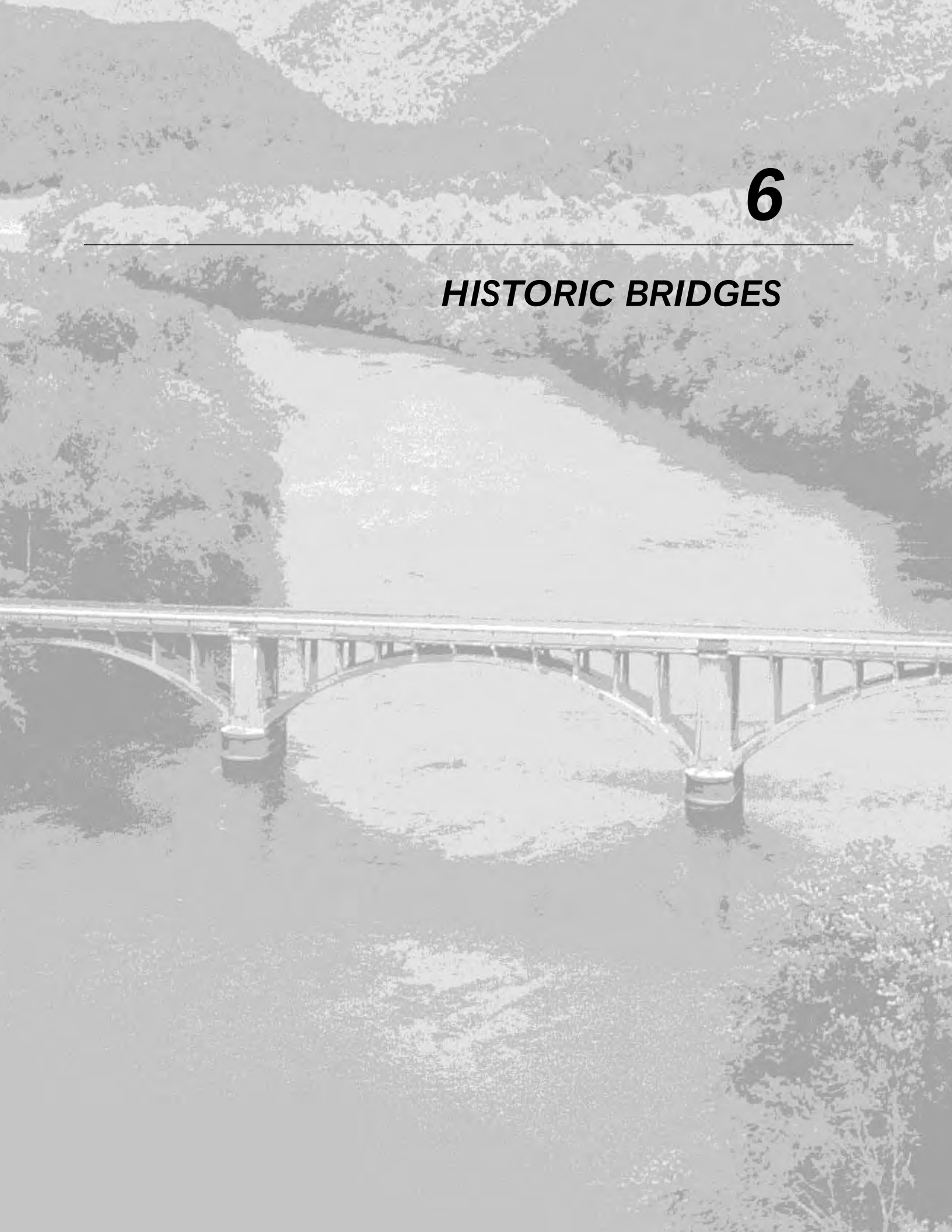


6

HISTORIC BRIDGES

Cordell Hull Bridge: This historic postcard shows an elevation view of the National Register eligible Cordell Hull Bridge (#139, 80-SR025-11.32). Spanning the Cumberland River in Carthage in Smith County, the state built the bridge with New Deal money and named it in honor of Carthage native and Nobel Peace Prize winner Cordell Hull (Author's Collection).

HISTORIC BRIDGES IN TENNESSEE

This chapter contains a discussion of each National Register listed or eligible bridge identified in this survey. The staff considered several ways to sequentially arrange these bridges such as chronologically, geographically, or construction method. The staff ultimately decided to arrange the bridges chronologically, beginning with the state's earliest masonry arch bridges dating from about 1830-1850 and ending with truss bridges built in the 1940s, as enumerated in Table VI-01. The advantages of such an arrangement included an overview of construction periods and trends that provided a comparative engineering context. It also reflected the overlapping nature of bridge construction in that there are no definitive beginning and ending dates for construction types but rather parallel and concurrent movements that evolved within the bridge building industry.

To facilitate finding bridges geographically, a chart (Table VI-02) enumerates the bridges by county locations. Chapters Four and Five contain a discussion of bridges by construction method.

Due to time limitations, TDOT historians have conducted this survey sporadically over a period of several years. In the interim, replacement projects have resulted in the demolition of some of these bridges. In order to provide a contextual overview of the eligibility decision making process, the survey includes demolished bridges with a discussion of their disposition. Although replacement projects may have resulted in the demolition of some historic bridges, municipalities working through the Tennessee Department of Transportation and the Federal Highway Administration retained several of these bridges through preservation in place or through relocation of the truss spans.

The bridges are arranged in three general bridge building periods in Tennessee: from about 1830 through 1901; from 1901 through 1920 and the development of the state highway department; and from 1921 through the end of World War II. Before each group of bridges is a brief historical overview.

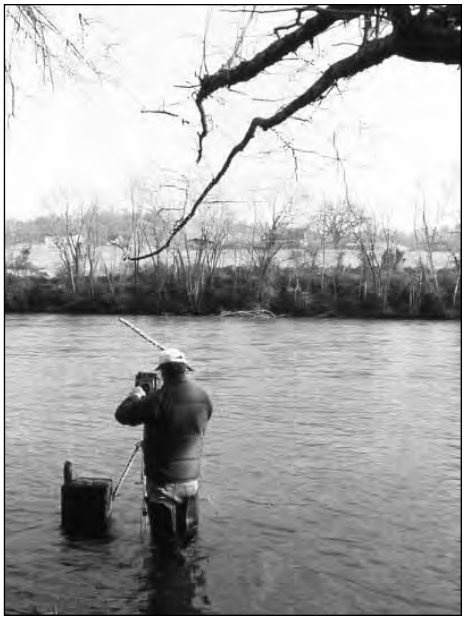


Figure VI-01: TDOT Photographer George Hornal photo-documenting the Massengill Bridge prior to its demolition.

TABLE VI-01: CHRONOLOGICAL LIST OF NATIONAL REGISTER LISTED OR ELIGIBLE BRIDGES

TABLE VI-01:
CHRONOLOGICAL LIST OF NATIONAL REGISTER LISTED OR ELIGIBLE BRIDGES

# IN CH 6	COUNTY	BRIDGE NUMBER	CROSSING	DATE BUILT	DESCRIPTION
1	Davidson	19-E0224-00.07	Manskers Cr	1841 ca	2 Masonry Arches
2	Robertson	74-NonHighway-1	Red River	1841 ca	2 Masonry Arches
3	Sumner	83-A0884-00.35	Slaters Creek	1841 ca	1 Masonry Arch
4	Sevier	78-A0324-00.58	E Fk Pigeon Rv	1875	1 Covered Queenpost
5	Bradley	06-A0184-00.64	Candies Creek	1877-78	1 Pratt Pony
6	Lincoln	52-A0183-05.54	Elk River	1878	1 Bowstring Through
7	Morgan	65-NonHighway-1	White Oak Creek	1880; 1920 ca	1880 substructure; 1 Warren Pony, ca. 1920
8	Carter	10-A0398-00.01	Doe River	1882	1 Covered Howe
9	Giles	28-00966-03.54	Big Creek	1884	1 Warren Pony
10	Meigs	61-A0022-01.04	Sewee Creek	1884	1 Pratt Through
11	Scott	76-A0040-08.03	South Fork Cumberland Rv	1885	1 Double Intersection Pratt Through
12	Bradley	06-A0163-00.19	Candies Creek	1886	3 Pratt Pony
13	Davidson	19-NonHighway-8	Browns Creek	1888	1 Masonry Arch
14	Shelby	79-NonHighway-3	Mississippi River	1888-92	1 4-span Continuous Double Intersection Warren (PTC) Through, 1 Warren Deck
15	Carter	10-A0634-01.93	Doe River	1889	1 Pratt Through
16	Davidson	19-NonHighway-2	S Harpeth Rv	1889	1 Parker Through
17	Lincoln	52-A0487-04.85	Elk River	1889	1 Double Intersection Pratt Thru, 1 Pratt Half-hip Pony
18	Lincoln	52-SR274-06.82	Coldwater Cr	1889	2 Warren Pony
19	Roane	73-A0330-00.84	Paint Rock Cr	1889	1 Pratt Bedstead Pony
20	Hamilton	33-03544-00.12	Tennessee Rv	1889-91	6 Camelback Through
21	Montgomery	63-A0456-01.88	Sulphur Fk Cr	1890	1 Pratt Through
22	Cheatham	11-NonHighway-1	Sycamore Creek	1891	2 Fixed Cable-Stayed Suspension
23	Lincoln	52-A0494-00.22	Elk River	1981	1 Baltimore Petit Thru, 2 Pratt Half-hip Pony

24	Marion	58-A0502-00.36	Battle Creek	1891	1 Pratt Through
25	Sequatchie	77-NonHighway-1	Sequatchie Rv	1893 ca	1 Pratt Through
26	Bradley	06-A0165-00.21	Candies Creek	1895	3 Pratt Half-hip Pony
27	Knox	47-03775-00.26	Tennessee River	1896-98	1 5-span continuous Pratt Deck-Arched
28	Grundy	31-NonHighway-3	Scott Creek	1898	2 Masonry Arches
29	Roane	73-A0323-02.19	Paint Rock Cr	1898	1 Pratt Bedstead Pony
30	Sevier	78-00496-07.09	Boyds Creek	1898	1 Masonry Arch
31	Sullivan	82-NonHighway-1	Beaver Creek	1898	1 Pratt Through
32	Cheatham	11-01931-00.45	Harpeth River	1898; 1911	2 Pratt Through, 1 Built-up Plate Girder
33	Davidson	19-NonHighway-9	Richland Creek	1900 ca	1 Double Intersection Warren Pony
34	Sumner	83-NonHighway-4	Dry Fork Creek	1900 ca	1 Double Intersection Warren Pony
35	Lincoln	52-NonHighway-3	Elk River	1901	1 Camelback Through, 2 Pratt Pony
36	Washington	90-A0900-00.97	Nolichucky Rv	1901-02	2 Pratt Thru, 1 Pratt Pony
37	Giles	28-A0153-01.95	Elk River	1902	1 Pennsylvania Petit Thru
38	Stewart	81-NonHighway-2	South Cross Cr	1902	1 Pratt Through
39	Sullivan	82-A0872-00.05	S Fk Holston Rv	1902-03	1 Camelback, 1 Pratt Thru
40	Hardin	36-NonHighway-1	Snake Creek	1903	1 Pratt Through
41	Maury	60-NonHighway-1	Duck River	1903	1 Penn Petit Thru, 1 Pratt Half-hip Pony
42	Humphreys	43-NonHighway-1	Duck River	1903-04	2 Camelback Through
43	Maury	60-NonHighway-2	Duck River	1903-04	1 Camelback Through
44	Shelby	79-E0578-00.21	Frisco Railroad	1903-05	1 Closed Spandrel Arch
45	Bedford	02-A0048-00.38	N Fork Creek	1904	1 Pratt Through
46	Davidson	19-D0981-02.00	Harpeth River	1904	3 Warren Pony
47	Dickson	22-01864-02.86	Jones Creek	1904	1 Pratt Through
48	Knox	47-A0135-00.42	Railroads	1905	10 Closed Spandrel Arch
49	Robertson	74-00979-01.58	Sulphur Fk Cr	1905	1 Camelback Through
50	Coffee	16-P0001-00.02	Duck River	1906	1 Pratt Through
51	Davidson	19-B0983-01.61	Richland Creek	1906	1 Closed Spandrel Arch

52	Grundy	31-NonHighway-2	Firescald Creek	1906	1 Masonry Arch
53	Marion	58-A0443-00.50	Poplar Spring Br	1906	1 Closed Spandrel Arch
54	Perry	68-NonHighway-2	Buffalo River	1906	1 Camelback Through, 1 Pratt Pony
55	Hickman	41-NonHighway-1	Duck River	1907	1 Penn Petit, 1 Pratt Thru; 1 Warren Pony
56	Smith	80-A0206-00.47	Lick Creek	1907	1 Pratt Pony
57	Smith	80-NonHighway-3	Caney Fork River	1907-08	1 Camelback Through, 1 Pratt Deck, & 1 Pratt Half-hip Deck
58	Davidson	19-03245-01.47	Cumberland Rv	1907-09	1 Parker,2 Camelback Thru
59	DeKalb	21-A0028-01.21	Smith Fork Cr	1908	2 Warren Pony
60	Greene	30-A0934-00.16	Lick Creek	1908	1 Pratt Half-hip Pony
61	Van Buren	88-NonHighway-1	Cane Creek	1908; 1924	1 Pratt Through, & 1 Warren Pony
62	Davidson	19-NonHighway-1	Richland Creek	1908-10	1 Warren Pony
63	Franklin	26-A0406-00.33	Wagner Creek	1909	1 Pratt Through
64	Grainger	29-A0051-00.06	Flat Creek	1909	1 Pratt Half-hip Pony
65	Meigs	61-NonHighway-1	Big Sewee Cr	1909-10	1 Pratt Bedstead Pony
66	Davidson	19-NonHighway-4	Duck Pond	1910	1 Closed Spandrel Arch
67	Obion	66-NonHighway-1	Obion River Drainage Canal	1910-12	1 Covered Kingpost
68	Humphreys	43-A0340-00.01	Hurricane Cr	1911	1 Pratt Through
69	McMinn	54-A0214-00.10	L & N Railroad	1911	1 Kingpost Pony
70	Polk	70-01223-02.53	Hiwassee River	1911	1 Parker & 2 Pratt Through
71	Grundy	31-A0022-02.49	Hickory Creek	1912	2 Masonry Arches
72	Polk	70-SR315-00.02	Hiwassee River	1912	5 Pratt Through
73	White	93-A0285-00.95	Lost Creek	1912	1 Pratt Pony
74	Polk	70-A0317-02.09	L & N Railroad	1913	1 Queenpost Pony
75	Sullivan	82-C0539-00.01	S Fk Holston Rv	1913	3 Pratt Through
76	Sumner	83-NonHighway-1	Caney Fork Cr	1913	1 Warren (PTC) Pony
77	Shelby	79-NonHighway-4	Mississippi River	1913-17	1 4-span Continuous Through, 1 Warren Deck

78	Franklin	26-NonHighway-1	Factory Creek	1914 ca	2 Masonry Arches
79	Giles	28-01891-04.77	Big Creek	1914	2 Closed Spandrel Arches
80	Loudon	53-02507-08.23	Pond Creek	1914	1 Closed Spandrel Arch
81	Meigs	61-A0028-00.23	Big Sewee Cr	1914	1 Pratt Through
82	Monroe	62-A0520-02.45	L & N Railroad	1914	1 Queenpost Pony
83	Obion	66-NonHighway-2	S Fk Indian Cr	1914	1 Warren Pony
84	Perry	68-NonHighway-1	Buffalo River	1914	1 Camelback Through, 2 Pratt Pony
85	Hamilton	33-SR008-09.53	Tennessee River	1914-17	1 Steel Arch/Bascule Lift, 6 Closed Spandrel Arches
86	Roane	73-01226-00.50	Emory River	1915-18	7 Closed Spandrel Arches
87	Anderson	01-A0088-03.53	Clinch River	1916	1 Camelback & 2 Pratt Through, 1 Pratt Pony
88	Maury	60-A0358-00.42	Big Bigby Cr	1916	5 Closed Spandrel Arches
89	Unicoi	86-A0068-00.89	Nolichucky Rv	1916	5 Closed Spandrel Arches
90	Washington	90-B0586-00.00	Watauga River	1916	2 Pennsylvania Petit Thru
91	Grainger	29-A0025-02.62	Hogskin Creek	1916-17	1 Camelback Through
92	Dyer	23-NonHighway-1	Lake	1917	1 Pratt Pony Swing
93	Hawkins	37-A0131-01.67	Poor Valley Cr	1917	1 Warren Pony
94	Maury	60-NonHighway-4	Beard Branch	1917	1 Closed Spandrel Arch
95	Meigs	61-NonHighway-2	Big Sewee Cr	1917	1 Pratt Bedstead Pony
96	White	93-A0415-00.19	L & N Railroad	1917-18	1 Queenpost Pony
97	Anderson	01-02444-06.74	L & N Railroad	1918	1 Kingpost Pony
98	Blount	05-NonHighway-1	Little River	1918	3 Closed Spandrel Arches
99	Giles	28-A0340-00.83	L & N Railroad	1918	1 Kingpost Pony
100	Smith	80-01068-03.16	Hickman Creek	1920	4 Closed Spandrel Arches
101	Madison	57-01644-00.05	S Fork Forked Deer River	1920-21	1 Warren Through
102	Greene	30-NonHighway-1	Camp Creek	1921	1 Open Spandrel Arch
103	Wilson	95-02036-01.51	Round Lick Cr	1921	2 Closed Spandrel Arches
104	Giles	28-A0334-00.33	Jenkins Branch	1921-22	1 Closed Spandrel Arch
105	Giles	28-A0002-00.23	Factory Creek	1922	1 Closed Spandrel-Ribbed

106	Sevier	78-01284-00.56	Birds Creek	1922	1 Closed Spandrel Arch
107	Warren	89-A0278-00.31	Rocky River	1922-23	1 Open Spandrel Arch
108	Montgomery	63-00973-03.88	Cumberland Rv	1922-25	1 K, 2 Warren (PTC) Thru
109	Greene	30-A0906-00.01	Little Chucky Cr	1923	1 Covered Queenpost
110	Polk	70-02268-01.51	Conasauga Rv	1923	1 Open Spandrel Arch
111	Giles	28-NonHighway-1	Elk River	1923-24	1 Warren (PTC) Through
112	Warren	89-04261-11.60	Collins River	1924; 1889	2 Parker Through & 2 Warren Pony
113	Greene	30-A0909-00.21	Nolichucky Riv	1925	4 Closed Spandrel-Ribbed
114	Hardin	36-A0446-00.43	Indian Creek	1925-26	1 Closed Spandrel Arch
115	Carter	10-03939-00.10	Doe River	1926	3 Closed Spandrel-Ribbed
116	Lincoln	52-A0147-03.89	Lane Branch	1926	2 Masonry Arches
117	Shelby	79-B0741-00.01	Cypress Creek	1926	3 Closed Spandrel Arches
118	Cocke	15-SR009-21.60	French Broad River	1926-28	3 Open & 2 Closed Spandrel Arches
119	Jackson	44-SR056-10.96	Cumberland Rv	1926-28	1 K, 2 Warren (PTC) Thru
120	Morgan	65-A0450-03.25	Emory River	1926-28	1 Warren Pony
121	Knox	47-01262-01.16	Roseberry Cr	1927	1 Open Spandrel Arch
122	Davidson	19-SR045-02.03	Cumberland Rv	1927-29	1 Parker, 2 Camelback Thru
123	Hancock	34-SR070-01.65	Clinch River	1928	1 Warren (PTC) Through
124	Wilson	95-A0392-02.12	Fall Creek	1928	1 Closed Spandrel-Ribbed
125	Henry	40-SR076-30.34	Tennessee Rv	1928-30	3 Parker, 8 Pratt Through
126	Campbell	07-A0080-00.49	Stinking Creek	1929	2 Closed Spandrel Arches
127	Morgan	65-00444-09.58	Emory River	1929	3 Camelback Through
128	Stewart	81-A0330-01.41	Standing Creek	1929	1 Open Spandrel Arch
129	Marion	58-SR002-21.19	Tennessee River	1929-30	2 Parker & 2 Warren (PTC), Thrrough
130	Roane	73-SR058-11.92	Tennessee River	1929-30	1 Parker & 2 Warren (PTC) Through
131	Sullivan	82-SR036-05.01	Holston River	1929-30	3 Open Spandrel Arches
132	Knox	47-SR033-06.72	Tennessee Rv	1930-31	6 Open Spandrel Arches
133	Knox	47-01262-04.68	Holston River	1930-31	3 Open Spandrel Thru Arch

134	Anderson	01-A0136-01.96	Hinds Creek	1931	1 Closed Spandrel-Ribbed
135	Monroe	62-02340-13.67	Tellico River	1931	1 Pratt Pony
136	Anderson	01-SR071-01.96	Hinds Creek	1934	1 Closed Spandrel Arch
137	Cumberland	18-01168-03.76	Byrds Creek	1934	1 Masonry Arch
138	Greene	30-SR070-08.48	Nolichucky River	1934-35	1 3-span Continuous Warren Deck
139	Smith	80-SR025-11.32	Cumberland River	1934-36	1 Modified Parker Thru & 2 Warren Deck Continuous 3-span Truss, 6 Modified Warren Deck
140	Union	87-SR033-15.83	Clinch River	1934-36	2 2-span Continuous Warren (PTC) Through
141	Sevier	78-SR071-05.85	State Route 71	1935	1 Closed Spandrel Arch
142	Sevier	78-SR071-08.54	W Prong Little Pigeon River	1936	1 Closed Spandrel Arch
143	Sevier	78-SR071-05.65	Cole Branch	1936-37	1 Closed Spandrel Arch
144	Sevier	78-SR071-05.23	Walker Camp Prong	1936-37	2 Closed Spandrel Arches
145	Sevier	78-SR071-02.83	W Prong Little Pigeon River	1936-37	1 Closed Spandrel Arch
146	Sevier	78-SR071-01.98	Walker Camp Prong	1936-37	1 Closed Spandrel Arch
147	Cumberland	18-01166-03.59	Byrds Crk/Lake	1936-38	15 Closed Spandrel Arch
148	Sevier	78-SR071-13.31	W Prong Little Pigeon River	1937	3 Closed Spandrel Arches
149	Cumberland	18-A0939-01.00	Byrds Creek	1937 ca	1 Masonry Arch
150	Fentress	25-SR028-29.24	Wolf River	1939-40	1 Pratt Through
151	Davidson	19-NonHighway-3	Drakes Branch	1941	1 (Metal) Kingpost Pony
152	Jefferson	45-SR092-09.21	French Broad River	1942-44	1 3-span Continuous Warren (PTC) Through
153	Roane	73-00653-04.34	Poplar Creek	1943 ca	3 Bailey Pony
154	Pickett	69-SR042-03.27	Obey River	1943-46	3 Parker & 3 Warren (PTC) Through
155	Shelby	79-I055-12.00	Mississippi River	1949-50	1 5-Continuous Warren (PTC) (Through)
156	Hamilton	33-01151-00.78	Sale Creek	1954	1 Warren (PTC) Pony

TABLE VI-02: NATIONAL REGISTER LISTED ELIGIBLE BRIDGES (BY COUNTY)

COUNTY	BRIDGE NUMBER	CROSSING	DATE BUILT	DESCRIPTION	# IN CH. 6
ANDERSON (01)	01-SR071-04.79	Hinds Creek	1934	1 Closed Spandrel	136
	01-02444-06.74	L & N RR	1918	1 Kingpost Pony	97
	01-A0088-03.53	Clinch River	1916	1 Camelback & 2 Pratt Through, 1 Pratt Pony	87
	01-A0136-01.96	Hinds Creek	1931	1 Closed Spandrel-Ribbed	134
BEDFORD (02)	02-A0048-00.38	North Fork Cr	1904	1 Pratt Through	45
BENTON (03)	NONE				
BLEDSOE (04)	NONE				
BLOUNT (05)	05-NonHighway-1	Little River	1918	3 Closed Spandrel	98
BRADLEY (06)	06-A0163-00.19	Candies Cr	1886	3 Pratt Pony	12
	06-A0165-00.21	Candies Cr	1895	3 Pratt Half-hip Pony	26
	06-A0184-00.64	Candies Cr	1877-78	1 Pratt Pony	5
CAMPBELL (07)	07-A0080-00.49	Stinking Cr	1929	2 Closed Spandrel	126
CANNON (08)	NONE				
CARROLL (09)	NONE				
CARTER (10)	10-03939-00.10	Doe River	1926	3 Closed Spandrel-Ribbed	115
	10-A0398-00.01	Doe River	1882	1 Covered Howe	8
	10-A0634-01.93	Doe River	1889	1 Pratt Through	15
CHEATHAM (11)	11-01931-00.45	Harpeth River	1898; 1911	2 Pratt Through, 1 Built-up Plate Girder	32
	11-NonHighway-1	Sycamore Creek	1891	Cable-Stayed Suspension	22
CHESTER (12)	NONE				
CLAIBORNE (13)	NONE				
CLAY (14)	NONE				

COCKE (15)	15 SR009-21.60	French Broad River	1926-28	3 Open & 2 Closed Spandrel	118
COFFEE (16)	16-P0001-00.02	Duck River	1906	1 Pratt Through	50
CROCKETT (17)	NONE				
CUMBERLAND (18)	18-01166-03.59	Byrds Cr/Lake	1936-38	15 Closed Spandrel	147
	18-01168-03.76	Byrds Creek	1934	1 Masonry Arch	137
	18-A0939-01.00	Byrds Creek	ca. 1937	1 Masonry Arch	149
DAVIDSON (19)	19-SR045-02.03	Cumberland River	1927-29	1 Parker & 2 Camelback Thru	122
	19-03245-01.47	Cumberland River	1907-09	1 Parker & 2 Camelback Thru	58
	19-B0983-01.61	Richland Cr	1906	1 Closed Spandrel	51
	19-D0981-02.00	Harpeth Rv	1904	3 Warren Pony	46
	19-E0224-00.07	Manskers Cr	ca. 1841	2 Masonry Arches	1
	19-NonHighway-1	Richland Cr	1908-10	1 Warren Pony	62
	19-NonHighway-2	S Harpeth Rv	1889	1 Parker Through	16
	19-NonHighway-3	Drakes Br	1941	1 Kingpost Pony	151
	19-NonHighway-4	Duck Pond	1910	1 Closed Spandrel	66
	19-NonHighway-8	Browns Creek	1888	1 Masonry Arch	13
	19-NonHighway-9	Richland Creek	1900 ca	1 Double Intersection Warren Pony	33
DECATUR (20)	NONE				
DEKALB (21)	21-A0028-01.21	Smith Fk Cr	1908	2 Warren Pony	59
DICKSON (22)	22-01864-02.86	Jones Creek	1904	1 Pratt Through	47
DYER (23)	23-NonHighway-1	Lake	1917	1 Pratt Pony Swing	92
FAYETTE (24)	NONE				
FENTRESS (25)	25-SR028-29.24	Wolf River	1939-40	1 Pratt Through	150
FRANKLIN (26)	26-A0406-00.33	Wagner Cr	1909	1 Pratt Through	63
	26-NonHighway-1	Factory Cr	ca. 1914	2 Masonry Arches	78
GIBSON (27)	NONE				

GILES (28)	28-00966-03.54	Big Creek	1884	1 Warren Pony	9
	28-01891-04.77	Big Creek	1914	2 Closed Spandrel	79
	28-A0002-00.23	Factory Creek	1922	1 Closed Spandrel-Ribbed	105
	28-A0153-01.95	Elk River	1902	1 Penn Petit Thru	37
	28-A0334-00.03	Jenkins Br	1921-22	1 Closed Spandrel	104
	28-A0340-00.83	L & N RR	1918	1 Kingpost Pony	99
	28-NonHighway-1	Elk River	1923-24	1 Warren-PTC Thru	111
GRAINGER (29)	29-A0025-02.62	Hogskin Creek	1916-17	1 Camelback Thru	91
	29-A0051-00.06	Flat Creek	1909	1 Pratt Half-hip Pony	64
GREENE (30)	30-SR070-08.48	Nolichucky River	1934-35	1 3-span Continuous Warren Deck	138
	30-A0906-00.01	Little Chucky Cr	1923	1 Covered Queenpost	109
	30-A0909-00.21	Nolichucky River	1925	4 Closed Spandrel-Ribbed	113
	30-A0934-00.16	Lick Creek	1908	1 Pratt Half-hip Pony	60
	30-NonHighway-1	Camp Creek	1921	1 Open Spandrel	102
GRUNDY (31)	31-A0022-02.49	Hickory Cr	1912	2 Masonry Arches	71
	31-NonHighway-2	Firescald Cr	1906	1 Masonry Arch	52
	31-NonHighway-3	Scott Creek	1898	2 Masonry Arches	28
HAMBLEN (32)	NONE				
HAMILTON (33)	33-SR008-09.53	Tennessee River	1914-17	1 Steel Arch (Bascule Lift) & 6 Closed Spandrel	85
	33-01151-00.78	Sale Creek	1954	1 Warren-PTC Pony	156
	33-03544-00.12	Tennessee Rv	1889-91	6 Camelback Thru	20
HANCOCK (34)	34-SR070-01.65	Clinch River	1928	1 Warren-PTC Thru	123
HARDEMAN (35)	NONE				
HARDIN (36)	36-A0446-00.43	Indian Creek	1925-26	1 Closed Spandrel	114
	36-NonHighway-1	Snake Creek	1903	1 Pratt Through	40
HAWKINS (37)	37-A0131-01.67	Poor Valley Cr	1917	1 Warren Pony	93
HAYWOOD (38)	NONE				
HENDERSON (39)	NONE				

HENRY (40)	40-SR076-30.34	Tennessee Rv	1928-30	3 Parker, 8 Pratt Thru	125
HICKMAN (41)	41-NonHighway-1	Duck River	1907	1 Pennsylvania Petit & 1 Pratt Through, 1 Warren Pony	55
HOUSTON (42)	NONE				
HUMPHREYS (43)	43-A0340-00.01	Hurricane Cr	1911	1 Pratt Through	68
	43-NonHighway-1	Duck River	1903-04	2 Camelback Thru	42
JACKSON (44)	44-SR056-10.96	Cumberland River	1926-28	1 K & 2 Warren (PTC) Through	119
JEFFERSON (45)	45-SR092-09.21	French Broad River	1942-44	1 3-Span Continuous Warren (PTC) Through	152
JOHNSON (46)	NONE				
KNOX (47)	47-SR033-06.72	Tennessee Rv	1930-31	6 Open Spandrel	132
	47-01262-01.16	Roseberry Cr	1927	1 Open Spandrel	121
	47-01262-04.68	Holston River	1930-31	3 Open Spandrel Through	133
	47-03775-00.26	Tennessee River	1896-98	1 5-span Continuous Pratt Deck-Arched	27
	47-A0135-00.42	Railroads	1905	10 Closed Spandrel	48
LAKE (48)	NONE				
LAUDERDALE (49)	NONE				
LAWRENCE (50)	NONE				
LEWIS (51)	NONE				
LINCOLN (52)	52-SR274-06.82	Coldwater Cr	1889	2 Warren Pony	18
	52-A0147-03.89	Lane Branch	1926	2 Masonry Arches	116
	52-A0183-05.54	Elk River	1878	1 Bowstring Through	6
	52-A0487-04.85	Elk River	1889	1 Whipple Thru, 1 Pratt Half-hip Pony	17
	52-A0494-00.22	Elk River	1891	1 Baltimore Petit Through & 2 Pratt Half-hip Pony	23
	52-NonHighway-3	Elk River	1901	1 Camelback Thru & 2 Pratt Pony	35

LOUDON (53)	53-02507-08.23	Pond Creek	1914	1 Closed Spandrel	80
McMINN (54)	54-A0214-00.10	L & N Railroad	1911	1 Kingpost Pony	69
McNAIRY (55)	NONE				
MACON (56)	NONE				
MADISON (57)	57-01644-00.05	S Fork Forked Deer River	1920-21	1 Warren Through	101
MARION (58)	58-SR002-21.19	Tennessee River	1929-30	2 Parker & 2 Warren (PTC) Through	129
	58-A0443-00.50	Poplar Spring Br	1906	1 Closed Spandrel	53
	58-A0502-00.36	Battle Creek	1891	1 Pratt Through	24
MARSHALL (59)	NONE				
MAURY (60)	60-A0358-00.42	Big Bigby Cr	1916	5 Closed Spandrel	88
	60-NonHighway-1	Duck River	1903	1 Pennsylvania Petit Through, 1 Pratt Half-hip Pony	41
	60-NonHighway-2	Duck River	1903-04	1 Camelback Thru	43
	60-NonHighway-4	Beard Branch	1917	1 Closed Spandrel	94
MEIGS (61)	61-A0022-01.04	Sewee Creek	1884	1 Pratt Through	10
	61-A0028-00.23	Big Sewee Creek	1914	1 Pratt Through	81
	61-NonHighway-1	Big Sewee Creek	1909-10	1 Pratt Bedstead Pony	65
	61-NonHighway-2	Big Sewee Creek	1917	1 Pratt Bedstead Pony	95
MONROE (62)	62-02340-13.67	Tellico River	1931	1 Pratt Pony	135
	62-A0520-02.45	L & N Railroad	1914	1 Queenpost Pony	82
MONTGOMERY (63)	63-00973-03.88	Cumberland River	1922-25	1 K & 2 Warren (PTC) Through	108
	63-A0456-01.88	Sulphur Fk Cr	1890	1 Pratt Through	21
MOORE (64)	NONE				
MORGAN (65)	65-00444-09.58	Emory River	1929	3 Camelback Thru	127
	65-A0450-03.25	Emory River	1926-28	1 Warren Pony	120
	65-NonHighway-1	White Oak Creek	1880 ca; 1920s	1880 substructure; 1 Warren Pony	7

OBION (66)	66-NonHighway-1	Obion River Drainage	1910-12	1 Covered Kingpost	67
	66-NonHighway-2	S Fk Indian Cr	1914	1 Warren Pony	83
OVERTON (67)	NONE				
PERRY (68)	68-NonHighway-1	Buffalo River	1914	1 Camelback Thru, 2 Pratt Pony	84
	68-NonHighway-2	Buffalo River	1906	1 Camelback Thru, 1 Pratt Pony	54
PICKETT (69)	69-SR042-03.27	Obey River	1943-46	3 Parker & 3 Warren (PTC) Through	154
POLK (70)	70-SR315-00.02	Hiwassee Rv	1912	5 Pratt Through	72
	70-01223-02.53	Hiwassee Rv	1911	1 Parker, 2 Pratt Thru	70
	70-02268-01.51	Conasauga Rv	1923	1 Open Spandrel	110
	70-A0317-02.09	L & N Railroad	1913	1 Queenpost Pony	74
PUTNAM (71)	NONE				
RHEA (72)	NONE				
ROANE (73)	73-SR058-11.92	Tennessee River	1929-30	1 Parker & 2 Warren (PTC) Through	130
	73-00653-04.34	Poplar Creek	ca. 1943	3 Bailey Pony	153
	73-01226-00.50	Emory River	1915-18	7 Closed Spandrel	86
	73-A0323-02.19	Paint Rock Creek	1898	1 Pratt Bedstead Pony	29
	73-A0330-00.84	Paint Rock Creek	1889	1 Pratt Bedstead Pony	19
ROBERTSON (74)	74-00979-01.58	Sulphur Fk Cr	1905	1 Camelback Thru	49
	74-NonHighway-1	Red River	ca. 1841	2 Masonry Arches	2
RUTHERFORD (75)	NONE				
SCOTT (76)	76-A0040-08.03	South Fork Cumberland River	1885 ca	1 Double Intersection Pratt Through	11
SEQUATCHIE (77)	77-NonHighway-1	Sequatchie R	ca. 1893	1 Pratt Through	25

SEVIER (78)	78-SR071-01.98	Walker Camp Prong	1937	1 Closed Spandrel	146
	78-SR071-02.83	W Prong Little Pigeon River	1937	1 Closed Spandrel	145
	78-SR071-05.23	Walker Camp Prong	1937	2 Closed Spandrel	144
	78-SR071-05.65	Cole Branch	1937	1 Closed Spandrel	143
	78-SR071-05.85	SR 71	1937	1 Closed Spandrel	141
	78-SR071-08.54	W Prong Little Pigeon River	1937	1 Closed Spandrel	142
	78-SR071-13.31	W Prong Little Pigeon River	1937	3 Closed Spandrel	148
	78-00496-07.09	Boyds Creek	1898	1 Masonry Arch	30
	78-01284-00.56	Birds Creek	1922	1 Closed Spandrel	106
	78-A0324-00.58	E Fork Little Pigeon River	1875	1 Covered Queenpost	4
SHELBY (79)	79-B0741-00.01	Cypress Creek	1926	3 Closed Spandrel	117
	79-E0578-00.21	Frisco RR	1903-05	1 Closed Spandrel	44
	79-I055-12.00	Mississippi River	1949-50	1 5-Continuous Warren (PTC) and 2 Warren (Through), 2 Warren Deck	156
	79-NonHighway-3	Mississippi River	1888-92	1 4-span Continuous Double Intersection Warren, I Warren Deck	14
	79-NonHighway-4	Mississippi River	1913-17	1 4-span Continuous Truss, 1 Warren Deck	77
SMITH (80)	80-SR025-11.32	Cumberland River	1934-36	1 Modified Parker Through, 2 Warren Deck Continuous 3-span Truss, 6 Warren Deck	139
	80-01068-03.16	Hickman Cr	1920	4 Closed Spandrel	100
	80-A0206-00.47	Lick Creek	1907	1 Pratt Pony	56
	80-NonHighway-3	Caney Fork River	1907-08	1 Camelback Thru, 1 Pratt Deck, & 1 Pratt Half-hip Deck	57

STEWART (81)	81-A0330-01.41	Standing Rock Creek	1929	1 Open Spandrel	128
	81-NonHighway-2	S Cross Creek	1902	1 Pratt Through	38
SULLIVAN (82)	82-SR036-05.01	Holston River	1929-30	3 Open Spandrel	131
	82-A0872-00.05	South Fork Holston River	1902-03	1 Camelback & 1 Pratt Through	39
	82-C0539-00.01	S F Holston Rv	1913	3 Pratt Through	75
	82-NonHighway-1	Beaver Creek	1898	1 Pratt Through	31
SUMNER (83)	83-A0884-00.35	Slaters Creek	ca. 1841	1 Masonry Arch	3
	83-NonHighway-1	Caney Fork Cr	1913	1 Warren-PTC Pony	76
	83-NonHighway-4	Dry Fork Creek	1900 ca	1 Double Intersection Warren Pony	34
TIPTON (84)	NONE				
TROUSDALE (85)	NONE				
UNICOI (86)	86-A0068-00.89	Nolichucky Rv	1916	5 Closed Spandrel	89
UNION (87)	87-SR033-15.83	Clinch River	1934-36	2 2-span Continuous Warren-PTC Thru	140
VAN BUREN (88)	88-NonHighway-1	Cane Creek	1908; 1924	1 Pratt Through, 1 Warren Pony	61
WARREN (89)	89-04261-11.60	Collins River	1924; 1889	2 Parker Through, 2 Warren Pony	112
	89-A0278-00.31	Rocky River	1922-23	1 Open Spandrel	107
WASHINGTON (90)	90-A0900-00.97	Nolichucky River	1901-02	2 Pratt Through, 1 Pratt Pony	36
	90-B0586-00.00	Watauga Rv	1916	2 Penn Petit Thru	90
WAYNE (91)	NONE				
WEAKLEY (92)	NONE				
WHITE (93)	93-A0285-00.95	Lost Creek	1912	1 Pratt Pony	73
	93-A0415-00.19	L & N Railroad	1917-18	1 Queenpost Pony	96
WILLIAMSON (94)	NONE				
WILSON (95)	95-02036-01. 51	Round Lick Cr	1921	2 Closed Spandrel	103
	95-A0392-02.12	Fall Creek	1928	3 Closed Spandrel-Ribbed	124

1830-1901 PERIOD

The first of these periods generally covers from about 1830, the approximate construction date of the oldest bridge included in this survey, until the turn of the twentieth century. About 1900, bridge building patterns in the state changed due to floods that destroyed numerous bridges and due to the demise of several older bridge companies and the formation of new companies. Bridges from the nineteenth century reflect both traditional designs in masonry and timber as well as experimental designs in what was then the new field of metal truss design.

The oldest bridges in the survey, and the only ones dating from before the Civil War, are the masonry arch spans from the Louisville and Nashville Turnpike (#1, 19-E0224-00.07; #2, 4-NonHighway-1; and #3, 83-A0884-00.35). These bridges reflect traditional bridge building techniques. Counties also built covered wooden truss bridges, such as the Harrisburg Covered Bridge (#4, 78-A0324-00.58), and the Elizabethton Covered Bridge (#8, 10-A0398-00.01), another traditional bridge form.

However, from the 1870s until about 1901, a plethora of bridge companies flourished around the country. In an effort to distinguish themselves from other companies, many firms experimented with truss designs and specific components. The Dobbs Ford Bridge (#5, 06-A0184-00.64) represents an early use of the then relatively new Pratt truss. The Sycamore Mills Bridge (#22, 11-NonHighway-1, a fixed cable stayed suspension bridge) was a creative experiment. The Kelso Bridge (#6, 52-A0183-05.54, a patented Whipple truss) and the Stone Bluff Bridge (#17, 52-A0487-04.85, a Double Intersection Pratt) feature truss designs that the more efficient Parker or Camelback designs soon replaced. The Dobbs Ford Bridge (#5, 06-A0184-00.64), the Kelso Bridge (#6, 52-A0183-05.54), and the Sulphur Fork Bridge (#21, 63-A0456-01.88) contain connections or members that are patented or based on patents; features that standard factory produced members soon rendered obsolete.

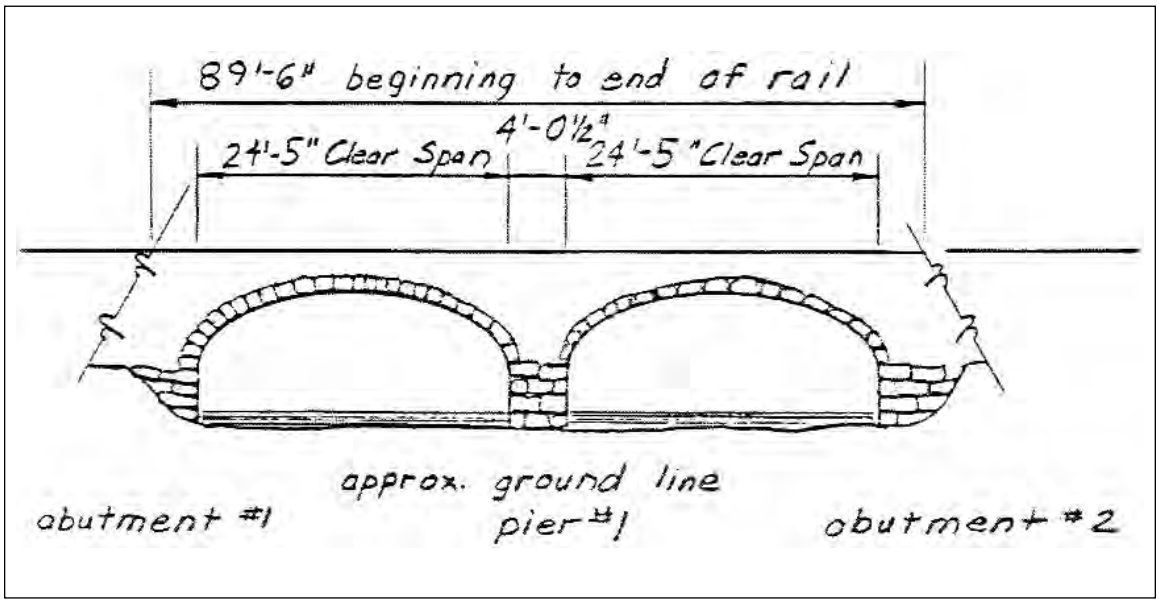
(#1) 19-E0224-00.07: Old Stone Bridge spanning Manskers Creek in Goodlettsville on the Davidson Sumner County line
(#2) 74-NonHighway-1: Cheek Stand Bridge spanning the Red River in northeast Robertson County
(#3) 83-A0884-00.35: Turnpike Bridge spanning Slaters Creek in Goodlettsville, Sumner County

Significant under Criterion A for their associations with the turnpike era and under Criterion C as rare early masonry arch bridges

These three masonry arch bridges are located on the original route of the old Louisville to Nashville Turnpike. Although not incorporated as a turnpike until the 1830s, this route followed old, animal and Indian trails that had become a wagon road at least by the 1790s. This turnpike was quite prosperous until the 1850s when the completion of the Louisville to Nashville Railroad provided an alternative transportation corridor. However, portions of it continued as a turnpike until about 1900, and the road has continued to be a major overland transportation route. The state designated much of the route as State Route 41/U.S. 31W in the 1920s. As the state improved these systems in the 1920s and 1930s, the state built a new route that bypassed many of the older sections. This realignment saved these bridges; one remains open today on a little used city road, and two are located on farm roads.

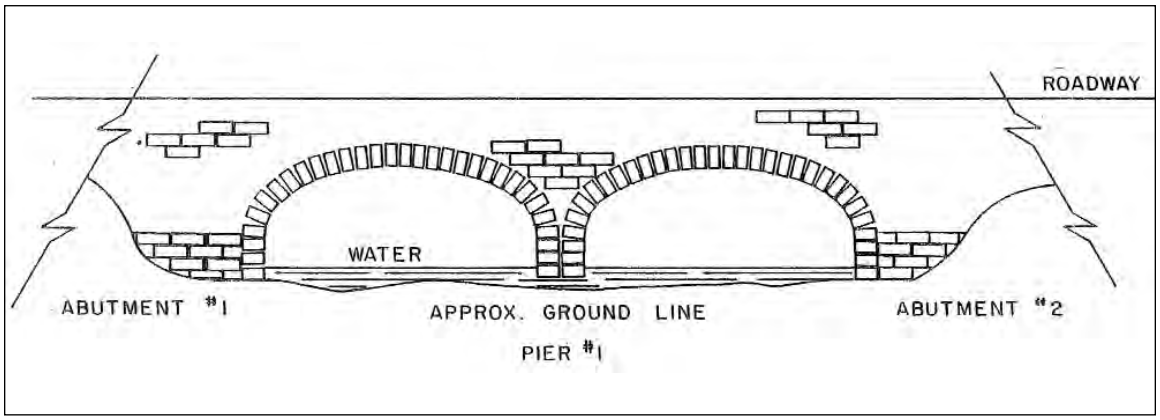
The erection dates of these bridges are unknown, but local historians have estimated they were built between 1825 and 1850. Oral interviews of local residents along the turnpike in 1934 indicated that a mason named Johnson built them in 1841 (Dorsey 1935; Henderson 1982; Henderson and Durrett 1979, Tretter 1986). Since all three bridges are relatively alike, it is assumed the same mason built them at about the same time. An interesting feature is that all three are laid without mortar.

(#1) 19-E0224-00.07: Old Stone Bridge spanning Manskers Creek in Goodlettsville on the Davidson Sumner County line (Goodlettsville Quad, 310 SW).



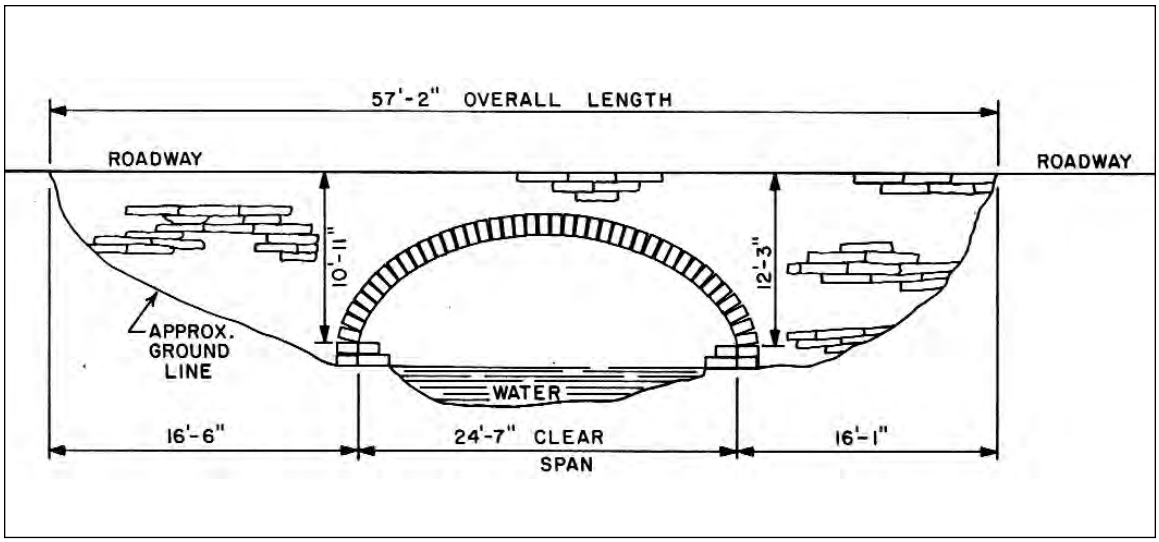
The Old Stone Bridge (19-E0224-00.07) contains two arch spans formed of cut stone laid in a coursed pattern. Each arch is 24.4 feet in length, and the total length is 89.5 feet. The curb to curb width is 19.5 feet, and the out to out width is 24.5 feet. A row of cut stones follows the line of the elliptical arches to the spring line. The stone walls rest above the arches to form the bridge railing that runs the length of the bridge and flares out at each end. A single row of large rectangular stones tops the railing.

(#2) 74-NonHighway-1: Cheek Stand Bridge spanning the Red River in northeast Robertson County (Portland Quad, 309 SE).



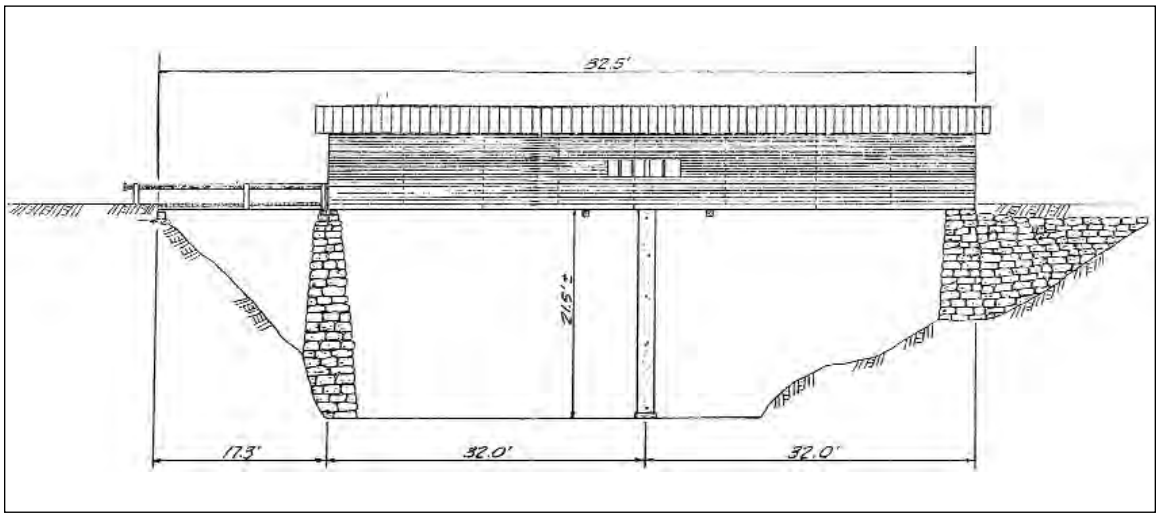
The Cheek Stand Bridge (74-NonHighway-1) spans the Red River on a farm road within the Cheek Stand property. Cheek Stand, a tavern and stage coach stop on the Old Louisville to Nashville Turnpike, presently consists of an 1838 log house (called Rock Rest), an 1847 three story stage coach (banked) stable, a log smokehouse, a stone spring house, and the bridge and stone fences lining the roadway. The bridge consists of two spans, each 23.0 feet in length. The overall length is 78.0 feet. The curb to curb width is 18.0 feet, and the out to out width is 21.0 feet. A row of cut stones follows the line of the elliptical arches. The cut, coursed stone walls rise above the arches to form railings that run the length of the bridge. The downstream railing has partially collapsed.

(#3) 83-A0884-00.35: Turnpike Bridge spanning Slaters Creek in Goodlettsville, Sumner County (Goodlettsville Quad, 310 SW).



The Slaters Creek Bridge (83-A0884-00.55) spans Slaters Creek on a farm road near the site of Isaac Walton's tavern. For many years the county road ended at the bridge, but in 1985 the county removed this bridge from the public road system and its ownership reverted to the adjacent property owner. The bridge consists of one 25 foot arch span formed of cut stone laid in a coursed pattern. The curb to curb width is 21.1 feet, and the out to out width is 24.1 feet. A row of cut stones follows the line of the low set elliptical arch. The stone walls rise above the arches to form a low curb like bridge railing that runs the length of the bridge and flares out at each end. A single row of large rectangular stones tops the railing.

(#4) 78-A0324-00.58: Harrisburg Covered Bridge spanning the East Fork of the Little Pigeon River east of Sevierville in north central Sevier County (Richardson Cove Quad, 164 SW).



Significant under Criterion C as a rare covered timber truss bridge.

The community of Harrisburg has contained a bridge at this location since the mid-1800s. Known as the McNutts Bridge, it washed away in 1875. In March of that same year, the Sevier County Court appointed a committee of J.H. Frame, A.E. Murphy, and D.W. Howard to oversee the rebuilding of the bridge. As was common then, local citizens contributed to the replacement of the bridge. Although only $50 could be privately raised, the Harrisburg community provided the wood and labor for the replacement structure. The county donated $25.

The county hired Elbert Stephenson Early to build a covered bridge. Elbert Early (1850-1917), along with several members of his family, moved to the Harrisburg area of Sevier County in the 1870s. Several members of the Early family were skilled carpenters, millwrights, and engineers. They built Murphy Chapel and several residences in the area. In 1877, Elbert Early purchased half interest in the Newport Mill, adjacent to the Harrisburg Covered Bridge, from Alexander Umbarger, a relative of his wife, Clementine (1843-1922).

In the late 1800s, the Harrisburg community grew, and with its several mills, blacksmith shops, a school, a doctor, and a post office, prospered. However, in 1915 the county built a new road that bypassed Harrisburg and the community disappeared.

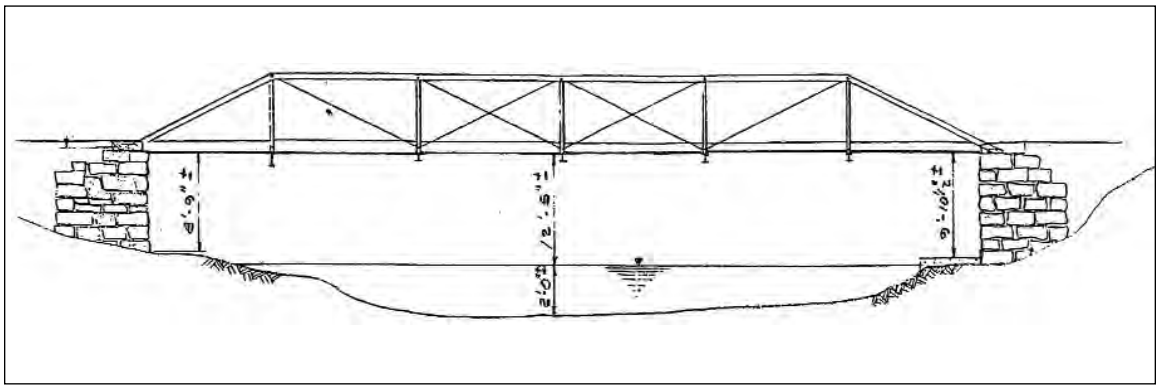
In 1952, a county road crew stabilized the bridge which included the placement of a concrete pier at the center of the truss. As a result, this span functioned as two timber stringers. By the 1970s, the bridge was deteriorated and facing possible demolition when the Great Smokies Chapter and the Spencer Clack Chapter of the Daughters of the American Revolution (DAR) raised funds to repair and maintain the bridge as well as seeking listing for it on the National Register of Historic Places. The Harrisburg Covered Bridge was listed in the National Register of Historic Places in 1975 for its significance as a rare surviving example of a covered timber truss bridge.

In 1983, the bridge had deteriorated and again faced closure, but the county renovated the bridge with new flooring and replaced some of the timber beams, allowing the bridge to remain open but posted it with a 3-ton weight limit.

The bridge, which is 83 feet long, contains a 64-foot timber Queenpost pony truss and an 18-foot steel I-beam span. A covered structure topped with a gable tin roof encases the truss section. The bridge has a curb-to-curb width of 11.4 feet and an out-to-out width of 14.1 feet.

Through a grant from the National Historic Covered Bridge Preservation Program through the Federal Highway Administration and TDOT, Sevier County rehabilitated the Harrisburg Covered Bridge, extensively repairing the bridge in 2004. It was reopened for traffic, with a 15-ton weight limit, on 2 December 2004.

(#5) 06-A0184-00.64: Dobbs Ford Bridge on Old Harrison Pike spanning Candies Creek west of Cleveland in Bradley County (South Cleveland Quad, 120 NW).



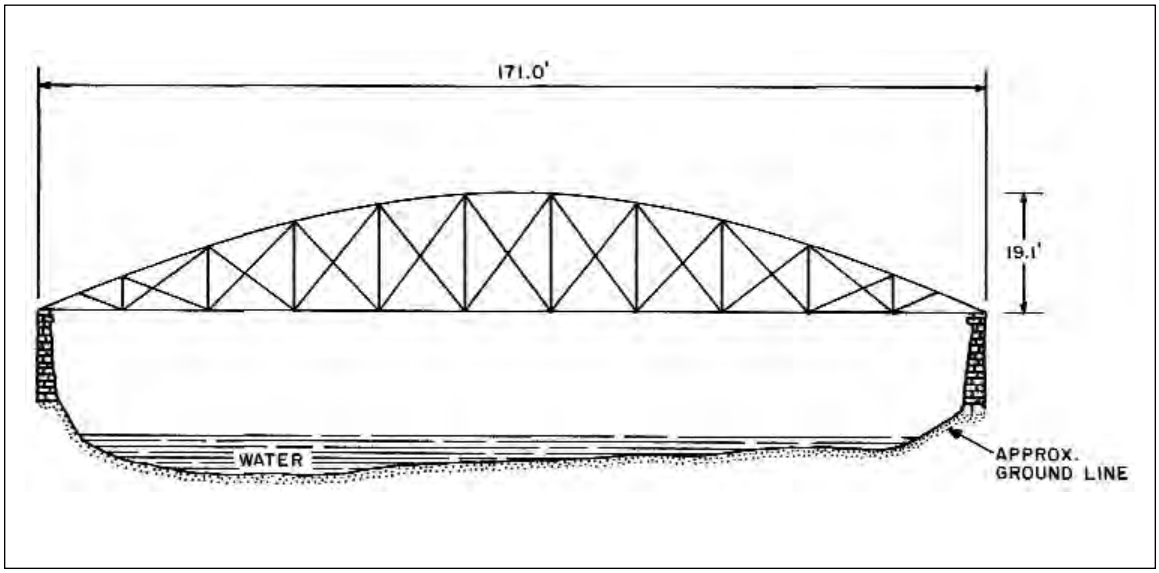
Significant under Criterion C as an early Pratt truss bridge with patented connections and as work by the Wrought Iron Bridge Company.

The Bradley County Court appointed a committee of H. W. Smith, C. L. Hardwick, and T. L. Cate in July 1877 to contract for an iron bridge at this site. The county court levied a bridge tax of ten cents on the one hundred dollars to pay for it. The bridge was completed by July of the following year. The Wrought Iron Bridge Company built the superstructure for $983.75, Williams and Smith built the substructure for $920, and an unspecified contractor built the approach roadwork for $168. The bridge was on the main road west from Cleveland. Between 1943 and 1950 the state built a new road on a different alignment, and the old road with this bridge became a county road (Bradley County Court Minutes Volume 2:321, 356 357; Carver 1989b; *Cleveland Weekly Herald*, 5 July 1877).

The bridge contains one span, a 76 foot pinned pony Pratt. Top chords and end posts are channels with battens, bottom chords are paired rectilinear eyebars, posts are angles with cross lacing, diagonals are paired rectilinear eyerods and counters are single cylindrical tie rods. An unusual feature is the patented end connections (U.S. Commissioner Patents 1874:150152) of paired eyerods extending diagonally and the vertical end posts extending through the end cover where they are secured on the outside by nuts. Another unusual feature is the composition of the angles that make up the posts that have a bulb or beaded T on their outside edge. More difficult and expensive to manufacture than a normal angle, this feature was possibly intended to add stiffness.

The Tennessee Department of Transportation, in cooperation with Bradley County and the Federal Highway Administration, replaced the bridge in 1990 and relocated the truss to the nearby Rolling Hills Golf Course where it again spans Candies Creek.

(#6) 52-A0183-05.54: Kelso/Cowley Bridge spanning the Elk River east of Fayetteville in Lincoln County (Mulberry Quad, 80 NW).



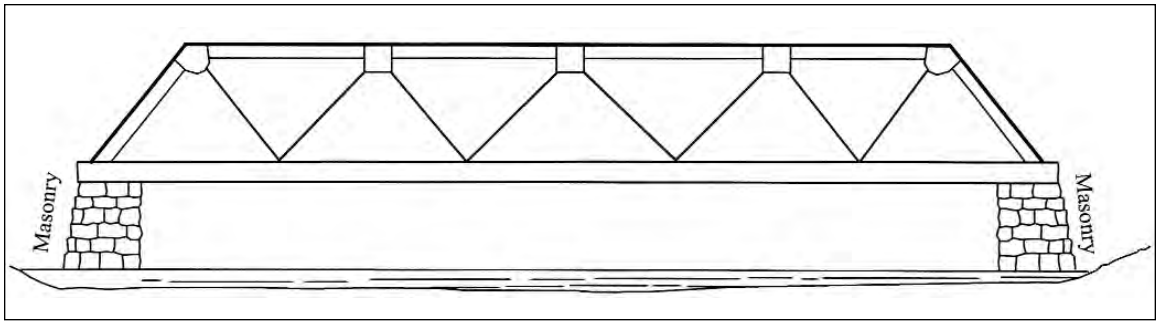
Significant under Criterion C as the only Bowstring truss in the state, for its patented features, and as rare surviving work of the King Iron Bridge Company.

The nationally famous King Iron Bridge Company built this bridge, the only Bowstring truss in the state, in 1878 for $8,000 (Fielder 1983; Lincoln County Court Minutes Book A-1:611-614, 246-248). The bridge contains one span, a patented Bowstring tubular arch through truss that is 170.5 feet long sitting on masonry abutments. The superstructure contains portal plaques identifying the builder as the King Iron Bridge Company, and a small oval plaque on the top chord lists the patent date as 30 July 1867. The substructure contains a plaque that gives the erection date and names of the masons, an unusual feature.

As a patented design, the connections and composition of the members are quite different from those found on most truss bridges. The top chord is tubular rather than being formed of channels with lacing. Bottom chords are paired eyebars that become circular in shape as they pass through a plate at the abutment where they are threaded and secured by nuts on the outside. The verticals are right angles with lacing but are unique in that they flatten and flare near the floor and then become circular rods that are bolted into the floor beams. The floor beams themselves are lightweight and have inverted trussed bracing. Top and bottom lateral bracing consist of four short rods attached to a circular member in the center rather than the typical paired rods that extend diagonally across the full panel. Unusually long, the truss is 13.8 feet wide with a minimum vertical clearance of 14.5 feet and an overall height of 19.1 feet. The panels in most truss bridges are the same length, but in this bridge the center panel is 17.5 feet while the others are only 15.2 feet long.

In the 1980s Lincoln County built a new bridge nearby that rendered this bridge and a short road section redundant. The bridge is now closed to traffic but remains intact.

(#7) 65-NonHighway-1: Rugby Bridge spanning Clear Fork Creek east of Rugby in northern Morgan County (Rugby Quad, 128-A SW).



Bridge substructure is a contributing element of the Rugby Historic District that is listed under Criterion A for its significance in planning and Criterion C for architectural significance.

English author and politician Thomas Hughes founded the community of Rugby in 1880 for the purpose of providing homes for the younger sons of the English gentry. In England societal pressures prohibited the involvement of younger sons in most professions yet the law of primogeniture precluded significant inheritances that would have allowed lives of gentlemanly leisure. Hughes planned for this new community to be a social and economic experiment where these men and their families could pursue agriculture or manual careers without the social stigma attached to these careers in England.

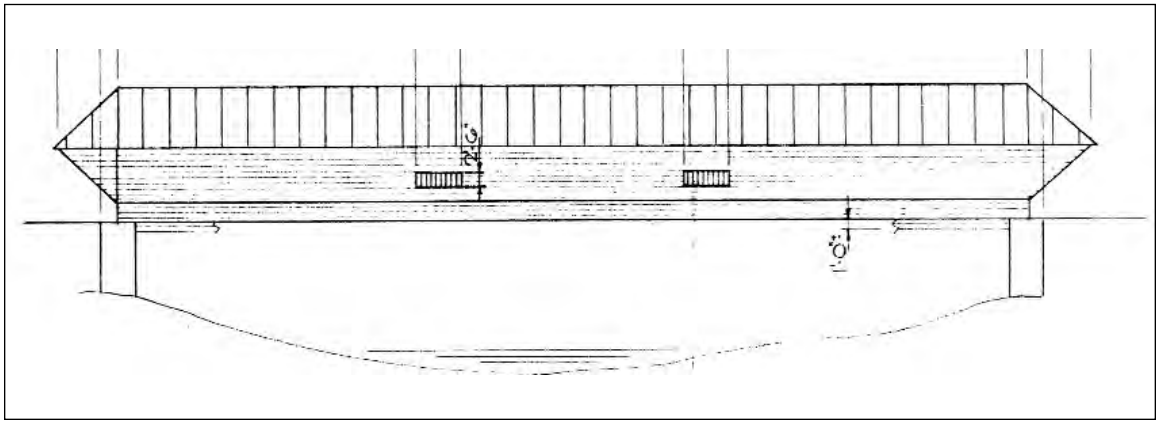
Hughes, through a private company, the Board of Aid to Land Ownership, bought 50,000 acres in isolated Morgan County and developed Rugby. Hughes and the Board chose the site for its close proximity to rail lines and for its central location between the North and the South. To take advantage of the natural topography of the rugged terrain, the developers of the Board

of Aid incorporated creative ideas in English and American town planning into Rugby's design that resulted in European asymmetrical street patterns and open vistas combined with the traditional American grid pattern.

The residents settled only about 1,500 acres to any extent, and creeks bounded this area on all sides. Within this area, they built 77 major buildings of which 20 remain. These buildings represent a superb collection of picturesque Victorian architecture. A circa 1880 toll bridge composed of a wood and iron Howe through truss marked the entrance to Rugby on the Rugby-Sedgemoor Road over White Oak Creek. The substructure for the bridge consisted of one sandstone boulder and a coursed sandstone block abutment. At an undetermined date, estimated to be about 1920, the Howe truss was removed and a steel Warren truss was erected on top of the 1880 substructure. The Rugby Colony with 525 acres was listed in the National Register in 1972, and a determination of eligibility in 1981 expanded the boundaries to 1,546 acres. Although the Warren truss itself does not contribute to the Rugby Colony Historic District, the substructure is a contributing element (Nolen 1981; Stagg 1972).

In 1981 the state built a new bridge nearby and closed the existing bridge to traffic. The old bridge is now part of a scenic pull off.

(#8) 10-A0398-00.01: Elizabethton Covered Bridge spanning the Doe River in Elizabethton, Carter County (Elizabethton Quad, 207 SW).



Significant under Criterion C as a rare covered timber truss bridge.

The Elizabethton Covered Bridge is located in downtown Elizabethton, the county seat of Carter County. Much of the downtown is listed in the National Register under Criteria A and C. The Elizabethton Historic District contains a variety of properties ranging in age from the late 1700s through the 1930s (Beasley 1972). The bridge is a well-known landmark in the state and the centerpiece of an annual festival in Elizabethton. In addition to this bridge, the district also contains a significant 1926 concrete arch bridge over the Doe River (#115, 10-03939-00.10).

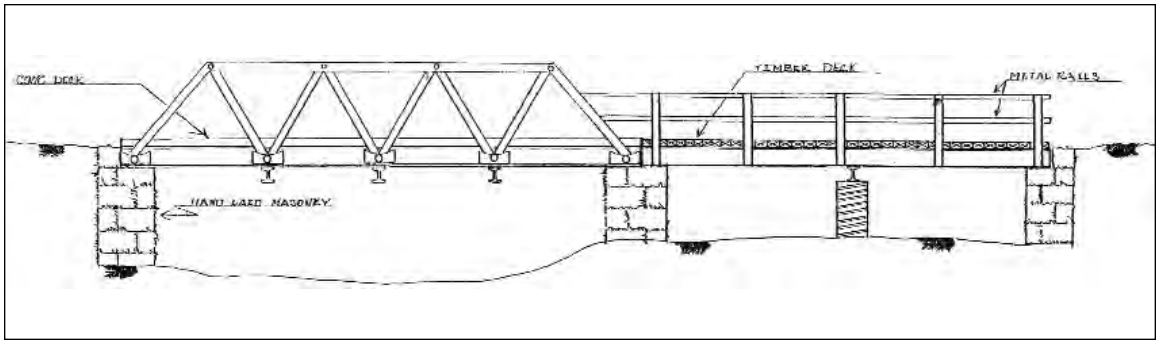
Carter County erected this bridge in 1882 for $3,300. After the county was unable to find a bridge builder to erect the bridge, a local doctor named E. E. Hunter accepted the contract and hired experienced individuals to work on the bridge such as Hunter selected Thomas Matson, who had been an engineer for the Narrow Gauge (Tweetsie) Railroad. Hunter referred to the bridge as his "$5 Bridge" since he made a profit of $5 as contractor. This was the only major bridge in the area to survive the disastrous 1901 flood, although it was battered by floodwaters, logs from a nearby lumber operation, and even a barn that smashed into it (Crowe 1977).

The bridge contains one span, a covered wooden Howe truss 137 feet long. The total length is 154.3 feet. The bridge contains one traffic lane and one sidewalk. The curb-to-curb width is 16.4 feet, and the out to out width is 20.4 feet. The substructure is masonry stone and concrete. Each end of the bridge features a projecting truncated gabled roofline described in this manner by one bridge historian:

> It is singular in appearance for an American covered bridge, resembling greatly those of Switzerland, Bavaria and New Brunswick, Canada. At each end great diagonal shelter panels protrude, and a sloping triangular roof comes down from the ridgepole to top them (Allen 1970:28).

The Elizabethton Covered Bridge received a Transportation Enhancement grant for rehabilitation in 2002 and was rehabilitated in 2003-04 and is now open for traffic.

(#9) 28-00966-03.54: Morris Mill Bridge spanning Big Creek, northwest of Pulaski in Giles County (Milky Way Quad, 58 SE).



Significant under Criterion C as a rare pin connected Warren truss and as the only vehicular truss design in the state by the Penn Bridge Company.

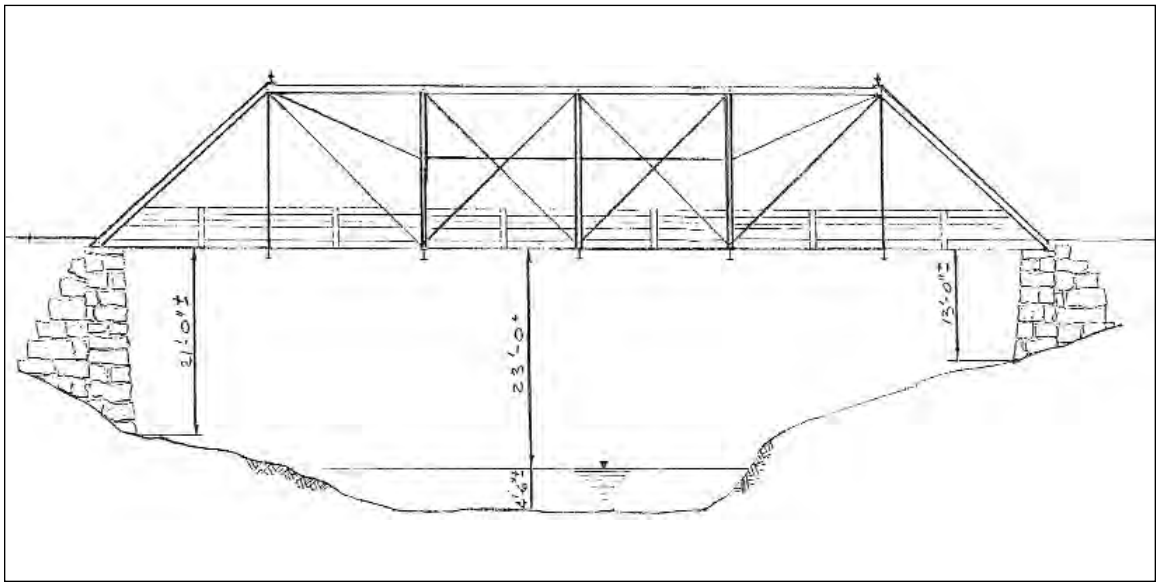
In 1884 the Giles County Court contracted with the Penn Bridge Works to build this bridge. The county reused one existing masonry pier and abutment but rebuilt the east abutment. The total cost was $1,000 (Giles County Court Minutes Volume 9:285-286; Volume 10:20-21; Book 5:185-187).

The bridge originally contained two 46 foot pin connected pony Warren trusses, but after one span washed out, the county replaced it with two steel I beam spans. The truss is 6.1 feet tall and 12.0 feet wide. This is the only bridge surveyed in Tennessee built for vehicular traffic that contains a pinned Warren truss. Due to its early age, the composition of its members is atypical when compared to other Warren trusses in the state. The truss does not contain

verticals. The top chords and end posts are channels connected with lacing on the top and bottom, except the mid panel that has a channel on top. The diagonals are paired angles with lacing, except the hip diagonals which are paired rectilinear eyerods. Rectilinear eyebars form the bottom chords.

In the early 1980s Giles County built a new bridge nearby that rendered this bridge and a short road segment redundant. In 1984 the county, through local courts, transferred ownership of the road and bridge to adjacent property owners. The road is now closed to traffic but the bridge remains intact.

(#10) 61-A0022-01.04: King's Mill Bridge spanning Sewee Creek north of Decatur in Northeast Meigs County (Decatur Quad, 118 SE).

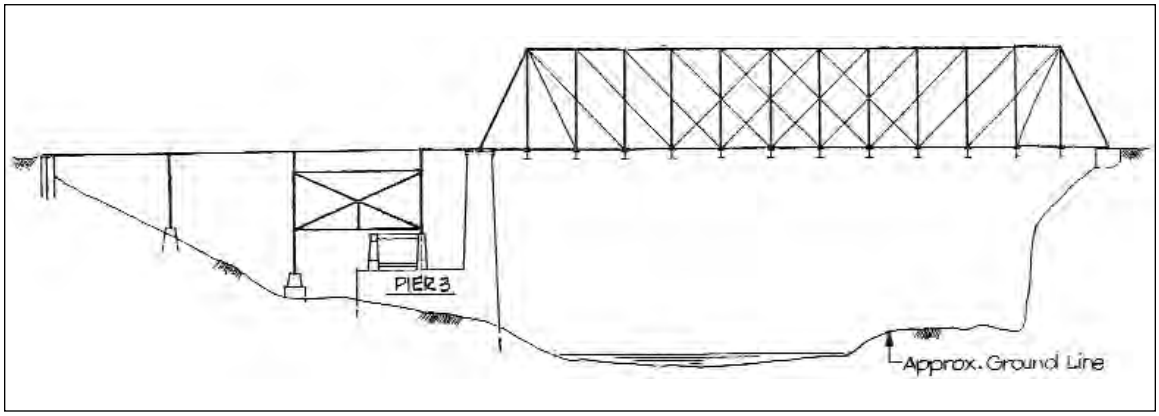


Significant under Criterion C as an early, atypical Pratt truss bridge by the Champion Bridge Company.

In April 1884 the Meigs County Court ordered that a contract be entered into with the Champion Bridge Company for $1,395 to erect the superstructure of this bridge. It is unclear if the substructure predates the truss or if the county contracted for it separately. Apparently, Champion completed the bridge by October since the court at that time ordered all warrants regarding the bridge to be paid (Meigs County Court Minutes Volume 9:63, 114, 318; Toplovich and Rogers 1981).

The King's Mill Bridge contains one span, an iron 98.5-foot pin connected Pratt through truss sitting on masonry abutments. The bridge has a curb-to-curb width of 11.1 feet and an out-to-out width of 13.0 feet. Decorative features include lattice portal bracing, arched knee bracing with a single circle, and four finials. The composition of most members is relatively typical. Top chords and end posts are channels with battens. Bottom chords and diagonals are paired rectilinear eyebars. Verticals are small channels with lacing, except the hip verticals, which are paired rectilinear eyerods. Counters are single cylindrical tie rods. One unusual feature is the lateral bracing that connects at an angle on the side of the end post that connects near but not within the intersection of the strut and vertical. Another unusual feature is a horizontal tension member that spans the two center panels and then extends diagonally upward and joins the upper chord at its intersection with the hip length; at those points a circular metal piece is located in the vertical, and the tension member is bolted into each side. Apparently the additional tension member was not a cost efficient design and few examples remain.

(#11) 76-A0040-08.03: Old O & W Bridge spanning Big South Fork River southwest of Oneida in western Scott County; within Big South Fork National River and Recreation Area (Honey Creek Quad, 128-A NW).

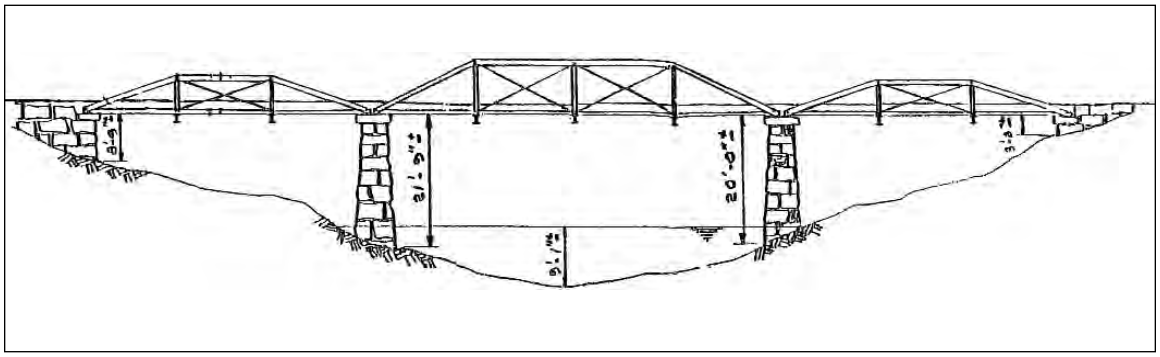


Significant under Criterion C as a rare surviving example of the Whipple truss.

The original date and place of the erection of the main span of this bridge are unknown but it is estimated to have been fabricated in the 1880s. In 1914 the Nashville Bridge Company relocated it to this site on the Oneida and Western Railroad that was then under construction. This line primarily served local lumber and coal industries. After the rail line abandoned the roadbed with its bridges intact in 1954, the county acquired it in 1956 and converted it to a county road. This bridge is considered a local landmark, in part, due to its spectacular location high above the Big South Fork River gorge. It is located on a trail within the Big South Fork National Recreation Area (Hutchinson et al. 1982:5-26; Nashville Bridge Company #3611; Sulzer 1975:187-197).

The 344 foot bridge contains one truss span, three plate girders, and one steel stringer. The approaches are steel frames on concrete pads. The eastern abutment is concrete and the western abutment is a massive boulder. The bridge has a curb-to-curb width of 8.4 feet and an out-to-out width of 15.5 feet. The main span is a 201.5 foot pin-connected Double Intersection Pratt/Whipple through truss that is 31 feet tall. Composition of members is typical. Top chords and end posts are channels with lacing, bottom chords are paired or quadrupled rectilinear eyebars, verticals are small channels with lacing, diagonals are paired rectilinear eyebars, and counters are single rectilinear tie rods. The only decorative feature is a single circle within the knee bracing.

(#12) 06-A0163-00.19: Lea Bridge on Old Georgetown Road spanning Candies Creek northwest of Cleveland in Bradley County (South Cleveland Quad, 120 NW).



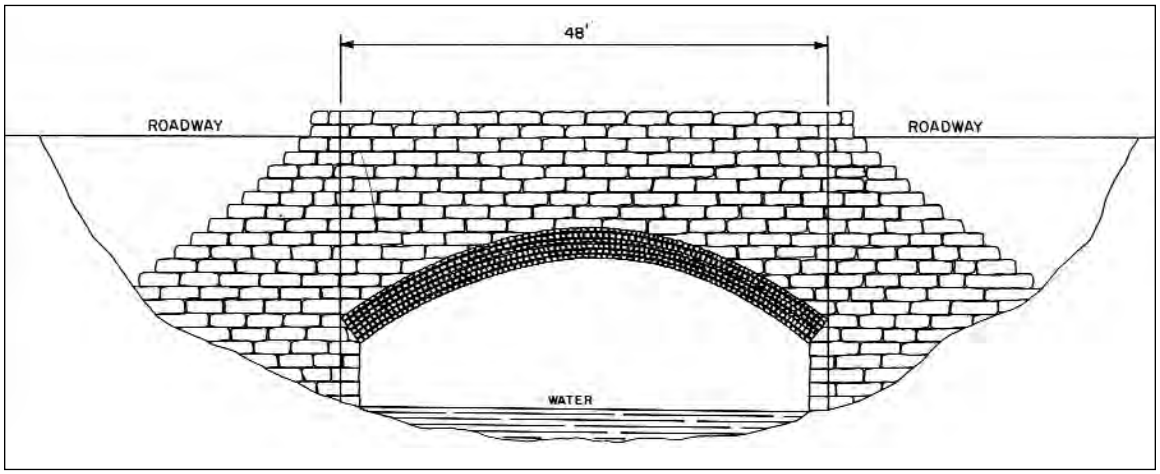
Significant under Criterion C as representative Pratt pony trusses, for their patented connections, and as work by the Wrought Iron Bridge Company.

In October 1885 the Bradley County Court appointed a three-man committee to investigate building a bridge across Candy's (Candies) Creek. In January 1886 the court agreed to build the bridge and in April the committee reported it had been completed at a cost of $2,000. This bridge was on the main road between Cleveland and Dayton that became State Route 83 in the 1920s. The state renumbered the road as State Route 60 in 1940 and rebuilt it in the late 1940s. At that time, the new alignment bypassed this bridge with a short road segment and it became a local road (Bradley County Court Minutes Volume 3:212, 250, 252, 266; Carver 1986a).

The Wrought Iron Bridge Company, whose agent was W. H. Converse, built the three-span bridge. Each span is an iron Pratt pony truss. The main span is 63 feet long and the secondary spans are 44 feet long. Sitting on a masonry substructure, the middle span is 7.0 feet tall and each flanking span is 5.0 feet tall. The curb to curb width is 11.3 feet, and the out to out width is 13.0 feet. Composition of the members is similar to that on the 1877 78 Dobbs Ford Bridge (#5, 06-A0184-00.64) as are the patented connections and "beaded T" angles. Top chords and end posts are channels with battens, bottom chords are paired rectilinear eyebars, posts are angles with cross lacing, diagonals are paired rectilinear eyerods and counters are single cylindrical tie rods. An unusual feature is the patented end connections (U.S. Commissioner Patents 1874:150152) of paired eyerods extending diagonally and the vertical end posts extending through the end cover where they are secured on the outside by nuts. Another unusual feature is the composition of the angles that make up the posts that have a bulb or beaded T on their outside edge. More difficult and expensive to manufacture than a normal angle, this feature was possibly intended to add stiffness.

The Tennessee Department of Transportation, in cooperation with Bradley County and the Federal Highway Administration, replaced this bridge in 1988 and relocated the truss spans to a Cleveland city park. The city later gave the main span to the city of Collegedale for use on its greenway.

(#13) 19-NonHighway-8: Lebanon Road Bridge spanning Browns Creek southeast of Nashville in Davidson County (Nashville East Quad 311 NW).

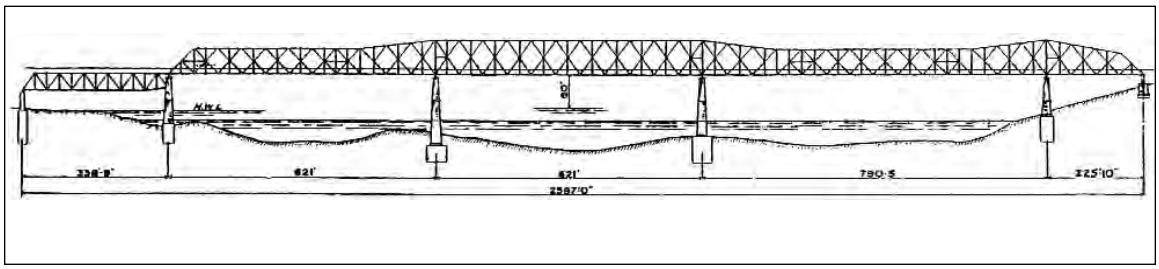


Significant under Criterion A for its associations with Nashville's public water system and under Criterion C as rare masonry arch with unusual brick lining.

In 1888 the City of Nashville assigned Nashville City Engineer J.A. Jowett the task of designing this bridge and hired the Foster Creighton Company to erect it. The bridge was one component of an effort to improve the city's municipal water-works system. Although the primary purpose of this bridge was to carry a 36 inch water main across Browns Creek, thus connecting the Omohundro Water Filtration Complex with the Eighth Avenue South Reservoir, it also carried Lebanon Road traffic. The state built a new structure nearby in 1925 and removed traffic from this bridge. However, the old bridge continues to carry the 36 inch water main across Browns Creek to the Reservoir (Sturtevant 1986a).

The bridge contains one span, a masonry arch 48 feet long. The curb-to-curb width is 20.1 feet, and the out-to-out width is 25.0 feet. The structure is primarily composed of large rectangular rough coursed limestone blocks of varying sizes. An unusual feature is that the arch is lined with eight courses of common bond brick. The stone sides of the bridge continue above the level of the roadbed to form railings running the length of the bridge.

(#14) 79-NonHighway-3: Frisco Bridge spanning Mississippi River on the Tennessee Arkansas state line, Memphis, Shelby County, (Northwest Memphis Quad, 404 NE).



Significant under Criterion A for role in expanding rail traffic between South and Midwest, under Criterion B due to Morison's close involvement with the bridge project, and under Criterion C as Morison's most important bridge design and as an innovative cantilevered continuous truss bridge.

Until the 1880s the engineering profession deemed it impossible to build a bridge to span the "true" Mississippi River as far south as Memphis. But as the engineering profession advanced, it became clear that such an engineering achievement was possible, and in early 1885 Congress granted a charter to two Arkansas and Tennessee corporations to build and maintain a toll bridge over the Mississippi River. At that time, rail lines crossed the river using a transfer steam operation, a situation that created a bottleneck and limited transcontinental traffic between the South and the Midwest. These firms contacted New Yorker George Shattuck Morison, one of the most prominent engineers in the United States in the nineteenth century. [In 1986, Clayton Fraser completed for the Historic American Engineering Record an intensive study of Morison, *Behemoths: The Great River Bridges of George S. Morison*. Much of the material in this section is summarized from his substantial study.]

George Shattuck Morison, was born in 1843 in Massachusetts, the son of an eminent Unitarian minister. Morison attended the prestigious preparatory school Phillips Exeter Academy and Harvard College and Harvard Law School. After receiving a Bachelor of Law degree in 1866 and being admitted to the New York Bar, Morison began working with a New York law firm. Almost immediately Morison regretted his career choice but worked for nearly a year until making a final decision to change professions. Morison had long been interested in civil engineering, and through the influence of family friends, railroad entrepreneur James F. Joy hired Morison to work under engineer Octave Chanute on the Kansas City Bridge spanning the Missouri River. With no formal training in engineering, Chanute first assigned Morison menial tasks. However, Morison developed a study regimen, and as his natural abilities became evident, Chanute gave him more challenging tasks and eventually appointed Morison assistant engineer for the project.

Through the mid-1870s Morison worked on different rail lines owned by Joy. In 1875 he formed his own consulting firm, Morison, Field and Company, and gradually built a national reputation. The reputation was based as much, if not more, on his managerial skills rather than on his skills as an engineer. However, in 1880 Morison resigned from his firm to develop a practice based more on engineering design and decreased his participation in railroad operations while focusing on bridge design.

Before his death in 1903, Morison had achieved national recognition for his truss designs, primarily for rail lines. He was extremely prolific and designed a variety of bridges of which the Frisco Bridge was considered his most outstanding design. Historian Carl Condit says of this bridge:

> The cantilever truss reached its greatest size in the United States before the end of the century with the construction of the first Mississippi River bridge at Memphis, Tennessee…Its designing engineers, George S. Morison and Alfred Noble, were in the front rank of their profession at the time, and they planned the structure on a heroic scale.
>
> …After the Memphis bridge the cantilever spans erected during the remainder of the century seem anti-climatic" (Condit 1960:159-160).

One of the first major bridges to be built by Morison spanned the Genesee River at Portagee, New York, for the New York and Erie Railroad in 1875. In the 1880s Morison designed seven Whipple-Murphy bridges spanning the Missouri River at Plattsmouth, Blair Crossing, Bismarck, Omaha, Nebraska City, Sioux City, and Rulo. In 1887-1889 he designed a Whipple-Murphy truss to span the Ohio River at Cairo for the Illinois Central. He also designed the Bellefontaine Bridge, which contained a Baltimore Petit truss, and the 1890-1891 Swing Bridge at Winona spanning the Mississippi River. Morison's last design was also his only major concrete arch bridge, the Connecticut Avenue Bridge spanning Rock Creek in Washington, D.C. (Condit 1960, 1968; Fraser 1986; Plowden 1974).

When approached, Morison was at the peak of his career and quite interested in being the chief engineer for the first bridge to span the lower Mississippi River. Morison carefully evaluated the Memphis area and selected a river crossing that he believed was the least likely to be affected by shifting channels. However, he had reservations about the ability of the Arkansas and Tennessee corporations to complete such an expensive and complicated project.

In January 1886, he approached George Nettleton, president of the Kansas City, Fort Scott to Memphis system of railroads to encourage him to finance and sponsor the bridge. Meanwhile opposition from the steamboat lobby blocked construction, and for various reasons, the private corporations dropped the project. In April 1888, Congress granted the railroad a charter but with a new stipulation—that the bridge also carry highway traffic. This new charter also specified a 700 foot clear channel span (150 feet longer than in the 1884 charter) and a height of 75 feet (10 feet more than in 1884). This latter stipulation troubled Morison the most, and he argued vigorously to have it reduced but to no avail. Morison incorporated these new restrictions into his plans, and the Secretary of War approved them 25 August 1888. Construction began in October.

For this massive job, Morison chose a group of experienced assistants and contractors, many of whom had worked with him previously. His three main assistants were Alfred Noble as resident engineer, M. A. Waldo as assistant engineer, and Ralph Modjeski who was chief draftsman and later chief inspector of the superstructure. (This was Modjeski's last job with his mentor Morison and afterwards he too became a leading bridge engineer and was the chief engineer of the 1913-1917 Harahan Bridge, #77, 79-NonHighway-4. Although Modjeski himself died in 1940, his firm, Modjeski and Masters, would also design the 1949 Memphis and Arkansas Bridge (#156, Memphis and Arkansas Bridge, 79-1055-12.00).

Between October 1888 and February 1889, workers completed the foundation. The piers rested on heavy timber caissons (92' long x 47' wide) which were founded on hard clay. The deepest foundations extended nearly 131 feet below the high water level and a maximum immersion depth of 108 feet during construction, which was the second greatest depth at that time in which the pneumatic process had been used. Men worked only three 45 minute shifts within a 24-hour period to guard against "caisson fever." Even so, four died and the bends left several others crippled.

Morison let the contract for the granite piers in April 1889 to Lewis Loss of New York. Loss finished the piers in April 1891. During this period the only major disaster occurred when a towboat became lost in fog-like smoke from nearby factories and struck a partially completed but still submerged pier. The impact destroyed the towboat, scattered the seven barges it was towing, and killed six of the thirty-four people aboard.

On 24 January 1890, Morison awarded the contract for the fabrication of the superstructure to the Union Bridge Company. In May 1890 he awarded the contract to erect the superstructure to the Baird Brothers who had served as the erectors on most of Morison's major bridges. A notable feature of the trusses was that Morison chose to exclusively use steel made in the open-hearth process that Carnegie, Phipps and Company (later Carnegie Steel) produced. Carnegie Steel shipped the uncut steel sections to the fabricator Union Bridge. Unfortunately, the scale of the project was more than Union (or probably any single company) could handle, a problem compounded by Morison's careful inspection and repeated rejections of some of the steel, and Union fell behind schedule. As a result, eight other companies did about 36% of the fabrication work. However, due to the success of this bridge, Morison's specifications for the fabrication and erection of steel soon came to be the recognized standard for railroad bridges in this country. In March 1891 the last structural contract was awarded to the Pennsylvania Steel Company to manufacture the iron viaduct on the west end.

Truss erection occurred between March 1891 and April 1892. Finishing touches included laying the deck and final riveting. Tens of thousands took part in elaborate dedication ceremonies on 12 May 1892. Completion of the highway deck and viaduct delayed Morison's officially turning over the bridge to the railroad until 1 May 1893. The total cost was $3 million. Morison was closely involved with the construction of this bridge, and many historians consider it Morison's greatest bridge design in his thirty-year career (Fraser 1986).

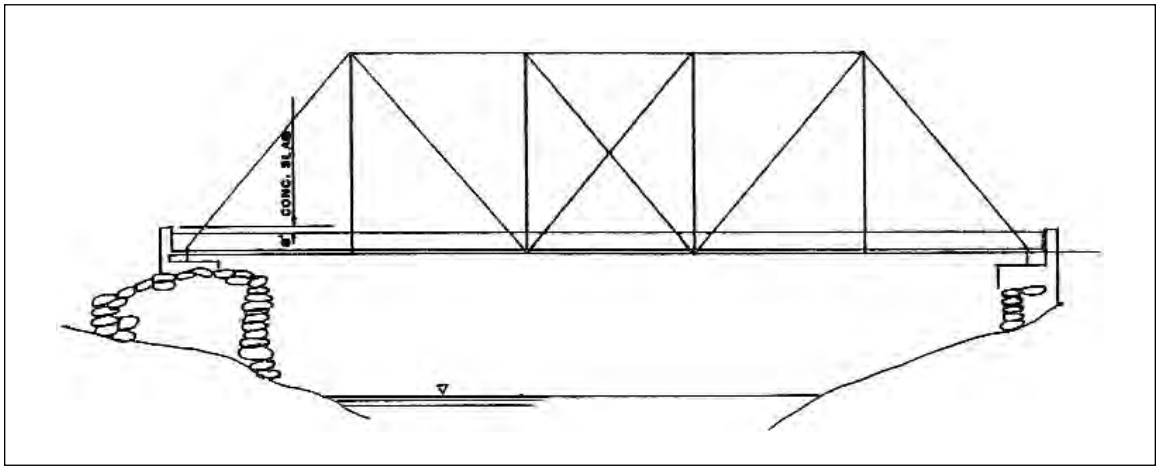
Known as the Frisco Bridge because the original rail companies later merged with the St. Louis and San Francisco Railroad ("Frisco Lines"), the bridge contains one 790-foot Double Intersection Warren (Lattice) continuous through truss with pinned connections. When built, it was the longest span in the United States and the third longest in the world. It was Morison's desire to build three equal spans of 675 feet or to center the longest span, but the Secretary of War's stipulations required that the main span be on the Tennessee side of the river, which resulted in an asymmetrical truss arrangement. Thus (beginning on the east side), the bridge contains an anchorage span above land 225.9 feet long. The next span is the 790 foot channel span. The next two truss spans are each 621 feet long. The last truss span is a simple deck Warren with verticals, a "mere" 339 feet long. West of the deck truss is a 2,290 foot iron viaduct of plate girders supported by iron towers on concrete foundations. The bridge contains a single rail track.

This is one of only a few bi-modal bridges in Tennessee, in this case for railroad and vehicular traffic. The Congressional Charter for the bridge stipulated that the railroad would provide an independent roadway for wagons and animals on each approach of said bridge, and, for the entire length of the bridge proper, a roadway of sufficient width for wagons to pass each other without inconvenience, to be used by wagons and animals in common with the railroad. That said bridge shall be open for the passage of wagons and animals at all times except when trains are actually passing.

However, it appears that wagon traffic did not widely use the bridge, in part due to the high tolls but also possibly due to its heavy usage by rail traffic. The steep design of the western viaduct, which reputedly required multiple teams to pull a wagon up it, may have also been a significant factor. By the early 1910s, when discussions began in earnest about the Harahan Bridge (#77, 79-NonHighway-4), the Frisco Bridge had essentially ceased operating as a wagon road bridge (Tennessee 1940:48). The bridge no longer carries vehicular traffic but is an active railroad bridge and was pivotal in expanding rail traffic in this region. When completed, it was the only bridge to span the lower Mississippi River and had the longest span in the country until 1917.

The American Society of Civil Engineers has designated three resources in Tennessee as National Historic Civil Engineering Landmarks: the Montgomery Bell Tunnel, the Norris Dam, and the Frisco Bridge.

(#15) 10-A0634-01.93: Blevins Bridge spanning Doe River South of Hampton in Carter County (Iron Mountain Gap Quad, 208 NW).



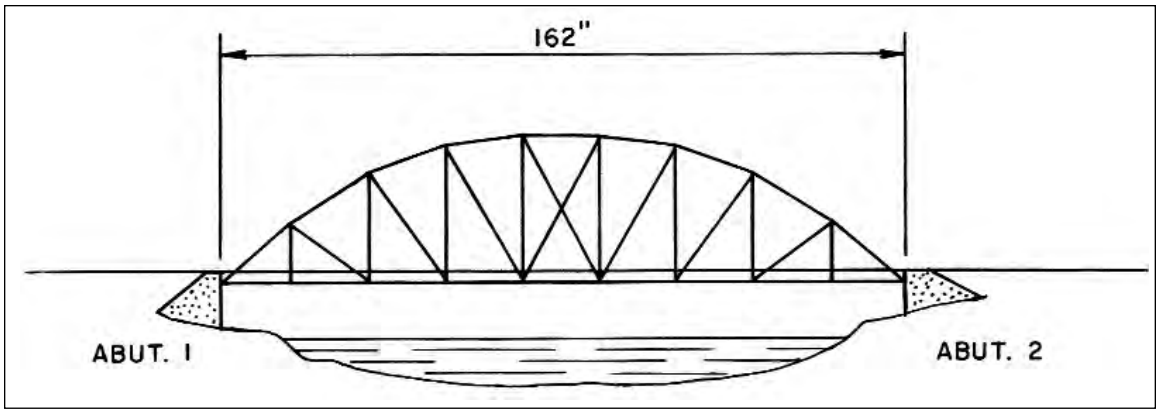
Significant under Criterion A for its associations with the Tweetsie Railroad and under Criterion C as Pratt truss bridge by the Keystone Bridge Company.

In the 1860s, the richest vein of magnetic iron ore known to exist in the United States up to that time was discovered in western North Carolina. This discovery resulted in the formation of the Cranberry Iron Works that constructed a railroad, the "Tweetsie" (East Tennessee and Western North Carolina) Railroad, from the mines in North Carolina into East Tennessee where it joined the East Tennessee and Virginia Railroad. The original bridge at this location was a covered Howe truss bridge that the severe "May Tide" 1901 flood damaged. The railroad repaired the bridge after the flood, but by 1909 the bridge needed to be replaced. The railroad then relocated this truss span to the site. Its previous location is unknown, but bridge plaques identify it as having been fabricated by the Keystone Bridge Company in 1889. The

Tweetsie Railroad abandoned a large segment of the line in Carter County in 1950. In 1967 the county opened a short segment, which included this bridge, for vehicular traffic (Bradshaw 1942:37-39; ET&WNCRR April May 1993:8-11,16; Ferrell 1976; Sulzer 1975:85- 122).

The bridge contains one span, a pinned Pratt through truss 111 feet long and 24.9 feet tall. Top chords and end posts are channels with lacing on the top and bottom. Bottom chords, which lie below the floor beam, are paired rectilinear eyebars. Verticals are channels with lacing, except the hip verticals, which are paired rectilinear eyebars as are the diagonals. The counters are paired rectilinear tie rods. The truss rests on masonry abutments, probably erected in 1882, which have concrete caps, possibly added in 1909.

(#16) 19-NonHighway-2: Old Bordeaux Bridge at Linton spanning South Harpeth River in southwest Davidson County (Kingston Springs Quad, 305 SE).



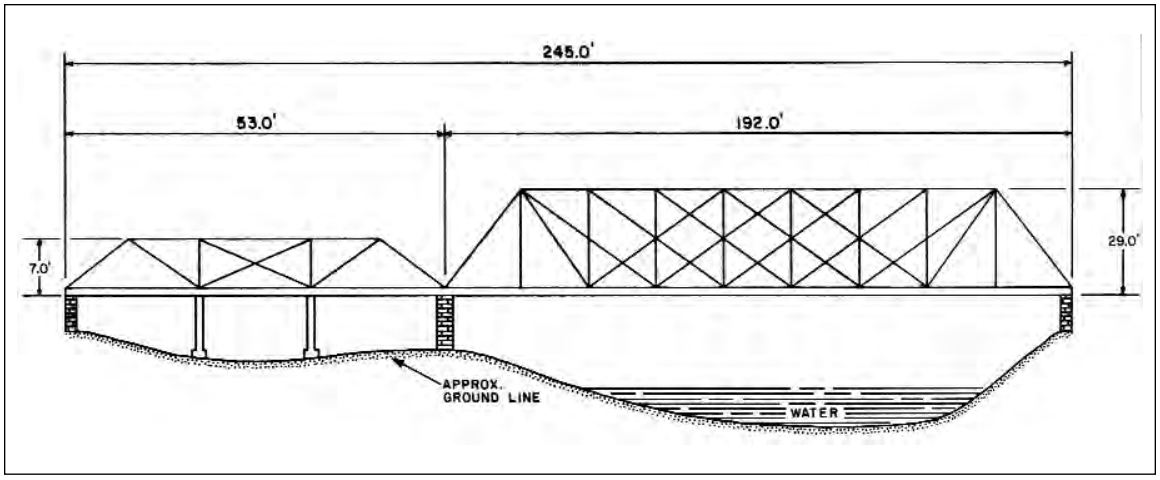
Significant under Criterion C as unusual Parker truss bridge by the Mount Vernon Bridge Company.

This span was one of four trusses on the Old Hyde's Ferry or Bordeaux Bridge that Davidson County built in 1889 over the Cumberland River northwest of Nashville. Designed by Nashville engineer E. F. Falconnet, the county awarded the contract for the iron superstructure to the Mount Vernon Bridge Company. The bridge was apparently under-built as the need for a larger bridge soon arose. By 1910 engineer Howard Jones, whom the county had hired to examine the bridge, recommended a new bridge, but it was not until 1915 that the county began in earnest to replace the bridge. In 1917 the county hired the Nashville Bridge Company to relocate two of the trusses from the Hyde's Ferry Bridge to different sites at Linton for $8,000 and for ownership of the two remaining spans (Davidson County Quarterly Court Minutes Volume A:220-222, 299-301, 323-330, 337-338, 343, 352, 354, 371-372, 444-447, 499, 537-540; Volume B:11-12, 70, 71, 78-92, 432, 468, 491;Volume H:211-213, 283-291;Volume K:358-359, 402-404, 461, 596-597;Volume L:355-357; Graves 1975:105-112; Nashville Bridge Company #3825). Of the two spans erected at Linton, only this one remains. One of the other spans is now part of #112, 89-04261-11.60; it is unknown what happened to the fourth span.

When Nashville Bridge relocated the span to Linton, it removed one panel and reduced the original length of 180 feet to 162 feet. It also reduced the original width of 20 feet to 16 feet. The top chords and end posts are channels with lacing as are the verticals. The diagonals and the bottom chords are paired rectilinear eyebars. The hip verticals are paired rectilinear eyerods. The counters are single rectilinear tie rods. The substructure is concrete. The bottom chords are below the floor beams, which is somewhat unusual. The elaborate two tier lattice railing remains. The lattice portal bracing and arched knee bracing contains a boss diamond decorative detail. This gracefully curved variation of the Parker is sometimes called an "elliptical truss" or "curved chord truss."

This bridge is located on a bypassed segment of a bypassed road, and although closed to traffic, it remains intact.

(#17) 52-A0487-04.85: Stone Bluff Bridge spanning Elk River southwest of Fayetteville in Lincoln County (Dellrose Quad 66 SE).



Significant under Criterion C as rare Double Intersection Pratt by the King Iron Bridge Company.

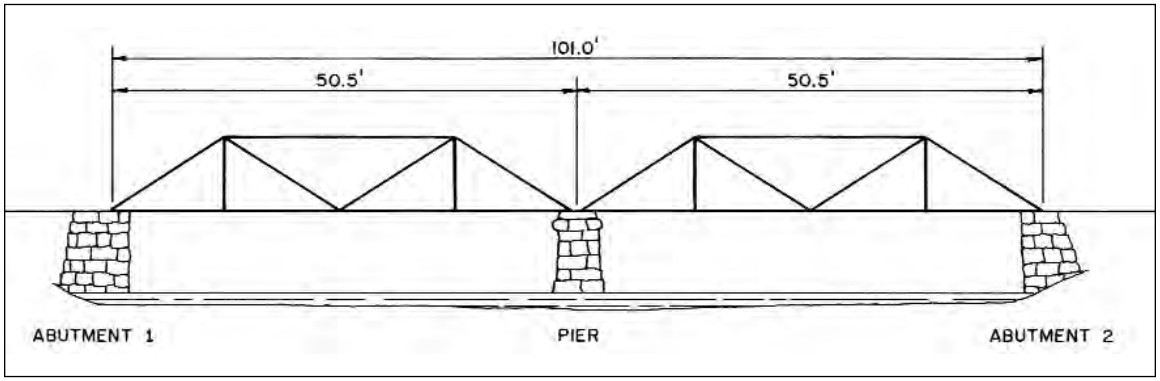
In January 1889 the Lincoln County Court approved up to $8,000 to build a bridge at this site and appointed a committee of S.A. Hill, D. H. Patterson, and D. C. Sherrill. However, the exact location of the bridge proved to be controversial as local citizens lobbied to get a new bridge instead at the mouth of Coldwater Creek (where the county would build #23, 52-A0494-

00.22 in 1891). In February the county let a contract to the King Iron Bridge Company to build this bridge, but in April the court rescinded its order. However, the next day the court reversed itself and again approved the bridge. By October, King Iron had finished its work, and the county paid it $7,726.14. In January 1890, the committee reported that all work had been done and all settlements with contractors had been made (*Fayetteville Observer* 10, 17 January, 28 February, 4 April, 2, 23 May, 6 June, 10 October 1889, 9 January 1890; Lincoln County Court Minutes Book 1888-1890:160-161, 219, 226-228, 340, 420-423).

The Stone Bluff Bridge contains an iron 192 foot pin connected Double Intersection Pratt truss and a 53-foot pin connected Pratt half-hip pony truss. Sitting on a masonry substructure, the bridge's minimum vertical clearance is 15.0 feet. It has a curb-to-curb width of 13.0 feet and an out-to-out width of 16.0 feet. The composition of the main span is typical. Top chords and end posts are channels with battens. Bottom chords are paired rectilinear eyebars. Verticals are small channels with lacing, except the hip verticals, which are paired rectilinear eyerods. Diagonals are paired rectilinear eyebars, and the counters are single or paired tie rods. One unusual feature of the bridge is the "V" shaped floor beams. The portal treatment contains a three-circle decorative motif that is common for many of King Iron's bridges. The pony truss is possibly a replacement for an earlier span and its composition is also typical. Top chords and end posts are channels with lacing on the top and bottom. Diagonals and counters are paired cylindrical tie rods. Verticals are paired angles with lacing. Bottom chords are paired rectilinear eyebars.

Due to its condition, the county closed this bridge to traffic in May 1981. During construction for a new bridge in October 1982, the bridge was accidentally destroyed.

(#18) 52-SR274-06.82: Coldwater Bridge spanning Coldwater Creek southwest of Fayetteville in Lincoln County (Taft Quad, 73 SW).



Significant under Criterion A for its role in development of transportation in the county and under Criterion C as an unusual Warren pony truss bridge.

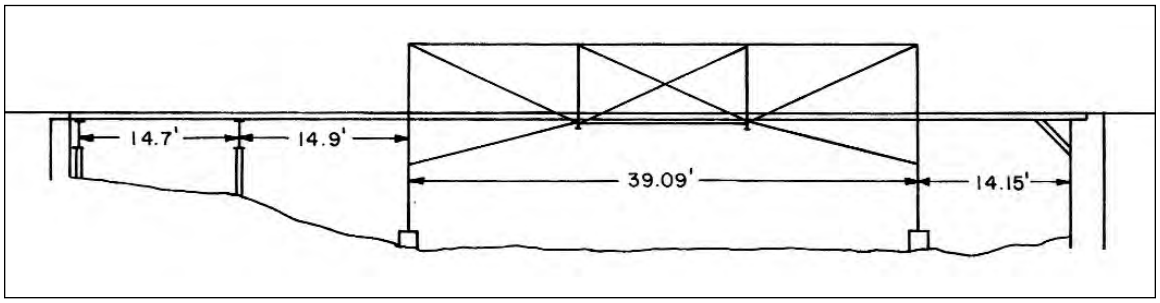
In 1887 the Decatur, Chesapeake, and New Orleans Railway Company was incorporated to construct a 135 mile line between Decatur, Alabama, and Gallatin, Tennessee. Believing that a railroad would aid the county's growth, Lincoln County promised the railroad a subsidy of $150,000 if the railroad built the line through the county. However, after Lincoln County

refused to pay the subsidy, the railroad went bankrupt and the only portion of the line completed was a thirty-six mile section built in 1889, of which twenty miles was in Lincoln County. Rockwell, Anderson and Company of Chattanooga built the superstructure of the bridges on the railroad. Alliger and Golightly of Florence, Alabama, built the masonry substructures. Over the following years, the line served local needs, and many small communities flourished around the railroad stops including Coldwater. By the 1920s passenger service declined, due in part to the growth of highway travel, and in 1929 the railroad ceased operation. During that summer Lincoln County purchased the old roadbed (with bridges) and converted it into a county road. Since then, Coldwater, as well as many other small communities, have disappeared and most of the railroad related buildings and structures have been replaced (Bailey 1969:252-268; Carver 1985b; *Fayetteville Observer* February 1889 through November 1889; *Lincoln County News* Supplement 1904; Sulzer 1975:53-66).

Erected in 1889, this bridge contains two spans, each a pin-connected Warren pony truss 50 feet long and 8.0 feet in height. The bridge has a curb-to-curb width of 13.3 feet and an out-to-out width of 21.0 feet. The composition of this bridge is much different from that of bridges originally built for highway use. However, since this survey did not generally inventory railroad bridges, it is difficult to conclude if the composition of members is significant even if it is unusual for highway bridges. Top chords and end posts are two large side-by-side channels with a smaller channel riveted and welded inside. Bottom chords extend across two panels. These members are paired rectilinear eyebars that connect on the exterior side of the end posts. Between these eyebars is an I-beam whose end encircles the pinned connection. Below these members is one cylindrical rod; this threaded tension rod passes completely through the web of the end post where a hex nut secures it. The verticals are large paired rectilinear eyebars. At each vertical a lateral bracing member of paired angles riveted together extends diagonally outward. The diagonals appear to be two large eyebars with a channel riveted and welded between them.

The Tennessee Department of Transportation, in cooperation with and the Federal Highway Administration demolished this bridge and erected a new bridge at this site in 1986.

(#19) 73-A0330-00.84: Bridge spanning Paint Rock Creek south of Paint Rock in southeast Roane County (Pattie Gap Quad, 124 NE).



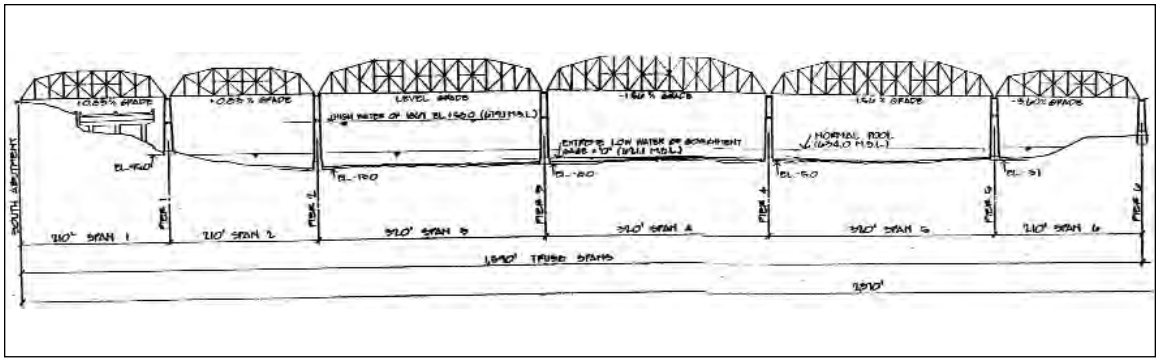
Significant under Criterion C as early iron Bedstead truss bridge by the Champion Bridge Company.

At the April 1889 meeting of the Roane County Court, the members of the court agreed to replace a wooden bridge at this site with an iron bridge. Subsequently the county awarded a contract for $1,200 to the Champion Bridge Company. The Champion Bridge Company completed the bridge and the county accepted it sometime prior to October (Roane County Court Minutes Volume B:229-230, 237, 343).

This bridge contains a 39-foot pin-connected Pratt Bedstead pony truss and three 15 foot steel I-beam approaches. Five feet in height, the truss has a curb-to-curb width of 11.7 feet and an out-to-out width of 13.8 feet. The abutments are concrete and the truss legs sit on concrete pads. Composition of members is typical. Top chords are channels with battens. End posts, formed of channels with battens, are 12.5 feet tall, and crossed cable bracing connects each set. Verticals are paired angles with lacing. Diagonals in the center panels are single rectilinear tie rods with paired rectilinear eyebars in the flanking panels. Paired rectilinear eyebars form the bottom chords in the center panel, but in each flanking panel, single I beams extending at an angle from the hip verticals to a point on the end posts about two feet below the road level form the bottom chords.

The county replaced this bridge with a new structure in 1987.

(#20) 33-03544-00.12: Walnut Street Bridge spanning the Tennessee River in downtown Chattanooga in Hamilton County (Chattanooga Quad, 105 SE).



Significant under Criterion A for role in community development and under Criterion C as outstanding truss bridge and as work by Thacher.

Prior to this bridge, there had been a river bridge at Chattanooga only briefly from 1864 to 1867, and afterwards ferries provided the only crossings. By the early 1880s local citizens began requesting a bridge and a series of committees worked on the project. Although they persuaded the state legislature to authorize legislation in 1885 for a bond issue, the county court refused to appropriate the money. In disgust, a group of local citizens on 13 August 1887

incorporated as the Chattanooga Bridge Company to form a stock company to build a toll bridge. They immediately contracted with Edwin Thacher's Decatur Bridge Company to design and build a bridge. However, Decatur failed to build the bridge. Finally, the stock company gave its assets to the county in return for its agreement to build a free bridge. The county's bridge committee included A. J. Gahagan, R. M. Barton, F. B. Thompson, B. R. Thomas, W. H. Converse [later of the Converse Bridge Company], and F. de Travernier. Barton, credited with obtaining the county's commitment to build a bridge, soon resigned and John Messick replaced him.

By the late 1880s, Decatur Bridge had gone into receivership and Thacher had established a consulting engineer's office in Louisville. The county hired nationally recognized Thacher (1839-1920) as chief engineer. He had worked briefly as an engineer with the Cedar Rapids and Missouri River Railroad in 1863, for the U.S. Military in 1864-1865, and for the Louisville, Cincinnati, and Lexington Railroad in 1866-1868. From 1868-1879 he worked for the Louisville Bridge and Iron Company. From 1879 to 1887, he worked for the Keystone Bridge Company that appointed him as chief engineer in 1883. Thacher was chief engineer and vice-president of the Decatur Bridge Company from 1887-1889 until it went into receivership. Afterwards, Thacher opened an office in Louisville as a consulting engineer. During the 1880s and 1890s, he became more interested in concrete bridges and became a national leader in concrete arches during the infancy of that bridge type. Thacher built the world's largest concrete arch of its kind in Topeka between 1894 and 1899. From 1901, until his retirement in 1912, Thacher and William Mueser were partners in the firm Concrete Steel Engineering Company of New York City. In the 1880s Thacher patented the Thacher Truss and in the 1890s, patented improvements for concrete arch bridges such as the "Thacher Bar." He was also well known as a mathematician patenting the Thacher Cylindrical Slide Rule in 1881 and a flat slide rule in 1900. In addition to this bridge, the survey identified one other bridge that Thacher designed in Tennessee, the Clinch Avenue Viaduct in Knoxville; (#48, 47-A0135-00.42).

The resident engineer was J.A. Fairleigh and the assistant engineer was E. E. Betts. The county chose the Smith Bridge Company to build the superstructure from about twenty applications. The county let the contract to the Neely Smith Company of Chattanooga to build the substructure. Smith Bridge subcontracted the superstructure to McCauley and Morse of Pittsburgh and that firm's foreman, L. L. Gross, directed construction.

For a bridge of this size, work proceeded relatively smoothly. Even so, accidents killed three laborers; a beam hit one and two drowned.

One point of continued discussion was the streetcar line. Several companies vied for the right to cross the bridge, and after that decision was made, the companies continued to wrangle about their fees. The county at first insisted on the streetcars being powered by mules or horses because it did not want the bridge used for the then experimental electrical powered lines. The telephone company wanted to extend lines across the bridge, but the county insisted on a fee that the company did not want to pay. County residents in Hill City supported the telephone company's feeling that their taxes were paying for a bridge that would benefit the city more than it would them. Actually, the bridge resulted in a real estate boom in the Hill City area that greatly expanded Chattanooga's size.

Although the contractor largely completed the bridge by November 1890, a lost shipment of lumber delayed completion of the bridge. About 5,000 people attended elaborate dedication

ceremonies held on 18 February 1891. The bridge cost about $247,000 that included $96,198 for the substructure; $130,189 for the superstructure; $7,828 for streetcar lines; $3,981 for inspection; and $8,194 for engineering and incidentals. Ironically, after years of unwillingness by the county to build the bridge, a May 1891 *Engineering News* article stated that a private firm that wanted to operate it as a toll bridge had offered the county a sum in excess of the bridge's cost.

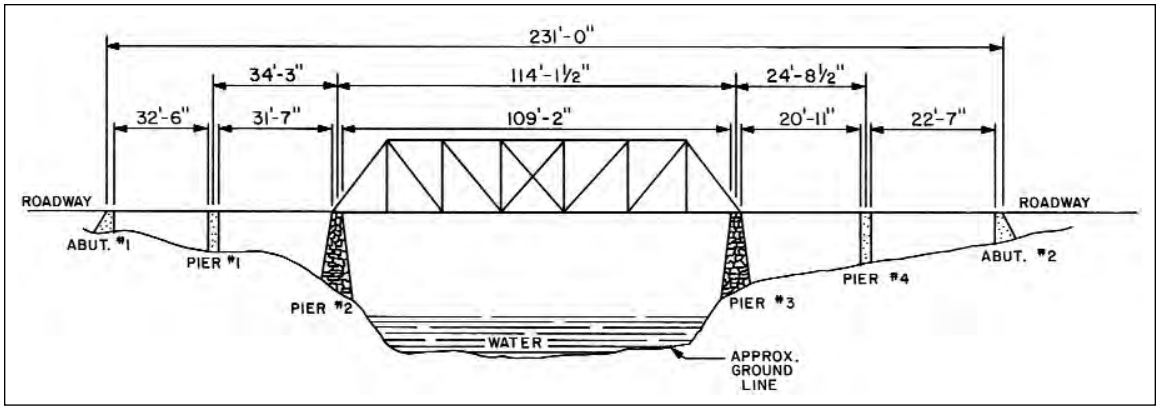
By 1897 electricity powered the streetcars, and a fire that destroyed two of the approach spans was attributed to a spark from the lines. Over the following years numerous fires occurred, usually caused by lighted cigarettes tossed on the sidewalks. Several suicides occurred from the bridge, and it was the site of at least two lynchings. Substantial repairs were made to the bridge in 1914, 1938, 1948, 1955, 1957, 1960, 1974 and 1977. The city barricaded the bridge to traffic on 11 May 1978 and it remained closed until the City of Chattanooga renovated it for pedestrian use and reopened it in 1993 (Gaston 1979; 1987; Hulan 1989; Jackson 1988:185-186).

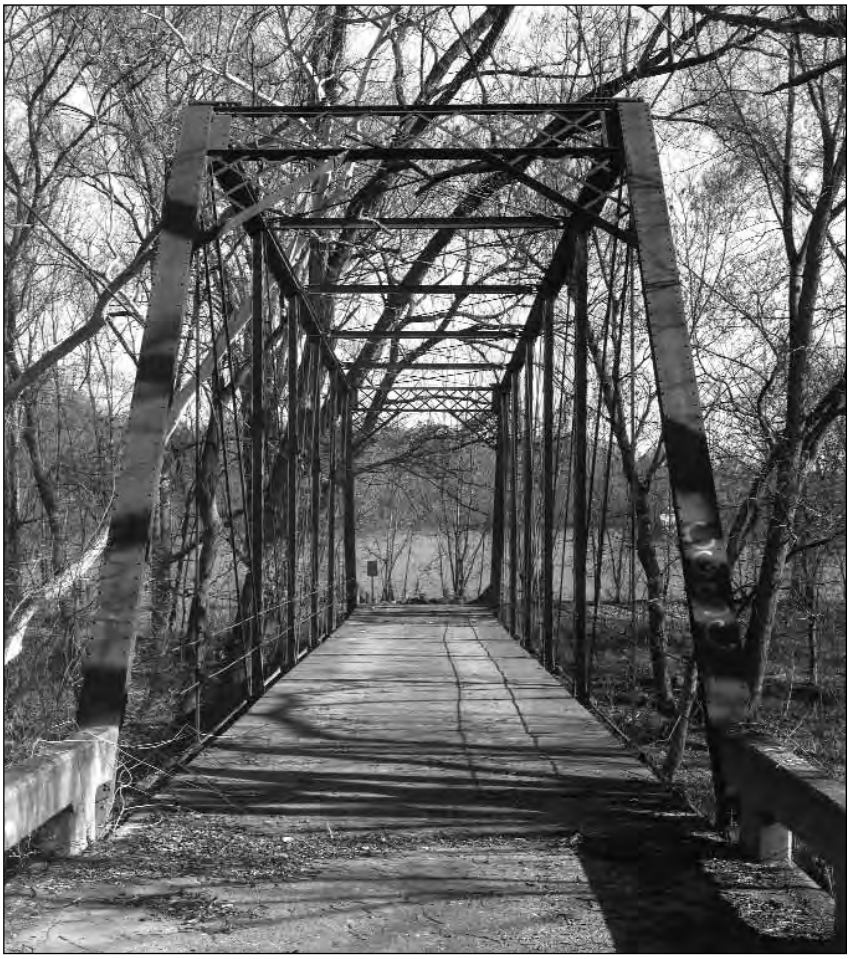
The Walnut Street Bridge is 2,370 feet long and contains six pin connected through modified Camelback trusses and thirty nine steel stringer spans. Beginning on the south (or downtown Chattanooga) end, the bridge contains two 210-foot trusses that are 38.0 feet tall at their highest points, three 320-foot channel spans that are 48 feet tall at their highest points, and one 210 foot span. The curb-to-curb width is 18.6 feet and sidewalks expand the out-to-out width to 30.0 feet. The minimum vertical clearance is 19.3 feet at the portal and 20.6 feet at the sway bracing. Each panel is 20 feet in length. The composition of truss members is typical although due to various repairs there are variations. Top chords and end posts are channels with lacing underneath. Bottom chords are rectilinear eyebars. Verticals are I-beams or angles with lacing. The diagonals and counters are paired rectilinear eyebars. Generally, compression members are iron, and tension members are steel.

The bridge has an elaborate railing of overlapping arches above latticing. The portal bracing consists of a single cross with a flower motif in the center. The arched knee bracing contains a wagon-wheel motif. An elaborate iron plaque that contained the overlapping arch motif found in the rail and the wagon wheel motif was removed in 1960 but restored as part of the 1990s renovation.

The substructure for the truss portion of the bridge consists of one small abutment and six piers all of grouted limestone masonry resting on bedrock and with concrete caps. All of these piers, except for pier six (which is on land), have nosings or shoulders on both the upstream and downstream sides. The piers are generally 50 feet wide and 20 feet deep at their base and range in height from 60 to 108 feet. A 780-foot viaduct, lying on a 3.6 percent grade and composed of thirty-nine steel stringers on bents made of channels connected with lacing, forms the north end of the bridge.

(#21) 63-A0456-01.88: Sulphur Fork Bridge at Port Royal spanning Sulphur Fork Creek in northeast Montgomery County on the Robertson County line (Sango Quad, 303 SW).





Significant under Criterion C as an early Pratt truss by the Converse Bridge Company.

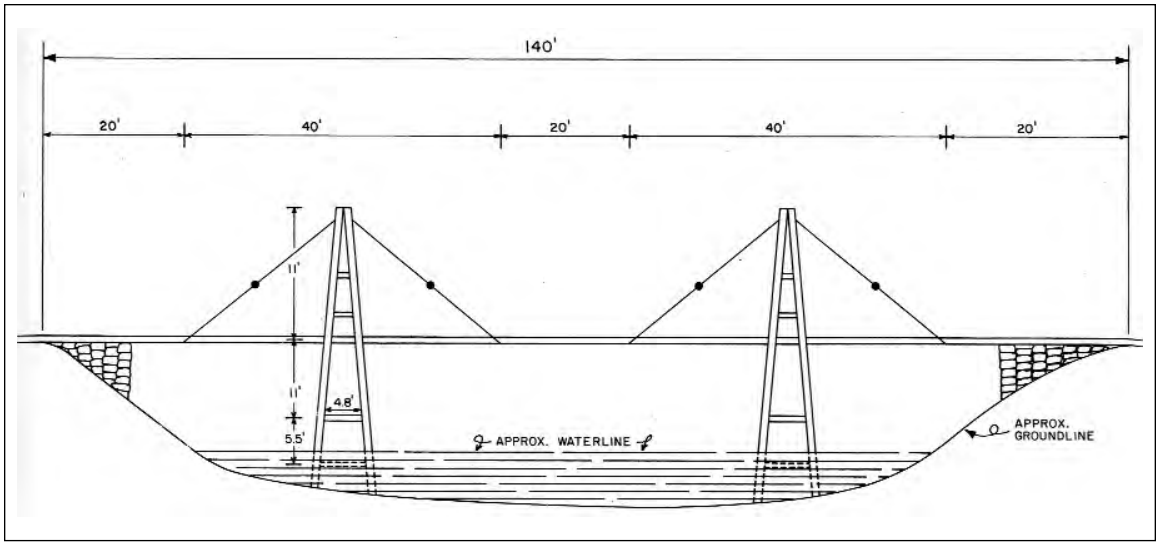
Earlier bridges were erected at this site in 1842 and 1859, and it was a relatively major crossing in the nineteenth century. Between 1885 and 1890, Robertson and Montgomery Counties repeatedly tried to reach an agreement on building a bridge here. The source of contention, as might be expected, was money: Montgomery County wanted each to pay half, and Robertson County wanted each to pay based on the number of voters in each county (which would be cheaper for it). The counties finally agreed to Robertson's plan with Montgomery County paying $1,340 and Robertson County paying $960. In January 1890, the counties let a contract to Converse Bridge for the new structure, but in April all the falsework washed away and work began anew. Converse completed the bridge by July 1890 (Brehm 1982; Carver 1988; Montgomery County Court Minutes Volume 31:349, 394; Volume 32:145, 356, 402, 483, 535, 583; Volume 33:17; Winters 1968).

The Sulphur Fork Bridge contains one main span, a pin connected Pratt through truss 114 feet long resting on masonry piers. Two reinforced concrete deck girder spans on cast-in-place concrete piers and abutments, which the county built about 1955 to replace the original approaches, flank the truss. The overall length is 231 feet and the vertical clearance is 13.1 feet. The curb-to-curb width is 11.8 feet, and the out-to-out width is 14.5 feet. The truss is 18.9 feet tall. The portal bracing contains a latticed design.

The overall composition of the bridge is typical of truss bridges of this period, but some specific details are unusual. The top chords and end posts are channels with lacing underneath. The bottom chords are paired rectilinear eyebars. The verticals are channels with lacing except the hip verticals, which are single eyerods that split at the bottom into four one-inch "fingers" looping the pin. The diagonals are double rectilinear eyebars except those in the center panel which are paired cylindrical tie rods as are the counters. The bottom connections of the hip verticals are not typical for most 1890s bridges in Tennessee but similar connections were used on the Riggins Mill Bridge (63-A0448-00.82; collapsed c. 1984) which appears to have been built by the Wrought Iron Bridge Company in the late 1880s. Since Converse was an agent for Wrought Iron for a few years, he may have decided to use this atypical feature in the 1890s even though by then major companies had ceased using it.

The Tennessee Department of Transportation, in cooperation with Montgomery and Robertson Counties and the Federal Highway Administration, built a new bridge nearby in 1990 and closed this bridge to vehicular traffic. It is now a pedestrian bridge within the Port Royal State Park.

(#22) 11-NonHighway-1: Sycamore Mills Bridge spanning Sycamore Creek northeast of Ashland City in Cheatham County (Ashland City Quad, 304 SE).



Significant under Criterion C as rare fixed, cable stayed suspension bridge and as work of E. C. Lewis.

E. C. Lewis designed and built the Sycamore Mills Bridge, erected in 1891 (Cheatham County Court Minutes Volume F:240, 319). It was located on a north-south county road that later became State Route 49. The state bypassed this bridge with a truss bridge downstream about 1930, but this bridge remained in local use until about 1940 and was then used on a farm road. It is located within the National Register Sycamore Mills Site, a mill village complex in operation from 1790 to 1904 (Binkley 1980; Fielder and Rogers 1979).

Trained as a civil engineer, Eugene Lewis (nicknamed "Major" in school) surveyed new railroad lines in the South after his graduation in 1865 from the Pennsylvania Military Academy. In the early 1870s as part of his job, Lewis bought explosives from the DuPont Powder Company. The association resulted in the DuPonts appointing Lewis as an agent to sell powder at their Sycamore Mills Powder Plant in Tennessee. When the chief stockholder at Sycamore died in 1876, the DuPonts bought his shares and appointed Lewis general manager. In a few years, Lewis became president of the mills. During his association with the mills, Cheatham County hired Lewis in 1891 to design and build the Sycamore Mills Bridge across Sycamore Creek that ran through the mill complex.

Throughout his life Lewis actively participated in the railroad industry. He was on the Board of Directors for both the Louisville & Nashville Railroad and the Nashville, Chattanooga, & St. Louis Railroad; he later served as board chairman of the latter. This led to his involvement with the 1897 Tennessee Centennial Exposition over which he was appointed director-general. Lewis viewed the Exposition as a means to increase railroad travel to Nashville. Thus, during the late 1890s, Lewis moved to Nashville where he designed his own home that included such unusual features as rounded corners and a bed suspended from the ceiling. In 1896 he bought and became publisher of a local newspaper that he used in large part to promote the Exposition.

Lewis is probably best remembered for his work with the Exposition. As director-general, he was responsible for the construction of all the fair's buildings. Lewis pushed for a "class" event and persuaded those involved to provide landscaping with reflecting pools and flowers. He wanted to recreate a replica of the Greek Parthenon, now one of Nashville's best known landmarks. He designed the Shell Spring, the bandstand, and a monument to James Robertson. As the Exposition neared its end, Lewis successfully pushed to retain the Parthenon and the Exposition grounds as a permanent park to be known as Centennial Park.

Lewis participated in several Nashville construction projects as a builder. These included the downtown Castner-Knott building and the transfer station for the Nashville railway system. He also superintended the construction in 1906 of the railroads' Union Station. Sometime prior to 1904, the DuPonts asked Lewis to recommend a site for a powder mill near Nashville. Because of anti-trust laws that resulted in the break-up of Dupont in 1904, the plant was not built until World War I increased the demand for explosives. The world's largest powder, dye, and acid plant was built at the site on Hadley's Bend that Lewis had originally recommended.

When Lewis died in 1917, during his funeral all traffic stopped for five minutes on the railroads with which he had been associated. He is buried at Mount Olivet Cemetery in Nashville in a family vault that he had designed in the shape of a pyramid guarded by a pair of exterior sphinx.

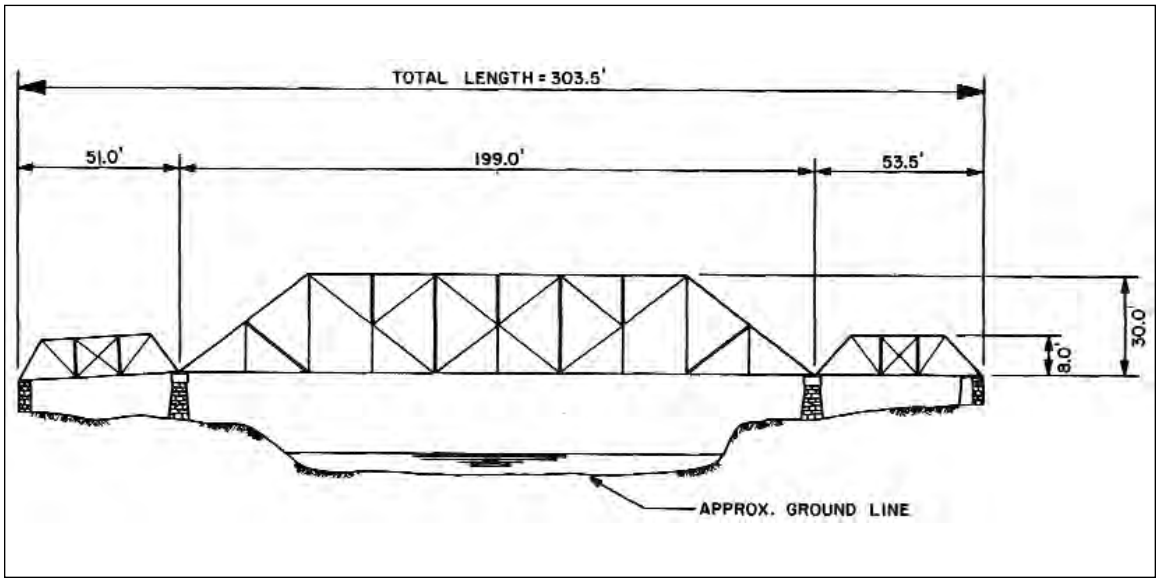
The survey identified only one bridge designed by Lewis, the Sycamore Mills Bridge, a cable stayed suspension bridge. It is approximately 140 feet long and 12 feet wide. It contains three spans supported by two identical towers. The towers are about 30 feet in height and are composed of four channels that join at the top but form an A shape as they extend to the water. Lateral bracing connects them at four points. Each of the two towers has a "twin tower" or double plane configuration, that is, a tower extends vertically on each side of the roadway. While such towers may stand independently of each other, in this case, lateral bracing connects them at the top and below the deck. This bracing is graceful and gives the bridge a

unique aesthetic appearance. On the top a single I bar connects the towers and below it is a single arched member. The spandrel area formed by these two members contains circular plates. Each plate contains the date 1891 and the names of the bridge committee and the phrase "E. C. Lewis Engineer and Contractor." Two arched members are located below the deck. The cables do not loop over the towers as is common with traditional suspension bridges but instead connect at the top. From the top of the tower, a single eyerod extends diagonally toward the deck. At about midpoint it joins (with a pinned connection) two eyebars that extend to the deck where they have pinned connections. With its floor beams and lateral bracing system, the deck is very similar to truss bridges.

In 1978 the Historic American Engineering Record identified this bridge as possibly the only nineteenth century, fixed cable stayed bridge in the United States (Griffin 1978).

The old roadbed with this bridge is located within a farm, and although deteriorated, remains intact.

(#23) 52-A0494-00.22: Hobbs Bridge spanning the Elk River southwest of Fayetteville near Coldwater in Lincoln County (Taft Quad, 73 SW).



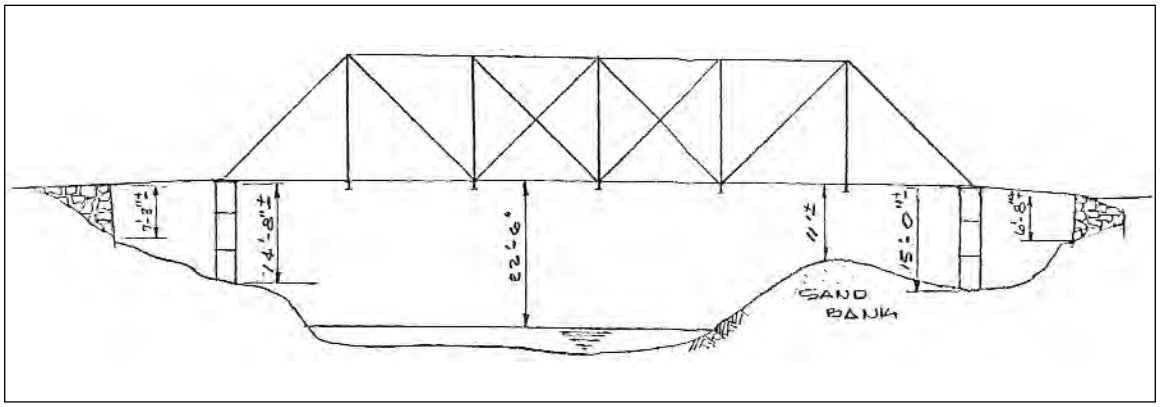
Significant under Criterion C as rare Baltimore Petit truss.

Local citizens lobbied intensely for this bridge and in January 1891 the Lincoln County Court, in a close vote, approved up to $8,000 for a bridge at this site. The county court appointed a committee composed of William Sugg, Pleasant Hobbs, and W. H. (or H. W.) Sheffield and gave it the authority to receive bids and to let the contract. The bridge was completed that year at a cost of $7,329, and the county paid each member of the committee $50 in January 1892 (Carver 1986c; Lincoln County Court Minutes Book 1888 1890:155; Book 1890 1892:140, 143 144, 544 546).

The 304 foot Hobbs Bridge contains a pin-connected Baltimore Petit through truss and two pin-connected Pratt half-hip pony trusses. The bridge has a curb-to-curb width of 11.8 feet and an out-to-out width of 12.6 feet. The minimum vertical clearance is 14.0 feet. Compositions of the members vary. The top chords and end posts are channels with lacing. The verticals are small channels with lacing, except the hip verticals and the half verticals from the mid-point to the bottom chord that are paired rectilinear eyerods. The diagonals and bottom chords are paired rectilinear eyebars. The bottom floor beams are "V" or chevron shaped, a feature common in early bridges but one that builders seem to have only occasionally used by the 1890s. At an unknown date, the county repaired the masonry substructure with concrete.

The Tennessee Department of Transportation, in cooperation with Lincoln County and the Federal Highway Administration, built a new bridge nearby in 1987 and closed the Hobbs Bridge to vehicular traffic. Due to liability and hydraulic concerns, the county removed the pony trusses but left the Baltimore Petit truss to stand as a historic ruin.

(#24) 58-A0502-00.36: Tate Cove Road spanning Battle Creek in southwest Marion County (South Pittsburg Quad, 100 SW).



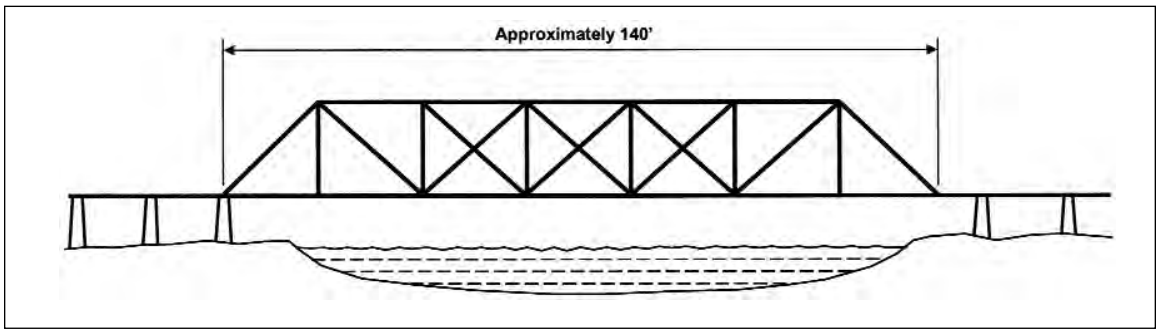
Significant under Criterion C as representative Pratt truss by the King Iron Bridge Company.

In January 1891, the Marion County Court appointed a bridge committee of J. S. Raulston, M. V. Wynick, H. R. Deakins, and J. G. Lancaster to locate a potential site for a bridge across Battle Creek at Ketch-All and to ascertain the cost. In April, this committee reported that it had received bids for the bridge from the following companies: Columbus Bridge, $4,049; Canton Bridge, $3,963; Pittsburg Bridge $4,050; Smith Bridge of Toledo $4,129; and King Iron $3,789. The county awarded the contract to the lowest bidder, King Iron. The contract specified that the bridge, an iron truss 110 by 12 feet with 30-foot wooden approaches on each end, was to be completed by 10 August 1891. The truss span was relocated to this site about 1930, probably in conjunction with local road improvements by the state (Marion County Court Minutes Volume A:125-126).

The bridge contains one 110-foot pin-connected Pratt through truss and two steel I-beam spans. The bridge originally contained an elaborate portal treatment of laced horizontal bracing and arched knee bracing with a three-circle motif, but the county replaced these members with angles in the 1990s. The bridge has a curb-to-curb width of 12 feet and an out-to-out width of 13 feet. Steel encased concrete tubular piers and masonry abutments form the substructure. Composition of the members is typical. Top chords and end posts are channels with battens. Bottom chords and diagonals are paired rectilinear eyebars. Verticals are laced beams, except the hip verticals, which are paired rectilinear eyebars. The counters are single cylindrical tie rods. One unusual feature is the "V" shaped floor beams.

In the 1990s, the county built a new bridge nearby and left the old bridge as a ruin, removing much of the decorative features but leaving the core bridge.

(#25) 77-NonHighway-1: Hatfield Bridge spanning the Sequatchie River south of Dunlap in Sequatchie County (Daus Quad, 104 SW).

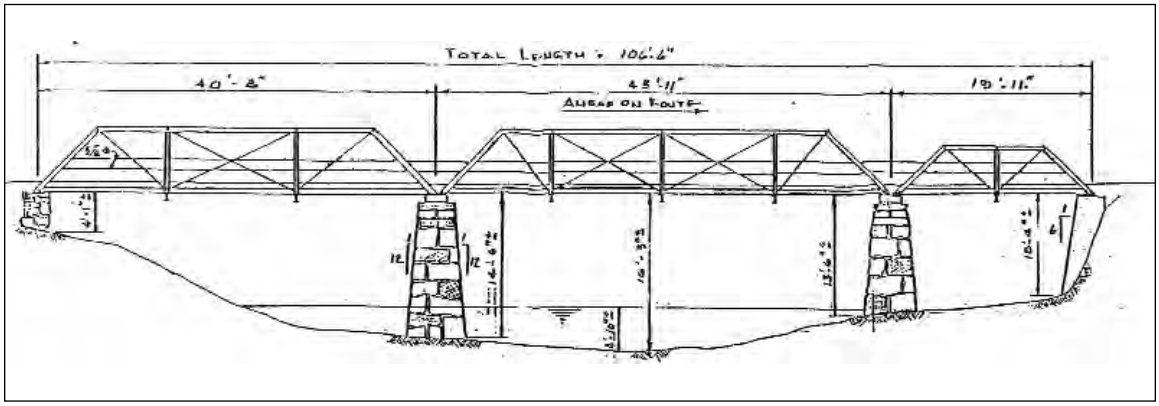


Significant under Criterion C as representative Pratt truss by the King Iron Bridge Company.

In May 1892, the Sequatchie County Court appointed a committee to accept bids and contract for an iron bridge at this site. In July 1892, the court appointed another committee to repair the bridge and in July the court paid $33 for those repairs. The court appointed another committee in July to investigate the cost of a timber bridge at this site and report its findings to the court at its October session. At the October session, the court ordered the bridge to be declared unsafe, for the sheriff to barricade it, and to notify the public of these actions through the local newspaper (Sequatchie County Court Minutes Volume D:162, 202, 203, 239). It is assumed that the county built this bridge soon afterwards, circa 1893. A plaque identifies the builder as the King Iron Bridge Company. The bridge was located on the main north south route in the area, and in the 1920s the state designated the highway as State Route 28 and U.S. 127. It was also the route of the Taft Memorial Highway, also designated the Alvin C. York Highway in Tennessee. The state built a new bridge nearby in 1950 and abandoned this bridge. Although the deck no longer remains, the truss remains intact.

The bridge contains a seven panel pin-connected Pratt through truss about 140 feet long with three steel I-beam approach spans. The portal contains horizontal bracing formed of two separate latticed sections connected by cross bracing. It is one lane wide. Steel encased concrete tubular piers and concrete abutments form the substructure. Composition of the members is typical. Top chords and end posts are channels with battens. Bottom chords are paired rectilinear eyebars. The verticals are channels with lacing, except the hip verticals, which are paired rectilinear eyebars. A lattice railing runs the length of the bridge.

(#26) 06-A0165-00.21: McPherson Bridge spanning Candies Creek northeast of Cleveland in Bradley County (Charleston Quad, 119 SE).



Significant under Criterion C as representative Pratt half hip trusses by the New Columbus Bridge Company.

In October 1894 Bradley County condemned the McPherson Bridge, and the Bradley County Court appointed a committee to investigate replacing it. In July 1895 the committee reported that it had let a contract for $1,190 to the New Columbus Bridge Company. Most of the substructure is masonry and apparently dates to 1883; one abutment is concrete. The county spent $35 for repairs on the substructure when these trusses were erected (Bradley County Court Minutes Volume 4:424, 499; Carver 1983b).

The bridge contains three spans, each a Pratt half-hip pony truss. Two trusses are 45 and 40 feet long and 6.0 feet tall. The third truss is unusually short at 20 feet and is only 4.5 feet tall. Composition of the members is typical, although there is more variety within a single truss than is common. On all trusses the top chords and end posts are channels with battens, and

the verticals are angles paired back to back with cross lacing. On the main 45-foot span, the bottom chords in the two center panels are paired rectilinear eyebars and in the flanking panels are paired cylindrical eyerods. Diagonals in the two center panels are paired cylindrical eyerods and in the flanking panels are paired rectangular eyebars. Counters are single cylindrical tie rods. The composition of the 40-foot span is similar, except for the diagonals in the center panels that are single rectilinear tie rods and the counters that are single rectilinear tie rods. On the 20-foot truss, the bottom chords are paired cylindrical eyerods.

The Tennessee Department of Transportation, in cooperation with Bradley County and the Federal Highway Administration, replaced this bridge in 1984 and relocated the trusses to a Girl Scout campground in Jackson County for use on an internal road system.

(#27) 47-03775-00.26: Gay Street Bridge spanning Tennessee River in downtown Knoxville, Knox County (Knoxville Quad, 147 NW).

Significant under Criterion C as early cantilever truss and for aesthetic design and as work by the Youngstown Bridge Company.

This transportation corridor first contained a bridge during the Civil War when Union troops built one bridge and possibly two at this site. The military bridge at this site washed away in

March 1867. Knox County built a covered bridge here in 1874 that blew down 1 May 1875. In 1879, Knox County leased the piers and right-of-way to G.W. Saulpaw who built a wooden Howe truss bridge that opened 2 March 1880. This bridge remained in use until the county completed the current bridge in 1898. The Gay Street Bridge was the only vehicular river bridge in downtown Knoxville until the 1930 Henley Street Bridge (#132, 47 SR033 06.72).

By the early 1890s, Knox County had begun trying to replace Saulpaw's bridge. In October 1894 the county appointed a committee of G. L. Maloney (Chairman), W. H. Crawford, and G. W. Hines (Secretary). Over the next two years, the committee investigated masonry arch bridges but the county considered the initial bids of $1.5 million too high and began to consider metal truss bridges.

In April 1896, the county hired nationally recognized Edwin Thacher of Detroit as consulting engineer for the new Tennessee River Bridge, as the county called it. The extent of Thacher's involvement is unknown, but the county paid him $750 for his work. In May 1896, the county accepted and reviewed bids for a new bridge from the Schultz, Youngstown, Toledo, and Groton Bridge Companies. The county chose Youngstown's plan and signed a contract in June. The representative for the Youngstown Bridge Company was Charles Fowler. Fowler claimed he drew the sketch for the Gay Street Bridge on the back of an envelope during his train ride to Knoxville prior to his first meeting with the county. In addition to designing the bridge, Fowler supervised construction. Other engineers associated with the project were resident engineer W. C. Crozer whom the county paid $1,255.22 and inspector L. C. Carter whom the county paid $2,062.13.

Completed in July 1898, the bridge cost $233,000. The bridge opened Monday 4 July and the county formally accepted it 6 July proclaiming (in the midst of the Spanish-American War) it be opened as a "highway bridge for the use of all the world except Spain." After the grand opening, the county closed the bridge the following Friday night while the Girl's Relief Society held a festival on the bridge to raise funds for the war hospital. The county closed the old bridge Saturday and began advertising for bids to remove it.

The original plans called for a fixed span, but to get approval from the War Department, the channel span had to be erected without falsework, which required a cantilevered span. This eventually led to the main controversy involving the bridge, Youngstown's payment. The county claimed that using a cantilevered span required less metal than the original fixed span, and Youngstown claimed that costs involved in changing the plans as well as unforeseen foundation problems offset those savings. Further, Youngstown's shops burned during the project, and the company had to reproduce some materials. Youngstown claimed that it lost $8,000 on the project. However, Youngstown and the county reached a compromise and settled out of court by the time the bridge formally opened (East Tennessee, Clipping File; Knox County Court Minutes Volume M:591, Volume N:619-623; *Knoxville Journal and Tribune* 1898; *Knoxville News-Sentinel* 1940, 1977; Rule 1900:302-303).

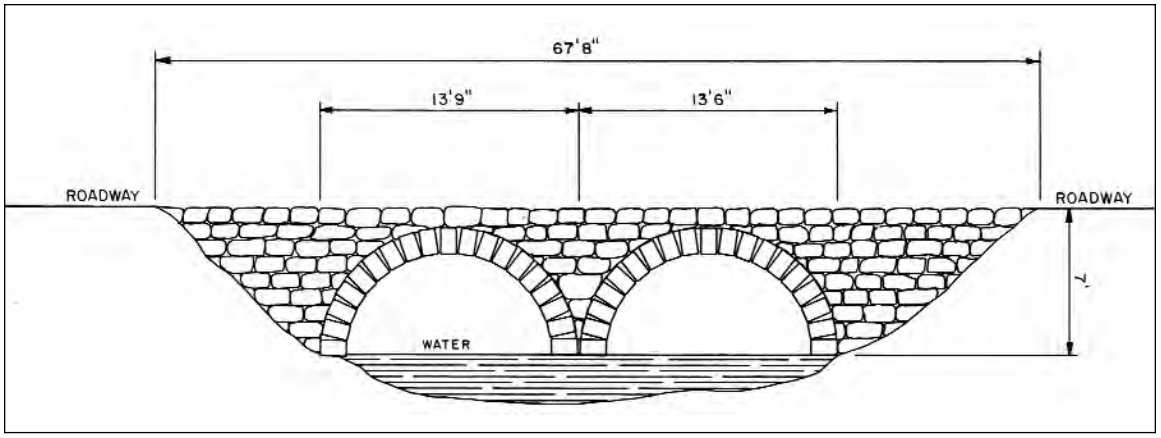
The Gay Street Bridge contains five pin-connected steel arched cantilever trusses that are 252 feet long and two 126 foot truss approach spans on a granite foundation, for an overall length of 1,512 feet. Fowler proposed a four-lane design but the county chose a two-lane design with streetcar tracks that were removed in 1949-1950. The bridge now carries three traffic lanes within a curb-to-curb width of 30.1 feet. There are also two 6.0 foot sidewalks. The bridge originally contained elaborate streetlights but these no longer remain. There is an elaborate

rail with lattice design and circular cut-outs. Composition of members is typical. Top and bottom chords are channels with lacing. Verticals are small channels with lacing. Diagonals are small channels with lacing or paired rectilinear eyebars, and counters are paired rectilinear eyebars. The anchored abutments are an unusual feature of the bridge. This system anchored down the ends of the bridge instead of the typical arrangement in which the ends rest on the abutment of their own weight. Fowler's design allowed contractors to work toward the middle of the bridge while relying on the anchored abutments to offset the weight of the equipment.

An 1896 article in *Engineering News* featured this bridge as an example of a trend toward more aesthetic bridge designs (*Engineering News* 7 May 1896:300). Also, the 1911 publication *Bridge Engineering*, by noted engineer Henry Tyrrell, discussed this movement and cites this bridge as a good example of the trend toward more aesthetic bridge designs (Tyrrell 1911:385-386). Fowler himself considered the aesthetic appearance of great importance. In one of Fowler's thirty books, the 1929 *Ideals of Engineering Architecture*, he used a photograph of this bridge on the frontispiece and cited it as an ideal aesthetical design saying that it "was of extreme simplicity; of five spans perfectly symmetrical and balanced; in entire harmony in all parts and with the natural beauties of the location; and the theoretical proportions as correct as possible for five arched openings" (Fowler 1929:fp, 50, 109-111).

With funds through the Highway Bridge Replacement and Rehabilitation Program, TDOT in cooperation with the City of Knoxville and the Federal Highway Administration rehabilitated the Gay Street Bridge for continued vehicular use between 2001 and 2004.

(#28) 31-NonHighway-3: Flat Branch Road spanning Scott Creek south of Coalmont in Grundy County (Tracy City Quad, 99 SW).

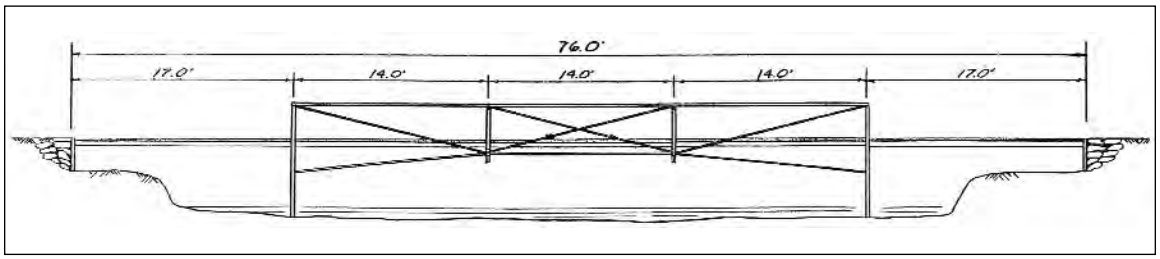


Significant under Criterion C as rare masonry arch.

Local builder A. J. Lockhart constructed this masonry arch bridge in 1898 for $620 (Grundy County Court Minutes Volume J:155). It is about 68 feet long and has two 14-foot arch spans. The roadway width is 10.3 feet and the out-to-out width is 12.2 feet. The bridge is built of coursed irregularly cut stones. A row of cut stones follows the line of the arch. There is little fill between the roadway and the arch, and there is no railing.

The county abandoned this bridge and a short road segment before the 1970s but did not barricade the road. The bridge remains as a historic ruin in good condition.

(#29) 73-A0323-02.19: Weaver Road Bridge spanning Paint Rock Creek near Paint Rock in southeast Roane County (Pattie Gap Quad, 124 NE).



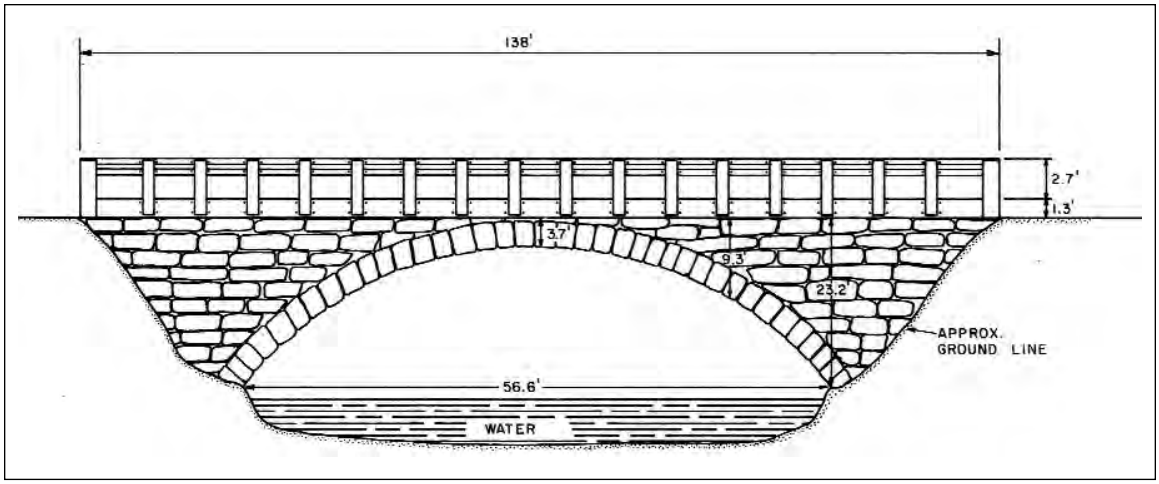
Significant under Criterion C as representative Bedstead truss by the Champion Bridge Company.

In January 1898 the Roane County Court appointed a bridge committee to contract for a bridge that could carry at least six-ton loads. In April the committee reported that it had received eight bids from the following companies: Indiana Bridge, $1,250; Youngstown Bridge, $1,025; Virginia Bridge, $1,099; Harriman Bridge, $1,180; Champion Bridge, $990; New Columbus Bridge, $1,200; King Iron Bridge, $1,173; and Groton Bridge, $1,120. The county awarded the contract to the low bidder, the Champion Bridge Company, who was required to build a bridge to "Cooper's Specifications Class C for 1896 Highway Bridges" (Carver 1983d; Roane County Court Minutes Volume D 2:433, 512-514).

The Weaver Road Bridge is 76.0 feet in length and contains one 42.0 foot pin-connected Pratt Bedstead pony truss and two 17.0 foot steel I-beam spans. Five feet in height, the truss has a curb-to-curb width of 12.1 feet and an out-to-out width of 13.8 feet. The abutments are masonry; the truss legs sit on concrete pads. Composition of members is typical. Top chords are channels with lacing. End posts, which are 15.0 feet tall, are channels with lacing on top and bottom. Crossed cable bracing connects each set of end posts. Verticals are paired angles with lacing. Diagonals in the center panel are single cylindrical tie rods while diagonals in the flanking panels are paired rectilinear eyerods. The bottom chord in the center panel is an eyebar, while in each flanking panel, an H-beam extending at an angle from the hip vertical to a point on the end post three feet below the road level forms the bottom chord.

The Tennessee Department of Transportation, in cooperation with Roane County and the Federal Highway Administration, demolished this bridge and erected a new bridge at this site in 1983.

(#30) 78-00496-07.09 : Boyd's Creek Bridge spanning Boyd Creek in northwest Sevier County (Boyd's Creek Quad, 156 NW).

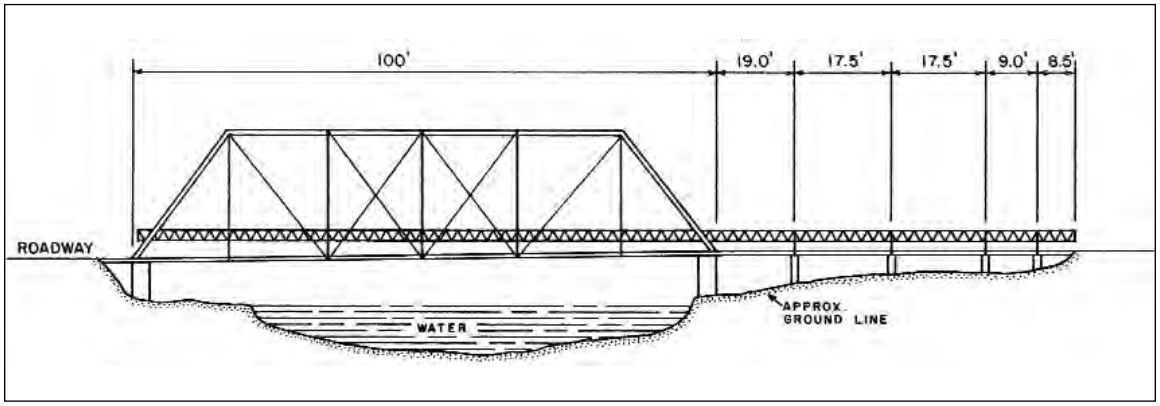


Significant under Criterion C as rare masonry arch.

Greene County Pike Commissioners C. W. Fox, J. W. Sharp, and T. D. McMahan supervised the erection of this bridge in 1898. The engineer was J. C. Thomas. The bridge is located within the National Register Brabson's Ferry Plantation Historic District, which was listed in the National Register in 1973 under Criteria A and C for its significance in late eighteenth-century settlement patterns and nineteenth-century architecture and history (Carberry 1973; Slater 1986).

The 138-foot bridge contains one span, an arch of cut stone laid in a coursed pattern. A row of cut stones follows the line of the arch. Originally, the bridge probably contained a masonry parapet railing and carried one lane of traffic. At an unknown date, the county widened the deck and added a concrete parapet rail. In the 1970s, the county removed the concrete parapet railing, widened the bridge deck, and added the existing metal ribbon railing. The bridge now has a curb-to-curb width of 28.0 feet and an out-to-out width of 29.4 feet. The bridge retains its original builder's plaque that is embedded in a concrete post at the end of the bridge.

(#31) 82-NonHighway-1: Thomas Bridge spanning Beaver Creek in Thomas Bridge in central Sullivan County (Blountville Quad, 197 SE).



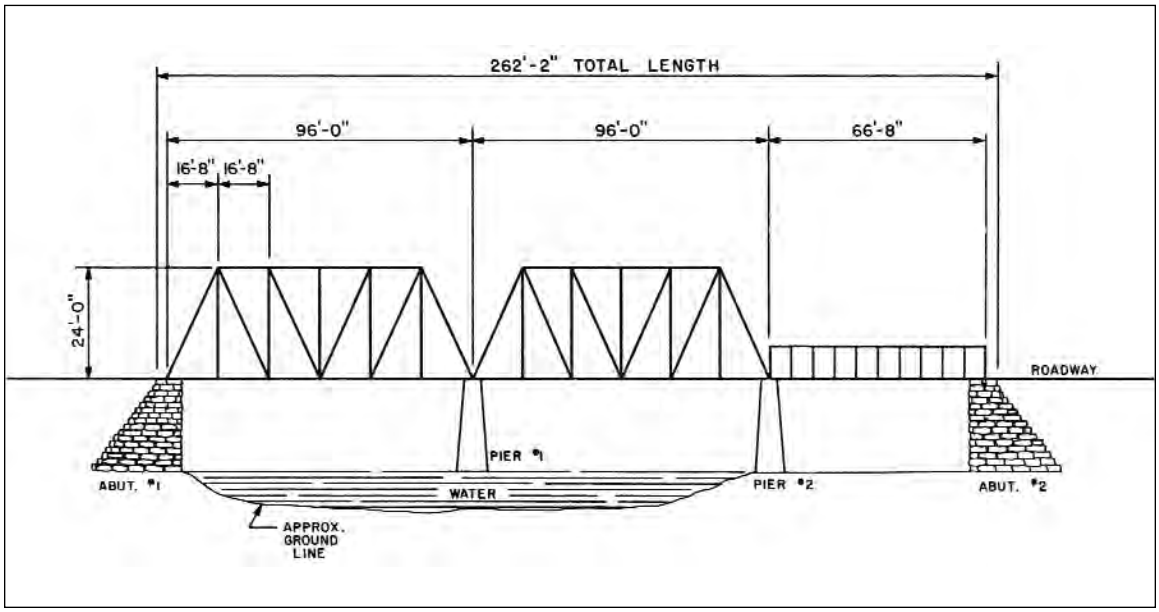
Significant under Criterion C as representative Pratt truss by the New Columbus Bridge Company.

In April 1898 the Sullivan County Court appointed a committee of L.A. Long, J.T. Thomas, and S. P. Hicks to consult with any representatives from bridge companies present at that session to ascertain the cost of repairing an existing bridge at this site. The committee reported back that afternoon that they had met with Morris Cope of New Columbus Bridge who said he could build a new bridge for $750 plus the wood work. The county court then appointed a new committee of Long, James Cole, H. H. Masingill, E. D. Baumgarder, and Hugh Webb; the

county added J. M. Fain later. A plaque indicates that New Columbus built the bridge in 1898. By 1923 the state had designated this road as State Route 37. This bridge remained in use on State Route 37 until the state built a new bridge nearby about 1971 and abandoned the old bridge and a short road segment (Sullivan County Court Minutes Volume N:318, 322 333; Volume O:72, 136). The bridge is now barricaded to traffic but remains intact.

The bridge contains a 100-foot pin-connected Pratt through truss and five steel I-beam spans. The bridge has a curb-to-curb width of 11.8 feet and an out-to-out width of 13.8 feet. The substructure consists of masonry abutments, steel encased concrete tubular piers connected with a solid steel partition, and bents of pin-connected laced channels (one bent has been added on the south end). Composition of the truss is typical. Top chords and end posts are channels with battens. Bottom chords and diagonals are paired rectilinear eyebars. Verticals are small channels with lacing, except hip verticals that are paired rectilinear eyerods. Counters are single cylindrical tie rods, except on the west side where they have been replaced with cables. Decorative features include the laced portal with arched knee bracing and the laced handrail.

(#32) 11-01931-00.45: Old Pinnacle Road Bridge spanning Harpeth River in Kingston Springs in Cheatham County (Kingston Springs Quad, 305 SE).



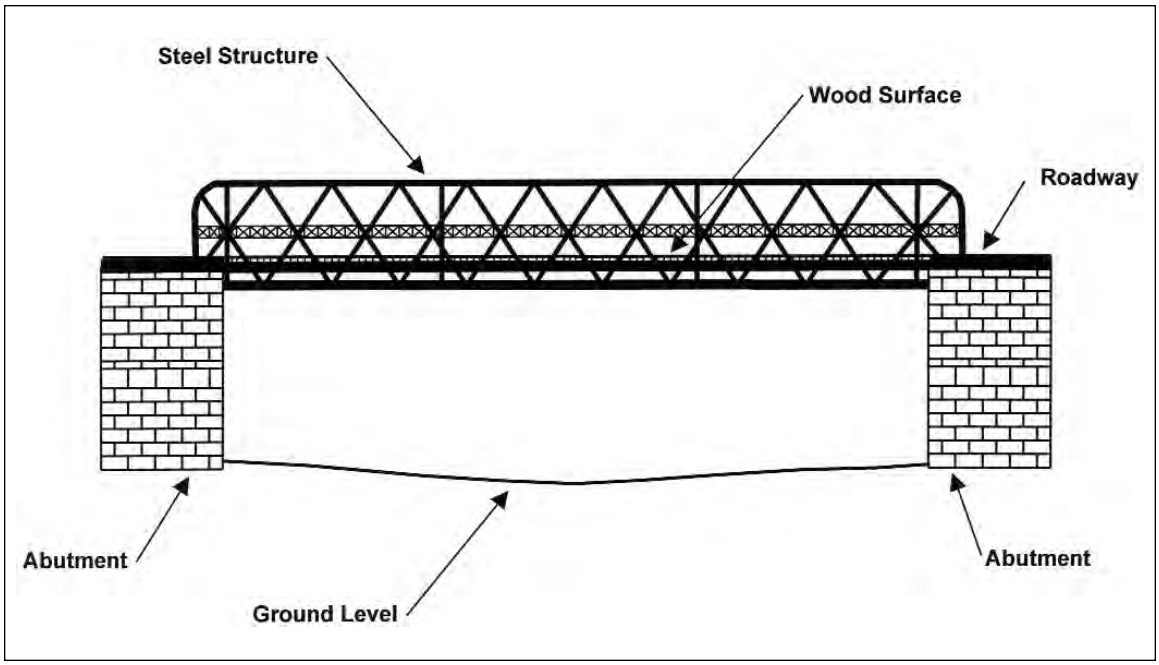
Significant under Criterion C as atypical Pratt trusses.

A former railroad bridge, this structure is located on the Old Nashville and Northwestern rail line that was built between 1854 and 1861. The Nashville, Chattanooga and St. Louis Railroad later acquired this line and in 1898 erected the two truss spans. The Virginia Bridge and Iron Company fabricated the plate girder in 1911. The bridge sits on a masonry substructure that has been repaired with concrete; the dates of the substructure and its repairs are unknown (Sulzer 1975:67-77). In the early 1920s, the railroad realigned its line, building a new bridge, and in 1922 sold the old bridge to the county which incorporated it into a county road.

The bridge contains two 96 foot pinned through Pratts 24 feet tall and a plate girder. The composition of some of the members is unusual, which may only reflect the heavier weights needed for rail usage. The top chords and end posts are channels with lacing top and bottom. The bottom chords are paired rectilinear eyebars; the mid-panels have lacing between the eyebars. Verticals are channels with lacing. The center panel diagonals are channels with lacing while the flanking diagonals are paired rectilinear eyebars. An unusual feature is that there are no counters. While counters were theoretically not necessary on trusses with an even number of panels, it was very common to use them and few Pratts in Tennessee lack counters.

The Tennessee Department of Transportation, in cooperation with the City of Kingston Springs and the Federal Highway Administration, built a new bridge nearby in 1984 and incorporated the old bridge into a trail connecting downtown Kingston Springs with a city park.

(#33) 19-NonHighway-9 : Belle Meade Bridge spanning Richland Creek in Belle Meade in southwest Davidson County (Oak Hill Quad, 308 SE).



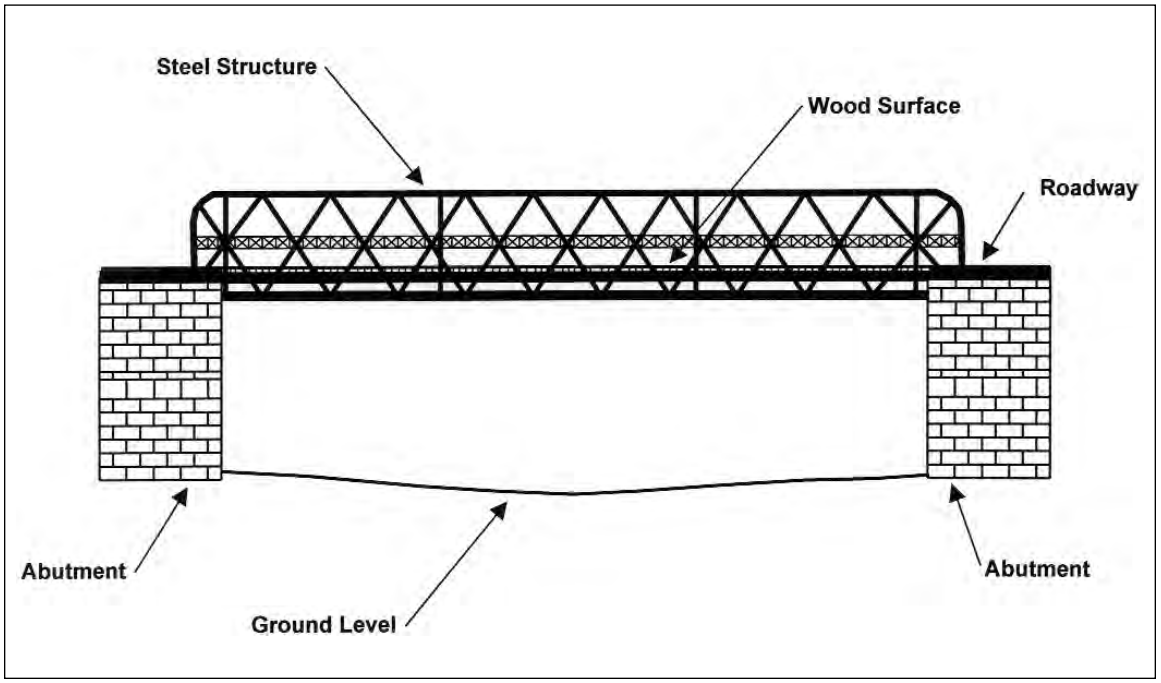
Significant under Criterion A as contributing element of National Register listed Belle Meade Mansion and under Criterion C as rare surviving example of a Double Intersection Warren (Lattice) pony truss.

This bridge is located on the main entrance drive to Belle Meade Mansion, a National Register listed property. John Harding, in 1807, established a plantation at this site that grew to include several thousand acres and that became recognized as one of the finest thoroughbred farms in the country. The family also sold breeding stock of ponies, cattle, sheep, and goats. The property passed to General William Giles Harding in 1839 who built the present mansion, and then to his daughter Selene and her husband General William Hicks Jackson and then, to their son William Harding Jackson. The family entertained lavishly, and numerous notables visited the property including Presidents Polk, Harrison, Theodore Roosevelt, Taft, and Cleveland.

At the turn of the century, Belle Meade was believed to be the oldest and largest thoroughbred farm in the United States, but it was also in financial trouble. Between 1902 and 1904, the owners sold the property and livestock. Real estate developers purchased much of the property and converted it into an exclusive residential subdivision, Belle Meade Park (see #51, 19 B0983-01.61). Other families owned and used the property as a private residence until 1953 when the State of Tennessee purchased it for use as a house museum. It also serves as state headquarters for the Association for the Preservation of Tennessee Antiquities. Extant buildings include the family's original log cabin (which may date to 1792 as Dunham's Station), the brick ante-bellum mansion, carriage house, stable, and dairy (Coop 1969; Ellis 1983; Tidwell 1983).

The bridge is located on the main driveway leading to the mansion. The original fabricator and date of erection are unknown. However, an 1894 photograph (Parish 1894) shows a timber stringer bridge at this location, and pre-1903 photographs of Belle Meade (Belle Meade Mansion:P-68, 70) show this bridge and an identical bridge at the old Natchez Trace crossing on the property (which is now probably bridge #34, 83-NonHighway-4). The construction date is estimated to be about 1900. The bridge contains one span, a 53-foot Double Intersection Warren (Lattice) pony truss resting on massive masonry abutments that rise above ground level to form walls flaring outward from the drive. The curb-to-curb width is 12 feet and the out-to-out width is 13.5 feet. The truss is 6.5 feet tall. The composition of the truss is somewhat different from that of highway bridges. Bottom chords, top chords, and end posts are angles paired back to back. The top chords curve downward, without a connection, into vertical end posts, forming a single member. Diagonals are single angles. Four outriggers, formed of angles paired back to back that curve into the bottom chord, provide lateral bracing on the outside of the truss. The railing is composed of angles in a lattice pattern with a diamond shaped boss detail.

(#34) 83-NonHighway-4: Dry Fork Creek Bridge spanning Dry Creek on Carr Driveway off Dry Fork Creek Road northeast of Gallatin in Sumner County (Gallatin Quad, 313 NW).



Significant under Criterion C as rare surviving example of a Double Intersection Warren (Lattice) pony truss.

The original location, builder, and owner of this bridge are unknown except that it was built for use on a private driveway in Belle Meade, an exclusive residential area of Nashville (Carr 1994). The original construction date is estimated to be about 1900.

During the early twentieth century, people traveling to the Dry Fork Creek School either forded Dry Fork Creek or crossed on a "swinging" (crude suspension) bridge. In the mid-1940s, the teacher dismissed school early due to a storm and the fear that the creek would rise and thus strand the children at school. While the teacher was escorting the children across the swinging bridge, a child slipped and fell into the creek and drowned. An unidentified Belle Meade resident, who was then replacing his driveway truss bridge with a new concrete structure, read about the incident in a Nashville newspaper and donated the truss bridge to the school (Carr 1994). Pre-1903 photographs of Belle Meade Mansion (Belle Meade Mansion:P-68, 70) show a bridge at the old Natchez Trace Crossing identical to this bridge, and it is believed probable that the original location of this bridge was at the Belle Meade property (see #33, 19-NonHighway-9). The county and local residents moved and erected the truss bridge at its present location.

The Dry Fork Creek Bridge contains one span, a 52.5-foot Double Intersection Warren (Lattice) pony truss resting on concrete abutments. The curb-to-curb width is 11.5 feet, and the out-to-out width is 12.5 feet. The truss is 6.0 feet in height. The composition of the truss is identical to that of the Belle Meade Bridge. Bottom chords, top chords, and end posts are angles paired back to back. The top chords curve downward, without a connection, into vertical end posts, forming a single member. Diagonals are single angles. Four outriggers, formed of angles paired back to back that curve into the bottom chord, provide lateral bracing on the outside of the truss. The railing is composed of angles in a lattice pattern with a diamond shaped boss detail.

The bridge is now located on a farm road off Dry Fork Creek Road.