U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with
Bureau of Land Management

Baseline Channel Morphology and Bank Erosion Inventory of South Fork Campbell Creek at Campbell Tract, Anchorage, Alaska, 1999 and 2000

Open-File Report 01–288

USGS
science for a changing world

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2001	**N/A**	**-**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Baseline Channel Morphology and Bank Erosion Inventory of South Fork Campbell Creek at Campbell Tract, Anchorage, Alaska, 1999 and 2000	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Department of the Interior 1849 C Street, NW Washington, DC 20240**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**SAR**	**73**	

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18

Cover photo: Anchorage schoolchildren participate in Outdoor Week, an educational program at South Fork Campbell Creek at Campbell Tract, Anchorage, May 2000. Photo by author.

Baseline Channel Morphology and Bank Erosion Inventory of South Fork Campbell Creek at Campbell Tract, Anchorage, Alaska, 1999 and 2000

By Janet H. Curran

Open-File Report 01-288

Prepared in cooperation with
Bureau of Land Management

Anchorage, Alaska
2001

U.S. DEPARTMENT OF THE INTERIOR
GALE A. NORTON, Secretary

U.S. GEOLOGICAL SURVEY
Charles G. Groat, Director

Additional information can be obtained from:

District Chief
U.S. Geological Survey
4230 University Drive
Suite 201
Anchorage, AK 99508-4664
http://ak.water.usgs.gov

This report is available online in PDF format and can be viewed using Adobe Acrobat Reader. The URL is:
http://pubs.water.usgs.gov/ofr01-288

CONTENTS

FIGURES

TABLES

CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
cubic foot per second (ft^3/s)	0.02832	cubic meter per second
foot (ft)	0.3048	meter
foot per year (ft/yr)	0.3048	meter per year
inch (in.)	2.54	centimeter
mile (mi)	1.609	kilometer
square mile (mi^2)	2.590	square kilometer

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

Baseline Channel Morphology and Bank Erosion Inventory of South Fork Campbell Creek at Campbell Tract, Anchorage, Alaska, 1999 and 2000

By Janet H. Curran

Abstract

South Fork Campbell Creek drains largely undeveloped land in Anchorage, Alaska, but supports heavy use near the Bureau of Land Management (BLM) Campbell Tract facility for recreation and environmental education. To help assess the impacts of human activities in the basin on biological communities, particularly aquatic and terrestrial biota, morphological changes to the channel bed and banks were monitored for 2 years. Erosion conditions and rates of change were measured and 11 transects were surveyed in three reaches of Campbell Creek near the BLM Campbell Creek Science Center in 1999. Repeat measurements at these 33 transects in 2000 documented noticeable differences between horizontal or vertical channel position at eight transects. Repeat measurements of 51 erosion pins at the survey transects provided details of bank erosion between the 2 years. Annual erosion rates at the erosion pins ranged from 0.81 foot per year of erosion to 0.16 foot per year of deposition.

INTRODUCTION

South Fork Campbell Creek is the major drainage in a relatively undeveloped tract of land managed by the Bureau of Land Management (BLM) in Anchorage, Alaska. The stream and surrounding land, known as the Campbell Tract, are near urbanized Anchorage (figs. 1 and 2) and are heavily used for recreation and environmental education. Despite intensive human use, the stream supports a range of wildlife and is the spawning grounds for wild coho and chinook salmon, as well as resident Dolly Varden trout. Many entities share concerns about potential environmental degradation from increasing use of Campbell Tract and resulting impacts on aquatic and terrestrial biota. BLM established a Limits of Acceptable Change program in 1994 that addresses the balance between human use and impacts on environmental conditions at the Campbell Tract facility.

The U.S. Geological Survey (USGS) included Cook Inlet Basin (COOK) as part of its National Water-Quality Assessment (NAWQA) Program in 1997. NAWQA studies support collection of biological, chemical, and physical data to be used in an integrated assessment of water quality according to national protocols. The NAWQA effort addresses a range of sites across Cook Inlet, including South Fork Campbell Creek at the Campbell Tract, but is not intended to provide comprehensive, site-specific assessments. In order to expand the knowledge base of South Fork Campbell Creek at Campbell Tract and provide a baseline for future assessments, the USGS, in cooperation with BLM, began a study in 1999 to monitor morphological changes to the channel bed and banks.

This report describes the methods and results of channel morphology surveys and erosion monitoring at South Fork Campbell Creek. Biological, chemical, and physical habitat data collected for the NAWQA study and comparisons with data from other sites in Cook Inlet are available online at http://ak.water.usgs.gov/Projects/Nawqa/ and in reports by Glass (1999), Frenzel (2000), Huckins and others (2001), Johnson (2001), and Meyer and others (2001).

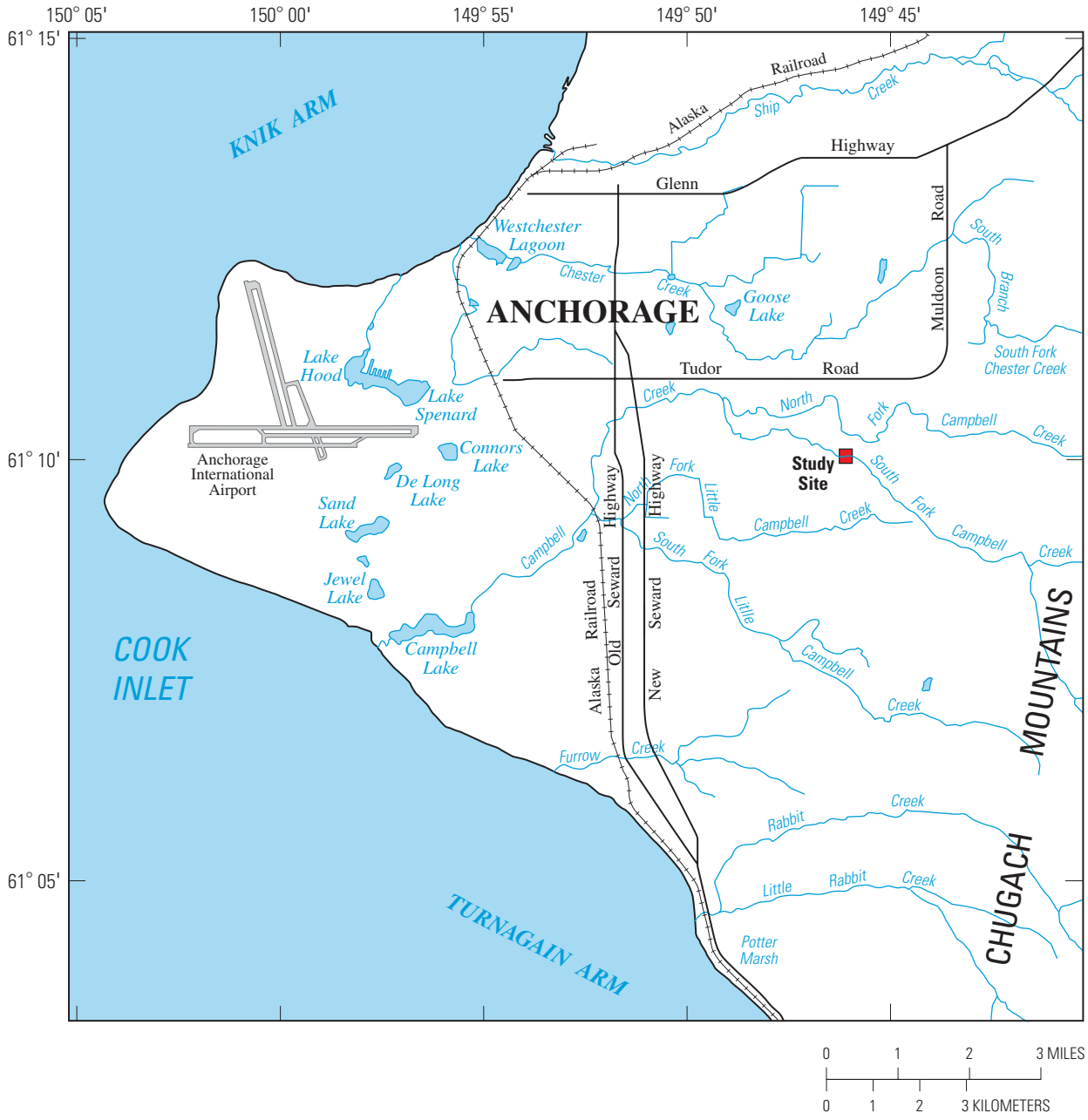

Figure 1. Location of South Fork Campbell Creek study site, Anchorage, Alaska.

Purpose and Scope

The purpose of this report is to provide a baseline inventory of existing channel bed and bank conditions at three reaches of South Fork Campbell Creek near BLM's Campbell Creek Science Center, including an inventory of erosional changes between water years 1999 and 2000. A baseline monitoring study describes existing conditions in such a way that future comparisons can be made. Comparison of a baseline with future measurements allows assessment of processes that may take years to develop. Accordingly, this report describes field monumentation of erosion monitoring sites, presents monitoring data, and describes

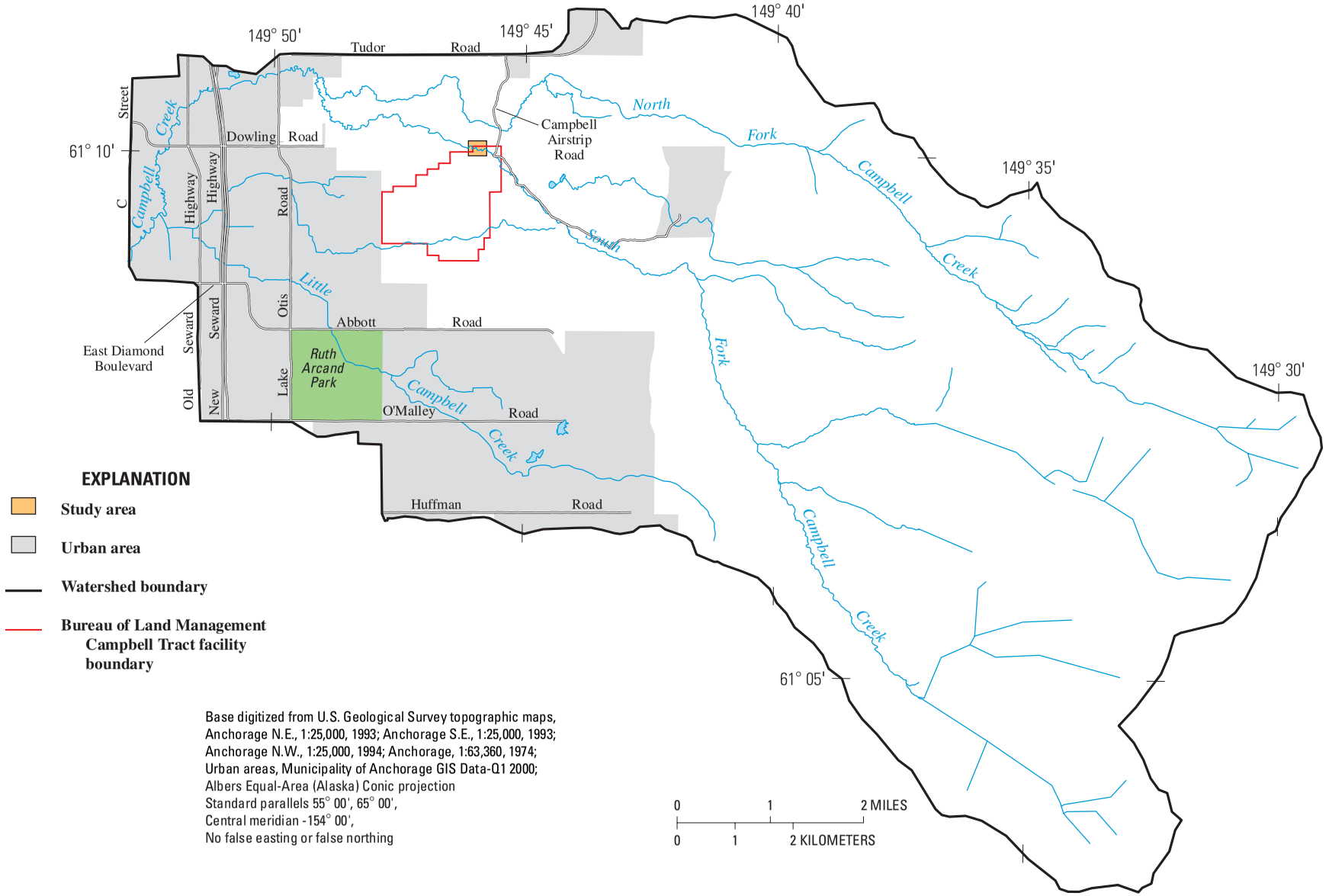

Figure 2. Campbell Tract and South Fork Campbell Creek watershed upstream from C Street, Anchorage, Alaska.

changes to channel bed and banks observed during the monitoring period. The results of related investigations on Campbell Creek for NAWQA or using NAWQA protocols are summarized in other reports and on the COOK NAWQA Website.

Approach

Three study reaches, each containing 11 transects, were established for this study and the concurrent NAWQA study. Transect surveys made in 1999 and repeated in 2000 documented lateral and vertical changes to the bed and banks of South Fork Campbell Creek. Repeat measurements of erosion pins at the transects detailed lateral changes to banks over this same study period. Aerial photographs taken in 2000 documented conditions between transects and provided detail not possible to include in transect surveys, such as the presence of large, woody debris and the extent of gravel bars.

DESCRIPTION OF STUDY AREA

South Fork Campbell Creek drains a mountainous area in Chugach State Park and emerges from a narrow bedrock canyon about 3 mi upstream from the study site. Downstream from the canyon, the channel flows across a broad, gently sloping lowland to the study site. Altitudes in the watershed range from over 5,000 ft above sea level in the mountainous headwaters to sea level where the stream discharges into Cook Inlet. Altitude at USGS streamflow gaging station 15274000, South Fork Campbell Creek near Anchorage, is about 260 ft, based on topographic maps.

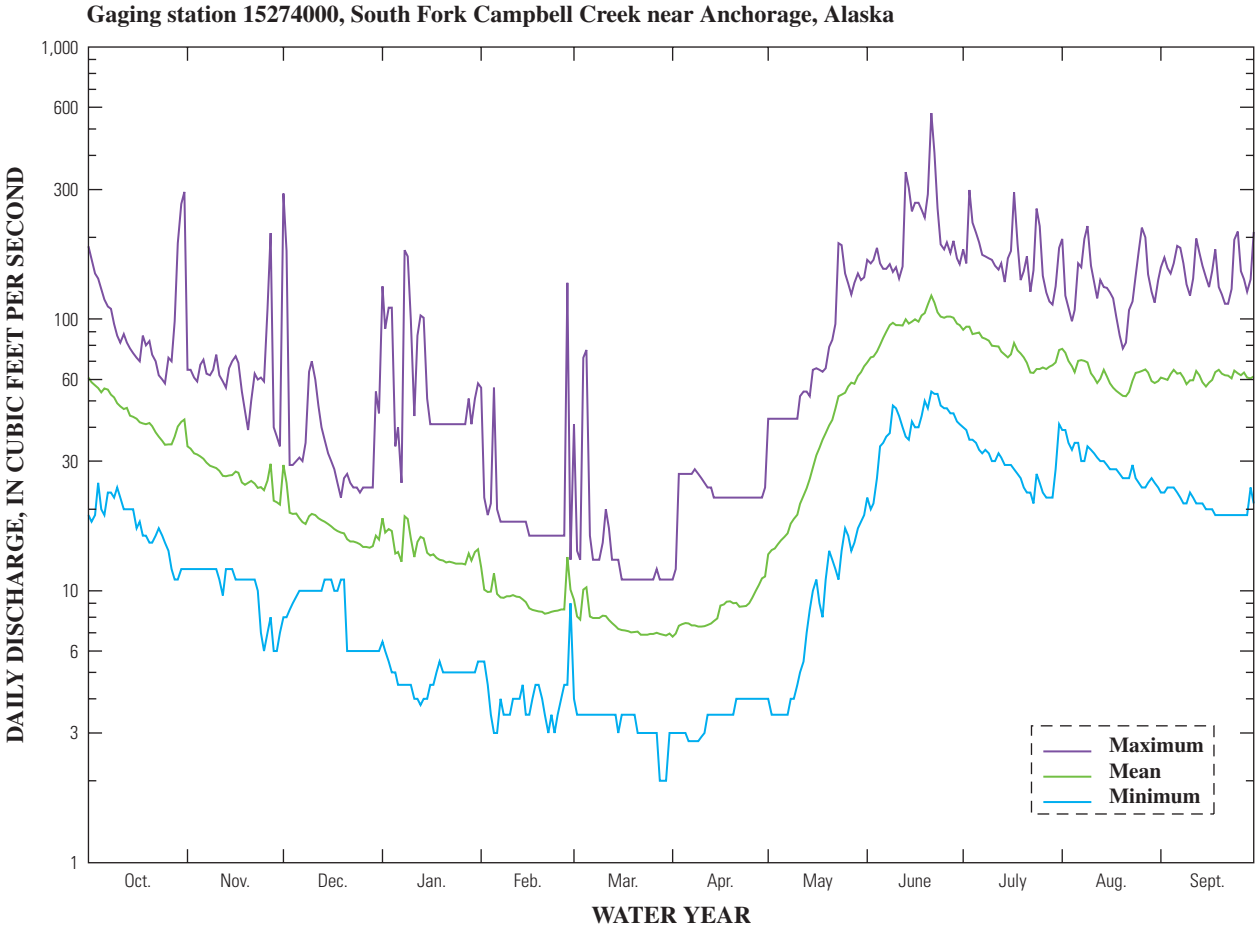

Figure 3. Daily maximum, mean, and minimum discharge for the period of record at U.S. Geological Survey gaging station 15274000, South Fork Campbell Creek near Anchorage, Alaska. (Location of gaging station shown in figure 7)

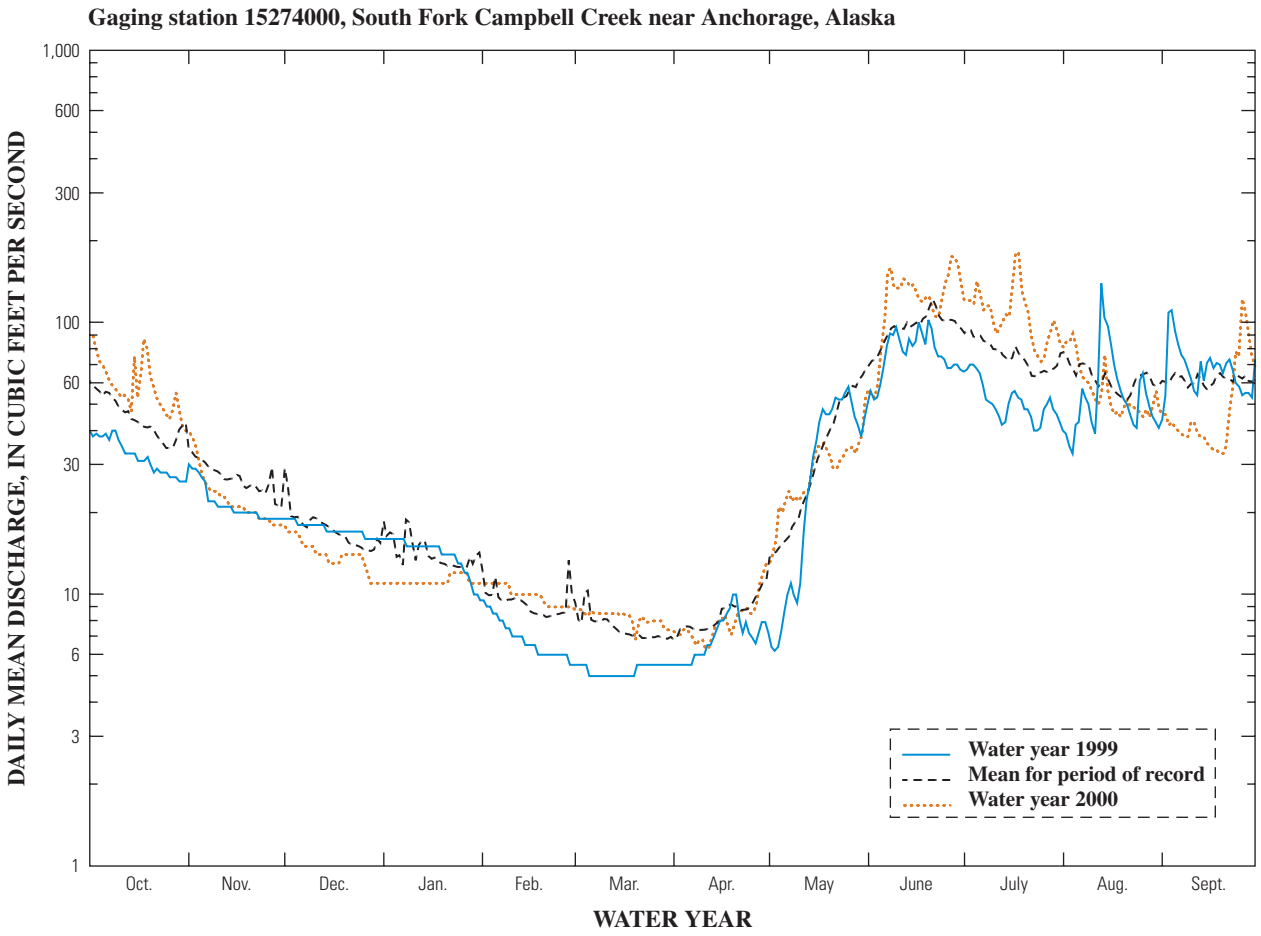

Figure 4. Daily mean discharge for 1999 and 2000 water years in relation to daily mean discharge for the period of record at U.S. Geological Survey gaging station 15274000, South Fork Campbell Creek near Anchorage, Alaska. (Data for water years 1999 and 2000 are from Bertrand and others, 2000; and Meyer and others, 2001. Location of gaging station shown in figure 7)

South Fork Campbell Creek at and near the study site forms a meandering, single-thread channel with occasional islands and gravel bars. The channel contains riffles, pools, and runs. The average gradient of three study reaches is 0.011 ft/ft. Streambanks generally consist of loose, unconsolidated gravel with cobbles, sand, and silt. Streambed material contains a similar range of grain sizes. Patches of naturally consolidated gravel with sand and silt observed in the streambed form a resistant shelf near the edges of several transects.

Although located near urbanized parts of Anchorage, the South Fork Campbell Creek watershed is mostly undeveloped upstream from the study site (fig. 2). Development near the study site includes gravel-surfaced Campbell Airstrip, formerly used as a military airport and presently maintained by BLM for occasional use, and Campbell Creek Science Center, an educational facility managed by BLM. The study site is used year round by about 4,000 to 6,000 people (Van Waggoner, Campbell Creek Science Center, oral commun., 2001) in educational groups including local schools, Campbell Creek Science Center, and private programs. The stream and streambanks also are used for recreational fishing, walking, jogging, and occasional mountain biking during open-water conditions, and cross-country skiing and dogsledding in winter months. Motorized vehicle traffic is limited to maintenance vehicles along a recreational trail within several hundred feet of the stream. Foot access by humans is the most common type of use of the stream and adjacent riparian corridor. Informal trails used by humans,

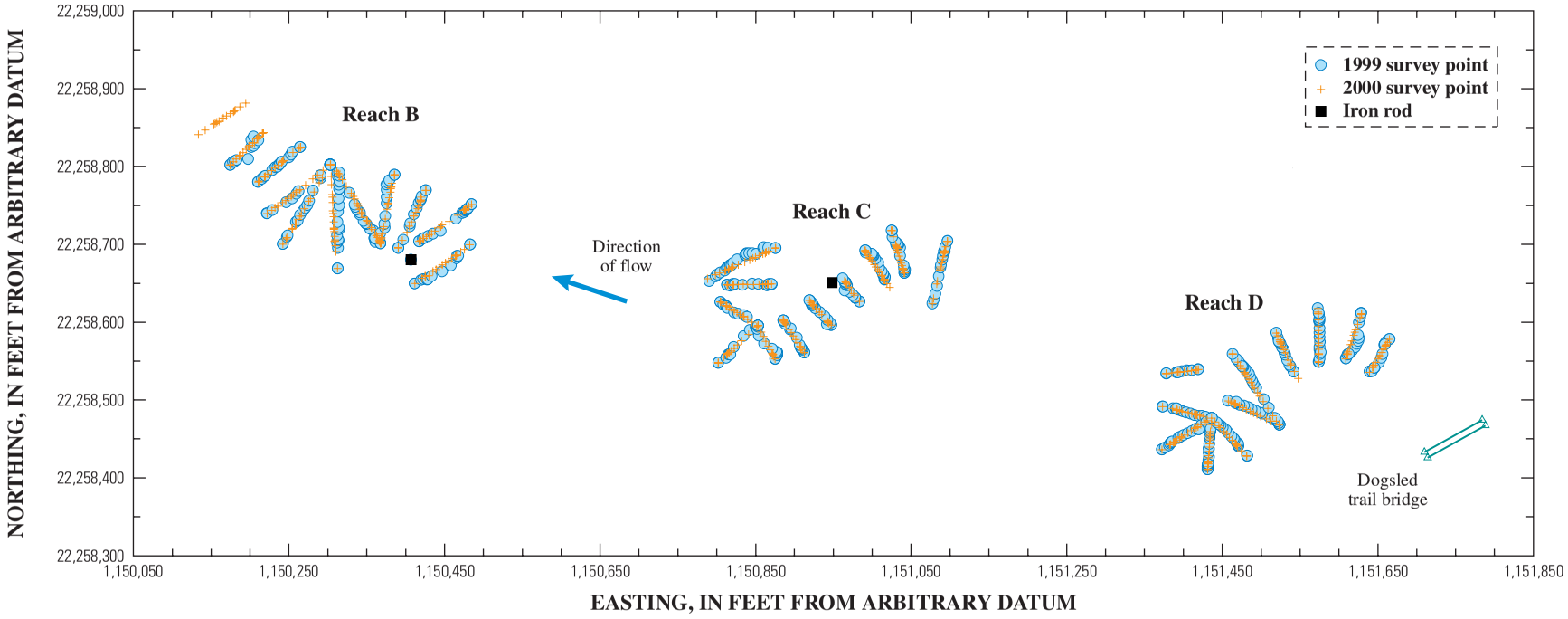

Figure 5. Locations of survey points on transects of three reaches of South Fork Campbell Creek near Anchorage, Alaska.

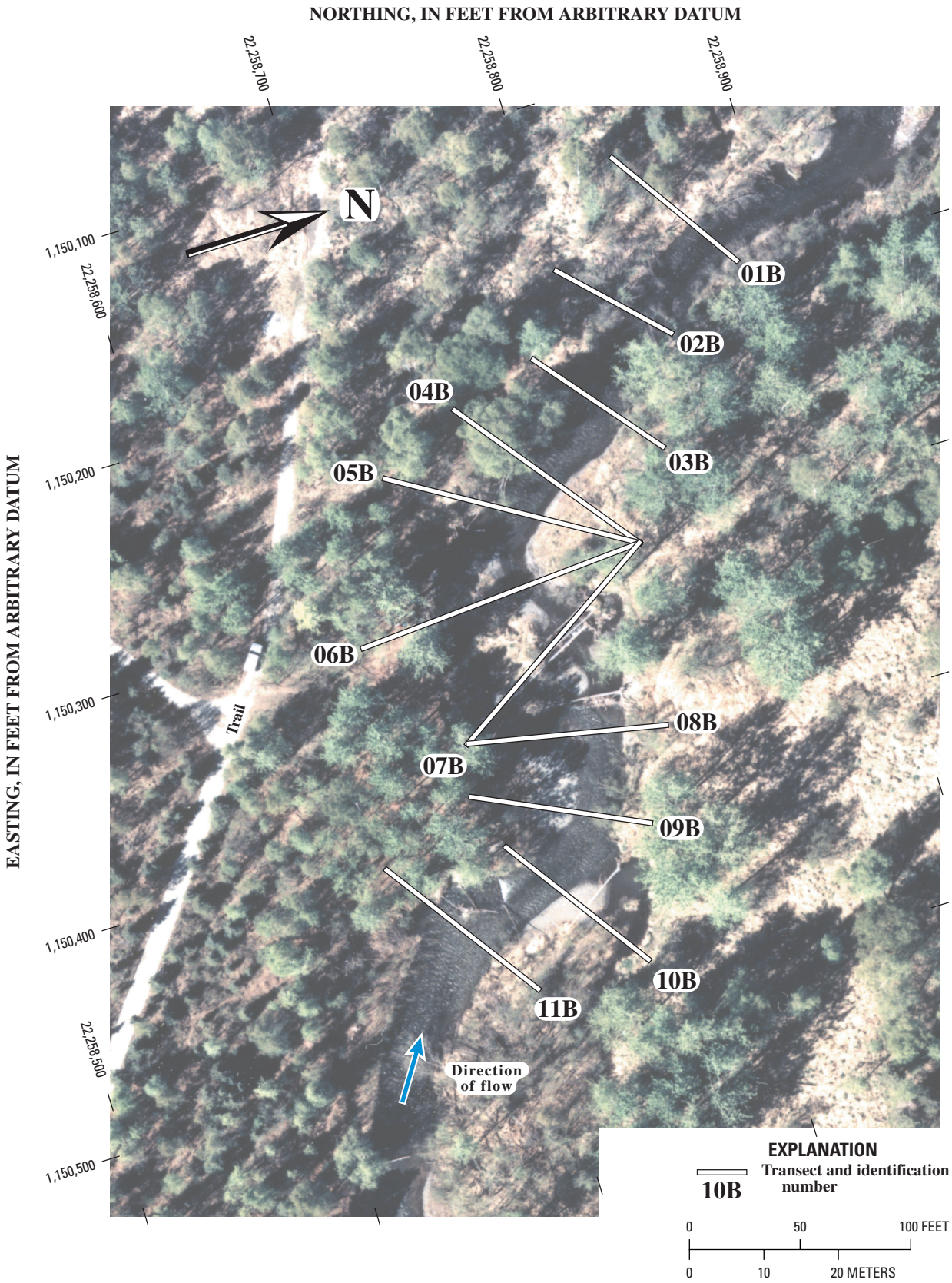

Figure 6. Transects and vicinity, Reach B of South Fork Campbell Creek near Anchorage, Alaska. (Aerial photograph flown May 26, 2000, by GPS Aerial Services. Photograph not rectified; transect locations approximate)

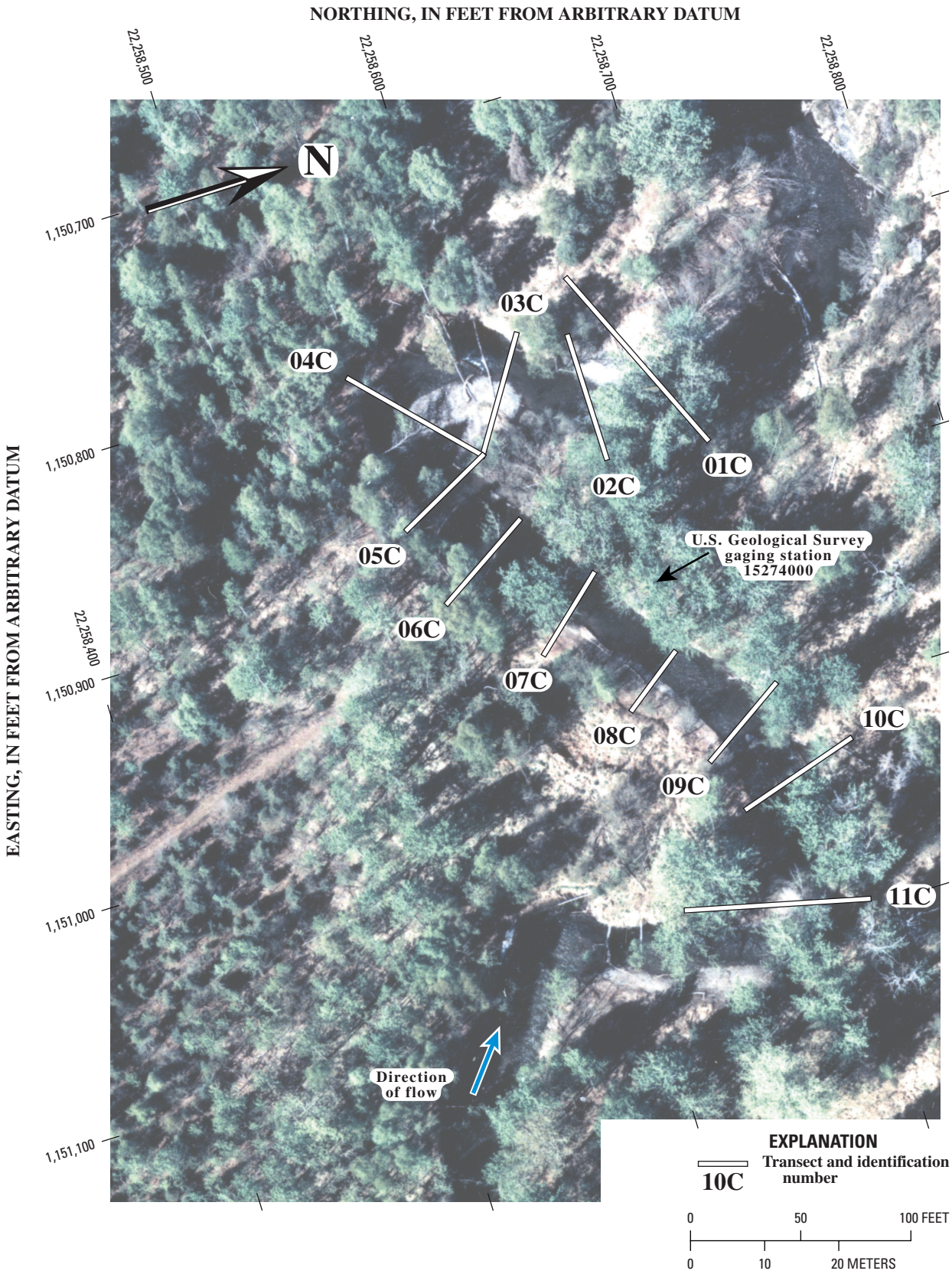

Figure 7. Transects and vicinity, Reach C of South Fork Campbell Creek near Anchorage, Alaska. (Aerial photograph flown May 26, 2000, by GPS Aerial Services. Photograph not rectified; transect locations approximate)

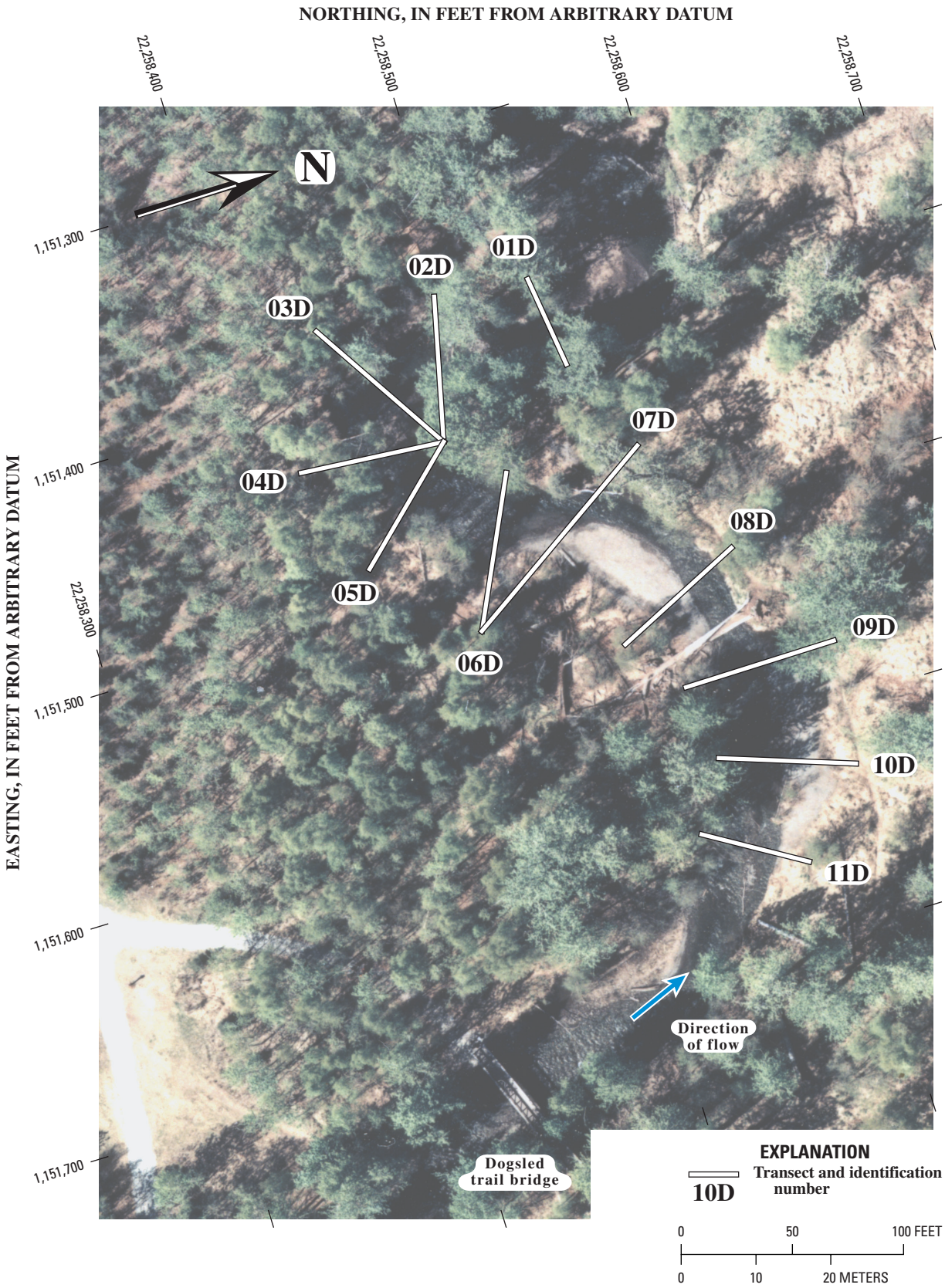

Figure 8. Transects and vicinity, Reach D of South Fork Campbell Creek near Anchorage, Alaska. (Aerial photograph flown May 26, 2000, by GPS Aerial Services. Photograph not rectified; transect locations approximate)

domestic dogs, and wildlife have developed along the top edge of streambanks and provide access to the streambed and bars. Activities observed within the stream corridor include wading, collecting water samples, releasing and capturing fish, removing and adding woody debris, and collecting minor amounts of sediment. In addition to dogs accompanying recreational users, moose and bear have been observed within the study reach.

HYDROLOGY

The South Fork Campbell Creek watershed comprises mountains over 5,000 ft in altitude that are snow covered for all but summer months. The drainage area of South Fork Campbell Creek upstream from the study site is 29.4 mi^2 (Meyer and others, 2001), and mean annual precipitation is 22 in. (Jones and Fahl, 1994). Other basin characteristics, used by Jones and Fahl to calculate flood frequencies for the site, also are listed in their report.

Streamflow in South Fork Campbell Creek is highest during snowmelt runoff or rainfall-induced peaks (fig. 3). The stream is mostly ice covered, with common open leads, from about late October to April. Flows generally are lowest in mid- to late March or early April (fig. 3).

The USGS measured streamflow at gaging station 15274000 from 1947 to 1971 and from 1998 to the time of preparation of this report. From 1947 to 1952, the gaging station was 0.2 mi upstream from the study site; the present station is along Reach C of this study. Mean annual discharge for the periods 1947–71 and 1998–2000 combined was 38.2 ft^3/s (Meyer and others, 2001). The largest recorded instantaneous peak flow was 891 ft^3/s, which is on the order of a 100-year flood (Jones and Fahl, 1994), on June 21, 1949.

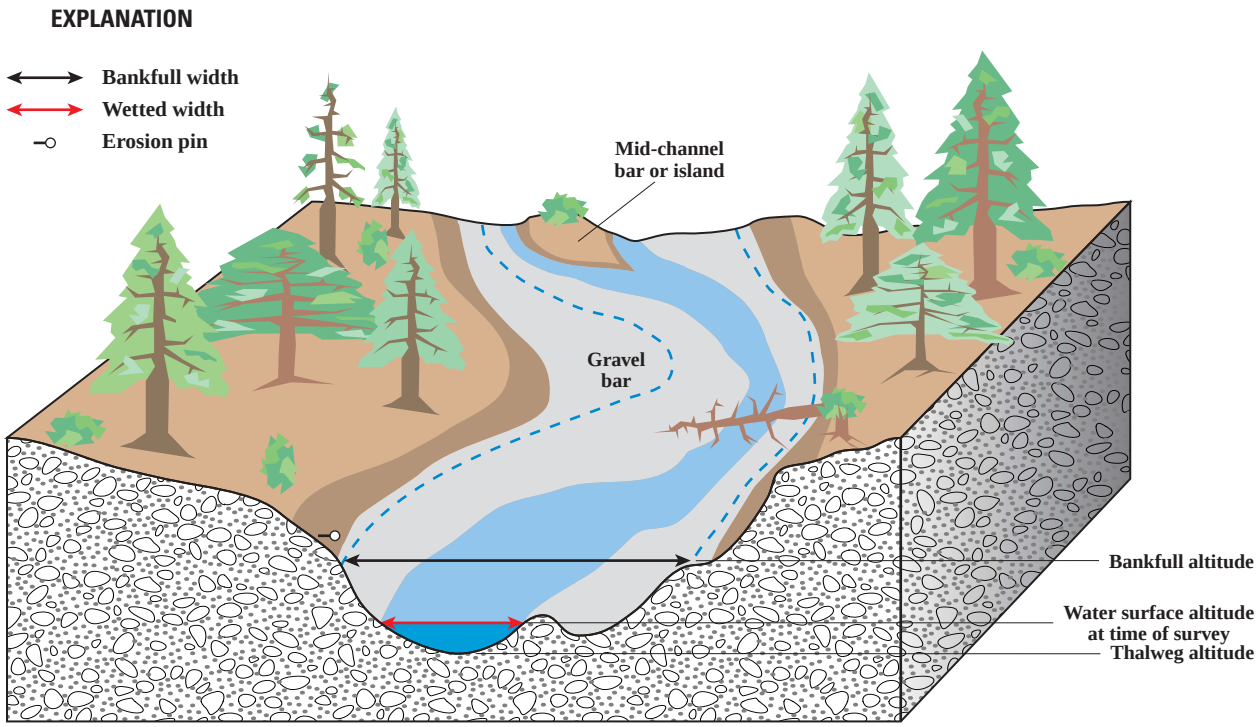

Figure 12. Schematic of typical channel features of South Fork Campbell Creek near Anchorage, Alaska. ("Bankfull" is a hypothetical water surface altitude useful for comparison between streams. At bankfull flow, South Fork Campbell Creek overtops most gravel bars and may overtop vegetated islands but does not overtop the tall cutbanks present at the outside of many meanders)

Figure 13. Channel near Transect 03D, South Fork Campbell Creek near Anchorage, Alaska. (This transect is at the apex of a meander bend typical of the study area, with a low, gravel point par on the inside bend of the meander and a tall cutbank on the outside bend. Woody debris derived from treefall and from upstream areas contributes to the formation of a pool located near the center of the photo)

Daily discharge during 1999 and 2000 was generally close to the mean of all years of record; peaks in 1999 were slightly below the mean, and peaks in 2000 were slightly above the mean (fig. 4). Daily discharge for water years 1999 and 2000 and summary statistics are published in reports by Bertrand and others (2000) and Meyer and others (2001), respectively.

CHANNEL MORPHOLOGY

Thirty-three transects (fig. 5) were established and surveyed as a repeatable measure of channel morphology from which to detect channel changes over time. Differences between the initial survey in 1999 and a repeat survey in 2000 provide a measure of the vertical changes to the streambed. Although not necessarily indicative of long-term change, these measurements provide information about the types and locations of erosional processes in the stream.

Methods of Survey

1999

Eleven transects were established at three study reaches, Reach B (downstream from the gaging station), Reach C, and Reach D (upstream from the gaging station) (figs. 6–8). This naming scheme corresponds to NAWQA conventions. Each transect was monumented with wooden stakes labeled with black ink, metal tags, and survey tape. Wooden stakes are useful for determining transect alignment but are not considered adequate for survey control. Iron rods 1 in. in diameter and 48 in. long were installed at each reach to provide vertical and horizontal control. The rod at Reach D was removed by unknown individuals by spring 2000, but rods at Reaches B and C were present in 2000 (fig. 5).

Table 1. Transects with apparent changes between 1999 and 2000, South Fork Campbell Creek near Anchorage, Alaska

[Vertical changes less than about 1 vertical foot are not included; transect profiles shown in figures 9–11]

Transect	Changes between 1999 and 2000 apparent from transect surveys	Comments
02B	Left bank has different form in 2000.	2000 survey was more detailed than 1999 survey.
04B	Left and right banks have different form in 2000.	2000 survey was more detailed than 1999 survey.
	Channel appears deeper on left side and channel appears wider in 2000.	
05B	Left and right banks have different form in 2000.	2000 survey was more detailed than 1999 survey.
06B	Channel appears to have shifted left and has different form in 2000.	Transect was surveyed to different right bank monument in 1999 (see fig. 5).
	Left bank appears to have shifted left in 2000.	
	Right side of channel has different form in 2000.	Bars and debris dams present on right side of channel.
07B	Right bank has different form in 2000.	2000 survey was more detailed than 1999 survey.
11B	Thalweg appears lower and farther left in 2000.	
01C	Thalweg appears lower and farther right in 2000.	
04C	Thalweg appears lower and channel appears narrower in 2000.	2000 survey was more detailed than 1999 survey.
11C	Thalweg appears lower in 2000.	Survey detail was similar in 1999 and 2000 but specific survey points varied.
03D	Left bank has different form in 2000.	Left bank is irregular and was surveyed in slightly different location in 2000.
	Left bank has different form in 2000.	Survey detail was similar in 1999 and 2000 but specific survey points varied.
07D	Channel appears to have shifted left in 2000.	
09D	Thalweg appears lower in 2000.	
10D	Thalweg and bar appear higher in 2000.	
11D	Thalweg appears lower and farther left and bar appears higher in 2000.	

Transects were surveyed on June 17, June 18, July 28, and August 17, 1999, with a total station (theodolite and electronic distance-measurement instrument) (figs. 9–11, back of report; appendix 1). The survey was based on an arbitrary horizontal and vertical datum assigned to the left bank monument of Transect 11C and an arbitrary azimuth. Transect 01B was not surveyed in 1999 because vegetation obscured substantial parts of the transect.

2000

All transects were resurveyed in 2000 (figs. 9–11, appendix 2) using a total station. Parts of Reach B were surveyed on May 24 and May 26, and the remaining transects were surveyed on September 26 and October 2, 6, 10, and 11, 2000. The 2000 survey was based on an arbitrary vertical datum and a horizontal datum close to actual latitude and longitude that was acquired for the iron rod monument on the left bank near Transect 10B using a survey-grade Global Posi-

tioning System (GPS) receiver. This coordinate system is estimated to be horizontally within about 30 ft of actual position (Bob McCool, System Dividends, oral commun., 2000) and was used for the presentation of all transects in this report. All 1999 data were converted to this coordinate system first by translating the entire 1999 survey by an amount equal to the difference between 1999 and 2000 coordinates for the left bank monument at Transect 11C, then rotating the entire survey about that monument until a best fit was obtained on the iron rod near Transect 10B. The remaining relatively permanent monument, the iron rod at Reach C, provided a check on the rotation. The 2000 northing, easting, and altitude for the iron rod at Reach C are −0.11, 0.10, and 0.07 ft from the 1999 coordinates, respectively. These values include errors in surveying as well as errors in adjusting the 1999 and 2000 coordinate systems. This level of accuracy was considered acceptable for the purposes of this study, in which the magnitude of channel change detectable from transect profiles was expected to be about 0.5 to 1.0 ft.

Original monuments that could not be located were reestablished by surveying to the original location and installing a new monument as close to that location as possible. The iron bar at Reach D was missing but was not replaced. A wooden stake was installed at this location to serve as a monument for the transects.

In addition to the transects, the 2000 survey included the locations of the iron rods at Reaches B and C, some erosion pins, some additional stakes placed to mark instrument locations, and the four outermost corners of the concrete bridge abutment for the dogsled trail footbridge upstream from Reach D (appendix 2).

DATA REDUCTION

Despite efforts to survey along a straight line between transect monuments, individual survey points were usually offset a slight distance upstream or downstream. If the actual coordinates for these points were used to plot the transect profile, horizontal distances shown on the transect would be longer than actual distances. Survey points were projected onto a straight transect to eliminate this problem. Altitudes at the projected location may vary from the altitude at the surveyed location, but there was no basis for corrections to altitude. Horizontal distances between points were calculated from projected locations and plotted with the surveyed altitude to generate transect profiles (figs. 9–11). The original surveyed location, horizontal

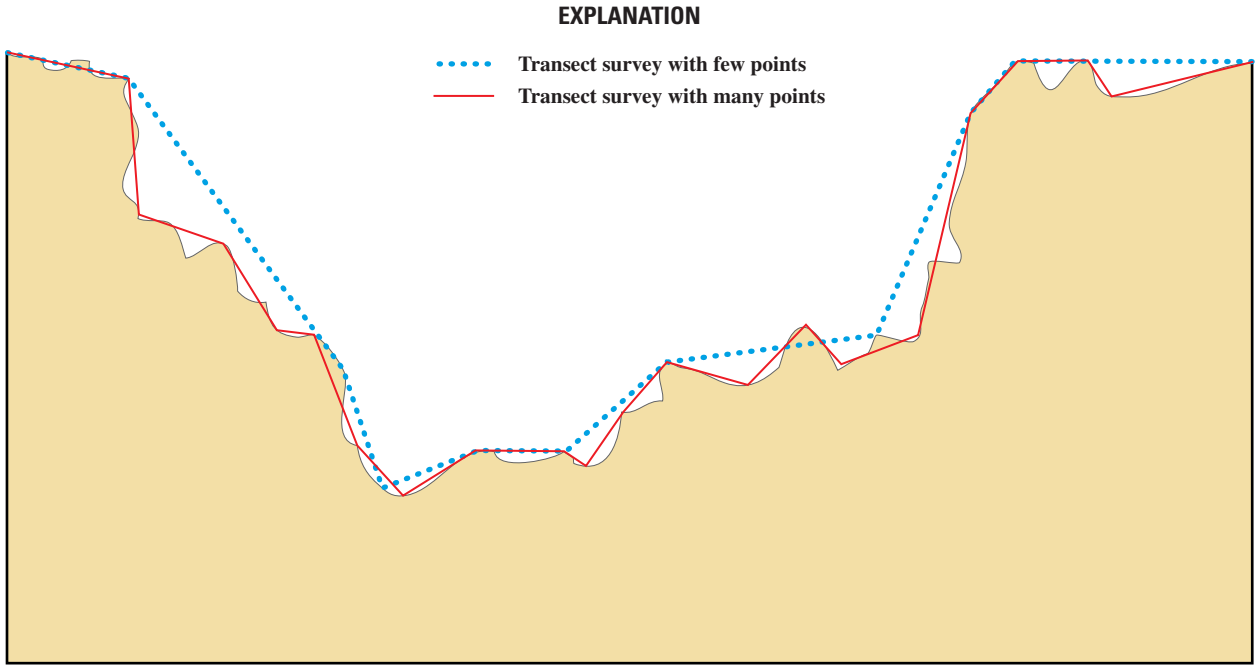

Figure 14. Schematic showing differences in vertical profile of a transect survey with few points and a survey of the same transect with many points. (The comparison highlights the differences that can be apparent with no physical change to the transect. Vertical changes are best detected from repeated survey points that are close to the previous points)

distance along the transect as calculated from the projected points, and the offset distance upstream (negative values) or downstream (positive values), are presented in appendices 1 and 2.

Physical Channel Characteristics

South Fork Campbell Creek contains many features common to small streams (fig. 12), including meanders, pools, riffles, bars, and islands. At the study reach, the channel is incised about 5 to 10 ft into the surrounding lowland. Short, gently sloping point bars are present on the inside bank of meanders within each of the three study reaches and are opposite tall, near-vertical banks. Wide gravel bars are present along some straighter reaches. Gravel islands vegetated with shrubs are present at Reach B and between the reaches. Average bankfull width is 36 ft, and average wetted width at the time of the 2000 surveys was 26 ft. The channel transects include shallow riffles with bankfull depths of about 1.5 ft and pools as much as 4.8 ft deep at bankfull flow. Mean bankfull depth at the transects is 2.4 ft. Bankfull altitude was determined for the purposes of this study as the altitude of the transition between vegetation species tolerant of exposure to air and species tolerant of inundation by water.

Large, woody debris is present in the channel in all three study reaches. A large log spans the channel between Transects 08D and 09D, and other logs partly span the channel in several locations (fig. 13). Multiple logs form a debris jam at Transects 06B and 07B.

Geomorphic Changes at Channel Cross Sections, 1999 to 2000

Repeated surveys of a large number of points at the same transect can be used to determine the amount of vertical change (erosion or deposition) at a transect. However, changes evident in transect surveys also can be the result of differences in resolution (the number of points surveyed) or of surveying slightly upstream or downstream from the transect. For example, apparent vertical changes reflect actual physical changes when two consecutive measurements are made in the same location but cannot necessarily be confirmed when consecutive measurements are several feet apart (fig. 14). For the Campbell Creek transect surveys, vertical changes within the wetted channel are generally actual changes, whereas changes to banks that result in obvious differences in form often are related to differences in survey resolution. Plots of Campbell Creek transects over 2 years (figs. 9–11) are generally similar, but noticeable differences are apparent on 14 transects (table 1). Of these, at least 8 transects have apparently changed. Changes in consecutive transects were observed only at the upstream end of Reach D, where the thalwegs of Transects 09D, 10D, and 11D each moved up or down about 1 ft.

Geomorphic Changes in Channel Planform, 1999 to 2000

The limit of detection associated with repeat transect surveys for horizontal changes is greater than for vertical changes because the delineation of features such as banks with abrupt changes in slope is sensitive to the choice of survey point location. Little definitive horizontal change was detected from the Campbell Creek surveys between 1999 and 2000 (table 1). These baseline surveys will be more effective for detecting future major changes in channel planform than for detecting minor amounts of lateral bank erosion or bar growth.

Some changes occurred between transects that were not detectable from transect surveys. For example, the downstream edge of the point bar near Transect 05B eroded shoreward about 1 ft, but no change in the bar occurred at the transect. Likewise, some events that occur upstream or downstream from the study reaches could have an impact within the reach. For example, a scour hole is developing upstream from Transect 11C behind the root ball of a tilted, dead tree as the bank is being actively eroded.

BANK EROSION

Although repeat transect surveys can be used to detect channel changes of about 1 ft or more, erosion pins can be used to monitor bank changes directly with a detection limit of about 0.1 ft. Erosion pin monitoring is an established method of assessing bank erosion in which a permanent marker (a “pin”) is installed and measurements of the amount of pin exposed are made over time. Applications vary from a dense array of

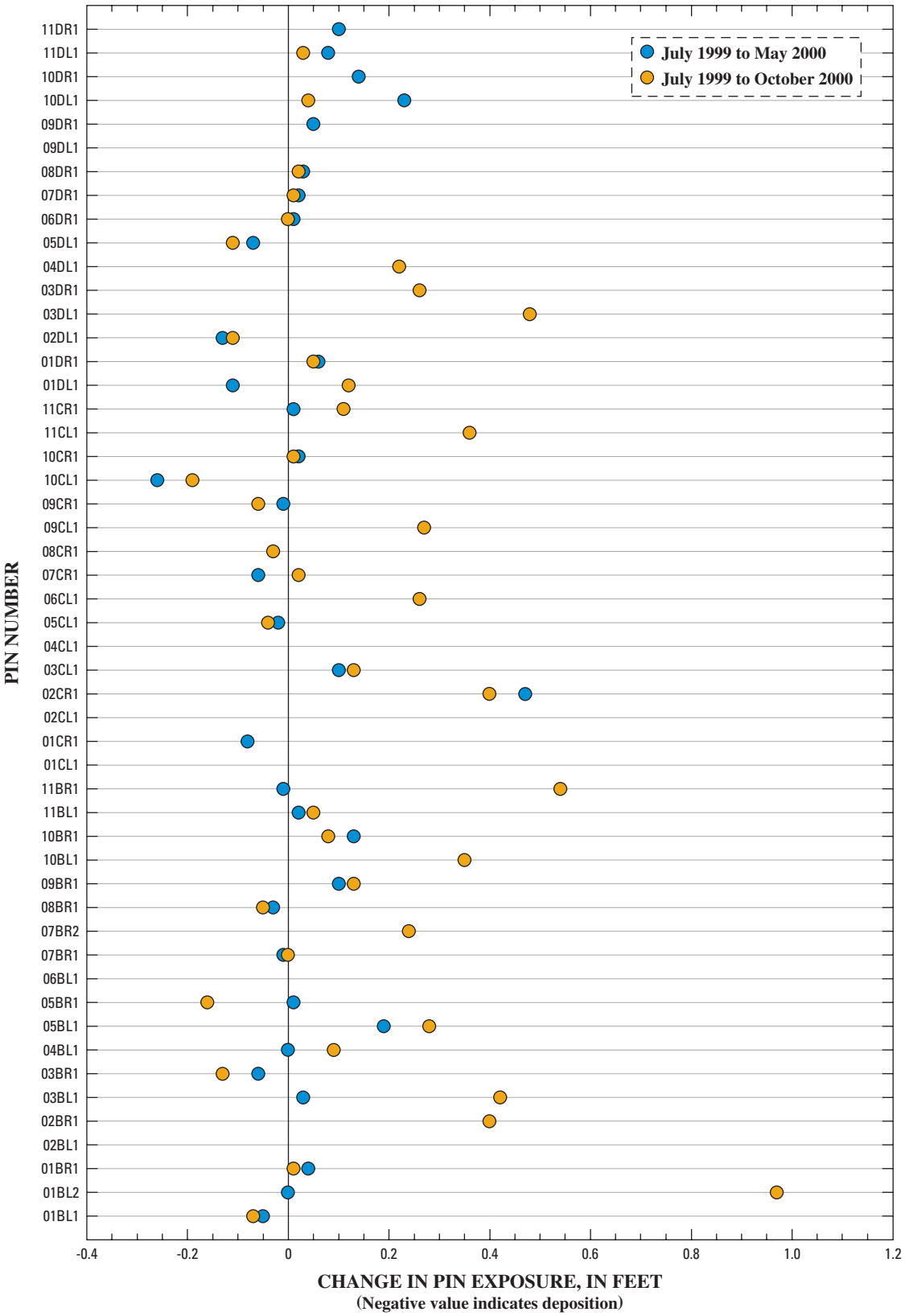

Figure 15. Change in erosion pin exposure at transects of South Fork Campbell Creek near Anchorage, Alaska, between July 1999 and October 2000. [All pins were installed on July 28, 1999. Pins are designated by transect (first three digits); by side of channel (L, left; R, right); and by position on bank (2, lowermost pin where more than one pin is present). No point on transect line indicates pin installed but not found again during monitoring period]

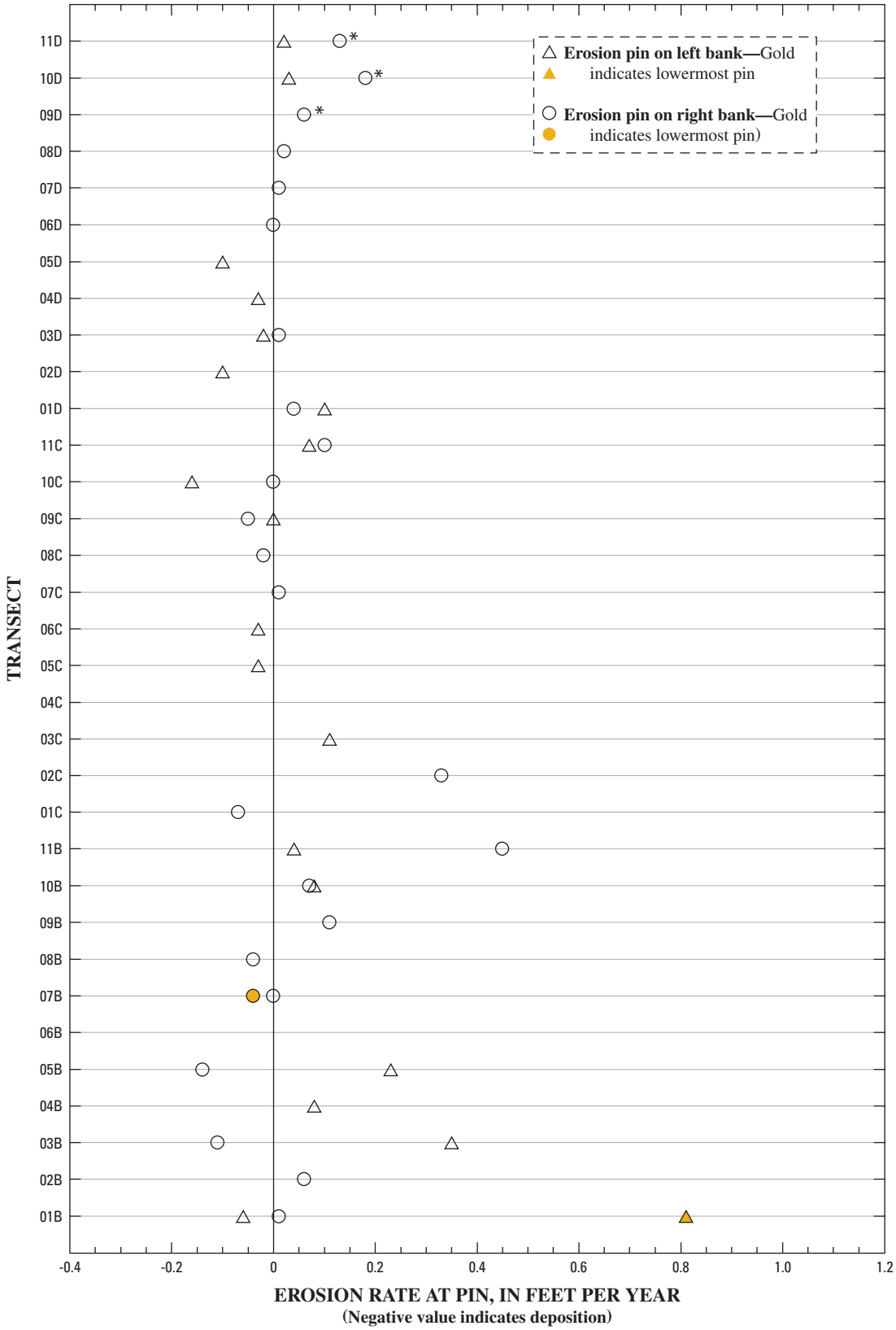

Figure 16. Erosion rate measured at erosion pins along transects of South Fork Campbell Creek near Anchorage, Alaska, between July 1999 and October 2000. [Erosion rates are from measurements made July 28, 1999, to October 5, 2000. No symbol on transect line indicates pin installed but not found again during monitoring period. Asterisk (*) indicates pin not found in October 2000. Rates for pins not found in October were determined from measurements made July 28, 1999, to May 12, 2000]

pins at a single bank location to a sparse array at many locations. The latter method was chosen for this study to provide a reconnaissance-level assessment of bank erosion over a large area. An assumption inherent in the method is that a single pin can represent the change across the entire vertical bank profile, that is, that every point on the bank moves at the same rate. This assumption is generally true at near-vertical banks and very gently sloping point bars. Because these conditions are not always met at South Fork Campbell Creek and because erosion rates varied at the few study transects where two erosion pins were installed, it is possible that the erosion rates calculated from erosion pin measurements do not reflect the true migration rate of the bank as a whole. However, they do provide a general assessment of the amount and spatial distribution of bank change.

Methods of Survey

Erosion pins consisting of a smooth, 1/4- or 3/8-in.-diameter, 24-in.-long (except for erosion pin 09DL1, which is 20 in. long) metal rod were driven horizontally into the streambank (fig. 12) at or near the established transects on July 28, 1999. Fifty-one pins were installed such that about half of the transects had an erosion pin on each bank (table 2) and two transects had more than one pin on the same bank. Pin exposure was measured with a metal tape at the time of installation and again on May 12, 2000, and October 5, 2000. Change in pin exposure then was divided by the time between measurements to provide erosion rates for two periods (table 2). The erosion pins were left in place at the end of the study to be available for future use.

Geomorphic Changes in Banks, 1999 to 2000

Bank change (determined from erosion pin measurements in May and October 2000, subtracted from the initial measurement in July 1999) included undetectable change, progressive erosion or deposition, and reversals between erosion and deposition (fig. 15). The erosion rate at each study transect was calculated from erosion pin measurements over the entire monitoring

Table 2. Erosion pin measurements and erosion rates between 1999 and 2000, South Fork Campbell Creek near Anchorage, Alaska

[Pin number: Pins are designated by transect (first three digits); by side of channel (L, left; R, right); and by position on bank (2, lowermost pin where more than one pin is present). Rate for 09DR1, 10DR1, and 11DR1 is from 7-28-99 to 5-12-00 because pin was not found on 10-5-00. Negative values indicate deposition. —, pin not found. Note that many pins were under winter ice on 5-12-00. ft, foot; ft/yr, foot per year]

Pin number	Pin exposure, 7-28-99 (ft)	Pin exposure, 5-12-00 (ft)	Pin exposure, 10-5-00 (ft)	Erosion rate from 7-28-99 to 10-5-00 (ft/yr)
01BL1	0.19	0.14	0.12	-0.06
01BL2	0.25	0.25	1.22	0.81
01BR1	0.25	0.29	0.26	0.01
02BL1	0.23	—	—	—
02BR1	0.33	—	0.40	0.06
03BL1	0.25	0.28	0.67	0.35
03BR1	0.21	0.15	0.08	-0.11
04BL1	0.25	0.25	0.34	0.08
05BL1	0.25	0.44	0.53	0.23
05BR1	0.29	0.30	0.13	-0.14
06BL1	0.25	—	—	—
07BR1	0.33	0.32	0.33	0.00
07BR2	0.29	—	0.24	-0.04
08BR1	0.33	0.30	0.28	-0.04
09BR1	0.21	0.31	0.34	0.11
10BL1	0.25	—	0.35	0.08
10BR1	0.25	0.38	0.33	0.07
11BL1	0.33	0.35	0.38	0.04
11BR1	0.21	0.20	0.75	0.45
01CL1	0.58	—	—	—
01CR1	0.33	0.25	0.25	-0.07
02CL1	0.25	—	—	—
02CR1	0.13	0.59	0.52	0.33
03CL1	0.25	0.35	0.38	0.11
04CL1	0.25	—	—	—
05CL1	0.38	0.36	0.34	-0.03
06CL1	0.29	—	0.26	-0.03
07CR1	0.31	0.25	0.33	0.01
08CR1	0.38	0.35	0.35	-0.02
09CL1	0.27	—	0.27	0.00
09CR1	0.29	0.28	0.23	-0.05
10CL1	0.50	0.24	0.31	-0.16
10CR1	0.38	0.39	0.38	0.00
11CL1	0.28	—	0.36	0.07
11CR1	0.42	0.43	0.53	0.10
01DL1	0.25	0.14	0.37	0.10
01DR1	0.58	0.64	0.63	0.04
02DL1	0.83	0.70	0.72	-0.10
03DL1	0.50	—	0.48	-0.02
03DR1	0.25	—	0.26	0.01
04DL1	0.25	—	0.22	-0.03
05DL1	0.33	0.26	0.22	-0.10
06DR1	0.42	0.43	0.42	0.00
07DR1	0.33	0.35	0.34	0.01
08DR1	0.21	0.24	0.23	0.02
09DL1	0.38	—	—	—
09DR1	0.25	0.30	—	0.06
10DL1	0.38	0.60	0.41	0.03
10DR1	0.25	0.39	—	0.18
11DL1	0.38	0.45	0.40	0.02
11DR1	0.25	0.35	—	0.13

period, July 1999 to October 2000. Rates for this period ranged from deposition of 0.16 ft/yr to erosion of 0.81 ft/yr (table 2). The average erosion rate was 0.06 ft/yr.

Plots of erosion rates by transect (fig. 16) show changes on one side of the channel relative to the other side. Pin measurements identified erosion on one bank and deposition on the opposite bank (lateral migration) at three transects, erosion on both banks (channel widening) at five transects, a change on only one of the banks at two transects, and both erosion and deposition on the same bank at one transect. None of the measurements identified deposition on both banks (channel narrowing). Pins at the remaining transects either had not been installed on both banks, or had been installed but were not found again during part of, or during the rest of, the monitoring period.

REFERENCES CITED

Bertrand, C.M., Hess, D.L., Kemnitz, R.T., Meyer, D.F., and Swanner, W.C., 2000, Water resources data for Alaska, water year 1999: U.S. Geological Survey Water-Data Report AK–99–1, 508 p.

Frenzel, S.A., 2000, Selected organic compounds and trace elements in streambed sediments and fish tissues, Cook Inlet Basin, Alaska: U.S. Geological Survey Water-Resources Investigations Report 00–4004, 39 p.

Glass, R.L., 1999, Water-quality assessment of the Cook Inlet Basin, Alaska—summary of data through 1997: U.S. Geological Survey Water-Resources Investigations Report 99–4116, 110 p.

Huckins, J.N., Petty, J.D., Cranor, W.L., and Clark, R.C., 2001, Evaluation of contaminant exposure and the potential impacts on aquatic habitat quality in the Anchorage area of the Cook Inlet Basin: Columbia, Missouri, U.S. Geological Survey and Columbia Environmental Research Center, variously paged.

Johnson, B.T., 2001, Urban stream toxicological risk assessment—evaluation of contaminant exposure and the potential impact on aquatic habitat quality in the Cook Inlet Basin, Alaska: Columbia, Missouri, U.S. Geological Survey and Columbia Environmental Research Center, variously paged.

Jones, S.H., and Fahl, C.B., 1994, Magnitude and frequency of floods in Alaska and conterminous basins of Canada: U.S. Geological Survey Water-Resources Investigations Report 93–4179, 122 p.

Meyer, D.F., Hess, D.L., Schellekens, M.F., Smith, C.W., Synder, E.F., and Solin, G.L., 2001, Water resources data for Alaska, water year 2000: U.S. Geological Survey Water-Data Report AK–00–1, 438 p.

Figures 9 - 11

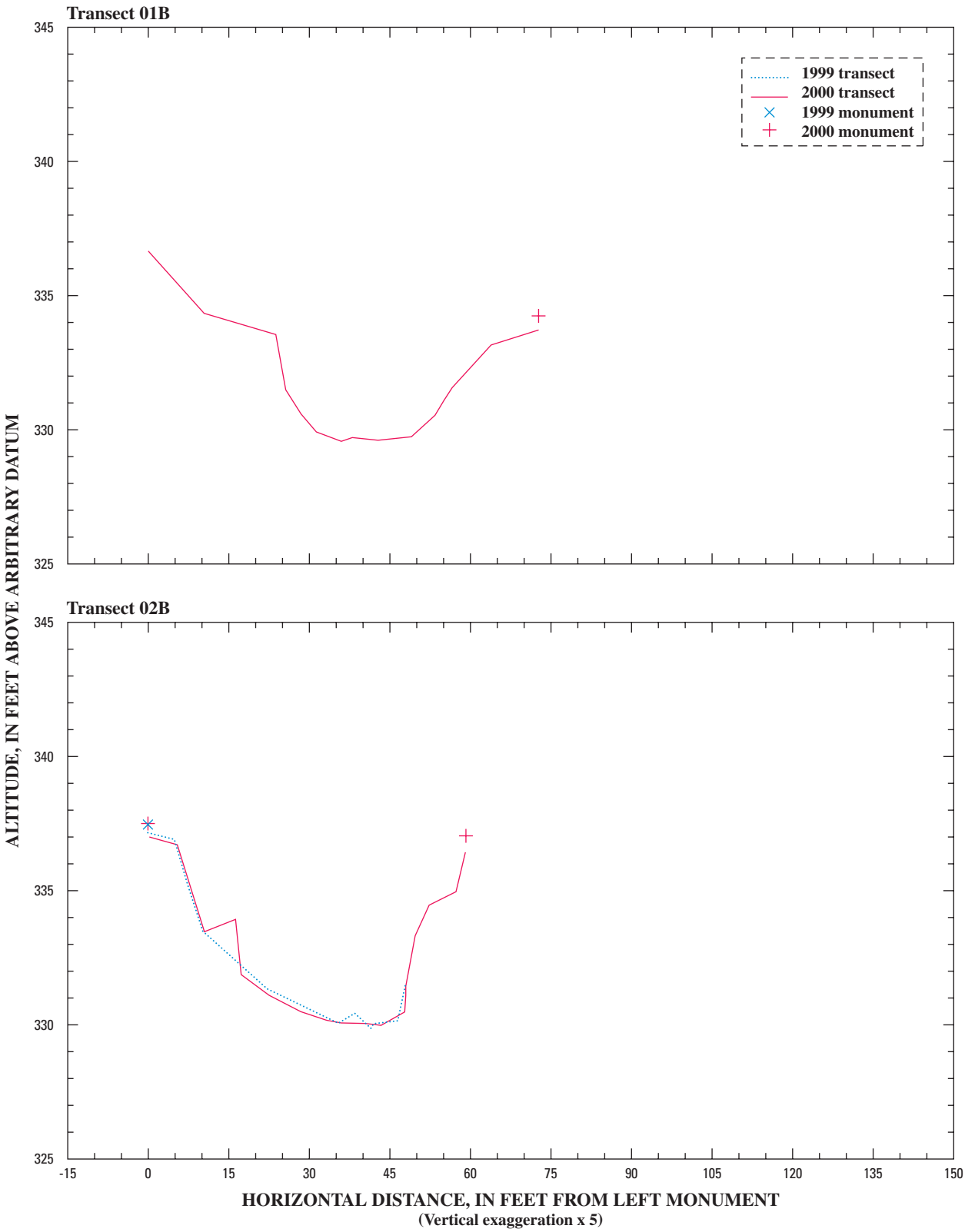

Figure 9. Transect profiles for Reach B of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000. (Transect locations are shown in figure 6)

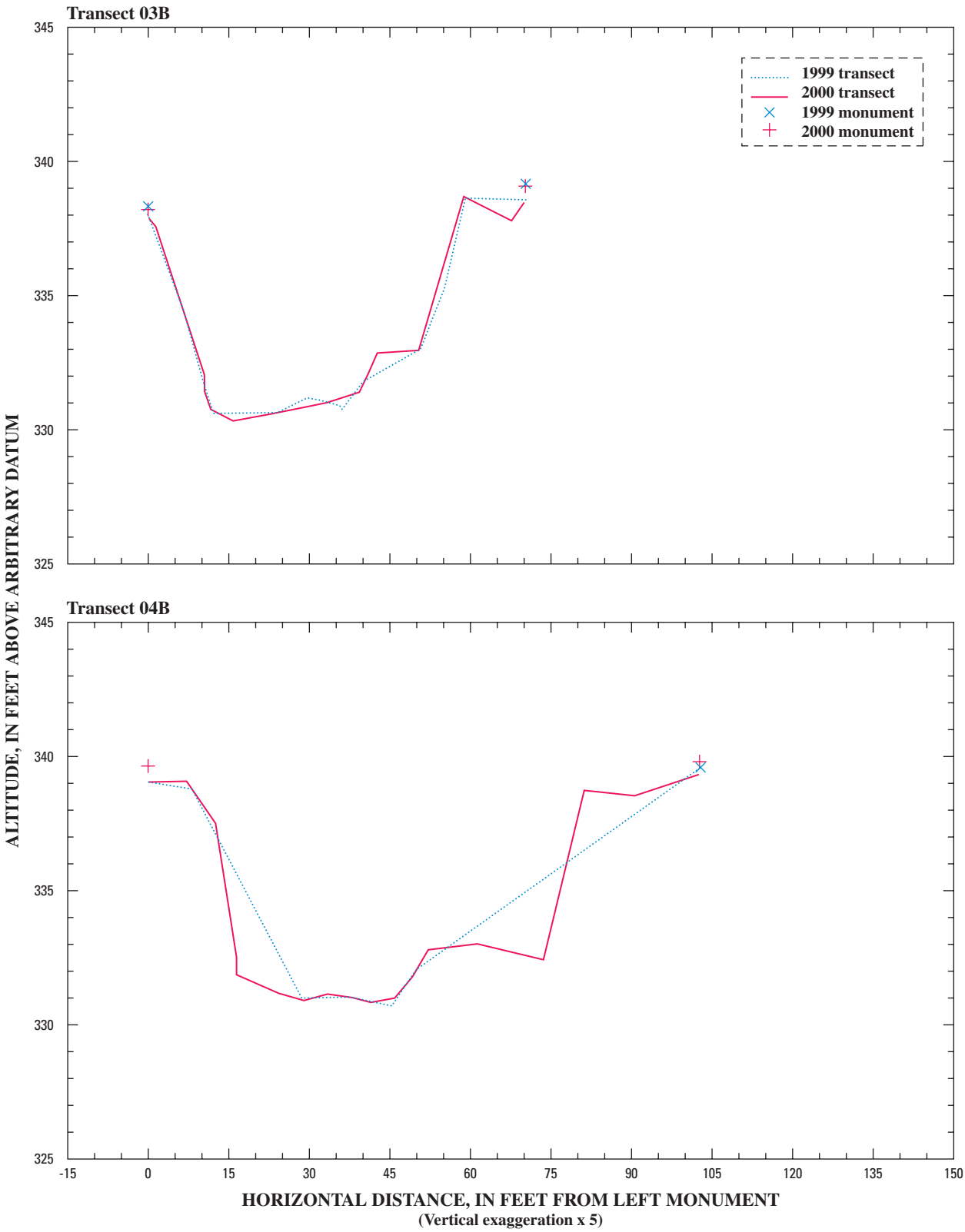

Figure 9. Transect profiles for Reach B of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 6)

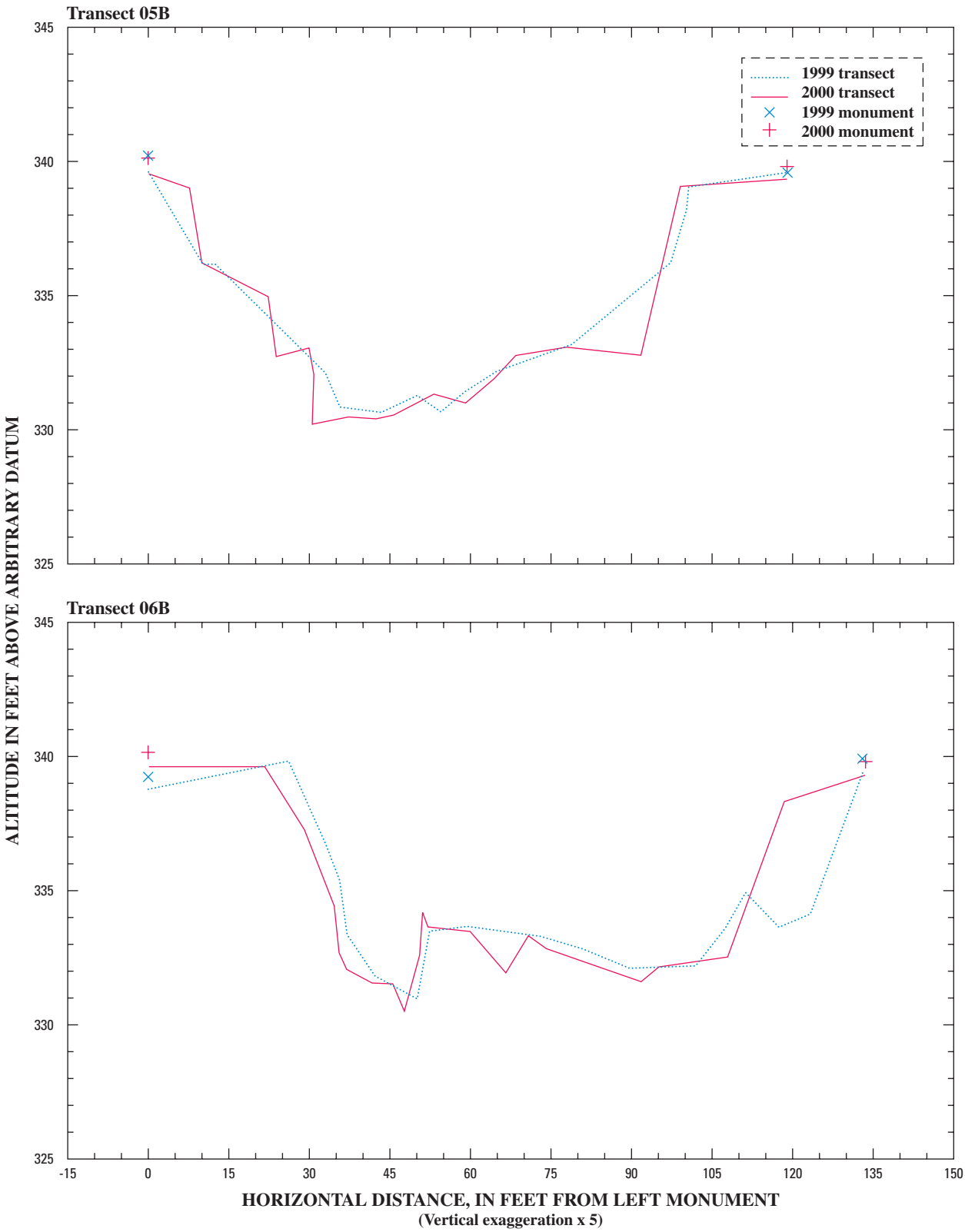

Figure 9. Transect profiles for Reach B of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 6)

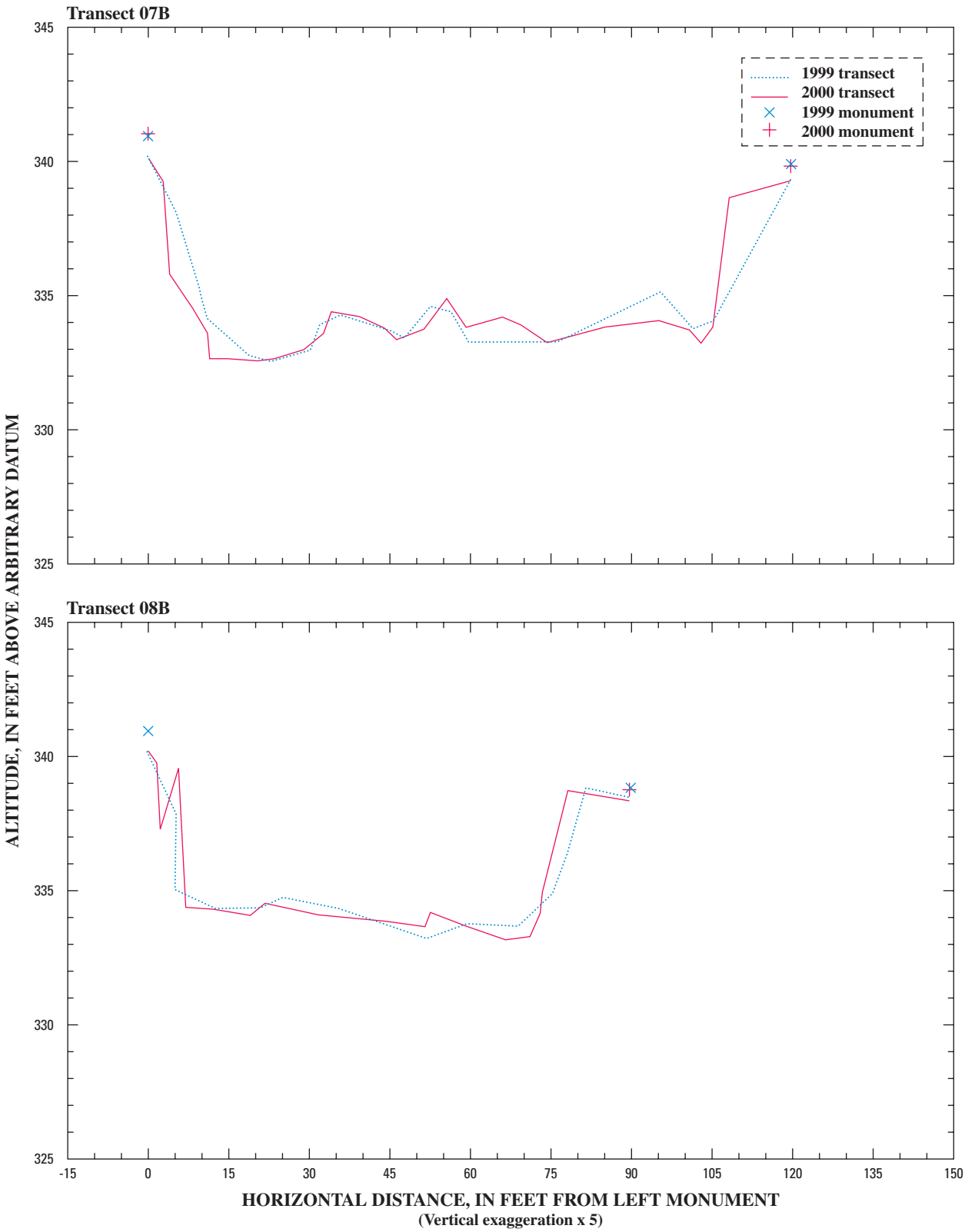

Figure 9. Transect profiles for Reach B of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 6)

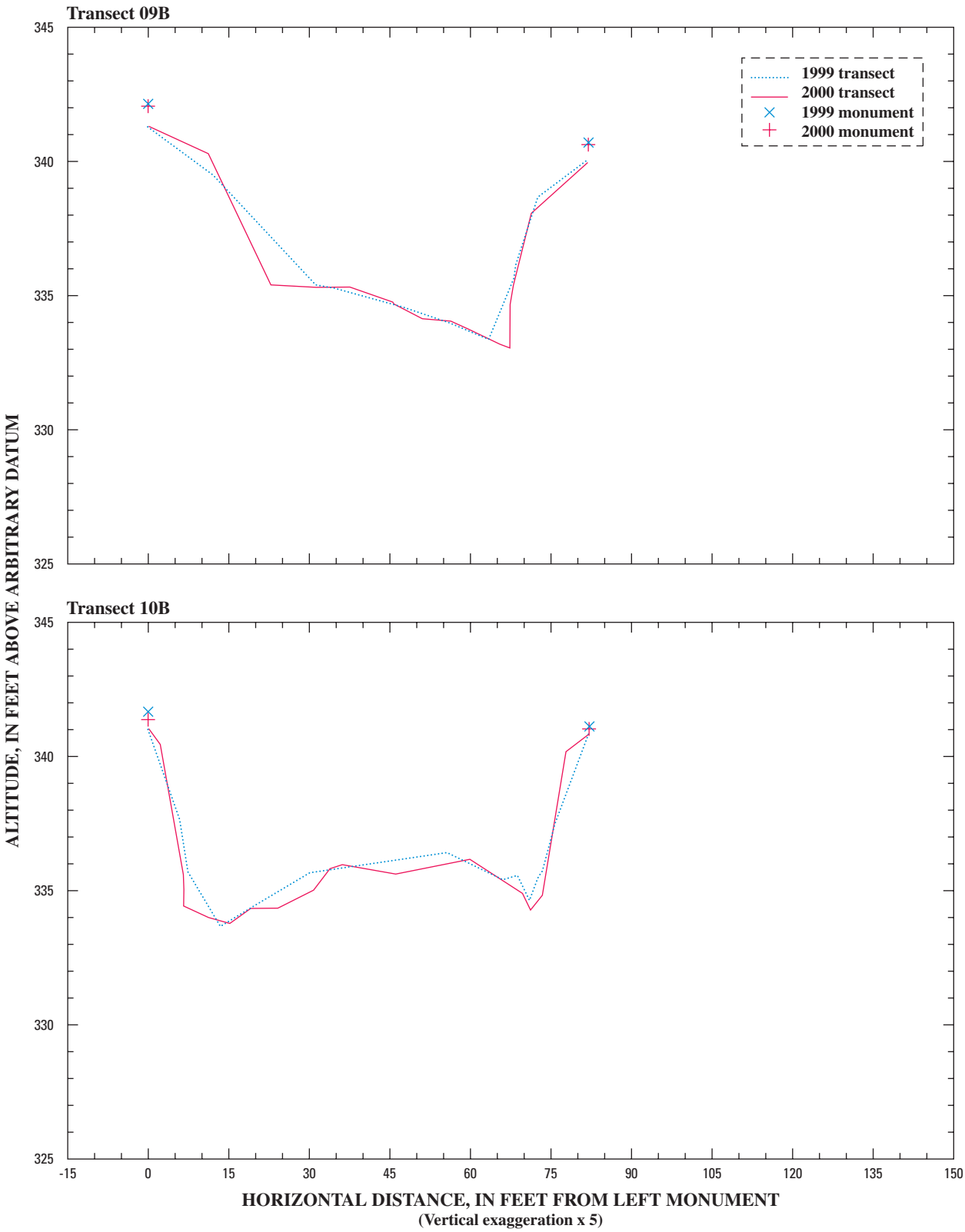

Figure 9. Transect profiles for Reach B of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 6)

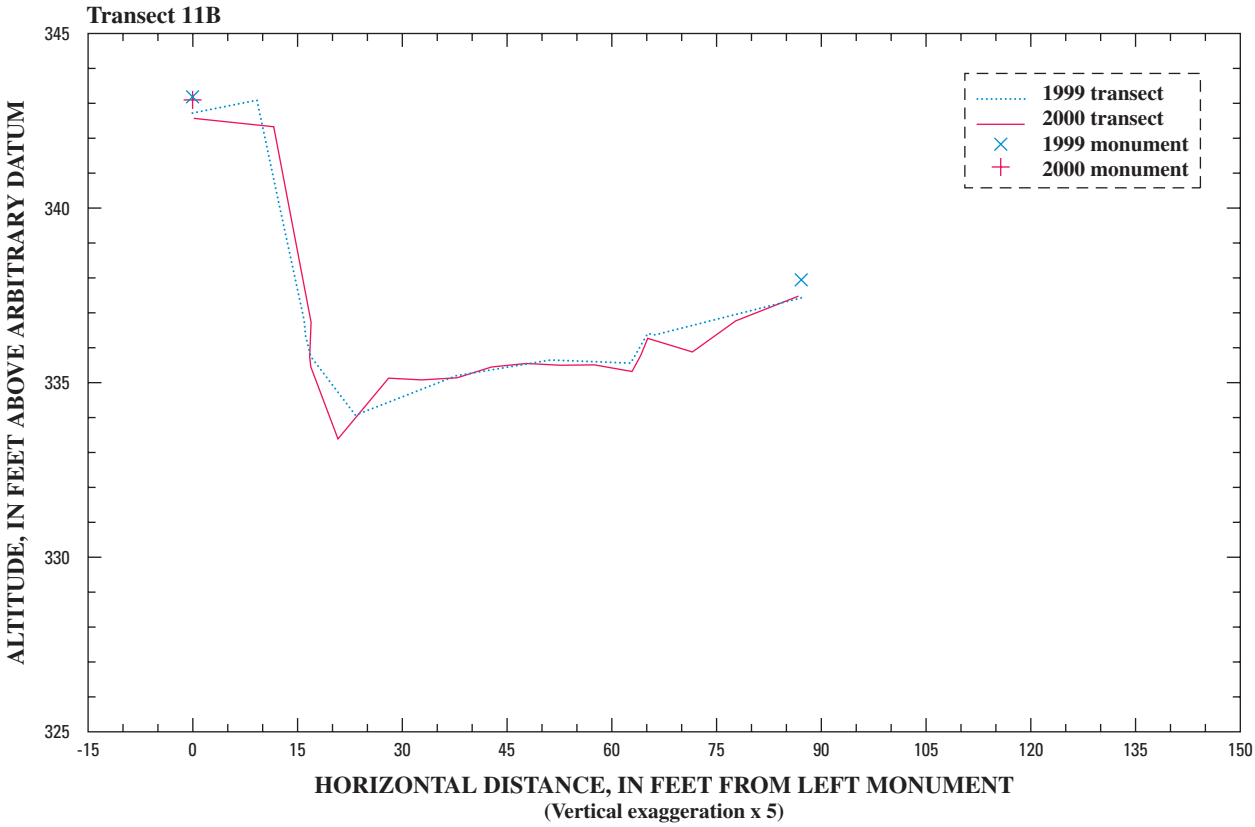

Figure 9. Transect profiles for Reach B of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 6)

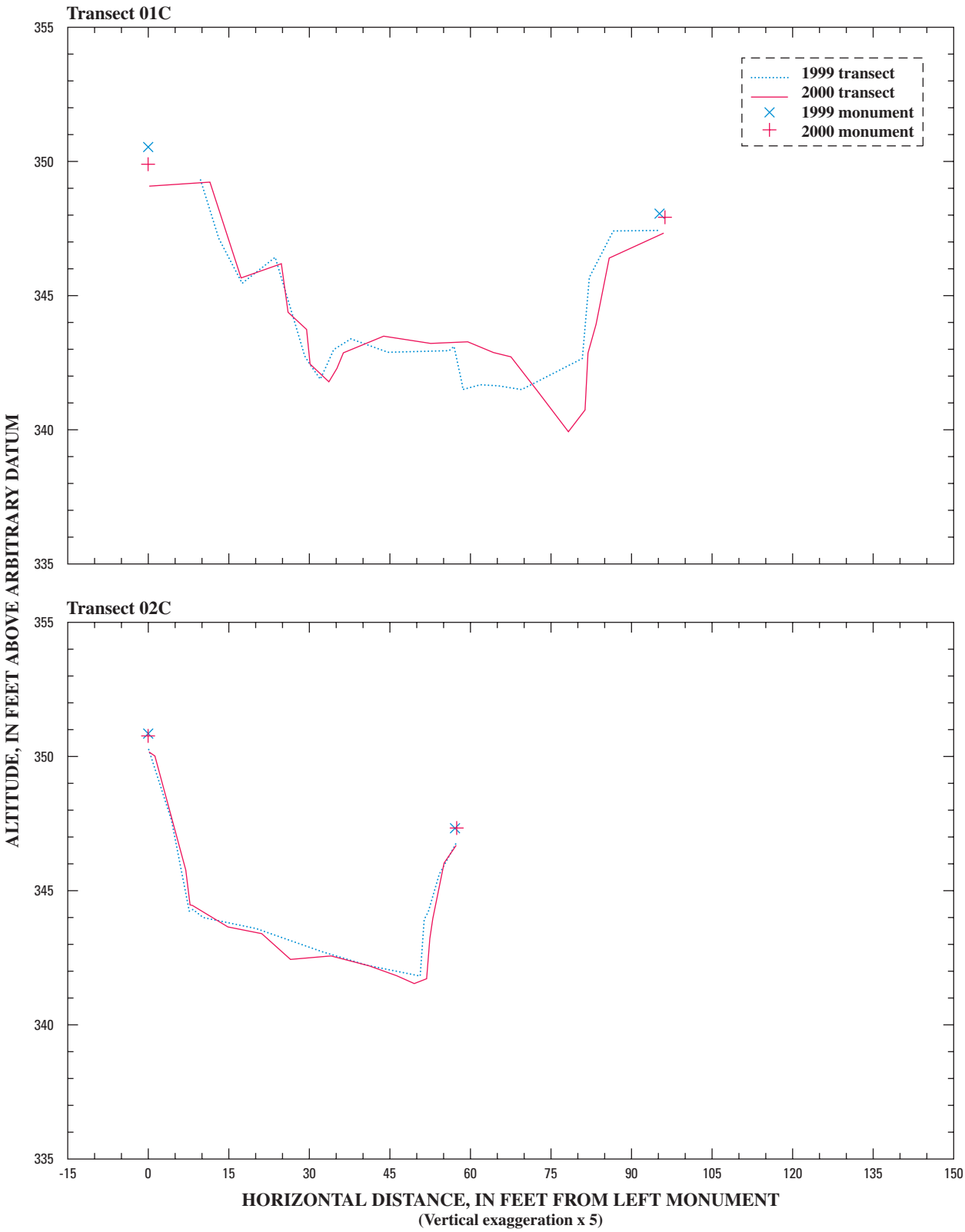

Figure 10. Transect profiles for Reach C of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000. (Transect locations are shown in figure 7)

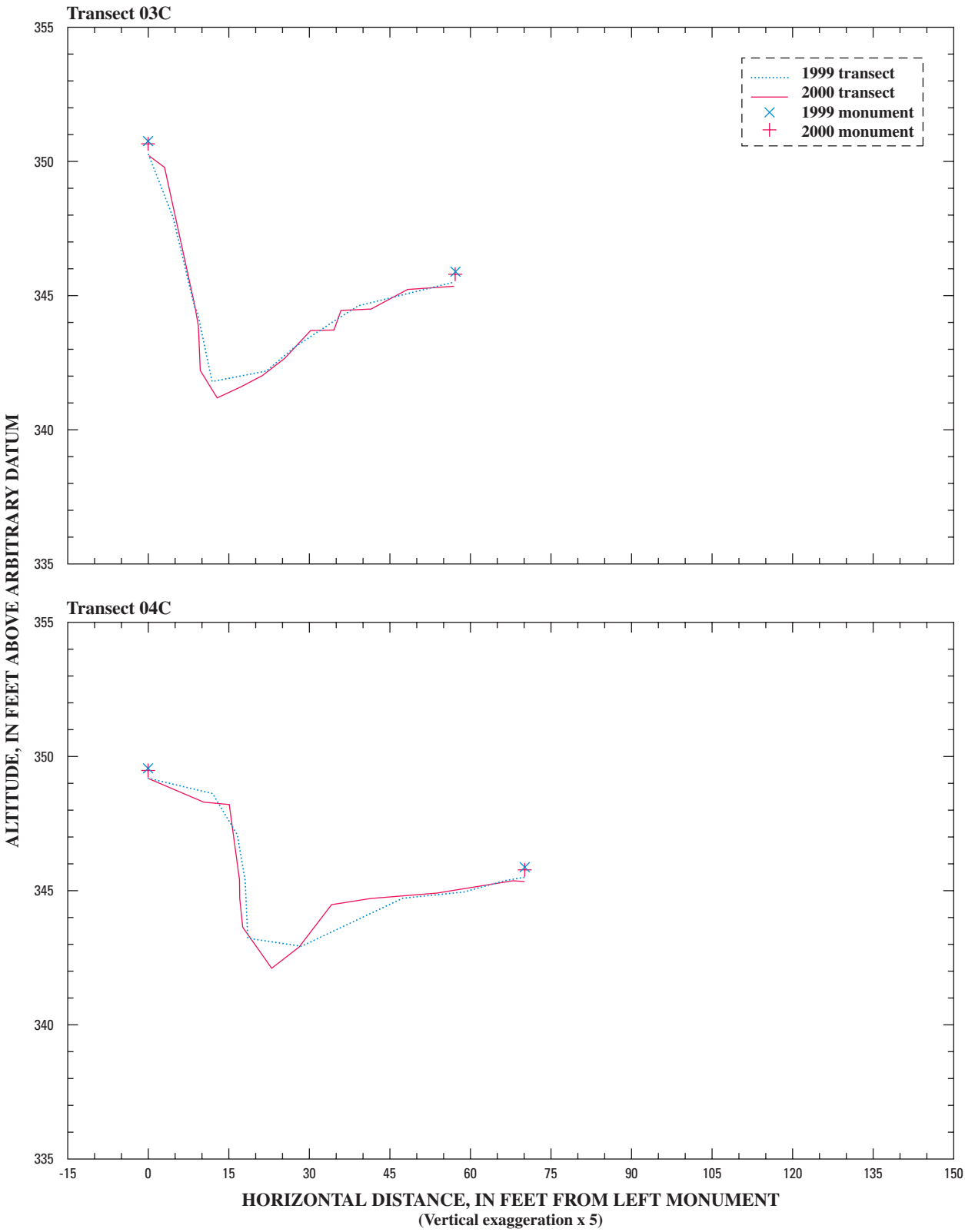

Figure 10. Transect profiles for Reach C of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 7)

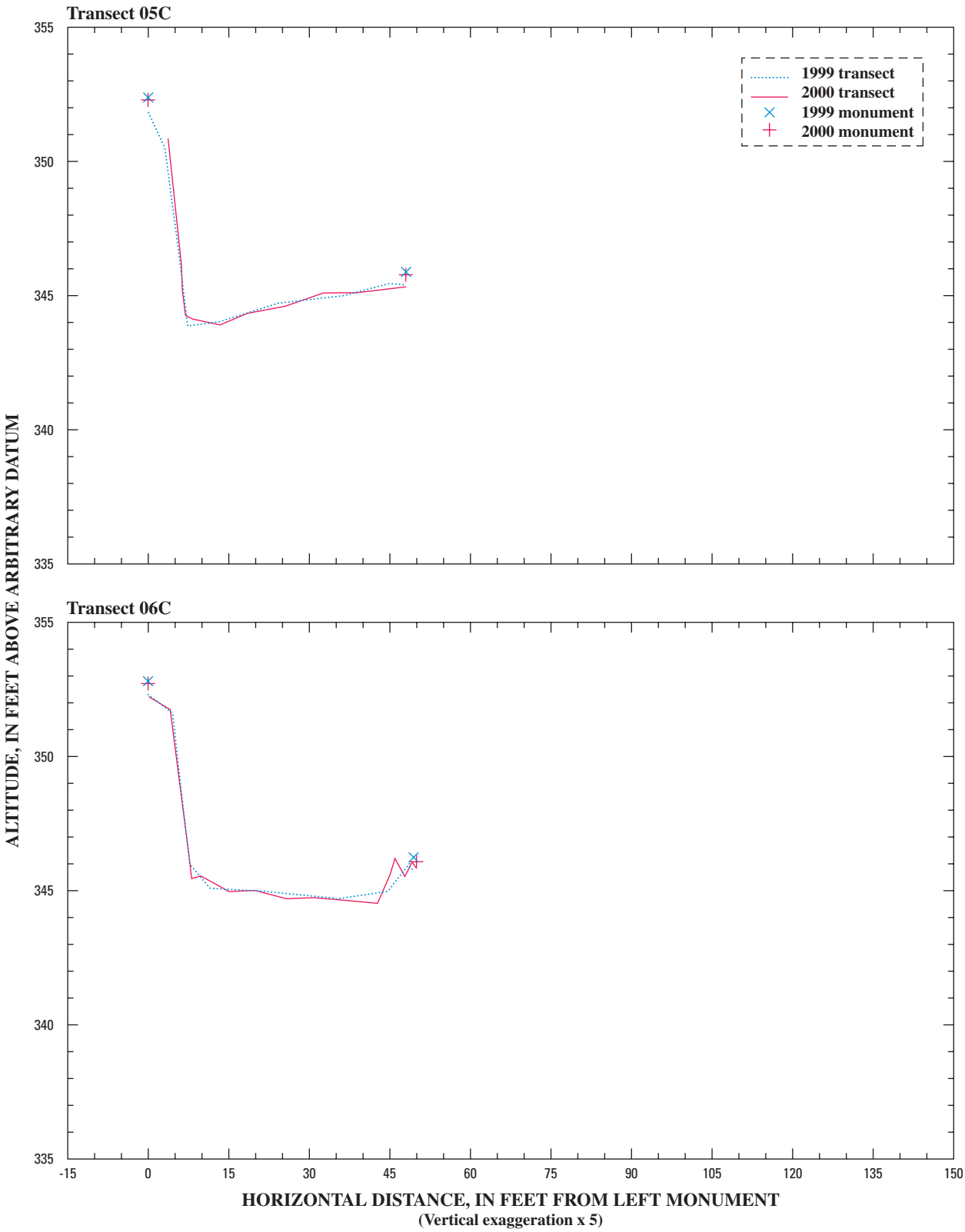

Figure 10. Transect profiles for Reach C of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 7)

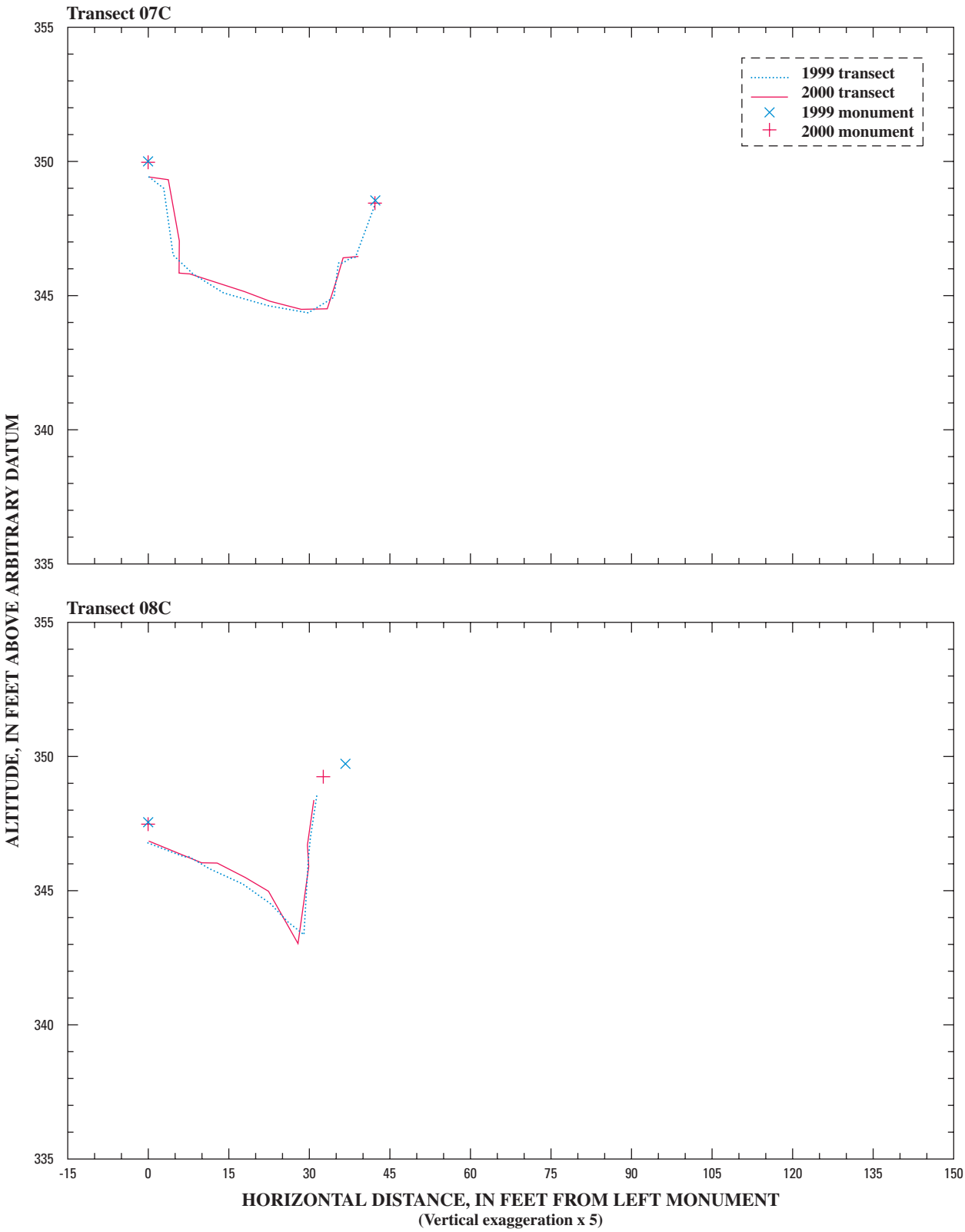

Figure 10. Transect profiles for Reach C of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 7)

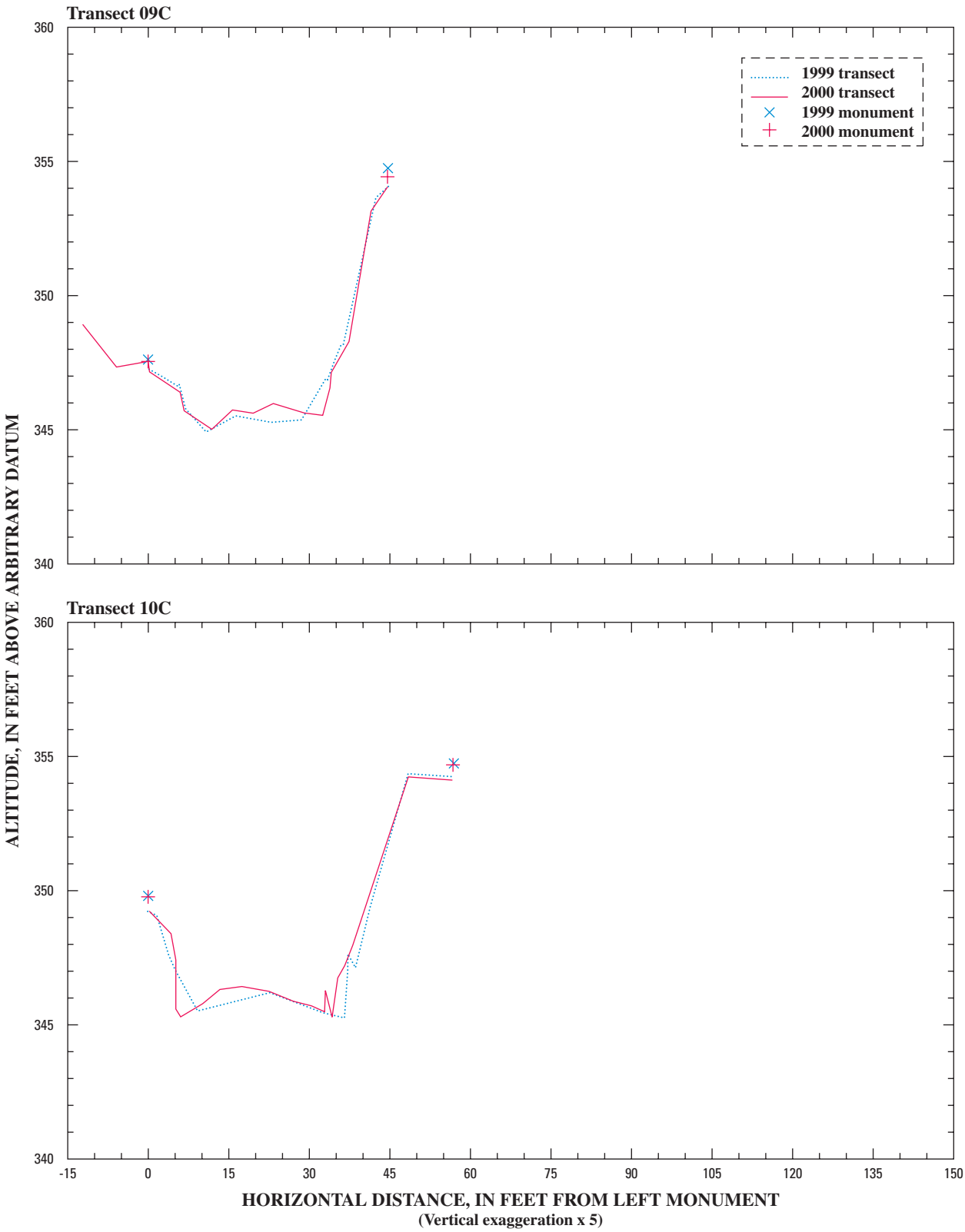

Figure 10. Transect profiles for Reach C of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 7)

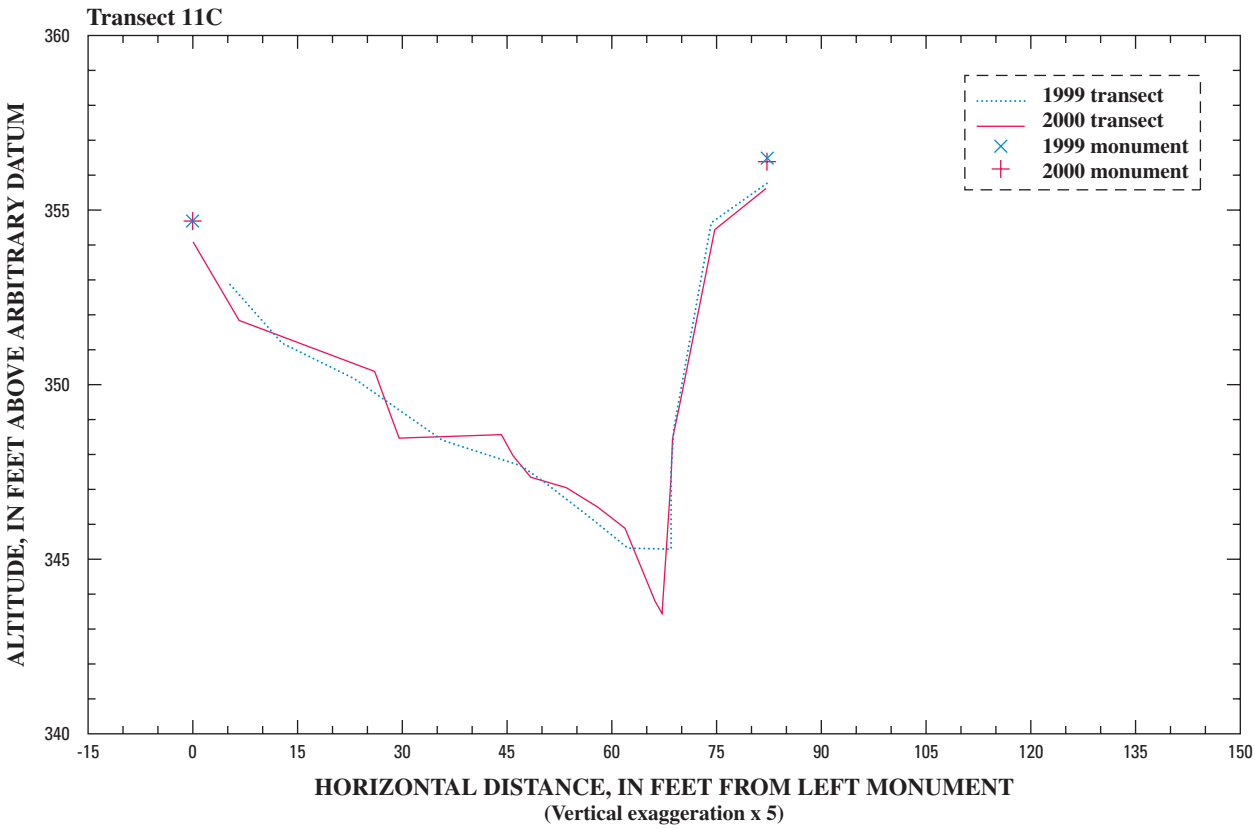

Figure 10. Transect profiles for Reach C of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 7)

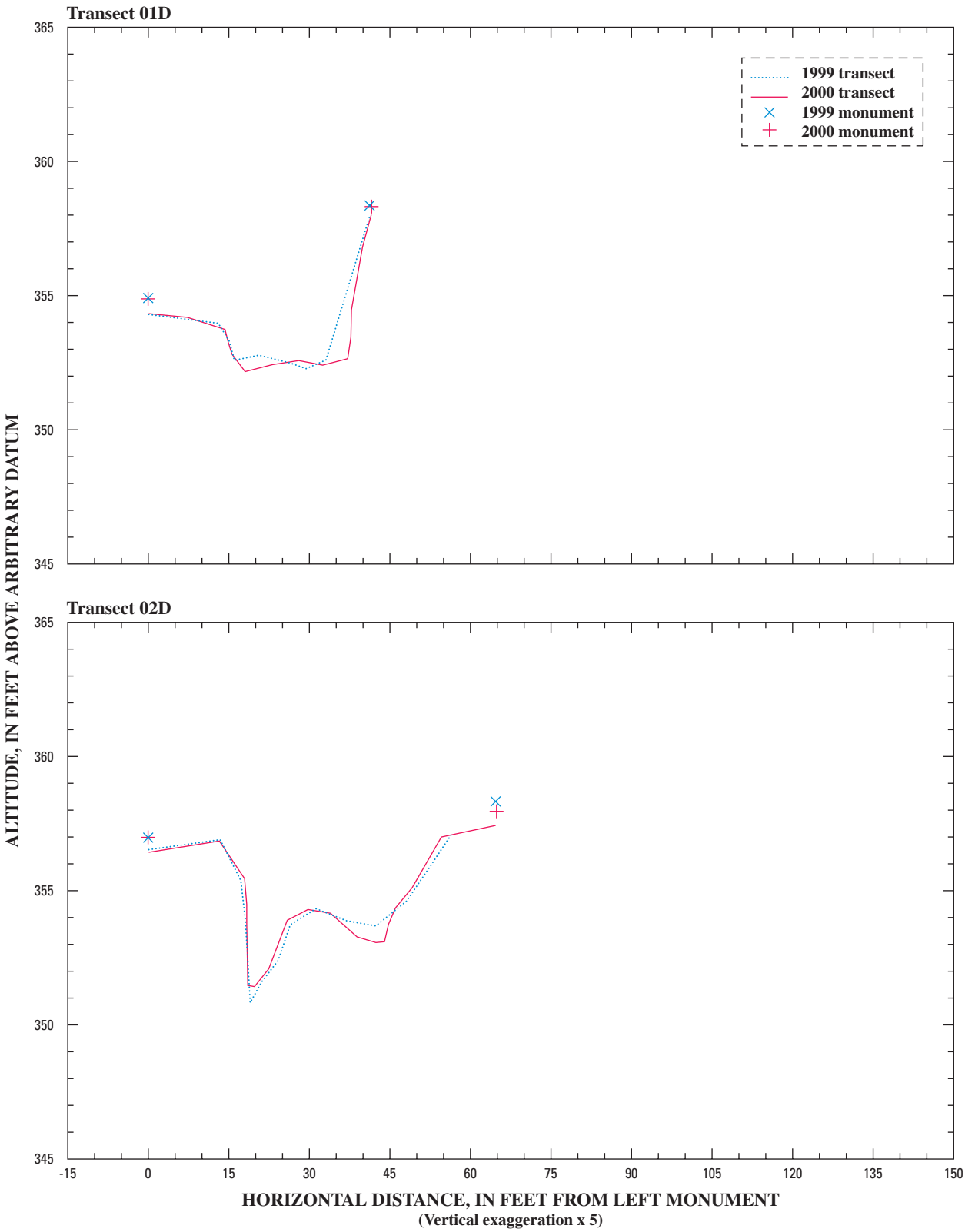

Figure 11. Transect profiles for Reach D of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000. (Transect locations are shown in figure 8)

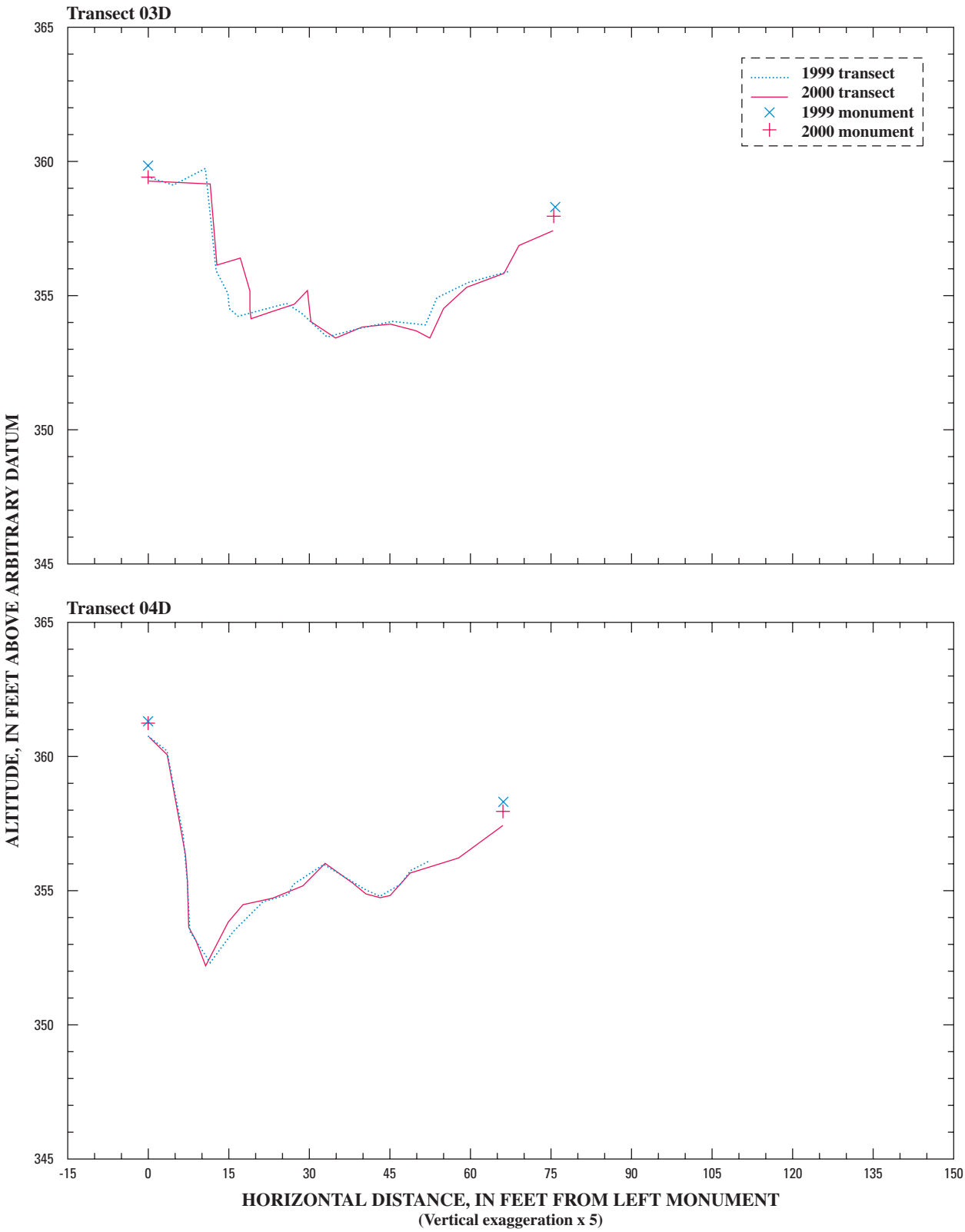

Figure 11. Transect profiles for Reach D of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 8)

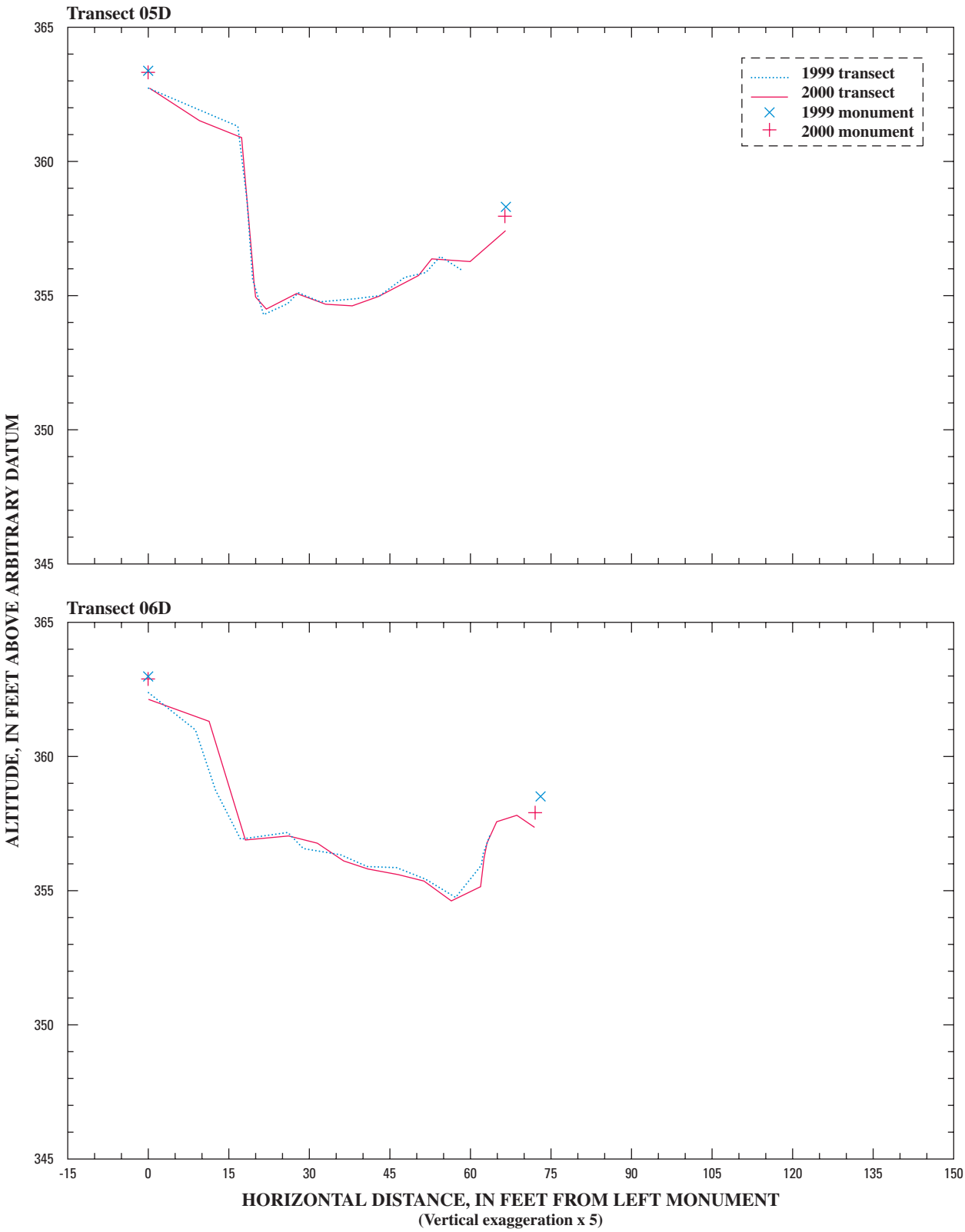

Figure 11. Transect profiles for Reach D of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 8)

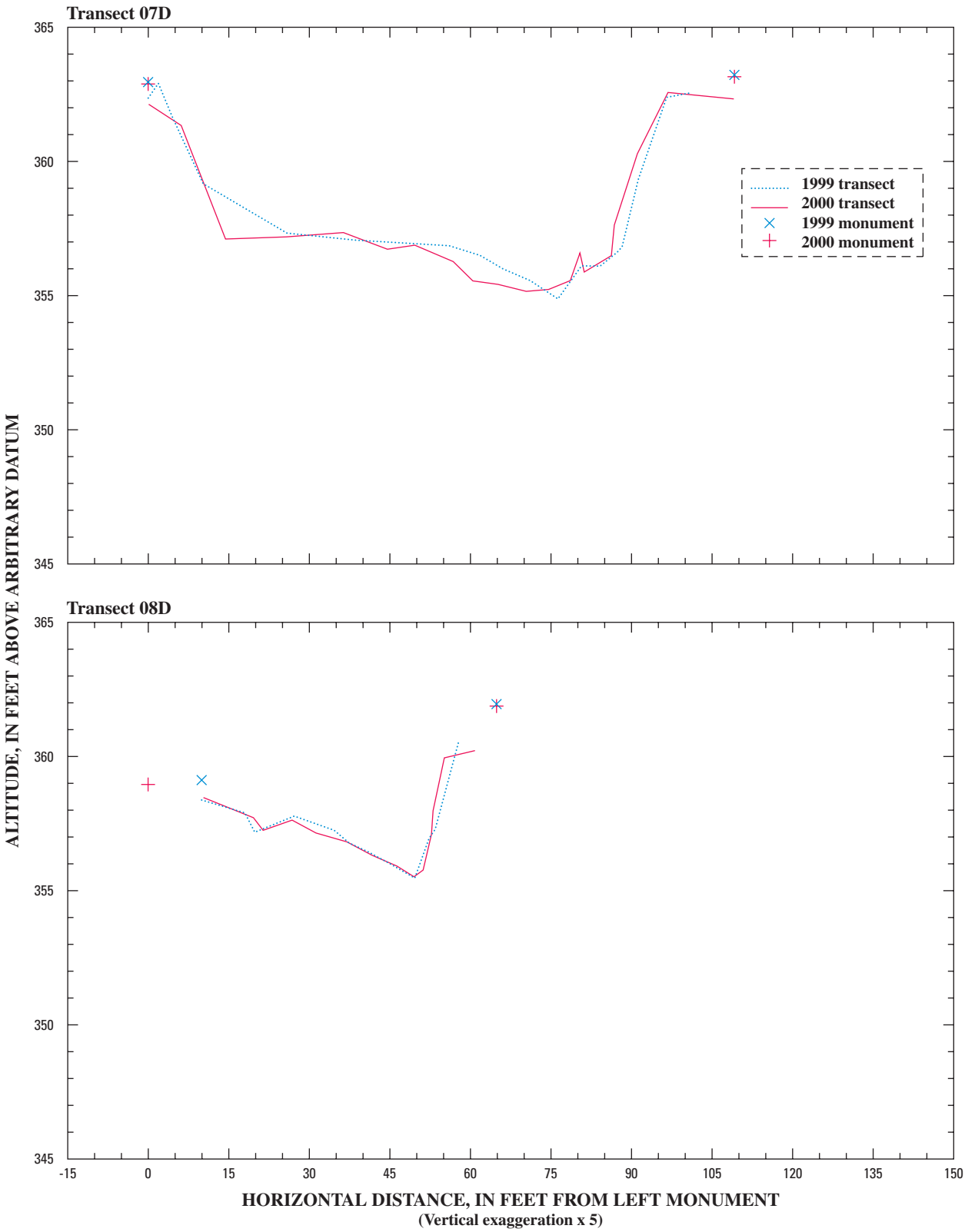

Figure 11. Transect profiles for Reach D of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 8)

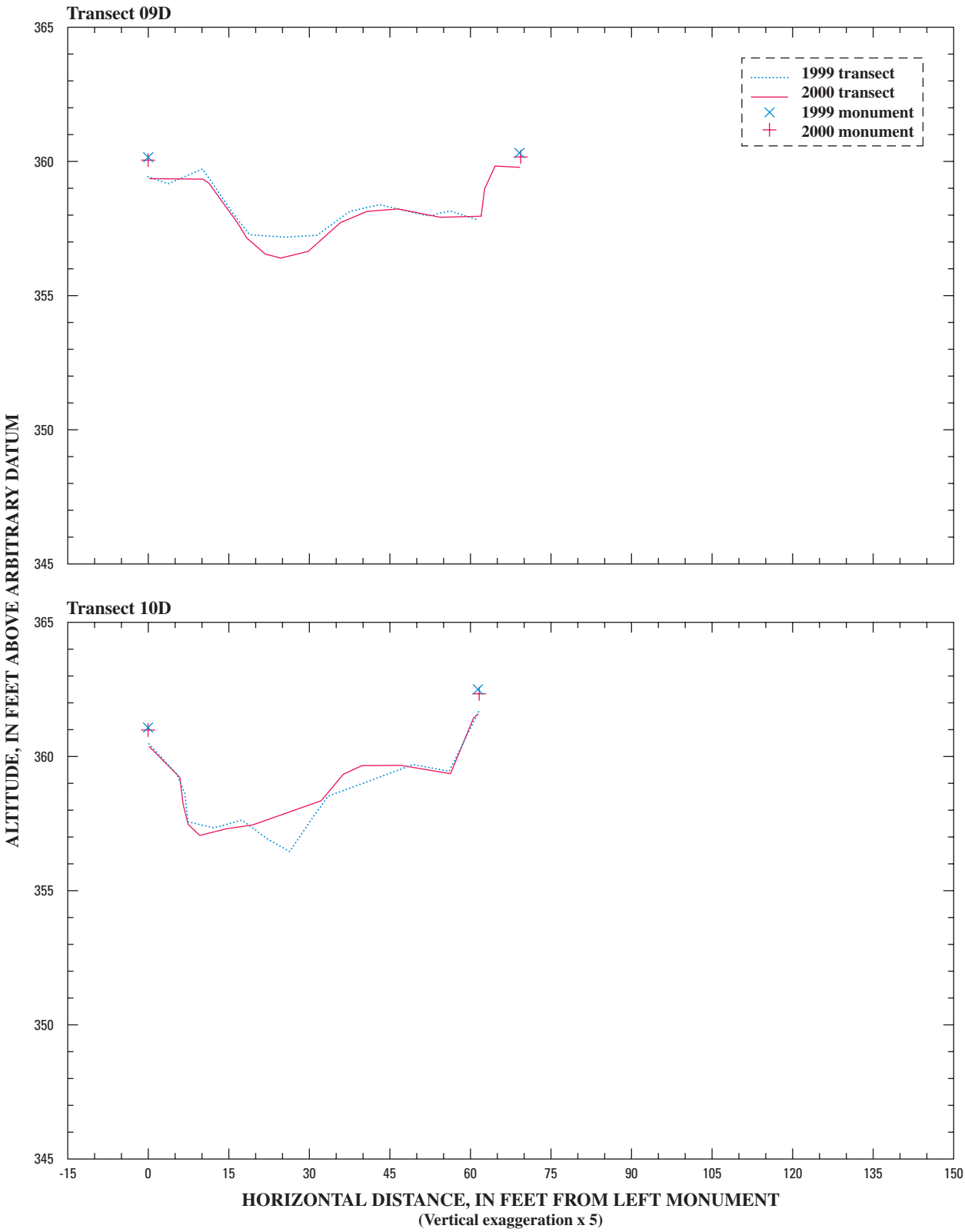

Figure 11. Transect profiles for Reach D of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 8)

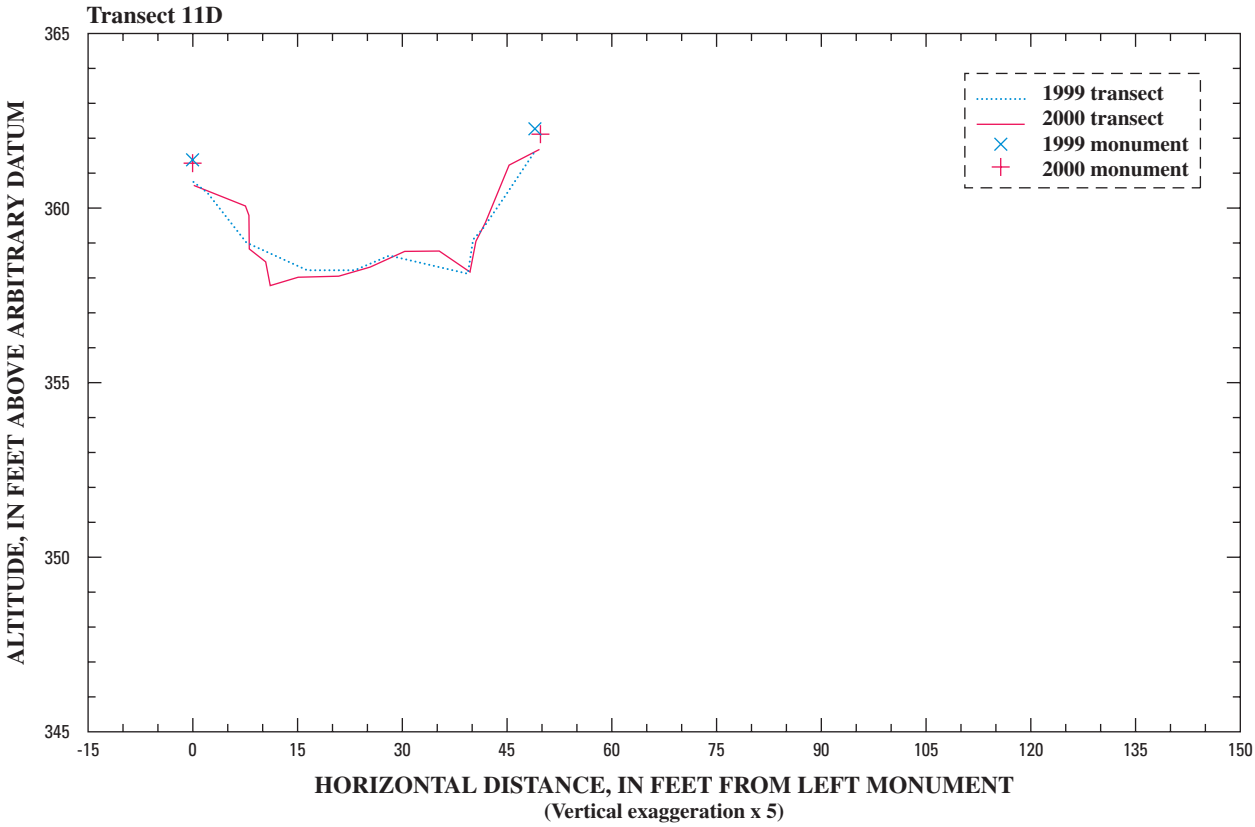

Figure 11. Transect profiles for Reach D of South Fork Campbell Creek near Anchorage, Alaska, 1999 and 2000—Continued.
(Transect locations are shown in figure 8)

Appendices

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999

Dates of survey, June 17, 18; July 28; August 17, 1999. The following abbreviations may be used in combinations, and a single point may have more than one comment:

ID	identification	SB	streambed
ft	foot	calc'd	point calculated as offset from a surveyed point
mon, M	monument	instr	instrument
L	left	NA	not applicable
R	right	E	edge
B	bank	veg	vegetation
EW, EOW	edge water, edge of water	surf	surface
WSEL	water surface elevation	btwn	between

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
02B	310	22258801.945	1150174.667	337.47	0.00	0.00	top of mon
02B	311	22258801.832	1150174.602	337.16	-0.12	-0.04	base of mon
02B	312	22258805.714	1150177.797	336.91	4.84	0.77	top of LB
02B	313	22258806.648	1150180.227	335.24	7.28	-0.13	downslope LB
02B	314	22258808.151	1150182.696	333.49	10.13	-0.63	downslope LB
02B	315	22258809.496	1150197.535	331.34	22.17	-9.40	LEW WSEL
02B	316	22258824.885	1150201.605	330.06	35.38	-0.51	streambed
02B	287	22258826.340	1150204.405	330.43	38.44	-1.26	steambed
02B	319	22258833.852	1150201.787	329.87	41.43	6.12	streambed
02B	286	22258829.748	1150206.111	330.04	41.97	0.18	steambed
02B	318	22258838.286	1150204.570	330.15	46.44	7.62	streambed REW
02B	285	22258833.479	1150210.641	331.46	47.84	0.00	REW
03B	296	22258780.126	1150210.093	338.33	0.00	0.00	top of LBM
03B	295	22258780.057	1150210.004	338.04	-0.11	0.00	base of mon
03B	309	22258784.099	1150215.348	334.44	6.58	-0.27	LB midslope
03B	308	22258786.867	1150217.812	331.78	10.24	0.30	LEW WSEL
03B	307	22258787.885	1150219.439	330.61	12.15	0.05	streambed
03B	284	22258795.375	1150228.702	330.64	24.06	-0.05	streambed
03B	283	22258798.974	1150232.859	331.19	29.56	0.09	streambed
03B	306	22258799.744	1150235.355	331.10	31.97	-0.91	streambed
03B	282	22258802.843	1150237.566	330.90	35.65	0.08	streambed
03B	304	22258805.928	1150240.458	331.76	39.84	0.63	REW WSEL
03B	281	22258805.860	1150240.647	331.79	39.95	0.45	REW
03B	303	22258811.661	1150249.802	333.01	50.70	-0.88	base of RB
03B	302	22258815.193	1150252.685	335.27	55.17	0.01	midslope RB
03B	301	22258818.901	1150254.689	338.63	59.07	1.60	top of RB
03B	300	22258824.925	1150264.260	338.58	70.29	0.17	base of RBM
03B	299	22258824.788	1150264.361	339.17	70.28	0.00	top of RBM
04B	292	22258739.748	1150221.637	339.63	0.00	0.00	top of mon
04B	293	22258739.648	1150221.800	339.05	0.07	0.18	base of mon
04B	294	22258743.790	1150228.765	338.79	8.12	1.14	top of LB
04B	280	22258753.924	1150246.782	331.00	28.58	4.08	streambed
04B	279	22258759.002	1150254.272	331.04	37.61	4.62	streambed
04B	278	22258764.871	1150259.480	330.71	45.31	3.14	streambed
04B	277	22258768.349	1150262.615	332.06	49.92	2.29	REW
04B	261	22258802.422	1150303.182	339.59	102.85	0.00	base of RBM (top is 0.41 ft high)
04B	calc'd	22258802.422	1150303.182	339.59	102.85	0.00	top of RBM calc'd from shot 261
05B	276	22258700.237	1150242.107	340.22	0.00	0.00	top of mon
05B	275	22258700.325	1150242.016	339.61	0.03	0.12	base of mon
05B	274	22258709.108	1150247.130	336.17	10.19	0.24	top of LB

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
05B	273	22258711.145	1150248.225	336.18	12.50	0.34	top of LB
05B	272	22258728.625	1150258.891	332.12	32.98	0.16	LEW
05B	271	22258730.302	1150261.365	330.85	35.69	-1.11	streambed
05B	270	22258737.517	1150264.335	330.65	43.40	0.05	streambed
05B	269	22258742.913	1150268.375	331.28	50.11	-0.65	streambed
05B	268	22258746.423	1150271.049	330.67	54.49	-1.15	streambed
05B	267	22258750.078	1150273.537	331.41	58.91	-1.41	streambed
05B	266	22258755.650	1150275.954	332.18	64.93	-0.62	REW
05B	265	22258768.947	1150280.876	333.18	78.87	1.97	top of island RB
05B	264	22258784.737	1150290.369	336.23	97.29	1.93	midslope RB
05B	262	22258788.164	1150290.387	338.20	100.24	3.67	top of bank
05B	263	22258788.607	1150290.411	339.05	100.64	3.87	top of bank
05B	261	22258802.422	1150303.182	339.59	119.05	0.00	base of RBM (top is 0.41 ft high)
05B	calc'd	22258802.422	1150303.182	339.59	119.05	0.00	top of RBM calc'd from shot 261
06B	256	22258669.010	1150312.590	339.24	0.00	0.00	instr site at LBM 6
06B	calc'd	22258669.010	1150312.590	338.78	0.00	0.00	base of LBM 6 (calc'd from shot 256)
06B	996	22258695.156	1150313.254	339.83	26.15	0.33	top LB
06B	997	22258702.048	1150311.703	336.74	33.02	-1.31	LB
06B	998	22258704.649	1150313.821	335.39	35.65	0.78	veg line LB
06B	999	22258706.054	1150313.317	333.36	37.05	0.26	WSEL LEW
06B	1000	22258711.240	1150311.949	331.82	42.22	-1.18	L channel
06B	1001	22258719.105	1150314.531	330.97	50.12	1.30	R channel
06B	1002	22258721.425	1150314.220	333.49	52.43	0.96	WSEL RE channel, veg line
06B	1003	22258728.426	1150312.533	333.67	59.41	-0.81	land
06B	1004	22258742.074	1150312.846	333.30	73.06	-0.67	land
06B	1005	22258749.974	1150314.613	332.83	80.98	0.99	WSEL
06B	1006	22258758.651	1150313.893	332.11	89.65	0.16	main channel
06B	1007	22258770.945	1150314.512	332.20	101.95	0.63	main channel
06B	1008	22258776.441	1150313.956	333.60	107.44	-0.00	WSEL LB channel
06B	1009	22258780.226	1150315.011	334.92	111.24	1.01	land
06B	1010	22258786.485	1150313.091	333.64	117.47	-0.99	last channel (3)
06B	1011	22258792.307	1150312.248	334.13	123.28	-1.91	channel (3) WSEL veg line
06B	1012	22258802.196	1150303.052	339.39	133.05	-11.23	base RBM
06B	1013	22258802.171	1150303.173	339.91	133.03	-11.11	top RBM
07B	958	22258701.277	1150367.610	340.95	0.00	0.00	top LBM
07B	959	22258701.143	1150367.612	340.20	-0.11	0.07	LB
07B	960	22258703.184	1150360.996	338.11	5.17	4.55	LB
07B	961	22258707.499	1150359.688	335.30	9.51	3.33	LB
07B	962	22258708.085	1150359.691	334.85	10.00	3.01	LB
07B	963	22258711.084	1150362.553	334.15	10.99	-1.02	WSEL LEW
07B	964	22258717.637	1150358.324	332.77	18.79	-0.98	streambed
07B	965	22258719.885	1150354.267	332.55	22.86	1.23	streambed
07B	966	22258725.722	1150349.796	332.97	30.19	1.86	streambed
07B	967	22258726.895	1150348.406	333.92	31.93	2.40	WSEL REW
07B	968	22258729.905	1150345.887	334.28	35.82	2.90	land
07B	969	22258738.244	1150341.282	333.68	45.33	2.29	WSEL
07B	970	22258740.979	1150341.147	333.42	47.70	0.93	WSEL

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
07B	971	22258744.438	1150337.502	334.60	52.58	2.15	land
07B	972	22258747.832	1150335.710	334.40	56.41	1.83	WSEL
07B	973	22258750.996	1150334.584	333.27	59.68	1.08	L channel, main
07B	974	22258766.104	1150327.548	333.28	76.20	-1.13	streambed
07B	975	22258781.087	1150315.344	335.14	95.39	1.10	land
07B	976	22258787.961	1150314.849	333.77	101.46	-2.19	channel bed
07B	977	22258792.226	1150314.481	334.06	105.25	-4.17	WSEL REW, veg line
07B	978	22258802.272	1150303.055	339.40	119.86	0.05	base mon
07B	979	22258802.167	1150303.182	339.91	119.71	0.00	top mon
08B	995	22258701.286	1150367.592	340.95	0.00	0.00	top LBM
08B	994	22258701.058	1150367.650	340.18	-0.21	-0.10	base LBM
08B	993	22258706.959	1150365.714	337.86	5.18	2.98	LB upslope
08B	992	22258707.793	1150360.626	335.04	4.97	8.14	veg line LB
08B	991	22258714.020	1150367.612	334.34	12.48	2.55	LB
08B	990	22258721.391	1150373.294	334.36	20.84	-1.53	streambed L-channel
08B	989	22258725.858	1150372.480	334.75	25.05	0.17	land
08B	988	22258736.231	1150373.711	334.34	35.46	1.06	WSEL channel
08B	987	22258752.644	1150375.356	333.22	51.87	2.76	streambed
08B	986	22258760.317	1150375.441	333.77	59.40	4.22	streambed
08B	985	22258769.975	1150375.754	333.68	68.92	5.87	streambed
08B	984	22258776.592	1150375.335	334.90	75.32	7.61	WSEL REW
08B	983	22258779.043	1150377.093	336.39	78.08	6.38	RB
08B	982	22258782.117	1150379.149	338.83	81.50	4.99	RB
08B	981	22258789.300	1150385.782	338.47	89.87	-0.06	base RBM
08B	980	22258789.335	1150385.732	338.83	89.90	0.00	top RBM
09B	953	22258695.391	1150390.675	342.14	0.00	0.00	top mon
09B	952	22258695.299	1150390.543	341.29	-0.14	0.08	base mon
09B	951	22258705.896	1150396.757	339.49	12.10	-0.97	top LB
09B	950	22258722.953	1150405.314	335.40	31.18	-1.36	WSEL LEW
09B	949	22258726.532	1150405.826	335.28	34.63	-0.29	SB
09B	948	22258738.519	1150410.544	334.57	47.48	0.61	SB
09B	947	22258746.231	1150414.282	333.99	56.05	0.55	SB
09B	946	22258753.096	1150416.963	333.37	63.40	1.08	SB
09B	945	22258757.122	1150419.484	335.65	68.12	0.54	WSEL REW
09B	944	22258757.611	1150419.297	336.15	68.48	0.91	veg line REW
09B	943	22258761.413	1150420.780	338.67	72.55	1.21	RB
09B	942	22258769.484	1150425.854	340.09	82.02	0.10	base mon
09B	941	22258769.441	1150425.945	340.71	82.02	0.00	top mon
10B	940	22258703.823	1150417.477	341.66	0.00	0.00	top mon
10B	939	22258703.874	1150417.346	341.01	-0.08	0.12	base mon
10B	938	22258707.130	1150422.292	337.66	5.84	-0.08	top LB
10B	937	22258708.012	1150423.578	335.70	7.40	-0.10	WSEL LEW
10B	936	22258710.600	1150429.180	333.67	13.47	-1.22	streambed
10B	935	22258713.376	1150435.017	334.45	19.84	-2.32	streambed
10B	934	22258717.014	1150444.988	335.67	30.08	-5.10	WSEL RB
10B	933	22258733.135	1150464.901	336.42	55.65	-3.42	LB
10B	932	22258740.044	1150472.734	335.41	66.03	-2.29	LB
10B	931	22258741.230	1150475.262	335.57	68.78	-2.78	veg line, WSEL
10B	930	22258742.904	1150476.770	334.64	70.98	-2.29	veg line
10B	929	22258743.742	1150478.146	335.47	72.59	-2.39	veg line
10B	928	22258744.327	1150478.337	335.65	73.08	-2.03	veg line
10B	927	22258744.683	1150478.473	335.73	73.40	-1.81	RB

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
10B	926	22258746.285	1150480.247	337.50	75.77	-1.53	RB
10B	925	22258751.270	1150484.567	340.92	82.17	0.05	BM (?)
10B	924	22258751.226	1150484.591	341.12	82.17	0.00	top mon
11B	908	22258649.564	1150411.608	343.19	0.00	0.00	top LBM 11B
11B	909	22258649.488	1150411.582	342.72	-0.06	-0.05	base mon 11B
11B	910	22258654.111	1150419.675	343.09	9.21	-0.92	LB
11B	912	22258655.093	1150422.538	340.36	12.12	-1.77	top LB
11B	913	22258655.945	1150426.624	336.79	15.95	-3.42	LB
11B	914	22258654.615	1150427.762	336.36	16.12	-5.17	veg line, WSEL LEW
11B	915	22258654.919	1150428.495	335.75	16.89	-5.34	stream channel
11B	916	22258659.056	1150433.430	334.07	23.31	-4.80	streambed
11B	917	22258665.059	1150446.825	335.20	37.72	-7.60	streambed
11B	918	22258672.797	1150457.979	335.65	51.29	-7.69	streambed
11B	919	22258681.857	1150465.554	335.56	62.70	-4.64	streambed
11B	920	22258685.165	1150466.214	336.42	65.15	-2.32	veg line, WSEL REW
11B	921	22258685.210	1150467.466	336.37	66.19	-3.00	veg line RB
11B	922	22258699.827	1150482.803	337.43	87.15	0.13	RBM
11B	923	22258699.712	1150482.859	337.95	87.13	0.00	top RBM
01C	855	22258652.813	1150790.374	350.53	0.00	0.00	LBM
01C	899	22258658.549	1150798.389	349.31	9.73	-1.58	LB
01C	898	22258661.065	1150800.964	347.13	13.15	-2.69	LB
01C	897	22258663.407	1150804.621	345.46	17.47	-3.16	LB
01C	896	22258666.124	1150810.186	346.43	23.66	-3.12	LB
01C	895	22258669.615	1150812.784	343.83	27.54	-5.10	LB
01C	894	22258670.552	1150814.118	342.75	29.15	-5.34	veg line intermittent stream LB
01C	893	22258671.131	1150814.948	342.43	30.15	-5.49	water surf intermittent stream LB
01C	892	22258672.263	1150816.498	341.89	32.05	-5.82	intermittent stream channel
01C	891	22258673.322	1150817.391	342.45	33.32	-6.37	water surf intermittent stream RB
01C	890	22258672.867	1150818.992	342.99	34.55	-5.25	intermittent stream veg line RB
01C	889	22258675.901	1150821.039	343.39	37.73	-7.06	LB
01C	888	22258680.565	1150826.425	342.89	44.63	-8.85	LB
01C	887	22258686.198	1150836.419	342.95	56.08	-9.45	edge veg LB
01C	886	22258685.675	1150837.654	343.11	56.96	-8.43	water surf LB
01C	885	22258688.216	1150838.203	341.62	58.55	-9.82	streambed L
01C	884	22258687.626	1150838.464	341.50	58.58	-10.47	streambed
01C	883	22258688.340	1150841.819	341.68	61.87	-8.97	streambed
01C	882	22258688.198	1150845.642	341.64	65.23	-7.15	streambed
01C	881	22258687.616	1150850.783	341.50	69.58	-4.34	streambed
01C	880	22258695.280	1150859.585	342.66	80.87	-7.30	water surf RB
01C	879	22258696.153	1150860.590	345.68	82.16	-7.63	RB
01C	878	22258695.452	1150865.907	347.41	86.61	-4.64	RB
01C	877	22258695.203	1150875.618	347.43	95.20	-0.10	base mon RB
01C	876	22258695.123	1150875.691	348.05	95.23	-0.00	top mon RB
02C	861	22258647.959	1150813.090	350.85	0.00	0.00	top mon LB
02C	862	22258647.938	1150813.157	350.26	0.07	-0.02	base mon LB
02C	863	22258646.825	1150817.436	347.62	4.33	-1.20	LB
02C	865	22258648.817	1150820.714	344.24	7.64	0.74	edge veg LB

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
02C	864	22258647.971	1150821.463	344.30	8.37	-0.11	LB
02C	866	22258648.890	1150823.320	344.00	10.24	0.78	water surf LB
02C	867	22258647.937	1150833.182	343.59	20.09	-0.32	streambed L
02C	868	22258649.426	1150845.563	342.72	32.49	0.99	streambed
02C	869	22258648.771	1150853.850	342.22	40.77	0.21	streambed
02C	870	22258647.322	1150863.797	341.82	50.69	-1.39	streambed R
02C	871	22258647.291	1150864.535	343.93	51.43	-1.43	water surf RB
02C	872	22258647.246	1150865.301	344.21	52.19	-1.49	edge veg RB
02C	873	22258648.982	1150867.283	345.61	54.20	0.22	RB
02C	874	22258648.428	1150870.576	346.83	57.49	-0.38	base RB mon
02C	875	22258648.807	1150870.247	347.33	57.16	0.00	top of mon
03C	848	22258625.959	1150804.810	350.75	0.00	0.00	top mon LB
03C	846	22258622.779	1150808.289	347.91	4.64	0.83	midslope LB
03C	845	22258620.802	1150811.755	344.57	8.63	0.65	edge veg LB
03C	844	22258620.054	1150811.907	344.40	9.15	1.20	water surf LB
03C	843	22258618.009	1150813.845	341.80	11.89	1.90	streambed L
03C	842	22258612.350	1150822.213	342.19	21.98	2.21	streambed
03C	841	22258610.852	1150827.438	343.07	27.20	0.69	streambed
03C	840	22258608.751	1150834.990	344.07	34.71	-1.57	stream R
03C	839	22258606.674	1150838.829	344.62	39.06	-1.86	water surf RB
03C	838	22258595.491	1150853.148	345.51	57.14	-0.05	base mon RB
03C	837	22258595.398	1150853.203	345.89	57.24	0.00	top mon RB
04C	854	22258547.555	1150801.882	349.56	0.00	0.00	top mon LB
04C	853	22258547.484	1150801.914	349.19	-0.02	-0.07	base mon LB
04C	852	22258554.154	1150812.104	348.62	11.98	-2.15	LB
04C	851	22258558.318	1150814.547	347.08	16.60	-0.77	midslope LB
04C	850	22258558.581	1150816.246	345.40	18.03	-1.73	water surf LB
04C	849	22258558.166	1150817.300	343.23	18.51	-2.75	streambed L
04C	836	22258567.981	1150821.833	342.93	28.52	1.33	streambed
04C	835	22258582.132	1150834.433	344.72	47.39	3.09	streambed
04C	834	22258589.992	1150842.664	344.95	58.77	3.22	streambed R
04C	833	22258593.837	1150849.997	345.39	66.75	1.04	water surf, EOW RB
04C	832	22258595.464	1150853.135	345.50	70.16	0.09	base mon RB
04C	831	22258595.402	1150853.194	345.88	70.16	0.00	top mon RB
05C	811	22258552.617	1150874.904	352.38	0.00	0.00	top mon LB
05C	809	22258552.728	1150875.112	351.81	0.01	-0.24	base mon LB
05C	808	22258557.479	1150877.603	350.51	3.12	-4.60	LB
05C	807	22258560.178	1150877.983	347.13	5.35	-6.16	veg edge LB
05C	806	22258561.080	1150877.904	345.81	6.19	-6.50	water surface LB
05C	805	22258561.650	1150876.525	343.87	7.33	-5.53	streambed L
05C	804	22258565.619	1150871.162	344.03	13.29	-2.54	streambed
05C	830	22258572.628	1150860.757	344.72	24.24	3.58	streambed
05C	829	22258582.825	1150853.958	345.00	36.41	5.04	streambed RB
05C	828	22258591.313	1150851.917	345.45	44.91	3.03	water surf RB
05C	826	22258594.146	1150852.505	345.42	47.17	1.22	edge veg RB
05C	825	22258595.427	1150853.073	345.38	48.05	0.14	base mon RB
05C	824	22258595.447	1150853.216	345.88	48.01	0.00	top mon RB
06C	794	22258560.902	1150912.872	352.81	0.00	0.00	top mon LB
06C	795	22258560.948	1150912.961	352.31	-0.01	-0.10	base mon LB
06C	796	22258564.557	1150910.207	351.61	4.52	0.21	top LB
06C	797	22258565.676	1150909.234	349.00	5.99	0.41	LB
06C	798	22258566.949	1150908.402	346.35	7.51	0.40	edge veg LB

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
06C	799	22258567.217	1150908.397	345.98	7.74	0.26	water surface LB
06C	800	22258570.667	1150906.698	345.09	11.55	-0.22	channel L
06C	801	22258580.078	1150903.003	344.98	21.44	-2.31	streambed
06C	823	22258590.356	1150894.292	344.72	34.82	-0.70	streambed
06C	802	22258591.461	1150895.529	344.69	35.06	-2.34	streambed
06C	822	22258597.930	1150887.947	344.98	44.63	0.43	streambed RB
06C	821	22258601.713	1150886.385	346.01	48.65	-0.34	water surf RB
06C	820	22258601.517	1150885.959	345.84	48.72	0.12	edge veg RB
06C	819	22258602.273	1150885.677	345.78	49.51	-0.06	base mon RB
06C	818	22258602.161	1150885.679	346.25	49.41	0.00	top mon RB
07C	793	22258596.334	1150947.461	350.00	0.00	0.00	top mon LB
07C	792	22258596.467	1150947.414	349.41	0.13	-0.05	base mon LB
07C	791	22258599.017	1150946.160	349.00	2.87	-0.82	LB
07C	790	22258597.411	1150941.680	346.51	4.65	3.59	edge veg LB
07C	789	22258603.007	1150942.447	345.81	8.32	-0.71	channel LB
07C	788	22258607.295	1150938.666	345.10	14.03	-0.74	streambed
07C	847	22258625.856	1150804.771	350.26	0.02	0.11	base mon LB
07C	787	22258612.919	1150932.343	344.62	22.44	0.23	streambed
07C	786	22258617.847	1150926.806	344.36	29.80	1.07	streambed
07C	785	22258621.781	1150923.975	344.94	34.62	0.57	channel right side
07C	817	22258621.719	1150922.737	346.18	35.40	1.53	water surf RB
07C	784	22258622.583	1150923.527	346.24	35.52	0.37	top water surface
07C	816	22258622.788	1150922.772	346.21	36.18	0.79	veg line RB
07C	815	22258624.064	1150922.073	346.39	37.59	0.46	(no comment noted)
07C	783	22258625.375	1150922.090	346.43	38.56	-0.42	top RB veg line
07C	814	22258627.903	1150919.419	348.40	42.22	-0.11	base mon RB
07C	813	22258627.856	1150919.308	348.54	42.26	0.00	top mon RB
08C	770	22258626.485	1150983.616	347.55	0.00	0.00	top LB
08C	771	22258626.487	1150983.706	346.78	-0.05	-0.07	base LB
08C	772	22258631.007	1150978.395	346.26	6.73	1.55	edge veg
08C	773	22258631.807	1150978.090	346.27	7.56	1.33	edge water
08C	774	22258634.595	1150975.222	345.81	11.50	2.00	edge channel
08C	775	22258638.977	1150970.920	345.25	17.57	2.89	streambed
08C	776	22258640.852	1150964.768	344.52	22.72	6.76	streambed
08C	777	22258647.056	1150967.764	343.84	25.96	0.68	streambed
08C	778	22258649.140	1150965.513	343.36	28.97	1.27	streambed
08C	779	22258650.563	1150966.015	346.12	29.82	0.02	water surface
08C	780	22258650.978	1150965.981	346.97	30.18	-0.19	edge veg
08C	781	22258651.841	1150964.985	348.61	31.46	0.10	top RB
08C	782	22258656.139	1150961.974	349.73	36.71	0.00	top RB
09C	747	22258654.795	1151015.900	347.62	0.00	0.00	top LBM 9
09C	748	22258654.887	1151015.800	347.26	0.13	0.03	base
09C	749	22258658.214	1151016.214	346.98	2.67	-2.15	bank LB
09C	750	22258660.689	1151014.582	346.61	5.64	-2.16	veg line
09C	752	22258660.467	1151013.933	346.69	5.81	-1.50	WSEL
09C	753	22258661.979	1151014.201	345.79	6.92	-2.56	streambed
09C	754	22258665.261	1151012.133	344.92	10.80	-2.65	streambed
09C	755	22258669.867	1151009.102	345.52	16.32	-2.67	streambed
09C	756	22258676.791	1151007.600	345.28	22.92	-5.25	streambed
09C	757	22258681.039	1151003.833	345.37	28.54	-4.47	streambed
09C	758	22258684.997	1151001.601	346.92	33.07	-4.80	WSEL REW
09C	759	22258685.045	1151001.037	346.87	33.42	-4.35	veg line

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
09C	760	22258685.823	1150999.779	347.60	34.77	-3.73	bank RB
09C	761	22258686.730	1150998.994	348.18	35.96	-3.58	midslope
09C	762	22258687.546	1150999.560	348.19	36.32	-4.51	midslope
09C	763	22258689.631	1150991.691	353.65	42.41	0.90	top RB
09C	764	22258692.195	1150991.219	354.08	44.81	-0.13	base RBM 9
09C	765	22258692.011	1150991.187	354.75	44.67	0.00	top RBM 9
10C	746	22258663.238	1151041.543	349.81	0.00	0.00	top LBM 10
10C	745	22258663.120	1151041.465	349.23	-0.09	0.11	base RB 10
10C	744	22258665.001	1151041.842	349.08	1.60	-0.80	bank
10C	743	22258667.350	1151042.122	347.61	3.76	-1.75	veg line
10C	742	22258668.385	1151041.253	347.06	5.01	-1.22	LEW WSEL
10C	741	22258672.545	1151040.503	345.52	9.21	-1.72	streambed
10C	740	22258685.149	1151035.785	346.20	22.64	-0.88	streambed
10C	739	22258695.541	1151035.861	345.45	32.56	-3.99	streambed
10C	738	22258699.092	1151033.878	345.26	36.53	-3.13	streambed
10C	736	22258699.602	1151033.345	347.00	37.17	-2.77	WSEL REW
10C	734	22258698.911	1151031.032	347.64	37.19	-0.35	REW, base of bank
10C	735	22258700.786	1151032.304	347.13	38.61	-2.12	veg line
10C	733	22258702.942	1151030.065	349.40	41.33	-0.61	RB
10C	731	22258709.095	1151026.022	354.36	48.39	1.47	RBM 10
10C	730	22258717.556	1151025.198	354.25	56.72	-0.21	RBM 10
10C	729	22258717.695	1151024.932	354.75	56.93	0.00	RBM 10
11C	713	22258623.962	1151077.507	354.68	0.00	0.00	LBM 11
11C	718	22258629.031	1151079.285	352.86	5.34	0.54	LB
11C	717	22258636.171	1151081.388	351.18	12.78	0.92	LB
11C	716	22258646.336	1151083.495	350.17	23.15	0.59	LB
11C	715	22258658.762	1151085.485	348.41	35.70	-0.39	LEW
11C	714	22258669.842	1151087.763	347.68	47.01	-0.77	LEW WSEL
11C	719	22258673.139	1151088.540	347.21	50.39	-0.78	LEW
11C	720	22258680.058	1151090.016	346.11	57.47	-0.97	SB
11C	721	22258684.833	1151090.878	345.32	62.31	-1.25	midstream
11C	723	22258690.639	1151093.385	345.29	68.49	-1.32	SB right
11C	724	22258690.860	1151092.250	347.55	68.54	-0.17	REW
11C	725	22258691.281	1151092.251	348.76	68.90	-1.42	veg line
11C	726	22258696.401	1151093.899	354.64	74.26	-1.02	RB
11C	727	22258703.958	1151096.755	355.77	82.23	0.00	RBM 11
11C	728	22258703.904	1151096.751	356.48	82.28	-0.01	top of RBM 11
01D	55	22258533.769	1151378.240	354.91	0.00	0.00	top LBM, 2x2 stake
01D	56	22258533.825	1151378.355	354.30	0.12	0.04	base LBM, 2x2 stake
01D	57	22258535.184	1151391.195	353.97	13.03	-0.27	on LB
01D	59	22258535.596	1151393.231	353.30	15.10	-0.12	LEW WSEL
01D	60	22258535.765	1151394.154	352.59	16.04	-0.07	base of channel streambed
01D	61	22258536.535	1151398.622	352.78	20.57	0.11	streambed
01D	62	22258537.695	1151404.407	352.49	26.45	0.52	streambed
01D	63	22258537.324	1151407.410	352.28	29.39	-0.24	streambed
01D	64	22258537.859	1151411.046	352.60	33.06	-0.18	streambed
01D	66	22258539.198	1151419.078	357.93	41.20	0.11	base of RBM 1
01D	65	22258539.087	1151419.102	358.36	41.21	0.00	top of RBM 1
02D	67	22258491.284	1151373.407	356.97	0.00	0.00	top LBM, hub 2x2 stake

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
02D	68	22258491.348	1151373.504	356.53	0.08	0.08	base LBM, hub 2x2 stake
02D	69	22258488.883	1151386.600	356.90	13.39	0.68	high-water mark at base of tree
02D	70	22258488.200	1151390.397	355.38	17.24	0.88	LB
02D	73	22258488.315	1151391.294	353.91	18.09	1.20	WSEL LEW
02D	74	22258488.111	1151392.183	350.83	19.00	1.21	bottom of streambed, left side
02D	75	22258487.015	1151394.130	351.61	21.15	0.58	streambed
02D	76	22258486.294	1151397.055	352.40	24.16	0.55	streambed
02D	77	22258485.092	1151399.108	353.73	26.44	-0.15	LE of island
02D	78	22258483.707	1151403.677	354.33	31.20	-0.45	top of island
02D	79	22258482.053	1151409.159	353.88	36.92	-0.81	RE of island
02D	80	22258480.246	1151414.381	353.69	42.41	-1.37	bottom of streambed, right side
02D	81	22258479.297	1151420.011	354.61	48.11	-1.01	REW and surface
02D	82	22258479.307	1151424.072	355.77	52.06	-0.07	RB
02D	83	22258478.349	1151428.469	357.12	56.56	0.00	more of RB - flood plain
02D	71	22258476.475	1151436.428	358.32	64.74	0.00	LB
03D	84	22258435.994	1151372.387	359.85	0.00	0.00	top of hub LBM 2x2 stake
03D	85	22258435.905	1151372.434	359.42	-0.01	0.10	base of hub LMB 2x2 stake
03D	86	22258438.428	1151376.365	359.12	4.66	0.07	LB on the trail
03D	87	22258441.464	1151381.516	359.74	10.64	0.26	LB
03D	88	22258443.385	1151382.644	355.93	12.62	-0.76	midslope LB
03D	89	22258444.993	1151384.244	355.08	14.83	-1.26	base of LB
03D	90	22258445.264	1151384.373	354.52	15.08	-1.42	WSEL LEW
03D	91	22258446.475	1151385.572	354.23	16.75	-1.80	L channel
03D	92	22258450.725	1151393.542	354.71	25.75	-1.13	left side of channel btwn fallen trees
03D	93	22258452.284	1151395.916	354.34	28.59	-1.18	left side of channel btwn fallen trees
03D	94	22258454.475	1151400.099	353.46	33.30	-0.80	thalweg
03D	95	22258456.916	1151405.476	353.77	39.15	0.02	mid channel
03D	96	22258459.786	1151411.091	354.04	45.43	0.59	right side of channel
03D	97	22258462.872	1151416.532	353.91	51.68	0.90	right side of channel
03D	98	22258461.894	1151419.601	354.92	53.75	3.36	top of erosion pin, WSEL REW
03D	99	22258467.210	1151423.159	355.49	59.60	0.78	right side of bank
03D	100	22258471.375	1151429.426	355.90	67.12	0.61	right side of bank
03D	156	22258476.548	1151436.463	358.31	75.83	0.00	Mainhub D (top RBM)
04D	101	22258410.608	1151431.199	361.31	0.00	0.00	top of hub, LBM, 2x2 stake
04D	102	22258410.636	1151431.301	360.75	0.04	0.10	base of hub, LBM, 2x2 stake
04D	103	22258414.100	1151431.171	360.21	3.48	-0.31	top of LB
04D	104	22258415.586	1151431.726	358.60	5.01	0.13	midslope LB
04D	105	22258417.056	1151431.874	357.09	6.48	0.16	base of LB
04D	107	22258417.872	1151432.208	355.32	7.32	0.43	WSEL LB

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
04D	108	22258418.332	1151431.940	353.49	7.76	0.12	bottom of left side channel
04D	109	22258422.122	1151431.988	352.32	11.54	-0.13	bottom of left side channel
04D	110	22258426.354	1151433.057	353.48	15.84	0.60	bottom of mid channel
04D	111	22258431.941	1151432.567	354.59	21.37	-0.33	channel
04D	112	22258436.632	1151432.979	354.86	26.08	-0.30	left edge of island WSEL
04D	113	22258437.589	1151432.505	355.23	27.00	-0.84	LB of island
04D	114	22258443.232	1151433.173	355.98	32.68	-0.63	top of island
04D	115	22258450.957	1151433.892	355.04	40.44	-0.53	right edge of island WSEL
04D	116	22258453.694	1151433.659	354.79	43.15	-0.98	mid channel of right side channel
04D	117	22258457.492	1151434.177	355.24	46.97	-0.76	WSEL REW
04D	118	22258459.306	1151434.788	355.75	48.83	-0.30	right side of bank
04D	119	22258462.813	1151435.288	356.11	52.36	-0.08	RB of flood plain
04D	156	22258476.548	1151436.463	358.31	66.15	-0.00	Mainhub D (top RBM)
05D	120	22258427.936	1151482.042	363.38	0.00	0.00	top of hub, LBM, 2x2 stake
05D	121	22258428.031	1151482.098	362.74	0.03	0.11	base of hub, LBM, 2x2 stake
05D	122	22258440.261	1151470.763	361.31	16.71	0.20	top edge of LB
05D	123	22258441.662	1151469.802	358.55	18.38	0.46	midslope of LB
05D	124	22258443.598	1151470.295	355.60	19.46	2.14	WSEL
05D	125	22258444.889	1151468.706	354.29	21.49	1.87	bottom of left side of channel
05D	126	22258448.395	1151465.937	354.70	25.94	2.25	bottom of left side of channel
05D	127	22258450.020	1151464.785	355.11	27.91	2.52	bottom of left side of channel
05D	128	22258452.888	1151461.844	354.77	32.02	2.33	bottom of mid channel
05D	129	22258457.616	1151457.630	354.88	38.35	2.49	thalweg
05D	130	22258461.235	1151454.461	355.00	43.16	2.66	right side of channel
05D	131	22258464.140	1151450.839	355.68	47.75	2.00	right side of channel
05D	132	22258466.789	1151447.915	355.86	51.69	1.68	WSEL REW
05D	133	22258468.270	1151445.486	356.46	54.43	0.92	RB
05D	134	22258470.808	1151442.632	355.97	58.23	0.57	RB
05D	156	22258476.548	1151436.463	358.31	66.64	0.00	Mainhub D (top RBM)
06D	140	22258468.021	1151523.641	362.98	0.00	0.00	top of hub, LBM, 2x2 stake
06D	141	22258468.169	1151523.656	362.38	0.05	0.14	base of hub, LBM, 2x2 stake
06D	142	22258474.552	1151516.952	360.99	8.82	3.11	top of LB
06D	143	22258476.819	1151513.923	358.74	12.52	3.89	mid slope of bank
06D	144	22258478.561	1151509.602	356.92	17.17	3.65	base of slope
06D	145	22258482.173	1151501.553	357.17	25.99	3.54	LB bottom part
06D	146	22258483.311	1151498.916	356.57	28.86	3.46	LB
06D	147	22258486.095	1151492.599	356.34	35.77	3.33	WSEL LEW
06D	148	22258487.921	1151487.919	355.90	40.78	3.01	left side of channel
06D	149	22258490.711	1151483.190	355.86	46.24	3.55	mid channel
06D	150	22258492.438	1151477.997	355.43	51.68	2.93	right side of channel

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
06D	151	22258493.332	1151472.274	354.75	57.25	1.33	thalweg
06D	152	22258495.604	1151468.051	355.95	62.04	1.62	right channel near bank
06D	153	22258495.831	1151467.760	356.36	62.39	1.70	water surf right side
06D	155	22258496.149	1151466.538	357.07	63.64	1.48	top of RB
06D	135	22258498.788	1151457.348	358.51	73.08	0.00	top of RBM
07D	157	22258467.982	1151523.445	362.96	0.00	0.00	top of hub, 2x2 stake
07D	158	22258468.029	1151523.556	362.36	-0.02	0.12	base of hub, 2x2 stake
07D	159	22258469.818	1151522.803	362.91	1.89	0.47	top of LB
07D	160	22258471.907	1151521.352	361.69	4.43	0.41	(no comment noted)
07D	161	22258476.481	1151517.785	359.17	10.21	-0.05	mid slope of LB
07D	162	22258489.811	1151509.645	357.33	25.82	0.48	LB
07D	163	22258500.836	1151503.386	357.07	38.47	1.32	edge of veg line
07D	164	22258515.478	1151493.634	356.86	56.06	1.23	L sandbar
07D	165	22258520.150	1151490.303	356.50	61.80	1.01	WSEL LEW
07D	166	22258524.164	1151488.651	356.00	66.06	1.84	left side of channel
07D	167	22258528.688	1151486.257	355.56	71.15	2.33	left side of channel
07D	168	22258533.598	1151484.259	354.88	76.35	3.36	thalweg
07D	169	22258537.126	1151481.699	356.11	80.71	3.17	right side of channel
07D	170	22258539.843	1151479.561	356.10	84.15	2.87	right side of channel
07D	171	22258542.157	1151477.198	356.62	87.38	2.17	WSEL REW
07D	172	22258542.712	1151476.477	356.82	88.24	1.88	RB
07D	174	22258545.020	1151474.476	359.32	91.27	1.48	midslope right bank
07D	175	22258549.225	1151471.265	362.39	96.55	1.11	top of RB
07D	176	22258552.474	1151468.384	362.56	100.85	0.49	top of (illegible) RB
07D	137	22258559.169	1151463.392	363.23	109.18	0.00	top of RBM
08D	180	22258536.098	1151541.694	359.12	9.96	0.00	top LBM, 2x2 stake
08D	181	22258536.177	1151541.876	358.38	9.96	0.20	base LBM, 2x2 stake
08D	182	22258543.078	1151537.637	357.90	17.98	-0.91	LB
08D	183	22258544.609	1151536.473	357.18	19.85	-1.36	L edge line of LB
08D	184	22258551.240	1151533.334	357.78	27.19	-1.57	top of sandbar
08D	185	22258558.303	1151530.890	357.25	34.64	-0.96	LEW WSEL
08D	186	22258560.847	1151529.855	356.78	37.38	-0.89	left side of channel
08D	187	22258564.397	1151528.803	356.44	41.05	-0.42	left side of channel
08D	188	22258567.655	1151526.879	356.03	44.81	-0.87	mid channel
08D	189	22258572.134	1151525.018	355.47	49.66	-0.78	thalweg
08D	190	22258574.253	1151523.204	356.95	52.33	-1.59	right side of channel
08D	191	22258575.250	1151522.694	357.29	53.45	-1.65	REW WSEL
08D	calc'd	22258579.605	1151521.627	360.58	57.86	-0.88	hub RBM
08D	193	22258586.403	1151519.598	361.95	64.90	0.00	high-water mark base white birch
09D	198	22258548.875	1151574.040	360.16	0.00	0.00	top of LBM, 2x2 stake
09D	199	22258548.842	1151574.201	359.43	-0.04	0.16	base of LBM, 2x2 stake
09D	200	22258552.581	1151574.934	359.17	3.69	0.95	midway through trail on left side
09D	201	22258559.071	1151575.918	359.72	10.17	2.04	LB
09D	203	22258564.415	1151574.891	358.13	15.53	1.10	LEW WSEL
09D	204	22258567.769	1151574.830	357.27	18.88	1.09	L channel
09D	205	22258574.491	1151575.536	357.18	25.59	1.90	mid channel
09D	206	22258580.359	1151575.247	357.25	31.46	1.70	R side of channel

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
09D	207	22258586.408	1151575.111	358.14	37.51	1.66	REW WSEL
09D	208	22258591.958	1151575.069	358.39	43.06	1.71	top of sandbar
09D	209	22258600.654	1151574.612	357.99	51.76	1.39	LEW of R channel
09D	210	22258601.769	1151574.668	357.98	52.88	1.46	midpoint of side channel/R side
09D	211	22258602.966	1151574.620	358.07	54.08	1.43	REW of side channel/R side
09D	212	22258605.211	1151575.049	358.15	56.31	1.90	RB
09D	213	22258610.229	1151574.565	357.83	61.34	1.49	RB
09D	194	22258618.028	1151572.948	360.32	69.16	-0.00	top of RBM
10D	215	22258553.384	1151608.753	361.07	0.00	0.00	top of LBM, 2x2 stake
10D	216	22258553.413	1151609.132	360.47	0.15	-0.35	base of LBM, 2x2 stake
10D	217	22258558.170	1151611.238	359.34	5.33	-0.81	LB
10D	219	22258559.284	1151612.734	358.61	6.87	-1.87	LEW WSEL
10D	220	22258559.733	1151613.093	357.57	7.41	-2.07	L channel depth
10D	221	22258563.410	1151617.321	357.34	12.25	-4.89	channel bottom
10D	222	22258567.688	1151620.916	357.63	17.46	-6.91	midpoint channel bottom
10D	223	22258572.043	1151622.796	356.93	22.19	-7.29	channel bottom
10D	224	22258575.723	1151624.975	356.46	26.37	-8.17	RS channel bottom
10D	225	22258579.539	1151625.734	357.61	30.23	-7.66	RS channel
10D	226	22258583.438	1151624.415	358.52	33.50	-5.16	REW WSEL
10D	227	22258599.674	1151625.876	359.70	49.34	-1.31	R sand bar
10D	228	22258606.232	1151627.435	359.45	56.05	-0.68	R veg line
10D	229	22258611.684	1151628.642	361.70	61.60	-0.07	base of RBM
10D	230	22258611.561	1151628.528	362.50	61.45	0.00	top of RBM
11D	245	22258536.061	1151639.543	361.39	0.00	0.00	top of LBM
11D	244	22258536.152	1151639.609	360.76	0.12	-0.01	base of LBM
11D	243	22258536.662	1151642.601	360.44	2.10	-2.31	LB
11D	241	22258541.202	1151645.833	359.01	7.66	-2.72	LEW WSEL
11D	239	22258547.831	1151651.748	358.22	16.39	-4.36	L side of channel
11D	238	22258553.998	1151654.705	358.22	23.20	-3.70	mid channel
11D	237	22258558.939	1151656.078	358.64	28.14	-2.32	R side of channel
11D	236	22258570.708	1151658.397	358.12	39.41	1.79	R side of channel
11D	235	22258571.172	1151659.051	359.10	40.14	1.47	erosion pin, REW WSEL
11D	234	22258572.572	1151659.299	359.40	41.47	1.98	RB - bottom edge
11D	233	22258574.994	1151661.420	360.32	44.64	1.42	mid slope of RB
11D	232	22258578.091	1151664.982	361.67	49.13	-0.03	base of RBM, 2x2 stake
11D	231	22258578.000	1151664.895	362.27	49.01	0.00	top of RBM, 2x2 stake
NA	903	22258680.041	1150406.826	341.24	NA	NA	Mainhub B
NA	766	22258650.786	1150948.424	349.57	NA	NA	Mainhub C
NA	58	22258535.172	1151393.029	353.52	NA	NA	on erosion pin
NA	72	22258488.834	1151390.855	355.23	NA	NA	erosion pin - on top
NA	98	22258461.894	1151419.601	354.92	NA	NA	top of erosion pin, WSEL REW
NA	106	22258417.471	1151431.817	356.78	NA	NA	top of erosion pin
NA	154	22258497.312	1151468.257	356.56	NA	NA	erosion pin right side
NA	173	22258543.186	1151475.440	358.53	NA	NA	erosion pin

Appendix 1. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 1999—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
NA	192	22258575.554	1151522.429	358.25	NA	NA	erosion pin - partway up bank
NA	202	22258561.215	1151576.532	359.08	NA	NA	top of erosion pin/LB
NA	214	22258611.970	1151573.845	359.03	NA	NA	erosion pin/RB
NA	218	22258558.772	1151612.645	358.75	NA	NA	erosion pin
NA	242	22258541.049	1151645.528	359.48	NA	NA	erosion pin
NA	235	22258571.172	1151659.051	359.10	NA	NA	erosion pin, REW WSEL

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000

Dates of survey, May 24, 26; September 26; October 2, 6, 10, and 11, 2000. The following abbreviations may be used in combinations, and a single point may have more than one comment:

ID	identification	MON	monument
FT	foot	BASE	base
FP	footpath	BAR	subaerial bar
L	left	SC	side channel
R	right	WSEL	water surface elevation
BANK	bank	HWM	high-water mark (small marker nailed to trees, used as a monument)
EOW	edge of water	EP	erosion pin
WETBED	streambed within the wetted channel	HUB	monument for locations other than transect ends
DRYBED	streambed outside of the wetted channel	MAINHUB	monument consisting of 1-inch-diameter, 4-foot-long iron rod
THAL	thalweg	NA	not applicable
BKFL	bankfull elevation	SEC	transect
TOB	top of bank	WD	woody debris
BOB	base of bank	SH	spot height

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
01B	REACH B7189	22258841.129	1150133.866	336.66	0.00	0.00	1SEC FP
01B	REACH B7190	22258846.962	1150142.446	334.34	10.37	-0.08	1SEC BANK_L
01B	REACH B7191	22258854.505	1150153.499	333.55	23.76	-0.20	1SEC BANK_L
01B	REACH B7192	22258855.559	1150154.992	331.50	25.58	-0.25	1SEC BKFL_L
01B	REACH B7194	22258856.929	1150157.494	330.59	28.42	0.00	1SEC LEOW
01B	REACH B7195	22258858.244	1150160.041	329.92	31.27	0.33	1SEC WETBED
01B	REACH B7196	22258861.140	1150163.735	329.57	35.95	-0.03	1SEC WETBED
01B	REACH B7197	22258862.245	1150165.471	329.72	38.01	0.02	1SEC THAL
01B	REACH B7198	22258864.827	1150169.489	329.61	42.79	0.11	1SEC WETBED
01B	REACH B7199	22258868.021	1150174.835	329.74	49.00	0.42	1SEC WETBED
01B	REACH B7200	22258870.185	1150178.679	330.54	53.40	0.76	1SEC REOW
01B	REACH B7201	22258871.424	1150179.854	331.09	55.07	0.39	1SEC BKFL_R
01B	REACH B7203	22258872.246	1150181.150	331.57	56.60	0.42	1SEC BANK_R
01B	REACH B7204	22258876.675	1150186.904	333.16	63.85	-0.06	1SEC TOBR
01B	REACH B7205	22258881.454	1150194.384	333.72	72.72	0.13	1SEC MON-BASE
01B	REACH B7206	22258881.591	1150194.359	334.24	72.78	0.00	1SEC MON_R
02B	REACH B7168	22258802.151	1150174.878	337.49	0.00	0.00	2SEC MON_L
02B	REACH B7169	22258802.239	1150175.060	336.99	0.19	0.06	2SEC MON-BASE
02B	REACH B7170	22258806.142	1150178.516	336.71	5.39	-0.32	2SEC TOBL
02B	REACH B7172	22258809.780	1150182.041	333.47	10.45	-0.46	2SEC BANK_L
02B	REACH B7173	22258813.622	1150186.340	333.93	16.21	-0.20	2SEC BANK_L
02B	REACH B7174	22258814.556	1150186.948	331.87	17.30	-0.45	2SEC BKFL_L
02B	REACH B7175	22258817.843	1150190.985	331.10	22.49	0.02	2SEC LEOW
02B	REACH B7176	22258822.235	1150194.933	330.49	28.38	-0.37	2SEC WETBED
02B	REACH B7177	22258825.504	1150198.478	330.17	33.20	-0.23	2SEC WETBED
02B	REACH B7178	22258827.476	1150200.264	330.07	35.86	-0.39	2SEC THAL
02B	REACH B7179	22258830.548	1150203.641	330.05	40.42	-0.23	2SEC WETBED
02B	REACH B7180	22258832.613	1150205.694	329.98	43.33	-0.28	2SEC WETBED
02B	REACH B7181	22258835.610	1150208.940	330.48	47.75	-0.16	2SEC WETBED
02B	REACH B7182	22258835.817	1150208.979	331.10	47.92	-0.28	2SEC REOW
02B	REACH B7183	22258835.883	1150208.928	331.44	47.93	-0.36	2SEC BKFL_R
02B	REACH B7184	22258836.957	1150210.360	333.32	49.70	-0.13	2SEC TOBR
02B	REACH B7185	22258838.843	1150212.153	334.46	52.30	-0.22	2SEC BANK_R
02B	REACH B7186	22258842.312	1150215.753	334.96	57.30	-0.19	2SEC BANK_R
02B	REACH B7187	22258843.515	1150217.018	336.42	59.05	-0.17	2SEC MON-BASE

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
02B	REACH B7188	22258843.511	1150217.258	337.04	59.22	-0.00	2SEC MON_R
03B	REACH B7146	22258780.208	1150210.425	338.21	0.00	0.00	3SEC MON_L
03B	REACH B7147	22258780.290	1150210.516	337.88	0.12	-0.01	3SEC MON-BASE
03B	REACH B7148	22258781.182	1150211.436	337.57	1.40	-0.11	3SEC TOBL
03B	REACH B7149	22258786.551	1150218.760	332.06	10.47	0.38	3SEC BKFL_L
03B	REACH B7150	22258786.595	1150218.751	331.42	10.49	0.34	3SEC LEOW
03B	REACH B7152	22258787.528	1150219.492	330.76	11.65	0.09	3SEC WETBED
03B	REACH B7153	22258790.082	1150222.715	330.33	15.76	0.16	3SEC THAL
03B	REACH B7154	22258794.630	1150227.808	330.58	22.59	-0.12	3SEC WETBED
03B	REACH B7155	22258798.076	1150232.098	330.80	28.09	-0.06	3SEC WETBED
03B	REACH B7156	22258801.449	1150236.013	331.01	33.25	-0.19	3SEC WETBED
03B	REACH B7157	22258805.266	1150240.671	331.40	39.28	-0.18	3SEC REOW
03B	REACH B7158	22258806.507	1150241.830	332.11	40.96	-0.41	3SEC BKFL_R
03B	REACH B7160	22258807.620	1150243.098	332.86	42.65	-0.46	3SEC BAR
03B	REACH B7161	22258812.556	1150249.016	332.96	50.35	-0.52	3SEC BOB_R
03B	REACH B7162	22258818.085	1150255.397	338.70	58.79	-0.75	3SEC TOBR
03B	REACH B7163	22258823.261	1150262.607	337.80	67.65	-0.18	3SEC FP
03B	REACH B7164	22258824.553	1150264.646	338.47	70.05	0.12	3SEC MON-BASE
03B	REACH B7165	22258824.772	1150264.724	339.08	70.24	-0.00	3SEC MON_R
04B	REACH B7126	22258739.772	1150221.917	339.64	0.00	0.00	4SEC MON_L
04B	REACH B7127	22258739.786	1150222.057	339.05	0.12	0.07	4SEC MON-BASE
04B	REACH B7128	22258743.517	1150228.076	339.08	7.17	0.79	4SEC BANK_L
04B	REACH B7129	22258747.207	1150232.048	337.50	12.56	0.28	4SEC TOBL
04B	REACH B7130	22258748.953	1150235.624	332.53	16.46	1.08	4SEC BKFL_L
04B	REACH B7131	22258748.926	1150235.623	331.87	16.44	1.10	4SEC LEOW
04B	REACH B7132	22258753.651	1150241.870	331.18	24.28	1.17	4SEC WETBED
04B	REACH B7133	22258756.262	1150245.791	330.91	28.98	1.49	4SEC WETBED
04B	REACH B7134	22258759.085	1150249.184	331.15	33.39	1.32	4SEC WETBED
04B	REACH B7135	22258761.687	1150252.955	331.02	37.96	1.56	4SEC WETBED
04B	REACH B7136	22258764.163	1150255.458	330.84	41.46	1.12	4SEC THAL
04B	REACH B7137	22258766.798	1150259.021	331.00	45.89	1.21	4SEC WETBED
04B	REACH B7138	22258768.778	1150261.647	331.78	49.18	1.24	4SEC REOW
04B	REACH B7139	22258770.489	1150264.104	332.80	52.17	1.38	4SEC BKFL_R
04B	REACH B7140	22258776.029	1150271.410	333.02	61.34	1.44	4SEC BAR
04B	REACH B7141	22258784.046	1150280.705	332.43	73.59	0.76	4SEC BOB_R
04B	REACH B7142	22258789.021	1150286.491	338.73	81.21	0.34	4SEC TOBR
04B	REACH B7143	22258795.043	1150293.735	338.54	90.62	-0.01	4SEC BANK_R
04B	REACH B7144	22258802.278	1150303.238	339.33	102.57	0.05	4SEC MON-BASE
04B	REACH B7145	22258802.396	1150303.313	339.81	102.70	0.00	4SEC MON_R
05B	REACH B7100	22258700.310	1150242.188	340.13	0.00	0.00	5SEC MON_L
05B	REACH B7101	22258700.427	1150242.216	339.54	0.11	-0.04	5SEC MON-BASE
05B	REACH B7102	22258706.861	1150246.226	339.01	7.69	0.10	5SEC TOBL
05B	REACH B7103	22258708.764	1150247.501	336.22	9.98	0.22	5SEC BANK_L
05B	REACH B7104	22258719.248	1150254.061	334.96	22.35	0.46	5SEC BANK_L
05B	REACH B7105	22258720.568	1150254.752	332.73	23.83	0.37	5SEC BANK_L
05B	REACH B7106	22258725.730	1150258.040	333.05	29.95	0.54	5SEC BKFL_L
05B	REACH B7107	22258726.276	1150258.817	332.06	30.82	0.93	5SEC LEOW
05B	REACH B7108	22258726.092	1150258.627	330.21	30.56	0.86	5SEC WETBED

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
05B	REACH B7109	22258732.078	1150261.761	330.48	37.31	0.47	5SEC WETBED
05B	REACH B7110	22258736.499	1150264.332	330.41	42.42	0.41	5SEC THAL
05B	REACH B7111	22258739.244	1150266.159	330.55	45.72	0.56	5SEC WETBED
05B	REACH B7112	22258745.812	1150269.842	331.33	53.25	0.35	5SEC WETBED
05B	REACH B7113	22258750.700	1150273.130	331.00	59.13	0.66	5SEC WETBED
05B	REACH B7114	22258755.493	1150275.420	331.90	64.42	0.16	5SEC REOW
05B	REACH B7115	22258758.942	1150277.504	332.77	68.45	0.18	5SEC BKFL_R
05B	REACH B7116	22258767.200	1150282.146	333.08	77.92	-0.08	5SEC BAR
05B	REACH B7117	22258779.194	1150289.044	332.79	91.75	-0.33	5SEC BOB_R
05B	REACH B7118	22258785.409	1150292.995	339.07	99.11	-0.13	5SEC TOBR
05B	REACH B7119	22258802.317	1150303.331	339.34	118.93	0.05	5SEC MON-BASE
05B	REACH B7120	22258802.367	1150303.300	339.81	118.96	0.00	5SEC MON_R
06B	REACH B7074	22258669.113	1150312.630	340.15	0.00	0.00	6SEC MON_L
06B	REACH B7075	22258669.236	1150312.597	339.62	0.12	-0.02	6SEC MON-BASE
06B	REACH B7076	22258690.712	1150310.363	339.61	21.70	-0.76	6SEC TOBL
06B	REACH B7077	22258698.075	1150310.058	337.26	29.07	-0.56	6SEC BANK_L
06B	REACH B7124	22258703.574	1150308.716	334.43	34.65	-1.51	6SEC BKFL_L
06B	REACH B7079	22258704.491	1150309.231	332.69	35.53	-0.94	6SEC LEOW
06B	REACH B7080	22258705.889	1150309.341	332.07	36.92	-0.73	6SEC WETBED
06B	REACH B7081	22258710.627	1150308.729	331.56	41.68	-1.01	6SEC WETBED
06B	REACH B7082	22258714.452	1150308.549	331.53	45.51	-0.93	6SEC WETBED
06B	REACH B7083	22258716.614	1150308.420	330.51	47.68	-0.90	6SEC THAL
06B	REACH B7084	22258719.450	1150307.714	332.59	50.56	-1.41	6SEC REOW
06B	REACH B7125	22258720.087	1150308.502	334.19	51.14	-0.58	6SEC BKFL_R
06B	REACH B7085	22258720.990	1150307.758	333.64	52.09	-1.26	6SEC BAR
06B	REACH B7086	22258728.896	1150307.641	333.47	59.99	-0.83	6SEC BAR
06B	REACH B7087	22258735.541	1150307.447	331.94	66.63	-0.56	6SEC BAR
06B	REACH B7088	22258739.696	1150306.977	333.32	70.81	-0.74	6SEC BAR
06B	REACH B7089	22258743.042	1150306.701	332.84	74.16	-0.79	6SEC BAR
06B	REACH B7090	22258753.627	1150306.276	332.09	84.75	-0.47	6SEC LEOW SC
06B	REACH B7091	22258760.667	1150305.868	331.61	91.80	-0.39	6SEC THAL SC
06B	REACH B7092	22258763.982	1150305.704	332.16	95.12	-0.33	6SEC REOW SC
06B	REACH B7093	22258776.719	1150304.888	332.53	107.88	-0.26	6SEC DRYBED
06B	REACH B7094	22258787.283	1150304.472	338.32	118.45	0.06	6SEC TOBR
06B	REACH B7095	22258802.296	1150303.490	339.30	133.50	0.12	6SEC MON-BASE
06B	REACH B7096	22258802.410	1150303.360	339.81	133.62	0.00	6SEC MON_R
07B	REACH B7225	22258701.531	1150367.732	341.03	0.00	0.00	7SEC MON_L
07B	REACH B7226	22258701.623	1150367.677	340.11	0.11	0.00	7SEC MON-BASE
07B	REACH B7227	22258703.858	1150366.189	339.25	2.79	-0.05	7SEC TOBL
07B	REACH B7228	22258705.160	1150366.004	335.81	3.99	0.50	7SEC BANK_L
07B	REACH B7229	22258708.956	1150363.888	334.51	8.33	0.76	7SEC BKFL_L
07B	REACH B7230	22258711.274	1150362.462	333.60	11.05	0.80	7SEC LEOW
07B	REACH B7231	22258711.647	1150362.300	332.65	11.45	0.87	7SEC WETBED
07B	REACH B7232	22258714.360	1150360.307	332.65	14.81	0.65	7SEC THAL
07B	REACH B7233	22258719.163	1150357.465	332.57	20.39	0.84	7SEC WETBED
07B	REACH B7235	22258721.754	1150355.715	332.65	23.51	0.76	7SEC WETBED
07B	REACH B7236	22258726.521	1150353.019	333.00	28.98	1.06	7SEC WETBED

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
07B	REACH B7237	22258729.552	1150351.001	333.59	32.62	0.99	7SEC REOW
07B	REACH B7238	22258730.604	1150349.894	334.41	34.10	0.62	7SEC BKFL_R
07B	REACH B7239	22258734.804	1150346.715	334.22	39.35	0.20	7SEC BAR
07B	REACH B7240	22258738.870	1150344.510	333.80	43.97	0.53	7SEC SC LEOW
07B	REACH B7241	22258740.567	1150343.008	333.36	46.21	0.18	7SEC SC THAL
07B	REACH B7242	22258745.096	1150340.526	333.75	51.36	0.53	7SEC SC REOW
07B	REACH B7243	22258749.010	1150338.758	334.89	55.61	1.15	7SEC BAR
07B	REACH B7244	22258752.611	1150337.738	333.82	59.19	2.23	7SEC BAR
07B	REACH B7245	22258758.469	1150334.215	334.20	66.03	2.41	7SEC BAR
07B	REACH B7246	22258761.591	1150332.773	333.91	69.43	2.88	7SEC SC LEOW
07B	REACH B7247	22258765.719	1150330.131	333.25	74.33	2.87	7SEC SC THAL
07B	REACH B7248	22258774.432	1150323.746	333.83	85.11	2.18	7SEC SC REOW
07B	REACH B7249	22258783.133	1150318.779	334.07	95.12	2.68	7SEC BAR
07B	REACH B7254	22258787.686	1150315.361	333.72	100.80	2.25	7SEC SC LEOW
07B	REACH B7255	22258789.634	1150314.347	333.23	102.99	2.45	7SEC SC THAL
07B	REACH B7250	22258791.624	1150313.394	333.84	105.18	2.72	7SEC SC REOW
07B	REACH B7251	22258794.078	1150311.563	338.65	108.23	2.49	7SEC TOBR
07B	REACH B7252	22258802.263	1150303.238	339.28	119.61	-0.11	7SEC MON-BASE
07B	REACH B7253	22258802.350	1150303.318	339.82	119.64	0.00	7SEC MON_R
08B	REACH B7054	22258701.642	1150367.655	340.21	0.00	0.00	8SEC MON-BASE
08B	REACH B7055	22258703.245	1150367.800	339.75	1.60	-0.18	8SEC TOBL
08B	REACH B7056	22258703.959	1150367.477	337.28	2.23	-0.64	8SEC BANK_L
08B	REACH B7057	22258707.204	1150368.633	339.56	5.64	-0.17	8SEC BANK_L
08B	REACH B7058	22258708.544	1150368.731	334.37	6.98	-0.35	8SEC BAR
08B	REACH B7059	22258713.588	1150369.786	334.31	12.13	-0.34	8SEC BAR
08B	REACH B7060	22258720.291	1150371.234	334.07	18.99	-0.28	8SEC BAR
08B	REACH B7061	22258722.959	1150371.840	334.52	21.72	-0.23	8SEC BAR
08B	REACH B7062	22258732.681	1150373.919	334.09	31.66	-0.16	8SEC BAR
08B	REACH B7063	22258745.100	1150376.084	333.86	44.26	-0.56	8SEC LEOW
08B	REACH B7064	22258752.254	1150377.570	333.66	51.57	-0.56	8SEC WETBED
08B	REACH B7065	22258753.258	1150377.718	334.18	52.58	-0.62	8SEC WSEL
08B	REACH B7066	22258759.783	1150378.917	333.68	59.22	-0.77	8SEC WETBED
08B	REACH B7067	22258767.008	1150380.358	333.16	66.58	-0.83	8SEC THAL
08B	REACH B7068	22258771.472	1150381.164	333.29	71.12	-0.94	8SEC WETBED
08B	REACH B7069	22258773.346	1150381.555	334.16	73.03	-0.94	8SEC REOW
08B	REACH B7070	22258773.750	1150381.505	334.94	73.42	-1.07	8SEC BKFL_R
08B	REACH B7071	22258778.423	1150382.410	338.73	78.18	-1.13	8SEC TOBR
08B	REACH B7072	22258789.345	1150385.900	338.34	89.58	0.07	8SEC MON-BASE
08B	REACH B7073	22258789.398	1150385.841	338.76	89.62	0.00	8SEC MON_R
09B	REACH B7040	22258695.556	1150390.608	342.06	0.00	0.00	9SEC MON_L
09B	REACH B7041	22258695.691	1150390.588	341.31	0.11	-0.08	9SEC MON-BASE
09B	REACH B7042	22258705.459	1150395.833	340.29	11.19	0.44	9SEC TOBL

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
09B	REACH B7218	22258715.527	1150401.800	335.40	22.85	1.47	9SEC BKFL_L
09B	REACH B7044	22258723.371	1150404.894	335.31	31.26	0.88	9SEC BAR
09B	REACH B7045	22258729.052	1150407.583	335.33	37.54	0.85	9SEC BAR TOP
09B	REACH B7219	22258736.476	1150410.561	334.76	45.52	0.33	9SEC LEOW
09B	REACH B7046	22258736.667	1150410.679	334.69	45.75	0.35	9SEC LEOW
09B	REACH B7047	22258741.319	1150413.266	334.13	51.06	0.68	9SEC WETBED
09B	REACH B7048	22258746.057	1150415.595	334.05	56.34	0.73	9SEC WETBED
09B	REACH B7049	22258749.089	1150416.725	333.76	59.56	0.44	9SEC WETBED
09B	REACH B7050	22258754.564	1150419.018	333.19	65.49	0.15	9SEC THAL
09B	REACH B7051	22258756.306	1150419.715	333.05	67.36	0.02	9SEC WETBED
09B	REACH B7220	22258756.440	1150419.565	334.67	67.42	-0.17	9SEC REOW
09B	REACH B7221	22258757.141	1150419.488	335.38	68.02	-0.54	9SEC BKFL_R
09B	REACH B7222	22258760.609	1150419.987	338.07	71.36	-1.59	9SEC TOBR
09B	REACH B7223	22258769.487	1150425.835	339.96	81.89	-0.15	9SEC MON-BASE
09B	REACH B7224	22258769.517	1150426.014	340.62	82.00	-0.00	9SEC MON_R
10B	REACH B7018	22258703.962	1150417.449	341.37	0.00	0.00	10SEC MON_L
10B	REACH B7019	22258704.010	1150417.538	341.04	0.10	0.01	10SEC MON-BASE
10B	REACH B7020	22258705.169	1150419.335	340.44	2.24	0.10	10SEC TOBL
10B	REACH B7021	22258707.432	1150422.981	335.60	6.52	0.35	10SEC BKFL_L
10B	REACH B7022	22258707.595	1150422.968	335.04	6.60	0.21	10SEC LEOW
10B	REACH B7023	22258707.618	1150422.947	334.43	6.60	0.18	10SEC WET-BED
10B	REACH B7024	22258710.112	1150426.857	334.00	11.23	0.39	10SEC WET-BED
10B	REACH B7025	22258712.201	1150430.237	333.78	15.20	0.63	10SEC THAL
10B	REACH B7026	22258714.460	1150433.400	334.33	19.09	0.61	10SEC WET-BED
10B	REACH B7027	22258717.347	1150437.557	334.34	24.15	0.64	10SEC WET-BED
10B	REACH B7028	22258721.079	1150443.036	335.02	30.78	0.75	10SEC REOW
10B	REACH B7029	22258722.876	1150445.510	335.82	33.83	0.71	10SEC BAR
10B	REACH B7217	22258724.955	1150446.858	335.96	36.13	-0.22	10SEC BKFL_R
10B	REACH B7030	22258729.633	1150455.717	335.62	46.07	1.06	10SEC BAR
10B	REACH B7031	22258737.569	1150467.030	336.17	59.89	1.10	10SEC BAR
10B	REACH B7032	22258743.684	1150474.766	334.89	69.73	0.55	10SEC SC LEOW
10B	REACH B7033	22258744.573	1150475.991	334.28	71.25	0.53	10SEC SC THAL
10B	REACH B7034	22258745.746	1150477.777	334.83	73.38	0.60	10SEC SC REOW BOB_R
10B	REACH B7035	22258748.720	1150481.126	340.17	77.83	0.10	10SEC TOBR
10B	REACH B7036	22258751.163	1150484.597	340.83	82.08	0.11	10SEC MON-BASE
10B	REACH B7037	22258751.268	1150484.564	341.02	82.11	0.00	10SEC MON_R
11B	REACH B7211	22258649.576	1150411.802	343.10	0.00	0.00	11SEC MON_L
11B	REACH B7212	22258649.761	1150411.836	342.57	0.13	-0.13	11SEC MON-BASE
11B	REACH B7213	22258656.344	1150421.235	342.32	11.61	-0.09	11SEC TOBL
11B	REACH B7002	22258659.168	1150425.744	336.73	16.92	0.21	11SEC BKFL_L

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
11B	REACH B7003	22258659.450	1150425.290	335.75	16.71	-0.28	11SEC LEOW
11B	REACH B7004	22258659.287	1150425.610	335.46	16.88	0.03	11SEC WET-BED
11B	REACH B7214	22258659.984	1150429.925	333.39	20.81	1.95	11SEC WET-BED
11B	REACH B7005	22258665.274	1150435.054	335.13	28.05	0.59	11SEC WET-BED
11B	REACH B7006	22258667.601	1150439.115	335.08	32.71	1.04	11SEC THAL
11B	REACH B7007	22258670.879	1150443.094	335.14	37.85	0.65	11SEC WET-BED
11B	REACH B7008	22258673.531	1150447.290	335.45	42.81	0.91	11SEC WET-BED
11B	REACH B7009	22258676.292	1150451.341	335.55	47.71	0.99	11SEC WET-BED
11B	REACH B7010	22258679.108	1150455.425	335.51	52.67	1.05	11SEC WET-BED
11B	REACH B7011	22258681.913	1150459.447	335.51	57.57	1.08	11SEC WET-BED
11B	REACH B7012	22258684.941	1150463.828	335.33	62.90	1.13	11SEC WET-BED
11B	REACH B7013	22258685.519	1150464.952	335.79	64.15	1.31	11SEC REOW
11B	REACH B7014	22258686.155	1150465.765	336.27	65.18	1.26	11SEC BANK_R
11B	REACH B7015	22258690.079	1150470.823	335.88	71.58	0.97	11SEC BANK_R
11B	REACH B7016	22258693.699	1150475.869	336.77	77.79	0.92	11SEC BKFL_R
11B	REACH B7017	22258699.631	1150482.666	337.48	86.76	0.00	11SEC MON-BASE
01C	REACH C3001	22258655.816	1150788.009	349.89	0.00	0.00	1SEC MONL
01C	REACH C3002	22258655.892	1150788.182	349.08	0.19	0.00	1SEC MON-BASE
01C	REACH C3003	22258660.873	1150798.319	349.22	11.48	-0.37	1SEC TOBL
01C	REACH C3004	22258663.083	1150803.704	345.65	17.29	-0.17	1SEC BANK_L
01C	REACH C3005	22258666.040	1150810.564	346.19	24.76	-0.04	1SEC BANK_L
01C	REACH C3006	22258666.573	1150811.724	344.38	26.04	-0.05	1SEC BANK_L
01C	REACH C3007	22258668.007	1150814.888	343.74	29.51	-0.06	1SEC SC
01C	REACH C3008	22258668.165	1150815.493	342.45	30.13	0.05	1SEC SC DRYBED
01C	REACH C3009	22258669.642	1150818.646	341.79	33.61	0.00	1SEC SC THAL
01C	REACH C3010	22258670.251	1150820.020	342.28	35.12	0.01	1SEC SC DRYBED
01C	REACH C3011	22258670.886	1150821.050	342.87	36.32	-0.14	1SEC BAR
01C	REACH C3012	22258673.846	1150827.991	343.49	43.86	0.01	1SEC BAR
01C	REACH C3013	22258677.440	1150835.961	343.21	52.60	0.02	1SEC BKFL_L
01C	REACH C3014	22258680.159	1150842.329	343.27	59.52	0.16	1SEC BAR
01C	REACH C3015	22258682.147	1150846.716	342.88	64.34	0.15	1SEC BAR
01C	REACH C3016	22258683.485	1150849.658	342.71	67.57	0.14	1SEC LEOW
01C	REACH C3017	22258685.579	1150854.209	341.43	72.58	0.10	1SEC WETBED
01C	REACH C3018	22258687.727	1150859.449	339.92	78.24	0.30	1SEC THAL
01C	REACH C3019	22258688.691	1150862.425	340.74	81.35	0.65	1SEC WETBED
01C	REACH C3020	22258689.456	1150862.696	342.85	81.91	0.06	1SEC REOW
01C	REACH C3021	22258690.307	1150863.944	343.93	83.40	-0.20	1SEC BKFL_R
01C	REACH C3022	22258691.094	1150866.315	346.39	85.89	0.06	1SEC TOBR

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
01C	REACH C3023	22258695.233	1150875.533	347.32	95.99	0.07	1SEC MON-BASE
01C	REACH C3000	22258695.414	1150875.752	347.92	96.26	-0.00	1SEC MONR
02C	REACH C3027	22258648.235	1150813.145	350.77	0.00	0.00	2SEC MONL
02C	REACH C3028	22258648.232	1150813.293	350.17	0.15	0.01	2SEC MON-BASE
02C	REACH C3029	22258648.067	1150814.368	350.02	1.22	0.19	2SEC TOBL
02C	REACH C3030	22258648.299	1150820.110	345.77	6.97	0.04	2SEC BANK_L
02C	REACH C3031	22258648.479	1150820.916	344.47	7.77	-0.13	2SEC BOB_L
02C	REACH C3042	22258648.287	1150821.372	344.45	8.23	0.07	2SEC BKFL_L
02C	REACH C3032	22258648.322	1150827.986	343.65	14.84	0.13	2SEC BAR
02C	REACH C3033	22258648.778	1150834.273	343.40	21.13	-0.24	2SEC LEOW
02C	REACH C3034	22258648.694	1150839.611	342.45	26.47	-0.08	2SEC WETBED
02C	REACH C3035	22258648.676	1150847.187	342.57	34.04	0.05	2SEC WETBED
02C	REACH C3036	22258648.568	1150854.247	342.20	41.10	0.26	2SEC WETBED
02C	REACH C3037	22258648.710	1150859.448	341.83	46.31	0.20	2SEC WETBED
02C	REACH C3038	22258649.140	1150862.689	341.55	49.55	-0.19	2SEC THAL
02C	REACH C3039	22258649.179	1150864.998	341.73	51.86	-0.19	2SEC WETBED
02C	REACH C3040	22258649.030	1150865.620	343.22	52.48	-0.03	2SEC REOW
02C	REACH C3041	22258649.189	1150866.153	343.95	53.02	-0.19	2SEC BKFL_R
02C	REACH C3043	22258649.068	1150868.248	346.03	55.11	-0.03	2SEC TOBR
02C	REACH C3044	22258649.160	1150870.477	346.69	57.34	-0.09	2SEC MON-BASE
02C	REACH C3045	22258649.068	1150870.608	347.33	57.47	0.00	2SEC MONR
03C	REACH C3047	22258626.072	1150804.806	350.65	0.00	0.00	3SEC MONL
03C	REACH C3048	22258626.080	1150804.967	350.20	0.13	-0.09	3SEC MON-BASE
03C	REACH C3049	22258624.519	1150807.414	349.78	3.03	-0.08	3SEC TOBL
03C	REACH C3050	22258621.532	1150812.219	344.61	8.69	-0.12	3SEC BKFL_L
03C	REACH C3051	22258621.140	1150812.700	343.86	9.31	-0.04	3SEC LEOW
03C	REACH C3052	22258620.887	1150812.984	342.20	9.68	0.02	3SEC WETBED
03C	REACH C3054	22258619.323	1150815.711	341.18	12.82	-0.11	3SEC THAL
03C	REACH C3055	22258616.760	1150819.319	341.60	17.24	0.13	3SEC WETBED
03C	REACH C3056	22258614.512	1150822.608	342.01	21.22	0.27	3SEC WETBED
03C	REACH C3057	22258612.385	1150826.176	342.66	25.38	0.17	3SEC WETBED
03C	REACH C3058	22258609.750	1150830.238	343.69	30.22	0.23	3SEC REOW
03C	REACH C3059	22258607.413	1150833.954	343.72	34.61	0.22	3SEC BAR
03C	REACH C3060	22258606.701	1150835.035	344.45	35.90	0.24	3SEC BAR
03C	REACH C3061	22258603.741	1150839.790	344.50	41.50	0.21	3SEC BKFL_R
03C	REACH C3062	22258600.021	1150845.477	345.22	48.30	0.32	3SEC BAR
03C	REACH C3063	22258595.697	1150853.000	345.34	56.97	-0.04	3SEC MON-BASE
03C	REACH C3064	22258595.535	1150853.178	345.79	57.20	-0.00	3SEC MONR
04C	REACH C3065	22258547.706	1150801.878	349.48	0.00	0.00	4SEC MONL
04C	REACH C3066	22258547.791	1150801.968	349.17	0.12	-0.00	4SEC MON-BASE
04C	REACH C3067	22258554.938	1150809.270	348.30	10.34	-0.25	4SEC BANK_L
04C	REACH C3068	22258558.213	1150812.753	348.21	15.12	-0.26	4SEC TOBL
04C	REACH C3069	22258559.508	1150814.064	345.41	16.96	-0.32	4SEC BKFL_L
04C	REACH C3067	22258554.938	1150809.270	348.30	10.34	-0.25	4SEC BANK_L
04C	REACH C3068	22258558.213	1150812.753	348.21	15.12	-0.26	4SEC TOBL

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
04C	REACH C3069	22258559.508	1150814.064	345.41	16.96	-0.32	4SEC BKFL_L
04C	REACH C3070	22258559.570	1150814.081	344.71	17.02	-0.35	4SEC LEOW
04C	REACH C3071	22258559.925	1150814.494	343.64	17.56	-0.33	4SEC WETBED
04C	REACH C3072	22258561.220	1150816.108	343.06	19.62	-0.17	4SEC WETBED
04C	REACH C3073	22258563.204	1150818.854	342.11	22.99	0.25	4SEC THAL
04C	REACH C3074	22258566.623	1150822.623	342.90	28.07	0.32	4SEC WETBED
04C	REACH C3075	22258571.093	1150826.786	344.48	34.17	-0.11	4SEC REOW
04C	REACH C3076	22258576.170	1150831.977	344.71	41.43	-0.28	4SEC BAR
04C	REACH C3077	22258584.607	1150840.902	344.91	53.71	-0.36	4SEC BAR
04C	REACH C3078	22258594.295	1150851.334	345.37	67.94	-0.33	4SEC BKFL_R
04C	REACH C3079	22258595.542	1150853.108	345.34	70.09	-0.03	4SEC MON-BASE
04C	REACH C3093	22258595.569	1150853.180	345.77	70.16	0.00	4SEC 5SEC MONR
05C	REACH C3026	22258552.818	1150874.969	352.29	0.00	0.00	5SEC MONL
05C	REACH C3081	22258555.960	1150873.030	350.86	3.68	-0.30	5SEC TOBL
05C	REACH C3082	22258558.263	1150872.083	346.12	6.16	-0.10	5SEC BKFL_L
05C	REACH C3083	22258558.469	1150872.052	345.23	6.36	-0.03	5SEC LEOW
05C	REACH C3084	22258558.964	1150871.826	344.26	6.90	-0.01	5SEC WETBED
05C	REACH C3086	22258560.131	1150871.197	344.13	8.23	-0.04	5SEC WETBED
05C	REACH C3087	22258564.633	1150868.734	343.90	13.36	-0.19	5SEC THAL
05C	REACH C3088	22258569.184	1150866.485	344.34	18.43	-0.13	5SEC WETBED
05C	REACH C3089	22258575.383	1150863.345	344.59	25.38	-0.11	5SEC WETBED
05C	REACH C3090	22258581.719	1150859.853	345.09	32.61	-0.34	5SEC REOW
05C	REACH C3091	22258587.298	1150857.013	345.11	38.87	-0.34	5SEC BAR
05C	REACH C3092	22258595.599	1150853.075	345.33	48.06	-0.08	5SEC BKFL_R MONBASE
05C	REACH C3093	22258595.569	1150853.180	345.77	47.98	-0.00	4SEC 5SEC MONR
06C	REACH C3094	22258560.937	1150912.812	352.72	0.00	0.00	6SEC MONL
06C	REACH C3095	22258561.028	1150912.731	352.22	0.12	-0.02	6SEC MON-BASE
06C	REACH C3096	22258564.219	1150910.399	351.74	4.07	-0.24	6SEC TOBL
06C	REACH C3097	22258567.184	1150908.470	346.31	7.60	-0.25	6SEC BKFL_L
06C	REACH C3098	22258567.526	1150908.101	345.45	8.09	-0.38	6SEC BOB_L
06C	REACH C3099	22258568.956	1150907.241	345.55	9.76	-0.32	6SEC LEOW
06C	REACH C3100	22258573.505	1150904.540	344.97	15.05	-0.12	6SEC WETBED
06C	REACH C3101	22258577.518	1150901.796	345.01	19.91	-0.24	6SEC WETBED
06C	REACH C3102	22258582.391	1150898.590	344.70	25.74	-0.29	6SEC THAL
06C	REACH C3103	22258586.712	1150895.861	344.74	30.85	-0.23	6SEC WETBED
06C	REACH C3104	22258590.687	1150893.271	344.66	35.59	-0.25	6SEC WETBED
06C	REACH C3105	22258596.562	1150889.302	344.53	42.68	-0.39	6SEC WETBED
06C	REACH C3106	22258598.651	1150888.155	345.60	45.06	-0.22	6SEC WSEL
06C	REACH C3107	22258599.359	1150887.612	346.20	45.95	-0.29	6SEC WD
06C	REACH C3108	22258600.932	1150886.653	345.53	47.79	-0.24	6SEC REOW
06C	REACH C3109	22258602.120	1150886.020	346.07	49.13	-0.13	6SEC BKFL_R
06C	REACH C3110	22258602.824	1150885.680	345.85	49.91	-0.03	6SEC MON-BASE
06C	REACH C3111	22258602.927	1150885.652	346.08	50.01	-0.00	6SEC MONR
07C	REACH C1500	22258596.416	1150947.467	349.96	0.00	0.00	7SEC MONL
07C	REACH C1501	22258596.530	1150947.331	349.42	0.18	-0.03	7SEC MON-BASE

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
07C	REACH C1502	22258598.720	1150944.426	349.31	3.74	-0.74	7SEC TOBL
07C	REACH C1503	22258600.186	1150942.973	347.04	5.80	-0.85	7SEC BKFL_L
07C	REACH C1504	22258600.272	1150943.139	345.83	5.76	-0.67	7SEC BOB_L
07C	REACH C1505	22258602.026	1150942.118	345.81	7.75	-0.27	7SEC LEOW
07C	REACH C1507	22258609.670	1150935.366	345.15	17.95	-0.23	7SEC WETBED
07C	REACH C1508	22258613.123	1150932.152	344.78	22.66	-0.34	7SEC WETBED
07C	REACH C1509	22258617.571	1150928.386	344.48	28.49	-0.20	7SEC THAL
07C	REACH C1510	22258621.183	1150925.129	344.50	33.35	-0.23	7SEC WETBED
07C	REACH C1511	22258622.647	1150923.924	345.69	35.25	-0.16	7SEC REOW
07C	REACH C3123	22258623.036	1150922.785	346.41	36.29	-0.75	7SEC BKFL_R
07C	REACH C3124	22258625.467	1150921.260	346.45	39.12	-0.27	7SEC BANK_R
07C	REACH C3125	22258627.941	1150919.424	348.44	42.19	0.00	7SEC MONR
08C	REACH C3126	22258626.525	1150983.619	347.47	0.00	0.00	8SEC MONL
08C	REACH C3127	22258626.612	1150983.544	346.85	0.11	-0.01	8SEC MON-BASE
08C	REACH C3128	22258634.627	1150977.848	346.04	9.95	0.07	8SEC BAR
08C	REACH C3129	22258636.843	1150975.983	346.04	12.84	-0.14	8SEC LEOW
08C	REACH C3130	22258641.166	1150973.025	345.49	18.07	-0.00	8SEC WETBED
08C	REACH C3131	22258644.679	1150970.557	344.98	22.36	0.06	8SEC WETBED
08C	REACH C3132	22258649.171	1150967.335	343.03	27.89	0.08	8SEC THAL
08C	REACH C3133	22258650.879	1150966.294	345.90	29.89	0.24	8SEC REOW
08C	REACH C3135	22258650.574	1150966.337	346.70	29.61	0.09	8SEC BKFL_R
08C	REACH C3136	22258651.494	1150965.562	348.38	30.81	0.01	8SEC TOBR
08C	REACH C3137	22258652.929	1150964.516	349.25	32.59	0.00	8SEC MONR
09C	REACH C3139	22258644.565	1151022.501	348.92	-12.22	-0.09	9SEC TOBL
09C	REACH C3140	22258649.789	1151018.953	347.34	-5.91	-0.18	9SEC BKFL_L
09C	REACH C3141	22258654.818	1151015.849	347.54	0.00	0.00	9SEC MONL
09C	REACH C3142	22258655.042	1151015.799	347.15	0.21	0.08	9SEC MON-BASE
09C	REACH C3143	22258659.734	1151012.489	346.40	5.95	-0.10	9SEC LEOW
09C	REACH C3145	22258660.345	1151012.115	345.71	6.67	-0.07	9SEC WETBED
09C	REACH C3146	22258664.565	1151009.107	345.01	11.85	-0.26	9SEC THAL
09C	REACH C3147	22258667.854	1151007.067	345.74	15.72	-0.15	9SEC WETBED
09C	REACH C3148	22258670.892	1151004.792	345.61	19.51	-0.38	9SEC WETBED
09C	REACH C3149	22258674.064	1151002.698	345.97	23.31	-0.38	9SEC WETBED
09C	REACH C3150	22258678.950	1150999.738	345.63	29.02	-0.16	9SEC WETBED
09C	REACH C3151	22258681.784	1150997.768	345.53	32.47	-0.25	9SEC WETBED
09C	REACH C3152	22258682.812	1150996.865	346.55	33.82	-0.44	9SEC REOW
09C	REACH C3153	22258683.121	1150996.818	347.13	34.10	-0.30	9SEC BKFL_R
09C	REACH C3155	22258685.560	1150994.518	348.29	37.41	-0.88	9SEC BANK_R
09C	REACH C3156	22258689.230	1150992.614	353.15	41.52	-0.45	9SEC TOBR
09C	REACH C3157	22258691.907	1150991.157	354.06	44.56	-0.19	9SEC MON-BASE
09C	REACH C3158	22258692.019	1150991.314	354.42	44.56	-0.00	9SEC MONR
10C	REACH C3159	22258663.334	1151041.492	349.77	0.00	0.00	10SEC MONL
10C	REACH C3160	22258663.484	1151041.372	349.24	0.18	-0.07	10SEC MON-BASE
10C	REACH C3161	22258667.342	1151040.127	348.40	4.23	-0.14	10SEC TOBL
10C	REACH C3162	22258668.195	1151039.807	347.43	5.14	-0.20	10SEC BKFL_L
10C	REACH C3163	22258668.189	1151039.766	346.85	5.15	-0.24	10SEC LEOW
10C	REACH C3164	22258668.199	1151039.823	345.60	5.14	-0.18	10SEC WET-BED

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
10C	REACH C3165	22258669.053	1151039.594	345.30	6.02	-0.15	10SEC THAL
10C	REACH C3166	22258673.008	1151038.446	345.79	10.14	-0.10	10SEC WET-BED
10C	REACH C3167	22258676.052	1151037.438	346.32	13.35	-0.18	10SEC WET-BED
10C	REACH C3168	22258679.921	1151036.205	346.43	17.41	-0.23	10SEC WET-BED
10C	REACH C3169	22258684.797	1151034.821	346.25	22.48	-0.14	10SEC WET-BED
10C	REACH C3170	22258689.099	1151033.388	345.88	27.01	-0.26	10SEC WET-BED
10C	REACH C3171	22258692.350	1151032.391	345.72	30.41	-0.27	10SEC WET-BED
10C	REACH C3172	22258694.812	1151032.139	345.49	32.84	0.21	10SEC WET-BED
10C	REACH C3173	22258694.942	1151032.049	346.28	32.99	0.16	10SEC WD
10C	REACH C3174	22258696.141	1151031.822	345.29	34.20	0.29	10SEC WET-BED
10C	REACH C3175	22258696.931	1151030.789	346.75	35.26	-0.47	10SEC REOW
10C	REACH C3176	22258698.275	1151030.637	347.22	36.59	-0.22	10SEC BKFL_R
10C	REACH C3178	22258699.754	1151030.316	347.97	38.10	-0.10	10SEC BANK_R
10C	REACH C3179	22258709.654	1151027.332	354.24	48.44	-0.08	10SEC TOBR
10C	REACH C3180	22258717.504	1151024.821	354.12	56.68	-0.20	10SEC MON-BASE
10C	REACH C3181	22258717.690	1151024.970	354.69	56.81	-0.00	10SEC MONR
11C	REACH C3182	22258623.962	1151077.507	354.68	0.00	0.00	11SEC MONL
11C	REACH C3183	22258623.964	1151077.526	354.09	0.01	0.02	11SEC MON-BASE
11C	REACH C3184	22258630.469	1151078.908	351.84	6.65	-0.16	11SEC BANK_L
11C	REACH C3185	22258649.366	1151083.133	350.38	26.02	-0.48	11SEC BANK_L
11C	REACH C3186	22258652.780	1151084.000	348.46	29.54	-0.44	11SEC BANK_L
11C	REACH C3187	22258667.127	1151087.103	348.56	44.21	-0.78	11SEC BANK_L
11C	REACH C3188	22258668.708	1151087.417	347.97	45.82	-0.84	11SEC BKFL_L
11C	REACH C3189	22258671.244	1151087.939	347.35	48.41	-0.93	11SEC LEOW
11C	REACH C3190	22258676.162	1151089.333	347.05	53.52	-0.73	11SEC WET-BED
11C	REACH C3191	22258680.461	1151090.580	346.50	57.99	-0.52	11SEC WET-BED
11C	REACH C3192	22258684.274	1151091.426	345.89	61.89	-0.59	11SEC WET-BED
11C	REACH C3193	22258688.419	1151092.629	343.80	66.21	-0.39	11SEC WET-BED
11C	REACH C3194	22258689.391	1151092.863	343.45	67.21	-0.39	11SEC THAL
11C	REACH C3195	22258690.655	1151093.167	347.35	68.51	-0.39	11SEC REOW
11C	REACH C3196	22258690.849	1151093.214	348.45	68.71	-0.39	11SEC BKFL_R
11C	REACH C3197	22258691.857	1151093.263	349.40	69.70	-0.58	11SEC BANK_R

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
11C	REACH C3198	22258696.758	1151094.602	354.44	74.78	-0.43	11SEC TOBR
11C	REACH C3199	22258703.791	1151096.683	355.62	82.10	-0.05	11SEC MON-BASE
11C	REACH C3200	22258703.911	1151096.766	356.38	82.24	0.00	11SEC MONR
01D	REACH D4002	22258533.796	1151377.999	354.88	0.00	0.00	1SEC MONL
01D	REACH D4003	22258533.778	1151378.116	354.34	0.11	0.03	1SEC MON-BASE
01D	REACH D4004	22258534.507	1151385.236	354.19	7.27	0.24	1SEC BKFL_L
01D	REACH D4005	22258535.368	1151392.187	353.74	14.27	0.29	1SEC BANK_L
01D	REACH D4006	22258535.573	1151392.746	353.28	14.85	0.16	1SEC LEOW
01D	REACH D4007	22258535.642	1151393.465	352.83	15.57	0.19	1SEC WETBED
01D	REACH D4008	22258535.824	1151395.908	352.18	18.02	0.32	1SEC WETBED
01D	REACH D4009	22258536.374	1151400.996	352.43	23.14	0.44	1SEC WETBED
01D	REACH D4010	22258537.087	1151405.849	352.58	28.04	0.37	1SEC WETBED
01D	REACH D4011	22258537.599	1151410.262	352.41	32.48	0.43	1SEC THAL
01D	REACH D4012	22258538.074	1151414.905	352.65	37.15	0.57	1SEC WETBED
01D	REACH D4013	22258538.326	1151415.473	353.45	37.74	0.39	1SEC REOW
01D	REACH D4014	22258538.542	1151415.548	354.47	37.85	0.19	1SEC BKFL_R
01D	REACH D4016	22258538.793	1151417.575	356.80	39.89	0.20	1SEC BANK_R
01D	REACH D4017	22258539.186	1151419.193	358.02	41.55	0.03	1SEC MON-BASE
01D	REACH D4018	22258539.219	1151419.250	358.31	41.61	0.00	1SEC MONR
02D	REACH D4026	22258491.278	1151373.086	356.98	0.00	0.00	2SEC MONL
02D	REACH D4027	22258491.314	1151373.191	356.43	0.09	-0.06	2SEC MON-BASE
02D	REACH D4028	22258489.011	1151386.120	356.84	13.21	-0.75	2SEC BANK_L
02D	REACH D4029	22258487.379	1151390.580	355.44	17.92	-0.18	2SEC TOBL
02D	REACH D4031	22258487.275	1151390.968	354.49	18.32	-0.17	2SEC BKFL_L
02D	REACH D4032	22258487.312	1151390.999	353.76	18.35	-0.21	2SEC LEOW
02D	REACH D4033	22258487.411	1151391.218	351.47	18.54	-0.35	2SEC WETBED
02D	REACH D4034	22258486.984	1151392.394	351.43	19.78	-0.21	2SEC THAL
02D	REACH D4035	22258486.363	1151394.954	352.09	22.41	-0.18	2SEC WETBED
02D	REACH D4036	22258485.372	1151398.275	353.90	25.87	0.03	2SEC WSEL
02D	REACH D4037	22258484.678	1151402.104	354.30	29.76	-0.17	2SEC BAR
02D	REACH D4038	22258483.829	1151406.182	354.16	33.92	-0.27	2SEC WSEL
02D	REACH D4039	22258482.562	1151410.988	353.28	38.89	-0.12	2SEC WETBED
02D	REACH D4040	22258481.611	1151414.374	353.06	42.40	0.03	2SEC THAL
02D	REACH D4041	22258481.329	1151415.900	353.10	43.95	-0.04	2SEC WETBED
02D	REACH D4042	22258481.065	1151416.648	353.75	44.74	0.05	2SEC WETBED
02D	REACH D4043	22258480.813	1151417.908	354.35	46.03	0.01	2SEC REOW
02D	REACH D4044	22258480.108	1151420.929	355.10	49.13	0.01	2SEC BKFL_R
02D	REACH D4045	22258478.793	1151426.262	357.00	54.62	0.08	2SEC TOBR
02D	REACH D4046	22258476.523	1151436.111	357.43	64.73	0.05	2SEC 3SEC 4SEC 5SEC MONBASE
02D	REACH D4025	22258476.537	1151436.260	357.95	64.87	0.00	2SEC 3SEC 4SEC 5SEC MONR
03D	REACH D4057	22258435.979	1151372.516	359.42	0.00	0.00	3SEC MONL

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
03D	REACH D4058	22258436.107	1151372.518	359.27	0.07	-0.11	3SEC MON-BASE
03D	REACH D4059	22258442.215	1151382.205	359.16	11.52	-0.06	3SEC TOBL
03D	REACH D4060	22258443.066	1151383.170	356.14	12.79	-0.26	3SEC BOB_L
03D	REACH D4061	22258445.149	1151386.997	356.40	17.14	0.04	3SEC BANK_L
03D	REACH D4062	22258445.982	1151388.624	355.18	18.96	0.21	3SEC BKFL_L
03D	REACH D4063	22258445.964	1151388.594	354.47	18.93	0.21	3SEC LEOW
03D	REACH D4064	22258446.058	1151388.765	354.14	19.12	0.22	3SEC WETBED
03D	REACH D4066	22258448.326	1151391.652	354.40	22.77	-0.14	3SEC WETBED
03D	REACH D4067	22258450.784	1151395.331	354.68	27.20	-0.24	3SEC WETBED
03D	REACH D4069	22258452.201	1151397.329	355.19	29.64	-0.37	3SEC WD
03D	REACH D4070	22258452.388	1151397.963	354.03	30.28	-0.18	3SEC WETBED
03D	REACH D4071	22258454.959	1151401.777	353.43	34.88	-0.31	3SEC THAL
03D	REACH D4072	22258457.603	1151405.970	353.83	39.83	-0.29	3SEC WETBED
03D	REACH D4073	22258460.392	1151410.436	353.94	45.10	-0.24	3SEC WETBED
03D	REACH D4074	22258463.177	1151414.384	353.69	49.92	-0.47	3SEC WETBED
03D	REACH D4075	22258464.514	1151416.583	353.42	52.50	-0.42	3SEC WETBED
03D	REACH D4076	22258465.815	1151418.751	354.52	55.02	-0.35	3SEC REOW
03D	REACH D4077	22258468.263	1151422.307	355.31	59.34	-0.51	3SEC BKFL_R
03D	REACH D4078	22258471.857	1151428.210	355.83	66.25	-0.37	3SEC BANK_R
03D	REACH D4079	22258473.347	1151430.562	356.87	69.03	-0.37	3SEC TOBR
03D	REACH D4046	22258476.523	1151436.111	357.43	75.42	-0.07	2SEC 3SEC 4SEC 5SEC MONBASE
03D	REACH D4025	22258476.537	1151436.260	357.95	75.55	-0.00	2SEC 3SEC 4SEC 5SEC MONR
04D	REACH D4083	22258410.659	1151431.265	361.23	0.00	0.00	4SEC MONL
04D	REACH D4084	22258410.850	1151431.228	360.72	0.19	-0.05	4SEC MON-BASE
04D	REACH D4085	22258414.184	1151431.236	360.05	3.51	-0.30	4SEC TOBL
04D	REACH D4086	22258417.611	1151431.555	356.33	6.95	-0.24	4SEC BKFL_L
04D	REACH D4087	22258417.936	1151431.618	355.38	7.28	-0.20	4SEC LEOW
04D	REACH D4088	22258418.194	1151431.465	353.63	7.53	-0.37	4SEC WETBED
04D	REACH D4090	22258419.549	1151431.428	353.14	8.88	-0.51	4SEC THAL
04D	REACH D4091	22258421.312	1151432.380	352.19	10.71	0.31	4SEC WETBED
04D	REACH D4092	22258425.485	1151432.576	353.82	14.88	0.19	4SEC WETBED
04D	REACH D4093	22258428.277	1151432.578	354.48	17.67	-0.02	4SEC WETBED
04D	REACH D4094	22258433.711	1151433.130	354.72	23.13	0.12	4SEC WETBED
04D	REACH D4095	22258439.361	1151433.385	355.18	28.78	-0.06	4SEC LEOW
04D	REACH D4096	22258443.536	1151433.699	356.01	32.97	-0.06	4SEC BAR
04D	REACH D4097	22258448.608	1151434.031	355.28	38.05	-0.11	4SEC BAR
04D	REACH D4098	22258451.105	1151434.229	354.87	40.55	-0.10	4SEC SC LEOW
04D	REACH D4099	22258453.773	1151433.963	354.74	43.19	-0.57	4SEC SC THAL
04D	REACH D4100	22258455.572	1151434.583	354.81	45.04	-0.09	4SEC SC REOW
04D	REACH D4101	22258459.302	1151434.830	355.66	48.77	-0.12	4SEC BKFL_R
04D	REACH D4102	22258468.234	1151436.359	356.21	57.80	0.73	4SEC BANK_R
04D	REACH D4046	22258476.523	1151436.111	357.43	66.04	-0.15	2SEC 3SEC 4SEC 5SEC MONBASE

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
04D	REACH D4025	22258476.537	1151436.260	357.95	66.07	-0.00	2SEC 3SEC 4SEC 5SEC MONR
05D	REACH D4103	22258427.834	1151481.466	363.32	0.00	0.00	5SEC MONL
05D	REACH D4104	22258428.067	1151481.342	362.74	0.26	0.07	5SEC MON-BASE
05D	REACH D4105	22258434.548	1151474.689	361.52	9.53	-0.41	5SEC BANK_L
05D	REACH D4106	22258440.469	1151469.538	360.89	17.38	-0.16	5SEC TOBL
05D	REACH D4107	22258441.889	1151468.087	356.26	19.40	-0.26	5SEC BKFL_L
05D	REACH D4108	22258442.346	1151468.197	355.51	19.66	0.15	5SEC LEOW
05D	REACH D4109	22258442.665	1151468.089	354.95	19.97	0.29	5SEC WETBED
05D	REACH D4111	22258443.888	1151466.452	354.50	21.98	-0.11	5SEC WETBED
05D	REACH D4112	22258448.051	1151462.666	355.08	27.61	-0.05	5SEC WETBED
05D	REACH D4113	22258452.054	1151459.010	354.69	33.03	0.02	5SEC THAL
05D	REACH D4114	22258455.742	1151455.673	354.63	38.00	0.08	5SEC WETBED
05D	REACH D4115	22258459.301	1151452.322	354.97	42.89	0.05	5SEC WETBED
05D	REACH D4116	22258464.681	1151447.143	355.75	50.36	-0.14	5SEC REOW
05D	REACH D4117	22258466.515	1151445.484	356.37	52.83	-0.11	5SEC BKFL_R
05D	REACH D4118	22258471.835	1151440.709	356.27	59.98	0.06	5SEC BANK_R
05D	REACH D4046	22258476.523	1151436.111	357.43	66.54	-0.12	2SEC 3SEC 4SEC 5SEC MONBASE
05D	REACH D4025	22258476.537	1151436.260	357.95	66.45	0.00	2SEC 3SEC 4SEC 5SEC MONR
06D	REACH D4195	22258467.773	1151523.005	362.89	0.00	0.00	6SEC 7SEC MONL
06D	REACH D4196	22258467.855	1151522.994	362.13	0.05	0.07	6SEC 7SEC MONBASE
06D	REACH D4197	22258472.860	1151512.874	361.31	11.33	0.25	6SEC TOBL
06D	REACH D4198	22258475.572	1151506.674	356.89	18.10	0.04	6SEC BOB_L
06D	REACH D4199	22258479.046	1151499.419	357.04	26.14	0.06	6SEC BAR
06D	REACH D4200	22258481.234	1151494.537	356.77	31.49	-0.05	6SEC BKFL_L
06D	REACH D4201	22258483.239	1151490.070	356.11	36.39	-0.16	6SEC LEOW
06D	REACH D4202	22258485.206	1151486.040	355.81	40.87	-0.11	6SEC WETBED
06D	REACH D4203	22258487.791	1151480.982	355.60	46.55	0.05	6SEC WETBED
06D	REACH D4204	22258490.099	1151476.778	355.35	51.33	0.34	6SEC WETBED
06D	REACH D4205	22258492.198	1151472.106	354.62	56.46	0.23	6SEC THAL
06D	REACH D4206	22258494.651	1151467.244	355.15	61.90	0.36	6SEC WETBED
06D	REACH D4207	22258494.741	1151466.543	356.22	62.57	0.14	6SEC REOW
06D	REACH D4208	22258495.148	1151466.120	356.78	63.13	0.32	6SEC BKFL_R
06D	REACH D4209	22258495.761	1151464.407	357.57	64.94	0.14	6SEC TOBR
06D	REACH D4210	22258497.260	1151461.011	357.81	68.65	0.04	6SEC BANK_R
06D	REACH D4211	22258498.626	1151458.008	357.36	71.95	-0.01	6SEC MON-BASE
06D	REACH D4212	22258498.695	1151457.897	357.91	72.08	0.00	6SEC MONR
07D	REACH D4195	22258467.773	1151523.005	362.89	0.00	0.00	6SEC 7SEC MONL
07D	REACH D4196	22258467.855	1151522.994	362.13	0.07	0.04	6SEC 7SEC MONBASE

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
07D	REACH D4223	22258472.901	1151519.634	361.35	6.14	-0.03	7SEC TOBL
07D	REACH D4224	22258479.778	1151515.058	357.12	14.40	-0.11	7SEC BOB_L
07D	REACH D4225	22258489.089	1151508.558	357.19	25.75	-0.47	7SEC BAR
07D	REACH D4226	22258497.925	1151502.754	357.35	36.32	-0.51	7SEC BKFL_L
07D	REACH D4227	22258504.762	1151498.189	356.74	44.54	-0.61	7SEC BAR
07D	REACH D4228	22258509.142	1151495.497	356.88	49.68	-0.47	7SEC BAR
07D	REACH D4229	22258515.109	1151491.561	356.27	56.83	-0.51	7SEC LEOW
07D	REACH D4230	22258518.136	1151489.529	355.55	60.47	-0.56	7SEC WETBED
07D	REACH D4231	22258522.086	1151487.013	355.42	65.15	-0.51	7SEC WETBED
07D	REACH D4232	22258526.516	1151484.201	355.17	70.40	-0.45	7SEC WETBED
07D	REACH D4233	22258529.977	1151481.896	355.23	74.56	-0.50	7SEC THAL
07D	REACH D4234	22258533.331	1151479.598	355.56	78.62	-0.59	7SEC WETBED
07D	REACH D4235	22258534.934	1151478.751	356.59	80.43	-0.43	7SEC WD
07D	REACH D4236	22258535.485	1151478.154	355.88	81.22	-0.63	7SEC WETBED
07D	REACH D4237	22258539.865	1151475.648	356.49	86.25	-0.33	7SEC REOW
07D	REACH D4238	22258540.179	1151475.089	357.64	86.82	-0.63	7SEC BKFL_R
07D	REACH D4239	22258543.976	1151473.054	360.29	91.11	-0.26	7SEC BANK_R
07D	REACH D4240	22258548.619	1151469.782	362.58	96.79	-0.47	7SEC BANK_R
07D	REACH D4241	22258559.221	1151463.559	362.34	109.07	0.10	7SEC MON-BASE
07D	REACH D4242	22258559.255	1151463.417	363.16	109.18	0.00	7SEC MONR
08D	REACH D4174	22258527.502	1151547.615	358.95	0.00	0.00	8SEC HWM
08D	REACH D4175	22258536.617	1151542.768	358.46	10.31	-0.44	8SEC BANK_L
08D	REACH D4176	22258544.954	1151538.737	357.72	19.57	-0.47	8SEC BKFL_L
08D	REACH D4177	22258546.589	1151537.988	357.25	21.37	-0.44	8SEC BAR
08D	REACH D4178	22258551.472	1151535.590	357.63	26.81	-0.50	8SEC BAR
08D	REACH D4179	22258555.494	1151533.765	357.14	31.23	-0.41	8SEC LEOW
08D	REACH D4180	22258560.691	1151531.279	356.82	36.99	-0.41	8SEC WETBED
08D	REACH D4181	22258564.964	1151529.333	356.32	41.68	-0.32	8SEC WETBED
08D	REACH D4182	22258569.103	1151527.290	355.92	46.30	-0.38	8SEC WETBED
08D	REACH D4183	22258571.983	1151525.905	355.52	49.49	-0.38	8SEC THAL
08D	REACH D4184	22258573.513	1151525.139	355.77	51.21	-0.41	8SEC WETBED
08D	REACH D4185	22258575.006	1151524.704	357.10	52.74	-0.16	8SEC REOW
08D	REACH D4186	22258575.229	1151524.379	357.98	53.08	-0.36	8SEC BKFL_R
08D	REACH D4187	22258577.270	1151523.810	359.95	55.17	0.01	8SEC TOBR
08D	REACH D4188	22258582.459	1151521.490	360.22	60.85	0.16	8SEC BANK_R
08D	REACH D4189	22258586.046	1151519.598	361.87	64.90	0.00	8SEC HWM
09D	REACH D4248	22258548.539	1151573.842	360.05	0.00	0.00	9SEC MONL
09D	REACH D4249	22258548.710	1151573.939	359.36	0.17	0.10	9SEC MON-BASE
09D	REACH D4250	22258558.720	1151574.291	359.34	10.17	0.58	9SEC TOBL
09D	REACH D4251	22258559.848	1151574.249	359.19	11.30	0.55	9SEC BKFL_L
09D	REACH D4252	22258565.179	1151574.155	357.71	16.63	0.52	9SEC LEOW
09D	REACH D4253	22258566.872	1151574.183	357.16	18.33	0.57	9SEC WETBED
09D	REACH D4254	22258570.315	1151574.088	356.55	21.77	0.52	9SEC WETBED
09D	REACH D4255	22258573.238	1151574.138	356.41	24.69	0.60	9SEC THAL
09D	REACH D4256	22258578.351	1151573.887	356.65	29.81	0.42	9SEC WETBED
09D	REACH D4257	22258584.317	1151573.792	357.72	35.78	0.40	9SEC REOW
09D	REACH D4258	22258589.299	1151573.482	358.14	40.76	0.15	9SEC BAR
09D	REACH D4259	22258595.057	1151573.421	358.24	46.52	0.16	9SEC BAR
09D	REACH D4260	22258602.951	1151573.270	357.92	54.41	0.11	9SEC BAR
09D	REACH D4261	22258610.547	1151573.278	357.96	62.01	0.21	9SEC BOB_R

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
09D	REACH D4262	22258611.189	1151573.168	358.98	62.65	0.11	9SEC BKFL_R
09D	REACH D4263	22258613.139	1151573.184	359.83	64.60	0.15	9SEC TOBR
09D	REACH D4264	22258617.779	1151572.960	359.78	69.25	-0.02	9SEC MON-BASE
09D	REACH D4265	22258617.901	1151572.975	360.17	69.37	0.00	9SEC MONR
10D	REACH D4126	22258552.839	1151608.625	360.98	0.00	0.00	10SEC MONL
10D	REACH D4127	22258552.967	1151608.644	360.38	0.13	-0.02	10SEC MON-BASE
10D	REACH D4128	22258558.380	1151610.509	359.21	5.85	-0.05	10SEC BKFL_L
10D	REACH D4129	22258558.936	1151610.882	358.23	6.50	0.12	10SEC LEOW
10D	REACH D4130	22258559.857	1151611.110	357.47	7.44	0.03	10SEC WET-BED
10D	REACH D4132	22258561.988	1151611.531	357.06	9.60	-0.27	10SEC THAL
10D	REACH D4133	22258566.723	1151613.364	357.31	14.67	-0.10	10SEC WET-BED
10D	REACH D4134	22258571.222	1151614.974	357.45	19.45	-0.07	10SEC WET-BED
10D	REACH D4135	22258576.046	1151616.630	357.80	24.55	-0.09	10SEC WET-BED
10D	REACH D4136	22258583.284	1151619.139	358.35	32.21	-0.11	10SEC REOW
10D	REACH D4137	22258587.200	1151620.465	359.33	36.34	-0.15	10SEC BKFL_R
10D	REACH D4138	22258590.468	1151621.454	359.66	39.75	-0.30	10SEC BAR
10D	REACH D4139	22258597.270	1151624.101	359.67	47.05	-0.04	10SEC BAR
10D	REACH D4140	22258606.027	1151627.042	359.36	56.29	-0.15	10SEC BAR
10D	REACH D4141	22258609.983	1151628.858	361.44	60.62	0.26	10SEC TOBR
10D	REACH D4142	22258610.882	1151628.955	361.58	61.50	0.06	10SEC MON-BASE
10D	REACH D4143	22258611.047	1151628.954	362.33	61.66	0.00	10SEC MONR
11D	REACH D4151	22258535.373	1151639.207	361.28	0.00	0.00	11SEC MONL
11D	REACH D4152	22258535.502	1151639.280	360.65	0.15	-0.00	11SEC MON-BASE
11D	REACH D4153	22258541.793	1151643.191	360.06	7.56	0.10	11SEC TOBL
11D	REACH D4154	22258542.072	1151643.705	359.80	8.06	0.39	11SEC BKFL_L
11D	REACH D4155	22258542.095	1151643.689	358.83	8.07	0.37	11SEC LEOW
11D	REACH D4156	22258544.255	1151644.692	358.46	10.44	0.11	11SEC WET-BED
11D	REACH D4157	22258544.726	1151645.160	357.78	11.08	0.27	11SEC THAL
11D	REACH D4158	22258548.204	1151647.191	358.02	15.11	0.21	11SEC WET-BED
11D	REACH D4159	22258553.135	1151650.213	358.06	20.89	0.25	11SEC WET-BED
11D	REACH D4160	22258557.013	1151652.480	358.31	25.39	0.19	11SEC WET-BED
11D	REACH D4161	22258561.195	1151655.104	358.76	30.32	0.28	11SEC WET-BED
11D	REACH D4162	22258565.461	1151657.601	358.77	35.26	0.21	11SEC WET-BED
11D	REACH D4163	22258569.263	1151659.829	358.17	39.67	0.16	11SEC WET-BED
11D	REACH D4164	22258570.044	1151660.201	359.05	40.53	0.07	11SEC REOW
11D	REACH D4165	22258571.151	1151660.969	359.58	41.88	0.16	11SEC BKFL_R
11D	REACH D4166	22258574.085	1151662.729	361.24	45.30	0.15	11SEC TOBR

Appendix 2. Transect survey data for South Fork Campbell Creek near Anchorage, Alaska, 2000—Continued

Transect	Survey point ID	Northing (ft)	Easting (ft)	Elevation above arbitrary datum (ft)	Horizontal distance (ft)	Offset from transect (ft)	Comments (transcribed from field notes)
11D	REACH D4167	22258577.885	1151664.878	361.68	49.66	0.03	11SEC MON-BASE
11D	REACH D4168	22258578.021	1151664.925	362.12	49.80	0.00	11SEC MONR
NA	REACH D4131	22258558.217	1151612.615	358.62	NA	NA	EP10DL1
NA	REACH D4015	22258539.028	1151415.061	353.85	NA	NA	EP1DR1
NA	REACH D4030	22258488.589	1151391.020	355.14	NA	NA	EP2DL1
NA	REACH D4068	22258443.523	1151397.409	355.76	NA	NA	EP3DL1
NA	REACH D4089	22258417.726	1151431.420	356.61	NA	NA	EP4DL1
NA	REACH D4110	22258443.228	1151469.138	355.74	NA	NA	EP5DL1
NA	REACH D4213	22258497.062	1151468.250	356.60	NA	NA	EP6DR1
NA	REACH D4243	22258542.938	1151475.520	358.46	NA	NA	EP7DR1
NA	REACH B7193	22258857.668	1150156.180	330.69	NA	NA	EP1BL2
NA	REACH B7202	22258871.932	1150179.521	331.26	NA	NA	EP1BR1
NA	REACH B7151	22258786.438	1150218.833	331.85	NA	NA	EP3BL1
NA	REACH B7078	22258698.081	1150311.156	338.68	NA	NA	EP6BL1
NA	REACH B7159	22258805.471	1150242.863	332.25	NA	NA	EP6BR1
NA	REACH B7256	22258791.597	1150316.715	334.14	NA	NA	EP7BR1
NA	REACH B7001	22258792.139	1150358.838	339.26	NA	NA	HUB1
NA	REACH B7121	22258691.726	1150298.063	339.93	NA	NA	HUB2 (nail in tree root)
NA	REACH B7207	22258771.872	1150466.279	339.74	NA	NA	HUB3
NA	7208.000	22258857.220	1150666.626	346.69	NA	NA	HUB4
NA	REACH D3201	22258570.405	1151413.593	360.16	NA	NA	HUB 7
NA	REACH D4019	22258514.875	1151464.210	361.15	NA	NA	HUB 8
NA	REACH D4120	22258619.693	1151594.901	361.62	NA	NA	HUB 9
NA	REACH B7000	22258680.046	1150406.875	341.12	NA	NA	MAINHUB (iron rod near10B)
NA	REACH D4169	22258527.477	1151547.636	358.24	NA	NA	HWM
NA	4266.000	22258432.961	1151709.859	368.01	NA	NA	BRIDGE BANK_L (left downstream edge)
NA	4267.000	22258425.755	1151713.883	367.98	NA	NA	BRIDGE BANK_L (left upstream edge)
NA	4268.000	22258474.337	1151784.246	367.97	NA	NA	BRIDGE BANK_R (right down-stream edge)
NA	4269.000	22258467.071	1151788.192	368.00	NA	NA	BRIDGE BANK_R (right upstream edge)
NA	7263	22258650.898	1150948.321	349.50	NA	NA	MAINHUB C (iron rod near gage)
NA	7264	22258658.450	1150974.099	349.74	NA	NA	SH (lag bolt in tree upstream from gage)