGTH=750.0   NS=0   SLOPE=0.0003
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=10 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME         ID=10  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 11.2E ROUTED DOWN CANAL WITH CORRECTED BASE FLOW.
*
PRINT HYD           ID=10 CODE=0
*
*** ADD AREA 12.1W TO CANAL FLOW. ***
*
ADD HYD             ID=2 HYD NO=162 ID=7 ID=10
*
* AREAS 8.1W TO 12.1W IN CANAL.
*
PRINT HYD           ID=2 CODE=0
*
*S ROUTE FLOWS DOWN CANAL TO AREA 12.2W DISCHARGE POINT. **
* ROUTE FROM STA 650+83.62 TO 660+70
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE & OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=12.3     NO SEGS=1
                    MIN ELEV=4985.30    MAX ELEV=4995.14
                    CH SLOPE=0.0003     FP SLOPE=0.0003
                    N=0.045             DIST=86
                    DIST    ELEV
                    0       4993.58
                    12      4993.00
```

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                    35      4985.55
                    45      4985.30
                    72      4993.10
                    86      4995.14

ROUTE MCUNGE        ID=7 HYD NO=22 INFLOW ID=2  DT=0.0 HR
                    LENGTH=986   NS=0   SLOPE=0.0003
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=7 CODE=0.
*
* BASE FLOW CORRECTION.
*
MODIFY TIME         ID=7  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREAS 8.1W TO 12.1W ROUTED DOWN CANAL WITH CORRECTED BASE FLOW.
*
PRINT HYD           ID=7 CODE=0
*
*** ADD 12.2W TO CANAL FLOWS. ***
*
ADD HYD             ID=3 HYD NO=165 ID=7 ID=8
*
* FLOW FROM AREAS 8.1W TO 12.2W IN CANAL.
*
PRINT HYD           ID=3 CODE=0
*
**** SUB-BASIN 12.3E ****
*
*S UNDEVELOPED PROPERTY ZONED SPECIAL USE (SU-1)
*
COMPUTE NM HYD      ID=7 HYD=166
                    DA=0.02616 SQ MI
                         A=84.6
                         B=0
                         C=0
                         D=15.4
                    TP=0.2143 HR  MASSRAIN=-1
*
PRINT HYD           ID=7 CODE=1
*
* AREA 12.3E COMPOSITE RUNOFF HYDROGRAPH.  ENTERS CANAL DIRECTLY.
* ********** SIDE INLET DESIGN Q.**********
*
PRINT HYD           ID=7 CODE=0
*
*** ADD AREA 12.3E TO CANAL FLOW. ***
*
ADD HYD             ID=8 HYD NO=330 ID=3 ID=7
*
* FLOWS FROM AREA 8.1W TO 12.3E IN CANAL.
*
PRINT HYD           ID=8 CODE=0
*
** ROUTE FLOW IN CANAL FROM 8.1W TO 12.3E TO AREA 13 DISCHARGE POINT. **
* ROUTE FROM STA 660+70 TO 667+12
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE & OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=12.3     NO SEGS=1
                    MIN ELEV=4985.30    MAX ELEV=4995.14
                    CH SLOPE=0.0003     FP SLOPE=0.0003
                    N=0.045             DIST=85
                    DIST    ELEV
                    0       4993.20
                    15      4993.00
                    38      4986.10
                    51      4985.50
                    74      4993.00
                    85      4993.10

ROUTE MCUNGE        ID=5 HYD NO=23 INFLOW ID=8  DT=0.0 HR
                    LENGTH=642   NS=0   SLOPE=0.0003
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
```

```
MODIFY TIME          ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREAS 8.1W TO 12.3E ROUTED DOWN CANAL WITH BASE FLOW CORRECTED.
*
PRINT HYD            ID=5 CODE=0
*
**** SUB-BASIN 13.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=170
                     DA=0.0000001 SQ MI
                          A=90
                          B=0
                          C=5
                          D=5
                     TP=0.133333 HR  MASSRAIN=-1
*
PRINT HYD            ID=3 CODE=1
*
* AREA 13.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD            ID=3 CODE=0
*
** ROUTE 13.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=13.1     NO SEGS=3
                     MIN ELEV=100        MAX ELEV=103
                     CH SLOPE=0.015      FP SLOPE=0.015
                     N=0.045             DIST=70.0
                     N=-0.040            DIST=95
                     N=0.045             DIST=150
                     DIST    ELEV     DIST    ELEV     DIST    ELEV
                     0       103.0    70.0    102.0    80      100.0
                     95      102.0    150     103.0

ROUTE MCUNGE         ID=8 HYD NO=24 INFLOW ID=3  DT=0.0 HR
                     LENGTH=675.0   NS=0   SLOPE=0.015
                     MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 13.1W ROUTED THROUGH SECONDARY CHANNEL.
*
PRINT HYD            ID=8 CODE=0
*
**** SUB-BASIN 13.2E ****
*
*S BOSQUE DEL PUEBLO COMMERCIAL SITE
* SOURCE: GREINER ENGINEERING, BOSQUE DEL PUEBLO DRAINAGE REPORT
*
COMPUTE NM HYD       ID=3 HYD NO=172
                     DA=0.02206 SQ MI
                          A=30
                          B=15
                          C=0
                          D=55
                     TP=0.17911 HR  MASSRAIN=-1
*
PRINT HYD            ID=3 CODE=1
*
* AREA 13.2E COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD            ID=3 CODE=0
*
*** ADD 13.2W TO 13.1E. ***
*
ADD HYD              ID=10 HYD NO=333 ID=3 ID=8
*
* AREA 13.1W ADDED TO 13.2E.  ENTERS MAIN CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD            ID=10 CODE=0
*
*** ADD AREAS 13.1W AND 13.2E TO CANAL FLOW. ***
*
ADD HYD              ID=1 HYD NO=334 ID=5 ID=10
*
```

```
* AREA 13.1W+13.2E ADDED INTO CANAL.  FLOW FROM AREAS 8.1W TO 13.2E IN CANAL.
*
PRINT HYD             ID=1 CODE=0
*
**** SUB-BASIN 14.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD        ID=3 HYD NO=174
                      DA=0.05117 SQ MI
                           A=85
                           B=0
                           C=10
                           D=5
                      TP=0.133333 HR  MASSRAIN=-1
*
* AREA 14.1W RUNOFF HYDROGRAPH
*
PRINT HYD             ID=3 CODE=0
*
*S ROUTE 14.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=14.1     NO SEGS=3
                      MIN ELEV=100       MAX ELEV=104
                      CH SLOPE=0.0250    FP SLOPE=0.0250
                      N=0.045            DIST=10
                      N=-0.040           DIST=40
                      N=0.045            DIST=160
                      DIST    ELEV       DIST    ELEV       DIST    ELEV
                      0       104.0      10.0    102.0      20      100.0
                      40      102.0      160     104.0

ROUTE MCUNGE          ID=5 HYD NO=25 INFLOW ID=3  DT=0.0 HR
                      LENGTH=400.0   NS=0   SLOPE=0.025
                      MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 14.1W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD             ID=5 CODE=0
*
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **
* ROUTE FROM STA 667+12 TO 672+19
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=14.2     NO SEGS=1
                      MIN ELEV=4986      MAX ELEV=4994.32
                      CH SLOPE=0.0003    FP SLOPE=0.0003
                      N=0.045            DIST=83
                      DIST    ELEV
                      0       4994.32
                      4       4993.20
                      16      4993.00
                      39      4986.00
                      48      4986.00
                      73      4993.20
                      83      4994.00

ROUTE MCUNGE          ID=10 HYD NO=26 INFLOW ID=1  DT=0.0 HR
                      LENGTH=507   NS=0   SLOPE=0.0003
                      MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD             ID=10 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME           ID=10  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 13.2E ROUTED DOWN TO AREA 14 DISCHARGE POINT WITH BASE
* FLOW CORRECTED.
*
PRINT HYD             ID=10 CODE=0
*
*** ADD AREA 14.1W TO CANAL FLOW. ***
*
ADD HYD               ID=2 HYD NO=338 ID=5 ID=10
*
* FLOW FROM 8.1W TO 14.1W IN CANAL.
```

```
*
PRINT HYD            ID=2 CODE=0
*
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **
* ROUTE FROM STA 672+19 TO 680+12
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=15.2     NO SEGS=1
                     MIN ELEV=4985       MAX ELEV=4997.10
                     CH SLOPE=0.0003     FP SLOPE=0.0003
                     N=0.040             DIST=58
                     DIST    ELEV
                     0       4994.00
                     14      4992.80
                     27      4985.00
                     36      4985.00
                     42      4988.50
                     54      4997.00
                     58      4997.10

ROUTE MCUNGE         ID=7 HYD NO=27 INFLOW ID=2  DT=0.0 HR
                     LENGTH=793   NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=7 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=7  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 14.2E ROUTED DOWN CANAL TO AREA 15 DISCHARGE POINT WITH BASE
* FLOW CORRECTED.
*
PRINT HYD            ID=7 CODE=0
*
**** SUB-BASIN 15.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=182
                     DA=0.0256 SQ MI
                          A=77
                          B=5
                          C=15
                          D=3
                     TP=0.13333 HR  MASSRAIN=-1
*
PRINT HYD            ID=3 CODE=1
*
* AREA 15.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD            ID=3 CODE=0
*
*S ROUTE AREA 15.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=15.1     NO SEGS=3
                     MIN ELEV=100.0      MAX ELEV=103.0
                     CH SLOPE=0.016      FP SLOPE=0.016
                     N=0.045             DIST=70.0
                     N=-0.040            DIST=110.0
                     N=0.045             DIST=260
                     DIST    ELEV     DIST    ELEV     DIST    ELEV
                     0       103.0    70      101.0    90      100.0
                     110     101.0    260     103.0

ROUTE MCUNGE         ID=10 HYD NO=28 INFLOW ID=3  DT=0.0 HR
                     LENGTH=525.0   NS=0   SLOPE=0.016
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=4 CODE=0
*
**** SUB-BASIN 15.2W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=184
                     DA=0.0638 SQ MI
                           A=77
```

```
                          B=5
                          C=15
                          D=3
                    TP=0.13333 HR  MASSRAIN=-1
*
PRINT HYD           ID=3 CODE=1
*
* AREA 15.2W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD           ID=3 CODE=0
*
*S ROUTE 15.2W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=15.2    NO SEGS=3
                    MIN ELEV=100.0      MAX ELEV=102
                    CH SLOPE=0.0286     FP SLOPE=0.0286
                    N=0.045             DIST=50.0
                    N=-0.040            DIST=130.0
                    N=0.045             DIST=180.0
                    DIST    ELEV      DIST    ELEV      DIST    ELEV
                    0       102.0     50      101.0     110     100.0
                    130     101.0     180     102.0

ROUTE MCUNGE        ID=5 HYD NO=29 INFLOW ID=3  DT=0.0 HR
                    LENGTH=350.0   NS=0   SLOPE=0.0286
                    MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 15.2W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD           ID=5 CODE=0
*
*** ADD AREA 15.2W TO 15.1W. ***
*
ADD HYD             ID=3 HYD NO=186 ID=10 ID=5
*
* AREA 15.1W ADDED TO 15.2W.
*
PRINT HYD           ID=3 CODE=0
*
**** SUB-BASIN 15.3E ****
*
COMPUTE NM HYD      ID=10 HYD NO=187
                    DA=0.0189 SQ MI
                          A=80.1
                          B=0
                          C=0
                          D=19.9
                    TP=0.133333 HR  MASSRAIN=-1
*
* AREA 15.3E COMPOSITE RUNOFF HYDROGAPH.
*
PRINT HYD           ID=10 CODE=0
*
*** ADD 15.3E TO 15.1W AND 15.2W. ***
*
ADD HYD             ID=5 HYD NO=342 ID=3 ID=10
*
* AREA 15.1W + 15.2W + 15.3E.  ENTERS CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD           ID=5 CODE=0
*
*** ADD 15.1W, 15.2W AND 15.3E TO CANAL FLOW. ***
*
ADD HYD             ID=10 HYD NO=343 ID=5 ID=7
*
* FLOW FROM 8.1W TO 15.3E IN CANAL.
*
PRINT HYD           ID=4 CODE=0
*
**** SUB-BASIN 16.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD      ID=3 HYD NO=189
                    DA=0.0333 SQ MI
```

```
                          A=77
                          B=5
                          C=15
                          D=3
                    TP=0.13333 HR  MASSRAIN=-1
*
* AREA 16.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD           ID=3 CODE=0
*
*S ROUTE AREA 16.1W DOWN SECONDARY CHANNEL TO CANAL.**
*
COMPUTE RATING CURVE ID=1 VS NO=16.1   NO SEGS=3
                    MIN ELEV=100      MAX ELEV=103
                    CH SLOPE=0.168    FP SLOPE=0.0168
                    N=0.045           DIST=50
                    N=-0.040          DIST=110
                    N=-0.045          DIST=260
                    DIST    ELEV      DIST    ELEV      DIST    ELEV
                    0       103       50      101       80      100
                    110     101       260     103

ROUTE MCUNGE        ID=5 HYD NO=30 INFLOW ID=3  DT=0.0 HR
                    LENGTH=950.0   NS=0   SLOPE=0.0168
                    MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 16.1W ROUTED THROUGH SECONDARY CHANNEL.
*
PRINT HYD           ID=5 CODE=0
*
**** SUB-BASIN 16.2W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD      ID=3 HYD NO=191
                    DA=0.0665 SQ MI
                          A=77
                          B=5
                          C=15
                          D=3
                    TP=0.13333 HR  MASSRAIN=-1
*
* AREA 16.2W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD           ID=3 CODE=0
*
*S ROUTE AREA 16.2W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=16.2    NO SEGS=3
                    MIN ELEV=100      MAX ELEV=103
                    CH SLOPE=0.029    FP SLOPE=0.029
                    N=0.045           DIST=50
                    N=-0.040          DIST=110
                    N=0.045           DIST=160
                    DIST    ELEV      DIST    ELEV      DIST    ELEV
                    0       103       50      101       80      100
                    110     101       160     103

ROUTE MCUNGE        ID=7 HYD NO=31 INFLOW ID=3  DT=0.0 HR
                    LENGTH=750.0   NS=0   SLOPE=0.029
                    MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 16.2W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD           ID=7 CODE=0
*
*** ADD 16.2W TO 16.1W. ***
*
ADD HYD             ID=3 HYD NO=193 ID=5 ID=7
*
* AREA 16.1W ADDED TO AREA 16.2W.
*
PRINT HYD           ID=3 CODE=0
*
**** SUB-BASIN 16.3E ****
*
```

```
COMPUTE NM HYD        ID=5 HYD NO=194
                      DA=0.0484 SQ MI
                            A=74.5
                            B=9.3
                            C=5
                            D=11.2
                      TP=0.133333 HR  MASSRAIN=-1
*
* AREA 16.3E COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD             ID=5 CODE=0
*
*** ADD 16.3E TO 16.1W AND 16.2W. ***
*
ADD HYD               ID=7 HYD NO=347 ID=5 ID=3
*
* AREA 16.1W + 16.2W + 16.3E.  ENTERS CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD             ID=7 CODE=0
*
*S ROUTE 8.1W TO 15.2E DOWN CANAL TO AREA 16 DISCHARGE POINT. **
* ROUTE FROM STA 680+12 TO 698+62
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=16.3     NO SEGS=1
                     MIN ELEV=4984       MAX ELEV=4993.10
                     CH SLOPE=0.00032    FP SLOPE=0.00032
                     N=0.045             DIST=73
                     DIST    ELEV
                     0       4992.20
                     12      4991.90
                     27      4984.00
                     40      4984.00
                     56      4991.90
                     73      4993.10

ROUTE MCUNGE          ID=5 HYD NO=32 INFLOW ID=10  DT=0.0 HR
                      LENGTH=1850.0   NS=0   SLOPE=0.00032
                      MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD             ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME           ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 15.2E ROUTED DOWN CANAL TO AREA 16 DISCH. POINT WITH BASE
* FLOW CORRECTED.
*
PRINT HYD             ID=5 CODE=0
*
*** ADD 16.1W, 16.2W AND 16.3E TO CANAL FLOW. ***
*
ADD HYD               ID=5 HYD NO=348 ID=5 ID=7
*
* FLOWS FROM 8.1W TO 16.3E IN CANAL.
*
PRINT HYD             ID=5 CODE=0
*
*S ROUTE AREA 8.1W TO 16.3E DOWN CANAL TO AREA 17 DISCHARGE POINT. **
* ROUTE FROM STA 698+62 TO STA 712+83
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=17.2     NO SEGS=1
                     MIN ELEV=4983       MAX ELEV=4991.5
                     CH SLOPE=0.00032    FP SLOPE=0.00032
                     N=0.045             DIST=67
                     DIST    ELEV
                     0       4991.50
                     11      4991.00
                     27      4983.00
                     38      4983.00
                     53      4991.00
                     67      4991.50

ROUTE MCUNGE          ID=7 HYD NO=33 INFLOW ID=5  DT=0.0 HR
```

```
                    LENGTH=1421.0   NS=0   SLOPE=0.00032
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=7 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME         ID=7  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 16.3E ROUTED DOWN CANAL TO AREA 17 DISCH. POINT WITH
* CORRECTED BASE FLOW.
*
PRINT HYD           ID=7 CODE=0
*
**** SUB-BASIN 17.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD      ID=3 HYD NO=200
                    DA=0.0103 SQ MI
                         A=90
                         B=0
                         C=10
                         D=0
                    TP=0.13333 HR  MASSRAIN=-1
*
* AREA 17.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD           ID=3 CODE=0
*
*S ROUTE AREA 17.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=17.1    NO SEGS=3
                    MIN ELEV=100        MAX ELEV=102
                    CH SLOPE=0.0286     FP SLOPE=0.0286
                    N=0.045             DIST=50
                    N=-0.045            DIST=90
                    N=0.045             DIST=130
                    DIST    ELEV    DIST    ELEV    DIST    ELEV
                    0       102     50      101     70      100
                    90      101     130     102

ROUTE MCUNGE        ID=10 HYD NO=34 INFLOW ID=3  DT=0.0 HR
                    LENGTH=1050.0   NS=0   SLOPE=0.0286
                    MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 17.1W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD           ID=10 CODE=0
*
**** SUB-BASIN 17.4E ****
*
COMPUTE NM HYD      ID=3 HYD NO=208
                    DA=0.02409 SQ MI
                         A=90
                         B=0
                         C=4
                         D=6
                    TP=0.133333 HR  MASSRAIN=-1
*
* AREA 17.4E COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD           ID=3 CODE=0
*
*** ADD AREA 17.4E TO 17.1W ***
*
ADD HYD             ID=5 HYD NO=353 ID=3 ID=10
*
* AREA 17.1W + 17.4E. ENTERS CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD           ID=5 CODE=0
*
*** ADD AREAS 17.1W AND 17.4E TO CANAL FLOW. ***
*
ADD HYD             ID=10 HYD NO=354 ID=5 ID=7
*
```

```
* MIDDLE AREA HYDROGRAPH, AREAS 8.1W TO 17.4E.  DESIGN FLOW AT LA ORILLA OUTLET.
*
PRINT HYD             ID=10 CODE=0
PLOT HYD              ID=10
*
* THIS HYDROGRAPH GOES TO THE RIVERSIDE DRAIN & TO THE RIO GRANDE BYPASS
*
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =08/07/1996
INPUT FILE = NCDMPEXW.DAT USER NO.= C_ANDRSN.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
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3.0 HR.										
RAINFALL TYPE= 2										RAIN24= 2.650
*S 100-YEAR STORM										
*S ONE-HOUR=1.90										
*S SIX-HOUR=2.20										
*S 24-HOUR=2.65										
*S AREA OF FUTURE EXPANSION FOR RIVERFRONTE ESTATES										
COMPUTE NM HYD	134.00	-	3	.05305	59.33	1.922	.67914	1.533	1.748	PER IMP= 10.00
STORE HYD	136.00	-	5	.00010	50.00	96.240	18044.95000	3.950	781.250	
MODIFY TIME	136.00	5	5	.00010	50.00	96.711	18133.27000	3.950	781.250	
ROUTE MCUNGE	12.00	5	6	.00010	49.13	96.708	18132.74000	4.550	767.713	CCODE = .2
MODIFY TIME	12.00	6	6	.00010	49.13	96.708	18132.74000	4.550	767.713	
ADD HYD	139.00	6& 3	6	.05315	97.33	67.218	23.71287	1.533	2.861	
ROUTE MCUNGE	13.00	6	5	.05315	82.22	67.214	23.71136	1.533	2.417	CCODE = .2
MODIFY TIME	13.00	5	5	.05315	82.22	67.214	23.71136	1.533	2.417	
ROUTE MCUNGE	14.00	5	99	.05315	58.78	67.175	23.69757	1.900	1.728	CCODE = .2
MODIFY TIME	14.00	99	99	.05315	58.78	67.175	23.69757	1.900	1.728	
COMPUTE NM HYD	101EA	-	1	.03700	61.63	2.278	1.15431	1.533	2.603	PER IMP= 26.00
COMPUTE NM HYD	102EA	-	2	.04470	45.64	1.986	.83306	1.600	1.595	PER IMP= 10.00
ROUTE MCUNGE	101A.1	1	3	.03700	56.98	2.255	1.14293	1.733	2.406	CCODE = .1
ADD HYD	102EA.1	2& 3	4	.08170	95.07	4.241	.97340	1.700	1.818	
COMPUTE NM HYD	103EA	-	5	.00670	12.31	.434	1.21488	1.500	2.871	PER IMP= 30.00
COMPUTE NM HYD	104EA	-	6	.03660	65.33	2.253	1.15445	1.500	2.789	PER IMP= 26.00
ROUTE MCUNGE	103EA.4	5	7	.00670	12.30	.434	1.21423	1.533	2.869	CCODE = .2
ROUTE MCUNGE	105EA.41	7	8	.00670	11.45	.430	1.20422	1.700	2.670	CCODE = .1
ADD HYD	103EA.4	8& 6	9	.04330	65.69	2.684	1.16215	1.533	2.371	
COMPUTE NM HYD	105EA	-	10	.02360	35.41	1.453	1.15411	1.567	2.344	PER IMP= 26.00
ROUTE MCUNGE	1041EA.5	9	11	.04330	64.32	2.676	1.15872	1.600	2.321	CCODE = .1
ADD HYD	104EA.5	10&11	12	.06690	98.62	4.128	1.15709	1.567	2.303	
COMPUTE NM HYD	106EA	-	13	.02630	27.56	1.088	.77549	1.567	1.637	PER IMP= 7.00
ROUTE MCUNGE	101EA.1	12	14	.06690	95.81	4.113	1.15288	1.667	2.238	CCODE = .1
ADD HYD	104EA.5	14&13	15	.09320	119.65	5.201	1.04638	1.667	2.006	
ROUTE MCUNGE	102EA.6	4	16	.08170	94.96	4.239	.97294	1.733	1.816	CCODE = .2
ADD HYD	106EA.25	15&16	17	.17490	208.12	9.441	1.01208	1.700	1.859	
COMPUTE NM HYD	107EA	-	19	.02130	23.18	.856	.75365	1.567	1.701	PER IMP= 6.00
ROUTE MCUNGE	107EA.6	17	2	.17490	207.92	9.434	1.01139	1.766	1.858	CCODE = .2
ADD HYD	107EA.6	2&19	3	.19620	220.22	10.290	.98341	1.766	1.754	
COMPUTE NM HYD	108EA	-	7	.04700	43.68	2.177	.86868	1.633	1.452	PER IMP= 12.00
ADD HYD	107EA.8	3& 7	8	.24320	256.37	12.468	.96124	1.733	1.647	
ROUTE RESERVOIR	107EA.8	8	9	.24320	161.63	8.500	.65532	1.933	1.038	AC-FT= 5.437
COMPUTE NM HYD	109EA	-	10	.00600	9.78	.335	1.04606	1.500	2.548	PER IMP= 23.00
ROUTE MCUNGE	109EA.78	9	11	.24320	161.43	8.503	.65555	1.966	1.037	CCODE = .2
ADD HYD	109EA.87	10&11	12	.24920	163.06	8.838	.66495	1.966	1.022	
COMPUTE NM HYD	110EA	-	13	.00600	14.45	.594	1.85495	1.500	3.764	PER IMP= 70.00
ADD HYD	110EA.1	12&13	14	.25520	166.46	9.431	.69293	1.966	1.019	
*S ROUTING 110EA.1 ON GOLF COURSE RD AND BRYAN AVE										
ROUTE MCUNGE	103.22	14	3	.25520	159.20	9.367	.68818	2.166	.975	CCODE = .1
*S RESIDENTIAL										
COMPUTE NM HYD	104.00	-	1	.06720	94.78	4.764	1.32932	1.600	2.204	PER IMP= 40.00
ADD HYD	104.10	1& 3	2	.32240	180.71	14.131	.82182	2.133	.876	
*S ROUTING 104.1 ON CADDIE RD										
ROUTE MCUNGE	104.12	2	3	.32240	175.68	14.066	.81805	2.266	.851	CCODE = .1
COMPUTE NM HYD	105.00	-	1	.10270	94.85	3.926	.71675	1.567	1.443	PER IMP= 12.00
*S**** HYD 105.1 IS AP #2 *****										
ADD HYD	105.10	1& 3	2	.42510	184.75	17.992	.79357	2.266	.679	
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND										
ROUTE MCUNGE	105.12	2	4	.42510	180.35	17.935	.79105	2.366	.663	CCODE = .1
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	106.00	-	1	.09540	81.76	3.400	.66822	1.567	1.339	PER IMP= 10.00
*S SUB-BASIN 106A1 IS SKY CREST ESTATES										
COMPUTE NM HYD	106A1	-	7	.00846	18.13	.678	1.50231	1.500	3.349	PER IMP= 44.52
*S ROUTING RESERVOIR WITH 21" DIAMETER ORIFACE										
ROUTE RESERVOIR	106A1.RES	7	9	.00846	14.30	.677	1.50088	1.567	2.642	AC-FT= .126
*S										

*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S	0	0	5057
*S	4.675	0.062	5058
*S	16.379	0.140	5059
*S	22.510	0.235	5060

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	
*S	27.298	0.349	5061								
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE TO DISCHARGE ON CONGRESS AVE.											
ROUTE MCUNGE	106A1.01	9	10	.00846	14.19	.676	1.49853	1.633	2.621	CCODE =	.1
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL											
COMPUTE NM HYD	107.00	-	2	.02910	59.13	2.256	1.45384	1.500	3.175	PER IMP=	45.80
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND											
ROUTE MCUNGE	107.02	2	3	.02910	56.67	2.246	1.44744	1.567	3.043	CCODE =	.1
ADD HYD	107.10	4& 3	2	.45420	192.15	20.181	.83310	1.733	.661		
ADD HYD	107.20	1& 2	3	.54960	248.84	23.581	.80448	1.700	.707		
ADD HYD	107.30	3&10	11	.55806	261.50	24.257	.81501	1.700	.732		
*S RESIDENTIAL											
COMPUTE NM HYD	108.00	-	1	.02400	49.43	1.899	1.48367	1.500	3.218	PER IMP=	47.60
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND THRU CACTUS HILLS											
ROUTE MCUNGE	108.02	1	2	.02400	48.32	1.897	1.48175	1.567	3.146	CCODE =	.1
ADD HYD	108.10	2&11	4	.58206	293.63	26.154	.84250	1.667	.788		
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN											
COMPUTE NM HYD	109.00	-	1	.02070	39.89	1.514	1.37182	1.500	3.011	PER IMP=	42.50
*S**** HYD 109.1 IS AP #3	*****										
ADD HYD	109.10	1& 4	2	.60276	316.27	27.668	.86068	1.633	.820		
*S SOURCE: WILSON & CO, AHYMO FOR SPECIAL ASSESMENT DISTRICT 224											
ROUTE RESERVOIR	109.RES	2	66	.60276	140.10	27.410	.85263	2.533	.363	AC-FT=	9.381

*S

*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S 0	0	5069
*S 7	0.98	5070
*S 25	2.41	5071
*S 52	3.97	5072
*S 82	5.65	5073
*S 112	7.45	5074
*S 140	9.37	5075
*S 160	11.42	5076
*S 178	13.59	5077
*S 195	15.89	5078

COMPUTE NM HYD	201.00	-	1	.02580	28.91	.934	.67914	1.533	1.751	PER IMP=	10.00
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND											
ROUTE MCUNGE	201.02	1	2	.02580	28.74	.939	.68212	1.600	1.741	CCODE =	.2
COMPUTE NM HYD	202.00	-	1	.02880	59.18	2.271	1.47869	1.500	3.211	PER IMP=	47.30
*S**** HYD 202.1 IS AP #4	*****										
ADD HYD	202.10	1& 2	4	.05460	86.00	3.210	1.10229	1.533	2.461		
*S EXISTING DROP INLET IN BASIN 202											
ROUTE RESERVOIR	202.RES1	4	2	.05460	79.08	3.210	1.10229	1.567	2.263	AC-FT=	.041

*S

*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S 74.58	0.0111	5145.0
*S 81.98	0.0603	5146.0

*S ROUTING RESERVOIR WITH 21" ORIFACE											
ROUTE RESERVOIR	202.RES2	2	4	.05460	39.39	3.210	1.10227	1.733	1.127	AC-FT=	.774

*S

*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S 38.41	0.6717	5125
*S 40.11	0.8496	5126

DIVIDE HYD	202.03	4	8	.05460	39.39	3.210	1.10227	1.733	1.127		
	OLF.2	AND	11	.00000	.00	.000	.00000	-.033	.000		
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD											
ROUTE MCUNGE	202.02	8	6	.05460	39.38	3.208	1.10163	1.733	1.127	CCODE =	.2
*S RESIDENTIAL											
COMPUTE NM HYD	301.00	-	1	.01820	34.94	1.478	1.52307	1.533	3.000	PER IMP=	50.00
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304											
ROUTE MCUNGE	301.02	1	2	.01820	34.56	1.475	1.51956	1.567	2.967	CCODE =	.2
*S METHODIST CHURCH PROPERTY											
COMPUTE NM HYD	302.00	-	1	.00430	8.50	.335	1.45878	1.500	3.087	PER IMP=	50.00
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304											
ROUTE MCUNGE	302.02	1	5	.00430	7 85	.331	1.44422	1.700	2.853	CCODE =	.1
ADD HYD	302.10	2& 5	4	.02250	40.24	1.806	1.50516	1.633	2.795		
*S COMMERCIAL											
COMPUTE NM HYD	303.00	-	1	.06690	87.44	3.907	1.09493	1.567	2.042	PER IMP=	32.40
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE											
ROUTE RESERVOIR	303.RES	1	5	.06690	29.57	3.903	1.09392	1.900	.691	AC-FT=	1.482

*S

*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
*S 29.00	1.39	5108
*S 30.00	1.55	5109

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
DIVIDE HYD	303.03	5	8	.06690	29.57	3.903	1.09392	1.900	.691	
	OLF.3	AND	16	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE										
ROUTE MCUNGE	303.02	8	2	.06690	29.57	3.902	1.09363	1.900	.691	CCODE = .2
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL										
COMPUTE NM HYD	304.00	-	1	.03490	36.76	1.244	.66837	1.533	1.646	PER IMP= 10.00
ADD HYD	304.10	1& 4	7	.05740	72.58	3.050	.99638	1.567	1.976	
ADD HYD	304.20	7&16	5	.05740	72.58	3.050	.99638	1.567	1.976	
*S DIVIDE AT MH# S-702										
DIVIDE HYD	CB1	5	4	.03571	20.00	1.897	.99638	1.433	.875	
	304.13	AND	7	.02169	52.58	1.153	.99638	1.567	3.787	
ADD HYD	CB1.1	2& 4	5	.10261	49.57	5.799	1.05979	1.900	.755	
ADD HYD	CB1.2	5& 6	2	.15721	88.40	9.007	1.07432	1.833	.879	
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL										
COMPUTE NM HYD	305.00	-	17	.03910	63.05	2.893	1.38713	1.567	2.520	PER IMP= 45.00
*S CACTUS RIDGE SUBDIVISION										
COMPUTE NM HYD	401.00	-	1	.02360	50.44	1.974	1.56819	1.500	3.340	PER IMP= 52.70
ADD HYD	401.10	1&11	3	.02360	50.44	1.974	1.56819	1.500	3.340	
DIVIDE HYD	CB2	3	4	.02360	50.44	1.974	1.56819	1.500	3.340	
	401.13	AND	5	.00000	.00	.000	.00000	-.033	.000	
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS										
COMPUTE NM HYD	402.00	-	1	.00880	18.66	.692	1.47507	1.500	3.314	PER IMP= 42.70
ADD HYD	402.10	5& 1	6	.00880	18.66	.692	1.47507	1.500	3.314	
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD										
*S**** OLF HYD 402.2 IS AP #5 *****										
ADD HYD	402.20	6& 7	18	.03049	68.54	1.845	1.13451	1.567	3.512	
*S ROUTING 402.2 TO DETENTION POND IN 503										
ROUTE MCUNGE	402.23	18	20	.03049	66.51	1.837	1.12950	1.633	3.408	CCODE = .1
ADD HYD	305.10	17&20	19	.06959	121.01	4.730	1.27424	1.600	2.717	
*S**** PIPE HYD CB2.1 IS AP #6 *****										
ADD HYD	CB2.1	2& 4	6	.18081	122.66	10.981	1.13878	1.567	1.060	
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS										
COMPUTE NM HYD	403.00	-	1	.01440	32.61	1.266	1.64809	1.500	3.538	PER IMP= 54.20
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND										
DIVIDE HYD	CB3	1	2	.00551	3.00	.484	1.64809	1.300	.851	
	403.13	AND	4	.00889	29.61	.782	1.64809	1.500	5.201	
ADD HYD	CB3.1	6& 2	5	.18631	125.66	11.465	1.15383	1.567	1.054	
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732										
*S Q(CAP) = 144 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB3.13	5	2	.18631	125.26	11.446	1.15193	1.600	1.051	CCODE = .2
*S LESLIE HOMES										
COMPUTE NM HYD	404.00	-	1	.01610	33.73	1.307	1.52179	1.500	3.273	PER IMP= 49.90
ADD HYD	CB4.1	1& 2	5	.20241	153.14	12.753	1.18135	1.567	1.182	
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB4.13	5	2	.20241	151.89	12.736	1.17978	1.600	1.173	CCODE = .2
*S SUB-BASIN 405 IS PART OF CACTUS HILLS										
COMPUTE NM HYD	405.00	-	1	.02700	50.96	1.887	1.31061	1.500	2.949	PER IMP= 38.00
*S DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *										
DIVIDE HYD	CB5	1	6	.02581	40.00	1.804	1.31061	1.467	2.422	
	405.03	AND	7	.00119	10.96	.083	1.31061	1.500	14.335	
*S ROUTING 405.03 TO CONGRESS AVE										
ROUTE MCUNGE	405.02	7	15	.00119	10.13	.084	1.32313	1.600	13.244	CCODE = .2
ADD HYD	CB5.1	6& 2	5	.22822	190.20	14.540	1.19457	1.567	1.302	
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB5.13	5	2	.22822	190.01	14.530	1.19379	1.600	1.301	CCODE = .2
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND										
*S Q(CAP) = 233 CFS, AT SLOPE=0.008										
ROUTE MCUNGE	CB5.23	2	25	.22822	189.51	14.521	1.19304	1.600	1.297	CCODE = .2
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL										
COMPUTE NM HYD	406.00	-	1	.01070	10.53	.322	.56338	1.533	1.538	PER IMP= 5.00
ADD HYD	406.10	15& 1	6	.01189	19.41	.406	.63965	1.567	2.550	
*S ROUTING 406 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD										
ROUTE MCUNGE	406.12	6	3	.01189	19.15	.405	.63806	1.633	2.515	CCODE = .2
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL										
*S INCLUDES AREA FROM IRVING BLVD										
COMPUTE NM HYD	407.00	-	1	.02240	35.06	1.290	1.07951	1.500	2.445	PER IMP= 30.00
*S CUBBY HOLE DETENTION BASIN										
*S ROUTING RESERVOIR WITH 12" ORIFACE										
ROUTE RESERVOIR	407.RES	1	5	.02240	37.93	1.289	1.07877	1.500	2.645	AC-FT= .171
*S										

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
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	29	0.170	5070.25							
*S	62	0.175	5070.5							
DIVIDE HYD	407.03	5	89	.01643	10.00	.945	1.07877	1.500	.951	
	OLF.4	AND	13	.00597	27.93	.343	1.07877	1.500	7.313	
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962										
*S Q(CAP) = 260 CFS, AT SLOPE=0.01										
ROUTE MCUNGE	CB5.33	25	85	.22822	188.87	14.519	1.19290	1.633	1.293	CCODE = .2
ADD HYD	407.10	3&13	17	.01786	34.58	.748	.78529	1.500	3.025	
*S SUB-BASIN 408 IS STATE FARM INSURANCE										
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD										
COMPUTE NM HYD	408.00	-	14	.00660	15.06	.631	1.79218	1.500	3.566	PER IMP= 70.00
*S ROUTING RESERVOIR WITH 12" WEIR										
ROUTE RESERVOIR	408.RES	14	18	.00660	2.40	.617	1.75390	2.100	.569	AC-FT= .376
*S										
*S	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)							
*S	1.08	0.2198	5052.3	EXISTING TOP OF POND						
*S	2.31	0.3663	5053.3							
*S	3.02	0.4396	5053.8							
ADD HYD	408.10	17&18	14	.02446	35.35	1.365	1.04663	1.567	2.258	
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D										
COMPUTE NM HYD	409.00	-	1	.00980	21.51	.882	1.68771	1.500	3.429	PER IMP= 63.16
DIVIDE HYD	CB6	1	28	.00980	21.51	.882	1.68771	1.500	3.429	
	409.03	AND	15	.00000	.00	.000	.00000	-.033	.000	
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B										
COMPUTE NM HYD	411.00	-	1	.00920	15.03	.547	1.11419	1.500	2.552	PER IMP= 30.00
DIVIDE HYD	CB7	1	2	.00838	10.00	.498	1.11419	1.433	1.865	
	411.03	AND	7	.00082	5.03	.049	1.11419	1.500	9.537	
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A										
COMPUTE NM HYD	410.00	-	1	.00470	7.69	.279	1.11420	1.500	2.555	PER IMP= 30.00
DIVIDE HYD	CB8	1	9	.00470	7.69	.279	1.11420	1.500	2.555	
	410.03	AND	16	.00000	.00	.000	.00000	-.033	.000	
ADD HYD	411.10	7&16	3	.00082	5.03	.049	1.11419	1.500	9.537	
*S ASSUME OLF HYD 411.2 PONDS										
ADD HYD	411.20	3&15	16	.00082	5.03	.049	1.11419	1.500	9.537	
ADD HYD	CB7.1	2&85	21	.23659	198.45	15.017	1.19011	1.633	1.311	
ADD HYD	CB8.1	21& 9	2	.24129	203.69	15.296	1.18863	1.600	1.319	
*S ROUTE CB7.1 IN 60" PIPE TO SUB-BASIN 411 (JUST BEFORE CALABACILLAS ARROYO OU										
*S Q(CAP) = 184 CFS, AT SLOPE=0.005										
ROUTE MCUNGE	CB8.12	2	9	.24129	203.14	15.277	1.18709	1.633	1.315	CCODE = .2
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3										
COMPUTE NM HYD	412.00	-	1	.01330	20.68	.790	1.11408	1.533	2.429	PER IMP= 30.00
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO										
*S**** HYD CB9.1 IS AP #9 *****										
ADD HYD	CB9.1	1& 9	6	.25459	217.62	16.067	1.18328	1.633	1.336	
*S Q(CAP)=233 CFS, AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.23	66	2	.60276	140.08	27.402	.85240	2.566	.363	CCODE = .2
ADD HYD	6.33	2&89	86	.61919	141.88	28.348	.85840	2.533	.358	
*S Q(CAP)=233 CFS AT SLOPE = 0.008										
ROUTE MCUNGE	CB6.33	86	8	.61919	141.88	28.343	.85826	2.533	.358	CCODE = .2
ADD HYD	6.43	28& 8	9	.62899	142.95	29.225	.87119	2.066	.355	
*S SUB-BASIN 413 IS WEST OF EAGLE RANCH - COMMERCIAL										
COMPUTE NM HYD	413.00	-	3	.01560	41.91	1.807	2.17217	1.500	4.198	PER IMP= 90.00
*S SUB-BASIN 414 IS WEST OF EAGLE RANCH-COMMERCIAL										
COMPUTE NM HYD	414.00	-	10	.00297	7.99	.344	2.17219	1.500	4.204	PER IMP= 90.00
ADD HYD	6.53	3&10	5	.01857	49.90	2.151	2.17218	1.500	4.199	
ADD HYD	6.63	5& 9	11	.64756	154.10	31.376	.90849	2.033	.372	
*S SUB-BASIN 415 IS WEST OF EAGLE RANCH - COMMERCIAL										
COMPUTE NM HYD	415.00	-	1	.01190	31.97	1.379	2.17218	1.500	4.198	PER IMP= 90.00
*S HYD CB6.73 GOES TO CALABACILLAS ARROYO										
ADD HYD	6.73	1&11	22	.65946	161.52	32.755	.93130	2.000	.383	
*S EAGLE RANCH ROAD										
COMPUTE NM HYD	501.00	-	1	.01000	17.39	1.156	2.16736	1.700	2.718	PER IMP= 90.00
ADD HYD	501.10	14& 1	3	.03446	50.95	2.521	1.37184	1.633	2.310	
ROUTE MCUNGE	501.12	3	7	.03446	48.58	2.521	1.37144	1.667	2.203	CCODE = .1
*S COMMERCIAL										
COMPUTE NM HYD	502.00	-	1	.04350	98.97	3.953	1.70391	1.500	3.555	PER IMP= 60.00
DIVIDE HYD	402.24	19	2	.03209	20.00	2.181	1.27424	1.400	.974	
	402.25	AND	3	.03751	101.01	2.549	1.27424	1.600	4.208	
ADD HYD	502.10	2& 1	5	.07559	118.97	6.134	1.52151	1.500	2.459	
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE										

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	502.RES	5	8	.07559	51.19	6.099	1.51280	1.833	1.058	AC-FT= 2.243
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 38.9526	2.1993	5038								
*S 58	2.268	5038.25								
*S COMMERCIAL										
COMPUTE NM HYD	503.00	-	1	.02350	48.51	2.719	2.16951	1.600	3.225	PER IMP= 90.00
ADD HYD	503.10	1& 3	2	.06101	149.51	5.268	1.61910	1.600	3.829	
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	503.RES	2	5	.06101	9.65	5.007	1.53877	2.233	.247	AC-FT= 4.042
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5000								
*S 10.1924	4.2712	5010								
ADD HYD	503.10	5& 8	10	.13659	59.59	11.105	1.52440	1.833	.682	
*S COMMERCIAL										
COMPUTE NM HYD	504.00	-	1	.02570	55.27	2.881	2.10211	1.567	3.361	PER IMP= 85.00
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE										
ROUTE RESERVOIR	504.RES	1	3	.02570	28.40	2.873	2.09587	1.800	1.727	AC-FT= .856
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	5001								
*S 38.9526	1.1742	5007								
ADD HYD	504.10	3&10	11	.16229	87.92	13.978	1.61489	1.833	.846	
*S EAST OF IRVING BLVD, NORTH OF COORS BLVD - COMMERCIAL										
COMPUTE NM HYD	505.00	-	1	.04970	92.07	4.807	1.81358	1.567	2.895	PER IMP= 70.00
ADD HYD	505.10	1& 7	2	.08416	135.34	7.328	1.63254	1.600	2.513	
ROUTE MCUNGE	505.12	2	9	.08416	129.44	7.286	1.62319	1.766	2.403	CCODE = .1
ADD HYD	505.20	11& 9	2	.24646	212.90	21.264	1.61773	1.800	1.350	
*S ROUTE 505.2 IN 36" PIPE THRU 506'S LOW SPOT; 0.009 FT/FT										
ROUTE MCUNGE	505.22	2	3	.24646	182.57	21.023	1.59942	2.500	1.157	CCODE = .1
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW										
COMPUTE NM HYD	506.00	-	1	.05590	62.07	2.825	.94768	1.600	1.735	PER IMP= 20.00
ADD HYD	506.10	1& 3	2	.30236	186.60	23.849	1.47892	2.500	.964	
*S NATURAL PONDING AREA ON BLACK RANCH TRACT 2										
ROUTE RESERVOIR	506.RES	2	80	.30236	186.62	23.834	1.47800	2.500	.964	AC-FT= .445
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	4996								
*S 15.0	0.09183	4997								
*S 34.0	0.18365	4998								
*S 66.0	0.27548	4999								
*S 74.5	0.31772	4999.2								
*S 87.7	0.33792	4999.4								
*S 103.2	0.35812	4999.6								
*S 118.0	0.37833	4999.8								
*S 140.0	0.39850	5000.0								
*S 157.7	0.41873	5000.2								
*S 180.8	0.43893	5000.4								
*S 201.2	0.45913	5000.6								
*S DIVIDE HYD 506.RES BY RATING CURVE										
*S OVERFL.1 IS THE OVERFLOW THAT IS NOT DETAINED IN THE NATURAL PONDING AREA										
DIVIDE HYD	506.RES01	80	65	.25781	98.57	20.323	1.47800	2.500	.597	
	OVERFL.1	AND	68	.04454	88.05	3.511	1.47800	2.500	3.089	
*S										
*S TOTAL FLOW	DIVIDED FLOW									
*S 66.0	66									
*S 74.5	70									
*S 87.7	75									
*S 103.2	80									
*S 118.0	82									
*S 140.0	90									
*S 157.7	92									
*S 180.8	98									
*S 201.2	100									
*S ROUTE RESERVOIR THROUGH OUTLET PIPES TO CORRALES MAIN CANAL										
ROUTE MCUNGE	506.RES1	65	73	.25781	98.49	20.317	1.47760	2.500	.597	CCODE = .1
*S ADD THE OVERLAND FLOW TO THE MAIN CANAL										
ADD HYD	900.00	99&68	91	.09769	136.34	70.686	13.56675	2.500	2.181	
DIVIDE HYD	800.00	91	77	.09625	91.00	69.643	13.56675	2.333	1.477	
	OVERFL.2	AND	88	.00144	45.34	1.043	13.56675	2.500	49.150	
*S ADD FLOW FROM OUTLET PIPES TO FLOW IN THE MAIN CANAL										
ADD HYD	901.00	77&73	20	.35406	189.49	89.960	4.76396	2.500	.836	
*S HYD NO OVERFL.2 IS THE FLOW THAT JUMPS OVER THE CANAL AND DISCHARGES ON TO BLACK RANCH TRACT 12										

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
*S ROUTE THIS FLOW THROUGH THE CONCRETE BOX CULVERT TO THE INTERSECTION OF										
*S THE 36" PIPES FROM THE POND AT THE SW CORNER OF COORS AND PDN										
ROUTE MCUNGE	17.01	20	21	.35406	189.15	89.934	4.76256	2.566	.835	CCODE = .2
*S SUB-BASIN 11.1W										
*S WEST OF COORS BOULEVARD AND INCLUDES SECTION OF PASEO DEL NORTE										
*S COMMERCIAL AND STATE HIGHWAY DEPARTMENT ROW										
COMPUTE NM HYD	147.00	-	5	.04607	68.90	2.571	1.04655	1.500	2.337	PER IMP= 30.00
*S ROUTING RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.										
ROUTE RESERVOIR	147.RES	5	7	.04607	23.62	2.563	1.04314	1.766	.801	AC-FT= 1.096
*S										
*S OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)								
*S 0	0	4996								
*S 28	1.30	4998								
*S 66	2.66	5000								
DIVIDE HYD	147.RES1	7	25	.04607	23.62	2.563	1.04314	1.766	.801	
	OLF.5	AND	30	.00000	.00	.000	.00000	-.033	.000	
*S ROUTE 147.RES1 THROUGH 2 30" CULVERT PIPES UNDER COORS TO CANAL CBC **										
ROUTE MCUNGE	147.10	25	3	.04607	23.60	2.563	1.04293	1.800	.800	CCODE = .2
*S** ADD THE FLOW FROM NMSHTD POND TO CANAL ***										
ADD HYD	147.12	3&21	10	.40013	200.28	92.496	4.33429	2.533	.782	
*S SECTION OF BASIN 11.1W THAT DRAINS TO CULVERT UNDER COORS										
COMPUTE NM HYD	147A	-	18	.00528	4.48	.126	.44920	1.533	1.328	PER IMP= .00
*S ROUTE 11.1A THROUGH A 24" CULVERT PIPE UNDER COORS TO CANAL CBC **										
ROUTE MCUNGE	147A.1	18	12	.00528	4.49	.126	.44919	1.533	1.331	CCODE = .2
*S** ADD THE FLOW FROM 11.1A TO CANAL ***										
ADD HYD	147.12	10&12	9	.40541	200.43	92.622	4.28374	2.533	.772	
*S BASE FLOW CORRECTION.										
MODIFY TIME	147.12	9	9	.40541	200.43	92.622	4.28374	2.533	.772	
*S AREAS 8.1W TO 11.A ROUTED IN CANAL AND BASE FLOW CORRECTED.										
*S ROUTE CANAL FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **										
ROUTE MCUNGE	18.00	9	3	.40541	196.23	92.170	4.26281	4.500	.756	CCODE = .2
*S BASE FLOW CORRECTION.										
MODIFY TIME	18.00	3	3	.40541	196.23	92.170	4.26281	4.500	.756	
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW CORRECTED										
*S TO 38 CFS MIN.										
*S SUB-BASIN 11.2E										
*S INCLUDES PASEO-DEL-NORTE/COORS INTERSECTION ROW AND BUSINESSES ON EAST										
*S SIDE OF COORS BOULEVARD										
COMPUTE NM HYD	154.00	-	7	.02769	65.94	2.786	1.88678	1.500	3.721	PER IMP= 75.00
*S** ADD 11.2E TO CANAL FLOW. ***										
ADD HYD	326.00	3& 7	5	.43310	196.51	94.956	4.11090	4.500	.709	
*S SUB-BASIN 12.1W										
*S UNDEVELOPED LAND ZONED SU-1, FUTURE SITE OF EAGLE RIDGE APARTMENTS										
COMPUTE NM HYD	156.00	-	3	.03024	25.68	.724	.44920	1.533	1.327	PER IMP= .00
ROUTE MCUNGE	19.00	3	7	.03024	25.32	.724	.44888	1.533	1.308	CCODE = .1
*S SUB-BASIN 12.2 W										
*S INCLUDES EAGLE RANCH ROAD/EMERGENCY SPILLWAY OF PIEDRAS MARCADAS DAM										
COMPUTE NM HYD	158.00	-	1	.03200	30.82	.911	.53392	1.533	1.505	PER IMP= 3.00
ROUTE MCUNGE	20.00	1	8	.03200	28.42	.901	.52785	1.700	1.388	CCODE = .1
*S ROUTE AREA 8.1W TO 11.2E DOWN CANAL TO AREA 12 DISCHARGE POINT. **										
ROUTE MCUNGE	21.00	5	10	.43310	182.13	94.737	4.10139	4.533	.657	CCODE = .2
MODIFY TIME	21.00	10	10	.43310	182.13	94.737	4.10139	4.533	.657	
ADD HYD	162.00	7&10	2	.46334	182.14	95.461	3.86301	4.533	.614	
*S ROUTE FLOWS DOWN CANAL TO AREA 12.2W DISCHARGE POINT. **										
ROUTE MCUNGE	22.00	2	7	.46334	165.57	95.195	3.85224	4.566	.558	CCODE = .2
MODIFY TIME	22.00	7	7	.46334	165.57	95.195	3.85224	4.566	.558	
ADD HYD	165.00	7& 8	3	.49534	165.60	96.095	3.63748	4.566	.522	
*S UNDEVELOPED PROPERTY ZONED SPECIAL USE (SU-1)										
COMPUTE NM HYD	166.00	-	7	.02616	21.42	1.032	.73967	1.600	1.280	PER IMP= 15.40
ADD HYD	330.00	3& 7	8	.52150	165.73	97.127	3.49212	4.566	.497	
ROUTE MCUNGE	23.00	8	5	.52150	156.29	96.941	3.48543	4.600	.468	CCODE = .2
MODIFY TIME	23.00	5	5	.52150	156.29	96.941	3.48543	4.600	.468	
*S ALBAN HILLS										
COMPUTE NM HYD	170.00	-	3	.00000	.00	.00	.56342	1.533	1.774	PER IMP= 5.00
ROUTE MCUNGE	24.00	3	8	.52150	.00	.000	.00000	-.033	.000	CCODE = .2
*S BOSQUE DEL PUEBLO COMMERCIAL SITE										
COMPUTE NM HYD	172.00	-	3	.02206	37.54	1.787	1.51855	1.567	2.659	PER IMP= 55.00
ADD HYD	333.00	3& 8	10	.54356	37.54	1.787	.06163	1.567	.108	
ADD HYD	334.00	5&10	1	1.06506	156.47	98.728	1.73807	4.600	.230	
*S ALBAN HILLS										
COMPUTE NM HYD	174.00	-	3	.05117	52.49	1.595	.58460	1.533	1.603	PER IMP= 5.00
*S ROUTE 14.1W DOWN SECONDARY CHANNEL TO CANAL. **										

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 = 7 NOTATION
ROUTE MCUNGE	25.00	3	5	.05117	51.71	1.594	.58409	1.567	1.579	CCODE = .1
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **										
ROUTE MCUNGE	26.00	1	10	1.06506	149.73	98.593	1.73569	4.633	.220	CCODE = .2
MODIFY TIME	26.00	10	10	1.06506	149.73	98.593	1.73569	4.633	.220	
ADD HYD	338.00	5&10	2	1.11623	178.12	100.187	1.68290	1.567	.249	
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **										
ROUTE MCUNGE	27.00	2	7	1.11623	156.07	99.981	1.67944	1.567	.218	CCODE = .2
MODIFY TIME	27.00	7	7	1.11623	156.07	99.981	1.67944	1.567	.218	
*S ALBAN HILLS										
COMPUTE NM HYD	182.00	-	3	.02560	27.06	.791	.57930	1.533	1.651	PER IMP= 3.00
*S ROUTE AREA 15.1W DOWN SECONDARY CHANNEL TO CANAL. **										
ROUTE MCUNGE	28.00	3	10	.02560	25.86	.787	.57635	1.600	1.578	CCODE = .1
*S ALBAN HILLS										
COMPUTE NM HYD	184.00	-	3	.06380	67.44	1.971	.57930	1.533	1.652	PER IMP= 3.00
*S ROUTE 15.2W DOWN SECONDARY CHANNEL TO CANAL. **										
ROUTE MCUNGE	29.00	3	5	.06380	66.45	1.965	.57744	1.567	1.628	CCODE = .1
ADD HYD	186.00	10& 5	3	.08940	89.72	2.752	.57712	1.600	1.568	
COMPUTE NM HYD	187.00	-	10	.01890	23.22	.832	.82504	1.500	1.920	PER IMP= 19.90
ADD HYD	342.00	3&10	5	.10830	110.45	3.583	.62039	1.567	1.594	
ADD HYD	343.00	5& 7	10	1.22453	266.52	103.564	1.58578	1.567	.340	
*S ALBAN HILLS										
COMPUTE NM HYD	189.00	-	3	.03330	35.19	1.029	.57930	1.533	1.651	PER IMP= 3.00
*S ROUTE AREA 16.1W DOWN SECONDARY CHANNEL TO CANAL.**										
ROUTE MCUNGE	30.00	3	5	.03330	35.16	1.027	.57828	1.567	1.650	CCODE = .2
*S ALBAN HILLS										
COMPUTE NM HYD	191.00	-	3	.06650	70.37	2.055	.57930	1.533	1.653	PER IMP= 3.00
*S ROUTE AREA 16.2W DOWN SECONDARY CHANNEL TO CANAL. **										
ROUTE MCUNGE	31.00	3	7	.06650	68.72	2.037	.57442	1.600	1.615	CCODE = .1
ADD HYD	193.00	5& 7	3	.09980	102.32	3.064	.57571	1.600	1.602	
COMPUTE NM HYD	194.00	-	5	.04840	55.13	1.808	.70032	1.533	1.780	PER IMP= 11.20
ADD HYD	347.00	5& 3	7	.14820	151.10	4.872	.61641	1.567	1.593	
*S ROUTE 8.1W TO 15.2E DOWN CANAL TO AREA 16 DISCHARGE POINT. **										
ROUTE MCUNGE	32.00	10	5	1.22453	186.11	102.833	1.57458	1.600	.237	CCODE = .2
MODIFY TIME	32.00	5	5	1.22453	186.11	102.833	1.57458	1.600	.237	
ADD HYD	348.00	5& 7	5	1.37273	336.23	107.705	1.47114	1.567	.383	
*S ROUTE AREA 8.1W TO 16.3E DOWN CANAL TO AREA 17 DISCHARGE POINT. **										
ROUTE MCUNGE	33.00	5	7	1.37273	257.56	106.999	1.46150	1.567	.293	CCODE = .2
MODIFY TIME	33.00	7	7	1.37273	257.56	106.999	1.46150	1.567	.293	
*S ALBAN HILLS										
COMPUTE NM HYD	200.00	-	3	.01030	9.62	.269	.49005	1.533	1.459	PER IMP= .00
*S ROUTE AREA 17.1W DOWN SECONDARY CHANNEL TO CANAL. **										
ROUTE MCUNGE	34.00	3	10	.01030	8.84	.265	.48326	1.733	1.340	CCODE = .1
COMPUTE NM HYD	208.00	-	3	.02409	23.93	.743	.57830	1.533	1.552	PER IMP= 6.00
ADD HYD	353.00	3&10	5	.03439	23.93	1.008	.54983	1.533	1.087	
ADD HYD	354.00	5& 7	10	1.40712	280.08	108.008	1.43922	1.567	.311	
FINISH										

```
*
* 24 HOUR ALB. DPM  RAINFALL DISTRIBUTION (DPM.RAINTABLE) LAG 3.0 HOURS
START               TIME=0.00 HR  PUNCH CODE=0  PRINT LINES=-6
*                   ********************************************
*                   *   NORTH COORS DRAINAGE MANAGEMENT PLAN   *
*                   *    100 YEAR STORM - 24 HOUR DURATION     *
*                   *       IMPROVED CORRALES MAIN CANAL       *
*                   *              MIDDLE AREA                 *
*                   * CALABACILLAS ARROYO TO LA ORILLA OUTLET  *
*                   *    UPDATED FOR 1996 DRAINAGE CRITERIA    *
*                   ********************************************
*
* SMITH ENGINEERING COMPANY
* 6400 UPTOWN BLVD SUITE 500E
* ALBUQUERQUE, NEW MEXICO 87112
* (505) 884-0700
*
* THE LAND TREATMENT CLASSIFICATIONS IS AS FOLLOWS:
*                   TYPE A= BACKYARD PONDING, LANDSCAPE, AND UNDISTURBED
*                   TYPE B= GRASS
*                   TYPE C= COMPACTED SOIL
*                   TYPE D= IMPERVIOUS AREAS (ROOFS,PAVEMENT)
*
* THE MODEL IS BROKEN UP INTO DIFFERENT SEGMENTS BASED UPON THE
* NUMBER OF ASTERISKS.  THE CODING IS AS FOLLOWS:
*
*                        * * * MAJOR BASIN * * *
*                       ***** ANALYSIS POINT *****
*                          **** SUB-BASIN ****
*                         *** ADD HYDROGRAPHS ***
*                             ** ROUTING **
*                          * DIVIDE HYDROGRAPHS *
*
*
* RAINFALL BASED ON  TYPE=2  RAIN QUARTER=0.0  RAIN ONE=1.90
*                    RAIN SIX=2.2   RAIN DAY=2.65   DT=0.03333
*                    WITH RAINFALL SHIFTED 3.0 HOURS FOR BASE FLOW
*S COMPUTED 24-HOUR RAINFALL DIST BASED ON NOAA ATLAS 2 - PEAK AT 1.4+3.0 HR.
*
RAINFALL            TYPE=2
                    QUARTER=0
                    ONE= 1.90 IN
                    SIX= 2.20 IN
                    DAY= 2.65 IN
                    DT = 0.03333 HR
*S 100-YEAR STORM
*S ONE-HOUR=1.90
*S SIX-HOUR=2.20
*S 24-HOUR=2.65
*
**** SUB-BASIN 8.3E ****
*
*S AREA OF FUTURE EXPANSION FOR RIVERFRONTE ESTATES
*
COMPUTE NM HYD      ID=3 HYD NO=134
                    DA=0.05305 SQ MI
                        A=80
                        B=0
                        C=10
                        D=10
                    TP=0.133333 HR  MASSRAIN=-1
*
* AREA 8.3 E RUNOFF HYDROGRAPH. ENTERS CANAL DIRECTLY.
* ********** SIDE INLET DESIGN Q *********
*
PRINT HYD           ID=3 CODE=1
*
* ADD FLOW IN CORRALES MAIN CANAL COMING FROM CALABACILLAS SYPHON
*
STORE HYD           ID=5 HYD NO=136 INC=0.05 HR  AREA=0.0001 SQ MI
                    FLOW RATES=  38  38  38
                       38   38   38  38  38  38  38  38  38  38  38
                       38   38   38  38  38  38  38  38  38  38  38
                       38   38   38  38  38  38  38  38  38  38  38
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38  38  38  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38  38  38  39  40  41  44  45  46
46  47  47  47  48  49  49  49  49  49  50
50  50  50  50  50  50  49  49  49  49  49
49  48  48  48  47  47  46  46  45  45  45
44  44  44  44  43  43  43  43  43  42  42
42  42  42  42  42  42  42  42  42  41  41
41  41  41  41  41  41  41  41  41  41  41
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39  39  39  39  39  39  39  39  39  39  39
39  39  39  39  39  39  39  39  39  39  39
39  39  39  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38  38  38  38  38  38  38  38  38
38  38  38
```

```
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=6  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
PRINT HYD            ID=6 CODE=0
*
*** ADD AREA 8.3E TO CANAL FLOW.***
*
ADD HYD              ID=6 HYD NO=139 ID=6 ID=3
*
* AREA 8.3E ADDED TO BASE FLOW IN CANAL.
*
PRINT HYD            ID=6 CODE=0
*
** ROUTE 8.3E DOWN CANAL TO 8.1 DISCHARGE POINT. **
*
ROUTE MCUNGE         ID=5 HYD NO=13 INFLOW ID=6  DT=0.0 HR
                     LENGTH=750.0   NS=0   SLOPE=0.0006
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.3E ROUTED DS AND BASE FLOW CORRECTED TO 38 CFS MIN.
*
PRINT HYD            ID=5 CODE=0
*
** ROUTE 8.3E DOWN CANAL TO AREA 10 DISCHARGE POINT. **
*
ROUTE MCUNGE         ID=99 HYD NO=14 INFLOW ID=5  DT=0.0 HR
                     LENGTH=3250.0   NS=0   SLOPE=0.0006
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=99 TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* 8.3E ROUTED DOWN CANAL TO NEXT AP AND BASE FLOW CORRECTED.
*
PRINT HYD            ID=99 CODE=0
*
* * * BASIN 100A * * *
*
* UPDATED HYDROLOGY FOR THE PARADISE HILLS GOLF COURSE
* SOURCE: EASTERLING & ASSOCIATES, PARADISE HILLS GOLF COURSE DRNGE REPORT
*
**** SUB-BASIN 101EA ****
*
COMPUTE NM HYD       ID=1  HYD NO=101EA
                     DA=0.0370 SQ MI
                          A=10.0
                          B=39.0
                          C=25.0
                          D=26.0
                     TP=0.15 HR MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
**** SUB-BASIN 102EA ****
*
COMPUTE NM HYD       ID=2  HYD NO=102EA
                     DA=0.0447 SQ MI
                          A=18.0
                          B=59.0
                          C=13.0
                          D=10.0
                     TP=0.216 HR MASSRAIN=-1
PRINT HYD            ID=2 CODE=1
*
** ROUTE 101EA THROUGH 102EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.0133   FP SLP=0.0133
```

```
                    N=0.030   DIST=40 FT

                    DIST      ELEV
                    0.0       101.0
                    10.0      100.0
                    30.0      100.0
                    40.0      101.0
*
ROUTE MCUNGE        ID=3   HYD NO=101A.1 INFLOW ID=1
                    DT=0.0  L=2050
                    NS=0  SLOPE=0.0133   MATCODE=0
                    REGCODE=0      CCODE=0

PRINT HYD           ID=3        CODE=1
*
*** ADD 102EA AND 101EA1 AT CONFLUENCE OF 102EA AND 10E6A ***
*
ADD HYD             ID=4       HYD NO = 102EA.1
                    ID I=2     ID II=3

PRINT HYD           ID=4       CODE=1
*
**** SUB-BASIN 103EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE,
* ALSO INCLUDES A SMALL PORTION OF LYONS BLVD
*
COMPUTE NM HYD      ID=5  HYD NO=103EA
                    DA=0.0067 SQ MI
                         A=10.0
                         B=37.0
                         C=23.0
                         D=30.0
                    TP=0.133 HR MASSRAIN=-1
PRINT HYD           ID=5 CODE=1
*
**** SUB-BASIN 104EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD      ID=6  HYD NO=104EA
                    DA=0.0366 SQ MI
                         A=10.0
                         B=39.0
                         C=25.0
                         D=26.0
                    TP=0.133 HR MASSRAIN=-1
PRINT HYD           ID=6 CODE=1
*
** ROUTE 103EA THRU 104EA ***
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=2
                     MIN ELEV=100.0 FT      MAX ELEV=101.8 FT
                     CH SLP=0.050   FP SLP=0.050
                     N=0.020   DIST=33 FT
                     N=0.030   DIST=38 FT

                     DIST      ELEV
                     0.0       101.33
                     20.0      100.50
                     32.0      100.00
                     33.0      100.80
                     38.0      101.80

ROUTE MCUNGE         ID=7   HYD NO=103EA.4 INFLOW ID=5
                     DT=0.0  L=400
                     NS=0  SLOPE=0.050   MATCODE=0
                     REGCODE=0      CCODE=0

PRINT HYD            ID=7 CODE=1
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=2
                     MIN ELEV=100.0 FT      MAX ELEV=101.8 FT
                     CH SLP=0.0107   FP SLP=0.0107
                     N=0.020   DIST=33 FT
                     N=0.030   DIST=38 FT
```

```
                        DIST      ELEV
                        0.0       101.33
                        20.0      100.50
                        32.0      100.00
                        33.0      100.80
                        38.0      101.80

ROUTE MCUNGE            ID=8   HYD NO=105EA.41 INFLOW ID=7
                        DT=0.0  L=1500
                        NS=0  SLOPE=0.0107   MATCODE=0
                        REGCODE=0      CCODE=0

PRINT HYD               ID=8 CODE=1
*
*** ADD ROUTED 103EA.4 AND 104EA ***
*
ADD HYD                 ID=9       HYD NO = 103EA.4
                        ID I=8     ID II=6

PRINT HYD               ID=9       CODE=1
*
**** SUB-BASIN 105EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD          ID=10  HYD NO=105EA
                        DA=0.0236 SQ MI
                             A=10.0
                             B=39.0
                             C=25.0
                             D=26.0
                        TP=0.176 HR   MASSRAIN=-1
PRINT HYD               ID=10   CODE=1
*
** ROUTE FLOW COMING FROM 103EA.4 THRU 105EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=2
                        MIN ELEV=100.0 FT      MAX ELEV=101.8 FT
                        CH SLP=0.0111   FP SLP=0.0111
                        N=0.020   DIST=33 FT
                        N=0.030   DIST=38 FT

                        DIST      ELEV
                        0.0       101.33
                        20.0      100.50
                        32.0      100.00
                        33.0      100.80
                        38.0      101.80

ROUTE MCUNGE            ID=11   HYD NO=1041EA.5 INFLOW ID=9
                        DT=0.0  L=900
                        NS=0  SLOPE=0.0111   MATCODE=0
                        REGCODE=0      CCODE=0

PRINT HYD               ID=11        CODE=1
*
*** ADD 104EA.5 FLOW ROUTED THRU 105EA TO BASIN 105EA HYDROGRAPH ***
*
ADD HYD                 ID=12       HYD NO = 104EA.5
                        ID I=10     ID II=11

PRINT HYD               ID=12 CODE=1
*
****SUB-BASIN 106EA ****
*
* GOLF COURSE AND SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD          ID=13  HYD NO=106EA
                        DA=0.0263 SQ MI
                             A=19.0
                             B=63.0
                             C=11.0
                             D=7.0
                        TP=0.194 HR  MASSRAIN=-1
PRINT HYD               ID=13 CODE=1
```

```
*
** ROUTE FLOW 104EA.5 THRU 106EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.0100   FP SLP=0.0100
                      N=0.030   DIST=40 FT

                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0

ROUTE MCUNGE          ID=14   HYD NO=101EA.1 INFLOW ID=12
                      DT=0.0  L=1000
                      NS=0  SLOPE=0.0100  MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=14 CODE=1
*
*** ADD 106EA.1 FLOW ROUTED THRU 106EA TO BASIN 106EA HYDROGRAPH ***
*
ADD HYD               ID=15       HYD NO = 104EA.5
                      ID I=14     ID II=13

PRINT HYD             ID=15 CODE=1
*
** ROUTE FLOW COMING FROM 102EA THRU 106EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.0104   FP SLP=0.0104
                      N=0.030   DIST=40 FT

                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0

ROUTE MCUNGE          ID=16   HYD NO=102EA.6 INFLOW ID=4
                      DT=0.0  L=575
                      NS=0  SLOPE=0.0104   MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=16 CODE=1
*
*** ADD ROUTED 102EA.6 TO ROUTED 104EA.5 HYD ***
*
ADD HYD               ID=17       HYD NO = 106EA.25
                      ID I=15     ID II=16

PRINT HYD             ID=17 CODE=1
*
**** SUB-BASIN 107EA ****
*
* SINGLE FAMILY RESIDENTIAL @ 2 DU PER ACRE
*
COMPUTE NM HYD        ID=19  HYD NO=107EA
                      DA=0.0213 SQ MI
                            A=20.0
                            B=64.0
                            C=10.0
                            D=6.0
                      TP=0.181 HR  MASSRAIN=-1
PRINT HYD             ID=19 CODE=1
*
** ROUTE FLOW COMING FROM 106EA.25 THRU 107EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.5 FT
                      CH SLP=0.0094.  FP SLP=0.0094
                      N=0.030   DIST=55 FT

                      DIST      ELEV
```

```
                      0.0       101.5
                      10.0      100.0
                      45.0      100.0
                      55.0      101.5

ROUTE MCUNGE          ID=2   HYD NO=107EA.6 INFLOW ID=17
                      DT=0.0  L=1600
                      NS=0  SLOPE=0.0094   MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=2 CODE=1
*
*** ADD ROUTED 106EA.5 TO  BASIN 107EA HYD ***
*
ADD HYD               ID=3       HYD NO = 107EA.6
                      ID I=2     ID II=19
*
PRINT HYD             ID=3 CODE=1
*
**** SUB-BASIN 108EA ****
*
* GOLF COURSE, PARKING LOT AND SINGLE FAMILY RESIDENTIAL @ 2 DU/ACRE
*
COMPUTE NM HYD        ID=7  HYD NO=108EA
                      DA=0.0470 SQ MI
                            A=17.0
                            B=58.0
                            C=13.0
                            D=12.0
                      TP=0.254 HR  MASSRAIN=-1
PRINT HYD             ID=7 CODE=1
*
*** ADD 107EA TO BASIN HYD 108EA ***
*
ADD HYD                ID=8       HYD NO = 107EA.8
                       ID I=3     ID II=7

PRINT HYD              ID=8 CODE=1
*
** ROUTE 107EA.8 THRU RESERVOIR (DUCK POND & EMPTY HOLE) **
*
ROUTE RESERVOIR       ID=9   HYD=107EA.8  INFLOW=8   CODE=5

                     OUTFLOW(CFS)  STORAGE(AF)   ELEV(FT)
                       0.00           0.00        5241.0
                       0.01           0.22        5242.0
                       0.02           0.54        5243.0
                       0.03           0.95        5244.0
                       0.035          1.20        5244.5
                       0.04           1.44        5245.0
                       0.045          2.70        5245.5
                       0.05           3.96        5246.0
                      14.00           4.19        5246.1
                      27.00           4.41        5246.2
                      52.00           4.64        5246.3
                      76.00           4.86        5246.4
                     108.00           5.08        5246.5
                     139.00           5.30        5246.6
                     177.00           5.53        5246.7
                     215.00           5.75        5246.8
                     258.00           5.98        5246.9
                     300.00           6.20        5247.0
                     500.00           9.00        5250.0
                    1000.00          12.00        5255.0
*
**** SUB-BASIN 109EA ****
*
* GOLF COURSE, AND OTHER RECREATION
*
COMPUTE NM HYD        ID=10  HYD NO=109EA
                      DA=0.006 SQ MI
                           A=16.0
                           B=51.0
                           C=10.0
                           D=23.0
                      TP=0.133 HR  MASSRAIN=-1
```

```
PRINT HYD            ID=10 CODE=1
*
** ROUTE FLOW COMING FROM RESERVOIR THRU 109EA **
*
COMPUTE RATING CURVE  CID=1   VS NO=1     NO SEGS=1
                      MIN ELEV=100.0 FT      MAX ELEV=101.0 FT
                      CH SLP=0.018   FP SLP=0.018
                      N=0.030   DIST=40 FT

                      DIST      ELEV
                      0.0       101.0
                      10.0      100.0
                      30.0      100.0
                      40.0      101.0

ROUTE MCUNGE          ID=11   HYD NO=109EA.78 INFLOW ID=9
                      DT=0.0  L=500
                      NS=0  SLOPE=0.018   MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=11        CODE=1
*
*** ADD ROUTED POND OUTFLOW TO BASIN 109EA HYD ***
*
ADD HYD               ID=12       HYD NO = 109EA.87
                      ID I=10     ID II=11

PRINT HYD             ID=12       CODE=1
*
**** SUB-BASIN 110EA ****
*
* PKG LOT, CLUBHOUSE, ENTR. RD, PROSHOP, BED & BRKFST
*
COMPUTE NM HYD        ID=13  HYD NO=110EA
                      DA=0.006 SQ MI
                           A=5.0
                           B=15.0
                           C=10.0
                           D=70.0
                      TP=0.133 HR  MASSRAIN=-1
PRINT HYD             ID=13 CODE=1
*
*** ADD SUB-BASIN 109EA TO SUB-BASIN 110EA ***
*
ADD HYD               ID=14    HYD NO=110EA.1
                      ID I=12  ID II=13
PRINT HYD             ID=14    CODE=1
*
* SOURCE: SMITH ENGINEERING COMPANY
*
** ROUTE 110EA.1 THROUGH 104 **
*S ROUTING 110EA.1 ON GOLF COURSE RD AND BRYAN AVE
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0143  FP SLOPE=0.0143
                      N=0.033          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67          0.1       0
                      24       0.48         47.9       0
                      48       2.67

ROUTE MCUNGE          ID=3   HYD NO=103.22 INFLOW ID=14
                      DT=0.0  L=2650
                      NS=0  SLOPE=0.0143   MATCODE=0
                      REGCODE=0  CCODE=0
PRINT HYD             ID=3   CODE=1
*
**** SUB-BASIN 104 ****
*
*S RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
COMPUTE NM HYD        ID=1  HYD NO = 104
                      DA= 0.0672  SQUARE MI
                                A=20
```

```
                              B=25
                              C=15
                              D=40
                    TP=0.2191 HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
*** ADD HYD 104 TO HYD 103.22 ***
*
ADD HYD             ID=2   HYD NO=104.1   ID I=1  ID II=3
PRINT HYD           ID=2   CODE=1
*
** ROUTE 104.1 THRU 105 **
*S ROUTING 104.1 ON CADDIE RD
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                    MIN ELEV=0       MAX ELEV=2.67
                    CH SLOPE=0.0368  FP SLOPE=0.0368
                    N=0.033          DIST=48
                    DIST     ELEV        DIST      ELEV
                     0       2.67        0.1        0
                    24       0.48       47.9        0
                    48       2.67
*
ROUTE MCUNGE        ID=3   HYD NO=104.12 INFLOW ID=2
                    DT=0.0  L=1850
                    NS=0  SLOPE=0.0368   MATCODE=0
                    REGCODE=0      CCODE=0
PRINT HYD           ID=3   CODE=1
*
**** SUB-BASIN 105 ****
*
* RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
COMPUTE NM HYD      ID=1  HYD NO = 105
                    DA= 0.1027  SQUARE MI
                              A=73
                              B=10
                              C=5
                              D=12
                    TP=0.1876  HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
*** ADD HYD 105 TO HYD 104.12 ***
*S**** HYD 105.1 IS AP #2     *****
*
ADD HYD             ID=2   HYD NO=105.1   ID I=1  ID II=3
PRINT HYD           ID=2   CODE=1
*
** ROUTE 105.1 ON CONGRESS AVE TO EXISTING DET POND **
*S ROUTING 105.1 ON CONGRESS AVE TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                    MIN ELEV=0       MAX ELEV=2
                    CH SLOPE=0.0251  FP SLOPE=0.0251
                    N=0.020          DIST=48
                    DIST     ELEV        DIST      ELEV
                     0       2.00        0.1        0
                    24       0.48       47.9        0
                    48       2.00
*
ROUTE MCUNGE        ID=4   HYD NO=105.12 INFLOW ID=2
                    DT=0.0  L=1950
                    NS=0  SLOPE=0.0251   MATCODE=0
                    REGCODE=0      CCODE=0
PRINT HYD           ID=4   CODE=1
*
**** SUB-BASIN 106 ****
*
*S SUB-BASIN 106 IS NORTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD      ID=1  HYD NO = 106
                    DA= 0.0954  SQUARE MI
                              A=80
                              B=5
                              C=5
```

```
                        D=10
                    TP=0.1904  HR   MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
**** SUB-BASIN 106A1 ****
*
*S SUB-BASIN 106A1 IS SKY CREST ESTATES
* SOURCE: D. MARK GOODWIN & ASSOCIATES, SKY CREST ESTATES DRNGE REPORT 2/95
*
COMPUTE NM HYD      ID=7  HYD NO = 106A1
                    DA= 0.00846  SQUARE MI
                              A=0
                              B=27.74
                              C=27.74
                              D=44.52
                    TP=0.1333  HR   MASSRAIN=-1
PRINT HYD           ID=7 CODE=1
*
** ROUTE RESERVOIR **
*S ROUTING RESERVOIR WITH 21" DIAMETER ORIFACE
* EXISTING POND @ SW CORNER OF ARROWHEAD AVE. AND CHANTILLY RD.
*
ROUTE RESERVOIR     ID=9   HYD NO=106A1.RES   INFLOW=7   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0               0              5057
                        4.675           0.062            5058
                       16.379           0.140            5059
                       22.510           0.235            5060
                       27.298           0.349            5061
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5057
*S          4.675           0.062            5058
*S         16.379           0.140            5059
*S         22.510           0.235            5060
*S         27.298           0.349            5061
*
*S ROUTING 106A1.RES ON EXISTING ASPHALT SWALE TO DISCHARGE ON CONGRESS AVE.
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=3
                      CH SLOPE=0.109  FP SLOPE=0.109
                      N=0.017          DIST=8.1
                      DIST     ELEV         DIST      ELEV
                       0        3           0.1        0
                       8        0           8.1        3
*
ROUTE MCUNGE          ID=10   HYD NO=106A1.01 INFLOW ID=9
                      DT=0.0  L=925
                      NS=0  SLOPE=0.0216   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=10   CODE=1
*
**** SUB-BASIN 107 ****
*
*S SUB-BASIN 107 IS SOUTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD        ID=2  HYD NO = 107
                      DA= 0.0291  SQUARE MI
                                A=10
                                B=29.2
                                C=15
                                D=45.8
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=2 CODE=1
*
*S ROUTING 107 ON CONGRESS AVE TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0216  FP SLOPE=0.0216
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67         0.1        0
                      24       0.48        47.9        0
                      48       2.67
```

```
*
ROUTE MCUNGE          ID=3   HYD NO=107.02 INFLOW ID=2
                      DT=0.0  L=925
                      NS=0  SLOPE=0.0216   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3   CODE=1
*
*** ADD HYD 107.02 TO HYD 105.12 ***
*
ADD HYD               ID=2     HYD NO=107.1   ID I=4  ID II=3
PRINT HYD             ID=2     CODE=1
*
*** ADD HYD 107.1 TO HYD 106 ***
*
ADD HYD               ID=3     HYD NO=107.2   ID I=1  ID II=2
PRINT HYD             ID=3     CODE=1
*
*** ADD HYD 107.2 TO HYD 106A1.01 ***
*
ADD HYD               ID=11     HYD NO=107.3   ID I=3  ID II=10
PRINT HYD             ID=11     CODE=1
*
**** SUB-BASIN 108 ****
*
*S RESIDENTIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 108
                      DA= 0.0240  SQUARE MI
                                A=10
                                B=27.4
                                C=15
                                D=47.6
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S ROUTING 108 ON STONE HILLS RD TO EXISTING DETENTION POND THRU CACTUS HILLS
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.04    FP SLOPE=0.04
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67         0.1        0
                      24       0.48        47.9        0
                      48       2.67
*
ROUTE MCUNGE          ID=2   HYD NO=108.02 INFLOW ID=1
                      DT=0.0  L=825
                      NS=0  SLOPE=0.04     MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2   CODE=1
*
*** ADD HYD 108.02 TO HYD 107.3 ***
*
ADD HYD               ID=4     HYD NO=108.1   ID I=2  ID II=11
PRINT HYD             ID=4     CODE=1
*
**** SUB-BASIN 109 ****
*
*S SUB-BASIN 109 IS PART OF CACTUS HILLS AND EXISTING DET BASIN
*
COMPUTE NM HYD        ID=1  HYD NO = 109
                      DA= 0.0207  SQUARE MI
                                A=20
                                B=22.5
                                C=15
                                D=42.5
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 109 TO HYD 108.1 ***
*S**** HYD 109.1 IS AP #3     *****
*
ADD HYD               ID=2     HYD NO=109.1   ID I=1  ID II=4
PRINT HYD             ID=2     CODE=1
*
```

```
*  FUTURE DETENTION BASIN IN BASIN 109
*S SOURCE: WILSON & CO, AHYMO FOR SPECIAL ASSESMENT DISTRICT 224
*
ROUTE RESERVOIR       ID=66   HYD NO=109.RES   INFLOW=2   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0            5069
                            7            0.98            5070
                           25            2.41            5071
                           52            3.97            5072
                           82            5.65            5073
                          112            7.45            5074
                          140            9.37            5075
                          160           11.42            5076
                          178           13.59            5077
                          195           15.89            5078
*S
*S         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S                0               0            5069
*S                7            0.98            5070
*S               25            2.41            5071
*S               52            3.97            5072
*S               82            5.65            5073
*S              112            7.45            5074
*S              140            9.37            5075
*S              160           11.42            5076
*S              178           13.59            5077
*S              195           15.89            5078
*
* * * BASIN 200 * * *
*
**** SUB-BASIN 201 ****
*
* RESIDENTIAL
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, TABLE 1
*
COMPUTE NM HYD        ID=1  HYD NO = 201
                      DA= 0.0258  SQUARE MI
                                A=75
                                B=10
                                C=5
                                D=10
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
** ROUTE 201 THRU 202 **
*S ROUTING 201 ON CROYDEN ST TO EXISTING DETENTION POND
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0241  FP SLOPE=0.0241
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67          0.1        0
                      24       0.48         47.9        0
                      48       2.67
*
ROUTE MCUNGE          ID=2   HYD NO=201.02 INFLOW ID=1
                      DT=0.0  L=1080
                      NS=0  SLOPE=0.0241   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2   CODE=1
*
**** SUB-BASIN 202 ****
*
* SOURCE OF AREA: T.E.C. JAN, 1987 DRAINAGE REPORT, BASIN E
*
COMPUTE NM HYD        ID=1  HYD NO = 202
                      DA= 0.0288  SQUARE MI
                                A=10
                                B=27.7
                                C=15
                                D=47.3
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 202 TO HYD 201.02 ***
```

```
*S**** HYD 202.1 IS AP #4     *****
*
ADD HYD              ID=4     HYD NO=202.1   ID I=1  ID II=2
PRINT HYD            ID=4     CODE=1
*
*S EXISTING DROP INLET IN BASIN 202
* SOURCE: B.H. FEB, 1992 CACTUS RIDGE DRAINAGE REPORT, HYMO PRINTOUT
*
ROUTE RESERVOIR      ID=2   HYD NO=202.RES1   INFLOW=4   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0               0              5138.7
                        20.12           0.0009           5139.7
                        24.07           0.0019           5140.7
                        41.69           0.0028           5141.7
                        53.82           0.0037           5142.7
                        63.69           0.0047           5143.7
                        70.59           0.0054           5144.5
                        74.58           0.0111           5145.0
                        81.98           0.0603           5146.0
                        83.46           0.1024           5146.2
                        87.97           0.1700           5146.5
                        94.77           0.2611           5147.0
*S
*S      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*          0               0              5138.7
*        20.12           0.0009           5139.7
*        24.07           0.0019           5140.7
*        41.69           0.0028           5141.7
*        53.82           0.0037           5142.7
*        63.69           0.0047           5143.7
*        70.59           0.0054           5144.5
*S       74.58           0.0111           5145.0
*S       81.98           0.0603           5146.0
*        83.46           0.1024           5146.2
*        87.97           0.1700           5146.5
*        94.77           0.2611           5147.0
*
*  EXISTING DETENTION BASIN IN BASIN 401
*S ROUTING RESERVOIR WITH 21" ORIFACE
* SOURCE: B.H. FEB, 1992 CACTUS RIDGE DRAINAGE REPORT, HYMO PRINTOUT
*
ROUTE RESERVOIR      ID=4   HYD NO=202.RES2   INFLOW=2   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                          0               0              5114
                        11.58           0.0026           5115
                        16.38           0.0052           5116
                        20.06           0.0078           5117
                        23.16           0.0091           5118
                        25.89           0.0521           5119
                        28.37           0.1097           5120
                        30.64           0.1829           5121
                        32.75           0.2747           5122
                        34.74           0.3856           5123
                        36.62           0.5174           5124
                        38.41           0.6717           5125
                        40.11           0.8496           5126
                        41.76           1.03             5127
                         61             1.08             5127.25
                         94             1.13             5127.5
                        136             1.18             5127.75
                        185             1.23             5128
*S
*S      OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*          0               0              5114
*        11.58           0.0026           5115
*        16.38           0.0052           5116
*        20.06           0.0078           5117
*        23.16           0.0091           5118
*        25.89           0.0521           5119
*        28.37           0.1097           5120
*        30.64           0.1829           5121
*        32.75           0.2747           5122
*        34.74           0.3856           5123
*        36.62           0.5174           5124
*S       38.41           0.6717           5125
*S       40.11           0.8496           5126
```

```
*          41.76          1.03          5127      EXISTING TOP OF POND
*           61            1.08          5127.25
*           94            1.13          5127.5
*          136            1.18          5127.75
*          185            1.23          5128
*
* DIVIDE HYD 202.RES2 BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD            INFLOW ID=4   Q=41.76    ID I=8    HYD NO=202.03
                                                ID II=11  HYD NO=OLF.2
PRINT HYD             ID=8  CODE=1
PRINT HYD             ID=11 CODE=1
*
*S ROUTE 202.RES2 THRU ASSUMED 36" PIPE IN PARADISE BLVD
* PIPE SIZE AND SLOPE WAS NOT DETERMINED
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.05
                           DIAM=3 FT  N=0.015
ROUTE MCUNGE          ID=6  HYD NO=202.02  INFLOW ID=8
                      DT=0.0  L=760
                      NS=0  SLOPE=0.05     MATCODE=0
                      REGCODE=0      CCODE=0

PRINT HYD             ID=6  CODE=1
*
* * * BASIN 300 * * *
*
**** SUB-BASIN 301 ****
*
*S RESIDENTIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 301
                      DA= 0.0182  SQUARE MI
                                A=10
                                B=25
                                C=15
                                D=50
                      TP=0.1579 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S ROUTING 301 ON PARADISE BLVD TO SUB-BASIN 304
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0499  FP SLOPE=0.0499
                      N=0.017          DIST=48
                      DIST     ELEV         DIST      ELEV
                       0       2.67          0.1       0
                      24       0.48         47.9       0
                      48       2.67
*
ROUTE MCUNGE          ID=2   HYD NO=301.02 INFLOW ID=1
                      DT=0.0  L=1765
                      NS=0  SLOPE=0.0499   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=2   CODE=1
*
**** SUB-BASIN 302 ****
*
*S METHODIST CHURCH PROPERTY
*
COMPUTE NM HYD        ID=1  HYD NO = 302
                      DA= 0.0043  SQUARE MI
                                A=20
                                B=30
                                C=0
                                D=50
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*S ROUTING 302 ON PARADISE BLVD TO SUB-BASIN 304
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.0443  FP SLOPE=0.0443
                      N=0.017          DIST=48
```

```
                      DIST     ELEV          DIST      ELEV
                       0       2.67          0.1        0
                      24       0.48         47.9        0
                      48       2.67
*
ROUTE MCUNGE          ID=5   HYD NO=302.02 INFLOW ID=1
                      DT=0.0  L=2165
                      NS=0  SLOPE=0.0443   MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=5   CODE=1
*
*** ADD HYD 301.02 AND 302.02 ***
*
ADD HYD               ID=4     HYD NO=302.1   ID I=2  ID II=5
PRINT HYD             ID=4     CODE=1
*
**** SUB-BASIN 303 ****
*
*S COMMERCIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 303
                      DA= 0.0669  SQUARE MI
                                A=51
                                B=16.6
                                C=0
                                D=32.4
                      TP=0.1773 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*  EXISTING DETENTION BASIN IN BASIN 303
*S ROUTING RESERVOIR WITH 21" OUTLET WITH 2.6% SLOPE OF PIPE
*  ASSUME NO SEDIMENT VOLUME DISPLACEMENT
*  SOURCE OF TOTAL POND CAPACITY AND SIZE OF OUTLET PIPE:
*  SOURCE: ISAACSON AND ARFMAN OCT, 1990 DRAINAGE REPORT
*
ROUTE RESERVOIR       ID=5   HYD NO=303.RES   INFLOW=1   CODE=1
                       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0              5099
                          11.58             0.15           5100
                          16.37             0.30           5101
                          20.06             0.45           5102
                          23.16             0.60           5103
                          25.89             0.75           5104
                          26.00             0.91           5105
                          27.00             1.07           5106
                          28.00             1.23           5107
                          29.00             1.39           5108
                          30.00             1.55           5109
                          31.00             1.71           5110
                          32.00             1.87           5111
                          33.00             2.03           5112
                          34.00             2.11           5112.5   EXISTING TOP OF POND
                          53.00             2.15           5112.75
                          86.00             2.19           5113
                          128.0             2.23           5113.25

*S
*S          OUTFLOW(CFS)      STORAGE(AC-FT)     ELEV(FT)
*              0                 0                5099
*            11.58               0.15             5100
*            16.37               0.30             5101
*            20.06               0.45             5102
*            23.16               0.60             5103
*            25.89               0.75             5104
*            26.00               0.91             5105
*            27.00               1.07             5106
*            28.00               1.23             5107
*S           29.00               1.39             5108
*S           30.00               1.55             5109
*            31.00               1.71             5110
*            32.00               1.87             5111
*            33.00               2.03             5112
*            34.00               2.11             5112.5
*            53.00               2.15             5112.75
*            86.00               2.19             5113
*            128.0               2.23             5113.25
```

```
*
* DIVIDE HYD 303.RES BY MAXIMUM PIPE OUTFLOW *
*                    CHANGE ID12 TO ID 16 FOR EXIST COND
*
DIVIDE HYD           INFLOW ID=5   Q=34    ID I=8     HYD NO=303.03
                                           ID II=16   HYD NO=OLF.3
PRINT HYD            ID=8  CODE=1
*                    CHANGE ID12 TO ID 16 FOR EXIST COND
PRINT HYD            ID=16 CODE=1
*
*S ROUTE 303.RES THRU 304 IN ASSUMED 36" PIPE
* PIPE SIZE AND SLOPE WERE NOT DETERMINED
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.015
                           DIAM=3 FT  N=0.015
ROUTE MCUNGE         ID=2  HYD NO=303.02  INFLOW ID=8
                     DT=0.0  L=1000
                     NS=0  SLOPE=0.015    MATCODE=0
                     REGCODE=0      CCODE=0
PRINT HYD            ID=2  CODE=1
*
** ROUTE OLF.3 THRU 305 TO PARADISE BLVD **
* DELETE ROUTE FOR EXISTING CONDITIONS
* COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
*                       MIN ELEV=0       MAX ELEV=0.67
*                       CH SLOPE=0.0128  FP SLOPE=0.0128
*                       N=0.017          DIST=48
*                       DIST     ELEV          DIST      ELEV
*                        0       0.67          0.1        0
*                       24       0.48         47.9        0
*                       48       0.67
* *
* ROUTE MCUNGE         ID=16    HYD NO=OLF.32 INFLOW ID=12
*                      DT=0.0  L=1250
*                      NS=0  SLOPE=0.0128   MATCODE=0
*                      REGCODE=0      CCODE=0
* PRINT HYD            ID=16    CODE=1
*
**** SUB-BASIN 304 ****
*
*S INCLUDES AREA FROM PARADISE BLVD - COMMERCIAL
*
COMPUTE NM HYD       ID=1  HYD NO = 304
                     DA=0.0349  SQUARE MI
                                A=80
                                B=5
                                C=5
                                D=10
                     TP=0.1429 HR   MASSRAIN=-1
PRINT HYD            ID=1  CODE=1
*
*** ADD HYD 304 TO HYD 302.02 ***
*
ADD HYD              ID=7     HYD NO=304.1   ID I=1  ID II=4
PRINT HYD            ID=7     CODE=1
*
*** ADD HYD 304.1 TO HYD OLF.32 ***
*
ADD HYD              ID=5     HYD NO=304.2   ID I=7  ID II=16
PRINT HYD            ID=5     CODE=1
*
* DIVIDE HYD 304.1 BY MAXIMUM INFLOW OF CATCH BASINS *
*S DIVIDE AT MH# S-702
*
DIVIDE HYD           INFLOW ID=5   Q=20    ID I=4    HYD NO=CB1
                                           ID II=7   HYD NO=304.13
PRINT HYD            ID=4  CODE=1
PRINT HYD            ID=7  CODE=1
*
*** ADD PIPE HYD 303.02 TO HYD CB1 ***
*
ADD HYD              ID=5     HYD NO=CB1.1   ID I=2  ID II=4
PRINT HYD            ID=5     CODE=1
*
*** ADD HYD 304 TO HYD 302.02 ***
*
ADD HYD              ID=2     HYD NO=CB1.2   ID I=5  ID II=6
```

```
PRINT HYD             ID=2     CODE=1
*
**** SUB-BASIN 305 ****
*
*S DOES NOT INCLUDE AREA FROM PARADISE BLVD - COMMERCIAL
*
COMPUTE NM HYD        ID=17  HYD NO = 305
                      DA= 0.0391  SQUARE MI
                                A=25
                                B=20
                                C=10
                                D=45
                      TP=0.1807 HR   MASSRAIN=-1
PRINT HYD             ID=17  CODE=1
*
*
* * * BASIN 400 * * *
*
**** SUB-BASIN 401 ****
*
*S CACTUS RIDGE SUBDIVISION
*
* SOURCE OF AREA: B.H. FEB 1992 DRAINAGE REPORT
*
COMPUTE NM HYD        ID=1  HYD NO = 401
                      DA= 0.0236 SQUARE MI
                                A=10
                                B=22.3
                                C=15
                                D=52.7
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD OLF.2 TO SUB-BASIN 401 ***
*
ADD HYD               ID=3     HYD NO=401.1  ID I=1  ID II=11
PRINT HYD             ID=3     CODE=1
*
* DIVIDE HYD 401 BY MAXIMUM INFLOW OF CATCH BASINS, WEST OF SUB-BASIN 401,
* ALONG PARADISE ROAD (7 CB AT 10 CFS EACH)
*
DIVIDE HYD            INFLOW ID=3   Q=70    ID I=4    HYD NO=CB2
                                          ID II=5    HYD NO=401.13
PRINT HYD             ID=4  CODE=1
PRINT HYD             ID=5  CODE=1
*
**** SUB-BASIN 402 ****
*
*S SUB-BASIN 402 IS PART OF WEST PARK APARTMENTS
* SOURCE: D.M.G. MAY 1994 DRAINAGE REPORT
*
COMPUTE NM HYD        ID=1  HYD NO = 402
                      DA=0.0088  SQUARE MI
                                A=0
                                B=28.6
                                C=28.7
                                D=42.7
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1 CODE=1
*
*** ADD OLF HYD 401.13 TO 402 ***
*
ADD HYD               ID=6    HYD NO=402.1   ID I=5  ID II=1
PRINT HYD             ID=6     CODE=1
*
*** ADD OLF HYD 304.13 TO OLF HYD 402.1 ***
*S OLF HYD 402.2 CONTINUES SOUTH EAST ON PARADISE ROAD
*S**** OLF HYD 402.2 IS AP #5     *****
*
ADD HYD               ID=18     HYD NO=402.2   ID I=6  ID II=7
PRINT HYD             ID=18     CODE=1
*
** ROUTE 402.2 THRU 502 ON PARADISE BLVD **
*S ROUTING 402.2 TO DETENTION POND IN 503
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
```

```
                    MIN ELEV=0        MAX ELEV=2.67
                    CH SLOPE=0.0548   FP SLOPE=0.0548
                    N=0.017           DIST=48
                    DIST      ELEV          DIST      ELEV
                     0        2.67           0.1       0
                    24        0.48          47.9       0
                    48        2.67
*
ROUTE MCUNGE        ID=20     HYD NO=402.23 INFLOW ID=18
                    DT=0.0  L=1350
                    NS=0  SLOPE=0.0548    MATCODE=0
                    REGCODE=0       CCODE=0
PRINT HYD           ID=20     CODE=1
*
*** ADD OLF HYD 402.23 TO 305 ***
*
ADD HYD             ID=19     HYD NO=305.1  ID I=17  ID II=20
PRINT HYD           ID=19     CODE=1
*
*** ADD HYD CB1.2 TO HYD CB2 ***
*S**** PIPE HYD CB2.1 IS AP #6     *****
*
ADD HYD             ID=6      HYD NO=CB2.1    ID I=2  ID II=4
PRINT HYD           ID=6      CODE=1
*
**** SUB-BASIN 403 ****
*S SUB-BASIN 403 IS PART OF WEST PARK APARTMENTS
* SOURCE: D.M.G. MAY 1994 DRAINAGE REPORT
*
COMPUTE NM HYD      ID=1  HYD NO = 403
                    DA= 0.0144  SQUARE MI
                              A=0
                              B=22.9
                              C=22.9
                              D=54.2
                    TP=0.1333  HR    MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
*
* DIVIDE HYD 403 BY MAXIMUM INFLOW OF POND INLET IN WEST PARK APARTMENTS
*. SOURCE OF DIVIDE IS D.M.G. MAY, 1994 DRAINAGE REPORT
*S OLF HYD 403.13 IS A NONCONTRIBUTING POND
*
DIVIDE HYD          INFLOW ID=1   Q=3      ID I=2    HYD NO=CB3
                                          ID II=4   HYD NO=403.13
PRINT HYD           ID=2  CODE=1
PRINT HYD           ID=4  CODE=1
*
*** ADD HYD CB2.1 TO HYD CB3 ***
*
ADD HYD             ID=5      HYD NO=CB3.1    ID I=6  ID II=2
PRINT HYD           ID=5      CODE=1
*
*S ROUTE CB3.1 IN 48" AND 54" PIPE BETWEEN MH # S-702 AND MH # S-732
*S Q(CAP) = 144 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                            DIAM=4.5 FT  N=0.013
ROUTE MCUNGE        ID=2  HYD NO=CB3.13  INFLOW ID=5
                    DT=0.0  L=1678
                    NS=0  SLOPE=0.005     MATCODE=0
                    REGCODE=0       CCODE=0
PRINT HYD           ID=2  CODE=1
*
**** SUB-BASIN 404 ****
*
*S LESLIE HOMES
* SOURCE: D.M.G. JAN 1993 DRAINAGE REPORT
*
COMPUTE NM HYD      ID=1  HYD NO = 404
                    DA= 0.0161  SQUARE MI
                              A=10
                              B=25.1
                              C=15
                              D=49.9
                    TP=0.1333  HR    MASSRAIN=-1
PRINT HYD           ID=1  CODE=1
```

```
*
*** ADD HYD 404 TO HYD CB3.1 ***
* ASSUME ALL SUB-BASIN 404 ENTERS SD
*
ADD HYD                ID=5     HYD NO=CB4.1    ID I=1  ID II=2
PRINT HYD              ID=5     CODE=1
*
*S ROUTE CB4.1 IN 60" PIPE BETWEEN MH # S-732 AND MH # S-531
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE   CID=1 VS NO=1 CODE=-1 SLP=0.005
                              DIAM=5 FT  N=0.015
ROUTE MCUNGE           ID=2  HYD NO=CB4.13  INFLOW ID=5
                       DT=0.0  L=1051
                       NS=0  SLOPE=0.005    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=2  CODE=1
*
**** SUB-BASIN 405 ****
*S SUB-BASIN 405 IS PART OF CACTUS HILLS
* SOURCE: D.M.G. JAN 1993 DRAINAGE REPORT
*
COMPUTE NM HYD         ID=1  HYD NO = 405
                       DA=0.0270  SQUARE MI
                                  A=10
                                  B=42
                                  C=10
                                  D=38
                       TP=0.1333 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*S  DIVIDE SUB-BASIN 405 BY REMAINING MAXIMUM PIPE CAPACITY *
*
DIVIDE HYD             INFLOW ID=1   Q=40    ID I=6    HYD NO=CB5
                                            ID II=7   HYD NO=405.03
PRINT HYD              ID=6  CODE=1
PRINT HYD              ID=7  CODE=1
*
*S ROUTING 405.03 TO CONGRESS AVE
*
COMPUTE RATING CURVE   CID=1  VS NO=1   NO SEGS=1
                       MIN ELEV=0       MAX ELEV=2.67
                       CH SLOPE=0.004   FP SLOPE=0.004
                       N=0.017          DIST=48
                       DIST     ELEV          DIST      ELEV
                        0       2.67          0.1        0
                       24       0.48         47.9        0
                       48       2.67
*
ROUTE MCUNGE           ID=15  HYD NO=405.02 INFLOW ID=7
                       DT=0.0  L=500
                       NS=0  SLOPE=0.004    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=15  CODE=1
*
*** ADD HYD CB5 TO HYD CB4.13 ***
* SUB-BASIN 405 HAS TRANSVERSE DRAIN WITH 36" PIPE TO 60" SD
*
ADD HYD                ID=5     HYD NO=CB5.1    ID I=6  ID II=2
PRINT HYD              ID=5     CODE=1
*
*S ROUTE CB5.1 IN 60" PIPE BETWEEN MH # S-531 AND MH # S-932
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE   CID=1 VS NO=1 CODE=-1 SLP=0.005
                              DIAM=5.5 FT  N=0.015
ROUTE MCUNGE           ID=2  HYD NO=CB5.13  INFLOW ID=5
                       DT=0.0  L=454
                       NS=0  SLOPE=0.005    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=2  CODE=1
*
*S ROUTE CB5.2 IN 60" PIPE UNTIL CUBBY HOLE DET POND
*S Q(CAP) = 233 CFS, AT SLOPE=0.008
*
COMPUTE RATING CURVE   CID=1 VS NO=1 CODE=-1 SLP=0.008
```

```
                              DIAM=5 FT  N=0.015
ROUTE MCUNGE            ID=25  HYD NO=CB5.23  INFLOW ID=2
                        DT=0.0  L=690
                        NS=0  SLOPE=0.008    MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=2  CODE=1
*
**** SUB-BASIN 406 ****
*S SUB-BASIN 406 IS NORTH OF CONGRESS AVE - RESIDENTIAL
*
COMPUTE NM HYD          ID=1  HYD NO = 406
                        DA= 0.0107  SQUARE MI
                                  A=90
                                  B=0
                                  C=5
                                  D=5
                        TP=0.1333  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
*** ADD 405.1 TO HYD 406 ***
*
ADD HYD                 ID=6     HYD NO=406.1  ID I=15  ID II=1
PRINT HYD               ID=6     CODE=1
*
*S ROUTING 406 ON CONGRESS AVE TO IRVING AND EAGLE RANCH ROAD
*
COMPUTE RATING CURVE    CID=1  VS NO=1   NO SEGS=1
                        MIN ELEV=0       MAX ELEV=3
                        CH SLOPE=0.0083  FP SLOPE=0.0083
                        N=0.017          DIST=48
                        DIST     ELEV         DIST      ELEV
                         0       3.00          0.1       0
                        24       0.48         47.9       0
                        48       3.00
*
ROUTE MCUNGE            ID=3   HYD NO=406.12 INFLOW ID=6
                        DT=0.0  L=600
                        NS=0  SLOPE=0.0083  MATCODE=0
                        REGCODE=0      CCODE=0
PRINT HYD               ID=3   CODE=1
*
**** SUB-BASIN 407 ****
*
*S SUB-BASIN 407 IS NORTH OF CONGRESS AVE - COMMERCIAL
*S INCLUDES AREA FROM IRVING BLVD
*
COMPUTE NM HYD          ID=1  HYD NO = 407
                        DA= 0.0224  SQUARE MI
                                  A=50
                                  B=10
                                  C=10
                                  D=30
                        TP=0.1333  HR   MASSRAIN=-1
PRINT HYD               ID=1  CODE=1
*
* EXISTING DETENTION BASIN IN BASIN 407
*S CUBBY HOLE DETENTION BASIN
*S ROUTING RESERVOIR WITH 12" ORIFACE
* SOURCE: D.M.G. JAN, 1993 DRAINAGE REPORT, PG 42
*
ROUTE RESERVOIR         ID=5   HYD NO=407.RES   INFLOW=1   CODE=1
                         OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                              0               0             5063
                            3.78            0.0387          5064
                            5.35            0.0597          5065
                            6.55            0.0[illegible]3 5066
                            7.56            0.1019          5067
                            8.46            0.1230          5068
                            9.26            0.1440          5069
                           10.00            0.1651          5070
                            29              0.170           5070.25
                            62              0.175           5070.5
                           104              0.180           5070.75
                           153              0.185           5071
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
```

```
*              0              0          5063
*           3.78         0.0387          5064
*           5.35         0.0597          5065
*           6.55         0.0808          5066
*           7.56         0.1019          5067
*           8.46         0.1230          5068
*           9.26         0.1440          5069
*          10.00         0.1651          5070
*S           29          0.170           5070.25
*S           62          0.175           5070.5
*           104          0.180           5070.75
*           153          0.185           5071
*
* DIVIDE HYD 407.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD            INFLOW ID=5   Q=10    ID I=89    HYD NO=407.03
                                            ID II=13   HYD NO=OLF.4
PRINT HYD             ID=7  CODE=1
PRINT HYD             ID=13 CODE=1
*
*S ROUTE CB5.3 IN 60" PIPE UNTIL BETWEEN MH # S-951 TO MH # S-962
*S Q(CAP) = 260 CFS, AT SLOPE=0.01
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.01
                              DIAM=5 FT  N=0.015
ROUTE MCUNGE          ID=85  HYD NO=CB5.33  INFLOW ID=25
                      DT=0.0  L=739
                      NS=0  SLOPE=0.01     MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=85  CODE=1
*
*** ADD HYD 406.12 TO HYD OLF.4 ***
*
ADD HYD               ID=17    HYD NO=407.1   ID I=3  ID II=13
PRINT HYD             ID=17    CODE=1
*
**** SUB-BASIN 408 ****
*
*S SUB-BASIN 408 IS STATE FARM INSURANCE
*S OLF GOING TO THE EAST AND DOES NOT EFFECT EAGLE RANCH SD
* SOURCE: EASTERLING FEB 1987 PLANS
*
COMPUTE NM HYD        ID=14  HYD NO = 408
                      DA= 0.0066  SQUARE MI
                                A=20
                                B=10
                                C=0
                                D=70
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=14  CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 408
*S ROUTING RESERVOIR WITH 12" WEIR
* SOURCE: EASTERLING FEB, 1987 START FARM INS PLANS
*
ROUTE RESERVOIR       ID=18   HYD NO=408.RES   INFLOW=14   CODE=1
                       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                           0               0              5050.8
                          1.08           0.2198           5052.3
                          1.66           0.2931           5052.8
                          2.31           0.3663           5053.3
                          3.02           0.4396           5053.8
                           22            0.4763           5054.05
*S
*S     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*          0               0              5050.8
*S        1.08           0.2198           5052.3    EXISTING TOP OF POND
*         1.66           0.2931           5052.8
*S        2.31           0.3663           5053.3
*S        3.02           0.4396           5053.8
*          22            0.4763           5054.05
*
*** ADD HYD 408.RES TO HYD 407.1 ***
*
ADD HYD               ID=14    HYD NO=408.1   ID I=17  ID II=18
PRINT HYD             ID=14    CODE=1
```

```
*
**** SUB-BASIN 409 ****
*
*S SUB-BASIN 409 IS EAST OF IRVING, TRACT D
*
COMPUTE NM HYD        ID=1  HYD NO = 409
                      DA= 0.0098  SQUARE MI
                                A=20
                                B=10
                                C=5
                                D=60
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
* DIVIDE HYD 409 BY 36" STUB OUT PIPE CAPACITY *
*
DIVIDE HYD            INFLOW ID=1   Q=25    ID I=28   HYD NO=CB6
                                          ID II=15   HYD NO=409.03
PRINT HYD             ID=2  CODE=1
PRINT HYD             ID=15 CODE=1
*
**** SUB-BASIN 411 ****
*
*S SUB-BASIN 411 IS EAST OF IRVING, TRACT B
*
COMPUTE NM HYD        ID=1  HYD NO = 411
                      DA= 0.0092  SQUARE MI
                                A=45
                                B=5
                                C=20
                                D=30
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
* DIVIDE HYD 411 BY INLET CAPACITY *
*
DIVIDE HYD            INFLOW ID=1   Q=10    ID I=2    HYD NO=CB7
                                          ID II=7    HYD NO=411.03
PRINT HYD             ID=2  CODE=1
PRINT HYD             ID=7  CODE=1
*
**** SUB-BASIN 410 ****
*
*S SUB-BASIN 410 IS EAST OF IRVING, TRACT A
*
COMPUTE NM HYD        ID=1  HYD NO = 410
                      DA= 0.0047  SQUARE MI
                                A=45
                                B=5
                                C=20
                                D=30
                      TP=0.1333  HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
* DIVIDE HYD 410 BY INLET CAPACITY *
*
DIVIDE HYD            INFLOW ID=1   Q=10    ID I=9    HYD NO=CB8
                                          ID II=16   HYD NO=410.03
PRINT HYD             ID=9  CODE=1
PRINT HYD             ID=16 CODE=1
*
*** ADD HYD 411.03 TO HYD 410.03 ***
*
ADD HYD               ID=3    HYD NO=411.1   ID I=7  ID II=16
PRINT HYD             ID=3    CODE=1
*
*** ADD HYD 411.1 TO HYD 409.03 ***
*S ASSUME OLF HYD 411.2 PONDS
*
ADD HYD               ID=16   HYD NO=411.2   ID I=3  ID II=15
PRINT HYD             ID=16   CODE=1
*
*** ADD HYD CB5.33 TO CB7 ***
*
ADD HYD               ID=21   HYD NO=CB7.1  ID I=2  ID II=85
PRINT HYD             ID=21   CODE=1
```

```
*
*** ADD HYD CB8 TO HYD CB7.1 ***
*
ADD HYD                ID=2     HYD NO=CB8.1    ID I=21  ID II=9
PRINT HYD              ID=2     CODE=1
*
*S ROUTE CB7.1 IN 60" PIPE TO SUB-BASIN 411 ( JUST BEFORE CALABACILLAS ARROYO OUTFALL
*S Q(CAP) = 184 CFS, AT SLOPE=0.005
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.005
                            DIAM=5.5 FT  N=0.013
ROUTE MCUNGE           ID=9  HYD NO=CB8.12  INFLOW ID=2
                       DT=0.0  L=1263
                       NS=0  SLOPE=0.005    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=9  CODE=1
*
**** SUB-BASIN 412 ****
*
*S SUB-BASIN 412 IS EAST OF IRVING, TRACT C-2 and C-3
*
COMPUTE NM HYD         ID=1  HYD NO = 412
                       DA= 0.0133  SQUARE MI
                                 A=45
                                 B=5
                                 C=20
                                 D=30
                       TP=0.1449 HR    MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*
*** ADD HYD CB9 TO HYD CB8.12 ***
*S HYD CB9.1 IS TOTAL PIPE FLOW TO CALAB. ARROYO
*S****  HYD CB9.1 IS AP #9     *****
*
ADD HYD                ID=6     HYD NO=CB9.1    ID I=1  ID II=9
PRINT HYD              ID=6     CODE=1
*
****ROUTE PROPOSED PIPE UNTIL CUBBY HOLE DETENTION POND****
*S Q(CAP)=233 CFS, AT SLOPE = 0.008
* SOURCE: WILSON & CO, AHYMO-SAD 224
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.008
                            DIAM=5.5 FT  N=0.013
ROUTE MCUNGE           ID=2  HYD NO=CB6.23  INFLOW ID=66
                       DT=0.0  L=690
                       NS=0  SLOPE=0.008    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=2  CODE=1
*
***ADD HYD 407 TO PROPOSED PIPE SYSTEM****
* SOURCE:WILSON & CO, AHYMO-SAD 224
*
ADD HYD                ID=86 HYD NO CB6.33 ID I=2 ID II=89
PRINT HYD              ID=86 CODE=1
*
****ROUTE PROPOSED PIPE UNTIL IT REACHES EAGLE RANCH ROAD AGAIN****
* SOURCE:WILSON & CO, AHYMO-SAD 224
*
*S Q(CAP)=233 CFS AT SLOPE = 0.008
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.008
                            DIAM=5.5 FT  N=0.013
ROUTE MCUNGE           ID=8  HYD NO=CB6.33 INFLOW ID=86
                       DT=0.0  L=300
                       NS=0  SLOPE=0.008    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=8  CODE=1
*
****ADD BASIN 409 TO PROPOSED PIPE****
* SOURCE:WILSON & CO, AHYMO-SAD 224
*
ADD HYD                ID=9 HYD NO CB6.43 ID I=28 ID II=8
PRINT HYD              ID=9 CODE=1
*
**** SUB-BASIN 413 ****
```

```
*S SUB-BASIN 413 IS WEST OF EAGLE RANCH - COMMERCIAL
* SOURCE:WILSON & CO, AHYMO-SAD 224
*
COMPUTE NM HYD        ID=3  HYD NO = 413
                      DA= 0.0156  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=3  CODE=1
*
**** SUB-BASIN 414 ****
*S SUB-BASIN 414 IS WEST OF EAGLE RANCH-COMMERCIAL
* SOURCE:WILSON & CO, AHYMO-SAD 224
*
COMPUTE NM HYD        ID=10  HYD NO = 414
                      DA= 0.00297  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=10  CODE=1
*
*** ADD 413 AND 414 ***
* SOURCE:WILSON & CO, SAD 224
*
ADD HYD               ID=5 HYD NO CB6.53 ID I=3 ID II=10
PRINT HYD             ID=5 CODE=1
*
*** ADD 413 AND 414 TO PROPOSED PIPE ***
* SOURCE:WILSON & CO, AHYMO-SAD 224
*
ADD HYD               ID=11 HYD NO CB6.63 ID I=5 ID II=9
PRINT HYD             ID=11 CODE=1
*
**** SUB-BASIN 415 ****
*S SUB-BASIN 415 IS WEST OF EAGLE RANCH - COMMERCIAL
*
COMPUTE NM HYD        ID=1  HYD NO = 415
                      DA= 0.0119  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                      TP=0.1333 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 415 TO PIPE ***
*S HYD CB6.73 GOES TO CALABACILLAS ARROYO
* SOURCE:WILSON & CO, AHYMO - SAD 224
*
ADD HYD               ID=22 HYD NO CB6.73 ID I=1 ID II=11
PRINT HYD             ID=22 CODE=1
*
*
* * * BASIN 500 * * *
*
**** SUB-BASIN 501 ****
*
*S EAGLE RANCH ROAD
* 86 FT ROW
*
COMPUTE NM HYD        ID=1  HYD NO = 501
                      DA= 0.01  SQUARE MI
                                A=0
                                B=10
                                C=0
                                D=90
                      TP=0.3060 HR   MASSRAIN=-1
PRINT HYD             ID=1  CODE=1
*
*** ADD HYD 501 TO OLF HYD 408.1 ***
*
ADD HYD               ID=3    HYD NO=501.1  ID I=14   ID II=1
```

```
PRINT HYD              ID=3    CODE=1
*
** ROUTE OLF 501.1 THRU 505 IN IRVING BLVD **
*
COMPUTE RATING CURVE   CID=1  VS NO=1   NO SEGS=1
                       MIN ELEV=0       MAX ELEV=3
                       CH SLOPE=0.021   FP SLOPE=0.021
                       N=0.017          DIST=48
                       DIST     ELEV         DIST      ELEV
                        0       3.00         0.1        0
                       24       0.48        47.9        0
                       48       3.00
*
ROUTE MCUNGE           ID=7   HYD NO=501.12 INFLOW ID=3
                       DT=0.0  L=1000
                       NS=0  SLOPE=0.021    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=7   CODE=1
*
**** SUB-BASIN 502 ****
*
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD         ID=1  HYD NO = 502
                       DA= 0.0435  SQUARE MI
                                 A=10
                                 B=10
                                 C=20
                                 D=60
                       TP=0.1333 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
* DIVIDE HYD 305.1 IN PARADISE BLVD BY ASSUMED 18" CAPACITY *
*
DIVIDE HYD             INFLOW ID=19   Q=20      ID I=2    HYD NO=402.24
                                               ID II=3   HYD NO=402.25
PRINT HYD              ID=2   CODE=1
PRINT HYD              ID=3   CODE=1
*
*** ADD OLF HYD 402.24 TO SUB-BASIN 502 ***
*
ADD HYD                ID=5     HYD NO=502.1     ID I=2   ID II=1
PRINT HYD              ID=5     CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 502
*S ROUTING RESERVOIR WITH 24" RCP AND 6'2" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR        ID=8    HYD NO=502.RES   INFLOW=5    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0              5030
                          38.9526         2.1993           5038
                          58              2.268            5038.25
                          91              2.337            5038.5
*S
*S        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*             0               0              5030
*S           38.9526         2.1993           5038
*S           58              2.268            5038.25
*            91              2.337            5038.5
*
**** SUB-BASIN 503 ****
*
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD         ID=1  HYD NO = 503
                       DA= 0.0235  SQUARE MI
                                 A=0
                                 B=10
                                 C=0
                                 D=90
                       TP=0.2284 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
```

```
*** ADD OLF HYD 402.25 TO HYD SUB-BASIN 503 ***
*
ADD HYD                ID=2      HYD NO=503.1     ID I=1    ID II=3
PRINT HYD              ID=2      CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 503
*S ROUTING RESERVOIR WITH 24" RCP AND 9'3" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR        ID=5    HYD NO=503.RES   INFLOW=2    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0              5000
                          10.1924         4.2712           5010
                           29             4.378            5010.25
                           62             4.485            5010.5
                          104             4.592            5010.75
                          153             4.698            5011
                          209             4.805            5011.25
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5000
*S          10.1924         4.2712           5010
*           29             4.378            5010.25
*           62             4.485            5010.5
*          104             4.592            5010.75
*          153             4.698            5011
*          209             4.805            5011.25
*
*** ADD HYD 502.RES TO HYD 503.RES  ***
*
ADD HYD                ID=10    HYD NO=503.1  ID I=5  ID II=8
PRINT HYD              ID=10    CODE=1
*
**** SUB-BASIN 504 ****
*S COMMERCIAL
* SOURCE OF AREA: B.H. APR, 1990 DRAINAGE REPORT
*
COMPUTE NM HYD         ID=1  HYD NO = 504
                       DA= 0.0257  SQUARE MI
                                 A=0
                                 B=10
                                 C=5
                                 D=85
                       TP=0.2025 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*  EXISTING DETENTION BASIN IN SUB-BASIN 504
*S ROUTING RESERVOIR WITH 36" RCP AND 5'2" HIGH 18" STANDPIPE
* SOURCE OF STORAGE AND DISCHARGE: B.H. APR, 1990 DRAINAGE REPORT *
*
ROUTE RESERVOIR        ID=3    HYD NO=504.RES   INFLOW=1    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                            0               0              5001
                          38.9526         1.1742           5007
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              5001
*$          38.9526         1.1742           5007
*
*** ADD HYD 503.1 TO HYD 504.RES  ***
*
ADD HYD                ID=11      HYD NO=504.1  ID I=3   ID II=10
PRINT HYD              ID=11     CODE=1
*
**** SUB-BASIN 505 ****
*S EAST OF IRVING  LVD, NORTH OF COORS BLVD - COMMERCIAL
*
COMPUTE NM HYD         ID=1  HYD NO = 505
                       DA= 0.0497  SQUARE MI
                                 A=15
                                 B=10
                                 C=5
                                 D=70
                       TP=0.2066 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
```

```
*** ADD HYD 505 TO OLF HYD 501.12 ***
*
ADD HYD                ID=2      HYD NO=505.1  ID I=1  ID II=7
PRINT HYD              ID=2      CODE=1
*
** ROUTE OLF HYD 505.1 THRU 506 ON COORS BLVD **
*
COMPUTE RATING CURVE  CID=1  VS NO=1   NO SEGS=1
                      MIN ELEV=0       MAX ELEV=2.67
                      CH SLOPE=0.012   FP SLOPE=0.012
                      N=0.017          DIST=80
                      DIST     ELEV          DIST      ELEV
                       0       2.67           0.1       0
                      40       0.80          79.9       0
                      80       2.67
*
ROUTE MCUNGE           ID=9   HYD NO=505.12 INFLOW ID=2
                       DT=0.0  L=2150
                       NS=0  SLOPE=0.012    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=9  CODE=1
*
*** ADD OLF HYD 505.12 TO HYD 504.1 ***
*
ADD HYD                ID=2      HYD NO=505.2    ID I=11   ID II=9
PRINT HYD              ID=2      CODE=1
*
** ROUTE 505.2 THRU 506'S LOW SPOT **
*S ROUTE 505.2 IN 36" PIPE THRU 506'S LOW SPOT; 0.009 FT/FT
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.009
                             DIAM=3 FT  N=0.013
ROUTE MCUNGE           ID=3  HYD NO=505.22  INFLOW ID=2
                       DT=0.0  L=700
                       NS=0  SLOPE=0.009    MATCODE=0
                       REGCODE=0      CCODE=0
PRINT HYD              ID=3  CODE=1
*
**** SUB-BASIN 506 ****
*
*S EAST OF COORS BLVD - RESIDENTIAL AND STATE HWY DEPT ROW
*
COMPUTE NM HYD         ID=1  HYD NO = 506
                       DA= 0.0559 SQUARE MI
                                  A=50
                                  B=5
                                  C=25
                                  D=20
                       TP=0.2045 HR   MASSRAIN=-1
PRINT HYD              ID=1  CODE=1
*
*** ADD OLF HYD 505.12 TO HYD 506 ***
*
ADD HYD                ID=2      HYD NO=506.1   ID I=1  ID II=3
PRINT HYD              ID=2      CODE=1
*
*S NATURAL PONDING AREA ON BLACK RANCH TRACT 2
* ROUTING RESERVOIR WITH 2 36" DIAMETER ORIFACES
*
ROUTE RESERVOIR        ID=80    HYD NO = 506.RES   INFLOW=2    CODE=1
                        OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                             0               0              4996
                            15               0.09183        4997
                            34               0.18365        4998
                            66               0.27548        4999
                            74.5             0.31772        4999.2
                            87.65            0.33792        4999.4
                            103.2            0.35812        4999.6
                            118              0.37833        4999.8
                            140              0.39850        5000.0
                            157.7            0.41873        5000.2
                            180.8            0.43893        5000.4
                            201.2            0.45913        5000.6
*S  OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S        0              0              4996
*S     15.0           0.09183           4997
```

```
*S     34.0              0.18365         4998
*S     66.0              0.27548         4999
*S     74.5              0.31772         4999.2
*S     87.7              0.33792         4999.4
*S    103.2              0.35812         4999.6
*S    118.0              0.37833         4999.8
*S    140.0              0.39850         5000.0
*S    157.7              0.41873         5000.2
*S    180.8              0.43893         5000.4
*S    201.2              0.45913         5000.6
*
*
*S DIVIDE HYD 506.RES BY RATING CURVE
*S OVERFL.1 IS THE OVERFLOW THAT IS NOT DETAINED IN THE NATURAL PONDING AREA
*
DIVIDE HYD            ID=80   CODE=999        ID=65    HYD NO=506.RES01
                                              ID=68   HYD NO=OVERFL.1
                      TOTAL FLOW           DIVIDED FLOW
                         66.0                   66
                         74.5                   70
                         87.7                   75
                        103.2                   80
                        118.0                   82
                        140.0                   90
                        157.7                   92
                        180.8                   98
                        201.2                  100
*S
*S TOTAL FLOW           DIVIDED FLOW
*S    66.0                   66
*S    74.5                   70
*S    87.7                   75
*S   103.2                   80
*S   118.0                   82
*S   140.0                   90
*S   157.7                   92
*S   180.8                   98
*S   201.2                  100
*
PRINT HYD             ID=65   CODE=1
PRINT HYD             ID=68   CODE=1
*
*S ROUTE RESERVOIR THROUGH OUTLET PIPES TO CORRALES MAIN CANAL
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.009
                              DIAM=3.54 FT  N=0.013
ROUTE MCUNGE          ID=73  HYD NO=506.RES1  INFLOW ID=65
                      DT=0.0  L=150
                      NS=0  SLOPE=0.009    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=73  CODE=1
*
*S ADD THE OVERLAND FLOW TO THE MAIN CANAL
*
ADD HYD               ID=91 HYD NO=900 ID=99 ID=68
*
* DIVIDE HYD 900 IN CORRALES CANAL BY THE CAPACITY OF THE CANAL AT A DEPTH OF
* 3.5 FT
*

DIVIDE HYD            INFLOW ID=91   Q=91      ID I=77    HYD NO=800
                                               ID II=88   HYD NO=OVERFL.2
PRINT HYD             ID=77   CODE=1
PRINT HYD             ID=88   CODE=1
*
*S ADD FLOW FROM OUTLET PIPES TO FLOW IN THE MAIN CANAL
*
ADD HYD               ID=20 HYD NO=901 ID=77 ID=73
PRINT HYD             ID=20 CODE=1
*S HYD NO OVERFL.2 IS THE FLOW THAT JUMPS OVER THE CANAL AND DISCHARGES ON TO
*S BLACK RANCH TRACT 2
*
*S ROUTE THIS FLOW THROUGH THE CONCRETE BOX CULVERT TO THE INTERSECTION OF
*S THE 36" PIPES FROM THE POND AT THE SW CORNER OF COORS AND PDN
*
COMPUTE RATING CURVE ID=1 VS NO=11.2     NO SEGS=1
```

```
                    MIN ELEV=4987.43    MAX ELEV=4993.4
                    CH SLOPE=0.001332   FP SLOPE=0.001332
                    N=0.013             DIST=10.1
                    DIST        ELEV
                     0.0      4993.40
                     0.1      4987.43
                    10.0      4987.43
                    10.1      4993.40

ROUTE MCUNGE        ID=21 HYD NO=17.01 INFLOW ID=20  DT=0.0 HR
                    LENGTH=900.0   NS=0   SLOPE=0.001332
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=21 CODE=0
*
**** SUB-BASIN 11.W ****
*
*S SUB-BASIN 11.1W
*S WEST OF COORS BOULEVARD AND INCLUDES SECTION OF PASEO DEL NORTE
*S COMMERCIAL AND STATE HIGHWAY DEPARTMENT ROW
*
COMPUTE NM HYD      ID=5 HYD NO=147
                    DA=0.04607 SQ MI
                        A=60
                        B=5
                        C=5
                        D=30
                    TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD           ID=5 CODE=1
*
* FLOW FROM 11.1W ENTERS DET POND AT SW CORNER OF PDN AND COORS
*S ROUTING RESERVOIR WITH 2 30" CULVERT PIPES UNDER COORS BLVD.
*
ROUTE RESERVOIR     ID=7   HYD NO=147.RES   INFLOW=5   CODE=1
                     OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                         0               0              4996
                        28              1.30            4998
                        66              2.66            5000
*S
*S       OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
*S            0               0              4996
*S           28              1.30            4998
*S           66              2.66            5000
*
PRINT HYD           ID=7 CODE=1
*
* DIVIDE HYD 147.RES BY MAXIMUM PIPE OUTFLOW *
*
DIVIDE HYD          INFLOW ID=7   Q=66    ID I=25   HYD NO=147.RES1
                                          ID II=30   HYD NO=OLF.5
PRINT HYD           ID=25  CODE=1
PRINT HYD           ID=30  CODE=1
*
*S ROUTE 147.RES1 THROUGH 2 30" CULVERT PIPES UNDER COORS TO CANAL CBC **
* THE EQUIVALENT DIAMETER OF THE TWO PIPES IS USED. ASSUME A SLOPE OF 1%
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.01
                              DIAM=3.5 FT  N=0.013
ROUTE MCUNGE          ID=3  HYD NO=147.1  INFLOW ID=25
                      DT=0.0  L=300
                      NS=0  SLOPE=0.01    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=3  CODE=1
*
*S** ADD THE FLOW FROM NMSHTD POND TO CANAL ***
*
ADD HYD               ID=10 HYD NO=147.12 ID=3 ID=21
*
**** SUB-BASIN 11.1AW ****
*
*S SECTION OF BASIN 11.1W THAT DRAINS TO CULVERT UNDER COORS
*
COMPUTE NM HYD       ID=18 HYD NO=147A
                     DA=0.005275 SQ MI
                         A=100
                         B=0
```

```
                        C=0
                        D=0
                    TP=0.1333 HR  MASSRAIN=-1
*
PRINT HYD           ID=18 CODE=1
*
*S ROUTE 11.1A THROUGH A 24" CULVERT PIPE UNDER COORS TO CANAL CBC **
* ASSUME A SLOPE OF 1%
*
COMPUTE RATING CURVE  CID=1 VS NO=1 CODE=-1 SLP=0.01
                            DIAM=2 FT  N=0.013
ROUTE MCUNGE          ID=12  HYD NO=147A.1  INFLOW ID=18
                      DT=0.0  L=300
                      NS=0  SLOPE=0.01    MATCODE=0
                      REGCODE=0      CCODE=0
PRINT HYD             ID=52  CODE=1
*
*S** ADD THE FLOW FROM 11.1A TO CANAL ***
*
ADD HYD               ID=9 HYD NO=147.12 ID=10 ID=12
*
*S BASE FLOW CORRECTION.
*
MODIFY TIME           ID=9  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
*S AREAS 8.1W TO 11.A ROUTED IN CANAL AND BASE FLOW CORRECTED.
*
PRINT HYD             ID=9 CODE=0
*
*S ROUTE CANAL FLOW DOWN CANAL TO AREA 11.2 DISCHARGE POINT. **
*
ROUTE MCUNGE          ID=3 HYD NO=18 INFLOW ID=9  DT=0.0 HR
                      LENGTH=750.0   NS=0   SLOPE=0.0006
                      MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD             ID=3 CODE=0
*
*S BASE FLOW CORRECTION.
*
MODIFY TIME           ID=3  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
*S AREAS 8.1W TO 11.1AW ROUTED DOWN CANAL TO NEXT AP WITH BASE FLOW CORRECTED
*S TO 38 CFS MIN.
*
PRINT HYD             ID=3 CODE=0
*
**** SUB-BASIN 11.2E ****
*
*S SUB-BASIN 11.2E
*S INCLUDES PASEO-DEL-NORTE/COORS INTERSECTION ROW AND BUSINESSES ON EAST
*S SIDE OF COORS BOULEVARD
*
* FLOWS FROM BASIN 11.2E ENTER THE 6'X 10' CBC DIRECTLY THROUGH STORM DRAIN
* INLETS
*
COMPUTE NM HYD        ID=7 HYD NO=154
                      DA=0.02769 SQ MI
                           A=15
                           B=10
                           C=0
                           D=75
                      TP=0.133333 HR  MASSRAIN=-1
*
PRINT HYD             ID=7 CODE=1
*
*S** ADD 11.2E TO CANAL FLOW. ***
*
ADD HYD               ID=5 HYD NO=326 ID=3 ID=7
*
* FLOWS FROM 8.1W TO 11.2E IN CANAL.
*
PRINT HYD             ID=5 CODE=0
*
**** SUB-BASIN 12.1W ****
*
*S SUB-BASIN 12.1W
*S UNDEVELOPED LAND ZONED SU-1, FUTURE SITE OF EAGLE RIDGE APARTMENTS
```

```
*
COMPUTE NM HYD        ID=3 HYD NO=156
                      DA=0.03024 SQ MI
                           A=100
                           B=0
                           C=0
                           D=0
                      TP=0.1333 HR MASSRAIN=-1
*
PRINT HYD             ID=3 CODE=1
*
** ROUTE 12.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE  ID=1 VS NO=12.1 NO SEG=3 MIN ELEV=100 MAX ELEV=103
                      CH SLOPE=0.044 FP SLOPE=0.044 N=0.045 DIST=50
                      N=-0.040 DIST=90  N=0.045 DIST=140
                      DIST    ELEV      DIST    ELEV      DIST    ELEV
                      0       103       50      101       70      100
                      90      101       140     103
ROUTE MCUNGE          ID=7 HYD NO=19 INFLOW ID=3  DT=0.0 HR
                      LENGTH=90.0   NS=0   SLOPE=0.044
                      MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 12.1W ROUTED DOWN SECONDARY CHANNEL. ENTERS
* CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD             ID=7 CODE=0
*
**** SUB-BASIN 12.2W ****
*
*S SUB-BASIN 12.2 W
*S INCLUDES EAGLE RANCH ROAD/EMERGENCY SPILLWAY OF PIEDRAS MARCADAS DAM
*
COMPUTE NM HYD        ID=1 HYD NO=158
                      DA=0.03200 SQ MI
                            A=90
                            B=0
                            C=7
                            D=3
                      TP=0.133333 HR  MASSRAIN=-1
*
* AREA 12.2W COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD             ID=1 CODE=1
*
** ROUTE 12.2W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=12.2 NO SEG=3 MIN ELEV=100 MAX ELEV=103
                      CH SLOPE=0.0075 FP SLOPE=0.0075 N=0.0045 DIST=10
                      N=-0.040 DIST=150 N=0.045 DIST=200
                      DIST    ELEV      DIST    ELEV      DIST    ELEV
                      0       103       10      101       80      100
                      150     101       200     103
ROUTE MCUNGE          ID=8 HYD NO=20 INFLOW ID=1  DT=0.0 HR
                      LENGTH=800.0   NS=0   SLOPE=0.0075
                      MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 12.2W ROUTED DOWN SECONDARY CHANNEL.  ENTERS
* CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD             ID=8 CODE=0
*
*S ROUTE AREA 8.1W TO 11.2E DOWN CANAL TO AREA 12 DISCHARGE POINT. **
* ROUTE FROM STA 643+33.62 TO 650+83.62
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE & OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=12.3     NO SEGS=1
                      MIN ELEV=4985.30   MAX ELEV=4995.14
                      CH SLOPE=0.0003    FP SLOPE=0.0003
                      N=0.045            DIST=86
                      DIST    ELEV
                      0       4993.58
                      12      4993.00
                      35      4985.55
```

```
                    45      4985.30
                    72      4993.10
                    86      4995.14

ROUTE MCUNGE        ID=10 HYD NO=21 INFLOW ID=5  DT=0.0 HR
                    LENGTH=750.0   NS=0   SLOPE=0.0003
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=10 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME         ID=10  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 11.2E ROUTED DOWN CANAL WITH CORRECTED BASE FLOW.
*
PRINT HYD           ID=10 CODE=0
*
*** ADD AREA 12.1W TO CANAL FLOW. ***
*
ADD HYD             ID=2 HYD NO=162 ID=7 ID=10
*
* AREAS 8.1W TO 12.1W IN CANAL.
*
PRINT HYD           ID=2 CODE=0
*
*S ROUTE FLOWS DOWN CANAL TO AREA 12.2W DISCHARGE POINT. **
* ROUTE FROM STA 650+83.62 TO 660+70
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE & OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=12.3     NO SEGS=1
                    MIN ELEV=4985.30    MAX ELEV=4995.14
                    CH SLOPE=0.0003     FP SLOPE=0.0003
                    N=0.045             DIST=86
                    DIST    ELEV
                    0       4993.58
                    12      4993.00
                    35      4985.55
                    45      4985.30
                    72      4993.10
                    86      4995.14

ROUTE MCUNGE        ID=7 HYD NO=22 INFLOW ID=2  DT=0.0 HR
                    LENGTH=986   NS=0   SLOPE=0.0003
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=7 CODE=0.
*
* BASE FLOW CORRECTION.
*
MODIFY TIME         ID=7  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREAS 8.1W TO 12.1W ROUTED DOWN CANAL WITH CORRECTED BASE FLOW.
*
PRINT HYD           ID=7 CODE=0
*
*** ADD 12.2W TO CANAL FLOWS. ***
*
ADD HYD             ID=3 HYD NO=165 ID=7 ID=8
*
* FLOW FROM AREAS 8.1W TO 12.2W IN CANAL.
*
PRINT HYD           ID=3 CODE=0
*
**** SUB-BASIN 12.3E ****
*
*S UNDEVELOPED PROPERTY ZONED SPECIAL USE (SU-1)
*
COMPUTE NM HYD      ID=7 HYD=166
                    DA=0.02616 SQ MI
                         A=84.6
                         B=0
                         C=0
                         D=15.4
                    TP=0.2143 HR  MASSRAIN=-1
*
PRINT HYD           ID=7 CODE=1
*
```

```
* AREA 12.3E COMPOSITE RUNOFF HYDROGRAPH.  ENTERS CANAL DIRECTLY.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD             ID=7 CODE=0
*
*** ADD AREA 12.3E TO CANAL FLOW. ***
*
ADD HYD               ID=8 HYD NO=330 ID=3 ID=7
*
* FLOWS FROM AREA 8.1W TO 12.3E IN CANAL.
*
PRINT HYD             ID=8 CODE=0
*
** ROUTE FLOW IN CANAL FROM 8.1W TO 12.3E TO AREA 13 DISCHARGE POINT. **
* ROUTE FROM STA 660+70 TO 667+12
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE & OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=12.3      NO SEGS=1
                     MIN ELEV=4985.30     MAX ELEV=4995.14
                     CH SLOPE=0.0003      FP SLOPE=0.0003
                     N=0.045              DIST=85
                     DIST    ELEV
                     0       4993.20
                     15      4993.00
                     38      4986.10
                     51      4985.50
                     74      4993.00
                     85      4993.10

ROUTE MCUNGE          ID=5 HYD NO=23 INFLOW ID=8  DT=0.0 HR
                      LENGTH=642   NS=0   SLOPE=0.0003
                      MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD             ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME           ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREAS 8.1W TO 12.3E ROUTED DOWN CANAL WITH BASE FLOW CORRECTED.
*
PRINT HYD             ID=5 CODE=0
*
**** SUB-BASIN 13.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD        ID=3 HYD NO=170
                      DA=0.0000001 SQ MI
                           A=90
                           B=0
                           C=5
                           D=5
                      TP=0.133333 HR  MASSRAIN=-1
*
PRINT HYD             ID=3 CODE=1
*
* AREA 13.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD             ID=3 CODE=0
*
** ROUTE 13.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=13.1      NO SEGS=3
                     MIN ELEV=100         MAX ELEV=103
                     CH SLOPE=0.015       FP SLOPE=0.015
                     N=0.045              DIST=70.0
                     N=-0.040             DIST=95
                     N=0.045              DIST=150
                     DIST    ELEV      DIST    ELEV      DIST    ELEV
                     0       103.0     70.0    102.0     80      100.0
                     95      102.0     150     103.0

ROUTE MCUNGE          ID=8 HYD NO=24 INFLOW ID=3  DT=0.0 HR
                      LENGTH=675.0   NS=0   SLOPE=0.015
                      MATCODE=0   REGCODE=0   CCODE=0
*
```

```
* AREA 13.1W ROUTED THROUGH SECONDARY CHANNEL.
*
PRINT HYD             ID=8 CODE=0
*
**** SUB-BASIN 13.2E ****
*
*S BOSQUE DEL PUEBLO COMMERCIAL SITE
* SOURCE: GREINER ENGINEERING, BOSQUE DEL PUEBLO DRAINAGE REPORT
*
COMPUTE NM HYD        ID=3 HYD NO=172
                      DA=0.02206 SQ MI
                           A=30
                           B=15
                           C=0
                           D=55
                      TP=0.17911 HR  MASSRAIN=-1
*
PRINT HYD             ID=3 CODE=1
*
* AREA 13.2E COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD             ID=3 CODE=0
*
*** ADD 13.2W TO 13.1E. ***
*
ADD HYD               ID=10 HYD NO=333 ID=3 ID=8
*
* AREA 13.1W ADDED TO 13.2E.  ENTERS MAIN CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD             ID=10 CODE=0
*
*** ADD AREAS 13.1W AND 13.2E TO CANAL FLOW. ***
*
ADD HYD               ID=1 HYD NO=334 ID=5 ID=10
*
* AREA 13.1W+13.2E ADDED INTO CANAL.  FLOW FROM AREAS 8.1W TO 13.2E IN CANAL.
*
PRINT HYD             ID=1 CODE=0
*
**** SUB-BASIN 14.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD        ID=3 HYD NO=174
                      DA=0.05117 SQ MI
                           A=85
                           B=0
                           C=10
                           D=5
                      TP=0.133333 HR  MASSRAIN=-1
*
* AREA 14.1W RUNOFF HYDROGRAPH
*
PRINT HYD             ID=3 CODE=0
*
*S ROUTE 14.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=14.1     NO SEGS=3
                      MIN ELEV=100       MAX ELEV=104
                      CH SLOPE=0.0250    FP SLOPE=0.0250
                      N=0.045            DIST=10
                      N=-0.040           DIST=40
                      N=0.045            DIST=160
                      DIST    ELEV       DIST    ELEV       DIST    ELEV
                      0       104.0      10.0    102.0      20      100.
                      40      102.0      160     104.0

ROUTE MCUNGE          ID=5 HYD NO=25 INFLOW ID=3  DT=0.0 HR
                      LENGTH=400.0   NS=0   SLOPE=0.025
                      MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 14.1W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD             ID=5 CODE=0
*
```

```
*S ROUTE 8.1W TO 13.2E DOWN CANAL TO AREA 14 DISCHARGE POINT. **
* ROUTE FROM STA 667+12 TO 672+19
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=14.2     NO SEGS=1
                     MIN ELEV=4986       MAX ELEV=4994.32
                     CH SLOPE=0.0003     FP SLOPE=0.0003
                     N=0.045             DIST=83
                     DIST    ELEV
                     0       4994.32
                     4       4993.20
                     16      4993.00
                     39      4986.00
                     48      4986.00
                     73      4993.20
                     83      4994.00

ROUTE MCUNGE         ID=10 HYD NO=26 INFLOW ID=1  DT=0.0 HR
                     LENGTH=507   NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=10 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=10  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 13.2E ROUTED DOWN TO AREA 14 DISCHARGE POINT WITH BASE
* FLOW CORRECTED.
*
PRINT HYD            ID=10 CODE=0
*
*** ADD AREA 14.1W TO CANAL FLOW. ***
*
ADD HYD              ID=2 HYD NO=338 ID=5 ID=10
*
* FLOW FROM 8.1W TO 14.1W IN CANAL.
*
PRINT HYD            ID=2 CODE=0
*
*S ROUTE AREA 8.1W TO 14.1W DOWN CANAL TO AREA 15 DISCHARGE POINT. **
* ROUTE FROM STA 672+19 TO 680+12
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=15.2     NO SEGS=1
                     MIN ELEV=4985       MAX ELEV=4997.10
                     CH SLOPE=0.0003     FP SLOPE=0.0003
                     N=0.040             DIST=58
                     DIST    ELEV
                     0       4994.00
                     14      4992.80
                     27      4985.00
                     36      4985.00
                     42      4988.50
                     54      4997.00
                     58      4997.10

ROUTE MCUNGE         ID=7 HYD NO=27 INFLOW ID=2  DT=0.0 HR
                     LENGTH=793   NS=0   SLOPE=0.0003
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=7 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=7  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 14.2E ROUTED DOWN CANAL TO AREA 15 DISCHARGE POINT WITH BASE
* FLOW CORRECTED.
*
PRINT HYD            ID=7 CODE=0
*
**** SUB-BASIN 15.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=182
                     DA=0.0256 SQ MI
```

```
                          A=77
                          B=5
                          C=15
                          D=3
                    TP=0.13333 HR  MASSRAIN=-1
*
PRINT HYD           ID=3 CODE=1
*
* AREA 15.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD           ID=3 CODE=0
*
*S ROUTE AREA 15.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=15.1      NO SEGS=3
                    MIN ELEV=100.0        MAX ELEV=103.0
                    CH SLOPE=0.016        FP SLOPE=0.016
                    N=0.045               DIST=70.0
                    N=-0.040              DIST=110.0
                    N=0.045               DIST=260
                    DIST    ELEV      DIST    ELEV      DIST    ELEV
                    0       103.0     70      101.0     90      100.0
                    110     101.0     260     103.0

ROUTE MCUNGE        ID=10 HYD NO=28 INFLOW ID=3  DT=0.0 HR
                    LENGTH=525.0   NS=0   SLOPE=0.016
                    MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD           ID=4 CODE=0
*
**** SUB-BASIN 15.2W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD      ID=3 HYD NO=184
                    DA=0.0638 SQ MI
                          A=77
                          B=5
                          C=15
                          D=3
                    TP=0.13333 HR  MASSRAIN=-1
*
PRINT HYD           ID=3 CODE=1
*
* AREA 15.2W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD           ID=3 CODE=0
*
*S ROUTE 15.2W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=15.2    NO SEGS=3
                    MIN ELEV=100.0      MAX ELEV=102
                    CH SLOPE=0.0286     FP SLOPE=0.0286
                    N=0.045             DIST=50.0
                    N=-0.040            DIST=130.0
                    N=0.045             DIST=180.0
                    DIST    ELEV      DIST    ELEV      DIST    ELEV
                    0       102.0     50      101.0     110     100.0
                    130     101.0     180     102.0

ROUTE MCUNGE        ID=5 HYD NO=29 INFLOW ID=3  DT=0.0 HR
                    LENGTH=350.0   NS=0   SLOPE=0.0286
                    MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 15.2W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD           ID=5 CODE=0
*
*** ADD AREA 15.2W TO 15.1W. ***
*
ADD HYD             ID=3 HYD NO=186 ID=10 ID=5
*
* AREA 15.1W ADDED TO 15.2W.
*
PRINT HYD           ID=3 CODE=0
*
**** SUB-BASIN 15.3E ****
```

```
*
COMPUTE NM HYD       ID=10 HYD NO=187
                     DA=0.0189 SQ MI
                           A=80.1
                           B=0
                           C=0
                           D=19.9
                     TP=0.133333 HR  MASSRAIN=-1
*
* AREA 15.3E COMPOSITE RUNOFF HYDROGAPH.
*
PRINT HYD            ID=10 CODE=0
*
*** ADD 15.3E TO 15.1W AND 15.2W. ***
*
ADD HYD              ID=5 HYD NO=342 ID=3 ID=10
*
* AREA 15.1W + 15.2W + 15.3E.  ENTERS CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD            ID=5 CODE=0
*
*** ADD 15.1W, 15.2W AND 15.3E TO CANAL FLOW. ***
*
ADD HYD              ID=10 HYD NO=343 ID=5 ID=7
*
* FLOW FROM 8.1W TO 15.3E IN CANAL.
*
PRINT HYD            ID=4 CODE=0
*
**** SUB-BASIN 16.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=189
                     DA=0.0333 SQ MI
                          A=77
                          B=5
                          C=15
                          D=3
                     TP=0.13333 HR  MASSRAIN=-1
*
* AREA 16.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD            ID=3 CODE=0
*
*S ROUTE AREA 16.1W DOWN SECONDARY CHANNEL TO CANAL.**
*
COMPUTE RATING CURVE ID=1 VS NO=16.1   NO SEGS=3
                     MIN ELEV=100      MAX ELEV=103
                     CH SLOPE=0.168    FP SLOPE=0.0168
                     N=0.045           DIST=50
                     N=-0.040          DIST=110
                     N=-0.045          DIST=260
                     DIST    ELEV      DIST    ELEV      DIST    ELEV
                     0       103       50      101       80      100
                     110     101       260     103

ROUTE MCUNGE         ID=5 HYD NO=30 INFLOW ID=3  DT=0.0 HR
                     LENGTH=950.0   NS=0   SLOPE=0.0168
                     MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 16.1W ROUTED THROUGH SECONDARY CHANNEL.
*
PRINT HYD            ID=5 CODE=0
*
**** SUB-BASIN 16.2W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=191
                     DA=0.0665 SQ MI
                          A=77
                          B=5
                          C=15
                          D=3
```

```
                    TP=0.13333 HR  MASSRAIN=-1
*
* AREA 16.2W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD           ID=3 CODE=0
*
*S ROUTE AREA 16.2W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=16.2    NO SEGS=3
                    MIN ELEV=100        MAX ELEV=103
                    CH SLOPE=0.029      FP SLOPE=0.029
                    N=0.045             DIST=50
                    N=-0.040            DIST=110
                    N=0.045             DIST=160
                    DIST    ELEV        DIST    ELEV        DIST    ELEV
                    0       103         50      101         80      100
                    110     101         160     103

ROUTE MCUNGE        ID=7 HYD NO=31 INFLOW ID=3  DT=0.0 HR
                    LENGTH=750.0   NS=0   SLOPE=0.029
                    MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 16.2W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD           ID=7 CODE=0
*
*** ADD 16.2W TO 16.1W. ***
*
ADD HYD             ID=3 HYD NO=193 ID=5 ID=7
*
* AREA 16.1W ADDED TO AREA 16.2W.
*
PRINT HYD           ID=3 CODE=0
*
**** SUB-BASIN 16.3E ****
*
COMPUTE NM HYD      ID=5 HYD NO=194
                    DA=0.0484 SQ MI
                          A=74.5
                          B=9.3
                          C=5
                          D=11.2
                    TP=0.133333 HR  MASSRAIN=-1
*
* AREA 16.3E COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD           ID=5 CODE=0
*
*** ADD 16.3E TO 16.1W AND 16.2W. ***
*
ADD HYD             ID=7 HYD NO=347 ID=5 ID=3
*
* AREA 16.1W + 16.2W + 16.3E.  ENTERS CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD           ID=7 CODE=0
*
*S ROUTE 8.1W TO 15.2E DOWN CANAL TO AREA 16 DISCHARGE POINT. **
* ROUTE FROM STA 680+12 TO 698+62
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=16.3    NO SEGS=1
                    MIN ELEV=4984       MAX ELEV=4993.10
                    CH SLOPE=0.00032    FP SLOPE=0.00032
                    N=0.045             DIST=73
                    DIST    ELEV
                    0       4992.20
                    12      4991.90
                    27      4984.00
                    40      4984.00
                    56      4991.90
                    73      4993.10

ROUTE MCUNGE        ID=5 HYD NO=32 INFLOW ID=10  DT=0.0 HR
                    LENGTH=1850.0   NS=0   SLOPE=0.00032
                    MATCODE=0   REGCODE=0   CCODE=0
```

```
PRINT HYD            ID=5 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=5  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 15.2E ROUTED DOWN CANAL TO AREA 16 DISCH. POINT WITH BASE
* FLOW CORRECTED.
*
PRINT HYD            ID=5 CODE=0
*
*** ADD 16.1W, 16.2W AND 16.3E TO CANAL FLOW. ***
*
ADD HYD              ID=5 HYD NO=348 ID=5 ID=7
*
* FLOWS FROM 8.1W TO 16.3E IN CANAL.
*
PRINT HYD            ID=5 CODE=0
*
*S ROUTE AREA 8.1W TO 16.3E DOWN CANAL TO AREA 17 DISCHARGE POINT. **
* ROUTE FROM STA 698+62 TO STA 712+83
* SOURCE:SCANLON & ASSOCIATES, NORTH COORS DRAINAGE AND OUTLET CONST PLANS
*
COMPUTE RATING CURVE ID=1 VS NO=17.2     NO SEGS=1
                     MIN ELEV=4983       MAX ELEV=4991.5
                     CH SLOPE=0.00032    FP SLOPE=0.00032
                     N=0.045             DIST=67
                     DIST    ELEV
                     0       4991.50
                     11      4991.00
                     27      4983.00
                     38      4983.00
                     53      4991.00
                     67      4991.50

ROUTE MCUNGE         ID=7 HYD NO=33 INFLOW ID=5  DT=0.0 HR
                     LENGTH=1421.0   NS=0   SLOPE=0.00032
                     MATCODE=0   REGCODE=0   CCODE=0
PRINT HYD            ID=7 CODE=0
*
* BASE FLOW CORRECTION.
*
MODIFY TIME          ID=7  TIME SHIFT=0.0001  BASE FLOW=-38 CFS
*
* AREA 8.1W TO 16.3E ROUTED DOWN CANAL TO AREA 17 DISCH. POINT WITH
* CORRECTED BASE FLOW.
*
PRINT HYD            ID=7 CODE=0
*
**** SUB-BASIN 17.1W ****
*
*S ALBAN HILLS
*
COMPUTE NM HYD       ID=3 HYD NO=200
                     DA=0.0103 SQ MI
                          A=90
                          B=0
                          C=10
                          D=0
                     TP=0.13333 HR  MASSRAIN=-1
*
* AREA 17.1W COMPOSITE RUNOFF HYDROGRAPH.  ENTERS SECONDARY CHANNEL.
*
PRINT HYD            ID=3 CODE=0
*
*S ROUTE AREA 17.1W DOWN SECONDARY CHANNEL TO CANAL. **
*
COMPUTE RATING CURVE ID=1 VS NO=17.1     NO SEGS=3
                     MIN ELEV=100        MAX ELEV=102
                     CH SLOPE=0.0286     FP SLOPE=0.0286
                     N=0.045             DIST=50
                     N=-0.045            DIST=90
                     N=0.045             DIST=130
                     DIST    ELEV        DIST    ELEV        DIST    ELEV
                     0       102         50      101         70      100
                     90      101         130     102
```

```
ROUTE MCUNGE          ID=10 HYD NO=34 INFLOW ID=3  DT=0.0 HR
                      LENGTH=1050.0   NS=0   SLOPE=0.0286
                      MATCODE=0   REGCODE=0   CCODE=0
*
* AREA 17.1W ROUTED DOWN SECONDARY CHANNEL.
*
PRINT HYD             ID=10 CODE=0
*
**** SUB-BASIN 17.4E ****
*
COMPUTE NM HYD        ID=3 HYD NO=208
                      DA=0.02409 SQ MI
                           A=90
                           B=0
                           C=4
                           D=6
                      TP=0.133333 HR  MASSRAIN=-1
*
* AREA 17.4E COMPOSITE RUNOFF HYDROGRAPH.
*
PRINT HYD             ID=3 CODE=0
*
*** ADD AREA 17.4E TO 17.1W ***
*
ADD HYD               ID=5 HYD NO=353 ID=3 ID=10
*
* AREA 17.1W + 17.4E. ENTERS CANAL AT THIS POINT.
* ********** SIDE INLET DESIGN Q **********
*
PRINT HYD             ID=5 CODE=0
*
*** ADD AREAS 17.1W AND 17.4E TO CANAL FLOW. ***
*
ADD HYD               ID=10 HYD NO=354 ID=5 ID=7
*
* MIDDLE AREA HYDROGRAPH, AREAS 8.1W TO 17.4E.  DESIGN FLOW AT LA ORILLA OUTLET.
*
PRINT HYD             ID=10 CODE=0
PLOT HYD              ID=10
*
* THIS HYDROGRAPH GOES TO THE RIVERSIDE DRAIN & TO THE RIO GRANDE BYPASS
*
FINISH
```

APPENDIX B

Hydraulic Model
(Using HEC-2 Computer Program)

- HEC-2 Model of Corrales Main Canal with Flow Rates Determined from AHYMO

1**********
* HEC-2 WATER SURFACE PROFILES *
* *
* Version 4.6.0; February 1991 *
* *
* RUN DATE 25JUL96 TIME 09:33:34 *
****

****
* U.S. ARMY CORPS OF ENGINEERS
* HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616-4687
* (916) 756-1104
****

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

1

25JUL96 09:33:34

THIS RUN EXECUTED 25JUL96 09:33:34

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

T1 NORTH COORS DMP WATER SURFACE PROFILE
T2 FILE 85104MIDH2.4, 12' BOTTOM WIDTH AND 3:1 SIDE SLOPE
T3 MIDDLE SECTION - END AT DROP STR. AT STA 714+19-EARTH & GUNNITE

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	1.0	2.0	0.0	0.0	-1	0.0	0.0	0.0	85.6	0.0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	0.0	0.0	-1.0	0.0	0.0	1.0	-1.0	0.0	0.0	0.0

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	38.0	43.0	1.0	5.0	8.0	4.0	26.0	25.0	3.0	42.0
	39	17	68							
NC	.013	.013	.013	.1	.3	0.0	0.0	0.0	0.0	0.0
QT	1.0	280								

ALL CROSS SECTIONS ORIENTATED LOOKING DOWNSTREAM
CROSS SECTION 714+19 IS AT THE DOWNSTREAM END OF THE NORTH COORS DRAINAGE CHANNEL
SOURCE:CONSTRUCTION DRAWINGS, SCANLON & ASSOCIATES 1986

X1	714.19	4	93.99	106.01	0.0	0.0	0.0	0.0	0.0	0.0
GR	91.25	93.99	83.03	94.00	83.03	106.0	91.25	106.01		
X1	713.68	0.0	0.0	0.0	51	51	51	0.0	.0306	0.0
X1	713.18	0.0	0.0	0.0	50	50	50	0.0	.030	0.0
NC	.035	.035	.035							
X1	712.68	4.0	70.0	130.0	50	50	50	0.0	0.0	0.0
GR	91.10	70.0	83.08	94.0	83.08	106.0	91.10	130.0		
X1	711.79	0.0	0.0	0.0	89	89	89	0.0	.0534	0.0

```
 X1   710.90        0.0        0.0        0.0         89         89         89        0.0      .0534        0.0
1
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 X1   710.00        0.0        0.0        0.0         90         90         90        0.0       .054        0.0

 X1   709.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   708.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   707.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   706.87        0.0        0.0        0.0       13.0       13.0       13.0        0.0      .0078        0.0

 QT      1.0        336
 X1   706.72        4.0      93.99     106.01       15.0       15.0       15.0
 GR    91.45      93.99      83.32      94.00      83.32     106.00      91.45     106.01

 NC     .013       .013       .013
 X1   706.32        0.0        0.0        0.0       40.0       40.0       40.0        0.0       .024        0.0

 NC     .035       .035       .035
 X1   706.17        4.0      70.00     130.00       15.0       15.0       15.0
 GR    91.48      70.00      83.29      94.00      83.29     106.00      91.48     130.00

 X1   706.00        0.0        0.0        0.0         17         17         17        0.0      .0102        0.0

 X1   705.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   704.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   703.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   702.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   701.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   700.50        0.0        0.0        0.0         50         50         50        0.0       .030        0.0

 X1   700.12        0.0        0.0        0.0         38         38         38        0.0       .0228       0.0

 X1   700.05        6.0      70.00     130.0          7          7          7        0.0       .0042       0.0
 X3       10        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
 GR    91.86      70.00      86.86      85.00      83.86      94.00      83.86     106.00      86.86     115.00
 GR    91.86     130.00

 SB     1.25       1.56        3.0          0        .01          0        .01          0          0          0
 X1   699.97          0          0          0          8          8          8          0      .0048        0.0
 X2        0          0        1.0      84.86      86.86          0          0          0          0          0
 X3       10          0          0          0          0          0          0          0          0          0
 BT      4.0       70.0      91.86          0      85.00      86.86          0      115.0      86.86          0
 BT    130.0      91.86
1
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 X1   699.87        4.0       70.0      130.0         10         10         10
 GR    91.87      70.00      83.70      94.00      83.70      106.0      91.87      130.0

 X1   699.55        0.0        0.0        0.0         32         32         32        0.0      .0192        0.0

 X1   699.00        0.0        0.0        0.0         55         55         55        0.0       .033        0.0

 X1   698.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   697.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   696.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   695.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0

 X1   694.00        0.0        0.0        0.0        100        100        100        0.0       .060        0.0
```

```
X1   693.00      0.0      0.0      0.0      100      100      100      0.0     .060     0.0

X1   692.00      0.0      0.0      0.0      100      100      100      0.0     .060     0.0

QT     1.0      266
X1   690.34      0.0      0.0      0.0       66       66       66      0.0    .0396     0.0

NC     .019     .019     .019
X1   689.86        4    89.45   110.55     48.0     48.0     48.0
GR    92.48    89.45    84.55    97.08    84.55   102.92    92.48   110.55

X1   688.92        4    86.95   112.05     94.0     94.0     94.0
GR    92.54    86.95    84.58    96.58    84.58   103.42    92.54   112.05

X1   687.86        4    86.45   114.55    106.0    106.0    106.0
GR    92.60    86.45    84.54    96.08    84.54   103.92    92.60   114.55

X1   686.86        4    83.95   116.05    100.0    100.0    100.0
GR    93.50    83.95    84.57    96.58    84.57   102.42    92.80   116.05

X1   685.86        4    84.45   117.55    100.0    100.0    100.0
GR    93.20    84.45    84.61    96.08    84.61   103.92    92.60   117.55

X1   684.86        4    83.45   113.55    100.0    100.0    100.0
GR    93.63    83.45    84.76    96.08    84.76   103.92    93.88   113.55

X1   683.86        4    84.95   114.05    100.0    100.0    100.0
GR    93.69    84.95    84.87    96.58    84.87   103.42    93.94   114.05

X1   682.86        4    82.95   114.05    100.0    100.0    100.0
GR    93.75    82.95    84.90    96.58    84.90   103.42    93.99   114.05
1
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X1   681.86        4    85.95   113.05    100.0    100.0    100.0
GR    93.81    85.95    84.87    96.58    84.87   103.42    94.05   113.05

X1   680.86        4    86.95   110.05    100.0    100.0    100.0
GR    93.25    86.95    84.87    96.58    84.87   103.42    94.05   110.05

X1   679.86        4    87.95   110.05    100.0    100.0    100.0
GR    93.31    87.95    84.91    96.58    84.91   103.42    94.11   110.05

X1   678.86        4    87.45   111.55    100.0    100.0    100.0
GR    93.11    87.45    85.48    96.08    85.48   103.92    95.27   111.55

X1   677.86        4    86.45   111.55    100.0    100.0    100.0
GR    93.05    86.45    85.26    96.08    85.26   103.92    95.21   111.55

X1   676.86        4    86.45   111.55    100.0    100.0    100.0
GR    93.17    86.45    85.30    96.08    85.30   103.92    95.33   111.55

X1   675.86        4    83.95   114.05    100.0    100.0    100.0
GR    92.89    83.95    85.71    96.58    85.71   103.42    92.89   114.05

X1   674.86        4    83.95   115.05    100.0    100.0    100.0
GR    93.00    83.95    85.80    96.58    85.80   103.42    93.00   115.05

X1   673.86        4    84.95   117.05    100.0    100.0    100.0
GR    94.80    84.95    85.32    96.58    85.32   103.42    94.10   117.05

X1   673.01        4    80.45   115.55     85.0     85.0     85.0
GR    94.10    80.45    85.33    96.08    85.33   103.92    93.50   115.55

X1   672.86        4    93.99   106.01     15.0     15.0     15.0
GR    93.41    93.99    85.34    94.00    85.34   106.00    93.41   106.01

X1   672.46        0     0.00     0.00     40.0     40.0     40.0     0.00    .024     0.0

X1   672.31        4    70.00   130.00     15.0     15.0     15.0
GR    93.44    70.00    85.74    94.00    85.74   106.00    93.44   130.00

QT     1.0      178
X1   672.00      0.0      0.0      0.0       31       31       31      0.0    .0093     0.0
```

X1	671.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	670.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	669.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	668.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0

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X1	667.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
QT	1.0	177								
X1	666.11	0.0	0.0	0.0	89	89	89	0.0	.0267	0.0
X1	665.96	4.0	93.99	106.01	15	15	15			
GR	93.63	93.99	85.63	94.00	85.63	106.00	93.63	106.01		
X1	665.56	0	0	0	40	40	40	0.0	.0120	0.0
X1	665.41	4.0	70.00	130.00	15	15	15			
GR	93.65	70.00	85.65	94.00	85.65	106.00	93.65	130.00		
X1	665.00	0.0	0.0	0.0	41	41	41	0.0	.0123	0.0
X1	664.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	663.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	662.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	661.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
QT	1.0	182								
X1	660.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	659.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	658.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	657.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	656.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	655.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	654.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	653.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	652.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	651.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	650.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	649.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0

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X1	648.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	647.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	646.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	645.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	644.00	0.0	0.0	0.0	100	100	100	0.0	.030	0.0
X1	643.33	0.0	0.0	0.0	100	100	100	0.0	.030	0.0

```
QT      1.0        197

  STA 643+33 IS THE UPSTREAM END OF THE NORTH COORS DRAINAGE CHANNEL
  SOURCE:CONSTRUCTION DRAWINGS, SCANLON & ASSOCIATES 1986

  BEGIN 6'X 10' NEW MEXICO STATE HIGHWAY DEPARTMENT CONCRETE BOX CULVERT
  SLOPE OF BOX CULVERT=.001332 FT/FT MANNING'S N VALUE=0.013

NC    0.013      0.013      0.013
X1   643.00          4          0       10.1         33         33         33          0          0          0
GR     92.5          0       86.5        0.1       86.5         10       92.5       10.1

X1   642.00          4          0       10.1        100        100        100          0          0          0
GR     92.6          0      86.63        0.1      86.63         10       92.6       10.1

X1   641.00          4          0       10.1        100        100        100          0          0          0
GR     92.8          0      86.76        0.1      86.76         10       92.8       10.1

X1   640.00          4          0       10.1        100        100        100          0          0          0
GR     92.9          0      86.90          0.      86.90         10       92.9       10.1

X1   639.00          4          0       10.1        100        100        100          0          0          0
GR       93          0      87.03        0.1      87.03         10         93       10.1

X1   638.00          4          0       10.1        100        100        100          0          0          0
GR     93.2          0      87.17        0.1      87.17         10       93.2       10.1

X1   637.00          4          0       10.1        100        100        100          0          0          0
GR     93.3          0       87.3        0.1       87.3         10       93.3       10.1

X1   636.00          4          0       10.1        100        100        100          0          0          0
GR     93.4          0      87.43        0.1      87.43         10       93.4       10.1

QT      1.0         91          0
X1   635.00          4          0       10.1        100        100        100          0          0          0
GR     93.6          0      87.57        0.1      87.57         10       93.6       10.1
1
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X1   634.00          4          0       10.1        100        100        100          0          0          0
GR     93.7          0       87.7        0.1       87.7         10       93.7       10.1

X1   633.00          4          0       10.1        100        100        100          0          0          0
GR     93.8          0      87.83        0.1      87.83         10       93.8       10.1

QT      1.0        146
X1   632.75          4          0       10.1         25         25         25          0          0          0
GR       94          0      87.86        0.1      87.86         10         94       10.1

  STA 632+75 IS THE NORTHERN END OF THE 6' X 10' CBC

  BEGIN STA 632+45 THE SOUTHERN END OF THE CORRALES ACEQUIA CHANNEL
  FROM STA 632+75 TO STA 632+45 IS A RIP-RAP TRANSITION TO THE CBC

NC     0.03       0.03       0.03
QT      1.0         91
X1   632.45          4          0         20         30         30         30          0          0          0
GR     91.4          0      87.88          7      87.88         13       91.4         20

NC    .0225      .0225      .0225

  FROM STA 632+00 TO STA 575+00 IS THE CORRALES ACEQUIA CHANNEL ALONG THE
  NORTHERN END OF THE MIDDLE AREA
  TYPICAL CROSS SECTION OF CHANNEL IS TRAPEZOIDAL WITH D=3.5 FT B=6 FT
  Z=2 N=0.0225 AND SLOPE=0.0006
  SOURCE:MIDDLE RIO GRANDE CONSERVANCY DISTRICT PLAN AND PROFILE SHEETS 1/82

X1   632.00          4          0         20         45         45         45
GR     91.41         0      87.91          7      87.91         13      91.41         20

X1   631.00          4          0         20        100        100        100          0        .06          0
```

```
GR    91.47          0       87.97          7       87.97         13       91.47         20
X1   630.00          0           0          0         100        100         100          0      .06          0
X1   629.00          0           0          0         100        100         100          0      .06          0
X1   628.00          0           0          0         100        100         100          0      .06          0
X1   627.00          0           0          0         100        100         100          0      .06          0
X1   626.00          0           0          0         100        100         100          0      .06          0
X1   625.00          0           0          0         100        100         100          0      .06          0
```



```
X1   624.00          0           0          0         100        100         100          0      .06          0
X1   623.00          0           0          0         100        100         100          0      .06          0
X1   622.00          0           0          0         100        100         100          0      .06          0
X1   621.00          0           0          0         100        100         100          0      .06          0
X1   620.00          0           0          0         100        100         100          0      .06          0
X1   621.00          0           0          0         100        100         100          0      .06          0
X1   620.00          0           0          0         100        100         100          0      .06          0
X1   619.00          0           0          0         100        100         100          0      .06          0
X1   618.00          0           0          0         100        100         100          0      .06          0
X1   617.00          0           0          0         100        100         100          0      .06          0
X1   616.00          0           0          0         100        100         100          0      .06          0
X1   615.00          0           0          0         100        100         100          0      .06          0
X1   614.00          0           0          0         100        100         100          0      .06          0
X1   613.00          0           0          0         100        100         100          0      .06          0
X1   612.00          0           0          0         100        100         100          0      .06          0
X1   611.00          0           0          0         100        100         100          0      .06          0
X1   610.00          0           0          0         100        100         100          0      .06          0
X1   609.00          0           0          0         100        100         100          0      .06          0
X1   608.00          0           0          0         100        100         100          0      .06          0
X1   607.00          0           0          0         100        100         100          0      .06          0
X1   606.00          0           0          0         100        100         100          0      .06          0
X1   605.00          0           0          0         100        100         100          0      .06          0
X1   604.00          0           0          0         100        100         100          0      .06          0
X1   603.00          0           0          0         100        100         100          0      .06          0
```



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QT     1.0         97
X1   602.00          0           0          0         100        100         100          0      .06          0
X1   601.00          0           0          0         100        100         100          0      .06          0
X1   600.00          0           0          0         100        100         100          0      .06          0
```

X1	599.00	0	0	0	100	100	100	0	.06	0
X1	598.00	0	0	0	100	100	100	0	.06	0
X1	597.00	0	0	0	100	100	100	0	.06	0
X1	596.00	0	0	0	100	100	100	0	.06	0
X1	595.00	0	0	0	100	100	100	0	.06	0
X1	594.00	0	0	0	100	100	100	0	.06	0
X1	593.00	0	0	0	100	100	100	0	.06	0
X1	592.00	0	0	0	100	100	100	0	.06	0
X1	591.00	0	0	0	100	100	100	0	.06	0
X1	590.00	0	0	0	100	100	100	0	.06	0
X1	589.00	0	0	0	100	100	100	0	.06	0
X1	588.00	0	0	0	100	100	100	0	.06	0
X1	587.00	0	0	0	100	100	100	0	.06	0
X1	586.00	0	0	0	100	100	100	0	.06	0
X1	585.00	0	0	0	100	100	100	0	.06	0
X1	584.00	0	0	0	100	100	100	0	.06	0
X1	583.00	0	0	0	100	100	100	0	.06	0
X1	582.00	0	0	0	100	100	100	0	.06	0
X1	581.00	0	0	0	100	100	100	0	.06	0
X1	580.00	0	0	0	100	100	100	0	.06	0
X1	579.00	0	0	0	100	100	100	0	.06	0

X1	578.00	0	0	0	100	100	100	0	.06	0
X1	577.00	0	0	0	100	100	100	0	.06	0
X1	576.00	0	0	0	100	100	100	0	.06	0
X1	575.00	4	0	20	100	100	100	0	.06	0
GR	94.83	0	91.33	7	91.33	13	94.83	20		
X1	574.00	0	0	0	100	100	100	0	.06	0
X1	573.00	0	0	0	100	100	100	0	.06	0
X1	572.00	0	0	0	100	100	100	0	.06	0
X1	571.00	0	0	0	100	100	100	0	.06	0
X1	570.00	0	0	0	100	100	100	0	.06	0
X1	569.00	0	0	0	100	100	100	0	.06	0
X1	568.00	0	0	0	100	100	100	0	.06	0
X1	567.00	0	0	0	100	100	100	0	.06	0
QT	1.0	50								

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV= .100 CEHV= .300
*SECNO 714.190
3720 CRITICAL DEPTH ASSUMED

714.190	2.56	85.59	85.59	85.60	86.88	1.29	.00	.00	91.25
280.0	.0	280.0	.0	.0	30.7	.0	.0	.0	91.25
.00	.00	9.12	.00	.000	.013	.000	.000	83.03	94.00
.002923	0.	0.	0.	0	4	0	.00	12.01	106.00

*SECNO 713.680

713.680	3.07	86.13	85.62	.00	87.03	.90	.11	.04	91.28
280.0	.0	280.0	.0	.0	36.7	.0	.0	.0	91.28
.00	.00	7.63	.00	.000	.013	.000	.000	83.06	94.00
.001736	51.	51.	51.	4	5	0	.00	12.01	106.00

*SECNO 713.180

713.180	3.21	86.30	85.66	.00	87.12	.82	.08	.01	91.31
280.0	.0	280.0	.0	.0	38.5	.0	.1	.0	91.31
.00	.00	7.26	.00	.000	.013	.000	.000	83.09	94.00
.001509	50.	50.	50.	2	11	0	.00	12.01	106.00

*SECNO 712.680

3301 HV CHANGED MORE THAN HVINS

712.680	4.05	87.13	85.21	.00	87.26	.13	.07	.07	91.10
280.0	.0	280.0	.0	.0	97.7	.0	.2	.1	91.10
.01	.00	2.87	.00	.000	.035	.000	.000	83.08	81.88
.001273	50.	50.	50.	3	14	0	.00	36.24	118.12

*SECNO 711.790

711.790	4.11	87.25	85.26	.00	87.37	.12	.11	.00	91.15
280.0	.0	280.0	.0	.0	100.3	.0	.4	.1	91.15
.02	.00	2.79	.00	.000	.035	.000	.000	83.13	81.67
.001186	89.	89.	89.	0	11	0	.00	36.67	118.33

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 710.900

710.900	4.17	87.36	85.31	.00	87.47	.12	.10	.00	91.21
280.0	.0	280.0	.0	.0	102.1	.0	.6	.2	91.21
.03	.00	2.74	.00	.000	.035	.000	.000	83.19	81.52
.001130	89.	89.	89.	0	11	0	.00	36.96	118.48

*SECNO 710.000

710.000	4.22	87.46	85.37	.00	87.57	.11	.10	.00	91.26
280.0	.0	280.0	.0	.0	103.9	.0	.8	.3	91.26
.04	.00	2.70	.00	.000	.035	.000	.000	83.24	81.38
.001077	90.	90.	90.	0	8	0	.00	37.25	118.62

*SECNO 709.000

709.000	4.27	87.57	85.43	.00	87.68	.11	.11	.00	91.32
280.0	.0	280.0	.0	.0	105.7	.0	1.0	.4	91.32
.05	.00	2.65	.00	.000	.035	.000	.000	83.30	81.23
.001026	100.	100.	100.	0	8	0	.00	37.55	118.77

*SECNO 708.000

708.000	4.31	87.67	85.49	.00	87.78	.11	.10	.00	91.38
280.0	.0	280.0	.0	.0	107.4	.0	1.3	.5	91.38
.06	.00	2.61	.00	.000	.035	.000	.000	83.36	81.09
.000983	100.	100.	100.	0	8	0	.00	37.81	118.91

*SECNO 707.000

707.000	4.35	87.77	85.54	.00	87.87	.10	.10	.00	91.44
280.0	.0	280.0	.0	.0	108.9	.0	1.5	.5	91.44
.07	.00	2.57	.00	.000	.035	.000	.000	83.42	80.98
.000947	100.	100.	100.	0	8	0	.00	38.05	119.02

*SECNO 706.870

706.870	4.36	87.78	85.56	.00	87.89	.10	.01	.00	91.45
280.0	.0	280.0	.0	.0	109.1	.0	1.5	.6	91.45
.07	.00	2.57	.00	.000	.035	.000	.000	83.43	80.96
.000944	13.	13.	13.	0	11	0	.00	38.07	119.04

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 706.720

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .41

706.720	4.06	87.38	86.21	.00	88.11	.74	.03	.19	91.45
336.0	.0	336.0	.0	.0	48.8	.0	1.6	.6	91.45
.07	.00	6.89	.00	.000	.035	.000	.000	83.32	94.00
.008086	15.	15.	15.	2	14	0	.00	12.01	106.00

*SECNO 706.320

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.78

706.320	4.16	87.50	86.24	.00	88.21	.70	.09	.00	91.47
336.0	.0	336.0	.0	.0	49.9	.0	1.6	.6	91.47
.07	.00	6.73	.00	.000	.013	.000	.000	83.34	93.99
.001045	40.	40.	40.	2	15	0	.00	12.01	106.01

*SECNO 706.170

3301 HV CHANGED MORE THAN HVINS

706.170	4.88	88.17	85.66	.00	88.28	.11	.01	.00	91.48
336.0	.0	336.0	.0	.0	128.8	.0	1.7	.6	91.48
.07	.00	2.61	.00	.000	.035	.000	.000	83.29	79.66
.000854	15.	15.	15.	2	11	0	.00	40.67	120.34

*SECNO 706.000

706.000	4.89	88.19	85.67	.00	88.29	.11	.01	.00	91.49
336.0	.0	336.0	.0	.0	128.8	.0	1.7	.6	91.49
.07	.00	2.61	.00	.000	.035	.000	.000	83.30	79.67
.000856	17.	17.	17.	0	11	0	.00	40.66	120.33

*SECNO 705.000

705.000	4.91	88.28	85.73	.00	88.38	.10	.08	.00	91.55
336.0	.0	336.0	.0	.0	129.7	.0	2.0	.7	91.55
.09	.00	2.59	.00	.000	.035	.000	.000	83.36	79.60
.000839	100.	100.	100.	0	11	0	.00	40.80	120.40

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 704.000

704.000	4.94	88.36	85.79	.00	88.46	.10	.08	.00	91.61
336.0	.0	336.0	.0	.0	130.8	.0	2.3	.8	91.61
.10	.00	2.57	.00	.000	.035	.000	.000	83.42	79.53
.000820	100.	100.	100.	0	11	0	.00	40.95	120.47

*SECNO 703.000

703.000	4.96	88.44	85.85	.00	88.54	.10	.08	.00	91.67
336.0	.0	336.0	.0	.0	131.7	.0	2.6	.9	91.67
.11	.00	2.55	.00	.000	.035	.000	.000	83.48	79.46
.000805	100.	100.	100.	0	11	0	.00	41.08	120.54

*SECNO 702.000

702.000	4.98	88.52	85.91	.00	88.62	.10	.08	.00	91.73
336.0	.0	336.0	.0	.0	132.6	.0	2.9	1.0	91.73
.12	.00	2.53	.00	.000	.035	.000	.000	83.54	79.40
.000790	100.	100.	100.	0	11	0	.00	41.21	120.60

*SECNO 701.000

701.000	5.00	88.60	85.97	.00	88.70	.10	.08	.00	91.79
336.0	.0	336.0	.0	.0	133.4	.0	3.2	1.1	91.79
.13	.00	2.52	.00	.000	.035	.000	.000	83.60	79.34
.000777	100.	100.	100.	0	11	0	.00	41.32	120.66

*SECNO 700.500

700.500	5.01	88.64	85.99	.00	88.74	.10	.04	.00	91.82
336.0	.0	336.0	.0	.0	133.8	.0	3.4	1.1	91.82
.13	.00	2.51	.00	.000	.035	.000	.000	83.63	79.31
.000771	50.	50.	50.	0	14	0	.00	41.38	120.69

*SECNO 700.120

700.120	5.02	88.67	86.02	.00	88.77	.10	.03	.00	91.84
336.0	.0	336.0	.0	.0	134.1	.0	3.5	1.2	91.84
.14	.00	2.51	.00	.000	.035	.000	.000	83.65	79.29
.000767	38.	38.	38.	0	14	0	.00	41.42	120.71

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 700.050

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 91.86 ELREA= 91.86

700.050	4.81	88.67	86.22	.00	88.78	.11	.01	.00	91.86

336.0	.0	336.0	.0	.0	127.3	.0	3.5	1.2	91.86
.14	.00	2.64	.00	.000	.035	.000	.000	83.86	79.56
.000894	7.	7.	7.	0	14	0	.00	40.88	120.44

SPECIAL BRIDGE

5070, VARIABLE ELCHU OR ELCHD ON SB CARD NOT SPECIFIED

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.56	3.00	.00	.01	.00	.01	.00	83.86	83.86

*SECNO 699.970
PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
**********	88.78	.00	336.	0.	0.	0.	84.86	86.86	43.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 91.87 ELREA= 91.87

699.970	5.10	88.97	.00	.00	89.06	.09	.28	.00	91.87
336.0	.0	336.0	.0	.0	139.3	.0	3.5	1.2	91.87
.14	.00	2.41	.00	.000	.035	.000	.000	83.87	78.69
.000700	8.	8.	8.	2	0	9	.00	42.61	121.31

*SECNO 699.870

699.870	5.29	88.99	86.06	.00	89.07	.08	.01	.00	91.87
336.0	.0	336.0	.0	.0	145.2	.0	3.6	1.2	91.87
.14	.00	2.31	.00	.000	.035	.000	.000	83.70	78.49
.000618	10.	10.	10.	0	14	0	.00	43.02	121.51

*SECNO 699.550

699.550	5.29	89.01	86.08	.00	89.09	.08	.02	.00	91.89
336.0	.0	336.0	.0	.0	145.6	.0	3.7	1.2	91.89
.15	.00	2.31	.00	.000	.035	.000	.000	83.72	78.47
.000614	32.	32.	32.	0	14	0	.00	43.06	121.53

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 699.000

699.000	5.29	89.04	86.11	.00	89.12	.08	.03	.00	91.92
336.0	.0	336.0	.0	.0	145.6	.0	3.8	1.3	91.92
.15	.00	2.31	.00	.000	.035	.000	.000	83.75	78.47
.000614	55.	55.	55.	0	14	0	.00	43.06	121.53

*SECNO 698.000

698.000	5.29	89.10	86.17	.00	89.18	.08	.06	.00	91.98
336.0	.0	336.0	.0	.0	145.6	.0	4.2	1.4	91.98
.16	.00	2.31	.00	.000	.035	.000	.000	83.81	78.46
.000614	100.	100.	100.	0	14	0	.00	43.07	121.54

*SECNO 697.000

697.000	5.29	89.16	86.23	.00	89.24	.08	.06	.00	92.04
336.0	.0	336.0	.0	.0	145.7	.0	4.5	1.5	92.04
.18	.00	2.31	.00	.000	.035	.000	.000	83.87	78.46
.000613	100.	100.	100.	0	14	0	.00	43.08	121.54

*SECNO 696.000

696.000	5.29	89.22	86.29	.00	89.31	.08	.06	.00	92.10
336.0	.0	336.0	.0	.0	145.7	.0	4.9	1.6	92.10
.19	.00	2.31	.00	.000	.035	.000	.000	83.93	78.46
.000612	100.	100.	100.	0	14	0	.00	43.09	121.54

*SECNO 695.000

695.000	5.29	89.28	86.35	.00	89.37	.08	.06	.00	92.16
336.0	.0	336.0	.0	.0	145.8	.0	5.2	1.7	92.16
.20	.00	2.30	.00	.000	.035	.000	.000	83.99	78.45
.000612	100.	100.	100.	0	14	0	.00	43.10	121.55

*SECNO 694.000

694.000	5.29	89.35	86.41	.00	89.43	.08	.06	.00	92.22
336.0	.0	336.0	.0	.0	145.9	.0	5.5	1.8	92.22
.21	.00	2.30	.00	.000	.035	.000	.000	84.05	78.45
.000611	100.	100.	100.	0	14	0	.00	43.10	121.55

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 693.000

693.000	5.30	89.41	86.47	.00	89.49	.08	.06	.00	92.28
336.0	.0	336.0	.0	.0	145.9	.0	5.9	1.9	92.28
.22	.00	2.30	.00	.000	.035	.000	.000	84.11	78.45
.000611	100.	100.	100.	0	14	0	.00	43.11	121.55

*SECNO 692.000

692.000	5.30	89.47	86.53	.00	89.55	.08	.06	.00	92.34
336.0	.0	336.0	.0	.0	146.0	.0	6.2	2.0	92.34
.24	.00	2.30	.00	.000	035	.000	.000	84.17	78.44
.000610	100.	100.	100.	0	14	0	.00	43.12	121.56

*SECNO 690.340

690.340	5.32	89.54	86.28	.00	89.59	.05	.03	.00	92.38
266.0	.0	266.0	.0	.0	147.1	.0	6.4	2.0	92.38
.25	.00	1.81	.00	.000	.035	.000	.000	84.21	78.36
.000374	66.	66.	66.	2	18	0	.00	43.27	121.64

*SECNO 689.860

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

689.860	4.73	89.28	87.85	.00	89.74	.45	.03	.12	92.48
266.0	.0	266.0	.0	.0	49.3	.0	6.5	2.1	92.48
.25	.00	5.40	.00	.000	.019	.000	.000	84.55	92.52
.001338	48.	48.	48.	2	14	0	.00	14.96	107.48

*SECNO 688.920

688.920	4.99	89.57	87.59	.00	89.85	.28	.09	.02	92.54
266.0	.0	266.0	.0	.0	62.6	.0	6.6	2.1	92.54
.26	.00	4.25	.00	.000	.019	.000	.000	84.58	90.55
.000732	94.	94.	94.	2	14	0	.00	18.28	108.83

*SECNO 687.860

687.860	5.18	89.72	87.35	.00	89.92	.20	.06	.01	92.60
266.0	.0	266.0	.0	.0	74.3	.0	6.8	2.1	92.60
.26	.00	3.58	.00	.000	.019	.000	.000	84.54	89.90
.000478	106.	106.	106.	2	11	0	.00	20.85	110.75

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 686.860									
686.860	5.19	89.76	87.62	.00	89.97	.21	.05	.00	93.50
266.0	.0	266.0	.0	.0	71.8	.0	7.0	2.2	92.80
.27	.00	3.70	.00	.000	.019	.000	.000	84.57	89.23
.000546	100.	100.	100.	1	14	0	.00	21.80	111.03
*SECNO 685.860									
685.860	5.25	89.86	87.33	.00	90.02	.16	.04	.01	93.20
266.0	.0	266.0	.0	.0	83.4	.0	7.2	2.2	92.60
.28	.00	3.19	.00	.000	.019	.000	.000	84.61	88.97
.000371	100.	100.	100.	2	11	0	.00	23.91	112.88
*SECNO 684.860									
684.860	5.11	89.87	87.57	.00	90.08	.21	.04	.02	93.63
266.0	.0	266.0	.0	.0	72.4	.0	7.3	2.3	93.88
.29	.00	3.67	.00	.000	.019	.000	.000	84.76	88.80
.000510	100.	100.	100.	2	11	0	.00	20.51	109.32
*SECNO 683.860									
683.860	5.03	89.90	87.86	.00	90.15	.25	.06	.01	93.69
266.0	.0	266.0	.0	.0	66.0	.0	7.5	2.3	93.94
.29	.00	4.03	.00	.000	.019	.000	.000	84.87	89.94
.000648	100.	100.	100.	1	11	0	.00	19.38	109.32
*SECNO 682.860									
682.860	5.09	89.99	87.85	.00	90.21	.23	.06	.00	93.75
266.0	.0	266.0	.0	.0	69.9	.0	7.6	2.4	93.99
.30	.00	3.81	.00	.000	.019	.000	.000	84.90	88.74
.000570	100.	100.	100.	2	11	0	.00	20.63	109.37
*SECNO 681.860									
681.860	5.15	90.02	87.89	.00	90.28	.26	.06	.01	93.81
266.0	.0	266.0	.0	.0	65.0	.0	7.8	2.4	94.05
.31	.00	4.09	.00	.000	.019	.000	.000	84.87	90.45
.000659	100.	100.	100.	2	14	0	.00	18.38	108.83

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 680.860									
680.860	5.20	90.07	87.97	.00	90.37	.30	.07	.01	93.25
266.0	.0	266.0	.0	.0	61.0	.0	7.9	2.5	94.05
.31	.00	4.36	.00	.000	.019	.000	.000	84.87	90.59
.000759	100.	100.	100.	1	14	0	.00	16.59	107.18
*SECNO 679.860									
679.860	5.23	90.14	88.03	.00	90.45	.31	.08	.00	93.31
266.0	.0	266.0	.0	.0	59.7	.0	8.1	2.5	94.11
.32	.00	4.46	.00	.000	.019	.000	.000	84.91	91.21
.000795	100.	100.	100.	0	14	0	.00	15.98	107.19
*SECNO 678.860									

678.860	4.73	90.21	88.38	.00	90.53	.32	.08	.00	93.11
266.0	.0	266.0	.0	.0	58.6	.0	8.2	2.5	95.27
.33	.00	4.54	.00	.000	.019	.000	.000	85.48	90.72
.000859	100.	100.	100.	0	11	0	.00	16.89	107.61

*SECNO 677.860

677.860	5.10	90.36	88.14	.00	90.61	.25	.07	.01	93.05
266.0	.0	266.0	.0	.0	66.1	.0	8.4	2.6	95.21
.33	.00	4.03	.00	.000	.019	.000	.000	85.26	89.77
.000626	100.	100.	100.	2	14	0	.00	18.06	107.83

*SECNO 676.860

676.860	5.13	90.43	88.19	.00	90.68	.25	.06	.00	93.17
266.0	.0	266.0	.0	.0	66.4	.0	8.5	2.6	95.33
.34	.00	4.00	.00	.000	.019	.000	.000	85.30	89.80
.000615	100.	100.	100.	0	11	0	.00	18.03	107.83

*SECNO 675.860

675.860	4.81	90.52	88.56	.00	90.74	.22	.06	.00	92.89
266.0	.0	266.0	.0	.0	70.3	.0	8.7	2.7	92.89
.35	.00	3.78	.00	.000	.019	.000	.000	85.71	88.13
.000595	100.	100.	100.	2	11	0	.00	22.41	110.54

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 674.860

674.860	4.78	90.58	88.64	.00	90.80	.22	.06	.00	93.00
266.0	.0	266.0	.0	.0	71.1	.0	8.8	2.7	93.00
.36	.00	3.74	.00	.000	.019	.000	.000	85.80	88.20
.000584	100.	100.	100.	0	11	0	.00	22.93	111.14

*SECNO 673.860

673.860	5.34	90.66	88.24	.00	90.85	.19	.05	.00	94.80
266.0	.0	266.0	.0	.0	76.2	.0	9.0	2.8	94.10
.36	.00	3.49	.00	.000	.019	.000	.000	85.32	90.03
.000454	100.	100.	100.	2	14	0	.00	21.69	111.71

*SECNO 673.010

673.010	5.42	90.75	88.05	.00	90.89	.14	.03	.01	94.10
266.0	.0	266.0	.0	.0	89.6	.0	9.2	2.8	93.50
.37	.00	2.97	.00	.000	.019	.000	.000	85.33	86.42
.000310	85.	85.	85.	2	8	0	.00	25.22	111.64

*SECNO 672.860

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .66

672.860	5.33	90.67	87.81	.00	90.94	.27	.01	.04	93.41
266.0	.0	266.0	.0	.0	64.0	.0	9.2	2.8	93.41
.37	.00	4.16	.00	.000	.019	.000	.000	85.34	93.99
.000709	15.	15.	15.	2	14	0	.00	12.01	106.01

*SECNO 672.460

672.460	5.33	90.69	87.84	.00	90.96	.27	.03	.00	93.43
266.0	.0	266.0	.0	.0	63.9	.0	9.3	2.8	93.43
.38	.00	4.16	.00	.000	.019	.000	.000	85.36	93.99
.000710	40.	40.	40.	0	14	0	.00	12.01	106.01

*SECNO 672.310

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.49

672.310	5.20	90.94	87.79	.00	90.99	.05	.00	.02	93.44
266.0	.0	266.0	.0	.0	146.6	.0	9.3	2.8	93.44
.38	.00	1.81	.00	.000	.019	.000	.000	85.74	77.80
.000115	15.	15.	15.	2	18	0	.00	44.41	122.20

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 672.000

672.000	5.22	90.97	87.38	.00	90.99	.02	.00	.00	93.45
178.0	.0	178.0	.0	.0	147.7	.0	9.4	2.9	93.45
.38	.00	1.21	.00	.000	.019	.000	.000	85.75	77.72
.000050	31.	31.	31.	2	17	0	.00	44.56	122.28

*SECNO 671.000

671.000	5.20	90.98	87.41	.00	91.00	.02	.01	.00	93.48
178.0	.0	178.0	.0	.0	146.7	.0	9.7	3.0	93.48
.41	.00	1.21	.00	.000	.019	.000	.000	85.78	77.79
.000051	100.	100.	100.	0	17	0	.00	44.42	122.21

*SECNO 670.000

670.000	5.17	90.98	87.44	.00	91.00	.02	.01	.00	93.51
178.0	.0	178.0	.0	.0	145.5	.0	10.1	3.1	93.51
.43	.00	1.22	.00	.000	.019	.000	.000	85.81	77.88
.000053	100.	100.	100.	0	17	0	.00	44.24	122.12

*SECNO 669.000

669.000	5.15	90.99	87.47	.00	91.01	.02	.01	.00	93.54
178.0	.0	178.0	.0	.0	144.4	.0	10.4	3.2	93.54
.45	.00	1.23	.00	.000	.019	.000	.000	85.84	77.96
.000054	100.	100.	100.	0	17	0	.00	44.09	122.04

*SECNO 668.000

668.000	5.12	90.99	87.50	.00	91.02	.02	.01	.00	93.57
178.0	.0	178.0	.0	.0	143.3	.0	10.7	3.3	93.57
.48	.00	1.24	.00	.000	.019	.000	.000	85.87	78.03
.000055	100.	100.	100.	0	17	0	.00	43.93	121.97

*SECNO 667.000

667.000	5.10	91.00	87.53	.00	91.02	.02	.01	.00	93.60
178.0	.0	178.0	.0	.0	142.2	.0	11.1	3.4	93.60
.50	.00	1.25	.00	.000	.019	.000	.000	85.90	78.11
.000056	100.	100.	100.	0	17	0	.00	43.78	121.89

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 666.110

666.110	5.08	91.00	87.55	.00	91.03	.02	.00	.00	93.63
177.0	.0	177.0	.0	.0	141.2	.0	11.3	3.5	93.63
.52	.00	1.25	.00	.000	.019	.000	.000	85.93	78.18
.000056	89.	89.	89.	0	17	0	.00	43.64	121.82

*SECNO 665.960

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .42

665.960	5.31	90.94	87.51	.00	91.06	.12	.00	.03	93.63
177.0	.0	177.0	.0	.0	63.7	.0	11.4	3.5	93.63
.52	.00	2.78	.00	.000	.019	.000	.000	85.63	93.99
.000317	15.	15.	15.	2	18	0	.00	12.01	106.01

*SECNO 665.560

665.560	5.31	90.95	87.53	.00	91.07	.12	.01	.00	93.64
177.0	.0	177.0	.0	.0	63.7	.0	11.4	3.5	93.64
.52	.00	2.78	.00	.000	.019	.000	.000	85.64	93.99
.000318	40.	40.	40.	0	18	0	.00	12.01	106.01

*SECNO 665.410

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.67

665.410	5.41	91.06	87.28	.00	91.08	.02	.00	.01	93.65
177.0	.0	177.0	.0	.0	152.7	.0	11.5	3.5	93.65
.53	.00	1.16	.00	.000	.019	.000	.000	85.65	77.77
.000045	15.	15.	15.	2	17	0	.00	44.46	122.23

*SECNO 665.000

665.000	5.40	91.06	87.29	.00	91.08	.02	.00	.00	93.66
177.0	.0	177.0	.0	.0	152.5	.0	11.6	3.5	93.66
.54	.00	1.16	.00	.000	.019	.000	.000	85.66	77.78
.000045	41.	41.	41.	0	17	0	.00	44.43	122.22

*SECNO 664.000

664.000	5.37	91.07	87.32	.00	91.09	.02	.00	.00	93.69
177.0	.0	177.0	.0	.0	151.1	.0	12.0	3.6	93.69
.56	.00	1.17	.00	.000	.019	.000	.000	85.69	77.88
.000046	100.	100.	100.	0	17	0	.00	44.24	122.12

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 663.000

663.000	5.35	91.07	87.35	.00	91.09	.02	.00	.00	93.72
177.0	.0	177.0	.0	.0	150.0	.0	12.3	3.7	93.72
.58	.00	1.18	.00	.000	.019	.000	.000	85.72	77.95
.000047	100.	100.	100.	0	17	0	.00	44.09	122.05

*SECNO 662.000

662.000	5.32	91.08	87.38	.00	91.10	.02	.00	.00	93.75
177.0	.0	177.0	.0	.0	148.9	.0	12.7	3.8	93.75
.61	.00	1.19	.00	.000	.019	.000	.000	85.75	78.03
.000048	100.	100.	100.	0	17	0	.00	43.94	121.97

*SECNO 661.000

661.000	5.30	91.08	87.41	.00	91.10	.02	.00	.00	93.78
177.0	.0	177.0	.0	.0	147.8	.0	13.0	3.9	93.78
.63	.00	1.20	.00	.000	.019	.000	.000	85.78	78.11
.000049	100.	100.	100.	0	17	0	.00	43.78	121.89

*SECNO 660.000

660.000	5.27	91.08	87.47	.00	91.11	.02	.01	.00	93.81

182.0	.0	182.0	.0	.0	146.7	.0	13.3	4.0	93.81
.65	.00	1.24	.00	.000	.019	.000	.000	85.81	78.18
.000053	100.	100.	100.	0	17	0	.00	43.63	121.82

*SECNO 659.000

659.000	5.25	91.09	87.50	.00	91.11	.02	.01	.00	93.84
182.0	.0	182.0	.0	.0	145.5	.0	13.7	4.1	93.84
.67	.00	1.25	.00	.000	.019	.000	.000	85.84	78.26
.000054	100.	100.	100.	0	17	0	.00	43.48	121.74

*SECNO 658.000

658.000	5.22	91.09	87.53	.00	91.12	.02	.01	.00	93.87
182.0	.0	182.0	.0	.0	144.5	.0	14.0	4.2	93.87
.70	.00	1.26	.00	.000	.019	.000	.000	85.87	78.34
.000055	100.	100.	100.	0	17	0	.00	43.33	121.66

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 657.000

657.000	5.20	91.10	87.56	.00	91.12	.03	.01	.00	93.90
182.0	.0	182.0	.0	.0	143.4	.0	14.3	4.3	93.90
.72	.00	1.27	.00	.000	.019	.000	.000	85.90	78.41
.000056	100.	100.	100.	0	17	0	.00	43.18	121.59

*SECNO 656.000

656.000	5.17	91.10	87.59	.00	91.13	.03	.01	.00	93.93
182.0	.0	182.0	.0	.0	142.3	.0	14.7	4.4	93.93
.74	.00	1.28	.00	.000	.019	.000	.000	85.93	78.48
.000057	100.	100.	100.	0	17	0	.00	43.03	121.52

*SECNO 655.000

655.000	5.15	91.11	87.62	.00	91.14	.03	.01	.00	93.96
182.0	.0	182.0	.0	.0	141.3	.0	15.0	4.5	93.96
.76	.00	1.29	.00	.000	.019	.000	.000	85.96	78.56
.000058	100.	100.	100.	0	17	0	.00	42.89	121.44

*SECNO 654.000

654.000	5.12	91.12	87.65	.00	91.14	.03	.01	.00	93.99
182.0	.0	182.0	.0	.0	140.2	.0	15.3	4.6	93.99
.78	.00	1.30	.00	.000	.019	.000	.000	85.99	78.63
.000059	100.	100.	100.	0	17	0	.00	42.74	121.37

*SECNO 653.000

653.000	5.10	91.12	87.68	.00	91.15	.03	.01	.00	94.02
182.0	.0	182.0	.0	.0	139.2	.0	15.6	4.7	94.02
.80	.00	1.31	.00	.000	.019	.000	.000	86.02	78.70
.000061	100.	100.	100.	0	17	0	.00	42.59	121.30

*SECNO 652.000

652.000	5.07	91.13	87.71	.00	91.15	.03	.01	.00	94.05
182.0	.0	182.0	.0	.0	138.2	.0	15.9	4.8	94.05
.83	.00	1.32	.00	.000	.019	.000	.000	86.05	78.78
.000062	100.	100.	100.	0	17	0	.00	42.45	121.22

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV

Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 651.000									
651.000	5.05	91.13	87.74	.00	91.16	.03	.01	.00	94.08
182.0	.0	182.0	.0	.0	137.1	.0	16.3	4.9	94.08
.85	.00	1.33	.00	.000	.019	.000	.000	86.08	78.85
.000063	100.	100.	100.	0	17	0	.00	42.31	121.15
*SECNO 650.000									
650.000	5.03	91.14	87.77	.00	91.17	.03	.01	.00	94.11
182.0	.0	182.0	.0	.0	136.1	.0	16.6	5.0	94.11
.87	.00	1.34	.00	.000	.019	.000	.000	86.11	78.92
.000064	100.	100.	100.	0	17	0	.00	42.16	121.08
*SECNO 649.000									
649.000	5.00	91.15	87.80	.00	91.17	.03	.01	.00	94.14
182.0	.0	182.0	.0	.0	135.1	.0	16.9	5.1	94.14
.89	.00	1.35	.00	.000	.019	.000	.000	86.14	78.99
.000066	100.	100.	100.	0	17	0	.00	42.02	121.01
*SECNO 648.000									
648.000	4.98	91.15	87.83	.00	91.18	.03	.01	.00	94.17
182.0	.0	182.0	.0	.0	134.1	.0	17.2	5.2	94.17
.91	.00	1.36	.00	.000	.019	.000	.000	86.17	79.06
.000067	100.	100.	100.	0	17	0	.00	41.88	120.94
*SECNO 647.000									
647.000	4.96	91.16	87.86	.00	91.19	.03	.01	.00	94.20
182.0	.0	182.0	.0	.0	133.2	.0	17.5	5.3	94.20
.93	.00	1.37	.00	.000	.019	.000	.000	86.20	79.13
.000068	100.	100.	100.	0	17	0	.00	41.74	120.87
*SECNO 646.000									
646.000	4.93	91.16	87.89	.00	91.19	.03	.01	.00	94.23
182.0	.0	182.0	.0	.0	132.2	.0	17.8	5.4	94.23
.95	.00	1.38	.00	.000	.019	.000	.000	86.23	79.20
.000070	100.	100.	100.	0	17	0	.00	41.60	120.80

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 645.000									
645.000	4.91	91.17	87.92	.00	91.20	.03	.01	.00	94.26
182.0	.0	182.0	.0	.0	131.2	.0	18.1	5.5	94.26
.97	.00	1.39	.00	.000	.019	.000	.000	86.26	79.27
.000071	100.	100.	100.	0	17	0	.00	41.46	120.73
*SECNO 644.000									
644.000	4.89	91.18	87.95	.00	91.21	.03	.01	.00	94.29
182.0	.0	182.0	.0	.0	130.3	.0	18.4	5.6	94.29
.99	.00	1.40	.00	.000	.019	.000	.000	86.29	79.34
.000073	100.	100.	100.	0	17	0	.00	41.32	120.66
*SECNO 643.330									
643.330	4.86	91.19	87.98	.00	91.22	.03	.01	.00	94.32
182.0	.0	182.0	.0	.0	129.3	.0	18.7	5.7	94.32
1.01	.00	1.41	.00	.000	.019	.000	.000	86.32	79.41
.000074	100.	100.	100.	0	17	0	.00	41.18	120.59

*SECNO 643.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .43

643.000	4.50	91.00	88.81	.00	91.30	.30	.01	.08	92.50
197.0	.0	197.0	.0	.0	44.9	.0	18.8	5.7	92.50
1.01	.00	4.39	.00	.000	.013	.000	.000	86.50	.02
.000464	33.	33.	33.	2	11	0	.00	10.05	10.08

*SECNO 642.000

642.000	4.41	91.04	88.94	.00	91.35	.31	.05	.00	92.60
197.0	.0	197.0	.0	.0	43.9	.0	18.9	5.7	92.60
1.02	.00	4.48	.00	.000	.013	.000	.000	86.63	.03
.000493	100.	100.	100.	1	8	0	.00	10.05	10.07

*SECNO 641.000

641.000	4.32	91.08	89.06	.00	91.41	.32	.05	.00	92.80
197.0	.0	197.0	.0	.0	43.2	.0	19.0	5.8	92.80
1.02	.00	4.56	.00	.000	.013	.000	.000	86.76	.03
.000517	100.	100.	100.	0	11	0	.00	10.04	10.07

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 640.000

640.000	4.23	91.13	89.18	.00	91.46	.33	.05	.00	92.90
197.0	.0	197.0	.0	.0	42.5	.0	19.1	5.8	92.90
1.03	.00	4.64	.00	.000	.013	.000	.000	86.90	.00
.000541	100.	100.	100.	0	11	0	.00	10.07	10.07

*SECNO 639.000

639.000	4.14	91.17	89.33	.00	91.52	.35	.06	.01	93.00
197.0	.0	197.0	.0	.0	41.4	.0	19.2	5.8	93.00
1.03	.00	4.76	.00	.000	.013	.000	.000	87.03	.03
.000579	100.	100.	100.	0	11	0	.00	10.04	10.07

*SECNO 638.000

638.000	4.05	91.22	89.47	.00	91.59	.37	.06	.00	93.20
197.0	.0	197.0	.0	.0	40.5	.0	19.3	5.8	93.20
1.04	.00	4.87	.00	.000	.013	.000	.000	87.17	.03
.000617	100.	100.	100.	0	11	0	.00	10.03	10.07

*SECNO 637.000

637.000	3.97	91.27	89.60	.00	91.66	.38	.06	.00	93.30
197.0	.0	197.0	.0	.0	39.7	.0	19.4	5.9	93.30
1.05	.00	4.96	.00	.000	.013	.000	.000	87.30	.03
.000651	100.	100.	100.	0	11	0	.00	10.03	10.07

*SECNO 636.000

636.000	3.90	91.33	89.73	.00	91.73	.40	.07	.00	93.40
197.0	.0	197.0	.0	.0	38.9	.0	19.5	5.9	93.40
1.05	.00	5.06	.00	.000	.013	.000	.000	87.43	.03
.000685	100.	100.	100.	0	11	0	.00	10.03	10.07

*SECNO 635.000

635.000	4.15	91.72	88.94	.00	91.79	.08	.03	.03	93.60
91.0	.0	91.0	.0	.0	41.4	.0	19.5	5.9	93.60
1.06	.00	2.20	.00	.000	.013	.000	.000	87.57	.03
.000124	100.	100.	100.	2	22	0	.00	10.04	10.07

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 634.000									
634.000	4.03	91.73	89.07	.00	91.81	.08	.01	.00	93.70
91.0	.0	91.0	.0	.0	40.2	.0	19.6	5.9	93.70
1.08	.00	2.27	.00	.000	.013	.000	.000	87.70	.03
.000134	100.	100.	100.	2	17	0	.00	10.03	10.07
*SECNO 633.000									
633.000	3.91	91.74	89.20	.00	91.82	.08	.01	.00	93.80
91.0	.0	91.0	.0	.0	39.0	.0	19.7	6.0	93.80
1.09	.00	2.33	.00	.000	.013	.000	.000	87.83	.03
.000146	100.	100.	100.	0	17	0	.00	10.03	10.07
*SECNO 632.750									
632.750	3.78	91.64	89.75	.00	91.88	.23	.01	.04	94.00
146.0	.0	146.0	.0	.0	37.7	.0	19.7	6.0	94.00
1.09	.00	3.88	.00	.000	.013	.000	.000	87.86	.04
.000412	25.	25.	25.	2	11	0	.00	10.02	10.06

*SECNO 632.450
3280 CROSS SECTION 632.45 EXTENDED .46 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

632.450	3.98	91.86	89.47	.00	91.91	.04	.01	.02	91.40
91.0	.0	91.0	.0	.0	55.0	.0	19.8	6.0	91.40
1.09	.00	1.65	.00	.000	.030	.000	.000	87.88	.00
.000340	30.	30.	30.	2	18	0	.00	20.00	20.00

*SECNO 632.000
3280 CROSS SECTION 632.00 EXTENDED .47 FEET

632.000	3.96	91.87	89.50	.00	91.92	.04	.01	.00	91.41
91.0	.0	91.0	.0	.0	54.9	.0	19.8	6.0	91.41
1.10	.00	1.66	.00	.000	.023	.000	.000	87.91	.00
.000193	45.	45.	45.	0	18	0	.00	20.00	20.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 631.000
3280 CROSS SECTION 631.00 EXTENDED .37 FEET

631.000	3.86	91.89	89.62	.00	91.94	.05	.02	.00	91.53
91.0	.0	91.0	.0	.0	52.9	.0	20.0	6.0	91.53
1.12	.00	1.72	.00	.000	.023	.000	.000	88.03	.00
.000215	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 630.000
3280 CROSS SECTION 630.00 EXTENDED .32 FEET

630.000	3.82	91.91	89.68	.00	91.96	.05	.02	.00	91.59
91.0	.0	91.0	.0	.0	52.0	.0	20.1	6.1	91.59
1.13	.00	1.75	.00	.000	.023	.000	.000	88.09	.00
.000228	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 629.000
3280 CROSS SECTION 629.00 EXTENDED .29 FEET

629.000	3.79	91.94	89.74	.00	91.98	.05	.02	.00	91.65
91.0	.0	91.0	.0	.0	51.2	.0	20.2	6.1	91.65
1.15	.00	1.78	.00	.000	.023	.000	.000	88.15	.00
.000238	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 628.000
3280 CROSS SECTION 628.00 EXTENDED .25 FEET

628.000	3.75	91.96	89.80	.00	92.01	.05	.02	.00	91.71
91.0	.0	91.0	.0	.0	50.5	.0	20.3	6.2	91.71
1.17	.00	1.80	.00	.000	.023	.000	.000	88.21	.00
.000248	100.	100.	100.	0	18	0	.00	20.00	20.00

*SECNO 627.000
3280 CROSS SECTION 627.00 EXTENDED .21 FEET

627.000	3.71	91.98	89.86	.00	92.04	.05	.03	.00	91.77
91.0	.0	91.0	.0	.0	49.8	.0	20.4	6.2	91.77
1.18	.00	1.83	.00	.000	.023	.000	.000	88.27	.00
.000259	100.	100.	100.	0	18	0	.00	20.00	20.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 626.000
3280 CROSS SECTION 626.00 EXTENDED .18 FEET

626.000	3.68	92.01	89.93	.00	92.06	.05	.03	.00	91.83
91.0	.0	91.0	.0	.0	49.1	.0	20.5	6.3	91.83
1.20	.00	1.85	.00	.000	.023	.000	.000	88.33	.00
.000271	100.	100.	100.	0	14	0	.00	20.00	20.00

*SECNO 625.000
3280 CROSS SECTION 625.00 EXTENDED .15 FEET

625.000	3.65	92.04	89.99	.00	92.09	.05	.03	.00	91.89
91.0	.0	91.0	.0	.0	48.4	.0	20.7	6.3	91.89
1.21	.00	1.88	.00	.000	.023	.000	.000	88.39	.00
.000282	100.	100.	100.	0	14	0	.00	20.00	20.00

*SECNO 624.000
3280 CROSS SECTION 624.00 EXTENDED .11 FEET

624.000	3.61	92.06	90.05	.00	92.12	.06	.03	.00	91.95
91.0	.0	91.0	.0	.0	47.8	.0	20.8	6.4	91.95
1.23	.00	1.91	.00	.000	.023	.000	.000	88.45	.00
.000294	100.	100.	100.	0	14	0	.00	20.00	20.00

*SECNO 623.000
3280 CROSS SECTION 623.00 EXTENDED .08 FEET

623.000	3.58	92.09	90.10	.00	92.15	.06	.03	.00	92.01
91.0	.0	91.0	.0	.0	47.1	.0	20.9	6.4	92.01
1.24	.00	1.93	.00	.000	.023	.000	.000	88.51	.00

.000306	100.	100.	100.	0	14	0	.00	20.00	20.00

*SECNO 622.000
3280 CROSS SECTION 622.00 EXTENDED .05 FEET

622.000	3.55	92.12	90.16	.00	92.18	.06	.03	.00	92.07
91.0	.0	91.0	.0	.0	46.5	.0	21.0	6.4	92.07
1.25	.00	1.96	.00	.000	.023	.000	.000	88.57	.00
.000318	100.	100.	100.	0	14	0	.00	20.00	20.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 621.000
3280 CROSS SECTION 621.00 EXTENDED .02 FEET

621.000	3.52	92.15	90.22	.00	92.21	.06	.03	.00	92.13
91.0	.0	91.0	.0	.0	46.0	.0	21.1	6.5	92.13
1.27	.00	1.98	.00	.000	.023	.000	.000	88.63	.00
.000330	100.	100.	100.	0	14	0	.00	20.00	20.00

*SECNO 620.000

620.000	3.50	92.19	90.28	.00	92.25	.06	.03	.00	92.19
91.0	.0	91.0	.0	.0	45.4	.0	21.2	6.5	92.19
1.28	.00	2.00	.00	.000	.023	.000	.000	88.69	.01
.000342	100.	100.	100.	0	14	0	.00	19.98	19.99

*SECNO 621.000

621.000	3.47	92.22	90.34	.00	92.28	.06	.03	.00	92.25
91.0	.0	91.0	.0	.0	44.9	.0	21.3	6.6	92.25
1.30	.00	2.03	.00	.000	.023	.000	.000	88.75	.06
.000353	100.	100.	100.	0	14	0	.00	19.88	19.94

*SECNO 620.000

620.000	3.44	92.25	90.40	.00	92.32	.07	.04	.00	92.31
91.0	.0	91.0	.0	.0	44.4	.0	21.4	6.6	92.31
1.31	.00	2.05	.00	.000	.023	.000	.000	88.81	.11
.000364	100.	100.	100.	0	14	0	.00	19.78	19.89

*SECNO 619.000

619.000	3.42	92.29	90.46	.00	92.36	.07	.04	.00	92.37
91.0	.0	91.0	.0	.0	43.9	.0	21.5	6.7	92.37
1.32	.00	2.07	.00	.000	.023	.000	.000	88.87	.16
.000375	100.	100.	100.	0	14	0	.00	19.68	19.84

*SECNO 618.000

618.000	3.40	92.33	90.52	.00	92.40	.07	.04	.00	92.43
91.0	.0	91.0	.0	.0	43.5	.0	21.6	6.7	92.43
1.34	.00	2.09	.00	.000	.023	.000	.000	88.93	.20
.000385	100.	100.	100.	0	14	0	.00	19.59	19.80

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 617.000

617.000	3.38	92.37	90.58	.00	92.44	.07	.04	.00	92.49
91.0	.0	91.0	.0	.0	43.0	.0	21.7	6.8	92.49
1.35	.00	2.11	.00	.000	.023	.000	.000	88.99	.25
.000396	100.	100.	100.	0	14	0	.00	19.50	19.75

*SECNO 616.000

616.000	3.36	92.40	90.64	.00	92.48	.07	.04	.00	92.55
91.0	.0	91.0	.0	.0	42.6	.0	21.8	6.8	92.55
1.36	.00	2.13	.00	.000	.023	.000	.000	89.05	.29
.000406	100.	100.	100.	0	14	0	.00	19.42	19.71

*SECNO 615.000

615.000	3.34	92.45	90.71	.00	92.52	.07	.04	.00	92.61
91.0	.0	91.0	.0	.0	42.3	.0	21.9	6.9	92.61
1.37	.00	2.15	.00	.000	.023	.000	.000	89.11	.33
.000416	100.	100.	100.	0	11	0	.00	19.34	19.67

*SECNO 614.000

614.000	3.32	92.49	90.77	.00	92.56	.07	.04	.00	92.67
91.0	.0	91.0	.0	.0	41.9	.0	22.0	6.9	92.67
1.39	.00	2.17	.00	.000	.023	.000	.000	89.17	.37
.000426	100.	100.	100.	0	11	0	.00	19.27	19.63

*SECNO 613.000

613.000	3.30	92.53	90.83	.00	92.60	.07	.04	.00	92.73
91.0	.0	91.0	.0	.0	41.6	.0	22.1	6.9	92.73
1.40	.00	2.19	.00	.000	.023	.000	.000	89.23	.40
.000436	100.	100.	100.	0	11	0	.00	19.19	19.60

*SECNO 612.000

612.000	3.28	92.57	90.89	.00	92.65	.08	.04	.00	92.79
91.0	.0	91.0	.0	.0	41.2	.0	22.2	7.0	92.79
1.41	.00	2.21	.00	.000	.023	.000	.000	89.29	.44
.000445	100.	100.	100.	0	11	0	.00	19.13	19.56

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 611.000

611.000	3.27	92.62	90.95	.00	92.69	.08	.04	.00	92.85
91.0	.0	91.0	.0	.0	40.9	.0	22.3	7.0	92.85
1.43	.00	2.22	.00	.000	.023	.000	.000	89.35	.47
.000454	100.	100.	100.	0	11	0	.00	19.06	19.53

*SECNO 610.000

610.000	3.25	92.66	91.01	.00	92.74	.08	.05	.00	92.91
91.0	.0	91.0	.0	.0	40.6	.0	22.4	7.1	92.91
1.44	.00	2.24	.00	.000	.023	.000	.000	89.41	.50
.000463	100.	100.	100.	0	11	0	.00	19.00	19.50

*SECNO 609.000

609.000	3.24	92.71	91.06	.00	92.79	.08	.05	.00	92.97
91.0	.0	91.0	.0	.0	40.4	.0	22.5	7.1	92.97
1.45	.00	2.25	.00	.000	.023	.000	.000	89.47	.53
.000471	100.	100.	100.	0	8	0	.00	18.95	19.47

*SECNO 608.000

608.000	3.22	92.75	91.12	.00	92.83	.08	.05	.00	93.03
91.0	.0	91.0	.0	.0	40.1	.0	22.6	7.2	93.03

1.46	.00	2.27	.00	.000	.023	.000	.000	89.53	.55
.000479	100.	100.	100.	0	8	0	.00	18.90	19.45

*SECNO 607.000

607.000	3.21	92.80	91.18	.00	92.88	.08	.05	.00	93.09
91.0	.0	91.0	.0	.0	39.9	.0	22.7	7.2	93.09
1.47	.00	2.28	.00	.000	.023	.000	.000	89.59	.58
.000487	100.	100.	100.	0	8	0	.00	18.85	19.42

*SECNO 606.000

606.000	3.20	92.85	91.24	.00	92.93	.08	.05	.00	93.15
91.0	.0	91.0	.0	.0	39.7	.0	22.7	7.2	93.15
1.49	.00	2.29	.00	.000	.023	.000	.000	89.65	.60
.000494	100.	100.	100.	0	8	0	.00	18.80	19.40

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 605.000

605.000	3.19	92.90	91.30	.00	92.98	.08	.05	.00	93.21
91.0	.0	91.0	.0	.0	39.5	.0	22.8	7.3	93.21
1.50	.00	2.31	.00	.000	.023	.000	.000	89.71	.62
.000501	100.	100.	100.	0	8	0	.00	18.76	19.38

*SECNO 604.000

604.000	3.18	92.95	91.37	.00	93.03	.08	.05	.00	93.27
91.0	.0	91.0	.0	.0	39.3	.0	22.9	7.3	93.27
1.51	.00	2.32	.00	.000	.023	.000	.000	89.77	.64
.000507	100.	100.	100.	0	8	0	.00	18.72	19.36

*SECNO 603.000

603.000	3.17	93.00	91.43	.00	93.08	.08	.05	.00	93.33
91.0	.0	91.0	.0	.0	39.1	.0	23.0	7.4	93.33
1.52	.00	2.33	.00	.000	.023	.000	.000	89.83	.66
.000514	100.	100.	100.	0	8	0	.00	18.68	19.34

*SECNO 602.000

602.000	3.16	93.05	91.54	.00	93.14	.10	.06	.00	93.39
97.0	.0	97.0	.0	.0	38.9	.0	23.1	7.4	93.39
1.53	.00	2.49	.00	.000	.023	.000	.000	89.89	.68
.000590	100.	100.	100.	0	11	0	.00	18.64	19.32

*SECNO 601.000

601.000	3.15	93.10	91.60	.00	93.20	.10	.06	.00	93.45
97.0	.0	97.0	.0	.0	38.8	.0	23.2	7.5	93.45
1.54	.00	2.50	.00	.000	.023	.000	.000	89.95	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30

*SECNO 600.000

600.000	3.15	93.16	91.66	.00	93.26	.10	.06	.00	93.51
97.0	.0	97.0	.0	.0	38.8	.0	23.3	7.5	93.51
1.56	.00	2.50	.00	.000	.023	.000	.000	90.01	.69
.000595	100.	100.	100.	0	11	0	.00	18.62	19.31

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 599.000									
599.000	3.15	93.22	91.72	.00	93.32	.10	.06	.00	93.57
97.0	.0	97.0	.0	.0	38.8	.0	23.4	7.5	93.57
1.57	.00	2.50	.00	.000	.023	.000	.000	90.07	.69
.000595	100.	100.	100.	0	11	0	.00	18.62	19.31
*SECNO 598.000									
598.000	3.15	93.28	91.78	.00	93.38	.10	.06	.00	93.63
97.0	.0	97.0	.0	.0	38.8	.0	23.5	7.6	93.63
1.58	.00	2.50	.00	.000	.023	.000	.000	90.13	.69
.000596	100.	100.	100.	0	11	0	.00	18.61	19.31
*SECNO 597.000									
597.000	3.15	93.34	91.84	.00	93.44	.10	.06	.00	93.69
97.0	.0	97.0	.0	.0	38.8	.0	23.5	7.6	93.69
1.59	.00	2.50	.00	.000	.023	.000	.000	90.19	.69
.000596	100.	100.	100.	0	11	0	.00	18.61	19.31
*SECNO 596.000									
596.000	3.15	93.40	91.90	.00	93.50	.10	.06	.00	93.75
97.0	.0	97.0	.0	.0	38.8	.0	23.6	7.7	93.75
1.60	.00	2.50	.00	.000	.023	.000	.000	90.25	.69
.000596	100.	100.	100.	0	11	0	.00	18.61	19.31
*SECNO 595.000									
595.000	3.15	93.46	91.96	.00	93.56	.10	.06	.00	93.81
97.0	.0	97.0	.0	.0	38.8	.0	23.7	7.7	93.81
1.61	.00	2.50	.00	.000	.023	.000	.000	90.31	.70
.000597	100.	100.	100.	0	11	0	.00	18.61	19.30
*SECNO 594.000									
594.000	3.15	93.52	92.02	.00	93.62	.10	.06	.00	93.87
97.0	.0	97.0	.0	.0	38.8	.0	23.8	7.8	93.87
1.62	.00	2.50	.00	.000	.023	.000	.000	90.37	.70
.000597	100.	100.	100.	0	11	0	.00	18.61	19.30

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 593.000									
593.000	3.15	93.58	92.08	.00	93.68	.10	.06	.00	93.93
97.0	.0	97.0	.0	.0	38.8	.0	23.9	7.8	93.93
1.63	.00	2.50	.00	.000	.023	.000	.000	90.43	.70
.000597	100.	100.	100.	0	11	0	.00	18.61	19.30
*SECNO 592.000									
592.000	3.15	93.64	92.14	.00	93.74	.10	.06	.00	93.99
97.0	.0	97.0	.0	.0	38.8	.0	24.0	7.8	93.99
1.64	.00	2.50	.00	.000	.023	.000	.000	90.49	.70
.000597	100.	100.	100.	0	11	0	.00	18.61	19.30
*SECNO 591.000									
591.000	3.15	93.70	92.20	.00	93.80	.10	.06	.00	94.05
97.0	.0	97.0	.0	.0	38.8	.0	24.1	7.9	94.05
1.66	.00	2.50	.00	.000	.023	.000	.000	90.55	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30

*SECNO 590.000									
590.000	3.15	93.76	92.26	.00	93.86	.10	.06	.00	94.11
97.0	.0	97.0	.0	.0	38.8	.0	24.2	7.9	94.11
1.67	.00	2.50	.00	.000	.023	.000	.000	90.61	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 589.000									
589.000	3.15	93.82	92.32	.00	93.92	.10	.06	.00	94.17
97.0	.0	97.0	.0	.0	38.8	.0	24.3	8.0	94.17
1.68	.00	2.50	.00	.000	.023	.000	.000	90.67	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 588.000									
588.000	3.15	93.88	92.38	.00	93.98	.10	.06	.00	94.23
97.0	.0	97.0	.0	.0	38.8	.0	24.4	8.0	94.23
1.69	.00	2.50	.00	.000	.023	.000	.000	90.73	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 587.000									
587.000	3.15	93.94	92.44	.00	94.04	.10	.06	.00	94.29
97.0	.0	97.0	.0	.0	38.8	.0	24.4	8.1	94.29
1.70	.00	2.50	.00	.000	.023	.000	.000	90.79	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 586.000									
586.000	3.15	94.00	92.50	.00	94.10	.10	.06	.00	94.35
97.0	.0	97.0	.0	.0	38.7	.0	24.5	8.1	94.35
1.71	.00	2.50	.00	.000	.023	.000	.000	90.85	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 585.000									
585.000	3.15	94.06	92.56	.00	94.16	.10	.06	.00	94.41
97.0	.0	97.0	.0	.0	38.7	.0	24.6	8.1	94.41
1.72	.00	2.50	.00	.000	.023	.000	.000	90.91	.70
.000598	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 584.000									
584.000	3.15	94.12	92.62	.00	94.22	.10	.06	.00	94.47
97.0	.0	97.0	.0	.0	38.7	.0	24.7	8.2	94.47
1.73	.00	2.50	.00	.000	.023	.000	.000	90.97	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 583.000									
583.000	3.15	94.18	92.68	.00	94.28	.10	.06	.00	94.53
97.0	.0	97.0	.0	.0	38.7	.0	24.8	8.2	94.53
1.74	.00	2.50	.00	.000	.023	.000	.000	91.03	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 582.000									
582.000	3.15	94.24	92.74	.00	94.34	.10	.06	.00	94.59
97.0	.0	97.0	.0	.0	38.7	.0	24.9	8.3	94.59
1.76	.00	2.50	.00	.000	.023	.000	.000	91.09	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 581.000									
581.000	3.15	94.30	92.80	.00	94.40	.10	.06	.00	94.65
97.0	.0	97.0	.0	.0	38.7	.0	25.0	8.3	94.65
1.77	.00	2.50	.00	.000	.023	.000	.000	91.15	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 580.000									
580.000	3.15	94.36	92.86	.00	94.46	.10	.06	.00	94.71
97.0	.0	97.0	.0	.0	38.7	.0	25.1	8.4	94.71
1.78	.00	2.50	.00	.000	.023	.000	.000	91.21	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 579.000									
579.000	3.15	94.42	92.92	.00	94.52	.10	.06	.00	94.77
97.0	.0	97.0	.0	.0	38.7	.0	25.2	8.4	94.77
1.79	.00	2.50	.00	.000	.023	.000	.000	91.27	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 578.000									
578.000	3.15	94.48	92.98	.00	94.58	.10	.06	.00	94.83
97.0	.0	97.0	.0	.0	38.7	.0	25.2	8.4	94.83
1.80	.00	2.50	.00	.000	.023	.000	.000	91.33	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 577.000									
577.000	3.15	94.54	93.04	.00	94.64	.10	.06	.00	94.89
97.0	.0	97.0	.0	.0	38.7	.0	25.3	8.5	94.89
1.81	.00	2.50	.00	.000	.023	.000	.000	91.39	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30
*SECNO 576.000									
576.000	3.15	94.60	93.10	.00	94.70	.10	.06	.00	94.95
97.0	.0	97.0	.0	.0	38.7	.0	25.4	8.5	94.95
1.82	.00	2.50	.00	.000	.023	.000	.000	91.45	.70
.000599	100.	100.	100.	0	11	0	.00	18.60	19.30

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 575.000									
575.000	3.28	94.67	93.04	.00	94.75	.09	.06	.00	94.89
97.0	.0	97.0	.0	.0	41.0	.0	25.5	8.6	94.89
1.83	.00	2.37	.00	.000	.023	.000	.000	91.39	.46
.000514	100.	100.	100.	0	11	0	.00	19.07	19.54
*SECNO 574.000									
574.000	3.27	94.72	93.11	.00	94.80	.09	.05	.00	94.95
97.0	.0	97.0	.0	.0	41.0	.0	25.6	8.6	94.95
1.85	.00	2.36	.00	.000	.023	.000	.000	91.45	.46
.000512	100.	100.	100.	0	8	0	.00	19.09	19.54
*SECNO 573.000									
573.000	3.26	94.77	93.17	.00	94.86	.09	.05	.00	95.01

97.0	.0	97.0	.0	.0	40.8	.0	25.7	8.7	95.01
1.86	.00	2.38	.00	.000	.023	.000	.000	91.51	.48
.000521	100.	100.	100.	0	8	0	.00	19.03	19.52

*SECNO 572.000

572.000	3.25	94.82	93.23	.00	94.91	.09	.05	.00	95.07
97.0	.0	97.0	.0	.0	40.6	.0	25.8	8.7	95.07
1.87	.00	2.39	.00	.000	.023	.000	.000	91.57	.50
.000526	100.	100.	100.	0	8	0	.00	19.00	19.50

*SECNO 571.000

571.000	3.24	94.87	93.29	.00	94.96	.09	.05	.00	95.13
97.0	.0	97.0	.0	.0	40.5	.0	25.9	8.8	95.13
1.88	.00	2.40	.00	.000	.023	.000	.000	91.63	.52
.000531	100.	100.	100.	0	8	0	.00	18.97	19.48

*SECNO 570.000

570.000	3.24	94.93	93.35	.00	95.02	.09	.05	.00	95.19
97.0	.0	97.0	.0	.0	40.3	.0	26.0	8.8	95.19
1.89	.00	2.40	.00	.000	.023	.000	.000	91.69	.53
.000536	100.	100.	100.	0	8	0	.00	18.94	19.47

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 569.000

569.000	3.23	94.98	93.40	.00	95.07	.09	.05	.00	95.25
97.0	.0	97.0	.0	.0	40.2	.0	26.1	8.8	95.25
1.90	.00	2.41	.00	.000	.023	.000	.000	91.75	.54
.000541	100.	100.	100.	0	11	0	.00	18.92	19.46

*SECNO 568.000

568.000	3.22	95.03	93.46	.00	95.12	.09	.05	.00	95.31
97.0	.0	97.0	.0	.0	40.1	.0	26.2	8.9	95.31
1.92	.00	2.42	.00	.000	.023	.000	.000	91.81	.55
.000545	100.	100.	100.	0	11	0	.00	18.89	19.45

*SECNO 567.000

567.000	3.22	95.09	93.52	.00	95.18	.09	.05	.00	95.37
97.0	.0	97.0	.0	.0	40.0	.0	26.3	8.9	95.37
1.93	.00	2.42	.00	.000	.023	.000	.000	91.87	.57
.000549	100.	100.	100.	0	11	0	.00	18.87	19.43

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THIS RUN EXECUTED 25JUL96 09:33:40

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MIDDLE SECTION - END AT

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH	FRCH
*	714.190	280.00	85.59	29.23	2.56	12.01	9.12	30.69	86.88	83.03	.00	13.00	1.01
	713.680	280.00	86.13	17.36	3.07	12.01	7.63	36.71	87.03	83.06	51.00	13.00	.77
	713.180	280.00	86.30	15.09	3.21	12.01	7.26	38.55	87.12	83.09	50.00	13.00	.71
	712.680	280.00	87.13	12.73	4.05	36.24	2.87	97.71	87.26	83.08	50.00	35.00	.31
	711.790	280.00	87.25	11.86	4.11	36.67	2.79	100.30	87.37	83.13	89.00	35.00	.30
	710.900	280.00	87.36	11.30	4.17	36.96	2.74	102.09	87.47	83.19	89.00	35.00	.29
	710.000	280.00	87.46	10.77	4.22	37.25	2.70	103.89	87.57	83.24	90.00	35.00	.28
	709.000	280.00	87.57	10.26	4.27	37.55	2.65	105.75	87.68	83.30	100.00	35.00	.28
	708.000	280.00	87.67	9.83	4.31	37.81	2.61	107.42	87.78	83.36	100.00	35.00	.27
	707.000	280.00	87.77	9.47	4.35	38.05	2.57	108.91	87.87	83.42	100.00	35.00	.27
	706.870	280.00	87.78	9.44	4.36	38.07	2.57	109.06	87.89	83.43	13.00	35.00	.27
*	706.720	336.00	87.38	80.86	4.06	12.01	6.89	48.78	88.11	83.32	15.00	35.00	.60
*	706.320	336.00	87.50	10.45	4.16	12.01	6.73	49.93	88.21	83.34	40.00	13.00	.58
	706.170	336.00	88.17	8.54	4.88	40.67	2.61	128.85	88.28	83.29	15.00	35.00	.26
	706.000	336.00	88.19	8.56	4.89	40.66	2.61	128.76	88.29	83.30	17.00	35.00	.26
	705.000	336.00	88.28	8.39	4.91	40.80	2.59	129.73	88.38	83.36	100.00	35.00	.26
	704.000	336.00	88.36	8.20	4.94	40.95	2.57	130.78	88.46	83.42	100.00	35.00	.25

SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH	FRCH
703.000	336.00	88.44	8.05	4.96	41.08	2.55	131.72	88.54	83.48	100.00	35.00	.25
702.000	336.00	88.52	7.90	4.98	41.21	2.53	132.59	88.62	83.54	100.00	35.00	.25
701.000	336.00	88.60	7.77	5.00	41.32	2.52	133.40	88.70	83.60	100.00	35.00	.25
700.500	336.00	88.64	7.71	5.01	41.38	2.51	133.78	88.74	83.63	50.00	35.00	.25
700.120	336.00	88.67	7.67	5.02	41.42	2.51	134.06	88.77	83.65	38.00	35.00	.25
700.050	336.00	88.67	8.94	4.81	40.88	2.64	127.28	88.78	83.86	7.00	35.00	.26
699.970	336.00	88.97	7.00	5.10	42.61	2.41	139.32	89.06	83.87	8.00	35.00	.24
699.870	336.00	88.99	6.18	5.29	43.02	2.31	145.21	89.07	83.70	10.00	35.00	.22
699.550	336.00	89.01	6.14	5.29	43.06	2.31	145.57	89.09	83.72	32.00	35.00	.22
699.000	336.00	89.04	6.14	5.29	43.06	2.31	145.57	89.12	83.75	55.00	35.00	.22
698.000	336.00	89.10	6.14	5.29	43.07	2.31	145.63	89.18	83.81	100.00	35.00	.22
697.000	336.00	89.16	6.13	5.29	43.08	2.31	145.69	89.24	83.87	100.00	35.00	.22
696.000	336.00	89.22	6.12	5.29	43.09	2.31	145.75	89.31	83.93	100.00	35.00	.22
695.000	336.00	89.28	6.12	5.29	43.10	2.30	145.80	89.37	83.99	100.00	35.00	.22
694.000	336.00	89.35	6.11	5.29	43.10	2.30	145.86	89.43	84.05	100.00	35.00	.22
693.000	336.00	89.41	6.11	5.30	43.11	2.30	145.91	89.49	84.11	100.00	35.00	.22

	692.000	336.00	89.47	6.10	5.30	43.12	2.30	145.95	89.55	84.17	100.00	35.00	.22
	690.340	266.00	89.54	3.74	5.32	43.27	1.81	147.12	89.59	84.21	66.00	35.00	.17
*	689.860	266.00	89.28	13.38	4.73	14.96	5.40	49.26	89.74	84.55	48.00	19.00	.52
	688.920	266.00	89.57	7.32	4.99	18.28	4.25	62.63	89.85	84.58	94.00	19.00	.40
	687.860	266.00	89.72	4.78	5.18	20.85	3.58	74.25	89.92	84.54	106.00	19.00	.33
	686.860	266.00	89.76	5.46	5.19	21.80	3.70	71.82	89.97	84.57	100.00	19.00	.36
	685.860	266.00	89.86	3.71	5.25	23.91	3.19	83.39	90.02	84.61	100.00	19.00	.30
	684.860	266.00	89.87	5.10	5.11	20.51	3.67	72.44	90.08	84.76	100.00	19.00	.34
	683.860	266.00	89.90	6.48	5.03	19.38	4.03	66.03	90.15	84.87	100.00	19.00	.38
	682.860	266.00	89.99	5.70	5.09	20.63	3.81	69.87	90.21	84.90	100.00	19.00	.36

	SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH	FRCH
	681.860	266.00	90.02	6.59	5.15	18.38	4.09	64.98	90.28	84.87	100.00	19.00	.38
	680.860	266.00	90.07	7.59	5.20	16.59	4.36	61.01	90.37	84.87	100.00	19.00	.40
	679.860	266.00	90.14	7.95	5.23	15.98	4.46	59.70	90.45	84.91	100.00	19.00	.41
	678.860	266.00	90.21	8.59	4.73	16.89	4.54	58.57	90.53	85.48	100.00	19.00	.43
	677.860	266.00	90.36	6.26	5.10	18.06	4.03	66.06	90.61	85.26	100.00	19.00	.37
	676.860	266.00	90.43	6.15	5.13	18.03	4.00	66.43	90.68	85.30	100.00	19.00	.37
	675.860	266.00	90.52	5.95	4.81	22.41	3.78	70.29	90.74	85.71	100.00	19.00	.38
	674.860	266.00	90.58	5.84	4.78	22.93	3.74	71.11	90.80	85.80	100.00	19.00	.37
	673.860	266.00	90.66	4.54	5.34	21.69	3.49	76.22	90.85	85.32	100.00	19.00	.33
	673.010	266.00	90.75	3.10	5.42	25.22	2.97	89.64	90.89	85.33	85.00	19.00	.28
*	672.860	266.00	90.67	7.09	5.33	12.01	4.16	63.96	90.94	85.34	15.00	19.00	.32
	672.460	266.00	90.69	7.10	5.33	12.01	4.16	63.91	90.96	85.36	40.00	19.00	.32
*	672.310	266.00	90.94	1.15	5.20	44.41	1.81	146.61	90.99	85.74	15.00	19.00	.18
	672.000	178.00	90.97	.50	5.22	44.56	1.21	147.69	90.99	85.75	31.00	19.00	.12
	671.000	178.00	90.98	.51	5.20	44.42	1.21	146.72	91.00	85.78	100.00	19.00	.12
	670.000	178.00	90.98	.53	5.17	44.24	1.22	145.46	91.00	85.81	100.00	19.00	.12
	669.000	178.00	90.99	.54	5.15	44.09	1.23	144.36	91.01	85.84	100.00	19.00	.12
	668.000	178.00	90.99	.55	5.12	43.93	1.24	143.27	91.02	85.87	100.00	19.00	.12
	667.000	178.00	91.00	.56	5.10	43.78	1.25	142.18	91.02	85.90	100.00	19.00	.12
	666.110	177.00	91.00	.56	5.08	43.64	1.25	141.23	91.03	85.93	89.00	19.00	.12
*	665.960	177.00	90.94	3.17	5.31	12.01	2.78	63.72	91.06	85.63	15.00	19.00	.21
	665.560	177.00	90.95	3.18	5.31	12.01	2.78	63.66	91.07	85.64	40.00	19.00	.21
*	665.410	177.00	91.06	.45	5.41	44.46	1.16	152.73	91.08	85.65	15.00	19.00	.11
	665.000	177.00	91.06	.45	5.40	44.43	1.16	152.51	91.08	85.66	41.00	19.00	.11
	664.000	177.00	91.07	.46	5.37	44.24	1.17	151.13	91.09	85.69	100.00	19.00	.11

663.000	177.00	91.07	.47	5.35	44.09	1.18	149.99	91.09	85.72	100.00	19.00	.11

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SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH	FRCH
662.000	177.00	91.08	.48	5.32	43.94	1.19	148.87	91.10	85.75	100.00	19.00	.11
661.000	177.00	91.08	.49	5.30	43.78	1.20	147.76	91.10	85.78	100.00	19.00	.11
660.000	182.00	91.08	.53	5.27	43.63	1.24	146.65	91.11	85.81	100.00	19.00	.12
659.000	182.00	91.09	.54	5.25	43.48	1.25	145.53	91.11	85.84	100.00	19.00	.12
658.000	182.00	91.09	.55	5.22	43.33	1.26	144.46	91.12	85.87	100.00	19.00	.12
657.000	182.00	91.10	.56	5.20	43.18	1.27	143.39	91.12	85.90	100.00	19.00	.12
656.000	182.00	91.10	.57	5.17	43.03	1.28	142.33	91.13	85.93	100.00	19.00	.12
655.000	182.00	91.11	.58	5.15	42.89	1.29	141.27	91.14	85.96	100.00	19.00	.13
654.000	182.00	91.12	.59	5.12	42.74	1.30	140.23	91.14	85.99	100.00	19.00	.13
653.000	182.00	91.12	.61	5.10	42.59	1.31	139.19	91.15	86.02	100.00	19.00	.13
652.000	182.00	91.13	.62	5.07	42.45	1.32	138.17	91.15	86.05	100.00	19.00	.13
651.000	182.00	91.13	.63	5.05	42.31	1.33	137.15	91.16	86.08	100.00	19.00	.13
650.000	182.00	91.14	.64	5.03	42.16	1.34	136.14	91.17	86.11	100.00	19.00	.13
649.000	182.00	91.15	.66	5.00	42.02	1.35	135.14	91.17	86.14	100.00	19.00	.13
648.000	182.00	91.15	.67	4.98	41.88	1.36	134.15	91.18	86.17	100.00	19.00	.13
647.000	182.00	91.16	.68	4.96	41.74	1.37	133.16	91.19	86.20	100.00	19.00	.13
646.000	182.00	91.16	.70	4.93	41.60	1.38	132.19	91.19	86.23	100.00	19.00	.14
645.000	182.00	91.17	.71	4.91	41.46	1.39	131.22	91.20	86.26	100.00	19.00	.14
644.000	182.00	91.18	.73	4.89	41.32	1.40	130.26	91.21	86.29	100.00	19.00	.14
643.330	182.00	91.19	.74	4.86	41.18	1.41	129.32	91.22	86.32	100.00	19.00	.14
* 643.000	197.00	91.00	4.64	4.50	10.05	4.39	44.92	91.30	86.50	33.00	13.00	.37
642.000	197.00	91.04	4.93	4.41	10.05	4.48	43.94	91.35	86.63	100.00	13.00	.38
641.000	197.00	91.08	5.17	4.32	10.04	4.56	43.17	91.41	86.76	100.00	13.00	.39
640.000	197.00	91.13	5.41	4.23	10.07	4.64	42.50	91.46	86.90	100.00	13.00	.40
639.000	197.00	91.17	5.79	4.14	10.04	4.76	41.40	91.52	87.03	100.00	13.00	.41
638.000	197.00	91.22	6.17	4.05	10.03	4.87	40.46	91.59	87.17	100.00	13.00	.43

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SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH	FRCH
637.000	197.00	91.27	6.51	3.97	10.03	4.96	39.68	91.66	87.30	100.00	13.00	.44
636.000	197.00	91.33	6.85	3.90	10.03	5.06	38.94	91.73	87.43	100.00	13.00	.45
635.000	91.00	91.72	1.24	4.15	10.04	2.20	41.37	91.79	87.57	100.00	13.00	.19
634.000	91.00	91.73	1.34	4.03	10.03	2.27	40.16	91.81	87.70	100.00	13.00	.20
633.000	91.00	91.74	1.46	3.91	10.03	2.33	38.98	91.82	87.83	100.00	13.00	.21

	632.750	146.00	91.64	4.12	3.78	10.02	3.88	37.68	91.88	87.86	25.00	13.00	.35
*	632.450	91.00	91.86	3.40	3.98	20.00	1.65	55.03	91.91	87.88	30.00	30.00	.18
	632.000	91.00	91.87	1.93	3.96	20.00	1.66	54.90	91.92	87.91	45.00	22.50	.18
	631.000	91.00	91.89	2.15	3.86	20.00	1.72	52.92	91.94	88.03	100.00	22.50	.19
	630.000	91.00	91.91	2.28	3.82	20.00	1.75	51.96	91.96	88.09	100.00	22.50	.19
	629.000	91.00	91.94	2.38	3.79	20.00	1.78	51.21	91.98	88.15	100.00	22.50	.20
	628.000	91.00	91.96	2.48	3.75	20.00	1.80	50.48	92.01	88.21	100.00	22.50	.20
	627.000	91.00	91.98	2.59	3.71	20.00	1.83	49.77	92.04	88.27	100.00	22.50	.20
	626.000	91.00	92.01	2.71	3.68	20.00	1.85	49.07	92.06	88.33	100.00	22.50	.21
	625.000	91.00	92.04	2.82	3.65	20.00	1.88	48.41	92.09	88.39	100.00	22.50	.21
	624.000	91.00	92.06	2.94	3.61	20.00	1.91	47.76	92.12	88.45	100.00	22.50	.22
	623.000	91.00	92.09	3.06	3.58	20.00	1.93	47.14	92.15	88.51	100.00	22.50	.22
	622.000	91.00	92.12	3.18	3.55	20.00	1.96	46.54	92.18	88.57	100.00	22.50	.23
	621.000	91.00	92.15	3.30	3.52	20.00	1.98	45.97	92.21	88.63	100.00	22.50	.23
	620.000	91.00	92.19	3.42	3.50	19.98	2.00	45.42	92.25	88.69	100.00	22.50	.23
	621.000	91.00	92.22	3.53	3.47	19.88	2.03	44.90	92.28	88.75	100.00	22.50	.24
	620.000	91.00	92.25	3.64	3.44	19.78	2.05	44.40	92.32	88.81	100.00	22.50	.24
	619.000	91.00	92.29	3.75	3.42	19.68	2.07	43.92	92.36	88.87	100.00	22.50	.24
	618.000	91.00	92.33	3.85	3.40	19.59	2.09	43.47	92.40	88.93	100.00	22.50	.25
	617.000	91.00	92.37	3.96	3.38	19.50	2.11	43.05	92.44	88.99	100.00	22.50	.25
	616.000	91.00	92.40	4.06	3.36	19.42	2.13	42.64	92.48	89.05	100.00	22.50	.25

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SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH	FRCH
615.000	91.00	92.45	4.16	3.34	19.34	2.15	42.26	92.52	89.11	100.00	22.50	.26
614.000	91.00	92.49	4.26	3.32	19.27	2.17	41.89	92.56	89.17	100.00	22.50	.26
613.000	91.00	92.53	4.36	3.30	19.19	2.19	41.55	92.60	89.23	100.00	22.50	.26
612.000	91.00	92.57	4.45	3.28	19.13	2.21	41.23	92.65	89.29	100.00	22.50	.26
611.000	91.00	92.62	4.54	3.27	19.06	2.22	40.93	92.69	89.35	100.00	22.50	.27
610.000	91.00	92.66	4.63	3.25	19.00	2.24	40.64	92.74	89.41	100.00	22.50	.27
609.000	91.00	92.71	4.71	3.24	18.95	2.25	40.38	92.79	89.47	100.00	22.50	.27
608.000	91.00	92.75	4.79	3.22	18.90	2.27	40.13	92.83	89.53	100.00	22.50	.27
607.000	91.00	92.80	4.87	3.21	18.85	2.28	39.89	92.88	89.59	100.00	22.50	.28
606.000	91.00	92.85	4.94	3.20	18.80	2.29	39.68	92.93	89.65	100.00	22.50	.28
605.000	91.00	92.90	5.01	3.19	18.76	2.31	39.47	92.98	89.71	100.00	22.50	.28
604.000	91.00	92.95	5.07	3.18	18.72	2.32	39.28	93.03	89.77	100.00	22.50	.28
603.000	91.00	93.00	5.14	3.17	18.68	2.33	39.10	93.08	89.83	100.00	22.50	.28
602.000	97.00	93.05	5.90	3.16	18.64	2.49	38.94	93.14	89.89	100.00	22.50	.30

601.000	97.00	93.10	5.98	3.15	18.60	2.50	38.77	93.20	89.95	100.00	22.50	.31
600.000	97.00	93.16	5.95	3.15	18.62	2.50	38.82	93.26	90.01	100.00	22.50	.30
599.000	97.00	93.22	5.95	3.15	18.62	2.50	38.83	93.32	90.07	100.00	22.50	.30
598.000	97.00	93.28	5.96	3.15	18.61	2.50	38.81	93.38	90.13	100.00	22.50	.30
597.000	97.00	93.34	5.96	3.15	18.61	2.50	38.81	93.44	90.19	100.00	22.50	.31
596.000	97.00	93.40	5.96	3.15	18.61	2.50	38.80	93.50	90.25	100.00	22.50	.31
595.000	97.00	93.46	5.97	3.15	18.61	2.50	38.79	93.56	90.31	100.00	22.50	.31
594.000	97.00	93.52	5.97	3.15	18.61	2.50	38.78	93.62	90.37	100.00	22.50	.31
593.000	97.00	93.58	5.97	3.15	18.61	2.50	38.78	93.68	90.43	100.00	22.50	.31
592.000	97.00	93.64	5.97	3.15	18.61	2.50	38.77	93.74	90.49	100.00	22.50	.31
591.000	97.00	93.70	5.98	3.15	18.60	2.50	38.77	93.80	90.55	100.00	22.50	.31
590.000	97.00	93.76	5.98	3.15	18.60	2.50	38.76	93.86	90.61	100.00	22.50	.31

SECNO	Q	CWSEL	10*KS	DEPTH	TOPWID	VCH	AREA	EG	ELMIN	XLCH	K*XNCH	FRCH
589.000	97.00	93.82	5.98	3.15	18.60	2.50	38.76	93.92	90.67	100.00	22.50	.31
588.000	97.00	93.88	5.98	3.15	18.60	2.50	38.75	93.98	90.73	100.00	22.50	.31
587.000	97.00	93.94	5.98	3.15	18.60	2.50	38.75	94.04	90.79	100.00	22.50	.31
586.000	97.00	94.00	5.98	3.15	18.60	2.50	38.75	94.10	90.85	100.00	22.50	.31
585.000	97.00	94.06	5.98	3.15	18.60	2.50	38.74	94.16	90.91	100.00	22.50	.31
584.000	97.00	94.12	5.99	3.15	18.60	2.50	38.74	94.22	90.97	100.00	22.50	.31
583.000	97.00	94.18	5.99	3.15	18.60	2.50	38.74	94.28	91.03	100.00	22.50	.31
582.000	97.00	94.24	5.99	3.15	18.60	2.50	38.74	94.34	91.09	100.00	22.50	.31
581.000	97.00	94.30	5.99	3.15	18.60	2.50	38.73	94.40	91.15	100.00	22.50	.31
580.000	97.00	94.36	5.99	3.15	18.60	2.50	38.73	94.46	91.21	100.00	22.50	.31
579.000	97.00	94.42	5.99	3.15	18.60	2.50	38.73	94.52	91.27	100.00	22.50	.31
578.000	97.00	94.48	5.99	3.15	18.60	2.50	38.73	94.58	91.33	100.00	22.50	.31
577.000	97.00	94.54	5.99	3.15	18.60	2.50	38.73	94.64	91.39	100.00	22.50	.31
576.000	97.00	94.60	5.99	3.15	18.60	2.50	38.73	94.70	91.45	100.00	22.50	.31
575.000	97.00	94.67	5.14	3.28	19.07	2.37	40.98	94.75	91.39	100.00	22.50	.28
574.000	97.00	94.72	5.12	3.27	19.09	2.36	41.03	94.80	91.45	100.00	22.50	.28
573.000	97.00	94.77	5.21	3.26	19.03	2.38	40.79	94.86	91.51	100.00	22.50	.29
572.000	97.00	94.82	5.26	3.25	19.00	2.39	40.62	94.91	91.57	100.00	22.50	.29
571.000	97.00	94.87	5.31	3.24	18.97	2.40	40.48	94.96	91.63	100.00	22.50	.29
570.000	97.00	94.93	5.36	3.24	18.94	2.40	40.35	95.02	91.69	100.00	22.50	.29
569.000	97.00	94.98	5.41	3.23	18.92	2.41	40.22	95.07	91.75	100.00	22.50	.29
568.000	97.00	95.03	5.45	3.22	18.89	2.42	40.11	95.12	91.81	100.00	22.50	.29
567.000	97.00	95.09	5.49	3.22	18.87	2.42	40.00	95.18	91.87	100.00	22.50	.29

1
25JUL96 09:33:34 PAGE 48

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 714.190 PROFILE= 1 CRITICAL DEPTH ASSUMED

WARNING SECNO= 706.720 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 706.320 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 689.860 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 672.860 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 672.310 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 665.960 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 665.410 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 643.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 632.450 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

APPENDIX C

As-Built Plans

- Corrales Main Canal, State of New Mexico, Middle Rio Grande Conservancy District

- Corrales Main Canal, Plan & Profile 10' X 6' CBC, Albuquerque Metropolitan Arroyo Flood Control Authority

- North Coors Drainage La Orilla Outlet, Albuquerque Metropolitan Arroyo Flood Control Authority

PARADISE BLVD. EXT.

ALAMEDA GRANT LINE

NORTH COORS BLVD.

PROPOSED DRIVING RANGE

STA. 634+46.01

STA. 634+90.06

STA. 639+43.99

STA. 641+98.77

STA. 642+16.29

STA. 642+43.80

STA. 642+89.19

STA. 643+02.24

POT Sta. 656+20.00

PLAN

PROFILE

5000

4990

4980

600+00 610+00 620+00 630+00 640+00 650+00 660+00

TYPICAL SECTION STA. 598+00 TO 658+00

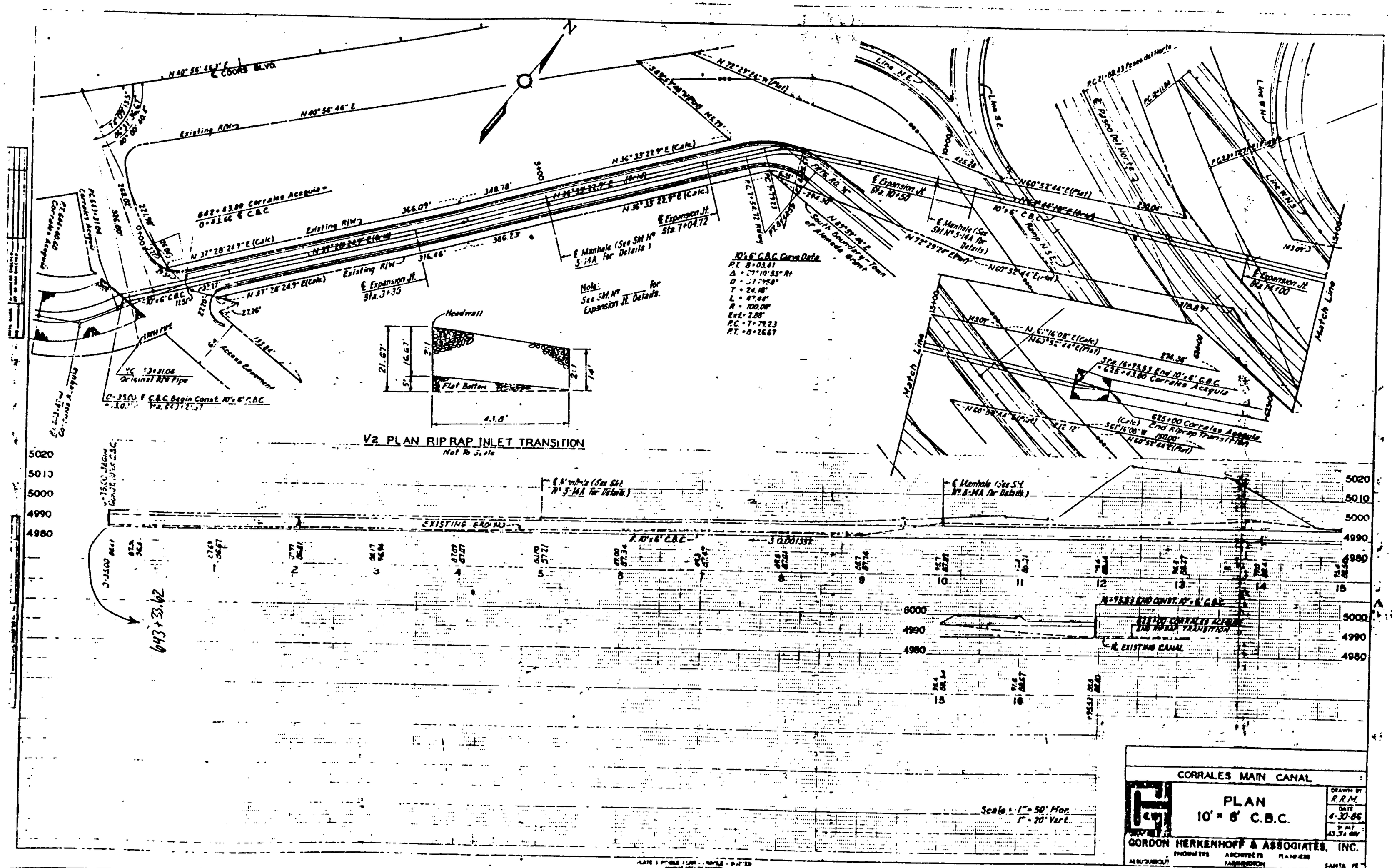
PLATE 1-PLAN-PROFILE

STATE OF NEW MEXICO
MIDDLE RIO GRANDE CONSERVANCY DISTRICT

CORRALES MAIN CANAL
STA. 598+00-658+00
(REVISED)

DRAWN R. BAKER RECOMMENDED
CHECKED APPROVED

A-46.2 ALBUQUERQUE, NEW MEXICO AUG., 1959


N 49° 56' 46" E
℄ COORS BLVD.
Existing R/W
N 40° 56' 46" E
N 72° 29' 26" W (Plat)
Line N.E.
Line S.E.
N 36° 33' 22.9" E (Calc.)
642+43.86 Corrales Acequia
0+83.66 ℄ C.B.C.
366.09'
348.78'
N 37° 28' 24.9" E (Calc.)
Existing R/W
386.23'
316.46'
℄ Expansion Jt.
Sta. 3+35
℄ Manhole (See Sht No 5-14A for Details)
℄ Expansion Jt.
Sta. 7+04.72
Note:
See Sht No for Expansion Jt. Details.
10'x6' C.B.C.
Corrales Acequia
PC 642+43.86
Corrales Acequia
PC 0+00
Corrales Acequia
PC 13+31.06
Original R/W Pipe
642+43.86 Corrales Acequia
0+83.66 ℄ C.B.C.
Begin Const. 10'x6' C.B.C.
Sta. 0+00+2.34
6' Access Easement
138.86'
Headwall
21.67'
16.67'
5'
2:1
Flat Bottom
4.1.8'
V2 PLAN RIPRAP INLET TRANSITION
Not To Scale
10'x6' C.B.C. Curve Data
P.I. 8+03.81
Δ = 27°10'55" Rt
D = 57°29.58'
T = 24.18'
L = 47.46'
R = 100.08'
Ext = 2.88'
P.C. = 7+79.23
P.T. = 8+26.67
South Boundary of "Town of Alameda Grant"
N 72° 29' 26" E (Plat)
N 60° 52' 46" E (Plat)
℄ Manhole (See Sht No 5-14A for Details)
10'x6' C.B.C.
Ramp N.S.E.
℄ Expansion Jt.
Sta. 10+50
℄ Expansion Jt.
Sta. 14+00
Match Line
Match Line
N 6° 16' 08" E (Calc.)
N 60° 52' 46" E (Plat)
Sta. 18+98.83 End 10'x6' C.B.C.
625+83.80 Corrales Acequia
625+00 Corrales Acequia
End Riprap Transition
N 60° 52' 46" E (Plat)
℄ Manhole (See Sht No 5-14A for Details)
℄ Manhole (See Sht No 5-14A for Details)
EXISTING GROUND
P.I. 0+83.66 ℄ C.B.C.
S 0°01'32" E
N 36° 33' 22.9" E (Calc.)
643+33.62
N 18+98.83 End Const. 10'x6' C.B.C.
625+00 Corrales Acequia
End Riprap Transition
℄ EXISTING CANAL
5020
5010
5000
4990
4980
Scale: 1"=50' Hor.
1"=20' Vert.
CORRALES MAIN CANAL
PLAN
10' x 6' C.B.C.
DRAWN BY R.R.M.
DATE 4-30-86
SHEET 13 of 40
GORDON HERKENHOFF & ASSOCIATES, INC.
ENGINEERS ARCHITECTS PLANNERS
ALBUQUERQUE FARMINGTON SANTA FE
SP-(M)-4054 (201)
SHEET 5-14

NOTE 1

All Monuments Denote Original M.R.G.C.D. R.O.W. Pipes Found, and Re-Established in Place by Arc Method, with same Materials as other Monument

NOTE 2

All Monuments are 2" Diameter Brass Caps Stamped "Section & Corner", Set in Top of Concrete with Appropriate Monument Number, Set in Top of a 4"x4"x3' Concrete Collar, Flush with Ground, with Other Fence Post Alongside as an Accessory

NOTE 3

M.R.G.C.D. approx. 2" Galv. Pipe with 2 1/2" Cap Stamped "R.O.W."

CONTROL MONUMENTS

MONUMENT	NORTH	EAST **	ELEVATION	COMMENTS
1275A*	1,519,558.698	374,275.665		NOTE 1
1278A*	1,519,558.91	374,112.824		*
1280	1,520,037.719	374,214.192		NOTE 2
1281	1,519,922.615	374,113.446		*
1282	1,519,653.319	374,008.650		*
1283A*	1,519,612.079	374,099.916		NOTE 1
1284A*	1,519,908.343	374,234.696		*
1286A*	1,519,490.336	374,039.856		*
1296	1,520,237.069	374,582.453		NOTE 2
1341A*	1,520,247.336	374,727.125		NOTE 1
1343	1,520,149.666	374,630.947		NOTE 2
1256	1,520,250.571	374,574.527		NOTE 3

* Shall be projected Grid according to Boundary Subdivision or survey plat.

** The coordinates shown on this sheet are local coordinates for this project based on ground distances and the State Plane projection. See sheet 2 for a tie to local and NM State Plane coordinates for selected control points.

SCALE: 1" = 50' HORIZONTAL

PLAN

PROFILE

Existing Chain Link Fence

CONST. ℄ CURVE DATA
R= 330.00'
L= 142.87'
T= 72.44'
Δ= 25°23'17"
Chord= 141.88'
Chord Brg= S49°14'05"W

R.O.W ℄ CURVE DATA
R= 190.99'
L= 109.74'
Δ= 32°55'17"

STA 643+33.62 N=1,520,280.60 E=374,676.44 BEGIN PROJECT

PT-O 034°34'25" N 1,520,280.60 E 374,676.44 FROM POINT 1341

STA 643+33.62 to 644+70.0
BUILD 1.0' THICK CLASS "A" GROUTED RIPRAP W/12" GRANULAR BEDDING IN CANAL - EST. QUANTS - 268 Cu. Yds. RIPRAP & 268 Cu. Yds. GRANULAR BEDDING HY-29
N=1,520,165.08
E= 374,607.04

16' Barbed Wire Gate

Existing Fence

RELOCATE EXISTING FENCE AND POSTS TO CANAL R.O.W. LINES & REMOVE EXISTING FENCE WITHIN CANAL R.O.W.

R.O.W.

S60°55'43"W 441.66'

S60°55'43"W 407.00'

STA 644+41.66 BEGIN TRANSITION

STA 644+81.66 END TRANSITION

STA 644+50 IS REMOVE EXISTING 6'-0" DIA. CMC PIPE & CONSTRUCT NEW TURNOUT GATE & STRUCTURE - SEE IRRIGATION TURNOUT DETAILS SHEET 25

ROAD TO SOUTHWESTERN INDIAN POLYTECH. INSTITUTE

1256

COORS ROAD

℄ EAST R.O.W. COORS BLVD.

℄ CURVE DATA
R= 143.24'
L= 91.00'
T= 47.09'
Δ= 36°23'59"
Chord= 89.48'
Chord Brg= S42°43'44"W

PC STA 645+10.75 N=1,519,966.42 E=374,525.13

PCC 1280 R=374.92'

RELOCATE EXISTING FENCE TO CANAL R.O.W. LINE

STOUT SUBDIVISION C23-73

Scale 1"=50'

NOTE: STA. 643+33.62 to 714+77.34 - All Disturbed Areas Except Main Canal Bottom and Side Slopes to be Seeded With "Class A Seeding" After All Other Construction Work is Completed. Estimated Quantities - 6.56 Acres.

STA 651+17.0 to STA 651+77.0
BUILD 1.0' THICK CLASS "A" GROUTED RIPRAP W/12" GRANULAR BEDDING IN CANAL - SEE DETAILS FOR GRADES & DIMENSIONS SHEETS 25, 26 & 31
HY-31
N=1,519,917.61
E= 374,191.10

PC-O 050°16'33" N 1,519,595.51 E 374,243.41 FROM POINT 1284A

HY-32 N=1,519,746.62 E=374,262.90 FROM POINT 1284A

S 26°31'44"W 385.70'

PT-O 058°14'55" N 1,519,607.46 E 374,062.90 FROM POINT 1283A

STA 651+77.0 to STA 651+80 TRANSITION

STA 651+80 END TRANSITION

STA 653+80 BEGIN TRANSITION

1283A

1284A

℄ CURVE DATA
R= 185.41'
L= 174.31'
Δ= 53°51'00"
Chord= 167.97'
Chord Brg= S 53°40'13" E

PC STA 652+67.84 N=1,519,905.05 E=374,044.44

GRADE TO MEET EXISTING

IN CANAL R.O.W.

STA 651+47.0 RT - BUILD 10.0' WIDE SIDE INLET STRUCTURE

S 84°31'44"W 296.01'

PERIMETER SEDIMENT POND 1 BEGIN WEST OF COORS BLVD.

MATCH LINE STA. 657+00

655+00

650+00

STOUT SUBDIVISION C23-73

PT-O 208° N 49°16'46"W FROM POINT 1278A

PT-O 317° N 49°43'55"W FROM POINT 1286A

PT STA 653+86.37 N=1,519,326.69 E=374,016.75

℄ CURVE DATA
R= 95.49'
L= 119.03'
T= 68.64'
Δ= 71°25'01"
Chord= 111.47'
Chord Brg= S 11°10'47"E

NOTE: R.O.W. width as shown on Stout Subdivision (C23-73) is not a uniform 100.00 feet. M.R.G.C.D. deeds show a uniform 100.00 feet R.O.W. width.

1286A

1278A

2-61-1

PROFILE

4998
4996
4994
4992
4990
4988
4986
4984
4982

Profile of Ridge Line between West Canal Bank and West R.O.W.

Top of Existing Canal - West Side

Existing Ground Elev. at West R.O.W.

TOP OF NEW EARTH CHANNEL

TOP OF NEW EARTH CHANNEL (EAST & WEST SIDE)

Top of Existing Canal - East Side

Side Inlet Structure

Top of Existing East Embankment

CWSEL

CWSEL (Flood)

CWSEL (Irrig.)

Q=263 cfs
V=1.76 ft/sec

Q=263 cfs
V=1.71 ft/sec.

Existing 9'5"x6' CBC

Existing 8" Dia. Turnout

INV=86.93

INV=85.31

INV=86.29

86.33

86.60

86.74

INV=86.26

86.33

86.29 INV=86.38

86.43 INV=86.11

INV=86.00

86.18

86.42

86.03 INV=86.02

86.22 INV=86.06

86.30 INV=86.30

Slope=0.0003 ft/ft

Bottom of Existing Earth Channel

BOTTOM OF NEW EARTH CHANNEL

NEW 10'x6' CBC TO BE CONSTRUCTED BY NEW MEXICO STATE HIGHWAY DEPARTMENT (PROJECT 3P-GRM-4054(200))

RIP-RAP TRANSITION

STA 643+33.62 BEGIN PROJECT

STA 643+49.15 REPLACE EXISTING IRRIGATION TURNOUT - SEE CONSTRUCTION NOTE ON PLAN ABOVE

STA 643+90.5 Existing ℄ 6'ø CMC Culvert (Crossing)

STA 644+17 10" Waterline (Conc. Encased)

77 STA 644+70 END TRANSITION - BEGIN EARTH CHANNEL (TYPE A)

STA 651+19 Begin Grouted R.O.-R.O.P.

STA 651+77 End Grouted R.O.-R.O.P.

642 643 644 645+00 646 647 648 649 650+00 651 652 653 654 655+00 656 657

CONCRETE MAIN CANAL STA. 643+33.62 TO 657+00

SHEET 6

MATCH LINE STA. 657+00

SHEET 5 OF 42 46

RECORD DRAWING

4998

STOUT SUBDIVISION C23-73

℄ CURVE DATA
R = 95.49'
L = 139.12'
T = 85.19'
Δ = 93°28'23"
Chord = 127.14'
Chord Brg. = S 05°09'06" E

R = 145.49'
L = 142.70'
Δ = 56°11'43"

PC = 324+584.51
FROM POINT 1277A

PC STA 658+99.48
N = 1,519,114.01
E = 374,450.93

1277A

1270

1271

1285

1303

1311A

MW-33
N = 1,519,076.96
E = 374,505.06

MW-36
N = 1,518,102.63
E = 373,860.46

℄ 374,500

STA 660+69.0 to STA 661+31.0
Build 1.0' Thick Class "A" Grouted Riprap w/ 12" Granular Bedding in Canal - See Details for Grades and Dimensions Sheet 25, 26 & 31

Build 2' Dia. Sloping Chain Link Fence on Corner Metal Post Spacing - See Sheet 32

Cattle Guard Barrier (Typical) See Detail Sheet 12

16' Barbed Wire Gate

Remove & Replace Existing Fence as Neces. During Construction

STA 662+63.36 Rt. Build 1-12" x 36" RCP CMC under New Roadway Ramp at ℄ of Roadway Side Ditches

Bearing based on PI to PI line across Subdivision Boundaries across ℄ of R.O.W.

STA 667+09.0 to STA 667+71.0
Build 1.0 Thick Class "A" Grouted Riprap w/ 12" Granular Bedding in Canal - See Details for Grades and Dimensions Sheets 25, 26 & 31

Survey of Tracts 1 & 2 in W½ NW¼ Sec 13 by Gale Jewell, NM LS No. 4071 (Jan. 1986) (Not Recorded)

Scale: 1" = 50'

S 36°35'18" W 432.32'

S 32°35'06" W 242.87'

Canal ℄

S 36°36'03" W 505.27'

S 36°35'06" W 458.25'

S 30°29'54" W 305.78'

S 32°36'26" W 287.33'

S 30°24'54" W 307.90'

PT: 6,632.934'59"09" W FROM POINT 1311A

N 10°24'54" W 12.50'

MATCH LINE STA. 672+00

MATCH LINE STA. 657+00

Contractor Shall Maintain Public Traffic Across the Canal on this Road at all times during Construction in Accordance with "MUTCD" and Requirements of the General Provisions of the Standard Specifications. Contractor Shall Submit a Detailed "Traffic Control Plan" for Approval before Starting Work Within the Roadway. The Traffic Control Plan Shall be Based upon Building the New CMC Structure One-Half at a Time, or the Contractor May Propose an Alternate "Detour Method".

Future Sediment Pond & Berm

Grade to Drain in Canal R.O.W.

Grade to Drain in Canal R.O.W.

Future Sediment Pond & Berm

Wire Fence

Existing Fence

Existing Road

Undeveloped

R.O.W.

Reconstruct Existing Fence to Canal R.O.W. Line

STA 657+65 Remove Existing CMC Canal

STA 660+30 Build 1-42" x 28" CMC - DES 1 with STD. End Section & Wingwalls both ends. Ramp existing roadway to top of new CMC with new 24' wide roadway with 6" aggregate base course, 6" compacted subgrade (95% density). See Cross Road Profile Below for tie channel details with new roadway as shown. Build welded pipe hand rails on both headwalls. Post spacing - see detail sheet 25-26 & 31. Place steel marker at each end of each headwall per N.M.S.H.D. Spec. SW 25-3 as modified to Class "A" concrete.

STA 667+40.0 Rt. - Build 6.0' Wide Side Inlet Structure

2-61-10

STA 661+30.0 Build 6.0' Wide Side Inlet Structure

R = 45.90'
L = 77.34'
Δ = 38°10'05"

NOTE: R.O.W. width as shown on Stout Subdivision (C23-73) is not a uniform 100.00 feet. MRGCD deeds show a uniform 100.00 feet R.O.W. width.

ANNEXATION PLAT MANN TRACTS C-26-10

P.I. Sta. 670+07.42
Δ = 2°10'17"
N = 1,518,269.45
E = 373,884.81

NOTE 1
All "A" Monuments Denote Original MRGCD R.O.W. Pipes Found, and Re-Monumented in Place by Arc Welding with same Materials as other Monument

NOTE 2
All Monuments are 2½" Aluminum Pipes Stamped "Junction & Assoc." "P.L.S. 3917" "CMC" with Appropriate Monument Number, Set on 1½" Pipe in Concrete Flush with Ground, with 6' Steel Fence Post Alongside as Necessary.

NOTE 3
MRGCD approx. 2" Galv. Pipe with 2½" Stamped "R.O.W."

CONTROL MONUMENTS

MONUMENT	NORTH	EAST	ELEVATION	COMMENTS
1270	1,519,010.555	374,406.841		NOTE 2
1271	1,519,069.964	374,416.910		"
1277A	1,519,211.671	374,484.080		NOTE 1
1285	1,519,138.700	374,415.442		NOTE 2
1303	1,518,241.811	373,926.565		"
1311A	1,518,302.537	373,846.856		NOTE 1

PROFILE

Profile of Ridge Line between West Side Canal Bank and West R.O.W.

TOP OF NEW EARTH CHANNEL

Side Inlet Structure

Top of Existing Canal - East Side

Existing Ground Elev. at West R.O.W.

CWSEL (Flood)

CWSEL

Qdes = 273 cfs
Vdes = 1.67

Qdes = 273 cfs
Vdes = 1.62 ft/sec

FUTURE - Raise invert of side inlet to Elev. 4992.0 (min.) w/future sediment pond const.

CWSEL (Irrig.)

Bottom of Existing Earth Channel

BOTTOM OF NEW EARTH CHANNEL (TYPE A)

REMOVE EXISTING CMC

STA 665+15.3 Install 42" x 28" RCP CMC Begin 12'-6" CMC

STA 665+91.3 Install 42" x 28" RCP CMC End 12'-6" CMC

SEE CONST. NOTE ON PLAN ABOVE

Profile of Access Road Elev. = 93.42

Slope = 0.0003 ft/ft

Top of Existing East Embankment

Profile of Ridge Line between West Side Canal Bank and West R.O.W.

Top of Existing Canal - West Side

FUTURE - Raise invert of side inlet to Elev. 4991.75 (min.) w/future sediment pond const.

TOP OF NEW EARTH CHANNEL

CWSEL

Qdes = 291 cfs
Vdes = 1.73 ft/sec

Slope = 0.0003 ft/ft

STA 660+70 Begin Grouted Rip-Rap

STA 661+30 End Grouted Rip-Rap

STA 667+12 Begin Grouted Rip-Rap

STA 667+73 End Grouted Rip-Rap

MATCH LINE STA. 657+00

MATCH LINE STA. 672+00

SHEET 5

SHEET 7

657 658 659 660+00 661 662 663 664 665+00 666 667 668 669 670+00 671 672

4998 4996 4994 4992 4990 4988 4986 4984 4982

CORRALES MAIN CANAL
STA 655+00 TO STA 672+00

STA 665+65 CROSSROAD PROFILE

New 3" Asphalt Pavement
New 6" Base Course
Grade to ℄
Grade to ℄
Approx. Exist. Road Surface
Embankment Fill
Side Ditch
New 18" CMP
Match Existing Road Grade
Match Existing Road Grade
50'
50'
New 12'-6" C.B.C.

SCALE: 1" = 50' HORIZ. 1" = 5' VERT.

PROFILE
SURVEYED
DRAWN
CHECKED
DESIGNED
QUANTITIES CHECKED
BY
DATE
NO.
REVISIONS

SHEET 6 OF 42

RECORD DRAWING

"SCANLON & ASSOCIATES"

ARCHEOLOGICAL SITE
DO NOT DISTURB

NOTE: DO NOT DISTURB THIS TREE. PLACE SHOTCRETE CHANNEL LINING AROUND TREE TRUNK

Survey of Tracts 1 & 2 in W½ NW¼ Sec. 19 by Gale Jewel NM LS No. 4071 (Jan. 1986) (Not Recorded)

Scale 1" = 50'

MATCH LINE STA 672+00

MATCH LINE STA 687+00

STA 672+85.0 BEGIN SHOTCRETE CHANNEL LINING

STA 672+56.6 PEDDLE EXISTING CMC FROM CANAL

HV-37 N=1,518,027.74 E=373,763.29

HV-38 N=1,517,868.58 E=373,698.60

HV-39 N=1,517,180.46 E=373,544.43

HV-40 N=1,516,685.50 E=373,578.40

1304 PC

1305 PT

1324 PT

1325

1333

1334A

R=286.48' L=87.22' T=43.95' Δ=17°26'36" Chord=86.88' Chord Brg.=S 21°41'36"W

R=336.50' L=108.59' Δ=17°25'52"

R=236.50' L=71.92' Δ=17°25'52"

R=236.41' L=69.70' Δ=16°39'00"

R=336.41' L=97.74' Δ=16°39'00"

R=286.48' L=83.28' T=41.94' Δ=16°39'25" Chord=82.99' Chord Brg.=S 04°38'36"W

S 12°58'17"W 581.01'

S 12°58'17"W 716.54'

S 12°58'17"W 309.37'

S 12°58'49"W 411.67'

S 03°41'07"E 635.51'

S 03°41'07"E 635.25'

S 03°41'07"E 635.31'

PT - 1336 N 06°59'04"E FROM POINT 1313A

PT - 1334 N 06°36'11"E FROM POINT 1334A

R.O.W.

COR TRACT 1

COR TRACT 2

Existing 3' Dia. Tree

Grade to Drain in Canal R.O.W.

BEARING BASED ON PT TO PC LINE ACROSS PLAT-SURVEY BOUNDARIES

ANNEXATION PLAT FOR MANN TRACTS C2G-10

Future Sediment Pond & Berm

STA 680+69.5 RT - BUILD 16.0' WIDE SIDE INLET STRUCTURE USE "TINTED CONCRETE" SEE DETAILS SHEETS 25, 26

36" ACP OUTLET FROM POND SEE TOPSOILS SHEETS 28, 29 L=30 S=1.4% STA 672+30 BUILD 6.0' WIDE SIDE INLET STRUCTURES STA 672+85.0 BUILD 12.0' WIDE CLASS "A" GROUTED RIPRAP TRANSITION STA 672+85.0 TO STA 673+82.5 CHANNEL SEE DETAILS SHEETS 35, 36 & 37

CONTROL MONUMENTS

MONUMENT	NORTH**	EAST**	ELEVATION	COMMENTS
1304	1,517,980.942	373,773.421		NOTE 2
1305	1,517,914.339	373,746.919		"
1312	1,518,031.568	373,687.183		"
1313A*	1,517,938.793	373,549.323		NOTE 1
1324	1,517,151.709	373,781.432		NOTE 2
1325	1,517,219.943	373,586.970		"
1333	1,517,242.379	373,459.519		"
1334A*	1,517,142.563	373,480.671		NOTE 1

NOTE 1
A "A" Monuments Denote Original W.R.G.C.D. R.O.W. Pipes Found, and Re-Monumented w/ Pipe & Arc Witness, w/ same Witness's as other Monument

NOTE 2
A" Monuments are 2 1/2" Aluminum Caps Stamped "Scanlon & Assoc. P.E./L.S. 13172" Over Concrete Monument Number, Set on 1.5" Pipe w/ 3 Concrete Collar, Flush with Ground, with 6' Steel Force Post & Projects as Necessary

NOTE 3
W.R.G.C.D. approx. 2" Galv. Pipe w/ an 2 1/2" Cap Stamped "R.O.W."

* Not on property line according to subdivision or survey plat.

** The coordinates shown on this sheet are local coordinates for this project based on ground distances and State Plane bearings. See Sheet 1 for a table of local and GS State Plane Coordinates for selected control points.

PLAN — SURVEYED — PLOTTED — DRAWN — CHECKED — NOTE BOOK — NO. — BY — DATE

PROFILE — SURVEYED — PLOTTED — DRAWN — CHECKED — NOTE BOOK — NO. — BY — DATE

Profile of Ridge Line between West Side Canal Bank and West R.O.W.

TOP OF NEW EARTH CHANNEL

Top of Existing East Embankment

Existing Ground Elev. at West R.O.W.

TOP OF NEW SHOTCRETE & NEW EARTH EMBANKMENT (EAST SIDE)

E 93.10 W 95.24 El=93.76

E 93.24 W 94.01 El=92.50

E 93.60 W 94.93 El=92.40

Top of Existing Canal - West Side

Side Inlet Structure

Top of Existing Canal East Side

CWSEL

CWSEL (Flood)

CWSEL (Irrig.)

Q100 = 303 cfs Y100 = 3.83 ft./sec.

Q100 = 305 cfs Y100 = 3.94 ft./sec.

Q100 = 305 cfs Y100 = 3.65 ft./sec.

Existing 48" Dia. CMC

85.36 INV. 84.43

85.15

85.80

85.29

85.51

84.87

84.90

84.76

84.57

0.25' TYP.

BOTTOM OF NEW SHOTCRETE CHANNEL (TYPE B)

Bottom of Existing Earth Channel

FILL

Placed Additional Fill For Archeological Site East & West Side

STA 672+24.90 END EARTH CHANNEL (TYPE A) BEGIN RIP RAP TRANSITION

STA 672+84 - 1.5' x 59.7' Cut-off Wall

STA 686+52 End Shotcrete Begin Fibermesh Shotcrete

COMELES MAIN CANAL STA. 672+00 TO 687+00

SHEET 6

SHEET 8

4996 4994 4992 4990 4988 4986 4984 4982 4980

672 673 674 675+00 676 677 678 679 680+00 681 682 683 684 685+00 686 687

SHEET 7 OF 35

RECORD DRAWING

4996

SCANLON & ASSOCIATES

PLAN — SURVEYED / PLOTTED / DRAWN / CHECKED — DATE — BY

PROFILE — LIMITED / PLOTTED / DRAWN / CHECKED — HORIZ. SCALE — VERT. SCALE — STRUCTURE NOTATIONS (And)

NOTE: DO NOT DISTURB TWO TREE - REPLACE SHOTCRETE CHANNEL LINING AROUND TREE TRUNK.

PC ID 336 N07°21'02"E FROM POINT 1323A

PT STA 686+30.65 N 1,516,345.94 E 373,277.57

PT STA 689+11.17 N 1,516,435.70 E 373,460.79

℄ CURVE DATA
R = 190.99'
L = 80.276
T = 40.739
Δ = 24°04'58"
Chord = 79.66'
Chord Brg. = S8°21'27"W

R=240.80'
L=101.22'
Δ=24°05'00"

1323A ℞.P.I.

MATCH LINE STA 687+00

1335A

PT ℄ Sp 311°18'17"E FROM POINT 1335A

R=140.80'
L=59.18'
Δ=24°05'00"

1336 ℞.P.I. ℄ Cottonwood N 1,516,320.553 E 373,535.685

BEARING BASED ON PT to PT LINE ACROSS SUBDIVISION BOUNDARIES.

Survey of Tracts 1 & 2 in W½ NW¼ Sec. 19 by Gale Jewel NMLS 4071 (Jan. 1986) (Not Recorded)

CONTROL MONUMENTS

MONUMENT	NORTH (ft)	EAST (ft)	LOCATION	COMMENTS
961	1,516,183.502	373,520.322		NOTE 2
963	1,516,130.619	373,511.575		"
977	1,516,218.277	373,426.503		"
978	1,516,278.865	373,411.612		"
1322	1,516,418.305	373,607.645		"
1323A	1,516,507.471	373,620.946		NOTE 1
1335A	1,516,515.491	373,521.632		"
1336	1,516,393.154	373,513.939		NOTE 2

NOTE 1
All "A" Monuments Concrete Highway Monument Stamped "Station & Number" Set on Top of Concrete Curb, Flush with Ground, or in Other Manner Approved by Engineer as Necessary

NOTE 2
All Monuments are Brass Cap Monument Stamped "Station & Number" Set on Top of Concrete Curb, Flush with Ground, or in Other Manner Approved by Engineer as Necessary

NOTE 3
MBGCD Number Stamped "M.B.G."

REMOVE & REPLACE EXISTING FENCE & GATES AS NECESSARY DURING CONSTRUCTION

690+00

16' Barbed Wire Gate

STA 690+27.50 BEGIN CONCRETE FIBERMESH CHANNEL TYPE "E" END FIBERMESH CONCRETE TYPE "E" RELOCATE EXISTING FENCE TO R.O.W. LINE

STA 691+00.0 Rt. BUILD 12.0' WIDE SIDE INLET STRUCTURE SEE DETAILS SHEETS 25, 26

℄ Const. & ℄ R.O.W.

961 PC

963 PT

250.52'

S 80°25'56" W 250.74'

HY-42 N=1,516,131.56 E 373,469.85

R=140.99'
L=58.93'
Δ=21°85'00"

R.O.W.

Existing 18" CMC

STA 694+36.88 REMOVE EXISTING GATE TRIM EXISTING CMC, BUILD NEW TURNOUT GATE & STRUCTURE SEE IRRIGATION TURNOUT DETAILS SHEET 24

Scale: 1" = 50'

84.3 84.2 84.7 85.1

ROBERSON RANCH SUBDIVISION C15-197

695+00

NOTE: PRESERVE EXISTING SMALL TREES

Existing 21" CMC

STA 699+27.88 REMOVE EXISTING GATE, TRIM EXISTING CMC, BUILD NEW TURNOUT GATE & STRUCTURE SEE IRRIGATION TURNOUT DETAILS SHEET 24

700+00

STA 700+02.0 TO 700+05 BUILD NEW REINFORCED CONC CHANNEL REMOVE STRUCTURE WITH SLIDE GATE - SEE CHANNEL CHECK DETAILS SHEET 22

S 01°34'00" E 1149.60'

Exist. Chain Link Fence - To Remain

R.O.W.

STA. 701+00

MATCH LINE

1330

Exist. 4" Dia. Tree

Const. ℄

S 01°34'00" E 1149.00'

Wire Fence

Existing Chain Link Fence

S 01°34'00" E 1149.08'

MAINTAIN EXISTING DRIVEWAY

Grade to Drain in Canal R.O.W.

Future Sediment Pond : Berm

REMOVE EXISTING CHANNEL CHECK STRUCTURE & GATE

977 PC

978 PT

R=240.99'
L=92.18'
Δ=21°55'00"

Grade to Drain in Canal R.O.W.

Future Sediment Pond : Berm

LAND DIVISION PLAT SW¼ Sec. 19 T11N, R5E 89-174

RELOCATE EXISTING FENCE TO CANAL R.O.W. LINE

STA 694+81 BEGIN CONCRETE CHANNEL TYPE "D" END CONCRETE FIBERMESH TYPE "E"

STA 699+15.0 Rt. BUILD 10.0' WIDE SIDE INLET STRUCTURE SEE DETAILS SHEETS 25, 26

92.7

PT Sta 691+41.61 N=1,516,200.96 E=373,173.50

PT Sta 695+81.82 N=1,516,129.77 E=373,441.60

FUTURE - Raise invert of side inlet to Elev. 4990.40 (min.) if future sediment pond const.

STA 700+10.0 BEGIN TRANSITION

STA 700+50.0 END TRANSITION

Profile of Ridge Line between West Side Canal Bank and West R.O.W.

SHEET 9

4994 4992 4990 4988 4986 4984 4982 4980

Top of Existing Canal - West Side

TOP of NEW SHOTCRETE & NEW EAST ℄ EMBANKMENT E=92.19 W=92.18 EL=92.04

Edge of Concrete E=92.13 W=90.60 EL=92.11

Slope = 0.00032 ft./ft.

TOP of NEW EARTH EMBANKMENT & TOP of NEW CONCRETE CHANNEL E=91.97 EL=91.95 W=91.36

Existing Ground Elev. at West R.O.W.

Slope = 0.300 ft./ft.

Side Inlet Structure

CWSEL

Side Inlet Structure

EL=91.87 E=91.85 W=91.87

EL=91.48

EL=91.46

Top of Existing Canal - East Side

Qmax = 330 cfs V100 = 4.42 ft./sec.

QWSEL (Flood)

Qmax = 330 cfs V100 = 2.73 ft./sec.

Top of Existing East Embankment

Qmax = 330 cfs V100 = 2.65 ft./sec.

TOP OF EXISTING CONCRETE CHANNEL

8.00'

CWSEL (Irrig.)

Existing 18" Dia. Turnout

Inv. = 85.35

Existing 21" Dia. Turnout

Inv. = 85.60

EL=86.86

BOTTOM OF NEW CONC. CHANNEL

84.57 BOTTOM OF NEW SHOTCRETE CHANNEL

84.58

83.79 INV. = 83.89

83.83 INV. = 84.70

Bottom of Existing Channel

BOTTOM OF NEW CONCRETE CHANNEL (TYPE E)

83.85

83.79

83.54 INV. = 83.64

Bottom of Existing Earth Channel

83.89

83.78 Slope = 0.00032 ft./ft.

FILL

Bottom of Existing Conc. Channel

Placed Additional Fill for Archeological Site. End Here for East ℄ West Side.

STA 690+27.5 BEGIN TRANSITION TO CONCRETE ℄ BERMESH CHANNEL

STA 691+27.5 END CONCRETE CHANNEL (TYPE "D") BEGIN CONCRETE CHANNEL (TYPE "E")

STA 694+36.88 REPLACE EXISTING IRRIGATION TURNOUT - SEE CONSTRUCTION NOTE ON PLAN ABOVE

STA 694+81 END CONCRETE FIBERMESH CHANNEL TYPE "E" BEGIN CONCRETE CHANNEL TYPE "D"

STA 699+27.88 REPLACE EXISTING IRRIGATION TURNOUT - SEE CONSTRUCTION NOTE ON PLAN ABOVE

STA 700+02.0 BEGIN NEW CHANNEL CHECK

687 688 689 690+00 691 692 693 694 695+00 696 697 698 699 700+00 701

CONVALES MAIN CANAL STA. 687+00 TO 701+00

SHEET 9 OF 46

RECORD DRAWING

ROBERTSON RANCH SUBDIVISION
C15-197

Scale: 1" = 50'

MATCH LINE STA 701+00

E 373,500

HV 43
N = 1,514,972.70
E = 373,507.72

HV 44
N = 1,514,709.20
E = 373,386.11

HV 45
N = 1,514,304.86
E = 373,269.43

HV 46
N = 1,514,353.77
E = 373,267.56

HV 47
N = 1,514,093.41
E = 373,335.32

HV 48
N = 1,513,992.25
E = 373,355.85

PT 514+16.71
N = 1,514,125.53
E = 373,342.99

℄ CURVE DATA
R = 193.99'
L = 98.60'
T = 50.37'
Δ = 29°33'00"
Chord = 97.41'
Chord Brg = S13°12'30"W

℄ CURVE DATA
R = 143.24'
L = 112.17'
T = 59.14'
Δ = 44°52'00"
Chord = 109.32'
Chord Brg = S05°33'00"W

℄ CURVE DATA
R = 87.86'
L = 48.84'
T = 25.07'
Δ = 31°51'15"
Chord = 48.22'
Chord Brg = S32°48'37"E

NOTE: Contractor Shall Maintain Public Traffic Across the Canal on this Road at all times during Construction in Accordance with "MUTCD" and Requirements of the General Provisions of the Standard Specifications. Contractor Shall Submit a Detailed "Traffic Control Plan" for Approval Before Starting Work Within the Roadway. The Traffic Control Plan Shall be Based upon Building the New CBC Structure One-Half at a Time, or the Contractor May Propose an Alternate "Detour Method".

BUILD 12'-0" 6' SLOPING CHAIN LINK FENCE ON TOP OF EACH WINGWALL - POST SPACING 6' SEE SHEET 32

REMOVE & REPLACE EXISTING WOOD FENCE AS NECESSARY DURING CONSTRUCTION

REMOVE & DISPOSE OF EXISTING STRUCTURE & CONCRETE DROP

RELOCATE EXISTING FENCE TO CANAL R.O.W. LINE

MAINTAIN STANDARD CHANNEL SECTION - CONSTRUCT TEMP. ROADWAY WITH SLOPED RAMP AS SHOWN

REMOVE & REPLACE EXIST. FENCE AS NECESSARY DURING CONSTRUCTION

Existing Wood Fence

Existing Chain Link Fence

Existing Wire Fence

Existing Ditch

Existing Ground Elev. at West R.O.W.

TOP OF NEW EARTH EMBANKMENT & TOP OF NEW CONCRETE CHANNEL

TOP OF EXISTING CONCRETE CHANNEL

Bottom of Existing Concrete Channel

Top of Existing East Embankment

Top of Existing Concrete Channel Lining

SEE CONST. NOTE ON PLAN ABOVE

TOP OF NEW CONCRETE CHANNEL & EMBANKMENT

CWSEL

CWSEL (Flood)

CWSEL (Irrig)

CWSEL (Flood) with Stop Blocks in Place

CWSEL (Flood) with Stop Block Removed

CWSEL (Irrig) with Stop Blocks in Place

CWSEL (Irrig) with Stop Blocks Removed

Q100 = 335 cfs
V100 = 2.88 ft./sec.

Q100 = 330 cfs
V100 = 3.10 ft./sec

Q100 = 325 cfs
V100 = 4.07 ft/sec

STA 706+23.0
END TYPE "D" CHANNEL
BEGIN BOX CULVERT

STA 706+87.0
END BOX CULVERT
BEGIN TYPE "E" CHANNEL

STA 707+00
BEGIN TRANSITION

STA 711+00
END TRANSITION

STA 712+30
BEGIN TRANSITION

STA 712+57.30 END DEPTH TRANSITION
CHANNEL DEPTH TRANSITION CURVES

STA 712+60 SLOPED CONCRETE STOP BLOCKS - SEE DETAIL

STA 712+60 BUILD REINFORCED CONCRETE BLOCK DETAIL

STA 712+144 BUILD OUTLET CONCRETE SIDE - SEE DETAIL

STA 712+144 REINFORCED CONCRETE SIDE OUTLET CHANNEL - SEE PLAN ABOVE - SEE DETAILS SHTS 41 & 44

STA 712+160 REINFORCED CONC. STOP BLOCKS - SEE PLAN ABOVE

STA 712+30.34
BEGIN WINGWALLS

STA 713+16.14
BEGIN CONCRETE OVER CHUTE

STA 712+83
EL = 83.03

BEGIN DROP STRUCTURE

STA 712+60 END CONCRETE SIDE CHUTE & BEGIN TRAPEZOIDAL CHANNEL

STA 713+00 BEGIN TRAPEZOIDAL CHANNEL

STA 713+45.24 END CONCRETE LINED CHANNEL - BEGIN RIPRAP LINED CHANNEL - SEE CORRALES MAINCANAL DIVERSION STRUCTURE LOCATION & DETAILS

STA 713+45.24 END CONCRETE LINED CHANNEL - BEGIN RIPRAP LINED CHANNEL - SEE CORRALES MAINCANAL DIVERSION STRUCTURE LOCATION & DETAILS

NOTE: CONTRACTOR SHALL MAINTAIN THE EXISTING FLOW PATTERN OF THE CORRALES RIVERSIDE DRAIN DURING ALL CONSTRUCTION ACTIVITIES

TOPSOIL OF NEW RIPRAP LINED CHANNEL

Riverside Drain

SIDE OUTLET CHANNEL

Existing Ground @ ℄ Overchute & Drop Structure

FUTURE - Raise invert of side inlet to Elev 4988.70 (min) w/future sediment pond const.

FUTURE SEDIMENT POND 1 BERM

AT END OF NEW CHANNEL BUILD LO' - 1'thick CLASS 'A' GROUTED RIPRAP LINING IN DRAIN W/ IN 12.0 CIRCULAR CROWN BEDDING R = 71.8 20' BOTTOM WIDTH CENTERED IN DRAIN, 5:1 SIDE SLOPES, 25' UPSTREAM & DOWNSTREAM FROM NEW CHANNEL 30° SKEW LT. FORWARD IN DRAIN

Exist. SAS Manhole

Grout Rip Rap

Light Duty Barbed Wire Gate

Barbed Wire Gates

Chain Link Fence

Wire Fence (Existing)

Wood Fence

Ramp Down

Ramp Up

Exist. Wood Fence

Existing Wood Fence

Existing Ditch

Existing Chain Link Fence

Existing Wire Fence

Existing Ground Elev. at West R.O.W.

Existing Ground @ ℄ Overchute & Drop Structure

Riverside Drain

SIDE OUTLET CHANNEL

Bottom of Existing Concrete Channel

REPLAT OF LOT 1 AND AN UNNUMBERED LOT BLOCK 15 ALBAN HILLS SUBDIVISION UNIT NO. 1
January, 1986

CONTROL MONUMENTS

MONUMENT	NORTH # M	EAST # M	ELEVATION	COMMENTS
964	1,514,987.446	373,542.841		NOTE 2
966	1,514,867.784	373,514.756		"
967	1,514,476.842	373,307.035		"
969	1,514,406.011	373,300.152		"
970	1,514,299.310	373,332.537		"
996	1,514,099.034	373,288.962		"
998A	1,514,083.070	373,277.021		NOTE 1&3
1028	1,514,985.232	373,442.864		NOTE 2
1029	1,514,915.225	373,426.433		"
1030	1,514,524.284	373,218.712		"
1031	1,514,371.492	373,204.448		"

NOTE 1
All "A" Monuments Denote Original MRGCD ROW Plans Found, and Re-Monumented in Place by Like Method, with same Materials as other Monument

NOTE 2
All Monuments are 2 1/2" Aluminum Caps Stamped "Surveyor B Assoc." "P.L.S. 3317" "CMC" with Appropriate Sub-Part Number, Set on a 5' Rebar in 12" Concrete Collar, Flush with Ground, with 6' Steel Fence Post Adjacent as an Accessory

NOTE 3
MRGCD approx. 2" Galv. Pipe with 3 1/2" Cap Stamped "ROW"

* Not in properly line & curvature for subdividing individual lots as shown on survey plat.

** The computations for this point are based on record coordinates for this monument based on record distances from a found 1/2" rebar with yellow plastic cap "Control Point" on the Corrales Main Canal Right of Way. Coordinates not held in place.

STA 706+65 CROSSROAD PROFILE

New 2" Asphalt Pavement
New 6" Base Course
Grade & Fit
Match Exist. Pavement Grade
Embankment Fill
CBC
New 12'-6" CBC
Repair Existing Pavement
Match Existing Pavement Grade
30'
50'

SCANDON ASSOCIATES

PLAN
SURVEYED
DRAWN
QUANTITIES CHECKED
DATE 1986
BY
ALL ON MAP CHECKED

PROFILE
SURVEYED
DRAWN
QUANTITIES CHECKED
DATE 1986
BY
STRUCTURE HORIZ & VERT

DATE
BY

RECORD DRAWING

REVISIONS

NO	DATE	REMARKS	BY
1	12/10		

CORRALES MAIN CANAL
STA 701+00 TO 715+16.14

SHEET 9-RI OF 42-56