UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

FLOOD PROFILE STUDY, HOOSIER CREEK, LINN COUNTY, IOWA

By

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United States Geological Survey

Prepared in Cooperation with

LINN COUNTY, IOWA

Open-file Report

Iowa City, Iowa
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ILLUSTRATIONS

FLOOD PROFILE STUDY, HOOSIER CREEK
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INTRODUCTION

The purpose of this report is to present the results of a flood-profile study made for Hoosier Creek and its tributary, South Hoosier Creek. The reaches studied extend from near the south Linn County line upstream to U.S. Highway 218 on Hoosier Creek, and from the mouth to U.S. Highway 218 on South Hoosier Creek. A total of about 11 miles of stream is included in the two reaches. The profiles shown in the report are computed for a very large flood under existing valley conditions and for a smaller flood under two assumed conditions of encroachment. This information can be used to supplement the existing county zoning ordinances for flood plains and to aid in future flood-plain management when part or all of the area is urbanized. This report is the result of a cooperative agreement between Linn County, Iowa, and the U.S. Geological Survey that provides for the collection and analysis of hydrologic data in Linn County.

DESCRIPTION OF THE AREA

Hoosier Creek (plate 1) is a small left-bank tributary of the Coralville Reservoir on the Iowa River. The drainage area of Hoosier Creek is 1.1 square miles at U.S. Highway 218 and 17.1 square miles near the town of Ely. The drainage area of South Hoosier Creek is 2.5 square miles at U.S. Highway 218 and 9.2 square miles at the mouth. At and downstream from Ely, maximum reservoir levels will flood parts of the flood plain of the creek.

Land elevations range from about 710 feet near Ely to about 870 feet at the upper end of the basin. Land use is mainly agricultural at present with woodland or lightly wooded pasture land in the downstream reaches of the two streams. Ely (population 268 in 1960) is the only community in the study area. A few houses in Ely near the creek may be subject to flooding during large overflows.

STUDY CRITERIA

State practice requires that a very large flood discharge be used to define the inundation elevation on the natural flood plain. This practice also uses a smaller flood to evaluate the effect of restriction of the of the waterway on flood elevations. The two flood discharges for several locations on the creek are shown in the following table. The 50-year flood is included to give a measure of the size of the other two floods.

Stream and location	Drainage area sq.mi.	Flood discharge in cfs		
		Defining inundation level	Evaluating effect of restrictions	50-year flood
Hoosier Creek at U.S. Hwy 218	1.1	2,600	2,100	353
Hoosier Creek above mouth S. Hoosier Creek	5.4	6,000	4,600	1,230
S. Hoosier Creek at U.S. Hwy 218	2.5	3,800	3,200	790
S.Hoosier Creet at mouth	9.2	8,200	6,600	1,820
Hoosier Creek below S. Hoosier Creek	14.6	12,000	10,000	2,360
Hoosier Creek at Ely	17.1	12,000	10,000	2,590

The two large flood discharges were varied according to drainage area between the points tabulated above. The size of the discharge and the points at which they were changed are shown on plates presented later in the report.

Floodway widths of 200 and 300 feet were used in the computations of profiles to show the effect of two degrees of encroachment on the water level. These profiles can be used as guides to set minimum building elevations on the flood plain.

At, and downstream from Ely, the stream channel and part of the flood plain areas are below the maximum elevation of flood storage for the Coralville Reservoir. These areas are subject to flowage easements to the United States which restrict the construction of fill or buildings in the easement area.

The criteria are based on floods that are extremely rare. However, Schwob (in Dougal, 1969, p. 33)[1/] shows that floods having ratios to the mean annual flood[2/] of from 11 to 20 for drainage areas of from 1 to 17 square miles have occurred in Iowa. Ratios for the floods used in this study are generally smaller than the above ratios except for drainage area less than about 4 square miles. For these latter drainage areas, the flood ratios are as high as 23 for 1 square mile and 16 for 4 square miles. The 50-year flood discharges are 3.1 times the mean annual flood.

1/ Dougal, Merwin D. ed., 1969, Flood-plain management, Iowa's experience: Iowa State University Press, 270 p.

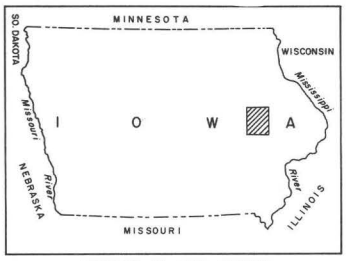
2/ Schwob, Harlan H., 1966, Magnitude and frequency of Iowa floods: Iowa Highway Research Board Bull. 28, pt. 1, 47 p., 2 pl., 16 figs.

PRESENTATION OF RESULTS

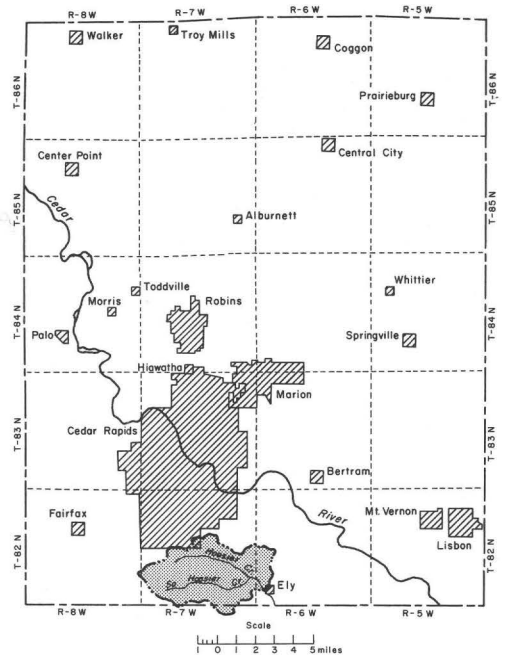
Plate 1 shows the basin map and the index of the seven sheets of map and profile combination on plates 2 to 8. Roads and landlines are shown on plate 1 to aid in locating the other plates containing points of interest to the user.

Standard methods of step-backwater computation were used to define the water-surface profiles for natural valley conditions and for the two restricted waterways of 200- and 300-foot widths.

Points at which the discharge used for computations changed are indicated on the profiles and drainage area at selected points is shown on the maps of plates 2 to 8. An appendix contains the description and elevation of temporary bench marks set during the project.



LOCATION OF LINN COUNTY



LOCATION OF HOOSIER CREEK BASIN AND CITIES AND TOWNS IN LINN COUNTY

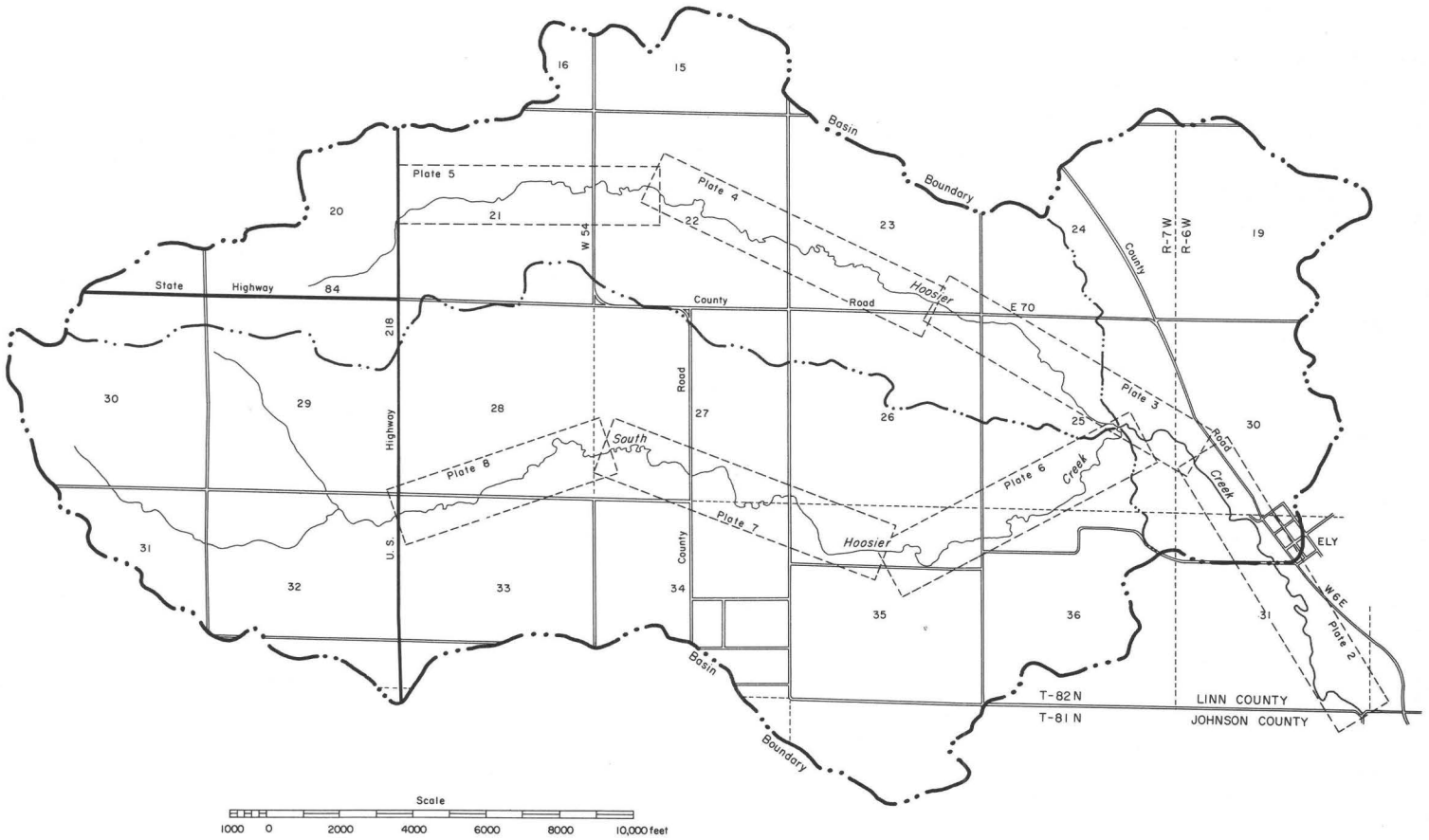


Plate 1. Map of Hoosier Creek basin study area in Linn County showing index of plates 2 to 8.

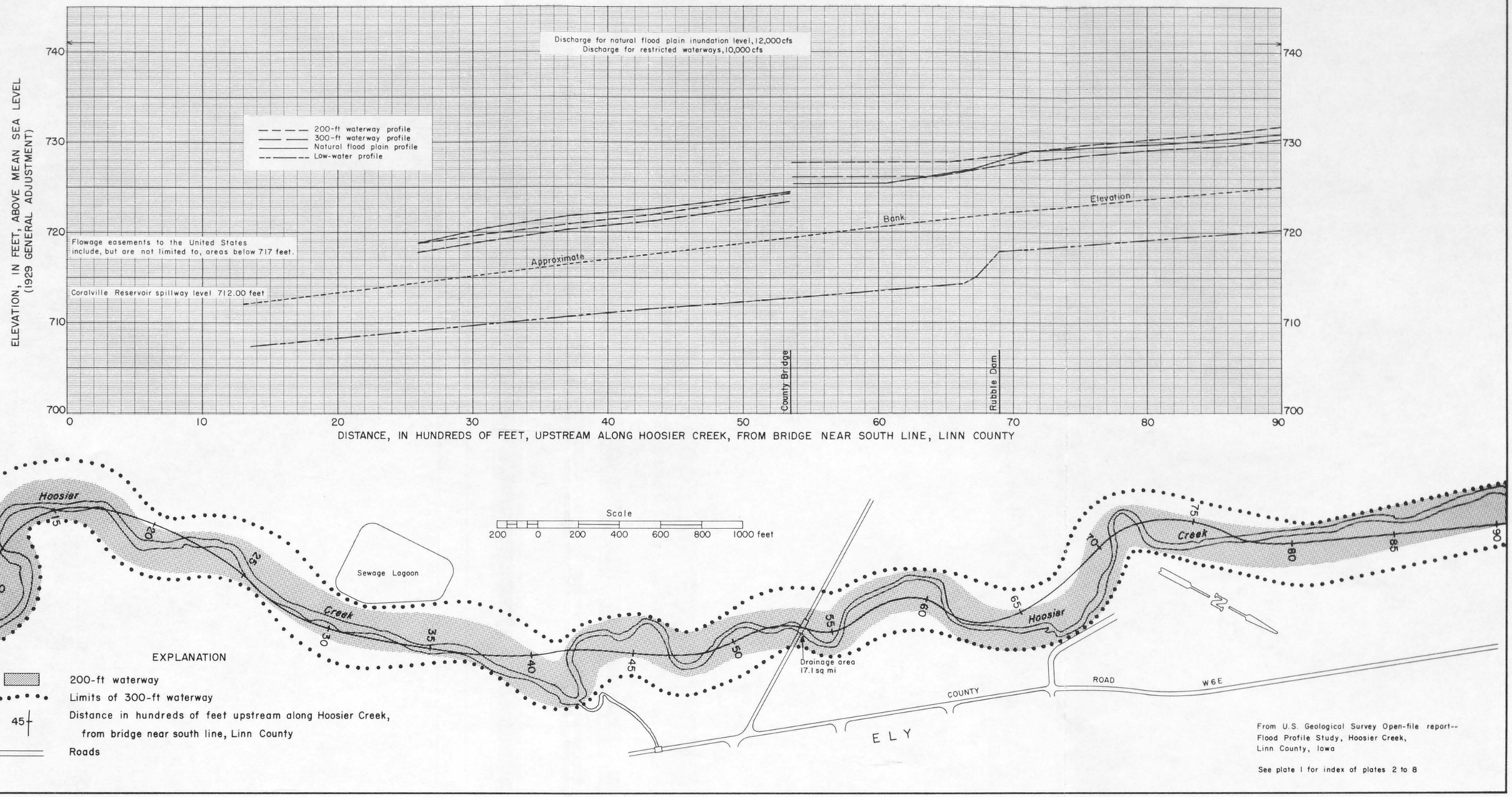
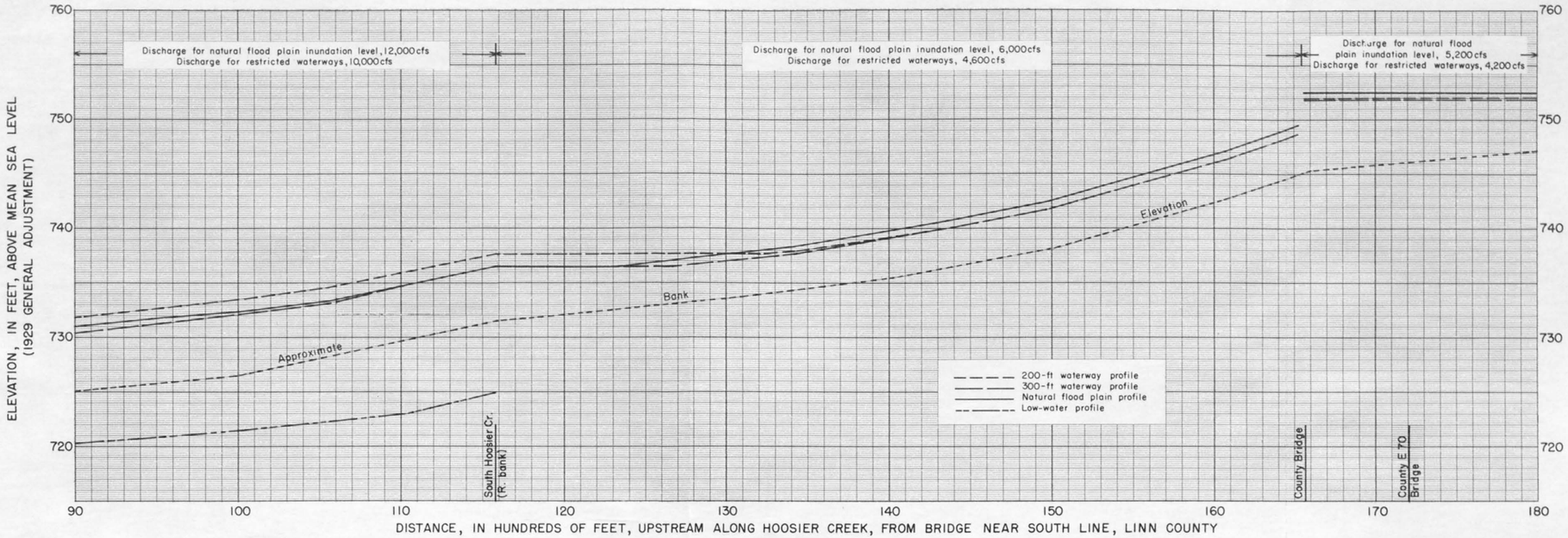


Plate 2. Map and flood profiles, station 0 to station 90, Hoosier Creek, showing waterway limits used in computations.



Note: Only one or two profile lines are shown at places where all three or any two flood elevations are coincident.

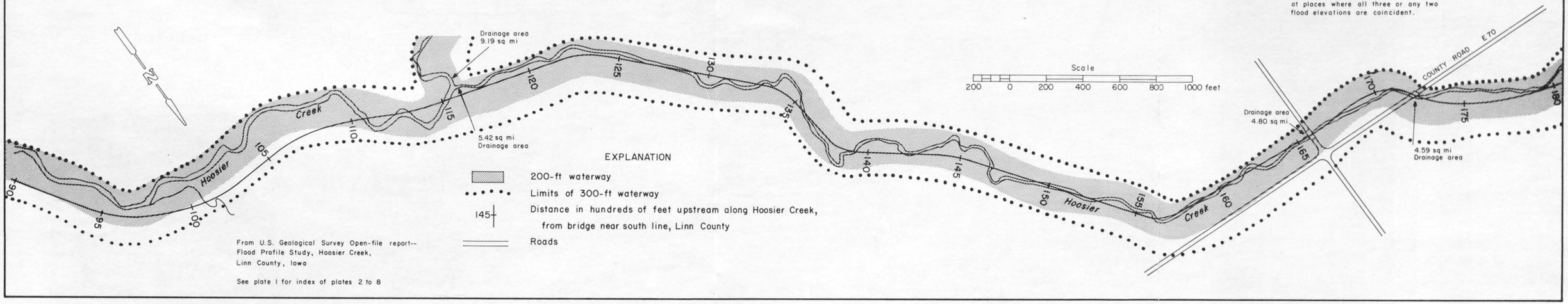
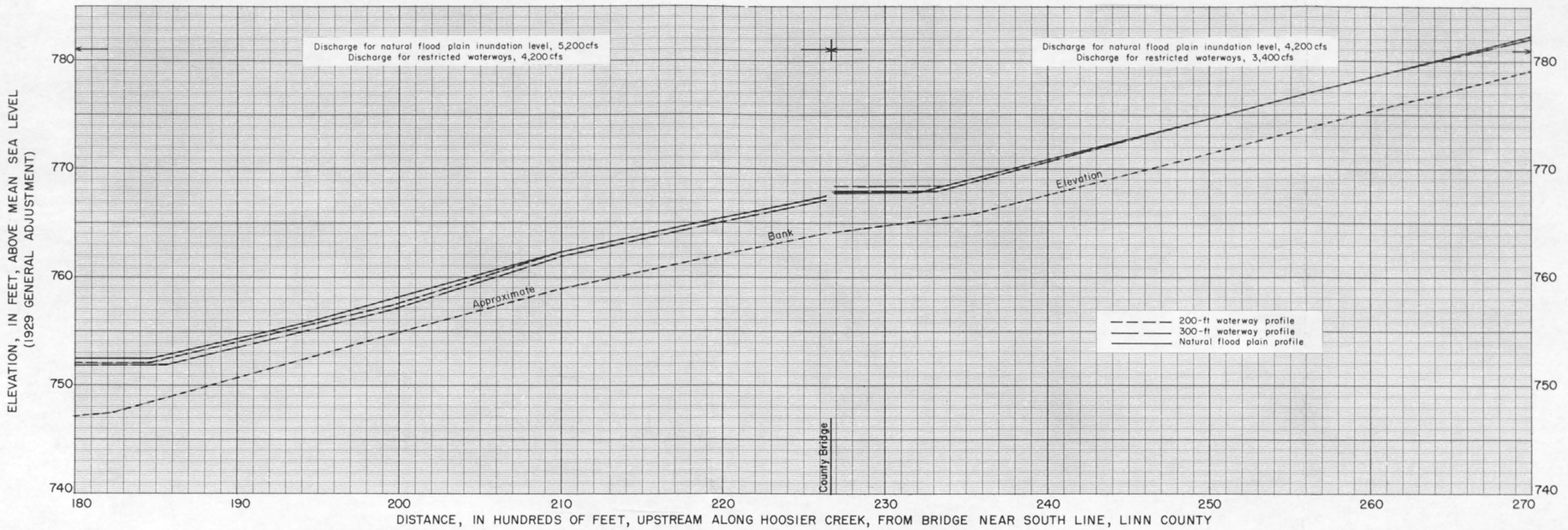
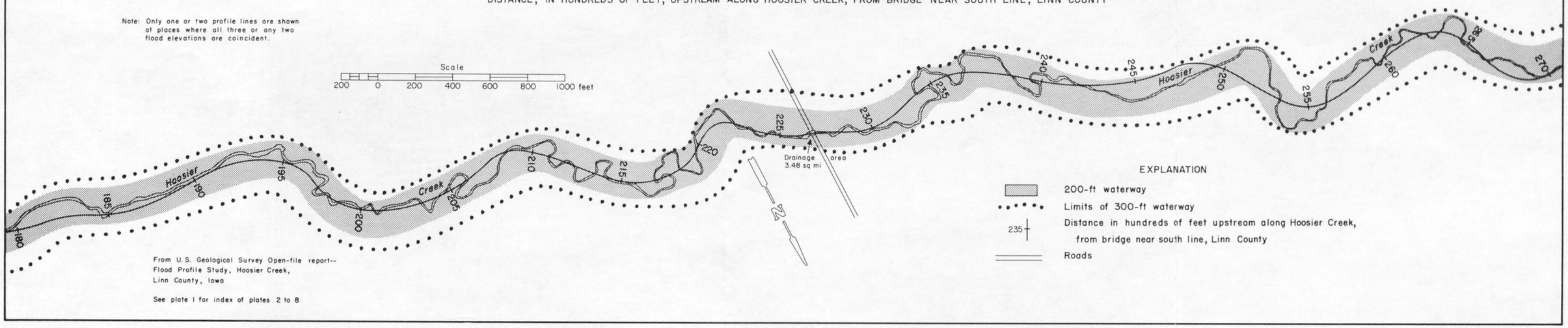


Plate 3. Map and flood profiles, station 90 to station 180, Hoosier Creek, showing waterway limits used in computations.



Note: Only one or two profile lines are shown at places where all three or any two flood elevations are coincident.



From U.S. Geological Survey Open-file report--
Flood Profile Study, Hoosier Creek,
Linn County, Iowa

See plate 1 for index of plates 2 to 8

Plate 4. Map and flood profiles, station 180 to station 270, Hoosier Creek, showing waterway limits used in computations.

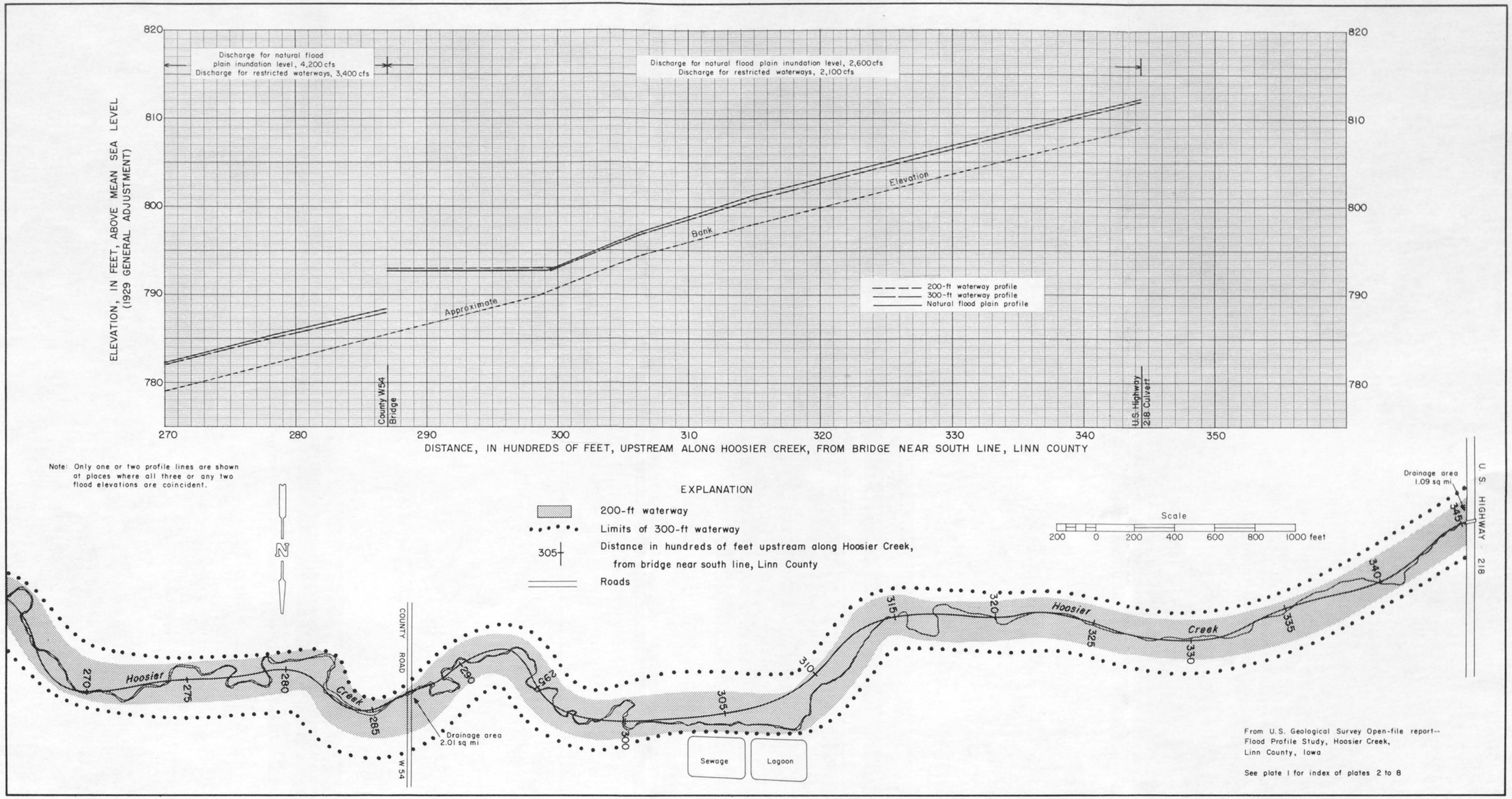


Plate 5. Map and flood profiles, station 270 to station 345, Hoosier Creek, showing waterway limits used in computations.

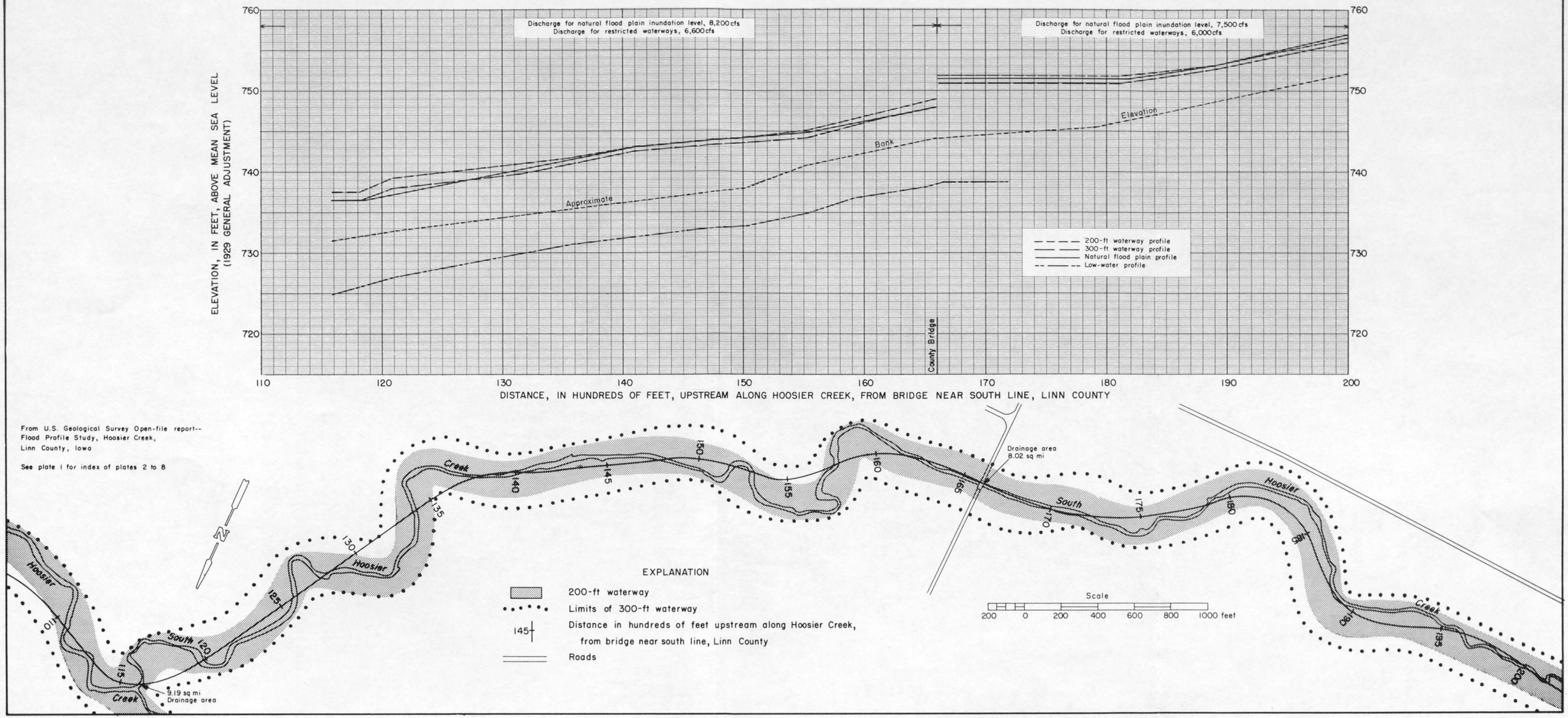


Plate 6. Map and flood profiles, station 116 to station 200, South Hoosier Creek, showing waterway limits used in computations.

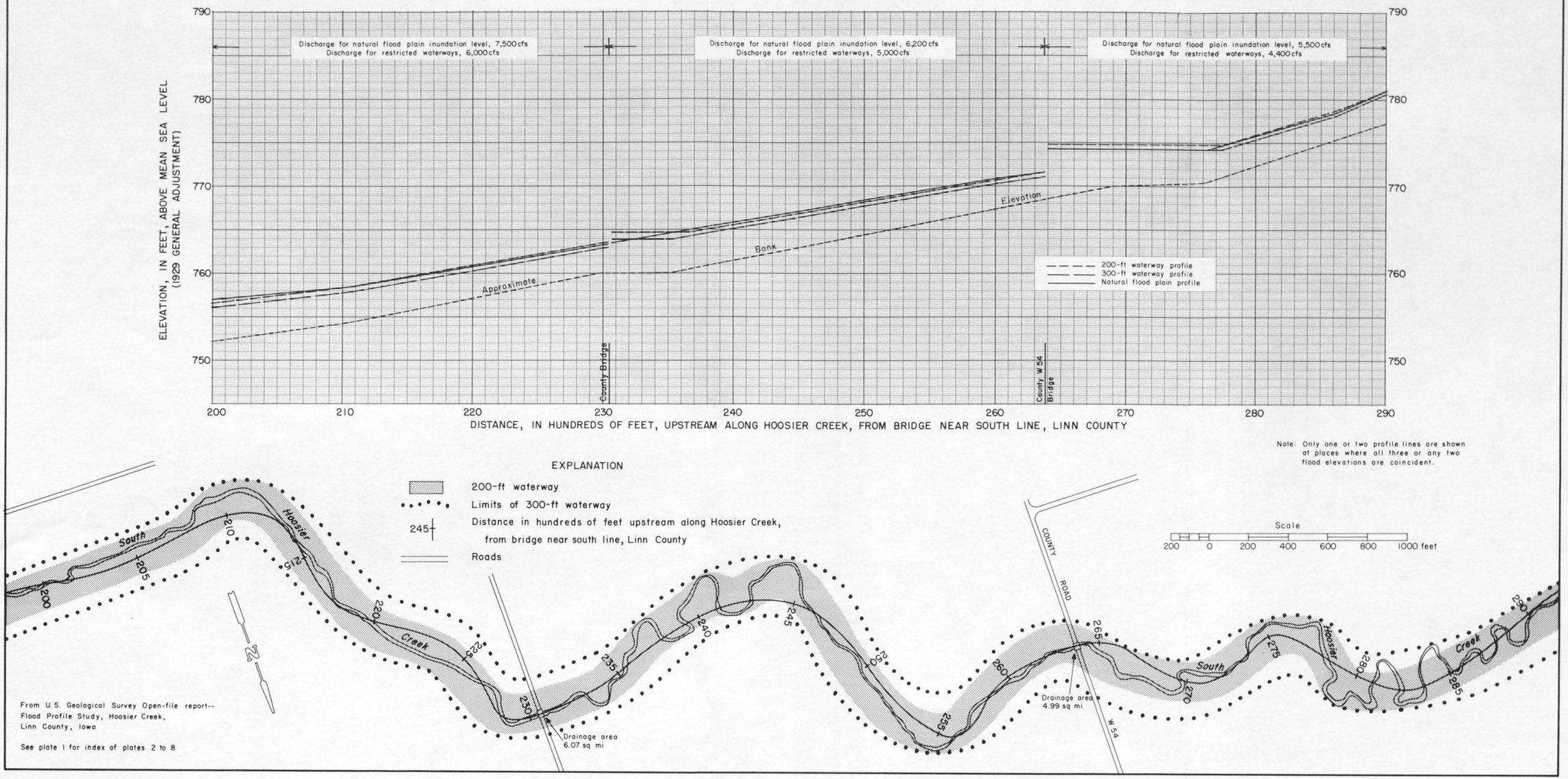


Plate 7. Map and flood profiles, station 200 to station 290, South Hoosier Creek, showing waterway limits used in computations.

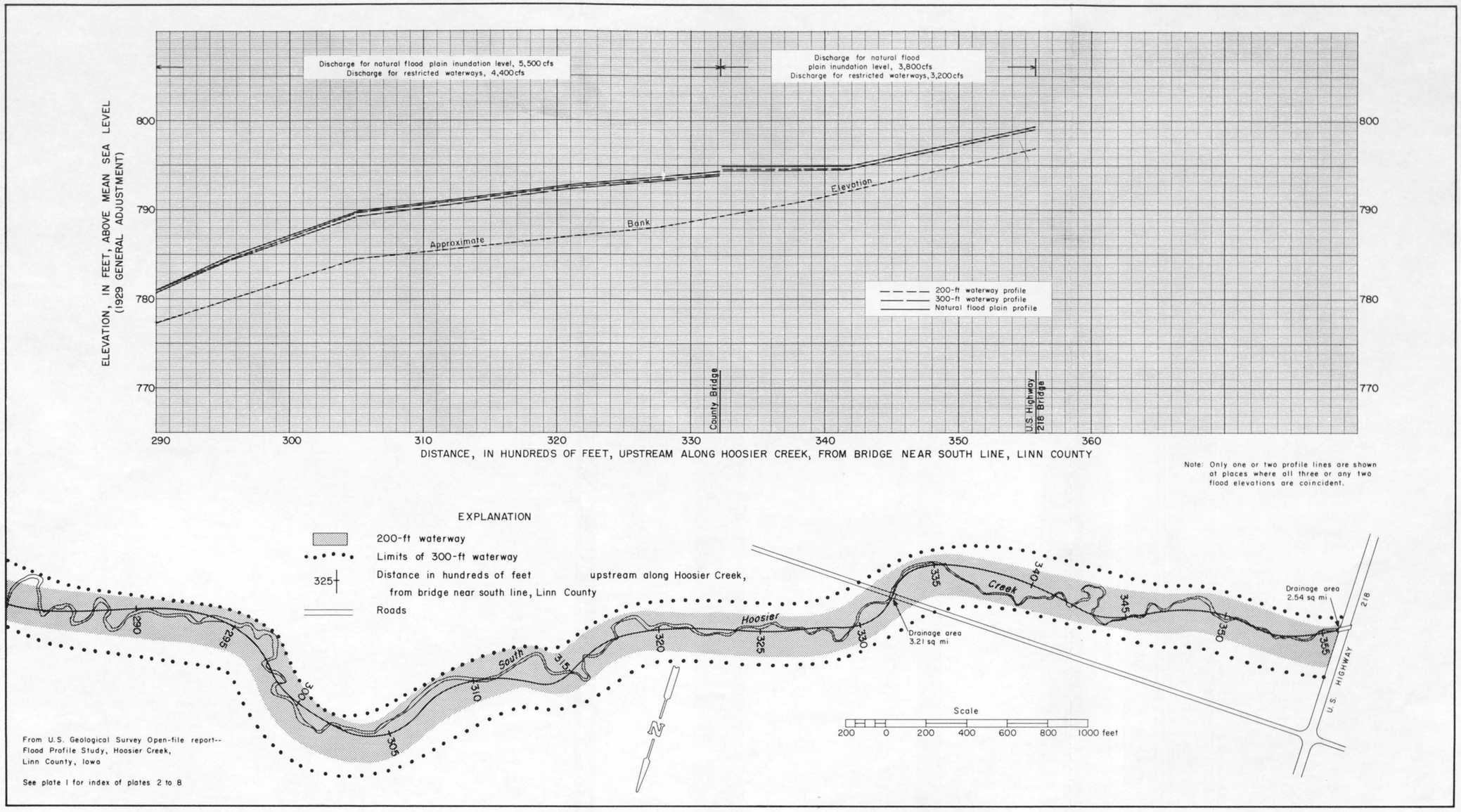


Plate 8. Map and flood profiles, station 290 to station 356, South Hoosier Creek, showing waterway limits used in computations.

APPENDIX

Descriptions and elevations of temporary bench marks set during surveys for the report are listed below. Each mark has been given an index number that also shows its landline location. As an example, 8206-29 SW (1) indicates the first mark established in the southwest quarter of section 29, Township 82 North, Range 6 West. Elevations are referenced to mean sea level, 1929 datum, and are of third-order accuracy.

8206-29 SW (1)--Northeast of Ely 0.6 mile, at an east-west county road bridge over an unnamed tributary to Hoosier Creek, on right downstream abutment pile cap; Linn County Engineering Department disk. Elev. 745.34

8206-29 SW (2)--(REFERENCE POINT)--Northeast of Ely 0.6 mile at an east-west county road bridge over an unnamed tributary to Hoosier Creek, on the 6th guardrail post from the right downstream end of bridge, 38 ft from left downstream abutment; top of top nut (painted red). Elev. 749.29

8206-31 NE (1)--At Ely, about 150 feet north of intersection of Dows and Main Streets, at site of former CRI&P RR station, at former concrete semaphore signal base, in top of east corner of the concrete foundation, 18 feet southwest of center of tracks; standard USC&GS disk stamped "H 76 1934". Elev. 736.734

8206-31 NE (2)--At Ely, about 1,000 feet southeast of Dows Street and 100 feet northeast of Main Street, at CRI&P RR bridge over an unnamed tributary to Hoosier Creek, on the left upstream stone wingwall; chiseled square (painted red). Elev. 730.93

8206-31 NE (3)--At Ely, about 1,000 feet southeast of intersection of Dows and Main Streets, at Main Street bridge over an unnamed tributary to Hoosier Creek, on right downstream abutment pile cap; Linn County Engineering Department disk No. 1944. Elev. 727.35

8206-31 NE (4)--(REFERENCE POINT)--At Ely, about 1,000 feet southeast of intersection of Dows and Main Streets, at Main Street bridge over an unnamed tributary to Hoosier Creek, on 6th guardrail post 31 feet from left downstream end of bridge; top of top nut (painted red). Elev. 731.98

8206-31 NE (5)--At Ely, about 700 feet southeast of Dows Street and County Road "R", at County Road "R" bridge over an unnamed tributary to Hoosier Creek, on left downstream abutment pile cap; Linn County Engineering Department disk No. 332. Elev. 724.48

8206-31 NE (6)--(REFERENCE POINT)--At Ely, about 700 feet southeast of Dows Street and County Road "R", at County Road "R" bridge over an unnamed tributary to Hoosier Creek on 3rd steel guardrail post, 15.5 feet from left downstream end of bridge; chiseled arrow (painted red). Elev. 728.28

8206-31 NW (1)--At Ely, about 600 feet west of intersection of Rowley Street and County Road "R", at east-west county road bridge, on right downstream wingwall; Linn County Engineering Department disk No. 741. Elev. 724.13

8206-31 NW (2)--(REFERENCE POINT)--At Ely, about 600 feet west of intersection of Rowley Street and county road "R", at east-west county road bridge, on top of downstream truss 4 feet right of 2nd vertical bridge member from the left downstream abutment and at station 20; chiseled arrow (painted red). Elev. 729.13

8207-15 SW (1)--South along old Highway 218, 2.2 miles from C&NW RR underpass, 1.1 miles south of intersection of Highway 30 and old Highway 218, .33 mile south of Hunker Field, 495 feet south of east-west section line, 85 feet north of deepest point of a deep cut, 18 feet east of centerline of old Highway 218 and 1.5 feet higher than highway, in top of concrete post; state survey disk stamped "57-21". Elev. 872.160

8207-21 SW (1)--South 2 miles from intersection of Highways 218 and 30, north 0.5 mile from intersection of Highways 84 and 218 at a 6x14 ft box culvert on Hoosier Creek, on north-south Highway 218, on culvert headwall, 7 feet from left downstream corner of culvert; Iowa State Highway Commission plug. Elev. 814.28

8207-21 SW (2)--(REFERENCE POINT)--South 2 miles from intersection of Highway 218 and 30, north .5 mile from intersection of Highways 84 & 218, at a 6x14 foot box culvert on Hoosier Creek on north-south Highway 218, on culvert headwall 10.5 feet from left downstream corner of culvert; Chiseled arrow (painted red). Elev. 814.19

8207-22 NW (1)--South 1.9 miles from intersection of old Highway 218 and 30, 1.2 miles northeast from intersection of Highway 84 and 218, at old north-south Highway 218 culvert on Hoosier Creek, on left downstream corner of culvert headwall; chiseled square (painted red). Elev. 791.88

8207-22 NW (2)--(REFERENCE POINT)--South 1.9 miles from intersection of old Highway 218 and 30, 1.2 miles northeast from intersection of highways 84 and 218, at old north-south Highway 218 culvert on Hoosier Creek, on culvert headwall 2.5 feet from left downstream end of culvert; chiseled arrow (painted red). Elev. 791.80

8207-23 SW (1)--Northwest of Ely 3 miles, 0.5 mile east and 0.3 mile north of intersection of county road "R" and old Highway 218, at north-south county road bridge over Hoosier Creek, on protruding steel angle on right downstream abutment; chiseled square (painted red). Elev. 765.29

8207-23 SW (2)--(REFERENCE POINT)--Northwest of Ely 3 miles, 0.3 mile north of intersection of county road "R" and old Highway 218 at north-south county road bridge over Hoosier Creek, in downstream steel stringer 10 feet from right abutment; top of nut (painted red). Elev. 765.97

8207-25 NE (1)--Northwest of Ely 1.2 miles along CRI&P RR, 9 poles northwest of milepost 90, 182 yards southeast of center of public road crossing, at 10-foot arch culvert, in top of northwest end of southwest stone headwall, 25 feet southwest of center of tracks and 7 feet lower than tracks; standard USC&GS disk stamped "G 76 1934". Elev. 750.031

8207-25 NW (1)--(REFERENCE POINT)--Northwest of Ely 1.9 miles, about 150 feet south of county road "R", at a north-south county road bridge over Hoosier Creek, on top of 5th steel guardrail post from left downstream end of bridge; chiseled arrow (painted red). Elev. 753.52

8207-26 NE (1)--Northwest of Ely 1.9 miles, about 150 feet south of county road "R", at a north-south county road bridge over Hoosier Creek, on right upstream wingpost; Linn County Engineering Department disk No. 1041. Elev. 753.56

8207-26 NE (2)--Northwest of Ely 2 miles, at east-west county road "R" bridge over Hoosier Creek, on top of right downstream wingwall; top of protruding 1/2-inch reinforcing rod enclosed in painted red circle. Elev. 752.39

8207-26 NE (3)--(REFERENCE POINT)--Northwest of Ely 2 miles, at east-west county road "R" bridge over Hoosier Creek, on downstream side of 2nd guardrail post 7 feet from left downstream end of bridge; chiseled arrow (painted red). Elev. 754.32

8207-26 SW (1)--(REFERENCE POINT)--West of Ely 2.7 miles, 1.1 miles southeast of intersection of old Highway 218 and county road "R", 1 mile south of county road "R" at north-south county road bridge over South Hoosier Creek, on 4th guardrail post and 12.5 feet from left downstream end of bridge; top of top nut (painted red). Elev. 763.03

8207-27 SE (1)--West of Ely 3.2 miles, 0.9 mile south of intersection of old Highway 218 and county road "R", at north-south old Highway 218 bridge over South Hoosier Creek, on top of right downstream wingwall; chiseled cross (painted red). Elev. 775.82

8207-27 SE (2)--(REFERENCE POINT)--West of Ely 3.2 miles, 0.9 mile south of intersection of old Highway 218 and county road "R" at north-south old Highway 218 bridge over South Hoosier Creek, on top of downstream concrete guardrail at station 15; chiseled arrow (painted red). Elev. 775.46

8207-27 SE (3)--West of Ely 2.7 miles, 1.1 miles southeast of intersection old Highway 218 and county road "R", 1 mile south of county road "R" at north-south county road bridge over South Hoosier Creek, on right upstream abutment pile cap; Linn County Engineering Department disk No. 1815. Elev. 760.75.

8207-27 NW (1)--North of Johnson-Linn county line along old Highway 218 1.5 miles, near the center of section 27, 64 feet north of east-west 1/2 section line on the west side of the highway, in a concrete post; standard state survey disk stamped "57-27". Elev. 810.805

8207-28 SW (1)--(REFERENCE POINT)--West of Ely 4.2 miles, 1.1 miles southeast of intersection of Highways 84 and 218, 0.4 mile east of Highway 218, at east-west county road bridge over South Hoosier Creek, in downstream side of bridge floor 5 feet from right downstream abutment; scaffold nail and disk (painted red). Elev. 792.65

8207-33 NW (1)--South 3.6 miles from intersection of Highways 30 and 218, south 1.1 miles from intersection Highways 84 and 218, 0.1 mile south from intersection of Highway 218 and county road, at north-south Highway 218 culvert on South Hoosier Creek, on 7x19 foot twin box culvert, on headwall at left downstream corner of culvert; chiseled square (painted red). Elev. 802.63

8207-33 NW (2)--(REFERENCE POINT)--South 3.6 miles from intersection of Highways 30 and 218, south 1.1 miles from intersection of Highways 84 and 218, 0.1 mile south from intersection of Highway 218 and county road, at north-south Highway 218 culvert on South Hoosier Creek, on 7x19 foot twin box culvert headwall 4 feet from right downstream corner of culvert; chiseled arrow (painted red). Elev. 802.61

8207-33 NW (3)--West of Ely 4.2 miles, 1.1 miles southeast of intersection of Highways 84 and 218, 0.4 mile east of Highway 218 at east-west county road bridge over South Hoosier Creek, on left upstream abutment pile cap; Linn County Engineering Department disk No. 1830. Elev. 790.97

8207-35 NE (1)--West of Ely 1.6 miles, 1.9 miles southeast of intersection of old Highway 218 and county road "R", 1.1 miles south of county road "R", at north-south county road bridge over South Hoosier Creek, on top of right upstream abutment bridge seat; Linn County Engineering Department disk No. 13. Elev. 747.68

8207-36 NW (1)--(REFERENCE POINT)--West of Ely 1.6 miles, 1.9 miles southeast of intersection of old Highway 218 and county road "R", 1.1 miles south of county road "R", at north-south county road bridge over South Hoosier Creek, on top of downstream truss, over 2nd vertical guardrail post 13 feet from right downstream abutment; chiseled arrow (painted red). Elev. 754.37

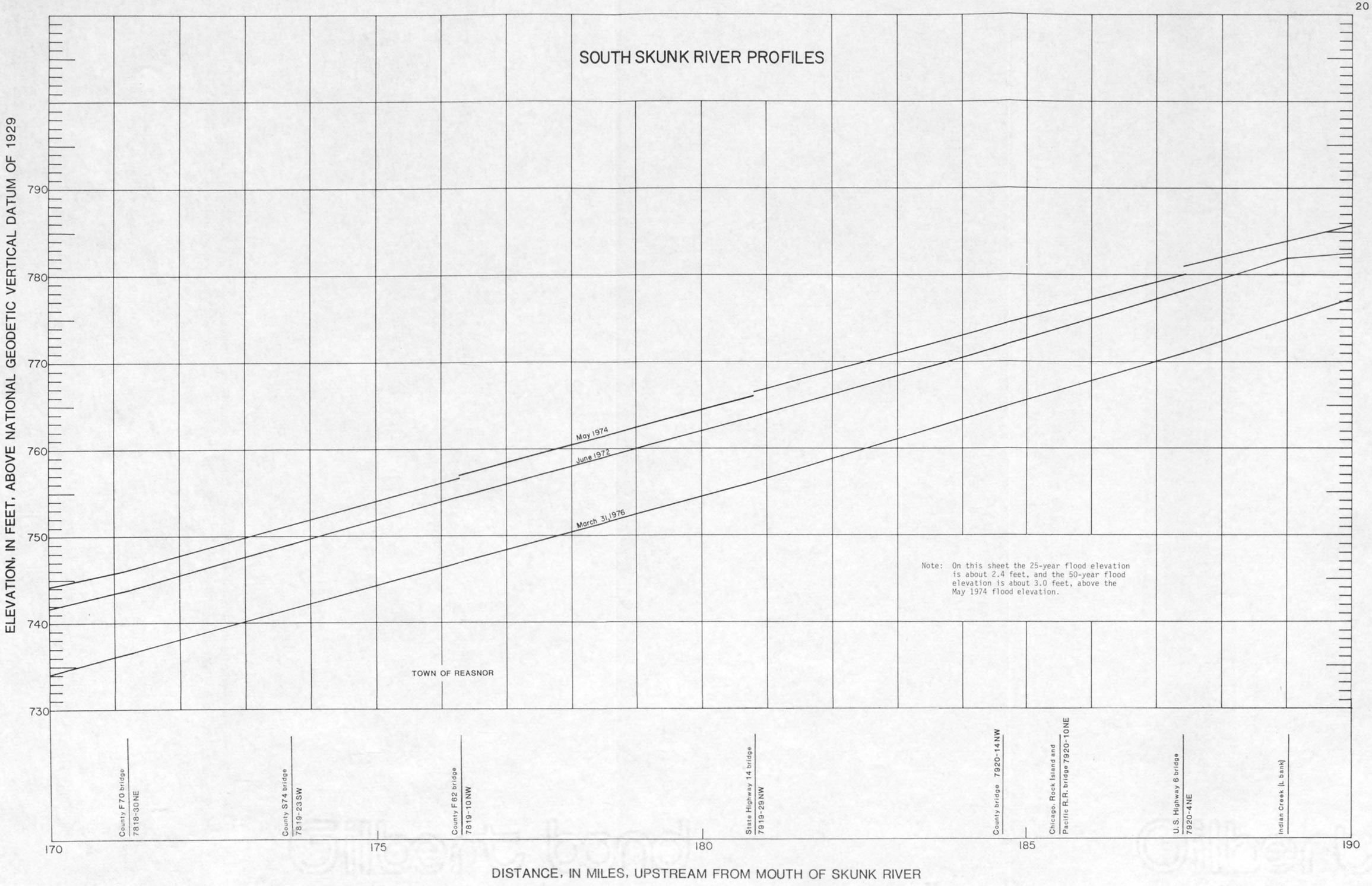


Figure 14. South Skunk River profiles, mile 170 to mile 190.

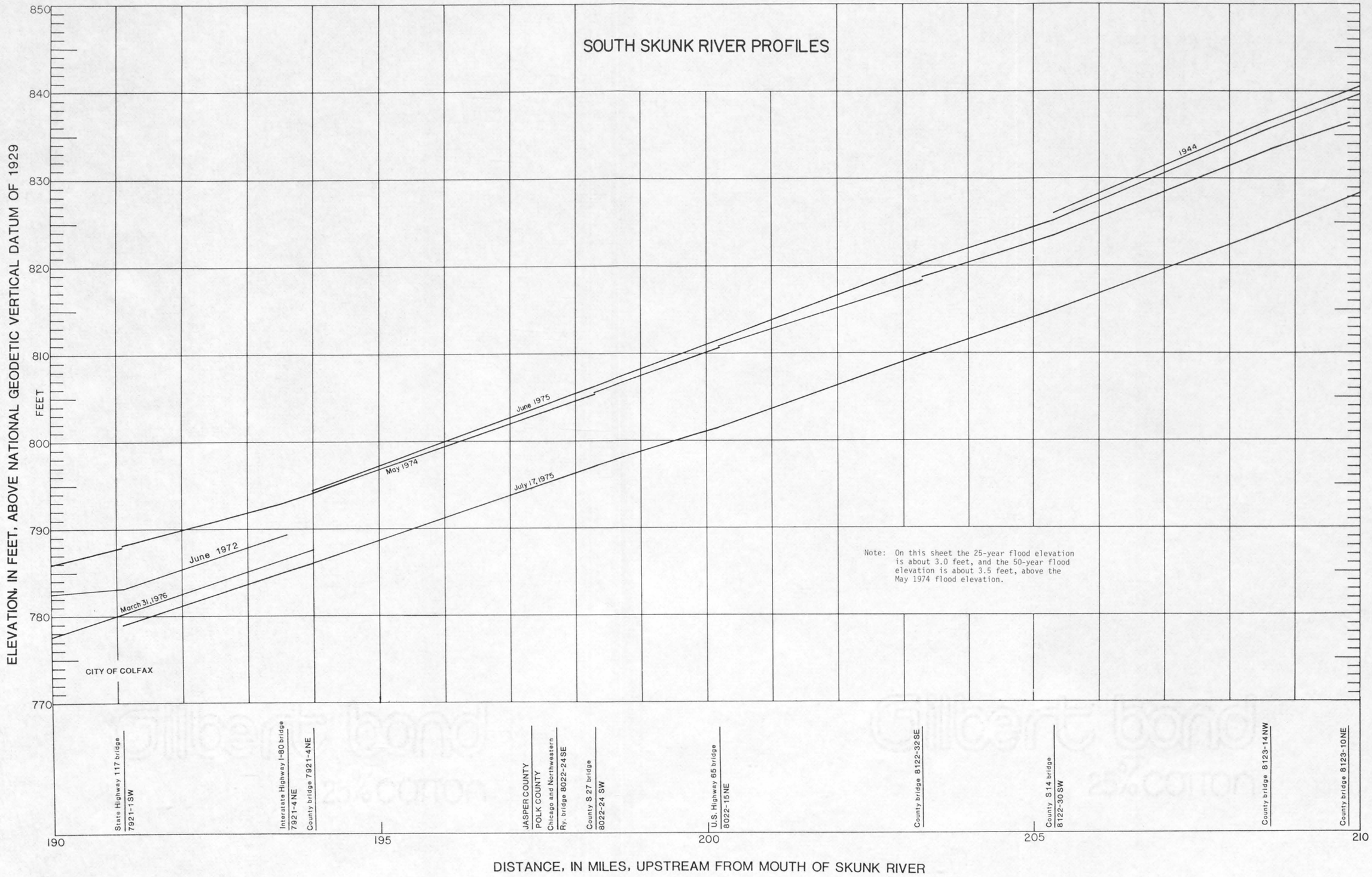


Figure 15. South Skunk River profiles, mile 190 to mile 210.

SOUTH SKUNK RIVER PROFILES

ELEVATION, IN FEET, ABOVE NATIONAL GEODETIC VERTICAL DATUM OF 1929

910
900
890
880
870
860
850
840
830

Note: From mile 210.0 to mile 222.8 the 25-year flood elevation is about 3.5 feet, and the 50-year flood elevation is about 4.0 feet, above the May 1974 flood elevation.

At mile 222.8 the 50-year flood elevation is nearly coincident with the 1975 flood elevation and varies to about 2.5 feet above the 1975 flood elevation at mile 228.1.

The 25-year flood elevation is about 0.5 foot below the 50-year flood elevation.

1944
June 1975
May 1974
Sept. 22, 1975
Approximate overbank flow
July 17, 1975
1944
June 1975
May 1974

Mile 222.6: U.S.G.S. gaging station 05471000 below Squaw Creek near Ames

May 19, 1944	discharge	10,000 ft³/s
June 27, 1975	discharge	14,700 ft³/s
May 18, 1974	discharge	5,100 ft³/s
July 17, 1975	discharge	260 ft /s

Mile 228.1: U.S.G.S. gaging station 05470000 near Ames

May 20, 1944	discharge	8,060 ft³/s
June 28, 1975	discharge	5,230 ft³/s
May 19, 1974	discharge	2,130 ft³/s
Sept 22, 1975	discharge	9 ft³/s

TOWN OF CAMBRIDGE

CITY OF AMES

POLK COUNTY
STORY COUNTY
State Highway 210 bridge
8223-34 NE Cambridge
County bridge 8223-27NW
Chicago, Milwaukee, St. Paul and Pacific R.R. bridge
County E63 bridge
8223-22 NW
Chicago, Rock Island and Pacific R.R. bridge
County bridge 8223-8NE
County bridge 8223-5NW
Interstate Highway I-35 bridge
8323-30SE
County bridge 8323-30NW
U.S. Highway 30 bridge 8324-13SE
County bridge 8324-13NW
U.S. Geological Survey recording gage
Squaw Creek (R bank)
Old U.S. Highway 30 bridge
8324-12NW
Chicago and Northwestern Ry. bridge
County bridge 8324-1NW
8424-23 SW
Riverside Avenue bridge
County bridge 8424-23SW
U.S. Geological Survey recording gage near Ames

210
215
220
225
230

DISTANCE, IN MILES, UPSTREAM FROM MOUTH OF SKUNK RIVER

Figure 16. South Skunk River profiles, mile 210 to mile 228.1.

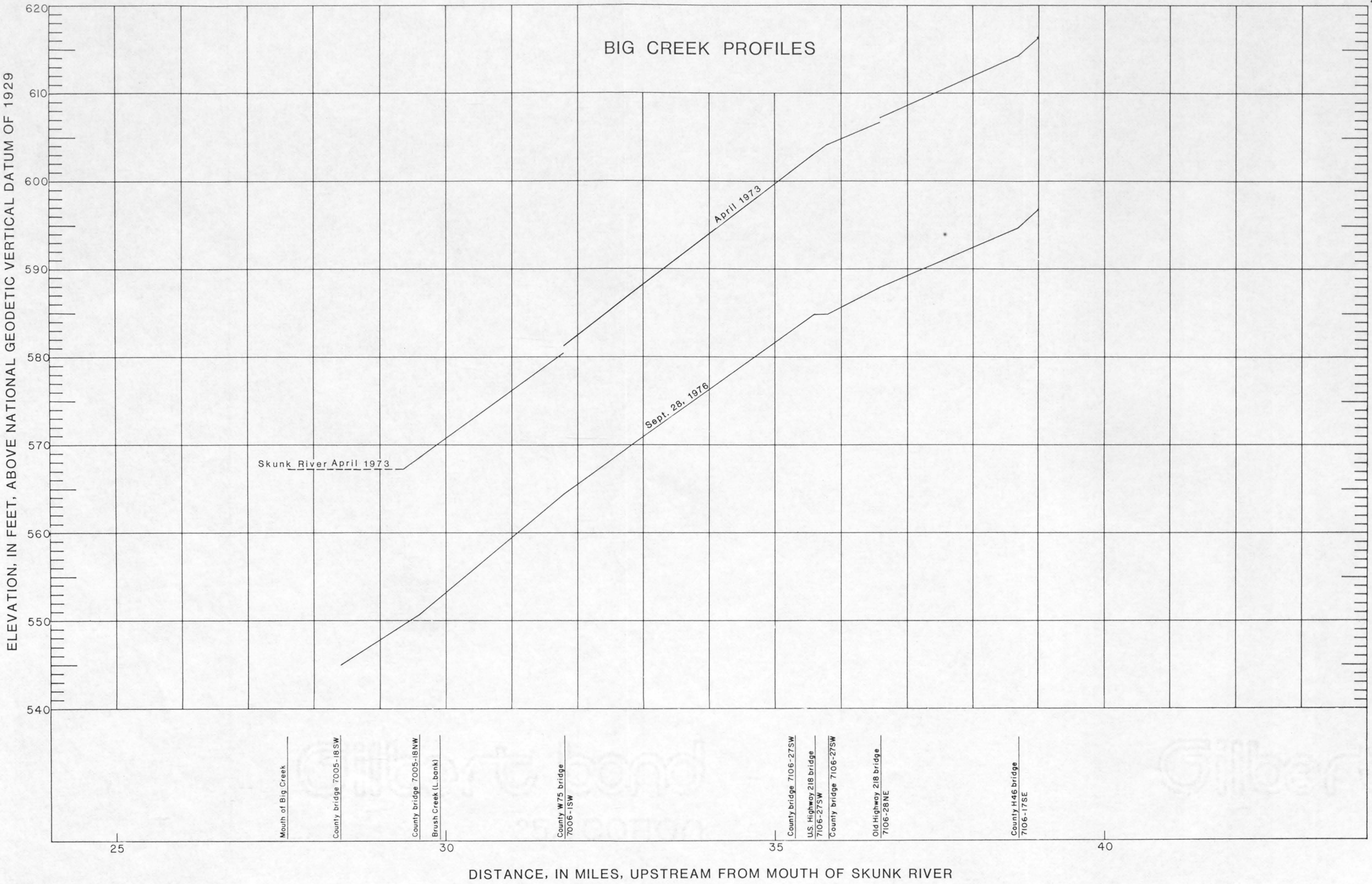


Figure 17. Big Creek profiles, mile 27.6 to 39.

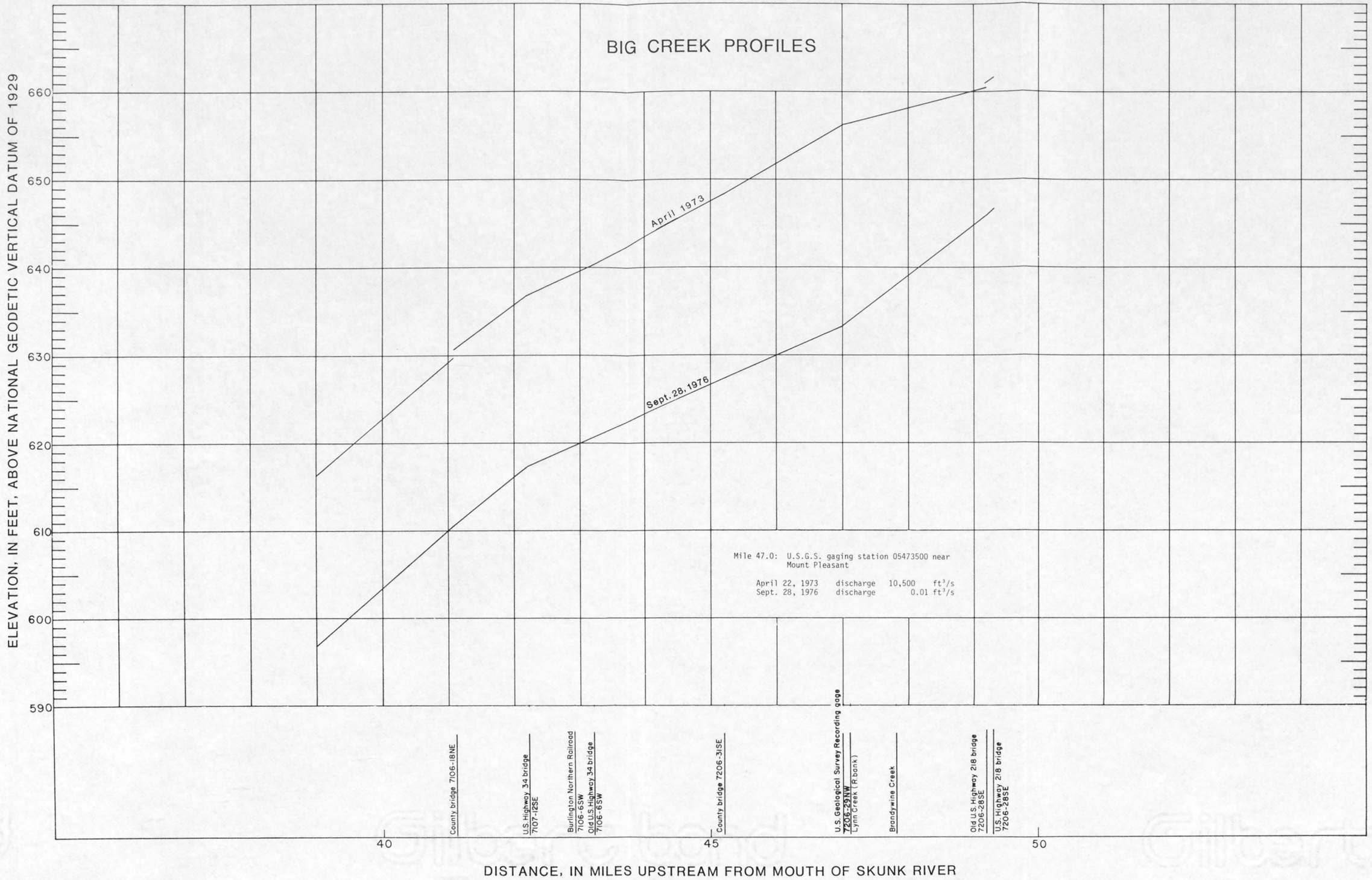


Figure 18. Big Creek profiles, mile 39 to mile 49.3.

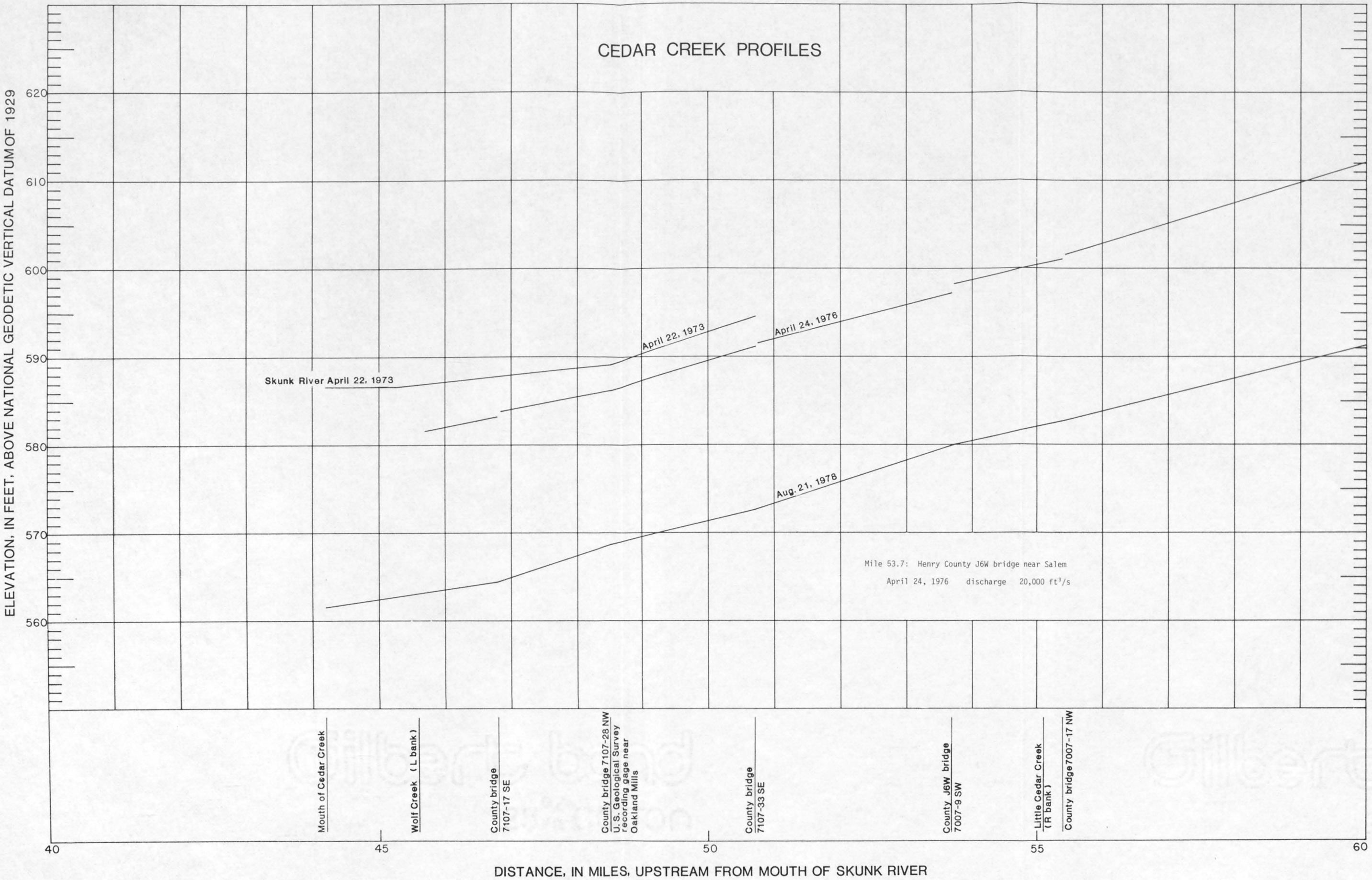


Figure 19. Cedar Creek profiles, mile 44.2 to mile 60.

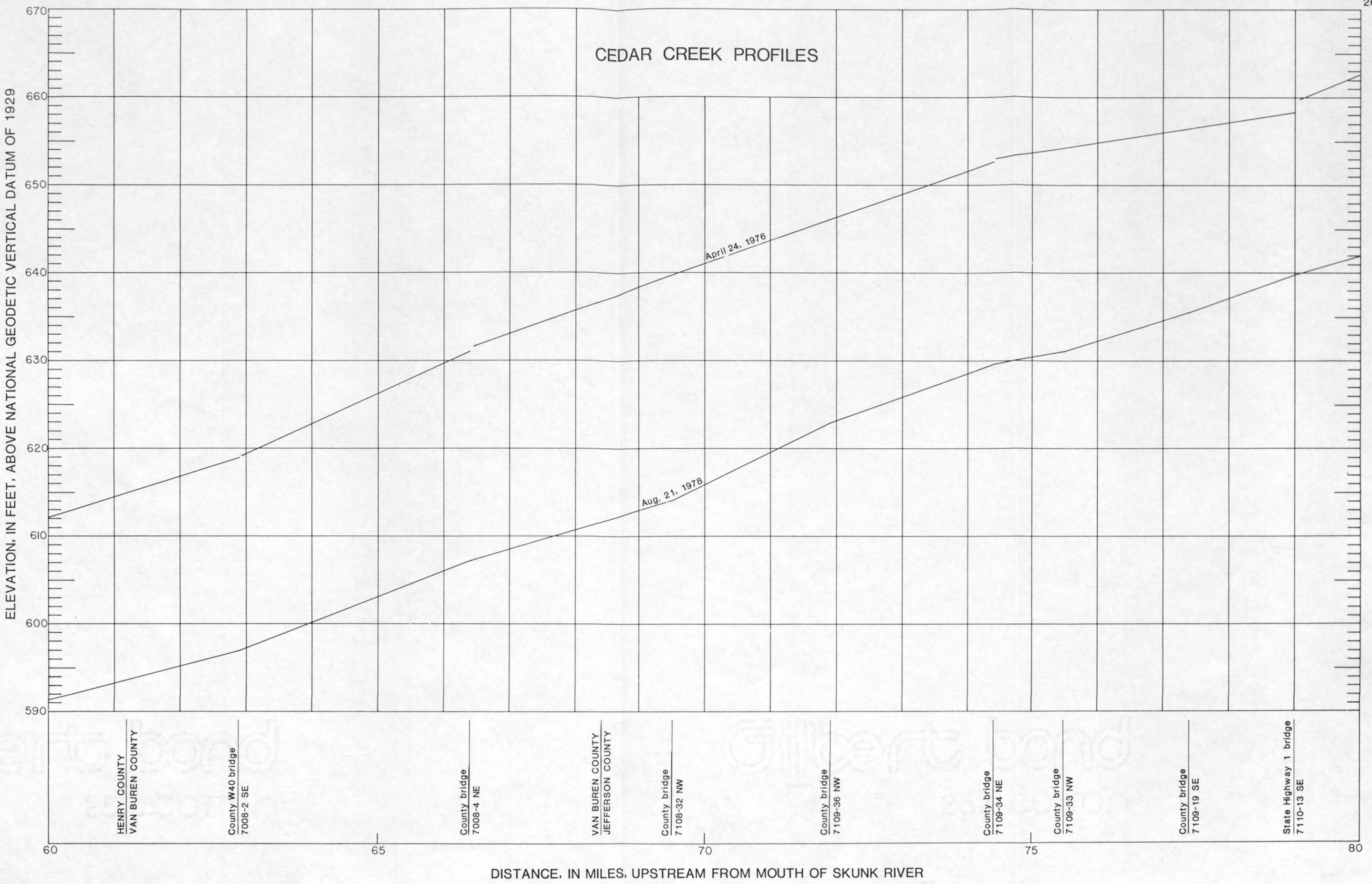


Figure 20. Cedar Creek profiles, mile 60 to mile 80.

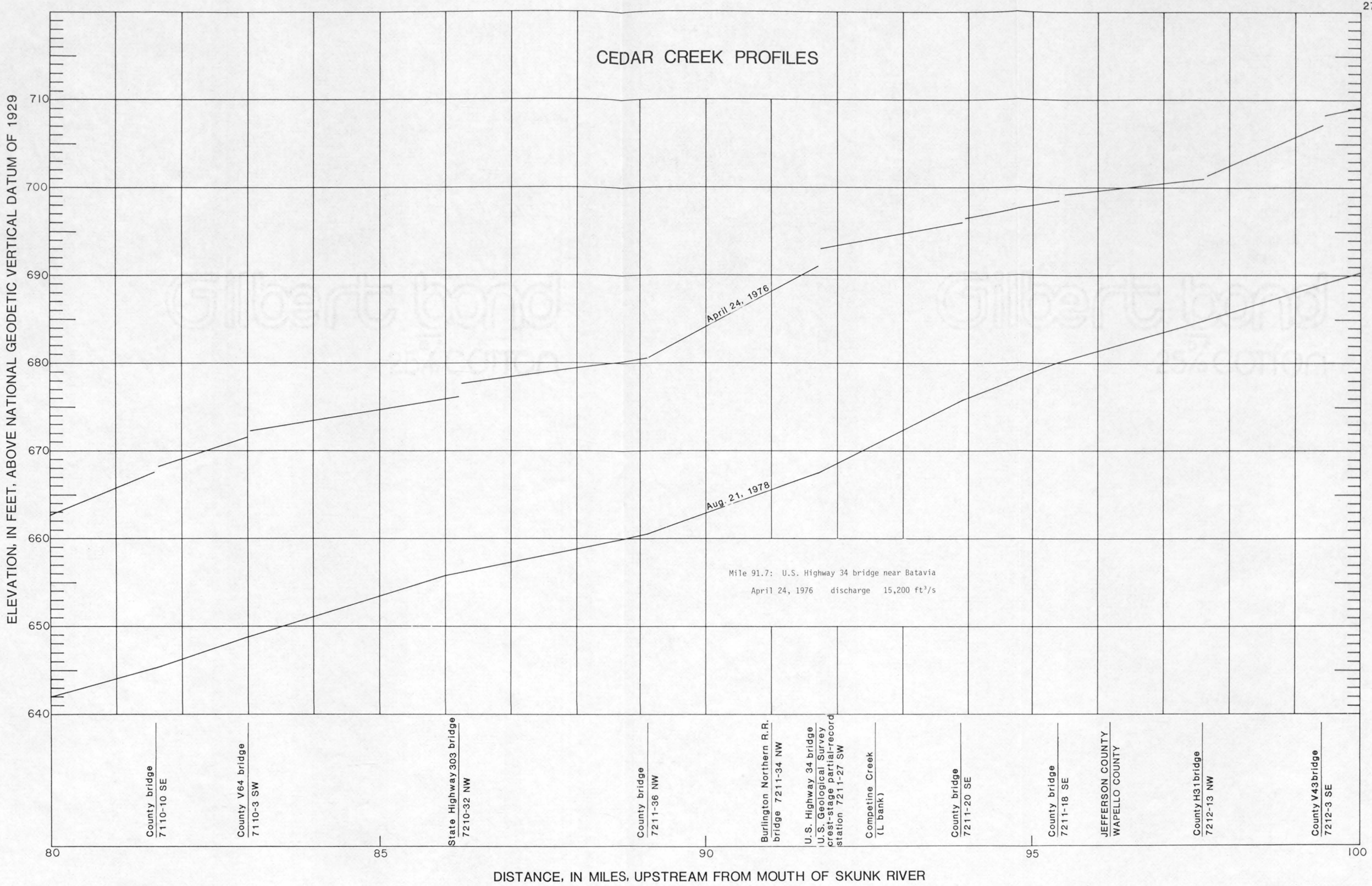


Figure 21. Cedar Creek profiles, mile 80 to mile 100.

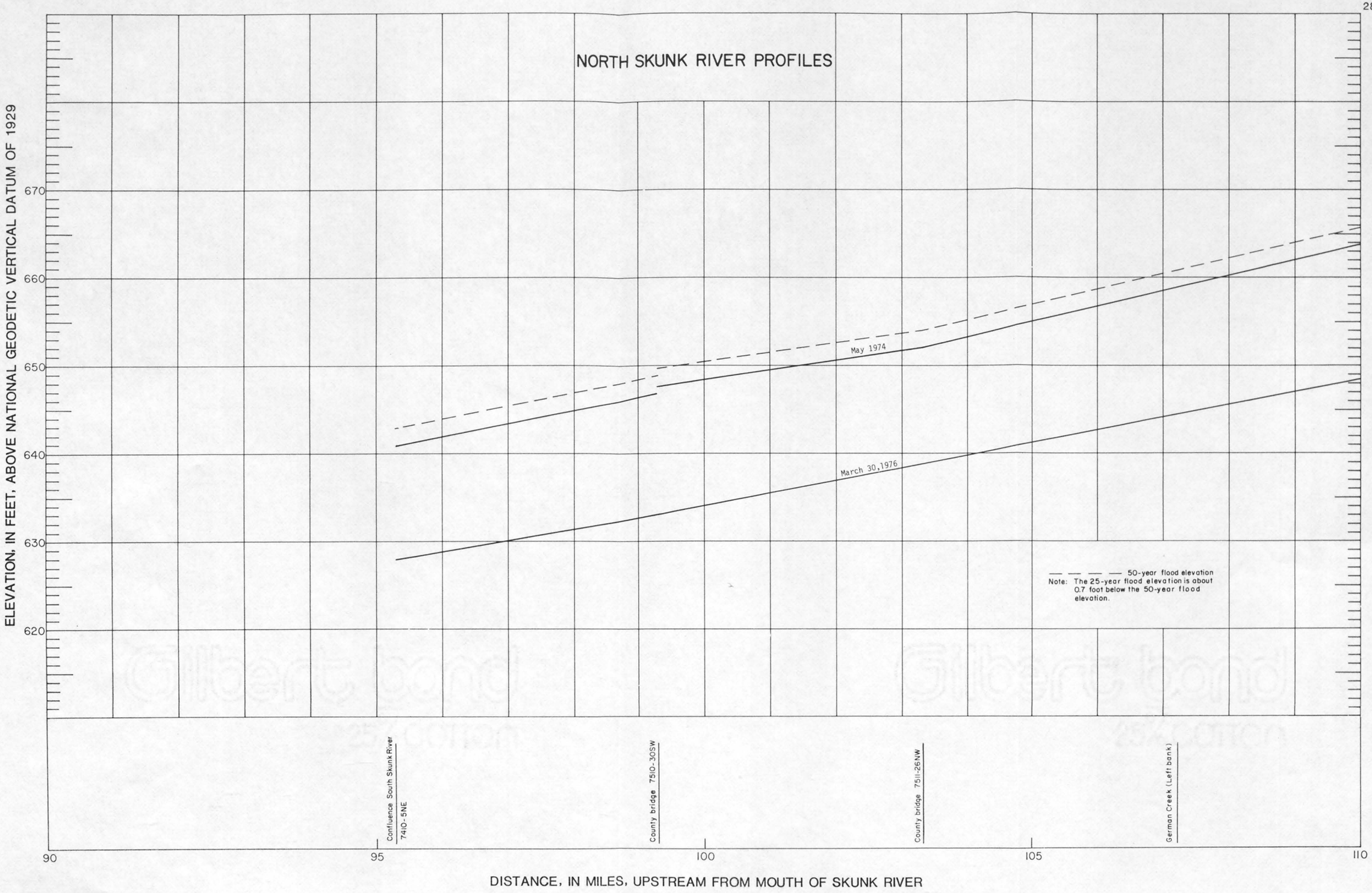


Figure 22. North Skunk River profiles, mile 95.3 to mile 110.

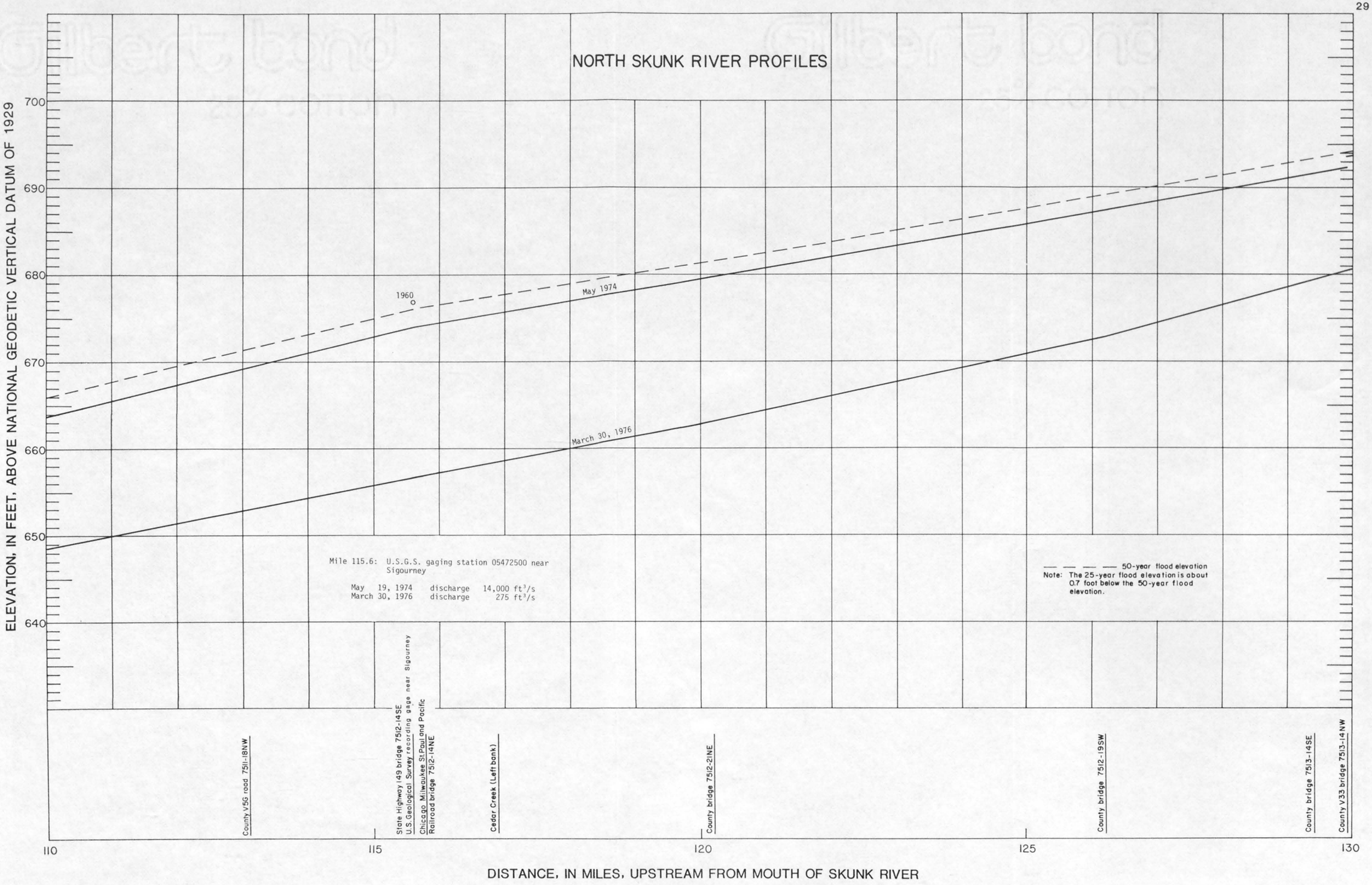


Figure 23. North Skunk River profiles, mile 110 to mile 130.

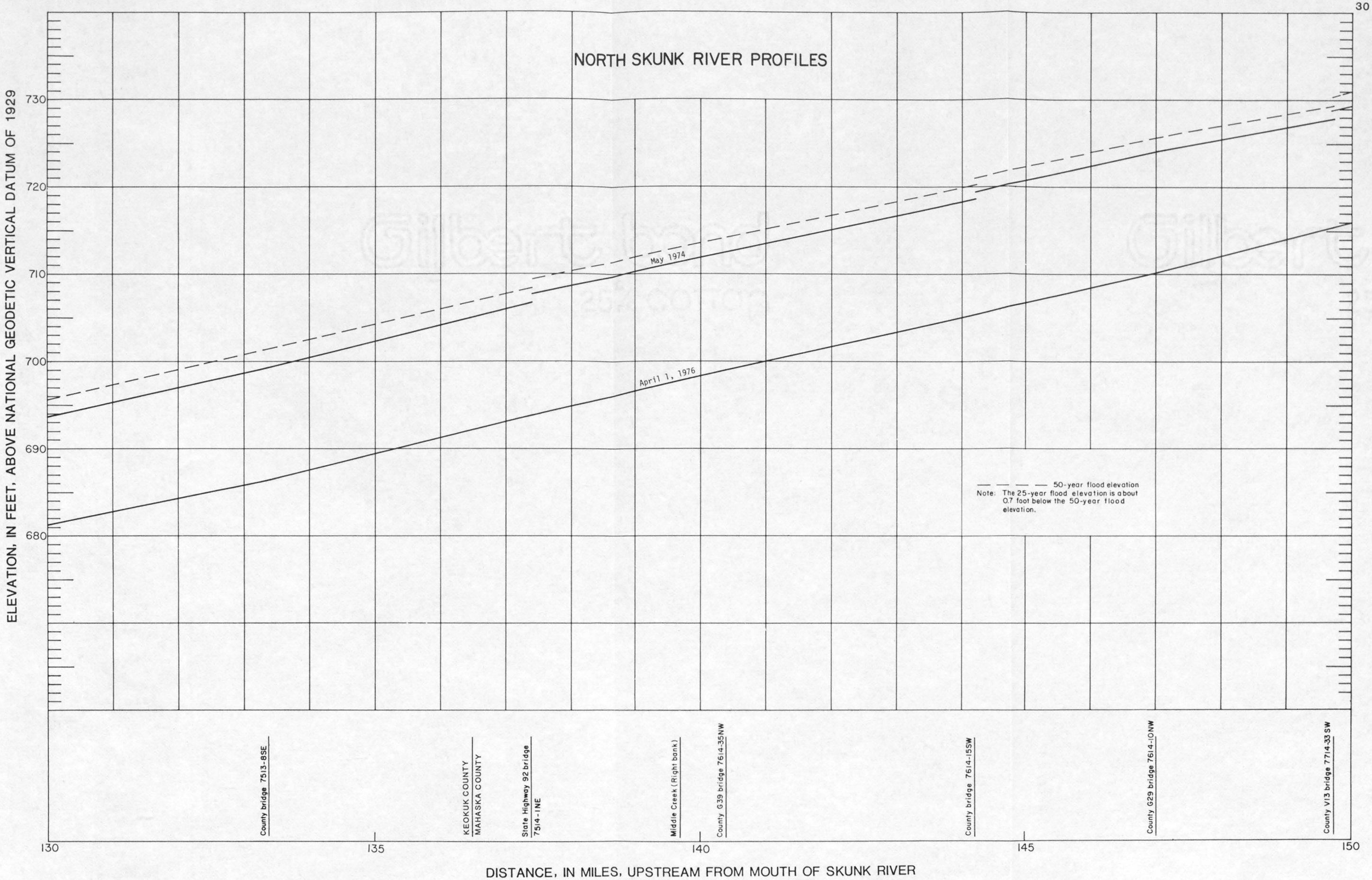


Figure 24. North Skunk River profiles, mile 130 to mile 150.

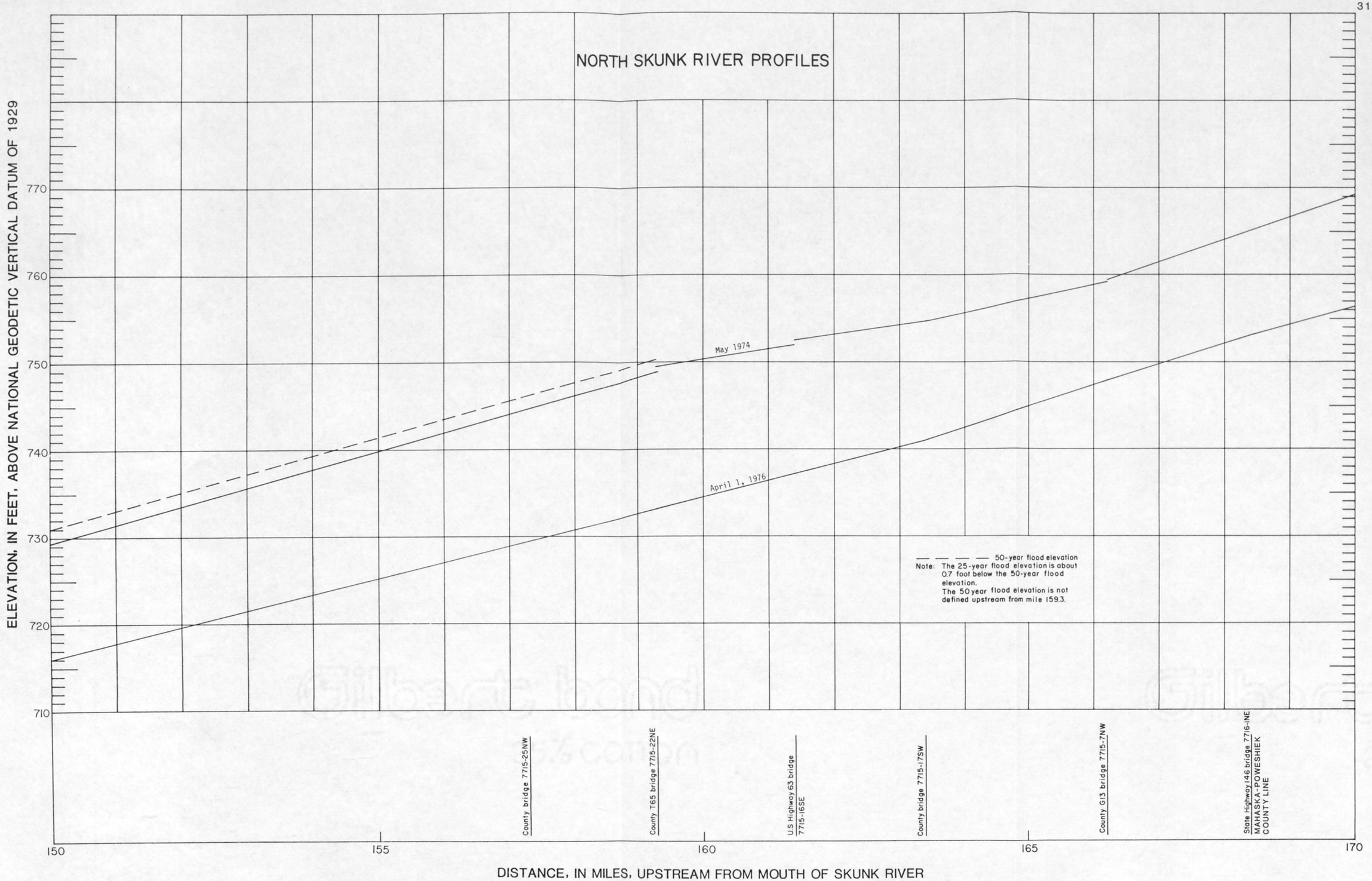


Figure 25. North Skunk River profiles, mile 150 to mile 170.

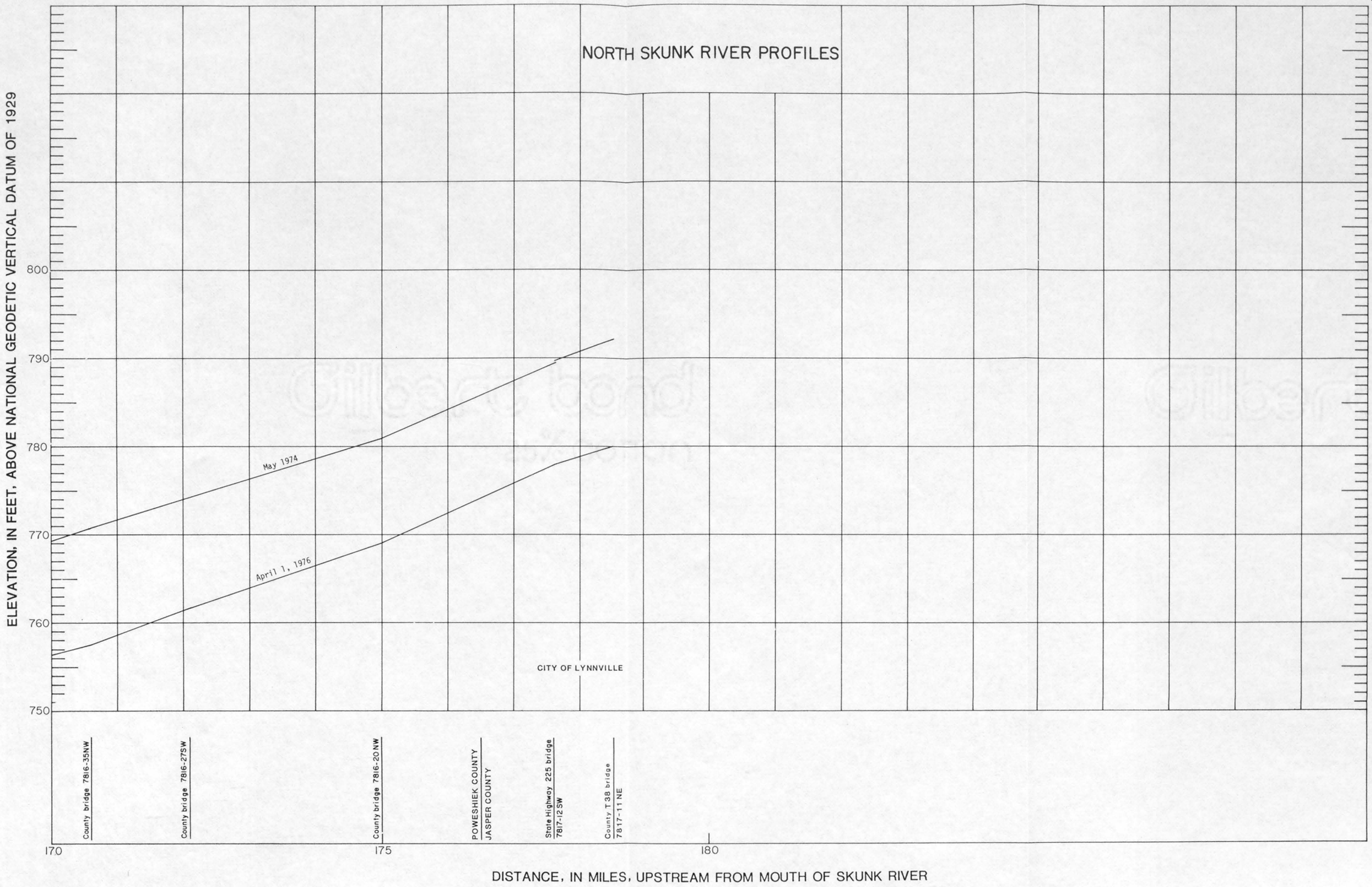


Figure 26. North Skunk River profiles, mile 170 to mile 178.5.

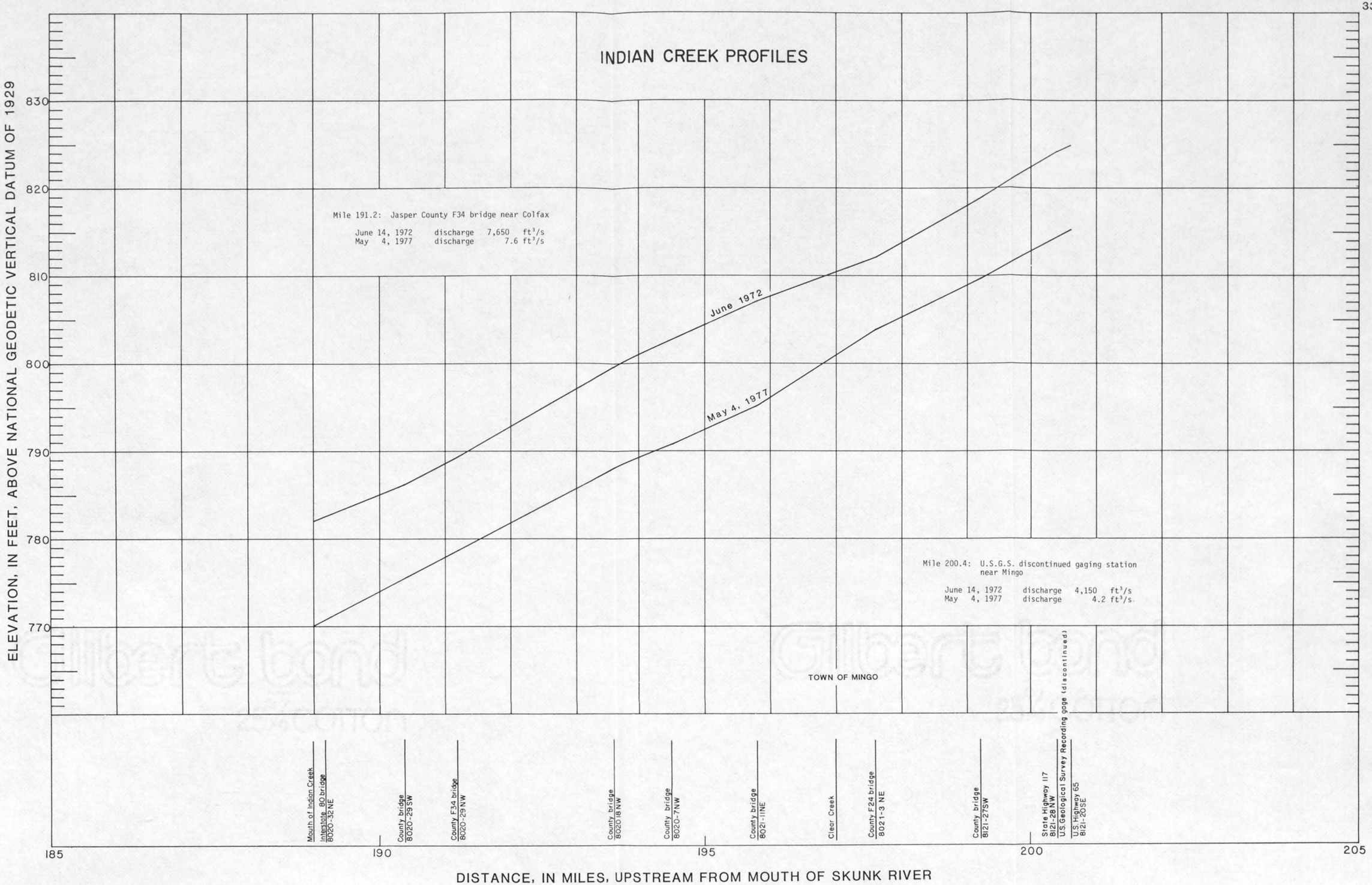


Figure 27. Indian Creek profiles, mile 189 to mile 200.6.

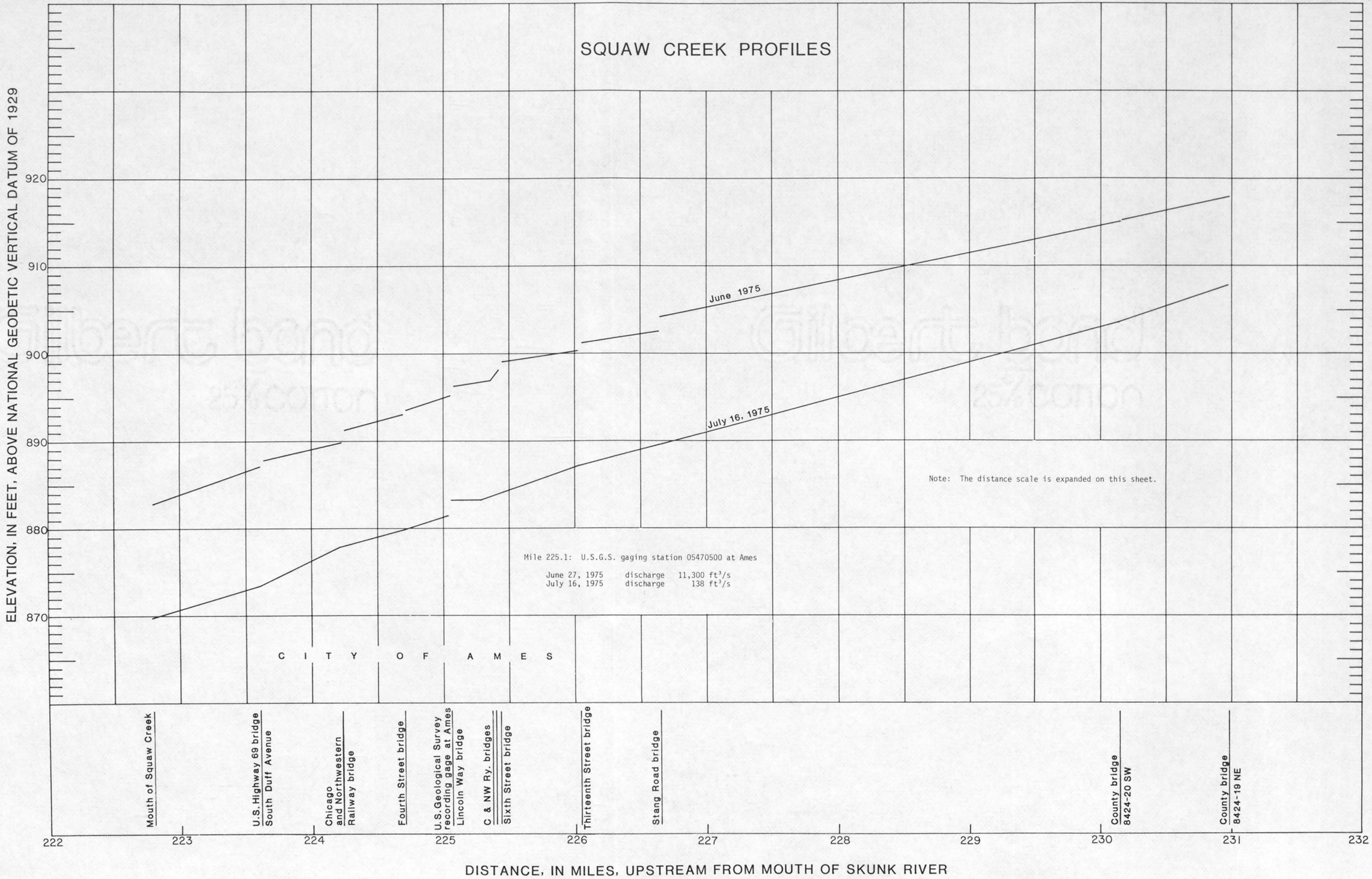


Figure 28. Squaw Creek profiles, mile 222.8 to mile 231.

DISCUSSION

Flood magnitude-frequency relationships in this basin are complex, as has been noted. They are not now (1978) very precisely defined. More, and longer, streamflow records will help to improve their definition. At the same time, these relationships are subject to continuing modification by factors such as changing meteorologic and climatic trends, and physical changes in the basin such as urbanization, installation of drainage systems, reservoir development, and shifting land use.

The hydraulics of the Skunk River system are also complex. The wide, flat bottomlands that are so typical in much of the basin give rise to insensitivity in the stage-discharge relationships. That is, above overbank stages, a very large change in discharge must occur to effect a significant change in stage. Often there is less than a foot of difference between the 25- and 50-year floods and the 50- and 100-year floods. Primarily because of this insensitivity, it was not generally possible to depict the 25- and 50-year flood profiles. Heavy foliage in the cropped and wooded bottomlands further complicates the stage-discharge relationships. For example, the September 1965 flood at Augusta exceeded the 50-year flood stage (determined from fig. 3) by more than a foot even though the peak flow was nearly 10 percent less than the computed 50-year flood. The same flow in winter or early spring would probably have occurred at a lower stage. Debris and ice jams, both nearly impossible to predict, can cause dramatic temporary changes in stage-discharge relationships. Natural scour and fill, channel straightening and construction of bridges and levees can cause more lasting changes.

Thus, a river basin and its channel system are dynamic entities undergoing continual change. The relationships presented in this report represent the conditions existing at the time the field data were obtained.

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GAGING-STATION RECORDS

The data on peak stages and discharges at gaging stations that follow were compiled through Sept. 30, 1975, by Lara (1976) and were updated through Sept. 30, 1977, for this report. The flood events are designated by calendar date and grouped by water year (year ending September 30). For the partial-record stations, those equipped with crest-stage gages, only the annual flood peaks are listed. In general, for the complete-record stations, independent flood peaks above a pre-selected base are listed (partial-duration series). The magnitude of the selected base discharge, given in the "Remarks" paragraph, was determined so that it would be equaled or exceeded on an average of about three or four times per year. Two flood peaks are considered independent if dry-weather flow is reached between them, or if they are more than 48 hours apart and the discharge of the trough between them is 25 percent or more below that of the lower peak.

The gaging station records are arranged in the downstream order explained in the annual water resources data reports of the U.S. Geological Survey. (See References.) Each gaging station is identified by a permanent number that is also used in figures 1, 3 and tables 1, 2. The datum of the gage, when given, is in feet above mean sea level, datum of 1929, and is equivalent to feet above the National Geodetic Vertical Datum of 1929, the present nomenclature used. Bankfull and flood stages are given for some of the stations. Bankfull stage, usually determined by the U.S. Geological Survey, is the stage at which a stream first overflows its banks. Flood stage, on the other hand, has been determined by the National Weather Service and is defined as the stage at which overflow of the natural banks of the stream begins to cause damage in the reach in which the elevation is measured. Underlining in the tables denotes

the following:

1. A line under "water year" denotes a break or gap in the record of peaks.
2. A line beginning at "date" and continuing through "discharge" denotes a change in site and datum.
3. A line under "date" and "discharge" denotes a change in site without a chage in datum.

The remainder of the information given is self-explanatory.

05-4698.60 Mud Lake Drainage ditch 71 in Jewell, Iowa

Location.--Lat 42°19', long 93°38', in SW1/4 sec.27, T.87 N., R.24 W., Hamilton County, at bridge on U.S. Highway 69 in Jewell.

Drainage area.--65.4 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1966	June 12, 1966	84.67	a
1967	June 10, 1967	87.91	a
1968	--	b	a
1969	July 9, 1969	89.76	a
1970	Aug. 6, 1970	84.45	a
1971	Feb. 18, 1971	90.13 c	a
1972	Aug. 7, 1972	89.02	a
1973	Nov. 8, 1972	86.96	710
1974	June 9, 1974	85.64	490
1975	June 27, 1975	90.04	2,300
1976	--	b	c
1977	Aug. 8, 1977	89.05	1,670

a Discharge not determined.
b Peak stage did not reach bottom of gage.
c Affected by ice.

05-4699.90 Keigley Branch near Story City, Iowa

Location.--Lat 42°09', long 93°37', in NW1/4 sec.26, T.85 N., R.24 W., Story County, at bridge on U.S. Highway 69, about 3 miles south of Story City.

Drainage area.--31.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1966	June 12, 1966	86.78	197
1967	June 8, 1967	88.97	600
1968	June 25, 1968	88.66	470
1969	July 9, 1969	88.51	420
1970	Aug. 6, 1970	87.81	295
1971	Feb. 18, 1971	90.05 a	555
1972	June 6, 1972	84.75	66
1973	Mar. 11, 1973	89.27	550
1974	Aug. 8, 1974	89.06	610
1975	June 27, 1975	91.38	b
1976	June 14, 1976	91.47	1,550
1977	Aug. 16, 1977	88.69	510

a Affected by ice.
b Discharge not determined.

05-4700.00 South Skunk River near Ames, Iowa
(Published as Skunk River near Ames prior to October 1966)

Location.--Lat 42°04'05", long 93°37'02", in NW1/4 SW1/4 sec.23, T.84 N., R.24 W., Story County, on left bank 2.5 miles north of Ames, 3.5 miles downstream from Keigley Branch, 5.2 miles upstream from Squaw Creek, and at mile 228.1 upstream from mouth of Skunk River.

Drainage area.--315 sq mi.

Gage.--Water-stage recorder. Concrete control since July 21, 1934. Datum of gage is 998.61 ft above mean sea level (Iowa Highway Commission bench mark). Prior to Aug. 25, 1921, nonrecording gage at same site and datum.

Stage-discharge relation.--Defined by current-meter measurements.

Flood stage.--10 feet.

Remarks.--Base for partial-duration series, 1,500 cfs. Several diversions for irrigation above station.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Sept.17, 1921	9.2	3,540
1922	Feb. 23, 1922	9.0	3,370
1923	Mar. 28, 1923	6.22	1,670
	Sept.28, 1923	6.0	1,530
1924	Mar. 30, 1924	6.3	1,680
	June 28, 1924	8.21	3,010
	Aug. 9, 1924	6.0	1,500
1925	Aug. 7, 1925	5.0	905
1926	Sept. 8, 1926	6.5	1,900
	Sept.19, 1926	8.26	3,120
1927	Feb. 5, 1927	7.4	2,460
1930	Nov. 24, 1929	11.2	5,230
1933	Apr. 1, 1933	6.47	1,990

05-4700.00 South Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)		Discharge (cfs)	
1934	Jan. 22, 1934	5.39	a	600	b
1935	Feb. 15, 1935	7.8	a	2,490	b
	Mar. 5, 1935	9.0		3,490	
	June 19, 1935	6.5		1,900	
	June 25, 1935	8.4		2,960	
	July 24, 1935	7.0		2,190	
1936	Mar. 10, 1936	7.7		2,580	
1937	Mar. 6, 1937	8.4	a	3,000	b
1938	May 4, 1938	8.3		2,890	
	May 17, 1938	6.5		1,880	
	June 29, 1938	5.8		1,540	
1939	Mar. 14, 1939	10.5	a	3,230	b
1940	Aug. 13, 1940	7.3		2,320	
1941	Sept. 8, 1941	8.6		3,050	
1942	Nov. 1, 1941	5.9		1,630	
	Sept. 14, 1942	8.1		2,530	
1943	June 16, 1943	6.5		1,910	
	July 31, 1943	10.3		4,500	
1944	May 20, 1944	13.9		8,060	
	June 12, 1944	8.0		2,840	
1945	Mar. 16, 1945	6.3		1,800	
	May 22, 1945	7.7		2,620	
	June 2, 1945	9.7		4,010	
1946	Feb. 5, 1946	7.1		2,270	
	Mar. 6, 1946	5.9		1,600	
	Mar. 13, 1946	5.9		1,610	

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a Affected by ice.
b About.

05-4700.00 South Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1947	June 1, 1947	8.63	3,740
	June 4, 1947	8.18	3,400
	June 13, 1947	11.95	6,550
	June 23, 1947	10.80	5,400
	June 30, 1947	6.4	2,200
1948	Feb. 28, 1948	5.8	1,630
	Mar. 19, 1948	7.35	2,620
	Mar. 27, 1948	7.3	2,600
1949	Mar. 4, 1949	10.52 a	3,000 b
1950	Mar. 7, 1950	8.86	3,820
	May 5, 1950	6.0	1,810
	May 9, 1950	7.0	2,410
	June 9, 1950	5.8	1,690
	June 18, 1950	6.6	2,170
1951	Feb. 26, 1951	5.75	1,690
	Mar. 29, 1951	10.90	5,320
	May 2, 1951	6.75	2,290
	June 2, 1951	10.35	4,920
	June 20, 1951	6.25	1,930
	July 4, 1951	7.07	2,470
1952	July 9, 1952	5.73	1,630
1953	May 1, 1953	4.71	980
1954	June 1, 1954	7.84	3,180
	June 10, 1954	13.66	8,630
	June 16, 1954	6.37	2,110
	June 22, 1954	5.88	1,770
	Aug. 27, 1954	8.27	3,520
1955	Oct. 15, 1954	5.22	1,340
1956	Sept. 4, 1956	3.49	376

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a Affected by ice.
b About.

05-4700.00 South Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1957	June 16, 1957	8.28	3,540
	July 4, 1957	6.52	2,200
1958	July 2, 1958	6.55	2,270
	July 4, 1958	7.85	3,150
	July 11, 1958	5.78	1,720
1959	Mar. 20, 1959	5.60	1,590
	May 31, 1959	5.83	1,720
1960	Mar. 30, 1960	10.33	6,210
	May 7, 1960	5.59	1,590
1961	Feb. 23, 1961	5.71	1,990
	Mar. 15, 1961	5.51	1,770
	Aug. 2, 1961	5.51	1,770
1962	Mar. 26, 1962	6.91	3,010
	May 7, 1962	7.53	3,510
	May 30, 1962	5.72	1,970
	July 14, 1962	9.02	4,300
	July 22, 1962	5.72	1,970
1963	Apr. 30, 1963	5.65	1,820
1964	May 8, 1964	5.31	1,570
	June 22, 1964	5.91	2,170
1965	Mar. 1, 1965	7.49 a	3,500 b
	Apr. 2, 1965	7.25 a	3,300 b
	Apr. 6, 1965	9.43	5,260
	May 27, 1965	6.55	2,730
	June 6, 1965	5.75	2,020
	Sept. 20, 1965	6.92	3,030
	Sept. 28, 1965	5.34	1,610
1966	Feb. 9, 1966	6.92 a	2,900 b
	May 23, 1966	5.87	1,960
	June 12, 1966	6.26	2,510

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a Affected by ice.
b About.

05-4700.00 South Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1967	June 8, 1967	6.63	2,790
	June 13, 1967	5.87	2,140
	June 18, 1967	6.06	2,320
1968	June 25, 1968	8.74	4,890
1969	Mar. 20, 1969	7.97	3,910
	Mar. 25, 1969	6.27	2,510
	June 7, 1969	6.19	2,440
	June 13, 1969	5.28	1,550
	June 30, 1969	6.88	2,910
	July 10, 1969	8.49	4,380
	July 18, 1969	6.13	2,390
	July 28, 1969	7.32	3,360
1970	May 13, 1970	5.10	1,330
1971	Feb. 19, 1971	9.10 a	--
	Feb. 20, 1971	7.67	3,660
	Mar. 13, 1971	6.03	2,300
1972	Mar. 7, 1972	8.93 a	--
	June 6, 1972	5.34	1,610
	Aug. 3, 1972	5.40	1,670
	Aug. 7, 1972	6.92	3,030
1973	Oct. 24, 1972	5.66	1,930
	Nov. 2, 1972	5.33	1,600
	Nov. 8, 1972	5.67	1,940
	Dec. 30, 1972	7.13 a	2,790 b
	Jan. 18, 1973	6.19 a	2,210 b
	Feb. 2, 1973	7.94 a	2,470 b
	Mar. 1, 1973	5.29	1,560
	Mar. 11, 1973	5.77	2,040
	Mar. 14, 1973	5.53	1,800
	Apr. 16, 1973	7.30	3,340
	May 8, 1973	6.12	2,380
	May 28, 1973	5.38	1,650
	Sept.27, 1973	5.83	2,100

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a Affected by ice.
b About.

05-4700.00 South Skunk River near Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1974	Oct. 12, 1973	6.70	2,850
	Apr. 22, 1974	5.10	1,730
	May 14, 1974	5.17	1,800
	May 16, 1974	5.37	2,000
	May 19, 1974	5.50	2,130
	May 22, 1974	5.37	2,000
	June 9, 1974	6.35	2,860
	June 19, 1974	8.90	5,100
	June 20, 1974	6.69	3,130
	June 23, 1974	9.61	5,780
1975	Mar. 20, 1975	5.94	2,170
	June 19, 1975	5.09	1,570
	June 22, 1975	6.12	2,290
	June 25, 1975	6.19	2,340
	June 28, 1975	9.98	5,230
1976	June 14, 1976	7.54	3,580
1977	Aug. 9, 1977	5.92	2,080
	Aug. 10, 1977	6.03	2,140
	Aug. 16, 1977	9.46	5,300

05-4705.00 Squaw Creek at Ames, Iowa

Location.--Lat 42°01'21", long 93°37'45", in NE1/4 NW1/4 sec.10, T.83 N., R.24 W., Story County, on left bank 65 ft downstream from Lincoln Way Bridge in Ames, 0.1 mile downstream from College Creek, and 1.8 miles upstream from mouth.

Drainage area.--204 sq miles.

Gage.--Water-stage recorder and concrete control. Datum of gage is 881.00 ft above mean sea level (levels by Iowa State University). Prior to Mar. 11, 1925, nonrecording gage at site 0.6 mile upstream at different datum. Mar. 11, 1925, to Apr. 30, 1927, nonrecording gage at site 65 ft upstream at datum about 4 ft higher.

Stage-discharge relation.--Defined by current-meter measurements.

Flood stage.--7 feet.

Remarks.--Base for partial-duration series 1,000 cfs. Prior to 1965 only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1918	June 4, 1918	14.5	6,900
1919	Sept.30, 1919	7.96	1,900 a
1920	Oct. 4, 1919	8.6	2,260
1921	Sept.17, 1921	7.4	1,900
1922	July 17, 1922	10.7	4,130
1923	Sept.28, 1923	6.1	1,340
1924	July 28, 1924	8.8	3,170
1925	Aug. 7, 1925	4.9	791
1926	Sept.19, 1926	10.2	3,610

a Maximum for period May to September 1919.

05-4705.00 Squaw Creek at Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Oct. 4, 1926	5.8	1,060
1965	Mar. 1, 1965	10.7 b	4,200
	May 26, 1965	6.06	1,700
	June 4, 1965	8.85	2,680 c
1966	May 23, 1966	5.70	1,580
	June 12, 1966	10.15	3,160
1967	June 8, 1967	6.69	1,950
	June 12, 1967	6.92	2,020
	June 16, 1967	5.47	1,510
1968	June 25, 1968	8.27	2,500
	June 29, 1968	4.75	1,270
1969	Mar. 20, 1969	9.59	2,970
	Mar. 24, 1969	7.16	2,120
	May 3, 1969	4.78	1,170
	June 7, 1969	8.34	2,240
	June 13, 1969	4.83	1,190
	June 27, 1969	5.45	1,380
	June 30, 1969	9.45	2,580
	July 4, 1969	--	1,800 d
	July 9, 1969	7.84	2,090
	July 27, 1969	4.30	1,030
1970	May 13, 1970	10.74	3,540
	May 25, 1970	4.26	1,010
1971	Feb. 19, 1971	10.09	3,650
	Mar. 14, 1971	5.52	1,560
1972	Mar. 7, 1972	5.03 e	1,300 d
	Aug. 2, 1972	5.84	1,680
	Aug. 6, 1972	--	1,340 d

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b From graph based on gage readings, at present site and datum.
c Maximum for period May to September 1965.
d About.
e Affected by ice.

05-4705.00 Squaw Creek at Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1973	Oct. 23, 1972	4.11	1,040
	Nov. 2, 1972	4.34	1,130
	Nov. 7, 1972	4.55	1,220
	Dec. 30, 1972	8.55 e	1,590 d
	Jan. 18, 1973	10.80 e	2,310 d
	Feb. 2, 1973	9.40 e	2,540 d
	Feb. 24, 1973	5.01	1,380
	Mar. 11, 1973	4.72	1,300
	Mar. 14, 1973	4.50	1,220
	Apr. 16, 1973	8.69	2,800
	May 7, 1973	6.65	1,950
	June 5, 1973	4.17	1,070
	Sept.27, 1973	5.60	1,610
	Sept.29, 1973	6.57	1,930
1974	Oct. 12, 1973	8.64	2,750
	Apr. 21, 1974	5.10	1,390
	May 16, 1974	7.21	2,080
	May 18, 1974	8.14	2,450
	May 22, 1974	5.75	1,620
	May 28, 1974	4.64	1,220
	June 9, 1974	7.93	2,400
	June 19, 1974	8.02	2,440
	June 22, 1974	8.95	2,900
1975	Mar. 20, 1975	--	1,700 d
	June 12, 1975	4.49	1,200
	June 18, 1975	5.96	1,720
	June 22, 1975	4.80	1,320
	June 24, 1975	4.84	1,330
	June 26, 1975	9.79	3,430
	June 27, 1975	14.00	11,300
1976	Mar. 12, 1976	4.75	1,300
	Apr. 18, 1976	4.36	1,110
	Apr. 23, 1976	4.40	1,110
	May 23, 1976	4.02	1,010
	June 14, 1976	8.55	2,680
1977	Aug. 8, 1977	7.09	2,070
	Aug. 16, 1977	8.01	2,430

d About.
e Affected by ice.

05-4710.00 South Skunk River below Squaw Creek near Ames, Iowa
(Prior to October 1966, published as
Skunk River below Squaw Creek near Ames)

Location.--Lat 42°00'31", long 93°35'37", in NE1/4 NW1/4 sec.13, T.83 N., R.24 W., Story County, on right bank 15 ft downstream from bridge on county highway, 0.2 mi downstream from Squaw Creek, 0.2 mi upstream from bridge on U.S. Highway 30, 2 mi southeast of Ames, and at mile 222.6 upstream from mouth of Skunk River.

Drainage area.--556 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 867.10 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements.

Flood stage.--20 feet.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 19, 1944	13. a	10,000
1953	May 1, 1953	5.47	1,620
1954	June 1, 1954	10.92	6,500
	June 11, 1954	11.92	7,980
	June 16, 1954	7.63	3,200
	June 22, 1954	8.36	3,820
	Aug. 22, 1954	8.53	3,950
	Aug. 26, 1954	9.26	4,700
	Aug. 28, 1954	12.36	8,700
1955	Oct. 14, 1954	6.81	2,680
	July 10, 1955	6.73	2,540
1956	May 13, 1956	3.05	638
1957	June 16, 1957	11.58	6,360
	July 4, 1957	8.54	3,950

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a From floodmark.

05-4710.00 South Skunk River below Squaw Creek near Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1958	June 8, 1958	6.95	2,610
	June 13, 1958	6.93	2,610
	July 2, 1958	11.13	6,120
	July 4, 1958	12.82	8,550
1959	Mar. 20, 1959	8.69	3,860
	May 31, 1959	10.57	5,520
1960	Mar. 30, 1960	13.20	9,260
	May 7, 1960	9.47	4,600
1961	Feb. 23, 1961	7.98	3,450
	Mar. 15, 1961	8.05	3,380
	June 7, 1961	7.11	2,680
	Aug. 1, 1961	7.97	3,310
	Sept. 30, 1961	8.27	3,520
1962	Mar. 26, 1962	10.70	5,900
	May 8, 1962	10.47	5,140
	May 29, 1962	9.32	4,280
	June 9, 1962	7.32	2,820
	July 15, 1962	11.87	6,330
	July 20, 1962	7.96	3,310
1963	Apr. 29, 1963	8.56	3,520
	May 12, 1963	10.20	4,780
1964	May 8, 1964	8.84	3,600
	June 23, 1964	9.80	4,440
1965	Mar. 1, 1965	11.87	6,410
	Apr. 1, 1965	11.82	6,350
	Apr. 6, 1965	12.59	7,340
	June 5 or 6, 1965	--	3,800 b
	Sept. 20, 1965	8.36	3,720
1966	May 23, 1966	8.23	3,400
	June 12, 1966	11.45	6,380

b About.

05-4710.00 South Skunk River below Squaw Creek near Ames, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1967	June 8, 1967	9.90	4,960
	June 12, 1967	8.57	3,880
	June 18, 1967	6.78	2,600
1968	June 25, 1968	12.07	7,310
	June 29, 1968	6.71	2,550
1969	Mar. 20, 1969	12.15	6,620
	Mar. 25, 1969	--	4,400 b
	June 7, 1969	9.22	3,920
	June 13, 1969	--	2,600 b
	June 27, 1969	--	3,600 b
	June 30, 1969	11.30	5,700
	July 3, 1969	7.80	2,890
	July 10, 1969	11.84	6,260
	July 19, 1969	--	3,600 b
	July 28, 1969	9.50	4,120
1970	May 13, 1970	10.35	4,950
1971	Feb. 20, 1971	12.67	8,610
	Mar. 14, 1971	9.21	4,270
1972	Aug. 2, 1972	8.05	3,340
	Aug. 8, 1972	--	3,300 b
1973	Oct. 24, 1972	7.50	2,930
	Nov. 2, 1972	7.27	2,770
	Nov. 7, 1972	7.73	3,090
	Dec. 30, 1972	8.97 c	3,720 b
	Jan. 18, 1973	9.91 c	3,800 b
	Feb. 2, 1973	12.43 c	5,120 b
	Mar. 11, 1973	8.12	3,400
	Mar. 14, 1973	7.72	3,080
	Apr. 16, 1973	11.94	6,860
	May 8, 1973	10.09	5,390
	May 28, 1973	6.92	2,730
	Sept. 27, 1973	8.89	3,530
	Sept. 30, 1973	9.60	3,780

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b About.
c Affected by ice.

05-4710.00 South Skunk River below Squaw Creek near Ames, Iowa--
(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1974	Oct. 10, 1973	21.69	5,880
	Apr. 22, 1974	18.15	2,900 b
	May 16, 1974	19.83	4,000 b
	May 18, 1974	21.13	5,100 b
	May 22, 1974	18.67	3,200 b
	June 9, 1974	21.21	5,210
	June 19, 1974	22.58	6,900 b
	June 23, 1974	23.19	7,800
1975	Mar. 20, 1975	--	3,990 b
	June 18, 1975	18.23	2,950
	June 22, 1975	18.76	3,240
	June 27, 1975	25.57	14,700
1976	Apr. 18, 1976	17.75	3,170
	Apr. 21, 1976	16.66	2,520
	May 24, 1976	16.80	2,600
	June 14, 1976	22.14	6,410
1977	Aug. 16, 1977	22.43	6,400

b About.

05-4712.00 Indian Creek near Mingo, Iowa
(Discontinued September 1975)

Location.--Lat 41°48'17", long 93°18'26", in NW1/4 NW1/4 sec.28, T.81 N., R.21 W., Jasper County, on right bank 30 ft downstream from bridge on State Highway 117, 0.7 mile downstream from Wolf Creek, 2.9 miles northwest of Mingo, and 3.3 miles upstream from Clear Creek.

Drainage area.--276 sq mi.

Gage.--Water-stage recorder. Datum of gage is 810.47 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 20, 1944	21.4 a	b
1958	June 13, 1958	11.50	1,700
	July 3, 1958	12.03	1,920
	July 5, 1958	13.03	2,800 c
1959	Mar. 20, 1959	13.50	3,400
	Mar. 27, 1959	11.17	1,560
	May 31, 1959	12.85	2,420
1960	Mar. 30, 1960	15.05	5,700
	Apr. 18, 1960	11.56	1,820
	May 7, 1960	15.07	5,860
	July 12, 1960	13.74	3,680
1961	Feb. 18, 1961	12.66	2,520
	Feb. 23, 1961	12.34	2,210
	Aug. 1, 1961	13.20	3,040
1962	Oct. 1, 1961	12.34	2,210
	Mar. 26, 1962	12.75	2,600
	May 8, 1962	13.91	3,960
	May 29, 1962	13.28	3,160
	July 15, 1962	11.79	1,920

a Flood stage a quarter mile upstream from gage.
b Estimated peak discharge of 15,000 cfs was used for defining flood-frequency curve.
c Maximum for period May to September 1958.

05-4712.00 Indian Creek near Mingo, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1963	May 12, 1963	13.45	3,280
1964	June 23, 1964	14.32	3,680
	July 11, 1964	12.30	2,080
1965	Feb. 20, 1965	13.00 c	2,000 d
	Mar. 17, 1965	13.42	3,000
	Apr. 1, 1965	13.80	3,820
	Apr. 6, 1965	14.32	4,610
	Apr. 24, 1965	10.97	1,550
1966	May 24, 1966	14.30	4,260
	June 12, 1966	16.41	7,380
1967	June 10, 1967	12.79	2,550
	June 12, 1967	11.94	1,940
	June 17, 1967	10.92	1,510
1968	June 26, 1968	11.05	1,690
1969	Mar. 18, 1969	13.59	3,570
	Mar. 24, 1969	11.12	1,720
	June 7, 1969	11.35	1,800
	June 12, 1969	12.30	2,430
	June 30, 1969	12.41	2,380
	July 4, 1969	12.03	2,170
	July 8, 1969	13.32	3,120
1970	May 14, 1970	15.87	7,360
	Aug. 5, 1970	10.99	1,670
	Aug. 18, 1970	12.27	2,350
1971	Feb. 20, 1971	15.65 c	4,300 d
1972	June 14, 1972	13.78	4,150
	June 20, 1972	12.83	2,980
	July 26, 1972	11.54	1,980

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c Affected by ice.
d About.

05-4712.00 Indian Creek near Mingo, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1973	Dec. 30, 1971	--	3,500 d
	Jan. 18, 1973	--	1,800 d
	Feb. 2, 1973	14.53	4,950
	Apr. 16, 1973	13.11	2,790
	May 8, 1973	11.54	1,820
1974	Oct. 11, 1973	13.17	2,970
	May 13, 1974	11.85	1,980
	May 16, 1974	12.97	2,720
	May 18, 1974	14.50	4,740
	May 28, 1974	12.74	2,770
	June 10, 1974	14.94	5,600
	June 20, 1974	13.70	3,700
	June 22, 1974	13.56	3,530
	July 4, 1974	10.69	1,600
1975	Mar. 20, 1975	13.44	3,390
	Apr. 28, 1975	11.86	2,080
	June 15, 1975	12.80	2,740
	June 19, 1975	13.88	3,930
	June 28, 1975	15.52	6,660

Discontinued September 1975

d About.

05-4715.00 South Skunk River near Oskaloosa, Iowa
(Prior to October 1966 published as "Skunk River near Oskaloosa")

Location.--Lat 41°21'19", long 92°39'31", in NW1/4 SW1/4 sec.25, T.76 N., R.16 W., Mahaska County, on right bank 400 ft upstream from bridge on U.S. Highway 63, 0.3 mile downstream from Painter Creek, 4.0 miles north of Oskaloosa, 53.7 miles upstream from confluence with North Skunk River, and at mile 147.3 upstream from mouth of Skunk River.

Drainage area.--1,635 sq mi.

Gage.--Water-stage recorder. Datum of gage is 685.50 ft above mean sea level. Prior to Nov. 21, 1947, nonrecording gage at site 400 ft downstream at same datum.

Stage-discharge relation.--Defined by current-meter measurements below 18,000 cfs and above 18,000 cfs on velocity-area study.

Flood stage.--15 feet.

Remarks.--Base for partial-duration series, 6,600.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 1944	25.8	37,000 a
1946	Jan. 9, 1946	18.57 b	9,600 c
	June 27, 1946	11.04	7,500
1947	June 6, 1947	19.47	14,300
	June 15, 1947	21.26	20,000
1948	Feb. 29, 1948	16.50 b	7,120 c
	Mar. 22, 1948	17.50	9,050
1949	Mar. 9, 1949	18.27	10,300
1950	Mar. 8, 1950	18.09	9,320

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a From rating curve extended above 18,000 cfs on basis of velocity-area study.
b Affected by ice.
c About.

05-4715.00 South Skunk River near Oskaloosa, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 31, 1951	16.61	6,700
	June 7, 1951	17.26	7,810
1952	Mar. 12, 1952	16.58	6,700
1953	Feb. 22, 1953	18.46	9,980
1954	June 24, 1954	15.89	5,420
1955	Feb. 20, 1955	15.55 b	3,700 c
1956	Aug. 13, 1956	7.90	782
1957	June 18, 1957	15.06	4,860
1958	July 7, 1958	15.76	5,680
1959	Mar. 21, 1959	16.87	8,500
1960	Jan. 14, 1960	16.84	7,340
	Apr. 3, 1960	20.56	14,800
	May 11, 1960	17.94	8,900
	June 28, 1960	16.64	6,800
1961	Sept. 13, 1961	16.17	6,280
1962	Mar. 20, 1962	17.32	6,730
	Mar. 29, 1962	18.80	8,460
1963	Aug. 6, 1963	16.38	5,720
1964	June 25, 1964	16.92	6,000
1965	Apr. 9, 1965	19.87	11,200
1966	May 26, 1966	17.80	7,920
	June 16, 1966	21.10	12,400
1967	June 13, 1967	18.09	7,600
1968	June 27, 1968	14.32	4,120

b Affected by ice.
c About.

05-4715.00 South Skunk River near Oskaloosa, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1969	Mar. 22, 1969	18.22	8,000
	July 13, 1969	19.02	8,760
	July 18, 1969	20.04	10,300
1970	Mar. 3, 1970	17.97	7,470
	May 17, 1970	18.54	8,160
1971	Feb. 27, 1971	20.34 b	6,700 c
1972	June 16, 1972	17.38	7,180
	Aug. 8, 1972	15.69	5,150
1973	Dec. 31, 1972	--	8,000 c
	Feb. 3, 1973	22.52 b	15,000 c
	Apr. 19, 1973	19.91	10,200
1974	Oct. 15, 1973	17.32	6,750
	Jan. 21, 1974	18.37 b	6,200 c
	Jan. 27, 1974	19.00 b	6,500 c
	Apr. 30, 1974	19.04	8,860
	May 22, 1974	21.22	12,700
	June 13, 1974	20.15	10,600
	June 26, 1974	19.32	9,280
1975	Mar. 22, 1975	18.70	8,380
	June 21, 1975	17.68	7,150
	July 2, 1975	19.62	9,740
1976	Apr. 25, 1976	21.04	12,300
	June 16, 1976	16.87	6,270
1977	Aug. 18, 1977	16.43	5,830

b Affected by ice.
c About.

05-4720.90 North Skunk River near Baxter, Iowa

Location.--Lat 41°49', long 93°04', in NE1/4 sec.21, T.81 N., R.19 W., Jasper County, at bridge on State Highway 223, 4.5 miles east of Baxter.

Drainage area.--52.2 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1966	June 12, 1966	84.42	a
1967	June 10, 1967	79.45	2,700
1968	--	b	a
1969	March 1969	80.55	a
1970	Mar. 2, 1970	78.51	2,100
1971	Feb. 19, 1971	79.14 c	2,500
1972	June 13, 1972	81.79	a
1973	Feb. 2, 1973	82.05	a
1974	June 9, 1974	83.60	a
1975	July 11, 1975	81.93	a
1976	Mar. 5, 1976	79.32	2,550
1977	--	b	a

a Discharge not determined.
b Peak stage did not reach bottom of gage.
c Affected by ice.

05-4722.90 Sugar Creek near Searsboro, Iowa

Location.--Lat 41°34', long 92°44', in SE1/4 sec.7, T.78 N., R.16 W., Poweshiek County, at bridge on State Highway 225, 1.8 miles west of Searsboro.

Drainage area.--52.7 sq miles.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1966	June 12, 1966	92.82	4,100
1967	June 9, 1967	91.09	1,920
1968	--	a	<510
1969	July 8, 1969	91.25	2,050
1970	Mar. 2, 1970	91.75	1,600
1971	Feb. 19, 1971	90.87 b	700
1972	Aug. 6, 1972	91.28	1,400
1973	Feb. 2, 1973	91.50	1,500
1974	Apr. 29, 1974	92.40	2,000
1975	June 18, 1975	89.91	940
1976	Apr. 24, 1976	91.43	1,450
1977	Sept. 18, 1977	90.36	1,020

a Peak stage did not reach bottom of gage.
b Affected by ice.

05-4723.90 Middle Creek near Lacey, Iowa

Location.--Lat 41°25', long 92°39', in NE1/4 sec.1, T.76 N., R.16 W., Mahaska County, at bridge on U.S. Highway 63, about 1.5 miles northwest of Lacey.

Drainage area.--23.0 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1966	June 28, 1966	86.63	1,200
1967	July 31, 1967	86.20	1,010
1968	--	a	<310
1969	July 8, 1969	87.15	1,180
1970	Aug. 5, 1970	87.62	1,370
1971	Feb. 19, 1971	86.32 b	350
1972	Aug. 6, 1972	86.78	1,130
1973	Apr. 22, 1973	87.32	1,350
1974	May 1974	86.89	1,200
1975	--	a	c
1976	Apr. 24, 1976	90.06	9,650
1977	--	a	c

a Peak stage did not reach bottom of gage.
b Affected by ice.
c Discharge not determined.

05-4724.45 Rock Creek at Sigourney, Iowa

Location.--Lat 41°20'12", long 92°13'20", in NE1/4 sec.3, T.75 N., R.12 W., Keokuk County, at bridge on State Highway 92, near west edge of Sigourney.

Drainage area.--26.3 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1966	May 17, 1966	90.14	2,100
1967	June 10, 1967	87.96	900
1968	--	a	<106
1969	July 18, 1969	90.38	2,300
1970	Sept. 17, 1970	91.29	3,300
1971	May 19, 1971	88.47	660
1972	May 7, 1972	88.91	940
1973	May 27, 1973	89.59	1,600
1974	Apr. 28, 1974	90.03	2,000
1975	Apr. 28, 1975	88.13	500
1976	Apr. 24, 1976	90.13	2,100
1977	Aug. 16, 1977	86.36	200

a Peak stage did not reach bottom of gage.

05-4725.00 North Skunk River near Sigourney, Iowa

Location.--Lat 41°18'03", long 92°12'16", in NE1/4 SE1/4 sec.14, T.75 N., R.12 W., Keokuk County, on right bank 20 ft downstream from bridge on State Highway 149, 1.2 miles downstream from Cedar Creek, 2.2 miles south of Sigourney, 4.0 miles upstream from Bridge Creek, and 16.2 miles upstream from confluence with South Skunk River.

Drainage area.--730 sq mi.

Gage.--Water-stage recorder. Datum of gage is 651.53 ft above mean sea level. Prior to June 10, 1953, nonrecording gage at same site and datum.

Stage-discharge relation.--Defined by current-meter measurements.

Flood stage.--16 feet.

Remarks.--Base for partial-duration series, 3,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	May 1944	22.8 a	14,500
1946	Jan. 7, 1946	22.57	14,000
1947	June 15, 1947	21.8	12,000
1948	Mar. 1, 1948	19.4 b	6,610 c
	Mar. 19, 1948	19.5	7,660
1949	Mar. 8, 1949	19.65	6,920
	Mar. 24, 1949	19.53 b	6,760 c
1950	Mar. 8, 1950	18.84	5,810
1951	May 29, 1951	16.4	3,820
	July 3, 1951	19.92	7,460
1952	Mar. 13, 1952	20.16	7,660

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a From floodmark.
b Affected by ice.
c About.

05-4725.00 North Skunk River near Sigourney, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Feb. 24, 1953	16.43	3,820
1954	Apr. 30, 1954	11.65	1,830
1955	Apr. 24, 1955	18.18	5,180
1956	June 20, 1956	7.98	880
1957	July 8, 1957	15.81	3,490
1958	Feb. 27, 1958	12.26 d	2,040
1959	Mar. 22, 1959	19.83	7,270
	May 30, 1959	17.37	4,500
1960	Jan. 15, 1960	21.56	11,500
	Mar. 31, 1960	25.33	27,500
	May 9, 1960	18.76	5,810
	July 13, 1960	17.29	4,420
1961	Feb. 22, 1961	17.80	4,820
	Mar. 8, 1961	18.73	5,700
	Mar. 16, 1961	17.50	4,580
	Sept.16, 1961	18.79	5,810
1962	Nov. 3, 1961	18.84	5,810
	Nov. 16, 1961	19.33	6,460
	Mar. 22, 1962	20.43	8,520
	May 29, 1962	18.94	5,930
1963	Mar. 5, 1963	17.15 b	--
	Aug. 7, 1963	16.36	3,820
1964	June 23, 1964	15.40	3,290
1965	Apr. 8, 1965	17.55	4,620
	Apr. 27, 1965	17.05	4,240
	July 7, 1965	17.95	4,960
	Sept.21, 1965	22.57	11,200

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b Affected by ice.
d Maximum gage height, 13.60 ft.

05-4725.00 North Skunk River near Sigourney, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1966	May 17, 1966	19.40	5,810
	May 24, 1966	17.70	4,280
	June 14, 1966	23.85	15,600
1967	June 15, 1967	13.80	2,450
1968	Apr. 25, 1968	9.87	1,230
1969	July 4, 1969	16.84	4,100
	July 11, 1969	19.61	6,940
	July 19, 1969	20.09	7,840
1970	Mar. 5, 1970	20.15	7,070
	Aug. 6, 1970	21.30	8,420
	Sept. 17, 1970	19.77	6,480
1971	Oct. 13, 1970	18.32	4,720
	Feb. 23, 1971	20.07 b	4,100 c
1972	May 8, 1972	16.03	3,360
1973	Jan. 3, 1973	--	3,800 c
	Feb. 4, 1973	20.33	7,490
	Apr. 18, 1973	20.17	7,210
	May 2, 1973	17.13	4,270
	May 29, 1973	19.33	6,030
1974	Jan. 31, 1974	17.57	4,460
	Apr. 30, 1974	22.04	12,100
	May 19, 1974	22.51	14,000
	May 31, 1974	19.63	6,380
	June 12, 1974	20.41	7,640
1975	Mar. 22, 1975	17.40	4,430
1976	Apr. 25, 1976	22.80	16,800
1977	Sept. 19, 1977	11.47	1,800

b Affected by ice.
c About.

05-4730.00 Skunk River at Coppock, Iowa
(Station operation discontinued Sept. 30, 1944)
(Peak data collected by observer until 1951)

Location.--Lat 41°09'50", long 91°43'05", in NE1/4 NE1/4 sec.1, T.73 N., R.8 W., Jefferson County, at bridge on State Highway 78, 0.5 mile west of Coppock, 3/4 mile upstream from Crooked Creek, and 66 miles usptream from mouth of Skunk River.

Drainage area.--2,916 sq mi.

Gage.--Nonrecording. Datum of gage is 585.02 ft above mean sea level. At site one-eighth mile upstream prior to Sept. 29, 1937.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 6,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 31, 1903	22.	40,000
1914	Sept.21, 1914	11.7	6,980
1915	May 26, 1915	11.7	6,980
	June 8, 1915	11.2	6,350
	July 11, 1915	13.4	9,300
	Aug. 4, 1915	16.5	15,200
	Sept.16, 1915	11.3	6,450
1916	Oct.. 2, 1916	14.7	11,200
	Jan. 27, 1916	12.8	8,400
	Feb. 22, 1916	12.4	7,870
	Mar. 27, 1916	17.1	16,800
	May 15, 1916	12.2	7,600
	Sept. 6, 1916	11.6	6,900
1917	Mar. 14, 1917	12.0	7,350
	May 1, 1917	12.1	7,450
	May 22, 1917	11.7	6,980
	June 7, 1917	16.7	15,600
	June 14, 1917	17.6	18,300
1918	May 29, 1918	12.2	7,800
	June 9, 1918	19.8	28,200
1919	Mar. 17, 1919	15.2	12,200
	May 5, 1919	14.1	10,200
	June 9, 1919	12.7	8,260

05-4730.00 Skunk River at Coppock, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1920	Mar. 27, 1920	15.5	12,800
	Apr. 20, 1920	13.3	9,090
	May 13, 1920	12.4	7,870
1921	June 19, 1921	13.2	8,950
	Sept.26, 1921	14.6	11,600
9122	Feb. 23, 1922	11.6	6,860
1923	Apr. 2, 1923	10.3	5,360
1924	Mar. 4, 1924	12.6	6,860
	June 29, 1924	19.1	23,900
	July 26, 1924	13.2	8,950
1925	June 4, 1925	10.2	5,040
1926	June 15, 1926	14.0	10,100
	Sept.10, 1926	14.4	10,700
	Sept.16, 1926	17.8	18,900
	Sept.26, 1926	19.4	25,100
1927	Feb. 5, 1927	16.5 a	15,200 b
	Apr. 19, 1927	15.5	12,800
	May 25, 1927	11.3	6,450
	June 4, 1927	11.7	6,980
1928	June 30, 1928	14.0	10,100
	July 4, 1928	14.5	10,800
	Aug. 6, 1928	14.3	10,600
1929	Nov. 19, 1928	14.2	10,400
	Mar. 19, 1929	17.7	18,600
	Apr. 1, 1929	11.5	6,700
	Apr. 20, 1929	13.6	9,500
	Apr. 26, 1929	14.6	11,000

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a Affected by ice.
b About.

05-4730.00 Skunk River at Coppock, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1930	June 15, 1930	22.1	40,700
1931	Sept. 27, 1931	8.2	3,360
1932	Nov. 29, 1931	15.4	12,600
	Jan. 1, 1932	12.9	8,600
	June 26, 1932	12.3	7,740
	July 11, 1932	11.3	6,450
	Aug. 13, 1932	11.2	6,380
1933	May 13, 1933	12.8	8,400
	May 26, 1933	14.2	10,400
1934	Jan. 26, 1934	6.5	1,840
1935	June 3, 1935	12.2	6,400
	June 20, 1935	13.8	7,870
	July 4, 1935	12.4	6,640
1936	Mar. 13, 1936	15.0	11,400
1937	Feb. 23, 1937	17.4 a	8,510 b
	Mar. 10, 1937	17.7	19,600
1938	Feb. 6, 1938	14.6 a	9,600 b
	May 19, 1938	12.3	7,500
1939	Mar. 13, 1939	17.4	15,700
1940	Aug. 29, 1940	7.9	3,260
1941	Feb. 15, 1941	11.9	5,500
1942	Nov. 7, 1941	12.4	7,390
1943	Feb. 9, 1943	12.8 a	6,520 b
	May 21, 1943	15.0	10,900
	June 17, 1943	12.1	6,300
	June 22, 1943	13.0	7,390
	Aug. 4, 1943	21.6	37,400

a Affected by ice.
b About.

05-4730.00 Skunk River at Coppock, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Apr. 24, 1944	17.6	18,700
	May 10, 1944	12.9	7,260
	May 24, 1944	22.3 c	41,500
	June 16, 1944	17.0	16,500
1945	Mar. 26, 1945	12.5	6,760
	Apr. 22, 1945	13.5	8,110
	May 19, 1945	15.5	12,100
	June 4, 1945	12.9	7,260
	June 16, 1945	14.0	8,910
1946	Jan. 9, 1946	17.7	19,100
	Mar. 19, 1946	14.3	9,440
	Mar. 26, 1946	12.2	6,410
	June 13, 1946	12.5	6,760
	June 20, 1946	18.9	24,200
1947	Apr. 8, 1947	15.7	12,600
	Arp. 16, 1947	13.8	8,580
	Apr. 22, 1947	15.4	11,800
	June 9, 1947	18.8	23,700
	June 18, 1947	19.3	26,000
1948	Feb. 19, 1948	13.0 a	6,640 b
	Mar. 3, 1948	14.5	9,820
	Mar. 20, 1948	18.1	20,700
1949	Mar. 4, 1949	15.7 a	10,200 b
	June 25, 1949	11.9	6,080
1950	Mar. 12, 1950	13.8	8,580
	June 21, 1950	15.0	10,900
	June 26, 1950	14.4	9,630

Discontinued 1951

a Affected by ice.
b About.
c Maximum stage known since 1881.

05-4733.00 Cedar Creek near Batavia, Iowa

Location.--Lat 41°01', long 92°07', in SW1/4 sec.27, T.72 N., R.11 W., Jefferson County, at bridge on U.S. Highway 34, 2.5 miles northeast of Batavia.

Drainage area.--252 sq mi.

Gage.--Crest-stage gage.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Sept. 21, 1965	92.80	26,000
1966	May 17, 1966	78.69	3,600
1967	June 10, 1967	79.86	4,200
1968	--	a	<1,060
1969	June 8, 1969	78.06	3,200
1970	Aug. 5, 1970	92.41	b
1971	Feb. 18, 1971	89.83 c	4,700
1972	--	a	b
1973	Apr. 22, 1973	84.24	7,800
1974	May 19, 1974	82.34	6,100
1975	Mar. 28, 1975	77.14	2,400
1976	Apr. 24, 1976	85.96	15,200
1977	Aug. 8, 1977	77.92	3,200

a Peak stage did not reach bottom of gage.
b Discharge not determined.
c Affected by ice.

05-4735.00 Big Creek near Mount Pleasant, Iowa

Location.--Lat 41°00'52", long 91°34'49", in NW1/4 NW1/4 sec.29, T.72 N., R.6 W., Henry County, on left bank 12 ft downstream from bridge on county highway, 100 ft downstream from Lynn Creek, 0.7 mile downstream from Brandywine Creek, and 3.7 miles northwest of Court House at Mount Pleasant.

Drainage area.--106 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 630.53 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Aug. 3, 1948	27. ab	c
1956	Feb. 24, 1956	6.52 d	500 a
1957	Apr. 3, 1957	4.33	264
1958	Feb. 24, 1958	9.38	1,600
	June 9, 1958	9.24	1,540
	June 13, 1958	8.49	1,320
	July 19, 1958	7.30	1,000
	Aug. 1, 1958	8.32	1,250
1959	Feb. 23, 1959	10.67 d	1,150 a
1960	Oct. 5, 1959	11.37	2,310
	Oct. 6, 1959	10.83	2,080
	Mar. 29, 1960	15.30	4,460
	Apr. 17, 1960	11.12	2,190
	June 12, 1960	12.89	2,950

a About.
b From floodmarks established by local residents.
c Discharge not determined.
d Affected by ice.

05-4735.00 Big Creek near Mount Pleasant, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Sept. 13, 1961	11.24	2,230
1962	Oct. 30, 1961	8.64	1,350
	Nov. 2, 1961	9.12	1,500
	Nov. 16, 1961	13.03	3,000
	Mar. 11, 1962	11.90 d	2,400 a
	Mar. 19, 1962	9.42	1,600
	May 8, 1962	9.62	1,670
	May 11, 1962	9.68	1,700
	July 5, 1962	13.92	3,540
1963	Mar. 4, 1963	11.18 d	1,500 a
1964	Apr. 20, 1964	8.08	1,100
	June 20, 1964	8.57	1,250
1965	Jan. 2, 1965	9.00	1,470
	Jan. 23, 1965	7.15	929
	Mar. 17, 1965	12.07	2,580
	Apr. 6, 1965	7.79	1,100
	Aug. 26, 1965	14.29	3,940
	Aug. 30, 1965	9.99	1,960
	Sept. 7, 1965	13.53	3,560
	Sept. 14, 1965	10.55	2,180
	Sept. 21, 1965	18.22	6,150
1966	Dec. 24, 1965	7.06	915
	May 17, 1965	8.22	1,250
	May 23, 1966	10.92	2,170
	June 12, 1966	10.55	2,020
1967	Apr. 1, 1967	6.95	888
1968	Nov. 2, 1967	8.90	1,420
	July 24, 1968	7.52	968
1969	Jan. 16, 1969	--	1,600
	Jan. 23, 1969	--	1,500
	July 8, 1969	8.92	1,430
	July 18, 1969	13.73	3,460

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a About.
d Affected by ice.

05-4735.00 Big Creek near Mount Pleasant, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1970	June 14, 1970	7.29	972
	Aug. 5, 1970	16.01	4,590
	Sept.17, 1970	7.85	1,080
	Sept.22, 1970	14.46	3,630
1971	Feb. 18, 1971	13.04 d	2,000 a
1972	Dec. 15, 1971	7.84	1,110
	June 14, 1972	7.41	1,000
1973	Mar. 7, 1973	8.42	1,230
	Mar. 14, 1973	7.78	1,040
	Mar. 31, 1973	10.55	2,150
	Apr. 9, 1973	11.38	2,480
	Apr. 22, 1973	25.58	10,500
	May 2, 1973	14.36	3,820
	May 7, 1973	6.83	902
	May 27, 1973	16.35	4,820
	July 4, 1973	9.79	1,850
	July 22, 1973	12.79	3,050
	Sept.27, 1973	19.00	6,350
	Sept.29, 1973	8.98	1,530
1974	Oct. 2, 1973	8.34	1,340
	Jan. 27, 1974	11.61	2,570
	May 13, 1974	7.06	989
	May 28, 1974	7.43	1,100
1975	Mar. 17, 1975	9.09	1,570
	Aug. 29, 1975	9.43	1,700
1976	Mar. 5, 1976	10.49	2,110
	Apr. 24, 1976	16.29	4,780
1977	Aug. 8, 1977	6.12	719

a About.
d Affected by ice.

05-4740.00 Skunk River at Augusta, Iowa

Location.--Lat 40°45'13", long 91°16'40", in NE1/4 NE1/4 sec.26, T.69 N., R.4 W., Des Moines County, on left bank 300 ft upstream from bridge on State Highway 394 at Augusta, 2.0 miles upstream from Long Creek, and at mile 12.5.

Drainage area.--4,303 sq mi.

Gage.--Water-stage recorder. Datum of gage is 521.24 ft above mean sea level. Prior to Nov. 15, 1913, nonrecording gage at site 400 ft upstream at datum about 0.7 ft higher. May 27, 1915, to Jan. 14, 1935, nonrecording gage at site 400 ft upstream at present datum.

Stage-discharge relation.--Defined by current-meter measurements.

Flood stage.--15 feet.

Remarks.--Base for partial-duration series, 15,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1903	June 1, 1903	21.0 a	45,000 a
1915	July 11, 1915	15.7	22,800
1916	Jan. 24, 1916	16.5 b	18,400 a
	Jan. 27, 1916	15.7 b	17,100 a
	Mar. 28, 1916	18.7	33,600
	June 7, 1916	14.5	19,700
1917	June 7, 1917	17.2	27,700
	June 13, 1917	14.0	18,400
	June 16, 1917	14.8	20,400
1918	May 30, 1918	12.8	15,600
	June 11, 1918	17.2	27,700
1919	Mar. 17, 1919	14.5	19,600
	May 4, 1919	15.3	21,700

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a About.
b Affected by ice.

05-4740.00 Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1920	Mar. 26, 1920	16.5	25,000
	Apr. 20, 1920	17.6	24,500
	May 13, 1920	14.9	20,600
1921	June 19, 1921	11.8	13,700
1922	Feb. 23, 1922	10.3	11,200
1923	Mar. 26, 1923	8.5	8,600
1924	June 25, 1924	14.4	18,200
	June 28, 1924	19.4	27,800
	June 30, 1924	19.2	27,200
	July 25, 1924	15.4	20,100
1925	Feb. 24, 1925	14.4 b	14,300 a
1926	June 13, 1926	16.2	20,300
	June 17, 1926	15.5	19,000
	Sept. 9, 1926	19.0	26,600
	Sept. 16, 1926	20.5	31,500
1927	Oct. 1, 1926	18.9	26,400
	Feb. 6, 1927	14.8	18,700
	Apr. 16, 1927	13.2	15,500
	Apr. 20, 1927	18.3	25,000
	May 19, 1927	14.8	18,000
	June 4, 1927	14.4	17,300
1928	June 29, 1928	13.0	16,100
	July 5, 1928	14.6	18,600
	Aug. 4, 1928	16.0	21,200
	Aug. 7, 1928	13.9	17,500
1929	Nov. 18, 1928	17.9	25,000
	Mar. 13, 1929	15.5	20,400
	Mar. 20, 1929	16.0	21,200
	Apr. 21, 1929	18.4	26,600
	Apr. 25, 1929	18.0	25,500
1930	June 17, 1930	22.6	44,500

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a About.
b Affected by ice.

05-4740.00 Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1931	July 4, 1931	11.9	14,000
1932	Nov. 23, 1931	14.6	18,600
	Jan. 1, 1932	15.8	20,900
	Aug. 14, 1932	13.0	16,000
1933	Dec. 25, 1932	14.4	18,400
	May 13, 1933	15.2	19,800
1934	Apr. 5, 1934	4.0	2,220
1935	June 2, 1935	15.2	16,400
	June 19, 1935	14.3	15,400
1936	Feb. 26, 1936	17.4 b	16,000 a
1937	Feb. 22, 1937	17.3	21,800
	Mar. 6, 1937	15.3	17,000
	Mar. 12, 1937	15.5	17,400
1938	Feb. 8, 1938	19.3 b	18,300 a
	June 16, 1938	17.9	23,300
1939	Mar. 13, 1939	19.5	28,000
1940	Aug. 17, 1940	11.9	11,800
1941	June 12, 1941	9.2	8,280
1942	Feb. 3, 1942	14.3 c	13,600
1943	May 20, 1943	16.6	19,600
	Aug. 6, 1943	20.5	29,800
1944	Mar. 15, 1944	14.9	16,200
	Apr. 24, 1944	19.8	29,600
	May 26, 1944	23.0	44,800
	June 19, 1944	15.3	17,000
1945	Mar. 26, 1945	14.7	16,000
	May 18, 1945	16.7	20,200

a About.
b Affected by ice.
c Backwater from debris.

05-4740.00 Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Jan. 6, 1946	19.2	27,500
	Jan. 9, 1946	19.2	27,600
	Mar. 17, 1946	14.6	16,000
	June 22, 1946	20.1	30,900
1947	Apr. 5, 1947	16.7	20,500
	Apr. 20, 1947	15.8	18,700
	June 9, 1947	19.6	29,000
	June 20, 1947	19.1	27,400
	July 1, 1947	19.1	27,000
1948	Feb. 28, 1948	16.6	20,200
	Mar. 20, 1948	18.7	25,800
1949	Mar. 4, 1949	15.4 b	16,000 a
1950	Apr. 25, 1950	18.5	25,900
	June 19, 1950	19.9	30,100
1951	Feb. 19, 1951	22.2 b	18,000 a
	Mar. 29, 1951	13.95	15,400
	May 11, 1951	18.00	23,700
	Aug. 28, 1951	16.02	19,100
1952	Mar. 13, 1952	15.92	18,900
	June 21, 1952	14.60	16,500
1953	Apr. 1, 1953	14.39	16,100
1954	Aug. 27, 1954	10.2	9,780
1955	Feb. 27, 1955	--	15,000 a
	Apr. 25, 1955	15.62	18,300
1956	June 20, 1956	5.47	4,050
1957	July 31, 1957	7.05	5,850
1958	Aug. 1, 1958	13.12	12,800

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a About.
b Affected by ice.

05-4740.00 Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Feb. 25, 1959	17.87 b	--
	Feb. 26, 1959	--	15,000 a
1960	Oct. 7, 1960	15.80	16,200
	Jan. 16, 1960	17.29	20,900
	Apr. 3, 1960	25.00	51,000
	Apr. 15, 1960	15.49	17,500
	May 10, 1960	15.11	16,800
	June 15, 1960	14.92	16,400
	July 13, 1960	14.17	15,200
1961	Mar. 8, 1961	14.49	15,800
	Mar. 14, 1961	14.55	15,900
	Sept. 14, 1961	15.38	17,300
1962	Nov. 3, 1961	14.45	15,600
	Nov. 20, 1961	18.89	25,200
	Mar. 23, 1962	18.20	23,100
	June 1, 1962	15.15	17,000
1963	Mar. 6, 1963	18.54 b	18,000 a
1964	Apr. 21, 1964	13.83	14,600
1965	Mar. 18, 1965	16.99	20,300
	Apr. 12, 1965	16.45	19,300
	Sept. 1, 1965	16.13	18,600
	Sept. 8, 1965	14.53	15,800
	Sept. 24, 1965	24.90	45,500
1966	May 24, 1966	14.03	15,000
	June 13, 1966	16.28	18,900
	June 18, 1966	16.37	19,100
1967	June 14, 1967	11.11	11,100
1968	July 24, 1968	11.36	11,500
1969	Jan. 23, 1969	--	20,900 a
	July 10, 1969	15.00	16,600
	July 21, 1969	19.29	26,500

a About.
b Affected by ice.

05-4740.00 Skunk River at Augusta, Iowa--(Continued)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)
1970	Aug. 10, 1970	18.17	23,900
	Sept.23, 1970	18.86	25,100
1971	Feb. 19, 1971	18.16 b	--
	Feb. 28, 1971	15.02 b	15,200 a
1972	Apr. 23, 1973	13.50	14,400
1973	Mar. 12, 1973	13.97	15,100
	Apr. 1, 1973	15.71	17,900
	Apr. 10, 1973	15.53	17,600
	Apr. 23, 1973	27.05	66,800 d
	May 3, 1973	18.58	26,300
	May 9, 1973	14.82	17,500
	May 29, 1973	18.93	27,400
	July 22, 1973	14.03	16,100
	Sept.28, 1973	16.50	21,000
1974	Jan. 23, 1974	--	18,000 a
	May 22, 1974	18.83	27,300
	May 30, 1974	18.55	26,300
1975	Mar. 29, 1975	12.86	14,200
1976	Mar. 6, 1976	14.75	17,400
	Apr. 27, 1976	22.34	40,900
1977	Aug. 9, 1977	9.23	9,020

a About.
b Affected by ice.
d Stage and discharge for April 1973 flood believed to be greatest known since 1851.

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