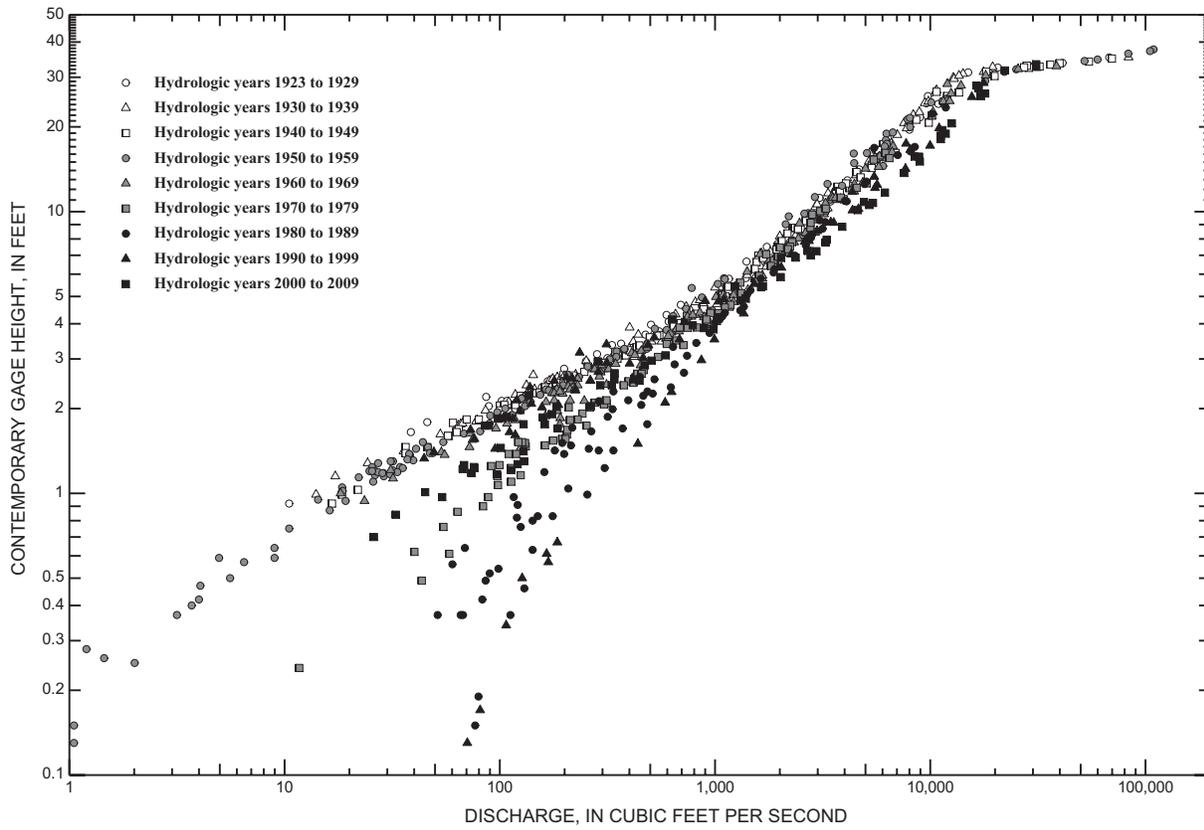


(B)



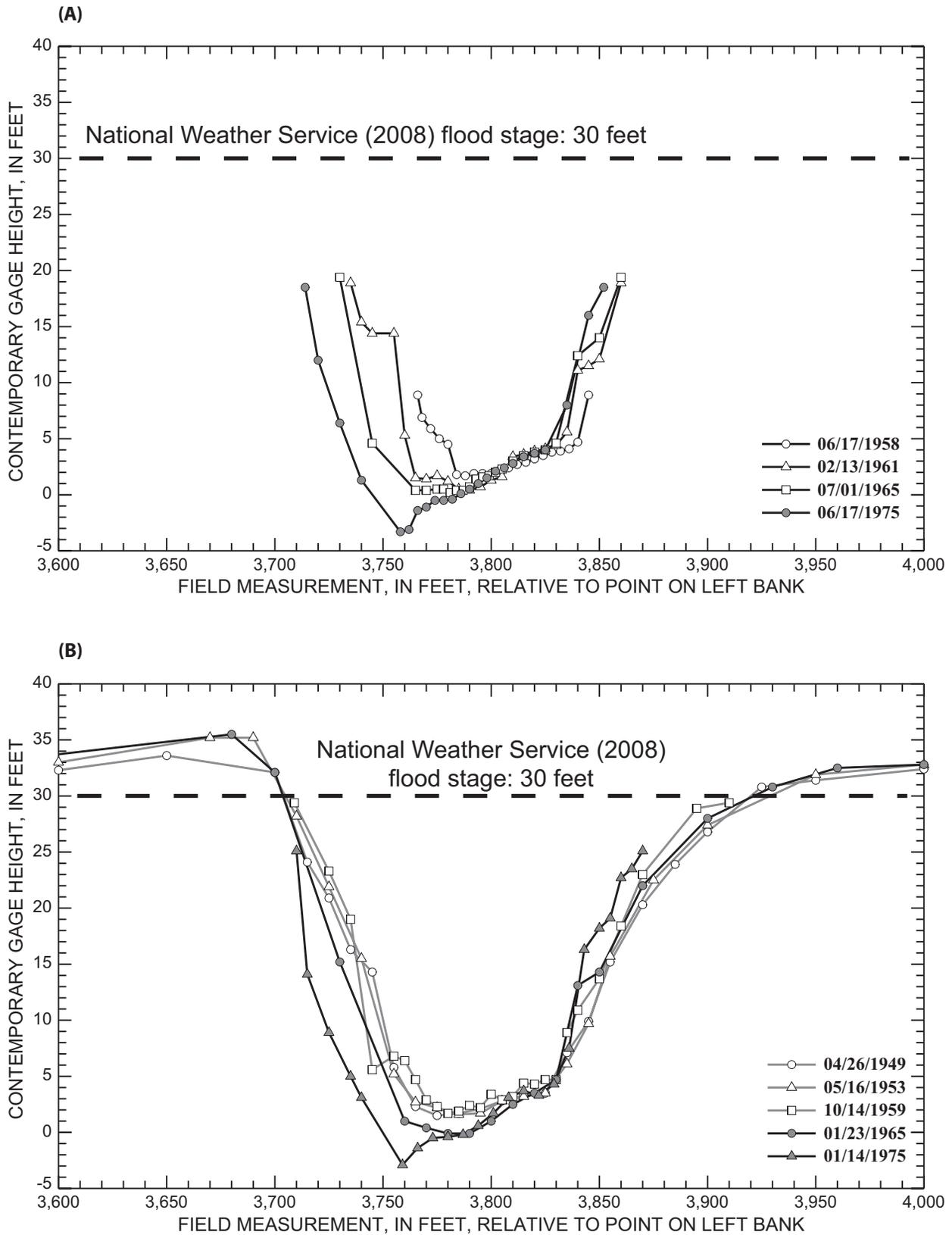
**Figure 25.** U.S. Geological Survey streamflow-gaging station 08106500 Little River near Cameron, Texas, (A) 2004 digital orthophoto quarter-quadrangle; and (B) photograph looking downstream from right bank just downstream from U.S. Highway 77/190 bridge, April 1, 2008.



**Figure 26.** Stage-discharge relations of field measurements for U.S. Geological Survey streamflow-gaging station 08106500 Little River near Cameron, Texas, October 1922–2009.



**Figure 27.** 1951 Aerial photograph showing U.S. Geological Survey streamflow-gaging station 08106500 Little River near Cameron, Texas, and vicinity. ("A," "B," "C," "D," and "E" denote meander bends; "gage" is not present (2009) location of streamflow-gaging station.)



**Figure 28.** Historical cross-sectional channel geometry for U.S. Geological Survey streamflow-gaging station 08106500 Little River near Cameron, Texas, (A) at moderate-flow conditions (greater than 1,000 cubic feet per second and less than 10,000 cubic feet per second), 1958–75; (B) at high-flow conditions (greater than 10,000 cubic feet per second), 1949–75; (C) at moderate-flow conditions, 1981–2003; and (D) at high-flow conditions, 1989–2001.

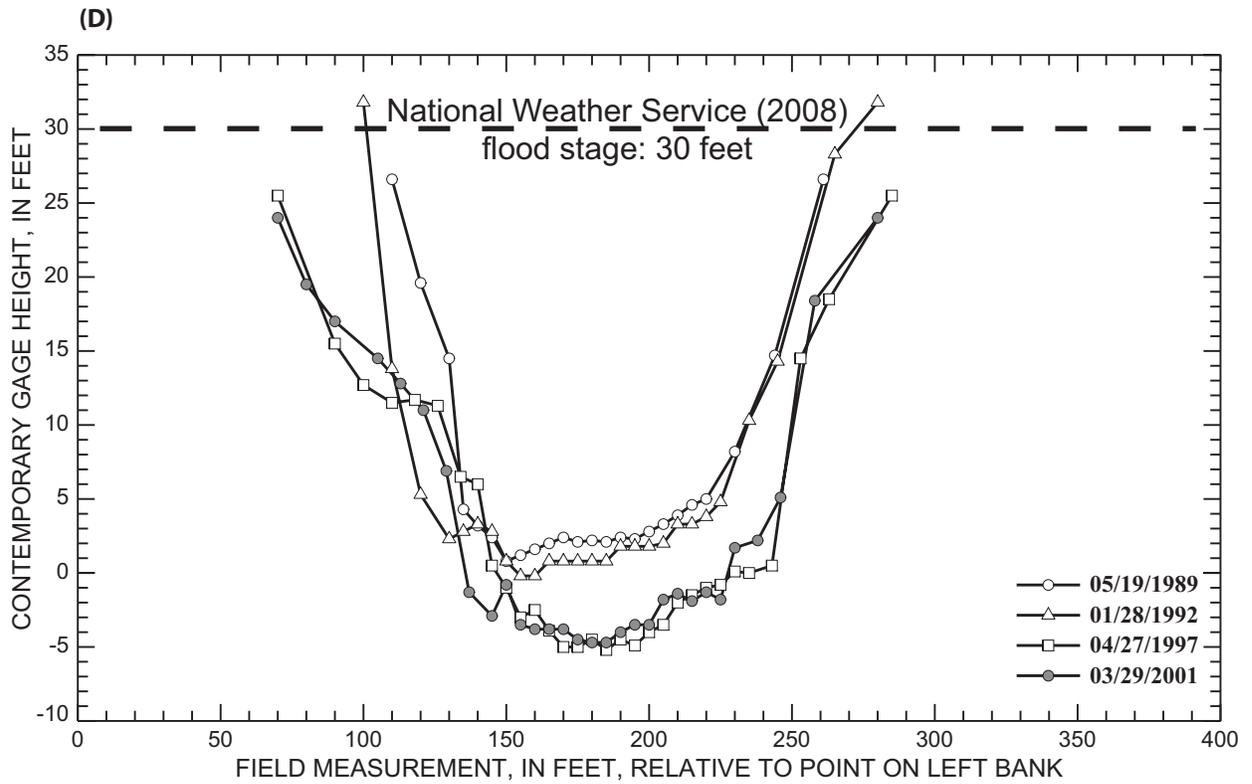
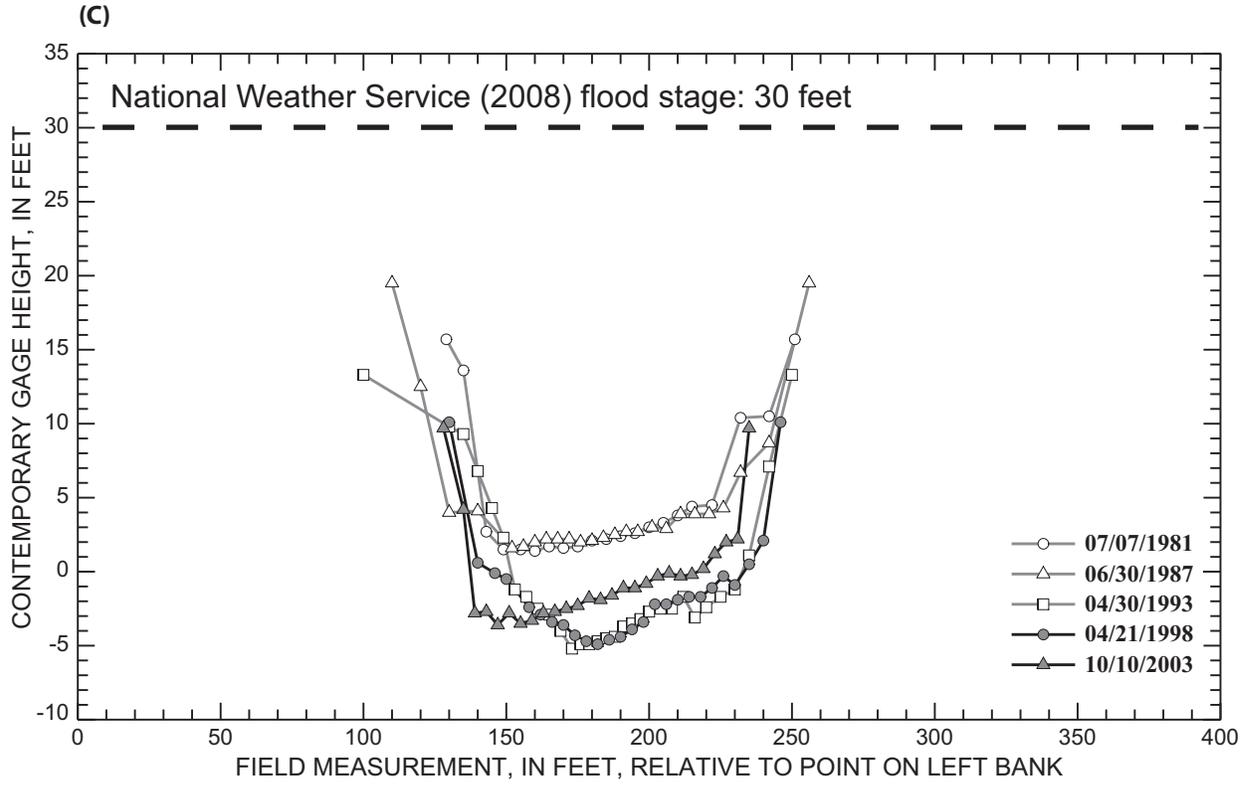


Figure 28.—Continued.

**Table 18.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08106500, Little River near Cameron, Texas, 1949–75.[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; >, greater than; <, less than]

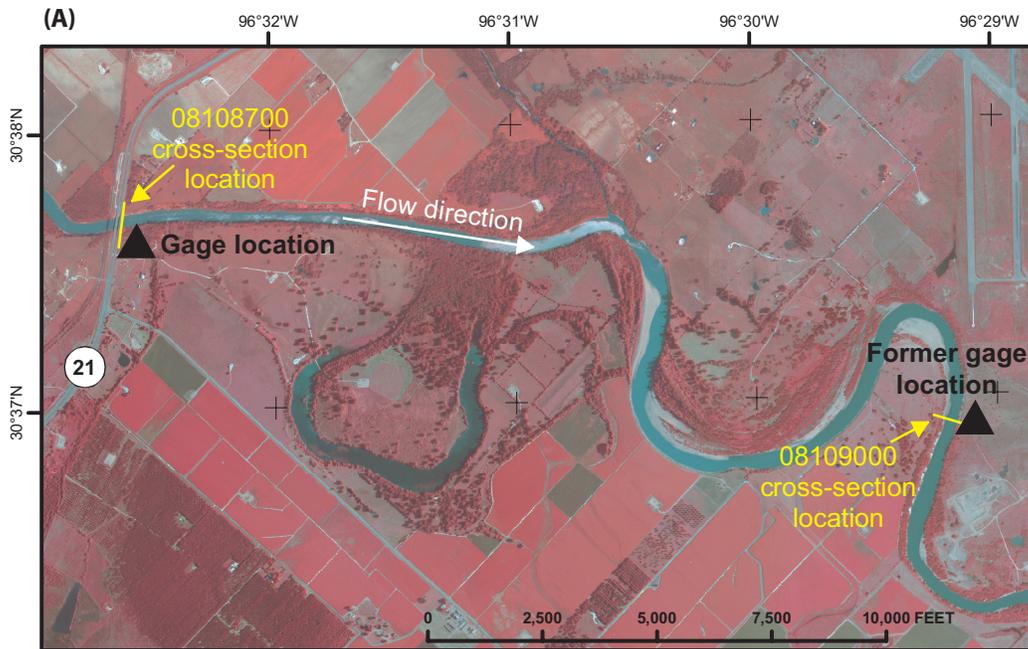
Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Moderate flow (>1,000 ft <sup>3</sup> /s, <10,000 ft <sup>3</sup> /s)								
<b>5.0-foot target stage</b>								
June 17, 1958	5.2	1,110	65.5	2.20	144.0	1.36	0.05	0.16
Feb. 13, 1961	4.9	5,810	71.6	2.70	192.9	1.31	.07	.14
July 1, 1965	5.2	6,650	70.4	3.17	222.8	1.45	.08	.14
June 17, 1975	5.2	5,460	95.6	4.42	422.8	1.24	.11	.10
<b>10.0-foot target stage</b>								
Feb. 13, 1961	9.9	5,810	81.4	7.13	581.0	2.50	.16	.17
July 1, 1965	10.2	6,650	90.4	6.91	624.6	2.44	.15	.16
June 17, 1975	10.2	5,460	114.5	8.32	952.5	1.90	.20	.12
High flow (>10,000 ft <sup>3</sup> /s)								
<b>20.0-foot target stage</b>								
Apr. 26, 1949	20.0	39,900	142.2	12.3	1,748	1.14	.29	.06
May 16, 1953	20.1	25,100	138.7	12.8	1,770	1.31	.30	.06
Oct. 14, 1959	20.2	12,500	131.7	13.0	1,712	3.33	.30	.16
Jan. 23, 1965	19.9	38,600	142.9	13.2	1,879	1.18	.31	.06
Jan. 14, 1975	20.1	10,200	144.1	14.0	2,010	3.11	.28	.15
<b>25.0-foot target stage</b>								
Apr. 26, 1949	25.0	39,900	177.4	14.4	2,545	1.34	.34	.06
May 16, 1953	25.1	25,100	170.9	14.8	2,537	1.45	.35	.07
Oct. 14, 1959	25.2	12,500	159.3	15.3	2,433	3.79	.35	.17
Jan. 23, 1965	24.9	38,600	171.7	15.5	2,658	1.39	.36	.06
Jan. 14, 1975	25.1	10,200	160.0	17.3	2,763	3.69	.35	.16

<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.<sup>2</sup> All hydraulic computations are post regulation of flow by reservoirs or other structures.<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.

**Table 19.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08106500, Little River near Cameron, Texas, 1981–2003.[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; >, greater than; <, less than]

Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Moderate flow (>1,000 ft <sup>3</sup> /s, <10,000 ft <sup>3</sup> /s)								
<b>5.0-foot target stage</b>								
July 7, 1981	4.9	4,950	81.3	2.37	192.5	1.35	0.06	0.15
June 30, 1987	5.1	8,100	99.3	2.16	214.7	1.12	.05	.13
Apr. 30, 1993	4.8	5,490	95.3	6.95	662.4	2.30	.17	.15
Apr. 21, 1998	5.1	4,350	107.0	6.78	725.0	2.31	.16	.16
Oct. 10, 2003	4.9	3,310	98.3	6.09	599.1	2.09	.14	.15
<b>10.0-foot target stage</b>								
July 7, 1981	9.9	4,950	93.4	6.74	629.3	2.77	.16	.19
June 30, 1987	10.1	8,100	121.0	6.35	768.0	2.32	.15	.16
Apr. 30, 1993	9.8	5,490	115.5	10.2	1,180	3.09	.24	.17
Apr. 21, 1998	10.1	4,350	116.0	11.1	1,282	3.37	.25	.18
High flow (>10,000 ft <sup>3</sup> /s)								
<b>15.0-foot target stage</b>								
May 19, 1989	14.8	11,800	114.7	10.4	1,194	2.82	.24	.15
Jan. 28, 1992	14.8	17,700	136.3	11.0	1,493	2.52	.26	.13
Apr. 27, 1997	14.8	15,600	161.2	12.6	2,024	2.79	.29	.14
Mar. 29, 2001	14.8	16,500	151.6	13.5	2,050	3.55	.31	.17
<b>20.0-foot target stage</b>								
May 19, 1989	19.8	11,800	131.6	13.8	1,810	3.43	.32	.16
Jan. 28, 1992	19.8	17,700	146.2	15.0	2,199	3.13	.35	.14
Apr. 27, 1997	19.8	15,600	185.7	15.6	2,893	3.30	.36	.15
Mar. 29, 2001	19.8	16,500	184.2	15.7	2,889	4.03	.36	.18

<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.<sup>2</sup> All hydraulic computations are post regulation of flow by reservoirs or other structures.<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.

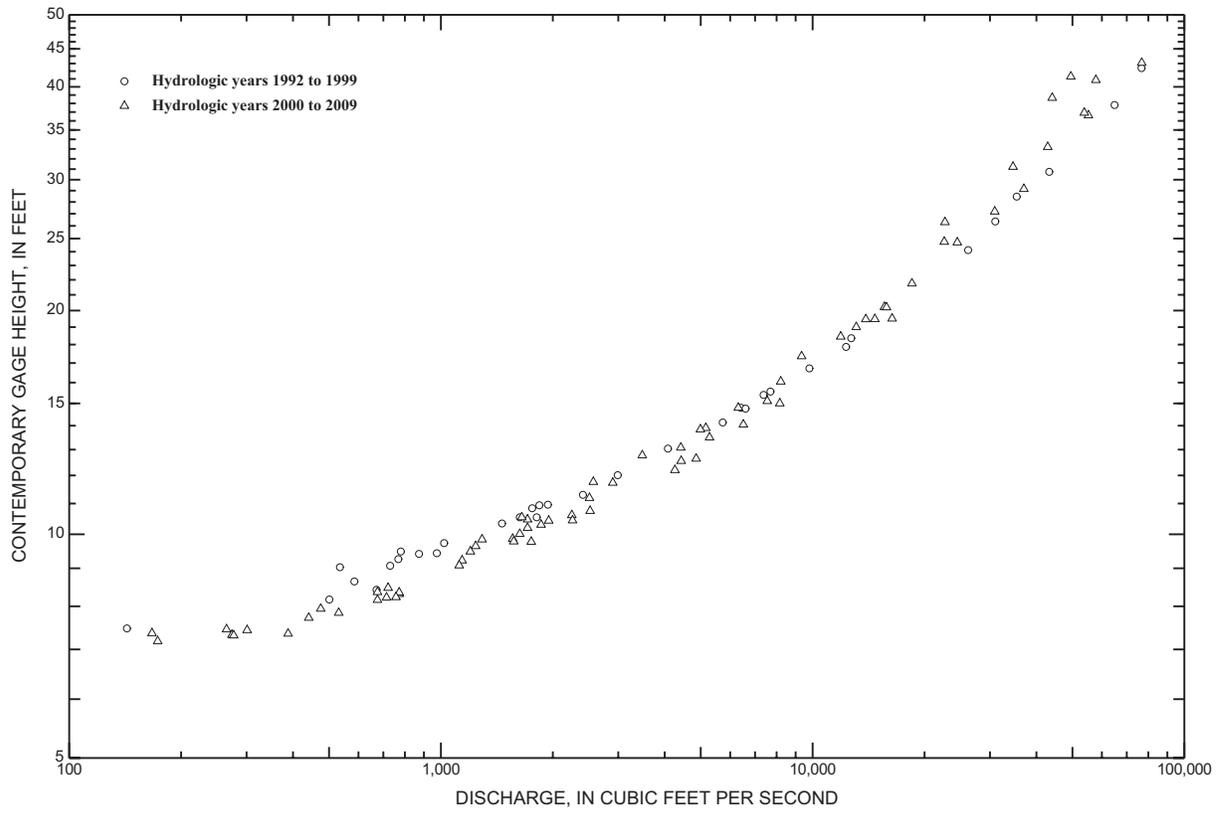


2004 National Agriculture Imagery Program color infrared imagery  
 Projection: Universal Transverse Mercator Zone 14 North  
 Datum: North American Datum 1983

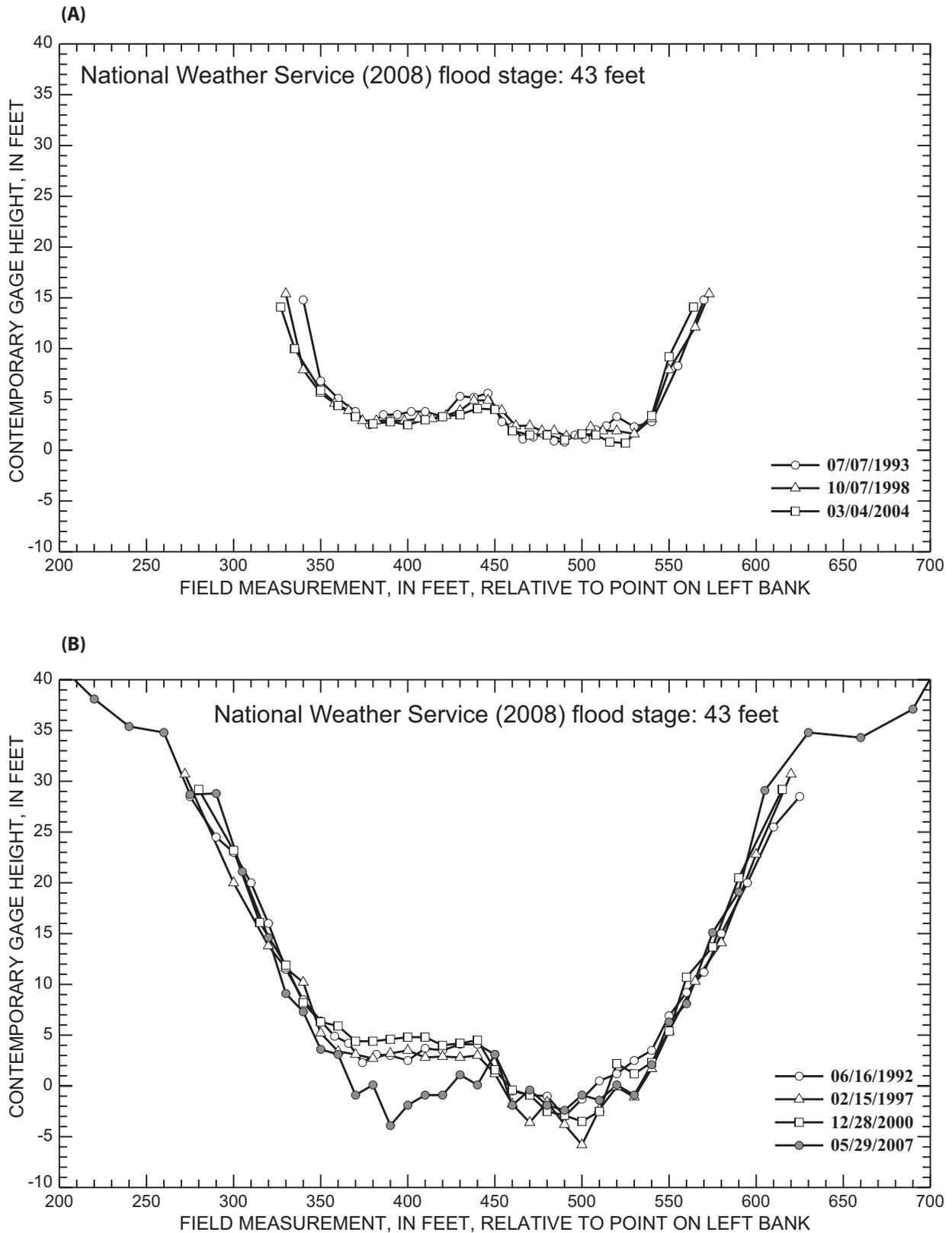
(B)



**Figure 29.** U.S. Geological Survey streamflow-gaging station 08108700 Brazos River at State Highway 21 near Bryan, Texas, and 08109000 Brazos River near Bryan, Texas, (A) 2004 digital orthophoto quarter-quadrangle; and (B) photograph of 08108700 Brazos River at State Highway 21 near Bryan, Texas, looking downstream from right bank just downstream from Texas State Highway 21 bridge, April 2, 2008.



**Figure 30.** Stage-discharge relations of field measurements for U.S. Geological Survey streamflow-gaging station 08108700 Brazos River at State Highway 21 near Bryan, Texas, 1992–2009.

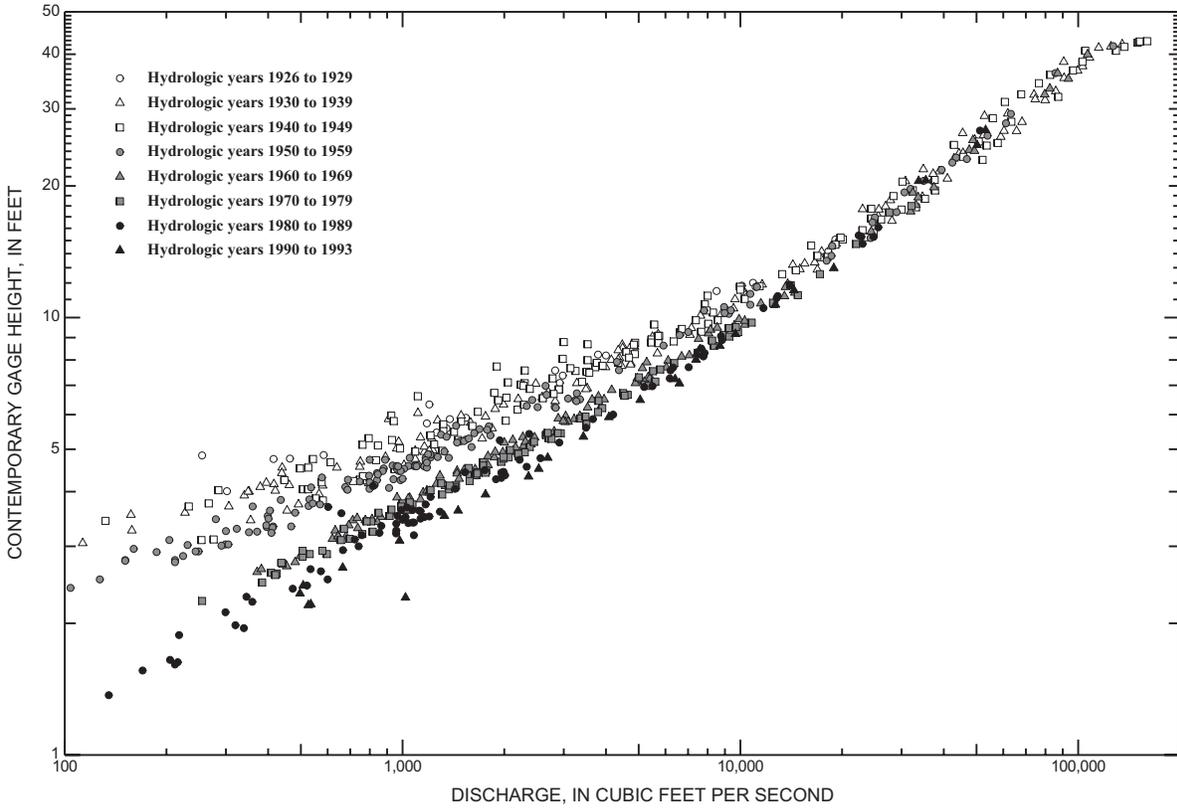


**Figure 31.** Historical cross-sectional channel geometry for U.S. Geological Survey streamflow-gaging station 08108700 Brazos River at State Highway 21 near Bryan, Texas, (A) at moderate-flow conditions (greater than 5,000 cubic feet per second and less than 10,000 cubic feet per second), 1993–2004; and (B) at high-flow conditions (greater than 10,000 cubic feet per second), 1992–2007.

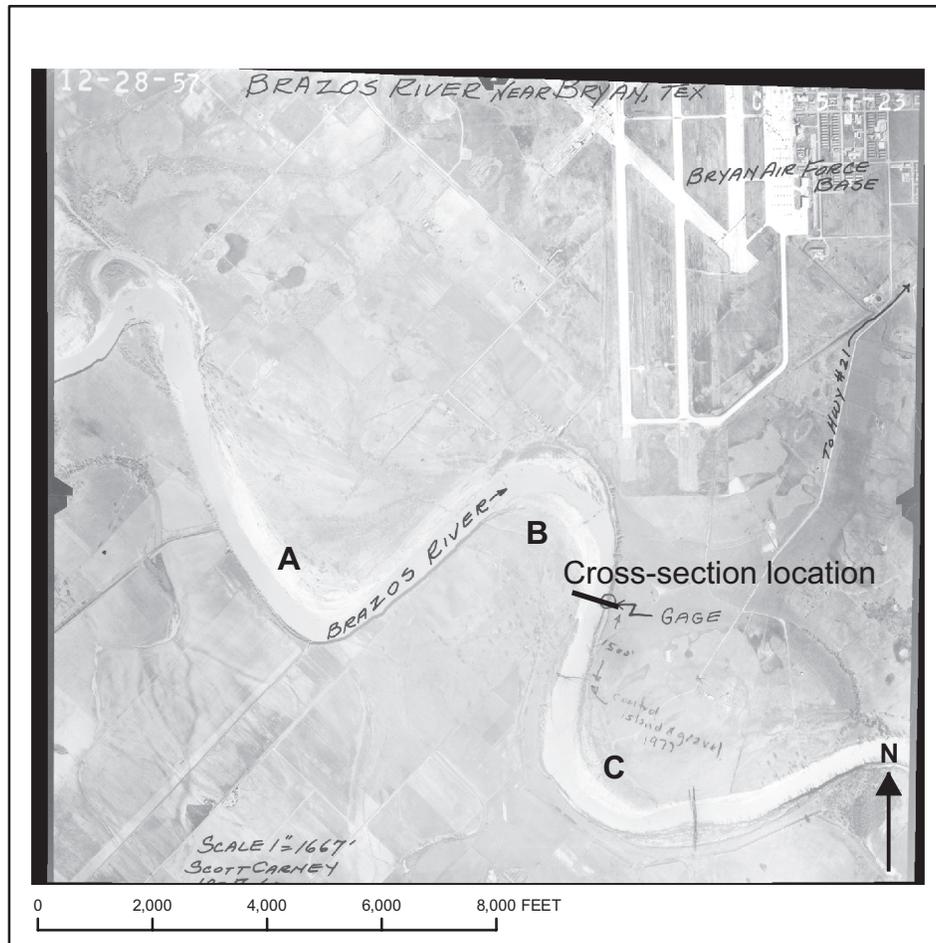
**Table 20.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08108700, Brazos River at State Highway 21 near Bryan, Texas, 1992–2007.[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; >, greater than; <, less than]

Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Moderate flow (>5,000 ft <sup>3</sup> /s, <10,000 ft <sup>3</sup> /s)								
<b>10.0-foot target stage</b>								
July 7, 1993	9.8	6,600	212.2	6.29	1,334	1.78	0.08	0.13
Oct. 7, 1998	9.9	7,380	219.8	6.38	1,403	1.79	.08	.12
Mar. 4, 2004	10.2	6,510	218.2	6.97	1,522	1.97	.09	.13
High flow (>10,000 ft <sup>3</sup> /s)								
<b>20.0-foot target stage</b>								
June 16, 1992	20.0	35,400	285.0	14.8	4,209	3.98	.18	.18
Feb. 15, 1997	20.2	43,300	294.6	15.6	4,592	4.01	.19	.18
Dec. 28, 2000	20.0	37,000	282.1	14.9	4,193	3.98	.18	.18
May 29, 2007	20.1	76,800	284.2	16.7	4,742	3.79	.20	.16
<b>25.0-foot target stage</b>								
June 16, 1992	25.0	35,400	320.5	17.8	5,716	4.63	.22	.19
Feb. 15, 1997	25.2	43,300	319.7	19.2	6,127	4.67	.23	.19
Dec. 28, 2000	25.0	37,000	308.9	18.3	5,666	4.69	.22	.19
May 29, 2007	25.1	76,800	301.8	20.6	6,207	4.45	.25	.17

<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.<sup>2</sup> All hydraulic computations are post regulation of flow by reservoirs or other structures.<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.



**Figure 32.** Stage-discharge relations of field measurements for U.S. Geological Survey streamflow-gaging station 08109000 Brazos River near Bryan, Texas, October 1925–93.



**Figure 33.** 1957 Aerial photograph of U.S. Geological Survey streamflow-gaging station 08109000 Brazos River near Bryan, Texas, and vicinity. ("A," "B," and "C" denote meander bends.)

(A)



(B)

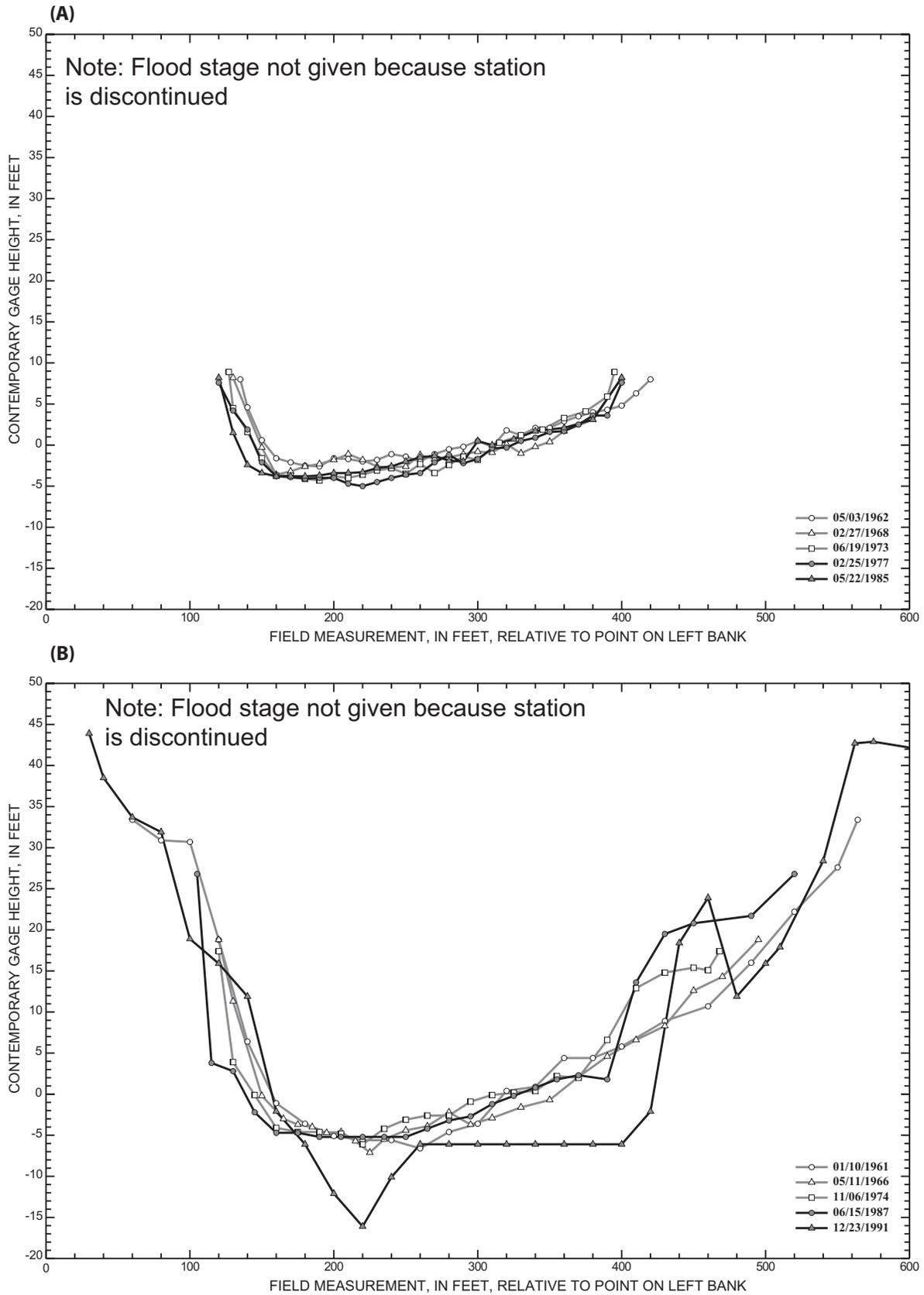


**Figure 34.** U.S. Geological Survey streamflow-gaging station 08109000 Brazos River near Bryan, Texas, looking upstream from left bank, (A) February 5, 1954; (B) March 10, 1971; and (C) April 2, 2008.

(C)



Figure 34.—Continued.

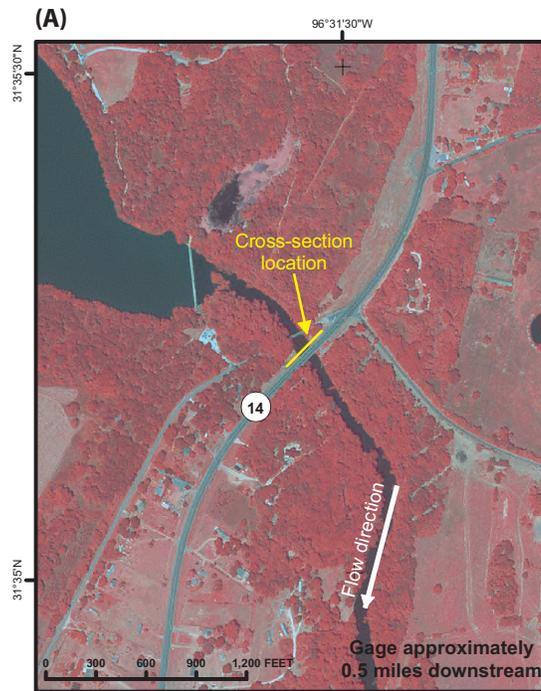


**Figure 35.** Historical cross-sectional channel geometry for U.S. Geological Survey streamflow-gaging station 08109000 Brazos River near Bryan, Texas, (A) at moderate-flow conditions (greater than 5,000 cubic feet per second and less than 10,000 cubic feet per second), 1962–85; and (B) at high-flow conditions (greater than 25,000 cubic feet per second), 1961–91.

**Table 21.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08109000, Brazos River near Bryan, Texas, 1961–91.[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; >, greater than; <, less than]

Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Moderate flow (>5,000 ft <sup>3</sup> /s, <10,000 ft <sup>3</sup> /s)								
<b>5.0-foot target stage</b>								
May 3, 1962	4.9	6,110	261.1	4.68	1,221	2.00	0.06	0.16
Feb. 27, 1968	4.9	7,060	249.3	5.74	1,432	2.24	.07	.16
June 19, 1973	5.2	8,250	254.6	6.32	1,609	2.28	.08	.16
Feb. 25, 1977	5.0	5,790	265.8	6.35	1,687	1.95	.08	.14
May 22, 1985	5.2	7,770	263.8	6.23	1,644	2.39	.08	.17
High flow (>25,000 ft <sup>3</sup> /s)								
<b>10.0-foot target stage</b>								
Jan. 10, 1961	9.9	82,400	312.3	9.80	3,061	3.02	.12	.17
May 11, 1966	9.9	33,600	305.1	10.6	3,233	3.54	.13	.19
Nov. 6, 1974	9.9	27,600	274.9	10.9	2,999	3.95	.13	.21
June 15, 1987	9.8	51,200	291.2	11.4	3,326	3.31	.14	.17
Dec. 23, 1991	9.9	161,500	288.8	16.1	4,653	4.15	.19	.18
<b>15.0-foot target stage</b>								
Jan. 10, 1961	14.9	82,400	357.5	13.3	4,754	3.81	.16	.18
May 11, 1966	14.9	33,600	348.1	13.9	4,853	4.55	.17	.21
Nov. 6, 1974	14.9	27,600	311.5	14.2	4,438	4.94	.17	.23
June 15, 1987	14.8	51,200	303.8	15.8	4,809	4.23	.19	.19
Dec. 23, 1991	14.9	161,500	331.6	18.6	6,173	4.64	.22	.19

<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.<sup>2</sup> All hydraulic computations are post regulation of flow by reservoirs or other structures.<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.

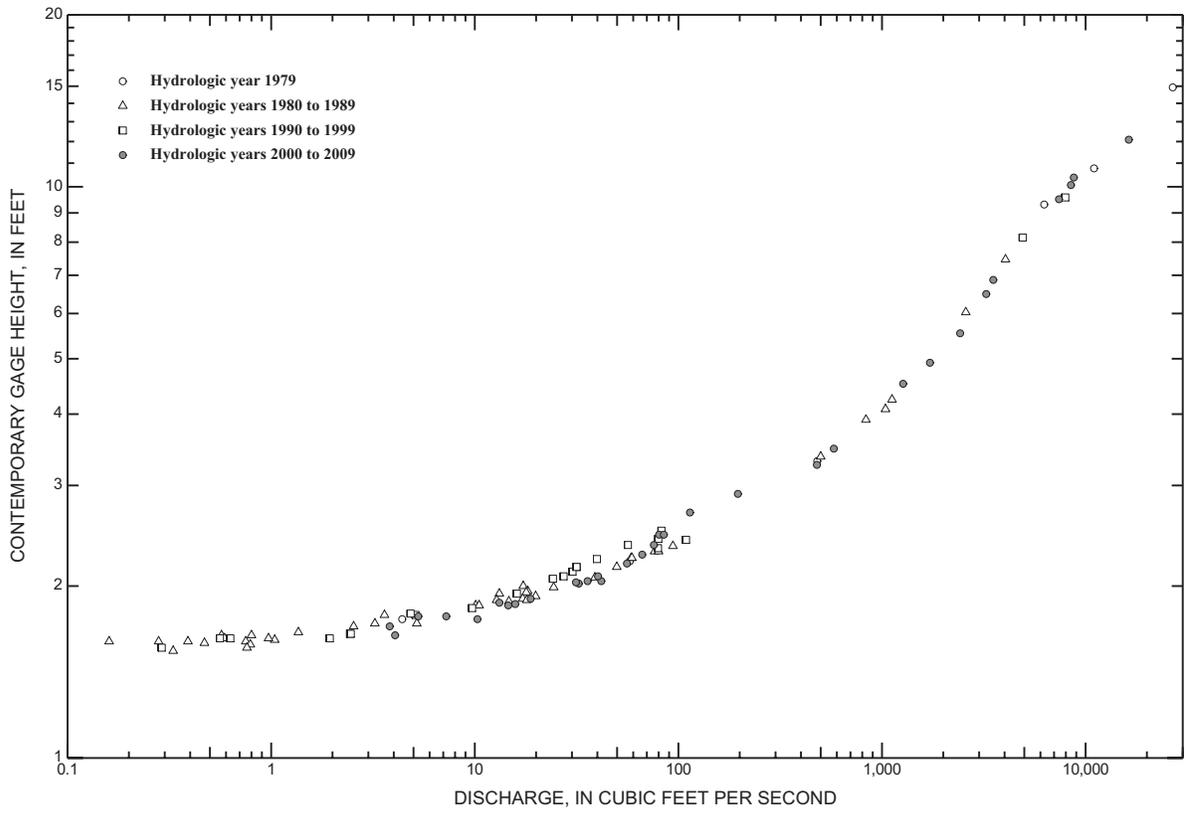


2004 National Agriculture Imagery Program color infrared imagery  
Projection: Universal Transverse Mercator Zone 14 North  
Datum: North American Datum 1983

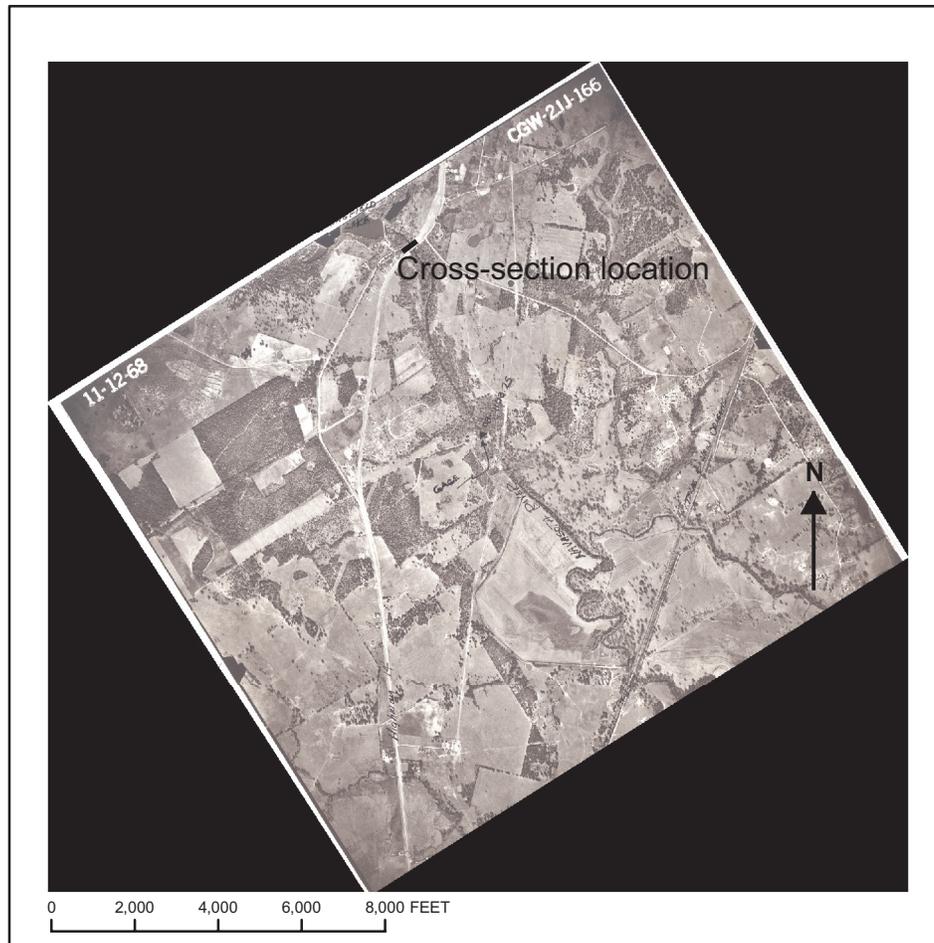
(B)



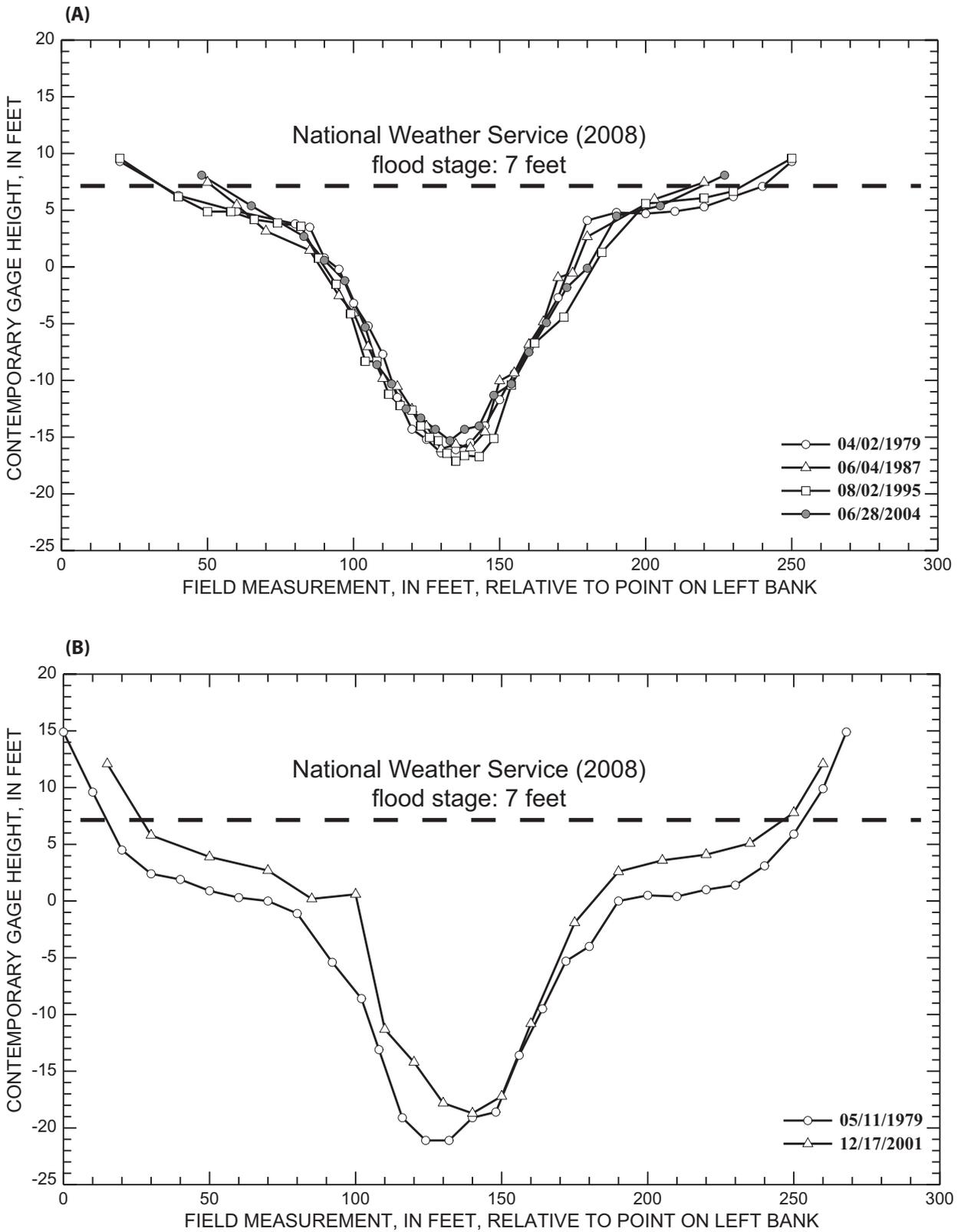
**Figure 36.** U.S. Geological Survey streamflow-gaging station 08110325 Navasota River above Groesbeck, Texas, (A) 2004 digital orthophoto quarter-quadrangle; and (B) photograph looking upstream from small bridge upstream from State Highway 14 bridge, April 1, 2008.



**Figure 37.** Stage-discharge relations of field measurements for U.S. Geological Survey streamflow-gaging station 08110325 Navasota River above Groesbeck, Texas, 1979–2009.



**Figure 38.** 1968 Aerial photograph of U.S. Geological Survey streamflow-gaging station 08110325 Navasota River above Groesbeck, Texas, and vicinity.

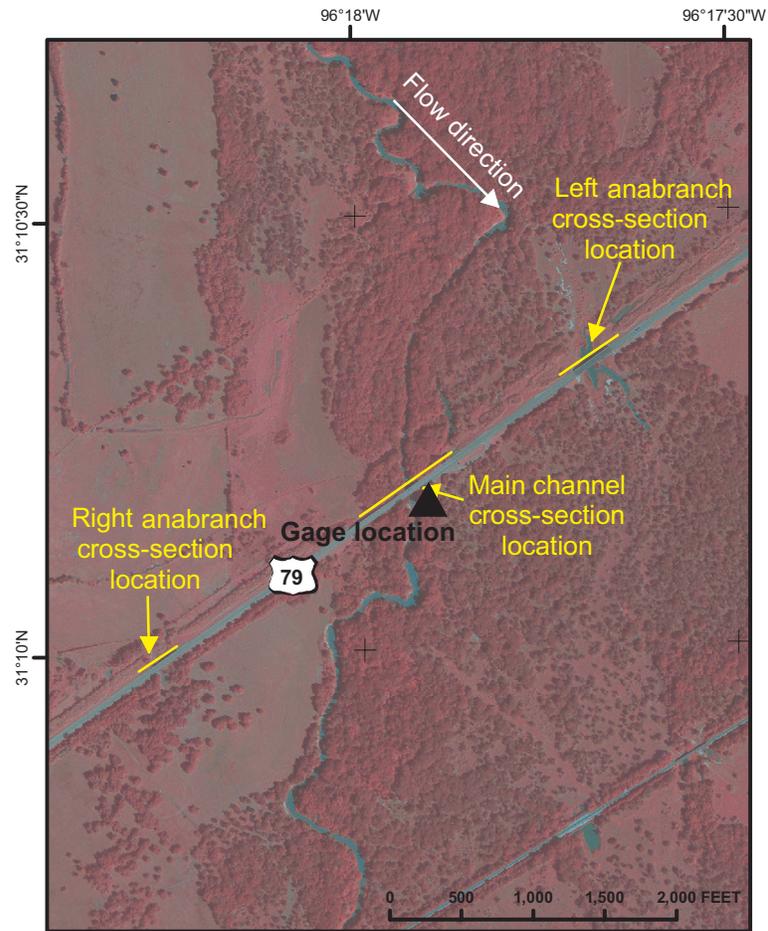


**Figure 39.** Historical cross-sectional channel geometry for U.S. Geological Survey streamflow-gaging station 08110325 Navasota River above Groesbeck, Texas, (A) at moderate-flow conditions (greater than 4,000 cubic feet per second and less than 10,000 cubic feet per second), 1979–2004; and (B) at high-flow conditions (greater than 15,000 cubic feet per second), 1979–2001.

**Table 22.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08110325, Navasota River above Groesbeck, Texas, 1979–2004.[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; >, greater than; <, less than]

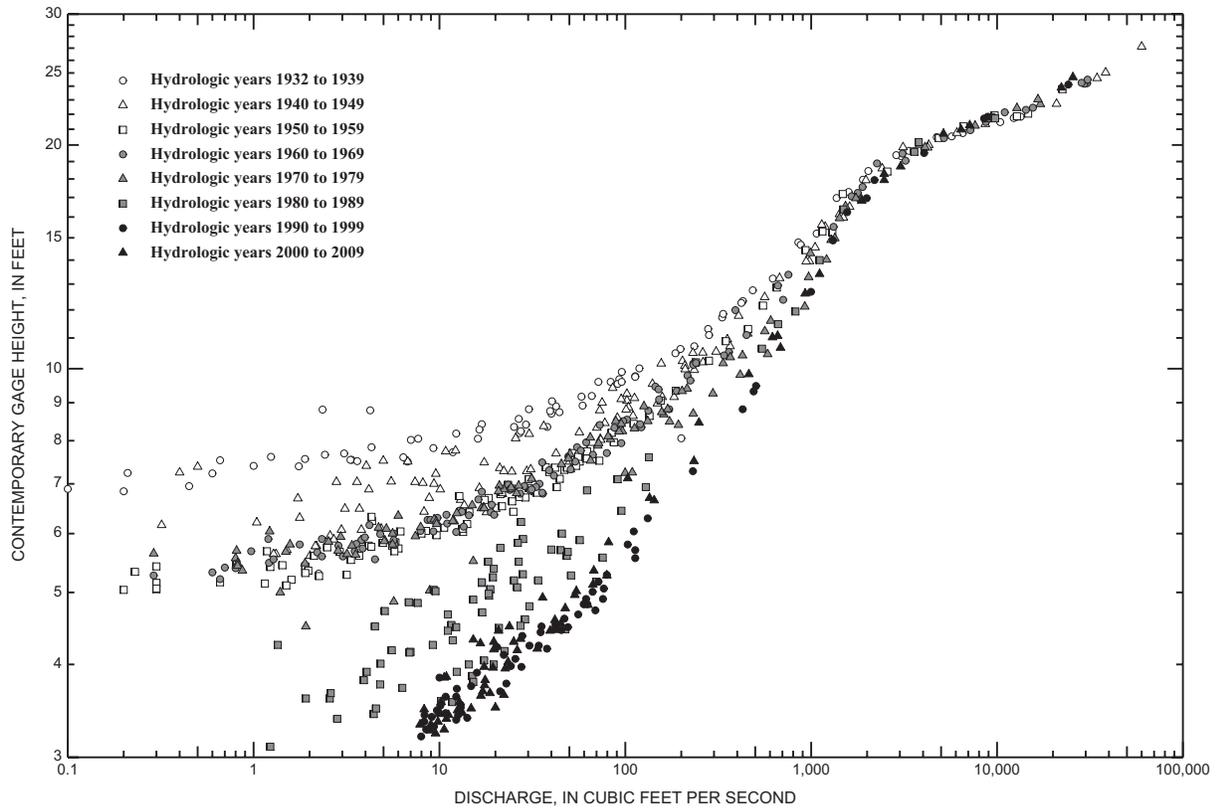
Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Moderate flow (>4,000 ft <sup>3</sup> /s, <10,000 ft <sup>3</sup> /s)								
<b>-5.0-foot target stage</b>								
Apr. 2, 1979	-4.9	6,260	60.9	7.01	426.5	2.38	0.20	0.16
June 4, 1987	-5.0	4,040	62.8	6.48	407.4	1.73	.19	.12
Aug. 2, 1995	-5.1	7,810	68.8	6.82	469.3	2.38	.20	.16
June 28, 2004	-4.8	4,680	63.1	6.43	405.6	1.89	.19	.13
<b>0-foot target stage</b>								
Apr. 2, 1979	.1	6,260	80.6	9.71	782.5	2.97	.28	.17
June 4, 1987	0	4,040	87.0	8.89	773.5	2.14	.25	.13
Aug. 2, 1995	-.1	7,810	91.5	9.51	869.8	3.02	.27	.17
June 28, 2004	.2	4,680	89.1	8.71	776.3	2.35	.25	.14
High flow (>15,000 ft <sup>3</sup> /s)								
<b>0-foot target stage</b>								
May 11, 1979	-.1	26,800	118.8	10.7	1,275	3.71	.31	.20
Dec. 17, 2001	-.2	16,300	80.0	11.6	928.3	4.24	.32	.22
<b>5.0-foot target stage</b>								
May 11, 1979	4.9	26,800	227.2	9.88	2,245	3.66	.29	.21
Dec. 17, 2001	4.8	16,300	190.0	8.21	1,559	3.60	.24	.22

<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.<sup>2</sup> All hydraulic computations are post regulation of flow by reservoirs or other structures.<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.

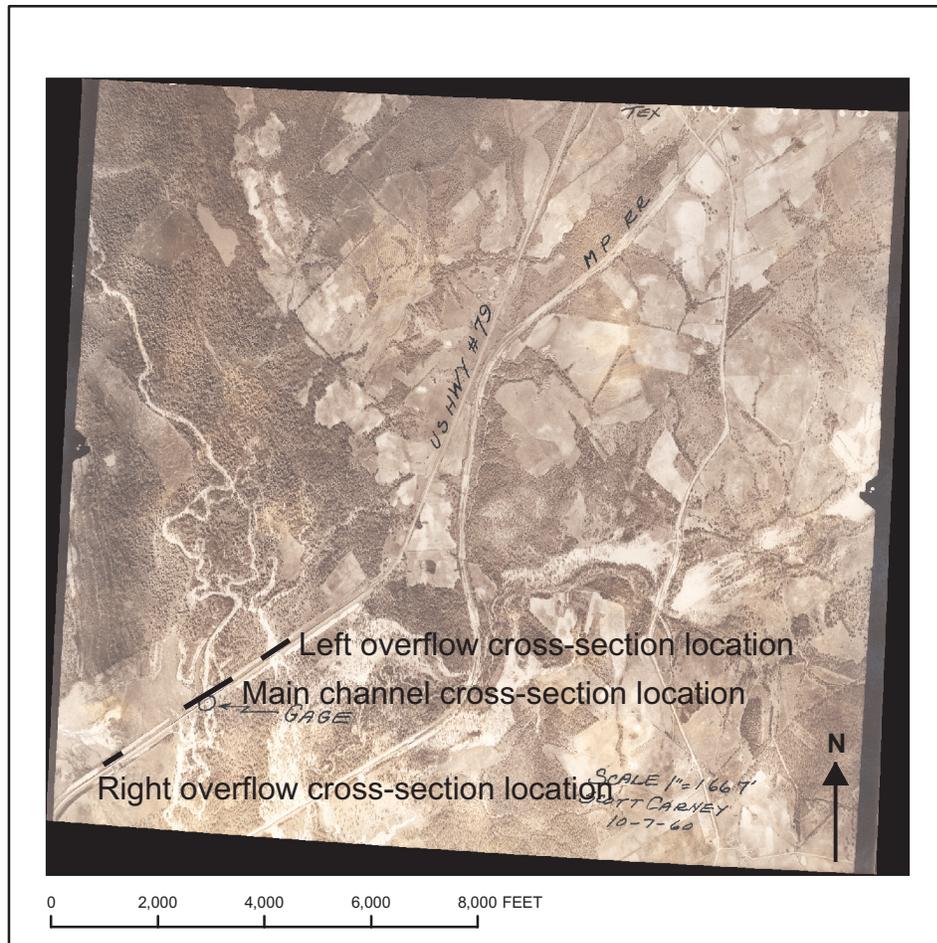


2004 National Agriculture Imagery Program color infrared imagery  
 Projection: Universal Transverse Mercator Zone 14 North  
 Datum: North American Datum 1983

**Figure 40.** U.S. Geological Survey streamflow-gaging station 08110500 Navasota River near Easterly, Texas, 2004 digital orthophoto quarter-quadrangle.



**Figure 41.** Stage-discharge relations of field measurements for U.S. Geological Survey streamflow-gaging station 08110500 Navasota River near Easterly, Texas, 1932–2009.



**Figure 42.** 1958 Aerial photograph showing U.S. Geological Survey streamflow-gaging station 08110500 Navasota River near Easterly, Texas, and vicinity.

(A)



(B)



**Figure 43.** U.S. Geological Survey streamflow-gaging station 08110500 Navasota River near Easterly, Texas, (A) looking upstream, June 7, 1934; (B) looking upstream, December 1952; (C) looking upstream from left bank, April 1, 2008; (D) looking downstream from left bank, December 5, 1941; (E) looking downstream from left bank, April 1, 2008; and (F) looking upstream from left bank, July 22, 1985.

(C)



(D)



Figure 43.—Continued.

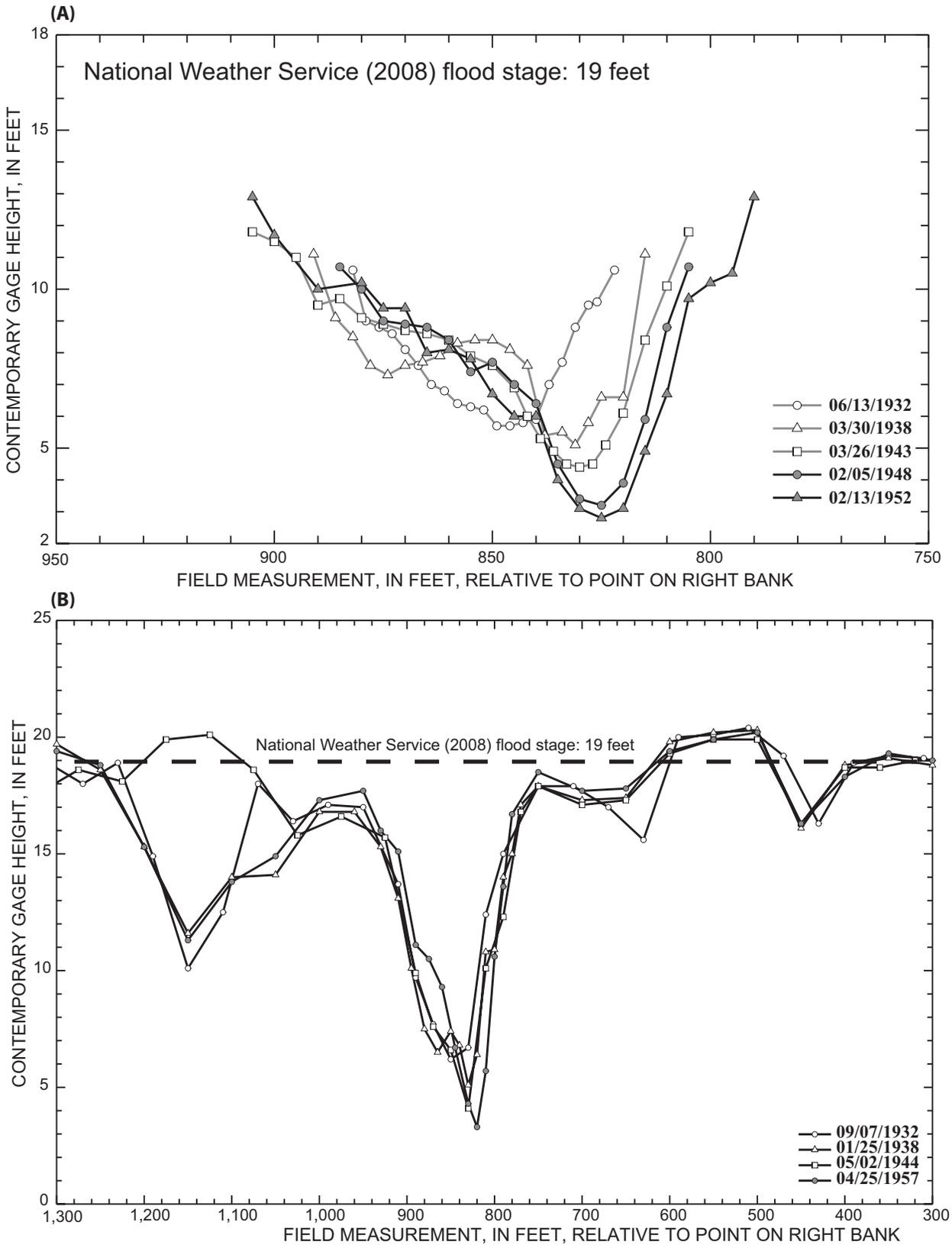
(E)



(F)



Figure 43.—Continued.



**Figure 44.** Historical cross-sectional channel geometry for U.S. Geological Survey streamflow-gaging station 08110500 Navasota River near Easterly, Texas, (A) at low-flow conditions (less than 700 cubic feet per second), 1932–52; (B) at high-flow conditions (greater than 10,000 cubic feet per second), 1932–57; (C) at moderate-flow conditions (greater than 1,500 cubic feet per second and less than 2,000 cubic feet per second), 1978–91; (D) moderately high-flow conditions (greater than 2,000 cubic feet per second and less than 10,000 cubic feet per second), 1965–97; and (E) at high-flow conditions, 1965–2000.

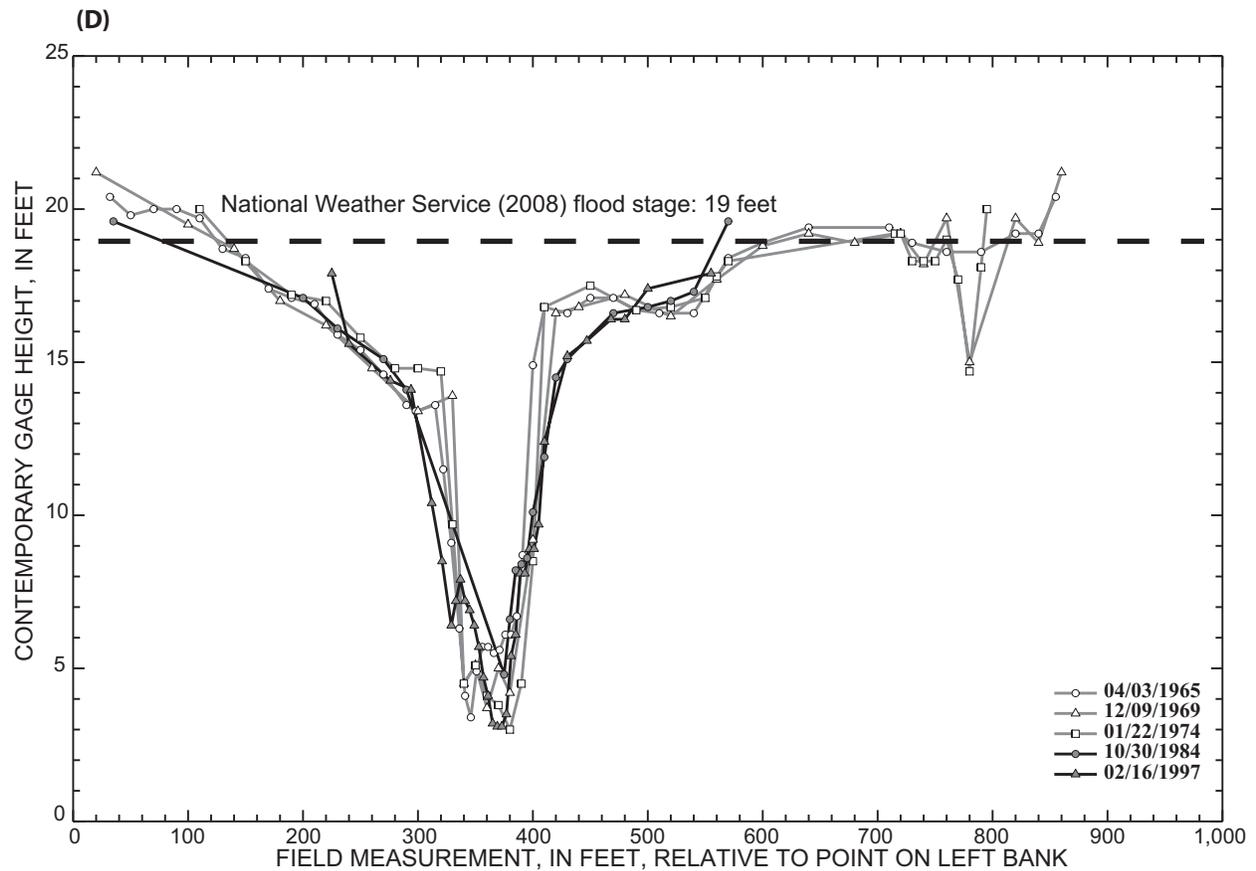
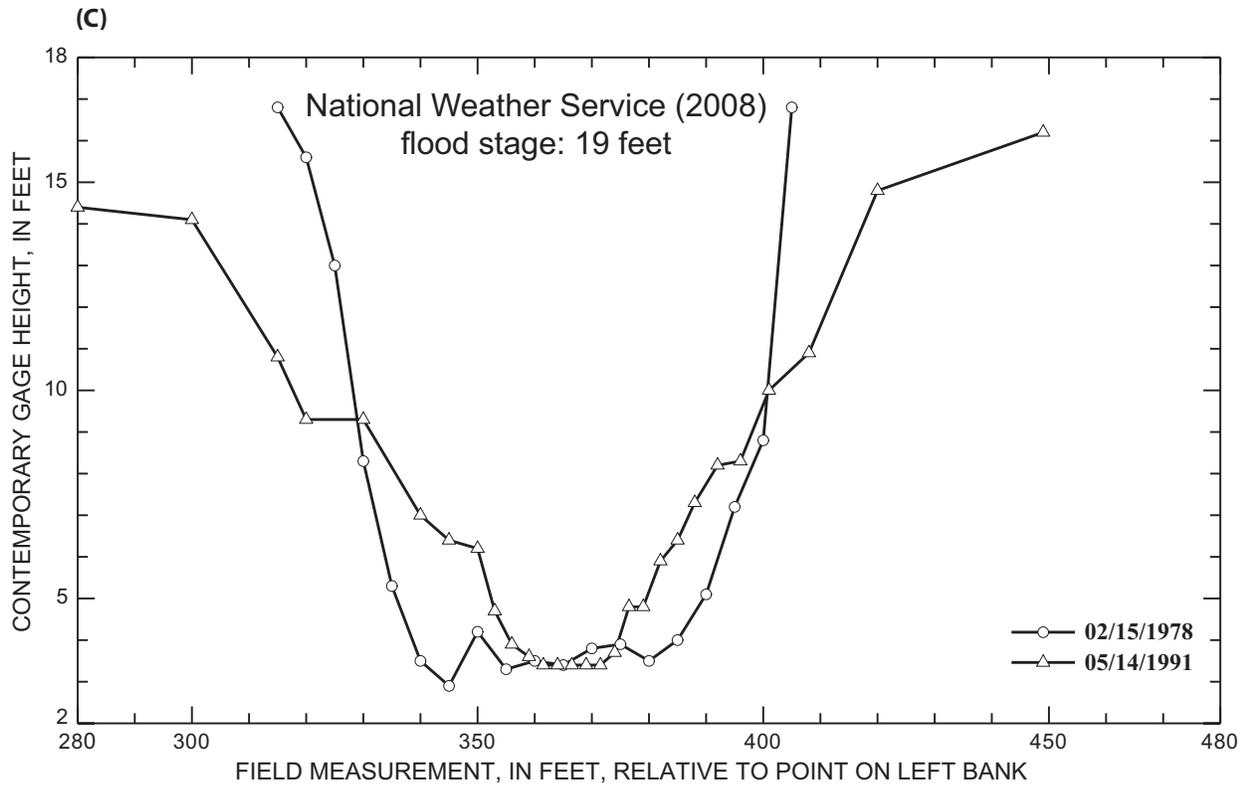


Figure 44.—Continued.

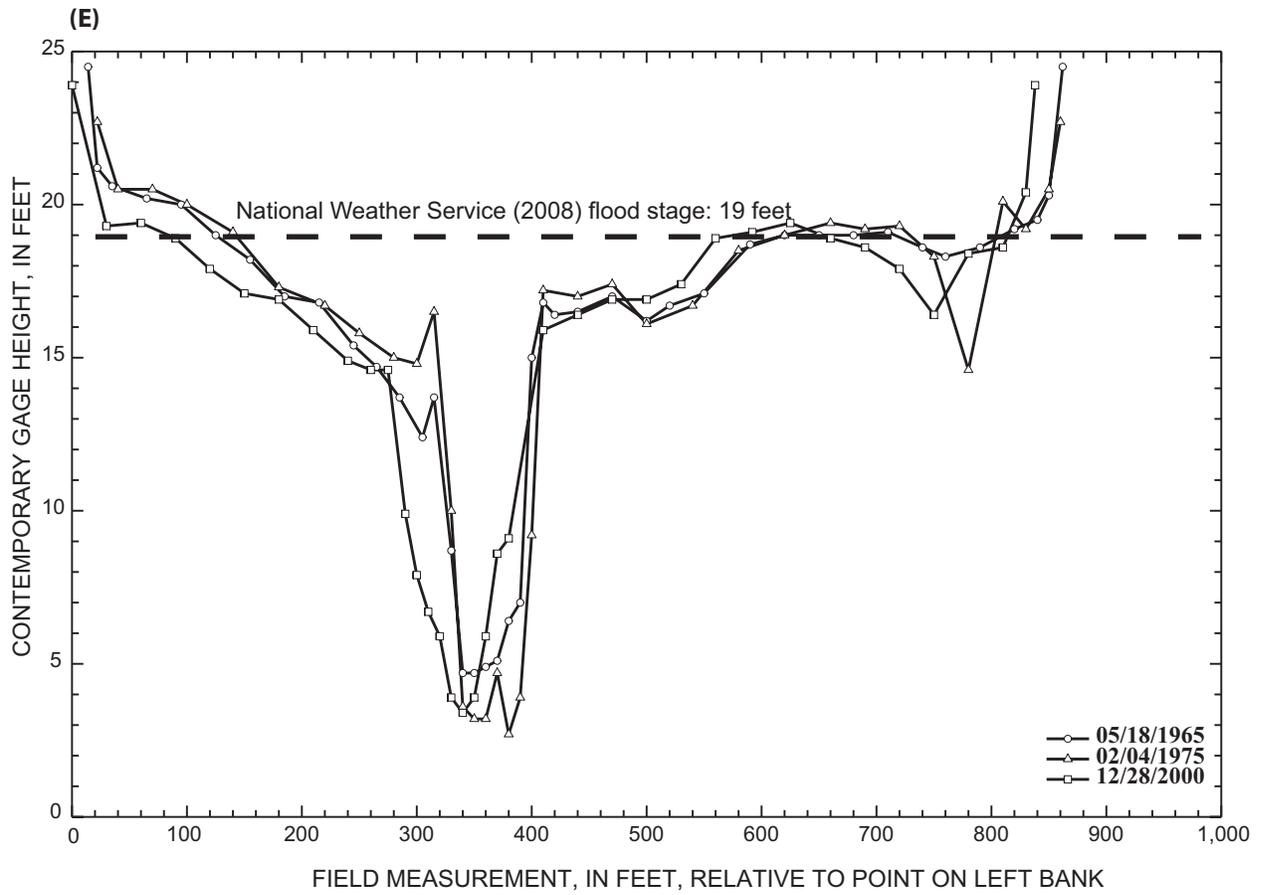
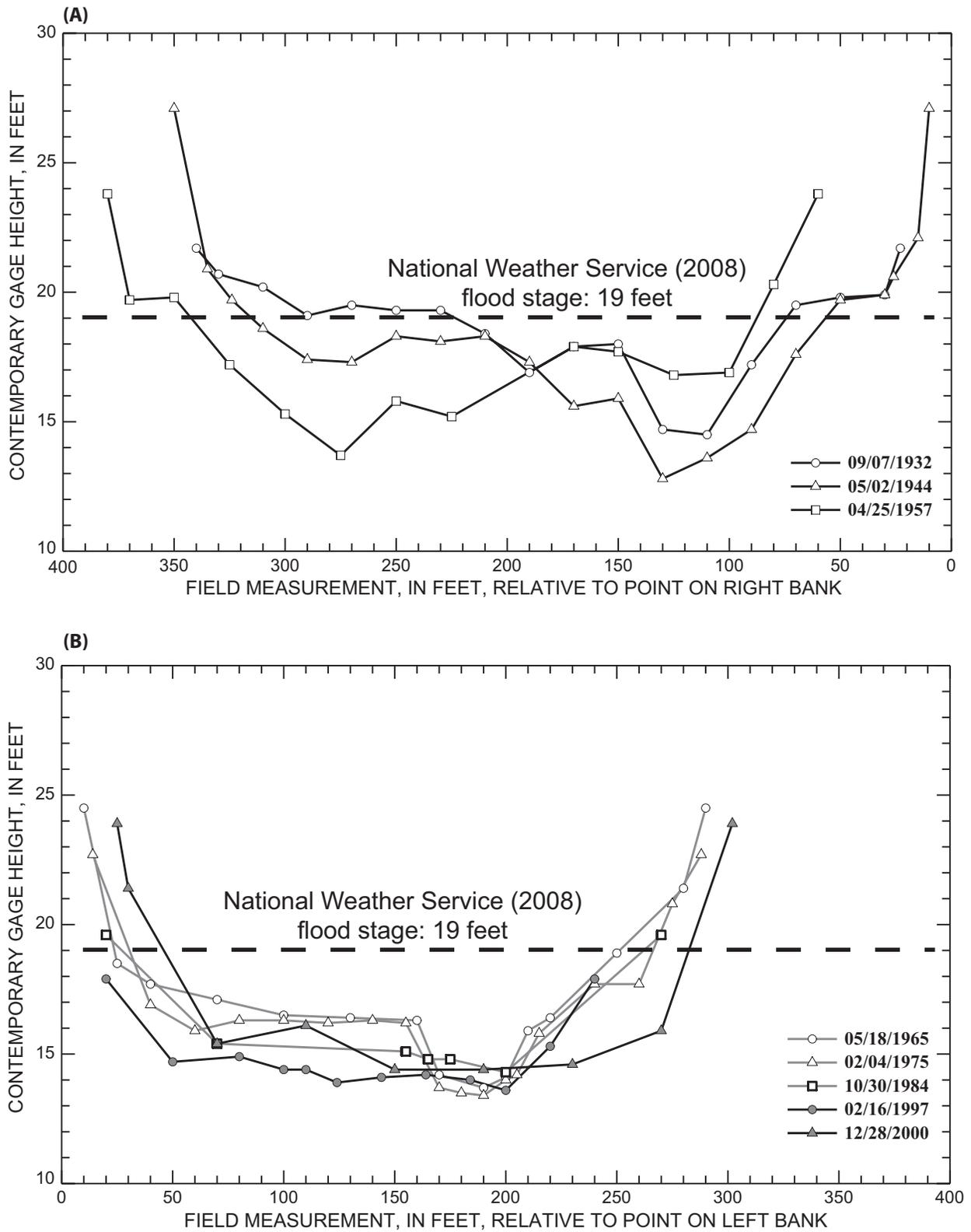
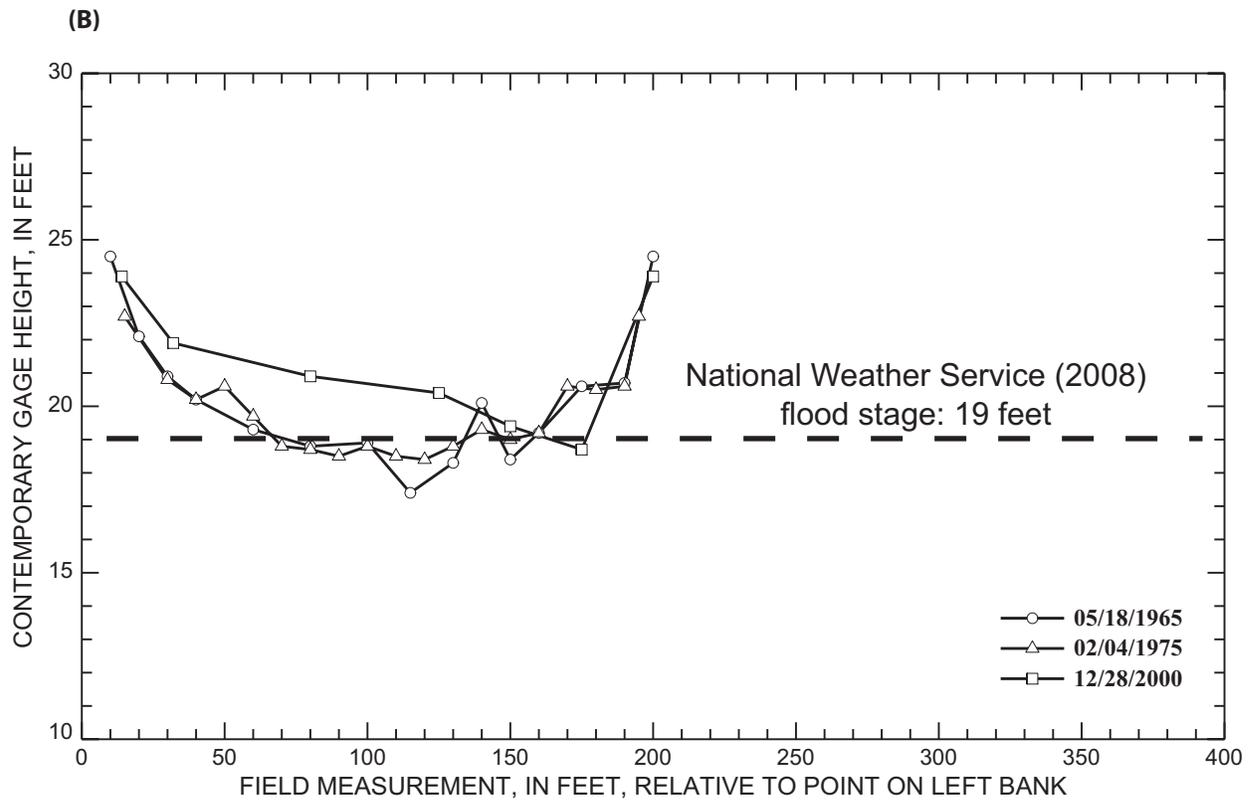
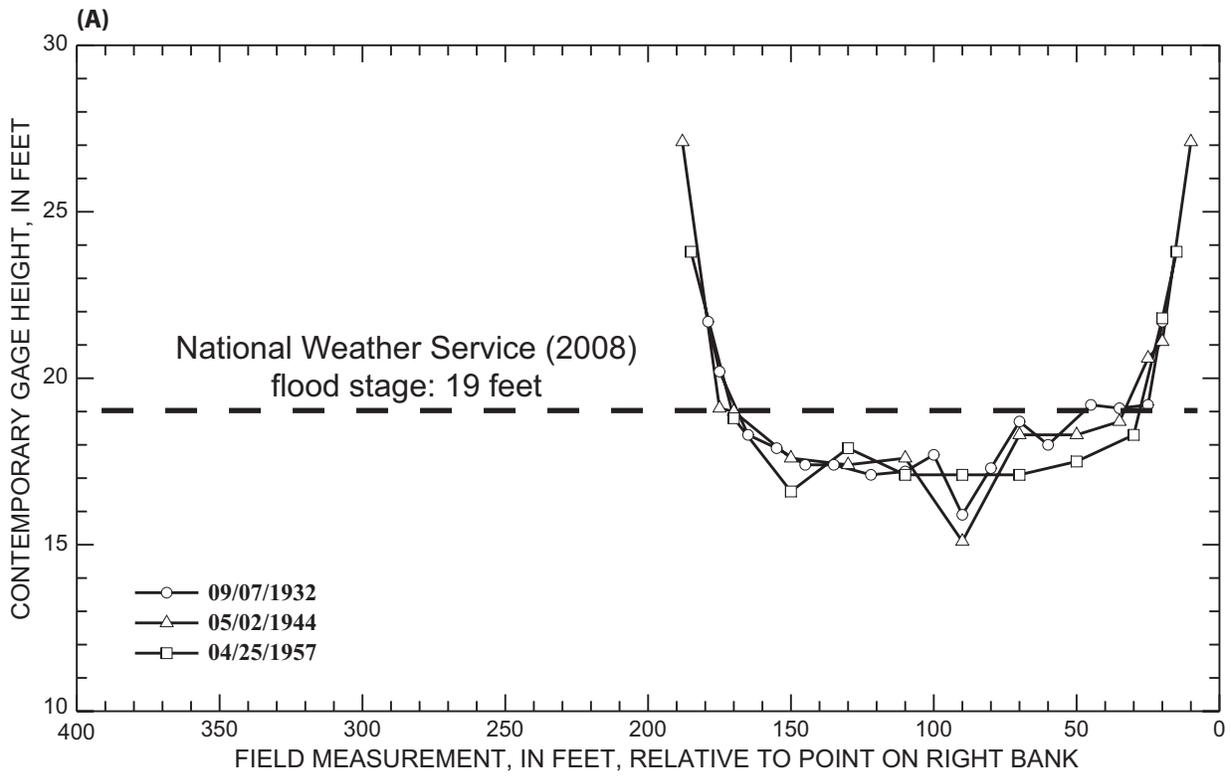


Figure 44.—Continued.



**Figure 45.** Historical cross-sectional channel geometry for left anabranch of U.S. Geological Survey streamflow-gaging station 08110500 Navasota River near Easterly, Texas, (A) 1932–57, and (B) 1965–2000.



**Figure 46.** Historical cross-sectional channel geometry for right anabranch of U.S. Geological Survey streamflow-gaging station 08110500 Navasota River near Easterly, Texas, (A) 1932–57, and (B) 1965–2000.

**Table 23.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08110500, Navasota River near Easterly, Texas, 1932–57.

[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; <, less than; >, greater than]

Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Low flow (<700 ft <sup>3</sup> /s)								
<b>10.0-foot target stage</b>								
June 13, 1932	10.2	198	57.6	2.75	158.6	1.02	0.08	0.11
Mar. 30, 1938	10.1	282	72.4	2.63	190.4	.87	.08	.09
Mar. 26, 1943	9.9	407	80.8	2.42	195.1	.83	.07	.09
Feb. 5, 1948	10.2	366	75.1	3.29	247.2	1.20	.10	.12
Feb. 13, 1952	9.8	653	73.5	3.48	255.8	.87	.11	.08
High flow (>10,000 ft <sup>3</sup> /s)								
<b>15.0-foot target stage</b>								
Sept. 7, 1932	15.2	12,300	140.9	4.94	696.9	1.04	.15	.08
Jan. 25, 1938	15.1	13,400	148.7	5.48	814.0	1.06	.17	.08
May 2, 1944	15.1	60,000	143.8	5.69	819.0	1.59	.18	.12
Apr. 25, 1957	14.8	22,500	122.4	5.87	718.0	1.09	.18	.08

<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.

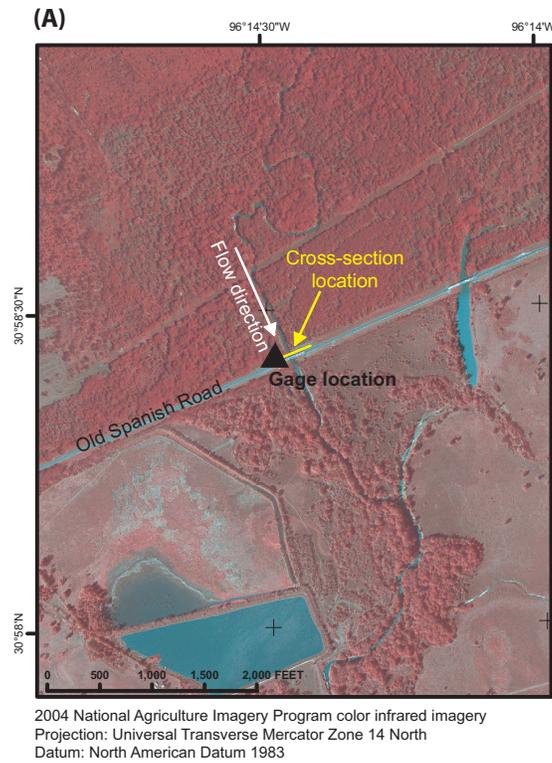
<sup>2</sup> Hydraulic computations before October 16, 1978, are pre-regulation of flow by reservoirs or other structures.

<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.

**Table 24.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08110500, Navasota River near Easterly, Texas, 1965–2000.[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; >, greater than; <, less than]

Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Moderate flow (>1,500 ft <sup>3</sup> /s, <2,000 ft <sup>3</sup> /s)								
<b>10.0-foot target stage</b>								
Feb. 15, 1978	9.9	1,790	72.4	5.30	384.0	1.21	0.16	0.09
May 14, 1991	9.9	1,560	82.7	3.43	283.5	1.11	.10	.11
Moderately high flow (>2,000 ft <sup>3</sup> /s, <10,000 ft <sup>3</sup> /s)								
<b>15.0-foot target stage</b>								
Apr. 3, 1965	14.9	5,180	85.0	7.53	640.0	1.53	.22	.10
Dec. 9, 1969	15.2	7,620	86.2	8.18	705.2	1.67	.24	.10
Jan. 22, 1974	15.0	3,830	87.8	8.68	762.4	1.56	.25	.09
Oct. 30, 1984	14.8	3,590	130.0	5.25	682.5	.61	.16	.05
Feb. 16, 1997	15.1	2,190	135.3	6.59	891.0	1.24	.20	.08
High flow (>10,000 ft <sup>3</sup> /s)								
<b>15.0-foot target stage</b>								
May 18, 1965	15.2	30,700	86.1	7.87	677.6	1.79	.23	.11
Feb. 4, 1975	15.2	17,100	89.5	9.04	808.7	1.93	.26	.11
Dec. 28, 2000	14.9	22,230	130.6	6.88	898.0	1.43	.21	.10

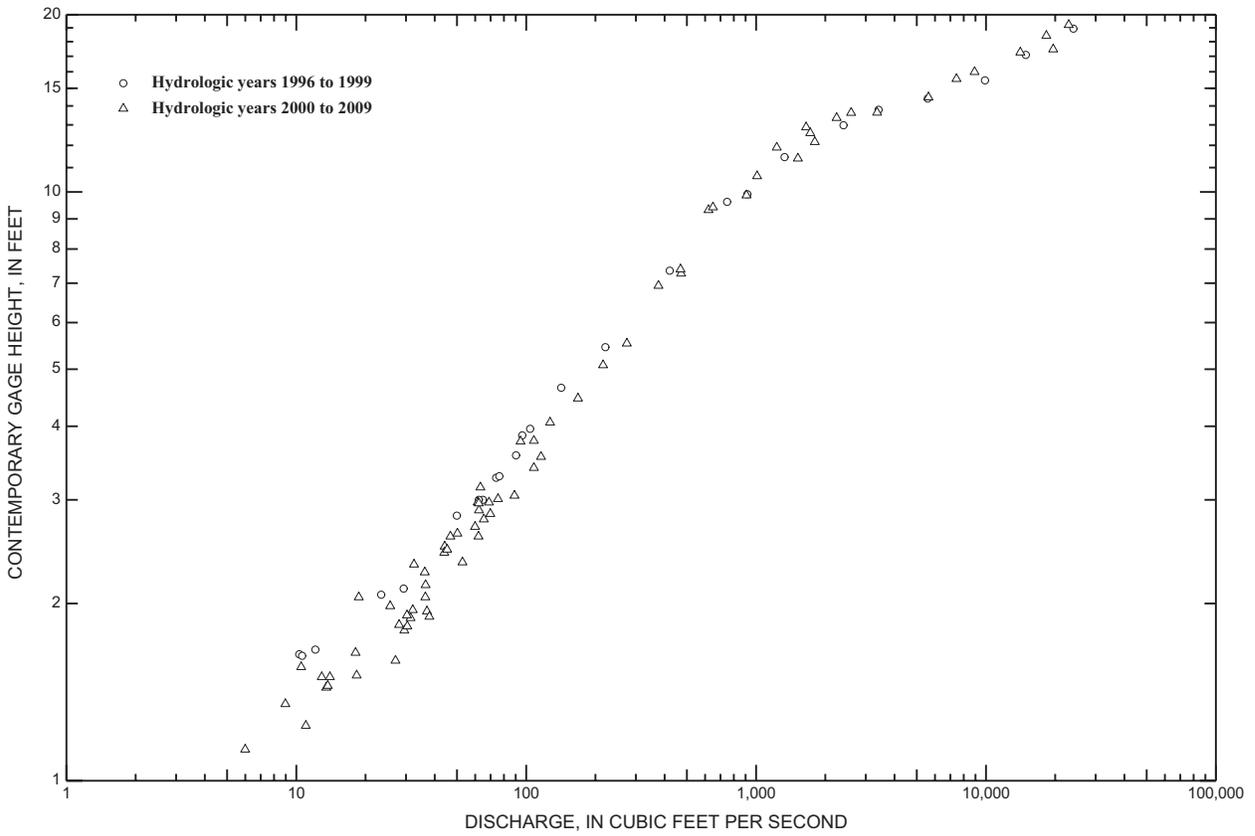
<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.<sup>2</sup> Hydraulic computations before October 16, 1978, are pre-regulation of flow by reservoirs or other structures.<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.



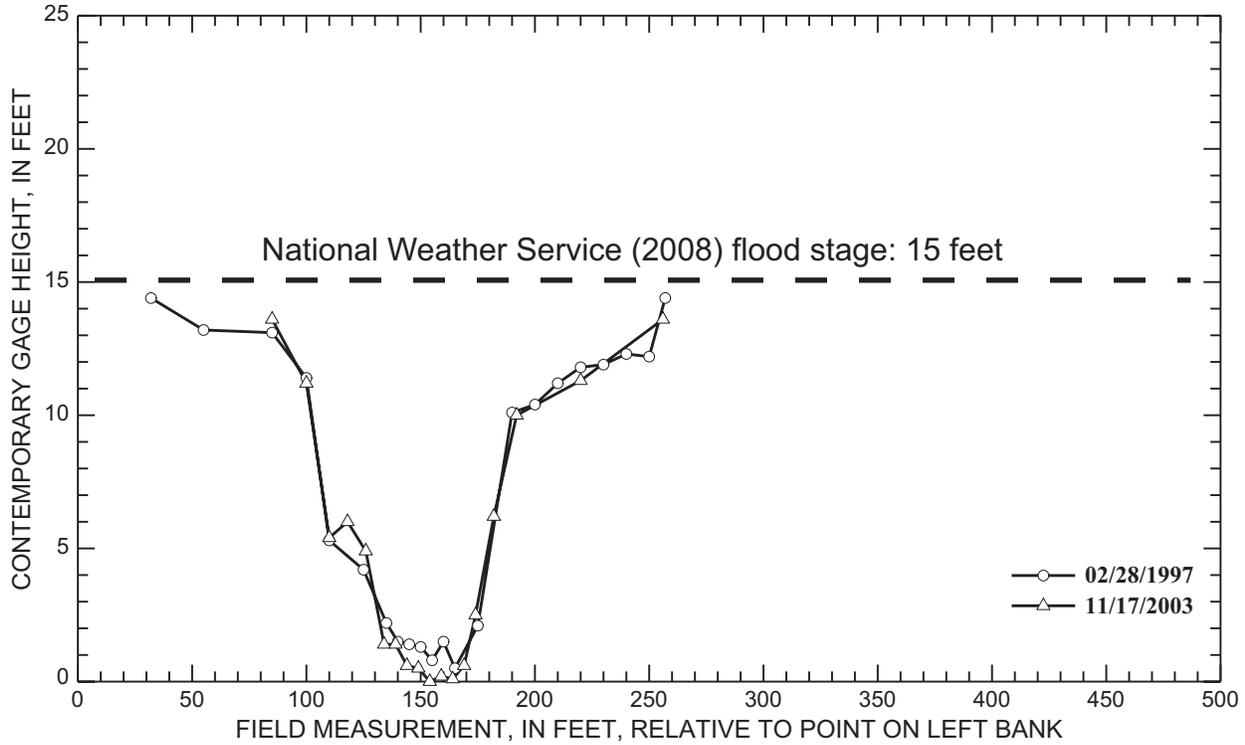
(B)



**Figure 47.** U.S. Geological Survey streamflow-gaging station 08110800 Navasota River at Old Spanish Road near Bryan, Texas, (A) 2004 digital orthophoto quarter-quadrangle; and (B) photograph looking upstream from bridge, April 1, 2008.



**Figure 48.** Stage-discharge relations of field measurements for U.S. Geological Survey streamflow-gaging station 08110800 Navasota River at Old Spanish Road near Bryan, Texas, 1996–2009.



**Figure 49.** Historical cross-sectional channel geometry for U.S. Geological Survey streamflow-gaging station 08110800 Navasota River at Old Spanish Road near Bryan, Texas, at moderately high-flow conditions (greater than 2,000 cubic feet per second and less than 10,000 cubic feet per second), 1997–2003.

**Table 25.** Hydraulic computations for historical cross sections of U.S. Geological Survey streamflow-gaging station 08110800, Navasota River at Old Spanish Road near Bryan, Texas, 1997–2003.

[ft, feet; ft<sup>3</sup>/s, cubic feet per second; ft<sup>2</sup>, square feet; ft/s, feet per second; lb/ft<sup>2</sup>, pounds per square foot; >, greater than; <, less than]

Date	Contemporary stage (ft)	Discharge <sup>1</sup> (ft <sup>3</sup> /s)	Width <sup>2</sup> (ft)	Hydraulic depth <sup>2,3</sup> (ft)	Cross-sectional area <sup>2</sup> (ft <sup>2</sup> )	Mean velocity <sup>2</sup> (ft/s)	Bed shear stress <sup>2</sup> (lb/ft <sup>2</sup> )	Froude number <sup>2</sup>
Moderately high flow (>2,000 ft <sup>3</sup> /s, <10,000 ft <sup>3</sup> /s)								
<b>10.0-foot target stage</b>								
Feb. 28, 1997	10.0	5,580	87.5	6.53	571.1	1.41	0.19	0.10
Nov. 17, 2003	10.0	2,590	89.9	6.46	581.3	1.18	.19	.08

<sup>1</sup> Discharge is for measurement, not a subdivided estimate based on hydraulic analyses.

<sup>2</sup> All hydraulic computations are post regulation of flow by reservoirs or other structures.

<sup>3</sup> Hydraulic depth is ratio of cross-sectional area to width, equivalent to mean depth.