City of Scottsdale
Desert Greenbelt Project

VOLUME IV: TECHNICAL ADDENDUM
Part 1 of 2

REATA PASS/BEARDSLEY WASH EROSION SEDIMENTATION CONTROL AND CHANNEL IMPROVEMENT DESIGN

The Desert Greenbelt
SCOTTSDALE, ARIZONA

August 1997
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Costa Mesa, California and Tempe, Arizona

Technical Addendum

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Appendix A - General Information

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Appendix A

General Information

1. Reach Definitions and Design Discharges
2. Channel Geometry

REACH DEFINITIONS and DESIGN DISCHARGES

For Sediment Transport Computations

Reach #	Station		Design Discharge Range (cfs)					
	From	To	100-Yr	50-Yr	25-Yr	10-Yr	5-Yr	2-Yr
1	316+50	289+50	5,766	4,823	3,803	2,684	1,896	1,022
2	289+50	277+15	11,236	9,324	7,438	5,069	3,689	2,027
3	277+15	271+75	11,236	9,324	7,438	5,069	3,689	2,027
4	271+75	262+30	11,236	9,324	7,438	5,069	3,689	2,027
5	262+30	229+80	11,236	9,324	7,438	5,069	3,689	2,027
6	229+80	210+00	11,742	9,538	7,644	5,227	3,827	2,162
7	210+00	192+00	11,742	9,538	7,644	5,227	3,827	2,162
8	192+00	183+00	11,742	9,538	7,644	5,227	3,827	2,162
9	183+00	163+00	11,742	9,538	7,644	5,227	3,827	2,162
10	163+00	151+00	11,742	9,538	7,644	5,227	3,827	2,162
11	151+00	140+00	10,579	8,751	6,838	4,745	3,537	2,044
12	140+00	125+40	12,814	10,496	8,208	5,666	4,222	2,456
13	125+40	124+40	12,814	10,496	8,208	5,666	4,222	2,456
14	124+40	121+90	12,814	10,496	8,208	5,666	4,222	2,456
15	121+90	121+40	12,814	10,496	8,208	5,666	4,222	2,456
16	121+40	119+80	12,814	10,496	8,208	5,666	4,222	2,456
17	119+80	119+30	12,814	10,496	8,208	5,666	4,222	2,456
18	119+30	117+00	12,814	10,496	8,208	5,666	4,222	2,456
19	117+00	116+50	12,814	10,496	8,208	5,666	4,222	2,456
20	116+50	114+60	12,814	10,496	8,208	5,666	4,222	2,456
21	114+60	114+10	12,814	10,496	8,208	5,666	4,222	2,456
22	114+10	112+00	12,814	10,496	8,208	5,666	4,222	2,456
23	112+00	111+50	12,814	10,496	8,208	5,666	4,222	2,456
24	111+50	109+60	12,814	10,496	8,208	5,666	4,222	2,456
25	109+60	109+10	12,814	10,496	8,208	5,666	4,222	2,456
26	109+10	107+60	12,814	10,496	8,208	5,666	4,222	2,456
27	107+60	107+10	12,814	10,496	8,208	5,666	4,222	2,456
28	107+10	105+50	12,814	10,496	8,208	5,666	4,222	2,456
29	105+50	105+00	12,814	10,496	8,208	5,666	4,222	2,456
30	105+00	103+00	12,814	10,496	8,208	5,666	4,222	2,456
31	103+00	101+00	12,814	10,496	8,208	5,666	4,222	2,456
32	101+00	99+20	12,814	10,496	8,208	5,666	4,222	2,456
33	99+20	98+10	12,185	9,821	7,721	5,319	3,976	2,338
34	98+10	96+00	12,185	9,821	7,721	5,319	3,976	2,338
35	96+00	95+50	12,185	9,821	7,721	5,319	3,976	2,338
36	95+50	93+50	12,185	9,821	7,721	5,319	3,976	2,338

REACH DEFINITIONS and DESIGN DISCHARGES (cont.)

For Sediment Transport Computations

Reach #	Station		Design Discharge Range (cfs)					
	From	To	100-Yr	50-Yr	25-Yr	10-Yr	5-Yr	2-Yr
37	93+50	93+00	12,185	9,821	7,721	5,319	3,976	2,338
38	93+00	91+50	12,185	9,821	7,721	5,319	3,976	2,338
39	91+50	91+00	12,185	9,821	7,721	5,319	3,976	2,338
40	91+00	89+50	12,185	9,821	7,721	5,319	3,976	2,338
41	89+50	89+00	12,185	9,821	7,721	5,319	3,976	2,338
42	89+00	87+50	12,185	9,821	7,721	5,319	3,976	2,338
43	87+50	87+00	12,185	9,821	7,721	5,319	3,976	2,338
44	87+00	82+50	12,185	9,821	7,721	5,319	3,976	2,338
45	82+50	82+00	12,185	9,821	7,721	5,319	3,976	2,338
46	82+00	80+50	12,185	9,821	7,721	5,319	3,976	2,338
47	80+50	80+00	12,185	9,821	7,721	5,319	3,976	2,338
48	80+00	74+00	12,185	9,821	7,721	5,319	3,976	2,338
49	74+00	73+50	12,185	9,821	7,721	5,319	3,976	2,338
50	73+50	71+00	12,185	9,821	7,721	5,319	3,976	2,338
51	71+00	70+50	12,185	9,821	7,721	5,319	3,976	2,338
52	70+50	68+50	12,185	9,821	7,721	5,319	3,976	2,338
53	68+50	68+00	12,185	9,821	7,721	5,319	3,976	2,338
54	68+00	66+00	12,185	9,821	7,721	5,319	3,976	2,338
55	66+00	65+50	12,185	9,821	7,721	5,319	3,976	2,338
56	65+50	63+50	12,185	9,821	7,721	5,319	3,976	2,338
57	63+50	63+00	12,185	9,821	7,721	5,319	3,976	2,338
58	63+00	61+00	12,185	9,821	7,721	5,319	3,976	2,338
59	61+00	60+50	12,185	9,821	7,721	5,319	3,976	2,338
60	60+50	58+50	12,185	9,821	7,721	5,319	3,976	2,338
61	58+50	58+00	12,185	9,821	7,721	5,319	3,976	2,338
62	58+00	53+00	12,185	9,821	7,721	5,319	3,976	2,338
63	53+00	52+50	12,185	9,821	7,721	5,319	3,976	2,338
64	52+50	50+00	12,185	9,821	7,721	5,319	3,976	2,338
65	50+00	49+50	12,185	9,821	7,721	5,319	3,976	2,338
66	49+50	48+00	12,185	9,821	7,721	5,319	3,976	2,338
67	48+00	44+58	12,185-15,265	9,821-12,231	7,721-9,546	5,319-6,613	3,976-5,031	2,338-3,065
68	44+58	43+30	15,265	12,231	9,546	6,613	5,031	3,065
69	43+30	14+80	15,265	12,231	9,546	6,613	5,031	3,065
70	14+80	8+80	15,265	12,231	9,546	6,613	5,031	3,065
71	8+80	0+30	15,265	12,231	9,546	6,613	5,031	3,065

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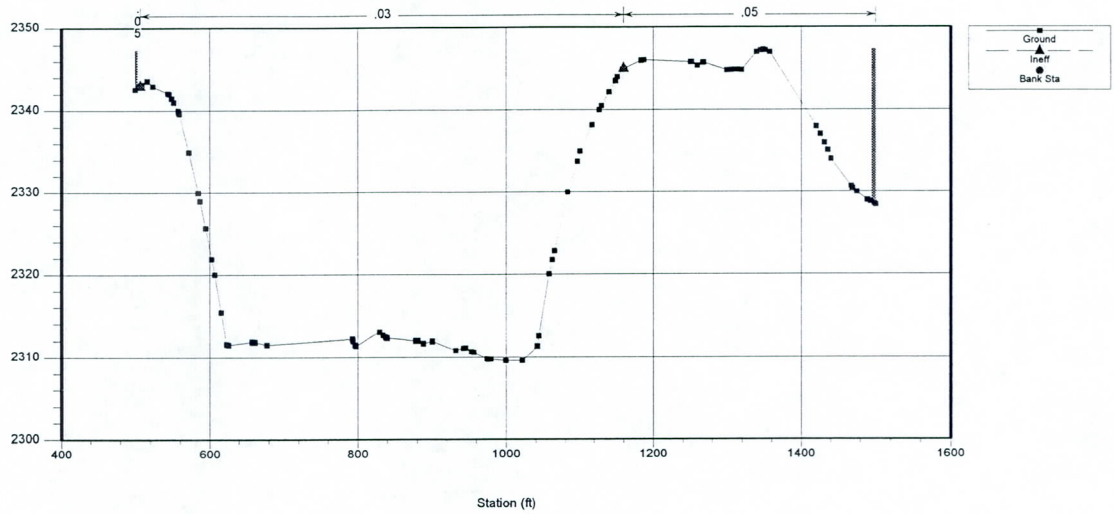

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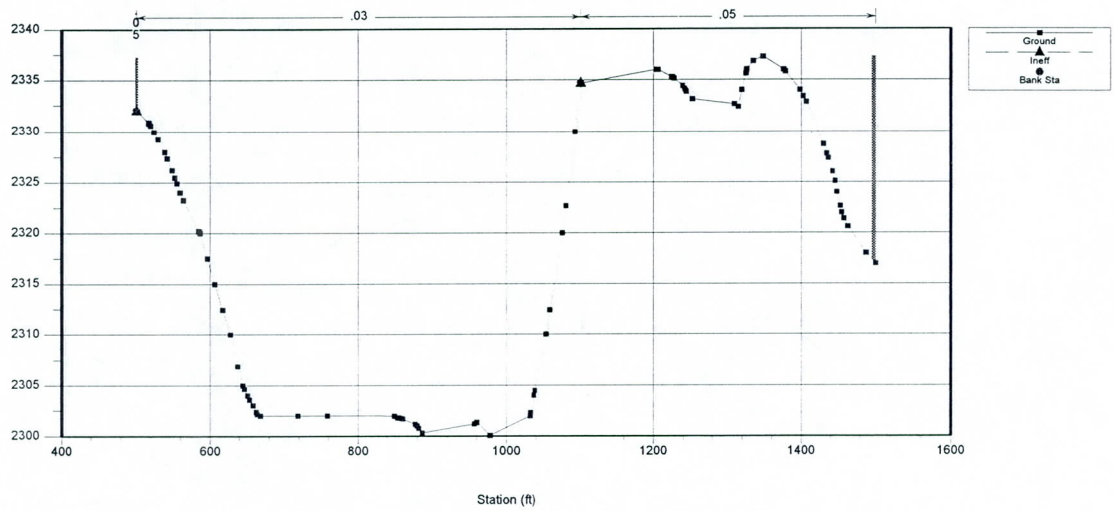

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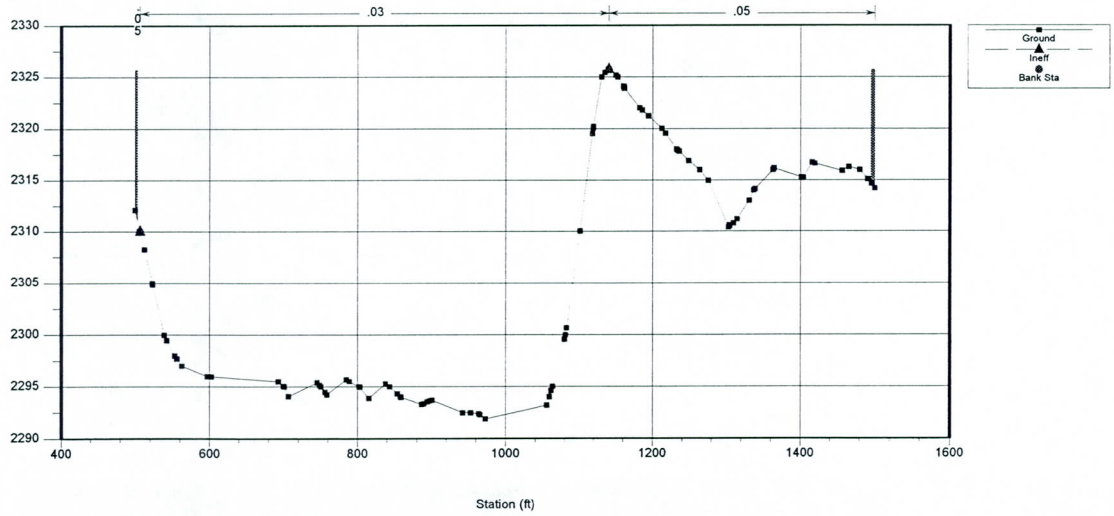

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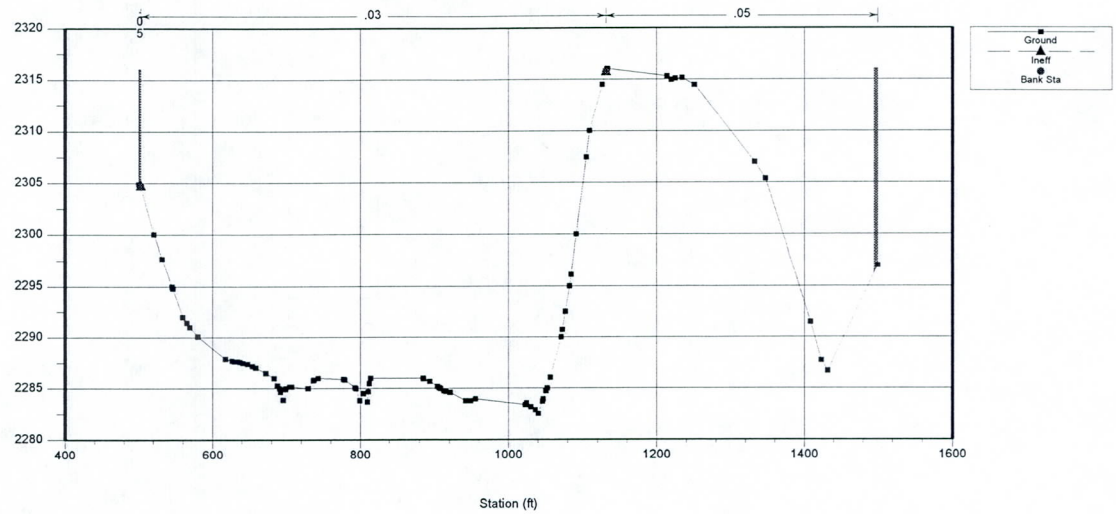

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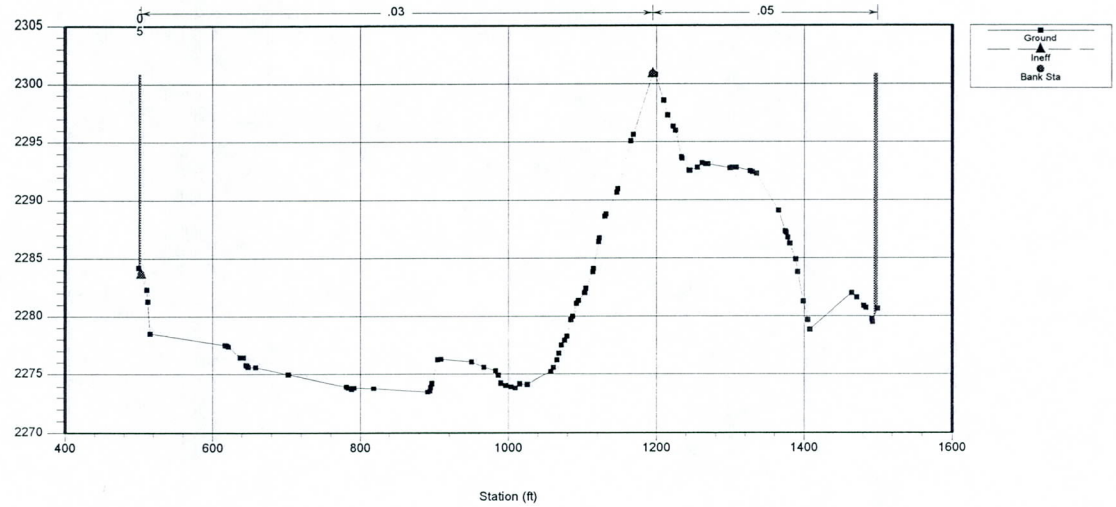

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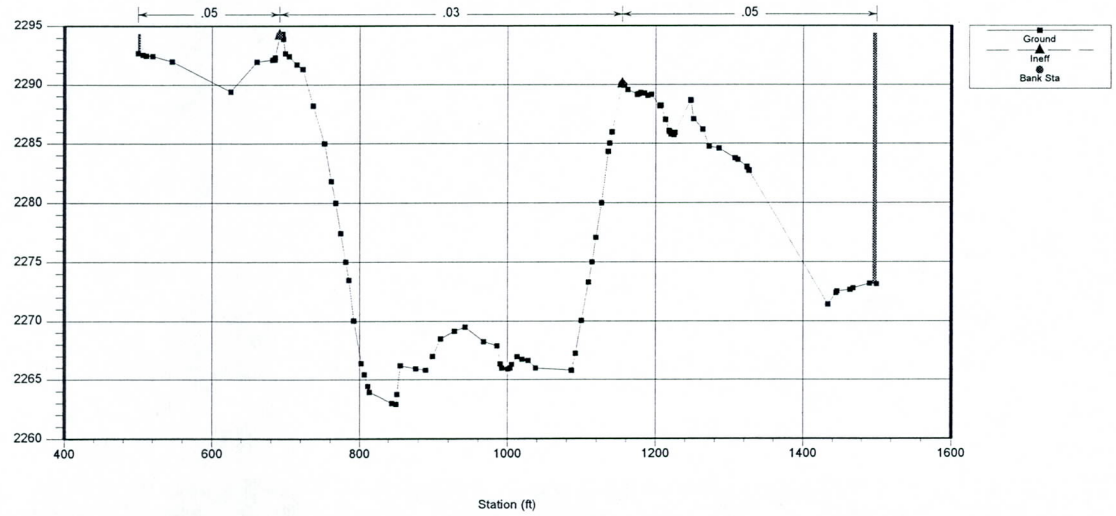

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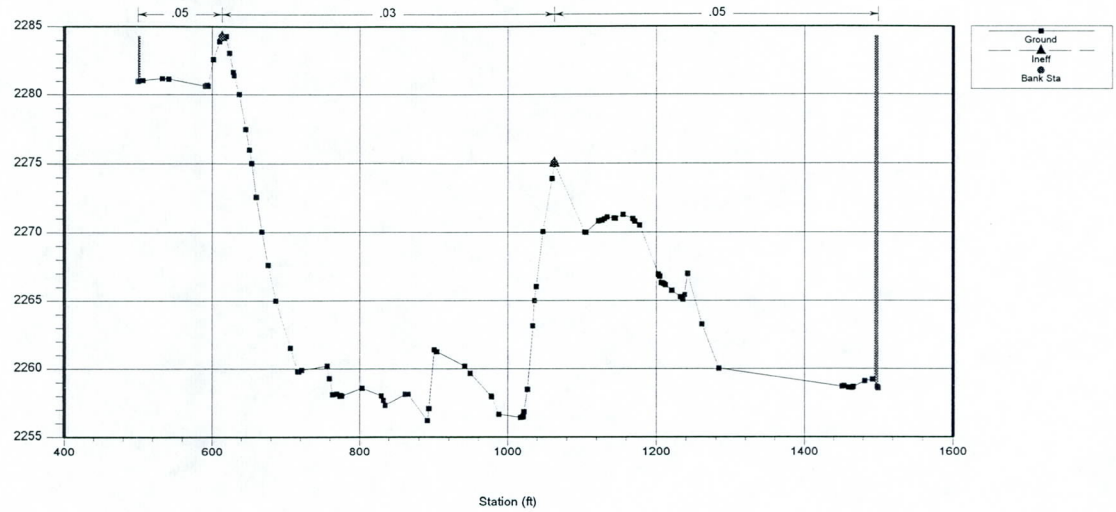

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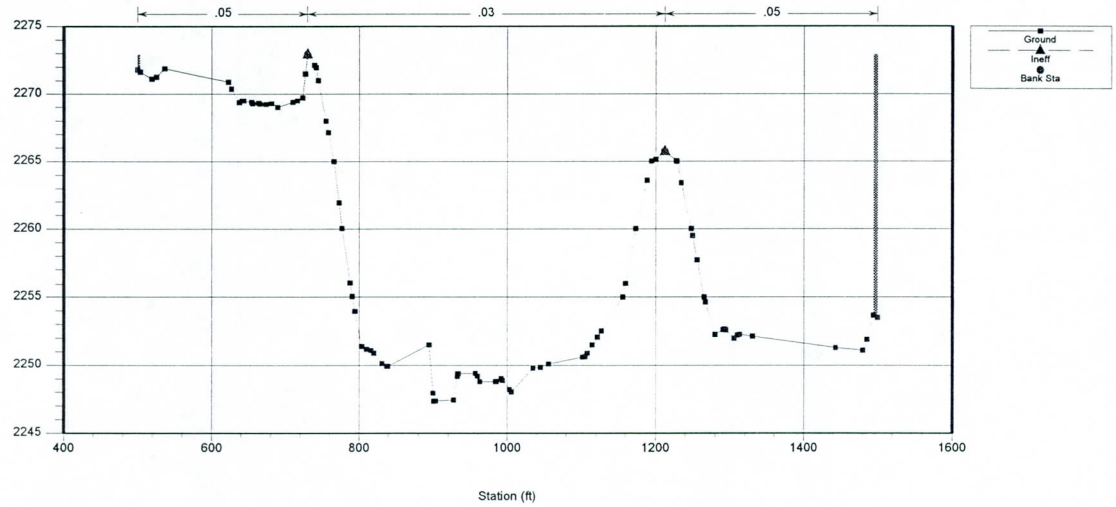

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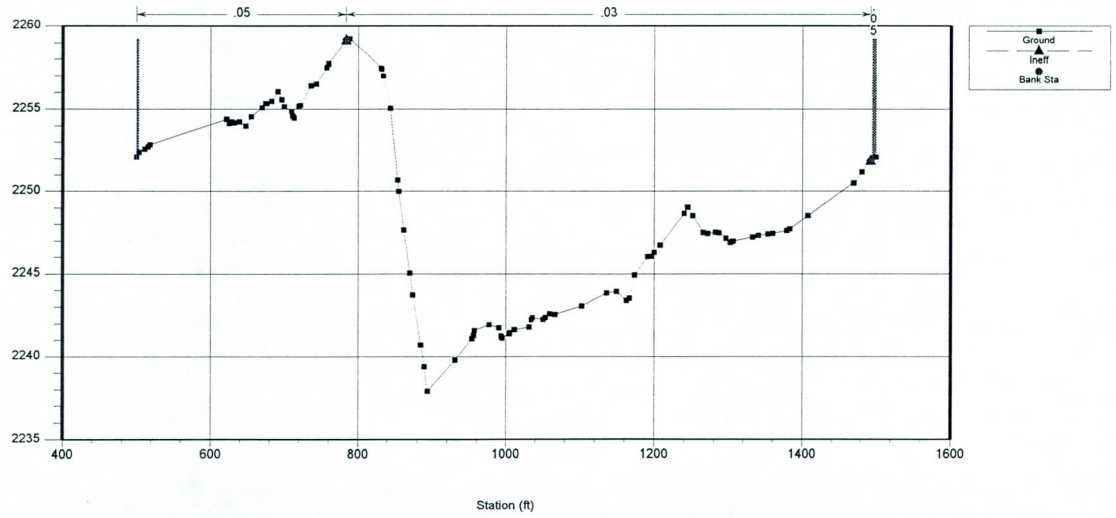

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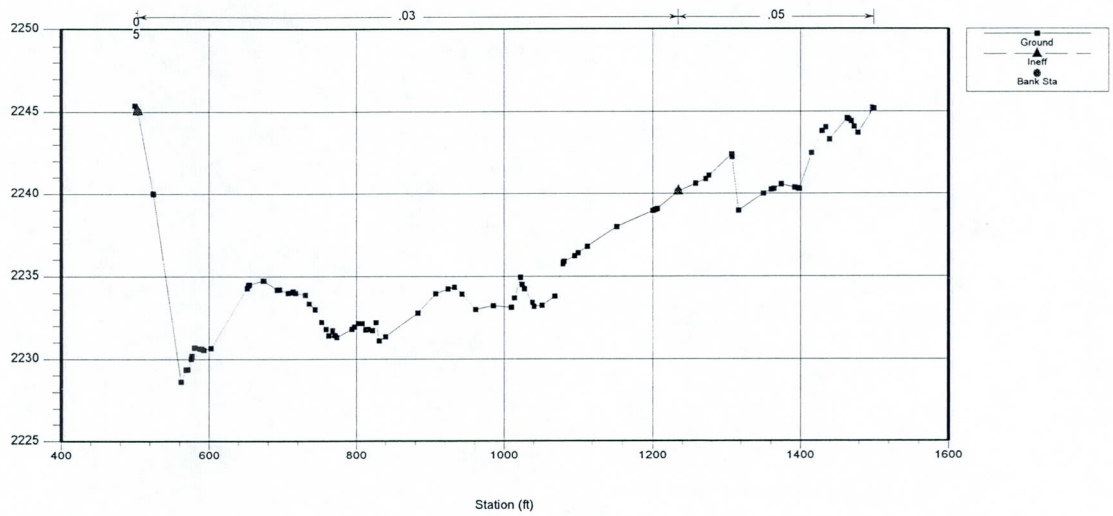

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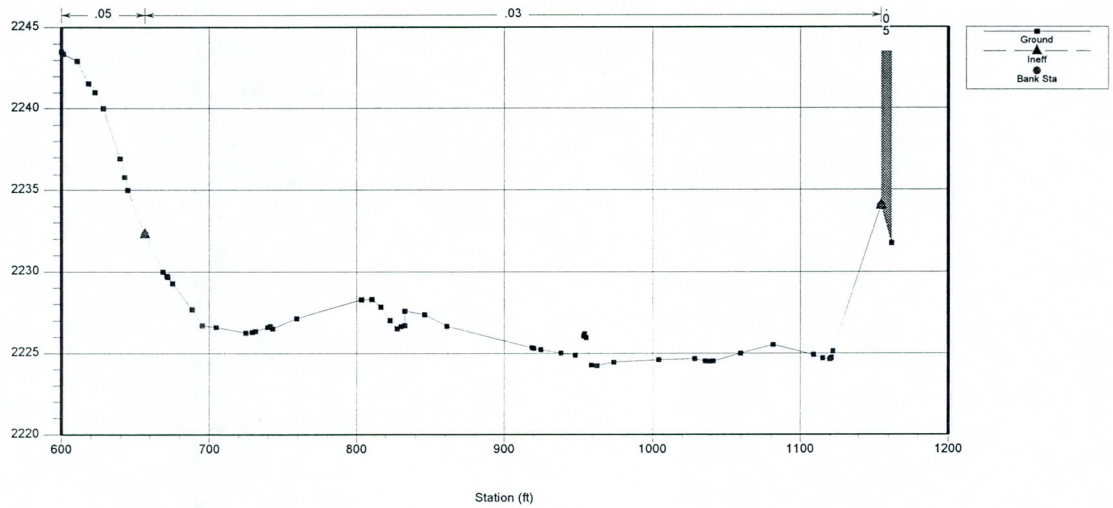

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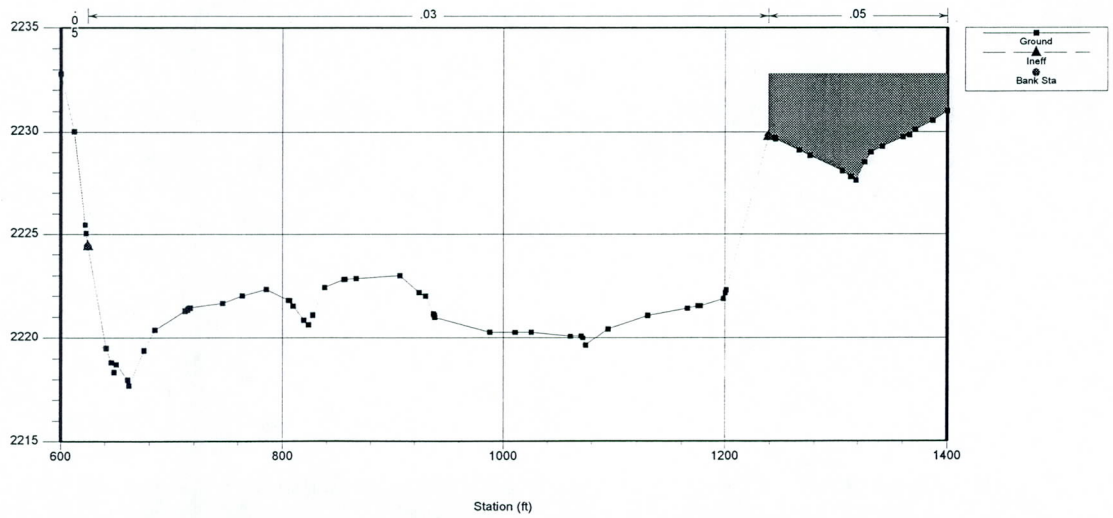

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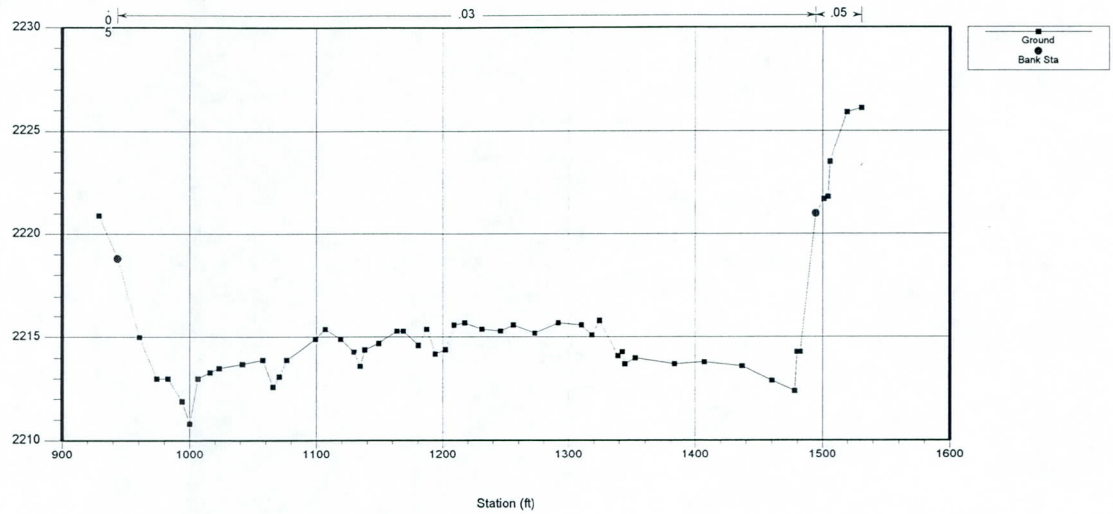

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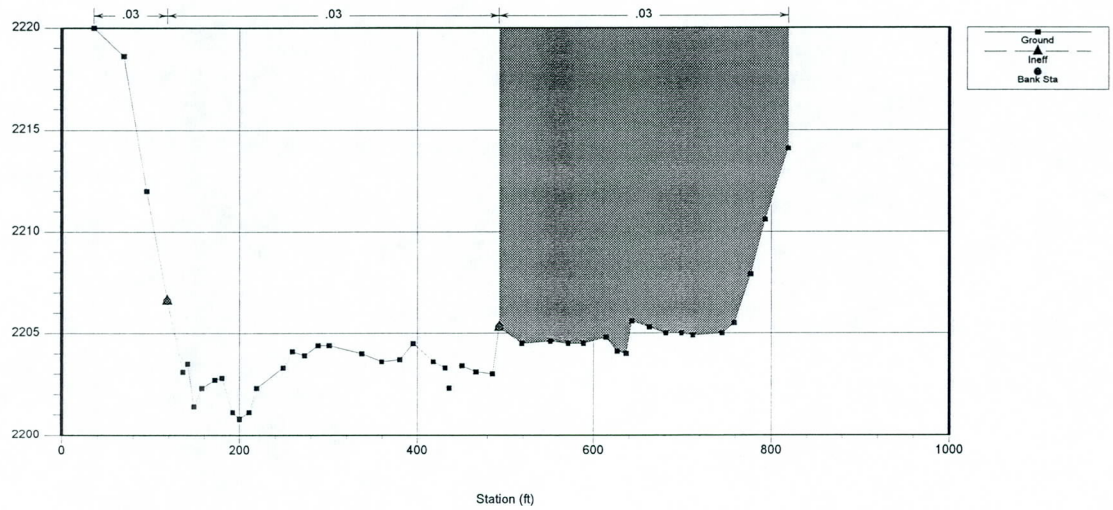

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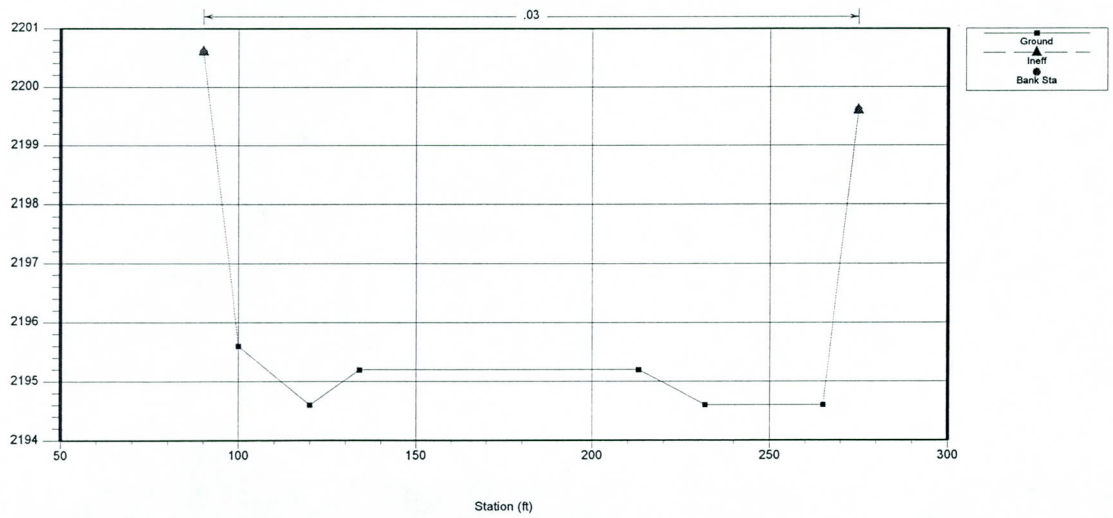

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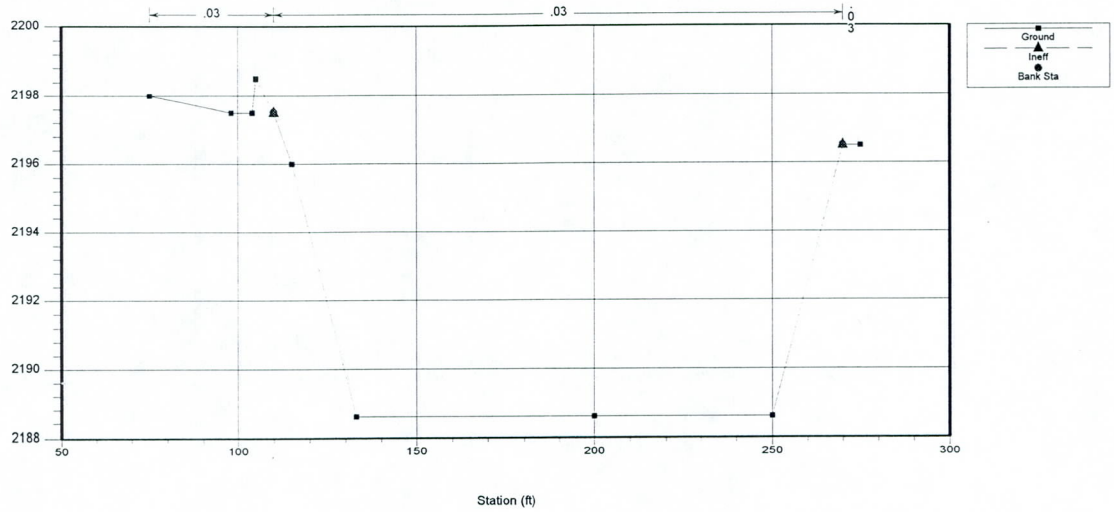

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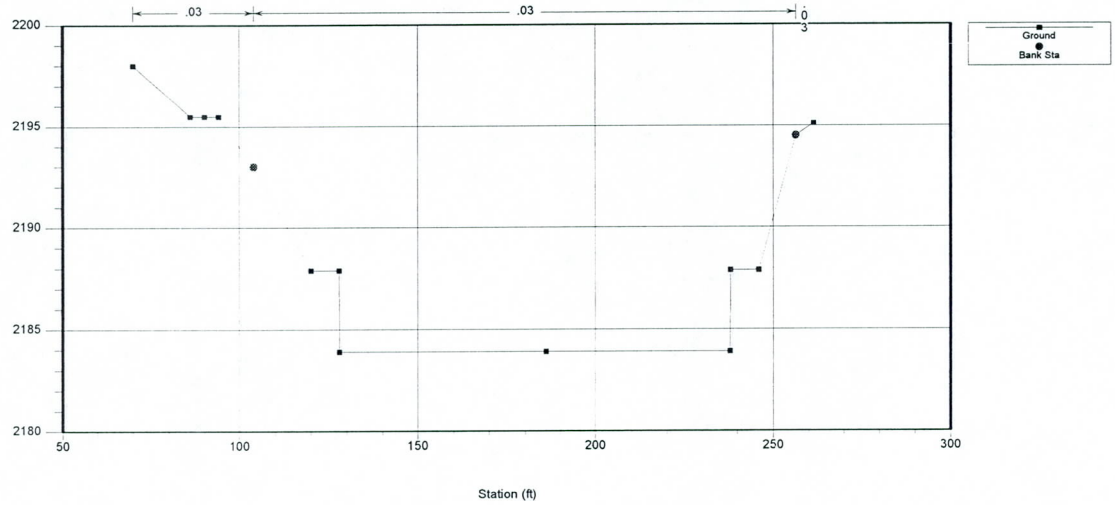

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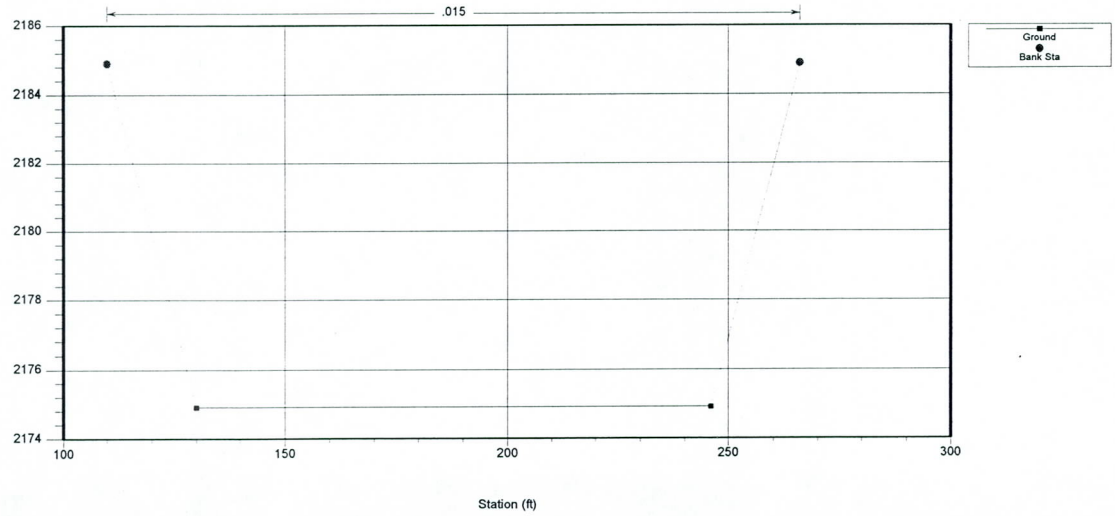

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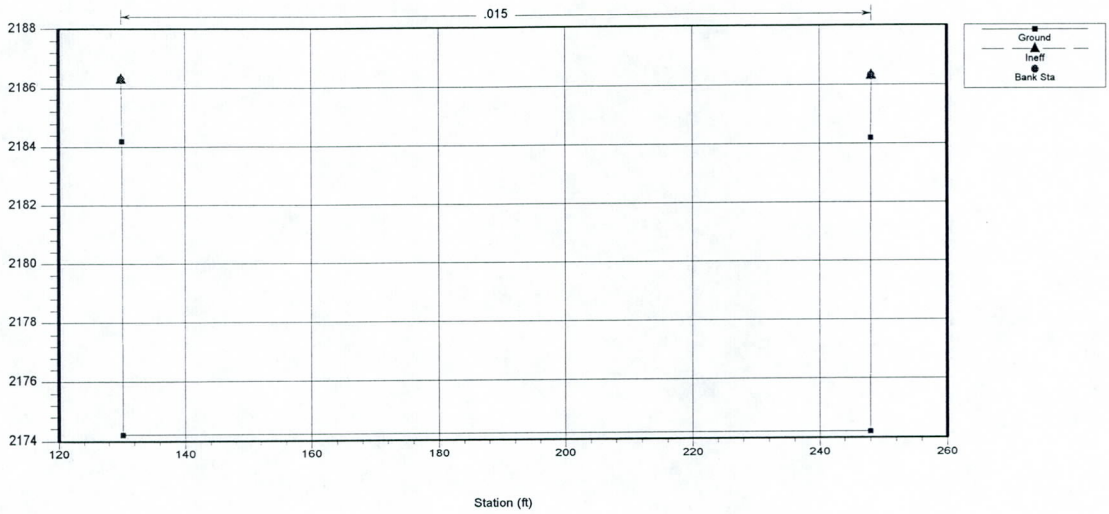

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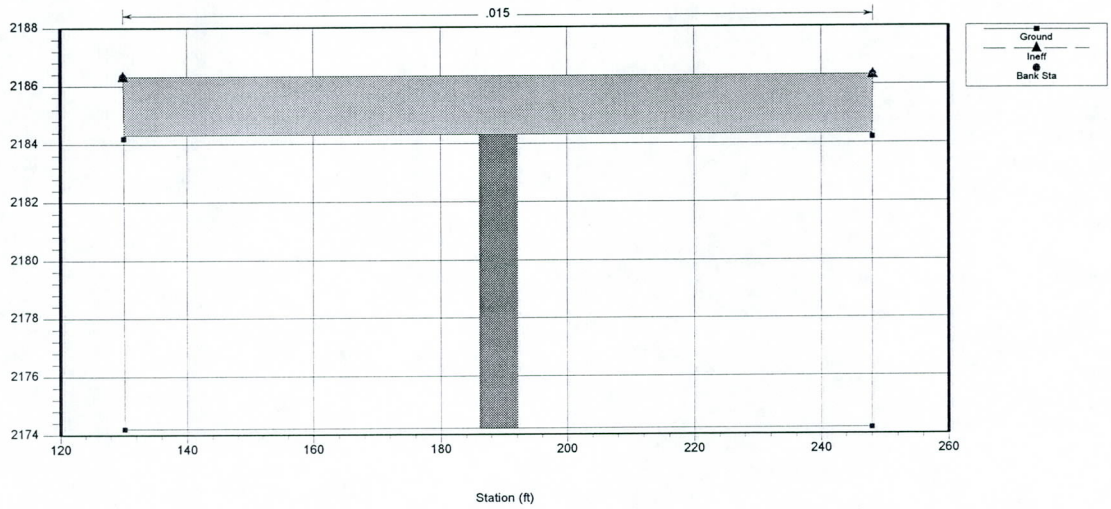

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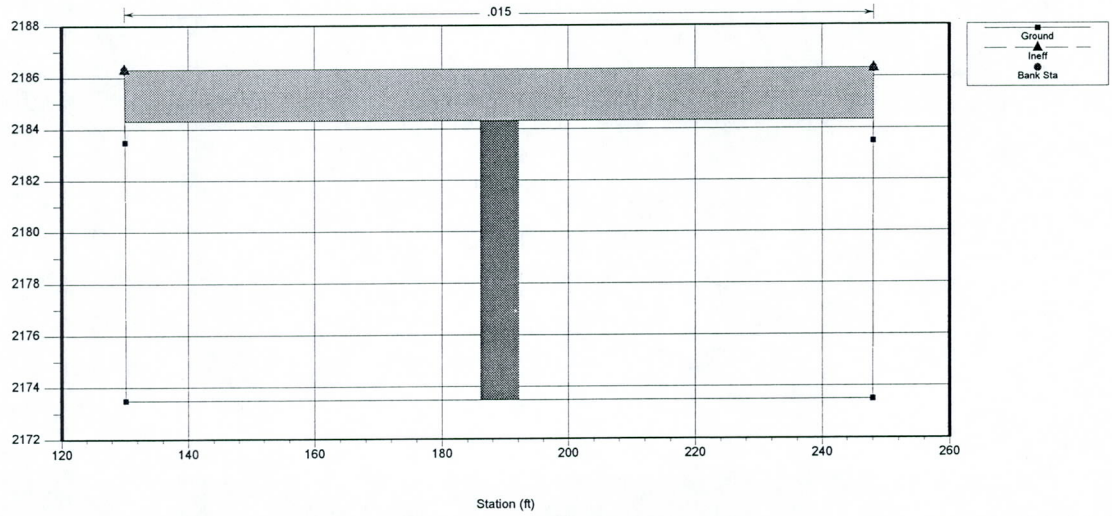

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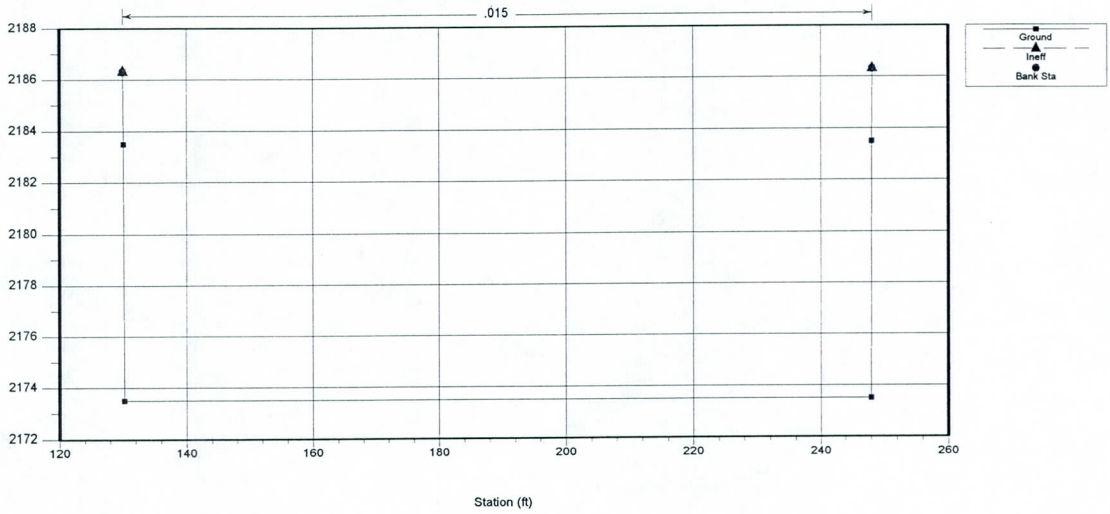

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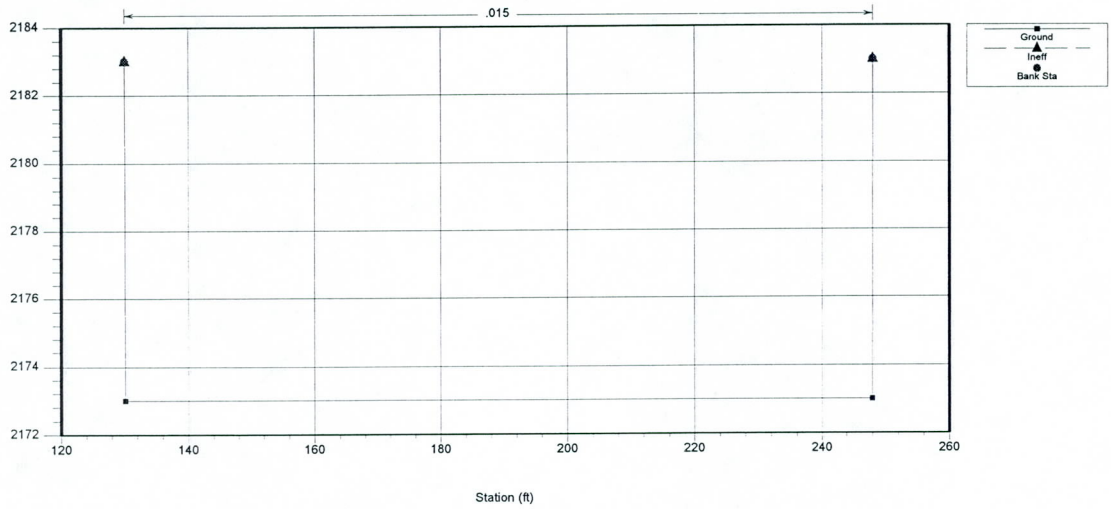

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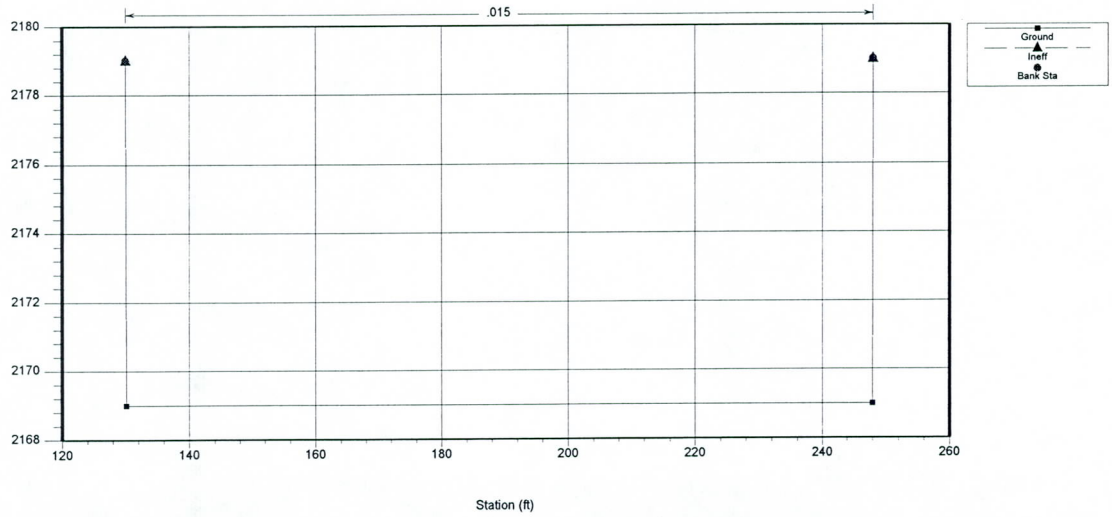

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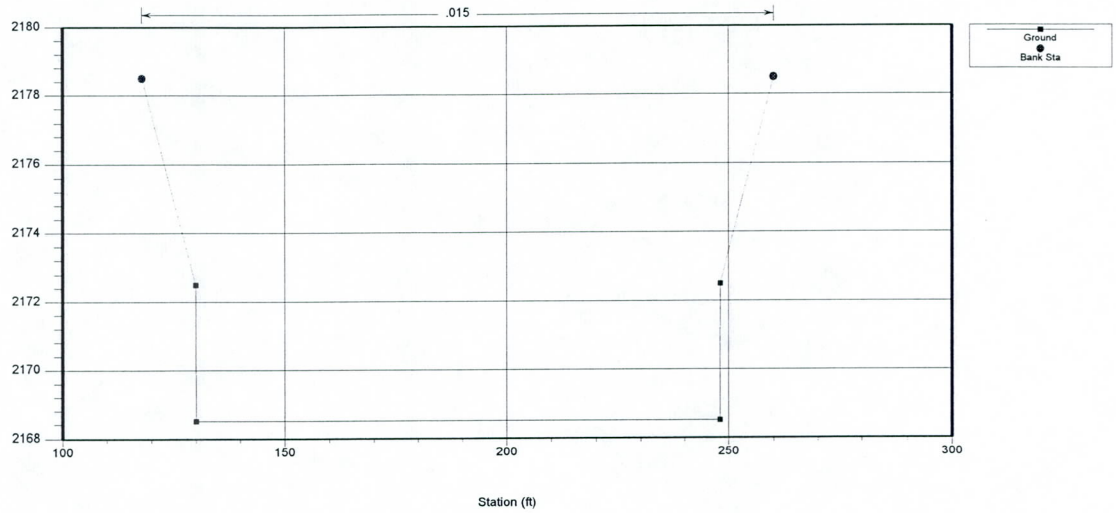

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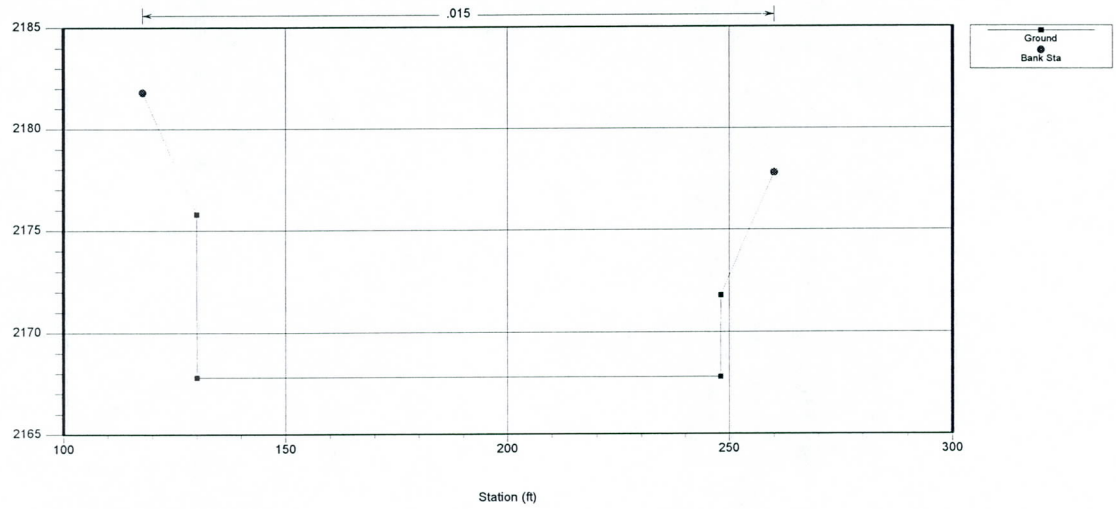

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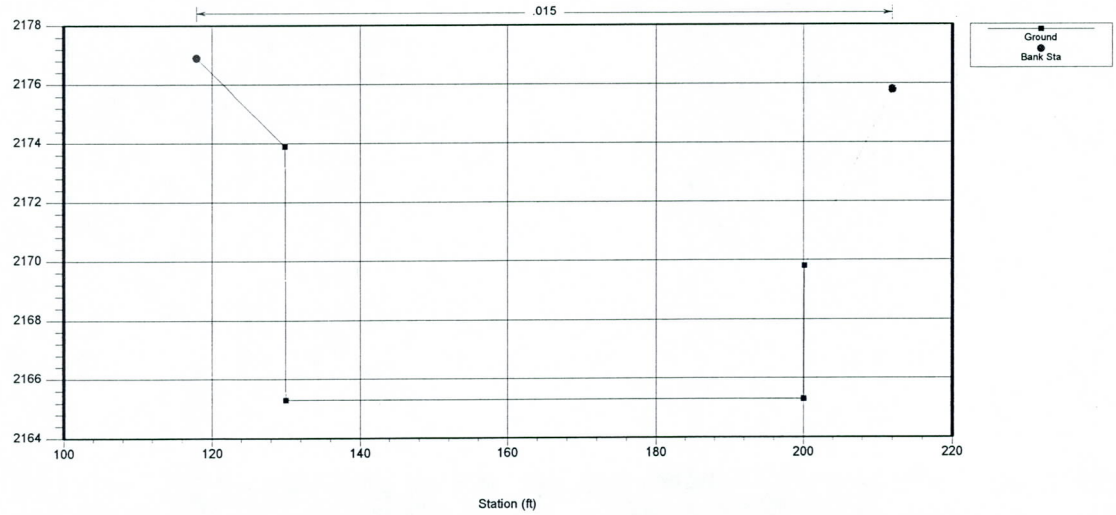

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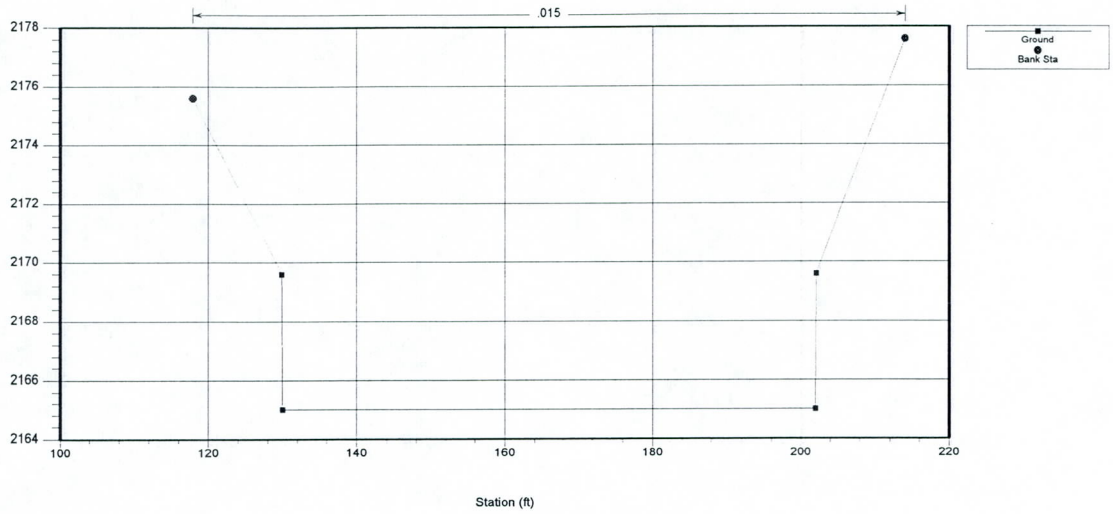

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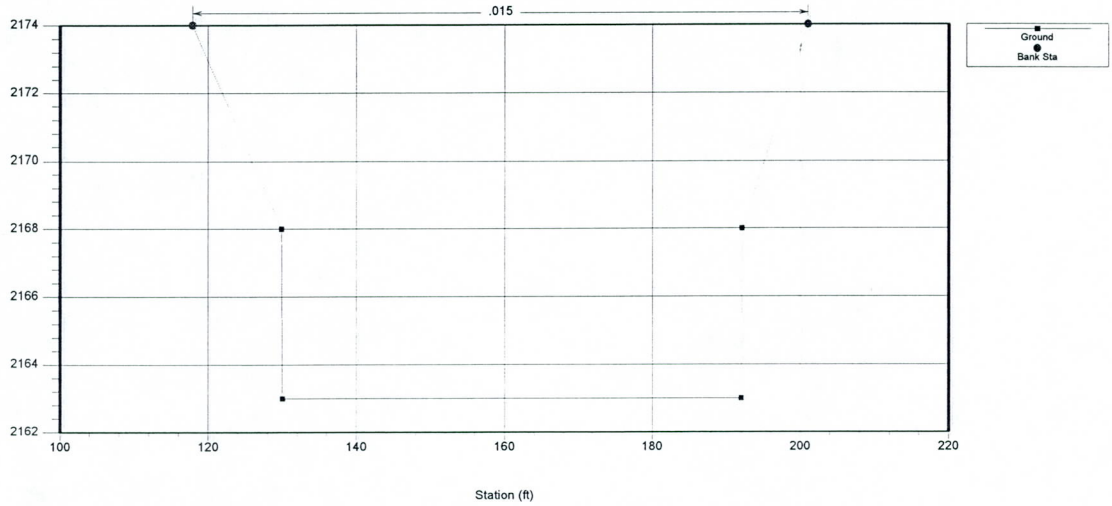

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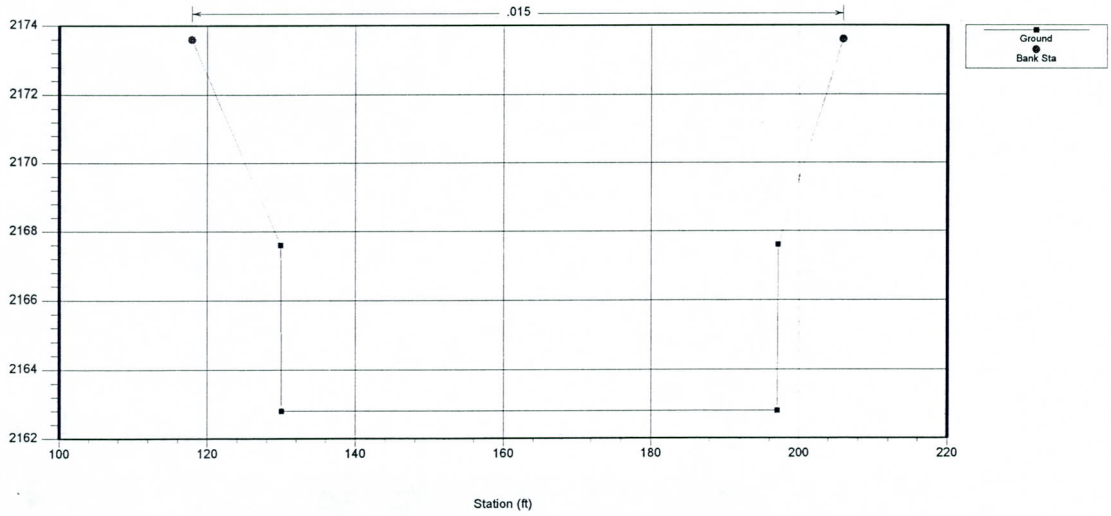

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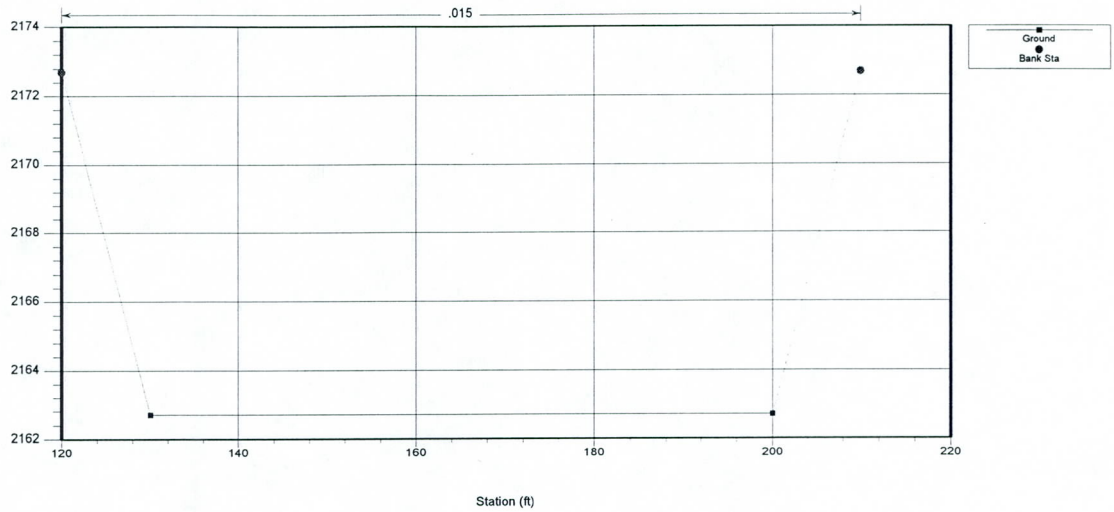

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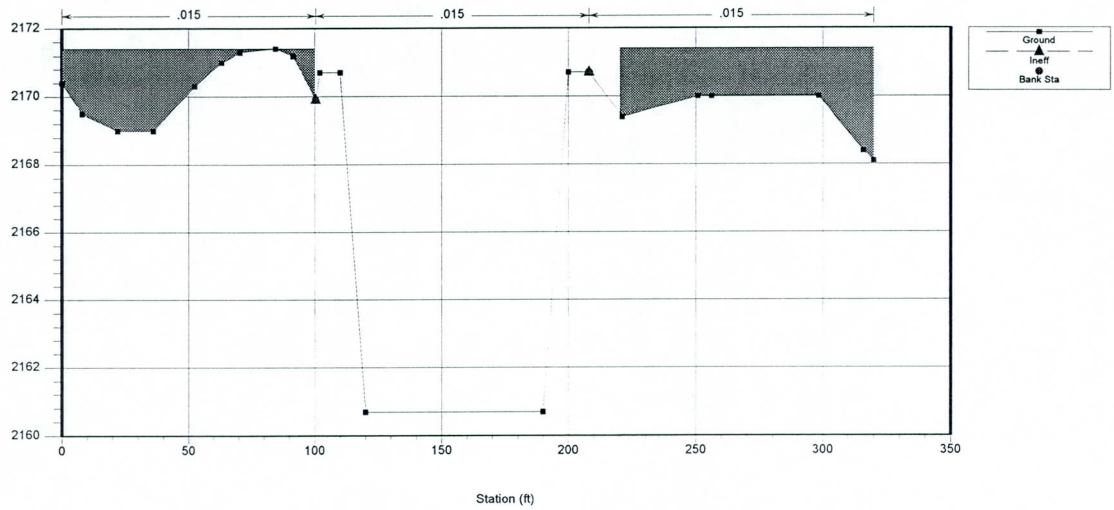

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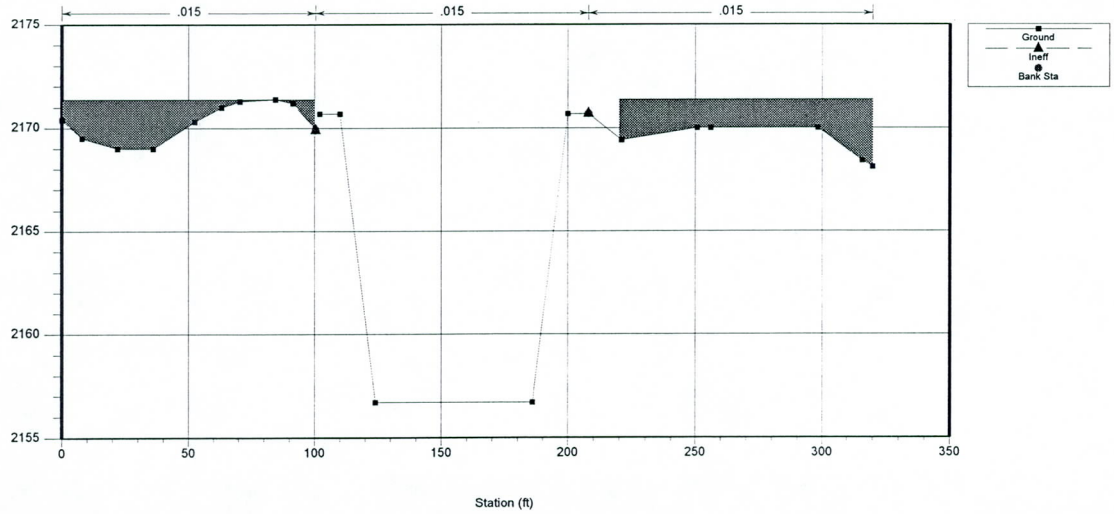

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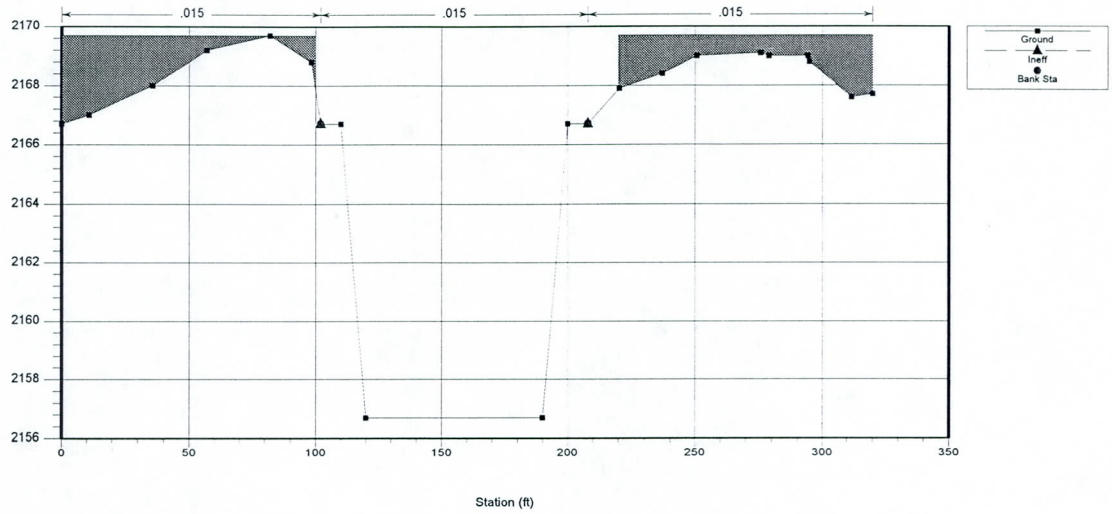

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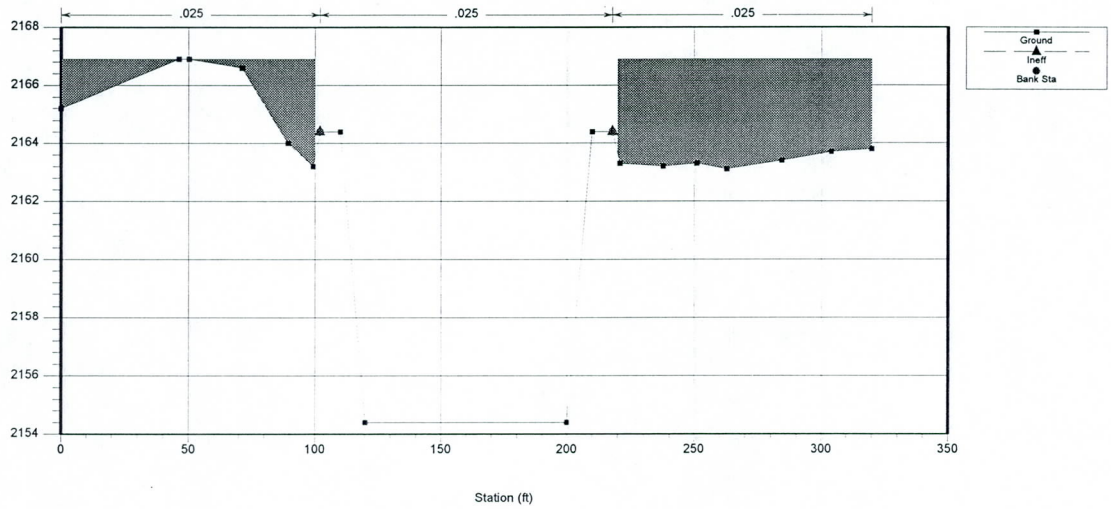

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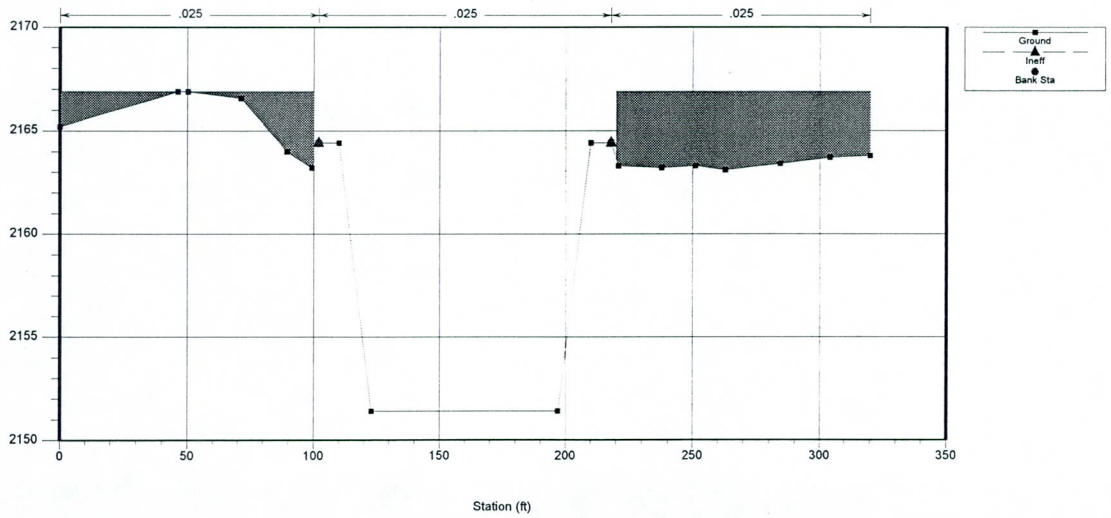
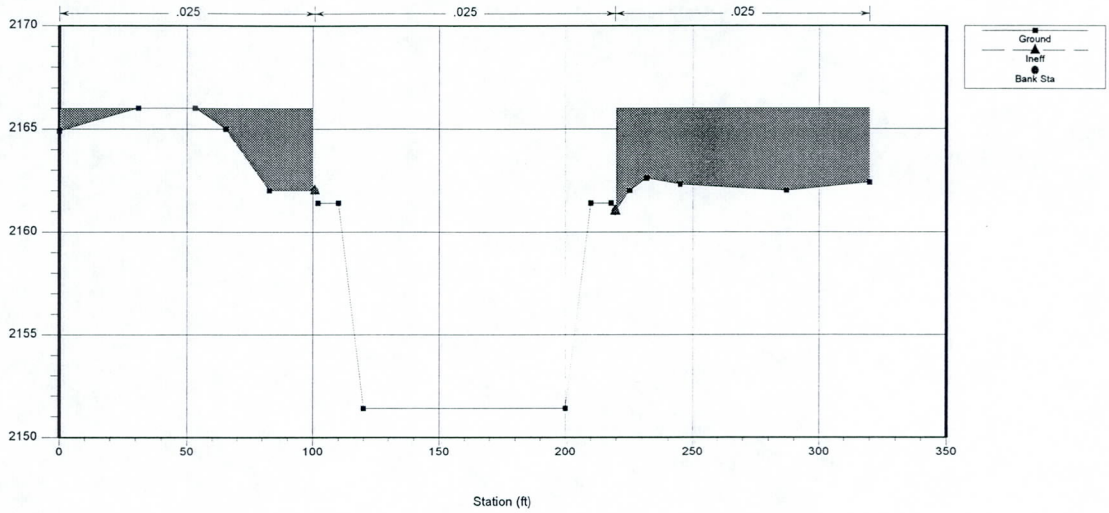


Reata Pass
Reach = 1 265.7



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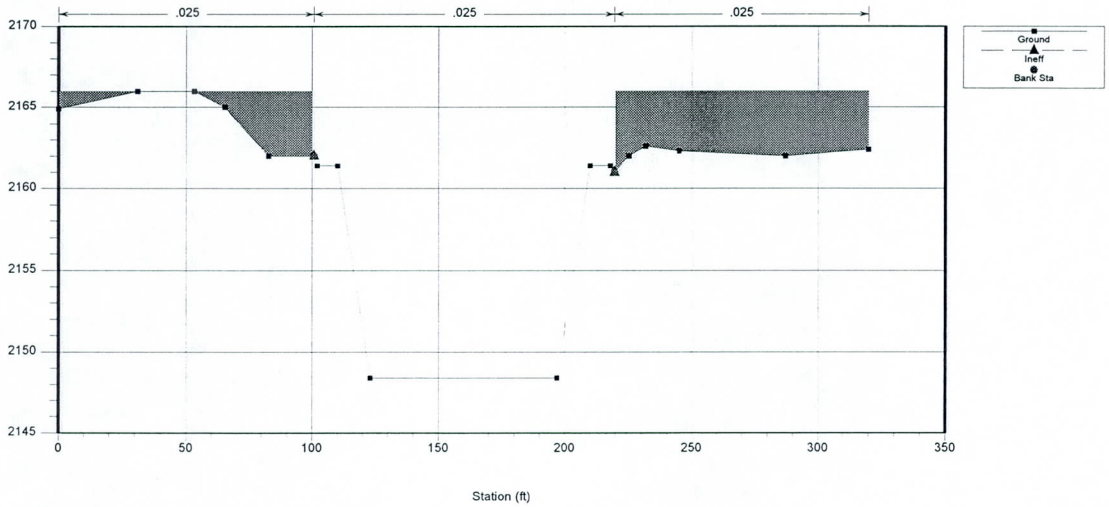
Reach = 1 265.67



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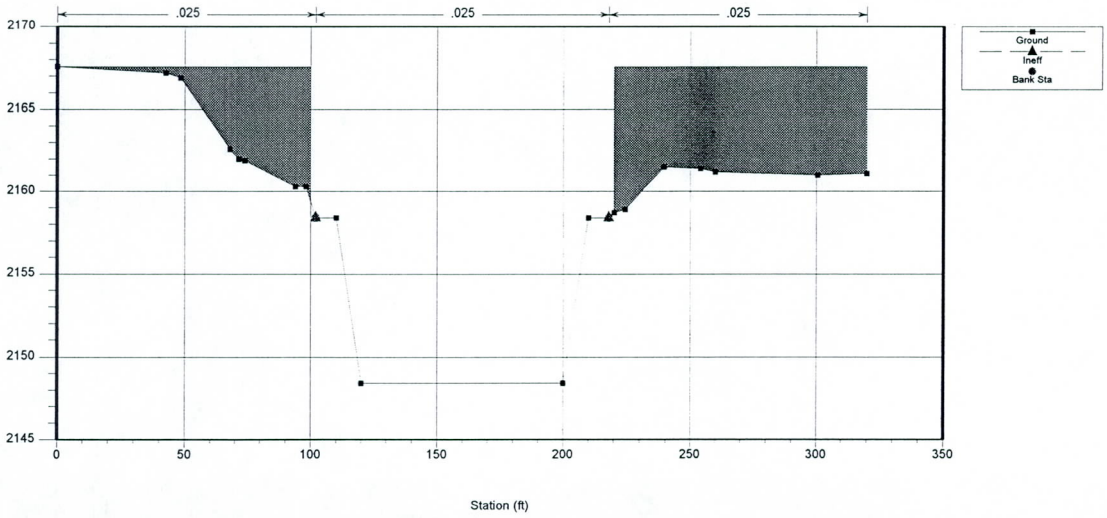
Reach = 1 265.2



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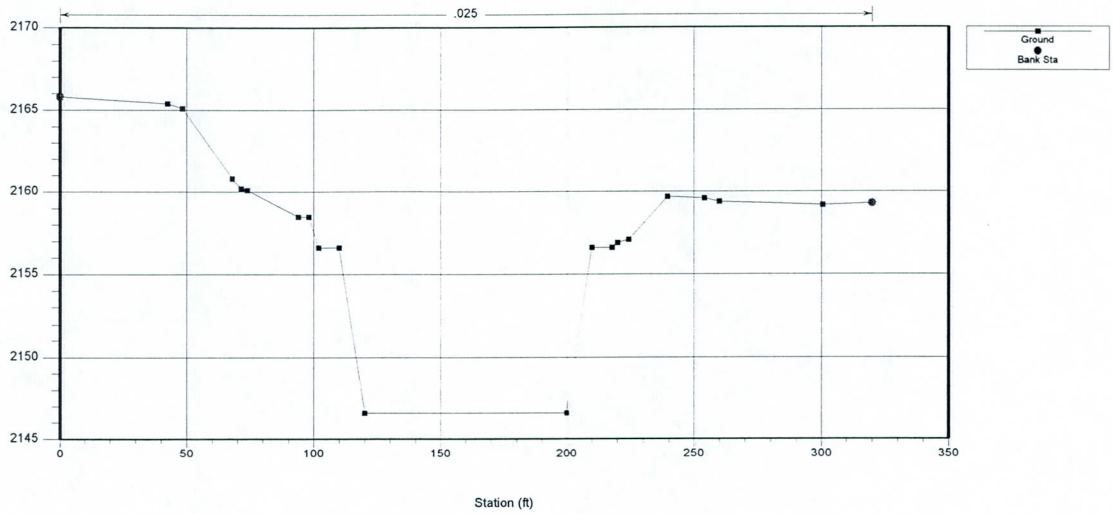
Reach = 1 264.2



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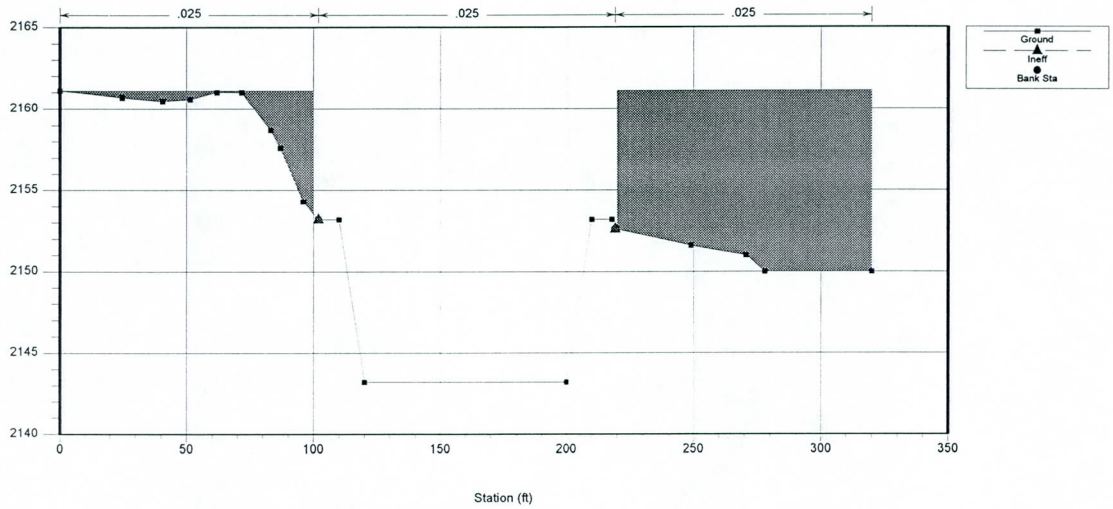
Reach = 1 262.3



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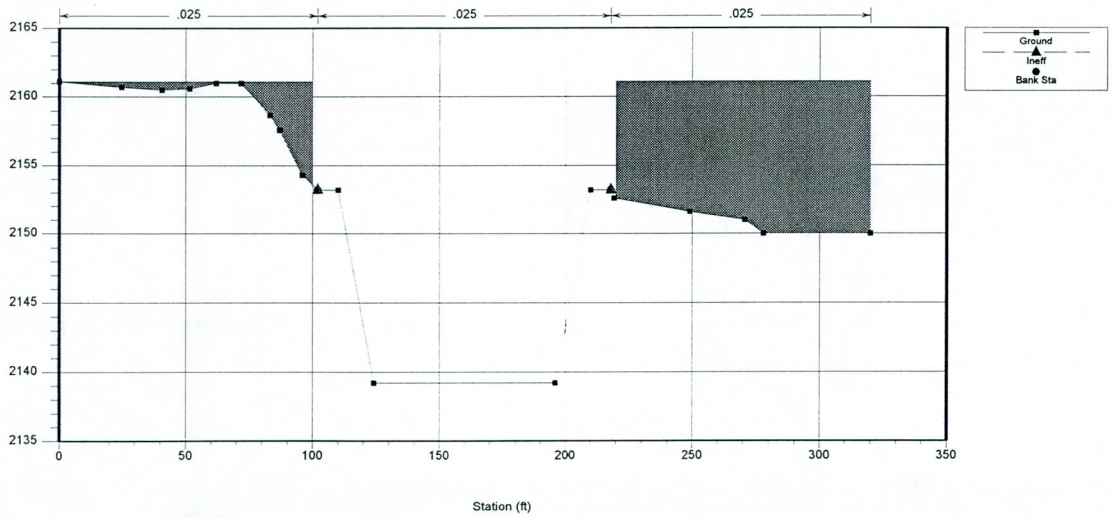
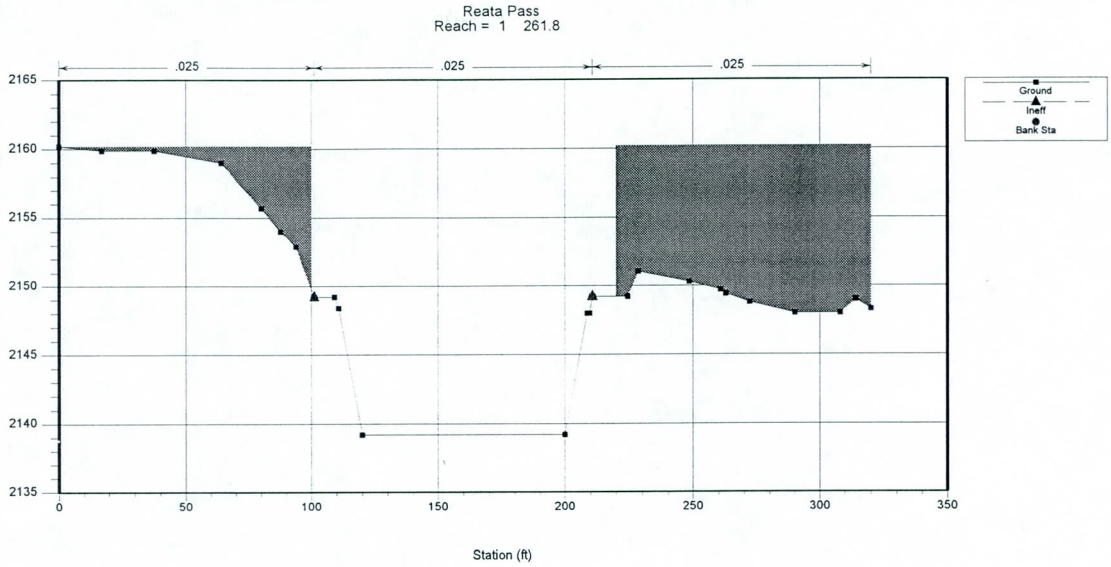
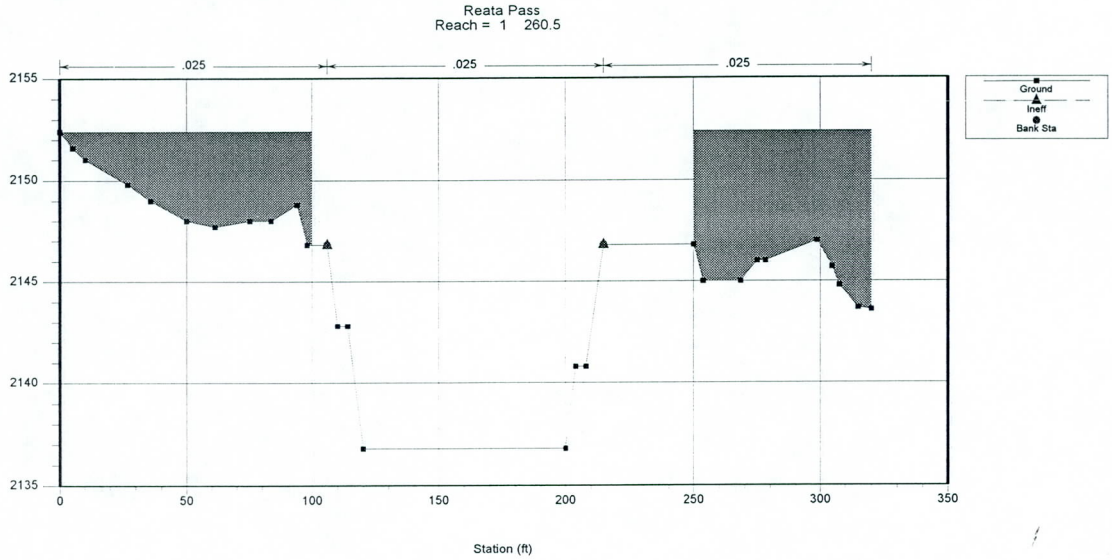
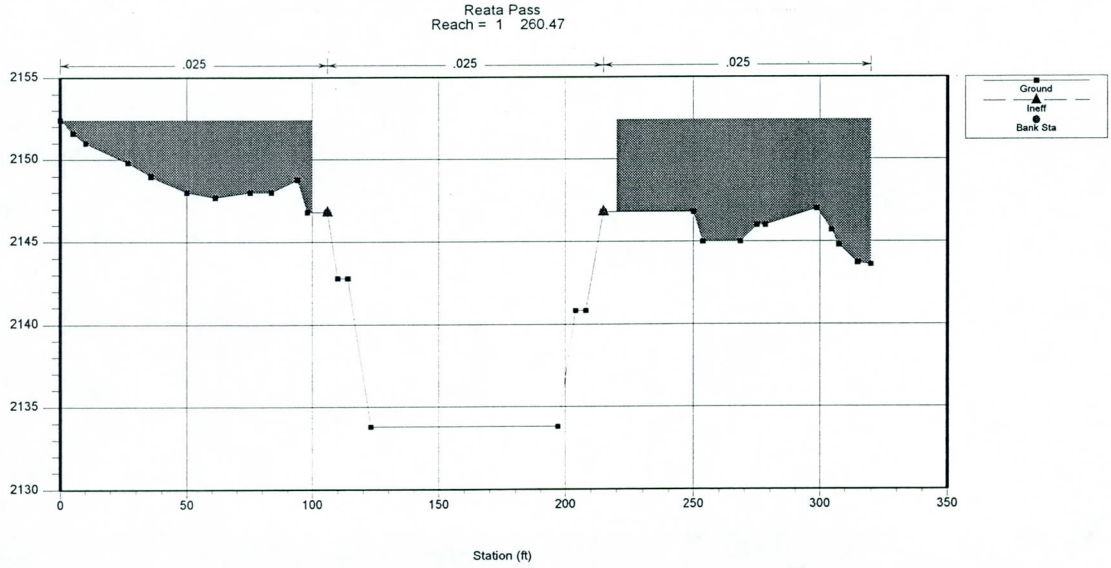
Reach = 1 262.26

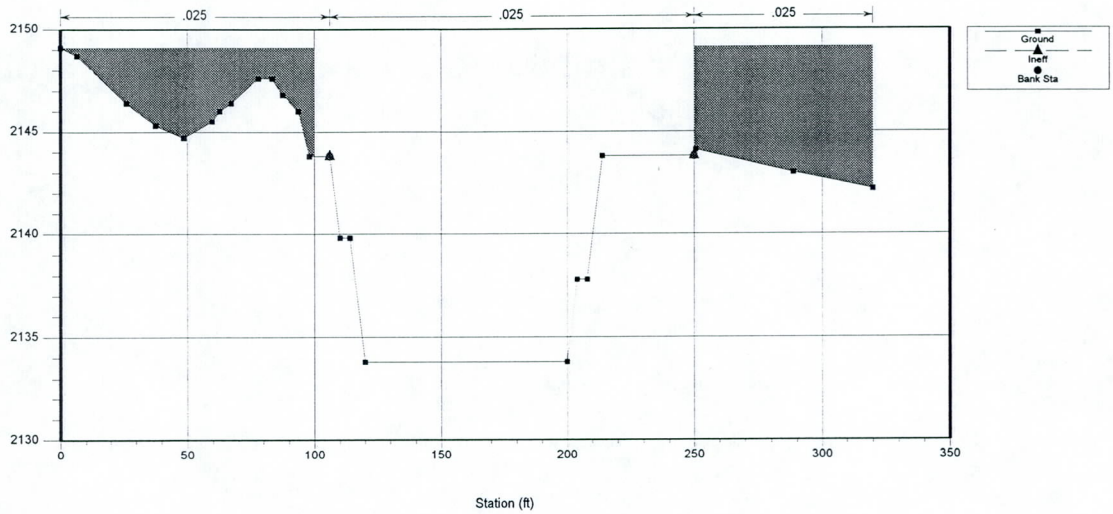



Reata Pass
Reach = 1 261.8
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Reata Pass
Reach = 1 260.5
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Reata Pass
Reach = 1 260.47
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

Reata Pass
Reach = 1 260



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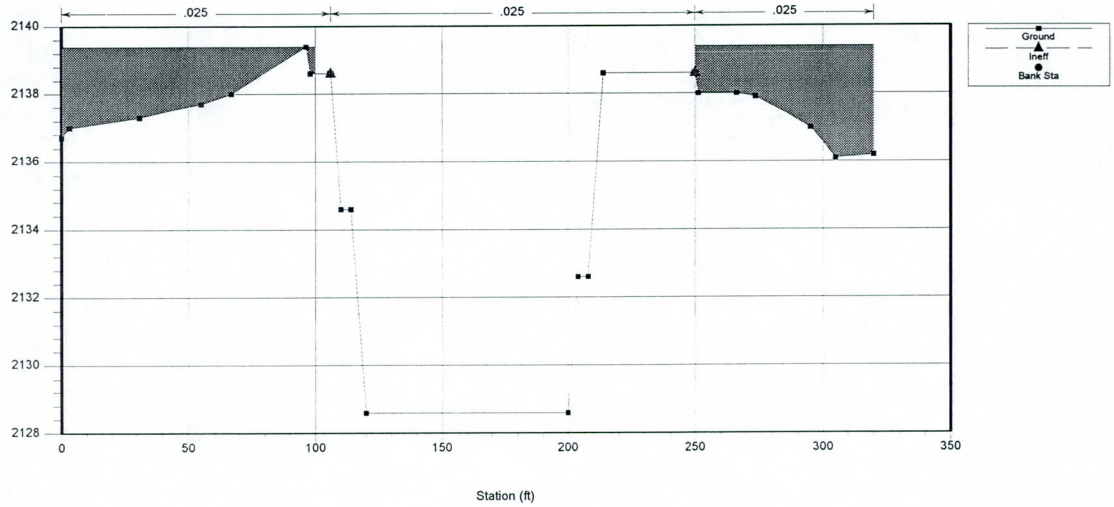
Reach = 1 257.1



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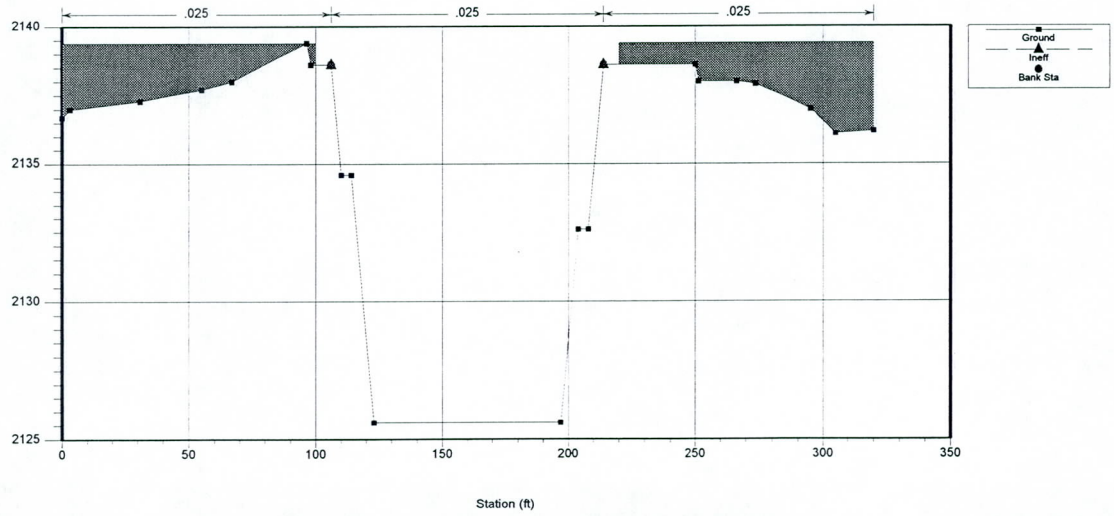

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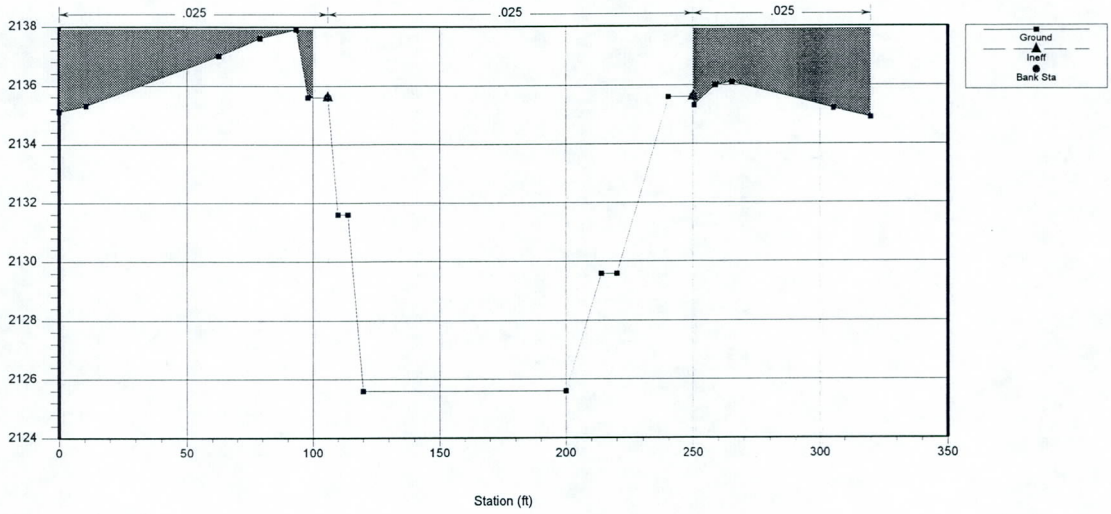
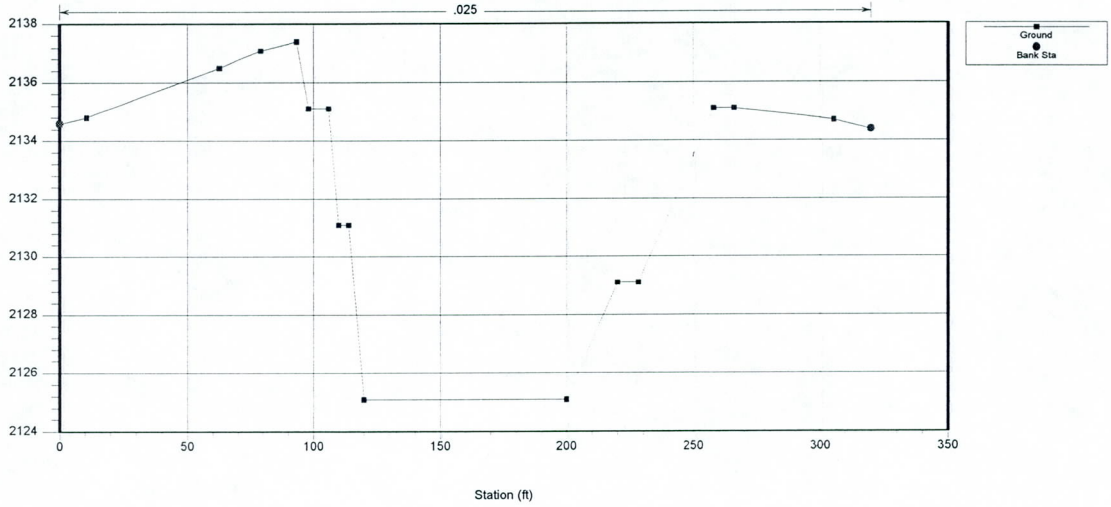
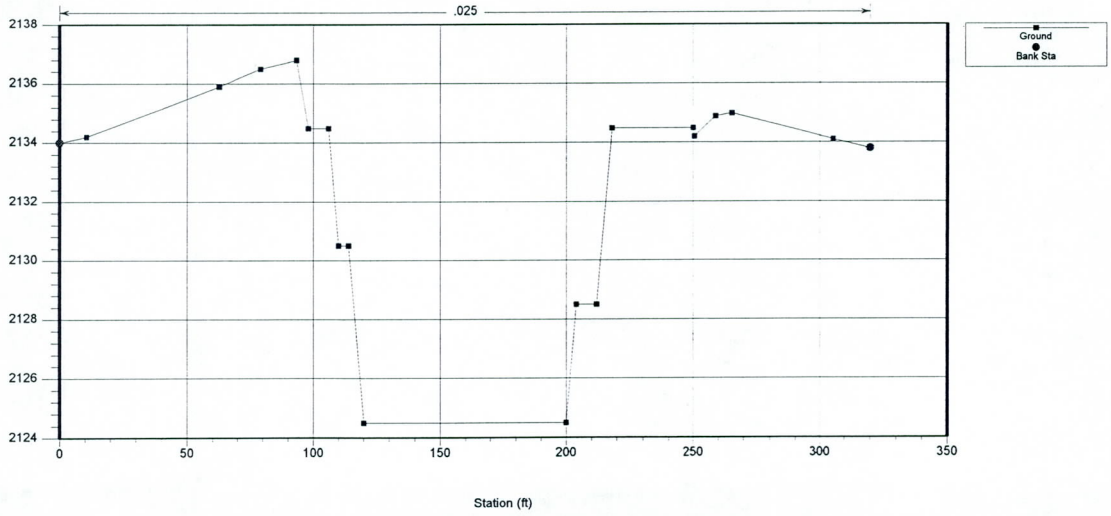


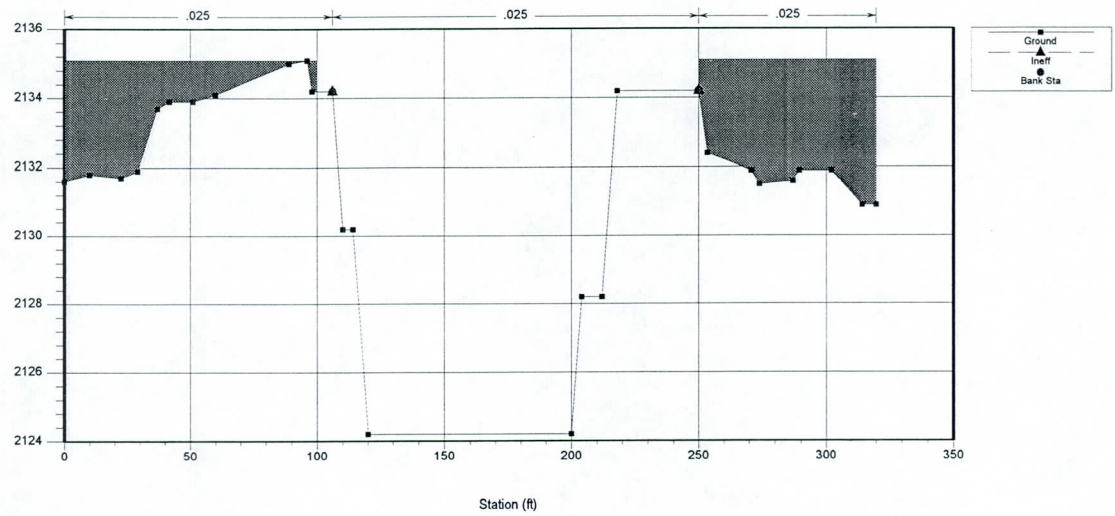
Reata Pass
Reach = 1 256.33



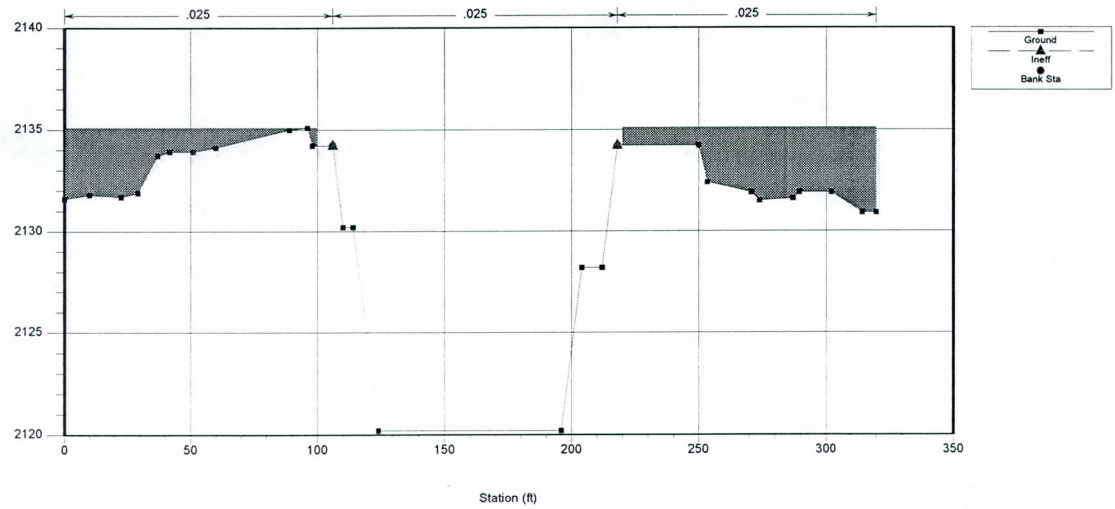
Reata Pass
Reach = 1 256



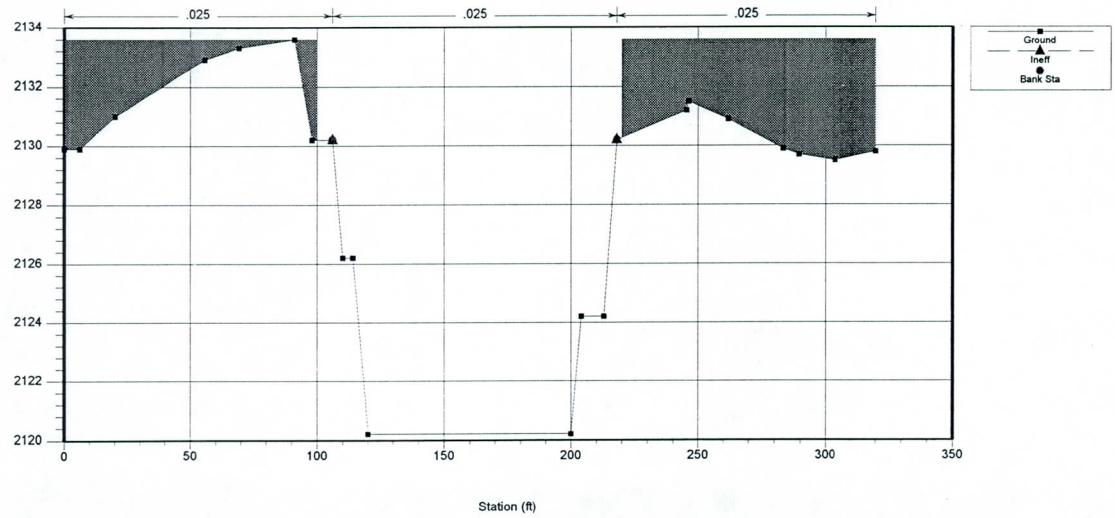
Reata Pass
Reach = 1 255.8



Reata Pass
Reach = 1 255.76



Reata Pass
Reach = 1 255.3



Reata Pass
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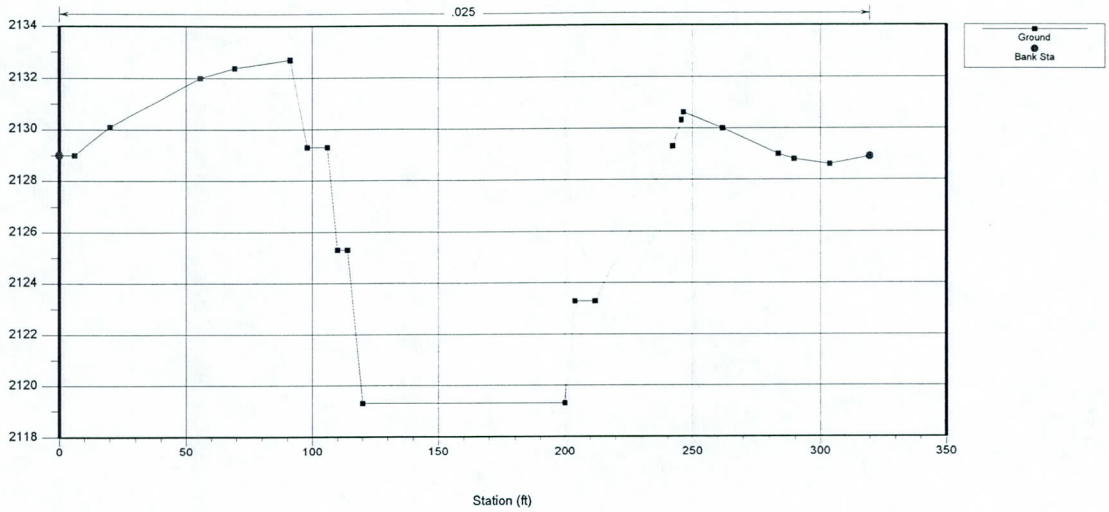
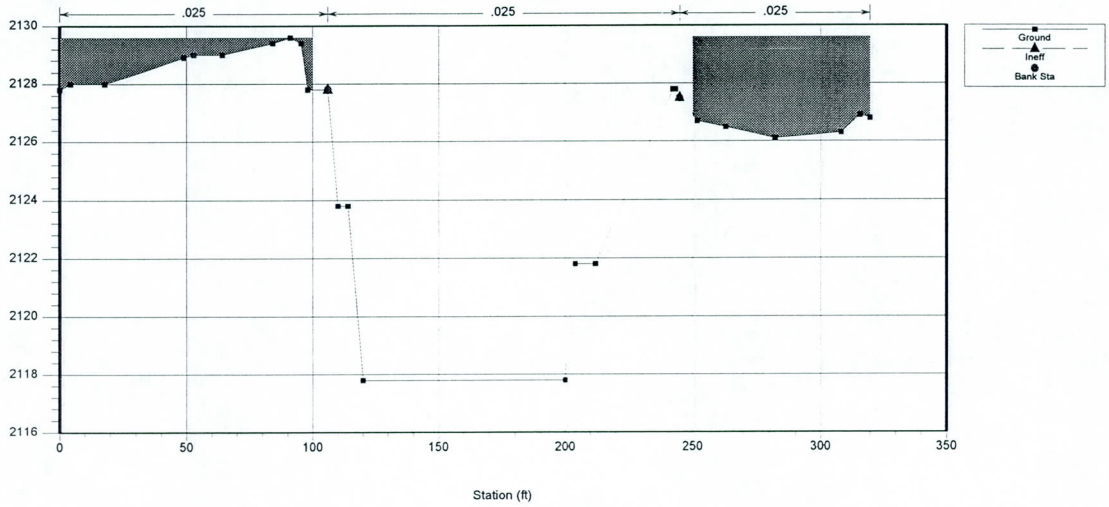
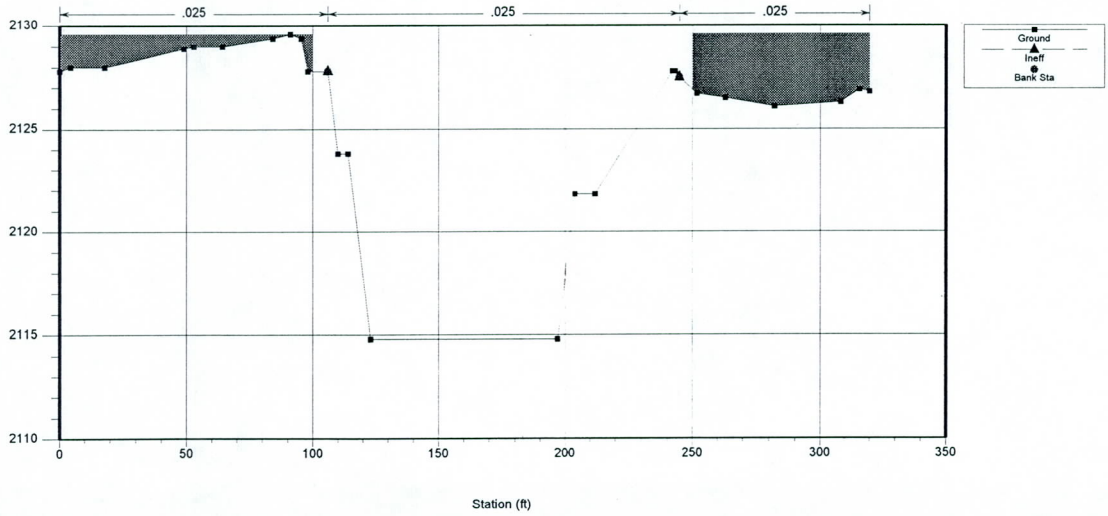


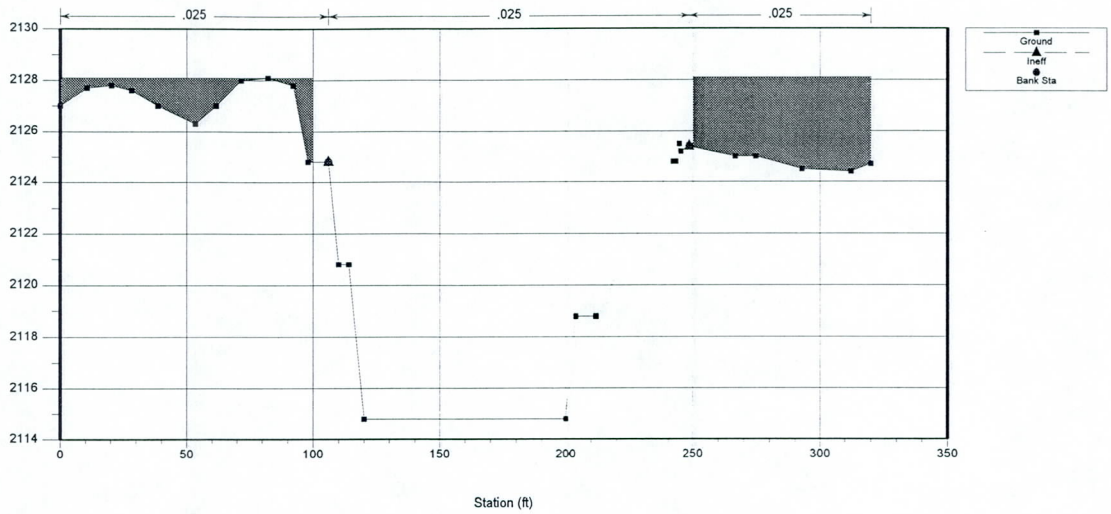
Reata Pass
Reach = 1 254



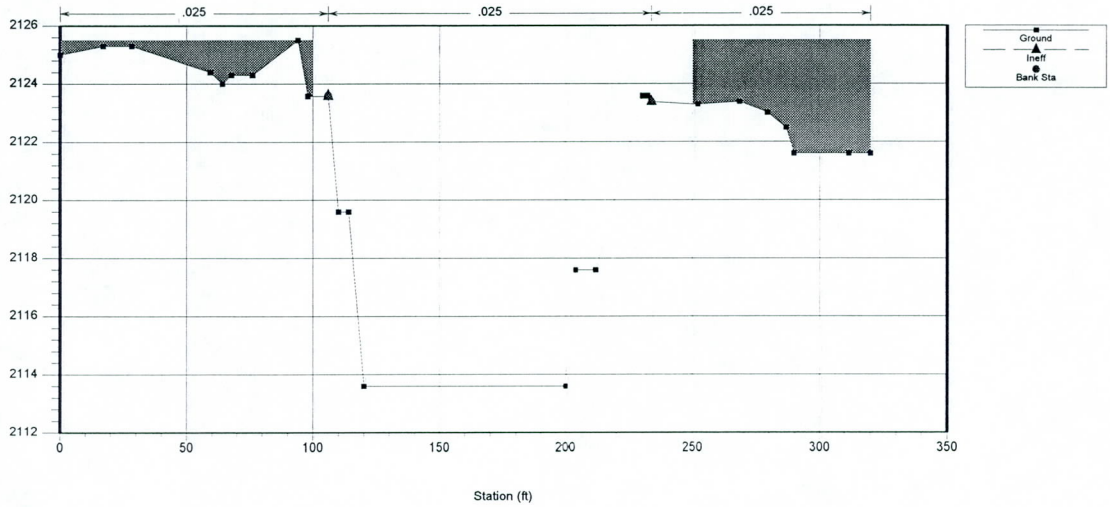
Reata Pass
Reach = 1 253.97



Reata Pass
Reach = 1 253.5



Reata Pass
Reach = 1 252.8



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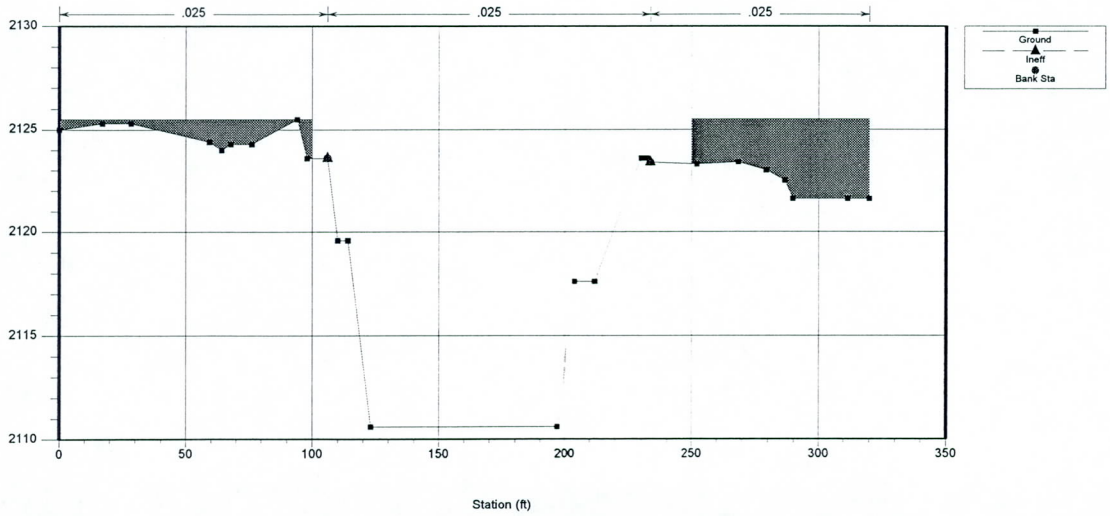
Reach = 1 252.77



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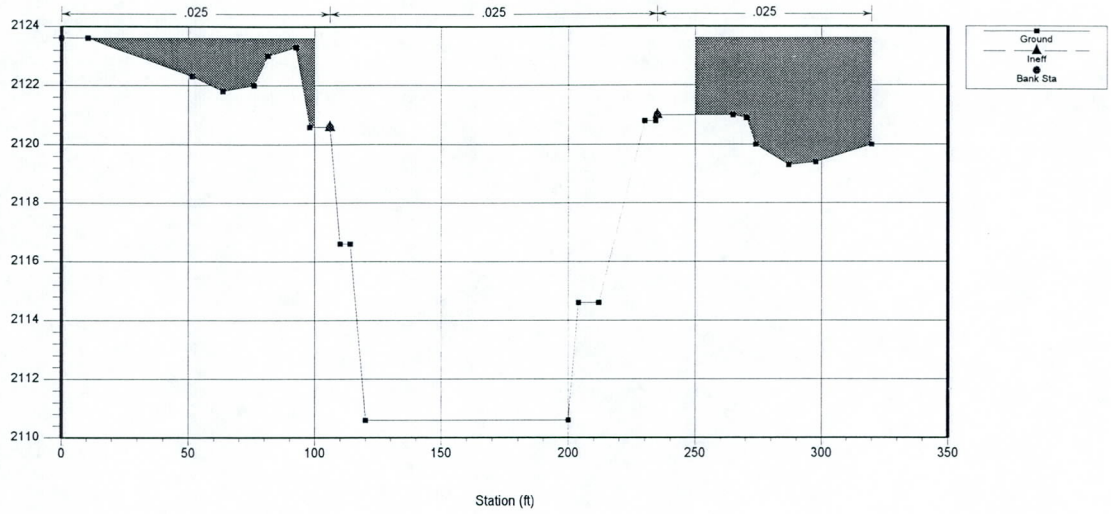
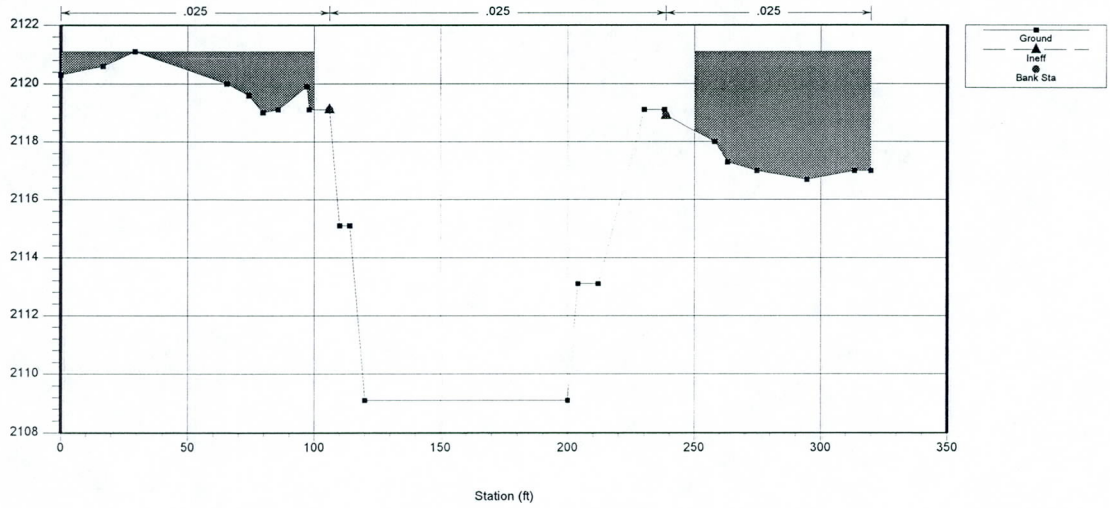
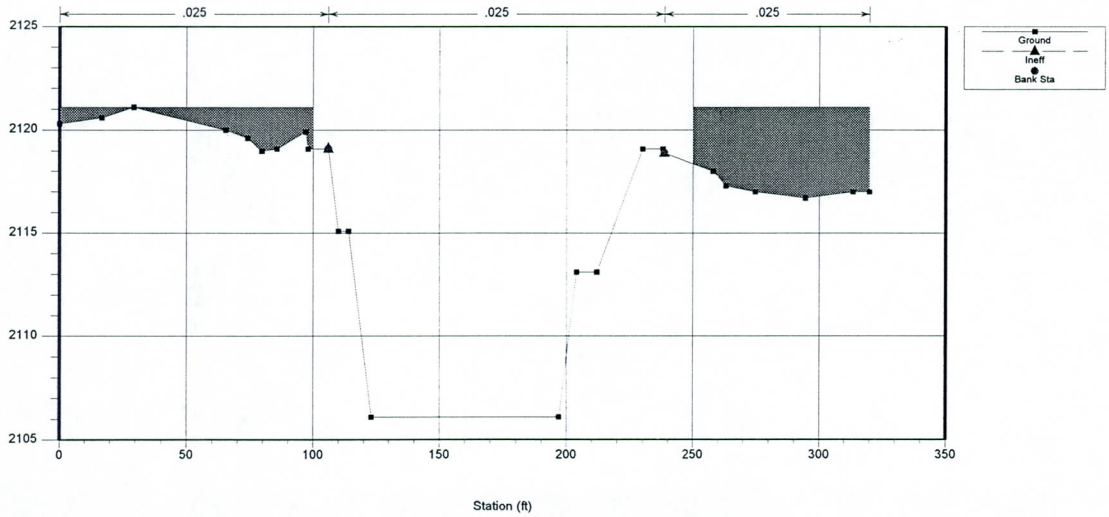
Reach = 1 252.3



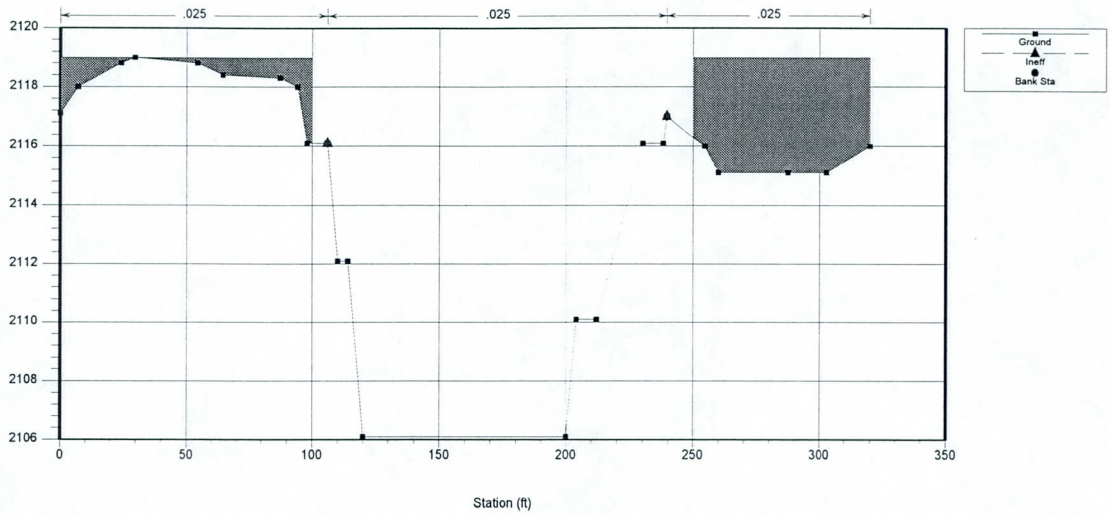
Reata Pass
Reach = 1 251.5



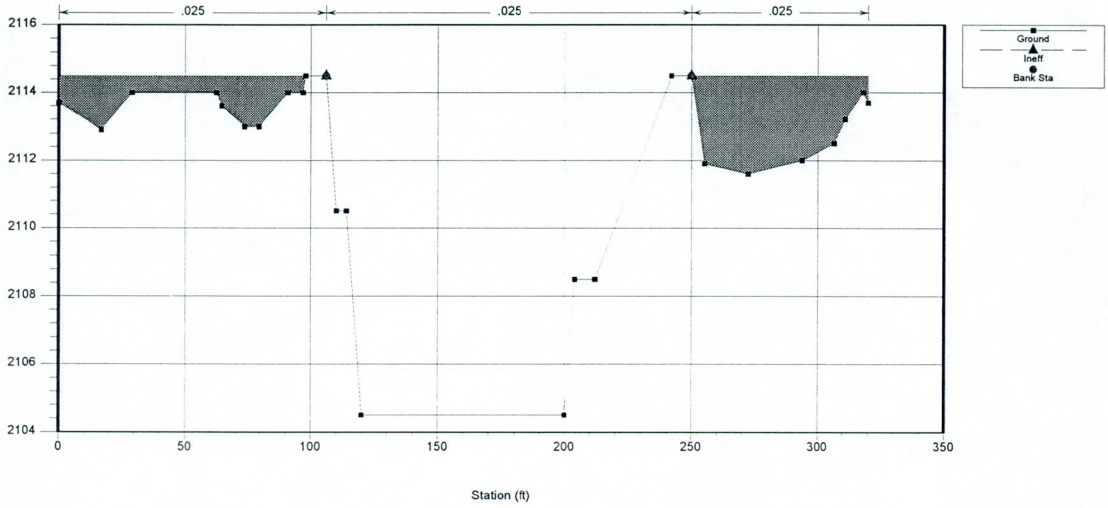
Reata Pass
Reach = 1 251.47



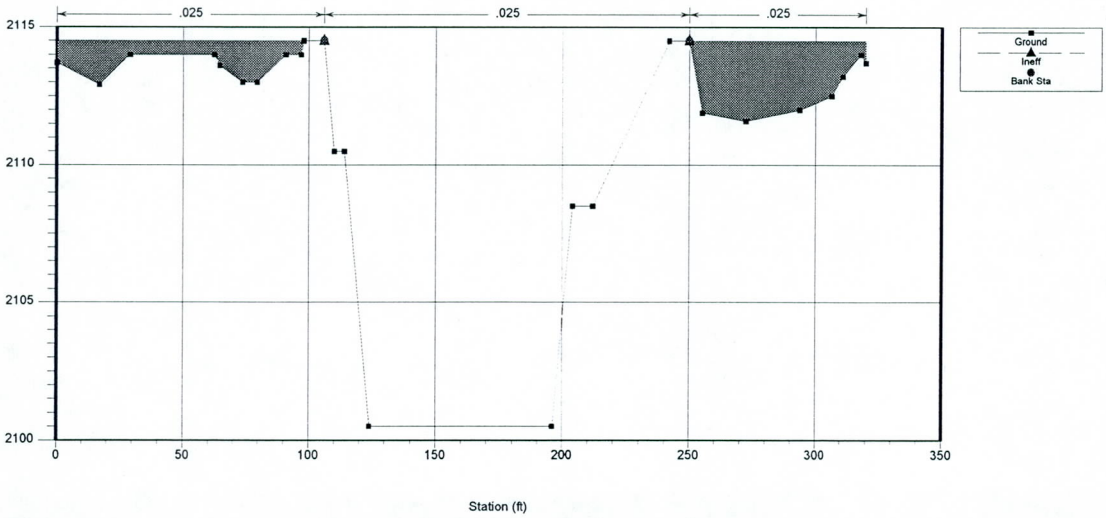
Reata Pass
Reach = 1 251



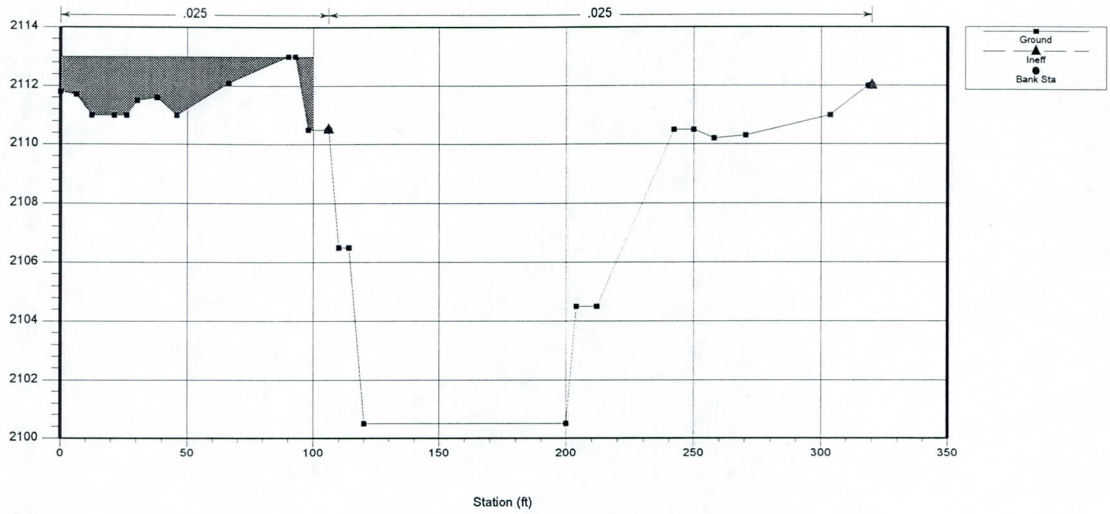
Reata Pass
Reach = 1 250.1



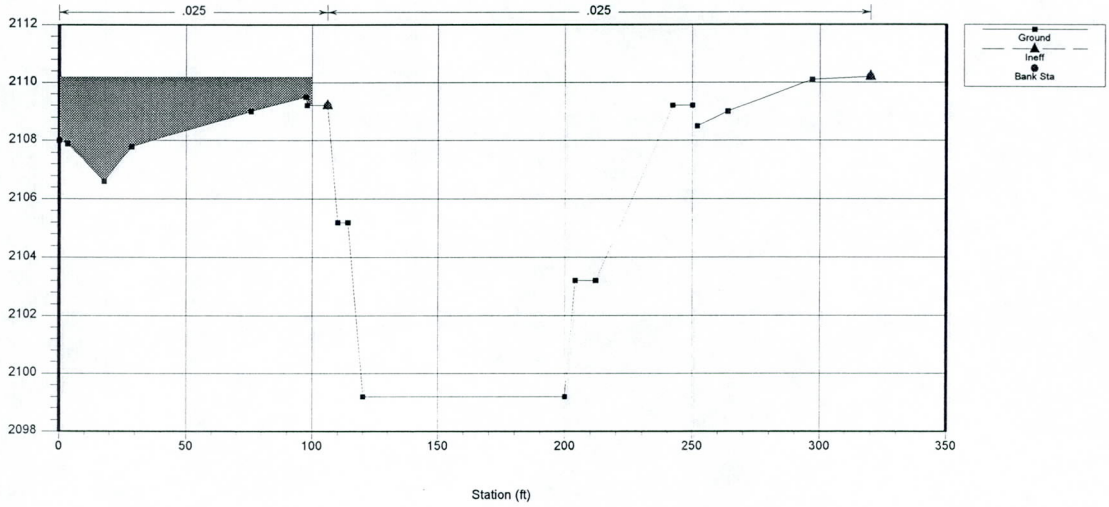
Reata Pass
Reach = 1 250.06



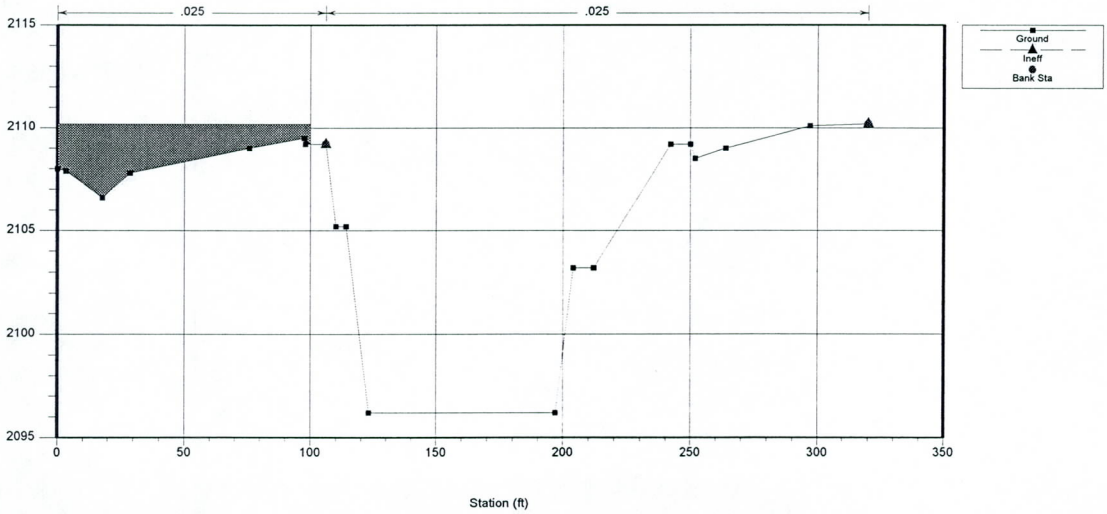
Reata Pass
Reach = 1 249.6



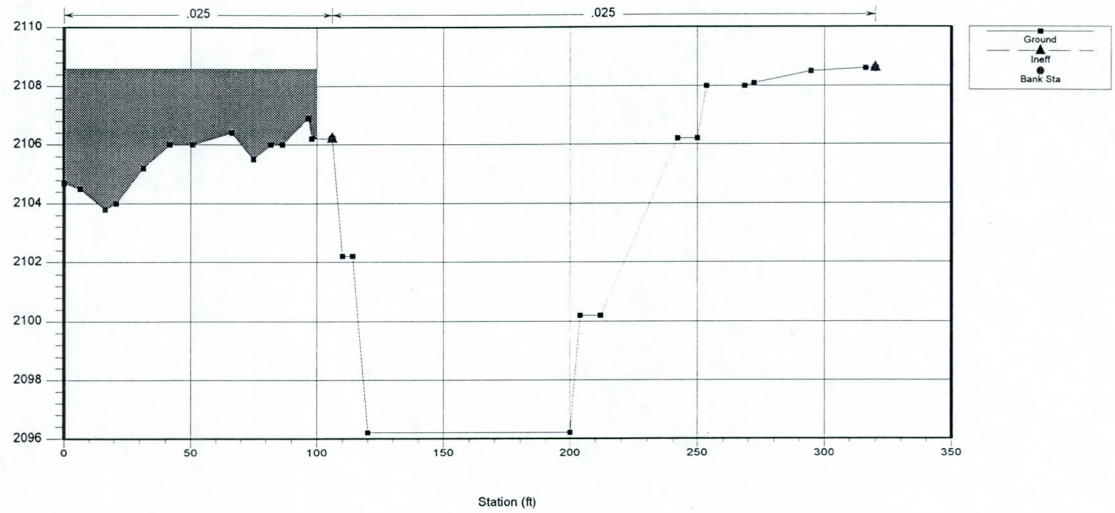
Reata Pass
Reach = 1 248.9



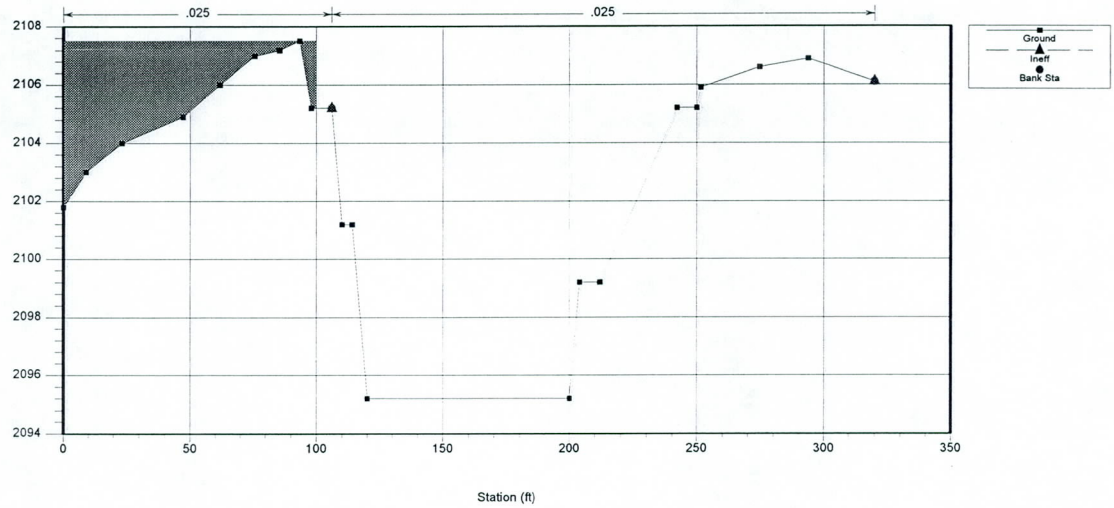
Reata Pass
Reach = 1 248.87



Reata Pass
Reach = 1 248.4



Reata Pass
Reach = 1 247.8



Reata Pass
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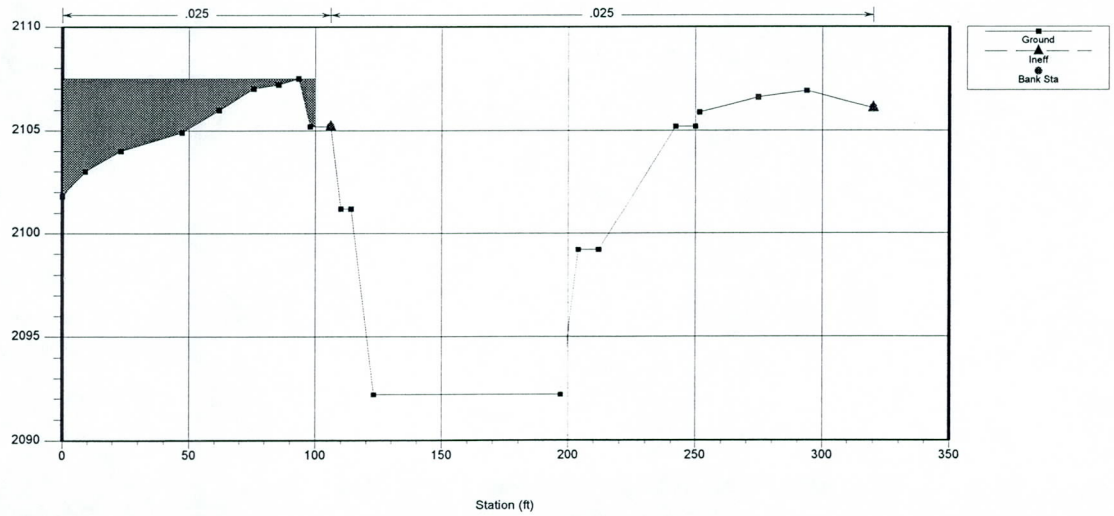
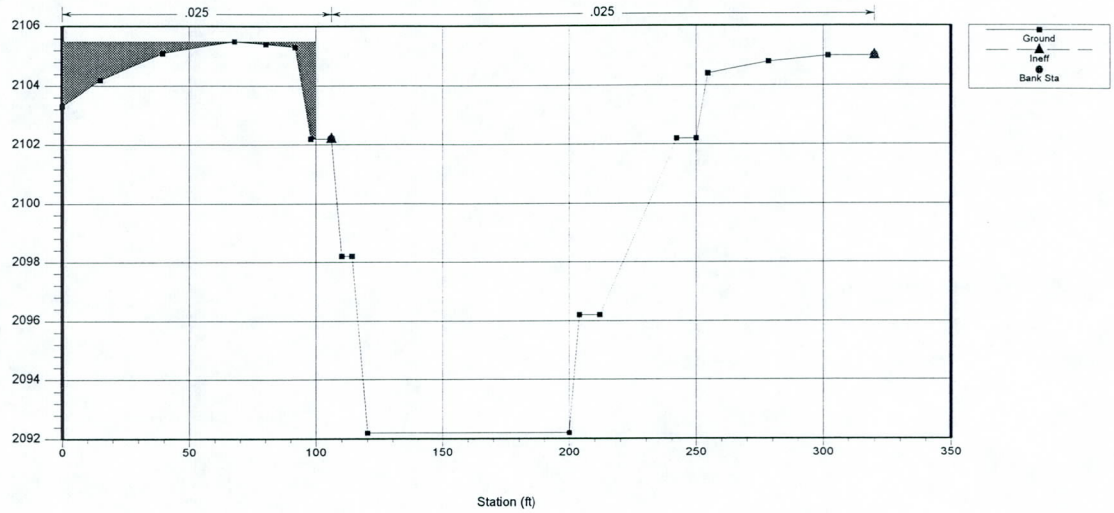
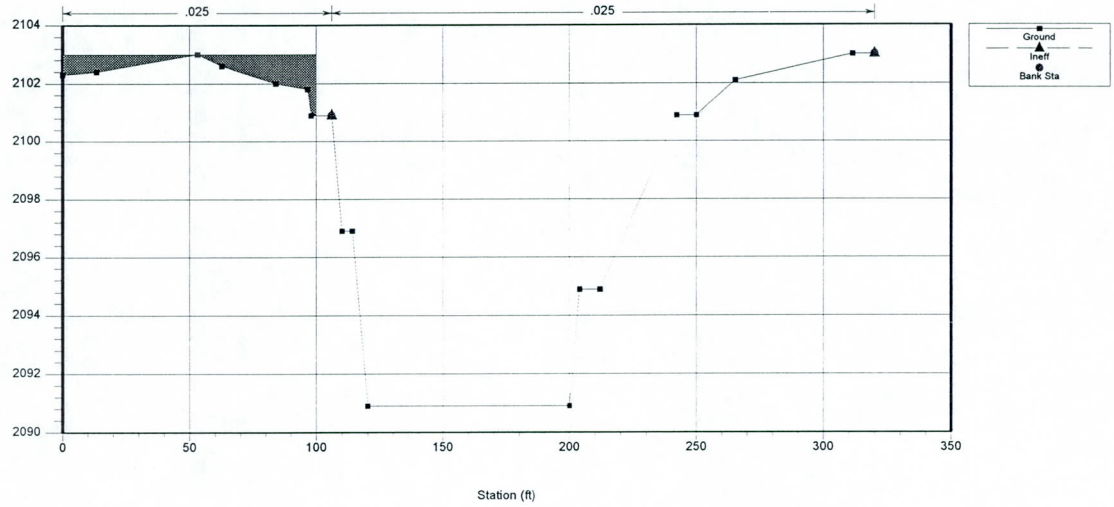


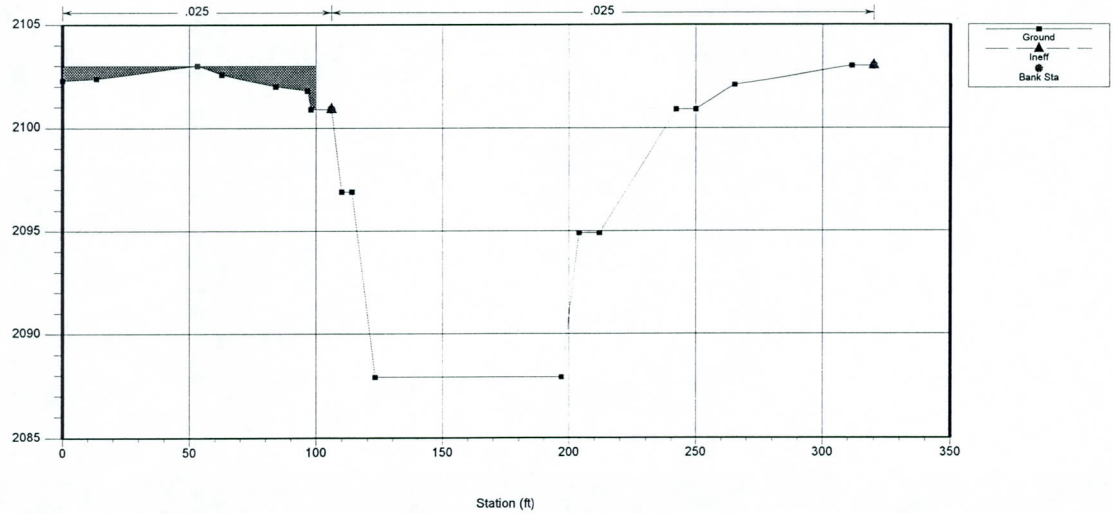
Reata Pass
Reach = 1 247.3



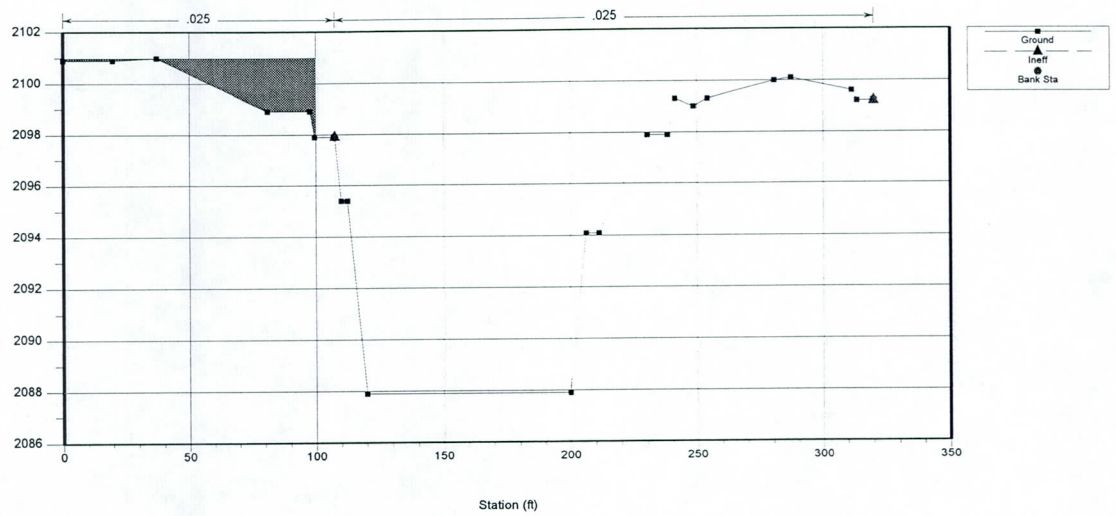
Reata Pass
Reach = 1 246.6



Reata Pass
Reach = 1 246.57



Reata Pass
Reach = 1 246.1



Reata Pass
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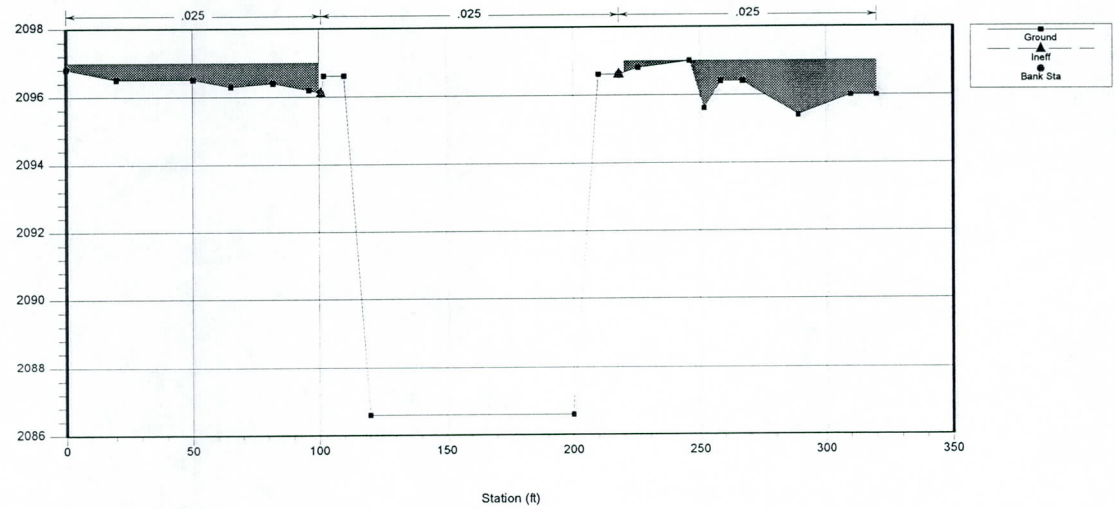
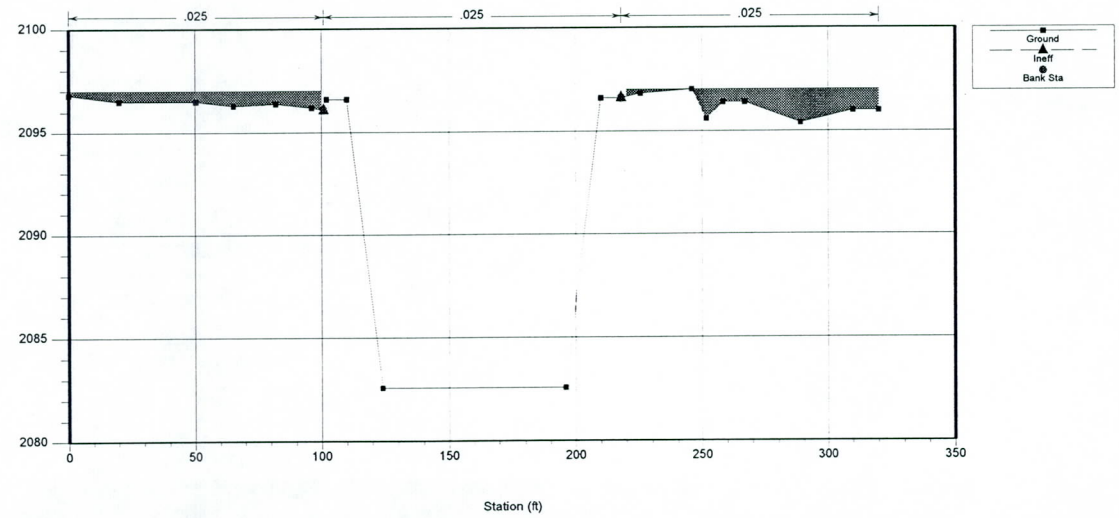
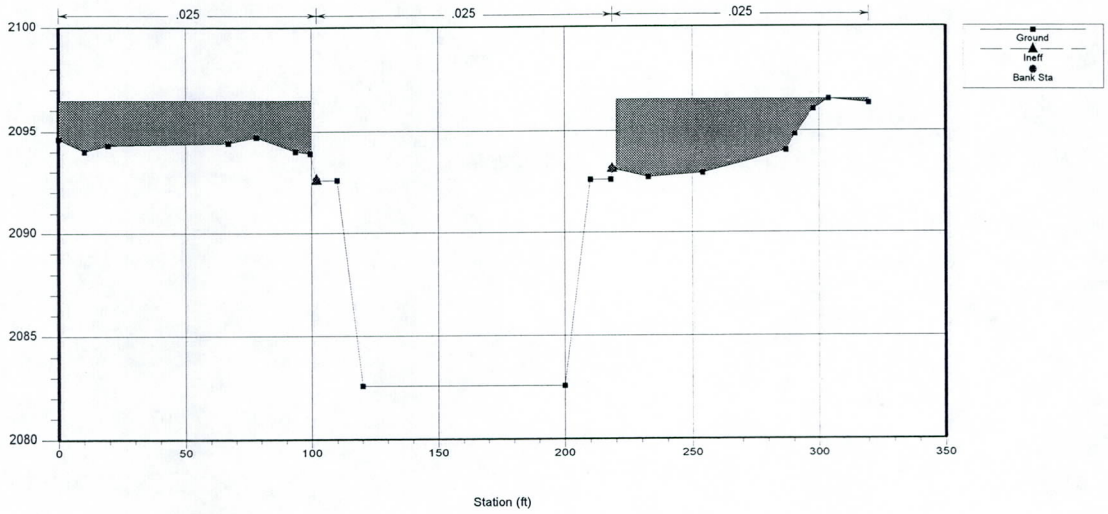


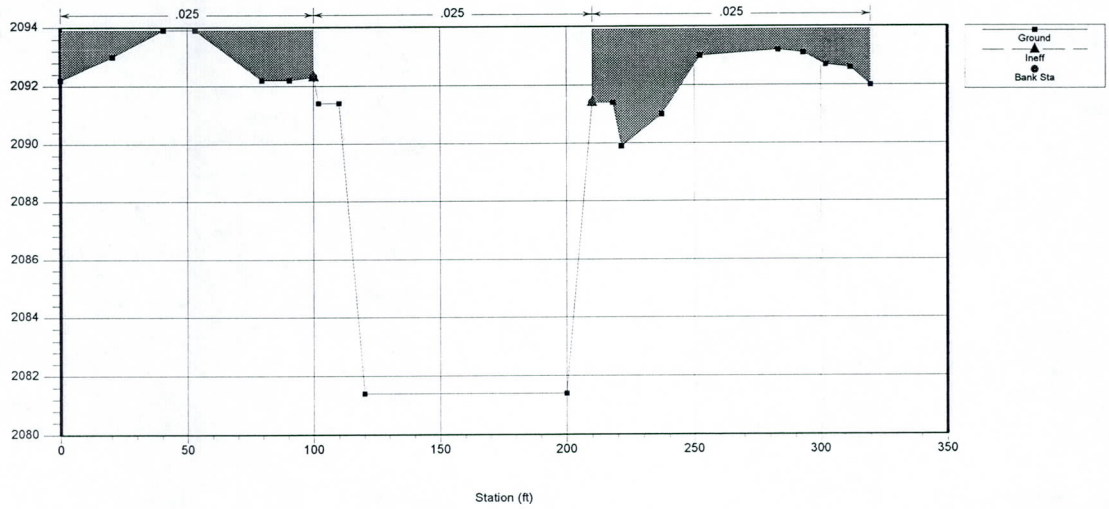
Reata Pass
Reach = 1 245.36



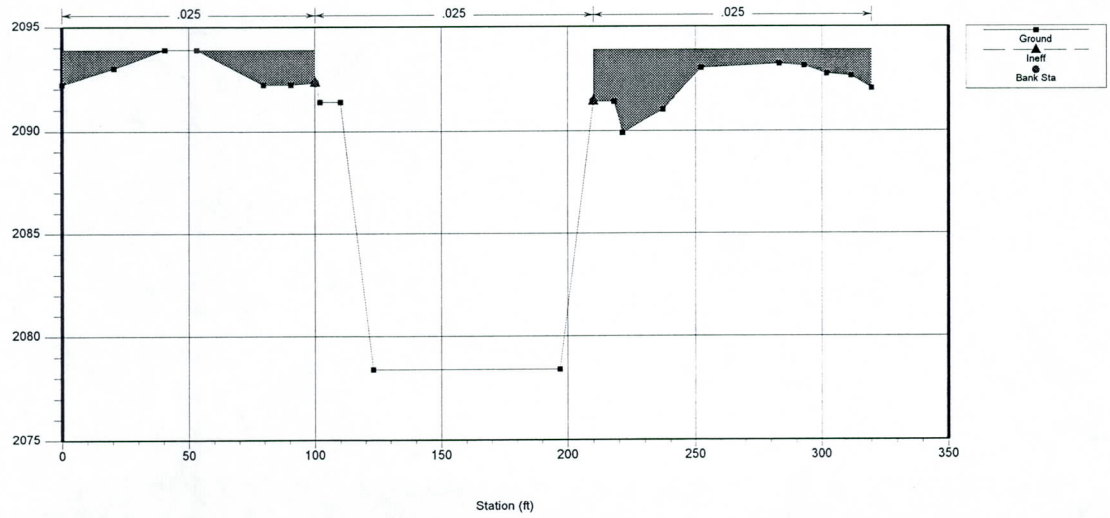
Reata Pass
Reach = 1 244.9



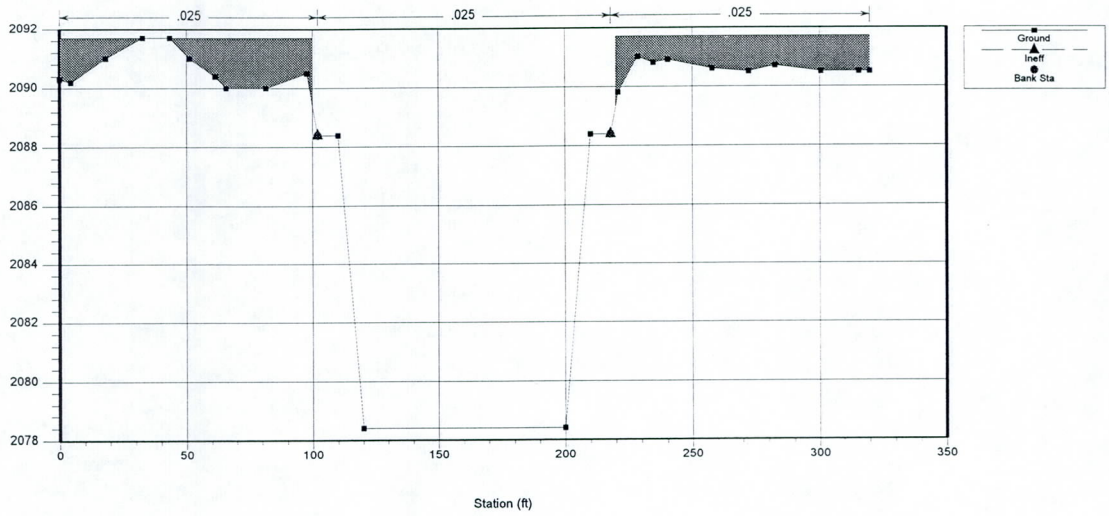
Reata Pass
Reach = 1 244.2



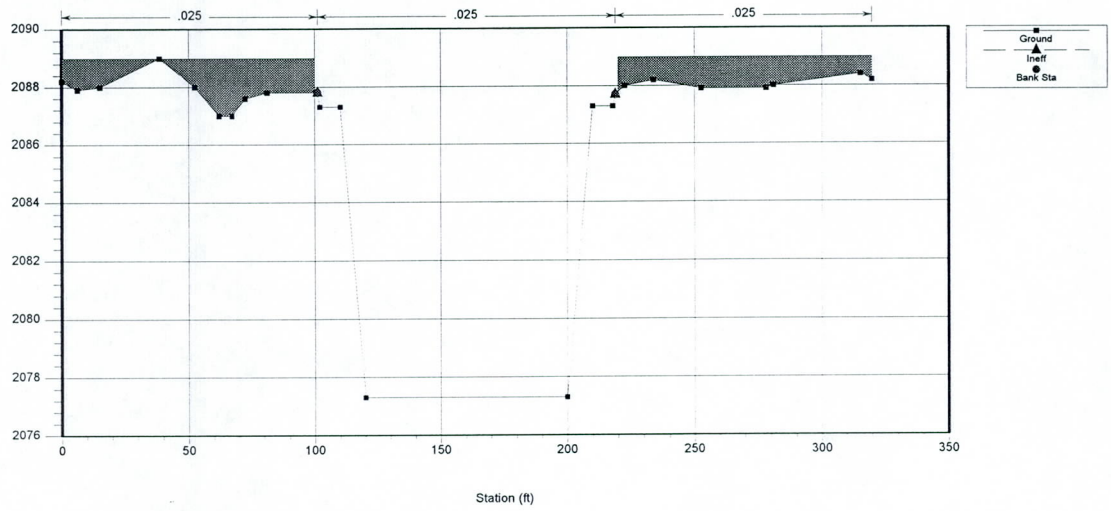
Reata Pass
Reach = 1 244.17



Reata Pass
Reach = 1 243.7



Reata Pass
Reach = 1 243.1



Reata Pass
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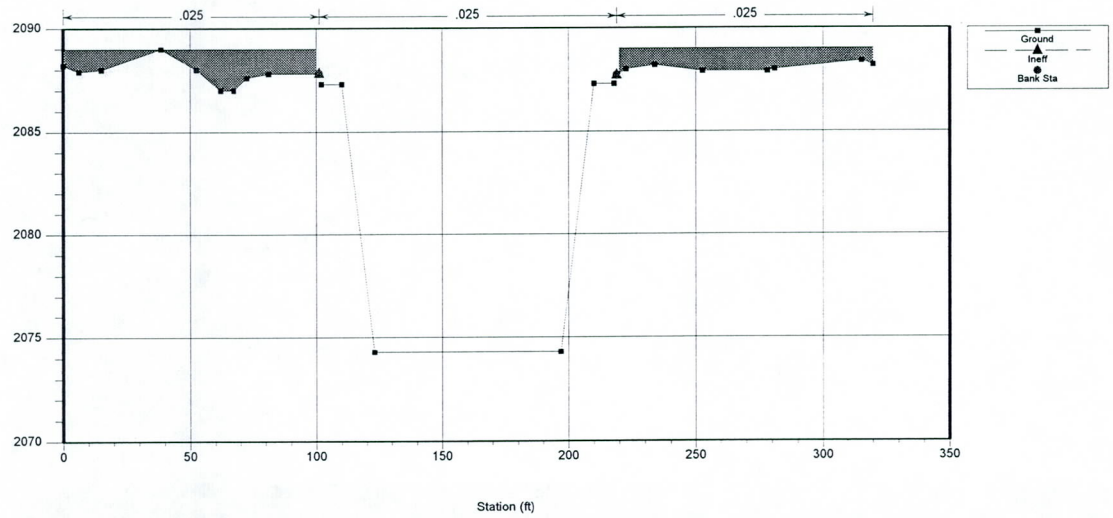
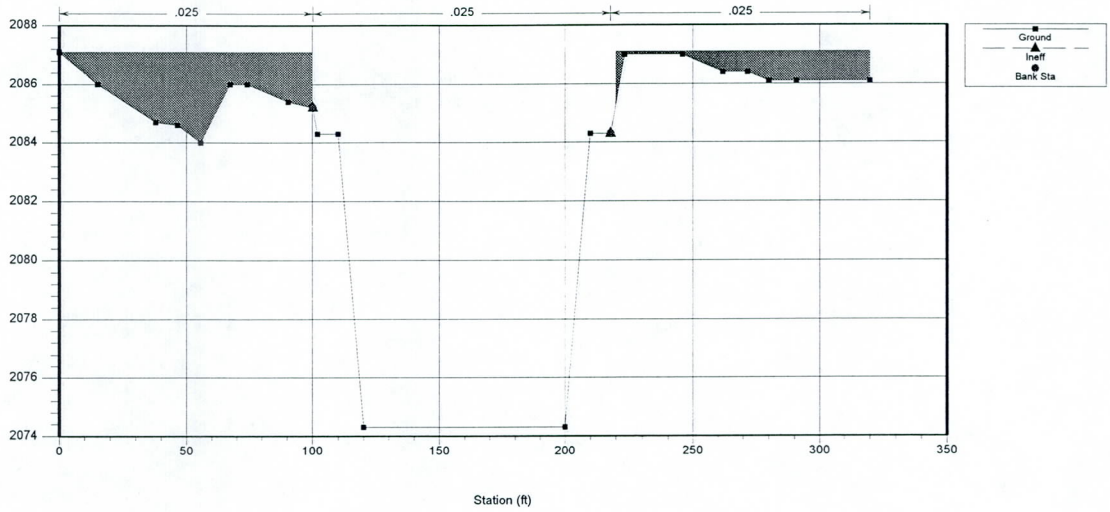
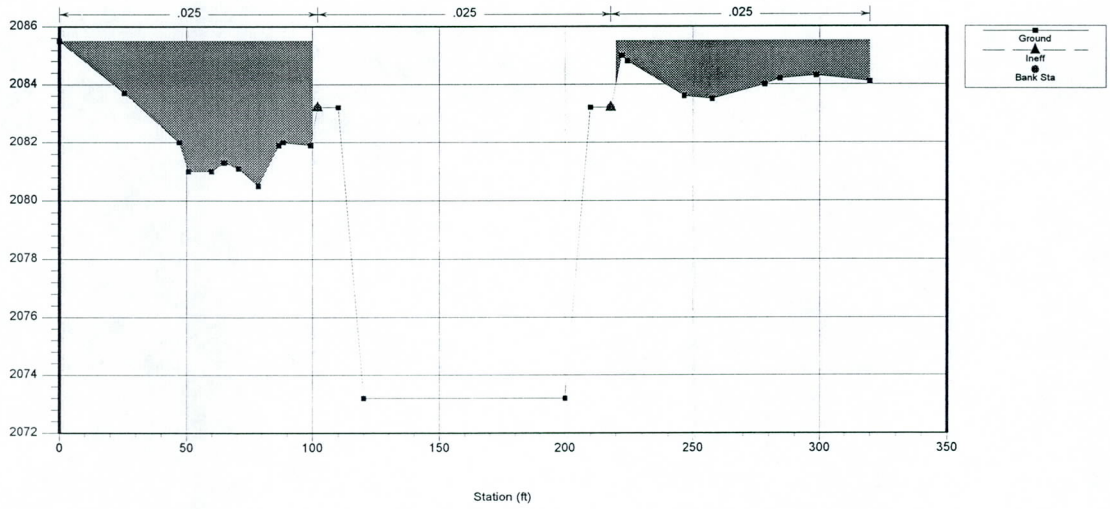


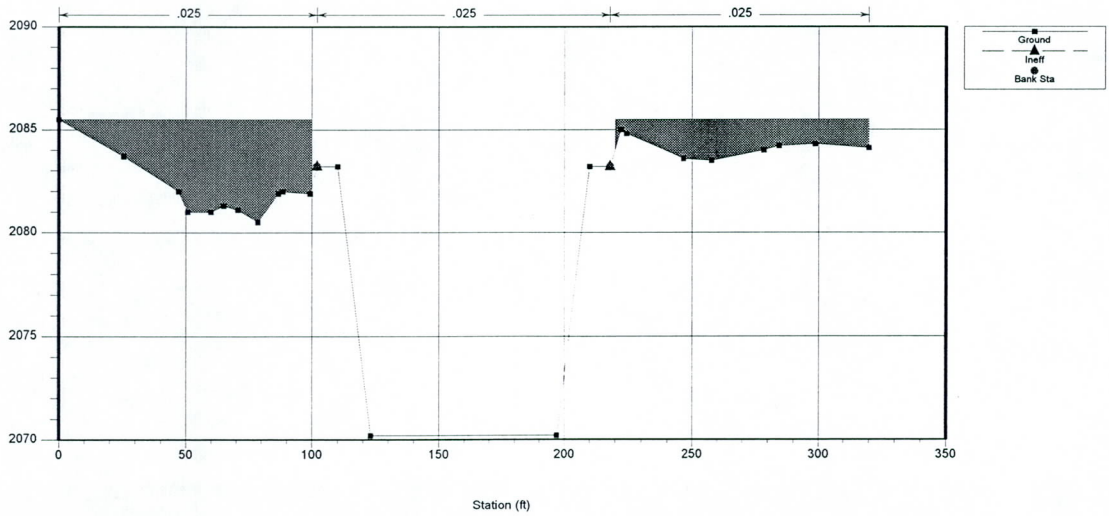
Reata Pass
Reach = 1 242.6



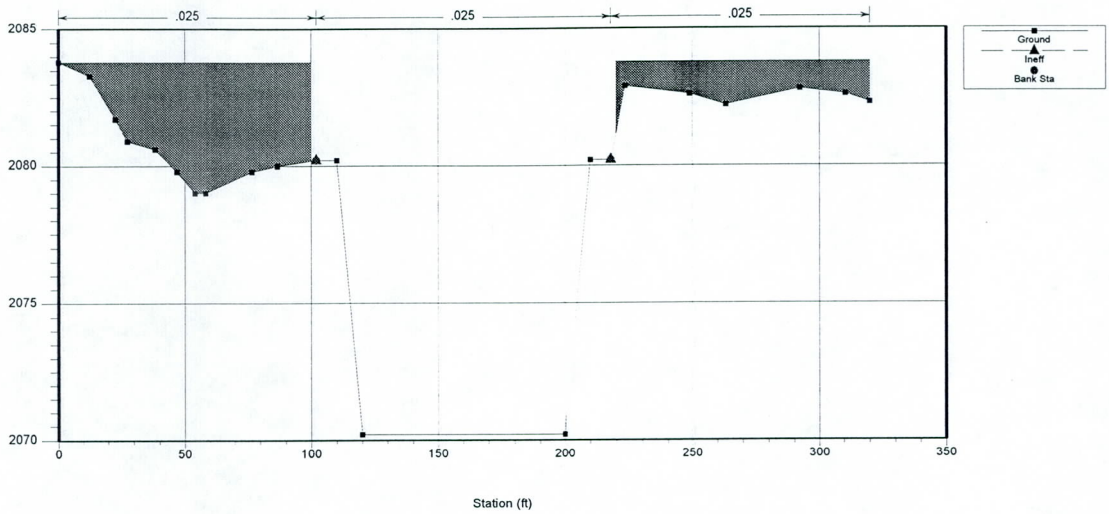
Reata Pass
Reach = 1 242



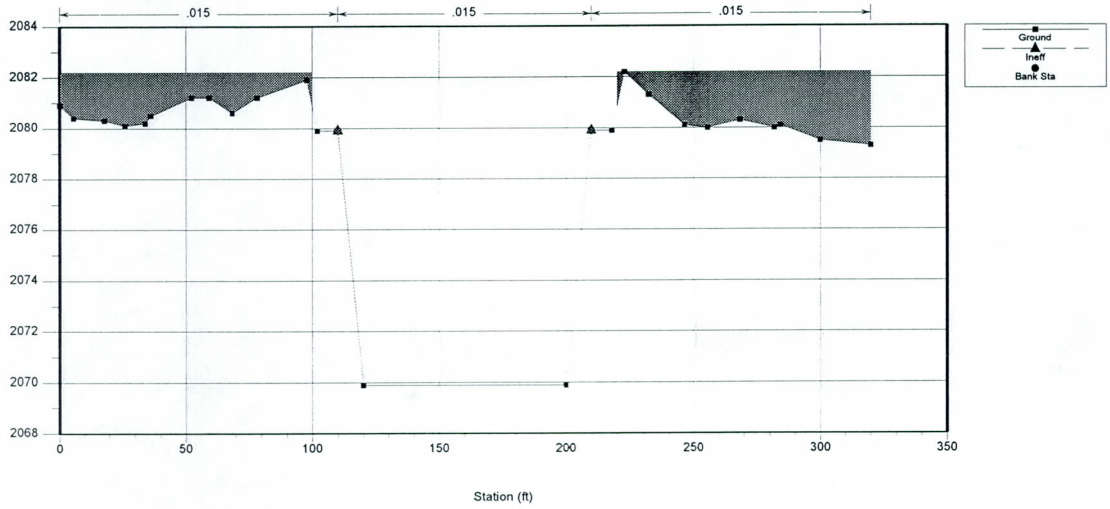
Reata Pass
Reach = 1 241.97



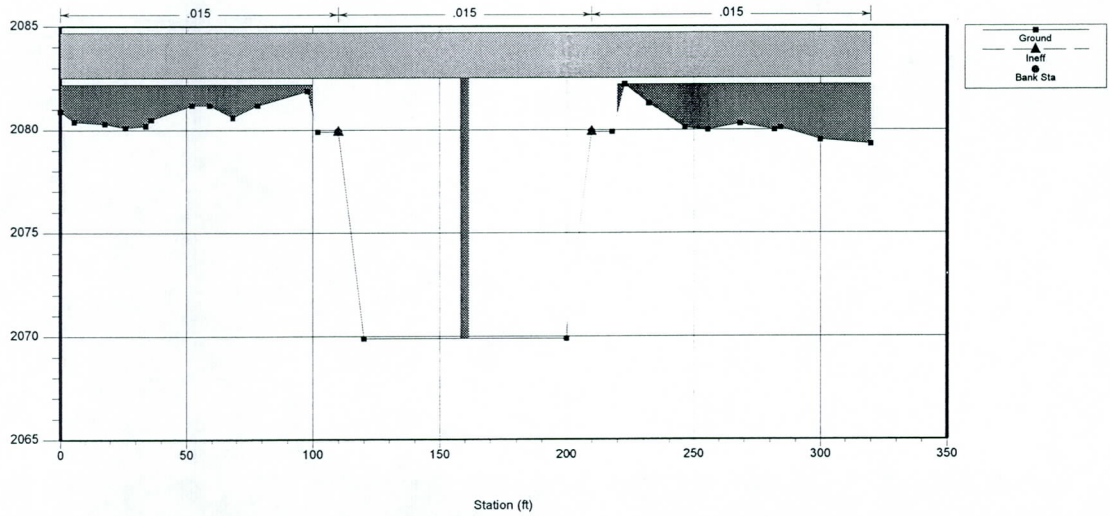
Reata Pass
Reach = 1 241.5



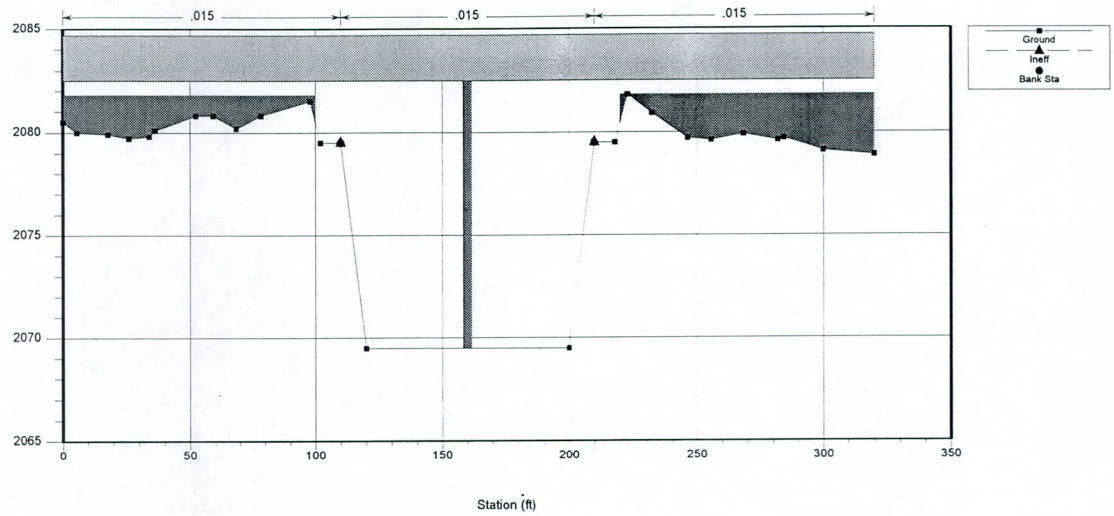
Reata Pass
Reach = 1 241.06



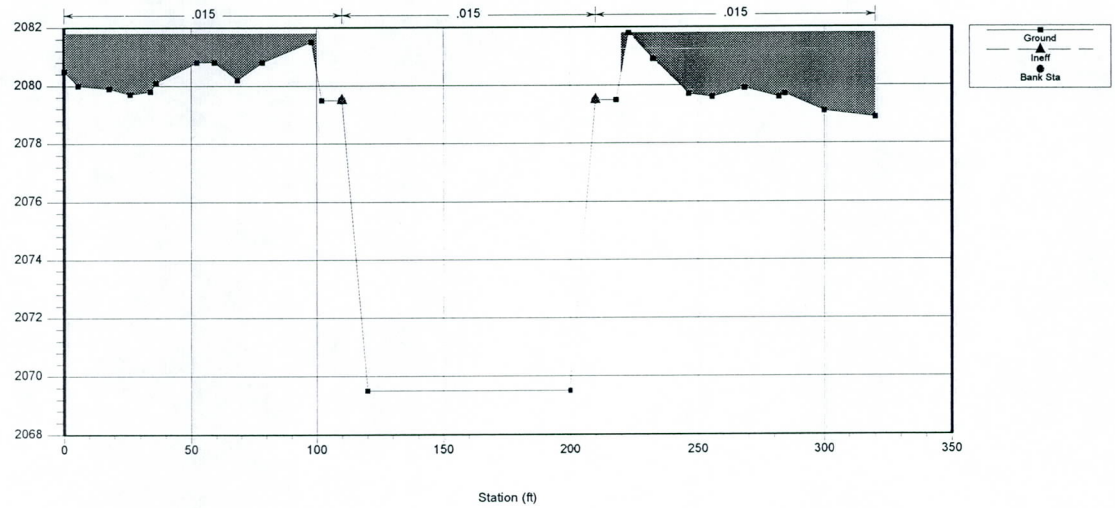
Reata Pass
Reach = 1 Upstream Inside Bridge # 2



Reata Pass
Reach = 1 Downstream Inside Bridge # 2



Reata Pass
Reach = 1 240.56



Reata Pass
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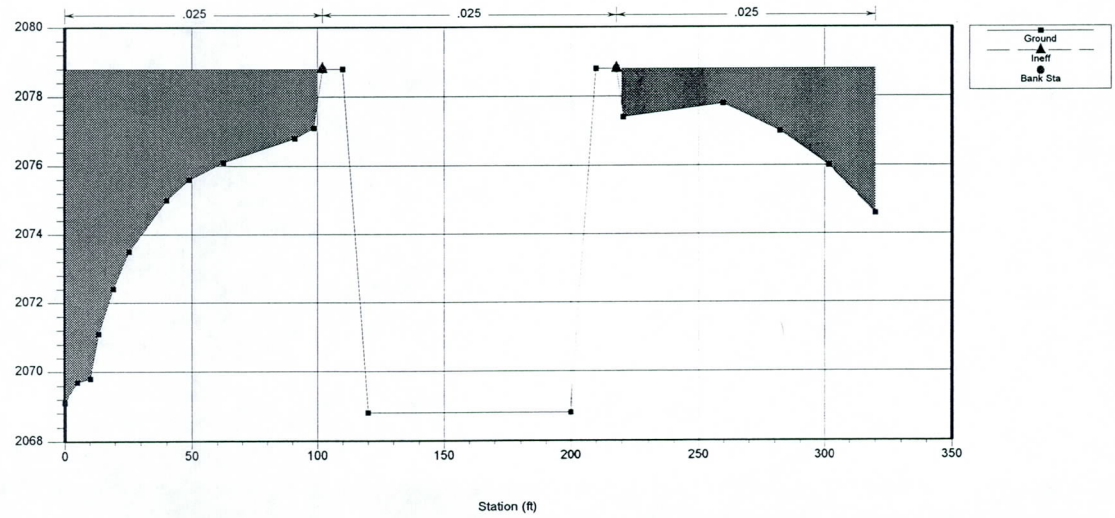

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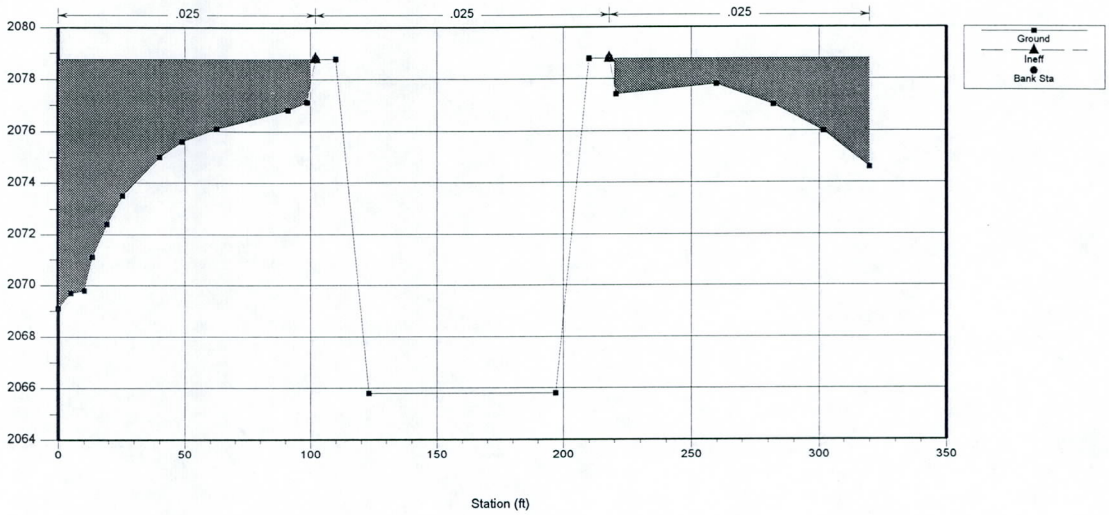
Reach = 1 239.67



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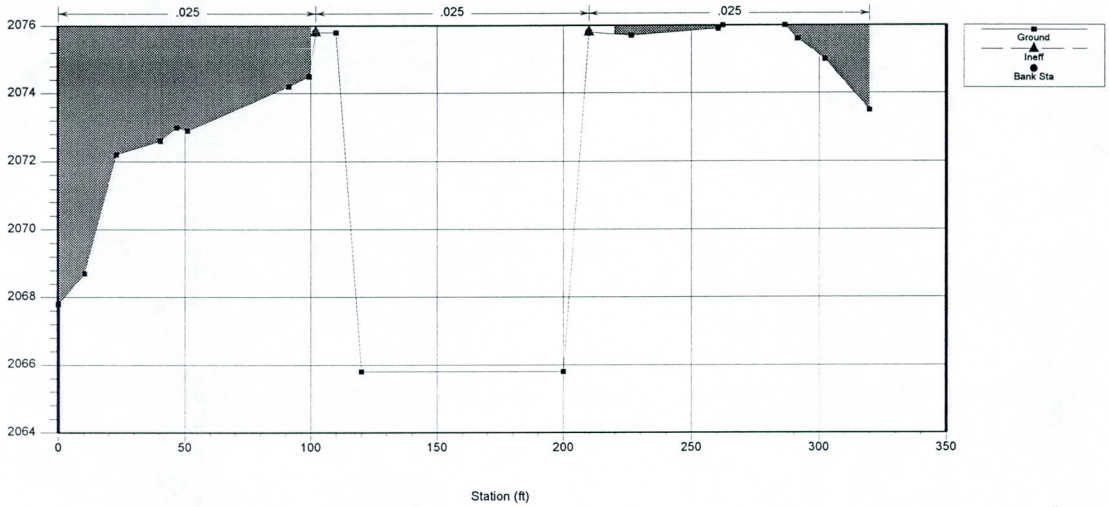

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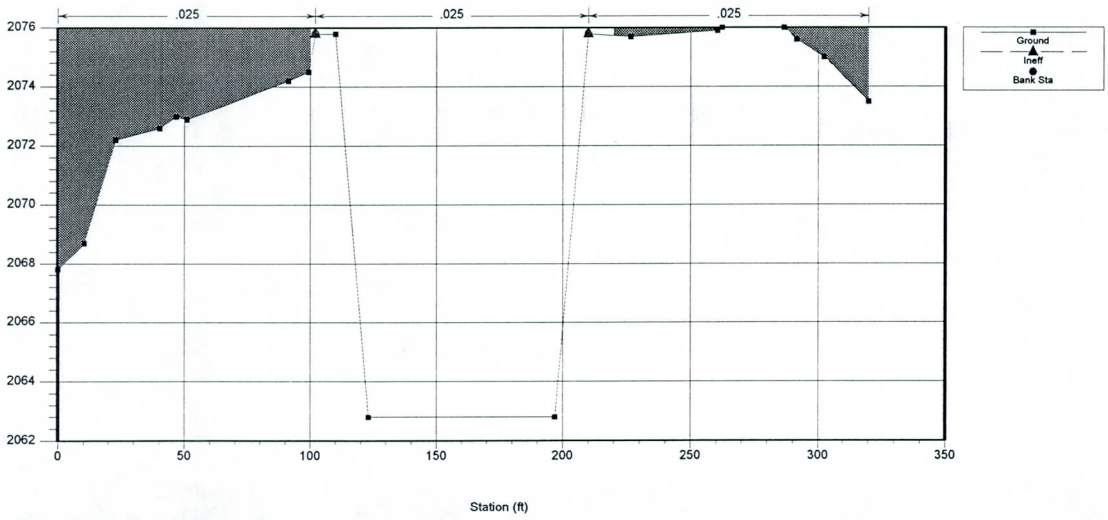
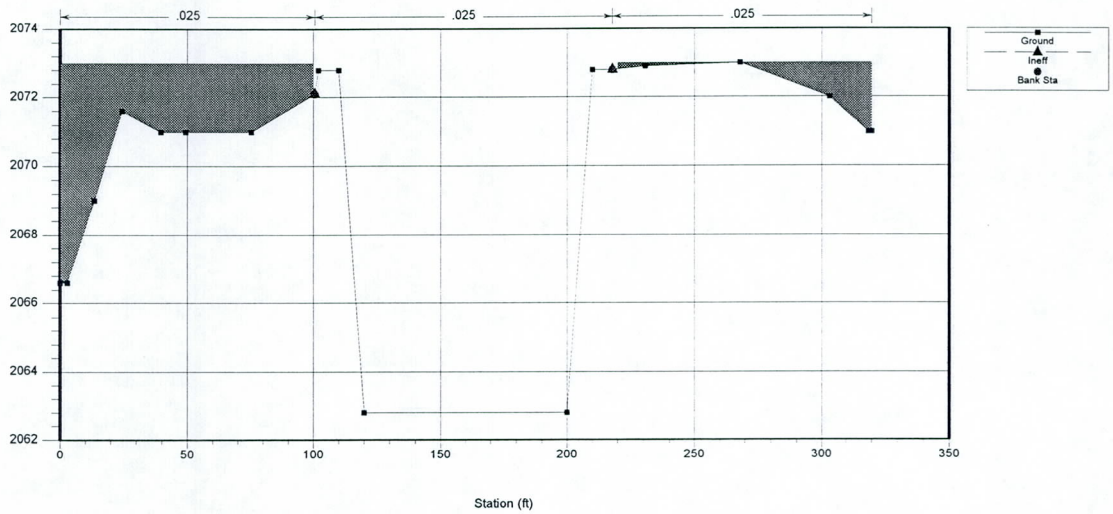
Reach = 1 239.17



Reata Pass
Reach = 1 238.6



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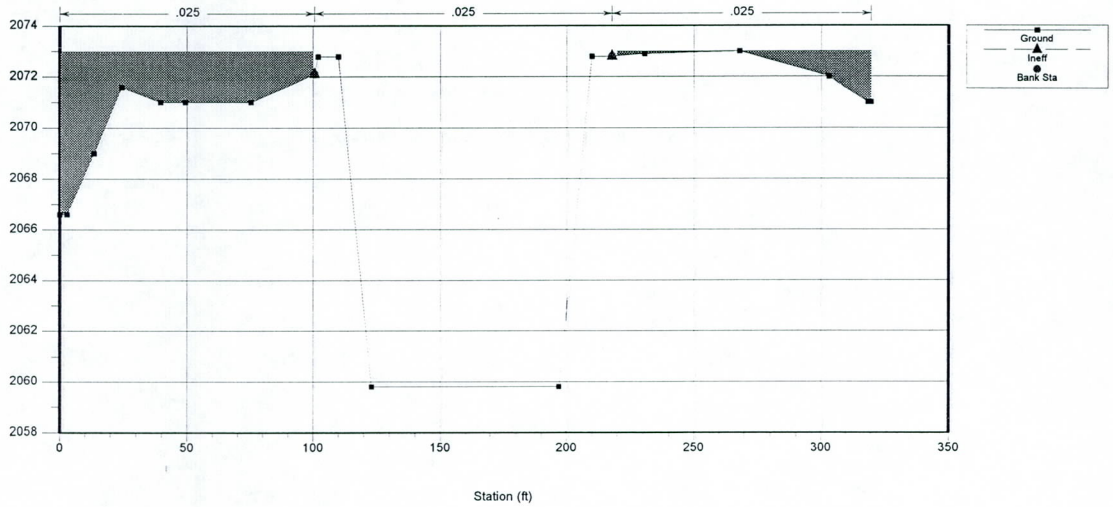

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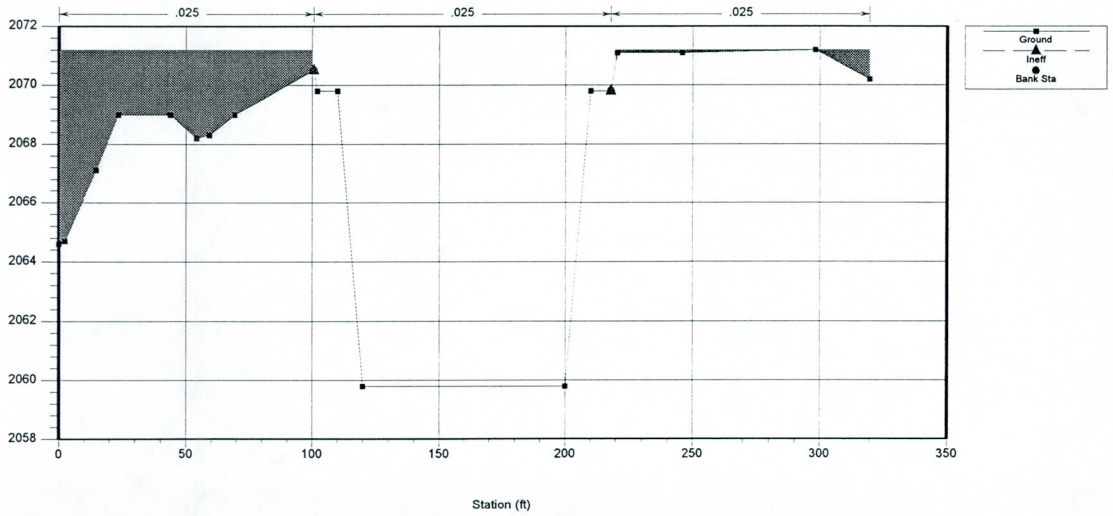

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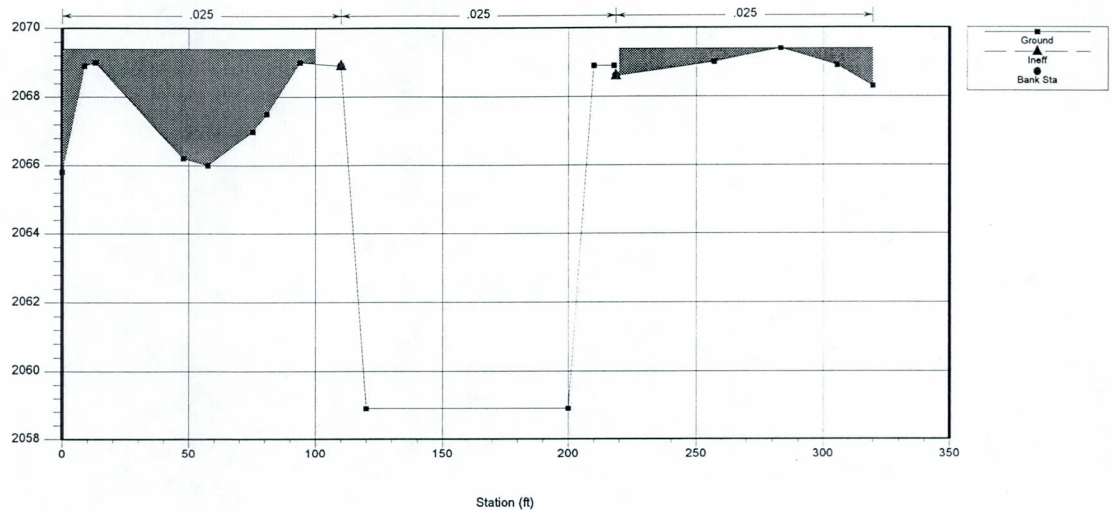

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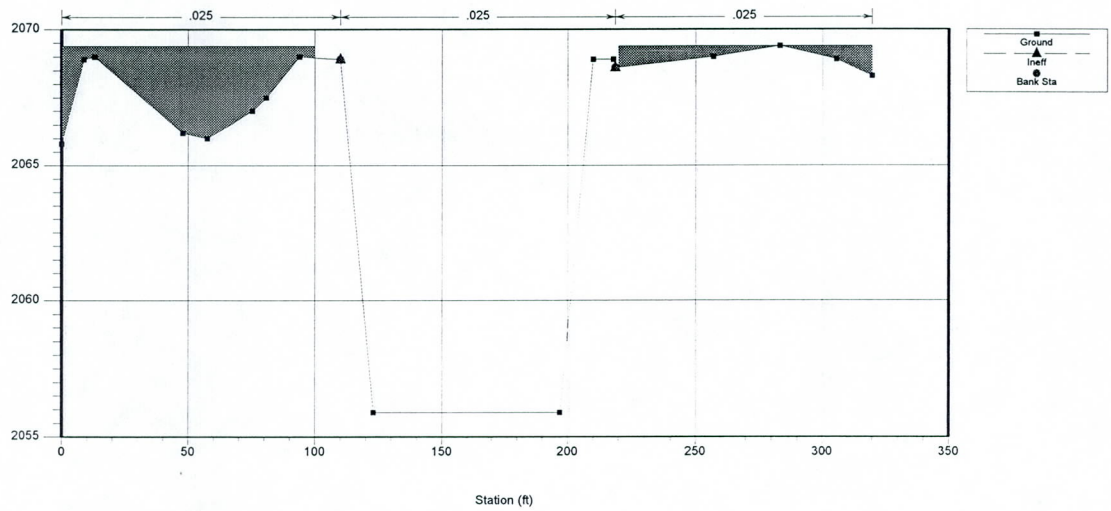

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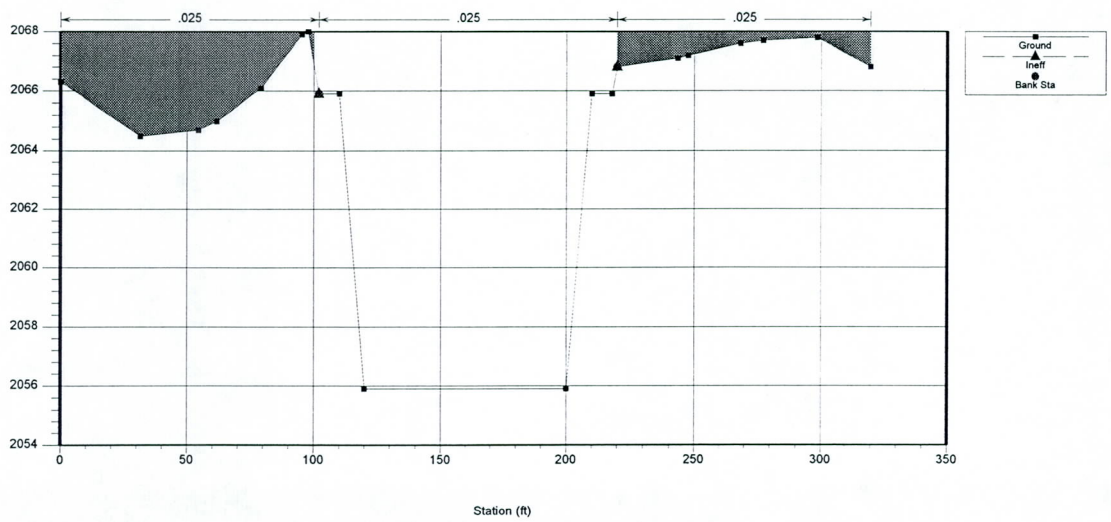

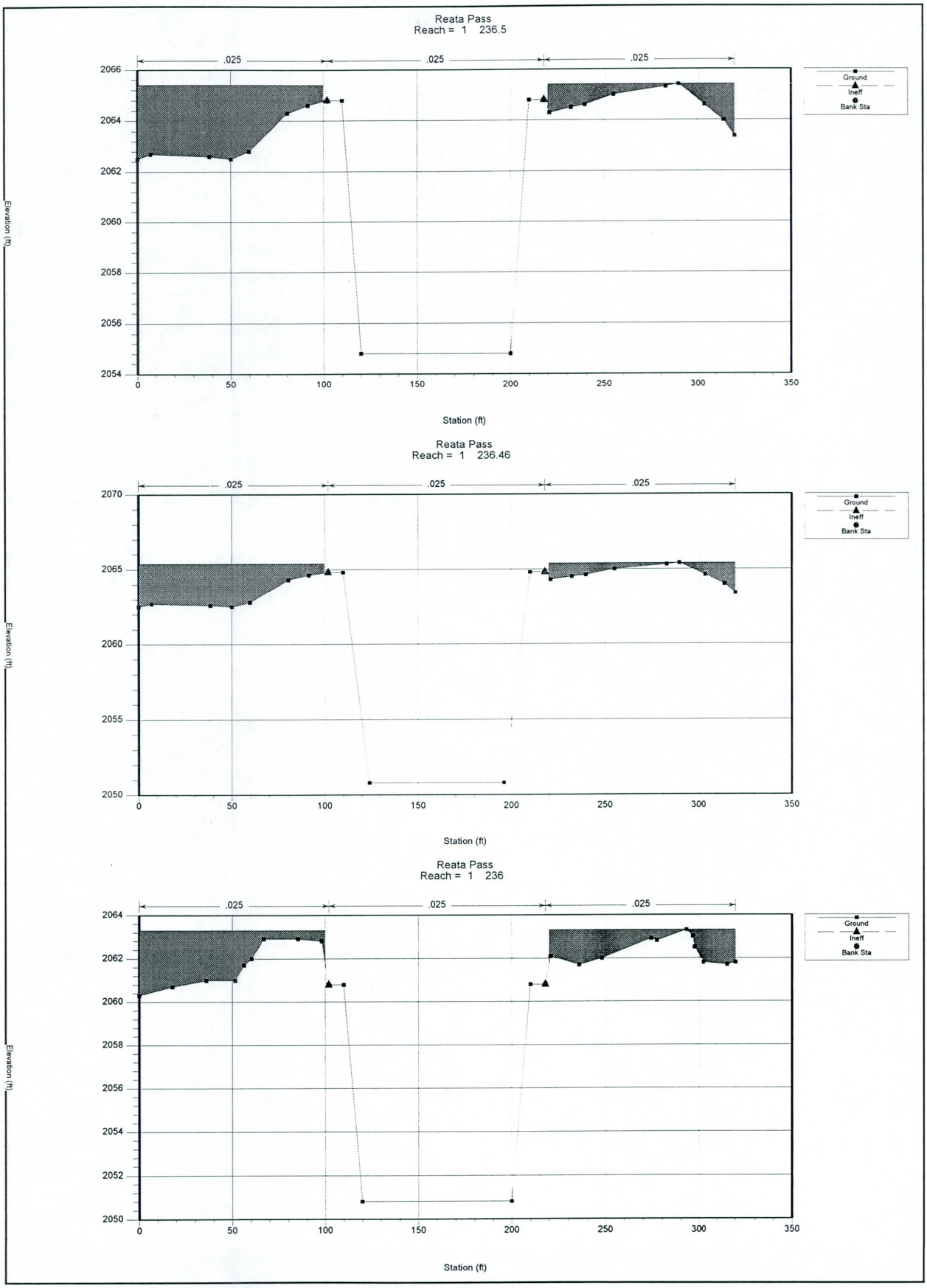
Reata Pass
Reach = 1 236.5
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Reata Pass
Reach = 1 236.46
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Reata Pass
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.025
.025
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Ineff
Bank Sta
Elevation (ft)
Station (ft)

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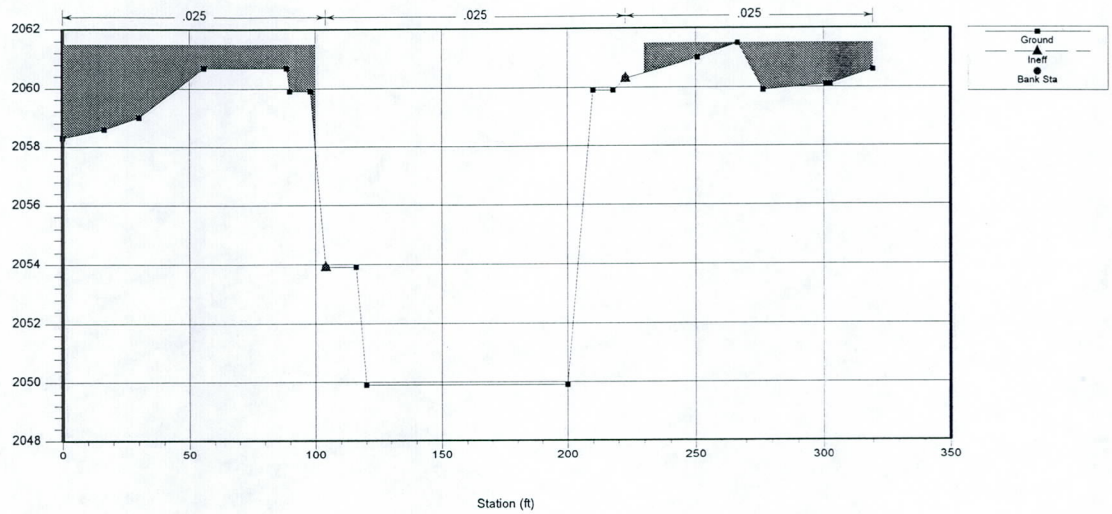

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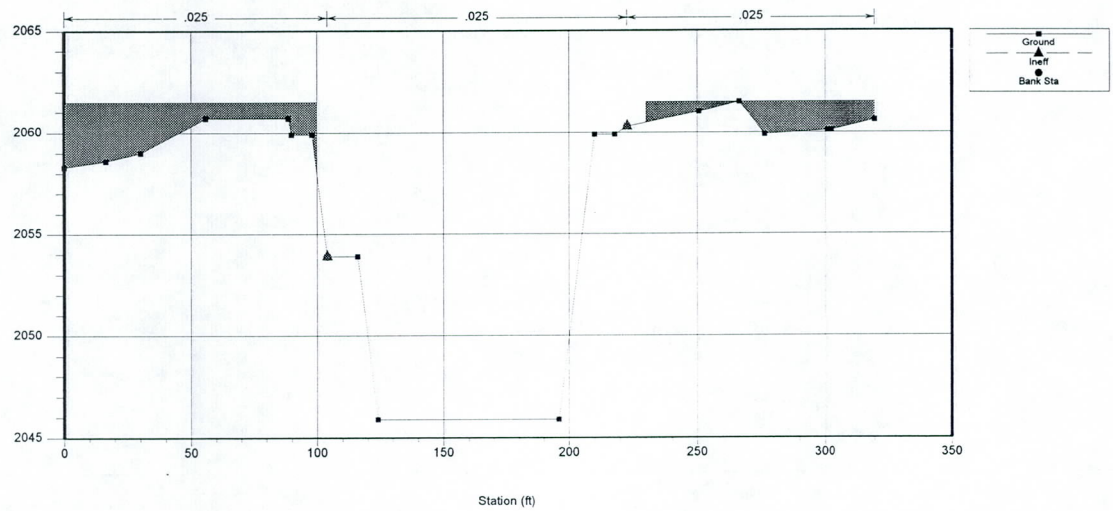

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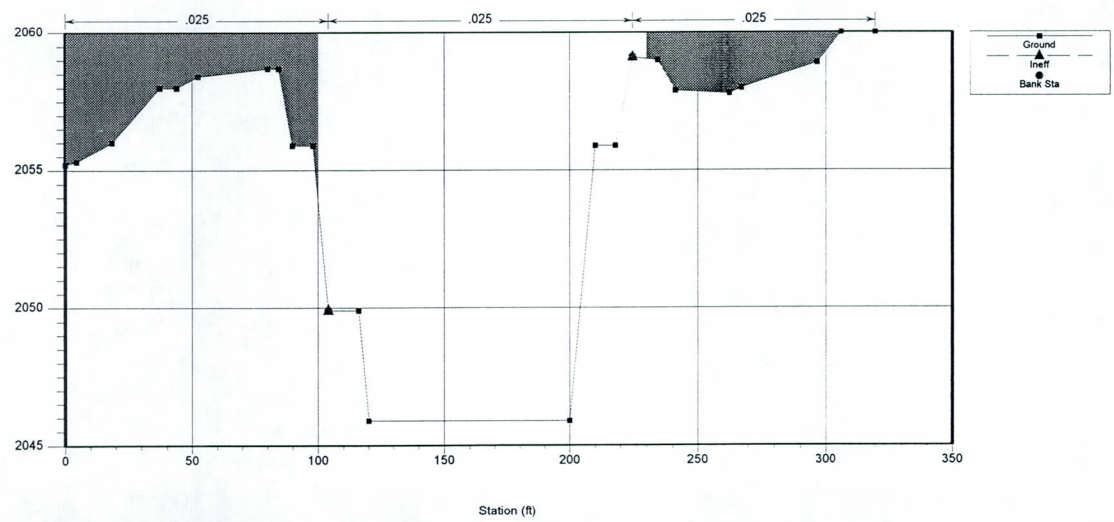

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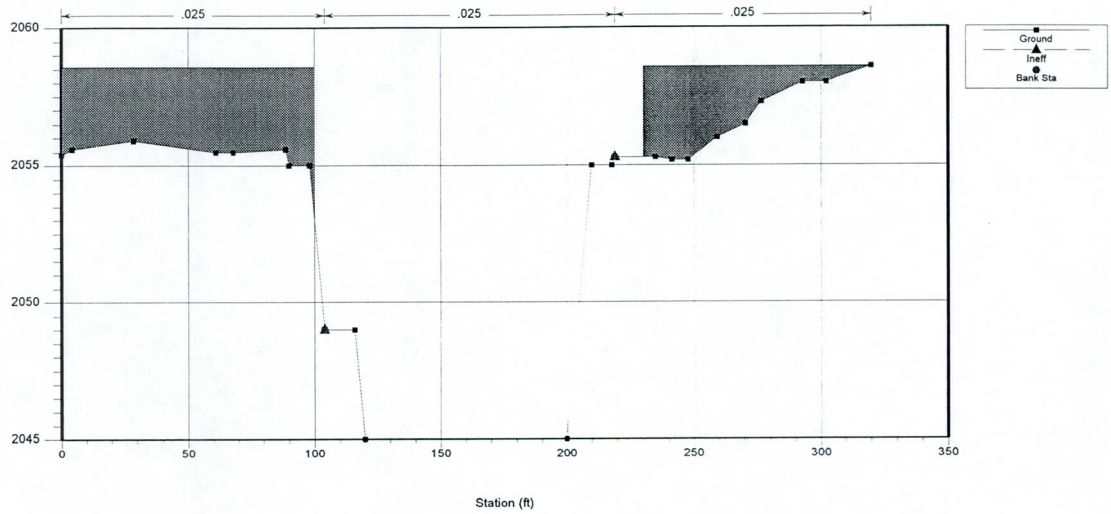

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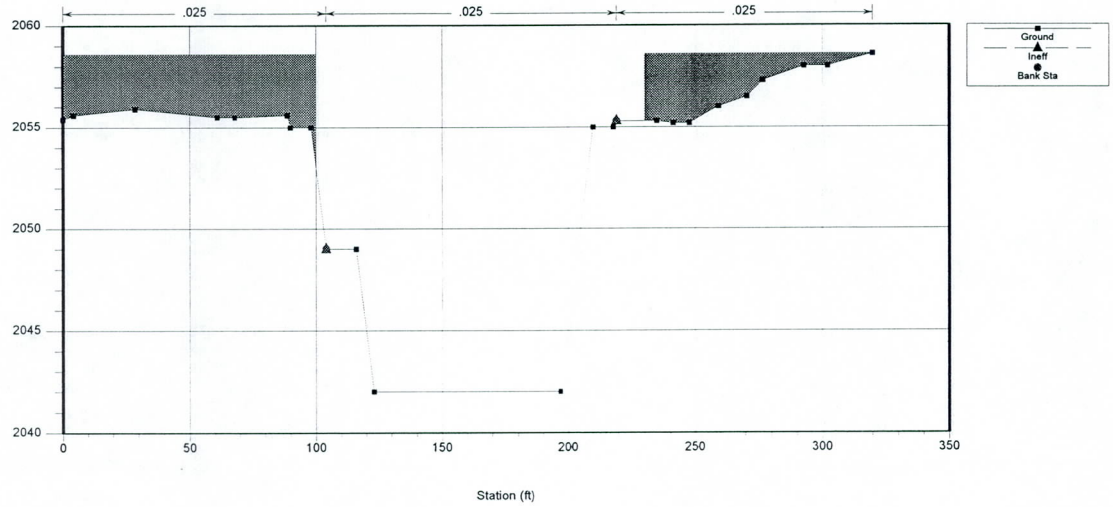

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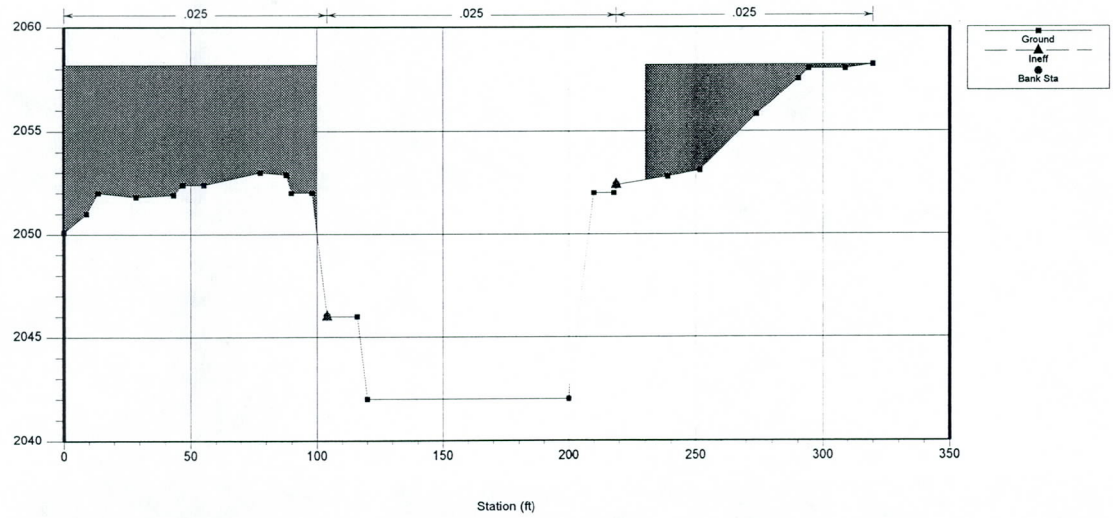

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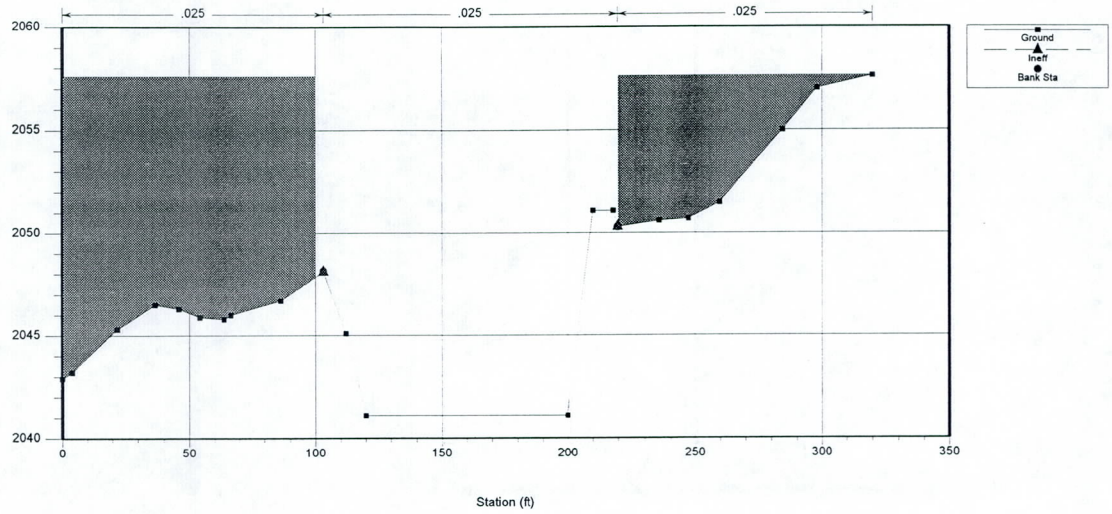

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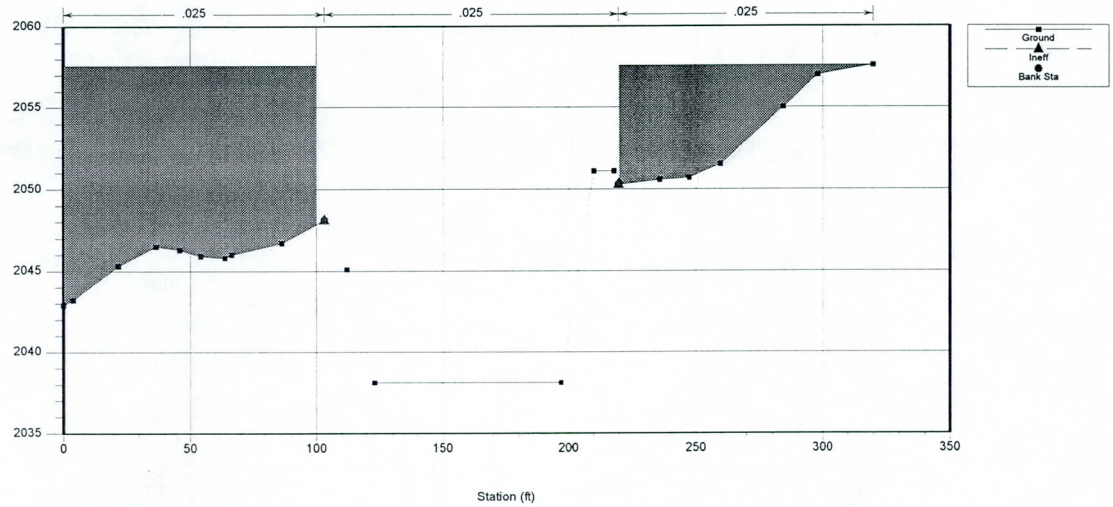

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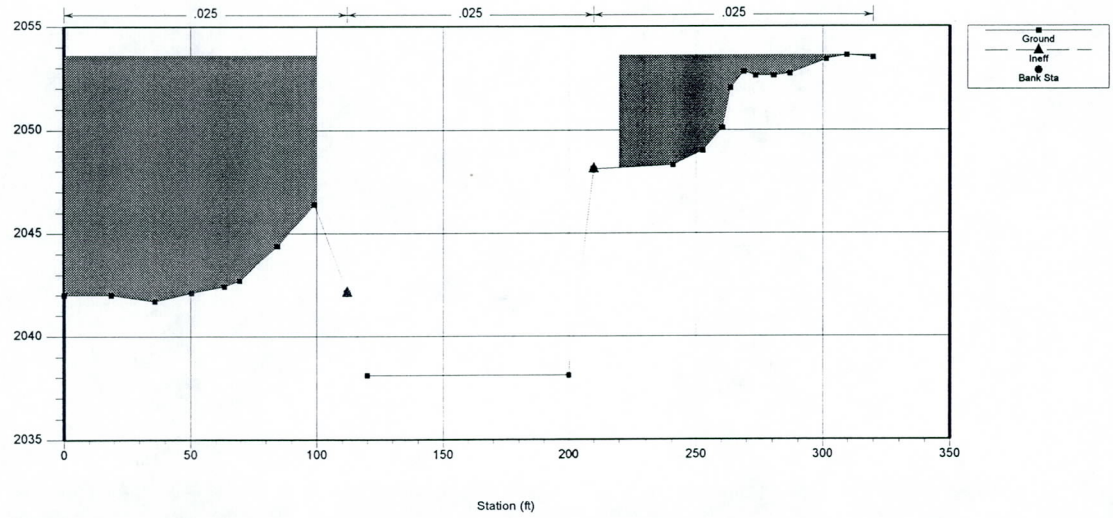

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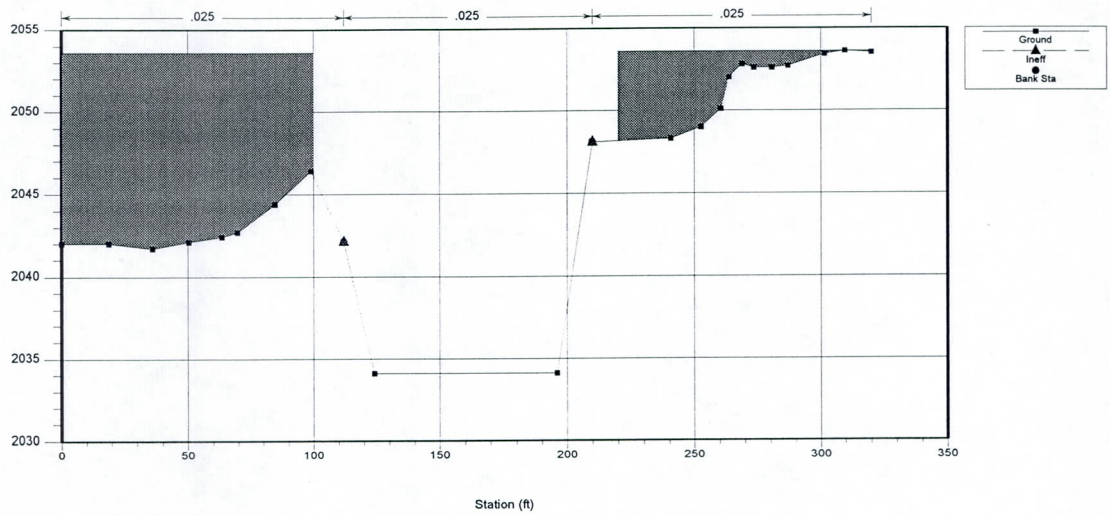

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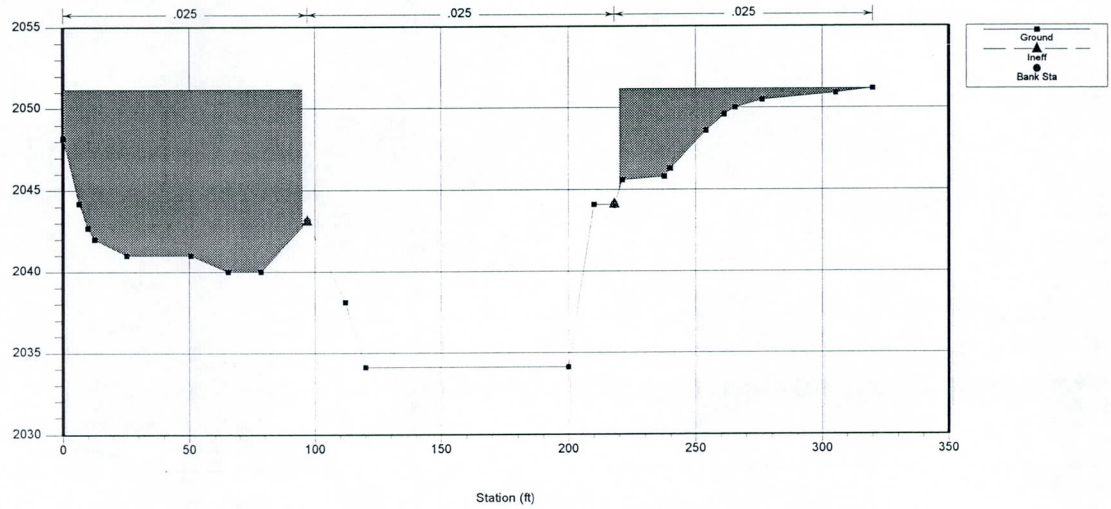

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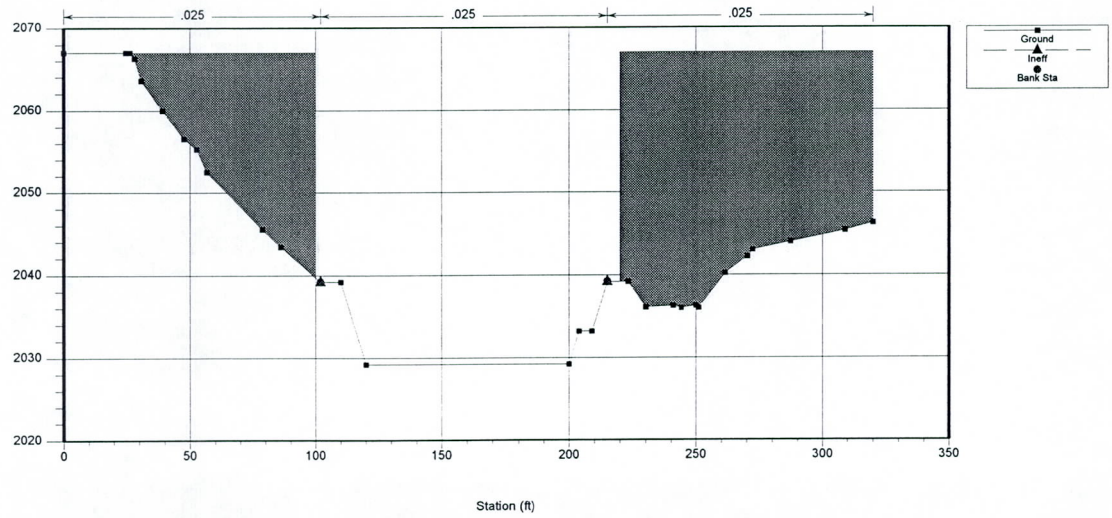

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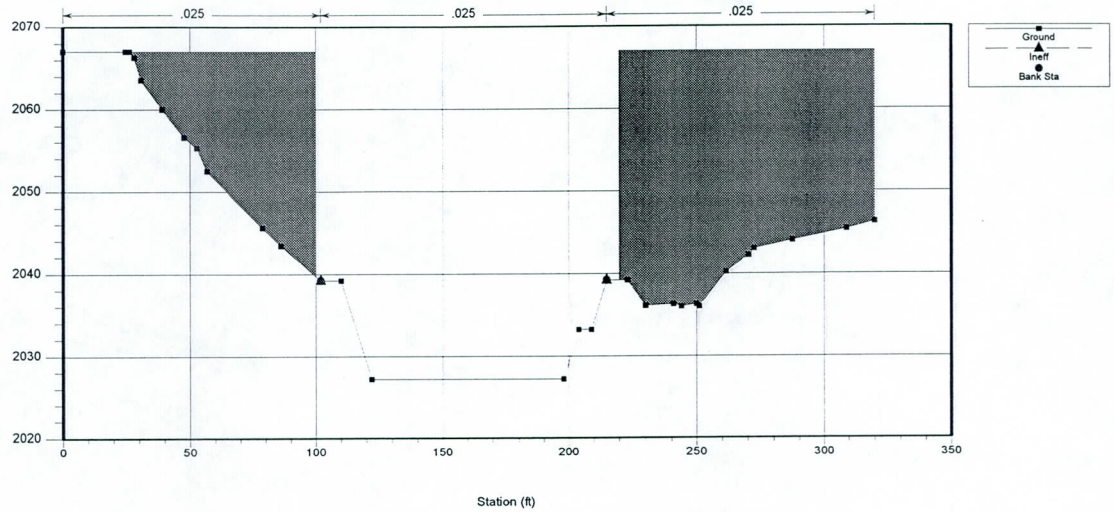

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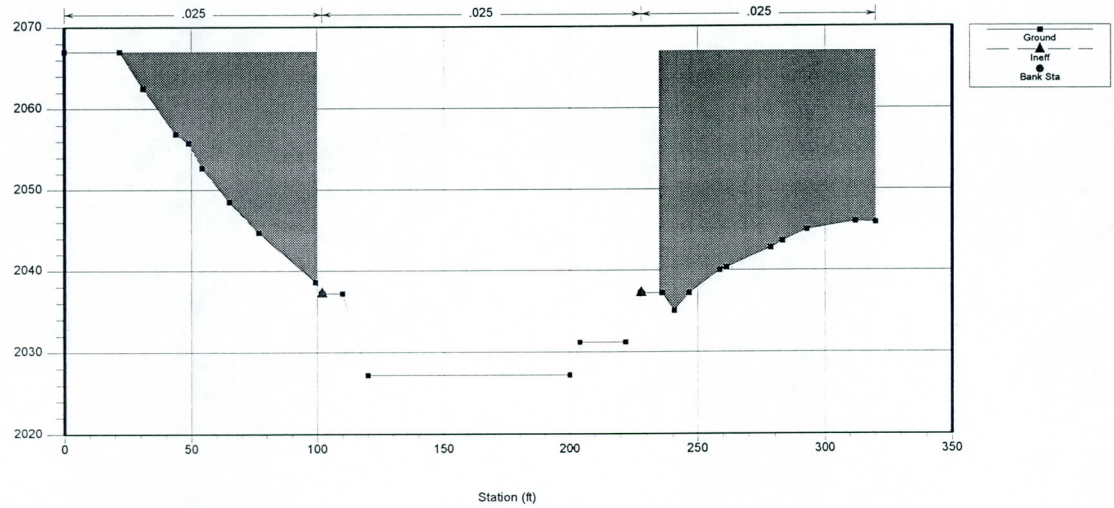

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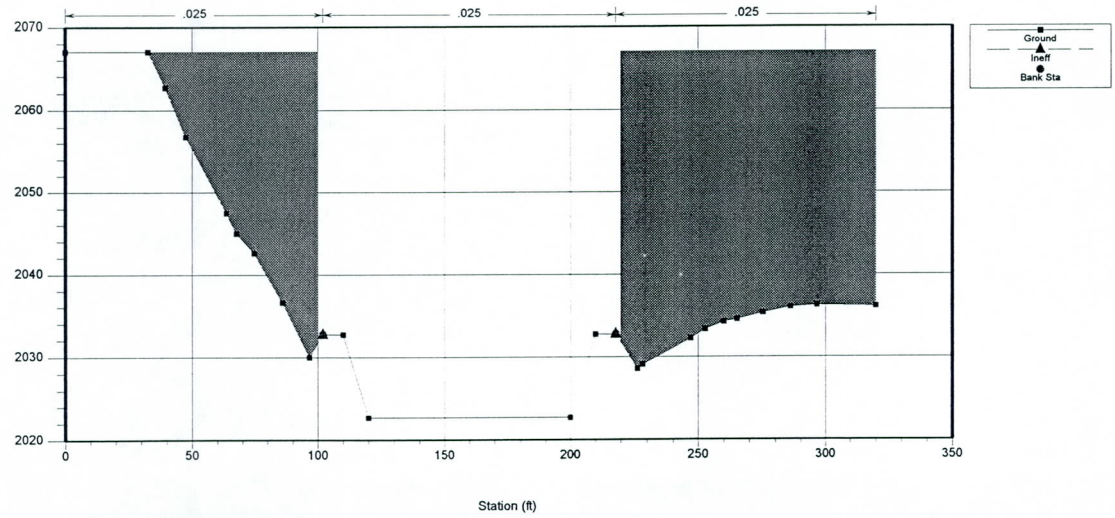

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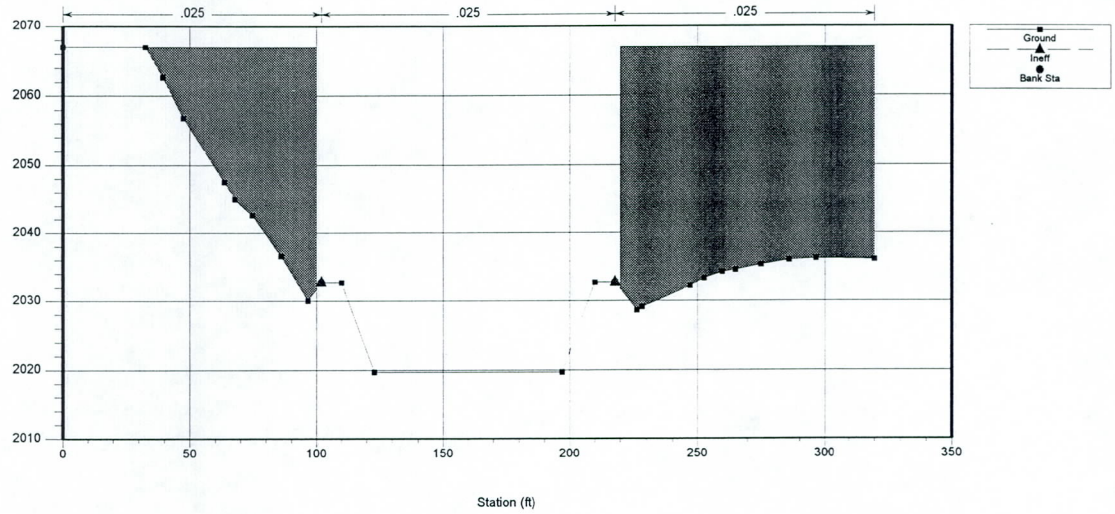

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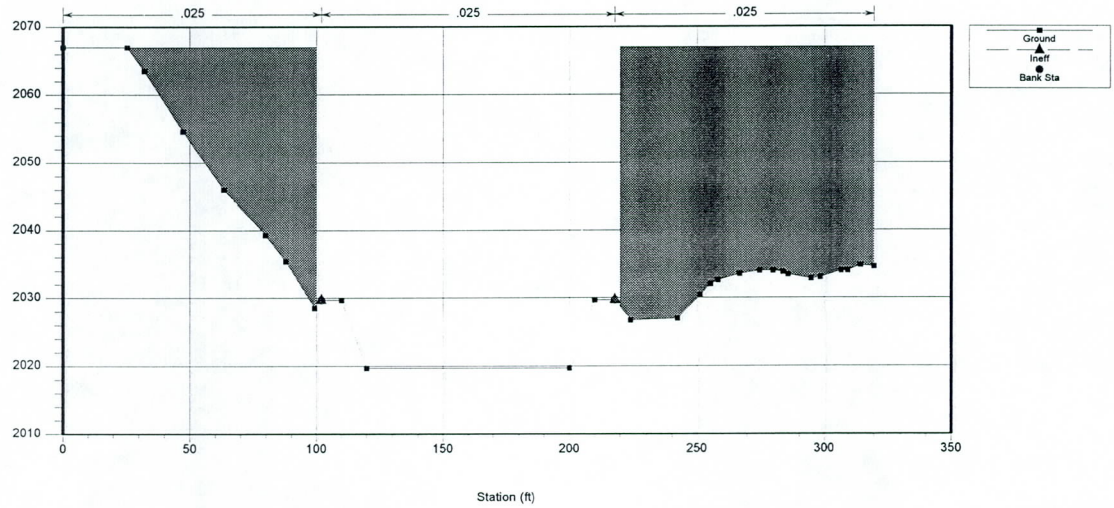

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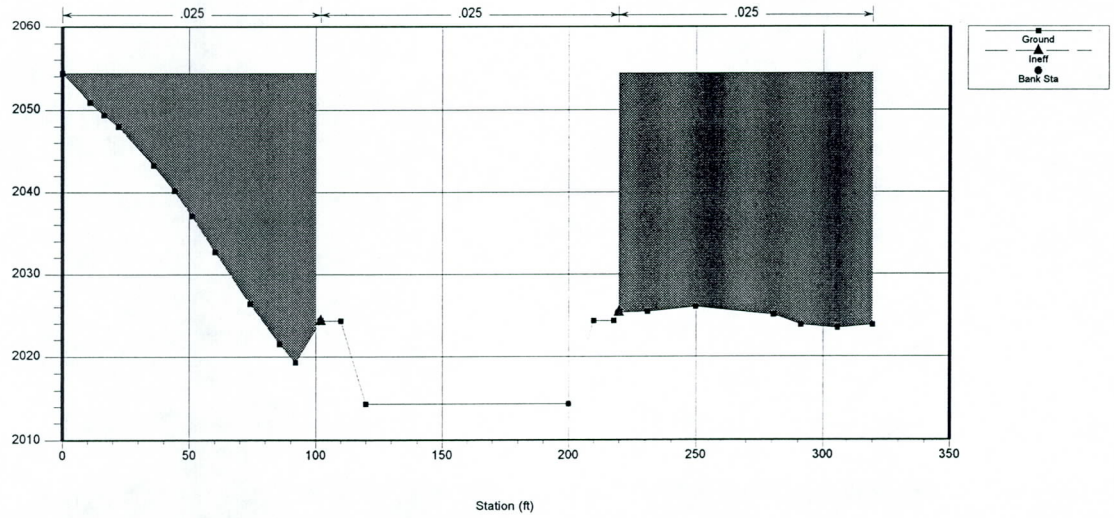

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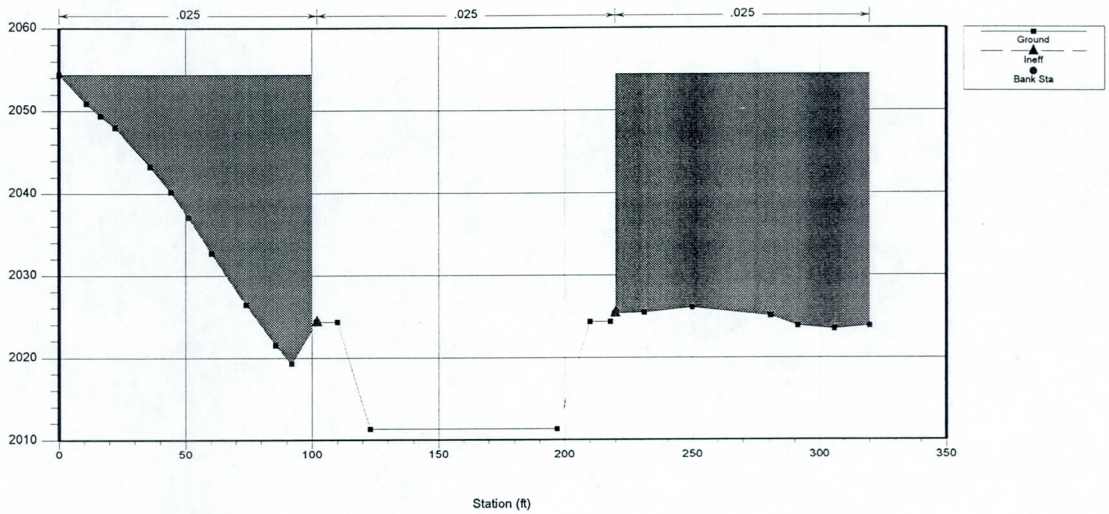

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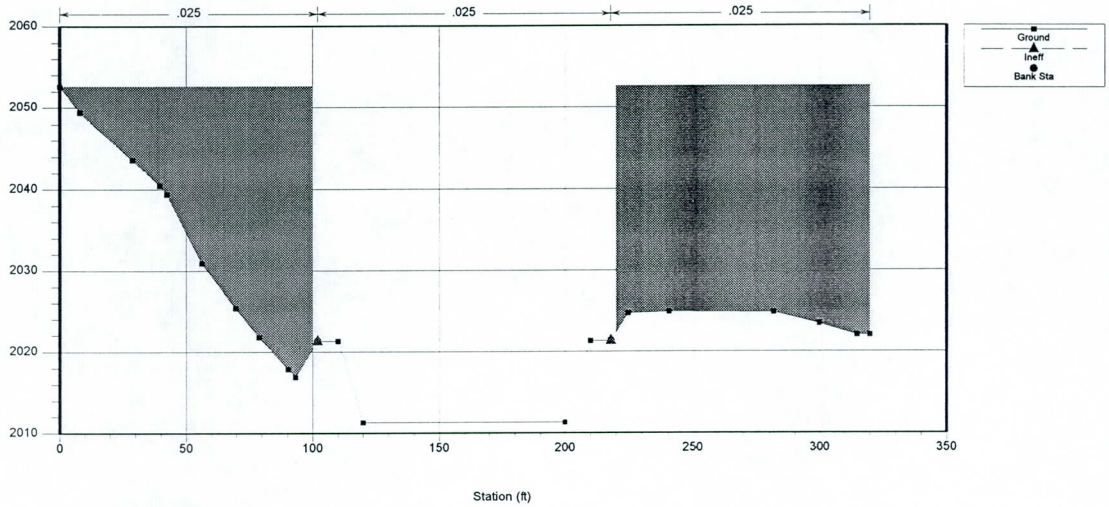

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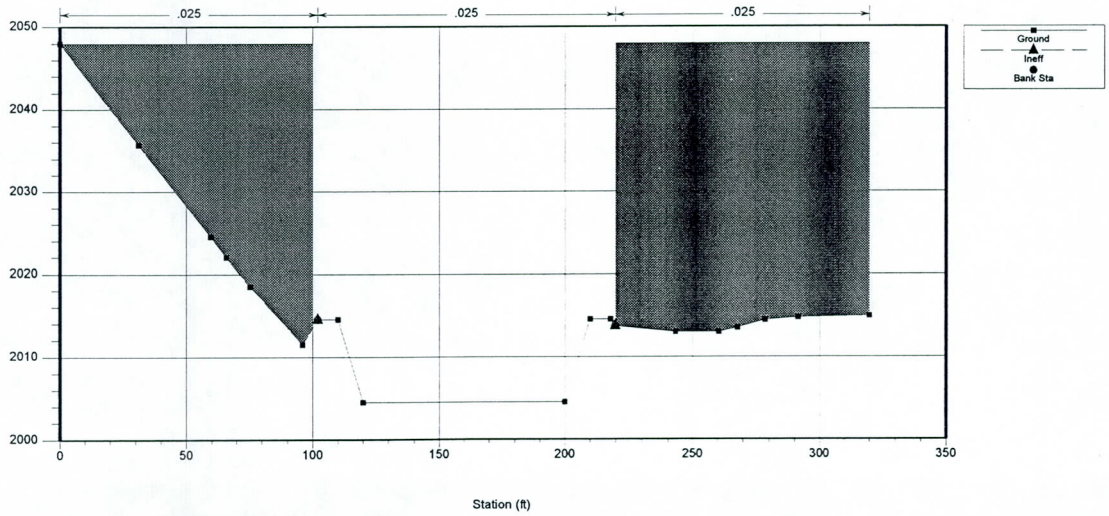

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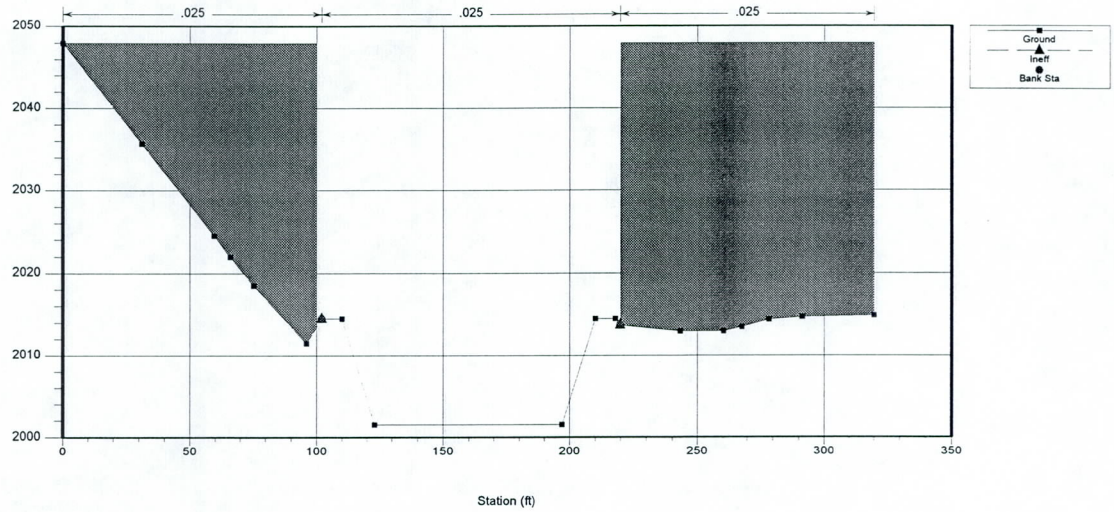

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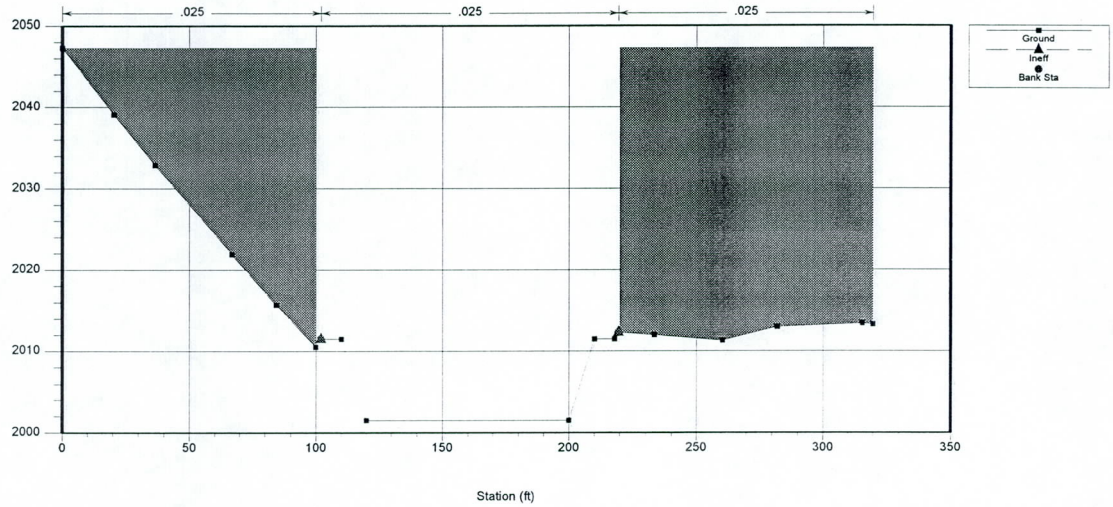

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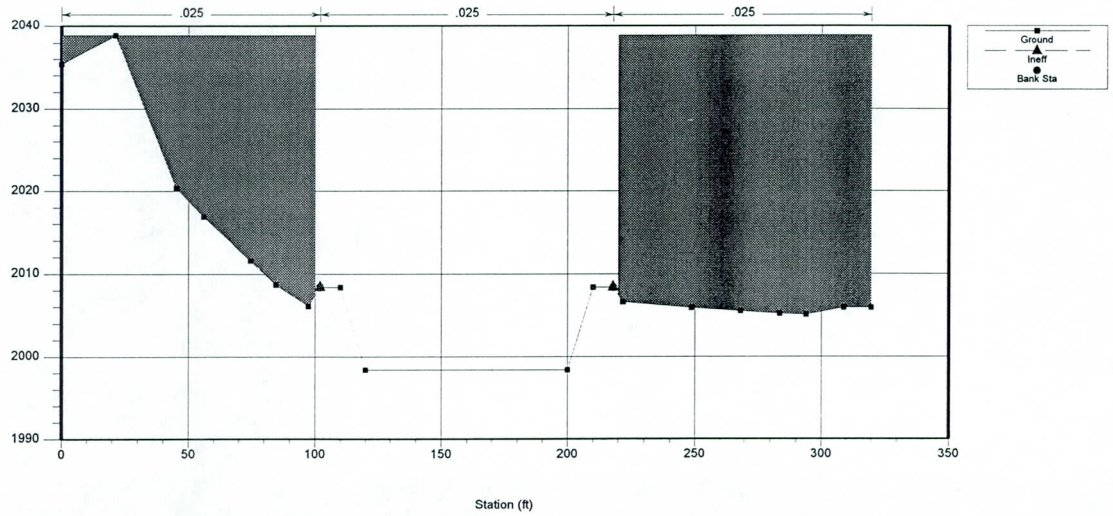

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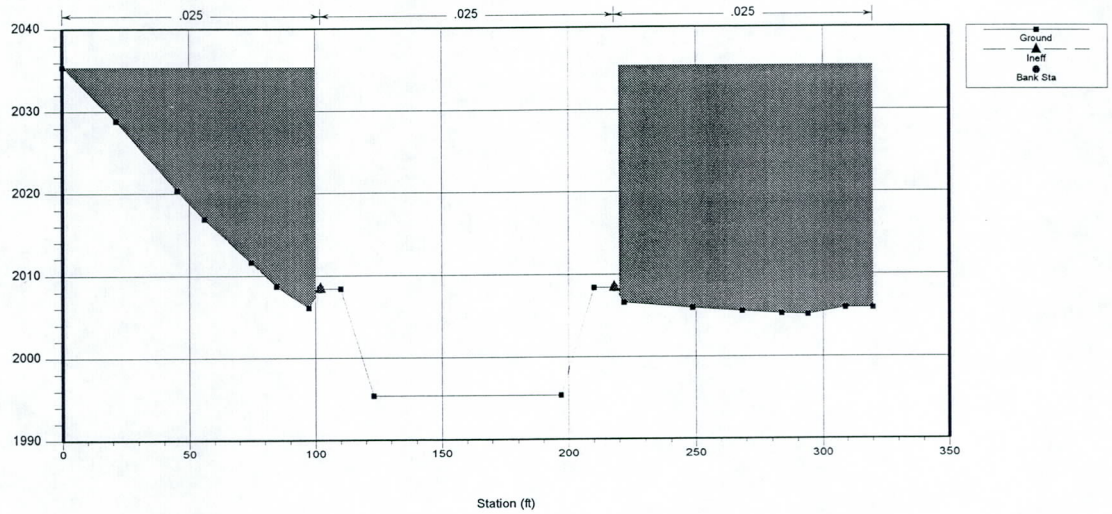

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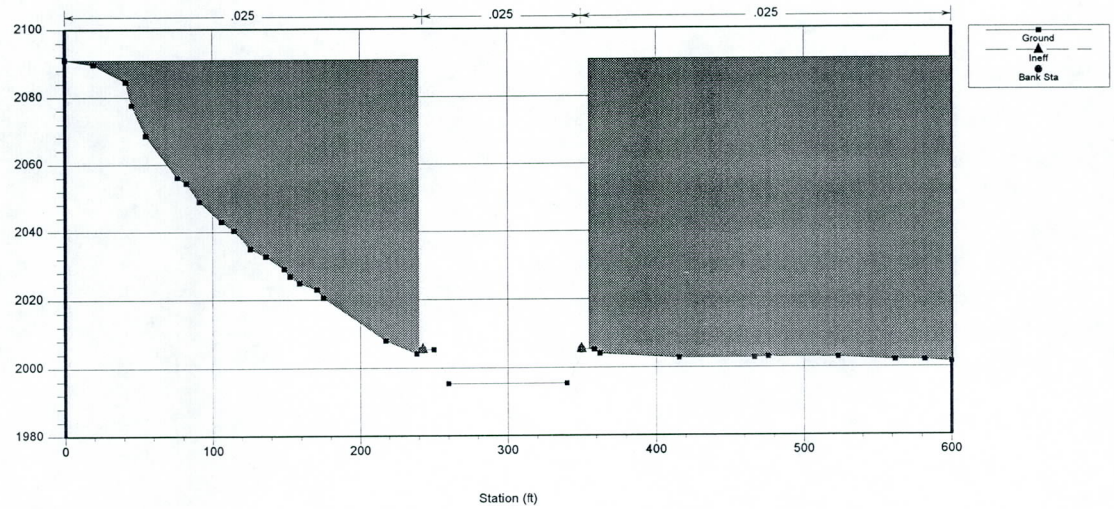

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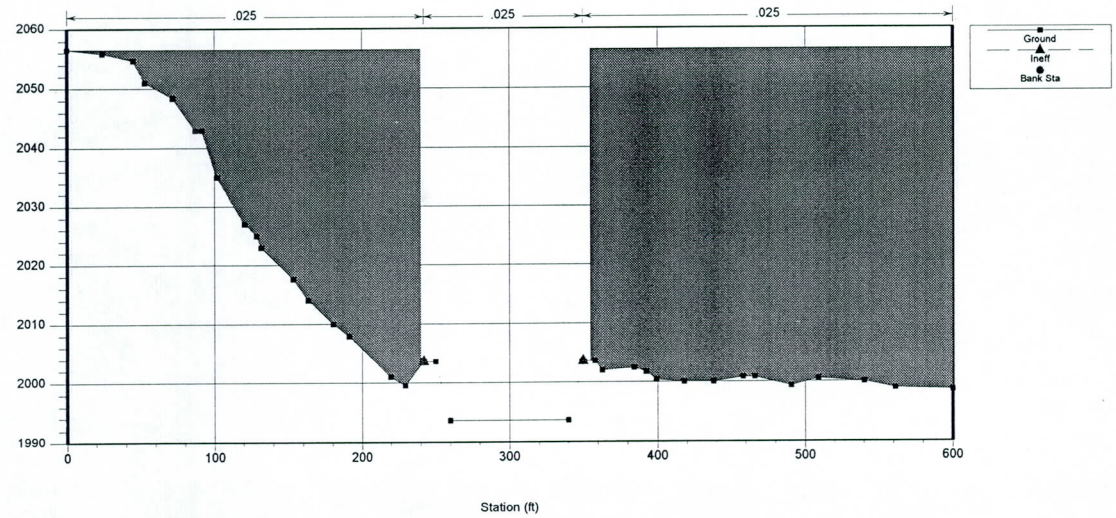

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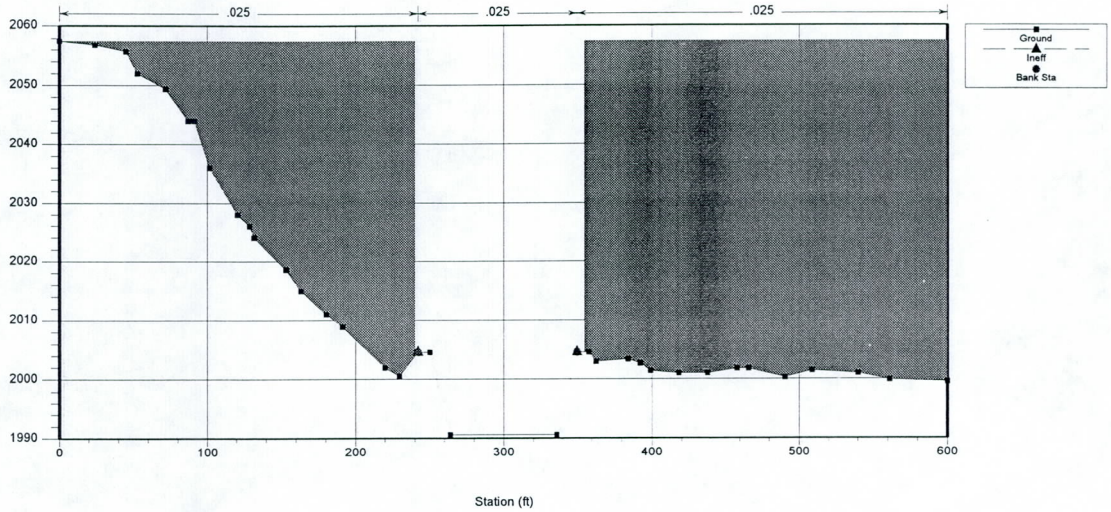

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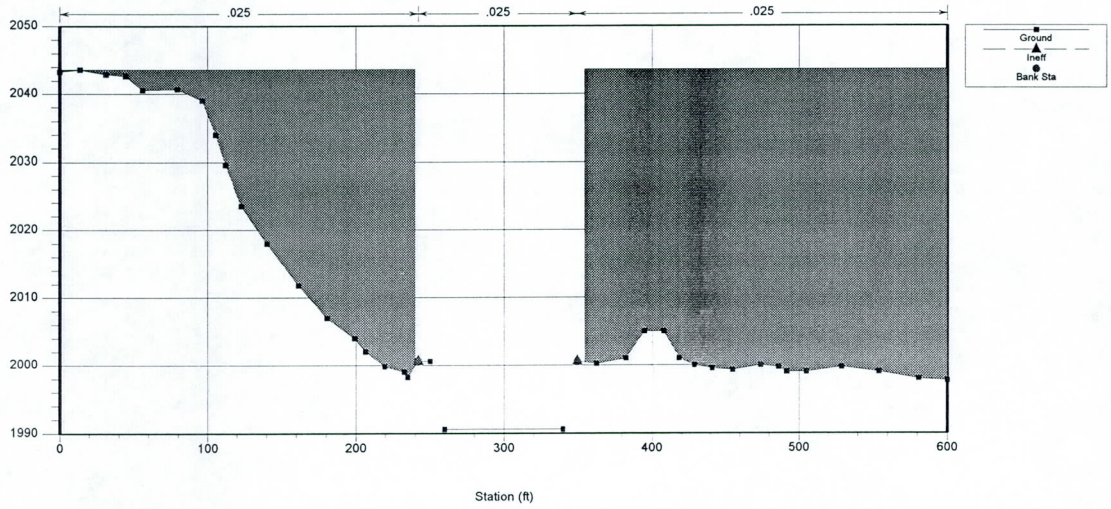

Reata Pass
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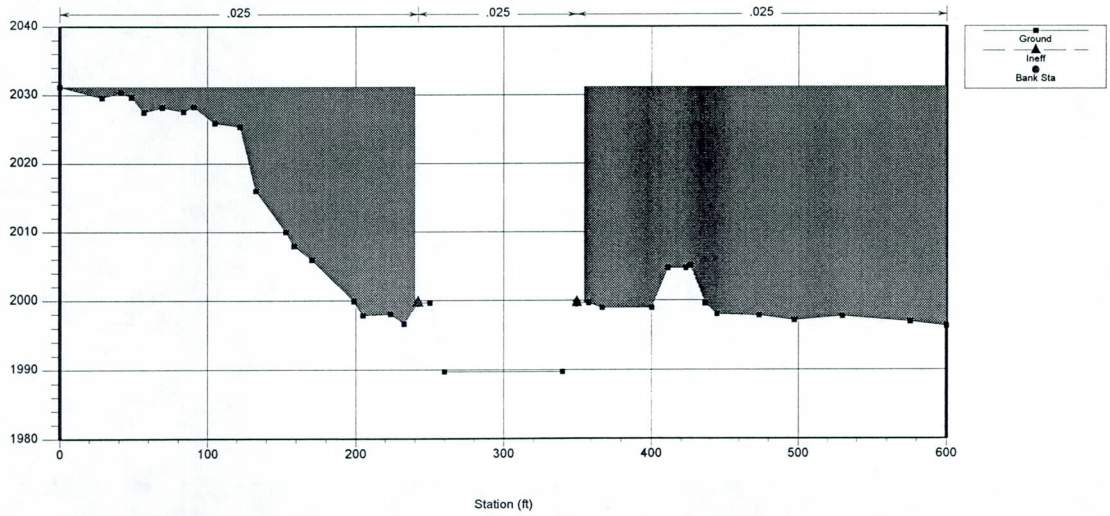

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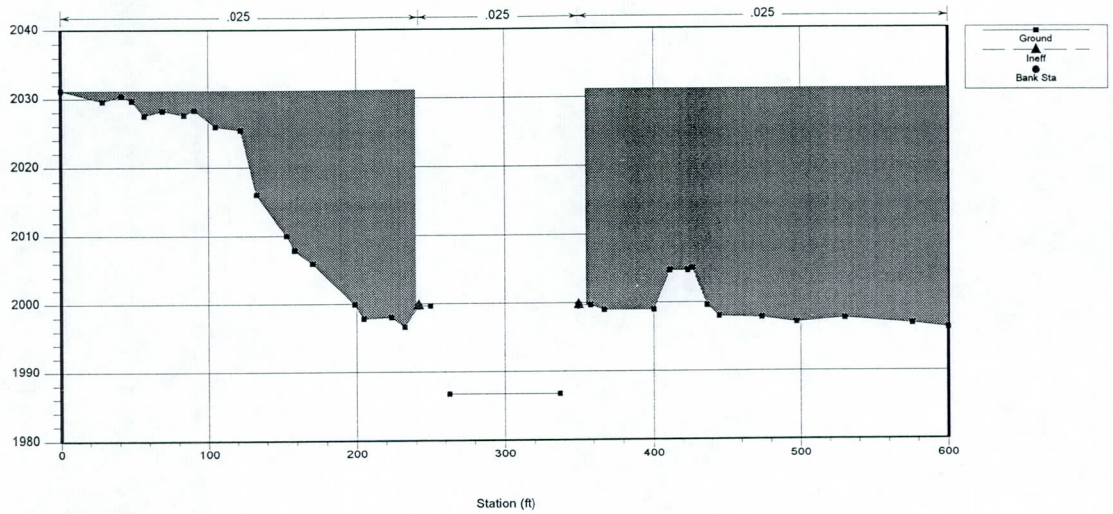

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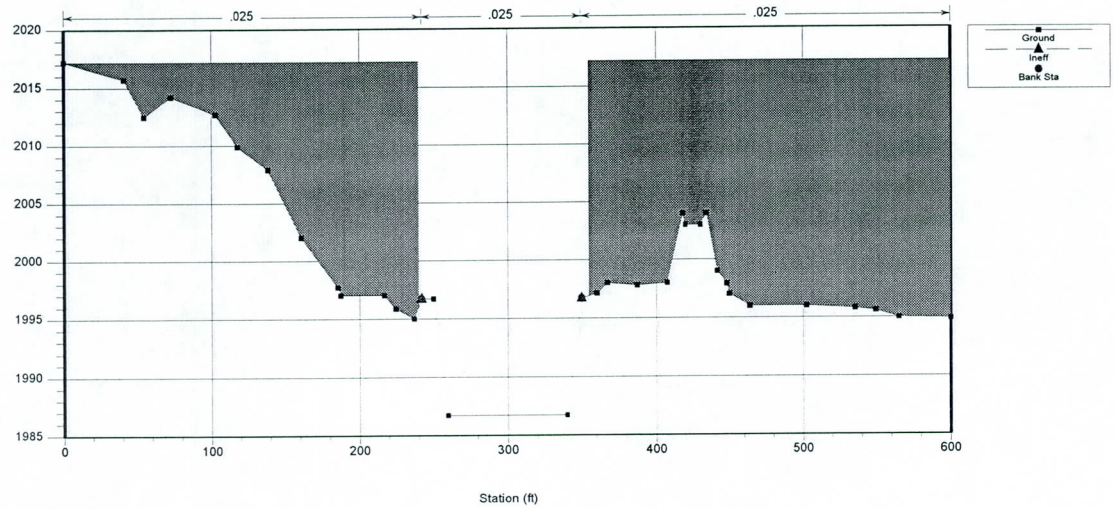

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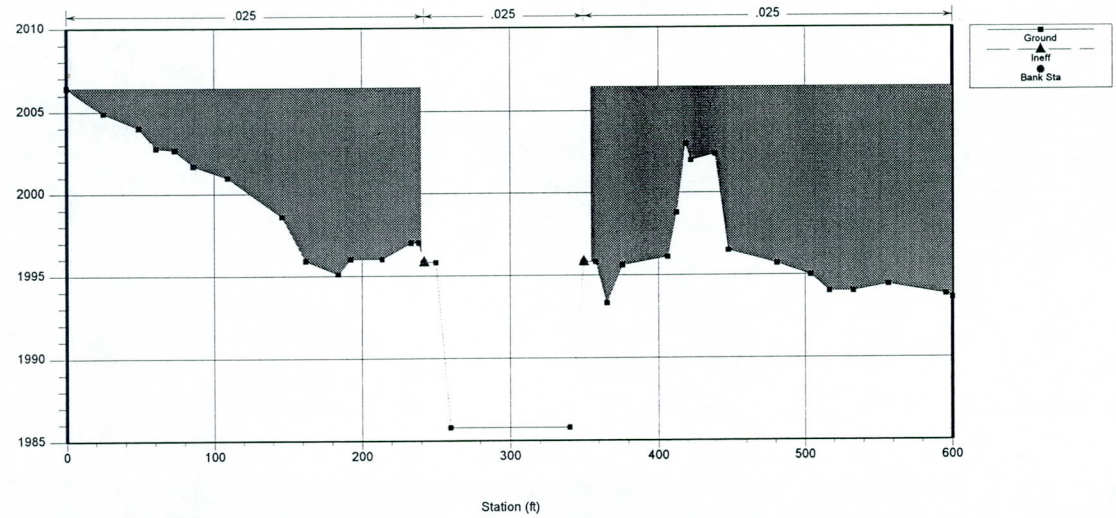

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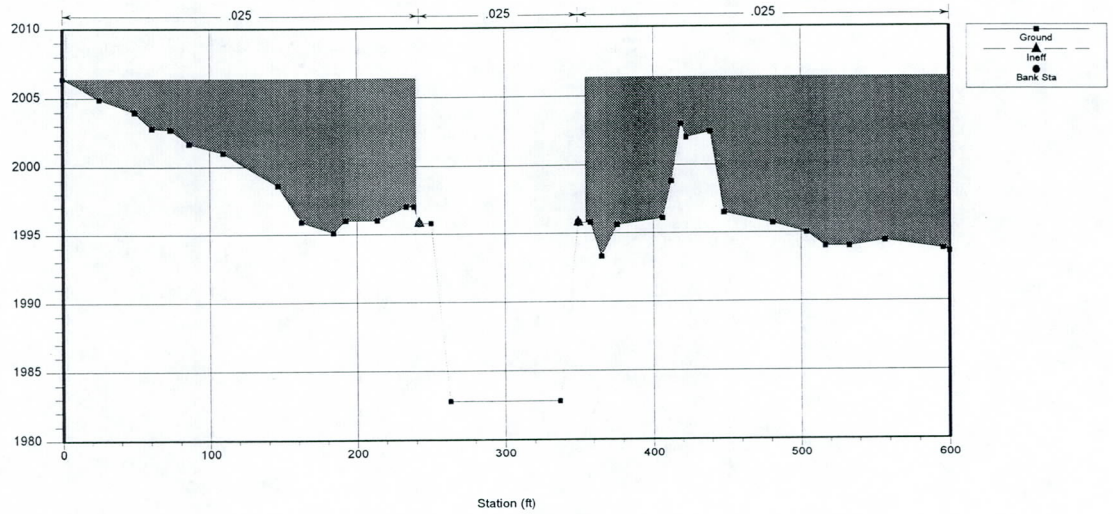
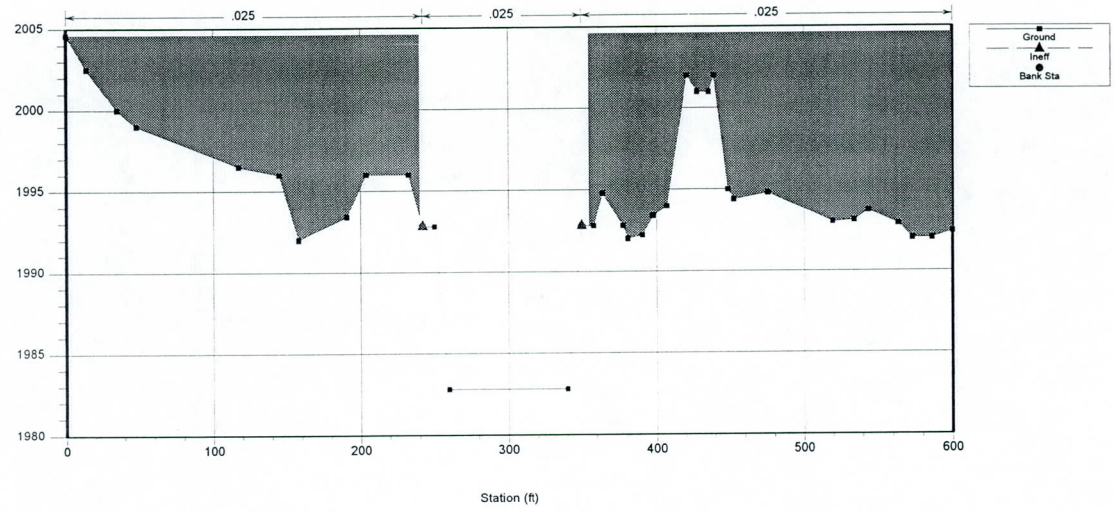
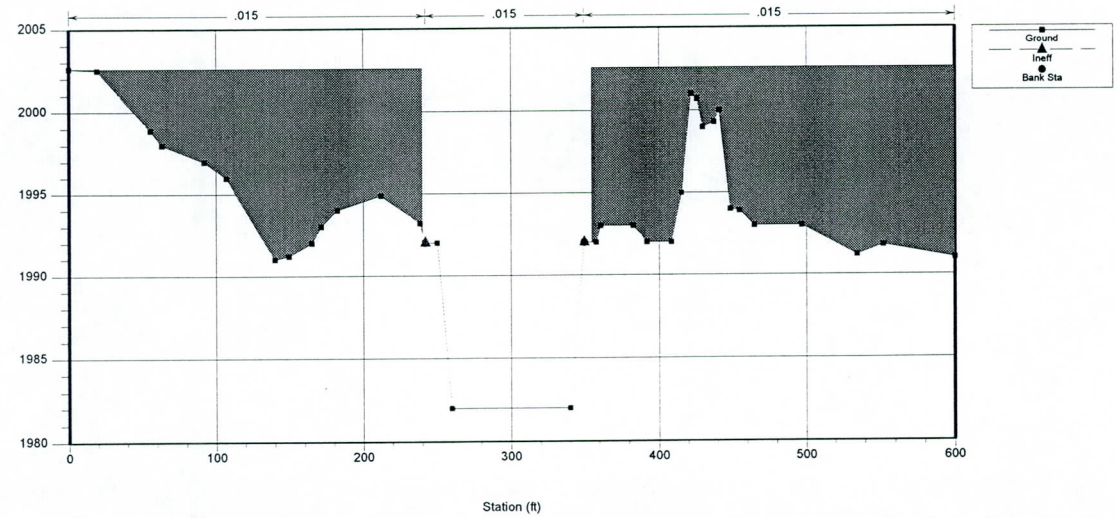


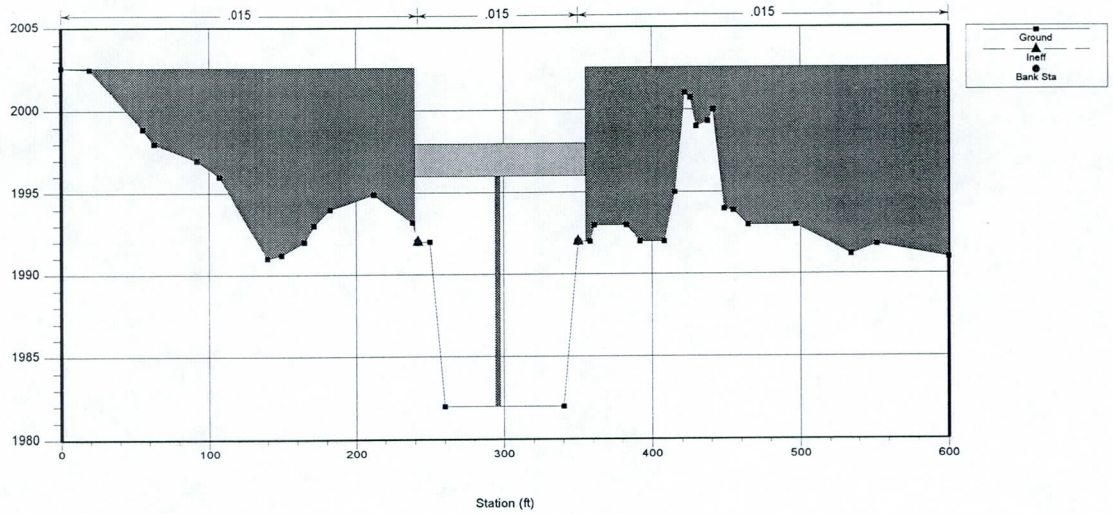
Reata Pass
Reach = 1 212.5



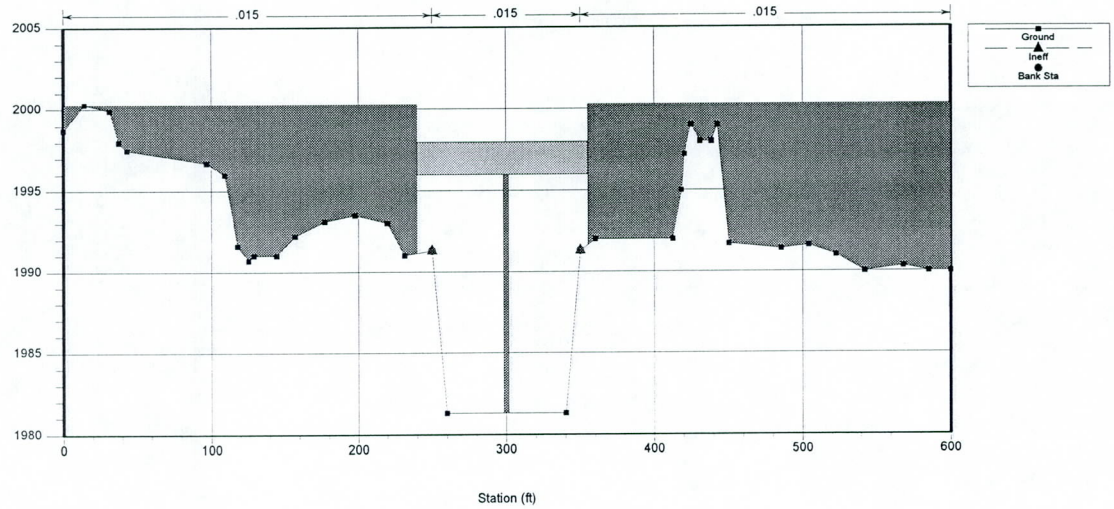
Reata Pass
Reach = 1 212.06



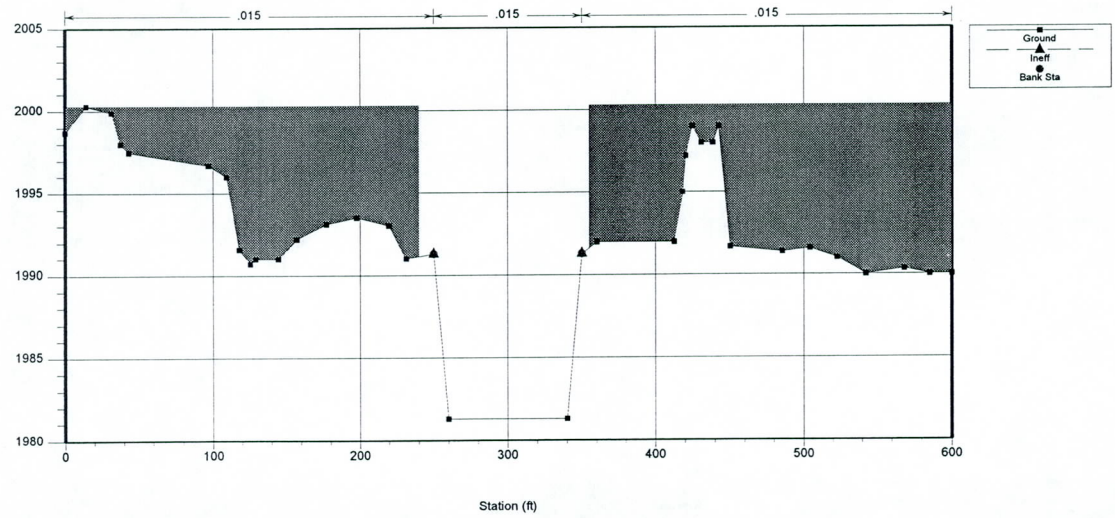
Reata Pass
Reach = 1 Upstream Inside Bridge # 3



Reata Pass
Reach = 1 Downstream Inside Bridge # 3



Reata Pass
Reach = 1 211.66



Reata Pass
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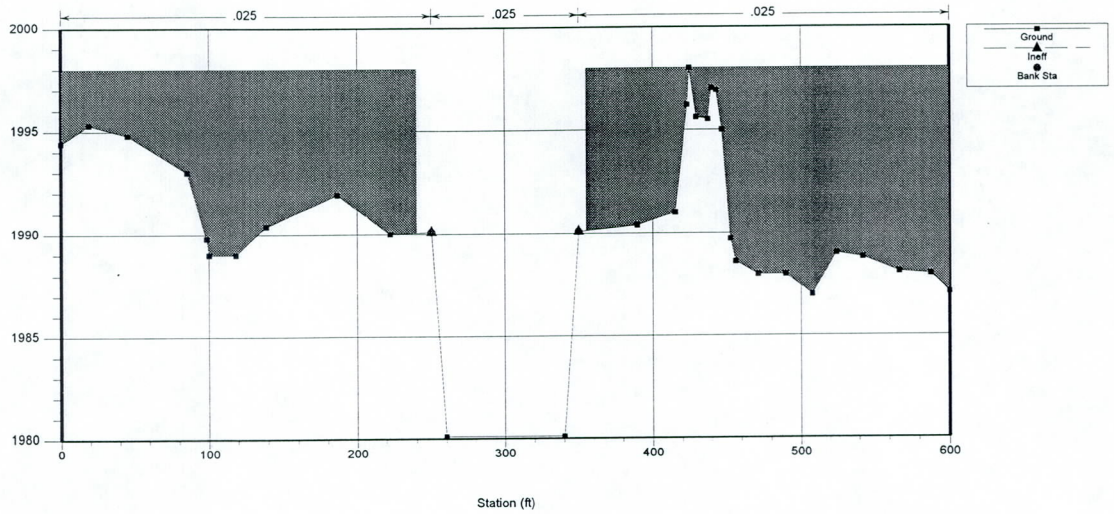

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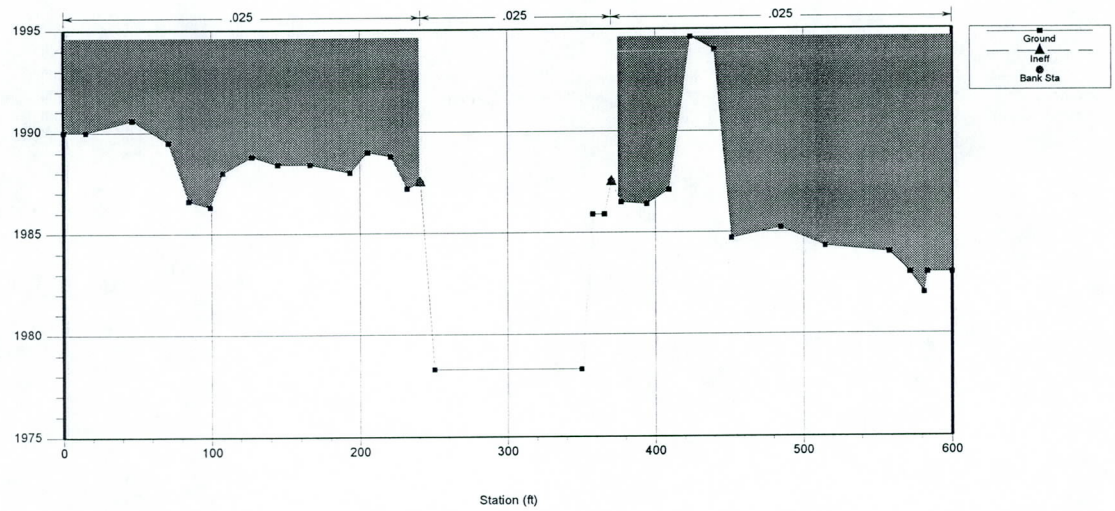

Reata Pass
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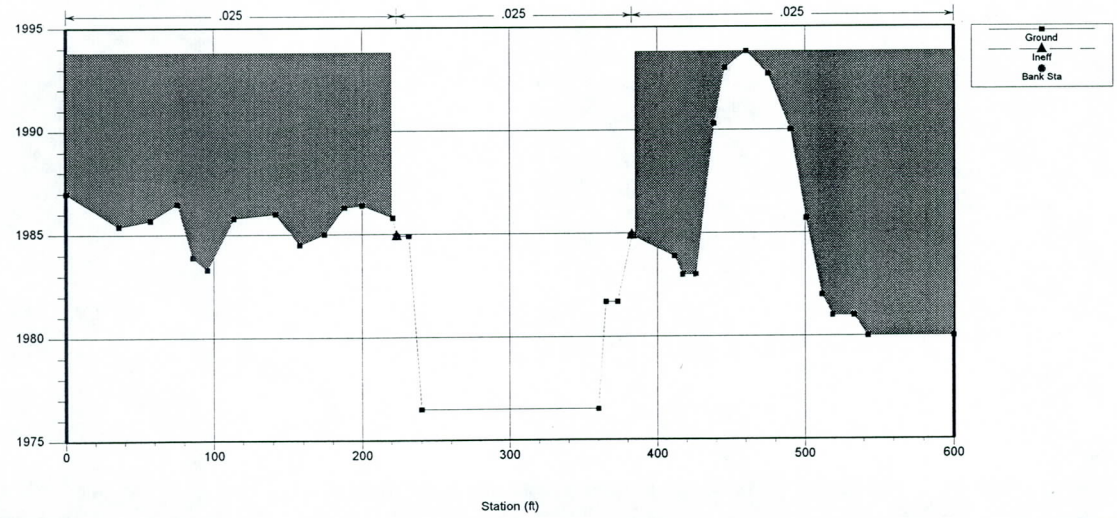

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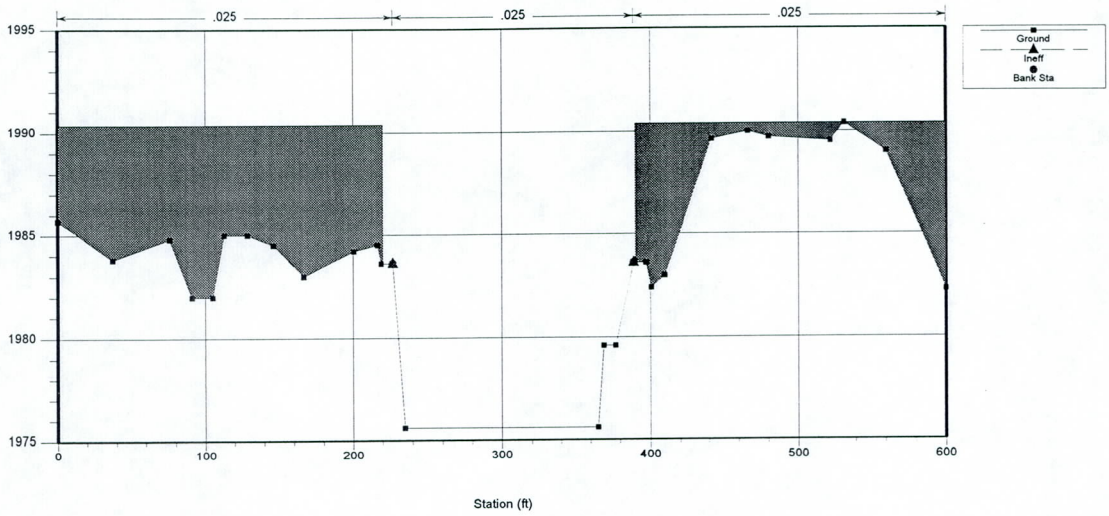

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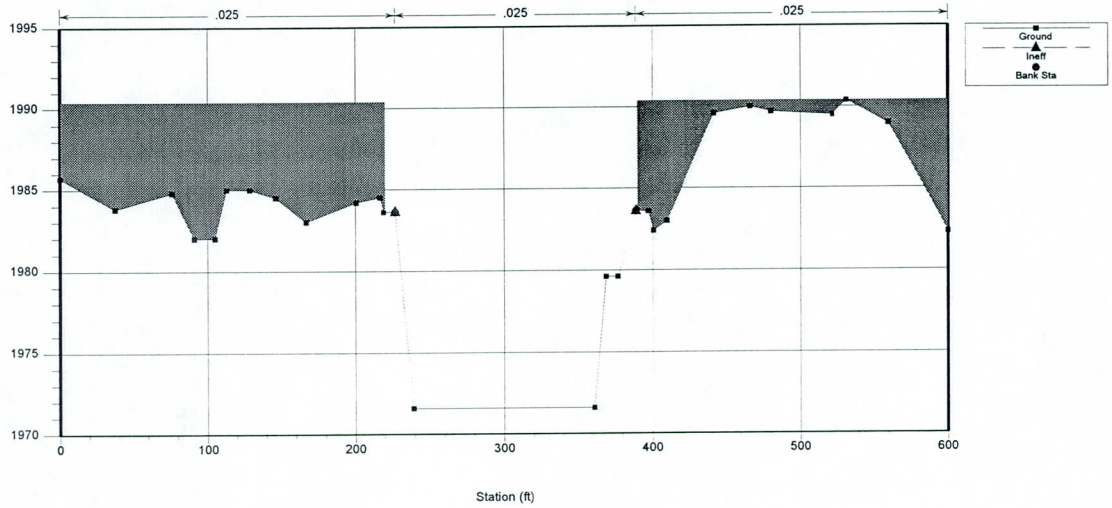

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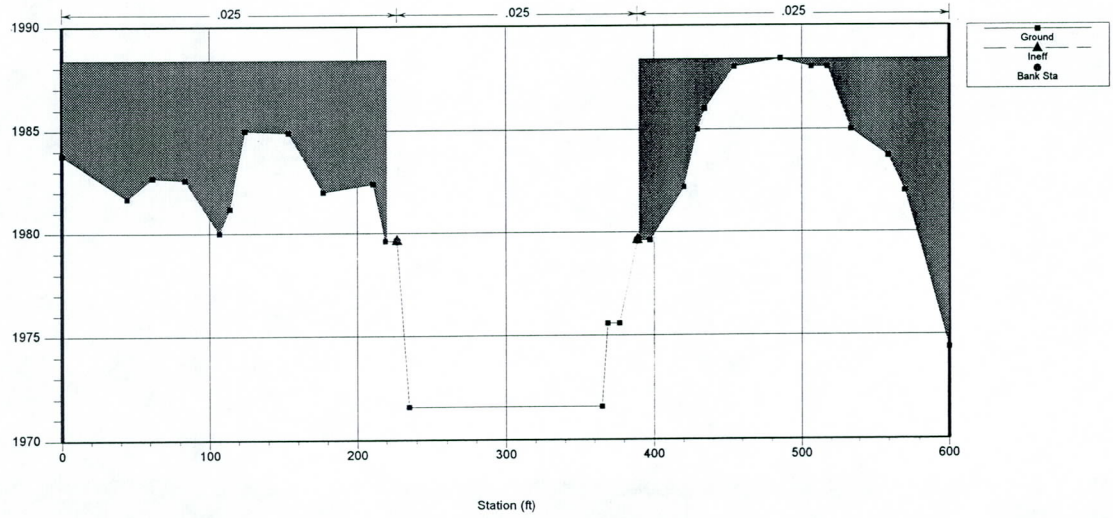

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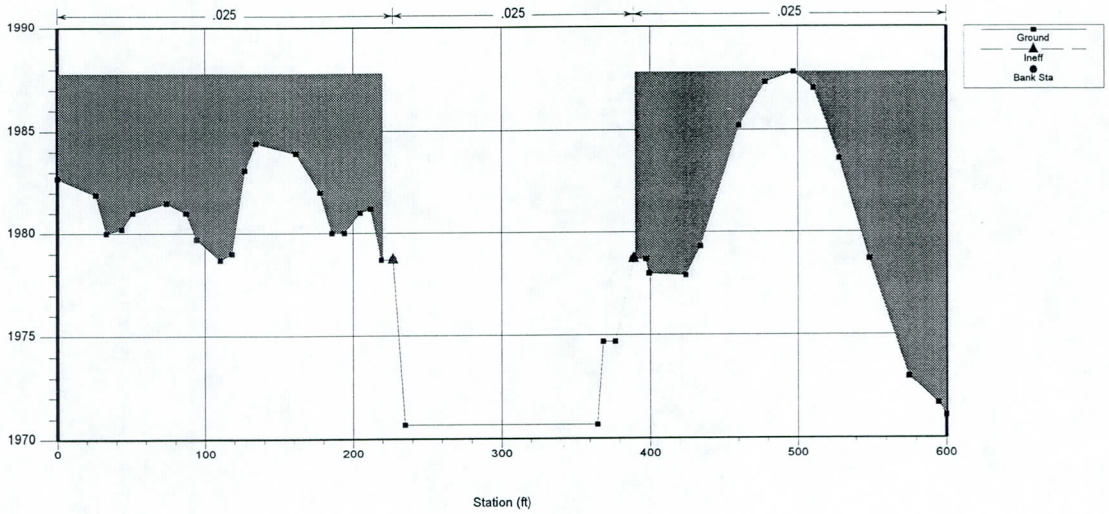

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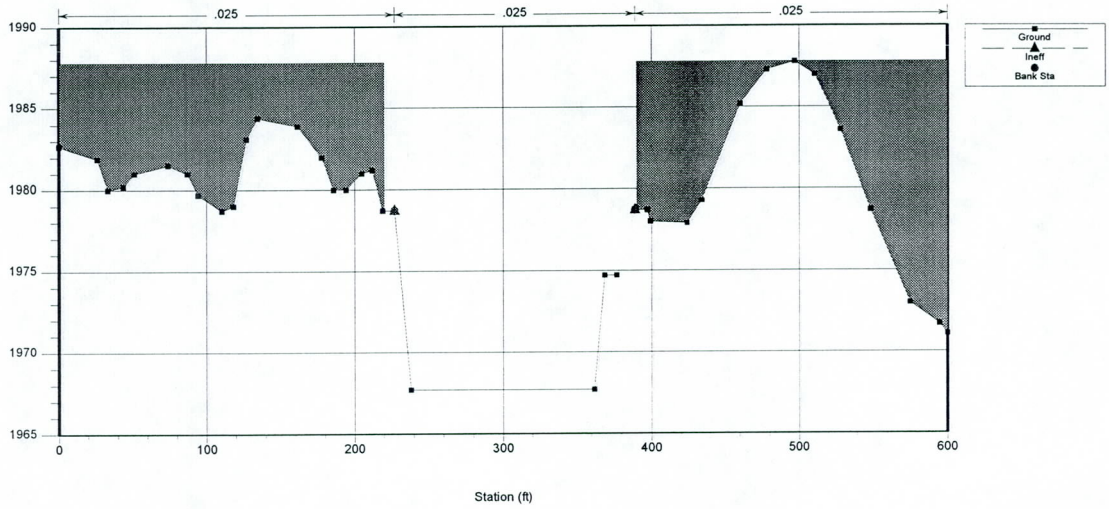

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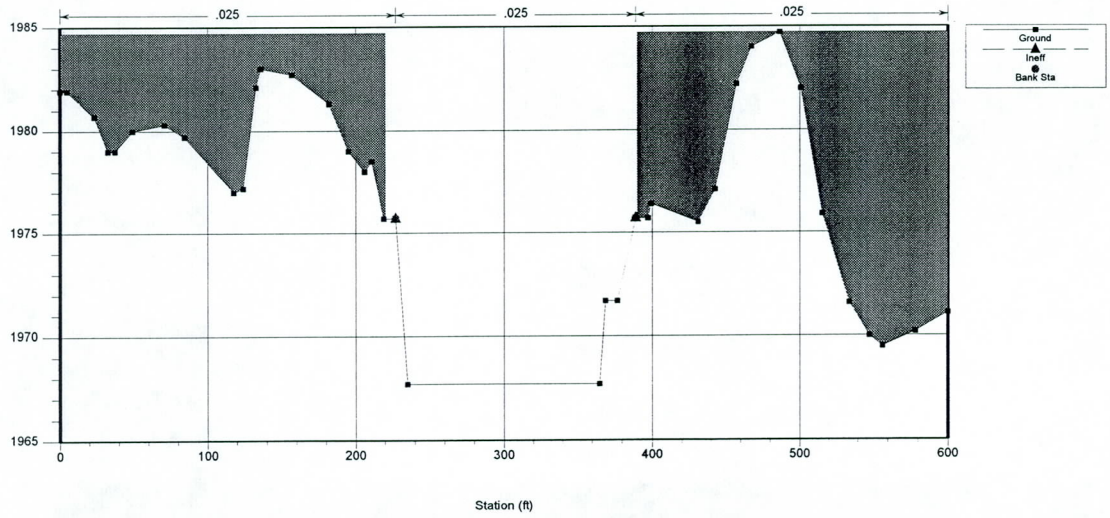

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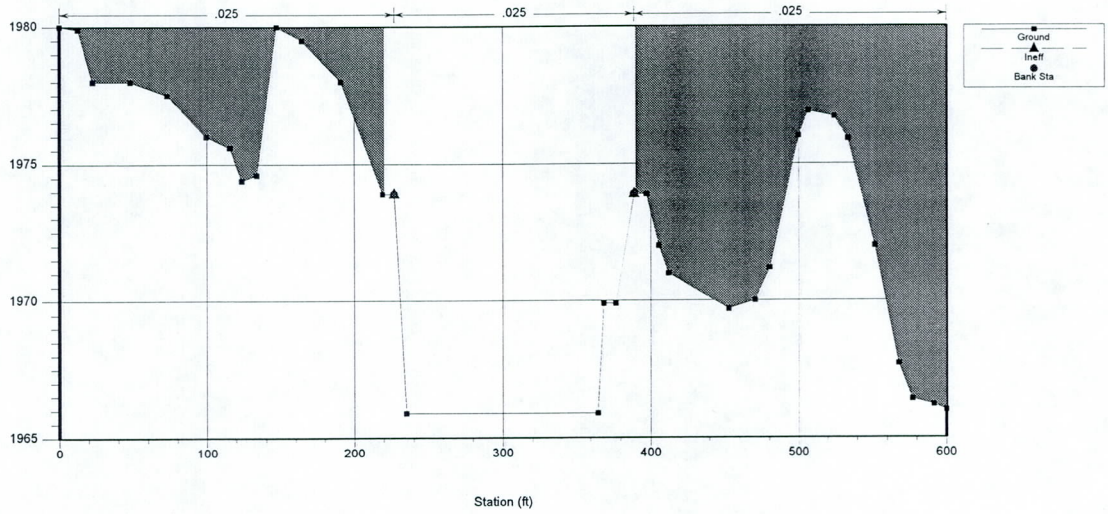

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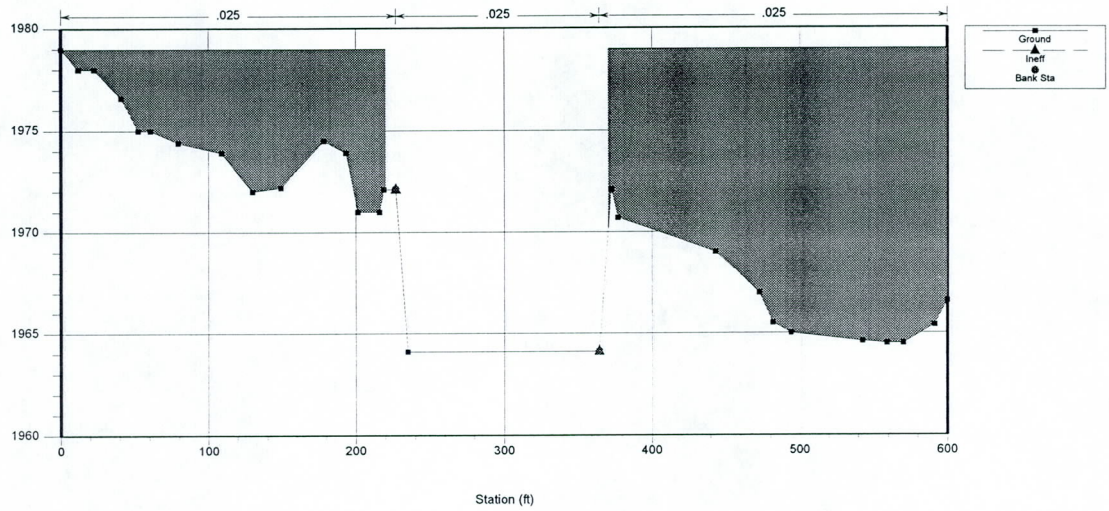

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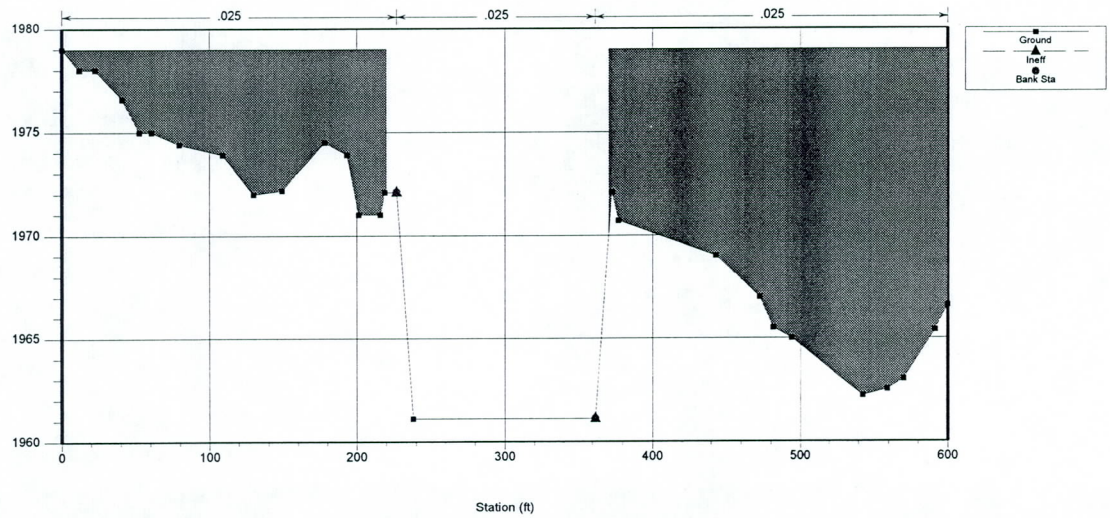

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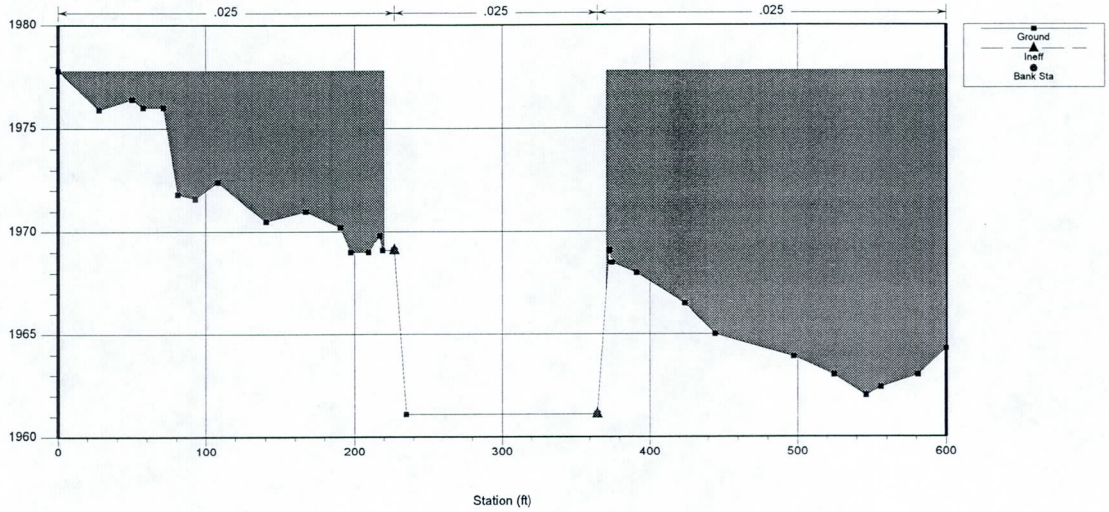

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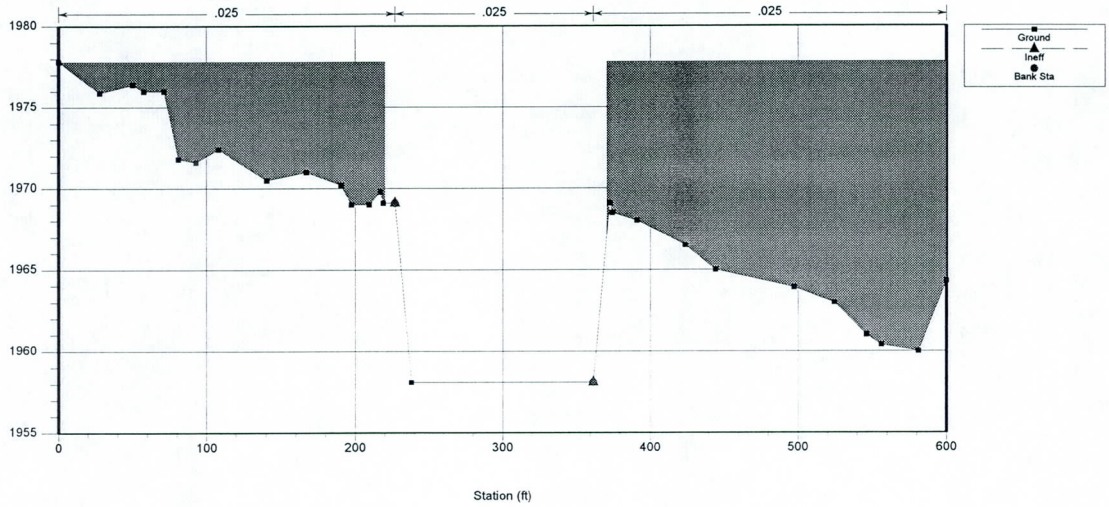

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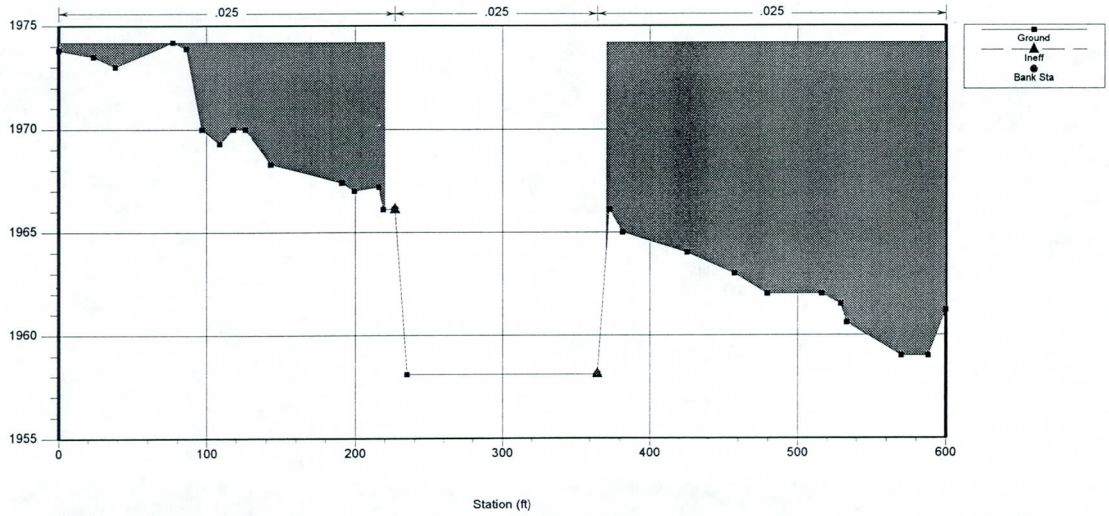

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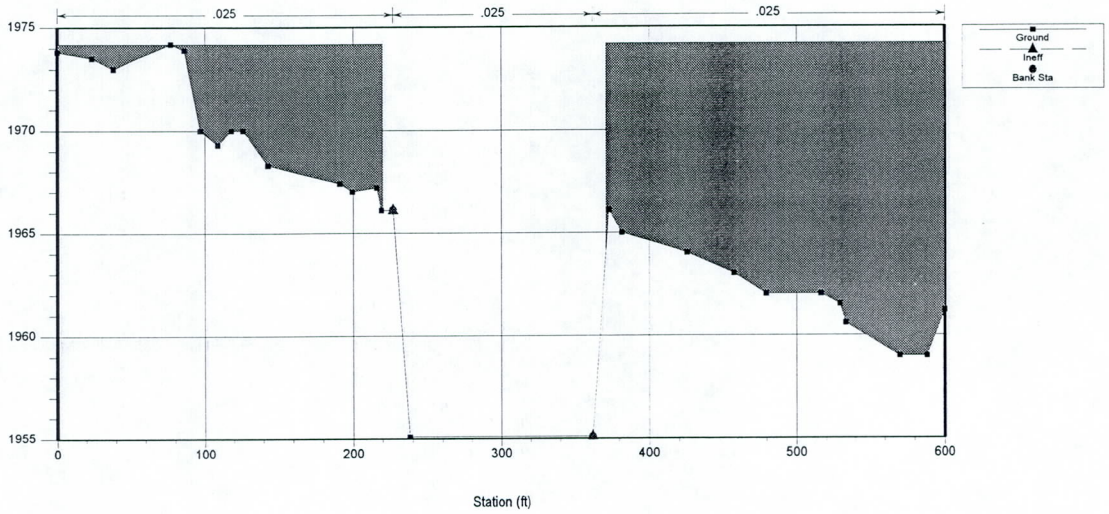

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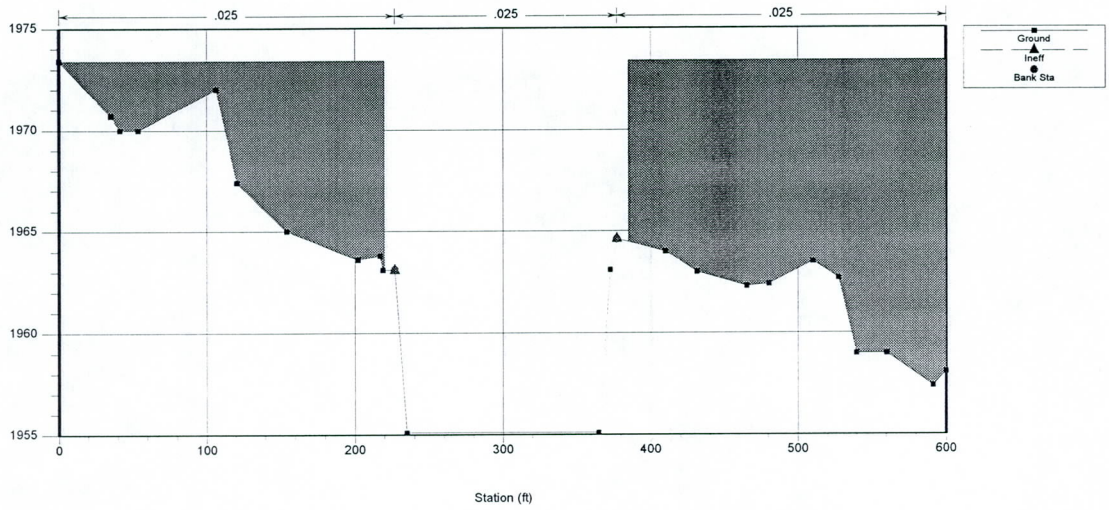

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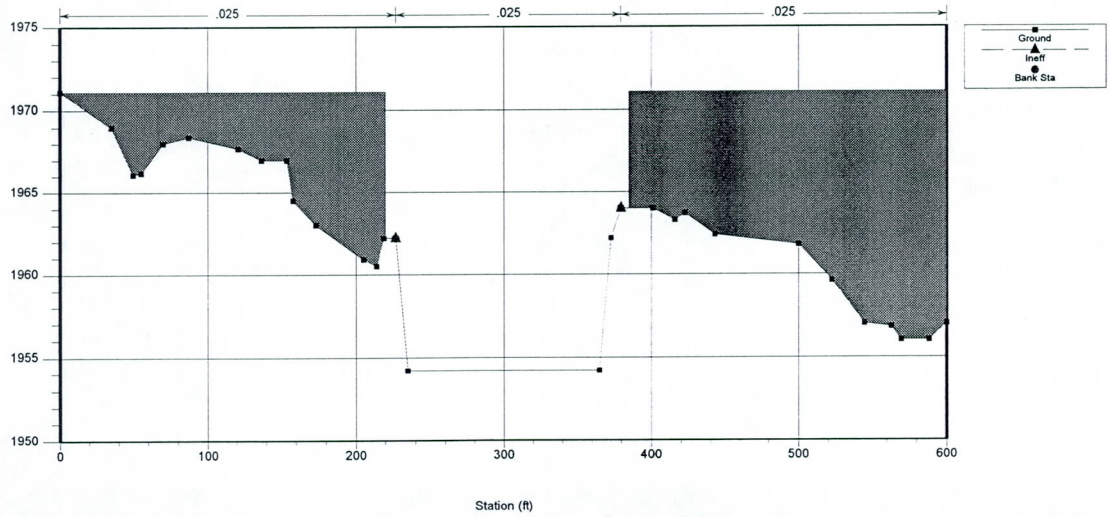

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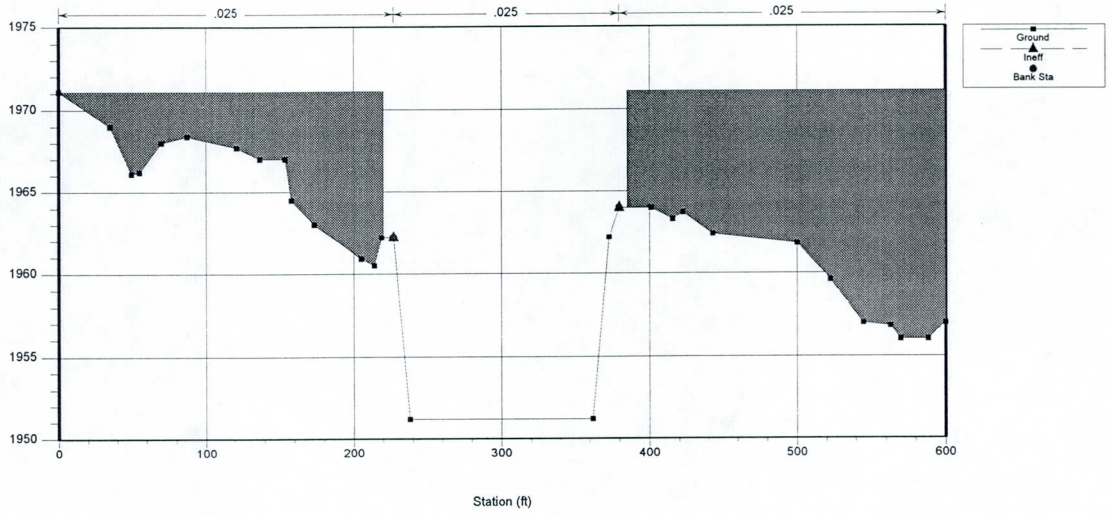

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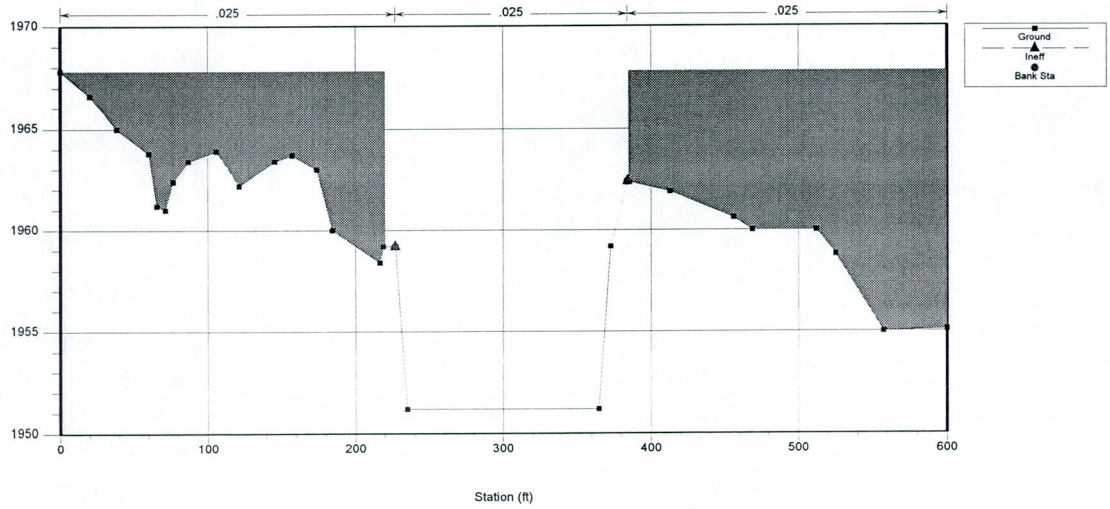

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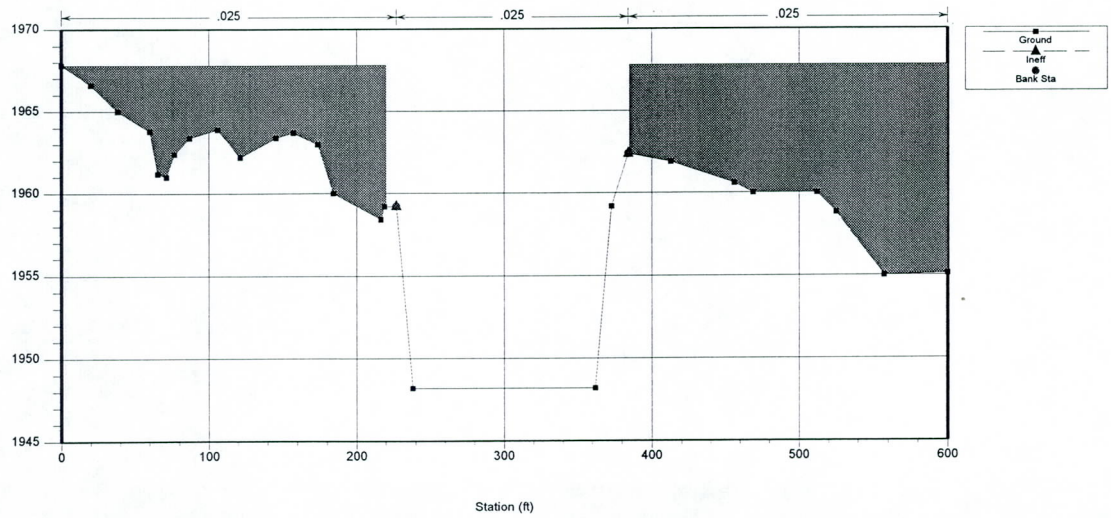

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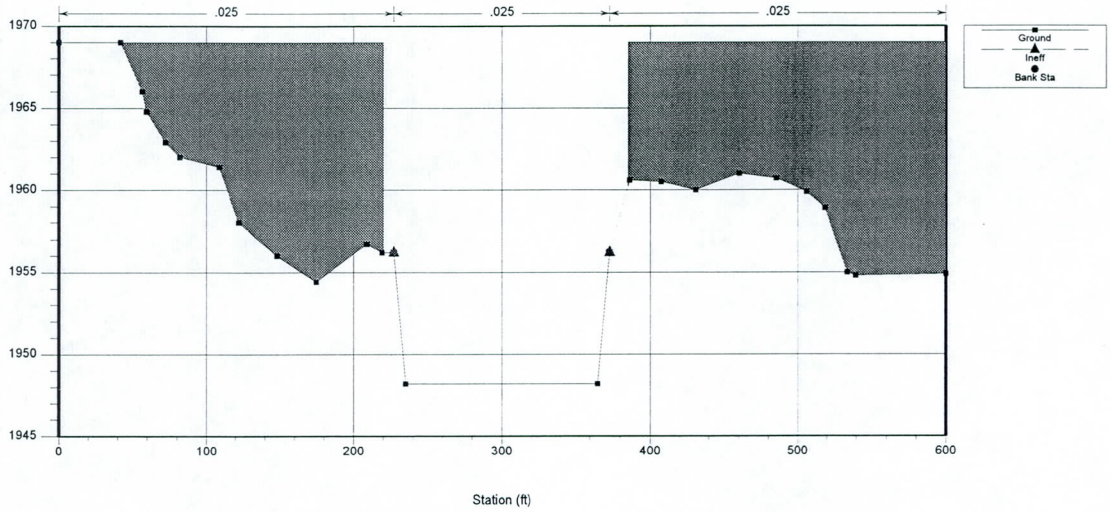

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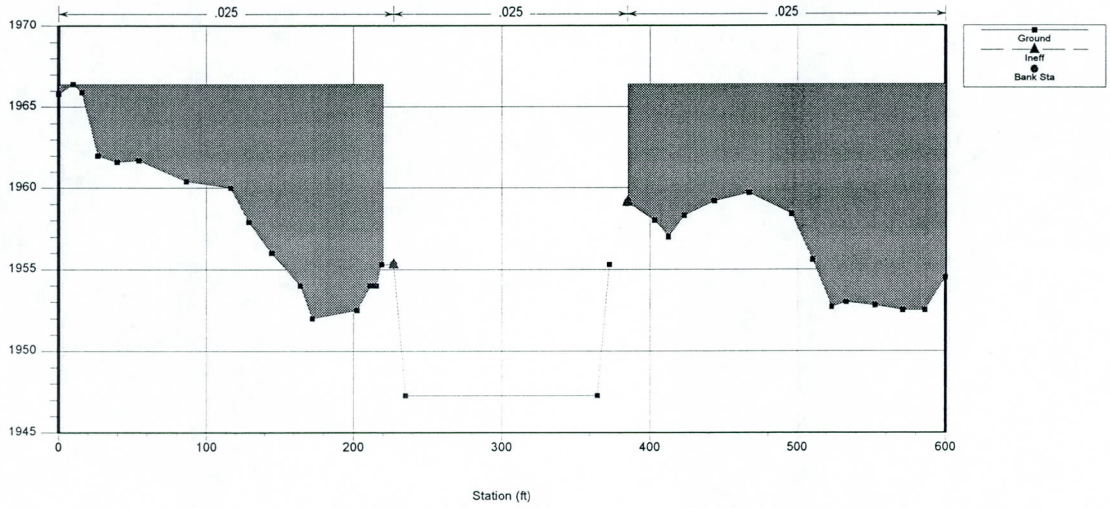

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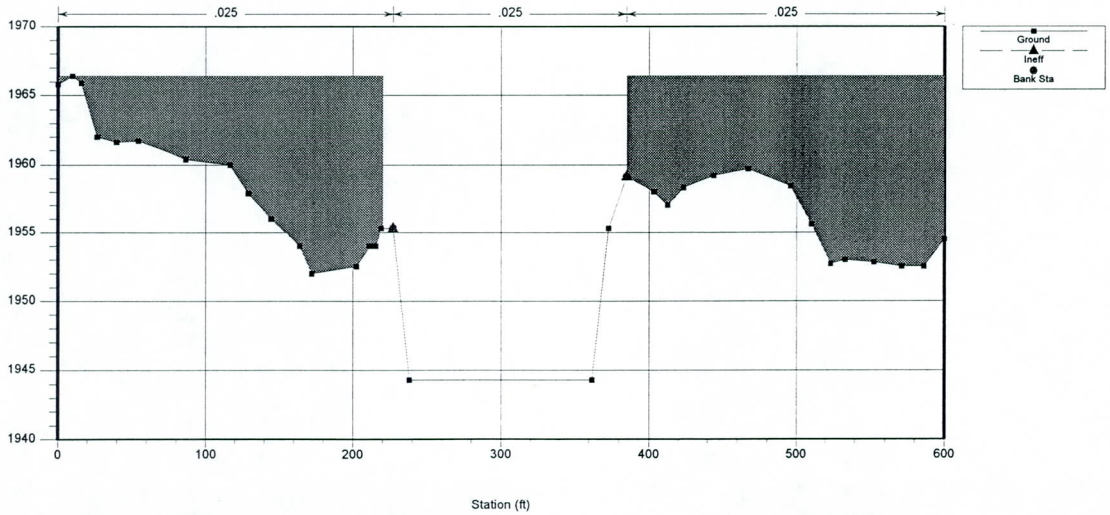

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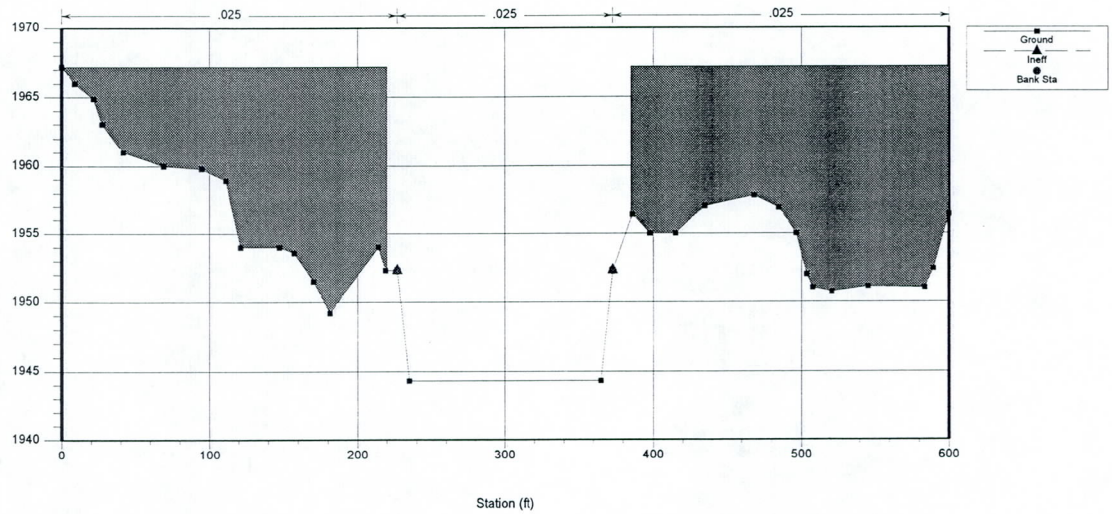

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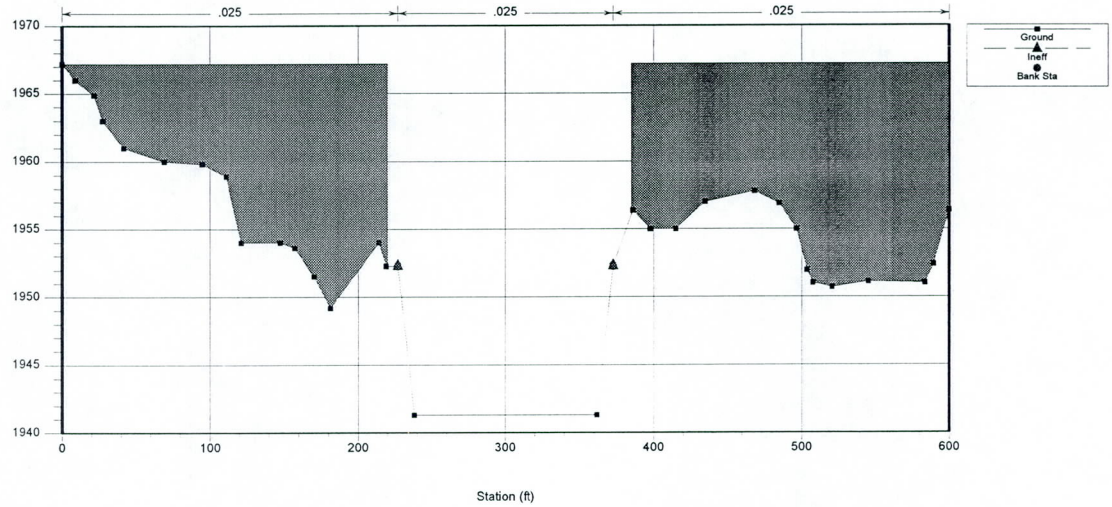

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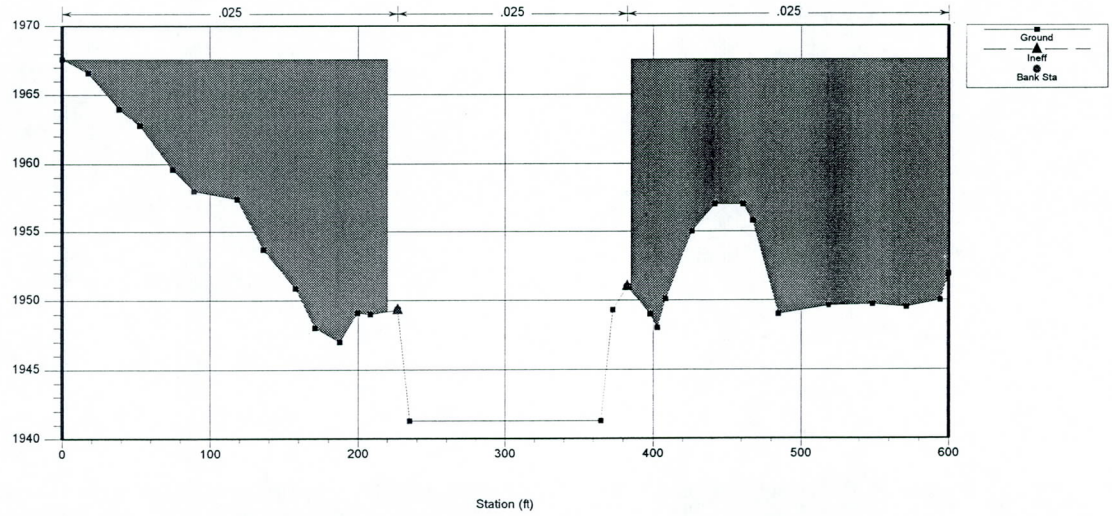

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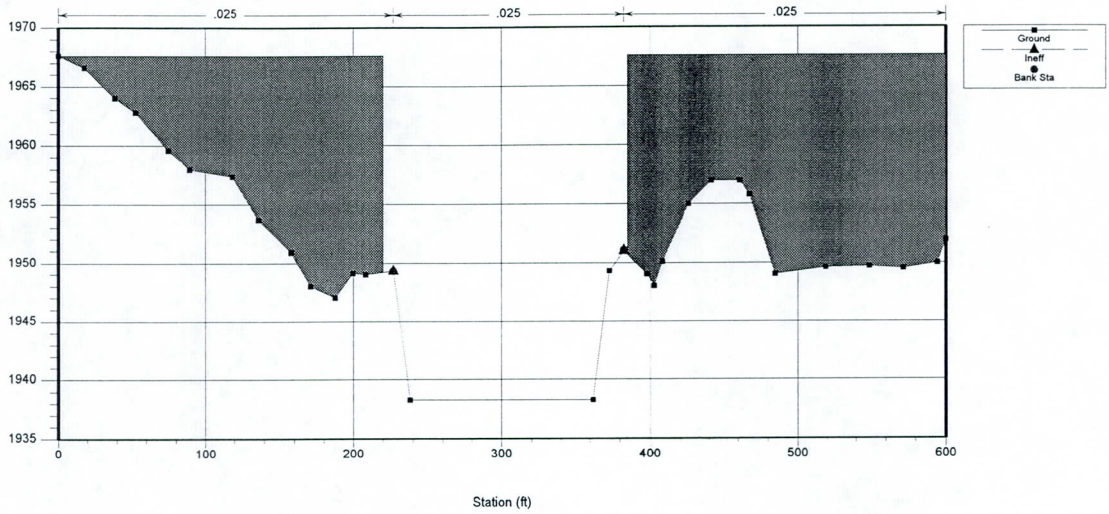

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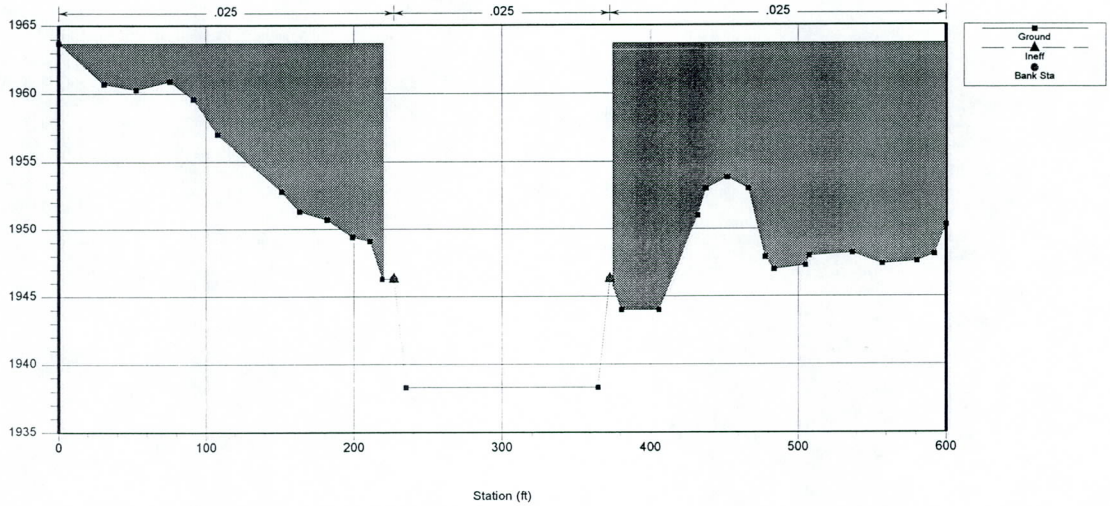

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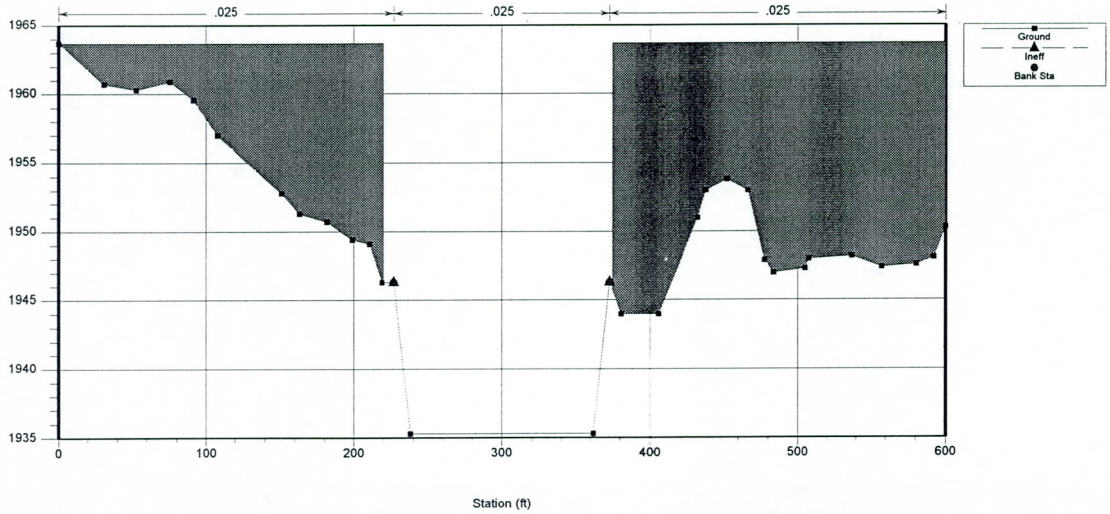

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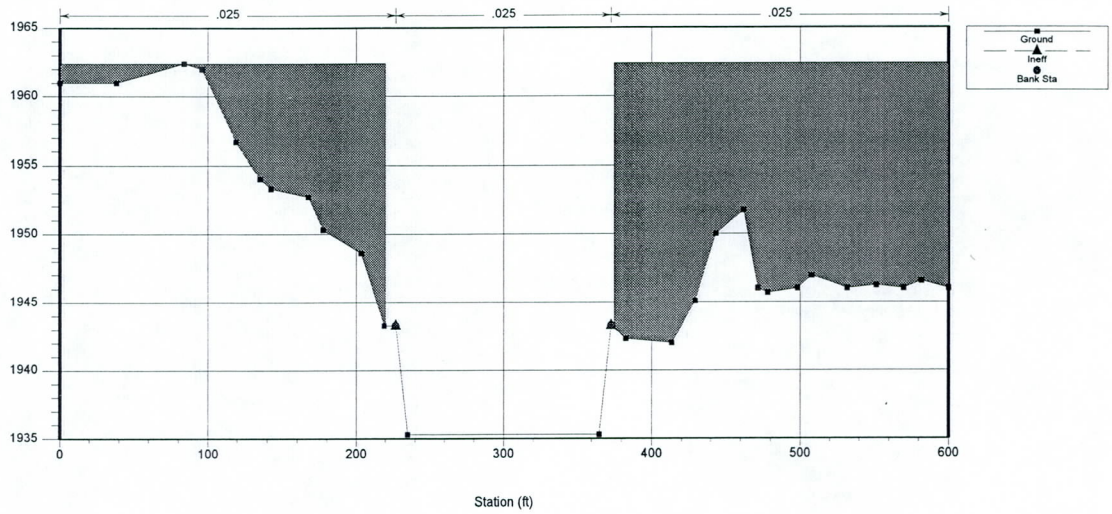

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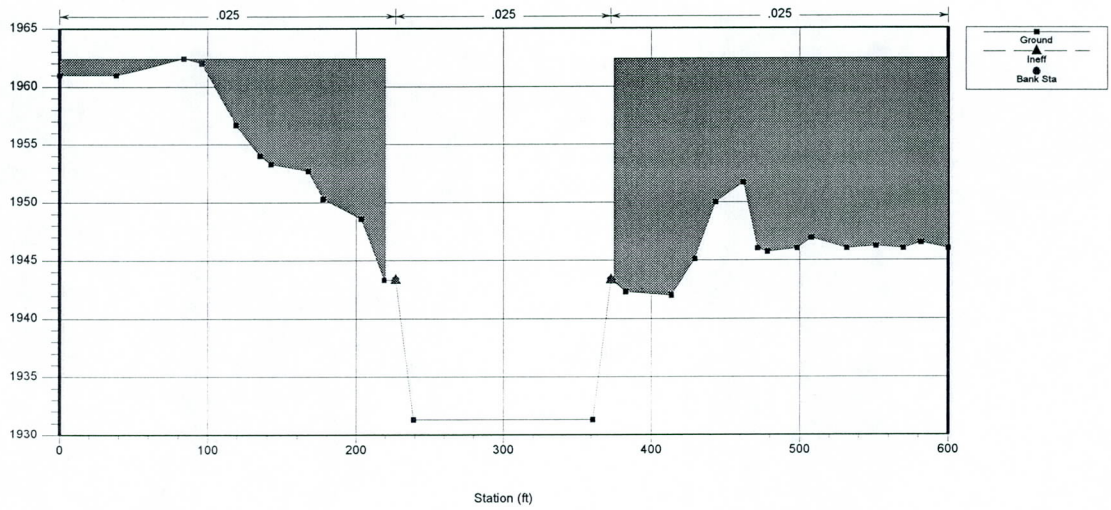

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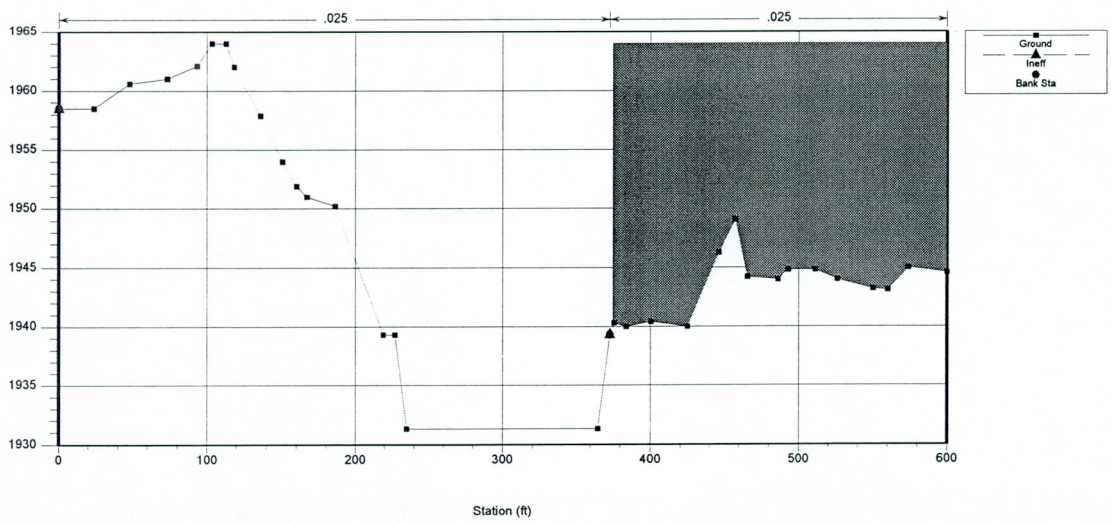

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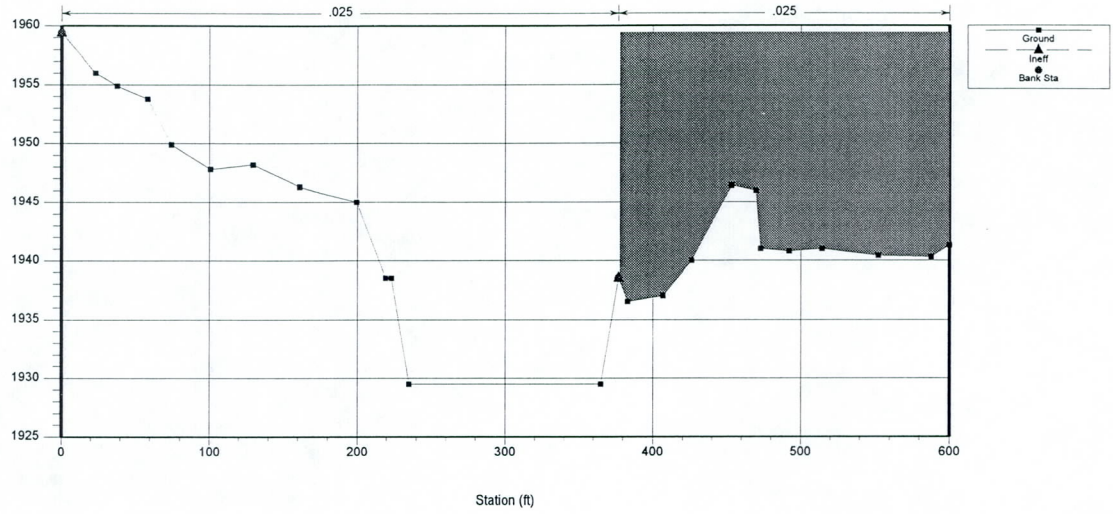

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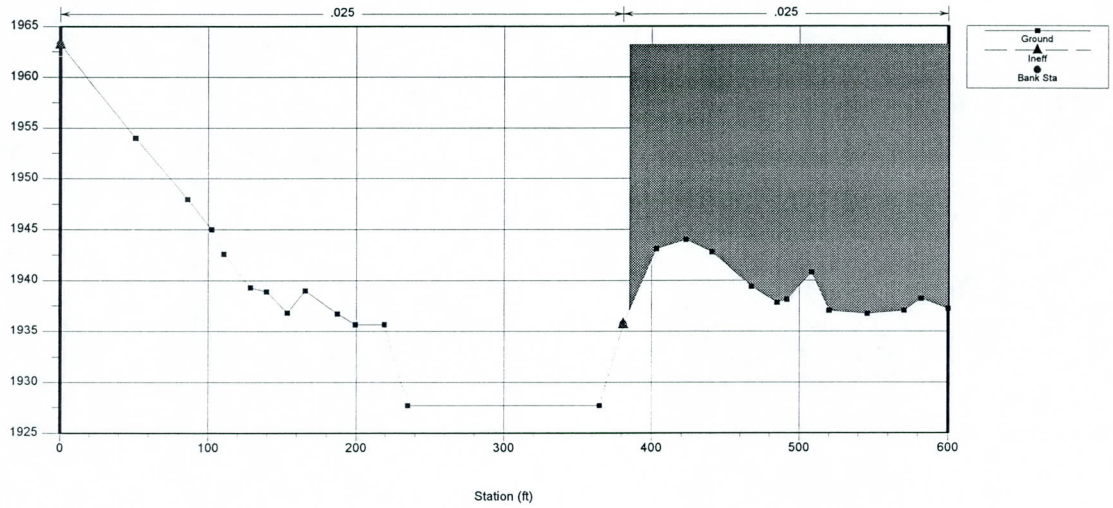

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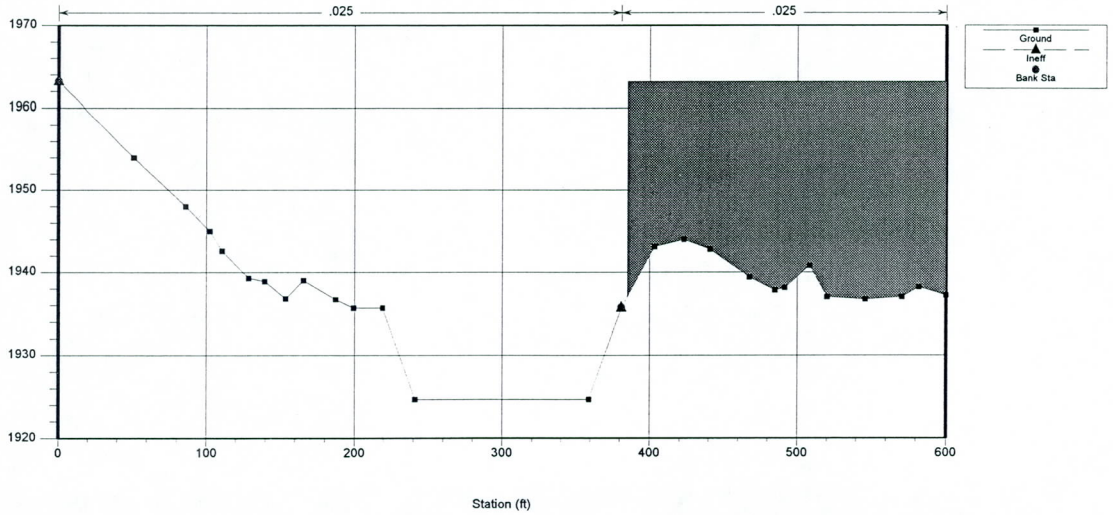

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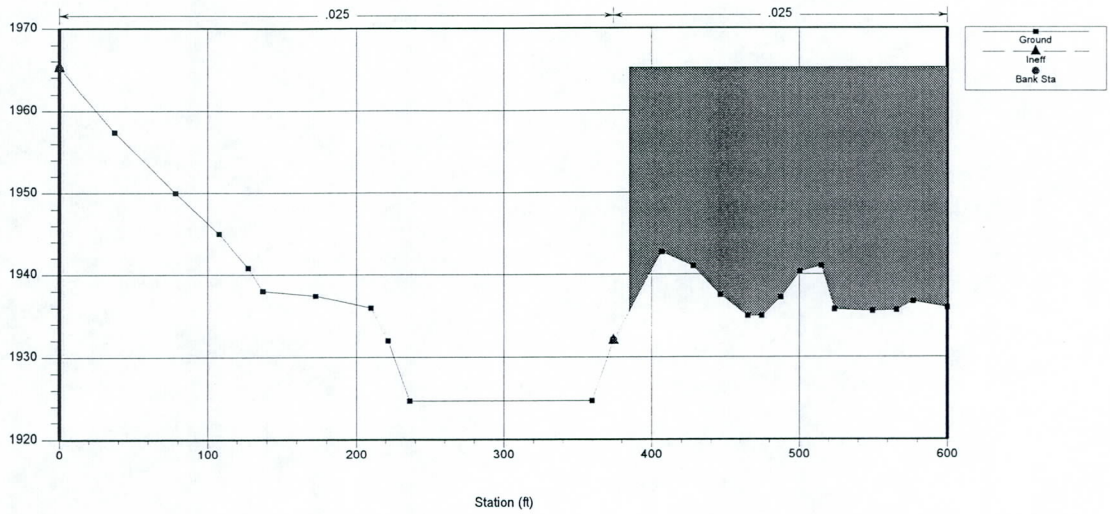

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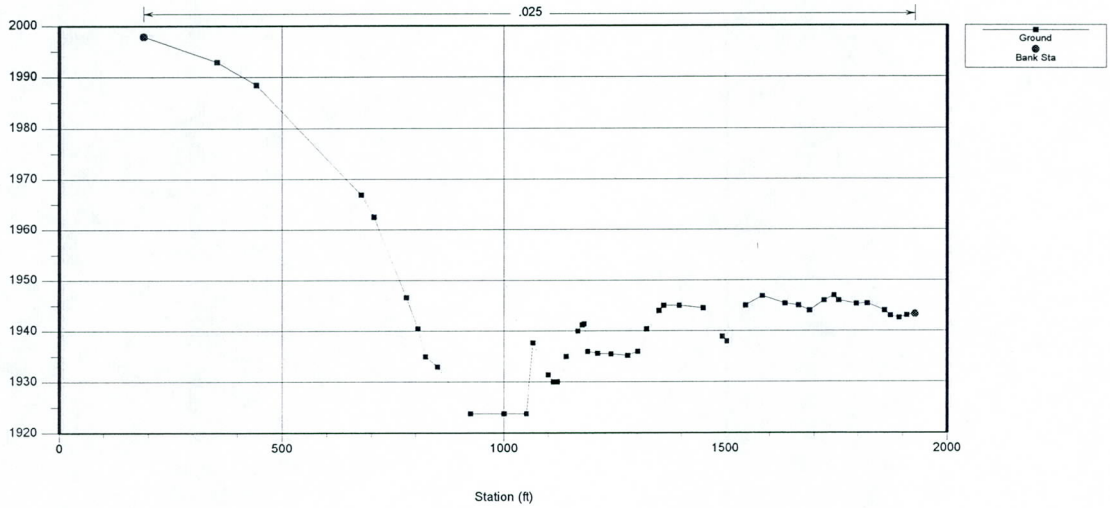

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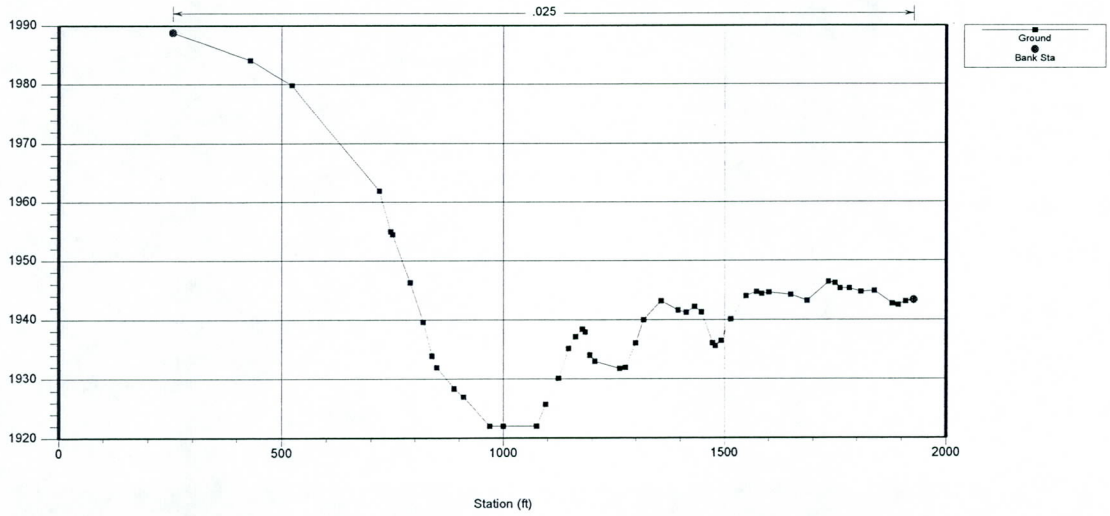

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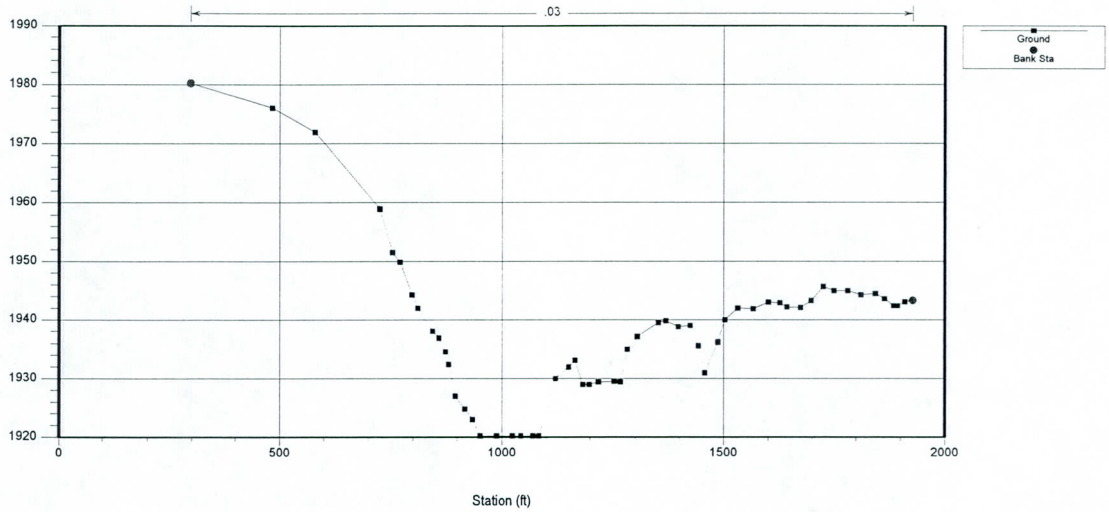

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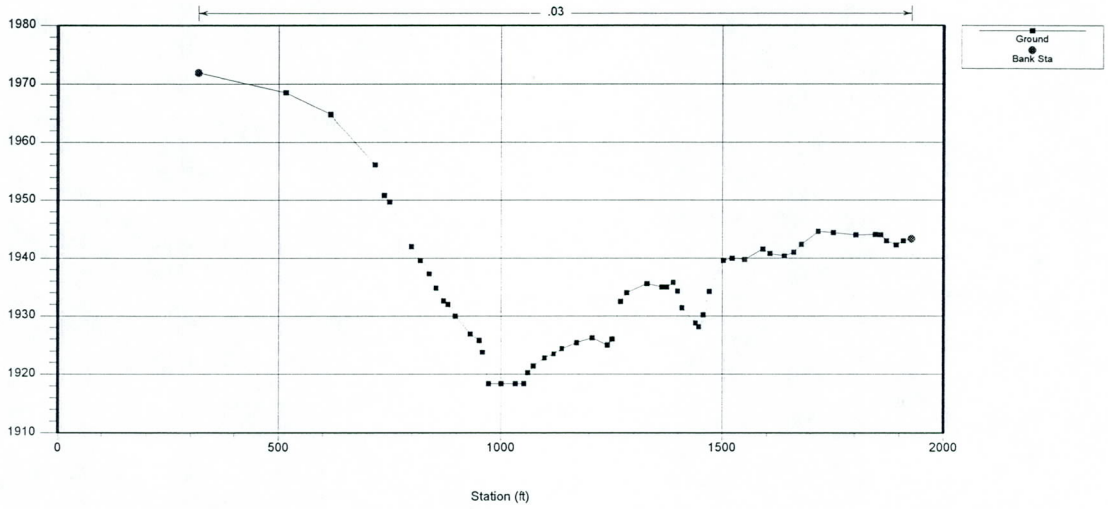

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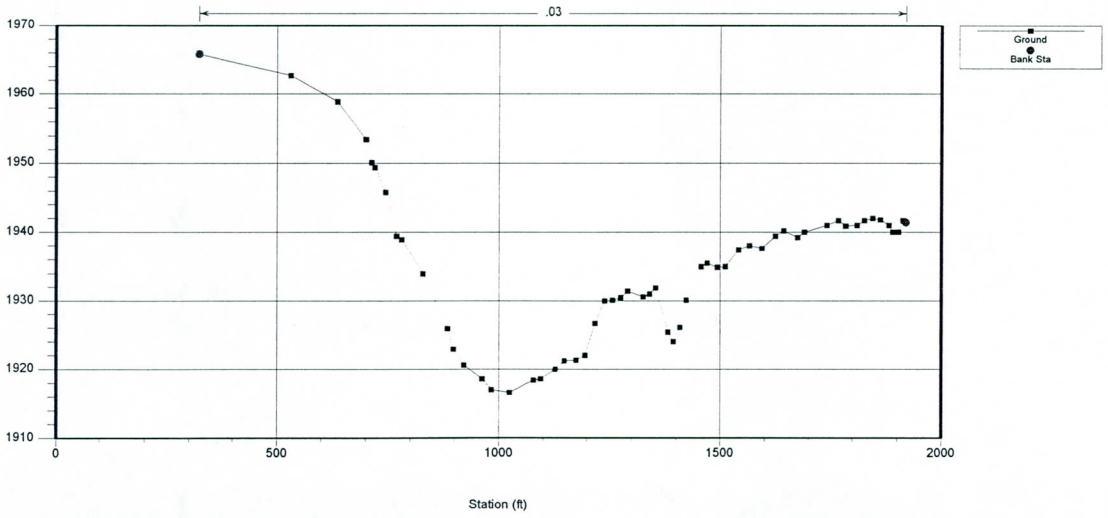

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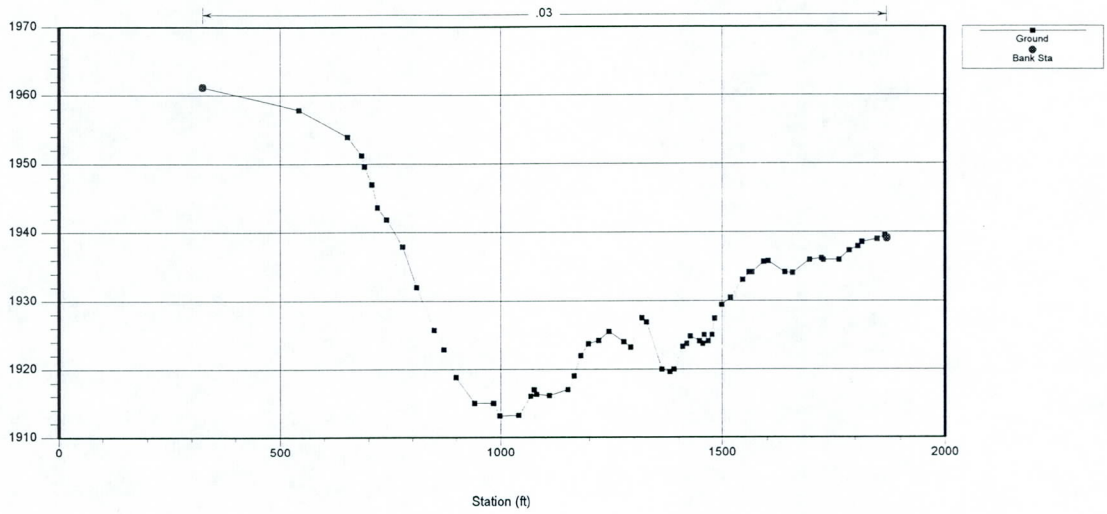

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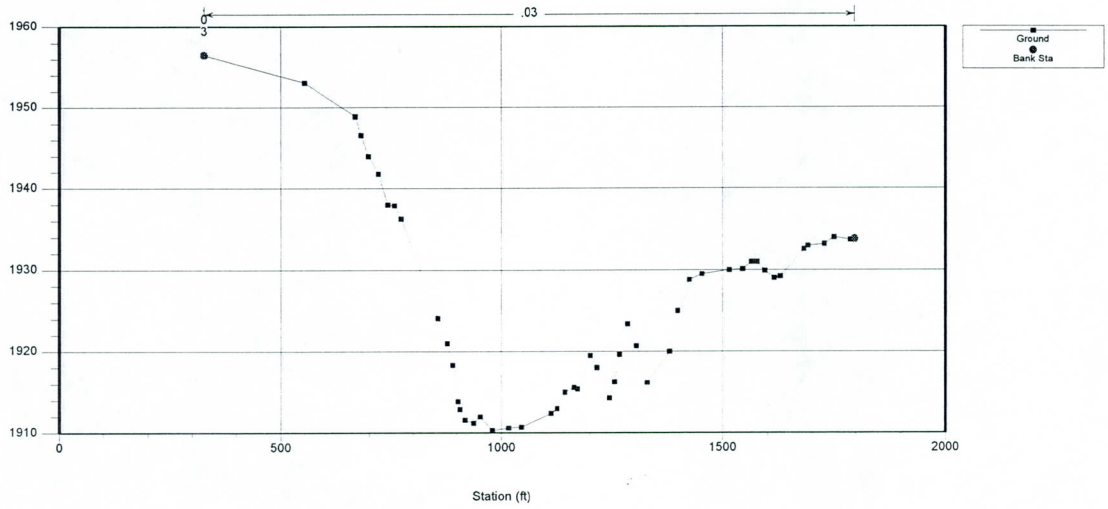

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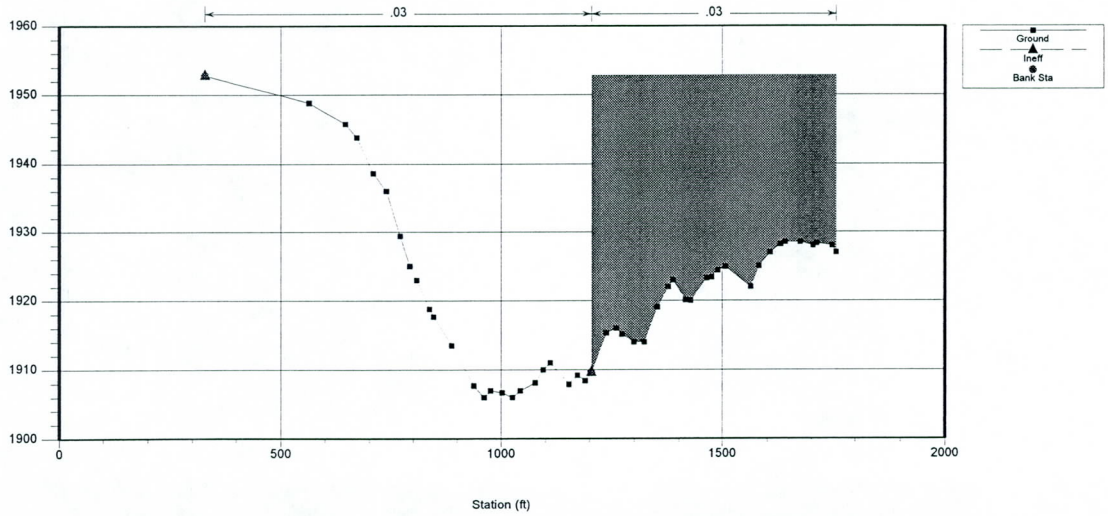

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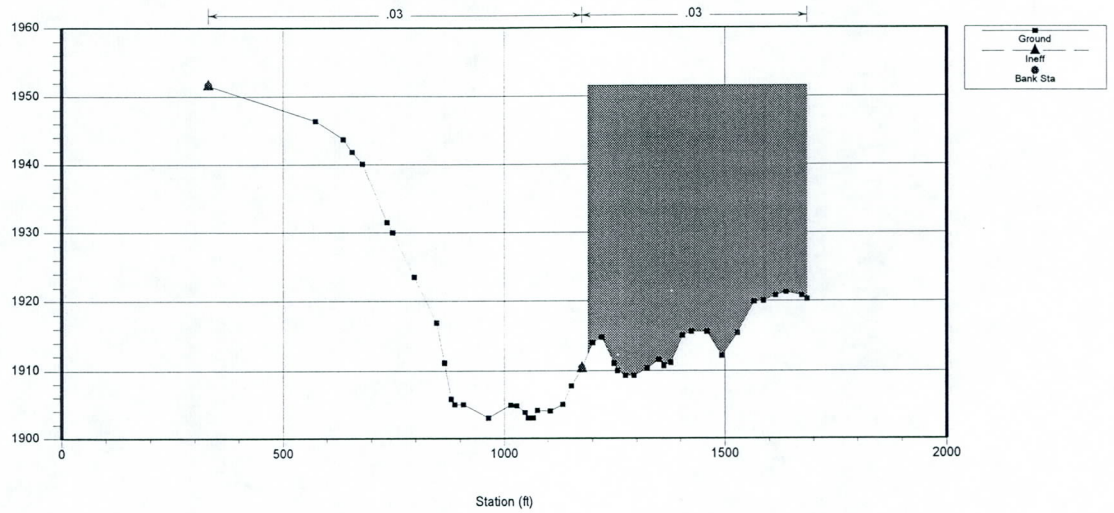

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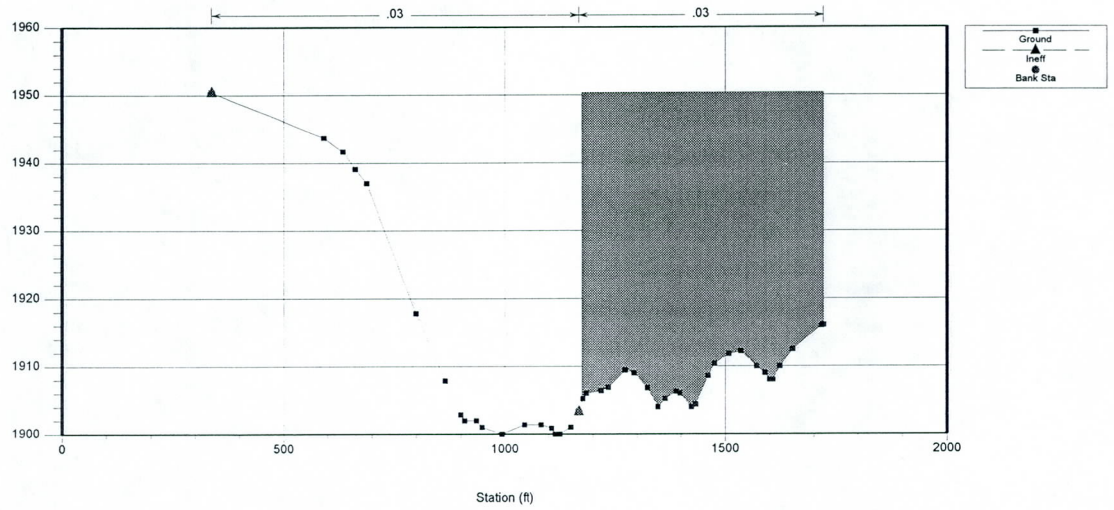

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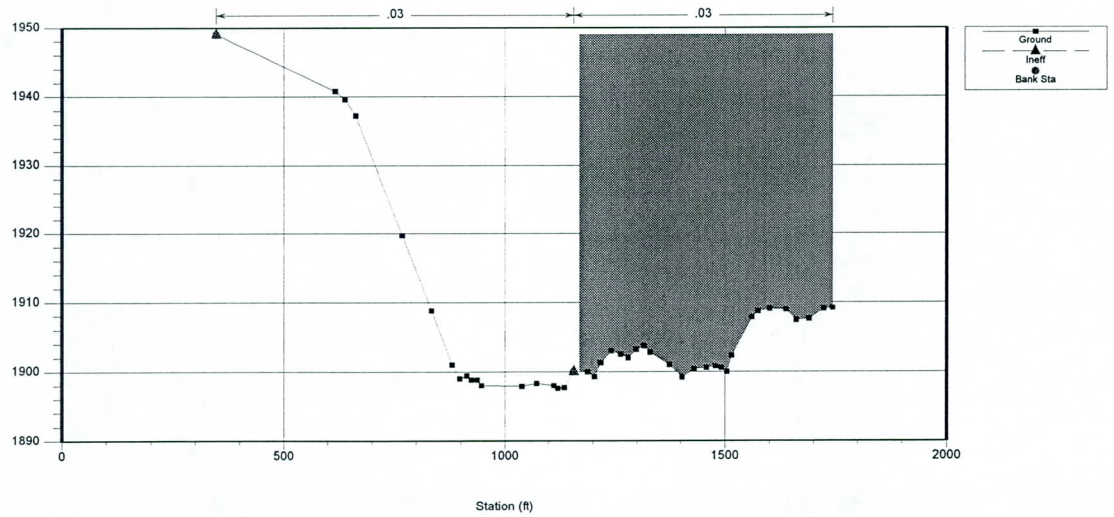

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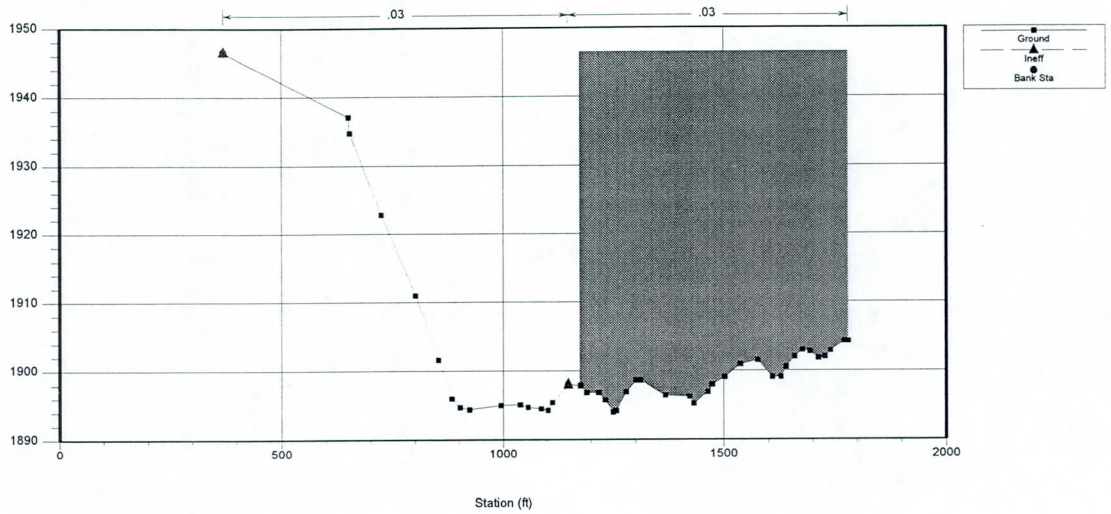

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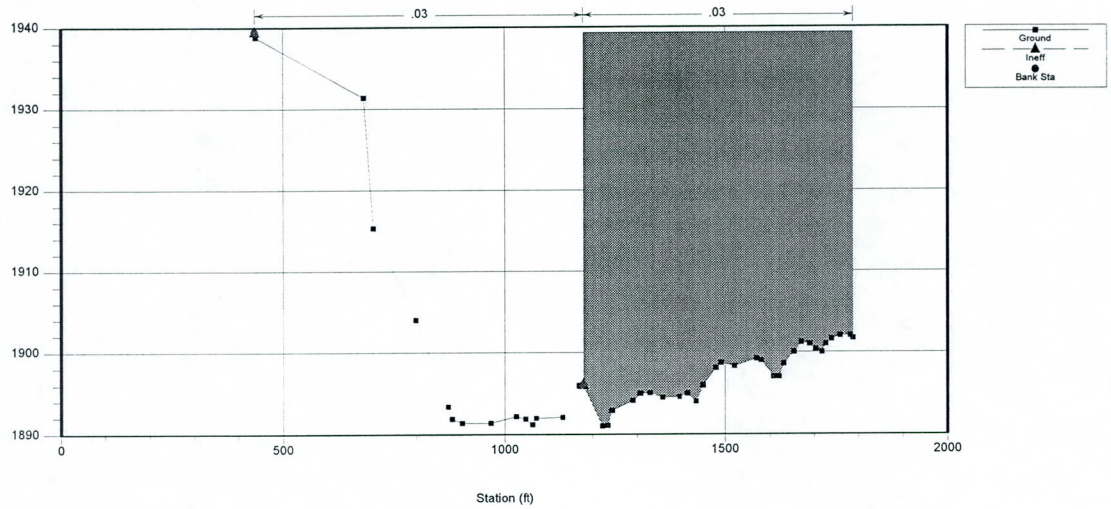

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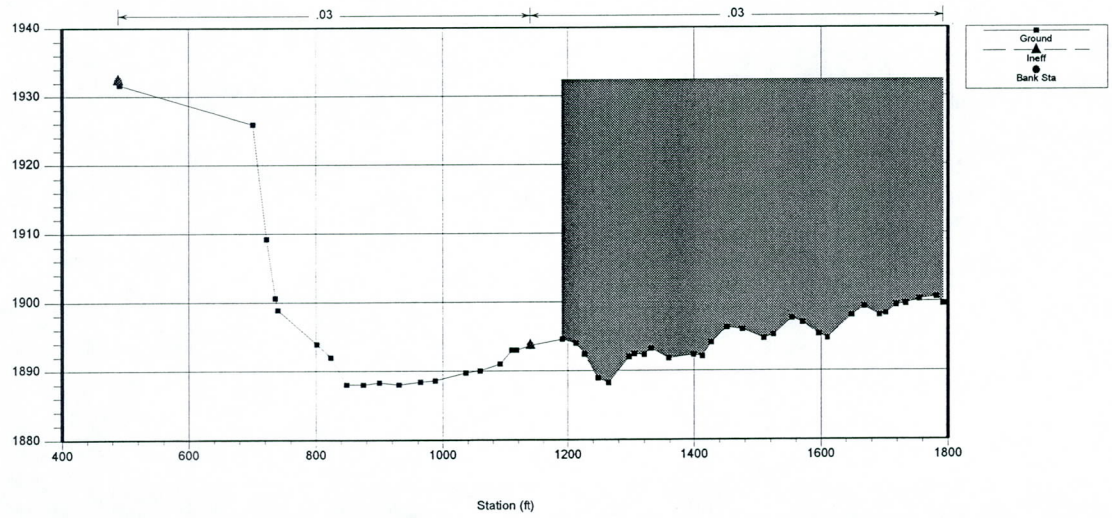

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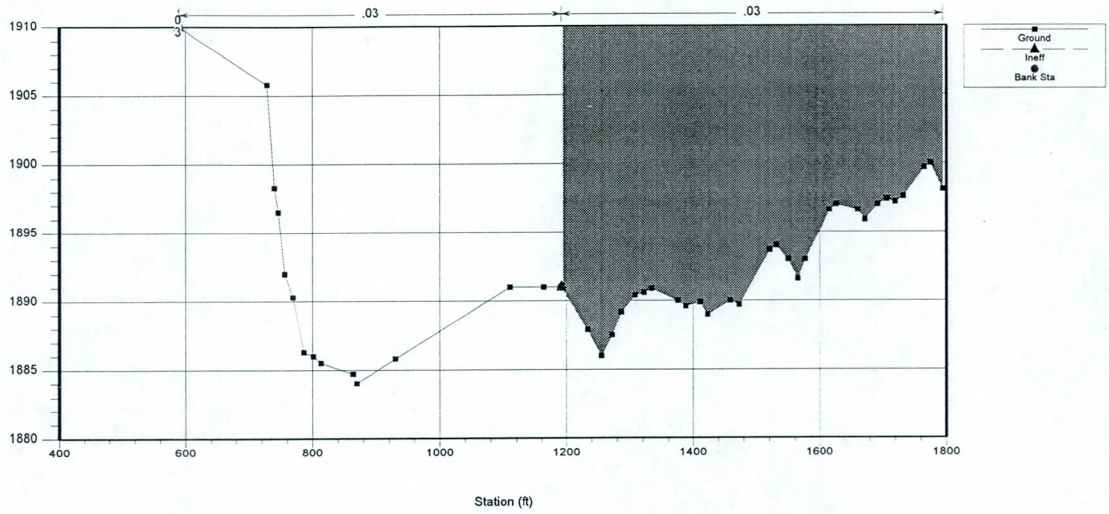

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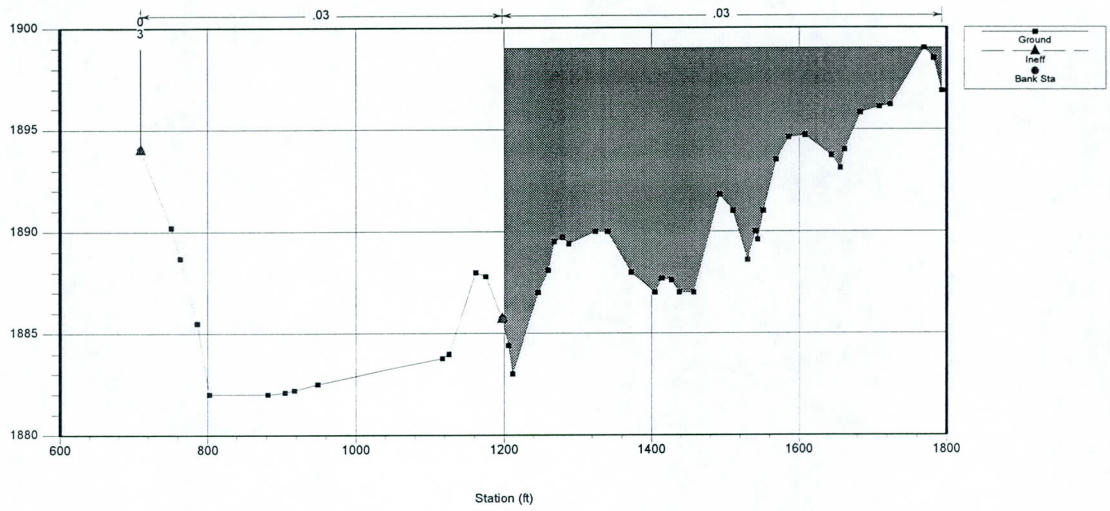

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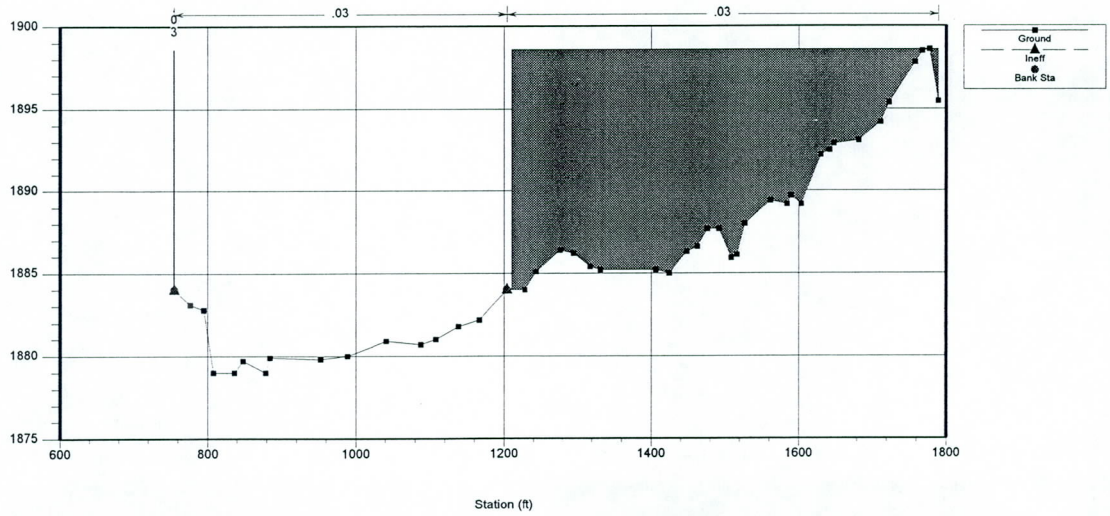

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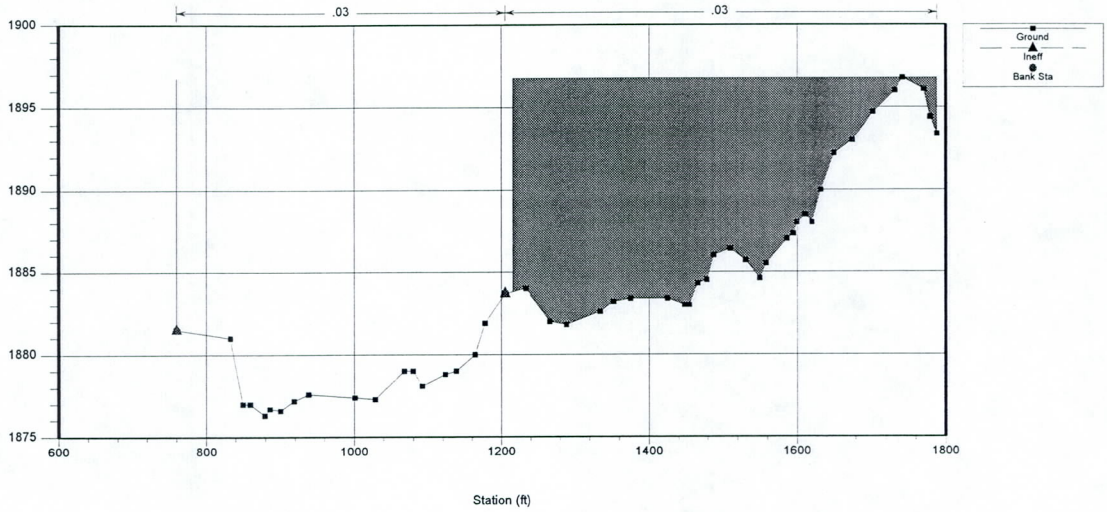

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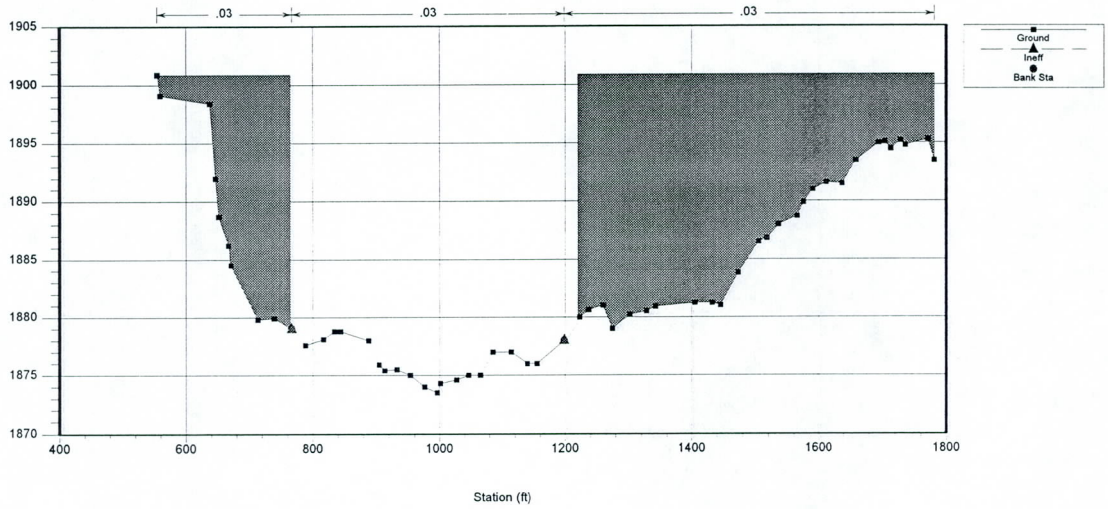

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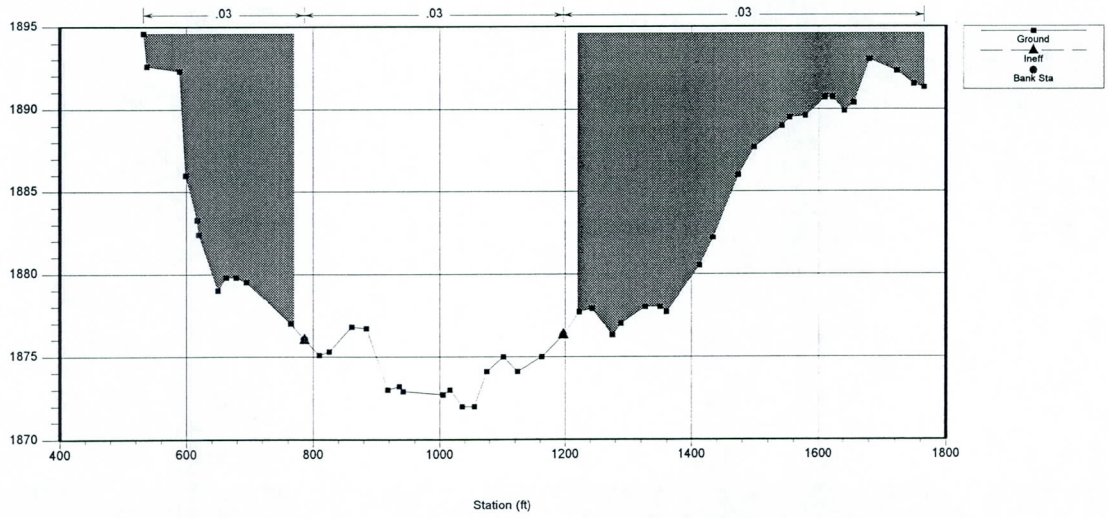

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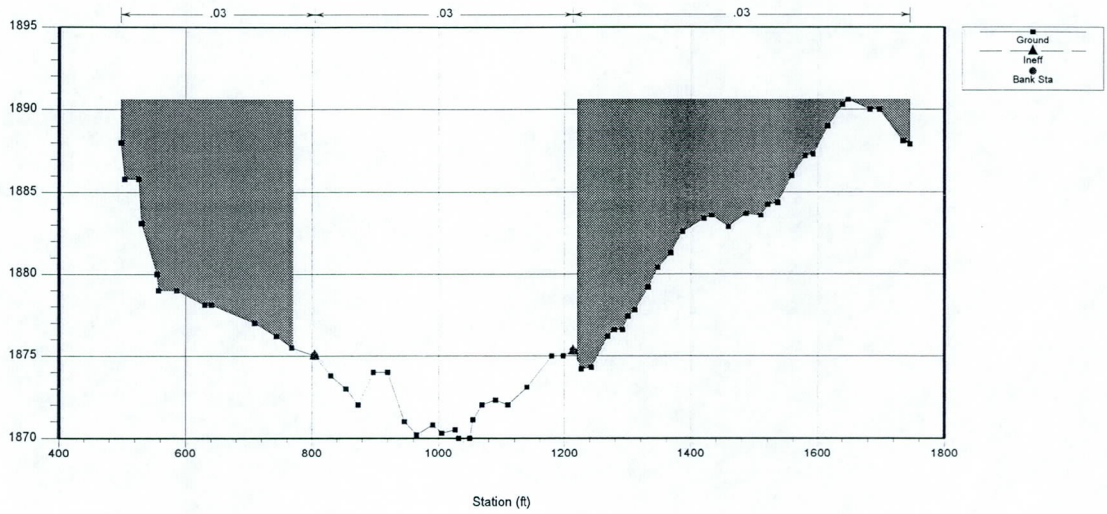

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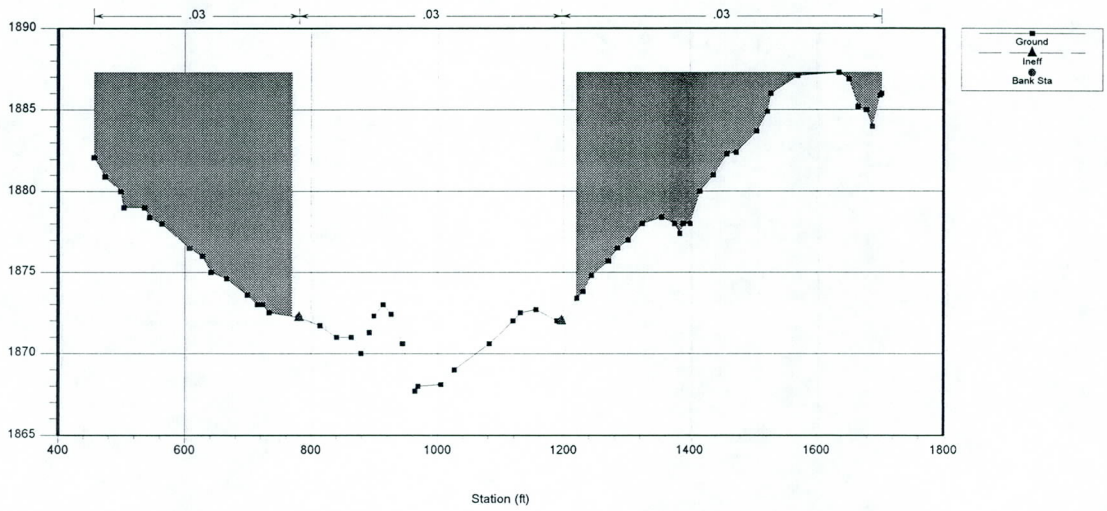

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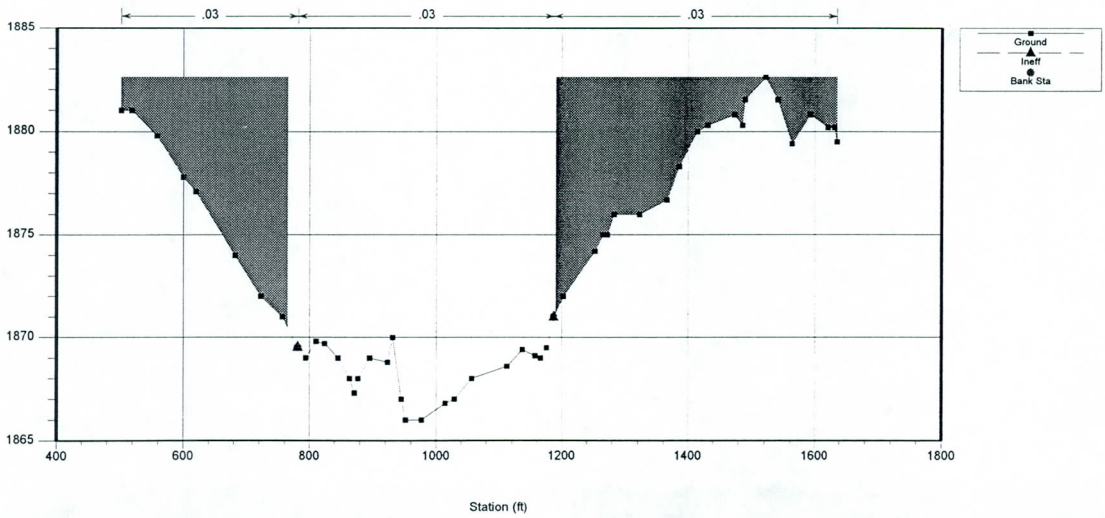

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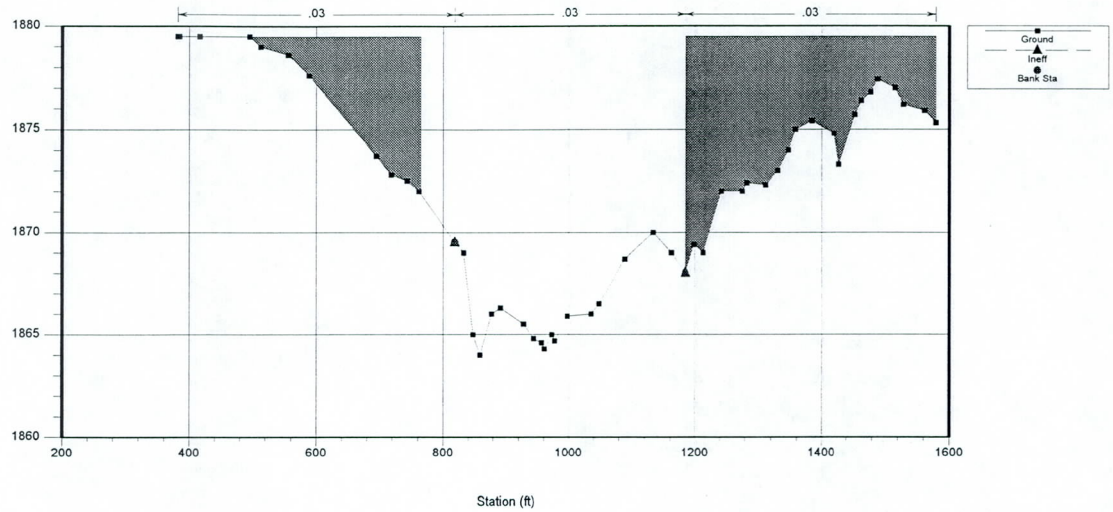

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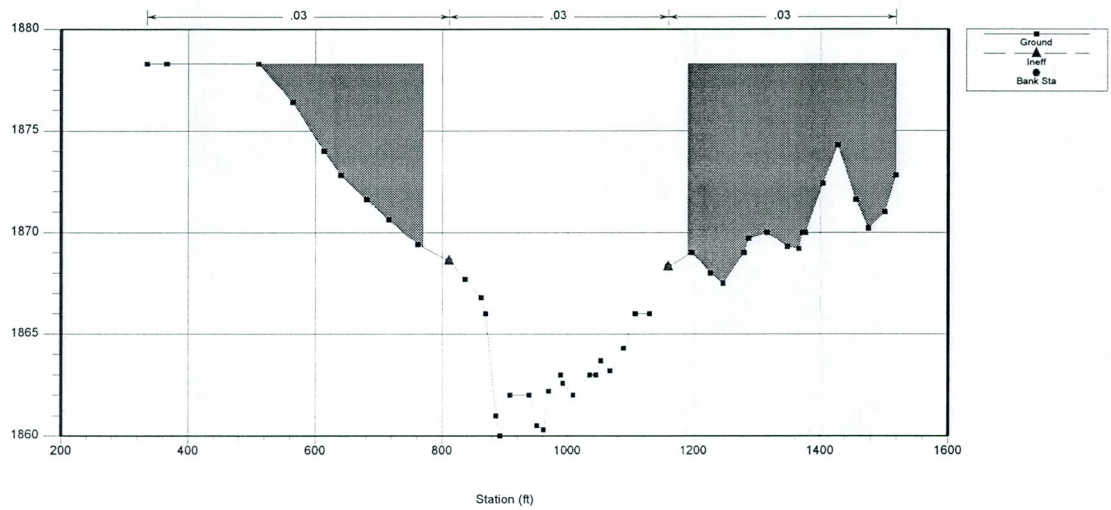

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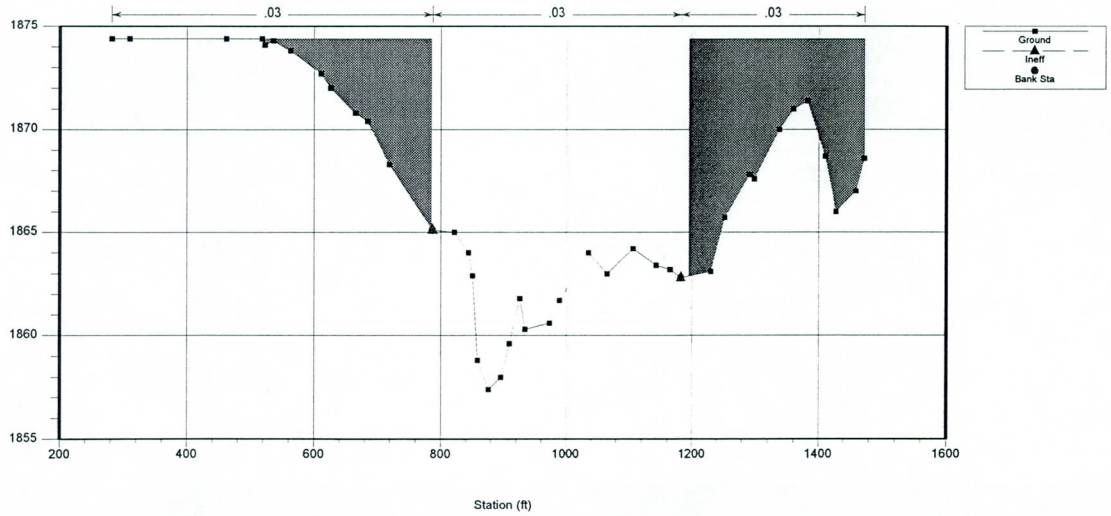
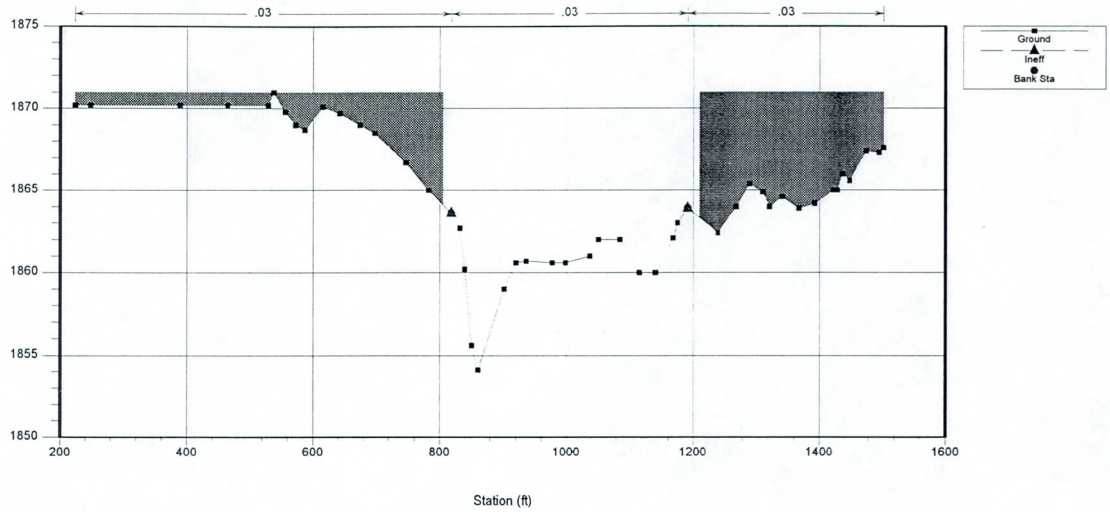
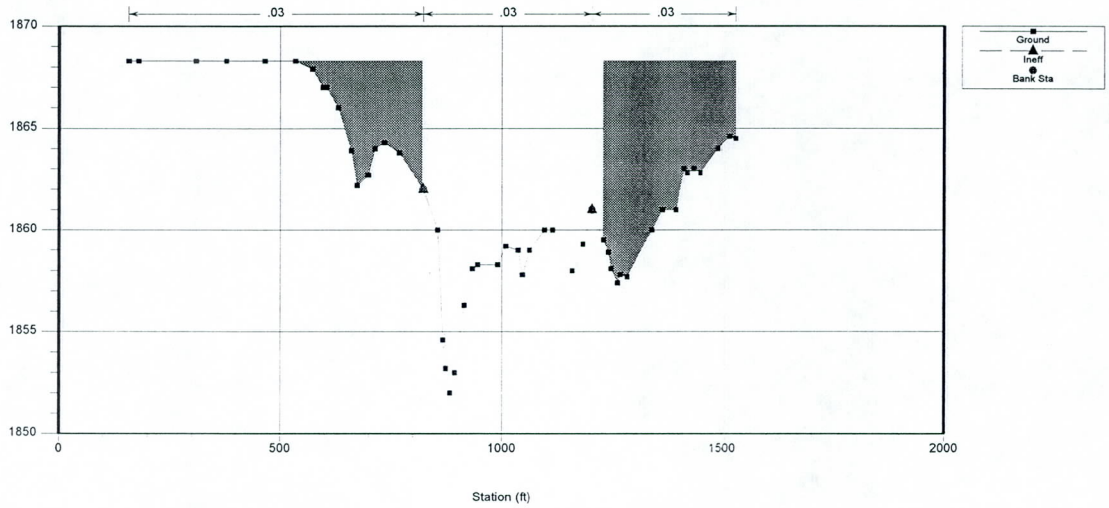


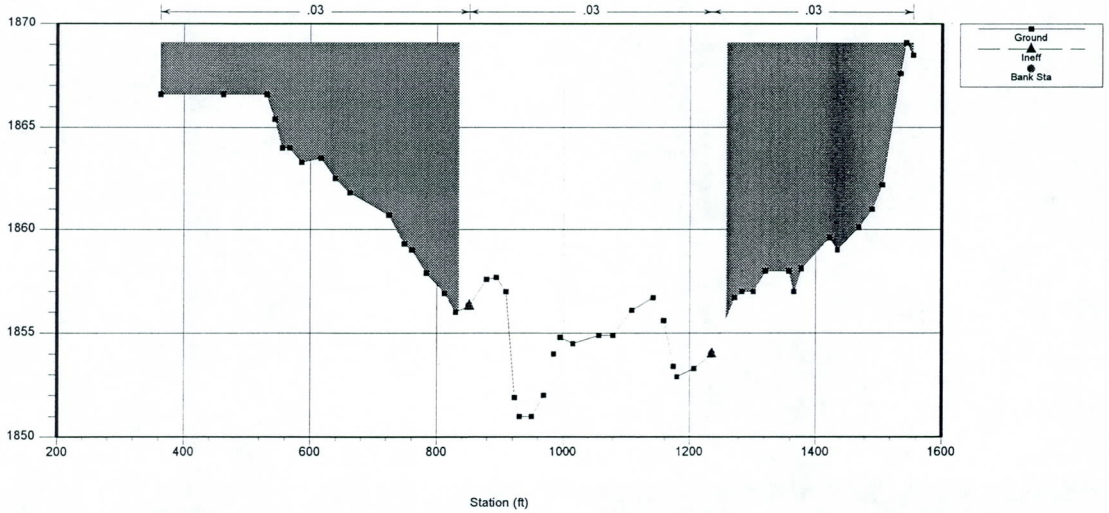
Reata Pass
Reach = 1 170



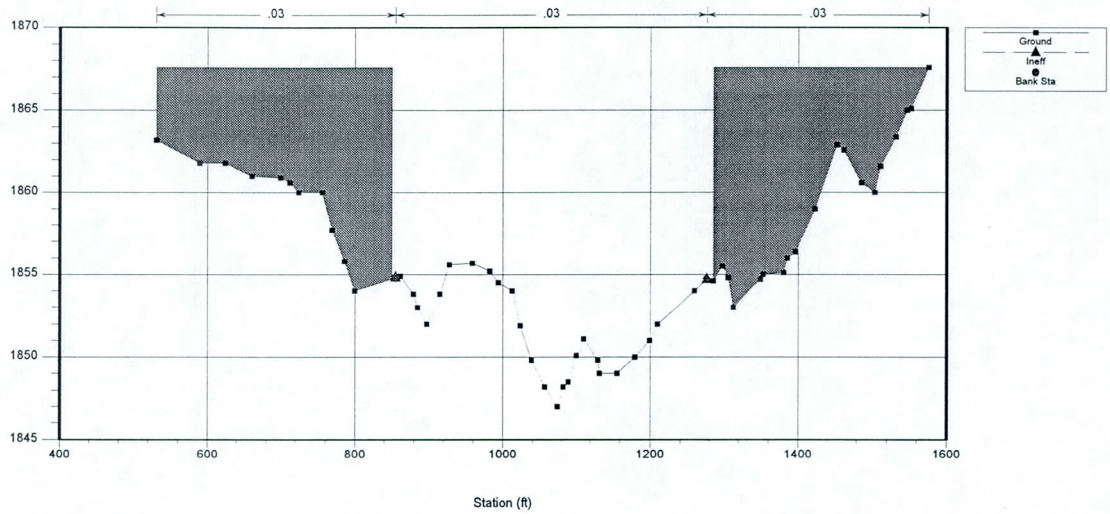
Reata Pass
Reach = 1 169



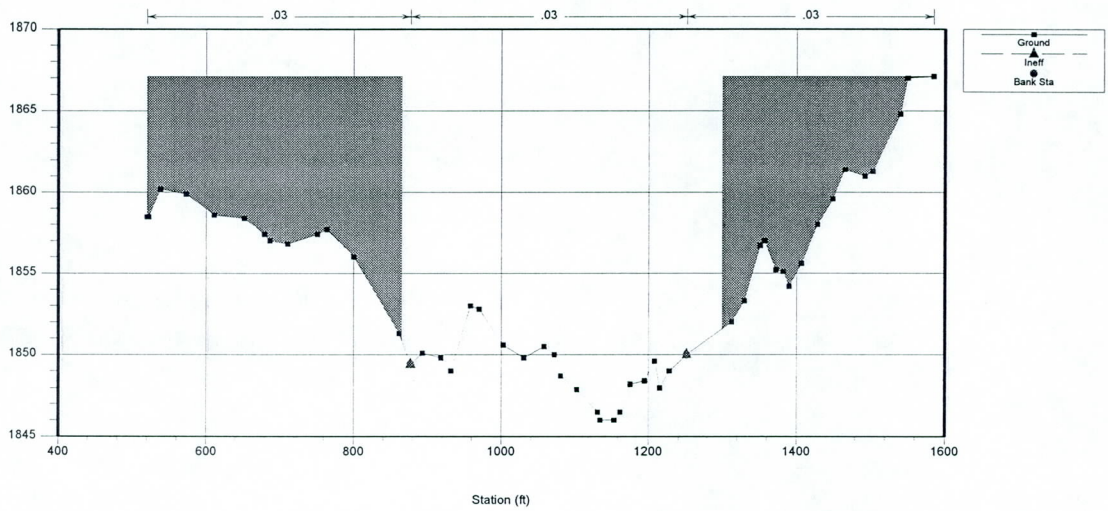
Reata Pass
Reach = 1 168



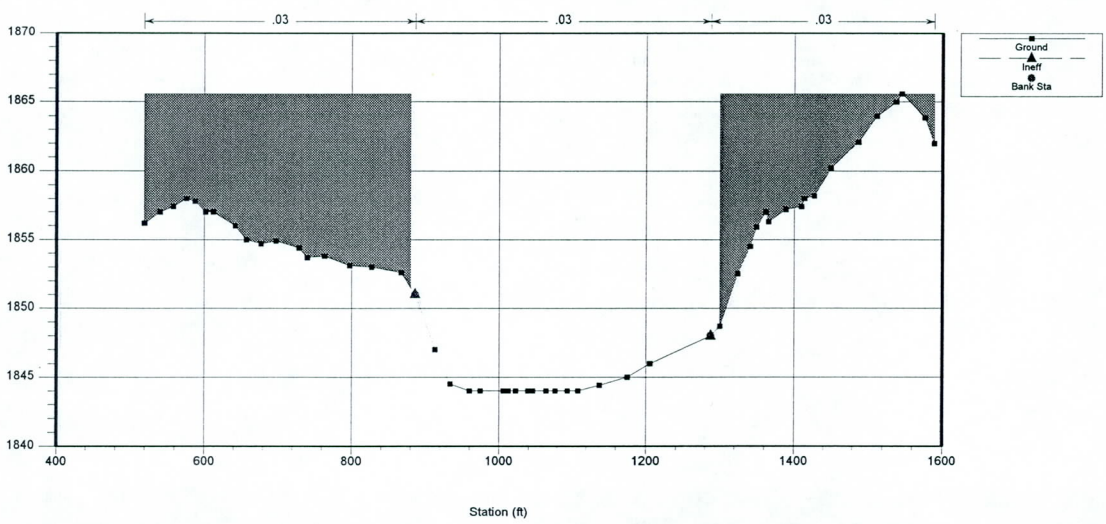
Reata Pass
Reach = 1 167



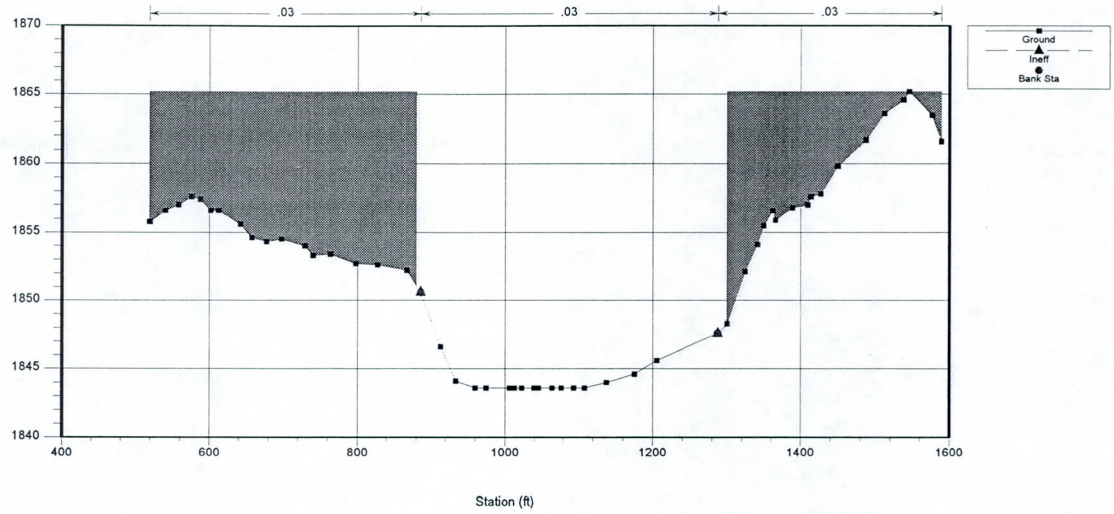
Reata Pass
Reach = 1 166



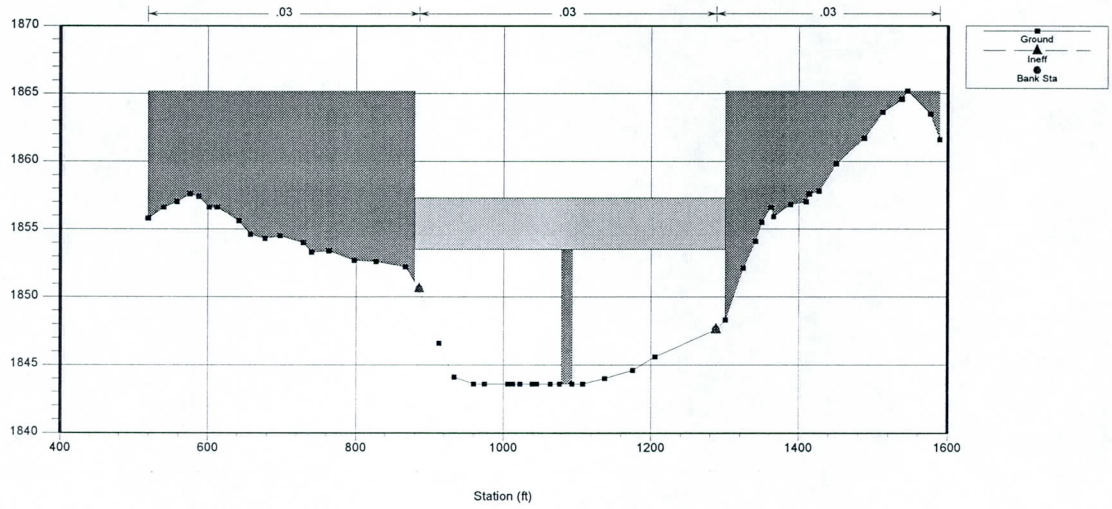
Reata Pass
Reach = 1 165



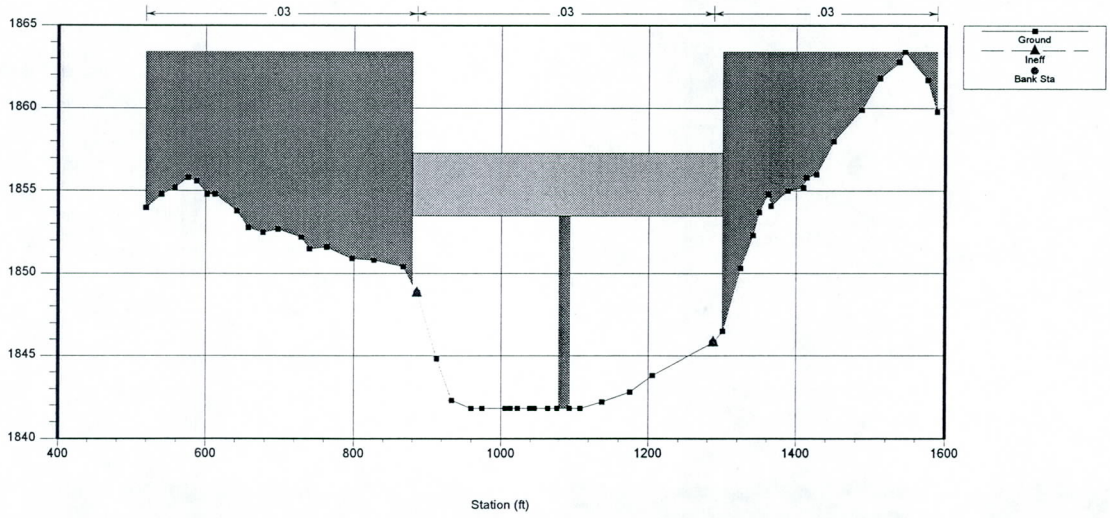
Reata Pass
Reach = 1 164.9



Reata Pass
Reach = 1 Upstream Inside Bridge # 4



Reata Pass
Reach = 1 Downstream Inside Bridge # 4



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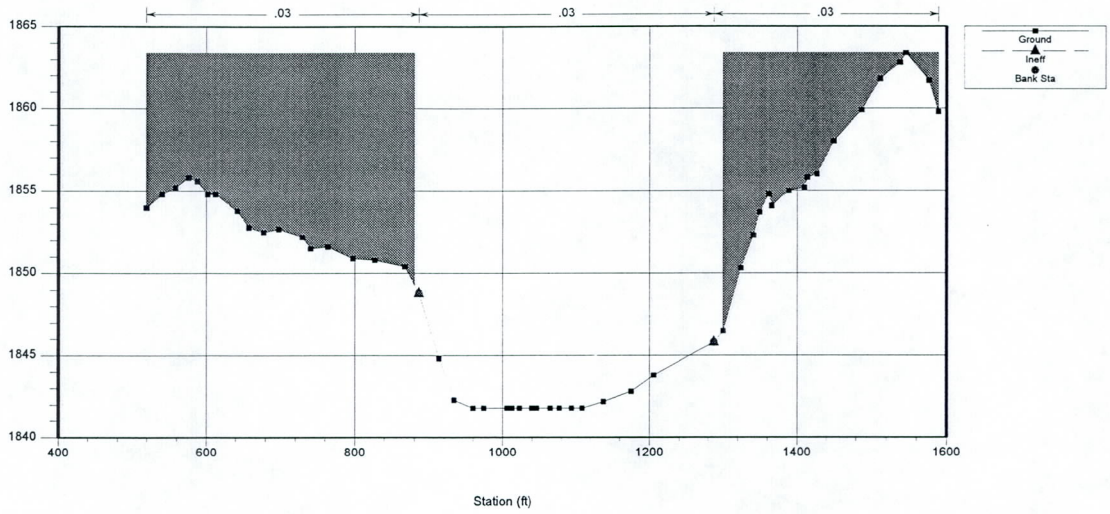
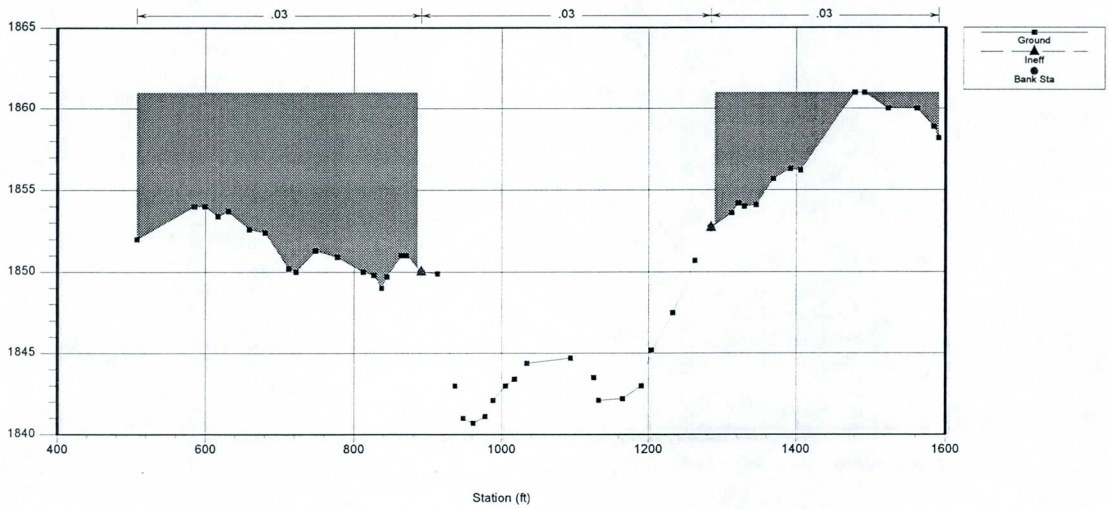
Reach = 1 164.1



Reata Pass
Reach = 1 164



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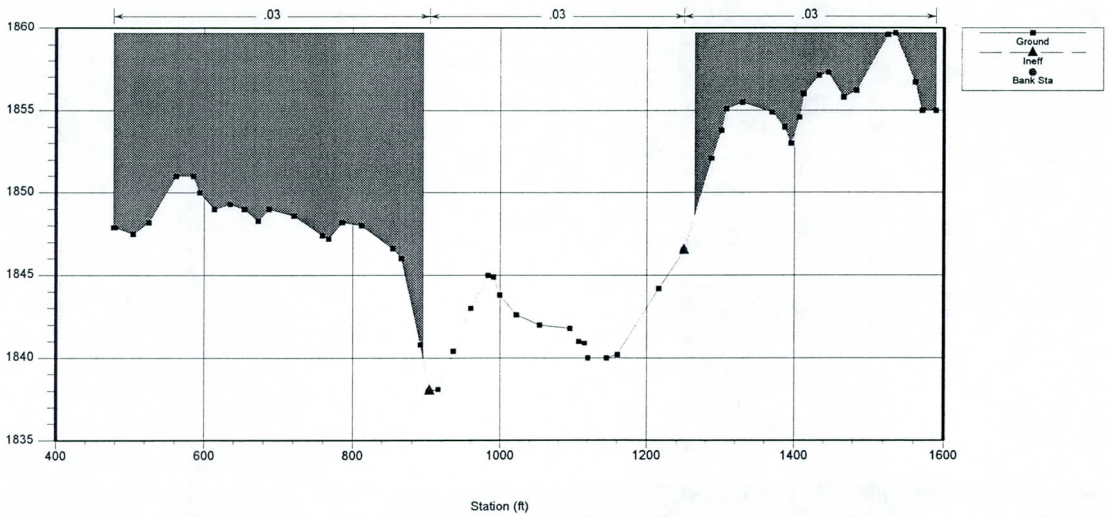
Reach = 1 163



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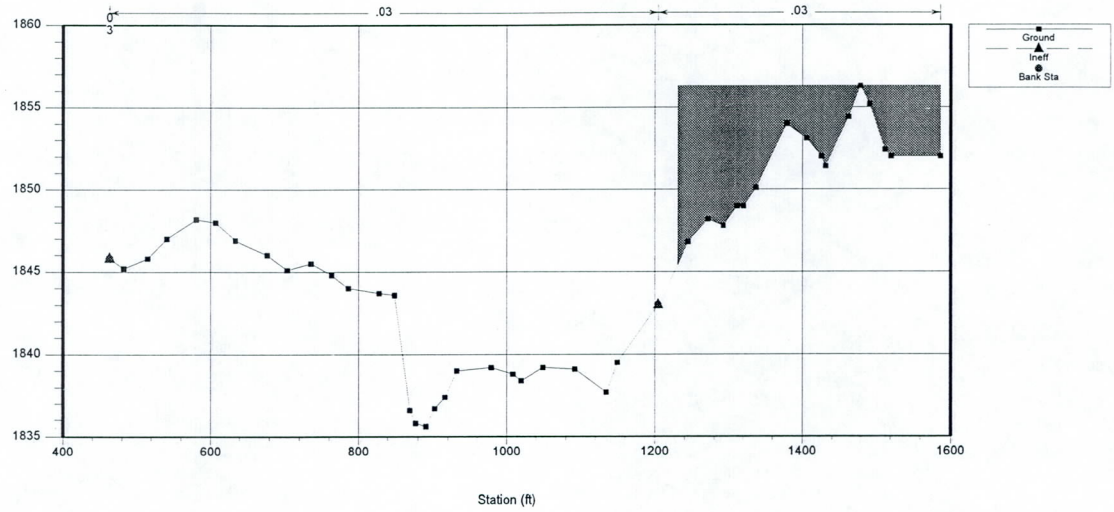

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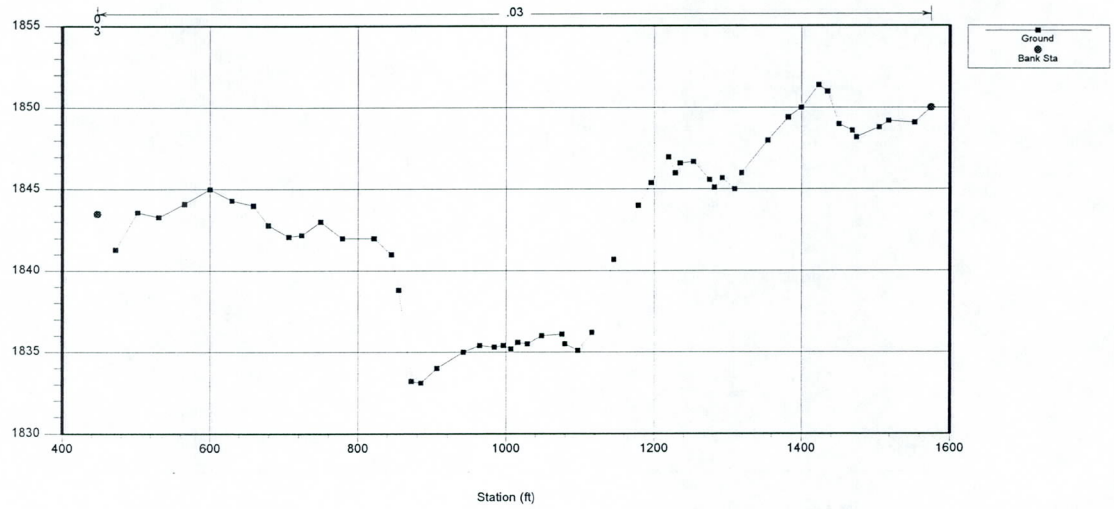

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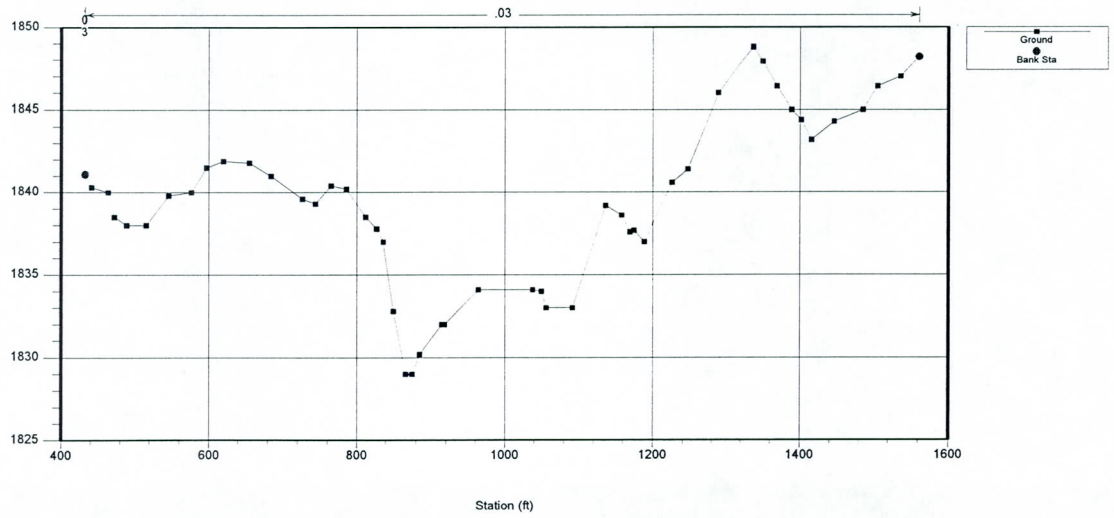

Reata Pass
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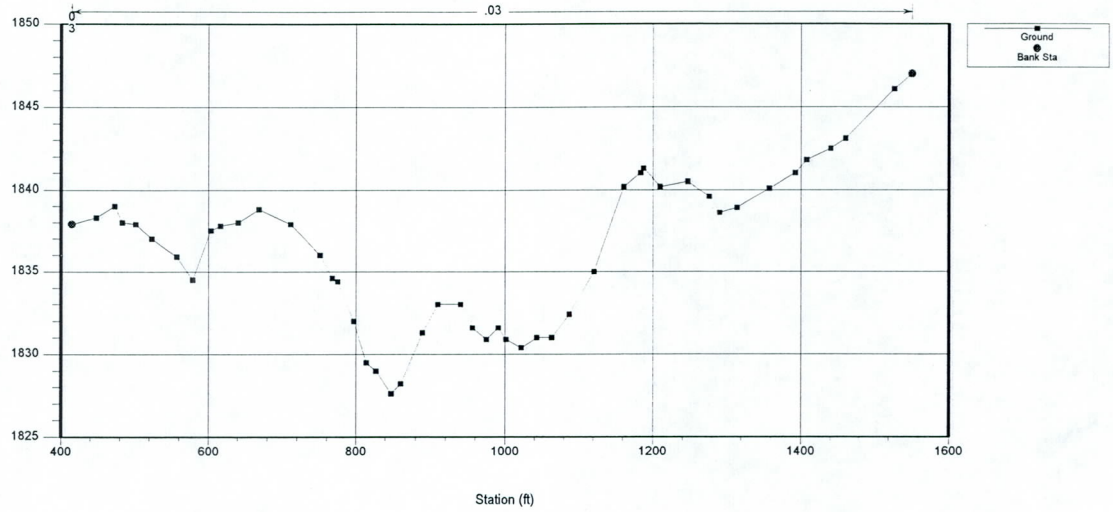

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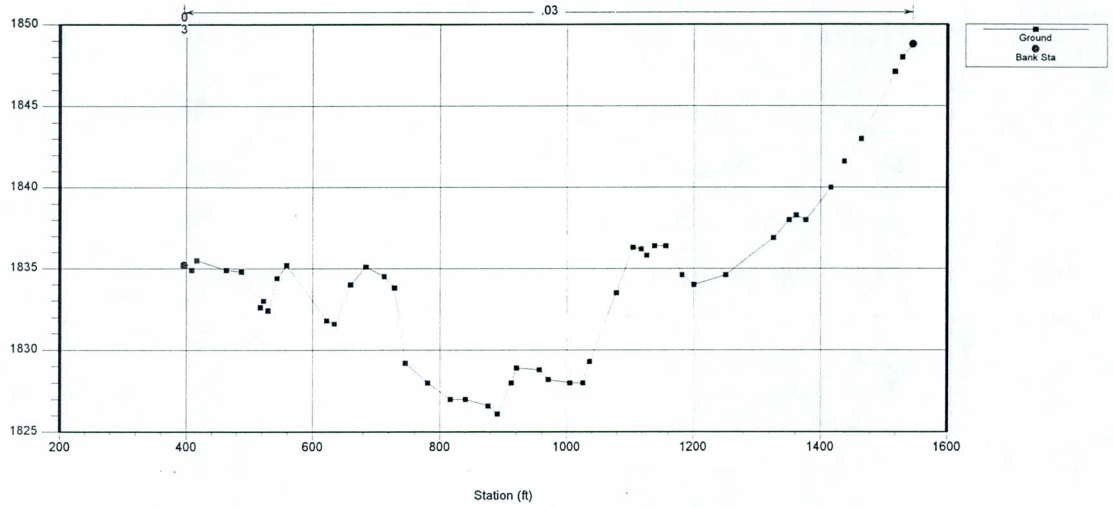
Reach = 1 158



Reata Pass
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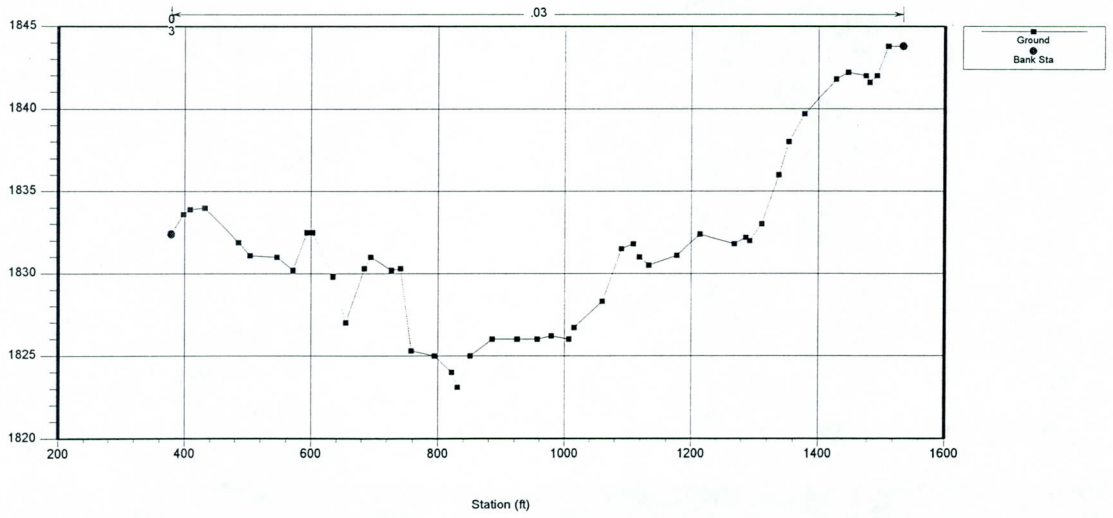
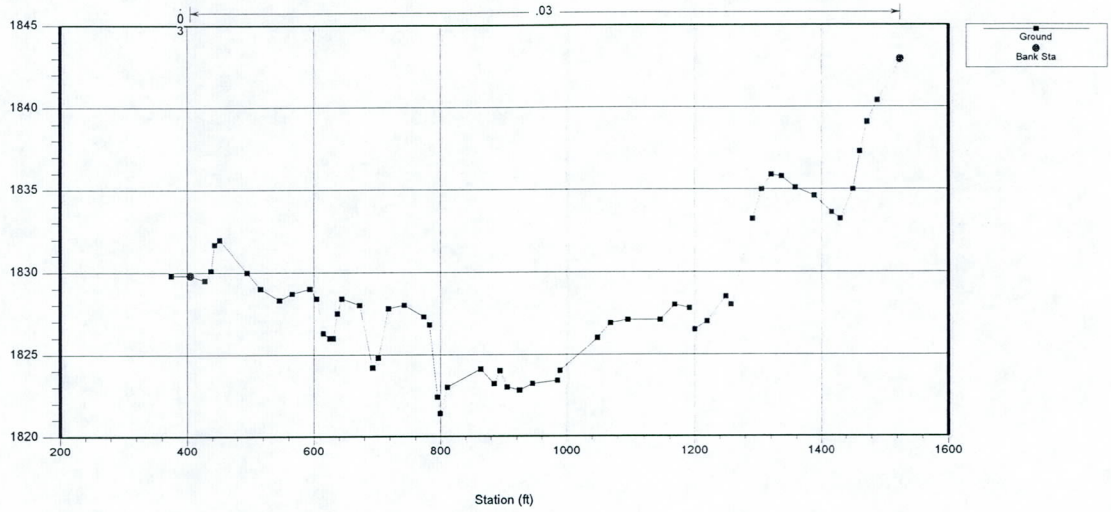
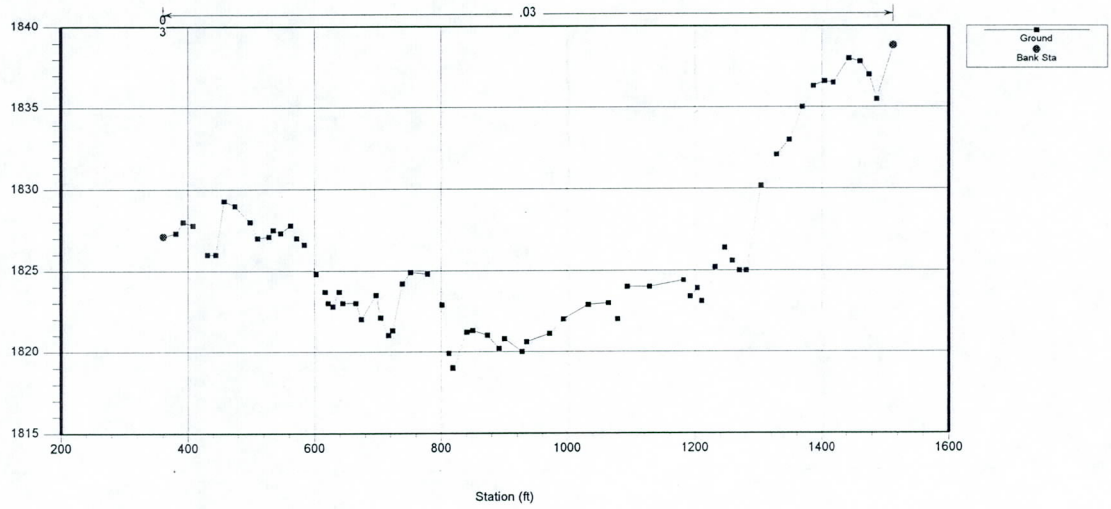


Reata Pass
Reach = 1 156



Reata Pass
Reach = 1 155



Reata Pass
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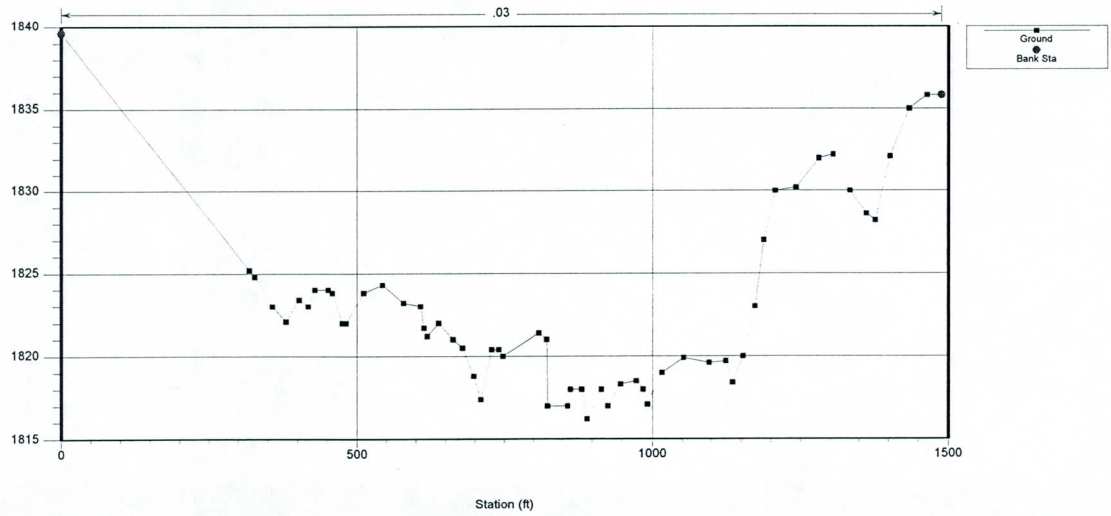

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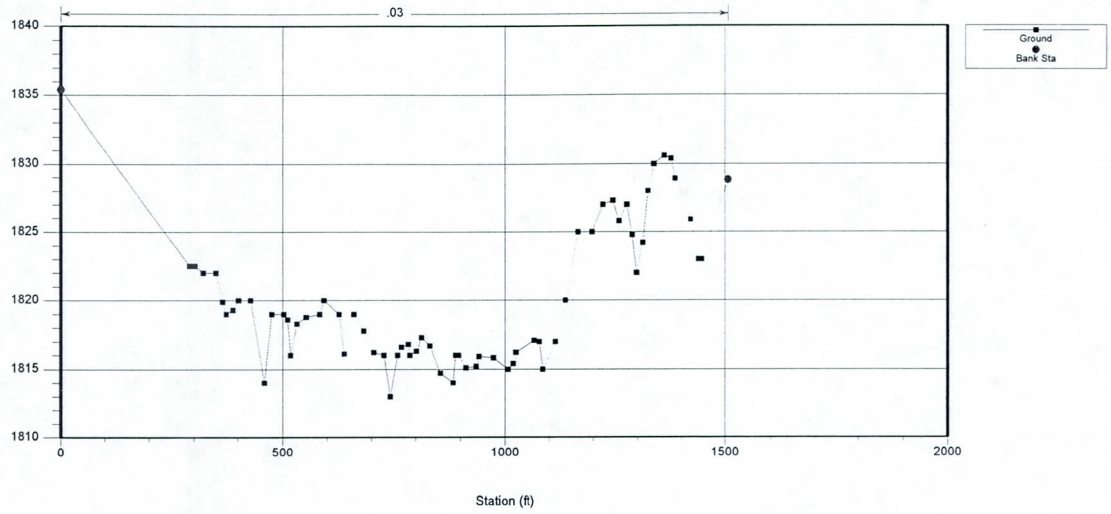

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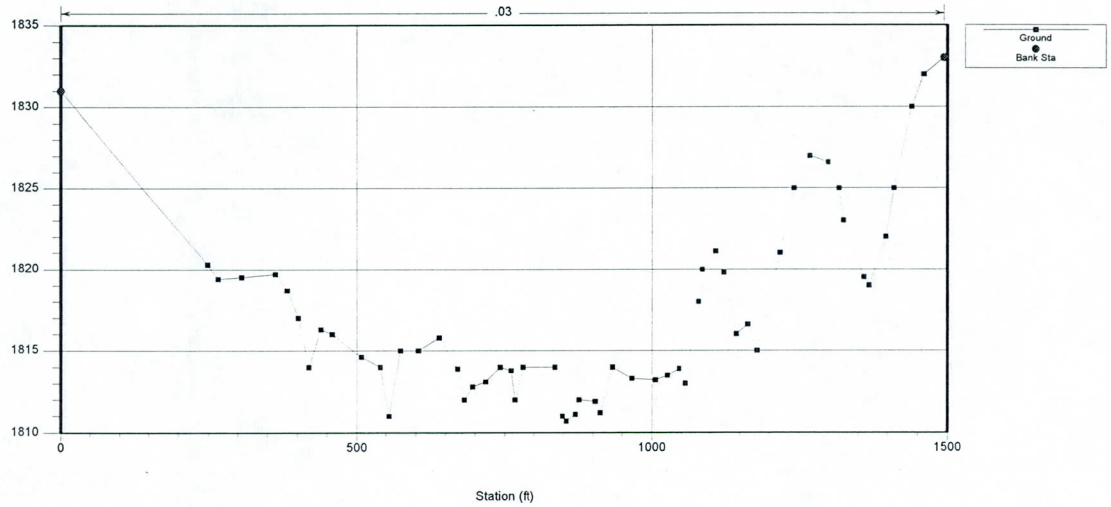

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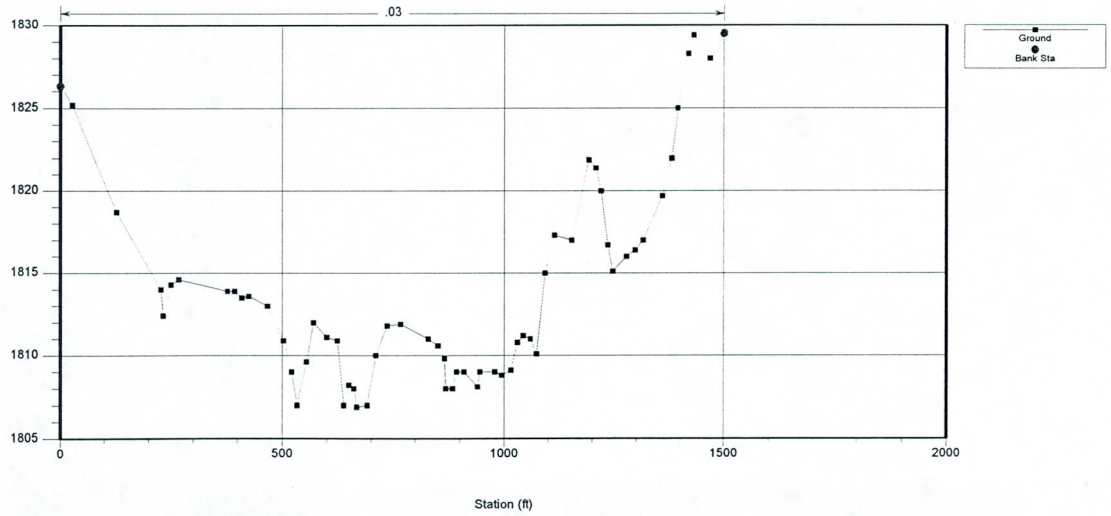

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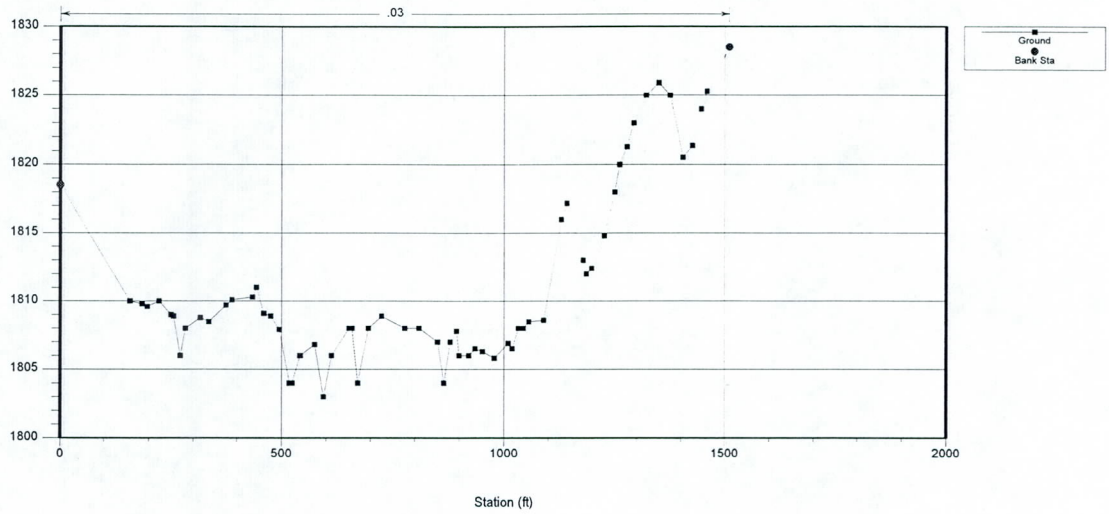

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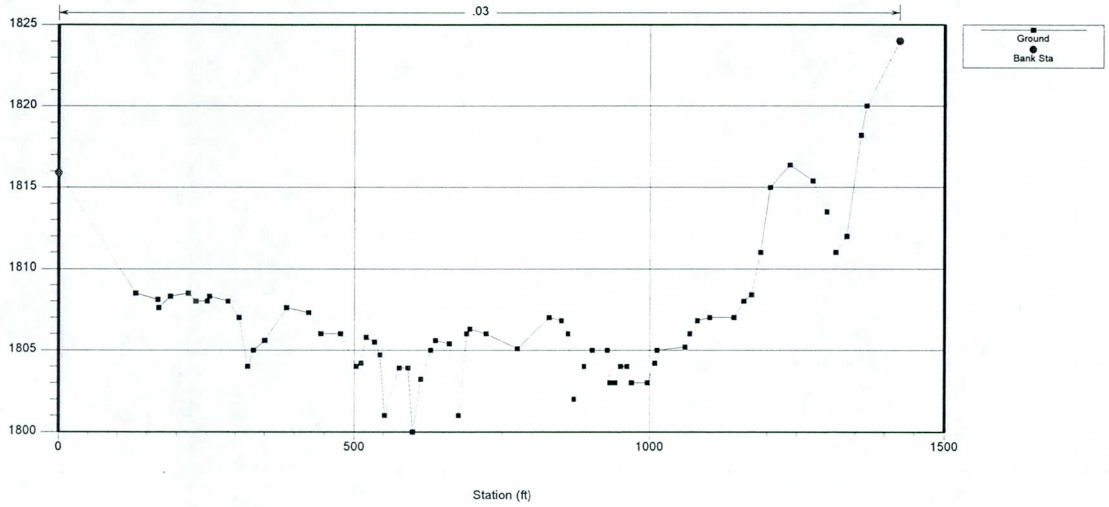

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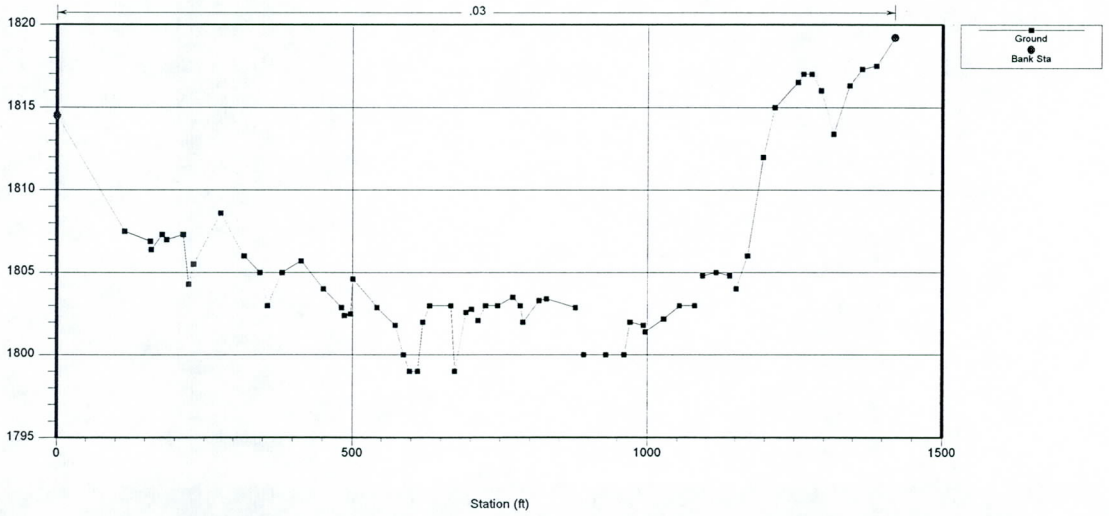

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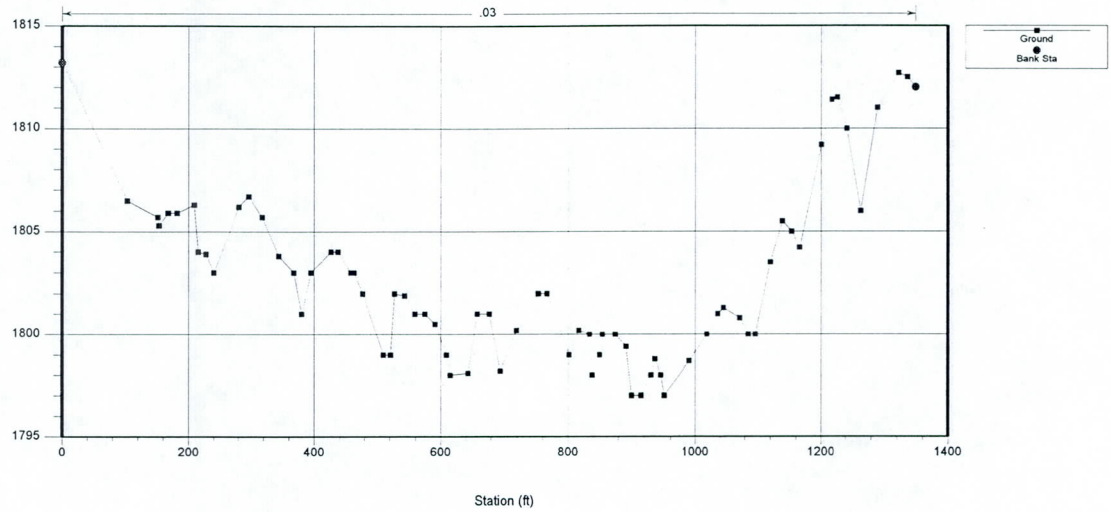

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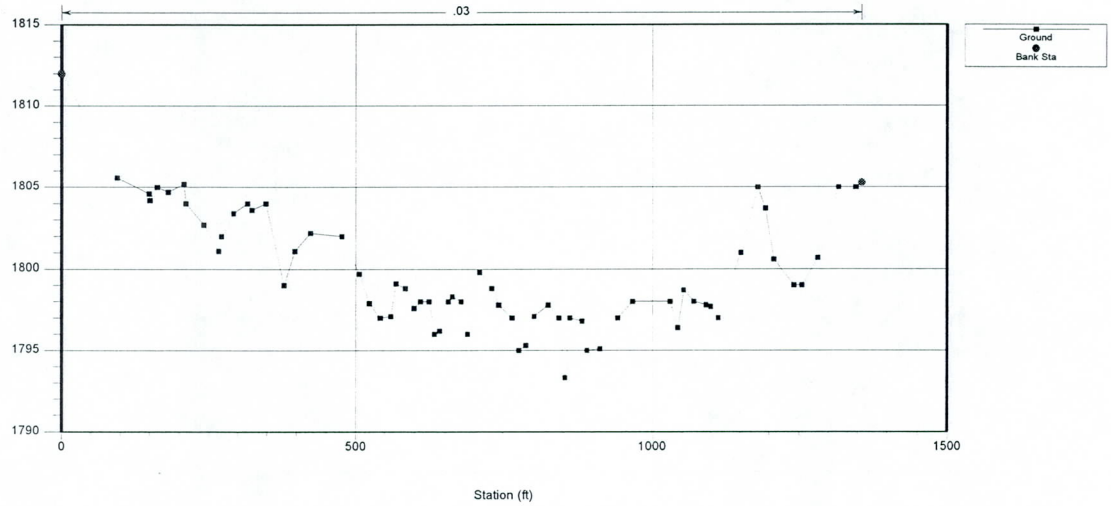

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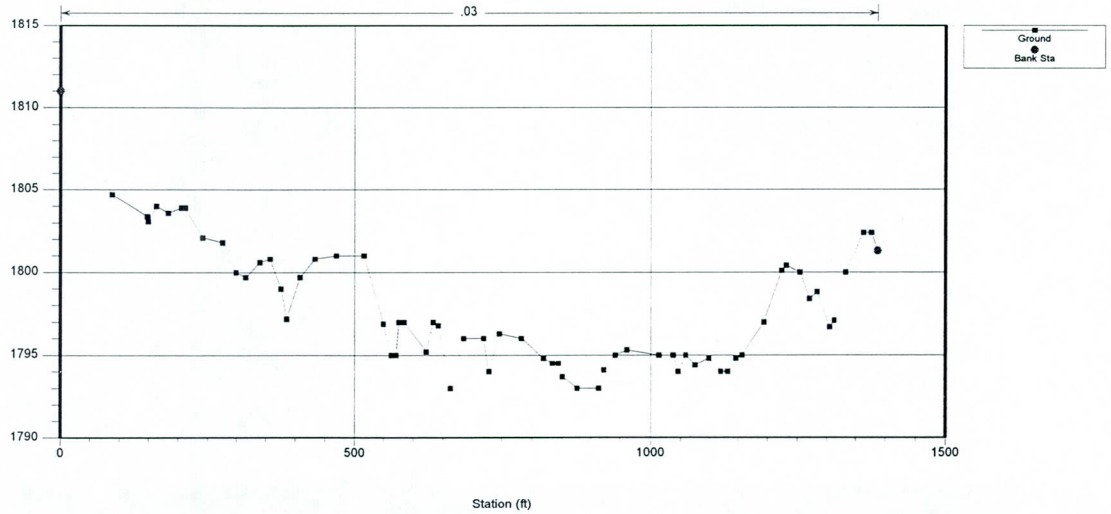

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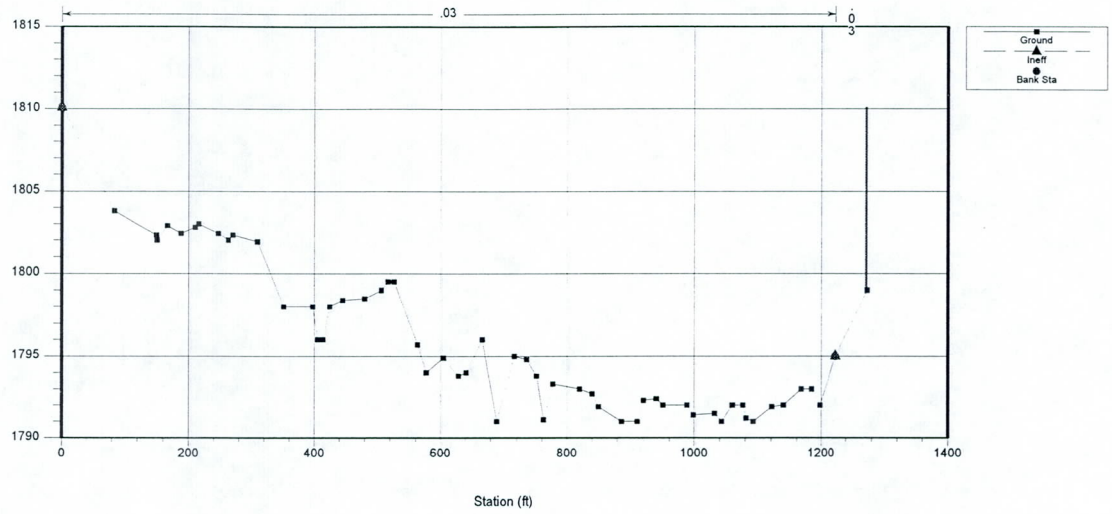

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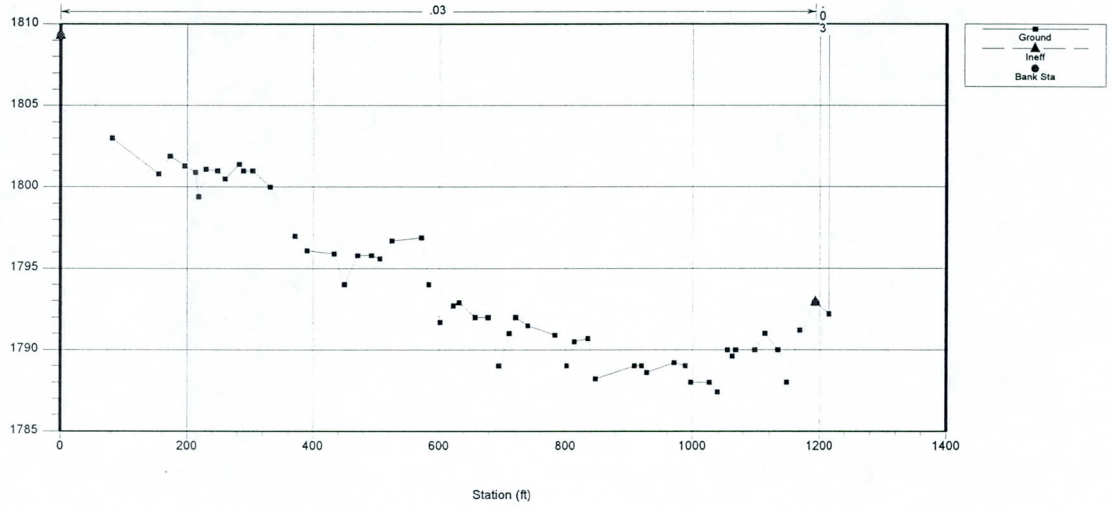

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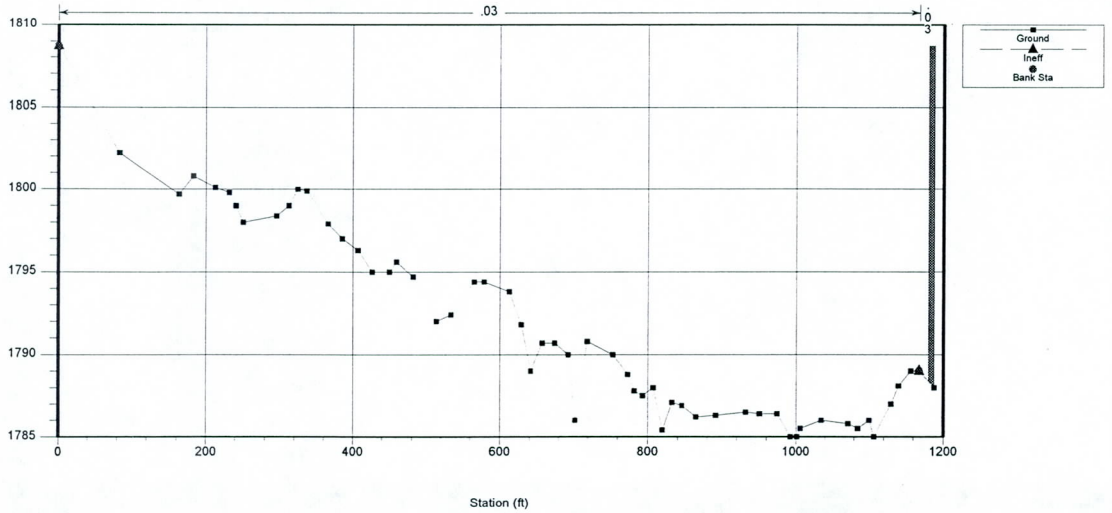

Reata Pass
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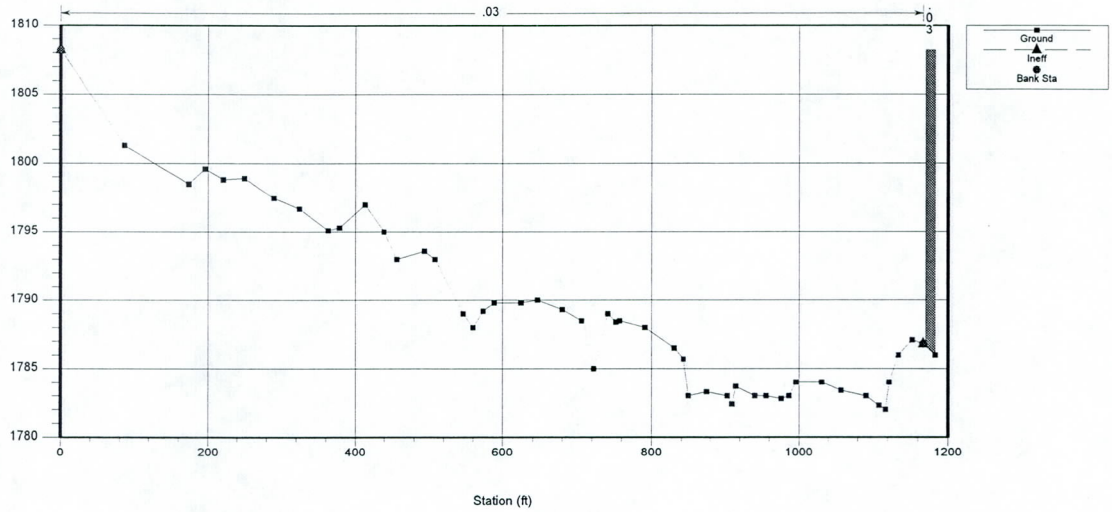

Reata Pass
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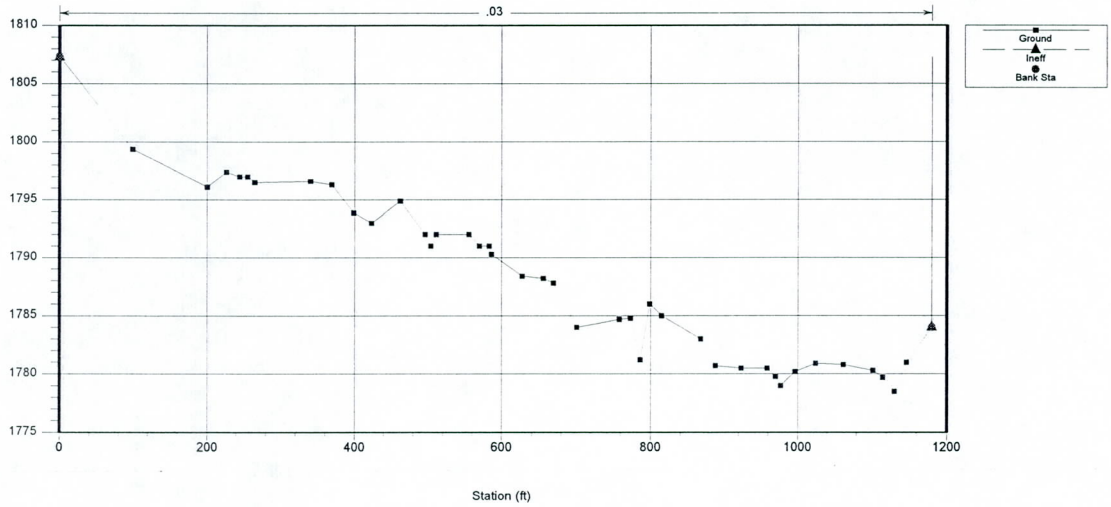

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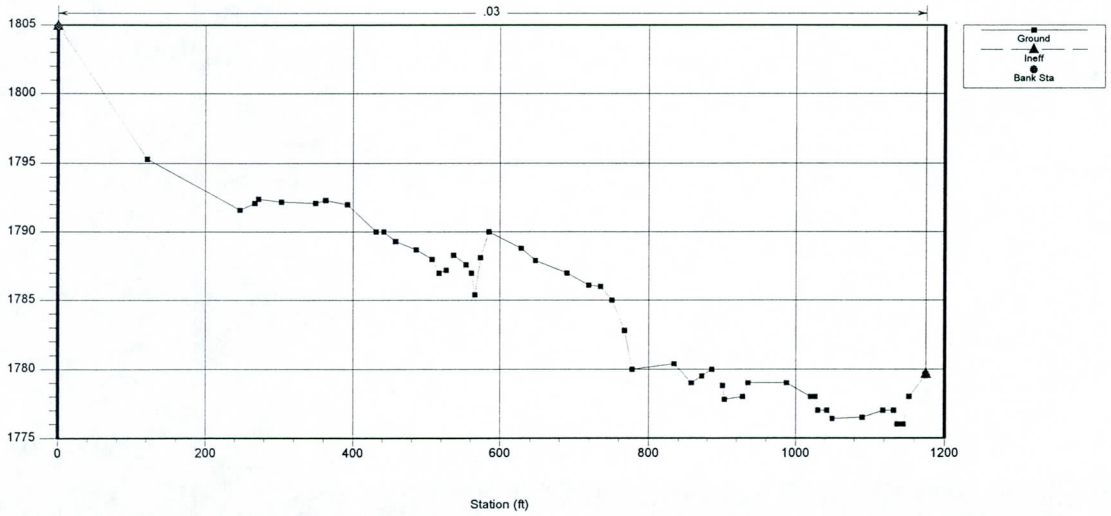

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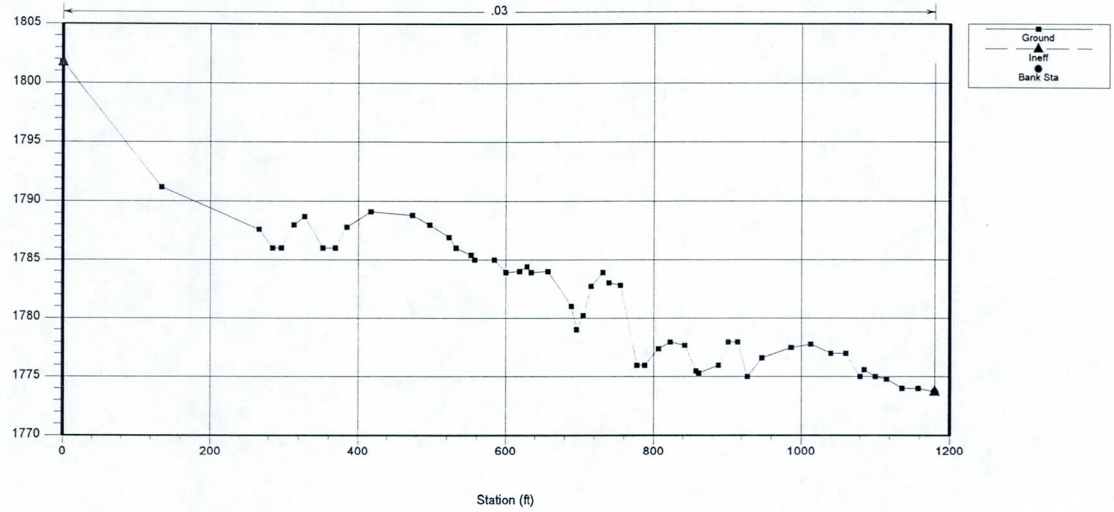

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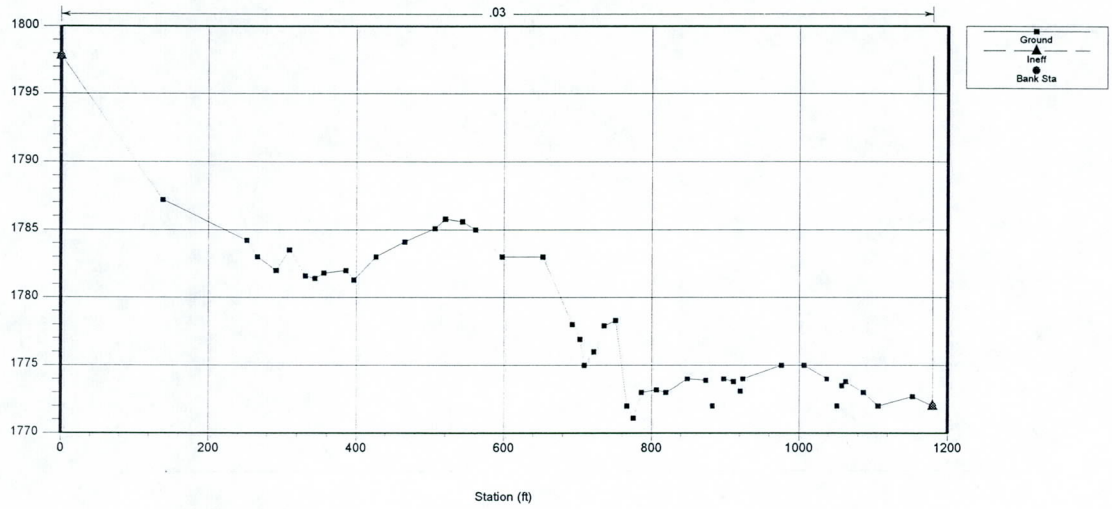

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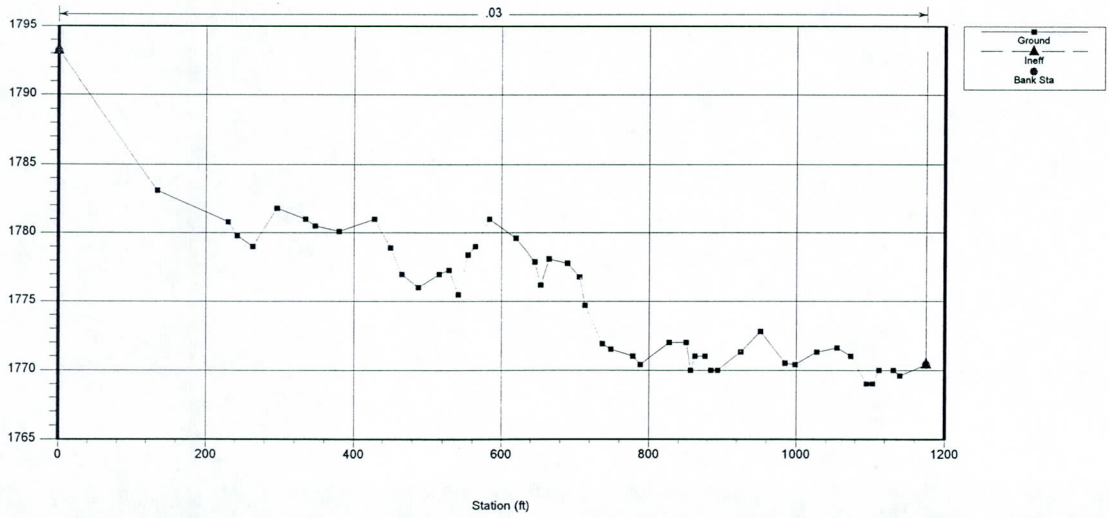

Reata Pass
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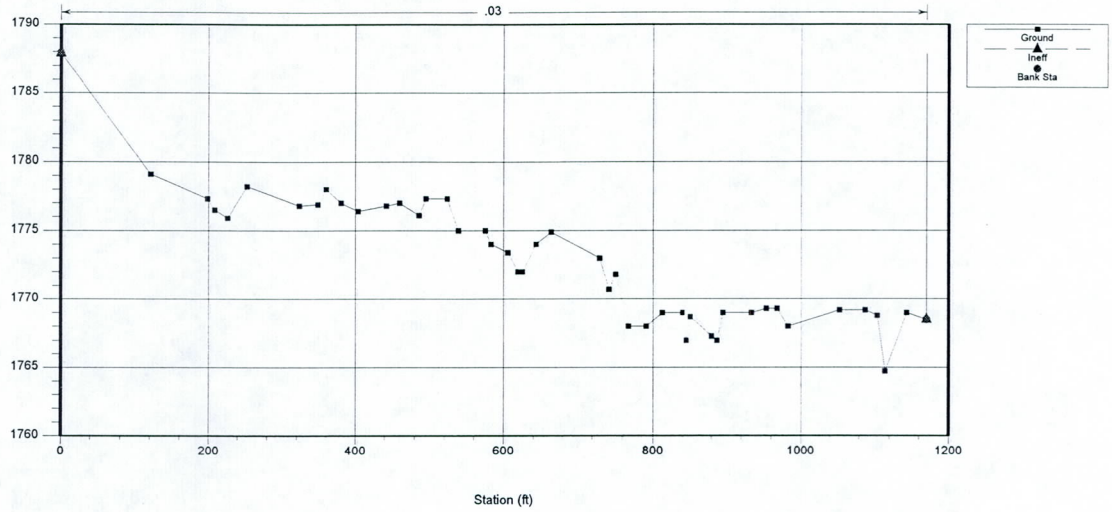

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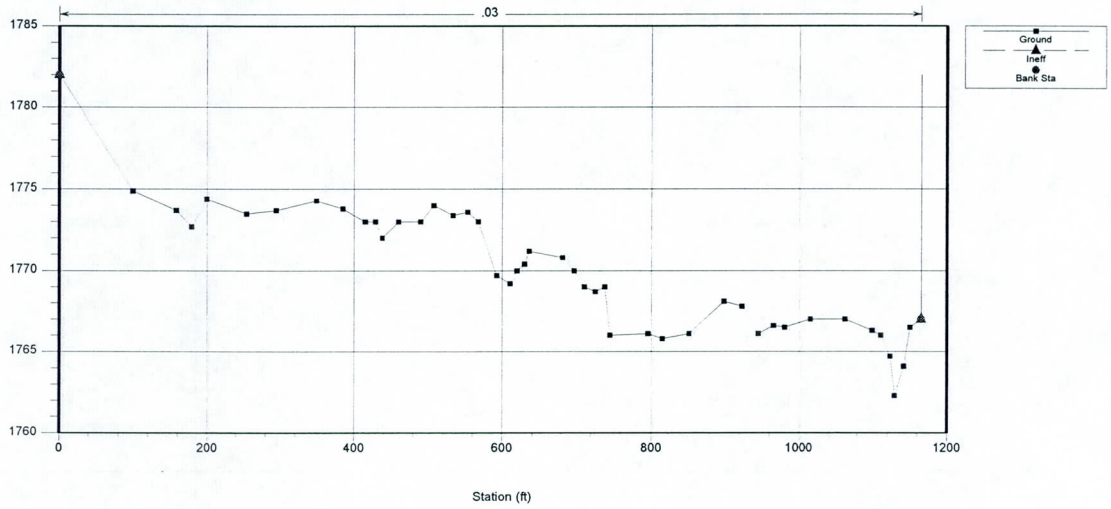

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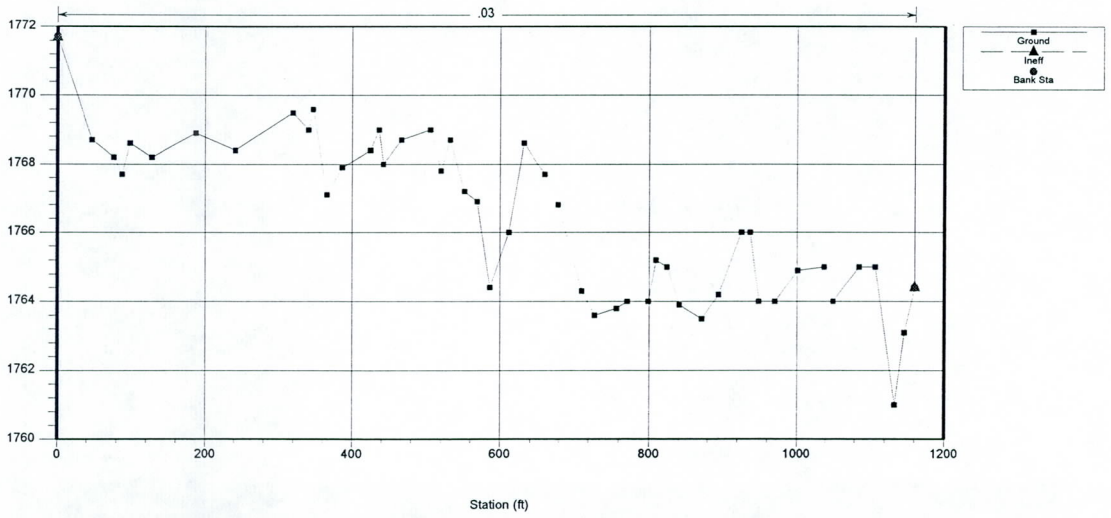

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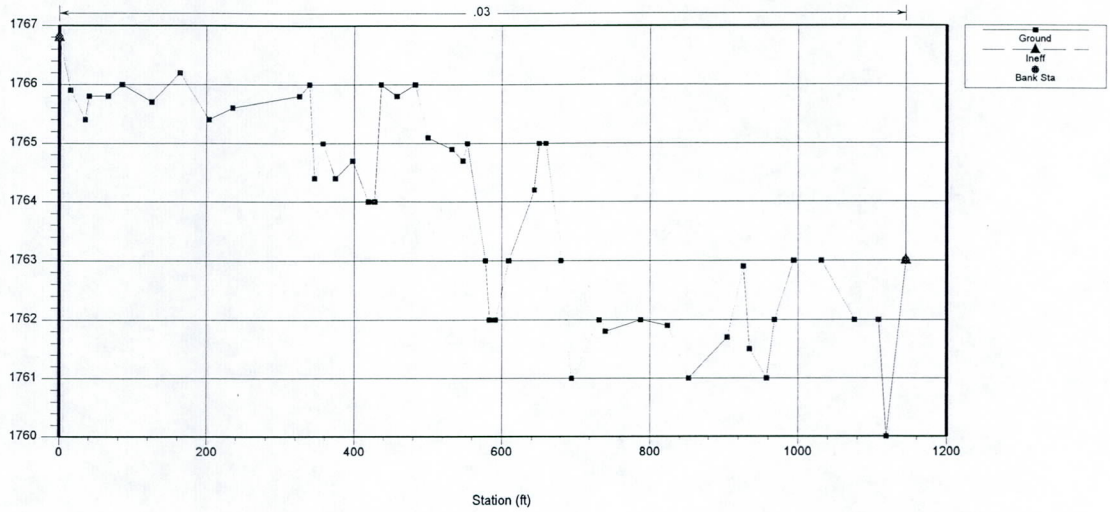

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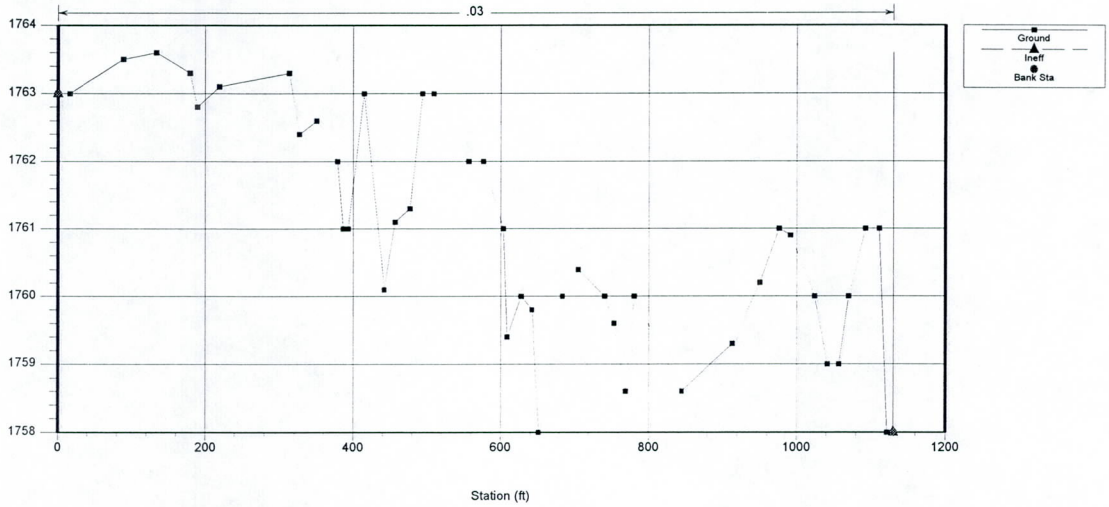

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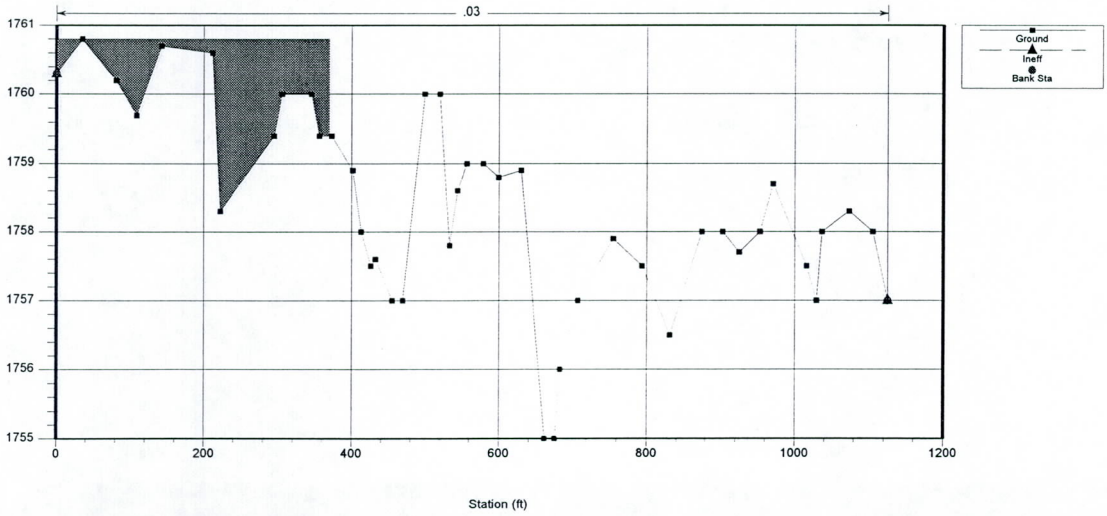

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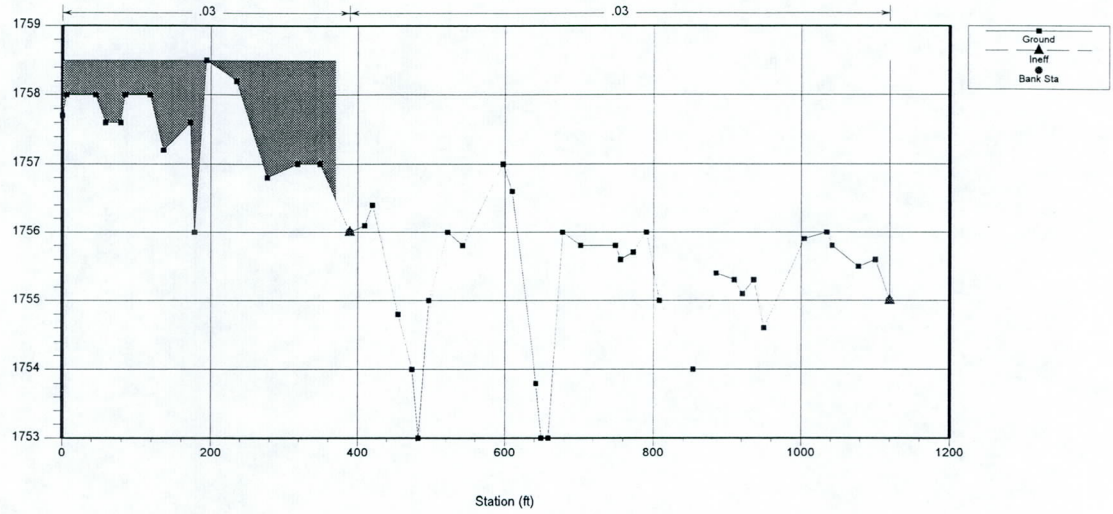

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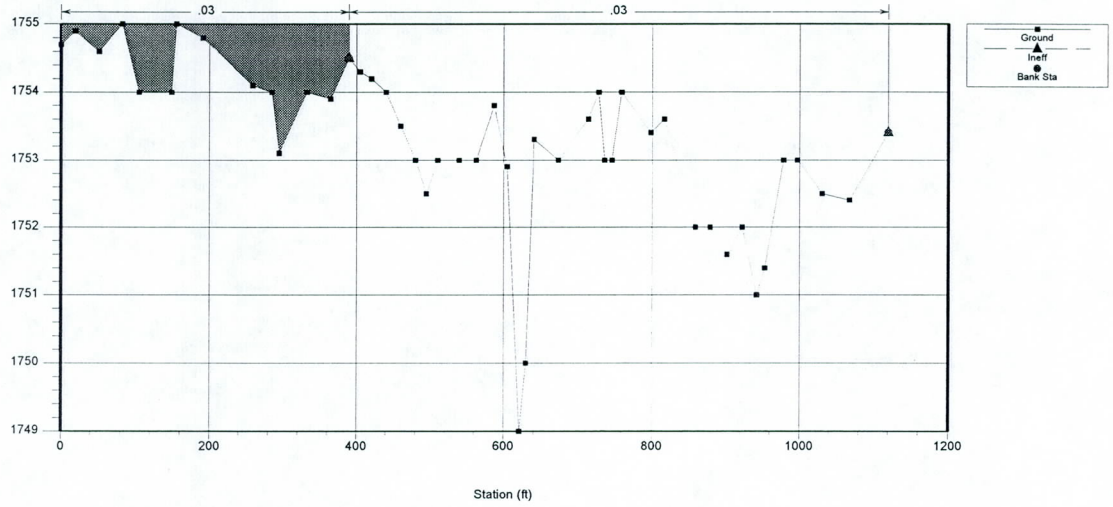

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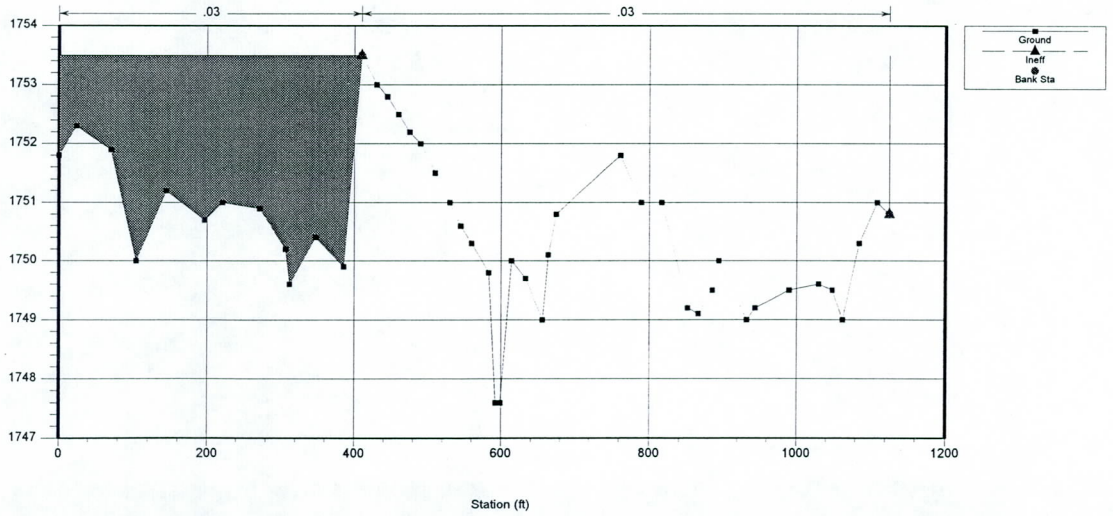

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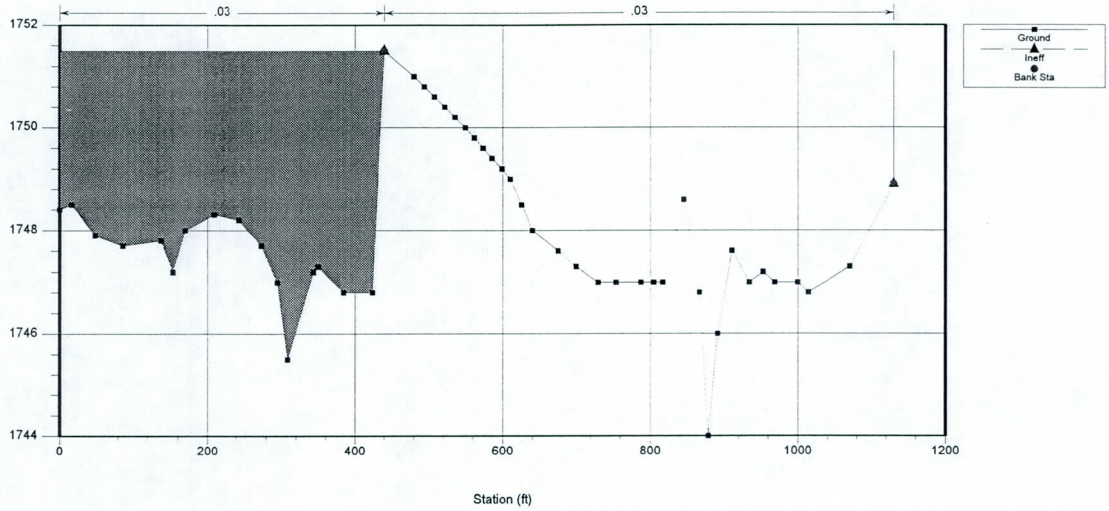

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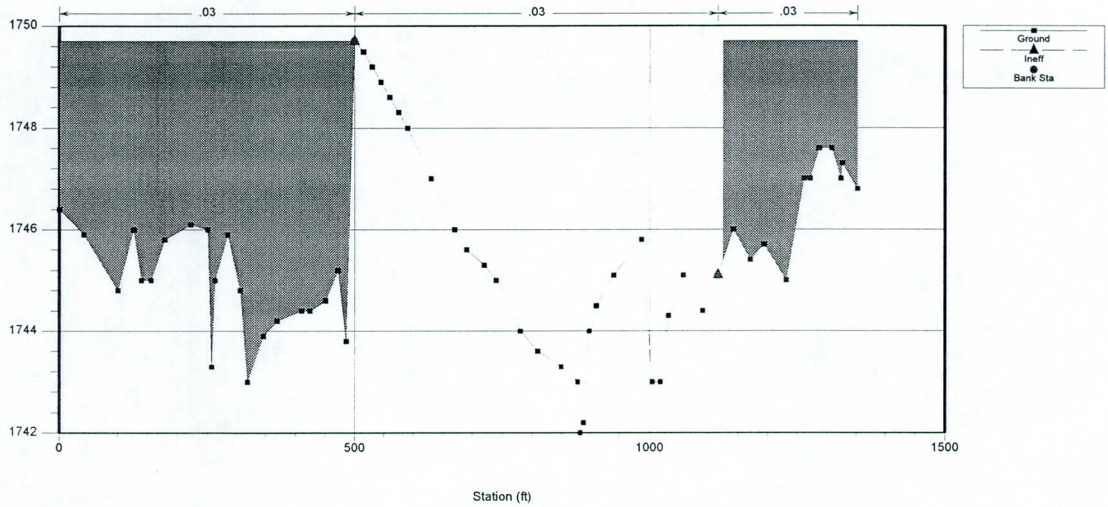

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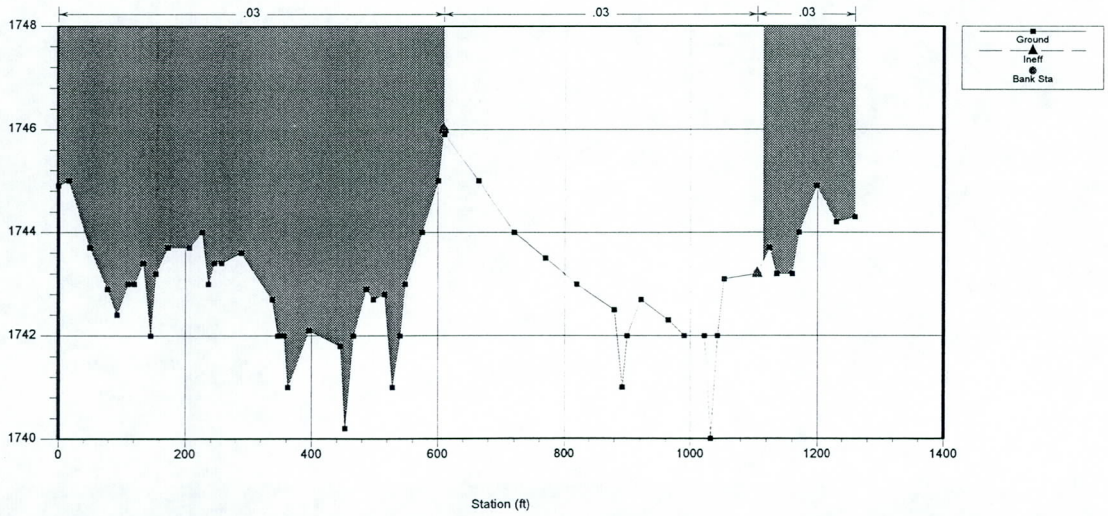

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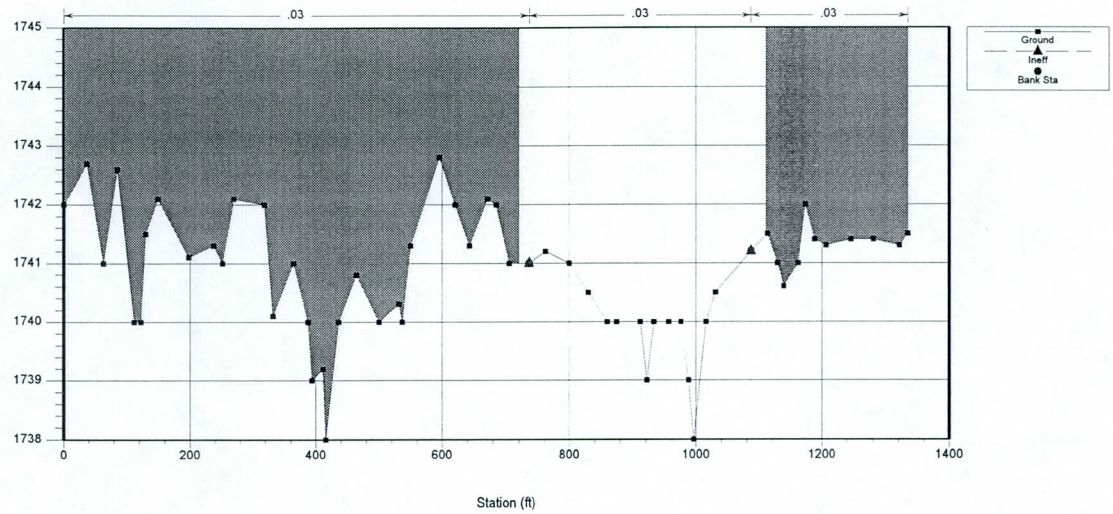

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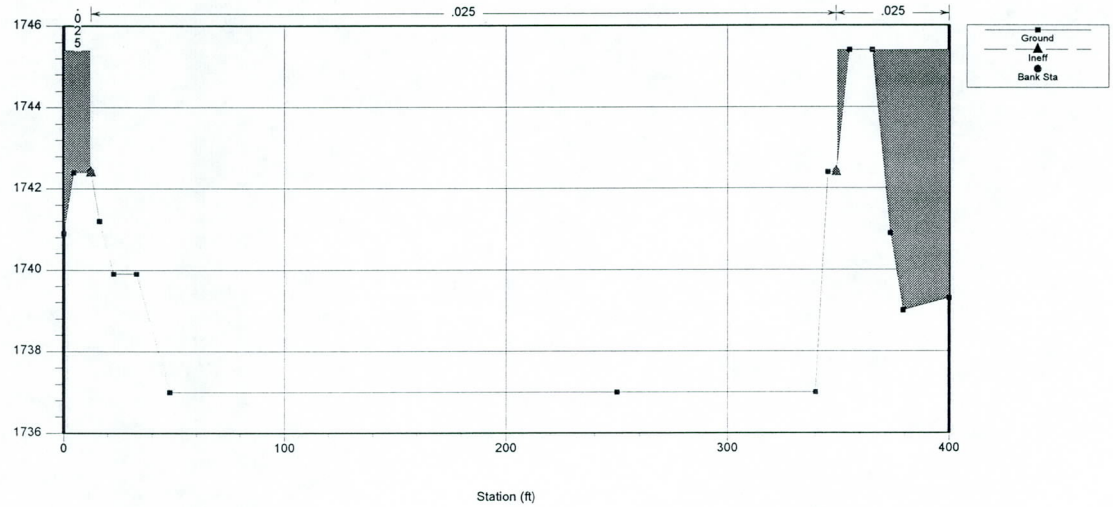

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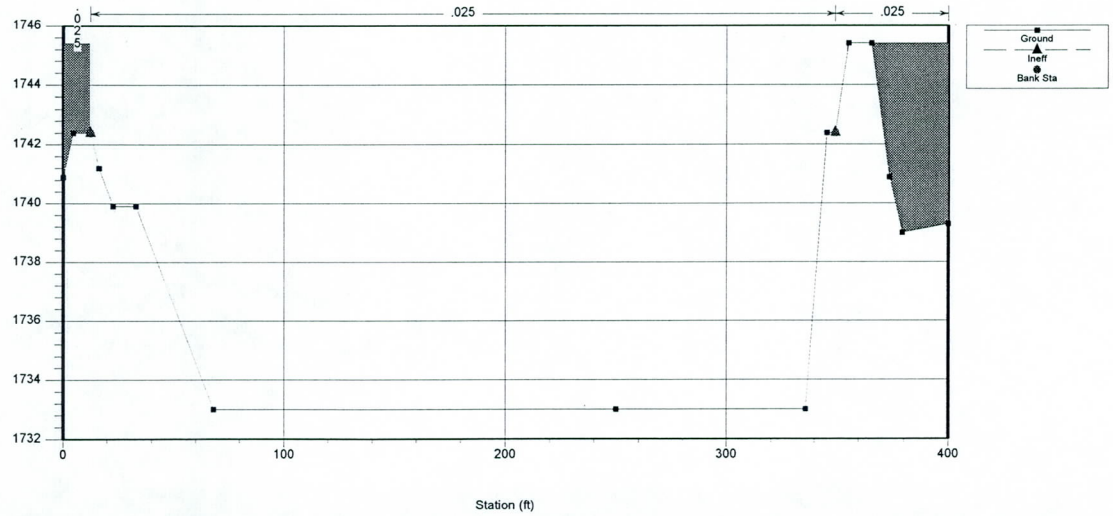

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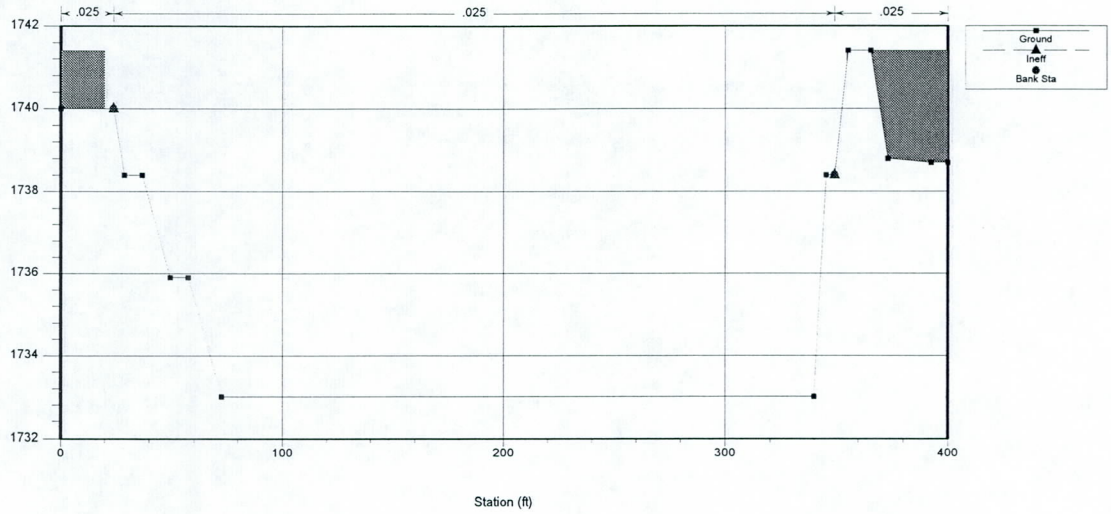

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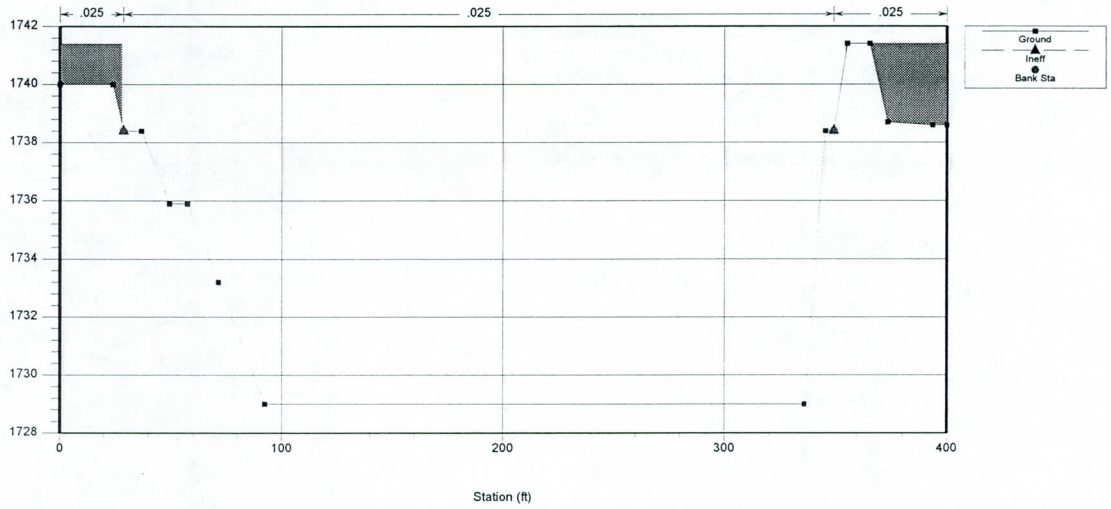
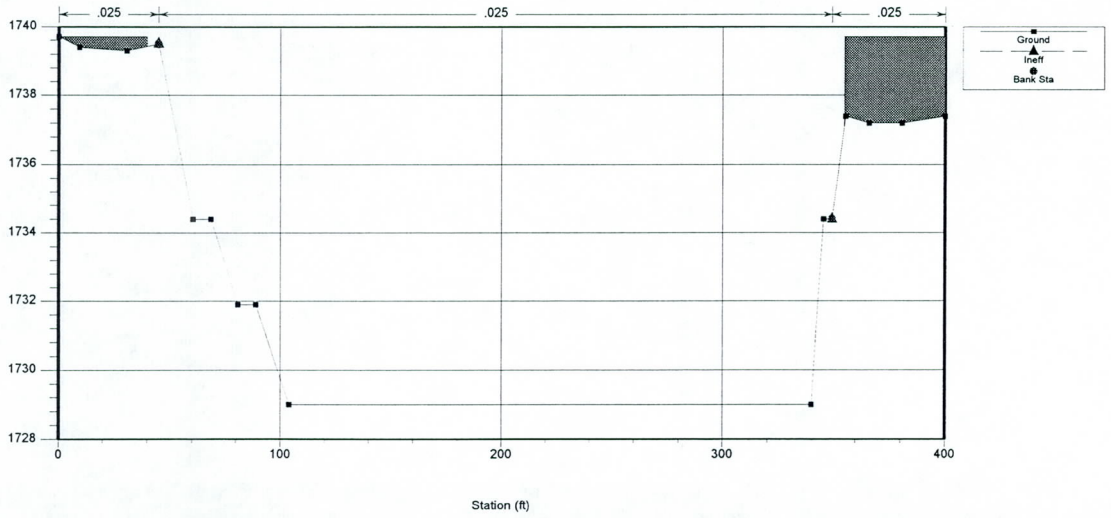
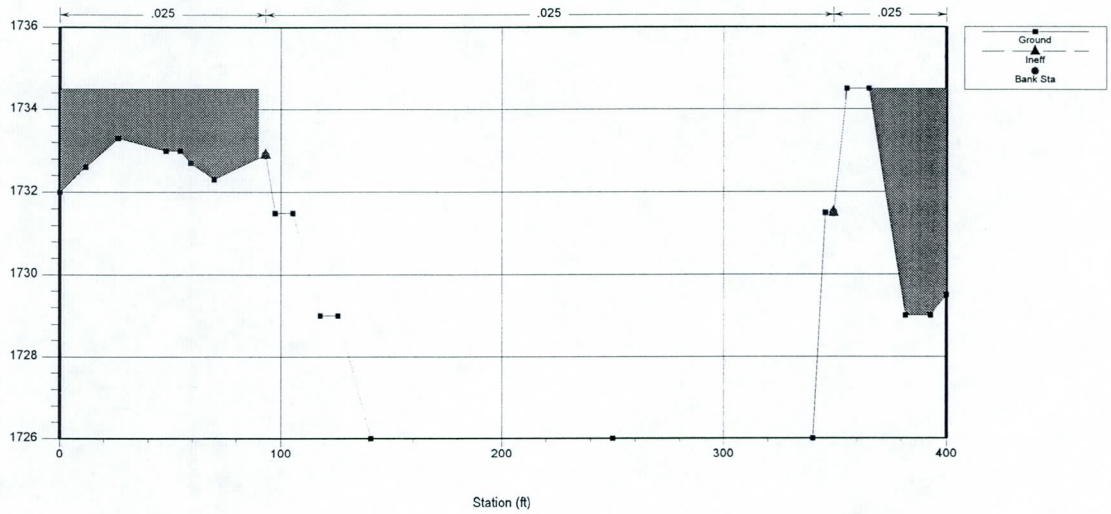


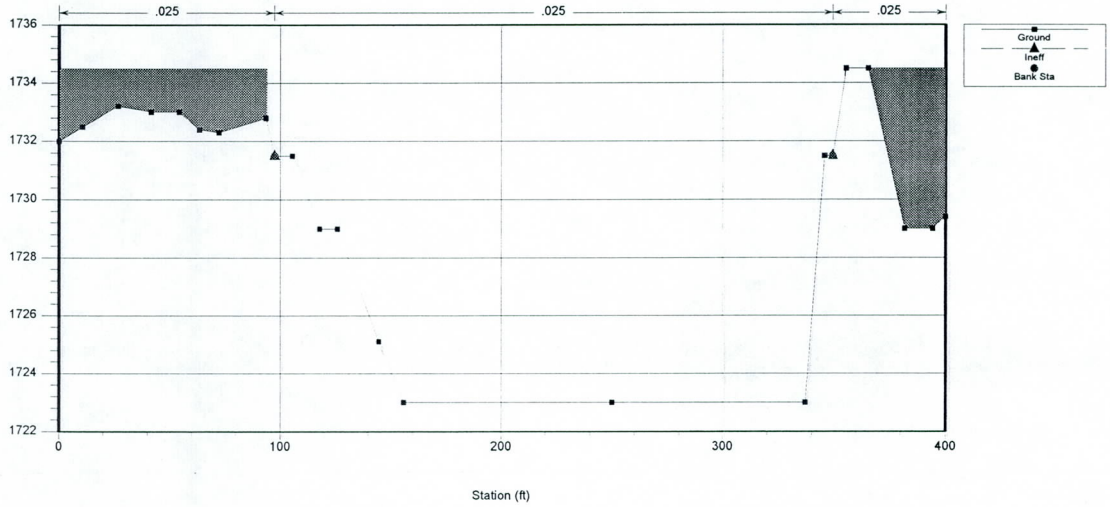
Reata Pass
Reach = 1 124.4



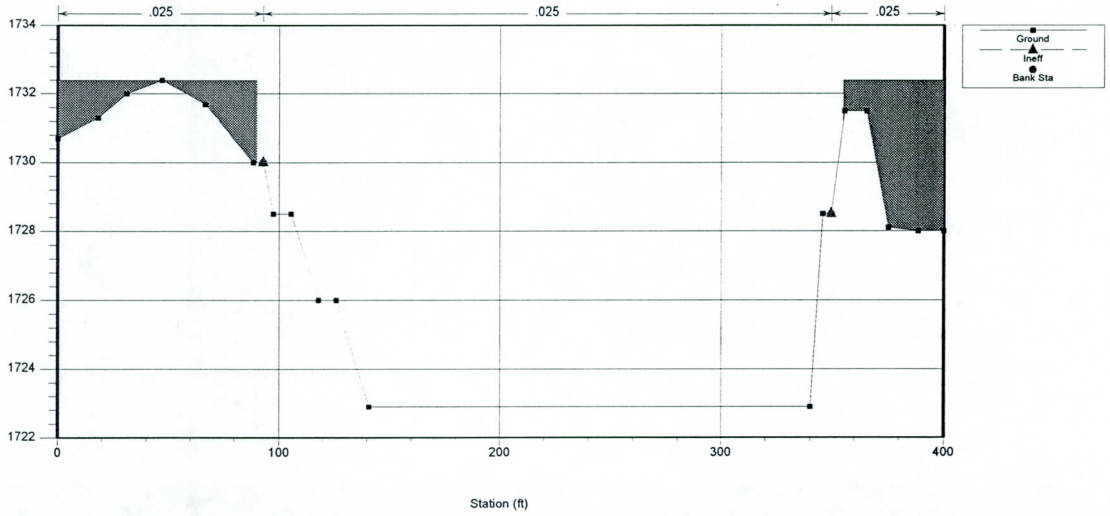
Reata Pass
Reach = 1 121.9

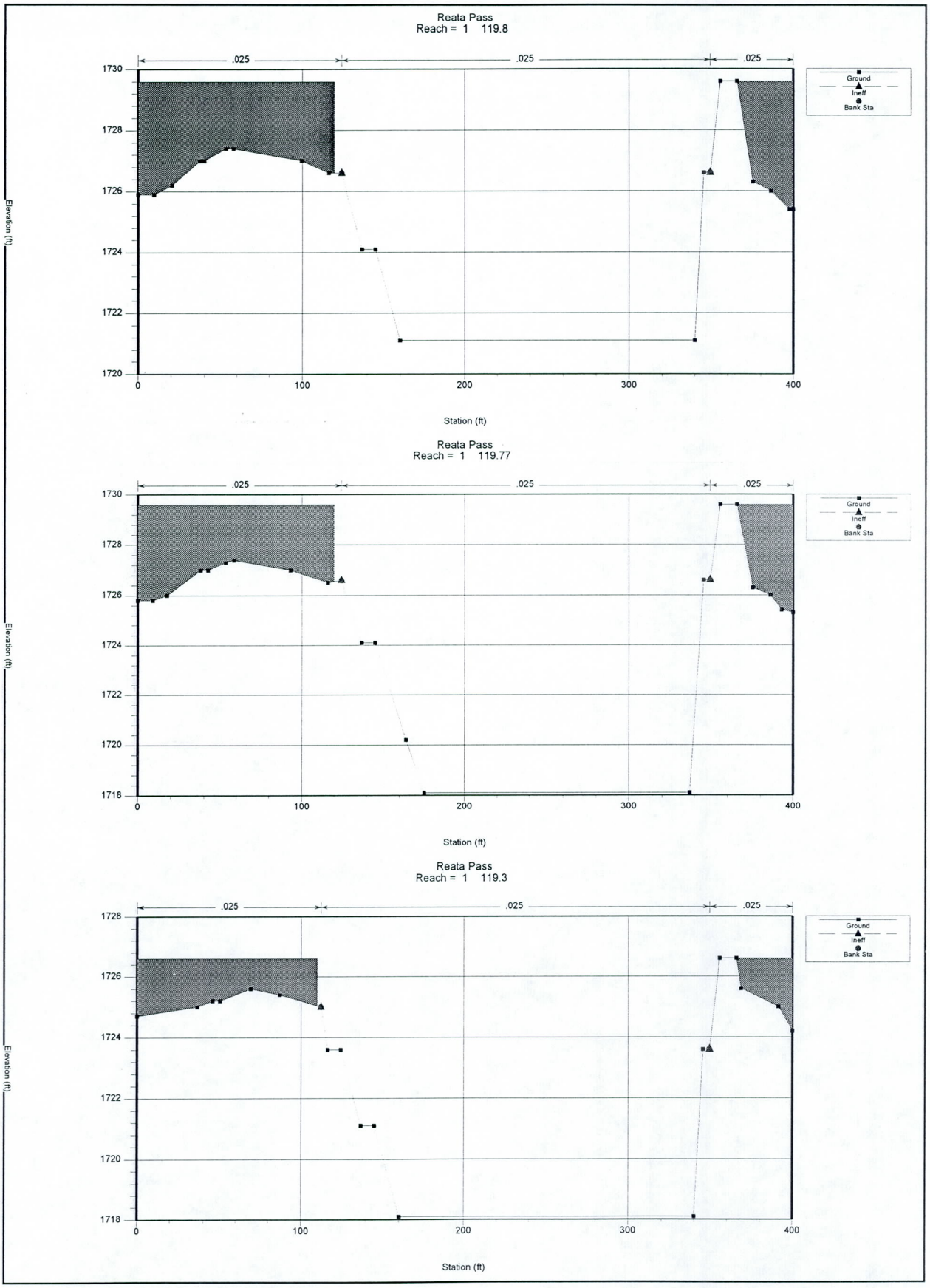


Reata Pass
Reach = 1 121.87

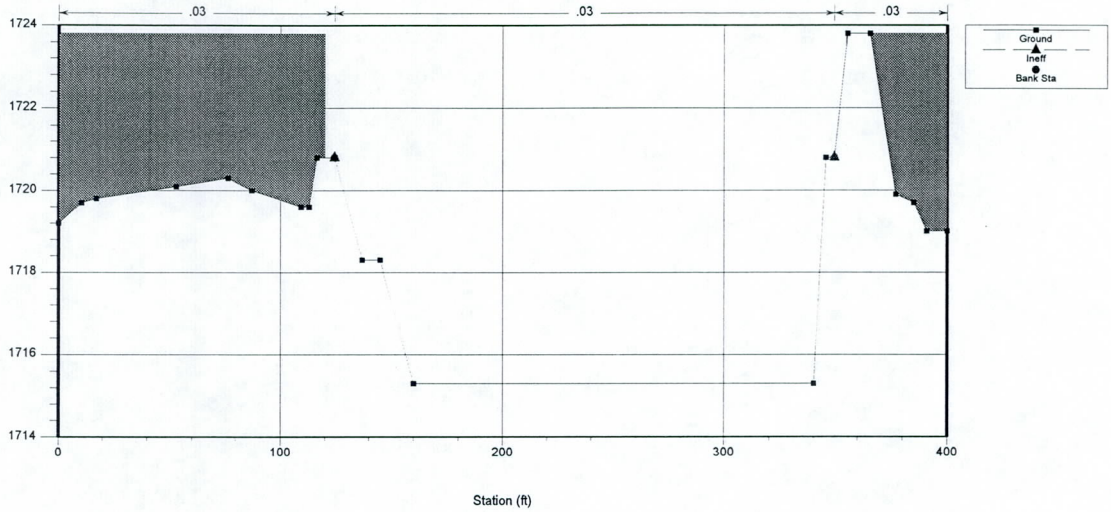


Reata Pass
Reach = 1 121.4

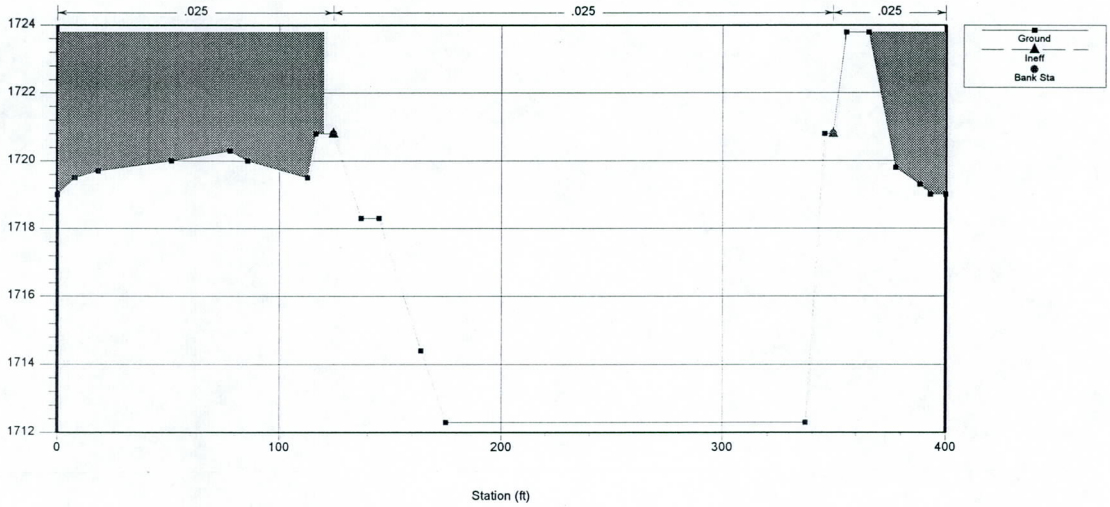



Reata Pass
Reach = 1 119.8
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Reata Pass
Reach = 1 119.77
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Reata Pass
Reach = 1 119.3
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

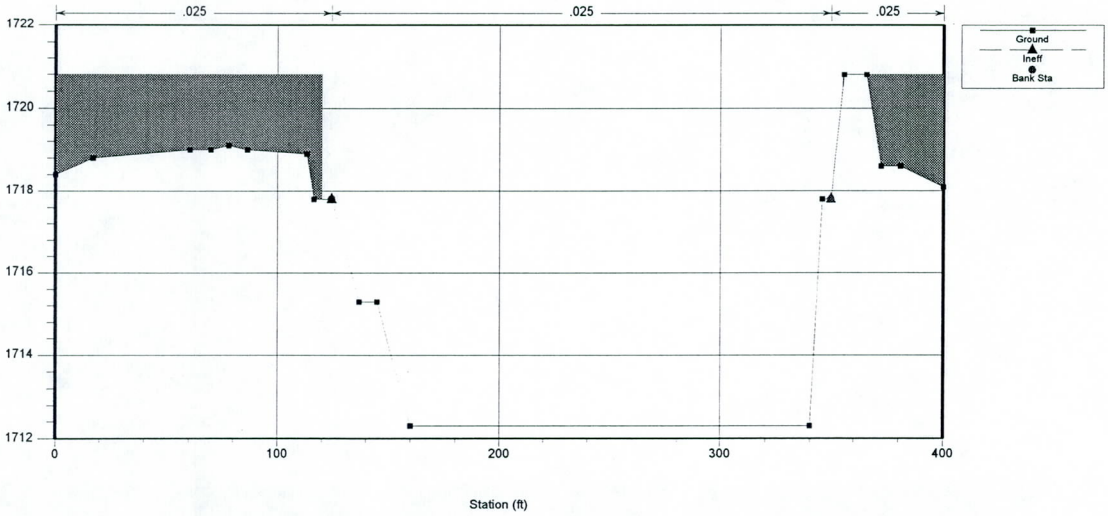
Reata Pass
Reach = 1 117



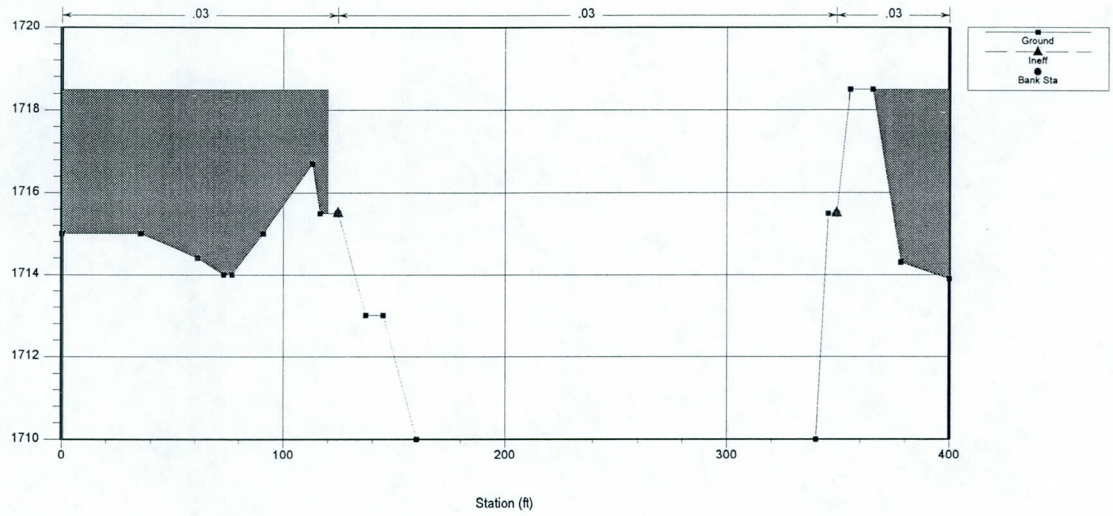
Reata Pass
Reach = 1 116.97



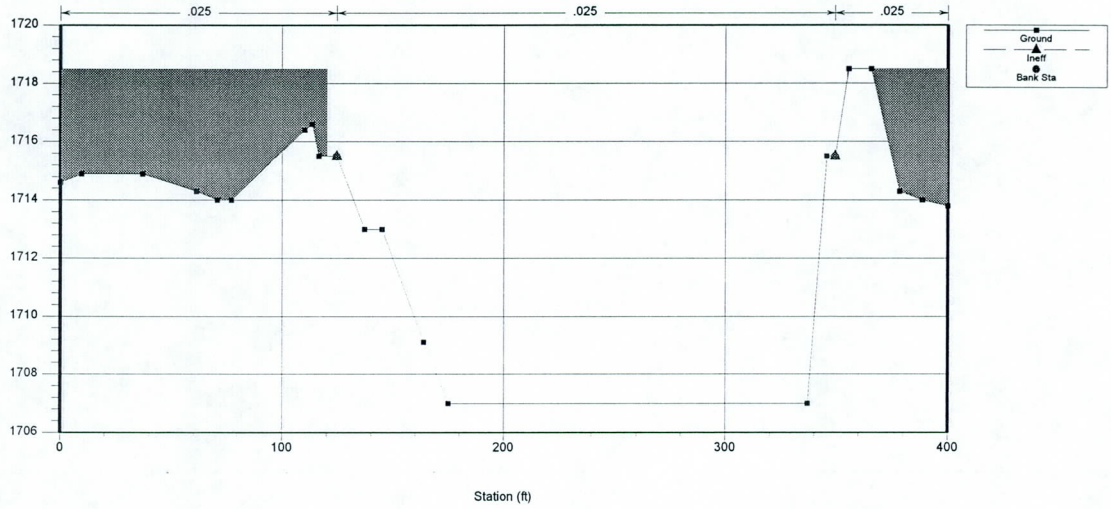
Reata Pass
Reach = 1 116.5



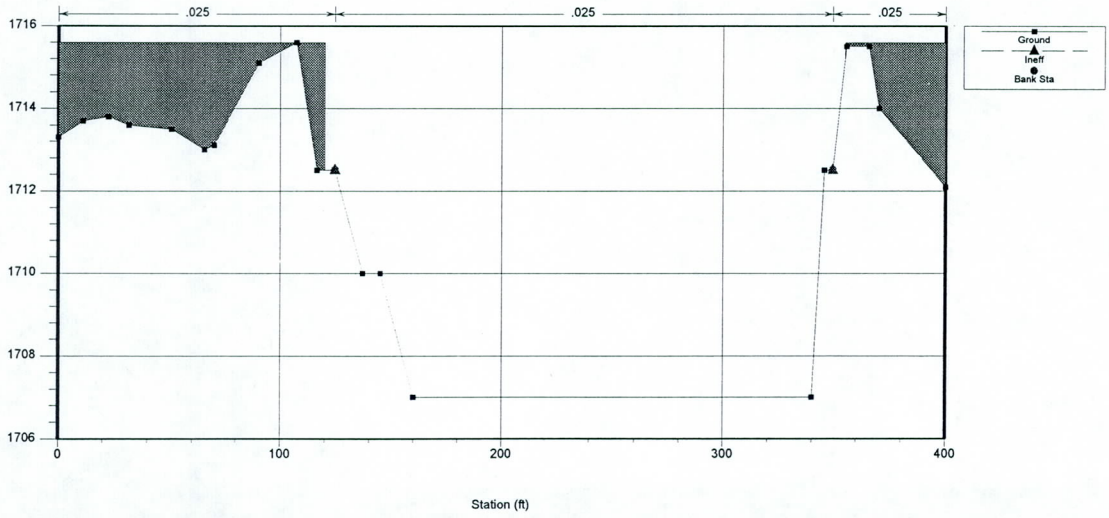
Reata Pass
Reach = 1 114.6



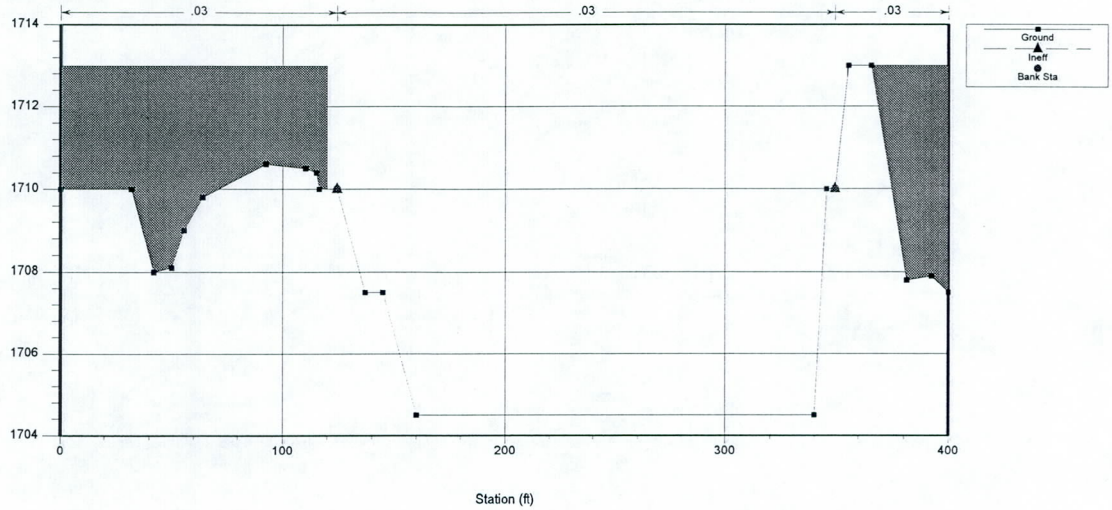
Reata Pass
Reach = 1 114.57



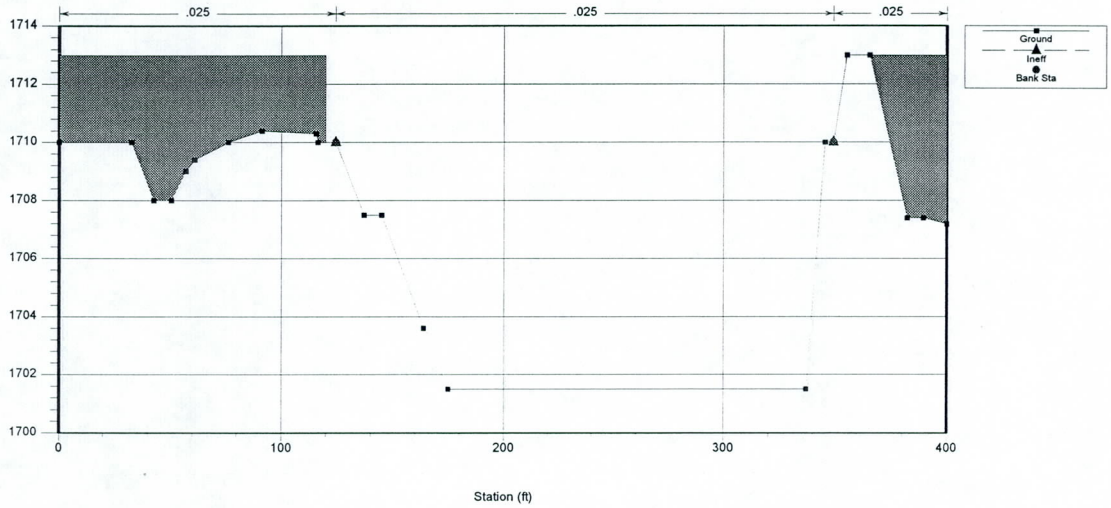
Reata Pass
Reach = 1 114.1



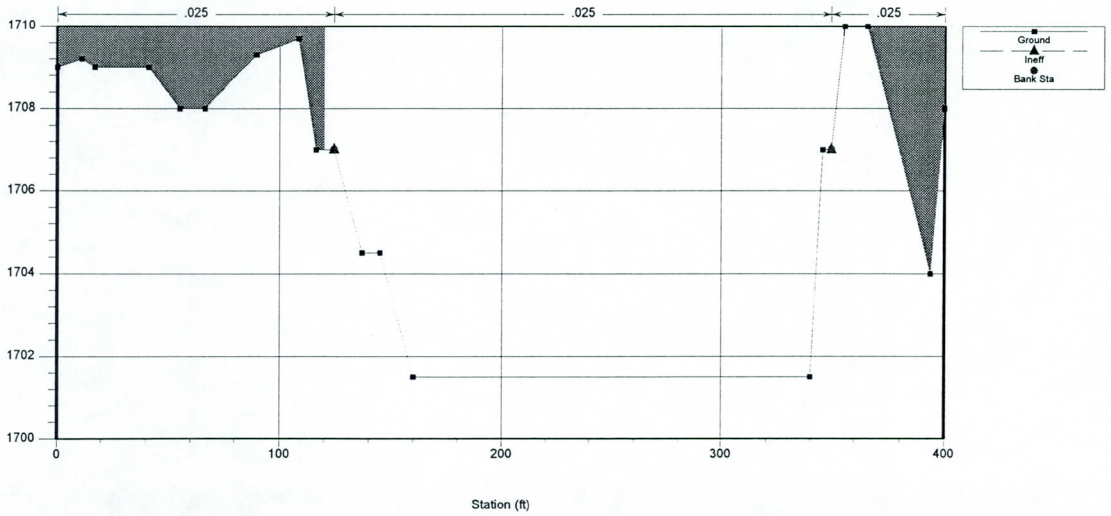
Reata Pass
Reach = 1 112



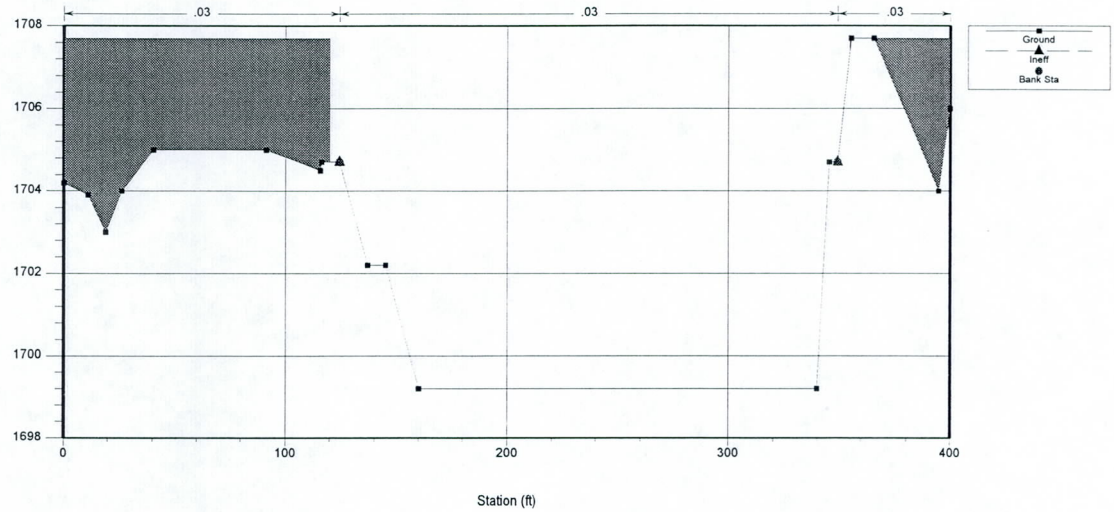
Reata Pass
Reach = 1 111.97



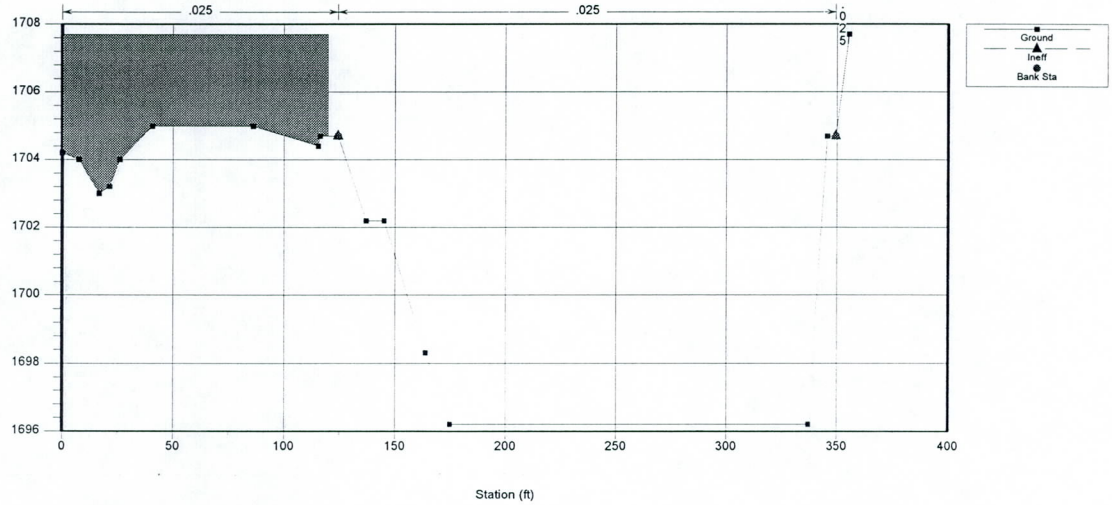
Reata Pass
Reach = 1 111.5



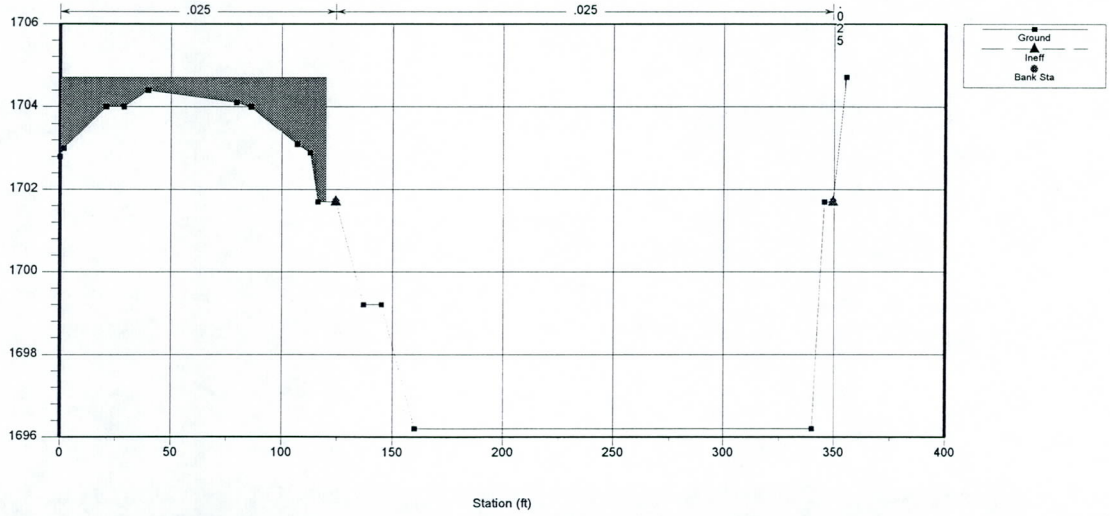
Reata Pass
Reach = 1 109.6



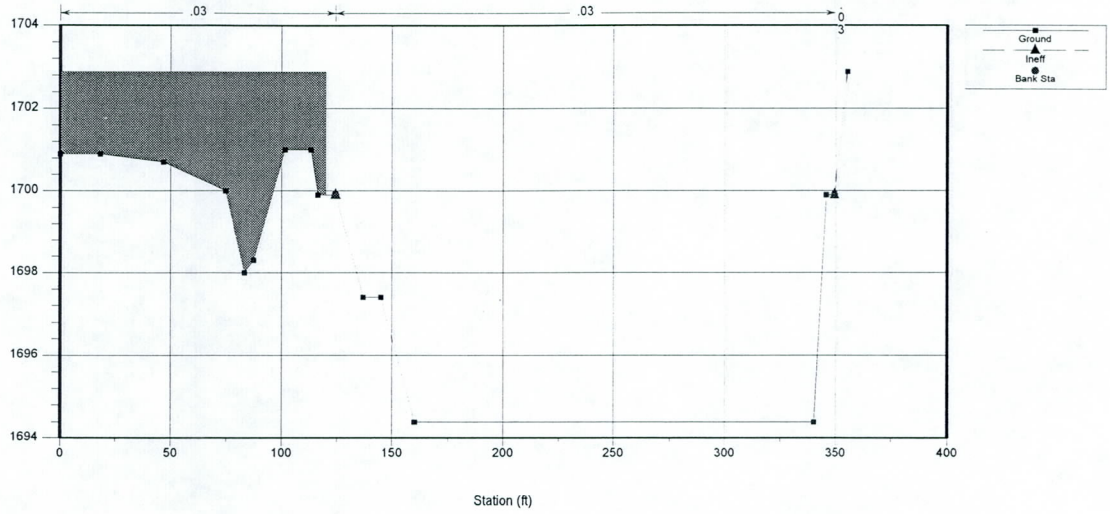
Reata Pass
Reach = 1 109.57



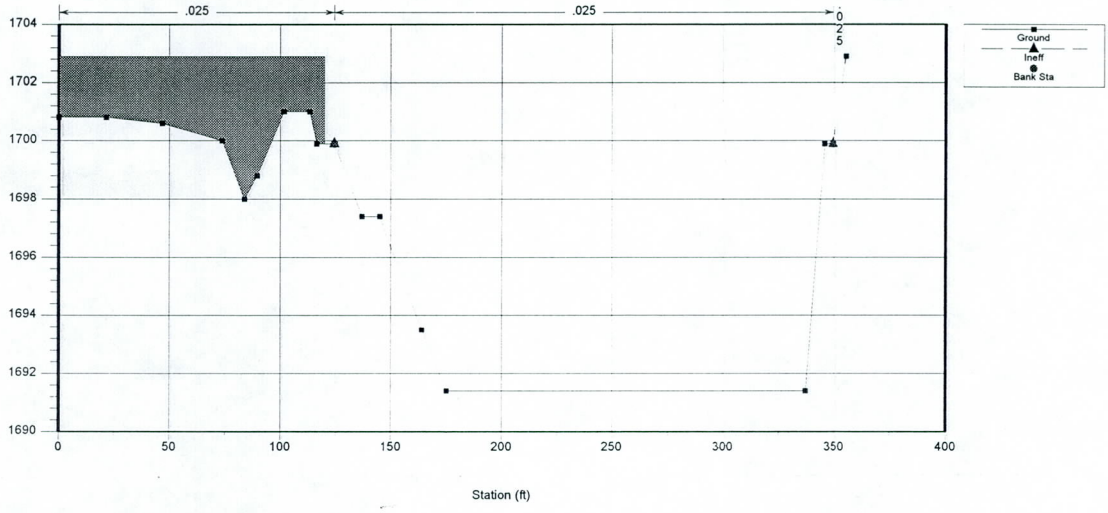
Reata Pass
Reach = 1 109.1



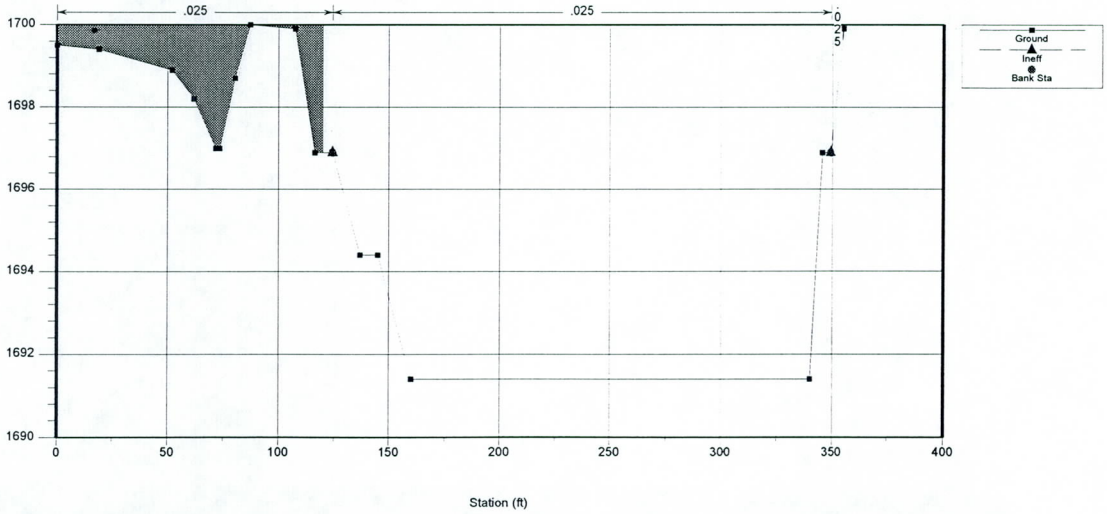
Reata Pass
Reach = 1 107.6



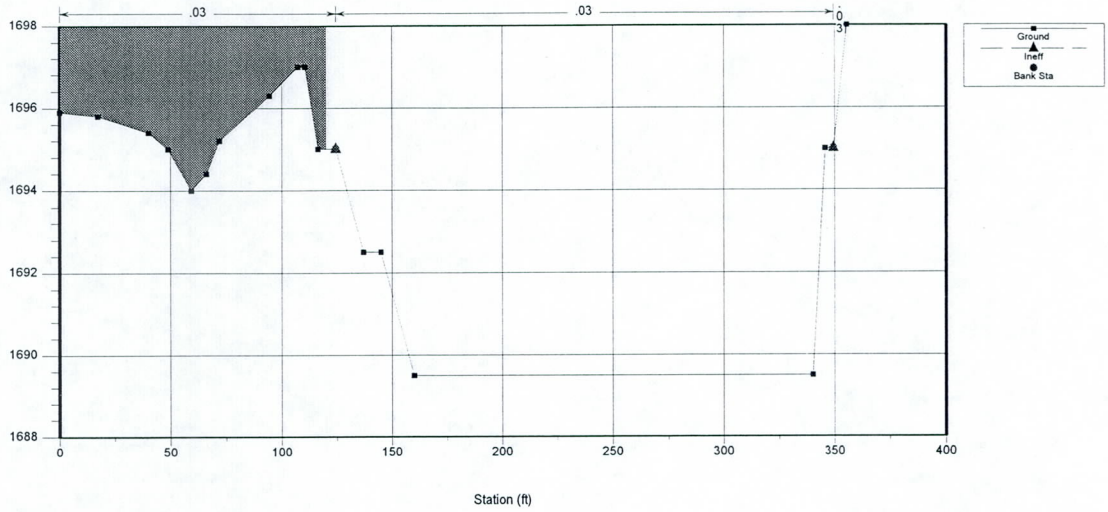
Reata Pass
Reach = 1 107.57



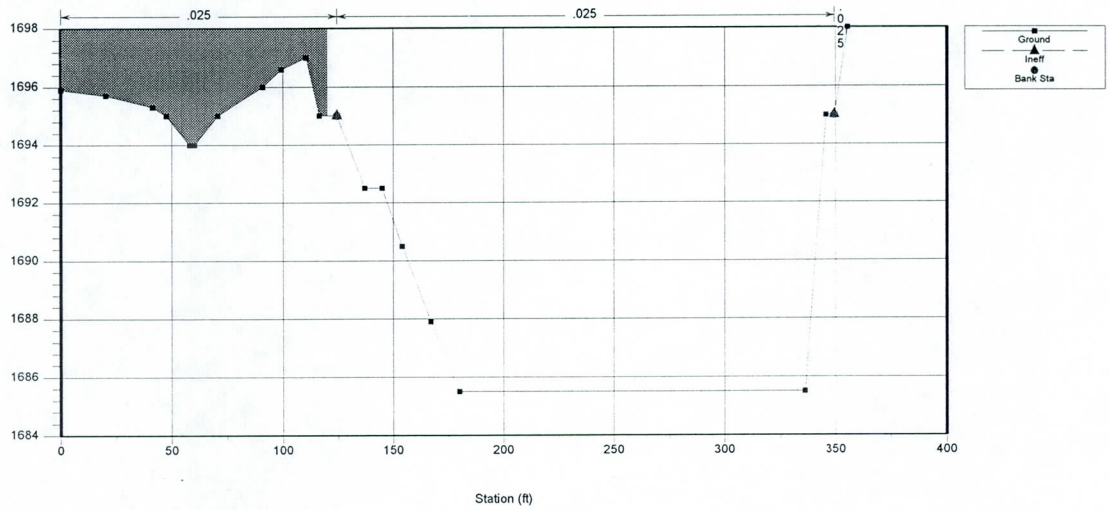
Reata Pass
Reach = 1 107.1



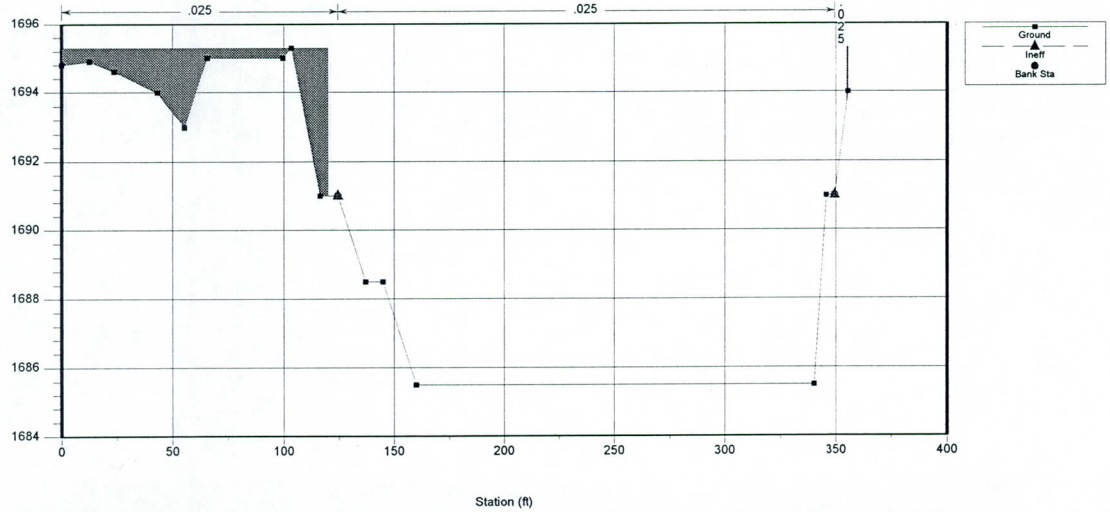
Reata Pass
Reach = 1 105.5

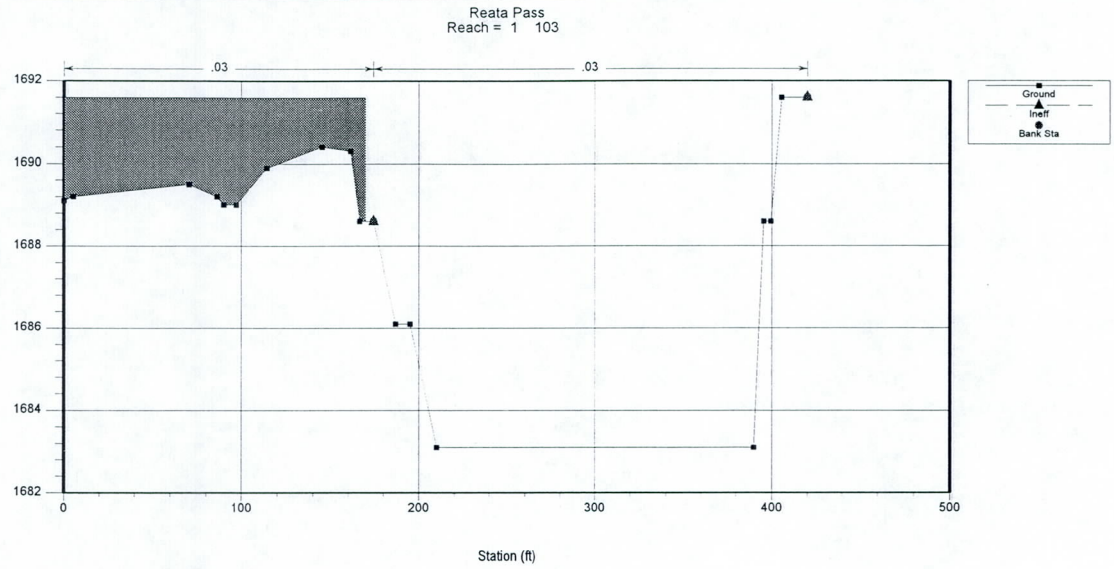


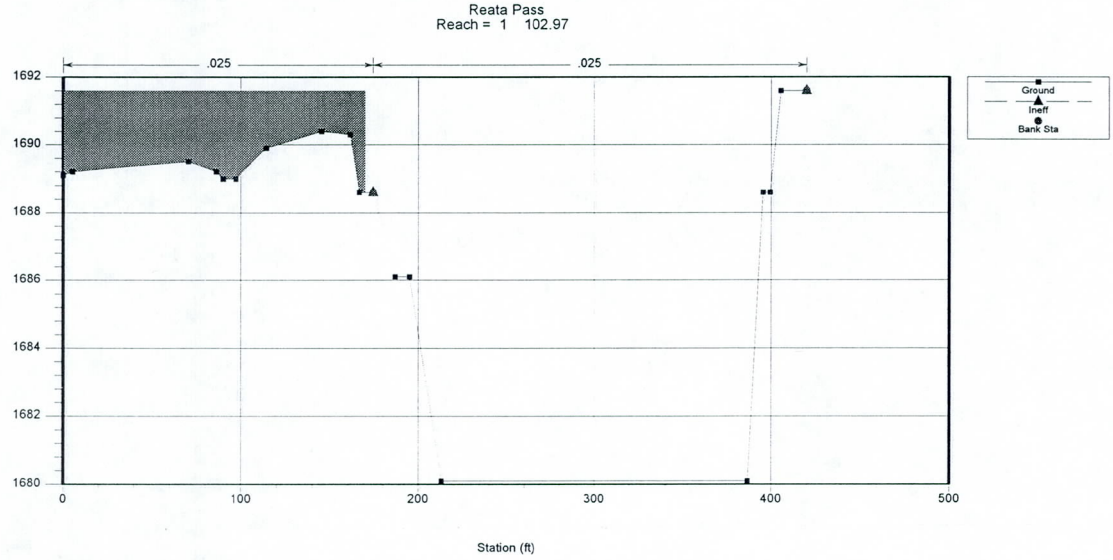
Reata Pass
Reach = 1 105.46

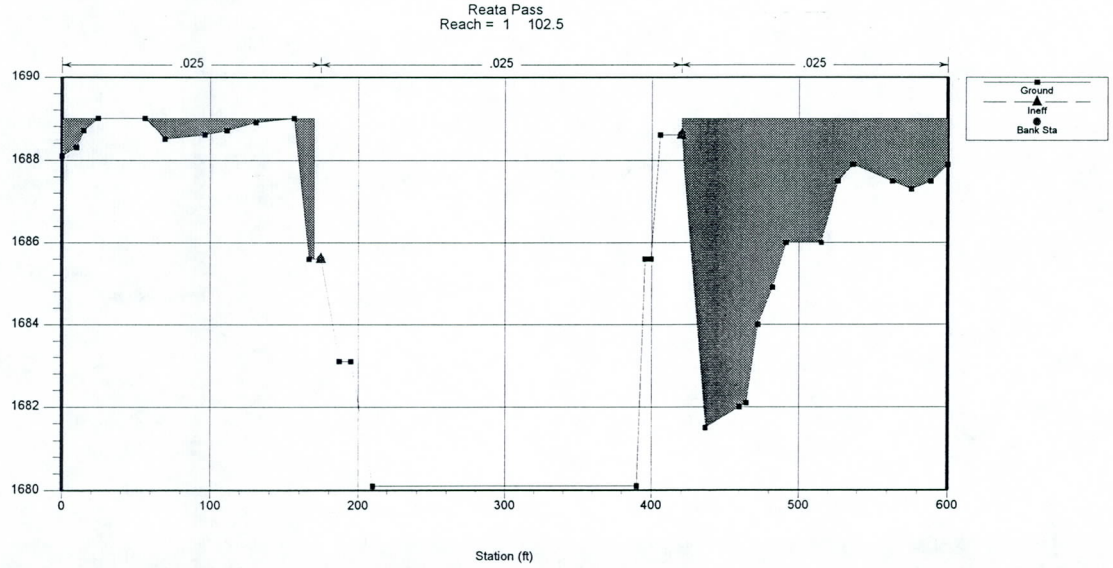


Reata Pass
Reach = 1 105

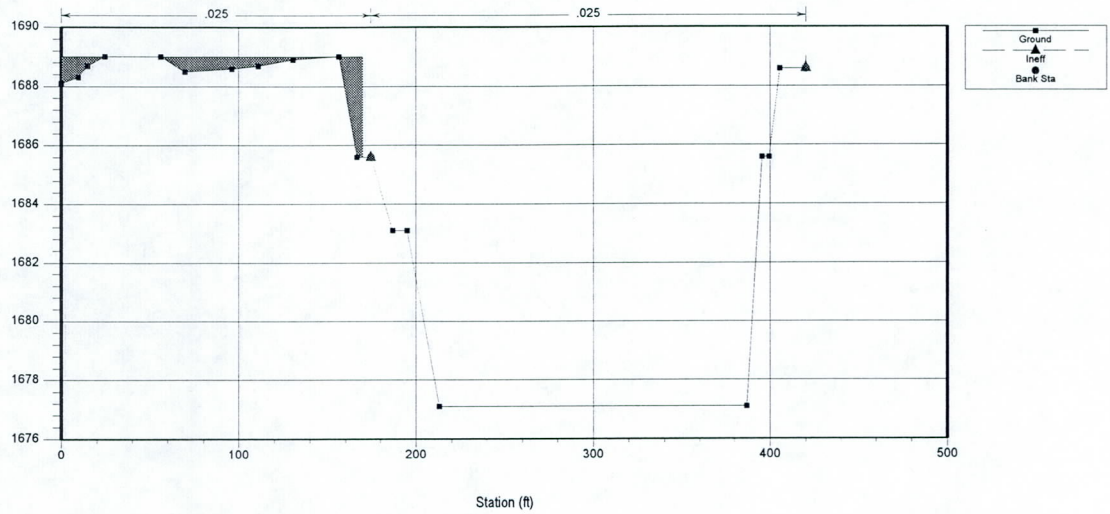



Reata Pass
Reach = 1 103
.03
.03
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

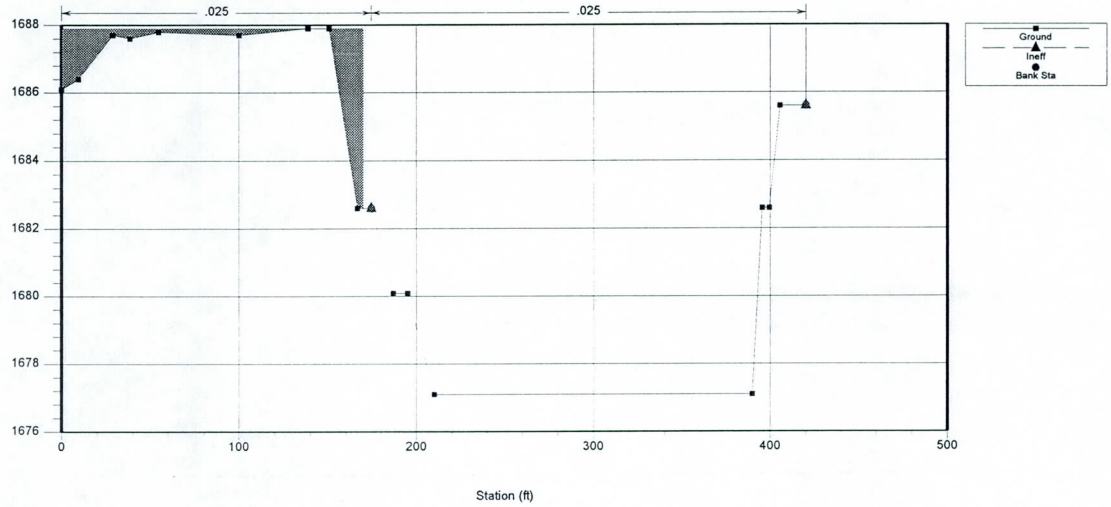

Reata Pass
Reach = 1 102.97
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Reata Pass
Reach = 1 102.5
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

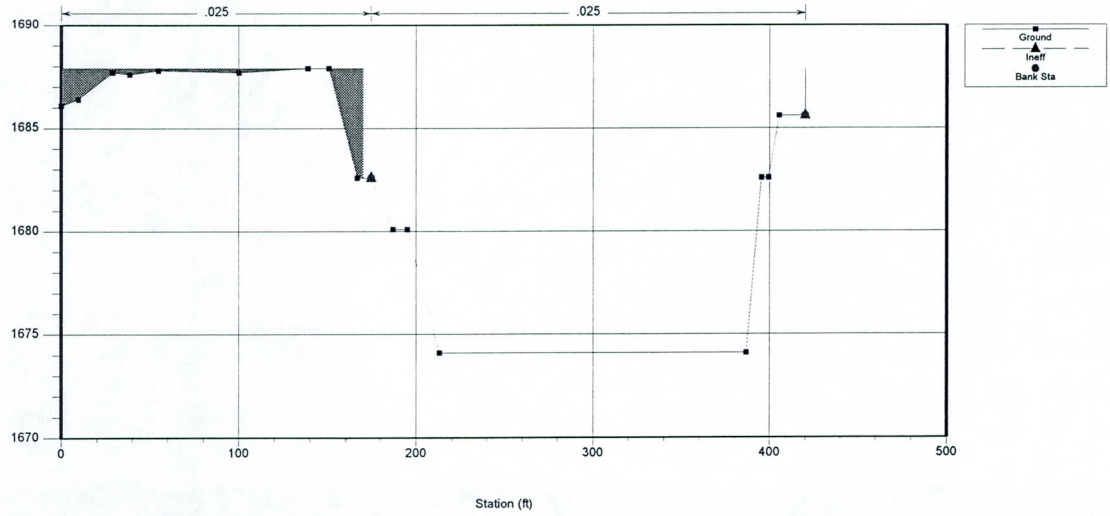
Reata Pass
Reach = 1 102.47



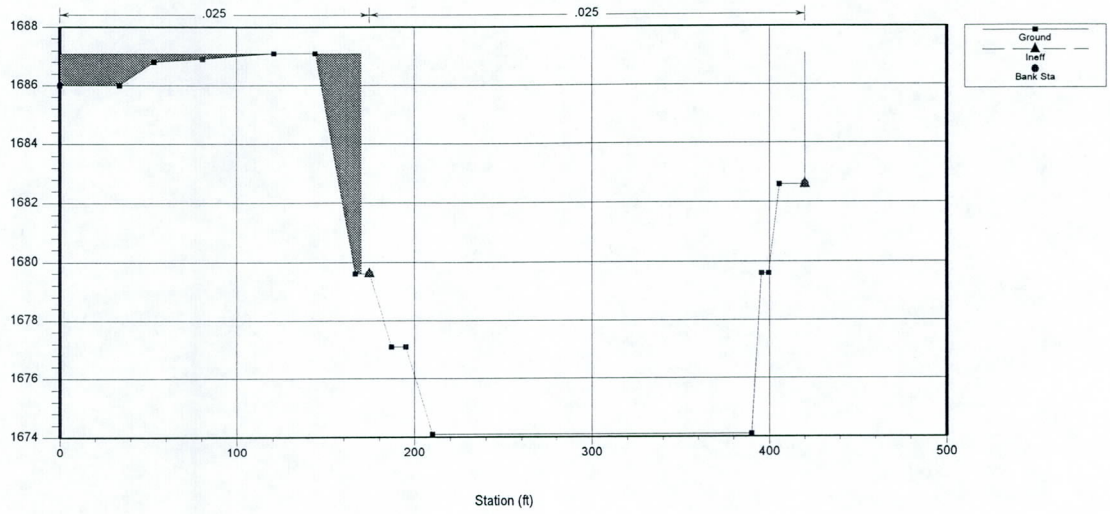
Reata Pass
Reach = 1 102



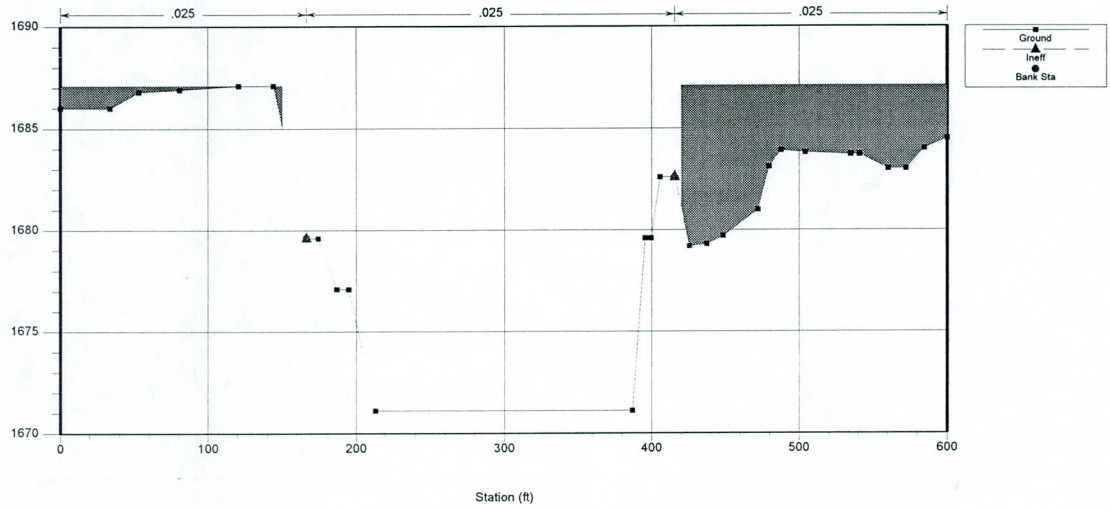
Reata Pass
Reach = 1 101.97



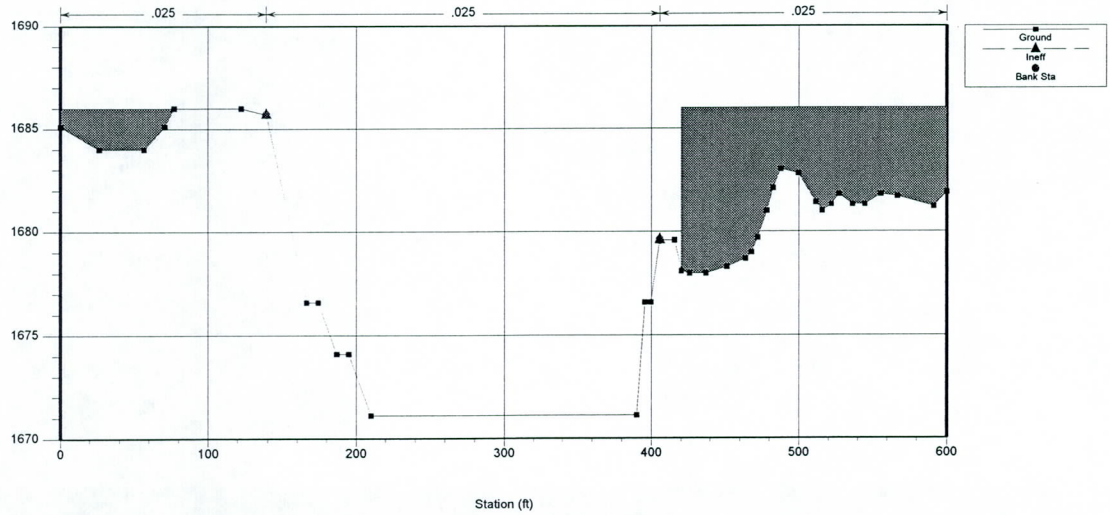
Reata Pass
Reach = 1 101.5



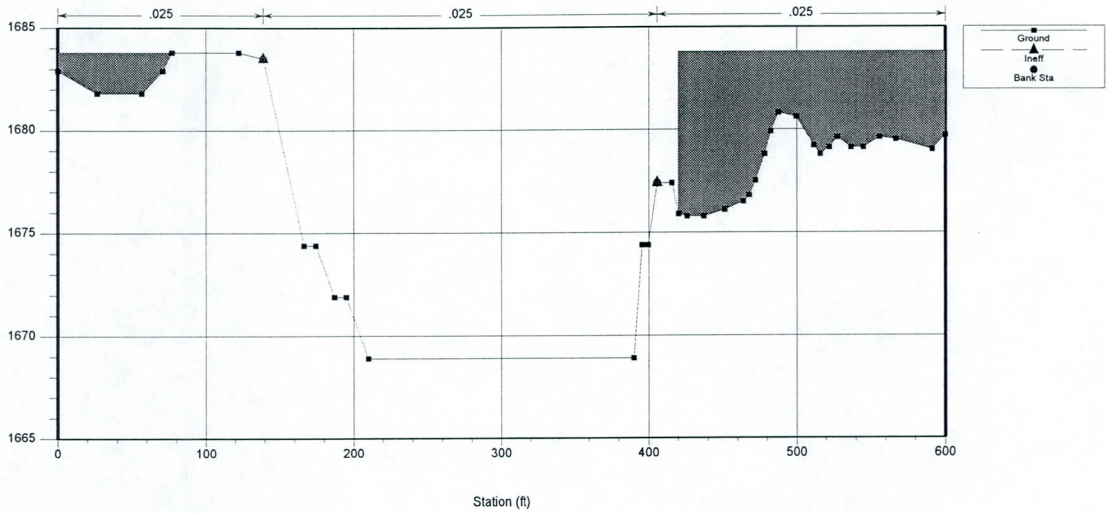
Reata Pass
Reach = 1 101.47



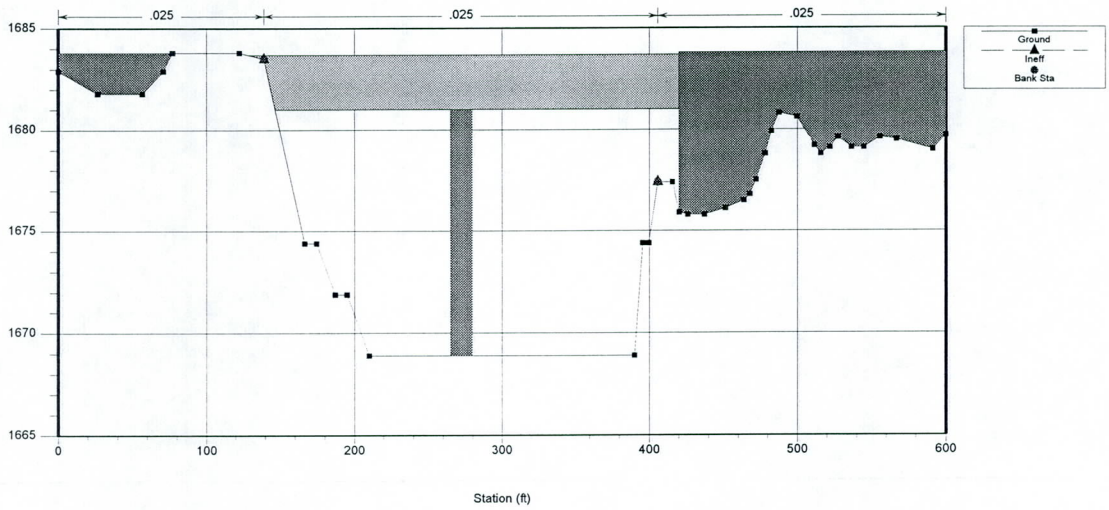
Reata Pass
Reach = 1 101



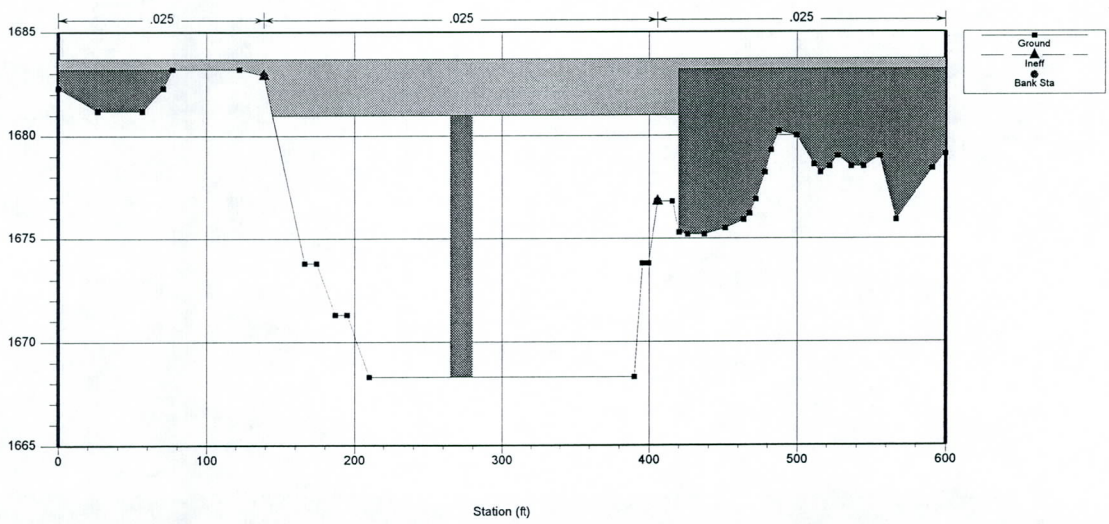
Reata Pass
Reach = 1 99.2

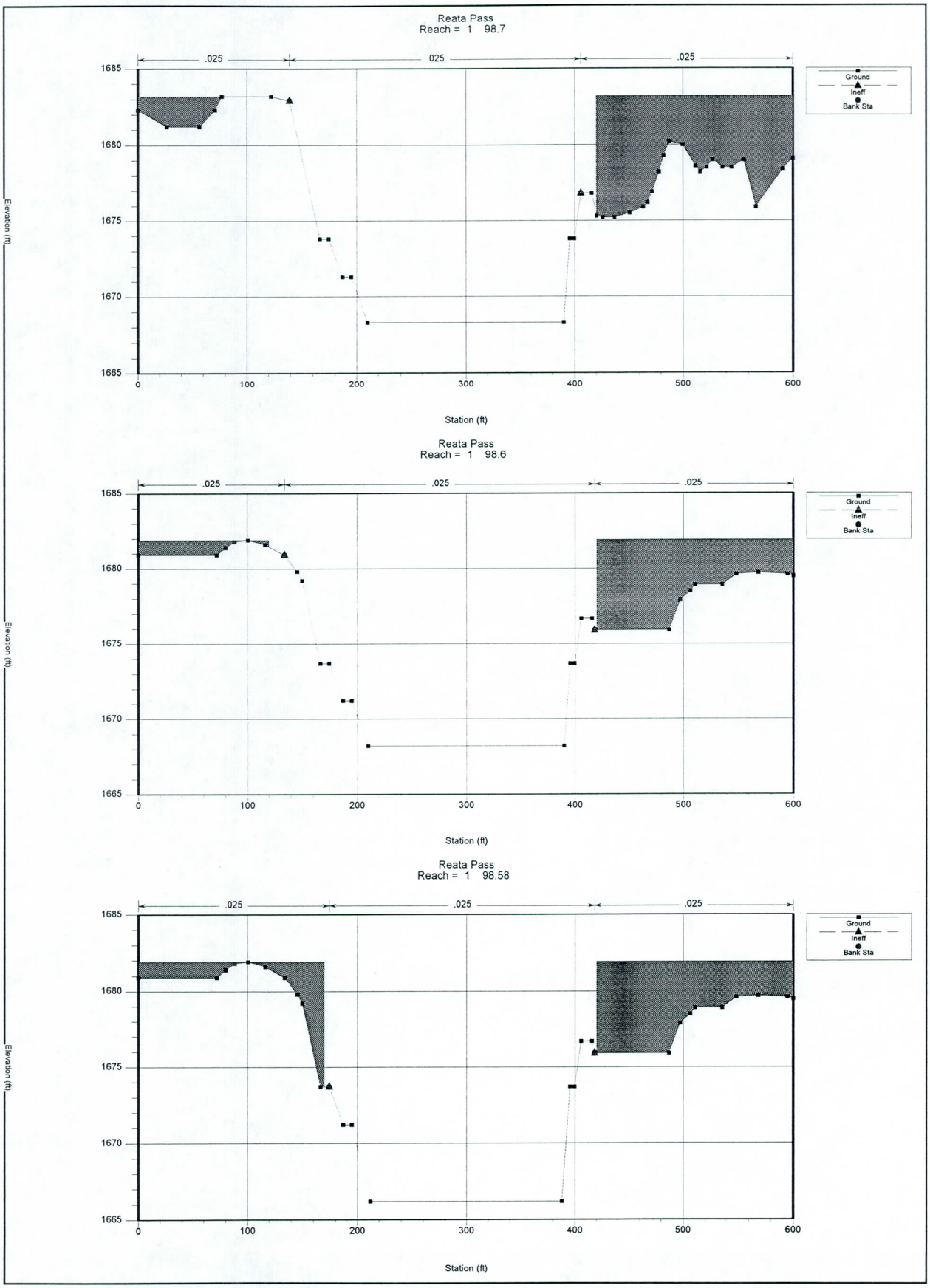


Reata Pass
Reach = 1 Upstream Inside Bridge # 5

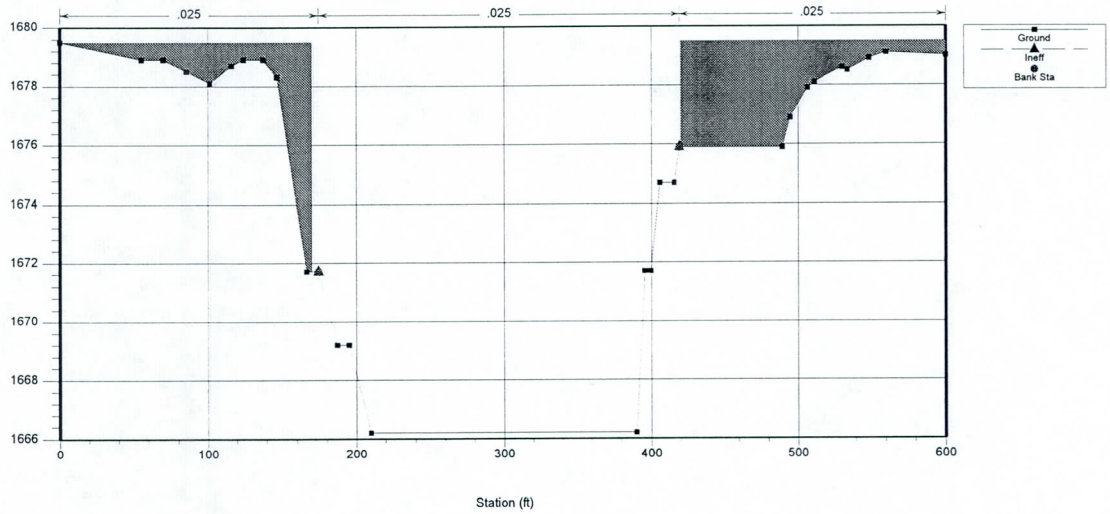


Reata Pass
Reach = 1 Downstream Inside Bridge # 5

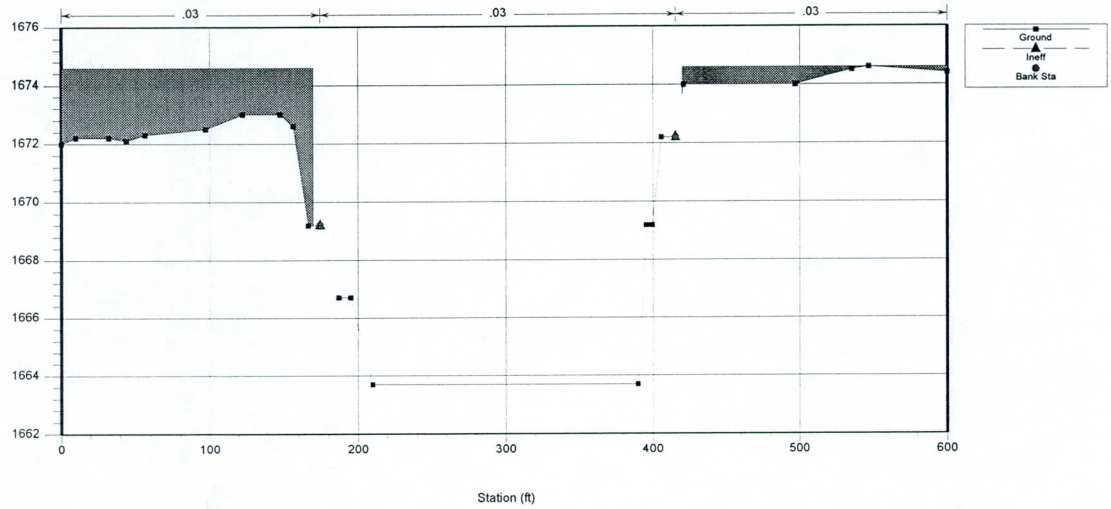



Reata Pass
Reach = 1 98.7
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
1685
1680
1675
1670
1665
0
100
200
300
400
500
600
Station (ft)
Reata Pass
Reach = 1 98.6
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
1685
1680
1675
1670
1665
0
100
200
300
400
500
600
Station (ft)
Reata Pass
Reach = 1 98.58
.025
.025
.025
Ground
Ineff
Bank Sta
Elevation (ft)
1685
1680
1675
1670
1665
0
100
200
300
400
500
600
Station (ft)

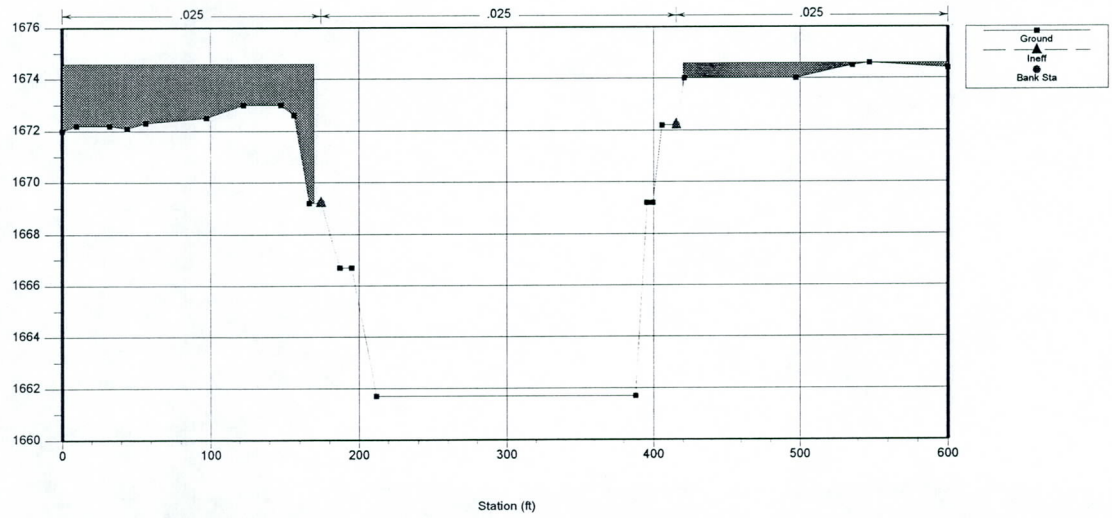
Reata Pass
Reach = 1 98.1



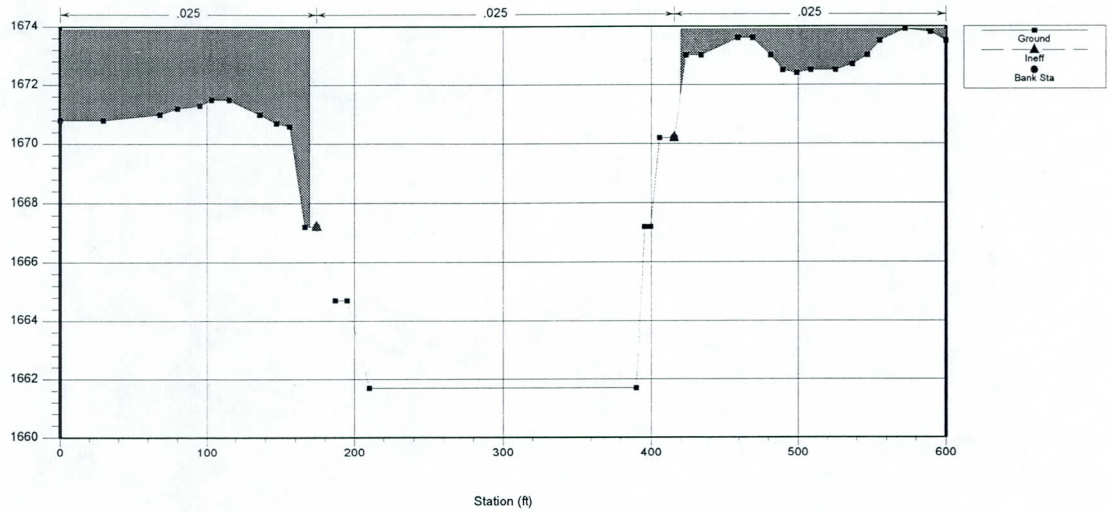
Reata Pass
Reach = 1 96



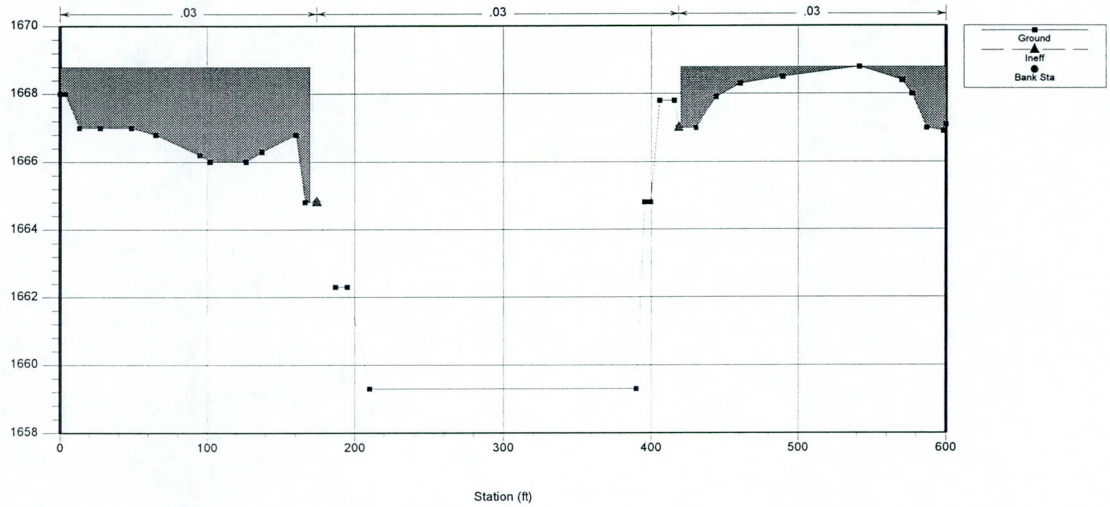
Reata Pass
Reach = 1 95.98



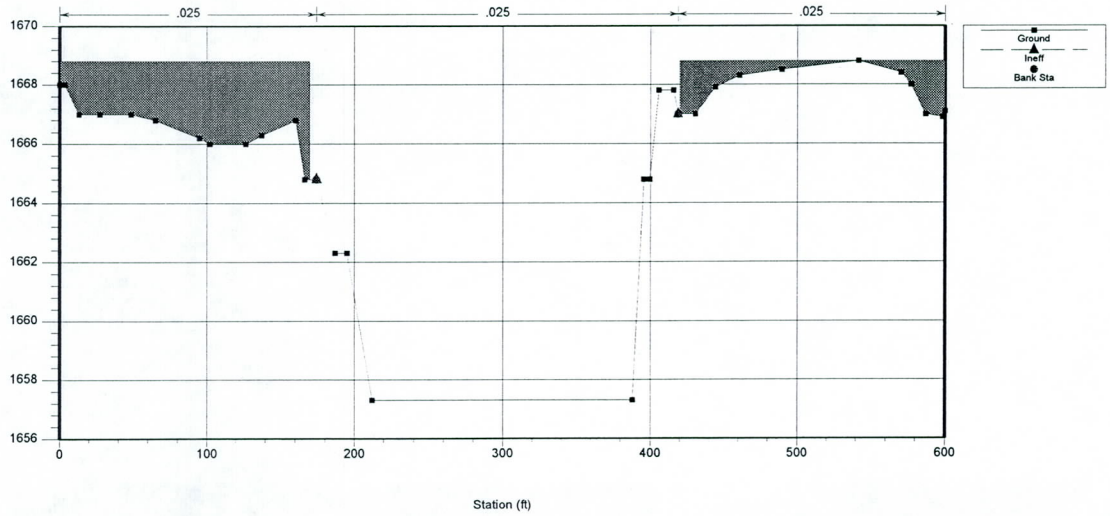
Reata Pass
Reach = 1 95.5



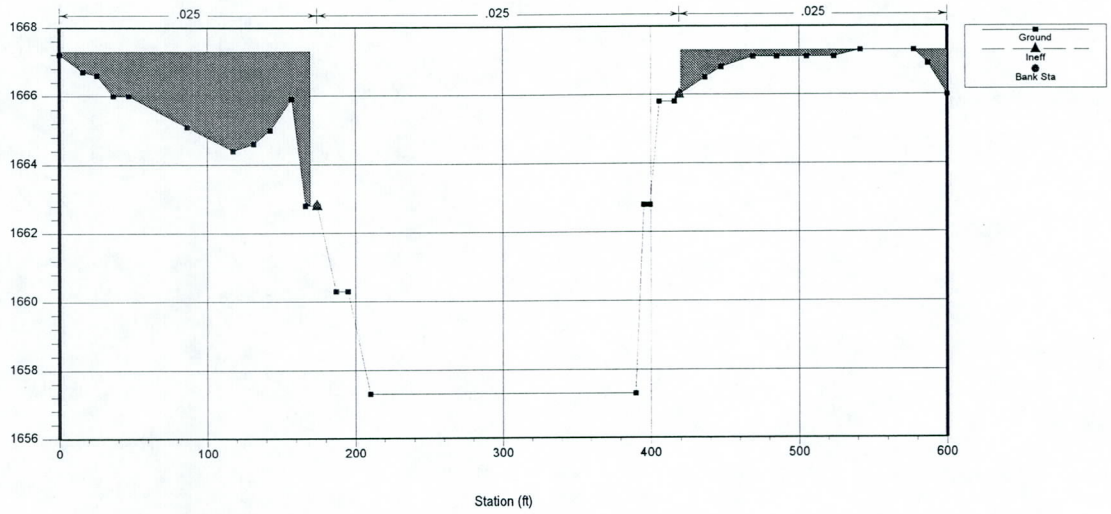
Reata Pass
Reach = 1 93.5



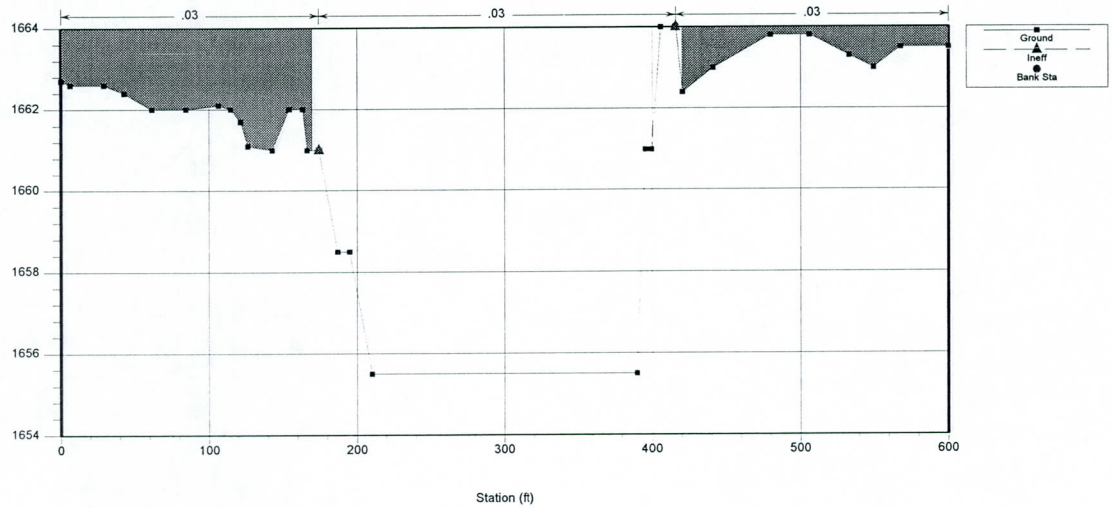
Reata Pass
Reach = 1 93.48



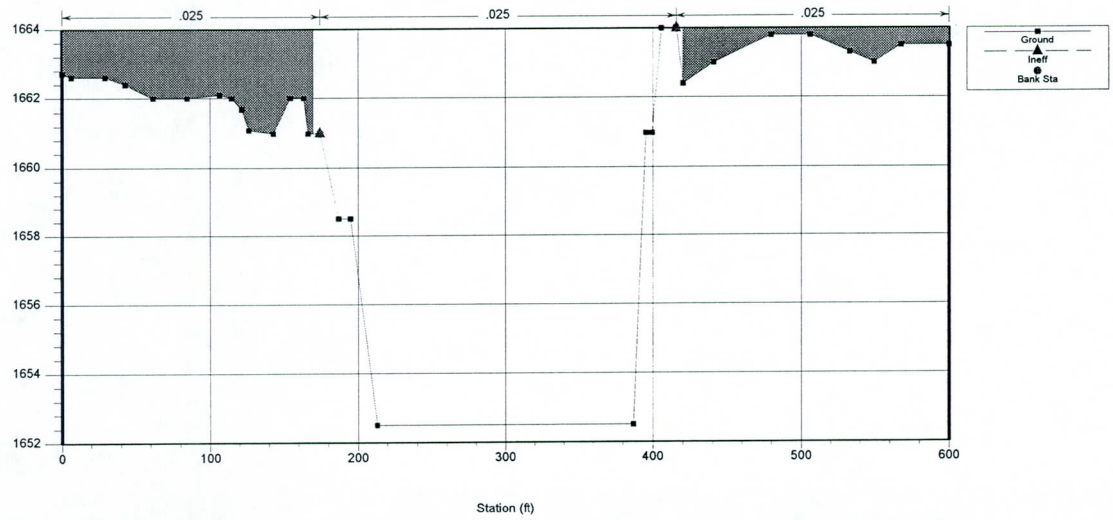
Reata Pass
Reach = 1 93



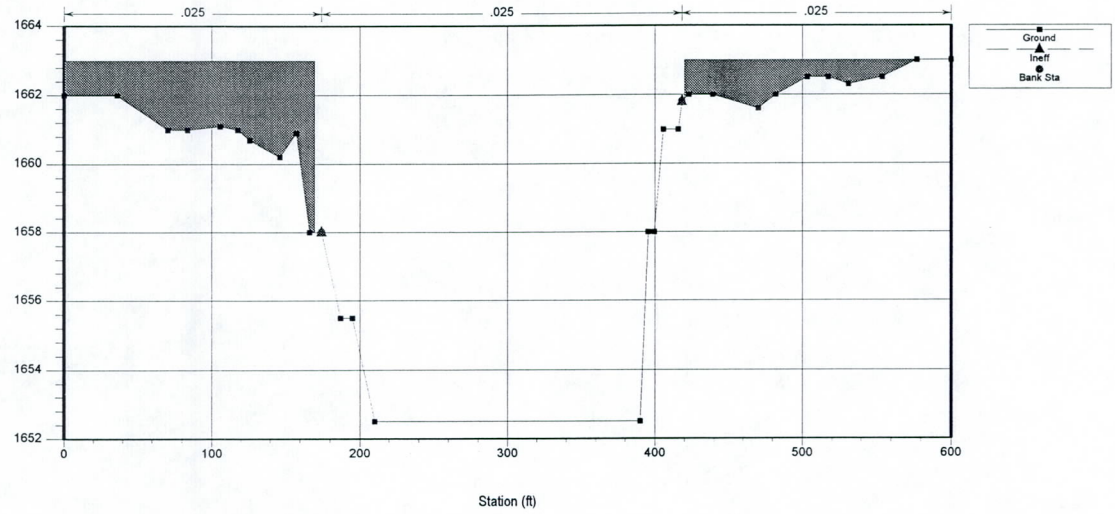
Reata Pass
Reach = 1 91.5



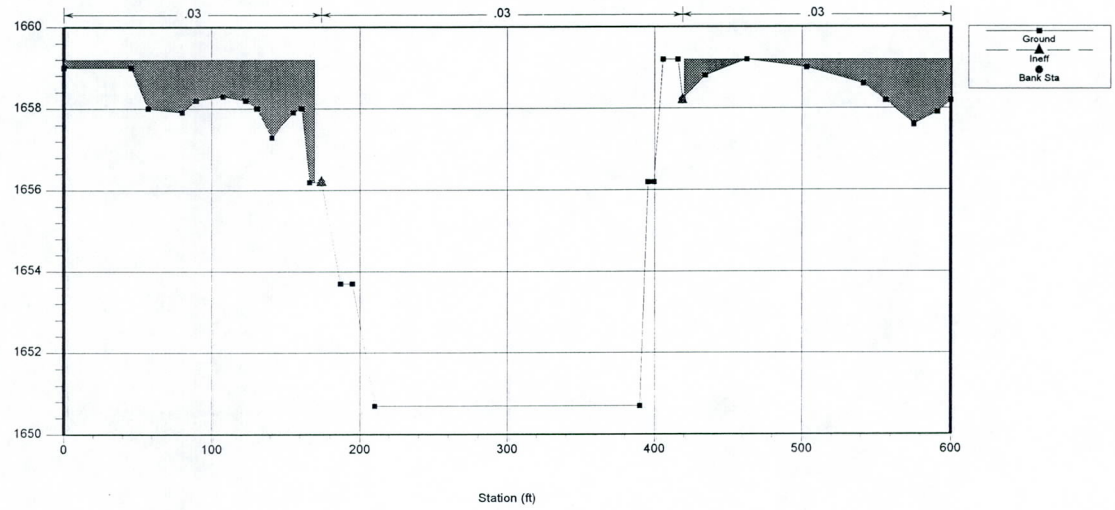
Reata Pass
Reach = 1 91.47



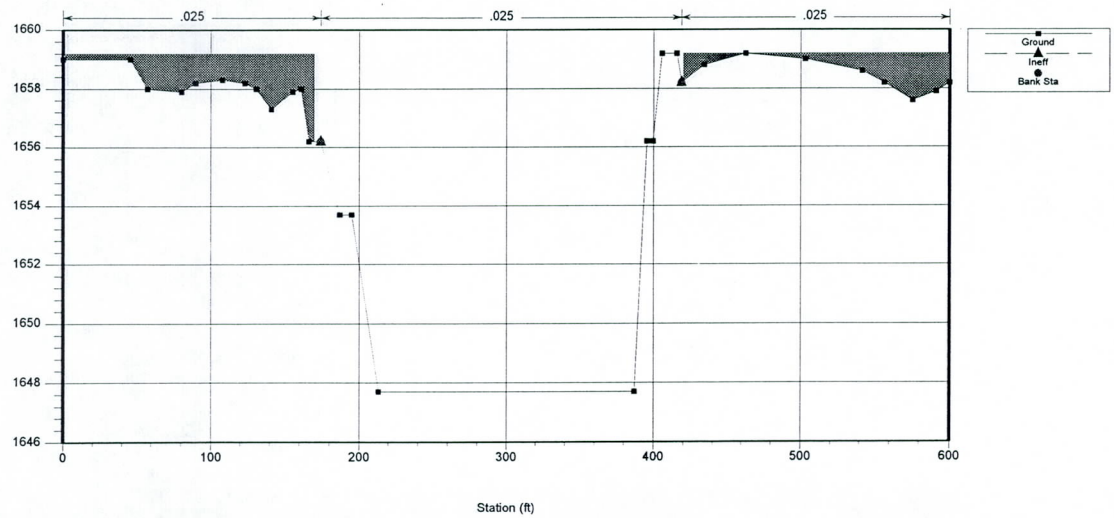
Reata Pass
Reach = 1 91



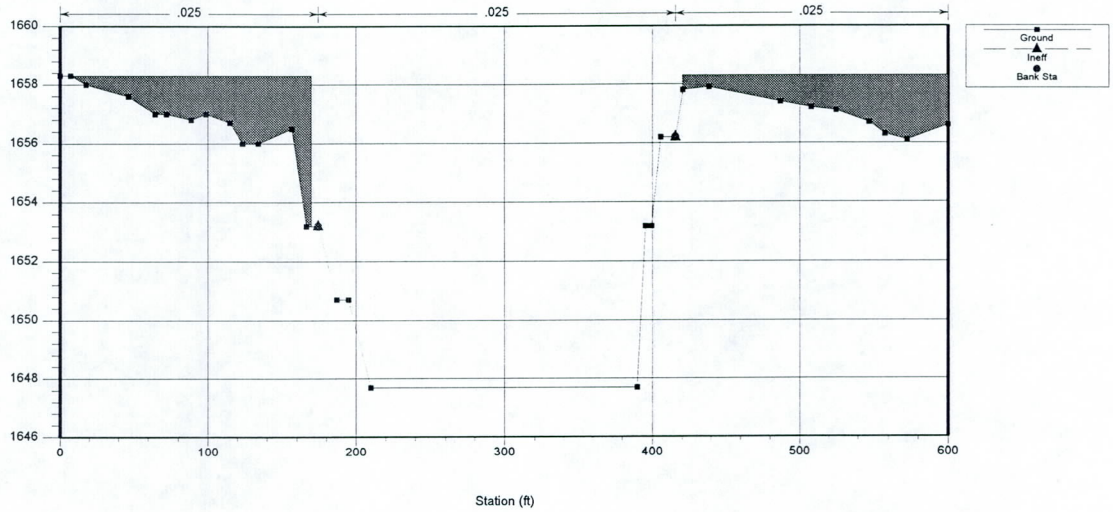
Reata Pass
Reach = 1 89.5



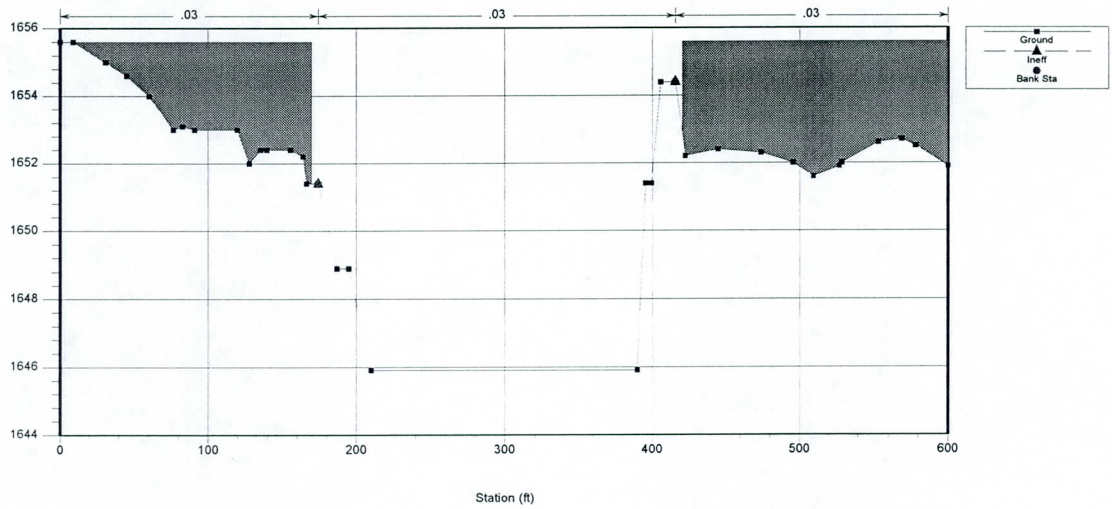
Reata Pass
Reach = 1 89.47



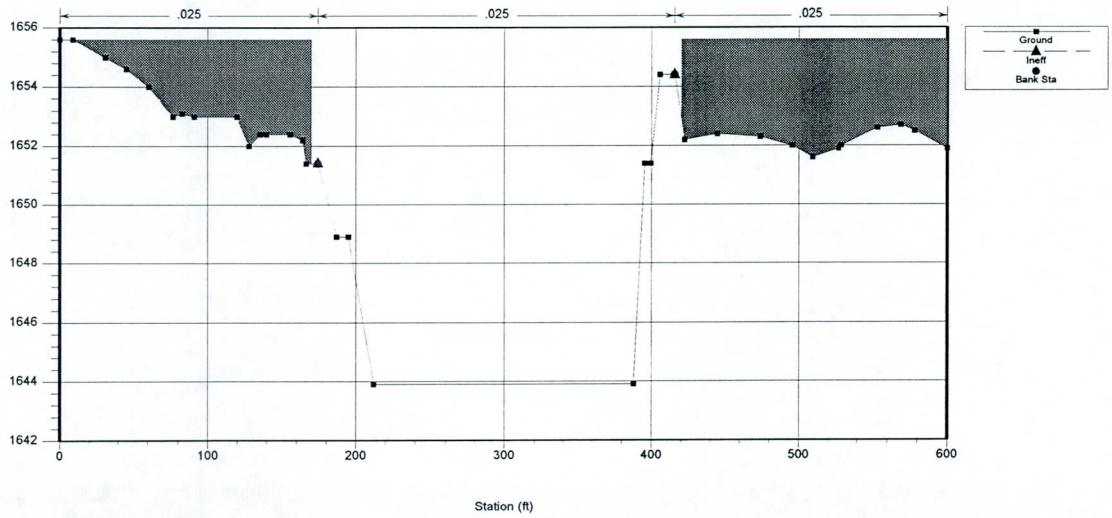
Reata Pass
Reach = 1 89



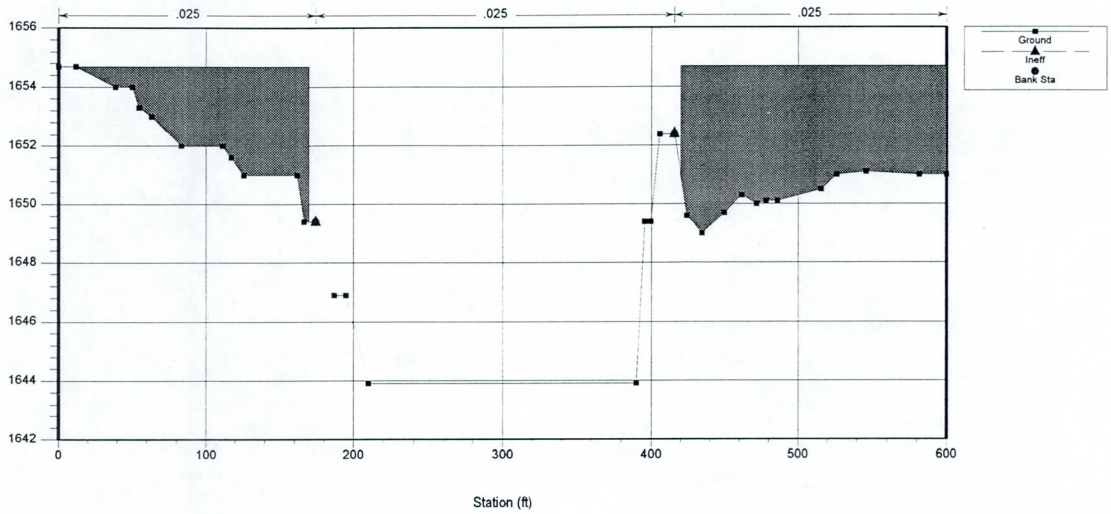
Reata Pass
Reach = 1 87.5



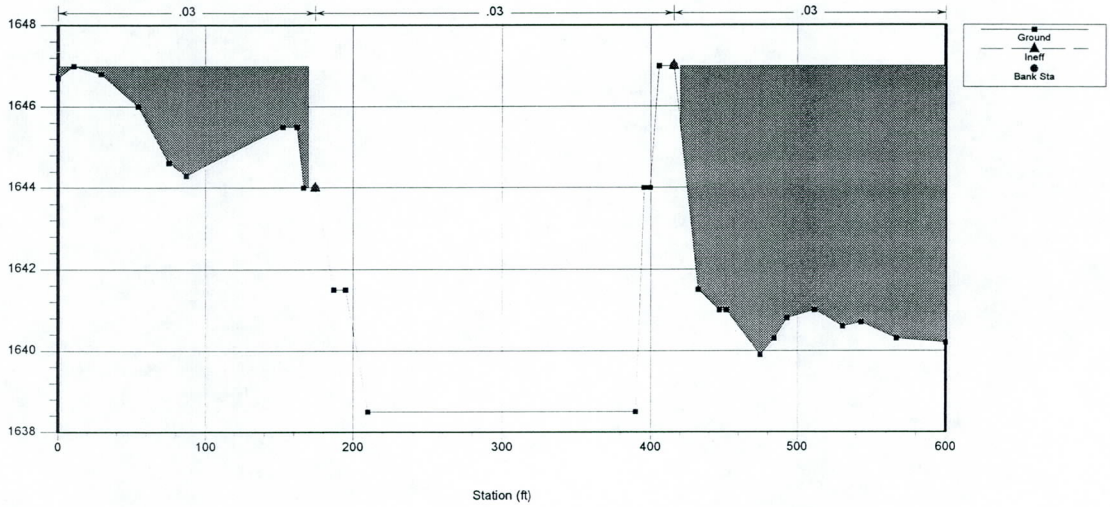
Reata Pass
Reach = 1 87.48



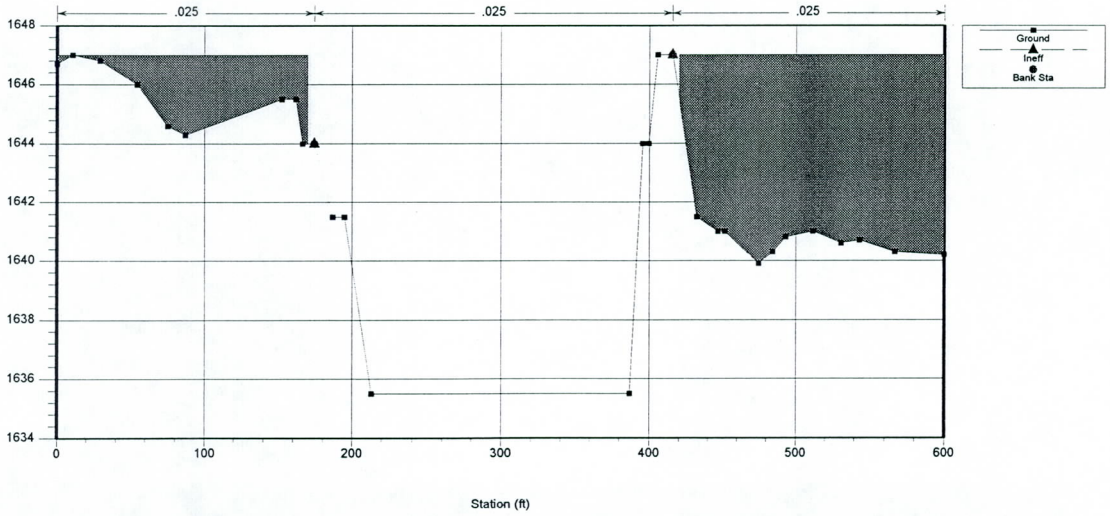
Reata Pass
Reach = 1 87



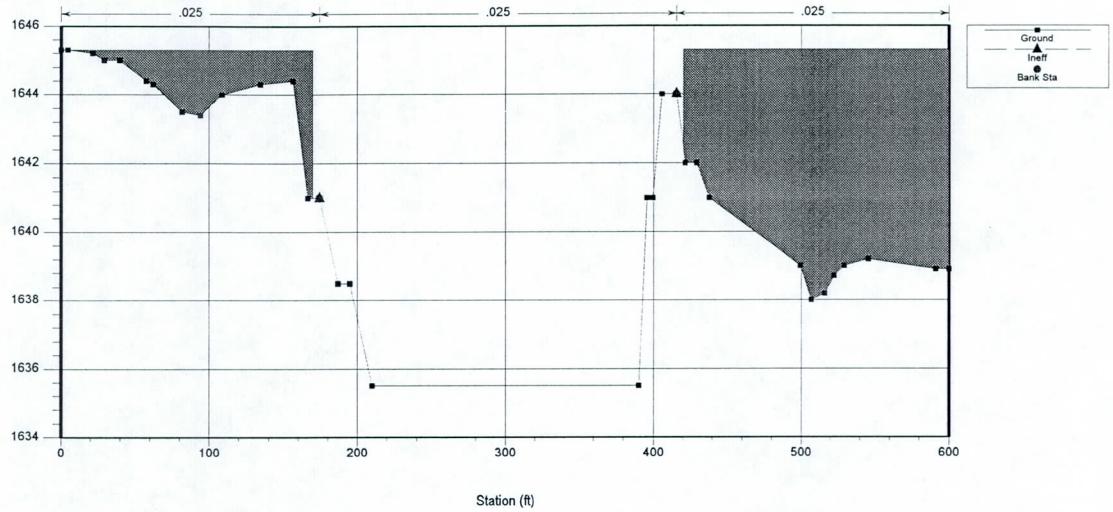
Reata Pass
Reach = 1 82.5



Reata Pass
Reach = 1 82.47



Reata Pass
Reach = 1 82



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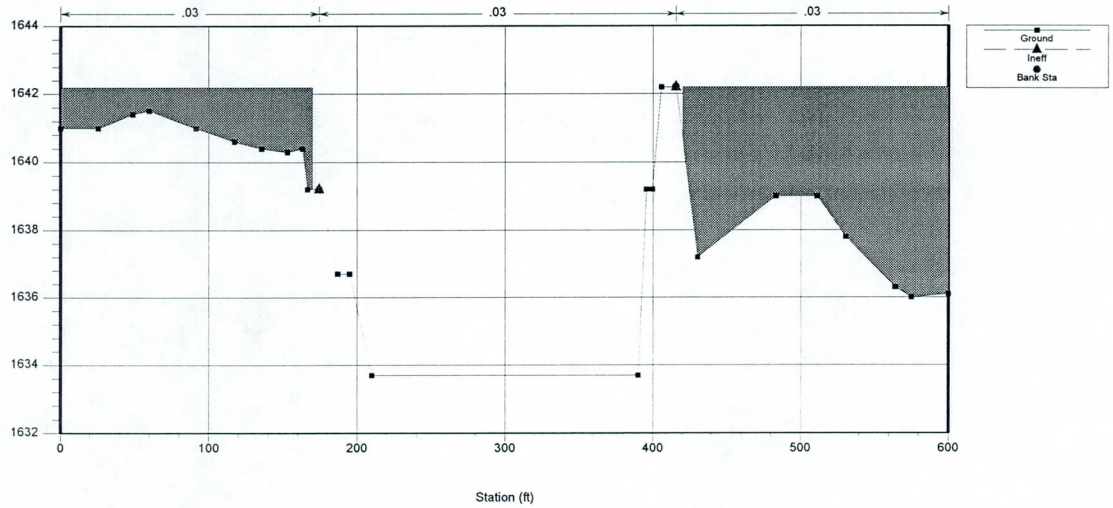

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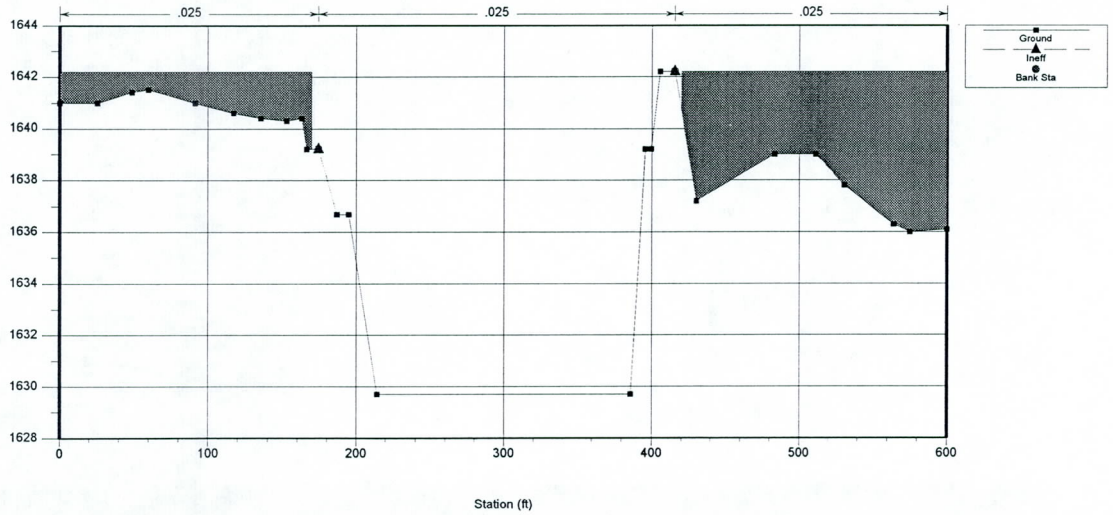

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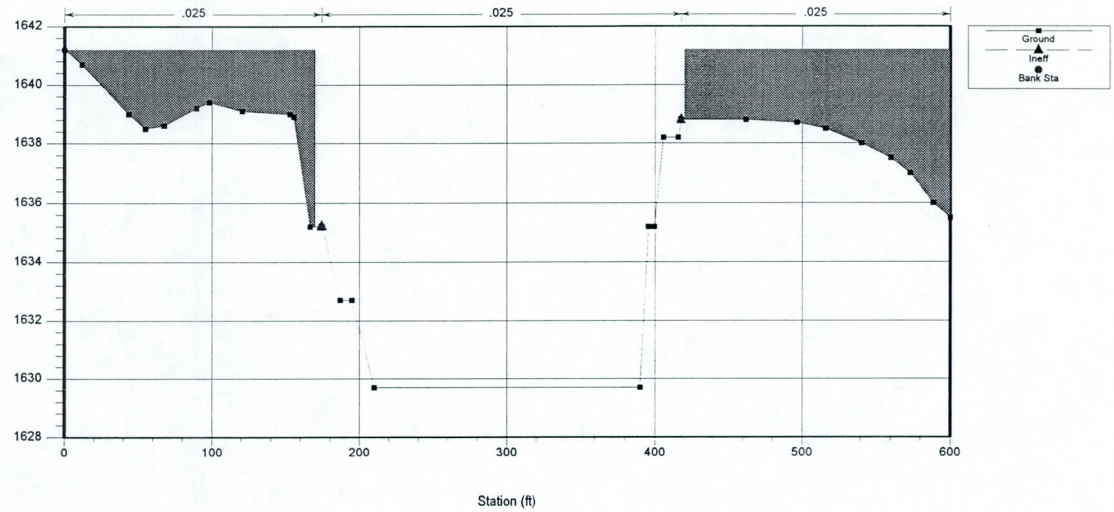
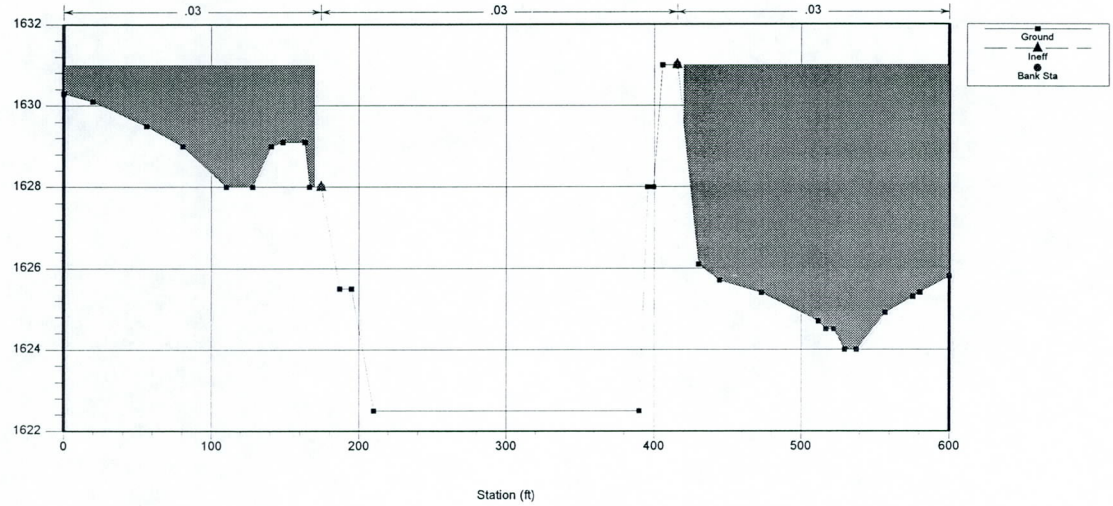
Reach = 1 80



Reata Pass
Reach = 1 74



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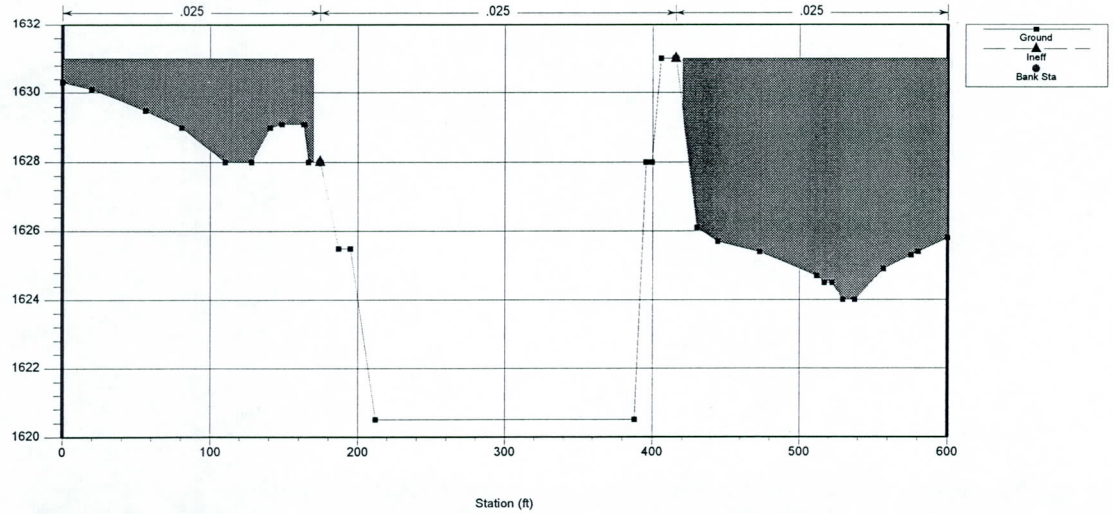

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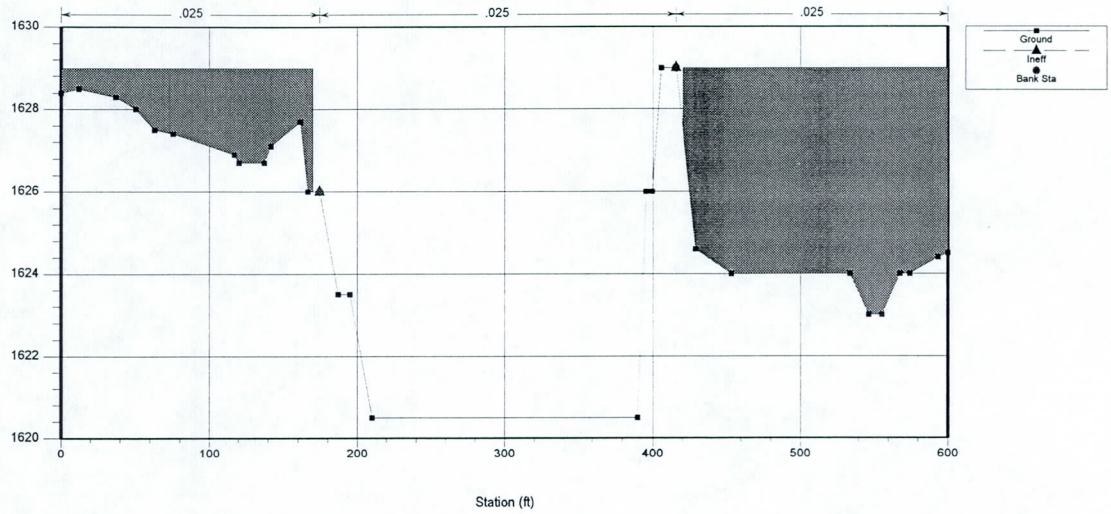
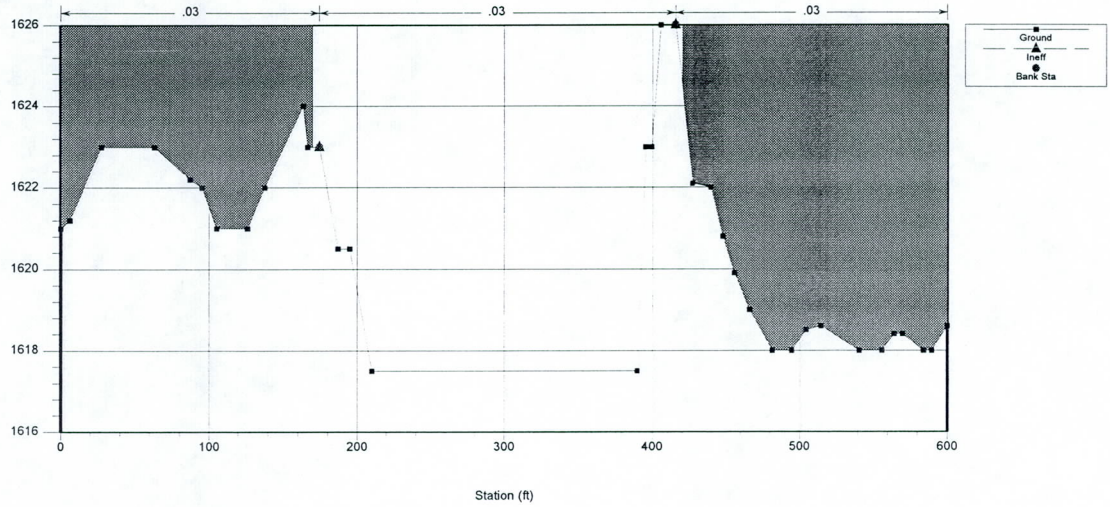


Reata Pass
Reach = 1 71



Reata Pass
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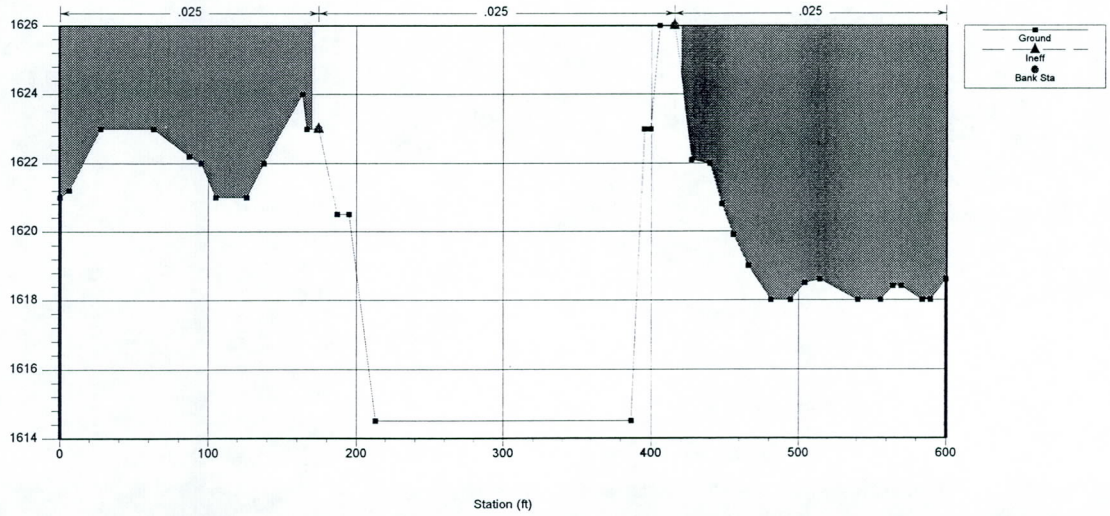

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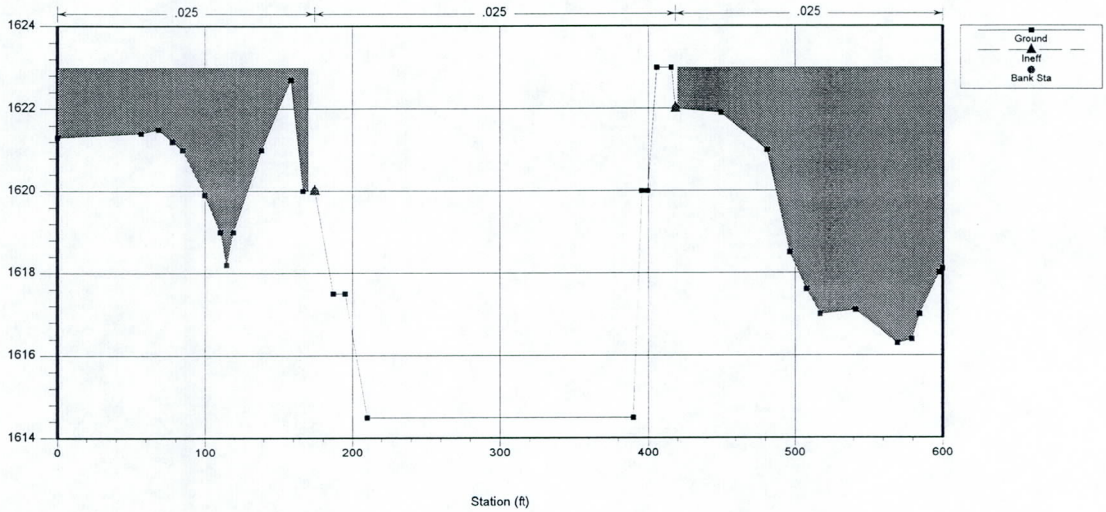

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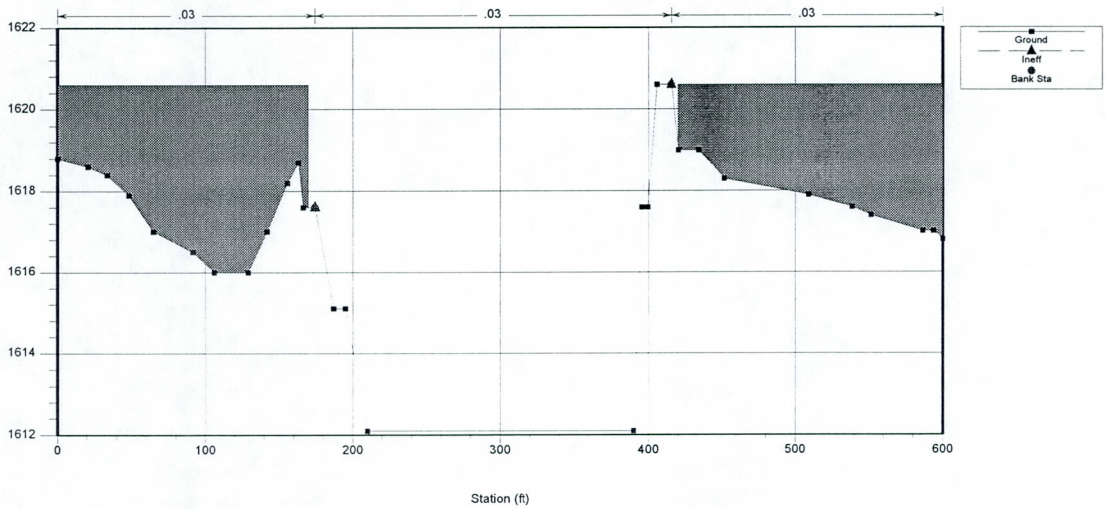

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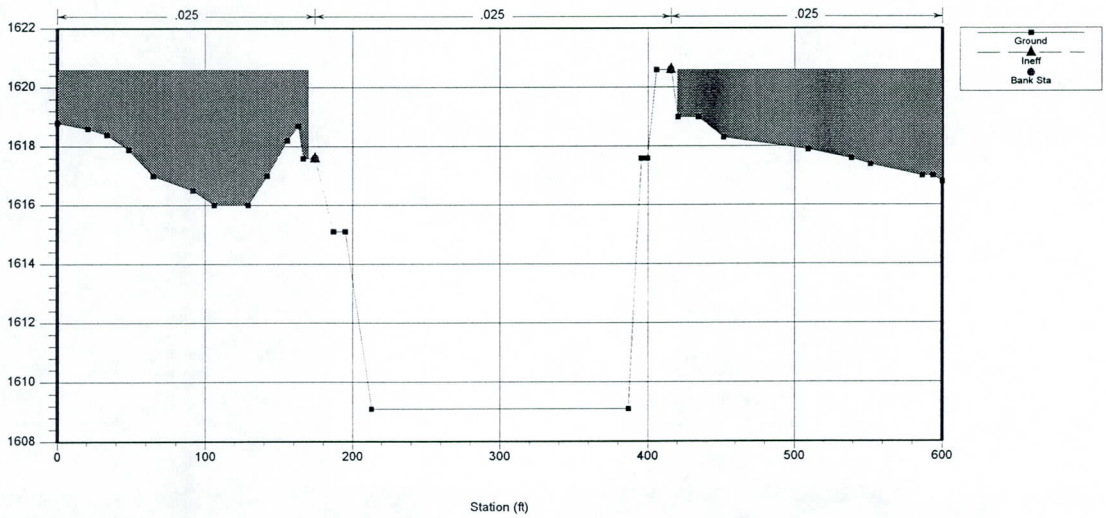

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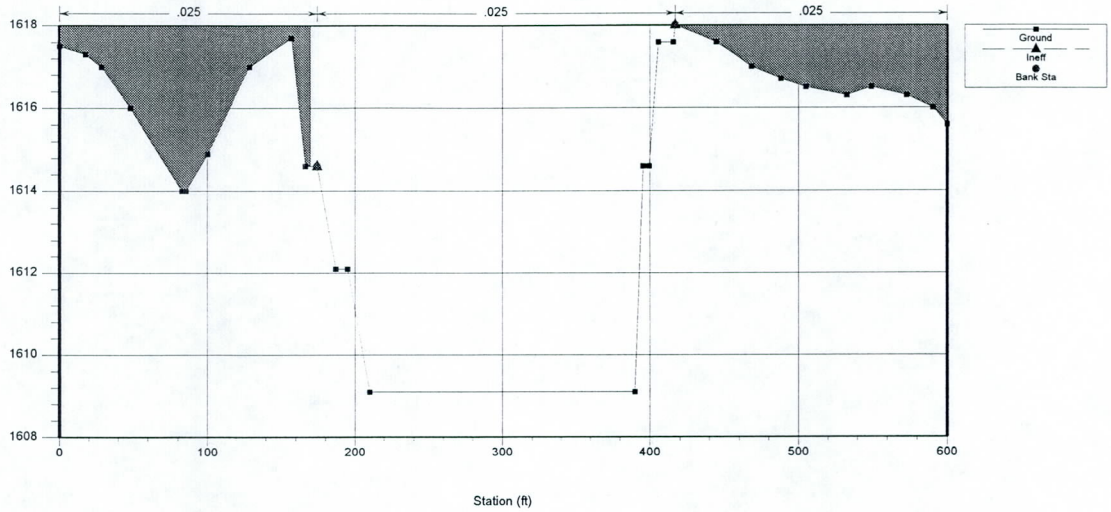

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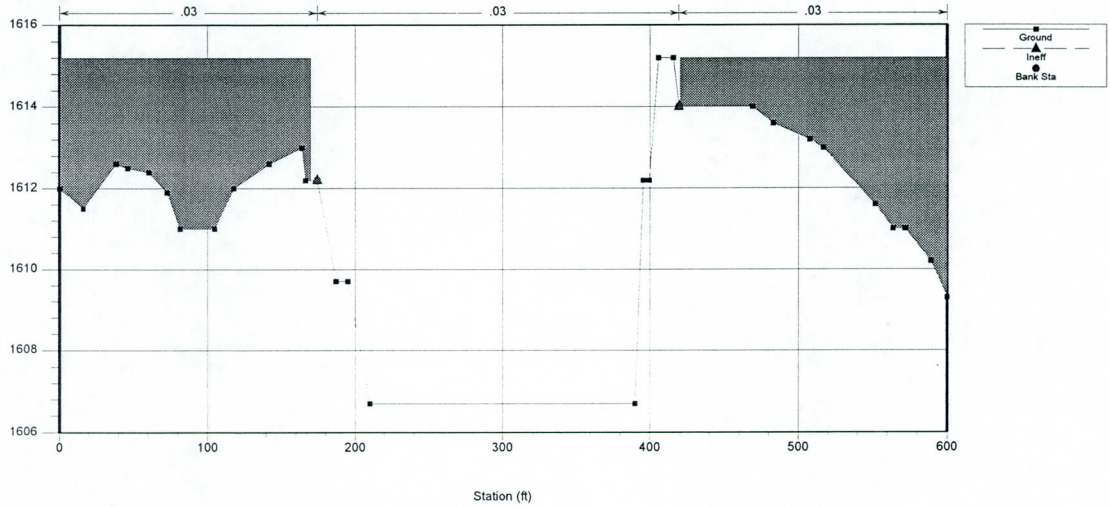

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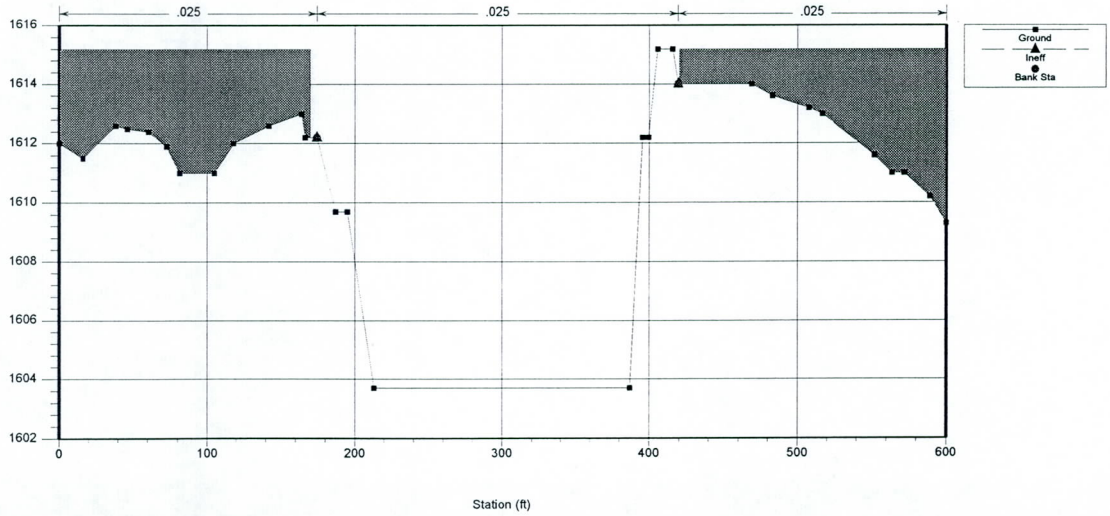

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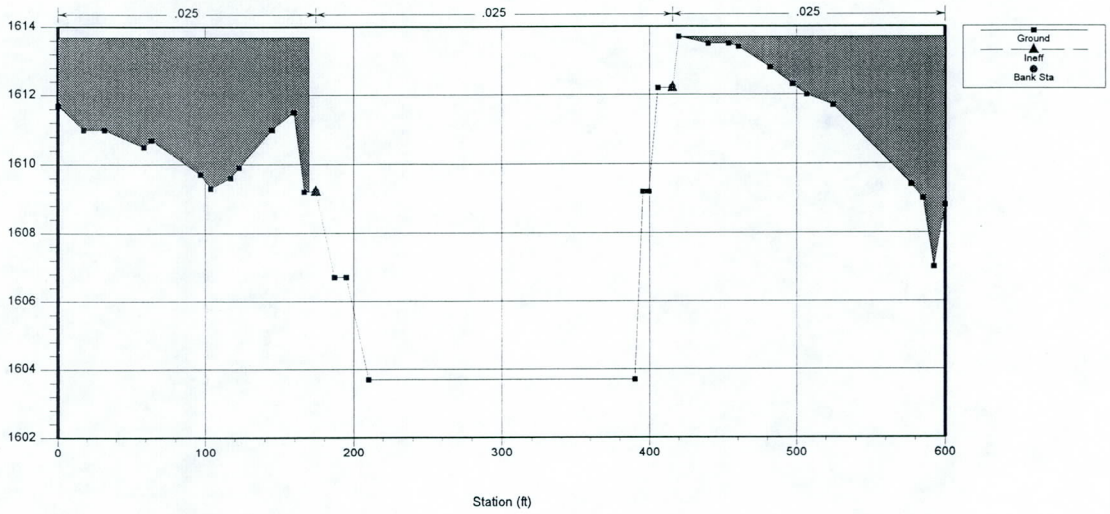

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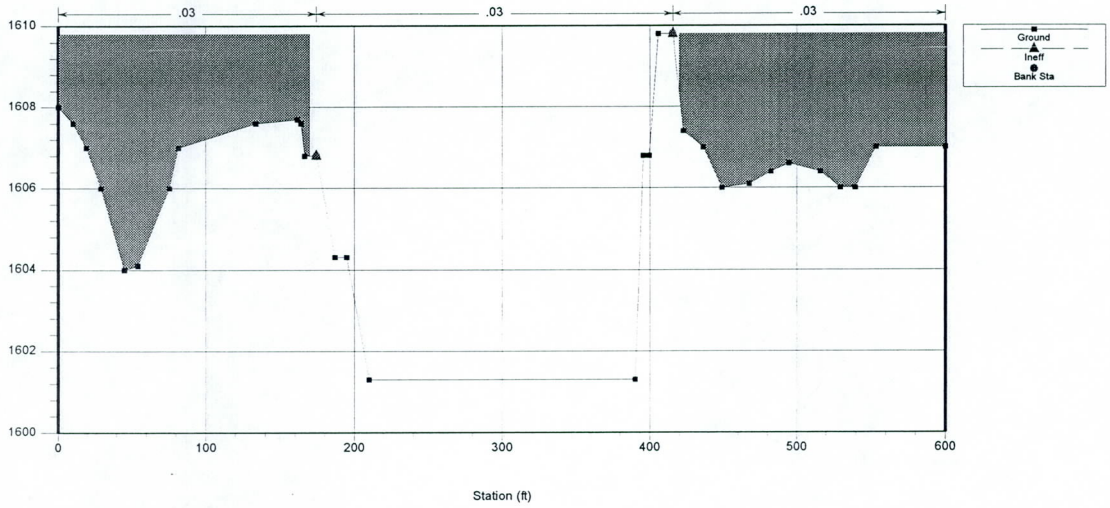

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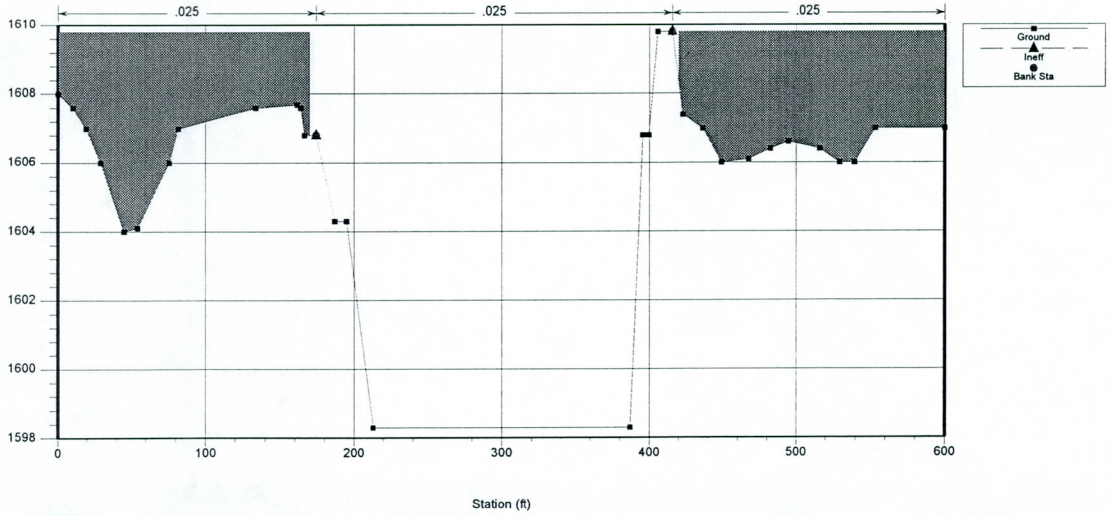

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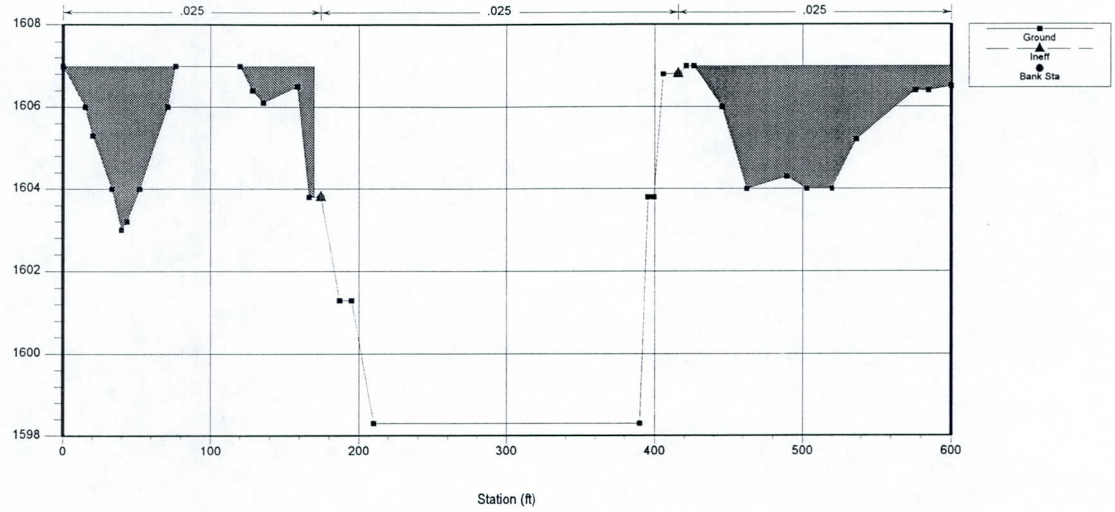

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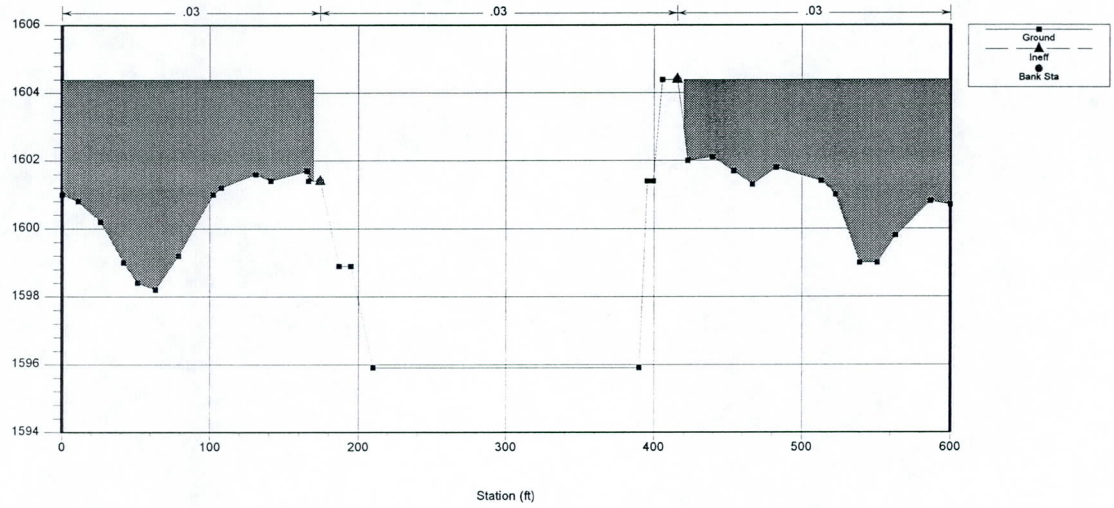

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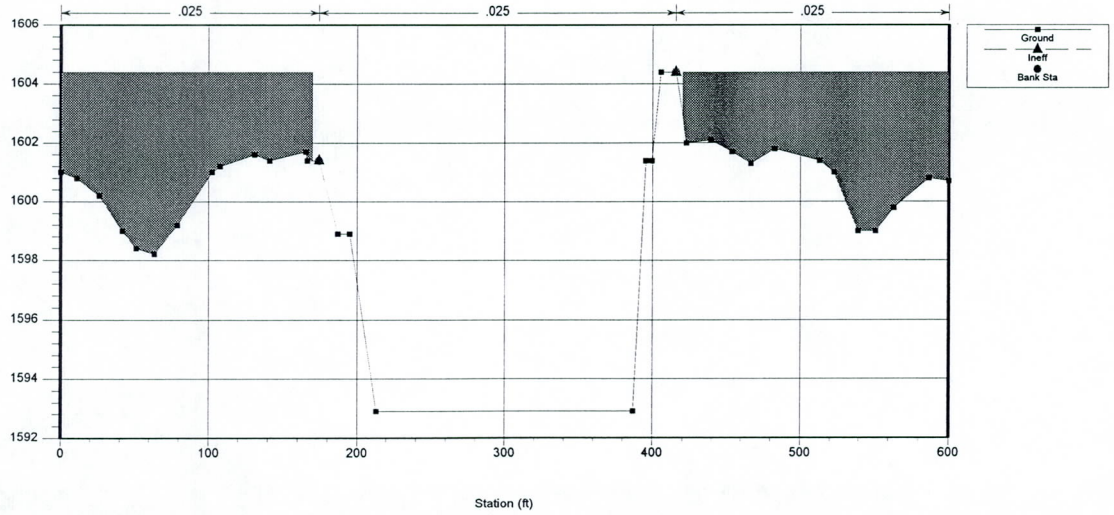

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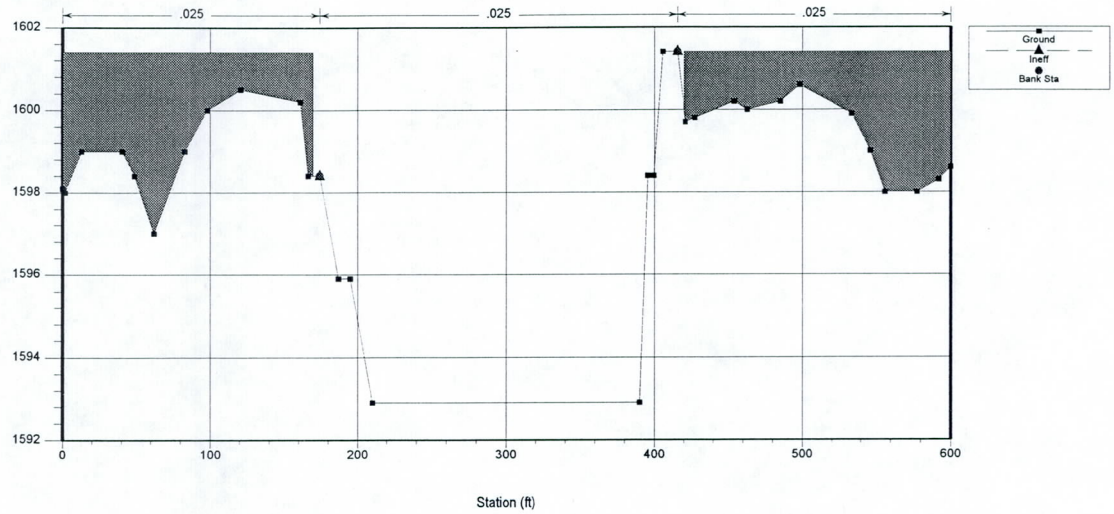

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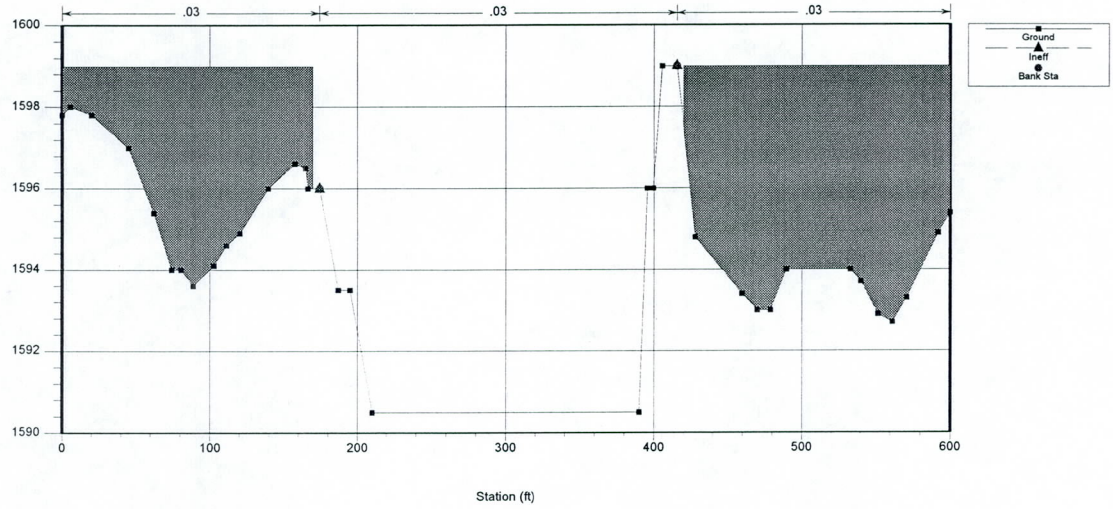

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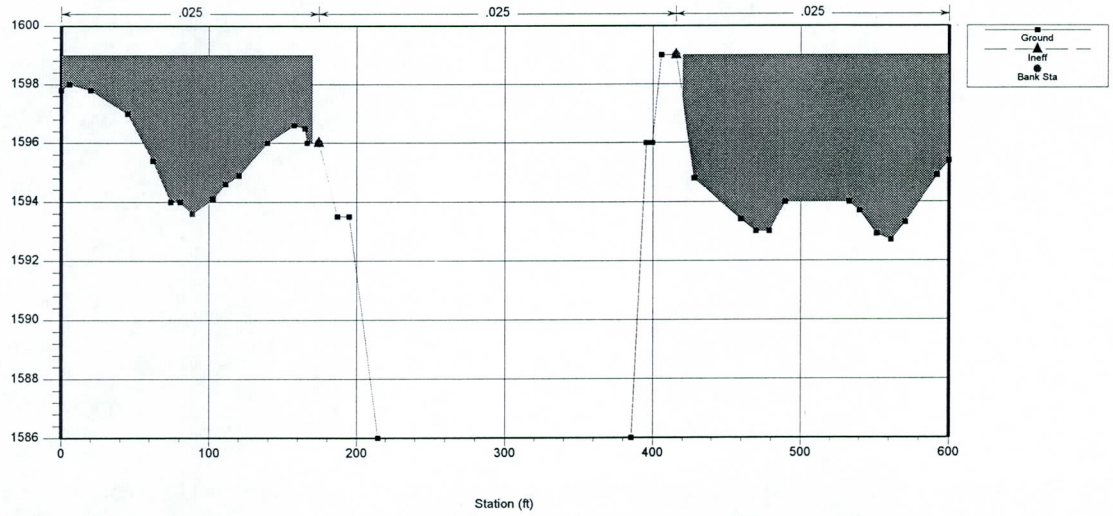

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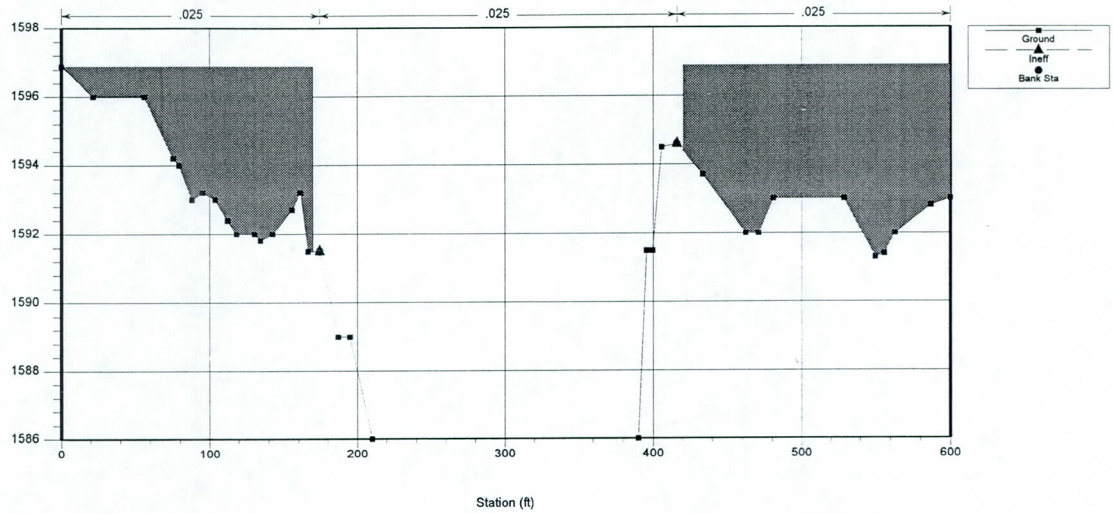

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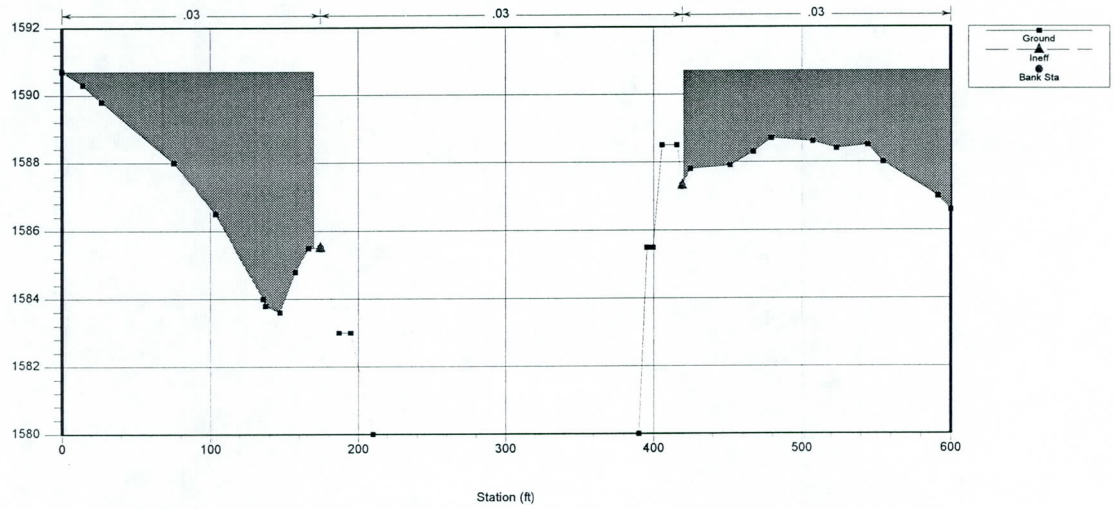

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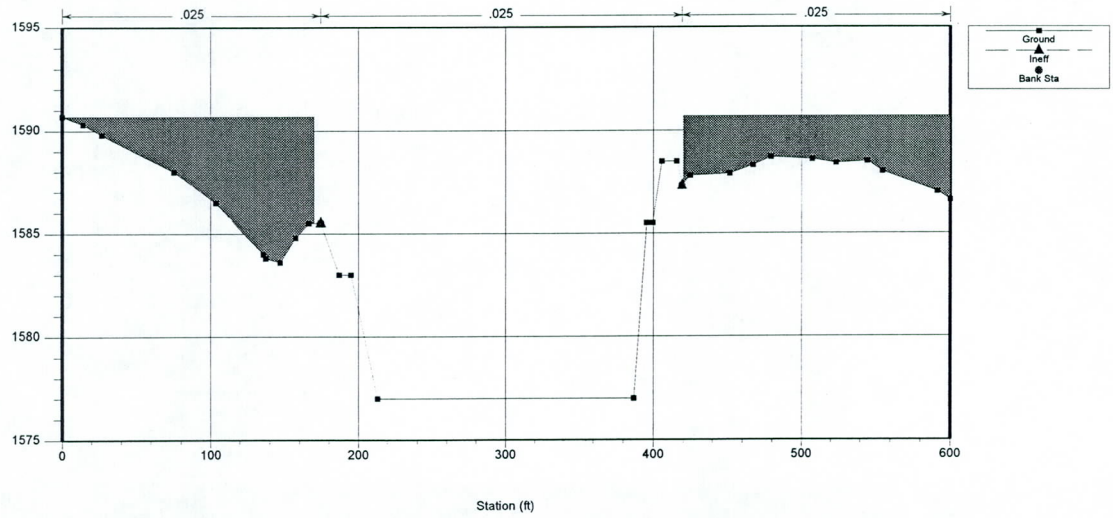

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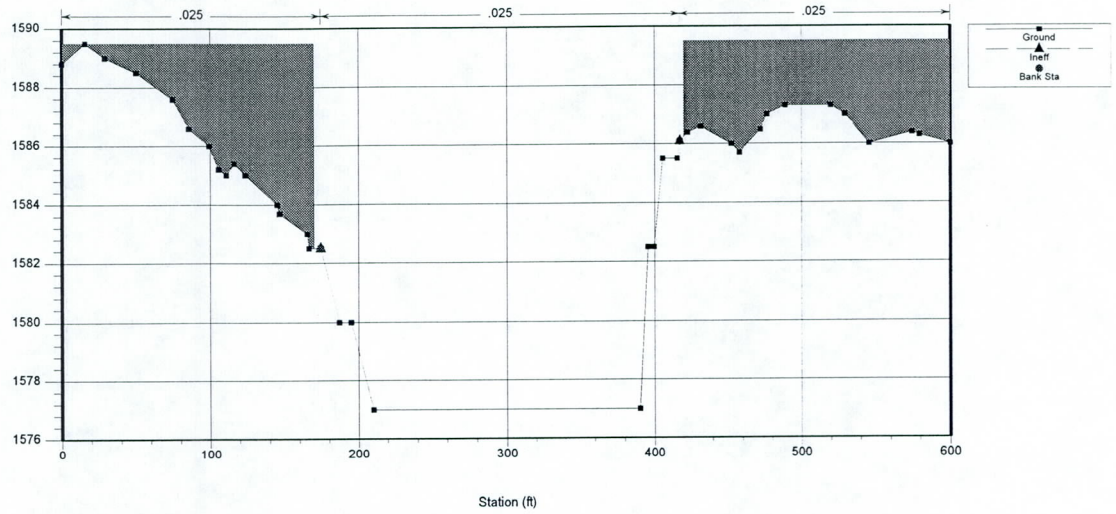

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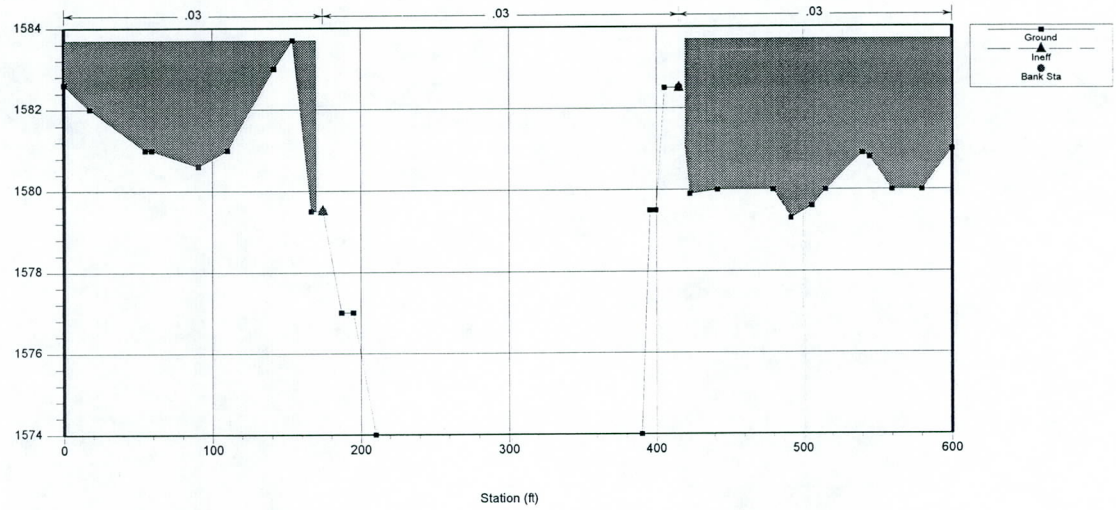

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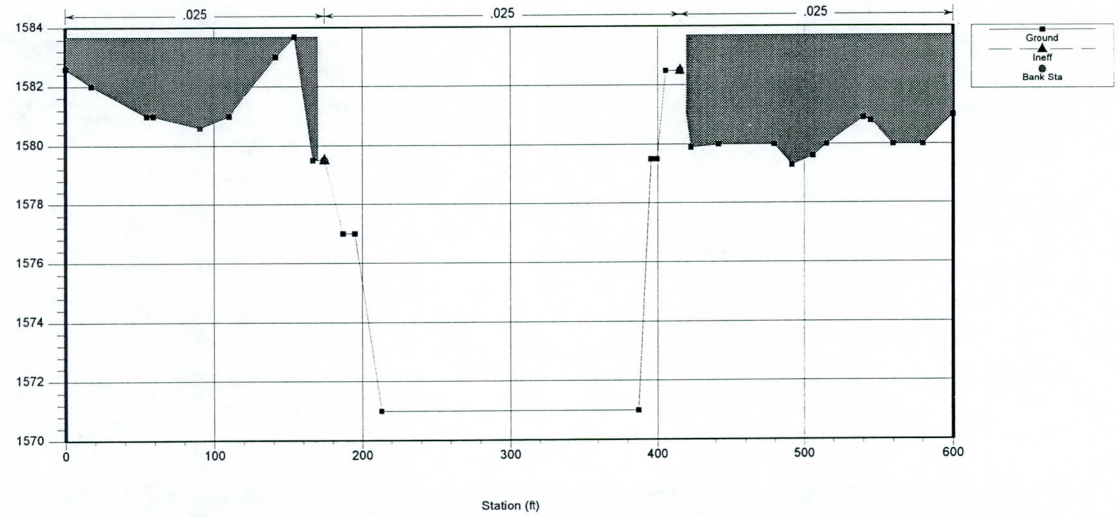

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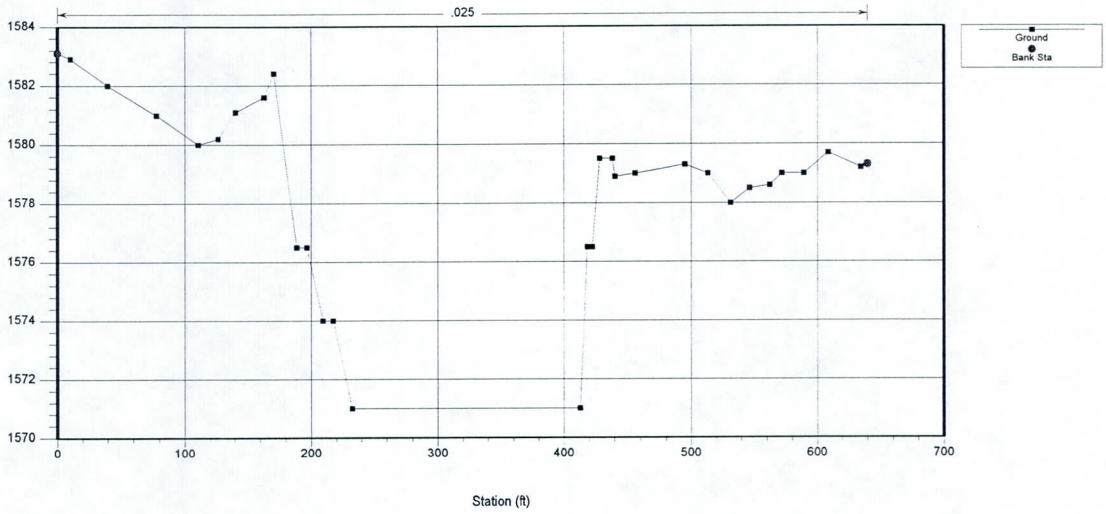

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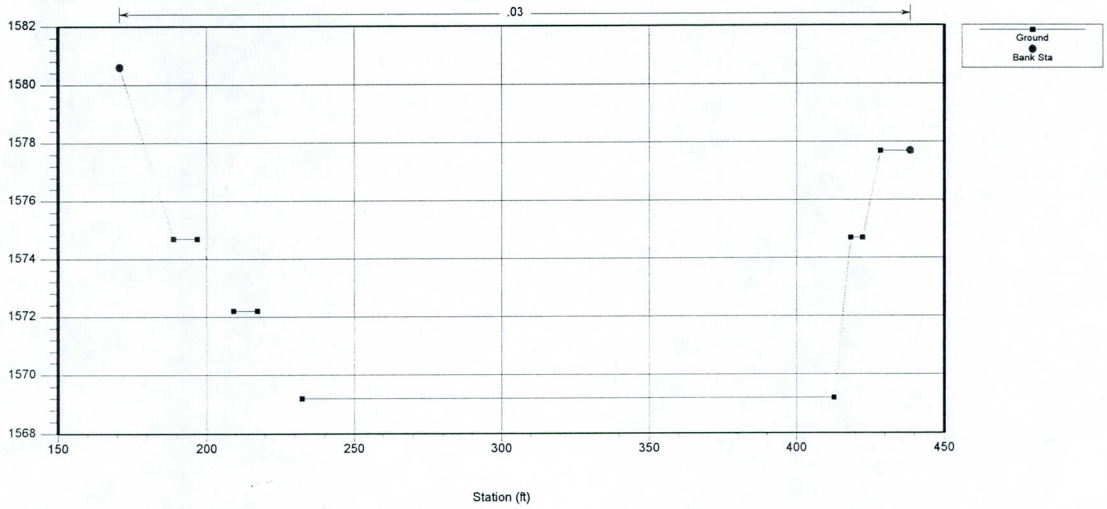

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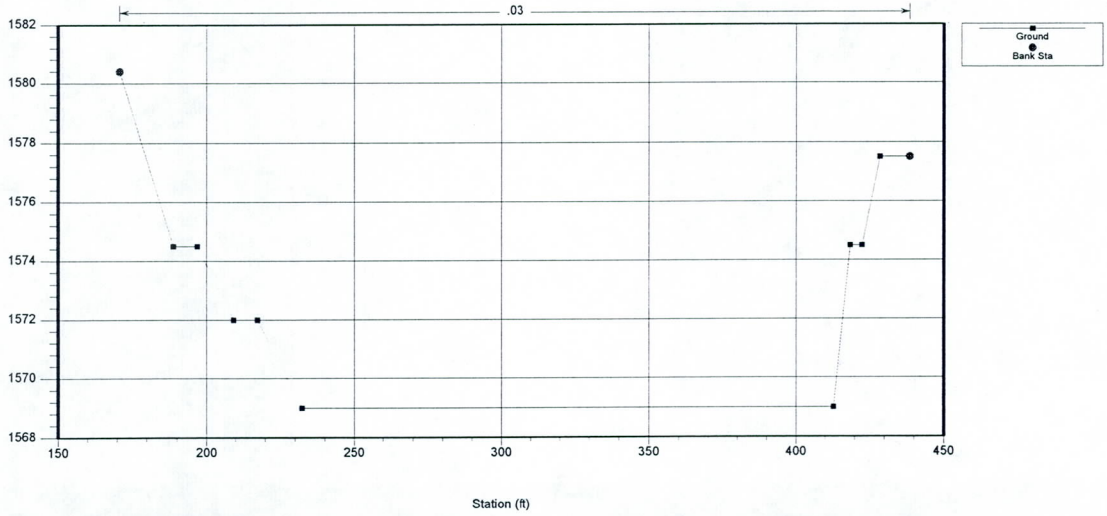

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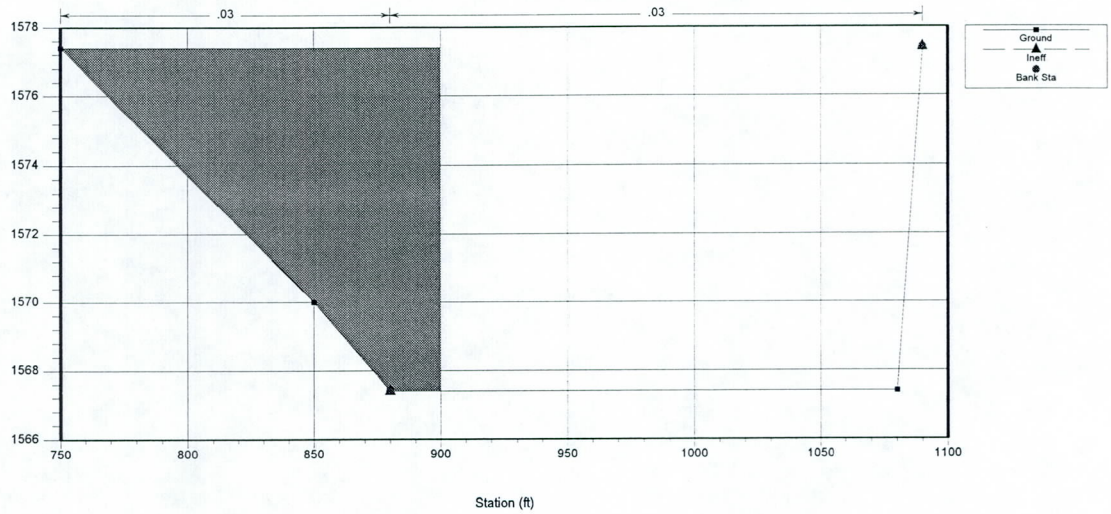

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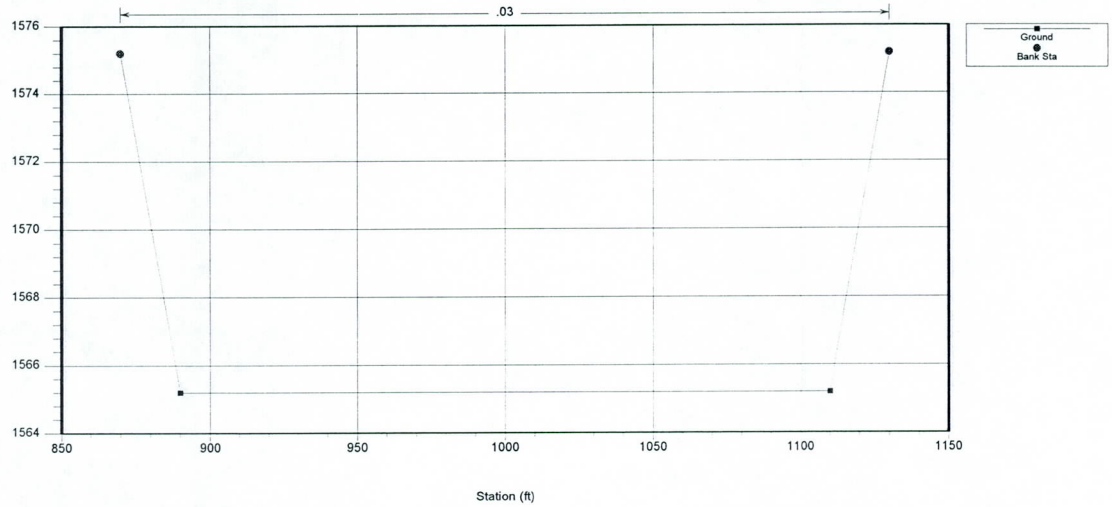

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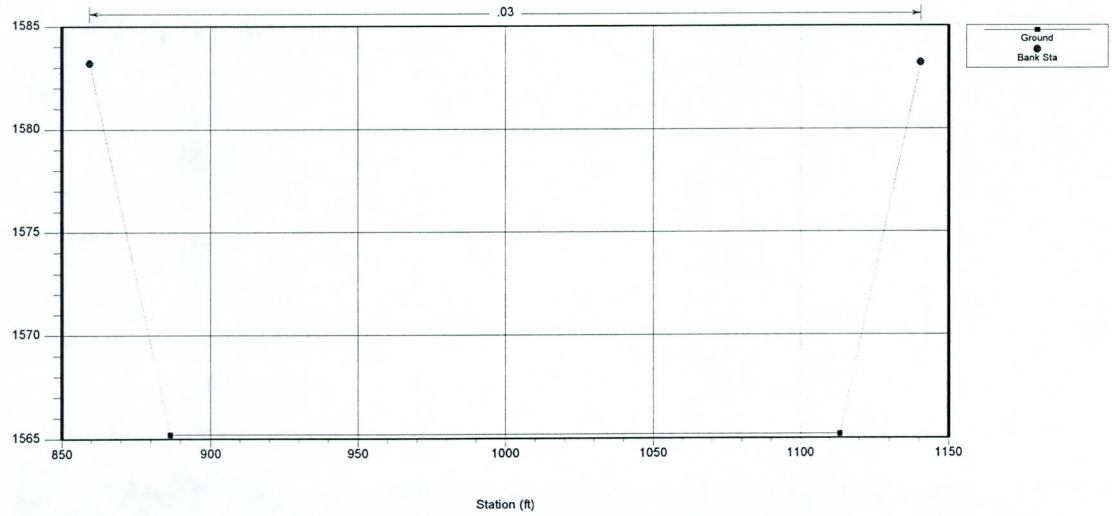

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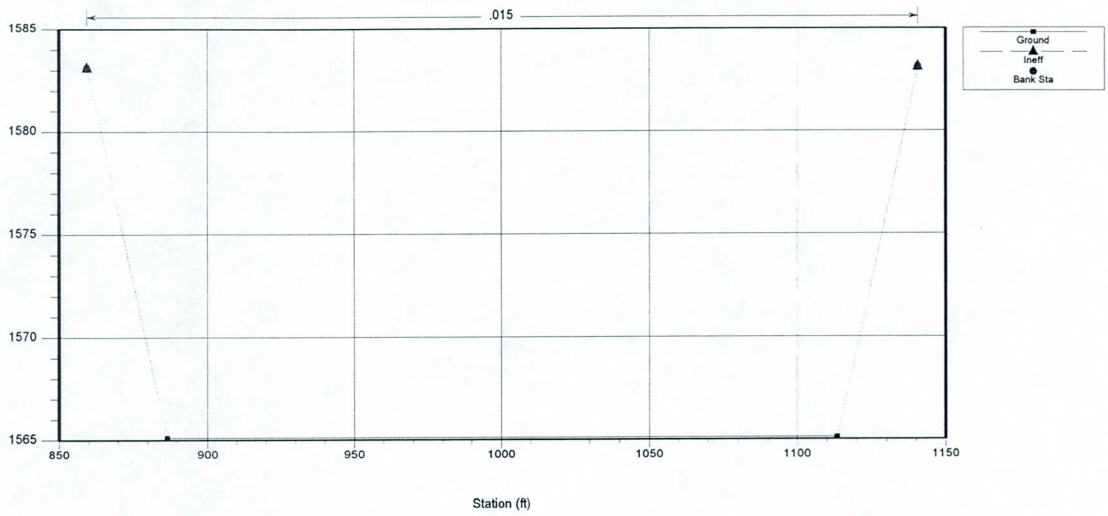
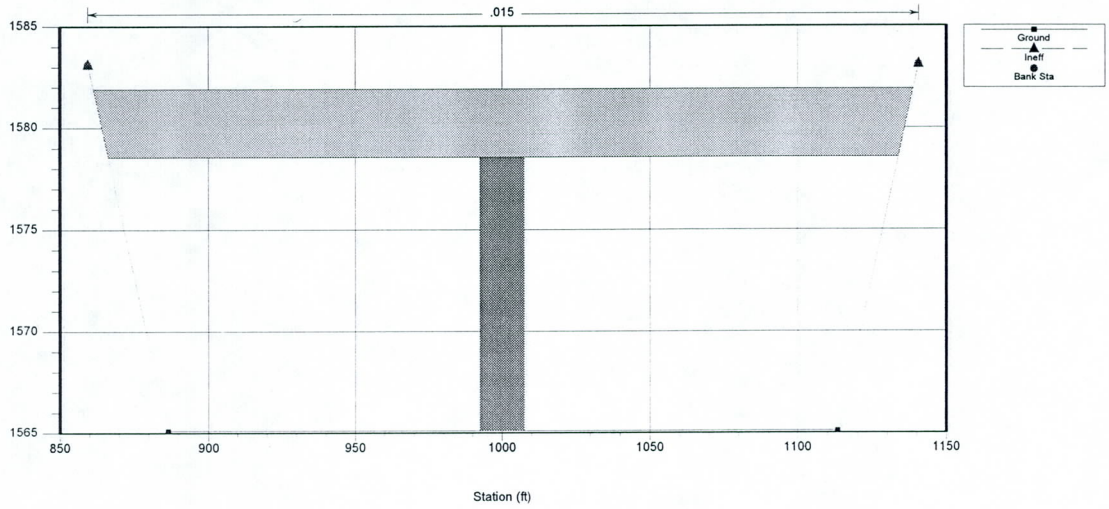
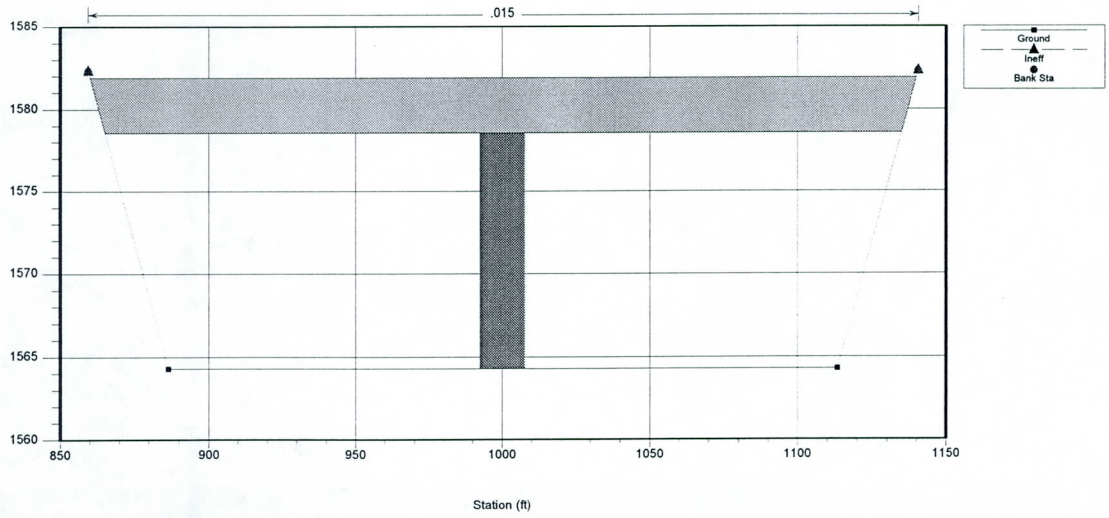


Reata Pass
Reach = 1 Upstream Inside Bridge # 6



Reata Pass
Reach = 1 Downstream Inside Bridge # 6



Reata Pass
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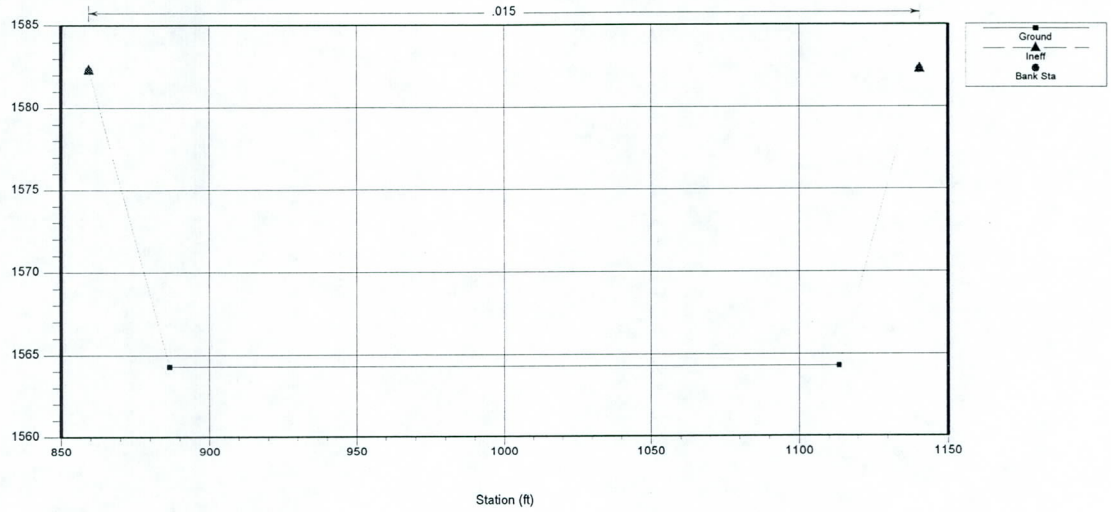
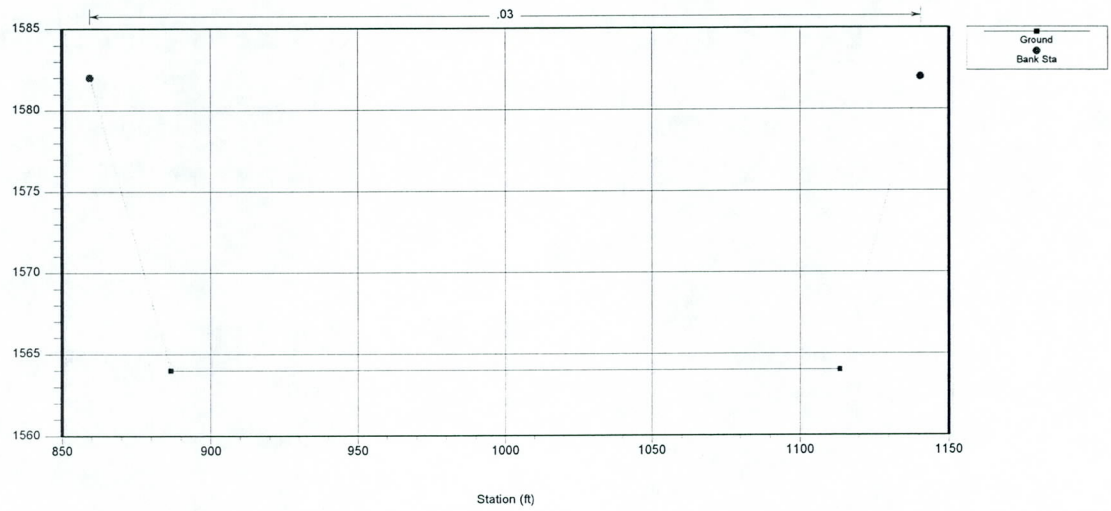
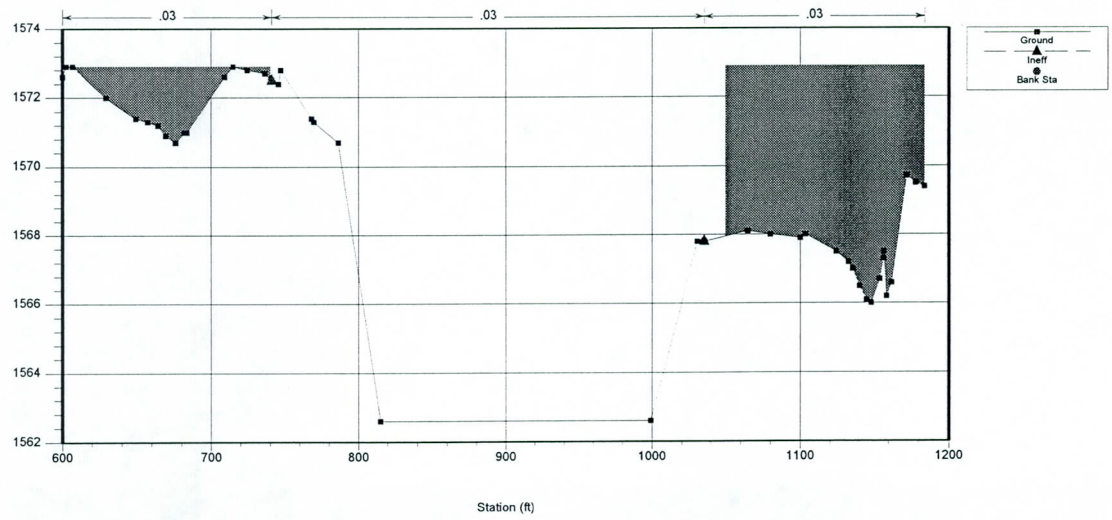


Reata Pass
Reach = 1 43.3



Reata Pass
Reach = 1 41.8



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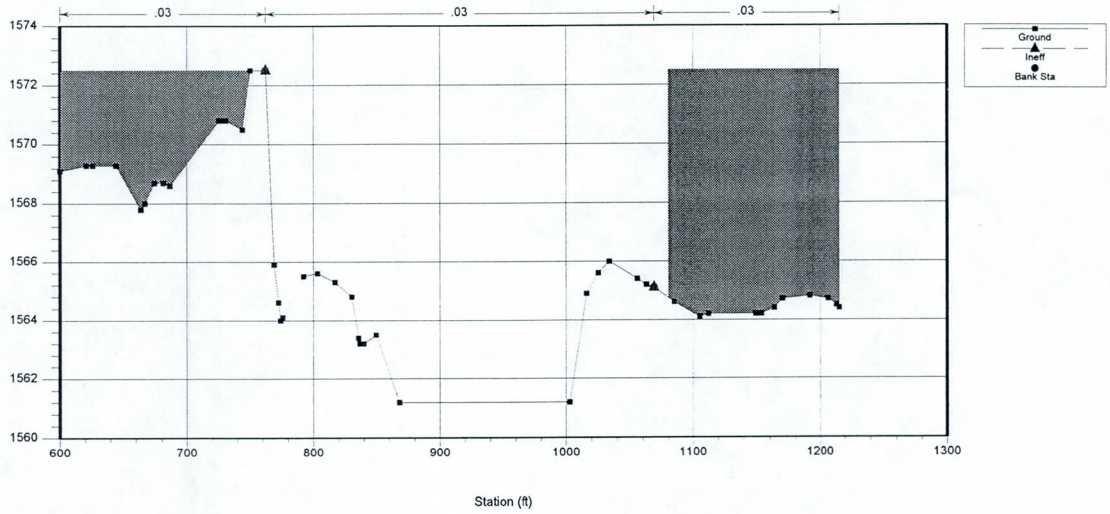

Reata Pass
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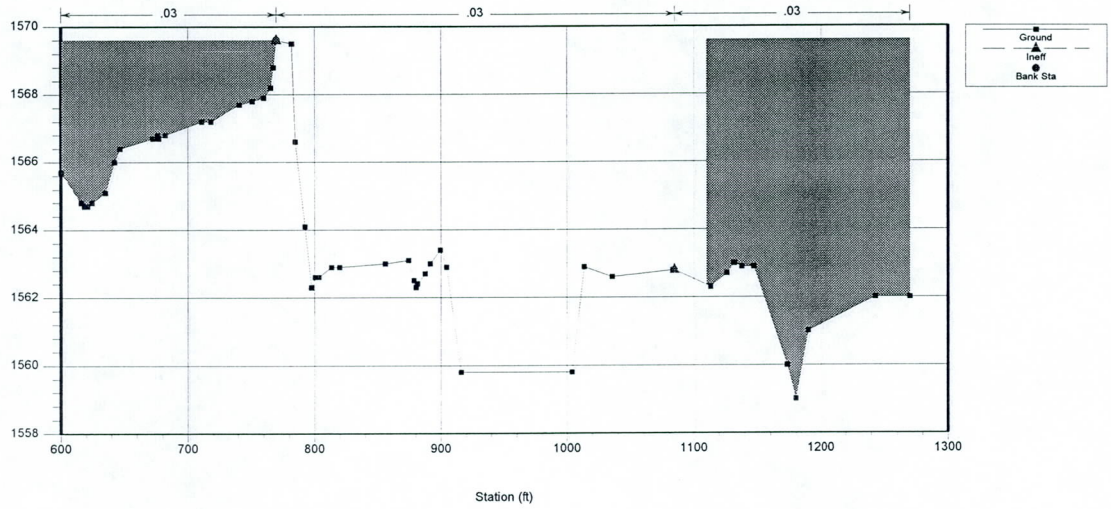

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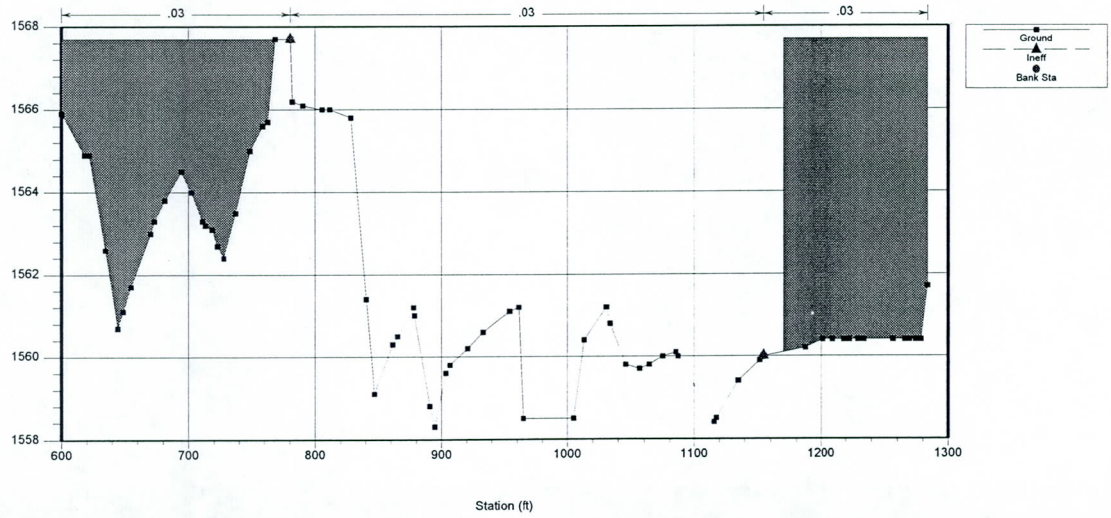

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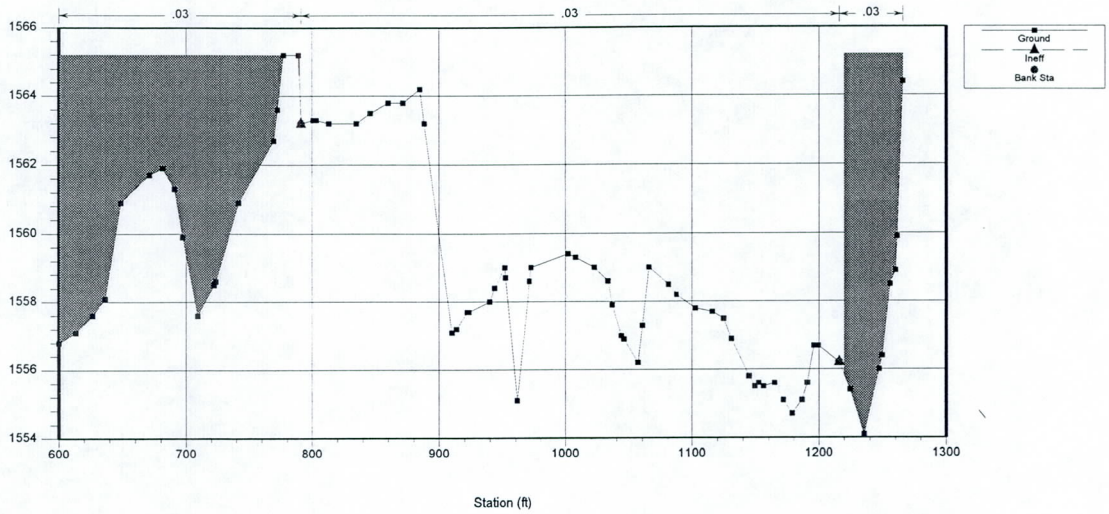

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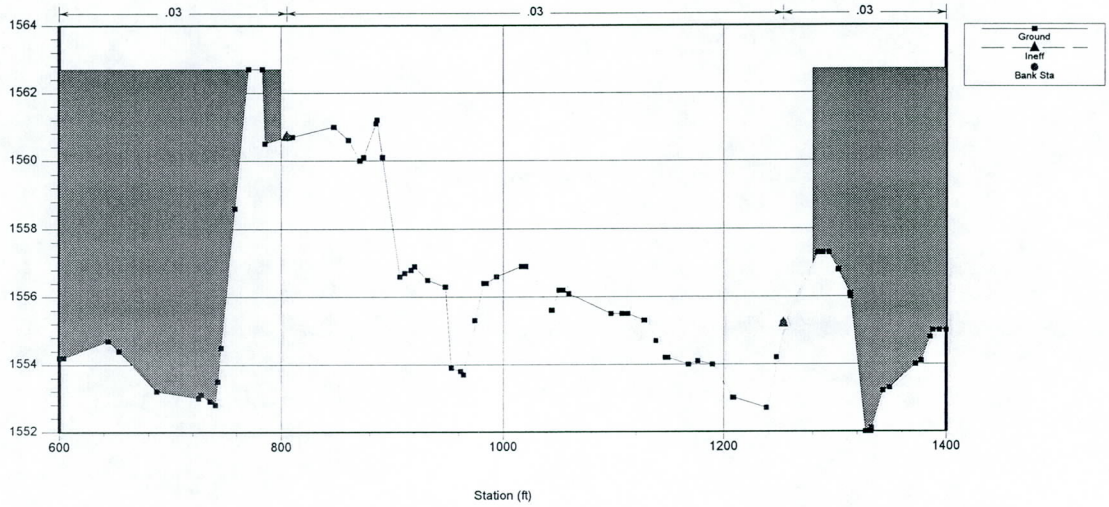

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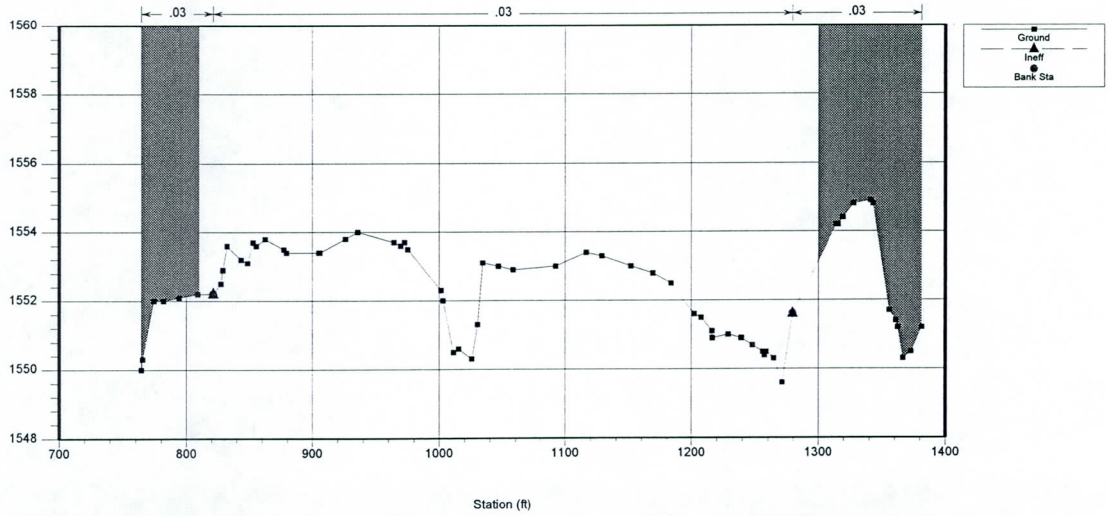

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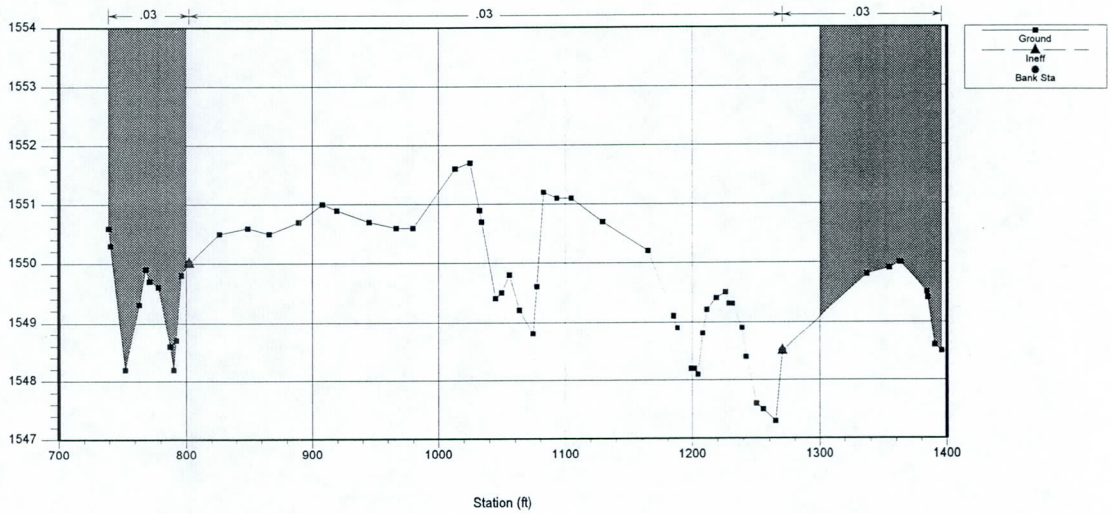

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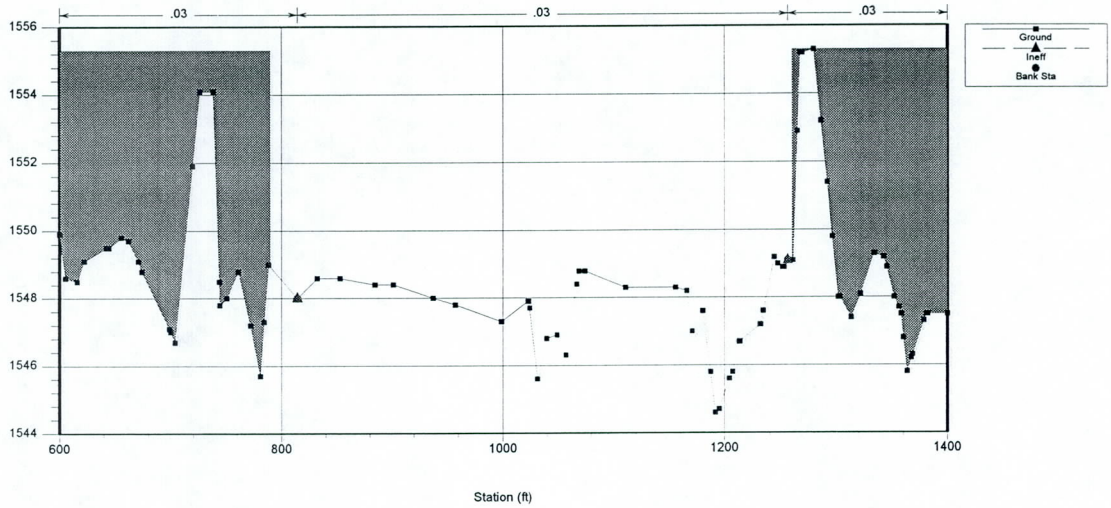

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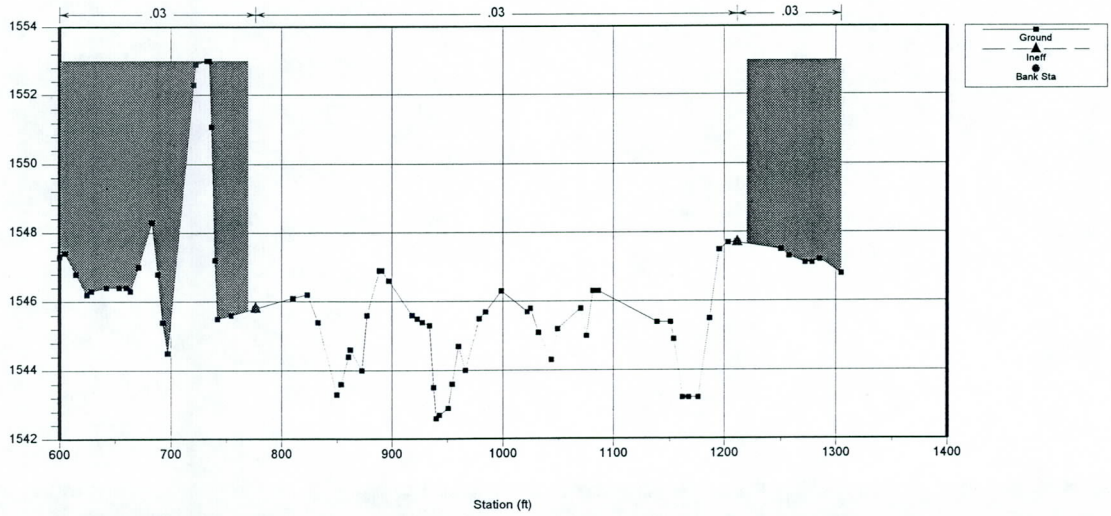

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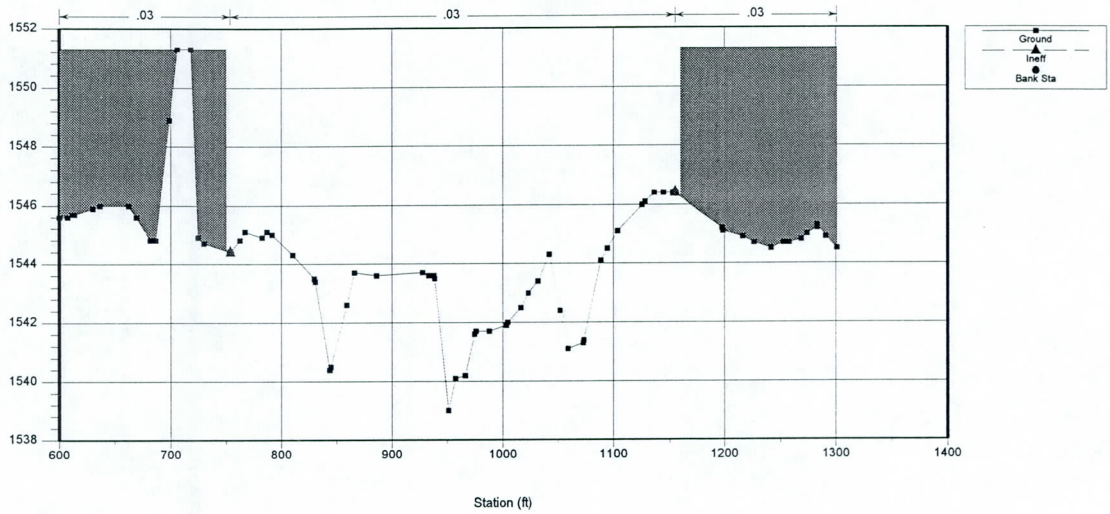

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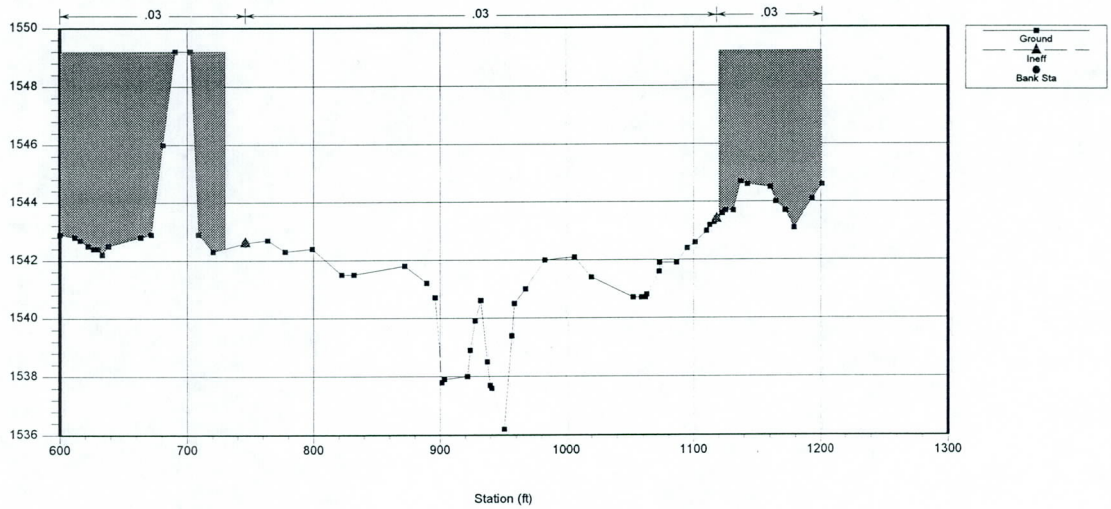

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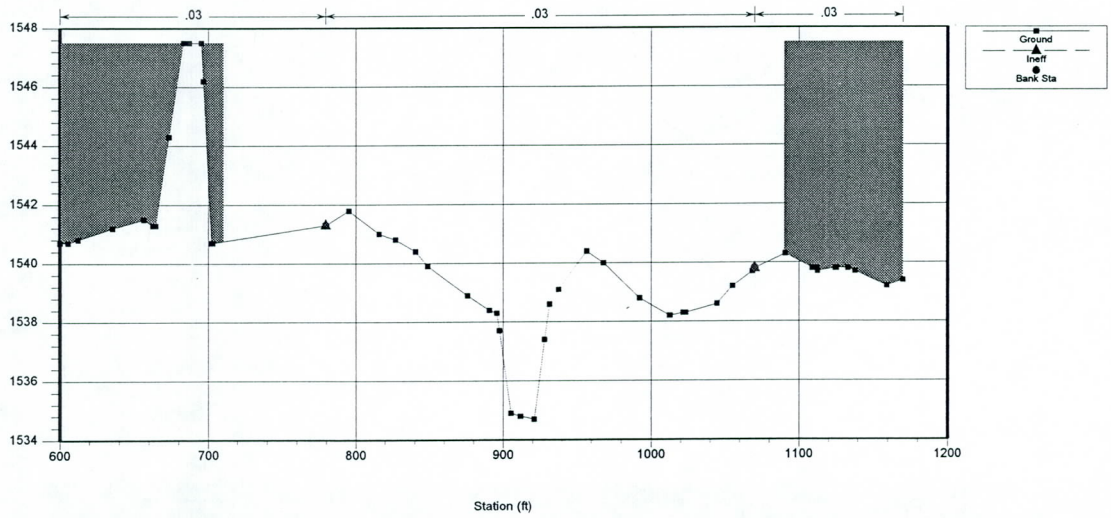

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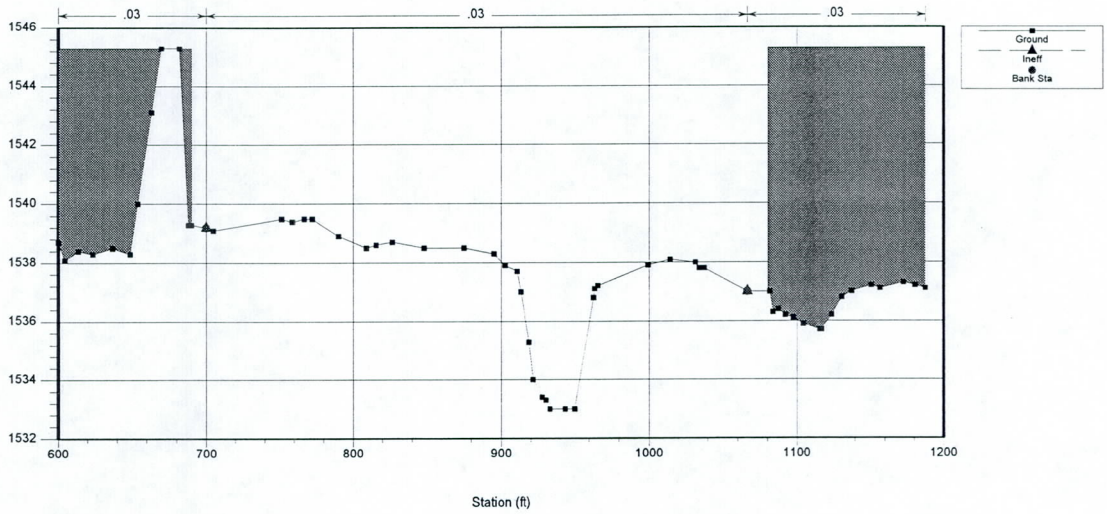

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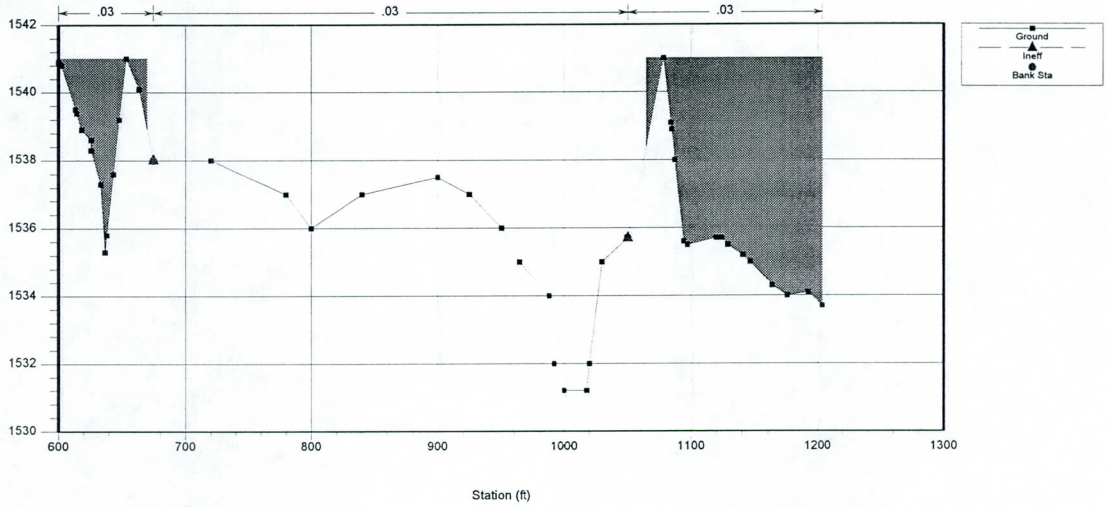

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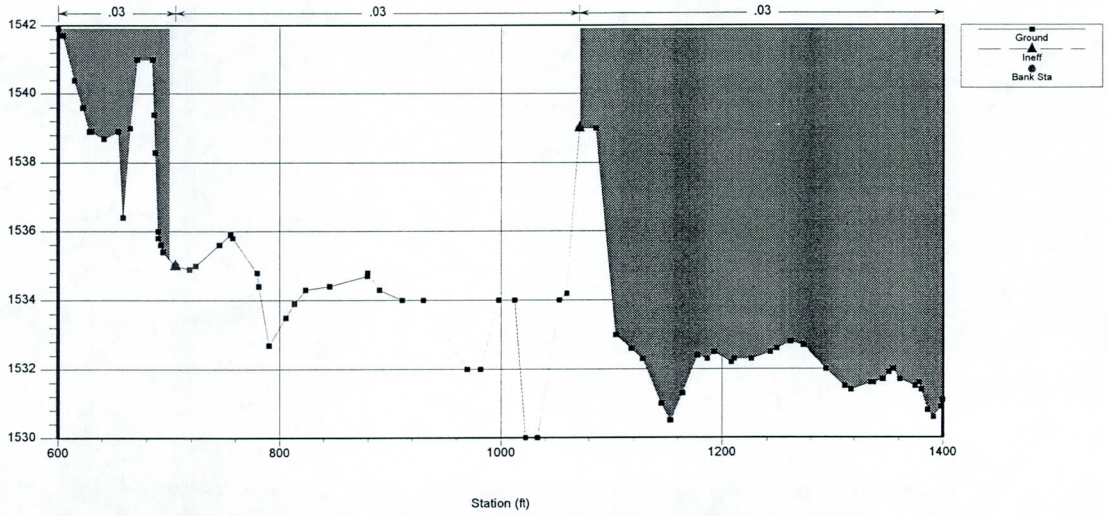

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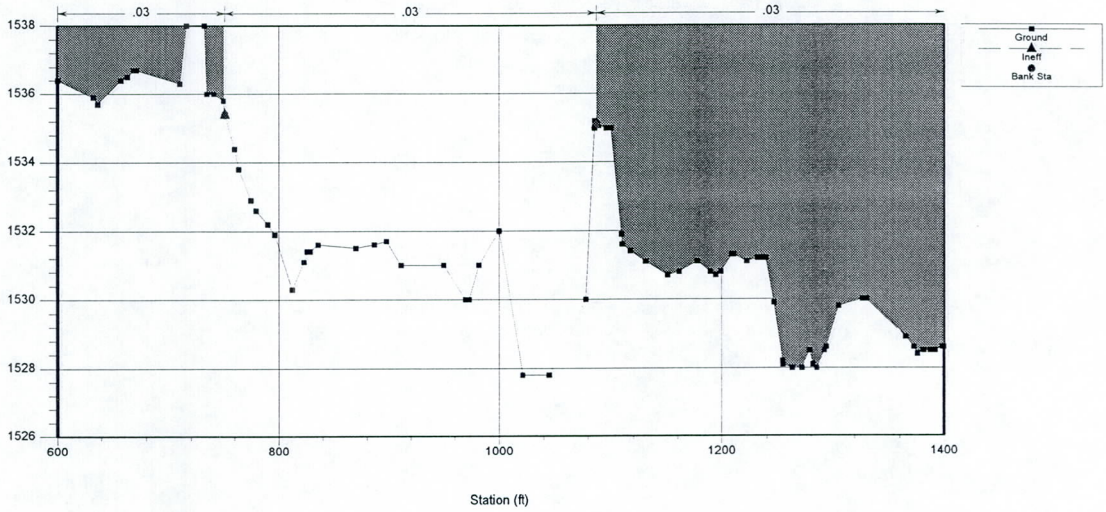

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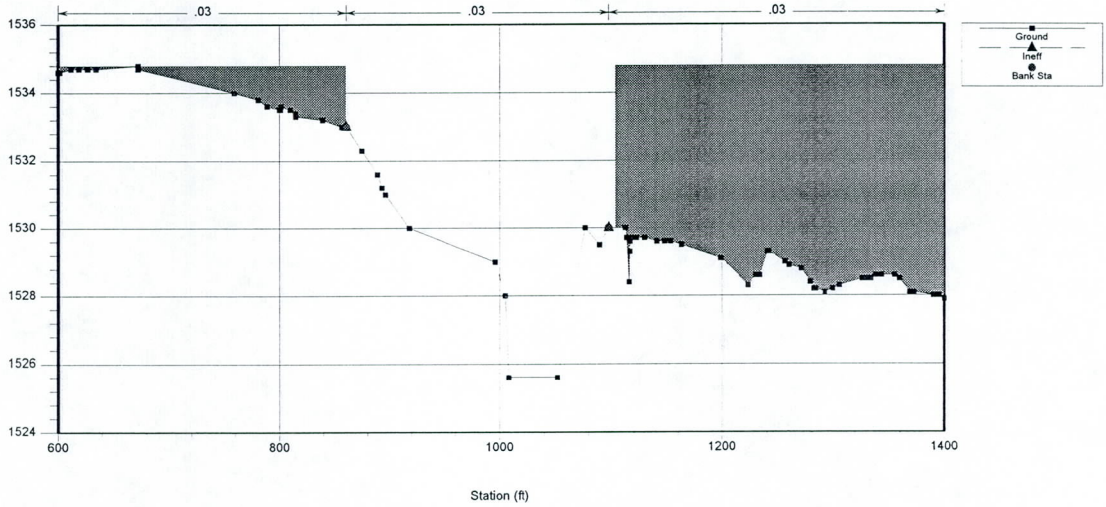

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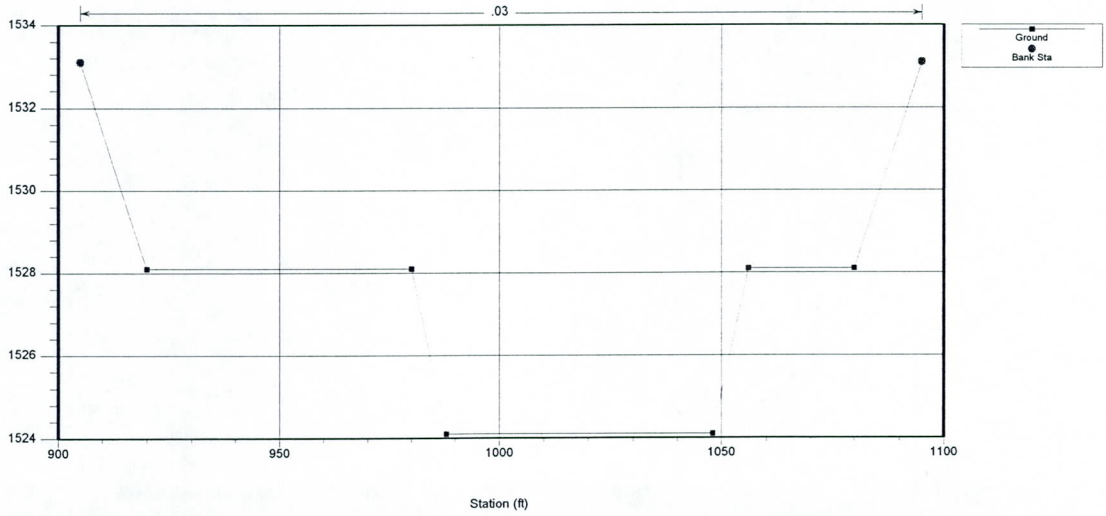

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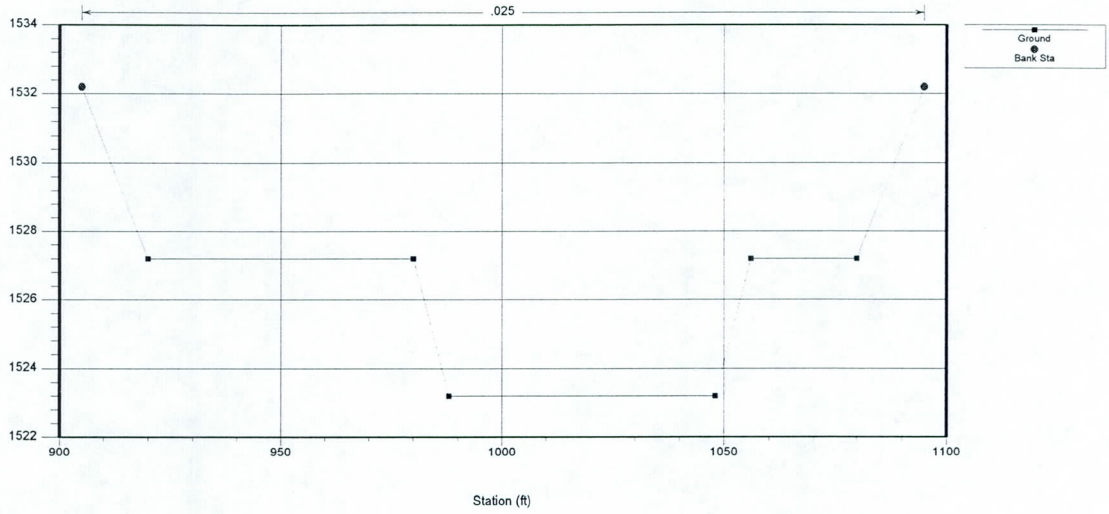

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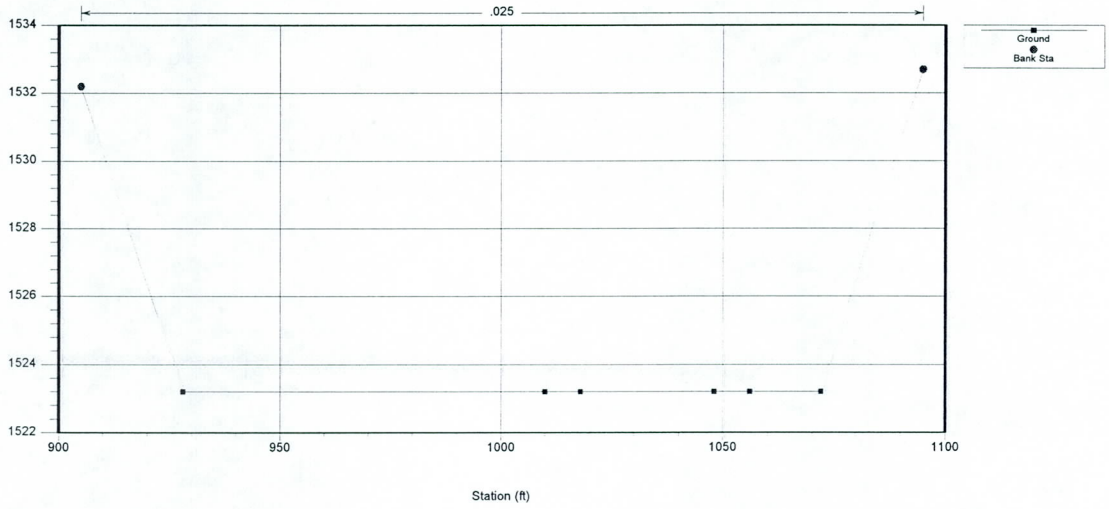

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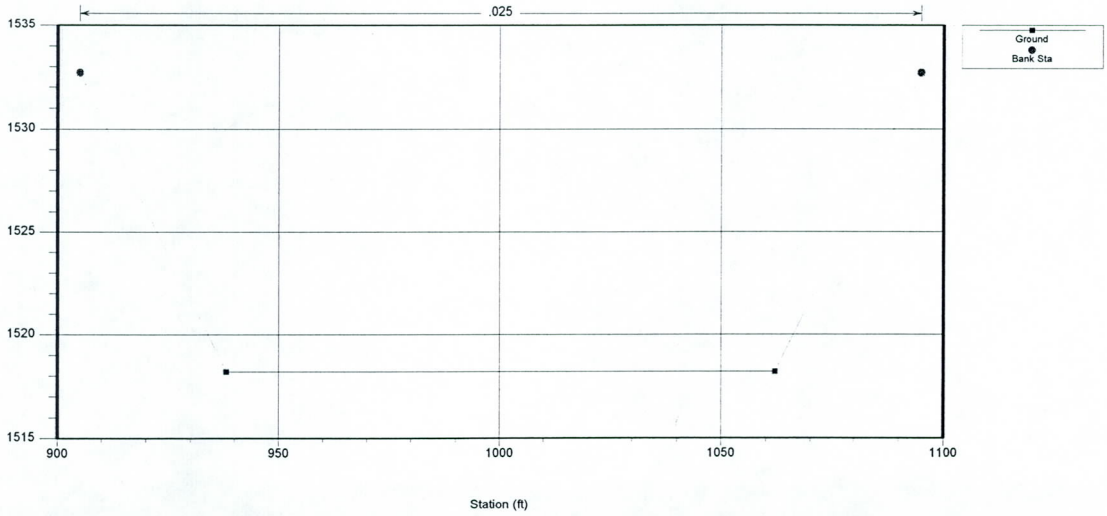

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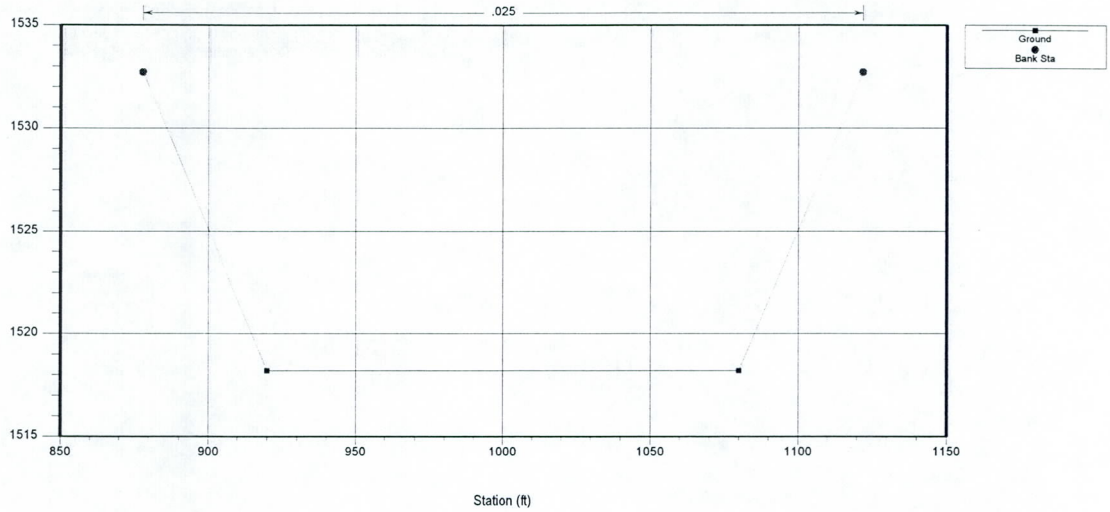

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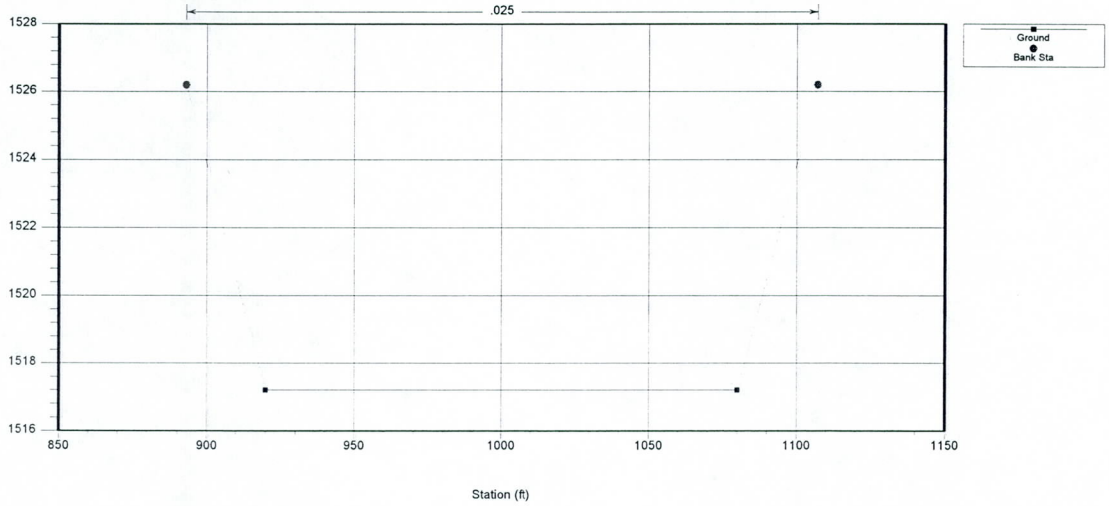

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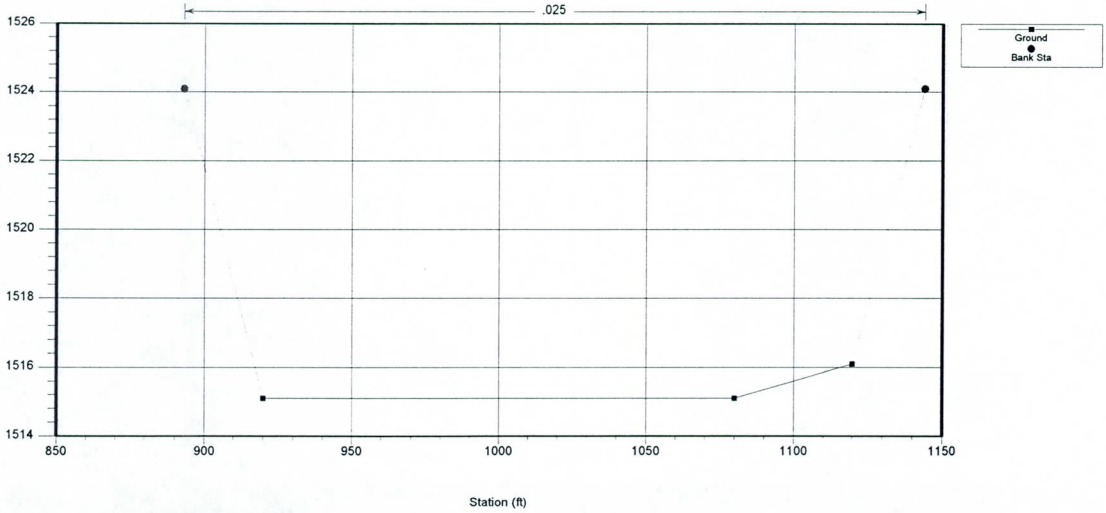

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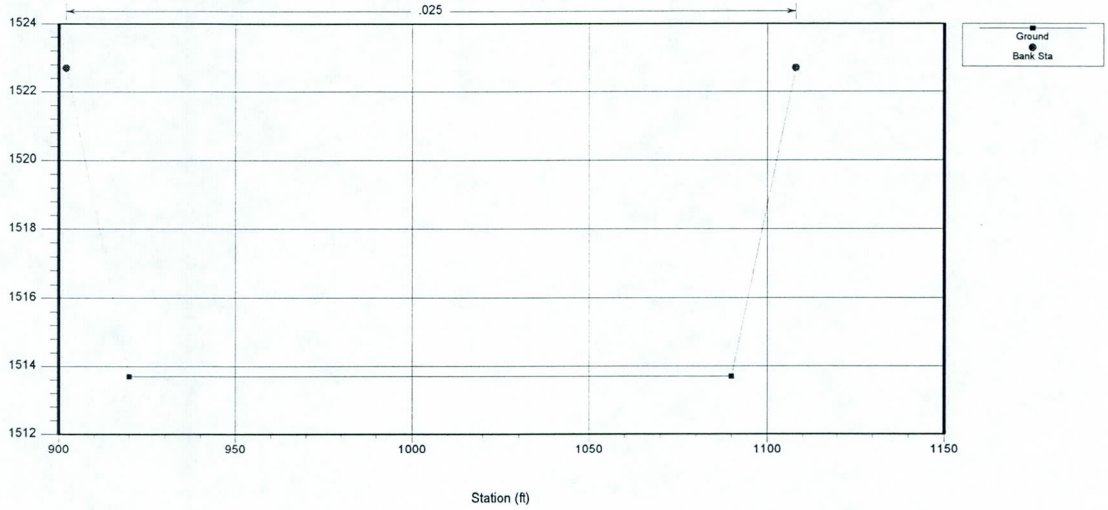

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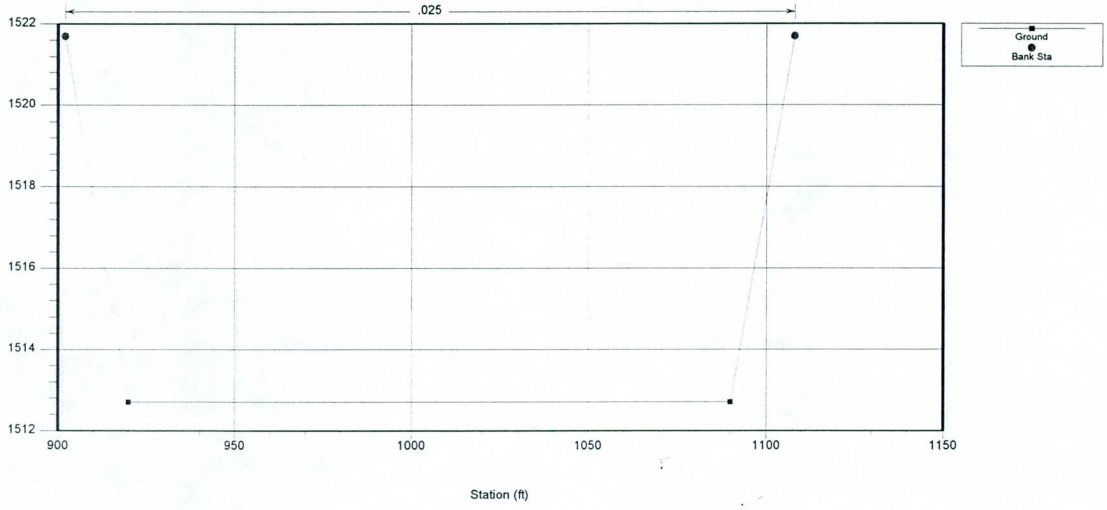

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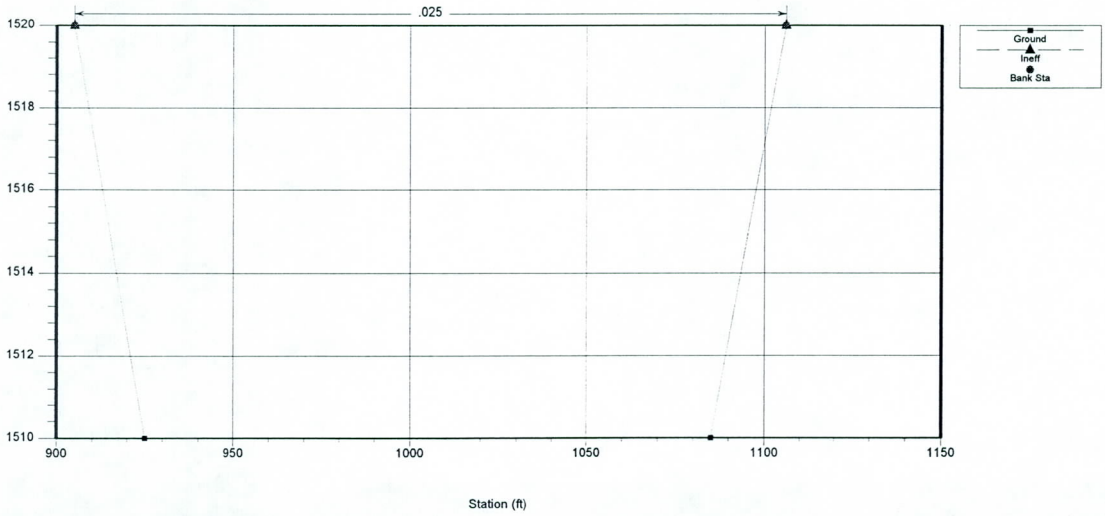

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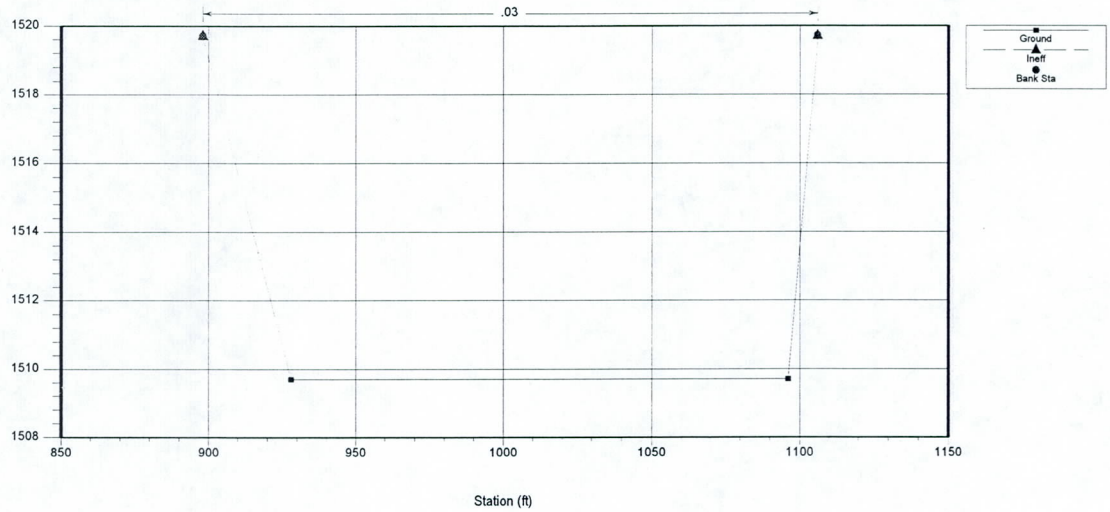

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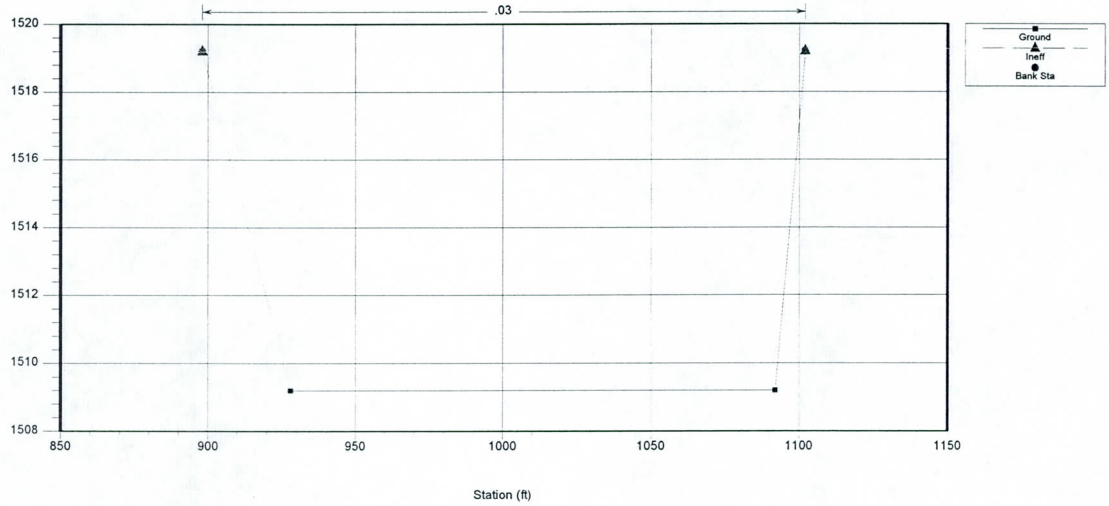

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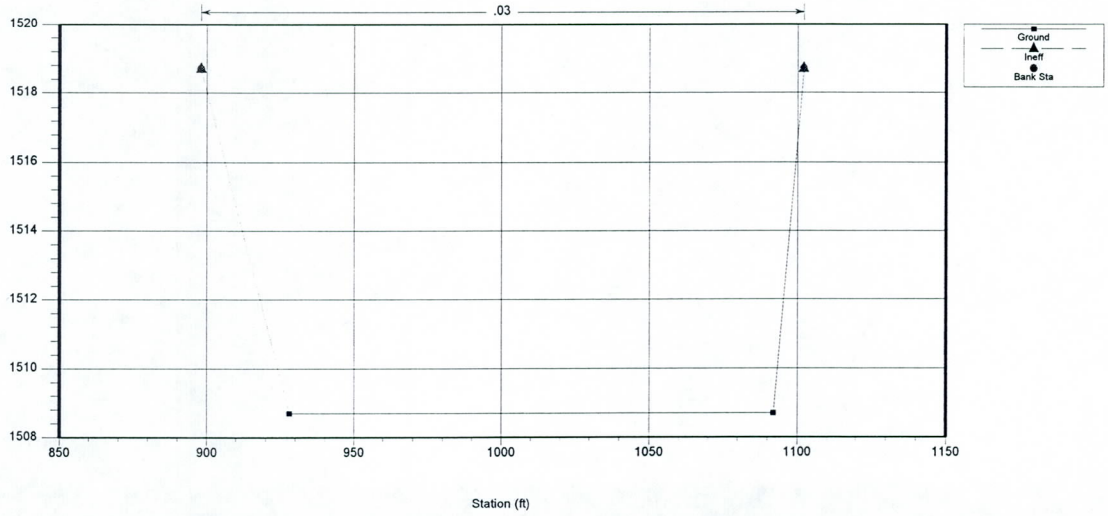

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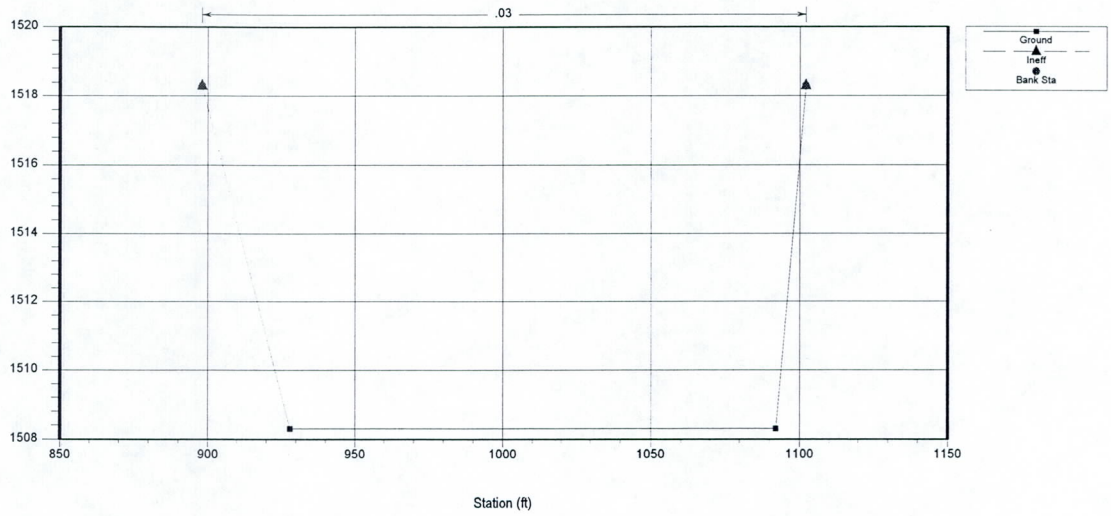

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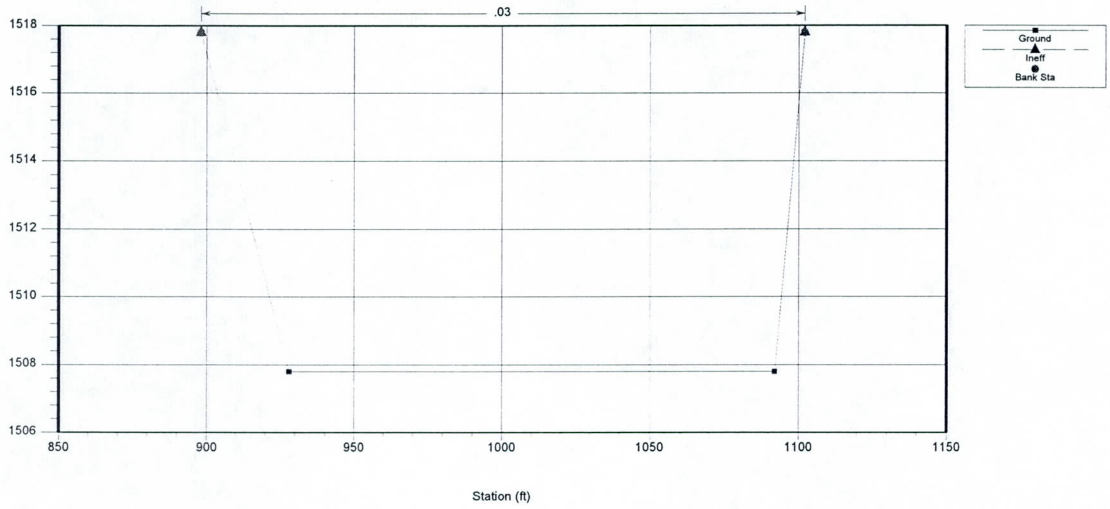

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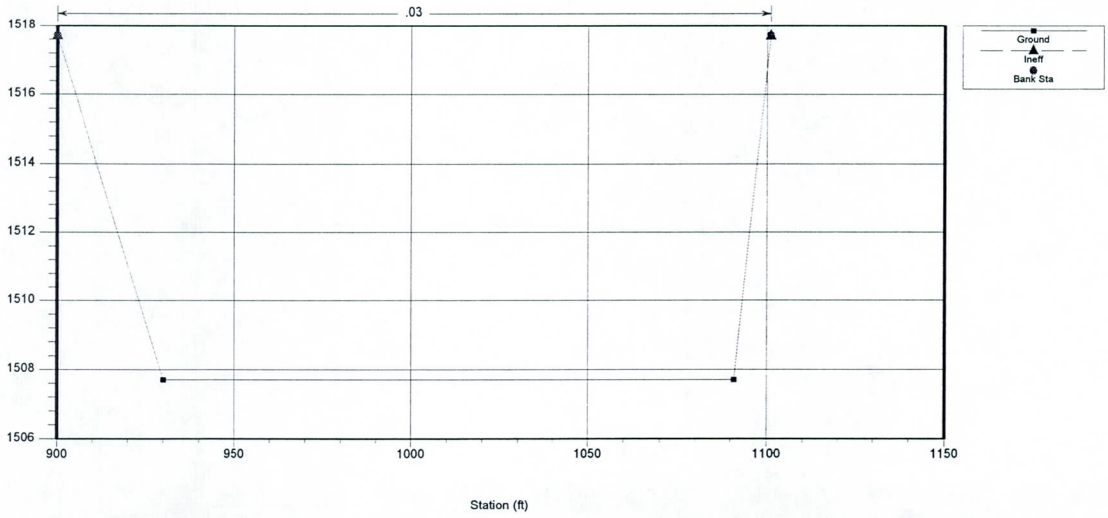

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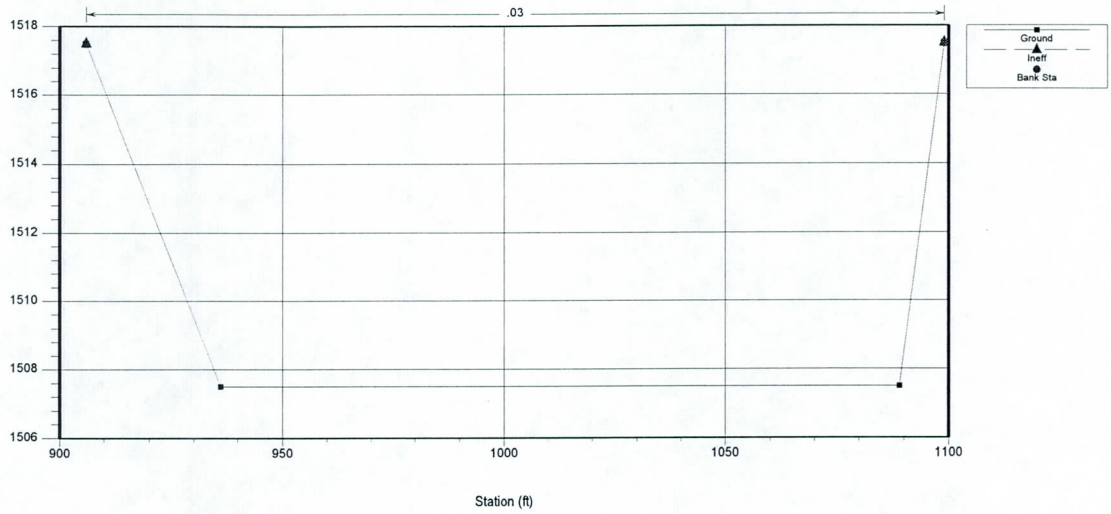

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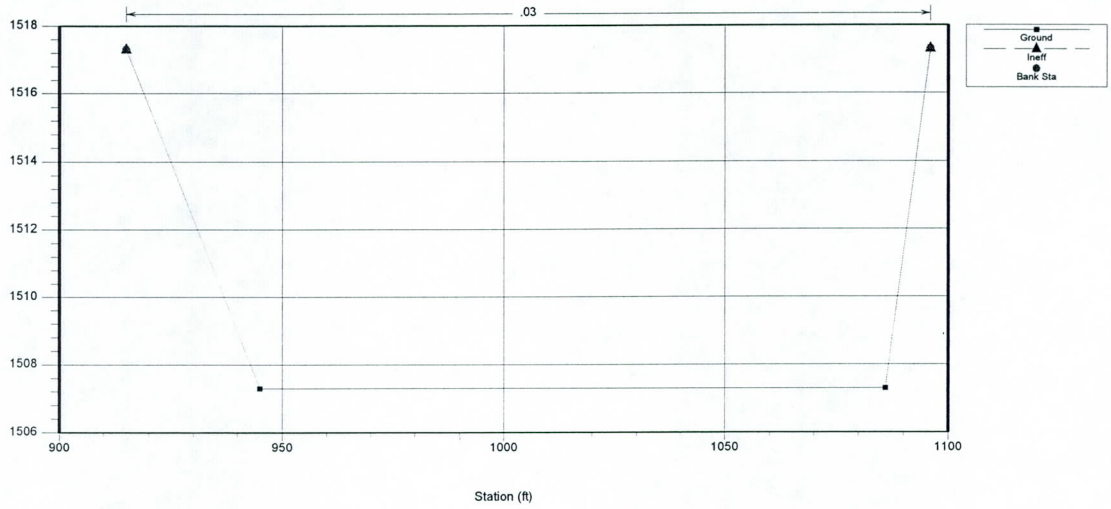

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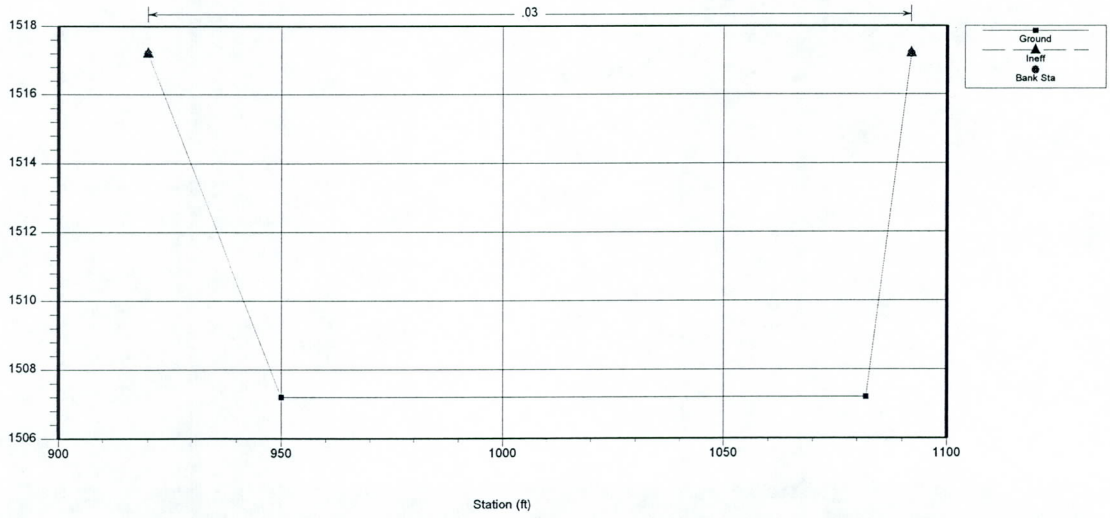
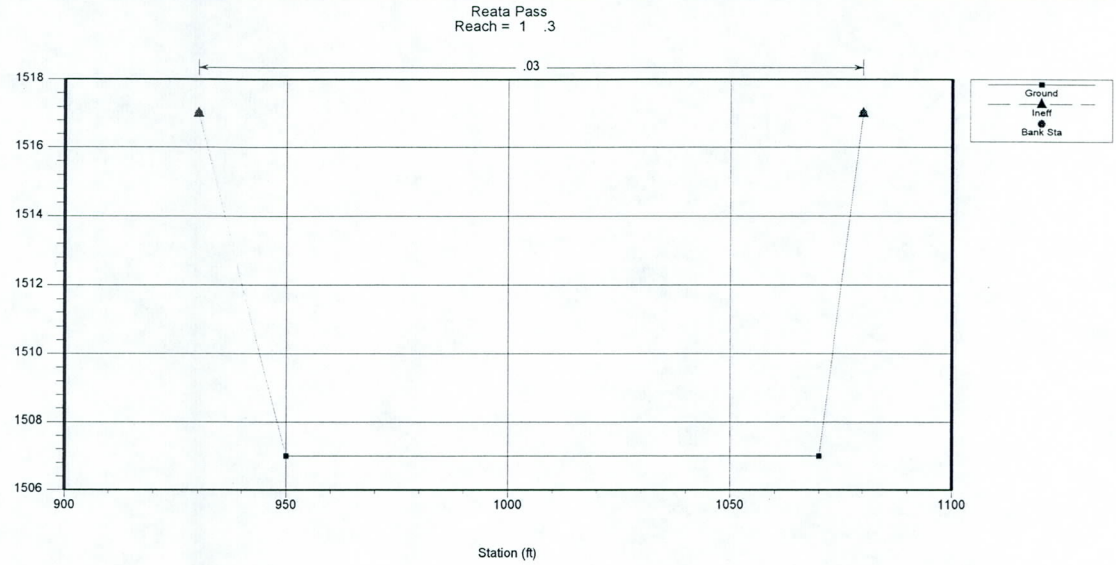
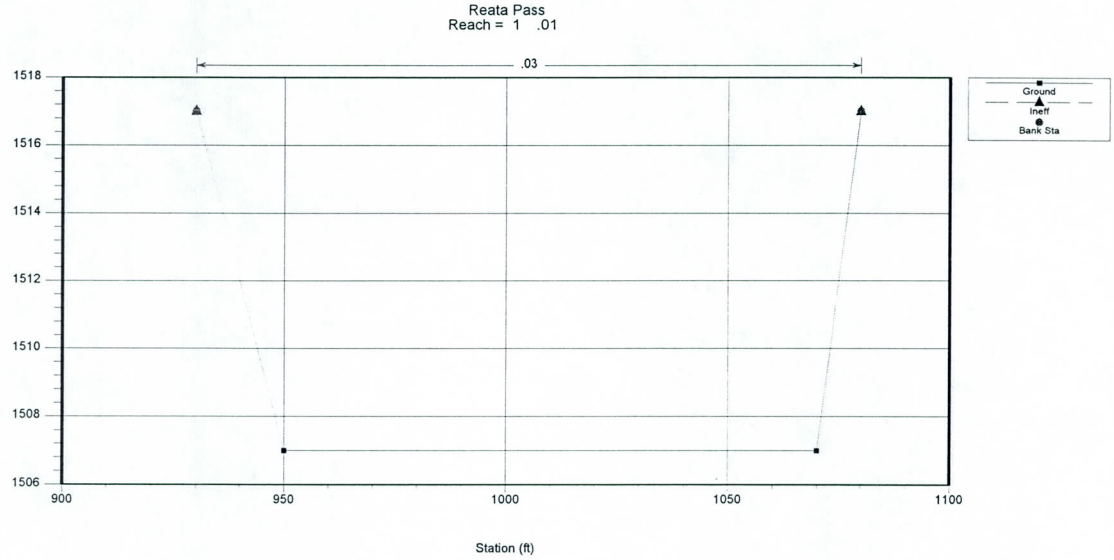



Reata Pass
Reach = 1 .3
.03
Ground
Ineff
Bank Sta
Elevation (ft)
1518
1516
1514
1512
1510
1508
1506
900
950
1000
1050
1100
Station (ft)


Reata Pass
Reach = 1 .01
.03
Ground
Ineff
Bank Sta
Elevation (ft)
1518
1516
1514
1512
1510
1508
1506
900
950
1000
1050
1100
Station (ft)

Appendix B

Velocity Limitation for Soil Cement and Articulated Blocks and Factor of Safety Computation

SIMONS, LI & ASSOCIATES, INC.
3150 Bristol Street, Suite 500
Costa Mesa, CA 92626
(714) 513-1280 Fax: (714) 513-1278

MEMORANDUM

DATE: 7/21/97

TO: Kofi Awumah, Flood Control District of Maricopa County

FROM: Ike Pace, SLA

SUBJECT: Desert Greenbelt Documentation of Allowable Velocities

Please find the attached documentation for allowable velocities for soil cement and concrete block.

Material	Velocity (ft/s)
Soil Cement	25
Concrete Block	>26

Please note:

Petraflex may be used as the design material for the reaches that we showed Armorflex as the design material in the plans that we submitted to you last week.

CC: Mark Landsiedel
John Rodriguez

SIMONS, LI & ASSOCIATES, INC.
4600 South Mill Avenue, Suite 200
Tempe, Arizona 85282-6759
(602) 491-1393 Fax: (602) 491-1396

MEMORANDUM

DATE: 7/21/97

TO: Lan Weber, SLA Costa Mesa

FROM: Krey Price, SLA Tempe

SUBJECT: Santa Cruz River Floods, 1983 and 1993

CC: Greg Pope, USGS
Mike Zeller, SLA Tucson

The USGS estimates the peak flows in the Santa Cruz River at 37,400 cfs for the 1983 flood and 52,700 cfs for the 1993 flood (see historical peak flow readings from Station #09482500 on USGS website). Measurements taken across the river at the Congress Street crossing include peak point velocities of up to 22 fps for the 1993 flood, according to Greg Pope of USGS Tucson office. These velocities occurred for a flow with an average velocity of about 15 fps. The 1983 flood produced a maximum average velocity of 20 fps, so the maximum point velocities would have exceeded 25 fps (≈29 fps if the same factor is used.) The report *Controlling Floods in the Desert with Soil-Cement* states that during the 1983 flood, "in all cases, the banks protected with soil-cement linings withstood the flood water." According to Mike Zeller, the soil cement used for the bank protection has a design stress of 550 psi. The soil cement in the drop structures was built at 1000 psi. Mike Zeller also recalled USGS measurements showing velocities exceeding 25 fps during the 1983 flood. Mike's sources of data at the USGS included Rod Roeske, Byron Aldridge, Jim Eichener, and Dave Camp. The 1983 event can therefore be used to show that soil cement protection in the past has withstood high velocity flows up to and exceeding 25 fps. The soil cement in the Scottsdale Desert Greenbelt Project will have a higher design strength (750 psi), so a peak design velocity of 25 fps for the Desert Greenbelt channel should be satisfactory.

CONTROLLING FLOODS IN THE DESERT WITH SOIL-CEMENT

Kenneth D. Hansen, P.E.,
Portland Cement Association

John B. Lynch, P.E., R.L.S.
GLHN Architects & Engineers, Inc.

June 1995

For presentation at the Second CANMET/ACI International Symposium on Advances in Concrete Technology,
Las Vegas, Nevada, USA, June 11-14, 1995

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PERFORMANCE

Soil-cement bank protection was severely tested during high flows in the Tucson area during October 1983 and January 1993. A description of the event, the damage due to flooding, and performance of the soil-cement bank protection is noted below.

1. The 1983 Tucson Flood - The land around normally dry riverbeds and washes in the Tucson area were saturated by 46mm (1.8 in.) of rainfall during the last three days of September 1983. Then, the area received another 124mm (4.9 in.) of rain during the first three days of October. The 170mm (6.7) of rain in the six day period was more than 60% of the area's annual average precipitation of 281mm (11.05 in).

52,700 cfs see attached memo 7/18/97

The heavy rains caused the Santa Cruz through downtown Tucson to reach a record flow (since 1915) estimated at 1275m^3/s (45,000 cfs). This was determined to be greater than the one in 100 year flood event and has been described as "The Big One". The flow on the Rillito River northeast of Tucson was estimated at 708m^3/s (25,000 cfs) or greater than the one in 50 year event.

Attributed to the flood were 4 deaths in the Tucson area, 154 destroyed residences, more than 400 homes and businesses damaged and about 20,000 people displaced. The erosion of unprotected bridge abutments and flooding of access roads caused 35 ~~of the~~ to 42 major bridges in Pima County to be closed at one time. One such bridge is shown in Fig. 1. Bank erosion caused extensive damage to River Front Village office complex as shown in Fig. 11. Further upstream on the Rillito River unprotected banks eroded while soil-cement banks protected the townhomes to the lower right of Fig. 12. Repair of the flood damage was estimated to cost $105.7 million dollars in 1984.

In all cases, the banks protected with soil-cement linings withstood the flood waters. News descriptions detailed soil-cement as a "proven flood fighter".

Other types of "bank protection" in place at the time of the flood did not fare well. Adjacent to the Rio Nuevo housing project west of downtown Tucson, the soil-cement banks were constructed to the 25 year flood level. The soil-cement was overtopped and the soil behind the armored banks washed away. Still, the soil-cement remained in place waiting to be tested by the next flood. The velocity of flow in this area was estimated to be in excess of 6m/s (20 ft/sec) and caused no noticeable erosion of the soil-cement face. over 25 fps See attached memo 7/18/97

2. The 1993 Tucson Flood - The next flood of note occurred in the Tucson area between January 5 and 19, 1993 when it rained daily for 14 days. The rainfall which varied from 28mm (1.11 in.) to 224mm (8.83 in.) in Pima County during this period caused two distinct peak flows. Peak discharges on the Rillito River reached 600m^3/s (28,000 cfs) on January 8th while the maximum peak discharge of the Santa Cruz River prior to its confluence with the Rillito was 1000m^3/s (35,800 cfs) on January 18th. The flow on the Rillito was slightly less than the regulatory 100 yr. flow of 920m (32500 cfs).

Even though the peak discharges for the 1993 flood were less than the 1983 flood, the soil-cement banks were subjected to high water for a longer period of time. No lives or residential or commercial buildings were lost during this flood. Also, no structural damage to any of the bridges occurred.

Pima County reported that significant erosion occurred along most unprotected banks of all major water courses except those of the smaller waterways. It further reported "remarkably little damage to soil-cement stabilization".

One area where the soil-cement bank protection was damaged was the west abutment of the Ina Road bridge over the Santa Cruz. This was the bridge that was outflanked during the 1983 flood as shown in Fig. 1. It was now protected by a variable height of soil-cement bank protection on either side of the bridge. Due to a combination of scour and/or softening of subgrade support, a block of soil-cement broke off and dropped vertically as shown in Fig. 13. Still the soil-cement remained in place to protect the sandy banks. This area was subjected to high flow for more than two weeks.

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
ARIZONA DISTRICT
520 North Park Avenue, Suite 221
Tucson, Arizona 85719

FAX: (520) 670-5592

DATE: July 18, 1997

TO: Krey Price
OFFICE: Simons Li Associates
FAX NUMBER: 602-491-1396 (1393)

FROM THE DESK OF:
Greg Pope
Phone: 520-670-6671

6 Pages, including cover page

Krey

I am sending you the cross section and slope area data for the Santa Cruz River at Tucson for the 1983 and 1993 peak flows. If you have any questions or require additional information, please give me a call.

Greg

Post-it® Fax Note 7671	Date 7-21	# of pages ▶ 6
To Ian Wilber	From	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

SANTA CRUZ AT TUCSON 09482500 100263

PROPERTIES FOR SECTION C

	AREA	TOP WIDTH	WETTED PERIMETER	HYDRAULIC RADIUS	CONVEYANCE	DISCHARGE
1	129.26	38.46	35.38	3.65	13017.35	865.06
2	2622.33	186.59	194.03	13.52	762318.62	51836.69
SUM	2751.59	221.07	229.41		775336.12	52721.76

$\bar{V} = 19.8$ $\frac{V^2}{2g} = 6.07$ $F_E = 0.43$

ALPHA = 1.0986 FROUDE NUMBER = 0.4571 VELOCITY HEAD = 5.9779

PROPERTIES FOR SECTION D

	AREA	TOP WIDTH	WETTED PERIMETER	HYDRAULIC RADIUS	CONVEYANCE	DISCHARGE
1	123.24	32.03	33.33	3.73	12440.61	850.10
2	2636.13	193.96	202.45	13.02	770325.62	51871.56
SUM	2760.41	226.39	235.78		782816.19	52721.76

$\bar{V} = 19.1$ $\frac{V^2}{2g} = 6.03$ $F_E = 0.44$

ALPHA = 1.0464 FROUDE NUMBER = 0.4539 VELOCITY HEAD = 5.9271

PROPERTIES FOR SECTION E

	AREA	TOP WIDTH	WETTED PERIMETER	HYDRAULIC RADIUS	CONVEYANCE	DISCHARGE
1	95.11	30.47	34.87	2.75	7184.51	437.37
2	2575.12	183.11	193.04	13.35	649080.19	52284.82
SUM	2760.30	213.57	221.91		656264.69	52721.76

$\bar{V} = 19.6$ $\frac{V^2}{2g} = 5.94$ $F_E = 0.40$

ALPHA = 1.0398 FROUDE NUMBER = 0.4363 VELOCITY HEAD = 5.6855

1983 pk

SANTA CRUZ AT TUCSON 19982596 100243

PROPERTIES FOR SECTION 6

	AREA	TOP WIDTH	WETTED PERIMETER	HYDRAULIC RADIUS	CONVEYANCE	DISCHARGE
1	2609.76	221.62	228.72	11.41	577778.56	52721.69
TOT	2609.76	221.62	228.72		577778.56	52721.76

ALPHA = 1.0034 FROUDE NUMBER = 1.0579 VELOCITY HEAD = 6.3371

PROPERTIES FOR SECTION 6

	AREA	TOP WIDTH	WETTED PERIMETER	HYDRAULIC RADIUS	CONVEYANCE	DISCHARGE
1	2479.71	238.55	248.95	10.00	654119.50	52721.69
TOT	2479.71	238.55	248.95		654119.50	52721.76

ALPHA = 1.0000 FROUDE NUMBER = 1.0353 VELOCITY HEAD = 6.0104

```
PROGRAM WRITTEN BY P. JEKEL, 1975.

REVISED BY WKIRBY, 6/82.

RUN DATE =  2/13/89


*** CONVERTING TO E431 CARDS FROM INPUT TYPE =    S
      C = CULVERT,    S = SLOPE-AREA

*** NOTE - ANY SUBSEQUENT OPTION CARDS WILL BE FLUSHED.

 --- REFORMATTED X-SECT CARDS ---

  1 SANTA CRUZ AT TUCSON                                    09482500  190283 05    300
  3          C    13
  5            3 01   488    4 01   399   12 01   365   21 01   343   39 02   333
  5           45 02   295   70 02   258  106 02   237  167 02   293  183 02   224
  5          203 02   227  222 02   386  235 02   409
  3          D    11
  5            0 01   399    7 01   367   17 01   359   33 02   332   45 02   246
  5           90 02   211  121 02   231  187 02   223  203 02   224  216 02   369
  5          235 02   305
  3          E    13
  5            7 01   387   15 01   351   31 02   343   52 02   281   90 02   213
  5          109 02   216  171 02   221  200 02   233  216 02   391  220 02   397
  3          F    13
  5            3 01   380   22 01   329   41 01   210   73 01   202  104 01   212
  5          136 01   222  197 01   251  211 01   393  214 01   351  228 01   367
  3          G    13
  5            3 01   375   15 01   337   25 01   330   38 01   270   46 01   211
  5           72 01   208   86 01   207   97 01   205  115 01   206  158 01   223
  5          207 01   252  228 01   332  244 01   159
-----------------------------------------------------------------------------------------

                                   OPTIONS SELECTED
TOTAL ELEVATION IN FEET=   30
TOTAL TRANSVERSE DISTANCE=  300
MIN. ELEVATION IN FEET=   15
BEGIN TRANSVERSE POINT IN FEET=     0
END TRANSVERSE POINT IN FEET=  300
-----------------------------------------------------------------------------------------

NUMBER OF PLOTS GENERATED=   5

******PROGRAM TERMINATED NORMALLY******
```

1993 pk

```
1SANTA CRUZ RIVER AT CONGRESS STREET AT TUCSON, ARIZ  09482500  01  94 03   110 1

 1SANTA CRUZ RIVER AT CONGRESS STREET AT TUCSON, ARIZ  09482500  01  94 03   110 1
      01  15       03      270                                                120 2
     0 01    335   14 01    291   20 02    287   26 02    260   33 02    194  130 3
    62 02    183   77 02    191  110 02    188  151 02    198  174 02    200  134 3
   188 02    220  194 02    246  204 03    285  209 03    288  229 03    332  136 3
       040     028     040                                                    140 4
      2956    2972    2989                                                    150 5
      02  16  111 03      543                                                  220 2
     0 01    323   17 01    286   23 02    282   30 02    246   34 02    207  230 3
    64 02    176   93 02    179  133 02    180  167 02    177  186 02    173  234 3
   188 02    193  193 02    217  200 02    260  207 03    283  213 03    286  236 3
   221 03    306                                                              238 3
       040     028     040                                                    240 4
      2853    2861    2869                                                    250 5
      03  13  083 01      810                                                  320 2
     0 01    301    8 01    281   26 01    215   64 01    184   86 01    167  330 3
   117 01    174  148 01    174  157 01    164  181 01    157  192 01    249  334 3
   199 01    280  205 01    285  211 01    314                                336 3
       028                                                                     340 4
      2778                                                                     350 5
0                                    NO FATAL ERRORS WERE DETECTED IN THIS SET.
1
                        SANTA CRUZ RIVER AT CONGRESS STREET AT TUCSON, ARIZ 09482500  0
                        DISCHARGE BETWEEN SECTIONS      DELH        L            Q
                           01   -    02                 1.11      273.       25953.
                           02   -    03                 0.83      267.       20466.
                           01   -    03                 1.94      540.       23120.
1
0                       SANTA CRUZ RIVER AT CONGRESS STREET AT TUCSON, ARIZ 09482500  0
 PROPERTIES FOR SECTION    01
          AREA     TOP WIDTH      WETTED    HYDRAULIC  CONVEYANCE   DISCHARGE
                                 PERIMETER   RADIUS
  1       4.30        7.46         7.55       0.57       109.64        6.21
  2    1744.68      184.00       188.67       9.25    407926.56    23096.07
  3       8.90        9.95        10.08       0.88       304.27       17.23
0
 SUM   1757.88      201.42       206.30                408340.44    23119.50
0
    ALPHA = 1.0121  FROUDE NUMBER = 0.7845  VELOCITY HEAD = 2.7185
0
0
 PROPERTIES FOR SECTION    02
          AREA     TOP WIDTH      WETTED    HYDRAULIC  CONVEYANCE   DISCHARGE
                                 PERIMETER   RADIUS
  1       0.82        4.95         4.96       0.16         9.11        0.52
  2    1746.09      184.00       189.58       9.21    407166.06    23117.84
  3       1.46        6.36         6.38       0.23        20.21        1.15
0
 SUM   1748.36      195.31       200.92                407195.31    23119.50
0
    ALPHA = 1.0024  FROUDE NUMBER = 0.7789  VELOCITY HEAD = 2.7217
0
0
 PROPERTIES FOR SECTION    03
          AREA     TOP WIDTH      WETTED    HYDRAULIC  CONVEYANCE   DISCHARGE
                                 PERIMETER   RADIUS
  1    1701.87      189.63       194.96       8.73    382921.00    23119.50
```

1SANTA CRUZ RIVER AT CONGRESS STREET AT TUCSON, ARIZ 09482500 01 94 03 110 1

0
SUM 1701.87 189.63 194.96 382921.00 23119.50
0
ALPHA = 1.0000 FROUDE NUMBER = 0.7991 VELOCITY HEAD = 2.8656
0
0

U.S. Department of Transportation

Federal Highway Administration

HYDRAULIC STABILITY OF ARTICULATED CONCRETE BLOCK REVETMENT SYSTEMS DURING OVERTOPPING FLOW

Cosponsored by:

U.S. Dept. of Interior
Bureau of Reclamation
Denver, Co. 80225

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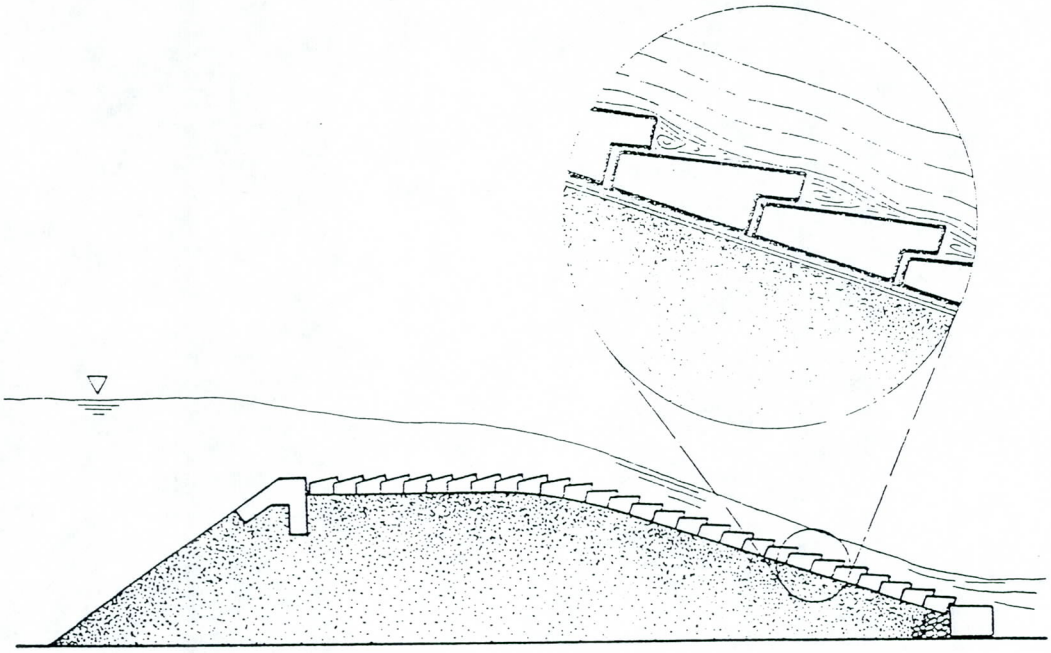
Soil Conservation Service
Washington, D.C. 20013

Tennessee Valley Authority
Knoxville, Tn. 37902



Research, Development, and Technology
Turner-Fairbank Highway Research Center
6300 Georgetown Pike
McLean, Virginia 22101-2296

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Table 7. Summary of critical velocity and shear stress for various protection measures.

Source	Protective Cover	Underlying Soil	V_c (ft/s)	τ_c (lb/ft^2)
ARS [see ref. (1)]	Class A Vegetation	Erosion Resistant	6-8	3.7
		Erodible	4-6	3.7
	Class B Vegetation	Erosion Resistant	5-7	2.1
		Erodible	3-5	2.1
	Class C Vegetation	Erosion Resistant	4-5	1.0
		Erodible	3-4	1.0
	Class D Vegetation	Erosion Resistant	3.5	0.60
		Erodible	2.5	0.60
	Class E Vegetation	Erosion Resistant	3.5	0.35
		Erodible	2.5	0.35
FHWA phase I study [see ref. (1)]	Woven Paper		N/A	0.15
	Jute Net		N/A	0.45
	Single Fiberglass		N/A	0.60
	Double Fiberglass		N/A	0.85
	Straw w/Net		N/A	1.45
	Curled Wood Mat		N/A	1.55
	Synthetic Mat		N/A	2.00
CIRIA [see ref. (1)]	Plain Grass, Good Cover	Clay	7-15*	N/A
	Plain Grass, Average Cover	Clay	5-12*	N/A
	Plain Grass, Poor Cover	Clay	3-10*	N/A
	Grass, Reinforced w/Nylon Mat	Clay	14-19*	N/A
CIRIA [see ref. (1)]	Dycel w/Grass	Clay	23-26	N/A
	Petraflex w/Grass	Clay	>26	N/A
	Armorflex w/Grass	Clay	23-26	N/A
	Dymex w/Grass	Clay	15	N/A
	Grasscrete	Clay	26	N/A
FHWA phase I study [see ref. (1)]	Gravel			
	D_{50} = 1 in		N/A	0.40
	D_{50} = 2 in		N/A	0.80
	Rock			
	D_{50} = 6 in		N/A	2.50
	D_{50} = 12 in		N/A	5.00
FHWA phase II study [see ref. (1)]	6 in Gabions	Type I	17	35
	4 in Geoweb	Type I	9-10	10
	Soil Cement (8% Cement)	Type I	>16.0	>45
FHWA phase II study [see ref. (1)]	Dycel w/o Grass	Type I	<7.3	<7.0
	Petraflex w/o Grass	Type I	>17	>32
	Armorflex w/o Grass	Type I	12-15	12-20
	Enkamat w/3 in Asphalt	Type I	13	13-16
	Enkamat w/1 in Asphalt	Type I	<8.6	<5

Historical Summary of Armorflex Projects In California and Arizona

Flood Channels, Rivers, Creeks, and Culverts

Corte Madera, CA - Corta Madera Creek (1986)

Owner - Giesburger Development. Engineer - AN/West. Creek under tidal influence from San Francisco Bay. Critical habitat for water fowl, clams, and bat rays. Armorflex was backfilled with native soils and gravel then vegetated with salt grasses and pickleweed to reestablish waterfowl nesting and foraging sites.

Cotati, CA - Cotati Creek (1987)

Owner/Engineer - City of Cotati. Protect abutments of bridge crossing Cotati Creek (1.5:1 side slopes). Armorflex was backfilled with gravel to inhibit vegetation to maintain design boundary flow conditions. No maintenance required.

Poway, CA - Poway Creek (1988)

Owner - City of Poway (San Diego County). Engineer - VTN. About 1000 lin ft. of channel lining - Armorflex CL 30 sides with CL 50 toe. Side slopes 1.5:1 to 1.75:1. Flow depth about 13 ft, Q-9600, V-13 fps, bed slope 2-3%. System has performed well. In comparison, adjacent ¼-ton loose riprap subsequently had to be grouted to stop rotational failure. Good vegetative growth throughout Armorflex.

Moreno Valley, CA - Drainage Channel (1989)

Owner - Griffin Homes (Riverside County Flood Control). Engineer - Community Engineering Services, Inc. Armorflex CL 50 - series of drop structures and invert stabilization in main drainage corridor through a new housing development. Good wetlands vegetation.

Novato CA - Novato Creek (1989)

Owner/Engineer - Marin County Flood Control Department. Mats placed on 1.5:1 slopes, backfilled and seeded with native plant mix. Now completely vegetated and nearly invisible.

Temecula, CA - Margarita Village (1990)

Owner - Buie Corp. Engineer - Rick Engineering. Major golf course drainage corridor. In addition to channel lining, mats were installed at inlets and outlets of box culverts and also used as check dams. Armorflex covered with soil and seeded with grass. Native wetlands vegetation has grown over mats. Depth of channel 6-8 ft. with Q of about 2500 cfs.

El Toro, Orange County, CA - Serrano Creek (1990)

Owner - Environmental Management Agency (EMA), Orange County Flood Control Department. Engineer - RBF & Associates. Armorflex CL 50 covers 3:1 side slopes and bottom of channel. Covered with native soil and hydroseeded. Installation withstood major winter storms of 1991, 1992, 1993, with no damage.

Temecula, CA - Chardonnay Hills (1990)

Owner - Marlboro Development Corp. Engineer - Community Engineering Services, Inc. Armorflex CL 50s at box culvert outlets in riparian park area of development. System has been through full design flows several times with no damage.

Irvine, CA - Pelican Hills Golf Course (1990/1991)

Owner - Irvine Company. Engineer - The Keith Companies. Armorflex CL 50 placed on sides and bottom of two separate riparian corridor channels. Channels covered with dirt and planted with native vegetation. Have undergone full flow conditions with no damage during 1991, 1992, and 1993 storms.

Roseville, CA - Woodside Creek (1990)

Owner - Elliot Homes. Engineer - Sugnet & Associates. Armorflex CL 30 installed on sides and bottom of drainage channel in new housing development. Armorflex covered with dirt and seeded. Now completely vegetated and invisible. Adjacent development with a concrete-lined channel has no vegetation and channel is covered with grafiti.

City of Buenaventura (Ventura), CA - Small Channel (1990)

Owner/Engineer - Ventura County Flood Control. A 2:1 side slope on one side of a Ventura Co. Creek. Maximum depth of flow approximately 10 feet. System survived the heavy February 1992 Ventura County flood with no problem. Huge boulders from upstream rip rap revetments were transported downstream past the Armorflex revetment.

Irvine (Orange County), CA - Pelican Hills Drainage Channel (1991)

Owner - Orange Co. EMA/Public Work Dept. Engineer - RBF & Associates. Armorflex installed on very steep sides (1:1) and bottom of an environmentally sensitive drainage channel. Part of a new road project. Channel completely vegetated in three years.

El Toro (Orange County), CA - Aliso Creek (1991)

Owner - Environmental Management Agency (EMA), Orange County Flood Control Dept. Engineer - RBF & Associates. Armorflex CL 70 installed on 2:1 sides and bottom of large channel. Channel depth, 10-12 ft, Q 6000 cfs, bed slope 3%, velocity 12-15 fps. Armorflex has held up well in the march 1991 and very heavy February 1992 and 1993 storms and has become covered with native vegetation.

Mission Viejo, CA - Santa Margarita Water District (1991)

Owner - Santa Margarita Water District. Engineer - RBF & Associates. Armorflex mats installed in several different locations along main drainage channel, road crossings and culvert outfalls. Mats vegetated to provide native habitat.

Temecula, CA - Santa Gertrudis Creek (1991/1992)

Owner - Riverside County Department of Transportation Assessment District 161. Engineer - Ranpac Inc. Major flood control project consisting of several miles of channel lining on both sides of Santa Gertrudis Creek (over 100 feet wide). Sides slopes 1.5:1; channel depth 13-15 feet, plus scour depth of 10-12 feet. Velocity 13-17 fps. Armorflex recommended by Fish and Game and EPA in place of traditional cast-in-place concrete flood control channel. Mats covered with soil and hydromulched with native plant mix. Completely vegetated in three years.

San Marcus, CA - San Marcus Creek (1991/1992)

Owner - M.J. Brock & Sons(Brock Homes) & City of San Marcus. Engineer - Masson & Associates. Ten different locations along the San Marcus Creek including grade control structures, wing wall extensions, and channel lining. Armorflex channel serves as a mitigation site (riparian habitat) running through golf course. Planted with willows and other native vegetation. Armorflex is no longer visible. ***Project has won environmental awards.***

San Clemente, CA - Detention Basin Outfall Channel (1992)

Owner - Orange county Environmental Management Agency, DWP. Engineer - RBF & Associates. Mitigation area along the overflow side of a concrete outfall channel from a large detention basin.

El Toro, CA - Aliso Creek Diversion Dike (1992)

Owner - Orange Co. Environmental Management Agency. Engineer - RBF & Associates. Armorflex mats protect a diversion dike that pulls partial flow from Aliso Creek into a mitigation area planted with native vegetation.

Saratoga, CA - Calabazas Creek (1992)

Owner - California Department of Transportation. Engineer - Brian Kangas Foulk. Armorflex mats installed along the bottom and sides of Calabazas Creek to prevent erosion and bridge pier scour on new freeway bridge. Combination of closed and open-cell Armorflex block mats. No offsite mitigation required since mats allow native revegetation to occur in the creek.

Chula Vista, CA - Naples Street Channel (1993)

Owner - City of Chula Vista. Engineer - RBF & Associates. Armorflex sides with concrete bottom to accommodate higher flow volumes in narrow channel easement. Sides vegetated with volunteer native vegetation.

Menifee, CA - Drainage Channel (1993)

Owner - Perris Union High School District. Engineer - GFB Genesis, Inc. Paloma Valley High School. Mandated by Cal Office of the State Architect. Large wide drainage channel running through school property. Armorflex channel provides for on-site mitigation of the new school project. Planted with native willows and native vegetation.

Irvine, CA - Mason Park Mitigation Area (1993)

Owner - Orange County Environmental Management Agency. Engineer - RBF & Associates. Armorflex used as channel lining through a riparian habitat area that serves as a mitigation "Bank" for various housing and commercial developments within Orange County. Mats are covered with willows and other native vegetation.

Livermore, CA - Arroyo Seco Channel (1993)

Owner - City of Livermore. Engineer - Griener Engineering. Armorflex channel lining protects bridge abutments while allowing vegetation to grow through the mats.

San Jose, CA - Guadalupe River Parkway (1993)

Owner - Santa Clara Valley District. Engineer - U.S. Army Corps of Engineers. Consulting Engineer - AN West. Master planned, multi-year ACOE project to develop a park incorporating a Riverwalk along the Guadalupe River. Armorflex channel lining used to prevent erosion and bridge pier scour under new I-880 bridge. Closed-cell Armorflex block in bottom of channel allows for wetlands-type vegetation, including willows, but restricts growth of larger trees..

Sacramento, CA - Discovery Park, Sacramento River (1993)

Owner/Engineer - Sacramento County Department of Parks and Recreation. Armorflex used as bank protection to replace failing gabions. Mats placed along sides of boat ramps in a park area. Steep slope areas (1:1) vegetated with native grasses. Flat areas of Armorflex covered with turf to provided for playing and sitting along the Sacramento River.

Temecula, CA - Santa Gertrudis Creek

Owner - Riverside County Department of Transportation Assessment District 161. Engineer - Ranpac Inc. Second phase of previous (1991/1992) large channel lining project on same river. This phase added about another mile of bank protection on 1.5:1 slope. As before, the Armorflex mats were covered with local soil and hydromulched with native plant mix.

Cotati, CA - Cotati Creek (1994)

Owner/Engineer - Sonoma County Water District. Armorflex mats protect banks of creek from eroding in a new residential development. Mats placed on 2:1 slopes, backfilled with soil, and seeded with native grass mix.

Roseville, CA - Antelope Creek (1994)

Owner - City of Roseville. Engineers - CH2MHill and Dames & Moore. Project involved realignment of Old Auburn Road and Antelope Creek. Armorflex mats installed on various slopes from 1:1 to horizontal. Large oak trees left intact with mats surrounding them. All mats covered with dirt and vegetated for mitigation. Mats also act as toe protection for an engineered retaining wall.

San Jose, CA - Guadalupe River Parkway, Phase Contract II (1995)

Owner - Santa Clara Valley Water District. Engineer - U.S. Army Corps of Engineers. Consulting Engineer - AN-West, Inc. Armorflex CL 40 (open cell) & CL 45 (closed cell) used for channel protection along a fish weir. Second phase of multi-year project.

Mountain View, CA - Steven's Creek Trail and Wildlife Corridor (1996)

Owner - City of Mountain View. Engineer - AN West, Inc. Class 40 Armorflex mats to protect sidewalk and embankment from flood flows of creek.

Rowland Heights, CA - Ridgemoor Wetland Mitigation (1996)

Owner - Akins Development. Engineer - RBF & Associates. Armorflex CL 50s used to armor drainage downshoots from wetland retention areas. Mats were placed on a 2:1 slope and vegetated.

Roseville, CA - Cirby Creek Flood Control Project (1996)

Owner - City of Roseville. Engineer - Dames & Moore. Armorflex CL 50s used to line channel & protect bridge piers from scour at Interstate 80 crossing of Cirby Creek. Armorflex connects to rectangular centerline channel and surrounds 16 bridge support piers.

Diamond Bar, CA - Olinda Alpha Landfill (1996)

Owner - Orange County EMA. Engineer - Bryan Stirrat & Associates. Armorflex CL 45s. Trapezoidal drainage channelJ on closed section of landfill. Armorflex chosen for its ability to flex as landfill consolidates.

Aliso Viejo, CA - Laguna Canyon Creek (1996)

Owner - San Joaquin Hills Transportation Corridor. Engineer - De Leuw, Cather (Parsons). Armorflex Cl 50. Channel through wetlands extending from large triple box culvert. Armorflex covered with soil and vegetated.

Irvine, CA - Bonita Creek (1996)

Owner - San Joaquin Hills Transportation Corridor. Engineer RBF & Associates. Armorflex Cl 50 and Cl 70. Several main and secondary channel sections. Armorflex covered with soil and vegetated.

Phoenix, AZ - 19th Avenue Landfill (1996)

Owner - City of Phoenix Sanitation Department. Engineer - Simons, Li & Associates. Several miles of drainage channels on EPA Superfund landfill closure.

Irvine, CA - San Diego Creek (1997)

Owner - California Department of Transportation, Orange Co. EMA. Engineer - RBF & Associates. Armorflex used at outlet of quad box and continuing down creek. Covered with soil and vegetated with native vegetation.

Poway, CA - Rattlesnake Creek (1997)

Owner - City of Poway. Engineer - BSI Consultants, Inc. Armorflex CI 50 placed at end of triple outlet box and continuing down creek through community park. Covered with soil and vegetated.

Coastal Installations

San Mateo, CA - Parkside Aquatic Park (1985)

Owner - City of San Mateo, Parks and Recreation Department Project. Engineer - Winzler and Kelly, Inc. Approx. 800 ln/ft shoreline protection for public park. Revetment also serves as a continuous boat launching ramp for small boats. Armorflex placed on San Francisco "black bay mud" subgrade that was not compatible. System has performed very well without bridging even in regions where significant differential settlement occurred.

Newport Beach, CA - Balboa Island Sea Wall (1989)

Owner - City of Newport Beach. Engineer - Rod Lundin & Associates. Mats installed underwater with barge crane on dredged cut-slope to provide toe protection for Balboa Island sea wall adjacent to ferry landing.

San Diego, CA - Sunset Cliffs Coastal Shoreline (1989)

Owner/Engineer - City of San Diego. Armorflex protects ocean front bluff below City Park walkway. Heavyweight Armorflex CL 85 installed on 1.7:1 slope. Revetment has undergone several storms with no damage.

San Mateo, CA - Coyote Point (1991)

Owner/Engineer - County of San Mateo. Armorflex CL50S serves as a revetment the windsurfing beach on San Francisco Bay, near Burlingame.

Tiburon, CA - San Francisco Bay (1994)

Owner - Clay Callander(private project). Armorflex, installed along the Tiburon Peninsula, used instead of rock riprap for shoreline erosion protection from waves.

Half Moon Bay, CA - Shoreline Erosion Protection (1995)

Owner/Engineer - San Mateo County. Armorflex mats used to protect the face of an old landfill from surface erosion and wave attack during coastal storms. The mats are covered with soil and vegetated with native coastal plants.

Carlsbad, CA - Batiquitos Lagoon (1996)

Owner - City of Carsbad. Engineer - Centennial Engineering & Moffatt & Nichol. Large wetlands mitigation project done in San Diego County to mitigate loss of wetlands as the result of the expansion of the Port of Los Angeles. Armorflex CL 85 Armorflex mats provide erosion protection of slopes consisting of very fine grain sands at the entrance of the lagoon. Project created breeding site for the endangered California Least Tern bird.

San Diego,CA - San Diego Harbor 10th Ave Marine Terminal (1997)

Owner - Port of San Diego. Engineer - Blaylock Engineering. Armorflex CL 85 used as toe protect for new sheet pile bulkhead for Supertanker loading berth. Armorflex placed in 42 feet of water with divers used to position mats.

Levee Installations

Sacramento, CA - Sacramento River Levee (1989)

Owner - Lighthouse Marina Development. Engineer - The Spink Corporation. Armorflex revetment protects about a mile of geogrid reinforced levee (1:1 slope) on the Sacramento River. System functioning well and completely vegetated with native grasses. Armorflex no longer visible.

Hemet, CA - Hemet High School Flood Protection (1993)

Owner - Hemet Union High School District. Engineer - GFB Genesis. Armorflex mats used to protect slopes of 12-acre elevated building site of new high school. High school lies in path of a new dam that is under construction. School site is elevated to be above flood levels if dam should break.

San Joaquin Delta, CA - Levee Protection Demonstration Project (1992)

Owner - California Department of Transportation. Engineer - Murry, Burns, Kielen. Side-by-side comparison of Armorflex CL 30, Triloc, and Rock Rip Rap at 6 different locations at Reclamation District 2110 and 2025. The Armorflex has remained more stable and is more vegetated than the other two techniques of bank protection.

Spillways & Detentions Basins

Irvine (Corona Del Mar area, Orange County), CA - Pelican Hills Golf Course (1991)

Owner - Irvine Company. Engineer - The keith Companies. Armorflex installed on two large detention basin spillways (slopes, 100-ft long on a 2:1). Spillways have been overtopped without damage when basin inlets were clogged with debris.

San Clemente, CA - Detention Basin (1992)

Owner - Orange Co. Environmental Management Agency. Engineer - RBF & Associates. Armorflex mats installed in 1992 to protect several inlets and outlets structures in a detention basin. Mats covered with soil and vegetated.

San Jose, CA - Matadero Creek (1994)

Owner/Engineer - Santa Clara Valley Water District..

Armorflex CL 40 mats used to armor an emergency spillway constructed inside the Barron Creek Sediment Basin. Mats were placed on a 3:1 slope.

Glendora, CA - Oak Park Debris Basins (1996)

Owner - Los Angeles County Public Works. Engineer - Civiltec Engineering, Inc. Two spillways on detention basins in County park covered with Armorflex Cl 30s and vegetated.

Newport Beach, CA - Detention Basins (1996)

Owner - Standard Pacific Homes. Engineer - Orange Co. Dept. of Public Works. Two spillways on detention basins in highly visible location. Spillways covered with soil and vegetated.

Phoenix, AZ - Detention Basins (1996)

Owner - City of Phoenix Sanitation Department. Engineer - Simons, Li and Associates. Armorflex Class 50s used to cover sides and entire bottom of three large detention basins on landfill closure.

Escondido, CA - San Diego Wild Animal Park (1997)

Owner - San Diego Zoological Society. Engineer - KTUA. Armorflex used to protect slopes and top of spillway of detention basin in African plains area of Wild Animal Park.

Boat Ramps, Access Roads

San Mateo, CA - Parkside Aquatic Park (1985)

Owner - City of San Mateo, Parks and Recreation Department. Engineer - Winzler and Kelly, Inc. Approx. 800 ln/ft shoreline protection for public park. Revetment also serves as a **boat launching ramp** for small boats. Armorflex placed on San Francisco "black bay mud" subgrade that was not compactable. System has performed very well without bridging even in regions where significant differential settlement occurred.

Modesto, CA - Waste Water Treatment Plant (1989)

Owner - City of Modesto. Engineer - Kennedy/Jenks/Chilton Inc. Armorflex mats are used for truck ramps leading to bottom of treatment ponds. Large ponds drained in summer and solids hauled out with 18-wheel trucks.

San Joaquin River Delta, CA - Old River Barrier Boat Ramps (1991)

Owner/Engineer - Cal. Dept. of Water Resources. Mats are removed and stored every October to satisfy Fish & Game requirements for "temporary boat ramps" and then re-installed in April.

San Joaquin River Delta, CA - Boat Launching Ramps (1992)

Owner/Engineer - Cal. Dept. of Water Resources. As in 1991 project, mats are removed and stored during winter season due to Fish & Game requirements.

Foster City, CA - San Francisco Bay (1993)

Owner/Engineer - City of Foster City, San Mateo Co. Armorflex installed to prevent erosion along the sides of a handicapped access ramp to San Francisco Bay.

Tracy, CA - Boat Ramp (1995)

Owner - U.S. Bureau of reclamation. Armorflex CI 30s mats used to provide boat access to a fish bypass structure.

Tracy, CA - Boat Ramp (1997)

Owner - California Dept. of Water Resources. Armorflex CI 50s and 30s used for multi-lane boat launching ramp. Mats are removed in October and re-installed in April per Fish & Game requirements. Same as other ramps installed in 1991 and 1992.

Pipeline and Cable Protection

San Benito County, CA - Panoche Creek (1988)

Owner - Pacific Gas & Electric Co. Engineer/Contractor - Ercon Development Co. Armorflex used to cover main gas line 300A where it crosses Panoche Creek Armorflex performed well through severe flash floods.

Holt, CA - McDonald Island (1988)

Owner - Pacific Gas & Electric Company. Engineer/Contractor - Ercon Development Co. Armorflex mats placed underwater to cover an exposed section of a main gas line crossing Latham Slough. System has performed well.

Bonsal (San Diego County), CA - San Luis Rey River (1990)

Owner/Engineer - San Diego Gas & Electric Co. CL 50 Armorflex used to cover SDG & E's main 30" high pressure gas line where it crosses the San Luis Rey River. The top of the pipeline had become exposed above the invert. The 700-ft long exposed section was capped with Armorflex mats. The river's Q exceeds 50,000 cfs with velocities in the range of 15-17 fps. Armorflex protected the pipeline from scour during the March 1991 and February 1992 and 1993 storm events with water depths exceeding 10 ft.

Santa Clarita, CA - Santa Clara River (1992)

Owner - Los Angeles County Sanitation /district. Engineer - Simons, Li & Associates. Armorflex mats used to cap and prevent scour to two main sewer lines crossing the Santa Clara River. Installed in December 1992, just before major winter storms occurred. Armorflex and sewer lines were not damaged. The structure also acts as a grade control structure to prevent pier scour on a bridge just upstream of the sewer lines. Other nearby pipeline and bridge protection grade control structures built of heavy rock were severely damaged during the same storms.

San Diego, CA - San Diego Bay (1993)

Owner - U.S. Navy, Ballast Point Submarine Facility. Engineer - Naval Facilities Engineering Command. Armorflex mats installed as protection on 11,000 linear feet of new fiber optic and video cable on underwater magnetic silencing range at mouth of San Diego Bay. Water depths from 10 to 50 feet. Eight months after installation mats were completely covered with vegetation in a region that is normally devoid of vegetation and sea life. The Navy is conducting a long-term environmental monitoring program.

Carlsbad, CA - Gas Pipeline Cover (1994)

Owner - San Diego Gas & Electric Co. Engineer - Nolte & Associates.

Armorflex mats installed over a 14"gas line. Pipeline stretched across a low water crossing and had the potential of being exposed from scour.

San Diego, CA - San Diego River (1994)

Owner - City of San Diego. Engineer - HYA Consulting & James Montgomery.

Armorflex Cl 50s mats installed over first phase of the North Metro, 108" sewer line in an environmentally sensitive area where the line crosses the San Diego River. Mats were covered with native topsoils to enhance future vegetation. Slopes ranged from 4:1 - 2:1.

Healdsburg, CA - Russian River (1994)

Owner/Engineer - PG & E. Armorflex mats installed underwater without diverting flow. Mats used to cover gas pipeline that had become exposed from scour.

Long Beach, CA - Rio Alto Canal (1996)

Owner - City of Long Beach. Engineer - Miramontes Construction, Inc.

Armorflex mats used to cover 6" and 12" polyethylene sewer pipeline. Installation was done under water using divers to assist with the placement of the mats. Second phase of project done in May of 97'.

Orange County, CA - Mission Viejo (1996)

Owner - Santa Margarita Water District. Engineer - RBF & Associates. Armorflex Class 50s installed to protect water line at a creek crossing.

Oakley, CA - Ironhouse Sanitary District (1996)

Owner/Engineer - Ironhouse Sanitation District. Armorflex mats used to protect sewer line from scour and exposure.

Water Treatment Facilities

Corte Madera, CA - San Clemente Pump Station (1988)

Owner/Engineer - Marin County Flood Control, Town of Corte Madera. Protects flood control pump station and water treatment plant. Some slopes as steep as 1:1. System has performed well and is completely covered with vegetation.

Modesto, CA - Waste Water Treatment Plant (1989)

Owner - City of Modesto. Engineer - Kennedy/Jenks/Chilton Inc. Armorflex CL 50 used for truck ramps leading to bottom of treatment ponds. Large ponds drained in summer and solids hauled out with 18-wheel trucks.

Santa Clarita, CA - Santa Clara River (1997)

Owner - LA Co. Sanitation District. Engineer - Simons, Li & Associates. Armorflex Cl 50s used to protect offset space of two-tiered segmental retaining wall.

Bridge Abutment and Pier Scour Protection

Cotati, CA - Cotati Creek (1987)

Owner/Engineer - City of Cotati. Protect abutments of bridge crossing Cotati Creek (1.5:1 side slopes). Armorflex backfilled with gravel to inhibit vegetation to maintain design boundary flow conditions. No maintenance required.

Mission Viejo, CA - Santa Margarita Water District (1991)

Owner - Santa Margarita Water District. Engineer - RBF & Associates. Armorflex mats installed in several different locations along the main drainage channel, road crossings and culvert outfalls. Mats vegetated to provide native habitat.

San Marcus, CA - San Marcus Creek (1991/1992)

Owner - M.J. Brock & Sons (Brock Homes) & City of San Marcus. Engineer - Masson & Associates. Ten different locations along San Marcus Creek including grade control structures, wing wall extensions, and channel lining. Armorflex channel serves as mitigation site (riparian habitat) running through golf course. Planted with willows and other native vegetation. Armorflex is no longer visible. Project has won environmental awards.

Saratoga, CA - Calabazas Creek (1992)

Owner - California Department of Transportation. Engineer - Brian Kangas Foulk. Armorflex mats installed along the bottom and sides of Calabazas Creek to prevent erosion and bridge pier scour on new freeway bridge. Combination of closed and open-cell Armorflex block mats. No offsite mitigation required since mats allow native revegetation to occur in the creek.

Santa Clarita, CA - Santa Clara River (1992)

Owner - Los Angeles County Sanitation /district. Engineer - Simons, Li & Associates. Armorflex mats used to cap and prevent scour to two main sewer lines crossing the Santa Clara River. Installed in December 1992, just before major winter storms occurred. Armorflex and sewer lines were not damaged. The structure also acts as a grade control structure to prevent pier scour on a bridge just upstream of the sewer lines. Other nearby pipeline and bridge protection grade control structures built of heavy rock were severely damaged during the same storms.

Livermore, CA - Arroyo Seco Channel (1993)

Owner - City of Livermore. Engineer - Griener Engineering. Armorflex channel lining protects bridge abutments while allowing vegetation to grow through the mats.

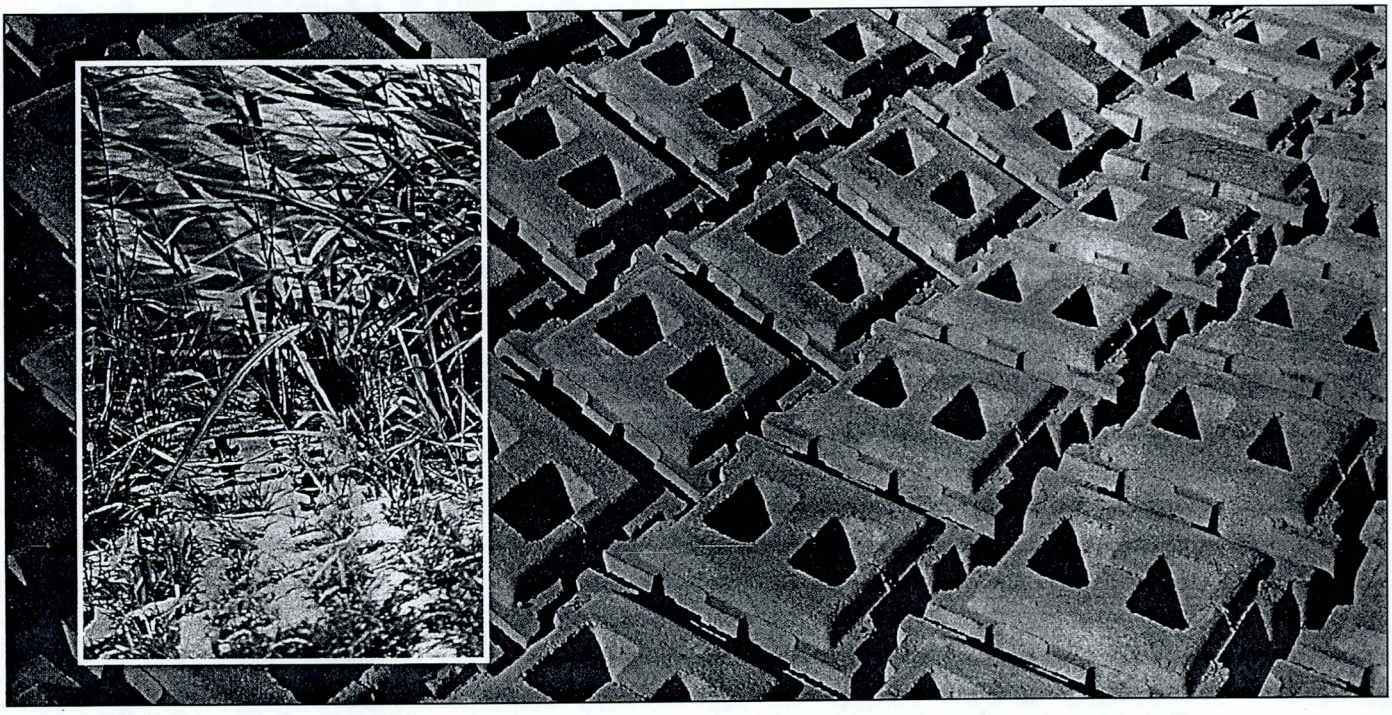
San Jose, CA - Guadalupe River Parkway (1993)

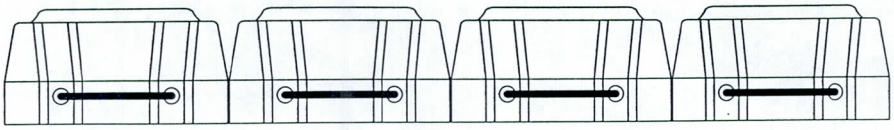
Owner - Santa Clara Valley District. Engineer - U.S. Army Corps of Engineers. Master planned, multi-year ACOE project to develop a park incorporating a riverwalk along the Guadalupe River. Armorflex channel lining used to prevent erosion and bridge pier scour under new I-880 bridge. Closed-cell Armorflex block in bottom of channel. Allows for wetlands-type vegetation, including willows, but restricts growth of larger trees.

Roseville, CA - Cirby Creek Flood Control Project (1996)

Owner - City of Roseville. Engineer - Dames & Moore. Armorflex CL 50s used to line channel & protect bridge piers from scour at Interstate 80 crossing of Cirby Creek. Armorflex connects to rectangular centerline channel and surrounds 16 bridge support piers.

ARMORFLEX®





ARMORTEC
Concrete Erosion Control Systems

ARMORFLEX®

Armorflex mats consist of machine compressed cellular concrete blocks of a unique interlocking shape which are made up into mats for easy handling on-site.

The blocks are cabled longitudinally by means of galvanized steel aircraft or polyester cables.

ARMORFLEX FEATURES

Factory Made and Assembled

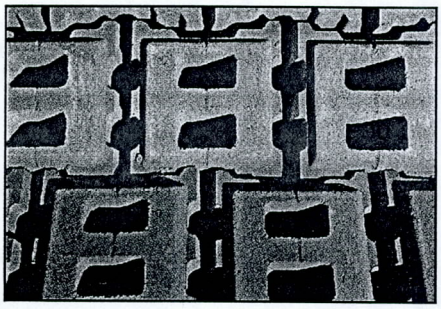
Sophisticated purpose-built machinery gives consistent quality and economic production.

Quality Concrete Specification

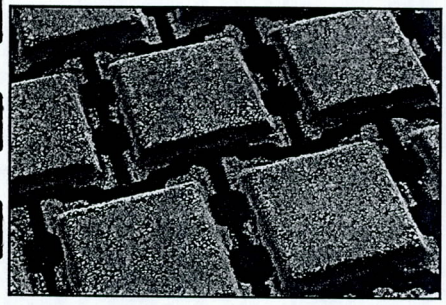
- 4000 psi concrete
- sulphate-resistant to ensure durability
- excellent freeze and thaw resistance

Up to 20 Percent Open Area

Permits free drainage of groundwater thus preventing a destabilizing build up of back-pressure behind the revetment.



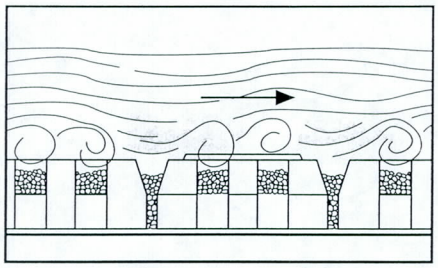
Open-cell Block



Closed-cell Block

Flow Efficiencies

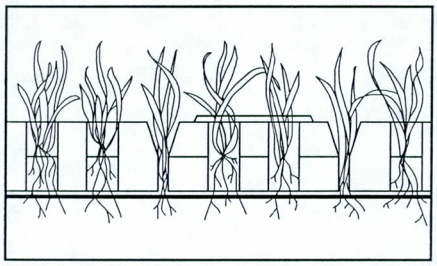
Designed with open or closed cell blocks, Armorflex provides the ideal combination of unit weight and surface roughness.



The Armorflex Manning Roughness Coefficient, n, has a value ranging from 0.026 to 0.034, depending on the block used.

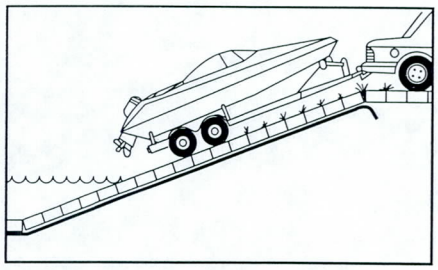
Vegetation

The open cells of Armorflex provide the perfect environment for vegetation. Grass and small shrubs



The open cell structure of Armorflex concrete revetment systems nurtures plant life, providing quicker growth and more stable revegetation.

can penetrate the filter, providing an attractive, permanent anchor for the system. When vegetation is not desired, install Armorflex with closed cells or fill open cells with stone.

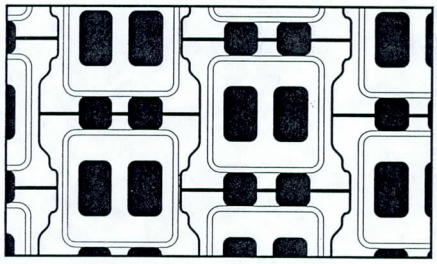


Access

Armorflex is free of dangerous projections, so pedestrians, animals, vehicles and boats all have convenient, safe access to the water.

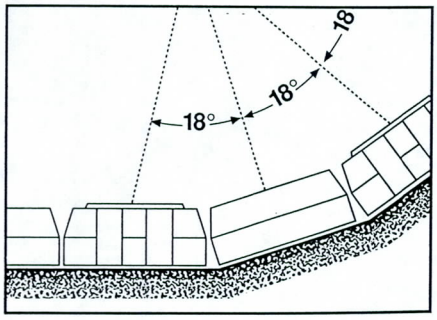
Stability

Serving as an articulated mattress, Armorflex provides continuous erosion protection against the destructive forces of water.
The proper Armorflex class is determined by the design hydraulic conditions to which it will be subjected.



Flexibility

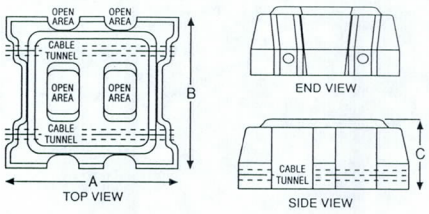
Armorflex blocks are interconnected by flexible cables, providing articulation between adjacent blocks. Block walls are designed with beveled relief to allow for flexibility in all directions.



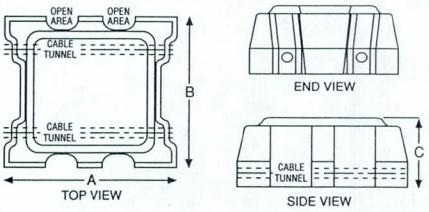
Permeability

When placed on filter fabric or a conventional graded filter, the permeability of the revetment system relieves hydrostatic pressure in the subgrade. The system's capability for soil retention

OPEN-CELL BLOCK



CLOSED-CELL BLOCK

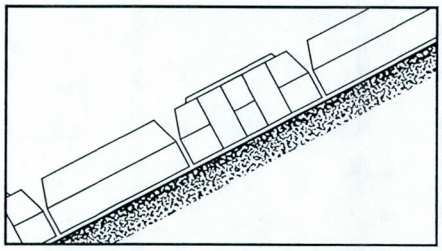


Armorflex Block Specifications (Typical Values)

Concrete Block Class		Specific Weight lbs./cu. ft.	Compressive Strength lbs./sq. in.	Maximum Absorption	Nominal Dimensions In. A	B	C	Gross Area/ Block sq. ft.	Block Weight** lbs.	lbs./sq. ft.	Open Area %
S-Class Open Cell	30S	130-150	4000	12 lbs./cu. ft.	13.0	11.6	4.75	0.98	31-36	32-37	20
	50S	130-150	4000	12 lbs./cu. ft.	13.0	11.6	6.0	0.98	45-52	45-53	20
S-Class Closed Cell	45S	130-150	4000	12 lbs./cu. ft.	13.0	11.6	4.75	0.98	39-45	40-45	10
	55S	130-150	4000	12 lbs./cu. ft.	13.0	11.6	6.0	0.98	53-61	54-62	10
Open Cell	40	130-150	4000	12 lbs./cu. ft.	17.4	15.5	4.75	1.77	62-71	35-40	20
	50	130-150	4000	12 lbs./cu. ft.	17.4	15.5	6.0	1.77	81-94	46-53	20
	60	130-150	4000	12 lbs./cu. ft.	17.4	15.5	7.5	1.77	99-113	56-64	20
	70	130-150	4000	12 lbs./cu. ft.	17.4	15.5	9.0*	1.77	120-138	68-78	20
Closed Cell	45	130-150	4000	12 lbs./cu. ft.	17.4	15.5	4.75	1.77	78-89	43-50	10
	55	130-150	4000	12 lbs./cu. ft.	17.4	15.5	6.0	1.77	94-108	53-61	10
	75	130-150	4000	12 lbs./cu. ft.	17.4	15.5	7.5	1.77	120-138	68-78	10
	85	130-150	4000	12 lbs./cu. ft.	17.4	15.5	9.0*	1.77	145-167	82-95	10

* *Block height may vary by approximately 0.5" based on local manufacturer's capabilities.*
** *Block weight may vary by 2% based on the specific gravity of locally available aggregate material.*

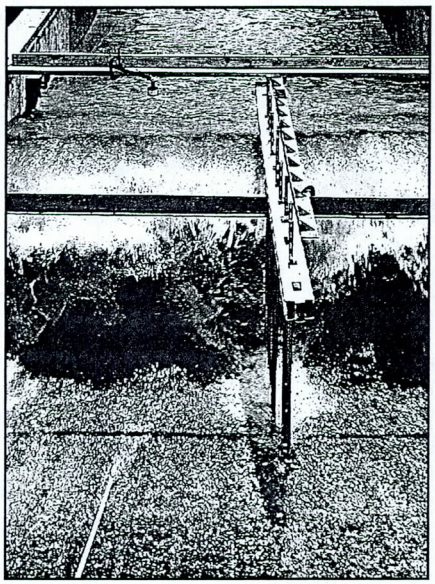
prevents leaching of subsoils through the installation.



RESEARCH AND DESIGN

Since 1980, Armortec has initiated and participated in a wide range of research projects to evaluate the performance of Armorflex, including the following:

1. Tetratech model tests – California, U.S.A.
2. Leylstad field trials, Netherlands – Rijkswaterstaat Directorate of the Zuiderzee Project, 1982.



3. Wave Attack Tests, Report No. M1910 – Delft Hydraulics Laboratory, 1982.
4. Hartel Canal Trials – Rotterdam Public Works Department and Delft Soil Mechanics Laboratory.
5. River Waal Breakwaters, Arnhem – Rijkswaterstaat, 1983.
6. "Design of Reinforced Grass Waterways," CIRIA Report 116, 1987
7. "Minimizing Embankment Damage During Overtopping Flows," FHWA Report-RD-88-181 prepared by Simons, Li and Associates, Inc., November 1988.
8. "Hydraulic Stability of Articulated Concrete Block Revetment Systems During Overtopping Flow," FHWA Report-RD-89-199 prepared by Simons, Li and Associates, Inc., July 1989.

Research Proven Performance

Armortec has carried out extensive research into wave and open channel flow conditions on Armorflex in the United States and the Netherlands. Design manuals and computer programs are available to assist in the proper Armorflex block selection for your hydraulic conditions. Design recommendations can thus be made on the basis of specific research data and sound engineering principles. Please call Armortec Corporation for design manuals and software.

ARMORFLEX INSTALLATION

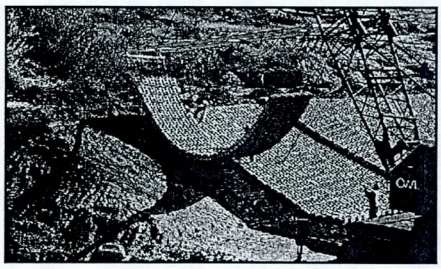
Armorflex arrives on-site as a system of factory-assembled mats. These articulating mats consist of interlocking blocks held together by cable. Armorflex is placed on a site specific geotextile which has been placed on a prepared subgrade using conventional construction equipment.

Delivery & Unloading

Mats are supplied on 40-foot trailers, up to 1600 square feet per truck. Delivery can be phased so that mats can be off-loaded directly from the road vehicles onto the prepared subgrade, if the site layout permits.

Laying Mats

Mats can be handled with a lifting beam, which picks up mats from both ends.

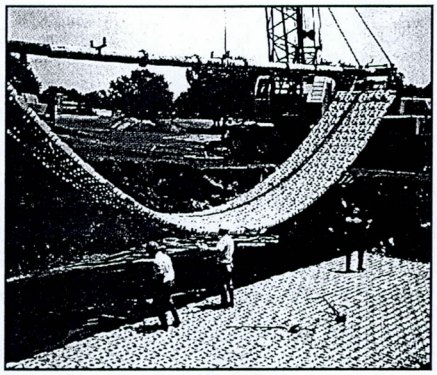


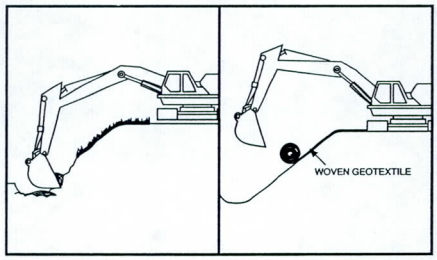
Anchorage

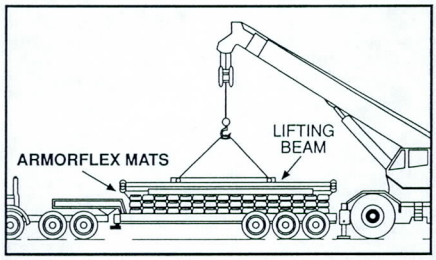
The mats may slide on the geotextile fabric until the system settles and seats. Temporary anchorage can be achieved by driving wood stakes on two-inch centers along the top of the mat. Permanent anchorage can be achieved by connecting the mat cables to patented anchors such as "Helix" or "Duckbill".

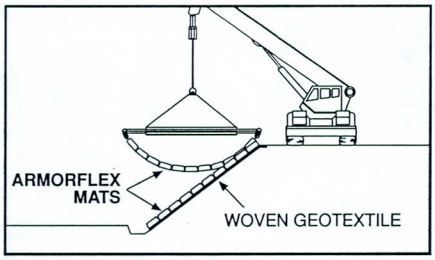
Finishing

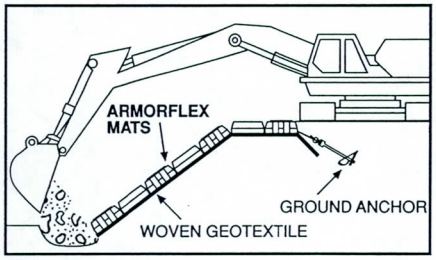
Mats subject to wave attack should be blinded with a sand/gravel mixture. Above normal waterline mats may be topsoiled and seeded to give a "green" effect.

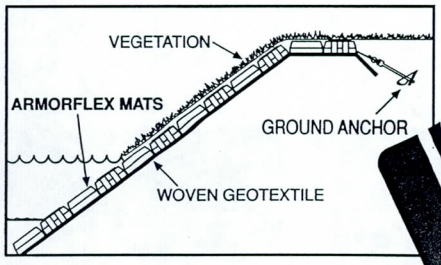






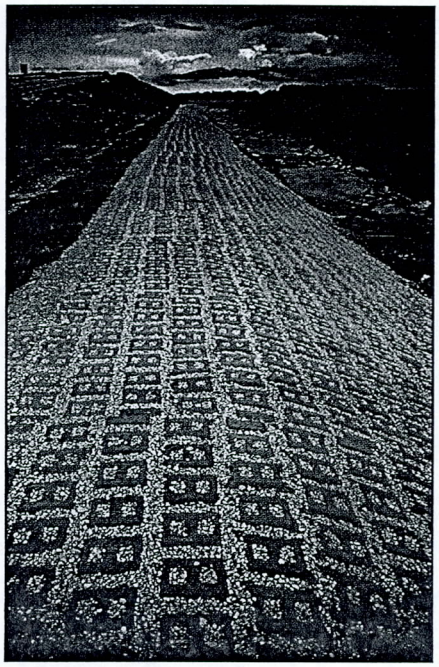






ARMORFLEX APPLICATIONS

Channel lining
River Bank Protection
Drainage Ditch Lining
Pipeline Protection
Boat Ramps
Reservoir Slope Protection
Lake Shoreline Protection
Bridge Abutment Protection
Dikes and Levee Protection
Dam Crests and Spillways
Weirs and Overflow Channels



Disclaimer

The information presented herein will not apply to every installation. Dimensions and quantities shown are approximate only and will vary as a result of site conditions and installation procedures. No warranty or guarantee expressed or implied is made regarding the performance of any product, since the manner of use and handling are beyond Armortec's control.

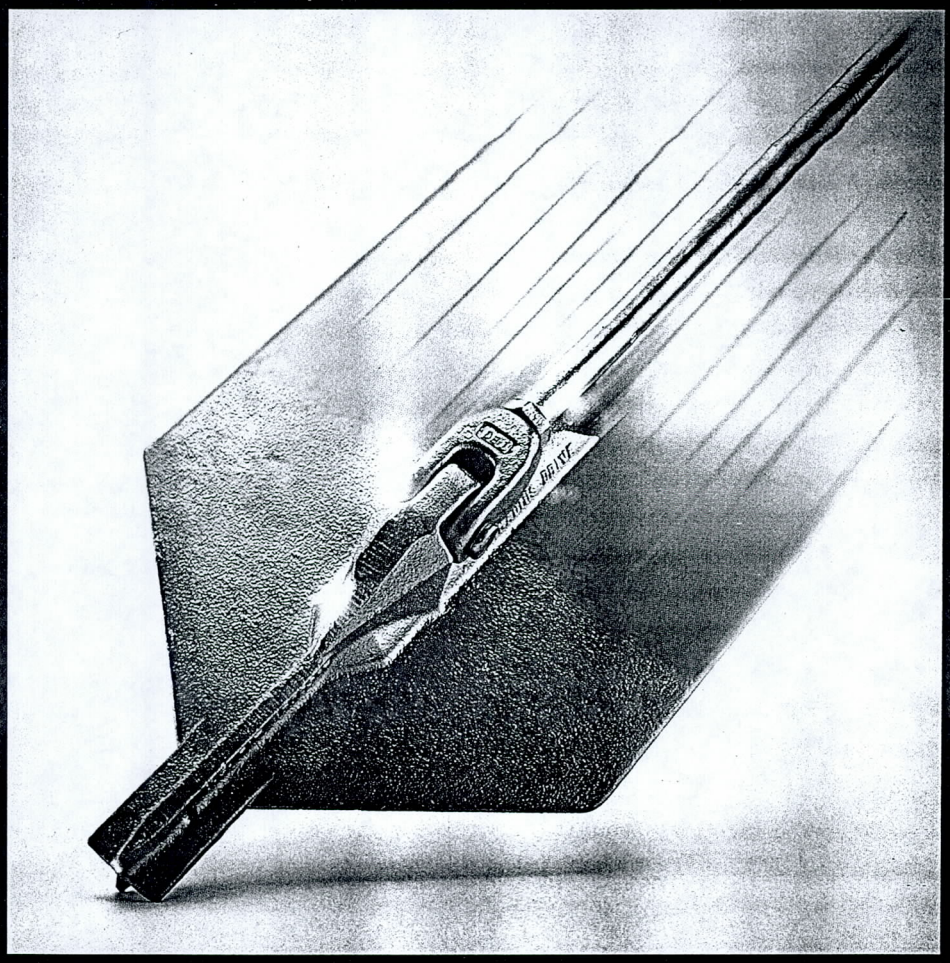
Armorflex® is an Armortec® product.

ARMORTEC
3260 P
N

EROSION TECHNOLOGY, INC.
P.O. Box 441
RANCHO SANTA FE, CA 92067
(619) 756-3050 FAX (619) 756-0284
023
CORPORATE MEMBER

MANTA RAY®

ENGINEERED EARTH ANCHOR SYSTEMS



- Easy Installation
- Time & Cost Savings
- Environmentally Sensitive & Friendly
- No Excavation

MANTA RAY®
EARTH ANCHOR SYSTEMS

The beautifully simple, effective and low cost MANTA RAY anchor system represents a major breakthrough in "anchoring technology" with a multitude of uses in the Civil Engineering and Construction Markets for:

- RETAINING WALLS
- SHEET PILES
- SEAWALLS
- PIPELINES
- EROSION CONTROL (revetment mats, embankment repair)
- UNDERWATER
- AND MUCH MORE

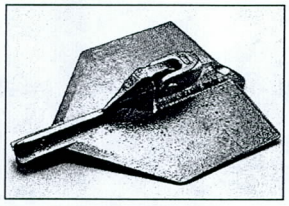
MANTA RAY offers never before cost reductions for repair of existing walls, sheet piles and seawalls. Many of our customers utilize MANTA RAYS to shore-up, stabilize and repair failing walls with superb economic advantages. The bottom line is MANTA RAY is the solution to all your anchoring problems.

THE CONCEPT

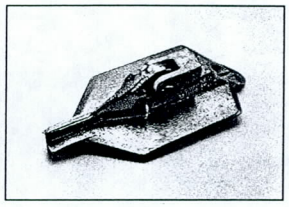
MANTA RAYS are driven into the ground, not augured or torqued, nor is a hole dug or drilled. There is "no disturbance" or "displacement" of soil. MANTA RAY actually compacts the soil around itself, unlike other anchoring systems.

The anchors are driven with conventional hydraulic/pneumatic equipment that is readily available worldwide. Once driven to the proper depth, the rod/tendon attached to the anchor is pulled to rotate the anchor into undisturbed soil - like a toggle bolt (See figures 1-3). This is called "Load Locking" the anchor (using the MANTA RAY Load Locker). The anchor is pulled upon to reach the holding capacity required which is measured by a gauge on the "Load Locker." Each anchor is immediately proof loaded to the exact capacity required. No other system offers this feature.

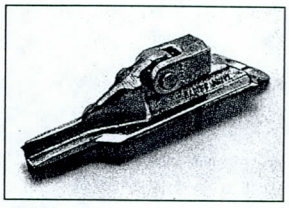
MANTA RAY REVOLUTIONIZES ANCHORING TECHNOLOGY



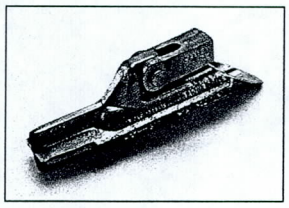
MR-SR



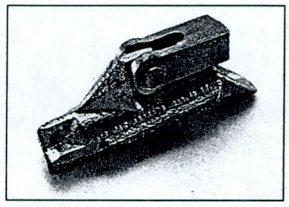
MR-1



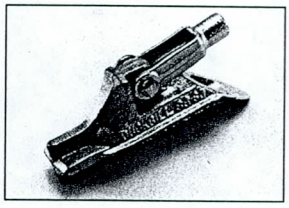
MR-2



MR-3



MR-4



88-SD1

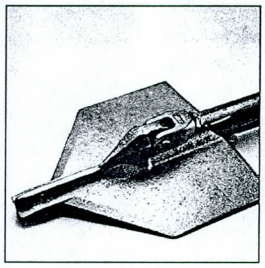


Figure 1
DRIVE POSITION

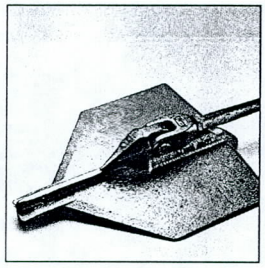


Figure 2
GAD REMOVED

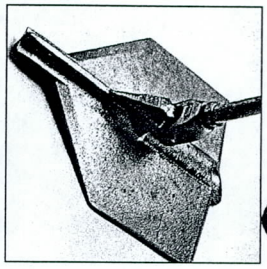
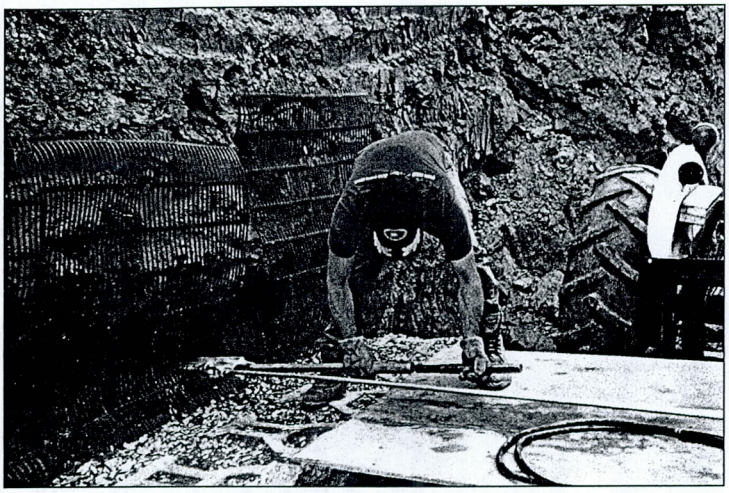


Figure 3
LOAD LOCK POSITION

THE ADVANTAGES

- Environmentally sensitive/friendly.
- Normally no excavation is necessary - no holes, no digging, no concrete.
- Anchors deliver immediate, proof loaded holding capacities.
- No large expensive equipment needed to install MANTA RAYS.
- Ease of "access"- the anchor and installation equipment are light, portable and compact to reach even the most difficult installation sites.
- "Time Is Money" - MANTA RAY can reduce anchoring costs up to 70% in many instances.
- New installations, as well as "restoration/repair" projects, benefit from MANTA RAY.
- Our experienced team of engineers is available to assist you for your individual applications and projects.

RETAINING WALLS

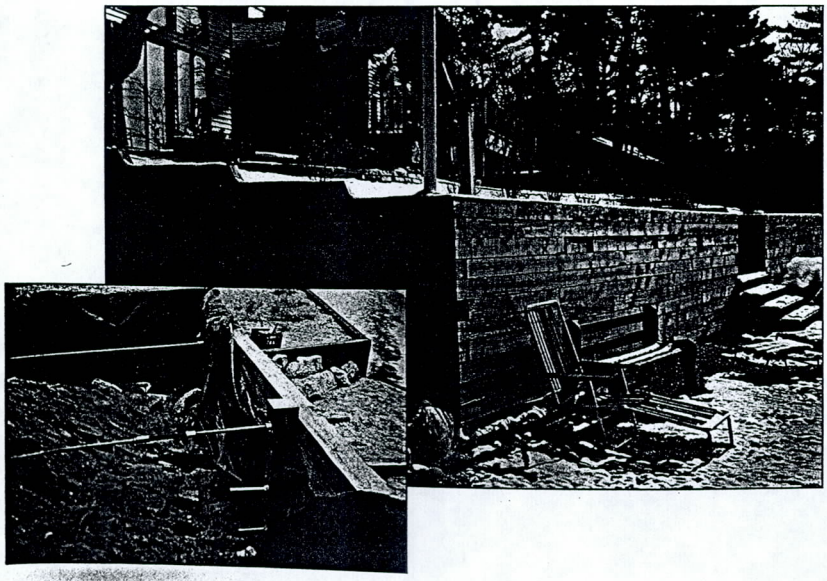


BLOCKWALLS

MANTA RAY tie backs allow minimum excavation for mechanically stabilized earth walls. This allows BLOCK/GEOGRID walls to be installed where excavation is not possible.

SHEET PILE CHECK DAM

In an effort to control costs and save time, the civil engineers for this project chose to use MANTA RAY earth anchors to provide overturning stability for the sheet piling rather than structural piles driven into the bedrock. Cost savings were substantial.



TIMBER WALLS

Rather than conventional timber deadmen, MANTA RAY anchors were used to provide proof loaded tie backs to insure permanent structural integrity with minimal excavation.

EROSION CONTROL

REVETMENT MATS

MANTA RAY anchors provide critical points of anchoring stability on stream and shorelines to prevent water erosion using cellular concrete revetment matting. The anchors install easily through openings in individual blocks. This system prevents lifting of mats and dangerous erosion under extreme flood conditions.

GABIONS

The flexibility of the MANTA RAY system allows gabions to be easily installed on steep slopes. The ease and speed of installation provide a cost-effective alternative. Again, cost savings prevail by using the MANTA RAY system.

SLOPE STABILIZATION

MANTA RAY anchors stabilize embankments that are in need of repair. Securing geogrids, geotextiles and fiber mats facilitate slope revegetation.

MANTA RAY FLEXIBILITY

UNDERWATER

From the Great Barrier Reef to the Red Sea, MANTA RAYS anchor moorings that help protect coral reefs and other natural resources. Now there is an environmentally friendly anchor system that installs easily under water with conventional equipment for buoys, floating docks, man made reefs and more.

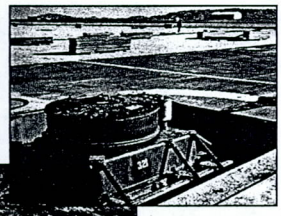
PIPELINES

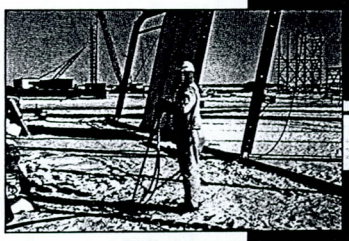
The compact and portable installation equipment allows MANTA RAY to be installed in locations normally inaccessible to traditional earth anchor methods.

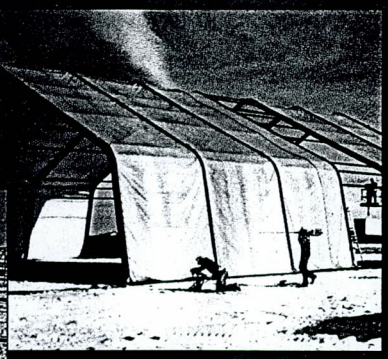
SPECIALIZED APPLICATIONS

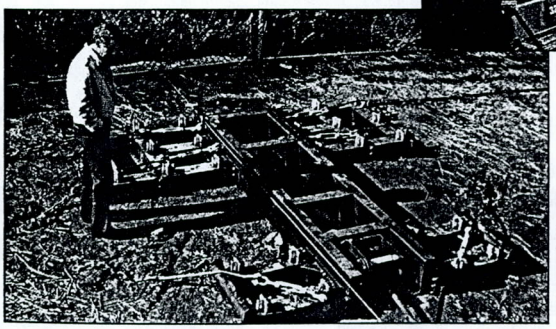
As a specified supplier to the United States Military, MANTA RAYS are the choice for critical and rapid deployment applications, such as:

- Tactical communication systems
- Land based aircraft arresting gear
- Expeditionary airfields
- Rapid deployment structures

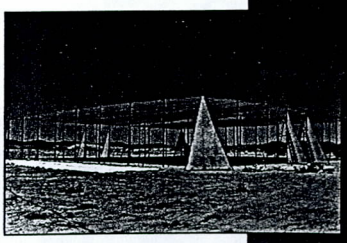


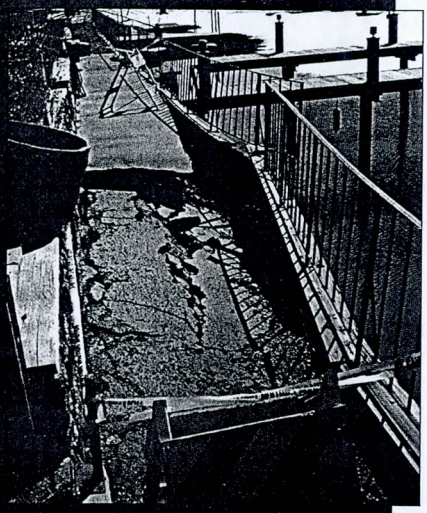






High preformance aircraft arresting gear.





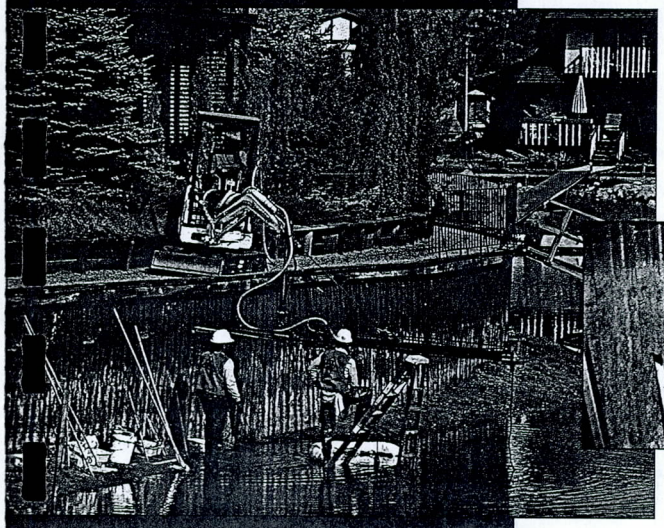
LAKE TAHOE, CALIFORNIA— A CASE STUDY

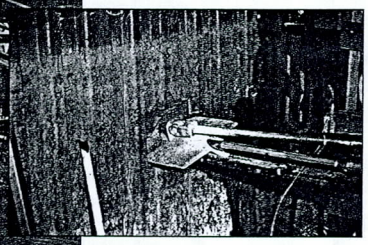
THE PROBLEM

Homeowners of the exclusive St. Moritz Isle in the environmentally sensitive Tahoe Keys Resort were faced with an immediate concern: Over 100 homes and properties were being threatened by progressive structural failure of a sheet pile bulkhead that separated their residential properties from Lake Tahoe.

THE SOLUTION

In a 28 working day time period, the failing bulkhead underwent complete renovation that included strict installation and proof loading of over 1,000 MANTA RAY earth anchors. Other options proved to be prohibitively expensive or environmentally undesirable. MANTA RAY anchors were installed from the front side of the bulkhead, through a "window" cut in the sheet pile, causing no damage or soil disturbance. The anchors were immediately proof loaded to ensure required holding capacity was achieved. Time was of the essence to avoid the impending Winter snows, which precipitated the previous failures.



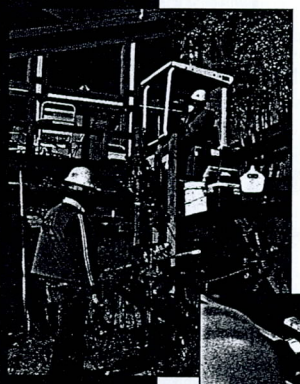


LOAD LOCKER

A load locking crew (Load locking is the act of toggling the anchor from its drive position to its deployed position) proof loaded each anchor to the required 18,000 pounds holding capacity. Soil was then replaced in the "window" and the piece of sheet pile that was cut out to install the anchors was replaced. Installation of structural steel waler, spreader plates, nuts, washers and torquing of the tie-back completed the installation.

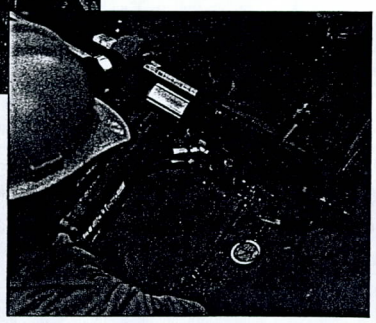
THE INSTALLATION

The contractor used the "MANTA RAY Anchor Driver" mounted to a mini-excavator, which was positioned on the narrow walkway above the bulkhead. The excavator "reached" over the edge of the bulkhead and aligned the MANTA RAY Anchor Driver with a "window" previously cut in the sheet pile. Alignment was critical in order to drive the anchors past numerous under ground obstructions, including existing concrete deadmen, fence posts, storm drain culverts and dock support posts - with no disturbance to the homeowners property.

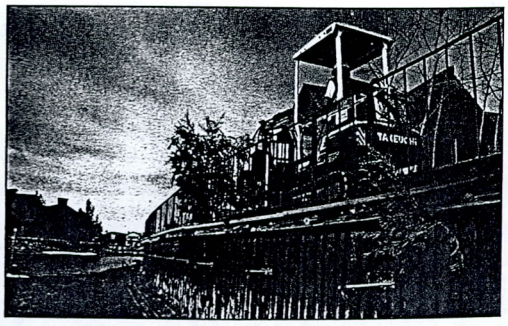


THE RESULTS

An environmentally clean, fast, secure and time/money saving project. A showcase for Manta Ray.



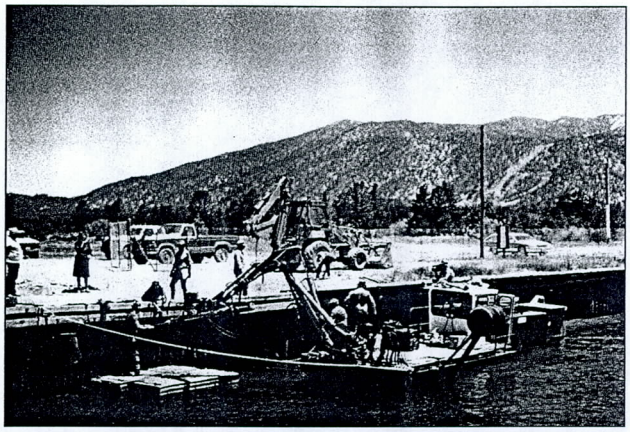
Technician load locks anchor.



Proof loaded anchors await waler attachment.

MANTA RAY INSTALLATION METHODS

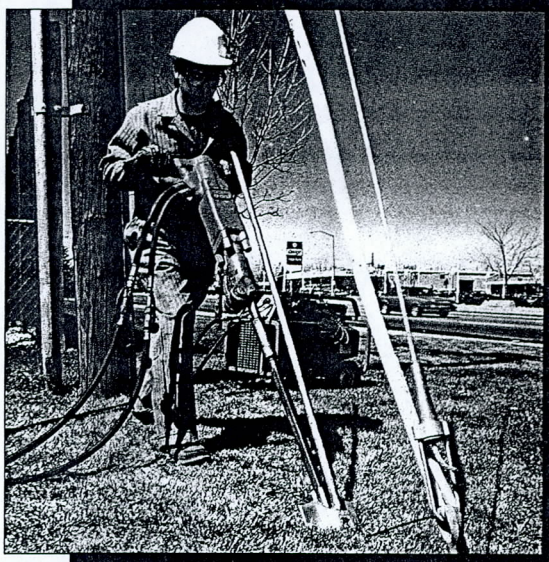
The MANTA RAY Anchor Driver can be installed on a wide range of commonly available construction vehicles; from small skid steers to large excavators. When access is limited, anchors can be installed using small vehicles or even hand held equipment. The flexibility of the MANTA RAY system makes it superior to other systems.



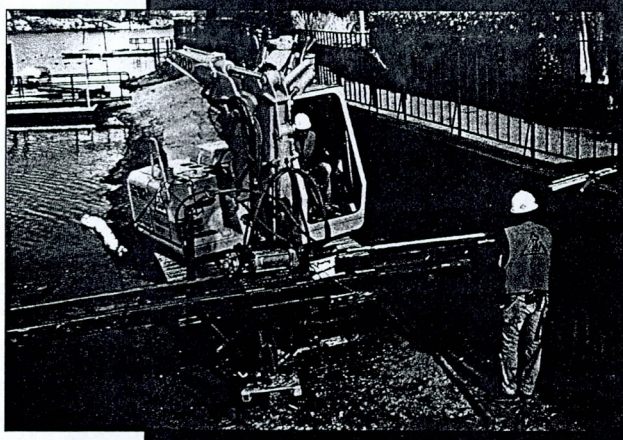
BARGE

BACK HOE

SKID STEER



HAND HELD

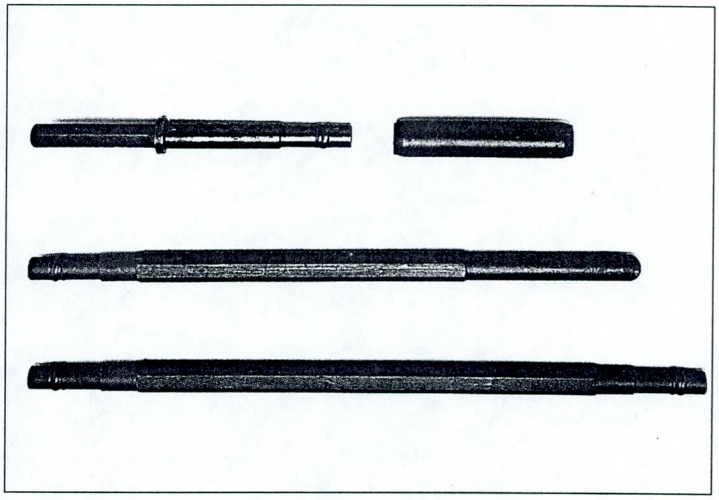


EXCAVATOR

INSTALLATION TOOLS

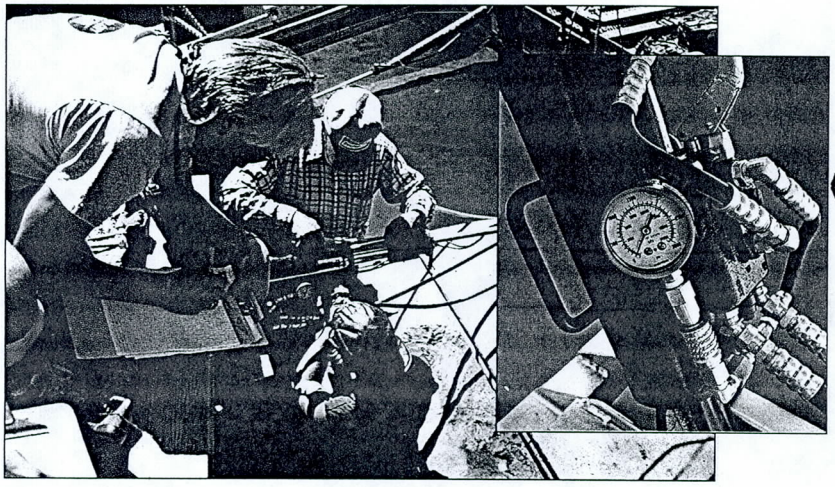
DRIVE GAD SYSTEM

Patented Stinger drive gads are used to install MANTA RAY anchors to their required depths. Made of high grade, heat treated steel, Foresight Products can supply custom lengths to suit your particular specifications.



LOAD LOCKER

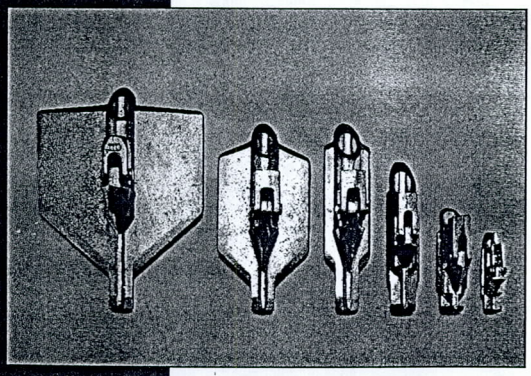
The MANTA RAY hydraulic load locker rotates the anchor to its load locked position and proof loads each and every anchor by displaying the actual holding capacity directly on the gauge.



On this unique gauge, the installer can see exactly how many pounds of holding capacity MANTA RAY has locked in. NO MORE GUESSWORK!

ANCHORS

Foresight Products can custom engineer complete anchoring systems to meet your specific requirements.



NOTE: All underground work requires proper safety and location procedures. Do not install an anchor until you know what is below the surface. It is imperative in all cases that all anchors are fully load locked before being put into service.

Available From:

FORESIGHT® PRODUCTS INC.

0 East 49th Drive • Commerce City, Colorado 80022
(800) 325-5360 or (303) 286-8955 • FAX (303) 287-3866

U. S. Pat. Nos. 4,044,513 4,096,673 4,802,317 and 5,031,370 and other international patents. Additional patents pending.

® Foresight Products, Inc. 1994

Form CB 1/94

ANALYTICAL EQUATIONS DEFINING THE FACTOR OF SAFETY FOR HYDRAULIC STABILITY

EQN 1: $\eta = \frac{\tau_0}{\tau_c}$

EQN 2: $M/N = \frac{l_4}{l_3} \frac{F_L}{F_D}$

EQN 3: $\beta = \tan^{-1}\left\{ \frac{\cos\lambda}{\left(\frac{M/N+1}{\eta} \frac{l_1}{l_2}\right)\sin\theta + \sin\lambda} \right\}$

EQN 4: $SF = \frac{(l_2/l_1)\cos\theta}{\frac{M/N + \sin(\lambda+\beta)}{(M/N+1)}\eta\frac{l_2}{l_1} + (\sin\theta\cos\beta)}$

WHERE:

τ_0 = BED SHEAR STRESS

τ_c = CRITICAL SHEAR STRESS FOR REVETMENT BLOCK, DETERMINED FROM TEST DATA

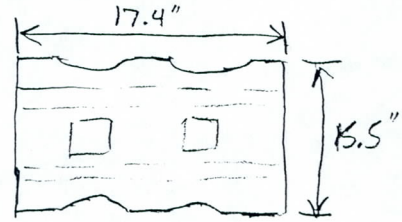
λ = LONGITUDINAL BED SLOPE

θ = BANK SIDE SLOPE

F_L, F_D = LIFT & DRAG FORCES

l_1, l_2, l_3, l_4 = MOMENT ARMS

ARMORFLEX BLOCK (OPEN CELL - 70)



MANNINGS "n" = 0.03

CRITICAL SHEAR STRESS $\tau_c = 34$ lbs/ft²

BLOCK WEIGHT = 135 lbs

MOMENT ARMS
$l_1 = 0.375'$
$l_2 = 0.725'$
$l_3 = 0.36'$
$l_4 = 0.725'$

(ASSUME $l_4/l_3 = 2$)

$y_o = 4.6'$

$V = 30$ fps

$S_{EN} = 0.05$

$[\tau_o = \gamma y_o S]$ = 62.4 (4.6)(0.05) = 14.35 lbs/ft²

$[n = \tau_o / \tau_c]$ = $\frac{14.35 \text{ lb/ft}^2}{34 \text{ lb/ft}^2}$ = 0.422

$[M/N = l_4 F_L / l_3 F_D]$ (ASSUME $F_L = F_D$) = 2

$[\lambda = \tan^{-1}(S_{BOT.})]$ = $\tan^{-1}(0.05)$ = 2.86°

$[\theta = \tan^{-1}(S_{SIDE})]$ = $\tan^{-1}(0)$ = 0° (ONLY ON BOTT.)

$$\beta = \tan^{-1}\left\{\frac{\cos(2.86)}{\frac{2+1}{0.422}\left(\frac{.375}{0.725}\right)\sin(0) + \sin 2.86}\right\}$$

$\beta = 87°$

$$SF = \left\{\frac{(0.725/0.375)(\cos 0)}{\frac{2+\sin(0+87)}{3}(0.422)\left(\frac{0.725}{0.375}\right) + \sin 0 \cos 87°}\right\}$$

$SF = 2.37$

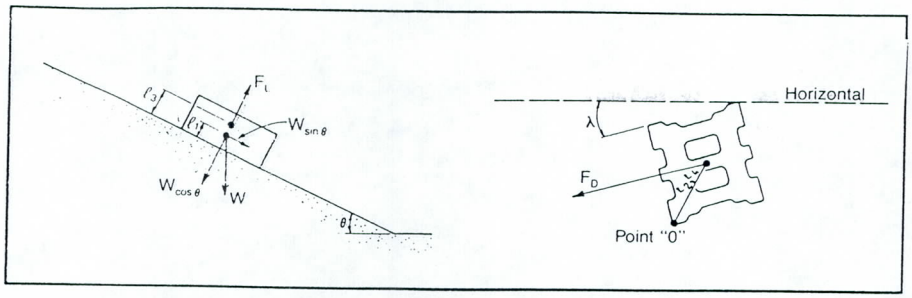


Figure 3: This definition sketch illustrates important components used in SLA's factor of safety analysis procedure. The figure on the left is the cross section view and the one on the right is the view normal to side slope. This analysis procedure accounts for blocks placed on the side slopes as well as on the bed of a spillway.

drag and form drag. Form drag, in particular, can lead to the creation of forces large enough to initiate block movement (rotation) where the block in question presents a frontal profile subject to direct impingement by the flow.[1] This is possible in the instance where, due to irregular subgrade preparation or poor installation, an individual block protrudes vertically above its immediately adjacent neighbors.

Cabled block systems are able to minimize the amount of projecting frontal area as shown on the left side of Figure 2. Wedge-shaped block systems negate the problem of direct frontal impingement entirely, as shown on the right side of Figure 2. As shown in the figure, the wedge block system provides a thin upstream cross-section and a thicker downstream one. All upstream edges are therefore effectively "shielded" from direct impingement. In addition, as Figure 2 shows, flow over the downstream edge of the wedge-shaped block causes a low pressure separation zone over the upstream portion of the next block. This region is connected by drainage slots to the underside of the block. The differential pressure created between the top and bottom of the block provides evacuation of excess seepage from the underlying drainage layer. This process minimizes saturation of the embankment material, thus reducing uplift pressure, potential "loss of intimate contact" with the embankment, and subsequent failure due to erosion.

Both lift and drag on a block produce overturning moments proportional to their magnitude and to the length of the moment arms through which they act. The resistance to overturning is provided by the submerged weight of the block acting through the center of gravity, and its moment arm.

The condition of incipient overturning is thus dependent on the hydraulic conditions of flow and the size, weight, and geometric characteristics of the block within its matrix. This condition yields to analysis and quantification by way of the "factor of safety" method, originally developed by D.B. Simons and F.Y. Senturk in their derivation of a methodology for evaluating the stability of rock riprap in open channel flow.[2] In this method, the critical shear stress at which particle motion is initiated was assumed to correspond to a Shields number of 0.047, as developed by E. Meyer-Peter and R. Muller.[3] In the case of articulated block revetment systems, the critical shear stress is determined through controlled hydraulic testing and measurement, allowing the development which parallels that of Simons and Senturk. The four analytical equations in the accompanying box can be used to define the factor of safety.

The definitions of the various forces, angles, and moments used in these equations are depicted in Figure 3. Critical shear stresses determined from SLA's research are given in Table 2.

The factor-of-safety procedure can be extended to blocks of different dimensions and weights, providing they are geometrically similar to the

Table 2: Critical Shear Stress for Various Block Revetment Systems*

Block Type	*Critical Shear Stress Pounds per Square Foot*
Dycel 100	< 7
Petraflex	32**
Armorflex Class 30 (now known as 30-S)	15
Armorflex Class 30L (now known as 40)	34**
Concrete construction blocks	20**
Wedge-shaped blocks	25**

* All blocks were tested under bare (unvegetated) conditions.
** Shear stress at maximum flume capacity; no failure noted. Use of these values will result in conservative design.

Analytical Equations Defining the Factor of Safety for Hydraulic Stability

Equation 1: $$\eta = \frac{\tau_0}{\tau_c}$$

Equation 2: $$M/N = \frac{\ell_4}{\ell_3}\,\frac{F_L}{F_D}$$

Equation 3: $$\beta = \tan^{-1}\left[\frac{\cos\lambda}{\left(\frac{M/N+1}{\eta}\,\frac{\ell_1}{\ell_2}\right)\sin\theta + \sin\lambda}\right]$$

Equation 4: $$SF = \frac{(\ell_2/\ell_1)\cos\theta}{\frac{M/N + \sin(\lambda+\beta)}{(M/N+1)}\,\eta\,\frac{\ell_2}{\ell_1} + (\sin\theta\,\cos\beta)}$$

where:
τ_0 = bed shear stress
τ_c = critical shear stress for revetment block, determined from test data
λ = longitudinal bed slope
θ = bank side slope
F_L, F_D = lift and drag forces
ℓ_1, ℓ_2, ℓ_3, ℓ_4 = moment arms

Using the Factor of Safety Analysis In a Design Example

An existing earthen emergency spillway requires an overlay to resist erosion during overtopping. The spillway, which is 200 feet in width, will pass a design discharge of 3,000 cubic feet per second (cfs). The slope of the spillway is 6:1 in the direction of flow (16.7 percent). A trapezoidal channel section with side slopes of 4:1 is proposed. Determine the factor of safety for revetment blocks having the following properties:

Manning's n	= 0.032
Critical shear stress τ_c	= 20 lbs/ft^2
Block weight	= 49 lbs
Moment arms: ℓ_1	= 0.25 ft
ℓ_2	= 0.73 ft
ℓ_3	= 0.40 ft
ℓ_4	= 0.73 ft

Step 1: Compute Hydraulic Conditions

Using unit discharge approach, $q = \dfrac{3{,}000 \text{ cfs}}{200 \text{ ft}}$ 15 cfs/ft

$$y_o = \left(\frac{qn}{1.49\, S^{1/2}}\right)^{0.6} = 0.87 \text{ ft}$$

$$V = \frac{q}{y_o} = 17.3 \text{ ft/s}$$

$$\tau_o = \gamma\, y_o S = 9.05 \text{ lbs/ft}^2$$

Step 2: Compute Factor of Safety

$$\eta = \frac{\tau_o}{\tau_c} = 0.45$$

$$\frac{M}{N} = \ell_4 F_L / \ell_3 F_D = 1.83 \text{ (assuming } F_L = F_D)$$

$$\lambda = \tan^{-1}(0.1667) = 9.46°$$

$$\theta = \tan^{-1}(0.250) = 14.0°$$

$$\beta = \tan^{-1}\left[\frac{\cos\lambda}{\left(\dfrac{\frac{M}{N}+1}{\eta}\,\dfrac{\ell_1}{\ell_2}\right)\sin\theta + \sin\lambda}\right] = 55.2°$$

$$SF = \frac{\ell_2/\ell_1 \cos\theta}{\dfrac{\frac{M}{N} + \sin(\lambda+\beta)}{\left(\frac{M}{N}+1\right)}\,\eta\,\dfrac{\ell_2}{\ell_1} + \sin\theta\cos\beta} = 2.01$$

From these steps, we can conclude that a revetment system comprised of blocks with the above properties exhibits a suitably conservative factor of safety for hydraulic stability considerations. The small blocks (less than 50 pounds each) are more than adequate to handle flows greater than 17 feet per second.

In practice, it is considered prudent to include additional destabilizing forces associated with a vertically protruding block in the stability analysis. The projecting height of the block is identified in construction plans and specifications, and is a function of the block type, cable diameter, and quality of subgrade preparation. The incorporation of the additional forces in the stability analysis procedure, although tractable, is beyond the scope of this discussion.

system for which the critical shear was previously determined through laboratory testing. As mentioned earlier, the blocks must be of the same "family" in terms of method of interlock, profile configuration, and characteristics of boundary roughness and interaction with the flow field. Given this basic similarity, the weight and dimensions of the block can be used with those of the tested block to determine the critical shear stress through a force balance approach:

$$\ell_2 W = F_L \ell_4 + F_D \ell_3$$

In the Simons and Senturk method for determining riprap stability, the ratio ℓ_4/ℓ_3 was assumed to be equal to 2.0, given the geometric properties of typical rock used for riprap and the corresponding size-distribution curve. Further, they assume that the lift force, F_L, on an individual particle is equal to half the drag force, F_D. In the case of articulated revetment, every block in the matrix is geometrically identical. Therefore, the moment arms are precisely defined. Conservatively assuming that F_L equals F_D equals F, and designating subscripts "t" for the tested block and "u" for the untested block, then

$$\tau_{cu} = \tau_{ct}\,\frac{W_u}{W_t}\,\frac{\ell_{2u}}{\ell_{2t}}\,\frac{(\ell_{4t} + \ell_{3t})}{(\ell_{4u} + \ell_{3u})}$$

where W_u and W_t are the submerged weights of the untested block and the tested block respectively.

The complete set of terms for the factor-of-safety method have thus been defined for the untested block, and stability analyses may proceed. The design example in the accompanying box shows the steps involved in applying the method.

Research Shows Promise For Articulated Block Systems

Years of prototype experience and large-scale testing indicate only three erosion protection systems have sufficient stability to perform reliably under steeply-sloped, high-velocity flow conditions. These systems include traditional structural reinforced concrete, roller-compacted concrete (or its lower strength alternative, soil cement), and selected articulated concrete block revetment systems. The results from SLA's research indicate the articulated concrete block systems may represent the least-cost alternative in many typical project

Appendix C

Mannings "n" Criteria

for Flow Resistance

Table 6.11
Manning's Roughness Coefficients (1)

Channel Material	Roughness Coefficient (n)		
	Minimum	Normal	Maximum
Corrugated metal	0.021	0.025	0.030
Concrete:			
Trowel finish	0.011	0.013	0.015
Float finish	0.013	0.015	0.016
Unfinished	0.014	0.017	0.020
Shotcrete, good section	0.016	0.019	0.023
Shotcrete, wavy section	0.018	0.022	0.025
Asphalt (2)	0.013	0.016	0.020
Soil cement	0.018	0.020	0.025
Constructed channels with earth or sand bottom			
Clean earth; straight	0.018	0.022	0.025
Earth with grass and weeds	0.020	0.025	0.030
Earth with trees and shrubs	0.024	0.032	0.040
Shotcrete	0.018	0.022	0.025
Soil cement	0.022	0.025	0.028
Concrete	0.017	0.020	0.024
Riprap	0.023	0.032	0.036
Natural channels with sand bottom and sides of:			
Trees and shrubs	0.025	0.035	0.045
Rock	0.024	0.032	0.040
Natural channel with rock bottom	0.040	0.060	0.090
Overbank floodplains:			
Desert brush, normal density	0.040	0.060	0.080
Dense vegetation	0.070	0.100	0.160

Roughened edge and surface will be applied

(1) From: Simons, Li and Associates, 1988. Adapted from Chow (1959) and Aldridge and Garret (1973).

(2) Use maximum value when cars are present.

Block Class	Range of n-values	Typical value
30S (open)	0.029 - 0.035	0.032
50S (open)	0.029 - 0.035	0.032
45S (closed)	0.024 - 0.029	0.026
55S (closed)	0.024 - 0.029	0.026
40 (open)	0.029 - 0.035	0.032
50 (open)	0.029 - 0.035	0.032
60 (open)	0.030 - 0.037	0.033
70 (open)	0.031 - 0.037	0.034
45 (closed)	0.024 - 0.029	0.026
55 (closed)	0.024 - 0.029	0.026
75 (closed)	0.025 - 0.030	0.028
85 (closed)	0.025 - 0.030	0.028

Table 2.1 Roughness Coefficients of ARMORFLEX Revetment Systems

When lined with a good, uniform stand of vegetation, a channel cannot be adequately described by a constant n value, since the resistance to flow is complicated by the fact that vegetation will bend in the flow, changing its height, and hence the amount of interference with the flow. The Soil Conservation Service has developed a method of predicting the amount of resistance which various types of vegetative linings exhibit under different flow conditions. **Table 2.2** describes the five categories of vegetation, referred to as conditions A (high resistance) through E (low resistance). The Manning's n value is found to be a function of the product of the flow velocity V and the hydraulic radius R, as shown in **Figure 2.2**. Solution of the uniform flow equation for a given discharge, channel geometry, slope, and vegetative condition is iterative, and depends on several trial-and-error estimates of n using Figure 2.2 to adjust the n value between successive iterations.

2.3 Stable Channel Design Concepts

2.3.1 Equilibrium Concepts

Stable channel design concepts focus on evaluating and defining a channel configuration which will perform within acceptable limits of stability. In the case of static

Appendix D

Downstream Backwater Control for 100-Year Flood

Transportation Department

7447 E. Indian School Road, Suite 205
Scottsdale, Arizona 85251
Phone: (602)994-7696 • FAX: (602)994-7971

FAX COVER SHEET

FAX #: 714-513-1278	**From:** Collis Lovely, Drainage Planner
Name: Patti Sexton	**Date:** July 1, 1997
Company: SLA	**Project:** Reata Pass Wash

Total Number of Pages: 5

☐ Originals Being Sent via: _____

REMARKS:

☐ Urgent	☒ For your information	☐ Please comment	☐ Reply ASAP

Patti, This is the Bureau of Reclamation Guidence for work within the Basins upstream of the CAP(Reach 11). Our project is outletting into Basin 4 of Reach 11. The City's topo was determined by WLB, one of our consultants on the Thompson Peak Parkway Project, to be 2.1 feet higher than the BOR's therefore the Q100 WSEL is 1528.1 per the City's datum we are using on the Reata Pass Project. Please call if you have any questions or need further assistance. Collis

If you are experiencing any difficulties in receiving this facsimile, please call (602) 994-7696.

DRAFT

OCTOBER 1995

HAYDEN/RHODES AQUEDUCT
REACH 11
GUIDELINES FOR ROAD CROSSINGS AND DEVELOPMENT WITHIN DRAINAGE BASINS

1. HYDROLOGIC DIKE SAFETY

Decreasing the overall flood storage capacity of the dike basins is prohibited. If material is imported into a flood detention basin, an equal volume of material must be removed from that basin to compensate for the reduced capacity. If the original dike configuration is changed by constructing dike "tails" at road crossings, the excluded storage volume must also be compensated for by removal of material from the dike basin.

Movement of materials within a flood detention basin will be allowed subject to approval by Reclamation and the Central Arizona Water Conservation District (CAWCD) based on restrictions given in items 3a and 3b below. However, approval will also be subject to other considerations such as land use plans and environmental considerations.

2. DEFINITIONS

Dike Basin - The flood detention reservoir behind a dike at or below the dike crest elevation.

Drainage Basin - The land area that contributes runoff to a dike basin.

3. DIKE AND BASIN DEVELOPMENT RESTRICTIONS

a. Maintaining Retention Capacity Below Existing 100-Year Storm, 50-Year Sediment Elevation

Movement of material from above the 100-year storm, 50-year sediment elevation to below that elevation will be allowed only if an equal volume is removed from below the 100-year storm, 50-year sediment elevation.

FLOOD AND SEDIMENT VOLUMES, AND COMBINED FLOOD AND SEDIMENT ELEVATION

	100-YEAR FLOOD (ACRE-FT)	50-YEAR SEDIMENT (ACRE-FT)	ELEVATION OF 100-YEAR FLOOD PLUS 50-YEAR SEDIMENT
BASIN 1	2080	840	1534.8
BASIN 2	3340	1190	1539.5
BASIN 3	1930	630	1531.5
BASIN 4	2320	1080	1526.0

b. Borrowing Material Within Flood Detention Basins

Borrowing materials for construction purposes from within the detention basins may be permitted provided that:

(1) All excavation activities, including borrow areas, must be a minimum of 200 feet from the upstream toe of the dike. This is necessary to prevent ponding of water that would direct seepage into the foundation soils of the embankment. The foundation soils are collapsible in many cases.

(2) Excavations located between 200 and 500 feet upstream of the upstream dike toe are limited to a maximum depth of 5 feet.

(3) Excavations located between 500 feet upstream of the upstream dike toe and the right-of-way are limited to a maximum depth of 10 feet.

(4) Borrow areas must be constructed to allow all collected water to drain and flow to the outlet structures.

(5) Borrow areas or excavations that penetrate sand and/or gravel lenses must be covered with an impervious blanket of material a minimum of 2 feet thick as measured normal to the ground surface.

(6) Cut slopes for borrow areas shall not be steeper than 3 feet horizontal to 1 foot vertical.

(7) Any materials moved during clearing and grubbing within the basins must be separated and all unsalvageable vegetation removed to prevent floatation of debris that could obstruct existing drainage or outlet structures.

(8) Excavated areas must be rehabilitated to prevent erosion and blend with the surrounding environment.

(9) Excavated areas must not conflict with recreational developments within the basins as identified by Reclamation and the cities of Phoenix and Scottsdale.

c. Importing Material into Flood Detention Basins

All materials imported into the basins shall be free of deleterious waste or toxic materials, and free of vegetation that could obstruct existing drainage or outlet structures.

d. Dividing Basins or Changing Flow Patterns Within a Basin

Reclamation and the CAWCD must review proposals for future crossings and land use development within detention basins. Projects which negatively impact the function and integrity of the dike and detention basins are not acceptable.

Plans for all proposed crossings must include hydrologic and hydraulic analyses to demonstrate the effects of the crossing upon the function and integrity of the dike and basin. The analyses must demonstrate that the storage volume of the basins has been maintained and that crossflow structures within a basin have been adequately sized to allow equalization of water surface elevations during a flood event. The design storm for purposes of sizing cross-conveyance structures shall be an event with a percentage of probable maximum flood hydrograph flows that results in volume equal to storage behind the dike at a water surface elevation 1 foot above the dike design crest elevation. Water surface elevations within the basin on either side of the crossing must be balanced within 0.1 foot when the water surface behind the dike is 1 foot below the dike design crest elevation. When a basin is divided, a cross-conveyance structure must be provided to evacuate the part of the basin that is divided from the basin evacuation structure. The invert of this cross-conveyance structure should be set at or below the dike evacuation structure invert. Recommended minimum capacity of the structure is 750 cubic feet per second with 1 foot head differential and submerged inlet and outlet. This structure does not have to provide the entire cross-conveyance capacity for balancing the inflow flood.

Additionally, historical inflows routed to each individual basin within the Reach 11 dike system should be maintained (i.e., no rerouting of flows from one basin to another). Flow velocities entering the dike basin should be kept at or below those of the historical 100-year storm (about 3 feet per second). Any changes in flow patterns upstream must not result in detrimental effects to the basins as flows outlet into them. Control of erosion and sediment must be considered when evaluating methods of outletting runoff into the basins.

4. CANAL RESTRICTIONS

a. Excavating Dikes

There will be no excavation of the dikes with the possible exception of excavation that does not interfere with the toe filter trench or vertical trench through the centerline of the dike. All excavation of the dikes will require review by Reclamation and the CAWCD on a case-by-case basis at an early conceptual stage.

b. Maintaining Access

Crossings cannot interfere with maintenance access to the dike slopes or crest.

c. Crossing Operation and Maintenance (O&M) Roads and the Canal

The CAWCD requires one of the following conditions to maintain access to the O&M roads at overhead roadway crossings:

(1) A minimum overhead clearance of 14 feet above the O&M road grade AND a minimum clear roadway width of 24 feet on canal right and 20 feet on canal left. Canal right and left are designated by facing in the direction of

water flow in the aqueduct. Roadway width is exclusive of the berm between the O&M road and the aqueduct prism.

OR

(2) Ramps connecting the O&M road grade and the crossing roadway grade in all four quadrants of the intersection, including appropriate gates and fencing to maintain canal security. These ramps shall have a minimum roadway width of 24 feet on canal right and 20 feet on canal left. The grade of these ramps shall not exceed 8 percent and the external angle between the ramp centerline and the O&M road centerline shall not exceed 60 degrees.

During construction, one O&M road must remain open at all times.

No shoring or formwork is to be placed within the canal prism during construction of the crossing.

5. INTERAGENCY COORDINATION

Land use and management agreements have been entered into between Reclamation and the cities of Phoenix and Scottsdale for public recreational use and development of Reach 11 lands and resources north of the canal between Cave Creek Road and 108th Street. Reclamation has an obligation to assure that public use of the areas is maintained in accordance with its land use policies, agreements and investment. Various public recreational facilities and uses have been developed and are being planned on these lands. Any crossings of these lands must be coordinated with and approved by Reclamation. Impacts to the recreational uses and the resource values of the lands will be assessed.

Further, necessary crossing permits and rights-of-way must be issued by the CAWCD and approved by Reclamation in coordination with approved land use plans, developments and existing agreements, prior to any construction. All crossings or proposed uses of the lands under existing use agreements must be coordinated with the appropriate land management staffs of Reclamation and the local recreation managing partner.

6. FOOTNOTE

These guidelines are intended to assist cities, agencies, and engineering consultants in developing concepts and plans which do not adversely impact the Central Arizona Project Reach 11 canal, dikes, and dike and drainage basins, and are consistent with current land use and land-use plans. Approval of plans which change existing conditions will be on a case-by-case basis and should be provided early in the planning process. Coordination and review should continue through concepts and design.

Appendix E

Freeboard Criteria

DRAINAGE DESIGN MANUAL

for Maricopa County, Arizona

Volume II

HYDRAULICS

January 28, 1996

Flood Control District
of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009
(602) 506-1501

Maricopa County
Flood Control District, AZ

Freeboard:

Required freeboard is computed according to the following formula:

$$FB = 0.25\left(Y + \frac{V^2}{2g}\right) \qquad (6.10)$$

The minimum freeboard value for rigid channels shall be 1 foot for subcritical and 2 feet for supercritical flows. Using a smaller freeboard in specific cases requires prior approval of the governing agency.

Additional freeboard may be called for in specific cases if aggradation is substantial during a single flow event.

Low Flow Channels: For channels with grass or earth bottoms, it is recommended that low flow channels (see Figure 6.1, page 6-8) be considered whenever the following condition exists:

$$\frac{b}{VY} \geq 1.40 \qquad (6.11)$$

where V and Y are respectively, velocity and depth for the 100-year event.

The existence of frequent grade control structures may also preclude the requirement for compound channel sections; however, where grade control structures are used in conjunction with low flow channels, the hydraulic structure should be matched to pass flows within the low flow channel.

Supercritical Flow: Supercritical flow in an open channel in an urbanized area creates certain hazards which the designer must take into consideration. From a practical standpoint, it is generally unwise to have any curvature in a supercritical channel. Careful attention must be taken to insure against excessive oscillatory waves which may extend down the entire length of the channel from only minor obstructions upstream.

In a supercritical channel, there shall be no change of cross-sectional shape or area at bridges or culverts. Bridges or other structures crossing the channel must be anchored satisfactorily to withstand the full dynamic load which might be imposed upon the structure in the event of major trash plugging. Concrete linings must be protected from hydrostatic uplift forces which are often created by a high water table or momentary inflow behind the lining from localized flooding.

C-3 Curving Alignments continued.

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT _ CA

C-3.2.4 Right of Way

If easement curves are used, all circular curves for the center line of the intended right of way should have upstream and downstream tangent extension lengths of at least one-half of the calculated required easement curve length. The District's practice is to make the central circular curve of the channel center line concentric with and midway inside of, the right of way curves.

C-4 Freeboard

Freeboard is the additional wall height applied to a calculated water surface.

C-4.1 Rectangular Channels

1. For average flow velocities of 35 f.p.s., or less, add 2.0 feet. For curved alignments, add 2.0 feet or 1.0 feet above the superelevated water surface, whichever is greater.

2. For average flow velocities greater than 35 f.p.s., add 3.0 feet. For curved alignments, add 3.0 feet or 2.0 feet above the superelevated water surface, whichever is greater.

3. For supercritical flow where the depth is between D_c and 0.80 D_c, the wall height shall be equal to the sequent depth, but not less than the heights required under 1 and 2 above.

C-4.2 Trapezoidal Channels and Associated Types

1. For average flow velocities of 35 f.p.s., or less, add 2.5 feet. For curved alignments, add 2.5 feet or 1.0 feet above the superelevated water surface, whichever is greater.

2. For average flow velocities greater than 35 f.p.s., add 3.5 feet. For curved alignments, add 3.5 feet or 2.0 feet above the superelevated water surface, whichever is greater.

3. For supercritical flow where the specific energy is equal to or less than 1.05 of the specific energy at D_c, the wall height shall be equal to the sequent depth, but not less than the heights required under 1 and 2 above.

C-5 Roll Waves

Roll waves, sometimes known as slug flow, are intermittent surges on steep slopes that will occur when the Froude Number (F) is greater than 2.0 and the channel invert slope (S_o) is greater

ORANGE COUNTY
FLOOD CONTROL
DISTRICT, CA

FREEBOARD

A. Purpose.

Freeboard is provided to insure that the desired degree of protection will not be reduced by unaccounted for factors which affect channel hydraulics but which are not required to be specifically analyzed in design. These factors include but are not limited to: variations in Manning's n with channel bottom conditions, uncertainties in the selection of Manning's n, variation in stage-discharge relationships, variation in velocity from average velocity, sedimentation, debris, bulking, and air entrainment. When any of the above factors are expected to be significant, its effect shall be separately estimated.

B. Definition.

Freeboard is the vertical distance from the design hydraulic-grade-line (plus wave height, super-elevation, and any other factors required to be separately evaluated):

1. to the top of levee in ultimate unlined earth levee channels.
2. to the top of rock where riprap slope protection is utilized.
3. to the top of wall or structural section in concrete channels.
4. to the soffit where box-conduits or culverts are designed as open channels.
5. to the low point of the soffit of bridges.

Under some supercritical conditions freeboard may be required above conjugate depth - refer to Other Considerations - Stable depth.

C. Minimum Values.

The following are minimum acceptable freeboard for Froude number below 0.90 (for larger Froude numbers refer to Other Considerations - Stable depth:

1. Leveed channels and flood-walls*. Levees or floodwalls shall be used only when there is no reasonable alternative conveyance section. "Reasonable" shall be determined by an analysis of alternatives approved by the Engineer. The magnitude of freeboard for levees and flood walls shall consider the degree of hazard to the protected area. When levees or floodwalls are used, the following minimum criteria shall apply.

   a. Two feet of freeboard shall be provided for facilities with the water surface not more than 2-feet above surrounding ground.

* A floodwall is a wall, in lieu of a levee, which projects above the surrounding ground for the purpose of conveying flood waters.

b. Where the water surface is more than 2 ft. above surrounding ground, a minimum freeboard of 3 ft. above the water surface level of the design discharge shall be provided. An additional 1 ft. is required within 100-ft. on either side of structures (such as bridges) riverward of the levee. An additional 1½ ft. above the minimum at the upstream end of the levee, tapering over 500 ft. to not less than the minimum is also required.

c. For super-critical flow, refer to Other Considerations - Stable depth.

d. For levees subject to tidal conditions, the freeboard shall be established one-foot above the height determined by a special study which shall consider all factors affecting water surface, including but not limited to astronomical tides, wave set-up, wave run-up (if applicable), storm surge, and tsunamis. Tsunamis shall be considered as an independent event unrelated to the other factors.

2. Non-leveed channels with design frequency of 100-years - 1.5 ft.

3. Non-leveed Channels with a design frequency of less than 100-years.

a. drainage area between 500 acres and 4,000 acres - 1.0 ft.

b. drainage area less than 500 acres-0.5 ft.

D. Other Considerations

1. Overtopping

Flows exceeding the design discharge shall be considered and the design shall include measures to assure the least hazardous (damaging) initial overtopping location or to assure initial overtopping of levee on least hazardous (damaging) side. Future landuse shall be considered and whenever possible, the overflow location should be into parks, wetlands, flood-plain easements or streets.

2. Hydraulic gradeline

Freeboard may also be determined by local drainage considerations. Unless pumping stations are an economical alternative for tributary drainage, the design hydraulic gradeline in the main trunk shall be sufficiently below surrounding ground to accommodate local drainage.

Where an entire tributary system has been designed, including all inlets, a design hydraulic-gradeline at least 0.5 ft. below street gutter grade shall be provided within catch-basins. In all other cases, or in preliminary studies which do not consider inlet hydraulics, the design hydraulic-gradeline of the conveyance facility shall be at least two feet below street gutter grade. Design in undeveloped areas shall consider the possibility that future street elevations may be one or more (usually 2) feet below average existing ground.

3. Alluvial fans

On alluvial fans where overflow may escape (cascade) to an adjoining watershed, a minimum of one-foot additional freeboard shall be provided.

4. Stable depths and supercritical flow

Stable depths (Froude number below 0.90 or above 1.20) shall be provided. Where a channel must be designed for Froude number between 1.00 and 1.20 or where piers or confluence introduce potential instability, freeboard shall be added to the conjugate depth. For leveed channels, freeboard shall be added to conjugate depth when Froude number is between 1.00 and 2.00. For non-leveed channels with Froude number greater than 1.2, the freeboard shall be as follows:

design frequency of 100-yrs.	3.0 ft.
drainage area between 500 acres and 4000 acres	2.0 ft.
drainage area less than 500 acres	1.0 ft.

5. Exceptions

A request for less than the minimum specified herein may be submitted to the Engineer for approval. The request shall include appropriate engineering analysis demonstrating adequate freeboard. The engineering analysis shall address those factors listed in paragraph A, Purpose. Under no circumstances will freeboard less than two feet be accepted for levees and floodwalls. In the case of coastal levees no exceptions will be made because Minimum Values requires a special study.

JWW:jc(M-15)007

Appendix F

Hydraulics

1. Multiple Flow Input and Mixed Flow Output
   (See diskette - rta_all.dat)

2. Model based on high "n" value for the natural channel input and mixed output
   (See diskette rtan.dat)

3. Model based on downstream backwater elevation
   Model based on condition where sediment basin (upstream of Bell Road) is not filled
   input and mixed output
   (See diskette rtasub.dat and basin.dat)

4. Velocity and Topwidth Plots (100-Year and 10-Year)

5. Hydraulic Summary for Sediment Transport

rta_all.dat

```
AC
T1      PINNACLE PEAK TO WEST WORLD  (ST 316+50 - ST 0+00)
T2      SLA JULY 1997
T3      SCOTTSDALE DESERT GREENBELT PROJECT
J1     0       2               1    .005       0     0.2       0               0
J2     1       0      -1
J5   -10     -10
QT     6    5766    4823    3803    2684    1896    1022
NC 0.050   0.050   0.030     0.1     0.3
X1 316.5      97  506.71 1159.92  302.98  297.02     300
X3    10                  503.0          1495.0
GR2342.6  500.00 2343.00  506.71 2343.20  509.06 2343.63  515.81 2343.00  523.24
GR2342.1  543.37 2342.02  545.13 2341.48  548.28 2341.04  551.04 2340.01  557.07
GR2339.8  557.75 2339.62  558.24 2334.96  571.34 2330.00  584.11 2328.99  586.43
GR2325.7  594.02 2321.93  602.57 2320.01  606.64 2315.44  615.26 2311.65  622.45
GR2311.6  625.31 2311.92  657.60 2311.91  659.16 2311.91  661.23 2311.59  677.39
GR2312.2  792.73 2312.12  793.31 2312.01  793.50 2311.54  796.45 2311.43  797.43
GR2313.0  828.86 2312.62  833.79 2312.45  836.61 2312.37  838.41 2312.33  839.20
GR2312.0  877.84 2312.01  880.55 2311.71  888.09 2311.92  899.94 2311.95  900.51
GR2310.9  932.26 2311.17  942.62 2311.20  945.71 2310.74  953.70 2310.65  956.33
GR2309.8  974.41 2309.73  976.25 2309.75  979.87 2309.55  999.46 2309.57 1021.12
GR2311.4 1041.95 2312.50 1044.10 2320.01 1057.62 2321.77 1062.14 2322.87 1065.16
GR2330.0 1083.07 2333.77 1097.01 2335.01 1100.43 2338.17 1116.69 2340.01 1126.65
GR2340.5 1129.50 2342.20 1140.19 2343.57 1148.75 2344.00 1151.24 2345.01 1159.92
GR2346.0 1183.31 2346.01 1183.51 2346.01 1183.53 2346.06 1186.72 2346.06 1187.08
GR2345.8 1250.87 2345.81 1251.74 2345.39 1259.67 2345.73 1267.25 2345.76 1268.19
GR2344.8 1299.86 2344.85 1304.72 2344.88 1309.52 2344.86 1314.47 2344.85 1319.19
GR2347.0 1339.61 2347.19 1344.58 2347.32 1347.92 2347.24 1351.21 2347.00 1357.19
GR2338.0 1419.90 2337.06 1425.77 2336.00 1431.26 2335.13 1435.78 2334.01 1440.41
GR2330.7 1467.62 2330.46 1469.29 2330.00 1474.94 2329.01 1489.17 2328.84 1493.13
GR2328.6 1498.25 2328.47 1500.00
X1 313.5      97  501.01 1101.28   188.7  408.74     300
X3    10                  503.0          1495.0
GR2332.0  500.00 2331.97  500.28 2331.96  500.42 2331.94  500.72 2331.91  501.01
GR2330.9  517.05 2330.85  517.78 2330.63  519.66 2330.00  524.15 2329.24  529.47
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GR2301.2  956.97 2301.34  959.92 2301.35  960.48 2300.06  978.22 2300.06  978.34
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GR2318.0 1487.44 2316.97 1500.00
X1 310.5      96  506.62 1140.49  406.31  183.65     300
X3    10                  503.0          1495.0
GR2312.1  500.00 2310.00  506.62 2308.23  512.38 2304.99  522.78 2304.88  523.16
GR2300.0  538.66 2299.49  542.06 2298.00  552.79 2297.71  555.61 2297.01  562.28
GR2296.0  597.10 2296.00  597.29 2296.00  597.46 2296.00  597.92 2295.98  602.45
GR2295.5  692.80 2295.51  693.42 2295.07  699.92 2295.00  701.21 2294.06  706.69
GR2295.4  745.46 2295.15  748.98 2295.00  750.58 2294.47  756.25 2294.24  758.71
GR2295.7  785.12 2295.52  788.89 2295.00  802.22 2294.97  802.92 2293.88  815.04
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X3    10                  503.0          1495.0
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GR2286.0  683.15 2285.29  687.92 2285.01  690.58 2284.66  691.86 2283.87  695.64
GR2284.9  698.64 2285.01  699.27 2285.16  704.38 2285.17  706.23 2285.17  706.79
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X1 304.5      97  503.14 1194.81  312.57  281.43     300
X3    10                  503.0          1495.0
GR2284.2  500.00 2283.63  503.14 2282.34  510.98 2281.29  512.22 2278.53  515.37
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GR2300.8 1198.12 2298.57 1209.32 2297.30 1214.73 2296.35 1221.71 2296.00 1224.93
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GR2289.1 1364.67 2287.31 1374.10 2287.21 1375.28 2286.77 1377.23 2286.24 1380.22
GR2284.9 1387.97 2283.79 1390.87 2281.26 1398.55 2279.66 1404.53 2278.85 1407.25
GR2282.0 1464.85 2281.63 1471.75 2280.89 1481.26 2280.73 1484.14 2279.72 1492.38
GR2279.5 1493.34 2280.65 1500.00
X1 301.5      97  691.76 1154.71   176.1  405.63     300
X3    10                  503.0          1495.0
GR2292.7  500.00 2292.55  506.44 2292.48  510.86 2292.45  519.75 2291.99  545.98
GR2289.4  625.09 2291.95  661.01 2292.13  682.21 2292.15  685.24 2292.30  685.38
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GR2280.0  767.33 2277.45  774.25 2275.02  781.18 2273.51  785.39 2270.05  792.20
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GR2273.2 1490.84 2273.15 1500.00
X1 298.5      94  613.15 1062.92  331.18  268.53     300
X3    10                  503.0          1495.0
GR2281.0  500.00 2281.05  506.30 2281.19  532.45 2281.16  541.22 2280.65  590.69
GR2280.7  592.83 2280.65  594.14 2282.61  601.64 2283.93  609.85 2284.24  613.15
GR2284.3  618.47 2283.07  623.01 2281.66  628.47 2281.41  629.73 2280.03  636.86
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X1 295.5      95  730.08 1212.02  512.5    79.58     300
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X1 292.5      95  783.84 1492.84  134.95  457.65     300
X3    10                  503.0          1495.0
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GR2254.4  621.17 2254.15  624.81 2254.25  628.71 2254.19  631.47 2254.24  638.82
GR2254.0  647.83 2254.55  655.05 2255.11  669.50 2255.36  674.50 2255.36  676.05
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GR2247.4 1353.43 2247.44 1359.59 2247.62 1378.59 2247.71 1382.68 2248.53 1407.28
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X1 289.5      96   503.8  1234.1  250.35  121.42     150
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GR2245.2 1500.00
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GR2205.3  662.20 2205.00  680.80 2205.00  699.00 2204.90  712.20 2205.00  745.20
GR2205.5  758.90 2207.90  777.30 2210.60  793.30 2214.10  819.00
X1277.15       8      90     275      20      20      20
X3    10
GR2200.6   90.00 2195.60  100.00 2194.60  120.00 2195.20  134.00 2195.20  213.00
GR2194.6  232.00 2194.60  265.00  2199.6  275.00
X1276.95      11     110     270     155     155     155
X3    10
GR2198.0   75.00 2197.50   98.00 2197.50  104.00 2198.50  105.00 2197.50  110.00
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GR2187.9   120.0  2187.9   127.9  2183.9   128.0  2183.9  186.00  2183.9   238.0
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NC  .015    .015    .015      .3      .5
X1272.45       4     110     266      20      20      20
GR2184.9     110  2174.9   130.0  2174.9   246.0  2184.9   266.0
X1272.35       6   130.0   248.2      40      40      40
X3    10
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GR2186.3   248.2
SB  1.05    1.56     2.6   118.0   118.0       6    1120
X1271.95     6.0   130.0   248.2    20.0    20.0    20.0      .0      .0      .0
X2                     1 2184.32 2186.32
X3    10
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GR2186.3   248.2
NC  .015    .015    .015      .1      .3
X1271.75     4.0   130.0   248.1     1.0     1.0     1.0      .0      .0      .0
X3    10
GR2183.0   130.0  2173.0   130.1  2173.0   248.0  2183.0   248.1
NC  .015    .015    .015      .1      .3
X1271.74     4.0   130.0   248.1      14      14      14      .0      .0      .0
X3    10
GR2179.0   130.0  2169.0   130.1  2169.0   248.0  2179.0   248.1
NC                             .1      .3
X1271.60       6   117.9   260.0      20      20      20
GR2178.5   117.9  2172.5   129.9  2168.5     130  2168.5     248  2172.5   248.1
GR2178.5   260.0
NC  .015    .015    .015      .3      .5
X1271.40       6   117.9   260.0      75      75      75
GR2181.8   117.9  2175.8   129.9  2167.8     130  2167.8     248  2171.8   248.1
GR2177.8   260
NC  .015    .015    .015      .1      .3
X1270.65       6   117.9   212.0      10      10      10
GR2176.9   117.9  2173.9   129.9  2165.3     130  2165.3     200  2169.8   200.1
GR2175.8     212
X1270.55       6   117.9   214.0      75      75      75
GR2175.6   117.9  2169.6   129.9  2165.0     130  2165.0     202  2169.6   202.1
GR2177.6     214
X1269.80     6.0   117.9   201.0      15      15      15
GR2174.0   117.9  2168.0   129.9  2163.0     130  2163.0     192  2168.0   192.1
GR2174.0     201
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X1269.65     6.0   117.9   206.0      10      10      10
GR2173.6   117.9  2167.6   129.9  2162.8     130  2162.8     197  2167.6   197.1
GR2173.6     206
X1269.55     4.0   120.0   210.0     155     155     155
GR2172.7     120  2162.7     130  2162.7     200  2172.7     210
NC  .015    .015    .015      .1      .3
X1 268.0    22.0   100.4   208.0       4       4     4.0      .0      .0      .0
X3    10                    100             220
GR2170.4      .0  2169.5     7.9  2169.0    22.0  2169.0    36.1  2170.3    52.5
GR2171.0    63.2  2171.3    70.6  2171.4    84.5  2171.2    91.5  2169.9   100.4
GR2170.7   102.0  2170.7   110.0  2160.7   120.0  2160.7   190.0  2170.7   200.0
GR2170.7   208.0  2169.4   220.9  2170.0   250.8  2170.0   256.2  2170.0   298.3
GR2168.4   316.0  2168.1   320.0
NC  .015    .015    .015      .3      .5
X1267.96    22.0   100.4   208.0      46      46    46.0      .0      .0      .0
X3    10                    100             220
GR2170.4      .0  2169.5     7.9  2169.0    22.0  2169.0    36.1  2170.3    52.5
GR2171.0    63.2  2171.3    70.6  2171.4    84.5  2171.2    91.5  2169.9   100.4
GR2170.7   102.0  2170.7   110.0  2156.7   124.0  2156.7   186.0  2170.7   200.0
GR2170.7   208.0  2169.4   220.9  2170.0   250.8  2170.0   256.2  2170.0   298.3
GR2168.4   316.0  2168.1   320.0
NC  .015    .015    .015      .3      .5
X1 267.5    21.0   102.0   208.0     130     130   130.0      .0      .0      .0
X3    10                    100             220
GR2166.7      .0  2167.0    10.9  2168.0    35.8  2169.2    57.0  2169.7    82.1
GR2168.8    98.2  2166.7   102.0  2166.7   110.0  2156.7   120.0  2156.7   190.0
GR2166.7   200.0  2166.7   208.0  2167.9   220.4  2168.4   236.9  2169.0   250.8
GR2169.1   275.7  2169.0   278.9  2169.0   294.1  2168.8   294.7  2167.6   311.7
GR2167.7   320.0
NC  .025    .025    .025      .1      .3
X1 266.2    19.0   102.0   218.0     3.0     3.0     3.0      .0      .0      .0
X3    10                    100             220
GR2165.2      .0  2166.9    46.2  2166.9    50.2  2166.6    71.3  2164.0    89.4
GR2163.2    99.2  2164.4   102.0  2164.4   110.0  2154.4   120.0  2154.4   200.0
GR2164.4   210.0  2164.4   218.0  2163.3   220.8  2163.2   237.6  2163.3   251.1
GR2163.1   262.9  2163.4   284.3  2163.7   304.0  2163.8   320.0
NC  .025    .025    .025      .3      .5
X1266.17    19.0   102.0   218.0      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2165.2      .0  2166.9    46.2  2166.9    50.2  2166.6    71.3  2164.0    89.4
GR2163.2    99.2  2164.4   102.0  2164.4   110.0  2151.4   123.0  2151.4   197.0
GR2164.4   210.0  2164.4   218.0  2163.3   220.8  2163.2   237.6  2163.3   251.1
GR2163.1   262.9  2163.4   284.3  2163.7   304.0  2163.8   320.0
NC  .025    .025    .025      .3      .5
X1 265.7    18.0   100.8   219.6       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2164.9      .0  2166.0    31.1  2166.0    53.2  2165.0    65.3  2162.0    82.9
GR2162.0   100.8  2161.4   102.0  2161.4   110.0  2151.4   120.0  2151.4   200.0
GR2161.4   210.0  2161.4   218.0  2161.0   219.6  2162.0   225.2  2162.6   231.7
GR2162.3   244.9  2162.0   287.1  2162.4   320.0
NC  .025    .025    .025      .3      .5
X1265.67    18.0   100.8   219.6      47      47      47       0       0       0
X3    10                    100             220
GR2164.9      .0  2166.0    31.1  2166.0    53.2  2165.0    65.3  2162.0    82.9
GR2162.0   100.8  2161.4   102.0  2161.4   110.0  2148.4   123.0  2148.4   197.0
GR2161.4   210.0  2161.4   218.0  2161.0   219.6  2162.0   225.2  2162.6   231.7
GR2162.3   244.9  2162.0   287.1  2162.4   320.0
NC  .025    .025    .025      .3      .5
X1 265.2    21.0   102.0   218.0     100     100      .0      .0      .0
X3    10                    100             220
GR2167.6      .0  2167.2    42.6  2166.9    48.4  2162.6    68.0  2162.0    71.6
GR2161.9    74.0  2160.3    94.0  2160.3    98.1  2158.4   102.0  2158.4   110.0
GR2148.4   120.0  2148.4   200.0  2158.4   210.0  2158.4   218.0  2158.7   220.1
GR2158.9   224.4  2161.5   239.4  2161.4   254.1  2161.2   260.1  2161.0   300.5
GR2161.1   320.0
NC                            .1      .3
X1 264.2      21       0     320     190     190     190
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GR2165.8	.0	2165.4	42.6	2165.1	48.4	2160.8	68.0	2160.2	71.6
GR2160.1	74.0	2158.5	94.0	2158.5	98.1	2156.6	102.0	2156.6	110.0
GR2146.6	120.0	2146.6	200.0	2156.6	210.0	2156.6	218.0	2156.9	220.1
GR2157.1	224.4	2159.7	239.4	2159.6	254.1	2159.4	260.1	2159.2	300.5
GR2159.3	320.0								
NC .025	.025	.025	.1	.3					
X1 262.3	20.0	102.0	219.2	4.0	4.0	4.0	.0	.0	.0
X3 10			100		220				
GR2161.1	.0	2160.7	24.8	2160.5	40.7	2160.6	51.5	2161.0	61.9
GR2161.0	71.9	2158.7	83.2	2157.6	86.9	2154.3	95.9	2153.2	102.0
GR2153.2	110.0	2143.2	120.0	2143.2	200.0	2153.2	210.0	2153.2	218.0
GR2152.6	219.2	2151.6	249.0	2151.0	270.6	2150.0	277.9	2150.0	320.0
NC .025	.025	.025	.3	.5					
X1262.26	20.0	102.0	218.0	46.0	46.0	46.0	.0	.0	.0
X3 10			100		220				
GR2161.1	.0	2160.7	24.8	2160.5	40.7	2160.6	51.5	2161.0	61.9
GR2161.0	71.9	2158.7	83.2	2157.6	86.9	2154.3	95.9	2153.2	102.0
GR2153.2	110.0	2139.2	124.0	2139.2	196.0	2153.2	210.0	2153.2	218.0
GR2152.6	219.2	2151.6	249.0	2151.0	270.6	2150.0	277.9	2150.0	320.0
NC .025	.025	.025	.3	.5					
X1 261.8	25.0	101.2	210.8	130.0	130.0	130.0	.0	.0	.0
X3 10			100		220				
GR2160.2	.0	2159.9	17.1	2159.9	37.6	2159.0	64.1	2155.7	80.0
GR2154.0	87.7	2152.9	93.8	2149.2	101.2	2149.2	109.2	2148.4	110.8
GR2139.2	120.0	2139.2	200.0	2148.0	208.8	2148.0	209.6	2149.2	210.8
GR2149.2	224.4	2151.1	228.4	2150.3	248.5	2149.7	260.8	2149.4	262.8
GR2148.8	272.1	2148.0	290.0	2148.0	308.2	2149.0	314.1	2148.3	320.0
NC .025	.025	.025	.1	.3					
X1 260.5	29.0	106.0	214.8	3.0	3.0	3.0	.0	.0	.0
X3 10			100		250				
GR2152.4	.0	2151.6	5.0	2151.0	10.1	2149.8	26.9	2149.0	35.8
GR2148.0	50.0	2147.7	61.3	2148.0	75.3	2148.0	83.7	2148.8	94.0
GR2146.8	98.0	2146.8	106.0	2142.8	110.0	2142.8	114.0	2136.8	120.0
GR2136.8	200.0	2140.8	204.0	2140.8	208.0	2146.8	214.8	2146.8	250.0
GR2145.0	253.7	2145.0	268.3	2146.0	274.9	2146.0	278.1	2147.0	298.7
GR2145.7	304.6	2144.8	307.5	2143.7	314.9	2143.6	320.0		
NC .025	.025	.025	.3	.5					
X1260.47	29.0	106.0	214.8	47.0	47.0	47.0	.0	.0	.0
X3 10			100		220				
GR2152.4	.0	2151.6	5.0	2151.0	10.1	2149.8	26.9	2149.0	35.8
GR2148.0	50.0	2147.7	61.3	2148.0	75.3	2148.0	83.7	2148.8	94.0
GR2146.8	98.0	2146.8	106.0	2142.8	110.0	2142.8	114.0	2133.8	123.0
GR2133.8	197.0	2140.8	204.0	2140.8	208.0	2146.8	214.8	2146.8	250.0
GR2145.0	253.7	2145.0	268.3	2146.0	274.9	2146.0	278.1	2147.0	298.7
GR2145.7	304.6	2144.8	307.5	2143.7	314.9	2143.6	320.0		
NC .025	.025	.025	.3	.5					
X1 260.0	25.0	106.0	250.0	250.0	290.0	290.0	.0	.0	.0
X3 10			100		250				
GR2149.1	.0	2148.7	6.4	2146.4	26.1	2145.3	37.7	2144.7	48.6
GR2145.5	59.7	2146.0	62.7	2146.4	67.2	2147.6	78.1	2147.6	83.4
GR2146.8	87.5	2146.0	93.6	2143.8	98.0	2143.8	106.0	2139.8	110.0
GR2139.8	114.0	2133.8	120.0	2133.8	200.0	2137.8	204.0	2137.8	208.0
GR2143.8	214.0	2143.8	250.0	2144.1	250.6	2143.0	288.6	2142.2	320.0
NC .025	.025	.025	.1	.3					
X1 257.1	22.0	106.0	250.0	3.0	3.0	3.0	.0	.0	.0
X3 10			100		250				
GR2136.7	.0	2137.0	3.1	2137.3	31.0	2137.7	55.0	2138.0	66.8
GR2139.4	96.4	2138.6	98.0	2138.6	106.0	2134.6	110.0	2134.6	114.0
GR2128.6	120.0	2128.6	200.0	2132.6	204.0	2132.6	208.0	2138.6	214.0
GR2138.6	250.0	2138.0	251.4	2138.0	266.4	2137.9	273.6	2137.0	295.0
GR2136.1	304.9	2136.2	320.0						
NC .025	.025	.025	.3	.5					
X1257.07	22.0	106.0	214.0	47.0	47.0	47.0	.0	.0	.0
X3 10			100		220				
GR2136.7	.0	2137.0	3.1	2137.3	31.0	2137.7	55.0	2138.0	66.8
GR2139.4	96.4	2138.6	98.0	2138.6	106.0	2134.6	110.0	2134.6	114.0
GR2125.6	123.0	2125.6	197.0	2132.6	204.0	2132.6	208.0	2138.6	214.0

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GR2138.6   250.0  2138.0   251.4  2138.0   266.4  2137.9   273.6  2137.0   295.0
GR2136.1   304.9  2136.2   320.0
NC  .025    .025    .025      .3      .5
X1 256.6    20.0   106.0   250.0    27.0    27.0    27.0      .0      .0      .0
X3    10                    100             250
GR2135.1      .0  2135.3    10.5  2137.0    62.6  2137.6    79.1  2137.9    93.3
GR2135.6    98.0  2135.6   106.0  2131.6   110.0  2131.6   114.0  2125.6   120.0
GR2125.6   200.0  2129.6   214.0  2129.6   220.0  2135.6   240.0  2135.6   250.0
GR2135.3   250.5  2136.0   258.9  2136.1   265.3  2135.2   305.4  2134.9   320.0
NC                             .1      .3
X1256.33    17.0      .0   320.0    33.0    33.0    33.0      .0      .0      .0
GR2134.6      .0  2134.8    10.5  2136.5    62.6  2137.1    79.1  2137.4    93.3
GR2135.1    98.0  2135.1   106.0  2131.1   110.0  2131.1   114.0  2125.1   120.0
GR2125.1   200.0  2129.1   220.0  2129.1   228.0  2135.1   258.0  2135.1   266.0
GR2134.7   305.4  2134.4   320.0
X1 256.0    20.0      .0   320.0    20.0    20.0    20.0      .0      .0      .0
GR2134.0      .0  2134.2    10.5  2135.9    62.6  2136.5    79.1  2136.8    93.3
GR2134.5    98.0  2134.5   106.0  2130.5   110.0  2130.5   114.0  2124.5   120.0
GR2124.5   200.0  2128.5   204.0  2128.5   212.0  2134.5   218.0  2134.5   250.0
GR2134.2   250.5  2134.9   258.9  2135.0   265.3  2134.1   305.4  2133.8   320.0
NC  .025    .025    .025      .3      .5
X1 255.8    28.0   106.0   250.0     4.0     4.0     4.0      .0              .0
X3    10                    100             250
GR2131.6      .0  2131.8     9.9  2131.7    22.4  2131.9    29.1  2133.7    37.0
GR2133.9    41.8  2133.9    51.0  2134.1    59.9  2135.0    89.1  2135.1    96.1
GR2134.2    98.0  2134.2   106.0  2130.2   110.0  2130.2   114.0  2124.2   120.0
GR2124.2   200.0  2128.2   204.0  2128.2   212.0  2134.2   218.0  2134.2   250.0
GR2132.4   253.4  2131.9   270.8  2131.5   274.0  2131.6   287.0  2131.9   289.5
GR2131.9   302.0  2130.9   314.5  2130.9   320.0
NC  .025    .025    .025      .3      .5
X1255.76    28.0   106.0   218.0    46.0    46.0    46.0      .0              .0
X3    10                    100             220
GR2131.6      .0  2131.8     9.9  2131.7    22.4  2131.9    29.1  2133.7    37.0
GR2133.9    41.8  2133.9    51.0  2134.1    59.9  2135.0    89.1  2135.1    96.1
GR2134.2    98.0  2134.2   106.0  2130.2   110.0  2130.2   114.0  2120.2   124.0
GR2120.2   196.0  2128.2   204.0  2128.2   212.0  2134.2   218.0  2134.2   250.0
GR2132.4   253.4  2131.9   270.8  2131.5   274.0  2131.6   287.0  2131.9   289.5
GR2131.9   302.0  2130.9   314.5  2130.9   320.0
NC  .025    .025    .025      .1      .3
X1 255.3    22.0   106.0   218.0    50.0    50.0    50.0      .0              .0
X3    10                    100             220
GR2129.9      .0  2129.9     6.0  2131.0    20.1  2132.9    55.7  2133.3    69.3
GR2133.6    91.2  2130.2    98.0  2130.2   106.0  2126.2   110.0  2126.2   114.0
GR2120.2   120.0  2120.2   200.0  2124.2   204.0  2124.2   212.9  2130.2   218.0
GR2131.2   245.5  2131.5   246.3  2130.9   261.9  2129.9   283.4  2129.7   289.6
GR2129.5   303.8  2129.8   320.0
X1 254.8    22.0      .0   320.0    80.0    80.0    80.0      .0      .0      .0
GR2129.0      .0  2129.0     6.0  2130.1    20.1  2132.0    55.7  2132.4    69.3
GR2132.7    91.2  2129.3    98.0  2129.3   106.0  2125.3   110.0  2125.3   114.0
GR2119.3   120.0  2119.3   200.0  2123.3   204.0  2123.3   212.0  2129.3   242.0
GR2130.3   245.5  2130.6   246.3  2130.0   261.9  2129.0   283.4  2128.8   289.6
GR2128.6   303.8  2128.9   320.0
NC  .025    .025    .025      .1      .3
X1 254.0    26.0   106.0   244.7     3.0     3.0     3.0      .0      .0      .0
X3    10                    100             250
GR2127.8      .0  2128.0     4.3  2128.0    17.8  2128.9    49.0  2129.0    52.9
GR2129.0    64.2  2129.4    84.2  2129.6    91.1  2129.4    95.3  2127.8    98.0
GR2127.8   106.0  2123.8   110.0  2123.8   114.0  2117.8   120.0  2117.8   200.0
GR2121.8   204.0  2121.8   212.0  2127.8   242.0  2127.8   243.0  2127.5   244.7
GR2126.7   251.8  2126.5   263.1  2126.1   282.1  2126.3   308.5  2126.9   316.0
GR2126.8   320.0
NC  .025    .025    .025      .3      .5
X1253.97    26.0   106.0   244.7    47.0    47.0    47.0      .0      .0      .0
X3    10                    100             250
GR2127.8      .0  2128.0     4.3  2128.0    17.8  2128.9    49.0  2129.0    52.9
GR2129.0    64.2  2129.4    84.2  2129.6    91.1  2129.4    95.3  2127.8    98.0
GR2127.8   106.0  2123.8   110.0  2123.8   114.0  2114.8   123.0  2114.8   197.0
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GR2121.8   204.0  2121.8   212.0  2127.8   242.0  2127.8   243.0  2127.5   244.7
GR2126.7   251.8  2126.5   263.1  2126.1   282.1  2126.3   308.5  2126.9   316.0
GR2126.8   320.0
NC  .025    .025    .025      .3      .5
X1 253.5    28.0   106.0   248.5    70.0    70.0    70.0      .0      .0      .0
X3    10                    100            250
GR2127.0      .0  2127.7    10.6  2127.8    20.3  2127.6    28.2  2127.0    38.6
GR2126.3    53.4  2127.0    61.6  2128.0    71.7  2128.1    82.3  2127.8    92.1
GR2124.8    98.0  2124.8   106.0  2120.8   110.0  2120.8   114.0  2114.8   120.0
GR2114.8   200.0  2118.8   204.0  2118.8   212.0  2124.8   242.0  2124.8   243.0
GR2125.5   244.3  2125.2   245.1  2125.4   248.5  2125.0   266.7  2125.0   274.6
GR2124.5   292.7  2124.4   312.3  2124.7   320.0
NC  .025    .025    .025      .1      .3
X1 252.8    26.0   106.0   233.6     3.0     3.0     3.0      .0      .0      .0
X3    10                    100            250
GR2125.0      .0  2125.3    17.1  2125.3    28.4  2124.4    59.3  2124.0    64.2
GR2124.3    67.9  2124.3    76.3  2125.5    94.1  2123.6    98.0  2123.6   106.0
GR2119.6   110.0  2119.6   114.0  2113.6   120.0  2113.6   200.0  2117.6   204.0
GR2117.6   212.0  2123.6   230.0  2123.6   232.0  2123.4   233.6  2123.3   252.1
GR2123.4   268.5  2123.0   279.3  2122.5   286.6  2121.6   289.7  2121.6   311.6
GR2121.6   320.0
NC  .025    .025    .025      .3      .5
X1252.77    26.0   106.0   233.6    47.0    47.0    47.0      .0      .0      .0
X3    10                    100            250
GR2125.0      .0  2125.3    17.1  2125.3    28.4  2124.4    59.3  2124.0    64.2
GR2124.3    67.9  2124.3    76.3  2125.5    94.1  2123.6    98.0  2123.6   106.0
GR2119.6   110.0  2119.6   114.0  2110.6   123.0  2110.6   197.0  2117.6   204.0
GR2117.6   212.0  2123.6   230.0  2123.6   232.0  2123.4   233.6  2123.3   252.1
GR2123.4   268.5  2123.0   279.3  2122.5   286.6  2121.6   289.7  2121.6   311.6
GR2121.6   320.0
NC  .025    .025    .025      .3      .5
X1 252.3    24.0   106.0   235.0    80.0    80.0    80.0      .0      .0      .0
X3    10                    100            250
GR2123.6      .0  2123.6    10.6  2122.3    51.5  2121.8    63.6  2122.0    76.0
GR2123.0    81.5  2123.3    92.4  2120.6    98.0  2120.6   106.0  2116.6   110.0
GR2116.6   114.0  2110.6   120.0  2110.6   200.0  2114.6   204.0  2114.6   212.0
GR2120.8   230.0  2120.8   234.3  2121.0   235.0  2121.0   265.0  2120.9   270.3
GR2120.0   274.0  2119.3   287.1  2119.4   297.7  2120.0   320.0
NC  .025    .025    .025      .1      .3
X1 251.5    25.0   106.0   238.6     3.0     3.0     3.0      .0      .0      .0
X3    10                    100            250
GR2120.3      .0  2120.6    16.8  2121.1    29.4  2120.0    65.3  2119.6    74.1
GR2119.0    79.7  2119.1    85.7  2119.9    97.0  2119.1    98.0  2119.1   106.0
GR2115.1   110.0  2115.1   114.0  2109.1   120.0  2109.1   200.0  2113.1   204.0
GR2113.1   212.0  2119.1   230.0  2119.1   238.0  2118.9   238.6  2118.0   258.0
GR2117.3   263.1  2117.0   274.8  2116.7   294.5  2117.0   313.5  2117.0   320.0
NC  .025    .025    .025      .3      .5
X1251.47    25.0   106.0   238.6    47.0    47.0    47.0      .0      .0      .0
X3    10                    100            250
GR2120.3      .0  2120.6    16.8  2121.1    29.4  2120.0    65.3  2119.6    74.1
GR2119.0    79.7  2119.1    85.7  2119.9    97.0  2119.1    98.0  2119.1   106.0
GR2115.1   110.0  2115.1   114.0  2106.1   123.0  2106.1   197.0  2113.1   204.0
GR2113.1   212.0  2119.1   230.0  2119.1   238.0  2118.9   238.6  2118.0   258.0
GR2117.3   263.1  2117.0   274.8  2116.7   294.5  2117.0   313.5  2117.0   320.0
NC  .025    .025    .025      .3      .5
X1 251.0    24.0   106.0   239.5    90.0    90.0    90.0      .0      .0      .0
X3    10                    100            250
GR2117.1      .0  2118.0     7.2  2118.8    24.4  2119.0    29.8  2118.8    54.2
GR2118.4    64.6  2118.3    87.3  2118.0    94.2  2116.1    98.0  2116.1   106.0
GR2112.1   110.0  2112.1   114.0  2106.1   120.0  2106.1   200.0  2110.1   204.0
GR2110.1   212.0  2116.1   230.0  2116.1   238.0  2117.0   239.5  2116.0   254.6
GR2115.1   259.9  2115.1   287.5  2115.1   302.9  2116.0   320.0
NC  .025    .025    .025      .1      .3
X1 250.1    26.0   106.0   250.0     4.0     4.0     4.0      .0      .0      .0
X3    10                    100            250
GR2113.7      .0  2112.9    16.9  2114.0    29.2  2114.0    62.3  2113.6    64.6
GR2113.0    73.9  2113.0    79.6  2114.0    91.0  2114.0    97.0  2114.5    98.0
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GR2114.5   106.0  2110.5   110.0  2110.5   114.0  2104.5   120.0  2104.5   200.0
GR2108.5   204.0  2108.5   212.0  2114.5   242.0  2114.5   250.0  2111.9   255.2
GR2111.6   272.3  2112.0   293.7  2112.5   306.6  2113.2   310.9  2114.0   318.0
GR2113.7   320.0
NC  .025    .025    .025      .3      .5
X1250.06    26.0   106.0   250.0    46.0    46.0    46.0      .0      .0      .0
X3    10                    100             250
GR2113.7      .0  2112.9    16.9  2114.0    29.2  2114.0    62.3  2113.6    64.6
GR2113.0    73.9  2113.0    79.6  2114.0    91.0  2114.0    97.0  2114.5    98.0
GR2114.5   106.0  2110.5   110.0  2110.5   114.0  2100.5   124.0  2100.5   196.0
GR2108.5   204.0  2108.5   212.0  2114.5   242.0  2114.5   250.0  2111.9   255.2
GR2111.6   272.3  2112.0   293.7  2112.5   306.6  2113.2   310.9  2114.0   318.0
GR2113.7   320.0
NC  .025    .025    .025      .3      .5
X1 249.6    26.0   106.0   320.0    70.0    70.0    70.0      .0      .0      .0
X3    10                    100
GR2111.8      .0  2111.7     6.1  2111.0    12.4  2111.0    21.4  2111.0    26.2
GR2111.5    30.4  2111.6    38.1  2111.0    45.8  2112.1    66.4  2113.0    90.2
GR2113.0    93.0  2110.5    98.0  2110.5   106.0  2106.5   110.0  2106.5   114.0
GR2100.5   120.0  2100.5   200.0  2104.5   204.0  2104.5   212.0  2110.5   242.0
GR2110.5   250.0  2110.2   258.1  2110.3   270.4  2111.0   303.6  2112.0   318.5
GR2112.0   320.0
NC  .025    .025    .025      .1      .3
X1 248.9    20.0   106.0   320.0     3.0     3.0     3.0      .0      .0      .0
X3    10                    100
GR2108.0      .0  2107.9     3.3  2106.6    17.8  2107.8    28.8  2109.0    75.9
GR2109.5    97.5  2109.2    98.0  2109.2   106.0  2105.2   110.0  2105.2   114.0
GR2099.2   120.0  2099.2   200.0  2103.2   204.0  2103.2   212.0  2109.2   242.0
GR2109.2   250.0  2108.5   251.9  2109.0   263.9  2110.1   297.0  2110.2   320.0
NC  .025    .025    .025      .3      .5
X1248.87    20.0   106.0   320.0    47.0    47.0    47.0      .0      .0      .0
X3    10                    100
GR2108.0      .0  2107.9     3.3  2106.6    17.8  2107.8    28.8  2109.0    75.9
GR2109.5    97.5  2109.2    98.0  2109.2   106.0  2105.2   110.0  2105.2   114.0
GR2096.2   123.0  2096.2   197.0  2103.2   204.0  2103.2   212.0  2109.2   242.0
GR2109.2   250.0  2108.5   251.9  2109.0   263.9  2110.1   297.0  2110.2   320.0
NC  .025    .025    .025      .3      .5
X1 248.4    28.0   106.0   320.0    60.0    60.0    60.0      .0      .0      .0
X3    10                    100
GR2104.7      .0  2104.5     6.3  2103.8    16.4  2104.0    20.8  2105.2    31.5
GR2106.0    41.8  2106.0    50.7  2106.4    66.4  2105.5    75.1  2106.0    82.0
GR2106.0    86.6  2106.9    96.7  2106.2    98.0  2106.2   106.0  2102.2   110.0
GR2102.2   114.0  2096.2   120.0  2096.2   200.0  2100.2   204.0  2100.2   212.0
GR2106.2   242.0  2106.2   250.0  2108.0   253.6  2108.0   268.5  2108.1   272.1
GR2108.5   294.6  2108.6   316.2  2108.6   320.0
NC  .025    .025    .025      .1      .3
X1 247.8    22.0   106.0   320.0     3.0     3.0     3.0      .0      .0      .0
X3    10                    100
GR2101.8      .0  2103.0     9.1  2104.0    23.3  2104.9    47.2  2106.0    61.9
GR2107.0    75.8  2107.2    85.6  2107.5    93.5  2105.2    98.0  2105.2   106.0
GR2101.2   110.0  2101.2   114.0  2095.2   120.0  2095.2   200.0  2099.2   204.0
GR2099.2   212.0  2105.2   242.0  2105.2   250.0  2105.9   251.6  2106.6   274.6
GR2106.9   293.8  2106.1   320.0
NC  .025    .025    .025      .3      .5
X1247.77    22.0   106.0   320.0      47      47    47.0      .0      .0      .0
X3    10                    100
GR2101.8      .0  2103.0     9.1  2104.0    23.3  2104.9    47.2  2106.0    61.9
GR2107.0    75.8  2107.2    85.6  2107.5    93.5  2105.2    98.0  2105.2   106.0
GR2101.2   110.0  2101.2   114.0  2092.2   123.0  2092.2   197.0  2099.2   204.0
GR2099.2   212.0  2105.2   242.0  2105.2   250.0  2105.9   251.6  2106.6   274.6
GR2106.9   293.8  2106.1   320.0
NC  .025    .025    .025      .3      .5
X1 247.3    20.0   106.0   320.0      70      70    70.0      .0      .0      .0
X3    10                    100
GR2103.3      .0  2104.2    15.0  2105.1    39.5  2105.5    67.8  2105.4    80.3
GR2105.3    91.8  2102.2    98.0  2102.2   106.0  2098.2   110.0  2098.2   114.0
GR2092.2   120.0  2092.2   200.0  2096.2   204.0  2096.2   212.0  2102.2   242.0
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GR2102.2   250.0  2104.4   254.6  2104.8   278.4  2105.0   301.9  2105.0   320.0
NC  .025    .025    .025      .1      .3
X1 246.6    19.0   106.0   320.0       3       3     3.0      .0      .0      .0
X3    10                    100
GR2102.3      .0  2102.4    13.4  2103.0    53.1  2102.6    62.7  2102.0    84.1
GR2101.8    96.6  2100.9    98.0  2100.9   106.0  2096.9   110.0  2096.9   114.0
GR2090.9   120.0  2090.9   200.0  2094.9   204.0  2094.9   212.0  2100.9   242.0
GR2100.9   250.0  2102.1   265.3  2103.0   311.6  2103.0   320.0
NC  .025    .025    .025      .3      .5
X1246.57    19.0   106.0   320.0      47      47    47.0      .0      .0      .0
X3    10                    100
GR2102.3      .0  2102.4    13.4  2103.0    53.1  2102.6    62.7  2102.0    84.1
GR2101.8    96.6  2100.9    98.0  2100.9   106.0  2096.9   110.0  2096.9   114.0
GR2087.9   123.0  2087.9   197.0  2094.9   204.0  2094.9   212.0  2100.9   242.0
GR2100.9   250.0  2102.1   265.3  2103.0   311.6  2103.0   320.0
NC  .025    .025    .025      .3      .5
X1 246.1    23.0   107.5   320.0      70      70    70.0      .0      .0      .0
X3    10                    100
GR2100.9      .0  2100.9    19.8  2101.0    37.1  2098.9    81.0  2098.9    97.6
GR2097.9    99.5  2097.9   107.5  2095.4   110.0  2095.4   112.5  2087.9   120.0
GR2087.9   200.0  2094.1   206.3  2094.1   211.3  2097.9   230.0  2097.9   238.0
GR2099.3   241.0  2099.0   248.5  2099.3   254.1  2100.0   280.3  2100.1   287.0
GR2099.6   311.4  2099.2   313.5  2099.2   320.0
NC  .025    .025    .025      .1      .3
X1 245.4    21.0   100.9   218.0       4       4     4.0      .0      .0      .0
X3    10                    100             220
GR2096.8      .0  2096.5    20.1  2096.5    50.3  2096.3    65.3  2096.4    82.0
GR2096.2    96.1  2096.1   100.9  2096.6   102.0  2096.6   110.0  2086.6   120.0
GR2086.6   200.0  2096.6   210.0  2096.6   218.0  2096.8   225.4  2097.0   245.9
GR2095.6   251.8  2096.4   258.3  2096.4   266.8  2095.4   288.8  2096.0   309.9
GR2096.0   320.0
NC  .025    .025    .025      .3      .5
X1245.36    21.0   100.9   218.0      46      46    46.0      .0      .0      .0
X3    10                    100             220
GR2096.8      .0  2096.5    20.1  2096.5    50.3  2096.3    65.3  2096.4    82.0
GR2096.2    96.1  2096.1   100.9  2096.6   102.0  2096.6   110.0  2082.6   124.0
GR2082.6   196.0  2096.6   210.0  2096.6   218.0  2096.8   225.4  2097.0   245.9
GR2095.6   251.8  2096.4   258.3  2096.4   266.8  2095.4   288.8  2096.0   309.9
GR2096.0   320.0
NC  .025    .025    .025      .3      .5
X1 244.9    21.0   102.0   218.5      70      70    70.0      .0      .0      .0
X3    10                    100             220
GR2094.6      .0  2094.0    10.2  2094.3    19.4  2094.4    66.9  2094.7    78.2
GR2094.0    93.7  2093.9    99.5  2092.6   102.0  2092.6   110.0  2082.6   120.0
GR2082.6   200.0  2092.6   210.0  2092.6   218.0  2093.1   218.5  2092.7   232.5
GR2092.9   254.1  2094.0   286.9  2094.8   290.5  2096.0   297.7  2096.5   303.9
GR2096.3   320.0
NC  .025    .025    .025      .1      .3
X1 244.2    21.0   100.1   210.0       3       3     3.0      .0      .0      .0
X3    10                    100             210
GR2092.2      .0  2093.0    20.4  2093.9    40.5  2093.9    53.1  2092.2    79.6
GR2092.2    90.6  2092.3   100.1  2091.4   102.0  2091.4   110.0  2081.4   120.0
GR2081.4   200.0  2091.4   210.0  2091.4   218.0  2089.9   221.3  2091.0   237.1
GR2093.0   252.4  2093.2   283.2  2093.1   293.0  2092.7   302.0  2092.6   312.0
GR2092.0   320.0
NC  .025    .025    .025      .3      .5
X1244.17    21.0   100.1   210.0      47      47    47.0      .0      .0      .0
X3    10                    100             210
GR2092.2      .0  2093.0    20.4  2093.9    40.5  2093.9    53.1  2092.2    79.6
GR2092.2    90.6  2092.3   100.1  2091.4   102.0  2091.4   110.0  2078.4   123.0
GR2078.4   197.0  2091.4   210.0  2091.4   218.0  2089.9   221.3  2091.0   237.1
GR2093.0   252.4  2093.2   283.2  2093.1   293.0  2092.7   302.0  2092.6   312.0
GR2092.0   320.0
NC  .025    .025    .025      .3      .5
X1 243.7    26.0   102.0   218.0      60      60    60.0      .0      .0      .0
X3    10                    100             220
GR2090.3      .0  2090.2     4.4  2091.0    18.2  2091.7    32.8  2091.7    43.5
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GR2091.0    51.1  2090.4    61.3  2090.0    65.7  2090.0    81.7  2090.5    97.8
GR2088.4   102.0  2088.4   110.0  2078.4   120.0  2078.4   200.0  2088.4   210.0
GR2088.4   218.0  2089.8   220.9  2091.0   228.5  2090.8   234.5  2090.9   240.2
GR2090.6   257.9  2090.5   272.2  2090.7   282.4  2090.5   300.5  2090.5   315.7
GR2090.5   320.0
NC  .025    .025    .025      .1      .3
X1 243.1    24.0   101.1   219.0       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2088.2      .0  2087.9     6.1  2088.0    15.0  2089.0    38.5  2088.0    52.4
GR2087.0    62.1  2087.0    67.3  2087.6    72.6  2087.8    81.2  2087.8   101.1
GR2087.3   102.0  2087.3   110.0  2077.3   120.0  2077.3   200.0  2087.3   210.0
GR2087.3   218.0  2087.7   219.0  2088.0   222.6  2088.2   233.8  2087.9   252.7
GR2087.9   278.2  2088.0   281.1  2088.4   315.5  2088.2   320.0
NC  .025    .025    .025      .3      .5
X1243.07    24.0   101.1   219.0      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2088.2      .0  2087.9     6.1  2088.0    15.0  2089.0    38.5  2088.0    52.4
GR2087.0    62.1  2087.0    67.3  2087.6    72.6  2087.8    81.2  2087.8   101.1
GR2087.3   102.0  2087.3   110.0  2074.3   123.0  2074.3   197.0  2087.3   210.0
GR2087.3   218.0  2087.7   219.0  2088.0   222.6  2088.2   233.8  2087.9   252.7
GR2087.9   278.2  2088.0   281.1  2088.4   315.5  2088.2   320.0
NC  .025    .025    .025      .3      .5
X1 242.6    22.0   100.2   218.0      60      60    60.0      .0      .0      .0
X3    10                    100             220
GR2087.1      .0  2086.0    15.0  2084.7    37.9  2084.6    46.5  2084.0    55.6
GR2086.0    67.3  2086.0    74.2  2085.4    90.6  2085.2   100.2  2084.3   102.0
GR2084.3   110.0  2074.3   120.0  2074.3   200.0  2084.3   210.0  2084.3   218.0
GR2087.0   223.4  2087.0   245.8  2086.4   262.0  2086.4   271.7  2086.1   280.1
GR2086.1   290.9  2086.1   320.0
NC  .025    .025    .025      .1      .3
X1 242.0    25.0   102.0   218.0       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2085.5      .0  2083.7    25.5  2082.0    47.1  2081.0    50.7  2081.0    59.9
GR2081.3    64.9  2081.1    70.7  2080.5    78.6  2081.9    86.8  2082.0    88.6
GR2081.9    99.3  2083.2   102.0  2083.2   110.0  2073.2   120.0  2073.2   200.0
GR2083.2   210.0  2083.2   218.0  2085.0   222.2  2084.8   224.4  2083.6   246.5
GR2083.5   257.8  2084.0   278.5  2084.2   284.4  2084.3   298.6  2084.1   320.0
NC  .025    .025    .025      .3      .5
X1241.97    25.0   102.0   218.0      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2085.5      .0  2083.7    25.5  2082.0    47.1  2081.0    50.7  2081.0    59.9
GR2081.3    64.9  2081.1    70.7  2080.5    78.6  2081.9    86.8  2082.0    88.6
GR2081.9    99.3  2083.2   102.0  2083.2   110.0  2070.2   123.0  2070.2   197.0
GR2083.2   210.0  2083.2   218.0  2085.0   222.2  2084.8   224.4  2083.6   246.5
GR2083.5   257.8  2084.0   278.5  2084.2   284.4  2084.3   298.6  2084.1   320.0
NC  .025    .025    .025      .3      .5
X1 241.5    22.0   102.0   218.0      44      44    44.0      .0      .0      .0
X3    10                    100             220
GR2083.8      .0  2083.3    12.5  2081.7    22.8  2080.9    27.5  2080.6    38.3
GR2079.8    46.8  2079.0    54.0  2079.0    58.3  2079.8    76.9  2080.0    86.8
GR2080.2   102.0  2080.2   110.0  2070.2   120.0  2070.2   200.0  2080.2   210.0
GR2080.2   218.0  2082.9   223.5  2082.6   248.8  2082.2   263.3  2082.8   292.2
GR2082.6   310.5  2082.3   320.0
NC  .015    .015    .015      .3      .5
X1241.06    26.0     110   210.0      50      50      50      .0              .0
X3    10                    100             220
GR2080.9      .0  2080.4     5.5  2080.3    18.0  2080.1    26.1  2080.2    34.0
GR2080.5    36.3  2081.2    52.3  2081.2    59.1  2080.6    68.6  2081.2    78.5
GR2081.9    97.9  2079.9   102.0  2079.9   110.0  2069.9   120.0  2069.9   200.0
GR2079.9   210.0  2079.9   218.0  2082.2   222.8  2081.3   232.1  2080.1   246.3
GR2080.0   255.7  2080.3   268.4  2080.0   281.8  2080.1   284.2  2079.5   299.9
GR2079.3   320.0
SB  1.05     1.6     2.6     105      80     3.5    1370       1  2069.9  2069.5
X1240.56    26.0     110   210.0      86      86      86      .0              .0
X2                     1  2082.5  2084.7                    1.33
X3    10                    100             220
GR2080.5      .0  2080.0     5.5  2079.9    18.0  2079.7    26.1  2079.8    34.0
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GR2080.1    36.3  2080.8    52.3  2080.8    59.1  2080.2    68.6  2080.8    78.5
GR2081.5    97.9  2079.5   102.0  2079.5   110.0  2069.5   120.0  2069.5   200.0
GR2079.5   210.0  2079.5   218.0  2081.8   222.8  2080.9   232.1  2079.7   246.3
GR2079.6   255.7  2079.9   268.4  2079.6   281.8  2079.7   284.2  2079.1   299.9
GR2078.9   320.0
NC  .025    .025    .025      .3      .5
X1 239.7    22.0   102.0   218.0       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2069.1      .0  2069.7     4.9  2069.8    10.3  2071.1    13.5  2072.4    19.3
GR2073.5    25.5  2075.0    40.1  2075.6    49.0  2076.1    62.5  2076.8    91.1
GR2077.1    98.6  2078.8   102.0  2078.8   110.0  2068.8   120.0  2068.8   200.0
GR2078.8   210.0  2078.8   218.0  2077.4   220.6  2077.8   259.8  2077.0   282.0
GR2076.0   301.7  2074.6   320.0
NC  .025    .025    .025      .3      .5
X1239.67    22.0   102.0   218.0      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2069.1      .0  2069.7     4.9  2069.8    10.3  2071.1    13.5  2072.4    19.3
GR2073.5    25.5  2075.0    40.1  2075.6    49.0  2076.1    62.5  2076.8    91.1
GR2077.1    98.6  2078.8   102.0  2078.8   110.0  2065.8   123.0  2065.8   197.0
GR2078.8   210.0  2078.8   218.0  2077.4   220.6  2077.8   259.8  2077.0   282.0
GR2076.0   301.7  2074.6   320.0
NC  .025    .025    .025      .3      .5
X1 239.2    20.0   102.0   210.0       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2067.8      .0  2068.7    10.4  2072.2    23.0  2072.6    40.3  2073.0    46.7
GR2072.9    51.0  2074.2    91.3  2074.5    99.4  2075.8   102.0  2075.8   110.0
GR2065.8   120.0  2065.8   200.0  2075.8   210.0  2075.7   226.5  2075.9   260.6
GR2076.0   262.3  2076.0   286.6  2075.6   291.5  2075.0   302.3  2073.5   320.0
NC  .025    .025    .025      .3      .5
X1239.17    20.0   102.0   210.0      57      57    57.0      .0      .0      .0
X3    10                    100             220
GR2067.8      .0  2068.7    10.4  2072.2    23.0  2072.6    40.3  2073.0    46.7
GR2072.9    51.0  2074.2    91.3  2074.5    99.4  2075.8   102.0  2075.8   110.0
GR2062.8   123.0  2062.8   197.0  2075.8   210.0  2075.7   226.5  2075.9   260.6
GR2076.0   262.3  2076.0   286.6  2075.6   291.5  2075.0   302.3  2073.5   320.0
NC  .025    .025    .025      .1      .3
X1 238.6    19.0   100.6   218.0       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2066.6      .0  2066.6     2.8  2069.0    13.6  2071.6    24.5  2071.0    39.7
GR2071.0    49.3  2071.0    75.4  2072.1   100.6  2072.8   102.0  2072.8   110.0
GR2062.8   120.0  2062.8   200.0  2072.8   210.0  2072.8   218.0  2072.9   230.6
GR2073.0   268.1  2072.0   303.1  2071.0   318.7  2071.0   320.0
NC  .025    .025    .025      .3      .5
X1238.57    19.0   100.6   218.0      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2066.6      .0  2066.6     2.8  2069.0    13.6  2071.6    24.5  2071.0    39.7
GR2071.0    49.3  2071.0    75.4  2072.1   100.6  2072.8   102.0  2072.8   110.0
GR2059.8   123.0  2059.8   197.0  2072.8   210.0  2072.8   218.0  2072.9   230.6
GR2073.0   268.1  2072.0   303.1  2071.0   318.7  2071.0   320.0
NC  .025    .025    .025      .3      .5
X1 238.1    19.0   100.6   218.0      50      50    50.0      .0      .0      .0
X3    10                    100             220
GR2064.6      .0  2064.7     2.3  2067.1    14.8  2069.0    23.5  2069.0    43.8
GR2068.2    54.1  2068.3    59.1  2069.0    69.2  2070.5   100.6  2069.8   102.0
GR2069.8   110.0  2059.8   120.0  2059.8   200.0  2069.8   210.0  2069.8   218.0
GR2071.1   220.5  2071.1   245.8  2071.2   298.2  2070.2   320.0
NC  .025    .025    .025      .1      .3
X1 237.6    18.0   110.0   218.7       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2065.8      .0  2068.9     8.8  2069.0    13.0  2066.2    47.8  2066.0    57.5
GR2067.0    75.4  2067.5    80.9  2069.0    93.9  2068.9   110.0  2058.9   120.0
GR2058.9   200.0  2068.9   210.0  2068.9   218.0  2068.6   218.7  2069.0   257.1
GR2069.4   283.3  2068.9   305.8  2068.3   320.0
NC  .025    .025    .025      .3      .5
X1237.57    18.0   110.0   218.7      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2065.8      .0  2068.9     8.8  2069.0    13.0  2066.2    47.8  2066.0    57.5
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GR2067.0    75.4  2067.5    80.9  2069.0    93.9  2068.9   110.0  2055.9   123.0
GR2055.9   197.0  2068.9   210.0  2068.9   218.0  2068.6   218.7  2069.0   257.1
GR2069.4   283.3  2068.9   305.8  2068.3   320.0
NC  .025    .025    .025      .3      .5
X1 237.1    20.0   102.0   220.0      60      60    60.0      .0      .0      .0
X3    10                    100             220
GR2066.3      .0  2064.5    31.5  2064.7    54.5  2065.0    61.7  2066.1    79.2
GR2067.9    95.3  2068.0    97.8  2065.9   102.0  2065.9   110.0  2055.9   120.0
GR2055.9   200.0  2065.9   210.0  2065.9   218.0  2066.8   220.0  2067.1   243.4
GR2067.2   247.6  2067.6   268.5  2067.7   277.4  2067.8   298.5  2066.8   320.0
NC  .025    .025    .025      .1      .3
X1 236.5    22.0   102.0   218.0       4       4     4.0      .0      .0      .0
X3    10                    100             220
GR2062.5      .0  2062.7     7.0  2062.6    38.6  2062.5    50.1  2062.8    59.8
GR2064.3    80.3  2064.6    91.4  2064.8   102.0  2064.8   110.0  2054.8   120.0
GR2054.8   200.0  2064.8   210.0  2064.8   218.0  2064.3   220.9  2064.5   232.1
GR2064.6   239.4  2065.0   255.2  2065.3   282.7  2065.4   289.5  2064.6   303.6
GR2064.0   314.1  2063.4   320.0
NC  .025    .025    .025      .3      .5
X1236.46    22.0   102.0   218.0      46      46    46.0      .0      .0      .0
X3    10                    100             220
GR2062.5      .0  2062.7     7.0  2062.6    38.6  2062.5    50.1  2062.8    59.8
GR2064.3    80.3  2064.6    91.4  2064.8   102.0  2064.8   110.0  2050.8   124.0
GR2050.8   196.0  2064.8   210.0  2064.8   218.0  2064.3   220.9  2064.5   232.1
GR2064.6   239.4  2065.0   255.2  2065.3   282.7  2065.4   289.5  2064.6   303.6
GR2064.0   314.1  2063.4   320.0
NC  .025    .025    .025      .3      .5
X1 236.0    26.0   102.0   218.0      50    50.0      50      .0      .0
X3    10                    100             220
GR2060.3      .0  2060.7    18.0  2061.0    36.1  2061.0    51.6  2061.7    56.3
GR2062.0    60.3  2062.9    66.9  2062.9    85.2  2062.8    98.0  2060.8   102.0
GR2060.8   110.0  2050.8   120.0  2050.8   200.0  2060.8   210.0  2060.8   218.0
GR2062.1   220.6  2061.7   235.7  2062.0   248.1  2062.9   274.3  2062.8   277.3
GR2063.3   293.1  2063.0   296.5  2062.5   297.5  2061.8   302.5  2061.7   315.5
GR2061.8   320.0
NC  .025    .025    .025      .1      .3
X1 235.5    20.0   104.0   222.8       4       4     4.0      .0      .0      .0
X3    10                    100             230
GR2058.3      .0  2058.6    16.4  2059.0    30.1  2060.7    55.8  2060.7    88.7
GR2059.9    90.0  2059.9    98.0  2053.9   104.0  2053.9   116.0  2049.9   120.0
GR2049.9   200.0  2059.9   210.0  2059.9   218.0  2060.3   222.8  2061.0   250.8
GR2061.5   266.7  2059.9   276.6  2060.1   301.0  2060.1   302.8  2060.6   320.0
NC  .025    .025    .025      .3      .5
X1235.46    20.0   104.0   222.8      46      46    46.0      .0      .0      .0
X3    10                    100             230
GR2058.3      .0  2058.6    16.4  2059.0    30.1  2060.7    55.8  2060.7    88.7
GR2059.9    90.0  2059.9    98.0  2053.9   104.0  2053.9   116.0  2045.9   124.0
GR2045.9   196.0  2059.9   210.0  2059.9   218.0  2060.3   222.8  2061.0   250.8
GR2061.5   266.7  2059.9   276.6  2060.1   301.0  2060.1   302.8  2060.6   320.0
NC  .025    .025    .025      .3      .5
X1 235.0    24.0   104.0   224.6      50      50    50.0      .0      .0      .0
X3    10                    100             230
GR2055.2      .0  2055.3     4.4  2056.0    18.4  2058.0    37.3  2058.0    43.9
GR2058.4    52.4  2058.7    80.2  2058.7    84.4  2055.9    90.0  2055.9    98.0
GR2049.9   104.0  2049.9   116.0  2045.9   120.0  2045.9   200.0  2055.9   210.0
GR2055.9   218.0  2059.1   224.6  2059.0   234.3  2057.9   241.1  2057.8   262.6
GR2058.0   267.3  2058.9   296.6  2060.0   306.4  2060.0   320.0
NC  .025    .025    .025      .1      .3
X1 234.5    24.0   104.0   219.2       3       3     3.0      .0      .0      .0
X3    10                    100             230
GR2055.4      .0  2055.6     4.1  2055.9    28.6  2055.5    60.9  2055.5    68.0
GR2055.6    88.7  2055.0    90.0  2055.0    98.0  2049.0   104.0  2049.0   116.0
GR2045.0   120.0  2045.0   200.0  2055.0   210.0  2055.0   218.0  2055.3   219.2
GR2055.3   234.8  2055.2   241.2  2055.2   247.8  2056.0   259.5  2056.5   270.6
GR2057.3   276.7  2058.0   292.7  2058.0   302.2  2058.6   320.0
NC  .025    .025    .025      .3      .5
X1234.47    24.0   104.0   219.2      47      47    47.0      .0      .0      .0
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X3     10                    100            230
GR2055.4      .0  2055.6     4.1  2055.9    28.6  2055.5    60.9  2055.5    68.0
GR2055.6    88.7  2055.0    90.0  2055.0    98.0  2049.0   104.0  2049.0   116.0
GR2042.0   123.0  2042.0   197.0  2055.0   210.0  2055.0   218.0  2055.3   219.2
GR2055.3   234.8  2055.2   241.2  2055.2   247.8  2056.0   259.5  2056.5   270.6
GR2057.3   276.7  2058.0   292.7  2058.0   302.2  2058.6   320.0
NC  .025    .025    .025      .3      .5
X1 234.0    25.0   104.0   218.9      50      50    50.0      .0      .0      .0
X3     10                    100            230
GR2050.1      .0  2051.0     9.0  2052.0    13.7  2051.8    28.6  2051.9    43.3
GR2052.4    46.9  2052.4    55.3  2053.0    77.8  2052.9    87.9  2052.0    90.0
GR2052.0    98.0  2046.0   104.0  2046.0   116.0  2042.0   120.0  2042.0   200.0
GR2052.0   210.0  2052.0   218.0  2052.4   218.9  2052.8   238.8  2053.1   251.8
GR2055.8   274.1  2057.5   290.3  2058.0   294.3  2058.0   309.1  2058.2   320.0
NC  .025    .025    .025      .1      .3
X1 233.5    22.0   103.1   219.7       3       3     3.0      .0      .0      .0
X3     10                    100            220
GR2042.9      .0  2043.2     3.8  2045.3    21.9  2046.5    36.6  2046.3    45.8
GR2045.9    54.1  2045.8    63.8  2046.0    66.7  2046.7    86.4  2048.1   103.1
GR2045.1   112.0  2041.1   120.0  2041.1   200.0  2051.1   210.0  2051.1   218.0
GR2050.3   219.7  2050.6   235.6  2050.7   247.4  2051.5   259.8  2055.0   284.4
GR2057.0   298.1  2057.6   320.0
NC  .025    .025    .025      .3      .5
X1233.47    22.0   103.1   219.7      47      47    47.0      .0      .0      .0
X3     10                    100            220
GR2042.9      .0  2043.2     3.8  2045.3    21.9  2046.5    36.6  2046.3    45.8
GR2045.9    54.1  2045.8    63.8  2046.0    66.7  2046.7    86.4  2048.1   103.1
GR2045.1   112.0  2038.1   123.0  2038.1   197.0  2051.1   210.0  2051.1   218.0
GR2050.3   219.7  2050.6   235.6  2050.7   247.4  2051.5   259.8  2055.0   284.4
GR2057.0   298.1  2057.6   320.0
NC  .025    .025    .025      .3      .5
X1 233.0    23.0   112.0   210.0       4       4     4.0      .0      .0      .0
X3     10                    100            220
GR2042.0      .0  2042.0    18.8  2041.7    36.0  2042.1    50.4  2042.4    63.4
GR2042.7    69.7  2044.4    84.6  2046.4    99.1  2042.1   112.0  2038.1   120.0
GR2038.1   200.0  2048.1   210.0  2048.3   240.6  2049.0   252.7  2050.1   260.5
GR2052.0   263.7  2052.8   268.8  2052.6   273.5  2052.6   280.6  2052.7   286.9
GR2053.4   301.5  2053.6   309.7  2053.5   320.0
NC  .025    .025    .025      .3      .5
X1232.96    23.0   112.0   210.0      46      46    46.0      .0      .0      .0
X3     10                    100            220
GR2042.0      .0  2042.0    18.8  2041.7    36.0  2042.1    50.4  2042.4    63.4
GR2042.7    69.7  2044.4    84.6  2046.4    99.1  2042.1   112.0  2034.1   124.0
GR2034.1   196.0  2048.1   210.0  2048.3   240.6  2049.0   252.7  2050.1   260.5
GR2052.0   263.7  2052.8   268.8  2052.6   273.5  2052.6   280.6  2052.7   286.9
GR2053.4   301.5  2053.6   309.7  2053.5   320.0
NC  .025    .025    .025      .3      .5
X1 232.5    23.0    97.0   218.0     270     270   270.0      .0      .0      .0
X3     10                     95            220
GR2048.2      .0  2044.2     6.3  2042.7     9.9  2042.0    12.6  2041.0    25.4
GR2041.0    50.6  2040.0    65.3  2040.0    78.5  2043.1    97.0  2038.1   112.0
GR2034.1   120.0  2034.1   200.0  2044.1   210.0  2044.1   218.0  2045.6   221.1
GR2045.8   237.5  2046.3   239.9  2048.6   254.1  2049.6   261.3  2050.0   265.6
GR2050.5   276.3  2050.9   305.4  2051.2   320.0
QT      6  11742    9538    7644    5227    3827    2162
NC  .025    .025    .025      .1      .3
X1 229.8    30.0   102.0   215.1       2       2     2.0      .0      .0      .0
X3     10                    100            220
GR2067.0      .0  2067.0    24.7  2067.0    26.4  2066.3    28.1  2063.6    30.8
GR2060.0    39.1  2056.6    47.6  2055.3    52.6  2052.5    56.6  2045.6    78.7
GR2043.4    86.1  2039.2   102.0  2039.2   110.0  2029.2   120.0  2029.2   200.0
GR2033.2   204.0  2033.2   209.1  2039.2   215.1  2039.2   223.1  2036.1   230.1
GR2036.3   240.8  2036.0   244.1  2036.3   250.0  2036.0   251.1  2040.2   261.6
GR2042.2   270.3  2043.0   272.4  2044.0   287.3  2045.4   309.1  2046.3   320.0
NC  .025    .025    .025      .3      .5
X1229.78    30.0   102.0   215.1      48      48    48.0      .0      .0      .0
X3     10                    100            220
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GR2067.0      .0  2067.0    24.7  2067.0    26.4  2066.3    28.1  2063.6    30.8
GR2060.0    39.1  2056.6    47.6  2055.3    52.6  2052.5    56.6  2045.6    78.7
GR2043.4    86.1  2039.2   102.0  2039.2   110.0  2027.2   122.0  2027.2   198.0
GR2033.2   204.0  2033.2   209.1  2039.2   215.1  2039.2   223.1  2036.1   230.1
GR2036.3   240.8  2036.0   244.1  2036.3   250.0  2036.0   251.1  2040.2   261.6
GR2042.2   270.3  2043.0   272.4  2044.0   287.3  2045.4   309.1  2046.3   320.0
NC  .025    .025    .025      .3      .5
X1 229.3    26.0   102.0   228.0     250     250   250.0      .0      .0      .0
X3    10                    100             235
GR2067.0      .0  2067.0    21.9  2062.5    31.0  2056.9    43.8  2055.8    48.9
GR2052.7    54.1  2048.5    65.0  2044.7    76.8  2038.6    99.3  2037.2   102.0
GR2037.2   110.0  2027.2   120.0  2027.2   200.0  2031.2   204.0  2031.2   222.0
GR2037.2   228.0  2037.2   236.0  2035.0   240.7  2037.2   246.8  2040.0   258.7
GR2040.3   261.3  2042.8   278.4  2043.6   283.0  2045.0   292.7  2046.0   312.1
GR2045.9   320.0
NC  .025    .025    .025      .1      .3
X1 226.8    25.0   102.0   218.0       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2067.0      .0  2067.0    32.7  2062.7    39.4  2056.8    47.5  2047.5    63.6
GR2045.0    67.7  2042.6    74.7  2036.6    85.9  2030.0    96.6  2032.7   102.0
GR2032.7   110.0  2022.7   120.0  2022.7   200.0  2032.7   210.0  2032.7   218.0
GR2028.6   226.4  2029.1   228.4  2032.2   247.1  2033.3   252.8  2034.2   260.0
GR2034.5   265.2  2035.3   275.2  2036.0   286.0  2036.2   296.5  2036.1   320.0
NC  .025    .025    .025      .3      .5
X1226.77    25.0   102.0   218.0      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2067.0      .0  2067.0    32.7  2062.7    39.4  2056.8    47.5  2047.5    63.6
GR2045.0    67.7  2042.6    74.7  2036.6    85.9  2030.0    96.6  2032.7   102.0
GR2032.7   110.0  2019.7   123.0  2019.7   197.0  2032.7   210.0  2032.7   218.0
GR2028.6   226.4  2029.1   228.4  2032.2   247.1  2033.3   252.8  2034.2   260.0
GR2034.5   265.2  2035.3   275.2  2036.0   286.0  2036.2   296.5  2036.1   320.0
NC  .025    .025    .025      .3      .5
X1 226.3    30.0   102.0   218.0     300     300   300.0      .0      .0      .0
X3    10                    100             220
GR2067.0      .0  2067.0    25.5  2063.5    32.1  2054.6    47.3  2046.0    63.3
GR2039.3    79.8  2035.4    87.8  2028.5    99.2  2029.7   102.0  2029.7   110.0
GR2019.7   120.0  2019.7   200.0  2029.7   210.0  2029.7   218.0  2026.7   224.0
GR2027.0   242.1  2030.4   251.4  2032.0   255.6  2032.6   258.5  2033.5   267.0
GR2034.0   274.8  2034.0   279.9  2033.8   283.7  2033.4   285.7  2032.8   294.7
GR2033.0   298.4  2034.0   307.1  2034.0   309.7  2034.8   314.7  2034.6   320.0
NC  .025    .025    .025      .1      .3
X1 223.3    24.0   102.0   219.9       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2054.4      .0  2050.9    10.9  2049.4    16.5  2048.0    22.2  2043.3    36.1
GR2040.2    44.2  2037.1    51.1  2032.7    60.2  2026.4    74.1  2021.5    85.7
GR2019.3    91.9  2024.3   102.0  2024.3   110.0  2014.3   120.0  2014.3   200.0
GR2024.3   210.0  2024.3   218.0  2025.3   219.9  2025.4   230.9  2026.0   249.9
GR2025.0   280.6  2023.8   291.2  2023.4   306.0  2023.8   320.0
NC  .025    .025    .025      .3      .5
X1223.27    24.0   102.0   219.9      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2054.4      .0  2050.9    10.9  2049.4    16.5  2048.0    22.2  2043.3    36.1
GR2040.2    44.2  2037.1    51.1  2032.7    60.2  2026.4    74.1  2021.5    85.7
GR2019.3    91.9  2024.3   102.0  2024.3   110.0  2011.3   123.0  2011.3   197.0
GR2024.3   210.0  2024.3   218.0  2025.3   219.9  2025.4   230.9  2026.0   249.9
GR2025.0   280.6  2023.8   291.2  2023.4   306.0  2023.8   320.0
NC  .025    .025    .025      .3      .5
X1 222.8    22.0   102.0   218.0     380     380   380.0      .0      .0      .0
X3    10                    100             220
GR2052.6      .0  2049.4     8.0  2043.6    28.8  2040.5    39.5  2039.4    42.3
GR2030.9    56.1  2025.4    69.7  2021.8    78.9  2017.9    90.3  2016.9    93.2
GR2021.3   102.0  2021.3   110.0  2011.3   120.0  2011.3   200.0  2021.3   210.0
GR2021.3   218.0  2024.7   224.6  2024.9   240.3  2024.8   281.7  2023.4   299.6
GR2022.0   314.9  2022.0   320.0
NC  .025    .025    .025      .1      .3
X1 219.0    19.0   102.0   219.8       3       3     3.0      .0      .0      .0
X3    10                    100             220
```

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GR2048.0      .0  2035.7    31.1  2024.5    59.6  2022.0    65.9  2018.5    75.4
GR2011.5    96.0  2014.5   102.0  2014.5   110.0  2004.5   120.0  2004.5   200.0
GR2014.5   210.0  2014.5   218.0  2013.7   219.8  2013.0   243.1  2013.0   260.5
GR2013.5   267.9  2014.4   278.5  2014.7   291.4  2014.9   320.0
NC  .025    .025    .025      .3      .5
X1218.97    19.0   102.0   219.8      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2048.0      .0  2035.7    31.1  2024.5    59.6  2022.0    65.9  2018.5    75.4
GR2011.5    96.0  2014.5   102.0  2014.5   110.0  2001.5   123.0  2001.5   197.0
GR2014.5   210.0  2014.5   218.0  2013.7   219.8  2013.0   243.1  2013.0   260.5
GR2013.5   267.9  2014.4   278.5  2014.7   291.4  2014.9   320.0
NC  .025    .025    .025      .3      .5
X1 218.5    18.0   102.0   219.5     200     200   200.0      .0      .0      .0
X3    10                    100             220
GR2047.3      .0  2039.1    20.4  2032.9    36.5  2021.9    66.8  2015.7    84.4
GR2010.5    99.9  2011.5   102.0  2011.5   110.0  2001.5   120.0  2001.5   200.0
GR2011.5   210.0  2011.5   218.0  2012.3   219.5  2012.0   233.4  2011.3   260.5
GR2013.0   282.1  2013.4   315.7  2013.3   320.0
NC  .025    .025    .025      .1      .3
X1 216.5    20.0   102.0   218.0       3       3     3.0      .0      .0      .0
X3    10                    100             220
GR2035.4      .0  2038.9    21.4  2020.4    45.2  2016.9    56.0  2011.6    74.7
GR2008.7    84.7  2006.1    97.3  2008.4   102.0  2008.4   110.0  1998.4   120.0
GR1998.4   200.0  2008.4   210.0  2008.4   218.0  2006.6   221.8  2005.9   248.6
GR2005.5   268.3  2005.2   283.7  2005.1   294.0  2005.9   309.0  2005.9   320.0
NC  .025    .025    .025      .3      .5
X1216.47    20.0   102.0   218.0      47      47    47.0      .0      .0      .0
X3    10                    100             220
GR2035.4      .0  2028.9    21.4  2020.4    45.2  2016.9    56.0  2011.6    74.7
GR2008.7    84.7  2006.1    97.3  2008.4   102.0  2008.4   110.0  1995.4   123.0
GR1995.4   197.0  2008.4   210.0  2008.4   218.0  2006.6   221.8  2005.9   248.6
GR2005.5   268.3  2005.2   283.7  2005.1   294.0  2005.9   309.0  2005.9   320.0
NC  .025    .025    .025      .3      .5
X1 216.0    33.0   242.6   350.0     100     100   100.0      .0      .0      .0
X3    10                    240             355
GR2091.1      .0  2089.7    19.6  2084.6    41.4  2077.6    45.5  2068.6    54.8
GR2056.1    76.1  2054.4    82.1  2049.0    90.8  2043.0   105.7  2040.4   114.5
GR2035.0   125.8  2032.7   136.1  2029.0   148.5  2026.9   152.4  2025.0   159.0
GR2023.0   170.5  2020.6   175.0  2008.0   217.5  2004.2   238.4  2005.4   242.6
GR2005.4   250.0  1995.4   260.0  1995.4   340.0  2005.4   350.0  2005.3   358.3
GR2004.1   362.2  2002.8   415.5  2002.8   466.7  2003.0   475.9  2002.9   523.4
GR2002.0   561.9  2002.0   581.8  2001.5   600.0
NC  .025    .025    .025      .1      .3
X1 215.0    36.0   242.0   350.0       3       3     3.0      .0              .0
X3    10                    240             355
GR2056.5      .0  2055.8    24.2  2054.7    45.0  2051.0    52.7  2048.4    71.4
GR2043.0    86.9  2043.0    91.1  2035.0   101.4  2027.0   120.6  2025.0   128.8
GR2023.0   131.9  2017.6   153.4  2014.0   163.4  2010.0   180.5  2007.9   191.2
GR2001.0   219.6  1999.5   229.6  2003.6   242.0  2003.6   250.0  1993.6   260.0
GR1993.6   340.0  2003.6   350.0  2003.6   358.0  2002.0   362.9  2002.4   384.2
GR2001.7   392.2  2000.4   399.0  2000.0   418.0  2000.0   438.2  2000.8   458.3
GR2000.8   466.1  1999.3   490.4  2000.5   508.6  2000.0   540.2  1998.9   561.2
GR1998.6   600.0
NC  .025    .025    .025      .3      .5
X1214.97    36.0   242.0   350.0      46      46    47.0      .0      .0      .0
X3    10                    240             355
GR2057.5      .0  2056.8    24.2  2055.7    45.0  2052.0    52.7  2049.4    71.4
GR2044.0    86.9  2044.0    91.1  2036.0   101.4  2028.0   120.6  2026.0   128.8
GR2024.0   131.9  2018.6   153.4  2015.0   163.4  2011.0   180.5  2008.9   191.2
GR2002.0   219.6  2000.5   229.6  2004.6   242.0  2004.6   250.0  1990.6   264.0
GR1990.6   336.0  2004.6   350.0  2004.6   358.0  2003.0   362.9  2003.4   384.2
GR2002.7   392.2  2001.4   399.0  2001.0   418.0  2001.0   438.2  2001.8   458.3
GR2001.8   466.1  2000.3   490.4  2001.5   508.6  2001.0   540.2  1999.9   561.2
GR1999.6   600.0
NC  .025    .025    .025      .3      .5
X1 214.5    39.0   242.0   350.0      50      50    50.0      .0      .0      .0
X3    10                    240             355
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GR2043.3      .0  2043.6    13.5  2042.9    31.3  2042.7    44.5  2040.6    56.0
GR2040.7    79.3  2039.0    96.3  2034.0   105.3  2029.6   112.0  2023.5   122.9
GR2018.0   140.1  2011.8   161.6  2007.0   180.6  2004.0   199.1  2002.0   206.2
GR1999.8   219.3  1999.0   232.5  1998.2   234.9  2000.6   242.0  2000.6   250.0
GR1990.6   260.0  1990.6   340.0  2000.6   350.0  2000.2   363.2  2001.0   382.6
GR2005.0   395.0  2005.0   407.8  2001.0   418.1  2000.0   429.0  1999.5   441.3
GR1999.3   455.2  2000.0   474.2  1999.7   486.0  1999.0   491.6  1999.0   504.8
GR1999.7   529.2  1999.0   554.1  1998.0   580.6  1997.7   600.0
NC  .025    .025    .025      .1      .3
X1 214.0    36.0   242.0   350.0       3       3     3.0      .0      .0      .0
X3     10                   240             355
GR2031.2      .0  2029.6    28.6  2030.4    41.3  2029.7    48.5  2027.5    56.8
GR2028.2    69.2  2027.6    83.5  2028.3    90.4  2025.9   104.9  2025.4   122.1
GR2016.0   132.8  2010.0   153.1  2007.9   158.4  2005.9   170.5  1999.9   198.7
GR1997.8   204.7  1998.0   223.5  1996.6   232.6  1999.7   242.0  1999.7   250.0
GR1989.7   260.0  1989.7   340.0  1999.7   350.0  1999.7   358.0  1999.0   367.2
GR1999.0   400.1  2004.7   410.8  2004.7   423.5  2005.0   426.5  1999.6   436.5
GR1998.0   445.0  1997.8   473.6  1997.1   497.1  1997.7   530.3  1996.9   575.7
GR1996.3   600.0
NC  .025    .025    .025      .3      .5
X1213.97    36.0   242.0   350.0      47      47    47.0      .0      .0      .0
X3     10                   240             355
GR2031.2      .0  2029.6    28.6  2030.4    41.3  2029.7    48.5  2027.5    56.8
GR2028.2    69.2  2027.6    83.5  2028.3    90.4  2025.9   104.9  2025.4   122.1
GR2016.0   132.8  2010.0   153.1  2007.9   158.4  2005.9   170.5  1999.9   198.7
GR1997.8   204.7  1998.0   223.5  1996.6   232.6  1999.7   242.0  1999.7   250.0
GR1986.7   263.0  1986.7   337.0  1999.7   350.0  1999.7   358.0  1999.0   367.2
GR1999.0   400.1  2004.7   410.8  2004.7   423.5  2005.0   426.5  1999.6   436.5
GR1998.0   445.0  1997.8   473.6  1997.1   497.1  1997.7   530.3  1996.9   575.7
GR1996.3   600.0
NC  .025    .025    .025      .3      .5
X1 213.5    35.0   242.0   350.0      50      50    50.0      .0      .0      .0
X3     10                   240             355
GR2017.2      .0  2015.7    41.0  2012.5    54.4  2014.2    72.5  2012.7   102.4
GR2009.9   117.7  2007.9   138.4  2002.0   160.9  1997.7   185.4  1997.0   187.4
GR1997.0   216.7  1995.9   224.5  1995.0   236.8  1996.7   242.0  1996.7   250.0
GR1986.7   260.0  1986.7   340.0  1996.7   350.0  1997.1   360.4  1998.0   367.4
GR1997.8   387.2  1998.0   407.2  2004.0   417.9  2003.0   419.8  2003.0   430.4
GR2004.0   434.4  1999.0   441.7  1997.9   448.2  1997.0   450.0  1996.0   463.8
GR1996.0   502.2  1995.8   535.4  1995.6   549.3  1995.0   564.9  1994.9   600.0
NC  .025    .025    .025      .1      .3
X1 213.0    35.0   242.0   350.0       3       3     3.0      .0      .0      .0
X3     10                   240             355
GR2006.4      .0  2004.9    25.2  2004.0    49.0  2002.8    60.8  2002.7    73.1
GR2001.7    85.8  2001.0   108.9  1998.6   146.3  1995.9   162.2  1995.1   184.0
GR1996.0   192.5  1996.0   213.6  1997.0   233.2  1997.0   238.4  1995.8   242.0
GR1995.8   250.0  1985.8   260.0  1985.8   340.0  1995.8   350.0  1995.8   358.0
GR1993.3   365.6  1995.6   376.1  1996.1   406.1  1998.8   412.2  2003.0   418.5
GR2002.0   422.4  2002.4   438.9  1996.5   448.1  1995.7   480.8  1995.0   503.6
GR1994.0   516.5  1994.0   533.0  1994.4   556.7  1993.8   595.5  1993.6   600.0
NC  .025    .025    .025      .3      .5
X1212.97    35.0   242.0   350.0      47      47    47.0      .0      .0      .0
X3     10                   240             355
GR2006.4      .0  2004.9    25.2  2004.0    49.0  2002.8    60.8  2002.7    73.1
GR2001.7    85.8  2001.0   108.9  1998.6   146.3  1995.9   162.2  1995.1   184.0
GR1996.0   192.5  1996.0   213.6  1997.0   233.2  1997.0   238.4  1995.8   242.0
GR1995.8   250.0  1982.8   263.0  1982.8   337.0  1995.8   350.0  1995.8   358.0
GR1993.3   365.6  1995.6   376.1  1996.1   406.1  1998.8   412.2  2003.0   418.5
GR2002.0   422.4  2002.4   438.9  1996.5   448.1  1995.7   480.8  1995.0   503.6
GR1994.0   516.5  1994.0   533.0  1994.4   556.7  1993.8   595.5  1993.6   600.0
NC  .025    .025    .025      .3      .5
X1 212.5    36.0   242.0   350.0      44      44    44.0      .0      .0      .0
X3     10                   240             355
GR2004.6      .0  2002.5    13.7  2000.0    34.9  1999.0    48.0  1996.5   117.3
GR1996.0   144.7  1992.0   157.8  1993.4   190.8  1996.0   203.8  1996.0   232.4
GR1992.8   242.0  1992.8   250.0  1982.8   260.0  1982.8   340.0  1992.8   350.0
GR1992.8   358.0  1994.8   364.0  1992.8   377.5  1992.0   380.8  1992.2   390.5
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GR1993.4   397.6  1994.0   406.8  2002.0   420.7  2001.0   427.7  2001.0   435.6
GR2002.0   439.2  1995.0   448.6  1994.4   452.4  1994.8   475.3  1993.0   519.5
GR1993.1   534.2  1993.7   543.6  1992.9   563.5  1992.0   572.8  1992.0   586.1
GR1992.4   600.0
NC  .015    .015    .015      .3      .5
X1212.06    36.0   242.0   350.0      40      40    40.0      .0      .0      .0
X3    10                    240             355
GR2002.6      .0  2002.5    19.3  1998.9    55.6  1998.0    63.2  1997.0    91.8
GR1996.0   106.9  1991.0   140.0  1991.2   149.5  1992.0   165.0  1993.0   171.4
GR1994.0   182.4  1994.9   211.9  1993.2   238.4  1992.0   242.0  1992.0   250.0
GR1982.0   260.0  1982.0   340.0  1992.0   350.0  1992.0   358.0  1993.0   361.0
GR1993.0   382.6  1992.0   391.8  1992.0   408.2  1995.0   415.2  2001.0   422.0
GR2000.7   425.8  1999.0   429.9  1999.3   437.6  2000.0   441.0  1994.0   448.6
GR1993.9   454.7  1993.0   464.7  1993.0   496.7  1991.2   534.6  1991.8   552.0
GR1991.0   600.0
SB  1.05     1.6     2.6     100      80     3.5    1267       1    1982  1981.3
X1211.66    36.0   250.0   350.0      66      66    66.0      .0      .0      .0
X2                     1    1996    1998                   1.33
X3    10                    240             355
GR1998.7      .0  2000.3    14.1  1999.9    31.5  1998.0    37.6  1997.5    43.3
GR1996.7    96.8  1996.0   108.9  1991.6   117.9  1990.7   125.5  1991.0   129.1
GR1991.0   144.6  1992.2   157.1  1993.1   177.2  1993.5   197.7  1993.0   219.8
GR1991.0   231.4  1991.3   250.0  1981.3   260.0  1981.3   340.0  1991.3   350.0
GR1992.0   360.2  1992.0   412.4  1995.0   418.3  1997.2   420.5  1999.0   424.7
GR1998.0   430.9  1998.0   438.6  1999.0   442.5  1991.7   450.3  1991.4   485.4
GR1991.6   504.0  1991.0   522.7  1990.0   542.4  1990.3   568.3  1990.0   585.1
GR1990.0   600.0
NC  .025    .025    .025      .3      .5
X1 211.0    33.0   250.0   350.0     100     100   100.0      .0      .0      .0
X3    10                    240             355
GR1994.4      .0  1995.3    19.0  1994.8    45.3  1993.0    85.0  1989.8    98.3
GR1989.0   100.0  1989.0   118.3  1990.4   138.9  1991.9   186.5  1990.0   222.5
GR1990.1   250.0  1980.1   260.0  1980.1   340.0  1990.1   350.0  1990.4   389.6
GR1991.0   414.9  1996.2   423.5  1998.0   424.8  1995.6   429.5  1995.5   437.5
GR1997.0   439.9  1996.9   443.1  1995.0   446.9  1989.7   452.7  1988.6   456.2
GR1988.0   471.3  1988.0   489.5  1987.0   507.6  1989.0   524.5  1988.8   542.3
GR1988.1   566.7  1988.0   587.4  1987.1   600.0
NC  .025    .025    .025      .3      .5
X1 210.0    33.0   240.8   370.4     100     100   100.0      .0      .0      .0
X3    10                    240             375
GR1990.0      .0  1990.0    15.0  1990.6    46.5  1989.5    70.8  1986.6    84.4
GR1986.3    99.0  1988.0   107.5  1988.8   127.4  1988.4   144.6  1988.4   166.2
GR1988.0   193.4  1989.0   205.3  1988.8   220.9  1987.2   231.9  1987.5   240.8
GR1978.3   250.0  1978.3   350.0  1985.9   357.6  1985.9   365.6  1987.5   370.4
GR1986.5   376.8  1986.4   394.1  1987.1   409.0  1994.6   423.8  1994.0   440.0
GR1984.7   451.6  1985.2   484.5  1984.3   514.8  1984.0   558.2  1983.0   571.9
GR1982.0   581.3  1983.0   583.7  1983.0   600.0
NC  .025    .025    .025      .3      .5
X1 209.0    34.0   223.6   382.8      50      50    50.0      .0      .0      .0
X3    10                    220             385
GR1987.0      .0  1985.4    36.0  1985.7    57.3  1986.5    75.3  1983.9    85.7
GR1983.3    95.5  1985.8   113.6  1986.0   141.8  1984.5   157.8  1985.0   174.5
GR1986.3   188.1  1986.4   199.9  1985.8   220.9  1984.9   223.6  1984.9   231.6
GR1976.5   240.0  1976.5   360.0  1981.7   365.2  1981.7   373.2  1984.9   382.8
GR1983.9   411.3  1983.0   417.0  1983.0   426.1  1990.3   438.8  1993.0   446.0
GR1993.8   460.5  1992.7   475.0  1990.0   490.1  1985.7   500.6  1982.0   511.3
GR1981.0   518.8  1981.0   533.5  1980.0   542.9  1980.0   600.0
NC  .025    .025    .025      .3      .5
X1 208.5    28.0   227.0   389.0       4       4     4.0      .0      .0      .0
X3    10                    220             390
GR1985.7      .0  1983.8    37.3  1984.8    75.7  1982.0    90.8  1982.0   104.9
GR1985.0   112.7  1985.0   128.6  1984.5   146.1  1983.0   166.6  1984.2   200.5
GR1984.5   216.4  1983.6   219.0  1983.6   227.0  1975.6   235.0  1975.6   365.0
GR1979.6   369.0  1979.6   377.0  1983.6   389.0  1983.6   397.0  1982.4   400.6
GR1983.0   409.7  1989.6   441.9  1990.0   466.2  1989.7   480.1  1989.5   522.0
GR1990.4   531.9  1989.0   560.3  1982.3   600.0
NC  .025    .025    .025      .3      .5
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X1208.46    28.0   227.0   389.0      46      46    46.0      .0      .0      .0
X3    10                   220             390
GR1985.7      .0  1983.8    37.3  1984.8    75.7  1982.0    90.8  1982.0   104.9
GR1985.0   112.7  1985.0   128.6  1984.5   146.1  1983.0   166.6  1984.2   200.5
GR1984.5   216.4  1983.6   219.0  1983.6   227.0  1971.6   239.0  1971.6   361.0
GR1979.6   369.0  1979.6   377.0  1983.6   389.0  1983.6   397.0  1982.4   400.6
GR1983.0   409.7  1989.6   441.9  1990.0   466.2  1989.7   480.1  1989.5   522.0
GR1990.4   531.9  1989.0   560.3  1982.3   600.0
NC  .025    .025    .025      .3      .5
X1 208.0    29.0   227.0   389.0      50      50    50.0      .0      .0      .0
X3    10                   220             390
GR1983.8      .0  1981.7    44.4  1982.7    61.7  1982.6    83.3  1980.0   106.6
GR1981.2   113.6  1985.0   124.3  1984.9   153.6  1982.0   177.0  1982.4   210.7
GR1979.6   219.0  1979.6   227.0  1971.6   235.0  1971.6   365.0  1975.6   369.0
GR1975.6   377.0  1979.6   389.0  1979.6   397.1  1982.2   420.1  1985.0   429.6
GR1986.0   434.7  1988.0   454.7  1988.4   485.5  1988.0   506.3  1988.0   517.3
GR1985.0   534.2  1983.7   559.4  1982.0   570.4  1974.4   600.0
NC  .025    .025    .025      .1      .3
X1 207.5    38.0   227.0   389.0       3       3     3.0      .0      .0      .0
X3    10                   220             390
GR1982.7      .0  1981.9    26.1  1980.0    33.2  1980.2    43.6  1981.0    51.2
GR1981.5    73.9  1981.0    86.9  1979.7    94.2  1978.7   110.2  1979.0   118.3
GR1983.1   127.1  1984.4   134.4  1983.9   161.4  1982.0   177.8  1980.0   185.8
GR1980.0   194.2  1981.0   204.8  1981.2   211.6  1978.7   219.0  1978.7   227.0
GR1970.7   235.0  1970.7   365.0  1974.7   369.0  1974.7   377.0  1978.7   389.0
GR1978.7   397.0  1978.0   399.2  1977.9   424.3  1979.3   434.6  1985.2   460.5
GR1987.3   478.0  1987.8   496.9  1987.0   510.4  1983.6   528.6  1978.7   548.8
GR1973.0   574.8  1971.7   594.4  1971.1   600.0
NC  .025    .025    .025      .3      .5
X1207.47    38.0   227.0   389.0      47      47    47.0      .0      .0      .0
X3    10                   220             390
GR1982.7      .0  1981.9    26.1  1980.0    33.2  1980.2    43.6  1981.0    51.2
GR1981.5    73.9  1981.0    86.9  1979.7    94.2  1978.7   110.2  1979.0   118.3
GR1983.1   127.1  1984.4   134.4  1983.9   161.4  1982.0   177.8  1980.0   185.8
GR1980.0   194.2  1981.0   204.8  1981.2   211.6  1978.7   219.0  1978.7   227.0
GR1967.7   238.0  1967.7   362.0  1974.7   369.0  1974.7   377.0  1978.7   389.0
GR1978.7   397.0  1978.0   399.2  1977.9   424.3  1979.3   434.6  1985.2   460.5
GR1987.3   478.0  1987.8   496.9  1987.0   510.4  1983.6   528.6  1978.7   548.8
GR1973.0   574.8  1971.7   594.4  1971.1   600.0
NC  .025    .025    .025      .3      .5
X1 207.0    38.0   227.0   389.0     100     100   100.0      .0      .0      .0
X3    10                   220             390
GR1981.9      .0  1981.9     4.5  1980.7    23.2  1979.0    32.4  1979.0    37.2
GR1980.0    49.4  1980.3    70.7  1979.7    84.2  1977.0   117.8  1977.2   124.1
GR1982.1   132.7  1983.0   135.8  1982.7   156.7  1981.3   182.0  1979.0   195.1
GR1978.0   206.0  1978.5   210.7  1975.7   219.0  1975.7   227.0  1967.7   235.0
GR1967.7   365.0  1971.7   369.0  1971.7   377.0  1975.7   389.0  1975.7   397.0
GR1976.4   399.3  1975.5   431.4  1977.1   443.1  1982.2   457.5  1984.0   467.6
GR1984.7   486.4  1982.0   500.5  1975.9   515.2  1971.6   534.1  1970.0   547.6
GR1969.5   556.5  1970.2   578.3  1971.1   600.0
NC  .025    .025    .025      .1      .3
X1 206.0    34.0   227.0   389.0     100     100   100.0      .0      .0      .0
X3    10                   220             390
GR1980.0      .0  1979.9    12.3  1978.0    22.7  1978.0    48.0  1977.5    72.8
GR1976.0    99.4  1975.6   115.3  1974.4   123.7  1974.6   133.8  1980.0   147.0
GR1979.5   164.3  1978.0   191.1  1973.9   219.0  1973.9   227.0  1965.9   235.0
GR1965.9   365.0  1969.9   369.0  1969.9   377.0  1973.9   389.0  1973.9   397.0
GR1972.0   405.3  1971.0   411.8  1969.7   452.9  1970.0   470.4  1971.2   480.2
GR1976.0   499.9  1976.9   506.6  1976.7   524.4  1975.9   533.9  1972.0   551.7
GR1967.7   567.7  1966.4   576.9  1966.2   591.4  1966.0   600.0
NC  .025    .025    .025      .1      .3
X1 205.0    29.0   227.0   365.0       3       3     3.0      .0      .0      .0
X3    10                   220             371
GR1979.0      .0  1978.0    11.7  1978.0    22.7  1976.6    40.8  1975.0    52.4
GR1975.0    60.5  1974.4    79.2  1973.9   108.7  1972.0   129.8  1972.2   149.1
GR1974.5   178.2  1973.9   193.5  1971.0   201.4  1971.0   215.7  1972.1   219.0
GR1972.1   227.0  1964.1   235.0  1964.1   365.0  1972.1   373.0  1970.7   377.3
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GR1969.0   443.3  1967.0   472.3  1965.5   481.4  1965.0   493.9  1964.6   542.7
GR1964.5   559.1  1964.5   570.0  1965.4   591.3  1966.6   600.0
NC  .025    .025    .025      .3      .5
X1204.97    29.0   227.0   362.0      47      47    47.0      .0      .0      .0
X3    10                    220             371
GR1979.0      .0  1978.0    11.7  1978.0    22.7  1976.6    40.8  1975.0    52.4
GR1975.0    60.5  1974.4    79.2  1973.9   108.7  1972.0   129.8  1972.2   149.1
GR1974.5   178.2  1973.9   193.5  1971.0   201.4  1971.0   215.7  1972.1   219.0
GR1972.1   227.0  1961.1   238.0  1961.1   362.0  1972.1   373.0  1970.7   377.3
GR1969.0   443.3  1967.0   472.3  1965.5   481.4  1965.0   493.9  1962.2   542.7
GR1962.5   559.1  1963.0   570.0  1965.4   591.3  1966.6   600.0
NC  .025    .025    .025      .3      .5
X1 204.5    29.0   227.0   365.0       3       3     3.0      .0      .0      .0
X3    10                    220             371
GR1977.8      .0  1975.9    28.0  1976.4    49.9  1976.0    57.4  1976.0    71.0
GR1971.8    80.8  1971.6    92.8  1972.4   108.2  1970.5   140.5  1971.0   167.2
GR1970.2   190.7  1969.0   197.5  1969.0   209.3  1969.8   216.9  1969.1   219.0
GR1969.1   227.0  1961.1   235.0  1961.1   365.0  1969.1   373.0  1968.5   374.8
GR1968.0   390.9  1966.5   423.7  1965.0   444.6  1963.9   497.1  1963.0   524.7
GR1962.0   546.2  1962.4   556.1  1963.0   581.0  1964.3   600.0
NC  .025    .025    .025      .3      .5
X1204.47    29.0   227.0   362.0      47      47    47.0      .0      .0      .0
X3    10                    220             371
GR1977.8      .0  1975.9    28.0  1976.4    49.9  1976.0    57.4  1976.0    71.0
GR1971.8    80.8  1971.6    92.8  1972.4   108.2  1970.5   140.5  1971.0   167.2
GR1970.2   190.7  1969.0   197.5  1969.0   209.3  1969.8   216.9  1969.1   219.0
GR1969.1   227.0  1958.1   238.0  1958.1   362.0  1969.1   373.0  1968.5   374.8
GR1968.0   390.9  1966.5   423.7  1965.0   444.6  1963.9   497.1  1963.0   524.7
GR1961.0   546.2  1960.4   556.1  1960.0   581.0  1964.3   600.0
NC  .025    .025    .025      .3      .5
X1 204.0    28.0   227.0   365.0       3       3     3.0      .0      .0      .0
X3    10                    220             371
GR1973.8      .0  1973.5    23.7  1973.0    38.3  1974.2    76.8  1973.9    86.0
GR1970.0    96.8  1969.3   108.8  1970.0   118.2  1970.0   126.1  1968.3   143.1
GR1967.4   191.1  1967.0   199.5  1967.2   215.7  1966.1   219.0  1966.1   227.0
GR1958.1   235.0  1958.1   365.0  1966.1   373.0  1965.0   381.8  1964.0   425.4
GR1963.0   457.5  1962.0   479.5  1962.0   516.1  1961.5   529.3  1960.6   533.3
GR1959.0   569.8  1959.0   587.9  1961.2   600.0
NC  .025    .025    .025      .3      .5
X1203.97    28.0   227.0   362.0      47      47    47.0      .0      .0      .0
X3    10                    220             371
GR1973.8      .0  1973.5    23.7  1973.0    38.3  1974.2    76.8  1973.9    86.0
GR1970.0    96.8  1969.3   108.8  1970.0   118.2  1970.0   126.1  1968.3   143.1
GR1967.4   191.1  1967.0   199.5  1967.2   215.7  1966.1   219.0  1966.1   227.0
GR1955.1   238.0  1955.1   362.0  1966.1   373.0  1965.0   381.8  1964.0   425.4
GR1963.0   457.5  1962.0   479.5  1962.0   516.1  1961.5   529.3  1960.6   533.3
GR1959.0   569.8  1959.0   587.9  1961.2   600.0
NC  .025    .025    .025      .3      .5
X1 203.5    25.0   227.0   377.6      50      50    50.0      .0      .0      .0
X3    10                    220             385
GR1973.4      .0  1970.7    35.2  1970.0    41.5  1970.0    53.8  1972.0   106.3
GR1967.4   120.6  1965.0   154.3  1963.6   201.9  1963.8   216.9  1963.1   219.0
GR1963.1   227.0  1955.1   235.0  1955.1   365.0  1963.1   373.0  1964.6   377.6
GR1964.0   409.6  1963.0   431.2  1962.3   465.5  1962.4   480.4  1963.5   509.7
GR1962.7   527.4  1959.0   539.8  1959.0   560.3  1957.4   591.2  1958.1   600.0
NC  .025    .025    .025      .1      .3
X1 203.0    30.0   227.0   379.8       3       3     3.0      .0      .0      .0
X3    10                    220             385
GR1971.1      .0  1969.0    35.0  1966.1    49.7  1966.2    55.0  1968.0    69.9
GR1968.4    87.0  1967.7   120.9  1967.0   136.8  1967.0   153.8  1964.5   158.0
GR1963.0   173.3  1960.9   205.0  1960.5   213.8  1962.2   219.0  1962.2   227.0
GR1954.2   235.0  1954.2   365.0  1962.2   373.0  1964.0   379.8  1964.0   401.0
GR1963.3   415.4  1963.7   422.5  1962.4   443.0  1961.8   499.8  1959.6   522.5
GR1957.0   545.0  1956.8   563.0  1956.0   569.6  1956.0   588.2  1957.0   600.0
NC  .025    .025    .025      .3      .5
X1202.97    30.0   227.0   379.8      47      47    47.0      .0      .0      .0
X3    10                    220             385
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GR1971.1      .0  1969.0    35.0  1966.1    49.7  1966.2    55.0  1968.0    69.9
GR1968.4    87.0  1967.7   120.9  1967.0   136.8  1967.0   153.8  1964.5   158.0
GR1963.0   173.3  1960.9   205.0  1960.5   213.8  1962.2   219.0  1962.2   227.0
GR1951.2   238.0  1951.2   362.0  1962.2   373.0  1964.0   379.8  1964.0   401.0
GR1963.3   415.4  1963.7   422.5  1962.4   443.0  1961.8   499.8  1959.6   522.5
GR1957.0   545.0  1956.8   563.0  1956.0   569.6  1956.0   588.2  1957.0   600.0
NC  .025    .025    .025      .3      .5
X1 202.5    28.0   227.0   384.3       3       3     3.0      .0      .0      .0
X3    10                    220             385
GR1967.8      .0  1966.6    20.1  1965.0    38.4  1963.8    60.1  1961.2    65.5
GR1961.0    71.3  1962.4    76.7  1963.4    86.8  1963.9   105.8  1962.2   121.4
GR1963.4   145.8  1963.7   157.4  1963.0   173.8  1960.0   184.4  1958.4   216.5
GR1959.2   219.0  1959.2   227.0  1951.2   235.0  1951.2   365.0  1959.2   373.0
GR1962.4   384.3  1961.9   412.7  1960.6   456.1  1960.0   468.8  1960.0   512.0
GR1958.8   525.3  1955.0   557.4  1955.1   600.0
NC  .025    .025    .025      .3      .5
X1202.47    28.0   227.0   384.3      47      47    47.0      .0      .0      .0
X3    10                    220             385
GR1967.8      .0  1966.6    20.1  1965.0    38.4  1963.8    60.1  1961.2    65.5
GR1961.0    71.3  1962.4    76.7  1963.4    86.8  1963.9   105.8  1962.2   121.4
GR1963.4   145.8  1963.7   157.4  1963.0   173.8  1960.0   184.4  1958.4   216.5
GR1959.2   219.0  1959.2   227.0  1948.2   238.0  1948.2   362.0  1959.2   373.0
GR1962.4   384.3  1961.9   412.7  1960.6   456.1  1960.0   468.8  1960.0   512.0
GR1958.8   525.3  1955.0   557.4  1955.1   600.0
NC  .025    .025    .025      .3      .5
X1 202.0    26.0   227.0   373.0      50      50    50.0      .0      .0      .0
X3    10                    220             385
GR1969.0      .0  1969.0    42.0  1966.0    56.6  1964.8    59.5  1962.9    72.1
GR1962.0    81.8  1961.4   108.5  1958.0   122.1  1956.0   148.1  1954.4   174.8
GR1956.7   208.6  1956.2   219.0  1956.2   227.0  1948.2   235.0  1948.2   365.0
GR1956.2   373.0  1960.6   386.1  1960.5   407.2  1960.0   431.2  1961.0   460.5
GR1960.7   485.2  1959.9   506.0  1958.9   518.6  1955.0   533.9  1954.8   539.6
GR1954.9   600.0
NC  .025    .025    .025      .1      .3
X1 201.5    34.0   227.0   384.9       3       3     3.0      .0      .0      .0
X3    10                    220             385
GR1965.8      .0  1966.4     9.6  1965.9    15.8  1962.0    26.6  1961.6    39.7
GR1961.7    54.4  1960.4    86.3  1960.0   116.6  1957.9   129.0  1956.0   144.6
GR1954.0   164.1  1952.0   172.2  1952.5   202.4  1954.0   211.4  1954.0   215.1
GR1955.3   219.0  1955.3   227.0  1947.3   235.0  1947.3   365.0  1955.3   373.0
GR1959.1   384.9  1958.0   403.0  1957.0   412.4  1958.3   423.6  1959.2   444.0
GR1959.7   467.2  1958.4   495.7  1955.6   510.2  1952.7   523.6  1953.0   533.5
GR1952.8   552.7  1952.5   571.2  1952.5   586.1  1954.5   600.0
NC  .025    .025    .025      .3      .5
X1201.47    34.0   227.0   384.9      47      47    47.0      .0      .0      .0
X3    10                    220             385
GR1965.8      .0  1966.4     9.6  1965.9    15.8  1962.0    26.6  1961.6    39.7
GR1961.7    54.4  1960.4    86.3  1960.0   116.6  1957.9   129.0  1956.0   144.6
GR1954.0   164.1  1952.0   172.2  1952.5   202.4  1954.0   211.4  1954.0   215.1
GR1955.3   219.0  1955.3   227.0  1944.3   238.0  1944.3   362.0  1955.3   373.0
GR1959.1   384.9  1958.0   403.0  1957.0   412.4  1958.3   423.6  1959.2   444.0
GR1959.7   467.2  1958.4   495.7  1955.6   510.2  1952.7   523.6  1953.0   533.5
GR1952.8   552.7  1952.5   571.2  1952.5   586.1  1954.5   600.0
NC  .025    .025    .025      .3      .5
X1 201.0    33.0   227.0   373.0       3       3     3.0      .0      .0      .0
X3    10                    220             385
GR1967.2      .0  1966.0     8.6  1964.9    21.4  1963.0    27.4  1961.0    41.7
GR1960.0    69.2  1959.8    94.6  1958.9   110.8  1954.0   121.2  1954.0   147.4
GR1953.6   157.5  1951.5   170.4  1949.2   181.4  1954.0   214.0  1952.3   219.0
GR1952.3   227.0  1944.3   235.0  1944.3   365.0  1952.3   373.0  1956.4   386.2
GR1955.0   397.7  1955.0   414.7  1957.0   435.2  1957.8   468.4  1956.9   484.5
GR1955.0   496.3  1952.0   503.3  1951.0   507.5  1950.7   521.0  1951.1   545.7
GR1951.0   583.4  1952.4   589.2  1956.4   600.0
NC  .025    .025    .025      .3      .5
X1200.97    33.0   227.0   373.0      47      47    47.0      .0      .0      .0
X3    10                    220             385
GR1967.2      .0  1966.0     8.6  1964.9    21.4  1963.0    27.4  1961.0    41.7
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GR1960.0    69.2  1959.8    94.6  1958.9   110.8  1954.0   121.2  1954.0   147.4
GR1953.6   157.5  1951.5   170.4  1949.2   181.4  1954.0   214.0  1952.3   219.0
GR1952.3   227.0  1941.3   238.0  1941.3   362.0  1952.3   373.0  1956.4   386.2
GR1955.0   397.7  1955.0   414.7  1957.0   435.2  1957.8   468.4  1956.9   484.5
GR1955.0   496.3  1952.0   503.3  1951.0   507.5  1950.7   521.0  1951.1   545.7
GR1951.0   583.4  1952.4   589.2  1956.4   600.0
NC  .025    .025    .025      .3      .5
X1 200.5    31.0   227.0   382.7       3       3     3.0      .0      .0      .0
X3    10                    220             385
GR1967.6      .0  1966.6    17.6  1964.0    38.5  1962.8    52.5  1959.6    74.7
GR1958.0    89.2  1957.4   118.5  1953.7   136.0  1950.9   157.8  1948.0   171.0
GR1947.0   187.7  1949.1   199.7  1949.0   208.3  1949.3   227.0  1941.3   235.0
GR1941.3   365.0  1949.3   373.0  1951.0   382.7  1949.0   397.8  1948.0   402.8
GR1950.1   408.2  1955.0   426.2  1957.0   442.0  1957.0   461.1  1955.8   467.5
GR1949.0   484.6  1949.6   518.8  1949.7   549.0  1949.5   571.7  1950.0   594.3
GR1951.9   600.0
NC  .025    .025    .025      .3      .5
X1200.47    31.0   227.0   382.7      47      47    47.0      .0      .0      .0
X3    10                    220             385
GR1967.6      .0  1966.6    17.6  1964.0    38.5  1962.8    52.5  1959.6    74.7
GR1958.0    89.2  1957.4   118.5  1953.7   136.0  1950.9   157.8  1948.0   171.0
GR1947.0   187.7  1949.1   199.7  1949.0   208.3  1949.3   227.0  1938.3   238.0
GR1938.3   362.0  1949.3   373.0  1951.0   382.7  1949.0   397.8  1948.0   402.8
GR1950.1   408.2  1955.0   426.2  1957.0   442.0  1957.0   461.1  1955.8   467.5
GR1949.0   484.6  1949.6   518.8  1949.7   549.0  1949.5   571.7  1950.0   594.3
GR1951.9   600.0
NC  .025    .025    .025      .3      .5
X1 200.0    31.0   227.0   373.0       3       3     3.0      .0      .0      .0
X3    10                    220             375
GR1963.7      .0  1960.7    30.9  1960.3    52.7  1960.9    75.4  1959.6    91.2
GR1957.0   107.7  1952.8   151.1  1951.3   163.2  1950.7   181.8  1949.4   199.0
GR1949.1   210.6  1946.3   219.0  1946.3   227.0  1938.3   235.0  1938.3   365.0
GR1946.3   373.0  1944.0   380.7  1944.0   405.6  1951.0   432.4  1953.0   438.2
GR1953.8   452.5  1953.0   466.5  1947.9   477.6  1947.0   483.6  1947.3   504.8
GR1948.0   507.5  1948.2   537.2  1947.4   557.4  1947.6   580.4  1948.1   592.0
GR1950.3   600.0
NC  .025    .025    .025      .3      .5
X1199.97    31.0   227.0   373.0      47      47    47.0      .0      .0      .0
X3    10                    220             375
GR1963.7      .0  1960.7    30.9  1960.3    52.7  1960.9    75.4  1959.6    91.2
GR1957.0   107.7  1952.8   151.1  1951.3   163.2  1950.7   181.8  1949.4   199.0
GR1949.1   210.6  1946.3   219.0  1946.3   227.0  1935.3   238.0  1935.3   362.0
GR1946.3   373.0  1944.0   380.7  1944.0   405.6  1951.0   432.4  1953.0   438.2
GR1953.8   452.5  1953.0   466.5  1947.9   477.6  1947.0   483.6  1947.3   504.8
GR1948.0   507.5  1948.2   537.2  1947.4   557.4  1947.6   580.4  1948.1   592.0
GR1950.3   600.0
NC  .025    .025    .025      .3      .5
X1 199.5    29.0   227.0   373.0       4       4     4.0      .0      .0      .0
X3    10                    220             375
GR1961.0      .0  1961.0    38.3  1962.4    83.7  1962.0    95.9  1956.7   119.1
GR1954.0   135.2  1953.3   142.6  1952.7   167.5  1950.3   177.4  1948.6   203.2
GR1943.3   219.0  1943.3   227.0  1935.3   235.0  1935.3   365.0  1943.3   373.0
GR1942.3   382.8  1942.0   413.2  1945.1   429.6  1950.0   443.6  1951.7   462.2
GR1946.0   471.6  1945.7   478.2  1946.0   498.2  1946.9   507.7  1946.0   532.0
GR1946.2   551.5  1946.0   569.8  1946.5   581.7  1946.0   600.0
NC  .025    .025    .025      .3      .5
X1199.46    29.0   227.0   373.0      46      46    46.0      .0      .0      .0
X3    10                    220             375
GR1961.0      .0  1961.0    38.3  1962.4    83.7  1962.0    95.9  1956.7   119.1
GR1954.0   135.2  1953.3   142.6  1952.7   167.5  1950.3   177.4  1948.6   203.2
GR1943.3   219.0  1943.3   227.0  1931.3   239.0  1931.3   361.0  1943.3   373.0
GR1942.3   382.8  1942.0   413.2  1945.1   429.6  1950.0   443.6  1951.7   462.2
GR1946.0   471.6  1945.7   478.2  1946.0   498.2  1946.9   507.7  1946.0   532.0
GR1946.2   551.5  1946.0   569.8  1946.5   581.7  1946.0   600.0
NC  .025    .025    .025      .3      .5
X1 199.0    33.0      .0   373.0     100     100   100.0      .0      .0      .0
X3    10                                  375
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GR1958.5      .0  1958.5    23.8  1960.6    47.7  1961.0    73.1  1962.1    93.2
GR1964.0   103.4  1964.0   112.8  1962.0   118.4  1957.9   136.1  1954.0   150.7
GR1951.9   160.2  1951.0   167.2  1950.2   186.3  1939.3   219.0  1939.3   227.0
GR1931.3   235.0  1931.3   365.0  1939.3   373.0  1940.3   375.9  1940.0   383.9
GR1940.4   400.4  1940.0   425.1  1946.3   446.7  1949.1   457.7  1944.2   465.7
GR1944.0   486.1  1944.8   492.9  1944.8   511.0  1944.0   526.3  1943.2   550.4
GR1943.1   560.3  1945.0   574.1  1944.6   600.0
NC  .025    .025    .025      .1      .3
X1 198.0    25.0      .0   377.0     100     100   100.0      .0      .0      .0
X3    10                                   378
GR1959.4      .0  1956.0    23.2  1954.9    37.8  1953.8    58.4  1949.9    74.3
GR1947.8   100.6  1948.2   129.7  1946.3   161.3  1945.0   199.5  1938.5   219.0
GR1938.5   223.0  1929.5   235.0  1929.5   365.0  1938.5   377.0  1936.5   383.2
GR1937.0   406.7  1940.0   426.3  1946.4   453.4  1946.0   469.7  1941.0   473.0
GR1940.8   492.0  1941.0   514.2  1940.4   552.5  1940.3   587.8  1941.3   600.0
NC  .025    .025    .025      .1      .3
X1 197.0    27.0      .0   381.0       3       3     3.0      .0      .0      .0
X3    10                                   385
GR1963.2      .0  1954.0    51.1  1948.0    85.9  1945.0   102.3  1942.6   110.4
GR1939.3   128.8  1938.9   139.6  1936.8   153.8  1939.0   165.8  1936.7   187.3
GR1935.7   199.5  1935.7   219.0  1927.7   235.0  1927.7   365.0  1935.7   381.0
GR1943.1   403.2  1944.0   423.0  1942.8   440.9  1939.4   467.6  1937.8   484.9
GR1938.1   491.5  1940.8   508.1  1937.0   520.0  1936.7   546.0  1937.0   570.6
GR1938.2   581.9  1937.2   600.0
NC  .025    .025    .025      .3      .5
X1196.97    27.0      .0   381.0      47      47    47.0      .0      .0      .0
X3    10                                   385
GR1963.2      .0  1954.0    51.1  1948.0    85.9  1945.0   102.3  1942.6   110.4
GR1939.3   128.8  1938.9   139.6  1936.8   153.8  1939.0   165.8  1936.7   187.3
GR1935.7   199.5  1935.7   219.0  1924.7   241.0  1924.7   359.0  1935.7   381.0
GR1943.1   403.2  1944.0   423.0  1942.8   440.9  1939.4   467.6  1937.8   484.9
GR1938.1   491.5  1940.8   508.1  1937.0   520.0  1936.7   546.0  1937.0   570.6
GR1938.2   581.9  1937.2   600.0
NC  .025    .025    .025      .3      .5
X1 196.5    25.0      .0   374.3      50      50    50.0      .0      .0      .0
X3    10                                   385
GR1965.2      .0  1957.4    37.5  1950.0    78.3  1945.0   107.6  1940.8   127.5
GR1938.0   137.3  1937.4   172.7  1936.0   209.8  1932.0   221.6  1924.7   236.3
GR1924.7   359.6  1932.0   374.3  1942.7   406.5  1941.0   428.0  1937.5   446.3
GR1935.0   465.3  1935.0   474.7  1937.2   487.5  1940.3   500.3  1941.0   514.7
GR1935.8   524.0  1935.6   549.9  1935.7   566.0  1936.7   576.9  1936.0   600.0
NC                           .1      .3
X1 196.0    49.0   190.0  1927.9     100     100   100.0      .0      .0      .0
GR1997.9   190.0  1997.9   191.1  1992.9   354.1  1988.5   443.0  1966.9   676.9
GR1962.6   705.5  1946.6   779.6  1940.5   805.3  1935.0   822.7  1933.0   850.1
GR1923.8   925.0  1923.8  1000.0  1923.8  1001.0  1923.8  1050.0  1937.7  1065.2
GR1931.4  1099.5  1930.0  1111.6  1930.0  1120.4  1935.0  1140.4  1940.0  1166.8
GR1941.2  1176.0  1941.4  1181.2  1936.0  1188.9  1935.6  1211.4  1935.5  1242.0
GR1935.2  1279.5  1936.0  1301.9  1940.4  1322.0  1944.0  1349.6  1945.0  1359.5
GR1945.0  1395.1  1944.5  1449.7  1938.9  1492.7  1938.0  1503.2  1945.0  1546.0
GR1946.9  1583.7  1945.4  1634.4  1945.0  1664.9  1944.0  1689.5  1946.0  1722.4
GR1947.0  1746.0  1946.0  1756.4  1945.3  1796.2  1945.4  1820.9  1944.0  1860.2
GR1943.0  1873.1  1942.6  1892.5  1943.1  1909.5  1943.3  1927.9
X1 195.0    53.0   256.0  1927.7     100     100   100.0      .0      .0      .0
GR1988.8   256.0  1988.8   256.1  1984.1   430.3  1979.8   523.1  1961.9   719.2
GR1955.0   745.3  1954.5   749.3  1946.3   788.8  1939.6   818.6  1933.9   838.5
GR1932.0   849.0  1928.4   888.8  1927.0   910.3  1922.0   970.0  1922.0  1000.0
GR1922.0  1075.0  1925.7  1095.7  1930.1  1124.7  1935.1  1147.4  1937.1  1162.8
GR1938.4  1178.4  1937.9  1184.4  1934.0  1195.1  1933.0  1207.1  1931.8  1263.6
GR1932.0  1276.5  1936.0  1299.7  1940.0  1317.2  1943.2  1356.0  1941.6  1393.9
GR1941.2  1412.6  1942.2  1431.8  1941.3  1447.1  1936.0  1472.8  1935.5  1478.9
GR1936.4  1491.7  1940.1  1514.4  1944.0  1549.0  1944.7  1573.0  1944.4  1584.5
GR1944.6  1600.6  1944.2  1650.1  1943.2  1686.4  1946.4  1735.1  1946.2  1750.2
GR1945.3  1761.7  1945.3  1782.6  1944.7  1808.8  1944.9  1839.2  1942.7  1879.8
GR1942.5  1892.9  1943.1  1909.4  1943.3  1927.7
NC  .030    .030     .03
X1 194.0    57.0   297.0  1927.5     100     100   100.0      .0      .0      .0
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GR1980.2	297.0	1980.2	297.8	1976.1	483.2	1972.0	579.9	1959.0	725.4
GR1951.5	753.8	1949.9	770.3	1944.3	797.2	1942.0	810.6	1938.0	844.3
GR1936.9	858.6	1934.6	873.7	1932.4	880.8	1927.0	896.0	1924.8	917.3
GR1923.0	934.7	1920.2	952.1	1920.2	988.3	1920.2	1022.8	1920.2	1042.4
GR1920.2	1069.4	1920.2	1083.1	1930.0	1121.3	1932.0	1151.5	1933.1	1166.0
GR1929.0	1183.8	1929.0	1198.3	1929.4	1218.7	1929.5	1253.6	1929.4	1267.0
GR1935.0	1282.4	1937.1	1303.9	1939.5	1351.0	1939.8	1367.4	1938.8	1397.2
GR1939.0	1424.3	1935.6	1443.1	1931.0	1457.3	1936.2	1486.7	1940.0	1502.3
GR1942.0	1531.7	1941.9	1566.6	1943.0	1600.2	1942.9	1626.0	1942.2	1642.1
GR1942.1	1673.0	1943.3	1697.4	1945.7	1725.6	1945.0	1750.3	1945.0	1781.0
GR1944.3	1810.4	1944.5	1843.2	1943.6	1863.8	1942.4	1884.3	1942.4	1893.0
GR1943.1	1909.3	1943.3	1927.5						
X1 193.0	59.0	318.0	1927.6	100	100	100.0	.0	.0	.0
GR1971.9	318.0	1971.9	318.9	1968.5	516.4	1964.7	617.4	1956.1	717.3
GR1950.8	737.6	1949.7	749.6	1942.0	798.3	1939.6	818.4	1937.3	838.7
GR1934.8	854.1	1932.6	871.5	1932.0	881.8	1930.0	897.9	1926.9	931.7
GR1925.8	951.7	1923.8	959.3	1918.4	972.9	1918.4	1000.8	1918.4	1032.0
GR1918.4	1052.5	1920.3	1061.0	1921.4	1073.5	1922.8	1098.8	1923.5	1119.6
GR1924.4	1138.4	1925.4	1172.1	1926.2	1207.6	1925.0	1241.0	1926.0	1251.6
GR1932.5	1270.0	1934.0	1283.4	1935.6	1328.3	1935.0	1361.6	1935.0	1372.8
GR1935.8	1388.3	1934.3	1398.5	1931.4	1408.5	1928.8	1439.2	1928.1	1446.3
GR1930.2	1456.4	1934.2	1470.0	1939.6	1501.5	1940.0	1521.7	1939.8	1550.2
GR1941.6	1590.8	1940.8	1606.6	1940.4	1639.2	1941.0	1660.3	1942.4	1677.9
GR1944.6	1716.8	1944.4	1751.5	1944.0	1802.2	1944.1	1846.1	1944.0	1858.1
GR1943.0	1870.9	1942.3	1892.8	1943.0	1909.0	1943.3	1927.6		
X1 192.0	58.0	323.0	1920.1	100	100	100.0	.0	.0	.0
GR1965.8	323.0	1965.8	323.1	1962.7	531.4	1958.9	637.0	1953.5	700.3
GR1950.1	713.3	1949.4	721.1	1945.8	744.4	1939.4	769.3	1938.9	780.3
GR1934.0	828.6	1925.9	884.8	1922.9	897.7	1920.6	922.1	1918.6	963.1
GR1917.0	983.6	1916.6	1023.8	1918.4	1077.9	1918.6	1094.5	1920.0	1127.7
GR1921.2	1148.4	1921.3	1175.5	1922.0	1195.8	1926.7	1218.1	1930.0	1239.6
GR1930.1	1257.1	1930.5	1275.2	1931.4	1290.3	1930.6	1324.6	1931.0	1339.0
GR1931.9	1352.4	1925.4	1380.8	1924.0	1393.2	1926.1	1408.6	1930.1	1422.6
GR1935.0	1456.5	1935.5	1470.4	1934.9	1493.1	1935.0	1511.1	1937.4	1541.4
GR1938.0	1565.5	1937.6	1593.7	1939.4	1623.9	1940.2	1642.7	1939.2	1673.9
GR1940.0	1689.7	1941.0	1742.5	1941.7	1768.3	1940.9	1784.3	1941.0	1809.7
GR1941.7	1826.7	1942.0	1845.2	1941.8	1862.5	1941.0	1881.8	1940.0	1890.5
GR1940.0	1902.8	1941.7	1913.7	1941.4	1920.1				
X1 191.0	63.0	325.0	1870.4	100	100	100.0	.0	.0	.0
GR1961.2	325.0	1961.2	325.2	1957.9	542.7	1953.9	652.8	1951.2	684.0
GR1949.6	690.5	1947.0	707.3	1943.7	720.3	1941.9	740.8	1938.0	777.3
GR1932.0	809.3	1925.7	849.4	1922.9	871.7	1918.8	899.5	1915.0	941.3
GR1915.0	983.7	1913.1	997.9	1913.2	1039.6	1916.0	1066.7	1917.0	1074.9
GR1916.3	1080.5	1916.1	1108.9	1917.0	1151.4	1919.0	1165.6	1922.0	1180.8
GR1923.7	1198.4	1924.2	1221.3	1925.5	1244.1	1924.0	1277.1	1923.2	1292.1
GR1927.5	1317.4	1926.9	1327.5	1920.0	1362.0	1919.6	1379.5	1920.0	1388.8
GR1923.3	1410.2	1923.7	1419.4	1924.8	1427.1	1924.1	1448.3	1923.7	1455.5
GR1925.0	1459.1	1924.1	1467.8	1925.0	1476.9	1927.4	1482.2	1929.4	1498.7
GR1930.5	1518.3	1933.1	1545.5	1934.2	1560.3	1934.2	1566.1	1935.7	1592.3
GR1935.8	1601.5	1934.2	1639.3	1934.1	1657.1	1936.0	1695.4	1936.2	1723.0
GR1936.0	1727.4	1936.0	1764.0	1937.4	1786.8	1938.0	1806.3	1938.6	1815.0
GR1939.0	1848.3	1939.5	1865.9	1939.1	1870.4				
X1 190.0	51.0	327.3	1797.9	100	100	100.0	.0	.0	.0
GR1956.5	327.2	1956.5	327.3	1953.1	553.9	1948.9	668.2	1946.6	681.2
GR1944.0	698.1	1941.8	721.1	1938.0	742.5	1937.9	757.3	1936.3	772.6
GR1924.1	856.6	1921.0	878.2	1918.3	889.9	1913.9	902.2	1912.9	906.5
GR1911.6	918.3	1911.2	937.5	1912.0	952.6	1910.3	979.6	1910.6	1016.3
GR1910.7	1044.6	1912.4	1112.4	1913.0	1125.5	1915.0	1143.5	1915.6	1164.3
GR1915.4	1172.4	1919.5	1200.9	1918.0	1216.0	1914.3	1243.8	1916.3	1255.3
GR1919.6	1266.3	1923.4	1284.4	1920.7	1303.5	1916.2	1327.9	1920.0	1378.1
GR1925.0	1397.1	1928.8	1424.6	1929.5	1452.8	1930.0	1514.7	1930.1	1544.6
GR1931.0	1564.0	1931.0	1576.2	1929.9	1593.7	1929.0	1614.4	1929.2	1628.6
GR1932.6	1681.8	1933.0	1691.1	1933.2	1728.6	1934.0	1751.8	1933.7	1788.1
GR1933.8	1797.9								
X1 189.0	50.0	329.0	1204.3	100	100	100.0	.0	.0	.0
X3 10					1205				
GR1952.8	329.0	1952.8	329.1	1948.9	563.8	1945.8	646.3	1943.8	671.8

GR1938.6	708.4	1936.0	739.0	1929.4	770.1	1925.0	792.2	1923.0	807.7
GR1918.8	837.1	1917.7	846.4	1913.5	888.3	1907.7	938.1	1906.0	961.6
GR1907.0	976.3	1906.7	1001.9	1906.0	1025.1	1907.0	1042.3	1908.1	1076.7
GR1910.0	1095.0	1911.0	1110.7	1907.9	1153.3	1909.2	1173.2	1908.4	1190.6
GR1909.6	1204.3	1915.3	1238.3	1916.0	1260.0	1915.1	1273.0	1914.0	1299.3
GR1914.0	1322.3	1919.1	1351.3	1922.0	1375.9	1923.0	1386.2	1920.1	1415.8
GR1920.0	1428.0	1923.3	1464.6	1923.4	1476.1	1924.4	1489.5	1924.9	1507.1
GR1922.0	1563.7	1925.0	1581.5	1927.0	1606.8	1928.2	1629.9	1928.5	1640.1
GR1928.5	1674.1	1928.0	1703.4	1928.3	1712.0	1928.0	1747.9	1927.0	1757.2
X1 188.0	46.0	331.0	1176.3	100	100	100.0	.0	.0	.0
X3 10					1190				
GR1951.6	331.0	1951.6	332.0	1946.4	574.4	1943.7	637.1	1941.9	656.7
GR1940.1	679.9	1931.5	736.1	1930.0	748.5	1923.5	796.9	1916.9	846.8
GR1911.1	865.3	1905.8	880.0	1905.0	887.8	1905.0	907.3	1903.0	964.0
GR1904.9	1014.3	1904.8	1028.0	1903.8	1047.1	1903.0	1054.2	1903.0	1066.3
GR1904.1	1075.8	1904.0	1105.2	1905.0	1133.8	1907.7	1152.8	1910.3	1176.3
GR1914.0	1201.0	1914.8	1220.9	1911.0	1248.3	1910.0	1256.6	1909.3	1274.5
GR1909.3	1293.8	1910.3	1323.5	1911.5	1350.4	1910.7	1361.0	1911.1	1377.2
GR1915.0	1405.2	1915.6	1424.1	1915.6	1459.1	1912.1	1492.6	1915.4	1527.6
GR1919.9	1565.9	1920.0	1586.3	1920.8	1613.5	1921.3	1637.5	1920.8	1672.7
GR1920.3	1685.0								
X1 187.0	45.0	337.0	1168.5	100	100	100.0	.0	.0	.0
X3 10					1175				
GR1950.4	337.0	1950.4	337.9	1943.7	591.7	1941.7	634.6	1939.1	662.2
GR1937.0	687.9	1917.8	799.0	1907.9	864.8	1902.9	900.3	1902.0	909.0
GR1902.0	935.2	1901.0	948.6	1900.0	993.0	1901.4	1044.5	1901.4	1083.0
GR1900.9	1106.9	1900.0	1114.7	1900.0	1125.6	1901.0	1150.5	1903.3	1168.5
GR1905.2	1177.6	1906.0	1184.9	1906.4	1218.6	1906.9	1234.8	1909.4	1272.8
GR1909.0	1292.3	1906.8	1323.1	1904.0	1347.1	1905.2	1363.4	1906.3	1388.2
GR1906.0	1396.9	1904.0	1423.6	1904.4	1433.7	1908.6	1460.8	1910.4	1475.0
GR1911.8	1507.5	1912.2	1534.3	1910.0	1570.2	1909.0	1588.9	1908.0	1599.6
GR1908.0	1607.0	1910.0	1622.9	1912.5	1651.5	1916.0	1716.6	1916.1	1721.2
X1 186.0	44.0	347.0	1157.7	100	100	100.0	.0	.0	.0
X3 10					1170				
GR1949.0	347.0	1949.0	347.3	1940.8	616.9	1939.6	638.8	1937.3	663.0
GR1919.7	768.4	1908.8	834.4	1901.0	880.8	1899.0	898.2	1899.4	913.9
GR1898.8	923.9	1898.8	937.6	1898.0	946.8	1897.9	1038.4	1898.3	1072.9
GR1898.0	1113.1	1897.6	1121.4	1897.7	1135.9	1900.0	1157.7	1900.0	1188.3
GR1899.3	1204.2	1901.3	1218.6	1903.0	1242.0	1902.5	1263.0	1902.0	1279.8
GR1903.2	1298.8	1903.7	1316.2	1902.8	1329.8	1901.0	1373.3	1899.2	1403.5
GR1900.4	1431.1	1900.6	1457.9	1900.8	1478.4	1900.6	1491.0	1900.0	1504.0
GR1902.3	1514.6	1907.8	1561.0	1908.7	1574.0	1909.1	1601.0	1909.0	1637.6
GR1907.4	1660.4	1907.6	1689.7	1909.1	1722.6	1909.2	1743.8		
X1 185.0	45.0	370.0	1148.9	100	100	100.0	.0	.0	.0
X3 10					1175				
GR1946.5	370.0	1946.5	370.7	1937.1	651.5	1934.8	654.8	1922.8	725.1
GR1911.0	801.4	1901.6	853.8	1896.0	884.1	1894.7	902.4	1894.4	924.0
GR1895.0	994.9	1895.1	1038.5	1894.7	1057.1	1894.5	1087.2	1894.3	1102.4
GR1895.4	1112.7	1898.0	1148.9	1897.9	1176.5	1896.9	1190.6	1896.9	1217.2
GR1895.8	1231.7	1894.0	1250.1	1894.2	1257.2	1897.0	1279.1	1898.6	1301.8
GR1898.6	1310.7	1896.5	1366.7	1896.3	1423.0	1895.2	1432.6	1897.0	1464.8
GR1898.0	1474.2	1899.0	1502.6	1900.9	1537.4	1901.5	1575.5	1899.0	1608.6
GR1899.0	1628.1	1900.5	1640.1	1902.0	1658.9	1903.0	1676.2	1902.8	1693.8
GR1901.8	1712.6	1902.0	1727.0	1902.9	1740.0	1904.3	1770.9	1904.3	1780.1
X1 184.0	46.0	437.0	1179.3	100	100	100.0	.0	.0	.0
X3 10					1180				
GR1939.4	437.0	1939.4	437.8	1938.8	439.1	1931.4	682.1	1915.3	702.8
GR1904.0	798.2	1893.4	872.4	1891.9	881.3	1891.4	904.0	1891.4	968.4
GR1892.2	1026.1	1891.9	1047.2	1891.2	1064.2	1892.0	1072.5	1892.1	1132.8
GR1896.0	1170.3	1896.0	1179.3	1891.0	1222.3	1891.1	1234.6	1892.9	1244.4
GR1894.1	1291.1	1895.0	1307.7	1895.1	1328.9	1894.5	1357.6	1894.6	1396.2
GR1895.0	1414.7	1894.0	1434.6	1896.0	1450.9	1898.1	1479.4	1898.7	1490.5
GR1898.3	1520.8	1899.2	1570.0	1899.0	1580.4	1897.0	1607.9	1897.0	1620.8
GR1898.6	1631.9	1900.0	1654.3	1901.2	1670.6	1901.0	1689.7	1900.3	1703.1
GR1900.0	1717.1	1901.0	1726.3	1901.6	1739.5	1902.0	1758.9	1902.0	1782.0
GR1901.7	1787.7								
X1 183.0	51.0	489.0	1139.7	100	100	100.0	.0	.0	.0

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X3     10                                    1190
GR1932.4   489.0  1932.4   489.4  1931.7   491.2  1925.9   701.3  1909.2   722.6
GR1900.6   736.3  1898.9   740.1  1893.9   801.7  1892.0   823.5  1888.0   848.7
GR1888.0   874.7  1888.3   900.1  1888.0   930.4  1888.4   964.5  1888.6   987.8
GR1889.7  1036.8  1890.0  1059.2  1891.0  1090.7  1893.0  1109.8  1893.0  1117.2
GR1893.7  1139.7  1894.6  1191.1  1894.0  1212.4  1892.4  1226.2  1888.9  1247.8
GR1888.2  1264.2  1892.0  1296.3  1892.4  1304.6  1892.3  1320.2  1893.2  1330.9
GR1891.8  1358.9  1892.3  1399.1  1892.1  1413.1  1894.1  1427.2  1896.3  1451.5
GR1896.0  1475.9  1894.7  1509.7  1895.2  1524.8  1897.6  1554.0  1897.0  1570.5
GR1895.3  1595.9  1894.7  1610.3  1898.0  1648.7  1899.3  1667.7  1898.0  1692.1
GR1898.3  1701.9  1899.5  1718.5  1899.7  1733.5  1900.3  1754.7  1900.6  1781.4
GR1899.7  1792.3
X1 182.0    47.0   590.0  1192.1     100     100   100.0      .0      .0      .0
X3     10                                    1195
GR1910.0   587.0  1910.0   588.0  1910.0   589.0  1910.0   590.0  1905.8   728.4
GR1898.3   740.2  1896.5   746.2  1892.0   756.3  1890.3   769.3  1886.3   786.6
GR1886.0   801.5  1885.5   813.7  1884.7   863.5  1884.0   869.1  1885.8   930.1
GR1891.0  1110.1  1891.0  1163.6  1891.0  1192.1  1887.9  1233.5  1886.0  1255.6
GR1887.5  1272.4  1889.2  1286.7  1890.4  1308.2  1890.6  1322.0  1890.9  1333.6
GR1890.0  1375.7  1889.6  1388.6  1889.9  1410.8  1889.0  1423.1  1890.0  1458.9
GR1889.7  1472.8  1893.7  1520.6  1894.0  1530.6  1893.0  1549.3  1891.6  1564.9
GR1893.0  1576.8  1896.6  1616.5  1897.0  1627.1  1896.6  1660.8  1895.9  1672.5
GR1897.0  1692.4  1897.4  1706.4  1897.2  1719.7  1897.6  1732.4  1899.7  1764.8
GR1900.0  1774.7  1898.1  1794.1
X1 181.0    48.0   710.0  1197.4     100     100   100.0      .0      .0      .0
X3     10                     710           1200
GR1894.0   709.9  1894.0   710.0  1890.2   751.0  1888.7   763.2  1885.5   786.3
GR1882.0   802.5  1882.0   881.7  1882.1   905.0  1882.2   917.4  1882.5   949.1
GR1883.8  1117.0  1884.0  1126.0  1888.0  1161.9  1887.8  1175.5  1885.7  1197.4
GR1884.4  1205.8  1883.0  1211.0  1887.0  1246.5  1888.1  1260.5  1889.5  1268.3
GR1889.7  1279.8  1889.4  1288.5  1890.0  1324.3  1890.0  1340.6  1888.0  1372.4
GR1887.0  1404.7  1887.7  1413.9  1887.6  1426.4  1887.0  1437.7  1887.0  1457.6
GR1891.8  1492.6  1891.0  1510.4  1888.6  1530.3  1890.0  1540.9  1889.6  1543.7
GR1891.0  1551.4  1893.5  1568.5  1894.6  1585.6  1894.7  1607.4  1893.7  1644.5
GR1893.1  1657.2  1894.0  1663.1  1895.8  1684.1  1896.1  1709.7  1896.2  1724.4
GR1899.0  1769.3  1898.5  1782.1  1896.9  1793.0
X1 180.0    48.0   755.0  1203.7     100     100   100.0      .0      .0      .0
X3     10                     755           1210
GR1884.0   754.0  1884.0   754.5  1884.0   754.8  1884.0   755.0  1883.1   776.5
GR1882.8   794.7  1879.0   807.5  1879.0   836.5  1879.7   848.0  1879.0   878.8
GR1879.9   884.4  1879.8   952.9  1880.0   989.0  1880.9  1041.0  1880.7  1087.4
GR1881.0  1107.7  1881.8  1138.4  1882.2  1166.8  1884.0  1203.7  1884.0  1228.0
GR1885.1  1243.7  1886.4  1276.6  1886.2  1294.9  1885.4  1317.6  1885.2  1331.4
GR1885.2  1406.0  1885.0  1423.8  1886.3  1448.6  1886.6  1462.7  1887.7  1476.3
GR1887.7  1492.1  1885.9  1509.0  1886.1  1516.5  1888.0  1527.4  1889.4  1561.3
GR1889.2  1583.6  1889.7  1589.4  1889.2  1603.3  1892.2  1630.6  1892.5  1643.0
GR1892.9  1648.9  1893.1  1682.5  1894.2  1712.0  1895.4  1723.2  1897.8  1758.1
GR1898.5  1767.7  1898.6  1777.4  1895.5  1789.3
X1 179.0    49.0   760.0  1205.2     100     100   100.0      .0      .0      .0
X3     10                     760           1215
GR1881.5   760.0  1881.0   832.5  1877.0   849.6  1877.0   859.5  1876.3   879.0
GR1876.7   886.0  1876.6   900.2  1877.2   918.6  1877.6   938.3  1877.4  1001.2
GR1877.3  1028.3  1879.0  1067.6  1879.0  1079.5  1878.1  1092.0  1878.8  1123.4
GR1879.0  1138.5  1880.0  1164.2  1881.9  1177.8  1883.7  1205.2  1884.0  1232.8
GR1882.0  1265.7  1881.8  1288.3  1882.6  1334.2  1883.2  1352.3  1883.4  1374.9
GR1883.4  1424.5  1883.0  1448.0  1883.0  1454.9  1884.3  1466.4  1884.5  1478.6
GR1886.0  1488.1  1886.4  1510.1  1885.7  1530.6  1884.6  1549.4  1885.5  1558.0
GR1887.0  1586.1  1887.3  1594.4  1888.0  1599.3  1888.5  1610.8  1888.0  1619.9
GR1890.0  1632.5  1892.2  1651.0  1893.0  1675.6  1894.7  1702.9  1896.0  1731.8
GR1896.8  1741.7  1896.1  1769.8  1894.4  1778.8  1893.4  1787.9
X1 178.0    58.0   766.8  1198.6     100     100   100.0      .0      .0      .0
X3     10                     765           1220
GR1900.9   554.0  1900.9   554.7  1899.1   559.2  1898.4   637.3  1892.0   646.0
GR1888.7   651.5  1886.2   667.0  1884.5   670.9  1879.8   713.3  1879.9   738.9
GR1879.0   766.8  1877.6   788.5  1878.1   817.0  1878.8   834.5  1878.8   843.9
GR1878.0   887.9  1875.9   904.4  1875.4   913.7  1875.5   932.7  1875.0   953.5
GR1874.0   976.2  1873.5   996.3  1874.3  1001.6  1874.6  1027.3  1875.0  1046.8
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GR1875.0  1065.5  1877.0  1085.4  1877.0  1114.0  1876.0  1139.7  1876.0  1155.2
GR1878.0  1198.6  1880.0  1223.2  1880.6  1237.5  1881.0  1259.6  1879.0  1274.7
GR1880.2  1302.2  1880.5  1328.4  1880.9  1342.4  1881.2  1405.6  1881.2  1432.6
GR1881.0  1446.0  1883.8  1473.4  1886.5  1505.1  1886.8  1518.0  1888.0  1536.1
GR1888.7  1565.6  1889.9  1575.9  1891.0  1590.9  1891.6  1612.3  1891.5  1637.6
GR1893.5  1659.6  1895.0  1695.1  1895.1  1704.1  1894.5  1713.3  1895.2  1728.2
GR1894.8  1735.7  1895.3  1770.8  1893.5  1781.1
X1 177.0    51.0   786.3  1197.2     100     100   100.0      .0      .0      .0
X3    10                    770            1220
GR1894.6   532.0  1894.6   532.7  1892.6   537.8  1892.3   589.3  1886.0   598.8
GR1883.3   617.3  1882.4   619.5  1879.0   649.8  1879.8   662.5  1879.8   678.9
GR1879.5   694.9  1877.0   764.4  1876.0   786.3  1875.1   810.1  1875.3   825.7
GR1876.8   861.3  1876.7   884.0  1873.0   918.2  1873.2   936.3  1872.9   942.1
GR1872.7  1005.6  1873.0  1016.7  1872.0  1036.3  1872.0  1055.6  1874.1  1075.6
GR1875.0  1102.0  1874.1  1123.9  1875.0  1162.9  1876.3  1197.2  1877.7  1222.5
GR1877.9  1242.9  1876.3  1275.1  1877.0  1288.4  1878.0  1326.4  1878.0  1349.9
GR1877.7  1359.9  1880.5  1413.1  1882.2  1434.4  1886.0  1474.1  1887.7  1498.4
GR1889.0  1541.6  1889.5  1553.8  1889.6  1579.0  1890.7  1610.6  1890.7  1622.7
GR1889.9  1641.6  1890.4  1656.8  1893.0  1681.1  1892.3  1722.7  1891.5  1749.3
GR1891.3  1765.4
X1 176.0    62.0   804.4  1213.8     100     100   100.0      .0      .0      .0
X3    10                    770            1220
GR1888.0   498.0  1888.0   498.1  1885.8   503.9  1885.8   526.2  1883.1   530.4
GR1880.0   554.8  1879.0   557.2  1879.0   586.0  1878.1   630.0  1878.1   640.4
GR1877.0   709.1  1876.2   743.2  1875.5   767.7  1875.0   804.4  1873.8   830.2
GR1873.0   854.5  1872.0   873.5  1874.0   897.3  1874.0   919.9  1871.0   946.2
GR1870.2   965.4  1870.8   990.9  1870.3  1005.7  1870.5  1026.6  1870.0  1031.9
GR1870.0  1049.8  1871.1  1054.8  1872.0  1069.4  1872.3  1090.4  1872.0  1109.4
GR1873.1  1139.8  1875.0  1179.5  1875.0  1197.8  1875.3  1213.8  1874.2  1226.9
GR1874.3  1242.8  1876.2  1268.1  1876.6  1279.1  1876.6  1291.3  1877.4  1299.8
GR1877.8  1310.6  1879.2  1331.4  1880.4  1346.4  1881.3  1367.6  1882.6  1387.0
GR1883.4  1421.0  1883.6  1432.7  1882.9  1459.4  1883.7  1486.7  1883.6  1509.6
GR1884.3  1520.9  1884.4  1536.0  1886.0  1558.2  1887.2  1579.9  1887.3  1592.5
GR1889.0  1617.3  1890.3  1640.3  1890.6  1648.8  1890.0  1682.8  1890.0  1697.5
GR1888.1  1734.5  1887.9  1745.3
X1 175.0    63.0   780.7  1196.4     100     100   100.0      .0      .0      .0
X3    10                    770            1220
GR1882.1   457.0  1882.1   457.8  1880.9   474.0  1880.0   499.1  1879.0   504.2
GR1879.0   535.9  1878.4   544.2  1878.0   563.8  1876.5   607.2  1876.0   627.5
GR1875.0   641.3  1874.6   665.9  1873.6   699.0  1873.0   715.0  1873.0   723.0
GR1872.5   733.2  1872.2   780.7  1871.7   814.3  1871.0   840.7  1871.0   863.8
GR1870.0   878.8  1871.3   892.1  1872.3   899.4  1873.0   914.2  1872.4   926.8
GR1870.6   944.5  1867.7   964.1  1868.0   968.7  1868.1  1005.5  1869.0  1026.3
GR1870.6  1082.0  1872.0  1118.7  1872.5  1130.2  1872.7  1155.8  1872.0  1188.8
GR1872.0  1196.4  1873.4  1221.0  1873.8  1231.1  1874.8  1244.4  1875.7  1271.1
GR1876.5  1285.2  1877.0  1301.3  1878.0  1323.7  1878.4  1353.7  1878.0  1374.4
GR1877.4  1383.8  1878.0  1389.8  1878.0  1400.6  1880.0  1416.3  1881.0  1437.0
GR1882.3  1458.4  1882.4  1473.1  1883.7  1504.8  1884.9  1521.2  1886.0  1526.9
GR1887.1  1569.3  1887.3  1635.9  1886.9  1651.5  1885.2  1665.4  1885.0  1678.2
GR1884.0  1687.8  1885.9  1700.0  1886.0  1702.4
X1 174.0    51.0   781.3  1187.1     100     100   100.0      .0      .0      .0
X3    10                    765            1190
GR1881.0   502.0  1881.0   518.7  1879.8   558.3  1877.8   599.9  1877.1   619.6
GR1874.0   682.3  1872.0   722.8  1871.0   756.8  1869.5   781.3  1869.0   794.0
GR1869.8   810.8  1869.7   824.0  1869.0   845.6  1868.0   863.7  1867.3   871.3
GR1868.0   876.8  1869.0   895.2  1868.8   923.4  1870.0   931.4  1867.0   945.0
GR1866.0   951.6  1866.0   977.0  1866.8  1014.6  1867.0  1029.3  1868.0  1056.6
GR1868.6  1112.2  1869.4  1136.4  1869.1  1157.1  1869.0  1166.0  1869.5  1175.3
GR1871.0  1187.1  1872.0  1203.2  1874.2  1252.6  1875.0  1265.4  1875.0  1271.9
GR1876.0  1282.6  1876.0  1322.1  1876.7  1365.3  1878.3  1386.2  1880.0  1414.7
GR1880.3  1430.9  1880.8  1473.0  1880.3  1485.4  1881.5  1489.5  1882.6  1521.2
GR1881.5  1540.3  1879.4  1562.8  1880.8  1592.6  1880.2  1621.3  1880.2  1631.9
GR1879.5  1635.9
X1 173.0    51.0   818.7  1184.8     100     100   100.0      .0      .0      .0
X3    10                    765            1185
GR1879.5   382.0  1879.5   382.5  1879.5   384.2  1879.5   416.4  1879.5   495.5
GR1879.0   513.2  1878.6   556.0  1877.6   588.6  1873.7   694.6  1872.8   718.4
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GR1872.5	743.4	1872.0	762.0	1869.5	818.7	1869.0	832.5	1865.0	847.6
GR1864.0	858.9	1866.0	877.3	1866.3	891.5	1865.5	927.8	1864.8	943.9
GR1864.6	956.9	1864.3	961.5	1865.0	973.4	1864.7	977.7	1865.9	998.2
GR1866.0	1036.2	1866.5	1048.9	1868.7	1089.3	1870.0	1133.5	1869.0	1162.1
GR1868.0	1184.8	1869.4	1198.6	1869.0	1213.8	1872.0	1242.6	1872.0	1275.7
GR1872.4	1283.1	1872.3	1312.3	1873.0	1330.6	1874.0	1347.5	1875.0	1358.1
GR1875.4	1384.2	1874.8	1419.8	1873.3	1427.8	1875.7	1453.3	1876.4	1463.4
GR1876.8	1478.1	1877.4	1488.5	1877.0	1515.4	1876.2	1528.8	1875.9	1561.7
GR1875.3	1578.8								
X1 172.0	48.0	810.8	1158.8	100	100	100.0	.0	.0	.0
X3 10			770		1190				
GR1878.3	335.0	1878.3	335.1	1878.3	366.1	1878.3	510.8	1876.4	564.3
GR1874.0	613.3	1872.8	639.9	1871.6	680.4	1870.6	716.2	1869.4	761.6
GR1868.6	810.8	1867.7	836.4	1866.8	862.1	1866.0	869.3	1861.0	885.8
GR1860.0	892.4	1862.0	908.1	1862.0	938.4	1860.5	951.3	1860.3	961.9
GR1862.2	970.2	1863.0	989.2	1862.6	992.2	1862.0	1009.2	1863.0	1035.5
GR1863.0	1045.7	1863.7	1053.3	1863.2	1067.7	1864.3	1089.1	1866.0	1107.3
GR1866.0	1129.7	1868.3	1158.8	1869.0	1196.4	1868.0	1226.8	1867.5	1247.1
GR1869.0	1280.6	1869.7	1287.9	1870.0	1315.6	1869.3	1347.8	1869.2	1366.0
GR1870.0	1371.3	1870.0	1376.5	1872.4	1404.3	1874.3	1428.0	1871.6	1456.5
GR1870.2	1476.2	1871.0	1502.0	1872.8	1519.3				
X1 171.0	42.0	786.7	1181.9	100	100	100.0	.0	.0	.0
X3 10			785		1195				
GR1874.4	282.0	1874.4	282.2	1874.4	310.1	1874.4	461.7	1874.4	518.5
GR1874.1	522.8	1874.3	536.0	1873.8	562.8	1872.7	610.5	1872.0	625.9
GR1870.8	665.0	1870.4	684.1	1868.3	719.3	1865.1	786.7	1865.0	821.6
GR1864.0	844.2	1862.9	850.6	1858.8	858.9	1857.4	876.4	1858.0	896.1
GR1859.6	909.7	1861.8	925.9	1860.3	934.1	1860.6	973.9	1861.7	989.7
GR1864.0	1036.1	1863.0	1065.9	1864.2	1106.6	1863.4	1142.8	1863.2	1164.6
GR1862.8	1181.9	1863.1	1230.6	1865.7	1253.0	1867.8	1291.5	1867.6	1299.1
GR1870.0	1337.6	1871.0	1359.9	1871.4	1382.0	1868.7	1410.5	1866.0	1428.3
GR1867.0	1459.2	1868.6	1473.0						
X1 170.0	49.0	818.5	1191.3	100	100	100.0	.0	.0	.0
X3 10			805		1210				
GR1870.2	223.0	1870.2	223.4	1870.2	248.2	1870.2	388.7	1870.2	464.9
GR1870.2	529.4	1871.0	538.4	1869.8	556.3	1869.0	572.1	1868.7	586.9
GR1870.1	615.0	1869.7	641.7	1869.0	674.0	1868.5	697.3	1866.7	746.5
GR1865.0	782.4	1863.6	818.5	1862.7	831.9	1860.2	839.7	1855.6	850.8
GR1854.1	860.8	1859.0	901.8	1860.6	920.1	1860.7	936.2	1860.6	977.3
GR1860.6	998.4	1861.0	1037.7	1862.0	1051.5	1862.0	1085.6	1860.0	1115.5
GR1860.0	1140.0	1862.1	1167.2	1863.0	1175.0	1863.9	1191.3	1862.4	1240.4
GR1864.0	1270.4	1865.4	1290.9	1864.9	1311.5	1864.0	1322.2	1864.6	1341.1
GR1863.9	1367.2	1864.2	1392.6	1865.0	1423.3	1865.0	1429.8	1866.0	1437.7
GR1865.6	1449.3	1867.4	1475.9	1867.3	1496.5	1867.6	1503.6		
X1 169.0	52.0	822.6	1204.5	100	100	100.0	.0	.0	.0
X3 10			820		1230				
GR1868.3	158.0	1868.3	158.5	1868.3	179.9	1868.3	308.4	1868.3	378.5
GR1868.3	466.0	1868.3	533.8	1867.9	572.1	1867.0	596.0	1867.0	603.0
GR1866.0	630.4	1863.9	659.7	1862.2	673.1	1862.7	698.7	1864.0	713.8
GR1864.3	734.8	1863.8	768.6	1862.0	822.6	1860.0	855.1	1854.6	867.0
GR1853.2	873.4	1852.0	883.3	1853.0	893.7	1856.3	915.4	1858.1	933.6
GR1858.3	945.6	1858.3	990.6	1859.2	1008.8	1859.0	1035.6	1857.8	1045.7
GR1859.0	1061.9	1860.0	1096.0	1860.0	1114.3	1858.0	1158.9	1859.3	1183.8
GR1861.0	1204.5	1859.5	1230.4	1858.9	1241.5	1858.1	1247.8	1857.4	1262.3
GR1857.8	1268.4	1857.7	1283.4	1860.0	1338.4	1861.0	1361.2	1861.0	1392.1
GR1863.0	1411.4	1862.8	1418.7	1863.0	1432.8	1862.8	1448.9	1864.0	1489.8
GR1864.6	1516.0	1864.5	1530.8						
X1 168.0	51.0	851.5	1236.2	100	100	100.0	.0	.0	.0
X3 10			835		1260				
GR1866.6	363.2	1866.6	462.4	1866.6	531.8	1865.4	544.3	1864.0	556.1
GR1864.0	567.3	1863.3	586.6	1863.5	616.8	1862.5	639.3	1861.8	662.1
GR1860.7	724.9	1859.3	748.6	1859.0	760.6	1857.9	783.4	1856.9	812.2
GR1856.0	830.0	1856.3	851.5	1857.6	879.1	1857.7	894.2	1857.0	909.5
GR1851.9	923.0	1851.0	930.5	1851.0	950.2	1852.0	969.4	1854.0	985.0
GR1854.8	995.2	1854.5	1016.0	1854.9	1057.8	1854.9	1080.0	1856.1	1109.7
GR1856.7	1142.0	1855.6	1158.6	1853.4	1173.9	1852.9	1179.7	1853.3	1207.3
GR1854.0	1236.2	1856.7	1273.8	1857.0	1284.9	1857.0	1303.2	1858.0	1322.1

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GR1858.0  1357.6  1857.0  1366.1  1858.1  1377.6  1859.6  1422.1  1859.0  1435.6
GR1860.1  1470.3  1861.0  1491.4  1862.2  1507.4  1867.6  1535.5  1869.1  1544.0
GR1868.5  1554.7
X1 167.0    57.0   854.7  1276.3     100     100   100.0      .0      .0      .0
X3    10                    850            1285
GR1863.2   530.7  1861.8   589.0  1861.8   623.4  1861.0   660.6  1860.9   699.2
GR1860.6   711.6  1860.0   724.5  1860.0   756.1  1857.7   769.1  1855.8   786.1
GR1854.0   799.7  1854.8   854.7  1854.9   861.2  1853.8   879.1  1853.0   884.5
GR1852.0   897.0  1853.8   914.8  1855.6   927.7  1855.7   958.7  1855.2   982.2
GR1854.5   993.9  1854.0  1012.6  1851.9  1023.2  1849.8  1038.6  1848.2  1057.3
GR1847.0  1074.8  1848.2  1082.6  1848.5  1089.7  1850.1  1100.7  1851.1  1110.9
GR1849.8  1130.2  1849.0  1132.3  1849.0  1155.8  1850.0  1179.6  1851.0  1199.0
GR1852.0  1209.5  1854.0  1259.8  1854.7  1276.3  1854.6  1285.4  1855.5  1297.7
GR1854.8  1305.6  1853.0  1312.6  1854.7  1349.0  1855.0  1352.3  1855.1  1380.3
GR1856.0  1385.1  1856.4  1396.4  1859.0  1422.5  1862.9  1452.9  1862.6  1462.1
GR1860.6  1485.8  1860.0  1503.8  1861.6  1511.6  1863.4  1532.1  1865.0  1546.8
GR1865.1  1552.2  1867.6  1575.5
X1 166.0      53   877.1  1251.4     100     100   100.0      .0      .0      .0
X3    10                    865            1300
GR1858.5   520.0  1858.5   521.0  1858.5   522.0  1858.5   522.2  1860.2   538.3
GR1859.9   572.8  1858.6   610.7  1858.4   651.7  1857.4   679.2  1857.0   686.7
GR1856.8   711.2  1857.4   751.4  1857.7   764.4  1856.0   800.2  1851.3   861.7
GR1849.4   877.1  1850.1   893.3  1849.8   918.3  1849.0   931.7  1853.0   958.1
GR1852.8   969.9  1850.6  1002.4  1849.8  1030.3  1850.5  1058.6  1850.0  1072.9
GR1848.7  1081.3  1847.9  1103.7  1846.5  1132.1  1846.0  1135.6  1846.0  1154.5
GR1846.5  1162.4  1848.2  1175.9  1848.4  1194.7  1849.6  1208.2  1848.0  1214.8
GR1849.0  1227.6  1850.0  1251.4  1852.0  1312.9  1853.3  1329.9  1856.7  1350.9
GR1857.0  1356.9  1855.2  1371.8  1855.1  1381.7  1854.2  1389.8  1855.6  1406.7
GR1858.0  1428.1  1859.6  1449.7  1861.4  1466.0  1861.0  1492.7  1861.3  1503.7
GR1864.8  1540.2  1867.0  1549.9  1867.1  1584.7
NC                          0.1     0.3
X1 165.0    55.0   886.0  1287.6      10      10    10.0      .0      .0      .0
X3    10                    880            1300
GR1856.2   519.0  1856.2   519.7  1857.0   540.3  1857.4   558.0  1858.0   575.8
GR1857.8   587.3  1857.0   601.6  1857.0   611.8  1856.0   642.0  1855.0   657.4
GR1854.7   677.3  1854.9   697.7  1854.4   729.2  1853.7   740.5  1853.8   763.7
GR1853.1   797.5  1853.0   826.8  1852.6   867.0  1851.0   886.0  1847.0   913.0
GR1844.5   933.5  1844.0   960.0  1844.0   974.7  1844.0  1006.2  1844.0  1012.5
GR1844.0  1022.5  1844.0  1039.2  1844.0  1046.1  1844.0  1064.5  1844.0  1077.0
GR1844.0  1094.1  1844.0  1108.7  1844.4  1137.9  1845.0  1175.3  1846.0  1205.5
GR1848.0  1287.4  1848.0  1287.5  1848.0  1287.6  1848.7  1300.3  1852.5  1324.3
GR1854.5  1340.9  1855.9  1349.2  1857.0  1361.3  1856.3  1365.3  1857.2  1388.4
GR1857.4  1409.5  1858.0  1413.8  1858.2  1426.8  1860.2  1450.4  1862.1  1487.4
GR1864.0  1512.0  1865.0  1537.8  1865.6  1545.2  1863.9  1576.1  1862.0  1588.9
X1 164.9      55   886.0  1287.6      80      80    80.0
X3    10                    880            1300
GR1855.8   519.0  1855.8   519.7  1856.6   540.3  1857.0   558.0  1857.6   575.8
GR1857.4   587.3  1856.6   601.6  1856.6   611.8  1855.6   642.0  1854.6   657.4
GR1854.3   677.3  1854.5   697.7  1854.0   729.2  1853.3   740.5  1853.4   763.7
GR1852.7   797.5  1852.6   826.8  1852.2   867.0  1850.6   886.0  1846.6   913.0
GR1844.1   933.5  1843.6   960.0  1843.6   974.7  1843.6  1006.2  1843.6  1012.5
GR1843.6  1022.5  1843.6  1039.2  1843.6  1046.1  1843.6  1064.5  1843.6  1077.0
GR1843.6  1094.1  1843.6  1108.7  1844.0  1137.9  1844.6  1175.3  1845.6  1205.5
GR1847.6  1287.4  1847.6  1287.5  1847.6  1287.6  1848.3  1300.3  1852.1  1324.3
GR1854.1  1340.9  1855.5  1349.2  1856.6  1361.3  1855.9  1365.3  1856.8  1388.4
GR1857.0  1409.5  1857.6  1413.8  1857.8  1426.8  1859.8  1450.4  1861.7  1487.4
GR1863.6  1512.0  1864.6  1537.8  1865.2  1545.2  1863.5  1576.1  1861.6  1588.9
SB  1.05    1.56     2.6     364     349      15    3400       3
X1 164.1      55   886.0  1287.6      10      10    10.0
X2                     1  1853.5  1857.3                     1.33
X3    10                    880            1300
GR1854.0   519.0  1854.0   519.7  1854.8   540.3  1855.2   558.0  1855.8   575.8
GR1855.6   587.3  1854.8   601.6  1854.8   611.8  1853.8   642.0  1852.8   657.4
GR1852.5   677.3  1852.7   697.7  1852.2   729.2  1851.5   740.5  1851.6   763.7
GR1850.9   797.5  1850.8   826.8  1850.4   867.0  1848.8   886.0  1844.8   913.0
GR1842.3   933.5  1841.8   960.0  1841.8   974.7  1841.8  1006.2  1841.8  1012.5
GR1841.8  1022.5  1841.8  1039.2  1841.8  1046.1  1841.8  1064.5  1841.8  1077.0
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GR1841.8  1094.1  1841.8  1108.7  1842.2  1137.9  1842.8  1175.3  1843.8  1205.5
GR1845.8  1287.4  1845.8  1287.5  1845.8  1287.6  1846.5  1300.3  1850.3  1324.3
GR1852.3  1340.9  1853.7  1349.2  1854.8  1361.3  1854.1  1365.3  1855.0  1388.4
GR1855.2  1409.5  1855.8  1413.8  1856.0  1426.8  1858.0  1450.4  1859.9  1487.4
GR1861.8  1512.0  1862.8  1537.8  1863.4  1545.2  1861.7  1576.1  1859.8  1588.9
NC                        0.1     0.3
X1 164.0    49.0   890.3  1285.2     100     100   100.0      .0      .0      .0
X3    10                   885            1290
GR1852.0   507.8  1854.0   584.9  1854.0   599.0  1853.4   616.5  1853.7   631.0
GR1852.6   659.1  1852.4   680.5  1850.2   712.2  1850.0   722.1  1851.3   748.6
GR1850.9   777.9  1850.0   812.3  1849.8   826.3  1849.0   837.2  1849.7   844.5
GR1851.0   863.9  1851.0   870.1  1850.0   890.3  1849.9   912.2  1843.0   936.4
GR1841.0   947.6  1840.7   961.2  1841.1   977.5  1842.1   988.5  1843.0  1005.2
GR1843.4  1017.0  1844.4  1033.8  1844.7  1094.1  1843.5  1126.0  1842.1  1132.9
GR1842.2  1165.5  1843.0  1190.5  1845.2  1203.9  1847.5  1232.3  1850.7  1263.3
GR1852.7  1285.2  1853.6  1313.3  1854.2  1322.3  1854.0  1329.9  1854.1  1346.1
GR1855.7  1369.0  1856.3  1392.2  1856.2  1405.7  1861.0  1479.6  1861.0  1492.4
GR1860.0  1523.5  1860.0  1561.3  1858.9  1583.6  1858.2  1590.4
X1 163.0    56.0   903.5  1250.3     100     100   100.0      .0      .0      .0
X3    10                   895            1265
GR1847.9   478.0  1847.9   479.0  1847.9   480.0  1847.5   504.4  1848.2   525.6
GR1851.0   562.4  1851.0   585.0  1850.0   593.9  1849.0   613.7  1849.3   635.0
GR1849.0   654.3  1848.3   672.9  1849.0   687.4  1848.6   721.0  1847.4   759.3
GR1847.2   767.9  1848.2   786.4  1848.0   811.6  1846.6   854.1  1846.0   865.4
GR1840.8   891.2  1838.0   903.5  1838.1   915.0  1840.4   936.0  1843.0   960.1
GR1845.0   983.7  1844.9   990.9  1843.8   999.4  1842.6  1021.7  1842.0  1053.9
GR1841.8  1095.2  1841.0  1107.5  1840.9  1115.3  1840.0  1120.2  1840.0  1146.0
GR1840.2  1160.6  1844.2  1215.6  1846.5  1250.3  1852.1  1288.3  1853.8  1301.5
GR1855.1  1308.0  1855.5  1329.7  1854.9  1369.2  1854.0  1386.4  1853.0  1395.1
GR1854.6  1406.7  1856.0  1412.5  1857.1  1433.5  1857.3  1446.0  1855.8  1467.2
GR1856.2  1484.2  1859.6  1525.7  1859.7  1534.9  1856.7  1561.3  1855.0  1571.0
GR1855.0  1589.2
X1 162.0    45.0   463.4  1204.4     100     100   100.0      .0      .0      .0
X3    10                                 1230
GR1845.8   463.0  1845.8   463.4  1845.2   482.5  1845.8   515.0  1847.0   540.7
GR1848.2   580.4  1848.0   606.9  1846.9   633.7  1846.0   677.1  1845.1   703.8
GR1845.5   735.5  1844.8   763.4  1844.0   786.2  1843.7   827.6  1843.6   848.8
GR1836.6   869.2  1835.8   876.6  1835.6   890.4  1836.7   902.1  1837.4   916.0
GR1839.0   931.8  1839.2   979.1  1838.8  1008.4  1838.4  1019.4  1839.2  1049.2
GR1839.1  1091.9  1837.7  1134.5  1839.5  1149.7  1843.0  1204.4  1846.8  1244.8
GR1848.2  1271.4  1847.8  1292.6  1849.0  1311.8  1849.0  1320.6  1850.1  1337.8
GR1854.0  1378.9  1853.1  1405.5  1852.0  1425.1  1851.4  1431.0  1854.4  1462.8
GR1856.3  1479.0  1855.2  1491.5  1852.4  1512.6  1852.0  1521.1  1852.0  1586.3
X1 161.0    56.0   447.8  1575.2     100     100   100.0      .0      .0      .0
GR1843.5   447.0  1843.5   447.8  1841.3   472.1  1843.6   502.0  1843.3   530.5
GR1844.1   565.3  1845.0   599.8  1844.3   629.9  1844.0   659.2  1842.8   679.1
GR1842.1   706.5  1842.2   724.0  1843.0   749.3  1842.0   778.8  1842.0   821.5
GR1841.0   845.2  1838.8   855.0  1833.2   871.8  1833.1   884.7  1834.0   905.9
GR1835.0   941.7  1835.4   964.0  1835.3   984.2  1835.4   996.2  1835.2  1006.5
GR1835.6  1015.7  1835.5  1028.3  1836.0  1048.3  1836.1  1075.5  1835.5  1079.3
GR1835.1  1096.8  1836.2  1115.9  1840.7  1145.7  1844.0  1178.6  1845.4  1195.5
GR1847.0  1218.8  1846.0  1227.7  1846.6  1234.1  1846.7  1252.8  1845.6  1274.8
GR1845.1  1281.3  1845.7  1292.0  1845.0  1309.1  1846.0  1318.7  1848.0  1354.3
GR1849.4  1381.9  1850.0  1399.4  1851.4  1423.0  1851.0  1434.9  1849.0  1450.8
GR1848.6  1469.2  1848.2  1474.6  1848.8  1505.7  1849.2  1518.7  1849.1  1553.1
GR1850.0  1575.2
X1 160.0    52.0   432.2  1561.3     100     100   100.0      .0      .0      .0
GR1841.1   431.0  1841.1   432.0  1841.1   432.1  1841.1   432.2  1840.3   441.1
GR1840.0   463.9  1838.5   472.1  1838.0   488.9  1838.0   515.6  1839.8   545.5
GR1840.0   576.2  1841.5   596.8  1841.9   619.5  1841.8   655.2  1841.0   684.4
GR1839.6   726.4  1839.3   743.7  1840.4   765.1  1840.2   785.8  1838.5   811.6
GR1837.8   826.6  1837.0   835.7  1832.8   849.5  1829.0   866.1  1829.0   874.6
GR1830.2   884.5  1832.0   914.3  1832.0   917.8  1834.1   963.7  1834.1  1037.6
GR1834.0  1049.7  1833.0  1056.0  1833.0  1091.2  1839.2  1136.1  1838.6  1158.1
GR1837.6  1169.5  1837.7  1174.6  1837.0  1188.5  1840.6  1225.4  1841.4  1247.2
GR1846.0  1288.7  1848.8  1336.8  1847.9  1349.8  1846.4  1368.9  1845.0  1388.7
GR1844.4  1401.4  1843.2  1415.1  1844.3  1446.2  1845.0  1485.8  1846.4  1505.7
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GR1847.0	1536.6	1848.2	1561.3						
X1 159.0	49.0	414.5	1551.3	100	100	100.0	.0	.0	.0
GR1837.9	414.0	1837.9	414.5	1838.3	448.1	1839.0	473.2	1838.0	483.6
GR1837.9	501.7	1837.0	523.0	1835.9	556.7	1834.5	578.3	1837.5	603.1
GR1837.8	616.1	1838.0	640.8	1838.8	668.8	1837.9	711.4	1836.0	751.3
GR1834.6	767.8	1834.4	775.3	1832.0	797.0	1829.5	813.9	1829.0	826.8
GR1827.6	847.7	1828.2	860.4	1831.3	888.9	1833.0	909.7	1833.0	940.2
GR1831.6	955.9	1830.9	975.0	1831.6	991.0	1830.9	1001.2	1830.4	1021.5
GR1831.0	1043.2	1831.0	1063.1	1832.4	1086.9	1835.0	1121.0	1840.2	1161.1
GR1841.0	1183.7	1841.3	1187.3	1840.2	1209.3	1840.5	1247.3	1839.6	1276.4
GR1838.6	1290.6	1838.9	1314.3	1840.1	1357.6	1841.0	1392.0	1841.8	1407.3
GR1842.5	1440.4	1843.1	1461.3	1846.1	1527.6	1847.0	1551.3		
X1 158.0	51.0	396.6	1547.0	100	100	100.0	.0	.0	.0
GR1835.2	396.3	1835.2	396.4	1835.2	396.5	1835.2	396.6	1834.9	408.3
GR1835.5	416.6	1834.9	463.3	1834.8	487.9	1832.6	517.7	1833.0	522.5
GR1832.4	529.5	1834.4	543.7	1835.2	559.0	1831.8	622.3	1831.6	634.1
GR1834.0	660.0	1835.1	684.1	1834.5	712.9	1833.8	729.3	1829.2	746.1
GR1828.0	781.0	1827.0	816.5	1827.0	840.4	1826.6	876.1	1826.1	890.4
GR1828.0	912.1	1828.9	920.2	1828.8	956.9	1828.2	970.8	1828.0	1005.6
GR1828.0	1026.0	1829.3	1036.5	1833.5	1078.9	1836.3	1104.8	1836.2	1117.4
GR1835.8	1126.0	1836.4	1138.1	1836.4	1156.0	1834.6	1182.1	1834.0	1200.8
GR1834.6	1251.6	1836.9	1326.2	1838.0	1350.1	1838.3	1361.2	1838.0	1376.5
GR1840.0	1416.6	1841.6	1438.9	1843.0	1465.7	1847.1	1518.9	1848.0	1530.8
GR1848.8	1547.0								
X1 157.0	51.0	378.6	1535.8	100	100	100.0	.0	.0	.0
GR1832.4	378.3	1832.4	378.4	1832.4	378.5	1832.4	378.6	1833.6	397.8
GR1833.9	408.4	1834.0	431.8	1831.9	485.7	1831.1	503.8	1831.0	546.3
GR1830.2	571.3	1832.5	593.5	1832.5	602.4	1829.8	634.6	1827.0	655.1
GR1830.3	684.5	1831.0	694.3	1830.2	727.5	1830.3	741.5	1825.3	758.3
GR1825.0	794.3	1824.0	821.5	1823.1	830.9	1825.0	850.8	1826.0	885.6
GR1826.0	924.3	1826.0	956.8	1826.2	978.8	1826.0	1007.3	1826.7	1015.3
GR1828.3	1060.3	1831.5	1090.5	1831.8	1109.1	1831.0	1118.6	1830.5	1133.1
GR1831.1	1177.1	1832.4	1214.2	1831.8	1268.6	1832.2	1286.9	1832.0	1292.9
GR1833.0	1311.4	1836.0	1337.8	1838.0	1353.4	1839.7	1378.1	1841.8	1429.3
GR1842.2	1448.5	1842.0	1476.9	1841.6	1482.9	1842.0	1494.4	1843.8	1512.4
GR1843.8	1535.8								
X1 156.0	61.0	405.0	1524.6	100	100	100.0	.0	.0	.0
GR1829.8	374.7	1829.8	374.8	1829.8	374.9	1829.8	375.0	1829.8	405.0
GR1829.5	428.0	1830.1	437.9	1831.7	443.8	1832.0	451.8	1830.0	495.2
GR1829.0	516.2	1828.3	546.0	1828.7	566.0	1829.0	593.7	1828.4	604.5
GR1826.3	615.0	1826.0	625.2	1826.0	630.5	1827.5	637.2	1828.4	644.3
GR1828.0	672.4	1824.2	692.6	1824.8	701.5	1827.8	718.2	1828.0	742.7
GR1827.3	773.4	1826.8	782.4	1822.4	795.2	1821.4	799.6	1823.0	811.0
GR1824.1	863.8	1823.2	884.9	1824.0	893.8	1823.0	905.1	1822.8	924.4
GR1823.2	945.3	1823.4	985.4	1824.0	989.3	1826.0	1048.8	1826.9	1068.7
GR1827.1	1095.3	1827.1	1145.1	1828.0	1168.0	1827.8	1191.9	1826.5	1200.5
GR1827.0	1220.1	1828.5	1249.6	1828.0	1258.0	1833.2	1291.4	1835.0	1305.4
GR1835.9	1320.7	1835.8	1336.5	1835.1	1358.4	1834.6	1388.5	1833.6	1416.7
GR1833.2	1430.9	1835.0	1450.9	1837.3	1461.5	1839.1	1472.7	1840.4	1489.1
GR1842.9	1524.6								
X1 155.0	72.0	361.0	1513.4	119	119	119.0	.0	.0	.0
GR1827.1	360.7	1827.1	360.8	1827.1	360.9	1827.1	361.0	1827.3	380.8
GR1828.0	392.5	1827.8	408.0	1826.0	431.3	1826.0	444.1	1829.3	457.4
GR1829.0	474.7	1828.0	498.7	1827.0	510.6	1827.1	528.3	1827.5	534.9
GR1827.3	546.5	1827.8	562.3	1827.0	572.0	1826.6	583.7	1824.8	602.7
GR1823.7	616.8	1823.0	621.4	1822.8	629.0	1823.7	638.9	1823.0	644.7
GR1823.0	665.5	1822.0	673.7	1823.5	696.9	1822.1	704.3	1821.0	717.0
GR1821.3	723.3	1824.2	738.6	1824.9	751.7	1824.8	778.2	1822.9	801.5
GR1819.9	812.3	1819.0	818.8	1821.2	840.9	1821.3	850.2	1821.0	873.2
GR1820.2	891.5	1820.8	899.8	1820.0	927.4	1820.6	934.7	1821.1	972.1
GR1822.0	994.1	1822.9	1033.4	1823.0	1064.7	1822.0	1078.8	1824.0	1093.8
GR1824.0	1128.3	1824.4	1181.7	1823.4	1192.8	1823.9	1204.2	1823.1	1211.1
GR1825.2	1232.4	1826.4	1247.3	1825.6	1259.4	1825.0	1270.3	1825.0	1280.8
GR1830.2	1304.1	1832.1	1328.2	1833.0	1348.3	1835.0	1368.8	1836.3	1386.4
GR1836.6	1404.6	1836.5	1418.8	1838.0	1443.9	1837.8	1461.2	1837.0	1475.6
GR1835.5	1487.4	1838.8	1513.4						
X1 154.9	58.0	.0	1488.3	100	100	100.0	.0	.0	.0

GR1839.6	.0	1825.2	318.5	1824.8	327.5	1823.0	356.8	1822.1	379.8
GR1823.4	401.8	1823.0	417.2	1824.0	428.4	1824.0	451.1	1823.8	458.1
GR1822.0	475.0	1822.0	481.5	1823.8	511.2	1824.3	543.3	1823.2	578.6
GR1823.0	607.5	1821.7	613.1	1821.2	618.7	1822.0	638.3	1821.0	663.0
GR1820.5	679.2	1818.8	698.2	1817.4	710.1	1820.4	728.6	1820.4	740.1
GR1820.0	747.1	1821.4	808.5	1821.0	822.3	1817.0	823.5	1817.0	858.0
GR1818.0	863.2	1818.0	882.1	1816.2	891.1	1818.0	915.2	1817.0	926.2
GR1818.3	947.2	1818.5	972.9	1818.0	984.3	1817.1	991.5	1819.0	1015.3
GR1819.9	1052.0	1819.6	1096.1	1819.7	1124.1	1818.4	1135.8	1820.0	1153.3
GR1823.0	1173.4	1827.0	1187.9	1830.0	1206.9	1830.2	1241.8	1832.0	1280.8
GR1832.2	1305.8	1830.0	1334.7	1828.6	1362.5	1828.2	1377.5	1832.1	1402.0
GR1835.0	1434.2	1835.8	1463.8	1835.8	1488.3				
X1 154.8	67.0	.0	1506.6	100	100	100.0	.0	.0	.0
GR1835.4	.0	1822.5	290.9	1822.5	302.0	1822.0	320.7	1822.0	349.6
GR1819.9	364.7	1819.0	373.2	1819.3	388.8	1820.0	401.6	1820.0	428.5
GR1814.0	459.4	1819.0	475.5	1819.0	502.3	1818.6	510.7	1816.0	517.7
GR1818.3	531.5	1818.8	552.4	1819.0	582.8	1820.0	592.6	1819.0	626.6
GR1816.1	638.2	1819.0	660.0	1817.8	682.3	1816.2	705.1	1816.0	728.8
GR1813.0	743.0	1816.0	759.4	1816.6	768.2	1816.8	782.9	1816.0	787.0
GR1816.3	801.4	1817.3	812.8	1816.7	831.2	1814.7	854.8	1814.0	883.4
GR1816.0	889.3	1816.0	896.0	1815.1	912.3	1815.2	935.3	1815.9	941.8
GR1815.8	974.3	1815.0	1006.3	1815.4	1017.7	1816.2	1024.1	1817.1	1065.9
GR1817.0	1077.6	1815.0	1085.6	1817.0	1114.5	1820.0	1137.2	1825.0	1165.9
GR1825.0	1197.4	1827.0	1221.8	1827.3	1244.4	1825.8	1258.5	1827.0	1276.0
GR1824.8	1287.6	1822.0	1297.7	1824.2	1311.7	1828.0	1323.2	1830.0	1336.5
GR1830.6	1359.7	1830.4	1374.9	1828.9	1383.9	1825.9	1420.8	1823.0	1438.8
GR1823.0	1446.3	1828.8	1506.6						
X1 154.7	57.0	.0	1494.2	100	100	100.0	.0	.0	.0
GR1831.0	.0	1820.3	248.1	1819.4	266.1	1819.5	306.4	1819.7	362.7
GR1818.7	382.5	1817.0	401.3	1814.0	419.0	1816.3	439.5	1816.0	458.4
GR1814.6	507.8	1814.0	540.2	1811.0	554.8	1815.0	574.4	1815.0	604.4
GR1815.8	639.3	1813.9	670.4	1812.0	681.8	1812.8	695.7	1813.1	717.7
GR1814.0	741.7	1813.8	760.0	1812.0	766.8	1814.0	780.2	1814.0	834.9
GR1811.0	848.0	1810.7	854.5	1811.1	869.8	1812.0	876.3	1811.9	903.7
GR1811.2	912.2	1814.0	932.9	1813.3	965.7	1813.2	1005.9	1813.5	1025.9
GR1813.9	1046.2	1813.0	1057.2	1818.0	1080.1	1820.0	1086.7	1821.1	1109.4
GR1819.8	1123.4	1816.0	1144.1	1816.6	1163.3	1815.0	1178.8	1821.0	1217.1
GR1825.0	1240.6	1827.0	1267.6	1826.6	1299.0	1825.0	1318.1	1823.0	1325.6
GR1819.5	1360.1	1819.0	1368.9	1822.0	1396.8	1825.0	1410.3	1830.0	1439.5
GR1832.0	1460.0	1833.0	1494.2						
X1 154.0	61.0	.0	1500.3	100	100	100.0	.0	.0	.0
GR1826.3	.0	1825.2	26.6	1818.7	127.8	1814.0	228.0	1812.4	233.3
GR1814.3	250.6	1814.6	267.6	1813.9	377.8	1813.9	394.0	1813.5	410.1
GR1813.6	425.5	1813.0	467.5	1810.9	503.4	1809.0	521.2	1807.0	533.4
GR1809.6	554.2	1812.0	570.3	1811.1	600.0	1810.9	623.9	1807.0	638.5
GR1808.2	649.9	1808.0	661.1	1806.9	667.7	1807.0	690.9	1810.0	711.1
GR1811.8	737.3	1811.9	767.5	1811.0	829.3	1810.6	850.9	1809.8	865.6
GR1808.0	868.6	1808.0	884.1	1809.0	892.7	1809.0	909.6	1808.1	940.4
GR1809.0	945.6	1809.0	979.4	1808.8	994.6	1809.1	1014.8	1810.8	1029.4
GR1811.2	1042.2	1811.0	1058.9	1810.1	1073.6	1815.0	1092.6	1817.3	1114.4
GR1817.0	1153.8	1821.9	1192.5	1821.4	1208.2	1820.0	1220.1	1816.7	1235.5
GR1815.1	1246.7	1816.0	1277.9	1816.4	1297.0	1817.0	1315.1	1819.7	1358.5
GR1822.0	1379.4	1825.0	1393.3	1828.3	1418.7	1829.4	1431.0	1828.0	1468.4
GR1829.5	1500.3								
X1 153.0	64.0	.0	1509.9	100	100	100.0	.0	.0	.0
GR1818.5	.0	1810.0	158.1	1809.8	185.3	1809.6	196.6	1810.0	223.4
GR1809.0	249.6	1808.9	255.1	1806.0	270.4	1808.0	282.1	1808.8	315.9
GR1808.5	335.3	1809.7	374.1	1810.1	388.5	1810.3	435.1	1811.0	443.8
GR1809.1	460.4	1808.9	475.6	1807.9	495.2	1804.0	517.8	1804.0	523.6
GR1806.0	541.5	1806.8	574.3	1803.0	594.2	1806.0	612.5	1808.0	652.0
GR1808.0	657.9	1804.0	671.0	1808.0	695.0	1808.9	725.3	1808.0	777.6
GR1808.0	809.3	1807.0	850.9	1804.0	865.3	1807.0	879.5	1807.8	894.0
GR1806.0	899.2	1806.0	920.7	1806.5	935.4	1806.3	951.8	1805.8	978.5
GR1806.9	1009.6	1806.5	1018.3	1808.0	1031.7	1808.0	1042.6	1808.5	1055.2
GR1808.6	1088.8	1816.0	1129.2	1817.2	1142.4	1813.0	1179.6	1812.0	1186.3
GR1812.4	1198.9	1814.8	1227.3	1818.0	1251.1	1820.0	1262.0	1821.3	1278.5
GR1823.0	1293.4	1825.0	1320.9	1825.9	1349.2	1825.0	1374.1	1820.5	1404.4

GR1821.4	1425.6	1824.0	1445.5	1825.3	1458.8	1828.5	1509.9		
X1 152.0	68.0	.0	1424.4	100	100	100.0	.0	.0	.0
GR1815.9	.0	1808.5	130.7	1808.1	167.7	1807.6	169.4	1808.3	188.7
GR1808.5	219.2	1808.0	232.0	1808.0	251.3	1808.3	255.2	1808.0	287.1
GR1807.0	306.2	1804.0	320.7	1805.0	330.8	1805.6	349.6	1807.6	386.1
GR1807.3	423.1	1806.0	443.9	1806.0	476.8	1804.0	503.2	1804.2	511.4
GR1805.8	519.9	1805.5	534.1	1804.7	543.7	1801.0	551.9	1803.9	576.6
GR1803.9	591.2	1800.0	598.9	1803.2	612.9	1805.0	629.3	1805.6	637.5
GR1805.4	660.9	1801.0	676.3	1806.0	689.9	1806.3	695.0	1806.0	722.5
GR1805.1	774.8	1807.0	828.9	1806.8	850.3	1806.0	861.4	1802.0	871.6
GR1804.0	889.1	1805.0	903.2	1805.0	928.8	1803.0	932.9	1803.0	941.7
GR1804.0	950.8	1804.0	961.8	1803.0	969.4	1803.0	996.0	1804.2	1008.3
GR1805.0	1012.3	1805.2	1060.2	1806.0	1068.3	1806.8	1081.0	1807.0	1102.1
GR1807.0	1143.3	1808.0	1160.1	1808.4	1173.0	1811.0	1188.1	1815.0	1204.3
GR1816.4	1237.7	1815.4	1276.8	1813.5	1301.0	1811.0	1316.7	1812.0	1335.2
GR1818.2	1358.8	1820.0	1368.6	1824.0	1424.4				
QT 6	10579	8751	6838	4745	3537	2044			
X1 151.0	65.0	.0	1419.7	100	100	100.0	.0	.0	.0
GR1814.5	.0	1807.5	115.3	1806.9	158.3	1806.4	159.9	1807.3	178.4
GR1807.0	185.8	1807.3	213.4	1804.3	222.7	1805.5	231.1	1808.6	277.3
GR1806.0	317.8	1805.0	344.4	1803.0	357.4	1805.0	381.6	1805.7	413.6
GR1804.0	451.3	1802.9	481.6	1802.4	486.7	1802.5	496.9	1804.6	500.7
GR1802.9	541.8	1801.8	572.8	1800.0	587.0	1799.0	597.0	1799.0	610.5
GR1802.0	619.3	1803.0	630.7	1803.0	666.6	1799.0	673.2	1802.6	691.7
GR1802.8	701.3	1802.1	712.2	1803.0	725.0	1803.0	745.3	1803.5	770.6
GR1803.0	782.8	1802.0	787.4	1803.3	814.9	1803.4	827.7	1802.9	877.7
GR1800.0	892.0	1800.0	929.8	1800.0	960.7	1802.0	970.5	1801.8	992.8
GR1801.4	996.1	1802.2	1027.0	1803.0	1053.6	1803.0	1080.0	1804.8	1093.6
GR1805.0	1116.6	1804.8	1139.9	1804.0	1151.0	1806.0	1170.3	1812.0	1196.5
GR1815.0	1215.9	1816.5	1255.1	1817.0	1264.3	1817.0	1278.4	1816.0	1294.2
GR1813.4	1316.5	1816.3	1343.3	1817.3	1364.6	1817.5	1388.6	1819.2	1419.7
X1 150.0	72.0	.0	1349.0	100	100	100.0	.0	.0	.0
GR1813.2	.0	1806.5	103.2	1805.7	151.9	1805.3	153.4	1805.9	168.0
GR1805.9	181.9	1806.3	208.8	1804.0	215.1	1803.9	227.7	1803.0	240.2
GR1806.2	280.7	1806.7	296.6	1805.7	318.0	1803.8	344.3	1803.0	367.9
GR1801.0	380.5	1803.0	394.8	1804.0	426.4	1804.0	437.8	1803.0	458.1
GR1803.0	463.2	1802.0	476.9	1799.0	509.8	1799.0	521.3	1802.0	527.7
GR1801.9	543.2	1801.0	559.3	1801.0	574.7	1800.5	590.9	1799.0	609.3
GR1798.0	615.3	1798.1	643.8	1801.0	658.3	1801.0	677.3	1798.2	694.4
GR1800.2	719.2	1802.0	753.5	1802.0	766.6	1799.0	801.5	1800.2	817.2
GR1800.0	834.1	1798.0	838.5	1799.0	850.2	1800.0	855.0	1800.0	875.1
GR1799.4	891.8	1797.0	900.6	1797.0	915.0	1798.0	930.1	1798.8	936.2
GR1798.0	945.3	1797.0	950.7	1798.7	990.4	1800.0	1019.0	1801.0	1036.7
GR1801.3	1045.9	1800.8	1071.8	1800.0	1085.6	1800.0	1096.5	1803.5	1120.2
GR1805.5	1138.9	1805.0	1153.5	1804.2	1166.0	1809.2	1200.6	1811.4	1217.4
GR1811.5	1226.6	1810.0	1242.0	1806.0	1263.7	1811.0	1290.1	1812.7	1322.7
GR1812.5	1336.1	1812.0	1349.0						
X1 149.0	67.0	.0	1357.0	100	100	100.0	.0	.0	.0
GR1812.0	.0	1805.6	94.2	1804.6	148.4	1804.2	149.8	1805.0	162.3
GR1804.7	181.0	1805.2	207.2	1804.0	210.5	1802.7	241.2	1801.1	266.6
GR1802.0	271.4	1803.4	292.3	1804.0	316.3	1803.6	323.8	1804.0	347.7
GR1799.0	378.5	1801.1	396.8	1802.2	423.2	1802.0	476.4	1799.7	506.3
GR1797.9	523.1	1797.0	541.3	1797.1	560.1	1799.1	568.4	1798.8	584.0
GR1797.6	598.7	1798.0	609.5	1798.0	624.2	1796.0	633.1	1796.2	642.0
GR1798.0	657.1	1798.3	664.1	1798.0	678.9	1796.0	689.5	1799.8	710.0
GR1798.8	730.8	1797.8	742.2	1797.0	764.2	1795.0	775.5	1795.3	786.9
GR1797.1	801.1	1797.8	824.7	1797.0	842.8	1793.3	852.9	1797.0	861.1
GR1796.8	882.1	1795.0	890.6	1795.1	912.4	1797.0	942.8	1798.0	967.3
GR1798.0	1029.4	1796.4	1042.4	1798.7	1052.7	1798.0	1070.8	1797.8	1091.9
GR1797.7	1099.8	1797.0	1112.8	1801.0	1151.6	1805.0	1180.1	1803.7	1193.0
GR1800.6	1207.3	1799.0	1241.0	1799.0	1254.4	1800.7	1281.4	1805.0	1317.5
GR1805.0	1346.9	1805.3	1357.0						
X1 148.0	65.0	.0	1386.8	100	100	100.0	.0	.0	.0
GR1811.0	.0	1804.7	87.8	1803.4	147.7	1803.1	148.9	1804.0	163.0
GR1803.6	183.0	1803.9	205.4	1803.9	211.3	1802.1	241.2	1801.8	275.2
GR1800.0	298.9	1799.7	315.6	1800.6	339.9	1800.8	356.7	1799.0	375.5
GR1797.2	384.8	1799.7	407.6	1800.8	432.7	1801.0	469.1	1801.0	516.0

GR1796.9	549.1	1795.0	563.1	1795.0	570.7	1797.0	575.5	1797.0	584.2
GR1795.2	621.5	1797.0	633.0	1796.8	641.9	1793.0	662.5	1796.0	685.5
GR1796.0	719.1	1794.0	728.3	1796.3	745.6	1796.0	782.0	1794.8	819.5
GR1794.5	833.8	1794.5	844.1	1793.7	850.8	1793.0	876.0	1793.0	912.9
GR1794.1	921.8	1795.0	941.0	1795.3	960.8	1795.0	1013.5	1795.0	1037.2
GR1794.0	1045.6	1795.0	1058.9	1794.4	1075.5	1794.8	1099.3	1794.0	1120.1
GR1794.0	1132.1	1794.8	1146.0	1795.0	1156.4	1797.0	1193.6	1800.1	1223.2
GR1800.4	1230.9	1800.0	1253.8	1798.4	1270.3	1798.8	1282.9	1796.7	1304.4
GR1797.1	1312.7	1800.0	1332.7	1802.4	1362.7	1802.4	1375.9	1801.3	1386.8
X1 147.0	57.0	.0	1223.1	100	100	100.0	.0	.0	.0
X3 10					1270				
GR1810.1	.0	1803.8	83.9	1802.3	149.6	1802.0	150.8	1802.9	166.6
GR1802.4	188.0	1802.8	210.6	1803.0	216.1	1802.4	247.4	1802.0	263.2
GR1802.3	270.9	1801.9	309.7	1798.0	351.4	1798.0	397.3	1796.0	405.7
GR1796.0	413.8	1798.0	424.5	1798.4	445.2	1798.5	479.8	1799.0	506.7
GR1799.5	517.1	1799.5	526.8	1795.7	563.3	1794.0	577.1	1794.9	604.8
GR1793.8	629.2	1794.0	641.3	1796.0	667.0	1791.0	689.5	1795.0	716.6
GR1794.8	735.8	1793.8	751.9	1791.1	762.9	1793.3	777.6	1793.0	820.0
GR1792.7	840.3	1791.9	850.4	1791.0	886.5	1791.0	910.4	1792.3	919.9
GR1792.4	940.0	1792.0	950.3	1792.0	989.1	1791.4	998.9	1791.5	1032.1
GR1791.0	1043.2	1792.0	1060.1	1792.0	1076.3	1791.2	1081.6	1791.0	1092.4
GR1791.9	1121.3	1792.0	1139.4	1793.0	1168.0	1793.0	1184.5	1792.0	1198.1
GR1795.0	1223.1	1799.0	1272.8						
X1 146.0	56.0	.0	1193.0	100	100	100.0	.0	.0	.0
X3 10					1215				
GR1809.3	.0	1803.0	82.4	1800.8	155.4	1801.9	173.1	1801.3	196.0
GR1800.9	213.0	1799.4	217.8	1801.1	229.8	1801.0	248.0	1800.5	259.8
GR1801.4	282.8	1801.0	289.5	1801.0	303.9	1800.0	331.7	1797.0	371.4
GR1796.1	390.5	1795.9	433.5	1794.0	450.0	1795.8	470.9	1795.8	492.5
GR1795.6	506.1	1796.7	525.2	1796.9	571.6	1794.0	583.2	1791.7	601.7
GR1792.7	623.1	1792.9	632.3	1792.0	657.6	1792.0	678.2	1789.0	694.7
GR1791.0	710.8	1792.0	720.8	1791.5	740.2	1790.9	783.1	1789.0	802.0
GR1790.5	814.1	1790.7	835.8	1788.2	847.7	1789.0	908.8	1789.0	919.7
GR1788.6	927.6	1789.2	970.5	1789.0	988.8	1788.0	997.3	1788.0	1026.6
GR1787.4	1039.2	1790.0	1054.9	1789.6	1062.5	1790.0	1067.7	1790.0	1097.5
GR1791.0	1113.2	1790.0	1133.5	1788.0	1147.3	1791.2	1168.1	1792.9	1193.0
GR1792.2	1215.1								
X1 145.0	57.0	.0	1167.4	100	100	100.0	.0	.0	.0
X3 10					1180				
GR1808.7	.0	1802.2	83.3	1799.7	163.0	1800.8	182.7	1800.1	212.3
GR1799.8	231.5	1799.0	241.0	1798.0	250.7	1798.4	296.1	1799.0	312.6
GR1800.0	324.9	1799.9	336.9	1797.9	366.0	1797.0	385.6	1796.3	406.8
GR1795.0	425.9	1795.0	449.7	1795.6	459.0	1794.7	481.5	1792.0	513.4
GR1792.4	533.8	1794.4	565.5	1794.4	578.8	1793.8	612.5	1791.8	628.4
GR1789.0	641.4	1790.7	657.1	1790.7	674.0	1790.0	692.5	1786.0	702.3
GR1790.8	718.7	1790.0	753.3	1788.8	773.3	1787.8	781.8	1787.5	792.8
GR1788.0	807.0	1785.4	819.3	1787.1	832.2	1786.9	846.0	1786.2	865.4
GR1786.3	891.9	1786.5	932.2	1786.4	950.4	1786.4	973.9	1785.0	992.0
GR1785.0	1000.8	1785.5	1005.8	1786.0	1034.5	1785.8	1071.8	1785.5	1084.8
GR1786.0	1100.2	1785.0	1106.5	1787.0	1129.6	1788.1	1139.5	1789.0	1156.0
GR1789.0	1167.4	1788.0	1187.5						
X1 144.0	50.0	.0	1166.7	100	100	100.0	.0	.0	.0
X3 10					1170				
GR1808.2	.0	1801.3	86.6	1798.5	173.7	1799.6	195.7	1798.8	220.6
GR1798.9	249.9	1797.5	289.9	1796.7	324.5	1795.1	363.3	1795.3	378.4
GR1797.0	413.2	1795.0	439.0	1793.0	456.6	1793.6	493.6	1793.0	507.7
GR1789.0	546.7	1788.0	559.9	1789.2	573.8	1789.8	589.0	1789.8	624.4
GR1790.0	647.0	1789.3	679.8	1788.5	705.9	1785.0	722.2	1789.0	741.4
GR1788.4	752.3	1788.5	757.1	1788.0	791.0	1786.5	830.2	1785.7	843.0
GR1783.0	850.0	1783.3	875.0	1783.0	903.1	1782.4	909.5	1783.7	914.7
GR1783.0	940.2	1783.0	955.5	1782.8	975.7	1783.0	985.8	1784.0	995.5
GR1784.0	1030.6	1783.4	1057.6	1783.0	1090.9	1782.3	1108.3	1782.0	1116.8
GR1784.0	1121.8	1786.0	1133.7	1787.1	1152.1	1786.8	1166.7	1786.0	1182.7
X1 143.0	42.0	.0	1180.0	100	100	100.0	.0	.0	.0
X3 10					1180				
GR1807.3	.0	1799.4	99.2	1796.1	200.1	1797.4	226.0	1797.0	244.7
GR1797.0	255.3	1796.5	265.1	1796.6	340.4	1796.3	369.3	1793.9	399.0

GR1793.0	423.1	1794.9	462.4	1792.0	495.9	1791.0	503.7	1792.0	510.9
GR1792.0	555.7	1791.0	569.9	1791.0	583.1	1790.3	586.2	1788.4	627.3
GR1788.2	656.1	1787.8	669.5	1784.0	700.7	1784.7	758.2	1784.8	773.3
GR1781.2	786.0	1786.0	798.7	1785.0	814.7	1783.0	868.2	1780.7	888.6
GR1780.5	923.5	1780.5	958.6	1779.8	969.5	1779.0	976.3	1780.2	996.0
GR1780.9	1023.9	1780.8	1062.4	1780.3	1102.0	1779.7	1114.8	1778.5	1130.3
GR1781.0	1146.4	1784.0	1180.0						
X1 142.0	51.0	.0	1175.0	100	100	100.0	.0	.0	.0
X3 10					1175				
GR1804.9	.0	1795.3	121.1	1791.6	247.3	1792.1	267.2	1792.4	272.3
GR1792.2	303.3	1792.1	349.4	1792.3	362.9	1792.0	392.3	1790.0	431.3
GR1790.0	441.8	1789.3	458.0	1788.7	485.8	1788.0	507.4	1787.0	517.0
GR1787.2	526.7	1788.3	536.9	1787.6	554.0	1787.0	561.1	1785.4	566.0
GR1788.1	573.5	1790.0	584.9	1788.8	628.1	1787.9	647.4	1787.0	689.8
GR1786.1	719.3	1786.0	735.4	1785.0	750.8	1782.8	767.5	1780.0	778.1
GR1780.4	834.0	1779.0	858.2	1779.5	872.5	1780.0	886.3	1778.8	901.2
GR1777.8	903.9	1778.0	928.2	1779.0	935.6	1779.0	987.1	1778.0	1020.1
GR1778.0	1026.1	1777.0	1030.1	1777.0	1042.1	1776.4	1049.7	1776.5	1090.7
GR1777.0	1118.3	1777.0	1132.6	1776.0	1137.2	1776.0	1144.9	1778.0	1152.8
GR1779.6	1175.0								
X1 141.0	53.0	.0	1180.0	100	100	100.0	.0	.0	.0
X3 10					1180				
GR1801.7	.0	1791.2	134.2	1787.6	266.4	1786.0	285.1	1786.0	296.6
GR1788.0	313.6	1788.7	327.6	1786.0	352.5	1786.0	369.1	1787.8	384.6
GR1789.1	417.1	1788.8	473.7	1788.0	496.6	1786.9	522.6	1786.0	531.8
GR1785.4	552.3	1785.0	556.8	1785.0	584.2	1783.9	599.9	1784.0	618.5
GR1784.4	628.7	1783.9	634.7	1784.0	657.3	1781.0	688.8	1779.0	695.6
GR1780.2	704.8	1782.7	715.3	1783.9	731.5	1783.0	739.6	1782.8	755.0
GR1776.0	777.6	1776.0	787.8	1777.4	806.2	1778.0	822.0	1777.7	842.1
GR1775.5	857.7	1775.3	861.2	1776.0	888.1	1778.0	901.7	1778.0	914.4
GR1775.0	927.7	1776.6	947.1	1777.5	986.2	1777.8	1012.3	1777.0	1039.7
GR1777.0	1060.5	1775.0	1079.8	1775.6	1085.7	1775.0	1100.5	1774.8	1115.7
GR1774.0	1136.4	1774.0	1157.8	1773.7	1180.0				
QT 6	12814	10496	8208	5666	4222	2456			
X1 140.0	47.0	.0	1180.0	100	100	100.0	.0	.0	.0
X3 10					1180				
GR1797.8	.0	1787.2	138.5	1784.2	252.5	1783.0	267.0	1782.0	292.2
GR1783.5	309.9	1781.6	331.2	1781.4	344.0	1781.8	356.1	1782.0	385.8
GR1781.3	396.9	1783.0	426.9	1784.1	466.0	1785.1	506.0	1785.8	520.1
GR1785.6	543.3	1785.0	560.8	1783.0	597.4	1783.0	653.0	1778.0	692.5
GR1776.9	702.9	1775.0	708.8	1776.0	722.0	1777.9	735.8	1778.3	751.3
GR1772.0	766.7	1771.1	775.4	1773.0	786.0	1773.2	806.2	1773.0	819.0
GR1774.0	848.6	1773.9	874.0	1772.0	883.0	1774.0	898.3	1773.8	911.7
GR1773.1	920.9	1774.0	924.2	1775.0	976.1	1775.0	1006.1	1774.0	1037.4
GR1772.0	1051.4	1773.5	1058.1	1773.8	1063.0	1773.0	1087.4	1772.0	1107.2
GR1772.7	1153.1	1772.0	1180.0						
X1 139.0	50.0	.0	1175.0	100	100	100.0	.0	.0	.0
X3 10					1175.0				
GR1793.2	.0	1783.1	134.2	1780.8	230.0	1779.8	242.3	1779.0	263.7
GR1781.8	296.5	1781.0	334.6	1780.5	347.4	1780.1	380.0	1781.0	427.8
GR1778.9	450.3	1777.0	465.6	1776.0	487.4	1777.0	515.2	1777.3	528.6
GR1775.5	540.8	1778.4	553.8	1779.0	563.7	1781.0	583.2	1779.6	619.2
GR1777.9	645.5	1776.2	653.6	1778.1	664.7	1777.8	689.4	1776.8	705.7
GR1774.7	713.2	1771.9	736.8	1771.5	748.6	1771.0	778.3	1770.4	788.4
GR1772.0	827.0	1772.0	850.8	1770.0	856.6	1771.0	862.8	1771.0	876.5
GR1770.0	884.5	1770.0	893.7	1771.3	925.5	1772.8	951.9	1770.5	984.7
GR1770.4	998.0	1771.3	1027.5	1771.6	1055.4	1771.0	1074.0	1769.0	1095.2
GR1769.0	1103.7	1770.0	1112.3	1770.0	1131.6	1769.6	1140.2	1770.4	1175.0
X1 138.0	46.0	.0	1170.0	100	100	100.0	.0	.0	.0
X3 10					1170.0				
GR1787.9	.0	1779.1	121.2	1777.3	198.6	1776.5	208.6	1775.9	226.1
GR1778.2	253.0	1776.8	323.4	1776.9	348.8	1778.0	360.2	1777.0	380.7
GR1776.4	403.5	1776.8	442.1	1777.0	459.6	1776.1	485.6	1777.3	494.9
GR1777.3	523.7	1775.0	539.0	1775.0	575.4	1774.0	583.1	1773.4	605.7
GR1772.0	619.1	1772.0	624.4	1774.0	643.5	1774.9	664.1	1773.0	729.6
GR1770.7	742.0	1771.8	750.8	1768.0	767.6	1768.0	790.9	1769.0	812.4
GR1769.0	839.8	1767.0	845.4	1768.7	851.3	1767.3	879.8	1767.0	887.4

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GR1769.0   895.5  1769.0   933.4  1769.3   953.2  1769.3   967.6  1768.0   982.3
GR1769.2  1053.6  1769.2  1088.2  1768.8  1104.1  1764.7  1114.3  1769.0  1143.4
GR1768.5  1170.0
X1 137.0    46.0      .0  1165.0     100     100   100.0      .0      .0      .0
X3    10                                  1165.0
GR1782.0      .0  1774.9    99.3  1773.7   157.8  1772.7   178.8  1774.4   199.4
GR1773.5   254.0  1773.7   294.3  1774.3   348.8  1773.8   385.0  1773.0   415.0
GR1773.0   428.4  1772.0   438.0  1773.0   460.1  1773.0   489.9  1774.0   507.6
GR1773.4   533.6  1773.6   553.5  1773.0   567.6  1769.7   592.6  1769.2   610.3
GR1770.0   619.3  1770.4   629.5  1771.2   635.7  1770.8   681.6  1770.0   697.4
GR1769.0   711.1  1768.7   725.8  1769.0   738.4  1766.0   745.2  1766.1   795.0
GR1765.8   814.5  1766.1   851.7  1768.1   898.9  1767.8   923.2  1766.1   944.7
GR1766.6   965.1  1766.5   980.0  1767.0  1015.3  1767.0  1063.1  1766.3  1099.4
GR1766.0  1110.9  1764.7  1123.5  1762.3  1129.6  1764.1  1141.7  1766.5  1150.1
GR1767.0  1165.0
X1 136.0    49.0      .0  1160.0     100     100   100.0      .0      .0      .0
X3    10                                  1160.0
GR1771.7      .0  1768.7    47.0  1768.2    76.3  1767.7    87.2  1768.6    97.9
GR1768.2   127.2  1768.9   186.7  1768.4   241.1  1769.5   319.0  1769.0   340.5
GR1769.6   346.8  1767.1   365.9  1767.9   386.5  1768.4   424.5  1769.0   435.8
GR1768.0   441.9  1768.7   466.4  1769.0   505.5  1767.8   519.9  1768.7   532.2
GR1767.2   551.7  1766.9   568.8  1764.4   586.5  1766.0   611.5  1768.6   631.3
GR1767.7   660.3  1766.8   678.4  1764.3   710.8  1763.6   728.0  1763.8   756.9
GR1764.0   771.1  1764.0   798.7  1765.2   809.1  1765.0   823.7  1763.9   840.5
GR1763.5   872.1  1764.2   894.7  1766.0   925.5  1766.0   936.8  1764.0   948.6
GR1764.0   970.2  1764.9  1000.8  1765.0  1037.7  1764.0  1050.0  1765.0  1085.7
GR1765.0  1107.0  1761.0  1133.1  1763.1  1146.0  1764.4  1160.0
X1 135.0    50.0      .0  1145.0     100     100   100.0      .0      .0      .0
X3    10                                  1145.0
GR1766.8      .0  1765.9    15.1  1765.4    35.3  1765.8    40.8  1765.8    66.7
GR1766.0    85.4  1765.7   125.2  1766.2   163.6  1765.4   203.4  1765.6   235.6
GR1765.8   325.7  1766.0   339.5  1764.4   346.2  1765.0   357.8  1764.4   374.9
GR1764.7   398.0  1764.0   419.2  1764.0   427.5  1766.0   436.3  1765.8   457.7
GR1766.0   482.6  1765.1   500.1  1764.9   532.8  1764.7   547.8  1765.0   554.1
GR1763.0   578.1  1762.0   583.4  1762.0   591.5  1763.0   609.3  1764.2   643.8
GR1765.0   651.0  1765.0   660.0  1763.0   680.8  1761.0   695.5  1762.0   732.8
GR1761.8   741.0  1762.0   787.4  1761.9   823.3  1761.0   852.8  1761.7   905.2
GR1762.9   926.6  1761.5   934.7  1761.0   957.4  1762.0   967.9  1763.0   994.0
GR1763.0  1031.0  1762.0  1076.2  1762.0  1108.1  1760.0  1118.5  1763.0  1145.0
X1 134.0    45.0      .0  1130.0     100     100   100.0      .0      .0      .0
X3    10                                  1130.0
GR1763.0      .0  1763.0    15.7  1763.5    88.6  1763.6   133.2  1763.3   178.9
GR1762.8   189.1  1763.1   218.6  1763.3   313.2  1762.4   327.0  1762.6   350.8
GR1762.0   379.1  1761.0   386.7  1761.0   393.2  1763.0   414.6  1760.1   442.1
GR1761.1   456.9  1761.3   477.0  1763.0   494.0  1763.0   509.6  1762.0   557.2
GR1762.0   576.7  1761.0   603.5  1759.4   608.5  1760.0   627.4  1759.8   642.3
GR1758.0   651.8  1760.0   684.6  1760.4   706.1  1760.0   741.5  1759.6   753.6
GR1758.6   769.1  1760.0   780.3  1758.6   844.7  1759.3   913.7  1760.2   950.0
GR1761.0   975.8  1760.9   991.3  1760.0  1023.9  1759.0  1041.1  1759.0  1057.2
GR1760.0  1070.1  1761.0  1092.5  1761.0  1110.8  1758.0  1121.3  1758.0  1130.0
X1 133.0    44.0      .0  1125.0     100     100   100.0      .0      .0      .0
X3    10                    370           1125.0
GR1760.3      .0  1760.8    35.1  1760.2    80.9  1759.7   108.6  1760.7   142.0
GR1760.6   211.3  1758.3   222.1  1759.4   294.9  1760.0   305.8  1760.0   345.4
GR1759.4   356.4  1759.4   373.2  1758.9   401.6  1758.0   413.0  1757.5   426.0
GR1757.6   432.2  1757.0   455.4  1757.0   469.5  1760.0   499.5  1760.0   520.1
GR1757.8   533.5  1758.6   544.6  1759.0   556.9  1759.0   579.0  1758.8   599.6
GR1758.9   629.7  1755.0   662.2  1755.0   675.7  1756.0   683.7  1757.0   708.2
GR1757.9   755.3  1757.5   793.6  1756.5   830.8  1758.0   875.4  1758.0   903.3
GR1757.7   925.4  1758.0   953.1  1758.7   970.6  1757.5  1015.7  1757.0  1029.2
GR1758.0  1036.6  1758.3  1073.5  1758.0  1105.1  1757.0  1125.0
X1 132.0    48.0   389.4  1120.0     100     100   100.0      .0      .0      .0
X3    10                  370.0           1120.0
GR1757.7      .0  1758.0     5.6  1758.0    45.0  1757.6    58.7  1757.6    78.8
GR1758.0    84.9  1758.0   117.5  1757.2   135.9  1757.6   171.8  1756.0   177.6
GR1758.5   193.8  1758.2   235.1  1756.8   276.9  1757.0   318.3  1757.0   348.7
GR1756.0   389.4  1756.1   409.3  1756.4   419.6  1754.8   454.7  1754.0   473.9
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GR1753.0	482.4	1755.0	496.5	1756.0	522.3	1755.8	542.7	1757.0	597.2
GR1756.6	609.4	1753.8	641.9	1753.0	649.2	1753.0	658.4	1756.0	677.5
GR1755.8	702.4	1755.8	749.6	1755.6	756.3	1755.7	773.0	1756.0	790.3
GR1755.0	807.6	1754.0	853.7	1755.4	885.0	1755.3	909.8	1755.1	920.8
GR1755.3	936.2	1754.6	949.8	1755.9	1003.8	1756.0	1034.4	1755.8	1042.0
GR1755.5	1077.6	1755.6	1100.6	1755.0	1120.0				
X1 131.0	47.0	390.0	1120.0	100	100	100.0	.0	.0	.0
X3 10			390.0		1120.0				
GR1754.7	.0	1754.9	18.7	1754.6	51.9	1755.0	82.6	1754.0	104.9
GR1754.0	148.5	1755.0	155.1	1754.8	190.7	1754.1	259.0	1754.0	285.0
GR1753.1	295.0	1754.0	333.0	1753.9	365.1	1754.5	390	1754.3	405
GR1754.2	420	1754	440	1753.5	460	1753	480	1752.5	495
GR1753.0	510.6	1753.0	539.8	1753.0	563.0	1753.8	587.2	1752.9	604.6
GR1749.0	620.9	1750.0	629.6	1753.3	640.8	1753.0	674.0	1753.6	714.8
GR1754.0	729.0	1753.0	737.2	1753.0	746.8	1754.0	759.6	1753.4	798.3
GR1753.6	816.1	1752.0	858.8	1752.0	879.1	1751.6	901.9	1752.0	922.7
GR1751.0	942.2	1751.4	953.0	1753.0	978.0	1753.0	996.8	1752.5	1030.3
GR1752.4	1067.6	1753.4	1120.0						
X1 130.0	46.0	410.0	1125.0	100	100	100.0	.0	.0	.0
X3 10			410.0		1125.0				
GR1751.8	.0	1752.3	23.5	1751.9	70.5	1750.0	104.1	1751.2	144.4
GR1750.7	196.4	1751.0	220.5	1750.9	271.6	1750.2	306.9	1749.6	312.4
GR1750.4	347.5	1749.9	385.9	1753.5	410	1753	430	1752.8	445
GR1752.5	460	1752.2	475	1752	490	1751.5	510	1751	530
GR1750.6	545	1750.3	560	1749.8	583.3	1747.6	592.6	1747.6	599.0
GR1750.0	613.9	1749.7	632.9	1749.0	656.2	1750.1	663.7	1750.8	674.4
GR1751.8	761.4	1751.0	789.0	1751.0	816.3	1749.2	852.0	1749.1	866.7
GR1749.5	886.0	1750.0	894.7	1749.0	932.8	1749.2	944.3	1749.5	989.7
GR1749.6	1029.4	1749.5	1048.6	1749.0	1062.6	1750.3	1084.7	1751.0	1108.8
GR1750.8	1125.0								
X1 129.0	49.0	440	1130.0	100	100	100.0	.0	.0	.0
X3 10			440.0		1130.0				
GR1748.4	.0	1748.5	16.1	1747.9	48.7	1747.7	86.5	1747.8	137.3
GR1747.2	153.4	1748.0	169.8	1748.3	209.0	1748.2	243.0	1747.7	273.5
GR1747.0	295.0	1745.5	308.7	1747.2	343.6	1747.3	350.2	1746.8	384.7
GR1746.8	423.8	1751.5	440	1751	480	1750.8	494	1750.6	508
GR1750.4	522	1750.2	536	1750	550	1749.8	562	1749.6	574
GR1749.4	586	1749.2	599	1749	610	1748.5	625	1748	640
GR1747.6	675	1747.3	700	1747	730	1747	754.1	1747	787.4
GR 1747	804.7	1747.0	816.5	1748.6	845.7	1746.8	867.0	1744.0	879.3
GR1746.0	891.5	1747.6	911.1	1747.0	934.4	1747.2	952.9	1747.0	968.2
GR1747.0	999.5	1746.8	1013.8	1747.3	1070.5	1748.9	1130.0		
X1 128.0	60.0	500	1116.0	100	100	100.0	.0	.0	.0
X3 10			500.0		1125.0				
GR1746.4	.0	1745.9	42.0	1744.8	100.8	1746.0	127.1	1745.0	140.0
GR1745.0	156.1	1745.8	179.2	1746.1	222.1	1746.0	251.0	1743.3	257.5
GR1745.0	263.7	1745.9	285.4	1744.8	306.9	1743.0	319.3	1743.9	346.1
GR1744.2	369.5	1744.4	410.2	1744.4	424.4	1744.6	451.3	1745.2	472.4
GR1743.8	485.9	1749.7	500	1749.5	515	1749.2	530	1748.9	545
GR1748.6	560	1748.3	575	1748	590	1747.0	630	1746	670
GR1745.6	690	1745.3	720	1745	740	1744.0	780.0	1743.6	810
GR1743.3	850	1743.0	878.3	1742.0	882.3	1742.2	888.4	1744.0	898.1
GR1744.5	910.2	1745.1	939.8	1745.8	985.8	1743.0	1004.3	1743.0	1017.7
GR1744.3	1031.2	1745.1	1057.2	1744.4	1090.4	1745.1	1116.0	1746.0	1142.2
GR1745.4	1170.5	1745.7	1193.5	1745.0	1230.7	1747.0	1260.9	1747.0	1271.2
GR1747.6	1286.5	1747.6	1308.5	1747.0	1324.1	1747.3	1326.0	1746.8	1351.8
X1 127.0	57.0	610.0	1105.4	100	100	100.0	.0	.0	.0
X3 10			610.0	1748.0	1115.0	1748.0			
GR1744.9	.0	1745.0	15.9	1743.7	50.4	1742.9	78.3	1742.4	93.8
GR1743.0	111.6	1743.0	121.3	1743.4	135.2	1742.0	146.6	1743.2	154.9
GR1743.7	173.0	1743.7	206.5	1744.0	226.5	1743.0	236.6	1743.4	246.1
GR1743.4	257.4	1743.6	289.4	1742.7	338.0	1742.0	347.5	1742.0	356.7
GR1741.0	362.8	1742.1	396.0	1741.8	445.8	1740.2	453.1	1742.0	466.8
GR1742.9	486.9	1742.7	498.0	1742.8	516.0	1741.0	528.5	1742.0	540.8
GR1743.0	548.6	1744.0	575.3	1745.0	600.8	1746.0	610.0	1745.9	611.0
GR1745.0	665.0	1744.0	720.0	1743.5	770.0	1743.0	820.0	1742.5	880.0
GR1741.0	892.6	1742.0	899.9	1742.7	921.5	1742.3	964.2	1742.0	990.7

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GR1742.0  1022.9  1740.0  1032.7  1742.0  1043.4  1743.1  1053.7  1743.2  1105.4
GR1743.7  1124.8  1743.2  1136.0  1743.2  1160.3  1744.0  1170.8  1744.9  1198.5
GR1744.2  1230.7  1744.3  1260.0
X1 126.0    58.0   736.0  1086.7     100     100    60.0      .0      .0      .0
X3    10                   720.0  1745.0  1110.0  1745.0
GR1742.0      .0  1742.7    36.9  1741.0    63.2  1742.6    85.2  1740.0   112.1
GR1740.0   122.7  1741.5   129.9  1742.1   149.2  1741.1   197.8  1741.3   237.2
GR1741.0   251.8  1742.1   269.7  1742.0   318.7  1740.1   332.4  1741.0   364.8
GR1740.0   387.7  1739.0   394.1  1739.2   411.3  1738.0   415.9  1740.0   436.5
GR1740.8   464.2  1740.0   499.8  1740.3   531.9  1740.0   537.1  1741.3   550.4
GR1742.8   595.8  1742.0   620.7  1741.3   643.3  1742.1   671.5  1742.0   684.7
GR1741.0   705.1  1741.0   736.0  1741.2   762.4  1741.0   800.0  1740.5   830.0
GR1740.0   860.0  1740.0   874.4  1740.0   911.3  1739.0   921.6  1740.0   932.4
GR1740.0   956.1  1740.0   975.3  1739.0   988.5  1738.0   996.5  1740.0  1016.1
GR1740.5  1030.9  1741.2  1086.7  1741.5  1112.5  1741.0  1128.2  1740.6  1138.6
GR1741.0  1162.3  1742.0  1173.4  1741.4  1188.0  1741.3  1206.6  1741.4  1246.2
GR1741.4  1280.8  1741.3  1321.6  1741.5  1335.0
NC  .025    .025    .025      .1      .3
X1125.40   16.00    12.5   349.5     .00     .00    4.00     .00       0     .00
X3    10                      12             350
GR1740.9      .0  1742.4     4.5  1742.4    12.5  1741.2    16.3  1739.9    22.7
GR1739.9    33.0  1737.0    48.0  1737.0     250  1737.0   340.0  1742.4   345.5
GR1742.4   349.5  1745.4   355.5  1745.4   365.5  1740.9   373.6  1739.0   379.4
GR1739.3   400.0
NC                              .3      .5
X1125.36   16.00    12.5   349.5     .00     .00   46.00     .00       0     .00
X3    10                      12             355
GR1740.9      .0  1742.4     4.5  1742.4    12.5  1741.2    16.3  1739.9    22.7
GR1739.9    33.0  1733.0      68  1733.0     250  1733.0   336.0  1742.4   345.5
GR1742.4   349.5  1745.4   355.5  1745.4   365.5  1740.9   373.6  1739.0   379.4
GR1739.3   400.0
NC                              .3      .5
X1124.90   15.00    24.0   349.5     .00     .00    4.00     .00       0     .00
X3    10                      20             355
GR1740.0      .0  1740.0    24.0  1738.4    28.9  1738.4    36.9  1735.9    49.4
GR1735.9    57.4  1733.0    72.4  1733.0   340.0  1738.4   345.5  1738.4   349.5
GR1741.4   355.5  1741.4   365.5  1738.8   373.1  1738.7   392.4  1738.7   400.0
NC                              .3      .5
X1124.86   16.00    28.9   349.5     .00     .00   46.00     .00       0     .00
X3    10                      28             355
GR1740.0      .0  1740.0    24.0  1738.4    28.9  1738.4    36.9  1735.9    49.4
GR1735.9    57.4  1733.2    71.4  1729.0    92.4  1729.0   336.0  1738.4   345.5
GR1738.4   349.5  1741.4   355.5  1741.4   365.5  1738.7   373.4  1738.6   393.6
GR1738.6   400.0
NC                              .3      .5
X1124.40   16.00    45.1   349.5     .00     .00  250.00     .00       0     .00
X3    10                      40             355
GR1739.7      .0  1739.4     9.3  1739.3    30.9  1739.5    45.1  1734.4    60.5
GR1734.4    68.5  1731.9    81.0  1731.9    89.0  1729.0   104.0  1729.0   340.0
GR1734.4   345.5  1734.4   349.5  1737.4   355.5  1737.2   366.0  1737.2   380.6
GR1737.4   400.0
NC  .025    .025    .025      .1      .3
X1121.90   22.00    93.2   349.5     .00     .00    3.00     .00     .00     .00
X3    10                      90             355
GR1732.0      .0  1732.6    11.9  1733.3    26.6  1733.0    48.0  1733.0    54.4
GR1732.7    59.1  1732.3    69.9  1732.9    93.2  1731.5    97.5  1731.5   105.5
GR1729.0   118.0  1729.0   126.0  1726.0   141.0  1726.0   250.0  1726.0   340.0
GR1731.5   345.5  1731.5   349.5  1734.5   355.5  1734.5   365.5  1729.0   381.9
GR1729.0   393.0  1729.5   400.0
NC  .025    .025    .025      .3      .5
X1121.87   23.00    97.5   349.5     .00     .00   47.00     .00     .00     .00
X3    10                      94             355
GR1732.0      .0  1732.5    10.7  1733.2    26.8  1733.0    41.6  1733.0    54.2
GR1732.4    63.5  1732.3    72.4  1732.8    93.6  1731.5    97.5  1731.5   105.5
GR1729.0   118.0  1729.0   126.0  1725.1   144.8  1723.0   156.0  1723.0   250.0
GR1723.0   337.0  1731.5   345.5  1731.5   349.5  1734.5   355.5  1734.5   365.5
GR1729.0   381.9  1729.0   394.3  1729.4   400.0
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NC                                .3      .5
X1121.40   20.00    92.9   349.5     .00     .00  160.00     .00     .00     .00
X3    10                     90             355
GR1730.7      .0  1731.3    18.3  1732.0    31.3  1732.4    47.1  1731.7    66.7
GR1730.0    88.5  1730.0    92.9  1728.5    97.5  1728.5   105.5  1726.0   118.0
GR1726.0   126.0  1722.9   141.0  1722.9   340.0  1728.5   345.5  1728.5   349.5
GR1731.5   355.5  1731.5   365.5  1728.1   375.5  1728.0   388.7  1728.0   400.0
NC  .025    .025    .025      .1      .3
X1119.80   22.00   124.5   349.5     .00     .00    3.00     .00     .00     .00
X3    10                    120             355
GR1725.9      .0  1725.9     9.7  1726.2    20.5  1727.0    37.5  1727.0    40.0
GR1727.4    53.3  1727.4    57.9  1727.0    99.7  1726.6   116.5  1726.6   124.5
GR1724.1   137.0  1724.1   145.0  1721.1   160.0  1721.1   340.0  1726.6   345.5
GR1726.6   349.5  1729.6   355.5  1729.6   365.5  1726.3   375.1  1726.0   386.3
GR1725.4   397.4  1725.4   400.0
NC  .025    .025    .025      .3      .5
X1119.77   23.00   124.5   349.5     .00     .00   47.00     .00     .00     .00
X3    10                    120             355
GR1725.8      .0  1725.8     9.1  1726.0    17.7  1727.0    38.0  1727.0    42.5
GR1727.3    53.3  1727.4    58.4  1727.0    93.2  1726.5   116.2  1726.6   124.5
GR1724.1   137.0  1724.1   145.0  1720.2   163.8  1718.1   175.0  1718.1   337.0
GR1726.6   345.5  1726.6   349.5  1729.6   355.5  1729.6   365.5  1726.3   375.2
GR1726.0   386.0  1725.4   392.8  1725.3   400.0
NC                                .3      .5
X1119.30   20.00   112.2   349.5     .00     .00  230.00     .00     .00     .00
X3    10                    110             355
GR1724.7      .0  1725.0    36.5  1725.2    45.8  1725.2    50.3  1725.6    69.3
GR1725.4    87.1  1725.0   112.2  1723.6   116.5  1723.6   124.5  1721.1   137.0
GR1721.1   145.0  1718.1   160.0  1718.1   340.0  1723.6   345.5  1723.6   349.5
GR1726.6   355.5  1726.6   365.5  1725.6   368.4  1725.0   391.2  1724.2   400.0
NC   .03     .03     .03      .1      .3
X1117.00   22.00   124.5   349.5     .00     .00    3.00     .00     .00     .00
X3    10                    120             355
GR1719.2      .0  1719.7    10.4  1719.8    17.1  1720.1    53.0  1720.3    76.2
GR1720.0    87.2  1719.6   109.3  1719.6   112.9  1720.8   116.5  1720.8   124.5
GR1718.3   137.0  1718.3   145.0  1715.3   160.0  1715.3   340.0  1720.8   345.5
GR1720.8   349.5  1723.8   355.5  1723.8   365.5  1719.9   377.0  1719.7   385.1
GR1719.0   390.9  1719.0   400.0
NC  .025    .025    .025      .3      .5
X1116.97   22.00   124.5   349.5     .00     .00   47.00     .00     .00     .00
X3    10                    120             355
GR1719.0      .0  1719.5     7.8  1719.7    18.5  1720.0    51.4  1720.3    77.6
GR1720.0    85.8  1719.5   112.7  1720.8   116.5  1720.8   124.5  1718.3   137.0
GR1718.3   145.0  1714.4   163.8  1712.3   175.0  1712.3   337.0  1720.8   345.5
GR1720.8   349.5  1723.8   355.5  1723.8   365.5  1719.8   377.6  1719.3   388.4
GR1719.0   393.1  1719.0   400.0
NC                                .3      .5
X1116.50   20.00   124.5   349.5     .00     .00  190.00     .00     .00     .00
X3    10                    120             355
GR1718.4      .0  1718.8    17.0  1719.0    60.5  1719.0    69.9  1719.1    77.9
GR1719.0    86.6  1718.9   113.2  1717.8   116.5  1717.8   124.5  1715.3   137.0
GR1715.3   145.0  1712.3   160.0  1712.3   340.0  1717.8   345.5  1717.8   349.5
GR1720.8   355.5  1720.8   365.5  1718.6   372.2  1718.6   380.8  1718.1   400.0
NC   .03     .03     .03      .1      .3
X1114.60   19.00   124.5   349.5     .00     .00    3.00     .00     .00     .00
X3    10                    120             355
GR1715.0      .0  1715.0    35.5  1714.4    61.0  1714.0    72.9  1714.0    77.0
GR1715.0    91.1  1716.7   113.0  1715.5   116.5  1715.5   124.5  1713.0   137.0
GR1713.0   145.0  1710.0   160.0  1710.0   340.0  1715.5   345.5  1715.5   349.5
GR1718.5   355.5  1718.5   365.6  1714.3   378.2  1713.9   400.0
NC  .025    .025    .025      .3      .5
X1114.57   22.00   124.5   349.5     .00     .00   47.00     .00     .00     .00
X3    10                    120             355
GR1714.6      .0  1714.9     9.6  1714.9    37.0  1714.3    61.2  1714.0    70.7
GR1714.0    77.2  1716.4   110.1  1716.6   113.4  1715.5   116.5  1715.5   124.5
GR1713.0   137.0  1713.0   145.0  1709.1   163.8  1707.0   175.0  1707.0   337.0
GR1715.5   345.5  1715.5   349.5  1718.5   355.5  1718.5   365.5  1714.3   378.3
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GR1714.0   388.6  1713.8   400.0
NC                           .3      .5
X1114.10   21.00   124.5   349.5     .00     .00  210.00     .00     .00     .00
X3    10                    120             355
GR1713.3      .0  1713.7    11.1  1713.8    22.6  1713.6    31.7  1713.5    50.7
GR1713.0    65.6  1713.1    70.1  1715.1    90.5  1715.6   107.3  1712.5   116.5
GR1712.5   124.5  1710.0   137.0  1710.0   145.0  1707.0   160.0  1707.0   340.0
GR1712.5   345.5  1712.5   349.5  1715.5   355.5  1715.5   365.5  1714.0   370.1
GR1712.1   400.0
NC   .03     .03     .03      .1      .3
X1112.00   22.00   124.5   349.5     .00     .00    3.00     .00     .00     .00
X3    10                    120             355
GR1710.0      .0  1710.0    32.1  1708.0    42.0  1708.1    50.1  1709.0    55.7
GR1709.8    64.1  1710.6    92.6  1710.5   110.2  1710.4   115.2  1710.0   116.5
GR1710.0   124.5  1707.5   137.0  1707.5   145.0  1704.5   160.0  1704.5   340.0
GR1710.0   345.5  1710.0   349.5  1713.0   355.5  1713.0   365.5  1707.8   381.3
GR1707.9   392.3  1707.5   400.0
NC  .025    .025    .025      .3      .5
X1111.97   23.00   124.5   349.5     .00     .00   47.00     .00     .00     .00
X3    10                    120             355
GR1710.0      .0  1710.0    32.7  1708.0    42.6  1708.0    50.5  1709.0    57.1
GR1709.4    61.1  1710.0    76.4  1710.4    91.4  1710.3   115.5  1710.0   116.5
GR1710.0   124.5  1707.5   137.0  1707.5   145.0  1703.6   163.8  1701.5   175.0
GR1701.5   337.0  1710.0   345.5  1710.0   349.5  1713.0   355.5  1713.0   365.5
GR1707.4   382.2  1707.4   389.4  1707.2   400.0
NC                           .3      .5
X1111.50   20.00   124.5   349.5     .00     .00  190.00     .00     .00     .00
X3    10                    120             355
GR1709.0      .0  1709.2    11.2  1709.0    17.1  1709.0    41.1  1708.0    55.1
GR1708.0    66.4  1709.3    89.8  1709.7   108.5  1707.0   116.5  1707.0   124.5
GR1704.5   137.0  1704.5   145.0  1701.5   160.0  1701.5   340.0  1707.0   345.5
GR1707.0   349.5  1710.0   355.5  1710.0   365.5  1704.0   393.7  1708.0   400.0
NC   .03     .03     .03      .1      .3
X1109.60   19.00   124.5   349.5     .00     .00    3.00     .00     .00     .00
X3    10                    120             355
GR1704.2      .0  1703.9    11.2  1703.0    19.1  1704.0    26.3  1705.0    40.5
GR1705.0    91.4  1704.5   115.8  1704.7   116.5  1704.7   124.5  1702.2   137.0
GR1702.2   145.0  1699.2   160.0  1699.2   340.0  1704.7   345.5  1704.7   349.5
GR1707.7   355.5  1707.7   365.5  1704.0   394.7  1706.0   400.0
NC  .025    .025    .025      .3      .5
X1109.57   18.00   124.5   349.5     .00     .00   47.00     .00     .00     .00
X3    10                    120             355
GR1704.2      .0  1704.0     7.5  1703.0    16.8  1703.2    21.5  1704.0    26.1
GR1705.0    40.6  1705.0    86.3  1704.4   115.6  1704.7   116.5  1704.7   124.5
GR1702.2   137.0  1702.2   145.0  1698.3   163.8  1696.2   175.0  1696.2   337.0
GR1704.7   345.5  1704.7   349.5  1707.7   355.5
NC  .025    .025    .025      .3      .5
X1109.10   18.00   124.5   349.5     .00     .00  150.00     .00     .00     .00
X3    10                    120             355
GR1702.8      .0  1703.0     1.7  1704.0    20.9  1704.0    28.9  1704.4    39.7
GR1704.1    79.7  1704.0    86.1  1703.1   107.0  1702.9   112.8  1701.7   116.5
GR1701.7   124.5  1699.2   137.0  1699.2   145.0  1696.2   160.0  1696.2   340.0
GR1701.7   345.5  1701.7   349.5  1704.7   355.5
NC   .03     .03     .03      .1      .3
X1107.60   17.00   124.5   349.5     .00     .00    3.00     .00     .00     .00
X3    10                    120             355
GR1700.9      .0  1700.9    18.2  1700.7    46.8  1700.0    74.7  1698.0    83.4
GR1698.3    87.6  1701.0   101.7  1701.0   113.3  1699.9   116.5  1699.9   124.5
GR1697.4   137.0  1697.4   145.0  1694.4   160.0  1694.4   340.0  1699.9   345.5
GR1699.9   349.5  1702.9   355.5
NC  .025    .025    .025      .3      .5
X1107.57   18.00   124.5   349.5     .00     .00   47.00     .00     .00     .00
X3    10                    120             355
GR1700.8      .0  1700.8    21.5  1700.6    46.8  1700.0    73.6  1698.0    83.9
GR1698.8    89.7  1701.0   101.8  1701.0   113.3  1699.9   116.5  1699.9   124.5
GR1697.4   137.0  1697.4   145.0  1693.5   163.8  1691.4   175.0  1691.4   337.0
GR1699.9   345.5  1699.9   349.5  1702.9   355.5
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NC                                .3      .5
X1107.10   18.00   124.5   349.5     .00     .00  160.00     .00     .00     .00
X3    10                     120             355
GR1699.5      .0  1699.4    19.0  1698.9    52.0  1698.2    61.8  1697.0    71.7
GR1697.0    73.4  1698.7    80.5  1700.0    87.3  1699.9   107.5  1696.9   116.5
GR1696.9   124.5  1694.4   137.0  1694.4   145.0  1691.4   160.0  1691.4   340.0
GR1696.9   345.5  1696.9   349.5  1699.9   355.5
NC   .03     .03     .03      .1      .3
X1105.50   19.00   124.5   349.5     .00     .00    4.00     .00     .00     .00
X3    10                     120             355
GR1695.9      .0  1695.8    17.2  1695.4    40.1  1695.0    48.8  1694.0    59.2
GR1694.4    66.1  1695.2    71.9  1696.3    94.4  1697.0   107.3  1697.0   110.5
GR1695.0   116.5  1695.0   124.5  1692.5   137.0  1692.5   145.0  1689.5   160.0
GR1689.5   340.0  1695.0   345.5  1695.0   349.5  1698.0   355.5
NC  .025    .025    .025      .3      .5
X1105.46   21.00   124.5   349.5     .00     .00   46.00     .00     .00     .00
X3    10                     120             355
GR1695.9      .0  1695.7    20.2  1695.3    41.4  1695.0    47.5  1694.0    58.0
GR1694.0    60.1  1695.0    70.7  1696.0    90.8  1696.6    99.4  1697.0   110.5
GR1695.0   116.5  1695.0   124.5  1692.5   137.0  1692.5   145.0  1690.5   154.0
GR1687.9   167.0  1685.5   180.0  1685.5   336.0  1695.0   345.5  1695.0   349.5
GR1698.0   355.5
NC                                .3      .5
X1105.00   17.00   124.5   349.5     .00     .00  200.00     .00     .00     .00
X3    10                     120             355
GR1694.8      .0  1694.9    12.5  1694.6    23.6  1694.0    43.1  1693.0    55.2
GR1695.0    65.5  1695.0    99.6  1695.3   103.5  1691.0   116.5  1691.0   124.5
GR1688.5   137.0  1688.5   145.0  1685.5   160.0  1685.5   340.0  1691.0   345.5
GR1691.0   349.5  1694.0   355.5
NC  .030    .030    .030      .1      .3
X1 103.0    19.0   174.5     420       3       3     3.0      .0      .0      .0
X3    10                     170             420
GR1689.1       0  1689.2     5.2  1689.5    70.4  1689.2    85.9  1689.0    89.8
GR1689.0    97.1  1689.9   114.3  1690.4   145.2  1690.3   161.4  1688.6   166.5
GR1688.6   174.5  1686.1   187.0  1686.1   195.0  1683.1   210.0  1683.1   390.0
GR1688.6   395.5  1688.6   399.5  1691.6   405.5  1691.6   420.0
NC  .025    .025    .025      .3      .5
X1102.97    19.0   174.5     420      47      47    47.0      .0      .0      .0
X3    10                     170             420
GR1689.1       0  1689.2     5.2  1689.5    70.4  1689.2    85.9  1689.0    89.8
GR1689.0    97.1  1689.9   114.3  1690.4   145.2  1690.3   161.4  1688.6   166.5
GR1688.6   174.5  1686.1   187.0  1686.1   195.0  1680.1   213.0  1680.1   387.0
GR1688.6   395.5  1688.6   399.5  1691.6   405.5  1691.6   420.0
NC  .025    .025    .025      .3      .5
X1 102.5    33.0   174.5     420       3       3     3.0      .0      .0      .0
X3    10                     170             420
GR1688.1       0  1688.3     9.6  1688.7    14.9  1689.0    24.6  1689.0    56.2
GR1688.5    69.6  1688.6    96.2  1688.7   111.0  1688.9   130.6  1689.0   156.4
GR1685.6   166.5  1685.6   174.5  1683.1   187.0  1683.1   195.0  1680.1   210.0
GR1680.1   390.0  1685.6   395.5  1685.6   399.5  1688.6   405.5  1688.6   420.0
GR1681.5   436.8  1682.0   460.1  1682.1   464.8  1684.0   472.5  1684.9   482.2
GR1686.0   491.3  1686.0   515.1  1687.5   526.9  1687.9   537.1  1687.5   563.2
GR1687.3   575.8  1687.5   588.8  1687.9   600.0
NC  .025    .025    .025      .3      .5
X1102.47    20.0   174.5     420      47      47    47.0      .0      .0      .0
X3    10                     170             420
GR1688.1       0  1688.3     9.6  1688.7    14.9  1689.0    24.6  1689.0    56.2
GR1688.5    69.6  1688.6    96.2  1688.7   111.0  1688.9   130.6  1689.0   156.4
GR1685.6   166.5  1685.6   174.5  1683.1   187.0  1683.1   195.0  1677.1   213.0
GR1677.1   387.0  1685.6   395.5  1685.6   399.5  1688.6   405.5  1688.6   420.0
NC  .025    .025    .025      .3      .5
X1 102.0    18.0   174.5     420       3       3     3.0      .0      .0      .0
X3    10                     170             420
GR1686.1       0  1686.4     9.7  1687.7    28.9  1687.6    38.6  1687.8    54.7
GR1687.7   100.1  1687.9   138.8  1687.9   150.6  1682.6   166.5  1682.6   174.5
GR1680.1   187.0  1680.1   195.0  1677.1   210.0  1677.1   390.0  1682.6   395.5
GR1682.6   399.5  1685.6   405.5  1685.6   420.0
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NC  .025    .025    .025      .3      .5
X1101.97    18.0   174.5     420      47      47    47.0      .0      .0      .0
X3    10                     170              420
GR1686.1       0  1686.4     9.7  1687.7    28.9  1687.6    38.6  1687.8    54.7
GR1687.7   100.1  1687.9   138.8  1687.9   150.6  1682.6   166.5  1682.6   174.5
GR1680.1   187.0  1680.1   195.0  1674.1   213.0  1674.1   387.0  1682.6   395.5
GR1682.6   399.5  1685.6   405.5  1685.6   420.0
NC  .025    .025    .025      .3      .5
X1 101.5    16.0   174.5     420       3       3     3.0      .0      .0      .0
X3    10                     170              420
GR1686.0       0  1686.0    33.8  1686.8    53.2  1686.9    80.8  1687.1   120.7
GR1687.1   144.1  1679.6   166.5  1679.6   174.5  1677.1   187.0  1677.1   195.0
GR1674.1   210.0  1674.1   390.0  1679.6   395.5  1679.6   399.5  1682.6   405.5
GR1682.6   420.0
NC  .025    .025    .025      .3      .5
X1101.47    29.0   166.5   415.5      47      47    47.0      .0      .0      .0
X3    10                     150              420
GR1686.0       0  1686.0    33.8  1686.8    53.2  1686.9    80.8  1687.1   120.7
GR1687.1   144.1  1679.6   166.5  1679.6   174.5  1677.1   187.0  1677.1   195.0
GR1671.1   213.0  1671.1   387.0  1679.6   395.5  1679.6   399.5  1682.6   405.5
GR1682.6   415.5  1679.2   425.7  1679.3   437.6  1679.7   448.6  1681.0   472.1
GR1683.1   479.5  1683.9   487.5  1683.8   503.9  1683.7   535.1  1683.7   540.9
GR1683.0   560.5  1683.0   572.4  1684.0   584.8  1684.5   600.0
NC  .025    .025    .025      .3      .5
X1 101.0    38.0   139.2   405.5     180     180   180.0      .0      .0      .0
X3    10                     120              420
GR1685.1       0  1684.0    26.6  1684.0    56.7  1685.1    70.8  1686.0    77.0
GR1686.0   122.6  1685.7   139.2  1676.6   166.5  1676.6   174.5  1674.1   187.0
GR1674.1   195.0  1671.1   210.0  1671.1   390.0  1676.6   395.5  1676.6   399.5
GR1679.6   405.5  1679.6   415.5  1678.1   420.1  1678.0   426.0  1678.0   437.3
GR1678.3   451.3  1678.7   463.9  1679.0   467.9  1679.7   472.1  1681.0   478.3
GR1682.1   482.4  1683.0   487.5  1682.8   499.4  1681.4   511.3  1681.0   515.5
GR1681.3   522.1  1681.8   527.2  1681.3   536.5  1681.3   545.0  1681.8   555.8
GR1681.7   566.8  1681.2   591.1  1681.9   600.0
QT      6  12185    9821    7721    5319    3976    2338
NC  .025    .025    .025      .3      .5
X1  99.2    38.0   139.2   405.5    50.0    50.0    50.0
X3    10                     120              420
GR1682.9       0  1681.8    26.6  1681.8    56.7  1682.9    70.8  1683.8    77.0
GR1683.8   122.6  1683.5   139.2  1674.4   166.5  1674.4   174.5  1671.9   187.0
GR1671.9   195.0  1668.9   210.0  1668.9   390.0  1674.4   395.5  1674.4   399.5
GR1677.4   405.5  1677.4   415.5  1675.9   420.1  1675.8   426.0  1675.8   437.3
GR1676.1   451.3  1676.5   463.9  1676.8   467.9  1677.5   472.1  1678.8   478.3
GR1679.9   482.4  1680.8   487.5  1680.6   499.4  1679.2   511.3  1678.8   515.5
GR1679.1   522.1  1679.6   527.2  1679.1   536.5  1679.1   545.0  1679.6   555.8
GR1679.5   566.8  1679.0   591.1  1679.7   600.0
SB  1.05    1.56     2.6     343     255      15    4080       1 1668.94 1668.34
NC  .025    .025    .025      .3      .5
X1  98.7    38.0   139.2   405.5      10      10    10.0
X2                     1    1681  1683.7                    1.33
X3    10                     120              420
GR1682.3       0  1681.2    26.6  1681.2    56.7  1682.3    70.8  1683.2    77.0
GR1683.2   122.6  1682.9   139.2  1673.8   166.5  1673.8   174.5  1671.3   187.0
GR1671.3   195.0  1668.3   210.0  1668.3   390.0  1673.8   395.5  1673.8   399.5
GR1676.8   405.5  1676.8   415.5  1675.3   420.1  1675.2   426.0  1675.2   437.3
GR1675.5   451.3  1675.9   463.9  1676.2   467.9  1676.9   472.1  1678.2   478.3
GR1679.3   482.4  1680.2   487.5  1680.0   499.4  1678.6   511.3  1678.2   515.5
GR1678.5   522.1  1679.0   527.2  1678.5   536.5  1678.5   545.0  1679.0   555.8
GR1675.9   566.8  1678.4   591.1  1679.1   600.0
NC  .025    .025    .025      .3      .5
X1  98.6    29.0   134.2   418.1       2       2     2.0      .0              .0
X3    10                     120              420
GR1680.9       0  1680.9    71.9  1681.4    80.0  1681.8    88.3  1681.9   100.6
GR1681.6   116.5  1680.9   134.2  1679.8   145.7  1679.2   150.2  1673.7   166.5
GR1673.7   174.5  1671.2   187.0  1671.2   195.0  1668.2   210.0  1668.2   390.0
GR1673.7   395.5  1673.7   399.5  1676.7   405.5  1676.7   415.5  1675.9   418.1
GR1675.9   486.9  1677.9   497.1  1678.5   506.3  1678.9   510.7  1678.9   536.1
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GR1679.6	549.0	1679.7	568.7	1679.6	594.6	1679.5	600.0		
NC .025	.025	.025	.3	.5					
X1 98.58	29.0	174.5	418.1	.0	.0	48.0	.0		.0
X3 10			170		420				
GR1680.9	0	1680.9	71.9	1681.4	80.0	1681.8	88.3	1681.9	100.6
GR1681.6	116.5	1680.9	134.2	1679.8	145.7	1679.2	150.2	1673.7	166.5
GR1673.7	174.5	1671.2	187.0	1671.2	195.0	1666.2	212.0	1666.2	388.0
GR1673.7	395.5	1673.7	399.5	1676.7	405.5	1676.7	415.5	1675.9	418.1
GR1675.9	486.9	1677.9	497.1	1678.5	506.3	1678.9	510.7	1678.9	536.1
GR1679.6	549.0	1679.7	568.7	1679.6	594.6	1679.5	600.0		
NC .025	.025	.025	.3	.5					
X1 98.1	29.0	174.5	419.1	.0	.0	210.0	.0		.0
X3 10			170		420				
GR1679.5	0	1678.9	55.4	1678.9	69.7	1678.5	85.4	1678.1	101.3
GR1678.7	116.4	1678.9	124.4	1678.9	137.5	1678.3	146.7	1671.7	166.5
GR1671.7	174.5	1669.2	187.0	1669.2	195.0	1666.2	210.0	1666.2	390.0
GR1671.7	395.5	1671.7	399.5	1674.7	405.5	1674.7	415.5	1675.9	419.1
GR1675.9	489.2	1676.9	494.5	1677.9	506.4	1678.1	511.4	1678.6	530.5
GR1678.5	534.1	1678.9	548.7	1679.1	560.1	1679.0	600.0		
NC .030	.030	.030	.1	.3					
X1 96.0	24.0	174.5	415.5	.0	.0	2.0	.0	.0	.0
X3 10			170		420				
GR1672.0	0	1672.2	9.9	1672.2	32.3	1672.1	44.2	1672.3	56.6
GR1672.5	97.2	1673.0	122.8	1673.0	147.7	1672.6	156.3	1669.2	166.5
GR1669.2	174.5	1666.7	187.0	1666.7	195.0	1663.7	210.0	1663.7	390.0
GR1669.2	395.5	1669.2	399.5	1672.2	405.5	1672.2	415.5	1674.0	421.0
GR1674.0	497.0	1674.5	536.3	1674.6	547.7	1674.4	600.0		
NC .025	.025	.025	.3	.5					
X1 95.98	24.0	174.5	415.5	.0	.0	48.0	.0	.0	.0
X3 10			170		420				
GR1672.0	0	1672.2	9.9	1672.2	32.3	1672.1	44.2	1672.3	56.6
GR1672.5	97.2	1673.0	122.8	1673.0	147.7	1672.6	156.3	1669.2	166.5
GR1669.2	174.5	1666.7	187.0	1666.7	195.0	1661.7	212.0	1661.7	388.0
GR1669.2	395.5	1669.2	399.5	1672.2	405.5	1672.2	415.5	1674.0	421.0
GR1674.0	497.0	1674.5	536.3	1674.6	547.7	1674.4	600.0		
NC .025	.025	.025	.3	.5					
X1 95.5	35.0	174.5	415.5	.0	.0	200.0	.0	.0	.0
X3 10			170		420				
GR1670.8	0	1670.8	29.5	1671.0	68.0	1671.2	79.9	1671.3	95.2
GR1671.5	103.1	1671.5	115.2	1671.0	136.2	1670.7	147.5	1670.6	156.2
GR1667.2	166.5	1667.2	174.5	1664.7	187.0	1664.7	195.0	1661.7	210.0
GR1661.7	390.0	1667.2	395.5	1667.2	399.5	1670.2	405.5	1670.2	415.5
GR1673.0	424.0	1673.0	434.3	1673.6	459.4	1673.6	469.2	1673.0	481.4
GR1672.5	489.5	1672.4	498.9	1672.5	508.5	1672.5	525.7	1672.7	537.1
GR1673.0	547.3	1673.5	555.4	1673.9	572.4	1673.8	589.5	1673.5	600.0
NC .030	.030	.030	.1	.3					
X1 93.5	32.0	174.5	418.6	.0	.0	2.0	.0	.0	.0
X3 10			170		420				
GR1668.0	0	1668.0	3.2	1667.0	13.1	1667.0	27.3	1667.0	48.6
GR1666.8	65.1	1666.2	94.9	1666.0	102.2	1666.0	126.9	1666.3	137.5
GR1666.8	160.5	1664.8	166.5	1664.8	174.5	1662.3	187.0	1662.3	195.0
GR1659.3	210.0	1659.3	390.0	1664.8	395.5	1664.8	399.5	1667.8	405.5
GR1667.8	415.5	1667.0	418.6	1667.0	430.7	1667.9	444.6	1668.3	461.0
GR1668.5	489.5	1668.8	541.8	1668.4	570.3	1668.0	577.1	1667.0	586.9
GR1666.9	598.3	1667.1	600.0						
NC .025	.025	.025	.3	.5					
X1 93.48	32.0	174.5	418.6	.0	.0	48.0	.0	.0	.0
X3 10			170		420				
GR1668.0	0	1668.0	3.2	1667.0	13.1	1667.0	27.3	1667.0	48.6
GR1666.8	65.1	1666.2	94.9	1666.0	102.2	1666.0	126.9	1666.3	137.5
GR1666.8	160.5	1664.8	166.5	1664.8	174.5	1662.3	187.0	1662.3	195.0
GR1657.3	212.0	1657.3	388.0	1664.8	395.5	1664.8	399.5	1667.8	405.5
GR1667.8	415.5	1667.0	418.6	1667.0	430.7	1667.9	444.6	1668.3	461.0
GR1668.5	489.5	1668.8	541.8	1668.4	570.3	1668.0	577.1	1667.0	586.9
GR1666.9	598.3	1667.1	600.0						
NC .025	.025	.025	.3	.5					
X1 93.0	31.0	174.5	418.9	.0	.0	150.0	.0	.0	.0

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X3    10                    170            420
GR1667.2       0  1666.7    16.1  1666.6    25.7  1666.0    36.7  1666.0    47.2
GR1665.1    86.3  1664.4   117.5  1664.6   131.5  1665.0   142.8  1665.9   157.3
GR1662.8   166.5  1662.8   174.5  1660.3   187.0  1660.3   195.0  1657.3   210.0
GR1657.3   390.0  1662.8   395.5  1662.8   399.5  1665.8   405.5  1665.8   415.5
GR1666.0   418.9  1666.5   436.6  1666.8   447.5  1667.1   469.0  1667.1   484.9
GR1667.1   504.9  1667.1   523.7  1667.3   541.6  1667.3   577.4  1666.9   587.0
GR1666.0   600.0
NC  .030    .030    .030      .1      .3
X1  91.5    31.0   174.5   415.5      .0      .0     3.0      .0      .0      .0
X3    10                    170            420
GR1662.7       0  1662.6     6.2  1662.6    29.3  1662.4    42.8  1662.0    61.6
GR1662.0    84.4  1662.1   106.4  1662.0   114.6  1661.7   121.5  1661.1   126.5
GR1661.0   142.9  1662.0   154.5  1662.0   163.5  1661.0   166.5  1661.0   174.5
GR1658.5   187.0  1658.5   195.0  1655.5   210.0  1655.5   390.0  1661.0   395.5
GR1661.0   399.5  1664.0   405.5  1664.0   415.5  1662.4   420.3  1663.0   441.0
GR1663.8   479.9  1663.8   505.8  1663.3   533.0  1663.0   549.6  1663.5   567.7
GR1663.5   600.0
NC  .025    .025    .025      .3      .5
X1 91.47    31.0   174.5   415.5      .0      .0    47.0      .0      .0      .0
X3    10                    170            420
GR1662.7       0  1662.6     6.2  1662.6    29.3  1662.4    42.8  1662.0    61.6
GR1662.0    84.4  1662.1   106.4  1662.0   114.6  1661.7   121.5  1661.1   126.5
GR1661.0   142.9  1662.0   154.5  1662.0   163.5  1661.0   166.5  1661.0   174.5
GR1658.5   187.0  1658.5   195.0  1652.5   213.0  1652.5   387.0  1661.0   395.5
GR1661.0   399.5  1664.0   405.5  1664.0   415.5  1662.4   420.3  1663.0   441.0
GR1663.8   479.9  1663.8   505.8  1663.3   533.0  1663.0   549.6  1663.5   567.7
GR1663.5   600.0
NC  .025    .025    .025      .3      .5
X1  91.0      30   174.5   418.0      .0      .0   150.0      .0      .0      .0
X3    10                    170            420
GR1662.0       0  1662.0    36.1  1661.0    70.6  1661.0    83.8  1661.1   105.6
GR1661.0   117.8  1660.7   125.9  1660.2   146.6  1660.9   157.7  1658.0   166.5
GR1658.0   174.5  1655.5   187.0  1655.5   195.0  1652.5   210.0  1652.5   390.0
GR1658.0   395.5  1658.0   399.5  1661.0   405.5  1661.0   415.5  1661.8   418.0
GR1662.0   423.0  1662.0   439.1  1661.6   470.3  1662.0   482.0  1662.5   503.1
GR1662.5   517.3  1662.3   531.3  1662.5   554.2  1663.0   577.2  1663.0   600.0
NC  .030    .030    .030      .1      .3
X1  89.5    30.0   174.5   418.6      .0      .0     3.0      .0      .0      .0
X3    10                    170            420
GR1659.0       0  1659.0    45.8  1658.0    57.4  1657.9    80.2  1658.2    89.7
GR1658.3   107.7  1658.2   123.1  1658.0   130.8  1657.3   141.2  1657.9   155.7
GR1658.0   161.2  1656.2   166.5  1656.2   174.5  1653.7   187.0  1653.7   195.0
GR1650.7   210.0  1650.7   390.0  1656.2   395.5  1656.2   399.5  1659.2   405.5
GR1659.2   415.5  1658.2   418.6  1658.8   434.4  1659.2   462.8  1659.0   502.9
GR1658.6   541.6  1658.2   556.5  1657.6   575.5  1657.9   590.9  1658.2   600.0
NC  .025    .025    .025      .3      .5
X1 89.47    30.0   174.5   418.6      .0      .0    47.0      .0      .0      .0
X3    10                    170            420
GR1659.0       0  1659.0    45.8  1658.0    57.4  1657.9    80.2  1658.2    89.7
GR1658.3   107.7  1658.2   123.1  1658.0   130.8  1657.3   141.2  1657.9   155.7
GR1658.0   161.2  1656.2   166.5  1656.2   174.5  1653.7   187.0  1653.7   195.0
GR1647.7   213.0  1647.7   387.0  1656.2   395.5  1656.2   399.5  1659.2   405.5
GR1659.2   415.5  1658.2   418.6  1658.8   434.4  1659.2   462.8  1659.0   502.9
GR1658.6   541.6  1658.2   556.5  1657.6   575.5  1657.9   590.9  1658.2   600.0
NC  .025    .025    .025      .3      .5
X1  89.0    31.0   174.5   415.5      .0      .0   150.0      .0      .0      .0
X3    10                    170            420
GR1658.3       0  1658.3     7.1  1658.0    17.7  1657.6    46.7  1657.0    64.5
GR1657.0    72.2  1656.8    88.6  1657.0    98.6  1656.7   114.7  1656.0   123.7
GR1656.0   134.1  1656.5   156.6  1653.2   166.5  1653.2   174.5  1650.7   187.0
GR1650.7   195.0  1647.7   210.0  1647.7   390.0  1653.2   395.5  1653.2   399.5
GR1656.2   405.5  1656.2   415.5  1657.8   420.5  1657.9   438.7  1657.4   486.8
GR1657.2   507.7  1657.1   524.9  1656.7   547.4  1656.3   557.8  1656.1   572.5
GR1656.6   600.0
NC  .030    .030    .030      .1      .3
X1  87.5    35.0   174.5   415.5      .0      .0     2.0      .0      .0      .0
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X3     10                    170            420
GR1655.6       0  1655.6     8.9  1655.0    31.0  1654.6    45.5  1654.0    60.4
GR1653.0    76.6  1653.1    82.7  1653.0    90.8  1653.0   119.7  1652.0   128.1
GR1652.4   135.7  1652.4   139.8  1652.4   155.6  1652.2   164.1  1651.4   166.5
GR1651.4   174.5  1648.9   187.0  1648.9   195.0  1645.9   210.0  1645.9   390.0
GR1651.4   395.5  1651.4   399.5  1654.4   405.5  1654.4   415.5  1652.2   422.1
GR1652.4   444.9  1652.3   473.8  1652.0   495.3  1651.6   509.3  1651.9   527.3
GR1652.0   529.2  1652.6   553.5  1652.7   568.9  1652.5   578.1  1651.9   600.0
NC  .025    .025    .025      .3      .5
X1 87.48    35.0   174.5   415.5      .0      .0    48.0      .0      .0      .0
X3     10                    170            420
GR1655.6       0  1655.6     8.9  1655.0    31.0  1654.6    45.5  1654.0    60.4
GR1653.0    76.6  1653.1    82.7  1653.0    90.8  1653.0   119.7  1652.0   128.1
GR1652.4   135.7  1652.4   139.8  1652.4   155.6  1652.2   164.1  1651.4   166.5
GR1651.4   174.5  1648.9   187.0  1648.9   195.0  1643.9   212.0  1643.9   388.0
GR1651.4   395.5  1651.4   399.5  1654.4   405.5  1654.4   415.5  1652.2   422.1
GR1652.4   444.9  1652.3   473.8  1652.0   495.3  1651.6   509.3  1651.9   527.3
GR1652.0   529.2  1652.6   553.5  1652.7   568.9  1652.5   578.1  1651.9   600.0
NC  .025    .025    .025      .3      .5
X1  87.0    33.0   174.5   415.5      .0      .0   450.0      .0      .0      .0
X3     10                    170            420
GR1654.7       0  1654.7    11.5  1654.0    38.8  1654.0    50.1  1653.3    54.8
GR1653.0    63.1  1652.0    83.1  1652.0   111.2  1651.6   117.2  1651.0   125.9
GR1651.0   161.7  1649.4   166.5  1649.4   174.5  1646.9   187.0  1646.9   195.0
GR1643.9   210.0  1643.9   390.0  1649.4   395.5  1649.4   399.5  1652.4   405.5
GR1652.4   415.5  1649.6   424.1  1649.0   434.5  1649.7   449.9  1650.3   461.5
GR1650.0   471.6  1650.1   478.1  1650.1   485.9  1650.5   515.7  1651.0   526.8
GR1651.1   546.2  1651.0   581.5  1651.0   600.0
NC  .030    .030    .030      .1      .3
X1  82.5    29.0   174.5   415.5      .0      .0     3.0      .0      .0      .0
X3     10                    170            420
GR1646.7       0  1647.0    10.5  1646.8    29.3  1646.0    54.4  1644.6    74.9
GR1644.3    86.8  1645.5   152.5  1645.5   162.0  1644.0   166.5  1644.0   174.5
GR1641.5   187.0  1641.5   195.0  1638.5   210.0  1638.5   390.0  1644.0   395.5
GR1644.0   399.5  1647.0   405.5  1647.0   415.5  1641.5   432.2  1641.0   446.8
GR1641.0   451.4  1639.9   474.6  1640.3   484.2  1640.8   493.0  1641.0   511.5
GR1640.6   531.1  1640.7   543.4  1640.3   566.9  1640.2   600.0
NC  .025    .025    .025      .3      .5
X1 82.47    29.0   174.5   415.5      .0      .0    47.0      .0      .0      .0
X3     10                    170            420
GR1646.7       0  1647.0    10.5  1646.8    29.3  1646.0    54.4  1644.6    74.9
GR1644.3    86.8  1645.5   152.5  1645.5   162.0  1644.0   166.5  1644.0   174.5
GR1641.5   187.0  1641.5   195.0  1635.5   213.0  1635.5   387.0  1644.0   395.5
GR1644.0   399.5  1647.0   405.5  1647.0   415.5  1641.5   432.2  1641.0   446.8
GR1641.0   451.4  1639.9   474.6  1640.3   484.2  1640.8   493.0  1641.0   511.5
GR1640.6   531.1  1640.7   543.4  1640.3   566.9  1640.2   600.0
NC  .025    .025    .025      .3      .5
X1  82.0    33.0   174.5   415.5      .0      .0   150.0      .0      .0      .0
X3     10                    170            420
GR1645.3       0  1645.3     4.5  1645.2    21.4  1645.0    29.3  1645.0    39.7
GR1644.4    57.5  1644.3    62.0  1643.5    81.6  1643.4    94.1  1644.0   108.8
GR1644.3   134.4  1644.4   156.4  1641.0   166.5  1641.0   174.5  1638.5   187.0
GR1638.5   195.0  1635.5   210.0  1635.5   390.0  1641.0   395.5  1641.0   399.5
GR1644.0   405.5  1644.0   415.5  1642.0   421.5  1642.0   429.4  1641.0   438.0
GR1639.0   499.2  1638.0   506.7  1638.2   516.0  1638.7   522.6  1639.0   529.6
GR1639.2   545.8  1638.9   591.0  1638.9   600.0
NC  .030    .030    .030      .1      .3
X1  80.5    26.0   174.5   415.5      .0      .0     4.0      .0      .0      .0
X3     10                    170            420
GR1641.0       0  1641.0    25.6  1641.4    48.8  1641.5    59.8  1641.0    91.3
GR1640.6   117.2  1640.4   135.4  1640.3   152.9  1640.4   163.0  1639.2   166.5
GR1639.2   174.5  1636.7   187.0  1636.7   195.0  1633.7   210.0  1633.7   390.0
GR1639.2   395.5  1639.2   399.5  1642.2   405.5  1642.2   415.5  1637.2   430.5
GR1639.0   483.2  1639.0   511.0  1637.8   531.0  1636.3   564.2  1636.0   575.0
GR1636.1   600.0
NC  .025    .025    .025      .3      .5
X1 80.46    26.0   174.5   415.5      .0      .0    46.0      .0      .0      .0
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X3    10                    170            420
GR1641.0      0  1641.0    25.6  1641.4    48.8  1641.5    59.8  1641.0    91.3
GR1640.6  117.2  1640.4   135.4  1640.3   152.9  1640.4   163.0  1639.2   166.5
GR1639.2  174.5  1636.7   187.0  1636.7   195.0  1629.7   214.0  1629.7   386.0
GR1639.2  395.5  1639.2   399.5  1642.2   405.5  1642.2   415.5  1637.2   430.5
GR1639.0  483.2  1639.0   511.0  1637.8   531.0  1636.3   564.2  1636.0   575.0
GR1636.1  600.0
NC  .025   .025    .025     .3     .5
X1  80.0   29.0   174.5   417.5     .0      .0   600.0      .0     .0      .0
X3    10                    170            420
GR1641.2      0  1640.7    11.5  1639.0    43.5  1638.5    54.8  1638.6    67.5
GR1639.2   89.3  1639.4    97.9  1639.1   120.8  1639.0   152.8  1638.9   155.4
GR1635.2  166.5  1635.2   174.5  1632.7   187.0  1632.7   195.0  1629.7   210.0
GR1629.7  390.0  1635.2   395.5  1635.2   399.5  1638.2   405.5  1638.2   415.5
GR1638.8  417.5  1638.8   462.2  1638.7   496.3  1638.5   515.7  1638.0   540.5
GR1637.5  560.2  1637.0   573.1  1636.0   588.4  1635.5   600.0
NC  .030   .030    .030     .1     .3
X1  74.0   31.0   174.5   415.5     .0      .0     2.0      .0     .0      .0
X3    10                    170            420
GR1630.3      0  1630.1    19.6  1629.5    56.0  1629.0    80.6  1628.0   110.0
GR1628.0  128.1  1629.0   140.9  1629.1   148.6  1629.1   163.3  1628.0   166.5
GR1628.0  174.5  1625.5   187.0  1625.5   195.0  1622.5   210.0  1622.5   390.0
GR1628.0  395.5  1628.0   399.5  1631.0   405.5  1631.0   415.5  1626.1   430.3
GR1625.7  444.7  1625.4   473.2  1624.7   511.5  1624.5   516.8  1624.5   522.1
GR1624.0  529.8  1624.0   537.8  1624.9   557.2  1625.3   575.6  1625.4   580.3
GR1625.8  600.0
NC  .025   .025    .025     .3     .5
X1 73.98   31.0   174.5   415.5     .0      .0    48.0      .0     .0      .0
X3    10                    170            420
GR1630.3      0  1630.1    19.6  1629.5    56.0  1629.0    80.6  1628.0   110.0
GR1628.0  128.1  1629.0   140.9  1629.1   148.6  1629.1   163.3  1628.0   166.5
GR1628.0  174.5  1625.5   187.0  1625.5   195.0  1620.5   212.0  1620.5   388.0
GR1628.0  395.5  1628.0   399.5  1631.0   405.5  1631.0   415.5  1626.1   430.3
GR1625.7  444.7  1625.4   473.2  1624.7   511.5  1624.5   516.8  1624.5   522.1
GR1624.0  529.8  1624.0   537.8  1624.9   557.2  1625.3   575.6  1625.4   580.3
GR1625.8  600.0
NC  .025   .025    .025     .3     .5
X1  73.5   30.0   174.5   415.5     .0      .0   250.0      .0     .0      .0
X3    10                    170            420
GR1628.4      0  1628.5    11.9  1628.3    37.1  1628.0    50.5  1627.5    63.0
GR1627.4   75.4  1626.9   117.0  1626.7   120.3  1626.7   137.4  1627.1   141.9
GR1627.7  161.5  1626.0   166.5  1626.0   174.5  1623.5   187.0  1623.5   195.0
GR1620.5  210.0  1620.5   390.0  1626.0   395.5  1626.0   399.5  1629.0   405.5
GR1629.0  415.5  1624.6   428.9  1624.0   453.5  1624.0   534.1  1623.0   546.9
GR1623.0  555.7  1624.0   567.8  1624.0   574.3  1624.4   593.3  1624.5   600.0
NC  .030   .030    .030     .1     .3
X1  71.0   36.0   174.5   415.5     .0      .0     3.0      .0     .0      .0
X3    10                    170            420
GR1621.0      0  1621.2     6.2  1623.0    27.6  1623.0    63.1  1622.2    87.0
GR1622.0   95.1  1621.0   105.0  1621.0   126.3  1622.0   137.8  1624.0   163.5
GR1623.0  166.5  1623.0   174.5  1620.5   187.0  1620.5   195.0  1617.5   210.0
GR1617.5  390.0  1623.0   395.5  1623.0   399.5  1626.0   405.5  1626.0   415.5
GR1622.1  427.3  1622.0   439.8  1620.8   448.0  1619.9   456.0  1619.0   466.0
GR1618.0  481.4  1618.0   494.5  1618.5   504.4  1618.6   514.4  1618.0   540.7
GR1618.0  556.0  1618.4   564.3  1618.4   569.8  1618.0   584.0  1618.0   589.5
GR1618.6  600.0
NC  .025   .025    .025     .3     .5
X1 70.97     36   174.5   415.5     .0      .0    47.0      .0     .0      .0
X3    10                    170            420
GR1621.0      0  1621.2     6.2  1623.0    27.6  1623.0    63.1  1622.2    87.0
GR1622.0   95.1  1621.0   105.0  1621.0   126.3  1622.0   137.8  1624.0   163.5
GR1623.0  166.5  1623.0   174.5  1620.5   187.0  1620.5   195.0  1614.5   213.0
GR1614.5  387.0  1623.0   395.5  1623.0   399.5  1626.0   405.5  1626.0   415.5
GR1622.1  427.3  1622.0   439.8  1620.8   448.0  1619.9   456.0  1619.0   466.0
GR1618.0  481.4  1618.0   494.5  1618.5   504.4  1618.6   514.4  1618.0   540.7
GR1618.0  556.0  1618.4   564.3  1618.4   569.8  1618.0   584.0  1618.0   589.5
GR1618.6  600.0
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NC  .025    .025    .025      .3      .5
X1  70.5    33.0   174.5   418.5      .0      .0   200.0      .0      .0      .0
X3    10                    170             420
GR1621.3       0  1621.4    56.8  1621.5    68.5  1621.2    77.7  1621.0    84.6
GR1619.9    99.8  1619.0   110.3  1618.2   115.0  1619.0   119.7  1621.0   138.6
GR1622.7   158.4  1620.0   166.5  1620.0   174.5  1617.5   187.0  1617.5   195.0
GR1614.5   210.0  1614.5   390.0  1620.0   395.5  1620.0   399.5  1623.0   405.5
GR1623.0   415.5  1622.0   418.5  1621.9   449.8  1621.0   481.0  1618.5   496.2
GR1617.6   507.4  1617.0   516.9  1617.1   541.3  1616.3   569.5  1616.4   579.2
GR1617.0   584.4  1618.0   597.6  1618.1   600.0
NC  .030    .030    .030      .1      .3
X1  68.5    30.0   174.5   415.5      .0      .0     3.0      .0      .0      .0
X3    10                    170             420
GR1618.8       0  1618.6    20.9  1618.4    33.8  1617.9    48.4  1617.0    64.9
GR1616.5    91.6  1616.0   106.2  1616.0   129.5  1617.0   142.3  1618.2   155.9
GR1618.7   163.2  1617.6   166.5  1617.6   174.5  1615.1   187.0  1615.1   195.0
GR1612.1   210.0  1612.1   390.0  1617.6   395.5  1617.6   399.5  1620.6   405.5
GR1620.6   415.5  1619.0   420.4  1619.0   434.1  1618.3   452.0  1617.9   509.0
GR1617.6   538.8  1617.4   551.7  1617.0   586.5  1617.0   593.5  1616.8   600.0
NC  .025    .025    .025      .3      .5
X1 68.47    30.0   174.5   415.5      .0      .0    47.0      .0      .0      .0
X3    10                    170             420
GR1618.8       0  1618.6    20.9  1618.4    33.8  1617.9    48.4  1617.0    64.9
GR1616.5    91.6  1616.0   106.2  1616.0   129.5  1617.0   142.3  1618.2   155.9
GR1618.7   163.2  1617.6   166.5  1617.6   174.5  1615.1   187.0  1615.1   195.0
GR1609.1   213.0  1609.1   387.0  1617.6   395.5  1617.6   399.5  1620.6   405.5
GR1620.6   415.5  1619.0   420.4  1619.0   434.1  1618.3   452.0  1617.9   509.0
GR1617.6   538.8  1617.4   551.7  1617.0   586.5  1617.0   593.5  1616.8   600.0
NC  .025    .025    .025      .3      .5
X1  68.0    29.0   174.5   416.7      .0      .0   200.0      .0      .0      .0
X3    10                    170             420
GR1617.5       0  1617.3    17.4  1617.0    28.7  1616.0    48.2  1614.0    82.6
GR1614.0    85.4  1614.9   100.3  1617.0   129.0  1617.7   157.2  1614.6   166.5
GR1614.6   174.5  1612.1   187.0  1612.1   195.0  1609.1   210.0  1609.1   390.0
GR1614.6   395.5  1614.6   399.5  1617.6   405.5  1617.6   415.5  1618.0   416.7
GR1617.6   444.5  1617.0   468.3  1616.7   488.1  1616.5   504.8  1616.3   532.9
GR1616.5   549.4  1616.3   572.8  1616.0   590.3  1615.6   600.0
NC  .030    .030    .030      .1      .3
X1  66.0    31.0   174.5   419.2      .0      .0     3.0      .0      .0      .0
X3    10                    170             420
GR1612.0       0  1611.5    16.1  1612.6    38.4  1612.5    46.2  1612.4    60.4
GR1611.9    72.6  1611.0    81.3  1611.0   104.8  1612.0   118.2  1612.6   142.1
GR1613.0   164.1  1612.2   166.5  1612.2   174.5  1609.7   187.0  1609.7   195.0
GR1606.7   210.0  1606.7   390.0  1612.2   395.5  1612.2   399.5  1615.2   405.5
GR1615.2   415.5  1614.0   419.2  1614.0   468.8  1613.6   482.9  1613.2   507.5
GR1613.0   516.6  1611.6   552.0  1611.0   563.8  1611.0   571.9  1610.2   589.0
GR1609.3   600.0
NC  .025    .025    .025      .3      .5
X1 65.97    31.0   174.5   419.2      .0      .0    47.0      .0      .0      .0
X3    10                    170             420
GR1612.0       0  1611.5    16.1  1612.6    38.4  1612.5    46.2  1612.4    60.4
GR1611.9    72.6  1611.0    81.3  1611.0   104.8  1612.0   118.2  1612.6   142.1
GR1613.0   164.1  1612.2   166.5  1612.2   174.5  1609.7   187.0  1609.7   195.0
GR1603.7   213.0  1603.7   387.0  1612.2   395.5  1612.2   399.5  1615.2   405.5
GR1615.2   415.5  1614.0   419.2  1614.0   468.8  1613.6   482.9  1613.2   507.5
GR1613.0   516.6  1611.6   552.0  1611.0   563.8  1611.0   571.9  1610.2   589.0
GR1609.3   600.0
NC  .025    .025    .025      .3      .5
X1  65.5    33.0   174.5   415.5      .0      .0   200.0      .0      .0      .0
X3    10                    170             420
GR1611.7       0  1611.0    17.8  1611.0    32.1  1610.5    58.7  1610.7    63.7
GR1609.7    96.7  1609.3   103.6  1609.6   117.4  1609.9   122.9  1611.0   145.0
GR1611.5   159.5  1609.2   166.5  1609.2   174.5  1606.7   187.0  1606.7   195.0
GR1603.7   210.0  1603.7   390.0  1609.2   395.5  1609.2   399.5  1612.2   405.5
GR1612.2   415.5  1613.7   420.0  1613.5   440.0  1613.5   453.8  1613.4   460.4
GR1612.8   481.7  1612.3   497.0  1612.0   506.7  1611.7   524.8  1609.4   577.1
GR1609.0   585.0  1607.0   592.4  1608.8   600.0
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NC  .030    .030    .030     .1      .3
X1  63.5    32.0   174.5   415.5     .0      .0     3.0      .0      .0      .0
X3    10                     170            420
GR1608.0       0  1607.6    10.1  1607.0    19.4  1606.0    29.3  1604.0    45.3
GR1604.1    54.5  1606.0    75.5  1607.0    81.6  1607.6   133.7  1607.7   161.6
GR1607.6   164.0  1606.8   166.5  1606.8   174.5  1604.3   187.0  1604.3   195.0
GR1601.3   210.0  1601.3   390.0  1606.8   395.5  1606.8   399.5  1609.8   405.5
GR1609.8   415.5  1607.4   422.7  1607.0   436.4  1606.0   449.0  1606.1   467.5
GR1606.4   482.2  1606.6   494.6  1606.4   515.9  1606.0   529.7  1606.0   539.4
GR1607.0   553.5  1607.0   600.0
NC  .025    .025    .025     .3      .5
X1 63.47    32.0   174.5   415.5     .0      .0    47.0      .0      .0      .0
X3    10                     170            420
GR1608.0       0  1607.6    10.1  1607.0    19.4  1606.0    29.3  1604.0    45.3
GR1604.1    54.5  1606.0    75.5  1607.0    81.6  1607.6   133.7  1607.7   161.6
GR1607.6   164.0  1606.8   166.5  1606.8   174.5  1604.3   187.0  1604.3   195.0
GR1598.3   213.0  1598.3   387.0  1606.8   395.5  1606.8   399.5  1609.8   405.5
GR1609.8   415.5  1607.4   422.7  1607.0   436.4  1606.0   449.0  1606.1   467.5
GR1606.4   482.2  1606.6   494.6  1606.4   515.9  1606.0   529.7  1606.0   539.4
GR1607.0   553.5  1607.0   600.0
NC  .025    .025    .025     .3      .5
X1  63.0    34.0   174.5   415.5     .0      .0   200.0      .0      .0      .0
X3    10                     170            420
GR1607.0       0  1606.0    14.9  1605.3    20.3  1604.0    33.1  1603.0    39.8
GR1603.2    43.6  1604.0    52.2  1606.0    71.2  1607.0    76.4  1607.0   120.0
GR1606.4   128.4  1606.1   135.8  1606.5   158.5  1603.8   166.5  1603.8   174.5
GR1601.3   187.0  1601.3   195.0  1598.3   210.0  1598.3   390.0  1603.8   395.5
GR1603.8   399.5  1606.8   405.5  1606.8   415.5  1607.0   421.1  1607.0   426.3
GR1606.0   445.3  1604.0   462.5  1604.3   489.1  1604.0   502.6  1604.0   519.9
GR1605.2   536.8  1606.4   576.0  1606.4   584.7  1606.5   600.0
NC  .030    .030    .030     .1      .3
X1  61.0    34.0   174.5   415.5     .0      .0     3.0      .0      .0      .0
X3    10                     170            420
GR1601.0       0  1600.8    10.7  1600.2    26.0  1599.0    41.8  1598.4    51.2
GR1598.2    63.4  1599.2    79.1  1601.0   102.3  1601.2   107.7  1601.6   131.2
GR1601.4   141.2  1601.7   165.5  1601.4   166.5  1601.4   174.5  1598.9   187.0
GR1598.9   195.0  1595.9   210.0  1595.9   390.0  1601.4   395.5  1601.4   399.5
GR1604.4   405.5  1604.4   415.5  1602.0   422.7  1602.1   439.4  1601.7   453.9
GR1601.3   466.7  1601.8   482.7  1601.4   512.9  1601.0   522.8  1599.0   539.6
GR1599.0   551.3  1599.8   563.6  1600.8   586.6  1600.7   600.0
NC  .025    .025    .025     .3      .5
X1 60.97    34.0   174.5   415.5     .0      .0    47.0      .0      .0      .0
X3    10                     170            420
GR1601.0       0  1600.8    10.7  1600.2    26.0  1599.0    41.8  1598.4    51.2
GR1598.2    63.4  1599.2    79.1  1601.0   102.3  1601.2   107.7  1601.6   131.2
GR1601.4   141.2  1601.7   165.5  1601.4   166.5  1601.4   174.5  1598.9   187.0
GR1598.9   195.0  1592.9   213.0  1592.9   387.0  1601.4   395.5  1601.4   399.5
GR1604.4   405.5  1604.4   415.5  1602.0   422.7  1602.1   439.4  1601.7   453.9
GR1601.3   466.7  1601.8   482.7  1601.4   512.9  1601.0   522.8  1599.0   539.6
GR1599.0   551.3  1599.8   563.6  1600.8   586.6  1600.7   600.0
NC  .025    .025    .025     .3      .5
X1  60.5    32.0   174.5   415.5     .0      .0   200.0      .0      .0      .0
X3    10                     170            420
GR1598.1       0  1598.0     1.7  1599.0    12.9  1599.0    40.4  1598.4    48.9
GR1597.0    62.1  1599.0    82.9  1600.0    97.9  1600.5   120.8  1600.2   161.1
GR1598.4   166.5  1598.4   174.5  1595.9   187.0  1595.9   195.0  1592.9   210.0
GR1592.9   390.0  1598.4   395.5  1598.4   399.5  1601.4   405.5  1601.4   415.5
GR1599.7   420.8  1599.8   427.5  1600.2   454.1  1600.0   462.8  1600.2   485.0
GR1600.6   497.9  1599.9   533.6  1599.0   546.3  1598.0   556.2  1598.0   577.4
GR1598.3   592.1  1598.6   600.0
NC  .030    .030    .030     .1      .3
X1  58.5    36.0   174.5   415.5     .0      .0     4.5      .0      .0      .0
X3    10                     170            420
GR1597.8       0  1598.0     5.5  1597.8    20.0  1597.0    45.0  1595.4    62.2
GR1594.0    74.2  1594.0    80.6  1593.6    88.7  1594.1   102.7  1594.6   111.1
GR1594.9   120.4  1596.0   139.6  1596.6   157.6  1596.5   164.9  1596.0   166.5
GR1596.0   174.5  1593.5   187.0  1593.5   195.0  1590.5   210.0  1590.5   390.0
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GR1596.0   395.5  1596.0   399.5  1599.0   405.5  1599.0   415.5  1594.8   428.0
GR1593.4   459.7  1593.0   469.9  1593.0   478.7  1594.0   489.6  1594.0   533.1
GR1593.7   540.2  1592.9   551.9  1592.7   561.4  1593.3   571.0  1594.9   592.1
GR1595.4   600.0
NC  .025    .025    .025      .3      .5
X158.455    36.0   174.5   415.5      .0      .0    45.5      .0      .0      .0
X3    10                    170             420
GR1597.8       0  1598.0     5.5  1597.8    20.0  1597.0    45.0  1595.4    62.2
GR1594.0    74.2  1594.0    80.6  1593.6    88.7  1594.1   102.7  1594.6   111.1
GR1594.9   120.4  1596.0   139.6  1596.6   157.6  1596.5   164.9  1596.0   166.5
GR1596.0   174.5  1593.5   187.0  1593.5   195.0  1586.0   214.5  1586.0   385.5
GR1596.0   395.5  1596.0   399.5  1599.0   405.5  1599.0   415.5  1594.8   428.0
GR1593.4   459.7  1593.0   469.9  1593.0   478.7  1594.0   489.6  1594.0   533.1
GR1593.7   540.2  1592.9   551.9  1592.7   561.4  1593.3   571.0  1594.9   592.1
GR1595.4   600.0
NC  .025    .025    .025      .3      .5
X1  58.0    35.0   174.5   415.8      .0      .0   500.0      .0      .0      .0
X3    10                    170             420
GR1596.9       0  1596.0    21.6  1596.0    55.9  1594.2    75.1  1594.0    79.1
GR1593.0    87.9  1593.2    95.2  1593.0   103.5  1592.4   111.9  1592.0   118.4
GR1592.0   130.5  1591.8   134.3  1592.0   142.5  1592.7   155.6  1593.2   161.4
GR1591.5   166.5  1591.5   174.5  1589.0   187.0  1589.0   195.0  1586.0   210.0
GR1586.0   390.0  1591.5   395.5  1591.5   399.5  1594.5   405.5  1594.6   415.8
GR1593.7   433.6  1592.0   462.1  1592.0   470.7  1593.0   480.6  1593.0   528.9
GR1591.3   549.9  1591.4   555.8  1592.0   563.0  1592.8   586.8  1593.0   600.0
NC  .030    .030    .030      .1      .3
X1  53.0    30.0   174.5   419.2      .0      .0     3.0      .0      .0      .0
X3    10                    170             420
GR1590.7       0  1590.3    14.0  1589.8    26.9  1588.0    75.2  1586.5   103.3
GR1584.0   135.7  1583.8   137.2  1583.6   146.8  1584.8   157.4  1585.5   166.5
GR1585.5   174.5  1583.0   187.0  1583.0   195.0  1580.0   210.0  1580.0   390.0
GR1585.5   395.5  1585.5   399.5  1588.5   405.5  1588.5   415.5  1587.3   419.2
GR1587.8   425.2  1587.9   451.7  1588.3   467.1  1588.7   479.2  1588.6   507.1
GR1588.4   523.7  1588.5   544.7  1588.0   554.9  1587.0   591.3  1586.6   600.0
NC  .025    .025    .025      .3      .5
X1 52.97    30.0   174.5   419.2      .0      .0    47.0      .0      .0      .0
X3    10                    170             420
GR1590.7       0  1590.3    14.0  1589.8    26.9  1588.0    75.2  1586.5   103.3
GR1584.0   135.7  1583.8   137.2  1583.6   146.8  1584.8   157.4  1585.5   166.5
GR1585.5   174.5  1583.0   187.0  1583.0   195.0  1577.0   213.0  1577.0   387.0
GR1585.5   395.5  1585.5   399.5  1588.5   405.5  1588.5   415.5  1587.3   419.2
GR1587.8   425.2  1587.9   451.7  1588.3   467.1  1588.7   479.2  1588.6   507.1
GR1588.4   523.7  1588.5   544.7  1588.0   554.9  1587.0   591.3  1586.6   600.0
NC  .025    .025    .025      .3      .5
X1  52.5    38.0   174.5   417.3      .0      .0   250.0      .0      .0      .0
X3    10                    170             420
GR1588.8       0  1589.5    15.8  1589.0    29.1  1588.5    50.0  1587.6    74.4
GR1586.6    85.4  1586.0    99.0  1585.2   105.6  1585.0   110.7  1585.4   116.0
GR1585.0   123.7  1584.0   145.0  1583.7   146.5  1583.0   165.1  1582.5   166.5
GR1582.5   174.5  1580.0   187.0  1580.0   195.0  1577.0   210.0  1577.0   390.0
GR1582.5   395.5  1582.5   399.5  1585.5   405.5  1585.5   415.5  1586.1   417.3
GR1586.4   423.2  1586.6   432.0  1586.0   452.3  1585.7   457.8  1586.5   471.9
GR1587.0   476.3  1587.3   488.9  1587.3   519.8  1587.0   529.5  1586.0   545.6
GR1586.4   574.3  1586.3   579.3  1586.0   600.0
NC  .030    .030    .030      .1      .3
X1  50.0    29.0   174.5   415.5      .0      .0     3.0      .0      .0      .0
X3    10                    170             420
GR1582.6       0  1582.0    17.7  1581.0    54.7  1581.0    59.0  1580.6    90.4
GR1581.0   110.1  1583.0   141.4  1583.7   153.9  1579.5   166.5  1579.5   174.5
GR1577.0   187.0  1577.0   195.0  1574.0   210.0  1574.0   390.0  1579.5   395.5
GR1579.5   399.5  1582.5   405.5  1582.5   415.5  1579.9   423.2  1580.0   442.0
GR1580.0   479.2  1579.3   491.5  1579.6   506.0  1580.0   515.0  1580.9   540.0
GR1580.8   544.6  1580.0   559.8  1580.0   579.8  1581.0   600.0
NC  .025    .025    .025      .3      .5
X1 49.97    29.0   174.5   415.5      47      47    47.0      .0      .0      .0
X3    10                    170             420
GR1582.6       0  1582.0    17.7  1581.0    54.7  1581.0    59.0  1580.6    90.4
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GR1581.0   110.1  1583.0   141.4  1583.7   153.9  1579.5   166.5  1579.5   174.5
GR1577.0   187.0  1577.0   195.0  1571.0   213.0  1571.0   387.0  1579.5   395.5
GR1579.5   399.5  1582.5   405.5  1582.5   415.5  1579.9   423.2  1580.0   442.0
GR1580.0   479.2  1579.3   491.5  1579.6   506.0  1580.0   515.0  1580.9   540.0
GR1580.8   544.6  1580.0   559.8  1580.0   579.8  1581.0   600.0
X1 49.50    31.0      .0     640     150     150     150      .0      .0      .0
GR1583.1      .0  1582.9    10.2  1582.0    39.7  1581.0    77.8  1580.0   110.7
GR1580.2   126.7  1581.1   140.8  1581.6   163.2  1582.4   170.9  1576.5   188.8
GR1576.5   196.8  1574.0   209.3  1574.0   217.4  1571.0   232.4  1571.0   412.9
GR1576.5   418.5  1576.5   422.5  1579.5   428.5  1579.5   438.5  1578.9   440.4
GR1579.0   456.1  1579.3   495.1  1579.0   513.3  1578.0   531.4  1578.5   546.5
GR1578.6   562.3  1579.0   572.0  1579.0   589.1  1579.7   608.9  1579.2   634.7
GR1579.3   640.0
NC   .03     .03     .03      .1      .3
X1  48.0    11.0   170.9   438.5    10.0      10      10      .0              .0
GR1580.6   170.9  1574.7   188.8  1574.7   196.8  1572.2   209.3  1572.2   217.4
GR1569.2   232.4  1569.2   412.9  1574.7   418.5  1574.7   422.5  1577.7   428.5
GR1577.7   438.5
X1 47.90      11   170.9   438.5     140     140     140       0
GR1580.4   170.9  1574.5   188.8  1574.5   196.8  1572.0   209.3  1572.0   217.4
GR1569.0   232.4  1569.0   412.9  1574.5   418.5  1574.5   422.5  1577.5   428.5
GR1577.5   438.5
X1  46.5     5.0   880.0  1090.0   181.0   181.0   181.0      .0      .0      .0
X3    10                    900
GR1577.4     750  1570.0  850.00  1567.4  880.00  1567.4 1080.00  1577.4 1090.00
QT     6   13633   10954    8579    5927    4472    2680
X1 44.69     4.0   870.0  1130.0     6.0     6.0     6.0      .0      .0      .0
GR1575.2  870.00  1565.2  890.00  1565.2 1110.00  1575.2 1130.00
QT     6   15265   12231    9546    6613    5031    3065
X1 44.63       4   859.5  1140.5     5.0     5.0     5.0
GR1583.2   859.5  1565.2   886.5  1565.2  1113.5  1583.2  1140.5
NC  .015    .015    .015      .3      .5
X1 44.58       4   859.5  1140.5   100.0   100.0   100.0
X3    10
GR1583.1   859.5  1565.1   886.5  1565.1  1113.5  1583.1  1140.5
SB  1.05    1.56     2.6     264     227      15    3032     1.5
X1 43.58       4   859.5  1140.5    28.0    28.0    28.0
X2                     1 1578.55 1581.91
X3    10
GR1582.3   859.5  1564.3   886.5  1564.3  1113.5  1582.3  1140.5
NC  .030    .030    .030      .3      .5
X1 43.30       4   859.5  1140.5   170.0   140.0   150.0
GR1582.0   859.5  1564.0   886.5  1564.0  1113.5  1582.0  1140.5
NC                            .1      .3
X1 41.80    43.0   741.0  1035.4   150.1   158.5   150.0      .0      .0      .0
X3    10                    740            1050
GR1572.6   600.0  1572.9   602.3  1572.9   606.7  1572.0   629.2  1571.4   649.3
GR1571.3   657.2  1571.2   664.1  1570.9   669.3  1570.7   675.9  1571.0   682.1
GR1571.0   683.6  1572.6   709.0  1572.9   714.7  1572.8   724.5  1572.7   736.4
GR1572.5   741.0  1572.4   745.7  1572.8   747.2  1571.4   768.3  1571.3   769.8
GR1570.7   786.4  1562.6   815.0  1562.6   999.0  1567.8  1030.7  1567.8  1035.4
GR1568.1  1064.9  1568.0  1079.8  1567.9  1099.9  1568.0  1103.2  1567.5  1124.3
GR1567.2  1132.8  1567.0  1135.6  1566.5  1140.3  1566.1  1145.1  1566.0  1148.4
GR1566.7  1154.2  1567.3  1156.7  1567.5  1156.9  1566.2  1158.7  1566.6  1162.1
GR1569.7  1172.2  1569.5  1177.8  1569.4  1183.7
NC                            0.1     0.3
X1 40.30    46.0   762.6  1068.6   151.8   155.4   150.0      .0      .0      .0
X3    10                    750            1080
GR1569.1   600.0  1569.3   620.8  1569.3   625.8  1569.3   644.3  1567.8   663.9
GR1568.0   667.0  1568.7   674.5  1568.7   681.4  1568.6   686.5  1570.8   725.8
GR1570.8   728.2  1570.8   731.3  1570.5   744.4  1572.5   750.6  1572.5   762.6
GR1565.9   769.2  1564.6   772.7  1564.0   774.2  1564.1   775.8  1565.5   792.2
GR1565.6   803.3  1565.3   817.1  1564.8   830.4  1563.4   835.7  1563.2   836.7
GR1563.2   839.7  1563.5   849.8  1561.2   868.0  1561.2  1003.0  1564.9  1016.2
GR1565.6  1025.3  1566.0  1033.9  1565.4  1055.5  1565.2  1062.7  1565.1  1068.6
GR1564.6  1084.6  1564.1  1105.4  1564.2  1112.3  1564.2  1149.2  1564.2  1153.6
GR1564.4  1163.5  1564.7  1170.0  1564.8  1191.4  1564.7  1206.6  1564.5  1213.2
```

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GR1564.4  1215.3
X1 38.80    54.0   770.0  1084.3   150.2   150.0   150.0      .0      .0      .0
X3    10                   770            1110
GR1565.7   600.0  1564.8   616.0  1564.7   618.5  1564.7   620.9  1564.8   624.5
GR1565.1   635.1  1566.0   642.5  1566.4   646.6  1566.7   672.5  1566.8   676.1
GR1566.7   677.0  1566.8   682.1  1567.2   711.1  1567.2   718.2  1567.7   741.2
GR1567.8   751.3  1567.9   760.4  1568.2   765.8  1568.8   767.8  1569.6   770.0
GR1569.5   782.0  1566.6   784.9  1564.1   792.4  1562.3   797.6  1562.6   800.4
GR1562.6   803.5  1562.9   813.5  1562.9   819.8  1563.0   855.9  1563.0   856.0
GR1563.1   874.4  1562.5   878.7  1562.3   880.3  1562.4   881.5  1562.7   887.4
GR1563.0   891.5  1563.4   899.5  1562.9   904.5  1559.8   916.0  1559.8  1004.0
GR1562.9  1013.6  1562.6  1035.4  1562.8  1082.8  1562.8  1084.3  1562.3  1113.4
GR1562.7  1126.1  1563.0  1131.9  1562.9  1137.7  1562.9  1147.0  1560.0  1173.0
GR1559.0  1180.0  1561.0  1190.0  1562.0  1243.0  1562.0  1270.0
X1 37.30    71.0   780.7  1154.7   150.4   151.1   150.0      .0      .0      .0
X3    10                   780            1170
GR1565.9   600.0  1564.9   618.2  1564.9   621.9  1562.6   634.6  1560.7   644.5
GR1561.1   648.7  1561.7   655.0  1563.0   670.4  1563.3   673.2  1563.8   681.5
GR1564.5   694.3  1564.0   702.3  1563.3   711.0  1563.2   713.3  1563.1   718.6
GR1562.7   722.8  1562.4   728.1  1563.5   737.6  1565.0   748.9  1565.6   759.0
GR1565.7   763.0  1567.7   768.7  1567.7   780.7  1566.2   782.2  1566.1   790.3
GR1566.0   805.7  1566.0   811.9  1565.8   828.4  1561.4   840.5  1559.1   847.1
GR1560.3   861.5  1560.5   865.4  1561.2   877.8  1561.0   878.5  1558.8   890.8
GR1558.3   894.7  1559.6   903.6  1559.8   906.8  1560.2   920.8  1560.6   933.1
GR1561.1   954.1  1561.2   961.4  1558.5   965.0  1558.5  1005.0  1560.4  1013.3
GR1561.2  1030.8  1560.8  1033.7  1559.8  1045.8  1559.7  1056.6  1559.8  1064.0
GR1560.0  1074.6  1560.1  1085.4  1560.0  1087.3  1558.4  1116.2  1558.5  1117.8
GR1559.4  1135.1  1559.9  1151.9  1560.0  1154.7  1560.2  1187.4  1560.4  1201.5
GR1560.4  1209.3  1560.4  1218.3  1560.4  1222.7  1560.4  1229.4  1560.4  1234.0
GR1560.4  1256.7  1560.4  1265.8  1560.4  1269.4  1560.4  1274.5  1560.4  1278.5
GR1561.7  1283.7
X1 35.80    75.0   791.3  1216.0   150.8   150.1   150.0      .0      .0      .0
X3    10                   790            1220
GR1556.8   600.0  1557.1   613.3  1557.6   626.7  1558.1   636.5  1560.9   648.7
GR1560.9   648.8  1561.7   671.0  1561.9   681.4  1561.3   690.7  1559.9   697.2
GR1557.6   709.3  1558.5   722.2  1558.6   723.6  1560.9   742.0  1562.7   769.7
GR1563.6   772.6  1565.2   777.3  1565.2   789.3  1563.2   791.3  1563.3   801.0
GR1563.3   803.5  1563.2   813.4  1563.2   835.0  1563.5   845.8  1563.8   860.1
GR1563.8   871.7  1564.2   884.9  1563.2   888.3  1557.1   910.2  1557.2   913.7
GR1557.7   922.1  1557.7   923.3  1558.0   939.7  1558.4   943.5  1559.0   951.5
GR1558.7   952.1  1555.1   961.4  1558.6   971.2  1559.0   972.5  1559.4  1002.2
GR1559.3  1008.0  1559.0  1022.5  1558.6  1033.2  1557.9  1036.5  1557.0  1043.6
GR1556.9  1045.6  1556.2  1056.7  1557.3  1060.2  1559.0  1065.3  1558.5  1080.8
GR1558.2  1087.4  1557.8  1102.9  1557.7  1116.2  1557.5  1124.9  1556.9  1130.9
GR1555.8  1144.6  1555.5  1149.3  1555.6  1152.3  1555.5  1156.1  1555.6  1164.8
GR1555.1  1171.9  1554.7  1178.8  1555.1  1186.7  1555.6  1190.9  1556.7  1196.0
GR1556.7  1199.2  1556.2  1216.0  1555.4  1224.4  1554.1  1235.4  1556.0  1247.3
GR1556.4  1249.7  1558.5  1255.8  1558.9  1260.2  1559.9  1261.2  1564.4  1265.8
X1 34.30    84.0   805.2  1253.6   154.7   152.2   150.0      .0      .0      .0
X3    10                   800            1280
GR1554.2   600.0  1554.2   601.2  1554.2   604.1  1554.7   644.0  1554.4   653.5
GR1553.2   687.3  1553.0   725.3  1553.1   727.4  1552.9   735.4  1552.8   740.3
GR1553.5   742.8  1554.5   745.5  1558.6   758.4  1562.7   770.8  1562.7   783.2
GR1560.5   785.5  1560.7   805.2  1560.7   808.9  1560.7   809.2  1560.7   810.5
GR1561.0   847.9  1560.6   861.1  1560.0   871.2  1560.1   874.5  1561.1   885.7
GR1561.2   886.7  1560.1   891.7  1556.6   907.3  1556.7   911.4  1556.8   917.3
GR1556.9   920.4  1556.5   932.2  1556.3   948.1  1556.3   948.3  1553.9   953.5
GR1553.8   961.8  1553.7   964.3  1555.3   974.5  1556.4   982.6  1556.4   984.9
GR1556.6   993.9  1556.9  1016.4  1556.9  1020.7  1555.6  1044.3  1555.6  1045.1
GR1556.2  1051.2  1556.2  1054.7  1556.1  1059.9  1555.5  1097.6  1555.5  1107.4
GR1555.5  1112.6  1555.3  1127.1  1555.3  1128.2  1554.7  1138.2  1554.2  1146.4
GR1554.2  1147.4  1554.2  1148.8  1554.2  1149.4  1554.0  1168.2  1554.1  1176.6
GR1554.0  1189.8  1553.0  1207.8  1553.0  1208.9  1552.7  1238.1  1554.2  1247.1
GR1555.2  1253.6  1557.3  1285.0  1557.3  1286.4  1557.3  1288.9  1557.3  1294.6
GR1556.8  1303.0  1556.1  1313.4  1556.0  1313.8  1552.0  1327.5  1552.0  1332.3
GR1552.1  1332.9  1553.2  1343.3  1553.3  1349.1  1554.0  1372.5  1554.1  1377.6
GR1554.8  1385.5  1555.0  1387.8  1555.0  1393.7  1555.0  1400.0
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X1  32.8    65.0   821.4  1279.6   151.1   150.1   150.0      .0      .0      .0
X3    10                     810  1560.0    1300  1560.0
GR1550.0  764.60  1550.3  765.50  1552.0  774.20  1552.0  781.90  1552.1  794.20
GR1552.2  808.90  1552.2  821.40  1552.5  827.30  1552.9  828.80  1553.6  832.40
GR1553.2  843.80  1553.1  848.70  1553.7  853.00  1553.6  855.40  1553.8  862.50
GR1553.5  877.40  1553.4  879.40  1553.4  905.20  1553.4  906.10  1553.8  926.00
GR1554.0  935.60  1553.7  964.40  1553.6  969.50  1553.7  972.50  1553.5  975.00
GR1552.3 1001.40  1552.0 1003.00  1550.5 1011.20  1550.6 1015.30  1550.3 1025.70
GR1551.3 1030.10  1553.1 1034.20  1553.0 1046.50  1552.9 1058.00  1553.0 1092.50
GR1553.4 1116.50  1553.3 1128.90  1553.0 1151.60  1552.8 1168.80  1552.5 1183.40
GR1551.6 1202.20  1551.5 1207.70  1551.1 1216.30  1550.9 1216.60  1551.0 1228.90
GR1550.9 1239.10  1550.7 1247.70  1550.5 1256.00  1550.4 1257.30  1550.5 1258.60
GR1550.3 1264.60  1549.6 1271.40  1551.6 1279.60  1554.2 1314.20  1554.2 1315.50
GR1554.4 1319.40  1554.8 1327.70  1554.9 1341.00  1554.8 1343.00  1551.7 1355.80
GR1551.4 1360.80  1551.2 1362.40  1550.3 1366.70  1550.5 1373.00  1551.2 1381.30
X1 31.30    60.0   802.3  1270.2   150.7   152.0   150.0      .0      .0      .0
X3    10                     800  1554.0    1300  1554.0
GR1550.6   739.3  1550.3   740.6  1548.2   752.4  1549.3   763.6  1549.9   768.4
GR1549.7   771.2  1549.6   778.2  1548.6   787.3  1548.2   790.1  1548.7   792.2
GR1549.8   796.2  1550.0   802.3  1550.5   826.3  1550.6   849.3  1550.5   866.1
GR1550.7   889.3  1551.0   907.9  1550.9   919.3  1550.7   944.9  1550.6   966.6
GR1550.6   979.7  1551.6  1013.2  1551.7  1024.8  1550.9  1032.3  1550.7  1034.0
GR1549.4  1044.8  1549.5  1049.6  1549.8  1055.5  1549.2  1063.4  1548.8  1074.4
GR1549.6  1077.3  1551.2  1082.6  1551.1  1093.2  1551.1  1104.8  1550.7  1129.5
GR1550.2  1164.5  1549.1  1184.6  1548.9  1188.0  1548.2  1199.1  1548.2  1201.7
GR1548.1  1204.6  1548.8  1208.3  1549.2  1211.6  1549.4  1219.0  1549.5  1226.1
GR1549.3  1229.0  1549.3  1231.4  1548.9  1238.9  1548.4  1242.1  1547.6  1249.9
GR1547.5  1255.3  1547.3  1264.9  1548.5  1270.2  1549.8  1336.9  1549.9  1354.4
GR1550.0  1363.0  1549.5  1383.9  1549.4  1384.6  1548.6  1390.2  1548.5  1395.7
X1 29.80    90.0   814.4  1256.0   150.0   157.7   150.0      .0      .0      .0
X3    10                     790            1260
GR1549.9   600.0  1548.6   605.2  1548.5   615.7  1549.1   622.3  1549.5   642.3
GR1549.5   644.6  1549.8   655.6  1549.7   662.0  1549.1   670.8  1548.8   674.1
GR1547.1   698.5  1547.0   699.6  1546.7   703.6  1551.9   719.4  1554.1   726.0
GR1554.1   738.0  1548.5   743.6  1547.8   744.2  1548.0   750.8  1548.8   761.3
GR1547.2   772.4  1545.7   781.2  1547.3   784.6  1549.0   788.7  1548.0   814.4
GR1548.6   832.3  1548.6   852.9  1548.4   884.6  1548.4   901.6  1548.0   937.4
GR1547.8   957.6  1547.3   998.7  1547.9  1022.3  1547.9  1023.1  1547.7  1024.0
GR1545.6  1031.3  1546.8  1039.6  1546.9  1049.1  1546.3  1057.1  1548.4  1066.9
GR1548.8  1068.9  1548.8  1074.3  1548.3  1110.6  1548.3  1155.2  1548.2  1165.9
GR1547.0  1170.8  1547.6  1180.5  1545.8  1187.4  1544.6  1191.8  1544.7  1195.2
GR1545.6  1204.2  1545.8  1207.0  1546.7  1212.7  1546.7  1213.5  1547.2  1231.6
GR1547.6  1234.0  1549.2  1243.9  1549.0  1247.0  1548.9  1251.2  1548.9  1252.8
GR1549.1  1256.0  1549.1  1260.1  1549.1  1260.8  1552.9  1264.7  1555.2  1267.1
GR1555.2  1269.0  1555.3  1279.5  1553.2  1285.9  1551.4  1291.7  1549.8  1296.6
GR1548.0  1302.1  1548.0  1303.5  1547.4  1313.7  1548.1  1322.0  1549.3  1333.7
GR1549.3  1333.8  1549.2  1342.4  1548.9  1345.3  1548.0  1351.8  1547.7  1356.0
GR1547.5  1358.1  1546.8  1360.2  1545.8  1363.5  1546.2  1367.3  1546.3  1368.4
GR1547.3  1378.8  1547.5  1380.9  1547.5  1381.6  1547.5  1382.3  1547.5  1400.0
X1 28.30    75.0   776.8  1211.4   151.0   161.1   150.0      .0      .0      .0
X3    10                     770            1220
GR1547.3   600.0  1547.4   604.6  1546.8   614.2  1546.2   624.7  1546.3   628.6
GR1546.4   642.2  1546.4   653.8  1546.4   659.9  1546.3   663.7  1547.0   671.0
GR1548.3   683.0  1546.8   688.1  1545.4   692.6  1544.5   696.9  1552.3   720.4
GR1552.9   722.3  1553.0   732.3  1553.0   734.4  1551.1   736.3  1547.2   739.4
GR1545.5   741.8  1545.6   754.5  1545.8   776.8  1546.1   810.3  1546.2   823.2
GR1545.4   833.0  1543.3   849.8  1543.6   853.7  1544.4   860.5  1544.6   862.0
GR1544.0   872.6  1545.6   877.1  1546.9   888.3  1546.9   890.9  1546.6   897.3
GR1545.6   918.1  1545.5   922.8  1545.4   927.3  1545.3   934.0  1543.5   937.6
GR1542.6   939.9  1542.7   942.8  1542.9   950.9  1543.6   954.5  1544.7   960.2
GR1544.0   966.5  1545.5   978.8  1545.7   984.6  1546.3   998.6  1545.7  1021.8
GR1545.8  1024.8  1545.1  1032.1  1544.3  1043.6  1545.2  1049.3  1545.8  1070.6
GR1545.0  1075.8  1546.3  1081.6  1546.3  1086.3  1545.4  1138.7  1545.4  1150.7
GR1544.9  1153.6  1543.2  1162.1  1543.2  1167.6  1543.2  1176.4  1545.5  1186.8
GR1547.5  1195.4  1547.7  1203.4  1547.7  1211.3  1547.7  1211.4  1547.5  1249.8
GR1547.3  1257.3  1547.1  1271.8  1547.1  1278.2  1547.2  1285.3  1546.8  1305.0
X1 26.80    74.0   754.0  1154.7   150.8   160.0   150.0      .0      .0      .0
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X3	10		750		1160				
GR1545.6	600.0	1545.6	600.2	1545.6	607.3	1545.7	611.6	1545.7	613.5
GR1545.9	630.3	1546.0	636.8	1546.0	662.4	1545.6	669.3	1544.8	681.5
GR1544.8	684.7	1544.8	686.5	1548.9	698.7	1551.3	706.0	1551.3	718.0
GR1544.9	724.5	1544.7	729.7	1544.4	754.0	1544.8	762.9	1545.1	767.4
GR1544.9	782.9	1545.1	787.2	1545.0	791.7	1544.3	810.6	1543.5	830.1
GR1543.4	830.8	1540.4	843.9	1540.5	844.9	1542.6	859.3	1543.7	866.1
GR1543.6	886.1	1543.7	927.7	1543.6	933.1	1543.6	937.9	1543.5	938.6
GR1539.0	951.3	1540.1	957.5	1540.2	966.2	1541.6	974.7	1541.7	976.0
GR1541.7	988.0	1541.9	1003.2	1542.0	1004.3	1542.5	1016.0	1543.0	1023.0
GR1543.4	1031.8	1544.3	1042.1	1542.4	1051.9	1541.1	1059.1	1541.3	1072.9
GR1541.4	1073.5	1544.1	1088.7	1544.5	1094.5	1545.1	1103.7	1546.0	1125.2
GR1546.1	1127.7	1546.4	1136.1	1546.4	1144.3	1546.4	1152.6	1546.4	1154.7
GR1545.2	1197.6	1545.1	1198.3	1544.9	1216.3	1544.7	1226.3	1544.5	1241.4
GR1544.7	1252.6	1544.7	1255.8	1544.7	1257.6	1544.8	1268.6	1545.0	1273.6
GR1545.2	1282.8	1545.3	1282.8	1544.9	1290.3	1544.5	1301.1		
X1	25.30	64.0	746.3	1118.4	150.1	154.6	150.0	.0	.0	.0
X3	10		730		1120				
GR1542.9	600.0	1542.8	611.5	1542.7	615.9	1542.5	622.3	1542.4	626.7
GR1542.4	629.9	1542.2	633.3	1542.5	638.4	1542.8	663.4	1542.9	671.7
GR1546.0	680.9	1549.2	690.5	1549.2	702.5	1542.9	708.8	1542.3	720.3
GR1542.6	746.3	1542.7	763.9	1542.3	777.6	1542.4	799.1	1541.5	822.3
GR1541.5	832.0	1541.8	872.1	1541.2	889.5	1540.7	896.1	1537.8	901.5
GR1537.9	903.5	1538.0	921.7	1538.9	923.9	1539.9	927.9	1540.6	932.3
GR1538.5	937.5	1537.7	939.7	1537.6	941.0	1536.2	950.7	1539.4	956.6
GR1540.5	958.6	1541.0	967.4	1542.0	983.0	1542.1	1006.5	1541.4	1019.9
GR1540.7	1052.2	1540.7	1058.9	1540.7	1061.7	1540.8	1062.9	1541.6	1072.7
GR1541.9	1072.9	1541.9	1086.3	1542.4	1094.9	1542.6	1101.3	1543.0	1110.2
GR1543.2	1112.9	1543.3	1116.3	1543.4	1118.4	1543.6	1123.0	1543.7	1125.3
GR1543.7	1131.5	1544.7	1137.3	1544.6	1142.5	1544.5	1160.3	1544.0	1164.7
GR1543.7	1171.8	1543.1	1178.8	1544.1	1193.1	1544.6	1201.1		
X1	23.80	50.0	779.7	1070.2	150.0	150.2	150.0	.0	.0	.0
X3	10		710		1090				
GR1540.7	600.0	1540.7	605.4	1540.8	612.2	1541.2	635.6	1541.5	656.4
GR1541.3	662.5	1541.3	664.4	1544.3	673.4	1547.5	683.1	1547.5	686.9
GR1547.5	695.2	1546.2	696.5	1540.7	702.0	1540.7	702.9	1541.3	779.7
GR1541.8	795.3	1541.0	815.8	1540.8	826.9	1540.4	840.5	1539.9	848.8
GR1538.9	875.8	1538.4	890.7	1538.3	895.7	1537.7	897.5	1534.9	905.2
GR1534.8	911.5	1534.7	921.2	1537.4	928.0	1538.6	931.4	1539.1	937.6
GR1540.4	956.8	1540.0	968.1	1538.8	992.1	1538.2	1012.3	1538.3	1021.7
GR1538.3	1023.4	1538.6	1044.7	1539.2	1055.2	1539.7	1068.6	1539.8	1070.2
GR1540.3	1090.7	1539.8	1108.8	1539.8	1111.6	1539.7	1112.3	1539.8	1124.7
GR1539.8	1125.4	1539.8	1133.3	1539.7	1138.0	1539.2	1159.4	1539.4	1170.2
X1	22.30	60.0	699.9	1066.5	144.3	159.3	150.0	.0	.0	.0
X3	10		690		1080				
GR1538.7	600.0	1538.1	604.4	1538.4	613.8	1538.3	623.6	1538.5	637.0
GR1538.3	648.9	1540.0	654.0	1543.1	663.3	1545.3	669.7	1545.3	681.8
GR1539.3	687.8	1539.3	689.8	1539.2	699.9	1539.1	704.6	1539.5	751.5
GR1539.4	758.8	1539.5	766.8	1539.5	772.4	1538.9	790.2	1538.5	808.8
GR1538.6	815.6	1538.7	826.5	1538.5	848.0	1538.5	875.3	1538.3	895.2
GR1537.9	902.5	1537.7	910.6	1537.0	913.2	1535.3	918.7	1534.0	921.6
GR1533.4	927.8	1533.3	930.3	1533.0	933.1	1533.0	943.8	1533.0	950.3
GR1536.8	963.0	1537.1	963.8	1537.2	965.8	1537.9	999.2	1538.1	1013.9
GR1538.0	1031.5	1537.8	1034.2	1537.8	1037.5	1537.0	1066.5	1537.0	1081.4
GR1536.3	1083.5	1536.4	1087.2	1536.2	1091.8	1536.1	1097.3	1535.9	1104.3
GR1535.7	1115.5	1535.7	1117.1	1536.2	1124.2	1536.8	1131.1	1537.0	1137.7
GR1537.2	1151.0	1537.1	1156.8	1537.3	1172.4	1537.2	1180.3	1537.1	1187.4
X1	20.80	45.0	675.0	1050.0	136.7	159.4	150.0	.0	.0	.0
X3	10		670		1064				
GR1540.9	600.0	1540.8	602.3	1539.5	613.2	1539.4	614.3	1538.9	618.5
GR1538.6	626.0	1538.3	626.0	1537.3	633.5	1535.3	637.0	1535.8	638.3
GR1537.6	643.7	1539.2	648.2	1541.0	653.7	1540.1	663.8	1538.0	675.0
GR1538.0	720.0	1537.0	780.0	1536.0	800.0	1537.0	840.0	1537.5	900.0
GR1537.0	925.0	1536.0	950.0	1535.0	964.0	1534.0	988.0	1532.0	992.0
GR1531.2	1000.0	1531.2	1018.0	1532.0	1020.0	1535.0	1030.0	1535.7	1050.0
GR1541.0	1077.6	1539.1	1083.2	1538.9	1084.0	1538.0	1086.6	1535.6	1093.9
GR1535.5	1097.1	1535.7	1119.8	1535.7	1123.9	1535.5	1128.6	1535.2	1140.5

GR1535.0	1146.3	1534.3	1163.3	1534.0	1175.5	1534.1	1192.2	1533.7	1203.7
X1 19.30	80.0	705.7	1071.6	136.2	162.1	150.0	.0	.0	.0
X3 10			700		1072				
GR1541.9	600.0	1541.7	604.2	1540.4	614.6	1539.6	622.5	1538.9	628.5
GR1538.9	630.2	1538.7	641.7	1538.9	654.6	1536.4	658.9	1539.0	665.1
GR1541.0	671.6	1541.0	684.9	1539.4	686.6	1538.3	687.6	1536.0	690.1
GR1535.8	690.2	1535.6	692.6	1535.4	694.4	1535.0	705.7	1534.9	718.2
GR1535.0	723.7	1535.6	745.1	1535.9	755.8	1535.8	757.5	1534.8	779.7
GR1534.4	781.1	1532.7	790.5	1533.5	805.8	1533.9	813.7	1534.3	823.7
GR1534.4	845.4	1534.7	879.3	1534.8	879.6	1534.3	890.6	1534.0	911.0
GR1534.0	930.0	1532.0	970.0	1532.0	982.0	1534.0	998.0	1534.0	1012.0
GR1530.0	1022.0	1530.0	1033.0	1534.0	1053.0	1534.2	1060.0	1539.0	1071.6
GR1539.0	1086.2	1533.0	1104.2	1532.6	1117.7	1532.3	1127.8	1531.0	1144.6
GR1530.5	1152.3	1530.5	1153.1	1531.3	1164.4	1532.4	1178.0	1532.3	1186.7
GR1532.5	1192.8	1532.2	1208.2	1532.3	1210.8	1532.3	1226.0	1532.5	1243.0
GR1532.6	1248.8	1532.8	1261.2	1532.7	1272.8	1532.0	1293.9	1531.5	1311.5
GR1531.4	1317.2	1531.6	1335.0	1531.6	1337.5	1531.7	1345.6	1531.7	1346.2
GR1531.9	1351.3	1532.0	1355.0	1531.7	1361.0	1531.5	1374.8	1531.6	1378.3
GR1531.4	1380.3	1530.8	1386.0	1530.6	1391.4	1530.9	1398.4	1531.1	1400.0
X1 17.80	79.0	751.0	1087.7	146.2	155.2	150.0	.0	.0	.0
X3 10			750		1088				
GR1536.4	600.0	1535.9	632.4	1535.7	636.6	1536.4	657.8	1536.5	663.5
GR1536.7	668.8	1536.7	671.3	1536.3	710.0	1538.0	716.0	1538.0	732.1
GR1536.0	734.3	1536.0	740.7	1535.8	749.7	1535.4	751.0	1534.4	759.9
GR1533.8	763.6	1532.9	774.7	1532.6	779.4	1532.2	790.0	1531.9	796.5
GR1530.3	812.1	1531.1	822.9	1531.4	825.7	1531.4	828.5	1531.6	835.7
GR1531.5	870.0	1531.6	886.7	1531.7	897.8	1531.0	910.9	1531.0	950.0
GR1530.0	970.0	1530.0	973.0	1531.0	982.0	1532.0	1000.0	1527.8	1021.0
GR1527.8	1045.0	1530.0	1078.0	1535.0	1086.0	1535.2	1086.2	1535.1	1087.7
GR1535.0	1096.6	1535.0	1100.4	1531.9	1109.7	1531.6	1110.4	1531.4	1117.5
GR1531.1	1130.8	1530.7	1150.6	1530.8	1161.4	1531.1	1177.8	1530.8	1189.5
GR1530.7	1194.6	1530.8	1199.2	1531.3	1209.0	1531.3	1210.4	1531.1	1222.4
GR1531.2	1231.8	1531.2	1236.2	1531.2	1238.9	1529.9	1246.3	1528.2	1254.2
GR1528.1	1254.5	1528.0	1262.7	1528.0	1271.5	1528.5	1278.4	1528.1	1281.5
GR1528.0	1285.3	1528.5	1292.5	1528.6	1294.5	1529.8	1305.8	1530.0	1327.1
GR1530.0	1330.5	1528.9	1365.4	1528.6	1372.8	1528.4	1375.9	1528.5	1381.5
GR1528.5	1387.5	1528.5	1392.0	1528.6	1398.4	1528.6	1400.0		
X1 16.30	75.0	860.7	1098.1	100.0	100.0	100.0	.0	.0	.0
X3 10			860		1104				
GR1534.6	600.0	1534.6	601.4	1534.7	611.5	1534.7	618.9	1534.7	626.8
GR1534.7	634.3	1534.8	672.2	1534.7	672.4	1534.0	759.0	1533.8	780.9
GR1533.6	789.0	1533.5	800.2	1533.5	801.0	1533.6	801.4	1533.5	809.9
GR1533.4	814.6	1533.3	814.8	1533.2	839.3	1533.0	856.8	1533.0	859.5
GR1533.0	860.7	1532.3	874.7	1531.6	889.2	1531.2	893.2	1531.0	896.2
GR1530.0	918.0	1529.0	996.0	1528.0	1005.0	1525.6	1008.0	1525.6	1052.0
GR1530.0	1077.0	1529.5	1090.0	1530.0	1098.1	1530.0	1112.7	1529.7	1113.6
GR1528.4	1116.1	1529.3	1116.5	1529.6	1116.8	1529.7	1118.9	1529.7	1122.3
GR1529.7	1129.5	1529.6	1140.3	1529.6	1147.2	1529.6	1152.9	1529.5	1163.0
GR1529.1	1198.4	1529.1	1199.1	1528.3	1223.1	1528.3	1223.2	1528.6	1229.9
GR1528.6	1233.4	1529.3	1240.3	1529.3	1241.4	1529.0	1255.8	1528.9	1259.6
GR1528.8	1270.4	1528.8	1270.5	1528.4	1278.7	1528.2	1282.2	1528.2	1284.0
GR1528.1	1292.7	1528.2	1300.1	1528.3	1306.1	1528.5	1326.5	1528.5	1331.4
GR1528.5	1334.2	1528.6	1338.5	1528.6	1343.8	1528.6	1355.3	1528.5	1359.4
GR1528.1	1368.8	1528.1	1372.3	1528.0	1390.0	1528.0	1394.7	1527.9	1400.0
X1 15.30	8	905	1095	50	50	50			
GR1533.1	905	1528.1	920	1528.1	980	1524.1	988	1524.1	1048
GR1528.1	1056	1528.1	1080	1533.1	1095				
NC .025	.025	.025	.3	.5					
X1 14.80	8	905	1095	8	8	8			
GR1532.2	905	1527.2	920	1527.2	980	1523.2	988	1523.2	1048
GR1527.2	1056	1527.2	1080	1532.2	1095				
X1 14.72	8	905	1095	10	10	10			
GR1532.2	905	1523.2	928	1523.2	1010	1523.2	1018	1523.2	1048
GR1523.2	1056	1523.2	1072	1532.7	1095				
NC			.3	.5					
X1 14.62	4	905	1095	61	61	61			
GR1532.7	905	1518.2	938	1518.2	1062	1532.7	1095		

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X1 14.01       4     878    1122      71      71      71
GR1532.7     878  1518.2     920  1518.2    1080  1532.7    1122
NC                           .1      .3
X1 13.30       4     893    1107     145     155     150
GR1526.2     893  1517.2     920  1517.2    1080  1526.2    1107
X1 11.80       5     893    1144      95     105     100
GR1524.1     893  1515.1     920  1515.1    1080  1516.1    1120  1524.1    1144
X1 10.80       4     902    1108      75      75      75
GR1522.7     902  1513.7     920  1513.7    1090  1522.7    1108
NC  .025    .025    .025      .3      .5
X1 10.05       4     902    1108       5       5       5
GR1521.7     902  1512.7     920  1512.7    1090  1521.7    1108
NC                           .3      .5
X1 10.00       4     905    1106     120     120     120
X3    10                     905            1106
GR1520.0     905  1510.0     925  1510.0    1085  1520.0    1106
NC   .03     .03     .03      .1      .3
X1  8.80       4     898    1106     150     150     150
X3    10                     898            1106
GR1519.7     898  1509.7     928  1509.7    1096  1519.7    1106
X1  7.30       4     898    1102     150     150     150
X3    10                     898            1102
GR1519.2     898  1509.2     928  1509.2    1092  1519.2    1102
X1  5.80       4     898    1102     150     150     150
X3    10                     898            1102
GR1518.7     898  1508.7     928  1508.7    1092  1518.7    1102
X1  4.30       4     898    1102     150     150     150
X3    10                     898            1102
GR1518.3     898  1508.3     928  1508.3    1092  1518.3    1102
X1  2.80       4     898    1102      50      50      50
X3    10                     898            1102
GR1517.8     898  1507.8     928  1507.8    1092  1517.8    1102
X1  2.30       4     900    1101      55      40      50
X3    10                     900            1101
GR1517.7     900  1507.7     930  1507.7    1091  1517.7    1101
X1  1.80       4     906    1099      55      35      50
X3    10                     906            1099
GR1517.5     906  1507.5     936  1507.5    1089  1517.5    1099
X1  1.30       4     915    1096      50      50      50
X3    10                     915            1096
GR1517.3     915  1507.3     945  1507.3    1086  1517.3    1096
X1  0.80       4     920    1092      50      50      50
X3    10                     920            1092
GR1517.2     920  1507.2     950  1507.2    1082  1517.2    1092
X1  0.30       4     930    1080      30      30      30
X3    10                     930            1080
GR1517.0     930  1507.0     950  1507.0    1070  1517.0    1080
X1  0.01       4     930    1080
X3    10                     930            1080
GR1517.0     930  1507.0     950  1507.0    1070  1517.0    1080
EJ
T1      PINNACLE PEAK TO WEST WORLD  (ST 316+50 - ST 0+00)
T2      SLA JULY 1997
T3      SCOTTSDALE DESERT GREENBELT PROJECT
J1     0       3               1    .005       0     0.2       0               0
J2     2       0      -1
T1      PINNACLE PEAK TO WEST WORLD  (ST 316+50 - ST 0+00)
T2      SLA JULY 1997
T3      SCOTTSDALE DESERT GREENBELT PROJECT
J1     0       4               1    .005       0     0.2       0               0
J2     3       0      -1
T1      PINNACLE PEAK TO WEST WORLD  (ST 316+50 - ST 0+00)
T2      SLA JULY 1997
T3      SCOTTSDALE DESERT GREENBELT PROJECT
J1     0       5               1    .005       0     0.2       0               0
J2     4       0      -1
T1      PINNACLE PEAK TO WEST WORLD  (ST 316+50 - ST 0+00)
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T2      SLA JULY 1997
T3      SCOTTSDALE DESERT GREENBELT PROJECT
J1     0       6               1    .005       0     0.2       0                0
J2     5       0      -1
T1      PINNACLE PEAK TO WEST WORLD  (ST 316+50 - ST 0+00)
T2      SLA JULY 1997
T3      SCOTTSDALE DESERT GREENBELT PROJECT
J1     0       7               1    .005       0     0.2       0                0
J2     6       0      -1
ER
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100-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
316.50	5766	2309.6	2313.2	3.6	7.7	426.0	0.0285	1.0
313.50	5766	2300.1	2302.5	2.4	15.6	370.5	0.0290	2.7
310.50	5766	2291.9	2295.6	3.7	8.5	385.8	0.0283	1.1
307.50	5766	2282.5	2285.9	3.4	14.8	259.4	0.0317	2.1
304.50	5766	2273.5	2276.0	2.5	10.6	368.8	0.0318	1.5
301.50	5766	2262.9	2267.8	4.9	12.4	213.7	0.0253	1.5
298.50	5766	2256.2	2259.8	3.6	13.1	226.1	0.0280	1.7
295.50	5766	2247.4	2251.2	3.8	11.9	293.7	0.0282	1.6
292.50	5766	2237.9	2243.4	5.5	11.9	243.9	0.0273	1.5
289.50	11236	2228.6	2234.4	5.8	12.9	491.6	0.0333	1.7
288.00	11236	2224.2	2227.5	3.3	15.6	392.3	0.0393	2.0
286.50	11236	2217.7	2222.6	4.9	12.9	504.6	0.0352	1.7
284.15	11236	2210.8	2216.1	5.3	11.8	529.7	0.0276	1.5
280.30	11236	2200.8	2205.6	4.8	13.4	369.8	0.0321	1.6
277.15	11236	2194.6	2199.4	4.8	14.7	182.3	0.0344	1.3
276.95	11236	2188.6	2192.2	3.6	24.7	134.9	0.0460	2.4
275.40	11236	2183.9	2188.8	4.9	20.4	130.0	0.0318	1.8
272.45	11236	2174.9	2178.4	3.5	25.8	130.2	0.0308	2.5
272.35	11236	2174.2	2177.9	3.7	26.1	117.9	0.0650	2.4
271.95	11236	2173.5	2178.1	4.6	20.7	117.9	0.0500	1.7
271.75	11236	2173.0	2177.4	4.4	21.5	118.0	0.2550	1.8
271.74	11236	2169.0	2172.5	3.5	27.4	118.0	0.2571	2.6
271.60	11236	2168.5	2171.9	3.4	27.7	118.2	0.0171	2.6
271.40	11236	2167.8	2171.2	3.4	28.1	118.1	0.0187	2.7
270.65	11236	2165.3	2171.3	6.0	26.4	73.2	0.0187	1.9
270.55	11236	2165.0	2170.7	5.7	27.0	76.2	0.0147	2.0
269.80	11236	2163.0	2169.5	6.5	27.6	67.4	0.0113	2.0
269.65	11236	2162.8	2168.7	5.9	28.3	71.0	0.0117	2.1
269.55	11236	2162.7	2167.8	5.1	29.1	80.3	0.0111	2.3
268.00	11236	2160.7	2165.8	5.1	29.3	80.2	0.1186	2.4
267.96	11236	2156.7	2161.9	5.2	32.4	72.3	0.1223	2.6
267.50	11236	2156.7	2161.4	4.7	32.0	79.4	0.0229	2.7
266.20	11236	2154.4	2158.7	4.3	30.7	88.5	0.1464	2.7
266.17	11236	2151.4	2155.8	4.4	32.9	82.6	0.1791	2.9
265.70	11236	2151.4	2156.4	5.0	26.3	89.2	0.1624	2.4
265.67	11236	2148.4	2153.3	4.9	29.0	83.2	0.1539	2.6
265.20	11236	2148.4	2154.0	5.6	23.2	89.8	0.0522	2.2
264.20	11236	2146.6	2152.7	6.1	21.4	90.5	0.0261	2.0
262.30	11236	2143.2	2149.2	6.0	21.8	91.1	0.1361	1.8
262.26	11236	2139.2	2144.7	5.5	26.4	82.5	0.1511	2.2
261.80	11236	2139.2	2144.7	5.5	23.8	90.6	0.0372	2.0
260.50	11236	2136.8	2142.3	5.5	23.6	95.0	0.1445	1.9
260.47	11236	2133.8	2139.1	5.3	26.7	84.5	0.1578	2.1
260.00	11236	2133.8	2139.3	5.5	23.7	95.0	0.0341	1.9
257.10	11236	2128.6	2134.3	5.7	22.9	95.3	0.1430	1.8
257.07	11236	2125.6	2131.0	5.4	26.1	84.8	0.1535	2.0
256.60	11236	2125.6	2130.6	5.0	24.2	108.4	0.0332	2.1
256.33	11236	2125.1	2129.9	4.8	24.2	117.1	0.0296	2.1
256.00	11236	2124.5	2130.2	5.7	22.2	99.5	0.0292	1.7
255.80	11236	2124.2	2130.0	5.8	21.9	99.6	0.1375	1.7
255.76	11236	2120.2	2125.7	5.5	26.2	83.1	0.1402	2.0
255.30	11236	2120.2	2125.4	5.2	24.8	99.1	0.0292	2.0
254.80	11236	2119.3	2124.6	5.3	24.1	103.8	0.0259	2.0
254.00	11236	2117.8	2123.3	5.5	23.3	104.8	0.1452	1.9
253.97	11236	2114.8	2120.2	5.4	26.3	84.8	0.1567	2.1
253.50	11236	2114.8	2120.2	5.4	23.4	104.6	0.0341	1.9
252.80	11236	2113.6	2119.2	5.6	22.6	102.5	0.1440	1.8
252.77	11236	2110.6	2116.1	5.5	25.8	85.0	0.1546	2.0
252.30	11236	2110.6	2116.1	5.5	23.0	102.0	0.0313	1.9
251.50	11236	2109.1	2114.7	5.6	22.8	102.3	0.1433	1.8
251.47	11236	2106.1	2111.6	5.5	25.9	84.9	0.1557	2.0
251.00	11236	2106.1	2111.6	5.5	23.2	102.0	0.0323	1.9
250.10	11236	2104.5	2110.1	5.6	22.6	105.5	0.1475	1.8
250.06	11236	2100.5	2105.9	5.4	26.7	82.9	0.1603	2.1
249.60	11236	2100.5	2105.8	5.3	24.3	103.6	0.0350	2.0
248.90	11236	2099.2	2104.6	5.4	23.4	104.6	0.1455	1.9
248.87	11236	2096.2	2101.6	5.4	26.4	84.7	0.1567	2.1
248.40	11236	2096.2	2101.6	5.4	23.5	104.5	0.0351	1.9
247.80	11236	2095.2	2100.8	5.6	22.7	105.5	0.1450	1.8
247.77	11236	2092.2	2097.7	5.5	25.8	85.0	0.1546	2.0

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
247.30	11236	2092.2	2097.7	5.5	23.1	105.0	0.0320	1.9
246.60	11236	2090.9	2096.5	5.6	22.7	105.4	0.1440	1.8
246.57	11236	2087.9	2093.4	5.5	25.8	85.0	0.1557	2.0
246.10	11236	2087.9	2093.7	5.8	22.6	91.7	0.0309	1.7
245.40	11236	2086.6	2092.3	5.7	22.9	91.5	0.1336	1.7
245.36	11236	2082.6	2088.0	5.4	27.1	82.7	0.1489	2.1
244.90	11236	2082.6	2088.0	5.4	24.4	90.8	0.0346	1.9
244.20	11236	2081.4	2086.9	5.5	23.8	91.1	0.1440	1.8
244.17	11236	2078.4	2083.7	5.3	26.9	84.5	0.1589	2.1
243.70	11236	2078.4	2084.0	5.6	23.5	91.2	0.0347	1.8
243.10	11236	2077.3	2082.9	5.6	23.5	91.2	0.1425	1.8
243.07	11236	2074.3	2079.6	5.3	26.6	84.6	0.1578	2.1
242.60	11236	2074.3	2079.9	5.6	23.3	91.3	0.0328	1.8
242.00	11236	2073.2	2078.8	5.6	23.3	91.3	0.1417	1.8
241.97	11236	2070.2	2075.5	5.3	26.5	84.7	0.1578	2.1
241.50	11236	2070.2	2075.9	5.7	23.1	91.3	0.0324	1.8
241.06	11236	2069.9	2075.8	5.9	22.3	91.7	0.0180	1.7
240.56	11236	2069.5	2075.7	6.2	20.9	92.5	0.0135	1.5
239.70	11236	2068.8	2075.0	6.2	21.0	92.4	0.1535	1.5
239.67	11236	2065.8	2071.5	5.7	24.8	85.4	0.1702	1.9
239.20	11236	2065.8	2071.8	6.0	21.7	92.1	0.1535	1.6
239.17	11236	2062.8	2068.4	5.6	25.2	85.2	0.1474	1.9
238.60	11236	2062.8	2068.5	5.7	22.9	91.4	0.1474	1.7
238.57	11236	2059.8	2065.2	5.4	26.2	84.8	0.1567	2.1
238.10	11236	2059.8	2065.5	5.7	22.9	91.5	0.0324	1.7
237.60	11236	2058.9	2064.6	5.7	23.0	91.4	0.1423	1.8
237.57	11236	2055.9	2061.3	5.4	26.3	84.8	0.1567	2.1
237.10	11236	2055.9	2061.6	5.7	22.9	91.4	0.0326	1.7
236.50	11236	2054.8	2060.5	5.7	23.1	91.4	0.1342	1.8
236.46	11236	2050.8	2056.1	5.3	27.3	82.7	0.1489	2.2
236.00	11236	2050.8	2056.2	5.4	24.4	90.8	0.0359	1.9
235.50	11236	2049.9	2055.2	5.3	24.3	102.5	0.1370	2.0
235.46	11236	2045.9	2051.1	5.2	28.1	82.4	0.1511	2.2
235.00	11236	2045.9	2051.0	5.1	25.3	102.2	0.0411	2.1
234.50	11236	2045.0	2050.2	5.2	24.3	102.5	0.1483	2.0
234.47	11236	2042.0	2047.2	5.2	27.2	84.4	0.1578	2.2
234.00	11236	2042.0	2047.3	5.3	24.1	102.6	0.0365	2.0
233.50	11236	2041.1	2046.5	5.4	23.6	97.6	0.1453	1.9
233.47	11236	2038.1	2043.3	5.2	26.6	87.4	0.1578	2.1
233.00	11236	2038.1	2043.5	5.4	23.5	97.8	0.1495	1.9
232.96	11236	2034.1	2039.3	5.2	27.5	85.0	0.1500	2.2
232.50	11236	2034.1	2039.3	5.2	24.7	96.7	0.0354	2.0
229.80	11742	2029.2	2035.1	5.9	22.7	96.9	0.1354	1.7
229.78	11742	2027.2	2033.0	5.8	24.8	87.6	0.1438	1.9
229.30	11742	2027.2	2032.9	5.7	22.5	109.5	0.0271	1.8
226.80	11742	2022.7	2028.8	6.1	22.4	92.2	0.1584	1.7
226.77	11742	2019.7	2025.4	5.7	25.8	85.4	0.1713	2.0
226.30	11742	2019.7	2025.7	6.0	22.7	92.0	0.0296	1.7
223.30	11742	2014.3	2020.1	5.8	23.5	91.6	0.1417	1.8
223.27	11742	2011.3	2016.8	5.5	26.7	85.1	0.1567	2.1
222.80	11742	2011.3	2017.1	5.8	23.5	91.7	0.0322	1.8
219.00	11742	2004.5	2010.3	5.8	23.7	91.6	0.1421	1.8
218.97	11742	2001.5	2007.0	5.5	26.8	85.0	0.1578	2.1
218.50	11742	2001.5	2007.3	5.8	23.6	91.6	0.0330	1.8
216.50	11742	1998.4	2004.4	6.0	22.7	92.0	0.1585	1.7
216.47	11742	1995.4	2001.0	5.6	26.1	85.3	0.1649	2.0
216.00	11742	1995.4	2001.4	6.0	22.9	91.9	0.0229	1.7
215.00	11742	1993.6	1999.5	5.9	23.2	91.8	0.1455	1.7
214.97	11742	1990.6	1996.3	5.7	26.3	83.5	0.1592	2.0
214.50	11742	1990.6	1996.3	5.7	23.8	91.5	0.0317	1.8
214.00	11742	1989.7	1995.4	5.7	23.8	91.5	0.1433	1.8
213.97	11742	1986.7	1992.2	5.5	27.0	85.0	0.1589	2.1
213.50	11742	1986.7	1992.5	5.8	23.7	91.6	0.0345	1.8
213.00	11742	1985.8	1991.6	5.8	23.7	91.6	0.1423	1.8
212.97	11742	1982.8	1988.3	5.5	26.8	85.0	0.1578	2.1
212.50	11742	1982.8	1988.6	5.8	23.6	91.6	0.0301	1.8
212.06	11742	1982.0	1987.7	5.7	24.1	91.4	0.0207	1.8
211.66	11742	1981.3	1987.2	5.9	23.1	91.8	0.0203	1.7
211.00	11742	1980.1	1985.8	5.7	23.9	91.5	0.0173	1.8
210.00	11742	1978.3	1982.8	4.5	24.8	109.1	0.0265	2.1

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
209.00	11742	1976.5	1980.5	4.0	24.0	127.9	0.0315	2.2
208.50	11742	1975.6	1979.4	3.8	23.1	137.6	0.1545	2.1
208.46	11742	1971.6	1975.0	3.4	27.2	128.9	0.1755	2.6
208.00	11742	1971.6	1975.6	4.0	22.1	137.9	0.0520	2.0
207.50	11742	1970.7	1974.8	4.1	21.3	146.4	0.1473	1.9
207.47	11742	1967.7	1971.4	3.7	24.8	131.4	0.1652	2.3
207.00	11742	1967.7	1972.1	4.4	19.5	147.8	0.0404	1.7
206.00	11742	1965.9	1970.3	4.4	19.7	147.7	0.0175	1.7
205.00	11742	1964.1	1968.5	4.4	19.9	138.8	0.1423	1.7
204.97	11742	1961.1	1965.0	3.9	23.9	131.8	0.1610	2.2
204.50	11742	1961.1	1965.8	4.7	18.8	139.3	0.1777	1.6
204.47	11742	1958.1	1962.1	4.0	23.1	132.0	0.1766	2.1
204.00	11742	1958.1	1963.0	4.9	17.9	139.8	0.1933	1.5
203.97	11742	1955.1	1959.2	4.1	22.5	132.2	0.1911	2.0
203.50	11742	1955.1	1960.4	5.3	16.5	140.5	0.0305	1.3
203.00	11742	1954.2	1959.1	4.9	17.8	139.8	0.1560	1.4
202.97	11742	1951.2	1955.3	4.1	22.4	132.2	0.1755	2.0
202.50	11742	1951.2	1956.6	5.4	16.0	140.8	0.1922	1.2
202.47	11742	1948.2	1952.5	4.3	21.4	132.5	0.1879	1.9
202.00	11742	1948.2	1953.5	5.3	16.3	140.6	0.0263	1.3
201.50	11742	1947.3	1952.2	4.9	17.7	139.8	0.1550	1.4
201.47	11742	1944.3	1948.4	4.1	22.3	132.2	0.1766	2.0
201.00	11742	1944.3	1949.7	5.4	16.0	140.8	0.1933	1.2
200.97	11742	1941.3	1945.6	4.3	21.5	132.5	0.1879	1.9
200.50	11742	1941.3	1946.6	5.3	16.4	140.6	0.1713	1.3
200.47	11742	1938.3	1942.5	4.2	21.7	132.5	0.1723	1.9
200.00	11742	1938.3	1943.6	5.3	16.4	140.6	0.1723	1.3
199.97	11742	1935.3	1939.5	4.2	21.6	132.5	0.1723	1.9
199.50	11742	1935.3	1940.6	5.3	16.4	140.6	0.1723	1.3
199.46	11742	1931.3	1935.4	4.1	22.9	130.1	0.1750	2.0
199.00	11742	1931.3	1936.1	4.8	18.2	139.6	0.0325	1.5
198.00	11742	1929.5	1934.0	4.5	19.3	141.9	0.0155	1.6
197.00	11742	1927.7	1932.0	4.3	19.8	147.1	0.1413	1.7
196.97	11742	1924.7	1928.7	4.0	23.5	133.9	0.1610	2.1
196.50	11742	1924.7	1929.6	4.9	18.1	142.9	0.0367	1.5
196.00	11742	1923.8	1928.0	4.2	19.4	163.7	0.0190	1.8
195.00	11742	1922.0	1926.4	4.4	18.7	182.4	0.0210	1.8
194.00	11742	1920.2	1924.4	4.2	18.2	178.5	0.0195	1.7
193.00	11742	1918.4	1926.1	7.7	10.9	295.0	0.0175	1.0
192.00	11742	1916.6	1921.4	4.8	17.4	263.2	0.0260	1.9
191.00	11742	1913.1	1918.1	5.0	17.2	251.5	0.0340	1.8
190.00	11742	1910.3	1914.2	3.9	18.1	235.1	0.0360	1.9
189.00	11742	1906.0	1910.3	4.3	18.3	267.8	0.0395	2.1
188.00	11742	1903.0	1906.8	3.8	17.3	269.1	0.0375	1.9
187.00	11742	1900.0	1903.7	3.7	16.6	275.9	0.0330	1.8
186.00	11742	1897.6	1901.0	3.4	15.9	289.1	0.0305	1.8
185.00	11742	1894.3	1897.7	3.4	16.5	270.1	0.0305	1.8
184.00	11742	1891.2	1894.4	3.2	16.7	289.0	0.0315	1.9
183.00	11742	1888.0	1891.7	3.7	15.7	272.7	0.0290	1.7
182.00	11742	1884.0	1889.0	5.0	15.9	264.6	0.0315	1.7
181.00	11742	1882.0	1884.7	2.7	17.2	342.8	0.0370	2.2
180.00	11742	1879.0	1882.6	3.6	13.5	380.7	0.0300	1.6
179.00	11742	1876.3	1880.6	4.3	13.2	333.9	0.0220	1.4
178.00	11742	1873.5	1878.4	4.9	13.2	390.3	0.0220	1.5
177.00	11742	1872.0	1876.6	4.6	12.3	402.4	0.0195	1.4
176.00	11742	1870.0	1874.8	4.8	12.3	368.6	0.0180	1.3
175.00	11742	1867.7	1873.2	5.5	11.9	447.3	0.0205	1.4
174.00	11742	1866.0	1870.5	4.5	13.2	417.0	0.0185	1.6
173.00	11742	1864.0	1870.0	6.0	10.2	378.1	0.0160	1.0
172.00	11742	1860.0	1865.5	5.5	16.9	230.7	0.0225	1.7
171.00	11742	1857.4	1864.5	7.1	12.9	362.6	0.0235	1.4
170.00	11742	1854.1	1862.9	8.8	12.3	344.9	0.0190	1.3
169.00	11742	1852.0	1860.6	8.6	13.3	354.2	0.0245	1.5
168.00	11742	1851.0	1856.2	5.2	16.6	317.1	0.0305	2.0
167.00	11742	1847.0	1853.2	6.2	16.3	249.5	0.0300	1.7
166.00	11742	1846.0	1851.4	5.4	14.2	385.8	0.0275	1.7
165.00	11742	1844.0	1846.8	2.8	16.8	321.4	0.0280	2.0
164.90	11742	1843.6	1846.4	2.8	16.8	321.7	0.0380	2.0
164.10	11742	1841.8	1848.5	6.7	5.3	412.2	0.0268	0.4
164.00	11742	1840.7	1847.0	6.3	10.9	303.0	0.0107	1.0

100-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
163.00	11742	1838.0	1844.2	6.2	14.1	298.9	0.0205	1.5
162.00	11742	1835.6	1840.9	5.3	15.6	315.3	0.0280	1.8
161.00	11742	1833.1	1838.0	4.9	15.8	270.0	0.0270	1.7
160.00	11742	1829.0	1835.8	6.8	15.0	271.9	0.0245	1.6
159.00	11742	1827.6	1833.6	6.0	14.5	319.8	0.0260	1.6
158.00	11742	1826.1	1830.4	4.3	15.5	305.7	0.0275	1.7
157.00	11742	1823.1	1828.5	5.4	13.6	338.9	0.0245	1.5
156.00	11742	1821.4	1827.1	5.7	11.8	401.2	0.0230	1.3
*155.00	11742	1819.0	1823.8	4.8	14.0	448.5	0.0256	1.8
157.00	11742	1816.2	1820.9	4.7	12.3	459.7	0.0301	1.5
156.00	11742	1813.0	1817.7	4.7	13.3	500.4	0.0322	1.8
155.00	11742	1810.7	1815.2	4.5	11.5	571.4	0.0352	1.5
154.00	11742	1806.9	1811.1	4.2	14.1	445.1	0.0396	1.8
153.00	11742	1803.0	1808.3	5.3	12.4	554.8	0.0310	1.7
152.00	11742	1800.0	1806.4	6.4	10.2	652.2	0.0245	1.3
151.00	10579	1799.0	1803.6	4.6	11.3	611.2	0.0225	1.6
150.00	10579	1797.0	1801.4	4.4	10.5	566.7	0.0230	1.4
149.00	10579	1793.3	1798.9	5.6	10.9	583.4	0.0235	1.5
148.00	10579	1793.0	1796.6	3.6	10.6	602.4	0.0240	1.4
147.00	10579	1791.0	1794.0	3.0	11.3	513.1	0.0235	1.5
146.00	10579	1787.4	1791.4	4.0	11.8	459.9	0.0235	1.5
145.00	10579	1785.0	1788.5	3.5	13.0	385.1	0.0230	1.6
144.00	10579	1782.0	1786.0	4.0	13.3	306.7	0.0235	1.5
143.00	10579	1778.5	1782.9	4.4	14.8	308.7	0.0280	1.7
142.00	10579	1776.0	1780.4	4.4	13.5	390.7	0.0290	1.7
141.00	10579	1773.7	1778.5	4.8	11.7	410.7	0.0260	1.4
140.00	12814	1771.1	1775.8	4.7	13.0	434.9	0.0270	1.5
139.00	12814	1769.0	1773.1	4.1	13.4	448.1	0.0260	1.6
138.00	12814	1764.7	1770.9	6.2	12.7	418.7	0.0225	1.4
137.00	12814	1762.3	1768.8	6.5	12.7	436.6	0.0230	1.5
136.00	12814	1761.0	1766.3	5.3	12.8	516.8	0.0255	1.6
135.00	12814	1760.0	1764.1	4.1	11.7	562.2	0.0255	1.5
134.00	12814	1758.0	1761.7	3.7	11.6	617.0	0.0255	1.5
133.00	12814	1755.0	1759.4	4.4	10.4	755.0	0.0255	1.5
132.00	12814	1753.0	1757.1	4.1	10.4	750.0	0.0240	1.4
131.00	12814	1749.0	1754.5	5.5	10.9	728.0	0.0240	1.5
130.00	12814	1747.6	1752.0	4.4	11.1	633.8	0.0235	1.5
129.00	12814	1744.0	1749.4	5.4	11.9	541.5	0.0240	1.5
128.00	12814	1742.0	1746.6	4.6	12.7	480.6	0.0215	1.6
127.00	12814	1740.0	1745.8	5.8	9.8	497.2	0.0170	1.1
126.00	12814	1738.0	1742.9	4.9	13.6	390.0	0.0255	1.5
125.40	12814	1737.0	1739.5	2.5	17.1	307.4	0.1675	1.9
125.36	12814	1733.0	1735.1	2.1	22.5	280.6	0.1837	2.8
124.90	12814	1733.0	1736.1	3.1	14.8	294.8	0.1837	1.5
124.86	12814	1729.0	1731.4	2.4	21.1	258.1	0.1783	2.4
124.40	12814	1729.0	1733.0	4.0	12.7	268.7	0.0325	1.2
121.90	12814	1726.0	1730.2	4.2	14.1	232.4	0.1542	1.3
121.87	12814	1723.0	1726.4	3.4	19.7	201.8	0.1713	1.9
121.40	12814	1722.9	1726.9	4.0	15.1	230.4	0.0266	1.4
119.80	12814	1721.1	1725.8	4.7	13.7	216.4	0.1720	1.2
119.77	12814	1718.1	1721.9	3.8	19.6	185.0	0.1879	1.8
119.30	12814	1718.1	1722.7	4.6	14.1	215.8	0.0269	1.2
117.00	12814	1715.3	1719.6	4.3	15.2	213.9	0.1557	1.3
116.97	12814	1712.3	1716.0	3.7	20.2	184.3	0.1713	1.9
116.50	12814	1712.3	1716.5	4.2	15.5	213.4	0.0279	1.4
114.60	12814	1710.0	1714.5	4.5	14.6	214.8	0.1566	1.3
114.57	12814	1707.0	1710.7	3.7	19.9	184.6	0.1713	1.9
114.10	12814	1707.0	1711.3	4.3	15.1	214.0	0.0275	1.3
112.00	12814	1704.5	1708.9	4.4	14.7	214.6	0.1562	1.3
111.97	12814	1701.5	1705.2	3.7	20.0	184.6	0.1713	1.9
111.50	12814	1701.5	1705.8	4.3	15.2	213.9	0.0276	1.3
109.60	12814	1699.2	1703.6	4.4	14.8	214.5	0.1563	1.3
109.57	12814	1696.2	1699.9	3.7	20.0	184.5	0.1713	1.9
109.10	12814	1696.2	1700.5	4.3	15.4	213.7	0.0276	1.4
107.60	12814	1694.4	1698.8	4.4	14.7	214.7	0.1563	1.3
107.57	12814	1691.4	1695.1	3.7	20.0	184.6	0.1713	1.9
107.10	12814	1691.4	1695.7	4.3	15.2	213.9	0.0275	1.3
105.50	12814	1689.5	1693.9	4.4	14.7	214.7	0.1563	1.3
105.46	12814	1685.5	1689.1	3.6	21.3	178.6	0.1717	2.0
105.00	12814	1685.5	1689.3	3.8	17.6	210.7	0.0300	1.7

100-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
103.00	12814	1683.1	1687.8	4.7	13.8	216.2	0.1749	1.2
102.97	12814	1680.1	1683.7	3.6	19.9	188.3	0.1879	1.9
102.50	12814	1680.1	1684.7	4.6	14.1	215.7	0.1879	1.2
102.47	12814	1677.1	1680.6	3.5	20.0	188.2	0.1890	1.9
102.00	12814	1677.1	1681.9	4.8	13.5	216.8	0.1890	1.1
101.97	12814	1674.1	1677.7	3.6	19.8	188.3	0.1869	1.9
101.50	12814	1674.1	1678.9	4.8	13.7	216.5	0.1869	1.2
101.47	12814	1671.1	1674.7	3.6	19.8	188.3	0.1879	1.9
101.00	12814	1671.1	1675.8	4.7	13.9	216.1	0.0274	1.2
99.20	12185	1668.9	1672.9	4.0	15.8	211.9	0.0061	1.5
98.70	12185	1668.3	1671.8	3.5	18.4	208.7	0.0300	1.8
98.60	12185	1668.2	1672.4	4.2	15.1	212.9	0.1800	1.4
98.58	12185	1666.2	1669.7	3.5	18.9	191.5	0.1667	1.8
98.10	12185	1666.2	1670.7	4.5	13.8	215.0	0.0229	1.2
96.00	12185	1663.7	1667.9	4.2	14.8	213.3	0.1562	1.3
95.98	12185	1661.7	1665.2	3.5	18.7	191.6	0.1656	1.8
95.50	12185	1661.7	1666.4	4.7	13.0	216.4	0.0211	1.1
93.50	12185	1659.3	1663.5	4.2	15.1	212.9	0.1555	1.4
93.48	12185	1657.3	1660.8	3.5	18.9	191.5	0.1656	1.8
93.00	12185	1657.3	1661.8	4.5	13.8	215.0	0.0213	1.2
91.50	12185	1655.5	1659.7	4.2	14.7	213.5	0.1723	1.3
91.47	12185	1652.5	1655.8	3.3	20.2	187.4	0.1890	2.0
91.00	12185	1652.5	1656.9	4.4	14.0	214.6	0.0280	1.2
89.50	12185	1650.7	1655.0	4.3	14.7	213.5	0.1723	1.3
89.47	12185	1647.7	1651.0	3.3	20.1	187.4	0.1890	2.0
89.00	12185	1647.7	1652.3	4.6	13.5	215.5	0.0280	1.2
87.50	12185	1645.9	1650.1	4.2	14.7	213.5	0.1807	1.3
87.48	12185	1643.9	1647.5	3.6	18.7	191.6	0.1906	1.8
87.00	12185	1643.9	1648.5	4.6	13.6	215.3	0.0213	1.2
82.50	12185	1638.5	1642.6	4.1	15.3	212.5	0.1557	1.4
82.47	12185	1635.5	1638.8	3.3	20.5	187.2	0.1755	2.0
82.00	12185	1635.5	1640.1	4.6	13.6	215.4	0.0309	1.2
80.50	12185	1633.7	1637.9	4.2	14.7	213.5	0.1553	1.3
80.46	12185	1629.7	1632.9	3.2	21.5	183.8	0.1826	2.2
80.00	12185	1629.7	1633.6	3.9	15.9	211.7	0.0383	1.5
74.00	12185	1622.5	1627.1	4.6	13.6	215.4	0.1807	1.2
73.98	12185	1620.5	1624.2	3.7	18.1	192.1	0.1927	1.7
73.50	12185	1620.5	1625.0	4.5	13.7	215.1	0.0231	1.2
71.00	12185	1617.5	1621.7	4.2	15.0	213.1	0.1721	1.3
70.97	12185	1614.5	1617.8	3.3	20.3	187.3	0.1911	2.0
70.50	12185	1614.5	1618.9	4.4	14.2	214.2	0.0300	1.3
68.50	12185	1612.1	1616.3	4.2	14.7	213.5	0.1555	1.3
68.47	12185	1609.1	1612.4	3.3	20.2	187.4	0.1745	2.0
68.00	12185	1609.1	1613.5	4.4	14.1	214.5	0.0300	1.2
66.00	12185	1606.7	1610.9	4.2	14.8	213.4	0.1555	1.3
65.97	12185	1603.7	1607.0	3.3	20.2	187.4	0.1745	2.0
65.50	12185	1603.7	1608.3	4.6	13.5	215.5	0.0300	1.2
63.50	12185	1601.3	1605.5	4.2	14.9	213.2	0.1555	1.3
63.47	12185	1598.3	1601.6	3.3	20.3	187.3	0.1734	2.0
63.00	12185	1598.3	1602.7	4.4	14.0	214.6	0.0292	1.2
61.00	12185	1595.9	1600.1	4.2	14.8	213.4	0.1558	1.3
60.97	12185	1592.9	1596.2	3.3	20.2	187.4	0.1745	2.0
60.50	12185	1592.9	1597.5	4.6	13.6	215.4	0.0300	1.2
58.50	12185	1590.5	1594.7	4.2	14.9	213.2	0.1680	1.3
58.46	12185	1586.0	1589.1	3.1	22.2	182.2	0.1962	2.3
58.00	12185	1586.0	1589.8	3.8	16.8	210.5	0.0399	1.6
53.00	12185	1580.0	1584.7	4.7	13.1	216.3	0.1562	1.1
52.97	12185	1577.0	1580.5	3.5	19.5	187.8	0.1734	1.9
52.50	12185	1577.0	1581.3	4.3	14.3	214.1	0.0290	1.3
50.00	12185	1574.0	1578.2	4.2	14.7	213.4	0.1556	1.3
49.97	12185	1571.0	1574.3	3.3	20.2	187.4	0.1745	2.0
49.50	12185	1571.0	1575.5	4.5	13.8	215.6	0.0298	1.2
48.00	12185	1569.2	1573.4	4.2	14.7	214.1	0.0153	1.3
47.90	12185	1569.0	1573.2	4.2	14.9	213.8	0.0150	1.3
46.50	12185	1567.4	1572.6	5.2	12.9	185.2	0.0108	1.0
44.70	13633	1565.2	1571.8	6.6	8.8	246.4	0.0058	0.6
44.60	15265	1565.2	1571.1	5.9	11.0	244.6	0.0060	0.8
44.60	15265	1565.1	1571.1	6.0	10.8	245.0	0.0080	0.8
43.60	15265	1564.3	1569.9	5.6	11.5	243.9	0.0095	0.9
43.30	15265	1564.0	1569.9	5.9	11.0	244.6	0.0080	0.8

100-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
41.80	15265	1562.6	1568.3	5.7	12.6	255.1	0.0073	1.0
40.30	15265	1561.2	1567.2	6.0	12.1	312.1	0.0090	1.1
38.80	15265	1559.8	1566.0	6.2	11.6	323.4	0.0113	1.0
37.30	15265	1558.3	1563.0	4.7	14.4	333.9	0.0143	1.5
35.80	15265	1554.7	1561.1	6.4	13.1	324.3	0.0160	1.2
34.30	15265	1552.7	1558.1	5.4	14.5	379.3	0.0203	1.6
32.80	15265	1549.6	1554.9	5.3	13.5	490.0	0.0217	1.6
31.30	15265	1547.3	1552.8	5.5	11.0	500.0	0.0167	1.2
29.80	15265	1544.6	1550.7	6.1	11.7	470.0	0.0143	1.2
28.30	15265	1542.6	1548.2	5.6	12.3	450.0	0.0133	1.3
26.80	15265	1539.0	1547.0	8.0	10.4	410.0	0.0120	1.0
25.30	15265	1536.2	1544.4	8.2	12.8	390.0	0.0120	1.3
23.80	15265	1534.7	1543.2	8.5	11.5	380.0	0.0117	1.0
22.30	15265	1533.0	1540.9	7.9	12.8	390.0	0.0113	1.3
20.80	15265	1531.2	1539.9	8.7	11.1	394.0	0.0120	1.0
19.30	15265	1530.0	1536.9	6.9	13.8	366.5	0.0143	1.4
17.80	15265	1527.8	1536.2	8.4	8.7	338.0	0.0110	0.7
16.30	15265	1525.6	1534.0	8.4	12.8	244.0	0.0065	1.0
15.30	15265	1524.1	1532.9	8.8	13.8	188.6	0.0095	1.0
14.80	15265	1523.2	1531.2	8.0	16.0	183.8	0.0498	1.2
14.72	15265	1523.2	1528.0	4.8	20.2	168.1	0.0737	1.7
14.62	15265	1518.2	1522.6	4.4	25.8	144.1	0.0374	2.2
14.01	15265	1518.2	1522.1	3.9	22.7	182.8	0.0158	2.1
13.30	15265	1517.2	1528.2	11.0	7.2	214.0	0.0175	0.4
11.80	15265	1515.1	1528.4	13.3	4.9	251.0	0.0105	0.2
10.80	15265	1513.7	1528.3	14.6	5.3	206.0	0.0022	0.3
10.10	15265	1512.7	1528.4	15.7	5.0	206.0	0.0007	0.2
10.00	15265	1510.0	1528.4	18.4	4.4	201.0	0.0000	0.2
8.80	15265	1509.7	1528.4	18.7	4.1	208.0	0.0003	0.2
7.30	15265	1509.2	1528.4	19.2	4.1	204.0	0.0003	0.2
5.80	15265	1508.7	1528.4	19.7	4.0	204.0	0.0000	0.2
4.30	15265	1508.3	1528.3	20.0	3.9	204.0	0.0000	0.2
2.80	15265	1507.8	1528.3	20.5	3.8	204.0	0.0000	0.2
2.30	15265	1507.7	1528.3	20.6	3.9	201.0	0.0000	0.2
1.80	15265	1507.5	1528.3	20.8	4.0	193.0	0.0010	0.2
1.30	15265	1507.3	1528.3	21.0	4.2	181.0	0.0010	0.2
0.80	15265	1507.2	1528.2	21.0	4.5	172.0	0.0000	0.2
0.30	15265	1507.0	1528.1	21.1	5.1	150.0	0.0000	0.2
0.00	15265	1507.0	1528.1	21.1	5.1	150.0	0.0000	0.2

* Beginning of upstream control line stationing

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
316.50	4823	2309.6	2313	3.4	7.3	425.2	0.0137	1
313.50	4823	2300.1	2302.4	2.3	14.5	369.5	0.0292	2.7
310.50	4823	2291.9	2295.4	3.5	8.1	352.6	0.0280	1.1
307.50	4823	2282.5	2285.7	3.2	14.4	241.3	0.0318	2.2
304.50	4823	2273.5	2275.8	2.3	9.8	361.2	0.0320	1.5
301.50	4823	2262.9	2267.6	4.7	11.9	209.4	0.0257	1.5
298.50	4823	2256.2	2259.6	3.4	12.2	218.1	0.0277	1.6
295.50	4823	2247.4	2251	3.6	11.5	274	0.0280	1.6
292.50	4823	2237.9	2243.2	5.3	11.3	231.3	0.0275	1.5
289.50	9324	2228.6	2234.2	5.6	12.4	451.1	0.0335	1.7
288.00	9324	2224.2	2227.3	3.1	15	365.5	0.0397	2
286.50	9324	2217.7	2222.4	4.7	12	490.7	0.0352	1.7
284.15	9324	2210.8	2215.9	5.1	11	528.4	0.0278	1.5
280.30	9324	2200.8	2205.3	4.5	12.5	368.5	0.0222	1.6
277.15	9324	2194.6	2198.9	4.3	13.9	180.1	0.0369	1.3
276.95	9324	2188.6	2191.7	3.1	24.2	132.3	0.0498	2.5
275.40	9324	2183.9	2188.3	4.4	19	127.9	0.0334	1.7
272.45	9324	2174.9	2178	3.1	24.5	128.5	0.0312	2.5
272.35	9324	2174.2	2177.4	3.2	24.8	117.9	0.0638	2.4
271.95	9324	2173.5	2177.6	4.1	19.3	117.9	0.0488	1.7
271.75	9324	2173	2176.9	3.9	20.1	118	0.2550	1.8
271.74	9324	2169	2172	3.0	26.3	118	0.2571	2.7
271.60	9324	2168.5	2171.5	3.0	26.6	118.1	0.0196	2.7
271.40	9324	2167.8	2170.7	2.9	27	118.1	0.0205	2.8
270.65	9324	2165.3	2170.5	5.2	25.8	71.5	0.0180	2
270.55	9324	2165	2169.9	4.9	26.3	73.3	0.0153	2.1
269.80	9324	2163	2168.6	5.6	27	64.2	0.0120	2
269.65	9324	2162.8	2167.8	5.0	27.6	68	0.0117	2.2
269.55	9324	2162.7	2167.1	4.4	28.2	78.9	0.0115	2.4
268.00	9324	2160.7	2165.1	4.4	28.2	78.9	0.1315	2.4
267.96	9324	2156.7	2161.2	4.5	31.5	70.9	0.1370	2.7
267.50	9324	2156.7	2160.8	4.1	30.6	78.2	0.0262	2.7
266.20	9324	2154.4	2158.2	3.8	29.5	87.5	0.1476	2.7
266.17	9324	2151.4	2155.2	3.8	31.8	81.5	0.1801	3
265.70	9324	2151.4	2155.6	4.2	26.6	88.3	0.1801	2.3
265.67	9324	2148.4	2152.5	4.1	29.2	82.2	0.1695	2.6
265.20	9324	2148.4	2152.9	4.5	24.6	89	0.0497	2.1
264.20	9324	2146.6	2151.4	4.8	23	89.6	0.0240	1.9
262.30	9324	2143.2	2148.2	5.0	21.9	90	0.1355	1.8
262.26	9324	2139.2	2143.8	4.6	26.3	81.3	0.1522	2.2
261.80	9324	2139.2	2144	4.8	22.9	89.6	0.0379	1.9
260.50	9324	2136.8	2141.7	4.9	22.2	93.9	0.1441	1.8
260.47	9324	2133.8	2138.5	4.7	25.5	83.3	0.1589	2.1
260.00	9324	2133.8	2138.8	5.0	21.6	94.1	0.0347	1.8
257.10	9324	2128.6	2133.7	5.1	21.4	94.1	0.1425	1.8
257.07	9324	2125.6	2130.4	4.8	24.9	83.5	0.1567	2.1
256.60	9324	2125.6	2130.2	4.6	22.2	106.7	0.0345	2
256.33	9324	2125.1	2129.6	4.5	22.2	114.8	0.0263	2
256.00	9324	2124.5	2129.8	5.3	20.3	98.5	0.0252	1.7
255.80	9324	2124.2	2129.5	5.3	20.1	98.6	0.1475	1.6
255.76	9324	2120.2	2125.1	4.9	24.9	81.7	0.1538	2.1
255.30	9324	2120.2	2124.9	4.7	23.1	98.2	0.0293	2
254.80	9324	2119.3	2124.1	4.8	22.3	101	0.0249	1.9
254.00	9324	2117.8	2122.8	5.0	21.6	101.8	0.1452	1.9
253.97	9324	2114.8	2119.5	4.7	25	83.5	0.1578	2.1
253.50	9324	2114.8	2119.8	5.0	21.3	102.2	0.0345	1.8
252.80	9324	2113.6	2118.7	5.1	20.9	100.5	0.1433	1.7
252.77	9324	2110.6	2115.4	4.8	24.4	83.7	0.1567	2
252.30	9324	2110.6	2115.7	5.1	20.9	100.4	0.0328	1.7
251.50	9324	2109.1	2114.2	5.1	21	100.4	0.1427	1.8
251.47	9324	2106.1	2110.9	4.8	24.5	83.7	0.1567	2
251.00	9324	2106.1	2111.2	5.1	21	100.4	0.0323	1.8
250.10	9324	2104.5	2109.6	5.1	20.9	102.7	0.1464	1.8
250.06	9324	2100.5	2105.3	4.8	25.4	81.5	0.1625	2.1
249.60	9324	2100.5	2105.3	4.8	22.3	101	0.0364	1.9
248.90	9324	2099.2	2104.2	5.0	21.6	101.8	0.1448	1.9
248.87	9324	2096.2	2100.9	4.7	25	83.5	0.1578	2.1
248.40	9324	2096.2	2101.2	5.0	21.3	102.2	0.0345	1.8
247.80	9324	2095.2	2100.3	5.1	20.8	102.8	0.1433	1.8
247.77	9324	2092.2	2097.1	4.9	24.3	83.7	0.1567	2

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
247.30	9324	2092.2	2097.3	5.1	20.9	102.7	0.0327	1.8
246.60	9324	2090.9	2096	5.1	20.9	102.6	0.1426	1.8
246.57	9324	2087.9	2092.8	4.9	24.4	83.7	0.1567	2
246.10	9324	2087.9	2093.2	5.3	20.6	90.7	0.0313	1.6
245.40	9324	2086.6	2091.8	5.2	21.1	90.4	0.1454	1.7
245.36	9324	2082.6	2087.3	4.7	25.7	81.5	0.1625	2.1
244.90	9324	2082.6	2087.5	4.9	22.5	89.8	0.0350	1.8
244.20	9324	2081.4	2086.4	5.0	22	90	0.1433	1.8
244.17	9324	2078.4	2083.1	4.7	25.4	83.3	0.1589	2.1
243.70	9324	2078.4	2083.5	5.1	21.5	90.2	0.0347	1.7
243.10	9324	2077.3	2082.4	5.1	21.6	90.2	0.1425	1.7
243.07	9324	2074.3	2079	4.7	25.1	83.4	0.1589	2.1
242.60	9324	2074.3	2079.5	5.2	21.2	90.3	0.0339	1.7
242.00	9324	2073.2	2078.3	5.1	21.4	90.2	0.1417	1.7
241.97	9324	2070.2	2074.9	4.7	24.9	83.5	0.1578	2.1
241.50	9324	2070.2	2075.4	5.2	21.1	90.4	0.0313	1.7
241.06	9324	2069.9	2075.3	5.4	20.3	90.8	0.0158	1.6
240.56	9324	2069.5	2075.3	5.8	18.9	91.5	0.0125	1.4
239.70	9324	2068.8	2074.5	5.7	19.2	91.4	0.1535	1.5
239.67	9324	2065.8	2070.9	5.1	23.3	84.1	0.1713	1.9
239.20	9324	2065.8	2071.4	5.6	19.5	91.2	0.1713	1.5
239.17	9324	2062.8	2067.8	5.0	23.6	84	0.1632	1.9
238.60	9324	2062.8	2068	5.2	21	90.4	0.1632	1.7
238.57	9324	2059.8	2064.6	4.8	24.6	83.6	0.1734	2
238.10	9324	2059.8	2065.1	5.3	20.8	90.5	0.0314	1.6
237.60	9324	2058.9	2064.1	5.2	21	90.4	0.1580	1.7
237.57	9324	2055.9	2060.7	4.8	24.7	83.6	0.1734	2
237.10	9324	2055.9	2061.1	5.2	20.9	90.5	0.0317	1.7
236.50	9324	2054.8	2060	5.2	21.1	90.4	0.1458	1.7
236.46	9324	2050.8	2055.5	4.7	25.8	81.4	0.1625	2.2
236.00	9324	2050.8	2055.7	4.9	22.5	89.8	0.0350	1.8
235.50	9324	2049.9	2054.7	4.8	22.3	101.6	0.1475	1.9
235.46	9324	2045.9	2050.5	4.6	26.5	81.2	0.1658	2.2
235.00	9324	2045.9	2050.6	4.7	23	101.4	0.0413	2
234.50	9324	2045	2049.8	4.8	22.2	101.7	0.1463	1.9
234.47	9324	2042	2046.7	4.7	25.4	83.3	0.1589	2.1
234.00	9324	2042	2046.9	4.9	21.7	101.9	0.0355	1.9
233.50	9324	2041.1	2046	4.9	21.5	95.8	0.1600	1.8
233.47	9324	2038.1	2042.8	4.7	25	86	0.1745	2.1
233.00	9324	2038.1	2043.1	5.0	21.3	96.1	0.1495	1.8
232.96	9324	2034.1	2038.7	4.6	25.8	83.6	0.1500	2.2
232.50	9324	2034.1	2038.8	4.7	22.6	94.9	0.0350	1.9
229.80	9538	2029.2	2034.4	5.2	21.1	95.5	0.1600	1.7
229.78	9538	2027.2	2032.2	5.0	23.6	86	0.1719	1.9
229.30	9538	2027.2	2032.5	5.3	20	108.6	0.0297	1.7
226.80	9538	2022.7	2028.1	5.4	20.7	90.8	0.1578	1.6
226.77	9538	2019.7	2024.7	5.0	24.4	83.9	0.1723	2
226.30	9538	2019.7	2025.1	5.4	20.7	90.8	0.0307	1.6
223.30	9538	2014.3	2019.4	5.1	21.9	90.3	0.1417	1.8
223.27	9538	2011.3	2016.1	4.8	25.3	83.6	0.1578	2.1
222.80	9538	2011.3	2016.5	5.2	21.5	90.4	0.0332	1.7
219.00	9538	2004.5	2009.6	5.1	22	90.2	0.1420	1.8
218.97	9538	2001.5	2006.3	4.8	25.4	83.5	0.1589	2.1
218.50	9538	2001.5	2006.7	5.2	21.6	90.4	0.0338	1.7
216.50	9538	1998.4	2003.7	5.3	21	90.7	0.1582	1.7
216.47	9538	1995.4	2000.3	4.9	24.6	83.8	0.1734	2
216.00	9538	1995.4	2000.7	5.3	20.9	90.7	0.0314	1.6
215.00	9538	1993.6	1998.8	5.2	21.3	90.5	0.1413	1.7
214.97	9538	1990.6	1995.6	5.0	24.8	82	0.1546	2
214.50	9538	1990.6	1995.7	5.1	21.8	90.3	0.0303	1.7
214.00	9538	1989.7	1994.8	5.1	21.8	90.3	0.1423	1.7
213.97	9538	1986.7	1991.5	4.8	25.3	83.6	0.1578	2.1
213.50	9538	1986.7	1991.9	5.2	21.5	90.4	0.0335	1.7
213.00	9538	1985.8	1991	5.2	21.6	90.4	0.1423	1.7
212.97	9538	1982.8	1987.6	4.8	25.1	83.6	0.1578	2.1
212.50	9538	1982.8	1988.1	5.3	21.3	90.5	0.0301	1.7
212.06	9538	1982	1987.1	5.1	21.9	90.2	0.0194	1.8
211.66	9538	1981.3	1986.6	5.3	21	90.7	0.0198	1.7
211.00	9538	1980.1	1985.2	5.1	21.9	90.2	0.0176	1.8
210.00	9538	1978.3	1982.3	4.0	22.8	108	0.0260	2

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
209.00	9538	1976.5	1980	3.5	21.9	127.1	0.0305	2.1
208.50	9538	1975.6	1979	3.4	21	136.8	0.1660	2
208.46	9538	1971.6	1974.6	3.0	25.6	128	0.1870	2.6
208.00	9538	1971.6	1975.2	3.6	19.9	137.2	0.0480	1.9
207.50	9538	1970.7	1974.4	3.7	19.3	137.4	0.1610	1.8
207.47	9538	1967.7	1970.9	3.2	23.3	130.4	0.1809	2.3
207.00	9538	1967.7	1971.8	4.1	17.2	146.5	0.0384	1.6
206.00	9538	1965.9	1969.9	4.0	17.9	137.9	0.0160	1.6
205.00	9538	1964.1	1968	3.9	18.5	137.8	0.1418	1.7
204.97	9538	1961.1	1964.4	3.3	22.7	130.6	0.1610	2.2
204.50	9538	1961.1	1965.3	4.2	17	138.4	0.1943	1.5
204.47	9538	1958.1	1961.6	3.5	21.7	130.9	0.1933	2.1
204.00	9538	1958.1	1962.9	4.8	14.9	139.6	0.1933	1.2
203.97	9538	1955.1	1958.7	3.6	20.6	131.3	0.1879	1.9
203.50	9538	1955.1	1959.9	4.8	14.7	139.6	0.0273	1.2
203.00	9538	1954.2	1958.5	4.3	16.4	138.7	0.1560	1.4
202.97	9538	1951.2	1954.7	3.5	21.4	131	0.1766	2
202.50	9538	1951.2	1956.1	4.9	14.3	139.9	0.1933	1.2
202.47	9538	1948.2	1951.9	3.7	20.4	131.3	0.1858	1.9
202.00	9538	1948.2	1952.8	4.6	15.2	139.3	0.0251	1.3
201.50	9538	1947.3	1951.6	4.3	16.6	138.6	0.1727	1.4
201.47	9538	1944.3	1947.8	3.5	21.5	131	0.1922	2.1
201.00	9538	1944.3	1949.1	4.8	14.7	139.6	0.1922	1.2
200.97	9538	1941.3	1944.9	3.6	20.5	131.3	0.1869	1.9
200.50	9538	1941.3	1945.9	4.6	15.4	139.2	0.1869	1.3
200.47	9538	1938.3	1941.9	3.6	20.8	131.2	0.1901	2
200.00	9538	1938.3	1943.2	4.9	14.5	139.7	0.1901	1.2
199.97	9538	1935.3	1939	3.7	20.4	131.3	0.1858	1.9
199.50	9538	1935.3	1939.9	4.6	15.3	139.2	0.1816	1.3
199.46	9538	1931.3	1934.7	3.4	22.1	128.9	0.1886	2.1
199.00	9538	1931.3	1935.6	4.3	16.7	138.5	0.0336	1.4
198.00	9538	1929.5	1933.4	3.9	17.9	140.5	0.0160	1.6
197.00	9538	1927.7	1931.5	3.8	18.4	145.1	0.1418	1.7
196.97	9538	1924.7	1928.1	3.4	22.4	131.7	0.1621	2.2
196.50	9538	1924.7	1929.1	4.4	16.2	141.2	0.0367	1.4
196.00	9538	1923.8	1927.6	3.8	17.7	159.9	0.0170	1.7
195.00	9538	1922	1926	4.0	17.2	174.7	0.0200	1.7
194.00	9538	1920.2	1923.9	3.7	17	171.8	0.0175	1.7
193.00	9538	1918.4	1925.1	6.7	11.3	213	0.0150	1
192.00	9538	1916.6	1920.9	4.3	17	223.8	0.0265	1.9
191.00	9538	1913.1	1917.7	4.6	16.3	244.4	0.0355	1.9
190.00	9538	1910.3	1913.9	3.6	16.9	230.7	0.0365	1.9
189.00	9538	1906	1910	4.0	17	256.1	0.0390	2
188.00	9538	1903	1906.5	3.5	16	266	0.0375	1.9
187.00	9538	1900	1903.4	3.4	15.2	272.3	0.0325	1.8
186.00	9538	1897.6	1900.7	3.1	14.6	286.5	0.0300	1.7
185.00	9538	1894.3	1897.4	3.1	15.4	263.4	0.0310	1.8
184.00	9538	1891.2	1894.1	2.9	15.4	284	0.0315	1.8
183.00	9538	1888	1891.4	3.4	14.5	267.3	0.0285	1.6
182.00	9538	1884	1888.6	4.6	14.9	249.8	0.0310	1.6
181.00	9538	1882	1884.5	2.5	16.1	339.3	0.0370	2.1
180.00	9538	1879	1882.4	3.4	12.2	375	0.0295	1.5
179.00	9538	1876.3	1880.2	3.9	12.4	329.8	0.0210	1.4
178.00	9538	1873.5	1878.1	4.6	12.3	357.8	0.0210	1.5
177.00	9538	1872	1876.3	4.3	11.6	376.9	0.0200	1.4
176.00	9538	1870	1874.5	4.5	11.5	354.2	0.0185	1.3
175.00	9538	1867.7	1872.9	5.2	10.8	440.4	0.0195	1.3
174.00	9538	1866	1870.2	4.2	12.4	410	0.0185	1.6
173.00	9538	1864	1869.5	5.5	9.8	337.4	0.0170	1
172.00	9538	1860	1865	5.0	16.4	223.6	0.0235	1.8
171.00	9538	1857.4	1864.3	6.9	11.3	358.2	0.0230	1.3
170.00	9538	1854.1	1862.5	8.4	11.7	338.1	0.0180	1.3
169.00	9538	1852	1860.3	8.3	12.4	345.3	0.0245	1.5
168.00	9538	1851	1855.9	4.9	15.8	298.2	0.0305	2
167.00	9538	1847	1852.7	5.7	15.7	225.6	0.0300	1.7
166.00	9538	1846	1851.1	5.1	12.9	373.1	0.0310	1.6
165.00	9538	1844	1846.4	2.4	16.1	305.1	0.0365	2
164.90	9538	1843.6	1846	2.4	16	305.5	0.0313	2
164.10	9538	1841.8	1847.9	6.1	4.9	407.7	0.0163	0.4
164.00	9538	1840.7	1846.5	5.8	10.2	295.1	0.0125	1

50-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
163.00	9538	1838	1843.8	5.8	13.2	286.3	0.0210	1.5
162.00	9538	1835.6	1840.6	5.0	14.7	309.3	0.0280	1.8
161.00	9538	1833.1	1837.6	4.5	14.7	266.5	0.0275	1.7
160.00	9538	1829	1835.5	6.5	13.7	268.4	0.0245	1.5
159.00	9538	1827.6	1833.3	5.7	13.3	313.2	0.0255	1.6
158.00	9538	1826.1	1830.1	4.0	14.5	301.3	0.0275	1.7
157.00	9538	1823.1	1828.2	5.1	12.4	328.5	0.0230	1.4
156.00	9538	1821.4	1826.6	5.2	11.5	336.1	0.0215	1.3
*155.00	9538	1819	1823.5	4.5	13.3	419.6	0.0230	1.8
157.00	9538	1816.2	1820.7	4.5	11.5	436.4	0.0250	1.5
156.00	9538	1813	1817.5	4.5	12.4	488.5	0.0280	1.7
155.00	9538	1810.7	1815	4.3	10.9	508	0.0340	1.5
154.00	9538	1806.9	1810.7	3.8	14.2	351.8	0.0387	1.8
153.00	9538	1803	1808.1	5.1	11.9	502.9	0.0315	1.7
152.00	9538	1800	1806.2	6.2	9.5	620.4	0.0255	1.3
151.00	8751	1799	1803.5	4.5	10.6	593	0.0245	1.6
150.00	8751	1797	1801.1	4.1	10	532.6	0.0245	1.4
149.00	8751	1793.3	1798.7	5.4	10.3	567.4	0.0240	1.5
148.00	8751	1793	1796.4	3.4	9.8	591	0.0240	1.4
147.00	8751	1791	1793.7	2.7	10.7	491.1	0.0240	1.5
146.00	8751	1787.4	1791.2	3.8	11.2	433.8	0.0245	1.5
145.00	8751	1785	1788.2	3.2	12.3	376	0.0245	1.6
144.00	8751	1782	1785.7	3.7	12.7	295.7	0.0250	1.5
143.00	8751	1778.5	1782.6	4.1	14	301.2	0.0280	1.7
142.00	8751	1776	1780.1	4.1	12.8	345.5	0.0275	1.6
141.00	8751	1773.7	1778.2	4.5	10.9	409.8	0.0240	1.4
140.00	10496	1771.1	1775.5	4.4	12.3	429.2	0.0245	1.5
139.00	10496	1769	1772.8	3.8	12.4	446	0.0250	1.6
138.00	10496	1764.7	1770.7	6.0	11.8	414.2	0.0225	1.4
137.00	10496	1762.3	1768.5	6.2	11.8	425.5	0.0225	1.4
136.00	10496	1761	1766.1	5.1	11.8	510.6	0.0250	1.6
135.00	10496	1760	1763.8	3.8	10.9	538.4	0.0250	1.4
134.00	10496	1758	1761.5	3.5	10.8	603	0.0250	1.5
133.00	10496	1755	1759.2	4.2	9.6	777.4	0.0250	1.4
132.00	10496	1753	1756.8	3.8	9.8	738.5	0.0240	1.4
131.00	10496	1749	1754.3	5.3	10.1	712.1	0.0245	1.5
130.00	10496	1747.6	1751.7	4.1	10.5	616.3	0.0245	1.4
129.00	10496	1744	1749.1	5.1	11.2	525.7	0.0240	1.5
128.00	10496	1742	1746.4	4.4	12	469.8	0.0210	1.5
127.00	10496	1740	1745.5	5.5	9	479.6	0.0175	1
126.00	10496	1738	1742.5	4.5	13.1	390	0.0235	1.6
125.40	10496	1737	1739.1	2.1	16.4	305.3	0.1525	2
125.36	10496	1733	1734.8	1.8	21.9	278.7	0.1755	2.9
124.90	10496	1733	1735.7	2.7	13.8	284.6	0.1755	1.5
124.86	10496	1729	1731.1	2.1	20.5	256	0.1690	2.5
124.40	10496	1729	1732.8	3.8	11.2	267.1	0.0359	1.1
121.90	10496	1726	1729.6	3.6	13.6	228.9	0.1544	1.3
121.87	10496	1723	1725.9	2.9	19.2	198.8	0.1734	2
121.40	10496	1722.9	1726.5	3.6	13.6	228.3	0.0281	1.3
119.80	10496	1721.1	1725.2	4.1	13	212.8	0.1714	1.2
119.77	10496	1718.1	1721.3	3.2	19	181.7	0.1879	1.9
119.30	10496	1718.1	1722.3	4.2	13	213	0.0269	1.2
117.00	10496	1715.3	1719.1	3.8	14.3	210.8	0.1557	1.3
116.97	10496	1712.3	1715.4	3.1	19.6	181.2	0.1745	2
116.50	10496	1712.3	1716.3	4.0	13.5	212	0.0303	1.2
114.60	10496	1710	1713.9	3.9	14	211.3	0.1558	1.3
114.57	10496	1707	1710.1	3.1	19.4	181.4	0.1745	2
114.10	10496	1707	1711.2	4.2	12.7	213.4	0.0297	1.1
112.00	10496	1704.5	1708.3	3.8	14.2	211	0.1552	1.3
111.97	10496	1701.5	1704.6	3.1	19.5	181.3	0.1745	2
111.50	10496	1701.5	1705.5	4.0	13.4	212.2	0.0303	1.2
109.60	10496	1699.2	1703.1	3.9	14	211.3	0.1558	1.3
109.57	10496	1696.2	1699.3	3.1	19.4	181.4	0.1734	2
109.10	10496	1696.2	1700.3	4.1	13.1	212.6	0.0291	1.2
107.60	10496	1694.4	1698.3	3.9	13.9	211.4	0.1557	1.3
107.57	10496	1691.4	1694.5	3.1	19.4	181.4	0.1734	2
107.10	10496	1691.4	1695.6	4.2	12.9	213.1	0.0290	1.2
105.50	10496	1689.5	1693.4	3.9	14	211.3	0.1556	1.3
105.46	10496	1685.5	1688.6	3.1	20.7	175.3	0.1750	2.2
105.00	10496	1685.5	1688.9	3.4	16	208.5	0.0328	1.6

50-Yr Hydraulics

Section- ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
103.00	10496	1683.1	1687.3	4.2	12.7	213.4	0.1744	1.1
102.97	10496	1680.1	1683.1	3.0	19.1	186.2	0.1879	2
102.50	10496	1680.1	1684.4	4.3	12.4	213.9	0.1879	1.1
102.47	10496	1677.1	1680.2	3.1	19.1	186.2	0.1879	2
102.00	10496	1677.1	1681.3	4.2	12.8	213.3	0.1713	1.1
101.97	10496	1674.1	1677.1	3.0	19.2	186.2	0.1713	2
101.50	10496	1674.1	1678.2	4.1	13	212.8	0.1879	1.2
101.47	10496	1671.1	1674.1	3.0	19.3	186.1	0.1890	2
101.00	10496	1671.1	1675.4	4.3	12.6	213.6	0.0279	1.1
99.20	9821	1668.9	1672.3	3.4	14.9	208.7	0.0056	1.5
98.70	9821	1668.3	1671.3	3.0	17.3	198	0.0450	1.8
98.60	9821	1668.2	1671.8	3.6	14	209.9	0.1700	1.3
98.58	9821	1666.2	1669.1	2.9	18.3	188.9	0.1427	1.9
98.10	9821	1666.2	1670.2	4.0	12.6	212.2	0.0232	1.2
96.00	9821	1663.7	1667.4	3.7	13.8	210.1	0.1805	1.3
95.98	9821	1661.7	1664.7	3.0	18	189.2	0.1906	1.9
95.50	9821	1661.7	1665.7	4.0	12.6	212.1	0.0211	1.2
93.50	9821	1659.3	1663	3.7	13.8	210.1	0.1805	1.3
93.48	9821	1657.3	1660.3	3.0	18	189.2	0.1906	1.9
93.00	9821	1657.3	1661.3	4.0	12.6	212.1	0.0213	1.2
91.50	9821	1655.5	1659.2	3.7	13.7	210.3	0.1557	1.3
91.47	9821	1652.5	1655.3	2.8	19.4	185.3	0.1745	2.1
91.00	9821	1652.5	1656.6	4.1	12.2	212.8	0.0295	1.1
89.50	9821	1650.7	1654.4	3.7	13.8	210.2	0.1717	1.3
89.47	9821	1647.7	1650.5	2.8	19.5	185.2	0.1911	2.1
89.00	9821	1647.7	1651.8	4.1	12.2	212.9	0.0295	1.1
87.50	9821	1645.9	1649.6	3.7	13.8	210.2	0.1800	1.3
87.48	9821	1643.9	1646.9	3.0	18	189.2	0.1906	1.9
87.00	9821	1643.9	1647.9	4.0	12.6	212.1	0.0214	1.2
82.50	9821	1638.5	1642.1	3.6	14.3	209.5	0.1558	1.4
82.47	9821	1635.5	1638.3	2.8	19.7	185.1	0.1745	2.1
82.00	9821	1635.5	1639.5	4.0	12.5	212.2	0.0301	1.2
80.50	9821	1633.7	1637.4	3.7	13.7	210.3	0.1557	1.3
80.46	9821	1629.7	1632.4	2.7	20.8	181.9	0.1793	2.3
80.00	9821	1629.7	1633.3	3.6	14.3	209.5	0.0355	1.4
74.00	9821	1622.5	1626.4	3.9	12.9	211.7	0.1812	1.2
73.98	9821	1620.5	1623.6	3.1	17.5	189.5	0.1885	1.8
73.50	9821	1620.5	1624.6	4.1	12.4	212.4	0.0191	1.1
71.00	9821	1617.5	1621.1	3.6	14	209.8	0.1556	1.4
70.97	9821	1614.5	1617.3	2.8	19.6	185.2	0.1745	2.1
70.50	9821	1614.5	1618.6	4.1	12.3	212.7	0.0300	1.1
68.50	9821	1612.1	1615.8	3.7	14	209.9	0.1722	1.3
68.47	9821	1609.1	1611.9	2.8	19.6	185.2	0.1911	2.1
68.00	9821	1609.1	1613.2	4.1	12.2	212.8	0.0297	1.1
66.00	9821	1606.7	1610.3	3.6	14	209.9	0.1553	1.3
65.97	9821	1603.7	1606.5	2.8	19.6	185.2	0.1745	2.1
65.50	9821	1603.7	1607.8	4.1	12.2	212.8	0.0300	1.1
63.50	9821	1601.3	1605	3.7	14	209.9	0.1555	1.3
63.47	9821	1598.3	1601.1	2.8	19.6	185.2	0.1745	2.1
63.00	9821	1598.3	1602.4	4.1	12.2	212.8	0.0300	1.1
61.00	9821	1595.9	1599.6	3.7	14	209.9	0.1555	1.3
60.97	9821	1592.9	1595.7	2.8	19.6	185.2	0.1755	2.1
60.50	9821	1592.9	1597	4.1	12.2	212.8	0.0308	1.1
58.50	9821	1590.5	1594.2	3.7	14	209.9	0.1803	1.3
58.46	9821	1586	1588.6	2.6	21.6	180.3	0.2054	2.4
58.00	9821	1586	1589.4	3.4	15.3	208.2	0.0370	1.5
53.00	9821	1580	1584.2	4.2	12.1	212.9	0.1733	1.1
52.97	9821	1577	1579.9	2.9	18.9	185.6	0.1879	2
52.50	9821	1577	1581.2	4.2	12.1	213	0.0267	1.1
50.00	9821	1574	1577.6	3.6	14.2	209.6	0.1554	1.4
49.97	9821	1571	1573.8	2.8	19.7	185.1	0.1755	2.1
49.50	9821	1571	1575.1	4.1	12.4	213.1	0.0309	1.1
48.00	9821	1569.2	1572.9	3.7	13.7	210.9	0.0103	1.3
47.90	9821	1569	1572.7	3.7	13.9	210.6	0.0107	1.3
46.50	9821	1567.4	1571.9	4.5	12	184.5	0.0118	1
44.70	10954	1565.2	1570.9	5.7	8.4	242.6	0.0061	0.6
44.60	12231	1565.2	1570.1	4.9	10.5	241.8	0.0000	0.8
44.60	12231	1565.1	1570.2	5.1	10.2	242.3	0.0000	0.8
43.60	12231	1564.3	1569.1	4.8	10.9	241.4	0.0078	0.9
43.30	12231	1564	1569	5.0	10.4	242.1	0.0063	0.8

50-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
41.80	12231	1562.6	1567.8	5.2	11.2	242.4	0.0070	0.9
40.30	12231	1561.2	1566.8	5.6	10.9	311.7	0.0083	1
38.80	12231	1559.8	1565.4	5.6	11.1	321.5	0.0110	1.1
37.30	12231	1558.3	1562.6	4.3	13.2	332.8	0.0147	1.4
35.80	12231	1554.7	1560.7	6.0	11.9	322.7	0.0163	1.2
34.30	12231	1552.7	1557.7	5.0	13.3	377.7	0.0197	1.5
32.80	12231	1549.6	1554.7	5.1	12.1	490	0.0207	1.5
31.30	12231	1547.3	1552.5	5.2	10	500	0.0163	1.2
29.80	12231	1544.6	1550.3	5.7	10.8	470	0.0147	1.2
28.30	12231	1542.6	1547.8	5.2	11.3	450	0.0137	1.3
26.80	12231	1539	1546.4	7.4	10.1	385.7	0.0123	1
25.30	12231	1536.2	1543.9	7.7	12	390	0.0120	1.3
23.80	12231	1534.7	1542.7	8.0	10.7	380	0.0113	1
22.30	12231	1533	1540.5	7.5	11.7	390	0.0113	1.3
20.80	12231	1531.2	1539.4	8.2	10.4	394	0.0123	1
19.30	12231	1530	1536.5	6.5	12.8	365.5	0.0153	1.4
17.80	12231	1527.8	1535.4	7.6	8.3	336.6	0.0117	0.7
16.30	12231	1525.6	1533.3	7.7	11.9	244	0.0075	1
15.30	12231	1524.1	1532	7.9	13	183.4	0.0115	1
14.80	12231	1523.2	1530.4	7.2	15.2	178.9	0.0570	1.3
14.72	12231	1523.2	1527.3	4.1	19.4	164.4	0.1200	1.7
14.62	12231	1518.2	1521.9	3.7	25.2	140.7	0.0979	2.4
14.01	12231	1518.2	1521.7	3.5	20.7	180.1	0.0412	2
13.30	12231	1517.2	1521	3.8	18.7	182.9	0.0230	1.7
11.80	12231	1515.1	1518.5	3.4	17.9	217.3	0.0187	1.8
10.80	12231	1513.7	1518.3	4.6	14.9	188.4	0.0143	1.3
10.10	12231	1512.7	1517.1	4.4	15.7	187.5	0.0953	1.4
10.00	12231	1510	1513.6	3.6	20.4	174.7	0.0942	1.9
8.80	12231	1509.7	1518	8.3	8	201.2	0.0052	0.5
7.30	12231	1509.2	1517.8	8.6	7.9	198.3	0.0017	0.5
5.80	12231	1508.7	1517.6	8.9	7.6	199.6	0.0013	0.5
4.30	12231	1508.3	1517.4	9.1	7.4	200.5	0.0017	0.5
2.80	12231	1507.8	1517.3	9.5	7.1	201.9	0.0010	0.4
2.30	12231	1507.7	1517.2	9.5	7.2	198.9	0.0010	0.4
1.80	12231	1507.5	1517	9.5	7.4	191.2	0.0020	0.4
1.30	12231	1507.3	1516.8	9.5	8	179.1	0.0020	0.5
0.80	12231	1507.2	1516.6	9.4	8.7	169.4	0.0020	0.5
0.30	12231	1507	1515.9	8.9	10.3	146.8	0.0027	0.6
0.00	12231	1507	1515.8	8.8	10.5	146.3	0.0000	0.7

* Beginning of upstream control line stationing

25-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
316.50	3803	2309.6	2312.8	3.2	6.7	417.6	0.0140	1.0
313.50	3803	2300.1	2302.3	2.2	13.4	368.5	0.0292	2.7
310.50	3803	2291.9	2295.1	3.2	7.7	314.4	0.0278	1.1
307.50	3803	2282.5	2285.4	2.9	14.0	225.2	0.0318	2.2
304.50	3803	2273.5	2275.7	2.2	8.8	350.6	0.0320	1.4
301.50	3803	2262.9	2267.2	4.3	11.2	204.4	0.0260	1.5
298.50	3803	2256.2	2259.4	3.2	11.0	212.7	0.0277	1.5
295.50	3803	2247.4	2250.7	3.3	10.9	257.0	0.0278	1.6
292.50	3803	2237.9	2242.9	5.0	10.5	211.7	0.0275	1.4
289.50	7438	2228.6	2233.8	5.2	12.1	381.7	0.0338	1.7
288.00	7438	2224.2	2227.0	2.8	14.3	345.0	0.0400	2.1
286.50	7438	2217.7	2222.2	4.5	10.9	474.0	0.0348	1.6
284.15	7438	2210.8	2215.6	4.8	10.5	486.7	0.0277	1.5
280.30	7438	2200.8	2205.0	4.2	11.5	366.0	0.0229	1.5
277.15	7438	2194.6	2198.3	3.7	13.1	177.9	0.0397	1.3
276.95	7438	2188.6	2191.2	2.6	23.6	129.7	0.0529	2.7
275.40	7438	2183.9	2187.6	3.7	18.0	110.2	0.0343	1.6
272.45	7438	2174.9	2177.5	2.6	23.3	126.5	0.0314	2.6
272.35	7438	2174.2	2176.9	2.7	23.7	117.9	0.0650	2.6
271.95	7438	2173.5	2177.0	3.5	17.9	117.9	0.0500	1.7
271.75	7438	2173.0	2176.4	3.4	18.7	118.0	0.2550	1.8
271.74	7438	2169.0	2171.5	2.5	25.2	118.0	0.2607	2.8
271.60	7438	2168.5	2171.0	2.5	25.5	118.1	0.0232	2.9
271.40	7438	2167.8	2170.2	2.4	25.8	118.1	0.0205	2.9
270.65	7438	2165.3	2169.5	4.2	25.0	70.1	0.0180	2.1
270.55	7438	2165.0	2169.0	4.0	25.5	72.2	0.0160	2.2
269.80	7438	2163.0	2167.6	4.6	26.2	62.2	0.0127	2.2
269.65	7438	2162.8	2167.0	4.2	26.6	67.2	0.0167	2.3
269.55	7438	2162.7	2166.4	3.7	27.1	77.5	0.0174	2.5
268.00	7438	2160.7	2164.5	3.8	26.6	77.6	0.1324	2.5
267.96	7438	2156.7	2160.5	3.8	30.1	69.5	0.1402	2.8
267.50	7438	2156.7	2160.2	3.5	28.8	77.0	0.0302	2.8
266.20	7438	2154.4	2157.7	3.3	27.2	86.6	0.1650	2.7
266.17	7438	2151.4	2154.7	3.3	29.7	80.5	0.1957	3.0
265.70	7438	2151.4	2155.1	3.7	23.9	87.4	0.1791	2.2
265.67	7438	2148.4	2152.0	3.6	26.9	81.1	0.1695	2.6
265.20	7438	2148.4	2152.5	4.1	21.8	88.1	0.0477	2.0
264.20	7438	2146.6	2150.9	4.3	20.6	88.6	0.0212	1.8
262.30	7438	2143.2	2147.6	4.4	20.0	88.8	0.1472	1.7
262.26	7438	2139.2	2143.2	4.0	24.8	79.9	0.1647	2.3
261.80	7438	2139.2	2143.4	4.2	20.8	88.5	0.0376	1.8
260.50	7438	2136.8	2141.1	4.3	20.2	92.7	0.1437	1.8
260.47	7438	2133.8	2137.8	4.0	23.9	82.0	0.1610	2.2
260.00	7438	2133.8	2138.3	4.5	19.2	93.1	0.0363	1.7
257.10	7438	2128.6	2133.0	4.4	19.7	92.9	0.1586	1.7
257.07	7438	2125.6	2129.7	4.1	23.5	82.1	0.1745	2.1
256.60	7438	2125.6	2129.8	4.2	19.8	104.8	0.0356	1.8
256.33	7438	2125.1	2129.2	4.1	19.9	112.4	0.0247	1.9
256.00	7438	2124.5	2129.3	4.8	18.2	97.5	0.0211	1.6
255.80	7438	2124.2	2129.0	4.8	18.2	97.5	0.1450	1.6
255.76	7438	2120.2	2124.3	4.1	23.6	80.3	0.1560	2.1
255.30	7438	2120.2	2124.4	4.2	21.2	97.2	0.0315	2.0
254.80	7438	2119.3	2123.6	4.3	20.3	97.8	0.0236	1.9
254.00	7438	2117.8	2122.2	4.4	19.8	98.4	0.1440	1.8
253.97	7438	2114.8	2118.8	4.0	23.6	82.1	0.1610	2.1
253.50	7438	2114.8	2119.4	4.6	18.9	99.5	0.0355	1.7
252.80	7438	2113.6	2118.2	4.6	18.9	98.3	0.1579	1.7
252.77	7438	2110.6	2114.8	4.2	22.9	82.3	0.1755	2.0
252.30	7438	2110.6	2115.3	4.7	18.4	98.8	0.0337	1.6
251.50	7438	2109.1	2113.7	4.6	18.9	98.4	0.1415	1.7
251.47	7438	2106.1	2110.3	4.2	22.9	82.3	0.1589	2.0
251.00	7438	2106.1	2110.8	4.7	18.3	98.9	0.0333	1.6
250.10	7438	2104.5	2109.1	4.6	18.8	99.7	0.1453	1.7
250.06	7438	2100.5	2104.6	4.1	23.9	80.2	0.1647	2.1
249.60	7438	2100.5	2104.9	4.4	19.8	98.4	0.0372	1.8
248.90	7438	2099.2	2103.6	4.4	19.6	98.6	0.1433	1.8
248.87	7438	2096.2	2100.3	4.1	23.4	82.1	0.1599	2.1
248.40	7438	2096.2	2100.8	4.6	18.8	99.6	0.0349	1.7
247.80	7438	2095.2	2099.8	4.6	18.8	99.6	0.1417	1.7
247.77	7438	2092.2	2096.4	4.2	22.8	82.3	0.1589	2.0

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
247.30	7438	2092.2	2096.9	4.7	18.2	100.4	0.0334	1.6
246.60	7438	2090.9	2095.5	4.6	18.7	99.8	0.1579	1.7
246.57	7438	2087.9	2092.1	4.2	22.8	82.4	0.1745	2.0
246.10	7438	2087.9	2092.7	4.8	18.1	89.8	0.0316	1.5
245.40	7438	2086.6	2091.2	4.6	18.9	89.3	0.1446	1.6
245.36	7438	2082.6	2086.7	4.1	24.1	80.1	0.1636	2.2
244.90	7438	2082.6	2087.0	4.4	20.2	88.7	0.0354	1.7
244.20	7438	2081.4	2085.8	4.4	20.0	88.8	0.1426	1.7
244.17	7438	2078.4	2082.4	4.0	23.7	82.0	0.1599	2.1
243.70	7438	2078.4	2083.0	4.6	19.1	89.2	0.0349	1.6
243.10	7438	2077.3	2081.8	4.5	19.5	89.0	0.1417	1.7
243.07	7438	2074.3	2078.4	4.1	23.4	82.1	0.1589	2.1
242.60	7438	2074.3	2079.0	4.7	18.8	89.3	0.0339	1.6
242.00	7438	2073.2	2077.8	4.6	19.3	89.1	0.1417	1.6
241.97	7438	2070.2	2074.3	4.1	23.2	82.2	0.1589	2.1
241.50	7438	2070.2	2074.9	4.7	18.6	89.4	0.0312	1.6
241.06	7438	2069.9	2074.8	4.9	18.0	89.7	0.0137	1.5
240.56	7438	2069.5	2074.8	5.3	16.6	90.5	0.0138	1.3
239.70	7438	2068.8	2075.0	6.2	13.8	92.5	0.1891	1.0
239.67	7438	2065.8	2070.4	4.6	20.4	83.3	0.2014	1.7
239.20	7438	2065.8	2071.3	5.5	15.9	90.9	0.1681	1.2
239.17	7438	2062.8	2067.3	4.5	21.2	82.9	0.1632	1.8
238.60	7438	2062.8	2067.6	4.8	18.3	89.6	0.1632	1.5
238.57	7438	2059.8	2064.0	4.2	22.6	82.4	0.1734	2.0
238.10	7438	2059.8	2064.7	4.9	17.9	89.8	0.0304	1.5
237.60	7438	2058.9	2063.6	4.7	18.5	89.5	0.1570	1.5
237.57	7438	2055.9	2060.1	4.2	22.7	82.4	0.1745	2.0
237.10	7438	2055.9	2060.8	4.9	18.0	89.7	0.0320	1.5
236.50	7438	2054.8	2059.5	4.7	18.8	89.4	0.1450	1.6
236.46	7438	2050.8	2054.9	4.1	24.0	80.1	0.1625	2.2
236.00	7438	2050.8	2055.2	4.4	20.1	88.8	0.0350	1.7
235.50	7438	2049.9	2054.2	4.3	20.0	100.7	0.1475	1.8
235.46	7438	2045.9	2049.9	4.0	24.8	79.9	0.1668	2.3
235.00	7438	2045.9	2050.2	4.3	20.4	100.6	0.0413	1.9
234.50	7438	2045.0	2049.4	4.4	19.8	100.8	0.1453	1.8
234.47	7438	2042.0	2046.0	4.0	23.6	82.1	0.1610	2.1
234.00	7438	2042.0	2046.6	4.6	18.9	101.1	0.0357	1.7
233.50	7438	2041.1	2045.6	4.5	19.2	93.9	0.1580	1.7
233.47	7438	2038.1	2042.2	4.1	23.1	84.5	0.1745	2.1
233.00	7438	2038.1	2042.7	4.6	18.7	94.3	0.1620	1.6
232.96	7438	2034.1	2038.1	4.0	23.9	82.1	0.1625	2.2
232.50	7438	2034.1	2038.4	4.3	20.1	93.1	0.0343	1.8
229.80	7644	2029.2	2033.8	4.6	19.5	94.3	0.1593	1.7
229.78	7644	2027.2	2031.5	4.3	22.2	84.6	0.1740	1.9
229.30	7644	2027.2	2032.2	5.0	17.1	108.1	0.0314	1.5
226.80	7644	2022.7	2027.4	4.7	19.2	89.4	0.1407	1.6
226.77	7644	2019.7	2023.9	4.2	23.2	82.4	0.1578	2.0
226.30	7644	2019.7	2024.5	4.8	18.7	89.6	0.0326	1.5
223.30	7644	2014.3	2018.8	4.5	20.3	88.9	0.1415	1.7
223.27	7644	2011.3	2015.4	4.1	24.0	82.2	0.1599	2.1
222.80	7644	2011.3	2015.9	4.6	19.5	89.3	0.0350	1.6
219.00	7644	2004.5	2009.0	4.5	20.3	88.9	0.1584	1.7
218.97	7644	2001.5	2005.6	4.1	24.0	82.1	0.1766	2.2
218.50	7644	2001.5	2006.1	4.6	19.5	89.3	0.0343	1.6
216.50	7644	1998.4	2003.1	4.7	19.4	89.3	0.1578	1.6
216.47	7644	1995.4	1999.6	4.2	23.3	82.4	0.1745	2.1
216.00	7644	1995.4	2000.2	4.8	18.8	89.6	0.0325	1.6
215.00	7644	1993.6	1998.2	4.6	19.5	89.3	0.1413	1.6
214.97	7644	1990.6	1994.9	4.3	23.3	80.6	0.1567	2.0
214.50	7644	1990.6	1995.2	4.6	19.5	89.3	0.0314	1.6
214.00	7644	1989.7	1994.3	4.6	19.7	89.2	0.1413	1.7
213.97	7644	1986.7	1990.8	4.1	23.6	82.3	0.1589	2.1
213.50	7644	1986.7	1991.4	4.7	19.1	89.5	0.0335	1.6
213.00	7644	1985.8	1990.5	4.7	19.4	89.3	0.1413	1.6
212.97	7644	1982.8	1987.0	4.2	23.3	82.4	0.1589	2.1
212.50	7644	1982.8	1987.6	4.8	18.9	89.6	0.0312	1.6
212.06	7644	1982.0	1986.6	4.6	19.6	89.2	0.0182	1.7
211.66	7644	1981.3	1986.1	4.8	18.8	89.6	0.0186	1.6
211.00	7644	1980.1	1984.6	4.5	19.9	89.1	0.0171	1.7
210.00	7644	1978.3	1981.8	3.5	20.9	107.1	0.0255	2.0

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
209.00	7644	1976.5	1979.6	3.1	19.8	126.3	0.0295	2.0
208.50	7644	1975.6	1978.6	3.0	19.0	136.1	0.1525	1.9
208.46	7644	1971.6	1974.2	2.6	24.0	127.1	0.1745	2.7
208.00	7644	1971.6	1974.8	3.2	17.7	136.5	0.0470	1.8
207.50	7644	1970.7	1974.0	3.3	17.4	136.6	0.1600	1.7
207.47	7644	1967.7	1970.5	2.8	21.8	129.5	0.1798	2.3
207.00	7644	1967.7	1971.5	3.8	15.2	137.5	0.0368	1.4
206.00	7644	1965.9	1969.4	3.5	16.5	136.9	0.0150	1.6
205.00	7644	1964.1	1967.5	3.4	17.0	136.8	0.1580	1.7
204.97	7644	1961.1	1963.9	2.8	21.5	129.6	0.1787	2.3
204.50	7644	1961.1	1964.9	3.8	15.0	137.7	0.1787	1.4
204.47	7644	1958.1	1961.1	3.0	20.3	130.0	0.1755	2.1
204.00	7644	1958.1	1962.5	4.4	13.2	138.7	0.1922	1.1
203.97	7644	1955.1	1958.2	3.1	19.6	130.2	0.1879	2.0
203.50	7644	1955.1	1959.4	4.3	13.2	138.6	0.0263	1.1
203.00	7644	1954.2	1957.9	3.7	15.2	137.5	0.1717	1.4
202.97	7644	1951.2	1954.2	3.0	20.4	129.9	0.1922	2.1
202.50	7644	1951.2	1955.6	4.4	13.1	138.7	0.1922	1.1
202.47	7644	1948.2	1951.3	3.1	19.5	130.2	0.1869	2.0
202.00	7644	1948.2	1952.4	4.2	13.6	138.4	0.0262	1.2
201.50	7644	1947.3	1951.0	3.7	15.3	137.4	0.1560	1.4
201.47	7644	1944.3	1947.2	2.9	20.5	129.9	0.1766	2.1
201.00	7644	1944.3	1948.6	4.3	13.2	138.6	0.1933	1.1
200.97	7644	1941.3	1944.4	3.1	19.5	130.2	0.1879	2.0
200.50	7644	1941.3	1945.7	4.4	13.0	138.7	0.1879	1.1
200.47	7644	1938.3	1941.4	3.1	19.5	130.2	0.1879	2.0
200.00	7644	1938.3	1942.5	4.2	13.5	138.4	0.1713	1.2
199.97	7644	1935.3	1938.4	3.1	19.7	130.1	0.1723	2.0
199.50	7644	1935.3	1939.7	4.4	13.1	138.7	0.1848	1.1
199.46	7644	1931.3	1934.2	2.9	20.9	127.9	0.1897	2.2
199.00	7644	1931.3	1935.2	3.9	14.5	137.9	0.0342	1.3
198.00	7644	1929.5	1933.0	3.5	16.4	139.2	0.0150	1.6
197.00	7644	1927.7	1931.0	3.3	16.9	143.2	0.1580	1.7
196.97	7644	1924.7	1927.6	2.9	21.2	129.6	0.1787	2.2
196.50	7644	1924.7	1928.8	4.1	14.3	139.7	0.0357	1.3
196.00	7644	1923.8	1927.2	3.4	16.1	156.1	0.0155	1.6
195.00	7644	1922.0	1925.5	3.5	15.9	167.0	0.0190	1.6
194.00	7644	1920.2	1923.5	3.3	15.9	165.5	0.0165	1.6
193.00	7644	1918.4	1924.3	5.9	11.2	178.6	0.0145	1.0
192.00	7644	1916.6	1920.5	3.9	16.0	211.8	0.0265	1.9
191.00	7644	1913.1	1917.4	4.3	15.0	238.8	0.0360	1.8
190.00	7644	1910.3	1913.5	3.2	15.7	226.2	0.0370	1.9
189.00	7644	1906.0	1909.7	3.7	15.7	246.4	0.0385	2.0
188.00	7644	1903.0	1906.2	3.2	14.7	263.2	0.0370	1.8
187.00	7644	1900.0	1903.1	3.1	13.9	268.3	0.0320	1.7
186.00	7644	1897.6	1900.4	2.8	13.4	283.9	0.0295	1.7
185.00	7644	1894.3	1897.0	2.7	14.3	257.0	0.0315	1.7
184.00	7644	1891.2	1893.8	2.6	14.2	279.3	0.0320	1.8
183.00	7644	1888.0	1891.1	3.1	13.4	262.2	0.0285	1.6
182.00	7644	1884.0	1888.2	4.2	14.0	235.1	0.0305	1.6
181.00	7644	1882.0	1884.3	2.3	14.8	336.1	0.0355	2.1
180.00	7644	1879.0	1882.2	3.2	11.1	367.7	0.0290	1.4
179.00	7644	1876.3	1879.9	3.6	11.5	323.7	0.0210	1.4
178.00	7644	1873.5	1877.8	4.3	11.5	319.3	0.0205	1.4
177.00	7644	1872.0	1875.9	3.9	11.0	347.8	0.0200	1.4
176.00	7644	1870.0	1874.2	4.2	10.6	340.4	0.0180	1.3
175.00	7644	1867.7	1872.7	5.0	9.8	424.4	0.0195	1.3
174.00	7644	1866.0	1869.9	3.9	11.7	401.7	0.0190	1.6
173.00	7644	1864.0	1869.0	5.0	9.5	287.4	0.0175	1.0
172.00	7644	1860.0	1864.5	4.5	15.9	217.2	0.0240	1.9
171.00	7644	1857.4	1864.1	6.7	9.9	347.4	0.0225	1.2
170.00	7644	1854.1	1862.1	8.0	11.0	333.8	0.0180	1.3
169.00	7644	1852.0	1860.0	8.0	11.6	315.7	0.0245	1.4
168.00	7644	1851.0	1855.5	4.5	15.2	281.6	0.0310	2.0
167.00	7644	1847.0	1852.3	5.3	15.1	200.7	0.0305	1.7
166.00	7644	1846.0	1850.9	4.9	11.6	361.1	0.0300	1.5
165.00	7644	1844.0	1846.1	2.1	15.4	289.2	0.0410	2.1
164.90	7644	1843.6	1845.7	2.1	15.2	290.2	0.0356	2.0
164.10	7644	1841.8	1847.3	5.5	4.5	403.5	0.0206	0.4
164.00	7644	1840.7	1846.0	5.3	9.6	287.8	0.0175	1.0

25-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
163.00	7644	1838.0	1843.5	5.5	12.3	269.9	0.0210	1.5
162.00	7644	1835.6	1840.3	4.7	13.7	303.8	0.0290	1.8
161.00	7644	1833.1	1837.3	4.2	13.6	263.4	0.0280	1.6
160.00	7644	1829.0	1835.1	6.1	12.6	264.9	0.0235	1.5
159.00	7644	1827.6	1832.9	5.3	12.6	273.0	0.0250	1.5
158.00	7644	1826.1	1829.7	3.6	13.7	296.6	0.0275	1.8
157.00	7644	1823.1	1827.9	4.8	11.3	315.0	0.0225	1.4
156.00	7644	1821.4	1826.2	4.8	11.0	309.3	0.0210	1.3
*155.00	7644	1819.0	1823.2	4.2	12.5	393.4	0.0210	1.8
157.00	7644	1816.2	1820.3	4.1	10.8	402.3	0.0260	1.4
156.00	7644	1813.0	1817.2	4.2	11.6	474.9	0.0280	1.7
155.00	7644	1810.7	1814.8	4.1	10.1	490.9	0.0314	1.4
154.00	7644	1806.9	1810.4	3.5	13.7	318.9	0.0389	1.8
153.00	7644	1803.0	1807.8	4.8	11.4	417.3	0.0305	1.6
152.00	7644	1800.0	1805.9	5.9	9.3	528.6	0.0250	1.3
151.00	6838	1799.0	1803.2	4.2	10.2	512.0	0.0250	1.6
150.00	6838	1797.0	1800.7	3.7	9.8	437.5	0.0245	1.4
149.00	6838	1793.3	1798.5	5.2	9.5	548.6	0.0240	1.5
148.00	6838	1793.0	1796.1	3.1	9.1	556.3	0.0245	1.4
147.00	6838	1791.0	1793.5	2.5	10.0	484.8	0.0240	1.5
146.00	6838	1787.4	1790.9	3.5	10.4	403.5	0.0250	1.4
145.00	6838	1785.0	1787.9	2.9	11.5	364.3	0.0255	1.6
144.00	6838	1782.0	1785.3	3.3	11.7	289.0	0.0260	1.5
143.00	6838	1778.5	1782.3	3.8	12.9	292.8	0.0280	1.7
142.00	6838	1776.0	1779.8	3.8	11.8	320.3	0.0265	1.5
141.00	6838	1773.7	1777.9	4.2	10.0	390.0	0.0235	1.3
140.00	8208	1771.1	1775.1	4.0	11.4	423.3	0.0250	1.5
139.00	8208	1769.0	1772.6	3.6	11.2	436.3	0.0255	1.5
138.00	8208	1764.7	1770.3	5.6	10.8	412.8	0.0225	1.4
137.00	8208	1762.3	1768.3	6.0	10.7	424.9	0.0220	1.4
136.00	8208	1761.0	1765.9	4.9	10.8	487.8	0.0245	1.5
135.00	8208	1760.0	1763.6	3.6	10.1	524.6	0.0250	1.4
134.00	8208	1758.0	1761.2	3.2	9.9	581.1	0.0245	1.5
133.00	8208	1755.0	1759.0	4.0	8.7	748.6	0.0240	1.4
132.00	8208	1753.0	1756.6	3.6	9.0	721.3	0.0240	1.4
131.00	8208	1749.0	1754.1	5.1	9.3	685.8	0.0250	1.5
130.00	8208	1747.6	1751.5	3.9	9.8	571.2	0.0245	1.4
129.00	8208	1744.0	1748.8	4.8	10.4	511.2	0.0245	1.5
128.00	8208	1742.0	1746.1	4.1	11.0	458.4	0.0215	1.5
127.00	8208	1740.0	1745.1	5.1	8.5	454.6	0.0180	1.0
126.00	8208	1738.0	1742.1	4.1	12.4	390.0	0.0248	1.6
125.40	8208	1737.0	1738.8	1.8	15.5	303.0	0.1658	2.1
125.36	8208	1733.0	1734.4	1.4	21.1	276.7	0.1880	3.1
124.90	8208	1733.0	1735.4	2.4	12.4	282.5	0.1880	1.4
124.86	8208	1729.0	1730.7	1.7	19.6	253.7	0.1793	2.7
124.40	8208	1729.0	1732.3	3.3	10.1	264.3	0.0339	1.0
121.90	8208	1726.0	1729.1	3.1	12.9	225.4	0.1546	1.3
121.87	8208	1723.0	1725.3	2.3	18.6	195.7	0.1745	2.2
121.40	8208	1722.9	1726.3	3.4	11.7	226.5	0.0292	1.2
119.80	8208	1721.1	1724.6	3.5	12.3	208.9	0.1547	1.2
119.77	8208	1718.1	1720.7	2.6	18.5	178.3	0.1723	2.1
119.30	8208	1718.1	1721.8	3.7	11.5	210.3	0.0280	1.1
117.00	8208	1715.3	1718.5	3.2	13.4	207.4	0.1557	1.4
116.97	8208	1712.3	1714.9	2.6	18.9	177.9	0.1745	2.1
116.50	8208	1712.3	1716.0	3.7	11.7	209.9	0.0300	1.1
114.60	8208	1710.0	1713.3	3.3	13.1	207.7	0.1722	1.3
114.57	8208	1707.0	1709.6	2.6	18.8	178.0	0.1901	2.1
114.10	8208	1707.0	1710.7	3.7	11.5	210.2	0.0289	1.1
112.00	8208	1704.5	1707.8	3.3	13.1	207.7	0.1555	1.3
111.97	8208	1701.5	1704.1	2.6	18.8	178.0	0.1745	2.1
111.50	8208	1701.5	1705.2	3.7	11.4	210.4	0.0300	1.1
109.60	8208	1699.2	1702.5	3.3	13.2	207.6	0.1555	1.3
109.57	8208	1696.2	1698.8	2.6	18.8	178.0	0.1745	2.1
109.10	8208	1696.2	1699.9	3.7	11.4	210.3	0.0301	1.1
107.60	8208	1694.4	1697.7	3.3	13.0	207.8	0.1557	1.3
107.57	8208	1691.4	1694.0	2.6	18.7	178.1	0.1734	2.1
107.10	8208	1691.4	1695.1	3.7	11.4	210.4	0.0290	1.1
105.50	8208	1689.5	1692.8	3.3	13.0	207.8	0.1431	1.3
105.46	8208	1685.5	1688.0	2.5	20.1	172.0	0.1658	2.3
105.00	8208	1685.5	1688.5	3.0	14.2	206.3	0.0353	1.5

25-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
103.00	8208	1683.1	1686.8	3.7	11.6	210.1	0.1903	1.1
102.97	8208	1680.1	1682.6	2.5	18.4	184.0	0.2035	2.1
102.50	8208	1680.1	1683.8	3.7	11.4	210.4	0.2035	1.1
102.47	8208	1677.1	1679.6	2.5	18.4	184.0	0.2035	2.1
102.00	8208	1677.1	1680.8	3.7	11.4	210.5	0.2035	1.1
101.97	8208	1674.1	1676.6	2.5	18.4	184.0	0.2035	2.1
101.50	8208	1674.1	1677.8	3.7	11.4	210.5	0.2035	1.1
101.47	8208	1671.1	1673.6	2.5	18.4	184.0	0.2035	2.1
101.00	8208	1671.1	1674.8	3.7	11.4	210.5	0.0260	1.1
99.20	7721	1668.9	1671.8	2.9	13.9	197.7	0.0058	1.5
98.70	7721	1668.3	1670.9	2.6	16.1	195.4	0.0250	1.8
98.60	7721	1668.2	1671.0	2.8	14.4	197.1	0.2000	1.5
98.58	7721	1666.2	1668.6	2.4	18.1	186.4	0.1948	2.1
98.10	7721	1666.2	1669.8	3.6	11.1	209.7	0.0250	1.1
96.00	7721	1663.7	1666.8	3.1	13.0	206.8	0.1802	1.4
95.98	7721	1661.7	1664.2	2.5	17.3	186.8	0.1917	2.0
95.50	7721	1661.7	1665.3	3.6	11.3	209.4	0.0222	1.1
93.50	7721	1659.3	1662.5	3.2	12.9	206.9	0.1555	1.3
93.48	7721	1657.3	1659.8	2.5	17.2	186.9	0.1667	2.0
93.00	7721	1657.3	1660.9	3.6	11.3	209.4	0.0220	1.1
91.50	7721	1655.5	1658.7	3.2	12.7	207.2	0.1553	1.3
91.47	7721	1652.5	1654.8	2.3	18.7	183.2	0.1745	2.2
91.00	7721	1652.5	1656.1	3.6	11.1	209.7	0.0298	1.1
89.50	7721	1650.7	1653.9	3.2	12.8	207.0	0.1553	1.3
89.47	7721	1647.7	1650.0	2.3	18.8	183.2	0.1745	2.2
89.00	7721	1647.7	1651.3	3.6	11.1	209.7	0.0298	1.1
87.50	7721	1645.9	1649.1	3.2	12.8	207.0	0.1553	1.3
87.48	7721	1643.9	1646.4	2.5	17.2	186.9	0.1667	2.0
87.00	7721	1643.9	1647.5	3.6	11.3	209.4	0.0223	1.1
82.50	7721	1638.5	1641.5	3.0	13.4	206.3	0.1557	1.4
82.47	7721	1635.5	1637.8	2.3	19.0	183.1	0.1755	2.3
82.00	7721	1635.5	1639.1	3.6	11.1	209.8	0.0309	1.1
80.50	7721	1633.7	1636.9	3.2	12.8	207.0	0.1553	1.3
80.46	7721	1629.7	1631.9	2.2	20.2	180.1	0.1804	2.4
80.00	7721	1629.7	1632.9	3.2	12.7	207.2	0.0365	1.3
74.00	7721	1622.5	1625.9	3.4	12.0	208.1	0.1811	1.2
73.98	7721	1620.5	1623.0	2.5	16.9	187.1	0.1896	1.9
73.50	7721	1620.5	1624.1	3.6	11.3	209.4	0.0200	1.1
71.00	7721	1617.5	1620.6	3.1	13.0	206.8	0.1721	1.4
70.97	7721	1614.5	1616.8	2.3	18.9	183.2	0.1911	2.2
70.50	7721	1614.5	1618.2	3.7	11.0	209.9	0.0297	1.1
68.50	7721	1612.1	1615.2	3.1	13.1	206.7	0.1719	1.4
68.47	7721	1609.1	1611.4	2.3	18.9	183.2	0.1911	2.2
68.00	7721	1609.1	1612.7	3.6	11.1	209.7	0.0297	1.1
66.00	7721	1606.7	1609.8	3.1	13.0	206.8	0.1719	1.4
65.97	7721	1603.7	1606.0	2.3	18.9	183.2	0.1911	2.2
65.50	7721	1603.7	1607.4	3.7	10.8	210.2	0.0297	1.0
63.50	7721	1601.3	1604.4	3.1	13.2	206.6	0.1552	1.4
63.47	7721	1598.3	1600.6	2.3	18.9	183.1	0.1755	2.2
63.00	7721	1598.3	1602.0	3.7	11.0	209.9	0.0308	1.1
61.00	7721	1595.9	1599.0	3.1	13.1	206.7	0.1719	1.4
60.97	7721	1592.9	1595.2	2.3	18.9	183.2	0.1911	2.2
60.50	7721	1592.9	1596.5	3.6	11.1	209.7	0.0297	1.1
58.50	7721	1590.5	1593.6	3.1	13.0	206.8	0.1802	1.4
58.46	7721	1586.0	1588.1	2.1	20.9	178.6	0.2076	2.6
58.00	7721	1586.0	1588.9	2.9	13.9	197.6	0.0390	1.5
53.00	7721	1580.0	1583.6	3.6	11.3	209.4	0.1731	1.1
52.97	7721	1577.0	1579.4	2.4	18.2	183.5	0.1879	2.1
52.50	7721	1577.0	1580.6	3.6	11.2	209.5	0.0267	1.1
50.00	7721	1574.0	1577.1	3.1	13.1	206.7	0.1721	1.4
49.97	7721	1571.0	1573.3	2.3	18.9	183.2	0.1911	2.2
49.50	7721	1571.0	1574.6	3.6	11.2	210.1	0.0298	1.1
48.00	7721	1569.2	1572.4	3.2	12.7	207.7	0.0153	1.3
47.90	7721	1569.0	1572.2	3.2	12.9	207.6	0.0157	1.3
46.50	7721	1567.4	1571.2	3.8	11.1	183.8	0.0118	1.0
44.70	8579	1565.2	1570.0	4.8	7.9	239.0	0.0111	0.6
44.60	9546	1565.2	1569.3	4.1	10.1	239.2	0.0000	0.9
44.60	9546	1565.1	1569.3	4.2	9.7	239.6	0.0000	0.8
43.60	9546	1564.3	1568.3	4.0	10.2	239.1	0.0078	0.9
43.30	9546	1564.0	1568.2	4.2	9.7	239.7	0.0063	0.8

25-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
41.80	9546	1562.6	1567.3	4.7	9.8	229.2	0.0063	0.8
40.30	9546	1561.2	1566.2	5.0	10.1	311.1	0.0080	1.0
38.80	9546	1559.8	1564.9	5.1	10.1	320.0	0.0113	1.0
37.30	9546	1558.3	1562.2	3.9	12.1	331.6	0.0147	1.4
35.80	9546	1554.7	1560.3	5.6	10.7	321.2	0.0160	1.1
34.30	9546	1552.7	1557.4	4.7	12.2	376.1	0.0193	1.5
32.80	9546	1549.6	1554.4	4.8	10.8	490.0	0.0203	1.4
31.30	9546	1547.3	1552.1	4.8	9.0	500.0	0.0160	1.1
29.80	9546	1544.6	1549.9	5.3	9.8	470.0	0.0147	1.2
28.30	9546	1542.6	1547.5	4.9	10.4	425.2	0.0140	1.3
26.80	9546	1539.0	1546.0	7.0	9.0	374.5	0.0123	1.0
25.30	9546	1536.2	1543.6	7.4	10.7	390.0	0.0117	1.2
23.80	9546	1534.7	1542.2	7.5	9.9	380.0	0.0117	1.0
22.30	9546	1533.0	1540.2	7.2	10.6	390.0	0.0113	1.2
20.80	9546	1531.2	1538.9	7.7	9.6	393.7	0.0123	1.1
19.30	9546	1530.0	1536.1	6.1	11.7	364.6	0.0160	1.4
17.80	9546	1527.8	1534.5	6.7	7.9	326.7	0.0123	0.7
16.30	9546	1525.6	1532.6	7.0	11.0	235.9	0.0083	1.0
15.30	9546	1524.1	1530.8	6.7	13.0	176.4	0.0120	1.1
14.80	9546	1523.2	1529.5	6.3	14.5	174.0	0.0570	1.3
14.72	9546	1523.2	1526.5	3.3	18.7	160.6	0.1250	1.9
14.62	9546	1518.2	1521.2	3.0	24.5	137.5	0.1070	2.6
14.01	9546	1518.2	1521.2	3.0	18.6	177.6	0.0439	1.9
13.30	9546	1517.2	1520.6	3.4	16.7	180.2	0.0213	1.6
11.80	9546	1515.1	1518.1	3.0	16.1	214.8	0.0173	1.7
10.80	9546	1513.7	1517.7	4.0	13.5	185.9	0.0140	1.2
10.10	9546	1512.7	1516.4	3.7	14.4	185.0	0.0860	1.3
10.00	9546	1510.0	1513.0	3.0	19.3	172.2	0.0850	2.0
8.80	9546	1509.7	1516.7	7.0	7.5	196.0	0.0060	0.5
7.30	9546	1509.2	1516.4	7.2	7.4	193.0	0.0020	0.5
5.80	9546	1508.7	1516.2	7.5	7.1	194.2	0.0017	0.5
4.30	9546	1508.3	1516.0	7.7	6.9	195.0	0.0013	0.5
2.80	9546	1507.8	1515.9	8.1	6.5	196.4	0.0017	0.4
2.30	9546	1507.7	1515.8	8.1	6.6	193.4	0.0020	0.4
1.80	9546	1507.5	1515.7	8.2	6.9	185.7	0.0020	0.4
1.30	9546	1507.3	1515.5	8.2	7.4	173.7	0.0020	0.5
0.80	9546	1507.2	1515.2	8.0	8.0	164.1	0.0020	0.5
0.30	9546	1507.0	1514.7	7.7	9.4	143.1	0.0027	0.6
0.00	9546	1507.0	1514.5	7.5	9.6	142.6	0.0000	0.6

* Beginning of upstream control line stationing

10-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel. (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
316.50	2684	2309.6	2312.5	2.9	6.2	405.7	0.0150	1.0
313.50	2684	2300.1	2302.1	2.0	11.4	366.9	0.0295	2.5
310.50	2684	2291.9	2294.7	2.8	6.9	271.4	0.0272	1.0
307.50	2684	2282.5	2285.1	2.6	13.2	186.0	0.0317	2.2
304.50	2684	2273.5	2275.4	1.9	8.0	305.6	0.0322	1.4
301.50	2684	2262.9	2266.8	3.9	10.3	193.0	0.0265	1.6
298.50	2684	2256.2	2259.1	2.9	9.5	205.5	0.0275	1.4
295.50	2684	2247.4	2250.4	3.0	10.4	210.7	0.0277	1.6
292.50	2684	2237.9	2242.4	4.5	9.8	176.5	0.0278	1.4
289.50	5069	2228.6	2233.4	4.8	11.1	330.3	0.0347	1.7
288.00	5069	2224.2	2226.6	2.4	13.1	296.1	0.0400	2.0
286.50	5069	2217.7	2221.9	4.2	9.6	425.2	0.0337	1.5
284.15	5069	2210.8	2215.1	4.3	10.1	371.7	0.0277	1.5
280.30	5069	2200.8	2204.7	3.9	10.0	362.9	0.0240	1.5
277.15	5069	2194.6	2197.6	3.0	11.7	174.9	0.0428	1.3
276.95	5069	2188.6	2190.4	1.8	22.7	126.1	0.0580	3.0
275.40	5069	2183.9	2186.9	3.0	15.3	110.2	0.0370	1.6
272.45	5069	2174.9	2176.9	2.0	20.9	124.1	0.0315	2.6
272.35	5069	2174.2	2176.2	2.0	21.3	117.8	0.0625	2.6
271.95	5069	2173.5	2176.4	2.9	15.1	117.9	0.0475	1.6
271.75	5069	2173.0	2175.7	2.7	16.1	118.0	0.2550	1.7
271.74	5069	2169.0	2170.9	1.9	23.2	117.9	0.2607	3.0
271.60	5069	2168.5	2170.3	1.8	23.4	118.1	0.0257	3.1
271.40	5069	2167.8	2169.6	1.8	23.6	118.1	0.0250	3.1
270.65	5069	2165.3	2168.4	3.1	23.3	70.1	0.0150	2.3
270.55	5069	2165.0	2168.0	3.0	23.7	72.1	0.0130	2.4
269.80	5069	2163.0	2166.4	3.4	24.3	62.1	0.0147	2.3
269.65	5069	2162.8	2165.9	3.1	24.6	67.1	0.0167	2.5
269.55	5069	2162.7	2165.5	2.8	24.9	75.6	0.0190	2.7
268.00	5069	2160.7	2163.6	2.9	23.7	75.9	0.1340	2.5
267.96	5069	2156.7	2159.5	2.8	27.6	67.7	0.1435	2.9
267.50	5069	2156.7	2159.4	2.7	25.6	75.4	0.0346	2.8
266.20	5069	2154.4	2157.0	2.6	23.2	85.3	0.1495	2.6
266.17	5069	2151.4	2153.9	2.5	26.2	79.1	0.1780	2.9
265.70	5069	2151.4	2154.5	3.1	19.5	86.3	0.1780	2.0
265.67	5069	2148.4	2151.3	2.9	23.2	79.7	0.1663	2.5
265.20	5069	2148.4	2151.9	3.5	17.2	87.0	0.0415	1.7
264.20	5069	2146.6	2150.1	3.5	17.3	87.0	0.0174	1.7
262.30	5069	2143.2	2146.7	3.5	17.4	87.0	0.1464	1.7
262.26	5069	2139.2	2142.2	3.0	22.9	77.9	0.1690	2.4
261.80	5069	2139.2	2142.7	3.5	17.5	86.9	0.0408	1.7
260.50	5069	2136.8	2140.2	3.4	17.6	86.9	0.1426	1.7
260.47	5069	2133.8	2136.8	3.0	21.8	80.0	0.1621	2.3
260.00	5069	2133.8	2137.6	3.8	15.9	87.6	0.0367	1.5
257.10	5069	2128.6	2132.0	3.4	17.6	86.9	0.1579	1.7
257.07	5069	2125.6	2128.6	3.0	21.9	80.0	0.1777	2.3
256.60	5069	2125.6	2129.1	3.5	16.6	95.6	0.0369	1.6
256.33	5069	2125.1	2128.4	3.3	16.9	100.0	0.0199	1.7
256.00	5069	2124.5	2128.3	3.8	15.7	87.7	0.0181	1.4
255.80	5069	2124.2	2128.0	3.8	15.8	87.7	0.1575	1.5
255.76	5069	2120.2	2123.3	3.1	21.9	78.2	0.1696	2.2
255.30	5069	2120.2	2123.5	3.3	18.7	86.5	0.0316	1.9
254.80	5069	2119.3	2122.7	3.4	18.0	86.8	0.0220	1.8
254.00	5069	2117.8	2121.2	3.4	17.7	86.9	0.1433	1.7
253.97	5069	2114.8	2117.8	3.0	21.9	80.0	0.1621	2.3
253.50	5069	2114.8	2118.6	3.8	16.1	87.5	0.0366	1.5
252.80	5069	2113.6	2117.3	3.7	16.6	87.3	0.1412	1.6
252.77	5069	2110.6	2113.7	3.1	21.2	80.2	0.1610	2.2
252.30	5069	2110.6	2114.6	4.0	15.1	88.0	0.0345	1.4
251.50	5069	2109.1	2112.8	3.7	16.6	87.3	0.1569	1.6
251.47	5069	2106.1	2109.2	3.1	21.1	80.2	0.1777	2.2
251.00	5069	2106.1	2110.3	4.2	14.3	96.8	0.0343	1.3
250.10	5069	2104.5	2108.3	3.8	16.1	87.5	0.1567	1.5
250.06	5069	2100.5	2103.6	3.1	22.1	78.1	0.1783	2.3
249.60	5069	2100.5	2104.1	3.6	16.9	87.2	0.0368	1.6
248.90	5069	2099.2	2102.7	3.5	17.2	87.0	0.1419	1.7
248.87	5069	2096.2	2099.3	3.1	21.6	80.1	0.1610	2.2
248.40	5069	2096.2	2100.1	3.9	15.6	87.7	0.0352	1.4
247.80	5069	2095.2	2098.9	3.7	16.2	87.5	0.1575	1.5
247.77	5069	2092.2	2095.3	3.1	20.9	80.3	0.1777	2.1

10-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel. (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
247.30	5069	2092.2	2096.4	4.2	14.0	97.5	0.0341	1.3
246.60	5069	2090.9	2094.7	3.8	15.8	87.6	0.1564	1.5
246.57	5069	2087.9	2091.1	3.2	20.7	80.3	0.1766	2.1
246.10	5069	2087.9	2092.2	4.3	14.1	88.6	0.0323	1.2
245.40	5069	2086.6	2090.4	3.8	16.1	87.5	0.1557	1.5
245.36	5069	2082.6	2085.7	3.1	22.1	78.1	0.1783	2.3
244.90	5069	2082.6	2086.2	3.6	16.9	87.2	0.0361	1.6
244.20	5069	2081.4	2085.0	3.6	17.0	87.1	0.1579	1.6
244.17	5069	2078.4	2081.5	3.1	21.4	80.1	0.1777	2.2
243.70	5069	2078.4	2082.3	3.9	15.5	87.8	0.0343	1.4
243.10	5069	2077.3	2081.0	3.7	16.4	87.4	0.1567	1.5
243.07	5069	2074.3	2077.4	3.1	21.0	80.3	0.1766	2.1
242.60	5069	2074.3	2078.4	4.1	14.8	88.2	0.0333	1.3
242.00	5069	2073.2	2077.0	3.8	16.1	87.5	0.1567	1.5
241.97	5069	2070.2	2073.4	3.2	20.8	80.3	0.1766	2.1
241.50	5069	2070.2	2074.4	4.2	14.4	88.4	0.0291	1.3
241.06	5069	2069.9	2075.9	6.0	9.8	92.0	0.0071	0.7
240.56	5069	2069.5	2073.7	4.2	14.3	88.4	0.0081	1.3
239.70	5069	2068.8	2072.8	4.0	15.0	88.1	0.1535	1.3
239.67	5069	2065.8	2069.0	3.2	20.2	80.5	0.1745	2.0
239.20	5069	2065.8	2070.3	4.5	13.3	89.0	0.1911	1.1
239.17	5069	2062.8	2066.2	3.4	19.5	80.7	0.1807	1.9
238.60	5069	2062.8	2066.7	3.9	15.7	87.7	0.1640	1.4
238.57	5069	2059.8	2063.0	3.2	20.6	80.4	0.1766	2.1
238.10	5069	2059.8	2064.2	4.4	13.6	88.8	0.0326	1.2
237.60	5069	2058.9	2062.8	3.9	15.4	87.8	0.1560	1.4
237.57	5069	2055.9	2059.1	3.2	20.5	80.4	0.1755	2.1
237.10	5069	2055.9	2060.3	4.4	13.7	88.8	0.0314	1.2
236.50	5069	2054.8	2058.6	3.8	15.8	87.7	0.1558	1.5
236.46	5069	2050.8	2053.9	3.1	21.9	78.2	0.1772	2.2
236.00	5069	2050.8	2054.4	3.6	16.7	87.2	0.0362	1.6
235.50	5069	2049.9	2053.5	3.6	17.0	87.1	0.1465	1.6
235.46	5069	2045.9	2048.9	3.0	22.6	78.0	0.1668	2.3
235.00	5069	2045.9	2049.4	3.5	17.3	87.0	0.0383	1.7
234.50	5069	2045.0	2048.5	3.5	17.3	87.0	0.1590	1.7
234.47	5069	2042.0	2045.0	3.0	21.7	80.1	0.1777	2.2
234.00	5069	2042.0	2045.8	3.8	15.7	87.7	0.0357	1.4
233.50	5069	2041.1	2044.7	3.6	16.5	90.8	0.1413	1.6
233.47	5069	2038.1	2041.2	3.1	21.1	81.9	0.1599	2.2
233.00	5069	2038.1	2042.0	3.9	15.1	91.7	0.1766	1.4
232.96	5069	2034.1	2037.2	3.1	21.5	79.8	0.1772	2.2
232.50	5069	2034.1	2037.7	3.6	16.5	90.8	0.0353	1.6
229.80	5227	2029.2	2032.8	3.6	17.3	87.2	0.1581	1.6
229.78	5227	2027.2	2030.4	3.2	20.4	82.5	0.1760	2.0
229.30	5227	2027.2	2031.9	4.7	12.7	107.4	0.0324	1.1
226.80	5227	2022.7	2026.2	3.5	18.0	87.0	0.1397	1.7
226.77	5227	2019.7	2022.8	3.1	22.1	80.1	0.1621	2.3
226.30	5227	2019.7	2023.5	3.8	16.3	87.6	0.0371	1.5
223.30	5227	2014.3	2017.8	3.5	17.8	87.0	0.1417	1.7
223.27	5227	2011.3	2014.4	3.1	22.0	80.2	0.1621	2.3
222.80	5227	2011.3	2015.1	3.8	16.2	87.7	0.0369	1.5
219.00	5227	2004.5	2008.0	3.5	18.0	87.0	0.1415	1.7
218.97	5227	2001.5	2004.6	3.1	22.1	80.1	0.1621	2.3
218.50	5227	2001.5	2005.3	3.8	16.3	87.6	0.0362	1.5
216.50	5227	1998.4	2002.1	3.7	16.8	87.4	0.1575	1.6
216.47	5227	1995.4	1998.6	3.2	21.3	80.4	0.1766	2.1
216.00	5227	1995.4	1999.4	4.0	15.4	88.1	0.0336	1.4
215.00	5227	1993.6	1997.3	3.7	16.8	87.4	0.1403	1.6
214.97	5227	1990.6	1993.9	3.3	21.2	78.5	0.1589	2.1
214.50	5227	1990.6	1994.5	3.9	16.0	87.8	0.0335	1.5
214.00	5227	1989.7	1993.5	3.8	16.6	87.5	0.1413	1.5
213.97	5227	1986.7	1989.9	3.2	21.2	80.4	0.1599	2.1
213.50	5227	1986.7	1990.8	4.1	15.2	88.2	0.0336	1.4
213.00	5227	1985.8	1989.7	3.9	16.2	87.7	0.1570	1.5
212.97	5227	1982.8	1986.0	3.2	20.9	80.5	0.1766	2.1
212.50	5227	1982.8	1987.1	4.3	14.5	88.5	0.0311	1.3
212.06	5227	1982.0	1985.9	3.9	16.0	87.8	0.0158	1.5
211.66	5227	1981.3	1985.4	4.1	15.1	88.2	0.0234	1.3
211.00	5227	1980.1	1985.0	4.9	12.5	89.8	0.0201	1.0
210.00	5227	1978.3	1981.3	3.0	17.1	105.9	0.0195	1.8

10-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel. (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
209.00	5227	1976.5	1979.0	2.5	17.0	125.0	0.0255	1.9
208.50	5227	1975.6	1978.1	2.5	16.0	134.9	0.1640	1.8
208.46	5227	1971.6	1973.5	1.9	21.8	125.9	0.1859	2.8
208.00	5227	1971.6	1974.3	2.7	14.4	135.5	0.0449	1.6
207.50	5227	1970.7	1973.4	2.7	14.6	135.4	0.1590	1.6
207.47	5227	1967.7	1969.8	2.1	19.7	128.2	0.1787	2.4
207.00	5227	1967.7	1971.2	3.5	11.2	137.0	0.0347	1.1
206.00	5227	1965.9	1968.6	2.7	14.7	135.3	0.0145	1.6
205.00	5227	1964.1	1966.8	2.7	14.9	135.3	0.1585	1.6
204.97	5227	1961.1	1963.2	2.1	19.9	128.2	0.1787	2.5
204.50	5227	1961.1	1964.4	3.3	11.9	136.6	0.1954	1.2
204.47	5227	1958.1	1960.4	2.3	18.4	128.5	0.1879	2.2
204.00	5227	1958.1	1961.6	3.5	11.4	136.9	0.1879	1.1
203.97	5227	1955.1	1957.4	2.3	18.3	128.5	0.1879	2.2
203.50	5227	1955.1	1958.6	3.5	11.3	136.9	0.0273	1.1
203.00	5227	1954.2	1957.1	2.9	13.6	135.8	0.1560	1.4
202.97	5227	1951.2	1953.4	2.2	19.2	128.3	0.1766	2.3
202.50	5227	1951.2	1954.7	3.5	11.2	137.0	0.1933	1.1
202.47	5227	1948.2	1950.5	2.3	18.2	128.5	0.1869	2.2
202.00	5227	1948.2	1951.7	3.5	11.3	136.9	0.0262	1.1
201.50	5227	1947.3	1950.2	2.9	13.6	135.8	0.1560	1.4
201.47	5227	1944.3	1946.5	2.2	19.2	128.3	0.1766	2.3
201.00	5227	1944.3	1947.8	3.5	11.2	137.0	0.1933	1.1
200.97	5227	1941.3	1943.6	2.3	18.2	128.5	0.1869	2.2
200.50	5227	1941.3	1944.8	3.5	11.3	136.9	0.1869	1.1
200.47	5227	1938.3	1940.6	2.3	18.3	128.5	0.1879	2.2
200.00	5227	1938.3	1941.8	3.5	11.3	136.9	0.1879	1.1
199.97	5227	1935.3	1937.6	2.3	18.3	128.5	0.1879	2.2
199.50	5227	1935.3	1938.8	3.5	11.3	136.9	0.1838	1.1
199.46	5227	1931.3	1933.4	2.1	19.7	126.3	0.1918	2.4
199.00	5227	1931.3	1934.5	3.2	12.1	136.5	0.0358	1.2
198.00	5227	1929.5	1932.2	2.7	14.6	137.2	0.0155	1.6
197.00	5227	1927.7	1930.3	2.6	14.8	140.5	0.1423	1.6
196.97	5227	1924.7	1926.9	2.2	19.6	126.7	0.1621	2.4
196.50	5227	1924.7	1928.3	3.6	11.1	137.8	0.0347	1.1
196.00	5227	1923.8	1926.5	2.7	14.1	149.9	0.0145	1.6
195.00	5227	1922.0	1924.9	2.9	13.8	155.9	0.0190	1.6
194.00	5227	1920.2	1922.8	2.6	14.0	157.3	0.0150	1.6
193.00	5227	1918.4	1923.2	4.8	10.4	149.4	0.0135	1.0
192.00	5227	1916.6	1919.9	3.3	14.4	190.1	0.0265	1.8
191.00	5227	1913.1	1916.9	3.8	13.1	224.5	0.0355	1.7
190.00	5227	1910.3	1913.0	2.7	13.9	219.6	0.0375	1.9
189.00	5227	1906.0	1909.2	3.2	13.7	227.7	0.0385	1.9
188.00	5227	1903.0	1905.8	2.8	12.8	258.8	0.0360	1.8
187.00	5227	1900.0	1902.7	2.7	12.0	261.4	0.0315	1.6
186.00	5227	1897.6	1900.0	2.4	11.6	267.5	0.0295	1.6
185.00	5227	1894.3	1896.6	2.3	12.6	247.8	0.0315	1.7
184.00	5227	1891.2	1893.4	2.2	12.2	272.7	0.0315	1.7
183.00	5227	1888.0	1890.6	2.6	11.8	244.8	0.0280	1.5
182.00	5227	1884.0	1887.6	3.6	12.6	212.0	0.0310	1.6
181.00	5227	1882.0	1883.9	1.9	12.9	328.9	0.0345	2.0
180.00	5227	1879.0	1881.8	2.8	9.5	338.8	0.0275	1.3
179.00	5227	1876.3	1879.4	3.1	10.4	308.5	0.0215	1.4
178.00	5227	1873.5	1877.3	3.8	10.2	290.3	0.0205	1.3
177.00	5227	1872.0	1875.4	3.4	9.9	303.4	0.0190	1.3
176.00	5227	1870.0	1873.5	3.5	10.0	279.1	0.0175	1.3
175.00	5227	1867.7	1872.2	4.5	8.9	327.0	0.0190	1.2
174.00	5227	1866.0	1869.4	3.4	10.8	353.9	0.0200	1.6
173.00	5227	1864.0	1868.1	4.1	9.0	246.6	0.0200	1.0
172.00	5227	1860.0	1863.9	3.9	14.7	205.7	0.0230	2.0
171.00	5227	1857.4	1863.6	6.2	8.6	282.0	0.0205	1.0
170.00	5227	1854.1	1861.4	7.3	10.8	271.2	0.0185	1.4
169.00	5227	1852.0	1859.4	7.4	10.3	279.8	0.0255	1.3
168.00	5227	1851.0	1855.1	4.1	14.0	257.7	0.0330	2.1
167.00	5227	1847.0	1851.6	4.6	13.7	180.0	0.0310	1.7
166.00	5227	1846.0	1850.6	4.6	9.2	344.1	0.0280	1.3
165.00	5227	1844.0	1845.6	1.6	14.7	268.6	0.0450	2.2
164.90	5227	1843.6	1845.3	1.7	14.0	271.2	0.0406	2.1
164.10	5227	1841.8	1846.4	4.6	3.9	395.3	0.0156	0.4
164.00	5227	1840.7	1845.3	4.6	8.6	277.2	0.0130	1.0

10-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel. (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
163.00	5227	1838.0	1842.9	4.9	11.1	244.6	0.0220	1.5
162.00	5227	1835.6	1839.9	4.3	12.0	296.1	0.0295	1.7
161.00	5227	1833.1	1836.8	3.7	11.8	259.0	0.0280	1.6
160.00	5227	1829.0	1834.7	5.7	10.8	260.0	0.0235	1.4
159.00	5227	1827.6	1832.4	4.8	11.1	249.2	0.0245	1.4
158.00	5227	1826.1	1829.3	3.2	12.1	290.7	0.0270	1.7
157.00	5227	1823.1	1827.5	4.4	9.8	293.1	0.0220	1.3
156.00	5227	1821.4	1825.6	4.2	10.1	271.3	0.0200	1.3
155.00	5227	1819.0	1822.8	3.8	11.5	293.4	0.0250	1.6
157.00	5227	1816.2	1819.9	3.7	10.0	363.7	0.0280	1.5
156.00	5227	1813.0	1816.9	3.9	10.2	423.3	0.0290	1.6
155.00	5227	1810.7	1814.4	3.7	8.9	459.3	0.0380	1.4
154.00	5227	1806.9	1809.9	3.0	12.8	283.5	0.0404	1.9
153.00	5227	1803.0	1807.4	4.4	9.8	376.4	0.0290	1.5
152.00	5227	1800.0	1805.4	5.4	8.7	424.8	0.0230	1.3
151.00	4745	1799.0	1802.7	3.7	10.3	314.0	0.0250	1.5
150.00	4745	1797.0	1800.3	3.3	9.4	381.7	0.0255	1.4
149.00	4745	1793.3	1798.3	5.0	7.8	528.0	0.0235	1.3
148.00	4745	1793.0	1795.7	2.7	8.7	465.5	0.0240	1.4
147.00	4745	1791.0	1793.1	2.1	8.9	454.7	0.0250	1.4
146.00	4745	1787.4	1790.5	3.1	9.5	352.9	0.0260	1.4
145.00	4745	1785.0	1787.5	2.5	10.5	333.4	0.0265	1.6
144.00	4745	1782.0	1784.9	2.9	10.4	282.0	0.0265	1.4
143.00	4745	1778.5	1781.9	3.4	11.3	282.6	0.0280	1.6
142.00	4745	1776.0	1779.4	3.4	10.4	294.1	0.0255	1.5
141.00	4745	1773.7	1777.4	3.7	9.4	310.5	0.0230	1.3
140.00	5666	1771.1	1774.7	3.6	10.7	360.7	0.0255	1.6
139.00	5666	1769.0	1772.2	3.2	9.7	422.6	0.0255	1.4
138.00	5666	1764.7	1770.0	5.3	9.4	411.1	0.0225	1.4
137.00	5666	1762.3	1767.9	5.6	9.3	399.2	0.0220	1.3
136.00	5666	1761.0	1765.5	4.5	9.5	467.9	0.0240	1.5
135.00	5666	1760.0	1763.3	3.3	8.7	508.5	0.0240	1.3
134.00	5666	1758.0	1760.9	2.9	9.0	500.9	0.0235	1.4
133.00	5666	1755.0	1758.7	3.7	8.0	624.5	0.0240	1.3
132.00	5666	1753.0	1756.3	3.3	8.0	694.7	0.0245	1.4
131.00	5666	1749.0	1753.8	4.8	8.2	642.4	0.0250	1.4
130.00	5666	1747.6	1751.1	3.5	9.0	509.7	0.0250	1.4
129.00	5666	1744.0	1748.5	4.5	9.3	483.2	0.0255	1.5
128.00	5666	1742.0	1745.7	3.7	9.8	434.5	0.0215	1.5
127.00	5666	1740.0	1744.6	4.6	7.7	425.5	0.0180	1.0
126.00	5666	1738.0	1741.7	3.7	11.1	390.0	0.0278	1.6
125.40	5666	1737.0	1738.4	1.4	14.0	300.4	0.1683	2.1
125.36	5666	1733.0	1734.0	1.0	20.0	274.4	0.1880	3.5
124.90	5666	1733.0	1735.0	2.0	10.5	279.8	0.1880	1.3
124.86	5666	1729.0	1730.2	1.2	18.4	251.1	0.1793	2.9
124.40	5666	1729.0	1731.6	2.6	9.0	252.0	0.0339	1.0
121.90	5666	1726.0	1728.4	2.4	11.6	213.2	0.1546	1.4
121.87	5666	1723.0	1724.7	1.7	17.7	191.9	0.1755	2.4
121.40	5666	1722.9	1725.6	2.7	10.1	214.8	0.0302	1.1
119.80	5666	1721.1	1723.8	2.7	11.1	196.2	0.1547	1.2
119.77	5666	1718.1	1720.0	1.9	17.6	174.2	0.1723	2.3
119.30	5666	1718.1	1721.1	3.0	10.1	197.9	0.0280	1.1
117.00	5666	1715.3	1717.8	2.5	12.1	195.0	0.1557	1.4
116.97	5666	1712.3	1714.2	1.9	17.9	173.9	0.1745	2.3
116.50	5666	1712.3	1715.3	3.0	10.1	197.9	0.0303	1.1
114.60	5666	1710.0	1712.5	2.5	11.9	195.2	0.1558	1.4
114.57	5666	1707.0	1708.9	1.9	17.9	174.0	0.1734	2.3
114.10	5666	1707.0	1710.0	3.0	10.1	197.9	0.0291	1.1
112.00	5666	1704.5	1707.0	2.5	11.9	195.2	0.1557	1.3
111.97	5666	1701.5	1703.4	1.9	17.8	174.0	0.1734	2.3
111.50	5666	1701.5	1704.5	3.0	10.1	197.9	0.0292	1.1
109.60	5666	1699.2	1701.7	2.5	11.9	195.2	0.1558	1.4
109.57	5666	1696.2	1698.1	1.9	17.9	174.0	0.1734	2.3
109.10	5666	1696.2	1699.2	3.0	10.1	197.9	0.0291	1.1
107.60	5666	1694.4	1697.0	2.6	11.8	195.4	0.1557	1.3
107.57	5666	1691.4	1693.3	1.9	17.8	174.0	0.1734	2.3
107.10	5666	1691.4	1694.4	3.0	10.1	197.9	0.0290	1.1
105.50	5666	1689.5	1692.1	2.6	11.7	195.4	0.1556	1.3
105.46	5666	1685.5	1687.3	1.8	19.2	167.7	0.1793	2.5
105.00	5666	1685.5	1688.0	2.5	12.2	194.9	0.0358	1.4

10-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel. (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
103.00	5666	1683.1	1686.0	2.9	10.3	197.5	0.1732	1.1
102.97	5666	1680.1	1681.9	1.8	17.5	181.3	0.1879	2.3
102.50	5666	1680.1	1683.1	3.0	10.1	197.8	0.1879	1.1
102.47	5666	1677.1	1678.9	1.8	17.5	181.3	0.1879	2.3
102.00	5666	1677.1	1680.1	3.0	10.1	197.9	0.1879	1.1
101.97	5666	1674.1	1675.9	1.8	17.5	181.3	0.1879	2.3
101.50	5666	1674.1	1677.1	3.0	10.0	197.9	0.1879	1.0
101.47	5666	1671.1	1672.9	1.8	17.5	181.3	0.1879	2.3
101.00	5666	1671.1	1674.1	3.0	10.0	198.0	0.0271	1.0
99.20	5319	1668.9	1671.2	2.3	12.5	193.7	0.0068	1.5
98.70	5319	1668.3	1670.3	2.0	14.2	192.0	0.0310	1.8
98.60	5319	1668.2	1670.4	2.2	12.7	193.5	0.1800	1.5
98.58	5319	1666.2	1668.0	1.8	16.8	183.8	0.1677	2.2
98.10	5319	1666.2	1669.2	3.0	9.5	197.8	0.0232	1.0
96.00	5319	1663.7	1666.1	2.4	12.0	194.2	0.0000	1.4
95.98	5319	1661.7	1665.6	3.9	7.4	193.1	0.0000	0.7
95.50	5319	1661.7	1664.7	3.0	9.5	197.8	0.0085	1.0
93.50	5319	1659.3	1661.7	2.4	12.0	194.2	0.0000	1.4
93.48	5319	1657.3	1661.2	3.9	7.4	193.1	0.0000	0.7
93.00	5319	1657.3	1660.3	3.0	9.5	197.9	0.0083	1.0
91.50	5319	1655.5	1657.9	2.4	11.8	194.5	0.1720	1.4
91.47	5319	1652.5	1654.2	1.7	17.9	180.7	0.1901	2.5
91.00	5319	1652.5	1655.5	3.0	9.5	197.8	0.0287	1.0
89.50	5319	1650.7	1653.1	2.4	11.8	194.5	0.1720	1.4
89.47	5319	1647.7	1649.4	1.7	17.9	180.7	0.1901	2.5
89.00	5319	1647.7	1650.7	3.0	9.5	197.8	0.0287	1.0
87.50	5319	1645.9	1648.3	2.4	11.8	194.5	0.0000	1.4
87.48	5319	1643.9	1647.8	3.9	7.4	193.1	0.0000	0.7
87.00	5319	1643.9	1646.9	3.0	9.5	197.8	0.0087	1.0
82.50	5319	1638.5	1640.8	2.3	12.6	193.5	0.1557	1.5
82.47	5319	1635.5	1637.2	1.7	18.2	180.6	0.1755	2.5
82.00	5319	1635.5	1638.5	3.0	9.5	197.8	0.0309	1.0
80.50	5319	1633.7	1636.1	2.4	11.8	194.5	0.1553	1.4
80.46	5319	1629.7	1631.3	1.6	19.3	177.9	0.1815	2.7
80.00	5319	1629.7	1632.3	2.6	11.1	195.4	0.0376	1.2
74.00	5319	1622.5	1625.1	2.6	10.8	195.8	0.1561	1.2
73.98	5319	1620.5	1622.4	1.9	15.8	184.2	0.1646	2.1
73.50	5319	1620.5	1623.5	3.0	9.5	197.8	0.0202	1.0
71.00	5319	1617.5	1619.8	2.3	12.2	194.0	0.1556	1.4
70.97	5319	1614.5	1616.2	1.7	18.0	180.6	0.1745	2.5
70.50	5319	1614.5	1617.5	3.0	9.5	197.8	0.0300	1.0
68.50	5319	1612.1	1614.5	2.4	12.0	194.2	0.1555	1.4
68.47	5319	1609.1	1610.8	1.7	18.0	180.7	0.1745	2.5
68.00	5319	1609.1	1612.1	3.0	9.5	197.8	0.0300	1.0
66.00	5319	1606.7	1609.1	2.4	12.0	194.2	0.1555	1.4
65.97	5319	1603.7	1605.4	1.7	18.0	180.7	0.1745	2.5
65.50	5319	1603.7	1606.7	3.0	9.5	197.8	0.0300	1.0
63.50	5319	1601.3	1603.7	2.4	12.0	194.2	0.1555	1.4
63.47	5319	1598.3	1600.0	1.7	18.0	180.7	0.1745	2.5
63.00	5319	1598.3	1601.3	3.0	9.5	197.8	0.0300	1.0
61.00	5319	1595.9	1598.3	2.4	12.0	194.2	0.1555	1.4
60.97	5319	1592.9	1594.6	1.7	18.0	180.7	0.1745	2.5
60.50	5319	1592.9	1595.9	3.0	9.5	197.8	0.0300	1.0
58.50	5319	1590.5	1592.9	2.4	12.0	194.2	0.1680	1.4
58.46	5319	1586.0	1587.5	1.5	20.0	176.5	0.1973	2.9
58.00	5319	1586.0	1588.4	2.4	12.0	194.3	0.0410	1.4
53.00	5319	1580.0	1582.8	2.8	10.0	197.0	0.1729	1.1
52.97	5319	1577.0	1578.7	1.7	17.3	180.9	0.1879	2.3
52.50	5319	1577.0	1580.0	3.0	9.5	197.8	0.0269	1.0
50.00	5319	1574.0	1576.3	2.3	12.2	194.0	0.1556	1.4
49.97	5319	1571.0	1572.7	1.7	18.0	180.6	0.1745	2.5
49.50	5319	1571.0	1574.0	3.0	9.5	198.3	0.0298	1.0
48.00	5319	1569.2	1571.6	2.4	11.8	195.0	0.0153	1.4
47.90	5319	1569.0	1571.4	2.4	11.8	194.9	0.0161	1.4
46.50	5319	1567.4	1570.4	3.0	9.8	183.0	0.0122	1.0
44.70	5927	1565.2	1568.9	3.7	7.0	234.9	0.0133	0.6
44.60	6613	1565.2	1568.1	2.9	9.7	235.8	0.0171	1.0
44.60	6613	1565.1	1567.9	2.8	10.3	235.4	0.0140	1.1
43.60	6613	1564.3	1567.5	3.2	8.8	236.7	0.0076	0.9
43.30	6613	1564.0	1567.3	3.3	8.5	237.0	0.0066	0.8

10-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel. (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
41.80	6613	1562.6	1566.6	4.0	8.0	222.9	0.0057	0.7
40.30	6613	1561.2	1565.7	4.5	8.4	291.0	0.0070	0.9
38.80	6613	1559.8	1564.3	4.5	8.9	318.1	0.0113	1.0
37.30	6613	1558.3	1561.7	3.4	10.5	330.3	0.0150	1.4
35.80	6613	1554.7	1559.7	5.0	9.3	319.2	0.0160	1.1
34.30	6613	1552.7	1556.9	4.2	10.5	373.8	0.0187	1.4
32.80	6613	1549.6	1554.1	4.5	9.1	490.0	0.0193	1.3
31.30	6613	1547.3	1551.7	4.4	7.7	500.0	0.0160	1.1
29.80	6613	1544.6	1549.5	4.9	8.6	470.0	0.0150	1.2
28.30	6613	1542.6	1547.0	4.4	9.1	423.3	0.0143	1.2
26.80	6613	1539.0	1545.2	6.2	8.4	357.1	0.0127	1.0
25.30	6613	1536.2	1543.1	6.9	9.4	381.6	0.0117	1.2
23.80	6613	1534.7	1541.7	7.0	8.6	372.4	0.0117	1.0
22.30	6613	1533.0	1539.7	6.7	9.3	390.0	0.0113	1.2
20.80	6613	1531.2	1538.3	7.1	8.7	389.9	0.0127	1.1
19.30	6613	1530.0	1535.6	5.6	10.2	347.5	0.0163	1.3
17.80	6613	1527.8	1532.7	4.9	10.7	303.9	0.0130	1.3
16.30	6613	1525.6	1531.7	6.1	10.1	216.8	0.0100	1.0
15.30	6613	1524.1	1529.7	5.6	12.3	169.6	0.0140	1.2
14.80	6613	1523.2	1528.6	5.4	13.3	168.2	0.0580	1.4
14.72	6613	1523.2	1525.7	2.5	17.7	156.4	0.1250	2.0
14.62	6613	1518.2	1520.4	2.2	23.6	133.9	0.1111	2.9
14.01	6613	1518.2	1520.7	2.5	15.7	174.6	0.0473	1.8
13.30	6613	1517.2	1520.0	2.8	14.0	176.9	0.0196	1.5
11.80	6613	1515.1	1517.5	2.4	13.9	211.5	0.0158	1.6
10.80	6613	1513.7	1516.9	3.2	11.7	182.8	0.0128	1.2
10.10	6613	1512.7	1515.6	2.9	12.7	181.8	0.0953	1.3
10.00	6613	1510.0	1512.2	2.2	18.1	169.1	0.0958	2.2
8.80	6613	1509.7	1515.1	5.4	6.8	189.7	0.0072	0.5
7.30	6613	1509.2	1514.8	5.6	6.7	186.5	0.0023	0.5
5.80	6613	1508.7	1514.6	5.9	6.4	187.6	0.0017	0.5
4.30	6613	1508.3	1514.4	6.1	6.2	188.3	0.0017	0.5
2.80	6613	1507.8	1514.2	6.4	5.8	189.7	0.0010	0.4
2.30	6613	1507.7	1514.1	6.4	5.9	186.7	0.0010	0.4
1.80	6613	1507.5	1514.0	6.5	6.1	179.1	0.0020	0.4
1.30	6613	1507.3	1513.8	6.5	6.6	167.2	0.0020	0.5
0.80	6613	1507.2	1513.6	6.4	7.1	157.7	0.0020	0.5
0.30	6613	1507.0	1513.2	6.2	8.2	138.7	0.0027	0.6
0.00	6613	1507.0	1513.1	6.1	8.4	138.2	0.0000	0.6

* Beginning of upstream control line stationing

2-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
316.50	1022	2309.6	2311.8	2.2	5.2	223.7	0.0147	1.0
313.50	1022	2300.1	2301.4	1.3	11.4	145.3	0.0298	2.6
310.50	1022	2291.9	2293.8	1.9	5.6	190.2	0.0288	1.0
307.50	1022	2282.5	2284.4	1.9	10.4	140.5	0.0317	2.2
304.50	1022	2273.5	2274.8	1.3	5.8	237.9	0.0307	1.2
301.50	1022	2262.9	2265.4	2.5	12.3	47.5	0.0268	1.6
298.50	1022	2256.2	2258.4	2.2	7.0	169.4	0.0285	1.3
295.50	1022	2247.4	2249.5	2.1	8.4	133.0	0.0280	1.6
292.50	1022	2237.9	2240.9	3.0	9.8	67.3	0.0280	1.4
289.50	2027	2228.6	2232.4	3.8	9.5	197.2	0.0353	1.6
288.00	2027	2224.2	2225.8	1.6	10.5	221.8	0.0393	2.0
286.50	2027	2217.7	2221.2	3.5	7.3	295.6	0.0324	1.3
284.15	2027	2210.8	2214.3	3.5	8.3	280.2	0.0278	1.6
280.30	2027	2200.8	2203.9	3.1	7.7	247.2	0.0252	1.3
277.15	2027	2194.6	2196.3	1.7	9.0	170.0	0.0514	1.4
276.95	2027	2188.6	2189.4	0.8	20.6	121.1	0.0681	4.0
275.40	2027	2183.9	2185.7	1.8	10.1	110.1	0.0403	1.3
272.45	2027	2174.9	2176.0	1.1	16.4	120.2	0.0422	2.8
272.35	2027	2174.2	2175.2	1.0	16.6	117.8	0.0650	2.9
271.95	2027	2173.5	2175.3	1.8	9.6	117.8	0.0400	1.3
271.75	2027	2173.0	2174.5	1.5	11.4	117.9	0.2050	1.6
271.74	2027	2169.0	2169.8	0.8	20.1	117.9	0.2286	3.8
271.60	2027	2168.5	2169.4	0.9	19.6	118.0	0.0561	3.7
271.40	2027	2167.8	2168.7	0.9	18.8	118.0	0.0415	3.5
270.65	2027	2165.3	2166.9	1.6	18.3	70.1	0.0290	2.6
270.55	2027	2165.0	2166.5	1.5	18.5	72.1	0.0250	2.6
269.80	2027	2163.0	2164.7	1.7	19.0	62.1	0.0200	2.5
269.65	2027	2162.8	2164.4	1.6	19.0	67.1	0.0200	2.7
269.55	2027	2162.7	2164.2	1.5	19.0	73.0	0.0203	2.8
268.00	2027	2160.7	2162.4	1.7	16.5	73.4	0.1353	2.2
267.96	2027	2156.7	2158.2	1.5	21.9	64.9	0.1500	3.2
267.50	2027	2156.7	2158.3	1.6	18.0	73.2	0.0392	2.6
266.20	2027	2154.4	2156.0	1.6	15.1	83.3	0.1642	2.1
266.17	2027	2151.4	2152.8	1.4	19.6	76.8	0.1840	3.0
265.70	2027	2151.4	2153.6	2.2	11.0	84.5	0.1840	1.3
265.67	2027	2148.4	2150.0	1.6	17.3	77.1	0.1734	2.5
265.20	2027	2148.4	2151.1	2.7	9.2	85.3	0.0299	1.0
264.20	2027	2146.6	2148.5	1.9	13.0	83.8	0.0160	1.7
262.30	2027	2143.2	2145.3	2.1	11.9	84.1	0.1595	1.5
262.26	2027	2139.2	2140.6	1.4	19.1	74.9	0.1826	2.8
261.80	2027	2139.2	2141.4	2.2	11.0	84.5	0.0407	1.3
260.50	2027	2136.8	2138.8	2.0	12.7	83.9	0.1414	1.6
260.47	2027	2133.8	2135.3	1.5	18.1	77.0	0.1610	2.6
260.00	2027	2133.8	2136.5	2.7	9.2	85.3	0.0347	1.0
257.10	2027	2128.6	2130.3	1.7	15.0	83.3	0.1404	2.1
257.07	2027	2125.6	2127.0	1.4	19.5	76.8	0.1684	3.0
256.60	2027	2125.6	2127.8	2.2	11.0	89.8	0.0425	1.3
256.33	2027	2125.1	2127.1	2.0	11.6	92.2	0.0150	1.5
256.00	2027	2124.5	2126.6	2.1	11.5	84.3	0.0151	1.4
255.80	2027	2124.2	2126.3	2.1	11.5	84.3	0.1575	1.4
255.76	2027	2120.2	2121.6	1.4	19.0	74.9	0.1772	2.8
255.30	2027	2120.2	2122.1	1.9	13.1	83.8	0.0372	1.7
254.80	2027	2119.3	2121.3	2.0	12.3	84.0	0.0194	1.6
254.00	2027	2117.8	2119.8	2.0	12.4	84.0	0.1594	1.6
253.97	2027	2114.8	2116.3	1.5	18.0	77.0	0.1766	2.6
253.50	2027	2114.8	2117.5	2.7	9.2	85.3	0.0330	1.0
252.80	2027	2113.6	2115.6	2.0	12.2	84.0	0.1398	1.5
252.77	2027	2110.6	2112.1	1.5	17.9	77.0	0.1599	2.6
252.30	2027	2110.6	2113.3	2.7	9.2	85.3	0.0328	1.0
251.50	2027	2109.1	2111.0	1.9	12.8	83.9	0.1563	1.6
251.47	2027	2106.1	2107.6	1.5	18.2	77.0	0.1777	2.7
251.00	2027	2106.1	2108.8	2.7	9.2	85.3	0.0338	1.0
250.10	2027	2104.5	2106.4	1.9	12.7	83.9	0.1561	1.6
250.06	2027	2100.5	2101.9	1.4	19.5	74.8	0.1837	2.9
249.60	2027	2100.5	2102.7	2.2	11.2	84.4	0.0423	1.4
248.90	2027	2099.2	2101.2	2.0	12.3	84.0	0.1419	1.5
248.87	2027	2096.2	2097.7	1.5	17.9	77.0	0.1599	2.6
248.40	2027	2096.2	2098.9	2.7	9.2	85.3	0.0324	1.0
247.80	2027	2095.2	2097.3	2.1	12.0	84.1	0.1558	1.5
247.77	2027	2092.2	2093.7	1.5	17.7	77.0	0.1755	2.6

2-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
247.30	2027	2092.2	2094.9	2.7	9.2	85.3	0.0320	1.0
246.60	2027	2090.9	2092.9	2.0	12.5	83.9	0.1564	1.6
246.57	2027	2087.9	2089.4	1.5	18.0	77.0	0.1766	2.6
246.10	2027	2087.9	2090.6	2.7	9.2	85.4	0.0330	1.0
245.40	2027	2086.6	2088.6	2.0	12.5	83.9	0.1439	1.6
245.36	2027	2082.6	2084.0	1.4	19.4	74.8	0.1723	2.9
244.90	2027	2082.6	2084.8	2.2	11.2	84.4	0.0419	1.3
244.20	2027	2081.4	2083.5	2.1	12.0	84.1	0.1571	1.5
244.17	2027	2078.4	2079.9	1.5	17.7	77.0	0.1755	2.6
243.70	2027	2078.4	2081.1	2.7	9.2	85.3	0.0322	1.0
243.10	2027	2077.3	2079.3	2.0	12.3	84.0	0.1400	1.5
243.07	2027	2074.3	2075.8	1.5	17.9	77.0	0.1599	2.6
242.60	2027	2074.3	2077.0	2.7	9.2	85.3	0.0333	1.0
242.00	2027	2073.2	2075.2	2.0	12.3	84.0	0.1400	1.5
241.97	2027	2070.2	2071.7	1.5	17.9	77.0	0.1599	2.6
241.50	2027	2070.2	2073.2	3.0	8.2	86.0	0.0278	0.8
241.06	2027	2069.9	2073.2	3.3	7.3	86.6	0.0059	0.7
240.56	2027	2069.5	2071.8	2.3	10.8	84.6	0.0087	1.3
239.70	2027	2068.8	2071.0	2.2	11.2	84.4	0.1374	1.4
239.67	2027	2065.8	2067.3	1.5	17.4	77.1	0.1578	2.5
239.20	2027	2065.8	2068.5	2.7	9.2	85.3	0.1911	1.0
239.17	2027	2062.8	2064.4	1.6	16.9	77.2	0.1833	2.4
238.60	2027	2062.8	2065.1	2.3	10.6	84.6	0.1667	1.2
238.57	2027	2059.8	2061.4	1.6	17.2	77.1	0.1734	2.5
238.10	2027	2059.8	2062.5	2.7	9.2	85.3	0.0294	1.0
237.60	2027	2058.9	2061.0	2.1	11.9	84.1	0.1560	1.5
237.57	2027	2055.9	2057.4	1.5	17.7	77.0	0.1755	2.6
237.10	2027	2055.9	2058.6	2.7	9.2	85.3	0.0322	1.0
236.50	2027	2054.8	2056.8	2.0	12.3	84.0	0.1442	1.5
236.46	2027	2050.8	2052.2	1.4	19.3	74.9	0.1712	2.9
236.00	2027	2050.8	2053.0	2.2	11.1	84.4	0.0407	1.3
235.50	2027	2049.9	2052.0	2.1	11.9	84.1	0.1570	1.5
235.46	2027	2045.9	2047.3	1.4	19.1	74.9	0.1826	2.8
235.00	2027	2045.9	2048.1	2.2	11.0	84.5	0.0396	1.3
234.50	2027	2045.0	2047.1	2.1	11.9	84.1	0.1570	1.5
234.47	2027	2042.0	2043.5	1.5	17.7	77.0	0.1755	2.6
234.00	2027	2042.0	2044.7	2.7	9.2	85.3	0.0315	1.0
233.50	2027	2041.1	2043.1	2.0	12.0	86.1	0.1560	1.5
233.47	2027	2038.1	2039.6	1.5	17.7	77.9	0.1766	2.6
233.00	2027	2038.1	2040.8	2.7	9.1	88.0	0.1766	1.0
232.96	2027	2034.1	2035.6	1.5	18.3	75.7	0.1793	2.7
232.50	2027	2034.1	2036.5	2.4	10.2	87.2	0.0369	1.2
229.80	2162	2029.2	2031.1	1.9	13.6	83.9	0.1576	1.7
229.78	2162	2027.2	2028.8	1.6	17.2	79.2	0.1719	2.4
229.30	2162	2027.2	2030.0	2.8	9.4	85.6	0.0285	1.0
226.80	2162	2022.7	2024.5	1.8	15.0	83.5	0.1566	2.0
226.77	2162	2019.7	2021.2	1.5	19.5	76.9	0.1830	2.9
226.30	2162	2019.7	2022.0	2.3	11.1	84.7	0.0411	1.3
223.30	2162	2014.3	2016.3	2.0	13.5	83.9	0.1582	1.7
223.27	2162	2011.3	2012.8	1.5	18.6	77.1	0.1787	2.7
222.80	2162	2011.3	2013.9	2.6	10.1	85.2	0.0364	1.1
219.00	2162	2004.5	2006.3	1.8	14.8	83.6	0.1576	2.0
218.97	2162	2001.5	2003.0	1.5	19.4	76.9	0.1819	2.8
218.50	2162	2001.5	2003.9	2.4	11.0	84.8	0.0392	1.3
216.50	2162	1998.4	2000.5	2.1	12.5	84.2	0.1573	1.5
216.47	2162	1995.4	1997.0	1.6	18.0	77.2	0.1755	2.6
216.00	2162	1995.4	1998.2	2.8	9.4	85.6	0.0320	1.0
215.00	2162	1993.6	1995.6	2.0	13.2	84.0	0.1398	1.7
214.97	2162	1990.6	1992.2	1.6	18.4	75.2	0.1621	2.6
214.50	2162	1990.6	1993.2	2.6	10.2	85.1	0.0357	1.1
214.00	2162	1989.7	1991.9	2.2	12.0	84.4	0.1403	1.5
213.97	2162	1986.7	1988.3	1.6	17.8	77.2	0.1599	2.5
213.50	2162	1986.7	1989.5	2.8	9.4	85.6	0.0316	1.0
213.00	2162	1985.8	1988.0	2.2	12.2	84.3	0.1550	1.5
212.97	2162	1982.8	1984.4	1.6	17.9	77.2	0.1766	2.5
212.50	2162	1982.8	1985.6	2.8	9.4	85.6	0.0323	1.0
212.06	2162	1982.0	1984.2	2.2	12.0	84.4	0.0157	1.4
211.66	2162	1981.3	1983.6	2.3	11.4	84.6	0.0161	1.3
211.00	2162	1980.1	1982.1	2.0	13.3	84.0	0.0176	1.7
210.00	2162	1978.3	1980.0	1.7	12.6	103.4	0.0235	1.7

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Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
209.00	2162	1976.5	1978.1	1.6	11.3	123.2	0.0230	1.6
208.50	2162	1975.6	1977.1	1.5	11.0	133.0	0.1610	1.6
208.46	2162	1971.6	1972.6	1.0	18.4	123.9	0.1837	3.3
208.00	2162	1971.6	1973.4	1.8	9.0	133.6	0.0407	1.2
207.50	2162	1970.7	1972.3	1.6	10.5	133.1	0.1570	1.5
207.47	2162	1967.7	1968.7	1.0	16.7	126.1	0.1755	2.9
207.00	2162	1967.7	1969.7	2.0	8.0	134.1	0.0320	1.0
206.00	2162	1965.9	1967.3	1.4	11.6	132.8	0.0170	1.7
205.00	2162	1964.1	1965.7	1.6	10.2	133.2	0.1605	1.4
204.97	2162	1961.1	1962.1	1.0	16.6	126.1	0.1745	2.9
204.50	2162	1961.1	1963.1	2.0	8.1	134.1	0.1745	1.0
204.47	2162	1958.1	1959.2	1.1	16.1	126.2	0.1723	2.8
204.00	2162	1958.1	1960.1	2.0	8.1	134.1	0.1723	1.0
203.97	2162	1955.1	1956.2	1.1	16.1	126.2	0.1723	2.8
203.50	2162	1955.1	1957.1	2.0	8.1	134.1	0.0283	1.0
203.00	2162	1954.2	1955.7	1.5	10.7	133.1	0.1560	1.5
202.97	2162	1951.2	1952.2	1.0	16.8	126.1	0.1755	2.9
202.50	2162	1951.2	1953.2	2.0	8.0	134.1	0.1755	1.0
202.47	2162	1948.2	1949.3	1.1	16.1	126.1	0.1723	2.7
202.00	2162	1948.2	1950.2	2.0	8.1	134.1	0.0283	1.0
201.50	2162	1947.3	1948.8	1.5	10.7	133.1	0.1560	1.5
201.47	2162	1944.3	1945.3	1.0	16.8	126.1	0.1755	2.9
201.00	2162	1944.3	1946.3	2.0	8.0	134.1	0.1755	1.0
200.97	2162	1941.3	1942.4	1.1	16.1	126.1	0.1723	2.7
200.50	2162	1941.3	1943.3	2.0	8.1	134.1	0.1723	1.0
200.47	2162	1938.3	1939.4	1.1	16.1	126.1	0.1723	2.7
200.00	2162	1938.3	1940.3	2.0	8.1	134.1	0.1723	1.0
199.97	2162	1935.3	1936.4	1.1	16.1	126.1	0.1723	2.7
199.50	2162	1935.3	1937.3	2.0	8.1	134.1	0.1723	1.0
199.46	2162	1931.3	1932.3	1.0	17.6	124.0	0.1804	3.1
199.00	2162	1931.3	1933.2	1.9	8.4	133.9	0.0374	1.1
198.00	2162	1929.5	1930.9	1.4	11.3	133.9	0.0170	1.7
197.00	2162	1927.7	1929.3	1.6	10.2	136.4	0.1600	1.4
196.97	2162	1924.7	1925.8	1.1	16.5	122.4	0.1734	2.8
196.50	2162	1924.7	1926.8	2.1	8.1	131.7	0.0294	1.0
196.00	2162	1923.8	1925.3	1.5	10.9	138.9	0.0155	1.6
195.00	2162	1922.0	1923.8	1.8	9.8	136.9	0.0190	1.4
194.00	2162	1920.2	1921.7	1.5	10.3	146.3	0.0150	1.5
193.00	2162	1918.4	1921.1	2.7	8.8	104.5	0.0135	1.0
192.00	2162	1916.6	1919.0	2.4	10.4	149.5	0.0230	1.6
191.00	2162	1913.1	1915.7	2.6	11.3	130.0	0.0335	1.6
190.00	2162	1910.3	1912.2	1.9	10.7	190.1	0.0380	1.8
189.00	2162	1906.0	1908.3	2.3	10.8	156.0	0.0380	1.7
188.00	2162	1903.0	1905.1	2.1	9.2	247.3	0.0345	1.7
187.00	2162	1900.0	1901.9	1.9	8.9	221.7	0.0305	1.5
186.00	2162	1897.6	1899.2	1.6	8.5	242.3	0.0300	1.5
185.00	2162	1894.3	1895.8	1.5	9.4	231.3	0.0325	1.7
184.00	2162	1891.2	1892.8	1.6	8.4	262.8	0.0310	1.5
183.00	2162	1888.0	1889.6	1.6	9.3	195.6	0.0285	1.5
182.00	2162	1884.0	1886.6	2.6	9.9	172.3	0.0315	1.5
181.00	2162	1882.0	1883.4	1.4	9.2	262.9	0.0315	1.7
180.00	2162	1879.0	1881.0	2.0	7.0	307.9	0.0255	1.2
179.00	2162	1876.3	1878.5	2.2	8.3	235.8	0.0225	1.4
178.00	2162	1873.5	1876.3	2.8	8.3	205.5	0.0210	1.3
177.00	2162	1872.0	1874.3	2.3	8.2	193.1	0.0190	1.2
176.00	2162	1870.0	1872.5	2.5	8.2	202.6	0.0175	1.3
175.00	2162	1867.7	1870.9	3.2	7.9	170.3	0.0180	1.1
174.00	2162	1866.0	1868.4	2.4	9.7	185.3	0.0210	1.6
173.00	2162	1864.0	1866.9	2.9	7.2	215.9	0.0235	1.1
172.00	2162	1860.0	1863.0	3.0	12.0	155.4	0.0250	2.0
171.00	2162	1857.4	1861.6	4.2	8.5	132.2	0.0185	1.1
170.00	2162	1854.1	1859.8	5.7	10.5	69.9	0.0145	1.1
169.00	2162	1852.0	1856.7	4.7	14.2	57.1	0.0250	1.5
168.00	2162	1851.0	1853.8	2.8	13.2	122.6	0.0370	2.0
167.00	2162	1847.0	1850.5	3.5	11.1	139.0	0.0305	1.6
166.00	2162	1846.0	1849.6	3.6	7.4	183.6	0.0245	1.0
165.00	2162	1844.0	1844.8	0.8	13.1	234.3	0.0695	2.8
164.90	2162	1843.6	1844.6	1.0	10.9	244.0	0.0637	2.1
164.10	2162	1841.8	1844.8	3.0	2.7	335.5	0.0137	0.3
164.00	2162	1840.7	1844.0	3.3	7.4	178.8	0.0135	1.0

2-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
163.00	2162	1838.0	1841.6	3.6	9.7	135.7	0.0225	1.4
162.00	2162	1835.6	1839.3	3.7	8.5	286.3	0.0300	1.6
161.00	2162	1833.1	1836.1	3.0	8.7	237.9	0.0280	1.5
160.00	2162	1829.0	1833.4	4.4	9.6	141.2	0.0230	1.3
159.00	2162	1827.6	1831.4	3.8	8.8	190.6	0.0245	1.4
158.00	2162	1826.1	1828.5	2.4	9.3	218.3	0.0260	1.6
157.00	2162	1823.1	1826.6	3.5	7.2	260.3	0.0215	1.2
156.00	2162	1821.4	1824.6	3.2	7.8	227.8	0.0210	1.2
*155.00	2162	1819.0	1821.9	2.9	9.1	207.3	0.0220	1.5
157.00	2162	1816.2	1818.9	2.7	8.5	221.9	0.0230	1.4
156.00	2162	1813.0	1816.3	3.3	7.9	311.1	0.0240	1.5
155.00	2162	1810.7	1813.6	2.9	7.7	282.2	0.0250	1.4
154.00	2162	1806.9	1809.1	2.2	10.4	253.8	0.0260	2.0
153.00	2162	1803.0	1806.8	3.8	6.8	307.9	0.0270	1.2
152.00	2162	1800.0	1804.3	4.3	8.5	218.9	0.0225	1.4
151.00	2044	1799.0	1801.6	2.6	9.5	151.7	0.0245	1.4
150.00	2044	1797.0	1799.4	2.4	8.3	224.7	0.0240	1.4
149.00	2044	1793.3	1797.5	4.2	6.9	286.4	0.0230	1.2
148.00	2044	1793.0	1795.1	2.1	7.2	354.3	0.0245	1.4
147.00	2044	1791.0	1792.6	1.6	6.8	358.2	0.0260	1.3
146.00	2044	1787.4	1789.7	2.3	8.1	258.0	0.0275	1.4
145.00	2044	1785.0	1786.9	1.9	7.7	308.1	0.0280	1.4
144.00	2044	1782.0	1784.2	2.2	7.7	276.2	0.0275	1.4
143.00	2044	1778.5	1781.3	2.8	8.3	266.1	0.0275	1.5
142.00	2044	1776.0	1778.3	2.3	9.0	177.3	0.0245	1.4
141.00	2044	1773.7	1776.4	2.7	8.1	193.2	0.0225	1.2
140.00	2456	1771.1	1773.9	2.8	8.6	267.5	0.0250	1.5
139.00	2456	1769.0	1771.6	2.6	7.2	354.6	0.0250	1.3
138.00	2456	1764.7	1769.4	4.7	6.8	408.4	0.0225	1.3
137.00	2456	1762.3	1767.2	4.9	6.9	369.9	0.0220	1.2
136.00	2456	1761.0	1764.9	3.9	7.3	361.0	0.0225	1.3
135.00	2456	1760.0	1762.6	2.6	6.9	407.8	0.0235	1.3
134.00	2456	1758.0	1760.3	2.3	6.9	409.8	0.0235	1.3
133.00	2456	1755.0	1758.2	3.2	6.1	503.2	0.0225	1.2
132.00	2456	1753.0	1755.8	2.8	6.7	447.5	0.0240	1.3
131.00	2456	1749.0	1753.2	4.2	6.9	464.4	0.0265	1.4
130.00	2456	1747.6	1750.3	2.7	7.5	367.1	0.0265	1.4
129.00	2456	1744.0	1747.9	3.9	6.9	423.0	0.0260	1.3
128.00	2456	1742.0	1745.0	3.0	8.2	297.9	0.0215	1.4
127.00	2456	1740.0	1743.7	3.7	6.2	365.7	0.0190	1.0
126.00	2456	1738.0	1741.1	3.1	8.5	331.0	0.0313	1.6
125.40	2456	1737.0	1737.8	0.8	11.1	296.6	0.1833	2.3
125.36	2456	1733.0	1733.5	0.5	17.8	271.1	0.1984	4.4
124.90	2456	1733.0	1734.3	1.3	7.1	275.5	0.1859	1.1
124.86	2456	1729.0	1729.6	0.6	16.6	247.2	0.1793	3.8
124.40	2456	1729.0	1730.5	1.5	6.9	245.2	0.0345	1.0
121.90	2456	1726.0	1727.4	1.4	8.6	207.4	0.1552	1.3
121.87	2456	1723.0	1723.9	0.9	15.7	186.4	0.1745	3.0
121.40	2456	1722.9	1724.6	1.7	7.2	208.7	0.0295	1.0
119.80	2456	1721.1	1722.6	1.5	8.6	189.3	0.1550	1.2
119.77	2456	1718.1	1719.0	0.9	15.8	168.0	0.1734	2.9
119.30	2456	1718.1	1719.9	1.8	7.5	190.6	0.0293	1.0
117.00	2456	1715.3	1716.8	1.5	8.9	189.0	0.1559	1.3
116.97	2456	1712.3	1713.2	0.9	15.8	168.0	0.1734	2.9
116.50	2456	1712.3	1714.1	1.8	7.5	190.6	0.0292	1.0
114.60	2456	1710.0	1711.5	1.5	8.8	189.0	0.1558	1.3
114.57	2456	1707.0	1707.9	0.9	15.8	168.0	0.1734	2.9
114.10	2456	1707.0	1708.8	1.8	7.5	190.6	0.0291	1.0
112.00	2456	1704.5	1706.0	1.5	8.8	189.1	0.1557	1.3
111.97	2456	1701.5	1702.4	0.9	15.8	168.0	0.1734	2.9
111.50	2456	1701.5	1703.3	1.8	7.5	190.6	0.0292	1.0
109.60	2456	1699.2	1700.7	1.5	8.8	189.1	0.1558	1.3
109.57	2456	1696.2	1697.1	0.9	15.8	168.0	0.1734	2.9
109.10	2456	1696.2	1698.0	1.8	7.5	190.6	0.0291	1.0
107.60	2456	1694.4	1695.9	1.5	8.7	189.2	0.1557	1.3
107.57	2456	1691.4	1692.3	0.9	15.8	168.0	0.1734	2.9
107.10	2456	1691.4	1693.2	1.8	7.5	190.6	0.0290	1.0
105.50	2456	1689.5	1691.0	1.5	8.7	189.2	0.1556	1.3
105.46	2456	1685.5	1686.4	0.9	17.3	161.7	0.1804	3.2
105.00	2456	1685.5	1687.1	1.6	8.1	189.8	0.0364	1.1

2-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
103.00	2456	1683.1	1684.7	1.6	8.1	189.8	0.1727	1.1
102.97	2456	1680.1	1681.0	0.9	15.7	177.6	0.1890	3.0
102.50	2456	1680.1	1681.9	1.8	7.5	190.7	0.1723	1.0
102.47	2456	1677.1	1678.0	0.9	15.7	177.6	0.1723	2.9
102.00	2456	1677.1	1678.9	1.8	7.5	190.7	0.1723	1.0
101.97	2456	1674.1	1675.0	0.9	15.7	177.6	0.1723	2.9
101.50	2456	1674.1	1675.9	1.8	7.5	190.7	0.1723	1.0
101.47	2456	1671.1	1672.0	0.9	15.7	177.6	0.1723	2.9
101.00	2456	1671.1	1672.9	1.8	7.5	190.7	0.0282	1.0
99.20	2338	1668.9	1670.3	1.4	9.4	188.1	0.0088	1.4
98.70	2338	1668.3	1669.5	1.2	10.8	187.1	0.0280	1.8
98.60	2338	1668.2	1669.7	1.5	8.4	189.0	0.1750	1.2
98.58	2338	1666.2	1667.1	0.9	14.0	180.1	0.1646	2.6
98.10	2338	1666.2	1667.9	1.7	7.4	190.3	0.0205	1.0
96.00	2338	1663.7	1665.2	1.5	8.6	188.9	0.1560	1.3
95.98	2338	1661.7	1662.6	0.9	14.0	180.1	0.1646	2.6
95.50	2338	1661.7	1663.4	1.7	7.4	190.3	0.0206	1.0
93.50	2338	1659.3	1660.8	1.5	8.6	188.8	0.1560	1.3
93.48	2338	1657.3	1658.2	0.9	14.0	180.1	0.1646	2.6
93.00	2338	1657.3	1659.0	1.7	7.4	190.3	0.0206	1.0
91.50	2338	1655.5	1657.0	1.5	8.5	188.9	0.1560	1.2
91.47	2338	1652.5	1653.3	0.8	15.8	177.4	0.1723	3.0
91.00	2338	1652.5	1654.2	1.7	7.3	190.3	0.0283	1.0
89.50	2338	1650.7	1652.2	1.5	8.6	188.9	0.1560	1.3
89.47	2338	1647.7	1648.6	0.9	15.8	177.4	0.1723	3.0
89.00	2338	1647.7	1649.4	1.7	7.3	190.3	0.0283	1.0
87.50	2338	1645.9	1647.4	1.5	8.6	188.9	0.1560	1.3
87.48	2338	1643.9	1644.8	0.9	14.0	180.1	0.1646	2.6
87.00	2338	1643.9	1645.6	1.7	7.4	190.3	0.0206	1.0
82.50	2338	1638.5	1640.0	1.5	8.7	188.7	0.1560	1.3
82.47	2338	1635.5	1636.3	0.8	15.8	177.4	0.1723	3.0
82.00	2338	1635.5	1637.2	1.7	7.3	190.3	0.0283	1.0
80.50	2338	1633.7	1635.2	1.5	8.6	188.9	0.1560	1.3
80.46	2338	1629.7	1630.5	0.8	17.3	174.9	0.1804	3.5
80.00	2338	1629.7	1631.4	1.7	7.4	190.3	0.0364	1.0
74.00	2338	1622.5	1624.0	1.5	8.4	189.0	0.1560	1.2
73.98	2338	1620.5	1621.4	0.9	14.0	180.1	0.1646	2.6
73.50	2338	1620.5	1622.2	1.7	7.4	190.3	0.0206	1.0
71.00	2338	1617.5	1619.0	1.5	8.6	188.8	0.1560	1.3
70.97	2338	1614.5	1615.3	0.8	15.8	177.4	0.1723	3.0
70.50	2338	1614.5	1616.2	1.7	7.3	190.3	0.0283	1.0
68.50	2338	1612.1	1613.6	1.5	8.6	188.8	0.1560	1.3
68.47	2338	1609.1	1609.9	0.8	15.8	177.4	0.1723	3.0
68.00	2338	1609.1	1610.8	1.7	7.3	190.3	0.0283	1.0
66.00	2338	1606.7	1608.2	1.5	8.6	188.8	0.1560	1.3
65.97	2338	1603.7	1604.5	0.8	15.8	177.4	0.1723	3.0
65.50	2338	1603.7	1605.4	1.7	7.3	190.3	0.0283	1.0
63.50	2338	1601.3	1602.8	1.5	8.6	188.8	0.1560	1.3
63.47	2338	1598.3	1599.1	0.8	15.8	177.4	0.1723	3.0
63.00	2338	1598.3	1600.0	1.7	7.3	190.3	0.0283	1.0
61.00	2338	1595.9	1597.4	1.5	8.6	188.8	0.1560	1.3
60.97	2338	1592.9	1593.7	0.8	15.8	177.4	0.1723	3.0
60.50	2338	1592.9	1594.6	1.7	7.3	190.3	0.0283	1.0
58.50	2338	1590.5	1592.0	1.5	8.6	188.8	0.1685	1.3
58.46	2338	1586.0	1586.8	0.8	18.0	173.7	0.1973	3.7
58.00	2338	1586.0	1587.6	1.6	8.1	189.3	0.0408	1.2
53.00	2338	1580.0	1581.6	1.6	7.8	189.8	0.1727	1.1
52.97	2338	1577.0	1577.9	0.9	15.6	177.4	0.1879	3.0
52.50	2338	1577.0	1578.7	1.7	7.3	190.3	0.0273	1.0
50.00	2338	1574.0	1575.5	1.5	8.7	188.8	0.1560	1.3
49.97	2338	1571.0	1571.8	0.8	15.8	177.4	0.1723	3.0
49.50	2338	1571.0	1572.7	1.7	7.3	190.8	0.0283	1.0
48.00	2338	1569.2	1570.7	1.5	8.6	189.4	0.0160	1.3
47.90	2338	1569.0	1570.5	1.5	8.6	189.3	0.0157	1.3
46.50	2338	1567.4	1569.1	1.7	7.5	181.7	0.0113	1.0
44.70	2680	1565.2	1567.6	2.4	4.9	229.8	0.0056	0.6
44.60	3065	1565.2	1567.4	2.2	5.9	233.7	0.0000	0.7
44.60	3065	1565.1	1566.7	1.6	8.5	231.7	0.0000	1.2
43.60	3065	1564.3	1566.6	2.3	5.9	233.8	0.0088	0.7
43.30	3065	1564.0	1565.5	1.5	9.2	231.4	0.0090	1.4

2-Yr Hydraulics

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
41.80	3065	1562.6	1565.0	2.4	6.4	207.6	0.0060	0.7
40.30	3065	1561.2	1564.4	3.2	6.1	188.0	0.0057	0.7
38.80	3065	1559.8	1563.4	3.6	6.6	314.1	0.0103	1.0
37.30	3065	1558.3	1561.0	2.7	7.8	302.7	0.0150	1.2
35.80	3065	1554.7	1558.5	3.8	8.2	226.7	0.0157	1.1
34.30	3065	1552.7	1556.0	3.3	8.6	244.3	0.0173	1.3
32.80	3065	1549.6	1553.3	3.7	7.9	335.7	0.0183	1.4
31.30	3065	1547.3	1551.0	3.7	5.8	437.9	0.0160	1.0
29.80	3065	1544.6	1548.8	4.2	6.7	448.7	0.0153	1.2
28.30	3065	1542.6	1546.3	3.7	6.8	400.8	0.0153	1.1
26.80	3065	1539.0	1544.0	5.0	7.5	264.9	0.0133	1.1
25.30	3065	1536.2	1542.3	6.1	7.1	298.8	0.0120	1.0
23.80	3065	1534.7	1540.3	5.6	7.9	243.6	0.0117	1.1
22.30	3065	1533.0	1538.9	5.9	6.6	290.7	0.0107	1.0
20.80	3065	1531.2	1537.2	6.0	7.4	243.0	0.0127	1.0
19.30	3065	1530.0	1534.7	4.7	8.6	275.2	0.0173	1.3
17.80	3065	1527.8	1531.9	4.1	8.0	281.2	0.0147	1.2
16.30	3065	1525.6	1530.3	4.7	8.2	192.8	0.0125	1.0
15.30	3065	1524.1	1528.3	4.2	10.2	161.1	0.0145	1.3
14.80	3065	1523.2	1527.1	3.9	11.6	75.6	0.1633	1.1
14.72	3065	1523.2	1525.5	2.3	8.7	155.7	0.2312	1.0
14.62	3065	1518.2	1519.5	1.3	19.2	129.7	0.1045	3.1
14.01	3065	1518.2	1520.1	1.9	9.7	171.1	0.0366	1.2
13.30	3065	1517.2	1519.0	1.8	10.2	170.9	0.0147	1.4
11.80	3065	1515.1	1516.7	1.6	10.1	206.6	0.0147	1.5
10.80	3065	1513.7	1515.7	2.0	9.0	177.8	0.0130	1.1
10.10	3065	1512.7	1514.5	1.8	9.8	177.2	0.0960	1.3
10.00	3065	1510.0	1511.2	1.2	16.0	164.8	0.0971	2.6
8.80	3065	1509.7	1512.9	3.2	5.5	180.8	0.0084	0.5
7.30	3065	1509.2	1512.5	3.3	5.4	177.3	0.0027	0.5
5.80	3065	1508.7	1512.2	3.5	5.1	178.0	0.0023	0.5
4.30	3065	1508.3	1511.9	3.6	5.0	178.5	0.0020	0.5
2.80	3065	1507.8	1511.7	3.9	4.6	179.6	0.0020	0.4
2.30	3065	1507.7	1511.6	3.9	4.6	176.6	0.0010	0.4
1.80	3065	1507.5	1511.5	4.0	4.7	169.1	0.0010	0.4
1.30	3065	1507.3	1511.4	4.1	5.0	157.4	0.0020	0.4
0.80	3065	1507.2	1511.2	4.0	5.4	148.1	0.0020	0.5
0.30	3065	1507.0	1511.0	4.0	6.1	131.9	0.0027	0.6
0.00	3065	1507.0	1510.8	3.8	6.4	131.5	0.0000	0.6

* Beginning of upstream control line stationing

rtan.dat
high "n"-value along natural channel.

[preceding sections are unchanged]

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X1 193.0    59.0   318.0  1927.6     100     100   100.0      .0      .0      .0
GR1971.9   318.0  1971.9   318.9  1968.5   516.4  1964.7   617.4  1956.1   717.3
GR1950.8   737.6  1949.7   749.6  1942.0   798.3  1939.6   818.4  1937.3   838.7
GR1934.8   854.1  1932.6   871.5  1932.0   881.8  1930.0   897.9  1926.9   931.7
GR1925.8   951.7  1923.8   959.3  1918.4   972.9  1918.4  1000.8  1918.4  1032.0
GR1918.4  1052.5  1920.3  1061.0  1921.4  1073.5  1922.8  1098.8  1923.5  1119.6
GR1924.4  1138.4  1925.4  1172.1  1926.2  1207.6  1925.0  1241.0  1926.0  1251.6
GR1932.5  1270.0  1934.0  1283.4  1935.6  1328.3  1935.0  1361.6  1935.0  1372.8
GR1935.8  1388.3  1934.3  1398.5  1931.4  1408.5  1928.8  1439.2  1928.1  1446.3
GR1930.2  1456.4  1934.2  1470.0  1939.6  1501.5  1940.0  1521.7  1939.8  1550.2
GR1941.6  1590.8  1940.8  1606.6  1940.4  1639.2  1941.0  1660.3  1942.4  1677.9
GR1944.6  1716.8  1944.4  1751.5  1944.0  1802.2  1944.1  1846.1  1944.0  1858.1
GR1943.0  1870.9  1942.3  1892.8  1943.0  1909.0  1943.3  1927.6
NC    .05     .05     .05
X1 192.0    58.0   323.0  1920.1     100     100   100.0      .0      .0      .0
GR1965.8   323.0  1965.8   323.1  1962.7   531.4  1958.9   637.0  1953.5   700.3
GR1950.1   713.3  1949.4   721.1  1945.8   744.4  1939.4   769.3  1938.9   780.3
GR1934.0   828.6  1925.9   884.8  1922.9   897.7  1920.6   922.1  1918.6   963.1
GR1917.0   983.6  1916.6  1023.8  1918.4  1077.9  1918.6  1094.5  1920.0  1127.7
GR1921.2  1148.4  1921.3  1175.5  1922.0  1195.8  1926.7  1218.1  1930.0  1239.6
GR1930.1  1257.1  1930.5  1275.2  1931.4  1290.3  1930.6  1324.6  1931.0  1339.0
GR1931.9  1352.4  1925.4  1380.8  1924.0  1393.2  1926.1  1408.6  1930.1  1422.6
GR1935.0  1456.5  1935.5  1470.4  1934.9  1493.1  1935.0  1511.1  1937.4  1541.4
GR1938.0  1565.5  1937.6  1593.7  1939.4  1623.9  1940.2  1642.7  1939.2  1673.9
GR1940.0  1689.7  1941.0  1742.5  1941.7  1768.3  1940.9  1784.3  1941.0  1809.7
GR1941.7  1826.7  1942.0  1845.2  1941.8  1862.5  1941.0  1881.8  1940.0  1890.5
GR1940.0  1902.8  1941.7  1913.7  1941.4  1920.1
X1 191.0    63.0   325.0  1870.4     100     100   100.0      .0      .0      .0
GR1961.2   325.0  1961.2   325.2  1957.9   542.7  1953.9   652.8  1951.2   684.0
GR1949.6   690.5  1947.0   707.3  1943.7   720.3  1941.9   740.8  1938.0   777.3
GR1932.0   809.3  1925.7   849.4  1922.9   871.7  1918.8   899.5  1915.0   941.3
GR1915.0   983.7  1913.1   997.9  1913.2  1039.6  1916.0  1066.7  1917.0  1074.9
GR1916.3  1080.5  1916.1  1108.9  1917.0  1151.4  1919.0  1165.6  1922.0  1180.8
GR1923.7  1198.4  1924.2  1221.3  1925.5  1244.1  1924.0  1277.1  1923.2  1292.1
GR1927.5  1317.4  1926.9  1327.5  1920.0  1362.0  1919.6  1379.5  1920.0  1388.8
GR1923.3  1410.2  1923.7  1419.4  1924.8  1427.1  1924.1  1448.3  1923.7  1455.5
GR1925.0  1459.1  1924.1  1467.8  1925.0  1476.9  1927.4  1482.2  1929.4  1498.7
GR1930.5  1518.3  1933.1  1545.5  1934.2  1560.3  1934.2  1566.1  1935.7  1592.3
GR1935.8  1601.5  1934.2  1639.3  1934.1  1657.1  1936.0  1695.4  1936.2  1723.0
GR1936.0  1727.4  1936.0  1764.0  1937.4  1786.8  1938.0  1806.3  1938.6  1815.0
GR1939.0  1848.3  1939.5  1865.9  1939.1  1870.4
X1 190.0    51.0   327.3  1797.9     100     100   100.0      .0      .0      .0
GR1956.5   327.2  1956.5   327.3  1953.1   553.9  1948.9   668.2  1946.6   681.2
GR1944.0   698.1  1941.8   721.1  1938.0   742.5  1937.9   757.3  1936.3   772.6
GR1924.1   856.6  1921.0   878.2  1918.3   889.9  1913.9   902.2  1912.9   906.5
GR1911.6   918.3  1911.2   937.5  1912.0   952.6  1910.3   979.6  1910.6  1016.3
GR1910.7  1044.6  1912.4  1112.4  1913.0  1125.5  1915.0  1143.5  1915.6  1164.3
GR1915.4  1172.4  1919.5  1200.9  1918.0  1216.0  1914.3  1243.8  1916.3  1255.3
GR1919.6  1266.3  1923.4  1284.4  1920.7  1303.5  1916.2  1327.9  1920.0  1378.1
GR1925.0  1397.1  1928.8  1424.6  1929.5  1452.8  1930.0  1514.7  1930.1  1544.6
GR1931.0  1564.0  1931.0  1576.2  1929.9  1593.7  1929.0  1614.4  1929.2  1628.6
GR1932.6  1681.8  1933.0  1691.1  1933.2  1728.6  1934.0  1751.8  1933.7  1788.1
GR1933.8  1797.9
X1 189.0    50.0   329.0  1204.3     100     100   100.0      .0      .0      .0
X3     10                                  1205
GR1952.8   329.0  1952.8   329.1  1948.9   563.8  1945.8   646.3  1943.8   671.8
GR1938.6   708.4  1936.0   739.0  1929.4   770.1  1925.0   792.2  1923.0   807.7
GR1918.8   837.1  1917.7   846.4  1913.5   888.3  1907.7   938.1  1906.0   961.6
GR1907.0   976.3  1906.7  1001.9  1906.0  1025.1  1907.0  1042.3  1908.1  1076.7
GR1910.0  1095.0  1911.0  1110.7  1907.9  1153.3  1909.2  1173.2  1908.4  1190.6
GR1909.6  1204.3  1915.3  1238.3  1916.0  1260.0  1915.1  1273.0  1914.0  1299.3
GR1914.0  1322.3  1919.1  1351.3  1922.0  1375.9  1923.0  1386.2  1920.1  1415.8
GR1920.0  1428.0  1923.3  1464.6  1923.4  1476.1  1924.4  1489.5  1924.9  1507.1
GR1922.0  1563.7  1925.0  1581.5  1927.0  1606.8  1928.2  1629.9  1928.5  1640.1
GR1928.5  1674.1  1928.0  1703.4  1928.3  1712.0  1928.0  1747.9  1927.0  1757.2
X1 188.0    46.0   331.0  1176.3     100     100   100.0      .0      .0      .0
X3     10                                  1190
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GR1951.6   331.0  1951.6   332.0  1946.4   574.4  1943.7   637.1  1941.9   656.7
GR1940.1   679.9  1931.5   736.1  1930.0   748.5  1923.5   796.9  1916.9   846.8
GR1911.1   865.3  1905.8   880.0  1905.0   887.8  1905.0   907.3  1903.0   964.0
GR1904.9  1014.3  1904.8  1028.0  1903.8  1047.1  1903.0  1054.2  1903.0  1066.3
GR1904.1  1075.8  1904.0  1105.2  1905.0  1133.8  1907.7  1152.8  1910.3  1176.3
GR1914.0  1201.0  1914.8  1220.9  1911.0  1248.3  1910.0  1256.6  1909.3  1274.5
GR1909.3  1293.8  1910.3  1323.5  1911.5  1350.4  1910.7  1361.0  1911.1  1377.2
GR1915.0  1405.2  1915.6  1424.1  1915.6  1459.1  1912.1  1492.6  1915.4  1527.6
GR1919.9  1565.9  1920.0  1586.3  1920.8  1613.5  1921.3  1637.5  1920.8  1672.7
GR1920.3  1685.0
X1 187.0    45.0   337.0  1168.5     100     100   100.0      .0      .0      .0
X3    10                                  1175
GR1950.4   337.0  1950.4   337.9  1943.7   591.7  1941.7   634.6  1939.1   662.2
GR1937.0   687.9  1917.8   799.0  1907.9   864.8  1902.9   900.3  1902.0   909.0
GR1902.0   935.2  1901.0   948.6  1900.0   993.0  1901.4  1044.5  1901.4  1083.0
GR1900.9  1106.9  1900.0  1114.7  1900.0  1125.6  1901.0  1150.5  1903.3  1168.5
GR1905.2  1177.6  1906.0  1184.9  1906.4  1218.6  1906.9  1234.8  1909.4  1272.8
GR1909.0  1292.3  1906.8  1323.1  1904.0  1347.1  1905.2  1363.4  1906.3  1388.2
GR1906.0  1396.9  1904.0  1423.6  1904.4  1433.7  1908.6  1460.8  1910.4  1475.0
GR1911.8  1507.5  1912.2  1534.3  1910.0  1570.2  1909.0  1588.9  1908.0  1599.6
GR1908.0  1607.0  1910.0  1622.9  1912.5  1651.5  1916.0  1716.6  1916.1  1721.2
X1 186.0    44.0   347.0  1157.7     100     100   100.0      .0      .0      .0
X3    10                                  1170
GR1949.0   347.0  1949.0   347.3  1940.8   616.9  1939.6   638.8  1937.3   663.0
GR1919.7   768.4  1908.8   834.4  1901.0   880.8  1899.0   898.2  1899.4   913.9
GR1898.8   923.9  1898.8   937.6  1898.0   946.8  1897.9  1038.4  1898.3  1072.9
GR1898.0  1113.1  1897.6  1121.4  1897.7  1135.9  1900.0  1157.7  1900.0  1188.3
GR1899.3  1204.2  1901.3  1218.6  1903.0  1242.0  1902.5  1263.0  1902.0  1279.8
GR1903.2  1298.8  1903.7  1316.2  1902.8  1329.8  1901.0  1373.3  1899.2  1403.5
GR1900.4  1431.1  1900.6  1457.9  1900.8  1478.4  1900.6  1491.0  1900.0  1504.0
GR1902.3  1514.6  1907.8  1561.0  1908.7  1574.0  1909.1  1601.0  1909.0  1637.6
GR1907.4  1660.4  1907.6  1689.7  1909.1  1722.6  1909.2  1743.8
X1 185.0    45.0   370.0  1148.9     100     100   100.0      .0      .0      .0
X3    10                                  1175
GR1946.5   370.0  1946.5   370.7  1937.1   651.5  1934.8   654.8  1922.8   725.1
GR1911.0   801.4  1901.6   853.8  1896.0   884.1  1894.7   902.4  1894.4   924.0
GR1895.0   994.9  1895.1  1038.5  1894.7  1057.1  1894.5  1087.2  1894.3  1102.4
GR1895.4  1112.7  1898.0  1148.9  1897.9  1176.5  1896.9  1190.6  1896.9  1217.2
GR1895.8  1231.7  1894.0  1250.1  1894.2  1257.2  1897.0  1279.1  1898.6  1301.8
GR1898.6  1310.7  1896.5  1366.7  1896.3  1423.0  1895.2  1432.6  1897.0  1464.8
GR1898.0  1474.2  1899.0  1502.6  1900.9  1537.4  1901.5  1575.5  1899.0  1608.6
GR1899.0  1628.1  1900.5  1640.1  1902.0  1658.9  1903.0  1676.2  1902.8  1693.8
GR1901.8  1712.6  1902.0  1727.0  1902.9  1740.0  1904.3  1770.9  1904.3  1780.1
X1 184.0    46.0   437.0  1179.3     100     100   100.0      .0      .0      .0
X3    10                                  1180
GR1939.4   437.0  1939.4   437.8  1938.8   439.1  1931.4   682.1  1915.3   702.8
GR1904.0   798.2  1893.4   872.4  1891.9   881.3  1891.4   904.0  1891.4   968.4
GR1892.2  1026.1  1891.9  1047.2  1891.2  1064.2  1892.0  1072.5  1892.1  1132.8
GR1896.0  1170.3  1896.0  1179.3  1891.0  1222.3  1891.1  1234.6  1892.9  1244.4
GR1894.1  1291.1  1895.0  1307.7  1895.1  1328.9  1894.5  1357.6  1894.6  1396.2
GR1895.0  1414.7  1894.0  1434.6  1896.0  1450.9  1898.1  1479.4  1898.7  1490.5
GR1898.3  1520.8  1899.2  1570.0  1899.0  1580.4  1897.0  1607.9  1897.0  1620.8
GR1898.6  1631.9  1900.0  1654.3  1901.2  1670.6  1901.0  1689.7  1900.3  1703.1
GR1900.0  1717.1  1901.0  1726.3  1901.6  1739.5  1902.0  1758.9  1902.0  1782.0
GR1901.7  1787.7
X1 183.0    51.0   489.0  1139.7     100     100   100.0      .0      .0      .0
X3    10                                  1190
GR1932.4   489.0  1932.4   489.4  1931.7   491.2  1925.9   701.3  1909.2   722.6
GR1900.6   736.3  1898.9   740.1  1893.9   801.7  1892.0   823.5  1888.0   848.7
GR1888.0   874.7  1888.3   900.1  1888.0   930.4  1888.4   964.5  1888.6   987.8
GR1889.7  1036.8  1890.0  1059.2  1891.0  1090.7  1893.0  1109.8  1893.0  1117.2
GR1893.7  1139.7  1894.6  1191.1  1894.0  1212.4  1892.4  1226.2  1888.9  1247.8
GR1888.2  1264.2  1892.0  1296.3  1892.4  1304.6  1892.3  1320.2  1893.2  1330.9
GR1891.8  1358.9  1892.3  1399.1  1892.1  1413.1  1894.1  1427.2  1896.3  1451.5
GR1896.0  1475.9  1894.7  1509.7  1895.2  1524.8  1897.6  1554.0  1897.0  1570.5
GR1895.3  1595.9  1894.7  1610.3  1898.0  1648.7  1899.3  1667.7  1898.0  1692.1
GR1898.3  1701.9  1899.5  1718.5  1899.7  1733.5  1900.3  1754.7  1900.6  1781.4
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GR1899.7	1792.3								
X1 182.0	47.0	590.0	1192.1	100	100	100.0	.0	.0	.0
X3 10					1195				
GR1910.0	587.0	1910.0	588.0	1910.0	589.0	1910.0	590.0	1905.8	728.4
GR1898.3	740.2	1896.5	746.2	1892.0	756.3	1890.3	769.3	1886.3	786.6
GR1886.0	801.5	1885.5	813.7	1884.7	863.5	1884.0	869.1	1885.8	930.1
GR1891.0	1110.1	1891.0	1163.6	1891.0	1192.1	1887.9	1233.5	1886.0	1255.6
GR1887.5	1272.4	1889.2	1286.7	1890.4	1308.2	1890.6	1322.0	1890.9	1333.6
GR1890.0	1375.7	1889.6	1388.6	1889.9	1410.8	1889.0	1423.1	1890.0	1458.9
GR1889.7	1472.8	1893.7	1520.6	1894.0	1530.6	1893.0	1549.3	1891.6	1564.9
GR1893.0	1576.8	1896.6	1616.5	1897.0	1627.1	1896.6	1660.8	1895.9	1672.5
GR1897.0	1692.4	1897.4	1706.4	1897.2	1719.7	1897.6	1732.4	1899.7	1764.8
GR1900.0	1774.7	1898.1	1794.1						
X1 181.0	48.0	710.0	1197.4	100	100	100.0	.0	.0	.0
X3 10			710		1200				
GR1894.0	709.9	1894.0	710.0	1890.2	751.0	1888.7	763.2	1885.5	786.3
GR1882.0	802.5	1882.0	881.7	1882.1	905.0	1882.2	917.4	1882.5	949.1
GR1883.8	1117.0	1884.0	1126.0	1888.0	1161.9	1887.8	1175.5	1885.7	1197.4
GR1884.4	1205.8	1883.0	1211.0	1887.0	1246.5	1888.1	1260.5	1889.5	1268.3
GR1889.7	1279.8	1889.4	1288.5	1890.0	1324.3	1890.0	1340.6	1888.0	1372.4
GR1887.0	1404.7	1887.7	1413.9	1887.6	1426.4	1887.0	1437.7	1887.0	1457.6
GR1891.8	1492.6	1891.0	1510.4	1888.6	1530.3	1890.0	1540.9	1889.6	1543.7
GR1891.0	1551.4	1893.5	1568.5	1894.6	1585.6	1894.7	1607.4	1893.7	1644.5
GR1893.1	1657.2	1894.0	1663.1	1895.8	1684.1	1896.1	1709.7	1896.2	1724.4
GR1899.0	1769.3	1898.5	1782.1	1896.9	1793.0				
X1 180.0	48.0	755.0	1203.7	100	100	100.0	.0	.0	.0
X3 10			755		1210				
GR1884.0	754.0	1884.0	754.5	1884.0	754.8	1884.0	755.0	1883.1	776.5
GR1882.8	794.7	1879.0	807.5	1879.0	836.5	1879.7	848.0	1879.0	878.8
GR1879.9	884.4	1879.8	952.9	1880.0	989.0	1880.9	1041.0	1880.7	1087.4
GR1881.0	1107.7	1881.8	1138.4	1882.2	1166.8	1884.0	1203.7	1884.0	1228.0
GR1885.1	1243.7	1886.4	1276.6	1886.2	1294.9	1885.4	1317.6	1885.2	1331.4
GR1885.2	1406.0	1885.0	1423.8	1886.3	1448.6	1886.6	1462.7	1887.7	1476.3
GR1887.7	1492.1	1885.9	1509.0	1886.1	1516.5	1888.0	1527.4	1889.4	1561.3
GR1889.2	1583.6	1889.7	1589.4	1889.2	1603.3	1892.2	1630.6	1892.5	1643.0
GR1892.9	1648.9	1893.1	1682.5	1894.2	1712.0	1895.4	1723.2	1897.8	1758.1
GR1898.5	1767.7	1898.6	1777.4	1895.5	1789.3				
X1 179.0	49.0	760.0	1205.2	100	100	100.0	.0	.0	.0
X3 10			760		1215				
GR1881.5	760.0	1881.0	832.5	1877.0	849.6	1877.0	859.5	1876.3	879.0
GR1876.7	886.0	1876.6	900.2	1877.2	918.6	1877.6	938.3	1877.4	1001.2
GR1877.3	1028.3	1879.0	1067.6	1879.0	1079.5	1878.1	1092.0	1878.8	1123.4
GR1879.0	1138.5	1880.0	1164.2	1881.9	1177.8	1883.7	1205.2	1884.0	1232.8
GR1882.0	1265.7	1881.8	1288.3	1882.6	1334.2	1883.2	1352.3	1883.4	1374.9
GR1883.4	1424.5	1883.0	1448.0	1883.0	1454.9	1884.3	1466.4	1884.5	1478.6
GR1886.0	1488.1	1886.4	1510.1	1885.7	1530.6	1884.6	1549.4	1885.5	1558.0
GR1887.0	1586.1	1887.3	1594.4	1888.0	1599.3	1888.5	1610.8	1888.0	1619.9
GR1890.0	1632.5	1892.2	1651.0	1893.0	1675.6	1894.7	1702.9	1896.0	1731.8
GR1896.8	1741.7	1896.1	1769.8	1894.4	1778.8	1893.4	1787.9		
X1 178.0	58.0	766.8	1198.6	100	100	100.0	.0	.0	.0
X3 10			765		1220				
GR1900.9	554.0	1900.9	554.7	1899.1	559.2	1898.4	637.3	1892.0	646.0
GR1888.7	651.5	1886.2	667.0	1884.5	670.9	1879.8	713.3	1879.9	738.9
GR1879.0	766.8	1877.6	788.5	1878.1	817.0	1878.8	834.5	1878.8	843.9
GR1878.0	887.9	1875.9	904.4	1875.4	913.7	1875.5	932.7	1875.0	953.5
GR1874.0	976.2	1873.5	996.3	1874.3	1001.6	1874.6	1027.3	1875.0	1046.8
GR1875.0	1065.5	1877.0	1085.4	1877.0	1114.0	1876.0	1139.7	1876.0	1155.2
GR1878.0	1198.6	1880.0	1223.2	1880.6	1237.5	1881.0	1259.6	1879.0	1274.7
GR1880.2	1302.2	1880.5	1328.4	1880.9	1342.4	1881.2	1405.6	1881.2	1432.6
GR1881.0	1446.0	1883.8	1473.4	1886.5	1505.1	1886.8	1518.0	1888.0	1536.1
GR1888.7	1565.6	1889.9	1575.9	1891.0	1590.9	1891.6	1612.3	1891.5	1637.6
GR1893.5	1659.6	1895.0	1695.1	1895.1	1704.1	1894.5	1713.3	1895.2	1728.2
GR1894.8	1735.7	1895.3	1770.8	1893.5	1781.1				
X1 177.0	51.0	786.3	1197.2	100	100	100.0	.0	.0	.0
X3 10			770		1220				
GR1894.6	532.0	1894.6	532.7	1892.6	537.8	1892.3	589.3	1886.0	598.8
GR1883.3	617.3	1882.4	619.5	1879.0	649.8	1879.8	662.5	1879.8	678.9

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GR1879.5   694.9  1877.0   764.4  1876.0   786.3  1875.1   810.1  1875.3   825.7
GR1876.8   861.3  1876.7   884.0  1873.0   918.2  1873.2   936.3  1872.9   942.1
GR1872.7  1005.6  1873.0  1016.7  1872.0  1036.3  1872.0  1055.6  1874.1  1075.6
GR1875.0  1102.0  1874.1  1123.9  1875.0  1162.9  1876.3  1197.2  1877.7  1222.5
GR1877.9  1242.9  1876.3  1275.1  1877.0  1288.4  1878.0  1326.4  1878.0  1349.9
GR1877.7  1359.9  1880.5  1413.1  1882.2  1434.4  1886.0  1474.1  1887.7  1498.4
GR1889.0  1541.6  1889.5  1553.8  1889.6  1579.0  1890.7  1610.6  1890.7  1622.7
GR1889.9  1641.6  1890.4  1656.8  1893.0  1681.1  1892.3  1722.7  1891.5  1749.3
GR1891.3  1765.4
X1 176.0    62.0   804.4  1213.8     100     100   100.0      .0      .0      .0
X3    10                   770            1220
GR1888.0   498.0  1888.0   498.1  1885.8   503.9  1885.8   526.2  1883.1   530.4
GR1880.0   554.8  1879.0   557.2  1879.0   586.0  1878.1   630.0  1878.1   640.4
GR1877.0   709.1  1876.2   743.2  1875.5   767.7  1875.0   804.4  1873.8   830.2
GR1873.0   854.5  1872.0   873.5  1874.0   897.3  1874.0   919.9  1871.0   946.2
GR1870.2   965.4  1870.8   990.9  1870.3  1005.7  1870.5  1026.6  1870.0  1031.9
GR1870.0  1049.8  1871.1  1054.8  1872.0  1069.4  1872.3  1090.4  1872.0  1109.4
GR1873.1  1139.8  1875.0  1179.5  1875.0  1197.8  1875.3  1213.8  1874.2  1226.9
GR1874.3  1242.8  1876.2  1268.1  1876.6  1279.1  1876.6  1291.3  1877.4  1299.8
GR1877.8  1310.6  1879.2  1331.4  1880.4  1346.4  1881.3  1367.6  1882.6  1387.0
GR1883.4  1421.0  1883.6  1432.7  1882.9  1459.4  1883.7  1486.7  1883.6  1509.6
GR1884.3  1520.9  1884.4  1536.0  1886.0  1558.2  1887.2  1579.9  1887.3  1592.5
GR1889.0  1617.3  1890.3  1640.3  1890.6  1648.8  1890.0  1682.8  1890.0  1697.5
GR1888.1  1734.5  1887.9  1745.3
X1 175.0    63.0   780.7  1196.4     100     100   100.0      .0      .0      .0
X3    10                   770            1220
GR1882.1   457.0  1882.1   457.8  1880.9   474.0  1880.0   499.1  1879.0   504.2
GR1879.0   535.9  1878.4   544.2  1878.0   563.8  1876.5   607.2  1876.0   627.5
GR1875.0   641.3  1874.6   665.9  1873.6   699.0  1873.0   715.0  1873.0   723.0
GR1872.5   733.2  1872.2   780.7  1871.7   814.3  1871.0   840.7  1871.0   863.8
GR1870.0   878.8  1871.3   892.1  1872.3   899.4  1873.0   914.2  1872.4   926.8
GR1870.6   944.5  1867.7   964.1  1868.0   968.7  1868.1  1005.5  1869.0  1026.3
GR1870.6  1082.0  1872.0  1118.7  1872.5  1130.2  1872.7  1155.8  1872.0  1188.8
GR1872.0  1196.4  1873.4  1221.0  1873.8  1231.1  1874.8  1244.4  1875.7  1271.1
GR1876.5  1285.2  1877.0  1301.3  1878.0  1323.7  1878.4  1353.7  1878.0  1374.4
GR1877.4  1383.8  1878.0  1389.8  1878.0  1400.6  1880.0  1416.3  1881.0  1437.0
GR1882.3  1458.4  1882.4  1473.1  1883.7  1504.8  1884.9  1521.2  1886.0  1526.9
GR1887.1  1569.3  1887.3  1635.9  1886.9  1651.5  1885.2  1665.4  1885.0  1678.2
GR1884.0  1687.8  1885.9  1700.0  1886.0  1702.4
X1 174.0    51.0   781.3  1187.1     100     100   100.0      .0      .0      .0
X3    10                   765            1190
GR1881.0   502.0  1881.0   518.7  1879.8   558.3  1877.8   599.9  1877.1   619.6
GR1874.0   682.3  1872.0   722.8  1871.0   756.8  1869.5   781.3  1869.0   794.0
GR1869.8   810.8  1869.7   824.0  1869.0   845.6  1868.0   863.7  1867.3   871.3
GR1868.0   876.8  1869.0   895.2  1868.8   923.4  1870.0   931.4  1867.0   945.0
GR1866.0   951.6  1866.0   977.0  1866.8  1014.6  1867.0  1029.3  1868.0  1056.6
GR1868.6  1112.2  1869.4  1136.4  1869.1  1157.1  1869.0  1166.0  1869.5  1175.3
GR1871.0  1187.1  1872.0  1203.2  1874.2  1252.6  1875.0  1265.4  1875.0  1271.9
GR1876.0  1282.6  1876.0  1322.1  1876.7  1365.3  1878.3  1386.2  1880.0  1414.7
GR1880.3  1430.9  1880.8  1473.0  1880.3  1485.4  1881.5  1489.5  1882.6  1521.2
GR1881.5  1540.3  1879.4  1562.8  1880.8  1592.6  1880.2  1621.3  1880.2  1631.9
GR1879.5  1635.9
X1 173.0    51.0   818.7  1184.8     100     100   100.0      .0      .0      .0
X3    10                   765            1185
GR1879.5   382.0  1879.5   382.5  1879.5   384.2  1879.5   416.4  1879.5   495.5
GR1879.0   513.2  1878.6   556.0  1877.6   588.6  1873.7   694.6  1872.8   718.4
GR1872.5   743.4  1872.0   762.0  1869.5   818.7  1869.0   832.5  1865.0   847.6
GR1864.0   858.9  1866.0   877.3  1866.3   891.5  1865.5   927.8  1864.8   943.9
GR1864.6   956.9  1864.3   961.5  1865.0   973.4  1864.7   977.7  1865.9   998.2
GR1866.0  1036.2  1866.5  1048.9  1868.7  1089.3  1870.0  1133.5  1869.0  1162.1
GR1868.0  1184.8  1869.4  1198.6  1869.0  1213.8  1872.0  1242.6  1872.0  1275.7
GR1872.4  1283.1  1872.3  1312.3  1873.0  1330.6  1874.0  1347.5  1875.0  1358.1
GR1875.4  1384.2  1874.8  1419.8  1873.3  1427.8  1875.7  1453.3  1876.4  1463.4
GR1876.8  1478.1  1877.4  1488.5  1877.0  1515.4  1876.2  1528.8  1875.9  1561.7
GR1875.3  1578.8
X1 172.0    48.0   810.8  1158.8     100     100   100.0      .0      .0      .0
X3    10                   770            1190
```

GR1878.3	335.0	1878.3	335.1	1878.3	366.1	1878.3	510.8	1876.4	564.3
GR1874.0	613.3	1872.8	639.9	1871.6	680.4	1870.6	716.2	1869.4	761.6
GR1868.6	810.8	1867.7	836.4	1866.8	862.1	1866.0	869.3	1861.0	885.8
GR1860.0	892.4	1862.0	908.1	1862.0	938.4	1860.5	951.3	1860.3	961.9
GR1862.2	970.2	1863.0	989.2	1862.6	992.2	1862.0	1009.2	1863.0	1035.5
GR1863.0	1045.7	1863.7	1053.3	1863.2	1067.7	1864.3	1089.1	1866.0	1107.3
GR1866.0	1129.7	1868.3	1158.8	1869.0	1196.4	1868.0	1226.8	1867.5	1247.1
GR1869.0	1280.6	1869.7	1287.9	1870.0	1315.6	1869.3	1347.8	1869.2	1366.0
GR1870.0	1371.3	1870.0	1376.5	1872.4	1404.3	1874.3	1428.0	1871.6	1456.5
GR1870.2	1476.2	1871.0	1502.0	1872.8	1519.3				
X1 171.0	42.0	786.7	1181.9	100	100	100.0	.0	.0	.0
X3 10			785		1195				
GR1874.4	282.0	1874.4	282.2	1874.4	310.1	1874.4	461.7	1874.4	518.5
GR1874.1	522.8	1874.3	536.0	1873.8	562.8	1872.7	610.5	1872.0	625.9
GR1870.8	665.0	1870.4	684.1	1868.3	719.3	1865.1	786.7	1865.0	821.6
GR1864.0	844.2	1862.9	850.6	1858.8	858.9	1857.4	876.4	1858.0	896.1
GR1859.6	909.7	1861.8	925.9	1860.3	934.1	1860.6	973.9	1861.7	989.7
GR1864.0	1036.1	1863.0	1065.9	1864.2	1106.6	1863.4	1142.8	1863.2	1164.6
GR1862.8	1181.9	1863.1	1230.6	1865.7	1253.0	1867.8	1291.5	1867.6	1299.1
GR1870.0	1337.6	1871.0	1359.9	1871.4	1382.0	1868.7	1410.5	1866.0	1428.3
GR1867.0	1459.2	1868.6	1473.0						
X1 170.0	49.0	818.5	1191.3	100	100	100.0	.0	.0	.0
X3 10			805		1210				
GR1870.2	223.0	1870.2	223.4	1870.2	248.2	1870.2	388.7	1870.2	464.9
GR1870.2	529.4	1871.0	538.4	1869.8	556.3	1869.0	572.1	1868.7	586.9
GR1870.1	615.0	1869.7	641.7	1869.0	674.0	1868.5	697.3	1866.7	746.5
GR1865.0	782.4	1863.6	818.5	1862.7	831.9	1860.2	839.7	1855.6	850.8
GR1854.1	860.8	1859.0	901.8	1860.6	920.1	1860.7	936.2	1860.6	977.3
GR1860.6	998.4	1861.0	1037.7	1862.0	1051.5	1862.0	1085.6	1860.0	1115.5
GR1860.0	1140.0	1862.1	1167.2	1863.0	1175.0	1863.9	1191.3	1862.4	1240.4
GR1864.0	1270.4	1865.4	1290.9	1864.9	1311.5	1864.0	1322.2	1864.6	1341.1
GR1863.9	1367.2	1864.2	1392.6	1865.0	1423.3	1865.0	1429.8	1866.0	1437.7
GR1865.6	1449.3	1867.4	1475.9	1867.3	1496.5	1867.6	1503.6		
X1 169.0	52.0	822.6	1204.5	100	100	100.0	.0	.0	.0
X3 10			820		1230				
GR1868.3	158.0	1868.3	158.5	1868.3	179.9	1868.3	308.4	1868.3	378.5
GR1868.3	466.0	1868.3	533.8	1867.9	572.1	1867.0	596.0	1867.0	603.0
GR1866.0	630.4	1863.9	659.7	1862.2	673.1	1862.7	698.7	1864.0	713.8
GR1864.3	734.8	1863.8	768.6	1862.0	822.6	1860.0	855.1	1854.6	867.0
GR1853.2	873.4	1852.0	883.3	1853.0	893.7	1856.3	915.4	1858.1	933.6
GR1858.3	945.6	1858.3	990.6	1859.2	1008.8	1859.0	1035.6	1857.8	1045.7
GR1859.0	1061.9	1860.0	1096.0	1860.0	1114.3	1858.0	1158.9	1859.3	1183.8
GR1861.0	1204.5	1859.5	1230.4	1858.9	1241.5	1858.1	1247.8	1857.4	1262.3
GR1857.8	1268.4	1857.7	1283.4	1860.0	1338.4	1861.0	1361.2	1861.0	1392.1
GR1863.0	1411.4	1862.8	1418.7	1863.0	1432.8	1862.8	1448.9	1864.0	1489.8
GR1864.6	1516.0	1864.5	1530.8						
X1 168.0	51.0	851.5	1236.2	100	100	100.0	.0	.0	.0
X3 10			835		1260				
GR1866.6	363.2	1866.6	462.4	1866.6	531.8	1865.4	544.3	1864.0	556.1
GR1864.0	567.3	1863.3	586.6	1863.5	616.8	1862.5	639.3	1861.8	662.1
GR1860.7	724.9	1859.3	748.6	1859.0	760.6	1857.9	783.4	1856.9	812.2
GR1856.0	830.0	1856.3	851.5	1857.6	879.1	1857.7	894.2	1857.0	909.5
GR1851.9	923.0	1851.0	930.5	1851.0	950.2	1852.0	969.4	1854.0	985.0
GR1854.8	995.2	1854.5	1016.0	1854.9	1057.8	1854.9	1080.0	1856.1	1109.7
GR1856.7	1142.0	1855.6	1158.6	1853.4	1173.9	1852.9	1179.7	1853.3	1207.3
GR1854.0	1236.2	1856.7	1273.8	1857.0	1284.9	1857.0	1303.2	1858.0	1322.1
GR1858.0	1357.6	1857.0	1366.1	1858.1	1377.6	1859.6	1422.1	1859.0	1435.6
GR1860.1	1470.3	1861.0	1491.4	1862.2	1507.4	1867.6	1535.5	1869.1	1544.0
GR1868.5	1554.7								
X1 167.0	57.0	854.7	1276.3	100	100	100.0	.0	.0	.0
X3 10			850		1285				
GR1863.2	530.7	1861.8	589.0	1861.8	623.4	1861.0	660.6	1860.9	699.2
GR1860.6	711.6	1860.0	724.5	1860.0	756.1	1857.7	769.1	1855.8	786.1
GR1854.0	799.7	1854.8	854.7	1854.9	861.2	1853.8	879.1	1853.0	884.5
GR1852.0	897.0	1853.8	914.8	1855.6	927.7	1855.7	958.7	1855.2	982.2
GR1854.5	993.9	1854.0	1012.6	1851.9	1023.2	1849.8	1038.6	1848.2	1057.3
GR1847.0	1074.8	1848.2	1082.6	1848.5	1089.7	1850.1	1100.7	1851.1	1110.9

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GR1849.8  1130.2  1849.0  1132.3  1849.0  1155.8  1850.0  1179.6  1851.0  1199.0
GR1852.0  1209.5  1854.0  1259.8  1854.7  1276.3  1854.6  1285.4  1855.5  1297.7
GR1854.8  1305.6  1853.0  1312.6  1854.7  1349.0  1855.0  1352.3  1855.1  1380.3
GR1856.0  1385.1  1856.4  1396.4  1859.0  1422.5  1862.9  1452.9  1862.6  1462.1
GR1860.6  1485.8  1860.0  1503.8  1861.6  1511.6  1863.4  1532.1  1865.0  1546.8
GR1865.1  1552.2  1867.6  1575.5
X1 166.0      53   877.1  1251.4     100     100   100.0      .0      .0      .0
X3    10                    865            1300
GR1858.5   520.0  1858.5   521.0  1858.5   522.0  1858.5   522.2  1860.2   538.3
GR1859.9   572.8  1858.6   610.7  1858.4   651.7  1857.4   679.2  1857.0   686.7
GR1856.8   711.2  1857.4   751.4  1857.7   764.4  1856.0   800.2  1851.3   861.7
GR1849.4   877.1  1850.1   893.3  1849.8   918.3  1849.0   931.7  1853.0   958.1
GR1852.8   969.9  1850.6  1002.4  1849.8  1030.3  1850.5  1058.6  1850.0  1072.9
GR1848.7  1081.3  1847.9  1103.7  1846.5  1132.1  1846.0  1135.6  1846.0  1154.5
GR1846.5  1162.4  1848.2  1175.9  1848.4  1194.7  1849.6  1208.2  1848.0  1214.8
GR1849.0  1227.6  1850.0  1251.4  1852.0  1312.9  1853.3  1329.9  1856.7  1350.9
GR1857.0  1356.9  1855.2  1371.8  1855.1  1381.7  1854.2  1389.8  1855.6  1406.7
GR1858.0  1428.1  1859.6  1449.7  1861.4  1466.0  1861.0  1492.7  1861.3  1503.7
GR1864.8  1540.2  1867.0  1549.9  1867.1  1584.7
NC                          0.1     0.3
X1 165.0    55.0   886.0  1287.6      10      10    10.0      .0      .0      .0
X3    10                    880            1300
GR1856.2   519.0  1856.2   519.7  1857.0   540.3  1857.4   558.0  1858.0   575.8
GR1857.8   587.3  1857.0   601.6  1857.0   611.8  1856.0   642.0  1855.0   657.4
GR1854.7   677.3  1854.9   697.7  1854.4   729.2  1853.7   740.5  1853.8   763.7
GR1853.1   797.5  1853.0   826.8  1852.6   867.0  1851.0   886.0  1847.0   913.0
GR1844.5   933.5  1844.0   960.0  1844.0   974.7  1844.0  1006.2  1844.0  1012.5
GR1844.0  1022.5  1844.0  1039.2  1844.0  1046.1  1844.0  1064.5  1844.0  1077.0
GR1844.0  1094.1  1844.0  1108.7  1844.4  1137.9  1845.0  1175.3  1846.0  1205.5
GR1848.0  1287.4  1848.0  1287.5  1848.0  1287.6  1848.7  1300.3  1852.5  1324.3
GR1854.5  1340.9  1855.9  1349.2  1857.0  1361.3  1856.3  1365.3  1857.2  1388.4
GR1857.4  1409.5  1858.0  1413.8  1858.2  1426.8  1860.2  1450.4  1862.1  1487.4
GR1864.0  1512.0  1865.0  1537.8  1865.6  1545.2  1863.9  1576.1  1862.0  1588.9
X1 164.9      55   886.0  1287.6      80      80    80.0
X3    10                    880            1300
GR1855.8   519.0  1855.8   519.7  1856.6   540.3  1857.0   558.0  1857.6   575.8
GR1857.4   587.3  1856.6   601.6  1856.6   611.8  1855.6   642.0  1854.6   657.4
GR1854.3   677.3  1854.5   697.7  1854.0   729.2  1853.3   740.5  1853.4   763.7
GR1852.7   797.5  1852.6   826.8  1852.2   867.0  1850.6   886.0  1846.6   913.0
GR1844.1   933.5  1843.6   960.0  1843.6   974.7  1843.6  1006.2  1843.6  1012.5
GR1843.6  1022.5  1843.6  1039.2  1843.6  1046.1  1843.6  1064.5  1843.6  1077.0
GR1843.6  1094.1  1843.6  1108.7  1844.0  1137.9  1844.6  1175.3  1845.6  1205.5
GR1847.6  1287.4  1847.6  1287.5  1847.6  1287.6  1848.3  1300.3  1852.1  1324.3
GR1854.1  1340.9  1855.5  1349.2  1856.6  1361.3  1855.9  1365.3  1856.8  1388.4
GR1857.0  1409.5  1857.6  1413.8  1857.8  1426.8  1859.8  1450.4  1861.7  1487.4
GR1863.6  1512.0  1864.6  1537.8  1865.2  1545.2  1863.5  1576.1  1861.6  1588.9
SB  1.05    1.56     2.6     364     349      15    3400       3
X1 164.1      55   886.0  1287.6      10      10    10.0
X2                     1  1853.5  1857.3                    1.33
X3    10                    880            1300
GR1854.0   519.0  1854.0   519.7  1854.8   540.3  1855.2   558.0  1855.8   575.8
GR1855.6   587.3  1854.8   601.6  1854.8   611.8  1853.8   642.0  1852.8   657.4
GR1852.5   677.3  1852.7   697.7  1852.2   729.2  1851.5   740.5  1851.6   763.7
GR1850.9   797.5  1850.8   826.8  1850.4   867.0  1848.8   886.0  1844.8   913.0
GR1842.3   933.5  1841.8   960.0  1841.8   974.7  1841.8  1006.2  1841.8  1012.5
GR1841.8  1022.5  1841.8  1039.2  1841.8  1046.1  1841.8  1064.5  1841.8  1077.0
GR1841.8  1094.1  1841.8  1108.7  1842.2  1137.9  1842.8  1175.3  1843.8  1205.5
GR1845.8  1287.4  1845.8  1287.5  1845.8  1287.6  1846.5  1300.3  1850.3  1324.3
GR1852.3  1340.9  1853.7  1349.2  1854.8  1361.3  1854.1  1365.3  1855.0  1388.4
GR1855.2  1409.5  1855.8  1413.8  1856.0  1426.8  1858.0  1450.4  1859.9  1487.4
GR1861.8  1512.0  1862.8  1537.8  1863.4  1545.2  1861.7  1576.1  1859.8  1588.9
NC                          0.1     0.3
X1 164.0    49.0   890.3  1285.2     100     100   100.0      .0      .0      .0
X3    10                    885            1290
GR1852.0   507.8  1854.0   584.9  1854.0   599.0  1853.4   616.5  1853.7   631.0
GR1852.6   659.1  1852.4   680.5  1850.2   712.2  1850.0   722.1  1851.3   748.6
GR1850.9   777.9  1850.0   812.3  1849.8   826.3  1849.0   837.2  1849.7   844.5
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GR1851.0	863.9	1851.0	870.1	1850.0	890.3	1849.9	912.2	1843.0	936.4
GR1841.0	947.6	1840.7	961.2	1841.1	977.5	1842.1	988.5	1843.0	1005.2
GR1843.4	1017.0	1844.4	1033.8	1844.7	1094.1	1843.5	1126.0	1842.1	1132.9
GR1842.2	1165.5	1843.0	1190.5	1845.2	1203.9	1847.5	1232.3	1850.7	1263.3
GR1852.7	1285.2	1853.6	1313.3	1854.2	1322.3	1854.0	1329.9	1854.1	1346.1
GR1855.7	1369.0	1856.3	1392.2	1856.2	1405.7	1861.0	1479.6	1861.0	1492.4
GR1860.0	1523.5	1860.0	1561.3	1858.9	1583.6	1858.2	1590.4		
X1 163.0	56.0	903.5	1250.3	100	100	100.0	.0	.0	.0
X3 10			895		1265				
GR1847.9	478.0	1847.9	479.0	1847.9	480.0	1847.5	504.4	1848.2	525.6
GR1851.0	562.4	1851.0	585.0	1850.0	593.9	1849.0	613.7	1849.3	635.0
GR1849.0	654.3	1848.3	672.9	1849.0	687.4	1848.6	721.0	1847.4	759.3
GR1847.2	767.9	1848.2	786.4	1848.0	811.6	1846.6	854.1	1846.0	865.4
GR1840.8	891.2	1838.0	903.5	1838.1	915.0	1840.4	936.0	1843.0	960.1
GR1845.0	983.7	1844.9	990.9	1843.8	999.4	1842.6	1021.7	1842.0	1053.9
GR1841.8	1095.2	1841.0	1107.5	1840.9	1115.3	1840.0	1120.2	1840.0	1146.0
GR1840.2	1160.6	1844.2	1215.6	1846.5	1250.3	1852.1	1288.3	1853.8	1301.5
GR1855.1	1308.0	1855.5	1329.7	1854.9	1369.2	1854.0	1386.4	1853.0	1395.1
GR1854.6	1406.7	1856.0	1412.5	1857.1	1433.5	1857.3	1446.0	1855.8	1467.2
GR1856.2	1484.2	1859.6	1525.7	1859.7	1534.9	1856.7	1561.3	1855.0	1571.0
GR1855.0	1589.2								
X1 162.0	45.0	463.4	1204.4	100	100	100.0	.0	.0	.0
X3 10					1230				
GR1845.8	463.0	1845.8	463.4	1845.2	482.5	1845.8	515.0	1847.0	540.7
GR1848.2	580.4	1848.0	606.9	1846.9	633.7	1846.0	677.1	1845.1	703.8
GR1845.5	735.5	1844.8	763.4	1844.0	786.2	1843.7	827.6	1843.6	848.8
GR1836.6	869.2	1835.8	876.6	1835.6	890.4	1836.7	902.1	1837.4	916.0
GR1839.0	931.8	1839.2	979.1	1838.8	1008.4	1838.4	1019.4	1839.2	1049.2
GR1839.1	1091.9	1837.7	1134.5	1839.5	1149.7	1843.0	1204.4	1846.8	1244.8
GR1848.2	1271.4	1847.8	1292.6	1849.0	1311.8	1849.0	1320.6	1850.1	1337.8
GR1854.0	1378.9	1853.1	1405.5	1852.0	1425.1	1851.4	1431.0	1854.4	1462.8
GR1856.3	1479.0	1855.2	1491.5	1852.4	1512.6	1852.0	1521.1	1852.0	1586.3
X1 161.0	56.0	447.8	1575.2	100	100	100.0	.0	.0	.0
GR1843.5	447.0	1843.5	447.8	1841.3	472.1	1843.6	502.0	1843.3	530.5
GR1844.1	565.3	1845.0	599.8	1844.3	629.9	1844.0	659.2	1842.8	679.1
GR1842.1	706.5	1842.2	724.0	1843.0	749.3	1842.0	778.8	1842.0	821.5
GR1841.0	845.2	1838.8	855.0	1833.2	871.8	1833.1	884.7	1834.0	905.9
GR1835.0	941.7	1835.4	964.0	1835.3	984.2	1835.4	996.2	1835.2	1006.5
GR1835.6	1015.7	1835.5	1028.3	1836.0	1048.3	1836.1	1075.5	1835.5	1079.3
GR1835.1	1096.8	1836.2	1115.9	1840.7	1145.7	1844.0	1178.6	1845.4	1195.5
GR1847.0	1218.8	1846.0	1227.7	1846.6	1234.1	1846.7	1252.8	1845.6	1274.8
GR1845.1	1281.3	1845.7	1292.0	1845.0	1309.1	1846.0	1318.7	1848.0	1354.3
GR1849.4	1381.9	1850.0	1399.4	1851.4	1423.0	1851.0	1434.9	1849.0	1450.8
GR1848.6	1469.2	1848.2	1474.6	1848.8	1505.7	1849.2	1518.7	1849.1	1553.1
GR1850.0	1575.2								
X1 160.0	52.0	432.2	1561.3	100	100	100.0	.0	.0	.0
GR1841.1	431.0	1841.1	432.0	1841.1	432.1	1841.1	432.2	1840.3	441.1
GR1840.0	463.9	1838.5	472.1	1838.0	488.9	1838.0	515.6	1839.8	545.5
GR1840.0	576.2	1841.5	596.8	1841.9	619.5	1841.8	655.2	1841.0	684.4
GR1839.6	726.4	1839.3	743.7	1840.4	765.1	1840.2	785.8	1838.5	811.6
GR1837.8	826.6	1837.0	835.7	1832.8	849.5	1829.0	866.1	1829.0	874.6
GR1830.2	884.5	1832.0	914.3	1832.0	917.8	1834.1	963.7	1834.1	1037.6
GR1834.0	1049.7	1833.0	1056.0	1833.0	1091.2	1839.2	1136.1	1838.6	1158.1
GR1837.6	1169.5	1837.7	1174.6	1837.0	1188.5	1840.6	1225.4	1841.4	1247.2
GR1846.0	1288.7	1848.8	1336.8	1847.9	1349.8	1846.4	1368.9	1845.0	1388.7
GR1844.4	1401.4	1843.2	1415.1	1844.3	1446.2	1845.0	1485.8	1846.4	1505.7
GR1847.0	1536.6	1848.2	1561.3						
X1 159.0	49.0	414.5	1551.3	100	100	100.0	.0	.0	.0
GR1837.9	414.0	1837.9	414.5	1838.3	448.1	1839.0	473.2	1838.0	483.6
GR1837.9	501.7	1837.0	523.0	1835.9	556.7	1834.5	578.3	1837.5	603.1
GR1837.8	616.1	1838.0	640.8	1838.8	668.8	1837.9	711.4	1836.0	751.3
GR1834.6	767.8	1834.4	775.3	1832.0	797.0	1829.5	813.9	1829.0	826.8
GR1827.6	847.7	1828.2	860.4	1831.3	888.9	1833.0	909.7	1833.0	940.2
GR1831.6	955.9	1830.9	975.0	1831.6	991.0	1830.9	1001.2	1830.4	1021.5
GR1831.0	1043.2	1831.0	1063.1	1832.4	1086.9	1835.0	1121.0	1840.2	1161.1
GR1841.0	1183.7	1841.3	1187.3	1840.2	1209.3	1840.5	1247.3	1839.6	1276.4
GR1838.6	1290.6	1838.9	1314.3	1840.1	1357.6	1841.0	1392.0	1841.8	1407.3

GR1842.5	1440.4	1843.1	1461.3	1846.1	1527.6	1847.0	1551.3		
X1 158.0	51.0	396.6	1547.0	100	100	100.0	.0	.0	.0
GR1835.2	396.3	1835.2	396.4	1835.2	396.5	1835.2	396.6	1834.9	408.3
GR1835.5	416.6	1834.9	463.3	1834.8	487.9	1832.6	517.7	1833.0	522.5
GR1832.4	529.5	1834.4	543.7	1835.2	559.0	1831.8	622.3	1831.6	634.1
GR1834.0	660.0	1835.1	684.1	1834.5	712.9	1833.8	729.3	1829.2	746.1
GR1828.0	781.0	1827.0	816.5	1827.0	840.4	1826.6	876.1	1826.1	890.4
GR1828.0	912.1	1828.9	920.2	1828.8	956.9	1828.2	970.8	1828.0	1005.6
GR1828.0	1026.0	1829.3	1036.5	1833.5	1078.9	1836.3	1104.8	1836.2	1117.4
GR1835.8	1126.0	1836.4	1138.1	1836.4	1156.0	1834.6	1182.1	1834.0	1200.8
GR1834.6	1251.6	1836.9	1326.2	1838.0	1350.1	1838.3	1361.2	1838.0	1376.5
GR1840.0	1416.6	1841.6	1438.9	1843.0	1465.7	1847.1	1518.9	1848.0	1530.8
GR1848.8	1547.0								
X1 157.0	51.0	378.6	1535.8	100	100	100.0	.0	.0	.0
GR1832.4	378.3	1832.4	378.4	1832.4	378.5	1832.4	378.6	1833.6	397.8
GR1833.9	408.4	1834.0	431.8	1831.9	485.7	1831.1	503.8	1831.0	546.3
GR1830.2	571.3	1832.5	593.5	1832.5	602.4	1829.8	634.6	1827.0	655.1
GR1830.3	684.5	1831.0	694.3	1830.2	727.5	1830.3	741.5	1825.3	758.3
GR1825.0	794.3	1824.0	821.5	1823.1	830.9	1825.0	850.8	1826.0	885.6
GR1826.0	924.3	1826.0	956.8	1826.2	978.8	1826.0	1007.3	1826.7	1015.3
GR1828.3	1060.3	1831.5	1090.5	1831.8	1109.1	1831.0	1118.6	1830.5	1133.1
GR1831.1	1177.1	1832.4	1214.2	1831.8	1268.6	1832.2	1286.9	1832.0	1292.9
GR1833.0	1311.4	1836.0	1337.8	1838.0	1353.4	1839.7	1378.1	1841.8	1429.3
GR1842.2	1448.5	1842.0	1476.9	1841.6	1482.9	1842.0	1494.4	1843.8	1512.4
GR1843.8	1535.8								
X1 156.0	61.0	405.0	1524.6	100	100	100.0	.0	.0	.0
GR1829.8	374.7	1829.8	374.8	1829.8	374.9	1829.8	375.0	1829.8	405.0
GR1829.5	428.0	1830.1	437.9	1831.7	443.8	1832.0	451.8	1830.0	495.2
GR1829.0	516.2	1828.3	546.0	1828.7	566.0	1829.0	593.7	1828.4	604.5
GR1826.3	615.0	1826.0	625.2	1826.0	630.5	1827.5	637.2	1828.4	644.3
GR1828.0	672.4	1824.2	692.6	1824.8	701.5	1827.8	718.2	1828.0	742.7
GR1827.3	773.4	1826.8	782.4	1822.4	795.2	1821.4	799.6	1823.0	811.0
GR1824.1	863.8	1823.2	884.9	1824.0	893.8	1823.0	905.1	1822.8	924.4
GR1823.2	945.3	1823.4	985.4	1824.0	989.3	1826.0	1048.8	1826.9	1068.7
GR1827.1	1095.3	1827.1	1145.1	1828.0	1168.0	1827.8	1191.9	1826.5	1200.5
GR1827.0	1220.1	1828.5	1249.6	1828.0	1258.0	1833.2	1291.4	1835.0	1305.4
GR1835.9	1320.7	1835.8	1336.5	1835.1	1358.4	1834.6	1388.5	1833.6	1416.7
GR1833.2	1430.9	1835.0	1450.9	1837.3	1461.5	1839.1	1472.7	1840.4	1489.1
GR1842.9	1524.6								
X1 155.0	72.0	361.0	1513.4	119	119	119.0	.0	.0	.0
GR1827.1	360.7	1827.1	360.8	1827.1	360.9	1827.1	361.0	1827.3	380.8
GR1828.0	392.5	1827.8	408.0	1826.0	431.3	1826.0	444.1	1829.3	457.4
GR1829.0	474.7	1828.0	498.7	1827.0	510.6	1827.1	528.3	1827.5	534.9
GR1827.3	546.5	1827.8	562.3	1827.0	572.0	1826.6	583.7	1824.8	602.7
GR1823.7	616.8	1823.0	621.4	1822.8	629.0	1823.7	638.9	1823.0	644.7
GR1823.0	665.5	1822.0	673.7	1823.5	696.9	1822.1	704.3	1821.0	717.0
GR1821.3	723.3	1824.2	738.6	1824.9	751.7	1824.8	778.2	1822.9	801.5
GR1819.9	812.3	1819.0	818.8	1821.2	840.9	1821.3	850.2	1821.0	873.2
GR1820.2	891.5	1820.8	899.8	1820.0	927.4	1820.6	934.7	1821.1	972.1
GR1822.0	994.1	1822.9	1033.4	1823.0	1064.7	1822.0	1078.8	1824.0	1093.8
GR1824.0	1128.3	1824.4	1181.7	1823.4	1192.8	1823.9	1204.2	1823.1	1211.1
GR1825.2	1232.4	1826.4	1247.3	1825.6	1259.4	1825.0	1270.3	1825.0	1280.8
GR1830.2	1304.1	1832.1	1328.2	1833.0	1348.3	1835.0	1368.8	1836.3	1386.4
GR1836.6	1404.6	1836.5	1418.8	1838.0	1443.9	1837.8	1461.2	1837.0	1475.6
GR1835.5	1487.4	1838.8	1513.4						
X1 154.9	58.0	.0	1488.3	100	100	100.0	.0	.0	.0
GR1839.6	.0	1825.2	318.5	1824.8	327.5	1823.0	356.8	1822.1	379.8
GR1823.4	401.8	1823.0	417.2	1824.0	428.4	1824.0	451.1	1823.8	458.1
GR1822.0	475.0	1822.0	481.5	1823.8	511.2	1824.3	543.3	1823.2	578.6
GR1823.0	607.5	1821.7	613.1	1821.2	618.7	1822.0	638.3	1821.0	663.0
GR1820.5	679.2	1818.8	698.2	1817.4	710.1	1820.4	728.6	1820.4	740.1
GR1820.0	747.1	1821.4	808.5	1821.0	822.3	1817.0	823.5	1817.0	858.0
GR1818.0	863.2	1818.0	882.1	1816.2	891.1	1818.0	915.2	1817.0	926.2
GR1818.3	947.2	1818.5	972.9	1818.0	984.3	1817.1	991.5	1819.0	1015.3
GR1819.9	1052.0	1819.6	1096.1	1819.7	1124.1	1818.4	1135.8	1820.0	1153.3
GR1823.0	1173.4	1827.0	1187.9	1830.0	1206.9	1830.2	1241.8	1832.0	1280.8
GR1832.2	1305.8	1830.0	1334.7	1828.6	1362.5	1828.2	1377.5	1832.1	1402.0

GR1835.0	1434.2	1835.8	1463.8	1835.8	1488.3				
X1 154.8	67.0	.0	1506.6	100	100	100.0	.0	.0	.0
GR1835.4	.0	1822.5	290.9	1822.5	302.0	1822.0	320.7	1822.0	349.6
GR1819.9	364.7	1819.0	373.2	1819.3	388.8	1820.0	401.6	1820.0	428.5
GR1814.0	459.4	1819.0	475.5	1819.0	502.3	1818.6	510.7	1816.0	517.7
GR1818.3	531.5	1818.8	552.4	1819.0	582.8	1820.0	592.6	1819.0	626.6
GR1816.1	638.2	1819.0	660.0	1817.8	682.3	1816.2	705.1	1816.0	728.8
GR1813.0	743.0	1816.0	759.4	1816.6	768.2	1816.8	782.9	1816.0	787.0
GR1816.3	801.4	1817.3	812.8	1816.7	831.2	1814.7	854.8	1814.0	883.4
GR1816.0	889.3	1816.0	896.0	1815.1	912.3	1815.2	935.3	1815.9	941.8
GR1815.8	974.3	1815.0	1006.3	1815.4	1017.7	1816.2	1024.1	1817.1	1065.9
GR1817.0	1077.6	1815.0	1085.6	1817.0	1114.5	1820.0	1137.2	1825.0	1165.9
GR1825.0	1197.4	1827.0	1221.8	1827.3	1244.4	1825.8	1258.5	1827.0	1276.0
GR1824.8	1287.6	1822.0	1297.7	1824.2	1311.7	1828.0	1323.2	1830.0	1336.5
GR1830.6	1359.7	1830.4	1374.9	1828.9	1383.9	1825.9	1420.8	1823.0	1438.8
GR1823.0	1446.3	1828.8	1506.6						
X1 154.7	57.0	.0	1494.2	100	100	100.0	.0	.0	.0
GR1831.0	.0	1820.3	248.1	1819.4	266.1	1819.5	306.4	1819.7	362.7
GR1818.7	382.5	1817.0	401.3	1814.0	419.0	1816.3	439.5	1816.0	458.4
GR1814.6	507.8	1814.0	540.2	1811.0	554.8	1815.0	574.4	1815.0	604.4
GR1815.8	639.3	1813.9	670.4	1812.0	681.8	1812.8	695.7	1813.1	717.7
GR1814.0	741.7	1813.8	760.0	1812.0	766.8	1814.0	780.2	1814.0	834.9
GR1811.0	848.0	1810.7	854.5	1811.1	869.8	1812.0	876.3	1811.9	903.7
GR1811.2	912.2	1814.0	932.9	1813.3	965.7	1813.2	1005.9	1813.5	1025.9
GR1813.9	1046.2	1813.0	1057.2	1818.0	1080.1	1820.0	1086.7	1821.1	1109.4
GR1819.8	1123.4	1816.0	1144.1	1816.6	1163.3	1815.0	1178.8	1821.0	1217.1
GR1825.0	1240.6	1827.0	1267.6	1826.6	1299.0	1825.0	1318.1	1823.0	1325.6
GR1819.5	1360.1	1819.0	1368.9	1822.0	1396.8	1825.0	1410.3	1830.0	1439.5
GR1832.0	1460.0	1833.0	1494.2						
X1 154.0	61.0	.0	1500.3	100	100	100.0	.0	.0	.0
GR1826.3	.0	1825.2	26.6	1818.7	127.8	1814.0	228.0	1812.4	233.3
GR1814.3	250.6	1814.6	267.6	1813.9	377.8	1813.9	394.0	1813.5	410.1
GR1813.6	425.5	1813.0	467.5	1810.9	503.4	1809.0	521.2	1807.0	533.4
GR1809.6	554.2	1812.0	570.3	1811.1	600.0	1810.9	623.9	1807.0	638.5
GR1808.2	649.9	1808.0	661.1	1806.9	667.7	1807.0	690.9	1810.0	711.1
GR1811.8	737.3	1811.9	767.5	1811.0	829.3	1810.6	850.9	1809.8	865.6
GR1808.0	868.6	1808.0	884.1	1809.0	892.7	1809.0	909.6	1808.1	940.4
GR1809.0	945.6	1809.0	979.4	1808.8	994.6	1809.1	1014.8	1810.8	1029.4
GR1811.2	1042.2	1811.0	1058.9	1810.1	1073.6	1815.0	1092.6	1817.3	1114.4
GR1817.0	1153.8	1821.9	1192.5	1821.4	1208.2	1820.0	1220.1	1816.7	1235.5
GR1815.1	1246.7	1816.0	1277.9	1816.4	1297.0	1817.0	1315.1	1819.7	1358.5
GR1822.0	1379.4	1825.0	1393.3	1828.3	1418.7	1829.4	1431.0	1828.0	1468.4
GR1829.5	1500.3								
X1 153.0	64.0	.0	1509.9	100	100	100.0	.0	.0	.0
GR1818.5	.0	1810.0	158.1	1809.8	185.3	1809.6	196.6	1810.0	223.4
GR1809.0	249.6	1808.9	255.1	1806.0	270.4	1808.0	282.1	1808.8	315.9
GR1808.5	335.3	1809.7	374.1	1810.1	388.5	1810.3	435.1	1811.0	443.8
GR1809.1	460.4	1808.9	475.6	1807.9	495.2	1804.0	517.8	1804.0	523.6
GR1806.0	541.5	1806.8	574.3	1803.0	594.2	1806.0	612.5	1808.0	652.0
GR1808.0	657.9	1804.0	671.0	1808.0	695.0	1808.9	725.3	1808.0	777.6
GR1808.0	809.3	1807.0	850.9	1804.0	865.3	1807.0	879.5	1807.8	894.0
GR1806.0	899.2	1806.0	920.7	1806.5	935.4	1806.3	951.8	1805.8	978.5
GR1806.9	1009.6	1806.5	1018.3	1808.0	1031.7	1808.0	1042.6	1808.5	1055.2
GR1808.6	1088.8	1816.0	1129.2	1817.2	1142.4	1813.0	1179.6	1812.0	1186.3
GR1812.4	1198.9	1814.8	1227.3	1818.0	1251.1	1820.0	1262.0	1821.3	1278.5
GR1823.0	1293.4	1825.0	1320.9	1825.9	1349.2	1825.0	1374.1	1820.5	1404.4
GR1821.4	1425.6	1824.0	1445.5	1825.3	1458.8	1828.5	1509.9		
X1 152.0	68.0	.0	1424.4	100	100	100.0	.0	.0	.0
GR1815.9	.0	1808.5	130.7	1808.1	167.7	1807.6	169.4	1808.3	188.7
GR1808.5	219.2	1808.0	232.0	1808.0	251.3	1808.3	255.2	1808.0	287.1
GR1807.0	306.2	1804.0	320.7	1805.0	330.8	1805.6	349.6	1807.6	386.1
GR1807.3	423.1	1806.0	443.9	1806.0	476.8	1804.0	503.2	1804.2	511.4
GR1805.8	519.9	1805.5	534.1	1804.7	543.7	1801.0	551.9	1803.9	576.6
GR1803.9	591.2	1800.0	598.9	1803.2	612.9	1805.0	629.3	1805.6	637.5
GR1805.4	660.9	1801.0	676.3	1806.0	689.9	1806.3	695.0	1806.0	722.5
GR1805.1	774.8	1807.0	828.9	1806.8	850.3	1806.0	861.4	1802.0	871.6
GR1804.0	889.1	1805.0	903.2	1805.0	928.8	1803.0	932.9	1803.0	941.7

GR1804.0	950.8	1804.0	961.8	1803.0	969.4	1803.0	996.0	1804.2	1008.3
GR1805.0	1012.3	1805.2	1060.2	1806.0	1068.3	1806.8	1081.0	1807.0	1102.1
GR1807.0	1143.3	1808.0	1160.1	1808.4	1173.0	1811.0	1188.1	1815.0	1204.3
GR1816.4	1237.7	1815.4	1276.8	1813.5	1301.0	1811.0	1316.7	1812.0	1335.2
GR1818.2	1358.8	1820.0	1368.6	1824.0	1424.4				
QT 1	10579								
X1 151.0	65.0	.0	1419.7	100	100	100.0	.0	.0	.0
GR1814.5	.0	1807.5	115.3	1806.9	158.3	1806.4	159.9	1807.3	178.4
GR1807.0	185.8	1807.3	213.4	1804.3	222.7	1805.5	231.1	1808.6	277.3
GR1806.0	317.8	1805.0	344.4	1803.0	357.4	1805.0	381.6	1805.7	413.6
GR1804.0	451.3	1802.9	481.6	1802.4	486.7	1802.5	496.9	1804.6	500.7
GR1802.9	541.8	1801.8	572.8	1800.0	587.0	1799.0	597.0	1799.0	610.5
GR1802.0	619.3	1803.0	630.7	1803.0	666.6	1799.0	673.2	1802.6	691.7
GR1802.8	701.3	1802.1	712.2	1803.0	725.0	1803.0	745.3	1803.5	770.6
GR1803.0	782.8	1802.0	787.4	1803.3	814.9	1803.4	827.7	1802.9	877.7
GR1800.0	892.0	1800.0	929.8	1800.0	960.7	1802.0	970.5	1801.8	992.8
GR1801.4	996.1	1802.2	1027.0	1803.0	1053.6	1803.0	1080.0	1804.8	1093.6
GR1805.0	1116.6	1804.8	1139.9	1804.0	1151.0	1806.0	1170.3	1812.0	1196.5
GR1815.0	1215.9	1816.5	1255.1	1817.0	1264.3	1817.0	1278.4	1816.0	1294.2
GR1813.4	1316.5	1816.3	1343.3	1817.3	1364.6	1817.5	1388.6	1819.2	1419.7
X1 150.0	72.0	.0	1349.0	100	100	100.0	.0	.0	.0
GR1813.2	.0	1806.5	103.2	1805.7	151.9	1805.3	153.4	1805.9	168.0
GR1805.9	181.9	1806.3	208.8	1804.0	215.1	1803.9	227.7	1803.0	240.2
GR1806.2	280.7	1806.7	296.6	1805.7	318.0	1803.8	344.3	1803.0	367.9
GR1801.0	380.5	1803.0	394.8	1804.0	426.4	1804.0	437.8	1803.0	458.1
GR1803.0	463.2	1802.0	476.9	1799.0	509.8	1799.0	521.3	1802.0	527.7
GR1801.9	543.2	1801.0	559.3	1801.0	574.7	1800.5	590.9	1799.0	609.3
GR1798.0	615.3	1798.1	643.8	1801.0	658.3	1801.0	677.3	1798.2	694.4
GR1800.2	719.2	1802.0	753.5	1802.0	766.6	1799.0	801.5	1800.2	817.2
GR1800.0	834.1	1798.0	838.5	1799.0	850.2	1800.0	855.0	1800.0	875.1
GR1799.4	891.8	1797.0	900.6	1797.0	915.0	1798.0	930.1	1798.8	936.2
GR1798.0	945.3	1797.0	950.7	1798.7	990.4	1800.0	1019.0	1801.0	1036.7
GR1801.3	1045.9	1800.8	1071.8	1800.0	1085.6	1800.0	1096.5	1803.5	1120.2
GR1805.5	1138.9	1805.0	1153.5	1804.2	1166.0	1809.2	1200.6	1811.4	1217.4
GR1811.5	1226.6	1810.0	1242.0	1806.0	1263.7	1811.0	1290.1	1812.7	1322.7
GR1812.5	1336.1	1812.0	1349.0						
X1 149.0	67.0	.0	1357.0	100	100	100.0	.0	.0	.0
GR1812.0	.0	1805.6	94.2	1804.6	148.4	1804.2	149.8	1805.0	162.3
GR1804.7	181.0	1805.2	207.2	1804.0	210.5	1802.7	241.2	1801.1	266.6
GR1802.0	271.4	1803.4	292.3	1804.0	316.3	1803.6	323.8	1804.0	347.7
GR1799.0	378.5	1801.1	396.8	1802.2	423.2	1802.0	476.4	1799.7	506.3
GR1797.9	523.1	1797.0	541.3	1797.1	560.1	1799.1	568.4	1798.8	584.0
GR1797.6	598.7	1798.0	609.5	1798.0	624.2	1796.0	633.1	1796.2	642.0
GR1798.0	657.1	1798.3	664.1	1798.0	678.9	1796.0	689.5	1799.8	710.0
GR1798.8	730.8	1797.8	742.2	1797.0	764.2	1795.0	775.5	1795.3	786.9
GR1797.1	801.1	1797.8	824.7	1797.0	842.8	1793.3	852.9	1797.0	861.1
GR1796.8	882.1	1795.0	890.6	1795.1	912.4	1797.0	942.8	1798.0	967.3
GR1798.0	1029.4	1796.4	1042.4	1798.7	1052.7	1798.0	1070.8	1797.8	1091.9
GR1797.7	1099.8	1797.0	1112.8	1801.0	1151.6	1805.0	1180.1	1803.7	1193.0
GR1800.6	1207.3	1799.0	1241.0	1799.0	1254.4	1800.7	1281.4	1805.0	1317.5
GR1805.0	1346.9	1805.3	1357.0						
X1 148.0	65.0	.0	1386.8	100	100	100.0	.0	.0	.0
GR1811.0	.0	1804.7	87.8	1803.4	147.7	1803.1	148.9	1804.0	163.0
GR1803.6	183.0	1803.9	205.4	1803.9	211.3	1802.1	241.2	1801.8	275.2
GR1800.0	298.9	1799.7	315.6	1800.6	339.9	1800.8	356.7	1799.0	375.5
GR1797.2	384.8	1799.7	407.6	1800.8	432.7	1801.0	469.1	1801.0	516.0
GR1796.9	549.1	1795.0	563.1	1795.0	570.7	1797.0	575.5	1797.0	584.2
GR1795.2	621.5	1797.0	633.0	1796.8	641.9	1793.0	662.5	1796.0	685.5
GR1796.0	719.1	1794.0	728.3	1796.3	745.6	1796.0	782.0	1794.8	819.5
GR1794.5	833.8	1794.5	844.1	1793.7	850.8	1793.0	876.0	1793.0	912.9
GR1794.1	921.8	1795.0	941.0	1795.3	960.8	1795.0	1013.5	1795.0	1037.2
GR1794.0	1045.6	1795.0	1058.9	1794.4	1075.5	1794.8	1099.3	1794.0	1120.1
GR1794.0	1132.1	1794.8	1146.0	1795.0	1156.4	1797.0	1193.6	1800.1	1223.2
GR1800.4	1230.9	1800.0	1253.8	1798.4	1270.3	1798.8	1282.9	1796.7	1304.4
GR1797.1	1312.7	1800.0	1332.7	1802.4	1362.7	1802.4	1375.9	1801.3	1386.8
X1 147.0	57.0	.0	1223.1	100	100	100.0	.0	.0	.0
X3 10					1270				

GR1810.1	.0	1803.8	83.9	1802.3	149.6	1802.0	150.8	1802.9	166.6
GR1802.4	188.0	1802.8	210.6	1803.0	216.1	1802.4	247.4	1802.0	263.2
GR1802.3	270.9	1801.9	309.7	1798.0	351.4	1798.0	397.3	1796.0	405.7
GR1796.0	413.8	1798.0	424.5	1798.4	445.2	1798.5	479.8	1799.0	506.7
GR1799.5	517.1	1799.5	526.8	1795.7	563.3	1794.0	577.1	1794.9	604.8
GR1793.8	629.2	1794.0	641.3	1796.0	667.0	1791.0	689.5	1795.0	716.6
GR1794.8	735.8	1793.8	751.9	1791.1	762.9	1793.3	777.6	1793.0	820.0
GR1792.7	840.3	1791.9	850.4	1791.0	886.5	1791.0	910.4	1792.3	919.9
GR1792.4	940.0	1792.0	950.3	1792.0	989.1	1791.4	998.9	1791.5	1032.1
GR1791.0	1043.2	1792.0	1060.1	1792.0	1076.3	1791.2	1081.6	1791.0	1092.4
GR1791.9	1121.3	1792.0	1139.4	1793.0	1168.0	1793.0	1184.5	1792.0	1198.1
GR1795.0	1223.1	1799.0	1272.8						
X1 146.0	56.0	.0	1193.0	100	100	100.0	.0	.0	.0
X3 10					1215				
GR1809.3	.0	1803.0	82.4	1800.8	155.4	1801.9	173.1	1801.3	196.0
GR1800.9	213.0	1799.4	217.8	1801.1	229.8	1801.0	248.0	1800.5	259.8
GR1801.4	282.8	1801.0	289.5	1801.0	303.9	1800.0	331.7	1797.0	371.4
GR1796.1	390.5	1795.9	433.5	1794.0	450.0	1795.8	470.9	1795.8	492.5
GR1795.6	506.1	1796.7	525.2	1796.9	571.6	1794.0	583.2	1791.7	601.7
GR1792.7	623.1	1792.9	632.3	1792.0	657.6	1792.0	678.2	1789.0	694.7
GR1791.0	710.8	1792.0	720.8	1791.5	740.2	1790.9	783.1	1789.0	802.0
GR1790.5	814.1	1790.7	835.8	1788.2	847.7	1789.0	908.8	1789.0	919.7
GR1788.6	927.6	1789.2	970.5	1789.0	988.8	1788.0	997.3	1788.0	1026.6
GR1787.4	1039.2	1790.0	1054.9	1789.6	1062.5	1790.0	1067.7	1790.0	1097.5
GR1791.0	1113.2	1790.0	1133.5	1788.0	1147.3	1791.2	1168.1	1792.9	1193.0
GR1792.2	1215.1								
X1 145.0	57.0	.0	1167.4	100	100	100.0	.0	.0	.0
X3 10					1180				
GR1808.7	.0	1802.2	83.3	1799.7	163.0	1800.8	182.7	1800.1	212.3
GR1799.8	231.5	1799.0	241.0	1798.0	250.7	1798.4	296.1	1799.0	312.6
GR1800.0	324.9	1799.9	336.9	1797.9	366.0	1797.0	385.6	1796.3	406.8
GR1795.0	425.9	1795.0	449.7	1795.6	459.0	1794.7	481.5	1792.0	513.4
GR1792.4	533.8	1794.4	565.5	1794.4	578.8	1793.8	612.5	1791.8	628.4
GR1789.0	641.4	1790.7	657.1	1790.7	674.0	1790.0	692.5	1786.0	702.3
GR1790.8	718.7	1790.0	753.3	1788.8	773.3	1787.8	781.8	1787.5	792.8
GR1788.0	807.0	1785.4	819.3	1787.1	832.2	1786.9	846.0	1786.2	865.4
GR1786.3	891.9	1786.5	932.2	1786.4	950.4	1786.4	973.9	1785.0	992.0
GR1785.0	1000.8	1785.5	1005.8	1786.0	1034.5	1785.8	1071.8	1785.5	1084.8
GR1786.0	1100.2	1785.0	1106.5	1787.0	1129.6	1788.1	1139.5	1789.0	1156.0
GR1789.0	1167.4	1788.0	1187.5						
X1 144.0	50.0	.0	1166.7	100	100	100.0	.0	.0	.0
X3 10					1170				
GR1808.2	.0	1801.3	86.6	1798.5	173.7	1799.6	195.7	1798.8	220.6
GR1798.9	249.9	1797.5	289.9	1796.7	324.5	1795.1	363.3	1795.3	378.4
GR1797.0	413.2	1795.0	439.0	1793.0	456.6	1793.6	493.6	1793.0	507.7
GR1789.0	546.7	1788.0	559.9	1789.2	573.8	1789.8	589.0	1789.8	624.4
GR1790.0	647.0	1789.3	679.8	1788.5	705.9	1785.0	722.2	1789.0	741.4
GR1788.4	752.3	1788.5	757.1	1788.0	791.0	1786.5	830.2	1785.7	843.0
GR1783.0	850.0	1783.3	875.0	1783.0	903.1	1782.4	909.5	1783.7	914.7
GR1783.0	940.2	1783.0	955.5	1782.8	975.7	1783.0	985.8	1784.0	995.5
GR1784.0	1030.6	1783.4	1057.6	1783.0	1090.9	1782.3	1108.3	1782.0	1116.8
GR1784.0	1121.8	1786.0	1133.7	1787.1	1152.1	1786.8	1166.7	1786.0	1182.7
X1 143.0	42.0	.0	1180.0	100	100	100.0	.0	.0	.0
X3 10					1180				
GR1807.3	.0	1799.4	99.2	1796.1	200.1	1797.4	226.0	1797.0	244.7
GR1797.0	255.3	1796.5	265.1	1796.6	340.4	1796.3	369.3	1793.9	399.0
GR1793.0	423.1	1794.9	462.4	1792.0	495.9	1791.0	503.7	1792.0	510.9
GR1792.0	555.7	1791.0	569.9	1791.0	583.1	1790.3	586.2	1788.4	627.3
GR1788.2	656.1	1787.8	669.5	1784.0	700.7	1784.7	758.2	1784.8	773.3
GR1781.2	786.0	1786.0	798.7	1785.0	814.7	1783.0	868.2	1780.7	888.6
GR1780.5	923.5	1780.5	958.6	1779.8	969.5	1779.0	976.3	1780.2	996.0
GR1780.9	1023.9	1780.8	1062.4	1780.3	1102.0	1779.7	1114.8	1778.5	1130.3
GR1781.0	1146.4	1784.0	1180.0						
X1 142.0	51.0	.0	1175.0	100	100	100.0	.0	.0	.0
X3 10					1175				
GR1804.9	.0	1795.3	121.1	1791.6	247.3	1792.1	267.2	1792.4	272.3
GR1792.2	303.3	1792.1	349.4	1792.3	362.9	1792.0	392.3	1790.0	431.3

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GR1790.0   441.8  1789.3   458.0  1788.7   485.8  1788.0   507.4  1787.0   517.0
GR1787.2   526.7  1788.3   536.9  1787.6   554.0  1787.0   561.1  1785.4   566.0
GR1788.1   573.5  1790.0   584.9  1788.8   628.1  1787.9   647.4  1787.0   689.8
GR1786.1   719.3  1786.0   735.4  1785.0   750.8  1782.8   767.5  1780.0   778.1
GR1780.4   834.0  1779.0   858.2  1779.5   872.5  1780.0   886.3  1778.8   901.2
GR1777.8   903.9  1778.0   928.2  1779.0   935.6  1779.0   987.1  1778.0  1020.1
GR1778.0  1026.1  1777.0  1030.1  1777.0  1042.1  1776.4  1049.7  1776.5  1090.7
GR1777.0  1118.3  1777.0  1132.6  1776.0  1137.2  1776.0  1144.9  1778.0  1152.8
GR1779.6  1175.0
X1 141.0    53.0      .0  1180.0     100     100   100.0      .0      .0      .0
X3    10                                   1180
GR1801.7      .0  1791.2   134.2  1787.6   266.4  1786.0   285.1  1786.0   296.6
GR1788.0   313.6  1788.7   327.6  1786.0   352.5  1786.0   369.1  1787.8   384.6
GR1789.1   417.1  1788.8   473.7  1788.0   496.6  1786.9   522.6  1786.0   531.8
GR1785.4   552.3  1785.0   556.8  1785.0   584.2  1783.9   599.9  1784.0   618.5
GR1784.4   628.7  1783.9   634.7  1784.0   657.3  1781.0   688.8  1779.0   695.6
GR1780.2   704.8  1782.7   715.3  1783.9   731.5  1783.0   739.6  1782.8   755.0
GR1776.0   777.6  1776.0   787.8  1777.4   806.2  1778.0   822.0  1777.7   842.1
GR1775.5   857.7  1775.3   861.2  1776.0   888.1  1778.0   901.7  1778.0   914.4
GR1775.0   927.7  1776.6   947.1  1777.5   986.2  1777.8  1012.3  1777.0  1039.7
GR1777.0  1060.5  1775.0  1079.8  1775.6  1085.7  1775.0  1100.5  1774.8  1115.7
GR1774.0  1136.4  1774.0  1157.8  1773.7  1180.0
QT     1   12814
X1 140.0    47.0      .0  1180.0     100     100   100.0      .0      .0      .0
X3    10                                   1180
GR1797.8      .0  1787.2   138.5  1784.2   252.5  1783.0   267.0  1782.0   292.2
GR1783.5   309.9  1781.6   331.2  1781.4   344.0  1781.8   356.1  1782.0   385.8
GR1781.3   396.9  1783.0   426.9  1784.1   466.0  1785.1   506.0  1785.8   520.1
GR1785.6   543.3  1785.0   560.8  1783.0   597.4  1783.0   653.0  1778.0   692.5
GR1776.9   702.9  1775.0   708.8  1776.0   722.0  1777.9   735.8  1778.3   751.3
GR1772.0   766.7  1771.1   775.4  1773.0   786.0  1773.2   806.2  1773.0   819.0
GR1774.0   848.6  1773.9   874.0  1772.0   883.0  1774.0   898.3  1773.8   911.7
GR1773.1   920.9  1774.0   924.2  1775.0   976.1  1775.0  1006.1  1774.0  1037.4
GR1772.0  1051.4  1773.5  1058.1  1773.8  1063.0  1773.0  1087.4  1772.0  1107.2
GR1772.7  1153.1  1772.0  1180.0
X1 139.0    50.0      .0  1175.0     100     100   100.0      .0      .0      .0
X3    10                                  1175.0
GR1793.2      .0  1783.1   134.2  1780.8   230.0  1779.8   242.3  1779.0   263.7
GR1781.8   296.5  1781.0   334.6  1780.5   347.4  1780.1   380.0  1781.0   427.8
GR1778.9   450.3  1777.0   465.6  1776.0   487.4  1777.0   515.2  1777.3   528.6
GR1775.5   540.8  1778.4   553.8  1779.0   563.7  1781.0   583.2  1779.6   619.2
GR1777.9   645.5  1776.2   653.6  1778.1   664.7  1777.8   689.4  1776.8   705.7
GR1774.7   713.2  1771.9   736.8  1771.5   748.6  1771.0   778.3  1770.4   788.4
GR1772.0   827.0  1772.0   850.8  1770.0   856.6  1771.0   862.8  1771.0   876.5
GR1770.0   884.5  1770.0   893.7  1771.3   925.5  1772.8   951.9  1770.5   984.7
GR1770.4   998.0  1771.3  1027.5  1771.6  1055.4  1771.0  1074.0  1769.0  1095.2
GR1769.0  1103.7  1770.0  1112.3  1770.0  1131.6  1769.6  1140.2  1770.4  1175.0
X1 138.0    46.0      .0  1170.0     100     100   100.0      .0      .0      .0
X3    10                                  1170.0
GR1787.9      .0  1779.1   121.2  1777.3   198.6  1776.5   208.6  1775.9   226.1
GR1778.2   253.0  1776.8   323.4  1776.9   348.8  1778.0   360.2  1777.0   380.7
GR1776.4   403.5  1776.8   442.1  1777.0   459.6  1776.1   485.6  1777.3   494.9
GR1777.3   523.7  1775.0   539.0  1775.0   575.4  1774.0   583.1  1773.4   605.7
GR1772.0   619.1  1772.0   624.4  1774.0   643.5  1774.9   664.1  1773.0   729.6
GR1770.7   742.0  1771.8   750.8  1768.0   767.6  1768.0   790.9  1769.0   812.4
GR1769.0   839.8  1767.0   845.4  1768.7   851.3  1767.3   879.8  1767.0   887.4
GR1769.0   895.5  1769.0   933.4  1769.3   953.2  1769.3   967.6  1768.0   982.3
GR1769.2  1053.6  1769.2  1088.2  1768.8  1104.1  1764.7  1114.3  1769.0  1143.4
GR1768.5  1170.0
X1 137.0    46.0      .0  1165.0     100     100   100.0      .0      .0      .0
X3    10                                  1165.0
GR1782.0      .0  1774.9    99.3  1773.7   157.8  1772.7   178.8  1774.4   199.4
GR1773.5   254.0  1773.7   294.3  1774.3   348.8  1773.8   385.0  1773.0   415.0
GR1773.0   428.4  1772.0   438.0  1773.0   460.1  1773.0   489.9  1774.0   507.6
GR1773.4   533.6  1773.6   553.5  1773.0   567.6  1769.7   592.6  1769.2   610.3
GR1770.0   619.3  1770.4   629.5  1771.2   635.7  1770.8   681.6  1770.0   697.4
GR1769.0   711.1  1768.7   725.8  1769.0   738.4  1766.0   745.2  1766.1   795.0
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GR1765.8	814.5	1766.1	851.7	1768.1	898.9	1767.8	923.2	1766.1	944.7
GR1766.6	965.1	1766.5	980.0	1767.0	1015.3	1767.0	1063.1	1766.3	1099.4
GR1766.0	1110.9	1764.7	1123.5	1762.3	1129.6	1764.1	1141.7	1766.5	1150.1
GR1767.0	1165.0								
X1 136.0	49.0	.0	1160.0	100	100	100.0	.0	.0	.0
X3 10					1160.0				
GR1771.7	.0	1768.7	47.0	1768.2	76.3	1767.7	87.2	1768.6	97.9
GR1768.2	127.2	1768.9	186.7	1768.4	241.1	1769.5	319.0	1769.0	340.5
GR1769.6	346.8	1767.1	365.9	1767.9	386.5	1768.4	424.5	1769.0	435.8
GR1768.0	441.9	1768.7	466.4	1769.0	505.5	1767.8	519.9	1768.7	532.2
GR1767.2	551.7	1766.9	568.8	1764.4	586.5	1766.0	611.5	1768.6	631.3
GR1767.7	660.3	1766.8	678.4	1764.3	710.8	1763.6	728.0	1763.8	756.9
GR1764.0	771.1	1764.0	798.7	1765.2	809.1	1765.0	823.7	1763.9	840.5
GR1763.5	872.1	1764.2	894.7	1766.0	925.5	1766.0	936.8	1764.0	948.6
GR1764.0	970.2	1764.9	1000.8	1765.0	1037.7	1764.0	1050.0	1765.0	1085.7
GR1765.0	1107.0	1761.0	1133.1	1763.1	1146.0	1764.4	1160.0		
X1 135.0	50.0	.0	1145.0	100	100	100.0	.0	.0	.0
X3 10					1145.0				
GR1766.8	.0	1765.9	15.1	1765.4	35.3	1765.8	40.8	1765.8	66.7
GR1766.0	85.4	1765.7	125.2	1766.2	163.6	1765.4	203.4	1765.6	235.6
GR1765.8	325.7	1766.0	339.5	1764.4	346.2	1765.0	357.8	1764.4	374.9
GR1764.7	398.0	1764.0	419.2	1764.0	427.5	1766.0	436.3	1765.8	457.7
GR1766.0	482.6	1765.1	500.1	1764.9	532.8	1764.7	547.8	1765.0	554.1
GR1763.0	578.1	1762.0	583.4	1762.0	591.5	1763.0	609.3	1764.2	643.8
GR1765.0	651.0	1765.0	660.0	1763.0	680.8	1761.0	695.5	1762.0	732.8
GR1761.8	741.0	1762.0	787.4	1761.9	823.3	1761.0	852.8	1761.7	905.2
GR1762.9	926.6	1761.5	934.7	1761.0	957.4	1762.0	967.9	1763.0	994.0
GR1763.0	1031.0	1762.0	1076.2	1762.0	1108.1	1760.0	1118.5	1763.0	1145.0
X1 134.0	45.0	.0	1130.0	100	100	100.0	.0	.0	.0
X3 10					1130.0				
GR1763.0	.0	1763.0	15.7	1763.5	88.6	1763.6	133.2	1763.3	178.9
GR1762.8	189.1	1763.1	218.6	1763.3	313.2	1762.4	327.0	1762.6	350.8
GR1762.0	379.1	1761.0	386.7	1761.0	393.2	1763.0	414.6	1760.1	442.1
GR1761.1	456.9	1761.3	477.0	1763.0	494.0	1763.0	509.6	1762.0	557.2
GR1762.0	576.7	1761.0	603.5	1759.4	608.5	1760.0	627.4	1759.8	642.3
GR1758.0	651.8	1760.0	684.6	1760.4	706.1	1760.0	741.5	1759.6	753.6
GR1758.6	769.1	1760.0	780.3	1758.6	844.7	1759.3	913.7	1760.2	950.0
GR1761.0	975.8	1760.9	991.3	1760.0	1023.9	1759.0	1041.1	1759.0	1057.2
GR1760.0	1070.1	1761.0	1092.5	1761.0	1110.8	1758.0	1121.3	1758.0	1130.0
X1 133.0	44.0	.0	1125.0	100	100	100.0	.0	.0	.0
X3 10			370		1125.0				
GR1760.3	.0	1760.8	35.1	1760.2	80.9	1759.7	108.6	1760.7	142.0
GR1760.6	211.3	1758.3	222.1	1759.4	294.9	1760.0	305.8	1760.0	345.4
GR1759.4	356.4	1759.4	373.2	1758.9	401.6	1758.0	413.0	1757.5	426.0
GR1757.6	432.2	1757.0	455.4	1757.0	469.5	1760.0	499.5	1760.0	520.1
GR1757.8	533.5	1758.6	544.6	1759.0	556.9	1759.0	579.0	1758.8	599.6
GR1758.9	629.7	1755.0	662.2	1755.0	675.7	1756.0	683.7	1757.0	708.2
GR1757.9	755.3	1757.5	793.6	1756.5	830.8	1758.0	875.4	1758.0	903.3
GR1757.7	925.4	1758.0	953.1	1758.7	970.6	1757.5	1015.7	1757.0	1029.2
GR1758.0	1036.6	1758.3	1073.5	1758.0	1105.1	1757.0	1125.0		
X1 132.0	48.0	389.4	1120.0	100	100	100.0	.0	.0	.0
X3 10			370.0		1120.0				
GR1757.7	.0	1758.0	5.6	1758.0	45.0	1757.6	58.7	1757.6	78.8
GR1758.0	84.9	1758.0	117.5	1757.2	135.9	1757.6	171.8	1756.0	177.6
GR1758.5	193.8	1758.2	235.1	1756.8	276.9	1757.0	318.3	1757.0	348.7
GR1756.0	389.4	1756.1	409.3	1756.4	419.6	1754.8	454.7	1754.0	473.9
GR1753.0	482.4	1755.0	496.5	1756.0	522.3	1755.8	542.7	1757.0	597.2
GR1756.6	609.4	1753.8	641.9	1753.0	649.2	1753.0	658.4	1756.0	677.5
GR1755.8	702.4	1755.8	749.6	1755.6	756.3	1755.7	773.0	1756.0	790.3
GR1755.0	807.6	1754.0	853.7	1755.4	885.0	1755.3	909.8	1755.1	920.8
GR1755.3	936.2	1754.6	949.8	1755.9	1003.8	1756.0	1034.4	1755.8	1042.0
GR1755.5	1077.6	1755.6	1100.6	1755.0	1120.0				
X1 131.0	47.0	390.0	1120.0	100	100	100.0	.0	.0	.0
X3 10			390.0		1120.0				
GR1754.7	.0	1754.9	18.7	1754.6	51.9	1755.0	82.6	1754.0	104.9
GR1754.0	148.5	1755.0	155.1	1754.8	190.7	1754.1	259.0	1754.0	285.0
GR1753.1	295.0	1754.0	333.0	1753.9	365.1	1754.5	390	1754.3	405

GR1754.2	420	1754	440	1753.5	460	1753	480	1752.5	495
GR1753.0	510.6	1753.0	539.8	1753.0	563.0	1753.8	587.2	1752.9	604.6
GR1749.0	620.9	1750.0	629.6	1753.3	640.8	1753.0	674.0	1753.6	714.8
GR1754.0	729.0	1753.0	737.2	1753.0	746.8	1754.0	759.6	1753.4	798.3
GR1753.6	816.1	1752.0	858.8	1752.0	879.1	1751.6	901.9	1752.0	922.7
GR1751.0	942.2	1751.4	953.0	1753.0	978.0	1753.0	996.8	1752.5	1030.3
GR1752.4	1067.6	1753.4	1120.0						
X1 130.0	46.0	410.0	1125.0	100	100	100.0	.0	.0	.0
X3 10			410.0		1125.0				
GR1751.8	.0	1752.3	23.5	1751.9	70.5	1750.0	104.1	1751.2	144.4
GR1750.7	196.4	1751.0	220.5	1750.9	271.6	1750.2	306.9	1749.6	312.4
GR1750.4	347.5	1749.9	385.9	1753.5	410	1753	430	1752.8	445
GR1752.5	460	1752.2	475	1752	490	1751.5	510	1751	530
GR1750.6	545	1750.3	560	1749.8	583.3	1747.6	592.6	1747.6	599.0
GR1750.0	613.9	1749.7	632.9	1749.0	656.2	1750.1	663.7	1750.8	674.4
GR1751.8	761.4	1751.0	789.0	1751.0	816.3	1749.2	852.0	1749.1	866.7
GR1749.5	886.0	1750.0	894.7	1749.0	932.8	1749.2	944.3	1749.5	989.7
GR1749.6	1029.4	1749.5	1048.6	1749.0	1062.6	1750.3	1084.7	1751.0	1108.8
GR1750.8	1125.0								
X1 129.0	49.0	440	1130.0	100	100	100.0	.0	.0	.0
X3 10			440.0		1130.0				
GR1748.4	.0	1748.5	16.1	1747.9	48.7	1747.7	86.5	1747.8	137.3
GR1747.2	153.4	1748.0	169.8	1748.3	209.0	1748.2	243.0	1747.7	273.5
GR1747.0	295.0	1745.5	308.7	1747.2	343.6	1747.3	350.2	1746.8	384.7
GR1746.8	423.8	1751.5	440	1751	480	1750.8	494	1750.6	508
GR1750.4	522	1750.2	536	1750	550	1749.8	562	1749.6	574
GR1749.4	586	1749.2	599	1749	610	1748.5	625	1748	640
GR1747.6	675	1747.3	700	1747	730	1747	754.1	1747	787.4
GR 1747	804.7	1747.0	816.5	1748.6	845.7	1746.8	867.0	1744.0	879.3
GR1746.0	891.5	1747.6	911.1	1747.0	934.4	1747.2	952.9	1747.0	968.2
GR1747.0	999.5	1746.8	1013.8	1747.3	1070.5	1748.9	1130.0		
X1 128.0	60.0	500	1116.0	100	100	100.0	.0	.0	.0
X3 10			500.0		1125.0				
GR1746.4	.0	1745.9	42.0	1744.8	100.8	1746.0	127.1	1745.0	140.0
GR1745.0	156.1	1745.8	179.2	1746.1	222.1	1746.0	251.0	1743.3	257.5
GR1745.0	263.7	1745.9	285.4	1744.8	306.9	1743.0	319.3	1743.9	346.1
GR1744.2	369.5	1744.4	410.2	1744.4	424.4	1744.6	451.3	1745.2	472.4
GR1743.8	485.9	1749.7	500	1749.5	515	1749.2	530	1748.9	545
GR1748.6	560	1748.3	575	1748	590	1747.0	630	1746	670
GR1745.6	690	1745.3	720	1745	740	1744.0	780.0	1743.6	810
GR1743.3	850	1743.0	878.3	1742.0	882.3	1742.2	888.4	1744.0	898.1
GR1744.5	910.2	1745.1	939.8	1745.8	985.8	1743.0	1004.3	1743.0	1017.7
GR1744.3	1031.2	1745.1	1057.2	1744.4	1090.4	1745.1	1116.0	1746.0	1142.2
GR1745.4	1170.5	1745.7	1193.5	1745.0	1230.7	1747.0	1260.9	1747.0	1271.2
GR1747.6	1286.5	1747.6	1308.5	1747.0	1324.1	1747.3	1326.0	1746.8	1351.8
X1 127.0	57.0	610.0	1105.4	100	100	100.0	.0	.0	.0
X3 10			610.0	1748.0	1115.0	1748.0			
GR1744.9	.0	1745.0	15.9	1743.7	50.4	1742.9	78.3	1742.4	93.8
GR1743.0	111.6	1743.0	121.3	1743.4	135.2	1742.0	146.6	1743.2	154.9
GR1743.7	173.0	1743.7	206.5	1744.0	226.5	1743.0	236.6	1743.4	246.1
GR1743.4	257.4	1743.6	289.4	1742.7	338.0	1742.0	347.5	1742.0	356.7
GR1741.0	362.8	1742.1	396.0	1741.8	445.8	1740.2	453.1	1742.0	466.8
GR1742.9	486.9	1742.7	498.0	1742.8	516.0	1741.0	528.5	1742.0	540.8
GR1743.0	548.6	1744.0	575.3	1745.0	600.8	1746.0	610.0	1745.9	611.0
GR1745.0	665.0	1744.0	720.0	1743.5	770.0	1743.0	820.0	1742.5	880.0
GR1741.0	892.6	1742.0	899.9	1742.7	921.5	1742.3	964.2	1742.0	990.7
GR1742.0	1022.9	1740.0	1032.7	1742.0	1043.4	1743.1	1053.7	1743.2	1105.4
GR1743.7	1124.8	1743.2	1136.0	1743.2	1160.3	1744.0	1170.8	1744.9	1198.5
GR1744.2	1230.7	1744.3	1260.0						
X1 126.0	58.0	736.0	1086.7	100	100	60.0	.0	.0	.0
X3 10			720.0	1745.0	1110.0	1745.0			
GR1742.0	.0	1742.7	36.9	1741.0	63.2	1742.6	85.2	1740.0	112.1
GR1740.0	122.7	1741.5	129.9	1742.1	149.2	1741.1	197.8	1741.3	237.2
GR1741.0	251.8	1742.1	269.7	1742.0	318.7	1740.1	332.4	1741.0	364.8
GR1740.0	387.7	1739.0	394.1	1739.2	411.3	1738.0	415.9	1740.0	436.5
GR1740.8	464.2	1740.0	499.8	1740.3	531.9	1740.0	537.1	1741.3	550.4
GR1742.8	595.8	1742.0	620.7	1741.3	643.3	1742.1	671.5	1742.0	684.7

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GR1741.0   705.1  1741.0   736.0  1741.2   762.4  1741.0   800.0  1740.5   830.0
GR1740.0   860.0  1740.0   874.4  1740.0   911.3  1739.0   921.6  1740.0   932.4
GR1740.0   956.1  1740.0   975.3  1739.0   988.5  1738.0   996.5  1740.0  1016.1
GR1740.5  1030.9  1741.2  1086.7  1741.5  1112.5  1741.0  1128.2  1740.6  1138.6
GR1741.0  1162.3  1742.0  1173.4  1741.4  1188.0  1741.3  1206.6  1741.4  1246.2
GR1741.4  1280.8  1741.3  1321.6  1741.5  1335.0
NC  .025    .025    .025      .1      .3
X1125.40   16.00    12.5   349.5     .00     .00    4.00     .00       0     .00
X3    10                     12             350
GR1740.9      .0  1742.4     4.5  1742.4    12.5  1741.2    16.3  1739.9    22.7
GR1739.9    33.0  1737.0    48.0  1737.0     250  1737.0   340.0  1742.4   345.5
GR1742.4   349.5  1745.4   355.5  1745.4   365.5  1740.9   373.6  1739.0   379.4
GR1739.3   400.0
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[Succeeding Sections are unchanged]

[preceding sections are unchanged]

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SB  1.05    1.56     2.6     264     227      15    3032     1.5
X1 43.58       4   859.5  1140.5    28.0    28.0    28.0
X2                     1 1578.55 1581.91
X3    10
GR1582.3   859.5  1564.3   886.5  1564.3  1113.5  1582.3  1140.5
NC  .050    .050    .050      .3      .5
X1 43.30       4   859.5  1140.5   170.0   140.0   150.0
GR1582.0   859.5  1564.0   886.5  1564.0  1113.5  1582.0  1140.5
NC                            .1      .3
X1 41.80    43.0   741.0  1035.4   150.1   158.5   150.0      .0      .0      .0
X3    10                    740            1050
GR1572.6   600.0  1572.9   602.3  1572.9   606.7  1572.0   629.2  1571.4   649.3
GR1571.3   657.2  1571.2   664.1  1570.9   669.3  1570.7   675.9  1571.0   682.1
GR1571.0   683.6  1572.6   709.0  1572.9   714.7  1572.8   724.5  1572.7   736.4
GR1572.5   741.0  1572.4   745.7  1572.8   747.2  1571.4   768.3  1571.3   769.8
GR1570.7   786.4  1562.6   815.0  1562.6   999.0  1567.8  1030.7  1567.8  1035.4
GR1568.1  1064.9  1568.0  1079.8  1567.9  1099.9  1568.0  1103.2  1567.5  1124.3
GR1567.2  1132.8  1567.0  1135.6  1566.5  1140.3  1566.1  1145.1  1566.0  1148.4
GR1566.7  1154.2  1567.3  1156.7  1567.5  1156.9  1566.2  1158.7  1566.6  1162.1
GR1569.7  1172.2  1569.5  1177.8  1569.4  1183.7
NC                            0.1     0.3
X1 40.30    46.0   762.6  1068.6   151.8   155.4   150.0      .0      .0      .0
X3    10                    750            1080
GR1569.1   600.0  1569.3   620.8  1569.3   625.8  1569.3   644.3  1567.8   663.9
GR1568.0   667.0  1568.7   674.5  1568.7   681.4  1568.6   686.5  1570.8   725.8
GR1570.8   728.2  1570.8   731.3  1570.5   744.4  1572.5   750.6  1572.5   762.6
GR1565.9   769.2  1564.6   772.7  1564.0   774.2  1564.1   775.8  1565.5   792.2
GR1565.6   803.3  1565.3   817.1  1564.8   830.4  1563.4   835.7  1563.2   836.7
GR1563.2   839.7  1563.5   849.8  1561.2   868.0  1561.2  1003.0  1564.9  1016.2
GR1565.6  1025.3  1566.0  1033.9  1565.4  1055.5  1565.2  1062.7  1565.1  1068.6
GR1564.6  1084.6  1564.1  1105.4  1564.2  1112.3  1564.2  1149.2  1564.2  1153.6
GR1564.4  1163.5  1564.7  1170.0  1564.8  1191.4  1564.7  1206.6  1564.5  1213.2
GR1564.4  1215.3
X1 38.80    54.0   770.0  1084.3   150.2   150.0   150.0      .0      .0      .0
X3    10                    770            1110
GR1565.7   600.0  1564.8   616.0  1564.7   618.5  1564.7   620.9  1564.8   624.5
GR1565.1   635.1  1566.0   642.5  1566.4   646.6  1566.7   672.5  1566.8   676.1
GR1566.7   677.0  1566.8   682.1  1567.2   711.1  1567.2   718.2  1567.7   741.2
GR1567.8   751.3  1567.9   760.4  1568.2   765.8  1568.8   767.8  1569.6   770.0
GR1569.5   782.0  1566.6   784.9  1564.1   792.4  1562.3   797.6  1562.6   800.4
GR1562.6   803.5  1562.9   813.5  1562.9   819.8  1563.0   855.9  1563.0   856.0
GR1563.1   874.4  1562.5   878.7  1562.3   880.3  1562.4   881.5  1562.7   887.4
GR1563.0   891.5  1563.4   899.5  1562.9   904.5  1559.8   916.0  1559.8  1004.0
GR1562.9  1013.6  1562.6  1035.4  1562.8  1082.8  1562.8  1084.3  1562.3  1113.4
GR1562.7  1126.1  1563.0  1131.9  1562.9  1137.7  1562.9  1147.0  1560.0  1173.0
GR1559.0  1180.0  1561.0  1190.0  1562.0  1243.0  1562.0  1270.0
X1 37.30    71.0   780.7  1154.7   150.4   151.1   150.0      .0      .0      .0
X3    10                    780            1170
GR1565.9   600.0  1564.9   618.2  1564.9   621.9  1562.6   634.6  1560.7   644.5
GR1561.1   648.7  1561.7   655.0  1563.0   670.4  1563.3   673.2  1563.8   681.5
GR1564.5   694.3  1564.0   702.3  1563.3   711.0  1563.2   713.3  1563.1   718.6
GR1562.7   722.8  1562.4   728.1  1563.5   737.6  1565.0   748.9  1565.6   759.0
GR1565.7   763.0  1567.7   768.7  1567.7   780.7  1566.2   782.2  1566.1   790.3
GR1566.0   805.7  1566.0   811.9  1565.8   828.4  1561.4   840.5  1559.1   847.1
GR1560.3   861.5  1560.5   865.4  1561.2   877.8  1561.0   878.5  1558.8   890.8
GR1558.3   894.7  1559.6   903.6  1559.8   906.8  1560.2   920.8  1560.6   933.1
GR1561.1   954.1  1561.2   961.4  1558.5   965.0  1558.5  1005.0  1560.4  1013.3
GR1561.2  1030.8  1560.8  1033.7  1559.8  1045.8  1559.7  1056.6  1559.8  1064.0
GR1560.0  1074.6  1560.1  1085.4  1560.0  1087.3  1558.4  1116.2  1558.5  1117.8
GR1559.4  1135.1  1559.9  1151.9  1560.0  1154.7  1560.2  1187.4  1560.4  1201.5
GR1560.4  1209.3  1560.4  1218.3  1560.4  1222.7  1560.4  1229.4  1560.4  1234.0
GR1560.4  1256.7  1560.4  1265.8  1560.4  1269.4  1560.4  1274.5  1560.4  1278.5
GR1561.7  1283.7
X1 35.80    75.0   791.3  1216.0   150.8   150.1   150.0      .0      .0      .0
X3    10                    790            1220
GR1556.8   600.0  1557.1   613.3  1557.6   626.7  1558.1   636.5  1560.9   648.7
GR1560.9   648.8  1561.7   671.0  1561.9   681.4  1561.3   690.7  1559.9   697.2
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GR1557.6	709.3	1558.5	722.2	1558.6	723.6	1560.9	742.0	1562.7	769.7
GR1563.6	772.6	1565.2	777.3	1565.2	789.3	1563.2	791.3	1563.3	801.0
GR1563.3	803.5	1563.2	813.4	1563.2	835.0	1563.5	845.8	1563.8	860.1
GR1563.8	871.7	1564.2	884.9	1563.2	888.3	1557.1	910.2	1557.2	913.7
GR1557.7	922.1	1557.7	923.3	1558.0	939.7	1558.4	943.5	1559.0	951.5
GR1558.7	952.1	1555.1	961.4	1558.6	971.2	1559.0	972.5	1559.4	1002.2
GR1559.3	1008.0	1559.0	1022.5	1558.6	1033.2	1557.9	1036.5	1557.0	1043.6
GR1556.9	1045.6	1556.2	1056.7	1557.3	1060.2	1559.0	1065.3	1558.5	1080.8
GR1558.2	1087.4	1557.8	1102.9	1557.7	1116.2	1557.5	1124.9	1556.9	1130.9
GR1555.8	1144.6	1555.5	1149.3	1555.6	1152.3	1555.5	1156.1	1555.6	1164.8
GR1555.1	1171.9	1554.7	1178.8	1555.1	1186.7	1555.6	1190.9	1556.7	1196.0
GR1556.7	1199.2	1556.2	1216.0	1555.4	1224.4	1554.1	1235.4	1556.0	1247.3
GR1556.4	1249.7	1558.5	1255.8	1558.9	1260.2	1559.9	1261.2	1564.4	1265.8
X1 34.30	84.0	805.2	1253.6	154.7	152.2	150.0	.0	.0	.0
X3 10			800		1280				
GR1554.2	600.0	1554.2	601.2	1554.2	604.1	1554.7	644.0	1554.4	653.5
GR1553.2	687.3	1553.0	725.3	1553.1	727.4	1552.9	735.4	1552.8	740.3
GR1553.5	742.8	1554.5	745.5	1558.6	758.4	1562.7	770.8	1562.7	783.2
GR1560.5	785.5	1560.7	805.2	1560.7	808.9	1560.7	809.2	1560.7	810.5
GR1561.0	847.9	1560.6	861.1	1560.0	871.2	1560.1	874.5	1561.1	885.7
GR1561.2	886.7	1560.1	891.7	1556.6	907.3	1556.7	911.4	1556.8	917.3
GR1556.9	920.4	1556.5	932.2	1556.3	948.1	1556.3	948.3	1553.9	953.5
GR1553.8	961.8	1553.7	964.3	1555.3	974.5	1556.4	982.6	1556.4	984.9
GR1556.6	993.9	1556.9	1016.4	1556.9	1020.7	1555.6	1044.3	1555.6	1045.1
GR1556.2	1051.2	1556.2	1054.7	1556.1	1059.9	1555.5	1097.6	1555.5	1107.4
GR1555.5	1112.6	1555.3	1127.1	1555.3	1128.2	1554.7	1138.2	1554.2	1146.4
GR1554.2	1147.4	1554.2	1148.8	1554.2	1149.4	1554.0	1168.2	1554.1	1176.6
GR1554.0	1189.8	1553.0	1207.8	1553.0	1208.9	1552.7	1238.1	1554.2	1247.1
GR1555.2	1253.6	1557.3	1285.0	1557.3	1286.4	1557.3	1288.9	1557.3	1294.6
GR1556.8	1303.0	1556.1	1313.4	1556.0	1313.8	1552.0	1327.5	1552.0	1332.3
GR1552.1	1332.9	1553.2	1343.3	1553.3	1349.1	1554.0	1372.5	1554.1	1377.6
GR1554.8	1385.5	1555.0	1387.8	1555.0	1393.7	1555.0	1400.0		
X1 32.8	65.0	821.4	1279.6	151.1	150.1	150.0	.0	.0	.0
X3 10			810	1560.0	1300	1560.0			
GR1550.0	764.60	1550.3	765.50	1552.0	774.20	1552.0	781.90	1552.1	794.20
GR1552.2	808.90	1552.2	821.40	1552.5	827.30	1552.9	828.80	1553.6	832.40
GR1553.2	843.80	1553.1	848.70	1553.7	853.00	1553.6	855.40	1553.8	862.50
GR1553.5	877.40	1553.4	879.40	1553.4	905.20	1553.4	906.10	1553.8	926.00
GR1554.0	935.60	1553.7	964.40	1553.6	969.50	1553.7	972.50	1553.5	975.00
GR1552.3	1001.40	1552.0	1003.00	1550.5	1011.20	1550.6	1015.30	1550.3	1025.70
GR1551.3	1030.10	1553.1	1034.20	1553.0	1046.50	1552.9	1058.00	1553.0	1092.50
GR1553.4	1116.50	1553.3	1128.90	1553.0	1151.60	1552.8	1168.80	1552.5	1183.40
GR1551.6	1202.20	1551.5	1207.70	1551.1	1216.30	1550.9	1216.60	1551.0	1228.90
GR1550.9	1239.10	1550.7	1247.70	1550.5	1256.00	1550.4	1257.30	1550.5	1258.60
GR1550.3	1264.60	1549.6	1271.40	1551.6	1279.60	1554.2	1314.20	1554.2	1315.50
GR1554.4	1319.40	1554.8	1327.70	1554.9	1341.00	1554.8	1343.00	1551.7	1355.80
GR1551.4	1360.80	1551.2	1362.40	1550.3	1366.70	1550.5	1373.00	1551.2	1381.30
X1 31.30	60.0	802.3	1270.2	150.7	152.0	150.0	.0	.0	.0
X3 10			800	1554.0	1300	1554.0			
GR1550.6	739.3	1550.3	740.6	1548.2	752.4	1549.3	763.6	1549.9	768.4
GR1549.7	771.2	1549.6	778.2	1548.6	787.3	1548.2	790.1	1548.7	792.2
GR1549.8	796.2	1550.0	802.3	1550.5	826.3	1550.6	849.3	1550.5	866.1
GR1550.7	889.3	1551.0	907.9	1550.9	919.3	1550.7	944.9	1550.6	966.6
GR1550.6	979.7	1551.6	1013.2	1551.7	1024.8	1550.9	1032.3	1550.7	1034.0
GR1549.4	1044.8	1549.5	1049.6	1549.8	1055.5	1549.2	1063.4	1548.8	1074.4
GR1549.6	1077.3	1551.2	1082.6	1551.1	1093.2	1551.1	1104.8	1550.7	1129.5
GR1550.2	1164.5	1549.1	1184.6	1548.9	1188.0	1548.2	1199.1	1548.2	1201.7
GR1548.1	1204.6	1548.8	1208.3	1549.2	1211.6	1549.4	1219.0	1549.5	1226.1
GR1549.3	1229.0	1549.3	1231.4	1548.9	1238.9	1548.4	1242.1	1547.6	1249.9
GR1547.5	1255.3	1547.3	1264.9	1548.5	1270.2	1549.8	1336.9	1549.9	1354.4
GR1550.0	1363.0	1549.5	1383.9	1549.4	1384.6	1548.6	1390.2	1548.5	1395.7
X1 29.80	90.0	814.4	1256.0	150.0	157.7	150.0	.0	.0	.0
X3 10			790		1260				
GR1549.9	600.0	1548.6	605.2	1548.5	615.7	1549.1	622.3	1549.5	642.3
GR1549.5	644.6	1549.8	655.6	1549.7	662.0	1549.1	670.8	1548.8	674.1
GR1547.1	698.5	1547.0	699.6	1546.7	703.6	1551.9	719.4	1554.1	726.0
GR1554.1	738.0	1548.5	743.6	1547.8	744.2	1548.0	750.8	1548.8	761.3

GR1547.2	772.4	1545.7	781.2	1547.3	784.6	1549.0	788.7	1548.0	814.4
GR1548.6	832.3	1548.6	852.9	1548.4	884.6	1548.4	901.6	1548.0	937.4
GR1547.8	957.6	1547.3	998.7	1547.9	1022.3	1547.9	1023.1	1547.7	1024.0
GR1545.6	1031.3	1546.8	1039.6	1546.9	1049.1	1546.3	1057.1	1548.4	1066.9
GR1548.8	1068.9	1548.8	1074.3	1548.3	1110.6	1548.3	1155.2	1548.2	1165.9
GR1547.0	1170.8	1547.6	1180.5	1545.8	1187.4	1544.6	1191.8	1544.7	1195.2
GR1545.6	1204.2	1545.8	1207.0	1546.7	1212.7	1546.7	1213.5	1547.2	1231.6
GR1547.6	1234.0	1549.2	1243.9	1549.0	1247.0	1548.9	1251.2	1548.9	1252.8
GR1549.1	1256.0	1549.1	1260.1	1549.1	1260.8	1552.9	1264.7	1555.2	1267.1
GR1555.2	1269.0	1555.3	1279.5	1553.2	1285.9	1551.4	1291.7	1549.8	1296.6
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GR1549.3	1333.8	1549.2	1342.4	1548.9	1345.3	1548.0	1351.8	1547.7	1356.0
GR1547.5	1358.1	1546.8	1360.2	1545.8	1363.5	1546.2	1367.3	1546.3	1368.4
GR1547.3	1378.8	1547.5	1380.9	1547.5	1381.6	1547.5	1382.3	1547.5	1400.0
X1 28.30	75.0	776.8	1211.4	151.0	161.1	150.0	.0	.0	.0
X3 10			770		1220				
GR1547.3	600.0	1547.4	604.6	1546.8	614.2	1546.2	624.7	1546.3	628.6
GR1546.4	642.2	1546.4	653.8	1546.4	659.9	1546.3	663.7	1547.0	671.0
GR1548.3	683.0	1546.8	688.1	1545.4	692.6	1544.5	696.9	1552.3	720.4
GR1552.9	722.3	1553.0	732.3	1553.0	734.4	1551.1	736.3	1547.2	739.4
GR1545.5	741.8	1545.6	754.5	1545.8	776.8	1546.1	810.3	1546.2	823.2
GR1545.4	833.0	1543.3	849.8	1543.6	853.7	1544.4	860.5	1544.6	862.0
GR1544.0	872.6	1545.6	877.1	1546.9	888.3	1546.9	890.9	1546.6	897.3
GR1545.6	918.1	1545.5	922.8	1545.4	927.3	1545.3	934.0	1543.5	937.6
GR1542.6	939.9	1542.7	942.8	1542.9	950.9	1543.6	954.5	1544.7	960.2
GR1544.0	966.5	1545.5	978.8	1545.7	984.6	1546.3	998.6	1545.7	1021.8
GR1545.8	1024.8	1545.1	1032.1	1544.3	1043.6	1545.2	1049.3	1545.8	1070.6
GR1545.0	1075.8	1546.3	1081.6	1546.3	1086.3	1545.4	1138.7	1545.4	1150.7
GR1544.9	1153.6	1543.2	1162.1	1543.2	1167.6	1543.2	1176.4	1545.5	1186.8
GR1547.5	1195.4	1547.7	1203.4	1547.7	1211.3	1547.7	1211.4	1547.5	1249.8
GR1547.3	1257.3	1547.1	1271.8	1547.1	1278.2	1547.2	1285.3	1546.8	1305.0
X1 26.80	74.0	754.0	1154.7	150.8	160.0	150.0	.0	.0	.0
X3 10			750		1160				
GR1545.6	600.0	1545.6	600.2	1545.6	607.3	1545.7	611.6	1545.7	613.5
GR1545.9	630.3	1546.0	636.8	1546.0	662.4	1545.6	669.3	1544.8	681.5
GR1544.8	684.7	1544.8	686.5	1548.9	698.7	1551.3	706.0	1551.3	718.0
GR1544.9	724.5	1544.7	729.7	1544.4	754.0	1544.8	762.9	1545.1	767.4
GR1544.9	782.9	1545.1	787.2	1545.0	791.7	1544.3	810.6	1543.5	830.1
GR1543.4	830.8	1540.4	843.9	1540.5	844.9	1542.6	859.3	1543.7	866.1
GR1543.6	886.1	1543.7	927.7	1543.6	933.1	1543.6	937.9	1543.5	938.6
GR1539.0	951.3	1540.1	957.5	1540.2	966.2	1541.6	974.7	1541.7	976.0
GR1541.7	988.0	1541.9	1003.2	1542.0	1004.3	1542.5	1016.0	1543.0	1023.0
GR1543.4	1031.8	1544.3	1042.1	1542.4	1051.9	1541.1	1059.1	1541.3	1072.9
GR1541.4	1073.5	1544.1	1088.7	1544.5	1094.5	1545.1	1103.7	1546.0	1125.2
GR1546.1	1127.7	1546.4	1136.1	1546.4	1144.3	1546.4	1152.6	1546.4	1154.7
GR1545.2	1197.6	1545.1	1198.3	1544.9	1216.3	1544.7	1226.3	1544.5	1241.4
GR1544.7	1252.6	1544.7	1255.8	1544.7	1257.6	1544.8	1268.6	1545.0	1273.6
GR1545.2	1282.8	1545.3	1282.8	1544.9	1290.3	1544.5	1301.1		
X1 25.30	64.0	746.3	1118.4	150.1	154.6	150.0	.0	.0	.0
X3 10			730		1120				
GR1542.9	600.0	1542.8	611.5	1542.7	615.9	1542.5	622.3	1542.4	626.7
GR1542.4	629.9	1542.2	633.3	1542.5	638.4	1542.8	663.4	1542.9	671.7
GR1546.0	680.9	1549.2	690.5	1549.2	702.5	1542.9	708.8	1542.3	720.3
GR1542.6	746.3	1542.7	763.9	1542.3	777.6	1542.4	799.1	1541.5	822.3
GR1541.5	832.0	1541.8	872.1	1541.2	889.5	1540.7	896.1	1537.8	901.5
GR1537.9	903.5	1538.0	921.7	1538.9	923.9	1539.9	927.9	1540.6	932.3
GR1538.5	937.5	1537.7	939.7	1537.6	941.0	1536.2	950.7	1539.4	956.6
GR1540.5	958.6	1541.0	967.4	1542.0	983.0	1542.1	1006.5	1541.4	1019.9
GR1540.7	1052.2	1540.7	1058.9	1540.7	1061.7	1540.8	1062.9	1541.6	1072.7
GR1541.9	1072.9	1541.9	1086.3	1542.4	1094.9	1542.6	1101.3	1543.0	1110.2
GR1543.2	1112.9	1543.3	1116.3	1543.4	1118.4	1543.6	1123.0	1543.7	1125.3
GR1543.7	1131.5	1544.7	1137.3	1544.6	1142.5	1544.5	1160.3	1544.0	1164.7
GR1543.7	1171.8	1543.1	1178.8	1544.1	1193.1	1544.6	1201.1		
X1 23.80	50.0	779.7	1070.2	150.0	150.2	150.0	.0	.0	.0
X3 10			710		1090				
GR1540.7	600.0	1540.7	605.4	1540.8	612.2	1541.2	635.6	1541.5	656.4
GR1541.3	662.5	1541.3	664.4	1544.3	673.4	1547.5	683.1	1547.5	686.9

GR1547.5	695.2	1546.2	696.5	1540.7	702.0	1540.7	702.9	1541.3	779.7
GR1541.8	795.3	1541.0	815.8	1540.8	826.9	1540.4	840.5	1539.9	848.8
GR1538.9	875.8	1538.4	890.7	1538.3	895.7	1537.7	897.5	1534.9	905.2
GR1534.8	911.5	1534.7	921.2	1537.4	928.0	1538.6	931.4	1539.1	937.6
GR1540.4	956.8	1540.0	968.1	1538.8	992.1	1538.2	1012.3	1538.3	1021.7
GR1538.3	1023.4	1538.6	1044.7	1539.2	1055.2	1539.7	1068.6	1539.8	1070.2
GR1540.3	1090.7	1539.8	1108.8	1539.8	1111.6	1539.7	1112.3	1539.8	1124.7
GR1539.8	1125.4	1539.8	1133.3	1539.7	1138.0	1539.2	1159.4	1539.4	1170.2
X1 22.30	60.0	699.9	1066.5	144.3	159.3	150.0	.0	.0	.0
X3 10			690		1080				
GR1538.7	600.0	1538.1	604.4	1538.4	613.8	1538.3	623.6	1538.5	637.0
GR1538.3	648.9	1540.0	654.0	1543.1	663.3	1545.3	669.7	1545.3	681.8
GR1539.3	687.8	1539.3	689.8	1539.2	699.9	1539.1	704.6	1539.5	751.5
GR1539.4	758.8	1539.5	766.8	1539.5	772.4	1538.9	790.2	1538.5	808.8
GR1538.6	815.6	1538.7	826.5	1538.5	848.0	1538.5	875.3	1538.3	895.2
GR1537.9	902.5	1537.7	910.6	1537.0	913.2	1535.3	918.7	1534.0	921.6
GR1533.4	927.8	1533.3	930.3	1533.0	933.1	1533.0	943.8	1533.0	950.3
GR1536.8	963.0	1537.1	963.8	1537.2	965.8	1537.9	999.2	1538.1	1013.9
GR1538.0	1031.5	1537.8	1034.2	1537.8	1037.5	1537.0	1066.5	1537.0	1081.4
GR1536.3	1083.5	1536.4	1087.2	1536.2	1091.8	1536.1	1097.3	1535.9	1104.3
GR1535.7	1115.5	1535.7	1117.1	1536.2	1124.2	1536.8	1131.1	1537.0	1137.7
GR1537.2	1151.0	1537.1	1156.8	1537.3	1172.4	1537.2	1180.3	1537.1	1187.4
X1 20.80	45.0	675.0	1050.0	136.7	159.4	150.0	.0	.0	.0
X3 10			670		1064				
GR1540.9	600.0	1540.8	602.3	1539.5	613.2	1539.4	614.3	1538.9	618.5
GR1538.6	626.0	1538.3	626.0	1537.3	633.5	1535.3	637.0	1535.8	638.3
GR1537.6	643.7	1539.2	648.2	1541.0	653.7	1540.1	663.8	1538.0	675.0
GR1538.0	720.0	1537.0	780.0	1536.0	800.0	1537.0	840.0	1537.5	900.0
GR1537.0	925.0	1536.0	950.0	1535.0	964.0	1534.0	988.0	1532.0	992.0
GR1531.2	1000.0	1531.2	1018.0	1532.0	1020.0	1535.0	1030.0	1535.7	1050.0
GR1541.0	1077.6	1539.1	1083.2	1538.9	1084.0	1538.0	1086.6	1535.6	1093.9
GR1535.5	1097.1	1535.7	1119.8	1535.7	1123.9	1535.5	1128.6	1535.2	1140.5
GR1535.0	1146.3	1534.3	1163.3	1534.0	1175.5	1534.1	1192.2	1533.7	1203.7
X1 19.30	80.0	705.7	1071.6	136.2	162.1	150.0	.0	.0	.0
X3 10			700		1072				
GR1541.9	600.0	1541.7	604.2	1540.4	614.6	1539.6	622.5	1538.9	628.5
GR1538.9	630.2	1538.7	641.7	1538.9	654.6	1536.4	658.9	1539.0	665.1
GR1541.0	671.6	1541.0	684.9	1539.4	686.6	1538.3	687.6	1536.0	690.1
GR1535.8	690.2	1535.6	692.6	1535.4	694.4	1535.0	705.7	1534.9	718.2
GR1535.0	723.7	1535.6	745.1	1535.9	755.8	1535.8	757.5	1534.8	779.7
GR1534.4	781.1	1532.7	790.5	1533.5	805.8	1533.9	813.7	1534.3	823.7
GR1534.4	845.4	1534.7	879.3	1534.8	879.6	1534.3	890.6	1534.0	911.0
GR1534.0	930.0	1532.0	970.0	1532.0	982.0	1534.0	998.0	1534.0	1012.0
GR1530.0	1022.0	1530.0	1033.0	1534.0	1053.0	1534.2	1060.0	1539.0	1071.6
GR1539.0	1086.2	1533.0	1104.2	1532.6	1117.7	1532.3	1127.8	1531.0	1144.6
GR1530.5	1152.3	1530.5	1153.1	1531.3	1164.4	1532.4	1178.0	1532.3	1186.7
GR1532.5	1192.8	1532.2	1208.2	1532.3	1210.8	1532.3	1226.0	1532.5	1243.0
GR1532.6	1248.8	1532.8	1261.2	1532.7	1272.8	1532.0	1293.9	1531.5	1311.5
GR1531.4	1317.2	1531.6	1335.0	1531.6	1337.5	1531.7	1345.6	1531.7	1346.2
GR1531.9	1351.3	1532.0	1355.0	1531.7	1361.0	1531.5	1374.8	1531.6	1378.3
GR1531.4	1380.3	1530.8	1386.0	1530.6	1391.4	1530.9	1398.4	1531.1	1400.0
X1 17.80	79.0	751.0	1087.7	146.2	155.2	150.0	.0	.0	.0
X3 10			750		1088				
GR1536.4	600.0	1535.9	632.4	1535.7	636.6	1536.4	657.8	1536.5	663.5
GR1536.7	668.8	1536.7	671.3	1536.3	710.0	1538.0	716.0	1538.0	732.1
GR1536.0	734.3	1536.0	740.7	1535.8	749.7	1535.4	751.0	1534.4	759.9
GR1533.8	763.6	1532.9	774.7	1532.6	779.4	1532.2	790.0	1531.9	796.5
GR1530.3	812.1	1531.1	822.9	1531.4	825.7	1531.4	828.5	1531.6	835.7
GR1531.5	870.0	1531.6	886.7	1531.7	897.8	1531.0	910.9	1531.0	950.0
GR1530.0	970.0	1530.0	973.0	1531.0	982.0	1532.0	1000.0	1527.8	1021.0
GR1527.8	1045.0	1530.0	1078.0	1535.0	1086.0	1535.2	1086.2	1535.1	1087.7
GR1535.0	1096.6	1535.0	1100.4	1531.9	1109.7	1531.6	1110.4	1531.4	1117.5
GR1531.1	1130.8	1530.7	1150.6	1530.8	1161.4	1531.1	1177.8	1530.8	1189.5
GR1530.7	1194.6	1530.8	1199.2	1531.3	1209.0	1531.3	1210.4	1531.1	1222.4
GR1531.2	1231.8	1531.2	1236.2	1531.2	1238.9	1529.9	1246.3	1528.2	1254.2
GR1528.1	1254.5	1528.0	1262.7	1528.0	1271.5	1528.5	1278.4	1528.1	1281.5
GR1528.0	1285.3	1528.5	1292.5	1528.6	1294.5	1529.8	1305.8	1530.0	1327.1

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GR1530.0  1330.5  1528.9  1365.4  1528.6  1372.8  1528.4  1375.9  1528.5  1381.5
GR1528.5  1387.5  1528.5  1392.0  1528.6  1398.4  1528.6  1400.0
X1 16.30    75.0   860.7  1098.1   100.0   100.0   100.0      .0      .0      .0
X3    10                     860            1104
GR1534.6   600.0  1534.6   601.4  1534.7   611.5  1534.7   618.9  1534.7   626.8
GR1534.7   634.3  1534.8   672.2  1534.7   672.4  1534.0   759.0  1533.8   780.9
GR1533.6   789.0  1533.5   800.2  1533.5   801.0  1533.6   801.4  1533.5   809.9
GR1533.4   814.6  1533.3   814.8  1533.2   839.3  1533.0   856.8  1533.0   859.5
GR1533.0   860.7  1532.3   874.7  1531.6   889.2  1531.2   893.2  1531.0   896.2
GR1530.0   918.0  1529.0   996.0  1528.0  1005.0  1525.6  1008.0  1525.6  1052.0
GR1530.0  1077.0  1529.5  1090.0  1530.0  1098.1  1530.0  1112.7  1529.7  1113.6
GR1528.4  1116.1  1529.3  1116.5  1529.6  1116.8  1529.7  1118.9  1529.7  1122.3
GR1529.7  1129.5  1529.6  1140.3  1529.6  1147.2  1529.6  1152.9  1529.5  1163.0
GR1529.1  1198.4  1529.1  1199.1  1528.3  1223.1  1528.3  1223.2  1528.6  1229.9
GR1528.6  1233.4  1529.3  1240.3  1529.3  1241.4  1529.0  1255.8  1528.9  1259.6
GR1528.8  1270.4  1528.8  1270.5  1528.4  1278.7  1528.2  1282.2  1528.2  1284.0
GR1528.1  1292.7  1528.2  1300.1  1528.3  1306.1  1528.5  1326.5  1528.5  1331.4
GR1528.5  1334.2  1528.6  1338.5  1528.6  1343.8  1528.6  1355.3  1528.5  1359.4
GR1528.1  1368.8  1528.1  1372.3  1528.0  1390.0  1528.0  1394.7  1527.9  1400.0
X1 15.30       8     905    1095      50      50      50
GR1533.1     905  1528.1     920  1528.1     980  1524.1     988  1524.1    1048
GR1528.1    1056  1528.1    1080  1533.1    1095
NC  .025    .025    .025      .3      .5
X1 14.80       8     905    1095       8       8       8
GR1532.2     905  1527.2     920  1527.2     980  1523.2     988  1523.2    1048
GR1527.2    1056  1527.2    1080  1532.2    1095
X1 14.72       8     905    1095      10      10      10
GR1532.2     905  1523.2     928  1523.2    1010  1523.2    1018  1523.2    1048
GR1523.2    1056  1523.2    1072  1532.7    1095
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[succeeding sections are unchanged]

100-Yr Hydraulics with high "n"-value along natural channel

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
193.00	11742	1918.4	1926.1	7.7	10.9	295	0.0220	1
192.00	11742	1916.6	1921.5	4.9	16.4	269.2	0.0325	1.8
191.00	11742	1913.1	1919.4	6.3	11.3	272.6	0.0380	1
190.00	11742	1910.3	1915	4.7	14.1	253	0.0385	1.4
189.00	11742	1906.0	1911.3	5.3	12.4	298.2	0.0395	1.2
188.00	11742	1903.0	1907.8	4.8	12.4	278.7	0.0340	1.2
187.00	11742	1900.0	1904.7	4.7	11.8	287.7	0.0310	1.1
186.00	11742	1897.6	1902	4.4	11.5	295	0.0300	1.1
185.00	11742	1894.3	1898.6	4.3	12.3	304.8	0.0325	1.2
184.00	11742	1891.2	1895.3	4.1	11.9	305	0.0310	1.2
183.00	11742	1888.0	1892.9	4.9	10.9	295.9	0.0275	1
182.00	11742	1884.0	1889.9	5.9	11.6	302.2	0.0335	1.1
181.00	11742	1882.0	1885.4	3.4	13	351.6	0.0350	1.4
180.00	11742	1879.0	1883.9	4.9	8.5	443.6	0.0255	0.8
179.00	11742	1876.3	1881.5	5.2	9.5	415.2	0.0215	1
178.00	11742	1873.5	1879.4	5.9	8.9	451.3	0.0210	0.9
177.00	11742	1872.0	1877.5	5.5	8.8	449.5	0.0185	0.9
176.00	11742	1870.0	1876	6.0	8.3	450	0.0180	0.8
175.00	11742	1867.7	1873.8	6.1	9.3	450	0.0195	1
174.00	11742	1866.0	1872.3	6.3	7	425	0.0175	0.6
173.00	11742	1864.0	1870	6.0	10.2	378.1	0.0215	1
172.00	11742	1860.0	1866.6	6.6	12	273.2	0.0240	1.1
171.00	11742	1857.4	1865.7	8.3	8.5	410	0.0185	0.8
170.00	11742	1854.1	1863.8	9.7	9.1	377.5	0.0195	0.9
169.00	11742	1852.0	1861.3	9.3	10.2	395.9	0.0290	1
168.00	11742	1851.0	1856.8	5.8	12.7	378.3	0.0330	1.5
167.00	11742	1847.0	1854.6	7.6	10.4	337.7	0.0275	1
166.00	11742	1846.0	1852.3	6.3	10.1	410.6	0.1975	1
165.00	11742	1844.0	1847.3	3.3	13.3	348.1	0.1888	1.5
164.90	11742	1843.6	1848.6	5.0	7.6	400.8	0.0287	0.7
164.10	11742	1841.8	1848.6	6.8	5.2	412.6	0.0255	0.4
164.00	11742	1840.7	1847.5	6.8	9.4	311.4	0.0110	0.8
163.00	11742	1838.0	1845.2	7.2	10.3	335.2	0.0255	1
162.00	11742	1835.6	1841.7	6.1	11.8	329.4	0.0290	1.2
161.00	11742	1833.1	1839.1	6.0	11.2	281	0.0255	1
160.00	11742	1829.0	1836.8	7.8	11.1	282.4	0.0240	1
159.00	11742	1827.6	1834.6	7.0	10.4	347.1	0.0270	1
158.00	11742	1826.1	1831.2	5.1	11.7	316.7	0.0260	1.2
157.00	11742	1823.1	1829.8	6.7	8.7	378.2	0.0215	0.8
156.00	11742	1821.4	1827.7	6.3	9	523.7	0.0230	1
*155.00	11742	1819.0	1824.6	5.6	9.2	586.7	0.0280	1.1
157.00	11742	1816.2	1821.6	5.4	9.1	530.5	0.0305	1
156.00	11742	1813.0	1818.4	5.4	9.4	541.4	0.0295	1.1
155.00	11742	1810.7	1815.8	5.1	8.5	646.3	0.0320	1
154.00	11742	1806.9	1811.8	4.9	10	561	0.0340	1.2
153.00	11742	1803.0	1809.5	6.5	6.8	765.4	0.0275	0.8
152.00	11742	1800.0	1806.9	6.9	8.1	712.4	0.0245	1
151.00	10579	1799.0	1804.4	5.4	7.3	683.7	0.0250	0.9
150.00	10579	1797.0	1801.8	4.8	8.3	604.9	0.0240	1
149.00	10579	1793.3	1799.7	6.4	7.2	678.3	0.0240	0.9
148.00	10579	1793.0	1797	4.0	8.1	656.8	0.0240	1
147.00	10579	1791.0	1794.8	3.8	7.4	611.4	0.0240	0.9
146.00	10579	1787.4	1792.1	4.7	8.6	538.6	0.0250	1
145.00	10579	1785.0	1789.6	4.6	8.4	448.4	0.0245	0.9

100-Yr Hydraulics with high "n"-value along natural channel

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
144.00	10579	1782.0	1786.9	4.9	9.9	354.4	0.0260	1
143.00	10579	1778.5	1783.7	5.2	10.8	342.6	0.0290	1.1
142.00	10579	1776.0	1781.3	5.3	9	402	0.0255	0.9
141.00	10579	1773.7	1779.2	5.5	8.7	415.6	0.0230	0.9
140.00	12814	1771.1	1776.5	5.4	9.7	445.9	0.0255	1
139.00	12814	1769.0	1773.9	4.9	9.5	455.5	0.0240	1
138.00	12814	1764.7	1771.9	7.2	9	434.6	0.0215	0.9
137.00	12814	1762.3	1769.5	7.2	9.7	473.9	0.0240	1
136.00	12814	1761.0	1767.2	6.2	8.7	562.9	0.0255	0.9
135.00	12814	1760.0	1764.7	4.7	8.7	648.7	0.0250	1
134.00	12814	1758.0	1762.5	4.5	7.7	734.6	0.0245	0.9
133.00	12814	1755.0	1760	5.0	7.9	755	0.0240	1
132.00	12814	1753.0	1757.6	4.6	7.7	750	0.0245	0.9
131.00	12814	1749.0	1754.9	5.9	8.6	730	0.0245	1.1
130.00	12814	1747.6	1752.8	5.2	7.7	677.9	0.0245	0.9
129.00	12814	1744.0	1750	6.0	9.1	577.7	0.0235	1
128.00	12814	1742.0	1748.2	6.2	7	547.1	0.0195	0.7
127.00	12814	1740.0	1745.9	5.9	9.5	501.9	0.0260	1
126.00	12814	1738.0	1743.6	5.6	10.5	390	0.2175	1
125.40	12814	1737.0	1739.7	2.7	16	308.5	0.4000	1.7
43.30	15265	1564.0	1569.9	5.9	11.0	244.6	0.0044	0.8
41.80	15265	1562.6	1568.3	5.7	12.6	255.1	0.0087	1.0
40.30	15265	1561.2	1567.2	6.0	12.1	312.1	0.0103	1.1
38.80	15265	1559.8	1566.0	6.2	11.6	323.4	0.0130	1.0
37.30	15265	1558.3	1563.0	4.7	14.4	333.9	0.0150	1.5
35.80	15265	1554.7	1561.1	6.4	13.1	324.3	0.0173	1.2
34.30	15265	1552.7	1558.1	5.4	14.5	379.3	0.0213	1.6
32.80	15265	1549.6	1554.9	5.3	13.5	490.0	0.0197	1.6
31.30	15265	1547.3	1552.8	5.5	11.0	500.0	0.0153	1.2
29.80	15265	1544.6	1550.7	6.1	11.7	470.0	0.0140	1.2
28.30	15265	1542.6	1548.2	5.6	12.3	450.0	0.0130	1.3
26.80	15265	1539.0	1547.0	8.0	10.4	410.0	0.0123	1.0
25.30	15265	1536.2	1544.4	8.2	12.8	390.0	0.0117	1.3
23.80	15265	1534.7	1543.2	8.5	11.5	380.0	0.0113	1.0
22.30	15265	1533.0	1540.9	7.9	12.8	390.0	0.0113	1.3
20.80	15265	1531.2	1539.9	8.7	11.1	394.0	0.0133	1.0
19.30	15265	1530.0	1536.9	6.9	13.8	366.5	0.0130	1.4
17.80	15265	1527.8	1536.2	8.4	8.7	338.0	0.0118	0.7
16.30	15265	1525.6	1534.0	8.4	12.8	244.0	0.0155	1.0
15.30	15265	1524.1	1532.9	8.8	13.8	188.6	0.0180	1.0

Note: cross sections are only shown that are changed from those previously presented

Basin.dat

```
X1 49.50    31.0      .0     640     150     150     150      .0      .0      .0
GR1583.1      .0  1582.9    10.2  1582.0    39.7  1581.0    77.8  1580.0   110.7
GR1580.2   126.7  1581.1   140.8  1581.6   163.2  1582.4   170.9  1576.5   188.8
GR1576.5   196.8  1574.0   209.3  1574.0   217.4  1571.0   232.4  1571.0   412.9
GR1576.5   418.5  1576.5   422.5  1579.5   428.5  1579.5   438.5  1578.9   440.4
GR1579.0   456.1  1579.3   495.1  1579.0   513.3  1578.0   531.4  1578.5   546.5
GR1578.6   562.3  1579.0   572.0  1579.0   589.1  1579.7   608.9  1579.2   634.7
GR1579.3   640.0
NC   .03     .03     .03      .1      .3
X1  48.0    11.0   170.9   438.5    10.0      10      10      .0              .0
GR1580.6   170.9  1574.7   188.8  1574.7   196.8  1572.2   209.3  1572.2   217.4
GR1569.2   232.4  1569.2   412.9  1574.7   418.5  1574.7   422.5  1577.7   428.5
GR1577.7   438.5
X1 47.90      11   170.9   438.5     140     140     140       0
GR1580.4   170.9  1574.5   188.8  1574.5   196.8  1572.0   209.3  1572.0   217.4
GR1569.0   232.4  1569.0   412.9  1574.5   418.5  1574.5   422.5  1577.5   428.5
GR1577.5   438.5
X1  46.5     5.0   880.0  1090.0   181.0   181.0   181.0      .0      .0      .0
X3    10                    900
GR1577.4     750  1567.0   850.00  1563.3  880.00  1563.3 1080.00  1577.4 1090.00
QT     1   13633
X1 44.69     4.0   870.0  1130.0     6.0     6.0     6.0      .0      .0      .0
GR1575.2  870.00  1562.4   890.00  1562.4 1110.00  1575.6 1130.00
QT     1   15265
X1 44.63       4   859.5  1140.5     5.0     5.0     5.0
GR1583.2   859.5  1565.2   886.5  1565.2  1113.5  1583.2  1140.5
NC  .015    .015    .015      .3      .5
X1 44.58       4   859.5  1140.5   100.0   100.0   100.0
X3    10
GR1583.1   859.5  1565.1   886.5  1565.1  1113.5  1583.1  1140.5
SB  1.05    1.56     2.6     264     227      15    3032     1.5
```

[other information unchanged]

condition where
sediment basin above
Bell Road is not filled.

rtasub.dat
Backwater elevation

```
AC
T1      PINNACLE PEAK TO WEST WORLD  (ST 316+50 - ST 0+00)
T2      SLA JULY 1997
T3      SCOTTSDALE DESERT GREENBELT PROJECT
J1      0       2               0               0     0.2       0  1528.1       0
J2      1       0      -1
J5    -10     -10
QT      1   15265
NC   .030    .030    .030      .1      .3
X1     .0     4.0   930.0  1080.0      .0      .0      .0      .0      .0      .0
X3     10                    930            1080
GR1517.0   930.0  1507.0   950.0  1507.0  1070.0  1517.0  1080.0
X1     .3     4.0   930.0  1080.0    30.0    30.0    30.0      .0      .0      .0
X3     10                    930            1080
GR1517.0   930.0  1507.0   950.0  1507.0  1070.0  1517.0  1080.0
X1     .8     4.0   920.0  1092.0    50.0    50.0    50.0      .0      .0      .0
X3     10                    920            1092
GR1517.2   920.0  1507.2   950.0  1507.2  1082.0  1517.2  1092.0
X1    1.3     4.0   915.0  1096.0    50.0    50.0    50.0      .0      .0      .0
X3     10                    915            1096
GR1517.3   915.0  1507.3   945.0  1507.3  1086.0  1517.3  1096.0
X1    1.8     4.0   906.0  1099.0    55.0    35.0    50.0      .0      .0      .0
X3     10                    906            1099
GR1517.5   906.0  1507.5   936.0  1507.5  1089.0  1517.5  1099.0
X1    2.3     4.0   900.0  1101.0    55.0    40.0    50.0      .0      .0      .0
X3     10                    900            1101
GR1517.7   900.0  1507.7   930.0  1507.7  1091.0  1517.7  1101.0
X1    2.8     4.0   898.0  1102.0    50.0    50.0    50.0      .0      .0      .0
X3     10                    898            1102
GR1517.8   898.0  1507.8   928.0  1507.8  1092.0  1517.8  1102.0
X1    4.3     4.0   898.0  1102.0   150.0   150.0   150.0      .0      .0      .0
X3     10                    898            1102
GR1518.3   898.0  1508.3   928.0  1508.3  1092.0  1518.3  1102.0
X1    5.8     4.0   898.0  1102.0   150.0   150.0   150.0      .0      .0      .0
X3     10                    898            1102
GR1518.7   898.0  1508.7   928.0  1508.7  1092.0  1518.7  1102.0
X1    7.3     4.0   898.0  1102.0   150.0   150.0   150.0      .0      .0      .0
X3     10                    898            1102
GR1519.2   898.0  1509.2   928.0  1509.2  1092.0  1519.2  1102.0
X1    8.8     4.0   898.0  1106.0   150.0   150.0   150.0      .0      .0      .0
X3     10                    898            1106
GR1519.7   898.0  1509.7   928.0  1509.7  1096.0  1519.7  1106.0
X1   10.0     4.0   905.0  1106.0   120.0   120.0   120.0      .0      .0      .0
X3     10                    905            1106
GR1520.0   905.0  1510.0   925.0  1510.0  1085.0  1520.0  1106.0
NC   .025    .025    .025      .3      .5
X1   10.1     4.0   902.0  1108.0     5.0     5.0     5.0      .0      .0      .0
GR1521.7   902.0  1512.7   920.0  1512.7  1090.0  1521.7  1108.0
X1   10.8     4.0   902.0  1108.0    75.0    75.0    75.0      .0      .0      .0
GR1522.7   902.0  1513.7   920.0  1513.7  1090.0  1522.7  1108.0
NC   .025    .025    .025      .1      .3
X1   11.8     5.0   893.0  1144.0    95.0   105.0   100.0      .0      .0      .0
GR1524.1   893.0  1515.1   920.0  1515.1  1080.0  1516.1  1120.0  1524.1  1144.0
X1   13.3     4.0   893.0  1107.0   145.0   155.0   150.0      .0      .0      .0
GR1526.2   893.0  1517.2   920.0  1517.2  1080.0  1526.2  1107.0
X1   14.0     4.0   878.0  1122.0    71.0    71.0    71.0      .0      .0      .0
GR1532.7   878.0  1518.2   920.0  1518.2  1080.0  1532.7  1122.0
NC   .025    .025    .025      .3      .5
X1   14.6     4.0   905.0  1095.0    61.0    61.0    61.0      .0      .0      .0
GR1532.7   905.0  1518.2   938.0  1518.2  1062.0  1532.7  1095.0
X1   14.7     8.0   905.0  1095.0    10.0    10.0    10.0      .0      .0      .0
GR1532.2   905.0  1523.2   928.0  1523.2  1010.0  1523.2  1018.0  1523.2  1048.0
GR1523.2  1056.0  1523.2  1072.0  1532.7  1095.0
X1   14.8     8.0   905.0  1095.0     8.0     8.0     8.0      .0      .0      .0
GR1532.2   905.0  1527.2   920.0  1527.2   980.0  1523.2   988.0  1523.2  1048.0
GR1527.2  1056.0  1527.2  1080.0  1532.2  1095.0
X1   15.3     8.0   905.0  1095.0    50.0    50.0    50.0      .0      .0      .0
```

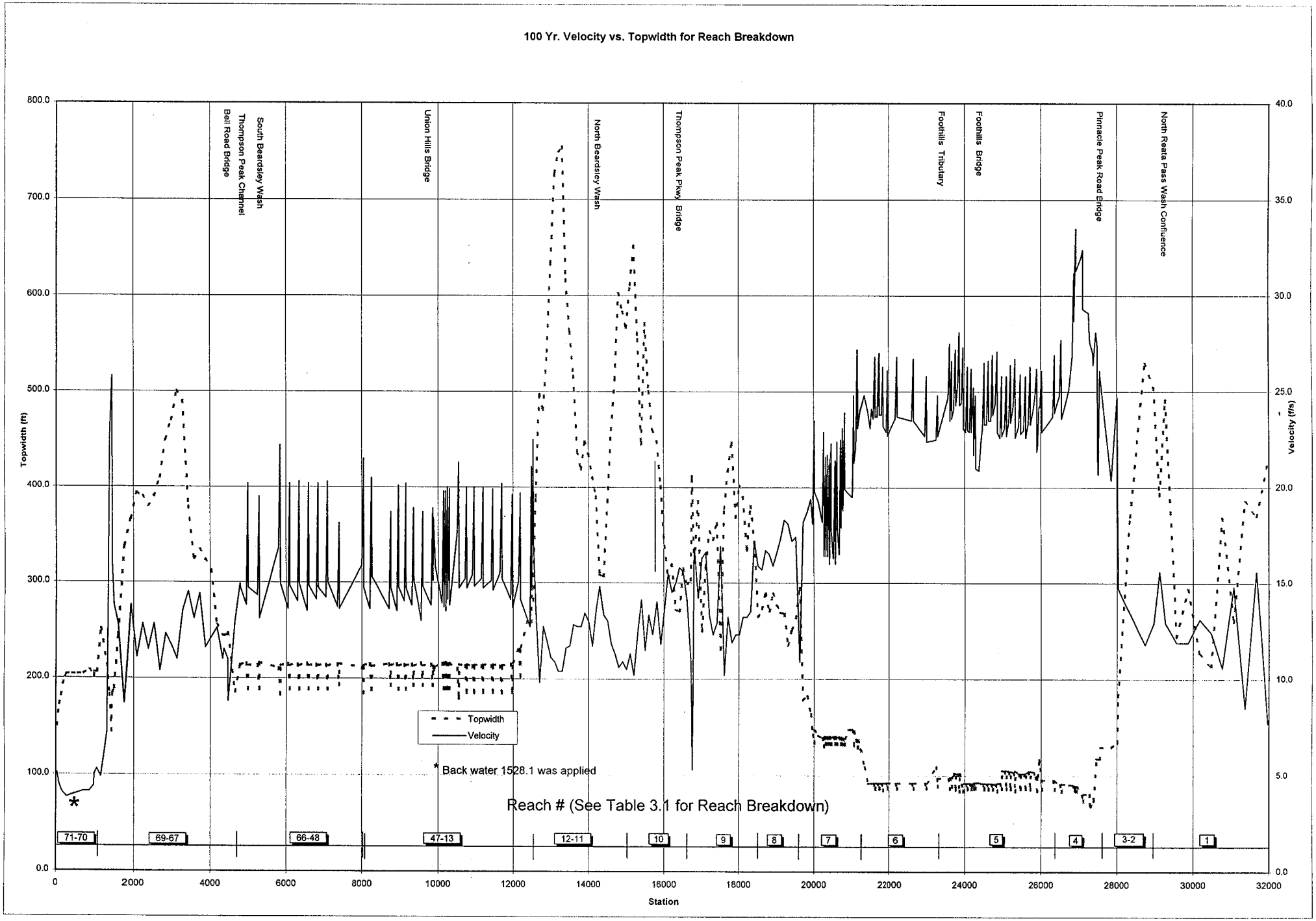
Succeeding information unchanged

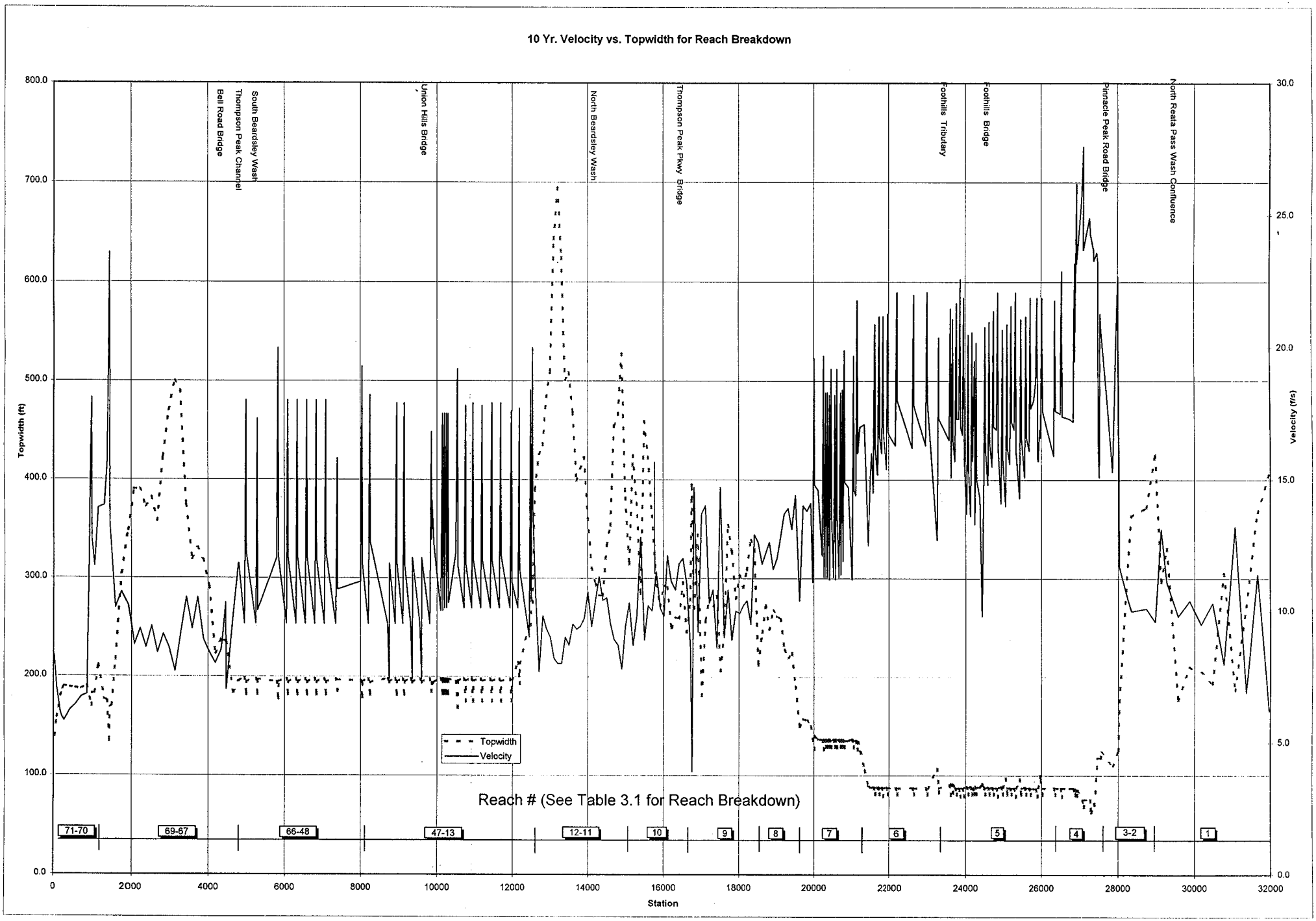
100-Yr Hydraulics - Basin not filled with sediment

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
49.50	12185	1571.0	1575.5	4.5	13.8	215.6	0.0877	1.2
48.00	12185	1569.2	1573.4	4.2	14.7	214.1	0.0807	1.3
47.90	12185	1569.0	1573.2	4.2	14.9	213.8	0.0098	1.3
46.50	12185	1567.4	1572.5	5.1	7.2	186.6	0.0258	0.4
44.70	13633	1565.2	1572.6	7.4	5.7	251.4	0.0267	0.3
44.60	15265	1565.2	1571.1	5.9	11	244.6	0.0105	0.8
44.60	15265	1565.1	1571.1	6.0	10.8	245	0.0010	0.8

100-Yr Hydraulics - No Downstream Backwater (normal depth)

Section ID	Q (cfs) total	Elevation (ft) thalweg	Elevation (ft) water sfc	Depth (ft)	Vel (ft/s) channel	Topwidth (ft)	Energy Slope	Froude #
14.01	15265	1518.2	1522.1	3.9	22.7	182.8	0.0133	2.1
13.3	15265	1517.2	1521.5	4.3	20.7	185.6	0.0227	1.8
11.8	15265	1515.1	1518.9	3.8	19.7	219.9	0.0287	1.8
10.8	15265	1513.7	1518.8	5.1	16.4	190.6	0.0927	1.3
10.05	15265	1512.7	1517.7	5.0	17.1	189.9	0.0837	1.4
10	15265	1510	1514.2	4.2	21.4	177.3	0.0074	1.9
8.8	15265	1509.7	1519	9.3	8.8	205.2	0.0047	0.5
7.3	15265	1509.2	1518.7	9.5	8.8	202.1	0.0020	0.5
5.8	15265	1508.7	1518.5	9.8	8.5	203.3	0.0017	0.5
4.3	15265	1508.3	1518.3	10.0	8.3	204	0.0037	0.5
2.8	15265	1507.8	1518.1	10.3	8	204	0.0030	0.5
2.3	15265	1507.7	1518	10.3	8.1	201	0.0010	0.5
1.8	15265	1507.5	1517.9	10.4	8.5	193	0.0020	0.5
1.3	15265	1507.3	1517.6	10.3	9.2	181	0.0030	0.5
0.8	15265	1507.2	1517.2	10.0	10.1	171.8	0.0053	0.6
0.3	15265	1507	1516	9.0	12.8	146.9	0.0083	0.8
0.01	15265	1507	1514.7	7.7	15.1	143	0.0100	1


100 Yr. Velocity vs. Topwidth for Reach Breakdown
Topwidth (ft)
Velocity (ft/s)
Station
Bell Road Bridge
Thompson Peak Channel
South Beardsley Wash
Union Hills Bridge
North Beardsley Wash
Thompson Peak Pkwy Bridge
Foothills Tributary
Foothills Bridge
Pinnacle Peak Road Bridge
North Reata Pass Wash Confluence
Topwidth
Velocity
* Back water 1528.1 was applied
Reach # (See Table 3.1 for Reach Breakdown)
71-70
69-67
66-48
47-13
12-11
10
9
8
7
6
5
4
3-2
1


10 Yr. Velocity vs. Topwidth for Reach Breakdown
Topwidth (ft)
Velocity (f/s)
Station
Bell Road Bridge
Thompson Peak Channel
South Beardsley Wash
Union Hills Bridge
North Beardsley Wash
Thompson Peak Pkwy Bridge
Foothills Tributary
Foothills Bridge
Pinnacle Peak Road Bridge
North Reata Pass Wash Confluence
Topwidth
Velocity
Reach # (See Table 3.1 for Reach Breakdown)
71-70
69-67
66-48
47-13
12-11
10
9
8
7
6
5
4
3-2
1

100-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
1	316+50	289+50	0.0286	11.8	3.7	145
2	289+50	277+15	0.0277	13.0	4.9	180
3	277+15	271+75	0.0336	22.1	4.3	120
4	271+75	262+30	0.0288	28.6	4.9	83
5	262+30	229+80	0.0352	24.7	5.4	84
6	229+80	210+00	0.0256	23.8	5.8	85
7	210+00	192+00	0.0368	20.3	4.5	133
8	192+00	183+00	0.0339	17.1	3.9	179
9	183+00	163+00	0.0241	13.9	5.3	175
10	163+00	151+00	0.0275	13.6	5.3	169
11	151+00	140+00	0.0248	12.1	4.2	217
12	140+00	125+40	0.0235	11.9	4.9	228
13	125+40	124+40	0.0853	21.3	2.3	264
14	124+40	121+90	0.0088	12.7	4	250
15	121+90	121+40	0.0580	19.4	3.5	193
16	121+40	119+80	0.0104	15.1	4	213
17	119+80	119+30	0.0592	19.2	3.8	175
18	119+30	117+00	0.0113	14.1	4.6	197
19	117+00	116+50	0.0584	19.9	3.7	174
20	116+50	114+60	0.0131	15.5	4.2	195
21	114+60	114+10	0.0582	19.6	3.7	175
22	114+10	112+00	0.0122	15.1	4.3	195
23	112+00	111+50	0.0582	19.7	3.7	175
24	111+50	109+60	0.0125	15.2	4.3	196
25	109+60	109+10	0.0580	19.7	3.7	174
26	109+10	107+60	0.0129	15.4	4.3	195
27	107+60	107+10	0.0582	19.7	3.7	175
28	107+10	105+50	0.0124	15.2	4.3	196
29	105+50	105+00	0.0648	20.8	3.7	170
30	105+00	103+00	0.0165	17.6	3.8	193
31	103+00	101+00	0.0600	19.5	3.6	182
32	101+00	99+20	0.0113	13.9	4.7	197
33	99+20	98+10	0.0280	17.4	3.7	189
34	98+10	96+00	0.0111	13.8	4.5	196
35	96+00	95+50	0.0448	18.5	3.6	184
36	95+50	93+50	0.0105	13.1	4.7	197

100-YEAR HYDRAULIC SUMMARY (PER REACH) (cont.)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
37	93+50	93+00	0.0444	18.7	3.5	184
38	93+00	91+50	0.0111	13.8	4.5	196
39	91+50	91+00	0.0622	19.8	3.4	181
40	91+00	89+50	0.0113	14.0	4.4	196
41	89+50	89+00	0.0636	19.8	3.4	181
42	89+00	87+50	0.0107	13.5	4.6	196
43	87+50	87+00	0.0434	18.5	3.6	184
44	87+00	82+50	0.0114	13.6	4.5	197
45	82+50	82+00	0.0660	20.2	3.3	181
46	82+00	80+50	0.0108	13.6	4.6	196
47	80+50	80+00	0.0746	21.0	3.3	179
48	80+00	74+00	0.0128	15.9	4	194
49	74+00	73+50	0.0396	17.9	3.7	184
50	73+50	71+00	0.0112	13.7	4.5	196
51	71+00	70+50	0.0626	20.0	3.4	181
52	70+50	68+50	0.0116	14.2	4.4	196
53	68+50	68+00	0.0622	19.9	3.4	182
54	68+00	66+00	0.0115	14.1	4.4	196
55	66+00	65+50	0.0636	19.9	3.4	182
56	65+50	63+50	0.0110	13.5	4.6	196
57	63+50	63+00	0.0630	19.9	3.4	181
58	63+00	61+00	0.0114	14.0	4.4	196
59	61+00	60+50	0.0638	19.9	3.4	181
60	60+50	58+50	0.0110	13.6	4.6	197
61	58+50	58+00	0.0798	21.6	3.2	178
62	58+00	53+00	0.0135	16.8	3.8	193
63	53+00	52+50	0.0568	19.1	3.5	182
64	52+50	50+00	0.0117	14.3	4.3	196
65	50+00	49+50	0.0632	19.9	3.4	182
66	49+50	48+00	0.0111	13.8	4.5	197
67	48+00	44+58	0.0114	13.7	4.8	190
68	44+58	43+30	0.0090	10.9	5.9	236
69	43+30	14+80	0.0128	12.2	6.7	187
70	14+80	8+80	0.0273	20.7	4.4	174
71	8+80	0+30	0.0032	10.0	9.6	177

50-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
1	316+50	289+50	0.0286	11.2	3.5	136
2	289+50	277+15	0.0281	12.3	4.7	166
3	277+15	271+75	0.0346	21.0	3.9	118
4	271+75	262+30	0.0292	27.1	4.3	82
5	262+30	229+80	0.0352	22.8	4.9	84
6	229+80	210+00	0.0257	21.8	5.2	85
7	210+00	192+00	0.0361	18.9	4.0	131
8	192+00	183+00	0.0341	16.0	3.6	171
9	183+00	163+00	0.0240	13.0	5.0	164
10	163+00	151+00	0.0273	12.8	5.0	154
11	151+00	140+00	0.0249	11.4	4.0	203
12	140+00	125+40	0.0236	11.1	4.7	211
13	125+40	124+40	0.0862	20.7	2.0	262
14	124+40	121+90	0.0087	11.2	3.8	249
15	121+90	121+40	0.0618	18.9	2.9	191
16	121+40	119+80	0.0098	13.6	3.7	211
17	119+80	119+30	0.0600	18.7	3.3	174
18	119+30	117+00	0.0113	13.0	4.2	195
19	117+00	116+50	0.0626	19.3	3.2	173
20	116+50	114+60	0.0117	13.5	4.0	194
21	114+60	114+10	0.0638	19.1	3.2	173
22	114+10	112+00	0.0109	12.7	4.2	196
23	112+00	111+50	0.0626	19.2	3.2	173
24	111+50	109+60	0.0116	13.4	4.0	194
25	109+60	109+10	0.0628	19.1	3.2	173
26	109+10	107+60	0.0112	13.1	4.1	195
27	107+60	107+10	0.0628	19.1	3.2	173
28	107+10	105+50	0.0109	12.9	4.2	195
29	105+50	105+00	0.0702	20.2	3.1	168
30	105+00	103+00	0.0154	16.0	3.4	192
31	103+00	101+00	0.0601	18.8	3.1	181
32	101+00	99+20	0.0113	12.6	4.3	195
33	99+20	98+10	0.0283	16.6	3.2	187
34	98+10	96+00	0.0110	12.6	4.0	194
35	96+00	95+50	0.0436	17.8	3.0	183
36	95+50	93+50	0.0111	12.6	4.0	194

50-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations (cont.)

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
37	93+50	93+00	0.0436	17.8	3.0	183
38	93+00	91+50	0.0110	12.6	4.0	194
39	91+50	91+00	0.0636	19.1	2.9	181
40	91+00	89+50	0.0107	12.2	4.1	195
41	89+50	89+00	0.0640	19.2	2.9	180
42	89+00	87+50	0.0107	12.2	4.1	195
43	87+50	87+00	0.0434	17.8	3.0	183
44	87+00	82+50	0.0114	12.6	4.0	194
45	82+50	82+00	0.0652	19.4	2.8	180
46	82+00	80+50	0.0110	12.6	4.0	194
47	80+50	80+00	0.0778	20.3	2.8	178
48	80+00	74+00	0.0124	14.3	3.6	192
49	74+00	73+50	0.0406	17.3	3.1	183
50	73+50	71+00	0.0111	12.5	4.1	194
51	71+00	70+50	0.0650	19.3	2.8	180
52	70+50	68+50	0.0108	12.3	4.1	195
53	68+50	68+00	0.0648	19.2	2.9	180
54	68+00	66+00	0.0108	12.2	4.1	194
55	66+00	65+50	0.0648	19.3	2.8	180
56	65+50	63+50	0.0108	12.2	4.1	194
57	63+50	63+00	0.0648	19.2	2.9	180
58	63+00	61+00	0.0108	12.2	4.1	194
59	61+00	60+50	0.0648	19.3	2.8	180
60	60+50	58+50	0.0108	12.2	4.1	194
61	58+50	58+00	0.0840	20.9	2.7	177
62	58+00	53+00	0.0131	15.3	3.3	191
63	53+00	52+50	0.0600	18.5	3.0	180
64	52+50	50+00	0.0108	12.1	4.2	194
65	50+00	49+50	0.0658	19.4	2.8	180
66	49+50	48+00	0.0108	12.4	4.1	195
67	48+00	44+58	0.0117	12.8	4.2	188
68	44+58	43+30	0.0088	10.4	5.0	234
69	43+30	14+80	0.0129	11.3	6.2	176
70	14+80	8+80	0.0255	19.3	3.8	172
71	8+80	0+30	0.0022	8.4	8.2	177

25-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
1	316+50	289+50	0.0287	10.5	3.3	125
2	289+50	277+15	0.0285	11.5	4.4	151
3	277+15	271+75	0.0355	20.1	3.3	117
4	271+75	262+30	0.0296	25.4	3.7	82
5	262+30	229+80	0.0351	20.6	4.4	83
6	229+80	210+00	0.0258	19.8	4.6	84
7	210+00	192+00	0.0356	17.4	3.5	129
8	192+00	183+00	0.0340	14.8	3.3	163
9	183+00	163+00	0.0240	12.2	4.6	153
10	163+00	151+00	0.0271	12.0	4.7	141
11	151+00	140+00	0.0251	10.6	3.7	184
12	140+00	125+40	0.0237	10.2	4.4	191
13	125+40	124+40	0.0862	19.8	1.6	262
14	124+40	121+90	0.0090	10.1	3.3	247
15	121+90	121+40	0.0648	18.3	2.4	190
16	121+40	119+80	0.0091	11.7	3.3	209
17	119+80	119+30	0.0614	18.1	2.7	172
18	119+30	117+00	0.0111	11.5	3.7	193
19	117+00	116+50	0.0646	18.6	2.6	171
20	116+50	114+60	0.0112	11.7	3.6	193
21	114+60	114+10	0.0638	18.4	2.6	171
22	114+10	112+00	0.0110	11.5	3.7	193
23	112+00	111+50	0.0640	18.5	2.6	171
24	111+50	109+60	0.0109	11.4	3.7	193
25	109+60	109+10	0.0646	18.5	2.6	171
26	109+10	107+60	0.0107	11.4	3.7	193
27	107+60	107+10	0.0636	18.4	2.6	171
28	107+10	105+50	0.0108	11.4	3.7	193
29	105+50	105+00	0.0750	19.5	2.6	166
30	105+00	103+00	0.0142	14.2	3.0	190
31	103+00	101+00	0.0600	18.0	2.6	180
32	101+00	99+20	0.0112	11.4	3.7	193
33	99+20	98+10	0.0282	15.9	2.7	185
34	98+10	96+00	0.0109	11.1	3.6	192
35	96+00	95+50	0.0442	17.1	2.5	182
36	95+50	93+50	0.0111	11.3	3.6	192

25-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations (cont.)

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
37	93+50	93+00	0.0438	17.1	2.5	182
38	93+00	91+50	0.0109	11.3	3.6	192
39	91+50	91+00	0.0636	18.4	2.4	179
40	91+00	89+50	0.0107	11.1	3.6	192
41	89+50	89+00	0.0638	18.4	2.4	179
42	89+00	87+50	0.0107	11.1	3.6	192
43	87+50	87+00	0.0436	17.0	2.5	182
44	87+00	82+50	0.0114	11.3	3.6	192
45	82+50	82+00	0.0658	18.7	2.3	179
46	82+00	80+50	0.0107	11.1	3.6	192
47	80+50	80+00	0.0804	19.6	2.3	177
48	80+00	74+00	0.0122	12.7	3.2	190
49	74+00	73+50	0.0414	16.7	2.6	182
50	73+50	71+00	0.0111	11.3	3.6	192
51	71+00	70+50	0.0646	18.5	2.3	179
52	70+50	68+50	0.0108	11.0	3.7	192
53	68+50	68+00	0.0650	18.6	2.3	179
54	68+00	66+00	0.0109	11.1	3.6	192
55	66+00	65+50	0.0648	18.5	2.3	179
56	65+50	63+50	0.0107	10.9	3.7	192
57	63+50	63+00	0.0652	18.6	2.3	179
58	63+00	61+00	0.0108	11.0	3.7	192
59	61+00	60+50	0.0650	18.6	2.3	179
60	60+50	58+50	0.0109	11.1	3.6	192
61	58+50	58+00	0.0864	20.2	2.2	176
62	58+00	53+00	0.0128	13.9	2.9	189
63	53+00	52+50	0.0598	17.8	2.4	180
64	52+50	50+00	0.0111	11.2	3.6	192
65	50+00	49+50	0.0648	18.5	2.3	179
66	49+50	48+00	0.0109	11.2	3.6	193
67	48+00	44+58	0.0120	11.8	3.5	187
68	44+58	43+30	0.0086	9.8	4.2	233
69	43+30	14+80	0.0130	10.3	5.8	164
70	14+80	8+80	0.0258	17.7	3.3	170
71	8+80	0+30	0.0022	7.8	7.1	175

10-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
1	316+50	289+50	0.0288	9.7	2.9	108
2	289+50	277+15	0.0289	10.5	4.0	125
3	277+15	271+75	0.0370	17.9	2.6	116
4	271+75	262+30	0.0299	22.5	2.9	81
5	262+30	229+80	0.0351	17.7	3.6	82
6	229+80	210+00	0.0261	16.5	3.9	83
7	210+00	192+00	0.0348	15.4	2.8	128
8	192+00	183+00	0.0338	12.9	2.8	150
9	183+00	163+00	0.0239	11.0	4.1	135
10	163+00	151+00	0.0267	10.7	4.2	119
11	151+00	140+00	0.0253	9.7	3.2	159
12	140+00	125+40	0.0240	9.1	4.0	163
13	125+40	124+40	0.0858	18.6	1.2	262
14	124+40	121+90	0.0095	9.0	2.6	244
15	121+90	121+40	0.0656	17.3	1.8	187
16	121+40	119+80	0.0092	10.1	2.7	208
17	119+80	119+30	0.0614	17.2	2.0	169
18	119+30	117+00	0.0112	10.1	3.0	189
19	117+00	116+50	0.0644	17.6	1.9	169
20	116+50	114+60	0.0111	10.1	3.0	189
21	114+60	114+10	0.0638	17.5	1.9	169
22	114+10	112+00	0.0110	10.1	3.0	189
23	112+00	111+50	0.0636	17.5	1.9	169
24	111+50	109+60	0.0111	10.1	3.0	189
25	109+60	109+10	0.0638	17.5	1.9	169
26	109+10	107+60	0.0109	10.1	3.0	189
27	107+60	107+10	0.0632	17.4	1.9	169
28	107+10	105+50	0.0109	10.1	3.0	189
29	105+50	105+00	0.0786	18.6	1.9	164
30	105+00	103+00	0.0131	12.2	2.5	188
31	103+00	101+00	0.0601	17.0	1.9	178
32	101+00	99+20	0.0114	10.0	3.0	189
33	99+20	98+10	0.0275	14.5	2.0	184
34	98+10	96+00	0.0108	9.5	3.0	189
35	96+00	95+50	0.0446	7.6	3.8	184
36	95+50	93+50	0.0109	9.5	3.0	189

10-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations (cont.)

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
37	93+50	93+00	0.0446	7.6	3.8	184
38	93+00	91+50	0.0107	9.5	3.0	189
39	91+50	91+00	0.0640	17.5	1.7	178
40	91+00	89+50	0.0107	9.5	3.0	189
41	89+50	89+00	0.0640	17.5	1.7	178
42	89+00	87+50	0.0107	9.5	3.0	189
43	87+50	87+00	0.0440	7.6	3.8	184
44	87+00	82+50	0.0112	9.5	3.0	189
45	82+50	82+00	0.0670	17.9	1.7	177
46	82+00	80+50	0.0107	9.5	3.0	189
47	80+50	80+00	0.0822	18.7	1.6	176
48	80+00	74+00	0.0121	11.1	2.6	188
49	74+00	73+50	0.0412	15.6	1.9	180
50	73+50	71+00	0.0109	9.5	3.0	189
51	71+00	70+50	0.0654	17.7	1.7	178
52	70+50	68+50	0.0108	9.5	3.0	189
53	68+50	68+00	0.0648	17.6	1.7	178
54	68+00	66+00	0.0108	9.5	3.0	189
55	66+00	65+50	0.0648	17.6	1.7	178
56	65+50	63+50	0.0108	9.5	3.0	189
57	63+50	63+00	0.0648	17.6	1.7	178
58	63+00	61+00	0.0108	9.5	3.0	189
59	61+00	60+50	0.0648	17.6	1.7	178
60	60+50	58+50	0.0108	9.5	3.0	189
61	58+50	58+00	0.0904	19.3	1.6	175
62	58+00	53+00	0.0124	12.0	2.4	188
63	53+00	52+50	0.0600	16.9	1.8	178
64	52+50	50+00	0.0109	9.5	3.0	189
65	50+00	49+50	0.0656	17.7	1.7	178
66	49+50	48+00	0.0107	9.5	3.0	190
67	48+00	44+58	0.0124	10.6	2.7	186
68	44+58	43+30	0.0082	10.0	2.9	231
69	43+30	14+80	0.0130	9.2	5.1	145
70	14+80	8+80	0.0260	15.7	2.6	168
71	8+80	0+30	0.0023	6.9	5.6	172

5-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
1	316+50	289+50	0.0288	9.0	2.6	92
2	289+50	277+15	0.0292	9.7	3.7	107
3	277+15	271+75	0.0379	16.3	2.1	115
4	271+75	262+30	0.0302	20.2	2.4	81
5	262+30	229+80	0.0350	15.6	3.0	81
6	229+80	210+00	0.0260	14.7	3.3	82
7	210+00	192+00	0.0346	14.1	2.3	126
8	192+00	183+00	0.0335	11.6	2.5	139
9	183+00	163+00	0.0239	10.3	3.6	121
10	163+00	151+00	0.0266	9.9	3.9	103
11	151+00	140+00	0.0255	9.1	2.9	140
12	140+00	125+40	0.0241	8.3	3.8	142
13	125+40	124+40	0.0853	17.8	0.9	260
14	124+40	121+90	0.0100	8.2	2.1	243
15	121+90	121+40	0.0650	16.5	1.4	186
16	121+40	119+80	0.0093	8.6	2.4	206
17	119+80	119+30	0.0618	16.5	1.5	167
18	119+30	117+00	0.0113	8.9	2.5	188
19	117+00	116+50	0.0638	16.8	1.5	167
20	116+50	114+60	0.0112	8.9	2.5	188
21	114+60	114+10	0.0634	16.8	1.5	167
22	114+10	112+00	0.0111	8.9	2.5	188
23	112+00	111+50	0.0634	16.7	1.5	167
24	111+50	109+60	0.0112	8.9	2.5	188
25	109+60	109+10	0.0634	16.8	1.5	167
26	109+10	107+60	0.0111	8.9	2.5	188
27	107+60	107+10	0.0628	16.7	1.5	167
28	107+10	105+50	0.0110	8.9	2.5	188
29	105+50	105+00	0.0806	17.9	1.5	163
30	105+00	103+00	0.0125	10.5	2.2	186
31	103+00	101+00	0.0601	16.3	1.5	177
32	101+00	99+20	0.0114	8.9	2.5	188
33	99+20	98+10	0.0272	9.4	2.5	185
34	98+10	96+00	0.0111	8.7	2.4	187
35	96+00	95+50	0.0432	14.2	1.6	180
36	95+50	93+50	0.0112	8.7	2.4	187

5-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations (cont.)

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
37	93+50	93+00	0.0430	14.2	1.6	180
38	93+00	91+50	0.0111	8.7	2.4	187
39	91+50	91+00	0.0628	16.6	1.4	177
40	91+00	89+50	0.0111	8.7	2.4	188
41	89+50	89+00	0.0628	16.6	1.4	177
42	89+00	87+50	0.0111	8.7	2.4	187
43	87+50	87+00	0.0426	14.7	1.5	179
44	87+00	82+50	0.0115	8.7	2.4	187
45	82+50	82+00	0.0644	16.9	1.3	177
46	82+00	80+50	0.0111	8.7	2.4	187
47	80+50	80+00	0.0820	17.9	1.3	174
48	80+00	74+00	0.0120	9.7	2.2	187
49	74+00	73+50	0.0414	14.9	1.5	179
50	73+50	71+00	0.0113	8.7	2.4	187
51	71+00	70+50	0.0636	16.7	1.4	177
52	70+50	68+50	0.0112	8.7	2.4	187
53	68+50	68+00	0.0632	16.7	1.4	177
54	68+00	66+00	0.0112	8.7	2.4	187
55	66+00	65+50	0.0632	16.7	1.4	177
56	65+50	63+50	0.0112	8.7	2.4	187
57	63+50	63+00	0.0630	16.7	1.4	177
58	63+00	61+00	0.0113	8.7	2.4	188
59	61+00	60+50	0.0630	16.7	1.4	177
60	60+50	58+50	0.0113	8.7	2.4	188
61	58+50	58+00	0.0908	18.4	1.3	175
62	58+00	53+00	0.0122	10.4	2.1	186
63	53+00	52+50	0.0602	16.2	1.4	178
64	52+50	50+00	0.0113	8.7	2.4	188
65	50+00	49+50	0.0636	16.8	1.4	176
66	49+50	48+00	0.0111	8.7	2.4	188
67	48+00	44+58	0.0121	9.6	2.3	185
68	44+58	43+30	0.0083	9.1	2.4	230
69	43+30	14+80	0.0131	8.6	4.7	132
70	14+80	8+80	0.0261	14.4	2.2	167
71	8+80	0+30	0.0024	6.4	4.7	170

2-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
1	316+50	289+50	0.0290	8.4	2.0	70
2	289+50	277+15	0.0293	8.4	3.2	80
3	277+15	271+75	0.0390	13.8	1.4	115
4	271+75	262+30	0.0308	16.6	1.6	80
5	262+30	229+80	0.0349	12.9	2.1	80
6	229+80	210+00	0.0260	12.0	2.3	81
7	210+00	192+00	0.0343	12.2	1.6	125
8	192+00	183+00	0.0330	9.7	2.0	119
9	183+00	163+00	0.0239	9.4	2.9	98
10	163+00	151+00	0.0265	8.6	3.3	79
11	151+00	140+00	0.0254	8.0	2.5	112
12	140+00	125+40	0.0242	7.1	3.4	108
13	125+40	124+40	0.0846	16.6	0.6	260
14	124+40	121+90	0.0106	6.9	1.5	241
15	121+90	121+40	0.0636	15.3	0.9	185
16	121+40	119+80	0.0099	7.3	1.7	204
17	119+80	119+30	0.0612	15.3	1.0	165
18	119+30	117+00	0.0118	7.5	1.8	186
19	117+00	116+50	0.0618	15.4	1.0	166
20	116+50	114+60	0.0117	7.5	1.8	186
21	114+60	114+10	0.0616	15.4	1.0	167
22	114+10	112+00	0.0116	7.5	1.8	186
23	112+00	111+50	0.0614	15.4	1.0	167
24	111+50	109+60	0.0117	7.5	1.8	186
25	109+60	109+10	0.0616	15.4	1.0	166
26	109+10	107+60	0.0115	7.5	1.8	186
27	107+60	107+10	0.0614	15.4	1.0	165
28	107+10	105+50	0.0114	7.5	1.8	186
29	105+50	105+00	0.0812	16.6	0.9	162
30	105+00	103+00	0.0120	8.1	1.6	186
31	103+00	101+00	0.0601	15.2	0.9	177
32	101+00	99+20	0.0118	7.5	1.8	185
33	99+20	98+10	0.0260	11.5	1.2	181
34	98+10	96+00	0.0116	7.4	1.7	185
35	96+00	95+50	0.0412	13.8	1.0	178
36	95+50	93+50	0.0117	7.4	1.7	185

2-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations (cont.)

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
37	93+50	93+00	0.0414	13.8	1.0	178
38	93+00	91+50	0.0116	7.4	1.7	185
39	91+50	91+00	0.0612	15.3	0.9	175
40	91+00	89+50	0.0116	7.3	1.7	185
41	89+50	89+00	0.0612	15.3	0.9	175
42	89+00	87+50	0.0116	7.3	1.7	185
43	87+50	87+00	0.0412	13.8	1.0	178
44	87+00	82+50	0.0118	7.4	1.7	185
45	82+50	82+00	0.0616	15.4	0.9	175
46	82+00	80+50	0.0116	7.3	1.7	185
47	80+50	80+00	0.0812	16.6	0.8	176
48	80+00	74+00	0.0119	7.4	1.7	185
49	74+00	73+50	0.0410	13.7	1.0	178
50	73+50	71+00	0.0117	7.4	1.7	186
51	71+00	70+50	0.0614	15.3	0.9	175
52	70+50	68+50	0.0117	7.3	1.7	185
53	68+50	68+00	0.0614	15.3	0.9	175
54	68+00	66+00	0.0117	7.3	1.7	185
55	66+00	65+50	0.0614	15.3	0.9	175
56	65+50	63+50	0.0117	7.3	1.7	185
57	63+50	63+00	0.0614	15.3	0.9	175
58	63+00	61+00	0.0117	7.3	1.7	185
59	61+00	60+50	0.0614	15.3	0.9	175
60	60+50	58+50	0.0117	7.3	1.7	185
61	58+50	58+00	0.0910	17.2	0.8	174
62	58+00	53+00	0.0120	8.2	1.6	185
63	53+00	52+50	0.0600	15.1	0.9	177
64	52+50	50+00	0.0117	7.3	1.7	185
65	50+00	49+50	0.0616	15.4	0.9	175
66	49+50	48+00	0.0115	7.3	1.7	185
67	48+00	44+58	0.0118	7.9	1.6	184
68	44+58	43+30	0.0080	8.0	1.7	229
69	43+30	14+80	0.0132	7.5	4.1	111
70	14+80	8+80	0.0264	12.0	1.7	165
71	8+80	0+30	0.0025	5.4	3.4	167

2-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
1	316+50	289+50	0.0290	8.4	2.0	70
2	289+50	277+15	0.0293	8.4	3.2	80
3	277+15	271+75	0.0390	13.8	1.4	115
4	271+75	262+30	0.0308	16.6	1.6	80
5	262+30	229+80	0.0349	12.9	2.1	80
6	229+80	210+00	0.0260	12.0	2.3	81
7	210+00	192+00	0.0343	12.2	1.6	125
8	192+00	183+00	0.0330	9.7	2.0	119
9	183+00	163+00	0.0239	9.4	2.9	98
10	163+00	151+00	0.0265	8.6	3.3	79
11	151+00	140+00	0.0254	8.0	2.5	112
12	140+00	125+40	0.0242	7.1	3.4	108
13	125+40	124+40	0.0846	16.6	0.6	260
14	124+40	121+90	0.0106	6.9	1.5	241
15	121+90	121+40	0.0636	15.3	0.9	185
16	121+40	119+80	0.0099	7.3	1.7	204
17	119+80	119+30	0.0612	15.3	1.0	165
18	119+30	117+00	0.0118	7.5	1.8	186
19	117+00	116+50	0.0618	15.4	1.0	166
20	116+50	114+60	0.0117	7.5	1.8	186
21	114+60	114+10	0.0616	15.4	1.0	167
22	114+10	112+00	0.0116	7.5	1.8	186
23	112+00	111+50	0.0614	15.4	1.0	167
24	111+50	109+60	0.0117	7.5	1.8	186
25	109+60	109+10	0.0616	15.4	1.0	166
26	109+10	107+60	0.0115	7.5	1.8	186
27	107+60	107+10	0.0614	15.4	1.0	165
28	107+10	105+50	0.0114	7.5	1.8	186
29	105+50	105+00	0.0812	16.6	0.9	162
30	105+00	103+00	0.0120	8.1	1.6	186
31	103+00	101+00	0.0601	15.2	0.9	177
32	101+00	99+20	0.0118	7.5	1.8	185
33	99+20	98+10	0.0260	11.5	1.2	181
34	98+10	96+00	0.0116	7.4	1.7	185
35	96+00	95+50	0.0412	13.8	1.0	178
36	95+50	93+50	0.0117	7.4	1.7	185

2-YEAR HYDRAULIC SUMMARY (PER REACH)

For Sediment Transport Computations (cont.)

Reach #	From Station	To Station	Slope (ft/ft)	Main Channel Velocity (fps)	Main Channel Depth (ft)	Main Channel Eff. Width (ft)
37	93+50	93+00	0.0414	13.8	1.0	178
38	93+00	91+50	0.0116	7.4	1.7	185
39	91+50	91+00	0.0612	15.3	0.9	175
40	91+00	89+50	0.0116	7.3	1.7	185
41	89+50	89+00	0.0612	15.3	0.9	175
42	89+00	87+50	0.0116	7.3	1.7	185
43	87+50	87+00	0.0412	13.8	1.0	178
44	87+00	82+50	0.0118	7.4	1.7	185
45	82+50	82+00	0.0616	15.4	0.9	175
46	82+00	80+50	0.0116	7.3	1.7	185
47	80+50	80+00	0.0812	16.6	0.8	176
48	80+00	74+00	0.0119	7.4	1.7	185
49	74+00	73+50	0.0410	13.7	1.0	178
50	73+50	71+00	0.0117	7.4	1.7	186
51	71+00	70+50	0.0614	15.3	0.9	175
52	70+50	68+50	0.0117	7.3	1.7	185
53	68+50	68+00	0.0614	15.3	0.9	175
54	68+00	66+00	0.0117	7.3	1.7	185
55	66+00	65+50	0.0614	15.3	0.9	175
56	65+50	63+50	0.0117	7.3	1.7	185
57	63+50	63+00	0.0614	15.3	0.9	175
58	63+00	61+00	0.0117	7.3	1.7	185
59	61+00	60+50	0.0614	15.3	0.9	175
60	60+50	58+50	0.0117	7.3	1.7	185
61	58+50	58+00	0.0910	17.2	0.8	174
62	58+00	53+00	0.0120	8.2	1.6	185
63	53+00	52+50	0.0600	15.1	0.9	177
64	52+50	50+00	0.0117	7.3	1.7	185
65	50+00	49+50	0.0616	15.4	0.9	175
66	49+50	48+00	0.0115	7.3	1.7	185
67	48+00	44+58	0.0118	7.9	1.6	184
68	44+58	43+30	0.0080	8.0	1.7	229
69	43+30	14+80	0.0132	7.5	4.1	111
70	14+80	8+80	0.0264	12.0	1.7	165
71	8+80	0+30	0.0025	5.4	3.4	167