DRAINAGE REPORT
FOR
TRACT B-9H-1
SEVEN BAR SUBDIVISION

APRIL 1997

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823.1000

fax 505.821.0892

PREPARED FOR:

BROWN/NZ (DEVELOPMENT) JOINT VENTURE
C/O BROWN & ASSOCIATES
3411 CANDELARIA NE
ALBUQUERQUE, NM 87107

Drainage Report
for
Tract B-9H-1
Seven Bar Ranch Subdivision

April, 1997

Prepared for:

BROWN/NZ (DEVELOPMENT) JOINT VENTURE
C/O BROWN & ASSOCIATES
3411 CANDELARIA NE
ALBUQUERQUE, NEW MEXICO 87107

Prepared by:

Pierce Runnels, E.I.

Under the Supervision of:

JAMES R. TOPMILLER
NEW MEXICO
9354
REGISTERED PROFESSIONAL ENGINEER

James Topmiller, P.E. 4/17/97

TABLE OF CONTENTS

APPENDICES

PLATES

I. INTRODUCTION

This report presents the Drainage Management Plan for Bulk Land Plat approval for Tract B-9H-1 and Preliminary Plat and rough grading approval for the development of Tract B-9H-1B of the Seven Bar Ranch Subdivision. The bulk land plat is being filed in order to dedicate Tract B-9H-1A to the City of Albuquerque. The property is currently zoned RT and the proposed Tract B-9H-1B development is for 92 lots of detached, single family residential housing and the related streets and infrastructure. As shown on the location map on the Drainage Basin Map, the property is bounded by Cibola Loop Road on the south, Seven Bar/Skyview Channel on the north, and undeveloped, vacant land (Tracts B-9G and B-9J-1) on the west and east. A portion of Tract B-9J-1 is developed with the initial phase of an apartment complex.

The report outlines the study methodologies used and summarizes the existing and proposed drainage conditions. Calculations and supporting data are presented in the appendices. A drainage basin map, a preliminary grading plan and a copy of the Bulk Land Plat and Preliminary Plat are included in the Plates at the end of the report.

The purpose of this report is to obtain drainage report approval for the Bulk Land Plat for Tract B-9H-1 and the Preliminary Plat for Tracts B-9H-1B, and rough grading approval.

II. STUDY METHODOLOGIES

Undeveloped, existing conditions and proposed, developed conditions were analyzed for the 100-year, 6-hour storm event consistent with the City of Albuquerque Design Process Manual (DPM), including the January, 1993 revision of Section 22.2, Hydrology. The analysis also references the Drainage Plan for Ellison Drive (May, 1995), and the Drainage Plan for SAD No. 223 (July, 1994), and is consistent with those reports.

Street hydraulics and channel capacities were analyzed using Manning's equation with the Manning's "n" values suggested in the DPM. Rating curves for streets and channels are provided in the Appendices, along with all hydrologic and hydraulic calculations. Streets are designed to convey the energy grade line of the design storm event within the right-of-way. Normal flow depth is confined to the top of curb.

III. EXISTING CONDITIONS

A. Site Characteristics

This site is currently undeveloped vacant land with A total are of 19.57 acres and slopes ranging from 2% to 8% in a generally southerly direction. Soils are highly absorptive sandy soils with occasional clay lenses. Vegetation is light, consisting of grasses and small sagebrush.

The site is not located within a FEMA floodplain, as shown on the Floodplain Map provided in the plates section of the report. The Skyview channel is located along the north boundary of the site. However, the site slopes away form the channel, to the south, and therefore does not receive any flow from the site.

The existing drainage conditions are shown graphically on the "Existing Drainage Conditions" map and are summarized as follows:

B. Onsite Drainage Basins

Basin E-1, approximately 8.3 acres, currently drains in primarily sheet flow to the natural channel in the southwest corner of the site, where it drains to the west. The 100-year storm event currently generates 10.7 cfs of peak flow.

Basin E-2, approximately 10.5 acres, also drains in sheet flow to the natural channel in the southwest corner of the site, where it drains to the east. The 100-year storm event generates a peak flow rate of 13.5 cfs from Basin E-2.

C. Offsite Drainage Basins

The site is not impacted by any offsite drainage basins.

IV. PROPOSED DEVELOPED CONDITIONS

The proposed development is a single-family, detached-unit residential subdivision with 92 lots on 16.3121 acres, producing a density of 5.6 D.U. per acre. Proposed street configurations are shown on the Preliminary Plat, the Proposed Conditions Drainage Basin Map and on the Preliminary Grading Plan.

In addition to the streets and lots in the subdivision, development will include a public detention pond in the southeast corner of the site, and the storm drain systems to and from the pond. The storm drain upstream from the public detention pond includes inlets on both sides of the entry road, inlets in the entry road, connecting pipes and main line. The inlets immediately east of the entry road are in a sump condition. Downstream of the public detention pond, a 24" storm drain line will be constructed in the southern (undeveloped) portion of Cibola Loop Road, and will connect to the recently installed stub-out from the Ellison Road storm drain.

The remainder parcel, Tract B-9H-1A, to be dedicated to the City of Albuquerque, will remain undisturbed and will continue to drain to the west. This parcel is shown as Basin P on the Proposed Conditions/Basins Map.

For purposes of analysis, Tract B-9H-1B is subdivided into subbasins, as shown on the Proposed Drainage Conditions/Basins Map. Basins 1A,1B, 2A and 2B drain to the inlets located

to the west of the entry road. Most of the 19.1 cfs is intercepted, and the overflow on the north side of the street continues to the sump inlets east of the entry. The overflow on the south side of the street continues into the entry road. Basins 6A, 6B, 5A, 5B, 3 and 4 drain to the inlets at the south side of the entry road, where the runoff is intercepted by a battery of inlets. The total runoff generated by these basins is 30.1 cfs. Preliminary storm drain plan and profile sheets are presented in the plates at the end of the report. All of this developed runoff is carried by the storm drain system to the detention pond, where it is controlled-released.

One-half of the cross-section of Cibola Loop Road will be constructed as part of this project, from the entry to Tract B-9H-1B to the southeast corner of Tract B-9H-1B, where it will tie into the existing half-section constructed under Project No. 5182.90. The runoff generated on Cibola Loop Road drains south on the street to inlets at Cibola Loop/Ellison. These inlets were designed to accommodate this Cibola Loop Road runoff. Plan and profile sheets for the Cibola Loop Road Storm drain are included in the Plates section of this report.

As stated in the Methodology Section of this report, street flows were calculated and energy grade lines confined to the right-of-way. A Summary Table of the street calculations is provided at the front of Appendix 2 for review and reference. The allowable locations for the use of roll curb have been identified on the Curb Type Identification Map in the rear of this report.

A. Public Detention Pond Discharge

The discharge from the site is restricted to 14.8 cfs, through the use of a public detention pond, in accordance with the SAD No. 223 Drainage Improvement Map, a copy of which is enclosed. The pond will discharge a maximum flow of 11.6 cfs, and the runoff from Tract B-9H-1A, when developed, will be restricted to 3.2 cfs.

The pond was sized based on the 24-hour, 100-year event. The maximum flow to the pond is 67.4 cfs with a maximum discharge of 11.6 cfs. Maximum depth is 10 feet, requiring the pond to be fenced. Maximum storage volume is 1.43 acre feet.

Calculations are found in Appendix 3 for the detention pond sizing and preliminary design.

B. Backyard Ponding

A few of the lots require backyard ponds, which drain only the backyard area. No credit is taken for the backyard ponding in the hydrologic analysis. Pond locations are shown on the preliminary grading plans enclosed in the rear of this report.

C. Offsite Basins

The site is not impacted by any offsite basins.

V. PHASING/BUILDING PERMIT/FINAL PLAT APPROVALS

No phasing is anticipated for this project, except for the future development of the park, Tract B-9H-1A.

This report requests only Bulk Land Plat, Preliminary Plat and rough grading approvals. Prior to final plat and building permit approval, a final grading plan and work order construction plans must be submitted and approved by the City and of Albuquerque.

VI. CONCLUSION

The drainage management plan presented in this report for Tract B-9H-1 provides a workable solution to the drainage issues created by the development of this property and should be approved as satisfying the requirements for Bulk Land Plat, Preliminary Plat drainage report and rough grading approval.

APPENDICES

APPENDIX 1 - HYDROLOGY/FLOWRATE CALCULATIONS

APPENDIX 2 - STREET FLOW CAPACITY CALCULATIONS

APPENDIX 3 - DETENTION POND DESIGN CALCULATIONS

APPENDIX 4 - STORM DRAIN AND CATCH BASIN CALCULATIONS

APPENDIX 5 - EXCERPTS FROM DRAINAGE REPORT FOR ELLISON DRIVE IMPROVEMENTS - MAY, 1995

APPENDIX 6 - INFRASTRUCTURE LIST

APPENDIX 1

HYDROLOGY/FLOWRATE CALCULATIONS

HYDROLOGY - FORMULAS USED

EXISTING CONDITIONS: FROM DPM, SECTION 22.2, 1/93 UPDATE

$t_c = (L_1/V_1 + L_2/V_2 + \ldots + L_x/V_x)/3600$ sec/hr

SUBREACH ①: $L_1 = 400'$, $K_1 = 0.7$, $S_1 = 7.3\%$

$V_1 = 0.7\sqrt{7.3} = 1.89$ fps

SUBREACH ②: $L_2 = 700'$, $K_2 = 2$, $S_2 = 5.2\%$

$V_2 = 2\sqrt{5.2} = 4.56$ fps

$$t_c = \frac{\frac{400}{1.89} + \frac{700}{4.56}}{3600} = 0.10 \text{ hr.} \Rightarrow \text{Use } 0.2 \text{ hr} = t_c$$

Since $t_c \leq 0.2$ hr, use methods in Section A.

* SEE ATTACHED SUMMARY OF HYDROLOGIC DATA - EXISTING CONDITIONS.

DEVELOPED CONDITIONS

FOR SMALL WATERSHEDS, $t_p = 8$ minutes,

$t_c = 12$ minutes,

RATIONAL METHOD "C" = %A(.27) + %B(.43) + %C(.61) + %D(.93)
(ZONE 1, 100-YR, 6HR STORM)

"C" = %A(.08) + %B(.24) + %C(.47) + %D(.92)
(ZONE 1, 10-YR, 6 HR STORM)

WEIGHTED EXCESS PRECIPITATION: E_c = %A(.44) + %B(.67) + %C(.99) + %D(1.97)

VOLUME (TOTAL) = AREA (E_c)

* SEE ATTACHED SUMMARY OF HYDROLOGIC DATA - FULLY DEVELOPED CONDITIONS

BOHANNAN-HUSTON INC.
ENGINEERS · PLANNERS · PHOTOGRAMMETRISTS · SURVEYORS · LANDSCAPE ARCHITECTS
ALBUQUERQUE LAS CRUCES SANTA FE

PROJECT NAME TRACT B-9H-1 SHEET ____ OF ____
PROJECT NO. C96146.A04 BY PR DATE 4/7/97
SUBJECT HYDROLOGY CH'D ____ DATE ____

HYDROLOGIC DATA-SEVEN BAR RANCH
TRACT B-9H-1

04/11/97

EXISTING CONDITIONS

SUMMARY OF HYDROLOGIC DATA

BASIN ID	AREA AC	AREA SQ.MI.	% LAND TREATMENT A	B	C	D	TIME TO PEAK	10-YR DISCHARGE CFS/AC	Q(10YR) CFS	100-YR DISCHARGE CFS/AC	Q(100YR) CFS
E1	8.300	0.0130	100.0	0.0	0.0	0.0	0.1333	0.24	2.0	1.29	10.7
E2	10.500	0.0164	100.0	0.0	0.0	0.0	0.1333	0.24	2.5	1.29	13.5

HYDROLOGIC DATA-SEVEN BAR RANCH
TRACT B-9H-1

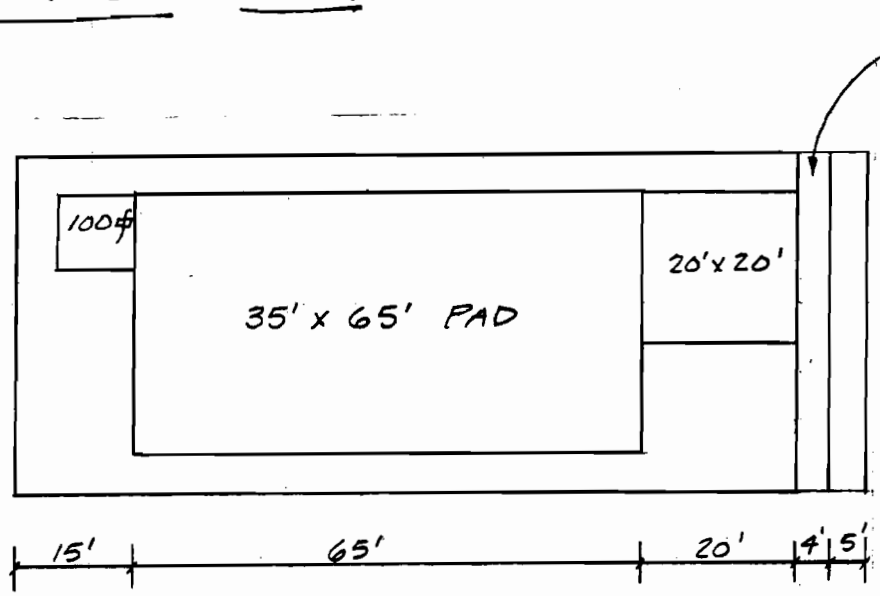
04/12/97

FULLY DEVELOPED CONDITIONS

SUMMARY OF HYDROLOGIC DATA

BASIN ID	AREA AC	AREA SQ.MI.	% LAND TREATMENT A	B	C	D	TIME TO PEAK	10-YR DISCHARGE CFS/AC	Q(10YR) CFS	100-YR DISCHARGE CFS/AC	Q(100YR) CFS
1A	2.06	0.0032	6.5	18.3	18.3	56.9	0.1333	2.07	4.3	3.47	7.1
1B	0.99	0.0015	7.0	16.1	16.1	60.8	0.1333	2.14	2.1	3.54	3.5
2A	1.33	0.0021	6.2	16.0	16.0	61.8	0.1333	2.16	2.9	3.56	4.7
2B	1.14	0.0018	4.4	24.3	24.3	47.0	0.1333	1.92	2.2	3.30	3.8
3	1.51	0.0024	5.8	19.0	19.0	56.3	0.1333	2.07	3.1	3.46	5.2
4	1.28	0.0020	6.1	20.8	20.8	52.4	0.1333	2.00	2.6	3.38	4.3
5A	1.15	0.0018	6.4	15.8	15.8	61.9	0.1333	2.16	2.5	3.56	4.1
5B	0.56	0.0009	2.5	21.8	21.8	54.0	0.1333	2.06	1.2	3.46	1.9
6A	2.35	0.0037	4.9	26.1	26.1	42.9	0.1333	1.84	4.3	3.22	7.6
6B	2.07	0.0032	6.2	20.4	20.4	53.1	0.1333	2.01	4.2	3.40	7.0
7	0.75	0.0012	0.0	50.0	50.0	0.0	0.1333	1.13	0.8	2.45	1.8
8	0.28	0.0004	0.0	16.3	16.3	67.5	0.1333	2.32	0.6	3.75	1.0
9	0.28	0.0004	1.6	22.5	22.5	53.3	0.1333	2.05	0.6	3.45	1.0
C1	0.55	0.0009	0.0	9.9	9.9	80.1	0.1333	2.54	1.4	3.99	2.2
C2	0.55	0.0009	0.0	9.9	9.9	80.1	0.1333	2.54	1.4	3.99	2.2
C3	1.87	0.0029	0.0	9.9	9.9	80.1	0.1333	2.54	4.7	3.99	7.5
P	3.18	0.0050	100.0	0.0	0.0	0.0	0.1333	0.24	0.8	1.29	4.1

TYPICAL LOT



TOTAL IMPERVIOUS AREA: 2,955 ft

NOTE: THIS DIAGRAM IS USED IN THE HYDROLOGIC DATA SPREAD SHEET (FOLLOWING PAGE).

BOHANNAN-HUSTON INC.

PROJECT NAME _____ SHEET _____ OF _____

PROJECT NO. 97146A BY CAB DATE 4-1-97

SUBJECT IMPERVIOUS AREA CH'D _____ DATE _____

IMPERVIOUS AREA CALCULATIONS

04/08/97

LOT WIDTH (IN FEET)		45	50	55	60	65	70	75	80
PAD WIDTH		35	40	45	50	55	55	60	65
PAD DEPTH		65	65	65	65	65	65	65	65
DRIVEWAY	(20'x20')	400	400	400	400	400	400	400	400
WALKWAY	(4' WIDE)	0	0	0	0	0	0	0	0
PATIO	(10'x10')	100	100	100	100	100	100	100	100
TOTAL IMPERVIOUS		2775 sq.ft/lot	3100 sq.ft/lot	3425 sq.ft/lot	3750 sq.ft/lot	4075 sq.ft/lot	4075 sq.ft/lot	4400 sq.ft/lot	4725 sq.ft/lot

ROADWAY	TYPE 1	TYPE 2	TYPE 3	TYPE 4	CUL 1
F-F WIDTH	28	51	26	40	
SIDEWALK	4	4	4	4	0
RADIUS					40
	36 sq.ft/ft	59 sq.ft/ft	34 sq.ft/ft	48 sq.ft/ft	5027 sq.ft

BASIN ID	AREA TYPE D AC	PERCENT TYPE D	TOTAL NUMBER OF LOTS PER BASIN 45	50'	55'	60'	65'	70'	75'	80'
1A	1.17	56.9	15	0	0	0	0	0	0	0
1B	0.60	60.8	8	0	0	0	0	0	0	0
2A	0.82	61.8	9	0	0	0	0	0	0	0
2B	0.54	47.0	6	0	0	0	0	0	0	0
3	0.85	56.3	10	0	0	0	0	0	0	0
4	0.67	52.4	9	0	0	0	0	0	0	0
5A	0.71	61.9	8	0	0	0	0	0	0	0
5B	0.30	54.0	2	0	0	0	0	0	0	0
6A	1.01	42.9	13	0	0	0	0	0	0	0
6B	1.10	53.1	14	0	0	0	0	0	0	0
7	0.00	0.0	0	0	0	0	0	0	0	0
8	0.19	67.5	0	0	0	0	0	0	0	0
9	0.15	53.3	1	0	0	0	0	0	0	0
C1	0.44	80.1	0	0	0	0	0	0	0	0
C2	0.44	80.1	0	0	0	0	0	0	0	0
C3	1.50	80.1	0	0	0	0	0	0	0	0
P	0.00	0.0	0	0	0	0	0	0	0	0

TOTAL LENGTH OF ROADWAY PER BASIN TYPE 1	TYPE 2	TYPE 3	TYPE 4	NUMBER OF CUL-DE-SACS PER BASIN
300	0	0	0	0
150	0	0	0	0
300	0	0	0	0
225	0	0	0	0
0	0	165	0	1
0	0	165	0	0
245	0	0	0	0
250	0	0	0	0
255	0	0	0	0
250	0	0	0	0
0	0	0	0	0
0	50	0	110	0
0	50	0	45	0
0	0	0	400	0
0	0	0	400	0
0	0	0	1360	0
0	0	0	0	0

APPENDIX 2

STREET FLOW CAPACITY CALCULATIONS

SUMMARY TABLE
STREET CAPACITY ANALYSIS
SEVEN BAR TRACT B-9H-1

ANALYSIS POINT	SLOPE, %	TYPE OF CURB	Q-100YR CFS	DEPTH FT	V-100YR FPS	E-100YR FT	E<1.00'? < .66' ROLL	Q-10YR CFS	DEPTH FT	V-10YR	D X V	<6.5?	D<.5?
1	4.27	ROLL	11.8	0.26	4.2	0.53	YES	4.2	0.19	3.3	0.6	YES	YES
2	4.27	STD	19.1	0.37	5.0	0.76	YES	8.3	0.28	4.0	1.1	YES	YES
3	5.08	ROLL	11.7	0.26	4.6	0.59	YES	4.0	0.18	3.5	0.6	YES	YES
4	1.28	STD	20.6	0.43	3.4	0.61	YES	8.1	0.34	2.5	0.9	YES	YES
5	3.33	ROLL	9.5	0.30	3.7	0.51	YES	4.1	0.20	3.0	0.6	YES	YES
6	0.50	STD	30.1	0.58	3.0	0.72	YES	12.1	0.43	2.1	0.9	YES	YES

DETENTION POND CALCULATIONS

① THE STAGE-STORAGE-DISCHARGE RELATIONSHIP IS SHOWN ON THE ATTACHED SPREADSHEET. THE POND CONFIGURATION IS SHOWN ON THE GRADING/DRAINAGE PLAN IN THE REAR POCKETS.

STORAGE VOLUMES WERE CALCULATED FOR EACH 1' INCREMENT OF POND DEPTH, AND ADDED INCREMENTALLY. IT WAS DETERMINED THAT A 12" DISCHARGE ORIFICE IS NECESSARY, AND THE DISCHARGE IS BASED ON THIS. THE ORIFICE EQUATION WAS USED:

$$Q = 0.6A\sqrt{2gh}$$

② USING THE STAGE-STORAGE-DISCHARGE DATA, THE RUNOFF WAS ROUTED THROUGH THE RESERVOIR USING AHYMO. THE AHYMO OUTPUT IS ATTACHED.

③ SUMMARY OF POND

Q_{100} (IN) = 67.4 CFS (USING 24-HR, 100-YR EVENT)

Q_{100} (OUT) = 11.62 CFS

ALLOWABLE DISCHARGE = 14.7 CFS (SEE DISCUSSION IN "MASTER PLAN" SECTION)

OUTFLOW IS 12" ORIFICE
(USE 12" TO 24" INCREASER TO STORM DRAIN IN CIBOLA LOOP)

MAX. WATER ELEVATION = 5099.0 (PROVIDES 2' + FREEBOARD)

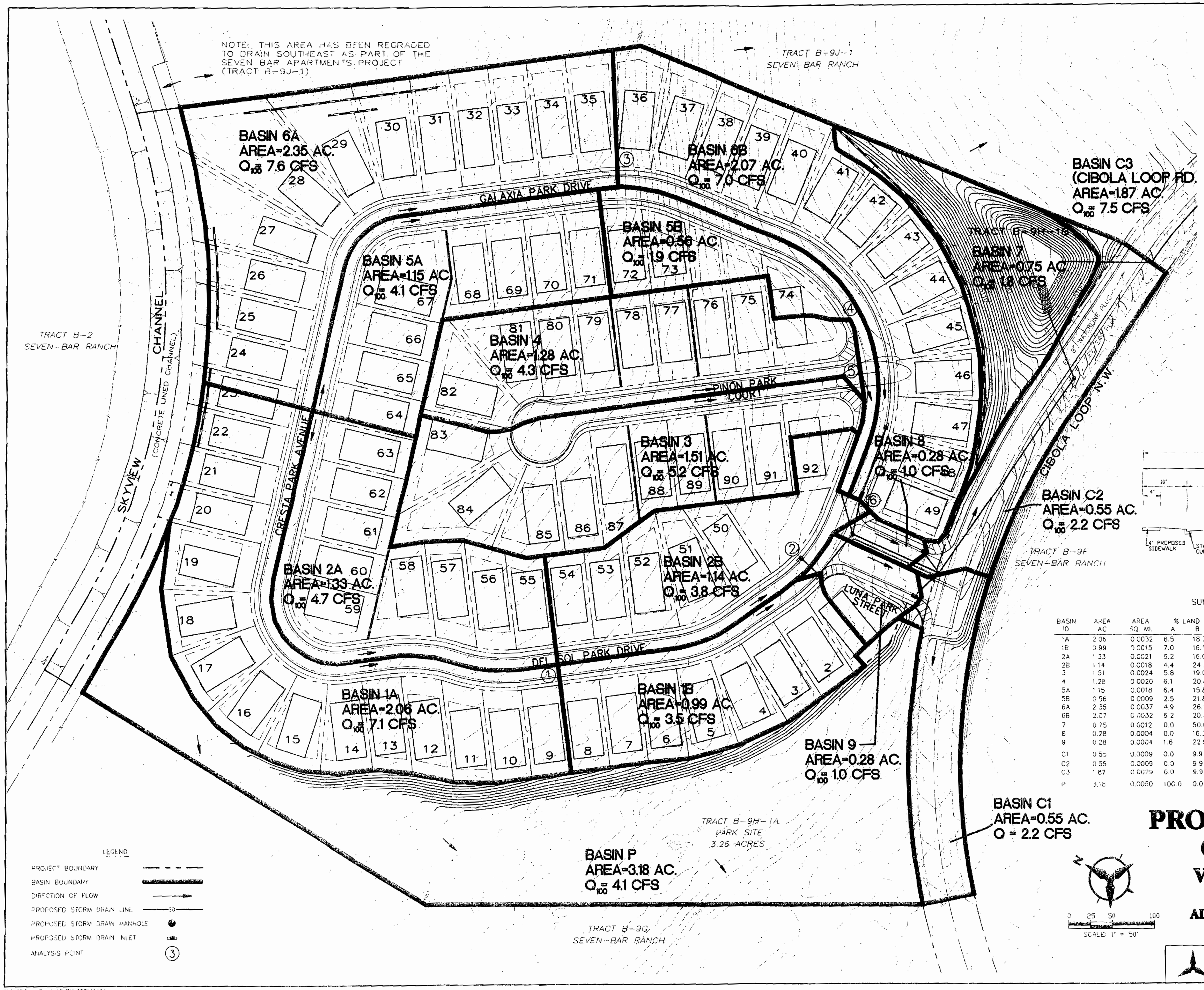
MAX. STORAGE = 1.43 AC-FT

POND VOLUME CALCULATIONS
STAGE VS STORAGE VS DISCHARGE

SEVEN BAR RANCH TRACT B-9H-1

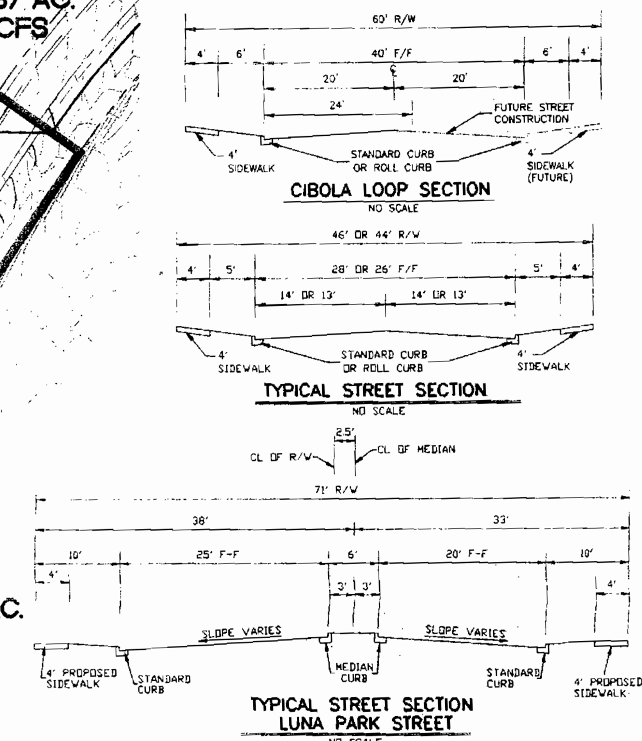
C97146A04/PONDVOL.XLS

ELEVATION	AREA, SF	AVG AREA, SF	INCREMENT. VOL, CF	CUM VOL, CF	CUM VOL, AC-FT	ORIFICE EQUATION FOR 12" OPENING H FT	Q CFS
5089	1582		0	0	0.0000		
5090	2224	1903	1903	1903	0.0437	0.50	2.67
5091	2971	2598	2598	4501	0.1033	1.50	4.63
5092	3823	3397	3397	7898	0.1813	2.50	5.98
5093	4781	4302	4302	12200	0.2801	3.50	7.07
5094	5843	5312	5312	17512	0.4020	4.50	8.02
5095	7011	6427	6427	23939	0.5496	5.50	8.86
5096	8284	7648	7648	31586	0.7251	6.50	9.64
5097	9662	8973	8973	40559	0.9311	7.50	10.35
5098	11145	10404	10404	50963	1.1699	8.50	11.02
5099	12734	11940	11940	62902	1.4440	9.50	11.65
5100	14428	13581	13581	76483	1.7558	10.50	12.25
5101	16226	15327	15327	91810	2.1077	11.50	12.82


NOTE: THIS AREA HAS BEEN REGRADED TO DRAIN SOUTHEAST AS PART OF THE SEVEN BAR APARTMENTS PROJECT (TRACT B-9J-1)
TRACT B-9J-1 SEVEN-BAR RANCH
TRACT B-2 SEVEN-BAR RANCH
SKYVIEW CHANNEL (CONCRETE LINED CHANNEL)
BASIN 6A AREA=2.35 AC. Q_{100}= 7.6 CFS
BASIN 6B AREA=2.07 AC. Q_{100}= 7.0 CFS
BASIN 5A AREA=1.15 AC. Q_{100}= 4.1 CFS
BASIN 5B AREA=0.56 AC. Q_{100}= 1.9 CFS
BASIN 4 AREA=1.28 AC. Q_{100}= 4.3 CFS
BASIN 3 AREA=1.51 AC. Q_{100}= 5.2 CFS
BASIN 2A AREA=1.33 AC. Q_{100}= 4.7 CFS
BASIN 2B AREA=1.14 AC. Q_{100}= 3.8 CFS
BASIN 1A AREA=2.06 AC. Q_{100}= 7.1 CFS
BASIN 1B AREA=0.99 AC. Q_{100}= 3.5 CFS
BASIN 7 AREA=0.75 AC. Q_{100}= 1.8 CFS
BASIN 8 AREA=0.28 AC. Q_{100}= 1.0 CFS
BASIN 9 AREA=0.28 AC. Q_{100}= 1.0 CFS
BASIN C1 AREA=0.55 AC. Q = 2.2 CFS
BASIN C2 AREA=0.55 AC. Q_{100}= 2.2 CFS
BASIN C3 (CIBOLA LOOP RD.) AREA=1.87 AC. Q_{100}= 7.5 CFS
BASIN P AREA=3.18 AC. Q_{100}= 4.1 CFS
GALAXIA PARK DRIVE
CRESTA PARK AVENUE
PINON PARK COURT
DEL SOL PARK DRIVE
LUNA PARK STREET
CIBOLA LOOP N.W.
TRACT B-9H-1B
TRACT B-9F SEVEN-BAR RANCH
TRACT B-9H-1A PARK SITE 3.26 ACRES
TRACT B-9G SEVEN-BAR RANCH
LEGEND
PROJECT BOUNDARY
BASIN BOUNDARY
DIRECTION OF FLOW
PROPOSED STORM DRAIN LINE
PROPOSED STORM DRAIN MANHOLE
PROPOSED STORM DRAIN INLET
ANALYSIS POINT
SCALE: 1" = 50'

STREET FLOWS

ANALYSIS POINT	Q(100-YR) CFS
1	11.8
2	19.1
3	11.7
4	20.6
5	9.5
6	30.1


60' R/W
40' F/F
STANDARD CURB OR ROLL CURB
FUTURE STREET CONSTRUCTION
4' SIDEWALK
4' SIDEWALK (FUTURE)
CIBOLA LOOP SECTION
NO SCALE
46' OR 44' R/W
28' OR 26' F/F
14' OR 13'
STANDARD CURB OR ROLL CURB
TYPICAL STREET SECTION
NO SCALE
CL OF R/W
CL OF MEDIAN
71' R/W
SLOPE VARIES
4' PROPOSED SIDEWALK
STANDARD CURB
MEDIAN CURB
TYPICAL STREET SECTION LUNA PARK STREET
NO SCALE

EXISTING CONDITIONS
SUMMARY OF HYDROLOGIC DATA

BASIN ID	AREA AC	AREA SQ. MI.	% LAND TREATMENT A	B	C	D	TIME TO PEAK	10-YR. DISCHARGE CFS/AC.	Q(10-YR) CFS	100-YR. DISCHARGE CFS/AC.	Q(100-YR) CFS
1A	2.06	0.0032	6.5	18.3	18.3	56.9	0.1333	2.07	4.3	3.47	7.1
1B	0.99	0.0015	7.0	16.1	16.1	60.8	0.1333	2.14	2.1	3.54	3.5
2A	1.33	0.0021	6.2	16.0	16.0	61.8	0.1333	2.16	2.9	3.56	4.7
2B	1.14	0.0018	4.4	24.3	24.3	47.0	0.1333	1.92	2.2	3.30	3.8
3	1.51	0.0024	5.8	19.0	19.0	56.3	0.1333	2.07	3.1	3.46	5.2
4	1.28	0.0020	6.1	20.8	20.8	52.4	0.1333	2.00	2.6	3.38	4.3
5A	1.15	0.0018	6.4	15.8	15.8	61.9	0.1333	2.16	2.5	3.56	4.1
5B	0.56	0.0009	2.5	21.8	21.8	54.0	0.1333	2.06	1.2	3.46	1.9
6A	2.35	0.0037	4.9	26.1	26.1	42.9	0.1333	1.84	4.3	3.22	7.6
6B	2.07	0.0032	6.2	20.4	20.4	53.1	0.1333	2.01	4.2	3.40	7.0
7	0.75	0.0012	0.0	50.0	50.0	0.0	0.1333	1.13	0.8	2.45	1.8
8	0.28	0.0004	0.0	16.3	16.3	67.5	0.1333	2.32	0.6	3.75	1.0
9	0.28	0.0004	1.6	22.5	22.5	53.3	0.1333	2.05	0.6	3.45	1.0
C1	0.55	0.0009	0.0	9.9	9.9	80.1	0.1333	2.54	1.4	3.99	2.2
C2	0.55	0.0009	0.0	9.9	9.9	80.1	0.1333	2.54	1.4	3.99	2.2
C3	1.87	0.0029	0.0	9.9	9.9	80.1	0.1333	2.54	4.7	3.99	7.5
P	3.18	0.0050	100.0	0.0	0.0	0.0	0.1333	0.24	0.8	1.29	4.1

PROPOSED DRAINAGE CONDITIONS

VISTA DEL PARQUE SUBDIVISION

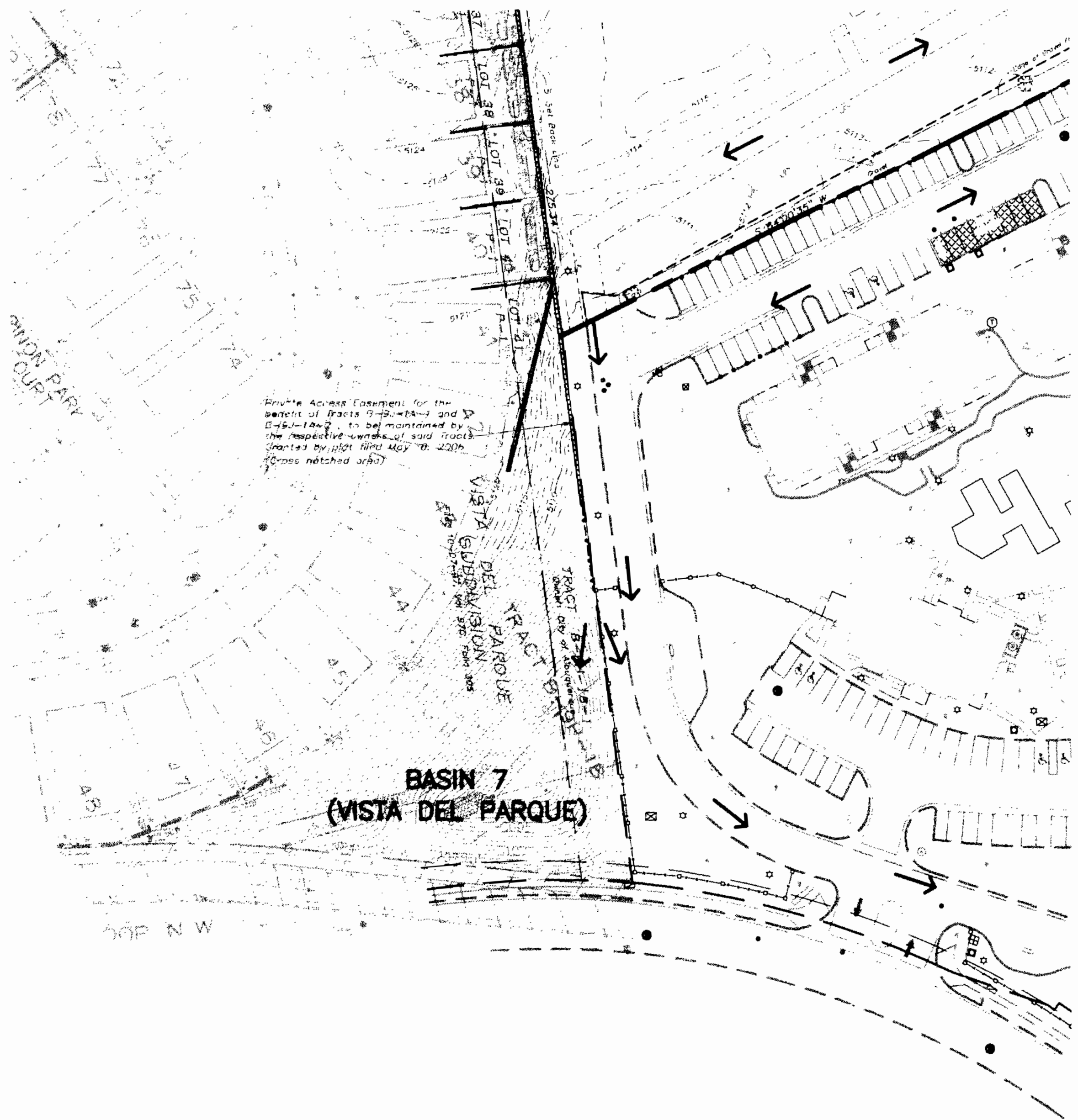
ALBUQUERQUE, NEW MEXICO

APRIL, 1997

BOHANNAN-HUSTON INC.
ENGINEERS • PLANNERS • PHOTOGRAMMETRISTS • SURVEYORS • LANDSCAPE ARCHITECTS
ALBUQUERQUE LAS CRUCES SANTA FE

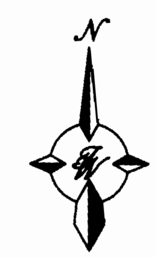
BHI PROJ. NO. J:MICKEY\C9714CAC4
FILENAME:B-SH
03/03/97
SHT 1

DATE



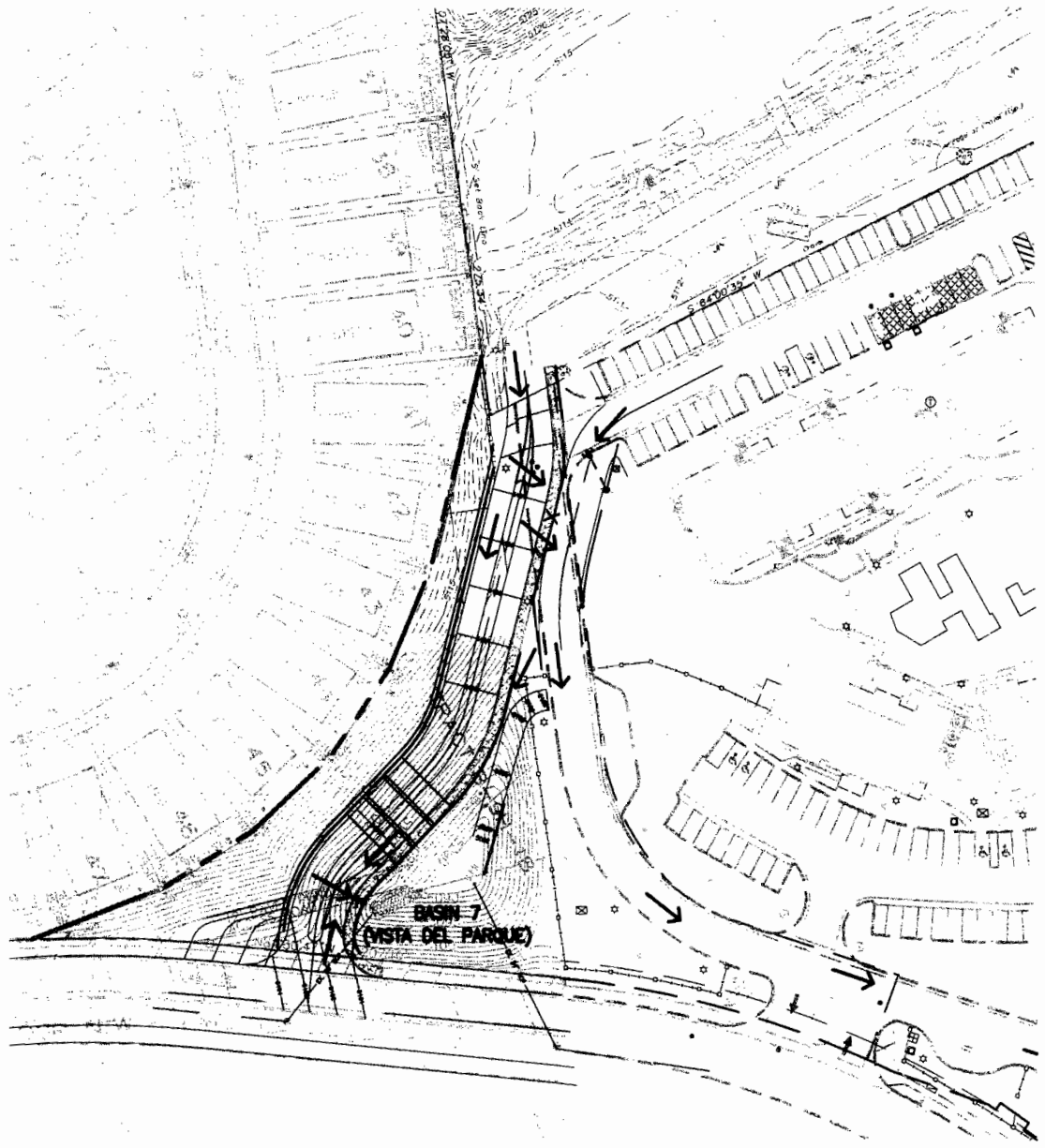
LEGEND

⟶ DIRECTION OF FLOW



sc: 100'

EXISTING DRAINAGE CONDITIONS



LEGEND

⟶ DIRECTION OF FLOW

N

sc: 100'

PROPOSED DRAINAGE CONDITIONS