



**US Army Corps
of Engineers**
Waterways Experiment
Station

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Demonstration Erosion Control Project Monitoring Program

Fiscal Year 1992 Report

Volume IV: Appendix C Batupan Bogue Watershed Profiles and Cross Sections

*by Terry N. Waller, Lisa C. Hubbard
Hydraulics Laboratory*

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Prepared for U.S. Army Engineer District, Vicksburg

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Batupan Bogue Watershed Profiles and Cross Sections

by Terry N. Waller, Lisa C. Hubbard
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U.S. Army Corps of Engineers
Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

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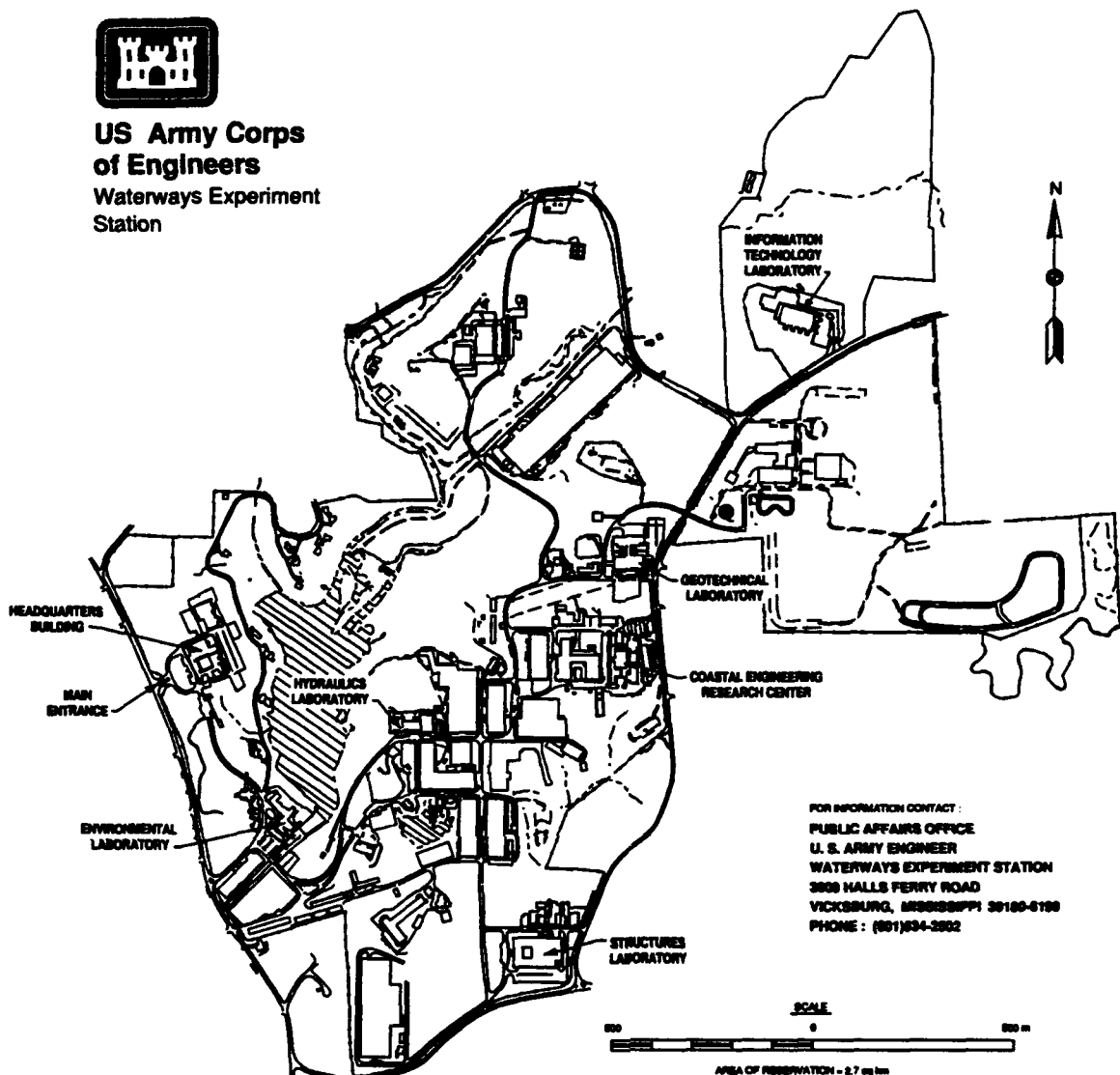
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Vicksburg, MS 39180-5191



**US Army Corps
of Engineers**
Waterways Experiment
Station



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TA7 W34 no.HL-93-3 v.4

Appendix C

Batupan Bogue Watershed Profiles and Cross Sections

Channel Profiles

Comparison plots of channel profiles in the Batupan Bogue watershed from 1985 and 1991 are shown in Plates C1-C38. The following channels are represented in the profile plots:

Creek	Plate
Batupan Bogue	C1-C3
Perry	C4-C6
Jack	C7, C8
Perry Tributary	C9
Big Bogue	C10, C11
Eskridge	C12, C13
Sykes	C14, C15
Worsham	C16, C17
West Fork Worsham	C18
East Fork Worsham	C19
Middle Fork Worsham	C20
Jackson	C21, C22
Wilkins	C23
Eskridge Tributary	C24
Little Bogue	C25-C29
Pruill/Powell	C30
(Continued)	

Creek	Plate
Mouse	C31, C32
Caffe	C33
Campbell	C34
Epison	C35
Crowder	C36, C37
Little Mouse	C38

Channel Cross Sections

Comparisons of channel cross sections in the Batupan Bogue watershed from 1985 and 1991 are shown in Plates C39-C289. The following channels are represented in the cross-section plots:

Creek	Plate
Batupan Bogue	C39-C61
Perry	C62-C81
Jack	C82-C92
Perry Tributary	C93-C95
Big Bogue	C96-C109
Eskridge	C110-C122
Sykes	C123-C146
Worsham	C147-C162
West Fork Worsham	C163-C169
East Fork Worsham	C170-C174
Middle Fork Worsham	C175-C179
Jackson	C180-C185
Wilkins	C186-C193
Eskridge Tributary	NONE
Little Bogue	C194-C233
Pruill/Powell	C234-C237
Mouse	C238-C246
Caffe	C247-C251
Campbell	C252-C260
(Continued)	

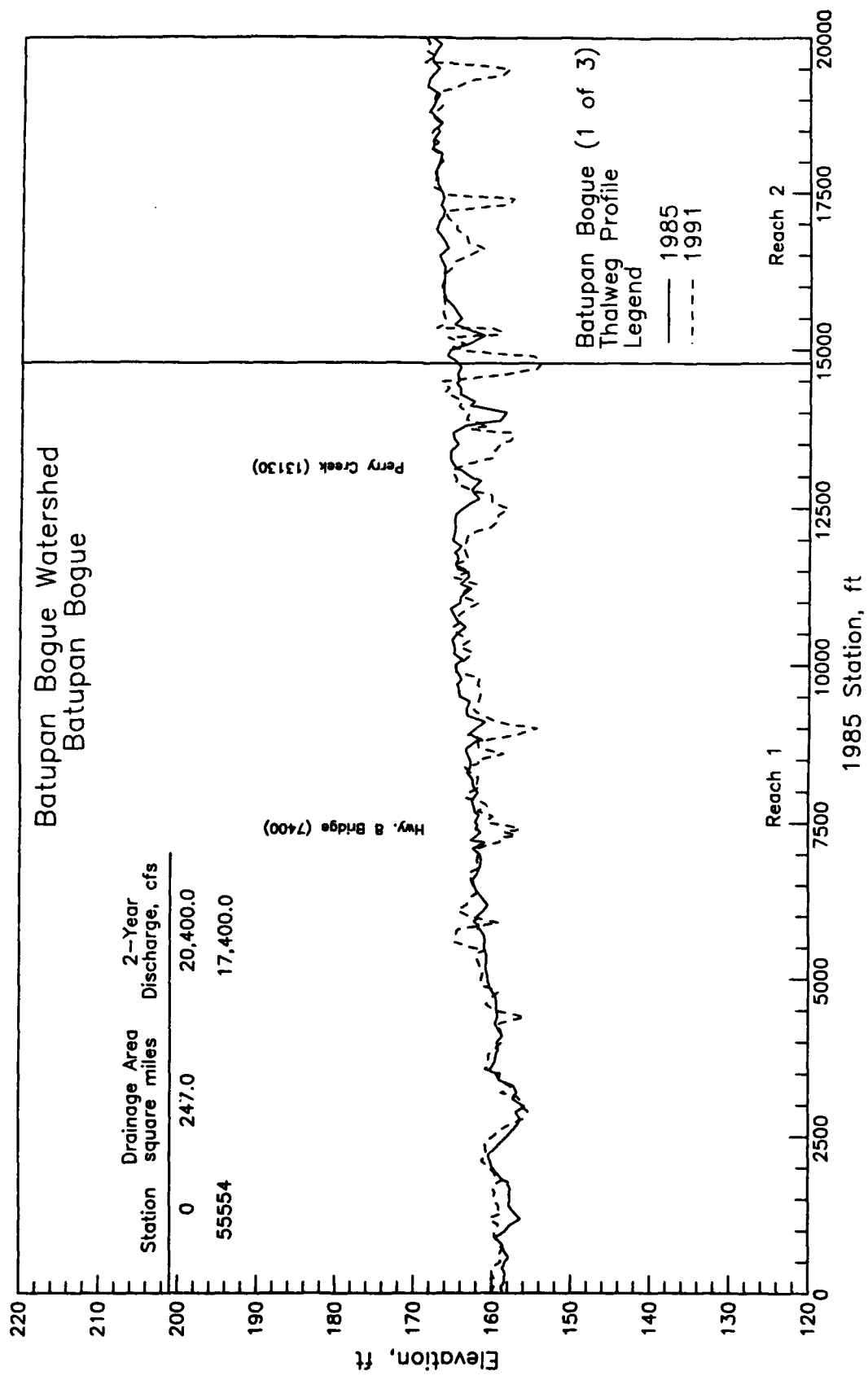
Creek	Plate
Epison	C261-C266
Crowder	C267-C284
Little Mouse	C285-C289

Batupan Bogue Watershed Batupan Bogue

Station	Drainage Area square miles	2-Year Discharge, cfs
0	247.0	20,400.0
55554		17,400.0

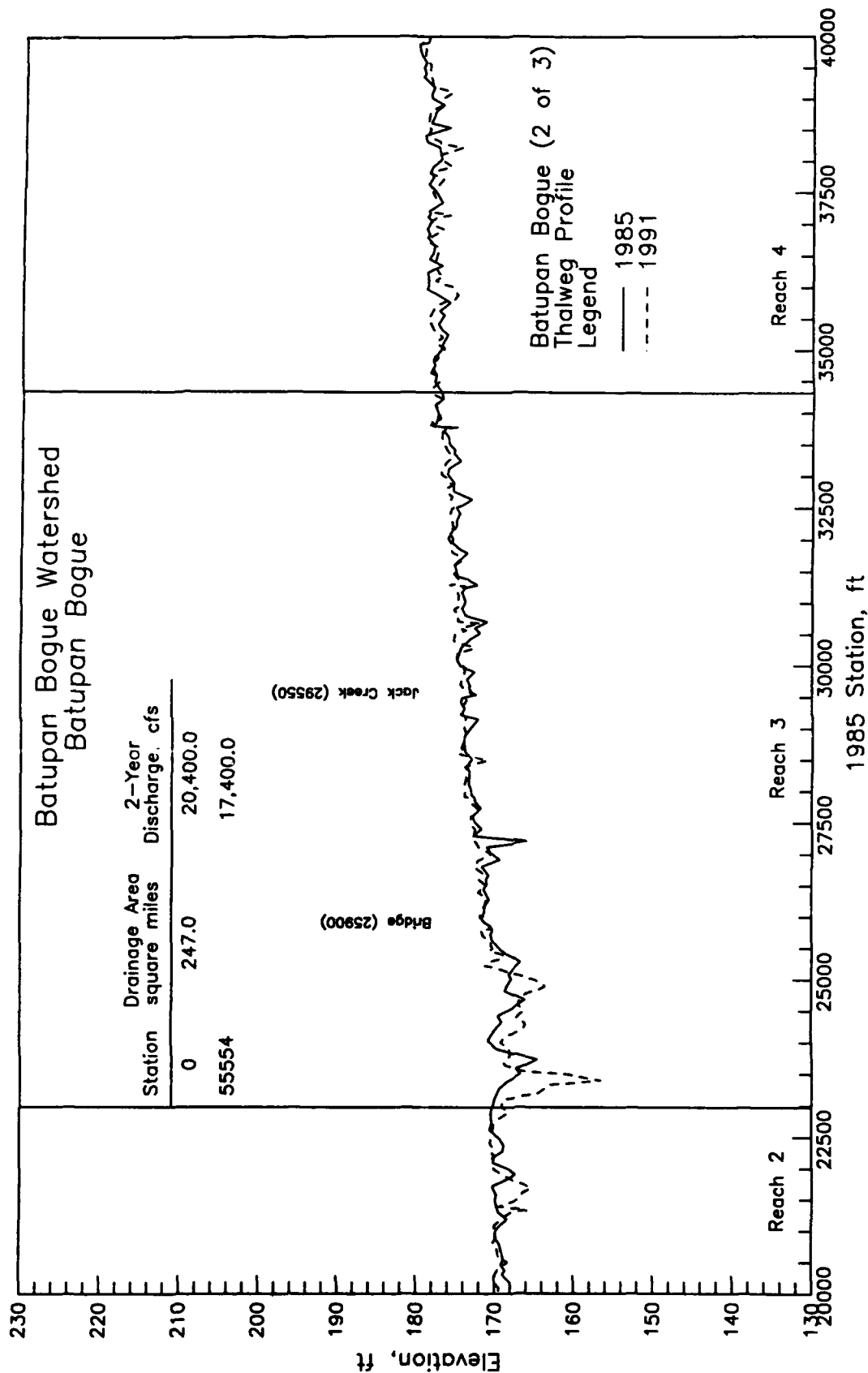
Hwy. 8 Bridge (7400)

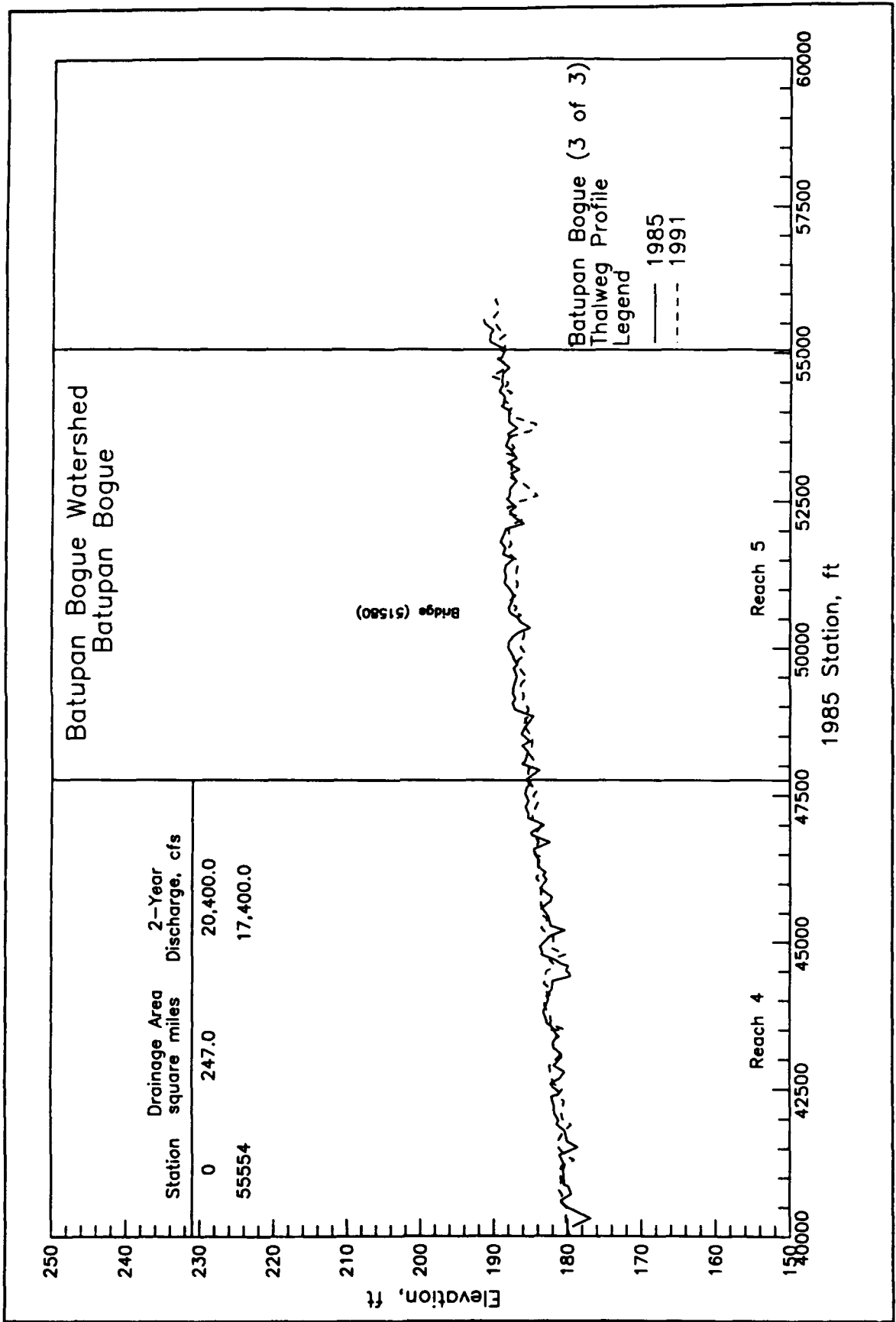
Perry Creek (13130)

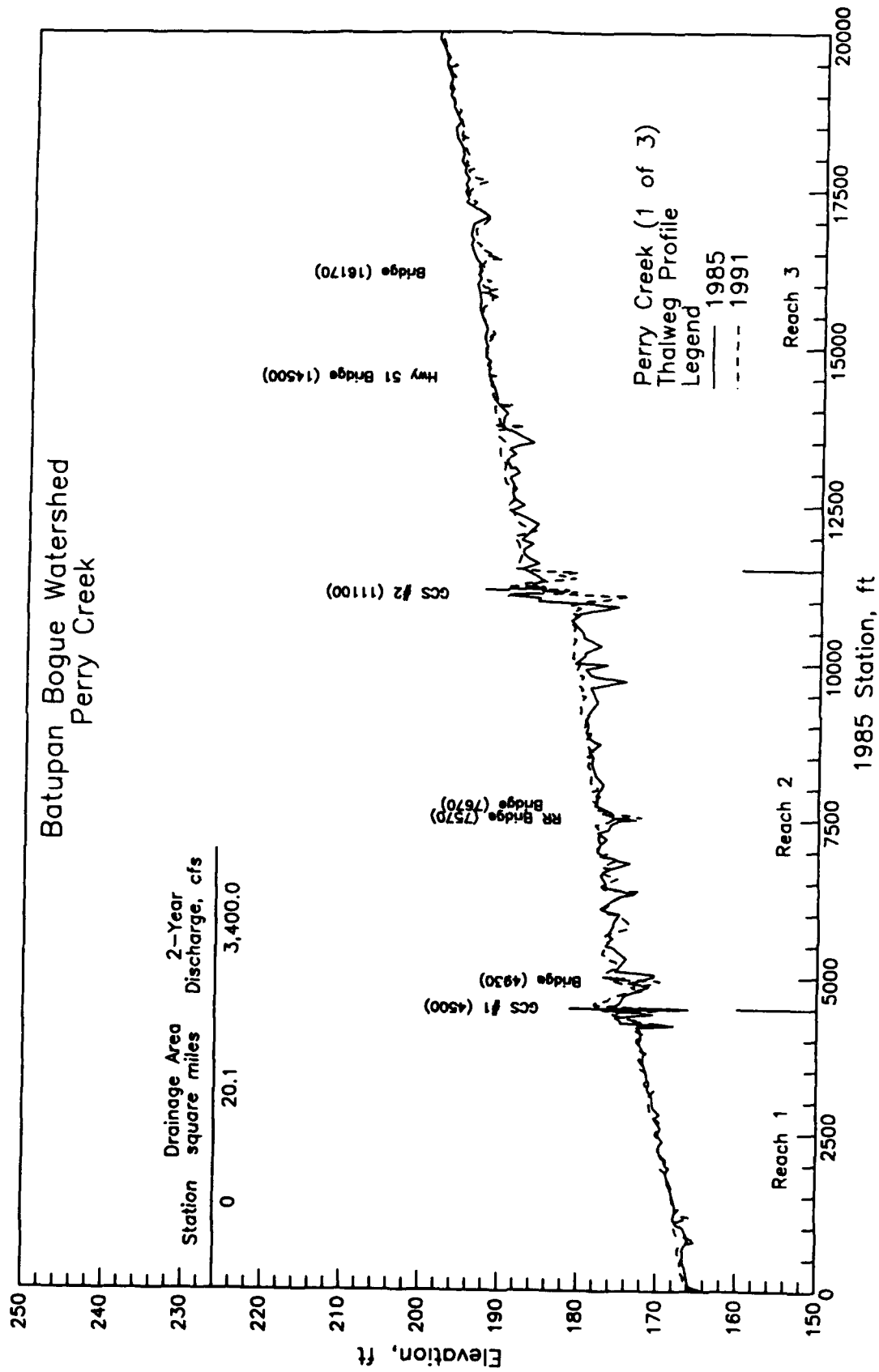


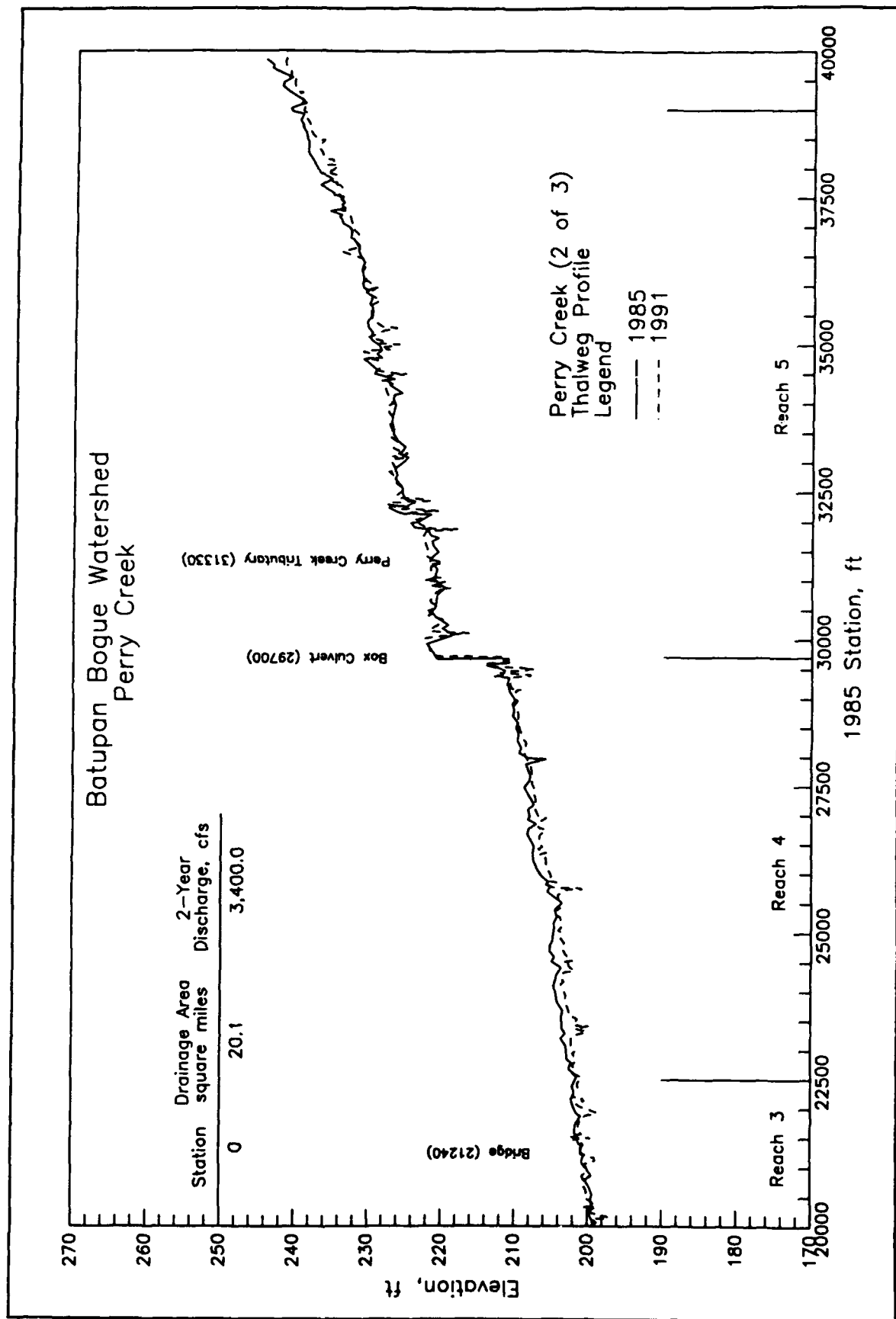
Batupan Bogue (1 of 3)
Thalweg Profile
Legend
— 1985
--- 1991

Reach 1
Reach 2
1985 Station, ft







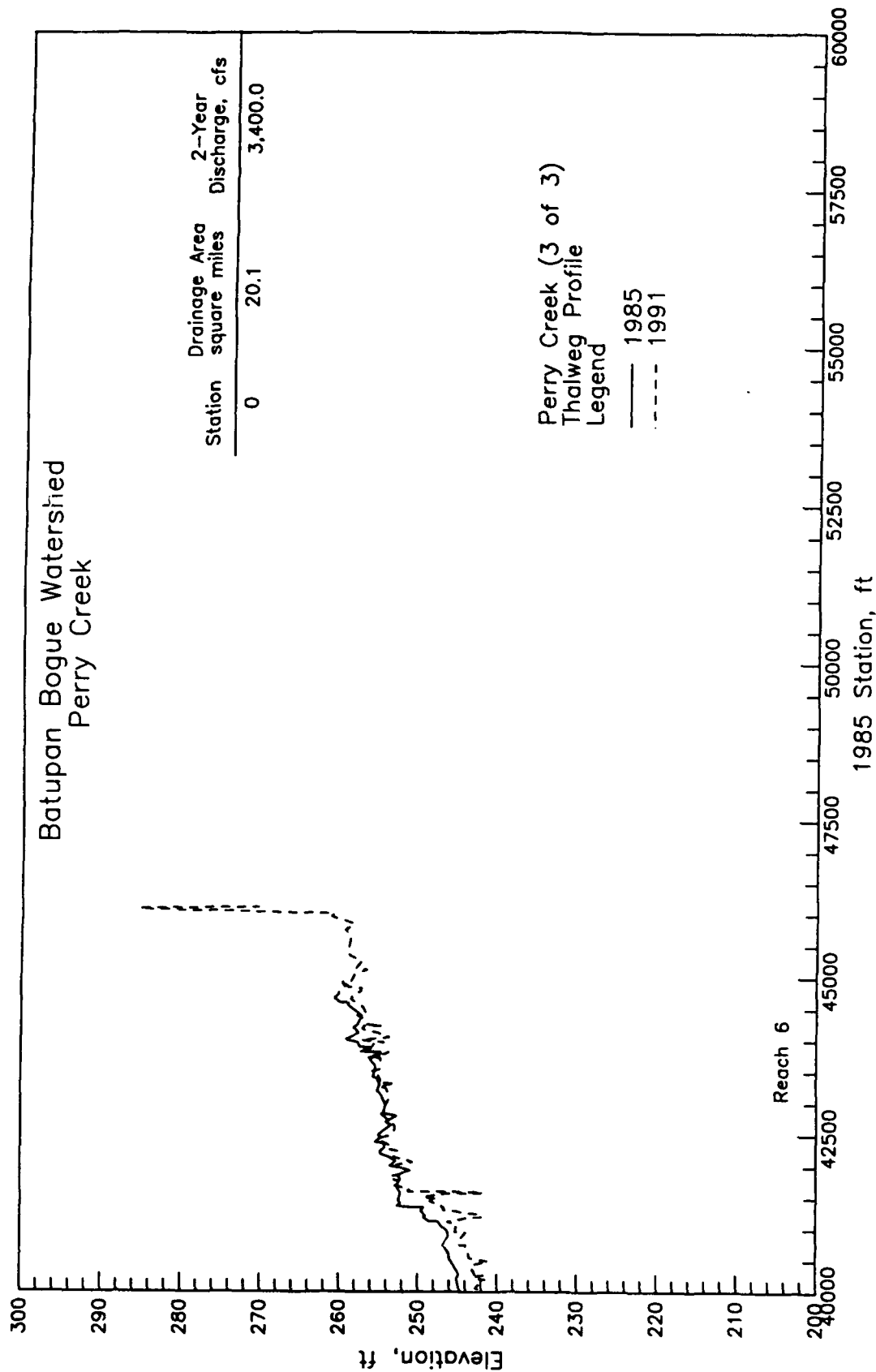


Batupan Bogue Watershed Perry Creek

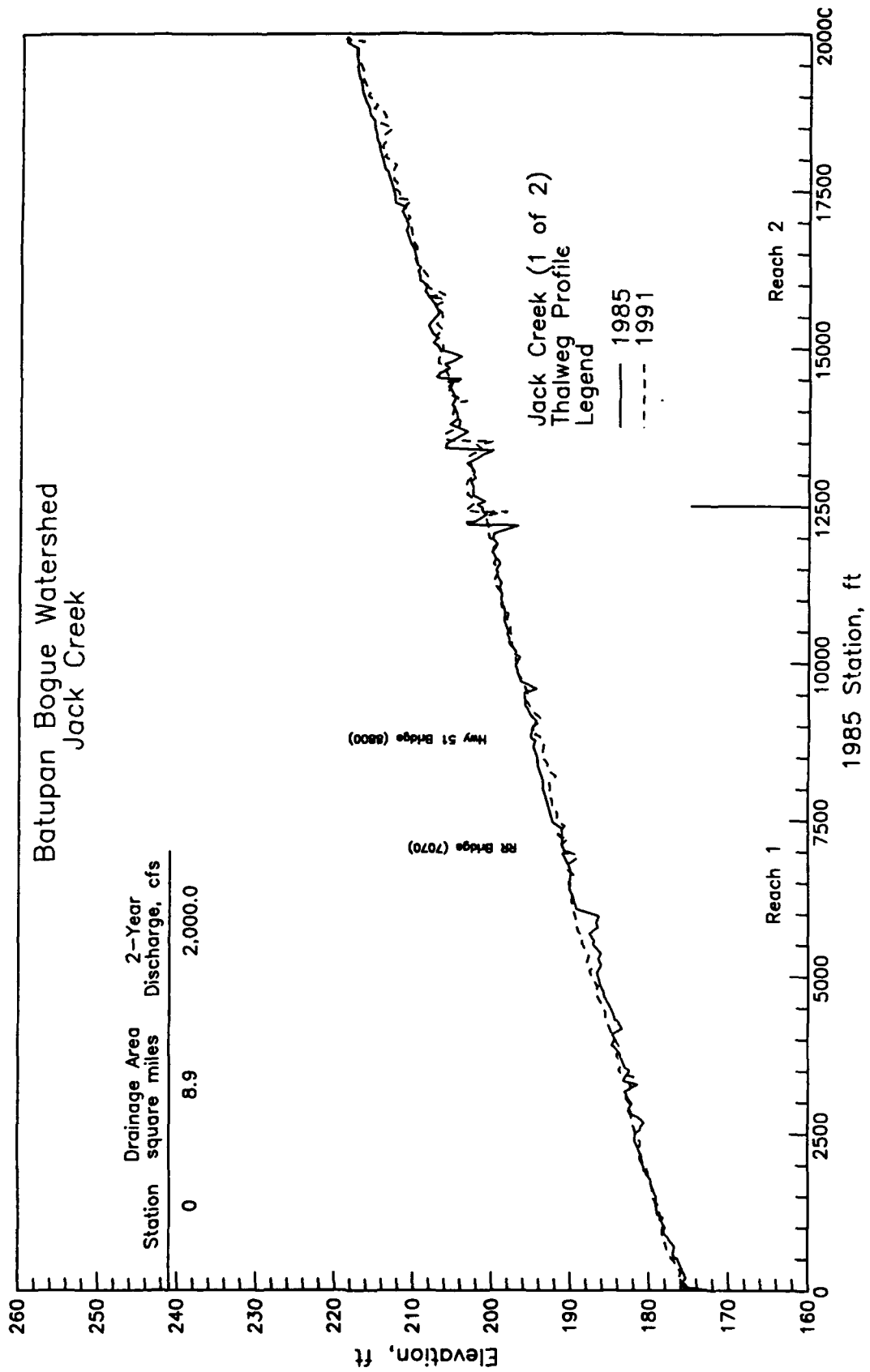
Station	Drainage Area square miles	2-Year Discharge, cfs
0	20.1	3,400.0

Perry Creek (3 of 3)
Thalweg Profile
Legend

— 1985
- - - 1991



Batupan Bogue Watershed Jack Creek



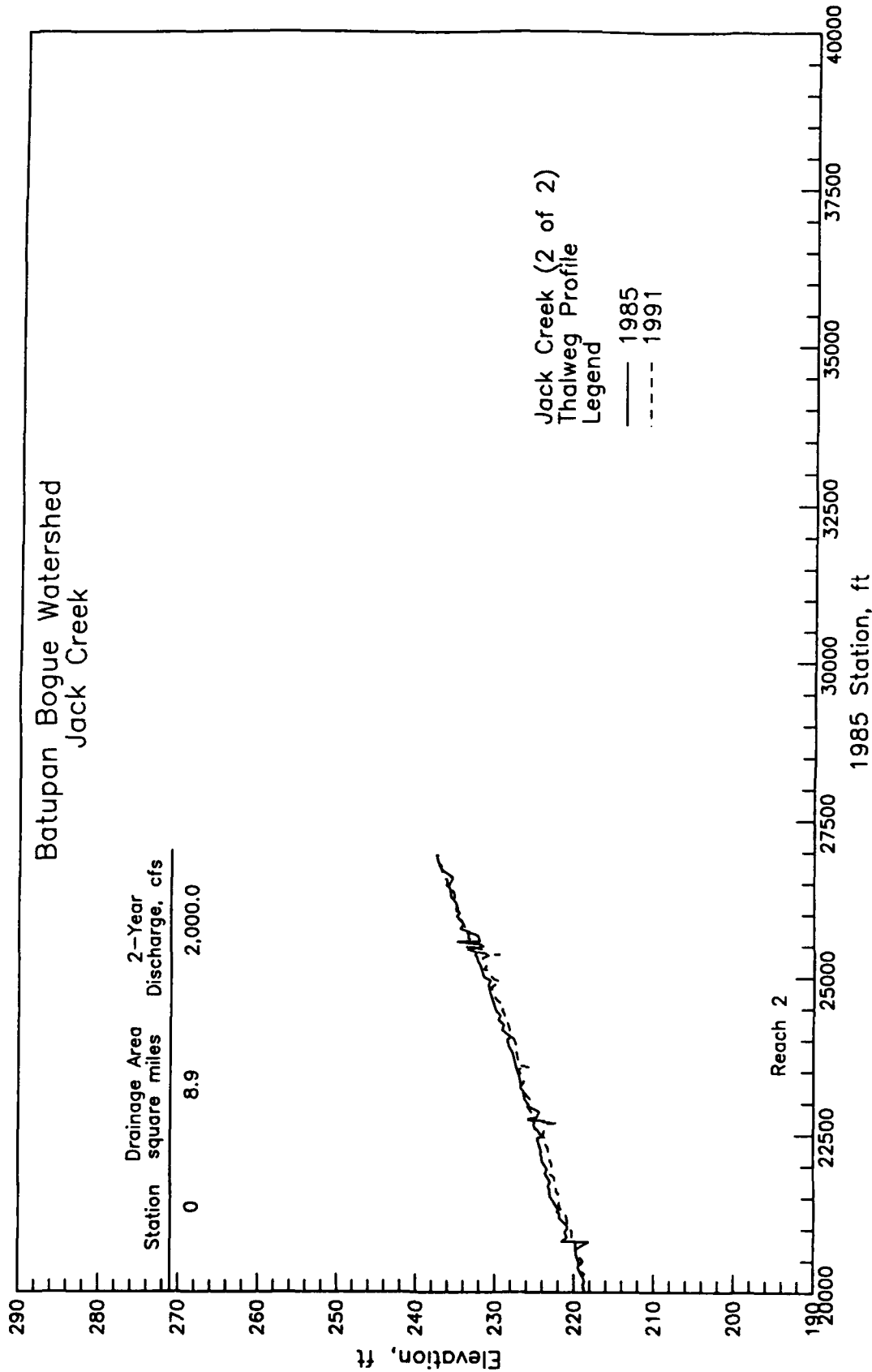
Jack Creek (1 of 2)
Thalweg Profile
Legend
— 1985
--- 1991

Reach 2

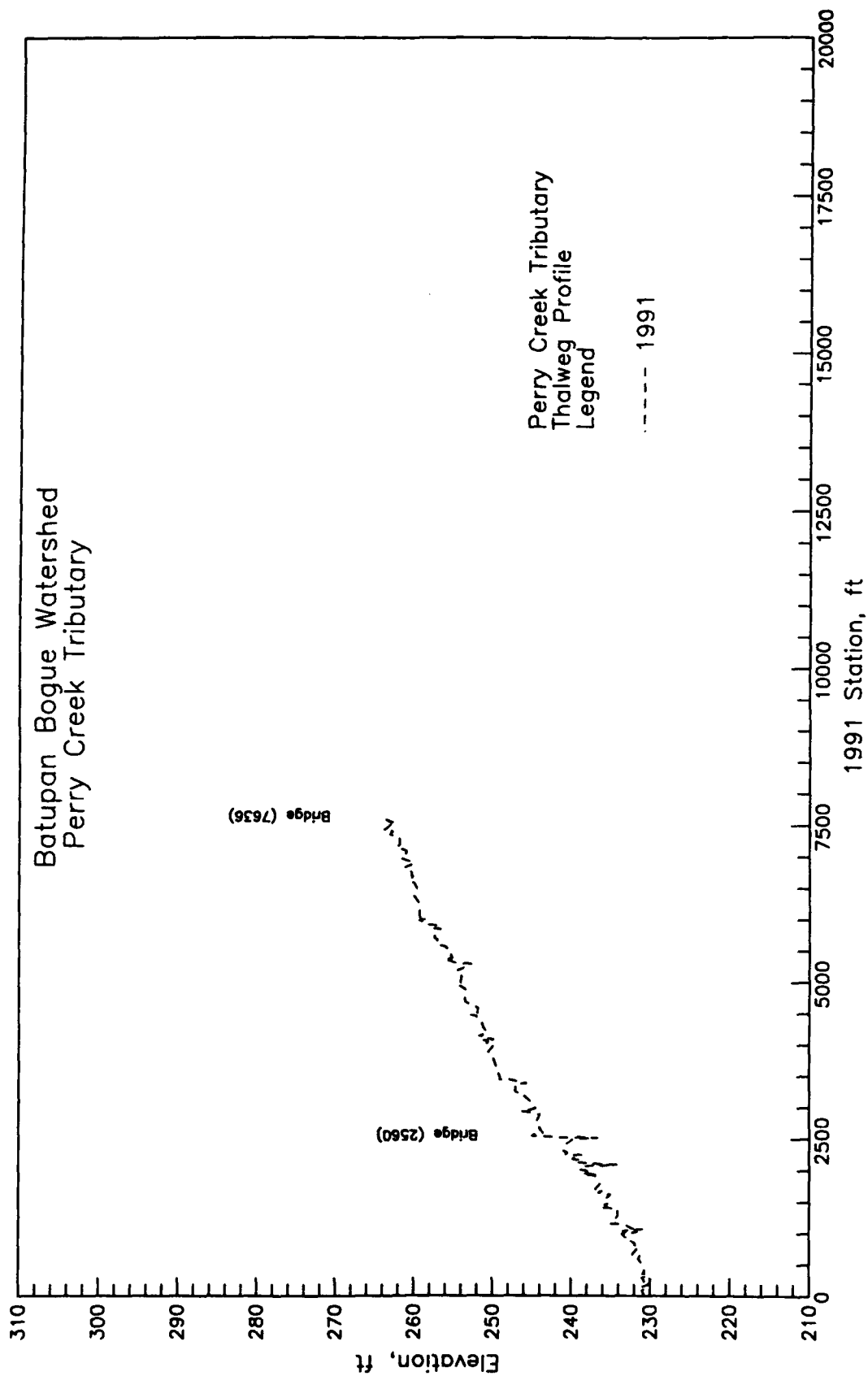
Reach 1

1985 Station, ft

Batupan Bogue Watershed Jack Creek



Batupan Bogue Watershed
Perry Creek Tributary



Perry Creek Tributary
Thalweg Profile
Legend

----- 1991

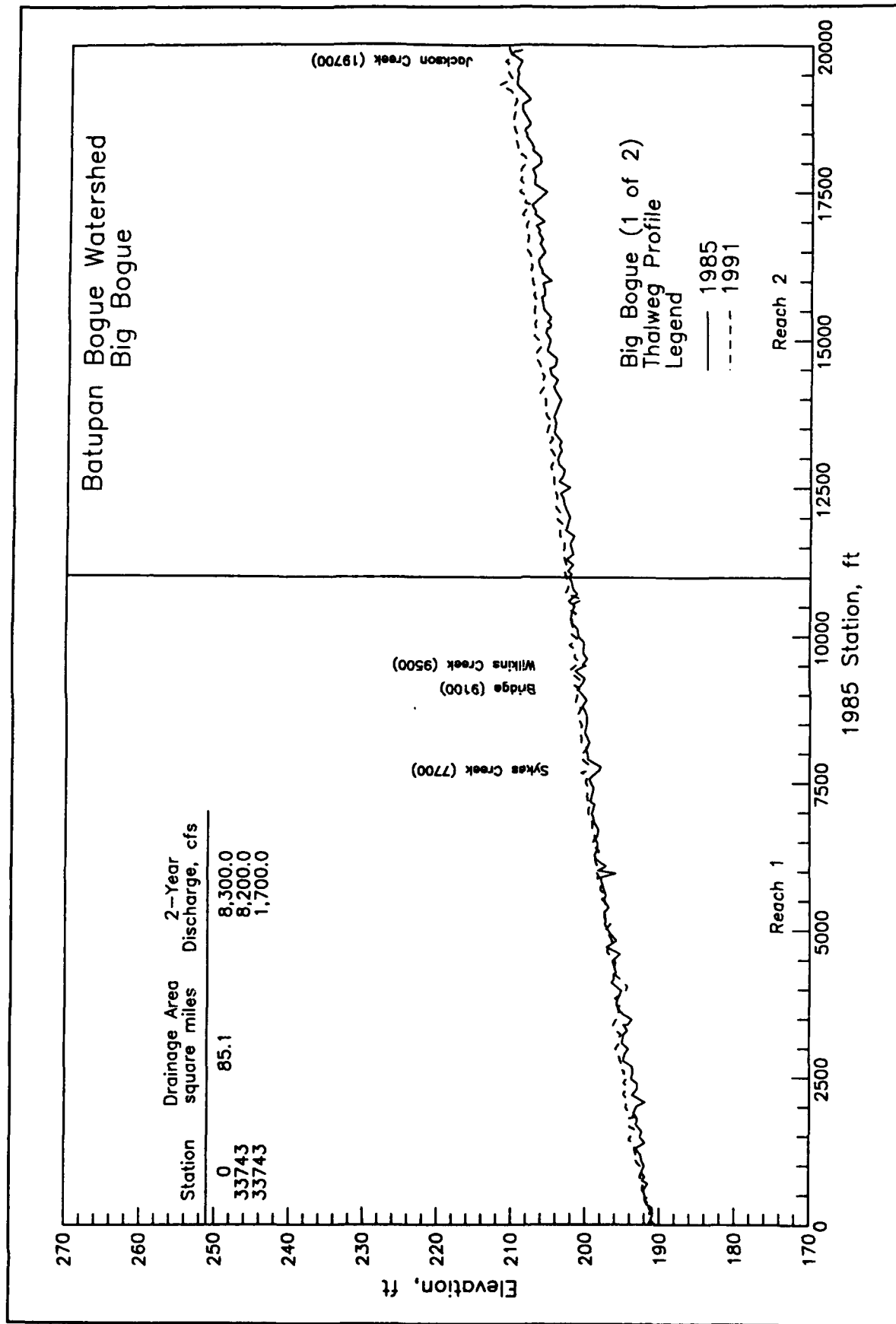
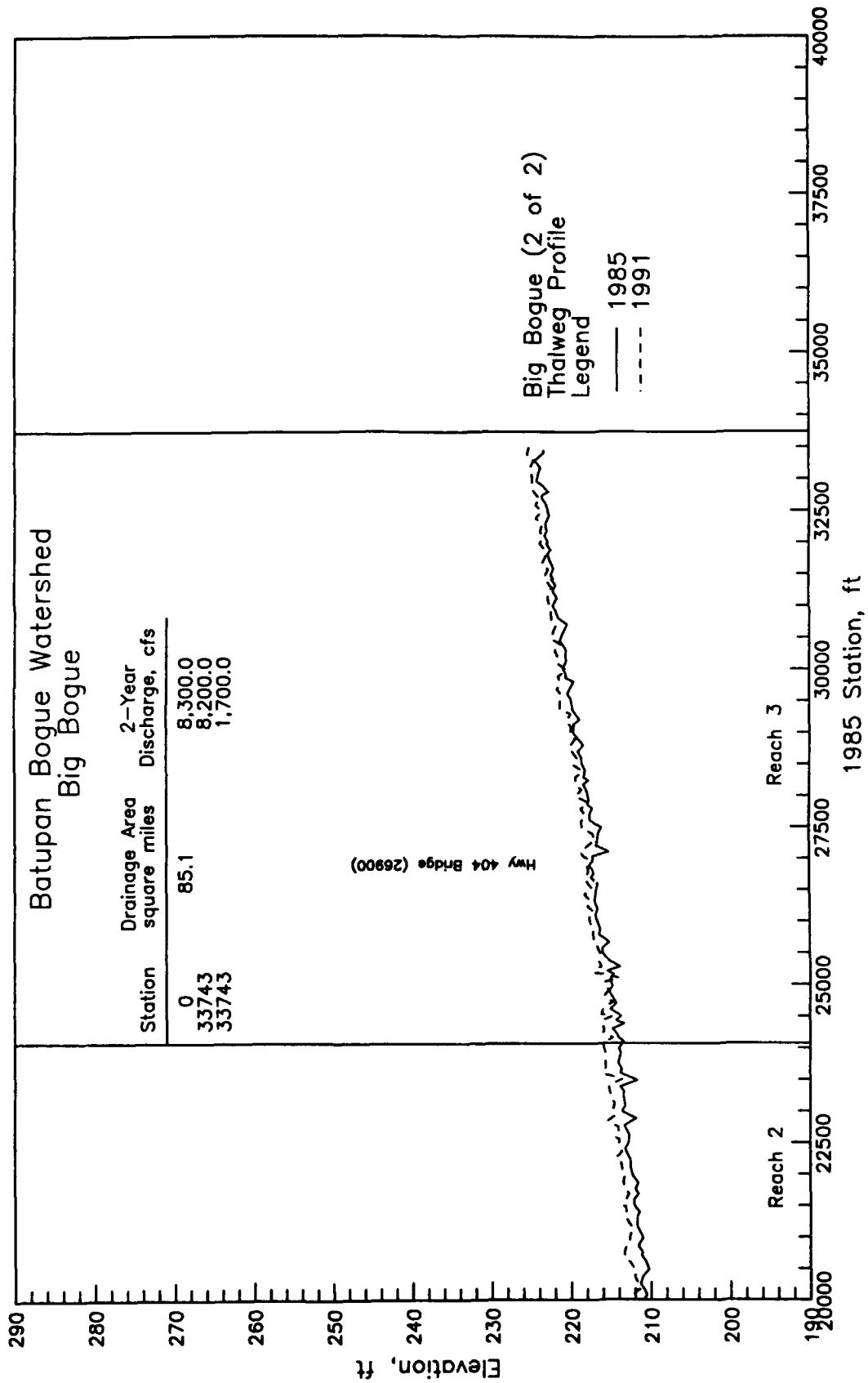
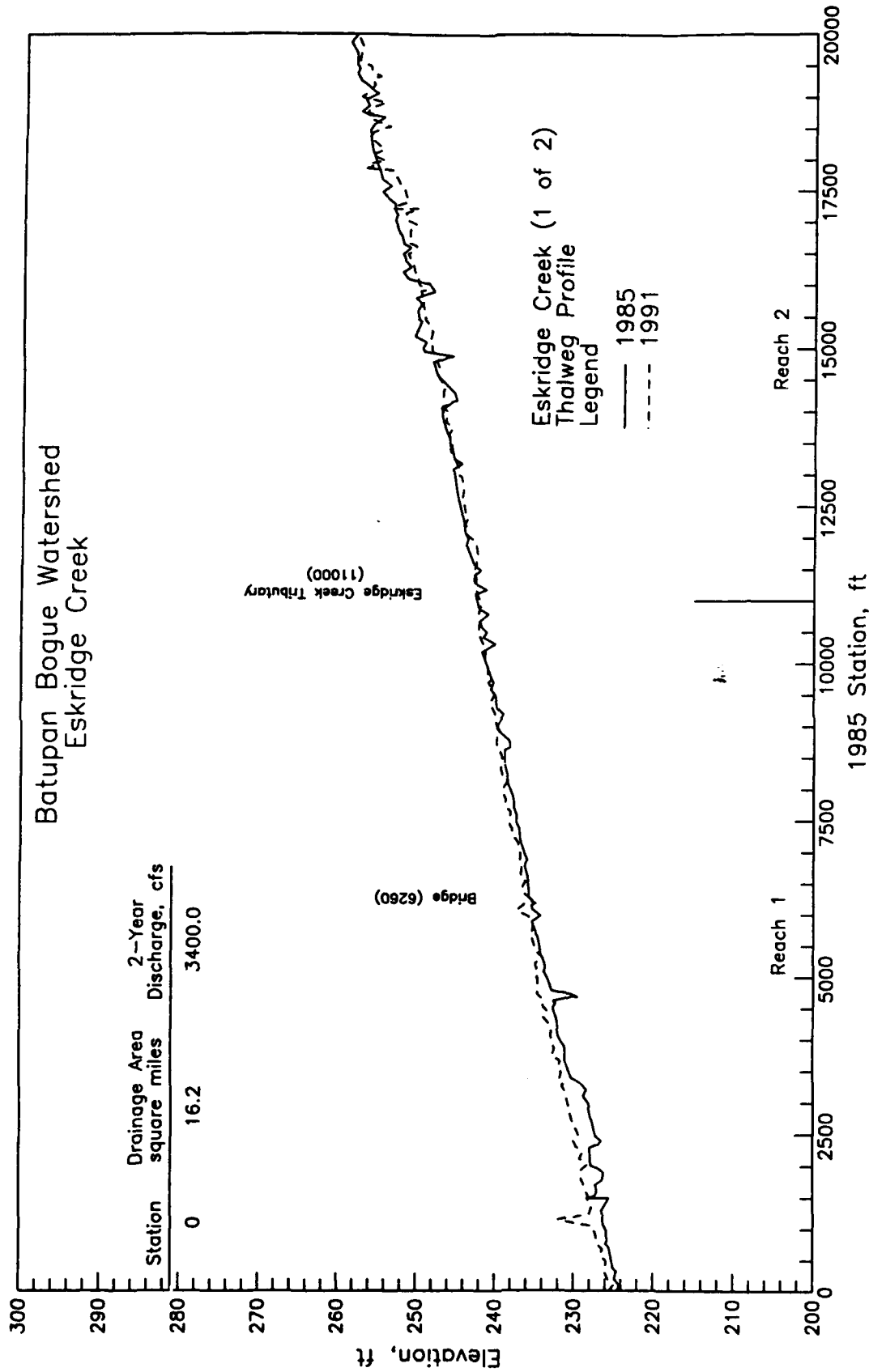


PLATE C10



Batupan Bogue Watershed Eskridge Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.2	3400.0



Eskridge Creek (1 of 2)
Thalweg Profile
Legend

— 1985
--- 1991

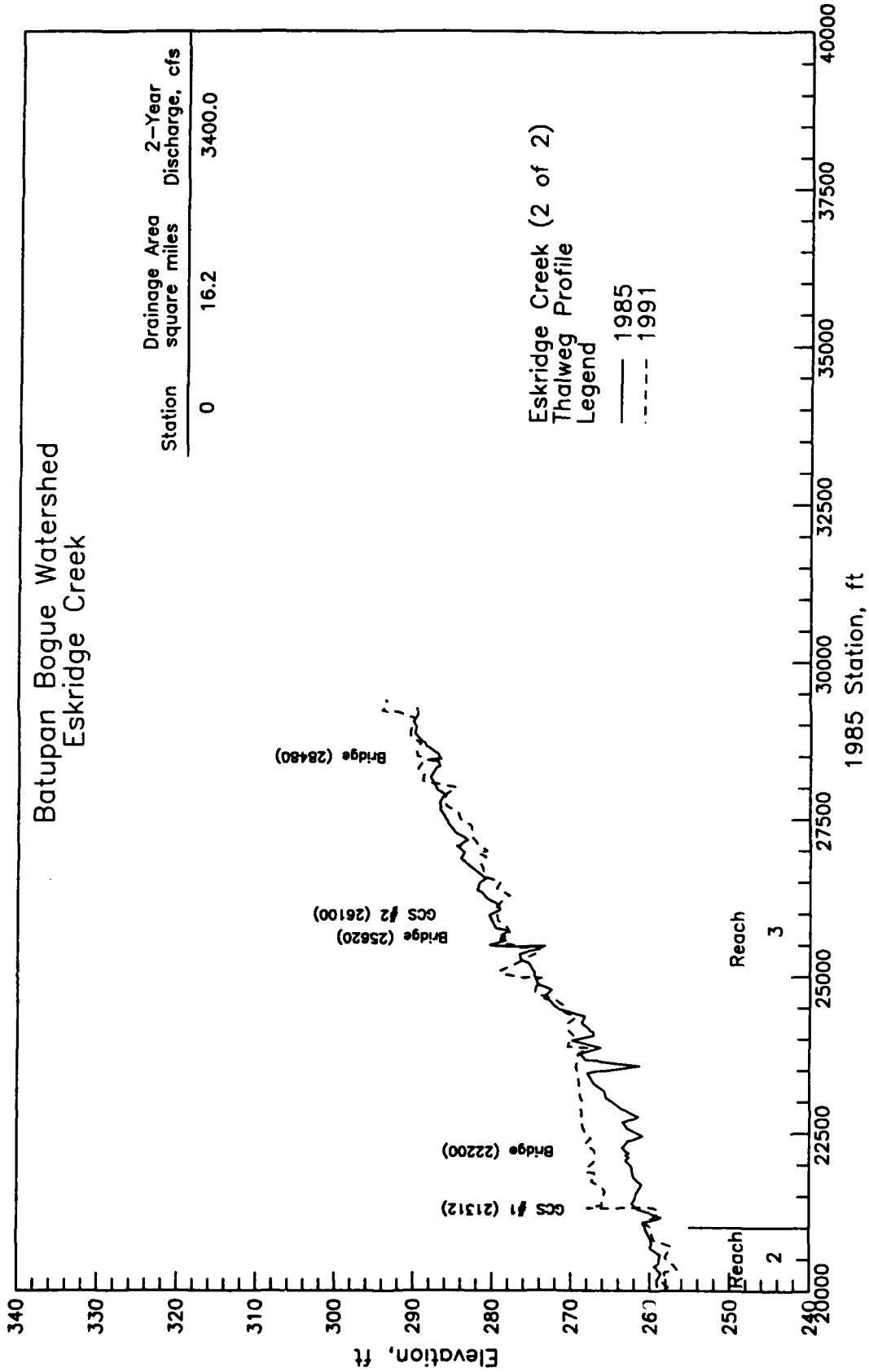
Reach 2

Reach 1

1985 Station, ft

Batupan Bogue Watershed Eskridge Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.2	3400.0



Batupan Bogue Watershed Sykes Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.8	3100.0

Bridge (16660)

RR Bridge (7030)
Hwy 51 Bridge (7160)

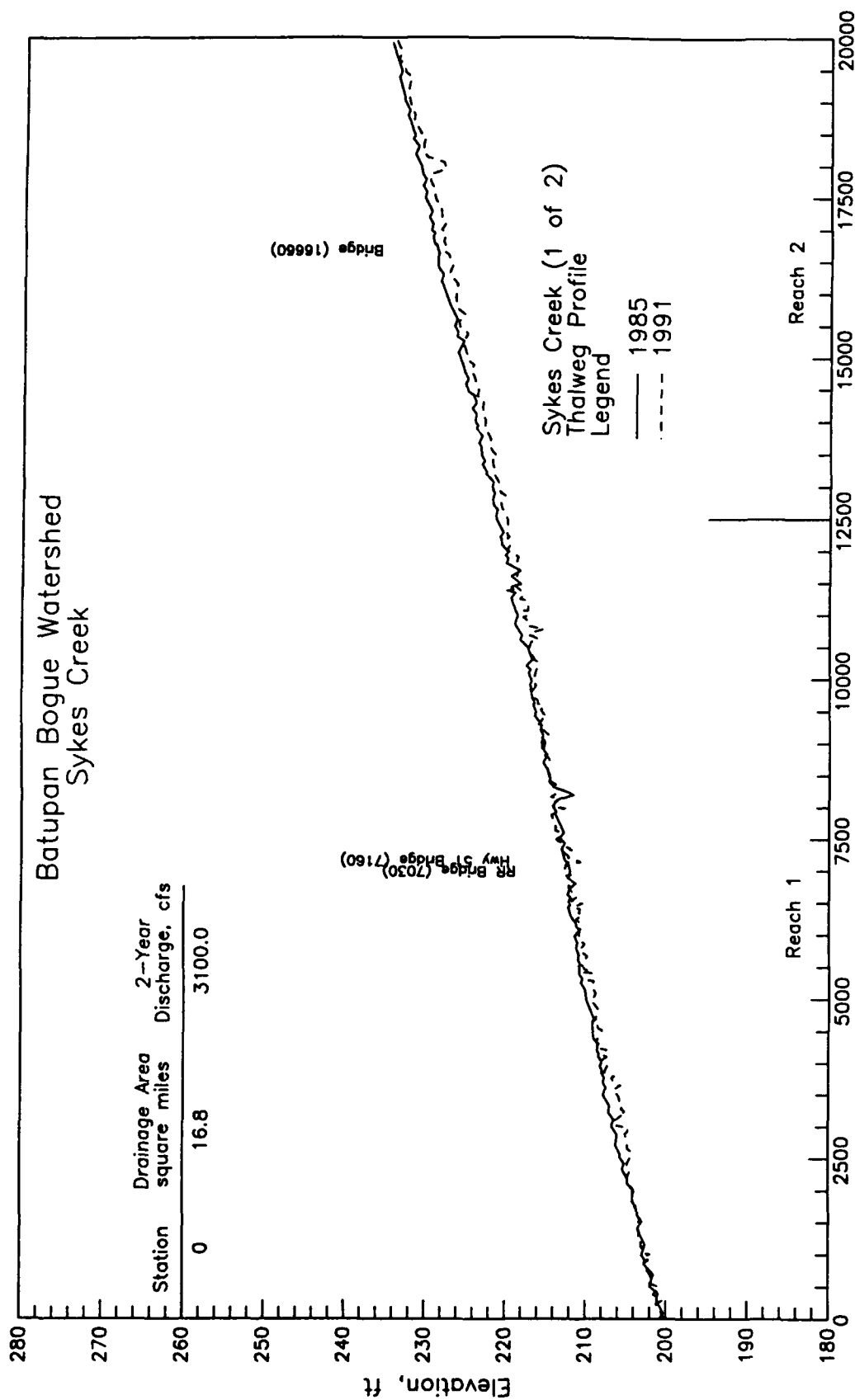
Sykes Creek (1 of 2)
Thalweg Profile
Legend

— 1985
--- 1991

Reach 1

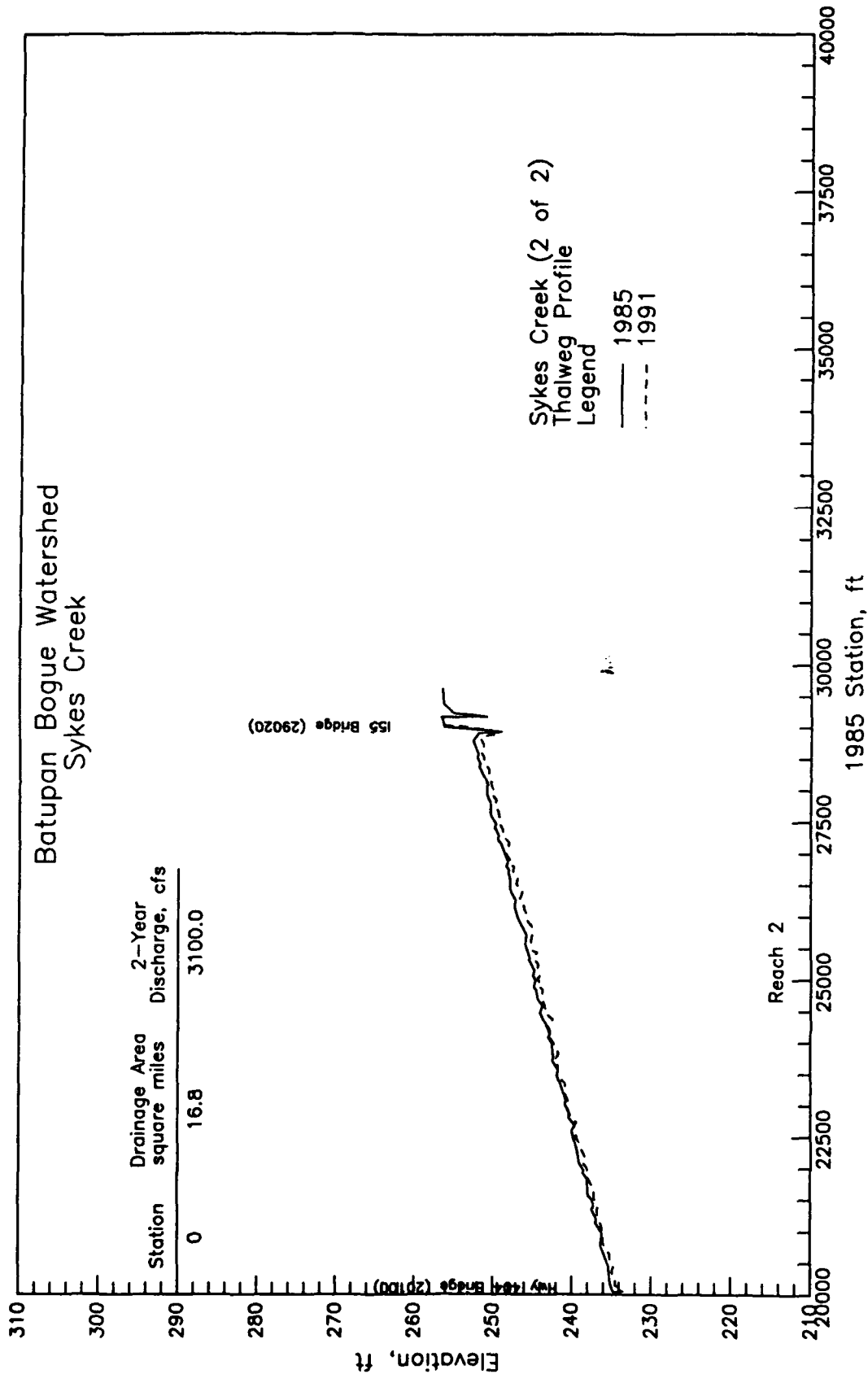
Reach 2

1985 Station, ft



Batupan Bogue Watershed Sykes Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.8	3100.0



Sykes Creek (2 of 2)
Thalweg Profile
Legend
— 1985
--- 1991

Reach 2

1985 Station, ft

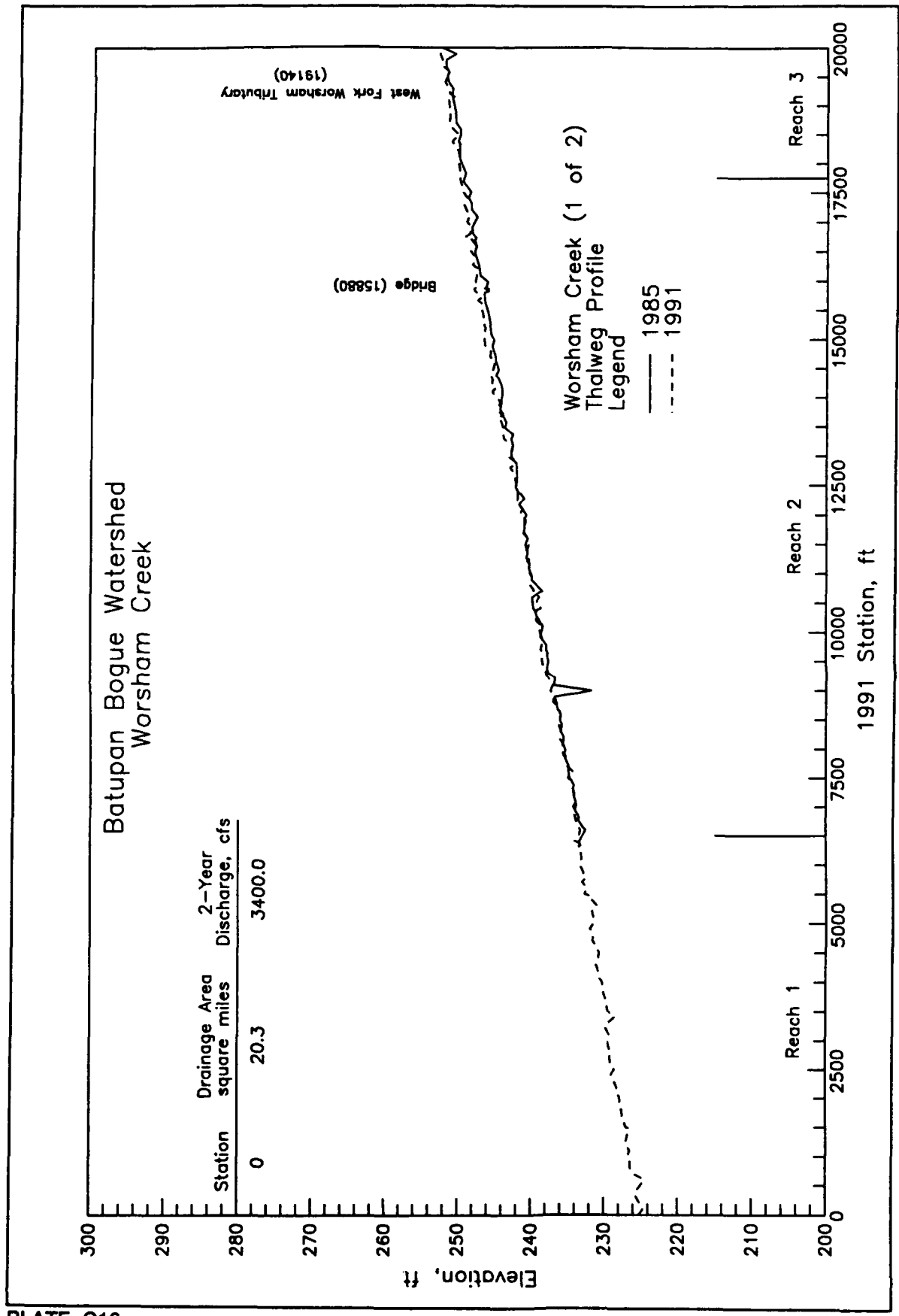
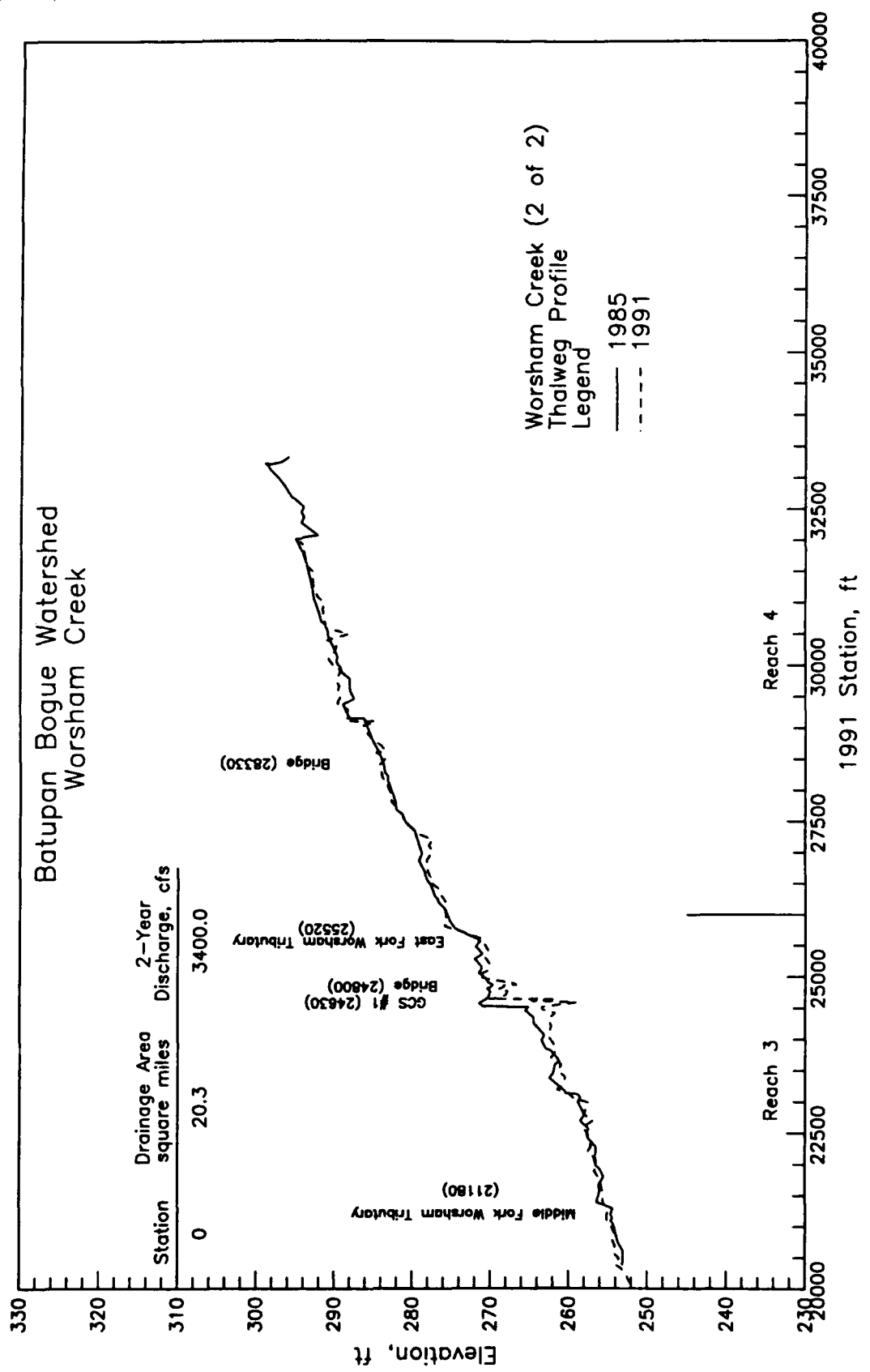
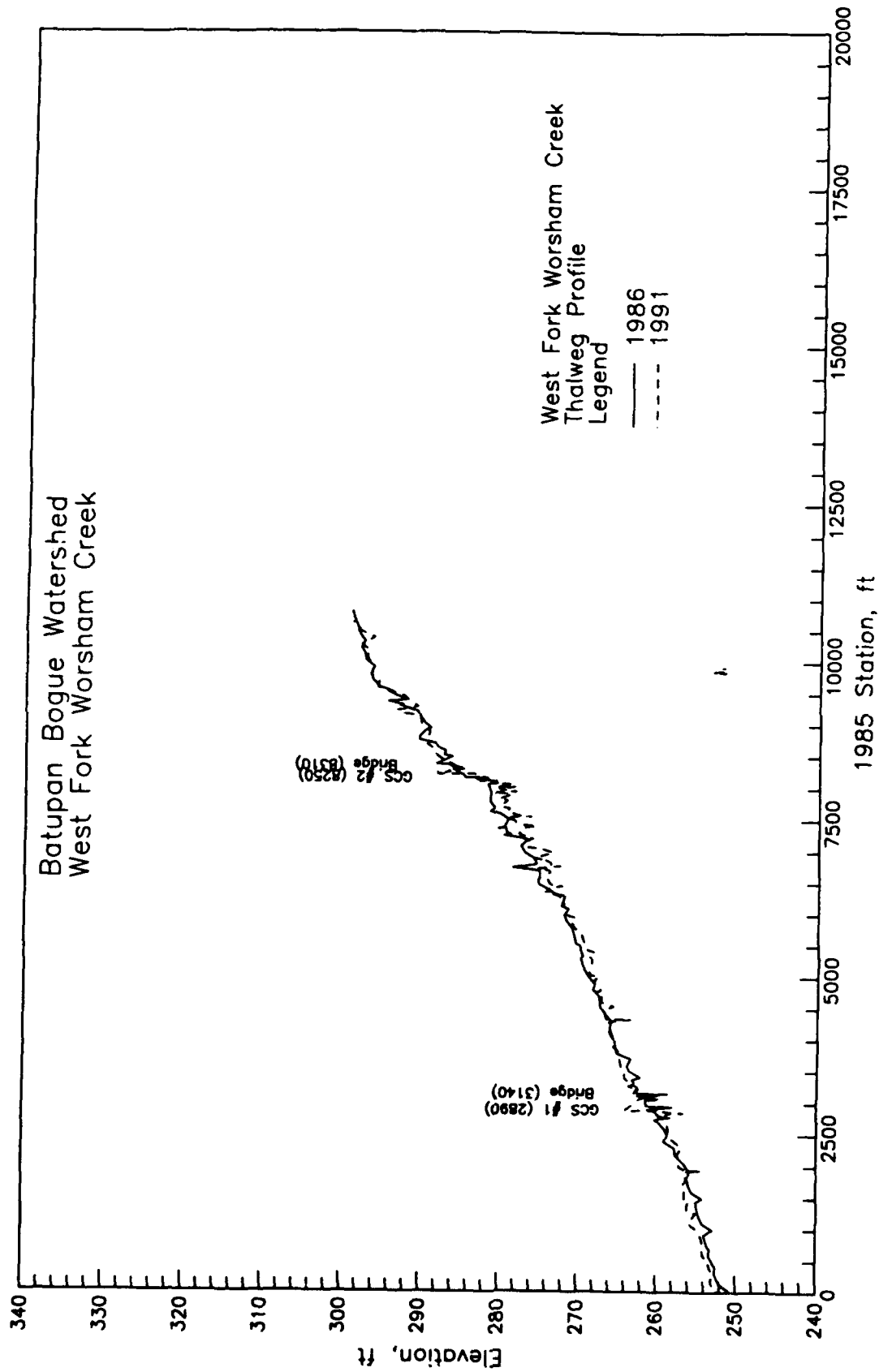


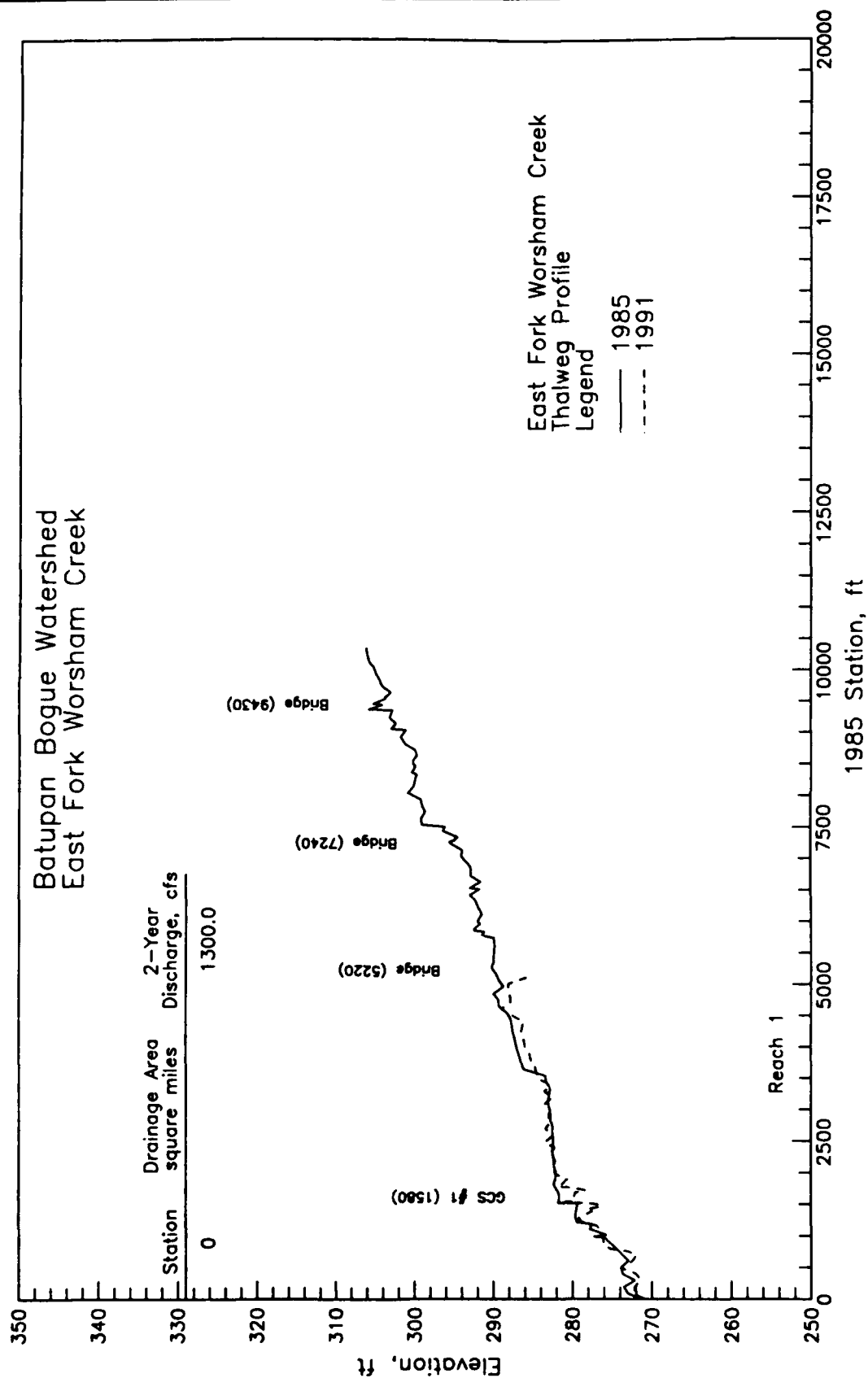
PLATE C16



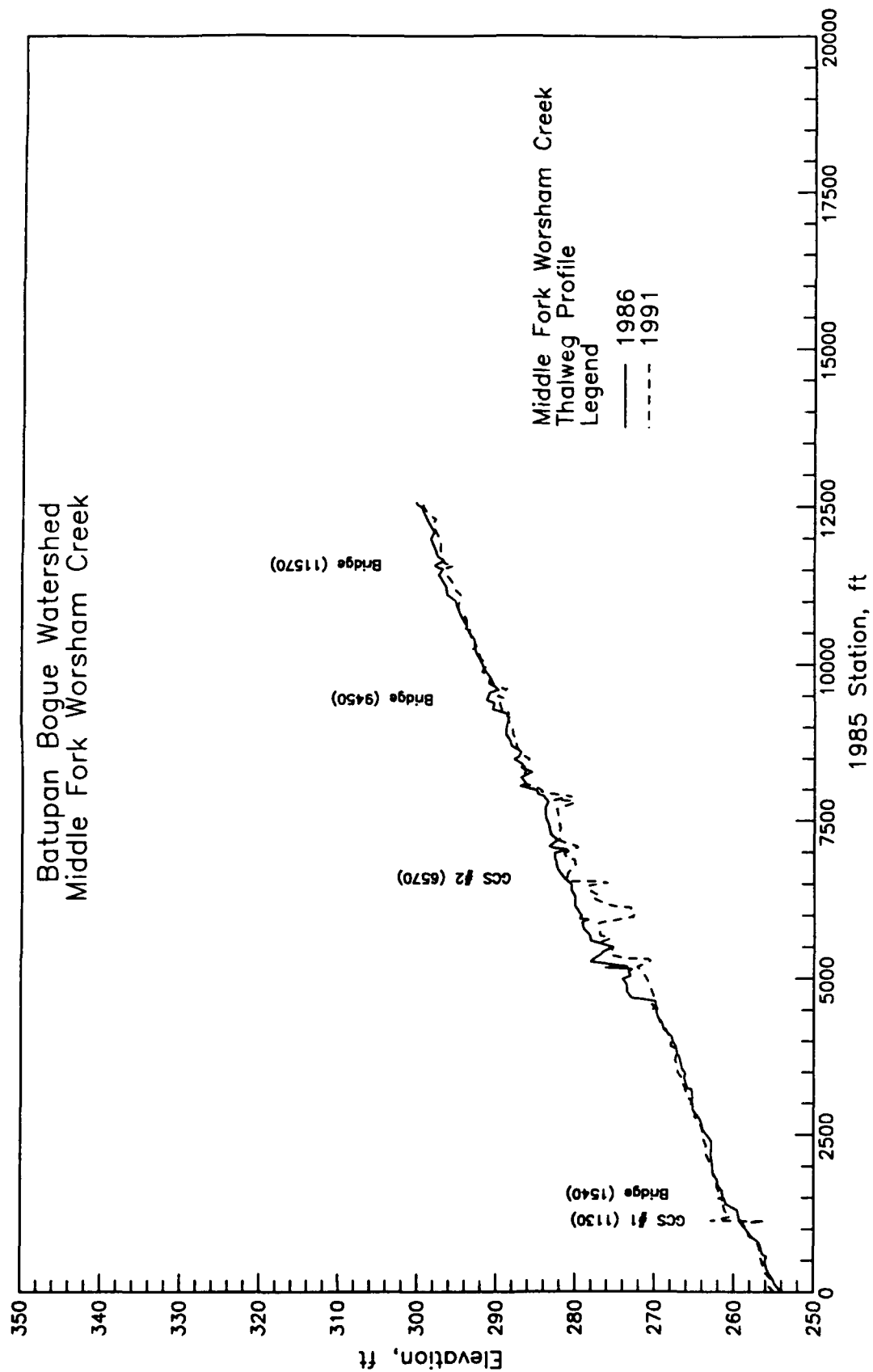
Batupan Bogue Watershed
West Fork Worsham Creek



Batupan Bogue Watershed East Fork Worsham Creek



Batupan Bogue Watershed Middle Fork Worsham Creek



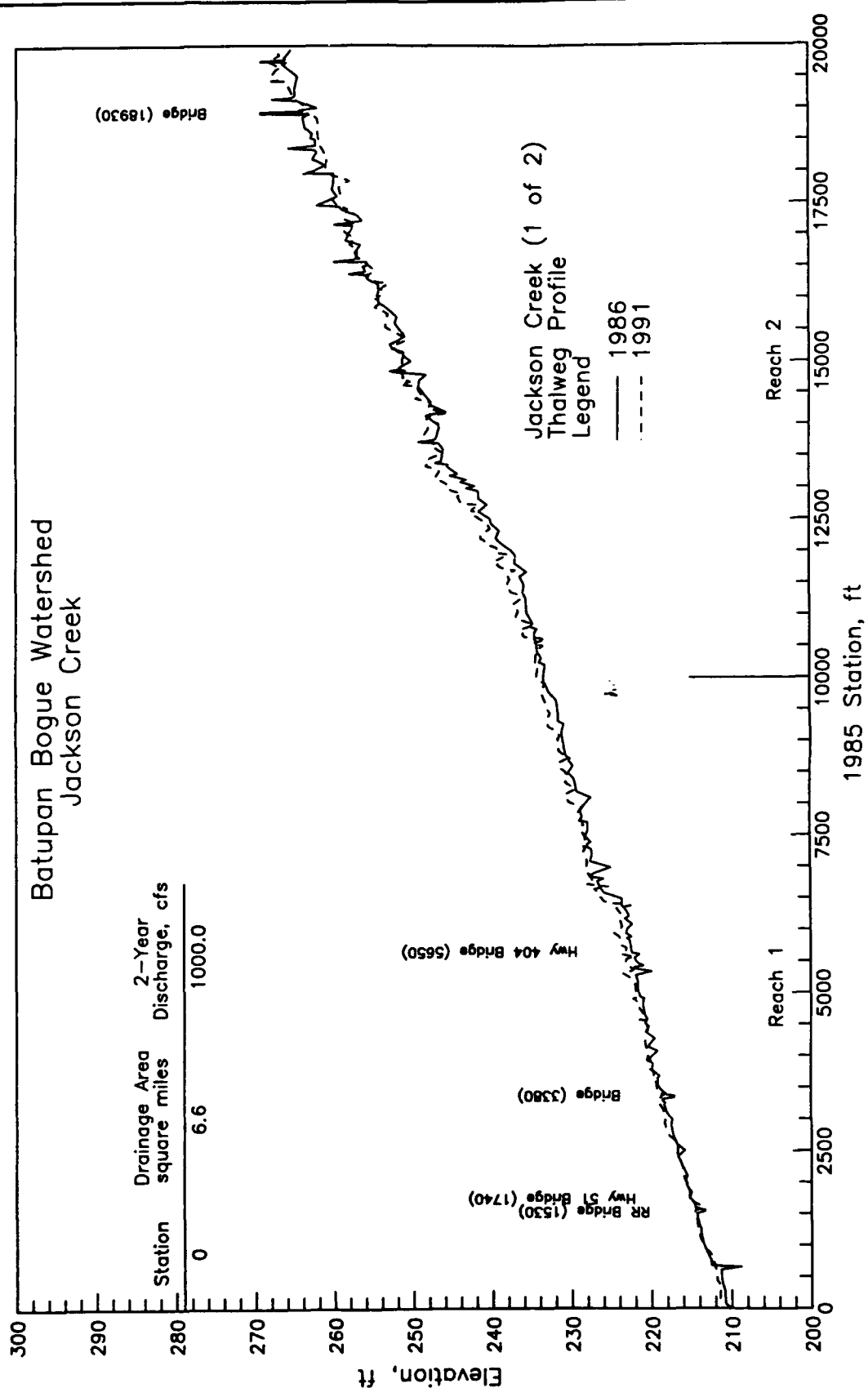
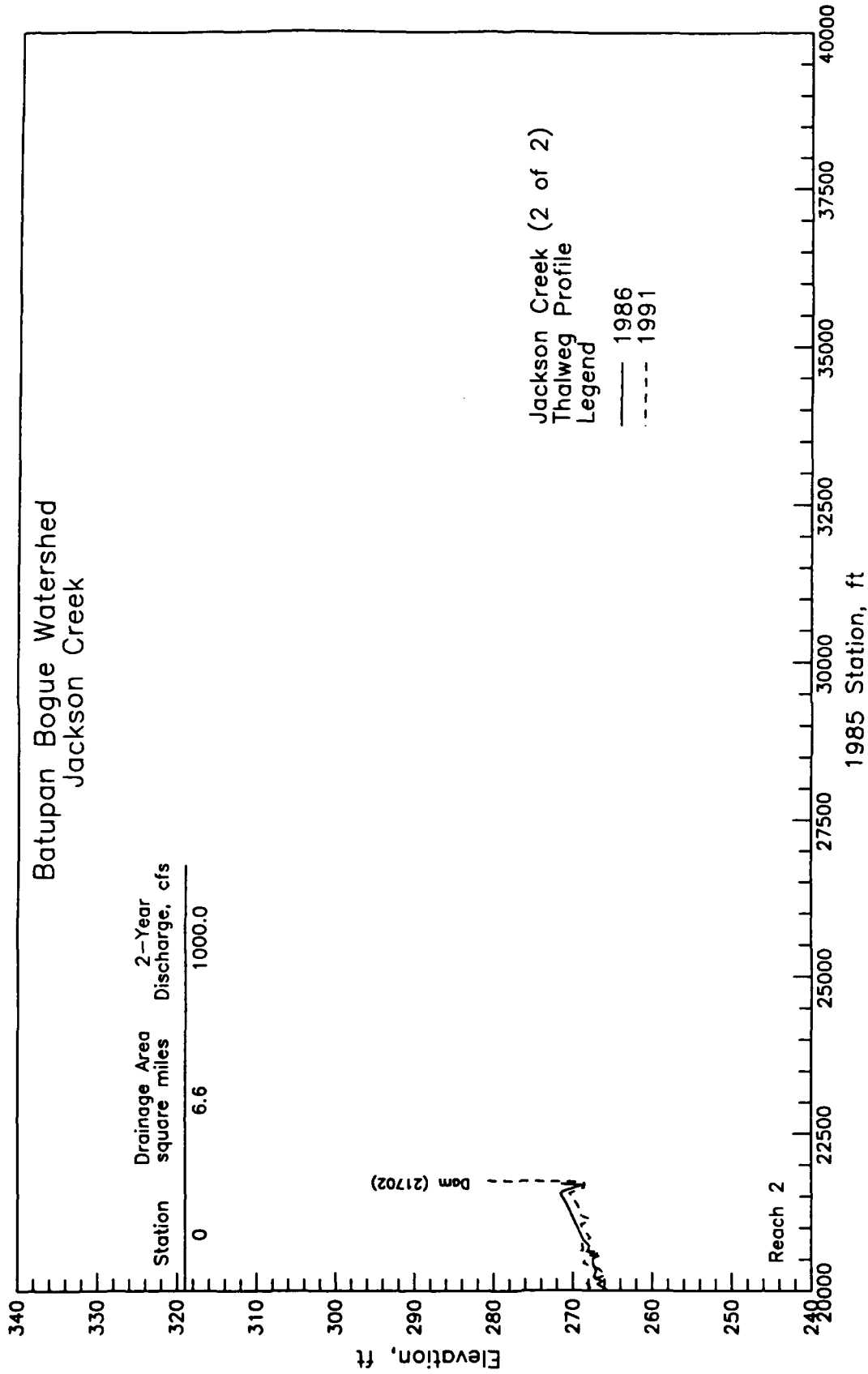


PLATE C21

Batupan Bogue Watershed Jackson Creek



Jackson Creek (2 of 2)

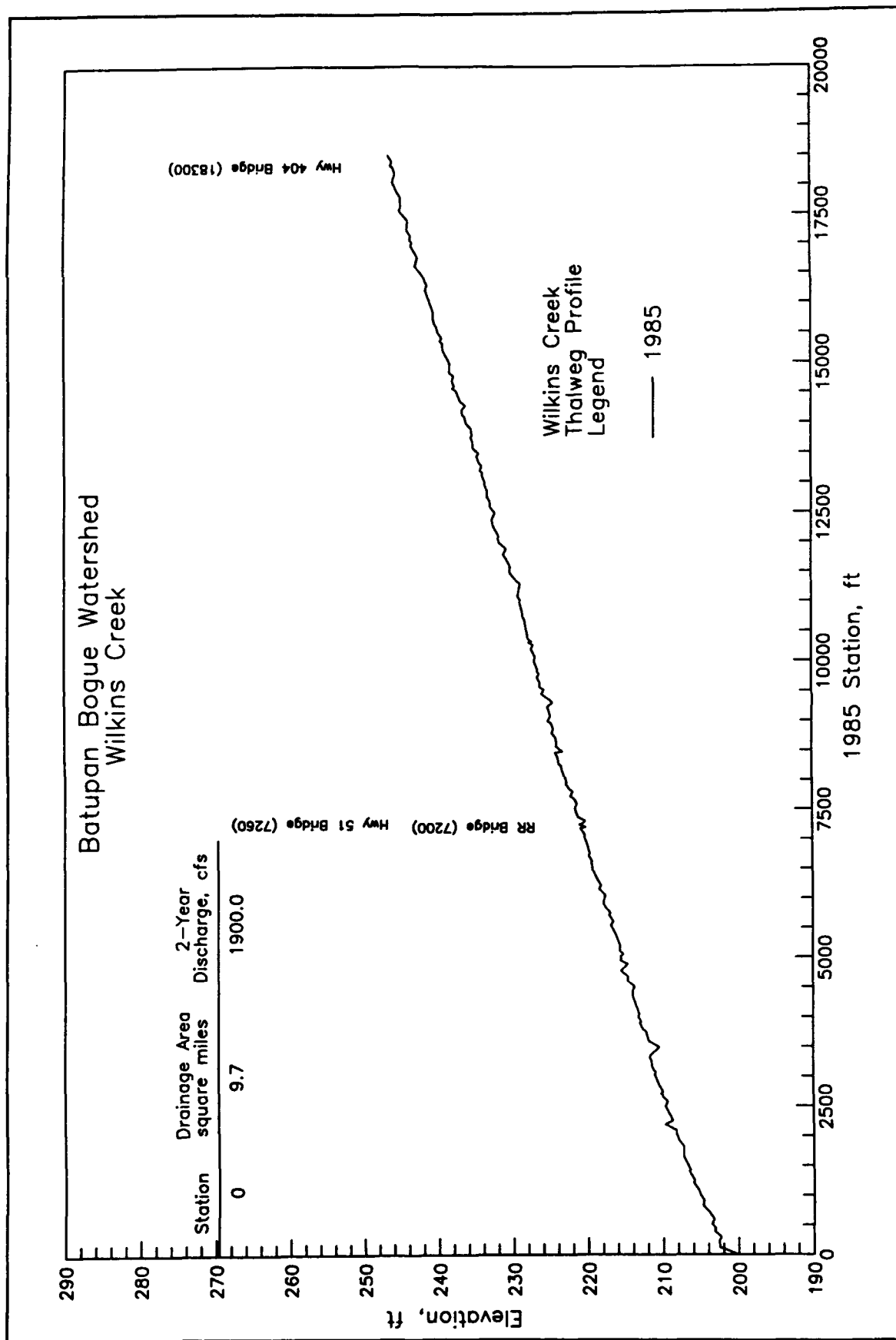
Thalweg Profile

Legend

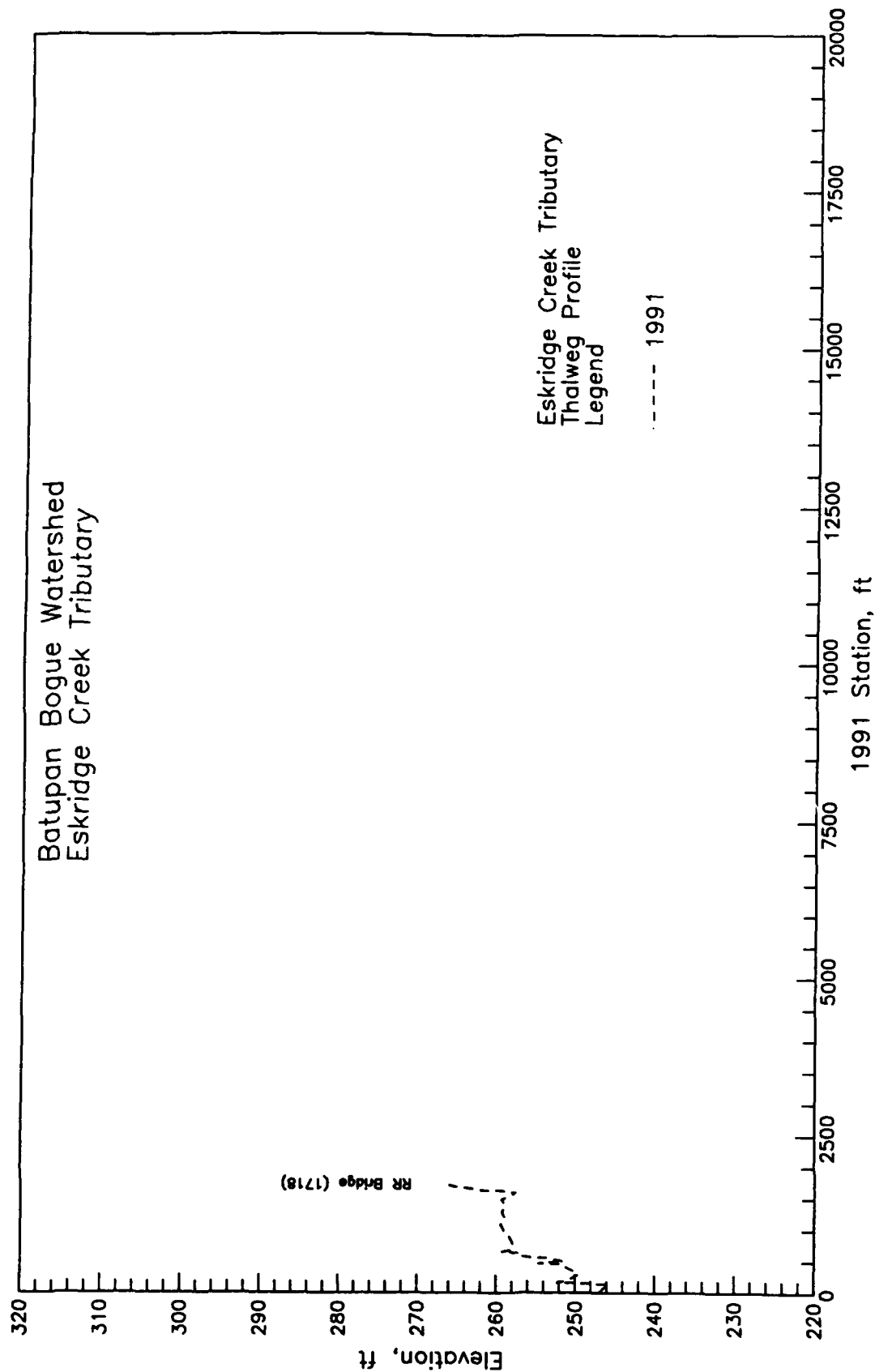
— 1986

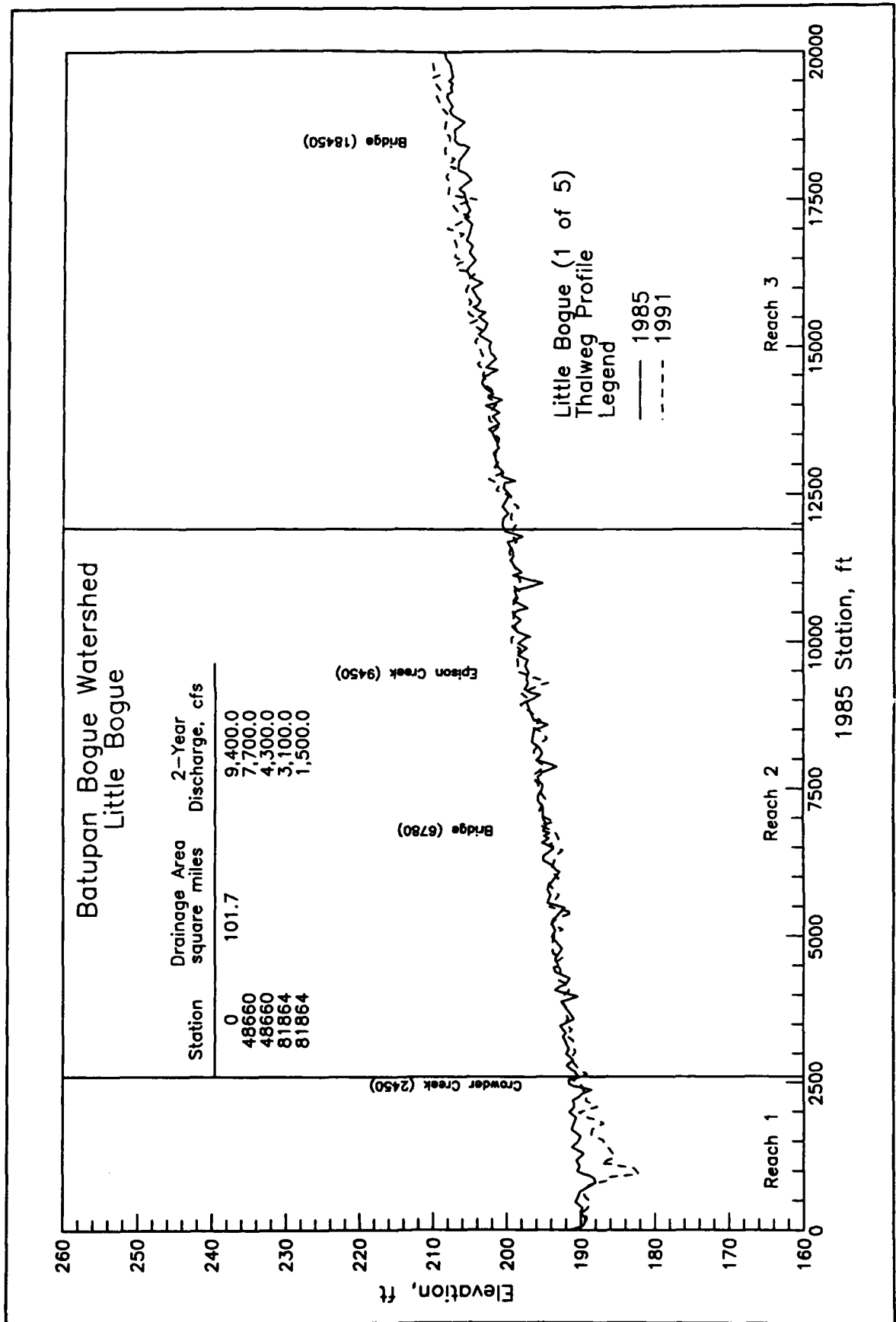
- - - 1991

1985 Station, ft



Batupan Bogue Watershed
Eskridge Creek Tributary

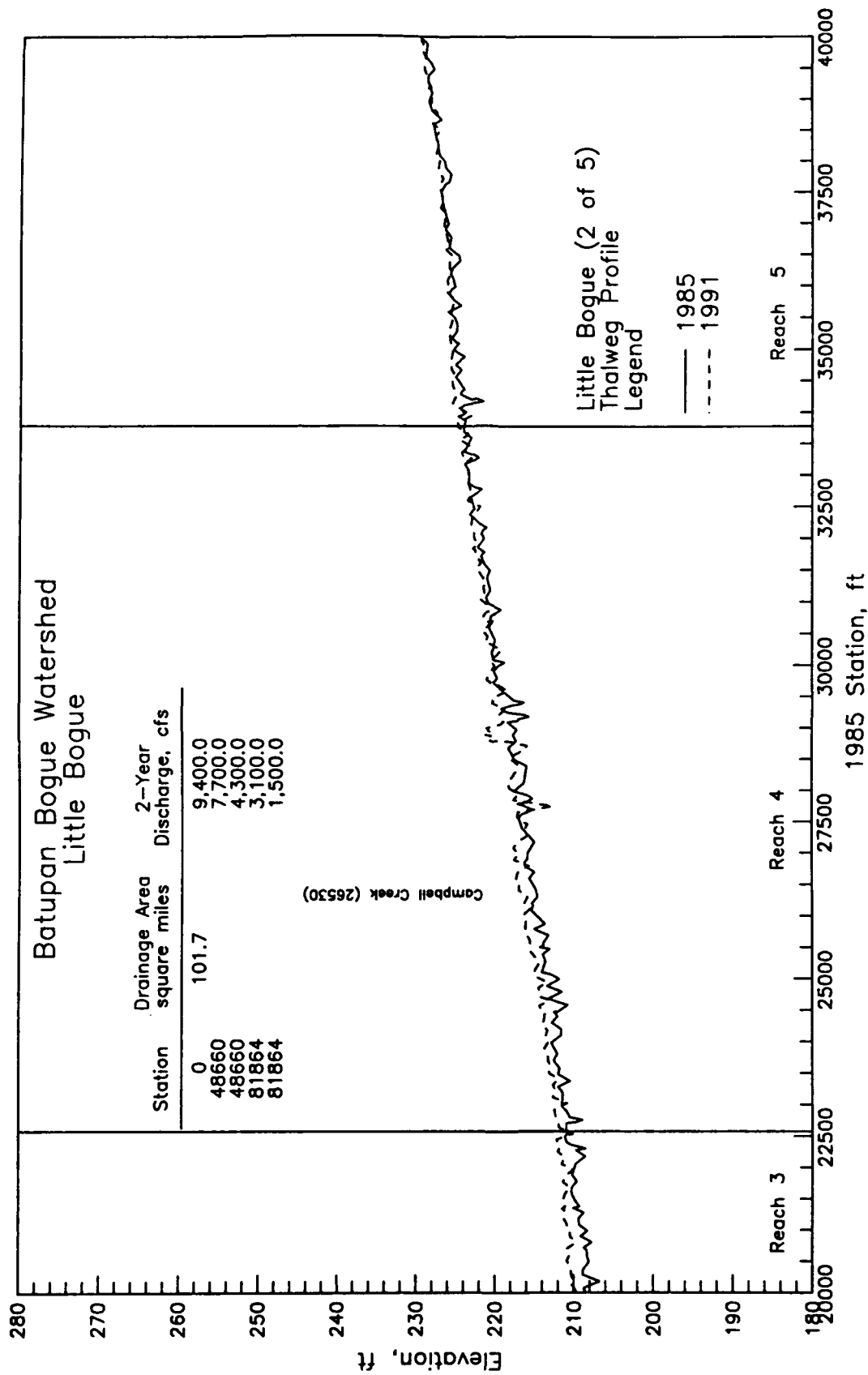




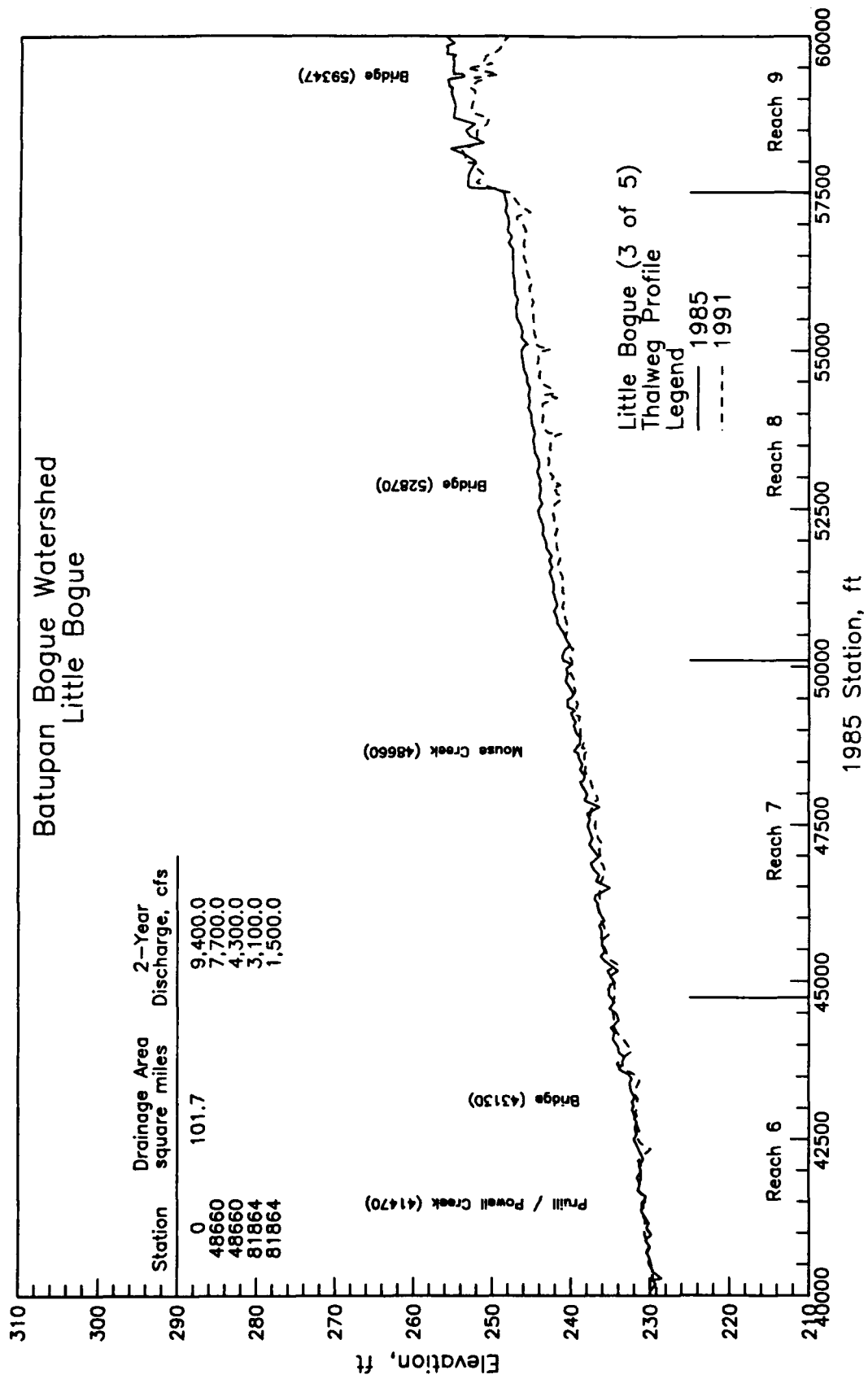
Batupan Bogue Watershed Little Bogue

Station	Drainage Area square miles	2-Year Discharge, cfs
0	101.7	9,400.0
48660		7,700.0
48660		4,300.0
81864		3,100.0
81864		1,500.0

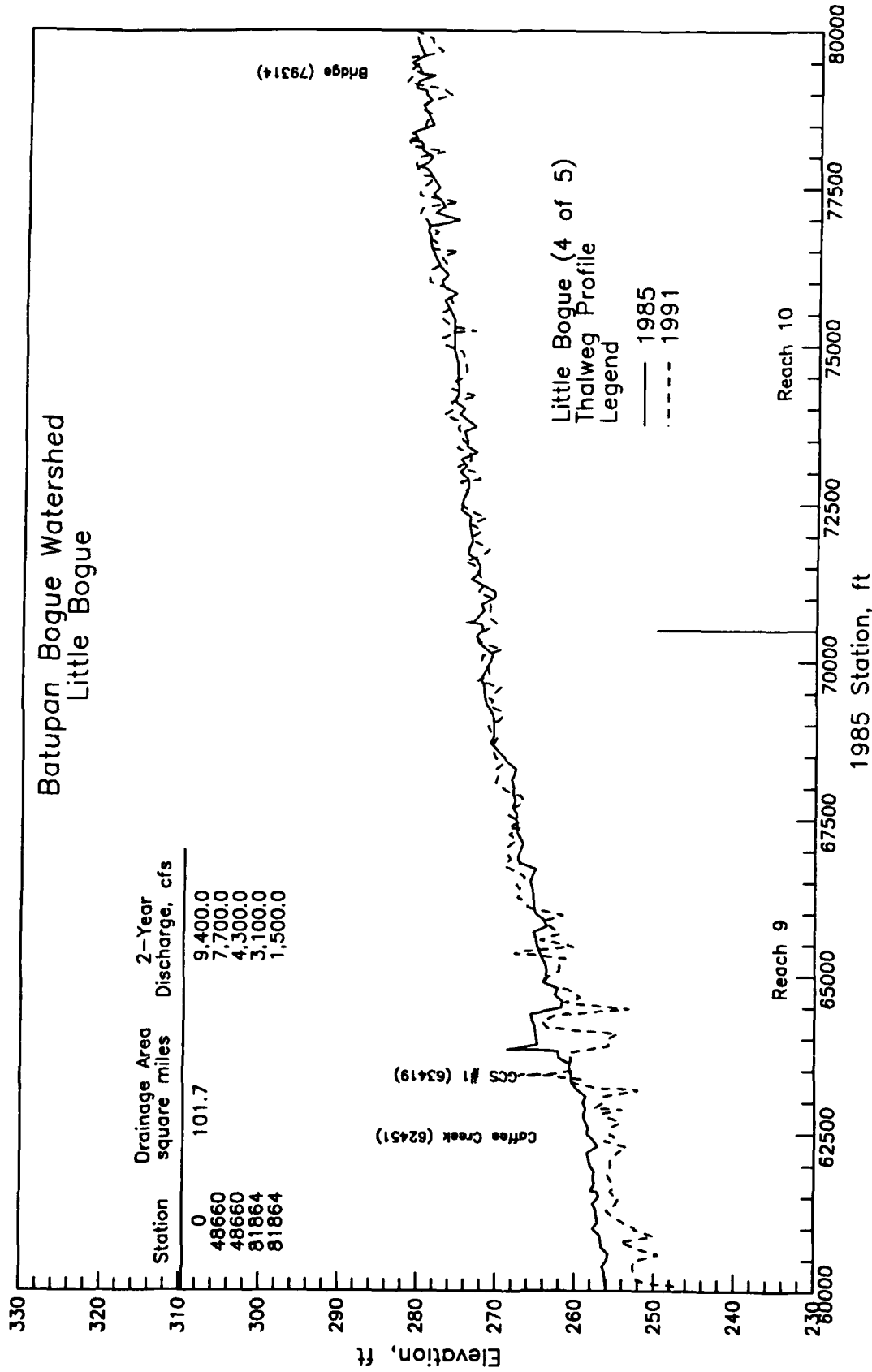
Campbell Creek (26530)



Batupan Bogue Watershed Little Bogue



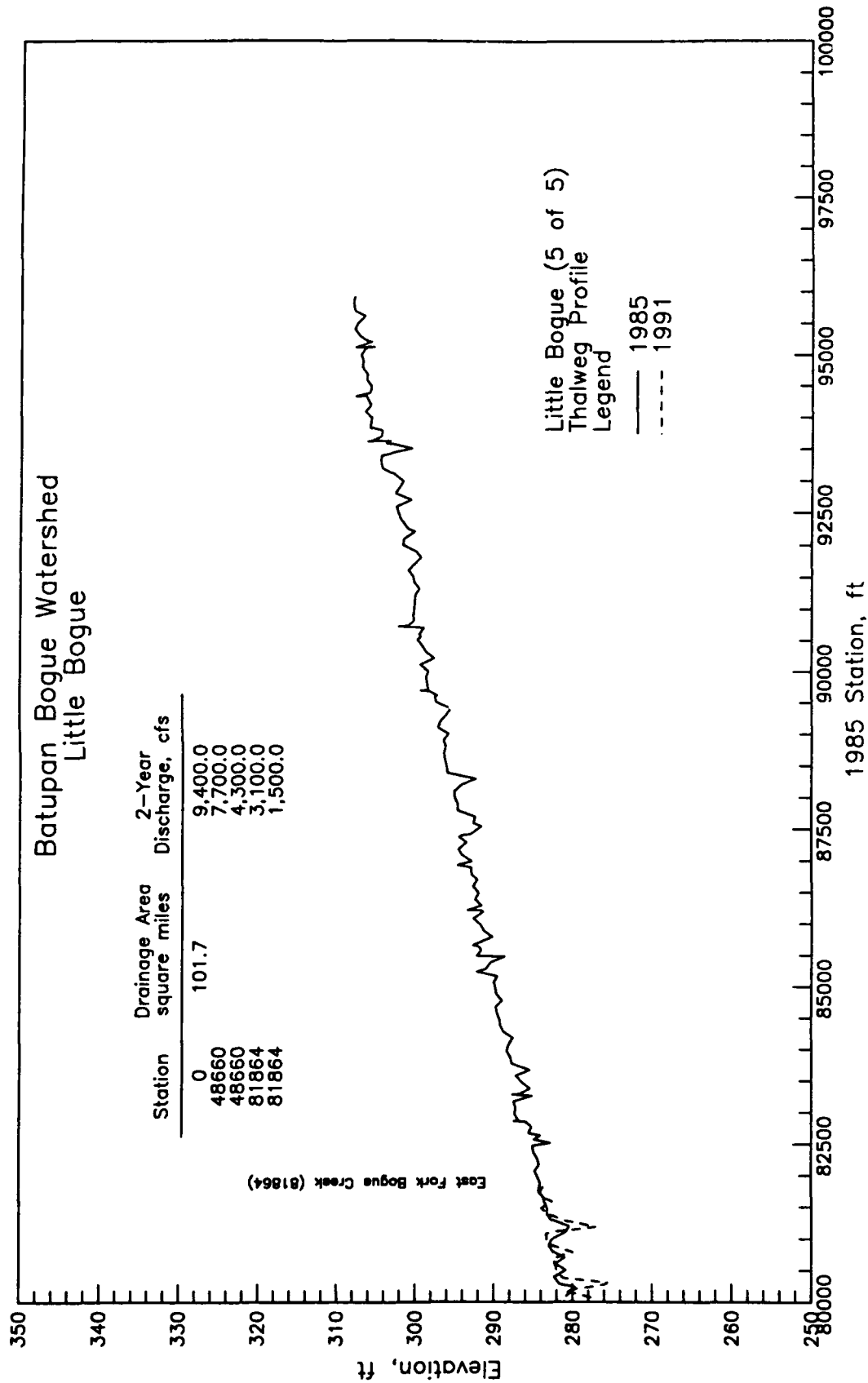
Batupan Bogue Watershed Little Bogue



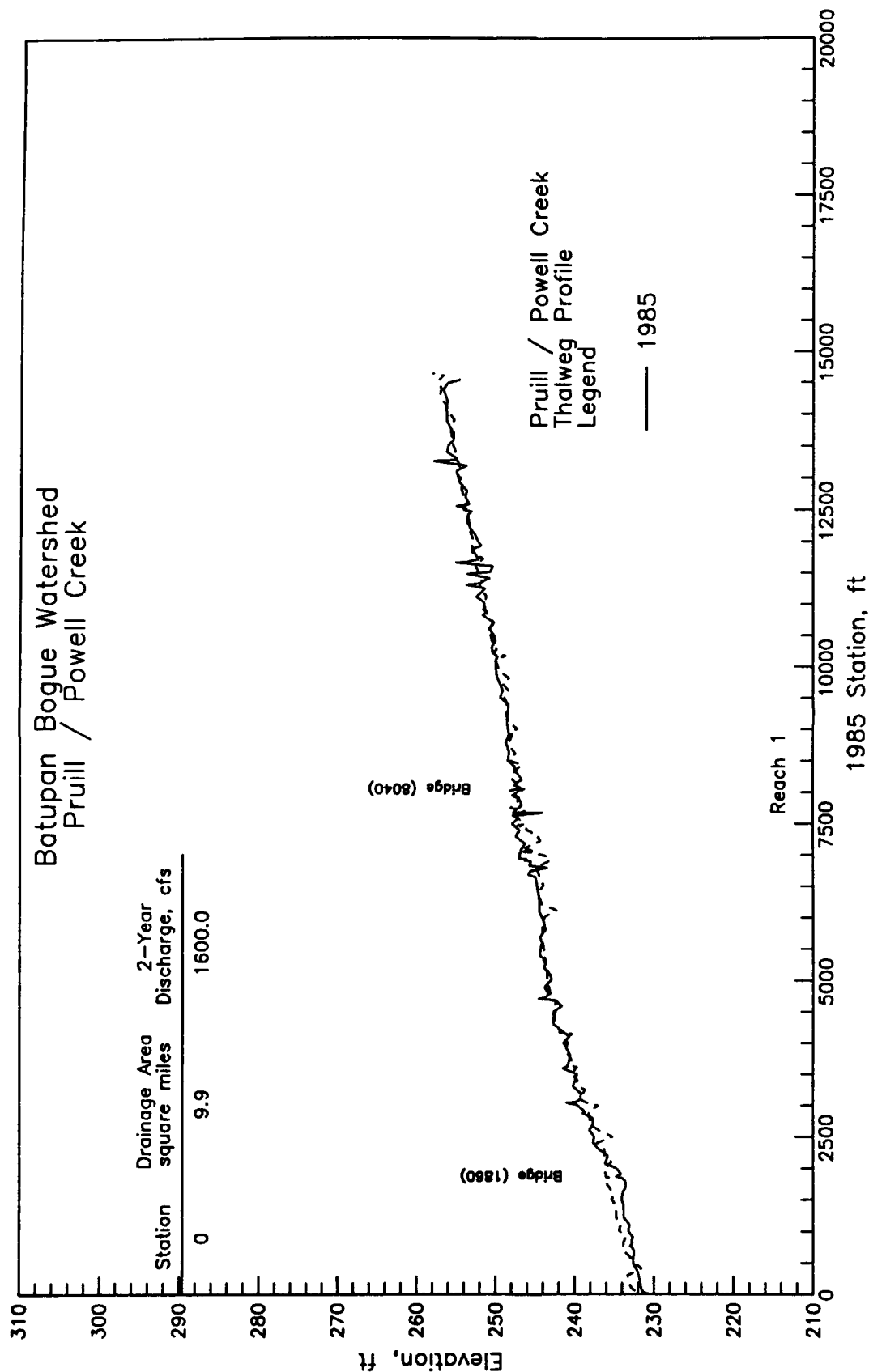
Batupan Bogue Watershed Little Bogue

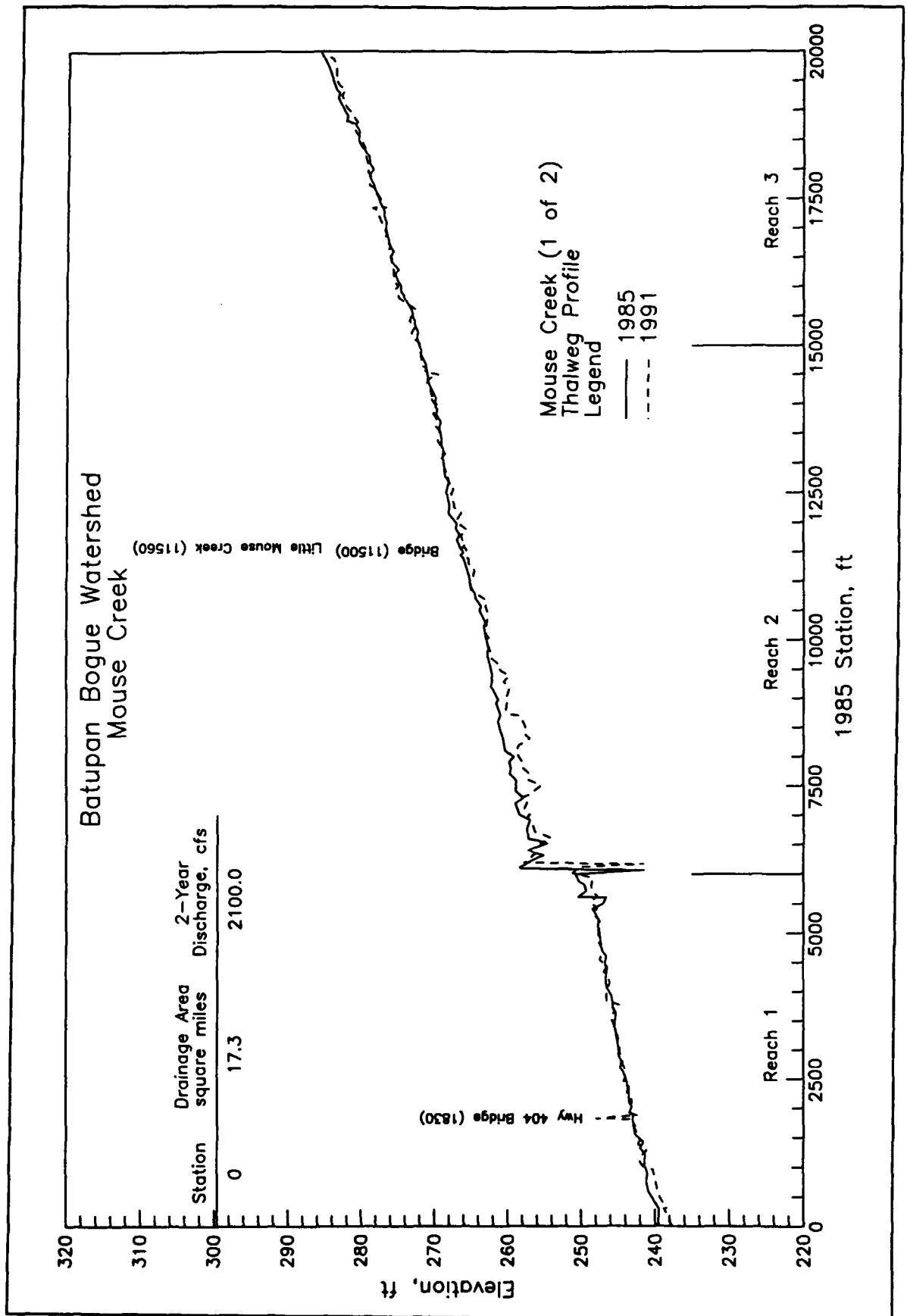
Station	Drainage Area square miles	2-Year Discharge, cfs
0	101.7	9,400.0
48660		7,700.0
48660		4,300.0
81864		3,100.0
81864		1,500.0

East Fork Bogue Creek (81864)

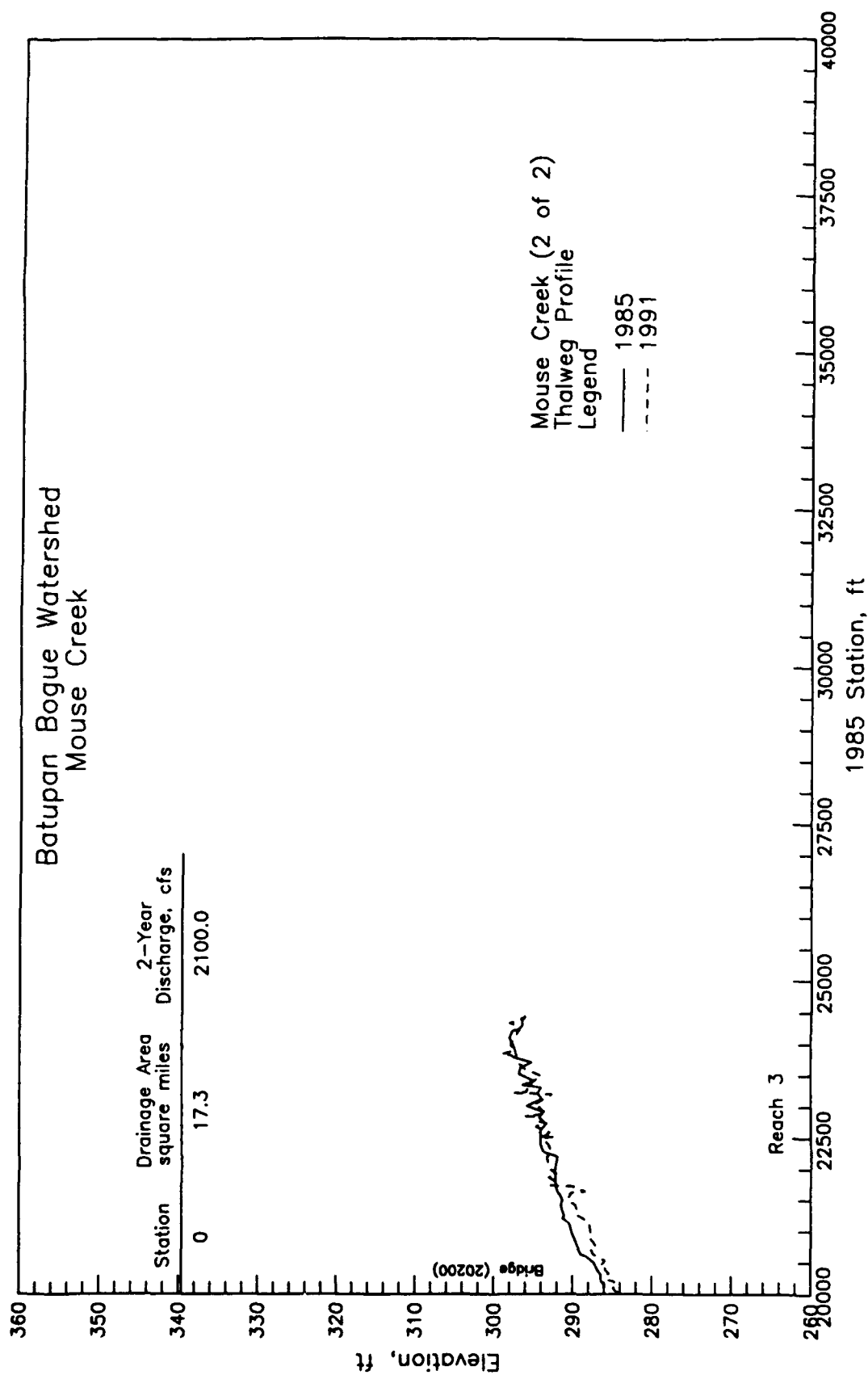


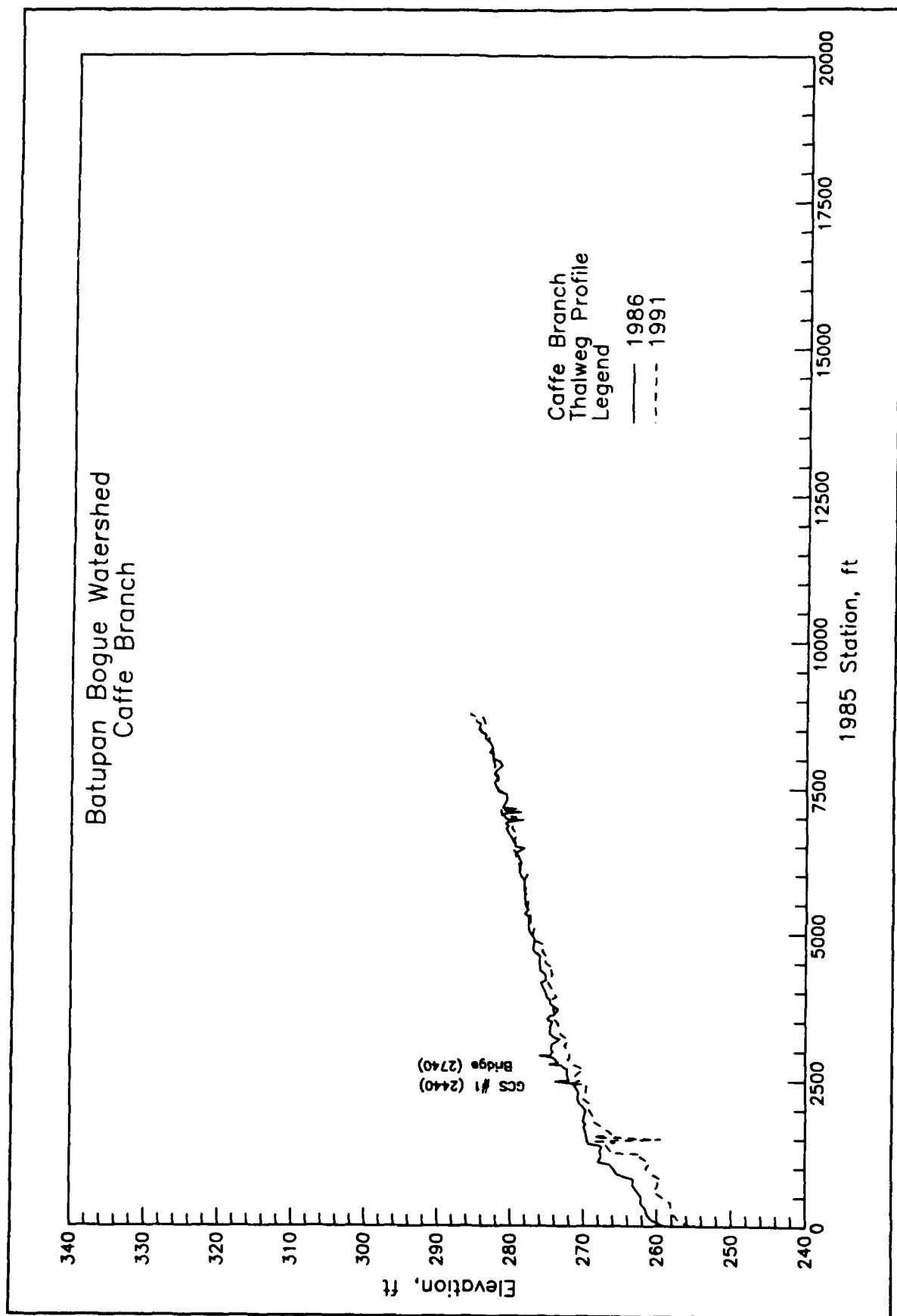
Batupan Bogue Watershed Pruill / Powell Creek



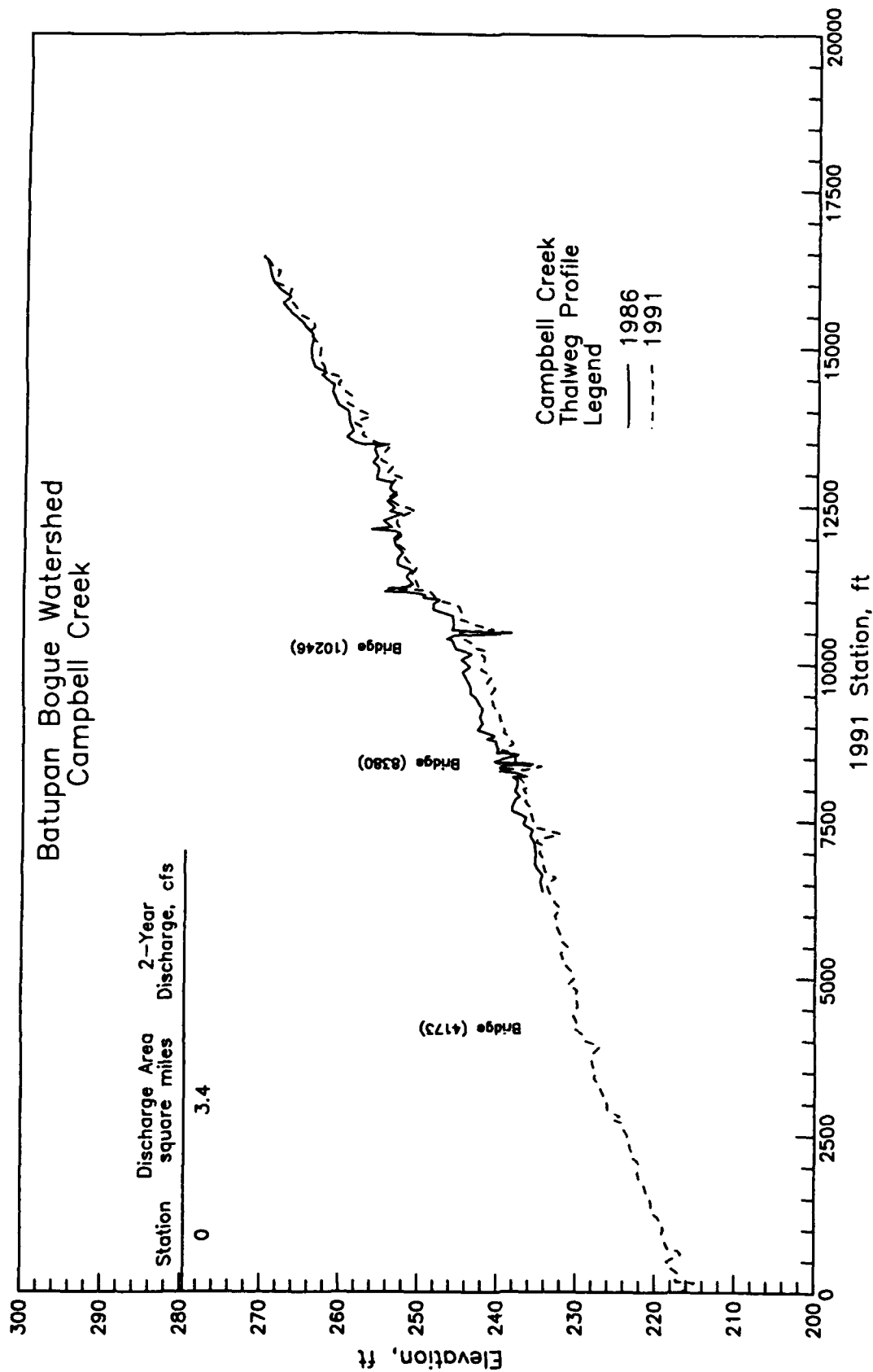


Batupan Bogue Watershed Mouse Creek

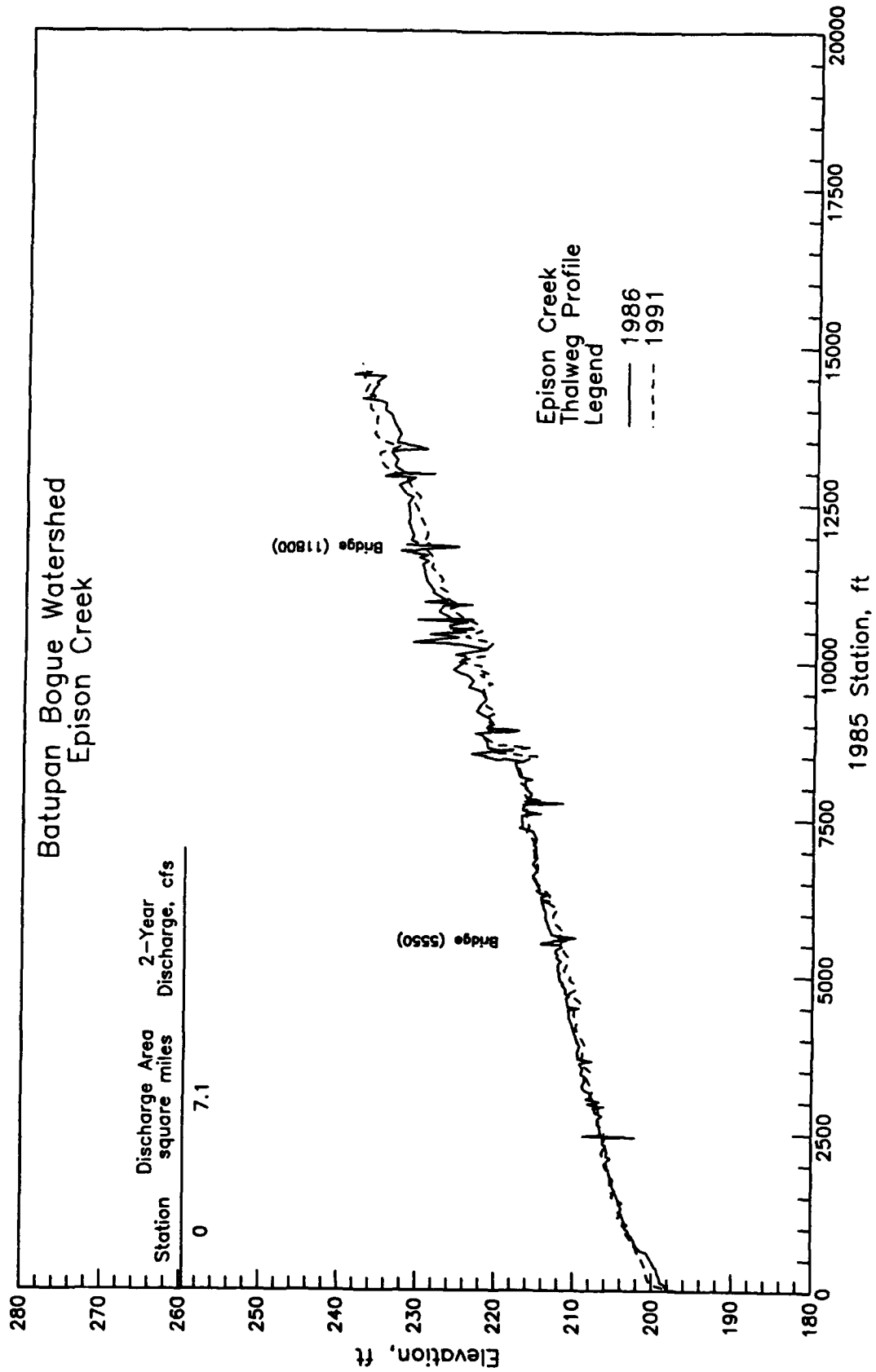




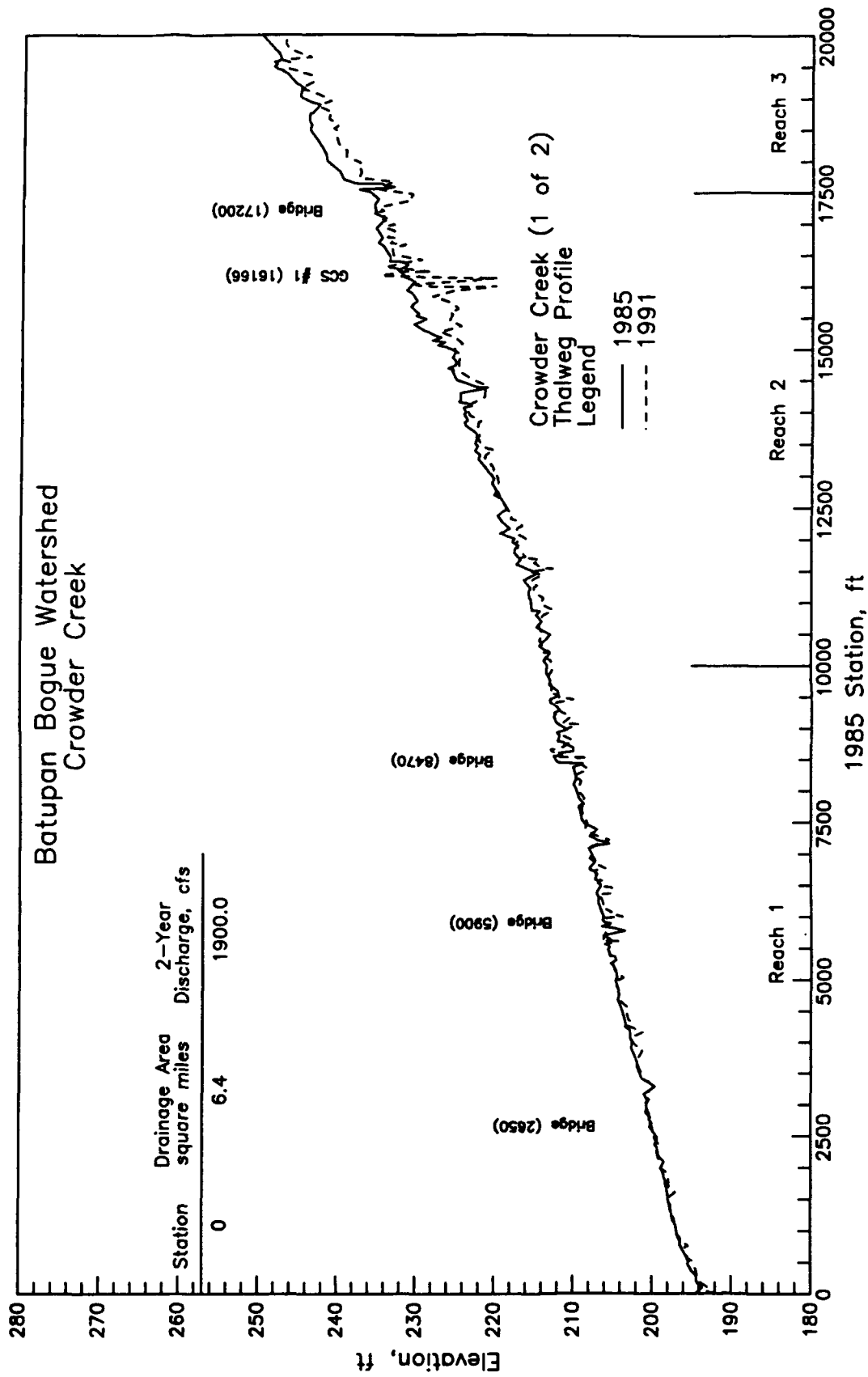
Batupan Bogue Watershed Campbell Creek



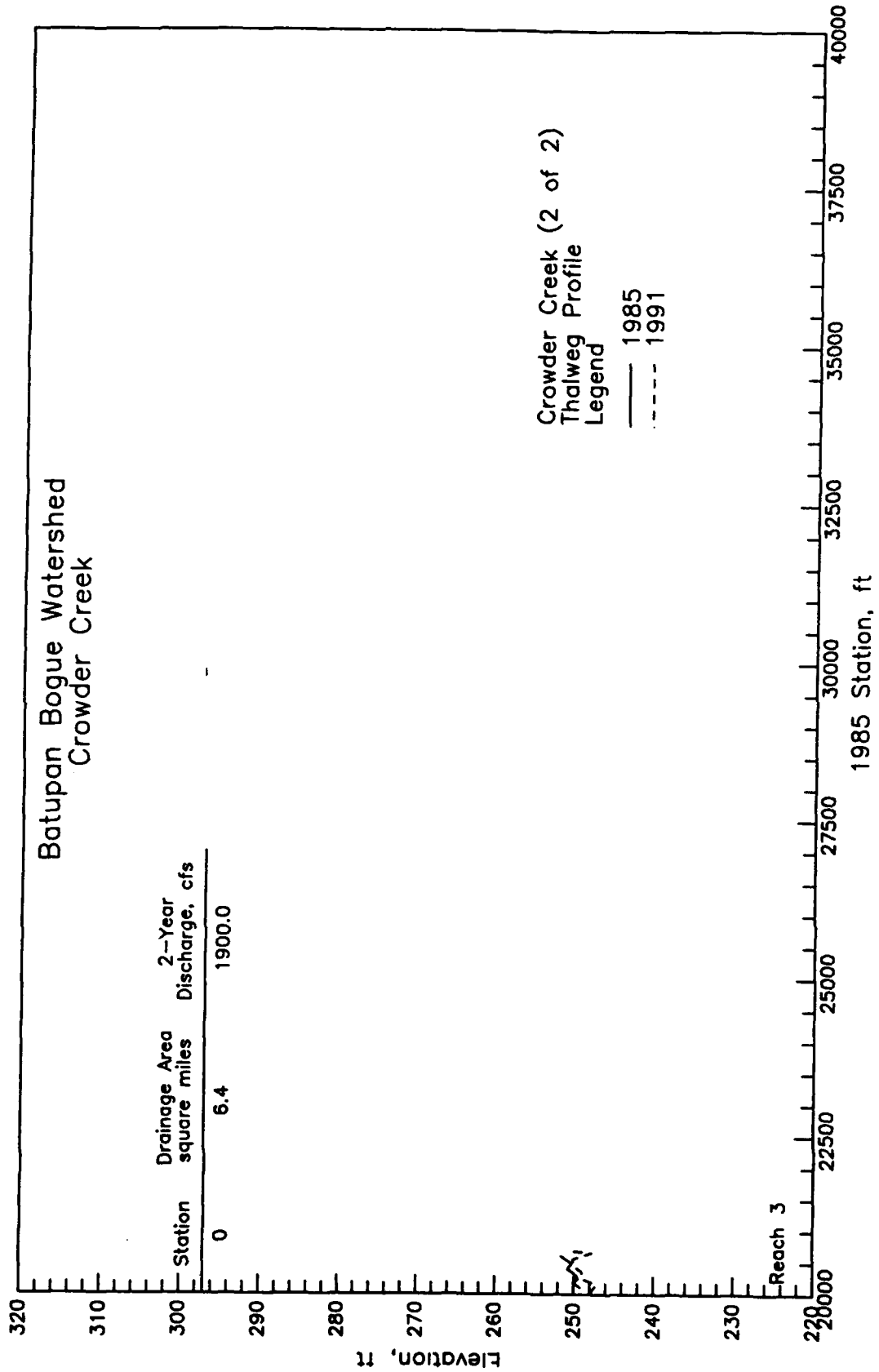
Batupan Bogue Watershed
Epison Creek



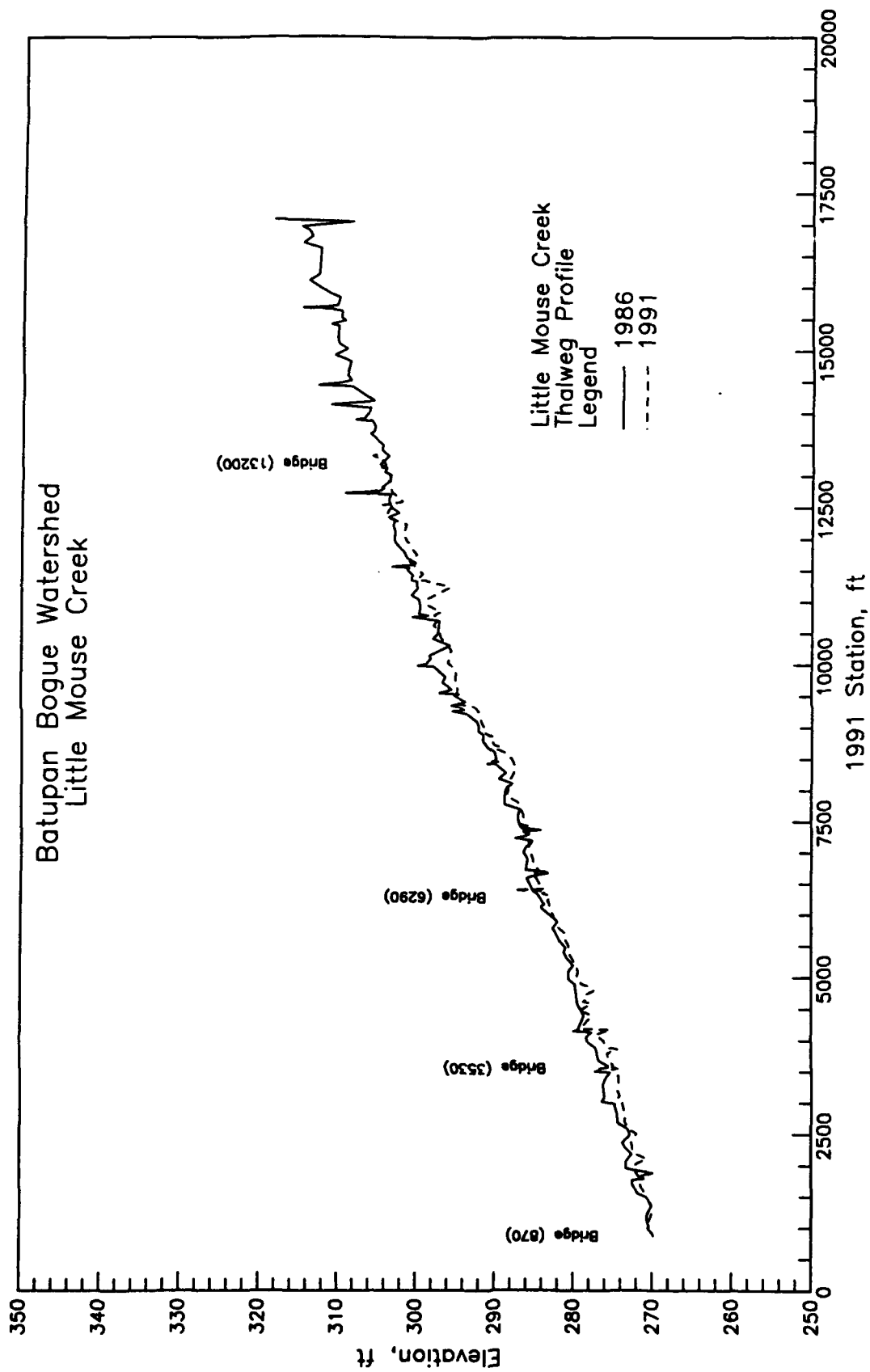
Batupan Bogue Watershed Crowder Creek

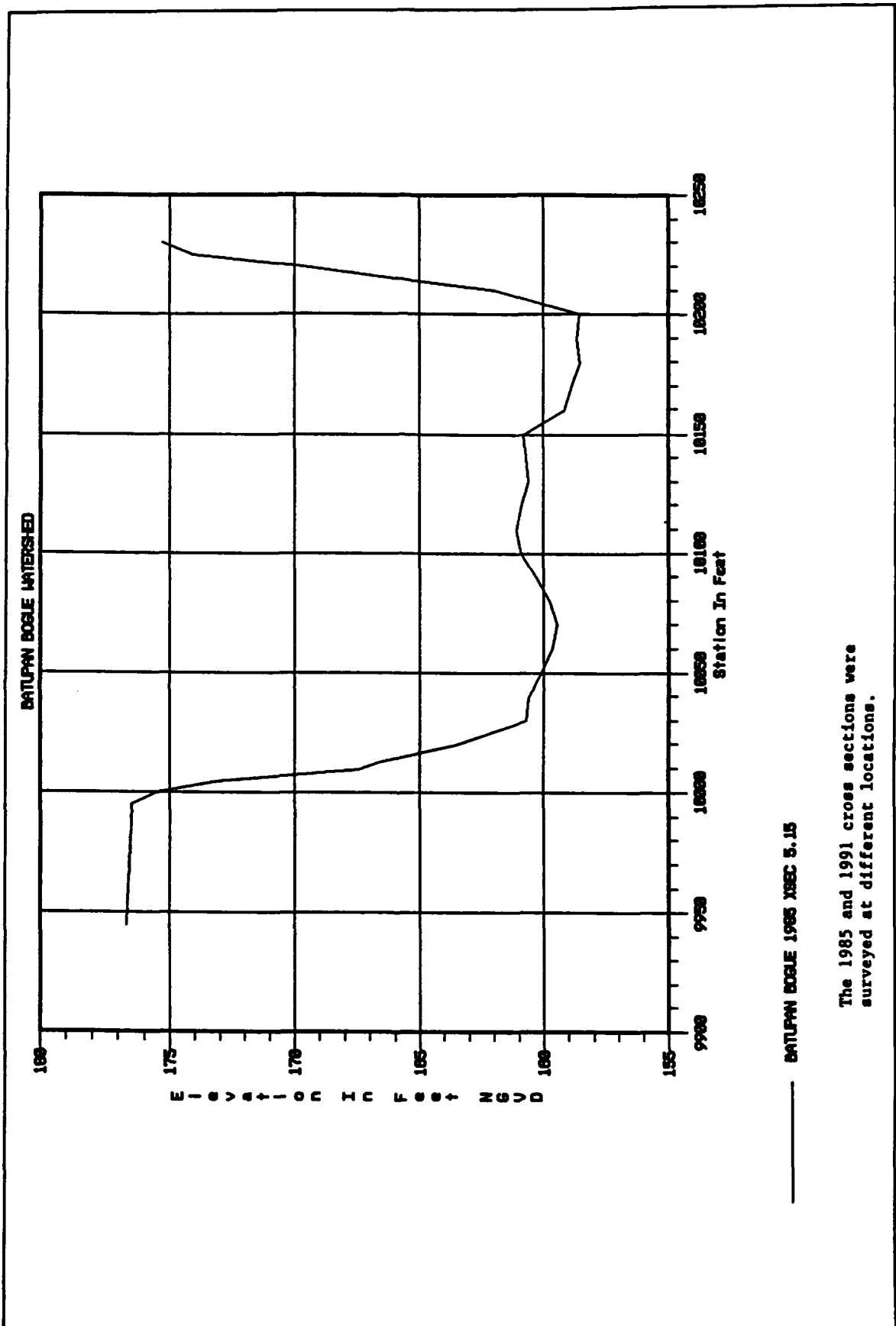


Batupan Bogue Watershed Crowder Creek

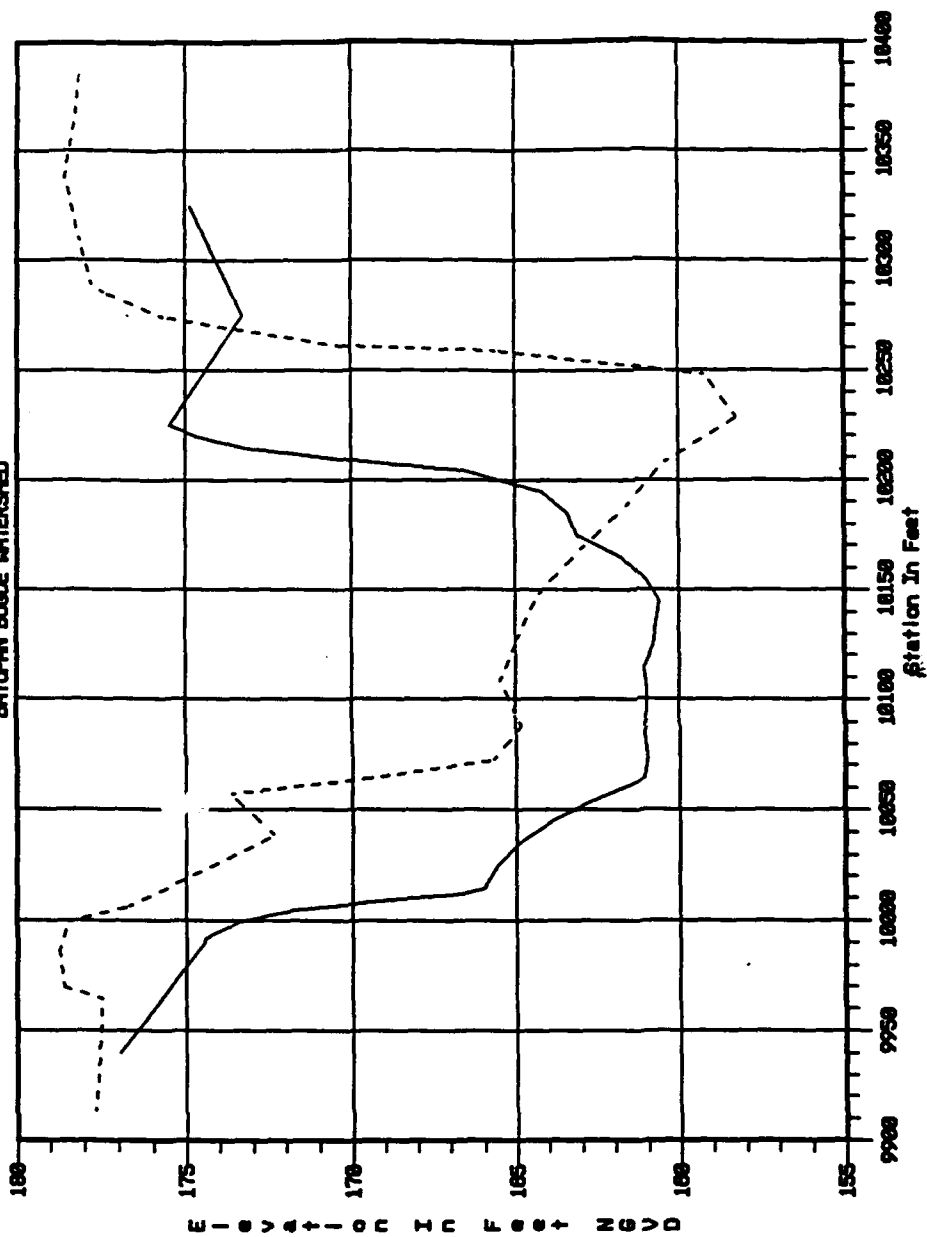


Batupan Bogue Watershed
Little Mouse Creek



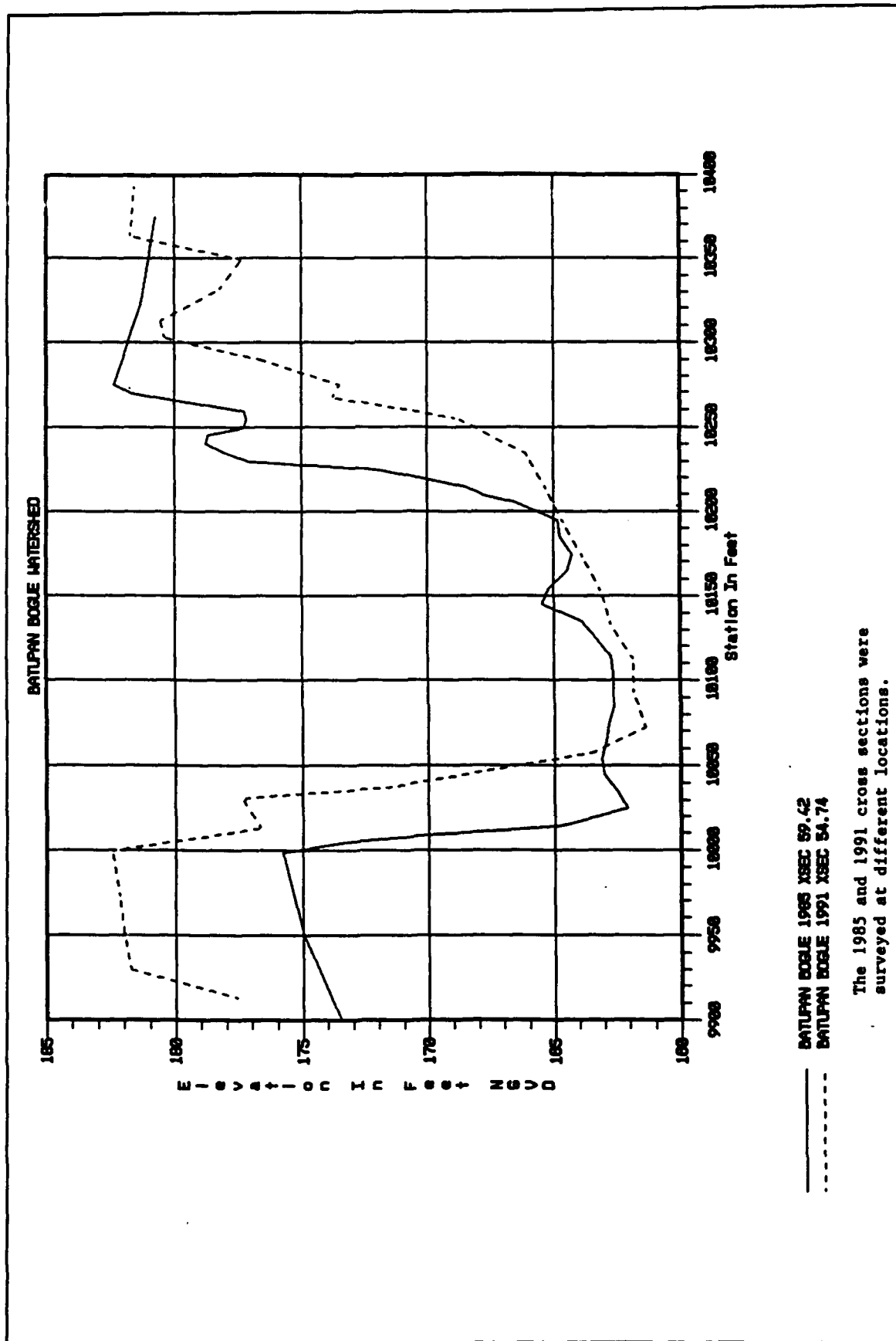


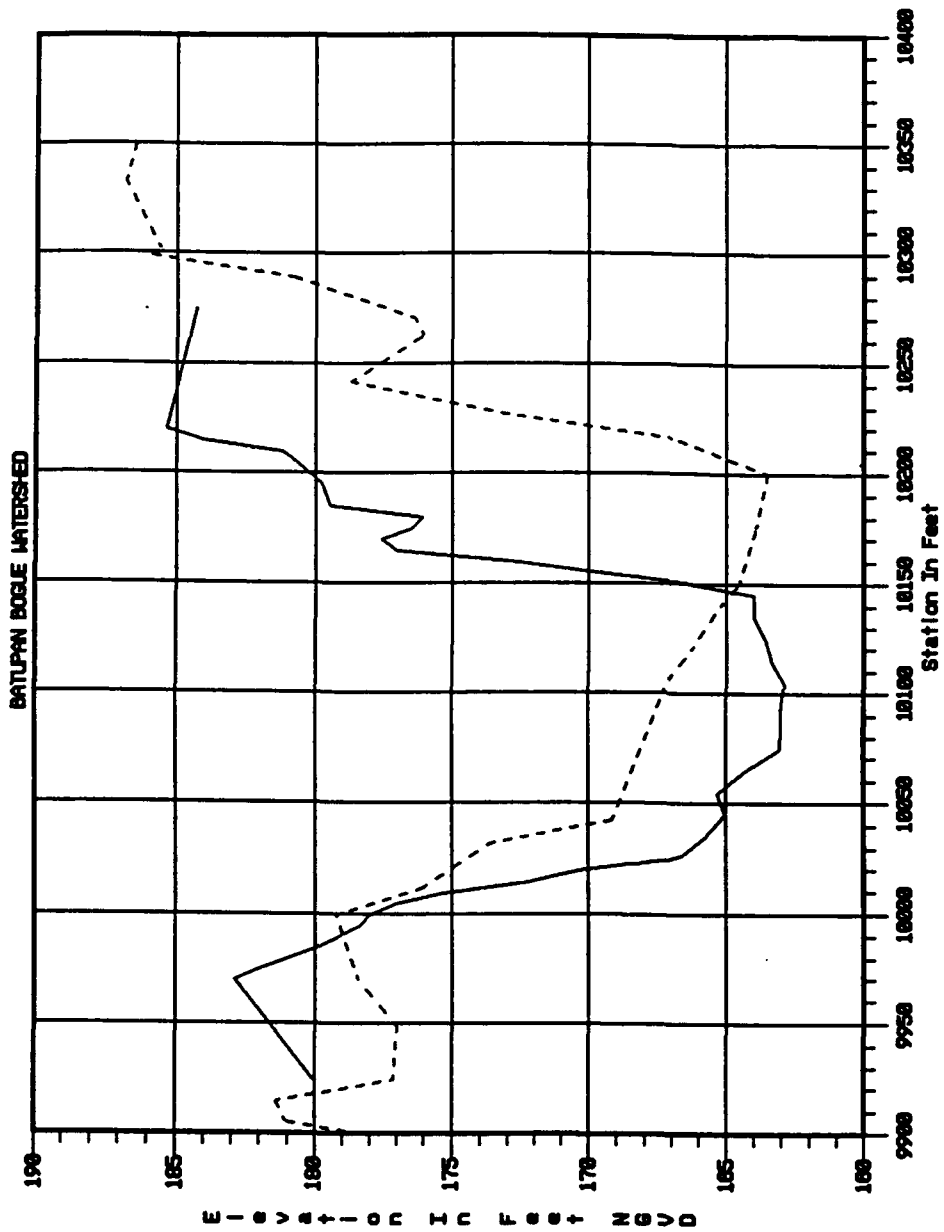
BATUPAN BOGLE WATERSHED



————— BATUPAN BOGLE 1985 XSEC 35.48
 - - - - - BATUPAN BOGLE 1991 XSEC 31.48

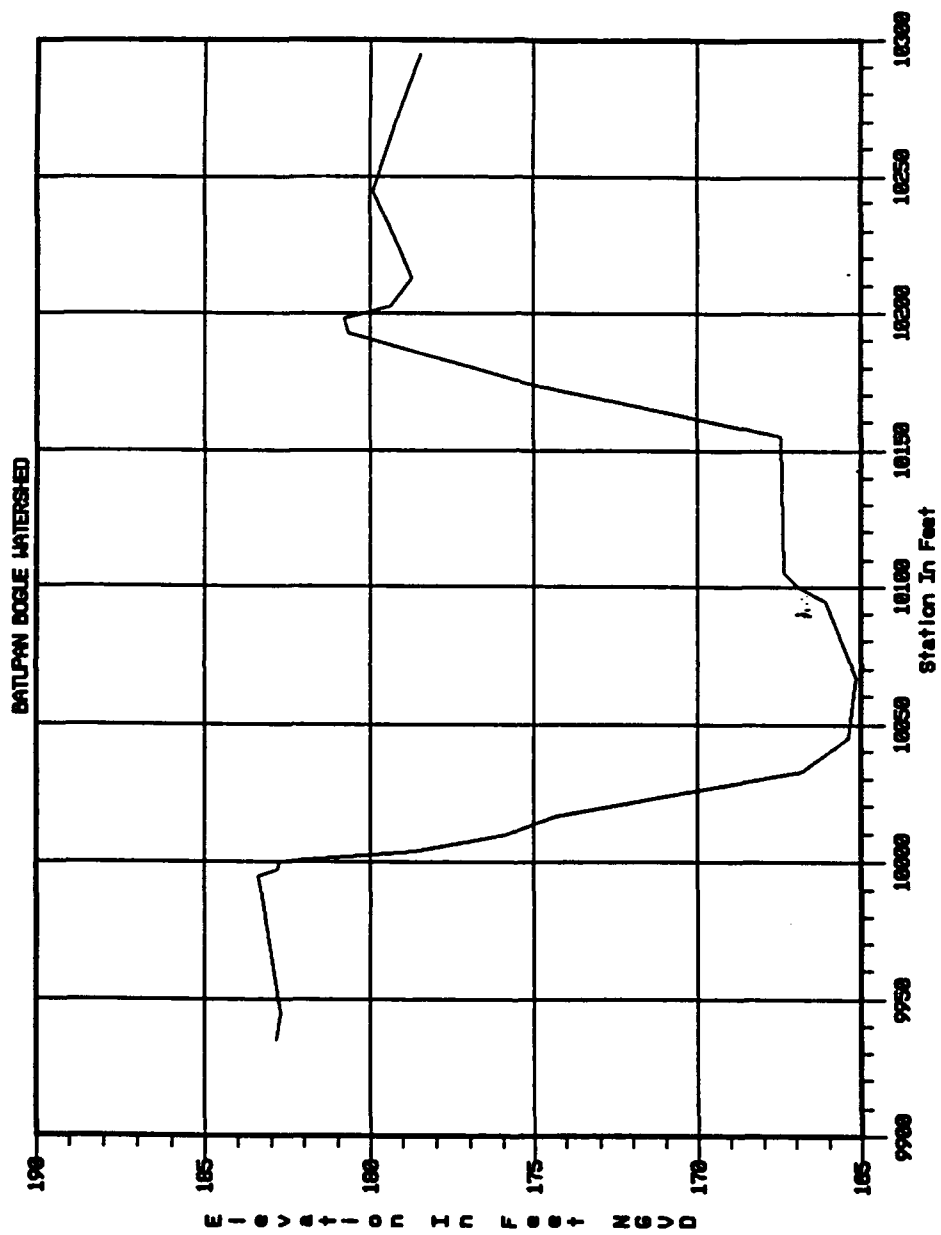
The 1985 and 1991 cross sections were surveyed at different locations.





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 - - - - - BATUPAN BOGLE 1991 XSEC 80.00

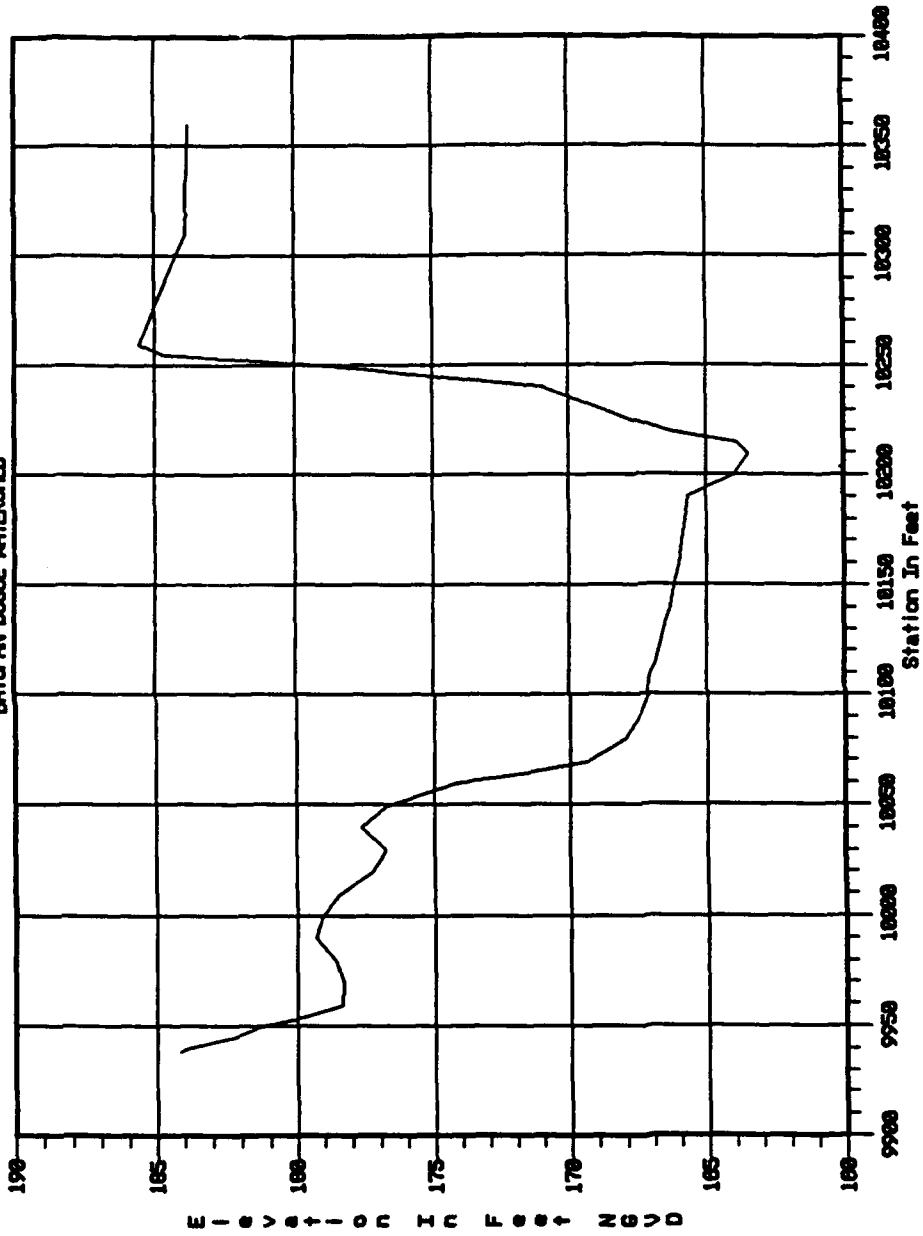
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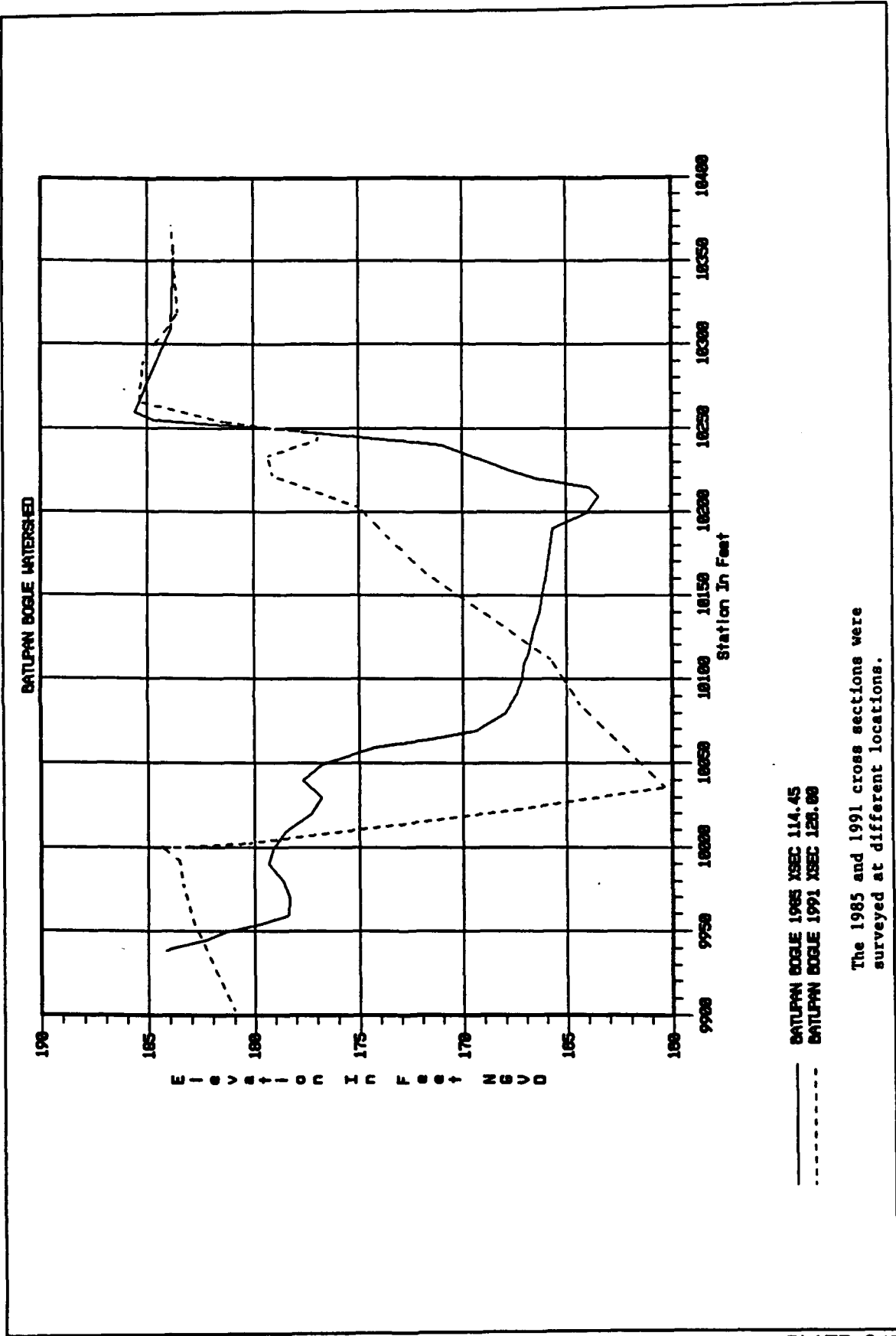
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED

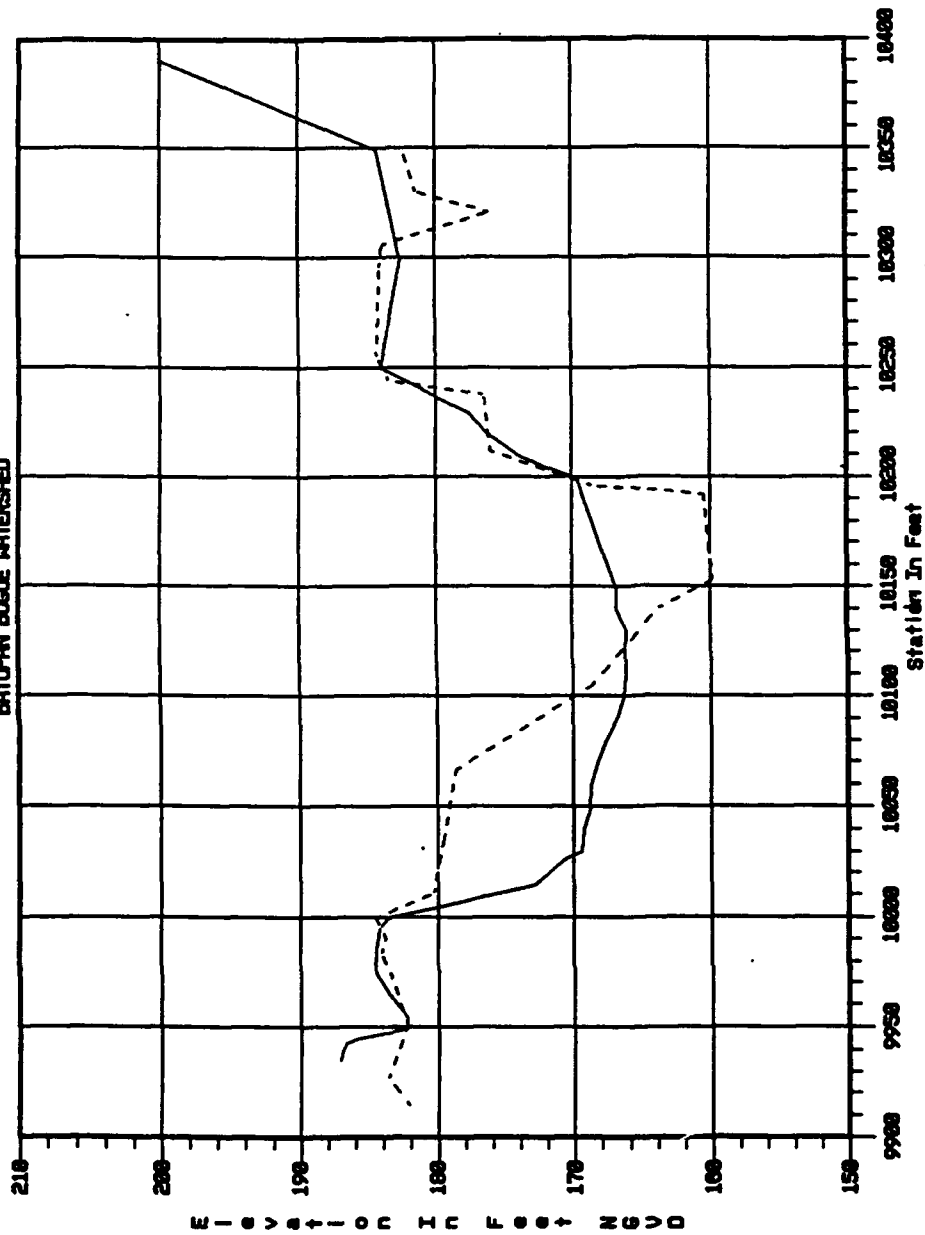


———— BATUPAN BOGLE 1985 XSEC 114.45

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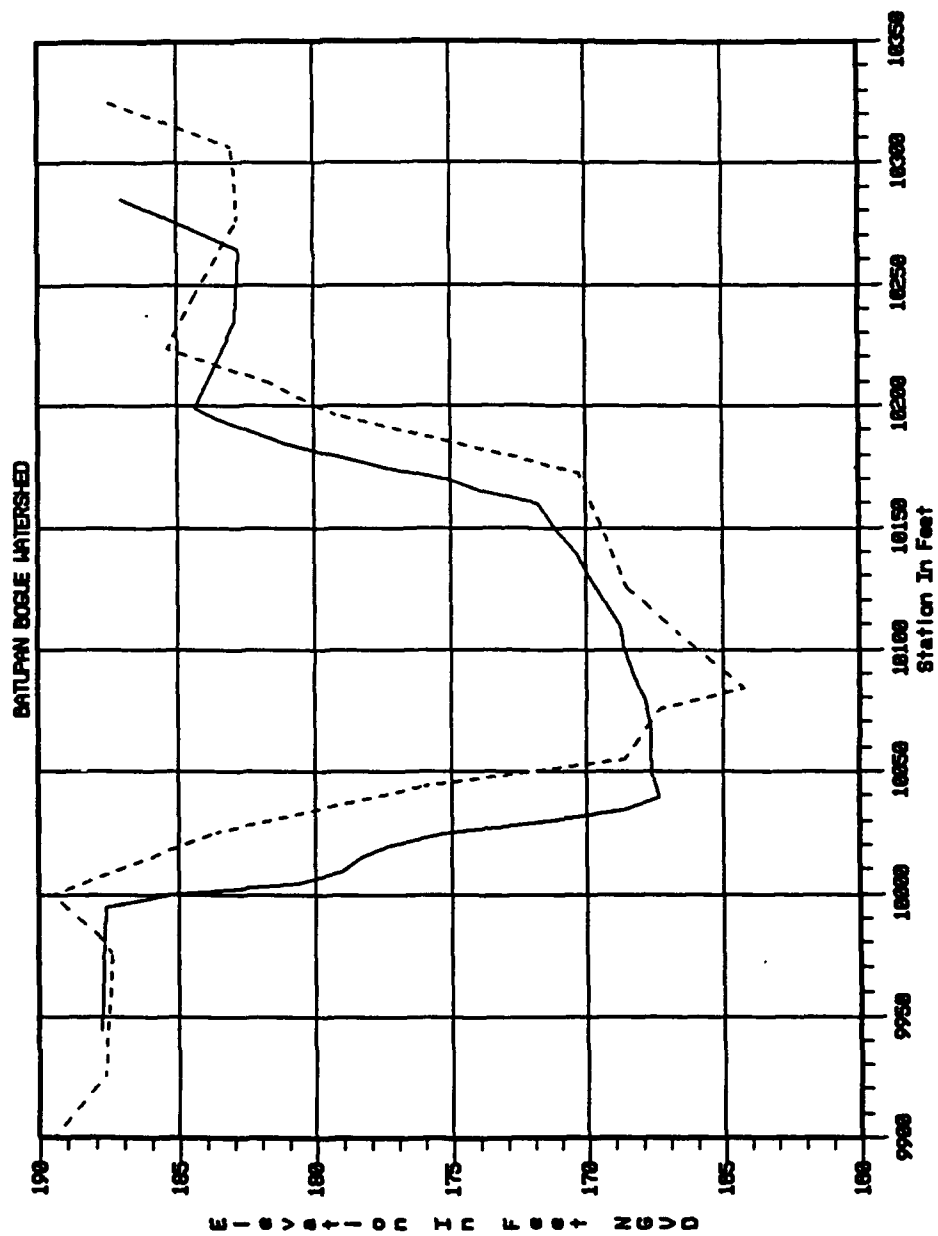


BATUPAN BOGLE INTERSECT



————— BATUPAN BOGLE 1985 XSEC 148.90
 - - - - - BATUPAN BOGLE 1991 XSEC 148.00

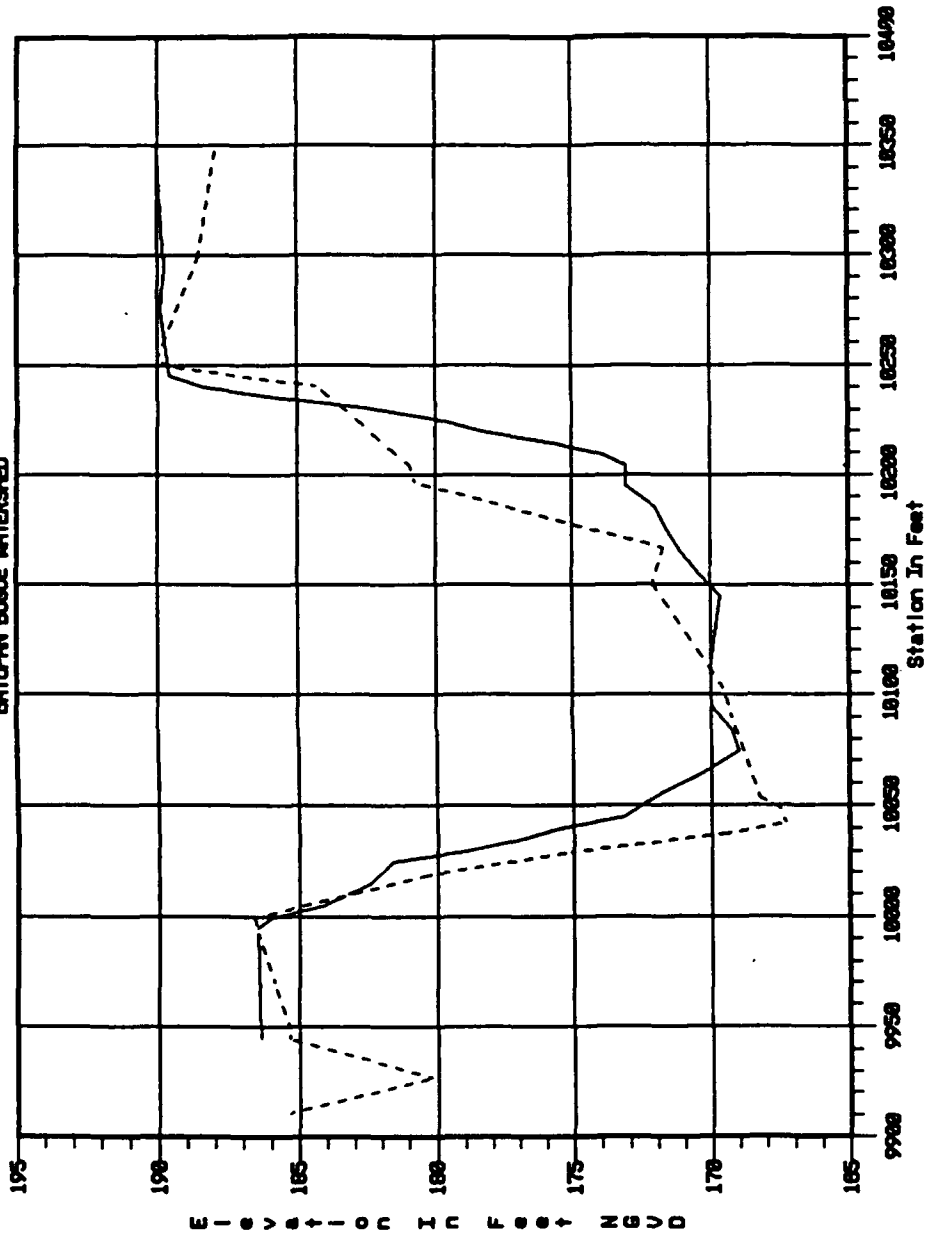
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 - - - BATUPAN BOGLE 1991 XSEC 169.78

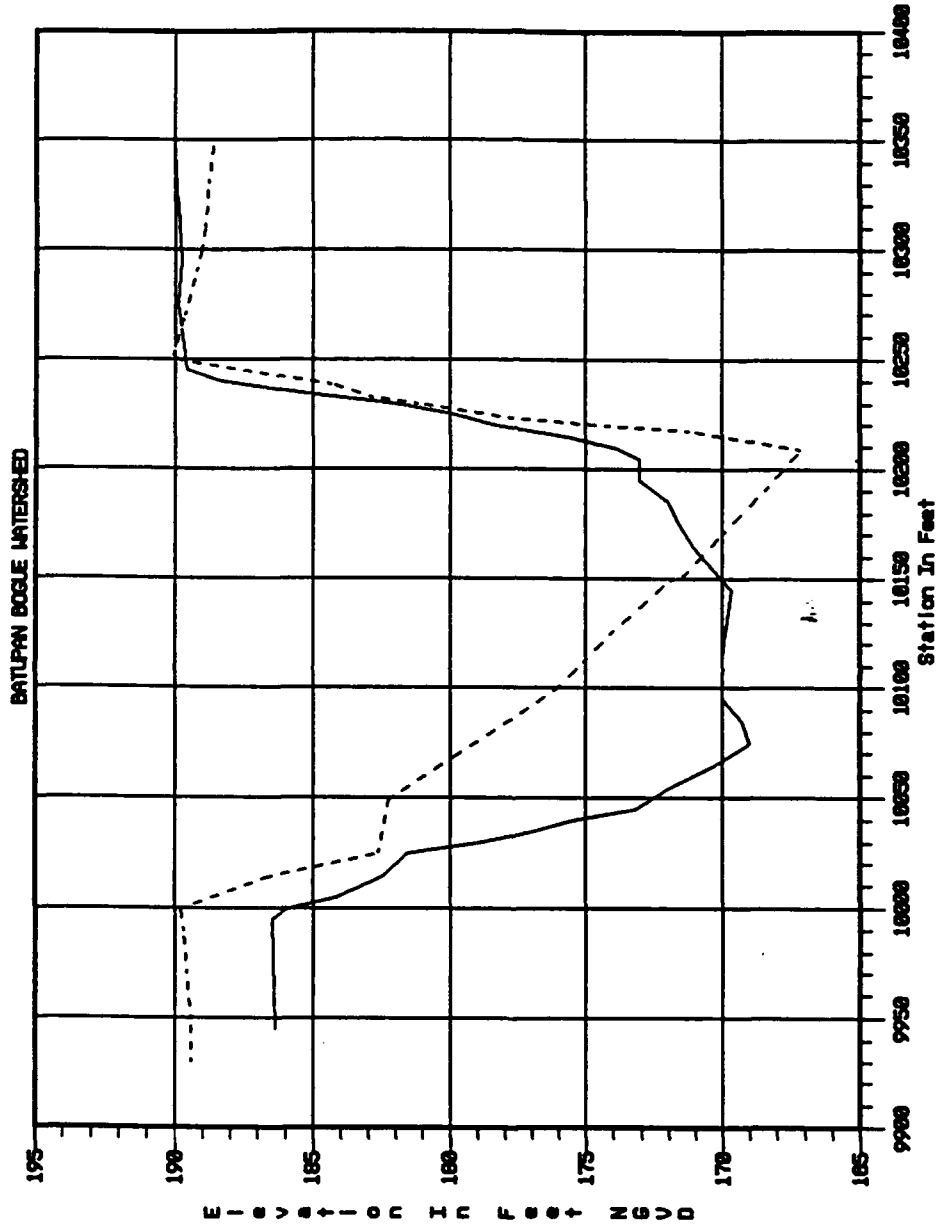
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— BATUPAN BOGLE 1985 XSEC 284.88
 - - - BATUPAN BOGLE 1991 XSEC 169.68

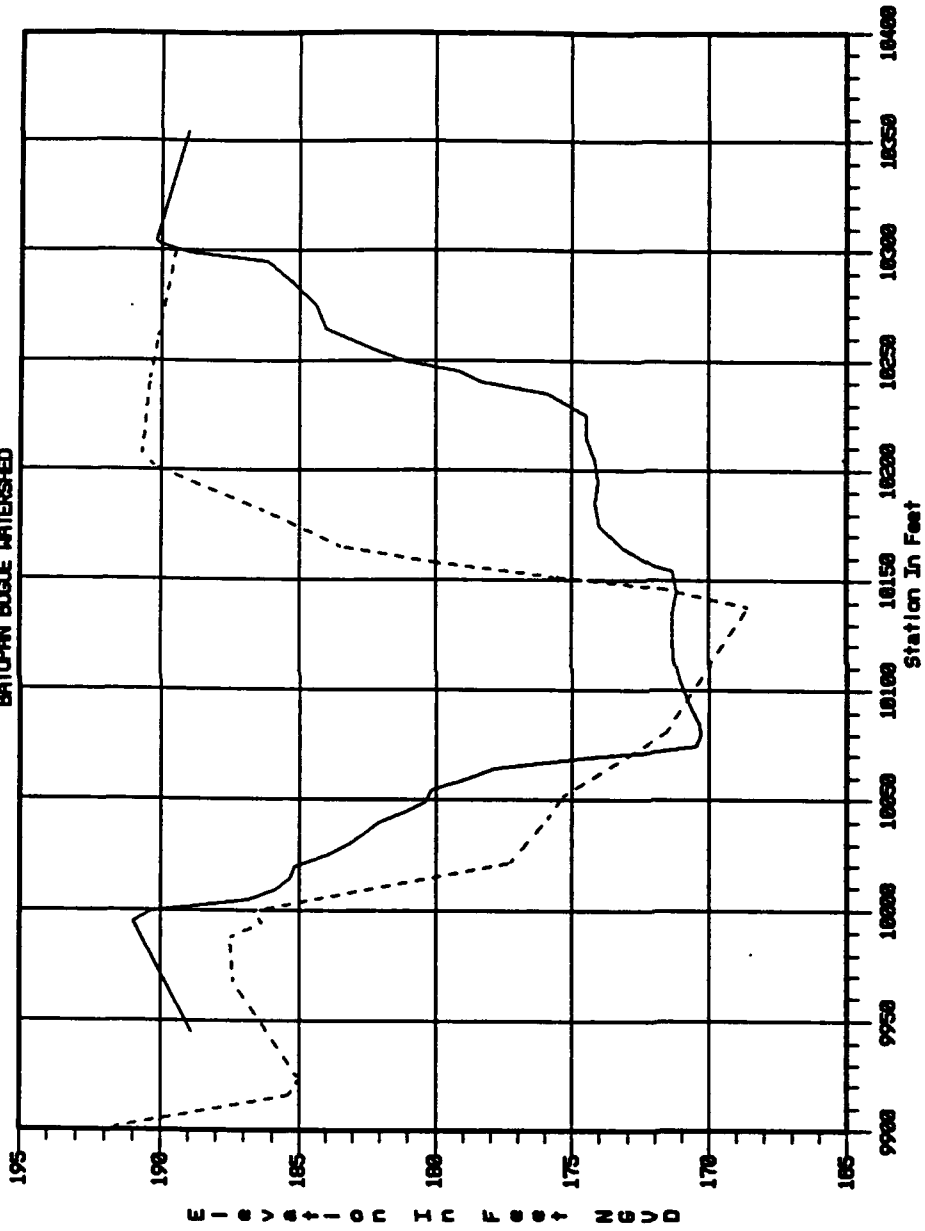
The 1985 and 1991 cross sections were surveyed at different locations.



— BATUPHAN BOGIE 1985 XSEC 204.00
 - - - BATUPHAN BOGIE 1991 XSEC 216.00

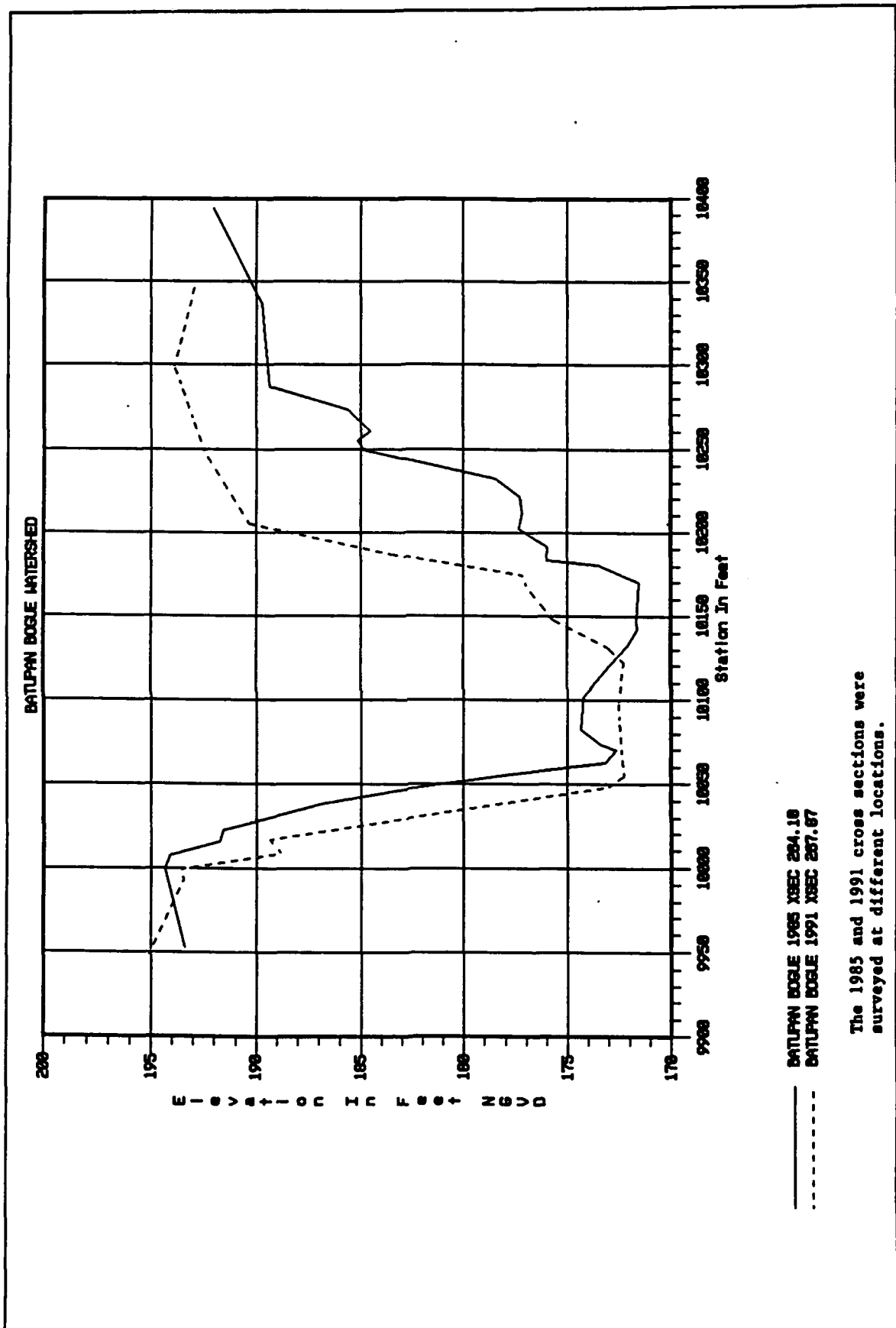
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED

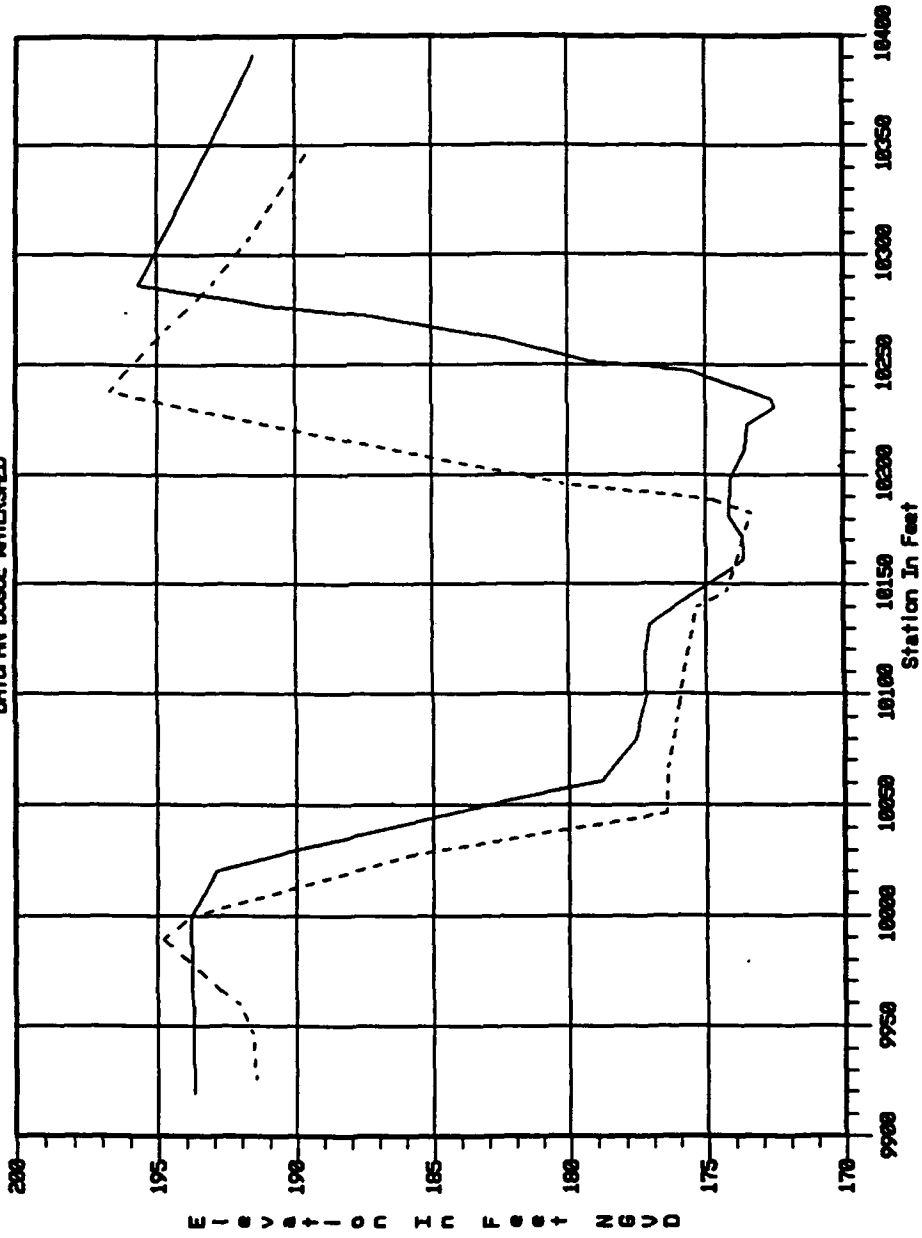


— BATUPAN BOGLE 1985 XSEC 231.00
 - - - BATUPAN BOGLE 1991 XSEC 241.00

The 1985 and 1991 cross sections were surveyed at different locations.

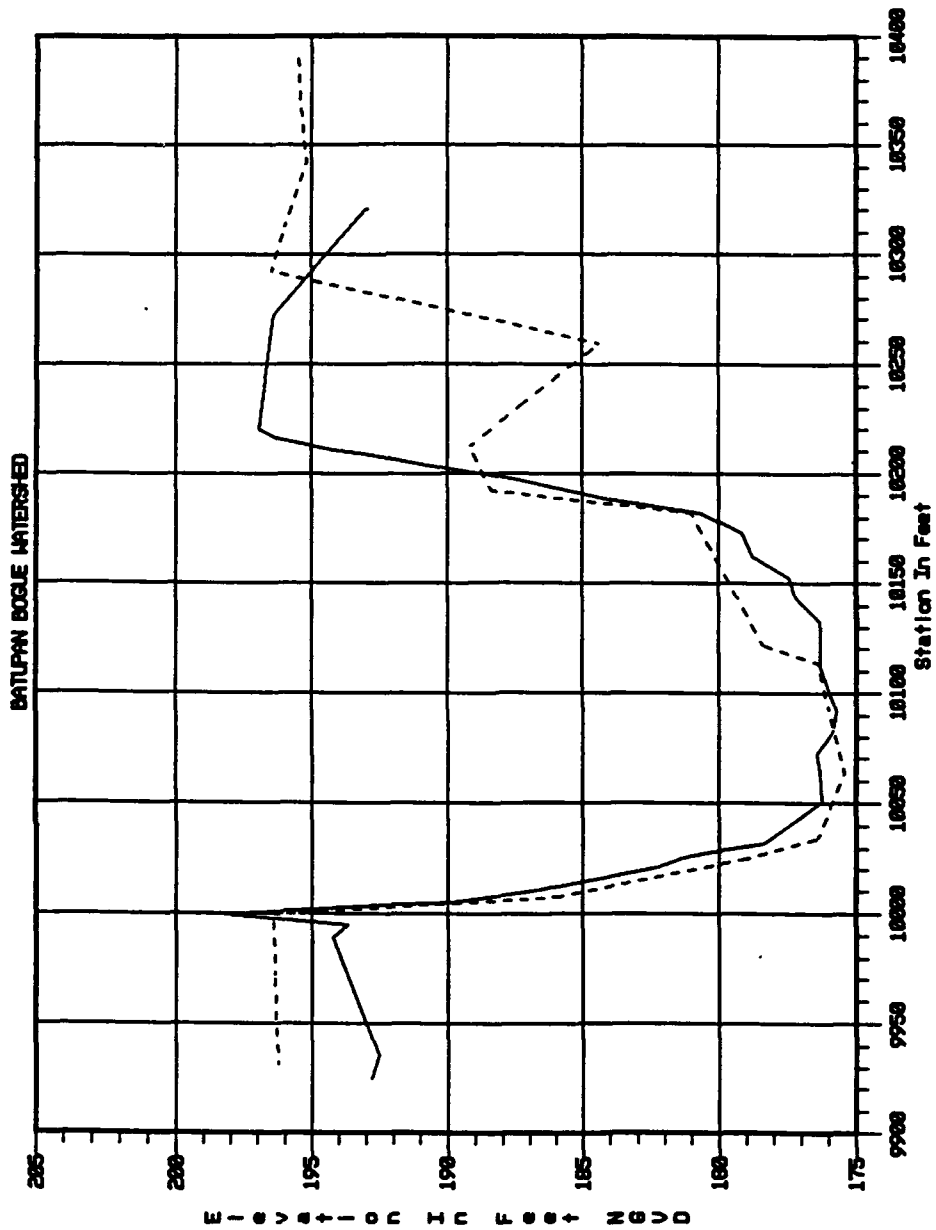


BATUPAN BOGLE WATERSHED



— BATUPAN BOGLE 1985 XSEC 291.72
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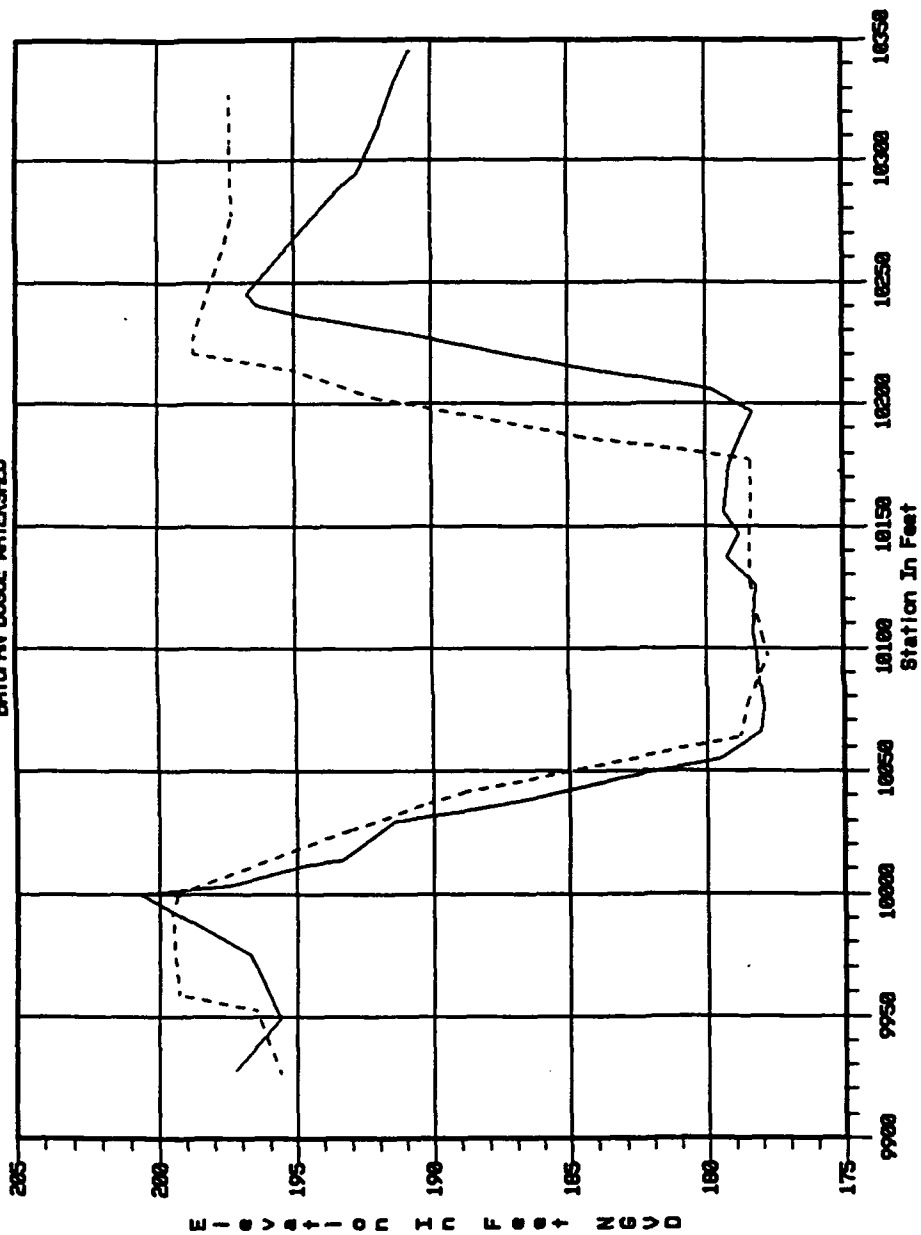
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— BATUPAN BOGLE 1985 XSEC 328.16
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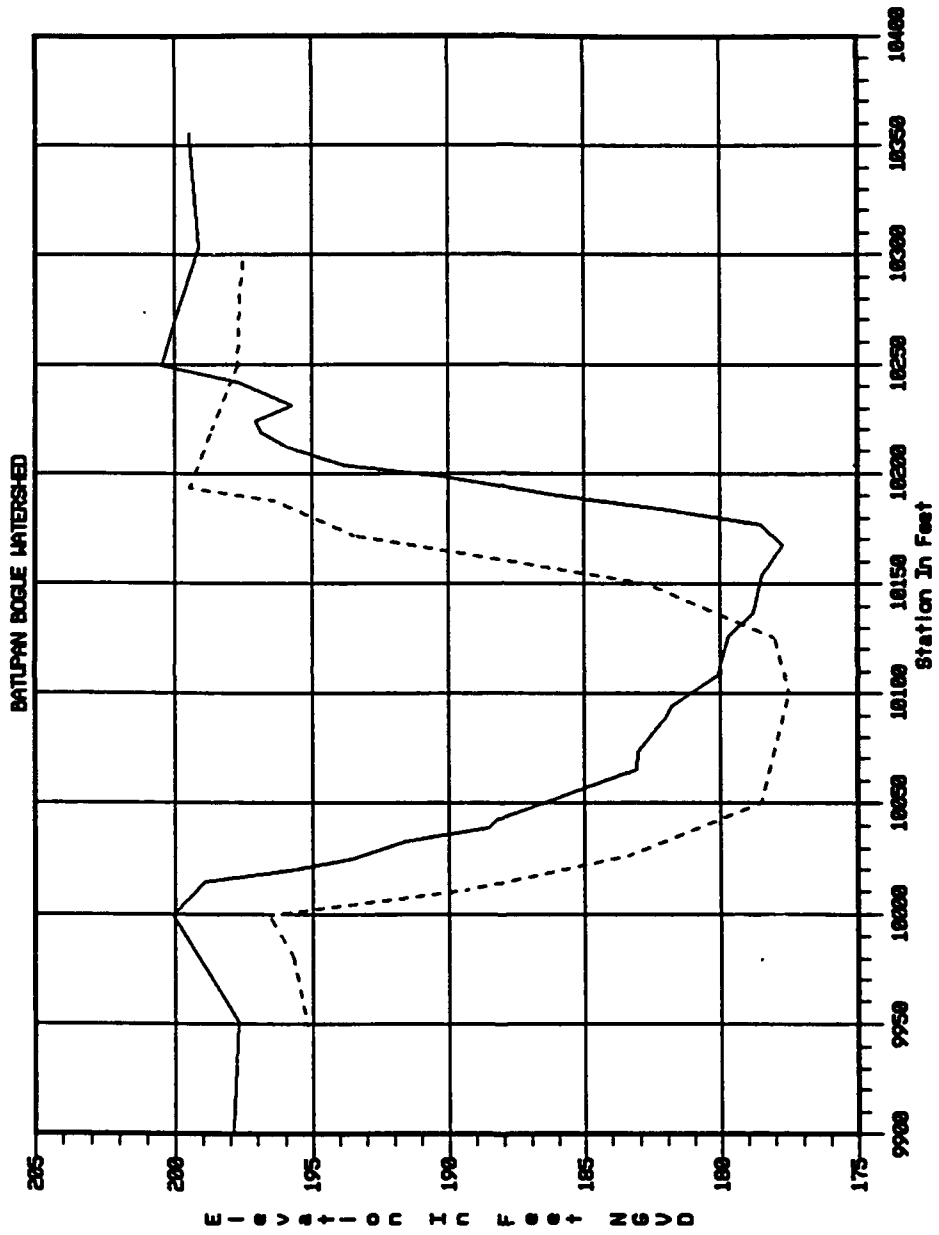
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BATUPAN BOGLE WATERSHED



— BATUPAN BOGLE 1985 XSEC 348.85
 - - - BATUPAN BOGLE 1991 XSEC 341.48

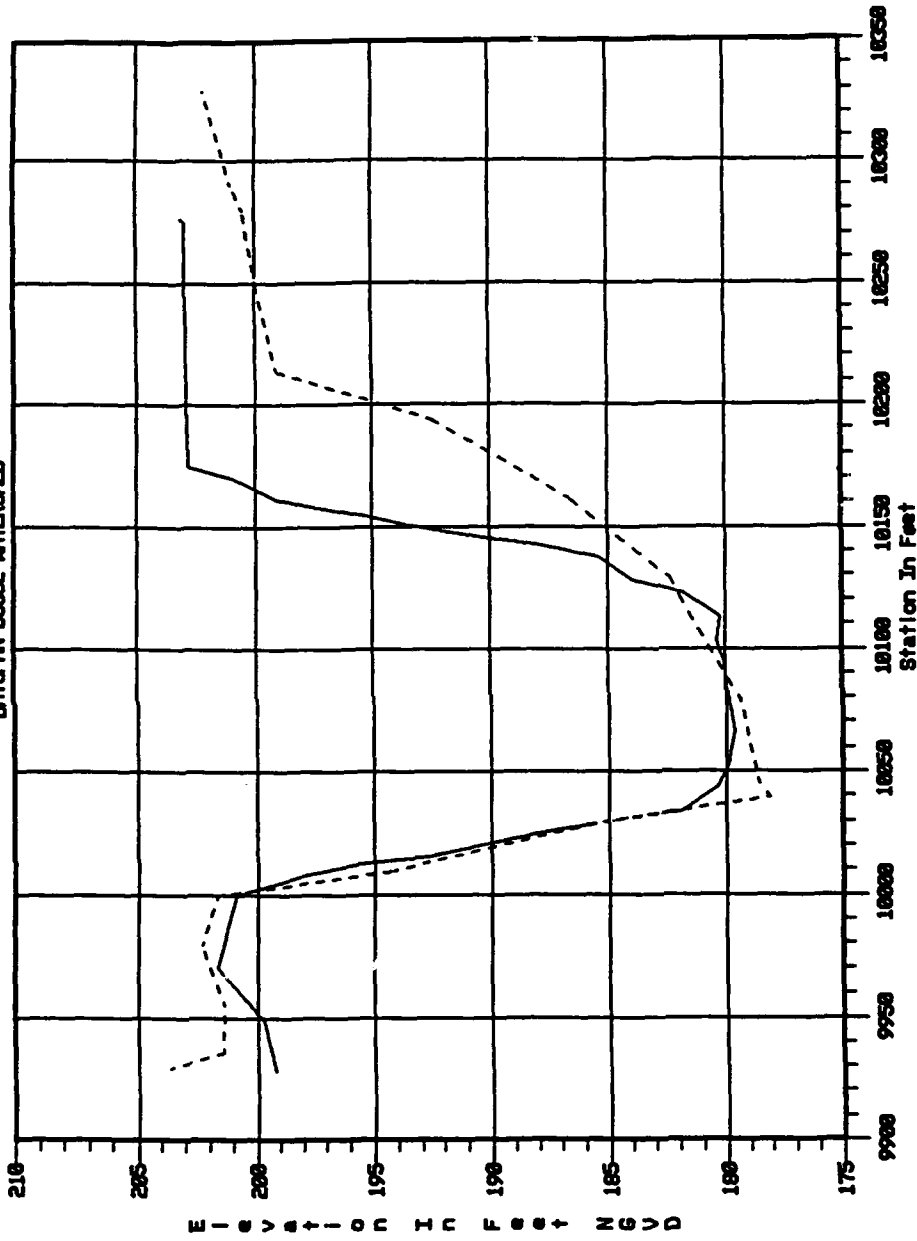
The 1985 and 1991 cross sections were
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— BATUPAN BOGLE 1985 XSEC 372.10
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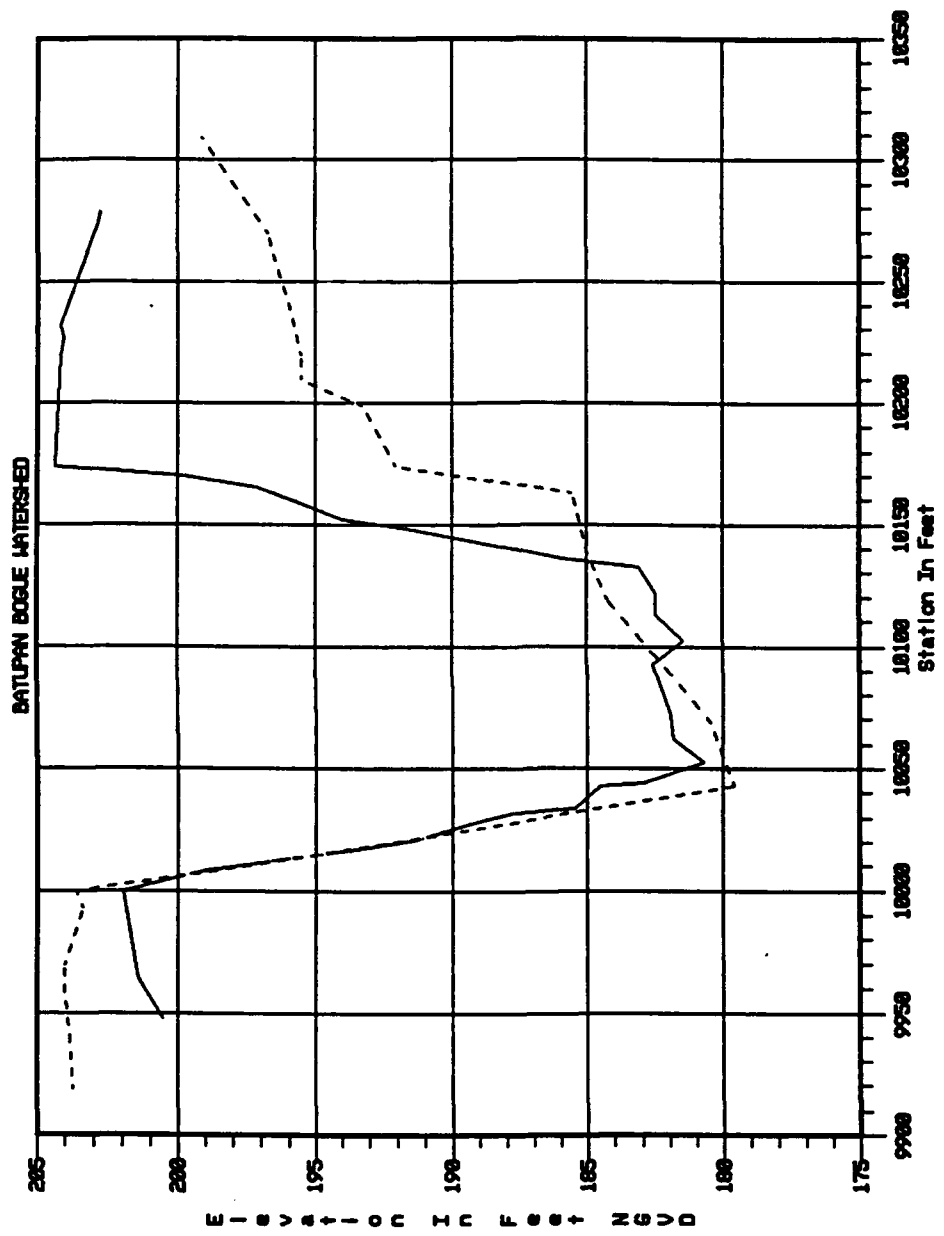
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BATUPAN BOGLE WATERSHED



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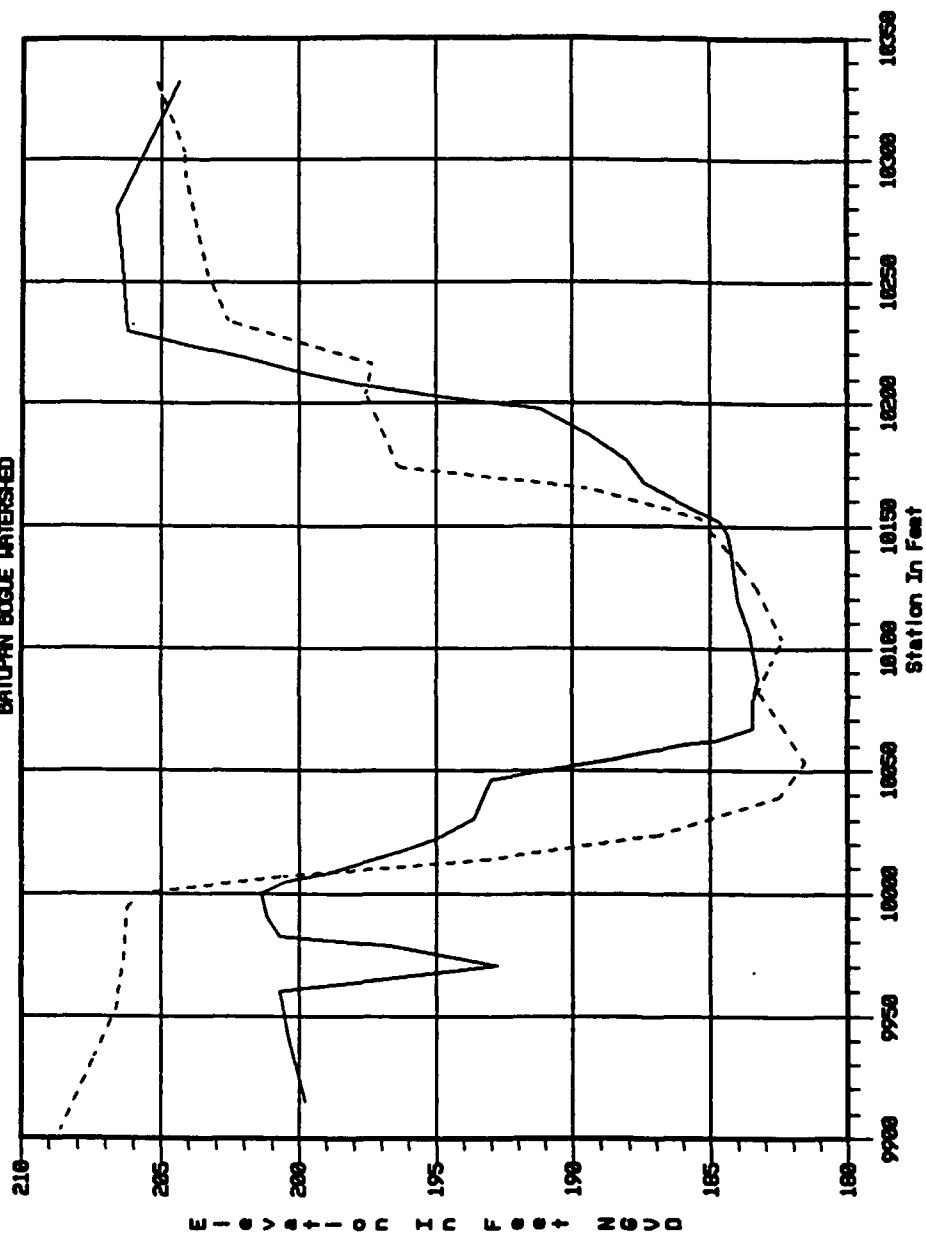
The 1985 and 1991 cross sections were
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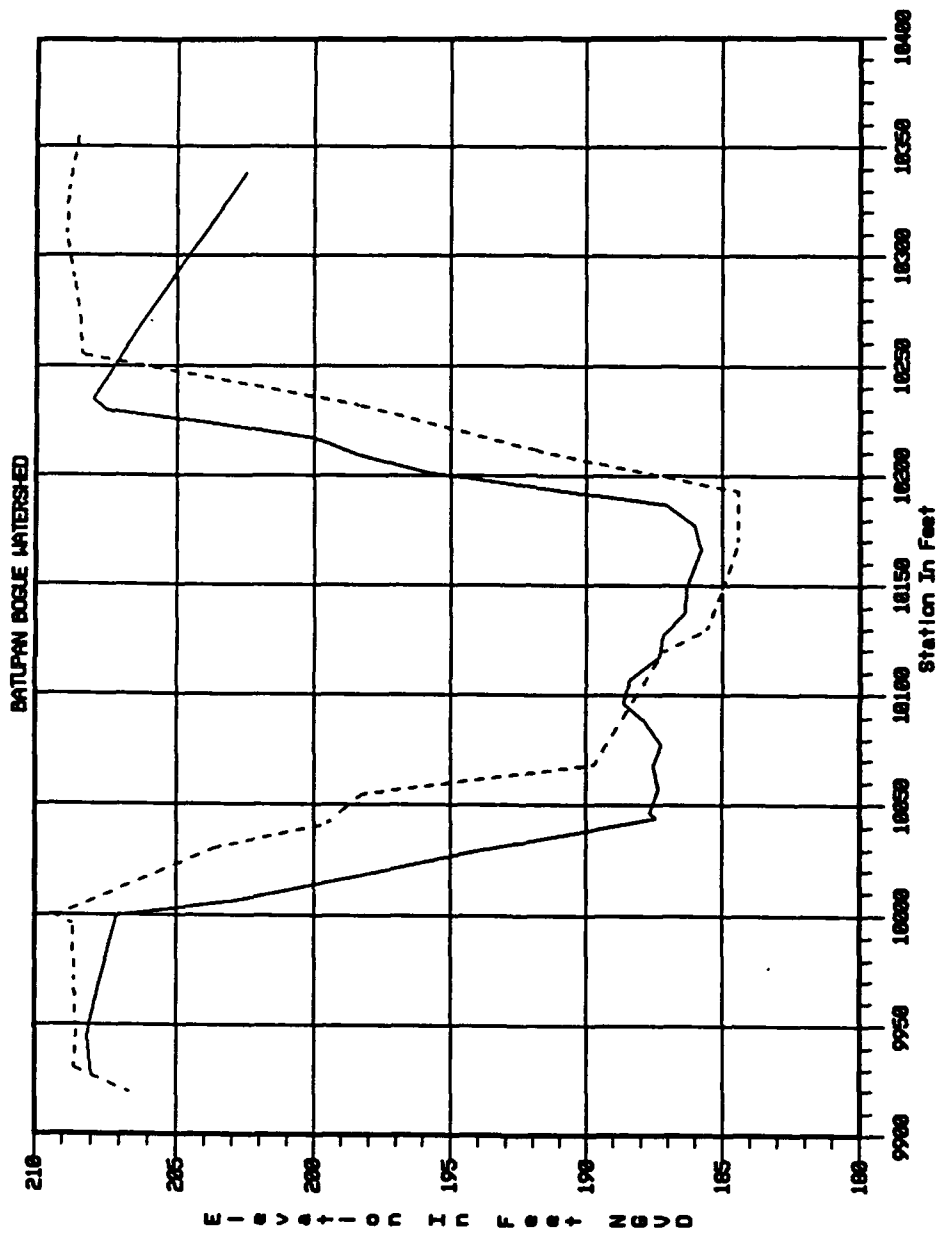
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



— BATUPAN BOGLE 1985 XSEC 449.44
 - - - BATUPAN BOGLE 1991 XSEC 445.00

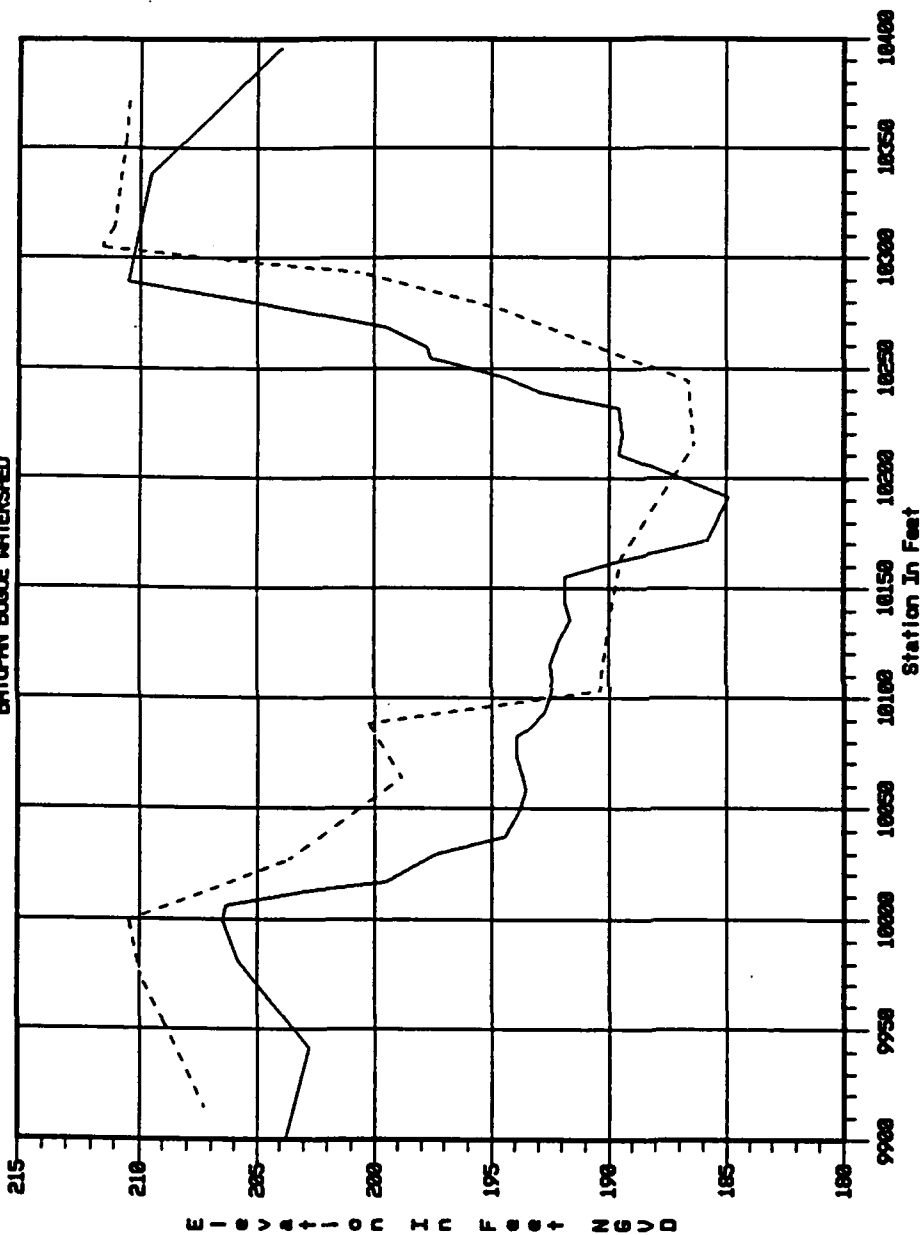
The 1985 and 1991 cross sections were surveyed at different locations.



————— BATUPAN BOGIE 1985 XSEC 477.85
 - - - - - BATUPAN BOGIE 1991 XSEC 471.25

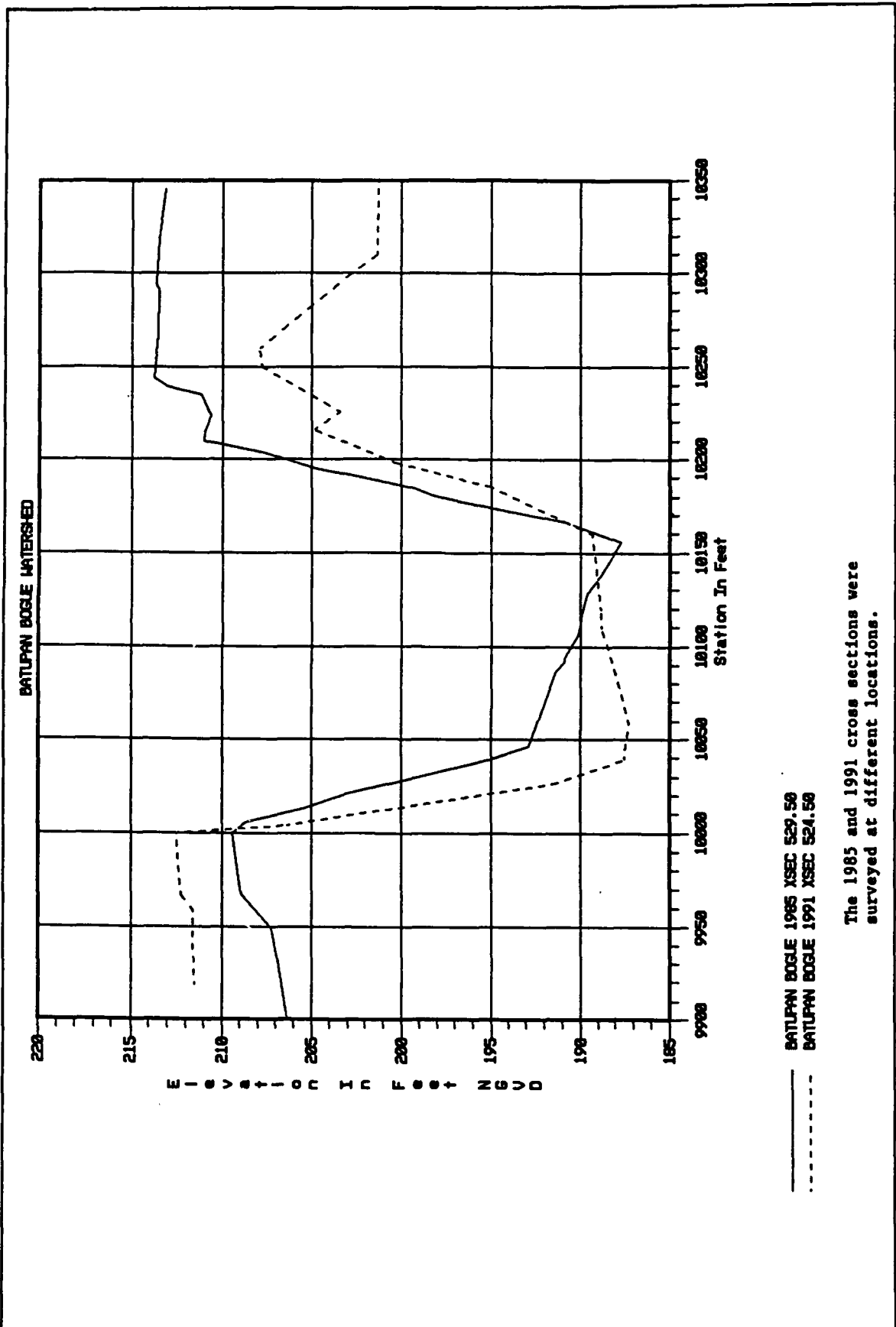
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



— BATUPAN BOGLE 1985 XSEC 583.41
 - - - BATUPAN BOGLE 1991 XSEC 498.08

The 1985 and 1991 cross sections were surveyed at different locations.



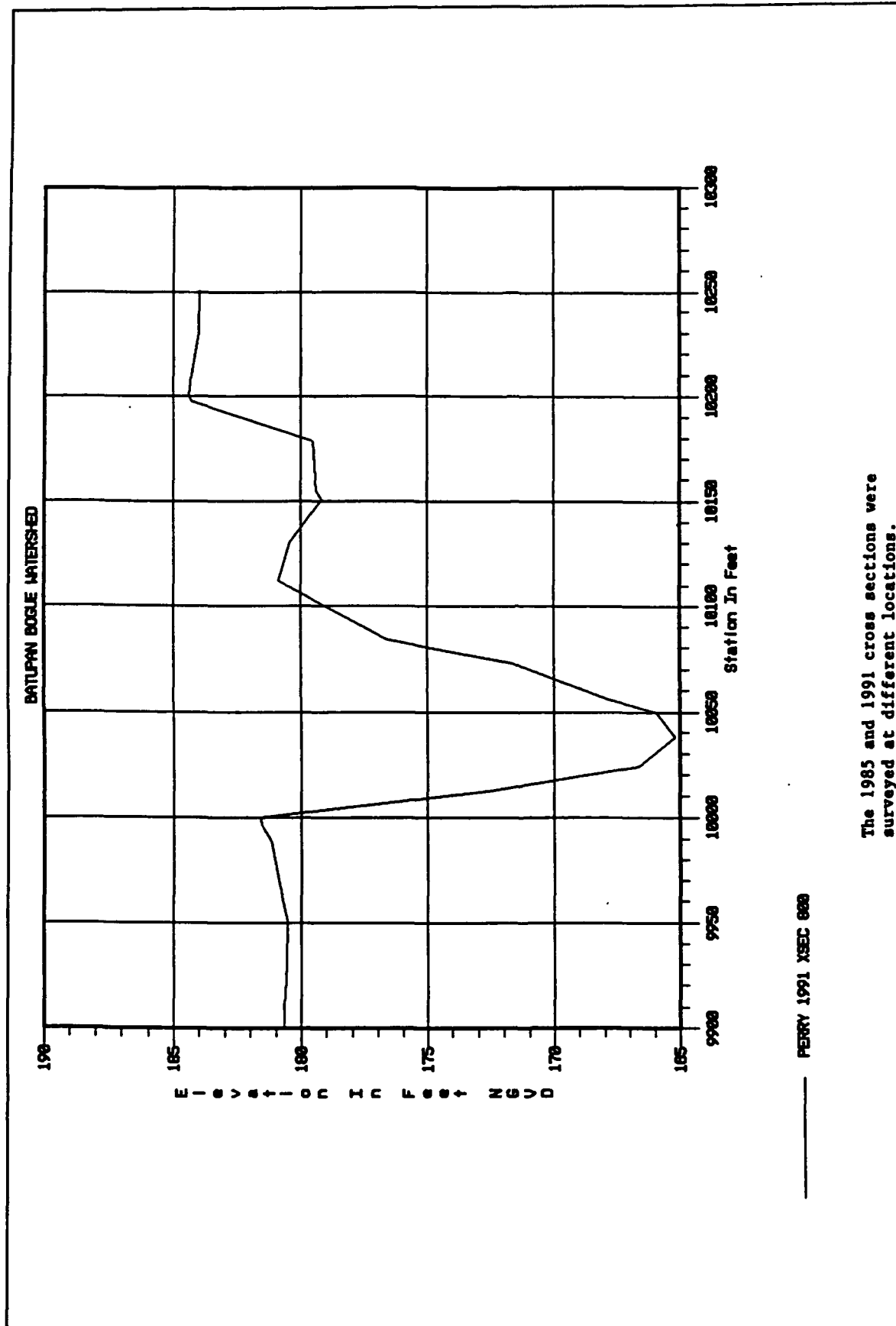
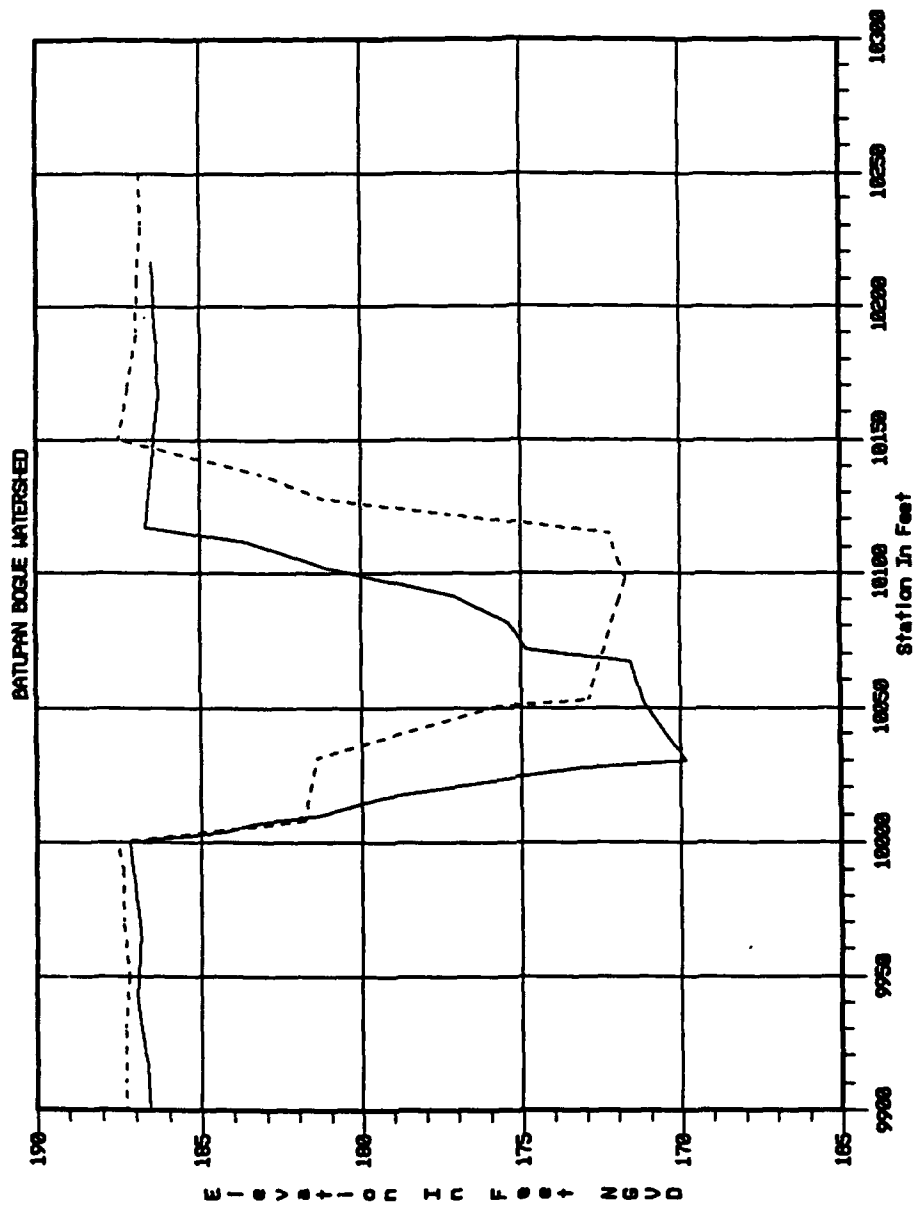


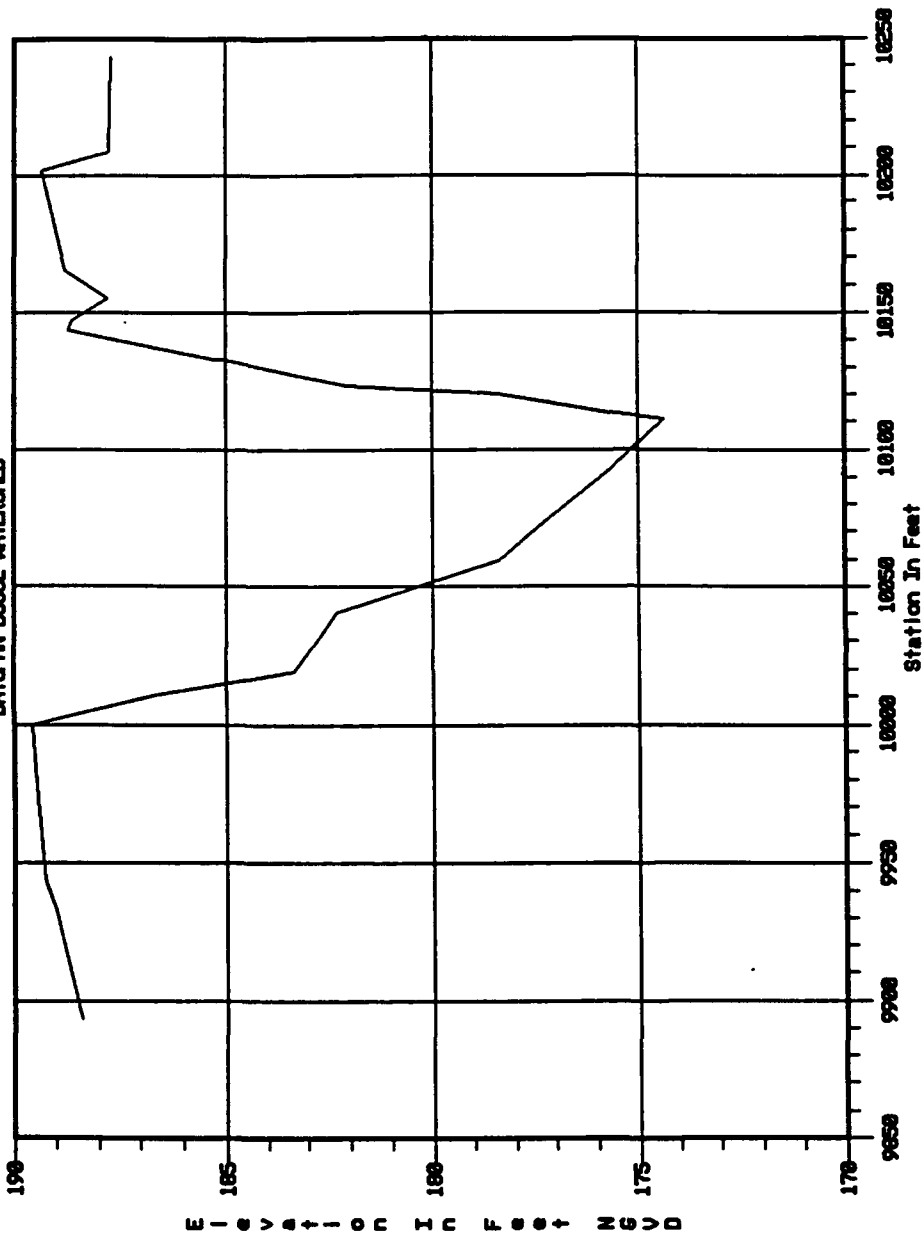
PLATE C62



— PERRY 1985 XSEC 28.10
 - - - PERRY 1991 XSEC 3400

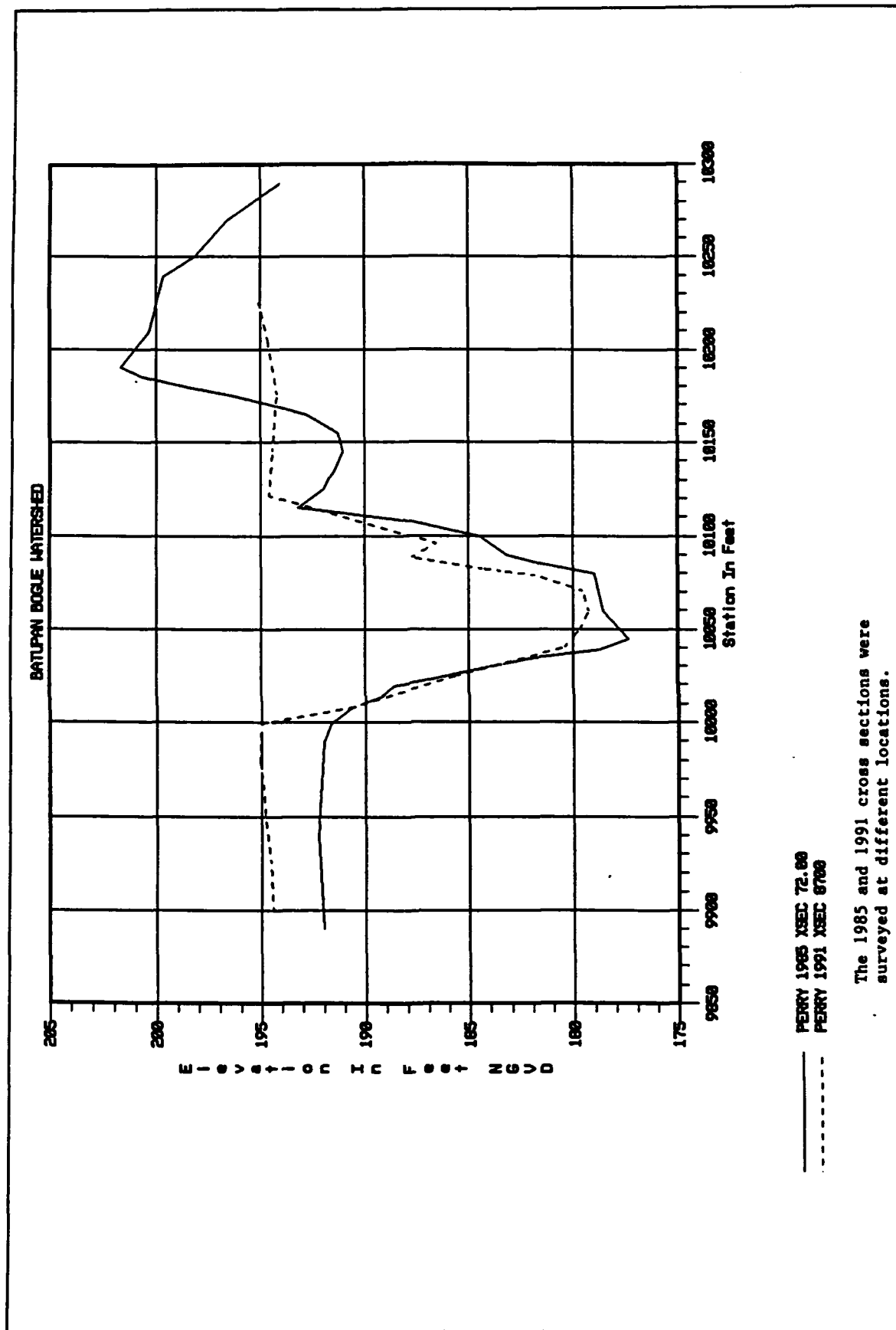
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED

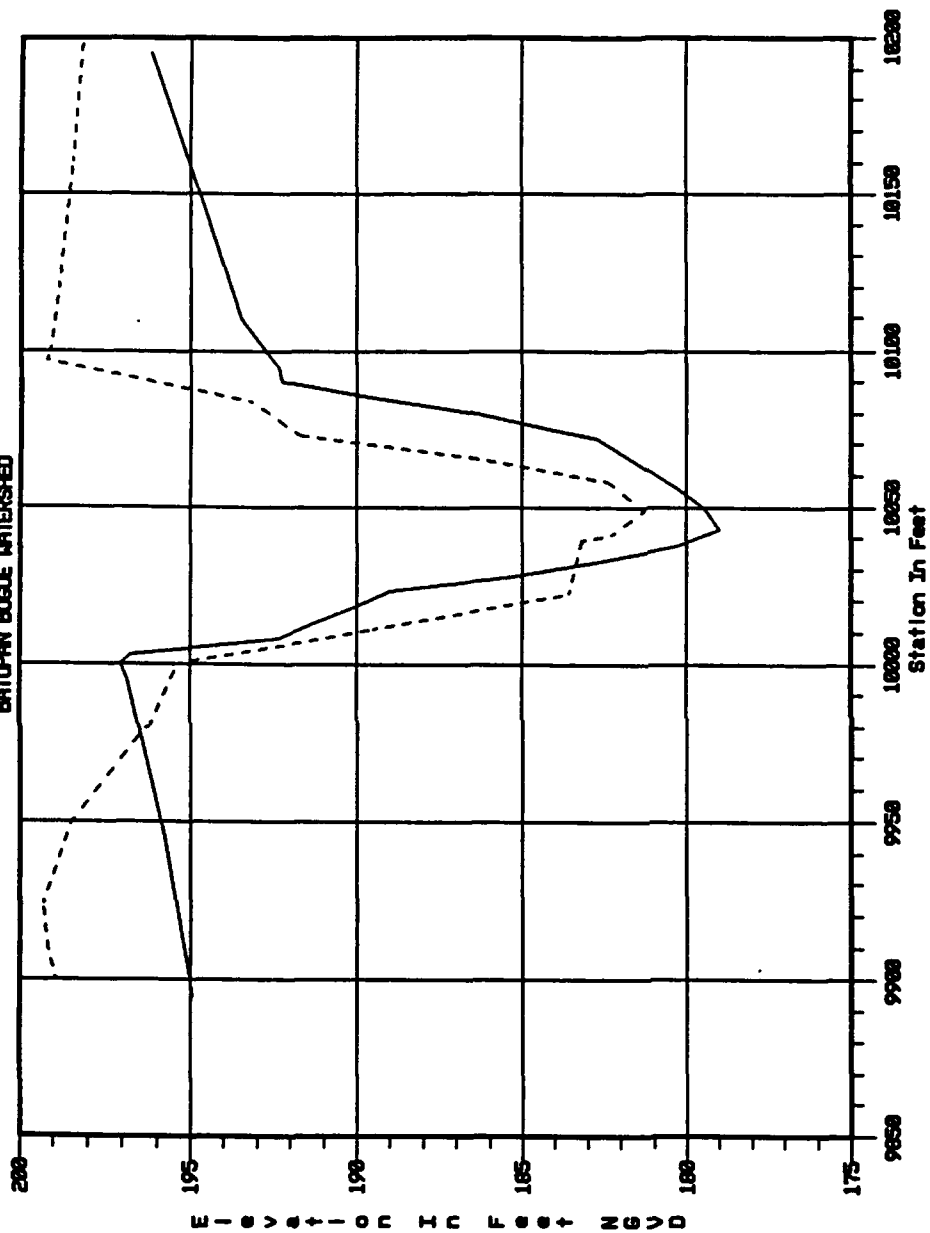


— PERRY 1991 XSEC 4746

The 1985 and 1991 cross sections were surveyed at different locations.

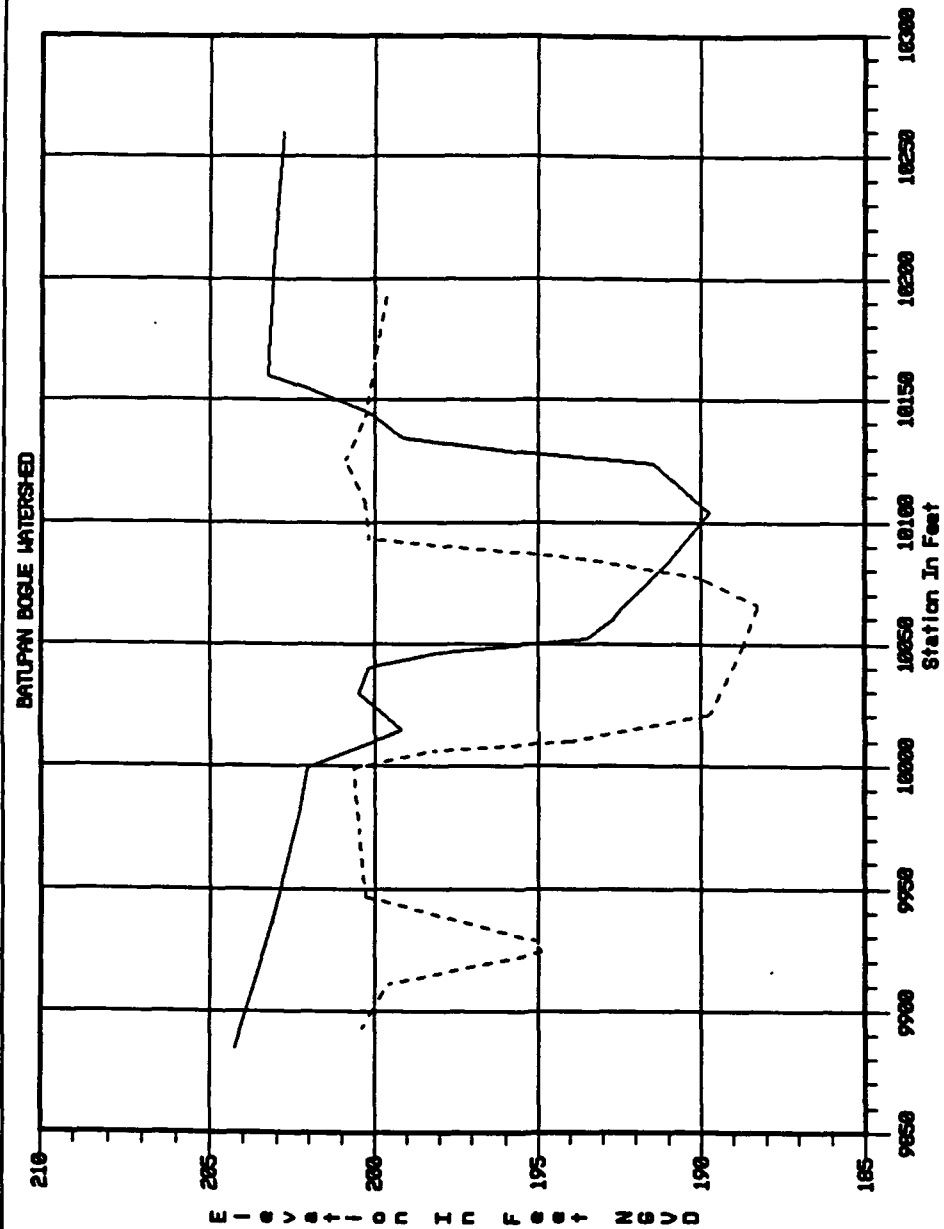


BATUPAN BOULE WATERSHED



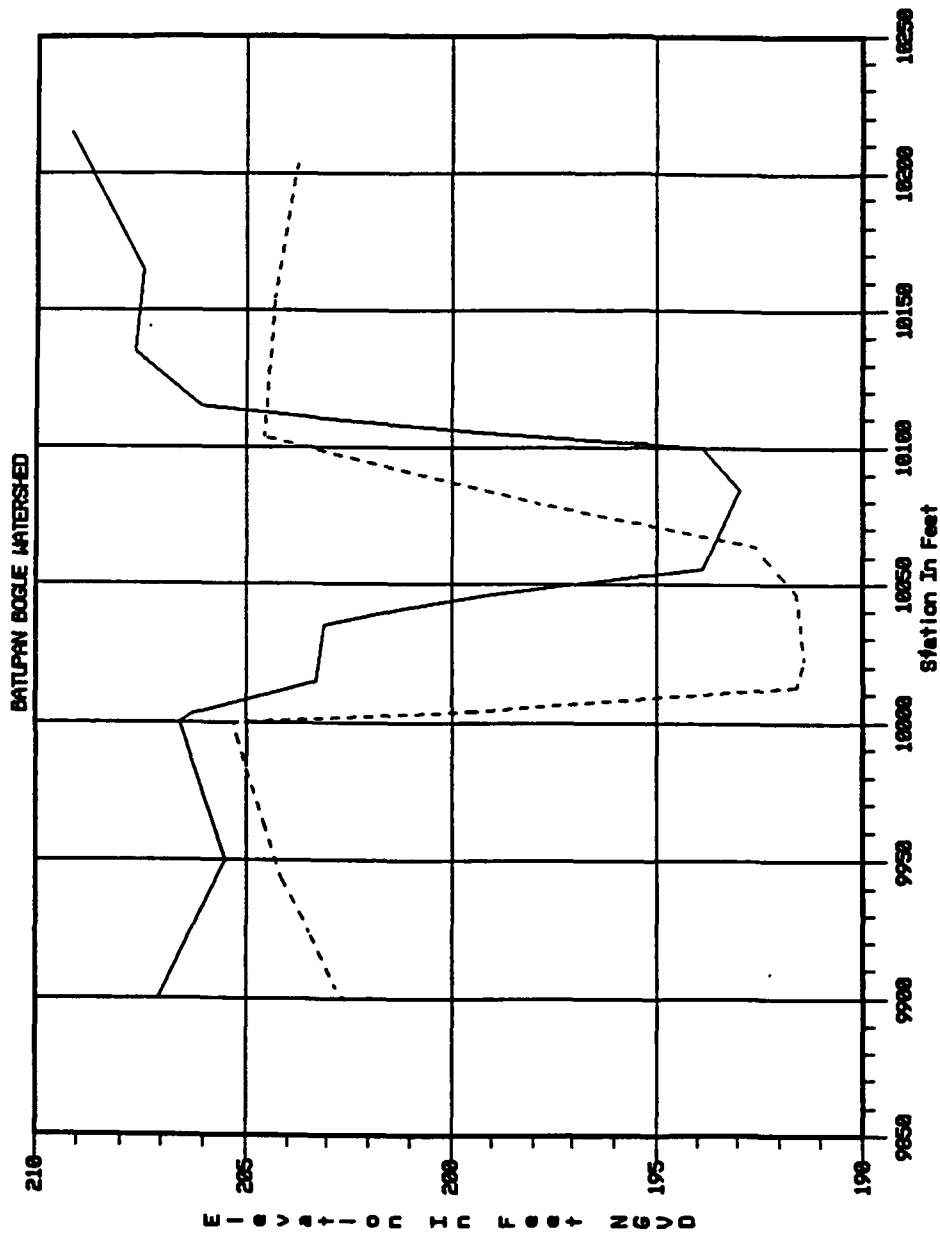
— PERRY 1985 XSEC 98.05
 - - - PERRY 1991 XSEC 11850

The 1985 and 1991 cross sections were surveyed at different locations.



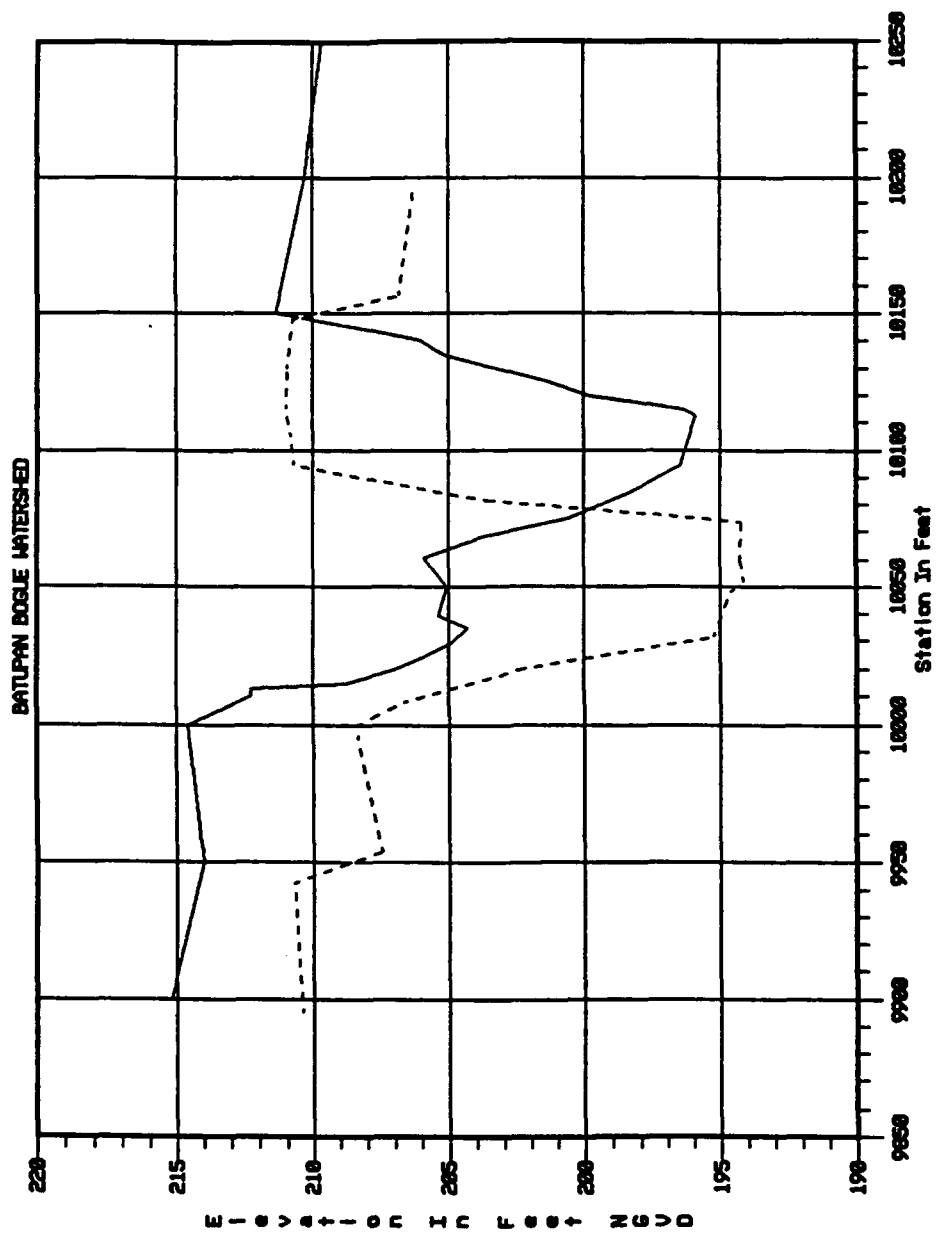
PERRY 1985 XSEC 129.00
 PERRY 1991 XSEC 11750

The 1985 and 1991 cross sections were surveyed at different locations.



— PERRY 1985 XSEC 149.98
 - - - PERRY 1991 XSEC 14234

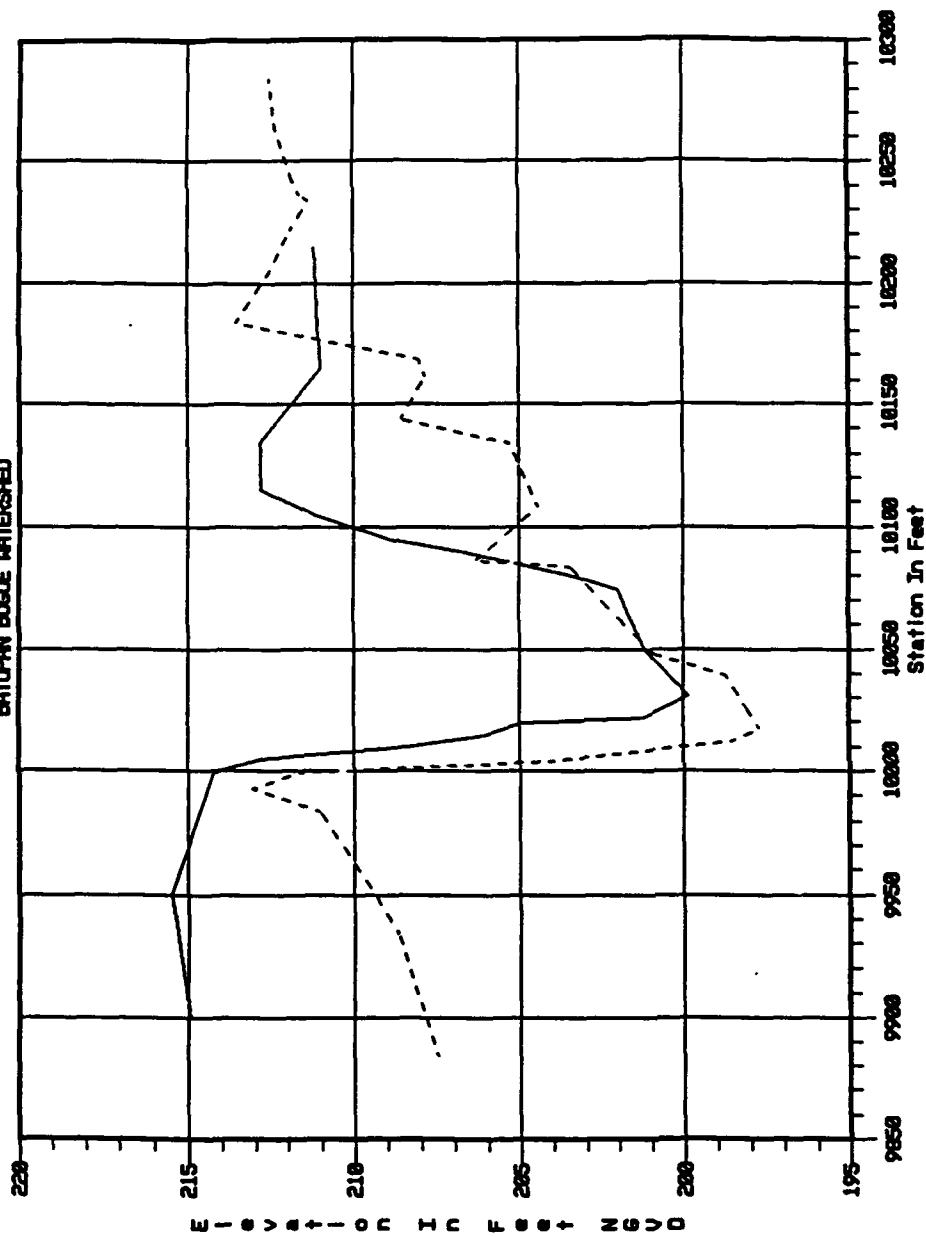
The 1985 and 1991 cross sections were surveyed at different locations



— PERRY 1985 XSEC 175.88
 - - - PERRY 1991 XSEC 172.38

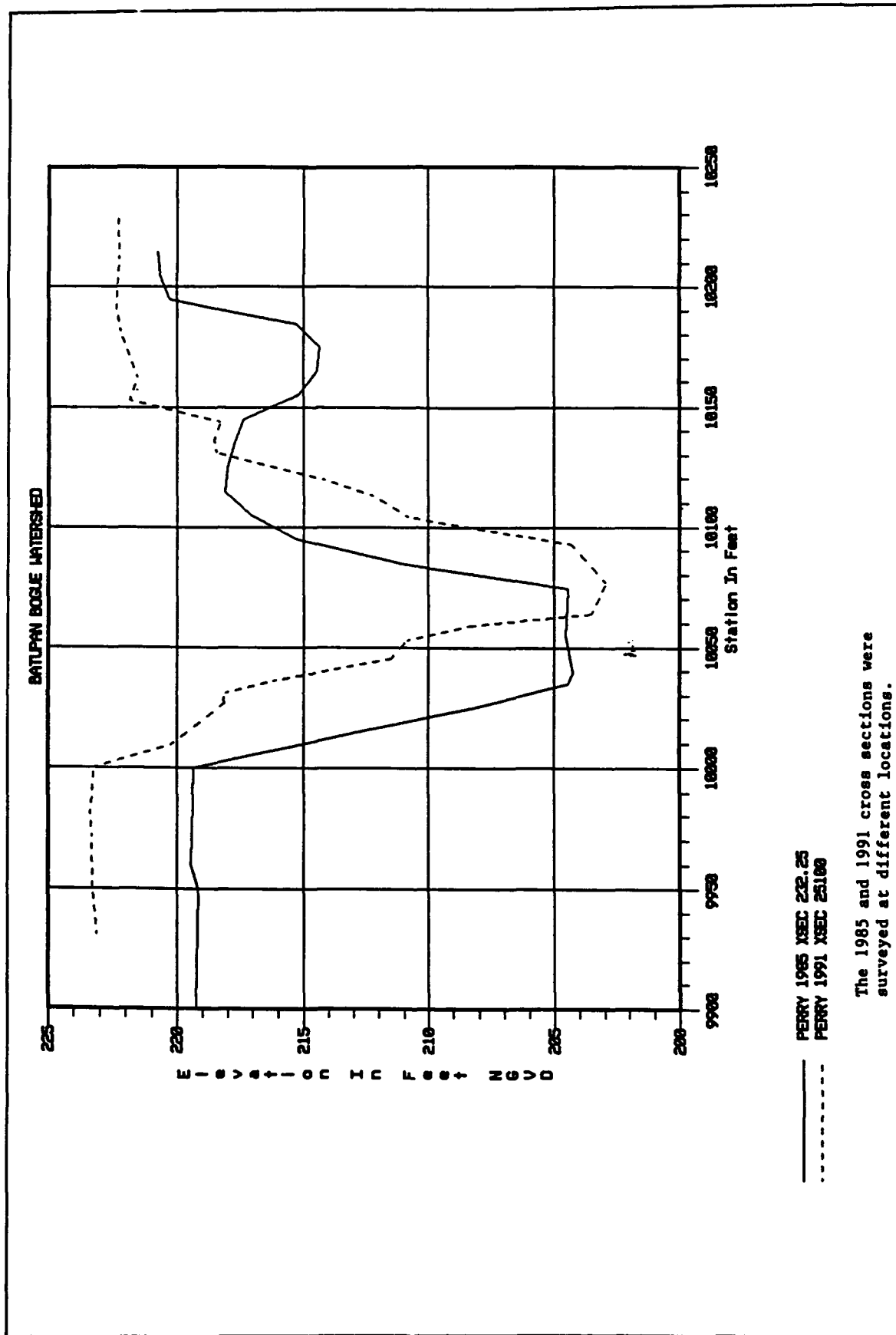
The 1985 and 1991 cross sections were surveyed at different locations.

DATUPAN BOGLE WATERSHED

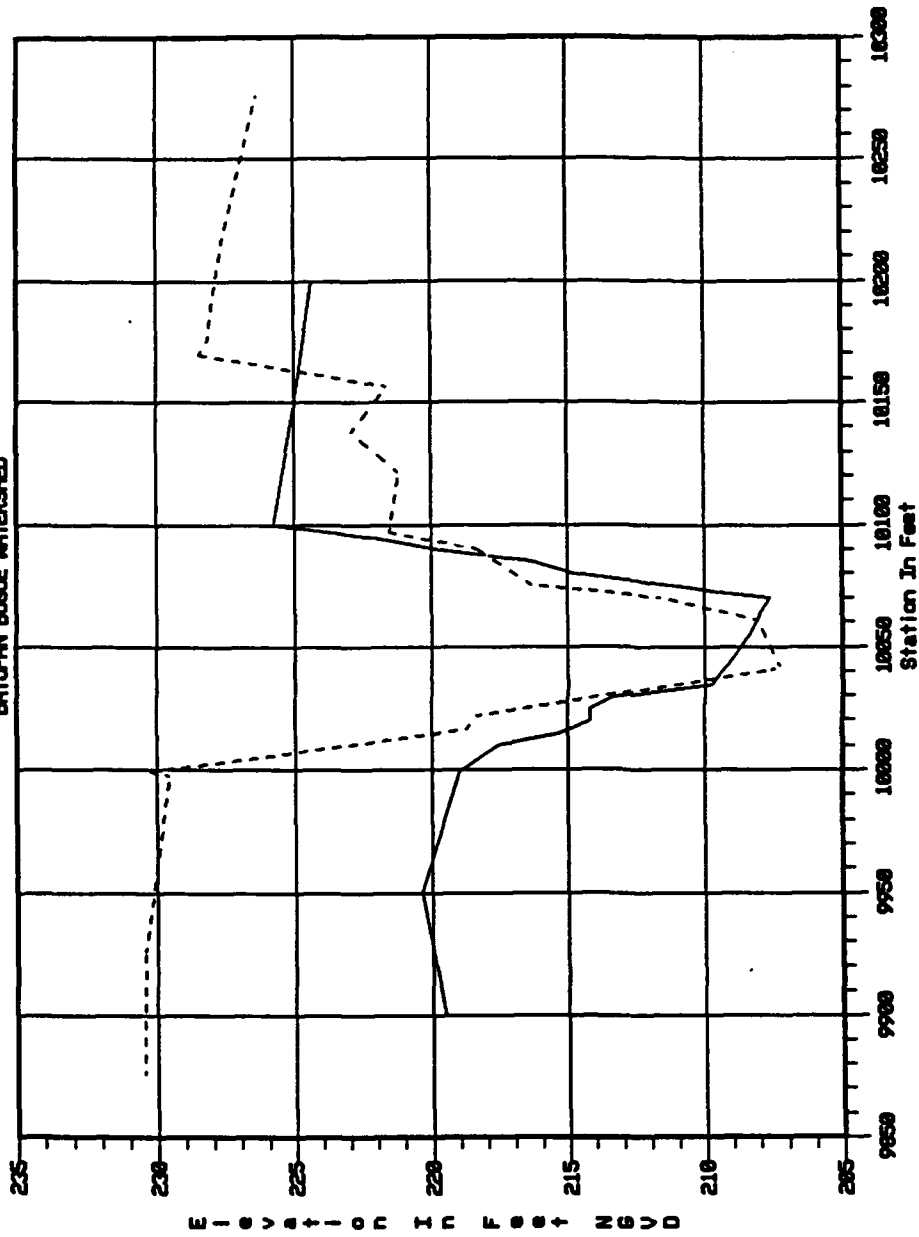


PERRY 1985 XSEC 284.45
 PERRY 1991 XSEC 28200

The 1985 and 1991 cross sections were
 surveyed at different locations.

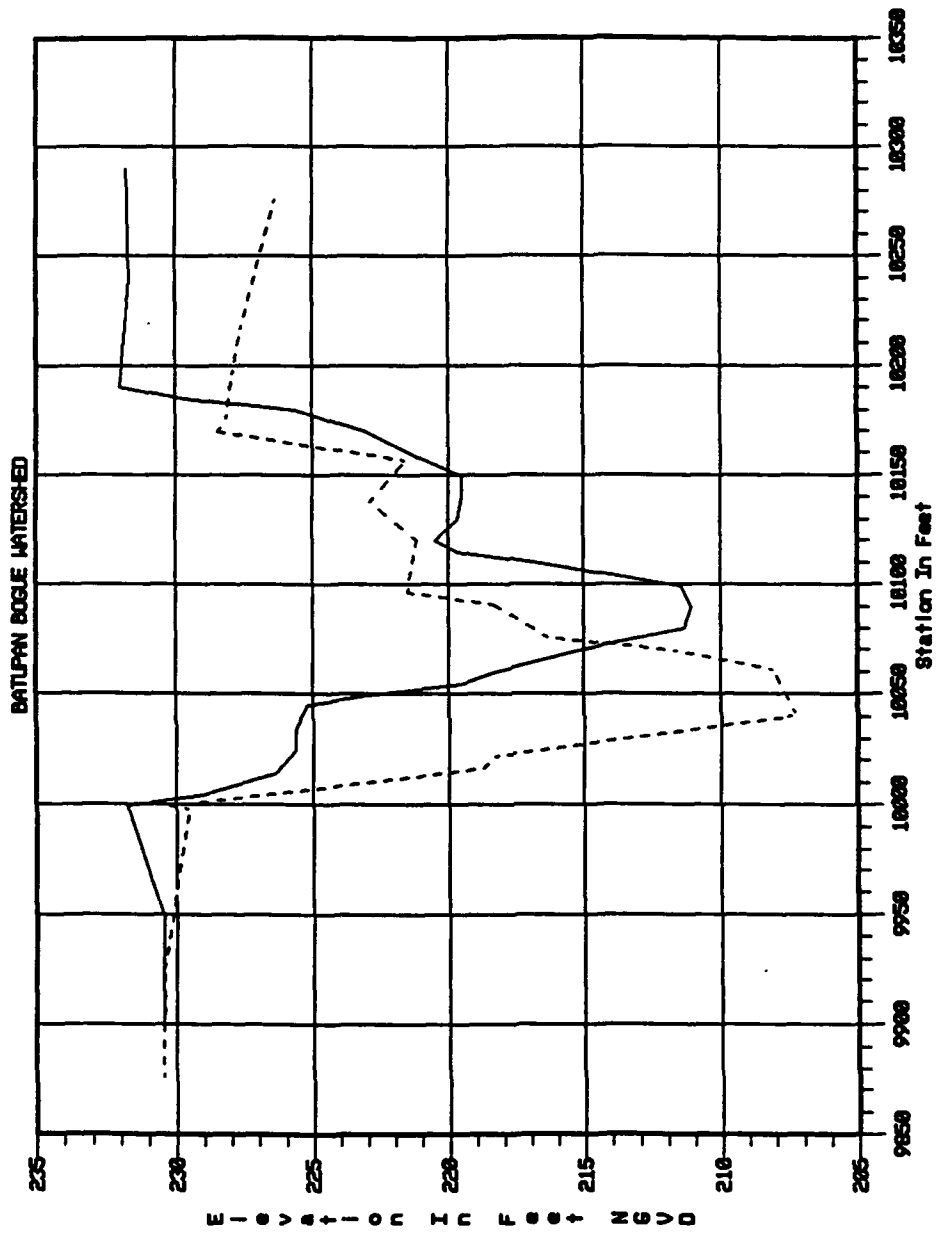


BATUPAN BOGLE WATERSHED



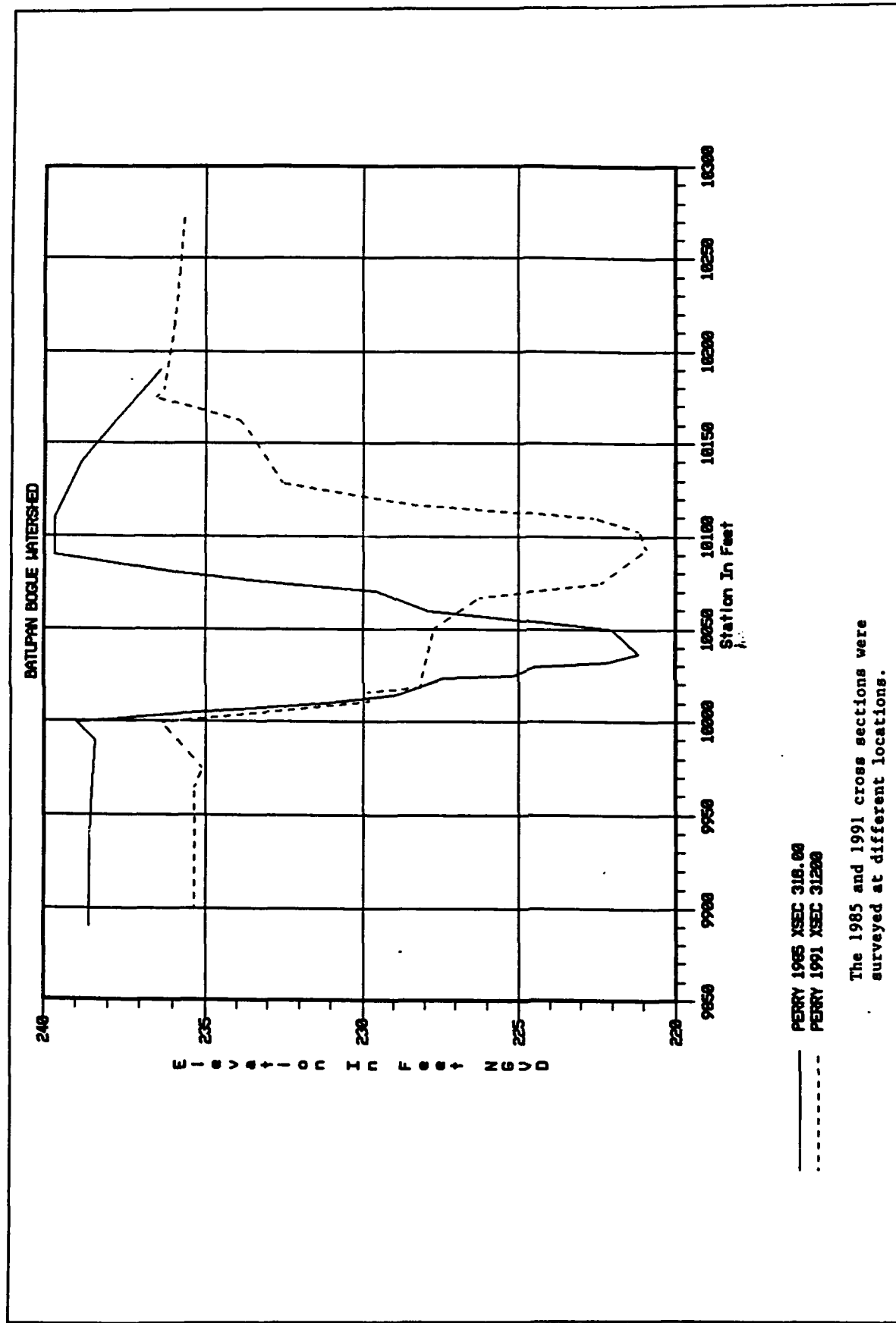
PERRY 1985 XSEC 281.58
 PERRY 1991 XSEC 28800

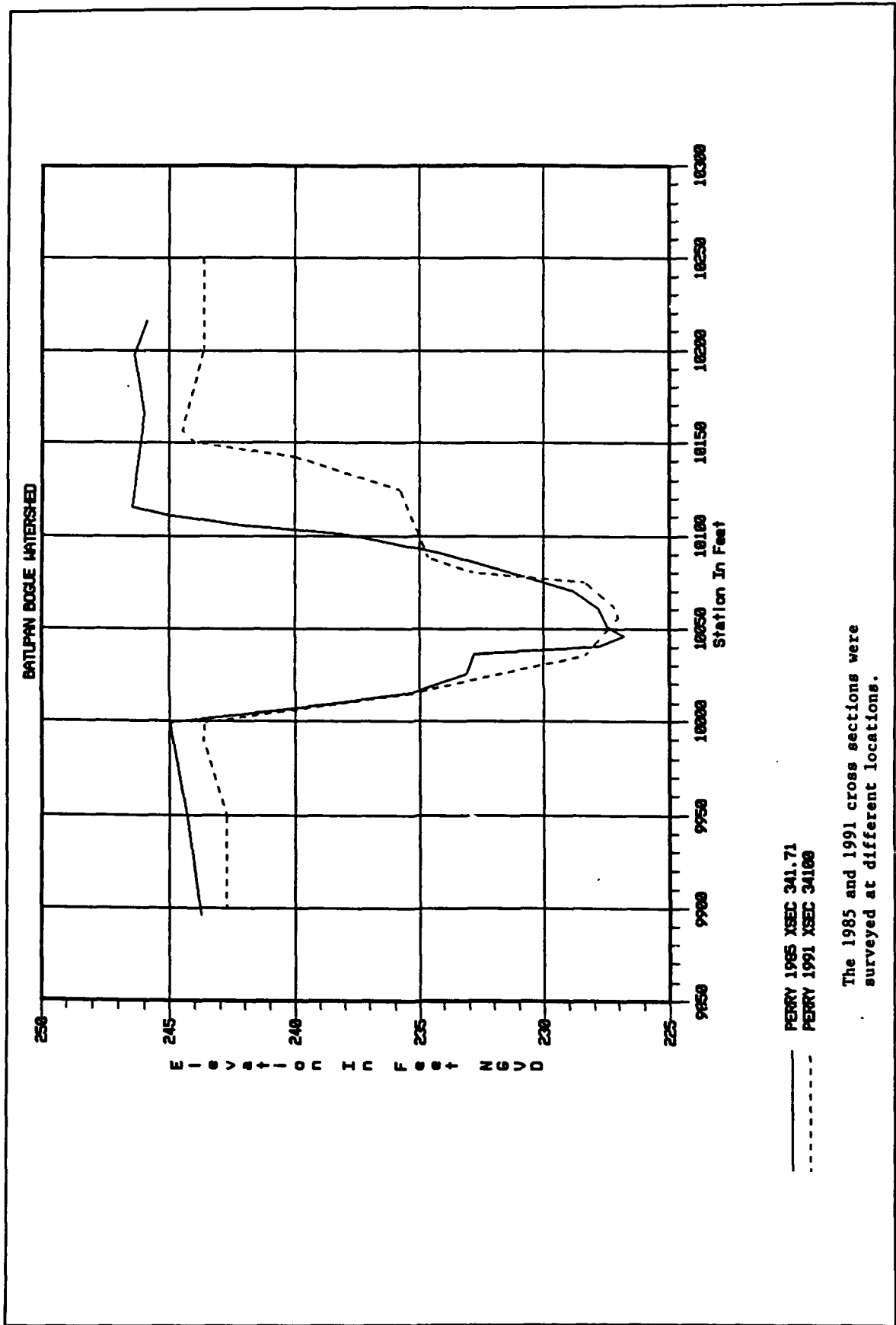
The 1985 and 1991 cross sections were
 surveyed at different locations.



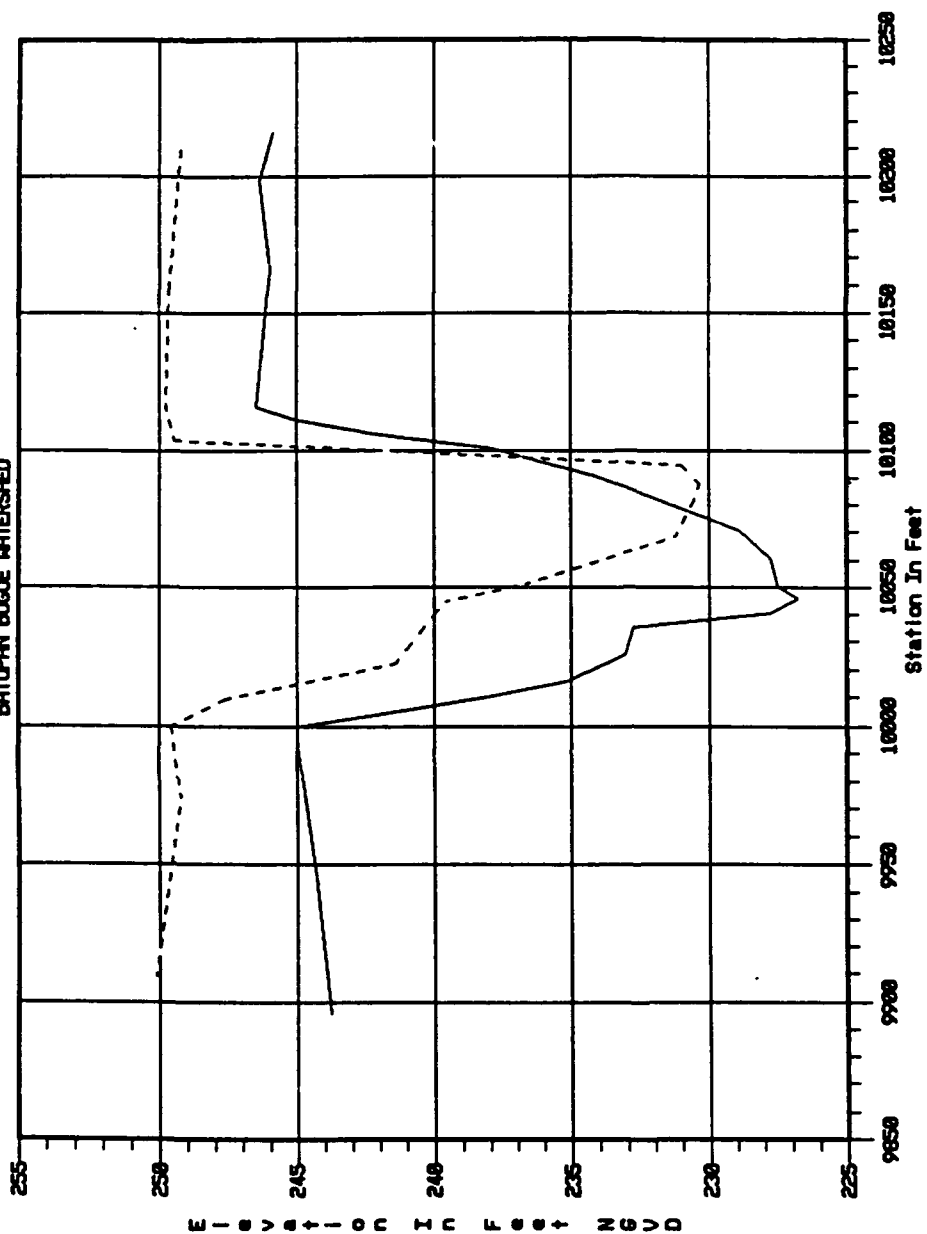
— PERRY 1985 XSEC 250.00
 - - - PERRY 1991 XSEC 20000

The 1985 and 1991 cross sections were surveyed at different locations.



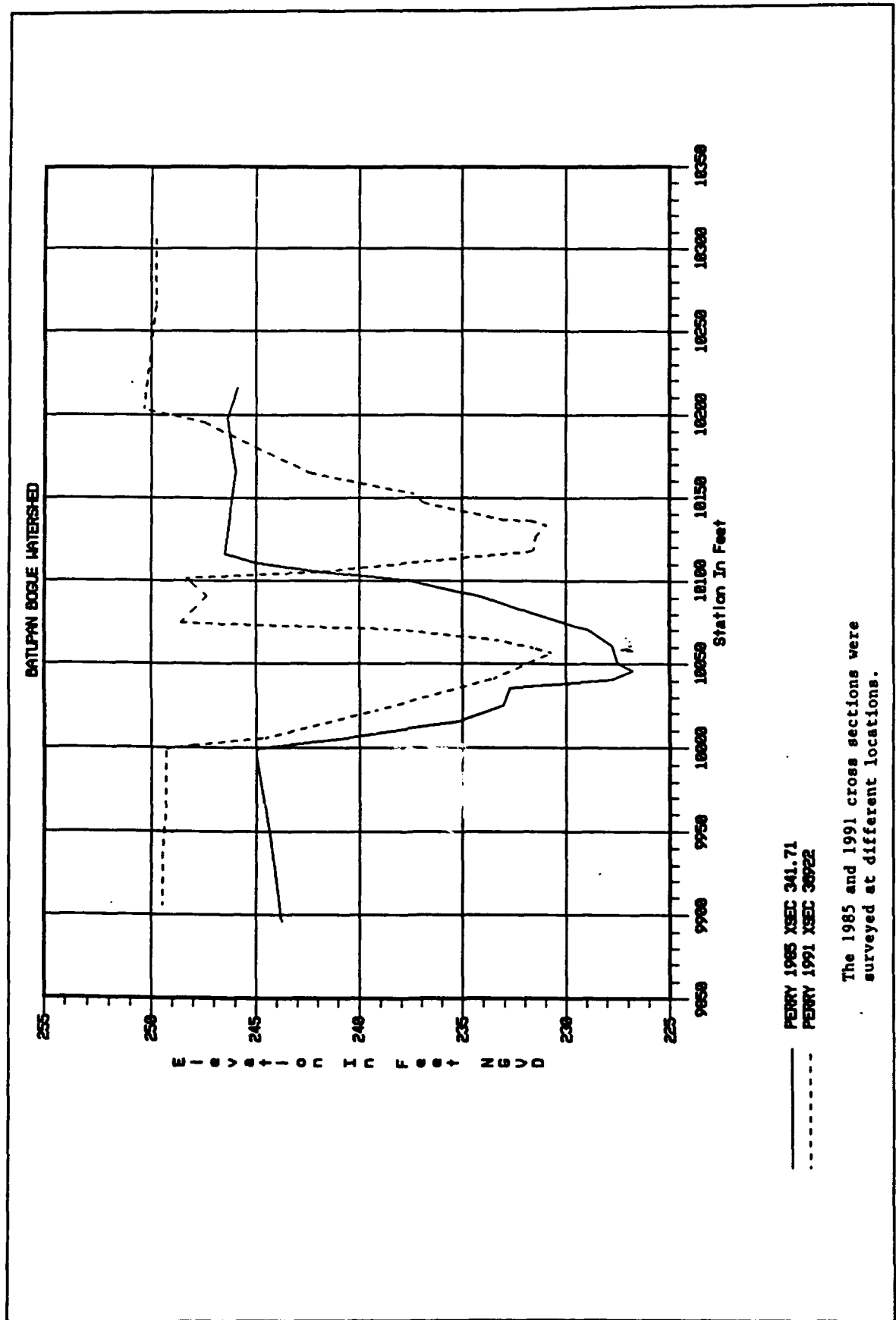


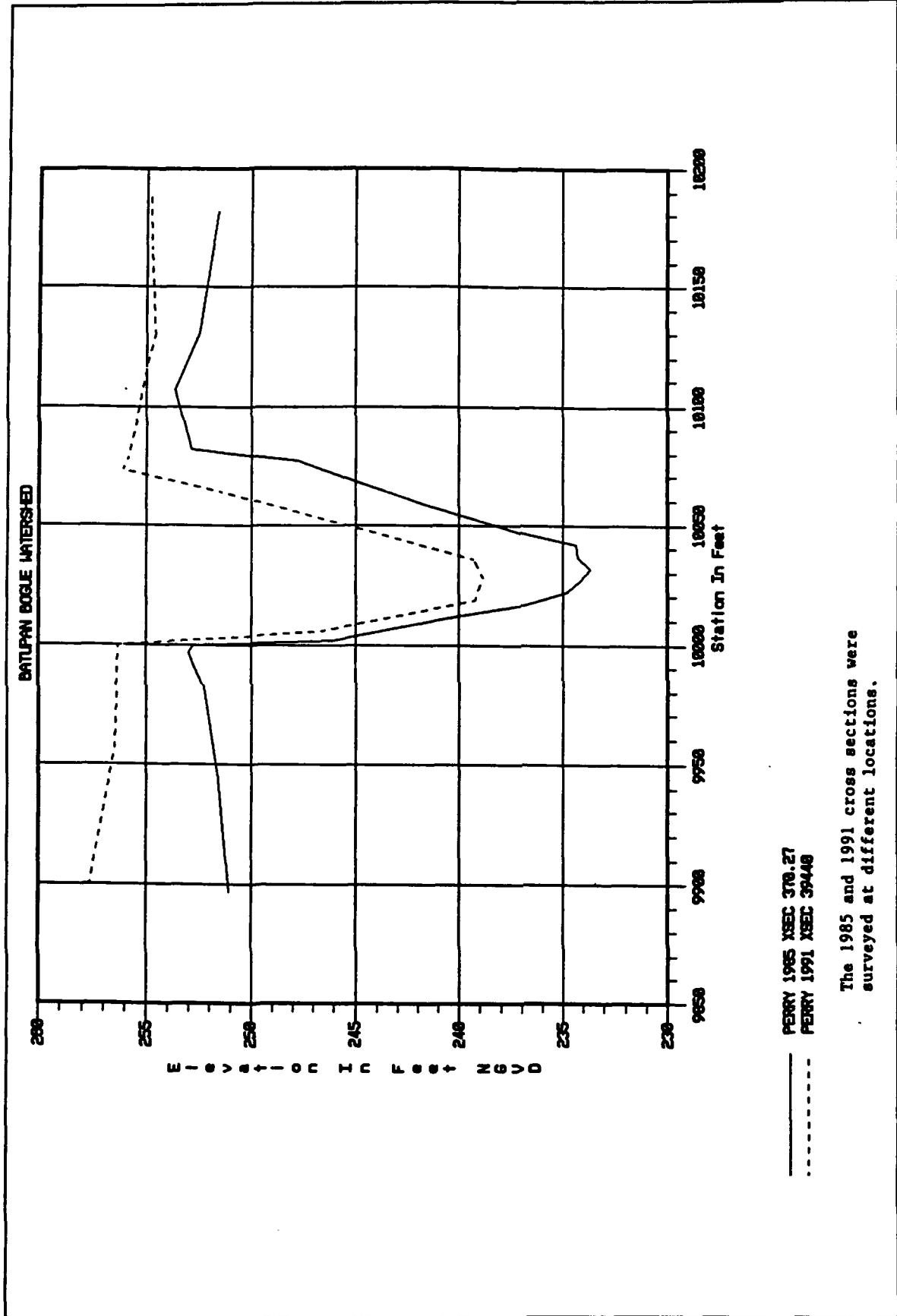
BATUPAN BOGLE WATERSHED

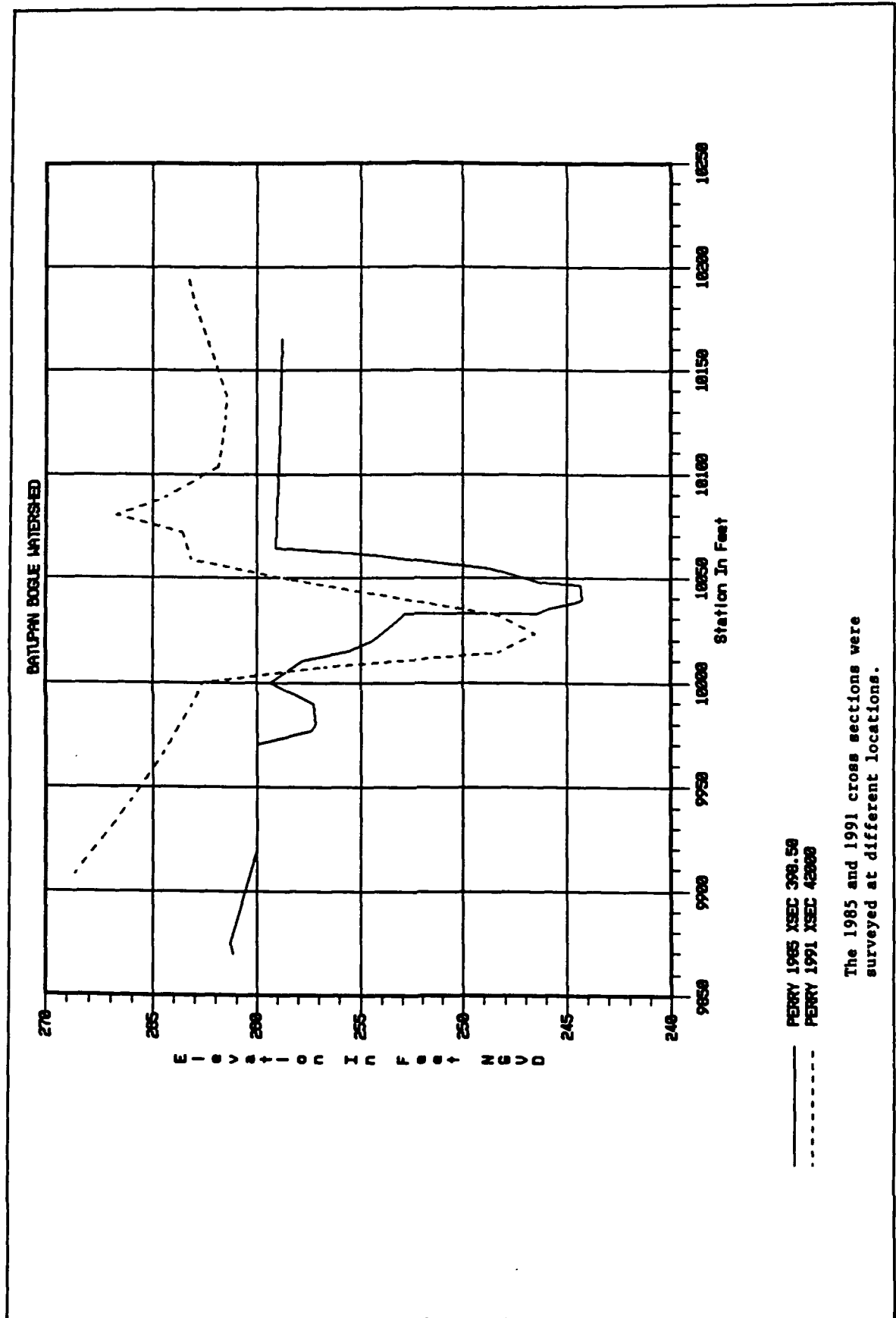


— PERRY 1985 XSEC 341.71
 - - - PERRY 1991 XSEC 36877

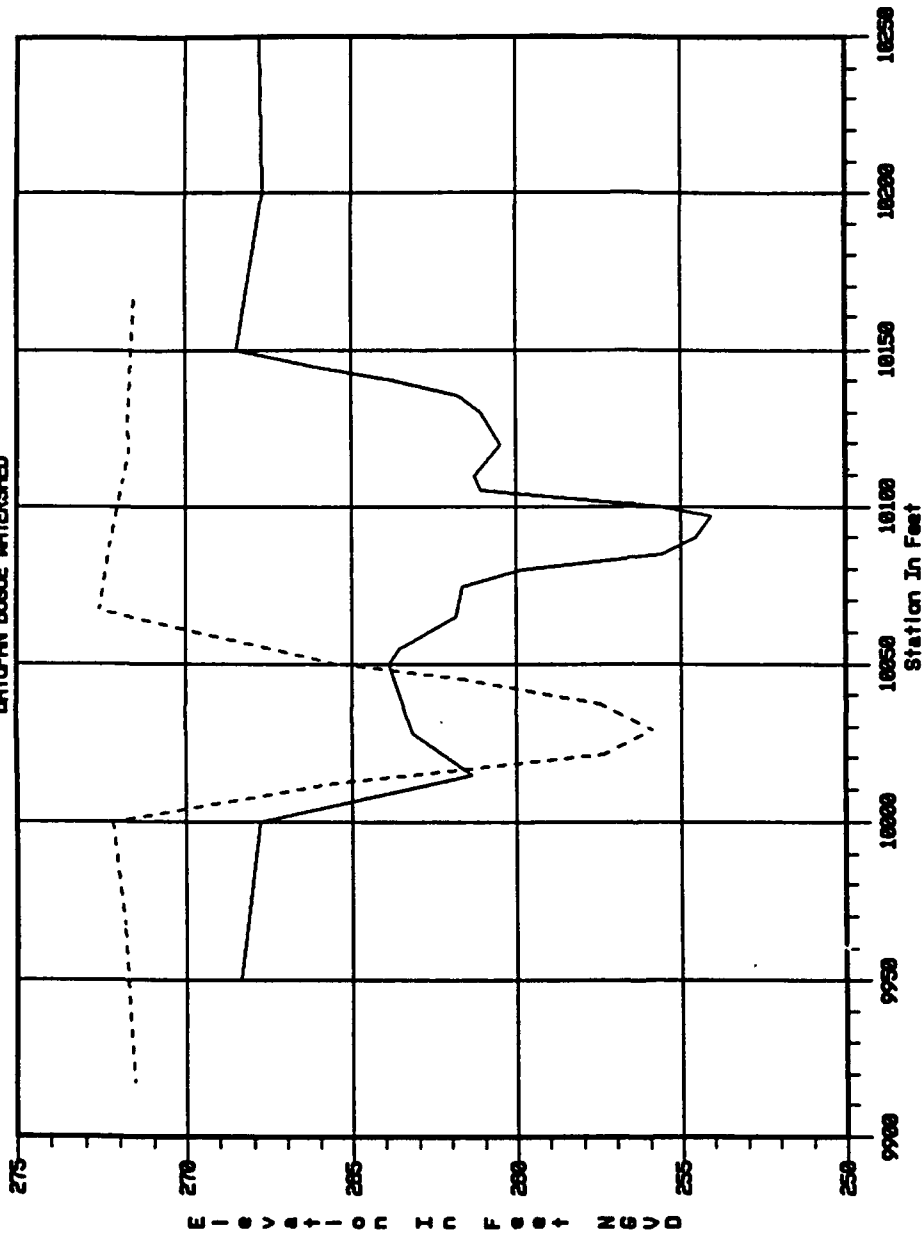
The 1985 and 1991 cross sections were surveyed at different locations.





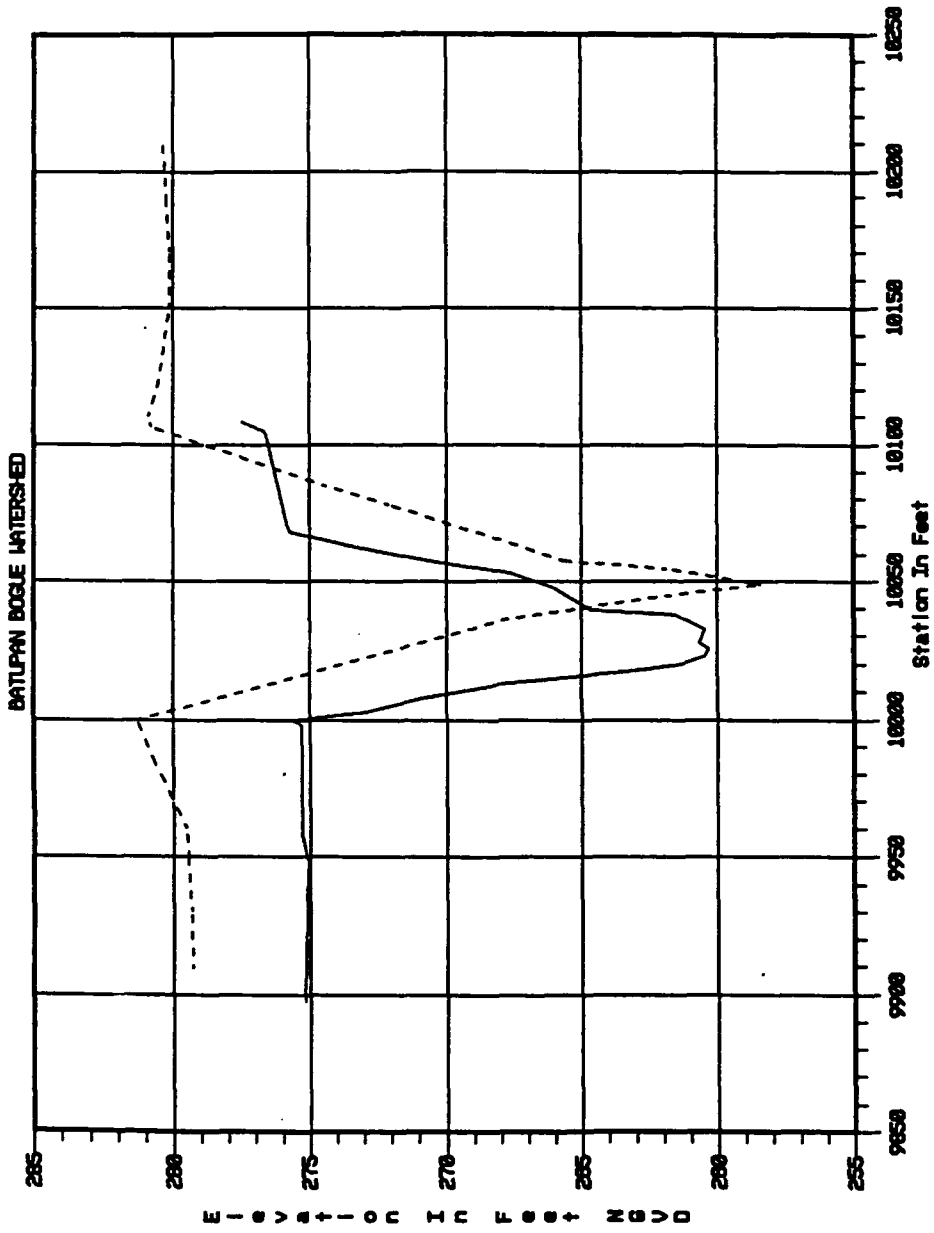


BATUPAN BOGLE WATERSHED



— PERRY 1985 XSEC 425.00
 - - - PERRY 1991 XSEC 44500

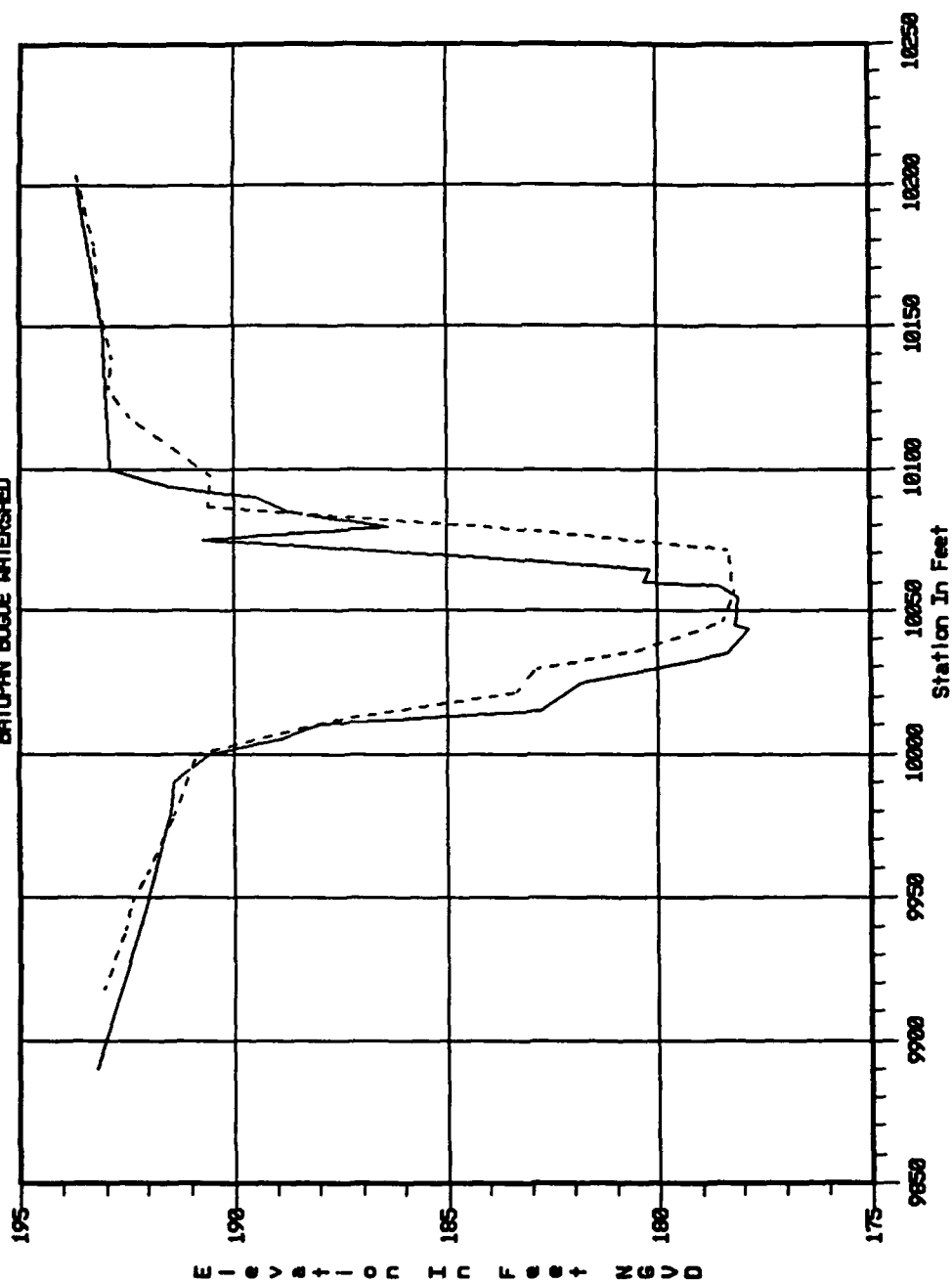
The 1985 and 1991 cross sections were surveyed at different locations.



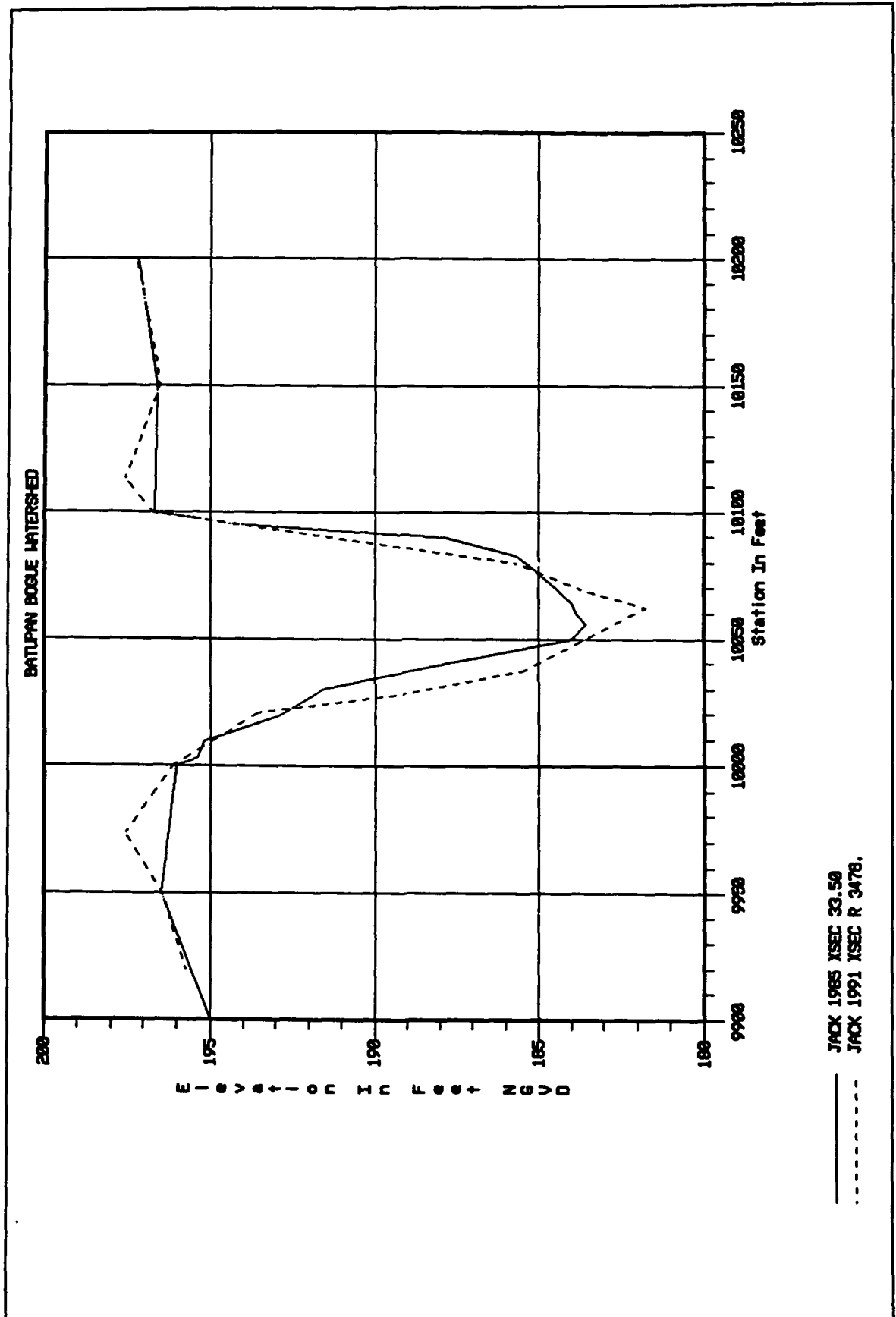
— PERRY 1985 XSEC 447.14
 - - - PERRY 1991 XSEC 46508

The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGUE INTERSECT

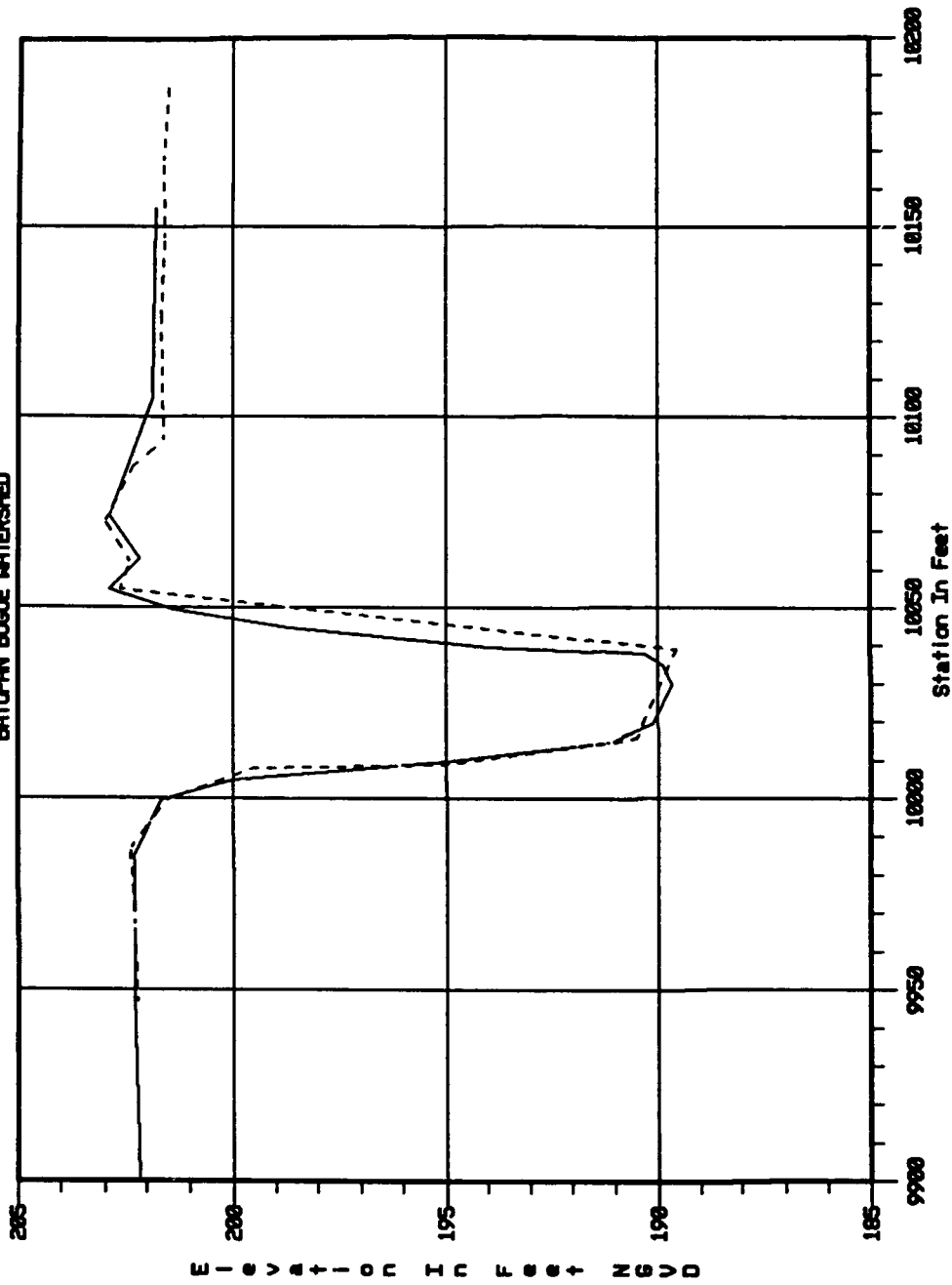


— JACK 1965 XSEC 8.00
 - - - JACK 1991 XSEC R 800.



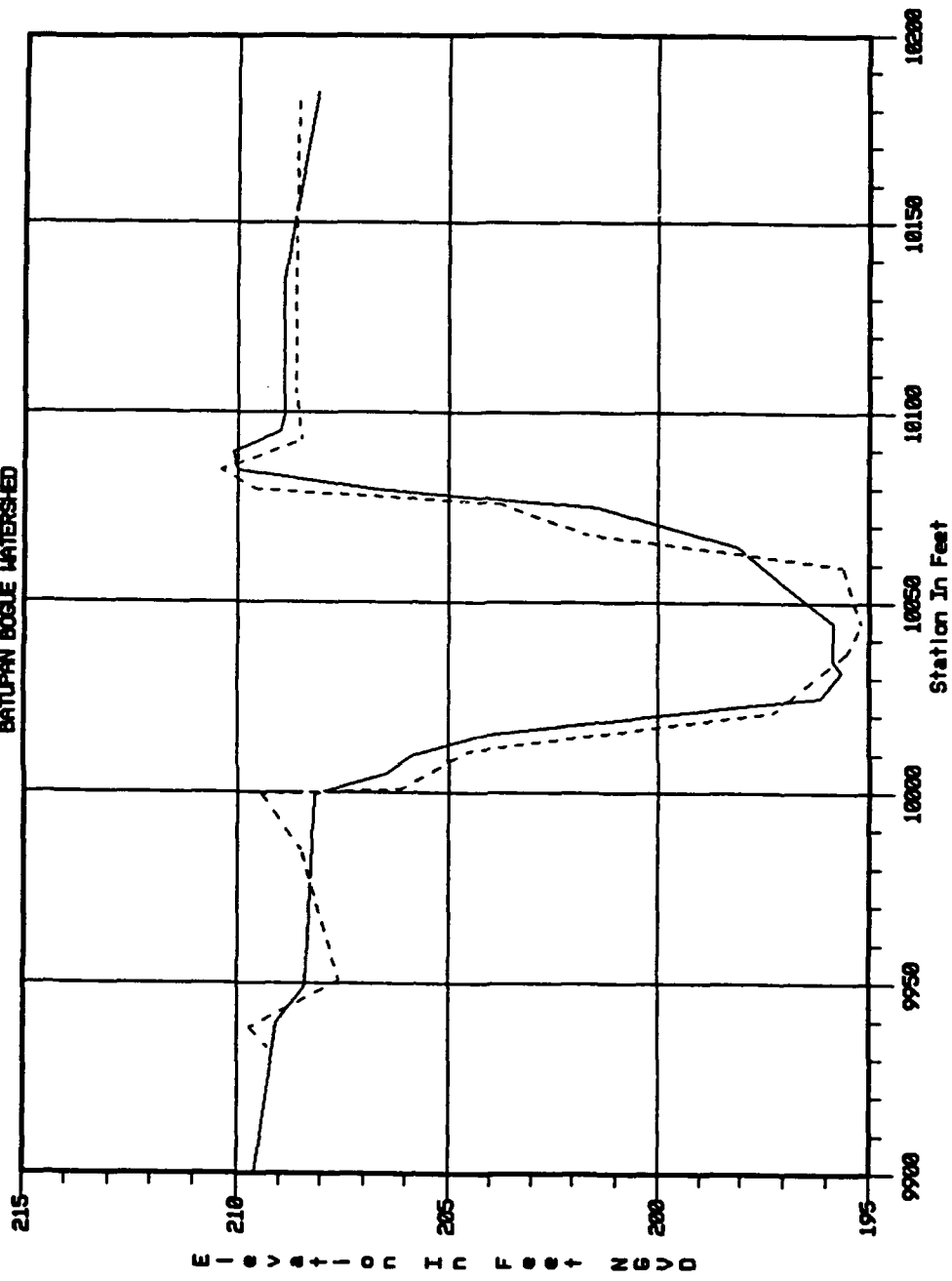
— JACK 1985 XSEC 33.50
- - - JACK 1991 XSEC R 3470.

BATUPAN BOGLE WATERSHED



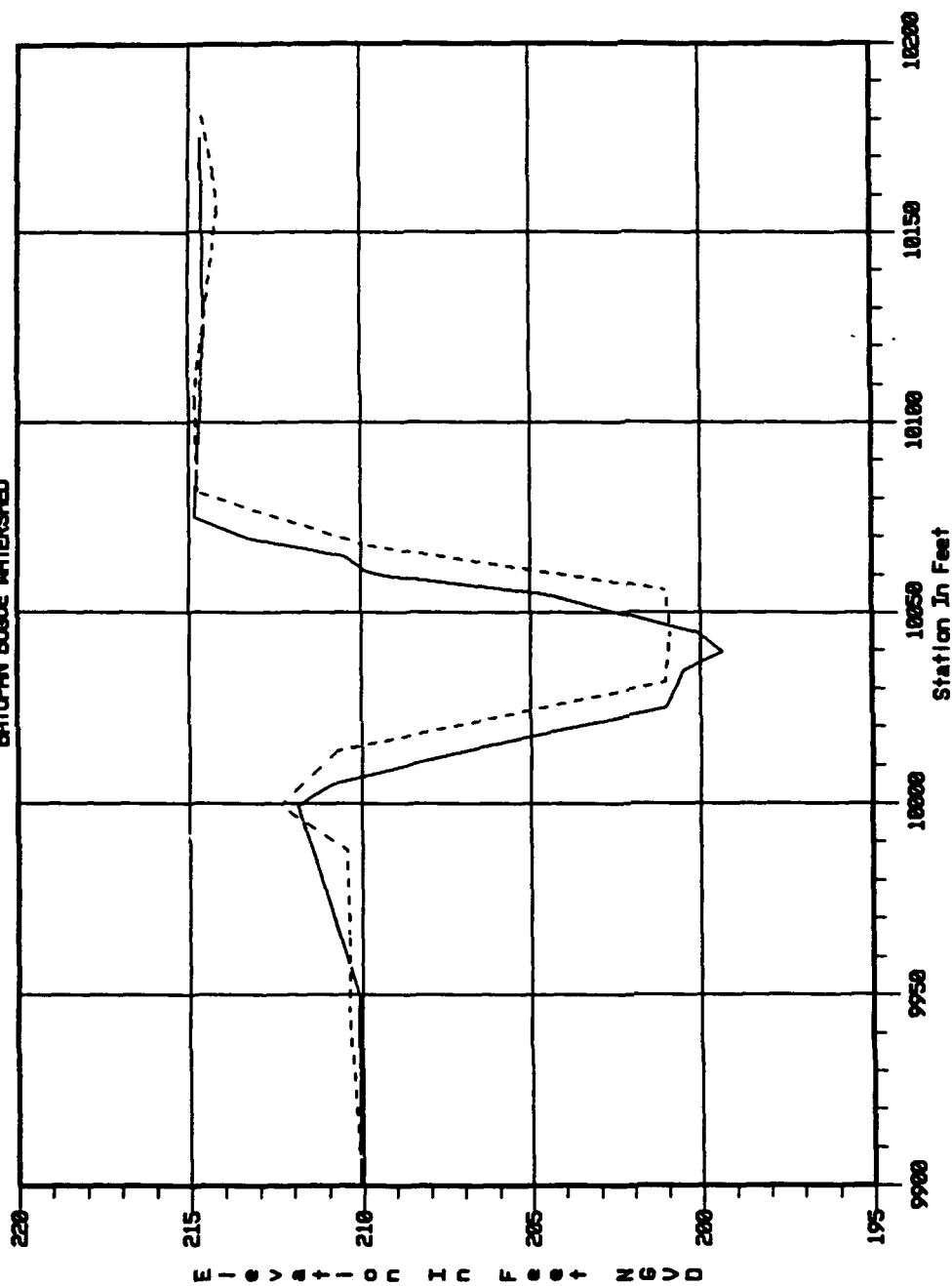
— JACK 1985 XSEC 83.00
 - - - JACK 1991 XSEC R 8354.

BATUPAN BOGLE WATERSHED

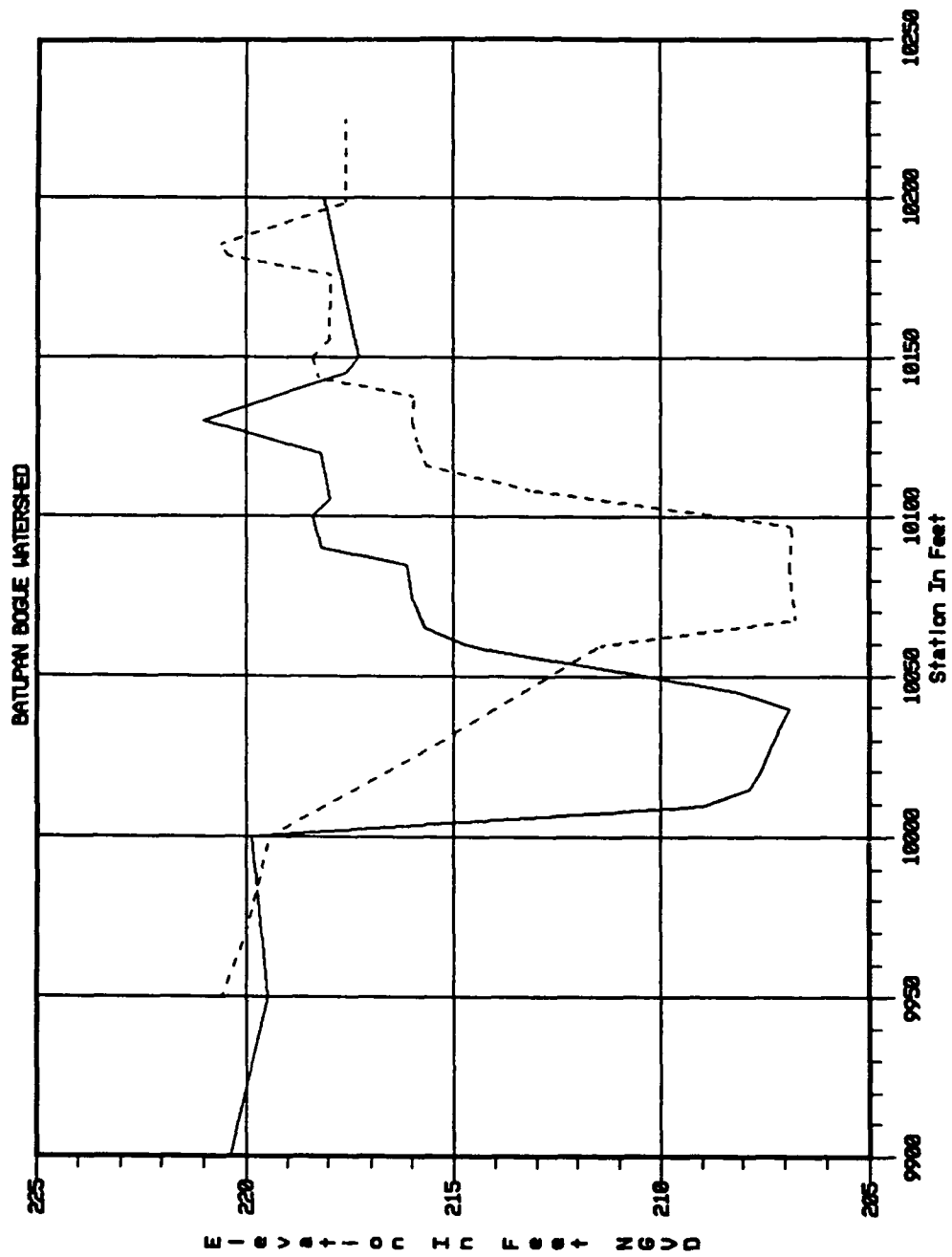


JACK 1985 XSEC 92.87
JACK 1991 XSEC R 9382

BATUPAN BOGIE WATERSHED



— JACK 1985 XSEC 119.30
 - - - JACK 1991 XSEC R 12245.



— JACK 1985 XSEC 146.14
 - - - JACK 1991 XSEC R 15000.

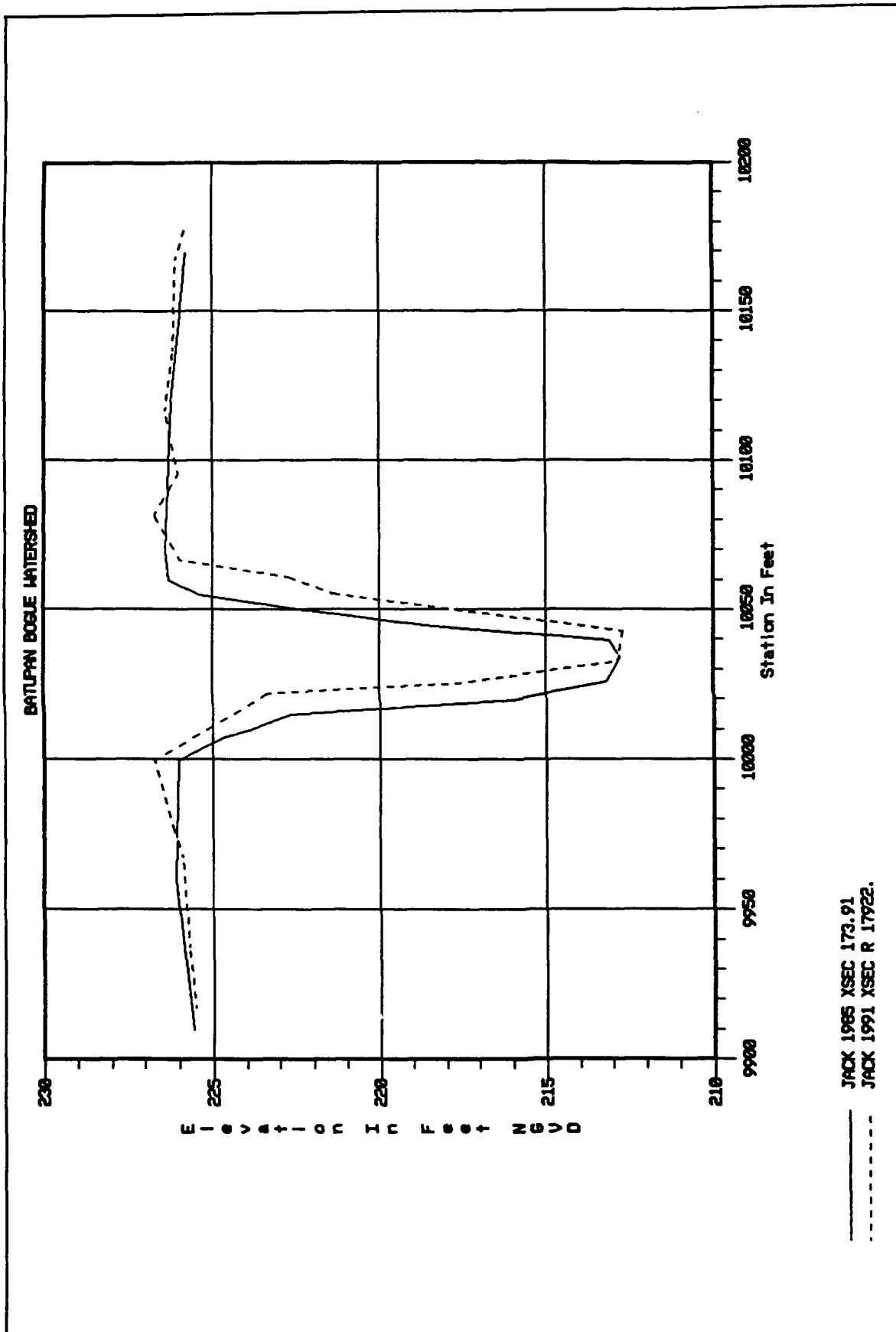
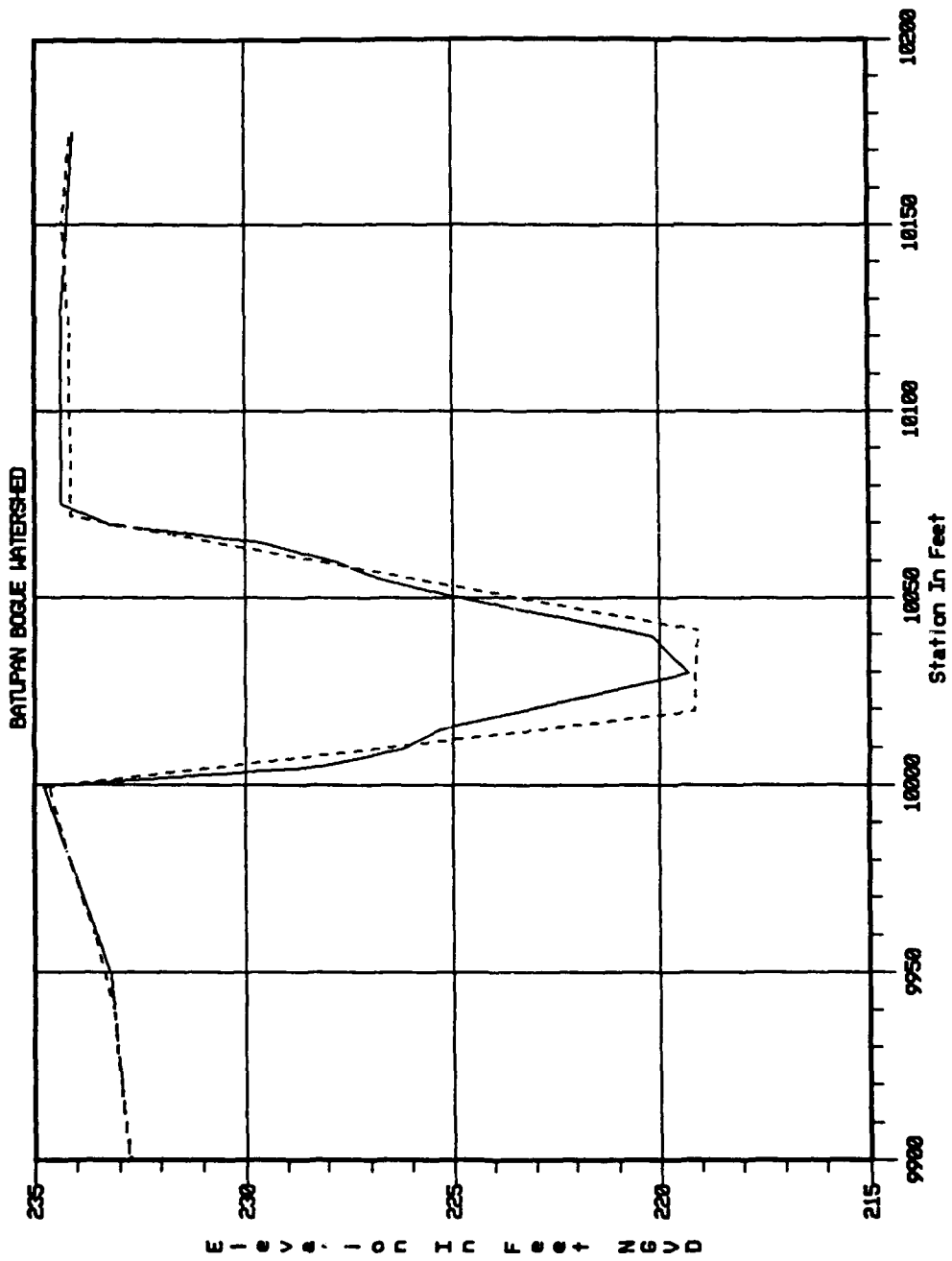
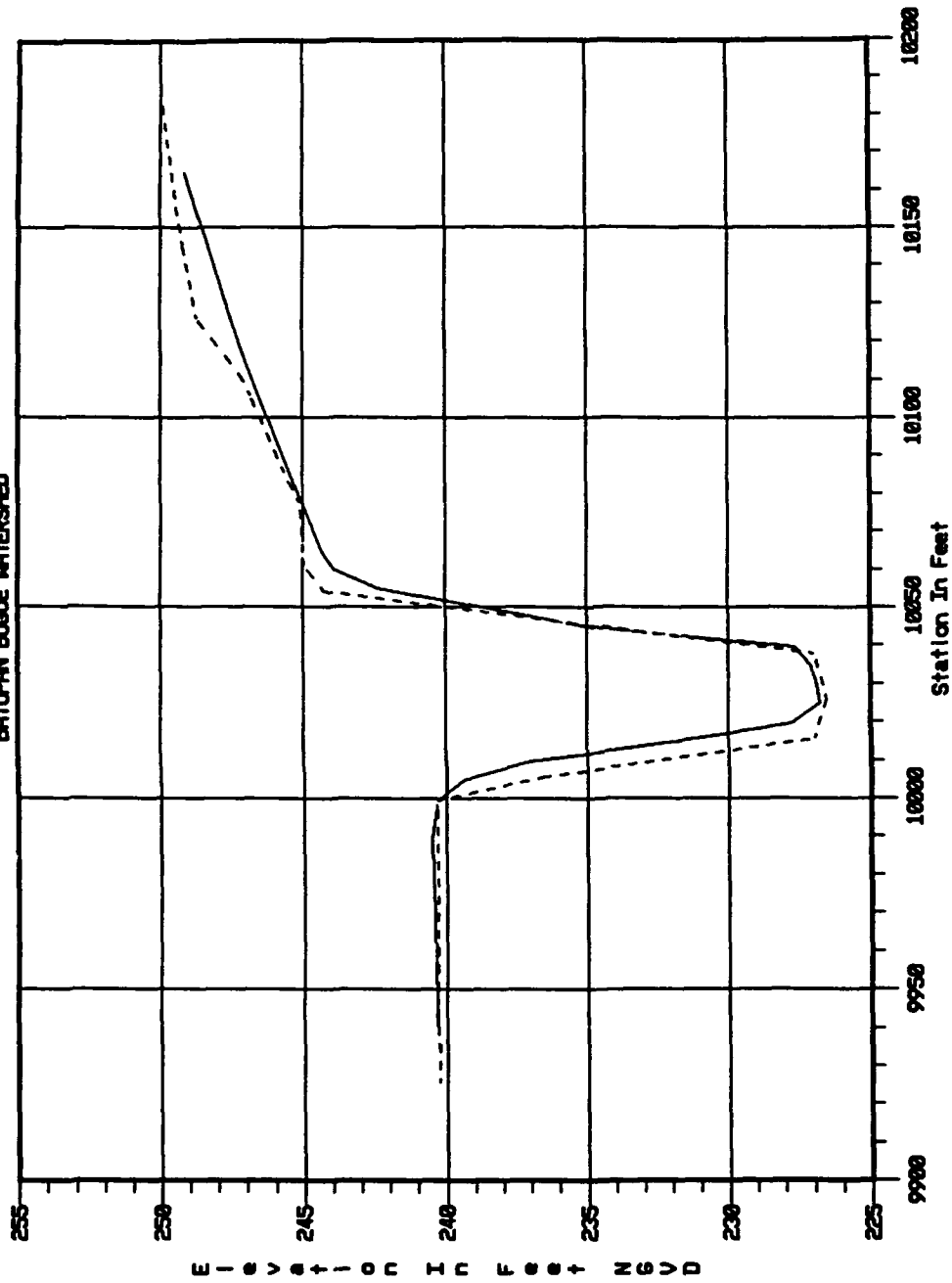


PLATE C88

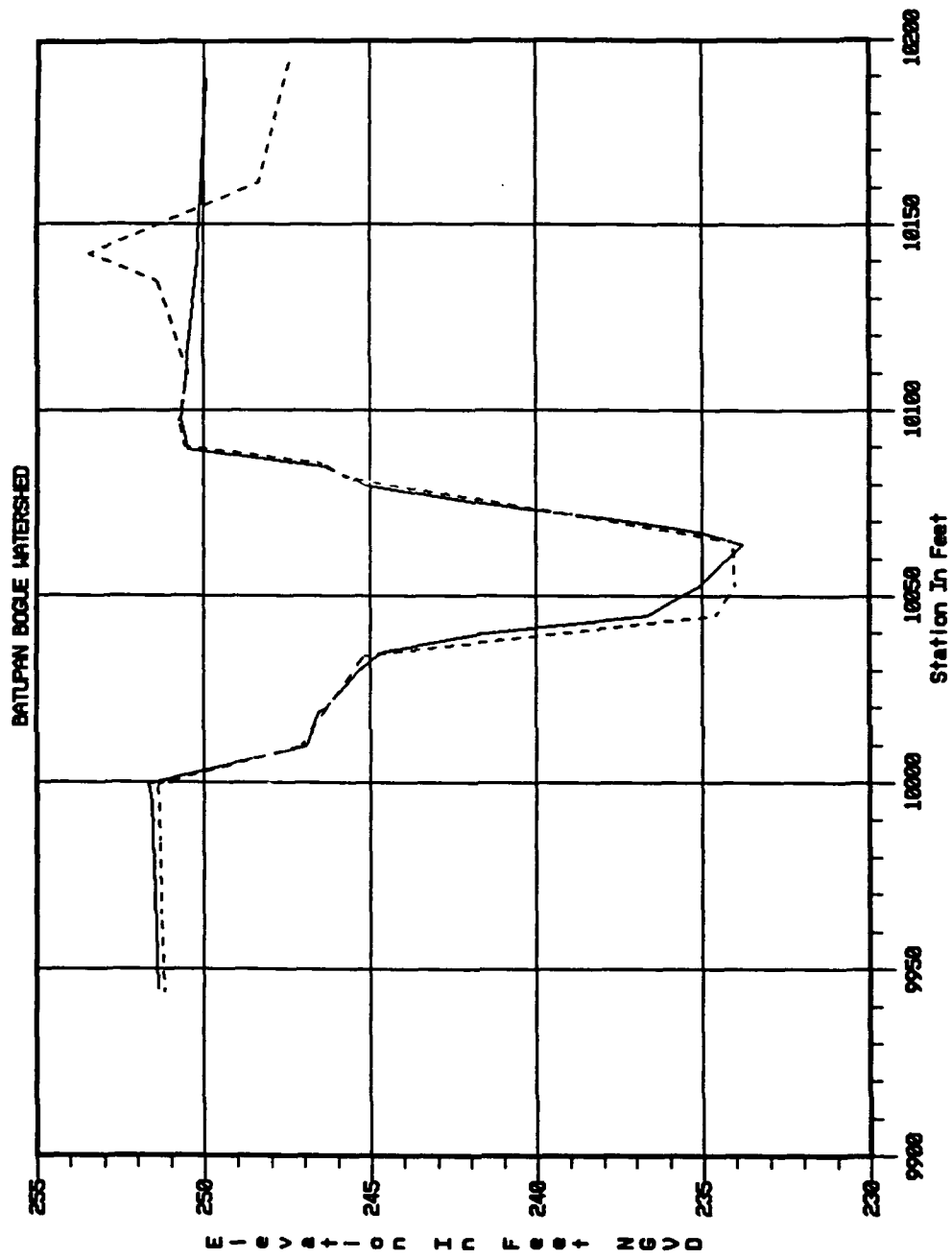


— JACK 1985 XSEC 200.74
 - - - JACK 1991 XSEC R 20700.

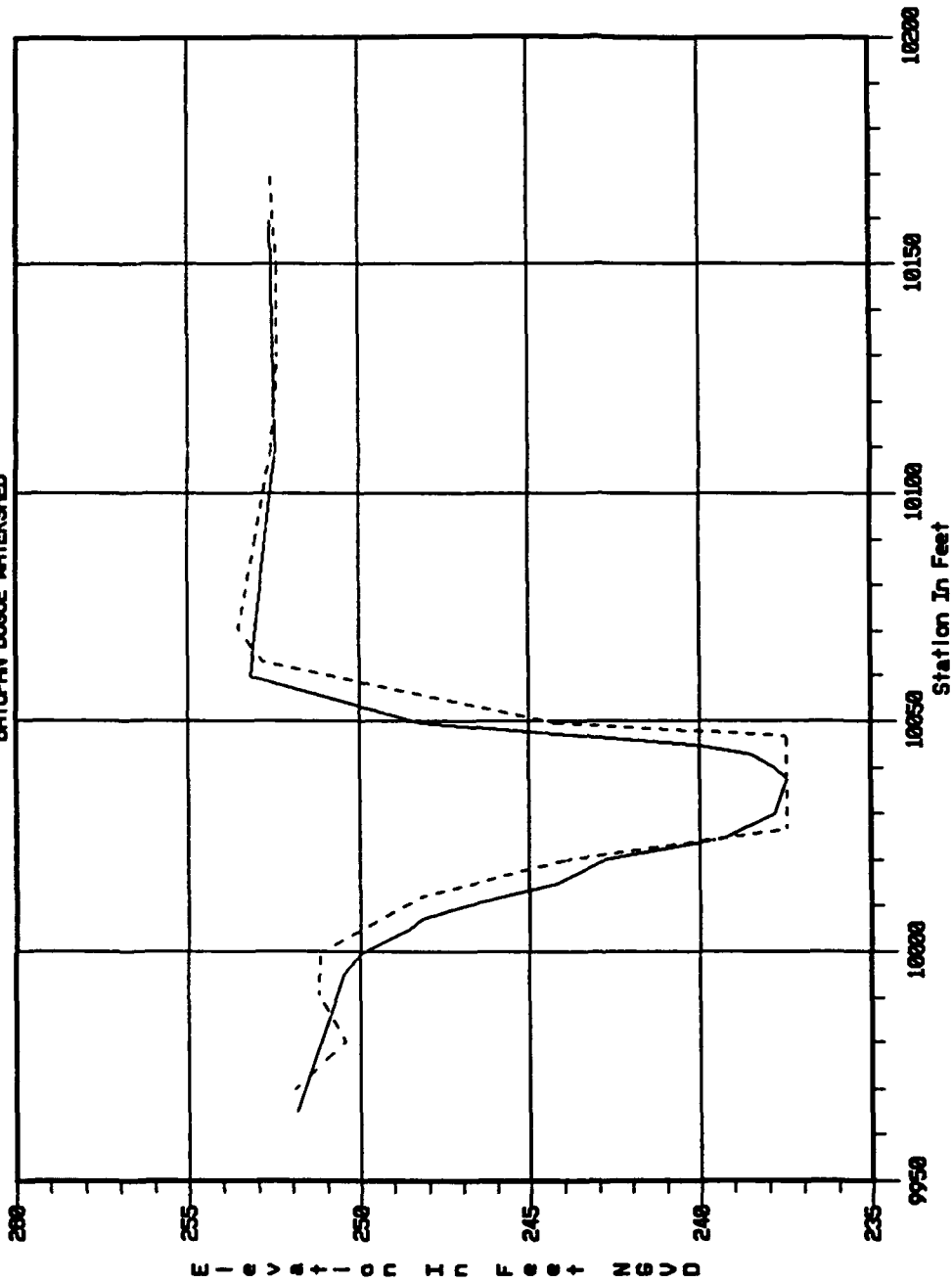
BATUPAN BOULE WATERSHED



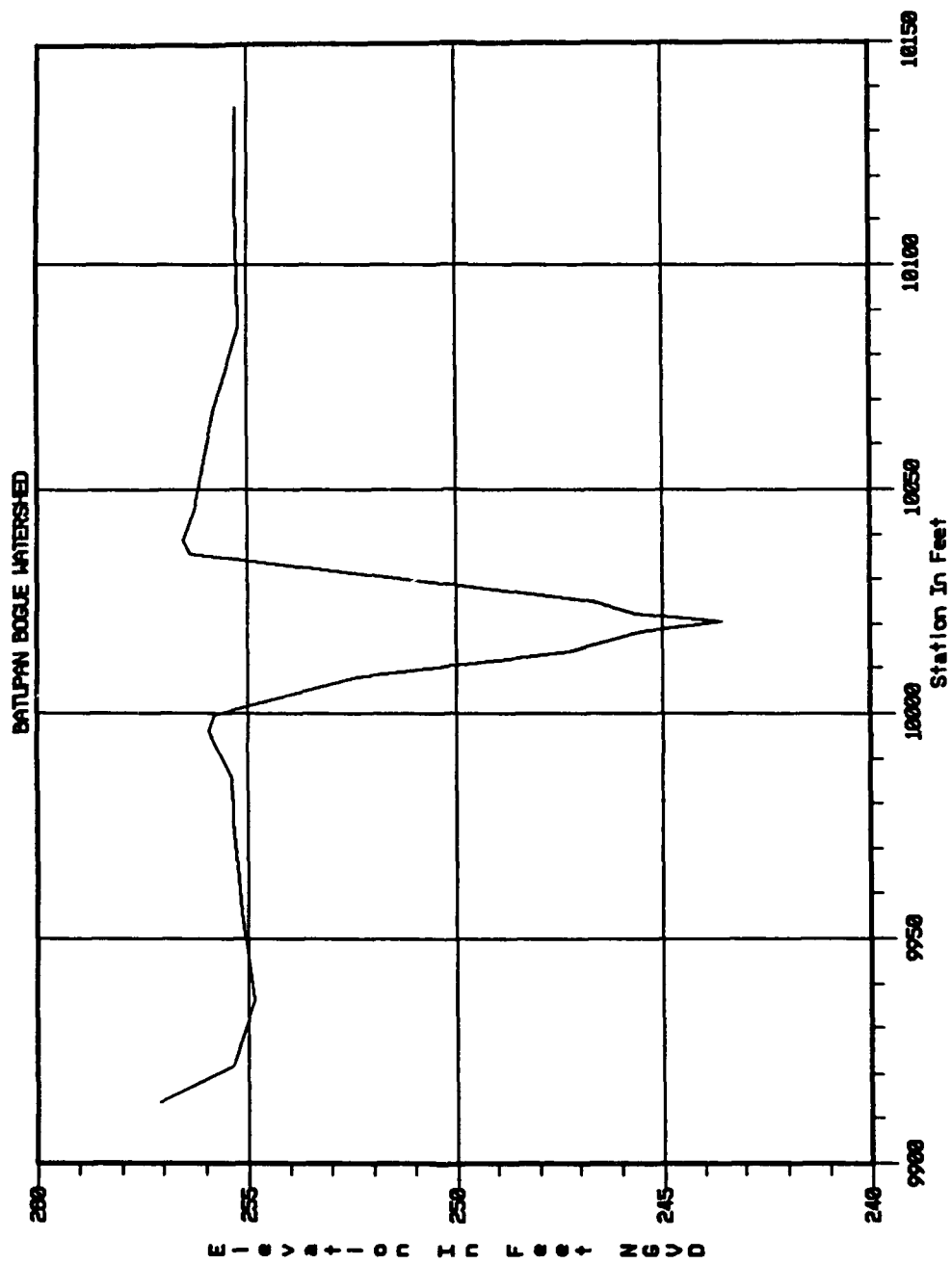
JACK 1985 XSEC 232.48
JACK 1991 XSEC R 24012.



BATUPAN BOGLE WATERSHED

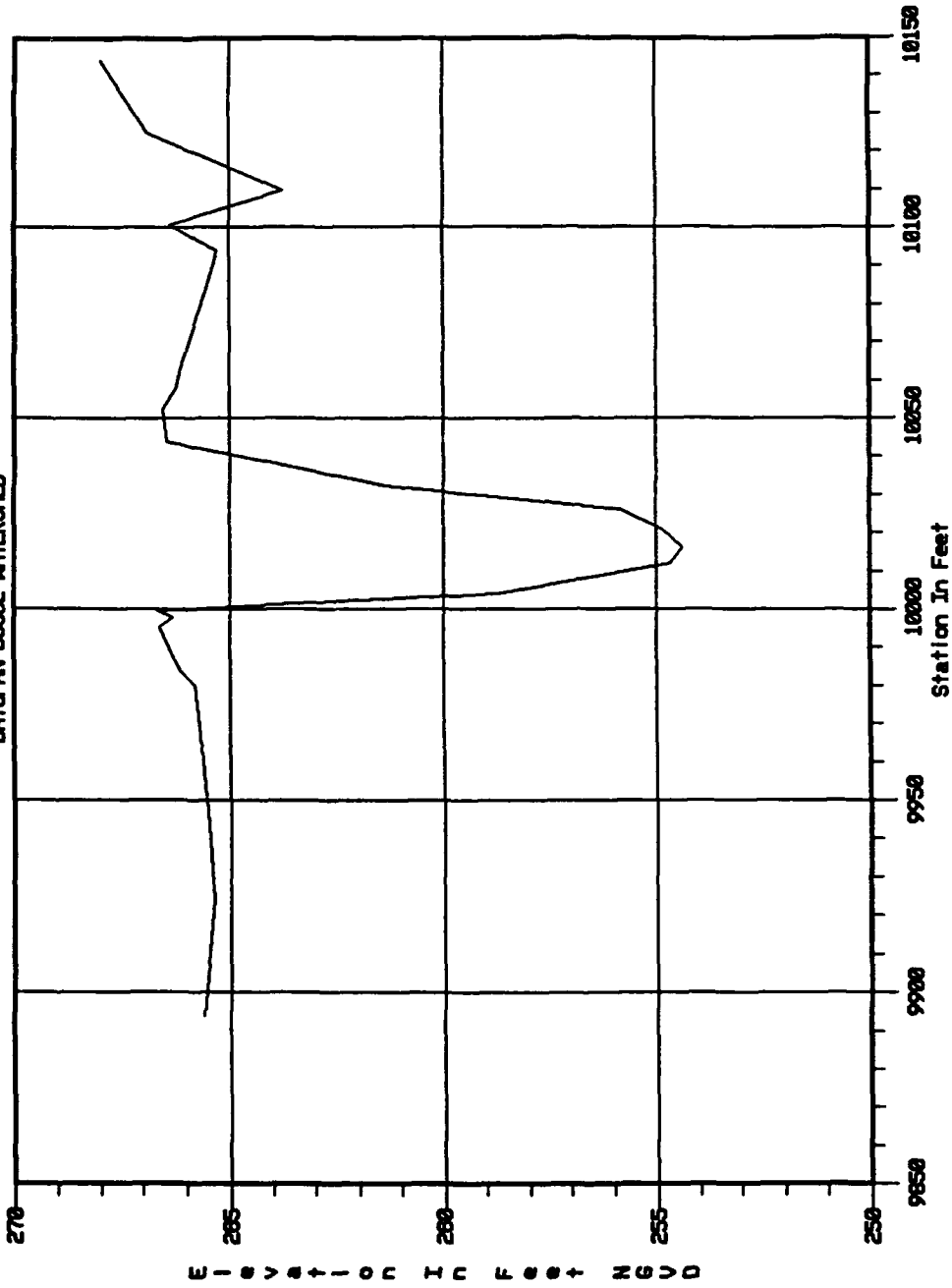


— JACK 1985 XSEC 289.08
 - - - JACK 1991 XSEC R 27859

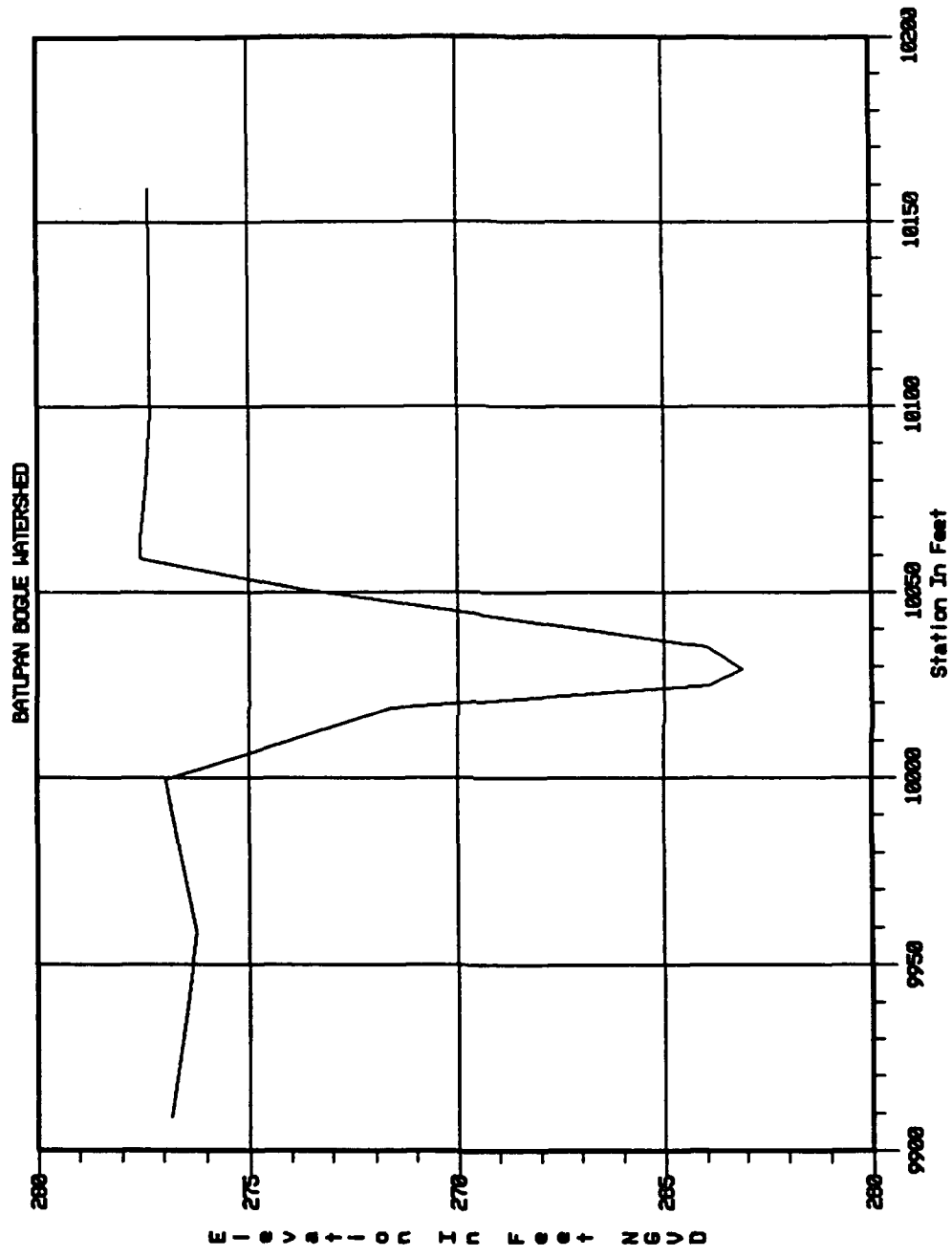


—— PERRY TRIB 1991 XSEC 2000

BATUPAN BOGLE WATERSHED

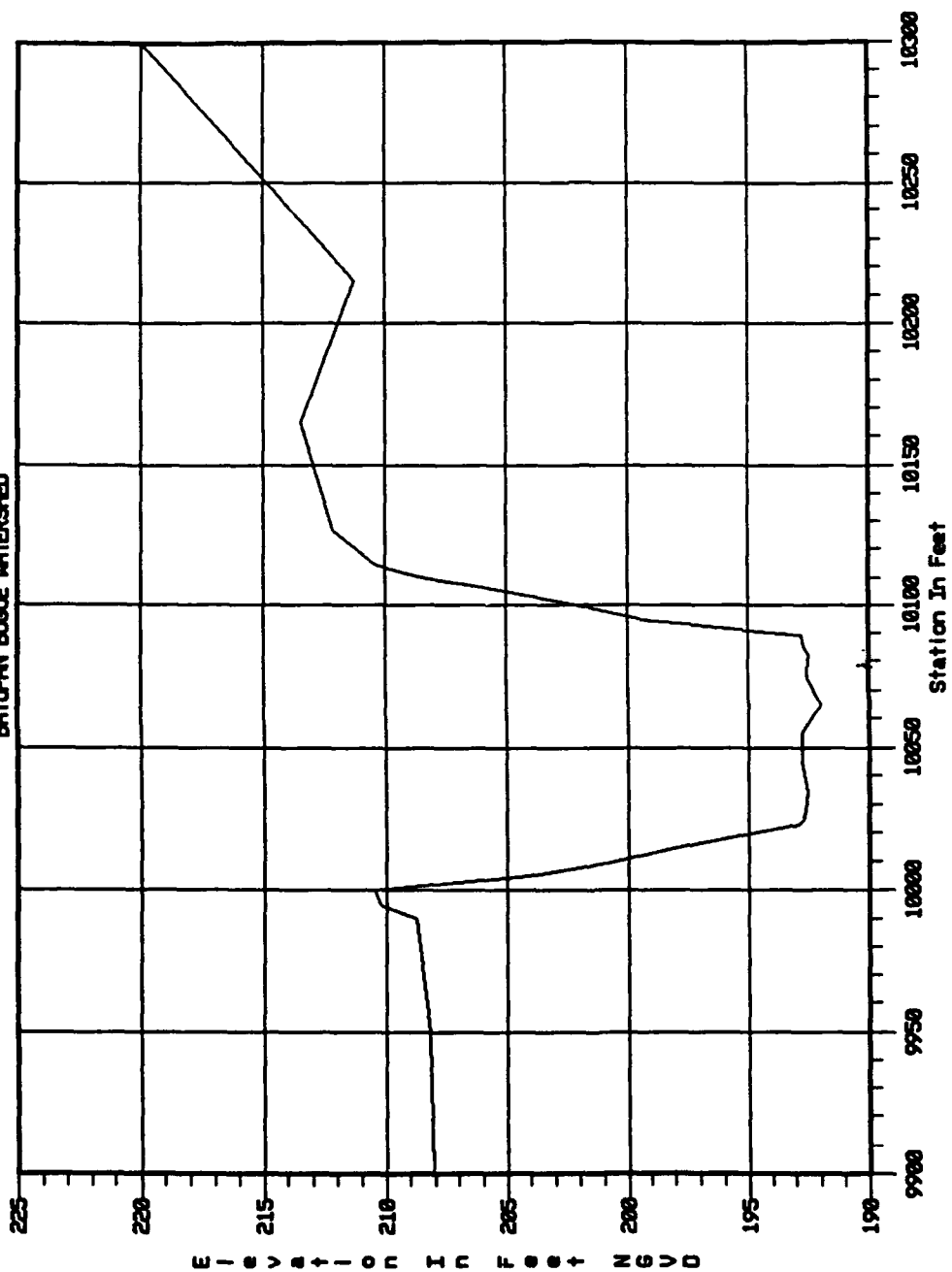


PERRY TRIB 1991 XSEC 5131

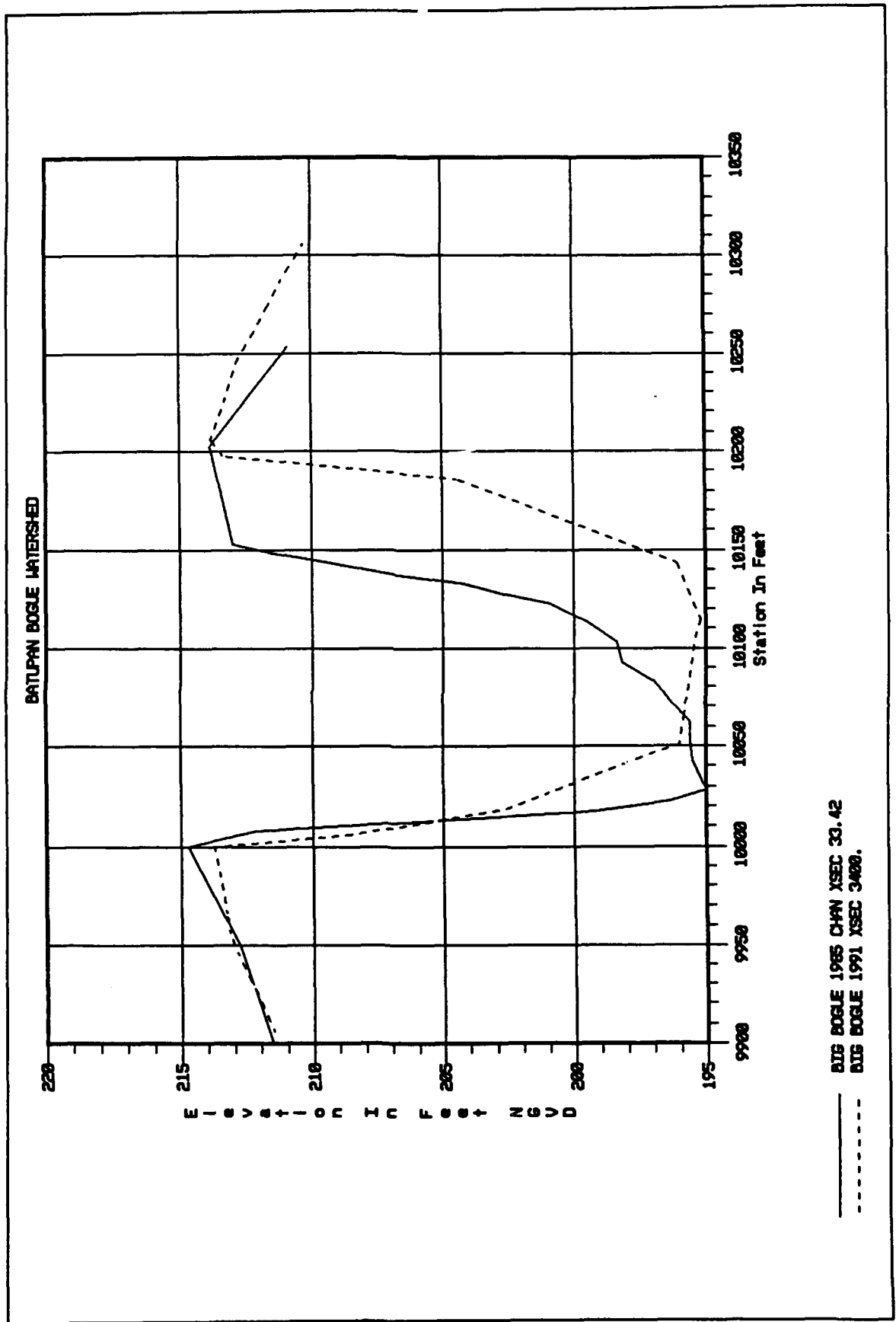


— PERRY TRIB 1991 XSEC 7500

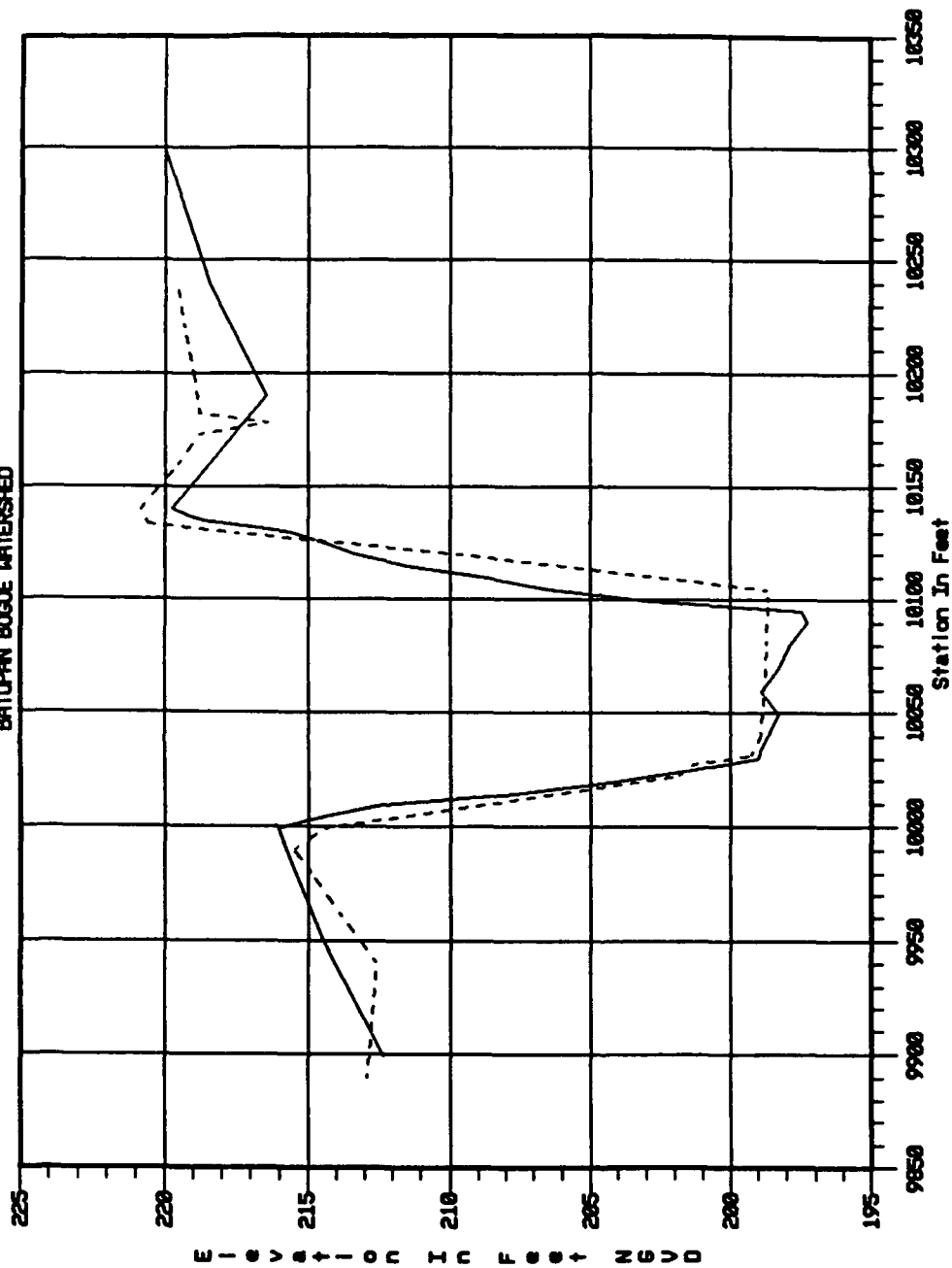
BATUPAN BOGLE WATERSHED



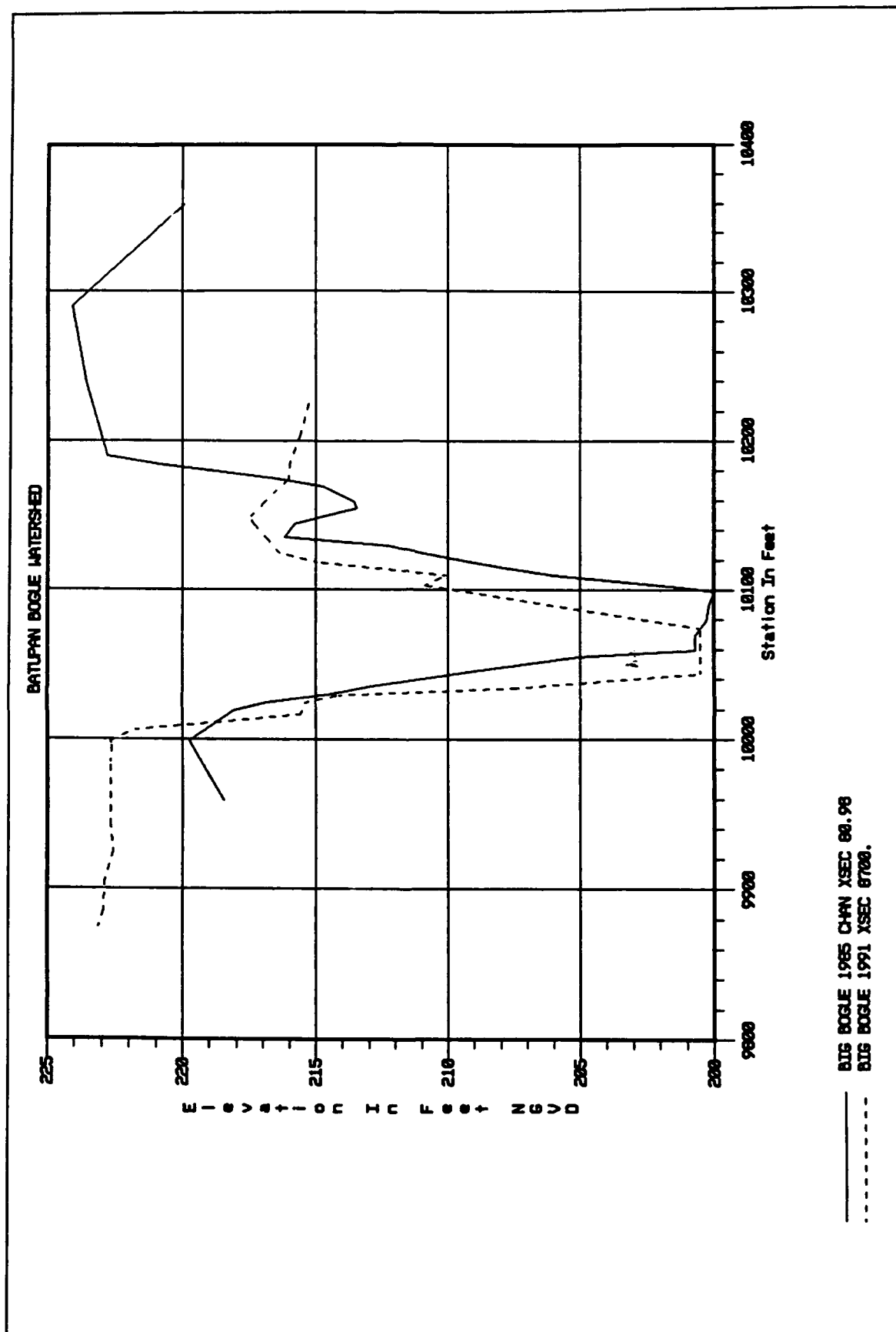
— BIG BOGLE 1965 CHAN XSEC 7.02



BATUPAN BOGLE WATERSHED



— 1985 CHAN XSEC 58.00
 - - - 1991 XSEC 8400



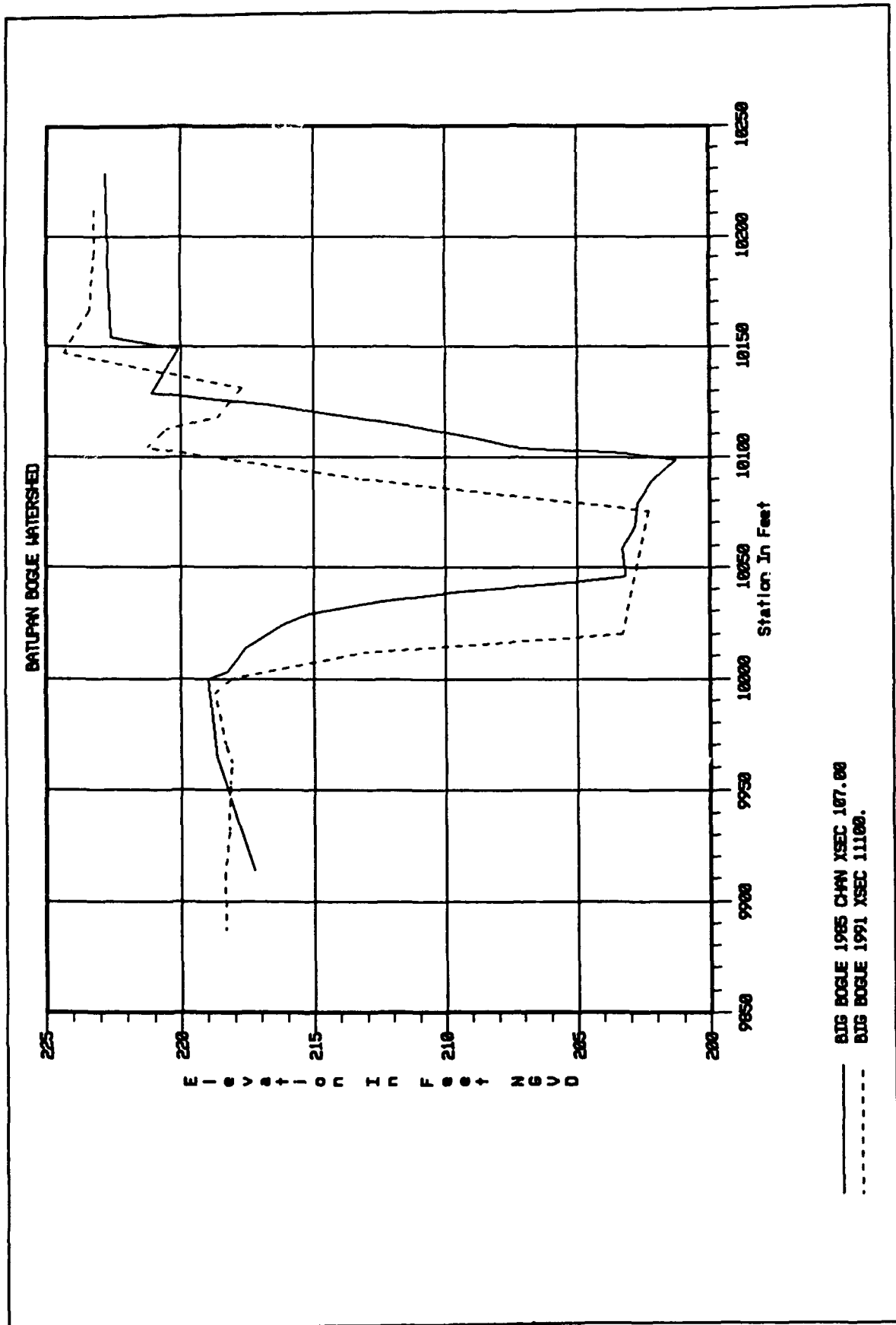
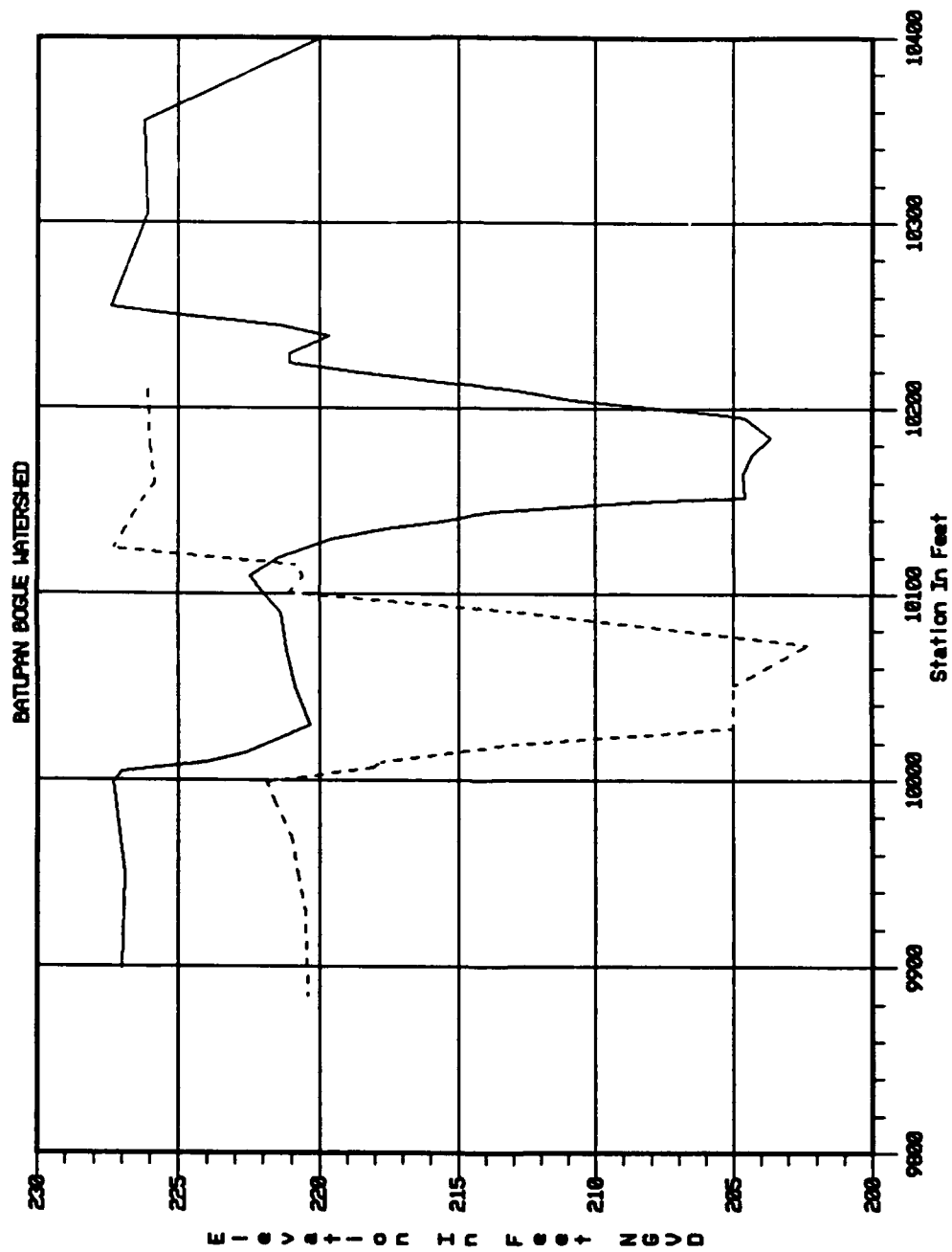


PLATE C100



— 1965 CHAN XSEC 132.98
- - - 1991 XSEC 13700

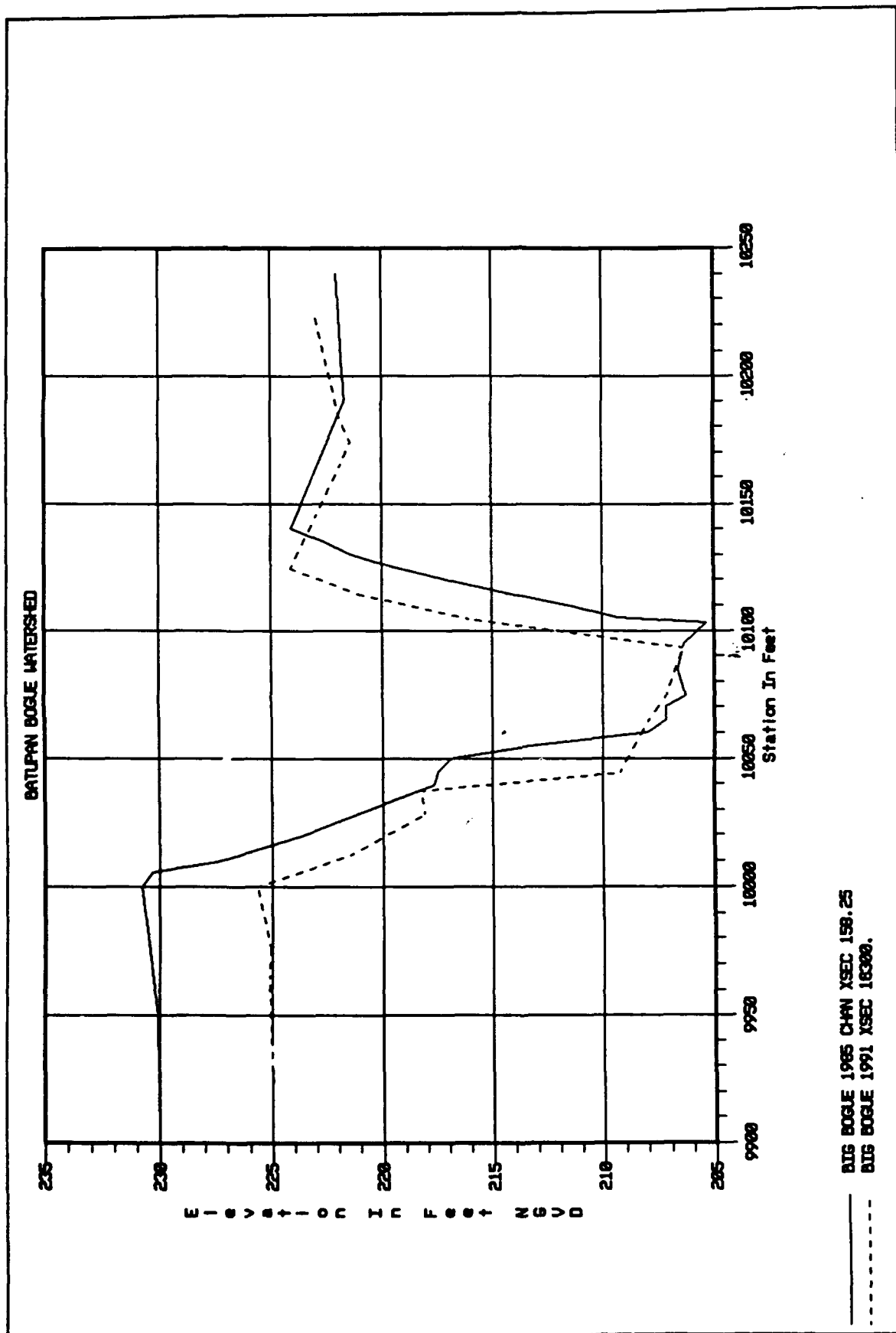
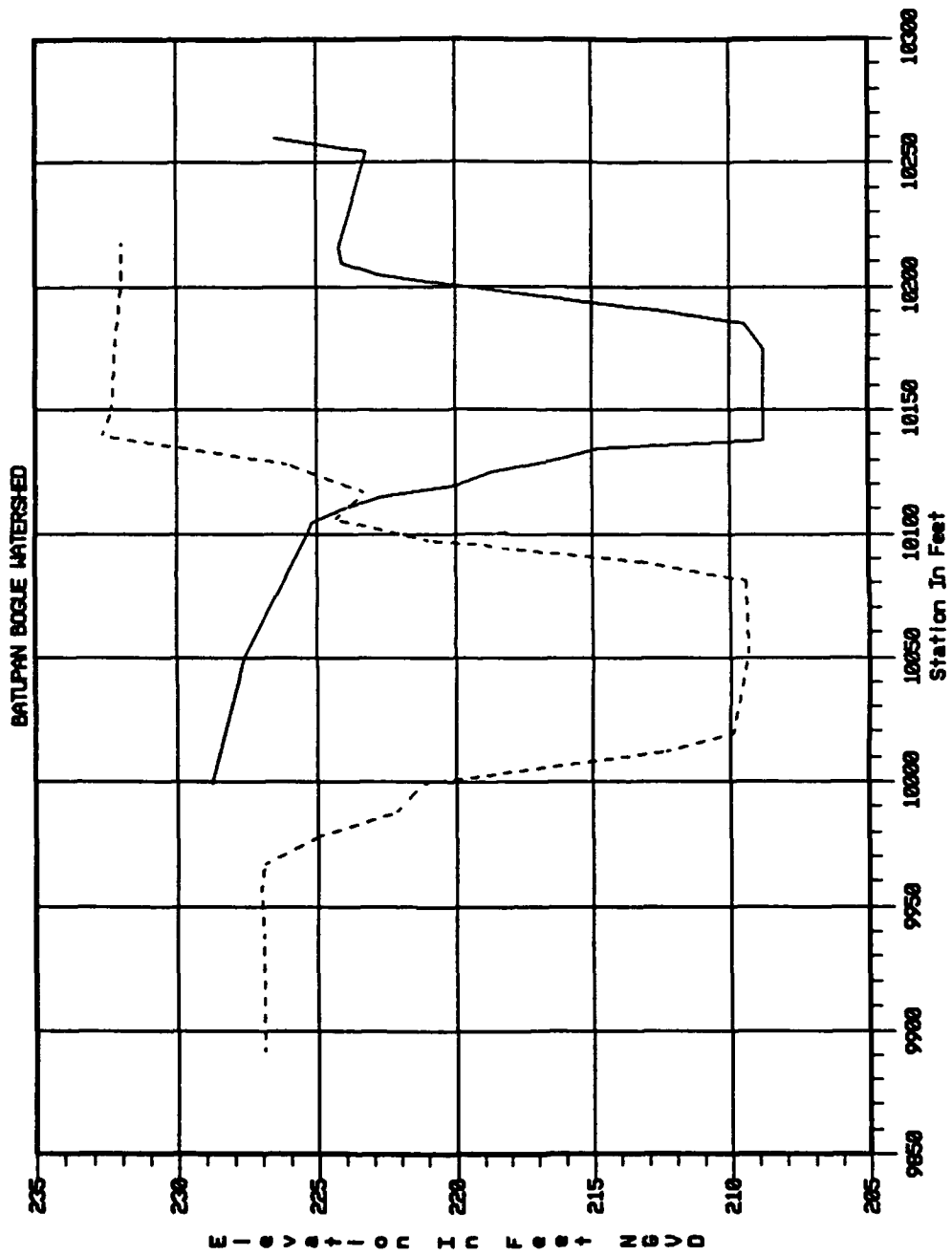
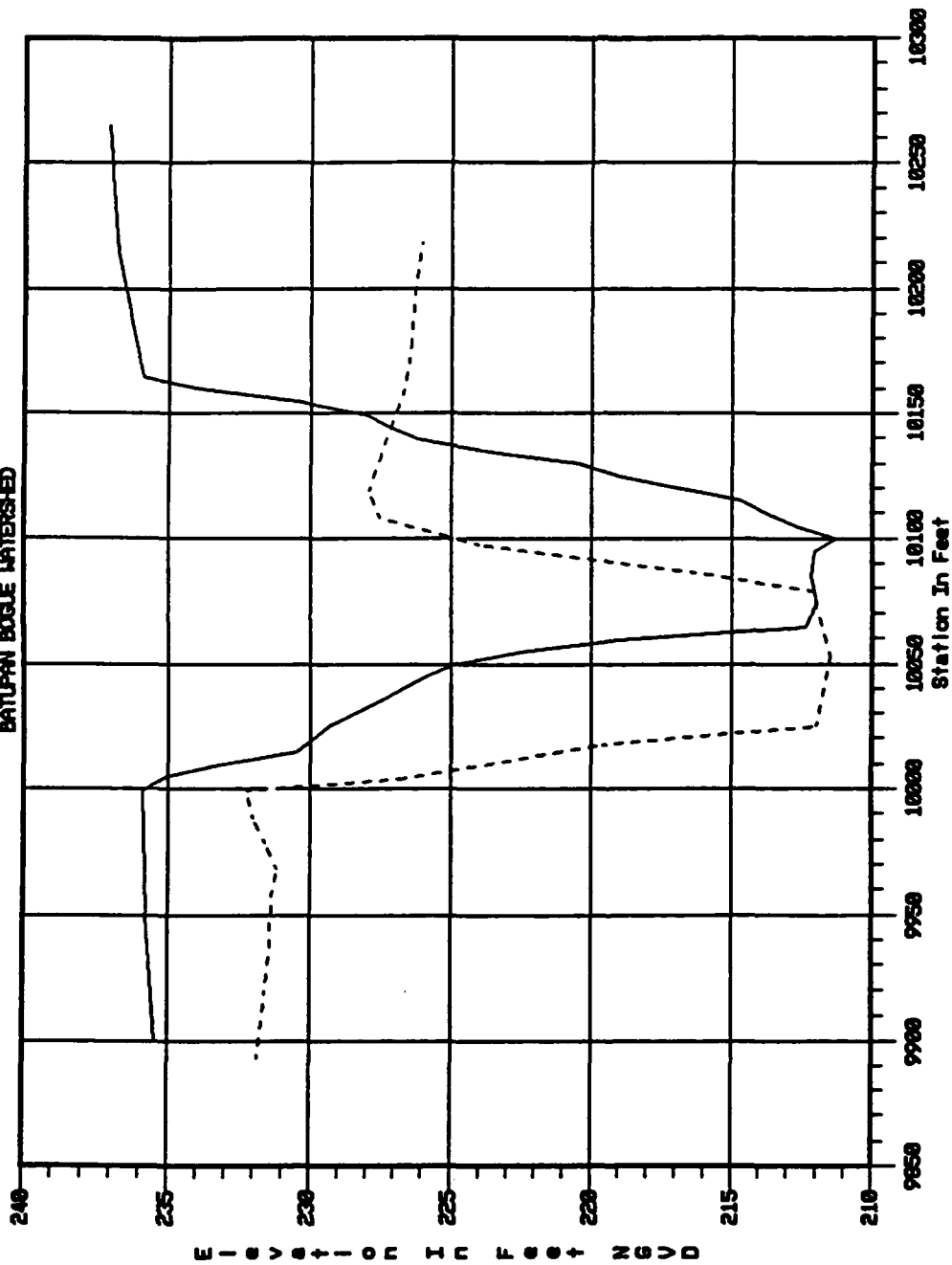


PLATE C102

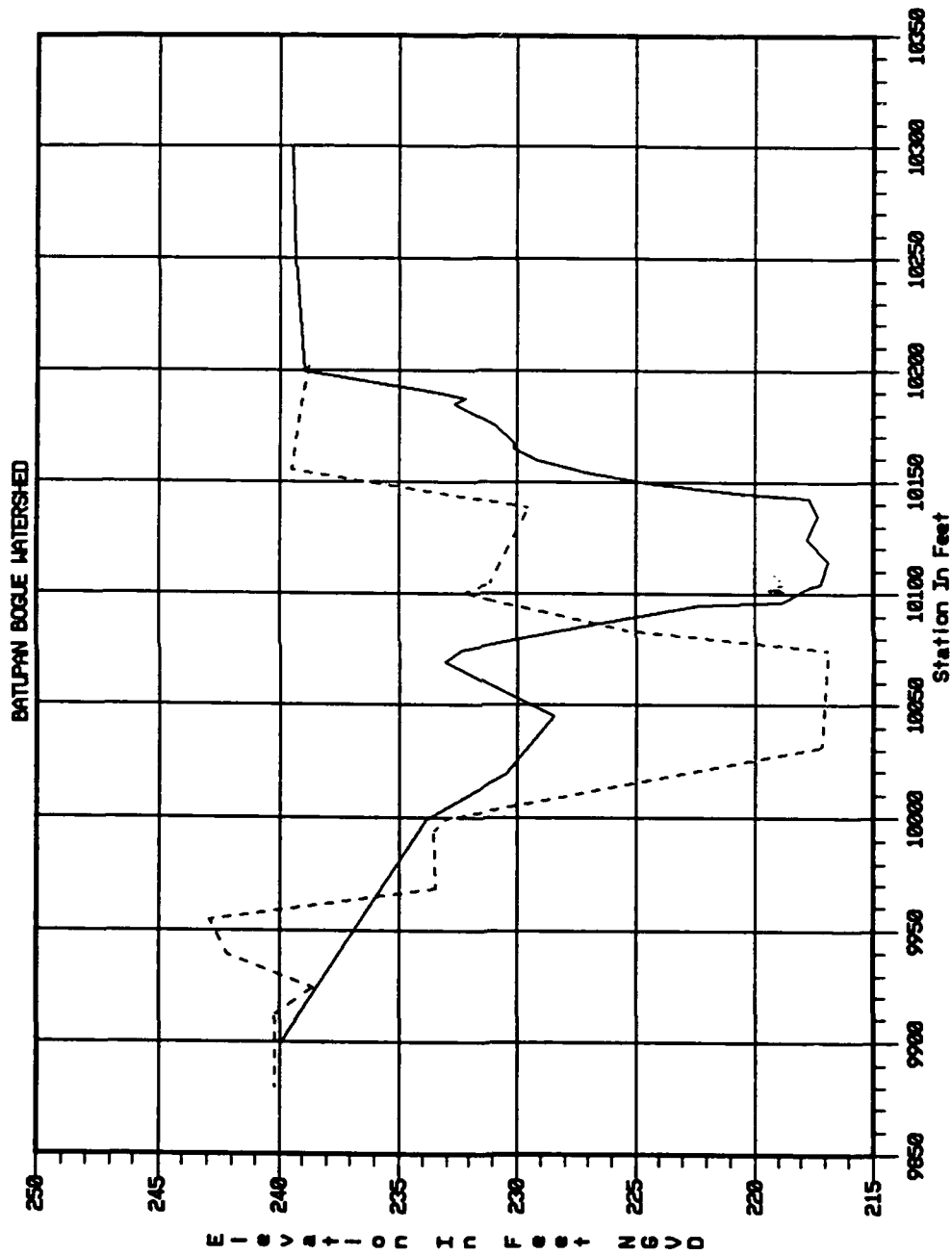


——— 1985 CHAN XSEC 185.00
 - - - 1991 XSEC 19010

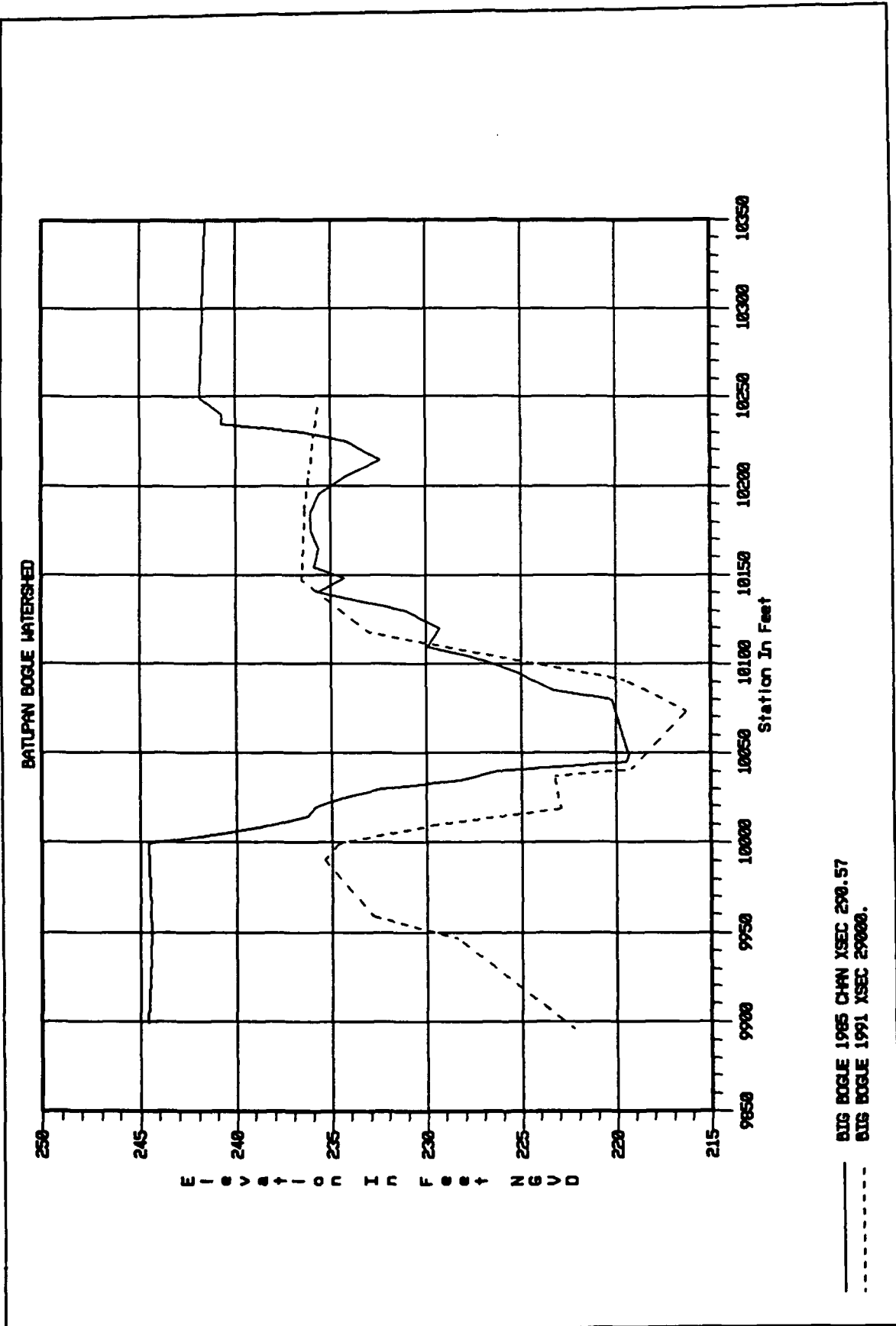
BATUPAN BOGLE WATERSHED

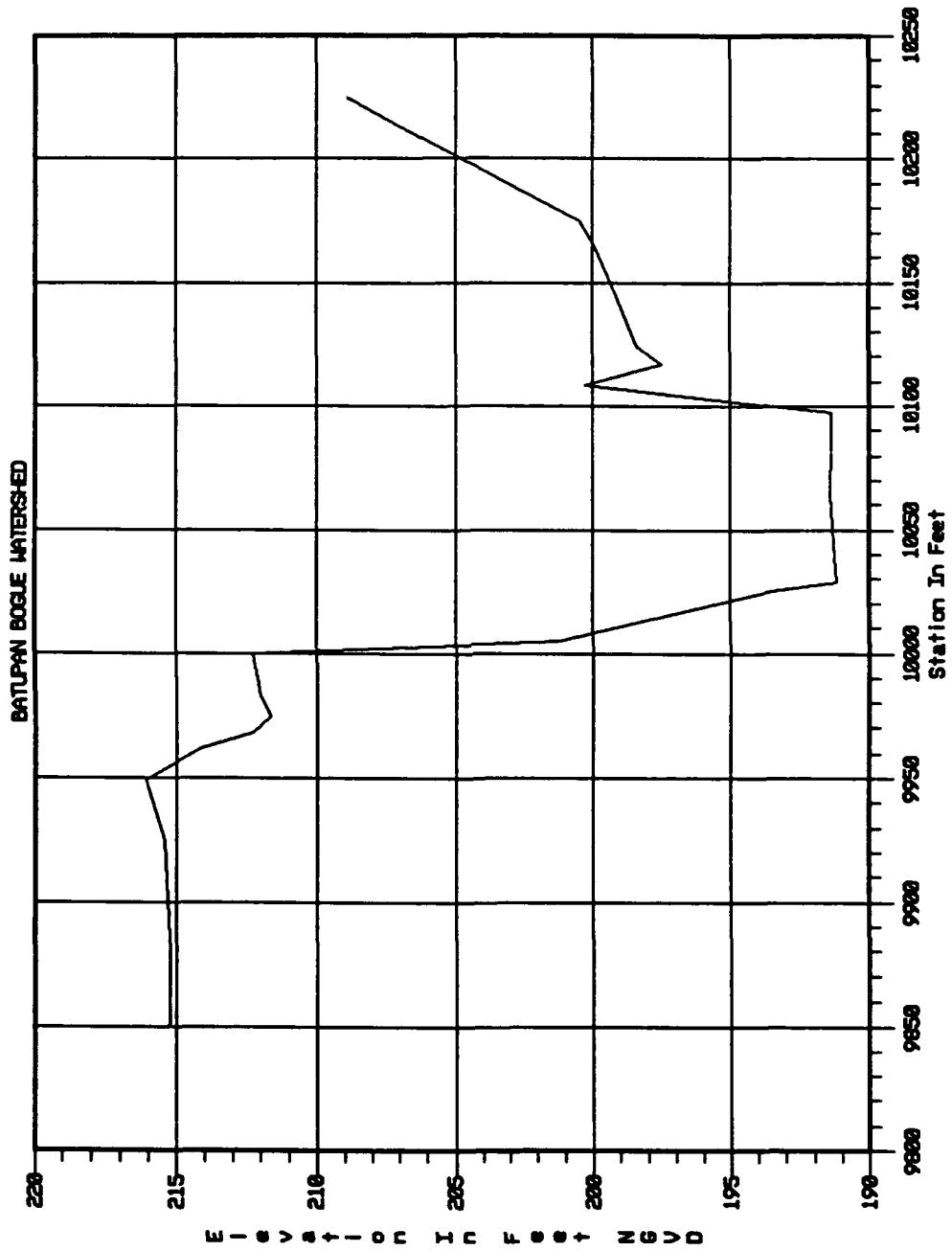


— 818 Bogle 1985 CHAN XSEC 211.00
 - - - 818 Bogle 1991 XSEC 21200.



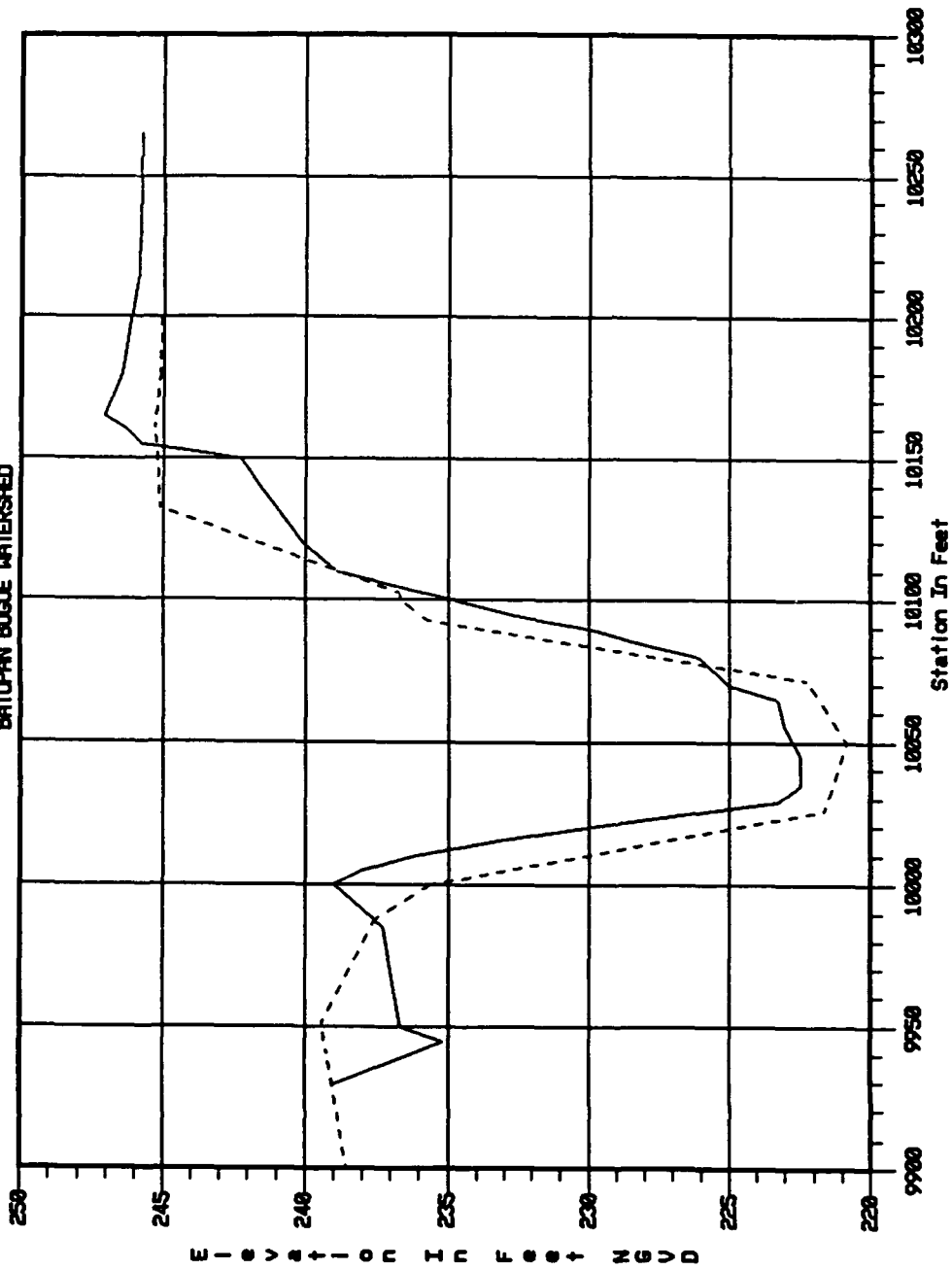
— BIG BOGLE 1985 CHAN XSEC 283.50
- - - BIG BOGLE 1991 XSEC 284.30.



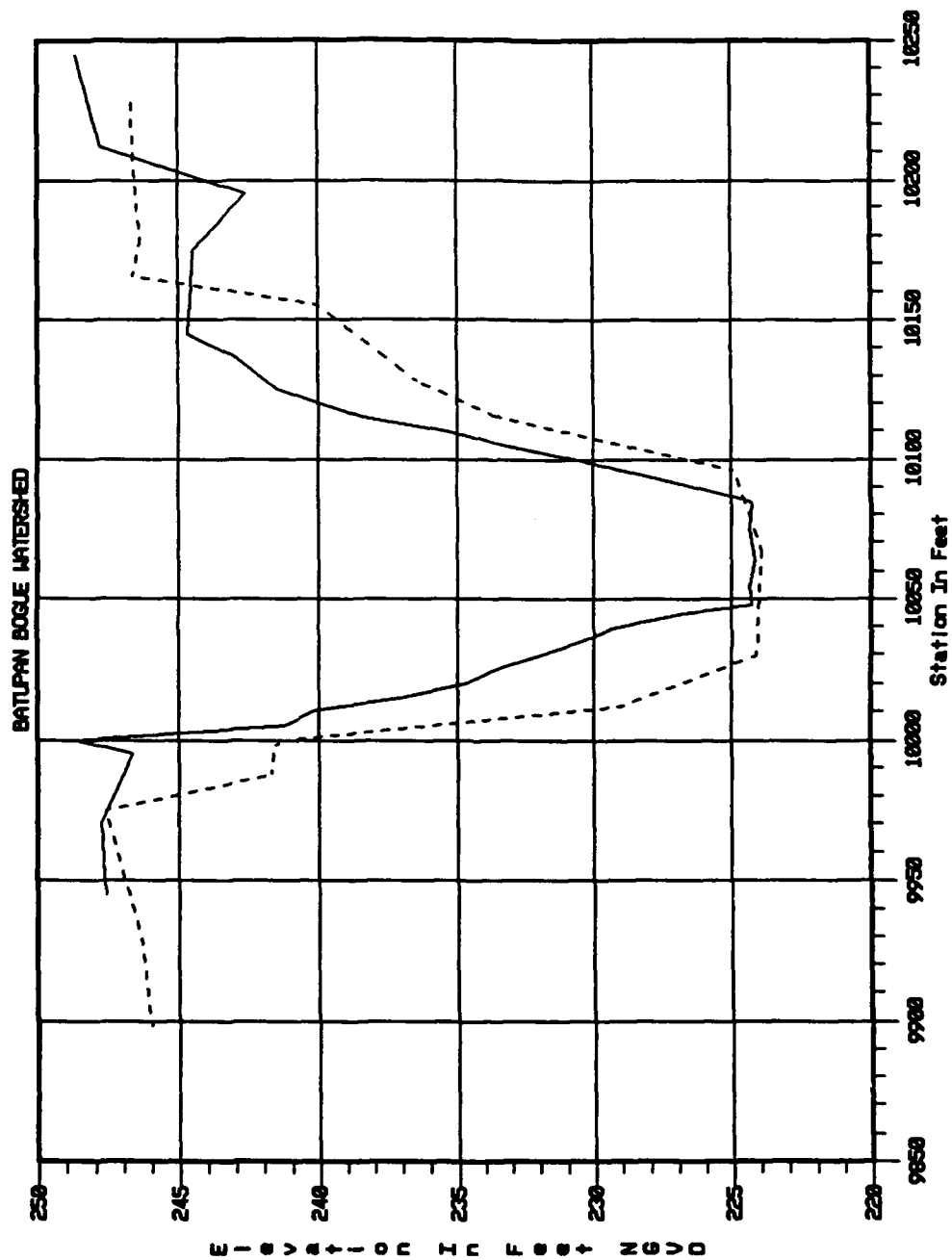


—— BGS BOGLE 1991 XSEC 310.

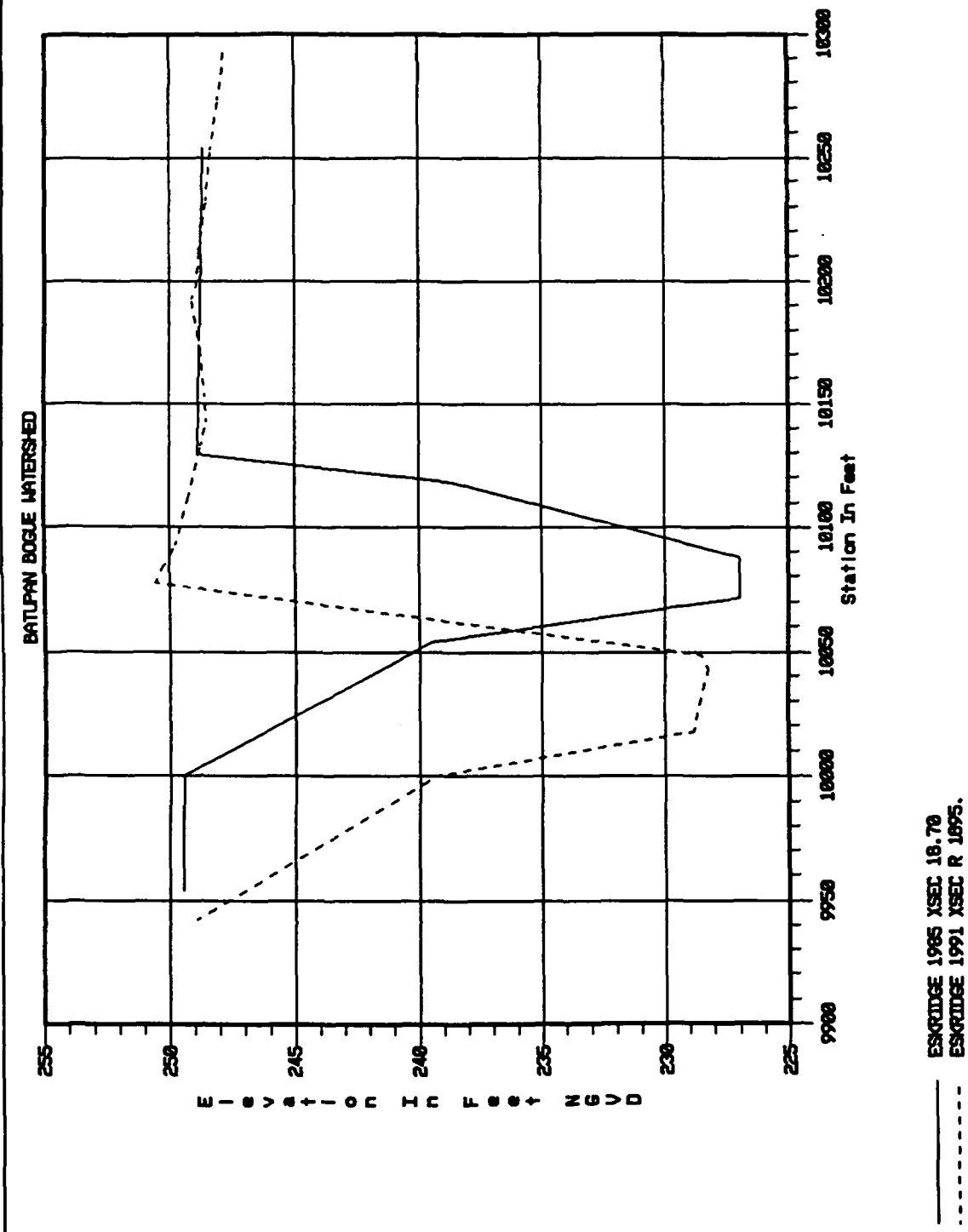
BATUPAN BOGLE WATERSHED

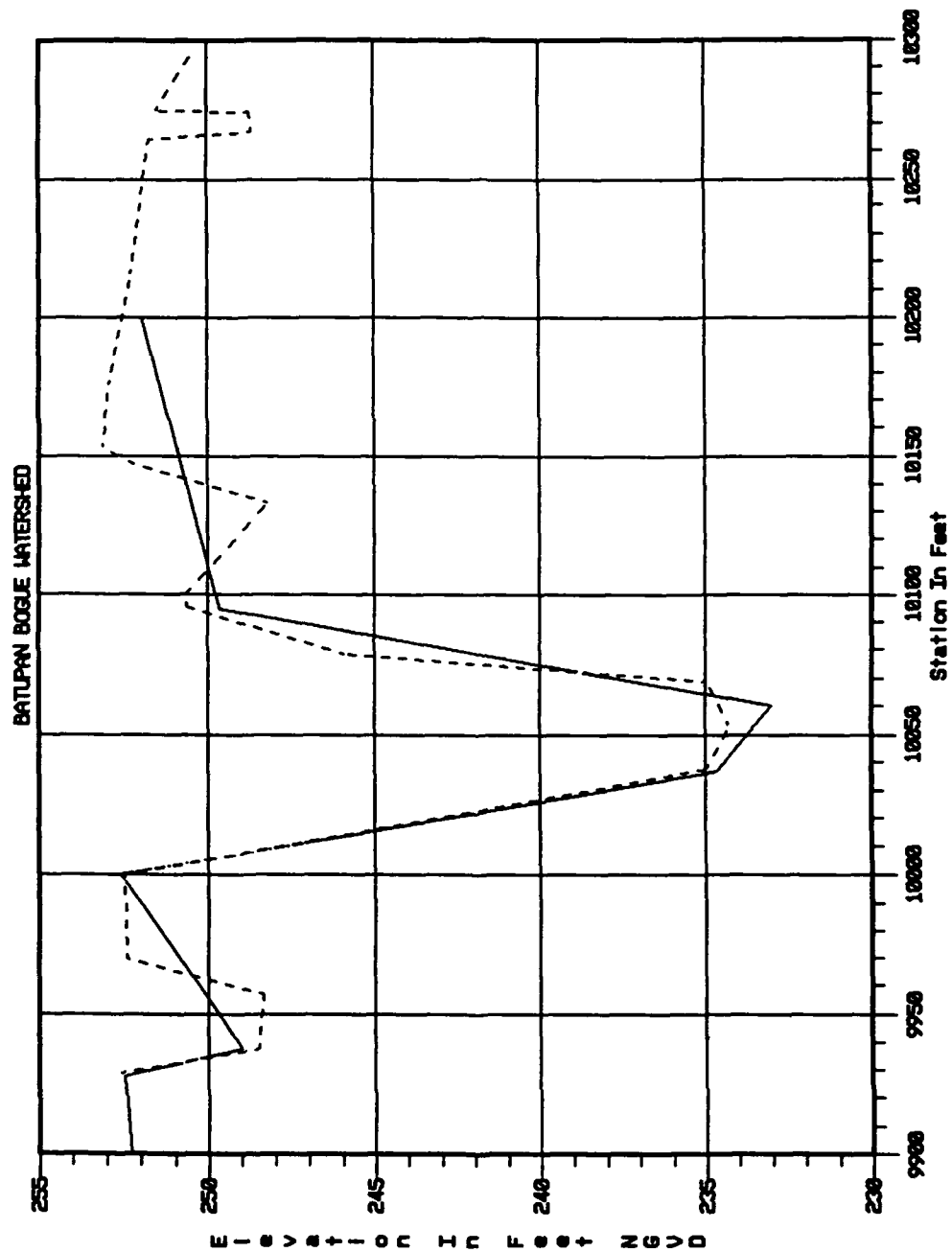


— 1985 CHAN XSEC 318.82
 - - - 1991 XSEC 315.00



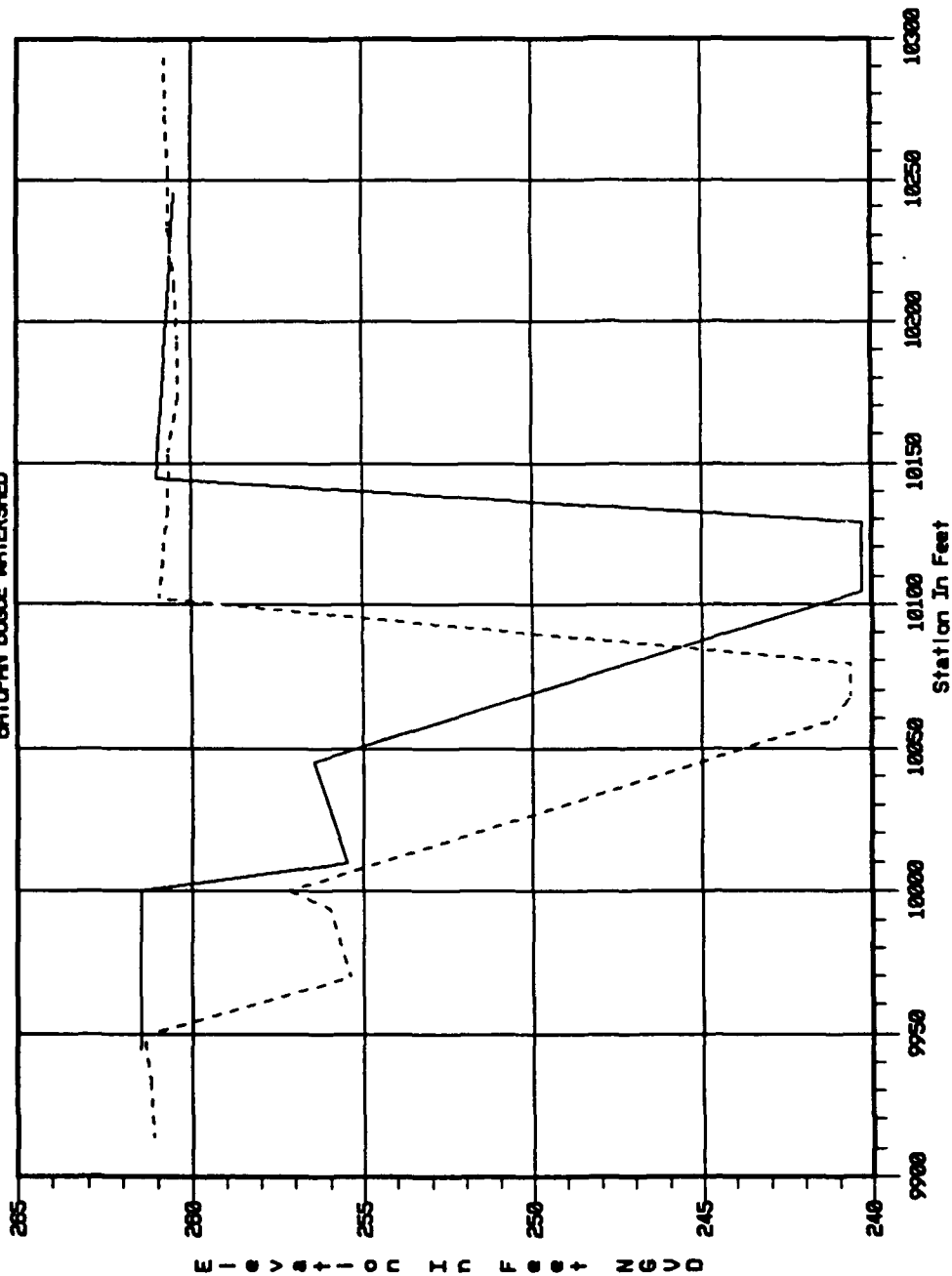
——— 1965 CHAN XSEC 332.54
 - - - - - 1991 XSEC 33800.



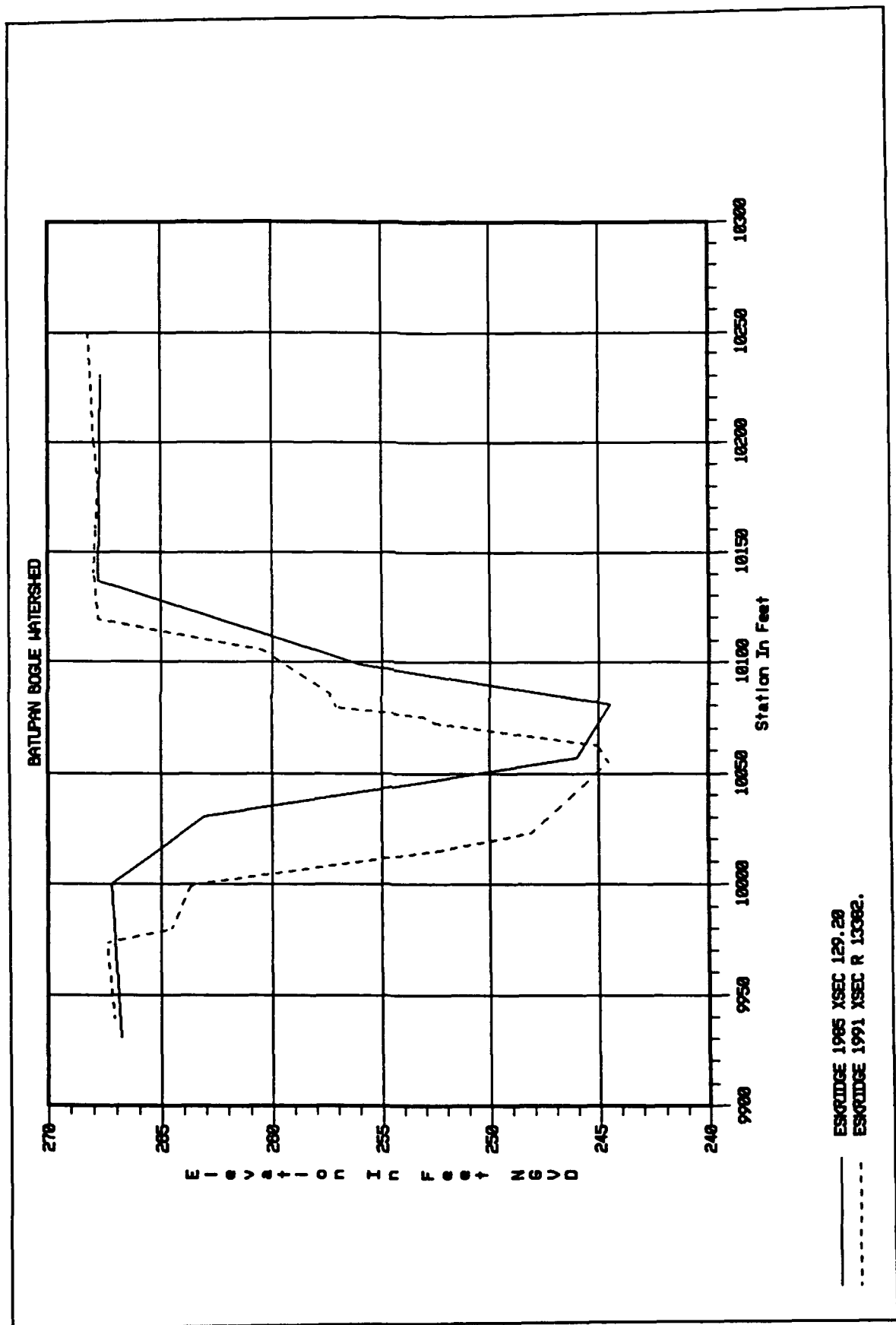


ESCRIDGE 1985 XSEC 50.00
 ESCRIDGE 1991 XSEC R 5229.

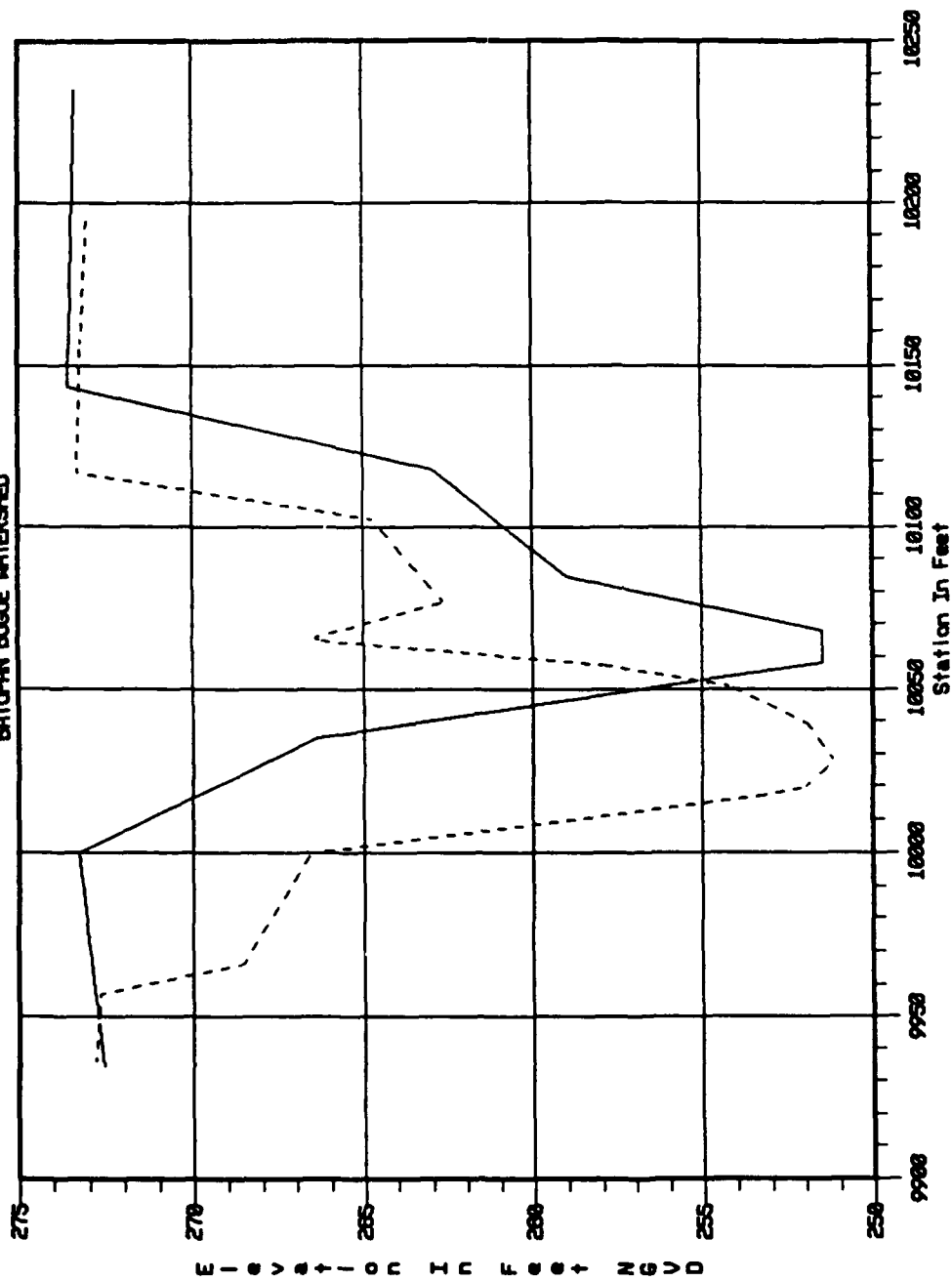
BATUPAN BOGLE WATERSHED



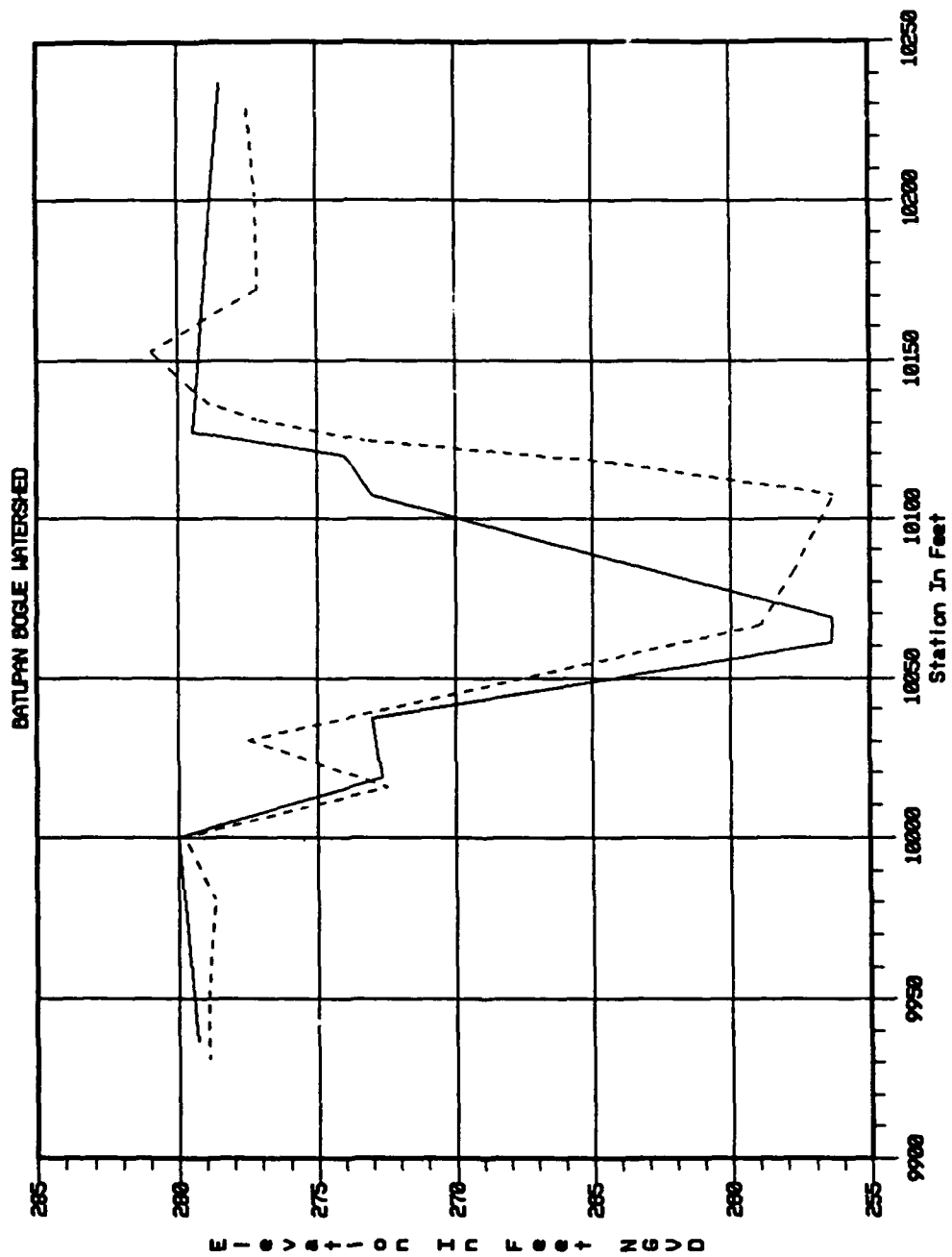
ESKRIDGE 1985 XSEC 98.00
 ESKRIDGE 1991 XSEC R 9979



BATUPAN BOGLE WATERSHED

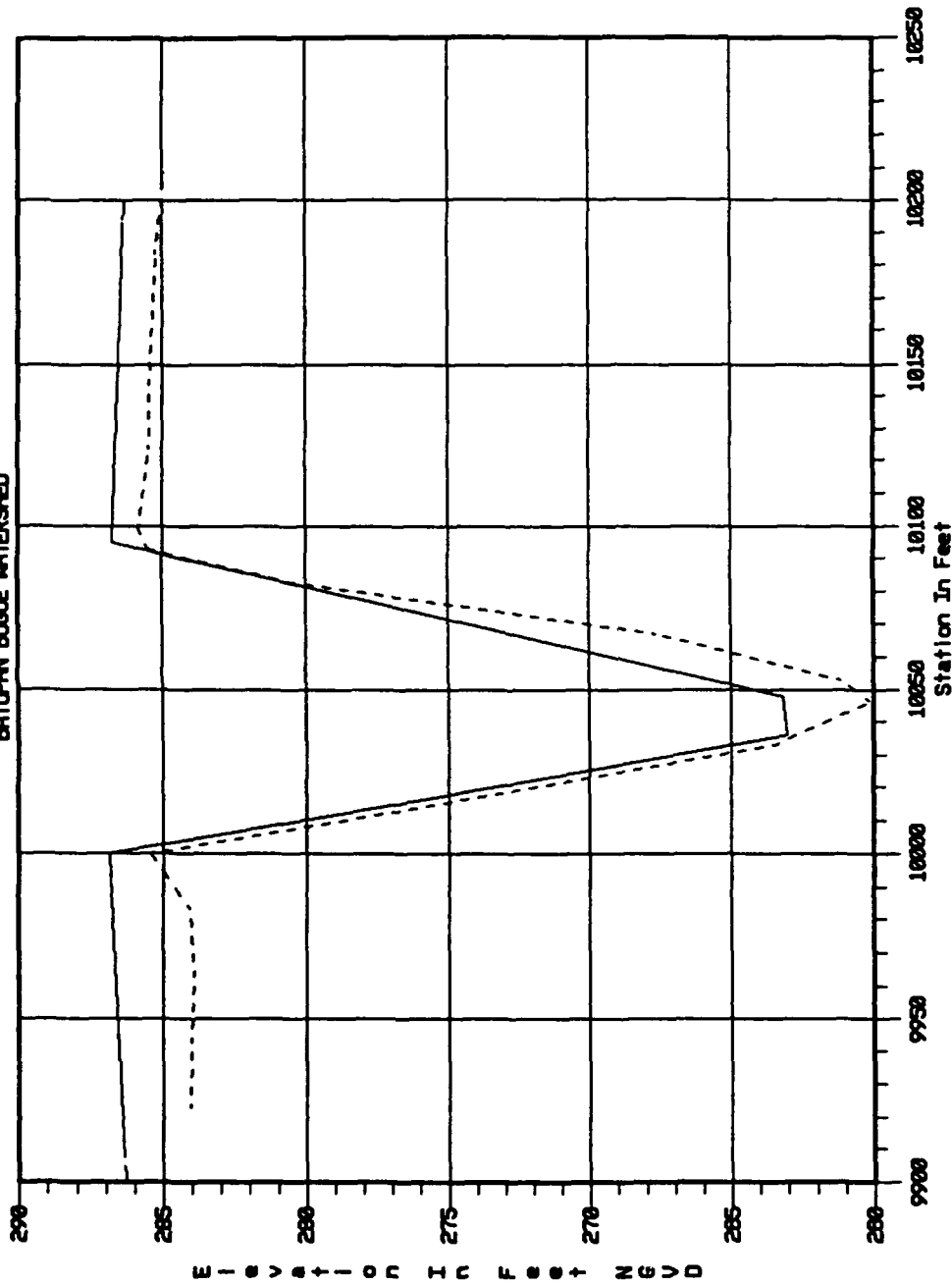


ESKRIDGE 1985 XSEC 167.00
 ESKRIDGE 1991 XSEC R 17246.

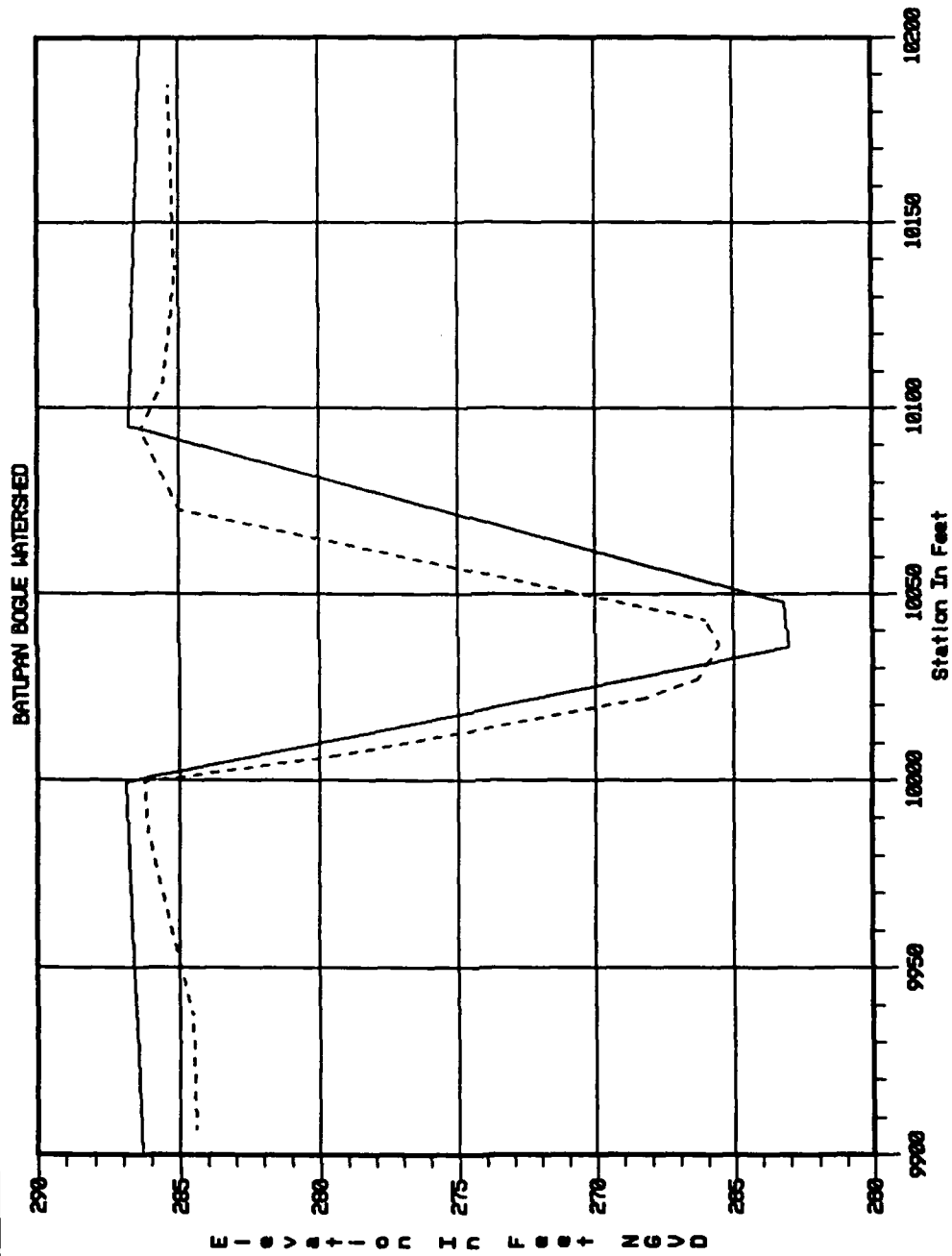


ESKRIDGE 1985 XSEC 194.30
 ESKRIDGE 1991 XSEC R 19886.

BATUPAN BOGLE WATERSHED

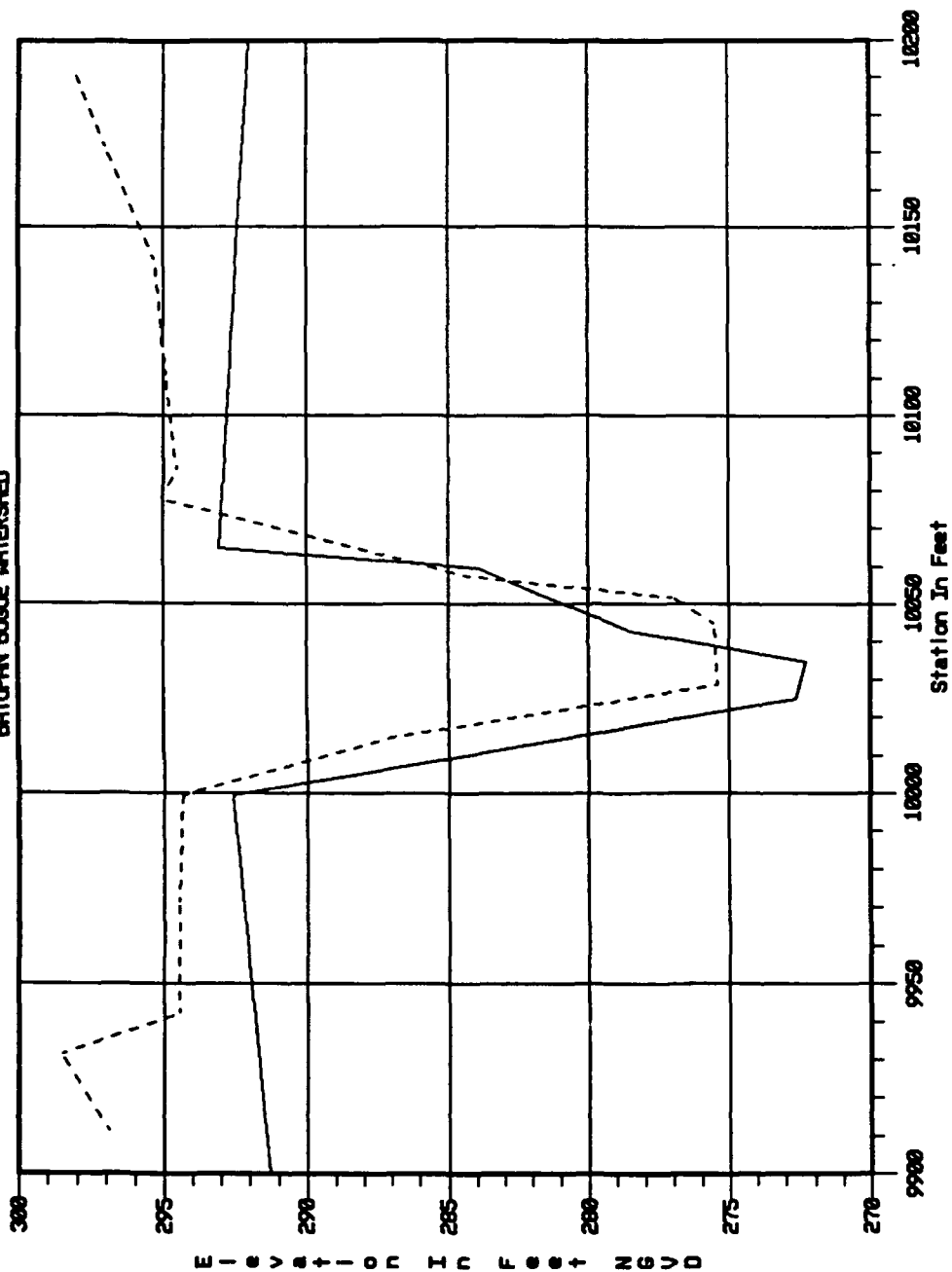


——— ESKRIDGE 1985 XSEC 228.00
 - - - - - ESKRIDGE 1991 XSEC R 22945.

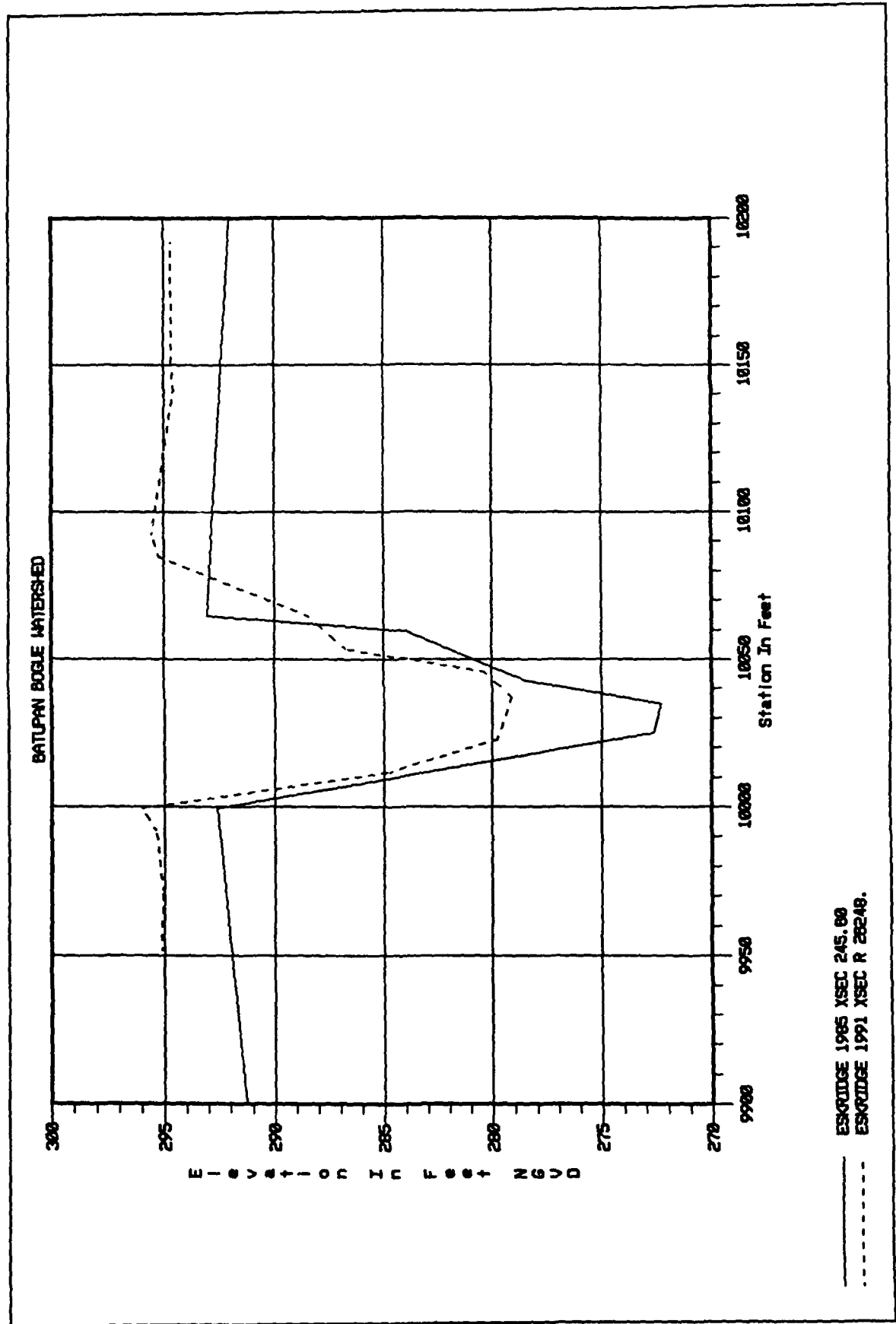


ESKIDGE 1985 XSEC 220.00
ESKIDGE 1991 XSEC R 22325.

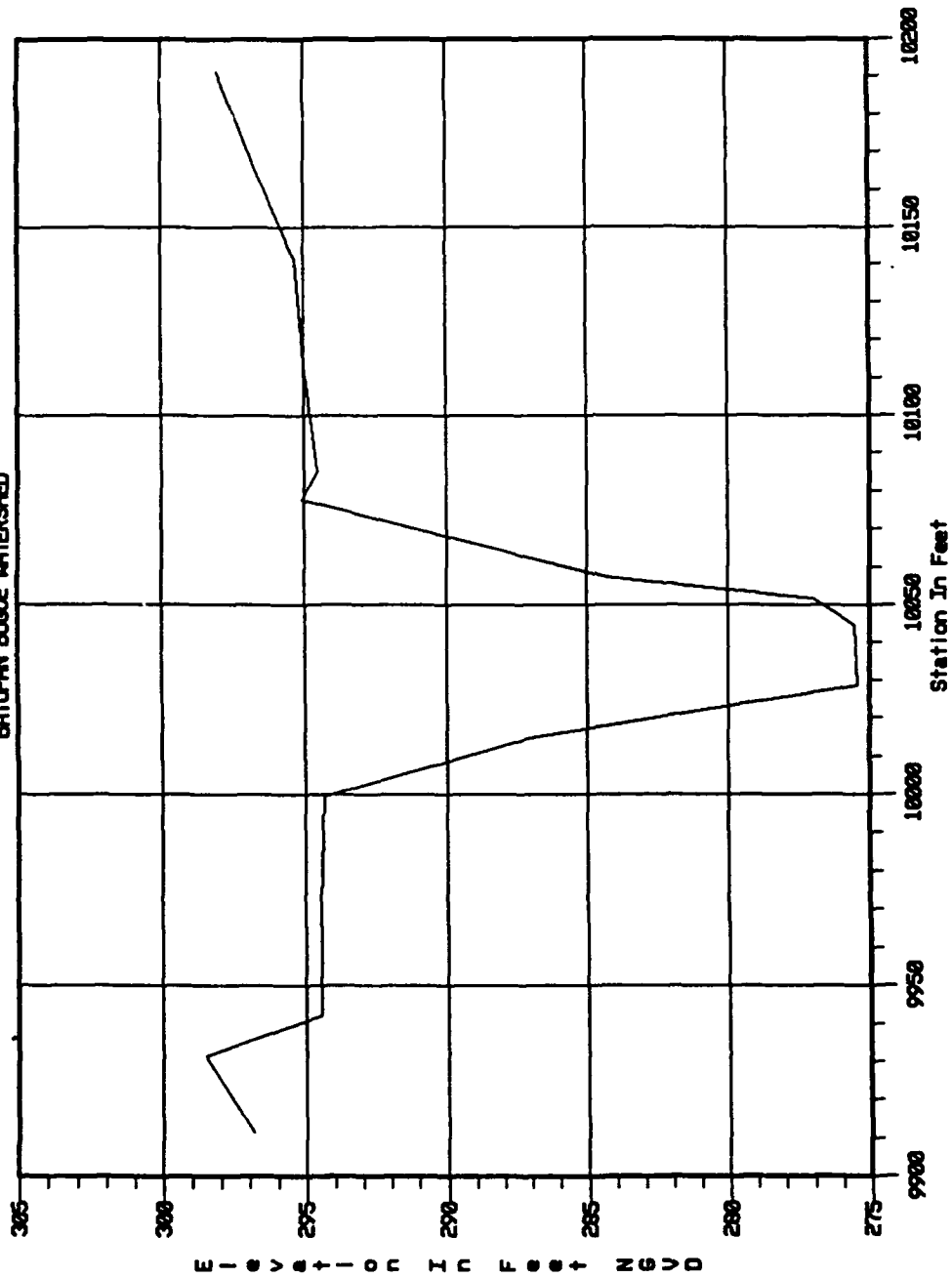
BATUPAN BOGLE WATERSHED



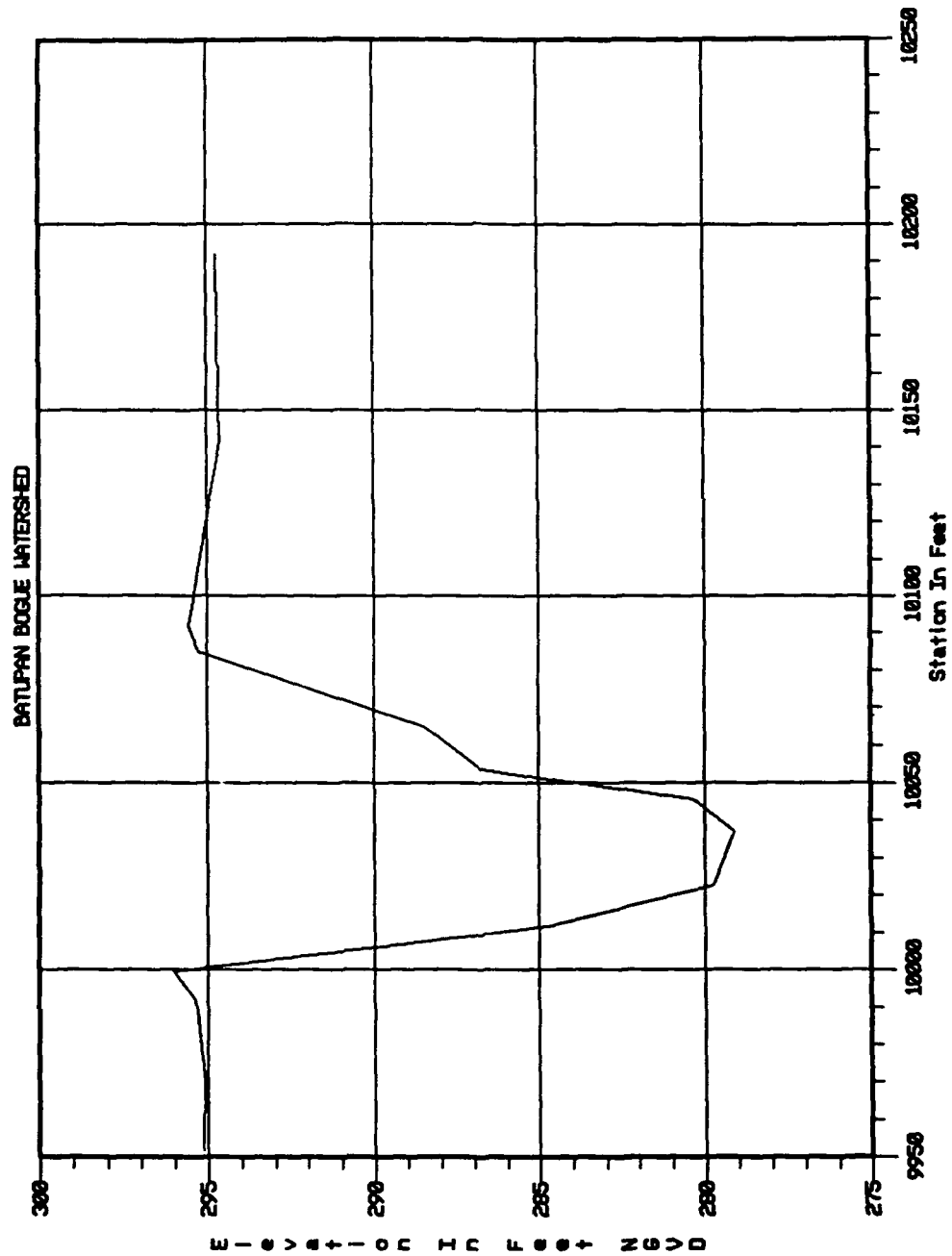
ESKRIDGE 1985 XSEC 245.80
 ESKRIDGE 1991 XSEC R 25934



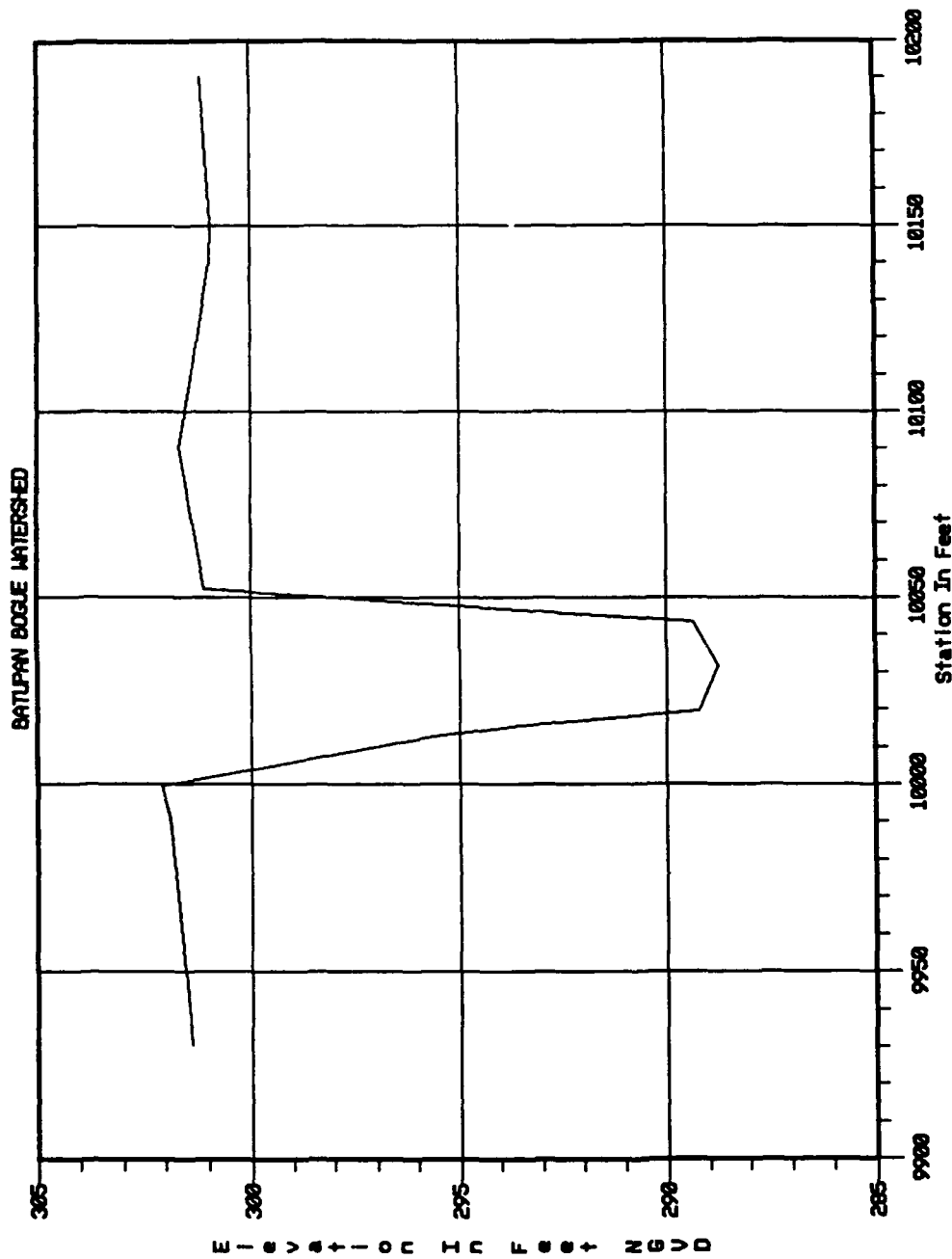
BATUPAN BOGE WATERSHED



ESCRIDGE 1991 XSEC R 25934.

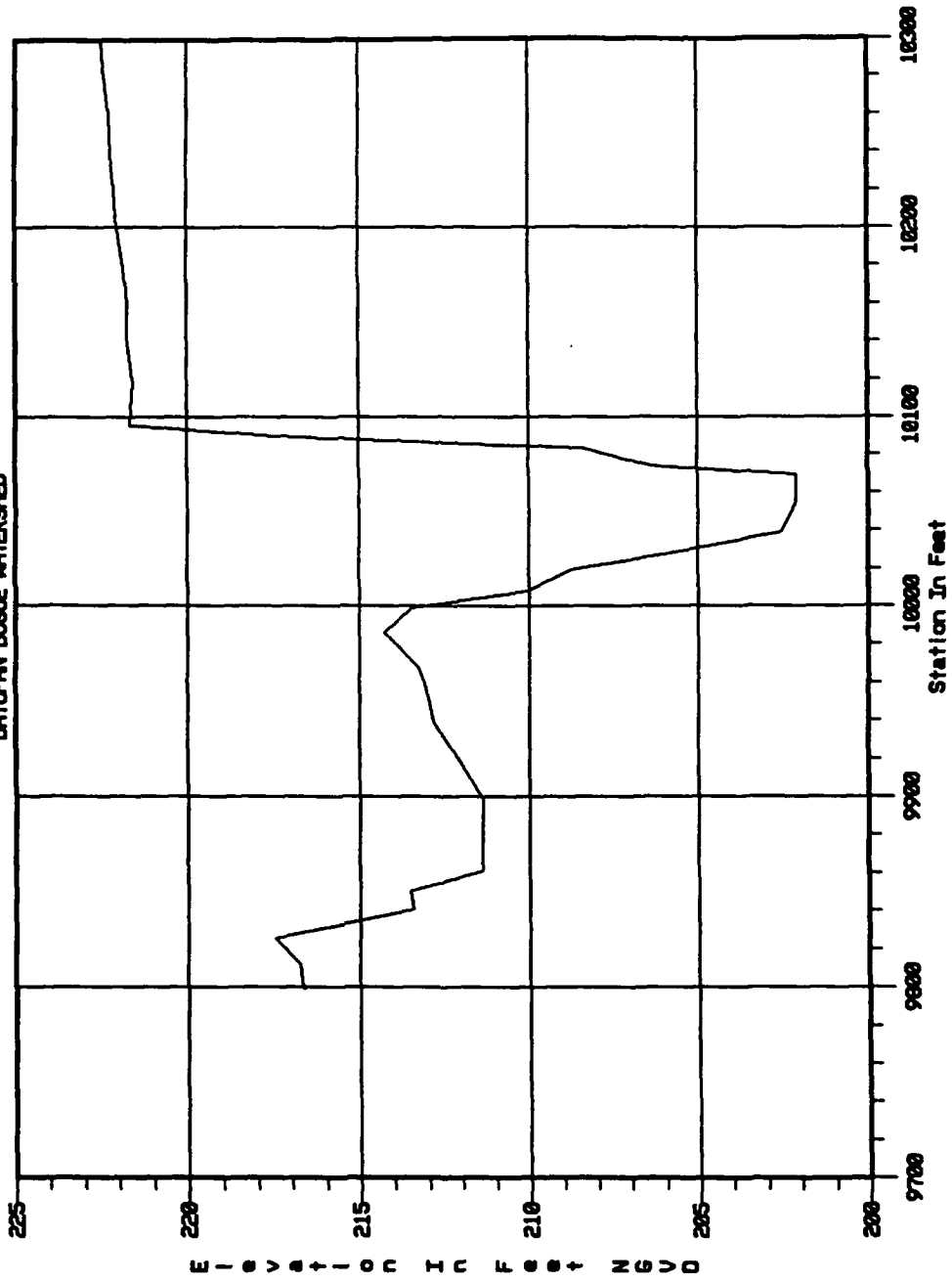


ESKIDGE 1991 XSEC R 28248.



ESKRIDGE 1991 XSEC R 26924.

BATUPAN BOGLE WATERSHED



SYNCS 1991 XSEC 592.

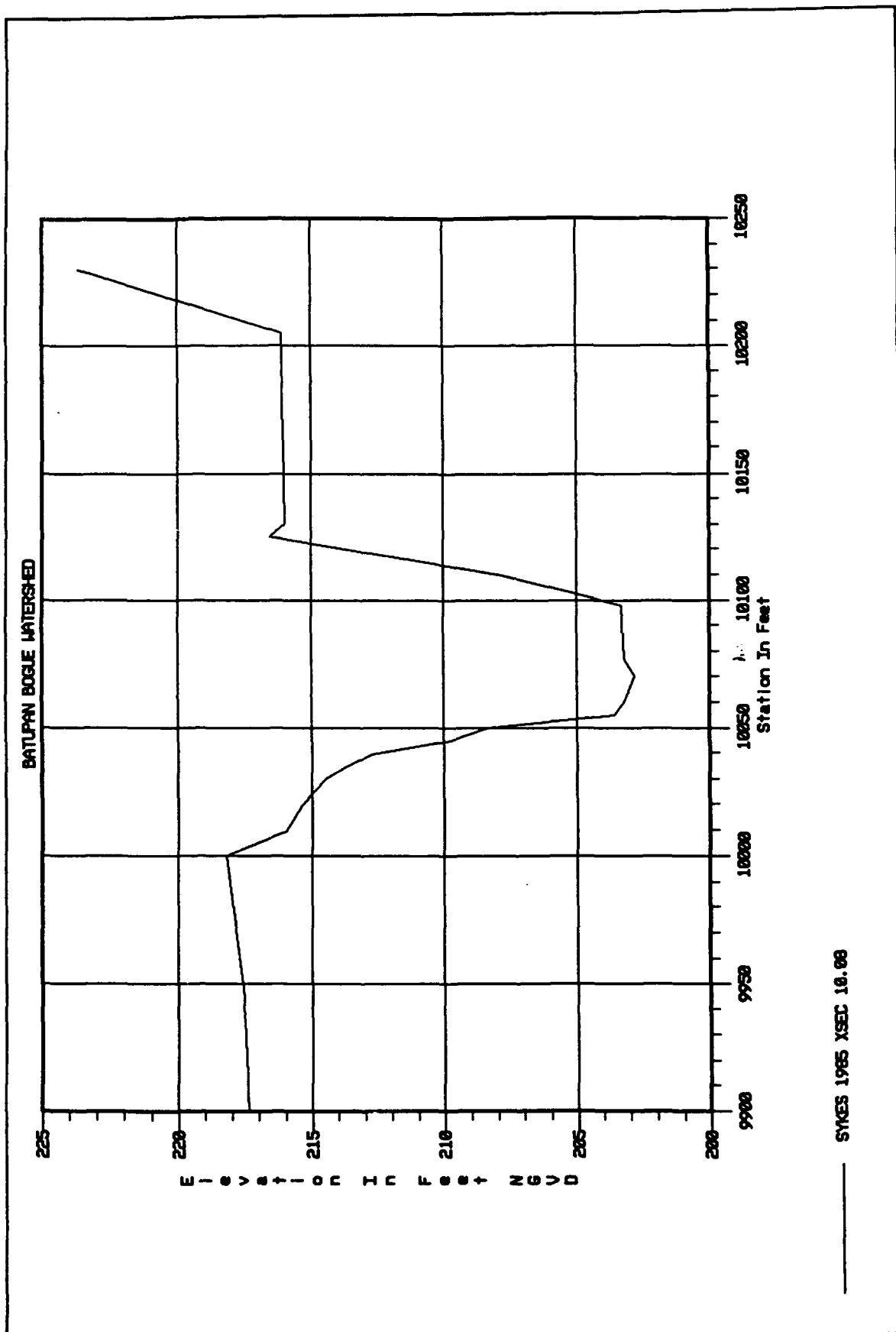
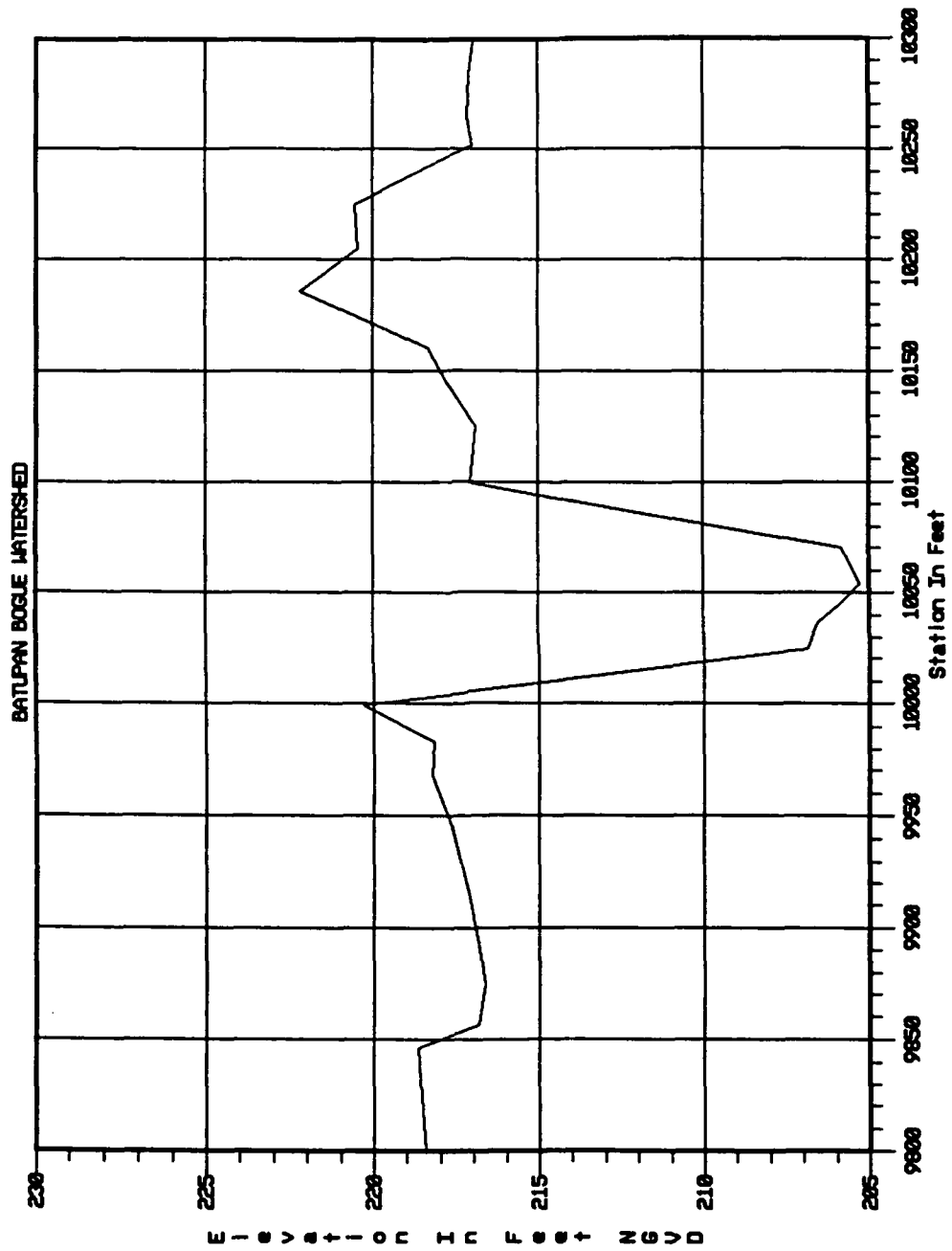
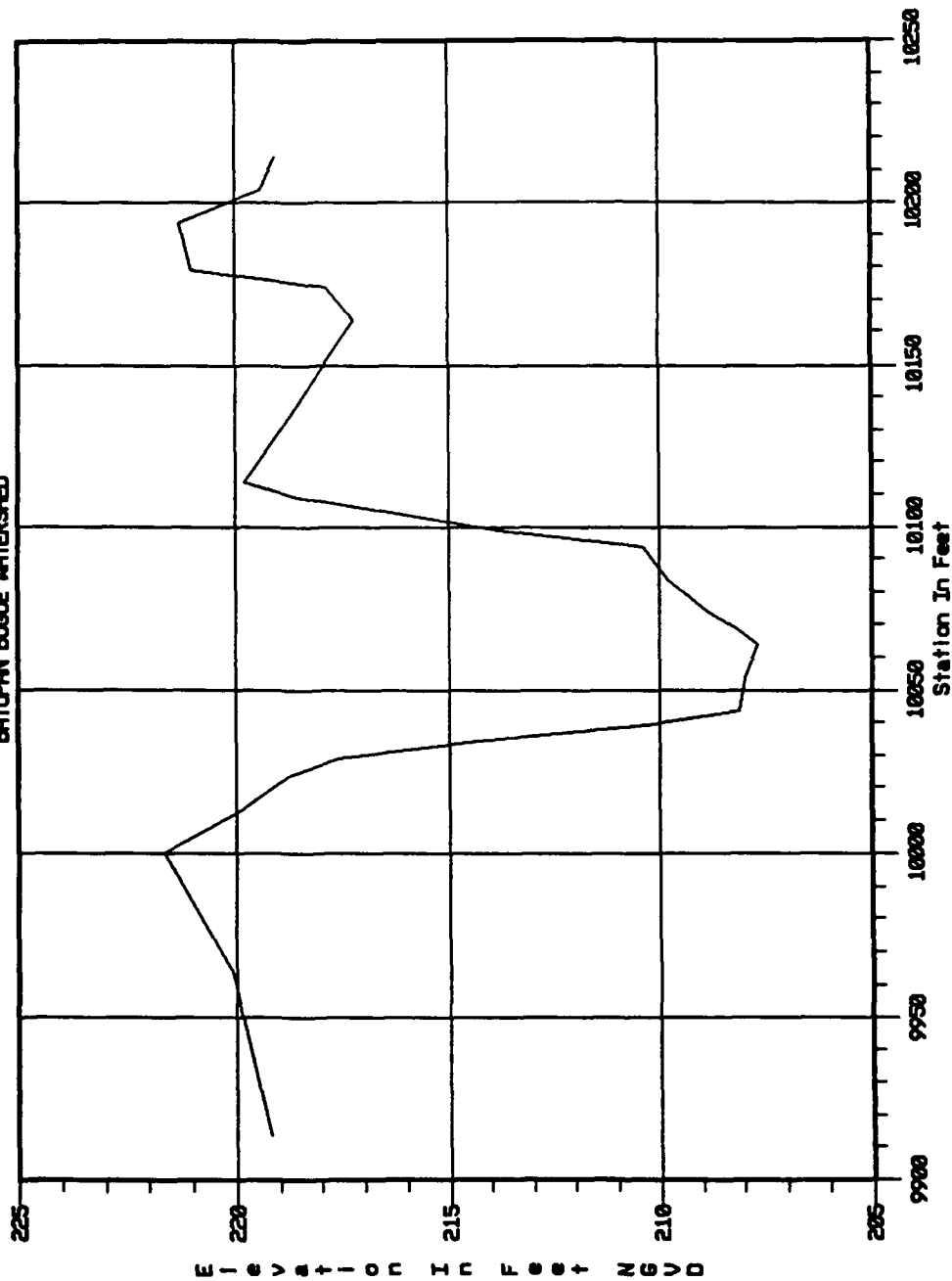


PLATE C124

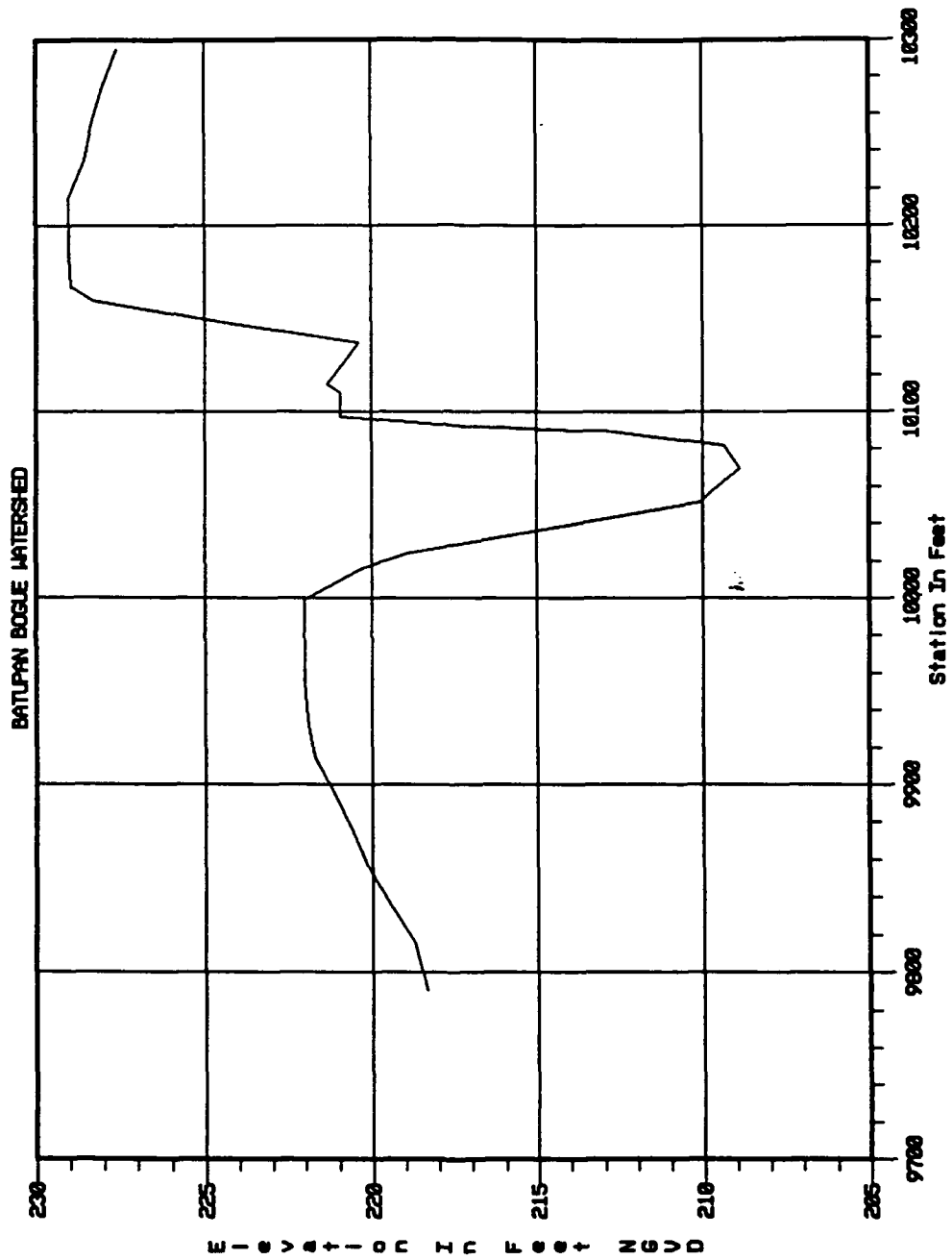


SYNCS 1991 XSEC 3109.

BATUPAN BOGLE WATERSHED

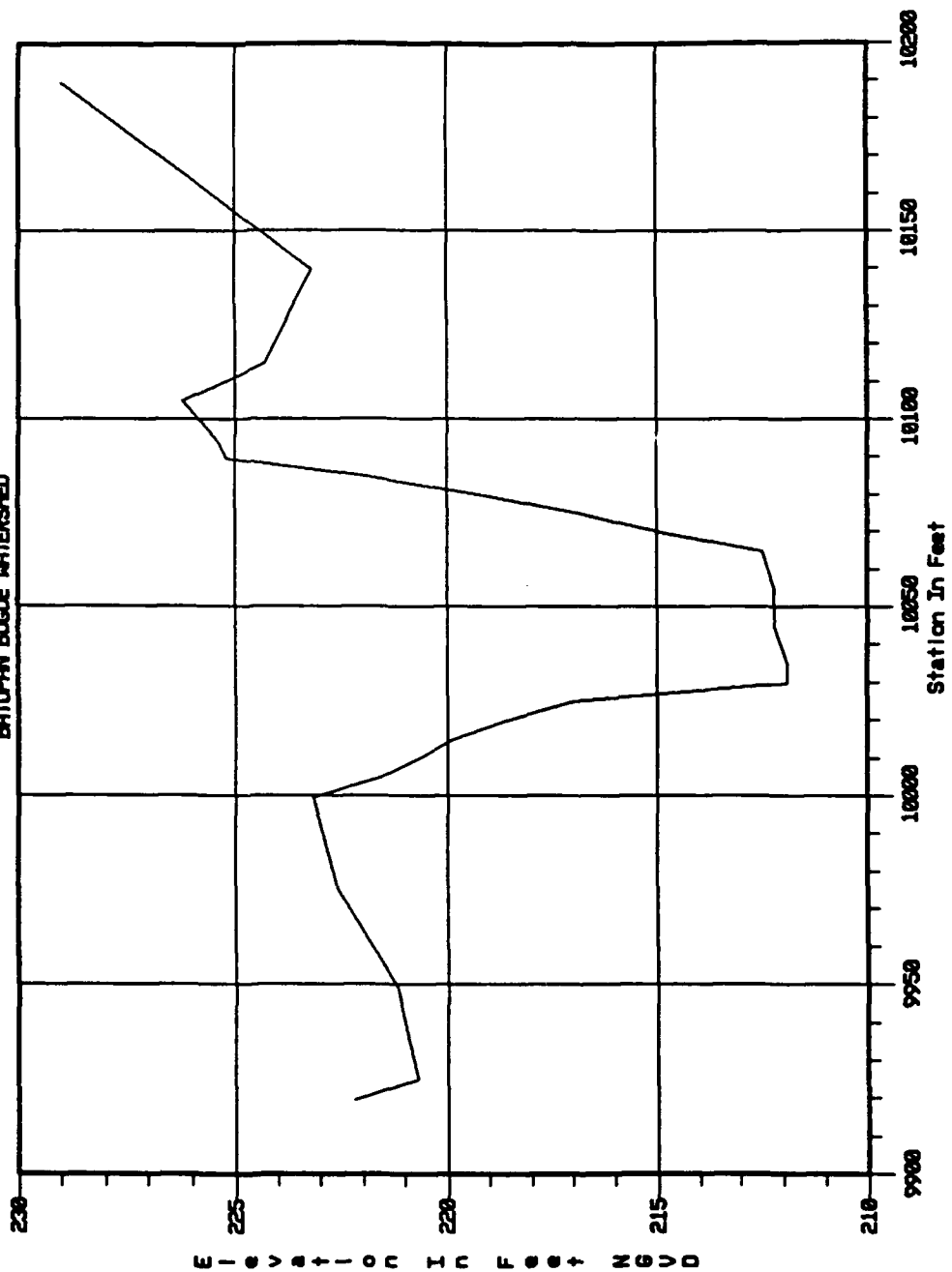


SYKES 1965 XSEC 35.30

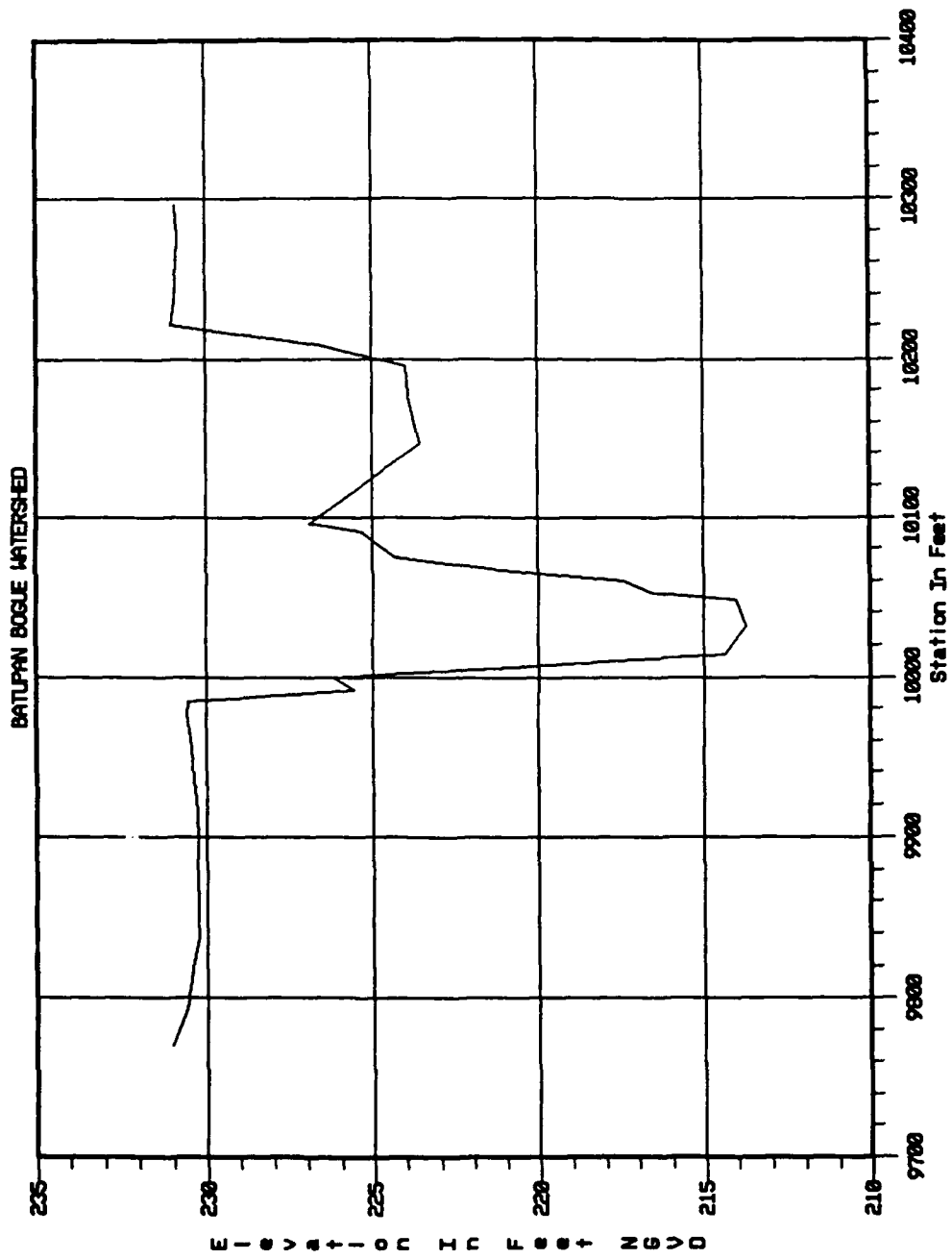


SYNCS 1991 XSEC 5515.

BATUPAN BOGUE WATERSHED

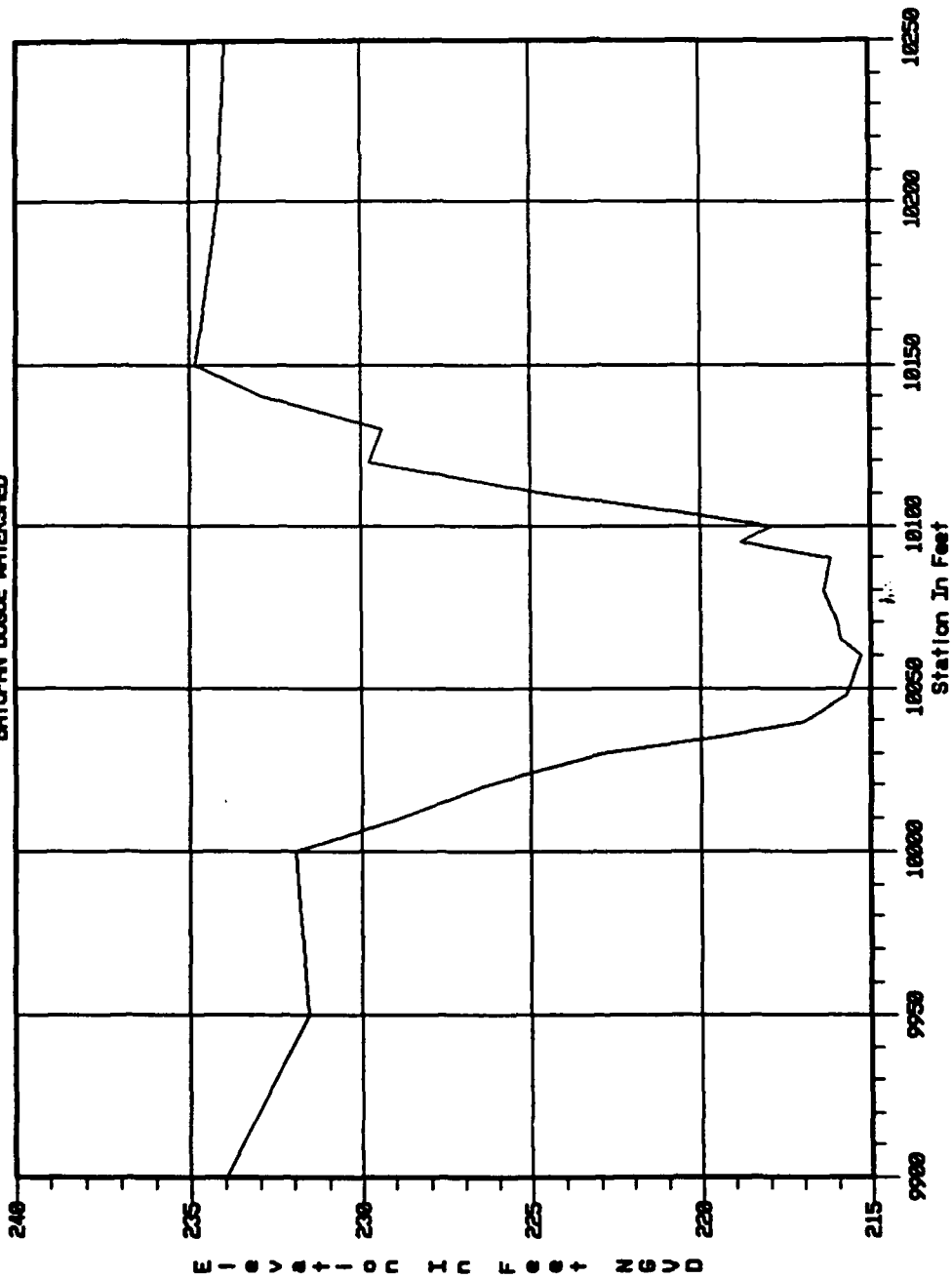


SYNCS 1985 XSEC 84.97

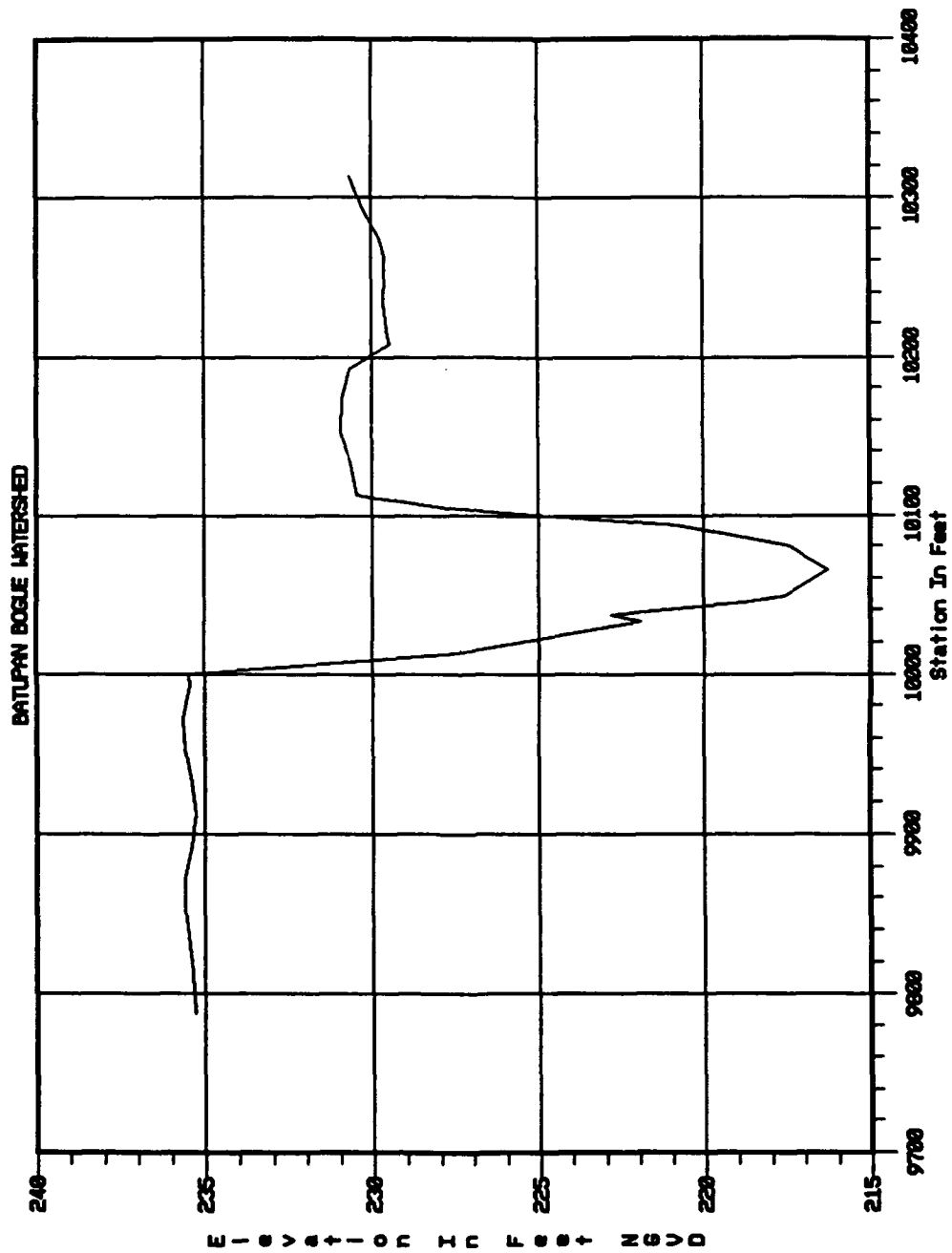


SYKES 1991 XSEC 8000.

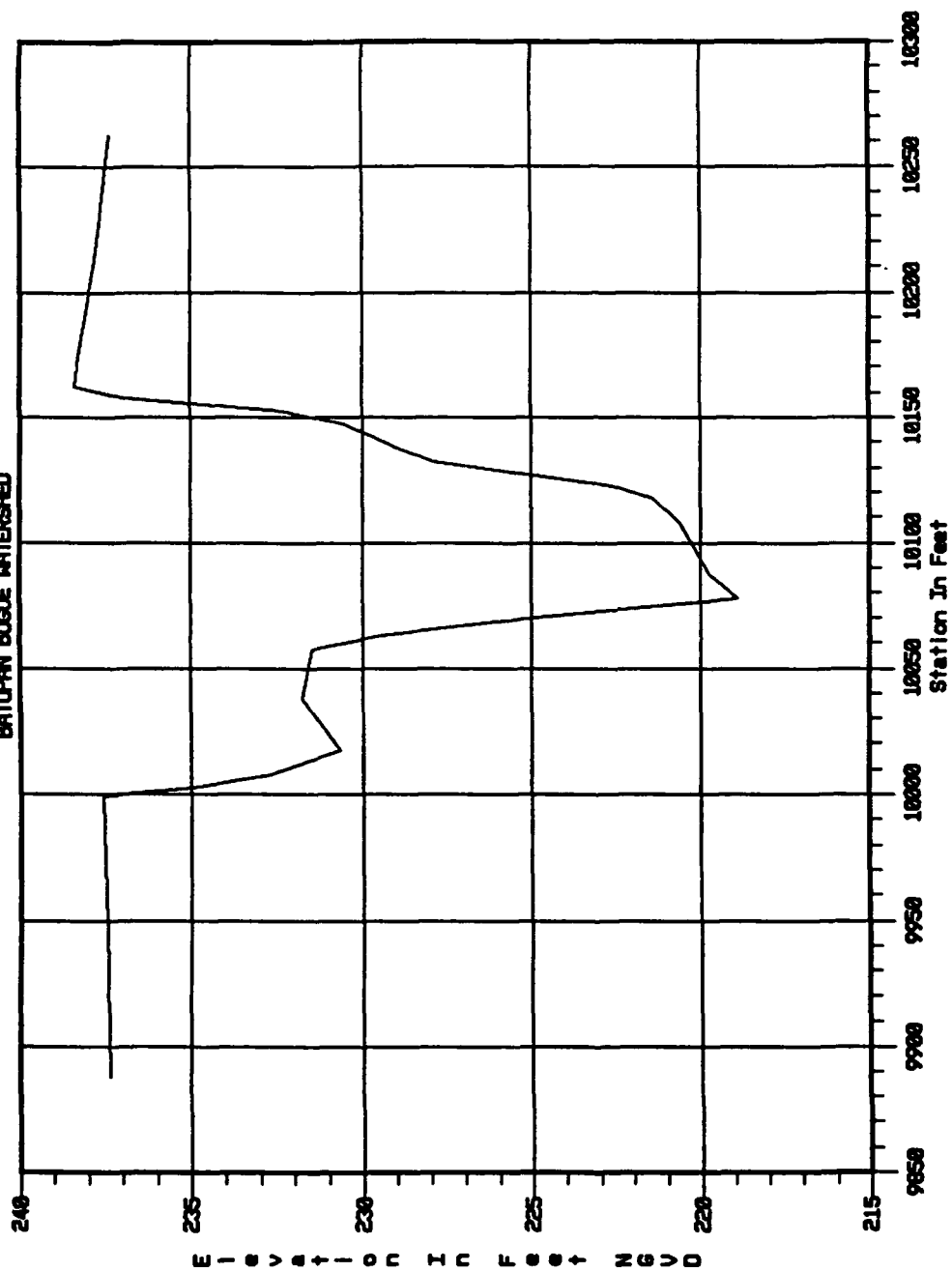
BATUPAN BOGLE WATERSHED



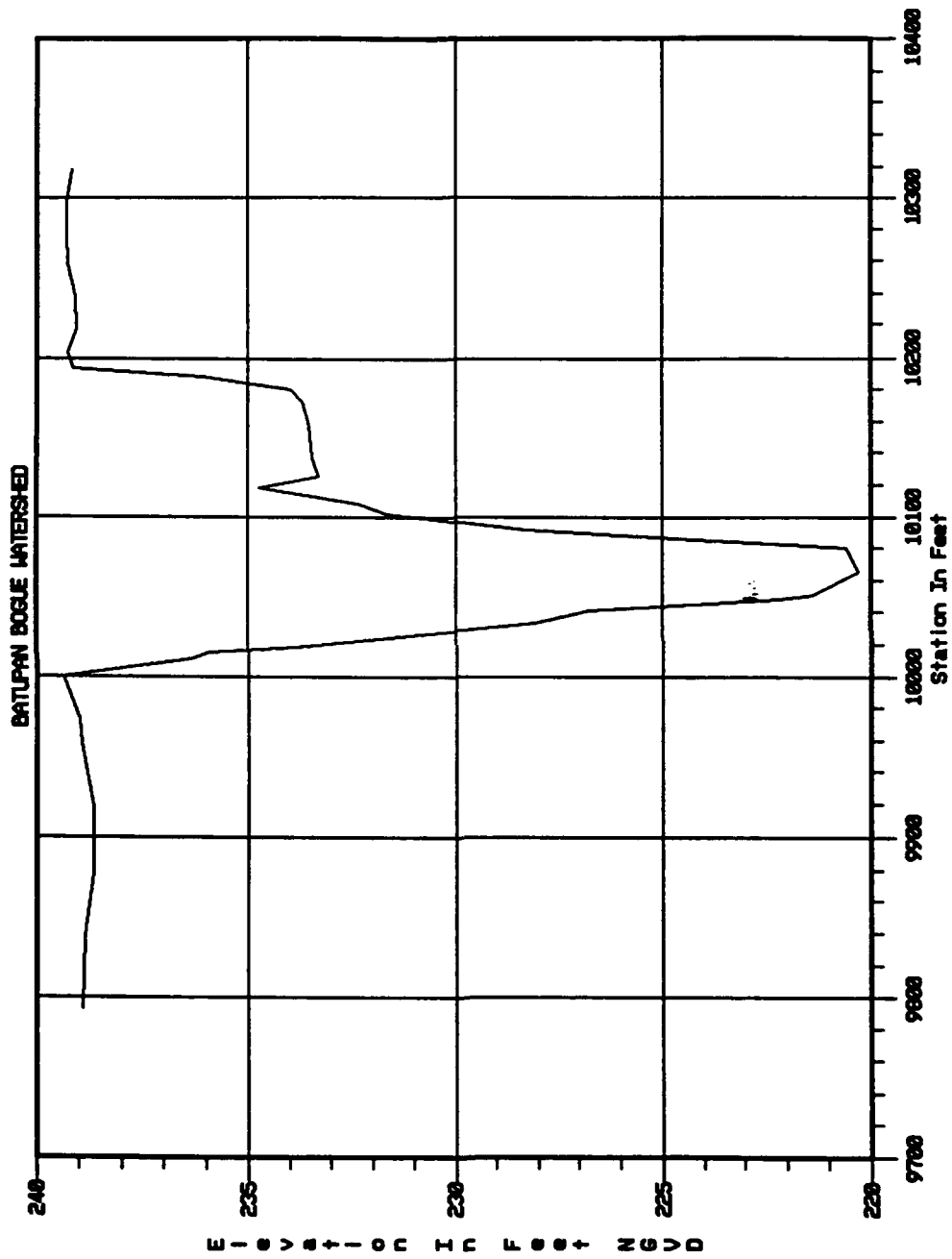
SYNCS 1965 XSEC 69.00



BATUPAN BOGLE INTERSECT

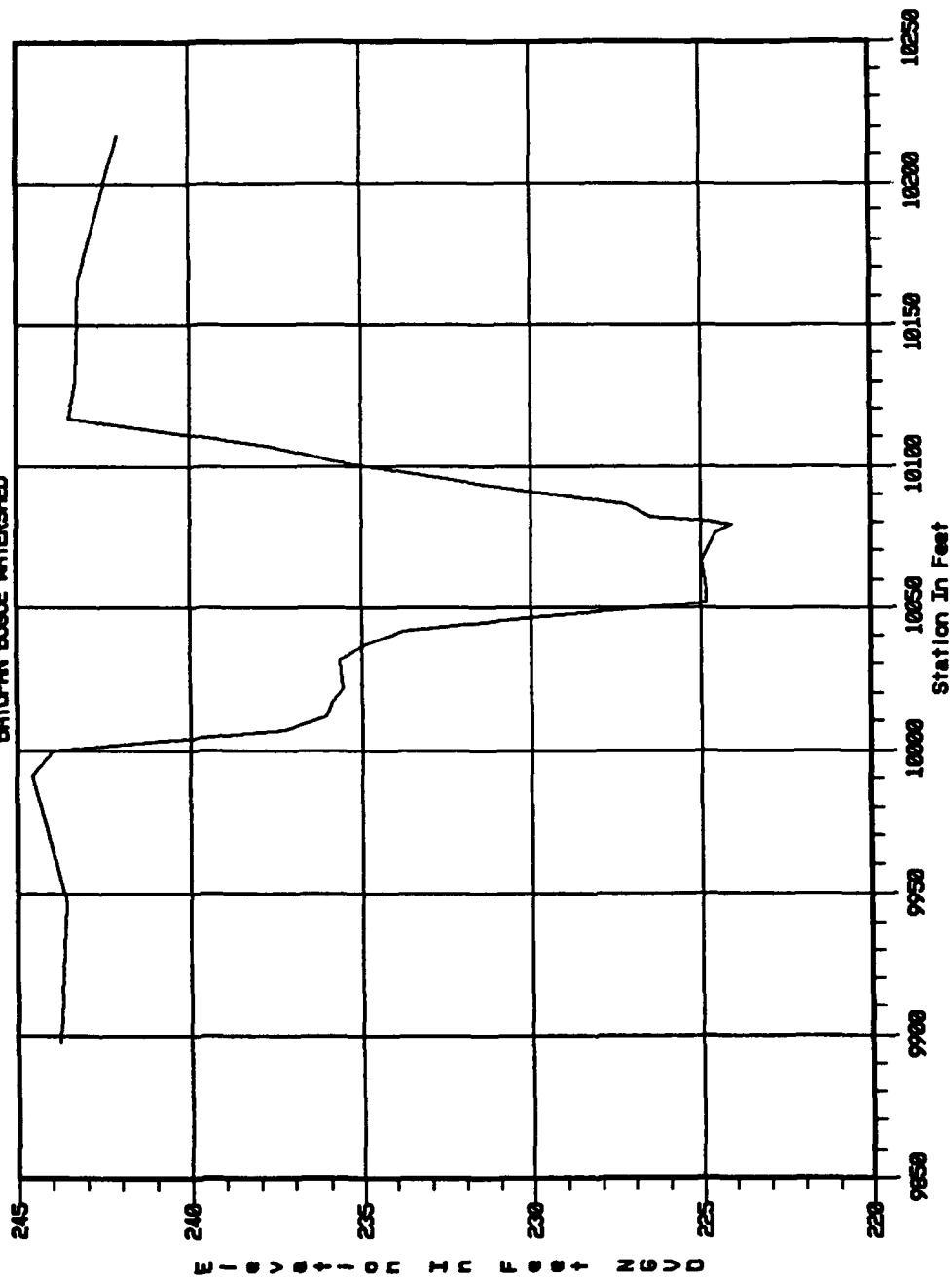


SYNCH 1985 XSEC 115.00

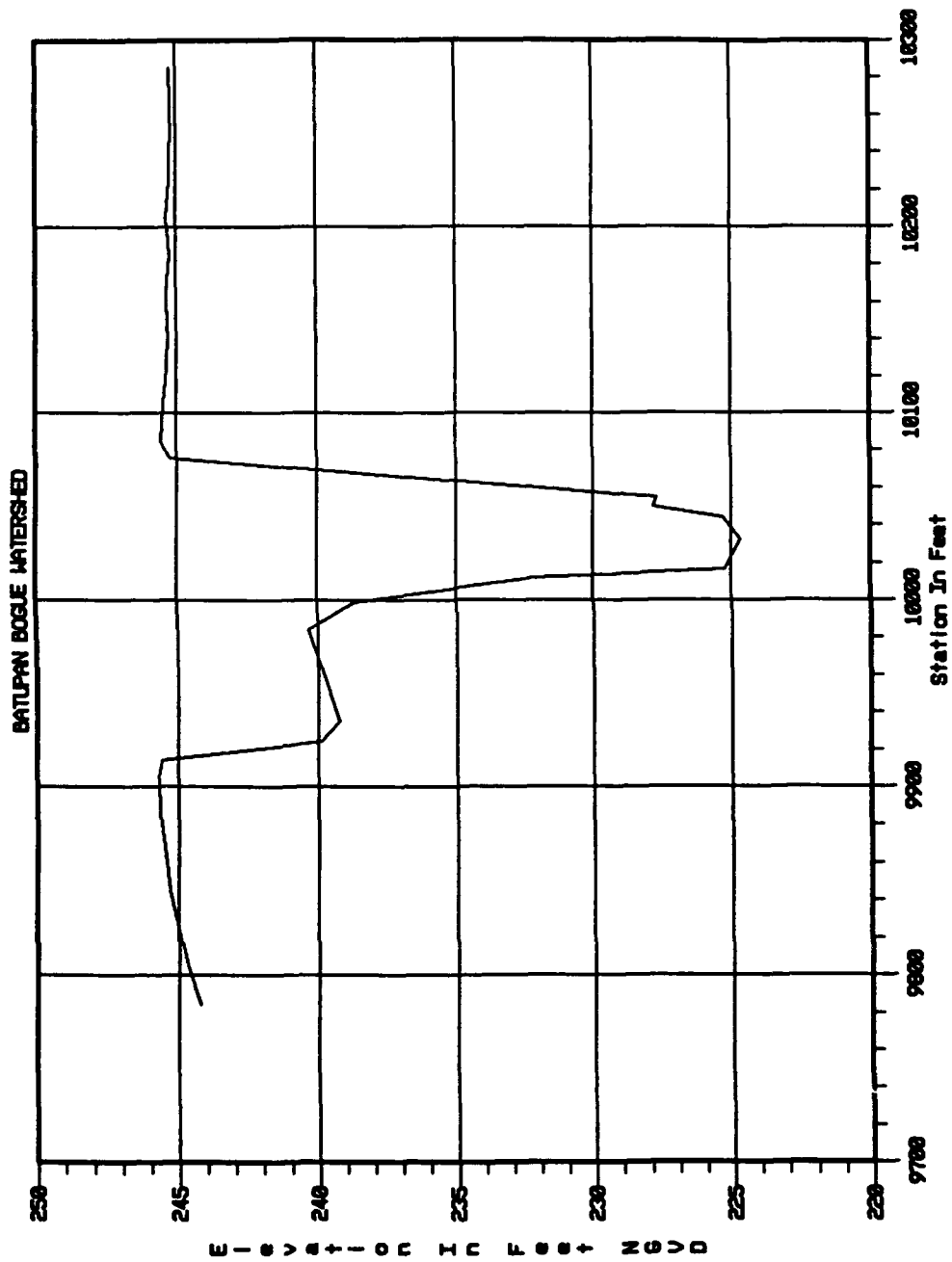


SYNCS 1991 XSEC 13000.

BATUPAN BOGLE WATERSHED

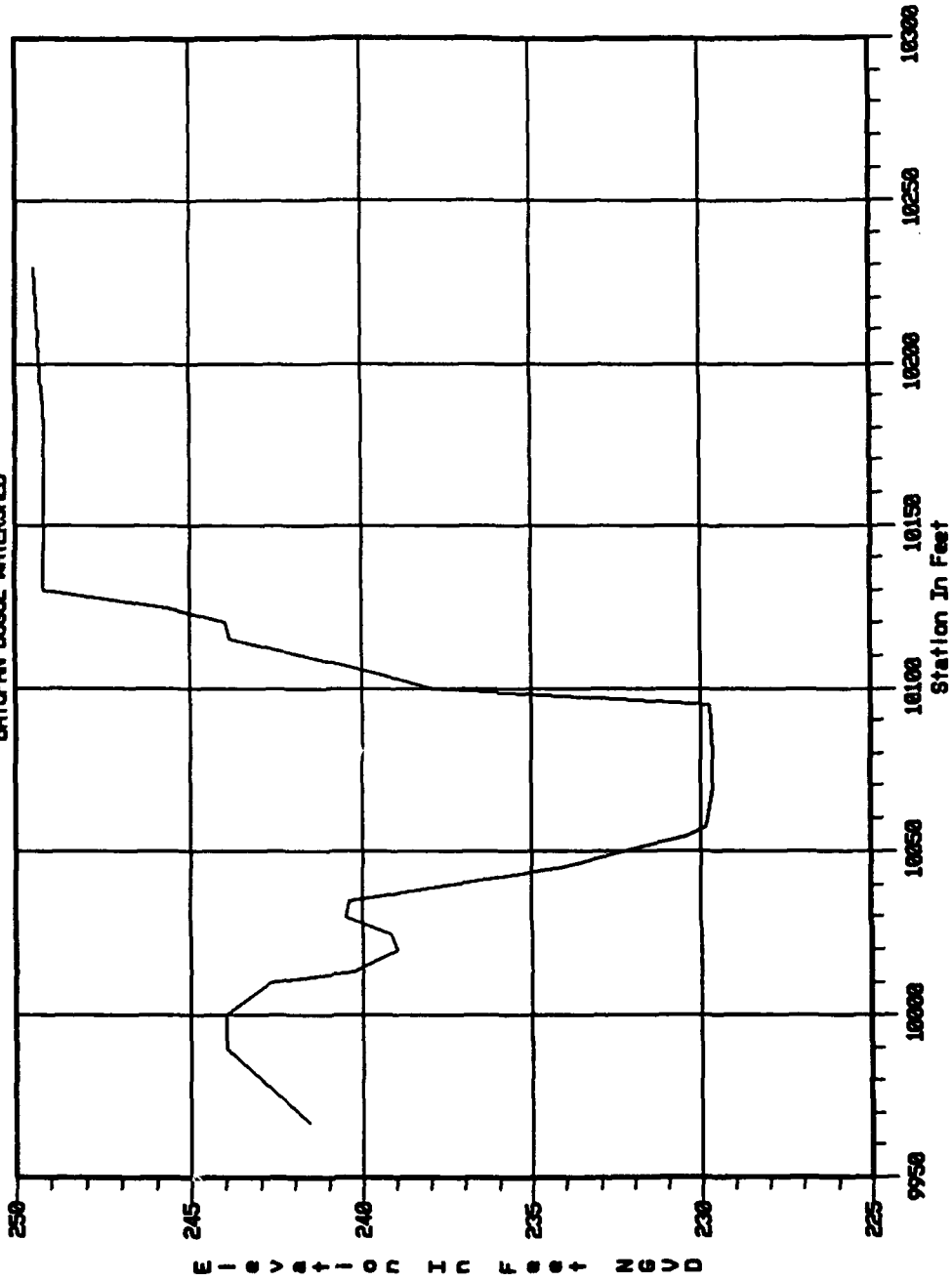


SYNCS 1965 XSEC 144.00

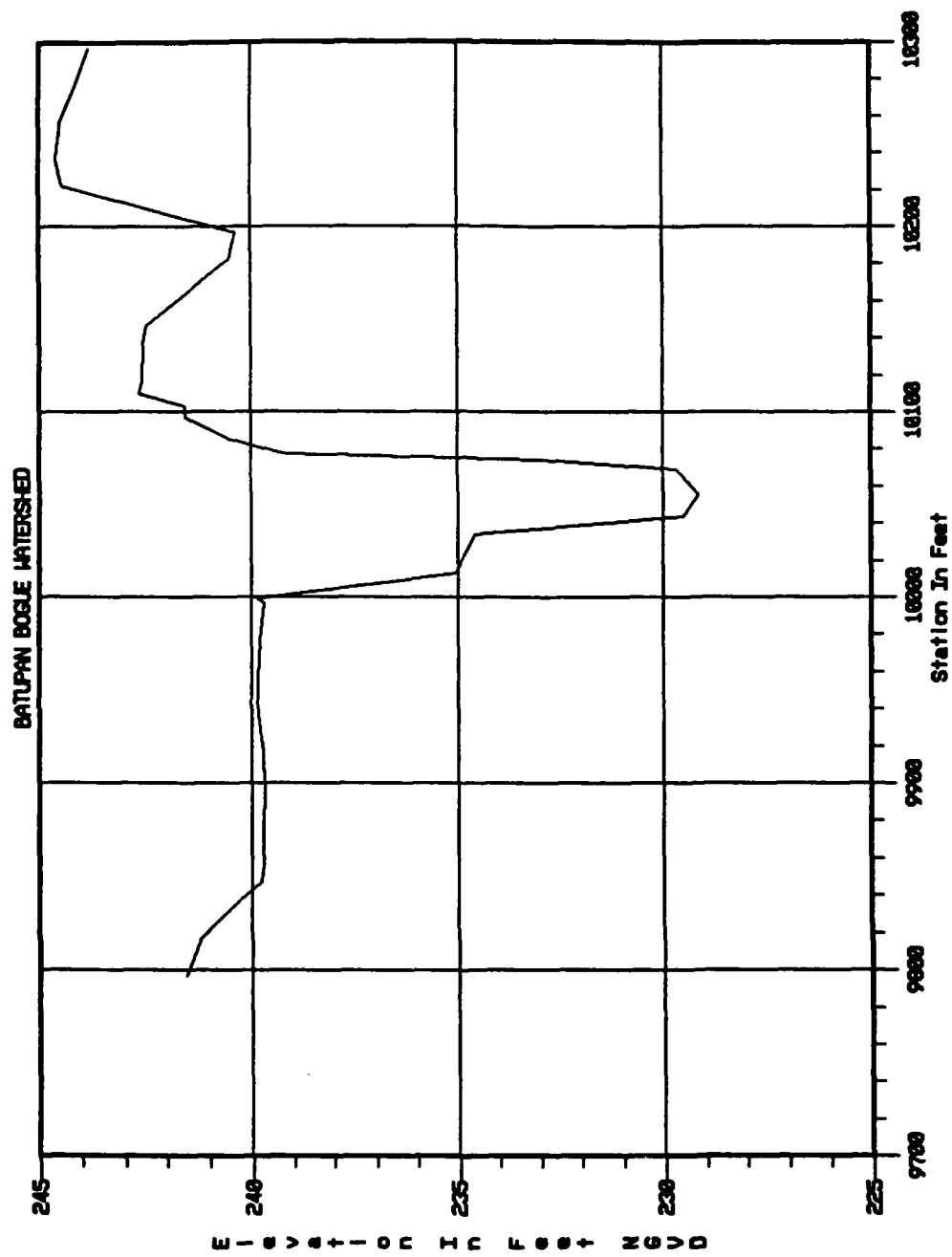


SYNCS 1991 XSEC 15500.

BATUPAN BOGLE WATERSHED

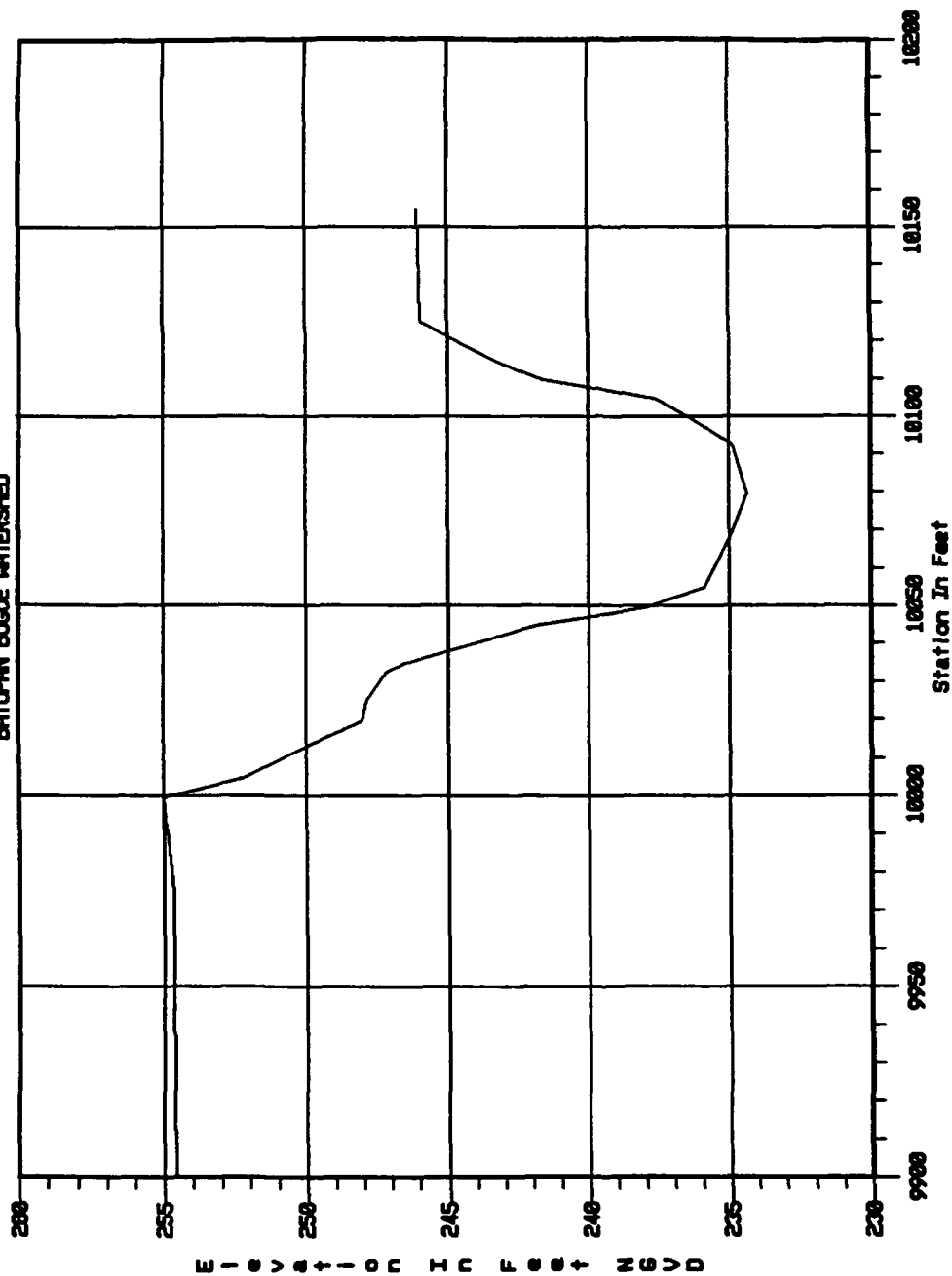


SYNCS 1965 XSEC 170.00

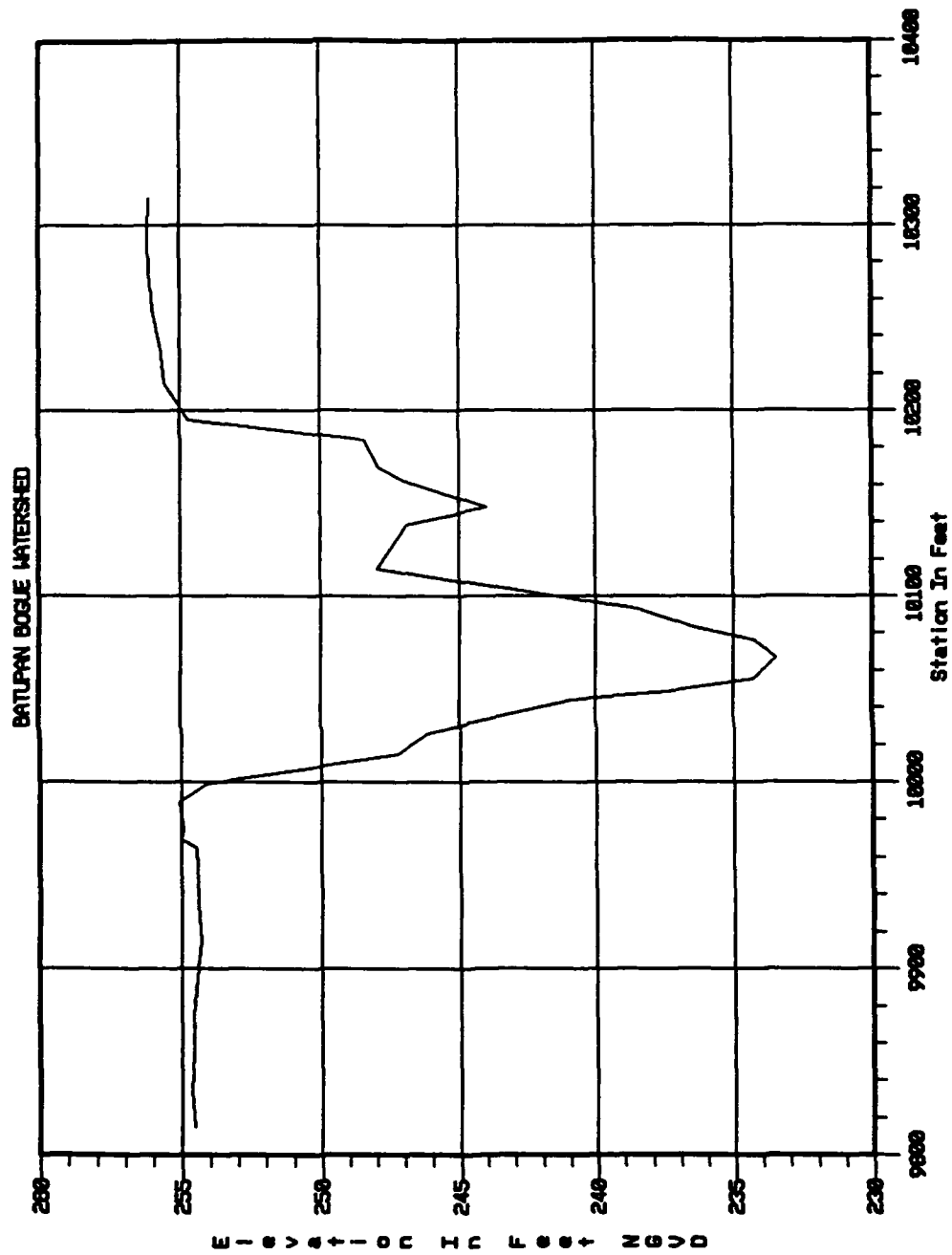


—— SINES 1991 XSEC 18100.

BATUPAN BOGLE WATERSHED

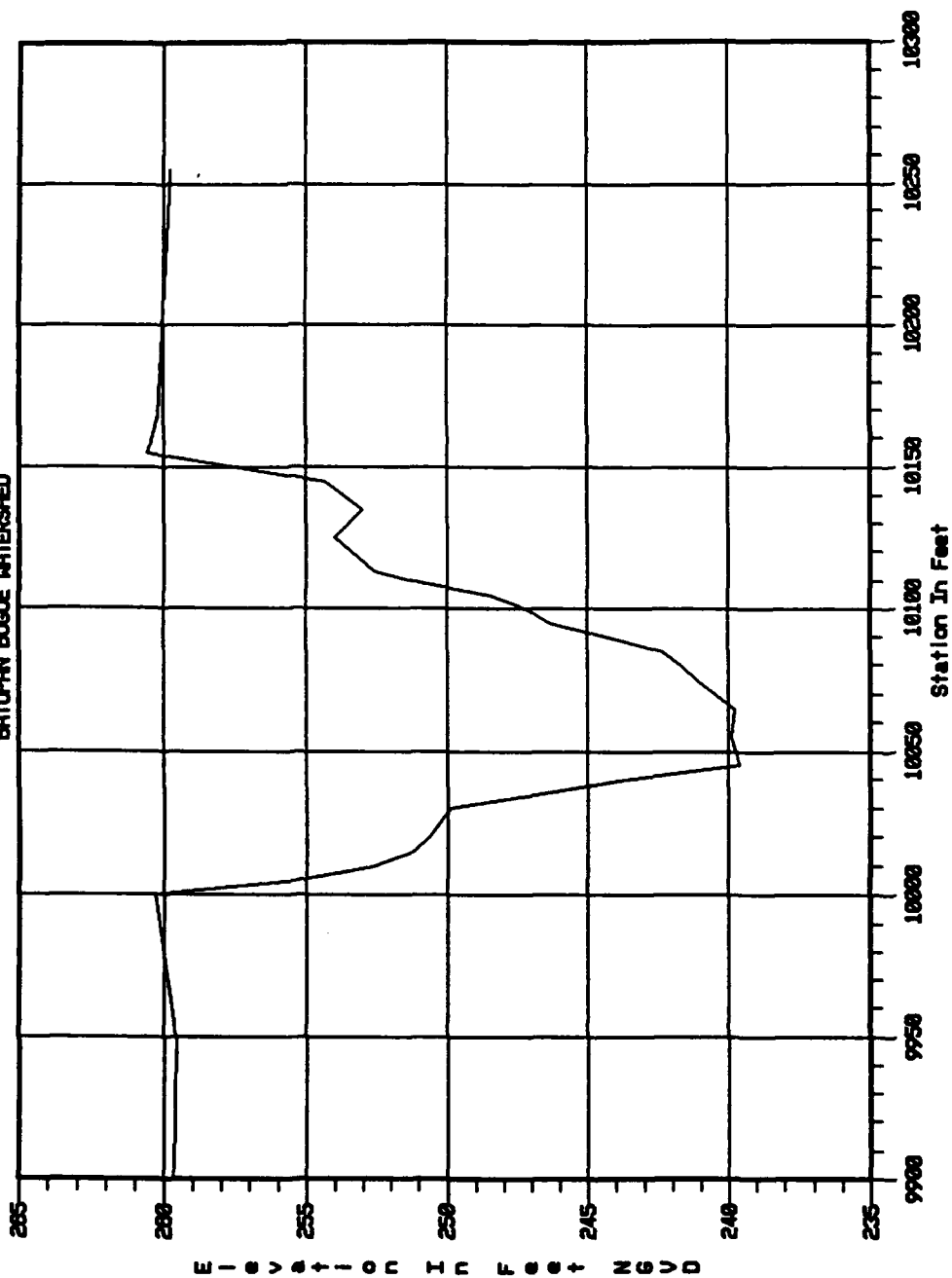


——— SINES 1965 XSEC 199.78

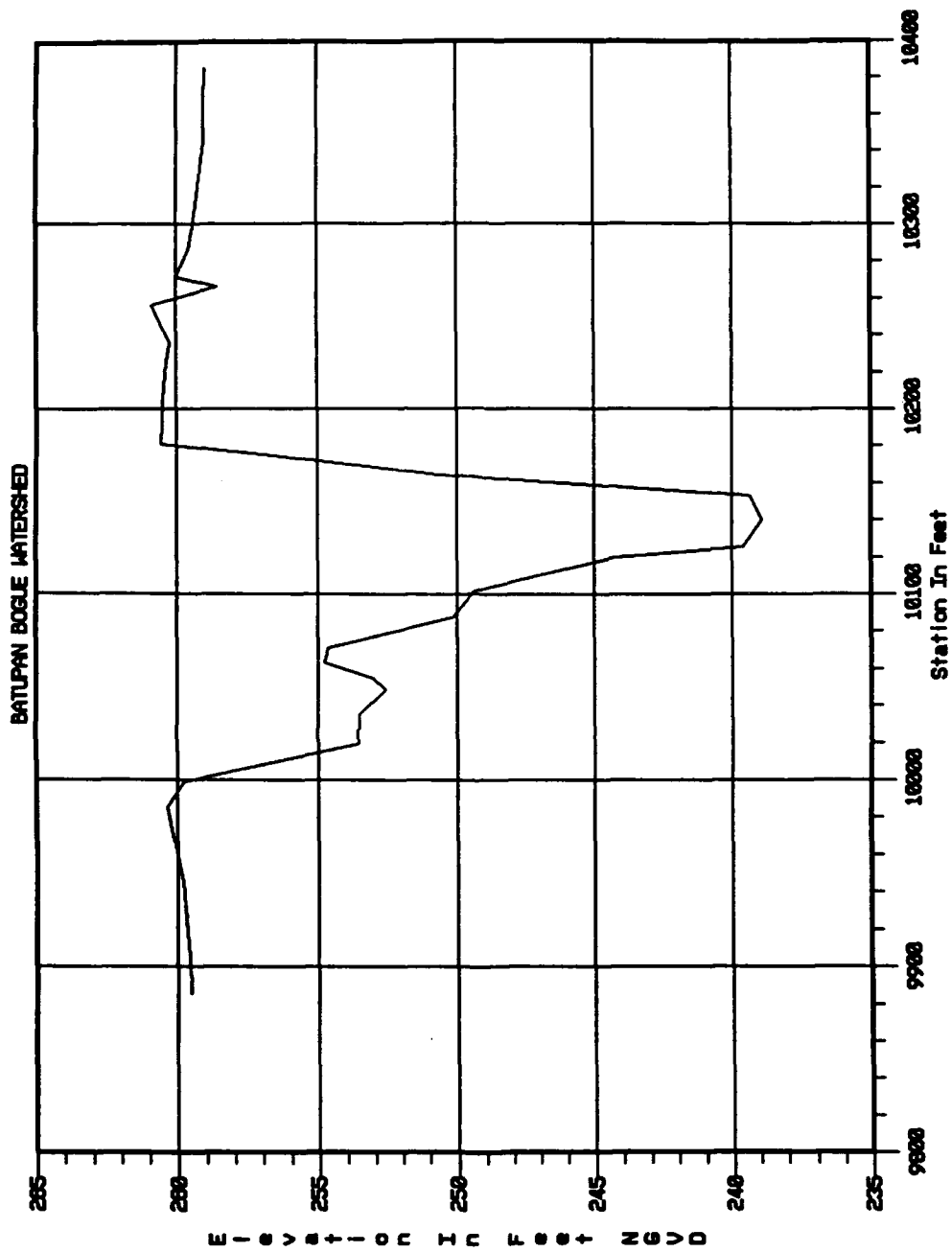


SYNCS 1991 XSEC 28700.

BATUPAN BOGLE WATERSHED

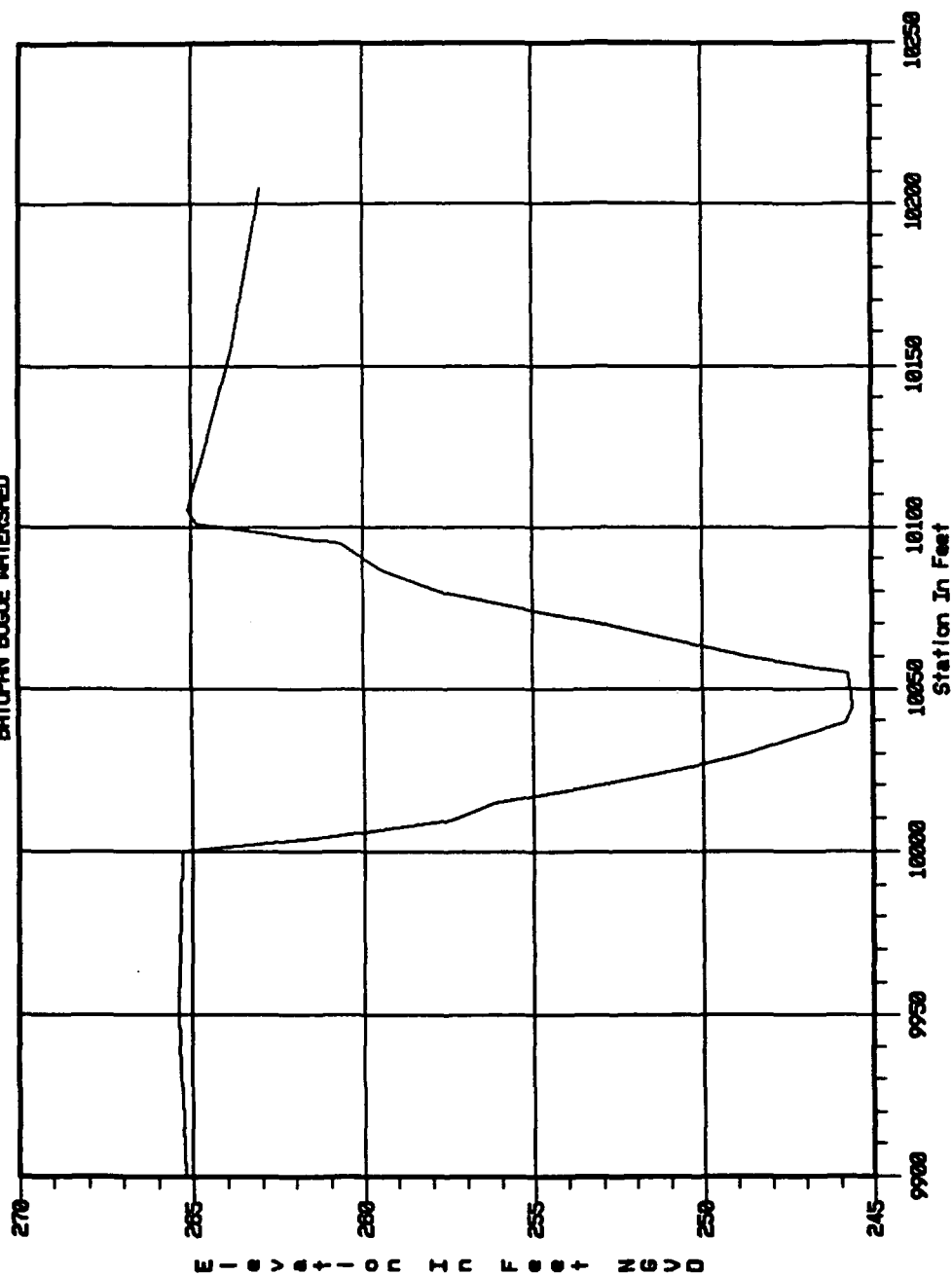


SYKES 1965 XSEC 228.08

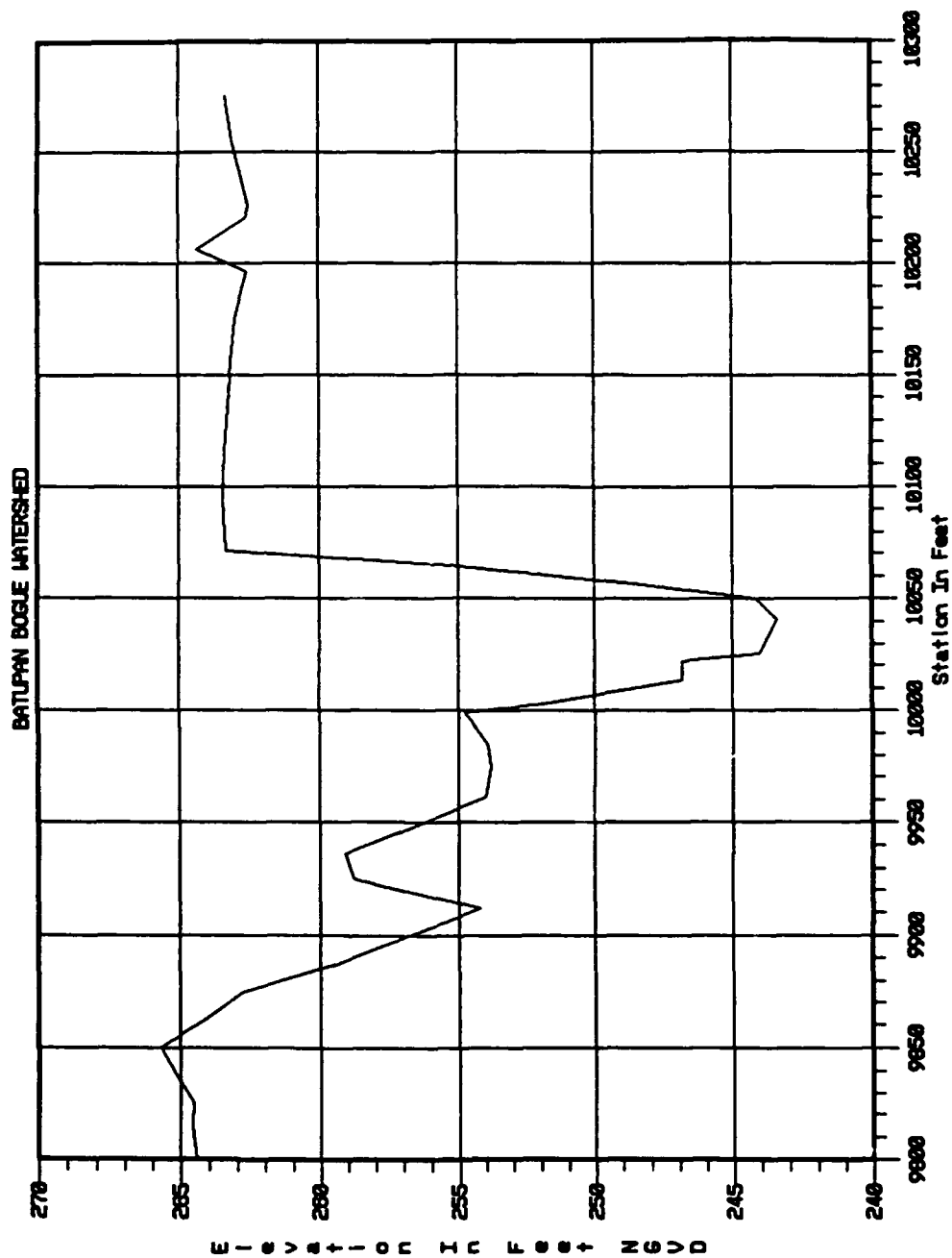


SYNCS 1991 XSEC 23200.

BATUPAN BOGLE WATERSHED

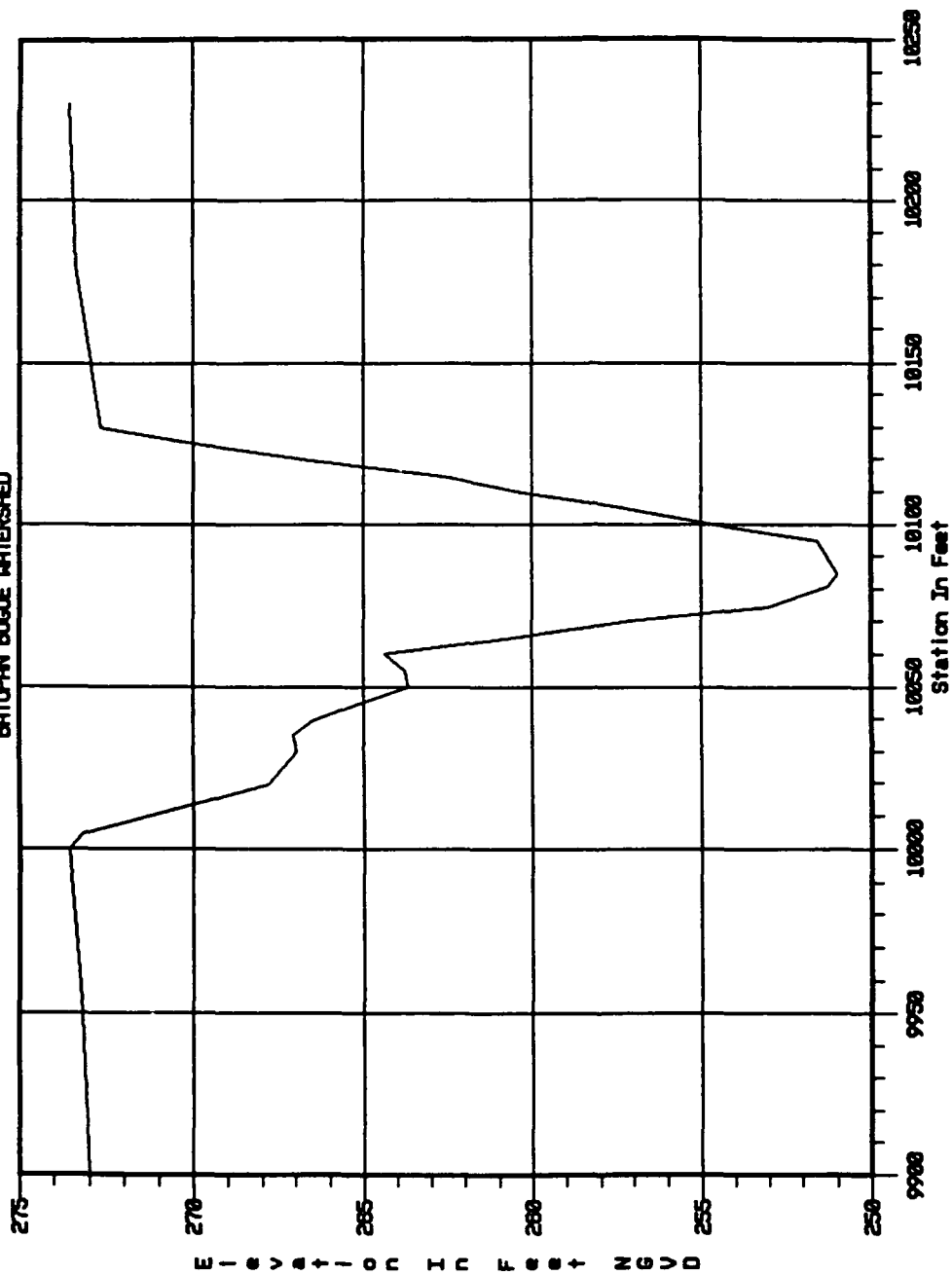


SYNCH 1965 XSEC 253.50

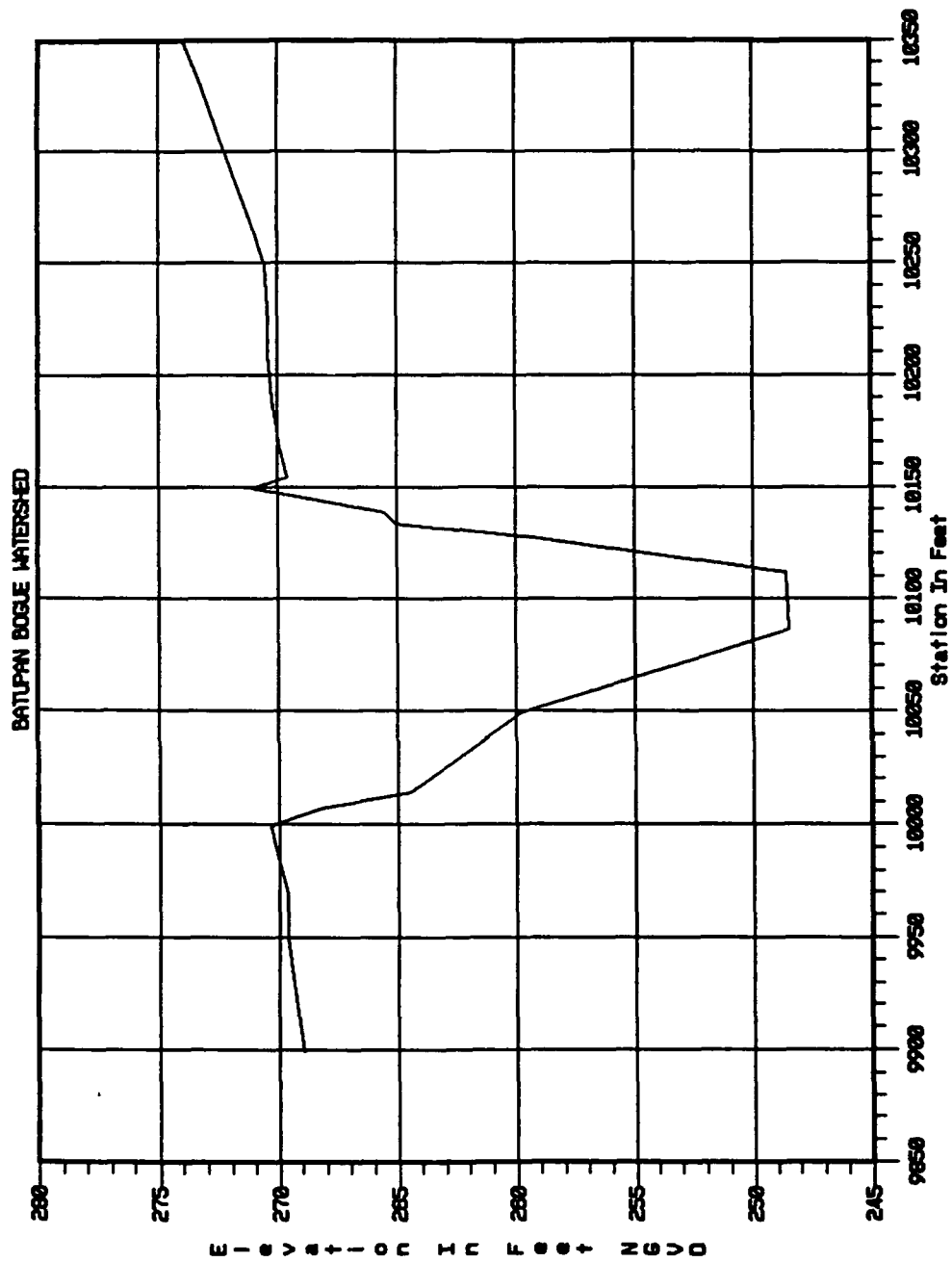


SYKES 1991 XSEC 25700.

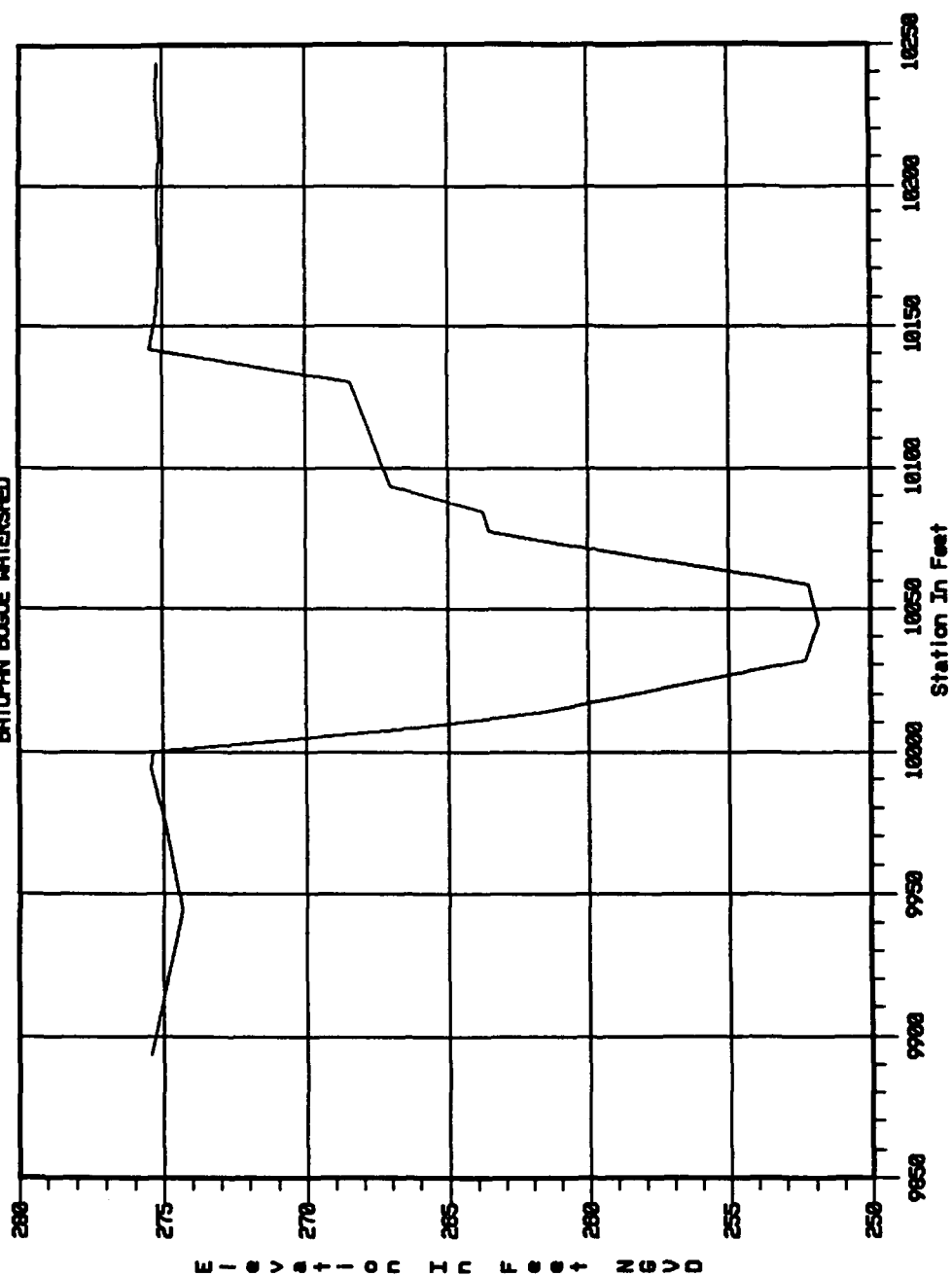
BATUPAN BOGUE WATERSHED



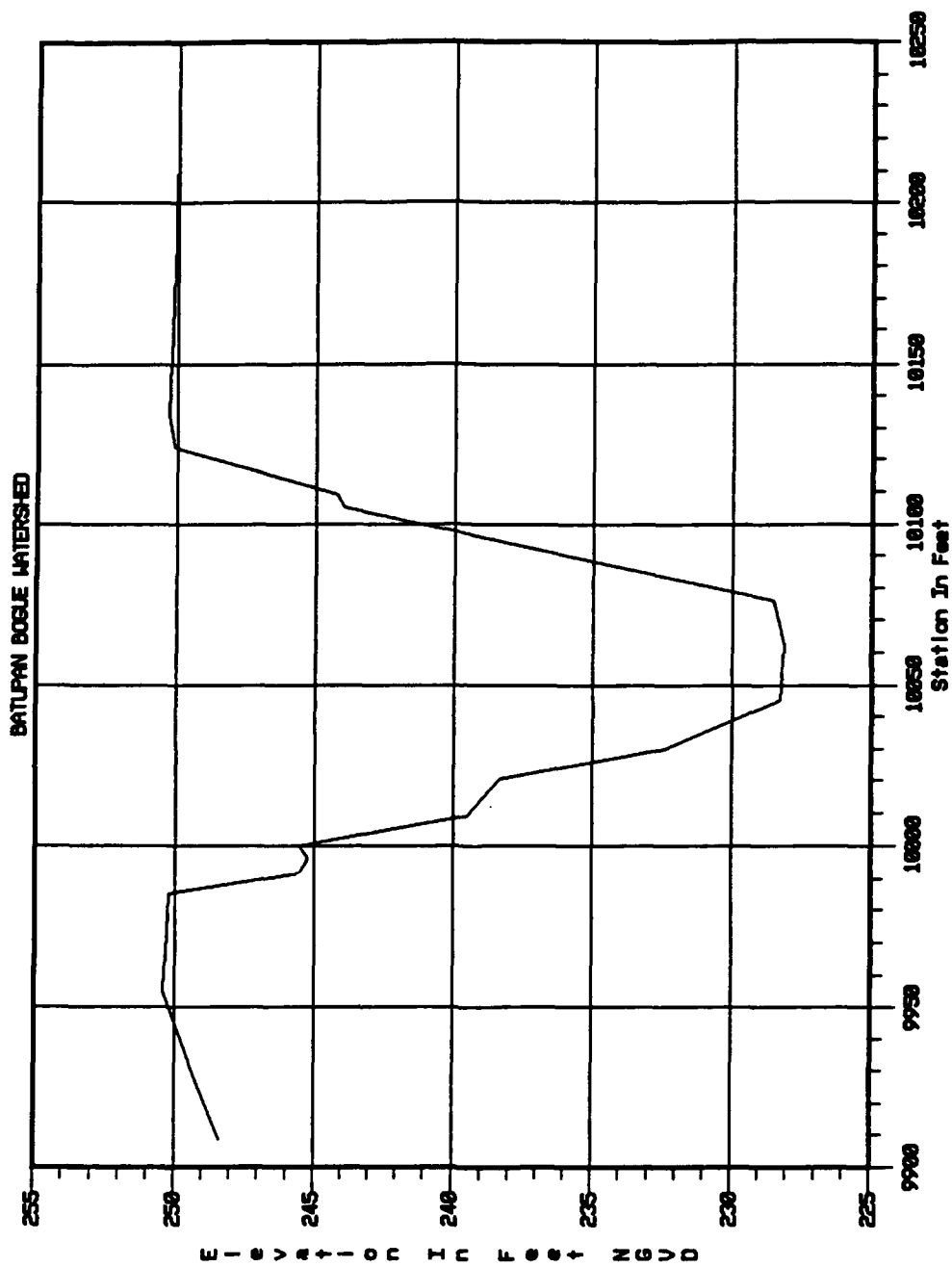
SYNOPSIS 1965 XSEC 281.29



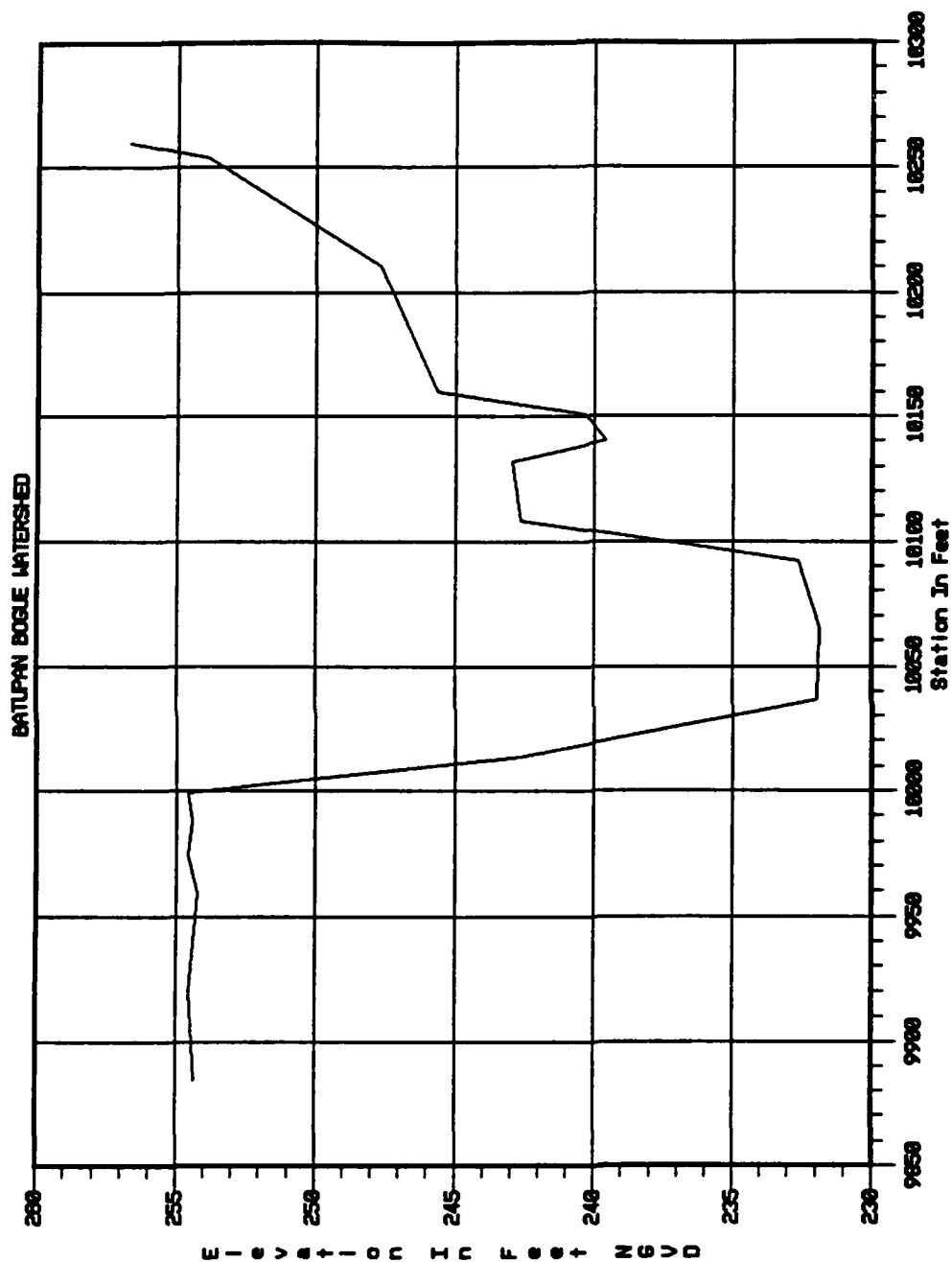
BATUPAN BOGUE WATERSHED



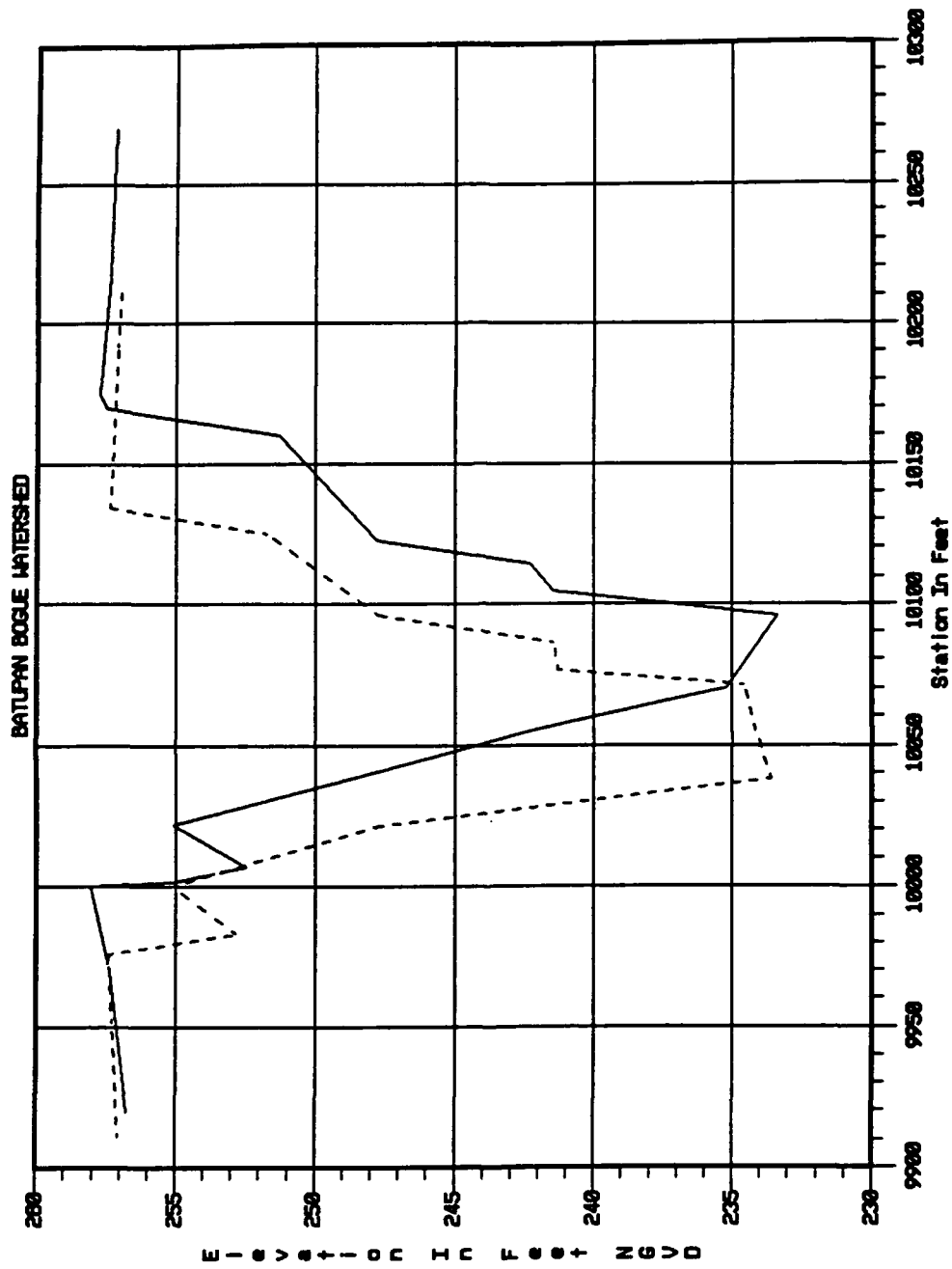
SYNCS 1991 XSEC 30030.



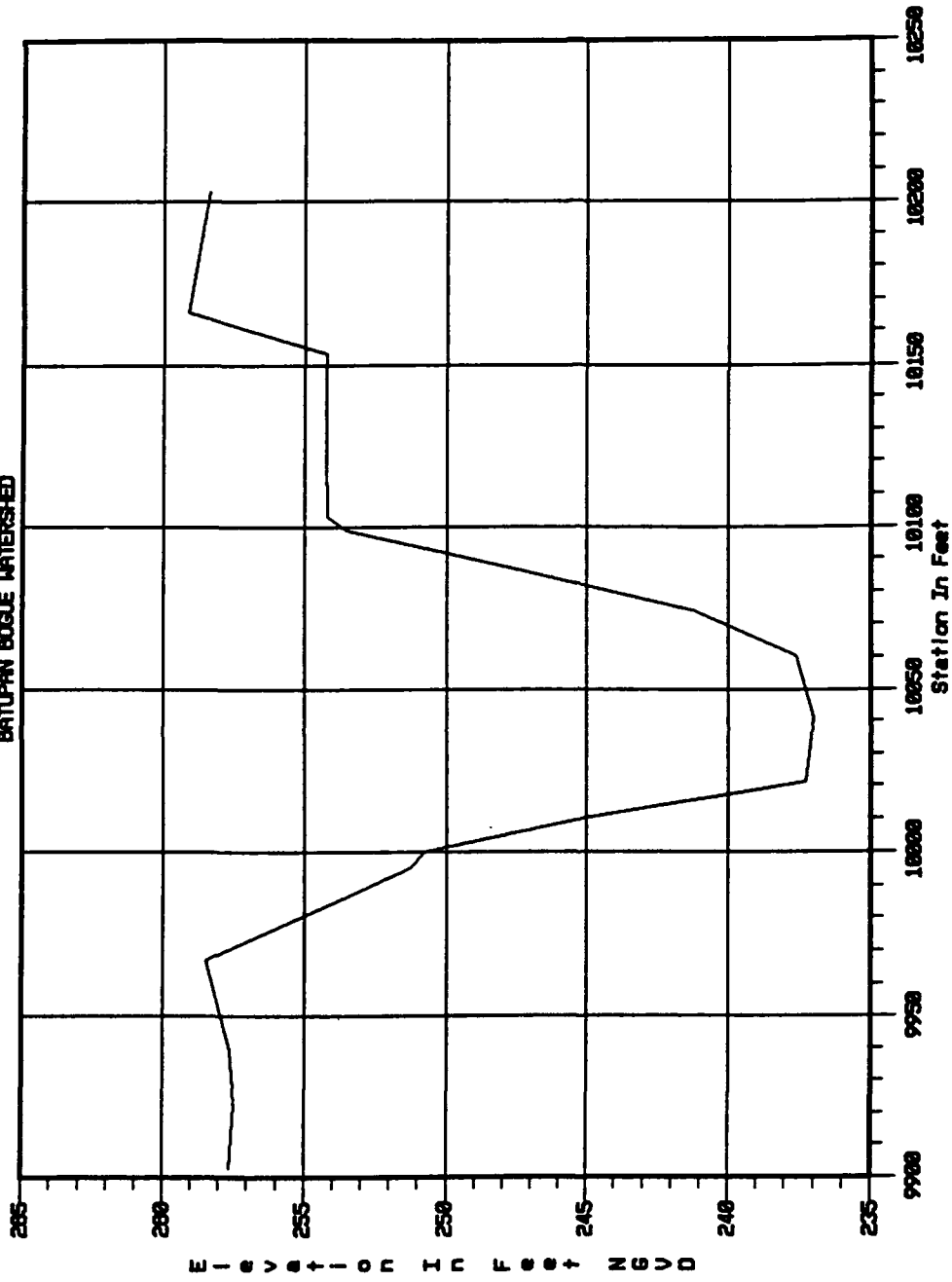
WDRSHM 1991 XSEC 20.00



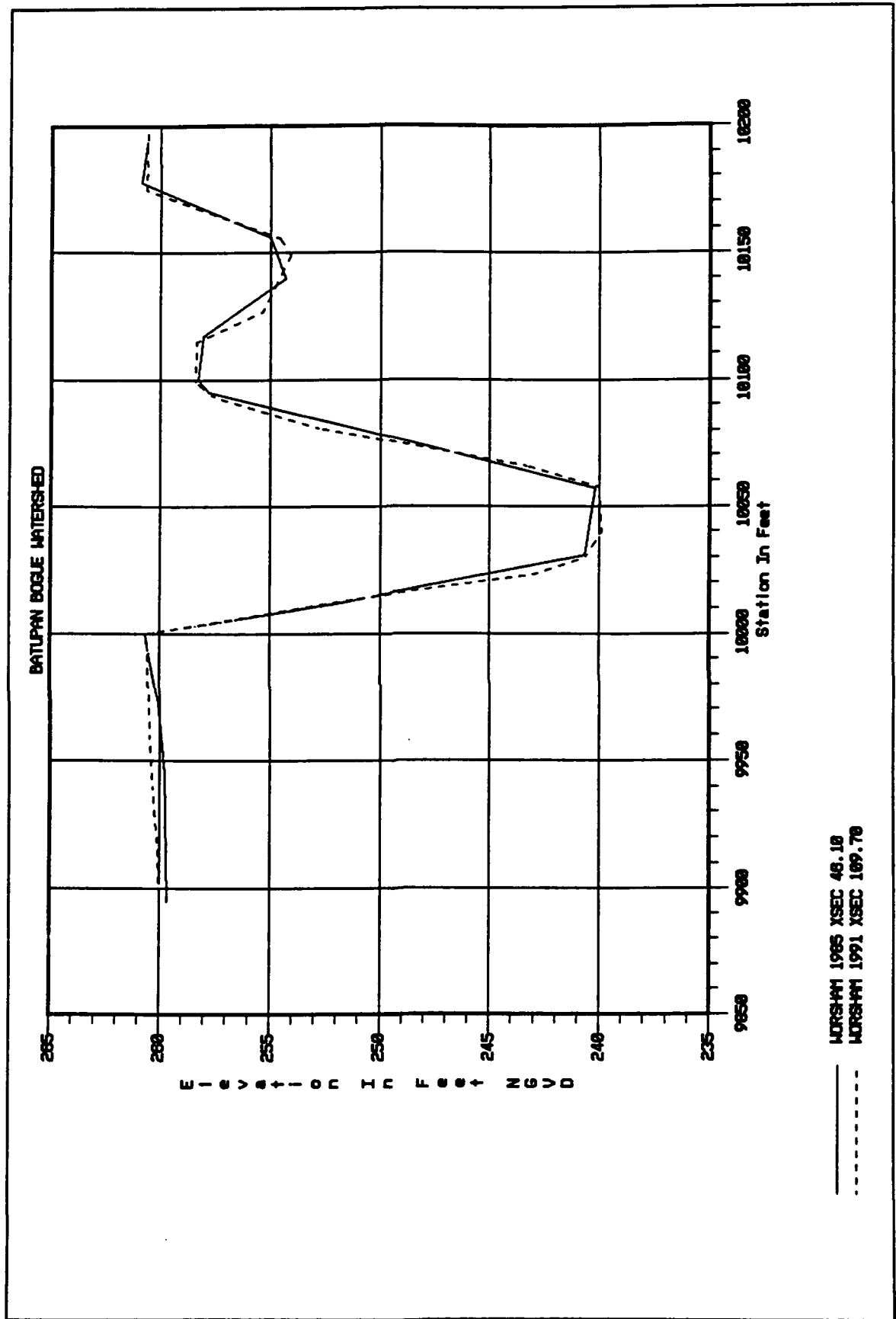
WOSHAW 1991 XSEC 51.98



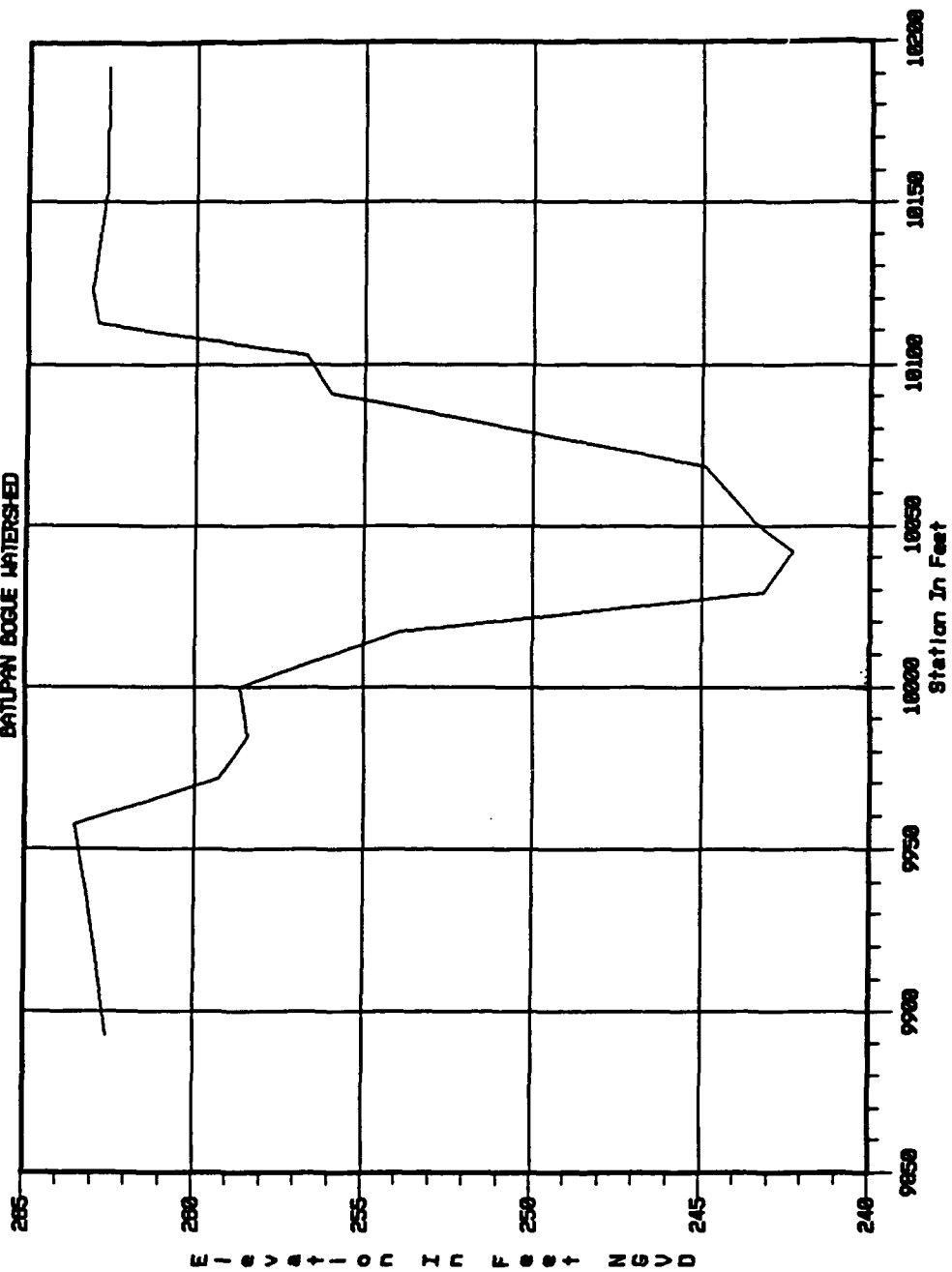
BATUPAN BOULE INTERSECT



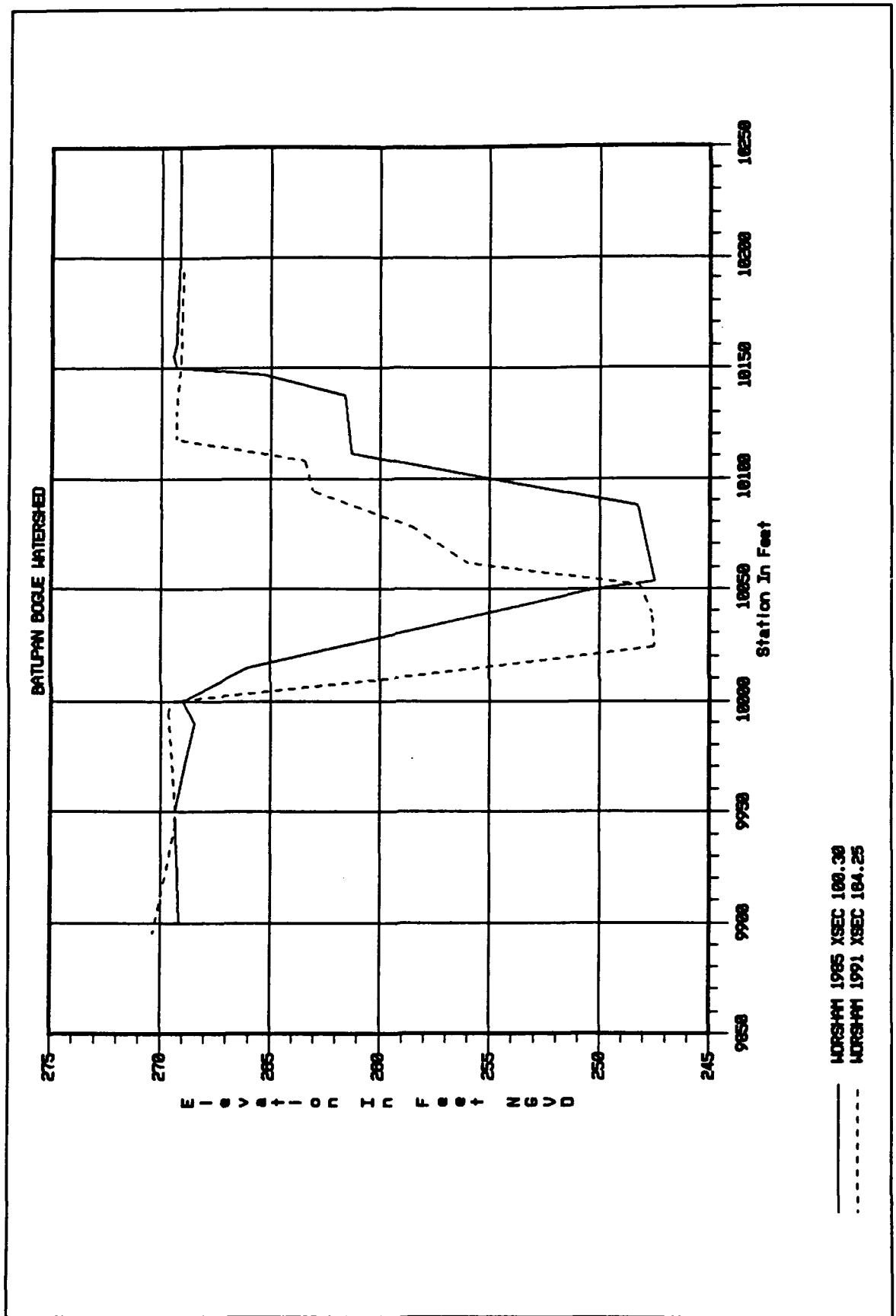
WORSHAM 1991 XSEC 91.55



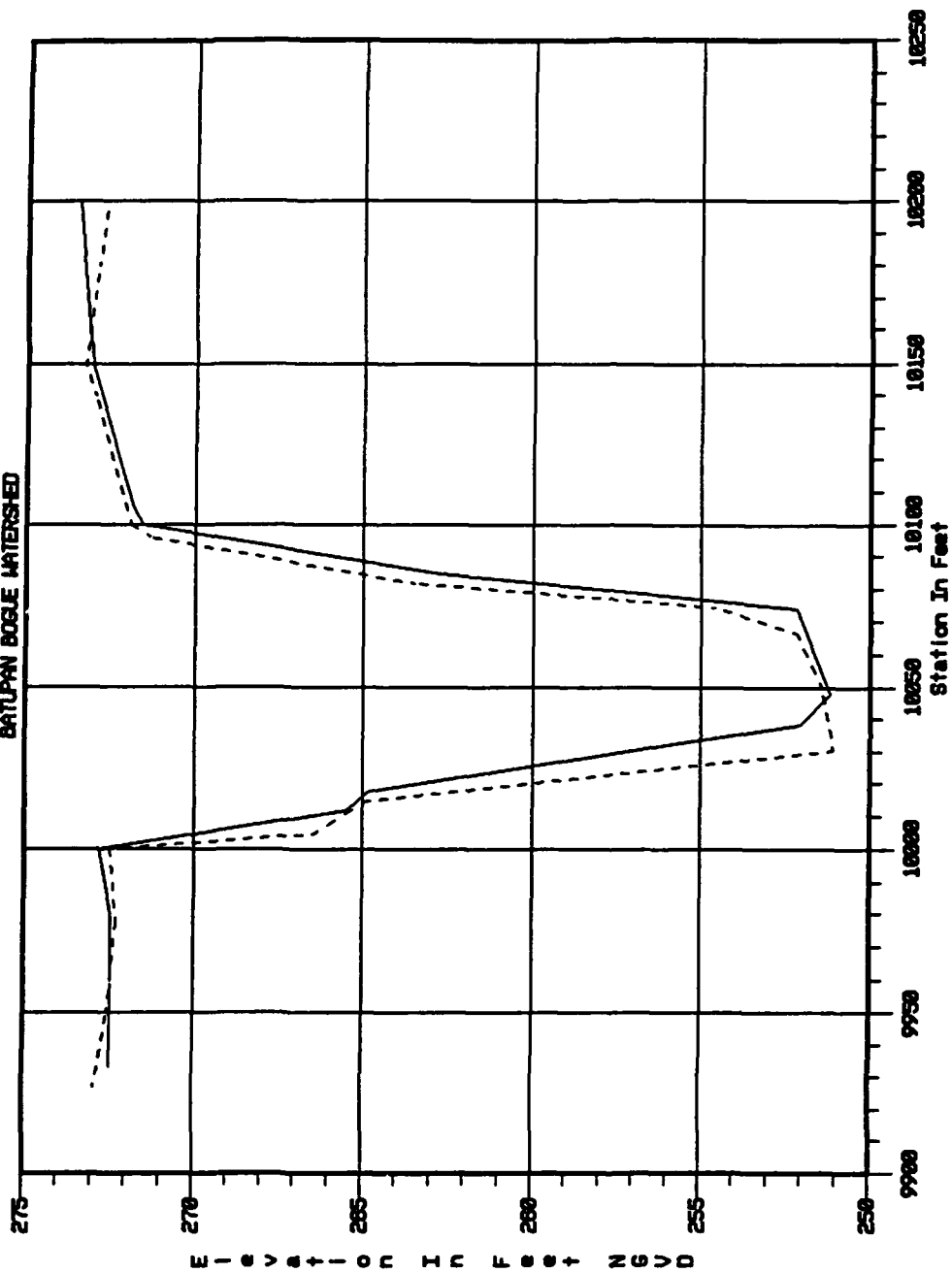
BATUPAN BOGLE WATERSHED



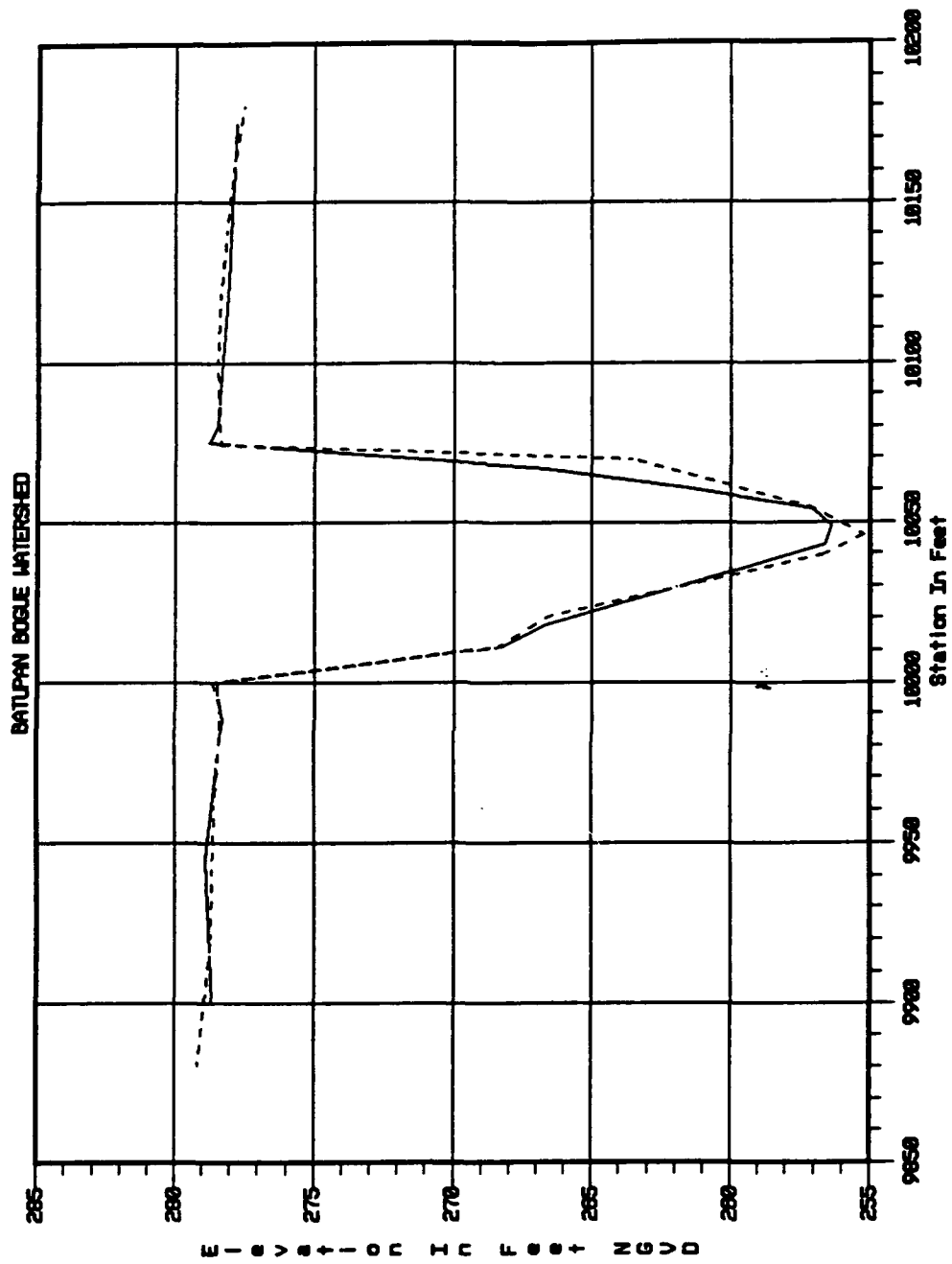
WRSW 1991 XSEC 132.00



BATUPAN BOGLE WATERSHED

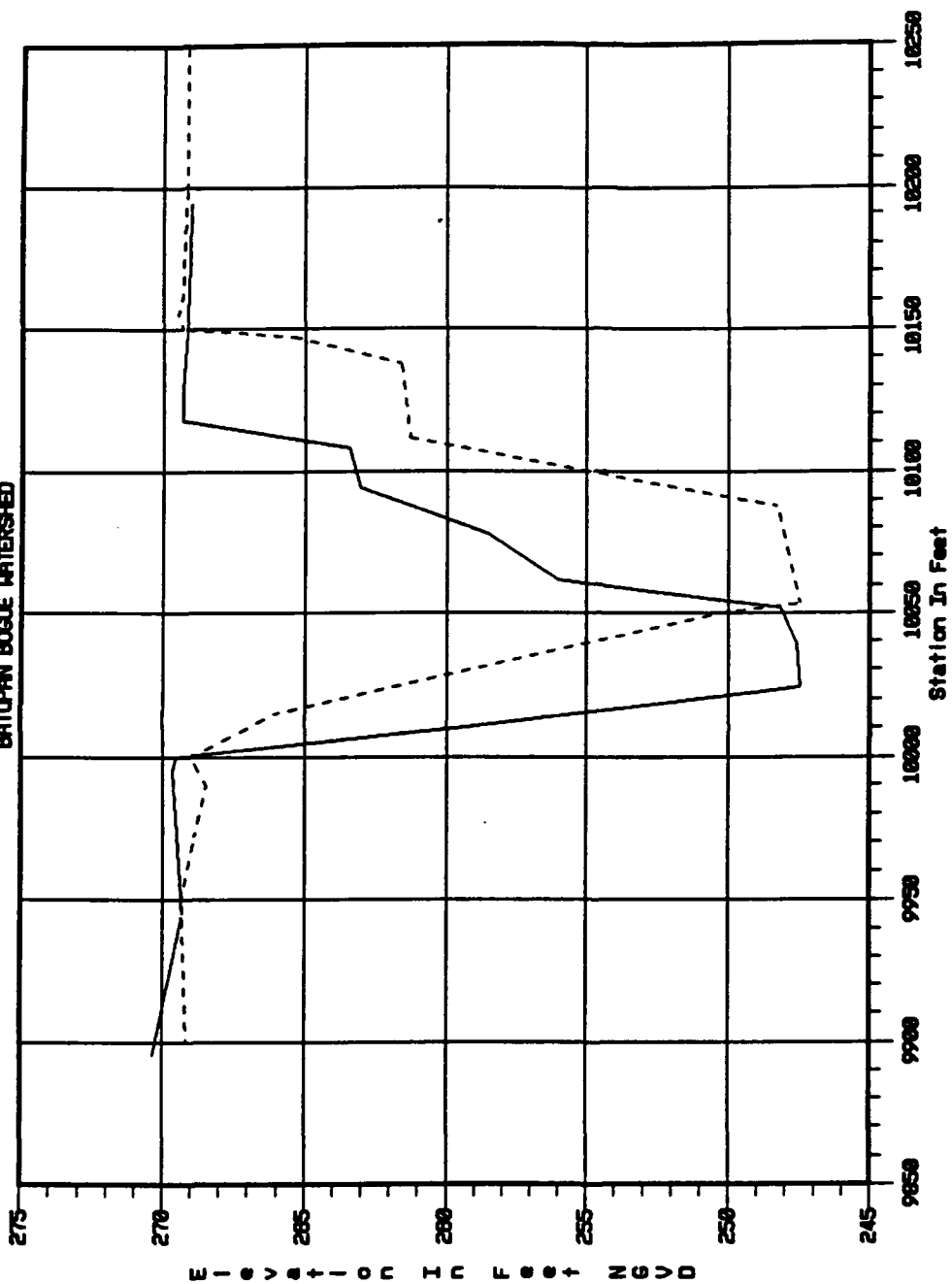


——— 1965 XSEC 128.00
 - - - 1991 XSEC 191.05

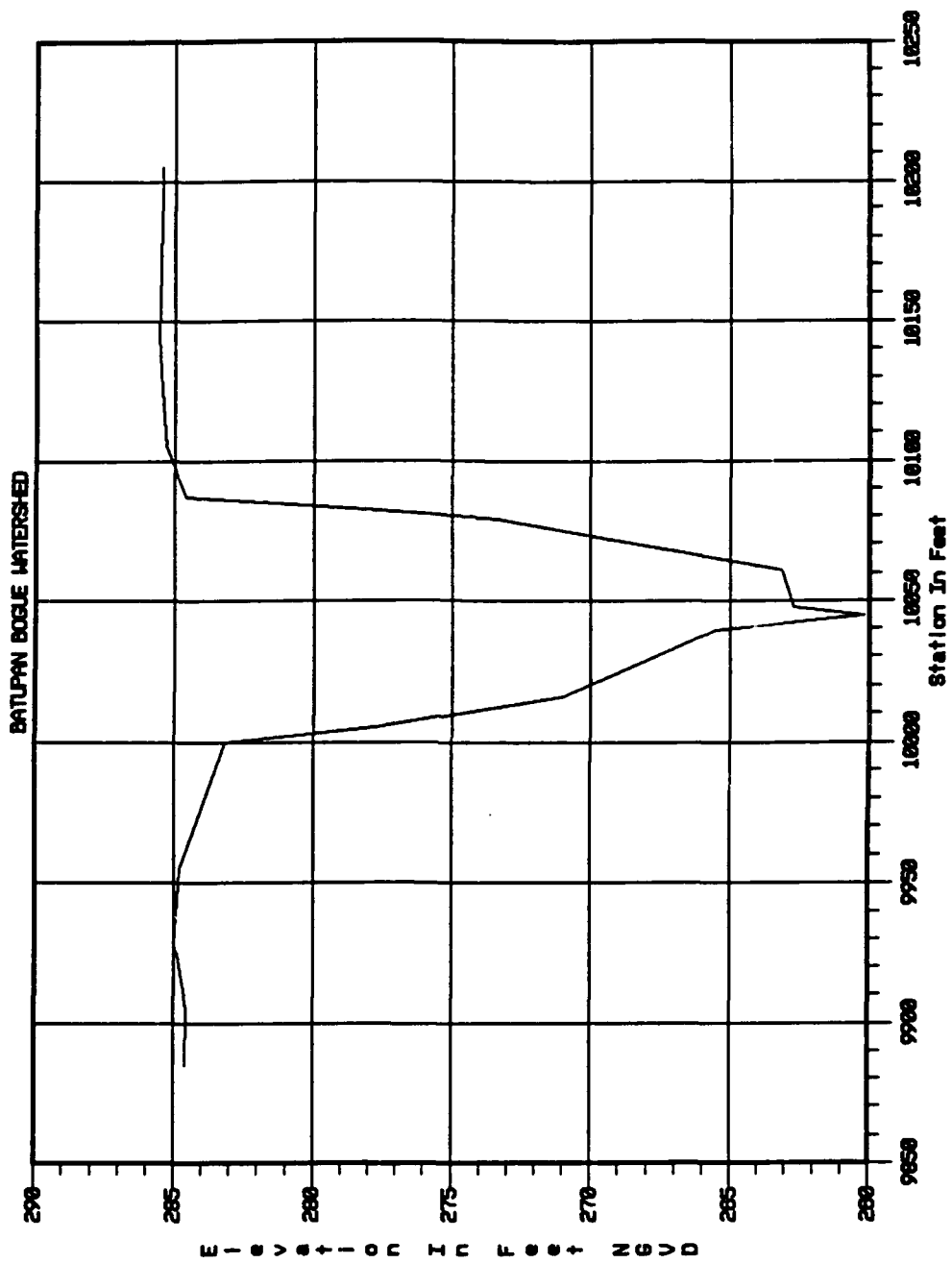


——— 1985 XSEC 155.75
 - - - 1991 XSEC 218.00

BATUPAN BOGLE INTERSECT

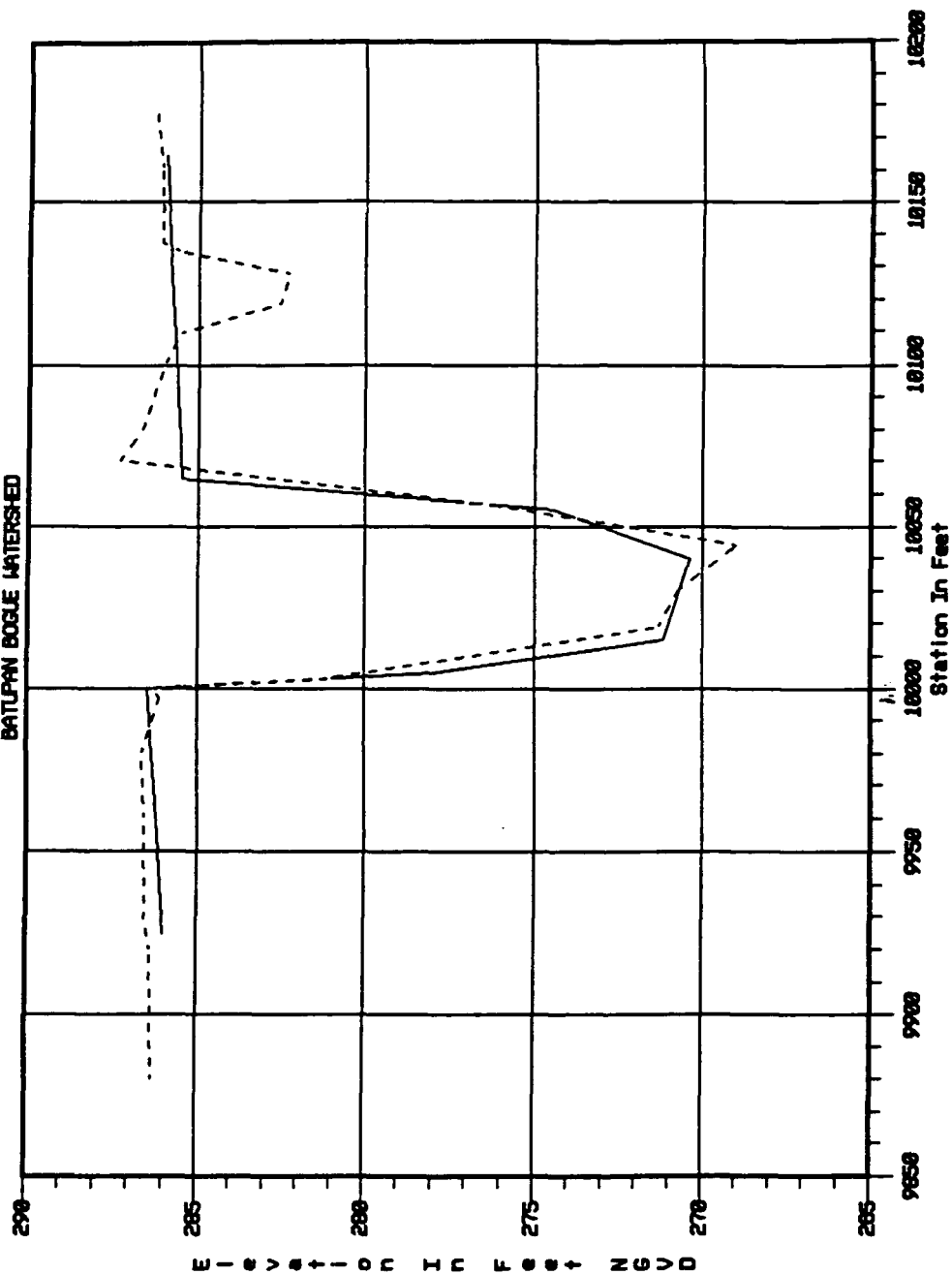


——— 1991 XSEC 104.25
 - - - 1985 XSEC 100.30

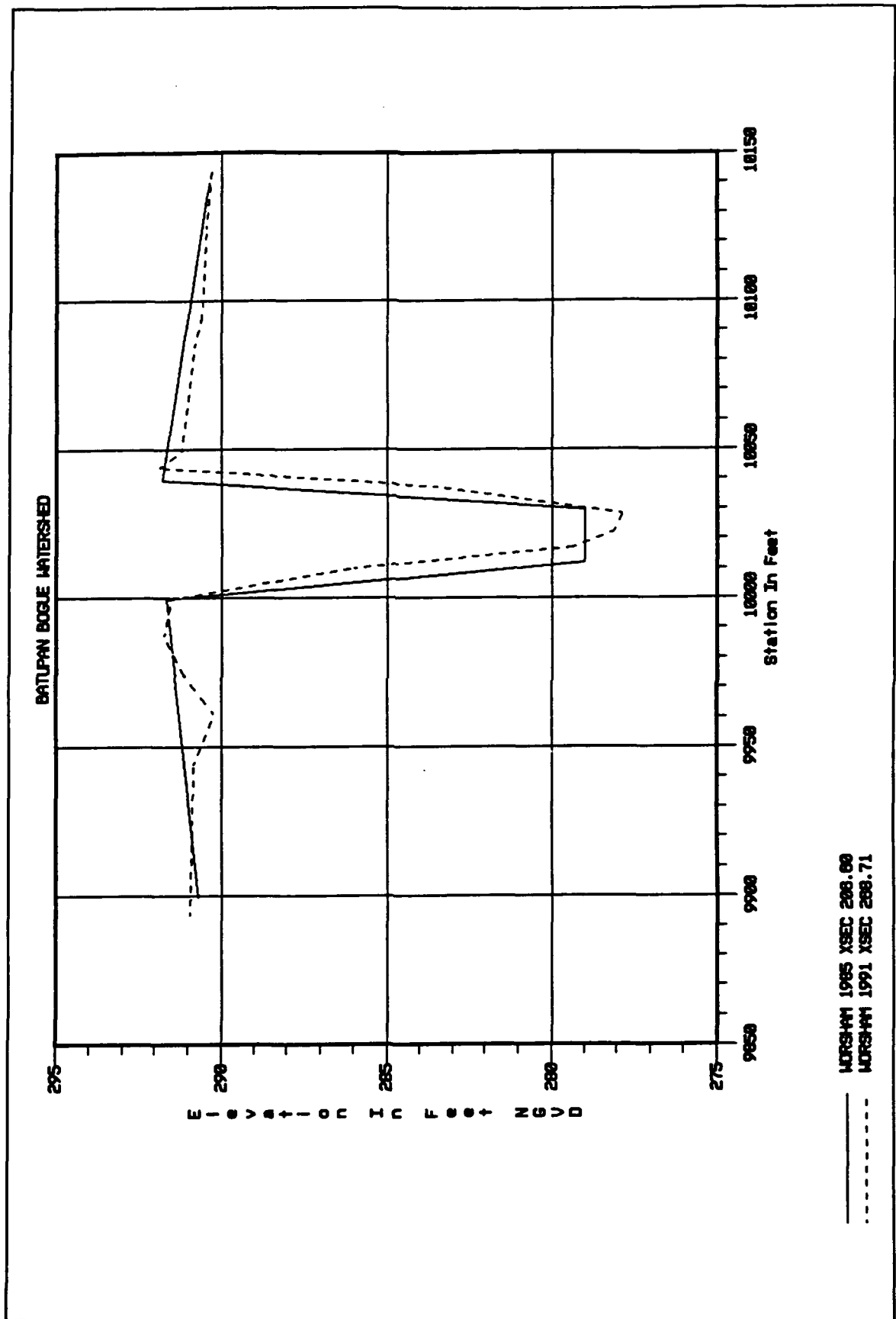


WORSWAM 1991 XSEC 244.35

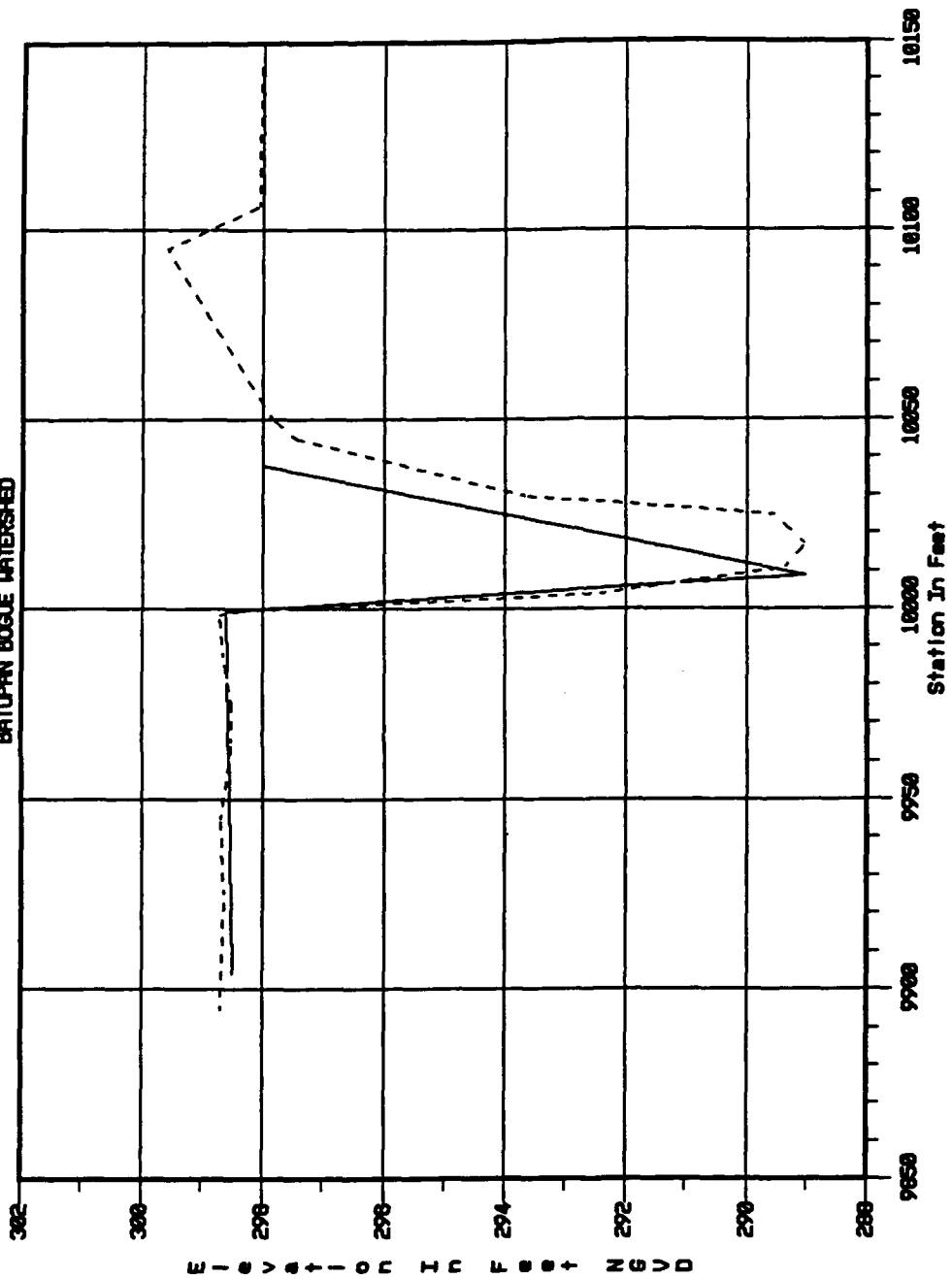
BATUPAN BOGLE WATERSHED



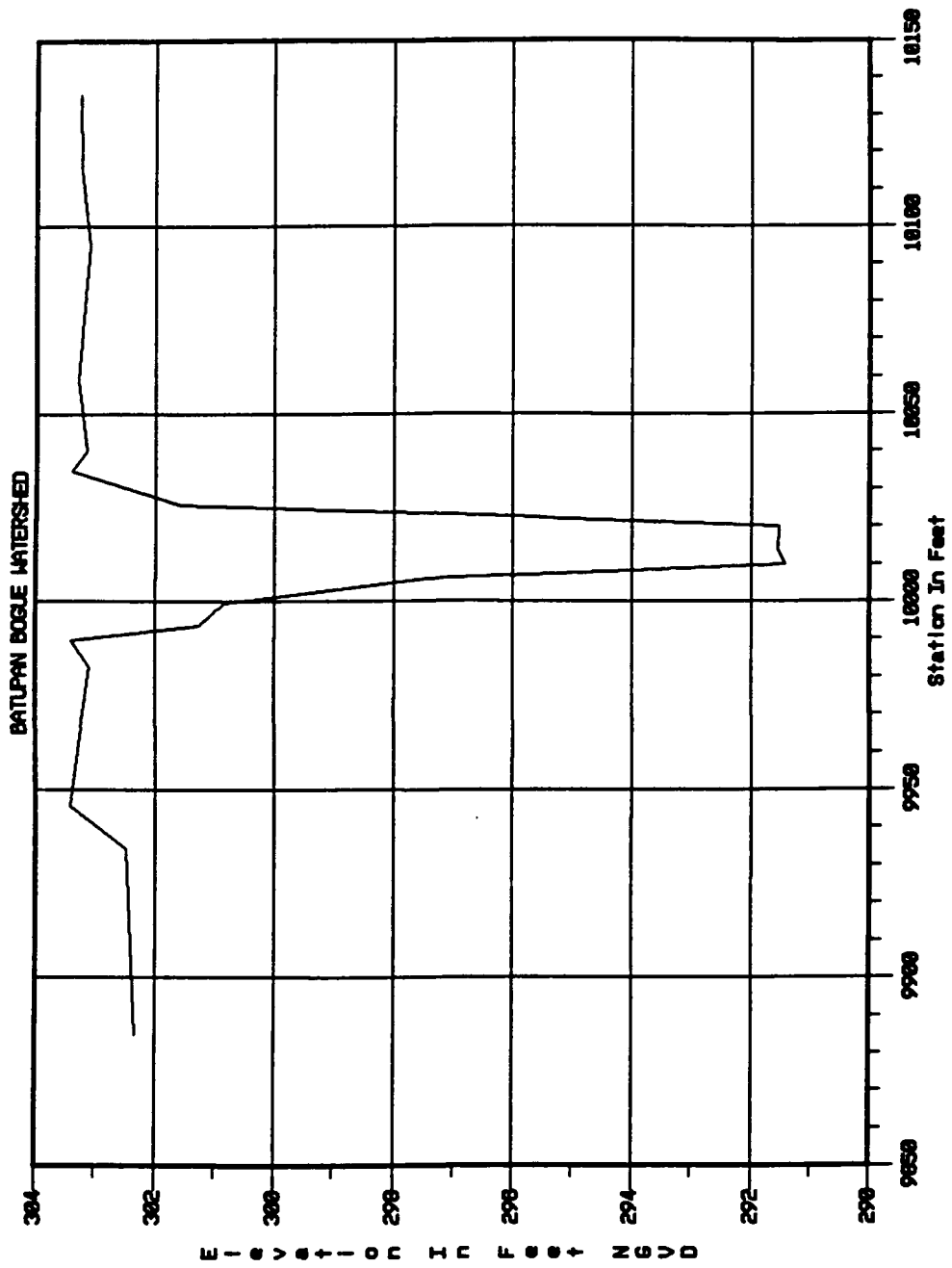
— 1985 XSEC 183.85
 - - 1991 XSEC 249.82



BATUPAN BOGLE WATERSHED

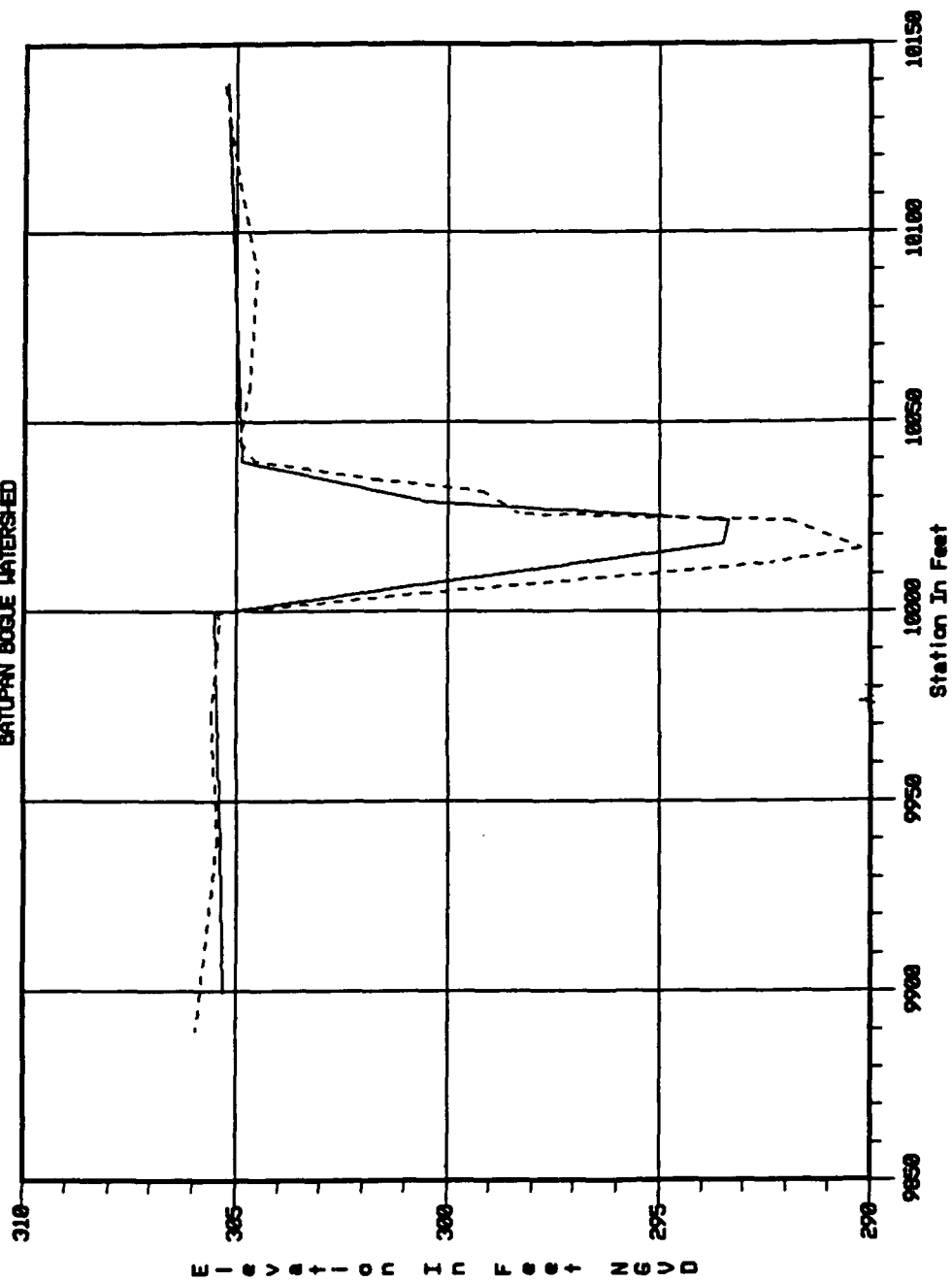


— 1985 XSEC 231.78
 - - - 1991 XSEC 293.75



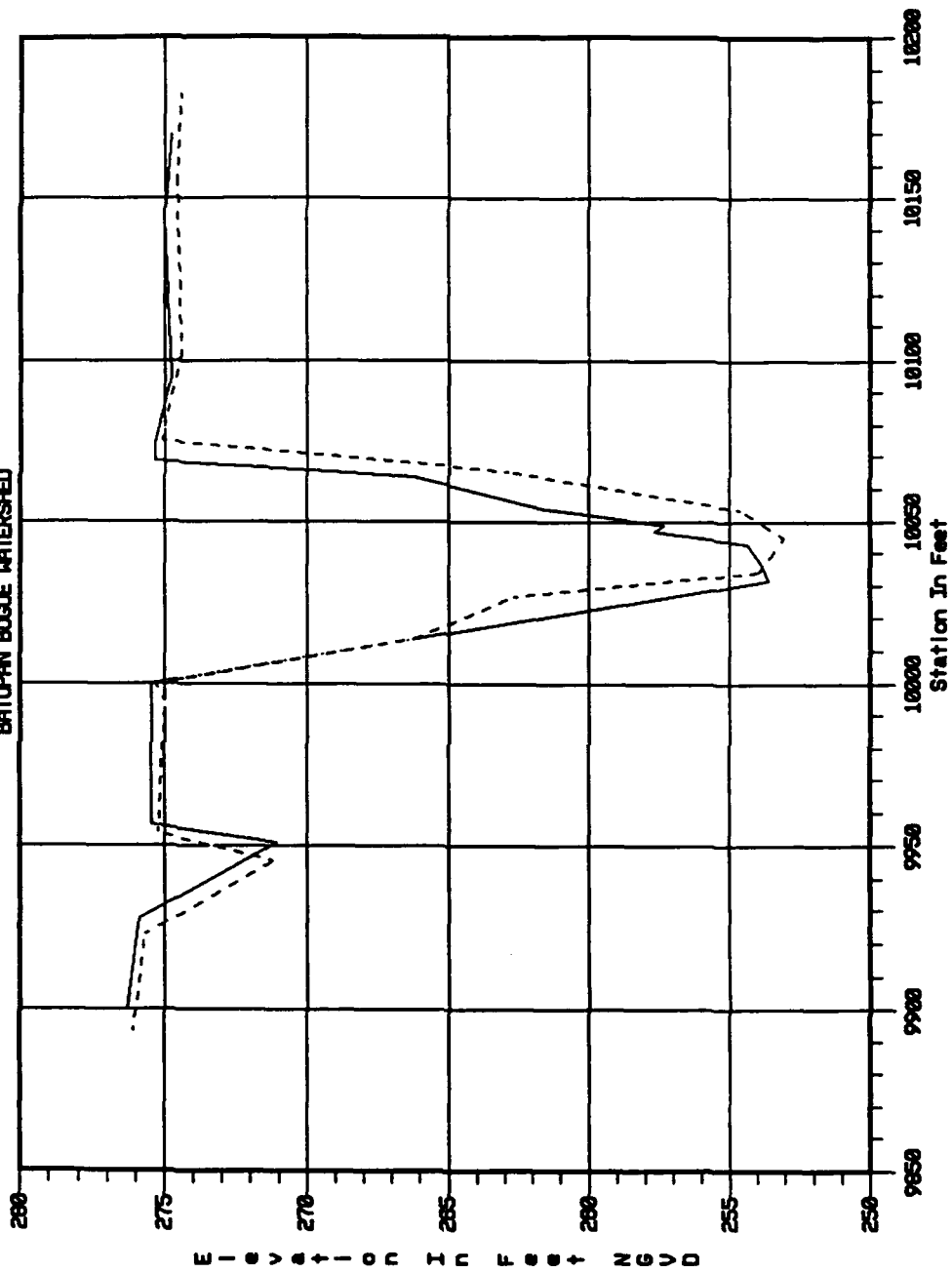
—— MORSHAM 1991 XSEC 308.00

BATUPAN BOGUE WATERSHED



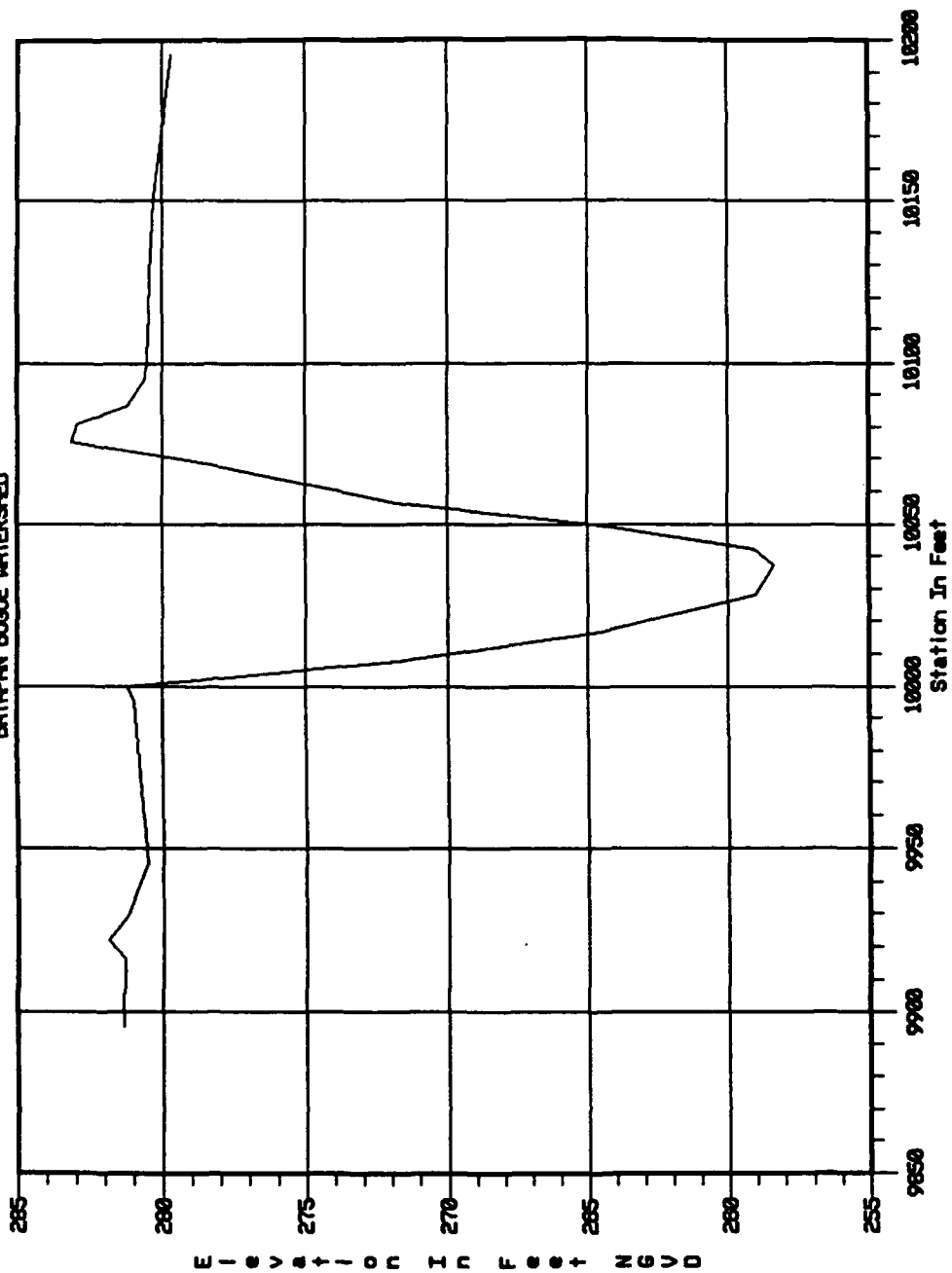
— 1985 XSEC 253.15
 - - 1991 XSEC 314.70

BATUPAN BOGLE WATERSHED

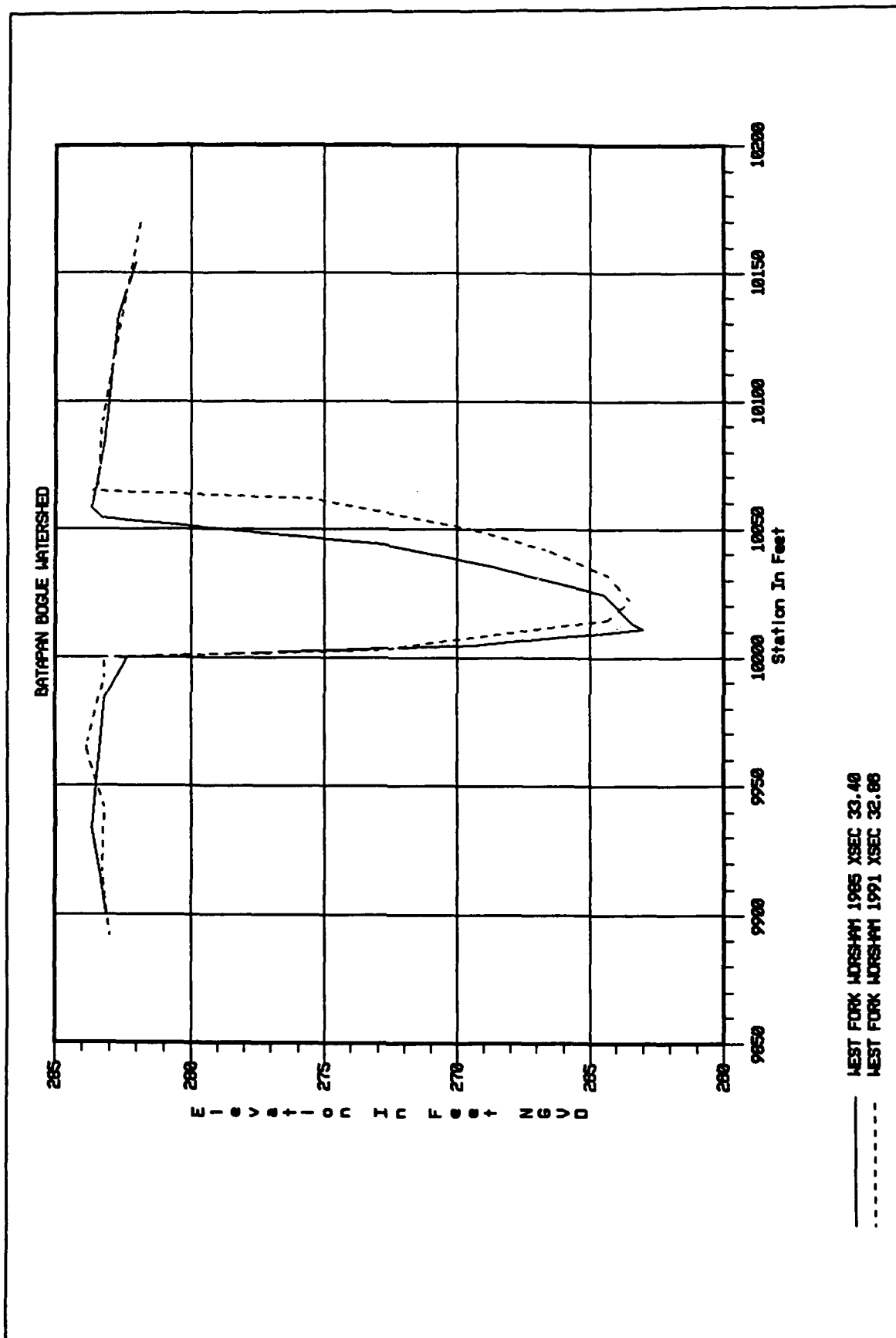


— WEST FORK MORSHAM 1985 XSEC 8.30
 - - - WEST FORK MORSHAM 1991 XSEC 8.30

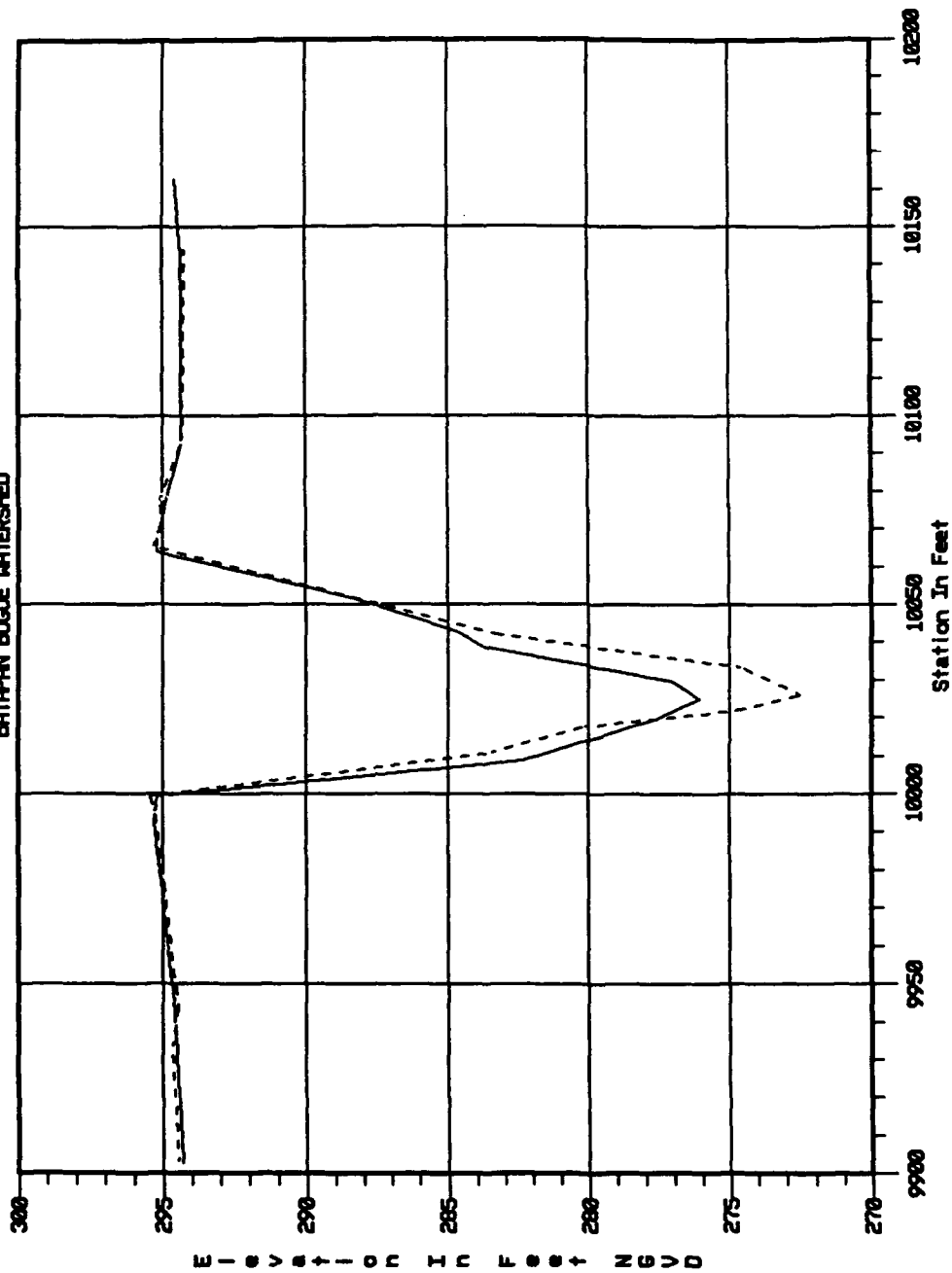
BATAVIN BOGUE WATERSHED



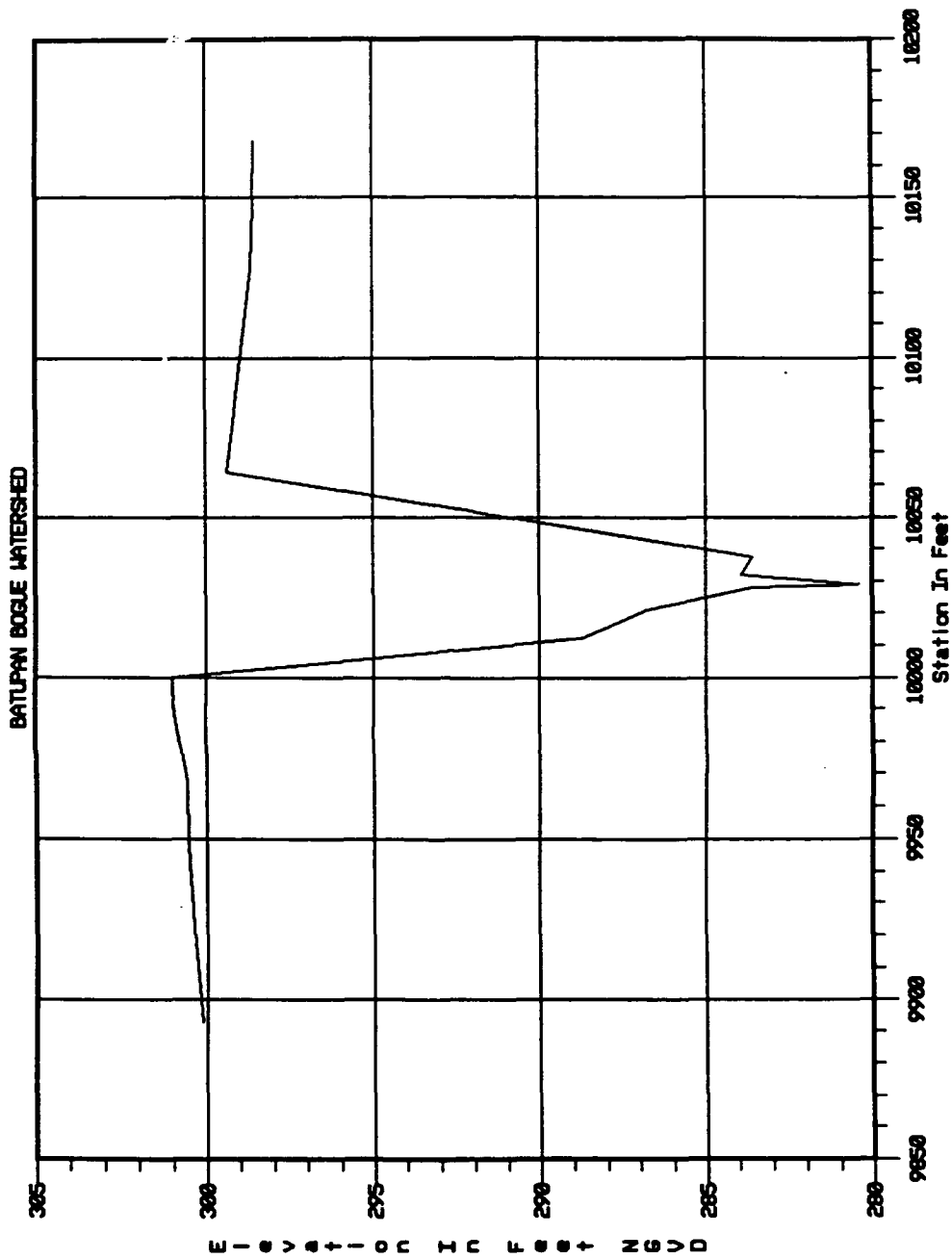
WEST FORK WORSHAM 1991 XSEC 25.55



BATAVAN BOGUE WATERSHED

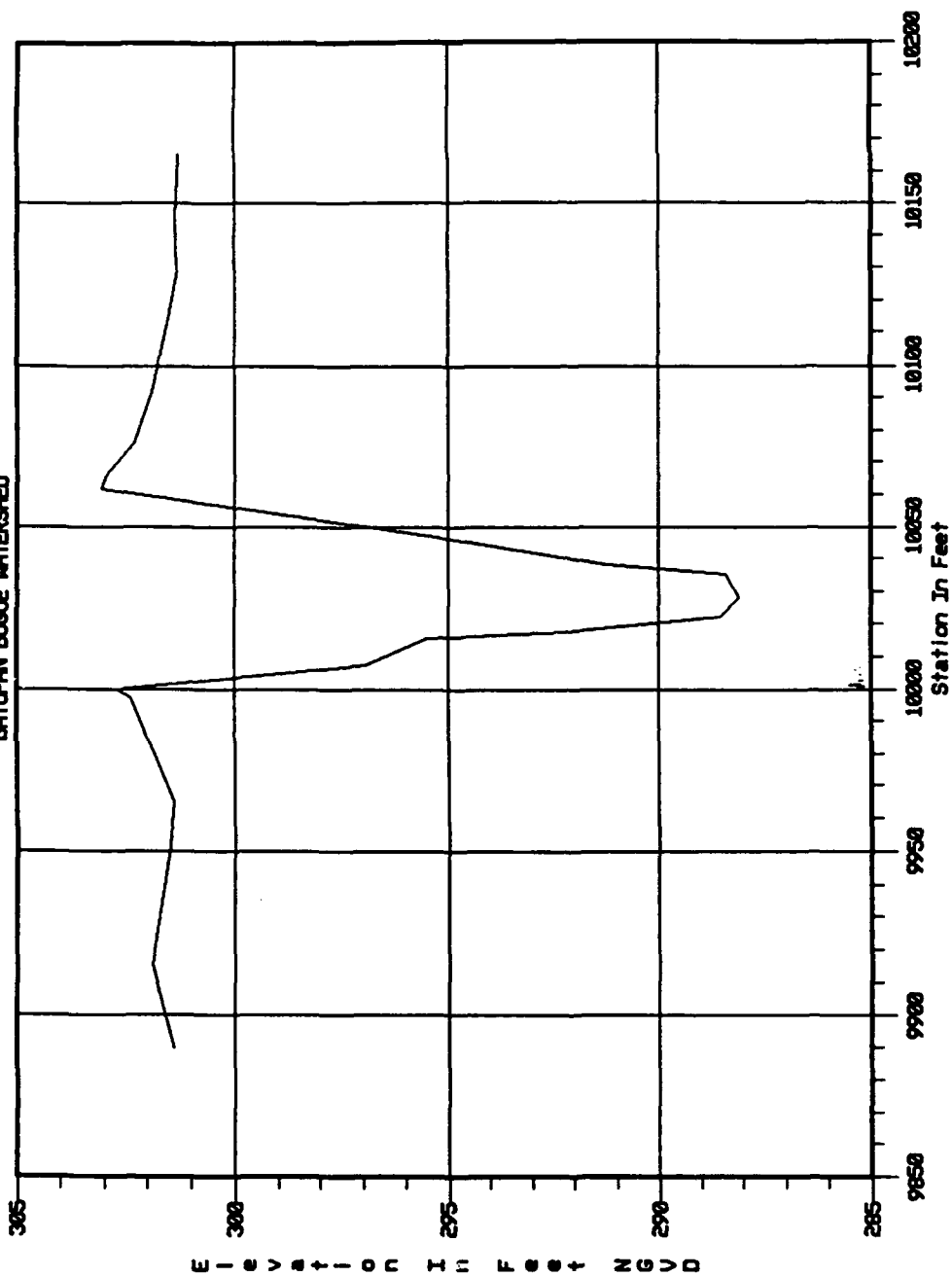


— WEST FORK WORSHAM 1985 XSEC 67.64
 - - - WEST FORK WORSHAM 1991 XSEC 66.20



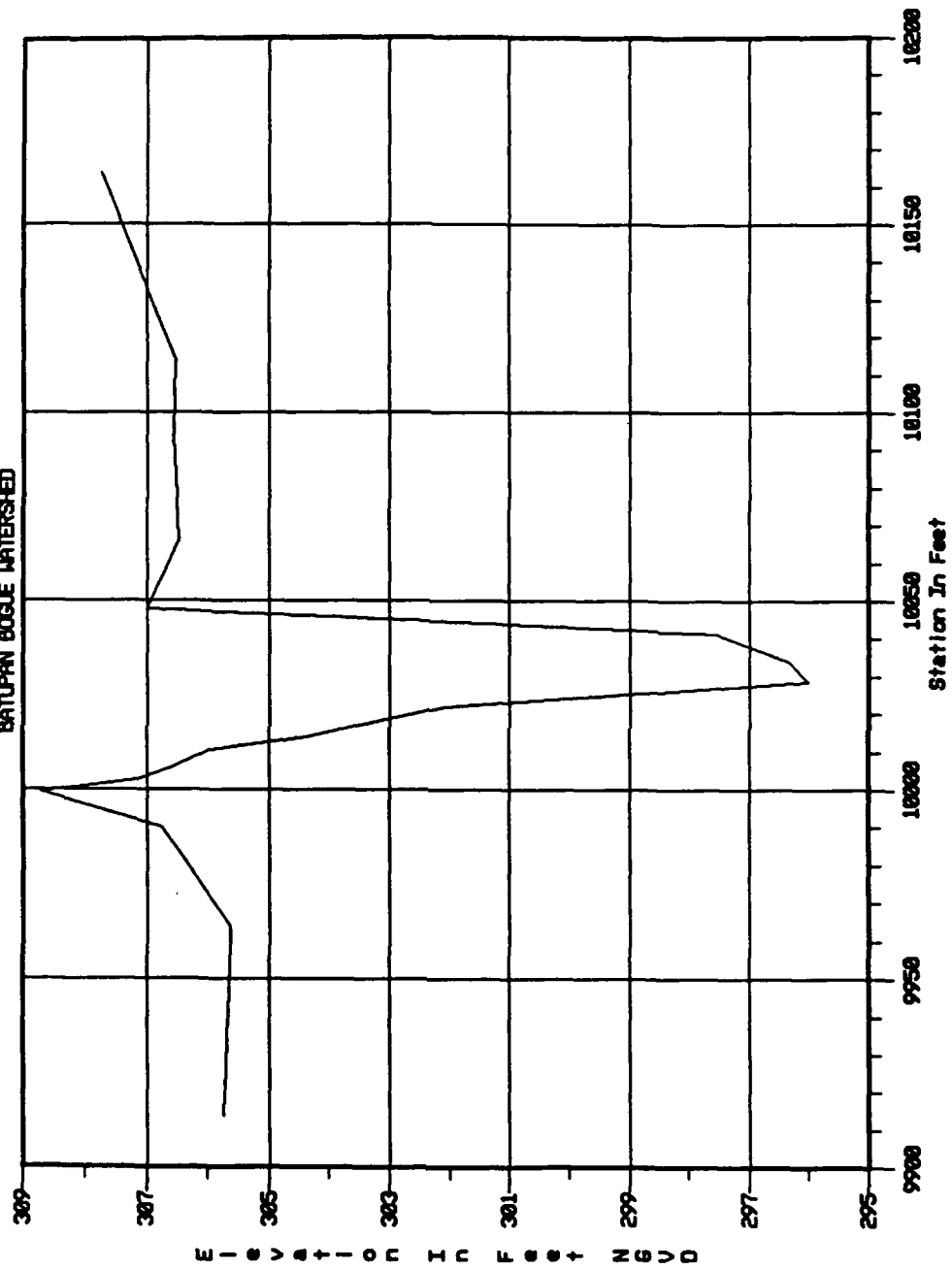
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BATUPAN BOGLE WATERSHED



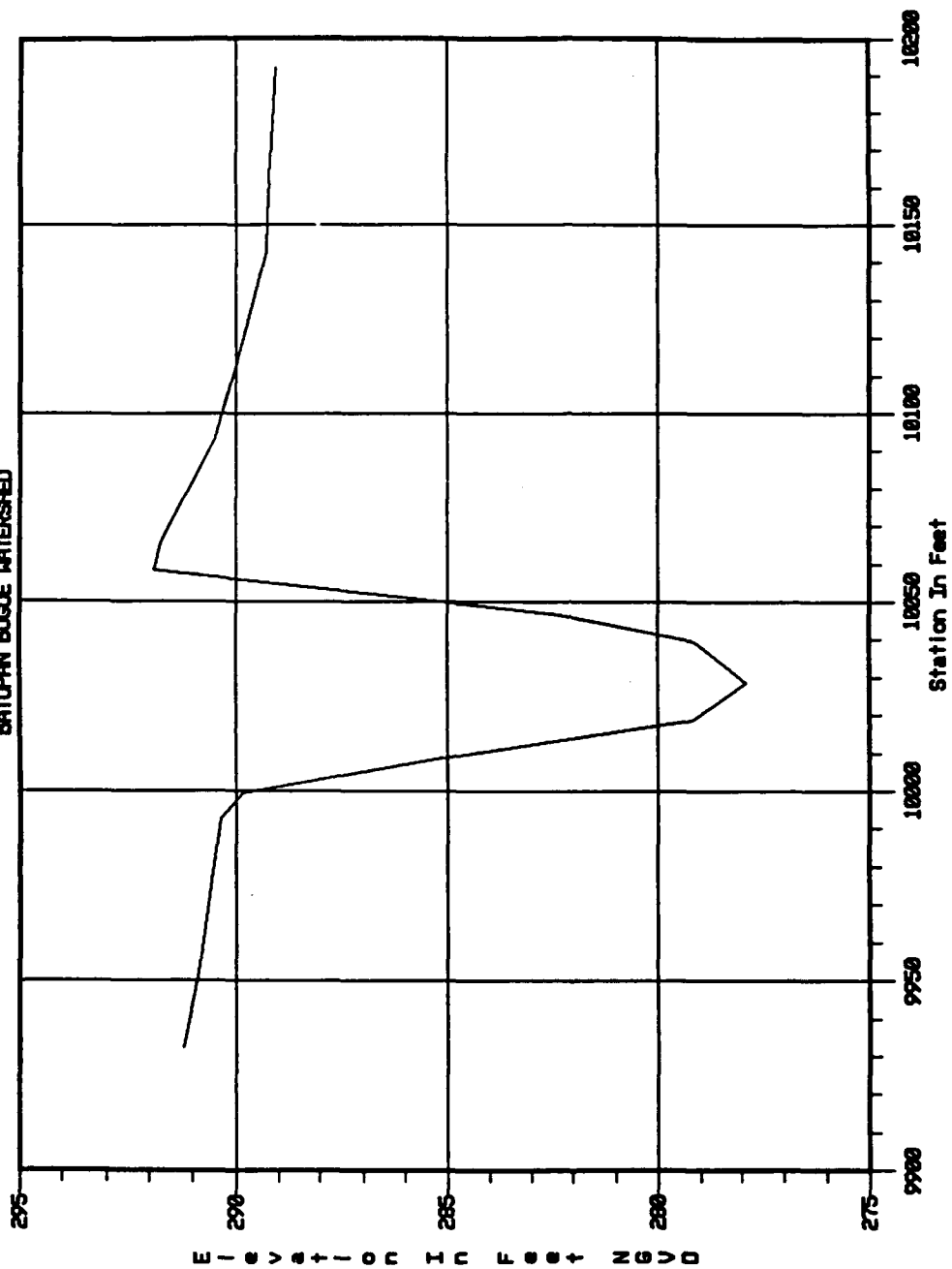
— WEST FORK WORSHAM 1991 XSEC 85.55

BATUPAN BOGUE WATERSHED



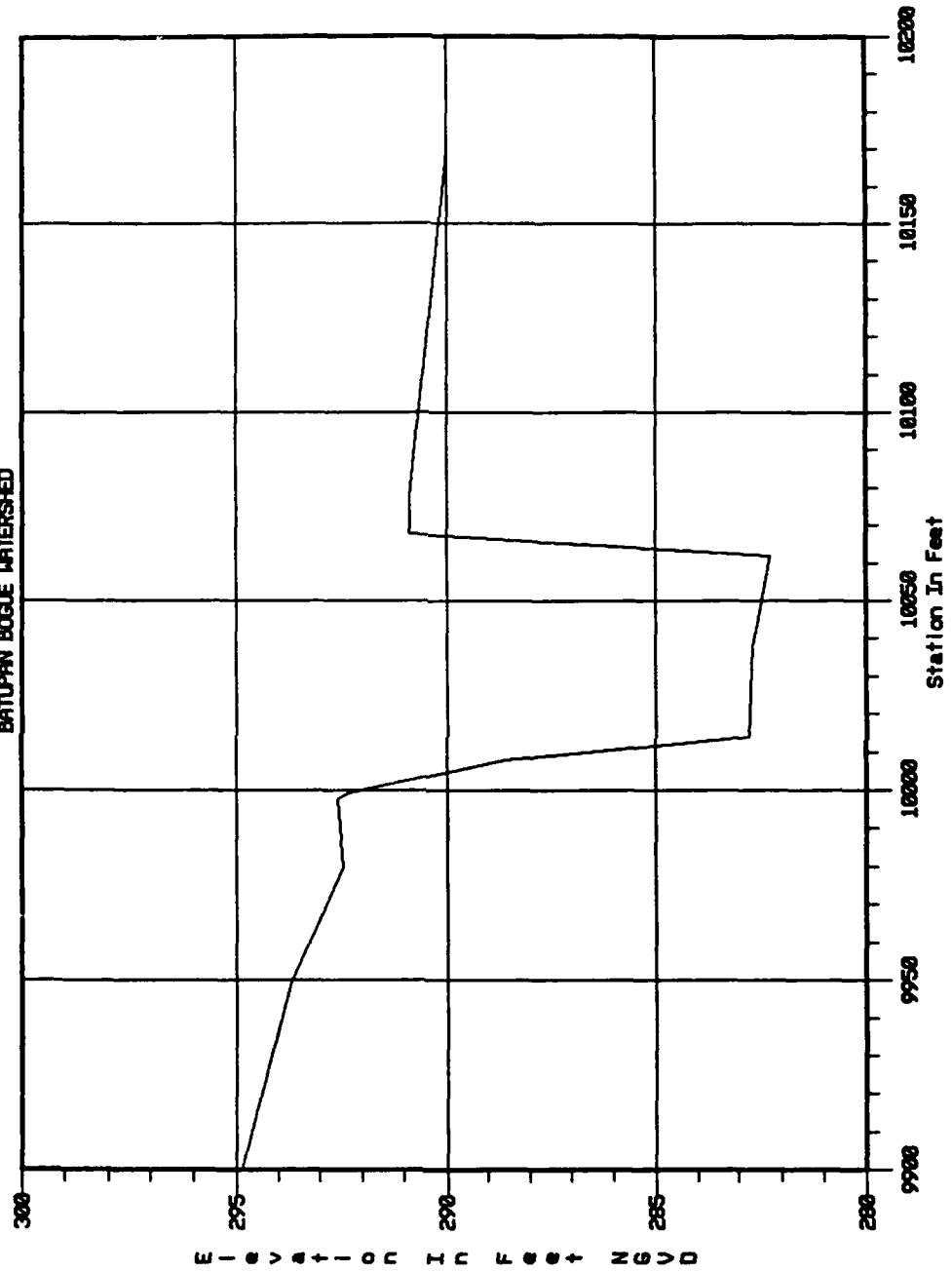
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BATUPAN BOULE WATERSHED



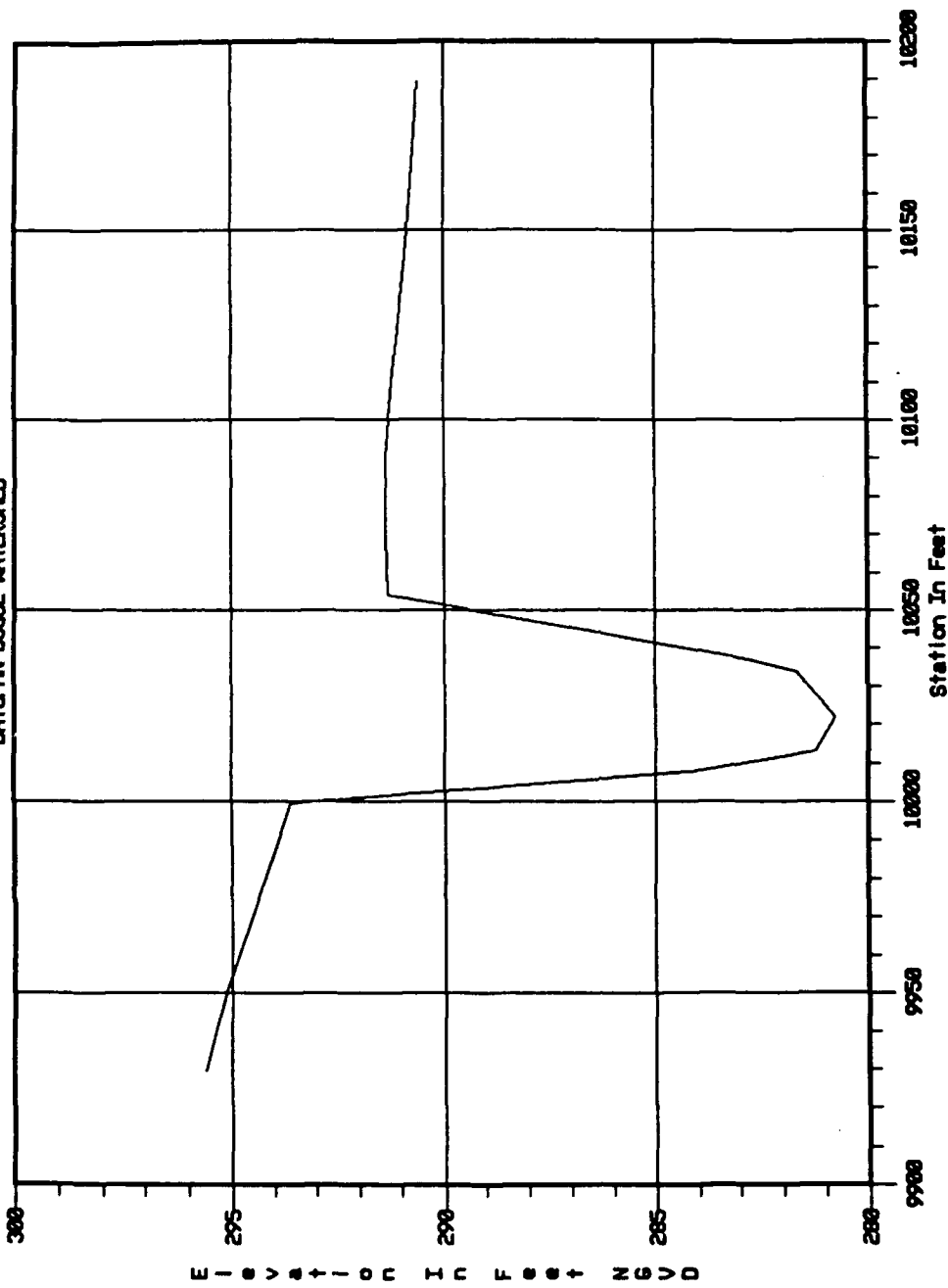
— EAST FORK WATERSHED 1991 XSEC R 13.57

BATUPAN BOGUE WATERSHED

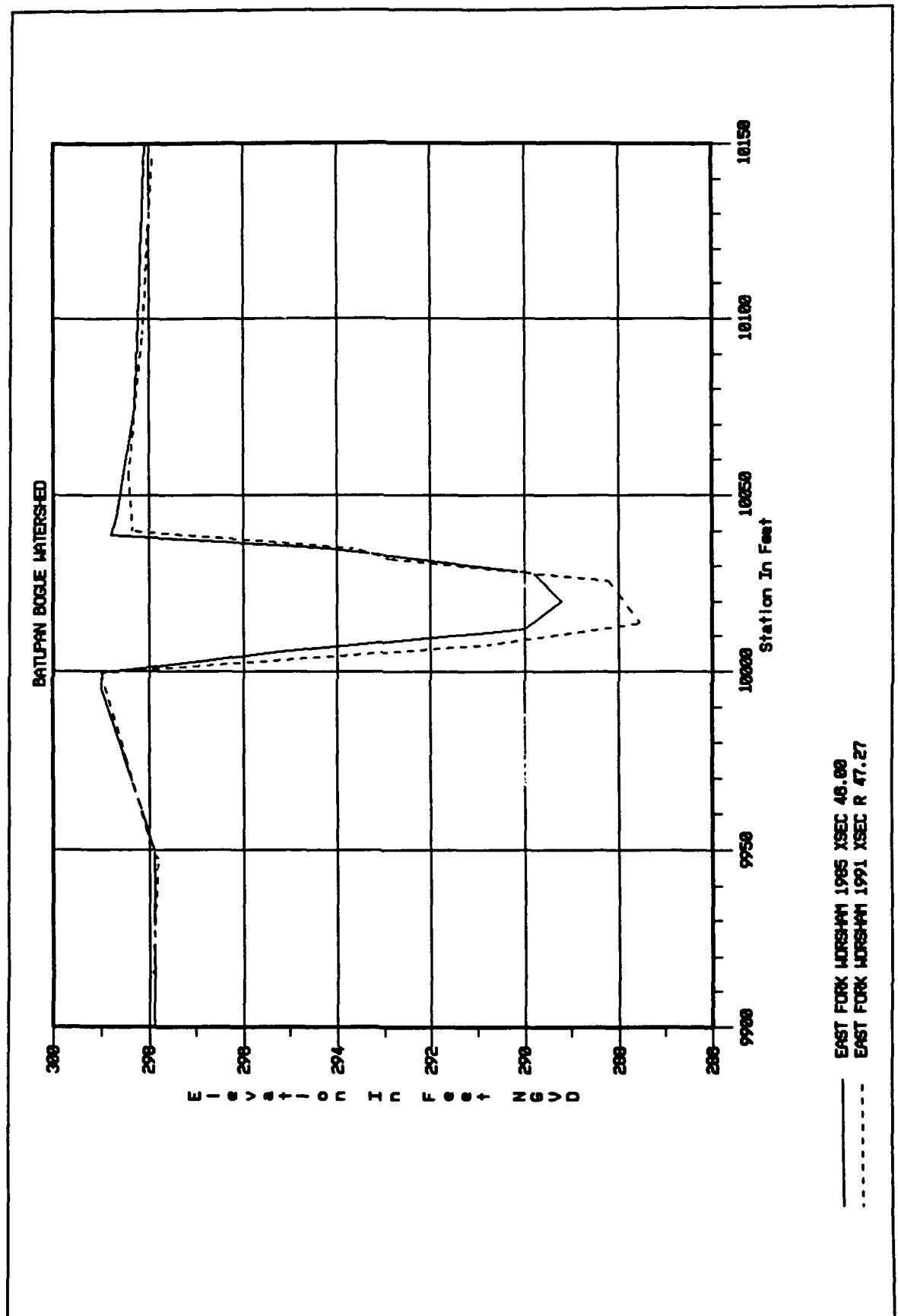


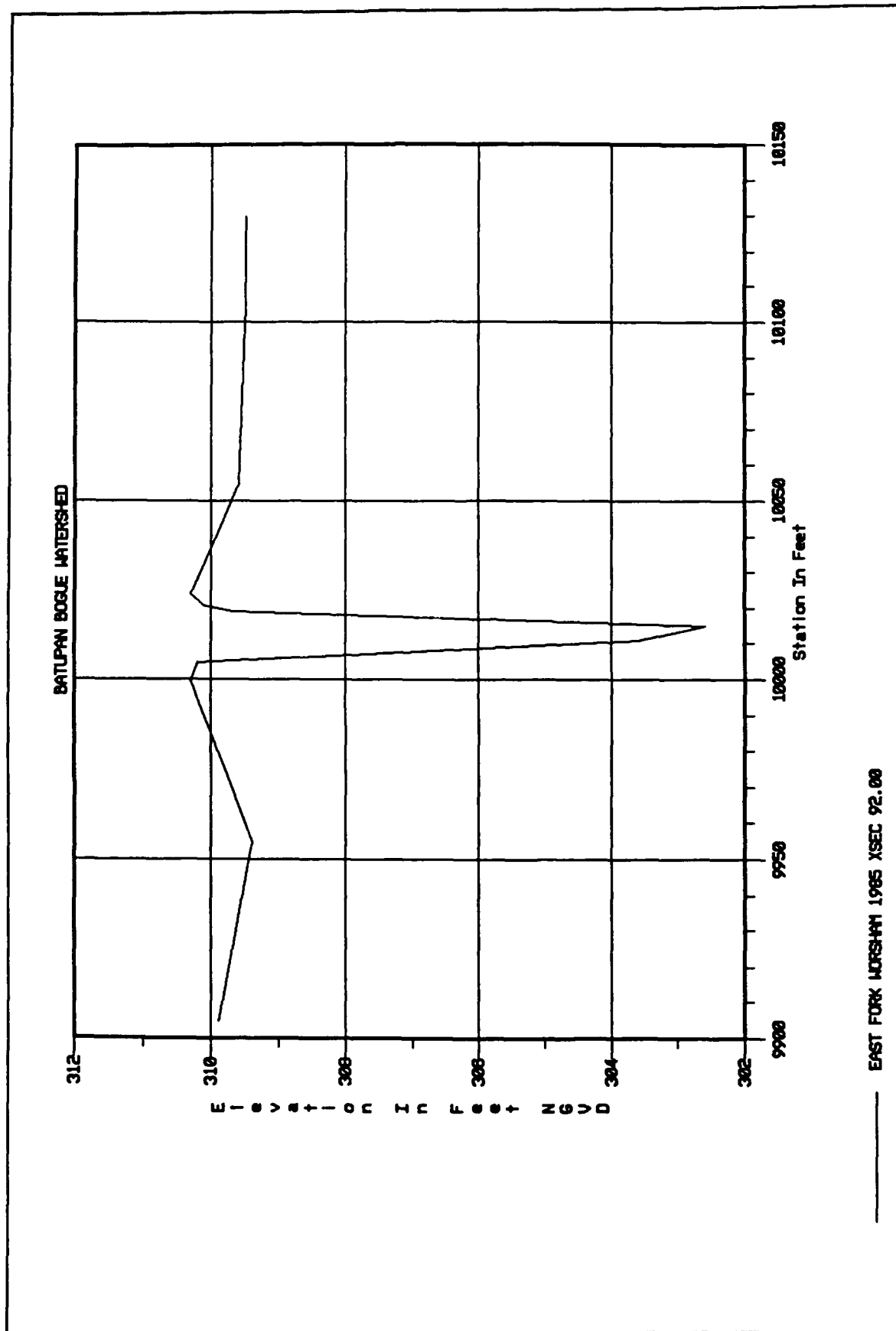
— EAST FORK MORSHAM 1985 XSEC 15.30

BATUPAN BOGLE WATERSHED

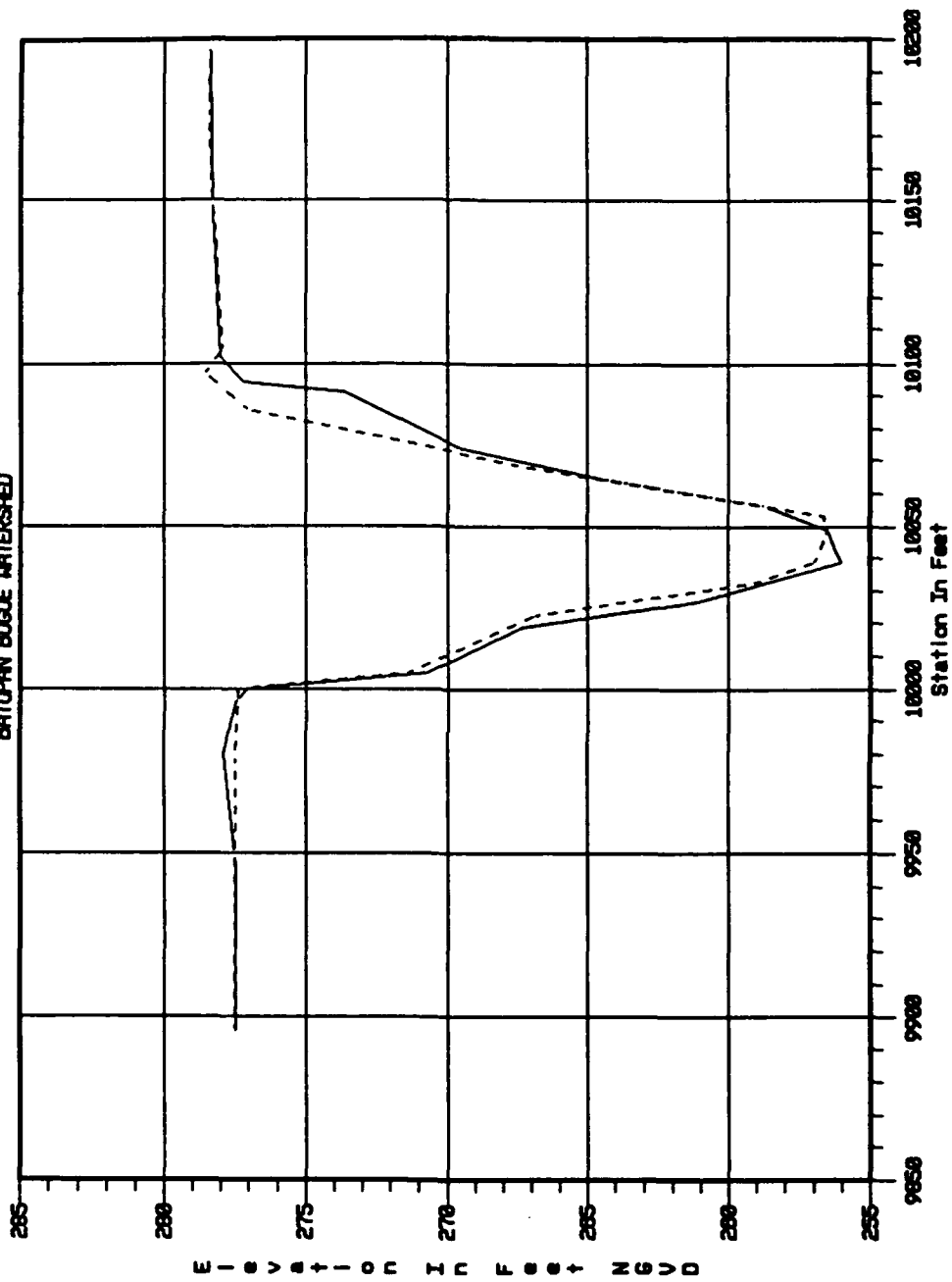


— EAST FORK WOSHAW 1991 XSEC R 15.95



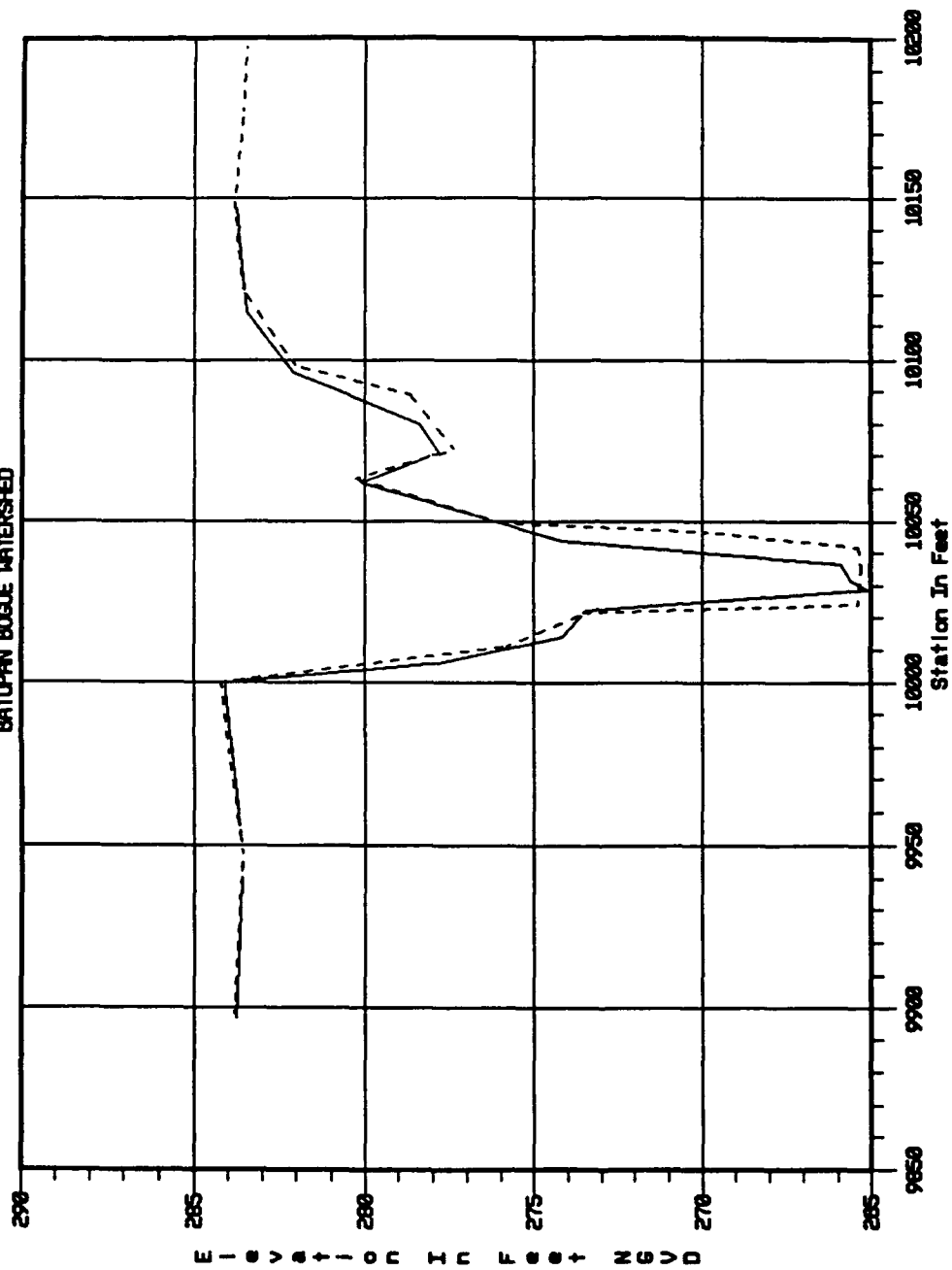


BATUPAN BOGLE WATERSHED

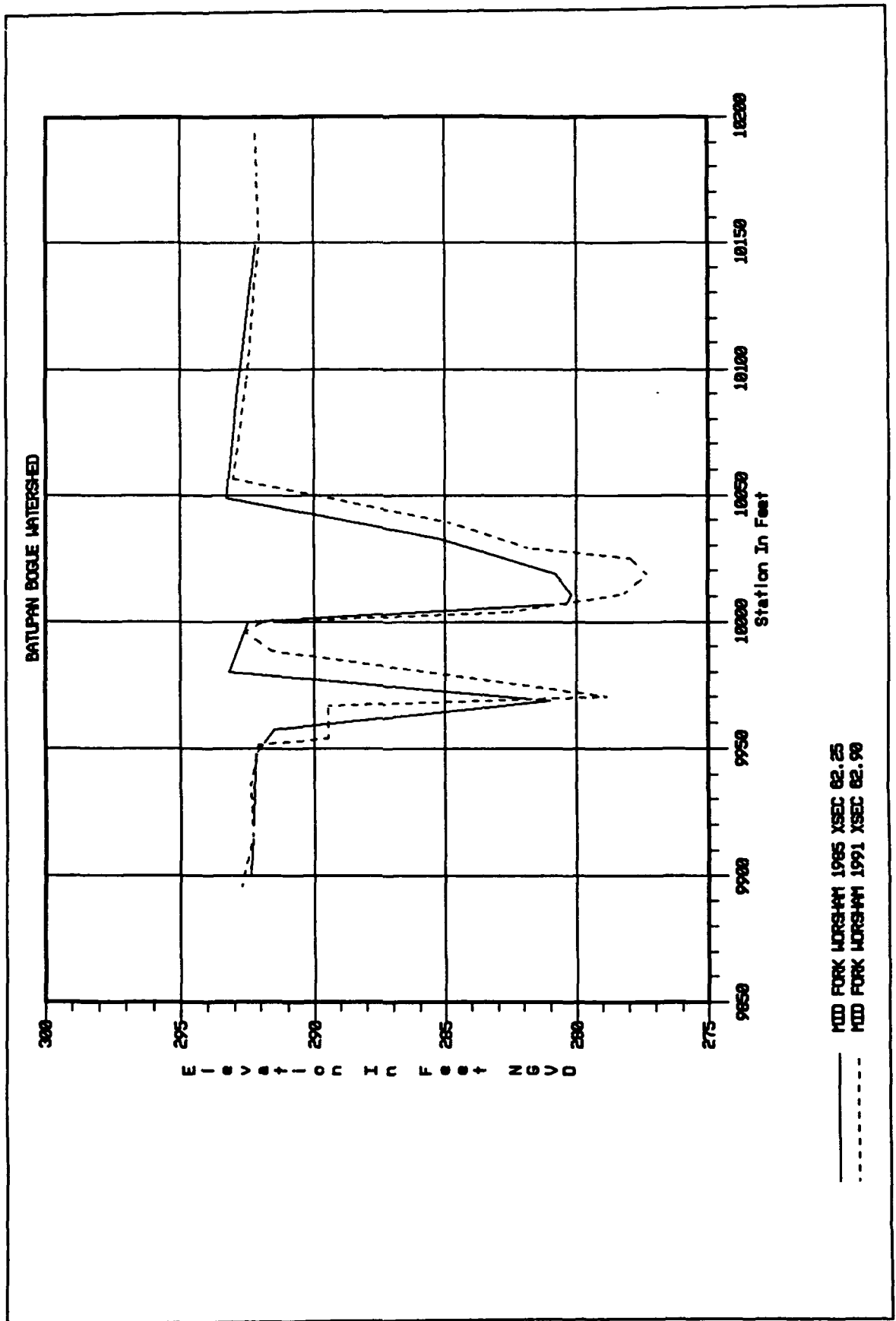


— 1985 XSEC 5.43
 - - - 1991 XSEC 5.29

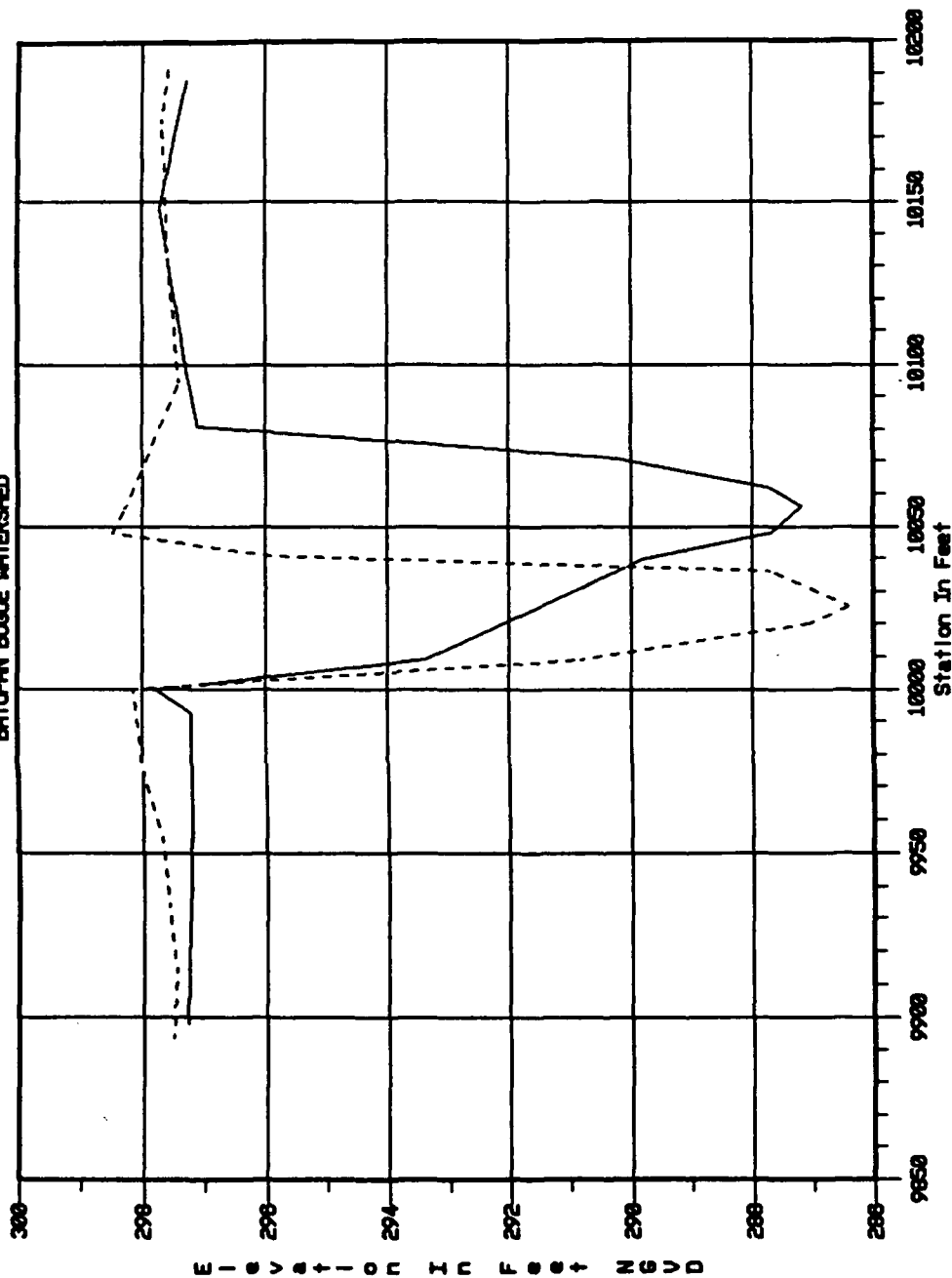
BATUPAN BOGUE WATERSHED



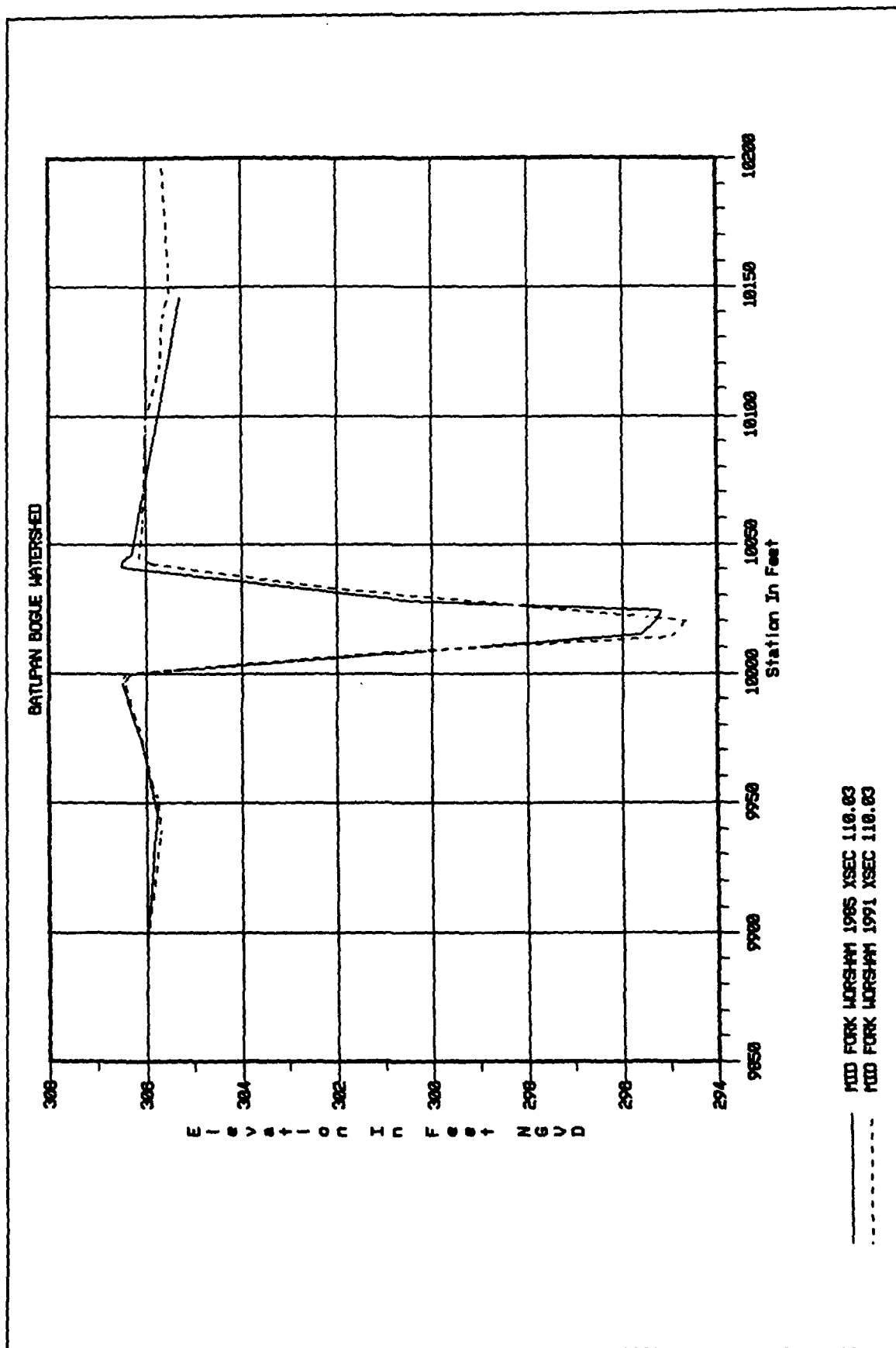
——— 1985 XSEC 29.95
 - - - 1991 XSEC 29.40



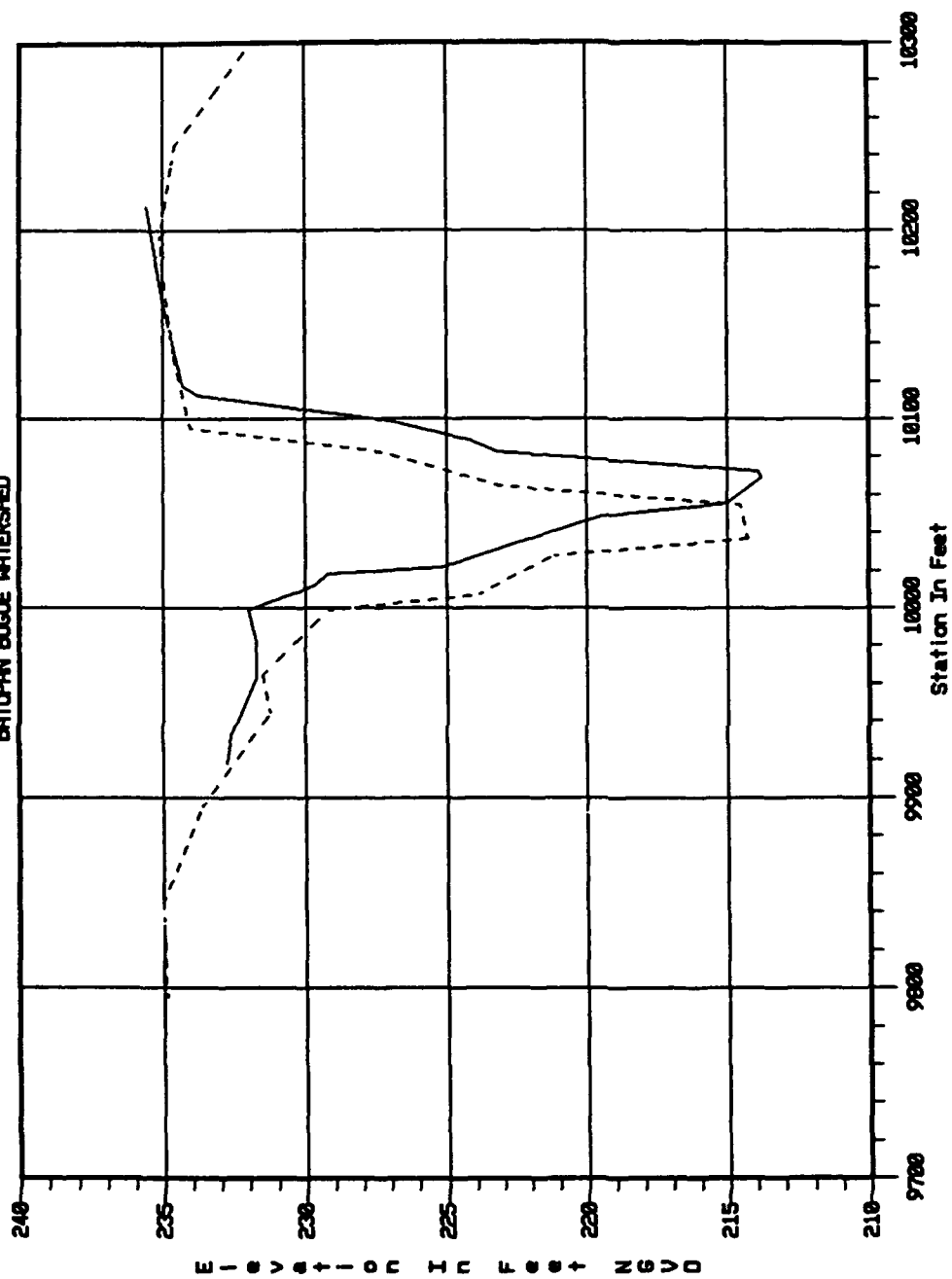
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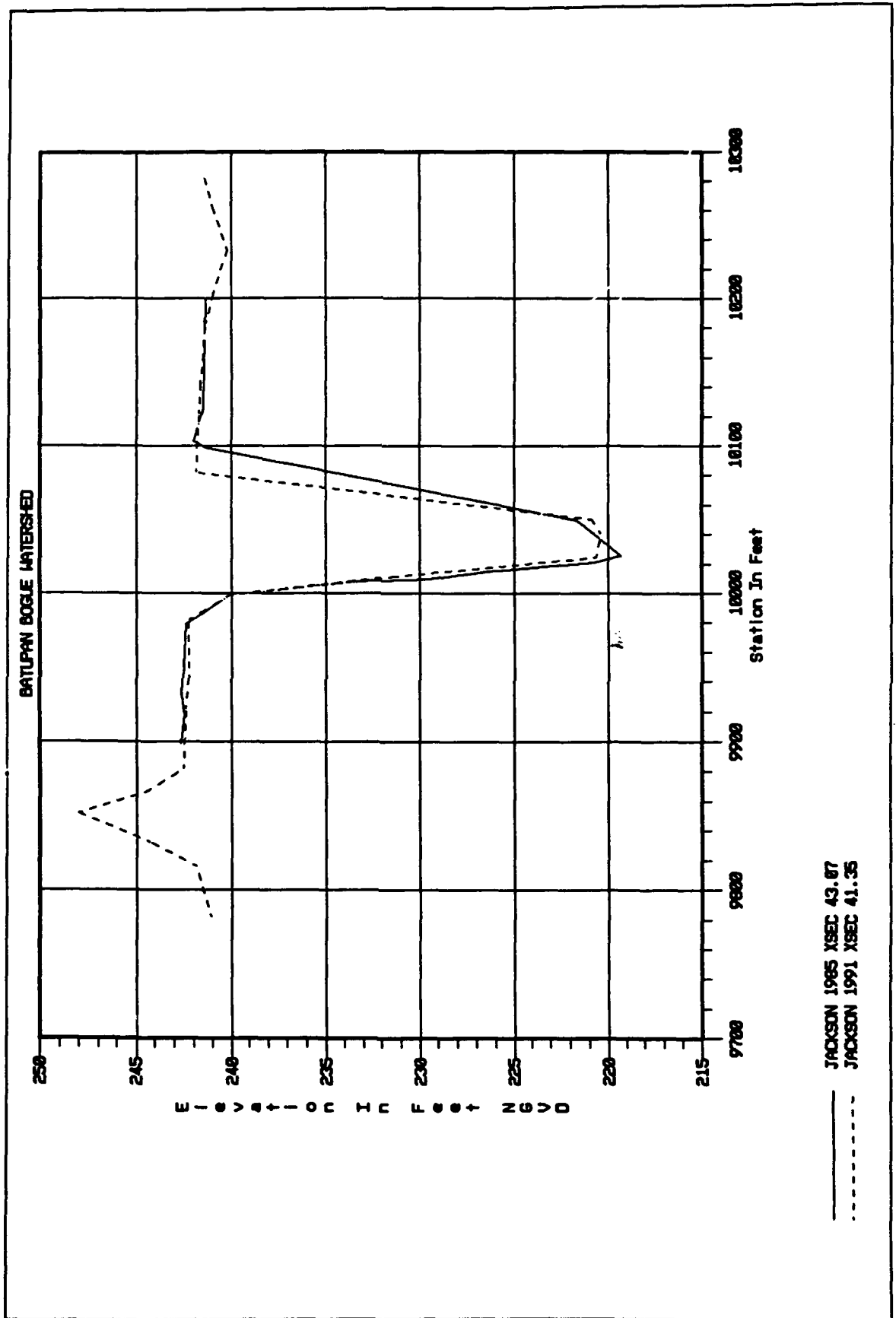
MID FORK LORSHAM 1985 XSEC 83.50
 MID FORK LORSHAM 1991 XSEC 84.90



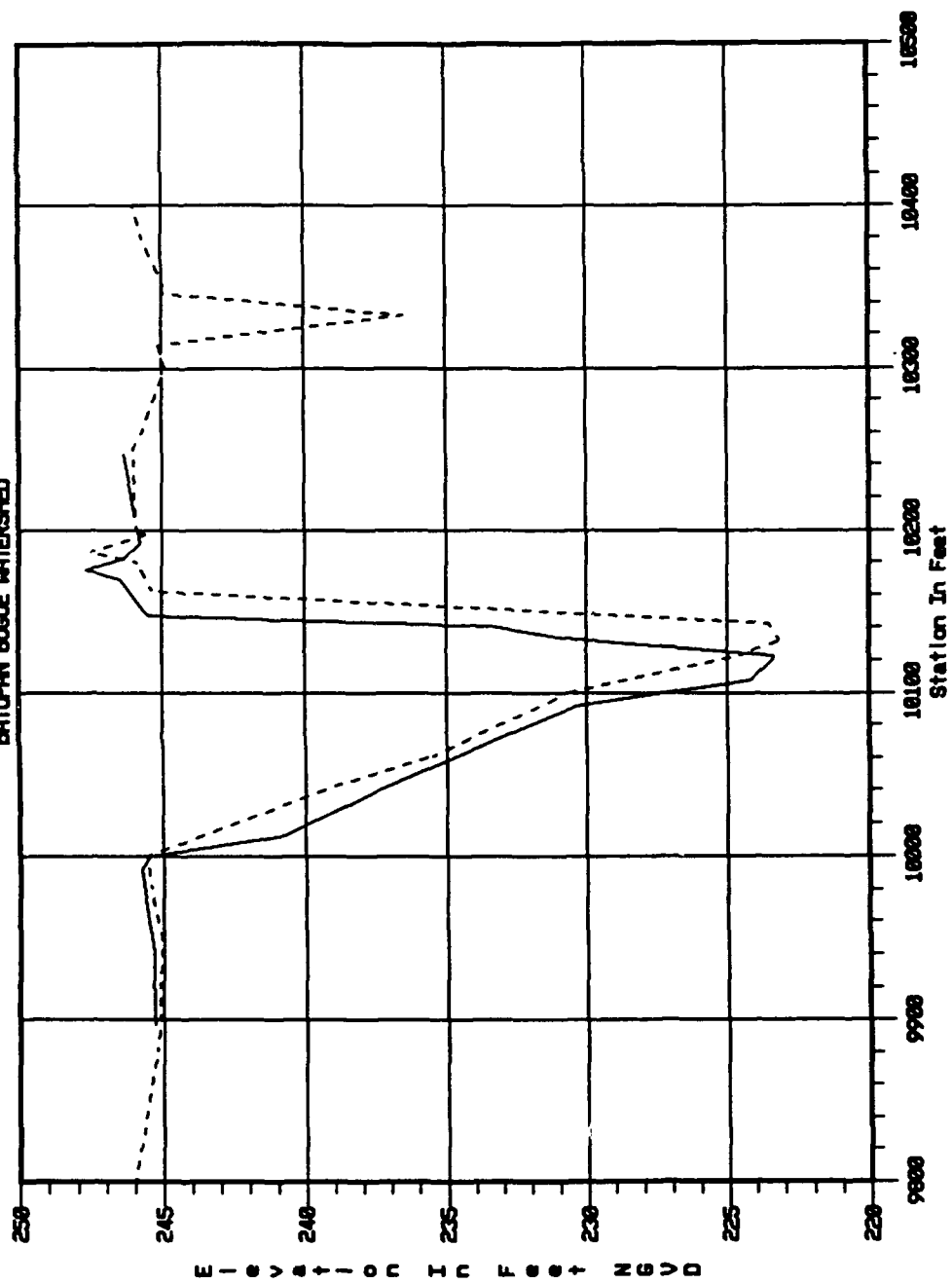
BATUPAN BOGLE WATERSHED



JACKSON 1985 XSEC 11.45
JACKSON 1991 XSEC 10.70

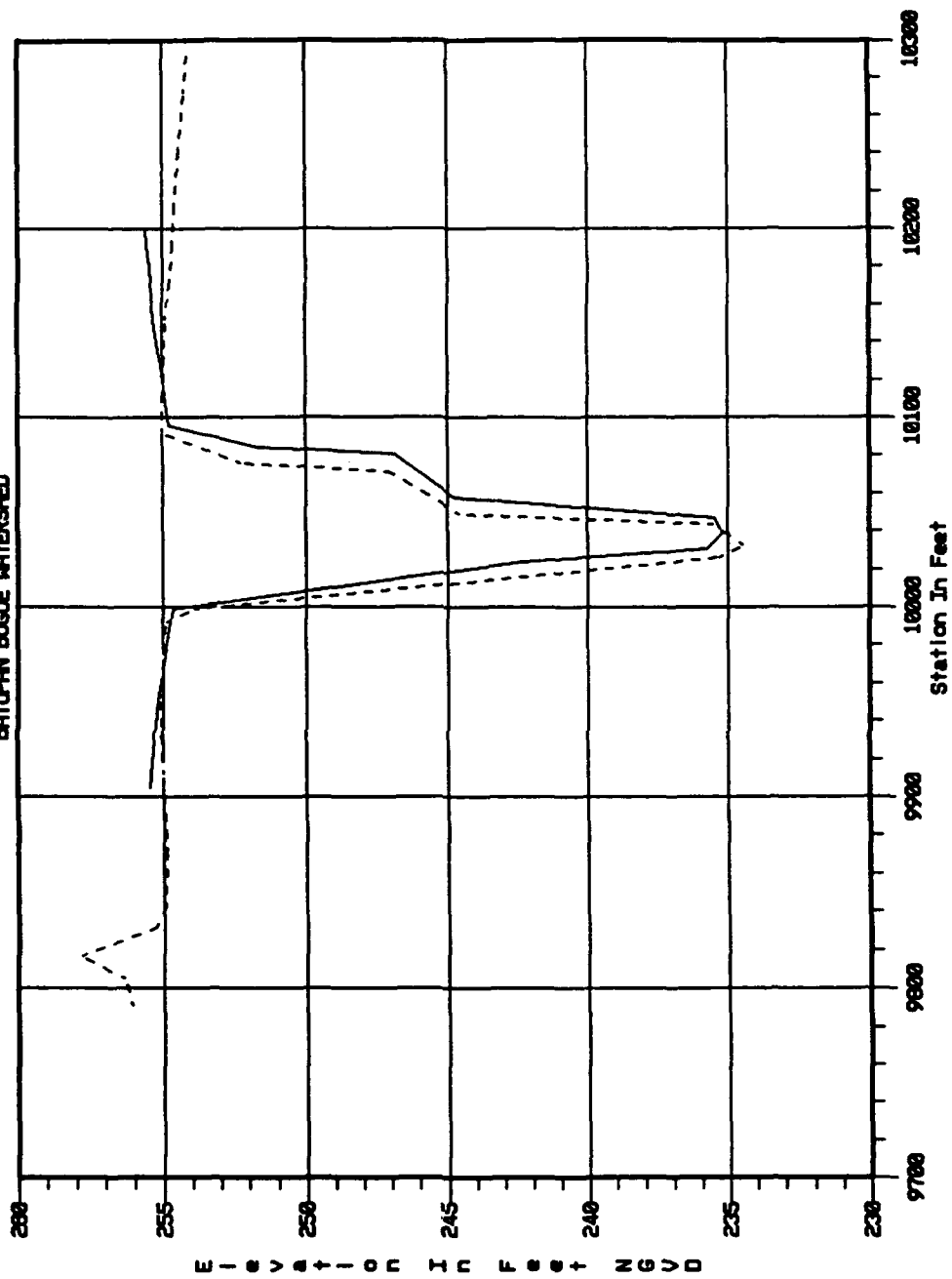


BATUPAN BOGLE WATERSHED



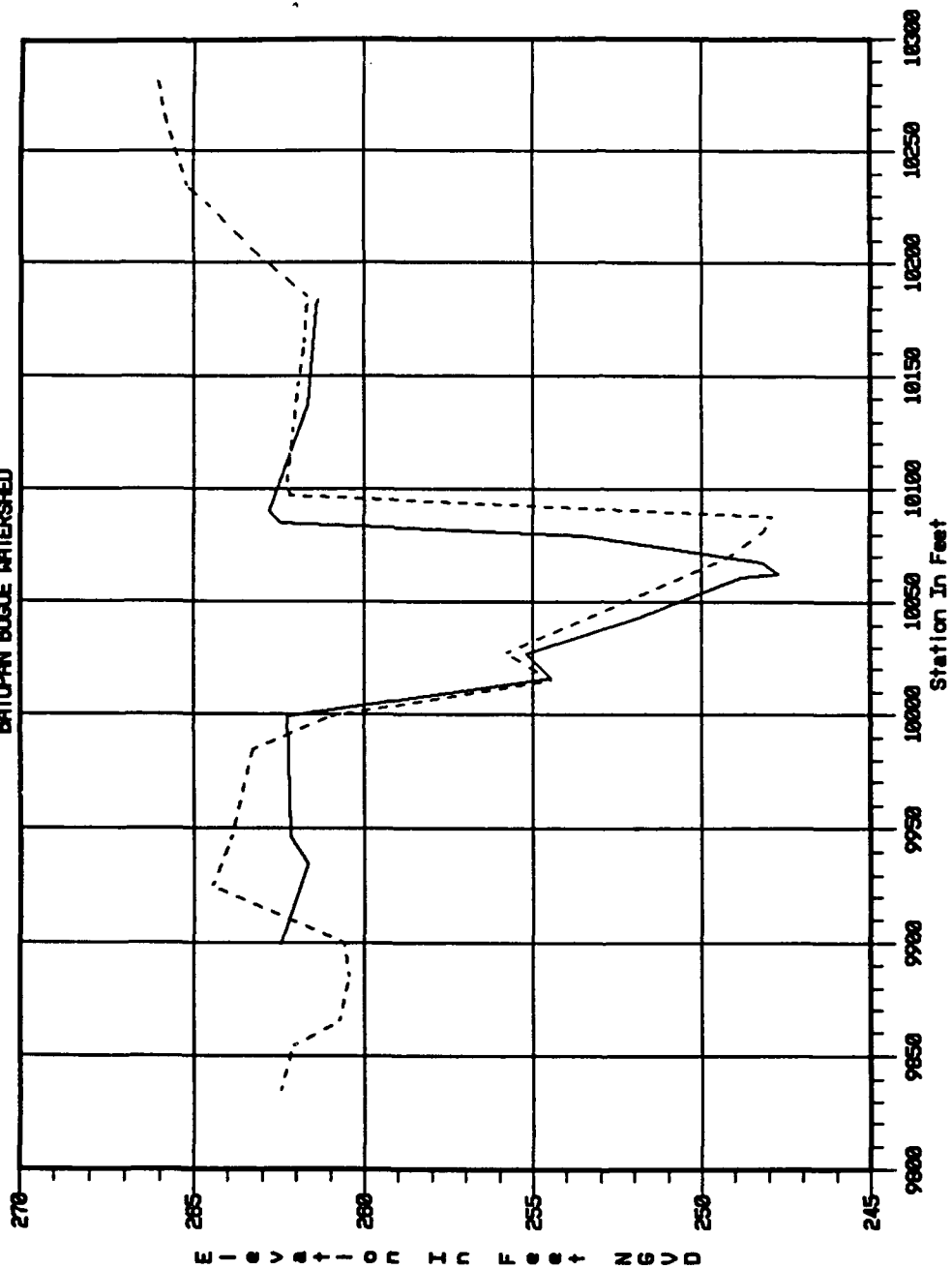
— JACKSON 1965 XSEC 61.98
 - - - JACKSON 1991 XSEC 59.53

BATUPAN BOSQUE WATERSHED

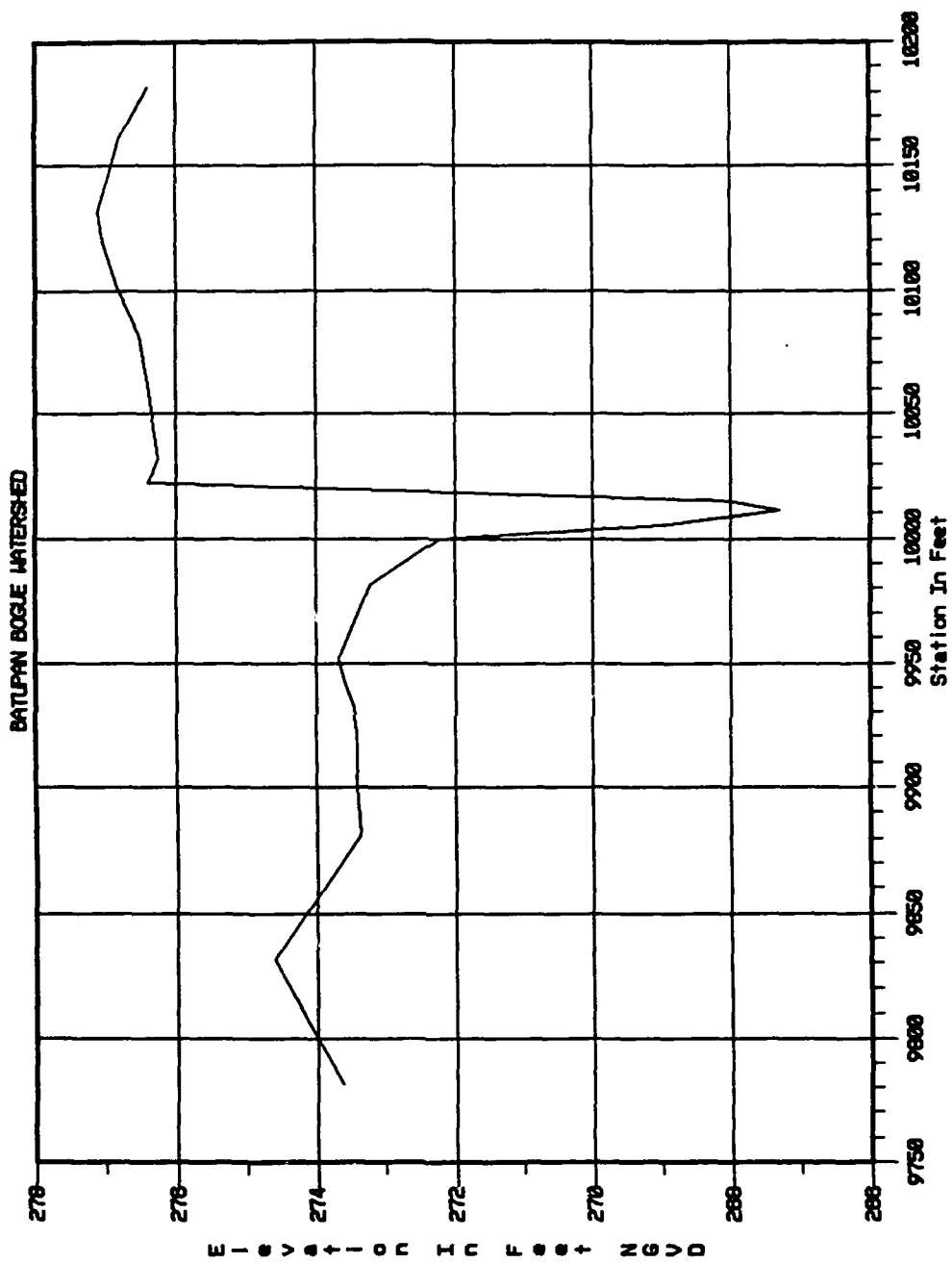


— JACKSON 1985 XSEC 108.12
 - - - JACKSON 1991 XSEC 103.44

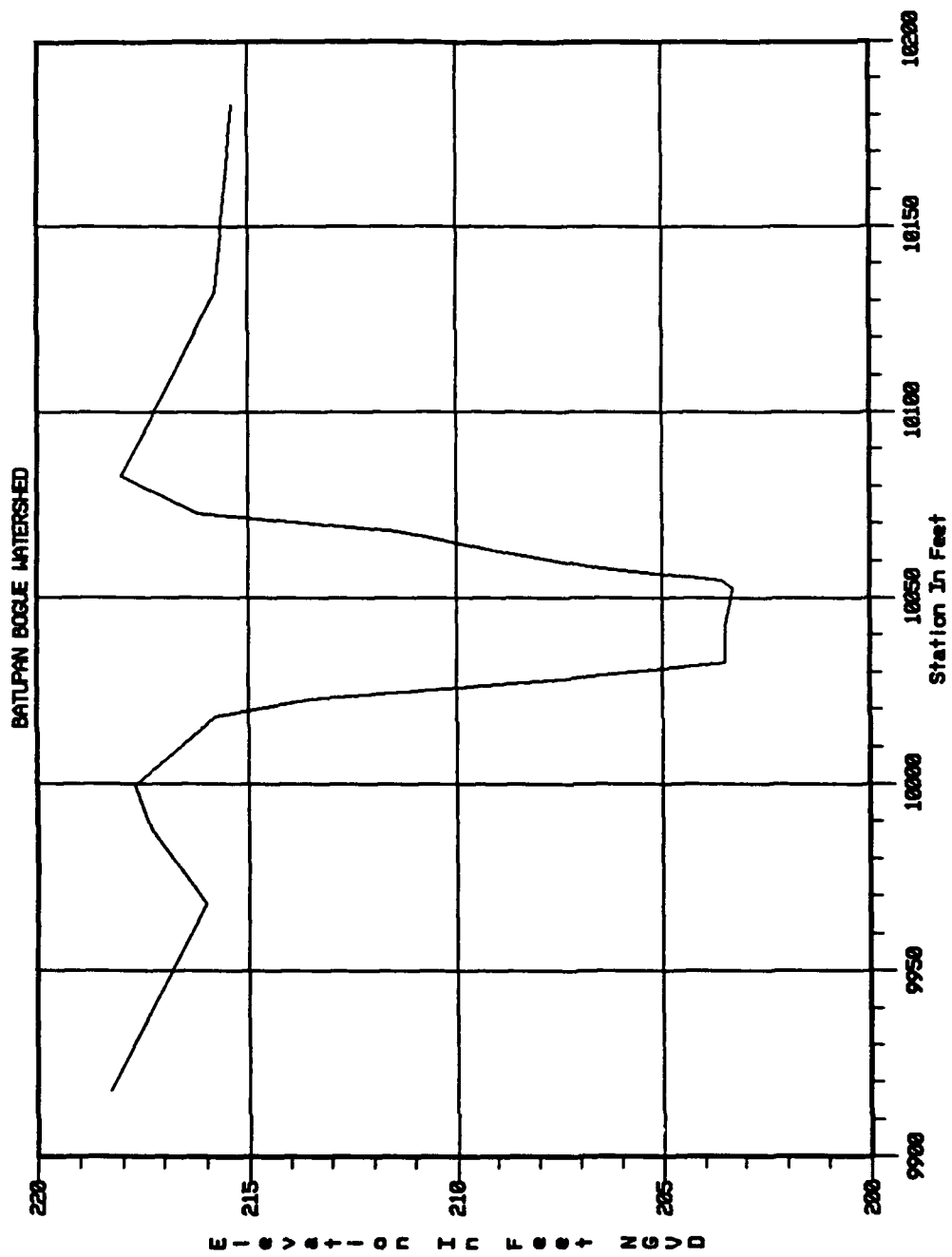
BATUPAN BOULE WATERSHED



— JACKSON 1985 XSEC 144.40
 - - - JACKSON 1991 XSEC 140.50

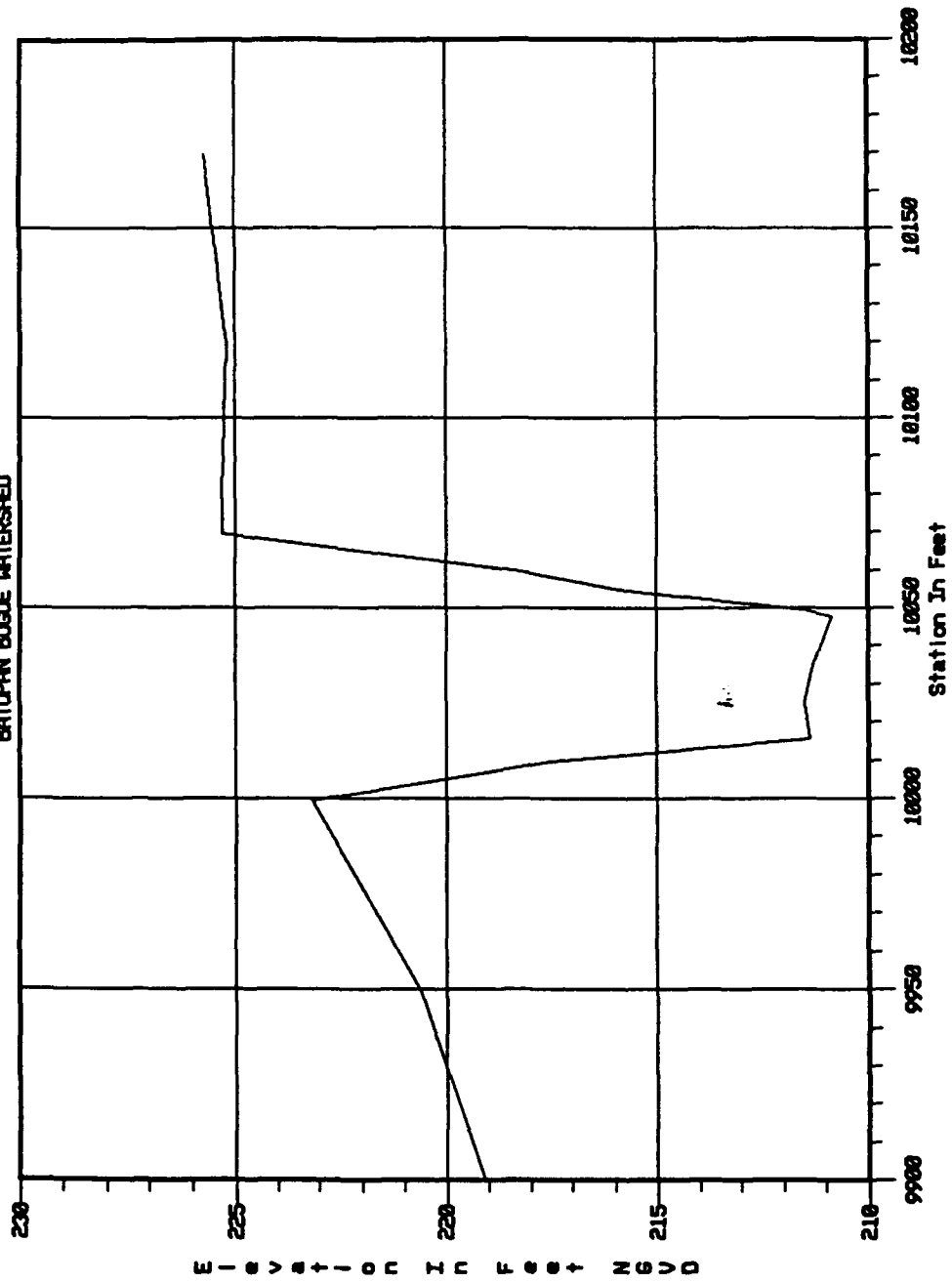


JACKSON 1991 XSEC 202.85



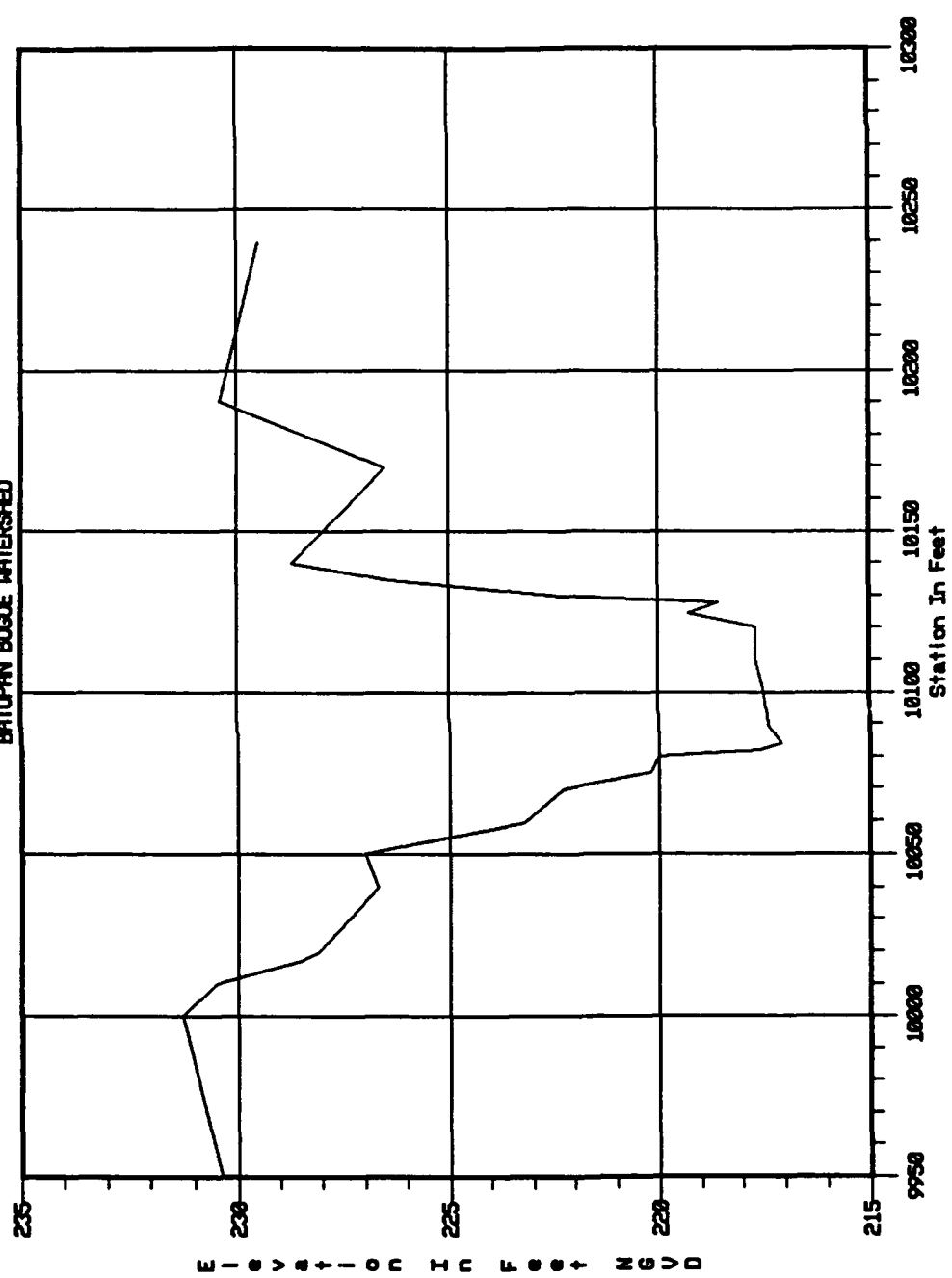
—— JULIANS 1985 XSEC 4.21

BATUPAN BOGLE WATERSHED

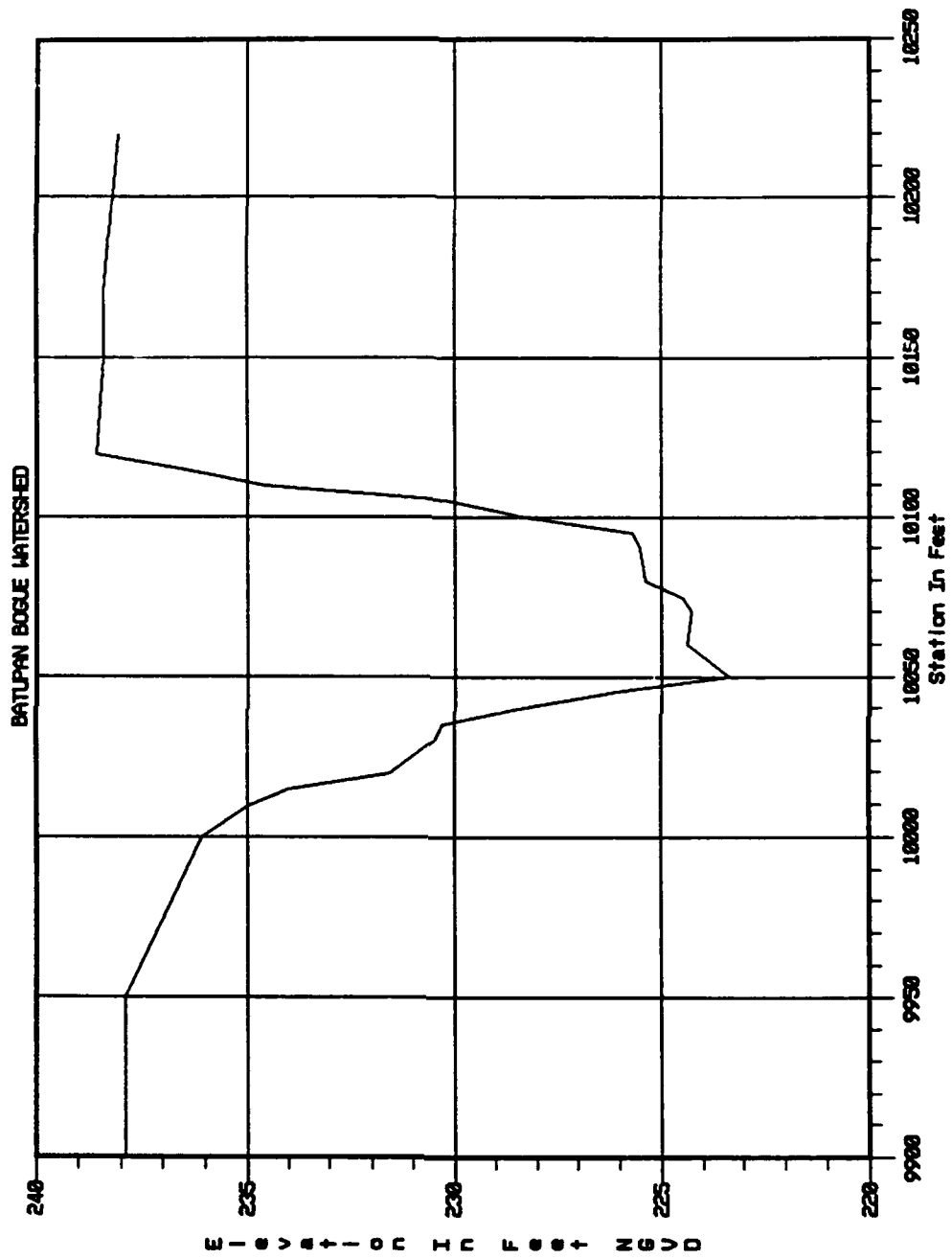


WILKINS 1985 XSEC 30.40

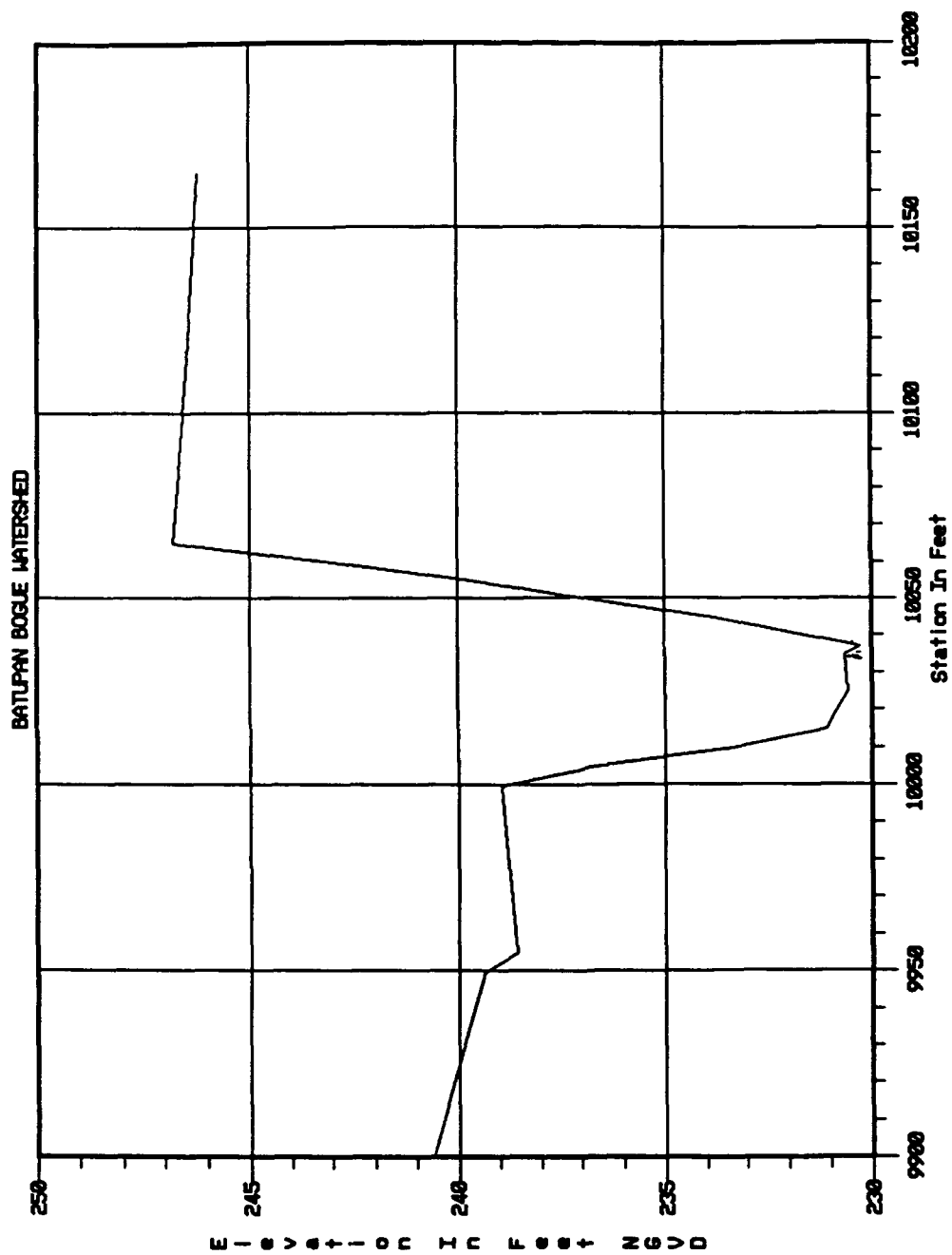
BATUPAN BOGLE WATERSHED



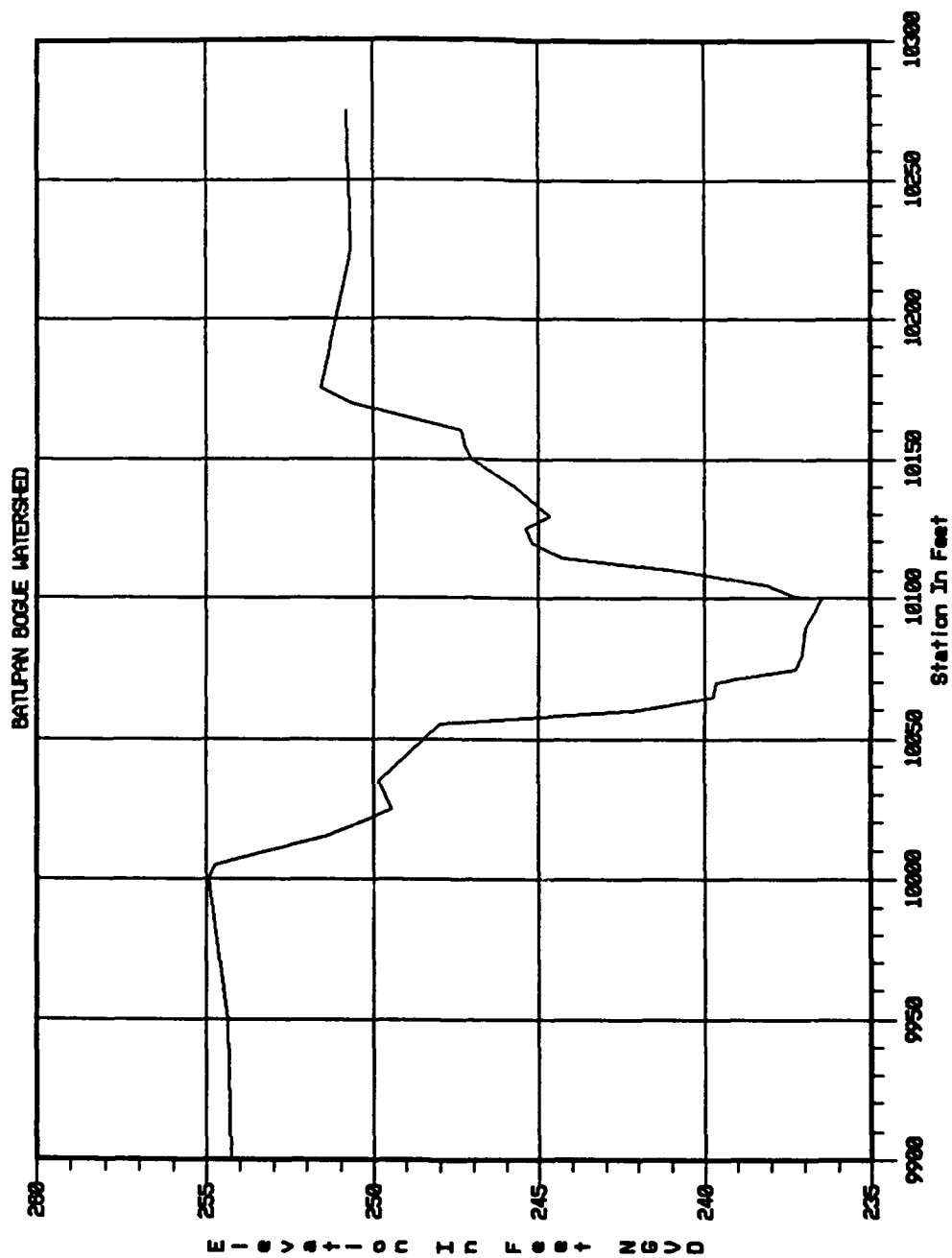
HOLKINS 1985 XSEC 57.40



WILKINS 1985 XSEC 85.15

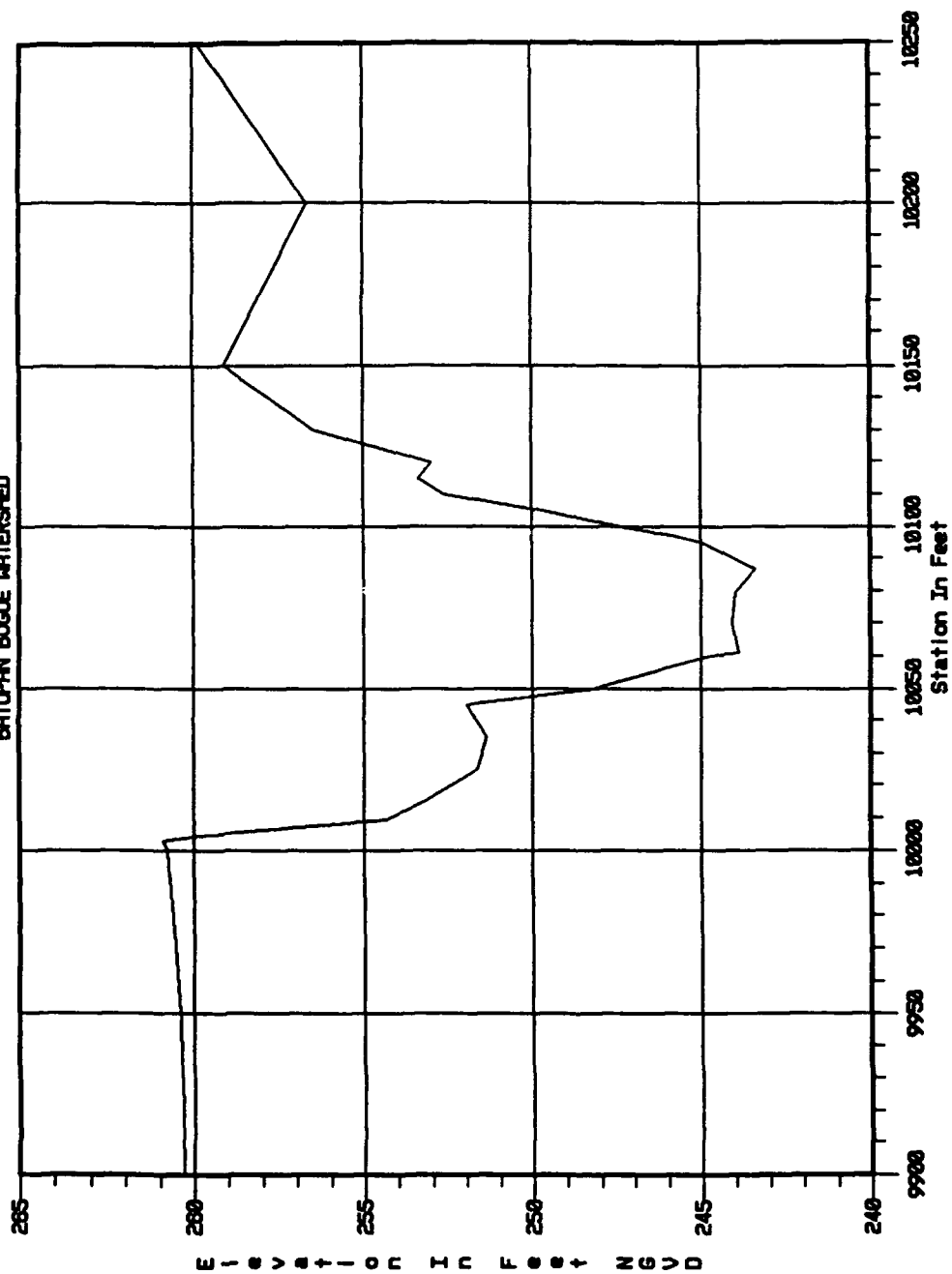


WILKINS 1985 XSEC 118.15

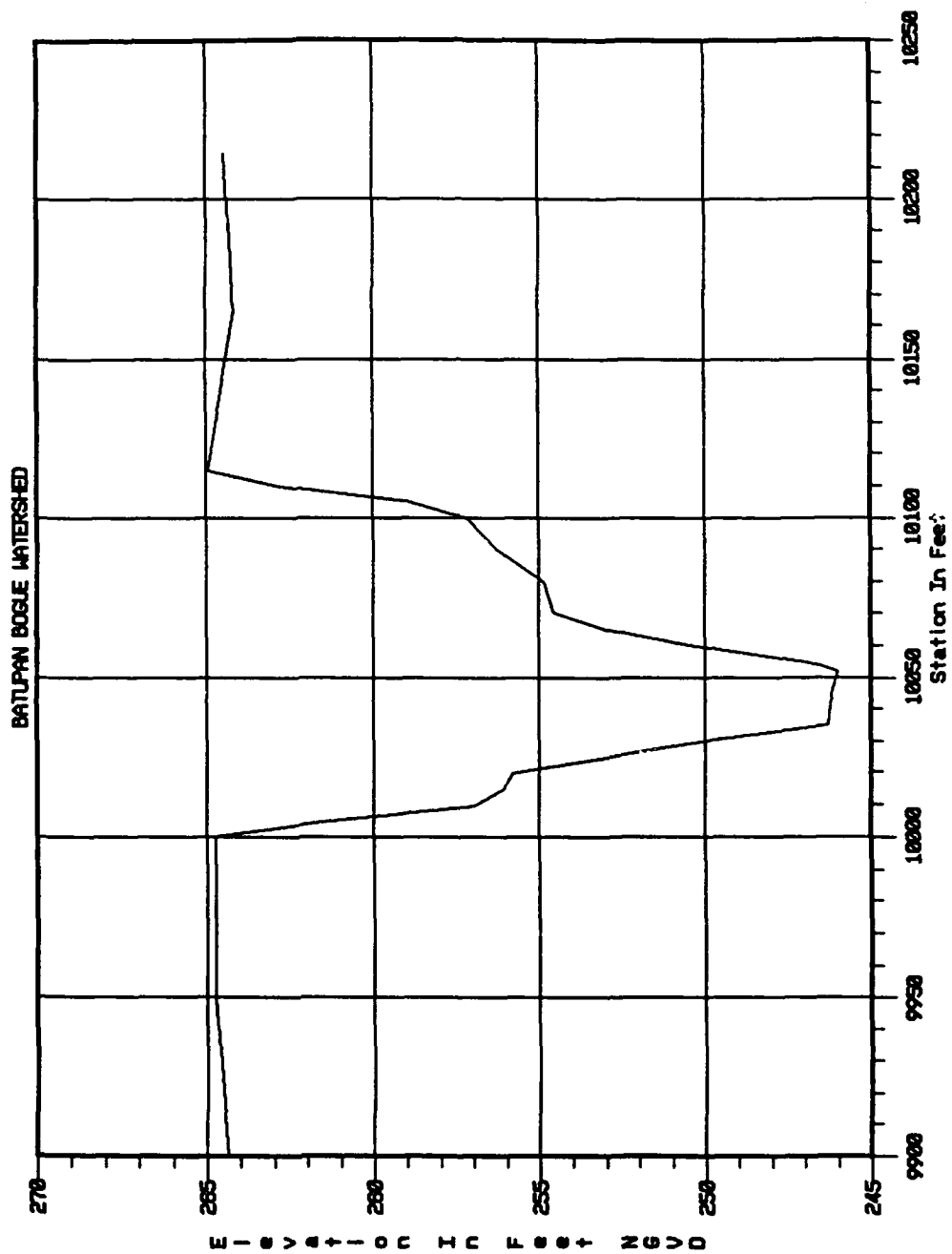


WILKINS 1965 XSEC 143.02

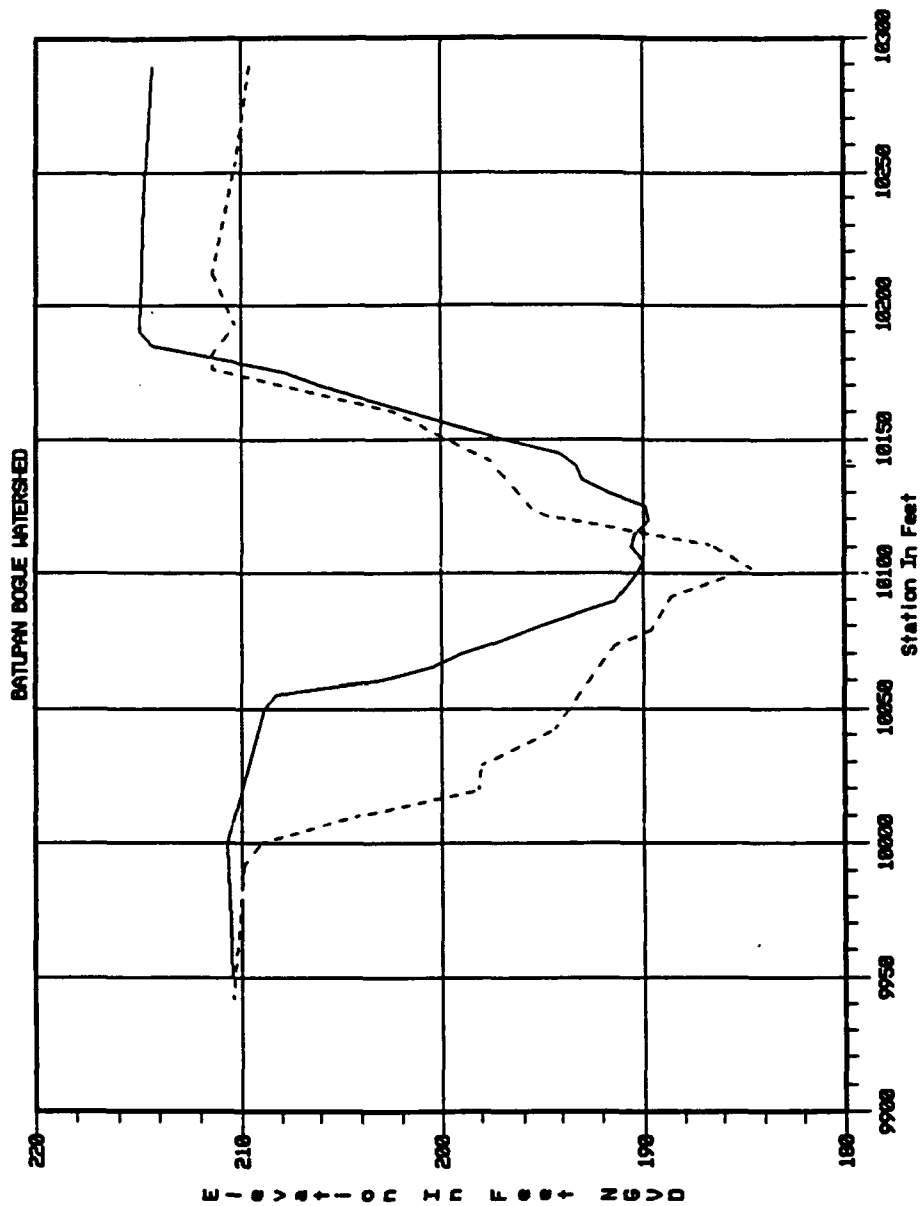
BATUPAN BOGLE INTERSECT



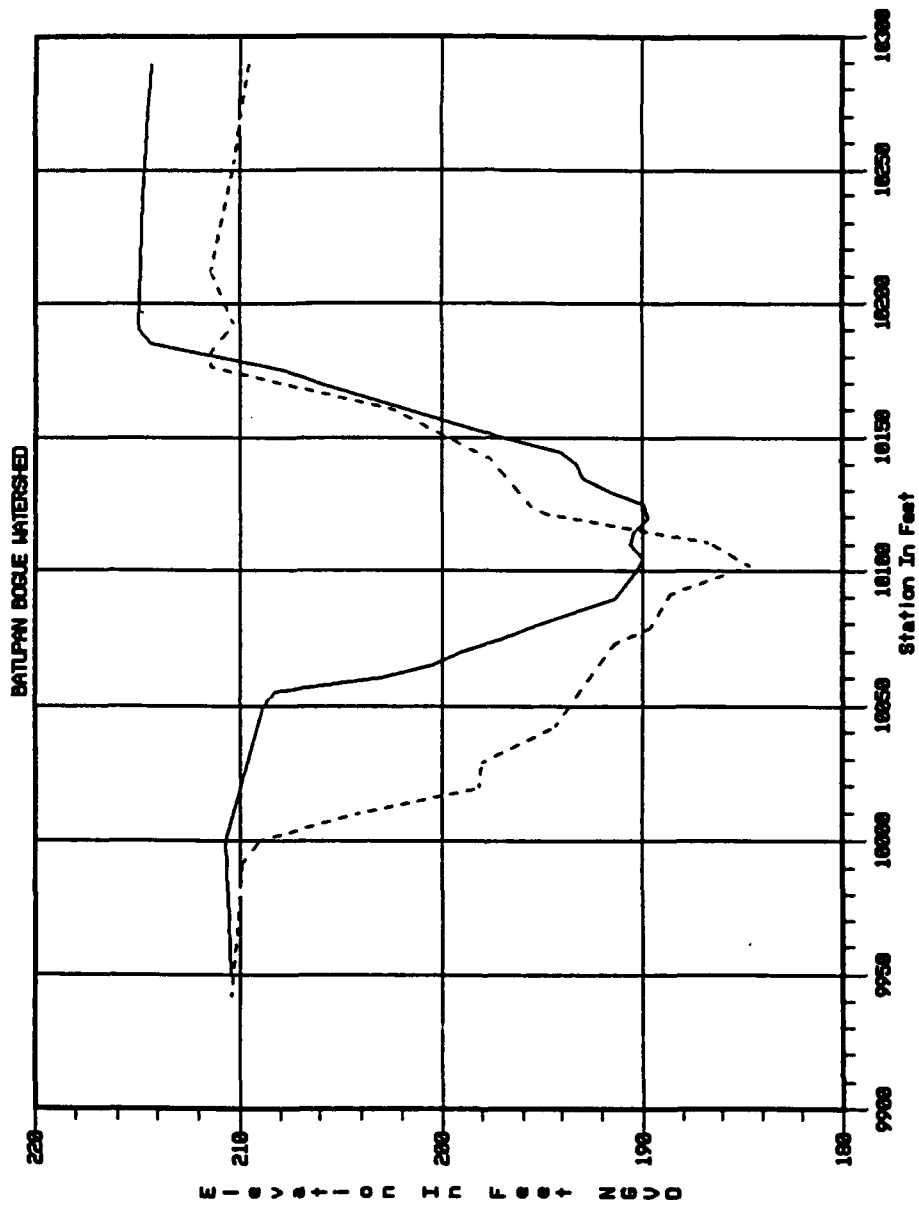
WILKINS 1985 XSEC 170.18



——— HULLKINS 1985 XSEC 183.00

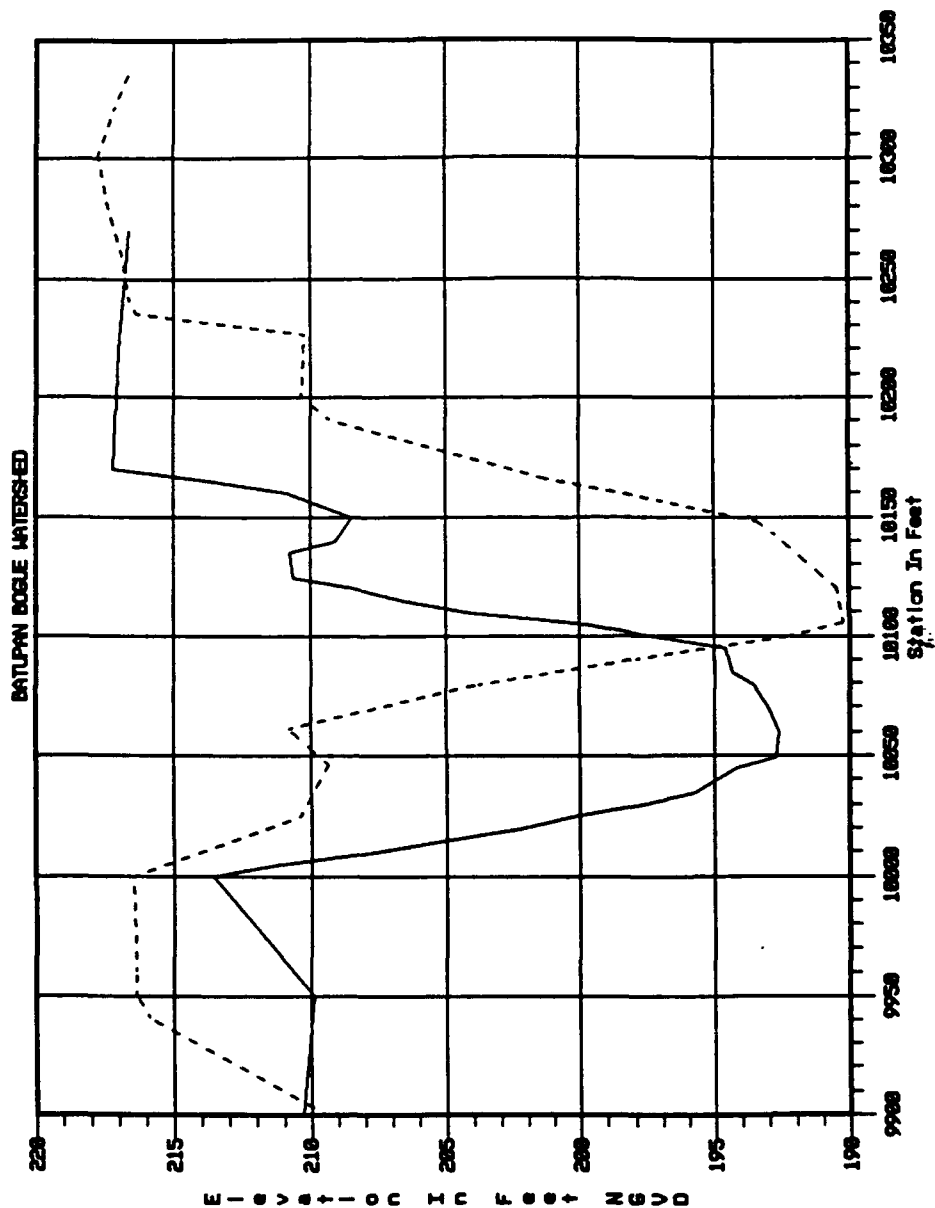


The 1985 and 1991 cross sections were surveyed at different locations.



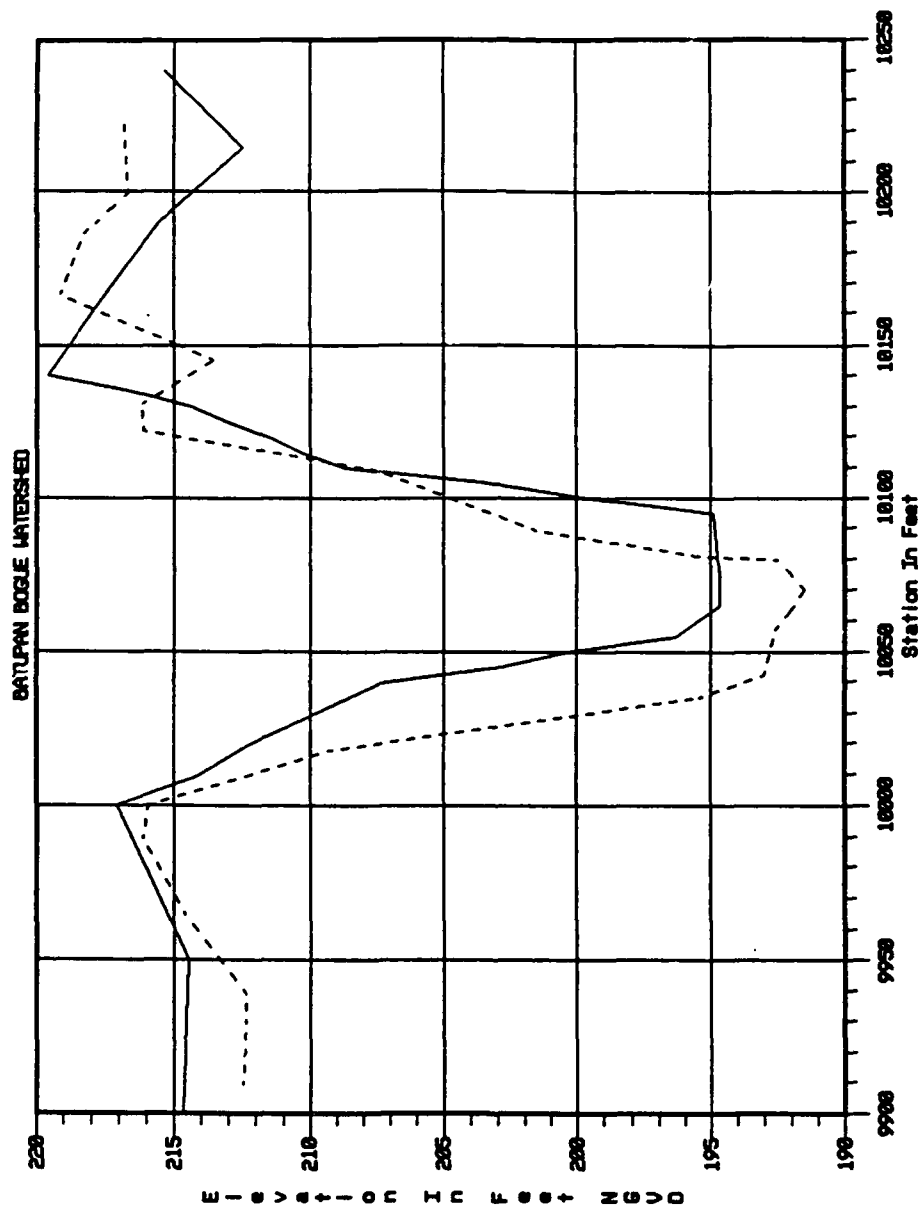
———— LITTLE BOGLE 1985 XSEC 26.00
 - - - - - LITTLE BOGLE 1991 XSEC 27.30

The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 36.21
 - - - - - LITTLE BOGLE 1991 XSEC 39.13

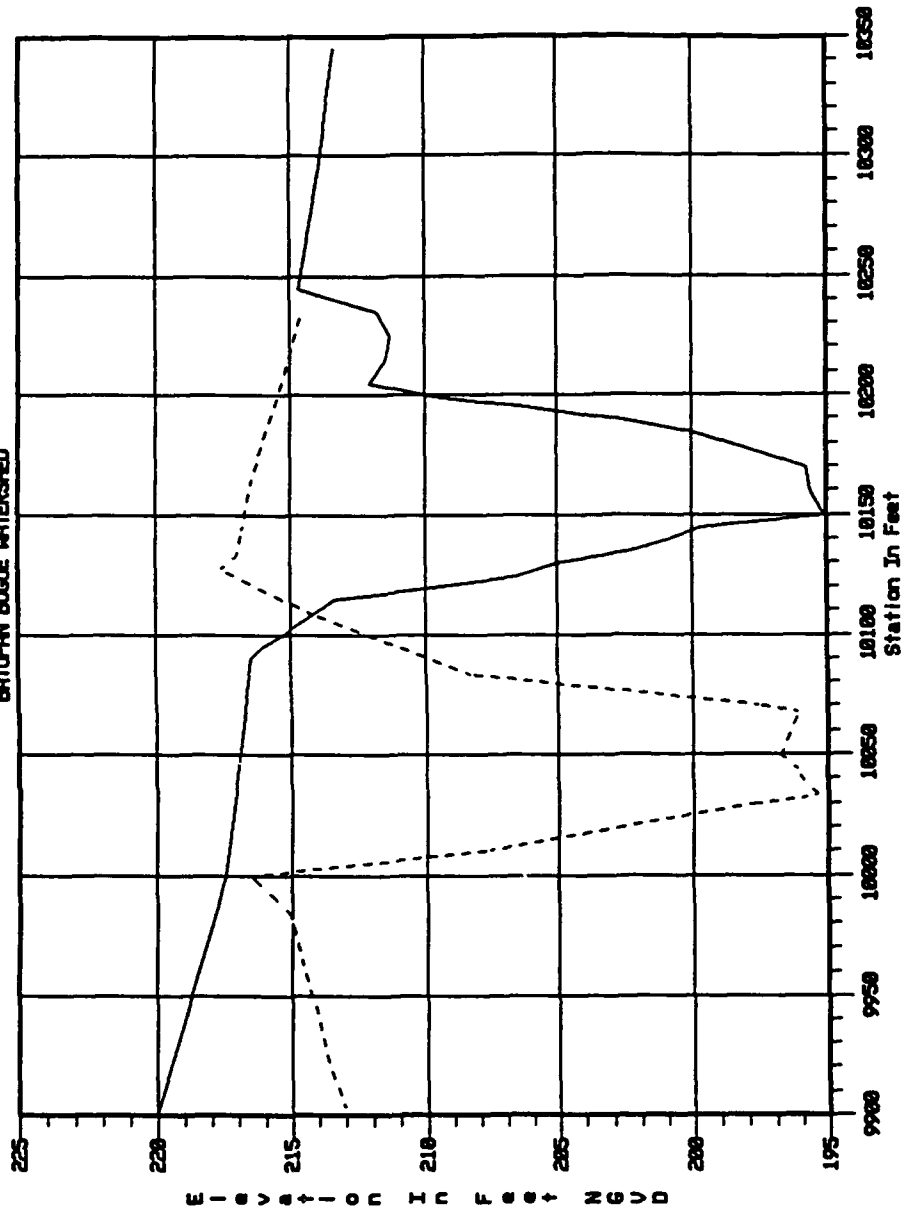
The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 83.10
 - - - - - LITTLE BOGLE 1991 XSEC 85.10

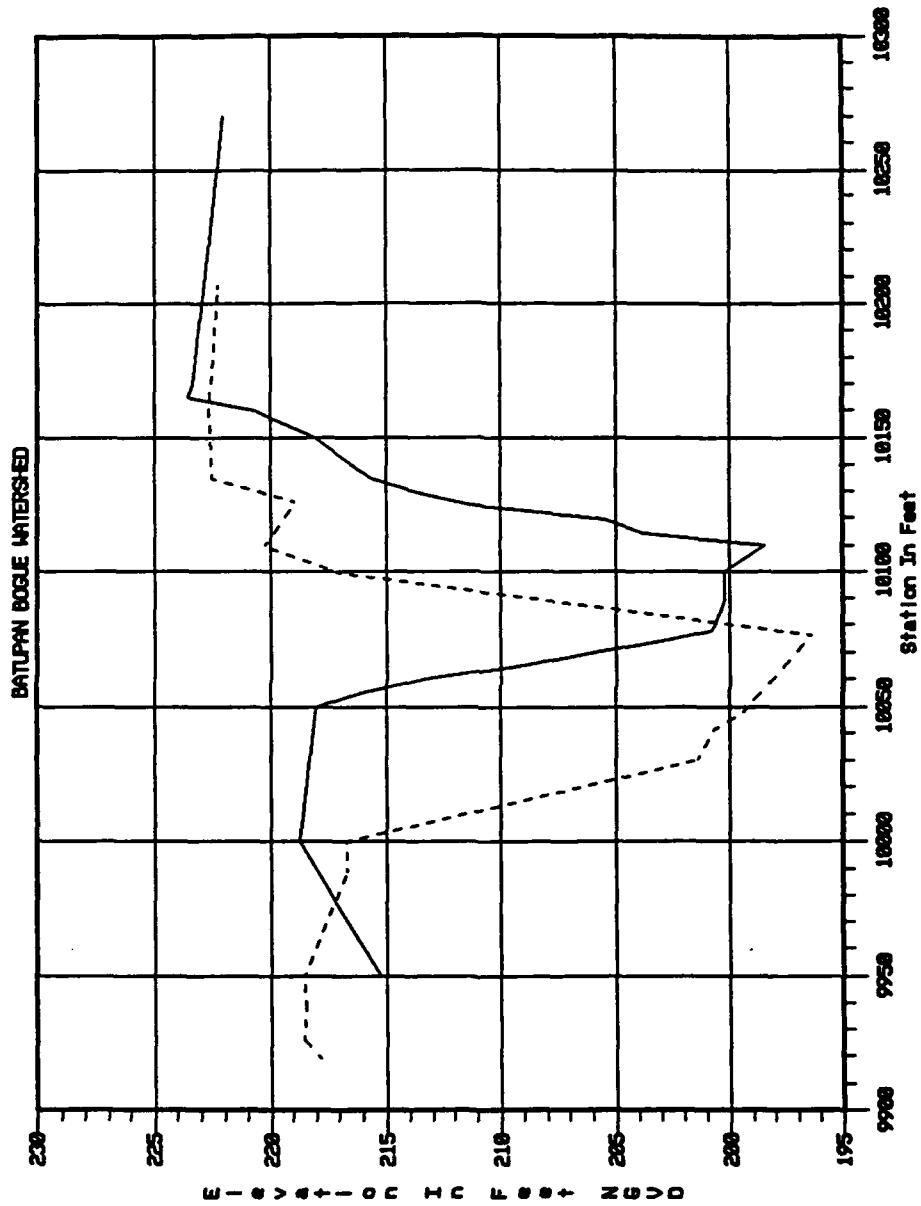
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



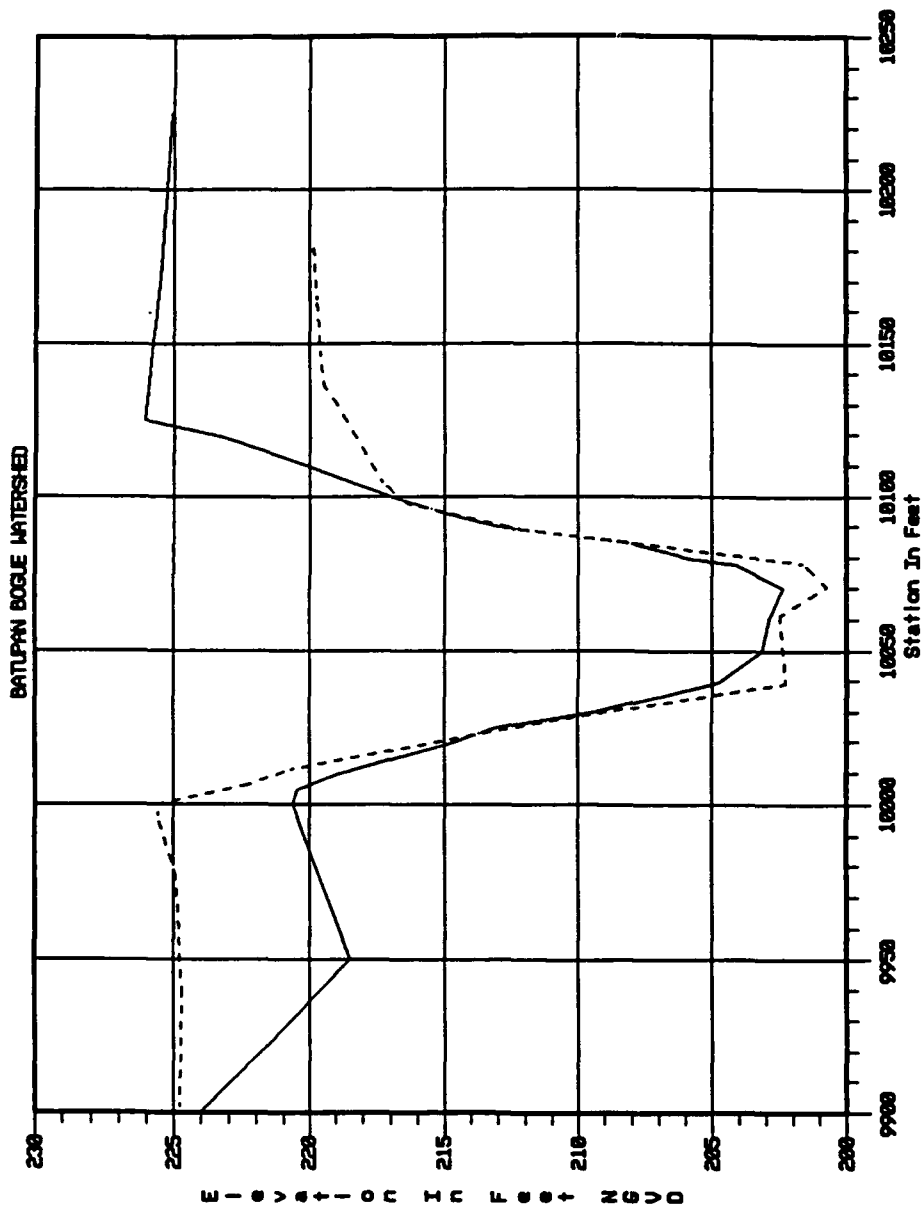
— LITTLE BOGLE 1985 XSEC 90.52
 - - - LITTLE BOGLE 1991 XSEC 89.38

The 1985 and 1991 cross sections were surveyed at different locations.



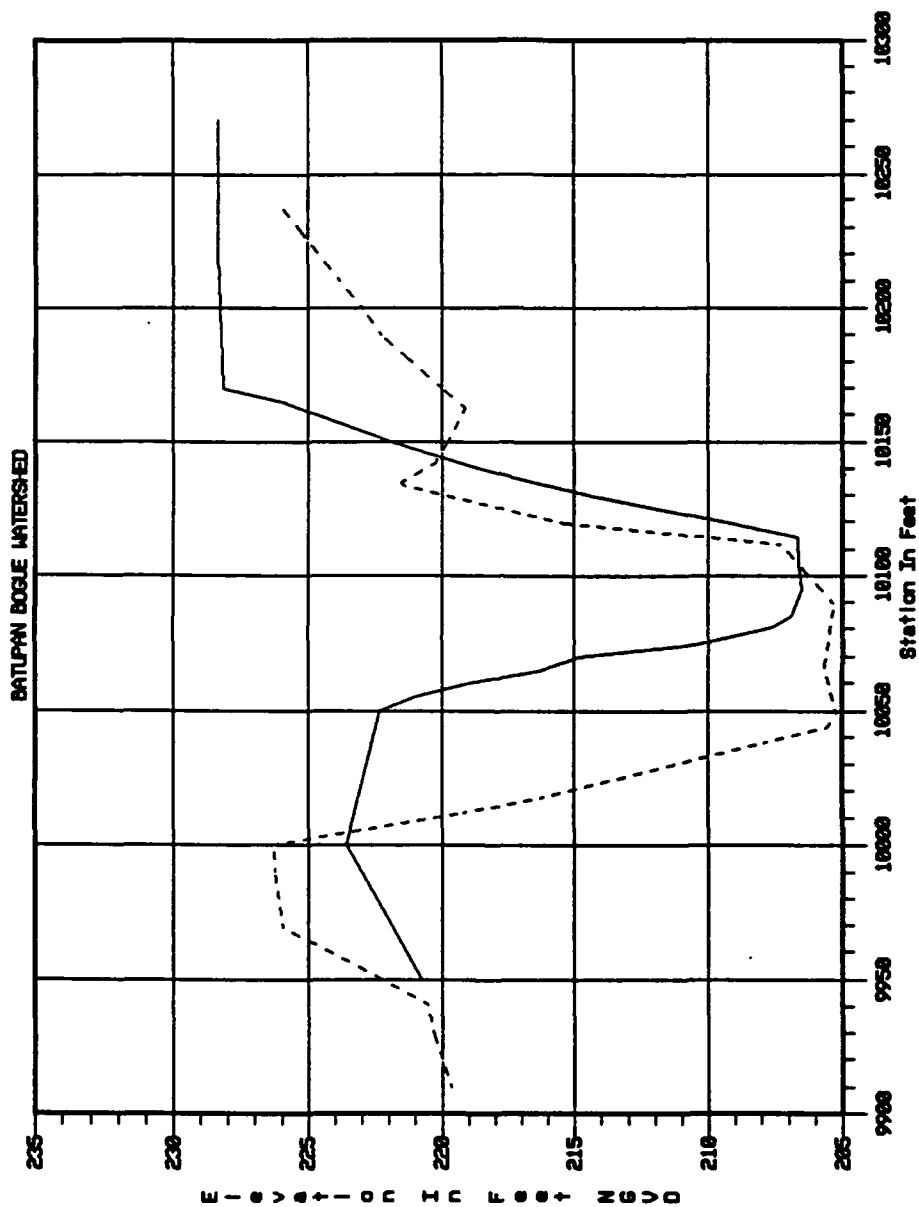
— LITTLE BOGLE 1985 XSEC 118.83
 - - - LITTLE BOGLE 1991 XSEC 114.56

The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGUE 1985 XSEC 143.94
 - - - - - LITTLE BOGUE 1991 XSEC 141.10

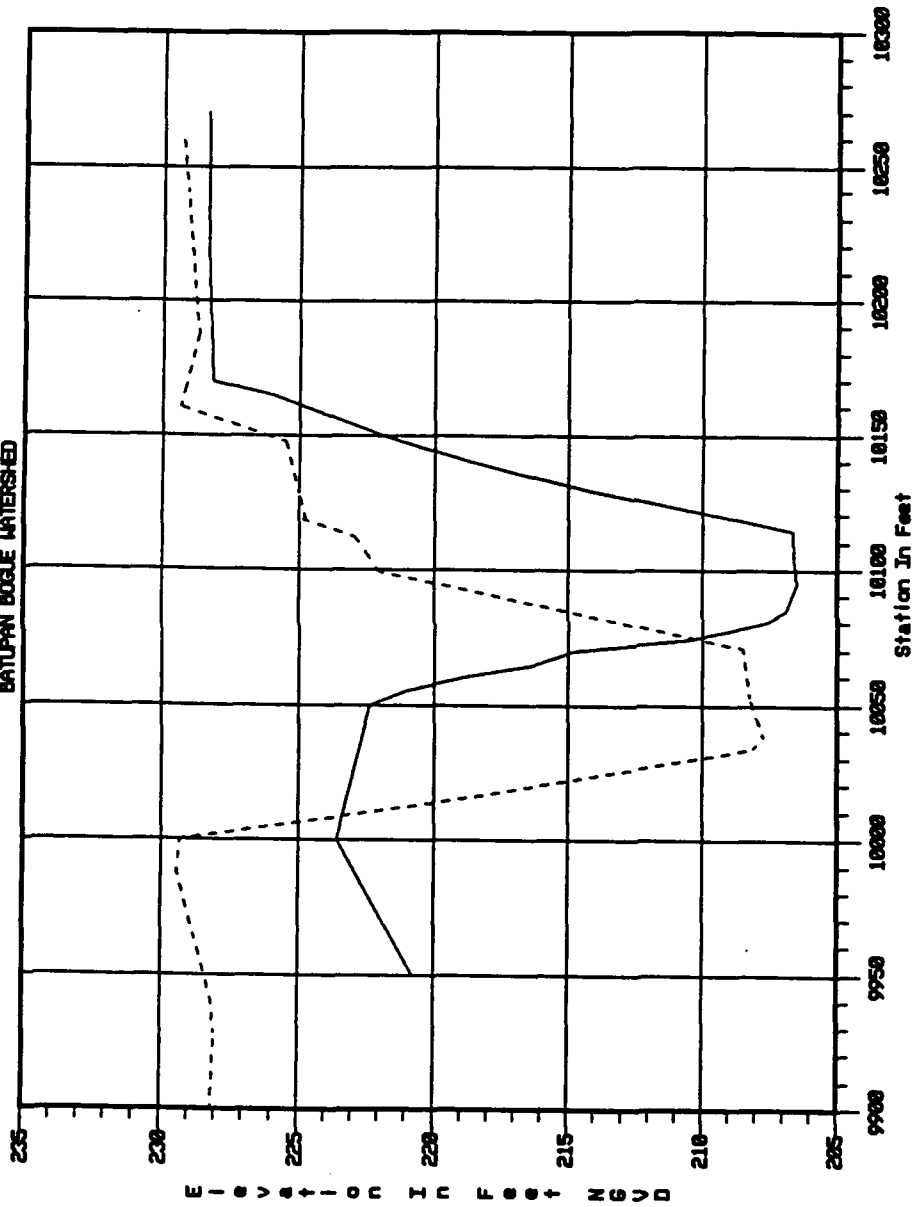
The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGLE 1985 XSEC 176.72
 - - - - - LITTLE BOGLE 1991 XSEC 167.32

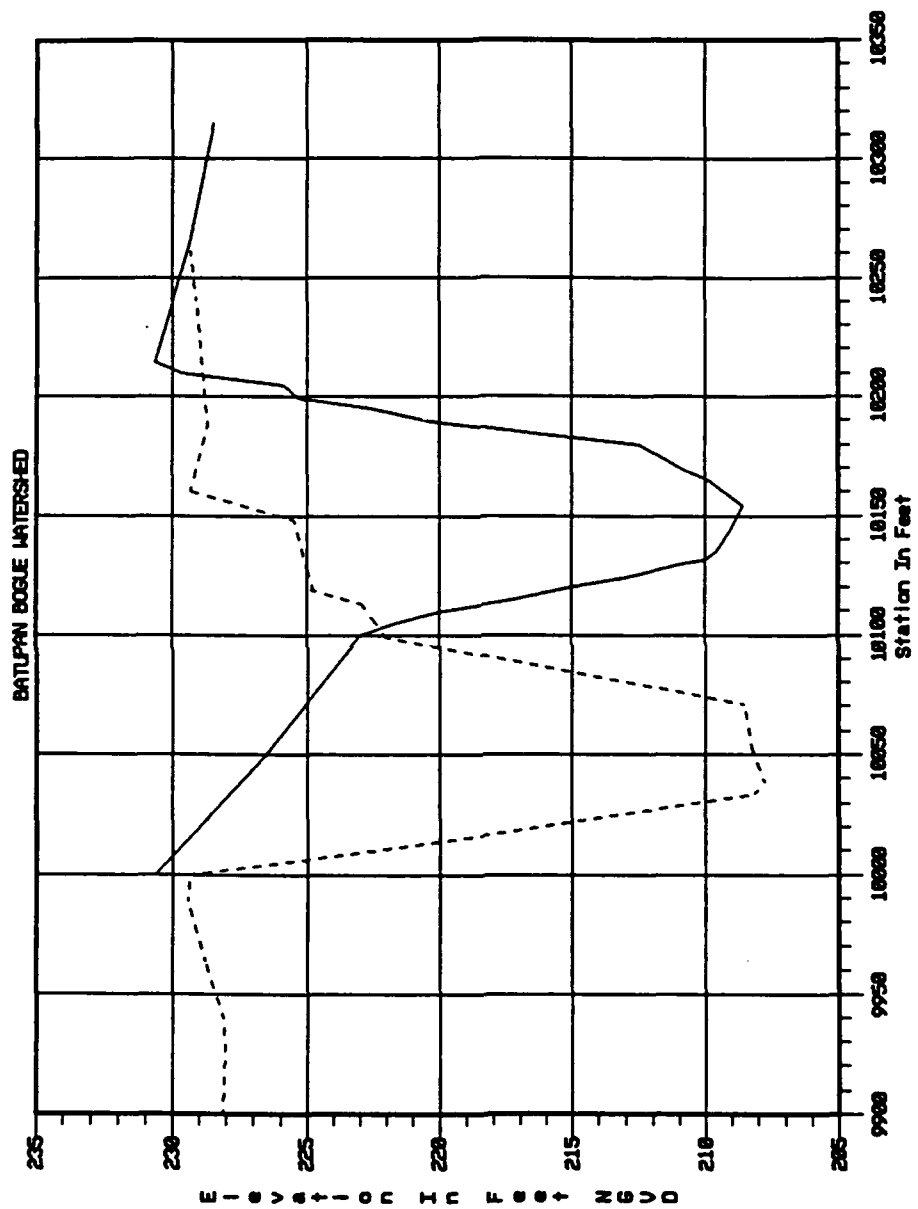
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 178.72
 - - - - - LITTLE BOGLE 1991 XSEC 191.37

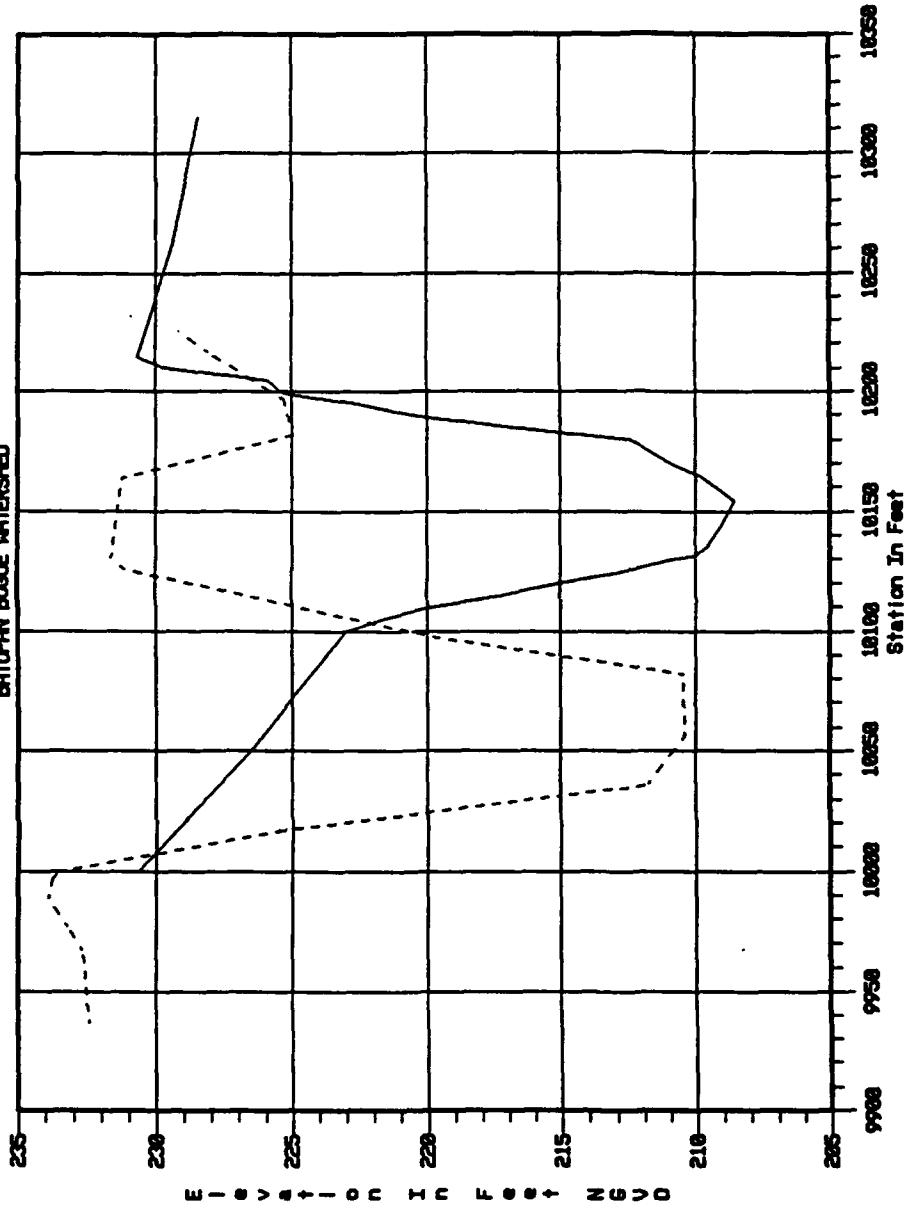
The 1985 and 1991 cross sections were surveyed at different locations.



— 1985 CROSS SECTION 283.04
 - - - 1991 CROSS SECTION 191.37

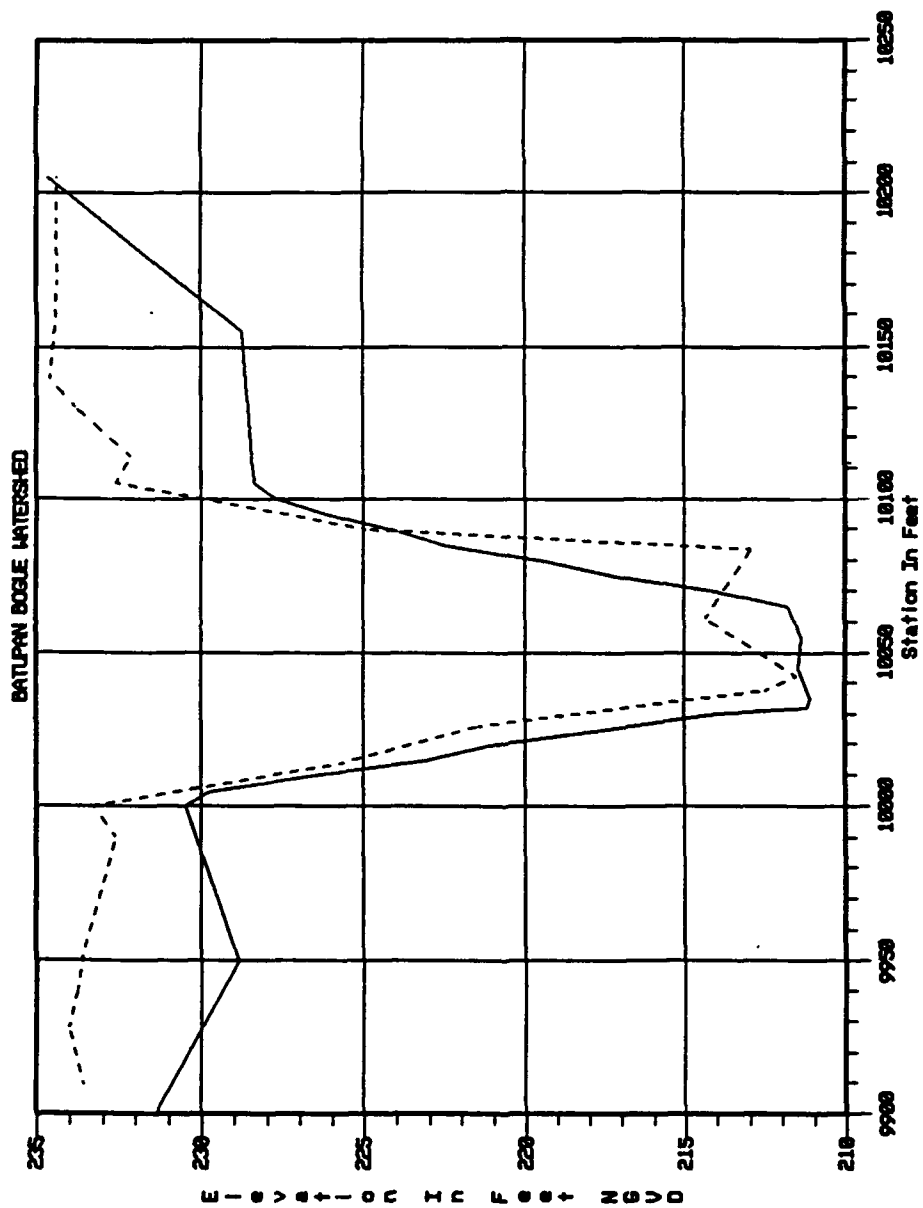
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 283.84
 - - - - - LITTLE BOGLE 1991 XSEC 228.67

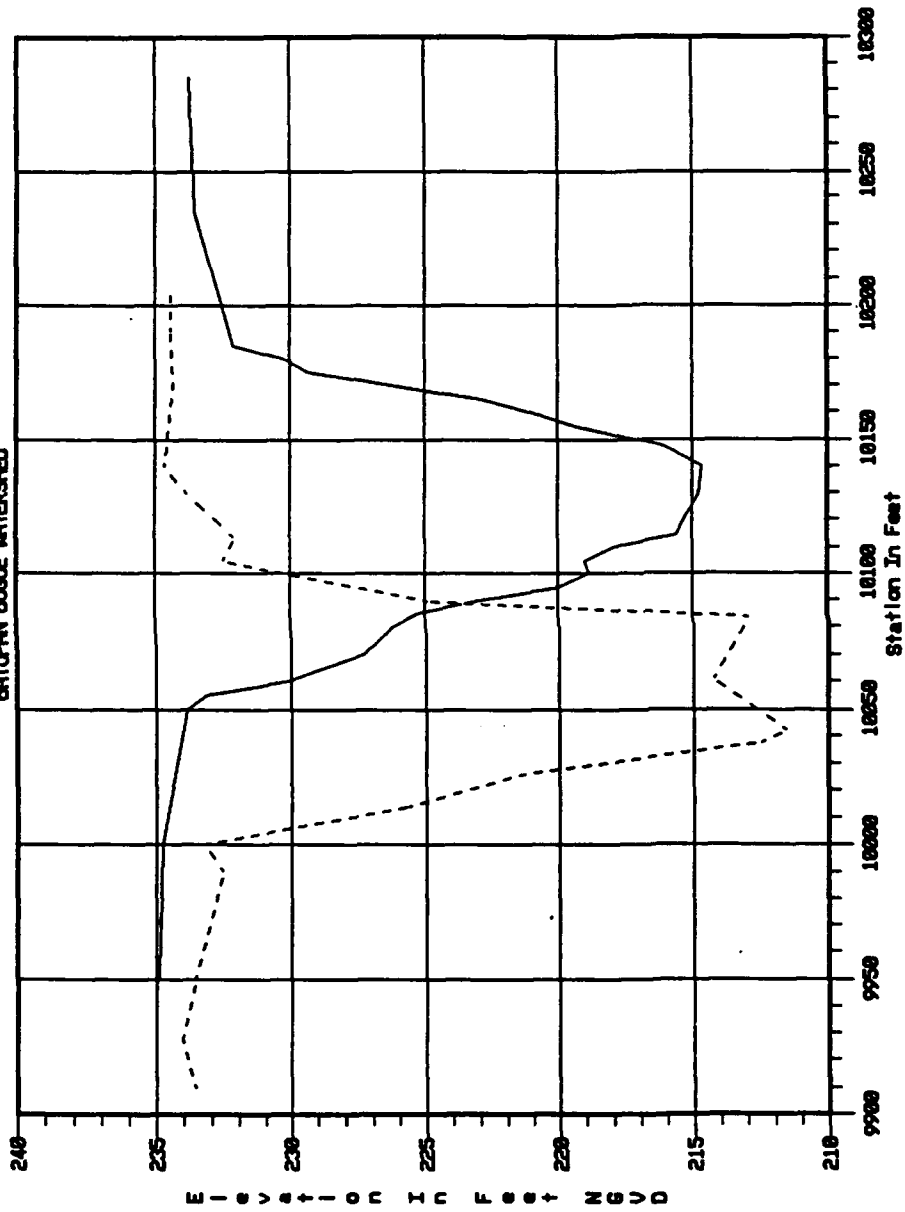
The 1985 and 1991 cross sections were surveyed at different locations.



— LITTLE BOGLE 1985 XSEC 230.00
 - - - LITTLE BOGLE 1991 XSEC 247.42

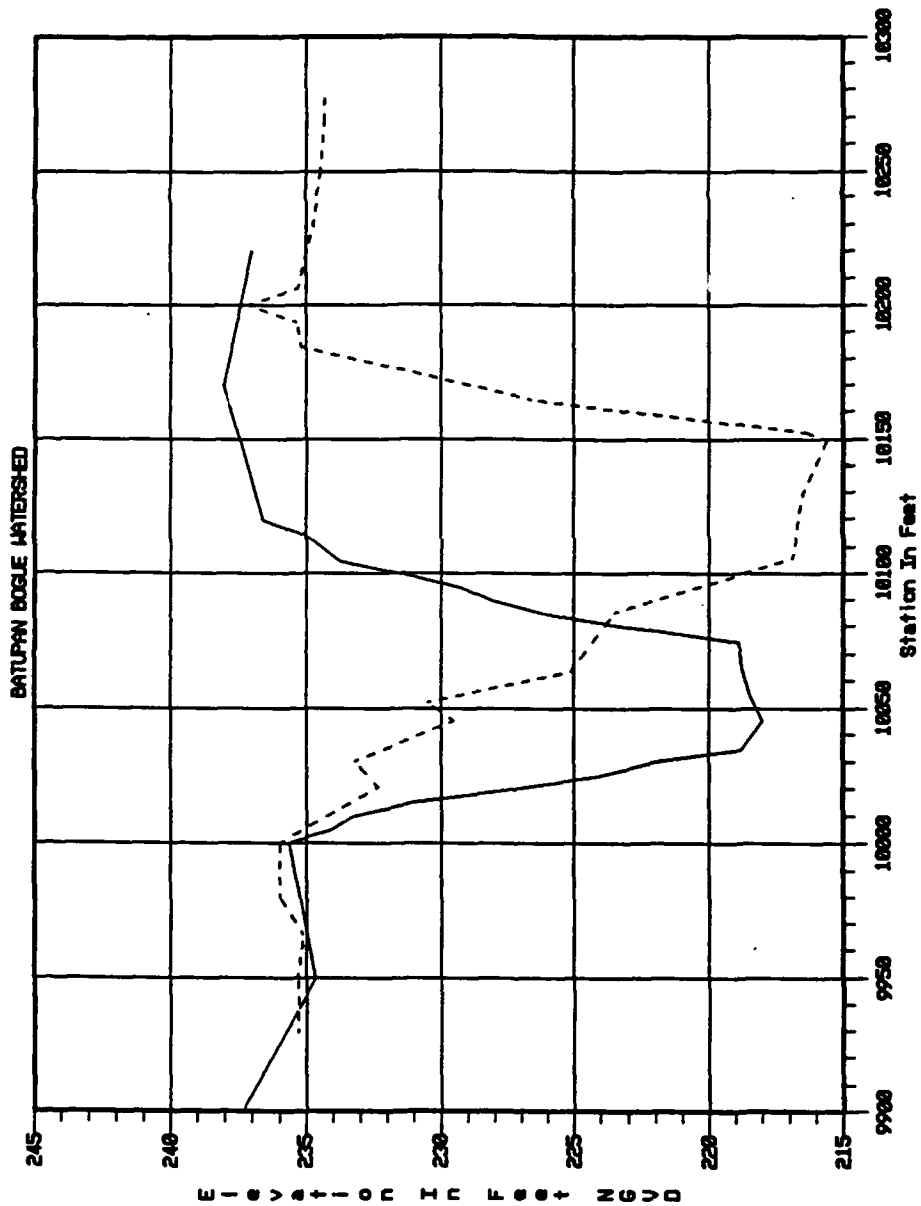
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 259.94
 - - - - - LITTLE BOGLE 1991 XSEC 247.42

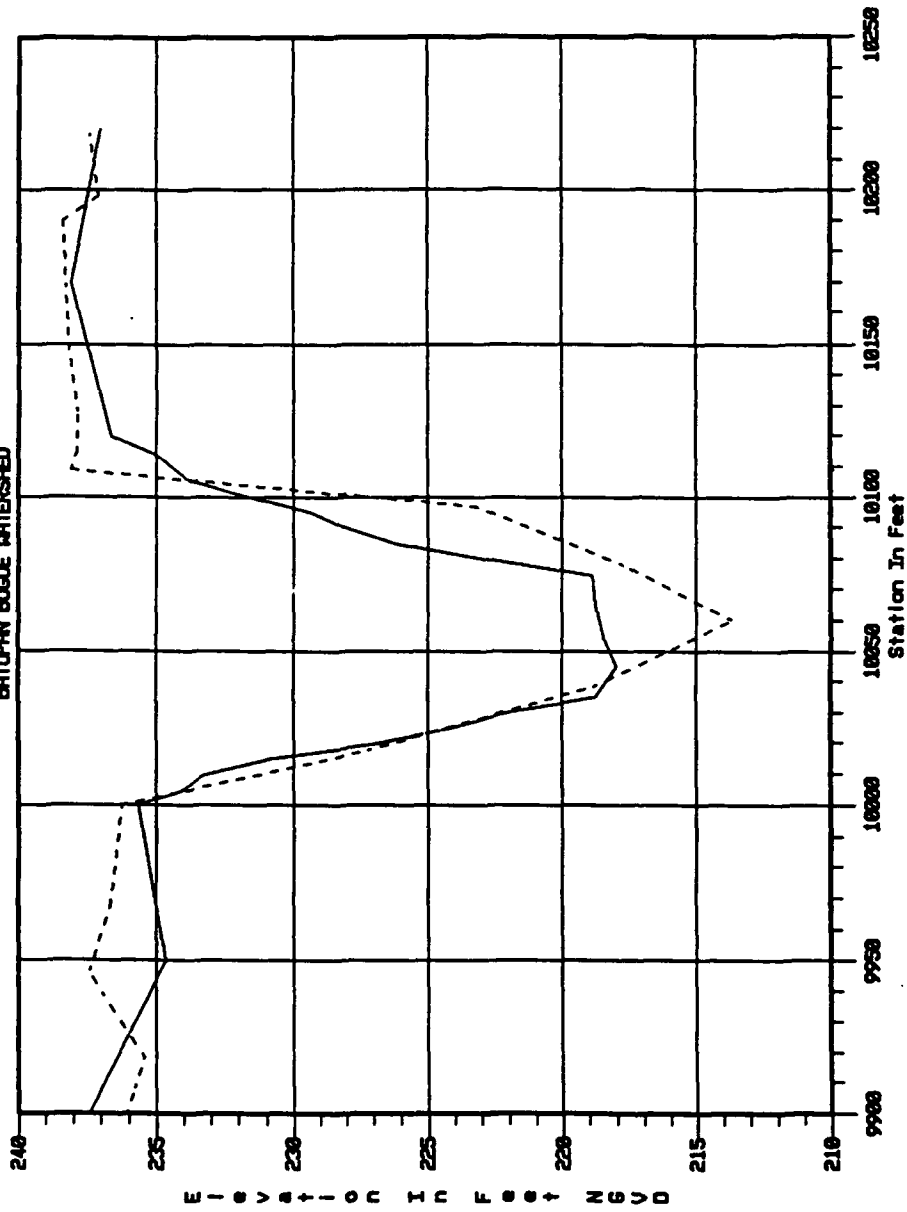
The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 287.84
 - - - - - LITTLE BOGLE 1991 XSEC 274.32

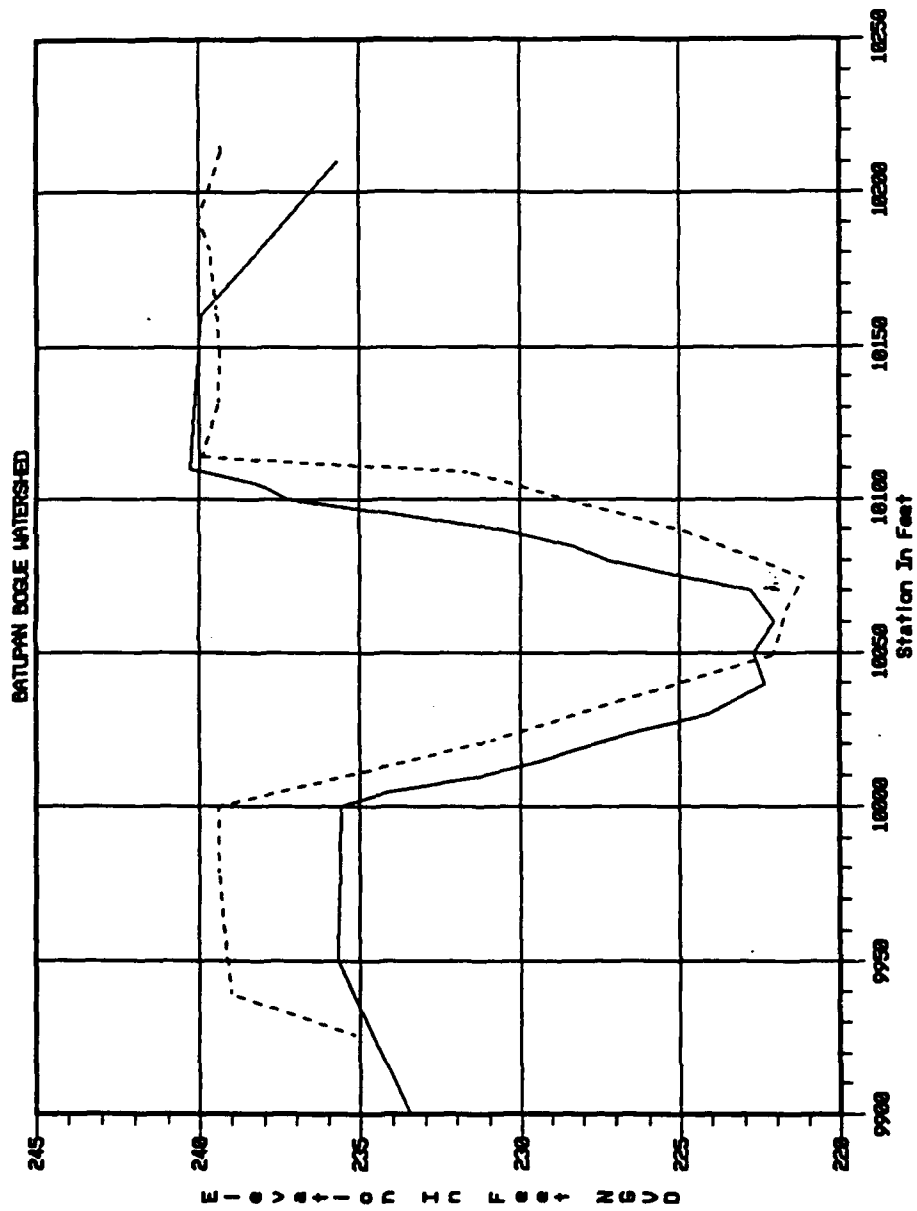
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE INTERSECT



— LITTLE BOGLE 1985 XSEC 287.04
 - - - LITTLE BOGLE 1991 XSEC 299.28

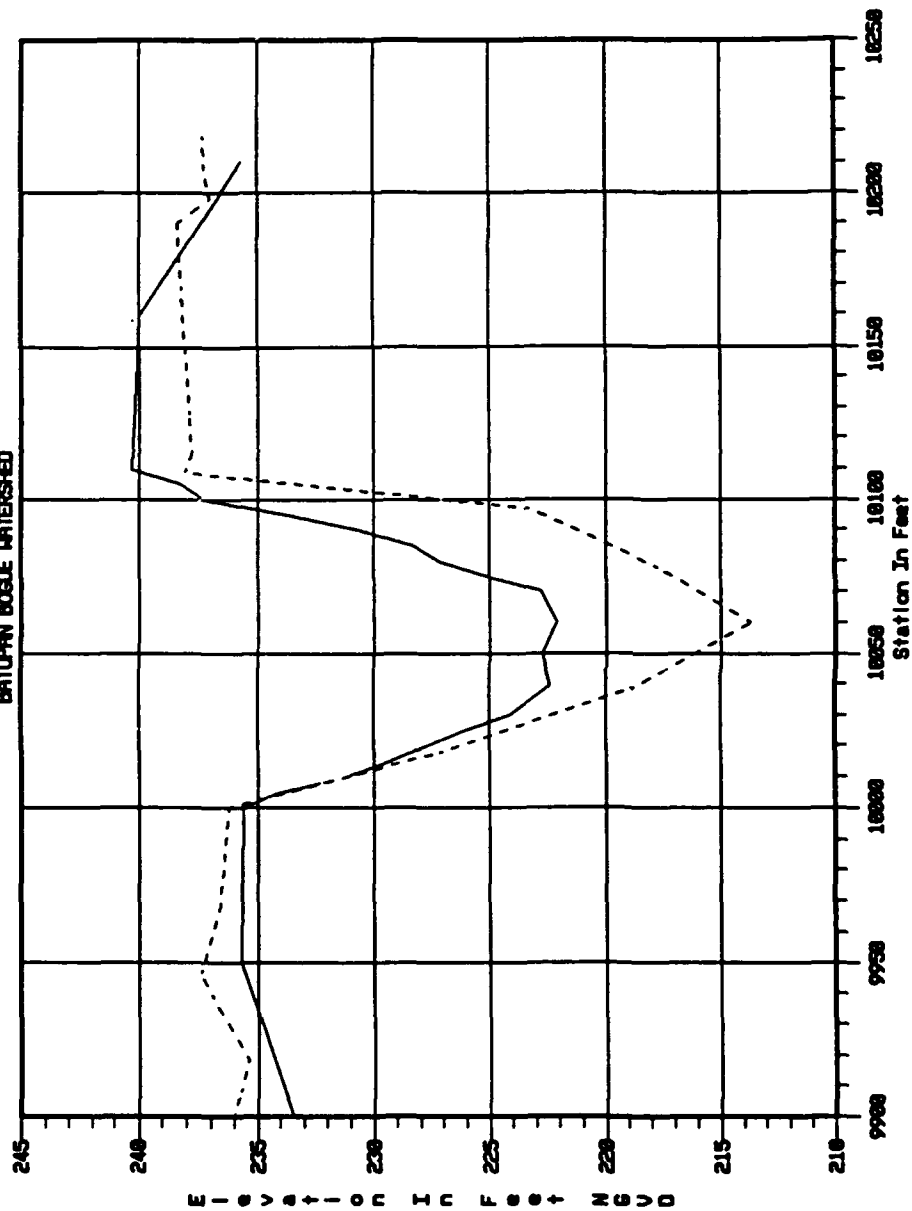
The 1985 and 1991 cross sections were surveyed at different locations.



— LITTLE BOGLE 1985 XSEC 318.00
 - - - LITTLE BOGLE 1991 XSEC 328.35

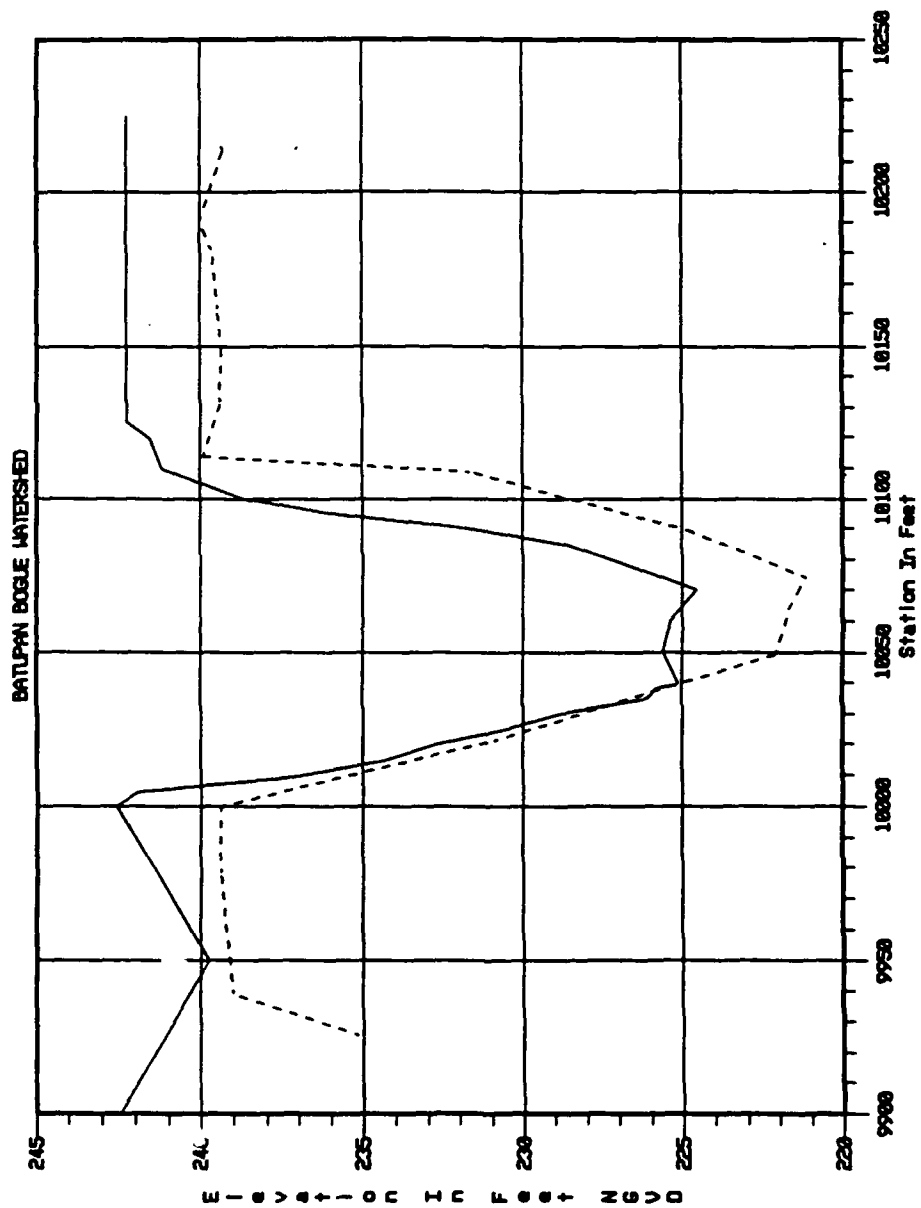
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



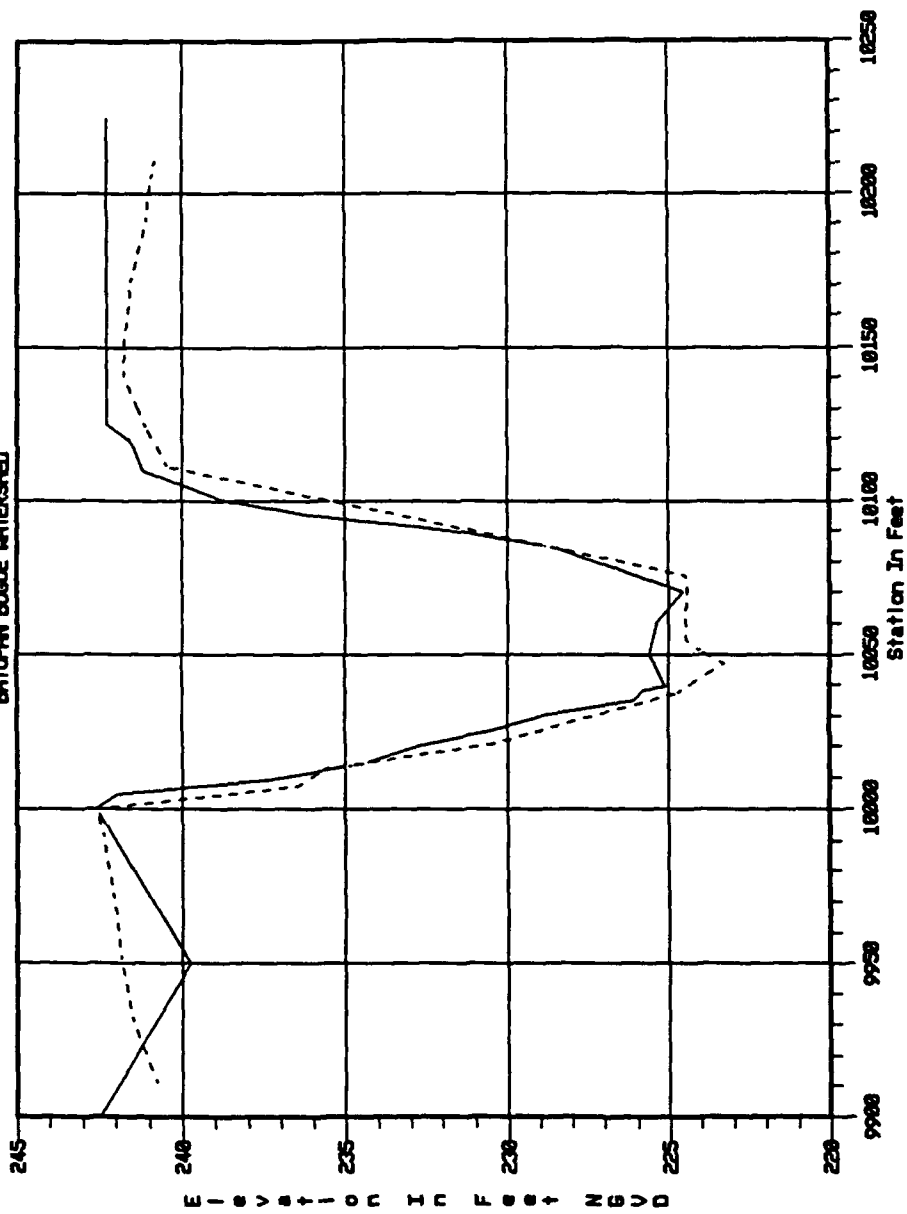
———— LITTLE BOGLE 1985 XSEC 318.86
 - - - - - LITTLE BOGLE 1991 XSEC 299.28

The 1985 and 1991 cross sections were surveyed at different locations.



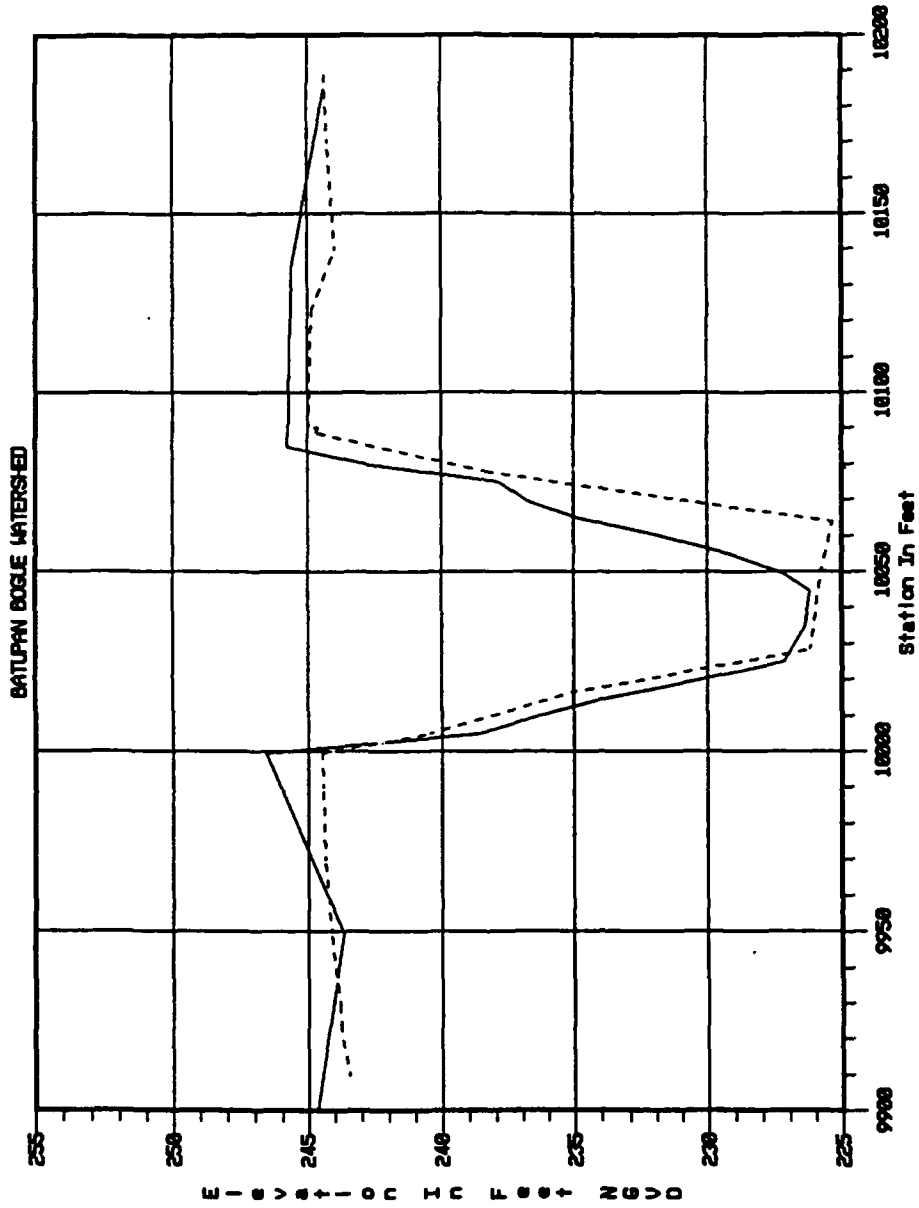
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



———— LITTLE BOGLE 1985 XSEC 343.88
 - - - - - LITTLE BOGLE 1991 XSEC 349.82

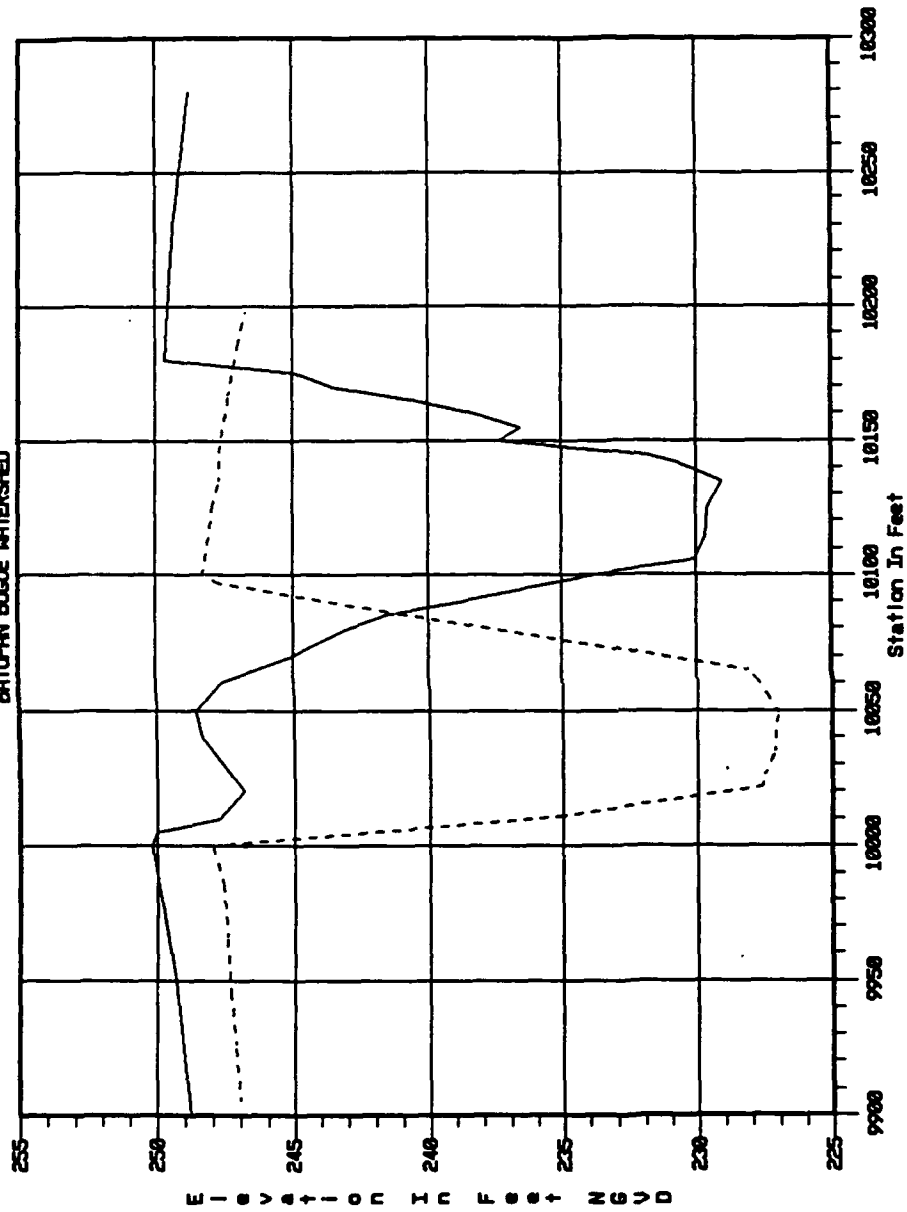
The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGLE 1985 XSEC 370.00
 - - - LITTLE BOGLE 1991 XSEC 375.00

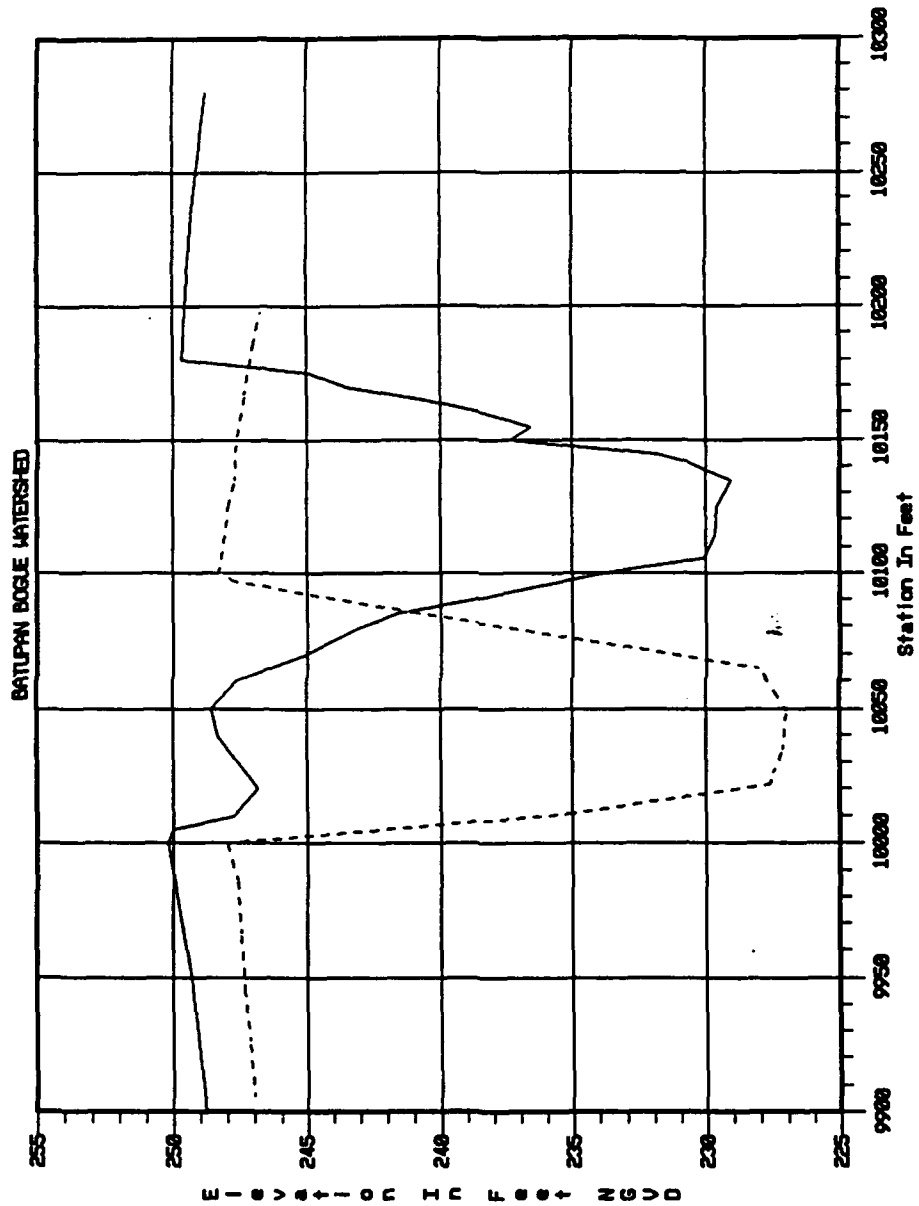
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



———— LITTLE BOGLE 1985 XSEC 397.10
 - - - - - LITTLE BOGLE 1991 XSEC 401.00

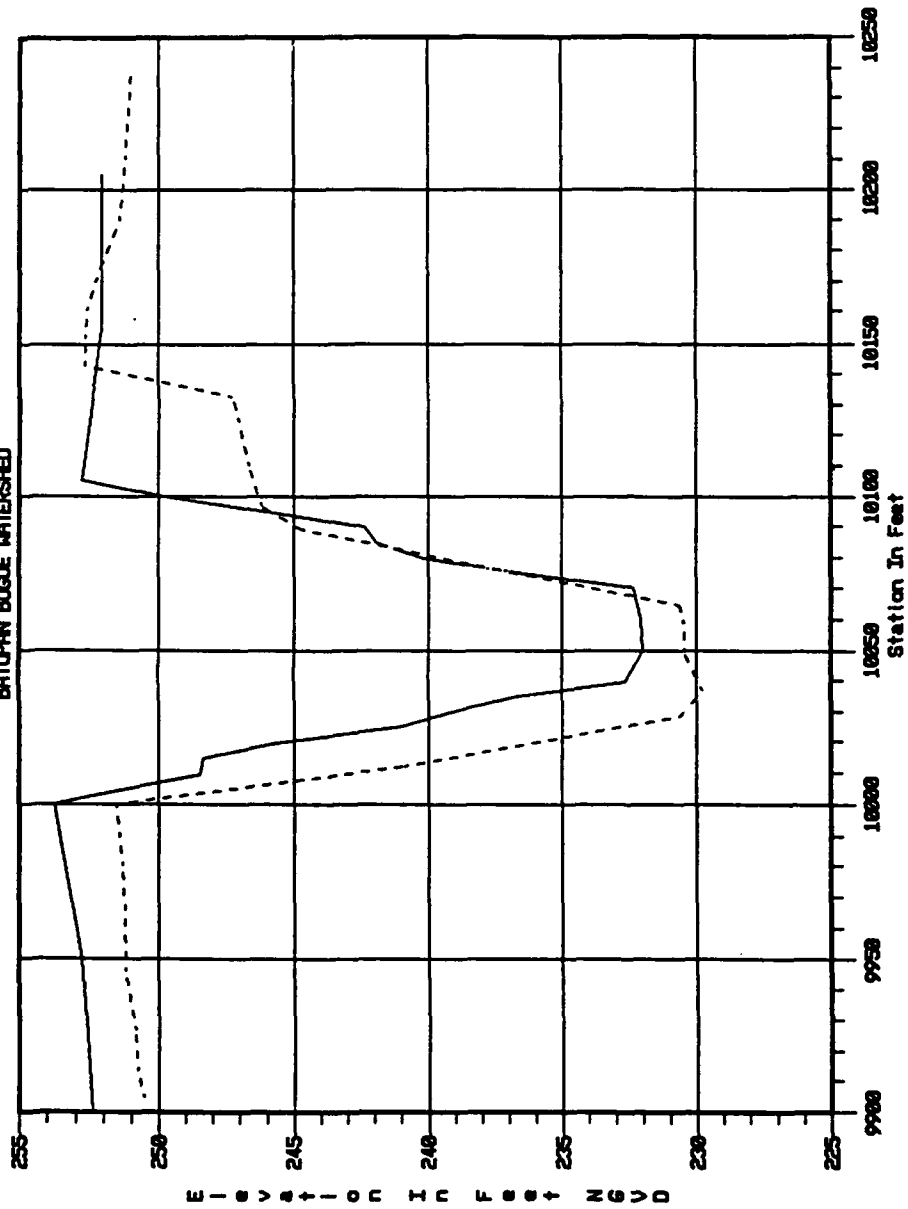
The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 409.9
 - - - - - LITTLE BOGLE 1991 XSEC 401.00

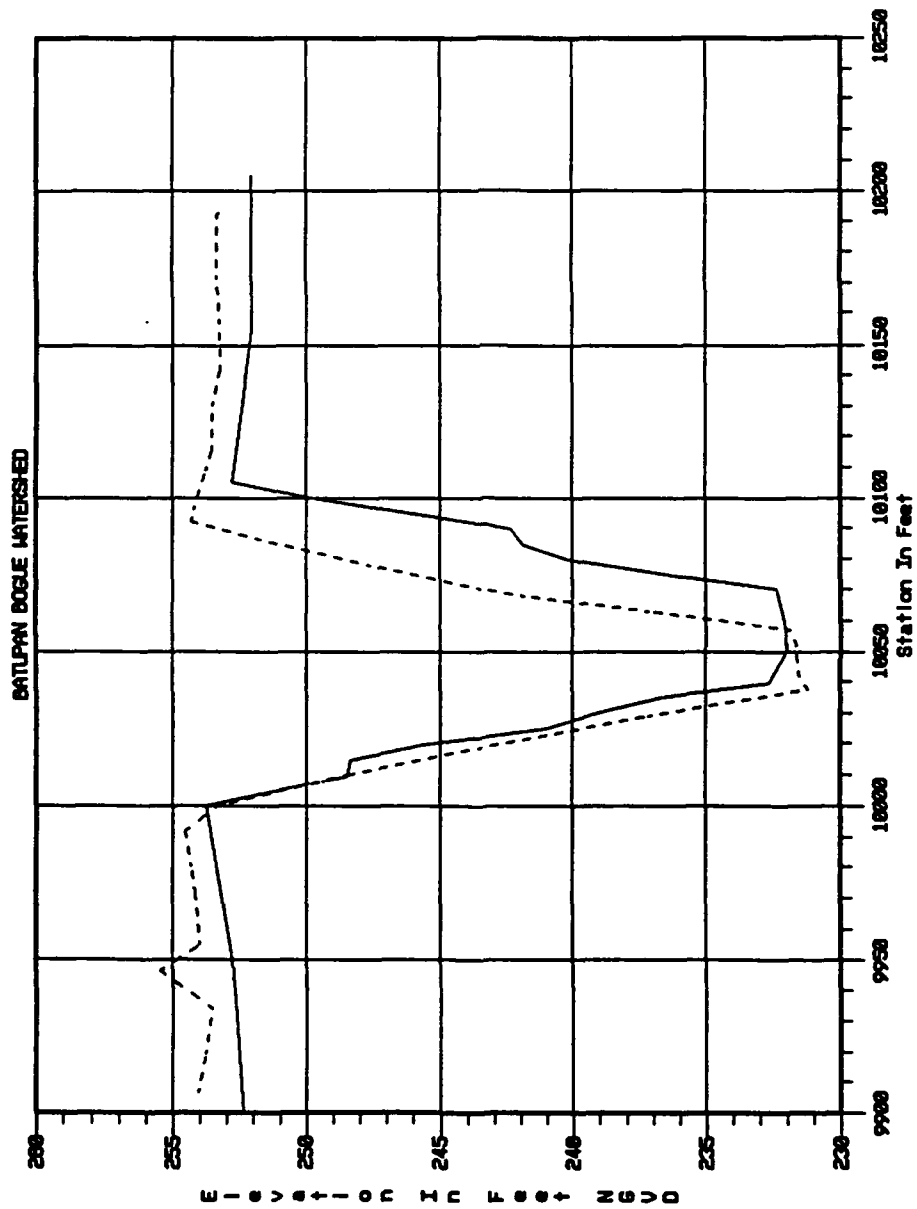
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 425.00
 - - - LITTLE BOGLE 1991 XSEC 427.05

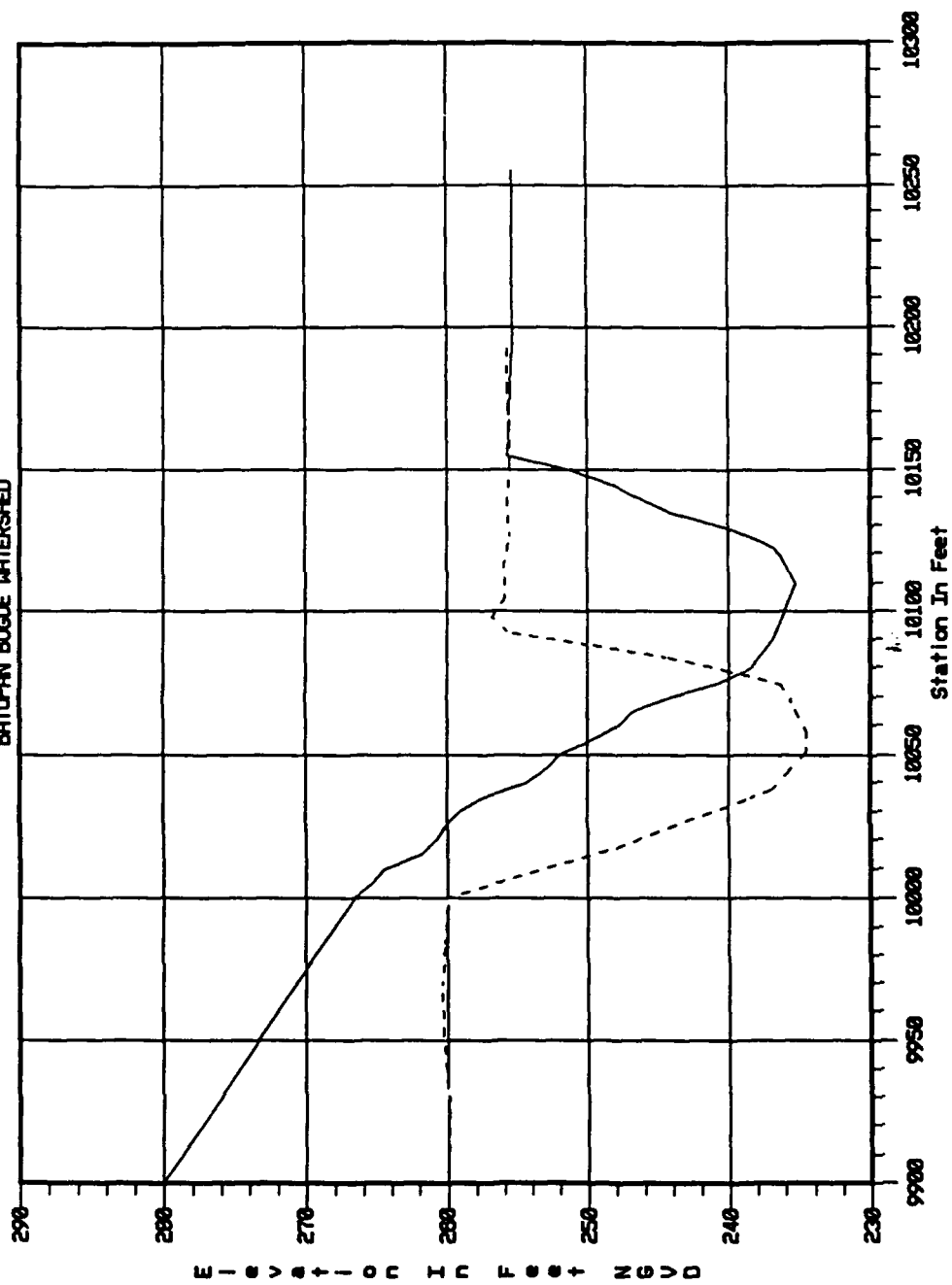
The 1985 and 1991 cross sections were surveyed at different locations.



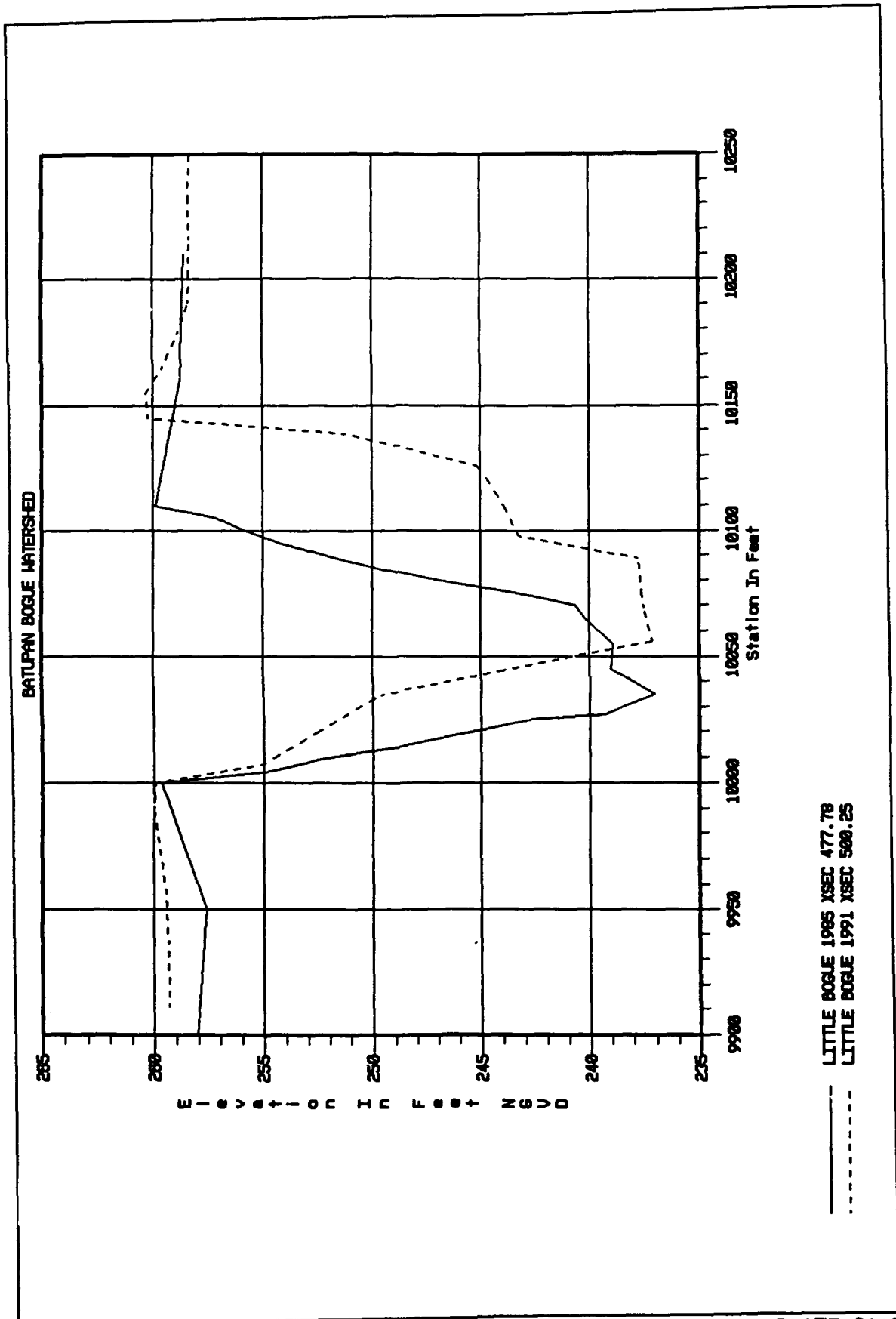
— LITTLE BOGLE 1985 XSEC 425.00
 - - - LITTLE BOGLE 1991 XSEC 449.39

The 1985 and 1991 cross sections were surveyed at different locations.

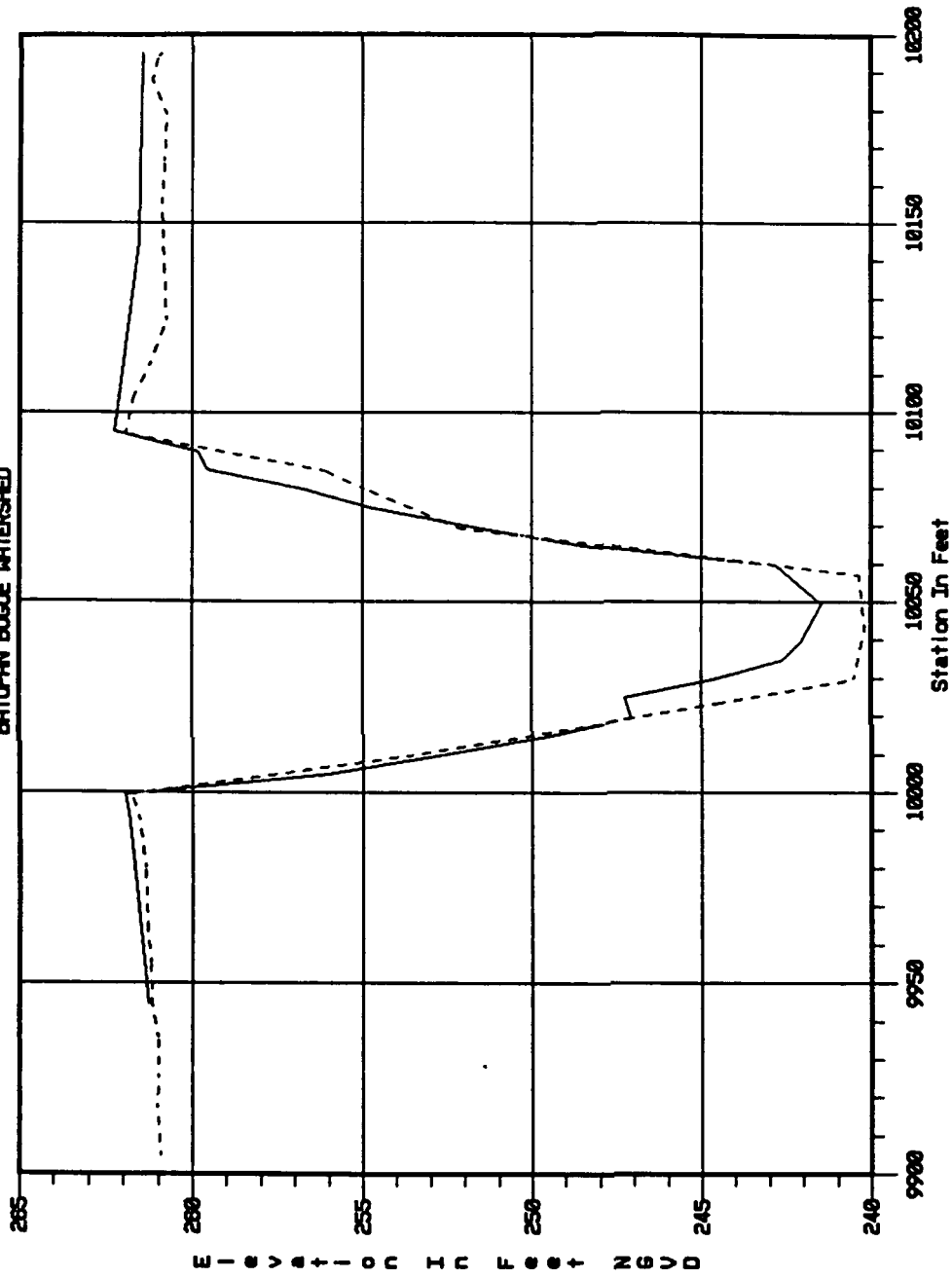
BATUPAN BOGUE WATERSHED



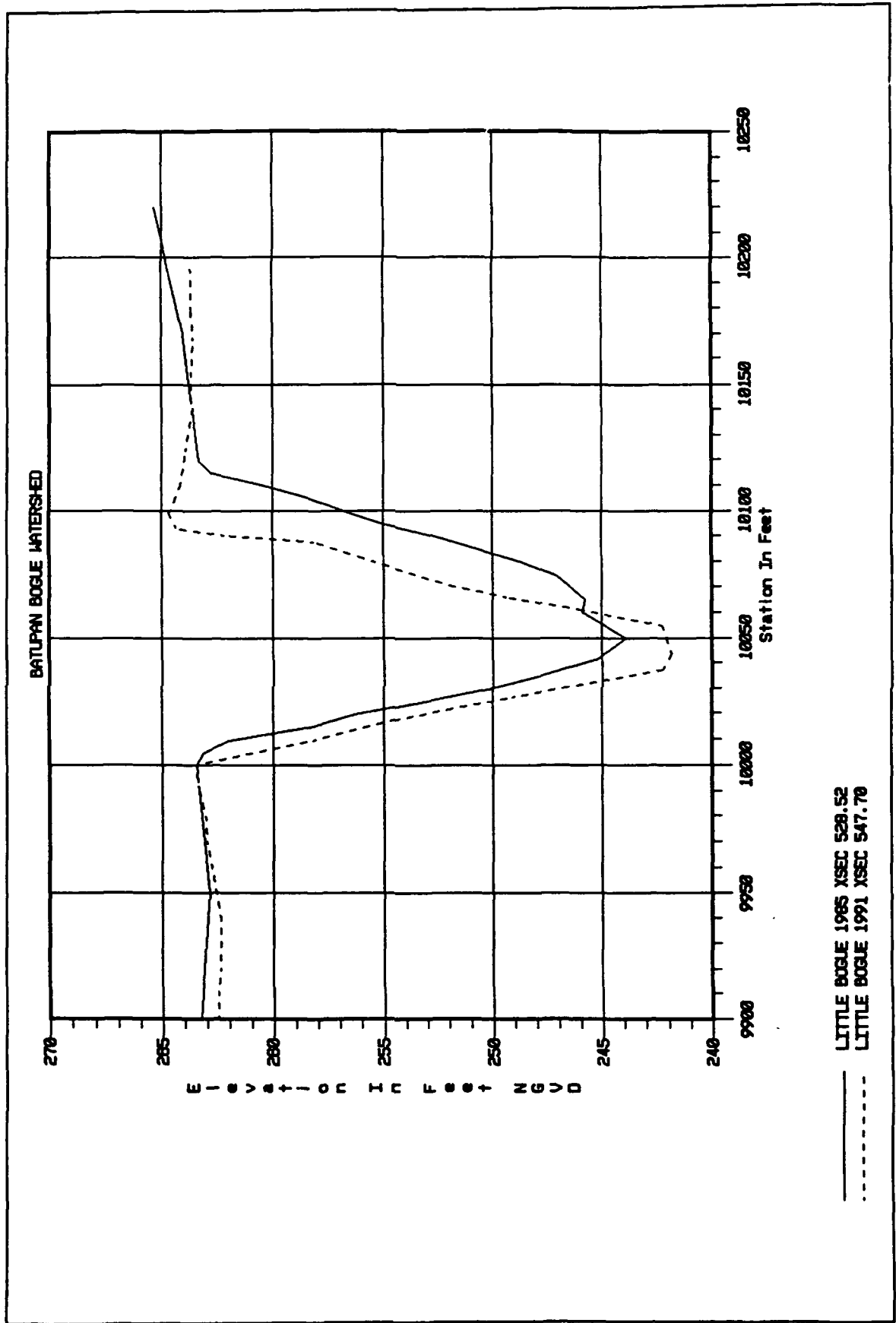
— LITTLE BOGUE 1985 XSEC 451.78
 - - - LITTLE BOGUE 1991 XSEC 478.25

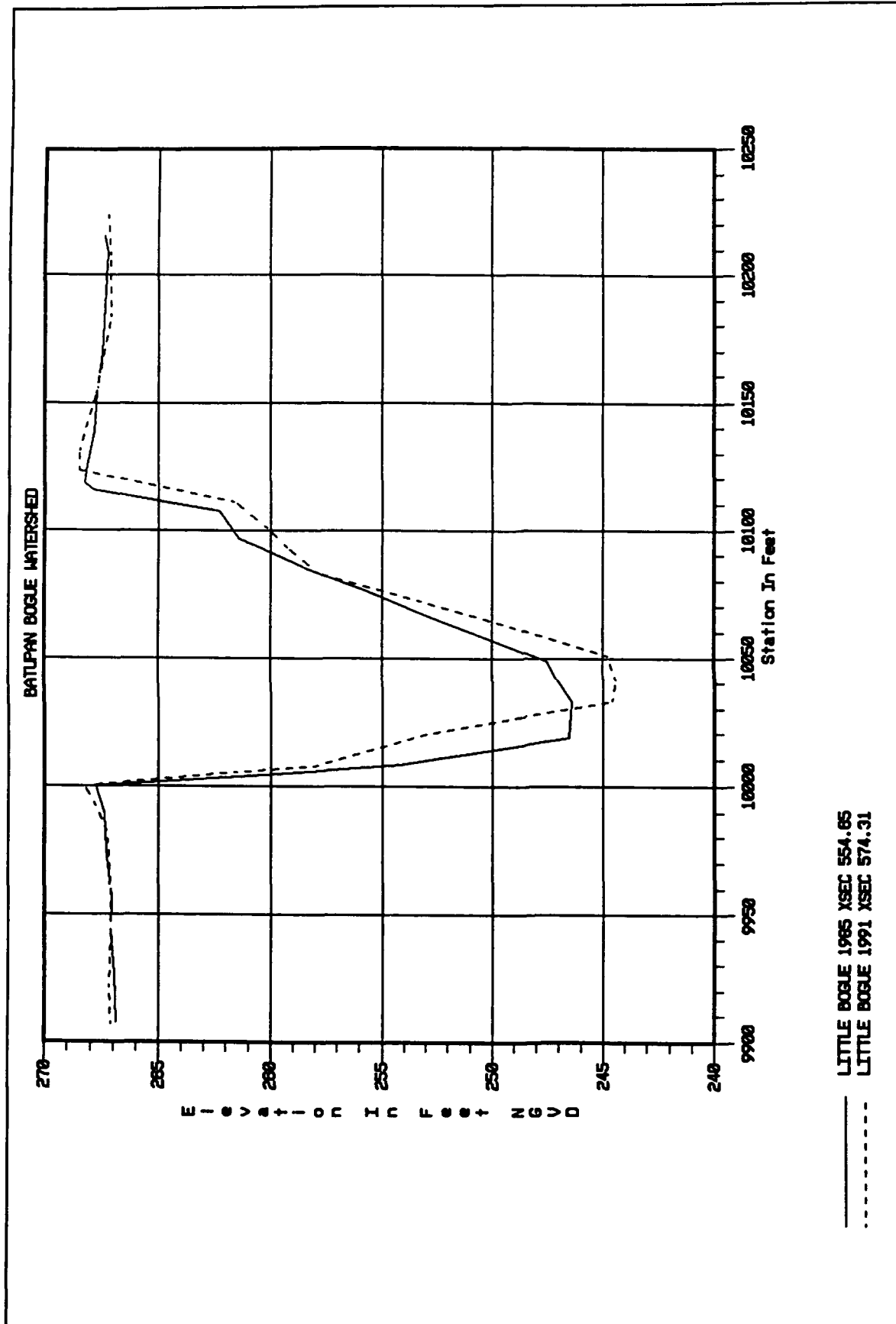


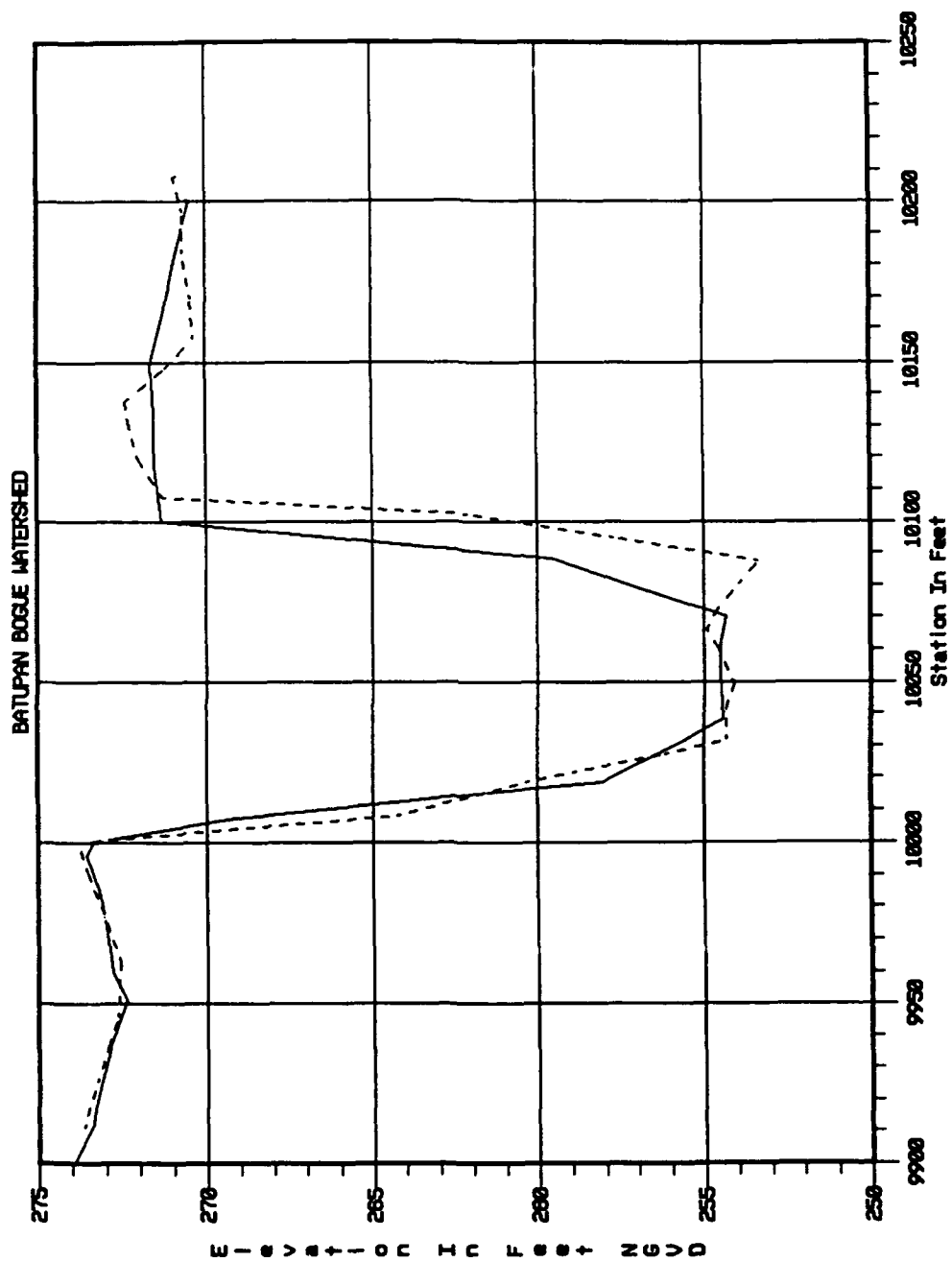
BATUPAN BOGLE WATERSHED



———— LITTLE BOGLE 1985 XSEC 508.00
 - - - - - LITTLE BOGLE 1991 XSEC 524.94







LITTLE BOGUE 1985 XSEC 581.80
LITTLE BOGUE 1991 XSEC 881.28

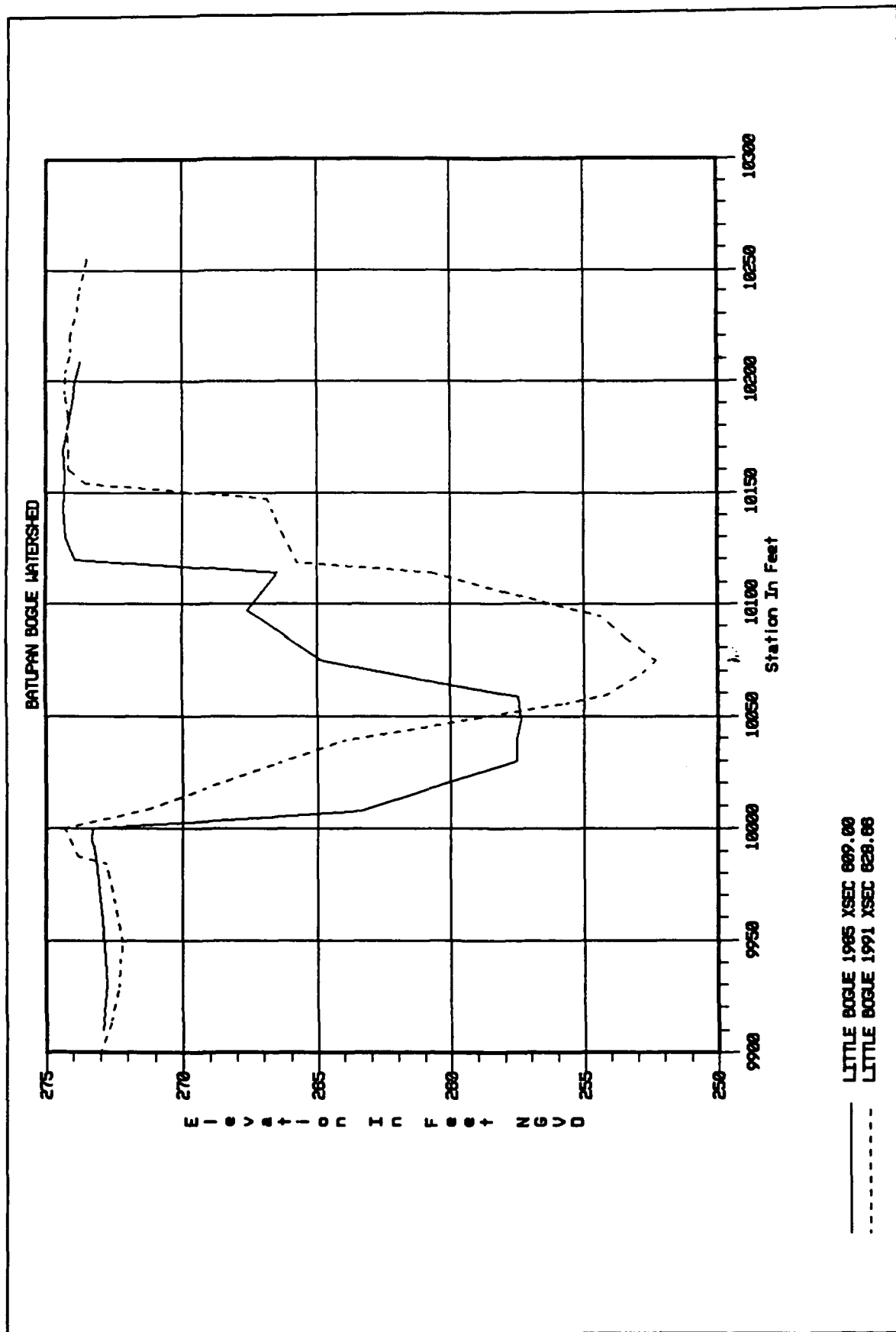
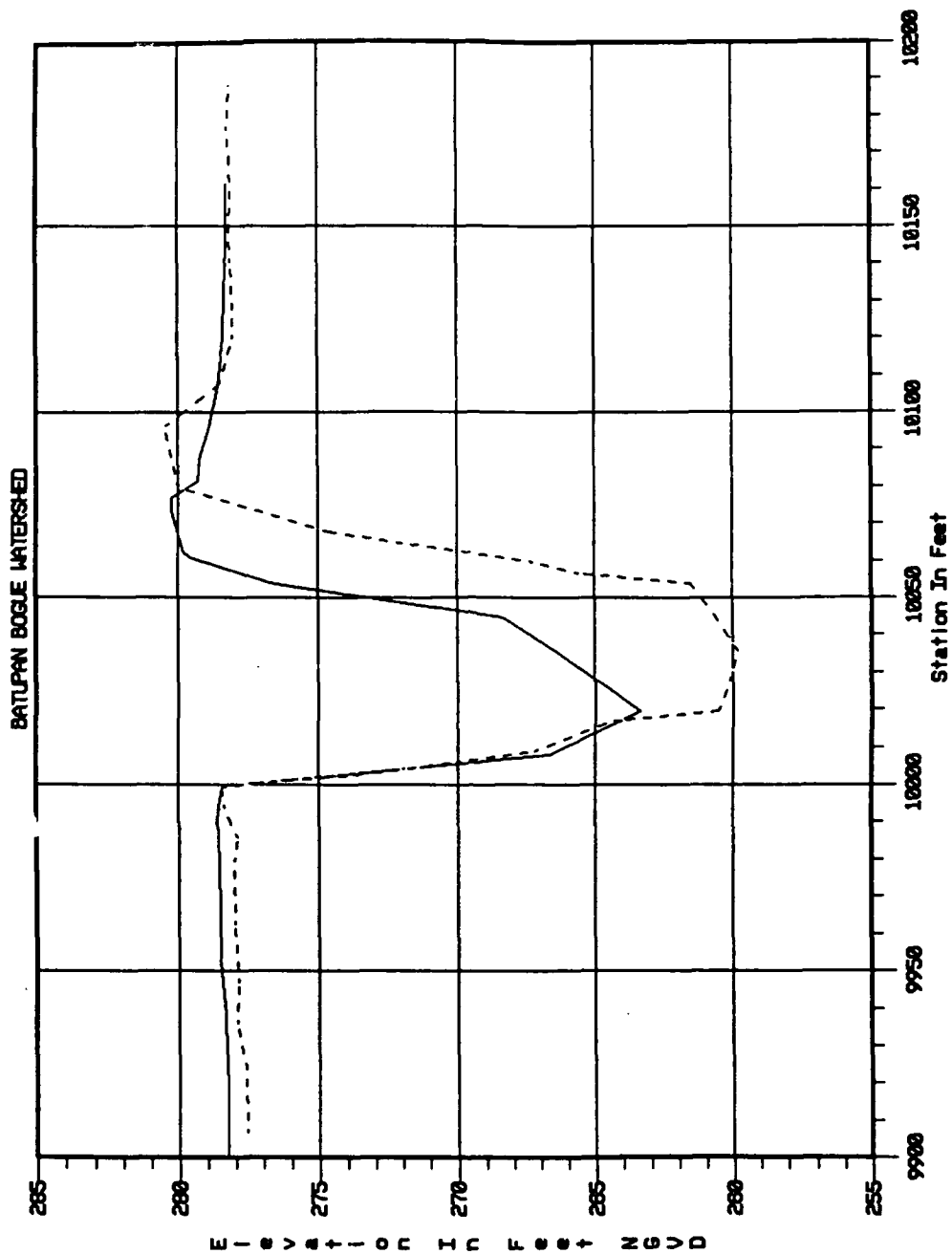
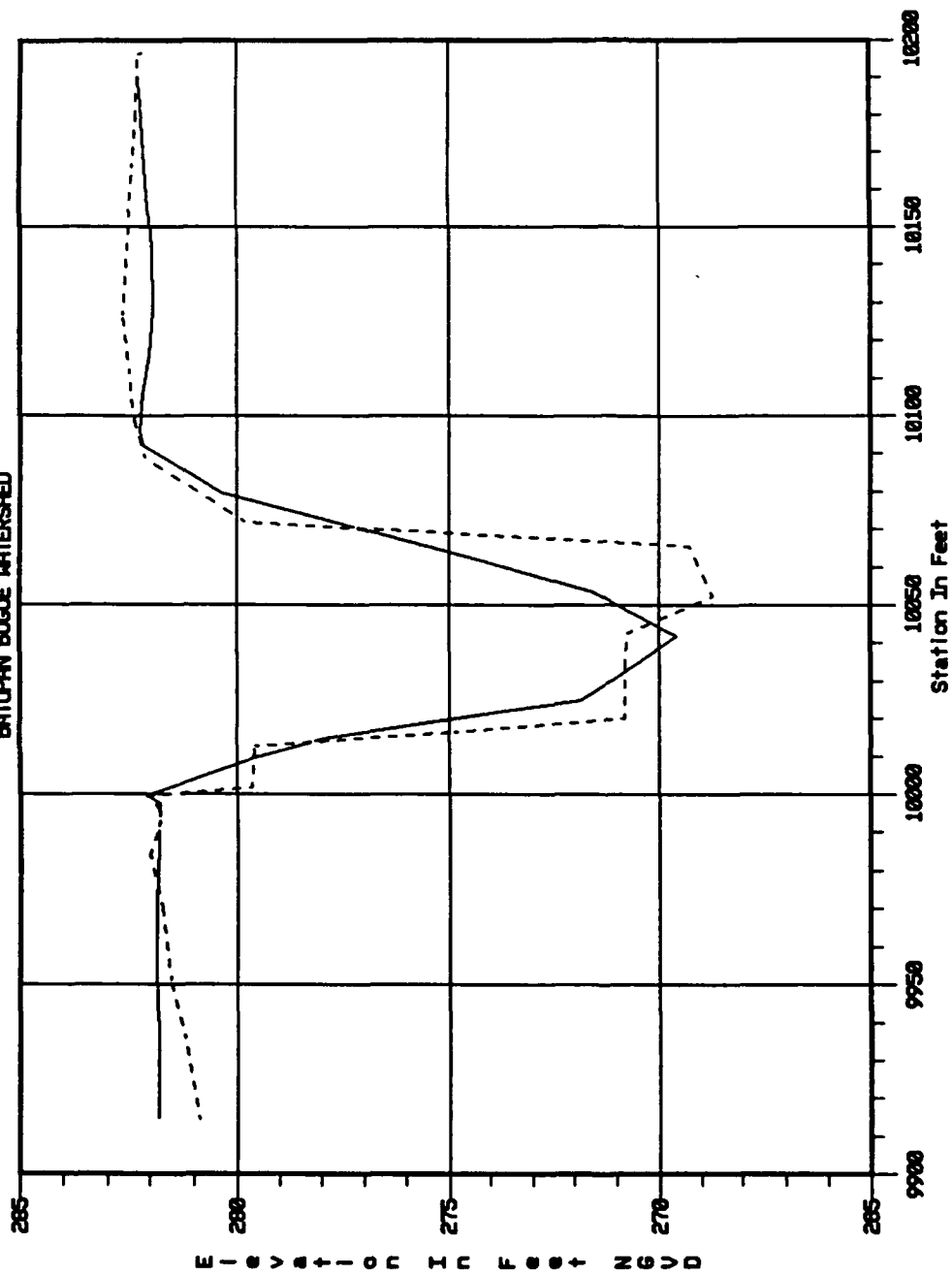


PLATE C224



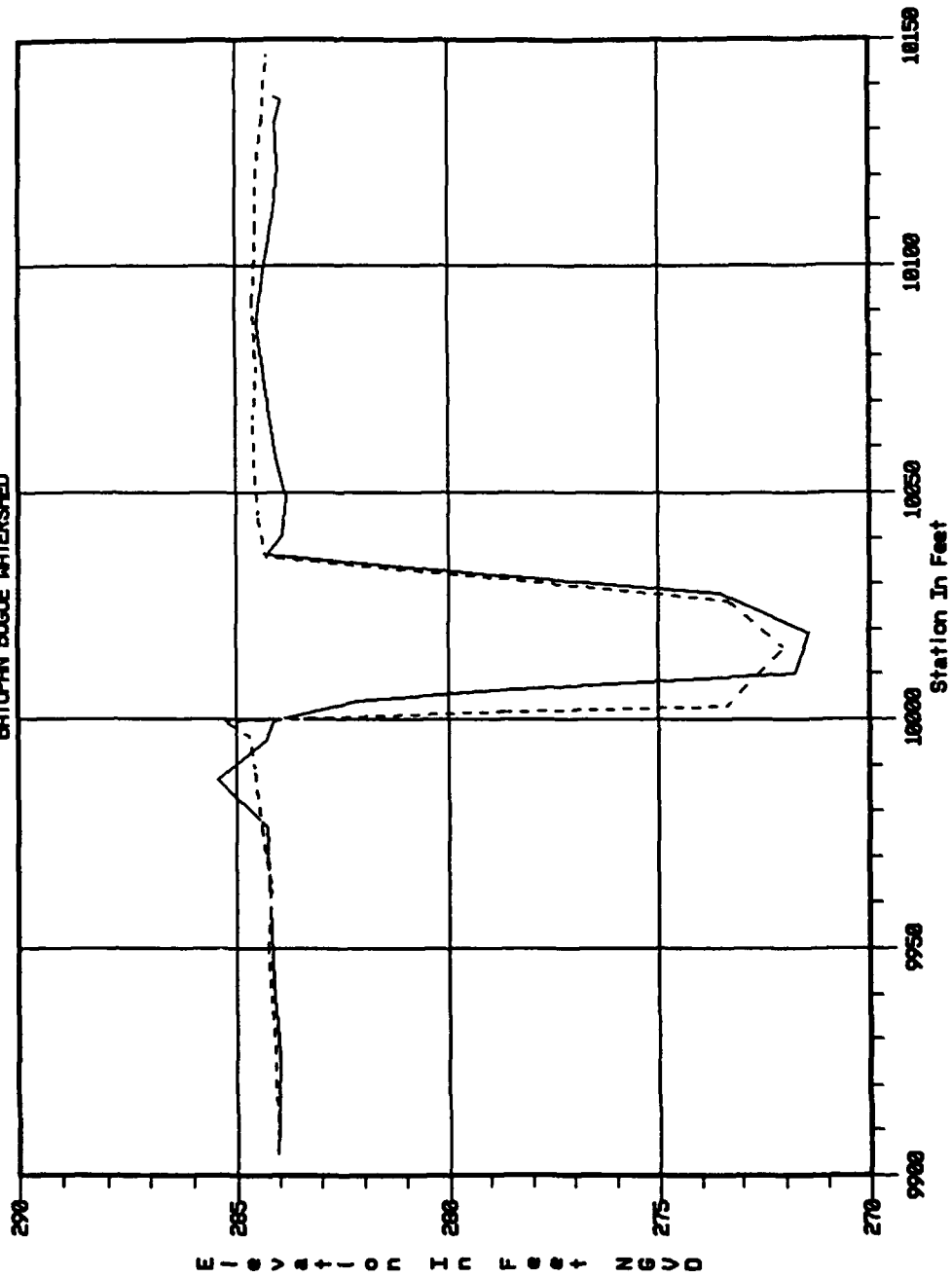
— LITTLE BOGUE 1985 XSEC 839.00
--- LITTLE BOGUE 1991 XSEC 854.90

BATUPAN BOGLE WATERSHED



— LITTLE BOGLE 1985 XSEC 879.30
 - - - LITTLE BOGLE 1991 XSEC 895.85

BATUPAN BOGUE WATERSHED



———— LITTLE BOGUE 1985 XSEC 789.90
 - - - - - LITTLE BOGUE 1991 XSEC 726.05

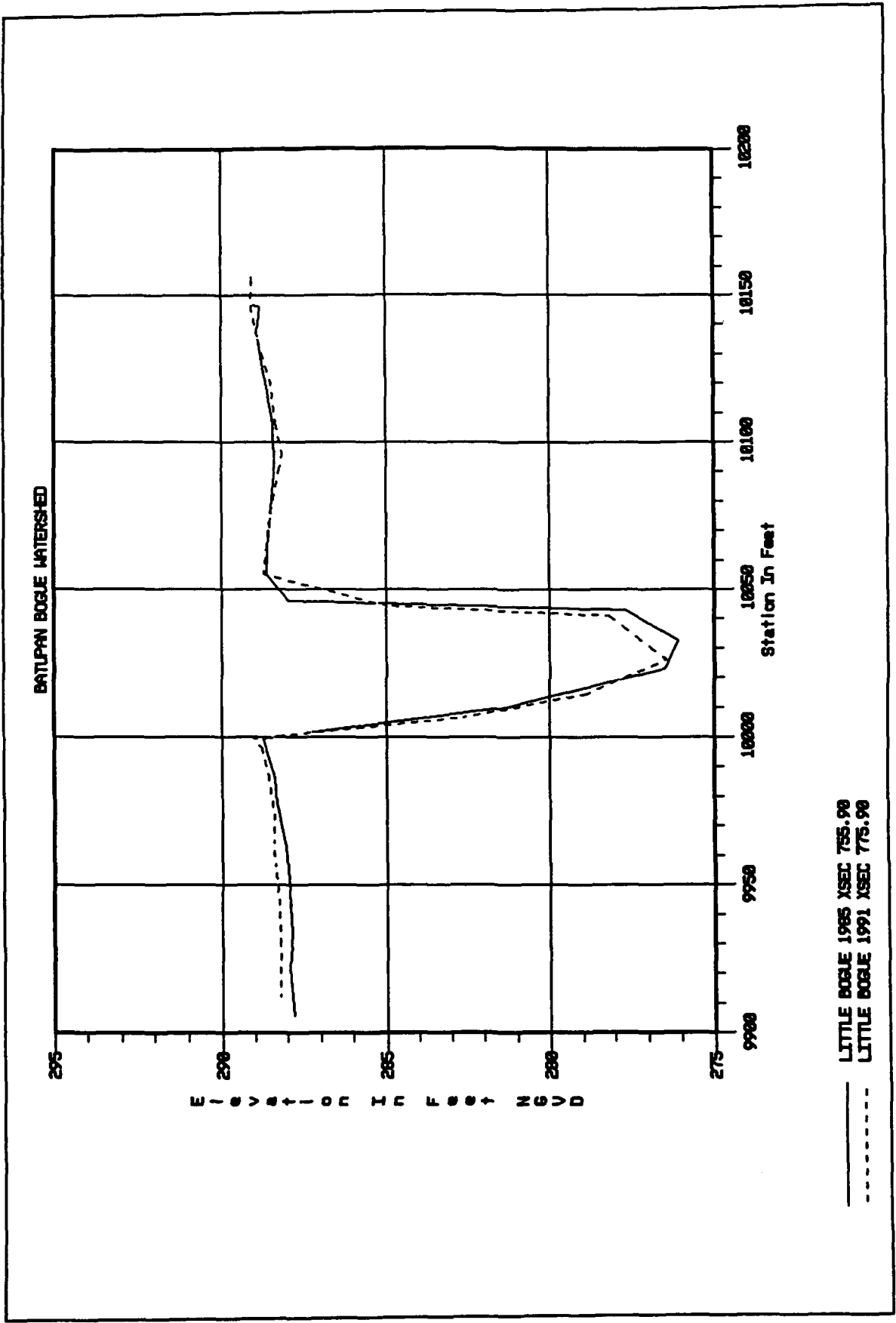
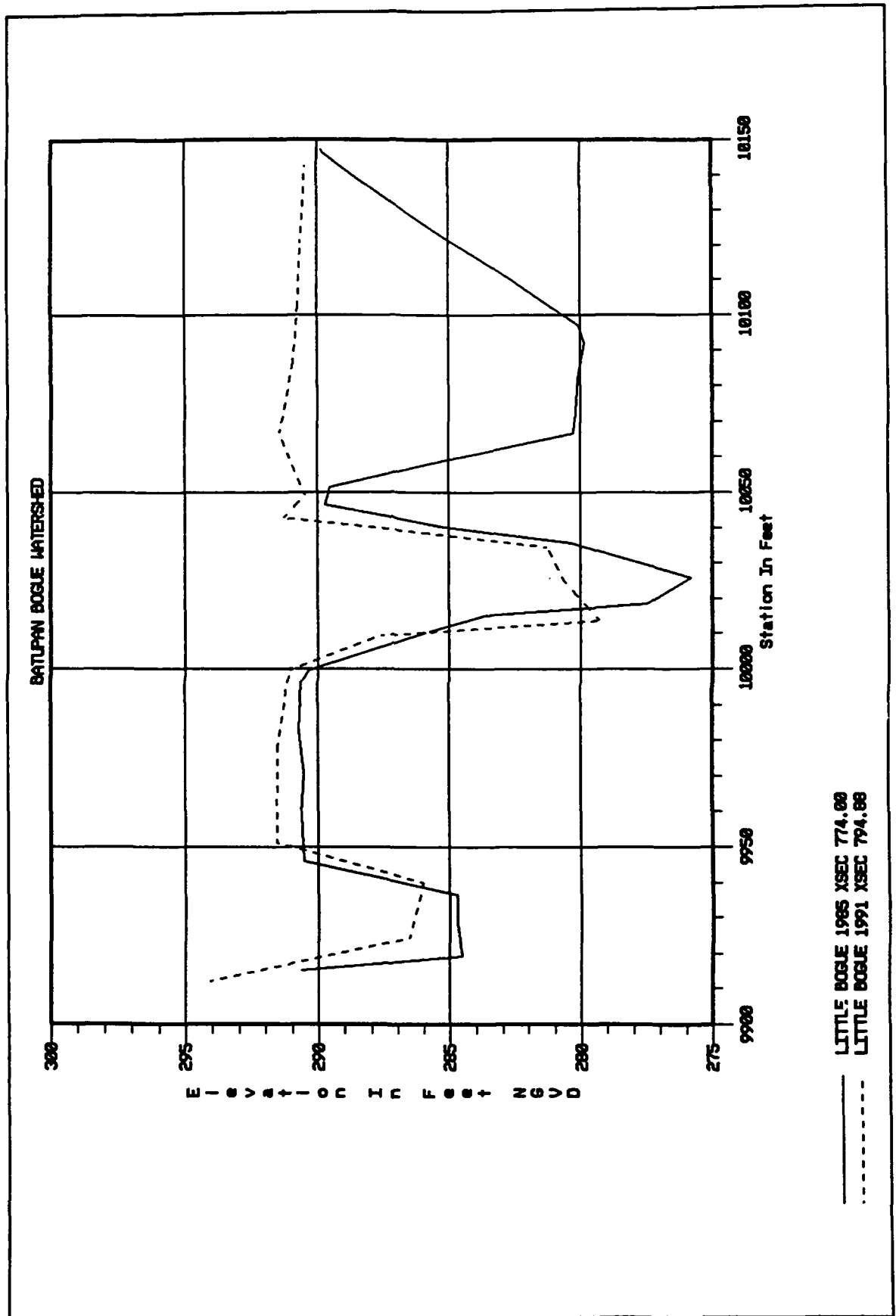
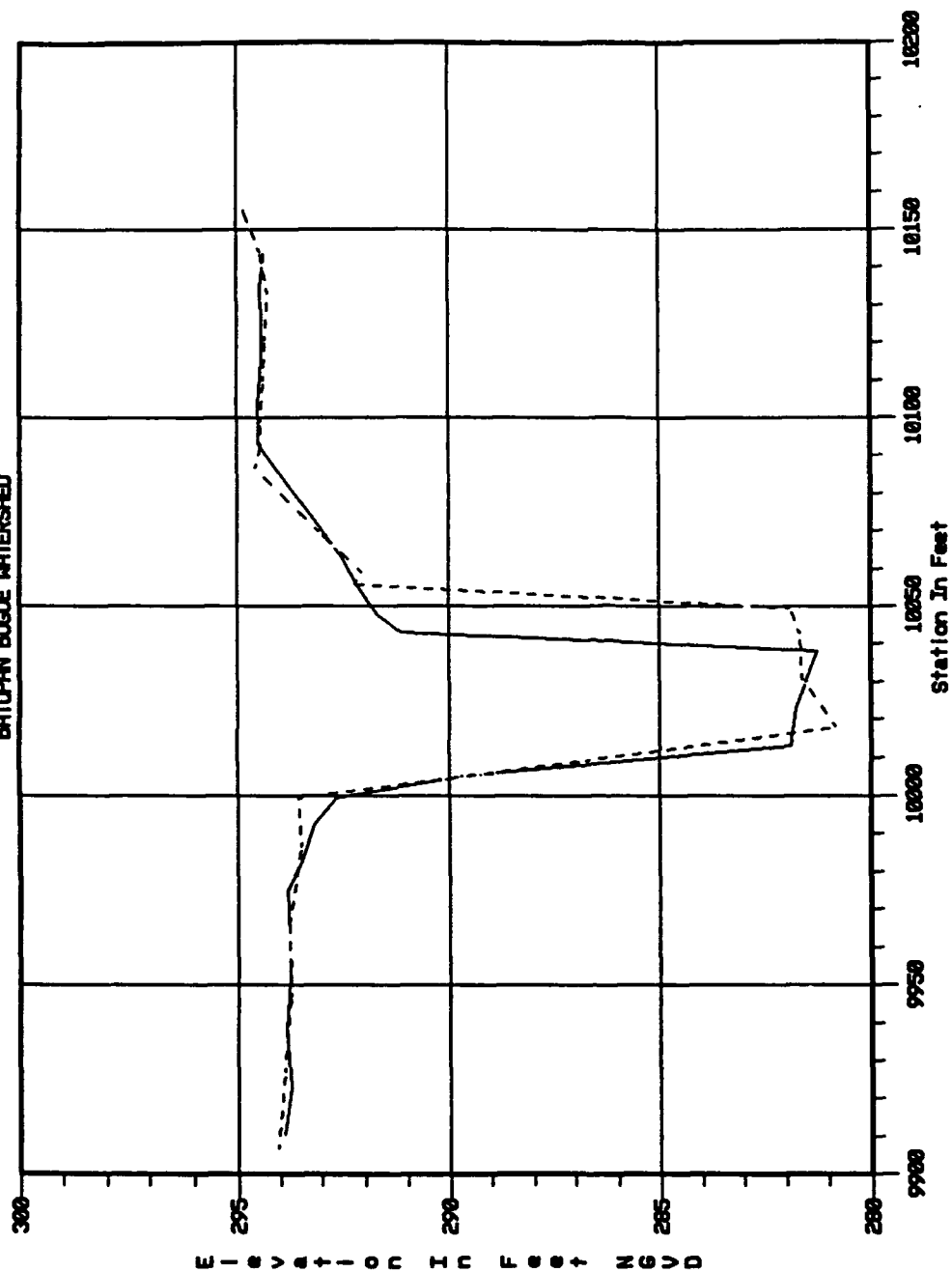


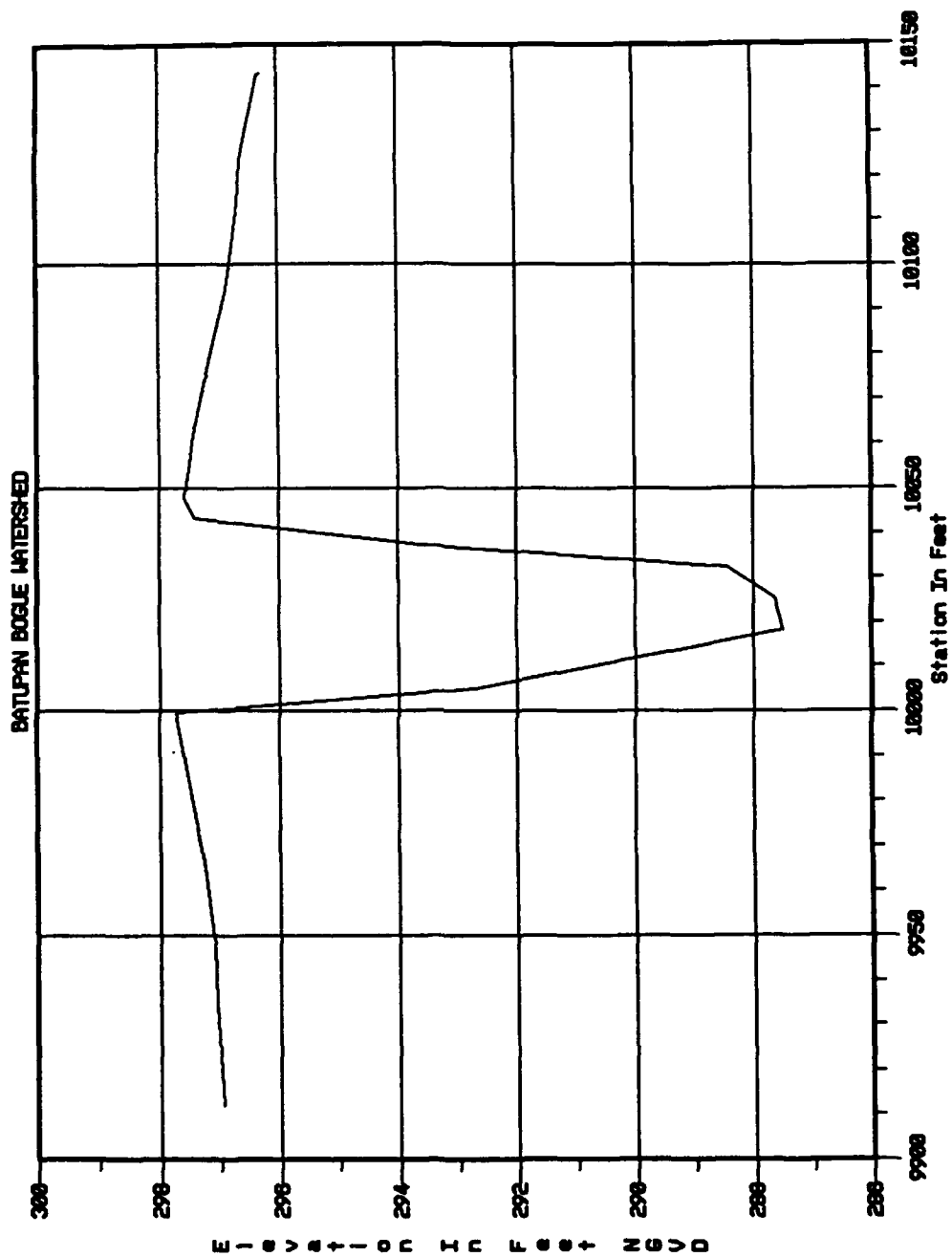
PLATE C228



BATUPAN BOGLE WATERSHED



— LITTLE BOGLE 1965 XSEC 800.00
 - - - LITTLE BOGLE 1991 XSEC 821.00



——— LITTLE BOGLE 1965 XSEC 831.60

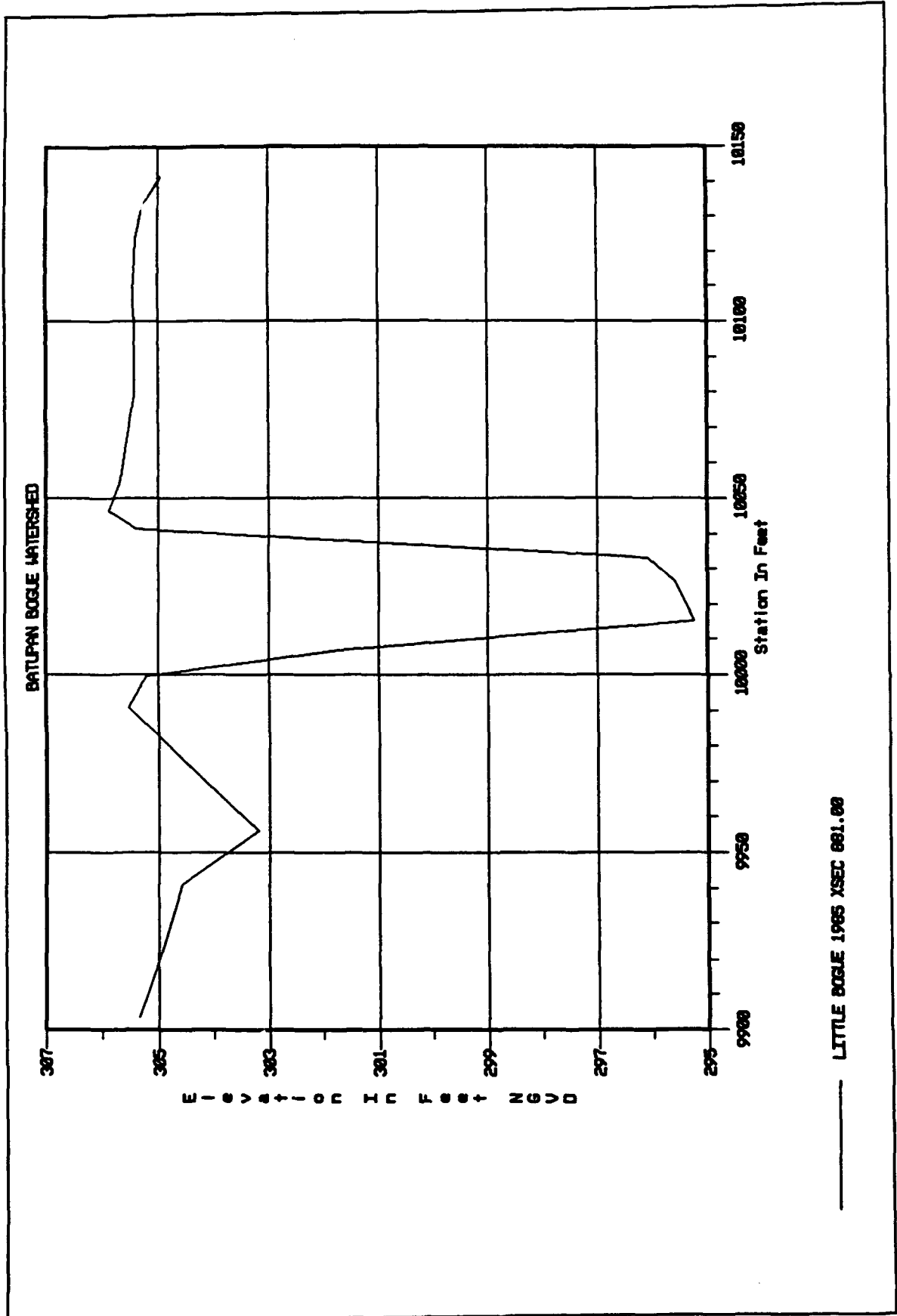
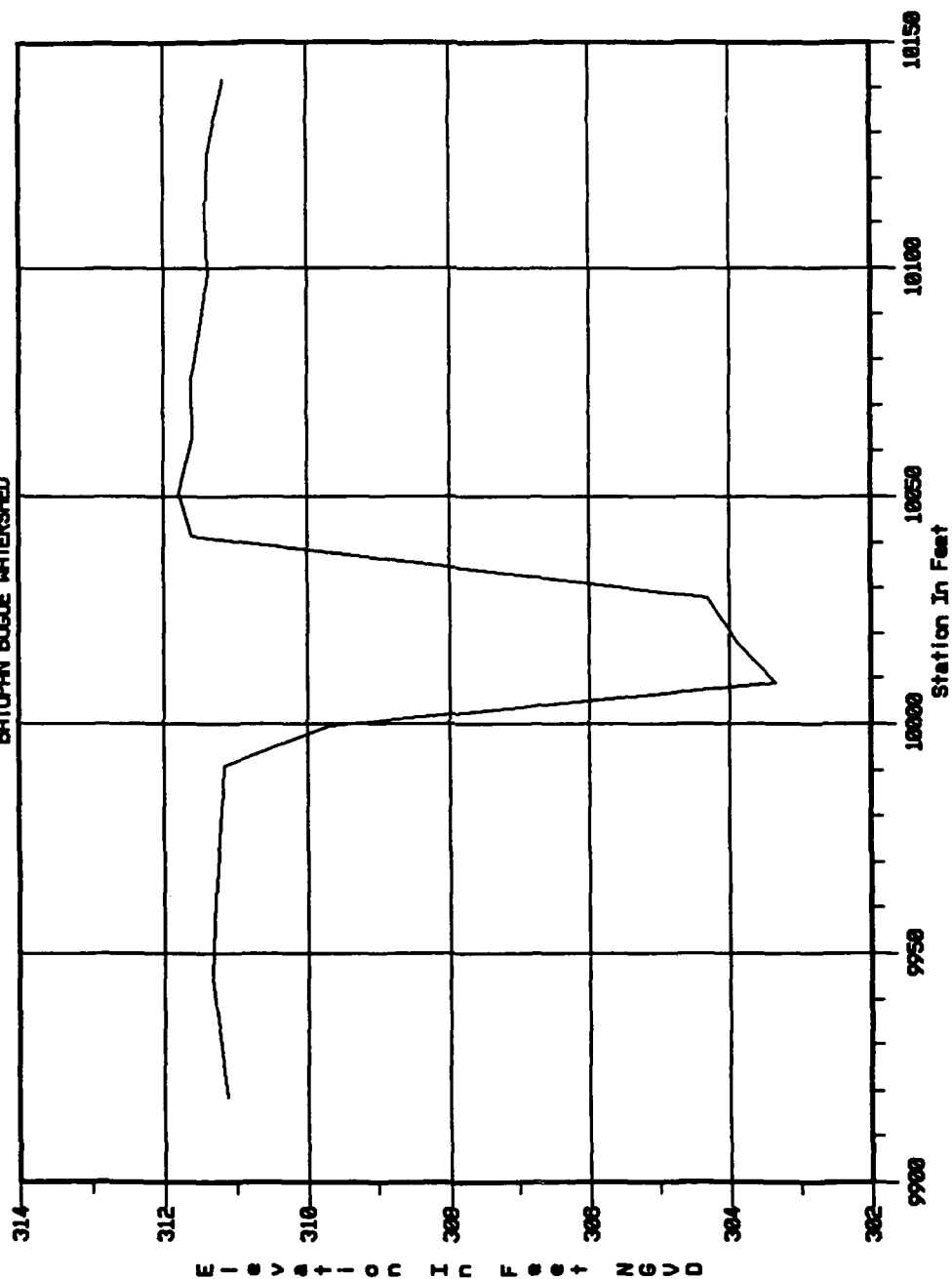


PLATE C232

BATUPAN BOGUE WATERSHED



— LITTLE BOGUE 1985 XSEC 929.00

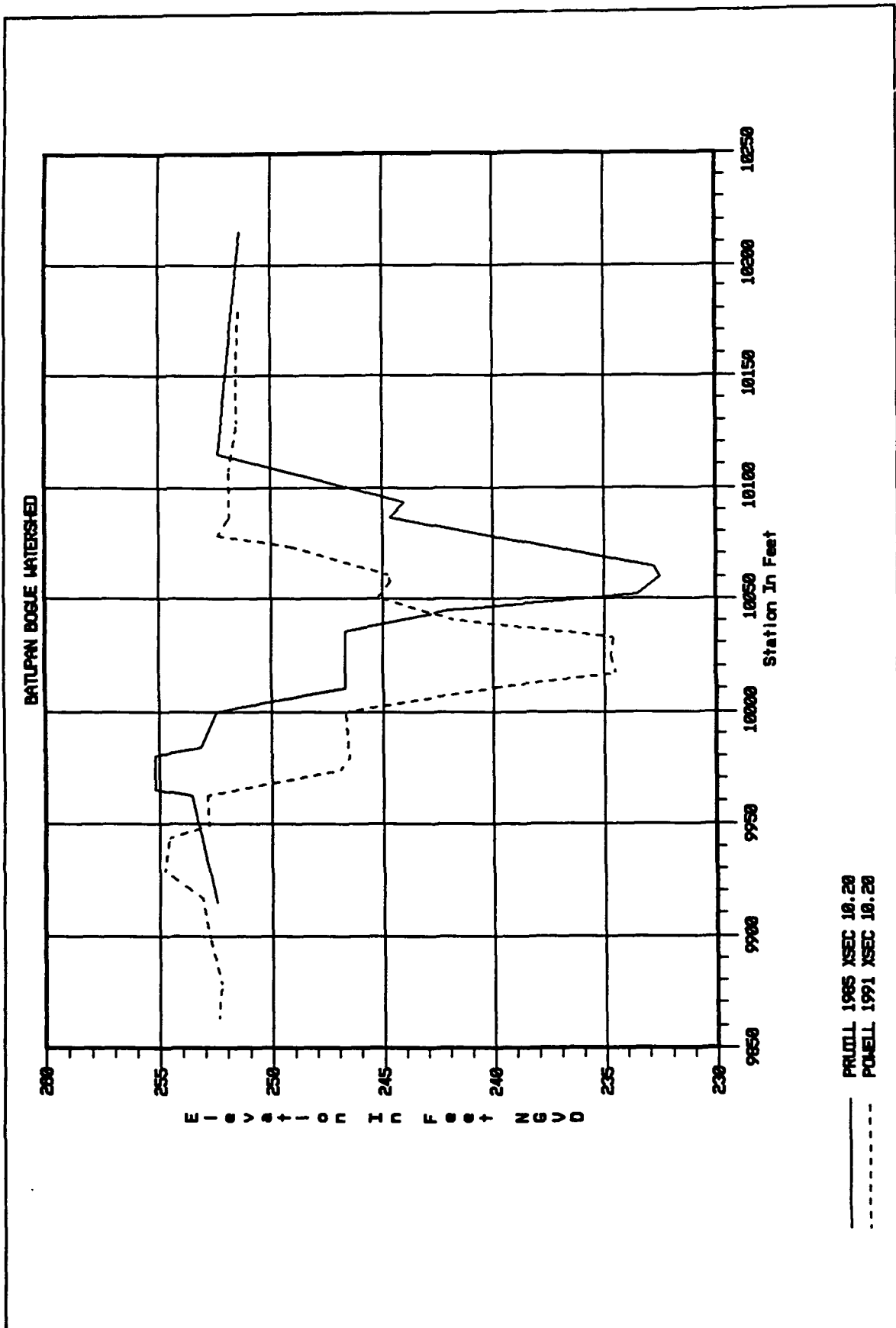
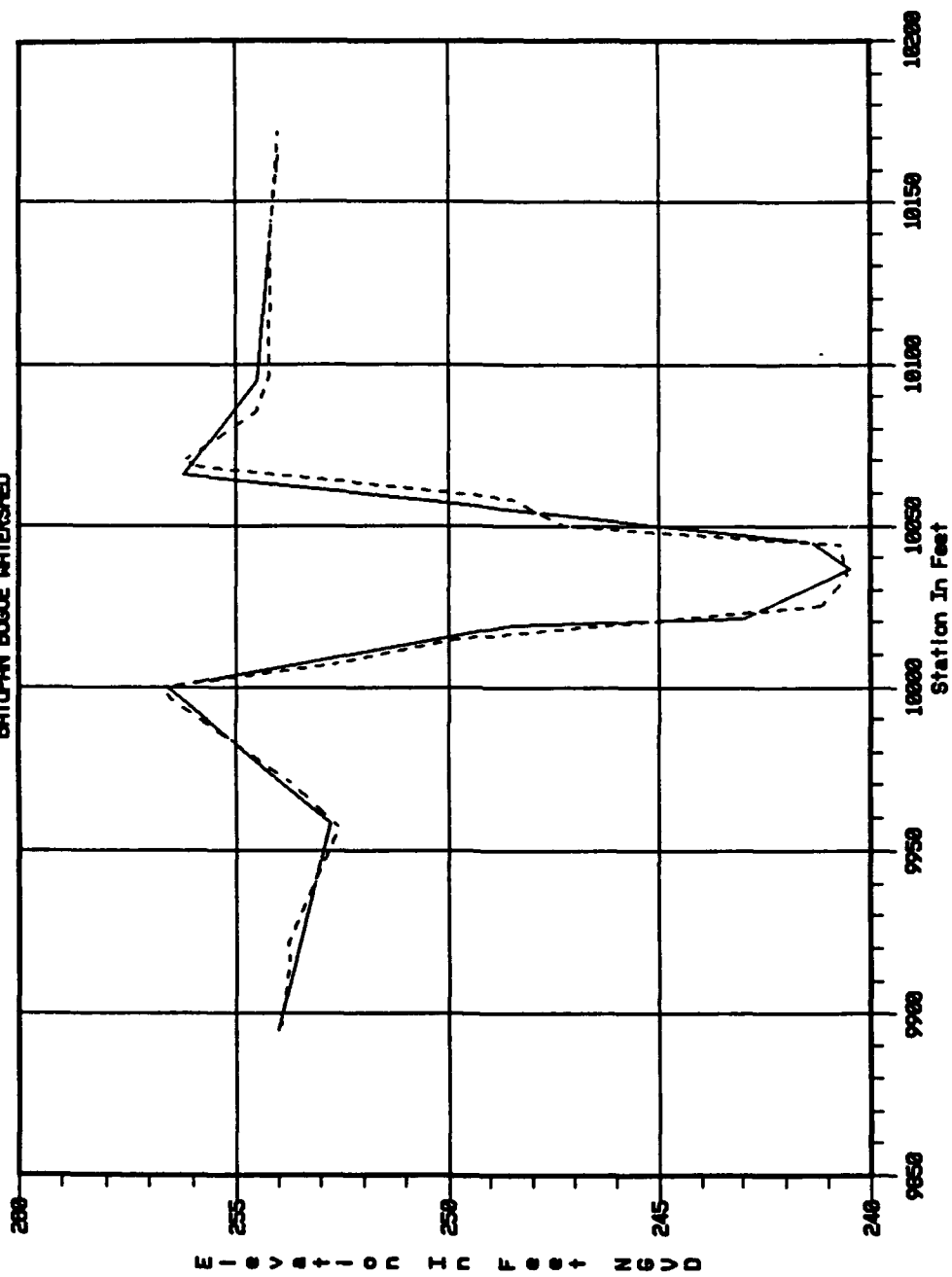


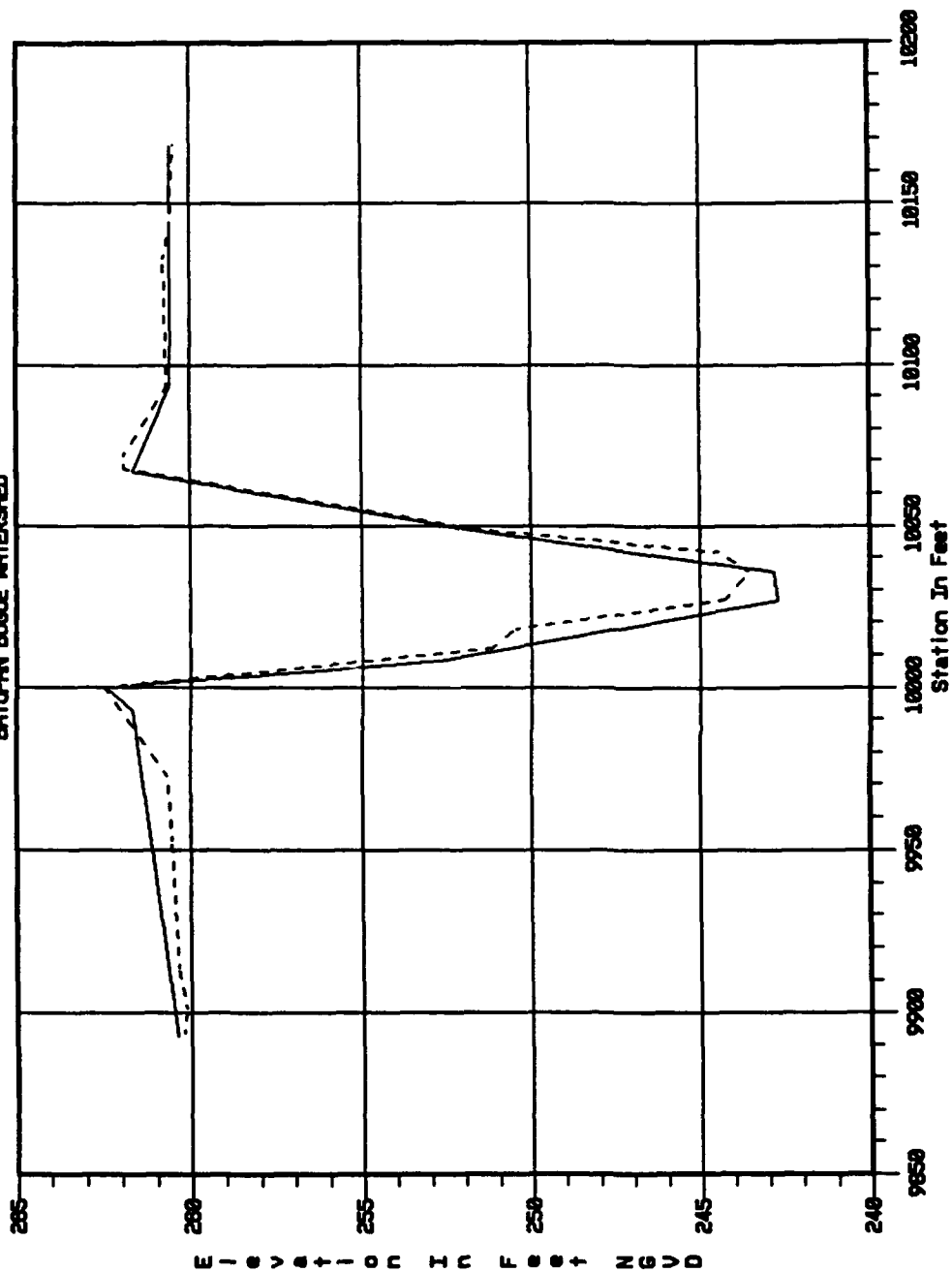
PLATE C234

BATUPAN BOGLE WATERSHED

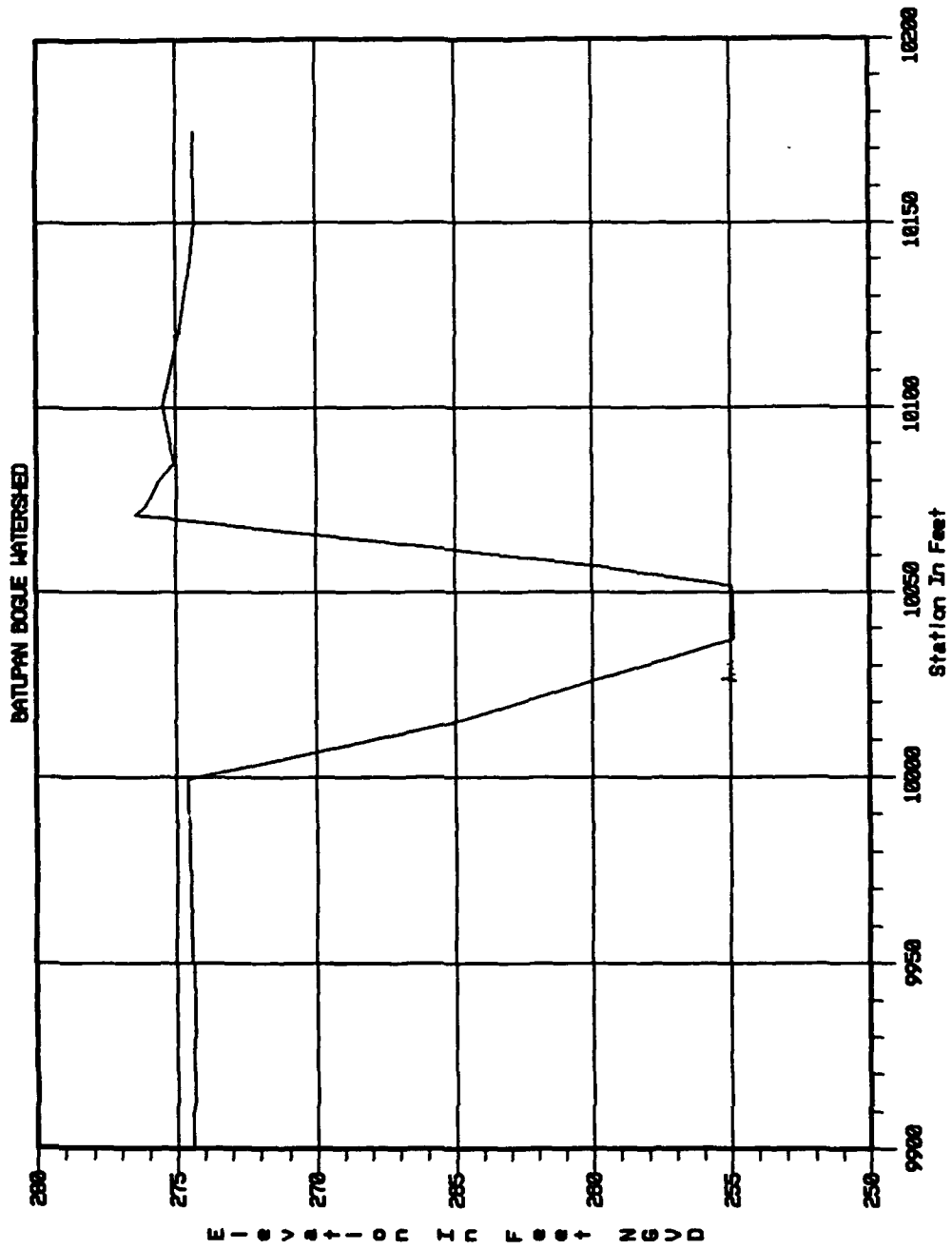


PRUTLL 1985 XSEC 37.00
POWELL 1991 XSEC 37.00

BATUPAN BOGLE WATERSHED

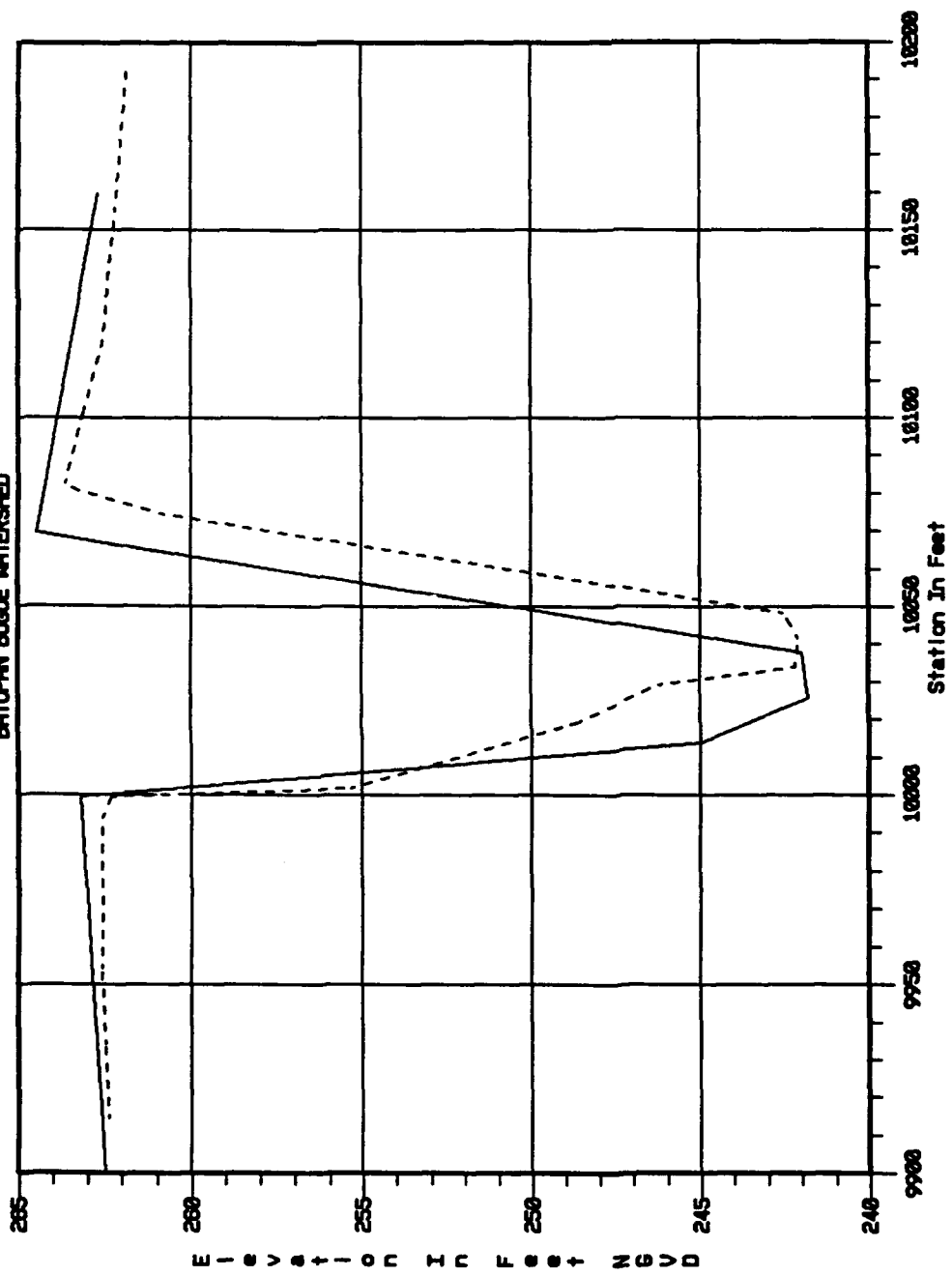


PRUILL 1985 XSEC 84.00
POUELL 1991 XSEC 65.00

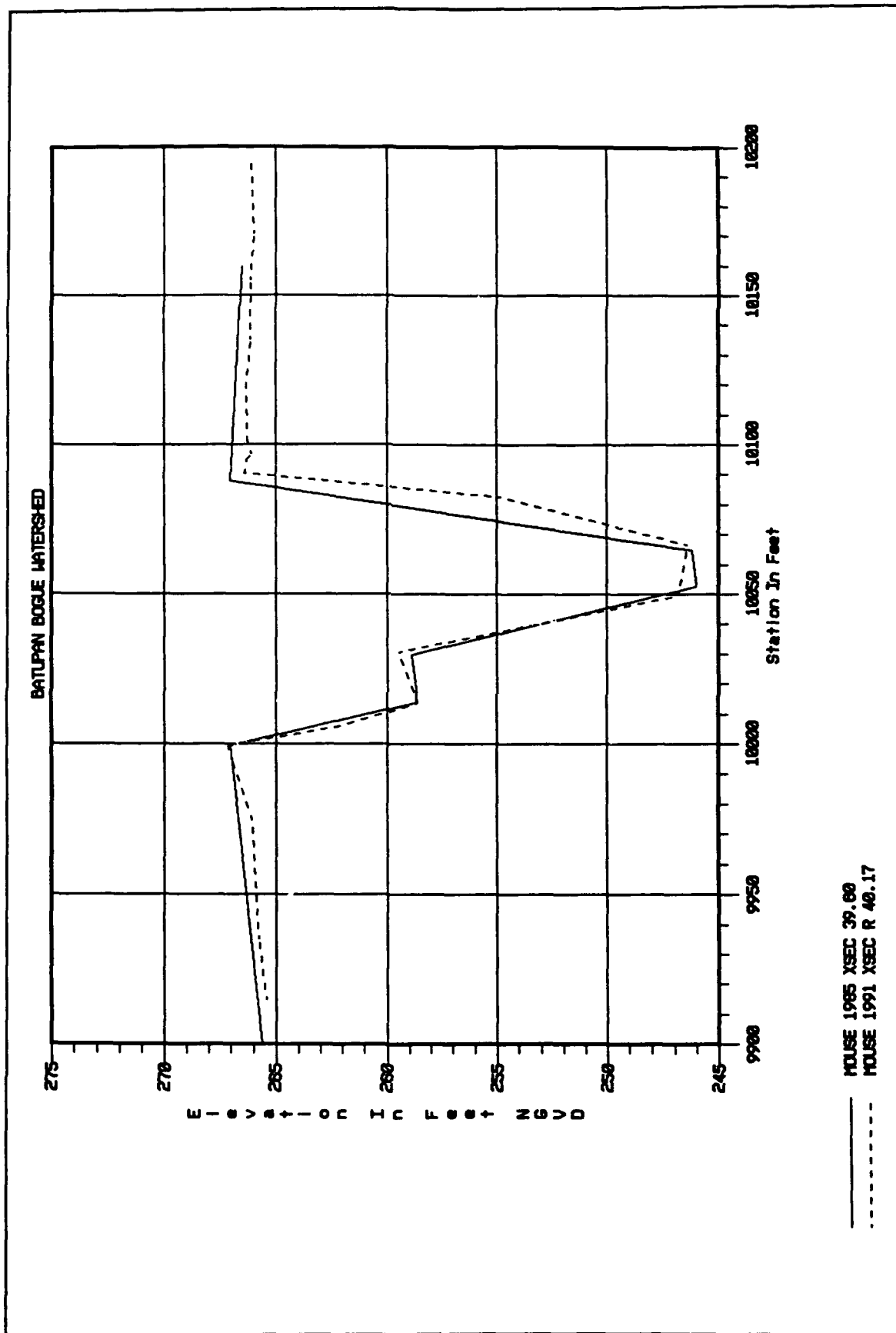


POJELL 1991 XSEC 131.20

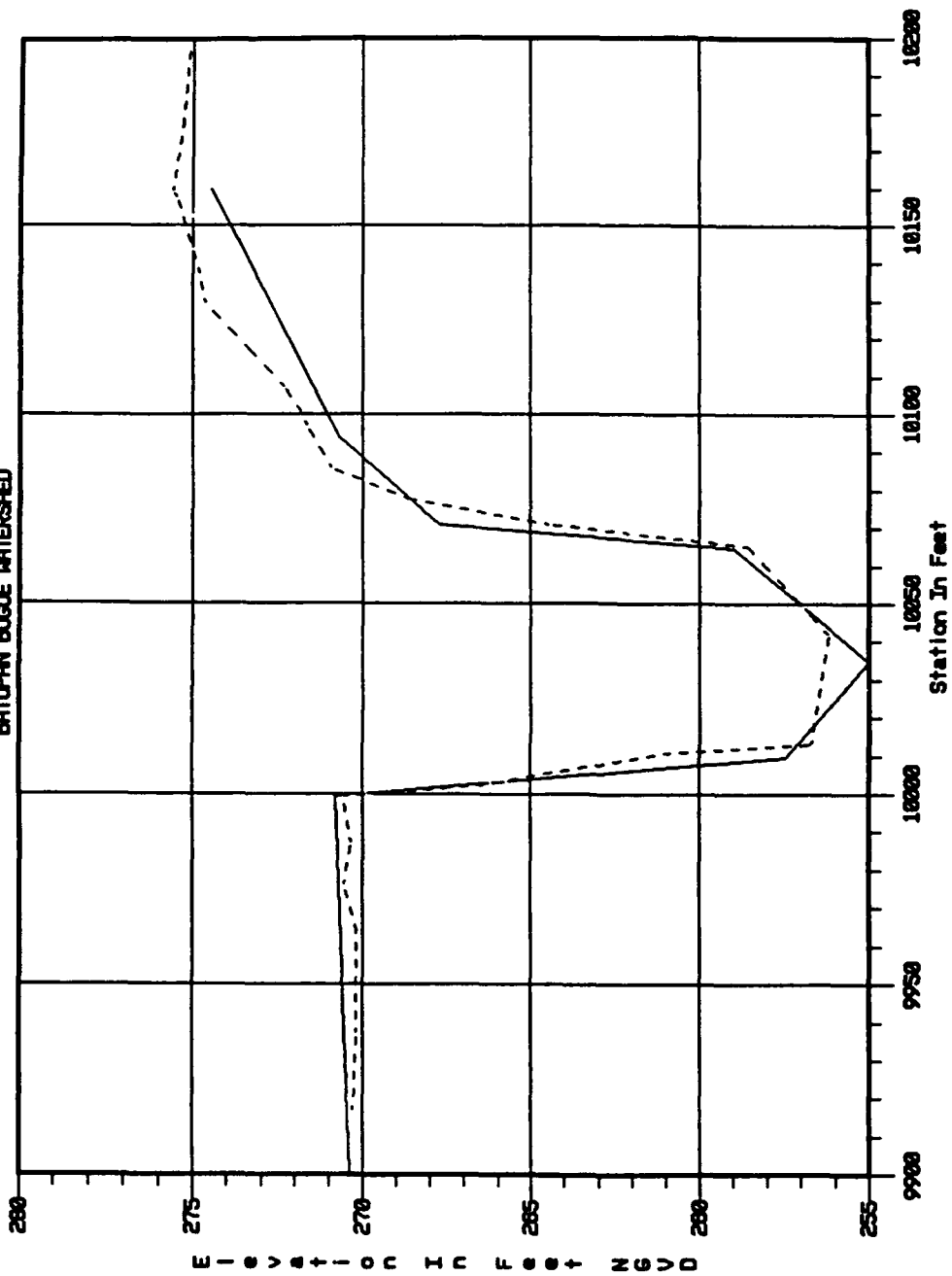
BATUPAN BOGLE WATERSHED



— MOUSE 1985 XSEC 14.40
 - - - MOUSE 1991 XSEC R 14.52

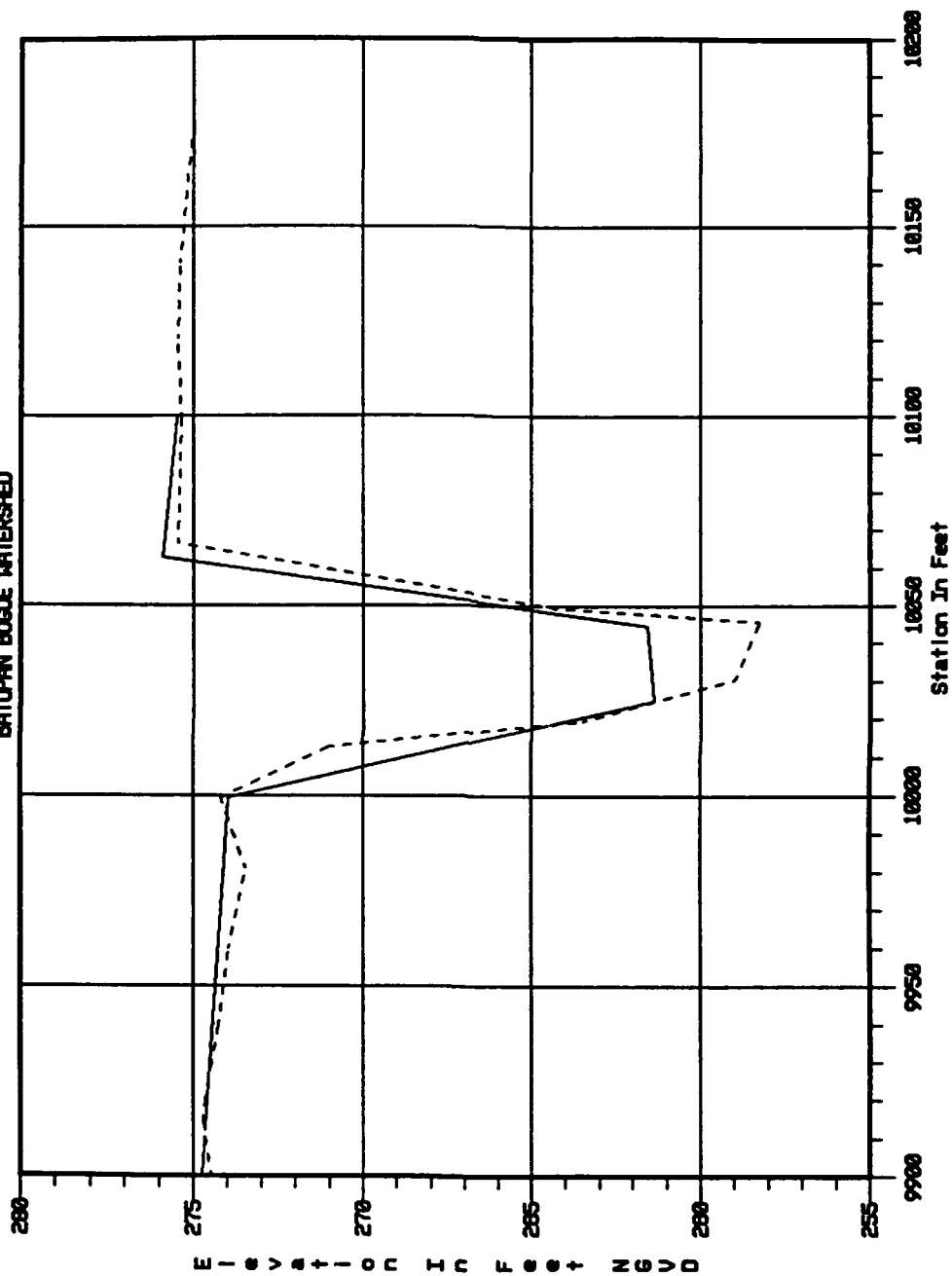


BATUPAN BOQUE WATERSHED



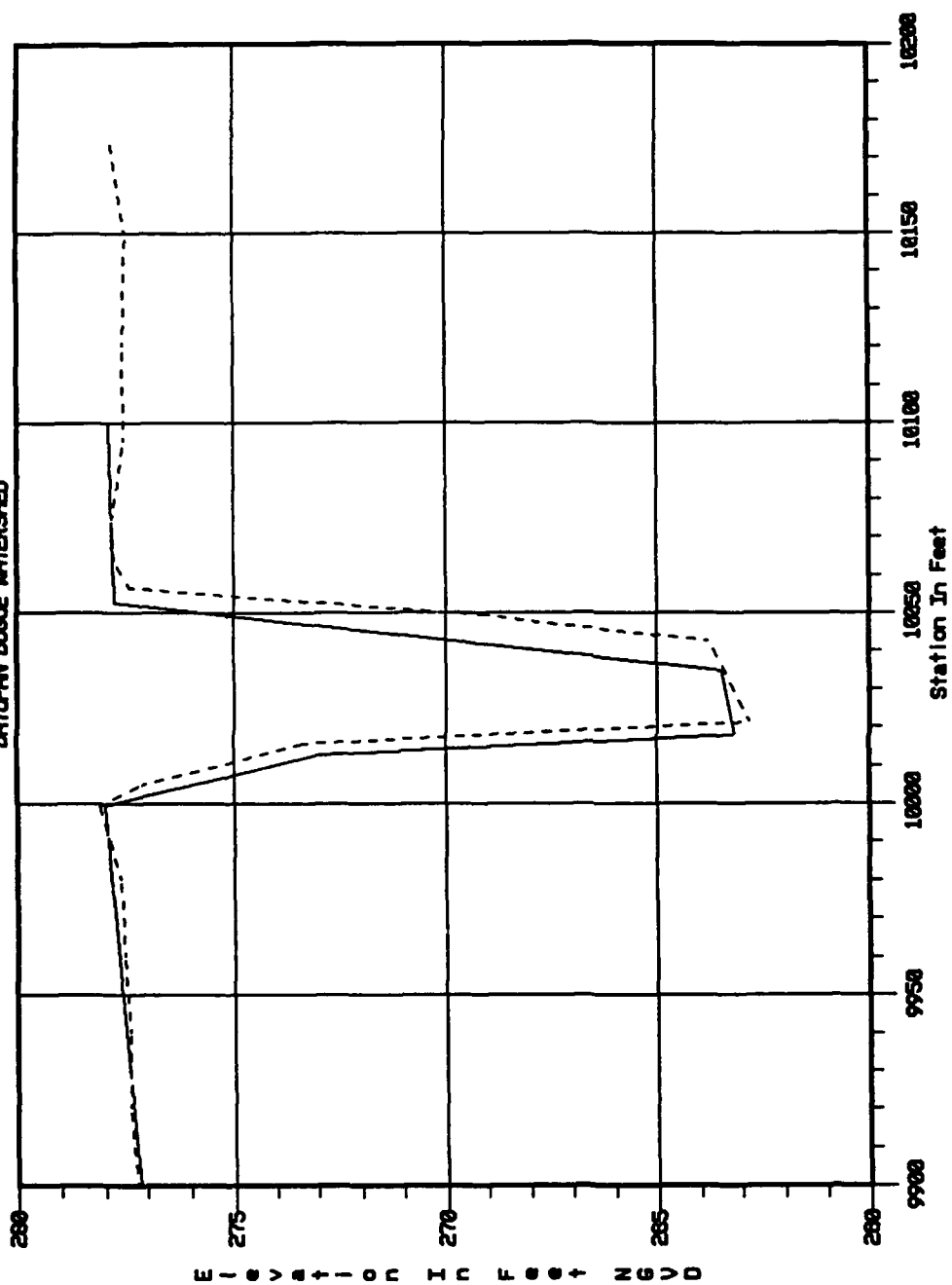
— HOUSE 1965 XSEC R 61.45
 - - - HOUSE 1991 XSEC R 63.35

BATUPAN BOSJE WATERSHED

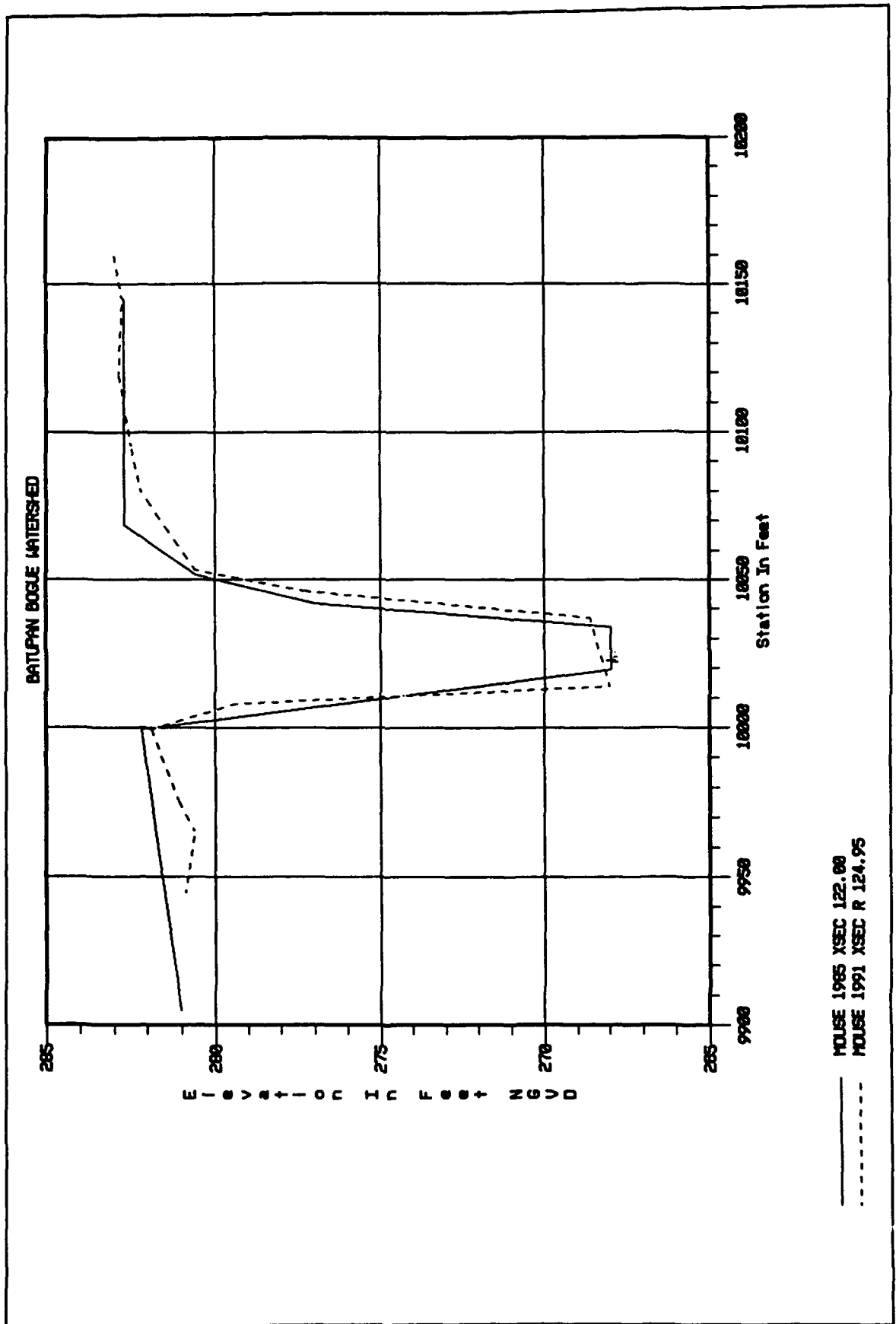


HOUSE 1985 XSEC 84.58
HOUSE 1991 XSEC R 88.59

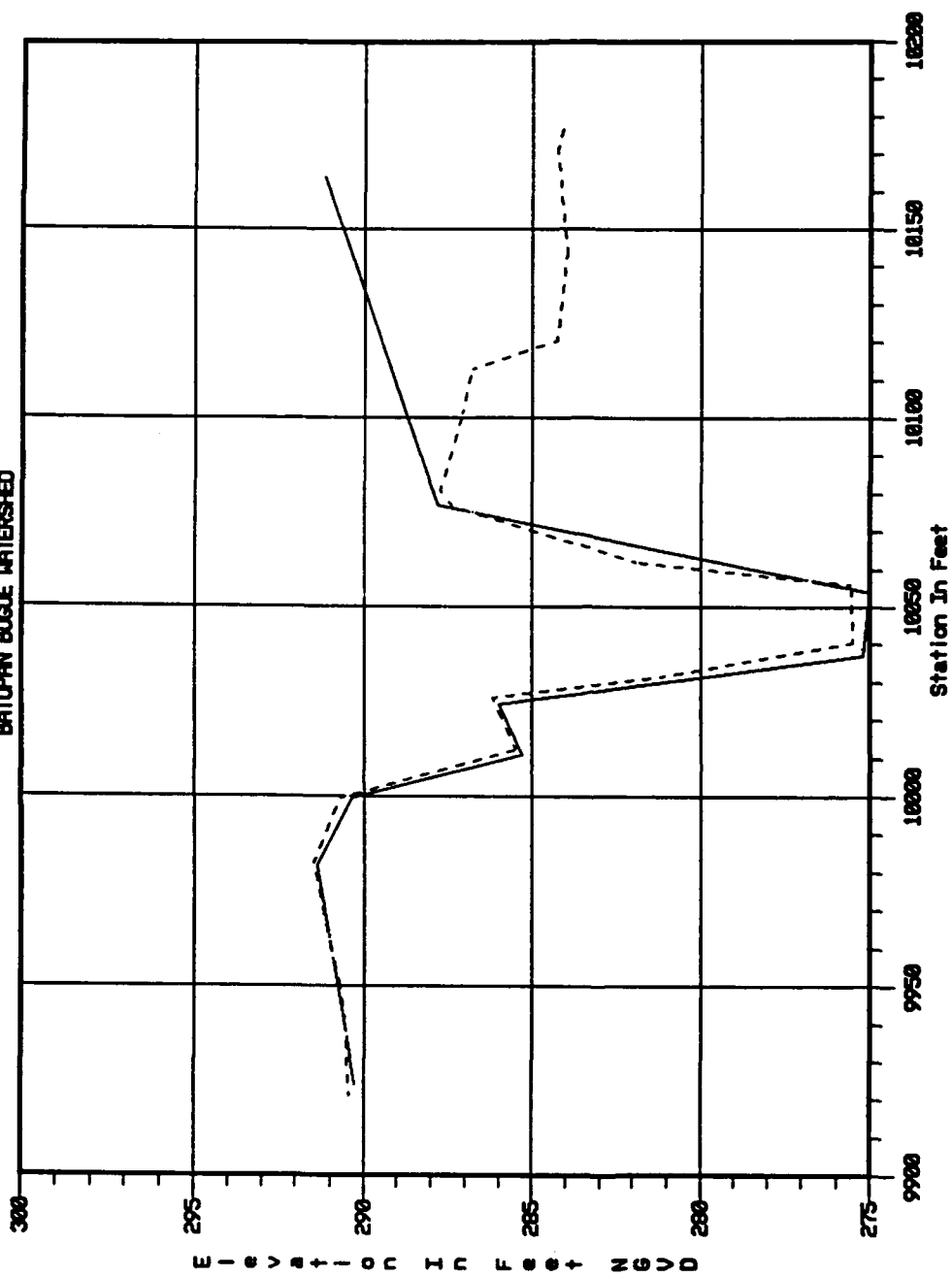
BATUPAN BOGLE WATERSHED



——— MOUSE 1985 XSEC 102.05
 - - - - - MOUSE 1991 XSEC R 104.50

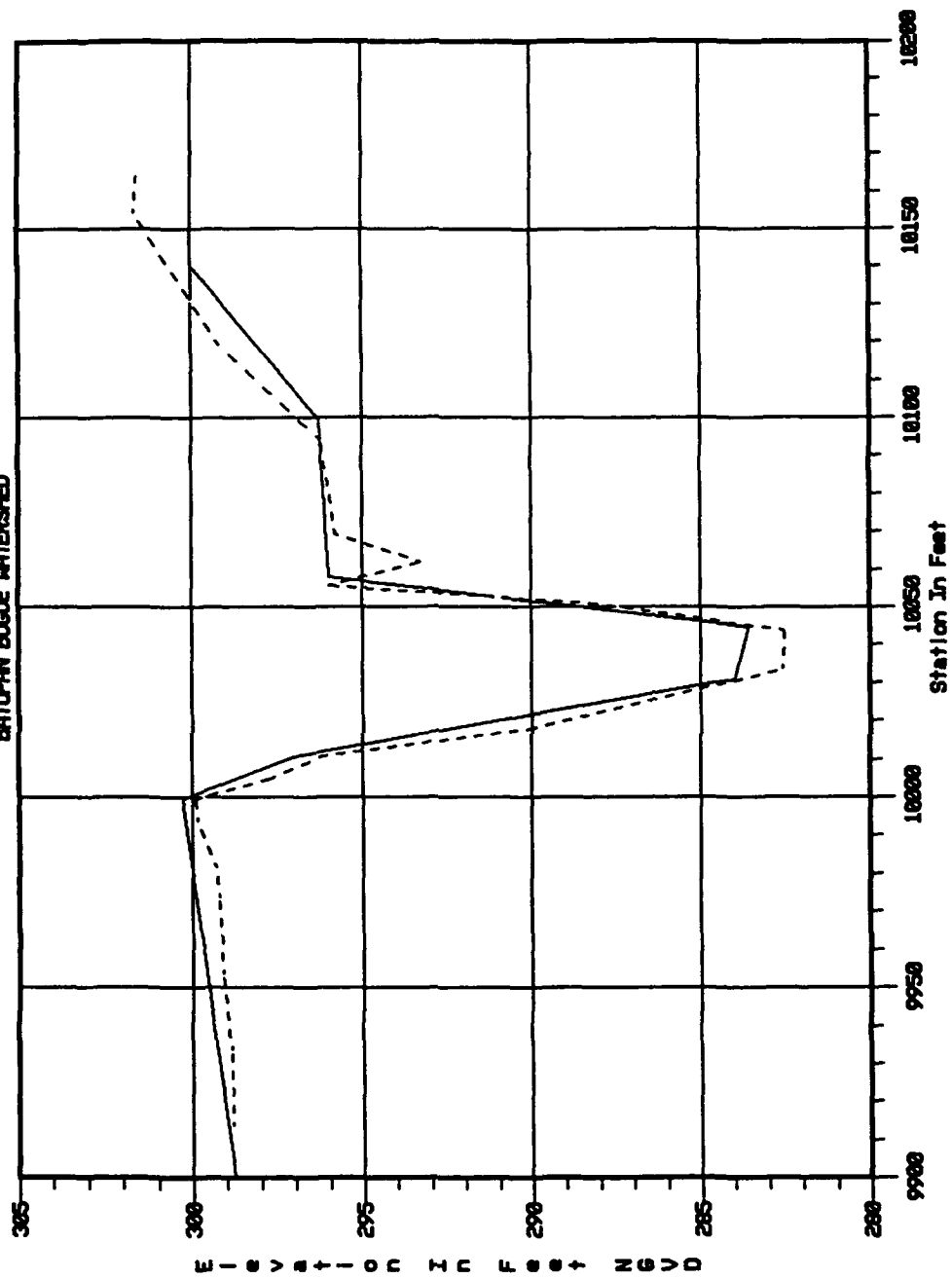


BATUPAN BOGLE WATERSHED



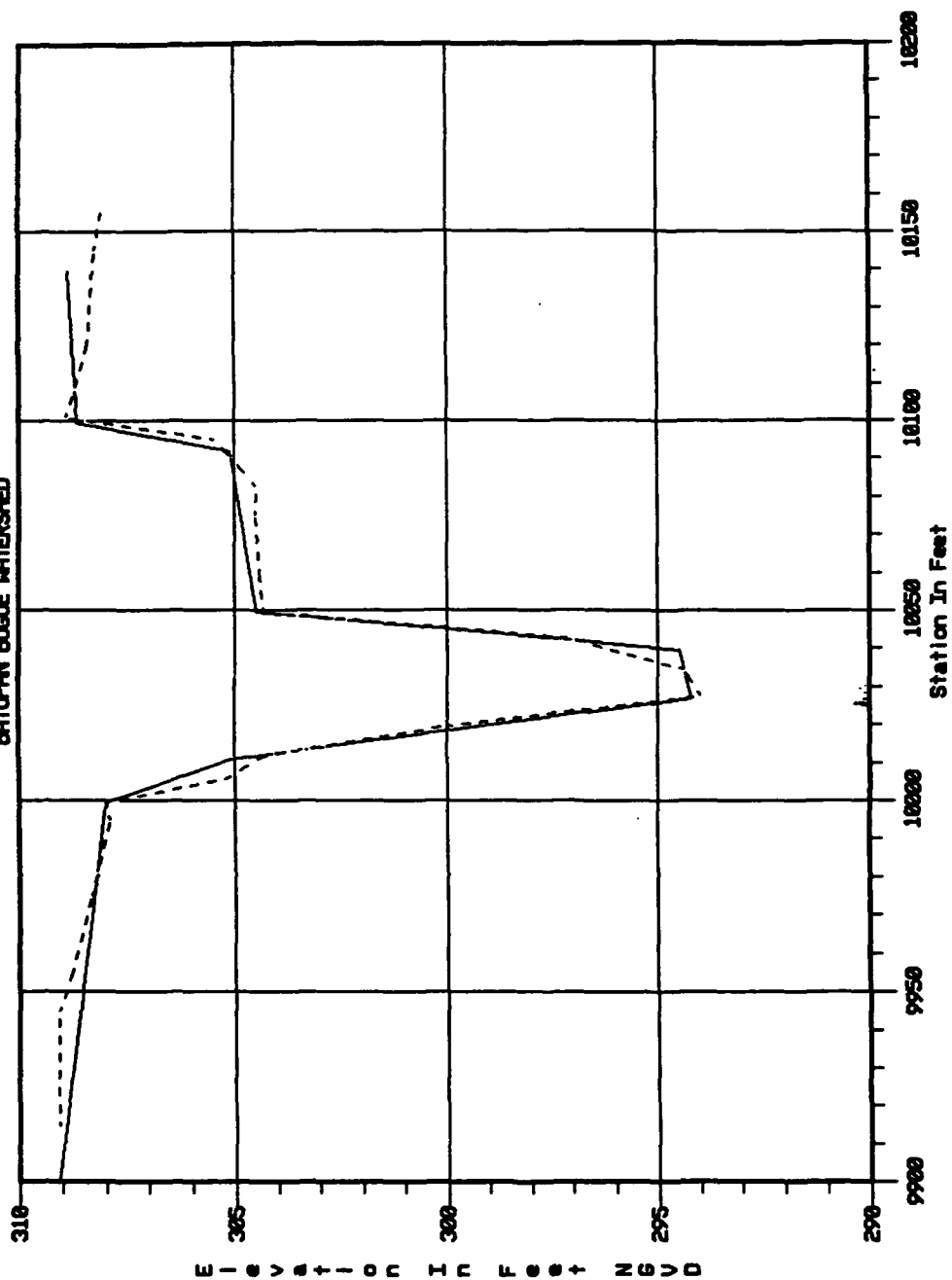
MOUSE 1985 XSEC 180.10
MOUSE 1991 XSEC R 163.00

BATUPAN BOULE INTERSECT

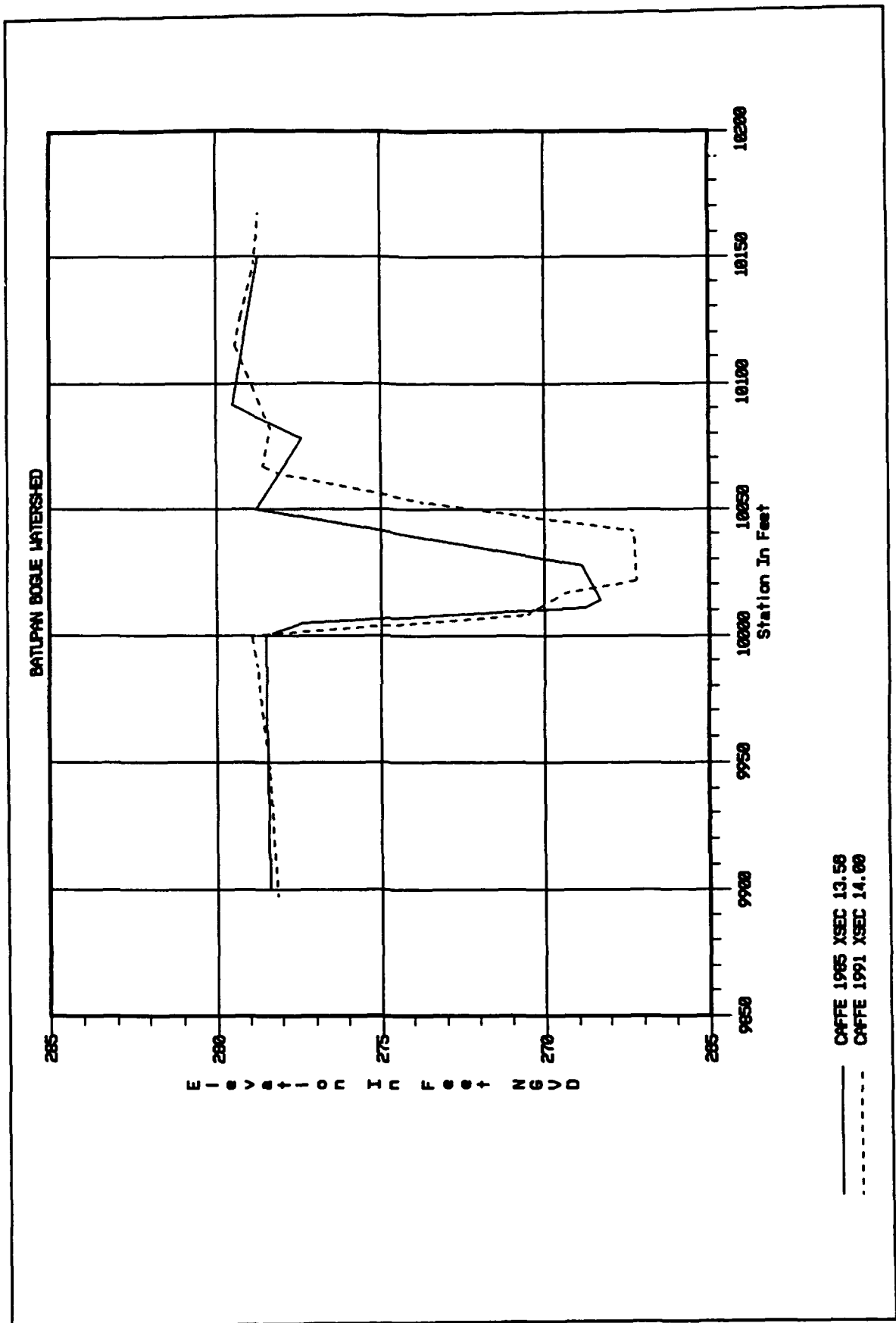


— MOUSE 1985 XSEC 193.65
 - - - MOUSE 1991 XSEC R 196.60

BATUPAN BOGLE WATERSHED



MOUSE 1985 XSEC 228.50
MOUSE 1991 XSEC R 229.79



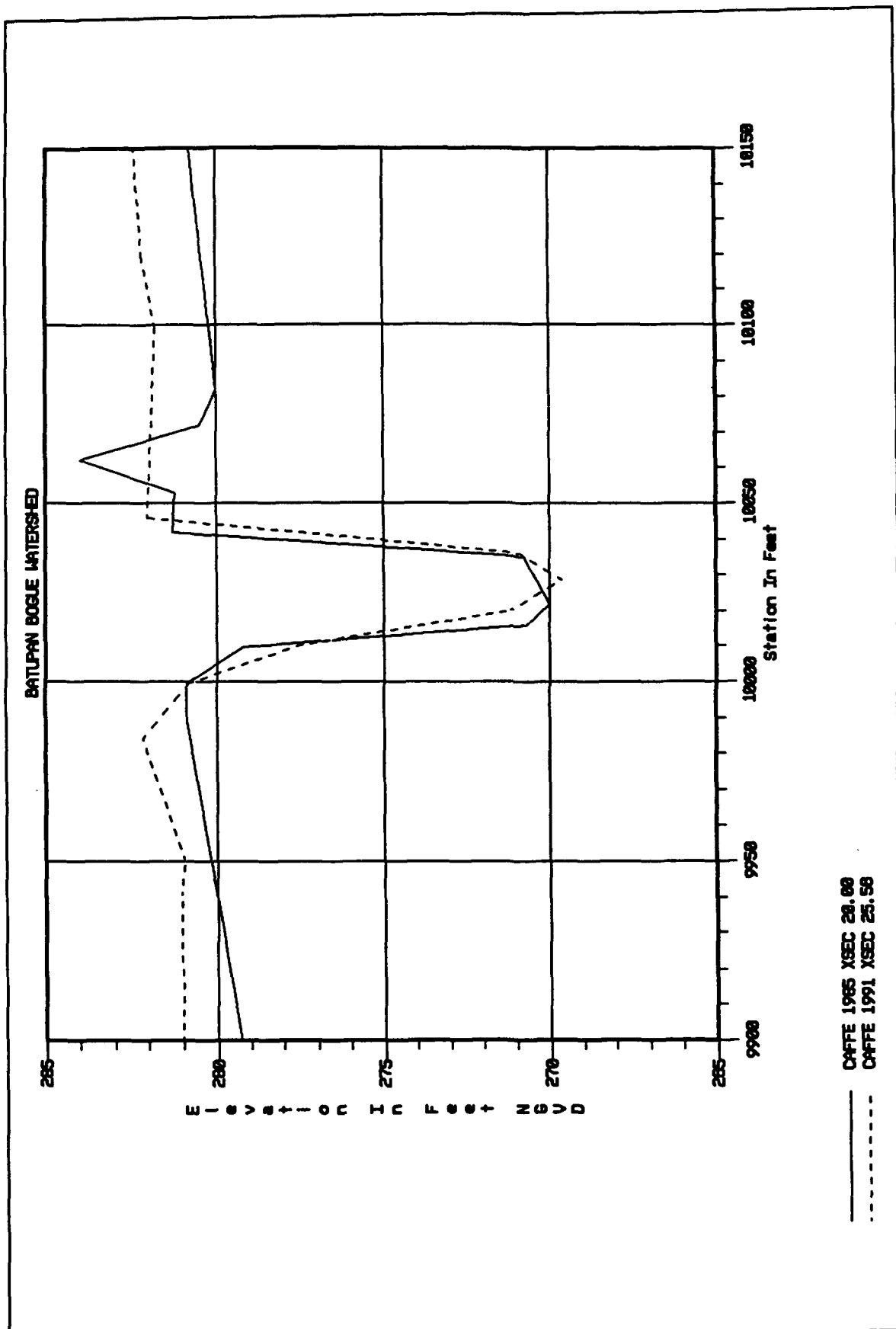
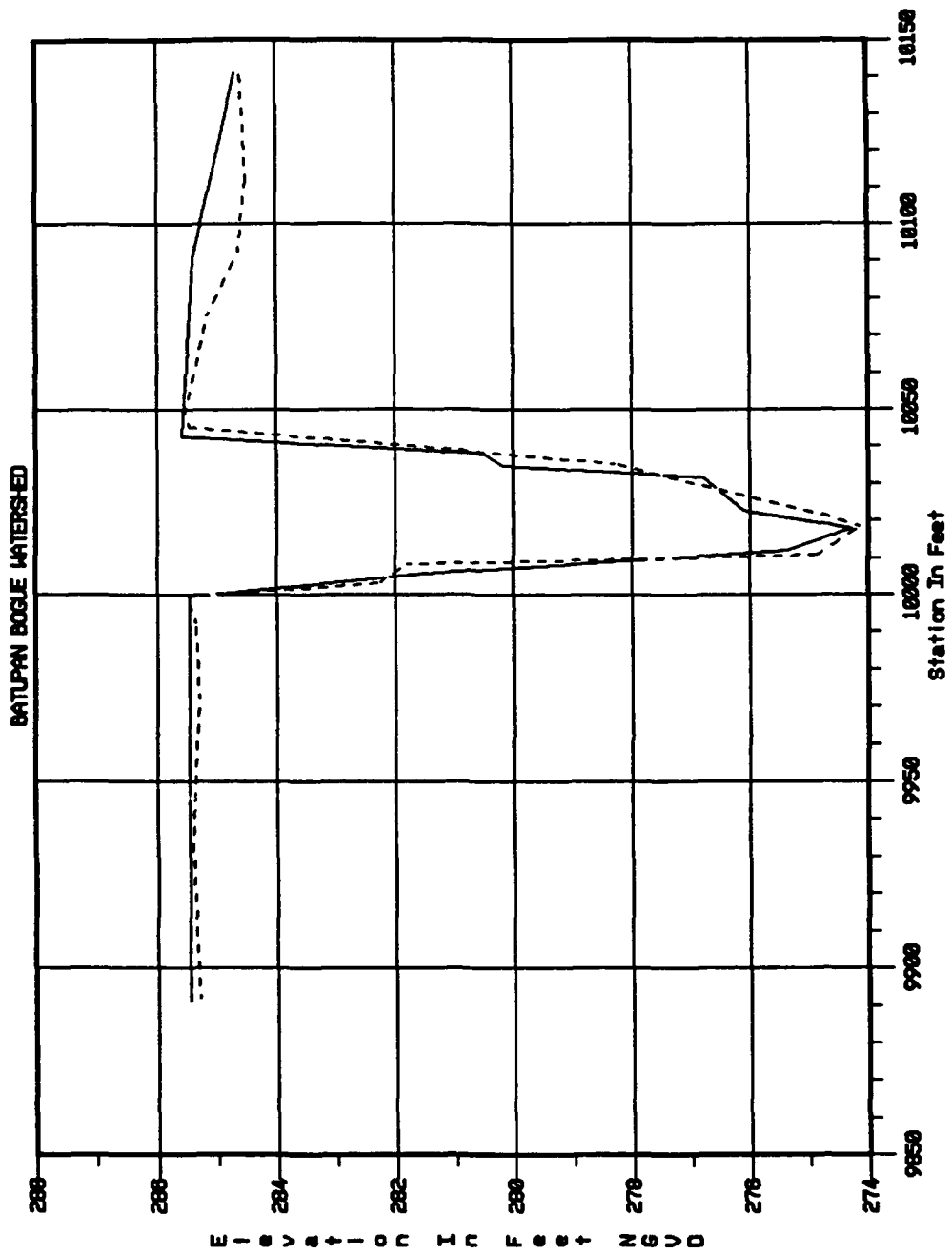
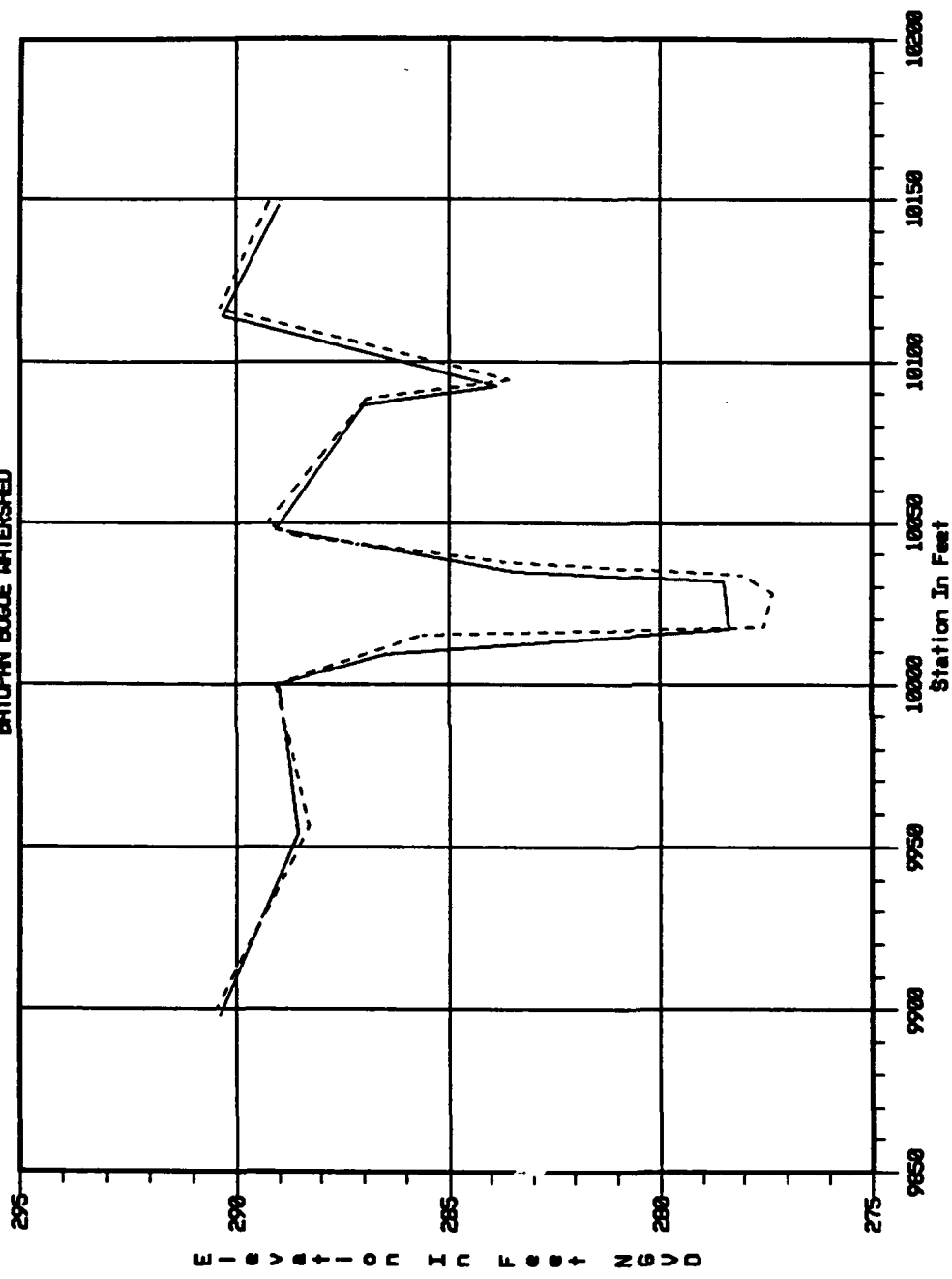


PLATE C248

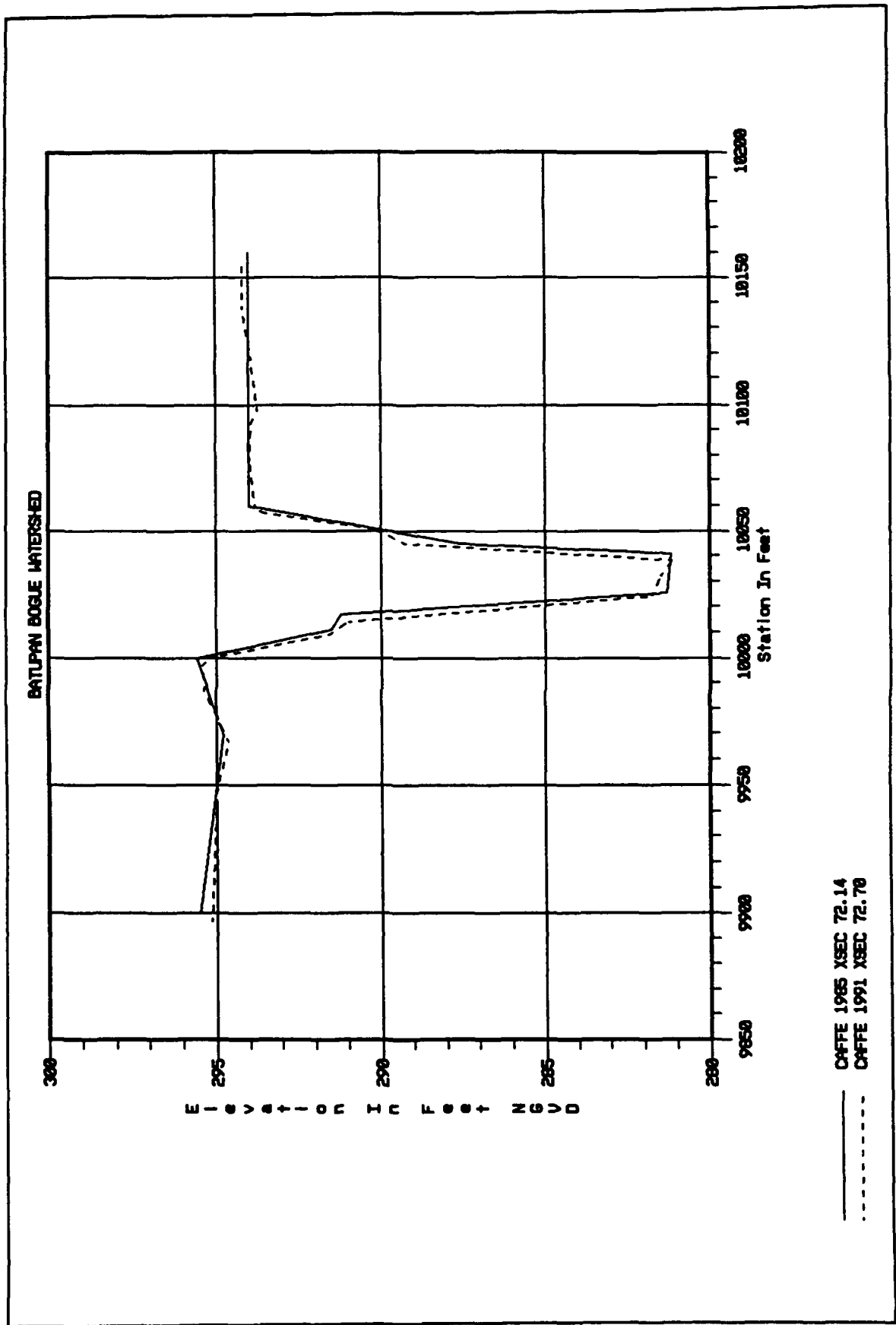


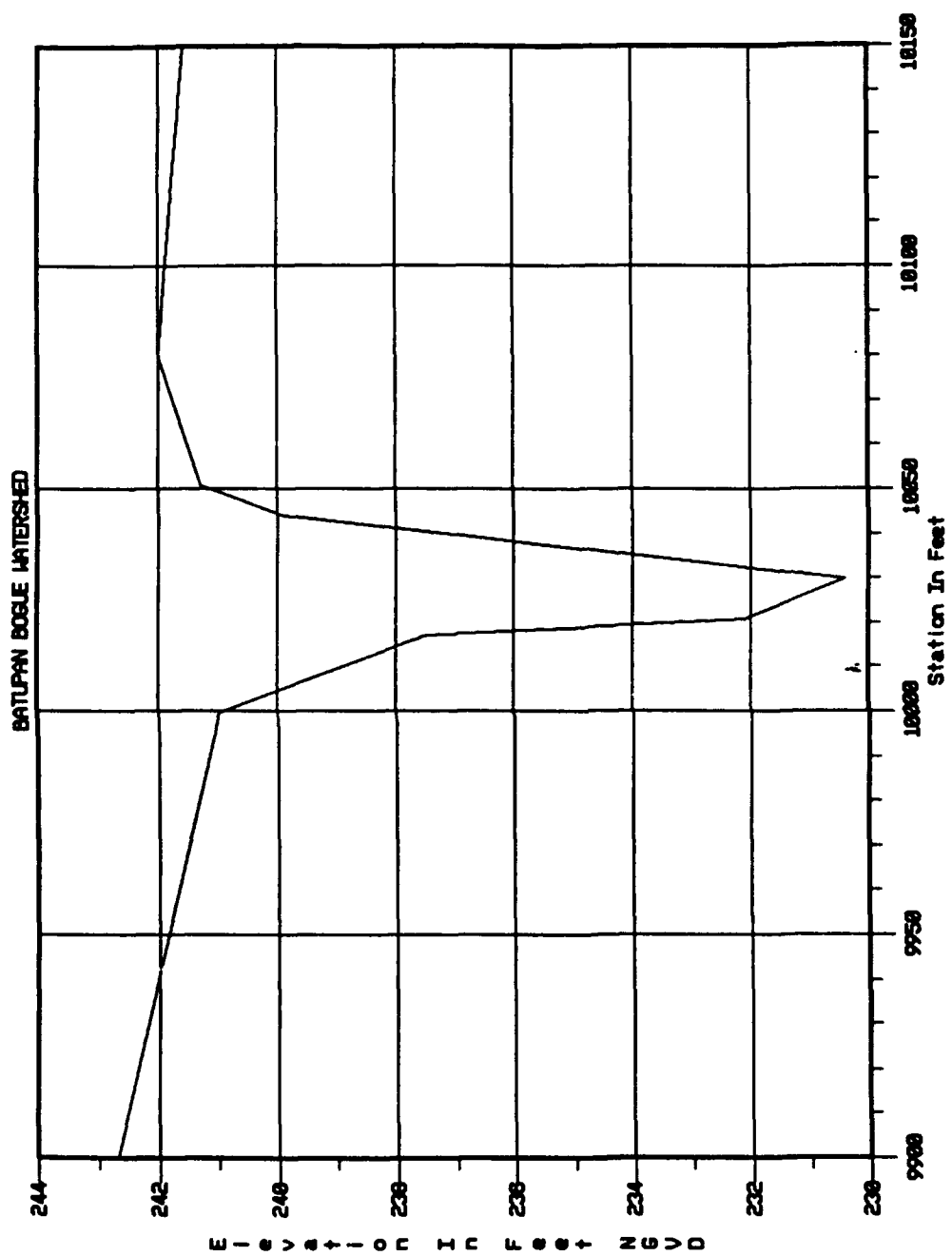
CAFFE 1985 XSEC 38.51
 CAFFE 1991 XSEC 39.18

BATUPAN BOGLE WATERSHED



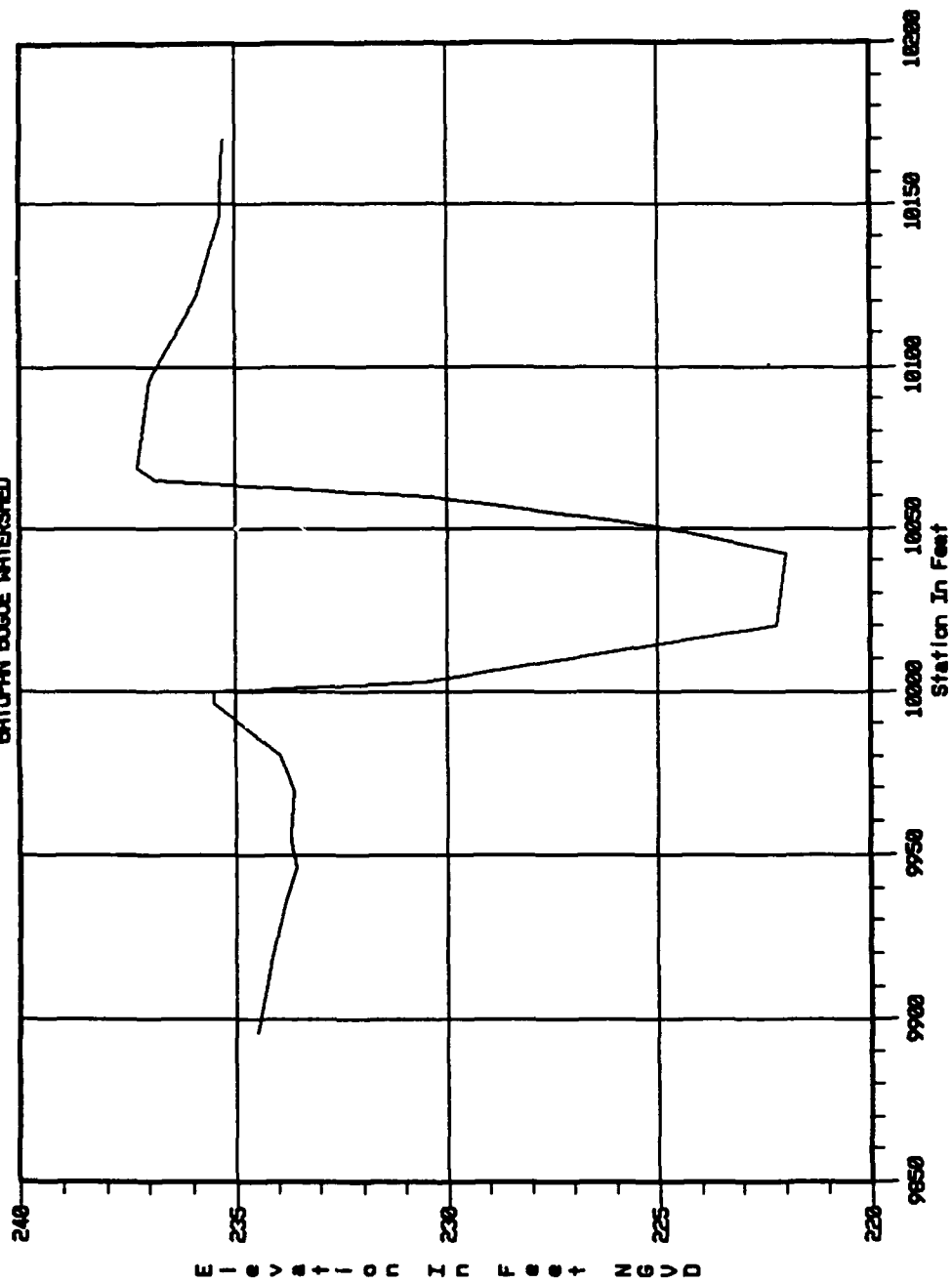
——— CAFFE 1965 XSEC 53.06
 - - - - - CAFFE 1991 XSEC 54.25



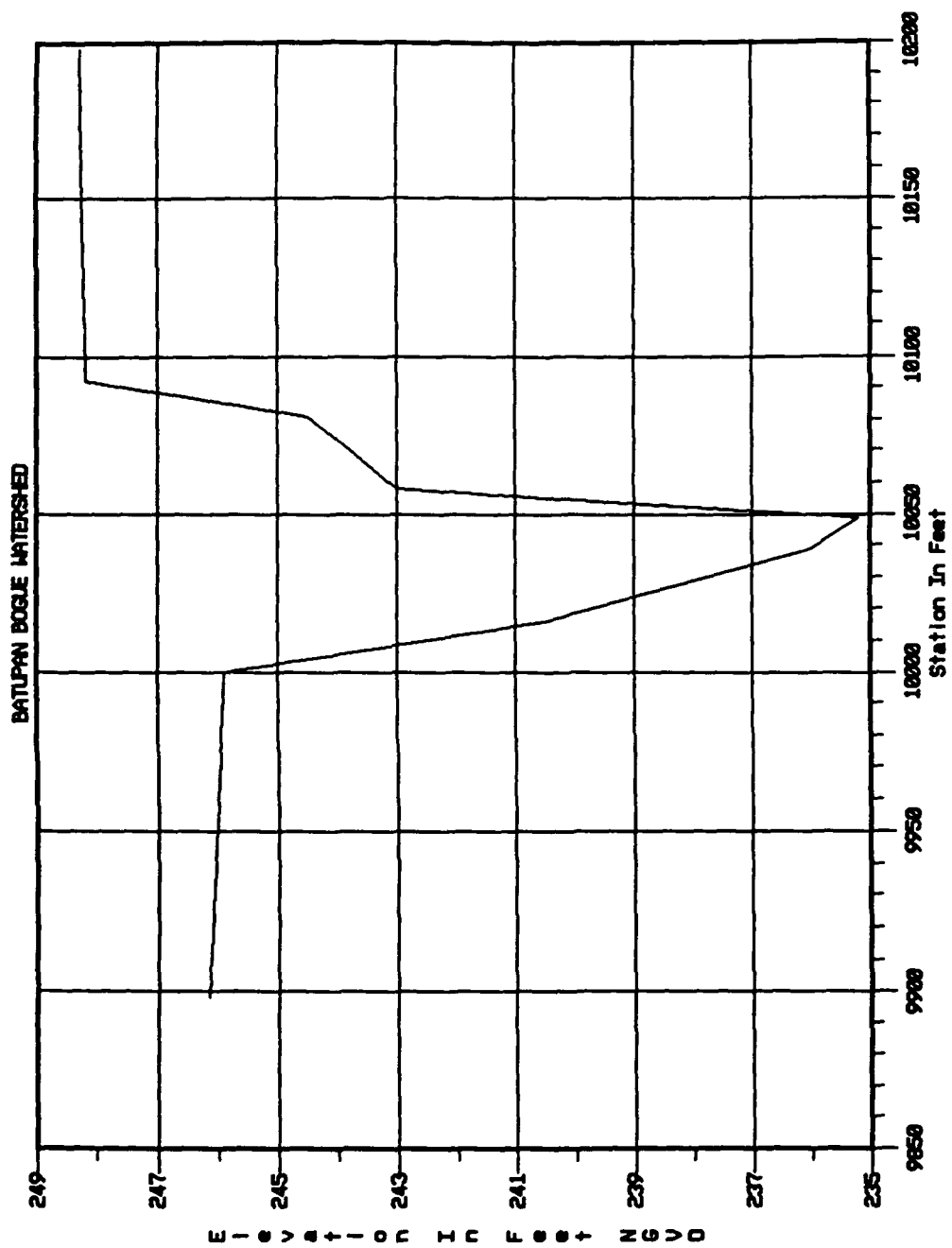


CAMPBELL 1965 XSEC 0.77

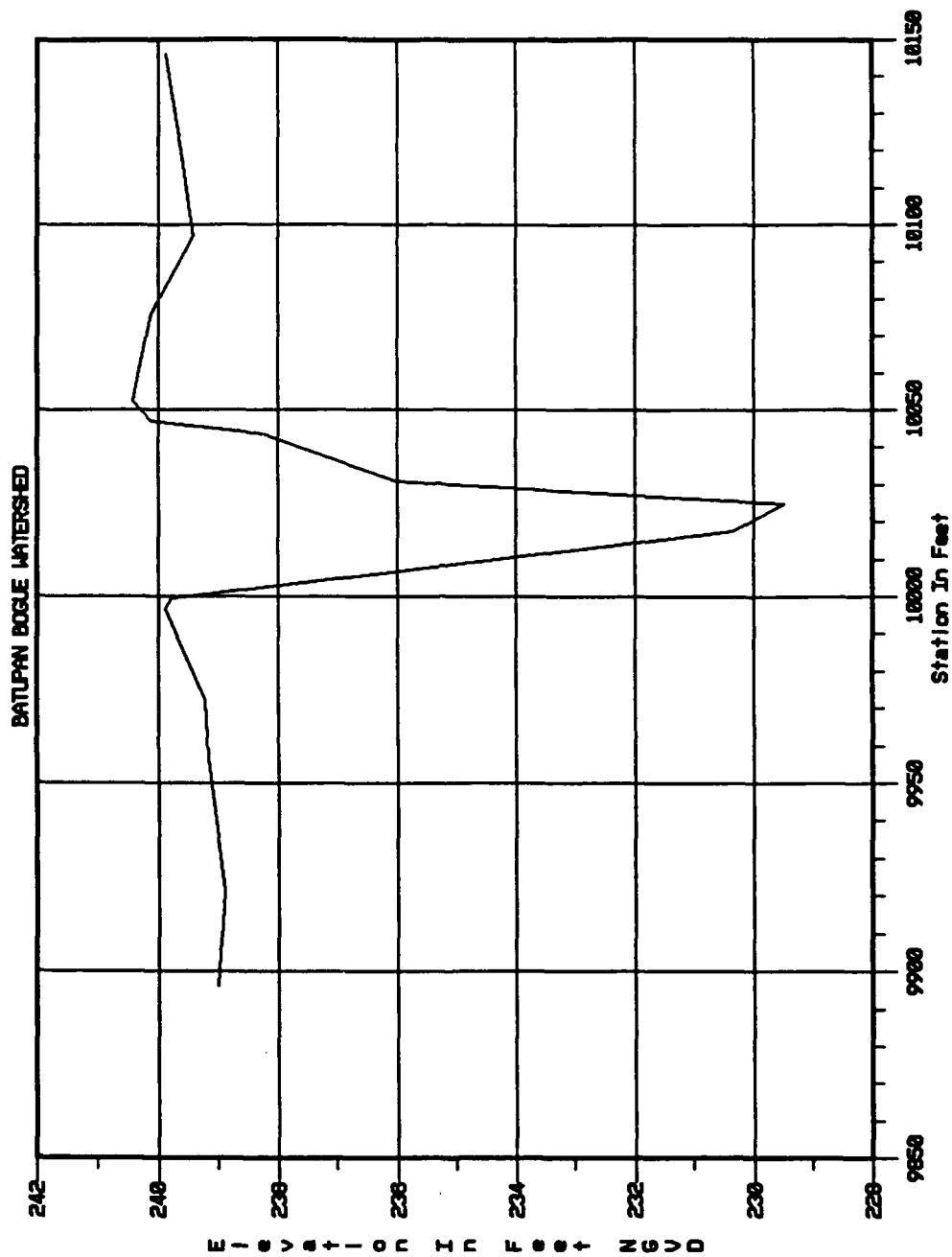
BATUPAN BOULE WATERSHED



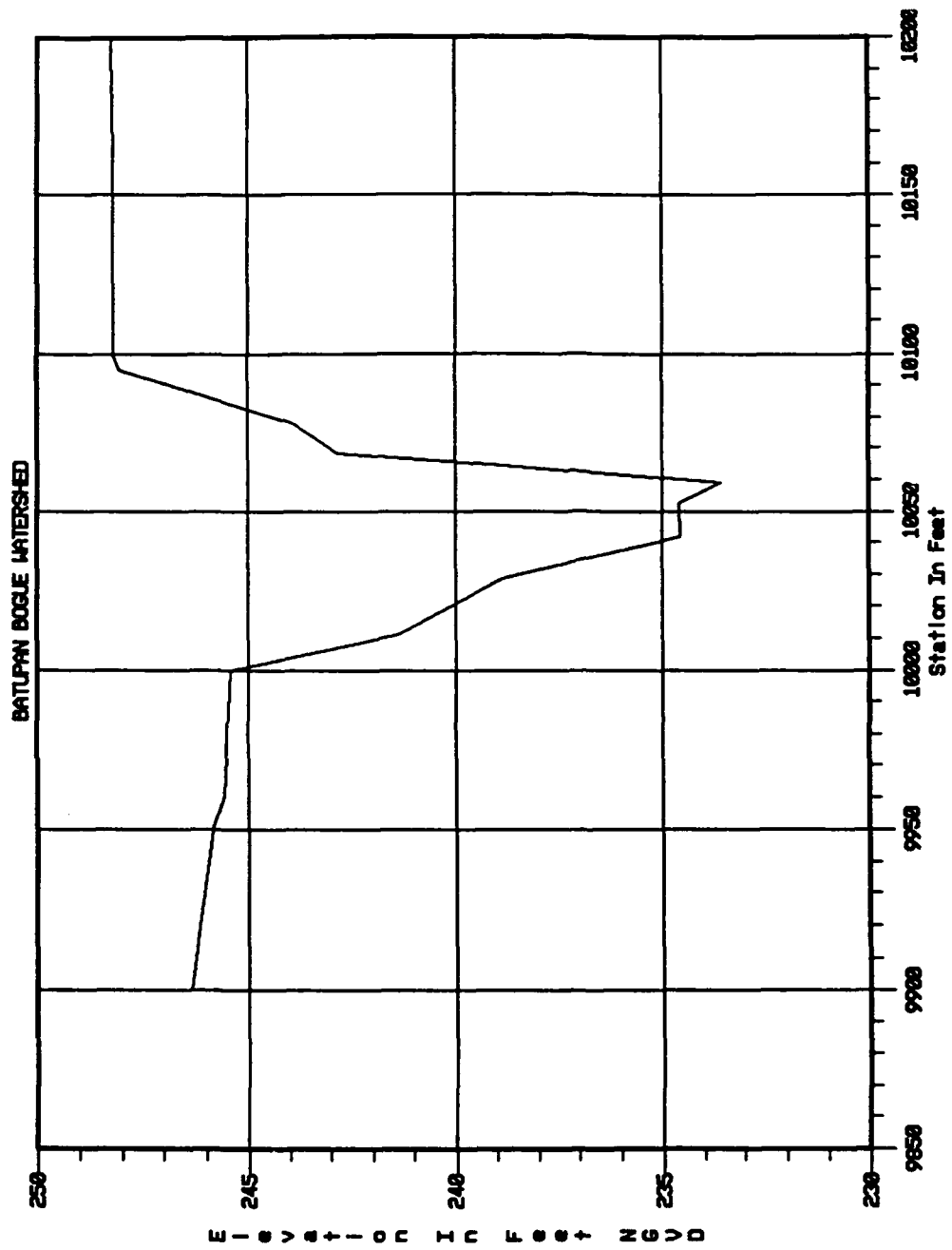
CHAPPELL 1991 XSEC 19.02



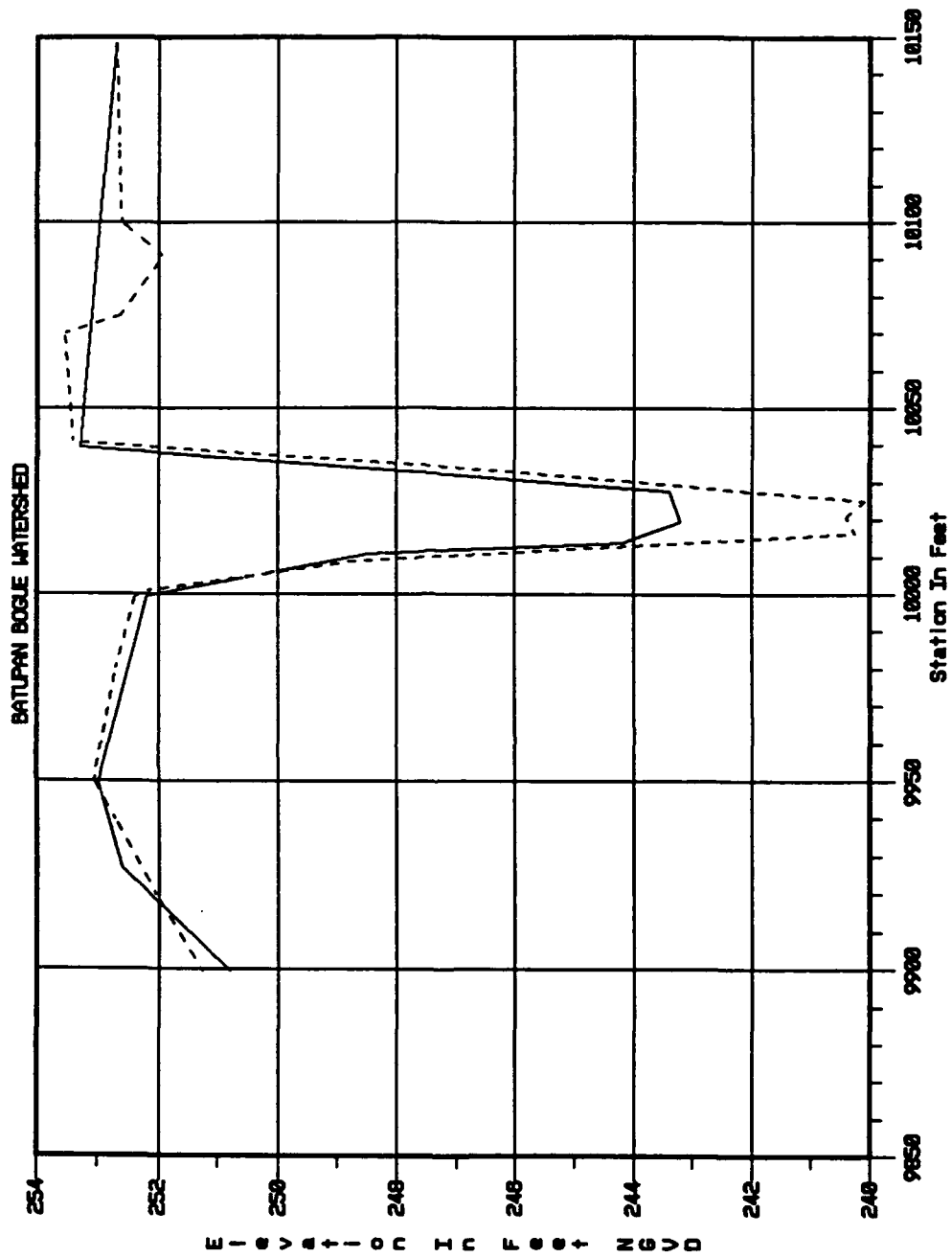
CAMPBELL 1965 XSEC 39.25



CHAPPELL 1991 XSEC 48.00

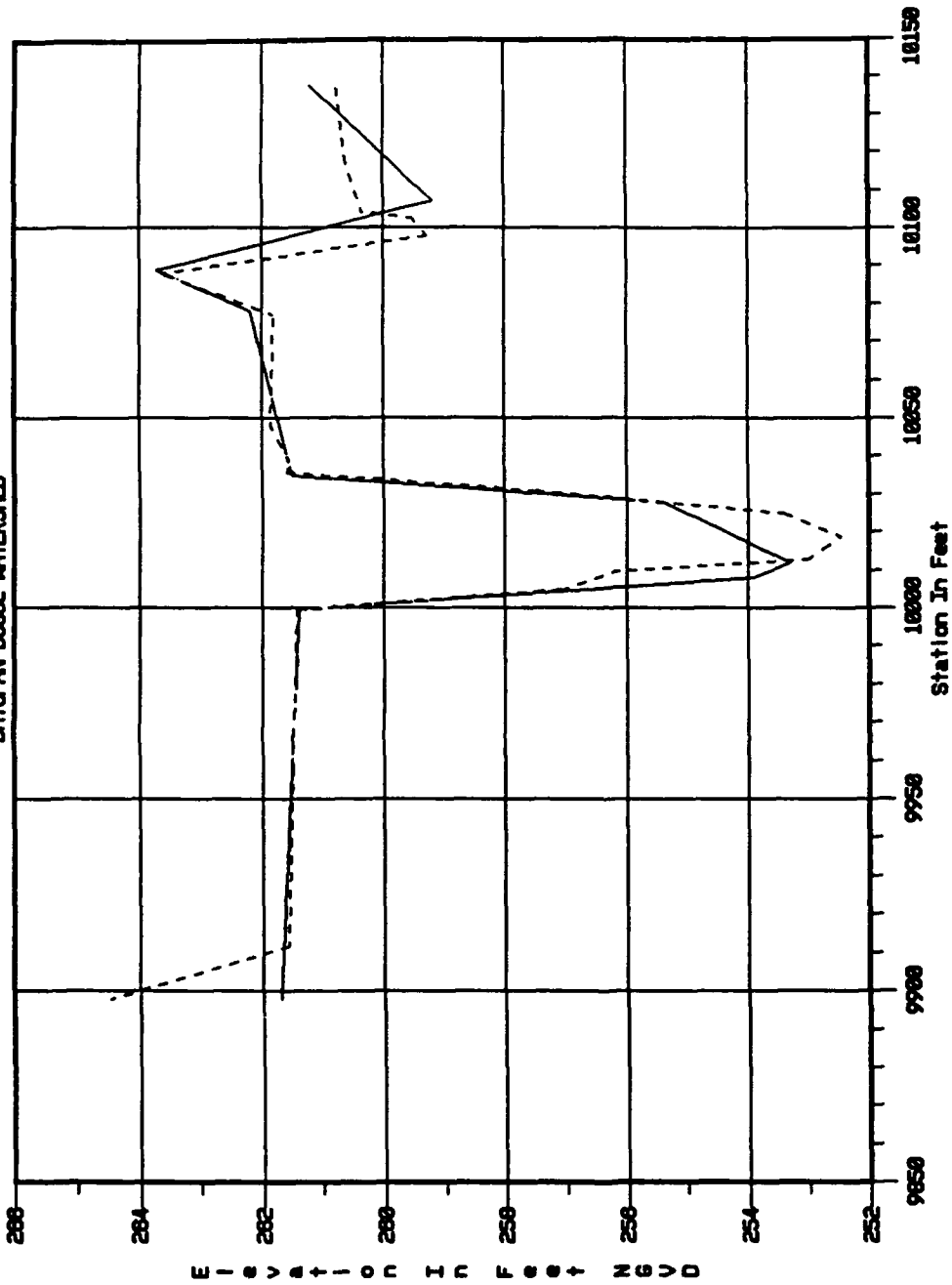


—— CAMPBELL 1991 XSEC 70.05

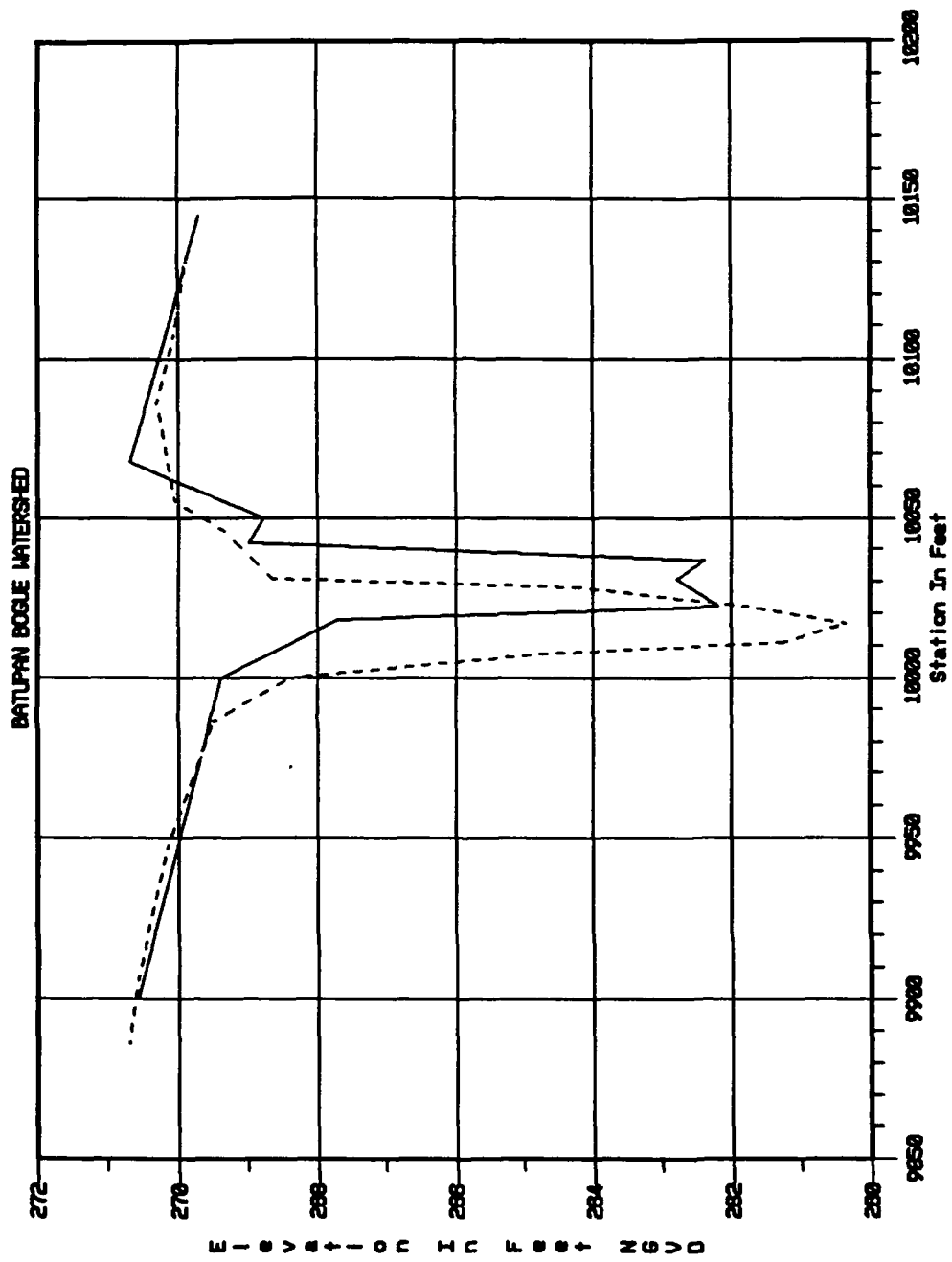


——— CAMPBELL 1965 XSEC 62.10
 - - - - - CAMPBELL 1991 XSEC 93.10

BATUPAN BOGLE INTERSECT

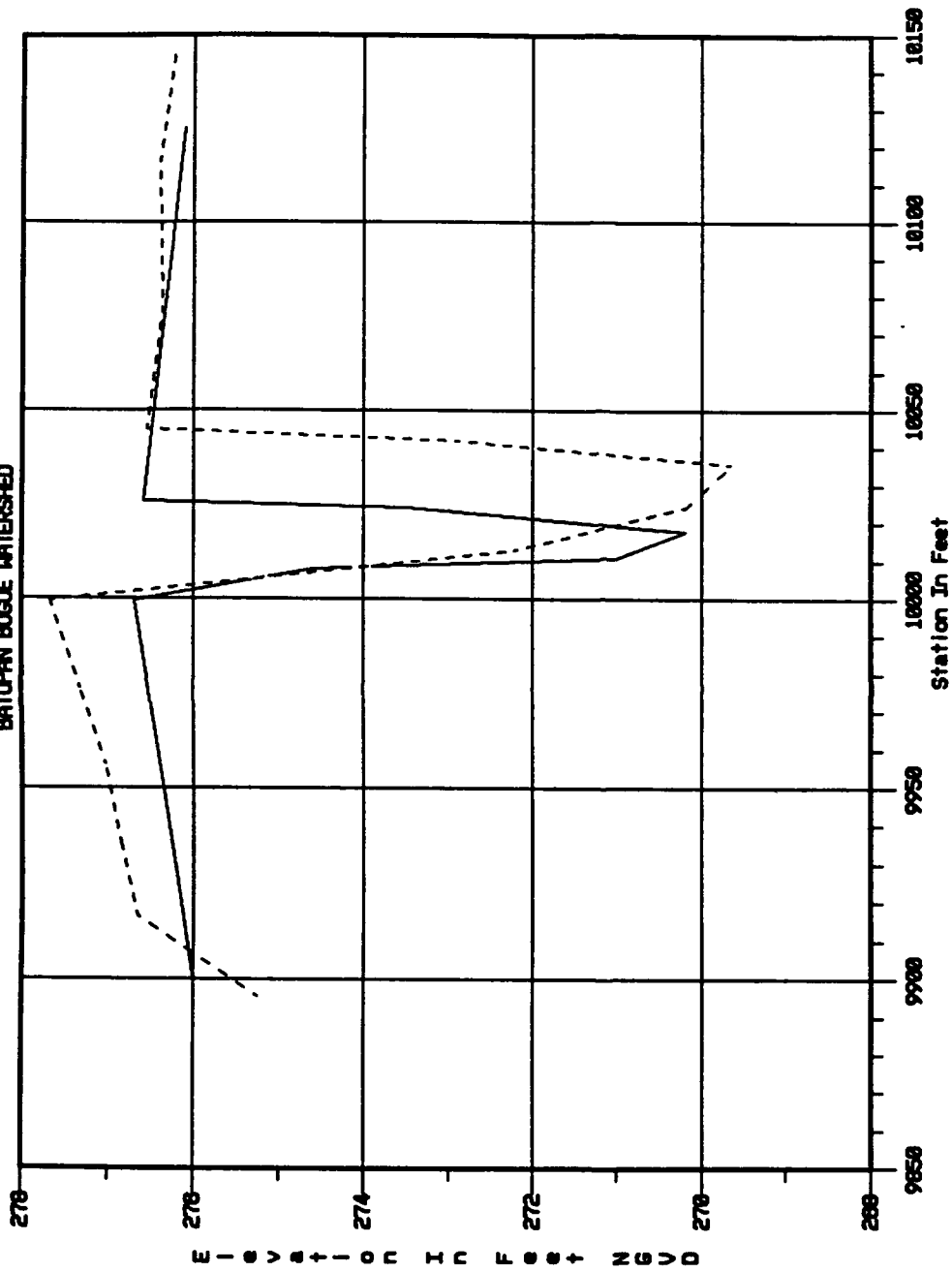


— CAMPBELL 1985 XSEC 91.05
 - - - CAMPBELL 1991 XSEC 121.40

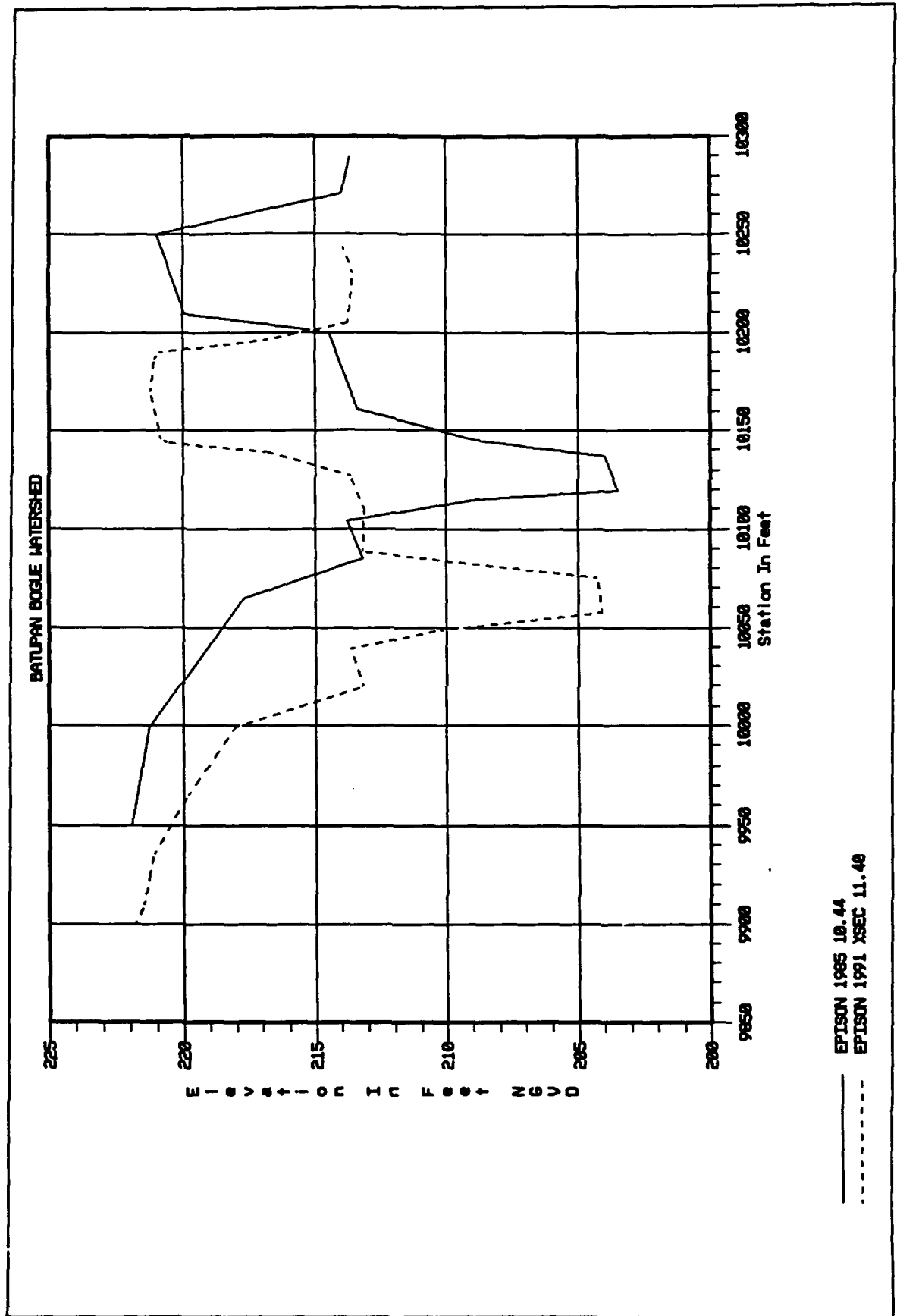


— CAMPBELL 1985 XSEC 115.00
- - - CAMPBELL 1991 XSEC 144.47

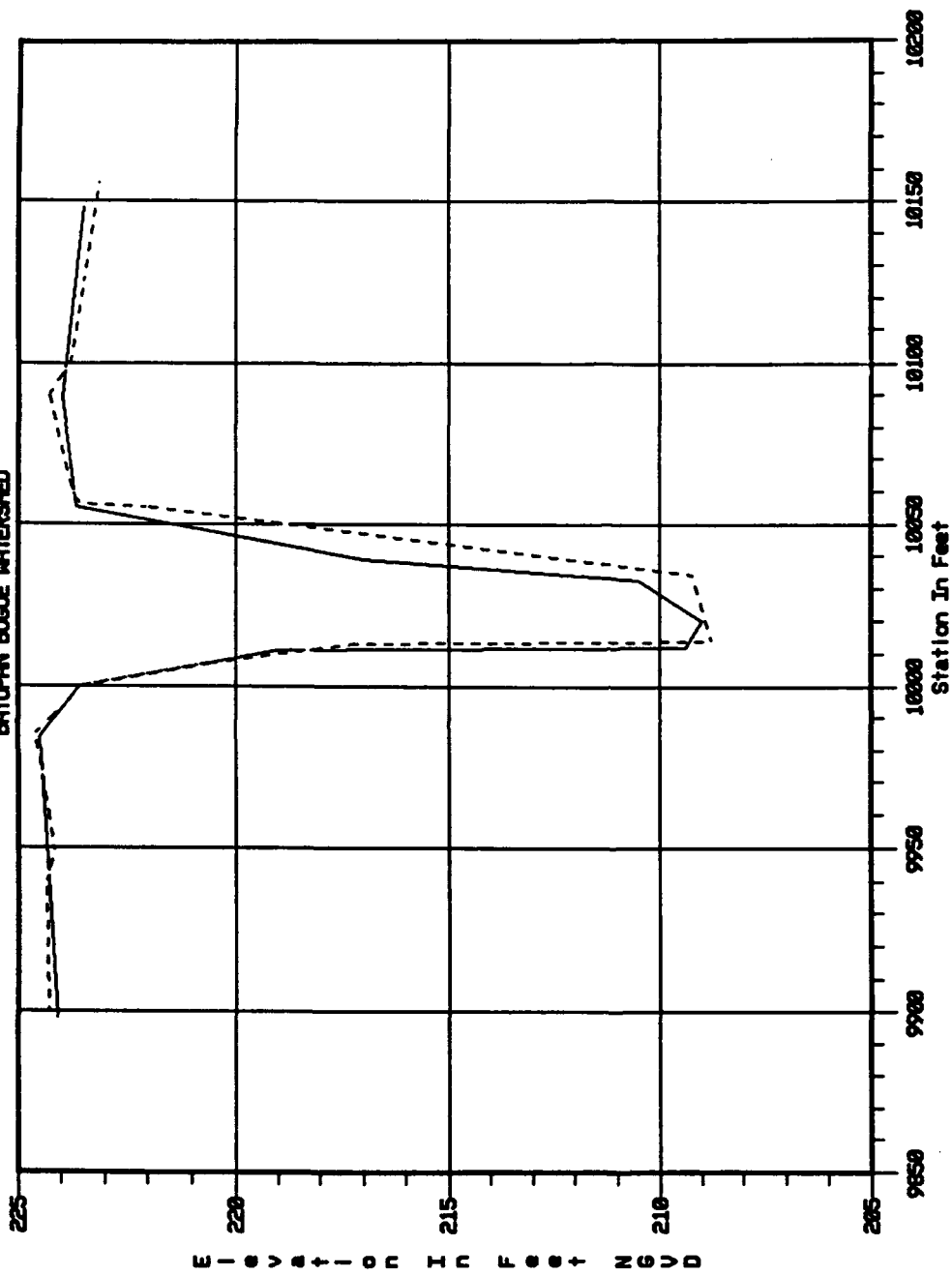
BATUPAN BOGLE WATERSHED



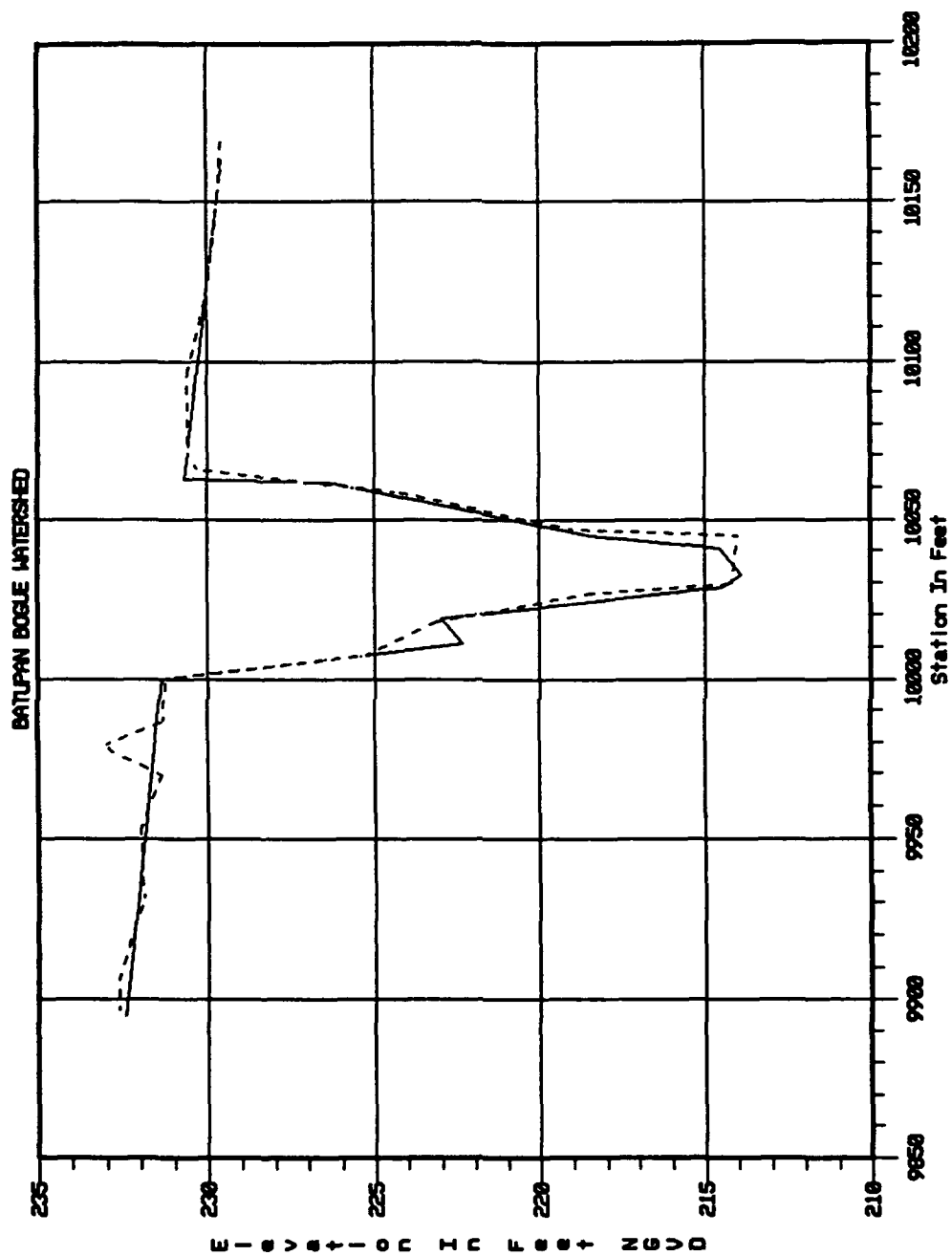
——— CAMPBELL 1965 XSEC 134.32
 - - - - - CAMPBELL 1991 XSEC 163.65



BATUPAN BOGUE WATERSHED



EPTSON 1985 38.45
 EPTSON 1991 XSEC 37.40



—— EPISON 1985 81.47
----- EPISON 1991 XSEC 62.17

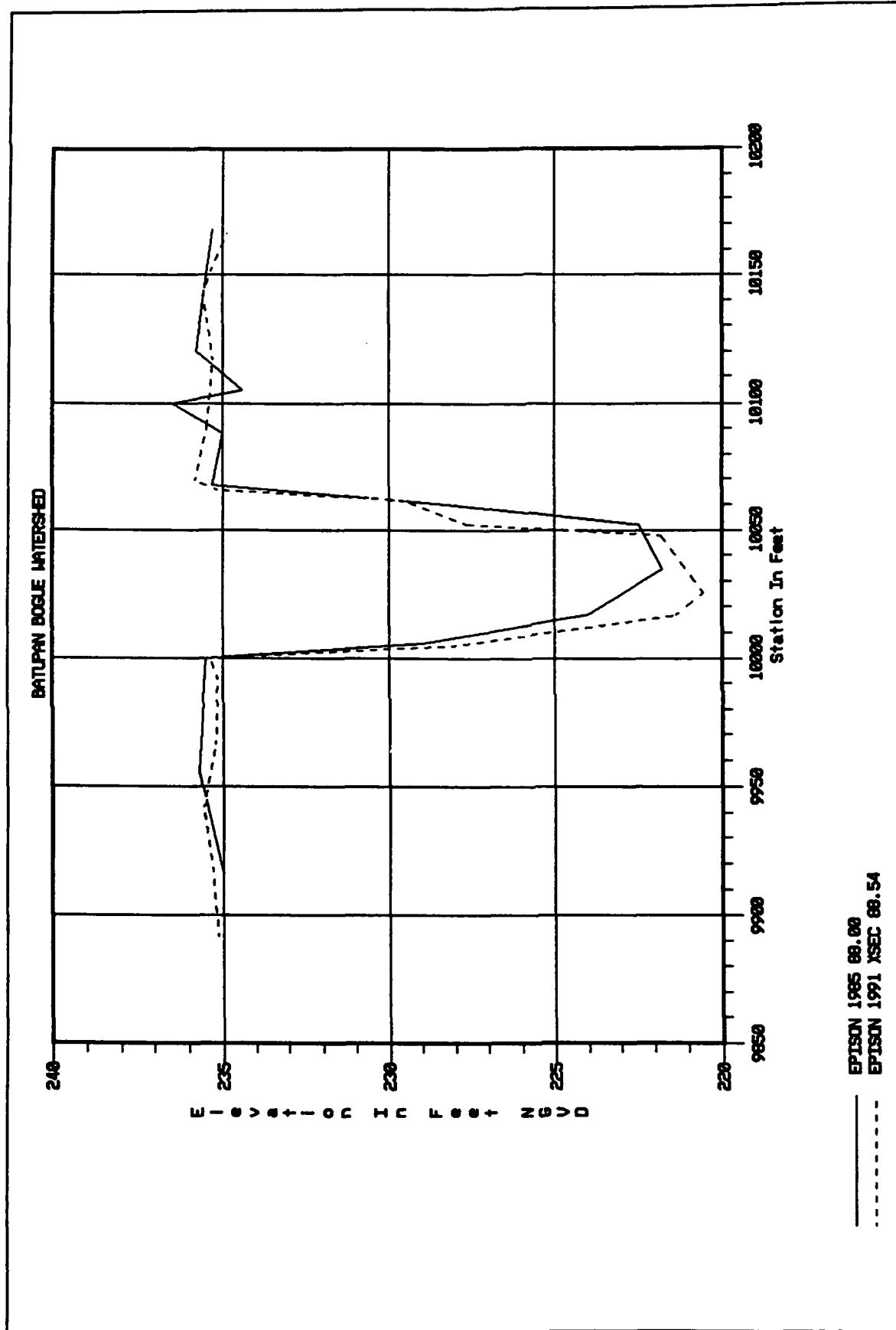
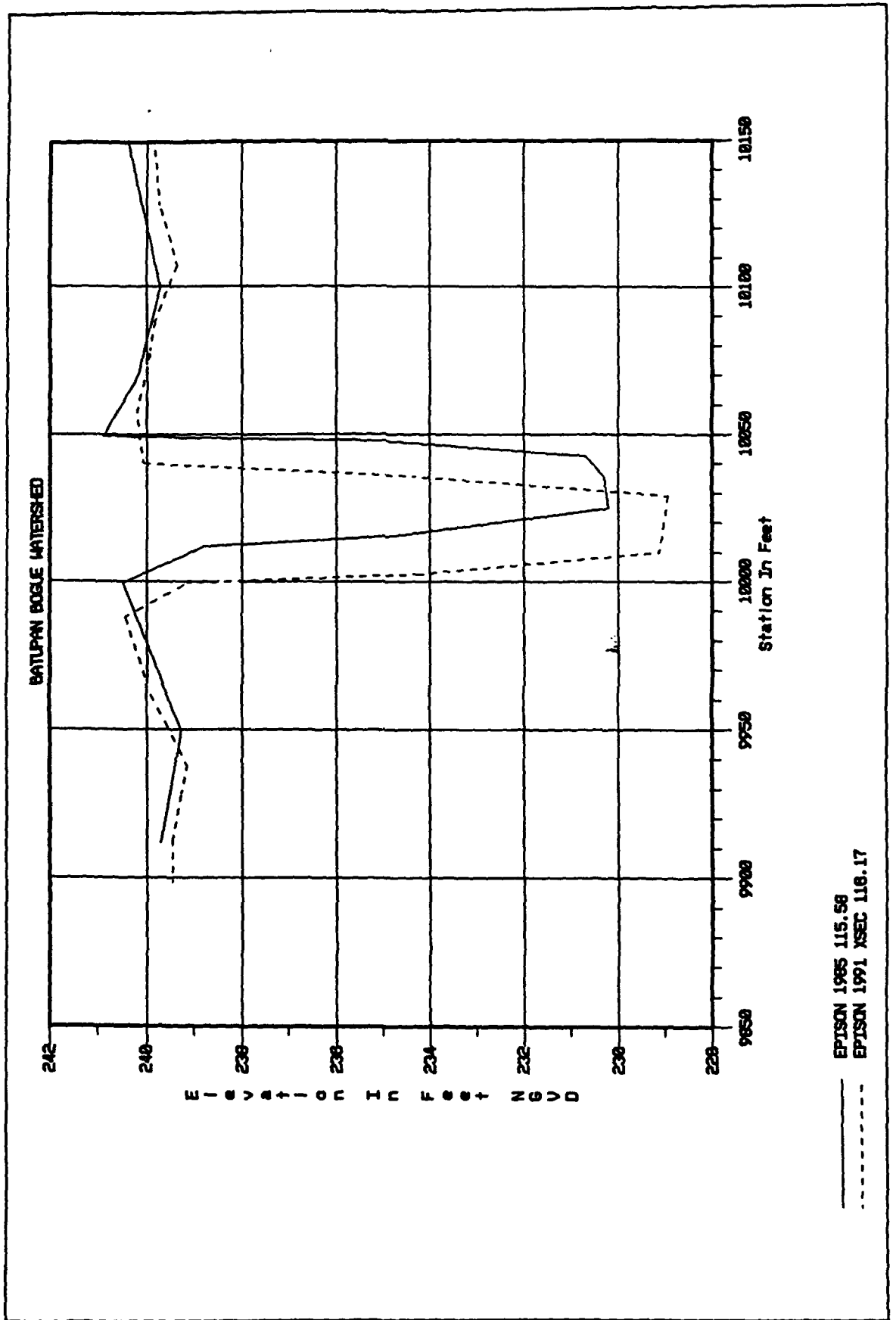
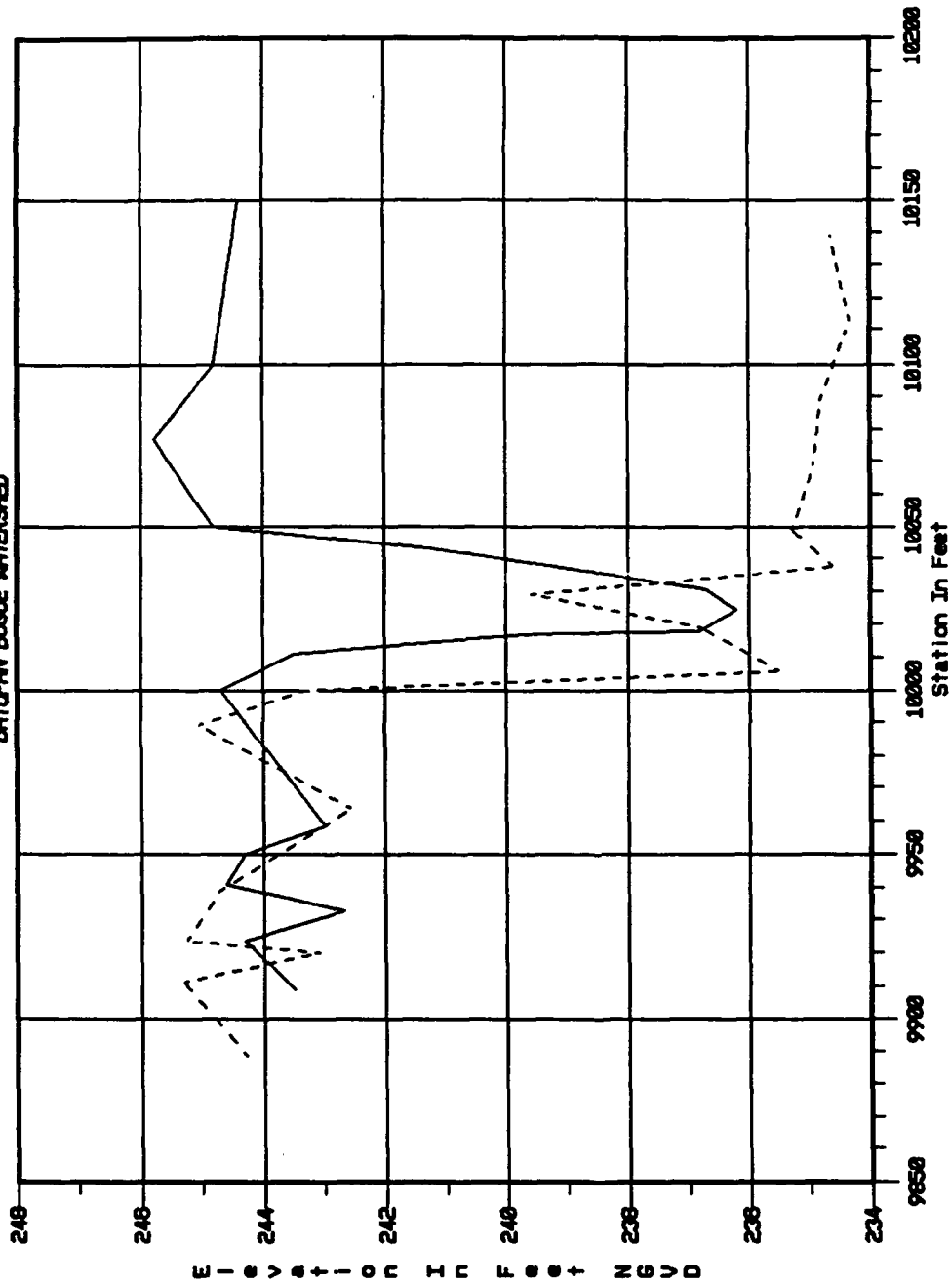


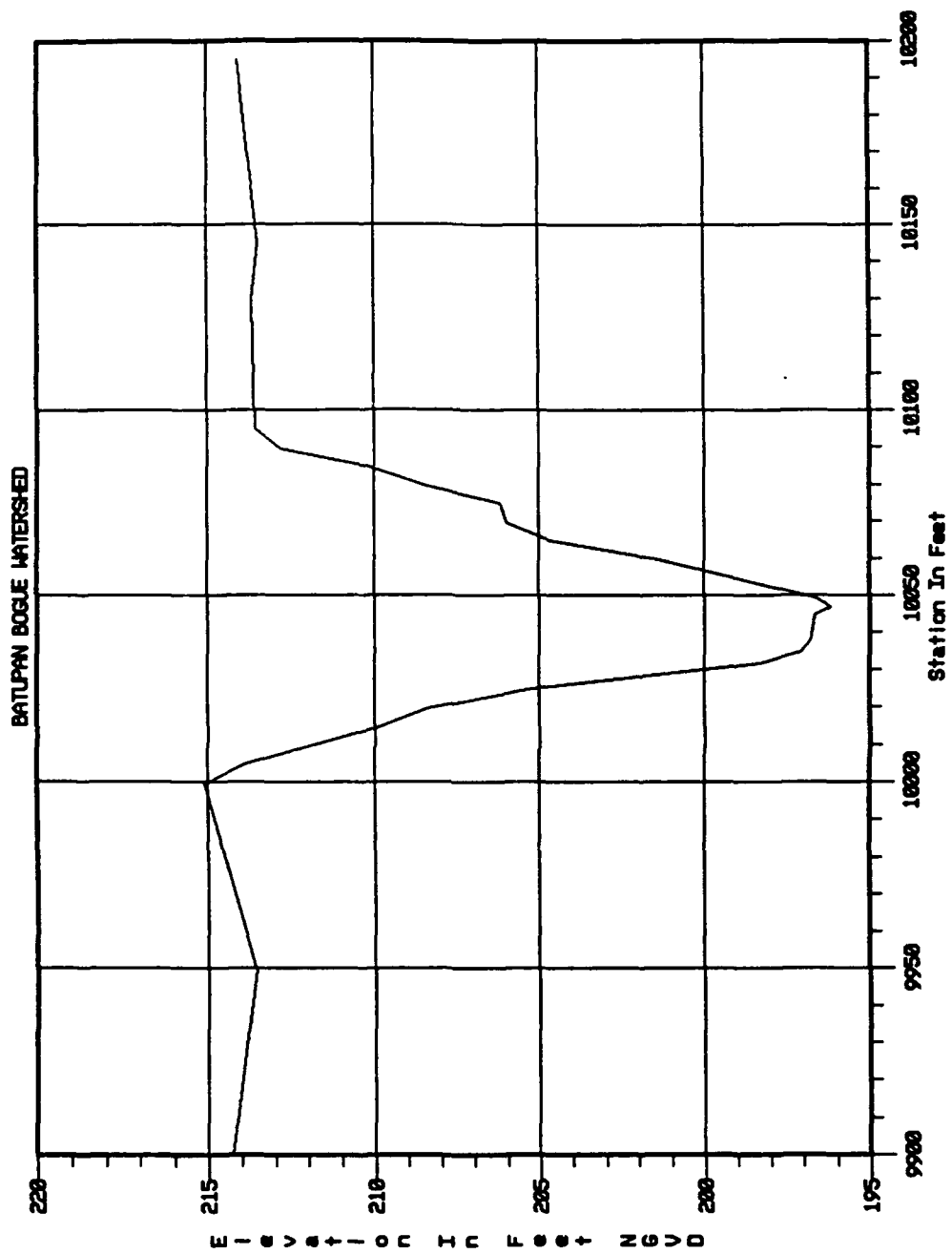
PLATE C264



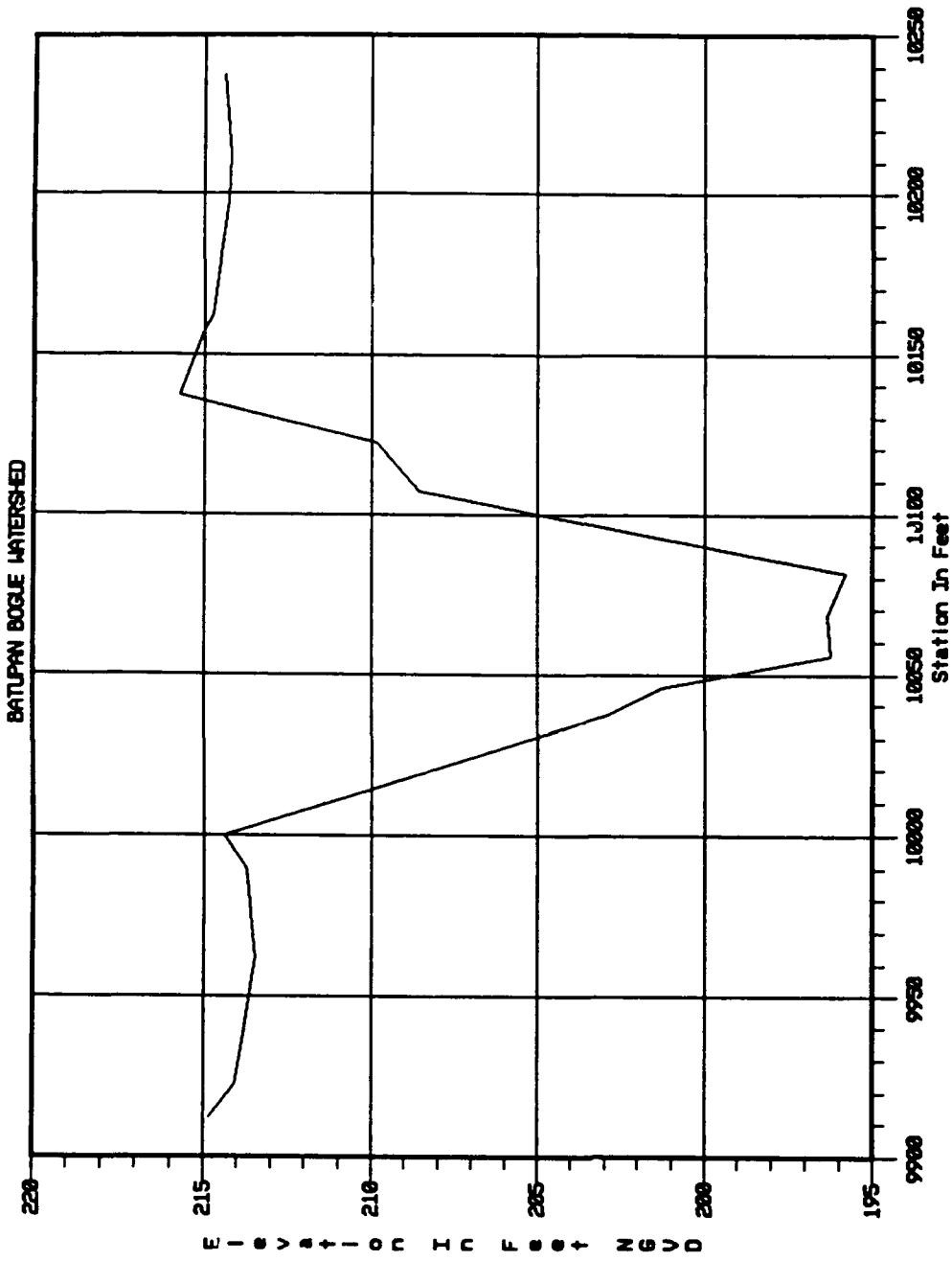
BATUPAN BOGLE WATERSHED



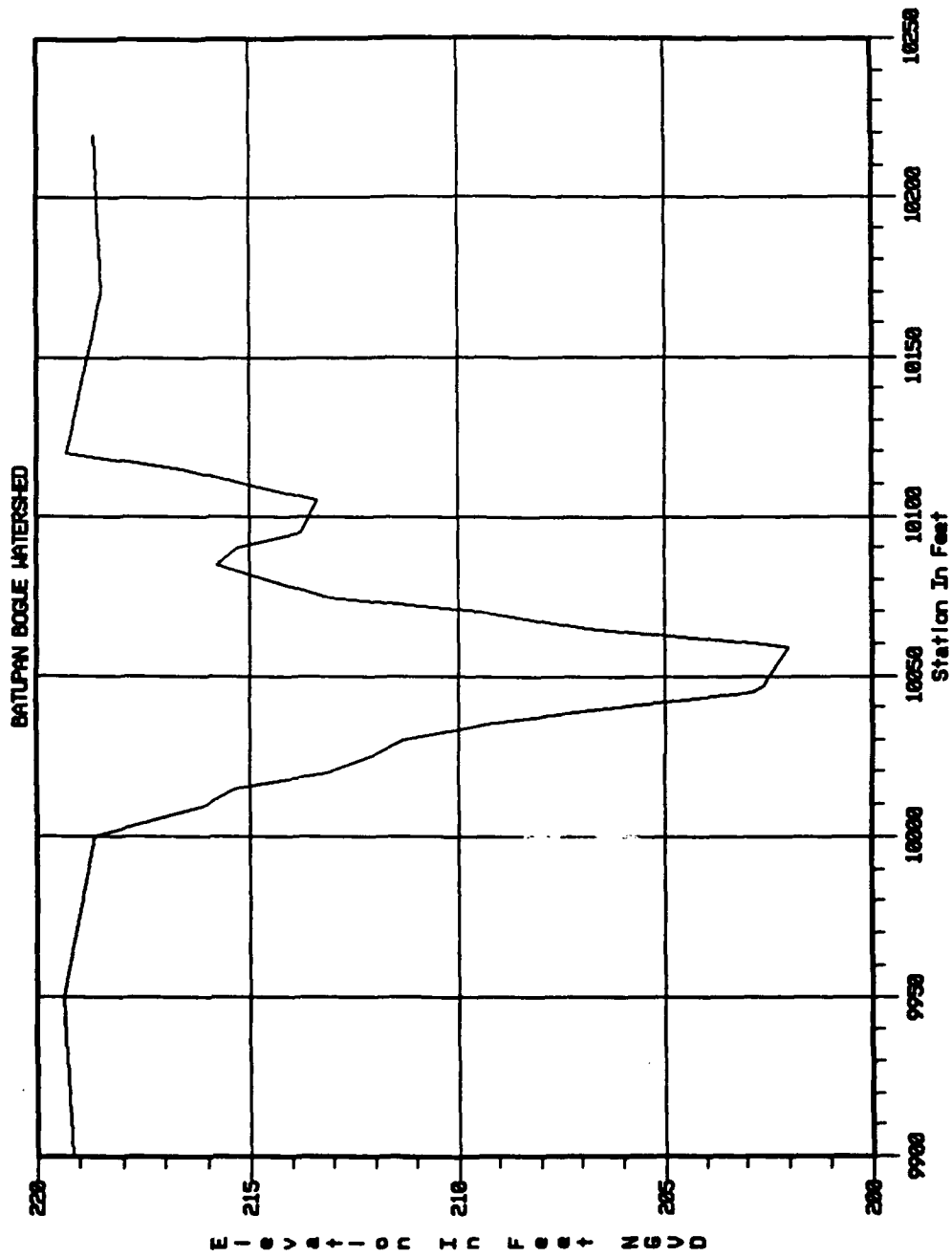
EPTISON 1985 144.67
 EPTISON 1991 XSEC 148.28



— CROWDER 1965 XSEC 7.70

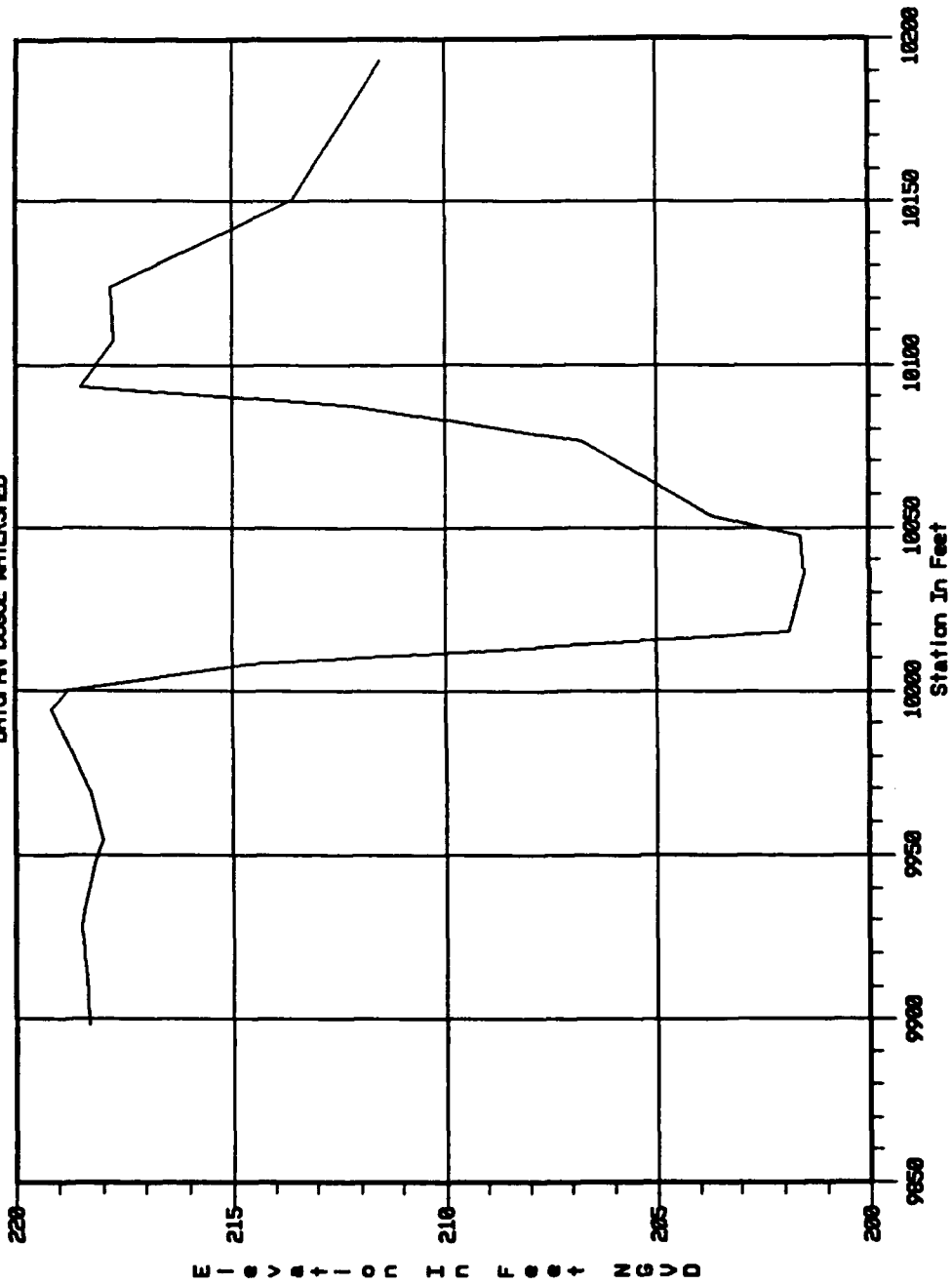


— CROUDER 1991 XSEC 7.93

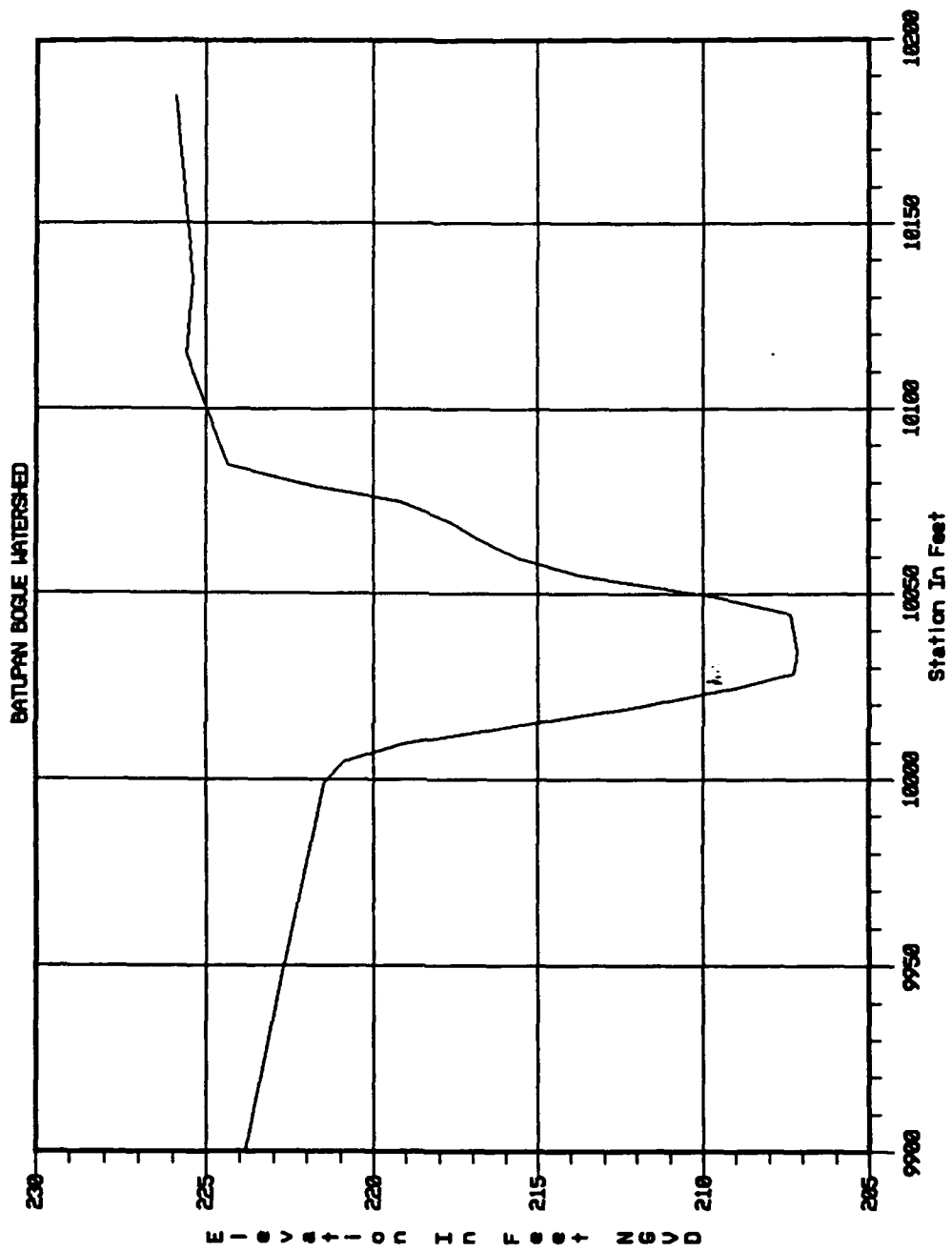


CROUDER 1965 XSEC 37.00

BATUPAN BOULE WATERSHED

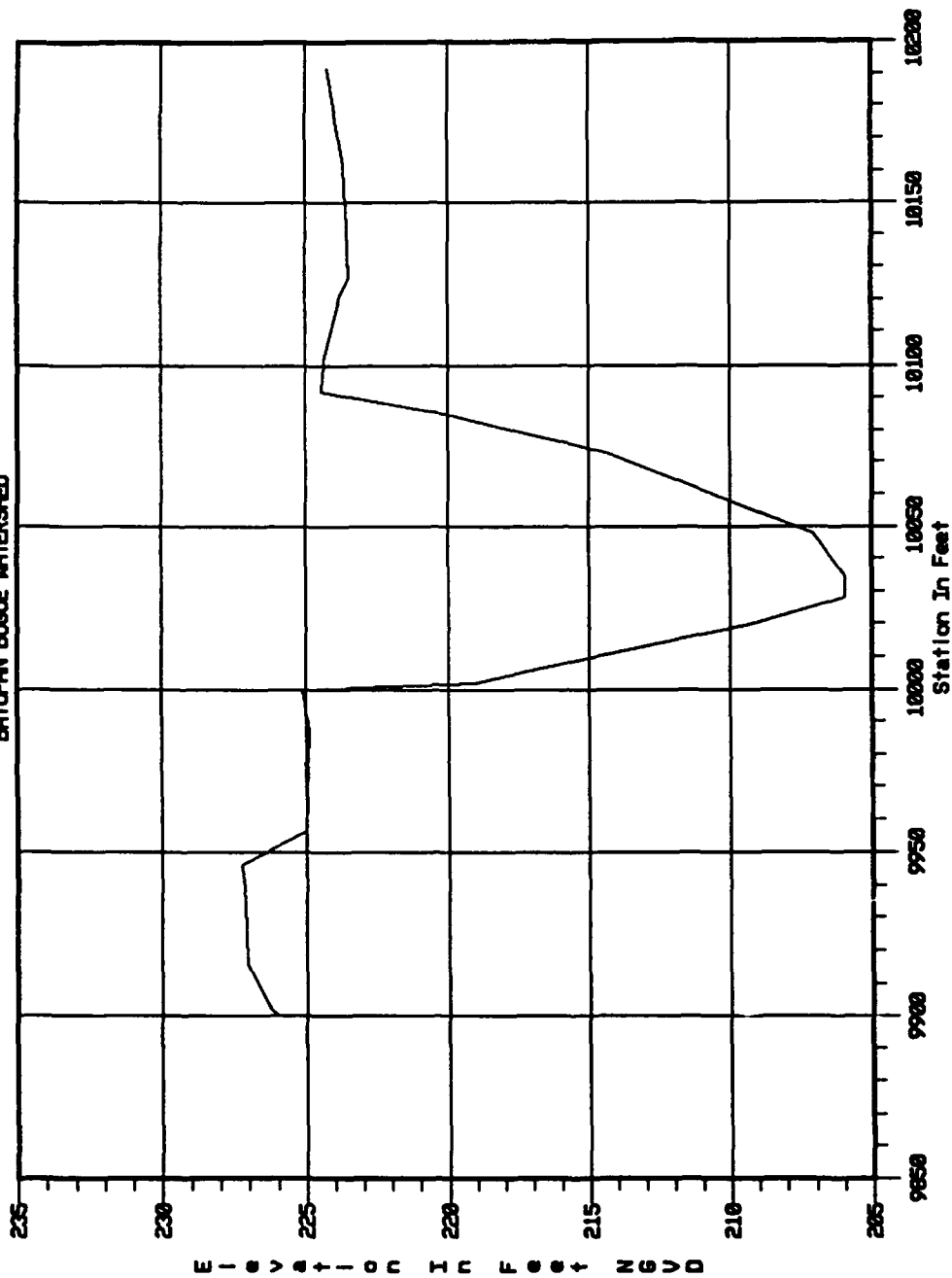


CRUMMER 1991 XSEC 37.00



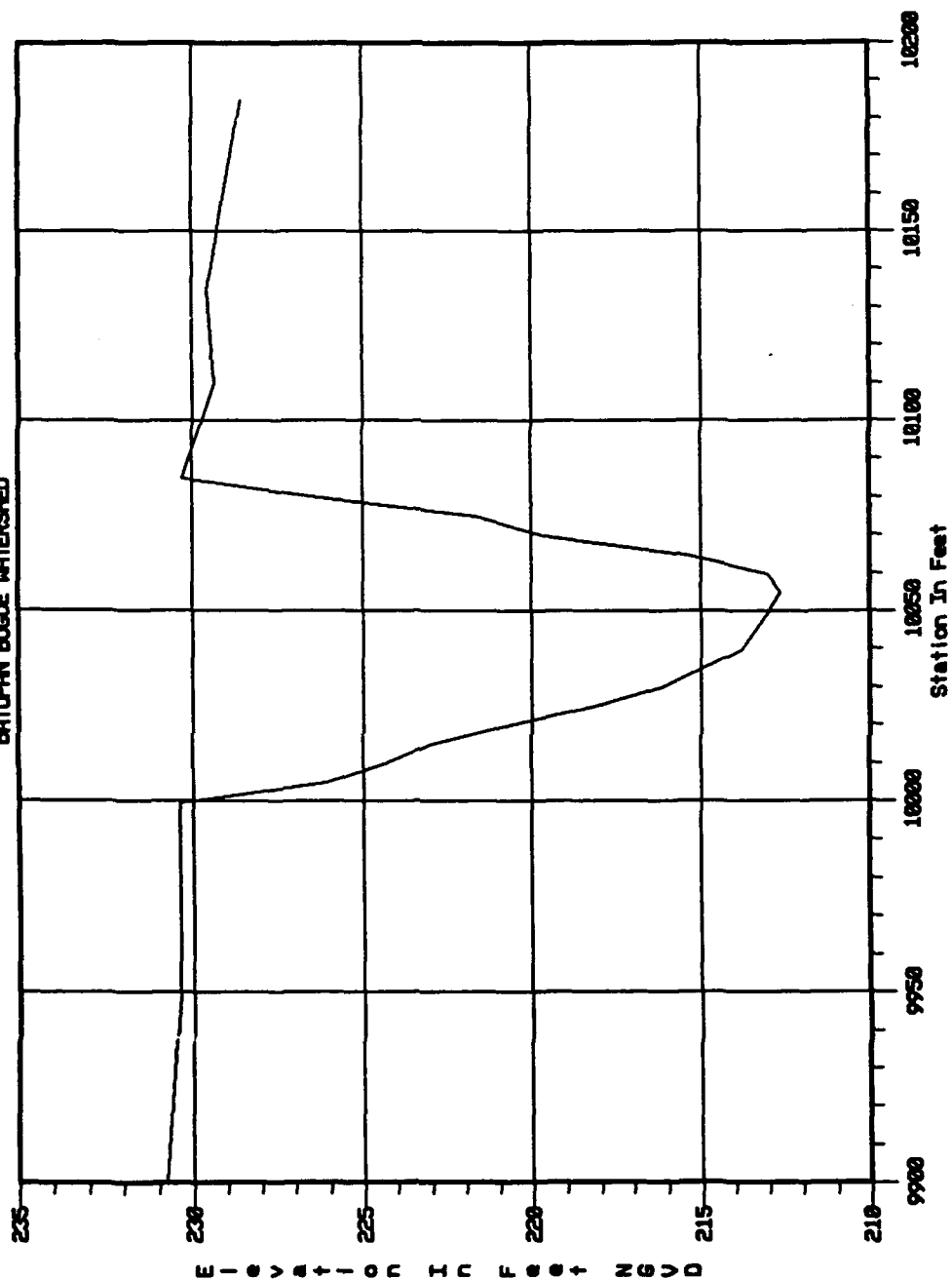
— CROWDER 1965 XSEC 83.70

BATUPAN BOGLE WATERSHED



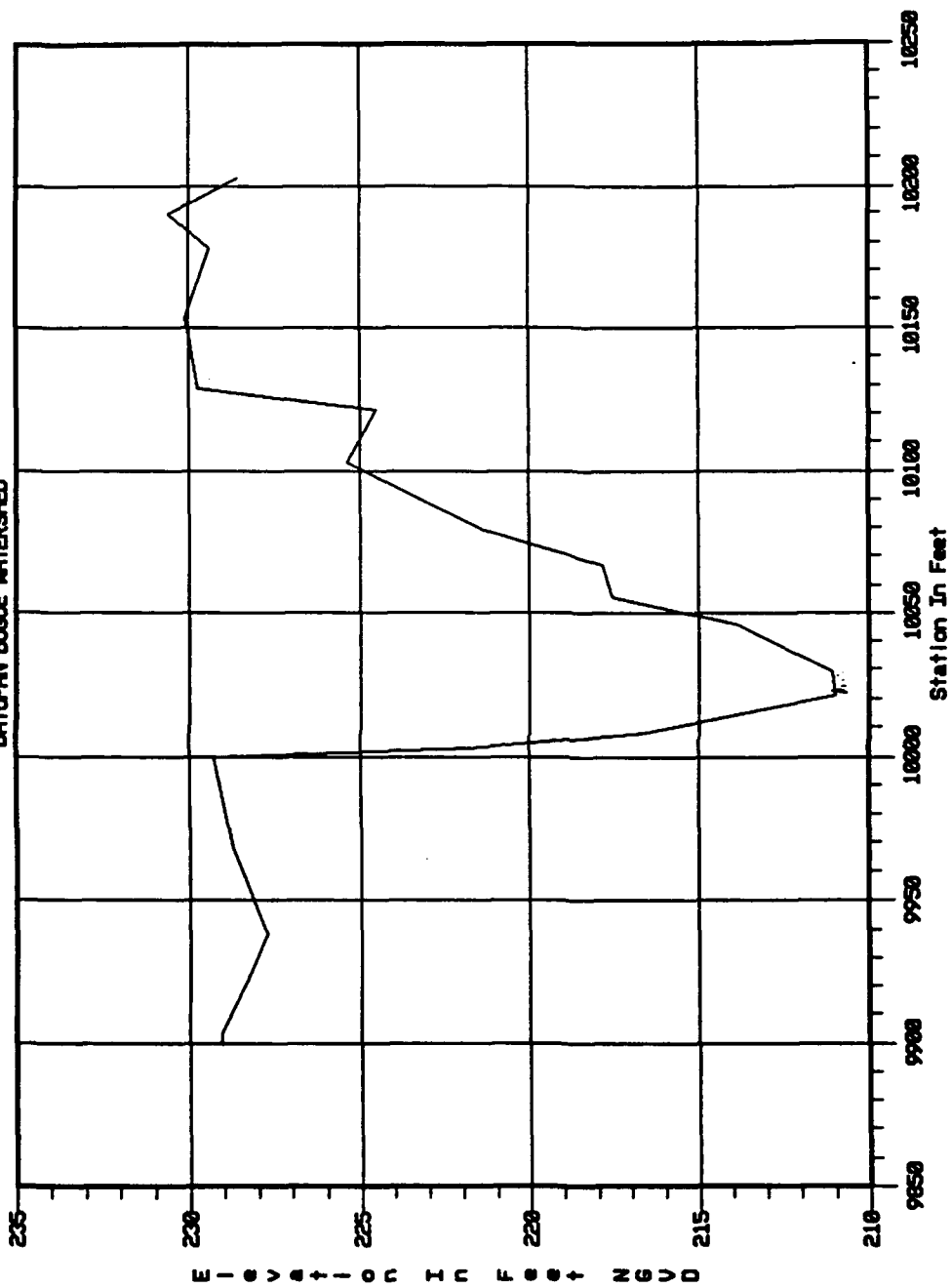
— CROWDER 1991 XSEC 63.78

BATUPAN BOGLE WATERSHED

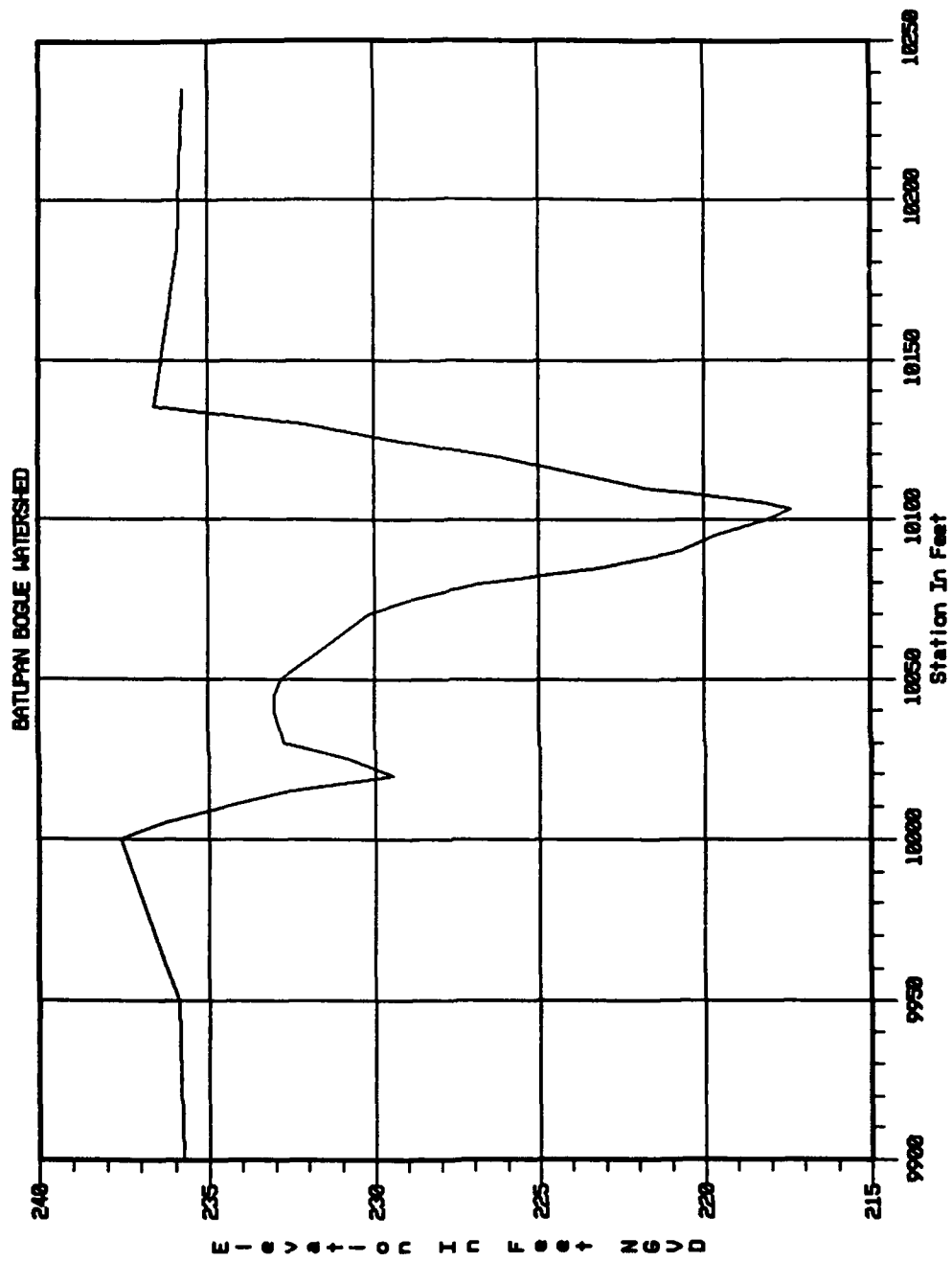


ORDER 1985 XSEC 92.33

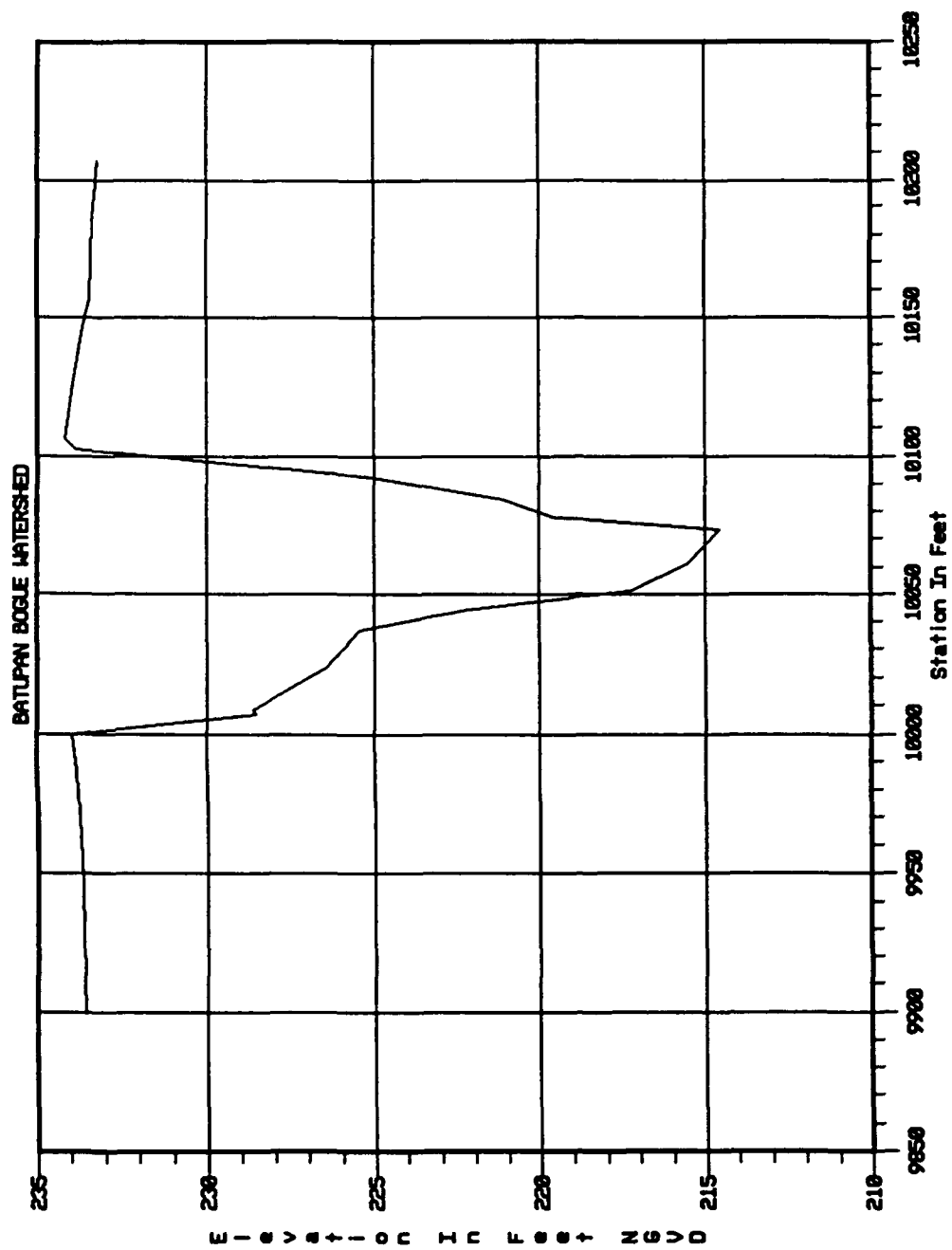
BATUPAN BOGLE WATERSHED



— CROWDER 1991 XSEC 92.75

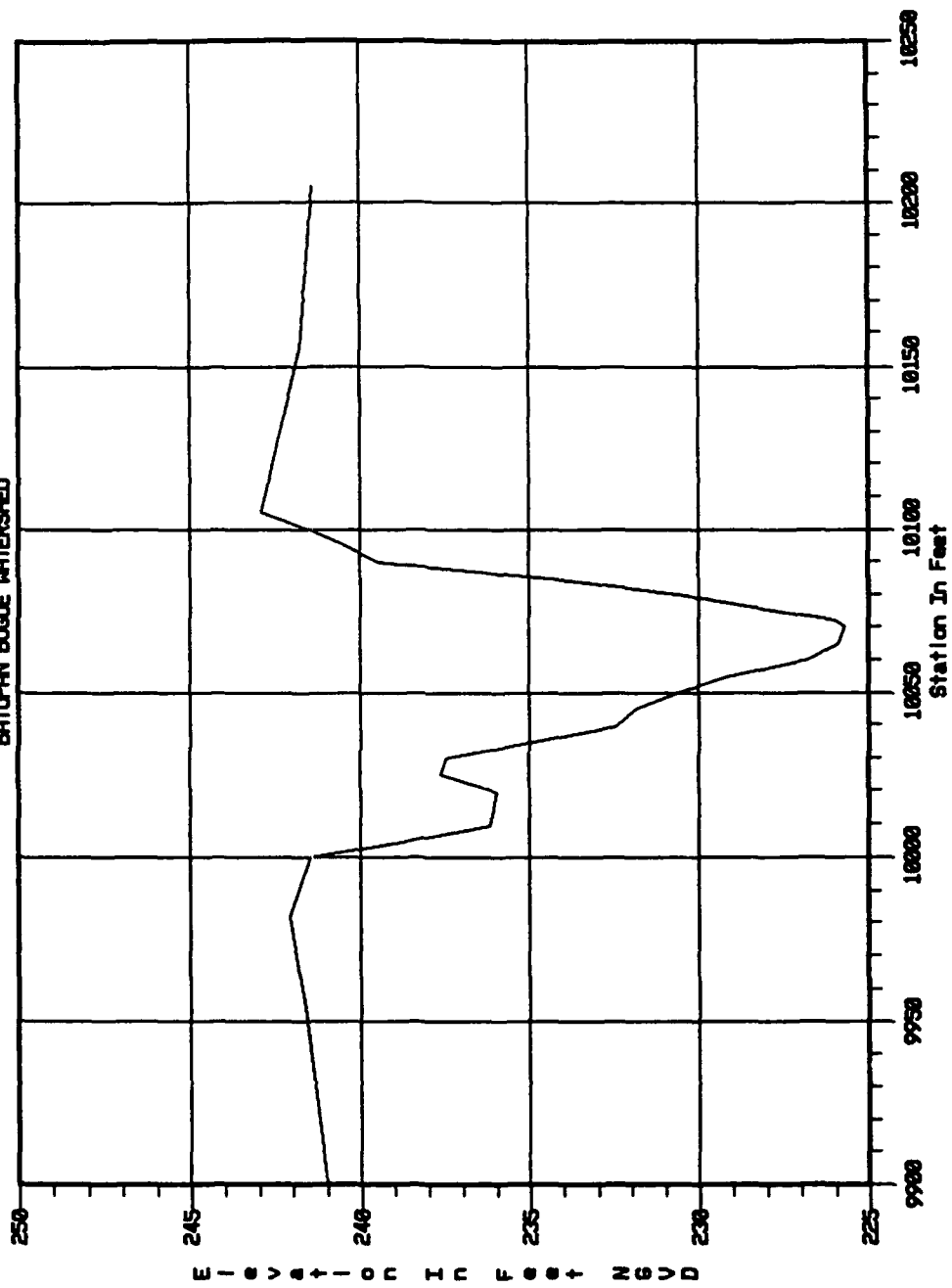


— CROWDER 1985 XSEC 118.79



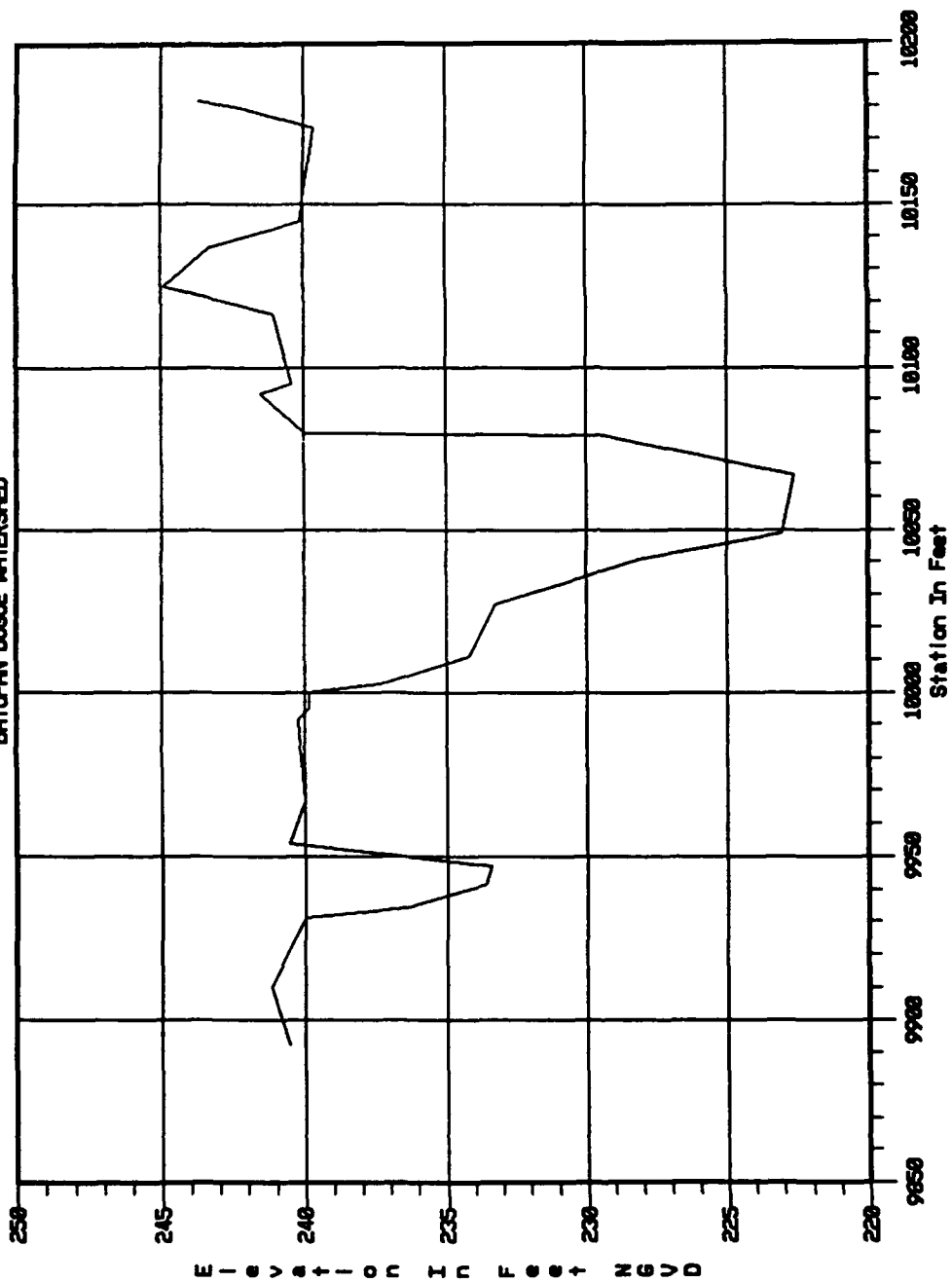
CROJDER 1991 XSEC 118.79

BATUPAN BOGLE WATERSHED

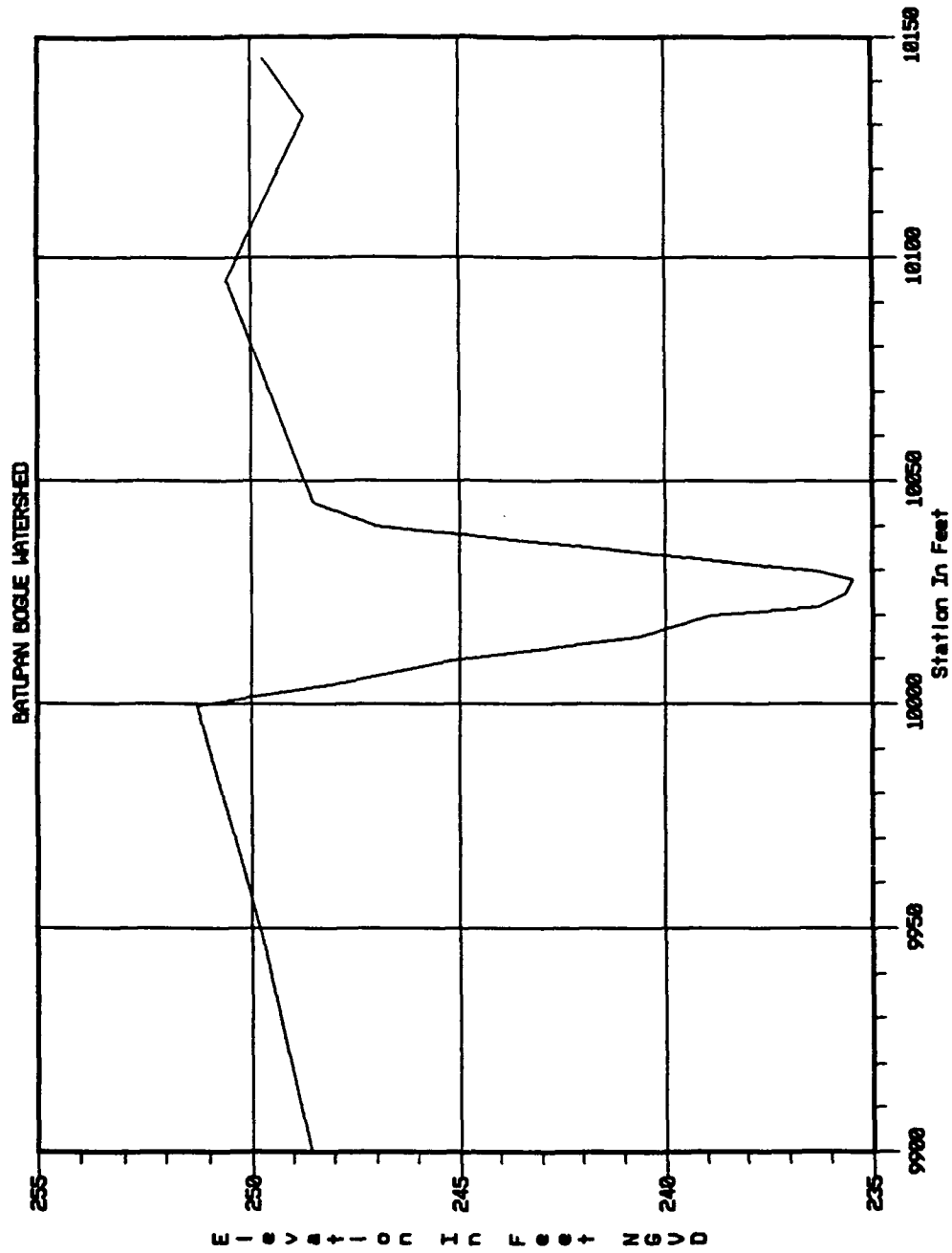


CROWDER 1985 XSEC 148.85

BATUPAN BOULE WATERSHED

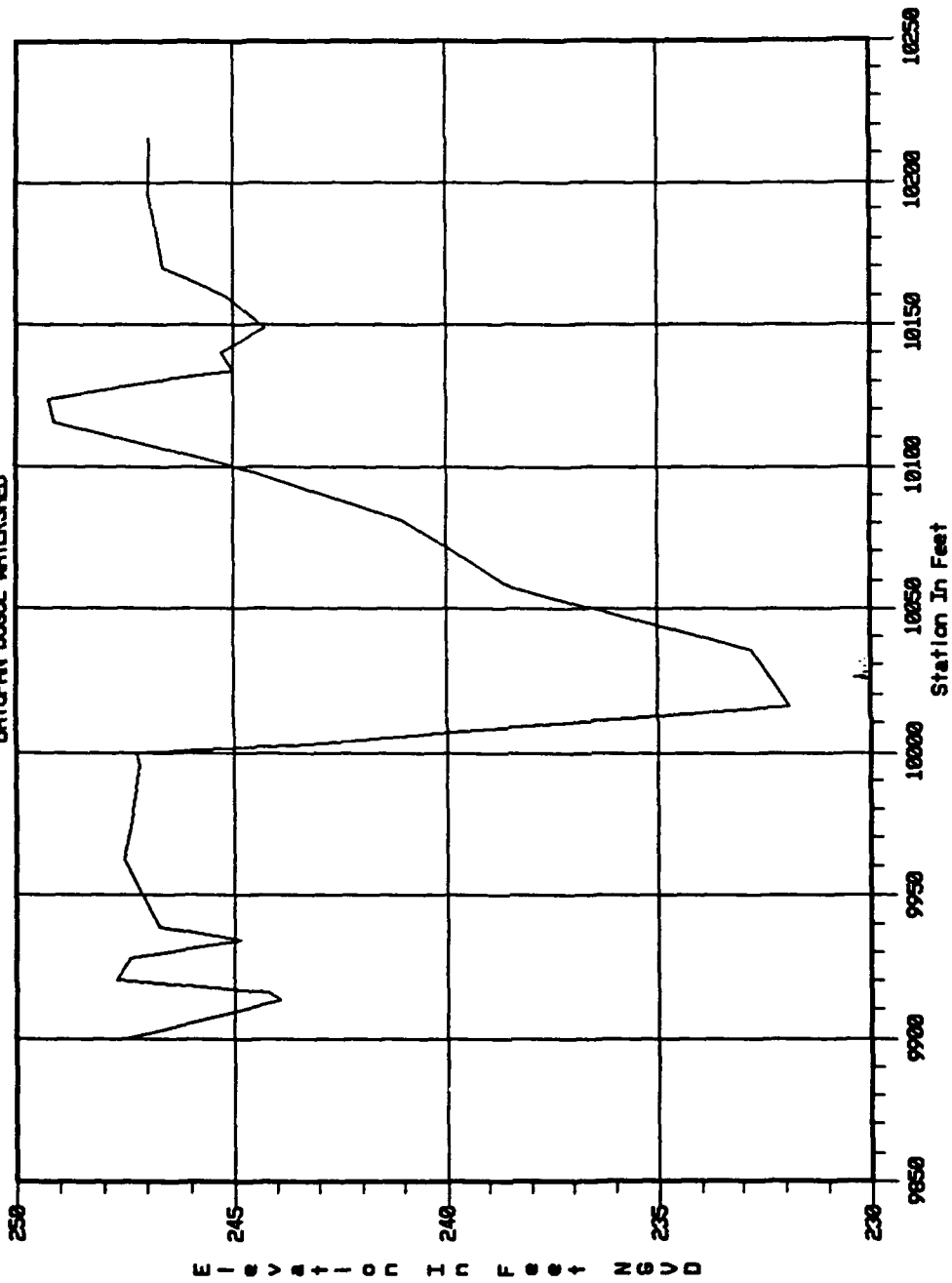


CRUDER 1991 XSEC 147.00

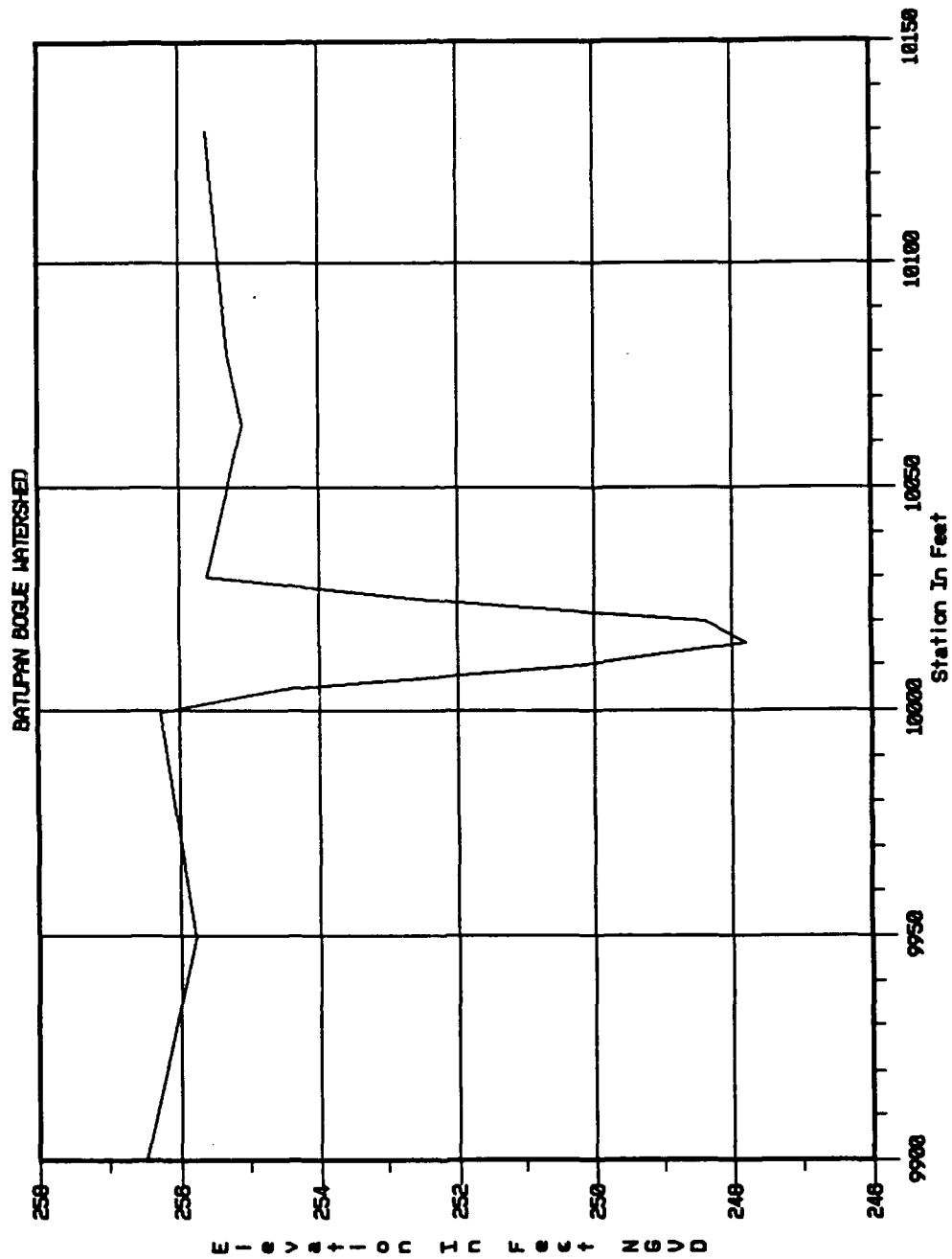


— CROUDER 1985 XSEC 173.00

BATUPAN BOQUE WATERSHED

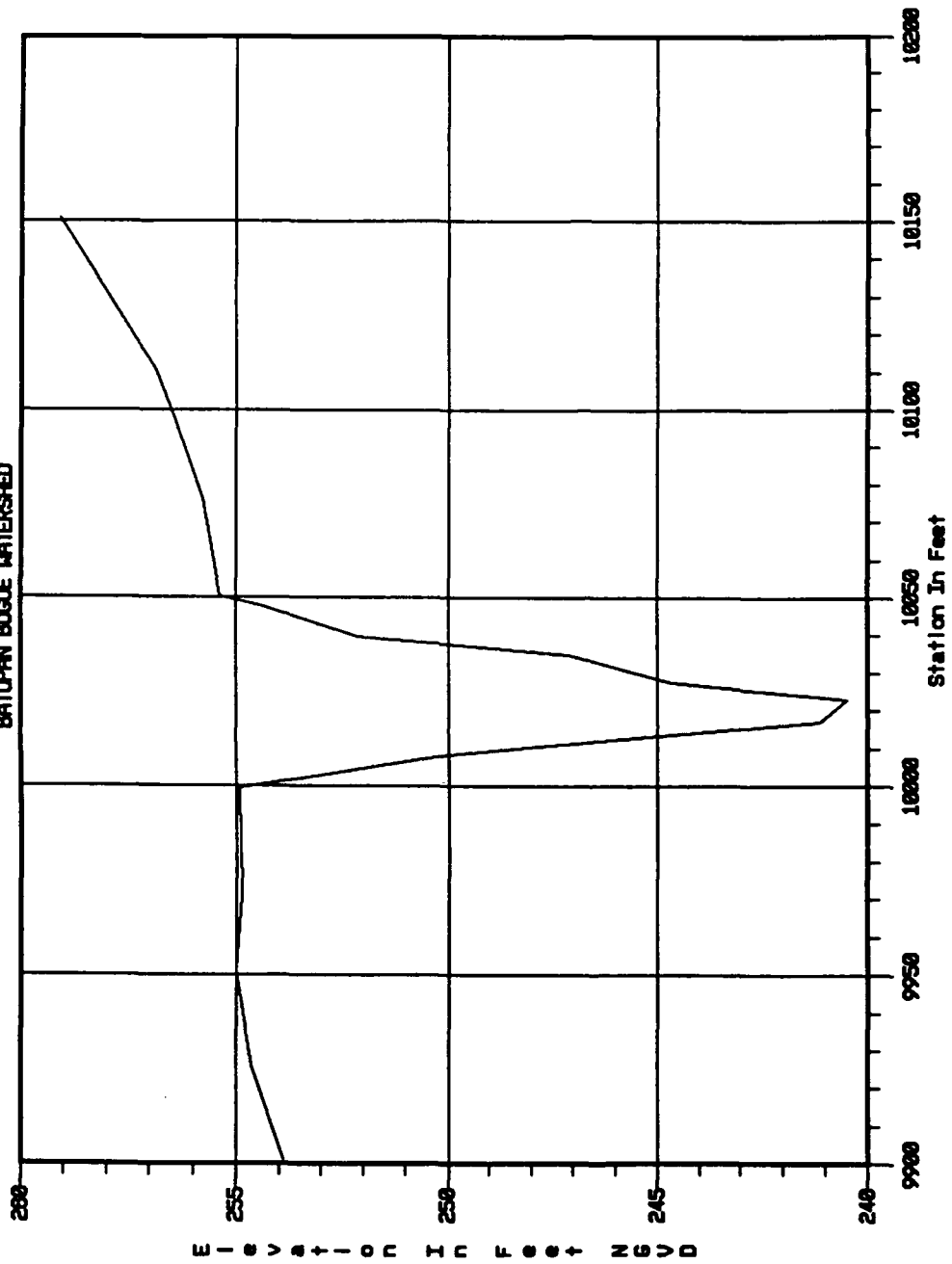


CROWDER 1991 XSEC 173.00



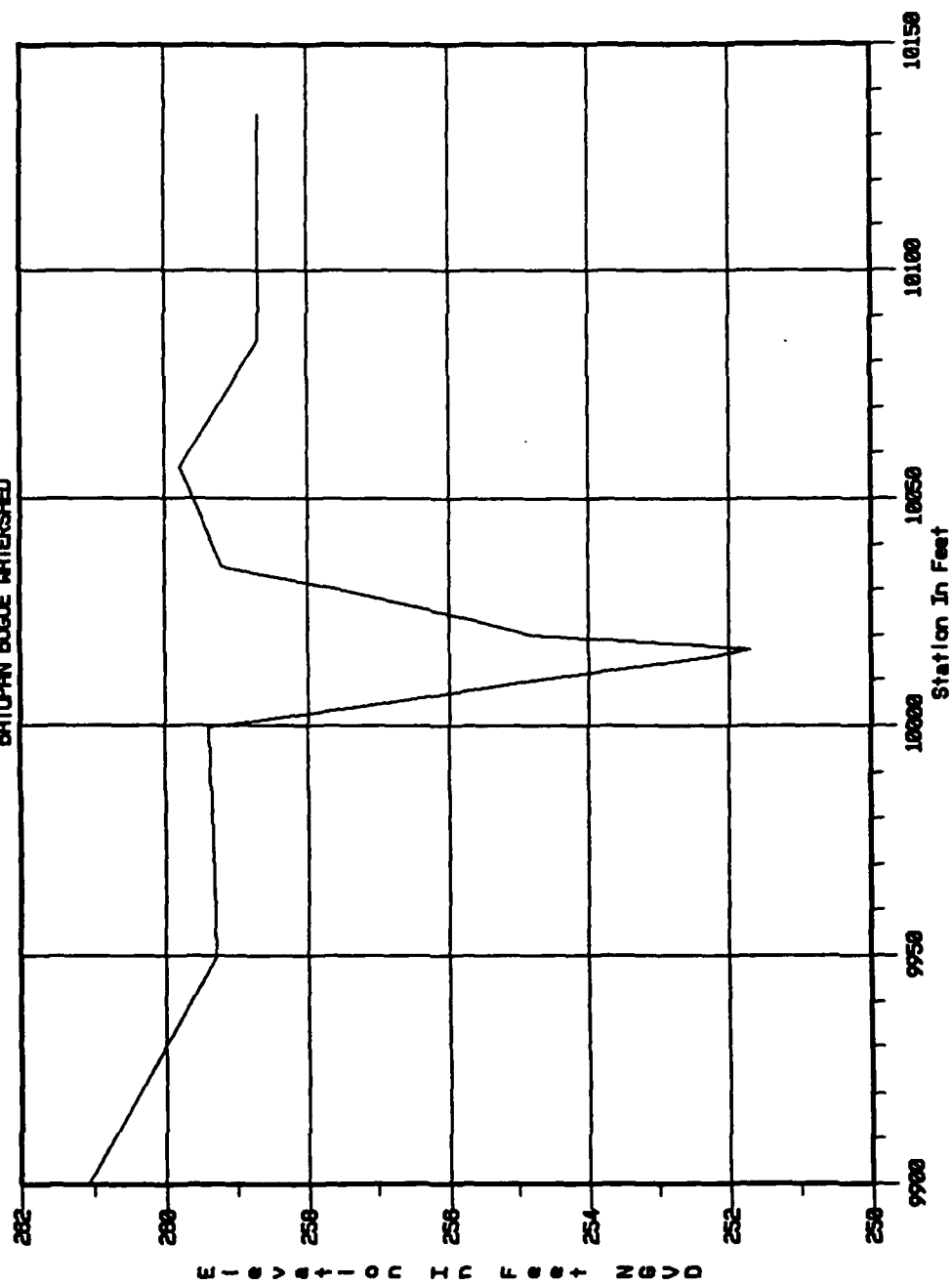
— CROWDER 1965 XSEC 195.50

BATUPAN BOULE WATERSHED



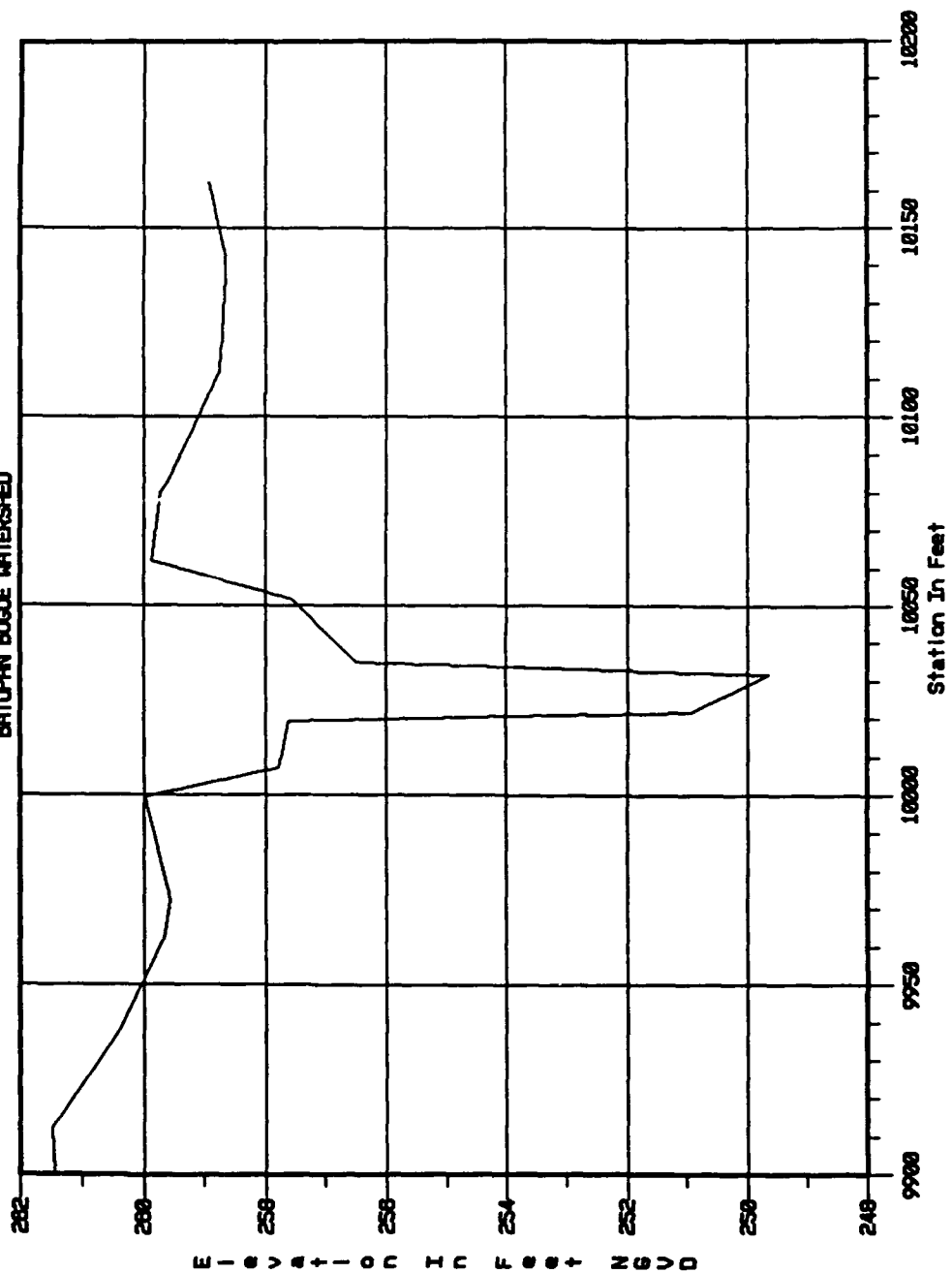
— CROUJER 1991 XSEC 195.50

BATUPAN BOULE WATERSHED



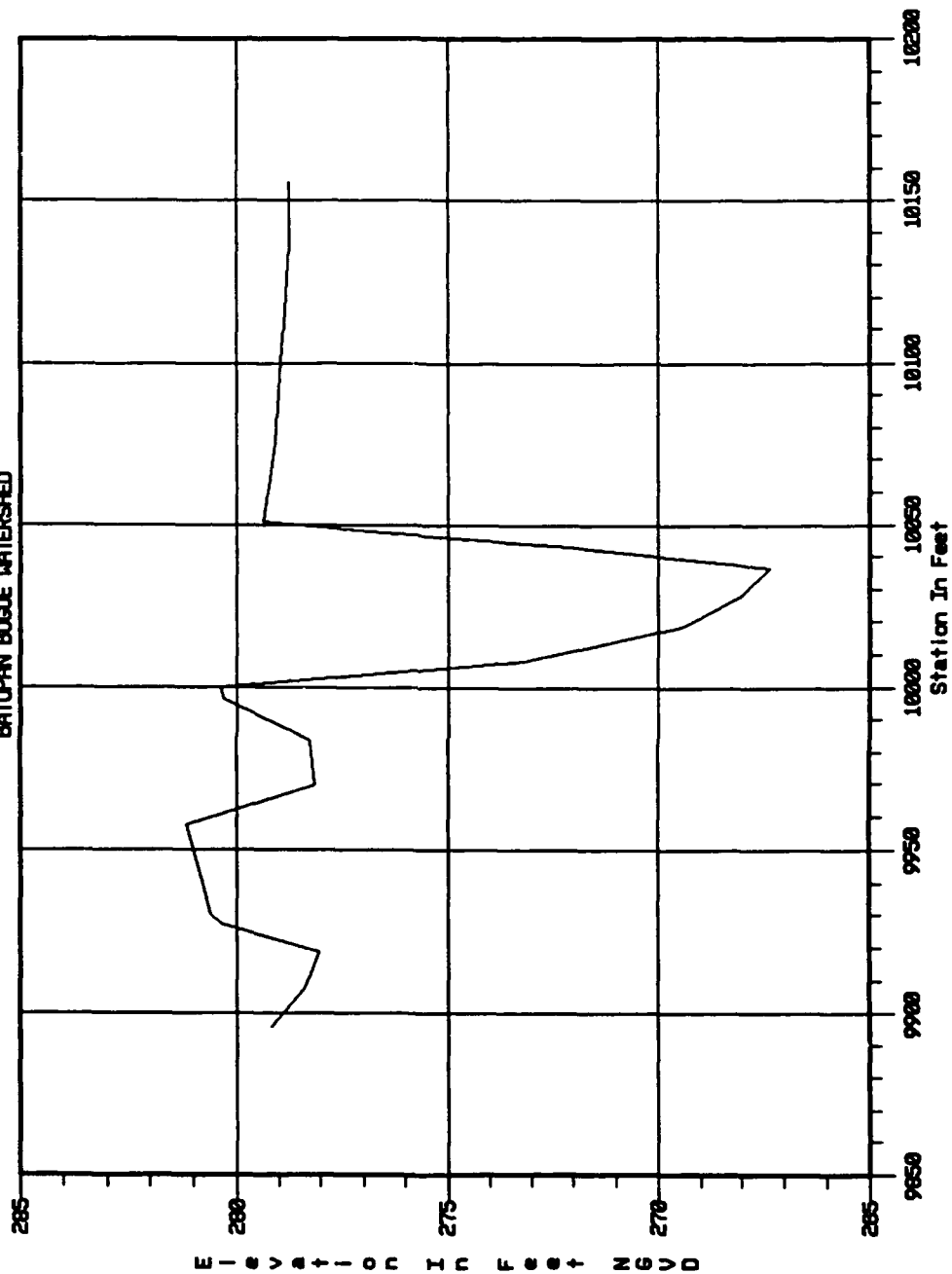
CROWDER 1985 XSEC 208.08

BATUPAN BOGUE WATERSHED



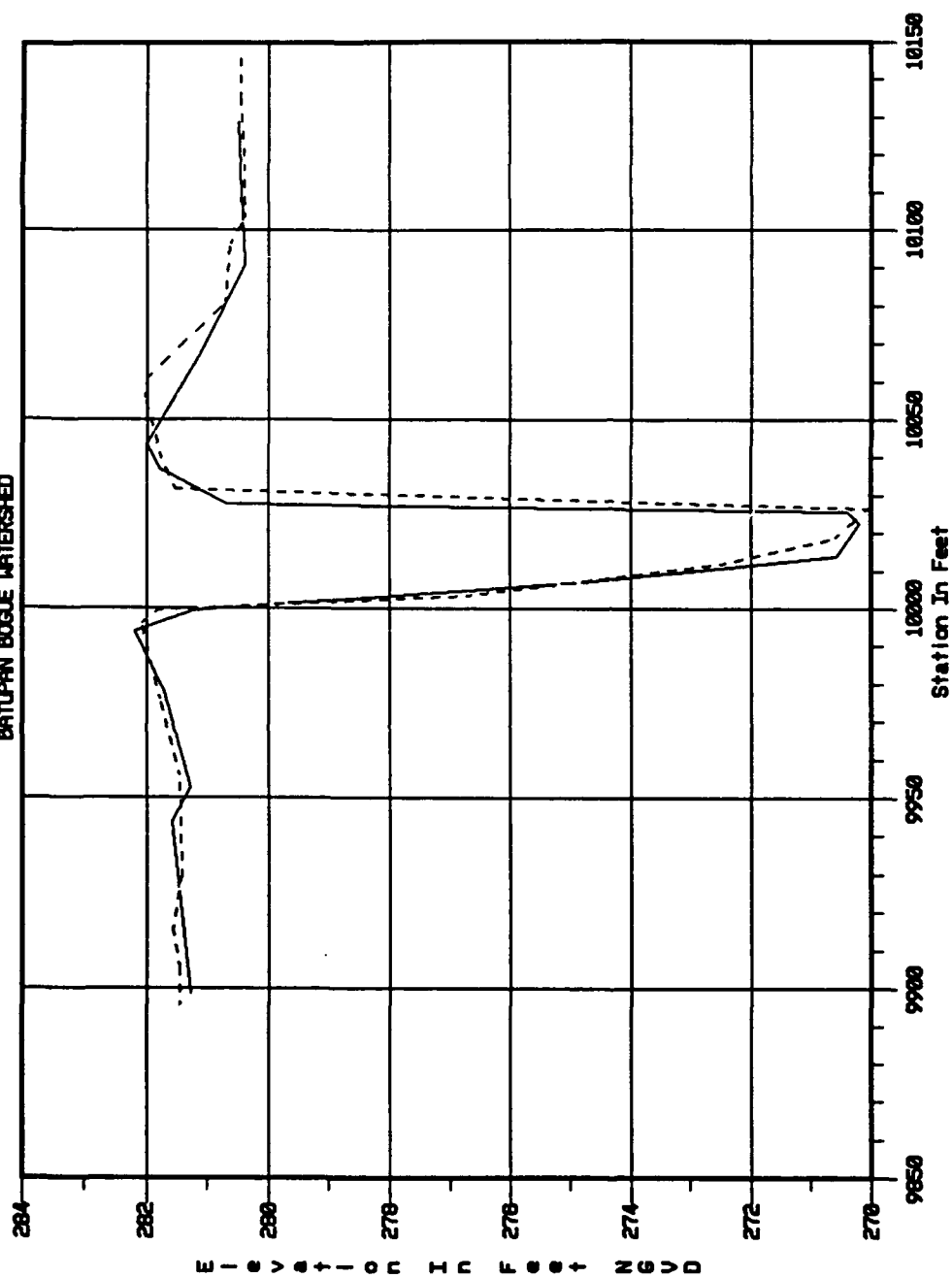
— CROUDER 1991 XSEC 217.13

BATUPAN BOGLE WATERSHED

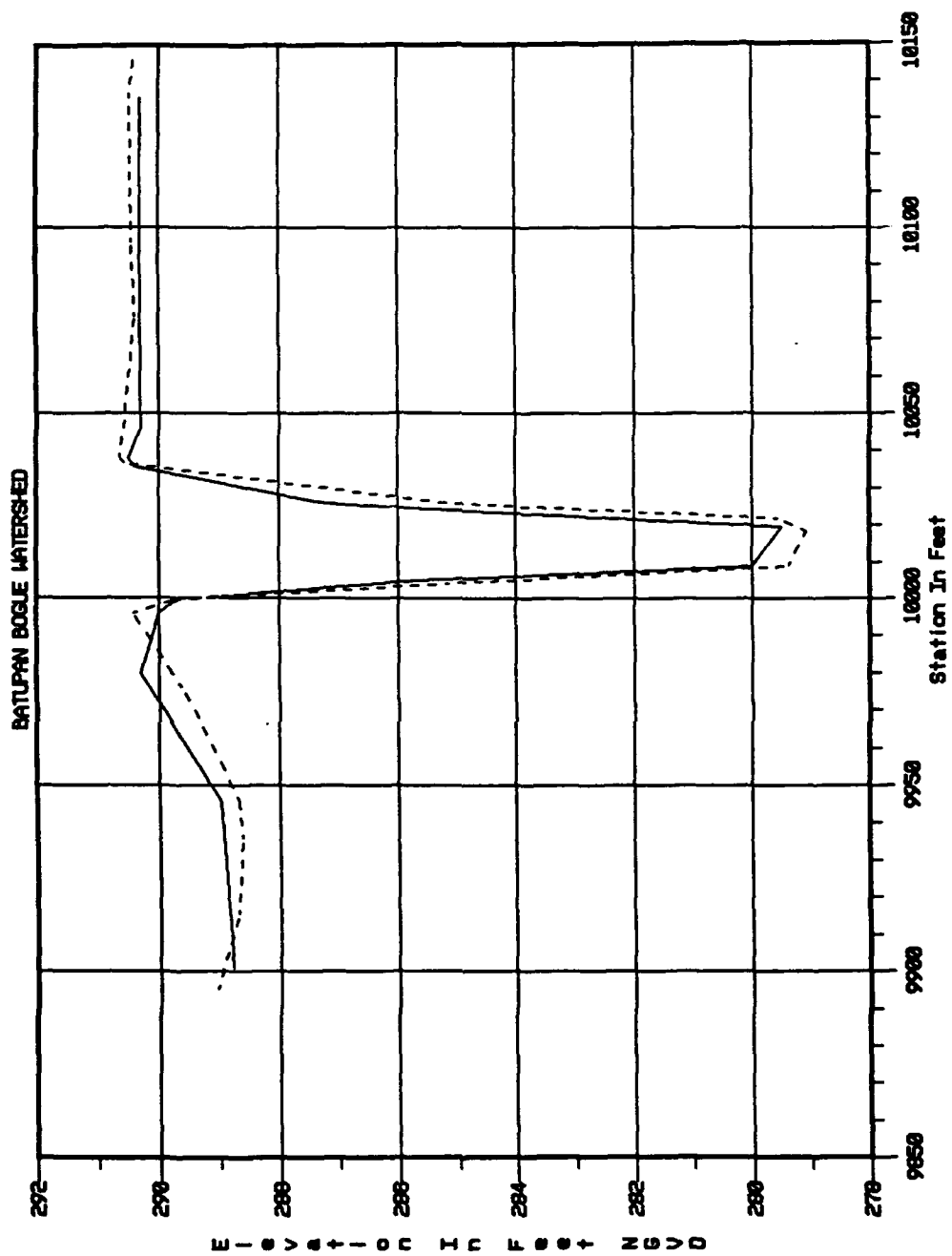


— LITTLE MOUSE 1991 XSEC 4.00

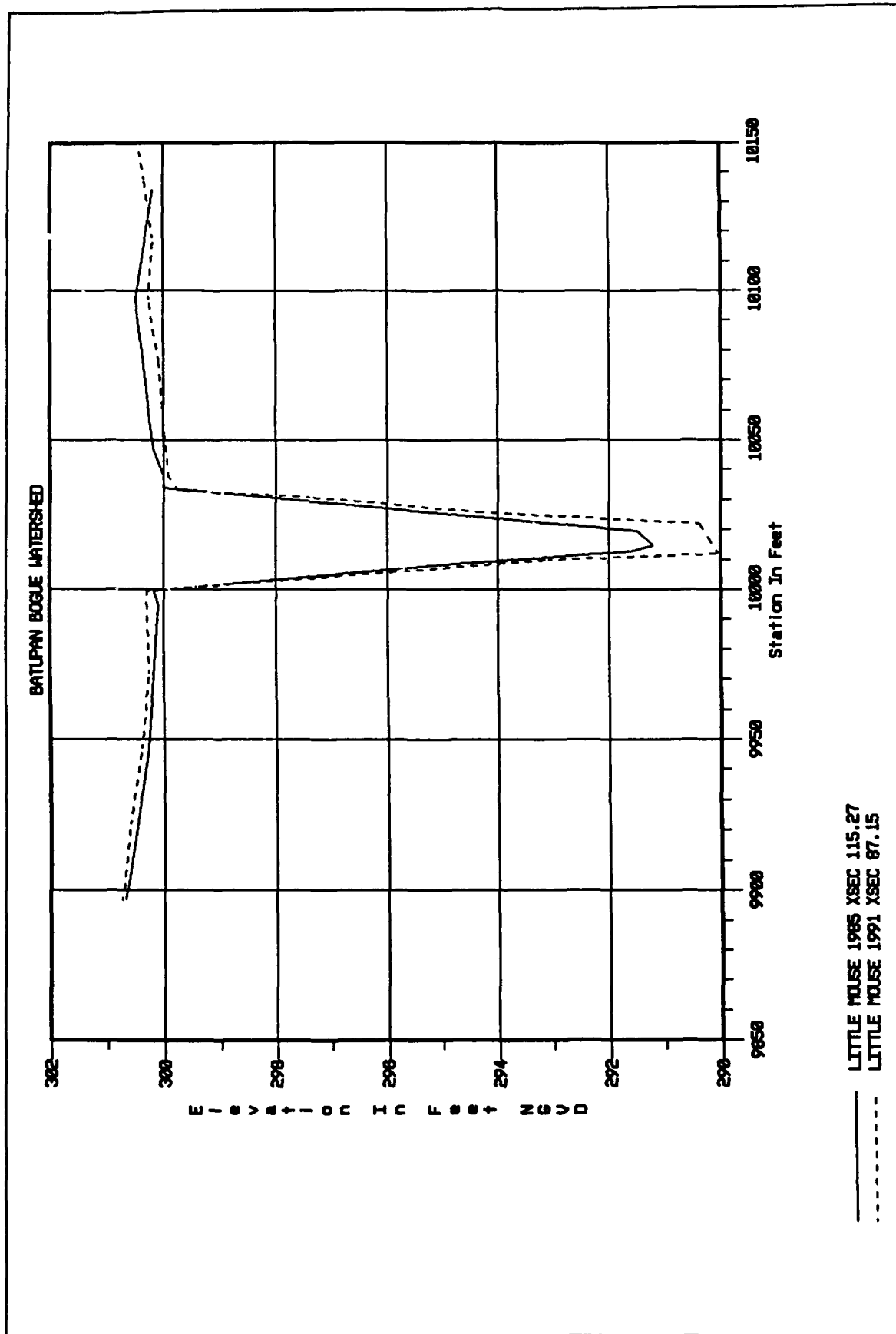
BATUPAN BOGLE WATERSHED

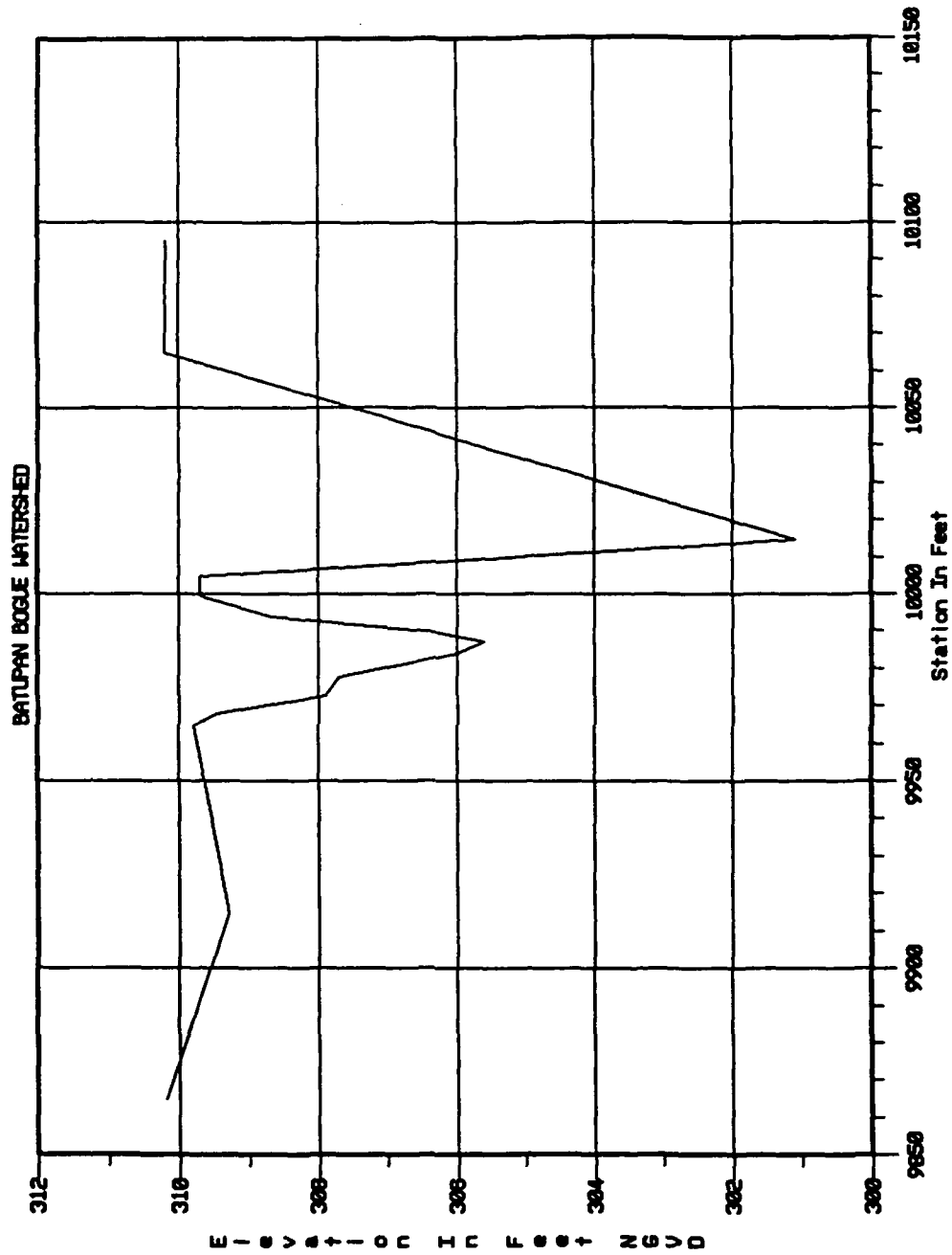


— LITTLE MOUSE 1985 XSEC 42.05
 - - - LITTLE MOUSE 1991 XSEC 14.08



— LITTLE MOUSE 1985 XSEC 70.88
 - - - LITTLE MOUSE 1991 XSEC 42.84





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