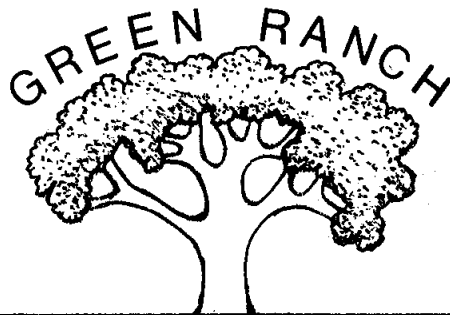


FLOOD PLANE ANALYSIS
OF EVANS CREEK
FOR
THE GREEN RANCH DEVELOPMENT
PROJECT



6155 LAKESIDE DRIVE RENO, NEVADA

SEPTEMBER 1983

Stille & Associates

LANDSCAPE ARCHITECTS & PLANNERS

571 California Street • Reno • Nevada • 89509

Stille & Associates
LANDSCAPE ARCHITECTS & PLANNERS

Thomas A. Stille

702/329-4329 702/825-2237

571 California Street • Reno • Nevada • 89509

LETTER OF TRANSMITTAL

Stille & Associates

LANDSCAPE ARCHITECTS & PLANNERS

571 California Street • Reno • Nevada • 89509

702/329-4329

702/825-2237

To: JOHN METZKER
6155 Lakeside

Date: 4/30/84

Project: GR Flood Plane

Attention: _____

Job No. _____

Gentlemen:

We are sending Herewith Under separate cover, via _____
the following items:

Copies	Description
1	copy Preliminary Flood Mgt Program w/ Diagram

These are transmitted for:

Your Information

Distribution

Bids due _____ 19____

Approval

Signature

As Requested

Your Files

Review & Comment

Remarks: _____

cc: Longfield
Clark & Sullivan
City of Reno / ^{Bill} Van

Very truly yours,

[Signature]

Stille & Associates

LANDSCAPE ARCHITECTS & PLANNERS

571 California Street • Reno • Nevada • 89509
702/329-4329 702/825-2237

April 27, 1984

PRELIMINARY FLOOD MANAGEMENT PROGRAM

Green Ranch Townhouse Addendum to Flood Plane Analysis
of Evans Creek - September 1983

To reduce the 100 year flood plane limits in the area of the existing pond, two central weirs can be adjusted.
(See diagram)

Weir A controls water running into pond by both a surface ditch and an underground culvert. By pulling several boards, water can be shut off to the pond. During a 100 year storm, water will continue running into the pond area.

Boards in a second weir (dam) can also be pulled to lower the pond level by two feet. This will substantially reduce the 100 year flood plane levels in the area of building group A.

Normally there are several hours, up to a day or more, of advance warning if a threatening condition exists. During this period the president of the home owner's association or his delegated representative shall be responsible for the above described flood management program.

GENERAL
LOCATION
OF BUILDING
GROUP A

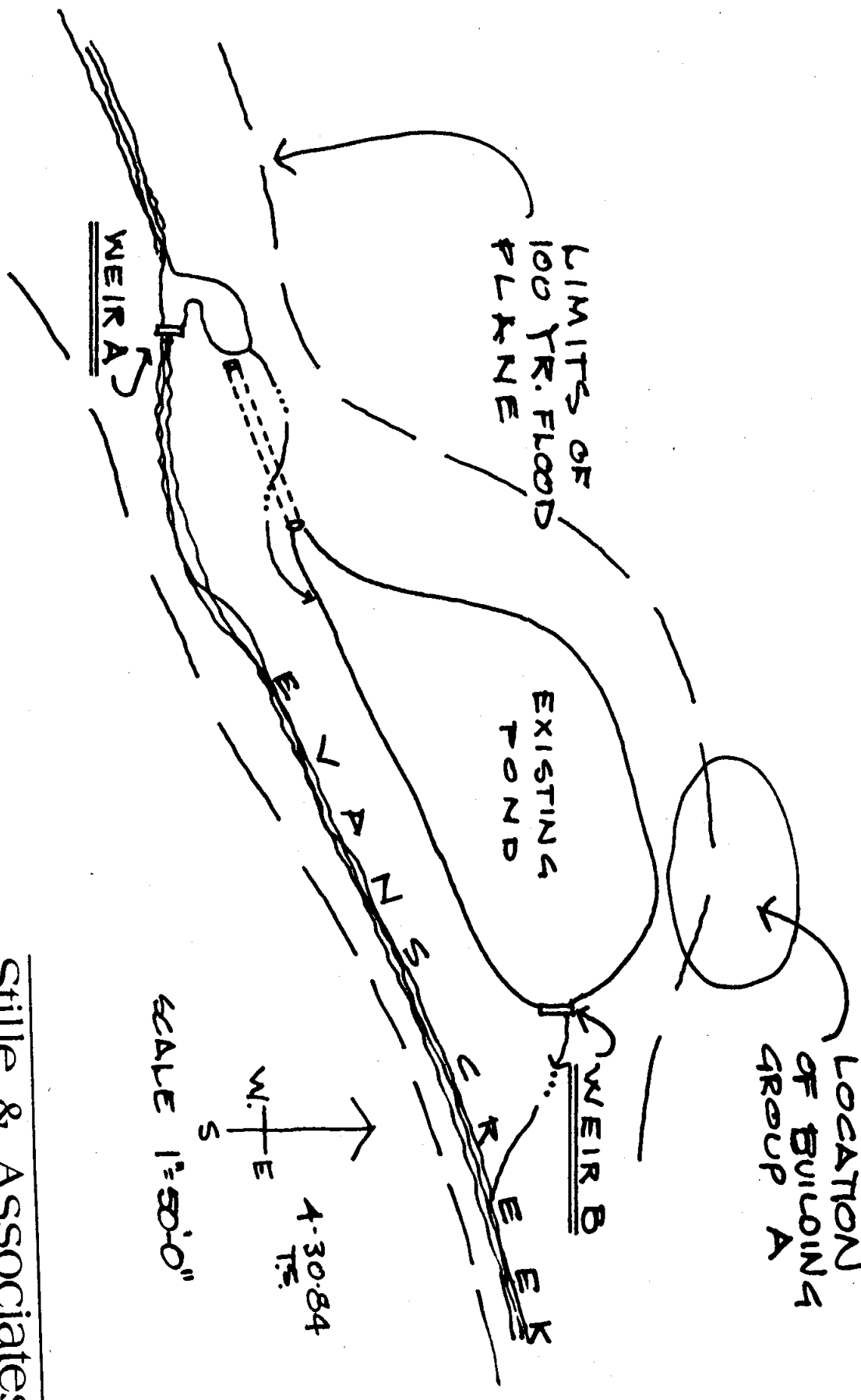
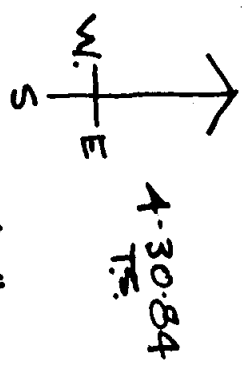
LIMITS OF
100 YR. FLOOD
PLAIN

EXISTING
POND

WEIR B

WEIR A

SCALE 1"=50'-0"



GREEN RANCH TOWNHOUSE
FLOOD MANAGEMENT

Stille & Associates
LANDSCAPE ARCHITECTS & PLANNERS
571 California Street • Reno • Nevada • 89509
702/329-4329 702/825-2237

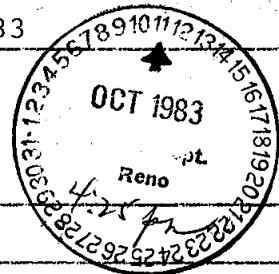
thomas albee stille
landscape architect

LETTER OF TRANSMITTAL

92 rissone lane • reno, nev 89503
702 • 329-4329

To: City of Reno Engineering Date: 10/10/83
450 Sinclair
Reno, Nevada Project: Green Ranch

Attention: Millard Reed Job No. 1083



Gentlemen:

We are sending Herewith Under separate cover, via the following items:

Copies	Description
3	copies of Green Ranch Flood Plane Study

These are transmitted for:

- Your Information
- Distribution
- Bids due _____ 19__
- Approval
- Signature
- As Requested
- Your Files
- Review & Comment

Remarks: You may recall our phone conversation regarding flood plane analysis. You suggested that I forward copies of our analysis to you and your staff for review. If this study appears satisfactory, we will proceed with more detailed site planning at a later date for your review.

cc: Dick MacDougall
Leonard Crowe
John Metzker

Very truly yours,

esi *[Signature]*

TABLE OF CONTENTS

I	INTRODUCTION.....	1
II	PROCEDURE.....	1
III	RESULTS.....	1
IV	ANALYSIS.....	2
V	OTHER AVAILABLE DATA.....	2
	PLATE NO. 1.....	3
VI	RECOMMENDATIONS.....	4
APPENDIX - SUMMARY OF WSP2 COMPUTER MODEL PRINTOUT		

Flood Plane Analysis of Evans Creek for the
Green Ranch Development Project

I INTRODUCTION

The purpose of this study is to determine the extent of the 100 year flood plane along the Evans Creek stream channel. This information can then be used as a guide for future development planning on the Green Ranch Property.

II PROCEDURE

The system used for analyzing the flood plane elevations was the United States Soil Conservation Service WSP2 Computer Model.

Eleven cross sections were surveyed representative of the Evans Creek channel at approximately equal spacing across the Green Ranch Property. Data was entered into the computer and sent to the Soil Conservation Service main frame computer at the Fort Collins Colorado Computer Center.

Input information on each cross section included reach, coefficient of friction, stationing and elevations.

III RESULTS

The computer print out from the Soil Conservation Service Fort Collins Colorado Computer Center indicated flood elevations at each cross section for the 10, 50, 100 and 500 year flood planes.

The flow volumes for Evans Creek at this location were provided by the Soil Conservation Service based on the Tudor Flood Insurance Study. The following table indicates the flow for each flood period.

<u>Tudor Study</u>	<u>Flood Volumes</u>
10 year	= 208 CFS
50 year	= 661 CFS
100 year	= 1041 CFS
500 year	= 2812 CFS

A copy of the computer print out for each cross section is located in the Appendix to this report.

IV ANALYSIS

The extent of the 100 year flood plane is mapped on the 24" x 36" map in the back pocket of this report. The map delineates the boundaries of the 100 year flood plane for future development.

The flood plane follows the stream channel fairly close except in two locations on the property. One location lies approximately 300' downstream from the property line on the southwest portion of the property where the distinct stream channel diminishes. At this location, the 100 year flood plane widens to approximately 140'. The riparian growth also indicates a widening in the flood plane.

The second area of widening occurs where a pond has been constructed with a concrete dam. The limits of the 100 year flood plane at this location widen to 150'.

To the southeast of the Green Ranch Property the limits of the 100 year flood plane increase as Evans Creek decreases in gradient and is less channelized.

V OTHER AVAILABLE DATA

Plate No. 1 is a copy of a portion of the flood insurance rate map for Reno. The boundaries of the Green Ranch have been traced on the flood insurance map as a reference. The Green Ranch property has been designated by the Federal Emergency Management Agency (FEMA) as Zone AO and C. Zone AO is a special flood hazard area where shallow depths of flooding may occur. Zone C is an area classified as "minimal flooding". The FEMA study coincides generally with the SCS WSP2 study although the FEMA study includes the entire access road to the site and areas to the north of the road. The southern boundary of the AO zone, however, does follow the 100 year flood plane as delineated in the SCS WSP2 model.

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
RENO,
NEVADA
WASHOE COUNTY

PANEL 23 OF 24
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PROOF COPY

COMMUNITY-PANEL NUMBER
320020 0023 B

EFFECTIVE DATE:
JANUARY 5, 1984



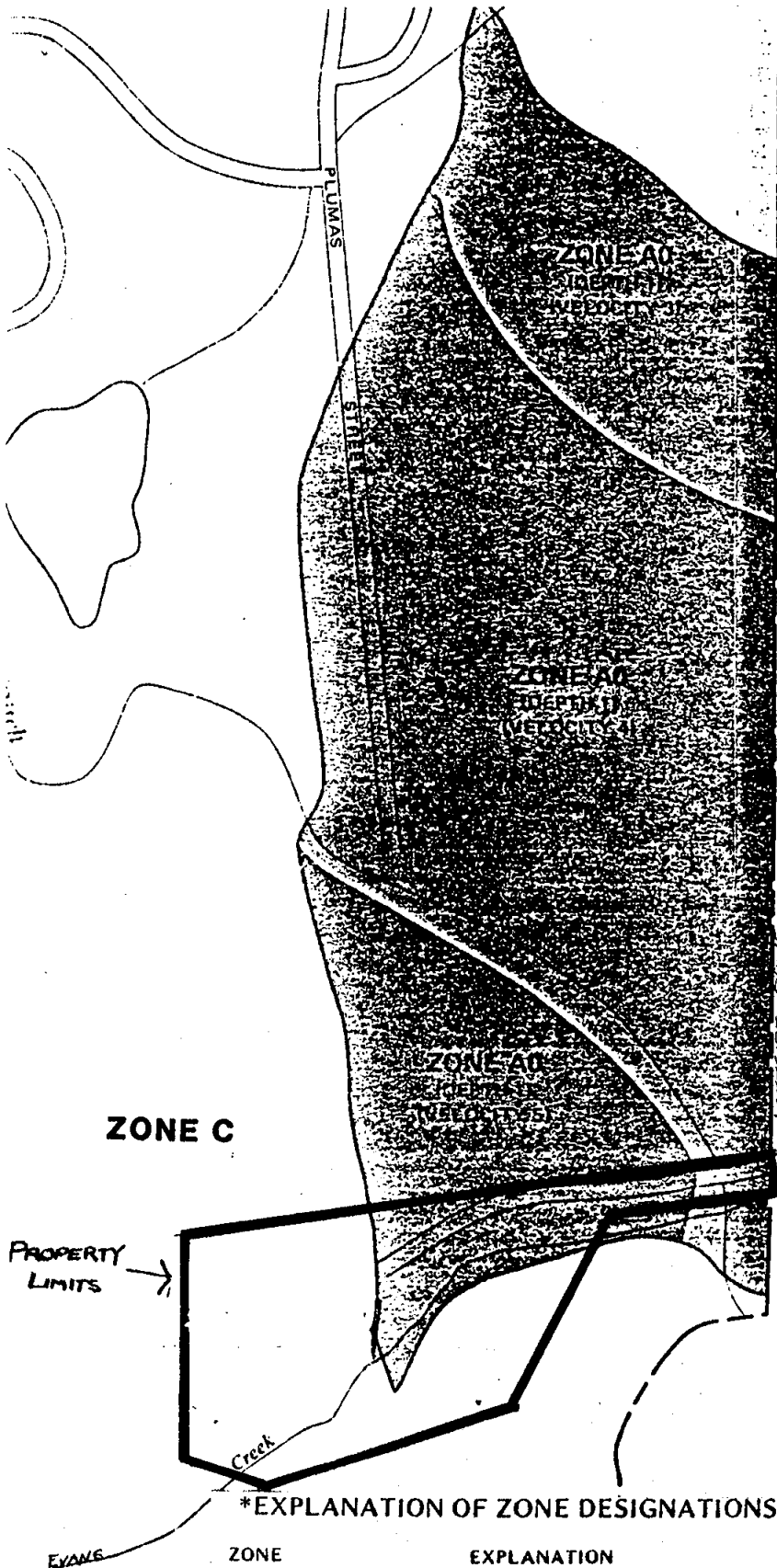
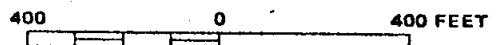
Federal Emergency Management Agency

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.



APPROXIMATE SCALE



***EXPLANATION OF ZONE DESIGNATIONS**

ZONE	EXPLANATION
A0	Special Flood Hazard Areas inundated by types of 100-year shallow flooding where depths are between 1.0 and 3.0 feet; depths are shown, or areas of 100-year alluvial fan flooding, depths and velocities shown, but no flood hazard factors are determined.
C	Areas of minimal flooding. (No shading)

PLATE NO. 1

VI RECOMMENDATIONS

The channel in its existing state indicates that little damage has occurred in the past due to natural flooding. Riparian growth has significantly stabilized banks along Evans Creek. Due to the stability of the channel in its existing state, it is recommended that the area within the channel or flood way not be disturbed.

FEMA regulations do not allow raising the base elevation of the 100 year flood plane by more than one (1) foot. Therefore any construction or filling within the 100 year flood plane should be calculated to ensure compatibility with FEMA regulations.

Floor elevations within the 100 year flood plane should be set two (2) feet above the base elevation of the 100 year flood plane.

APPENDIX

SUMMARY OF WSP2 COMPUTER MODEL

PRINTOUT

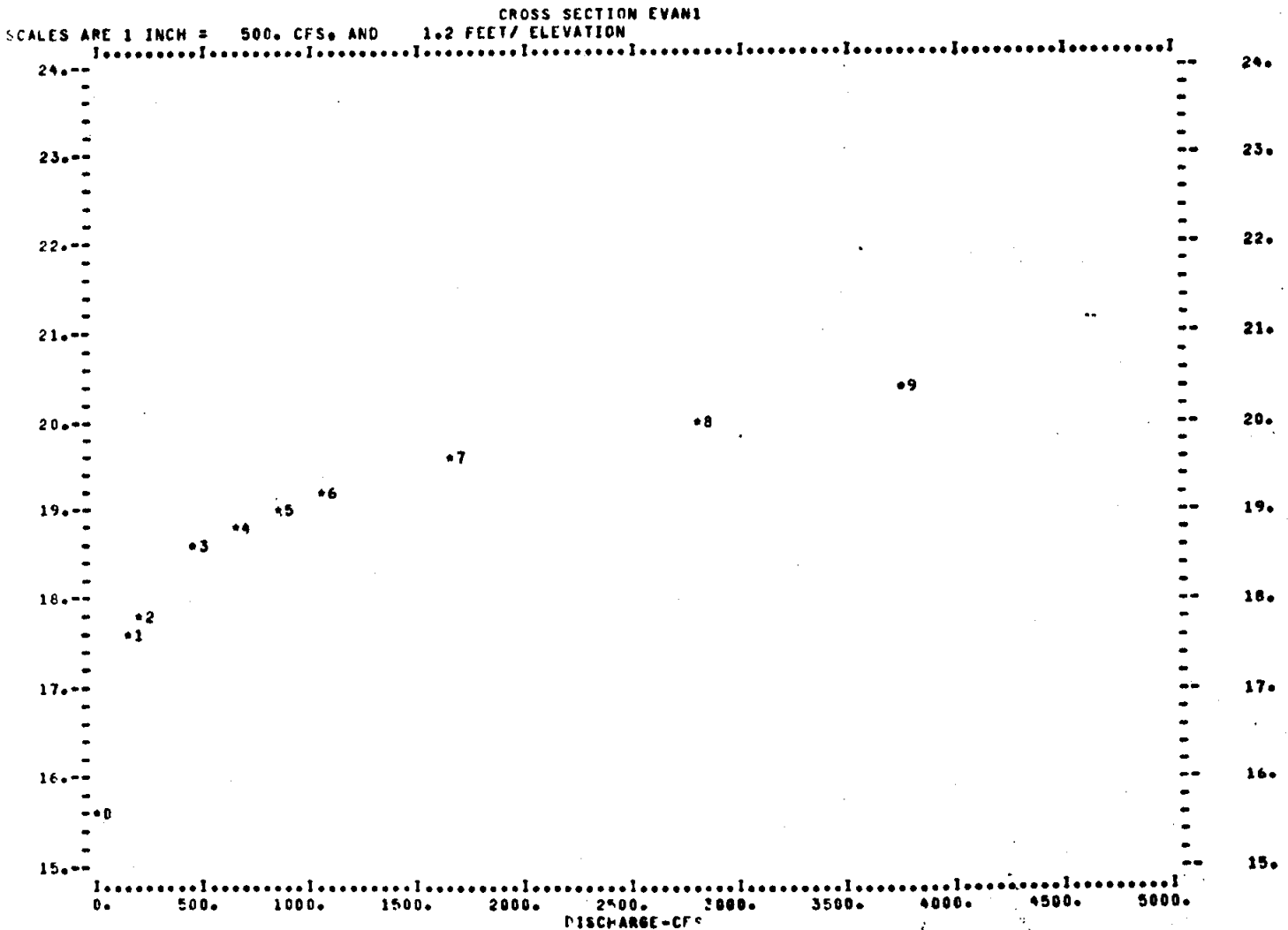
-----80/80 LIST OF INPUT DATA-----						
TITLE	FLOOD PLAIN ANALYSIS-GREEN RANCH, SEPT 1983					
TITLE	FLOOD AREA CALCULATION FOR STILLE & ASSOC. BY JSM, RENO SCS FO					
DISCHARGE	-1.0	140.0	208.0	460.0	661.0	860.0
DISCHARGE	-1.0	1041.0	1660.0	2812.0	3760.0	
STARTS	EVAN1	.0093	.0093	.0093	.0093	.0093
STARTS	EVAN1	.0093	.0093	.0093	.0093	
OUTPUT	SPK					
COMMENT	INPUT DATA DEVELOPED FROM 2 FOOT CONTOUR MAP 1"=50' FIELD VERIFIED					
REACH	EVAN 1	1.0	0.0	0.0	0.0	
REACH	EVAN 2	1.0	95.0	90.0	90.0	
REACH	EVAN 3	1.0	190.0	185.0	185.0	
REACH	EVAN 4	1.0	75.0	75.0	75.0	
REACH	EVAN 5	1.0	180.0	180.0	180.0	
REACH	EVAN 6	1.0	135.0	125.0	125.0	
REACH	EVAN 7	1.0	130.0	125.0	125.0	
REACH	EVAN P	1.0	150.0	145.0	145.0	
REACH	EVAN 9	1.0	185.0	175.0	175.0	
REACH	EVAN 10	1.0	280.0	275.0	275.0	
REACH	EVAN 11	1.0	175.0	170.0	170.0	
SECTION	EVAN 1					
	0.0	20.0	10.0	18.0	20.0	17.0
	29.0	18.0	45.0	19.0	134.0	18.0
	150.0	16.0	154.0	15.5	158.0	16.0
	192.0	18.0	220.0	19.0	240.0	20.0
ENDTABLE	EVAN 1	1	C	240.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 2					
	0.0	20.0	14.0	18.0	20.0	17.8
	24.0	18.0	35.0	19.0	43.0	18.0
	59.0	17.0	70.0	18.0	110.0	20.0
ENDTABLE	EVAN 2	1	C	110.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 3					
	0.0	26.0	27.0	24.0	35.0	22.0
	39.0	20.0	41.0	22.0	60.0	23.0
	78.0	22.0	87.0	24.0	95.0	26.0
	120.0	28.0				
ENDTABLE	EVAN 3	1	C	120.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 4					
	0.0	30.0	11.0	28.0	46.0	28.0
	60.0	26.0	69.0	24.0	75.0	23.5
	79.0	24.0	100.0	26.0	126.0	28.0
	137.0	30.0				
ENDTABLE	EVAN 4	1	C	137.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 5					
	0.0	40.0	4.0	38.0	6.0	26.0
	11.0	34.0	15.0	32.0	19.0	30.0
	21.0	28.0	24.0	27.5	26.0	28.0
	29.0	30.0	34.0	32.0	89.0	33.0
	102.0	34.0	110.0	36.0	115.0	38.0
	122.0	39.0				
ENDTABLE	EVAN 5	1	C	122.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 6					
	0.0	50.0	20.0	48.0	24.0	46.0
	29.0	44.0	32.0	42.0	35.0	40.5
	40.0	42.0	44.0	44.0	48.0	46.0
	55.0	48.0	68.0	50.0		
ENDTABLE	EVAN 6	1	C	68.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 7					
	0.0	51.0	10.0	48.0	20.0	45.0
	25.0	44.0	30.0	45.5	36.0	49.0
	44.0	49.0	47.0	45.5	112.0	45.5
	147.0	48.0				
ENDTABLE	EVAN 7	1	C	147.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 8					
	0.0	50.0	10.0	51.5	20.0	51.5
	40.0	51.0	50.0	49.0	56.0	48.5
	64.0	49.0	70.0	49.5	80.0	50.5
	100.0	50.5				
ENDTABLE	EVAN 8	1	C	100.0		
SEGMENT						
NVALUE	0.040					
SECTION	EVAN 9					
	0.0	59.5	8.0	60.5	31.0	60.5
	40.0	54.0	50.0	59.5	70.0	61.0
	90.0	62.5				
ENDTABLE	EVAN 9	1	C	90.0		
SEGMENT						

-----80/80 LIST OF INPUT DATA-----

NVALUE	0.040					
SECTION	EVAN 10					
	0.0	72.0	14.0	70.0	19.0	68.0
	25.0	66.0	45.0	65.0	52.0	66.0
	63.0	68.0	116.0	70.0	122.0	72.0
ENDTABLE						
SEGMENT	EVAN 10	1	C	122.0		
NVALUE	0.040					
SECTION	EVAN 11					
	0.0	79.0	22.0	78.0	36.0	76.0
	37.0	74.0	38.0	72.0	39.0	70.0
	39.5	69.0	41.0	70.0	42.0	72.0
	43.0	74.0	45.0	76.0	58.0	78.0
	80.0	79.0				
ENDTABLE						
SEGMENT	EVAN 11	1	C	80.0		
NVALUE	0.040					
COMPUTE	EVAN 1	EVAN 11	EVAN 1			

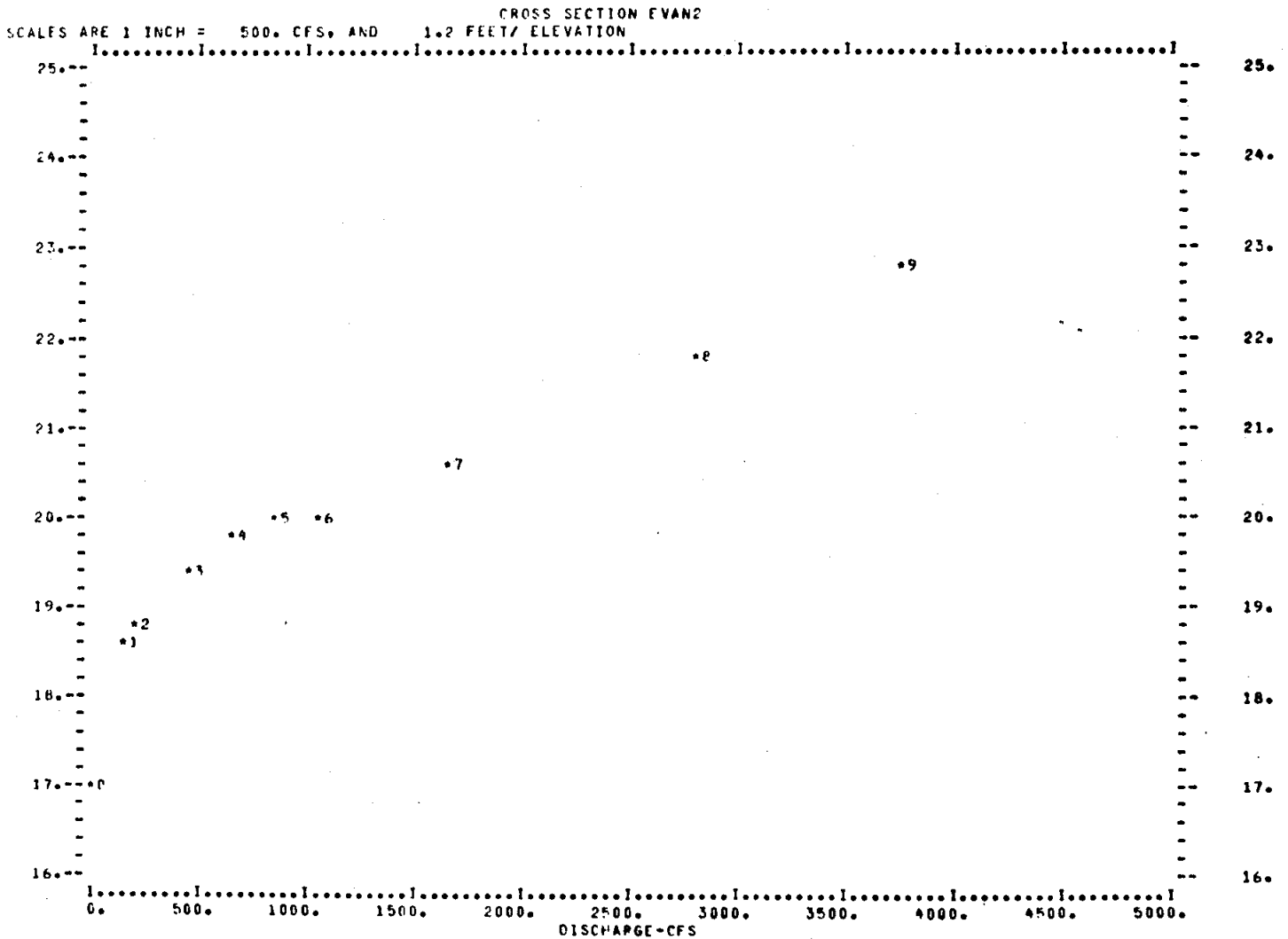
RATING TABLE FOR SECTION EVAN1 NO.	ELEV	AREA	CFS	DA= 1.0			CSM	CRIT ELEV	FRICTION SLOPE
				DAMAGE	CHANNEL	NON-DAM			
0	15.5	0.0	0.0						
1	17.5	45.1	140.0	.00	.00	.00	140.00	17.2	.00928
2	17.8	62.8	208.0	.00	.00	.00	208.00	17.4	.00913
3	18.5	137.0	460.0	.00	.00	.00	460.00	18.0	.00926
4	18.8	190.7	661.0	.00	.00	.00	661.00	18.4	.00904
5	19.0	230.2	860.0	.00	.00	.00	860.00	18.6	.00919
6	19.2	263.0	1041.0	.00	.00	.00	1041.00	18.8	.00921
7	19.6	354.6	1660.0	.00	.00	.00	1660.00	19.2	.00918
ZERO DAM	20.0	447.6	2672.3	.00	.00	.00			
8	20.1	460.5	2812.0	.00	.00	.00	2812.00	19.7	.00998
9	20.3	519.9	3760.0	.00	.00	.00	3760.00	20.2	.01080

*****PROFILE NO 8 EXCEEDS SURVEY DATA*****
*****PROFILE NO 9 EXCEEDS SURVEY DATA*****



RATING TABLE FOR SECTION EVAN2			DA=	1.0			CSM	CRIT ELEV	FRICTION SLOPE
NO.	ELEV	AREA	CFS	-----ACRES FLOODED-----					
				DAMAGE	CHANNEL	NON-DAM			
0	17.0	0.0	0.0						
1	17.6	48.2	140.0	.00	.00	.00	140.00	18.4	.00969
2	18.8	58.2	208.0	.00	.00	.00	208.00	18.6	.01327
3	19.5	115.2	460.0	.00	.00	.00	460.00	19.1	.00916
4	19.8	146.2	661.0	.00	.00	.00	661.00	19.4	.00974
5	19.9	161.0	860.0	.00	.00	.00	860.00	19.6	.01235
ZERO DAM	20.0	171.0	981.3	.00	.00	.00			
6	20.0	175.9	1041.0	.23	.00	.00	1041.00	19.8	.01368
7	20.5	225.6	1660.0	.26	.00	.00	1660.00	20.5	.01503
8	21.8	254.0	2812.0	.33	.00	.00	2812.00 C	21.8	.00768
9	22.9	462.3	3760.0	.39	.00	.00	3760.00 C	22.9	.00443

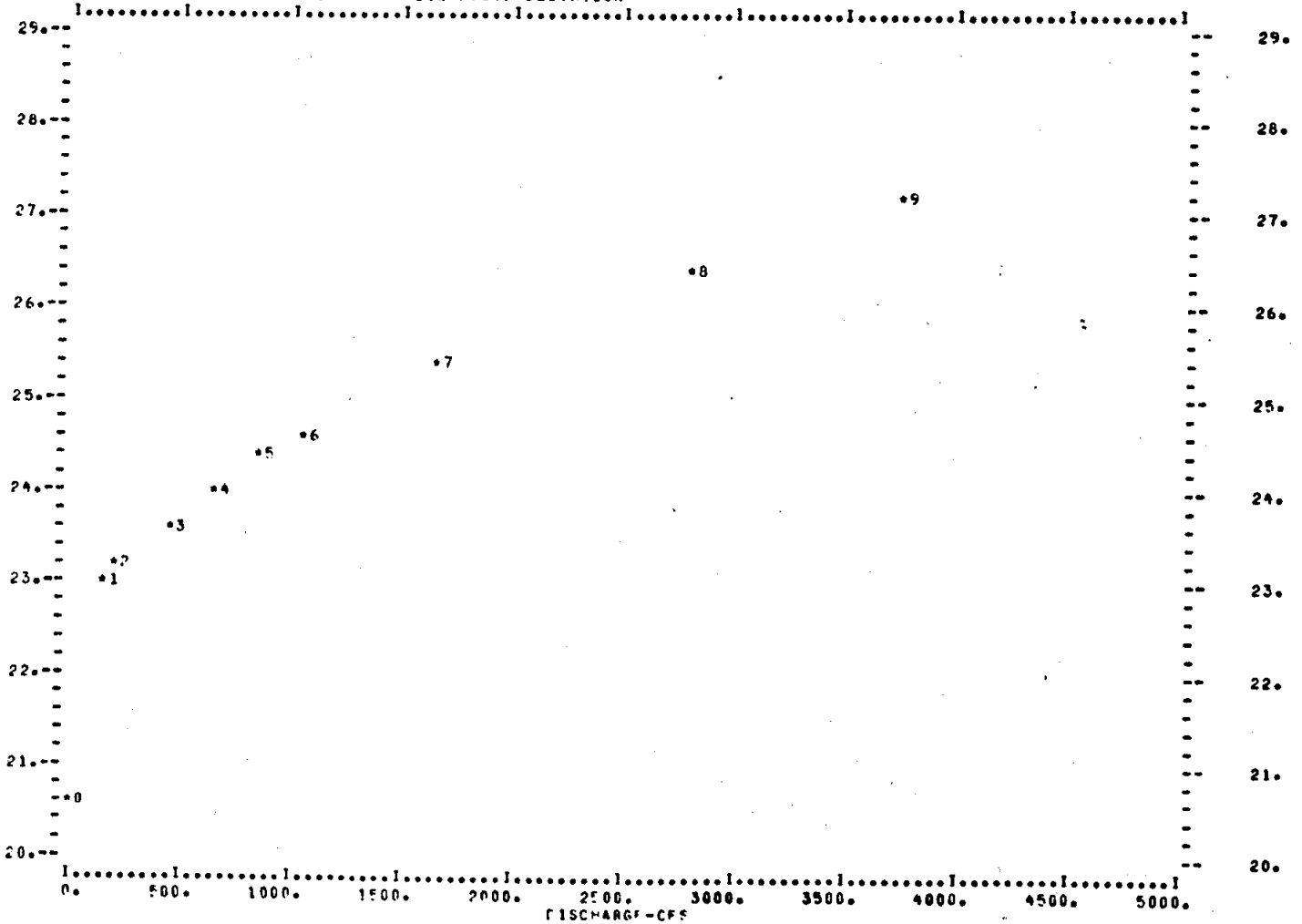
.....PROFILE NO 6 EXCEEDS SURVEY DATA.....
PROFILE NO 7 EXCEEDS SURVEY DATA.....
PROFILE NO 8 EXCEEDS SURVEY DATA.....
PROFILE NO 9 EXCEEDS SURVEY DATA.....



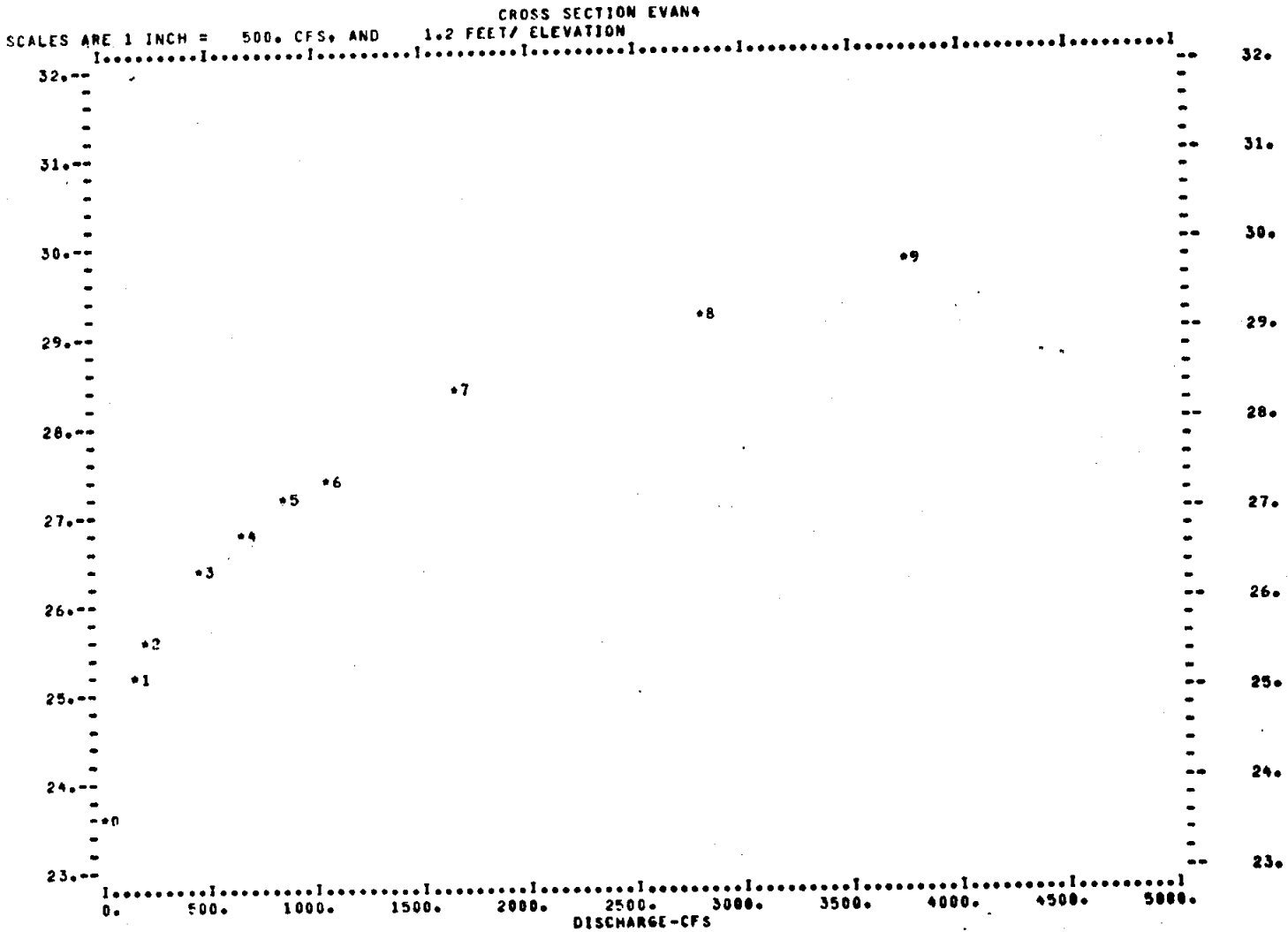
RATING TABLE FOR SECTION EVANS NO.	ELEV	AREA	CFS	DA= 1.0 ACRES FLOODED-----			CSM	CRIT ELEV	FRICTION SLOPE
				DAMAGE	CHANNEL	NON-DAM			
0	20.5	0.0	0.0						
1	23.0	25.7	140.0	.00	.00	.00	140.00	22.9	.02007
2	23.2	45.1	208.0	.00	.00	.00	208.00	23.1	.02216
3	23.6	66.1	460.0	.00	.00	.00	460.00	23.7	.03059
4	24.1	94.1	661.0	.00	.00	.00	661.00	24.1	.02096
5	24.4	115.2	860.0	.00	.00	.00	860.00	24.4	.02073
6	24.7	134.3	1041.0	.00	.00	.00	1041.00	24.7	.01950
7	25.4	153.5	1660.0	.00	.00	.00	1660.00	25.4	.01850
ZERO DAM	26.0	249.4	2252.0	.00	.00	.00			
8	26.5	280.9	2812.0	.43	.00	.00	2812.00	26.5	.01723
9	27.2	363.1	3760.0	.46	.00	.00	3760.00	27.2	.01641

.....PROFILE NO 8 EXCEEDS SURVEY DATA.....
.....PROFILE NO 9 EXCEEDS SURVEY DATA.....

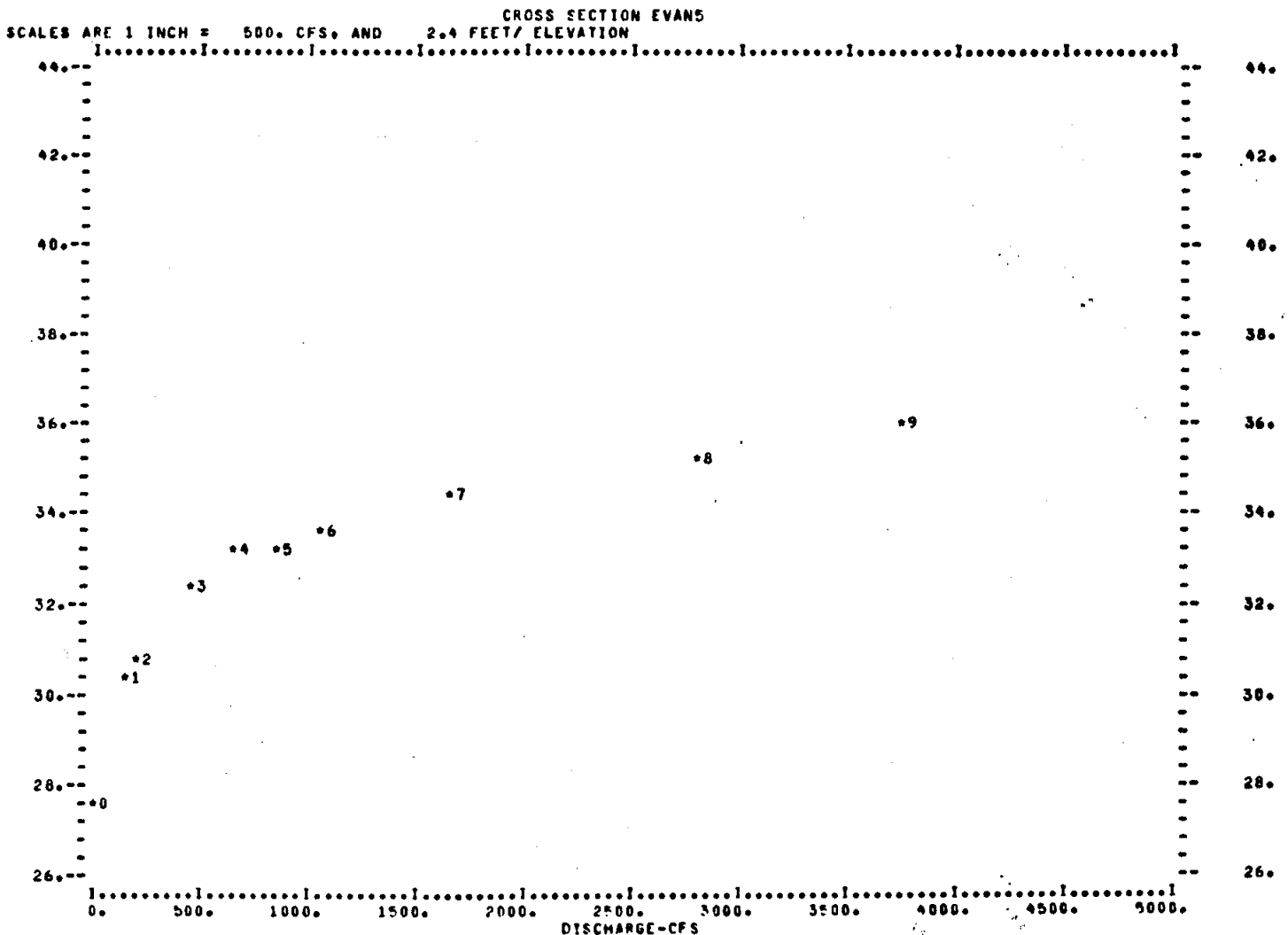
CROSS SECTION EVANS
SCALES ARE 1 INCH = 500. CFS, AND 1.2 FEET/ ELEVATION



RATING TABLE FOR SECTION EVAN4 NO.	ELFV	AREA	CFS	DA= 1.0			CSM	CRIT ELEV	FRICTION SLOPE	
				DAMAGE	CHANNEL	NON-DAM				
0	23.5	0.0	0.0				140.00	C	25.2	.02525
1	25.2	25.7	140.0	.00	.00	.00	208.00	C	25.5	.02326
2	25.5	35.3	208.0	.00	.00	.00	460.00	C	26.3	.02153
3	26.7	67.4	460.0	.00	.00	.00	661.00	C	26.8	.02068
4	26.8	91.0	661.0	.00	.00	.00	860.00	C	27.2	.01964
5	27.2	113.3	860.0	.00	.00	.00	1041.00	C	27.4	.01941
6	27.4	132.2	1041.0	.00	.00	.00	1660.00	C	28.4	.01969
7	28.4	216.2	1660.0	.00	.00	.00	2812.00	C	29.2	.01761
8	29.2	315.1	2812.0	.00	.00	.00	3760.00	C	29.7	.01681
9	29.7	389.2	3760.0	.00	.00	.00				



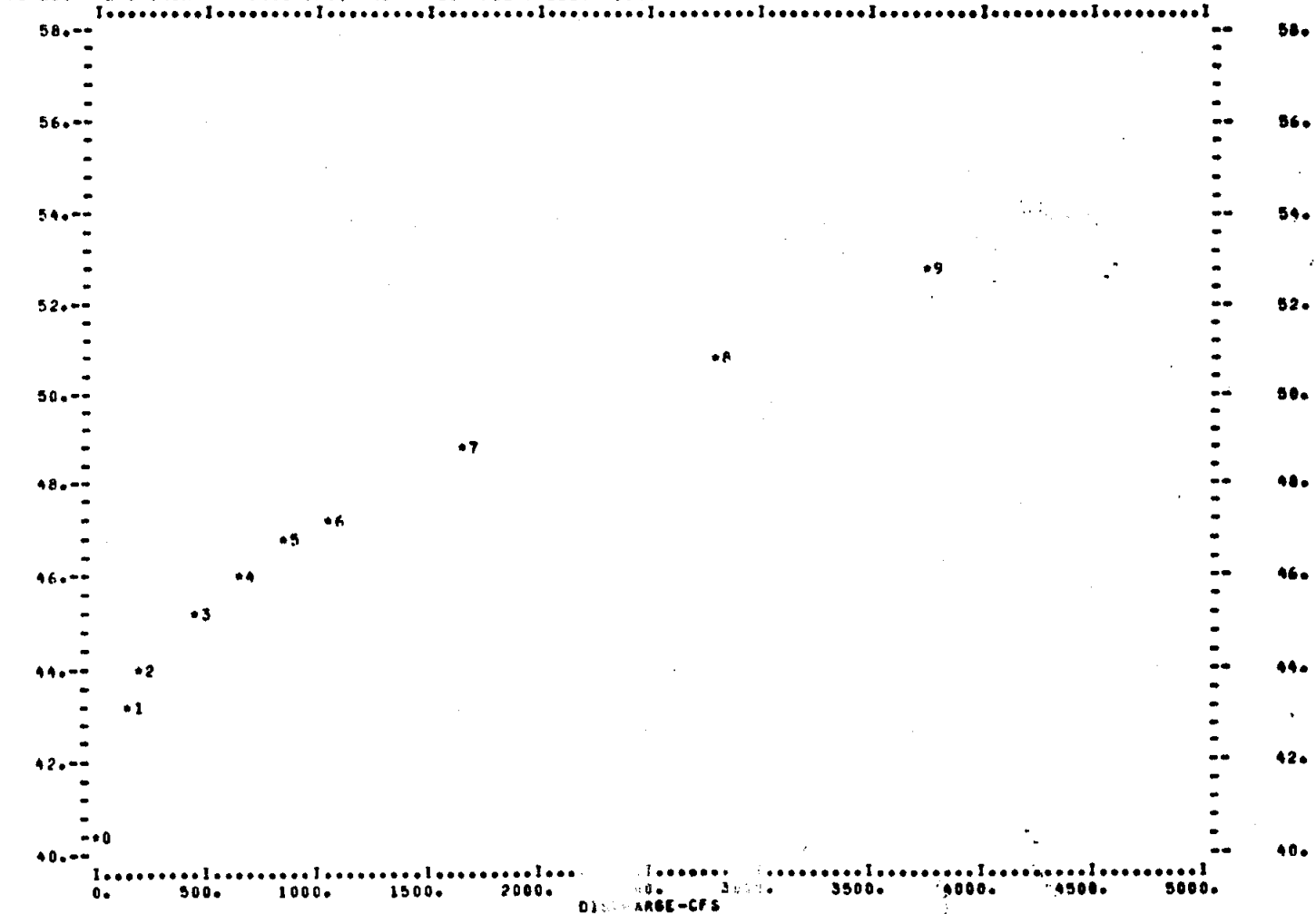
RATING TABLE FOR SECTION EVANS NO.	ELEV	AREA	CFS	DA= 1.0	-----ACRES FLOODED-----			CSM	CRIT ELEV	FRICTION SLOPE	
					DAMAGE	CHANNEL	NON-DAM				
0	27.5	0.0	0.0								
1	30.2	18.9	140.0		.00	.00	.00	140.00	C	30.2	.02397
2	30.8	26.4	208.0		.00	.00	.00	208.00	C	30.8	.02273
3	32.6	68.7	460.0		.00	.00	.00	460.00	C	32.6	.02359
4	33.1	101.7	661.0		.00	.00	.00	661.00	C	33.1	.02254
5	33.4	122.2	860.0		.00	.00	.00	860.00	C	33.4	.02351
6	33.6	140.8	1041.0		.00	.00	.00	1041.00	C	33.6	.02256
7	34.2	197.8	1660.0		.00	.00	.00	1660.00	C	34.2	.01993
8	35.2	286.5	2812.0		.00	.00	.00	2812.00	C	35.2	.01753
9	35.8	374.5	3760.0		.00	.00	.00	3760.00	C	35.8	.01658



RATING TABLE FOR SECTION EVANG6 NO.	ELEV	AREA	CFS	DA= 1.0			CSM	CRIT ELEV	FRICTION SLOPE
				DAMAGE	CHANNEL	NON-DAM			
0	40.5	0.0	0.0						
1	43.3	19.7	140.0	.00	.00	.00	140.00 C	43.3 .02364	
2	43.8	26.9	208.0	.00	.00	.00	208.00 C	43.8 .02232	
3	45.3	51.4	460.0	.00	.00	.00	460.00 C	45.3 .01976	
4	46.0	69.0	661.0	.00	.00	.00	661.00 C	46.0 .01887	
5	46.7	86.0	860.0	.00	.00	.00	860.00 C	46.7 .01836	
6	47.2	100.9	1041.0	.00	.00	.00	1041.00 C	47.2 .01794	
7	48.8	159.5	1660.0	.00	.00	.00	1660.00 C	48.8 .01723	
ZERO DAM	50.0	223.8	2303.9	.00	.00	.00			
8	51.0	274.6	2812.0	.24	.00	.00	2812.00 C	51.0 .01467	
9	52.8	369.3	3760.0	.33	.00	.00	3760.00 C	52.8 .01156	

.....PROFILE NO 8 EXCEEDS SURVEY DATA.....
.....PROFILE NO 9 EXCEEDS SURVEY DATA.....

CROSS SECTION EVANG6
SCALES ARE 1 INCH = 500. CFS, AND 2.4 FEET/ ELEVATION



RATING TABLE FOR SECTION EVAN7

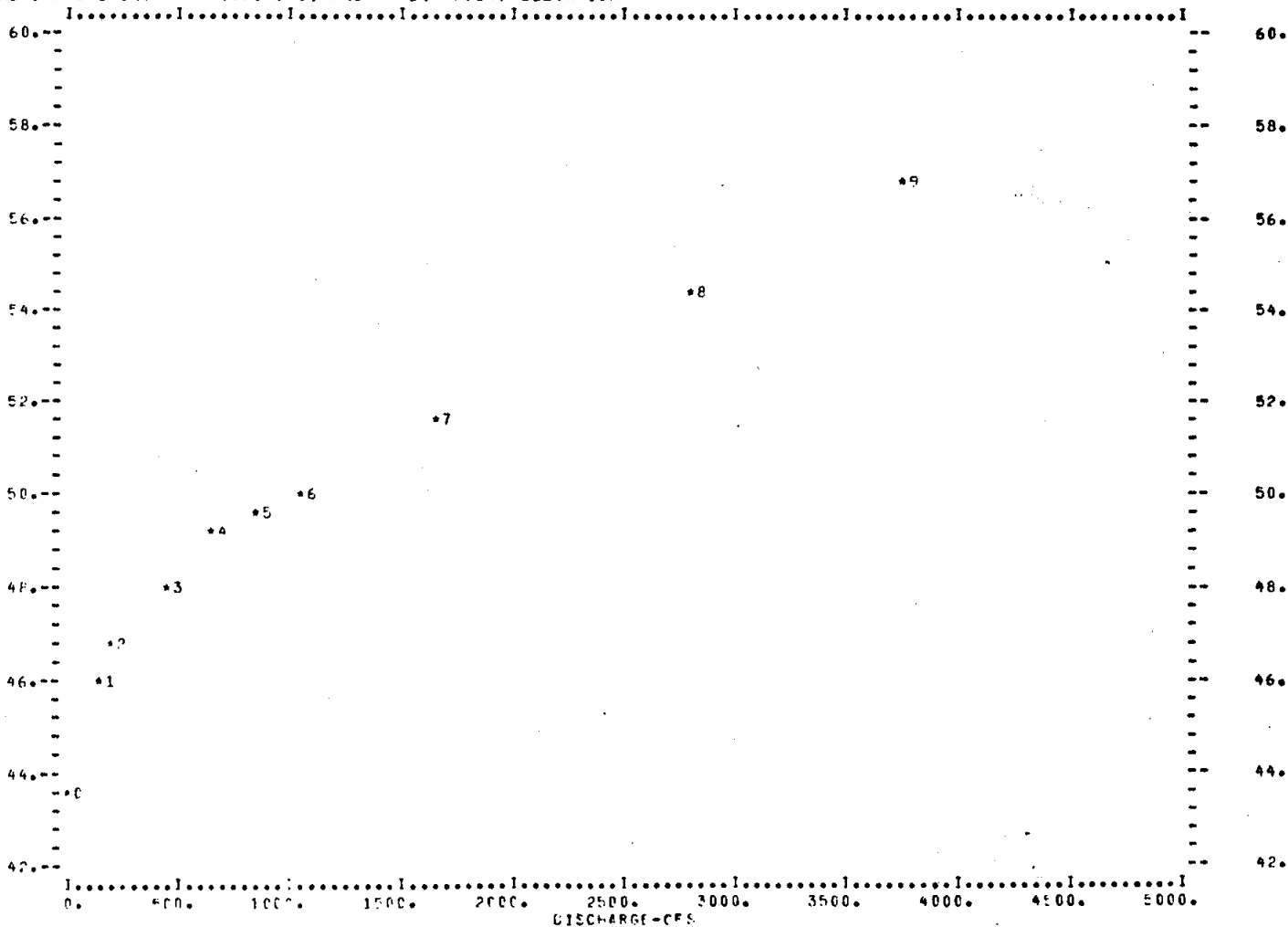
NA= 1.0

NO.	ELEV	AREA	CFS	ACRES FLOODED			CSM	CRIT ELEV	FRICTION SLOPE
				DAMAGE	CHANNEL	NON-DAM			
0	43.5	0.0	0.0						
1	46.2	20.7	140.0	.00	.00	.00	140.00	46.1 .02001	
2	46.7	27.9	208.0	.00	.00	.00	208.00	46.6 .01944	
3	48.2	52.0	460.0	.00	.00	.00	460.00	48.2 .02028	
4	49.1	77.2	661.0	.00	.00	.00	661.00	49.1 .01970	
5	49.5	92.2	860.0	.00	.00	.00	860.00	49.6 .02150	
ERO DAM6	50.0	110.8	1024.6	.00	.00	.00			
6	50.0	112.7	1041.0	.12	.00	.00	1041.00	C 50.0 .01811	
7	51.6	170.5	1660.0	.16	.00	.00	1660.00	C 51.6 .01201	
8	54.5	278.1	2812.0	.24	.00	.00	2812.00	C 54.5 .00500	
9	56.8	366.6	3760.0	.30	.00	.00	3760.00	C 56.8 .00259	

*****PROFILE NO 6 EXCEEDS SURVEY DATA*****
 *****PROFILE NO 7 EXCEEDS SURVEY DATA*****
 *****PROFILE NO 8 EXCEEDS SURVEY DATA*****
 *****PROFILE NO 9 EXCEEDS SURVEY DATA*****

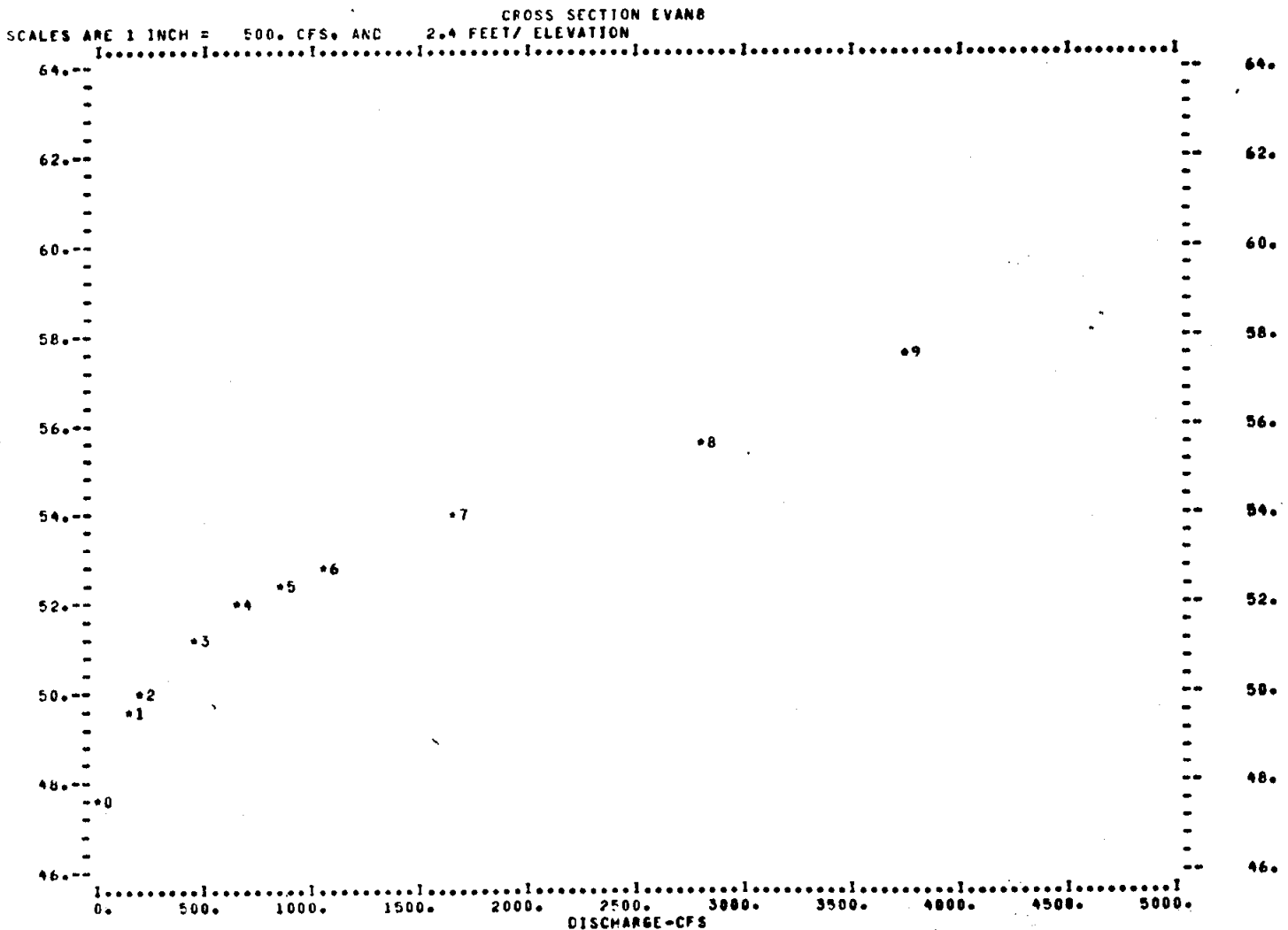
CROSS SECTION EVAN7

SCALFS ARE 1 INCH = 500. CFS, AND 2.4 FEET/ ELEVATION



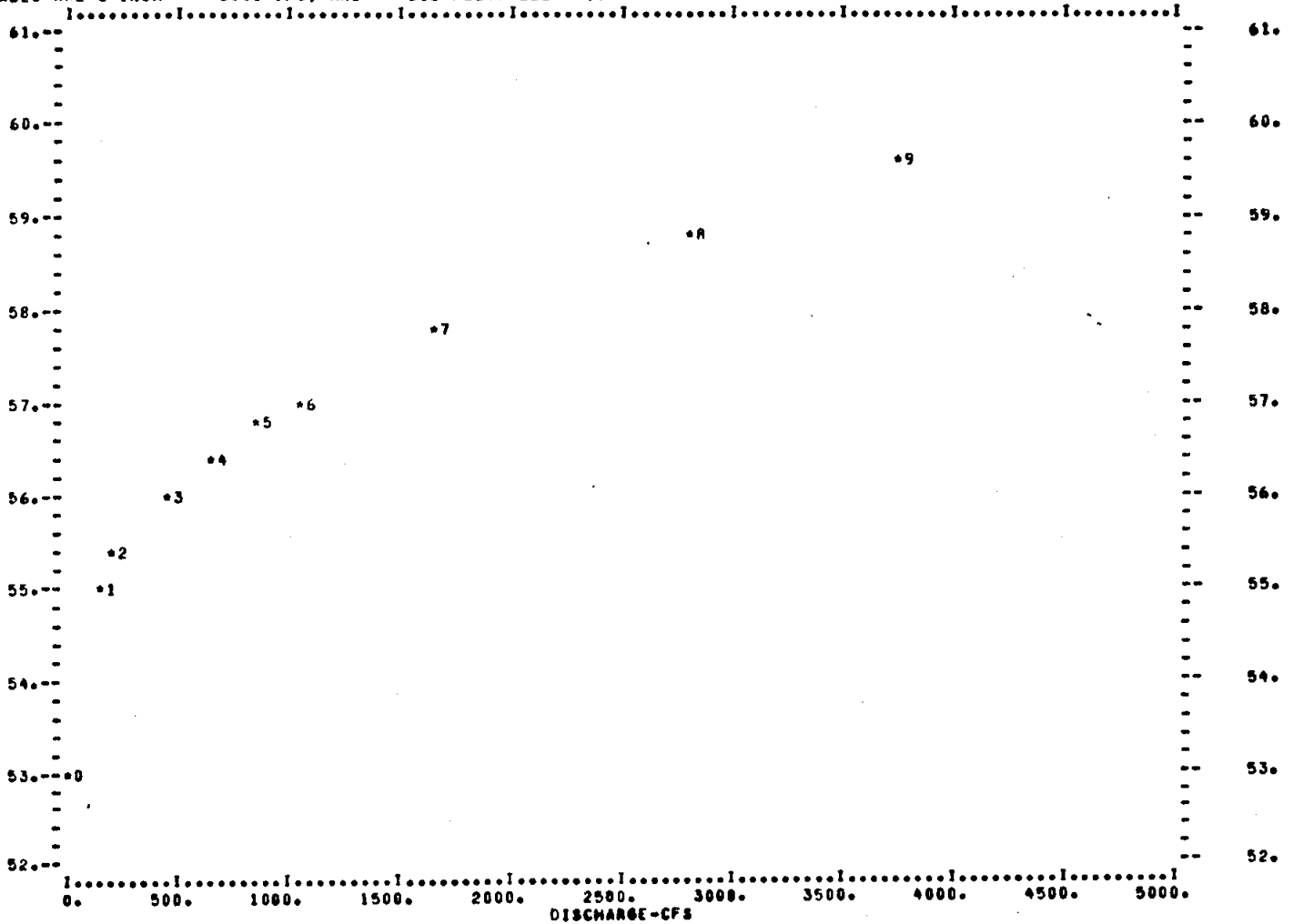
RATING TABLE FOR SECTION EVANR NO.	ELEV	AREA	CFS	CA= 1.0	-----ACRES FLOODED-----			CSH	CRIT ELEV	FRICTION SLOPE
					DAMAGE	CHANNEL	NON-DAM			
0	47.5	0.0	0.0							
1	49.7	25.0	140.0		.00	.00	.00	140.00	49.6	.01905
2	50.1	34.2	208.0		.00	.00	.00	208.00	50.0	.01895
3	51.3	69.2	460.0		.00	.00	.00	460.00	51.1	.01523
4	51.8	94.3	661.0		.00	.00	.00	661.00	51.6	.01507
5	52.4	126.4	860.0		.00	.00	.00	860.00	52.2	.01552
6	52.8	162.3	1041.0		.00	.00	.00	1041.00	52.5	.01454
7	53.9	283.5	1660.0		.00	.00	.00	1660.00	53.4	.01041
8	54.0	300.1	1747.6		.00	.00	.00			
9	55.6	501.0	2812.0		.80	.00	.00	2812.00	54.4	.00501
0	57.4	717.1	3760.0	1.13	.00	.00	.00	3760.00	55.3	.00184

*****PROFILE NO 8 EXCEEDS SURVEY DATA*****
*****PROFILE NO 9 EXCEEDS SURVEY DATA*****



PATIIC NO.	FLEV	AREA	CFS	DA= 1.0			CSM	CRIT ELEV	FRICTION SLOPE
				DAMAGE	CHANNEL	NON-DAM			
0	53.0	0.0	0.0						
1	55.0	27.2	140.0	.00	.00	.00	140.00	C 55.0	.02586
2	55.3	37.5	208.0	.00	.00	.00	208.00	C 55.3	.02508
3	56.0	71.3	460.0	.00	.00	.00	460.00	C 56.0	.02209
4	56.4	93.8	661.0	.00	.00	.00	661.00	C 56.4	.02158
5	56.7	115.1	860.0	.00	.00	.00	860.00	C 56.7	.02035
6	57.0	133.4	1041.0	.00	.00	.00	1041.00	C 57.0	.01982
7	57.8	192.4	1660.0	.00	.00	.00	1660.00	C 57.8	.01809
8	58.9	281.2	2812.0	.00	.00	.00	2812.00	C 58.9	.01720
9	59.6	376.0	3760.0	.00	.00	.00	3760.00	C 59.6	.01602

CROSS SECTION EVAN9
SCALES ARE 1 INCH = 500. CFS, AND 1.2 FEET/ ELEVATION

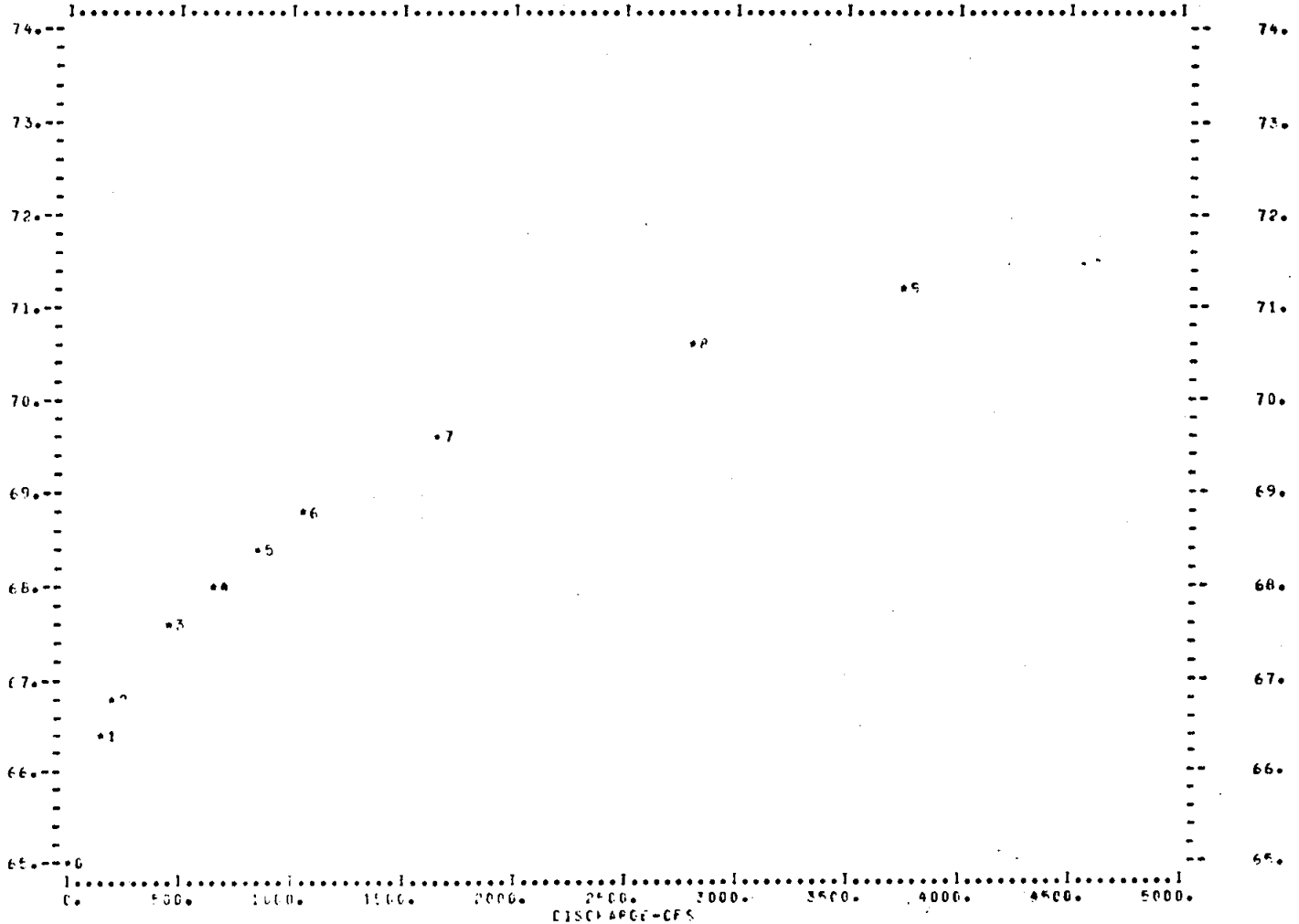


RATING TABLE FOR SECTION EVAN10

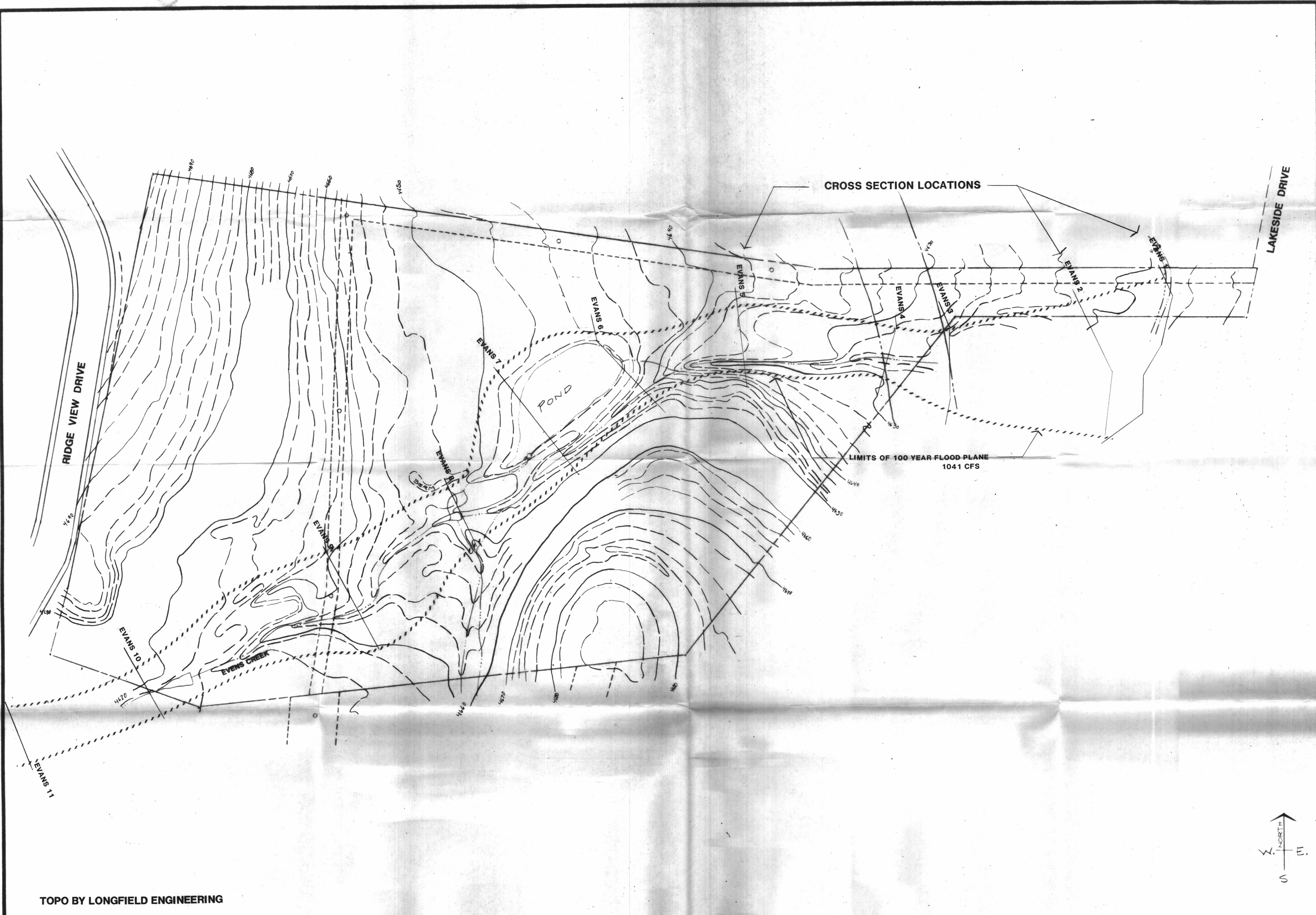
NO.	FLEV	AREA	CFS	ACRES FLOODED			CSM	CRIT FLEV	FRICTION SLOPE
				DAMAGE	CHANNEL	NON-DAM			
0	65.0	0.0	0.0						
1	66.4	26.3	140.0	.00	.00	.00	140.00 C	66.4 .02642	
2	66.7	35.7	208.0	.00	.00	.00	208.00 C	66.7 .02385	
3	67.5	63.8	460.0	.00	.00	.00	460.00 C	67.5 .02063	
4	68.0	64.1	661.0	.00	.00	.00	661.00 C	68.0 .01915	
5	68.5	110.1	860.0	.00	.00	.00	860.00 C	68.5 .01925	
6	68.8	131.6	1041.0	.00	.00	.00	1041.00 C	68.8 .01929	
7	69.7	159.2	1660.0	.00	.00	.00	1660.00 C	69.7 .01850	
8	70.6	298.4	2812.0	.00	.00	.00	2812.00 C	70.6 .01697	
9	71.3	368.0	3760.0	.00	.00	.00	3760.00 C	71.3 .01621	

CROSS SECTION EVAN10

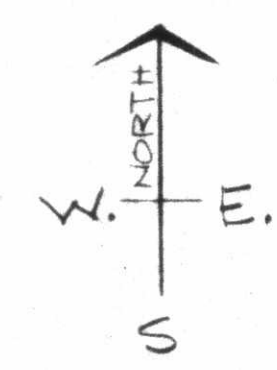
SCALES ARE 1 INCH = 500. CFS, AND 1.0 FEET/ ELEVATION



RATING TABLE FOR SECTION EVAN11				DA=	-----ACRES FLOODED-----			CSM	CRIT ELEV	FRICTION SLOPE
NO.	ELFV	AREA	CFS	1.0	DAMAGE	CHANNEL	NON-DAM			
0	69.0	0.0	0.0							
1	73.7	15.1	140.0		.00	.00	.00	140.00	C	73.7
2	74.6	21.0	208.0		.00	.00	.00	208.00	C	74.6
3	77.3	55.6	460.0		.00	.00	.00	460.00	C	77.3
4	78.1	80.6	661.0		.00	.00	.00	661.00	C	78.1
5	78.6	113.0	860.0		.00	.00	.00	860.00	C	78.6
ZERO DAM	79.0	135.0	995.1		.00	.00	.00			
6	79.1	142.5	1041.0		.33	.00	.00	1041.00	C	79.1
7	80.9	243.3	1660.0		.63	.00	.00	1660.00	C	80.9
8	84.1	430.9	2812.0		1.19	.00	.00	2812.00	C	84.1
9	86.8	585.3	3760.0		1.65	.00	.00	3760.00	C	86.8
*****PROFILE NO 6 EXCEEDS SURVEY DATA*****										
*****PROFILE NO 7 EXCEEDS SURVEY DATA*****										
*****PROFILE NO 8 EXCEEDS SURVEY DATA*****										
*****PROFILE NO 9 EXCEEDS SURVEY DATA*****										

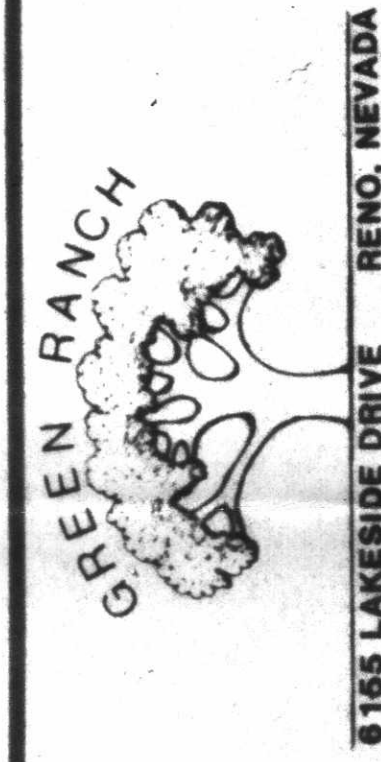


TOPO BY LONGFIELD ENGINEERING



revisions	date

Stille & Associates
 LANDSCAPE ARCHITECTS & PLANNERS
 571 California Street • Reno • Nevada • 89509
 702.329.4329 702.825.2237



100 YEAR FLOOD PLANE STUDY

date 9.23.83
 scale 1"=50'
 drawn
 checked
 proj no 1083

BTFP	S
BTFP	S

--

8155 LAKESIDE DRIVE RENO, NEVADA