

MS: Set_alarm--For sensor # 2373, Red Rocks Park Water Level PT,
the following alarm values are defined:

Absolute Max.	Absolute Min.	Positive Rate of Change Rate/Time	Rate of Change Threshold	Negative Rate of Change Rate/Time	Rate of Change Threshold
3.00 ft enabled	undefined disabled	0.50 ft/ 1.0hr enabled	1.00 ft	undefined disabled	undefined

Maximum acceptable time between reports = 48.0 hours , alarm is enabled
Alarms set to flash on terminals : 0
=====

Change the Absolute Max. alarm value (y/n) ?

**URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
SYSTEM MAINTENANCE RECORD
DIAD INC.**

<i>Service Log</i>	<i>Date:</i> 15-Apr-97	<i>Time:</i> 14:21
<i>Site Name:</i> Red Rocks	<i>Technician:</i> RJB	<i>Status:</i> OK
<i>Service Type:</i> Start Up		

<i>Configuration Changes</i>	
<i>Part #</i>	<i>Location</i>
TB H 554	2370
BY H 9353	2370
TX H 800	2370

<i>Transducer Calibration</i>			
<i>Port</i>	<i>A</i>	<i>B = BV</i>	<i>Std Error</i>
2373	0.0896	-0.30	0.071

<i>Settings and Performance</i>	
<i>Switches:</i>	2370-0012-1112-11011
<i>Jumpers:</i>	W10,W4
<i>Eprom:</i>	B
<i>Fwd Power</i>	8.0
<i>Rev Power:</i>	0.2
<i>Frequency:</i>	
<i>Deviation:</i>	

<i>Test Transmissions</i>				
<i>Port</i>	<i>Time</i>	<i>Count</i>	<i>Pressure</i>	<i>Predicted</i>
2373	14:37	40	1.08	38
2373	14:40	147	5.08	141
2373	14:42	241	9.23	248
2373	14:43	184	7.02	191
2373	14:43	133	5.03	140
2373	14:44	83	3.08	89
2373	14:45	29	1.01	36
2370	14:47	1		0
2370	14:57	2		0

M = 11.16

<i>Battery Tests</i>		
<i>Battery #</i>	<i>Volts -Q</i>	<i>Volts-T</i>
BY H 9353	12.89	12.77

07-May-97

<i>Problem:</i>	
<i>Action Taken:</i>	
<i>Site Notes:</i>	0-5 V PT.
<i>Follow-Up:</i>	

```
Z Device Definitions DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD NovaLynx Systems, Inc. \
3
3 Device ID Tag Name
3 Identification : 2373 2373 Red Rocks Park
3
3 Device Type name
3 Type : Water Level PT
3 Z Setup device calibration DDDDDDD NovaLynx Systems, Inc. \
3 Data 3
3 Calibration :3 Divisor Base value Data type Calibration time
3 3 11.1982 -0.87 Signed 03/28/1996-12:27:28
3 Data 3 11.0534 0 -RL Signed 04/01/1993-01:00:00
3 Checking :3
3 3
3 Data 3
3 Storage :3
3 3
3 Save changes <:3
3 3
```

B = -0.87

See 4-15-97

Is this value O.K. (y/n) ? y

Apr 11 94 14:01:41 2

Primary record 358 updated
Data file updated

Enter sensor # to calibrate (<ESC> to exit) 2373
Sensor # 2373 is Red Rocks Park Water Level PT

The present base value is 0.000000 feet
The present increment size is 0.500000 feet per increment

Change the base value (y/n) ? n

Change the increment size (y/n) ? y

Enter new increment size in feet per increment .09047

The new increment size is 0.090470 feet per increment
Is this value O.K. (y/n) ? y

Primary record 359 updated
Data file updated

Enter sensor # to calibrate (<ESC> to exit)

Sensor: 27 Data: 31 04/14/94 14:03:51

Apr 14 94 14:03:53 2

Rating table 66 Red Rocks Park

Sensor 2373 Red Rocks Park

SENSOR TYPE USING TABLE: 8 Water Level PT

RATING TABLE UNITS: cubic feet/second

UNITS ABBREVIATION: cfs

INTERPOLATION TYPE: linear interpolation

EXTRAPOLATION ALLOWED: YES

TABLE VALUES:

ft	cfs	ft	cfs	ft	cfs	ft	cfs
0	0	15	4400				
1	20	20	6400				
2	50						
3	100						
4	200						
5	350						
6	600						
7	900						
8	1400						
8.8	2030						
13	3630						

Obtain HEC-2 from Jeanne

Enter the rating table name

(RETURN for no change)

Enter F9 for a list of the EDIT keys

SM: Evout

Apr 14 94 14:04:09 D

Sensor # 2373 Red Rocks Park Water Level PT with rating

DATE	TIME	feet	cubic feet/second
04/14/94	12:41:51	0.45	9.05 (5)
04/14/94	00:41:48	0.45	9.05 (5)
04/13/94	19:30:34	0.45	9.05 (5)
04/13/94	19:15:33	0.54	10.86 (6)
04/13/94	14:00:33	0.45	9.05 (5)
04/13/94	13:49:18	0.45	9.05 (5)
04/13/94	12:41:48	0.36	7.24 (4)
04/13/94	03:15:36	0.36	7.24 (4)
04/13/94	00:41:47	0.45	9.05 (5)
04/12/94	16:23:05	0.45	9.05 (5)
04/12/94	12:49:15	0.36	7.24 (4)
04/12/94	12:41:46	0.27	5.43 (3)
04/12/94	12:37:59	0.36	7.24 (4)
04/12/94	11:45:37	0.27	5.43 (3)
04/12/94	11:41:52	0.36	7.24 (4)
04/12/94	11:34:22	0.27	5.43 (3)
04/12/94	11:30:37	0.36	7.24 (4)
04/12/94	11:23:06	0.27	5.43 (3)
04/12/94	00:41:44	0.27	5.43 (3)
04/11/94	12:41:43	0.27	5.43 (3)
04/11/94	00:41:42	0.27	5.43 (3)

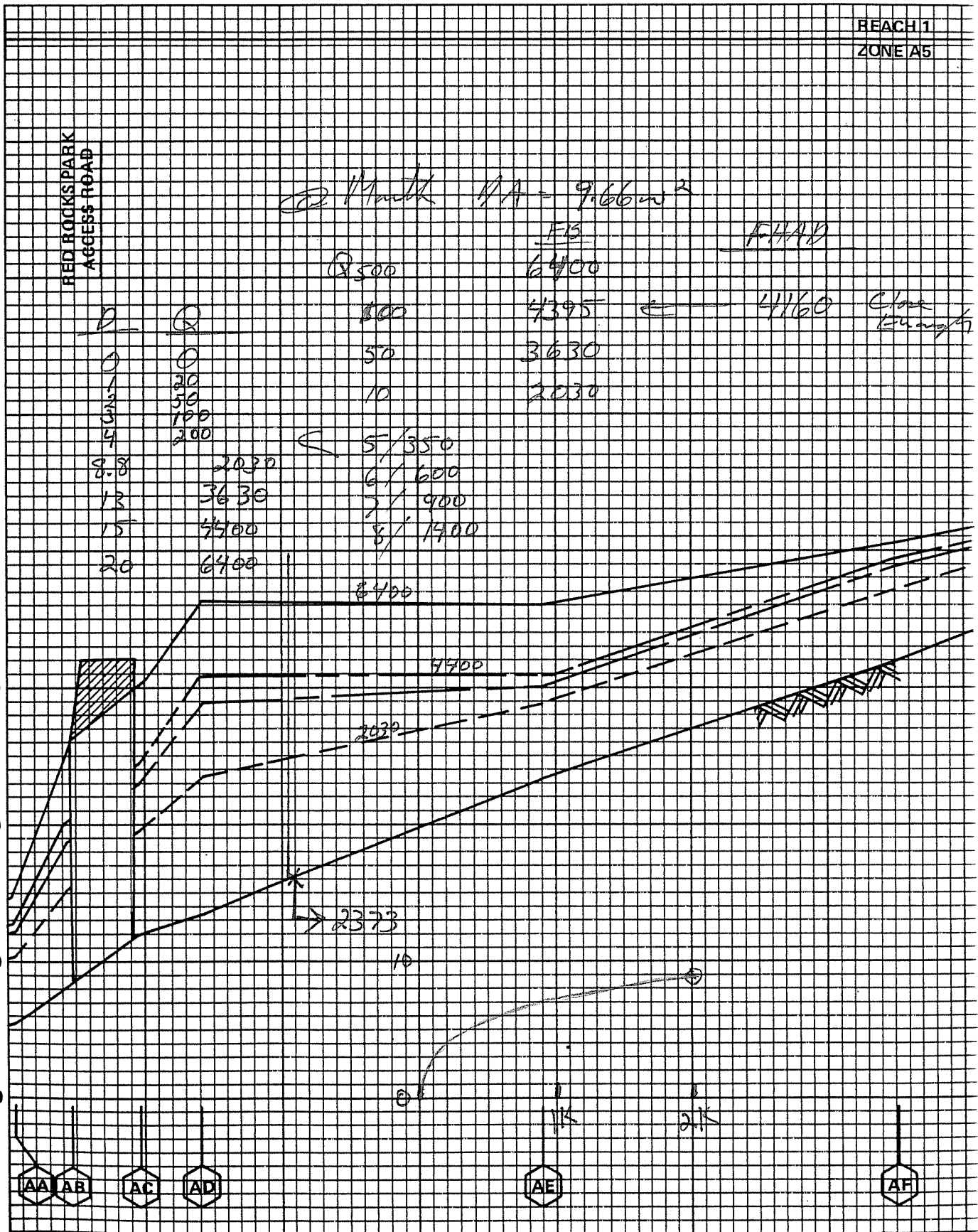
Strike <RETURN> to continue, <ESC> to stop :

REACH 1
ZONE A5

RED ROCKS PARK
ACCESS ROAD

② Mouth $AA = 9.66 \text{ m}^2$

ELEVATION (FEET NGVD)



11,200

11,400

11,600

11,800

STREAM DISTANCE IN FEET AE

AA AB

AC AD

AE

AF

2373

10

7700

2030

8400

Q500

300

50

10

5/350

6/600

7/900

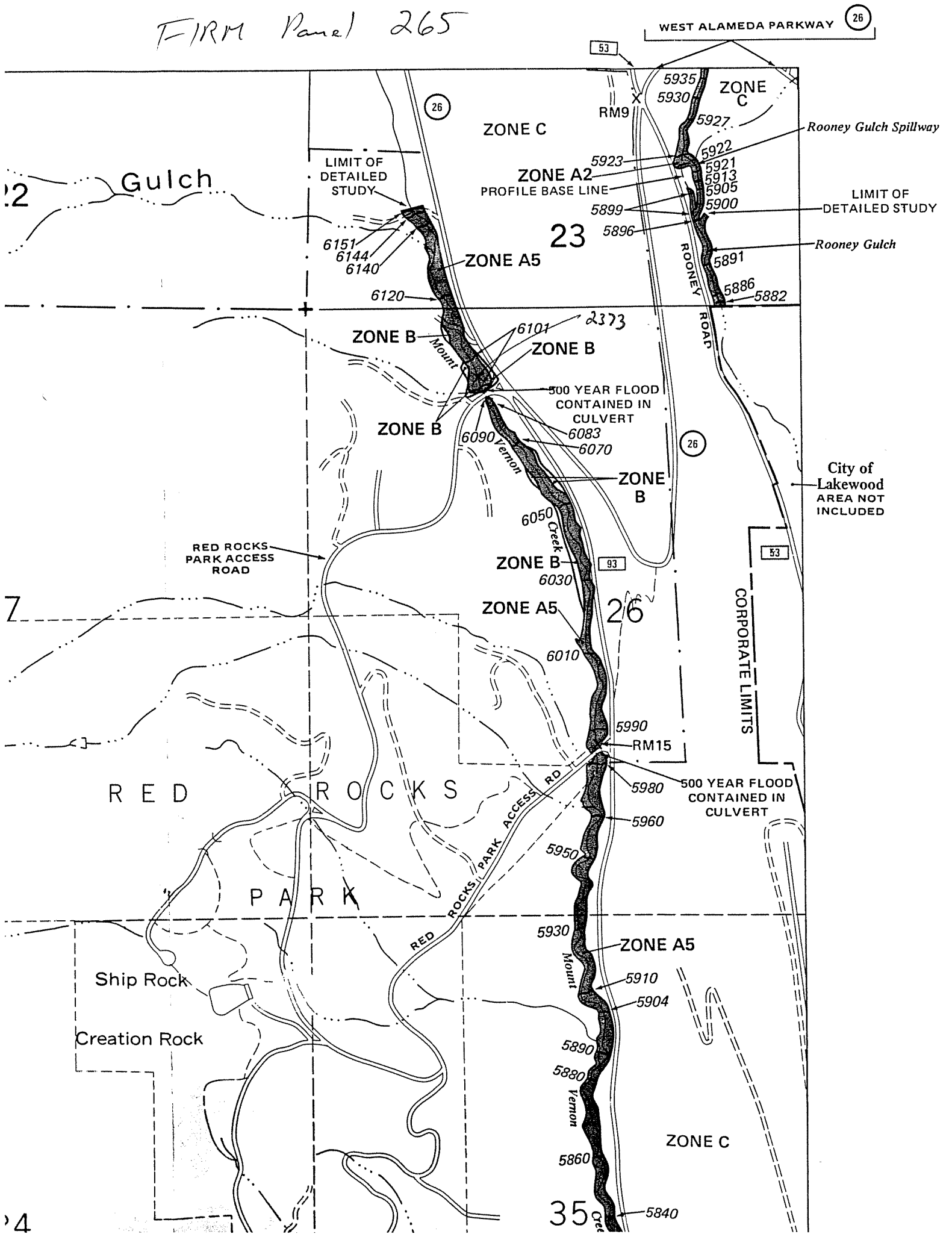
8/1900

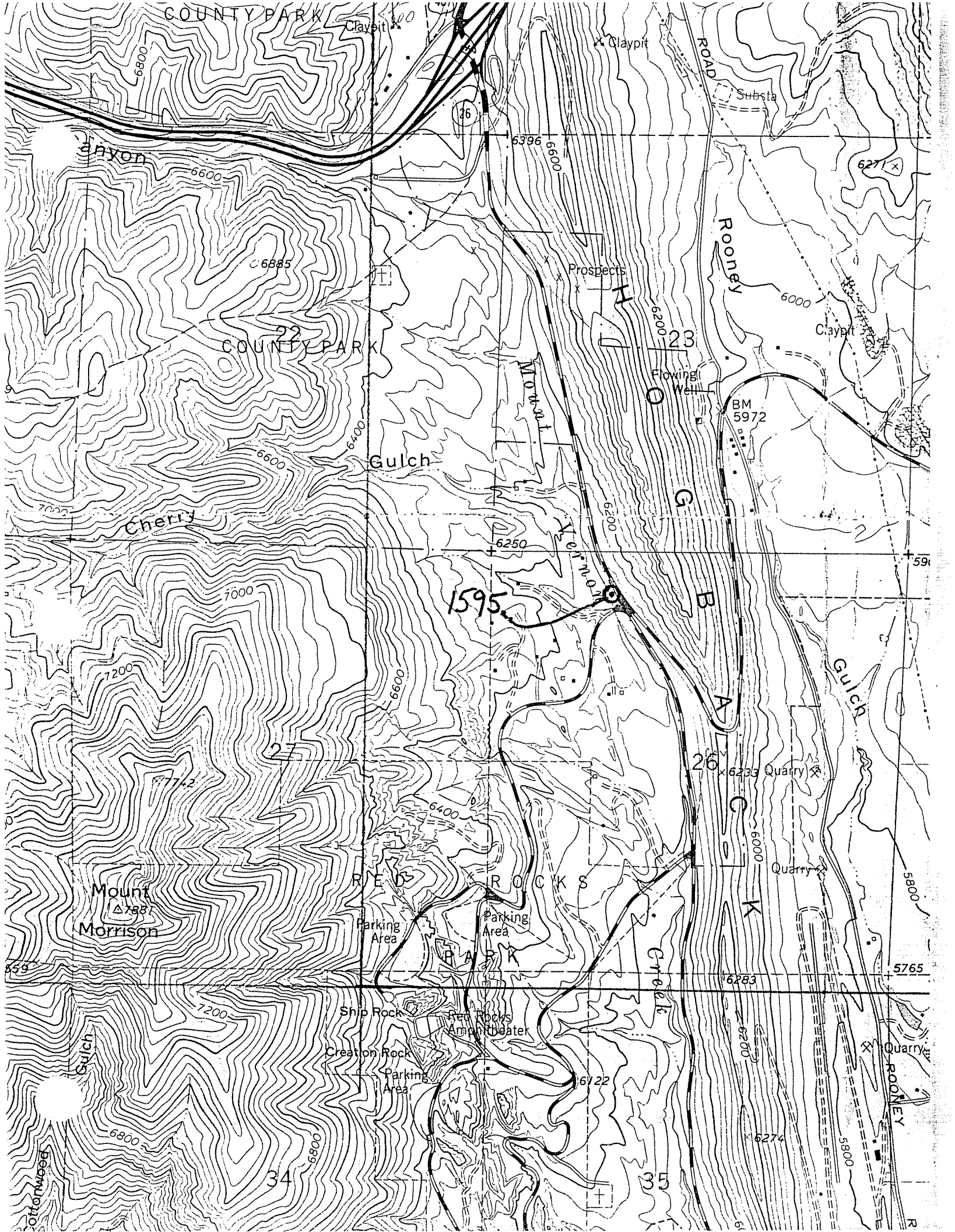
FIS

FHAD

Close
enough

FIRM Panel 265





COUNTY PARK

Claypit

Claypit

ROAD

Substa

anyon

26

6396

6600

6885

Prospects

6200

Rooney

6000

Claypit

6271

COUNTY PARK

Flowing Well

BM 5972

Gulch

Cherry

Mount

6200

1595

G

B

7000

Gulch

7200

27

26

Quarry

6400

6000

Mount Morrison

Parking Area

Parking Area

6253

Quarry

Parking Area

Parking Area

6283

5765

Ship Rock

Red Rocks Amphitheater

Creation Rock

Parking Area

6122

Gulch

Gravel

Quarry

ROONEY

6800

34

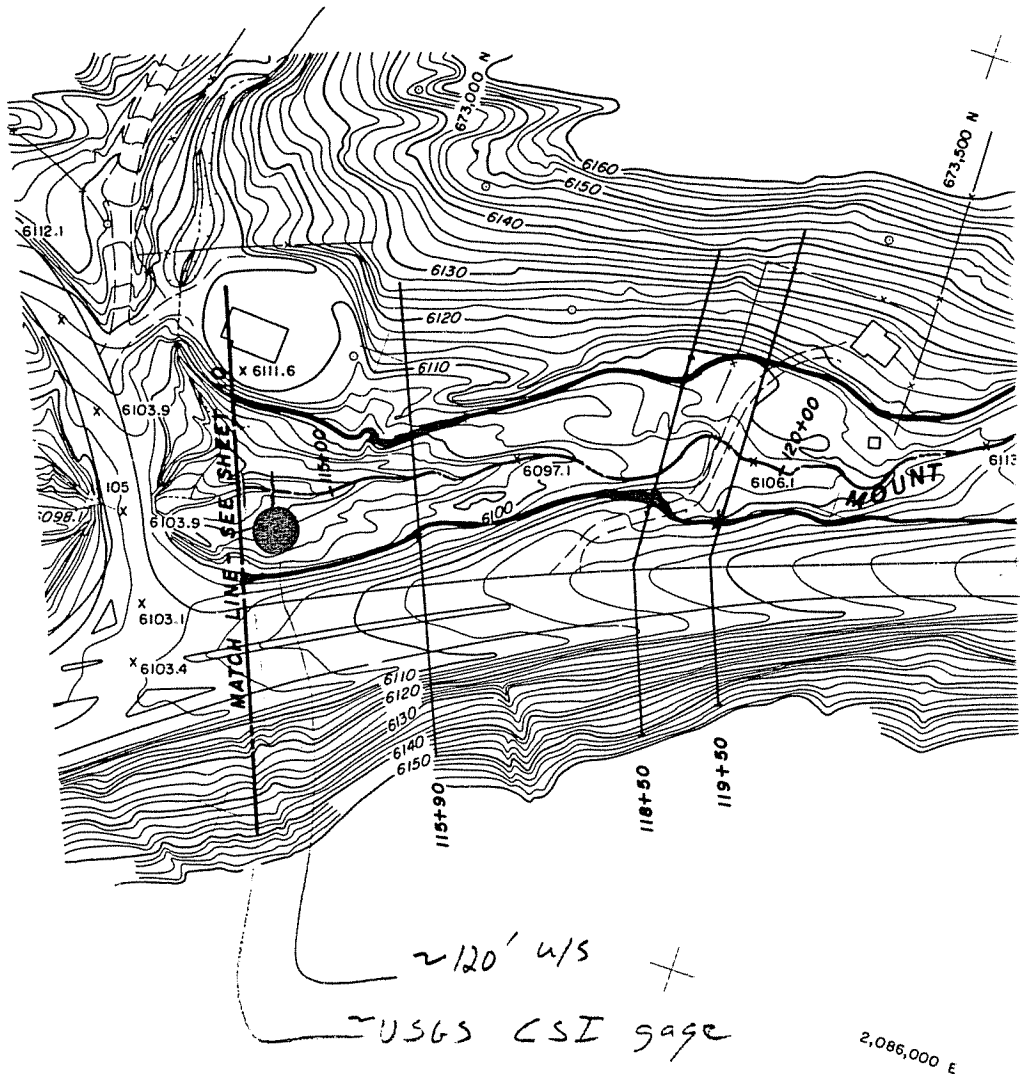
35

6274

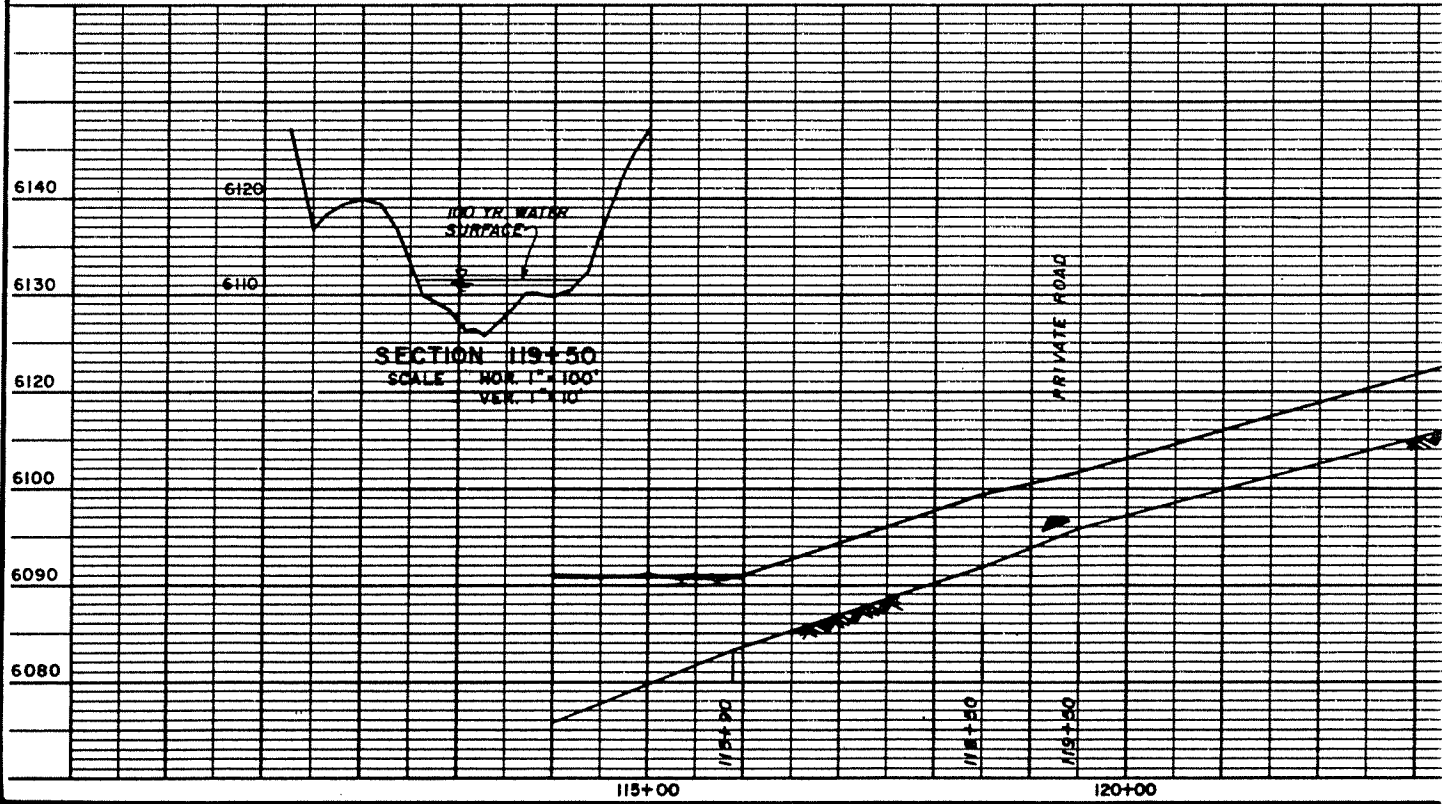
5800

Ottom

R



DATUM IS MEAN SEA LEVEL

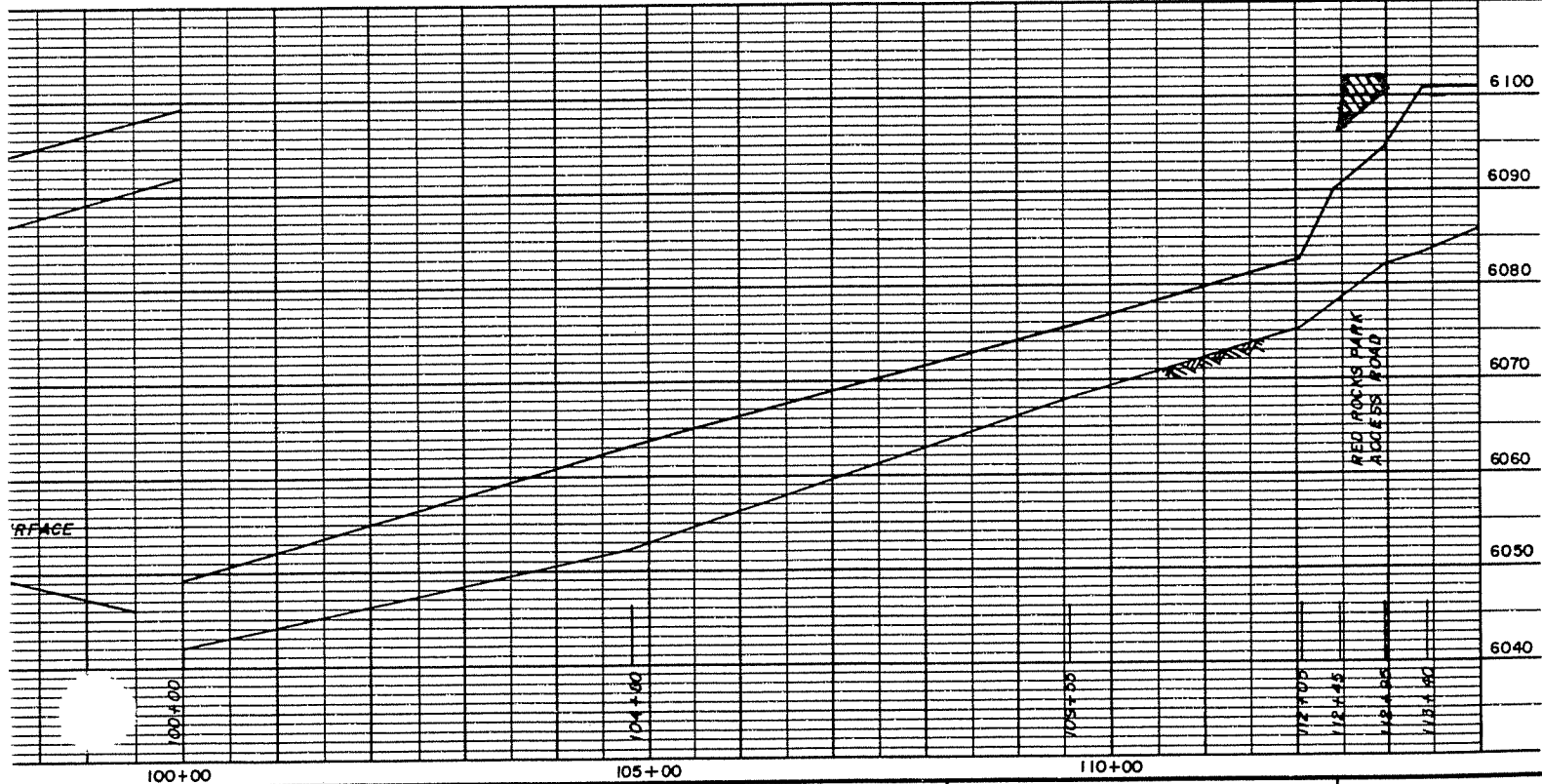
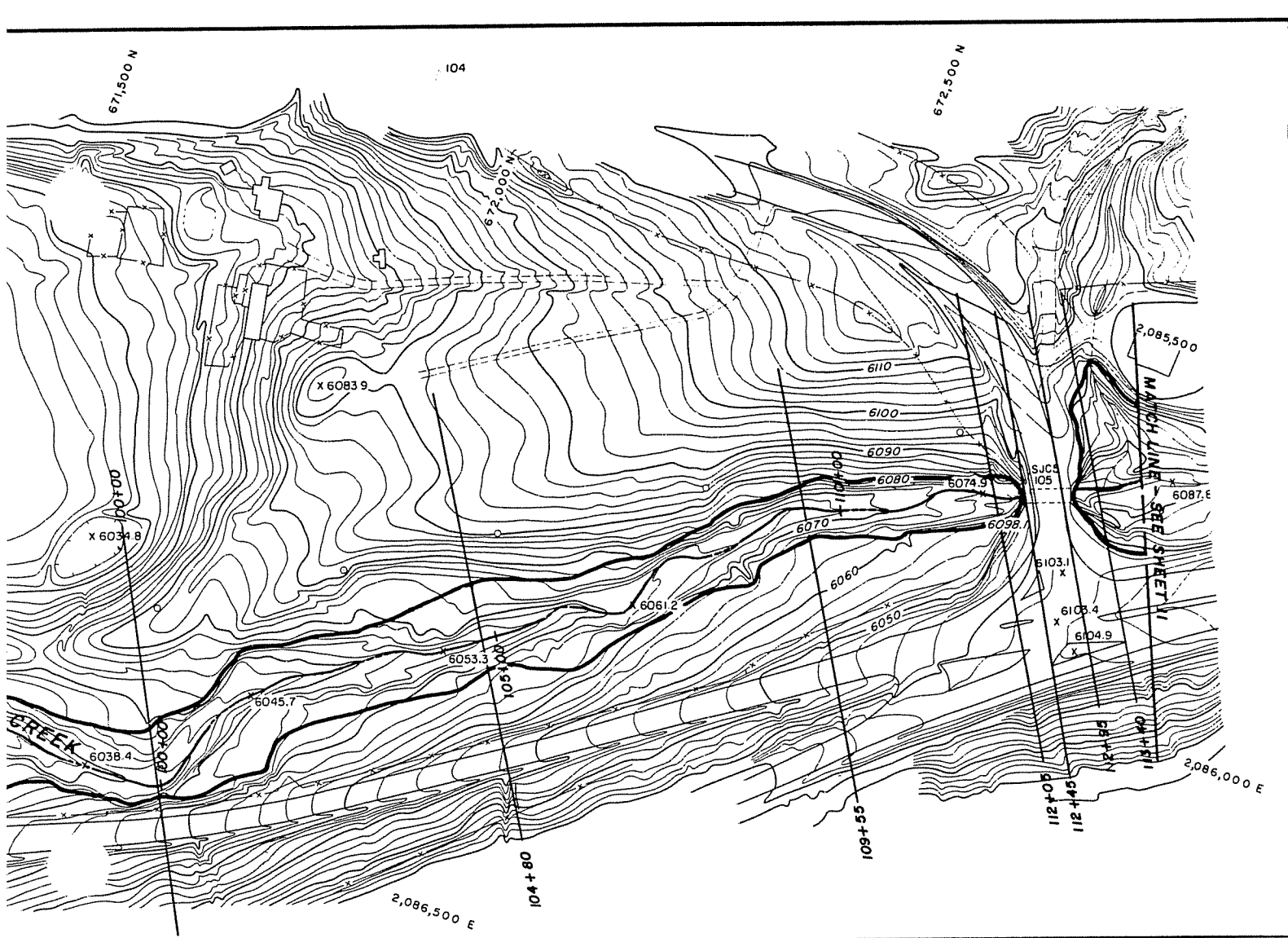


GROUND CONTROL SURVEY BY LANDMARK MAPPING CO.
 AERIAL PHOTOGRAPHY BY SCHARY & ASSOC.
 TOPOGRAPHIC MAPPING BY LANDMARK MAPPING CO.
 CONTOUR INTERVAL 2 FT. DATE PLOTTED 4-29-80

prc
 Engineering Consultants Inc.
 Englewood, Colorado

DESIGNED F.Z. DATE JULY 81
 DRAWN F.S. DATE JULY 81
 CHECKED J.R.A. DATE 12-16-81
 REVISED DATE

URBAN DRAINAGE AND
 JEFFER

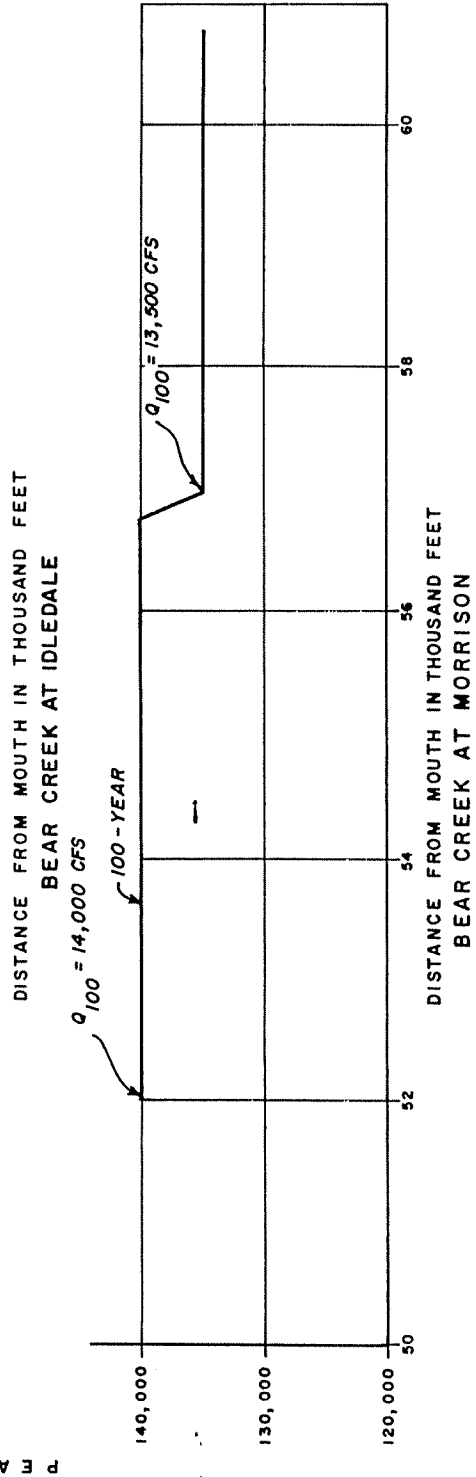
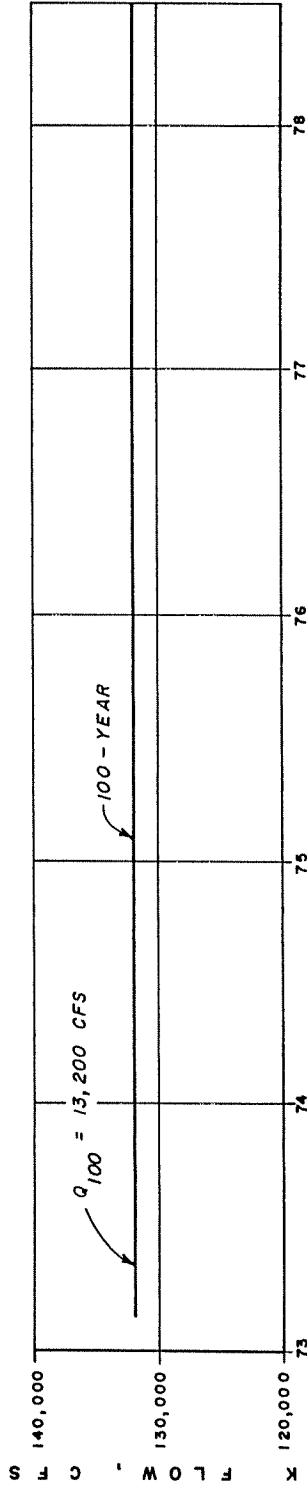
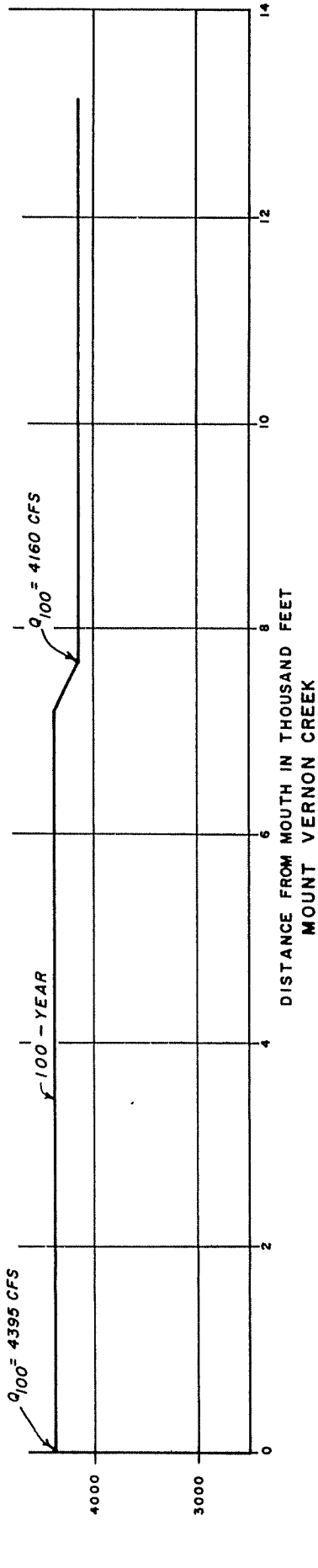


FLOOD CONTROL DISTRICT
SON COUNTY

FLOOD HAZARD AREA DELINEATION
SOUTHERN JEFFERSON COUNTY

MOUNT VERNON CREEK
STA. 84+00 TO STA. 114+00

SHEET
10 OF 36



URBAN DRAINAGE & FLOOD CONTROL DISTRICT
FLOOD HAZARD AREA DETERMINATION
SOUTHERN JEFFERSON COUNTY

100-YEAR DISCHARGE PROFILES
BEAR CREEK & MT. VERNON CREEK

CONSULTANTS - PRC ENGINEERING & CONSULTANTS, INC.
1111 SOUTH 25TH AVENUE
DENVER, CO 80202
PHONE (303) 733-1111
FAX (303) 733-1112
WWW.PRC-ENG.COM

APPROVED BY: [Signature]

DATE: 12/17/07

FIGURE 2

FLOODING SOURCE		FLOOD PLAIN DATA			FLOODWAY DATA			FLOODWAY DATA	
IDENTIFICATION	CROSS SECT. & STATION I	100 YEAR DISCHARGE (CFS)	THALWEG ELEV. (MSL)	100 YR. FLOOD ELEV. (MSL)	FLOOD PLAIN WIDTH (FT.)	LEFT DIST. (FT.)	FLOODWAY WIDTH (FT.)	RIGHT DIST. (FT.)	FLOODWAY ELEV. (MSL)
Highway 8 Private Road	1+05	4395	5759.0	5766.2	650	225	285	60	5766.7
	1+70	"	5759.0	5766.2	650	225	285	60	5766.7
	3+05	"	5762.0	5772.1	315	160	210	50	5772.1
	3+17	"	5762.5	5772.7	315	160	210	50	5772.7
	3+70	"	5762.8	5775.3	247	85	135	50	5775.3
	4+90	"	5767.1	5777.4	123	50	90	40	5777.4
	7+75	"	5777.3	5787.0	146	10	80	70	5787.0
	11+00	"	5786.4	5795.3	129	30	80	50	5795.3
	15+95	"	5799.2	5810.1	58	+	+	+	+
	18+55	"	5807.5	5816.8	104	+	+	+	+
	18+95	"	5809.0	5822.4	104	+	+	+	+
	21+00	"	5815.5	5823.5	84	+	+	+	+
	26+50	"	5829.7	5838.3	70	+	+	+	+
	29+75	"	5841.1	5849.5	88	+	+	+	+
	32+50	"	5849.3	5857.6	97	+	+	+	+
35+95	"	5859.3	5866.7	104	+	+	+	+	
39+80	"	5868.6	5877.2	96	+	+	+	+	
43+40	"	5881.0	5888.5	115	+	+	+	+	
47+70	"	5892.8	5903.7	67	+	+	+	+	
50+50	"	5902.5	5908.4	134	+	+	+	+	
53+70	"	5911.9	5918.6	65	+	+	+	+	
55+90	"	5916.1	5924.8	98	+	+	+	+	
62+60	"	5933.6	5941.2	68	+	+	+	+	
71+80	"	5958.8	5964.4	134	+	+	+	+	
76+35	4160	5974.7	5981.6	81	+	+	+	+	
76+77	"	5978.0	5983.4	58	+	+	+	+	
77+00	"	5978.0	5984.8	58	+	+	+	+	
86+60	"	6005.3	6010.9	115	+	+	+	+	
92+70	"	6021.1	6029.5	82	+	+	+	+	
100+00	"	6042.0	6049.1	88	+	+	+	+	
104+80	"	6055.2	6063.1	110	+	+	+	+	
109+55	"	6067.9	6075.5	63	+	+	+	+	
112+05	"	6075.2	6082.9	55	+	+	+	+	
112+45	"	6078.0	6090.2	17	+	+	+	+	
112+95	"	6082.0	6094.3	17	+	+	+	+	
113+40	"	6083.3	6101.0	190	+	+	+	+	
115+90	"	6093.1	6101.0	95	+	+	+	+	
118+50	"	6101.9	6109.2	131	+	+	+	+	
119+50	"	6105.9	6111.6	172	+	+	+	+	
126+05	"	6123.4	6130.5	89	+	+	+	+	
130+95	"	6139.2	6143.7	160	+	+	+	+	
131+20	"	6140.0	6148.8	185	+	+	+	+	
131+35	"	6140.0	6150.3	190	+	+	+	+	
131+45	"	6141.3	6150.6	183	+	+	+	+	

- 1 DISTANCE IN FEET ABOVE MOUTH
- 2 FROM CENTER OF CHANNEL TO FLOODWAY BOUNDARY, LOOKING DOWNSTREAM
- + CONFINED TO CHANNEL OR ENCROACHMENT NOT APPLICABLE

MOUNT VERNON CREEK

URBAN DRAINAGE & FLOOD CONTROL DISTRICT
FLOOD HAZARD AREA DELINEATION
SOUTHERN JEFFERSON COUNTY

FLOOD PLAIN AND FLOODWAY
REFERENCE DATA

CONSULTANTS - PRC ENGINEERING CONSULTANTS, INC.
DENVER, COLORADO, U.S.A.

DESIGNED BY: P.C. APP. BY: PRC/ECI
DRAWN BY: M.B. SUTER PRC/ECI
CHECKED BY: M.B. SUTER DENVER, CO. 80202

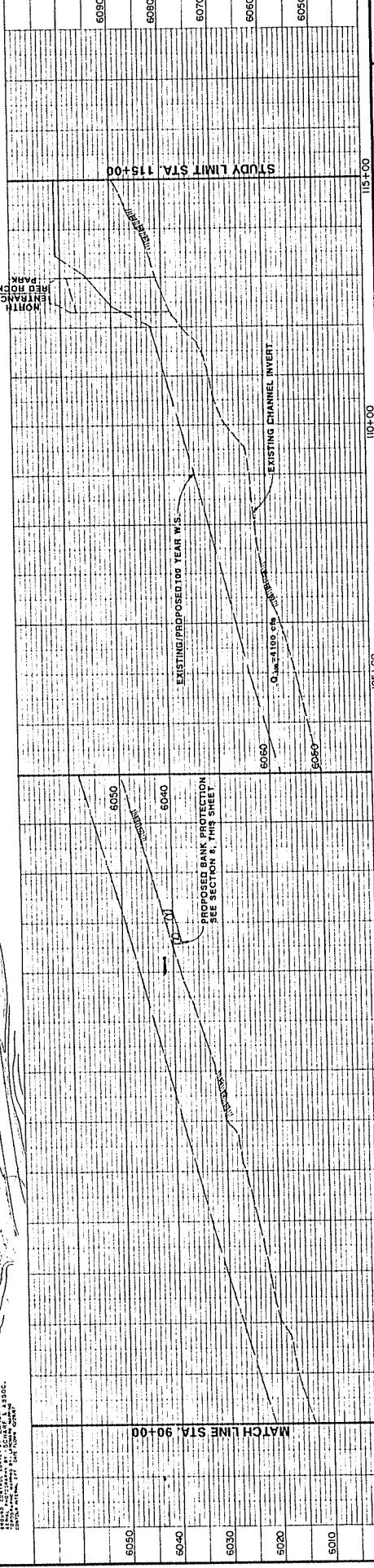
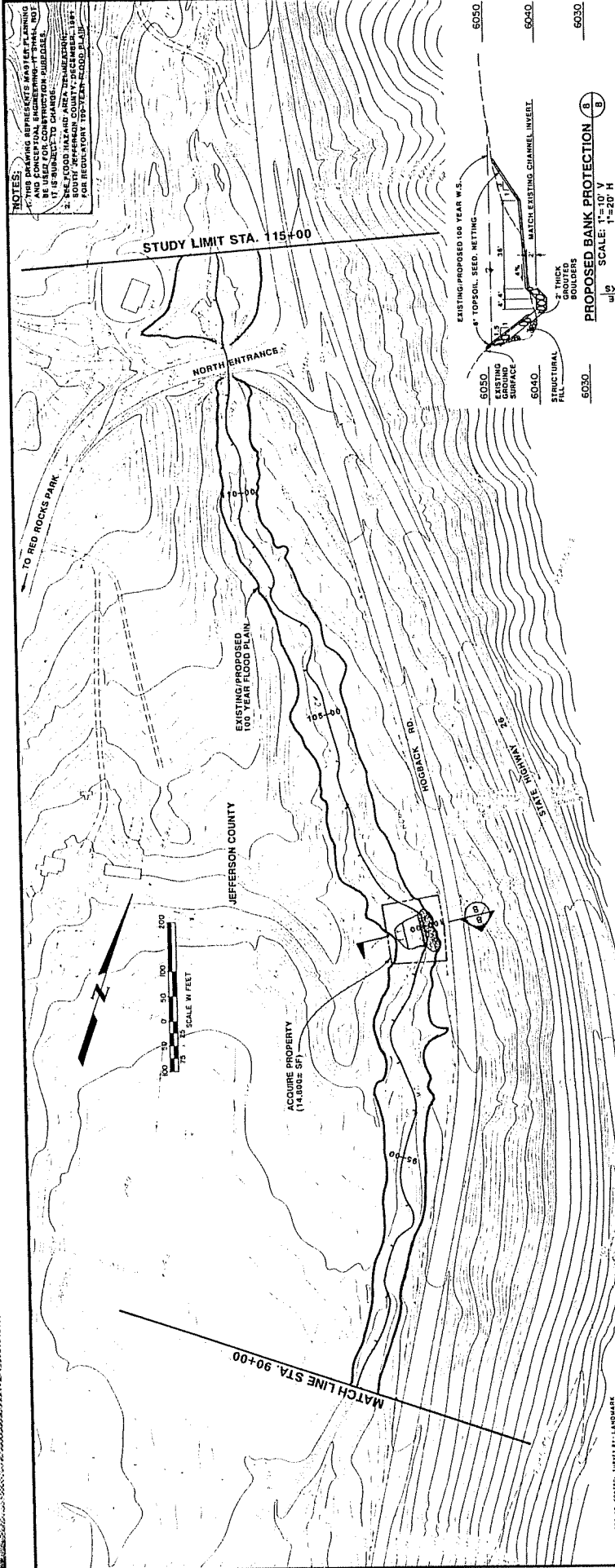
APP. BY: M.B. SUTER

TABLE 3

Two aspects of the 1978 study tend to over-predict peak flow rates. First, infiltration was assumed to occur at a constant rate of 0.4 inches per hour for the 100-year storm instead of the currently recommended rate based on Horton's equation. The latter method assumes an initial infiltration rate of 3.0 inches per hour and a final rate of 0.5 inches per hour resulting in significantly less calculated runoff than reported in the 1978 study. Second, hydrograph routing in the 1978 analysis is based primarily on the translation method, which predicts lesser attenuation and thus higher peak flows than the routing routines of UDSWM2-PC. A summary of the Rooney Gulch peak flows for the 1978 and 1988 studies is provided in Table IV-1.

TABLE IV-1
HYDROLOGIC SUMMARY
ROONEY GULCH, MT. VERNON CREEK & BEAR CREEK
PEAK DISCHARGE FOR GIVEN RETURN PERIOD
(cfs)

<u>Hydrologic Study/ Location/Date</u>	<u>Drainage Area (sq. mi.)</u>	<u>2-year</u>	<u>5-year</u>	<u>10-year</u>	<u>50-year</u>	<u>100-year</u>
1978 Rooney Gulch Study/Morrison Rd.	4.26	N/A	N/A	1,670	N/A	3,000
1988 Rooney Gulch Study/Morrison Rd.	4.21	370	740	990	2,120	2,840
1981 Mt. Vernon Creek Study/Confluence with Bear Creek	9.66	650	1,100	2,030	3,630	4,400
1981 Bear Creek Study/Downstream of Mt. Vernon Creek	174.00	460	1,200	2,270	8,410	14,000



NOTES:
 1. THIS DRAWING REPRESENTS MAJOR PLANNING AND CONCEPTUAL ENGINEERING. IT IS SUBJECT TO CHANGE.
 2. THE FLOOD HAZARD AREA, DETERMINED BY SOUTH JEFFERSON COUNTY, SHOULD BE USED FOR REGULATORY PURPOSES ONLY.

PROPOSED BANK PROTECTION
 SCALE: 1" = 10' V
 1" = 20' H

STATION	ELEVATION (FEET)	DESCRIPTION
90+00	5010	PROPOSED BANK PROTECTION SEE SECTION 2, THIS SHEET
90+00	5020	EXISTING CHANNEL INVERT
90+00	5030	EXISTING/PROPOSED 100 YEAR W.S.
90+00	5040	EXISTING/PROPOSED 100 YEAR W.S.
90+00	5050	EXISTING/PROPOSED 100 YEAR W.S.
90+00	5060	EXISTING/PROPOSED 100 YEAR W.S.
90+00	5070	EXISTING/PROPOSED 100 YEAR W.S.
90+00	5080	EXISTING/PROPOSED 100 YEAR W.S.
90+00	5090	EXISTING/PROPOSED 100 YEAR W.S.
115+00	5010	STUDY LIMIT STA. 115+00

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
 CITY OF LAKEWOOD
 JEFFERSON COUNTY
 TOWN OF MORRISON

MORRISON AREA
 MAJOR DRAINAGEWAY
 PLANNING STUDY

MT. VERNON CREEK
 STA. 90+00 TO STA. 115+00

UDFCD Project No. 87-08.04

REVISIONS

NO.	DATE	REVISIONS

MULLER ENGINEERING COMPANY, INC.
 200 WEST FOURTEENTH AVENUE
 LAKEWOOD, COLORADO 80404
 (303) 944-2444

PROJECT No. 8804
 DRAWING 8
 SHEET 8 of 15

Table 1. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cfs)			
		10-Year	50-Year	100-Year	500-Year
Lena Gulch Tributary At Mouth	0.39	140	285	350	570
Leyden Creek At Simms Street	11.8	1,000	2,000	2,500	4,000
Below Leyden Lake	9.0	850	1,150	2,200	3,400
Above Leyden Lake	9.0	1,500	3,000	3,750	6,200
At Foothills Road	4.2	1,300	2,500	3,300	5,400
Lilley Gulch At Mouth	3.01	1,240	1,660	1,880	2,300
Above Confluence with North Branch					
Lilley Gulch	1.88	1,150	1,540	1,720	2,050
At Simms Road	0.43	380	510	585	700
Little Cub Creek At Mouth	2.83	300	885	1,180	2,000
Massey Draw Tributary At Wadsworth Boulevard	0.99	585	820	920	1,200
At Garrison Road	0.53	370	515	570	700
Mount Vernon Creek At Mouth	9.66	2,030	3,630	4,395	6,400
Myers Gulch At Mouth	1.31	145	450	605	1,200
North Branch Coon Creek At Mouth	0.64	410	570	625	800

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
SYSTEM MAINTENANCE RECORD
DIAD INC.

Service Log		
Site Name: Red Rocks	Date: 22-Mar-93	Time: 1745
Service Type: Startup	Technician: DGV	Status: Incomplete

Configuration Changes	
<i>Part #</i>	<i>Location</i>
TX H 831	1595
TB H 563	1595
BY H 9069	1595

Transducer Calibration			
<i>Port</i>	<i>O-P Volts</i>	<i>Span P</i>	<i>Span V</i>

Test Transmissions			
<i>Port</i>	<i>Time</i>	<i>Count</i>	<i>Pressure</i>
1595	1839	0	
1591	1839	2	
1595	1840	1	
1595	1845	2	
1595	1900	6	

Settings and Performance	
Switches:	1595-0012-1112-11011
Jumpers:	J4 J10
Eprom:	AB-SP09
Fwd Power	7.0
Rev Power:	0.2
Frequency:	
Deviation:	

Battery Tests		
<i>Battery #</i>	<i>Volts -Q</i>	<i>Volts-T</i>
BY H 9069	13.26	12.92

Problem:

Action Taken: Prepped standpipe for PT install.

Site Notes:

Follow-Up: PT install, desc, ss clamp, PVC cement. KGS: initialize 1591