^^S: Set alarm--For sensor # 2233, Bear Cr below Cub Water Level PT,
the following alarm values are defined:

Absolute Max.	Absolute Min.	Positive Rate of Change Rate/Time	Positive Rate of Change Threshold	Negative Rate of Change Rate/Time	Negative Rate of Change Threshold
3.00 ft enabled	undefined disabled	1.00 ft/ 30min 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) ?

#: 5732 **Site ID:** 2230

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

Service Log

Site Name: Bear Creek @ Cub *Date:* 27-Mar-97 *Time:* 14:14

Service Type: Start Up *Technician:* RJB *Status:* OK

Configuration Changes

Part #	*Location*
TB H 561	2230
BY H 9553	2230
TX H 828	2230

Transducer Calibration = BV

Port	*A*	*B*	*Std Error*
2233	0.0890	-0.39	0.090

Test Transmissions

Port	*Time*	*Count*	*Pressure*	*Predicted*
2233	14:31	31	1.02	32
2233	14:31	82	3.00	84
2233	14:32	134	5.00	135
2233	14:33	187	7.06	189
2233	14:35	235	8.89	236
2230	14:42	1		0
2230	14:44	2		0

M = 11.24

Settings and Performance

Switches: 2230-0012-1112-11011
Jumpers:
Eprom: B
Fwd Power 9.0
Rev Power: 0.1
Frequency:
Deviation:

Battery Tests

Battery #	*Volts -Q*	*Volts-T*
BY H 9553	12.98	12.82

07-May-97

Problem:

Action Taken:

Site Notes: 0-5V PT

Follow-Up:

Device: 1714 Rcvd: 140   09/12/1996-14:17:11   Sep 12 96 14:17:26   2
NS: NovaStar   Help   Options   Utilities   Setup   Quit

```
Z Device Definitions DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD NovaLynx Systems, Inc. \
3                                                                            [
3 Device           ID          Tag          Name                             [
3 Identification : 2233        2233         Bear Cr below Cub                [
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 11.2108     -0.55       Signed     06/28/1996-12:25:52   [
3 Data            3 11.0534     0           Signed     03/31/1994-18:31:19   [
3 Checking       :3 11.0534     0           Signed     04/09/1991-01:00:00   [
3                 3                                                          [
3 Data            3                                                          [
3 Storage        :3                                                          [
3                 3                                                          [
3 Save changes  <:3                                                          [
3                 3                                                          [
```

B = -0.55
~~Last Rev.~~ See 3/27/97 next rev

Press [F1] for Help

```
Device: 2207 Rcvd: 0      08/14/1996-16:25:52                  Aug 14 96 16:26:12   2
  NS: NovaStar  Help     Options     Utilities     Setup     Quit

  Device Definitions DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD NovaLynx Systems, Inc. \
3
3 Device              ID           Tag.          Name
3 Identification :  2233          2233          Bear Cr below Cub
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 11.2108      -0.55        Signed      06/28/1996-12:25:52
3 Data             3 11.0534      0            Signed      03/31/1994-18:31:19
3 Checking        :3 11.0534      0            Signed      04/09/1991-00:00:01
3                  3
3 Data             3
3 Storage         :3
3                  3
3 Save changes   :3
3                  3

                         Press [F1] for Help
```

Assume SL ≈ Stream Bed
Close enough

Station Out-of-Service 10/20/94 – 6/28/96
(EMD Construction forced relocation of station)

SL = 0.00

B = −0.55 (DIAD 6-28-96 Reinstall)

BV = −0.55′

Prior to 1994, Sensor ID = 1533

#: 5344 Site ID: 2230

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

SYSTEM MAINTENANCE RECORD

DIAD INC.

Service Log

Site Name: Bear Creek @ Cub *Date:* 17-Jun-96 *Time:* 12:32

Service Type: New Installation *Technician:* RJB *Status:* Down

Configuration Changes

Part #	*Location*

Transducer Calibration

Port	*A*	*B*	*Std Error*

Test Transmissions

Port	*Time*	*Count*	*Pressure*	*Predicted*

Settings and Performance

Switches:
Jumpers:
Eprom:
Fwd Power
Rev Power:
Frequency:
Deviation:

Battery Tests

Battery #	*Volts -Q*	*Volts-T*

22-Jul-96

Problem:

Action Taken: Installed old 4-20 mA PT labled as from site 1530. Installed TB. Determined PT is dead. Blew fuse in Txr.

Site Notes:

Follow-Up: Return to replace PT.

```
        Is this value O.K. (y/n) ? y                    Apr 11 94 13:55:04   2
   imary record  354 updated
Data file updated


Enter sensor # to calibrate ( <ESC> to exit ) 2233
Sensor # 2233 is Bear Cr below Cub 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  355 updated
Data file updated


Enter sensor # to calibrate ( <ESC> to exit )
        Is this value O.K. (y/n) ? y                    Apr 11 94 13:58:00   2
r imary record  355 updated
  ca file updated


Enter sensor # to calibrate ( <ESC> to exit ) 2243
Sensor # 2243 is Cold Sprg Glch conf 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  356 updated
Data file updated


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

```
Enter sensor # to calibrate ( <ESC> to exit ) 1533
Sensor # 1533 is Bear Cr below Cub 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  215 updated
Data file updated
    Do you want to update older data files (y/n) ? y
Overload record 3960 updated

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

OK per DIAD 7/20/92 fax

- Field survey ~~req't~~ req'd to determine base value
- Obtain approx. rating from Jeffco FIS, if possible
- Backwater analysis req'd for refined rating
- Check for nearest USGS gage & rating table.

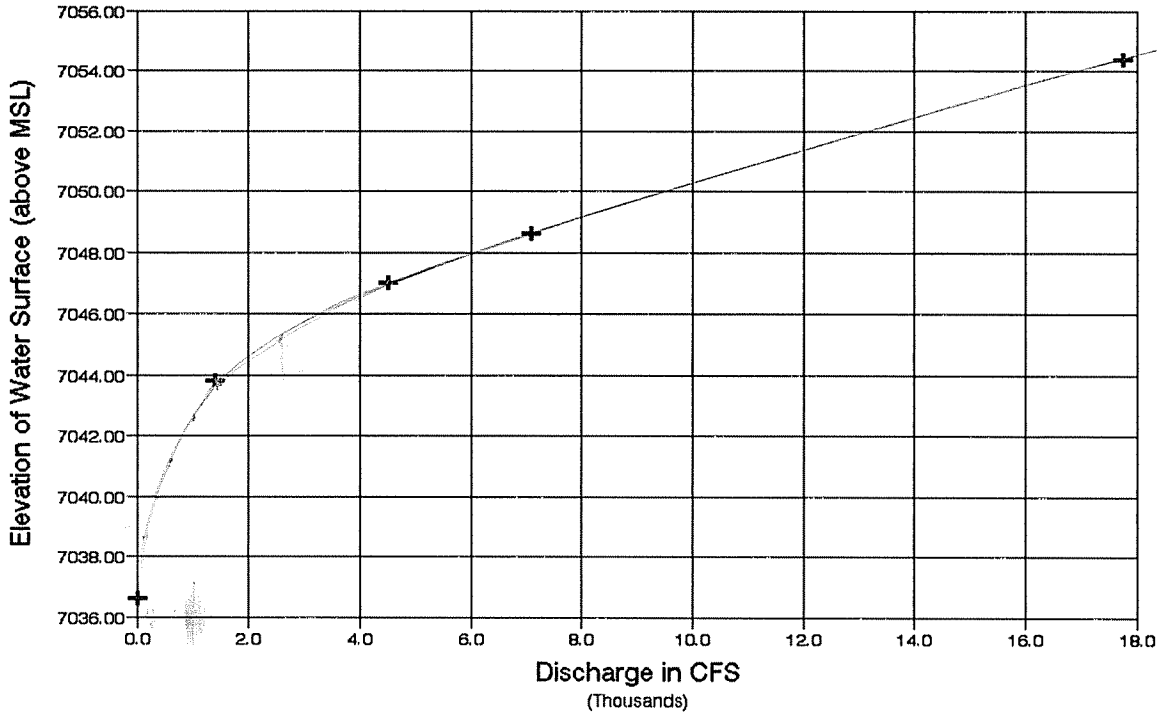
```
TMS: define_rating
  :ing table  59 Bear Creek Below Cub Creek
Sensor 1533 Bear Cr below Cub
 SENSOR TYPE USING TABLE: 7 Water Level PT
       RATING TABLE UNITS: cu.ft./sec
       UNITS ABBREVIATION: cfs
        INTERPOLATION TYPE: linear interpolation
   EXTRAPOLATION ALLOWED: YES
TABLE VALUES:
```

ft	cfs	ft	cfs	ft	cfs	ft	cfs
0	0						
2	200						
3.4	300						
4.5	600						
7.2	1390						
8.6	2600						
12	7100						
17.8	17750						

```
Enter F9 for a list of the EDIT keys
```

Estimated Rating Curve

Bear Creek Below Cub Creek (Gage #1533)



Approximate Streambed Elevation = 7036.6 ft above MSL

STAGE	Q x 1000
7036.6	0
7038.6	0.2
7040.0	0.3
7041.1	0.6
7043.8	1.39
7045.2	2.60
7048.6	7.10
7054.4	17.75

DERIVED FROM JEFFCO FEMA

RATING TABLE #59

Received FROM JEFFCO FEMA

Bear Creek (Kittredge to Evergreen) Reach #6
Gage # 1533 Bear Creek Below Cub Creek
Estimated Rating Curve

Elevation (ft)	Discharge (cfs)
7036.6	0
7043.8	1390
7047	4500
7048.6	7100
7054.4	17750

Bear Creek (Above Evergreen Lake) Reach #7
Gage # 1563 Rosedale
Estimated Rating Curve

Elevation (ft)	Discharge (cfs)
7220	0
7224	800
7227.3	2250
7230.4	3250
7234	7050

Table 1. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cfs) 10-Year	50-Year	100-Year	500-Year	
Bear Creek						
Below Mt. Carbon Dam	239	500	1,000	1,000	2,000	
Below Confluence with Mount Vernon Creek	174	2,270	8,410	14,000	41,400	
At USGS Gage at Morrison	164	2,180	8,140	13,500	39,900	
Below Confluence with Sawmill Gulch	158	1,930	6,750	10,800	30,500	
Below Confluence with Swede Gulch	146	1,710	5,850	9,500	25,000	
Above Confluence with Myers Gulch	139	1,600	5,350	8,500	22,500	
Above Confluence with Troublesome Creek	126	→ 1,390	4,500	7,100	17,750	1533 Evergreen
Above Confluence with Buffalo Creek	96	950	2,780	4,200	9,500	
At Western Jefferson County Line	85	→ 800	2,250	3,250	7,050	1563 Rosedale
Bear Creek Tributary Number 1						
At Mouth	0.59	145	385	510	980	
At Upstream Limit of Detailed Study	0.14	45	115	155	285	
Bear Creek Tributary Number 2						
At Mouth	0.69	100	290	385	670	
Bear Creek Tributary Number 3						
At Dedisee Park Road	0.41	120	310	415	760	
Bear Creek Tributary Number 5						
At Morrison Road	1.18	260	580	670	1,250	
At Tributary Confluence	0.69	150	320	380	660	
Bear Creek Tributary Number 6						
At Mouth	1.53	650	920	1,040	1,333	

I.D.# 1530

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
SYSTEM MAINTENANCE RECORD
SCC Inc.

SITE : BEAR / CUB
DATE : 4/9/91 TIME : _____ TECH(S) : DN / ____

TYPE : ___BENCH _V_SEASON INST. ___MECH.INSP. ___COMP. P.M.
___REMOVAL ___SERVICE CALL ___OTHER _____

ELECTRONICS PKG. MFGR: HANDAR
SN: 845
SS: 1530 00 19 11 11

SENSOR(S) MFGR: HANDAR
SN: 0568

GENERAL SITE CONDITION : _____

TEST RESULTS

BATTERY VOLTAGE (Q): 12.8 VDC
BATTERY VOLTAGE (T): 12.5 VDC

TRANSMIT POWER (FWD): 8 WATTS
TRANSMIT POWER (REV): 2 WATTS

+3 PORT	+4 PORT
2= ____	2= ____
8= ____	8= ____
11= ____	11= ____

TRANSMIT FREQUENCY : _____ mHz
TRANSMIT DEVIATION : _____ kHz

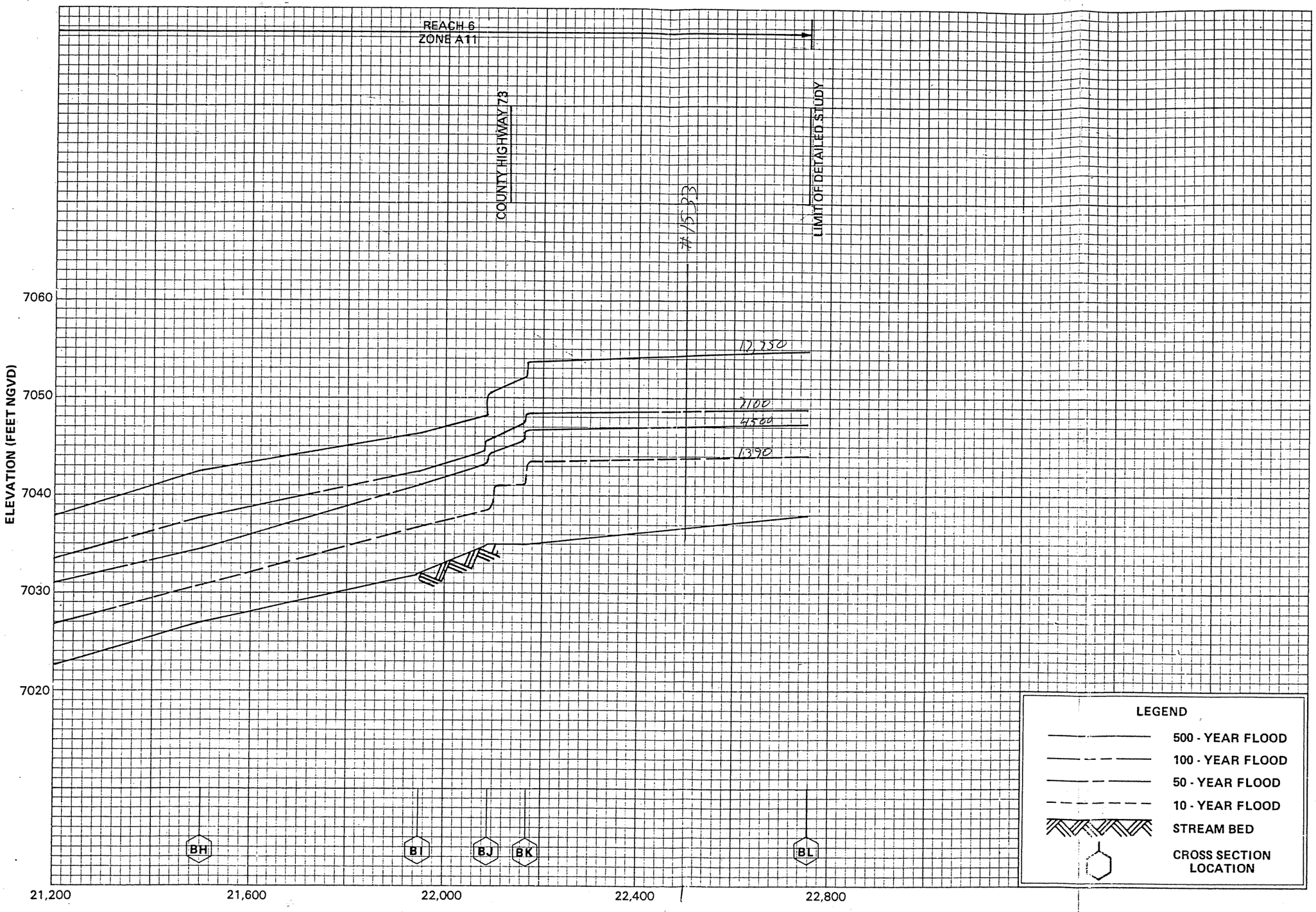
OTHER RESULT : _____

TRANSMISSIONS: RAIN 8 STAGE _____

REPAIRS/ADJUSTMENTS: _____

COMMENTS: _____

SCC Inc./BOULDER, CO USA IFR SN _____ CAL. DATE ___/___/___



FLOOD PROFILES

BEAR CREEK (KITTREDGE TO EVERGREEN)

FEDERAL EMERGENCY MANAGEMENT AGENCY

JEFFERSON COUNTY, CO.
(UNINCORPORATED AREAS)