A SURVEY OF TRUSS, SUSPENSION, AND ARCH BRIDGES IN KENTUCKY

FOR A DETERMINATION OF ELIGIBILITY TO THE NATIONAL REGISTER OF HISTORIC PLACES

PURSUANT TO:
THE NATIONAL HISTORIC PRESERVATION ACT OF 1966
AND
THE SURFACE TRANSPORTATION ASSISTANCE ACT OF 1978

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JANUARY, 1982

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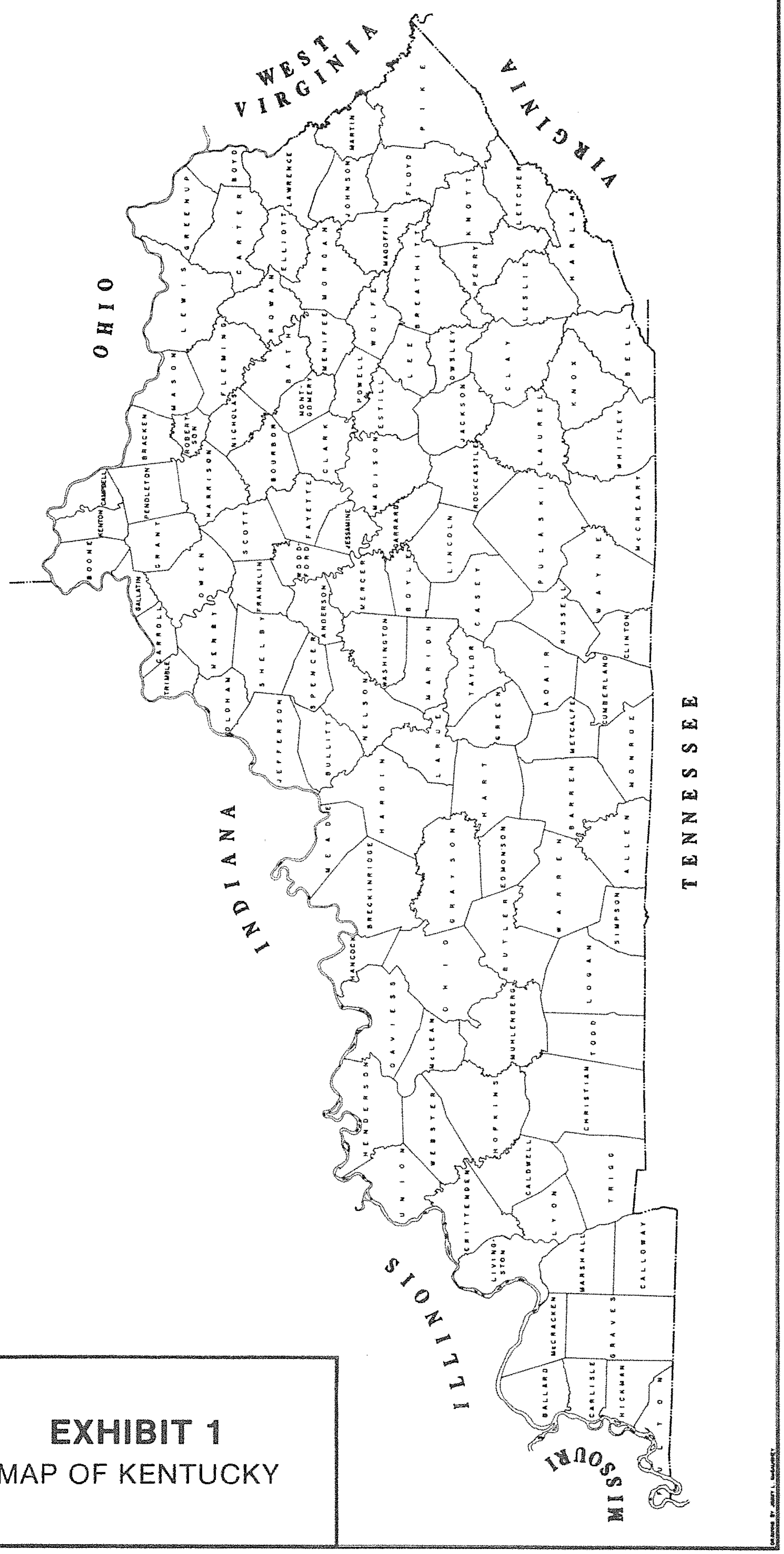


EXHIBIT 1

MAP OF KENTUCKY

I. BACKGROUND

A. SETTING

The Commonwealth of Kentucky is located in the south central and eastern portion of the United States. Kentucky is an elongated state reaching from the Appalachian Mountains west to the Mississippi River. The irregular boundaries of the state range between 39 degrees 15 minutes North to 39 degrees 30 minutes North Latitude and from 82 degrees West to 89 degrees 38 minutes West Longitude.[1] Kentucky is separated from the states of Ohio, Indiana, and Illinois to the north by the Ohio River. Missouri lies west of the Mississippi River on Kentucky's western border and Tennessee shares a southern land boundary. The southeastern boundary with Virginia traces the crestline of Pine Mountain and Cumberland Mountain. The northward flowing Big Sandy River forms Kentucky's northeastern boundary with West Virginia. (See Exhibit 1) Kentucky has an estimated population of 3.5 million people and a land area of 40,395 square miles. These statistics rank Kentucky twenty-third in population and thirty-seventh in land area among the fifty states.

B. NATURAL HISTORY

Kentucky has a moderately diverse topography with a general rise in elevation from west to east. The lowest point in the state is 275 feet above sea level on the Mississippi River at the southwestern corner of the state and the highest point is 4150 feet on Black Mountain in Harlan County.

The topography and underlying geology can be summarized in describing three physiographic provinces that cover the state. These regions, from east to west, are the Appalachian Plateau Province, the Interior Plateau Province, and the Costal Plain Province. (See Exhibit 2A)

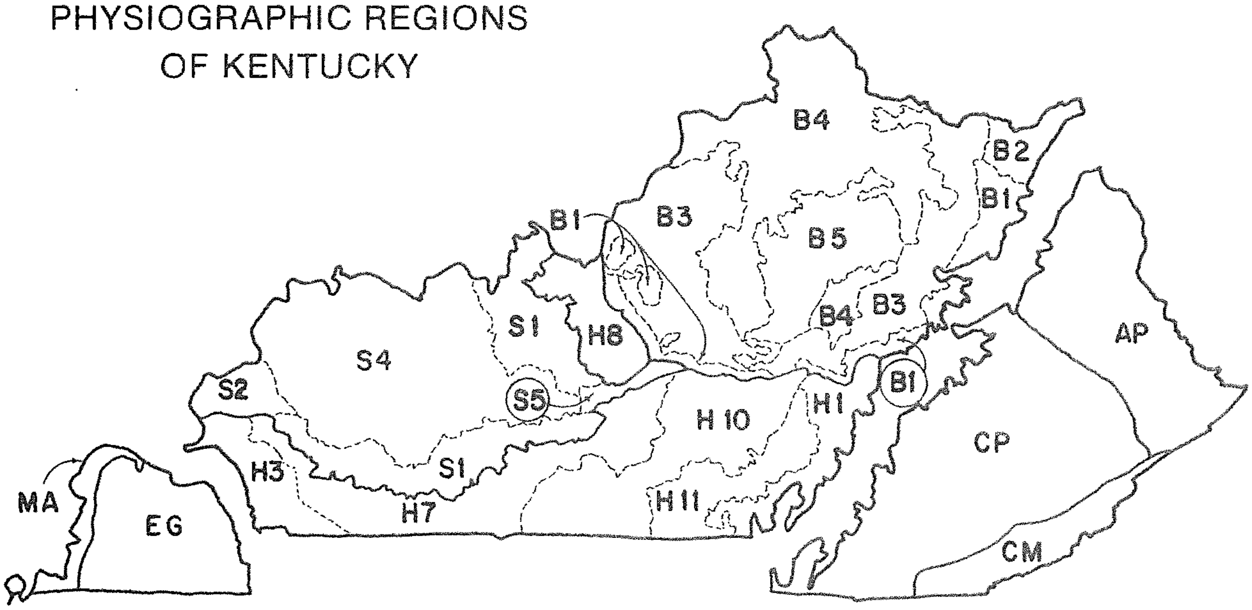
The Appalachian Plateau Province encompasses the mountainous ridge and valley terrain of eastern Kentucky. The layered sedimentary formations of sandstone, conglomerates, shales, and high quality coals are primarily of Mississippian and Pennsylvanian age.

The Interior Plateau Province comprises the largest land area and has the greatest diversity of Kentucky's physiographic regions. In Kentucky, this region has been divided into the Highland Rim, Shawnee Hills, and Blue Grass sections. The Highland Rim section is an extensive limestone upland from the Mississippian geological age. The topography in this area is characterized by extensive karst (sinkhole) development and subterranean drainage. The Shawnee Hills section is a sandstone capped upland composed mainly of limestone and shale. It is also characterized by rich coal deposits. The Blue Grass section of central Kentucky is an upland limestone plateau created by the Cincinnati Arch, a subsurface eroded structural dome. The oldest surface rocks in the state, from the Ordovician Era, are exposed in this area. Strata from the Ordovician, Silurian, and Devonian Eras in the Outer Blue Grass create cuesta form (steep on one side) hills. The Knobs section is composed of distinctive conical shale hills from the Devonian and Mississippian geological eras.

The Coastal Plain Province physiographic region extends across the area known as the Jackson Purchase in far western Kentucky. This area is comprised of wet lowlands called the Mississippian Alluvial Plain and a higher area of low rolling hills. The alluvial plain is made up of Cretaceous and Tertiary Era sands and gravels. The low hills are covered with a thin mantle of Pleistocene loess.[2]

EXHIBIT 2A

PHYSIOGRAPHIC REGIONS
OF KENTUCKY



COASTAL PLAIN PROVINCE

MA Mississippi Alluvial Plain
EG Eastern Gulf Coastal Plain

APPALACHIAN PLATEAUS PROVINCE

AP Unglaciated Allegheny Plateau
CP Cumberland Plateau
CM Cumberland Mountains

INTERIOR LOW PLATEAUS PROVINCE*

Highland Rim Sections

H1 Eastern Highland Rim Subsection
H3 Western Highland Rim Subsection
H7 Pennyroyal Plain Subsection
H8 Elizabethtown Subsection
H10 Greensburg Subsection
H11 Cumberland Enclave Subsection

Shawnee Hills Section:

S1 Mammoth Cave Plateau Subsection
S2 Marion Subsection
S4 Ohio River Hills and Lowlands Subsection
S5 Brush Creek Hills Subsection

Blue Grass Section:

B1 Knobstone Escarpment and Knobs Subsection
B2 Northeastern Blue Grass Subsection
B3 Outer Blue Grass Subsection
B4 Eden Shale Belt Subsection
B5 Inner Blue Grass Subsection

*Coding for this Province after Quaterman and Powell (1978).

Source: Kentucky Natural Areas Plan

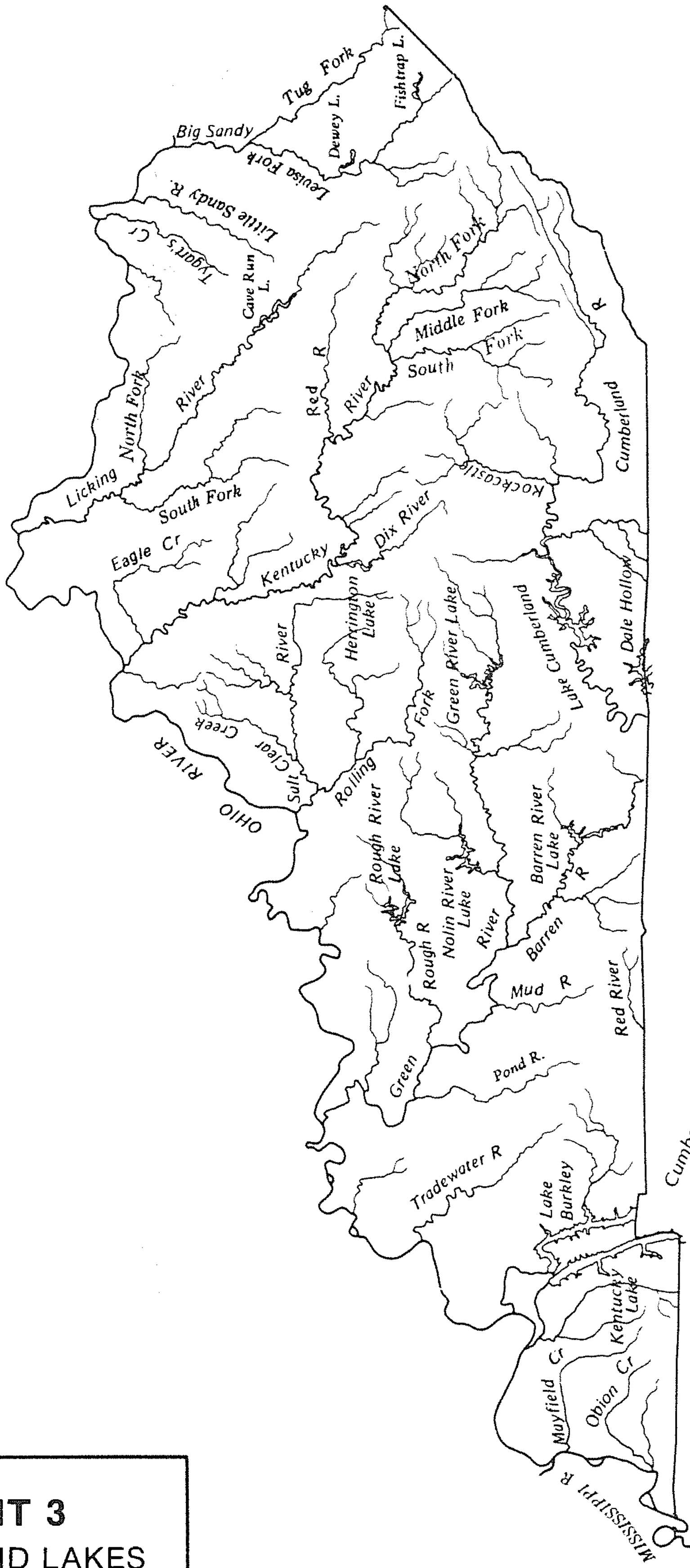
EXHIBIT 2B

MAJOR SOILS OF THE MAJOR PHYSIOGRAPHIC REGIONS OF KENTUCKY

PHYSIOGRAPHIC REGIONS OF KENTUCKY		MAJOR SOIL SERIES
COASTAL PLAIN PROVINCE		
MA	Mississippi Alluvial Plain	Commerce - Sharkey - Robinsville
EG	Eastern Gulf Coastal Plain	Grenada - Calloway - Falaya
INTERIOR LOW PLATEAUS PROVINCE*		
Highland Rim Section:		
H1	Eastern Highland Rim Subsection	Waynesboro - Baxter - Garmon - Bedford
H3	Western Highland Rim Subsection	Brandon - Lax - Guin
H7	Pennyroyal Plain Subsection	Pembroke - Cumberland - Grider
H8	Elizabethtown Subsection	Pembroke - Cumberland - Crider
H10	Greensburg Subsection	Waynesboro - Baxter - Garmon - Bedford
H11	Cumberland Enclave Subsection	Waynesboro - Baxter - Garmon - Bedford
Shawnee Hills Section:		
S1	Mammoth Cave Plateau Subsection	Zanesville - Gilpin - Weikert - Caneyville
S2	Marion Subsection	Zanesville - Gilpin - Weikert - Caneyville
S4	Ohio River Hills & Lowlands Subsection	Loring - Memphis - Falaya
S5	Brush Creek hills Subsection	Zanesville - Gilpin - Weikert - Caneyville
Blue Grass Section:		
B1	Knobstone Escarpment and Knobs Subsection	Garmon - Colyer - Captina
B2	Northeastern Blue Grass Subsection	Lowell - Shelbyville - Fairmount
B3	Outer Blue Grass Subsection	Lowell - Shelbyville - Fairmount
B4	Eden Shale Belt Subsection	Eden - Faywood - Nicholson
B5	Inner Blue Grass Subsection	Maury - Lowell - McAffee
APPALACHIAN PLATEAUS PROVINCE		
AP	Unglaciated Allegheny Plateau	Shelocta - Jefferson - Rarden - Weikert
CP	Cumberland Plateau	Shelocta - Jefferson - Rarden - Weikert
CM	Cumberland Mountains	Shelocta - Jefferson - Rarden - Weikert

*Coding for this Province after Quarterman and Powell (1978).

Source: Kentucky Natural Areas Plan



Source: Kentucky in Maps

EXHIBIT 3
STREAMS AND LAKES
OF KENTUCKY

The climate of Kentucky has been classified as humid continental, with a significant temperature range between seasons and a moderate amount of rainfall. The mean annual temperature is 57 degrees, and the average annual rainfall is 45 inches. The fall months are the driest and spring months are the wettest. There is relatively slight variation within the state in temperature and rainfall extremes; however, a considerable variation occurs in temperature and precipitation during a year, and from year to year. The growing season ranges from an average high of 210 days in the west to 165 days in the east.[3]

Soils are a vital natural resource and can be defined as "a collection of natural bodies at the earth's surface, composed of mineral and organic matter capable of supporting plant growth."[4] The principal soil divisions recognized in the state closely correspond to the major regional physiographic divisions. (See Exhibit 2B)

The vegetation of Kentucky is diverse with many different plant communities represented. Kentucky, like most of the eastern United States, is in the Deciduous Forest Formation. The Appalachian portion of the state is covered by a mixed mesophytic forest that is mostly secondary forest due to extensive logging. The central area of Kentucky, corresponding to the Interior Low Plateaus Province physiographic region, is labeled as western mesophytic forest and is characterized as an oak-hickory forest or bluestem prairie/ oak-hickory forest. The Coastal Plain Province has a western mesophytic forest of oak and hickory in the upland portion of the region. The swamps and sloughs of the Mississippian Alluvial Plain are classified as Southern Floodplain Forest.[5]

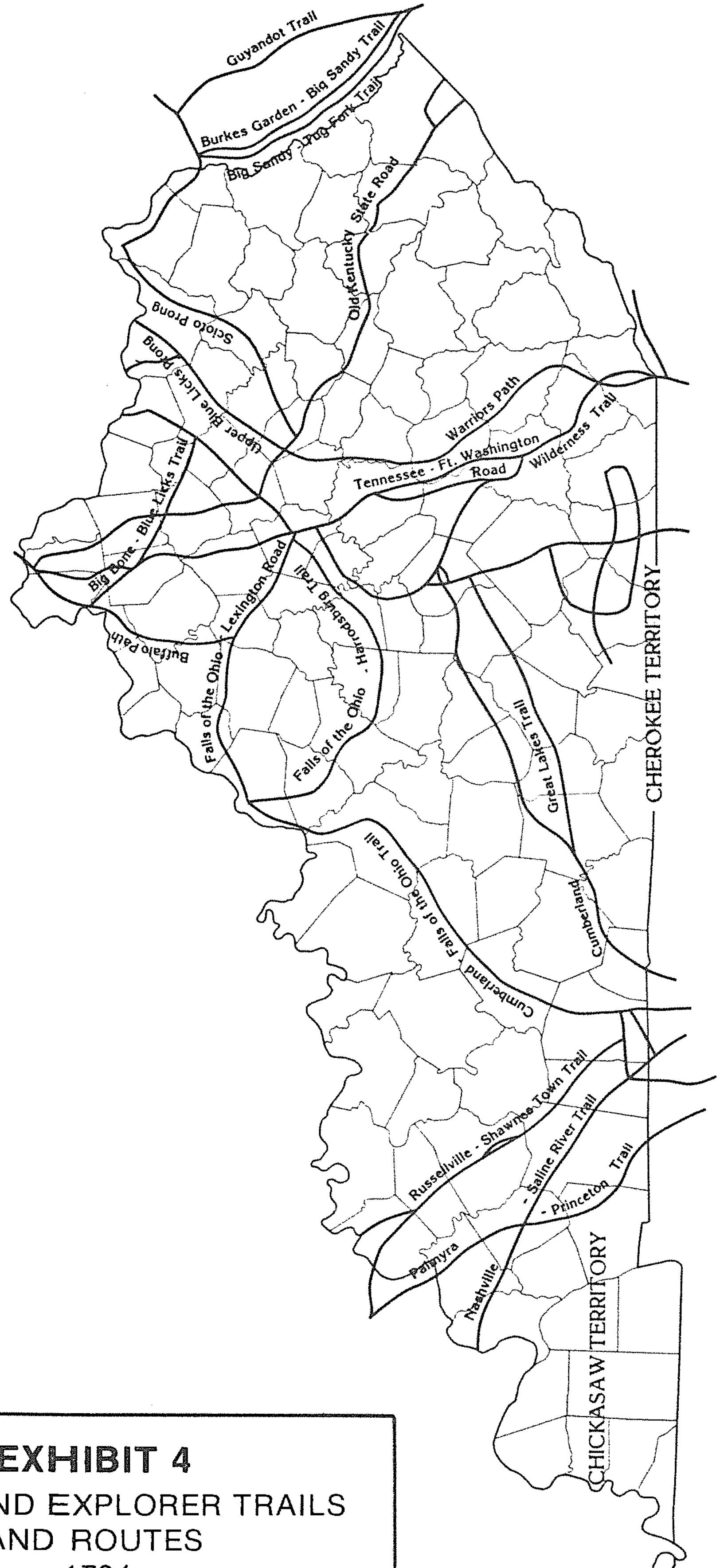
Kentucky has approximately 2000 miles of navigable streams within her borders. The longest waterway in Kentucky is the Ohio River which has 664.7 miles of navigable channel. All but five of the 120 counties in the state are drained by the Ohio RIver and its tributaries. Five counties on the western border are drained by the Mississippi River. From east to west the ten major drainage basins in Kentucky are: the Big Sandy, Ohio, Licking, Kentucky, Upper Cumberland, Salt, Green, Lower Cumberland, Tennessee, and Mississippi River drainage basins. (See Exhibit 3)

C. CULTURAL HISTORY

Before the mid-18th century, the region now called Kentucky was unknown to European settlers on this continent and there are no historic records of an established native American population in Kentucky. However, the Commonwealth has been documented as being utilized by various historic tribes (Delaware, Wyandote, Shawnee, Catawba, Cherokee and Creek) as a hunting ground. The tribe which is primarily associated with Kentucky is the Shawnee, who apparently hunted in family units during the winter and settled in larger groups to raise cultigens during the spring and summer. Historic information places this group living in the Ohio and Cumberland River drainages when Euroamerican populations began exploring their "Northwest Territory."[6]

Gabriel Arthur from Virginia has been credited as the first Euroamerican to cross into present day Kentucky in 1694. A captive, Arthur was led by a Shawnee raiding party along the Warrior's Path to southern Ohio where he was released. According to tradition, Euroamericans did not officially cross into Kentucky until 1750.

By the mid-18th century, two large land development companies in Virginia had been chartered to explore and survey lands within Kentucky. The Royal Land Company of Virginia was the first to equip an expedition expressly for the exploration of the western country. In 1750, Dr. Thomas Walker, a surveyor and medical doctor, proceeded southwesterly from Virginia on the advice of Indian traders who were familiar with the Tennessee River region. Entering Kentucky, Walker's group discovered the Cumberland Gap, a sharp break in the mountain walls of the western Appalachians. Following the Warrior's Path from the gap, Walker's party followed Clear Creek until they reached the Shawnee River which he



Source: Kentucky in Maps

EXHIBIT 4

INDIAN AND EXPLORER TRAILS
AND ROUTES
1794

renamed Cumberland after the English Duke of Cumberland. The Ohio Land Company of Virginia outfitted an expedition headed by Christopher Gist in 1751. Following the northern portion of the Warrior's Path, Gist's party forged as far north as the Red River country.[7]

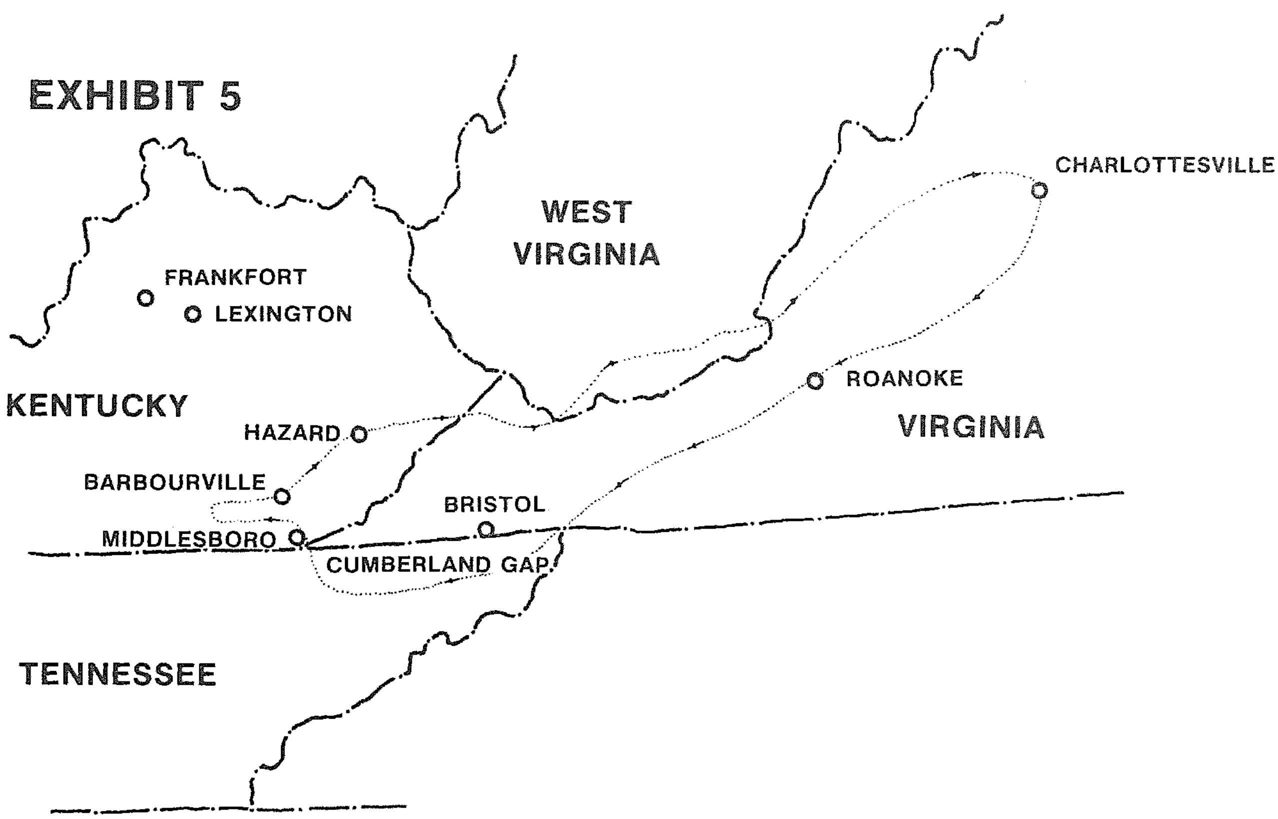
Daniel Boone and a group of early explorers established the Wilderness Trail in 1775. The Trail generally followed ancient buffalo and Indian trails and was the first pioneer route to connect the eastern seaboard with the unsettled lands west of the Appalachian Mountains.

The Commonwealth of Kentucky was partitioned from Virginia and became the fifteenth state in the Union in 1792. By 1795, the Wilderness Trail had become the Wilderness Road and was financed by the new Commonwealth. In 1797, a tollgate was established at the Narrows of the Cumberland River where Pineville now stands. The Wilderness Road entered Kentucky via the Cumberland Gap and then ran northwest through present day Pineville, Barbourville, and London. The road branched north of London at Pittsburg; one branch went north to Boonesborough on the Kentucky River, the other extended north and westward, terminating at Louisville on the Ohio River. In the last quarter of the 18th century, thousands of pioneers traveled the Wilderness Road approximately 200 miles from the Holston Settlement in Virginia to locate west of the mountains in Kentucky.

The Wilderness Road was the only major route to Kentucky for nearly 20 years. Its importance declined with the increase in river travel and the growth of early riverport towns such as Louisville, Maysville, and Covington. Gradually, the growth of an efficient road network in Kentucky further diminished the preeminence of the Wilderness Road, but it continued to play an important role for many years. (See Exhibits 4 and 5)

Negotiations by General Andrew Jackson and Kentucky Governor Isaac Shelby with the Chickasaw Indians in 1818 resulted in acquisition of the lands between the Tennessee and Mississippi Rivers. Bought for a price of $300,000, this land became known as the Jackson Purchase and completed the present boundary of Kentucky.

EXHIBIT 5



Route of Dr. Thomas Walker in 1750.
(Map Courtesy of the Kentucky Historical Society)

II. PURPOSE OF THE STUDY

The National Historic Preservation Act of 1966, in Section 106, mandates that prior to the approval for expenditure of Federal funds an agency must examine the effect of their undertaking on historic resources included in, or eligible for inclusion in, the National Register of Historic Places. The National Register is a listing of significant state, local, and national historic resources under the direction of the Department of the Interior.

The purpose of this survey of truss, arch, and suspension bridges in Kentucky is to provide a state-wide inventory of all potentially significant bridges which might be eligible for inclusion on the National Register. Those bridges having no particular historic significance will be eliminated from further consideration.

A. KYDOT

The Kentucky Department of Transportation (KYDOT) and the Federal Highway Administration (FHWA) are responsible for providing and maintaining a safe and efficient transportation system in Kentucky. The main function of KYDOT is the planning and construction of new highways and the maintenance and improvement of the existing roads and bridges. Kentucky has 12,627 bridges on 69,040 miles of state, county, and federal roads. KYDOT, FHWA, and the 120 counties of Kentucky share responsibility for the maintenance, rehabilitation, and replacement of these existing bridges.

The Bridge Maintenance Division of KYDOT is responsible for an annual Structural Inventory Appraisal (SIA) inspection of all bridges in the state. This annual survey of Kentucky's bridges reveals that 5,338 (42%) have an SIA rating of less than 50 out of 100 points. These structures are not considered safe for all types of traffic and many have been closed or posted at lower weight limits to remain in service. All bridges rating below 50 are eligible for replacement with Federal funding. Bridges rating above 50 are eligible for either replacement or rehabilitation with Federal participation. However, FHWA guidelines and 23 CFR Part 625 (Highway Bridge Replacement and Rehabilitation Program) provide for replacement or rehabilitation of historic bridges to less than minimum criteria, under certain conditions, on a project-by-project basis.

The Surface Transportation Assistance Act (STAA) of 1978 has alloted 4.2 billion dollars to the state highway departments over a four year period for the replacement and rehabilitation of "functionally obsolete" and "structurally deficient" bridges. The Kentucky Bridge Replacement and Rehabilitation Program, set up following the STAA of 1978, has a 1981 fund of $55 million to inventory and inspect all highway bridges in the state and rehabilitate or replace the most deficient structures.

The first phase of the Kentucky Bridge Replacement Program selected 128 deficient bridges in November of 1979. In order to comply with federal legislation, including the National Historic Preservation Act of 1966 (36 CFR Part 800), requiring that all federal expenditures address their effect (800.8) on properties on or eligible for inclusion on the National Register, a determination of historic significance had to be made on each project. This determination is circulated as part of an Environmental Impact Statement, Environmental Assessment, or Categorical Exclusion.

Sixty-six of the bridges selected for replacement were common bridge types of recent construction and not considered valuable historic resources. These bridges were reinforced concrete deck girders, box beam girders, I-beam girders, and wood trestle spans. However, 62 of the deficient bridges were either metal trusses or concrete arches and could possible have been significant structures. A survey of these bridges concluded that only 15 were potentially significant, but it was impossible to conclusively determine their relative significance without a state-wide inventory of all potentially significant bridges.

The problem of identifying significant bridges without a state-wide survey had been recognized and the STAA of 1978 states in Section 124(c)(2) that: "The Secretary may, at the request of a state, inventory bridges, on and off the federal-aid system, for historic significance." A recent check (July 1981) of historic bridge surveys by FHWA revealed that three states have completed a survey, 25 states are currently surveying historic bridges, and ten states are dealing with historic bridges on a project-by-project basis.

In December of 1980, $20,000 was allocated for a state-wide survey for bridges of historical significance in Kentucky. A Federal expenditure of $16,000 was supplemented by $4,000 in Commonwealth of Kentucky funding.

B. METHODOLOGY

A survey of the historically significant bridges in Kentucky must locate and inventory all the truss, arch, and suspension bridges. The 1980 computerized Structural Inventory and Appraisal (SIA) listing of 12,374 bridges in the state identified 880 as being either truss, arch, or suspension bridges. This SIA listing gives, in part, the following information: bridge identification number, location by county and route, year built and repaired, stream spanned, structural type, length and width, number of spans, and the sufficiency rating on a scale of 0-100. KYDOT Bridge Maintenance Division files provided profile drawings, detail and nature of repairs, and county maps showing exact locations of bridges on the State and Federal-Aid highway system. A recently completed survey by engineering consultants of all county bridges (included in the KYDOT SIA inventory beginning in 1978) provided profile drawings, structural analysis, and photographs of all bridges on county roads. Examination of these records provided detailed preliminary information and identified some bridges that were either already replaced or mislabeled and not truss, arch, or suspension spans.

The identification and location phase of this survey revealed that Kentucky has 651 potentially significant bridges. These structures break down into 573 metal trusses, 64 masonry and concrete arches, seven metal arches and seven suspension bridges.

The field inventory phase was organized by the 120 counties and 12 highway districts in Kentucky. Bridge maintenance personnel in the central office and in each district were consulted and informed as to the intent and purpose of the survey. The field visit included a physical inspection and completion of a Historic Bridge Survey Form (Appendix A) to identify: the location, bridge type, design and structural information, environmental setting, span configuration, and builder/date when available. Photographs of interesting details and a general elevation view of the bridge were taken and recorded.

The final phase of the survey is to determine which of the structures inventoried represent significant historic resources eligible for the National Register.

III. CRITERIA OF SIGNIFICANCE

The first survey of historic bridges for National Register inclusion undertaken in this country was in Virginia. This survey used a numerical significance rating system to determine which structures were eligible for listing on the National Register. A numerical rating system was chosen in Virginia, because it was a pilot study and determinations were made on a regional basis rather than state-wide. This method is not necessarily the best system for every survey. The rating of bridges with numerical scores for such factors as history, technology, and environment can be too rigid as it provides equal point values for different bridges and situations. Categories such as age, original location, local history, span length, etc. are relative factors more accurately weighed on an individual basis in the context of a state-wide inventory.

A non-subjective determination of historic significance is not possible and neither the numerical rating system nor the individual merit approach is "scientific." In Kentucky, because of the opportunity to inventory the entire state, a determination of significance will be made judging each individual structure against the National Register Criteria. This survey will strive to apply sound survey criteria in the unique context of Kentucky's developmental history, together with other important factors to be considered such as transportation needs and goals, public safety, and historic preservation.

Review of the inventory information on 651 bridges revealed that many structures were clearly important while others were obviously not significant. A third group of structures was also identified for which it was difficult to determine relative significance. Ninety bridges were identified as being either clearly or potentially significant. These 90 bridges were examined in the field a second time, researched at local archival repositories when possible, and discussed with interested historic and engineering experts.

This reexamination eliminated 20 bridges from further consideration and determined that 70 KYDOT bridges are on or appear to meet the criteria for eligibility to the National Register. These structures are considered worthy of preservation as excellent representative examples of the state's industrial, architectural, and cultural heritage.

A. NATIONAL REGISTER CRITERIA

A definition of historic resources and eligibility criteria for inclusion on the National Register is contained in the Advisory Council on Historic Preservation's "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800). Specifically, 36 CFR 800.10 the National Register Criteria states:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important in prehistory or history.

Generally the structures, buildings, etc. must be at least 50 years old to warrant eligibility to the National Register.

B. BRIDGE SIGNIFICANCE

Guidance in identification of specific elements of significance for historic bridges is provided through experience in preserving historic structures by bridge surveys in Virginia, Wisconsin, and North Carolina. These surveys recognized that the significance of a bridge can be determined in analyzing three broad categories of its character. Each bridge must be judged on the comparative merits of its history, technology, and environmental setting. By using a Historic Bridge Survey Form (Appendix A) this information can be compiled for comparison of the typical, rare, and unique survivors of bridge architecture, technology, and historical development.

1. History

The recorded history of a particular structure may include the builder of the structure and identify his contribution to the development of bridge manufacturing. Structures erected or designed by innovative or prolific builders are valuable local examples of their art and may provide information on our nation's technological development. Bridges representing various eras of local, state, and national historical development are valuable research sites. Bridges that are associated with historical areas or districts, or have connections to significant events or occurrences, are important contributors to our historical understanding.

2. Technology

The most apparent category of criteria for bridge significance is technology. Every structure is an example of the historic development of design, materials, and craftsmanship of bridge technology. Criteria to be considered include: materials used in construction, physical members making up the structure, the type and design of the bridge, length and number of spans, special ornamental or structural features, use of patented innovations, present integrity of the original technology, and involvement of local craftsmen.

3. Environment

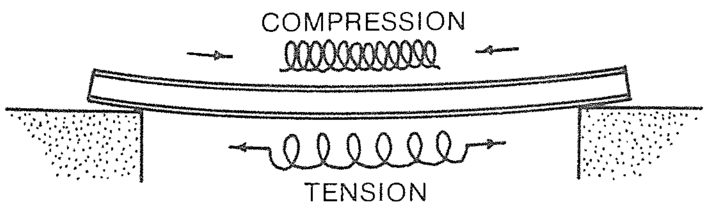
Environmental factors also contribute to the significance of an historic bridge. The location and setting of the structure and the bridge itself often enjoy a symbiotic aesthetic relationship. A bridge long identified with a particular location becomes an important element in the cultural fabric of the area. By removing or relocating the structure, the character of the bridge and the aesthetic quality of the locale would be disturbed.

The site of a particular bridge also can have cultural or historic significance. The earliest bridges were probably located on ancient trails or at low water fords or ferries that sought ease of transport across streams. The historic evolution of a bridge site from ford to covered bridge to early metal truss can sometimes be recreated through archival research.

THREE BASIC BRIDGE TYPES

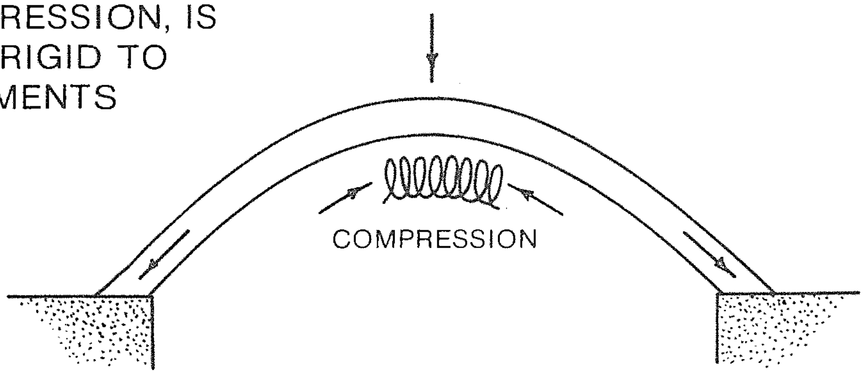
1. BEAM (TRUSS = BEAM WITH HOLES)

MEMBER(S) ACT IN
COMPRESSION OR TENSION
OR A COMBINATION OF BOTH



2. ARCH

ARCH ACTS IN
COMPRESSION, IS
HELD RIGID TO
ABUTMENTS



3. SUSPENSION

SPAN ACTS IN
TENSION, PULLING
CONSTANTLY AGAINST
ABUTMENTS OR TOWERS

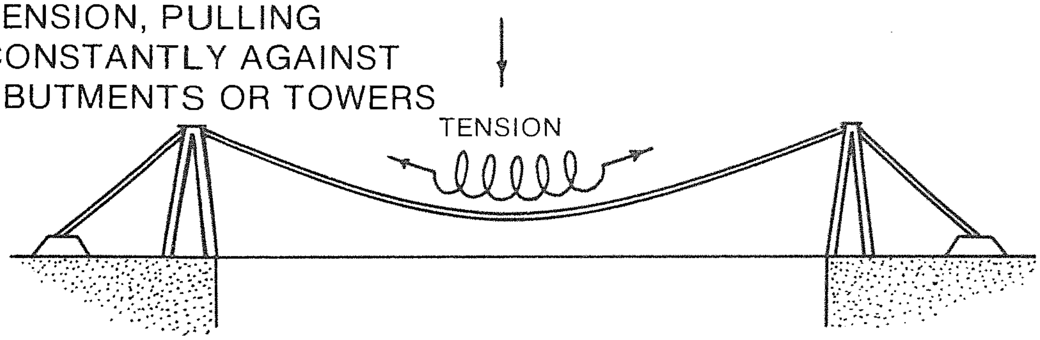


EXHIBIT 6

IV. HISTORY AND DEVELOPMENT OF BRIDGE TECHNOLOGY

The history and development of bridge technology is a blend of the adaptation of new materials and improved designs to the three basic types of bridges: the beam (a truss is a beam with holes), arch, and suspension. In a bridge, there are two major kinds of stress: compression which acts to shorten a member, and tension which pulls apart or lengthens a member. The change of shape accompanying the stress of compression or tension is called strain. The suspension bridge acts in tension, the arch in compression, and the beam or truss in a combination of tension and compression to support the bridge weight and live or applied load. The physical nature of bridge building materials determines their ability to withstand the stresses and resist the strain of bridge work. All common bridge building materials, such as stone, wood, cast iron, wrought iron, steel, and concrete are good in compression. The development in the mid-19th century of materials that are good in compression and tension, such as wrought iron and steel, led to rapid advances in bridge design and technology. (See Exhibit 6)

A. MATERIALS

1. Stone and Natural Cables.

The first bridges of primitive man were probably crude stone slabs or logs laid over narrow chasms. The importance of bridge construction grew with the development of early civilizations including the Sumerians, Babylonians, Persians, and Chinese. Evidence of early bridge construction is also found in the Greek and Egyptian cultures.[8]

The first great era in the history of bridge building is considered to be the Roman conquest of Europe. The Roman bridges were usually arches built of stone blocks. This development of the stone arch bridge by the Roman Empire may be considered the first adaptation of "scientific" principles to bridge construction. Masonry arch and masonry faced arch bridges and aqueducts were the most recognized engineering approach to bridge building until the 18th century. Though their importance to transportation has declined, stone arch bridges are still being constructed. In South America and Asia, there is evidence of very early suspension bridges of relatively long length using cables made of vines, ropes, or bamboo.

2. Wood

The earliest wood beam bridges were logs laid across a stream or chasm. A truss is a beam with holes cut out for lighter weight. The use of trusses built of timber for bridges was first accomplished by Palladio, and Italian architect, between 1560-1580. Using the triangle, he designed three forms of trusses built entirely of timber. The triangle is the only rigid polygon and of all geometric shapes is most rigid and resistent to distortion. Every truss is a variation on the theme of the triangle within a beam. Palladio is believed to be the earliest architect to make scientific use of the truss element for bridges.[9] The simplest bridge truss form is the king post which is an A frame with a central support adding another triangle.

Two hundred years after Palladio, in 1758, two wood truss bridges were constructed over the Rhine River in Europe. One bridge, at Schaffhausen, measured 170 feet and a longer truss bridge at Baden measured 366 feet. These bridges lasted 41 years before their destruction by the army of Napolean in 1799.[10]

One of the earliest permanent bridges on this continent was built across the Connecticut River at Bellows Falls, Vermont, by Enoch Hale in 1785. His four span bridge was built of white pine and had a total length of 350 feet. This bridge, although not covered, lasted for more than fifty years.[11]

Other famous pioneer bridge builders during the wood era in this country were Timothy Palmer, Theodore Burr, Louis Wernway, William Howe, Stephen Long, and Ithiel Town. Most of the early wooden bridges were composite arch/trusses supported by two parallel timber trusses resting on stone abutments. Timothy Palmer bridged the Schuylkill River at Philadelphia in 1806 with three spans designed in the form of an arch strengthened by a truss. Theodore Burr, unlike Palmer and others who strengthened the arch by means of a truss, designed a bridge that strengthened the truss by means of an arch. Burr placed a heavy arch, securely fastened to the uprights and diagonals, the length of these two elements. The ends of the arch extended below the floor of the bridge and rested on stone foundations.[12]

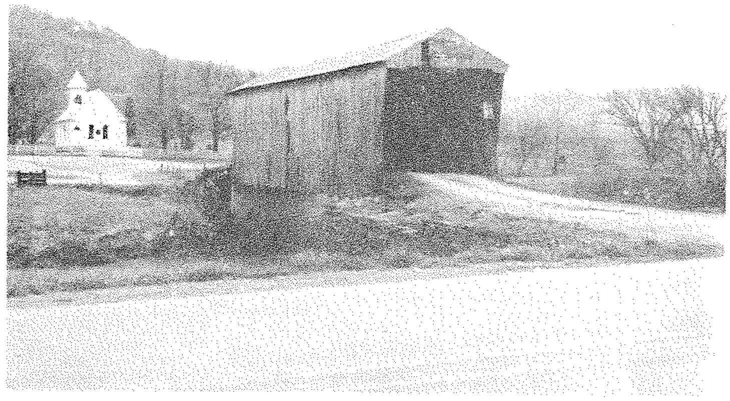
Ithiel Town patented his lattice truss, considered the first true truss, in 1820 and it soon became a popular design for covered wooden bridges throughout the eastern United States and elsewhere. Howe and Wernway also patented simple truss designs with innovative architectural advances for truss designs of lengthy spans before 1840.[13]

At the turn of the 19th century Kentucky had an estimated 400-500 wood truss bridges. The pre-World War II inventory of historic wooden trusses was down to 65 and by 1952 there were only 39. The destruction and disappearance of these structures continues as only 13 wooden truss bridges remain on the Kentucky highway system. (See Table 1) Most of these bridges are found in eastern Kentucky and although seven are still in service and all are on the National Register, their future is uncertain. Natural decay, vulnerability to vandals, and neglect by state and local officials may soon further deplete this architectural and historic heritage.

TABLE 1

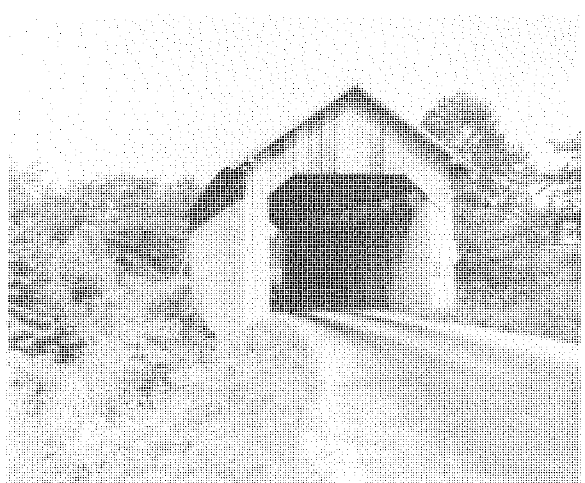
COVERED BRIDGES ON KENTUCKY HIGHWAY SYSTEM

HWY. DIST.	COUNTY	NAME	ROUTE	TYPE	LENGTH	DATE	ACTIVE
4	Washington	Mt. Zion	KY 458	Burr Arch	280′	1871	No
5	Franklin	Switzer	Nr. KY 1262	Howe	120′	1855	No
6	Bracken	Walcott	KY 1159	Queen/King Post	75′	1880	No
6	Robertson	Johnson Cr.	KY 1029	Smith	114′	1874	No
7	Bourbon	Colville	Colville Rd.	King Post	124′	1877	Yes
9	Fleming	Goddard	Nr. KY 32	Town Lattice	63′	Unknown	Yes
9	Fleming	Hillsboro	KY 111	King Post	86′	1860's	No
9	Fleming	Ringo's Mill	KY 158	King Post	86′	1867	No
9	Greenup	Bennett's Mill	CR 2125	Long	159′	1855	Yes
9	Greenup	Oldtown	Nr. KY 1	King Post	186′	Unknown	Yes
9	Lewis	Cabin Creek	KY 984	Burr Arch	114′	1867	Yes
9	Mason	Lee's Creek	Nr. KY 8	Queen Post	61′	1835	Yes
12	Lawrence	Yatesville	Nr. Yatesville Road	Howe	130′	1907	No



View of the Goddard Bridge, a 63 foot long town lattice timber truss in Fleming County.

A 1906 photo of the Switzer Bridge in Franklin County. This bridge is a 120 foot long Howe timber truss.



View of Ringo's Mill covered bridge. This is an 86 foot long multiple King post timber truss.

The Ohio River has been called a museum of bridge technology. Three notable historic bridges connect Cincinnati, Ohio, with Covington and Newport, Kentucky, at the Licking River confluence (lower center). From the left, the historic structures over the Ohio are the Covington-Cincinnati Suspension Bridge (SF #34), the Central Bridge (SF #30), and the Newport L & N Highway Bridge (SF #29). Also shown is the recent I-471 tied steel arch bridge.

3. Iron

The first iron bridges in the early 19th century were made of cast iron, a brittle material with low tensile strength. The increasing speed and weight of the steam locomotive soon created grave problems for cast iron bridges. Cast iron continued to be used for compression members and is found on at least two existant bridges in Kentucky constructed in 1869 and 1873. (Survey Forms (SF) #40 and #54.) Cast iron was no longer being used on highway bridges in this country by 1880. Wrought iron, a superior material when placed in either compression or tension, replaced the use of cast iron. It was the development of wrought iron, together with the expansion of railroad networks in the mid-19th century, that triggered the modern era of bridge construction.[14]

Squire Whipple, a civil engineer, was a pioneer in the scientific approach to analyzing the stress and strain metal bridges had to withstand. Whipple's patent #2064 of his "Iron Bowstring Bridge" design was granted on April 24, 1841. It was a bowstring arch with a practical combination of both cast and wrought iron for spans of less than 200 feet. Whipple used cast iron for the upper arched section which is always in compression. The lower chord and interior web members were constructed of wrought iron to withstand the compressive and tensive stresses in handling a live load.[15]

In 1844, Thomas and Caleb Pratt patented their design for a truss bridge using vertical web members acting in compression and diagonal members acting in tension between horizontal top and bottom chords. The earliest Pratt trusses used vertical compression posts of wood and diagonal tension members made of wrought iron.[16]

In 1852, Squire Whipple constructed a 146 foot double intersection (diagonals extend across two panels) Pratt through truss near Troy, New York, with cast iron compression members and pin-connected wrought iron tension members. In 1863, John W. Murphy built a double intersection Pratt truss using wrought iron on all compression members, while retaining cast iron in joint blocks and pedestals. Because of their development of the wrought iron double intersection horizontal chord Pratt truss, it is often referred to as a Whipple-Murphy truss. J. H. Linville is credited with first using wide die-forged eyebars as tension members in the web system (in 1861) and Whipple, Murphy, and Linville are credited for establishing the distinctive practice of the eyebar and pin-connection in this country.[17]

4. Steel

The age of steel was more a result of improved manufacturing, quality control, and economics than an inherent superiority over wrought iron as a bridge construction material. Steel is slightly stronger in smaller shapes than wrought iron but in physical appearance is nearly indistinguishable. The first widespread use of steel in bridges was for eyebars; rectilinear, round, or square bars with loop-welded or die-forged ends to accept a pin, at pin-connected joints. Wrought iron eyebars were used as early as 1861, but it was not until 1890 that steel almost exclusively replaced wrought iron for eyebars.[18]

Prior to 1885, bridge builders relied on wrought iron for most construction members. During the brief period of 1885-1895, a boom in the United States steel industry led to the construction of a mixture of wrought iron and/or steel structures. Wrought iron had been phased out by the use of steel for bridge building by 1895.

5. Concrete

For years American bridge engineers have used reinforced concrete in the construction of towers, anchorages, approaches, piers, and abutments. Beginning in the 1920's, and continuing through the 1960's, KYDOT built hundreds of reinforced concrete deck girder

(RCDG) bridges and this has become the most common bridge type in the state. Many concrete T-beam bridges have also been constructed in the last 40 years. In the 1970's, the limited length and greater cost of RCDG bridges has led to its replacement by pre-cast I-beam and steel girder bridges. Of greater interest to the development of bridge technology are the concrete massive deck arch, open spandral deck arch, and open spandral through arch bridges.

B. CONNECTIONS

1. Pins

As previously mentioned, the pin-connection and the eyebar became a particularly American manifestation. Pin-connected trusses had a number of advantages that appealed to American engineers. Economically these trusses were preferred because they were easily manufactured and shipped to the construction site where they could be quickly constructed by non-technical personnel. By allowing rotation in all the joints, the pin-connection reduced secondary stresses and made field calculations less complex.

The eyebar evolved with the pin-connection and the earliest eyebars were formed by looping the ends over the pin and welding it to the body of the bar. However, the thickness of these eyebars at pin-connected panel points was a problem when placed together in the web system. Thinner eyebars were necessary for a manageable joint connection, which led to the development of die-forged steel eyebars made by a process of upsetting and forging in a die.

Certain limitations inherent in the pin-connected truss eventually led to its replacement by the riveted connection. The pin-connected truss was not a very rigid bridge. Vibration from moving loads increased wear on the pins and eyebar holes, thus reducing the strength of the structure.[19]

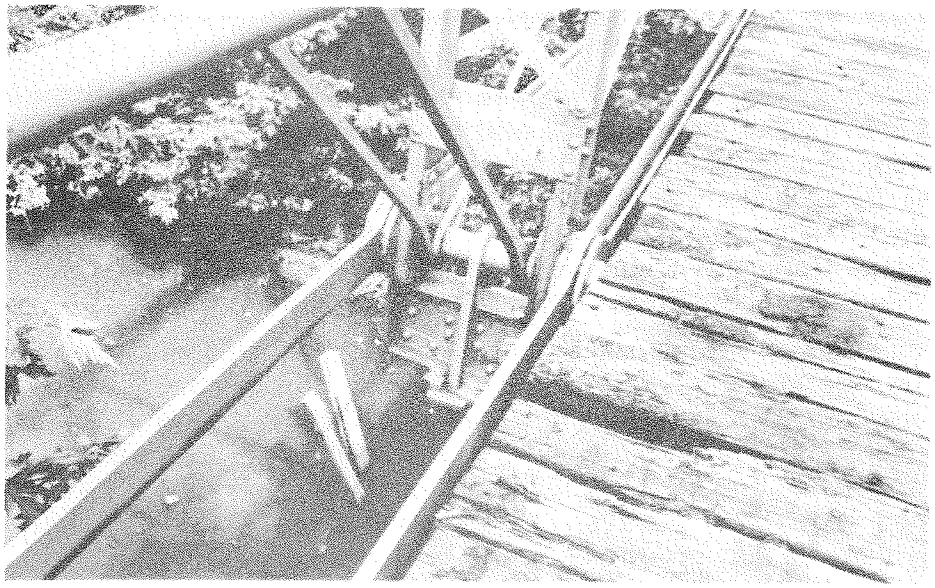
2. Rivets

Many of the problems of the pin-connected truss were solved by using riveted top and bottom chord connections. This allows for a more rigid structure with fewer wearing parts that has a greater load capacity and longer service life. The popularity of the rivet-connection increased in the early 20th century with development of the portable pneumatic riveter which allowed simple field riveting.[20]

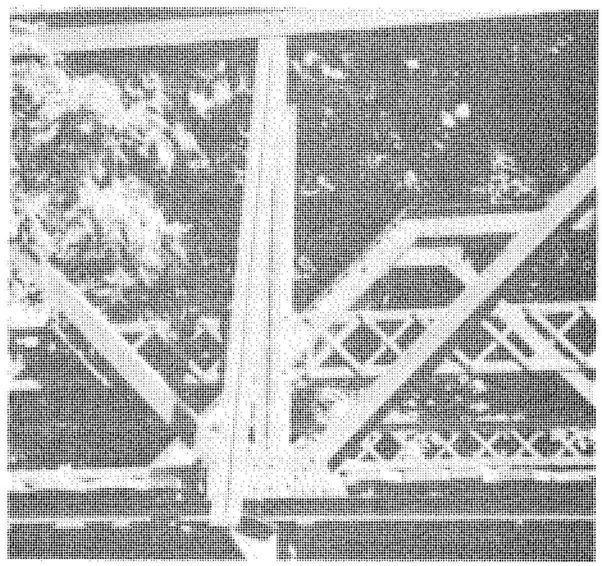
C. BRIDGE BUILDING

The emergence of the metal truss, rather than the covered wooden truss, as the standard bridge structure in Kentucky occurred in the last quarter of the 19th century. From this beginning until the establishment of the Kentucky Department of Highways in 1912, individual localities were solely responsible for contracting for new bridges. The decision of which bridge to build was made on the basis of economics and the requirements of span length and load weight. Bridges were selected from bridge company catalogues, similar local examples, or arranged by agents who ordered the structure and oversaw its erection.

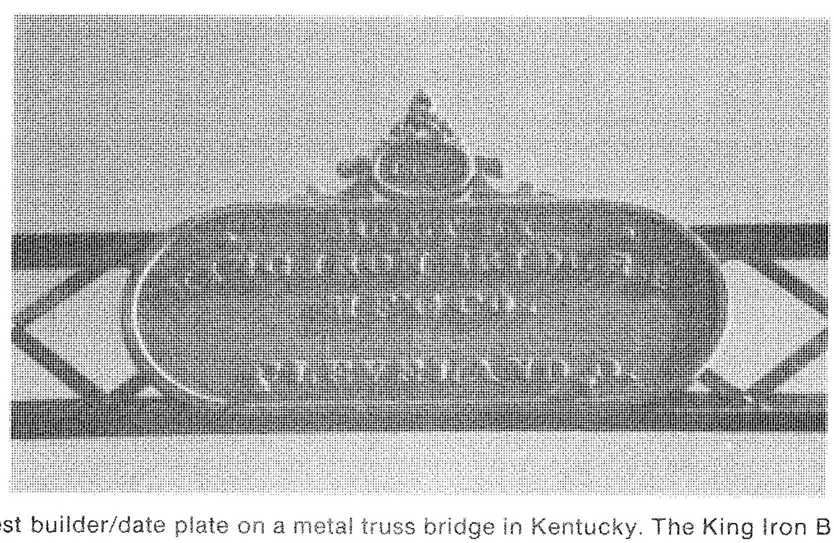
One reason for the popularity of the metal truss bridge was the simplicity of field construction methods due to a high degree of standarization among the manufacturers. It was a basic feature of all metal trusses that they were built up from standarized structural steel or iron shapes. The common members of all trusses; channels, plates, angles, I-beams, and eyebars, were being mass produced by most iron and steel manufacturers. These materials were measured from blueprints made from drawings for specific bridges and then cut, machined, and put together at the fabrication shop. The measured members were then



Metal truss bridge with pin-connected bottom chord panel point. (SF #18)



Metal truss bridge with rivet-connected top and bottom chord panel point. (SF #8)



Earliest builder/date plate on a metal truss bridge in Kentucky. The King Iron Bridge Company was established by Zenas King in 1858. (SF #14) disassembled before shipping to the construction site where they were reassembled and the bridge erected.

There were few metal bridge companies before 1880 but the growth of the iron and steel industry led to a rapid increase over the next decade. According to one observer there were nearly 40 bridge companies by 1889 producing a wide variety of styles and shapes of metal truss bridges. By 1900, there were again few individual bridge companies, due in part to the consolidation of smaller companies into large operations. The largest of these firms was the American Bridge Company, incorporated in 1900 as a consolidation of 27 plants. It soon controlled about 90% of the bridge tonnage in the United State.[21]

The bridge survey in Wisconsin outlined a common procedure for the bridge company when a bridge order was received. The first step was to prepare detailed plans and blueprints of the proposed bridge. A wooden template was then prepared from which the steel shapes were cut, punched, and reamed to shape. Then the pieces forming a bridge member were assembled and bolted and then reamed and riveted. Cut steel sections were then squared and smoothed with rotary planers. The forged eyebars, bolts, and rivets were either produced by the company or ordered from iron and steel manufacturers.

An erection plan, showing the position of each member in the completed structure, was prepared at the fabrication shop and sent to the erection site. Each piece of iron and steel was marked with a number or letter corresponding to the erection plan. The bridges were assembled by company representatives, local highway officials, or individual contractors who purchased the bridge from the company under contract with local officials. Many companies had agents who traveled and sought bridge contracts from local groups, submitted a bid, signed a contract, sent in the specifications, and then arranged shipment of the bridge. Often the structure was then assembled under the agent's supervision by mostly untrained local labors. [22]

A 1922 thesis in the engineering school at the University of Kentucky "The Erection of a Highway Bridge over Pitman Creek, Pulaski County" details field procedures of early bridge construction. This structure no longer exists, but the details of its erection are informative on the procedure of bridge building in the metal truss era. This project by the State Department of Roads began in 1917 with the awarding of contract bids to the Southern Building and Supply Company of Lexington, Kentucky, for the substructure and to the Virginia Bridge and Iron Company of Roanoake, Virginia, for the superstructure. The equipment for erection of the piers and abutments was shipped by rail to Burnside and then by boat to the bridge site. This equipment consisted of a hoisting engine, cableway and two 1 1/2 yard buckets, a four batch steam concrete mixer, and an assortment of smaller tools and pumps. A transit was used for the exact layout although instruments were probably not used on every project. The sand and cement was sent by barge, the lumber for forms and scaffolds was procured locally, and the firm constructing the new highway provided crushed stone for the piers and abutments.

Steel for the superstructure was sent by rail to Burnside and by wagon to the bridge site. The bridge was bolted together on the ground and then raised with scaffolds after an early attempt to hoist the bridge into place failed. After the bridge was in place, the erection bolts were removed and the rivet driving began. Erection of the two 80 foot pony trusses and one 100 foot through span took three and one-half months to complete. It had already taken six months to complete and prepare the abutments and two piers. The total cost of the bridge was $27,500, with a nearly equal amount spent on the substructure ($13,900) and the superstructure ($13,600).[23]

D. BRIDGE COMPANIES AND BUILDERS

The greatest diversity of bridge companies and builders was in the last quarter of the

19th century. Consolidation of many small companies combined with the growth of the steel industry reduced the number of bridge companies at the turn of the century.

By the 1920's, there were few companies constructing bridges in Kentucky. This reduction coincides with a growth in the role of the newly established Kentucky Department of Highways. Independent bridge builders in the 1920's included Champion Bridge Company of Wilmington, Ohio, and three companies that operated almost exclusively after World War I: the Vincennes Bridge Company of Vincennes, Indiana, the Luten Bridge Company of York, Pennsylvania, and Knoxville, Tennessee, and the HIP Bridge Company of Ligonier, Indiana.

In the 1930's, with the exception of very long spans, the Department of Highways was building most of the new bridges in Kentucky. However, the Champion Bridge Company continued to construct a few bridges after 1930, as evidenced by a 1938 truss and three circa 1945 trusses.

One hundred and ninety of the 651 bridges surveyed in Kentucky had identifying builder plates. A breakdown by bridge type and location by highway district is shown in Table 2.

Nine different states are represented among the bridge companies that once operated in Kentucky and are survived by extant bridges. As there were few bridge companies based in Kentucky, most of the identified bridges were built by companies from the neighboring states of Ohio and Indiana. A breakdown of the number of bridge companies and bridges built by state of origin are as follows:

STATE	# BRIDGES	# COMPANIES
OHIO	123	12
INDIANA	27	6
KENTUCKY	21	4
PENNSYLVANIA	8	5
NEW YORK	2	2
TENNESSEE	2	2
MISSOURI	1	1
NORTH CAROLINA	1	1
VIRGINIA	1	1

In addition to the above companies and builders the Federal Works Agency (WPA) built five bridges in Kentucky during the 1930's.

A total of 35 bridge companies from nine states and the WPA built 190 identifiable bridges in Kentucky. (See Table 3) The six most prolific bridge companies built 135 of the 190 recorded structures.

BRIDGE COMPANY	# BRIDGES
Champion Bridge Company of Wilmington, Ohio	69
King Bridge Company of Cleveland, Ohio	17
Vincennes Bridge Company of Vincennes, Indiana	16
State Department of Highways, in Frankfort, Ky.	15
Brackett Bridge Company of Cincinnati, Ohio	9
Oregonia Bridge Company of Lebanon, Ohio	9

Twelve companies are represented by six or fewer structures while the remaining 16 builder/companies are survived by only one example.

TABLE 2

190 BRIDGE COMPANY PLATES BY BRIDGE TYPE AND HIGHWAY DISTRICT

BRIDGE TYPES	HIGHWAY DISTRICTS												TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	
Pratt Pony	3	5	2				5		2	4		3	24
Half-hip Pony		2	1	4	3	5	11		2			2	30
Bedpost		1	1									1	3
Poly. TC Pony	1								1			3	5
Pratt Through		7	6	8	4	10	12	4	3	3	2	1	60
Whipple-Murphy				2				1					3
Camelback		1		6	1	1	2			1	2	4	18
Parker						2			2	1		3	8
Baltimore							1				3		4
Pennsylvania				1	1	1					1		4
Pratt Deck													0
Warren Pony		3		2			4	2					11
Warren Through	2	1									1	1	5
Quadrangular											1		1
Warren Deck													0
Tied Arch													0
Bowstring			1	1									2
Concrete Arch					1	1					2		4
Suspension									1			1	2
Cantilever	1	2				1			1				5
Continuous		1											1
TOTAL	7	23	11	24	10	21	35	7	12	9	12	19	190

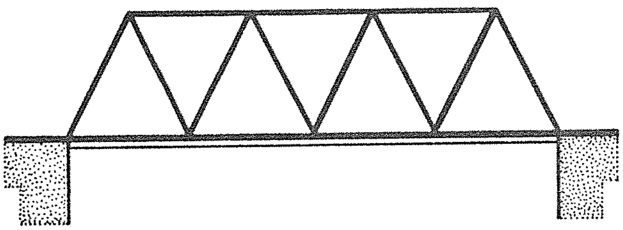
See Exhibit 13 - Kentucky Highway Districts on page 91.

TABLE 3

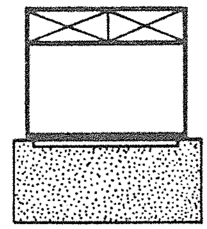
35 INDIVIDUAL BRIDGE COMPANIES AND BUILDERS IN KENTUCKY

BRIDGE CO.	HIGHWAY DISTRICTS 1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
American (PA)		1										1	2
Atlantic (NC)										1			1
Brackett (OH)		1	3	1			4						9
Brookville (OH)				1					1	1			3
Canton (OH)							1						1
Capitol Const. (OH)											1		1
Central Sts. (IN)							1						1
Champion (OH)		9	2	15	6	5	18	3	2	2	1	6	69
Empire (KY)							3						3
Groton (NY)		1											1
Hip (IN)		1						2				3	6
International (IN)	1												1
Kentucky (KY)												1	1
Ky. Hwy. Dept. (KY)	3		1			2	1		3	2		3	15
Keystone (PA)											1		1
King (OH)			1	3	3	5	3	1	1				17
Louisville (KY)											2		2
Luten (PA)						1	~~1~~				3		3
Luten (TN)											1		1
M & P Const. (IN)		1											1
Massillion (OH)						1					1		2
Mt. Vernon (OH)	1								1				2
Nashville (TN)	1												1
Oregonia (OH)						3	2	1		2		1	9
Pan Am. (IN)				1								1	2
Penn Br. Wks. (PA)			1										1
Pittsburg (PA)									1				1
Pub. Wks. Adm. (FED)		3										1	4
Rochester (NY)							1						1
Smith (OH)		1		2		4							7
St. Louis (MO)										1			1
Toledo (OH)							1		1				2
Vincennes (IN)	1	4	3	1					2		4	1	16
Virginia (VA)												1	1
Wrought Iron (OH)		1											1
TOTAL	7	23	11	24	10	21	35	7	12	9	12	19	190

TRUSS BRIDGES

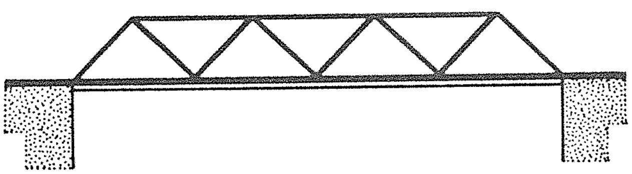


LONGITUDINAL ELEVATION

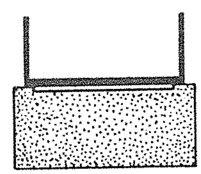


TRANSVERSE SECTION

THROUGH TRUSS

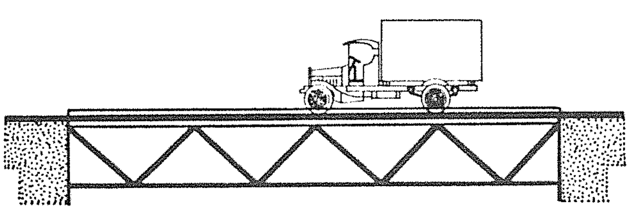


LONGITUDINAL ELEVATION

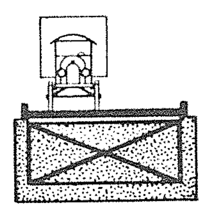


TRANSVERSE SECTION

PONY TRUSS



LONGITUDINAL ELEVATION



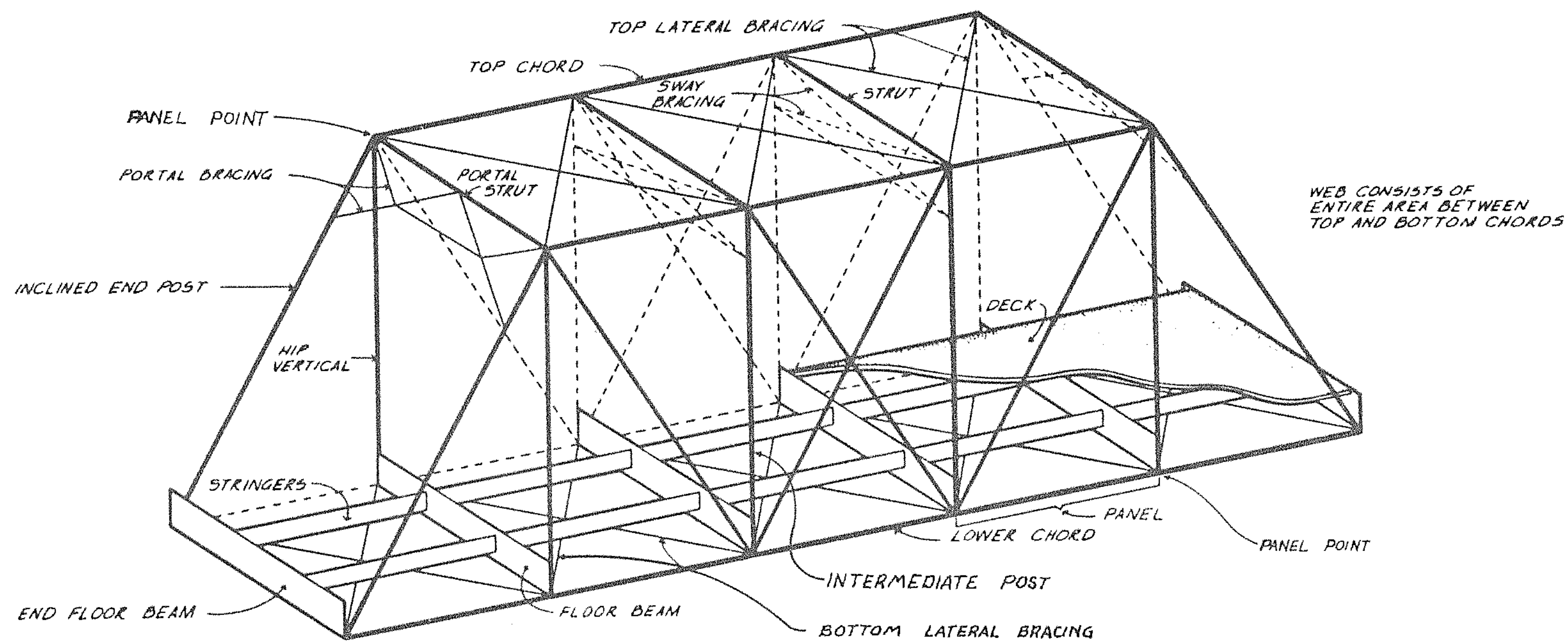
TRANSVERSE SECTION

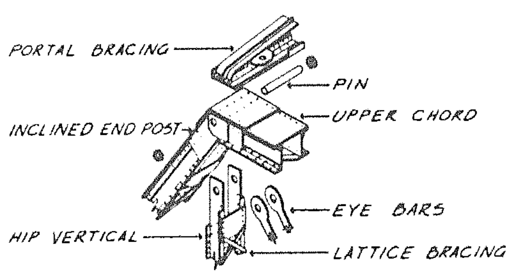
DECK TRUSS

Source: Historic American Engineering Record
National Park Service

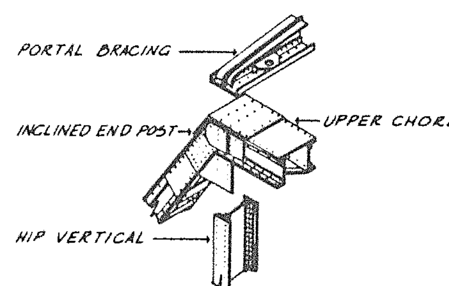
EXHIBIT 7

TRUSS IDENTIFICATION: NOMENCLATURE





PINNED CONNECTION

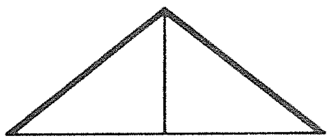


RIVETED CONNECTION

Source: Historic American Engineering Record
National Park Service

EXHIBIT 8

TRUSS IDENTIFICATION: BRIDGE TYPES

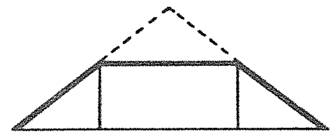


KING POST

(WOOD)

A TRADITIONAL TRUSS TYPE WITH ITS ORIGINS IN THE MIDDLE AGES.

LENGTH: 20-60 FEET
6-18 METERS

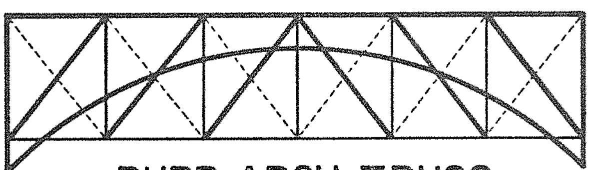


QUEEN POST

(WOOD)

A LENGTHENED VERSION OF THE KING POST.

LENGTH: 20-80 FEET
6-24 METERS



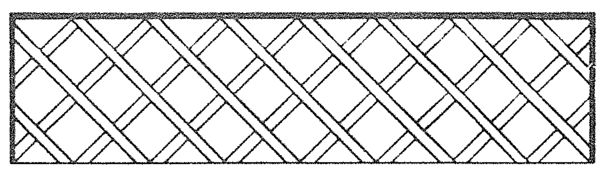
BURR ARCH TRUSS

1804-LATE 19TH CENTURY

(WOOD)

COMBINATION OF A WOODEN ARCH WITH A MULTIPLE KING POST. (ARCH ALSO COMBINED WITH LATER WOODEN TRUSSES).

LENGTH: 50-175 FEET
15-50 METERS



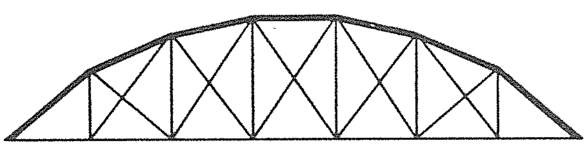
TOWN LATTICE

1820- LATE 19TH CENTURY

(WOOD)

A SYSTEM OF WOODEN DIAGONALS WITH NO VERTICALS. MEMBERS TAKE BOTH COMPRESSION AND TENSION

LENGTH: 50-220 FEET
15-66 METERS

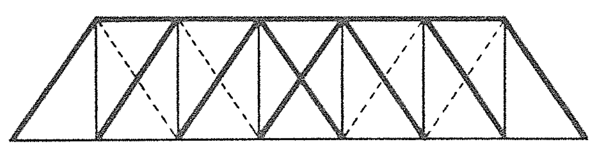


BOWSTRING ARCH-TRUSS

1840 - LATE 19TH CENTURY

A TIED ARCH WITH THE DIAGONALS SERVING AS BRACING AND THE VERTICALS SUPPORTING THE DECK.

LENGTH: 50-130 FEET
15-40 METERS



HOWE

1840 - 20TH CENTURY

(WOOD, VERTICALS OF METAL)

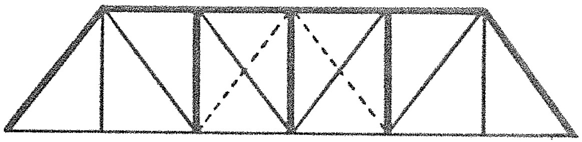
DIAGONALS IN COMPRESSION, VERTICALS IN TENSION.

LENGTH: 30-150 FEET
9-45 METERS

EXHIBIT 9A

Source: Historic American Engineering Record
National Park Service

TRUSS IDENTIFICATION: BRIDGE TYPES

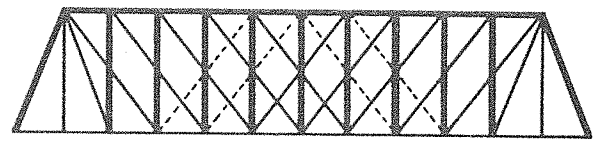


PRATT

1844 - 20TH CENTURY

DIAGONALS IN TENSION, VERTICALS IN COMPRESSION, (EXCEPT FOR HIP VERTICALS ADJACENT TO INCLINED END POSTS).

LENGTH: 30-250 FEET
9-75 METERS



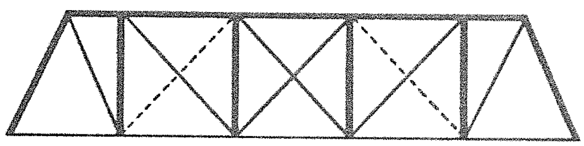
DOUBLE INTERSECTION PRATT

1847 - 20TH CENTURY

(WHIPPLE, WHIPPLE-MURPHY, LINVILLE)

AN INCLINED END POST PRATT WITH DIAGONALS THAT EXTEND ACROSS TWO PANELS.

LENGTH: 70-300 FEET
21-90 METERS

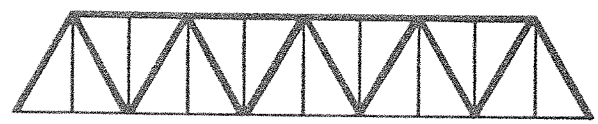


PRATT HALF-HIP

LATE 19TH-EARLY 20TH CENTURY

A PRATT WITH INCLINED END POSTS THAT DO NOT HORIZONTALLY EXTEND THE LENGTH OF A FULL PANEL.

LENGTH: 30-150 FEET
9-45 METERS

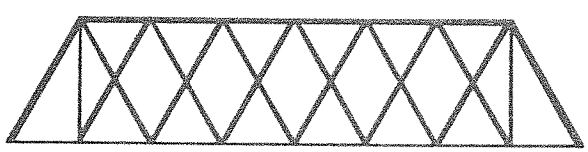


WARREN

WITH VERTICALS
MID 19TH-20TH CENTURY

DIAGONALS CARRY BOTH COMPRESSIVE AND TENSILE FORCES. VERTICALS SERVE AS BRACING FOR TRIANGULAR WEB SYSTEM.

LENGTH: 50-400 FEET
15-120 METERS

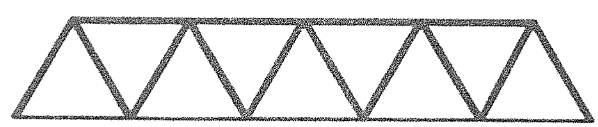


DOUBLE INTERSECTION WARREN

(LATTICE)
MID 19TH-20TH CENTURY

STRUCTURE IS INDETERMINATE. MEMBERS ACT IN BOTH COMPRESSION AND TENSION. TWO TRIANGULAR WEB SYSTEMS ARE SUPERIMPOSED UPON EACH OTHER WITH OR WITHOUT VERTICALS.

LENGTH: 75-400 FEET
23-120 METERS



WARREN

1848 - 20TH CENTURY

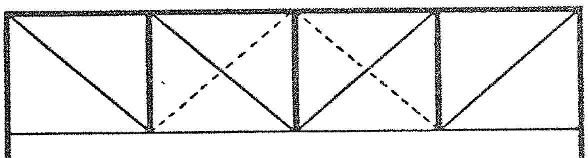
TRIANGULAR IN OUTLINE. THE DIAGONALS CARRY BOTH COMPRESSIVE AND TENSILE FORCES. A "TRUE" WARREN TRUSS HAS EQUILATERAL TRIANGLES.

LENGTH: 50-400 FEET
15-120 METERS

EXHIBIT 9B

Source: Historic American Engineering Record
National Park Service

TRUSS IDENTIFICATION: BRIDGE TYPES

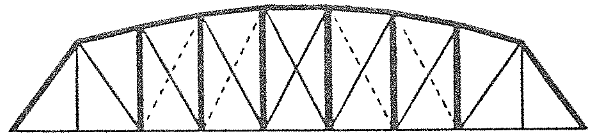


TRUSS LEG BEDSTEAD

LATE 19TH-EARLY 20TH CENTURY

A PRATT WITH VERTICAL END POSTS IMBEDDED IN THEIR FOUNDATIONS.

LENGTH: 30-100 FEET
9-30 METERS

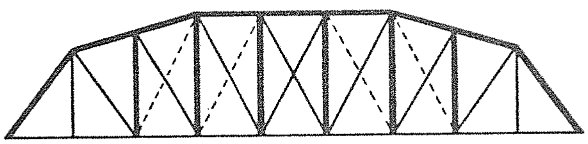


PARKER

MID-LATE 19TH-20TH CENTURY

A PRATT WITH A POLYGONAL TOP CHORD

LENGTH: 40-250 FEET
12-75 METERS



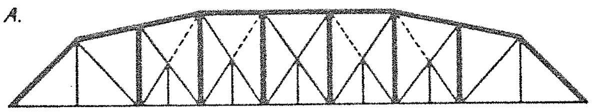
CAMELBACK

LATE 19TH-20TH CENTURY

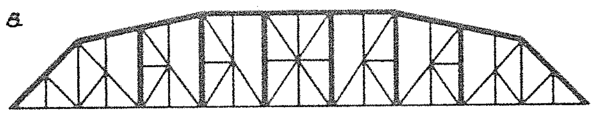
A PARKER WITH A POLYGONAL TOP CHORD OF EXACTLY FIVE SLOPES.

LENGTH: 100-300 FEET
30-90 METERS

A.



B.



CAMELBACK

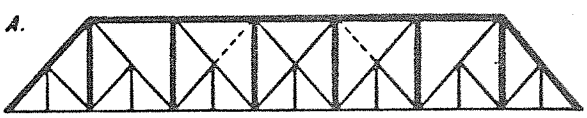
WITH SUBDIVIDED PANELS

LATE 19TH-EARLY 20TH CENTURY

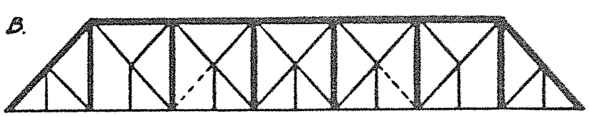
A. A PENNSYLVANIA TRUSS WITH A POLYGONAL TOP CHORD OF EXACTLY FIVE SLOPES
B. SAME AS A. WITH HORIZONTAL STRUTS.

LENGTH: 100-500 FEET
30-150 METERS

A.



B.



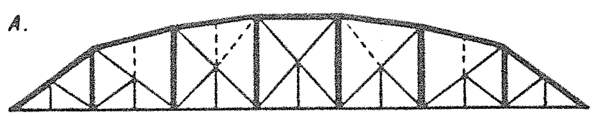
BALTIMORE (PETIT)

1871-EARLY 20TH CENTURY

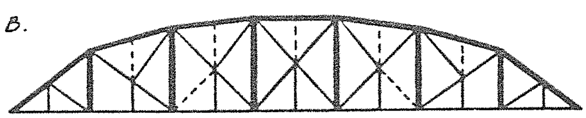
A. A PRATT WITH SUB-STRUTS.
B. A PRATT WITH SUB-TIES.

LENGTH: 250-600 FEET
75-180 METERS

A.



B.



PENNSYLVANIA (PETIT)

1875-EARLY 20TH CENTURY

A. A PARKER WITH SUB-STRUTS.
B. A PARKER WITH SUB-TIES.

LENGTH: 250-600 FEET
75-180 METERS

EXHIBIT 9C

Source: Historic American Engineering Record
National Park Service

V. BRIDGE TYPES

Most of the historic bridges in Kentucky are metal trusses which represent variations of the two most popular or common forms, the Pratt and Warren truss. Fewer examples are found of historic suspension, concrete or masonry arch, bowstring arch, or cantilever truss bridges. (See Exhibits 7, 8, 9A, 9B and 9C) The tied steel arch and the continuous span bridge are contemporary examples of bridge technology. The distribution of 651 bridges surveyed in Kentucky by bridge type and highway district is shown on Table 4. A statistical table of span length and percentage of pin-connected trusses is given in Table 5.

A. PRATT TRUSSES

The most popular late 19th and early 20th century bridge type was the Pratt truss. This truss type was patented in 1844 by Thomas and Caleb Pratt and utilized wooden compression posts and wrought iron tension members. Soon all members were constructed of metal, first cast iron and wrought iron and then steel.

On all truss spans, the end posts and top chord act in compression, with the bottom chord in tension. In a truss, unlike a rigid arch, at least one bearing point at the abutment must be able to expand or move. In the Pratt truss, the verticals between the end posts go into compression to keep the top chord from collapsing, and the diagonals act in tension to support the deck. However, the first vertical member (hip-vertical) next to the inclined end post must be placed in tension to support the deck when a load first enters the bridge.

Pratt trusses have both diagonals and counters in the web system acting in tension. Inclined members that are not parallel to the nearest end post are called diagonals. Inclined members parallel to the nearest end post are called counters. Diagonals support the dead load of bridge weight and the live load of traffic. Counters support only the live load of the bridge. Counters always intersect with a diagonal between two panel points (or floor beams) of the bridge. Because they support no dead load, a Pratt truss with an odd number of panels can not have counters in the center panel, but has intersecting diagonals that help support the dead load of bridge weight.

Counters accept or counteract the live load support from the diagonals as a load moves across the bridge. Tension support for the deck goes from the diagonal past the compression post, which is released as a load passes, to the next counter or diagonal. When a load passes an interior compression post and it is released, the compressive stress is thrown into the adjacent compression posts or end posts to keep the top and bottom chords apart.

The end posts, top chord and vertical compression posts must be sturdy members which are built with rolled channel and plate sections with lacing bars, heavy angles with lacing bars or plates, or rolled I-beams. The tension members (diagonals, counters, hip-vertical, and bottom chord) are usually single or double angle bars or rectilinear, round or square eyebars. All counters (or diagonals in the center panel)on pin-connected trusses are eyebars with turnbuckles or sleevenuts for field adjustment. These turnbuckles and sleevenuts were either original equipment or were added by KYDOT as years of stress weakened the span, necessitating field tightening to increase rigidity.

Pratt trusses are either low pony trusses without top lateral bracing or high through trusses with upper lateral struts and sway bracing for increased rigidity. Pratt pony trusses are used for economical reasons when the requirements of weight and length of a particular crossing can be met by short spans of limited weight capacity. The Pratt through truss,

TABLE 4

BRIDGE TYPES BY HIGHWAY DISTRICT

BRIDGE TYPE	1	2	3	4	5	6	7	8	9	10	11	12	Total
Pratt Pony	4	13	4	1	3	4	14	3	5	7	1	6	65
1/2 Hip Pony		12	9	19	11	16	37	4	8	2	2	2	122
Bedpost		5	3	10	1	2	3		2	1	1	1	29
P. Pony Pol. TC	1								1			3	5
Pratt Thru	2	14	16	15	11	14	19	5	15	10	6	7	134
Whipple-Murphy				2				2	1	1			6
Camelback		1	2	8	4	1	2	1		2	6	4	31
Parker	2	2		2	2	4	2		3	5	4	7	33
Baltimore (Petit)					1		1		1		3		6
Penna. (Petit)	1	1		1	1	1					2		7
Pratt Deck											1		1
Warren Pony	1	14	3	12	4	9	16	8	7	3	2	3	82
Warren Thru	2	1		2		1	3	1	1	2	4	3	20
DI Warren					1						1	1	3
Warren Deck				2			2	3					7
Tied Arch	2					1							3
Bowstring			1	2		1							4
Concrete Arch	1	3		1	18	1	1		5		8	3	41
Masonry Arch		6	1	1	6	1	5		1		2		23
Suspension						1			1			5	7
Cantilever	1	3			3	3		2	1				13
Continuous	1	2				3	2	1					9
TOTAL	18	78	39	77	66	63	107	30	52	33	43	45	651

TABLE 5

STATISTICAL DATA BY BRIDGE TYPE

BRIDGE TYPE	# BRIDGES	LONGEST	SHORTEST	AVERAGE	% PINNED
Pratt Pony	65	100′	32′	73′	40%
1/2 Hip Pony	122	100′	25′	58′	98%
Bedpost	29	100′	27′	58′	97%
Poly. TC Pony	5	100′	100′	100′	0%
Pratt Through	134	203′	75′	117′	78%
Whipple-Murphy	6	209′	105′	161′	100%
Camelback	31	200′	130′	150′	84%
Parker	33	360′	135′	187′	12%
Baltimore (Petit)	6	240′	150′	183′	17%
Pennsylvania (Petit)	7	715′	200′	343′	50%
Pratt Deck (Pinned) (As Main Span)	1	115′			
Warren Pony	82	105′	36′	59′	0%
Warren Through	20	500′	78′	222′	35%
Quadrangular	3	117′	108′	111′	0%
Warren Deck	7	360′	100′	189′	0%
Tied Arch	3	760′	534′	658′	
Bowstring	4	148′	59′	113′	
Concrete Arch	41	302′	20′	108′	
Masonry Arch	23	137′	20′	53′	
Suspension	8	1990′	326′	815′	
Cantilever	13	2830′	1024′	1843′	
Continuous	9	1758′	700′	983′	

capable of longer spans which will bear greater loads, is the oldest and most common truss type. The Pratt through truss also exhibits the greatest variation in refinements and embellishments.

1. Pratt Through Truss

There are 134 Pratt through trusses on the highways of Kentucky. This is the most common truss type in the state and exhibits the greatest variation in individual styles. Sixty of these trusses have identifying builder/date plates representing the work of 12 different bridge companies. Each of these companies expressed their own individual style in such details as portal bracing, use of patented innovations, makeup of structural members, and unique builder/date plates.

The change from pin-connected to riveted trusses appears to have taken place around 1920 in Kentucky. Most of the Pratt through trusses were built before 1920 and 78% of 133 bridges are pin-connected. By 1925, nearly all the Pratt trusses being built were utilizing the riveted connection at the top and bottom chord panel points. The emergence of the State Department of Highways, which built many of the riveted spans, and a sharp decrease in work by individual bridge companies, is also noted by the 1930's. The longest Pratt truss in Kentucky is 203 feet, the shortest is 75 feet, and the average length is 117 feet.

The Champion Bridge Company of Wilmington, Ohio, was the most prolific builder of Pratt through truss bridges in Kentucky. Thirty-one of the 60 Pratt through trusses with builder/date plates were constructed by the Champion Bridge Company, and many similar structures without identifying plates were probably also constructed by this company.

Of the 134 Pratt through trusses evaluated, the following 19 are considered to meet the National Register criteria.

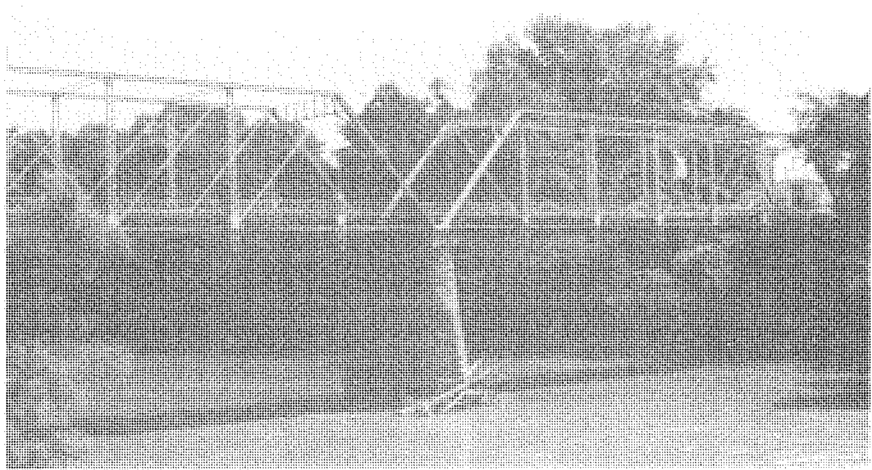
(1). The earliest Champion Pratt through truss in Kentucky is a 90 foot long single span adjacent to the historic Johnson Mill and dam in Scott County (SF #44). This structure rests on rough cut limestone abutments and utilizes loop-welded eyebars. The use of loop-welded, rather than die-forged eyebars is a characteristic of the Champion Bridge Company.

The Champion Bridge Company builder/date plate is a familiar outline on the rural Kentucky landscape. This plate identifies the earliest of 31 Pratt through trusses by Champion in the state. (SF #44)

Plate on portal strut identifies the Champion Bridge Company of Wilmington, Ohio, as the builder but does not give the erection date. This unique builder plate and decorative finials are found on only one other Champion bridge in Kentucky. (SF #37)

(2). An early Champion Pratt through truss in Bourbon County (SF #37) may predate the 1890 truss in Scott County. The bridge plate, identifying the builder only, and decorative details on this structure and one other, are unlike the remainder of Kentucky's Champion Bridge Company examples. This structure is 111 feet long and has loop-welded eyebars at pin-connected top and bottom chord panel points.

(3). A third Champion Pratt through truss selected by this survey as an excellent representative example is located near Berry in Harrison County (SF #32). This early multi-span structure is two 120 foot long spans resting on rough cut stone abutments and pier. These trusses have hip-vertical eyebars that attach to the first panel floor beam but are not connected to the bottom chord. This practice has only been noted on Champion Bridge Company examples. On the Berry Bridge, the hip-vertical eyebar is pin-connected 4 feet above the deck between two channels that extend to the floor beam to support the deck. On some Champion bridges, such as the Johnson Mill Bridge (SF #44), the hip-vertical is loop-welded directly to a floor beam hanger.



General elevation view of two 120 foot Pratt through trusses built in 1906 by the Champion Bridge Company. This example over the Licking River in Harrison County rests on a rough cut stone pier. (SF #32)

(4). The King Iron Bridge & Manufacturing Company of Cleveland, Ohio, was established by Zenas King in 1858, and became a leading manufacturer of metal truss and arch bridges in the nineteenth century. The importance of this company declined early in the 20th century, but their historical contribution is recognized by numerous truss and arch examples throughout the United States. The King Bridge Company built seven pre-1900 Pratt through trusses in Kentucky and made exclusive use of die-forged eyebars, rather than loop-welded eyebars, on their truss spans. An 1886 truss in Breckinridge County with die-forged eyebars in the web system is a good example (SF #13).

1886 Pratt through truss by the King Bridge Company of Cleveland, Ohio. This little used bridge in Breckinridge County has the familiar builder/date plate and delicate portal bracing found on most King trusses. (SF #13).

Detail view at second panel point showing the pin-connection and die-forged diagonal and bottom chord eyebars. Good view of a curved square rod floor beam hanger with upset and threaded ends that bolts to a plate below the floor beam to support the deck. (SF #13)

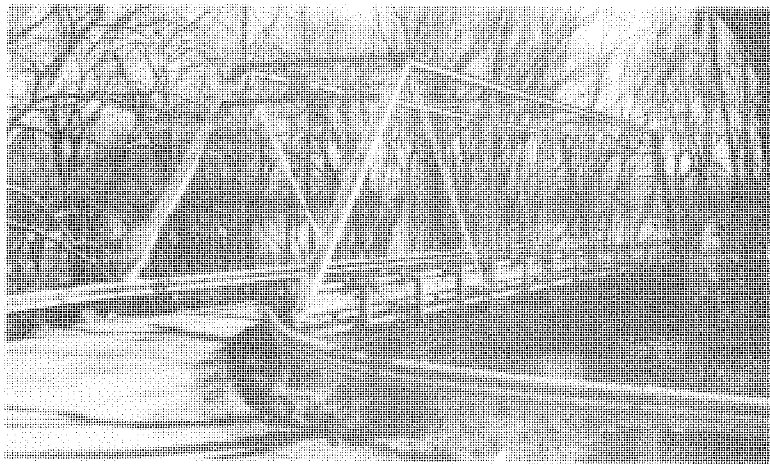
(5), (6). A 423 foot long three span crossing at Greenup, built in 1884, is one of the two oldest King Pratt through trusses and the second longest multi-span pin-connected truss in Kentucky (SF #48). The other 1884 example is a single 98 foot span over Cartwright Creek in rural Washington County (SF #21). This truss has plate girder floor beams and a simple cable guardrail. Because of its pre-1885 construction date, it is probably wrought iron rather than steel.

View from the bank of the Little Sandy River near its confluence with the Ohio River at Greenup. This 1884 three span Pratt through truss is by the King Bridge Company. (SF #48)

(7). A fourth King Pratt through truss selected during this survey is the Red Bridge in Franklin County (SF #22). This elegant single span truss has a star pattern punched in the portal bracing. The Red Bridge is not only a valuable architectural resource but also an important cultural resource. The aesthetic combination of an old iron bridge, memories and ruins of adjacent Conaway Mill, and the scenic natural falls of Benson Creek create a valuable local heritage.

(8), (9). The Smith Bridge Company of Toledo, Ohio, built two extant Pratt through trusses in Kentucky. The oldest, constructed in 1883, is located in Bracken County. This structure (SF #27) is a single span measuring 112 feet in length. This bridge has an early type floor system using wood beam stringers laid across plate girder floor beams. The second Smith example is a relatively short 90 foot span and is located in rural Daviess County in western Kentucky (SF #5). This structure has delicate lattice portal bracing and is the oldest metal truss in Highway District 2.

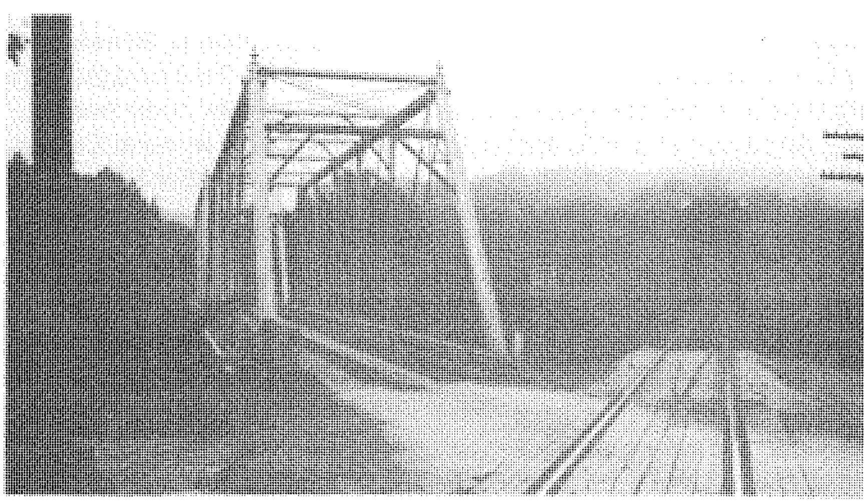
(10). Of the four recorded bridge companies from Kentucky, the only one operating in central Kentucky appears to have been the Empire Bridge Company of Lexington. This company was listed in the City Directory for Lexington from 1909 until 1919. The entry was "George Collins, Mgr., 310 City National Bank Building." The Empire Bridge Company apparently took bridge orders or submitted competitive bids and then ordered all steel members from a foundry or large bridge company. There are three surviving Empire bridges in Kentucky, all located in the central portion of the state. The earliest example is a pin-connected Pratt through truss in Scott County over Elkhorn Creek (SF #45). This 120 foot long structure rests on rough cut limestone abutments, has loop-welded eyebars, and uses rolled I-beam stringers and floor beams in the floor system.



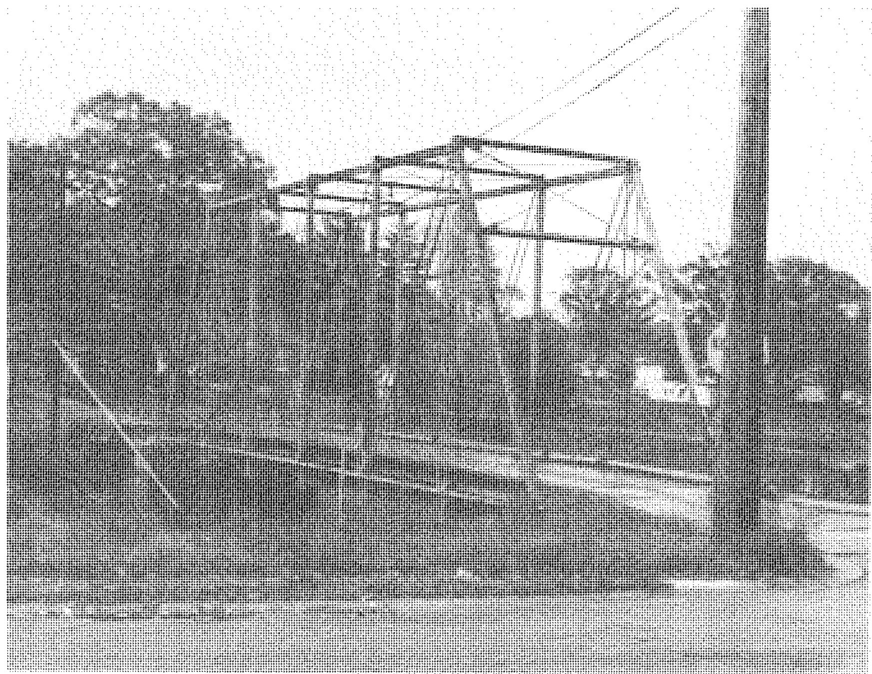
General elevation view of a 120 foot Pratt through truss built by the Empire Bridge Company of Lexington, Kentucky, in 1910. (SF #45)

(11). The second Empire bridge selected for this survey is the only mixed bedpost/Pratt through truss in Kentucky (SF #43). This 1915 structure uses a 120 foot long Pratt through truss and a 64 foot bedpost pony truss. The bridge rests on concrete abutments and metal encased concrete filled lally column piers. The bottom chord on the bedpost truss is unique, having a rigid end panel of two channel/stay bars and two center panels with two rectilinear eyebars.

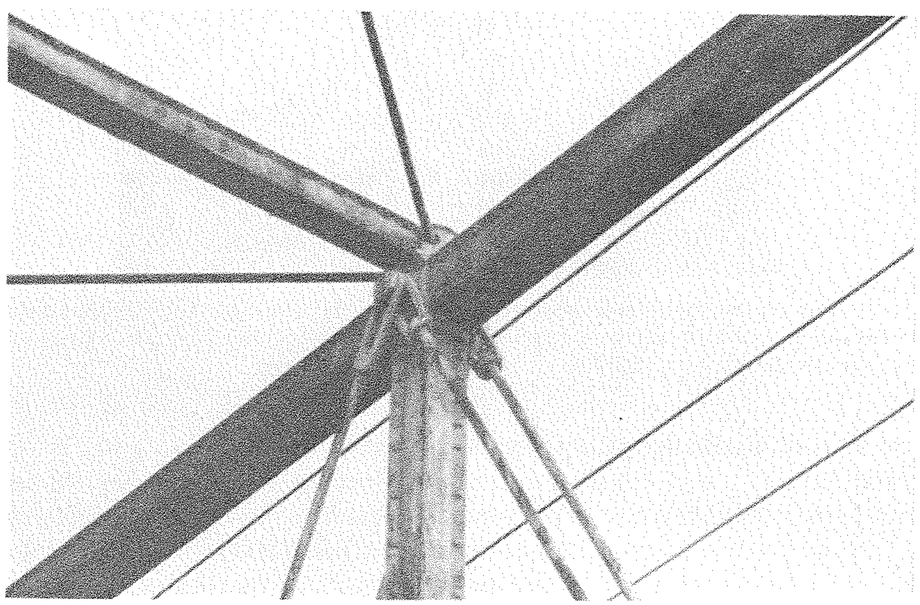
(12), (13). Two Pratt through truss bridges in Kentucky incorporate the patented Phoenix tubular column. One of these bridges, (SF #63) in Corbin, is the shortest Pratt through truss in the state (75 feet). This truss uses four-sided Phoenix columns on the end posts, top chord, intermediate posts, and top lateral struts. A second bridge using the Phoenix column is the longest multi-span metal truss in Kentucky with pin-connections at each panel point. This 470 foot structure, (SF #66) located in Lawrence County, has two Pratt through trusses with Phoenix columns and one Warren through truss span. The Pratt truss spans use six-sided Phoenix columns for the end post and top chord and four-sided Phoenix columns on the intermediate posts.



Crossing paths of a 1914 Warren through truss railroad bridge by the American Bridge Company and a 1904 three span highway bridge. The two main spans of the highway bridge have patented Phoenix columns and decorative finials on the end posts. (SF #66)



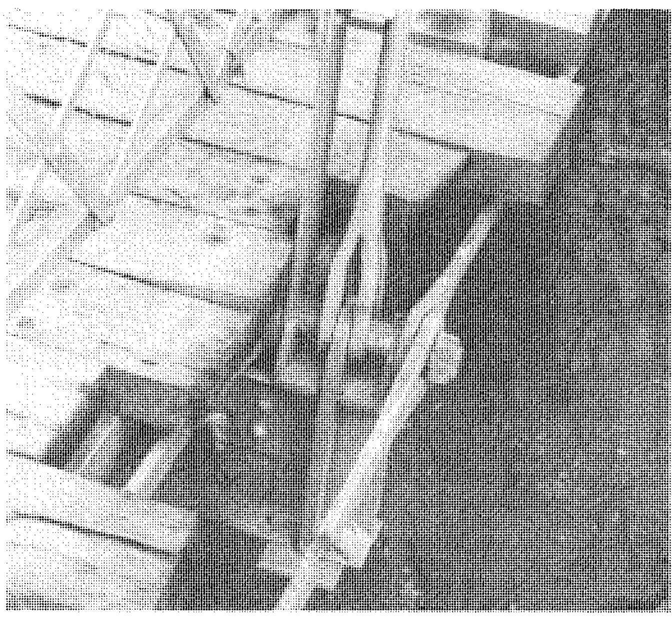
View of a 75 foot long Pratt through truss over Lynn Camp Creek in Corbin. This is the shortest Pratt through truss in Kentucky and one of two that use the patented Pheonix column compression post. (SF #63)



Detail view of patented four-sided Phoenix column top chord, top lateral strut, and intermediate post. Unique counters on this truss are round rods with upset threaded ends and adjustable stirrup connections. (SF #63)

(14). A Pratt through truss in Daviess County (SF #4) is Kentucky's only example by the Wrought Iron Bridge Company of Canton, Ohio. The Wrought Iron Bridge Company was an early innovator in metal truss bridge technology. This example is relatively late (1897) but does incorporate some distinctive elements, including hip-verticals that are split in cross section to rigidly hold the bottom chord pin and floor beam hanger.

General view of the 1897 Pratt through truss by the Wrought Iron Bridge Company (SF #4)



Detail view of unusual pin-connected hip-vertical panel point. The hip-vertical is a round rod eyebar that has been split in cross section to hold the floor beam hanger and bottom chord pin rigid. (SF #4)

(15). The Keystone Bridge Company of Pittsburgh, Pennsylvania, is another bridge company noted for its role in the development of truss technology. Keystone was an early innovator of flat eyebars as tension members on Pratt truss bridges. One Keystone example, dating 1888, is found in Kentucky. This truss (SF #53) is found in Bell County in southeast Kentucky and is founded on lally column piers and is approached by two temporary bailey bridges. Although the truss has been considerably weakened by age and heavy coal traffic (SIA rating of 9.3/100), the heavy structural members and deepened plate girder floor beams are evidence of a well constructed and once sturdy structure.

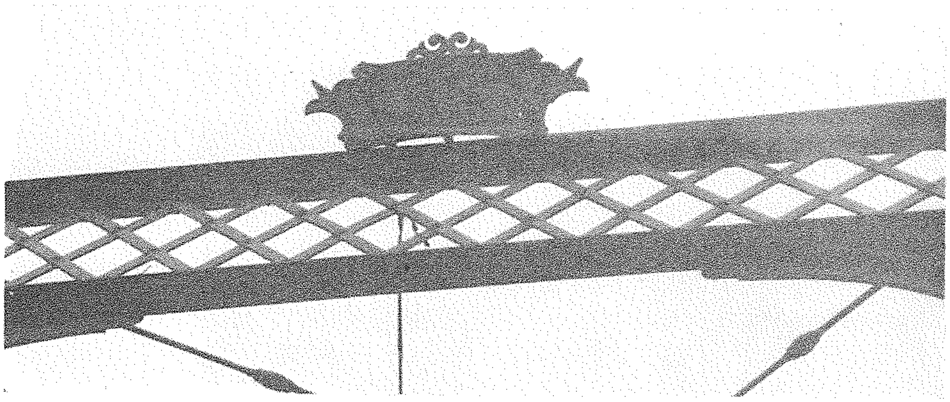
This 3/4 view shows a pin-connected Pratt through truss center span and two pin connected Pratt half-hip end spans resting on unique piers built of steel sections. (SF #52)

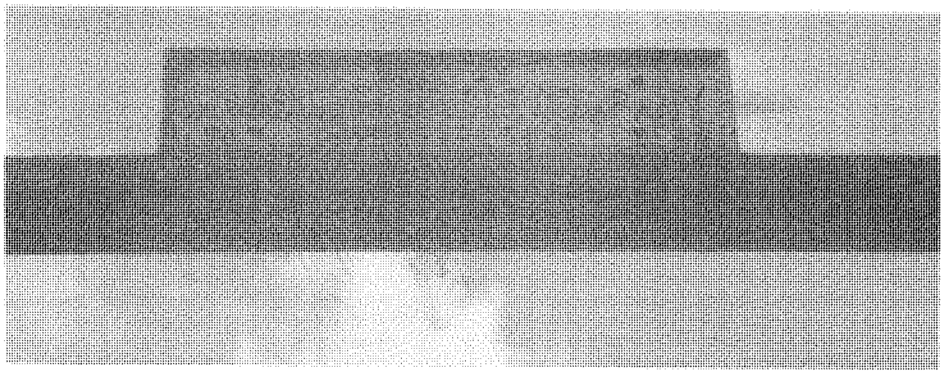
(16). An interesting mixed truss bridge was built by the Oregonia Bridge Company of Lebanon, Ohio, near Tallege in Lee County (SF #52). This structure was constructed in 1917 and consists of two pin-connected Pratt half-hip pony and one pin-connected Pratt through truss. This elegant truss rests high above the Middle Fork of the Kentucky River on unique metal piers constructed of angles and lacing bars.

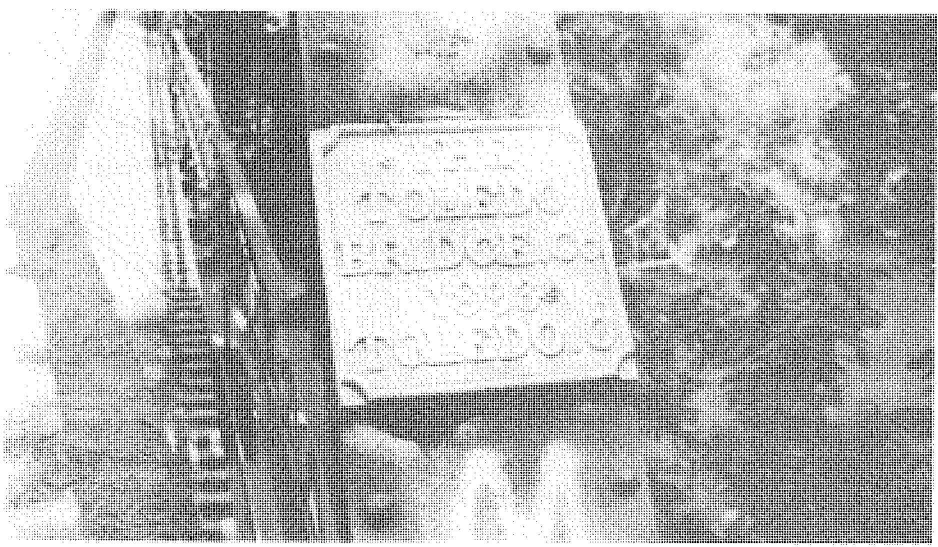
(17). A bridge built during 1915 in Bowling Green by the Vincennes Bridge Company of Vincennes, Indiana, is an interesting architectural example located on a site with recognized historical associations. This multi-span structure (SF #11) measures 420 feet in length with three pin-connected Pratt through trusses at 119 feet each and a 50 foot riveted Warren pony truss. This is one of only two Pratt through trusses in Kentucky built by the Vincennes Bridge Company. The first bridge on this site was a wooden truss built in 1839. That structure was burned by Union soldiers on February 14, 1862. The bridge was rebuilt at the close of the Civil War in 1864, but again burned on February 12, 1915.

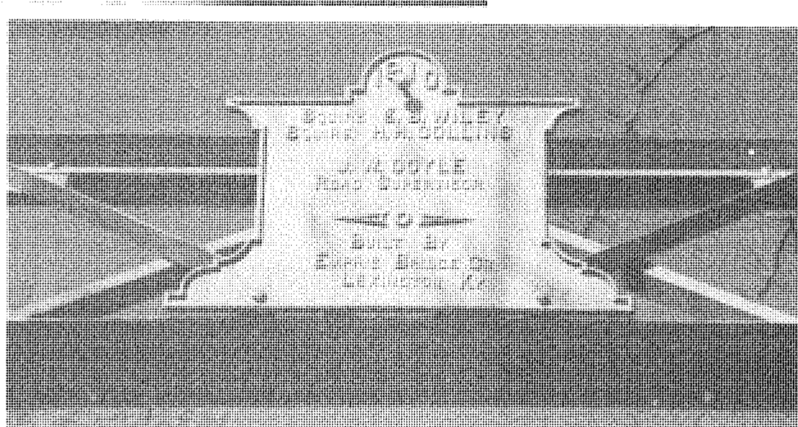
(18). A 408 foot long multi-span truss in Harrison County at Robinson Dam is one of two bridges in Kentucky built by the Massillon Bridge Company of Massillon, Ohio (SF #33). This bridge was built on rough cut stone piers and abutments in 1885. This truss utilizes die-forged eyebars and some materials, including the channels, from the Carnegie foundry.

(19). The Toledo Bridge Company of Toledo, Ohio, built only two of the metal truss bridges remaining in Kentucky. One of the Toledo trusses is a Pratt through truss bridge in Bourbon County over Stoner Creek and is notable for its unique bottom chord (SF #38). The first two panels of the bottom chord are two loop-welded eyebars while the three center panels are two die-forged eyebars. This truss was constructed in 1893, has a length of 99 feet, and a roadway width of 16 feet.









Four rare builder/date plates on Pratt through trusses in Kentucky. The Keystone Bridge Company plate identifies the only example in Kentucky by this innovative company. (SF #53) The other three plates identify companies that built only two or three trusses in Kentucky. (SF #33, #38, #45)

2. Pratt Pony Trusses

There are 63 Pratt pony trusses in Kentucky. The longest pin-connected Pratt pony truss is 85 feet, the longest riveted Pratt pony truss is 100 feet, and the average length of all Pratt pony trusses is 73 feet. The Pratt pony truss was built throughout the era of metal truss bridges and 40% of the spans in Kentucky are pin-connected. Most of the riveted spans were built in the 1920's and 1930's by the newly created State Department of Highways. The five following Pratt pony trusses appear to meet the National Register criteria.

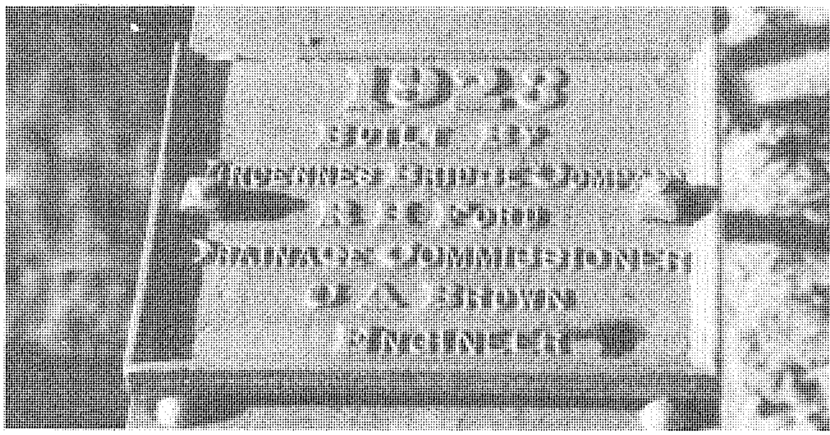
(1). The earliest Pratt pony truss in Kentucky is an 1880 structure in Logan County constructed by the Penn Bridge Works of Beaver Falls, Pennsylvania (SF #10). This bridge apparently pre-dates the 1886 incorporation date for the Penn Bridge Works reported in the Virginia historic bridge study. Although the diagonals of the bridge have been replaced by stirrup rods, the remaining original members allow sufficient integrity of design to warrant National Register eligibility.

(2). A rare two-span pin-connected Pratt pony truss by the King Bridge Company of Cleveland, Ohio, is located in Bourbon County (SF #39). These two 73 foot long spans utilize die-forged eyebars, two channel/lacing bar intermediate compression posts, and rolled I-beams in the floor system. Since this structure was built in 1893, it may have wrought iron members.

(3). The earliest riveted truss encountered on the survey is the 1898 Pratt pony truss by the Brackett Bridge Company of Cincinnati, Ohio, in Jessamine County (SF #42). This truss is unusual as most of the structural members are paired angles held by riveted stay bars.

(4). A relatively late pin-connected Pratt pony truss in Daviess County (SF #6) is interesting for the part it played in an early drainage project. Forty-six miles of Panther Creek and its tributaries drain two-thirds of Daviess County. Between 1922 and 1926, 36 miles of Panther Creek was straightened from a point ten miles upstream from its confluence with Green River to the county lines on both the north and south forks of the creek. Historically, this crooked creek made drainage for farming nearly impossible, but Kentucky laws in 1912 and 1918 provided legal steps for setting up drainage districts to receive financial assistance. By 1925, Daviess County had over 212 of these districts, more than any Kentucky county. This Panther Creek truss is 64 feet in length and is founded on concrete abutments.

A 1923 pin-connected Pratt pony truss built by the Vincennes Bridge Company of Vincennes, Indiana. Note compression members are paired angles/lacing bars and tension members are two eyebar diagonals. Counters are one round rod eyebar with turnbuckles for field adjustment. (SF #6)



Builder/date plate identifying the 1923 drainage commissioner. From 1922-26, thirty-six miles of Panther Creek was ditched to allow growth of farmland in the rich Ohio River bottomland near Owensboro. (SF #6)

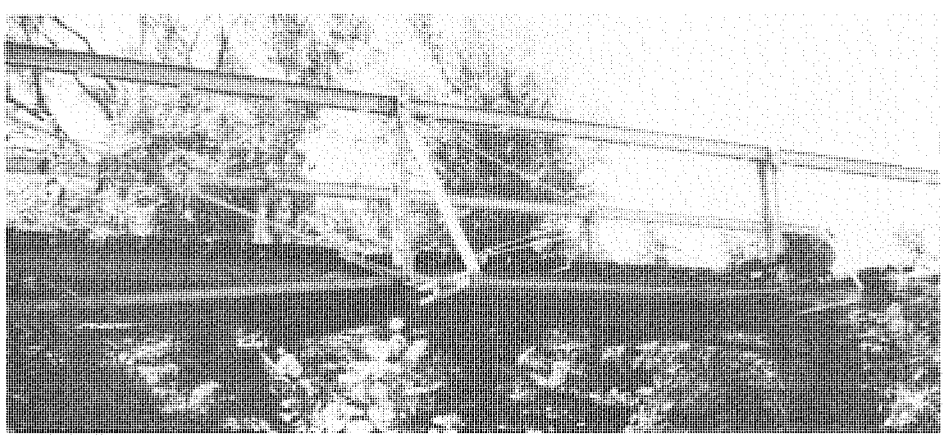
(5). One of the first bridges constructed by the Kentucky State Highway Department is a Pratt pony truss (SF #1) over Clarks River in Calloway County. This 90 foot long riveted span was built in 1927 and is constructed of channels, cover plates, lacing bars, angles, and rolled I-beams.

A variation of the Pratt pony truss in Kentucky has a polygonal top chord for added strength and outriggers for sway bracing. Only five of these bridges are found in Kentucky and they are remarkably similar. All are riveted spans, 100 feet in length, and were built between 1922 and 1926. These structures are scattered around the state and were constructed by separate bridge companies. None of these bridges appear to meet the eligibility criteria for National Register inclusion.

3. Bedpost or Truss Leg Bedstead Pony Trusses

A bedpost or truss-leg bedstead bridge is a Pratt pony truss with a vertical end post that often extends below the deck of the bridge into the abutment. Most of the 29 bedpost truss bridges are found in the western and central portions of the state. These trusses are usually less than 75 feet in length, were built between 1890 and 1920, and all but one are pin-connected. Two bedpost trusses appear to be eligible to the National Register. They are:

(1). The oldest bedpost pony truss in the state dates 1894, and was built by the Groton Bridge and Manufacturering Company of Groton, New York. This pin-connected truss bridge (SF #3) is located in Christian County and is 44 feet in length.



Center and end panel of a bedpost pony truss built by the Groton Bridge Company of Groton, New York, in 1894. Note inclined I-beam bottom chord on end panel and outriggers for added strength. (SF #3)

General view of 1905 Brackett Bridge Company bedpost pony truss with end posts that extend below the deck of the bridge. (SF #9)

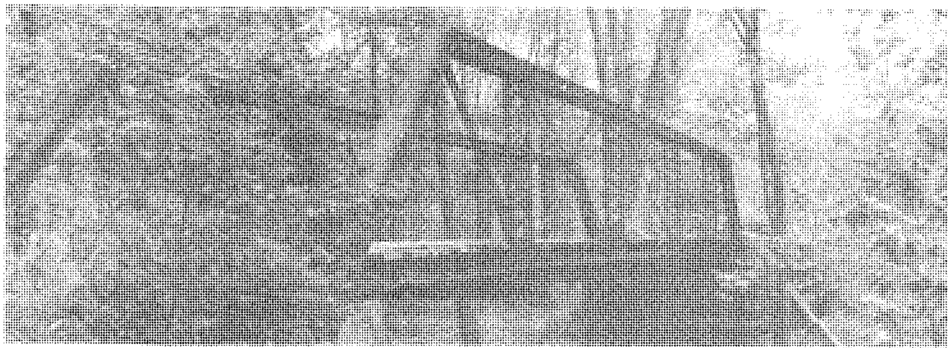
(2). The Carson Bridge in Butler County (SF #9) is the only bedpost truss in Kentucky built by the Brackett Bridge Company of Cincinnati, Ohio. This 36 foot long span is a short three panel bridge that supports little traffic. The end post of this truss extends below the deck of the bridge to the base of the abutment.

4. Pratt Half-hip Pony Trusses

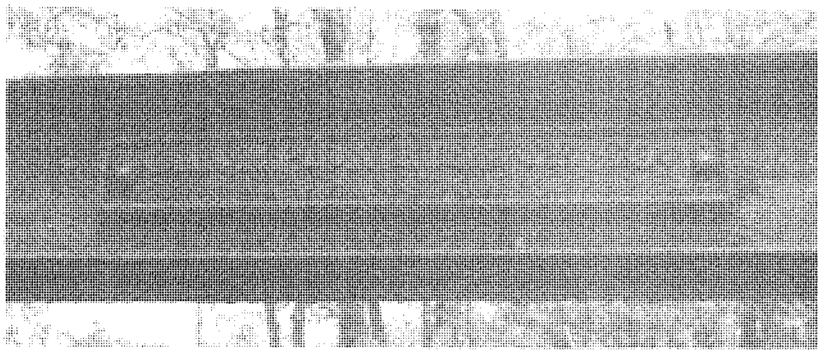
The Pratt half-hip truss is a Pratt pony truss without a hip-vertical placed in tension. The first panel between the end post and compression post is shortened by a nearly vertical end post. In the Kentucky survey, the average length of these trusses was 58 feet with a range from 25 feet to 100 feet in length. One hundred and twenty-two of these trusses remain in Kentucky and most were built between 1890 and 1915 with 98% utilizing the pin-connection in top and bottom chord panel points. Thirty of these bridges have bridge plates identifying the builder. The Champion Bridge Company of Wilmington, Ohio, built 21 of these structures and six other companies built the other nine bridges with extant builder plates. The following five Pratt half-hip trusses appear to meet the National Register criteria.

(1). The oldest documented Pratt half-hip pony truss in Kentucky was built by the Champion Bridge Company in 1882 (SF #50). This early multi-span crossing has unique builder and date plates incorporated in decorative finials on the end posts. The three spans of this structure total 174 feet in length with a six panel center span of 80 feet.

(2). The Champion Bridge Company of Wilmington, Ohio, built 21 Pratt half-hip pony trusses with builder plates in Kentucky. However, numerous identical spans without builder plates exist throughout the state and many of these were almost certainly built by Champion. One of the longest Champion examples is a 75 foot span in Webster County (SF #7). This truss has apparently never been painted and probably dates circa 1890. This bridge rests on large rough cut stone abutments, has a roadway width of 12 feet, and is seven feet tall from the deck to the top chord.

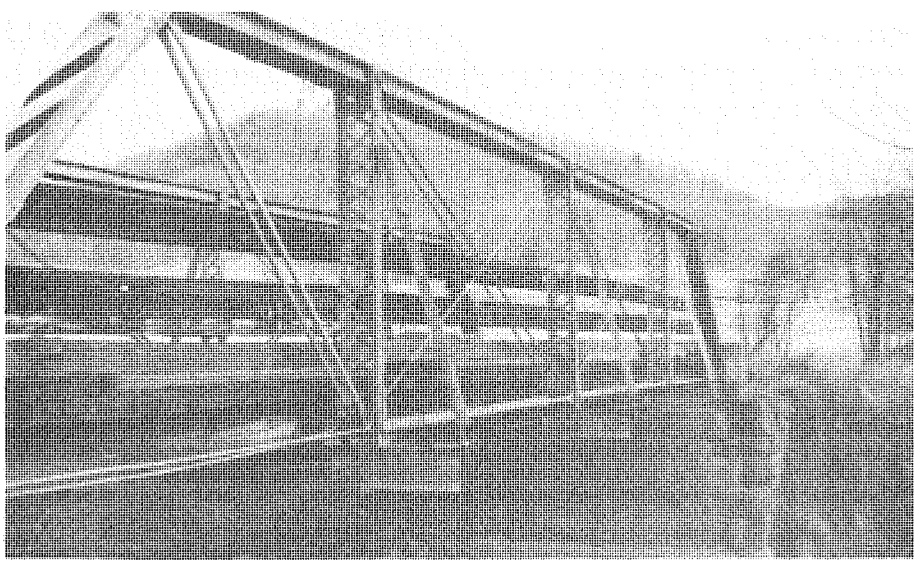


General elevation view of a relatively long (75') Pratt half-hip pony truss in Webster County. The Pratt half-hip truss is easily recognized as it has no hip vertical extending from the end post/top chord panel point to the bottom chord. (SF #7)



Builder plate on Pratt half-hip pony truss. Twenty-one of 30 Pratt half-hip trusses with builder plates in Kentucky were built by the Champion Bridge Company (SF #7)

(3). A Pratt half-hip pony truss in Fleming County is the only bridge built by the Pittsburg Bridge Company in the survey (SF #47). This 52 foot long single span bridge also identifies W. B. Bassett, Agent, on the builder/date plate. Agents for different bridge companies were active near the turn of the century in soliciting and bidding on local bridge contracts. The agent was responsible for selecting the correct bridge length, type, etc. and often oversaw its construction by untrained local labor.



General elevation view of a pin-connected Pratt half-hip pony truss built by the Pittsburg Bridge Company in 1893. A Pratt half-hip pony truss has no hip vertical and a more vertical end post that does not horizontally extend the length of a full panel. (SF #47)

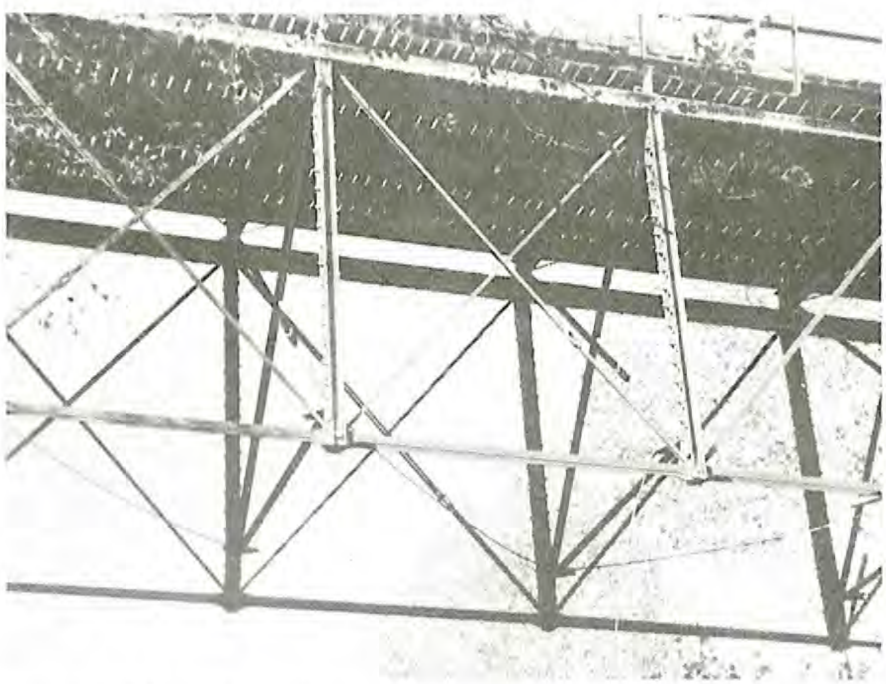
(4). The Smith Bridge Company of Toledo, Ohio, built a distinctive Pratt half-hip truss over Little Willow Creek in Pendleton County (SF #35). This bridge has large decorative finials on the endposts, loop-welded eyebars for diagonals and counters, and die-forged eyebars on the bottom chord. The intermediate compression posts are unusually shaped metal plates that taper from narrow to wide between the top and bottom chord.

(5). Only one bridge from the Canton Bridge Company of Canton, Ohio, remains in Kentucky. This example is an attractive Pratt half-hip pony truss in Anderson County constructed circa 1890 (SF #36). This structure has elegant finials on the end posts and curved lattice bar guardrailing.

5. Pratt Deck Trusses

A Pratt deck truss is similar to a Pratt through truss except the floor system is laid on the top chord rather than the bottom chord. Most of the Pratt deck truss spans in Kentucky are riveted spans used in conjunction with parker or Pennsylvania through trusses on long span crossings.

(1). Only one pin-connected Pratt deck truss was discovered in the Kentucky survey (SF #62). This truss was built in 1917 and consists of a 115 foot pin-connected Pratt deck center span flanked by two 55 foot riveted Warren deck truss spans. As the single remaining example of this bridge type, it is likely eligible to the National Register.



Center panel of Kentucky's only pin-connected Pratt deck truss with roadway on top chord (SF #62)

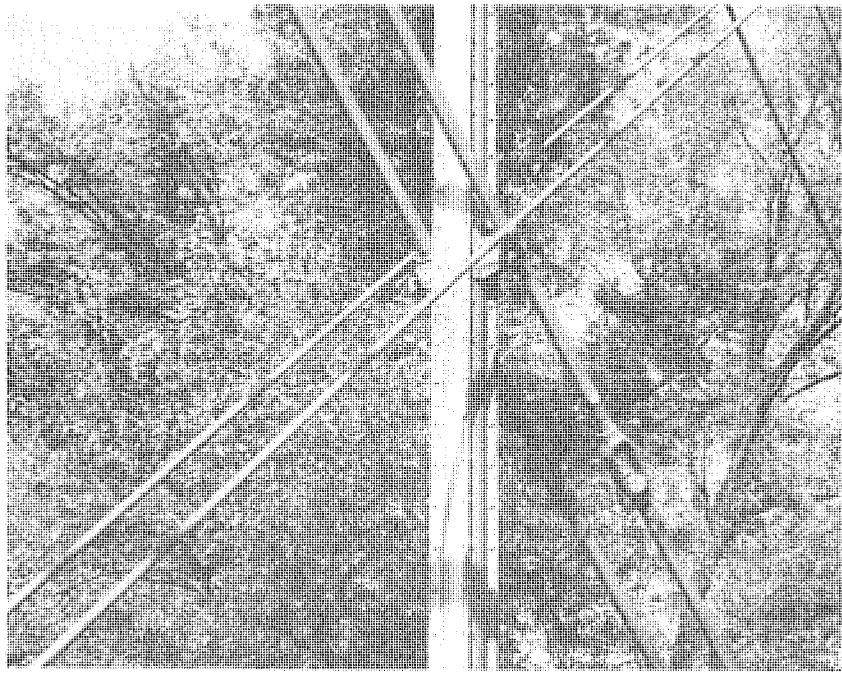
6. Whipple-Murphy or Double-Intersection Pratt Trusses

A Whipple-Murphy or double-intersection Pratt truss uses the basic form of a Pratt through truss but has lengthened diagonals and counters that extend across two panels. This bridge type was first patented by Squire Whipple in 1847 and later improved by John W. Murphy and J. H. Linville. All six Whipple-Murphy trusses in Kentucky are pin-connected. The earliest example is dated 1881 and the remainder apparently date before or near the turn of the century. The range in length for these structures is from 105 feet to 209 feet. The following five Whipple-Murphy trusses appear to meet the National Register criteria.

(1), (2). The Smith Bridge Company of Toledo, Ohio, built two early Whipple-Murphy trusses in Meade County. The oldest is an 11 panel truss 152 feet in length constructed in 1882 (SF #18). This massive truss has a structural sufficiency rating of only 4/100 but has survived due to its location on a little used county dirt road. Stringers for the deck on this structure are 6" x 6" wood beams. The second Smith example is the longest Whipple-Murphy truss in Kentucky (SF #17). This truss is 209 feet in length, has a roadway width of 15.5 feet, and was constructed in 1885.

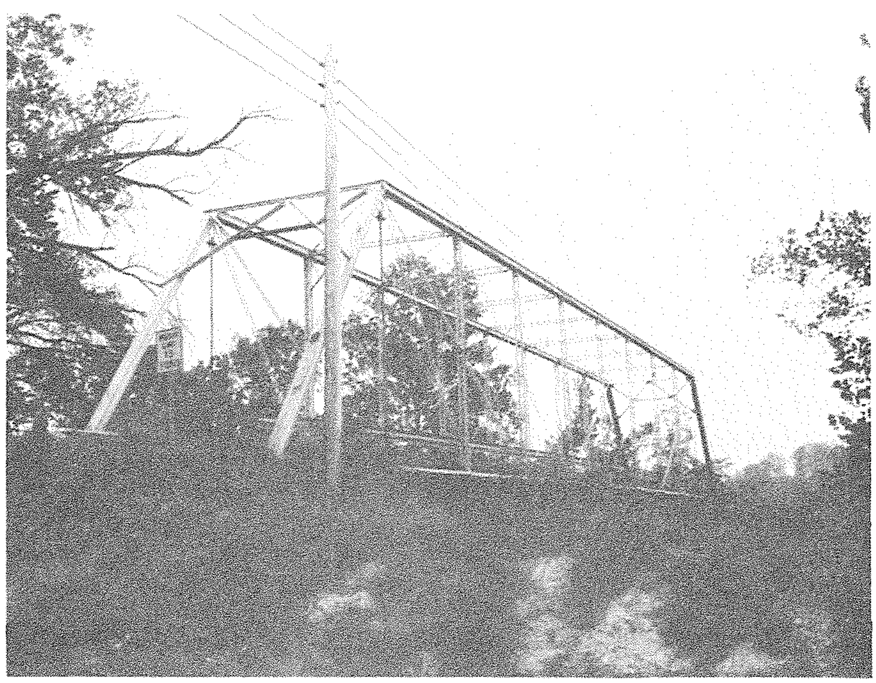
(3). One of the most attractive trusses in Kentucky is a Whipple-Murphy truss in Greenup County built by the East Kentucky Railroad and later converted to highway use (SF #49). This structure uses four and six-sided patented Phoenix column compression members from the Phoenix Iron Company of Philadelphia, Pennsylvania. Finials on the end posts and decorative portal bracing enhance this elegant structure.

View of Pheonix column end posts, cut-out portal bracing, and finials on a Whipple-Murphy truss in eastern Kentucky. (SF #49)



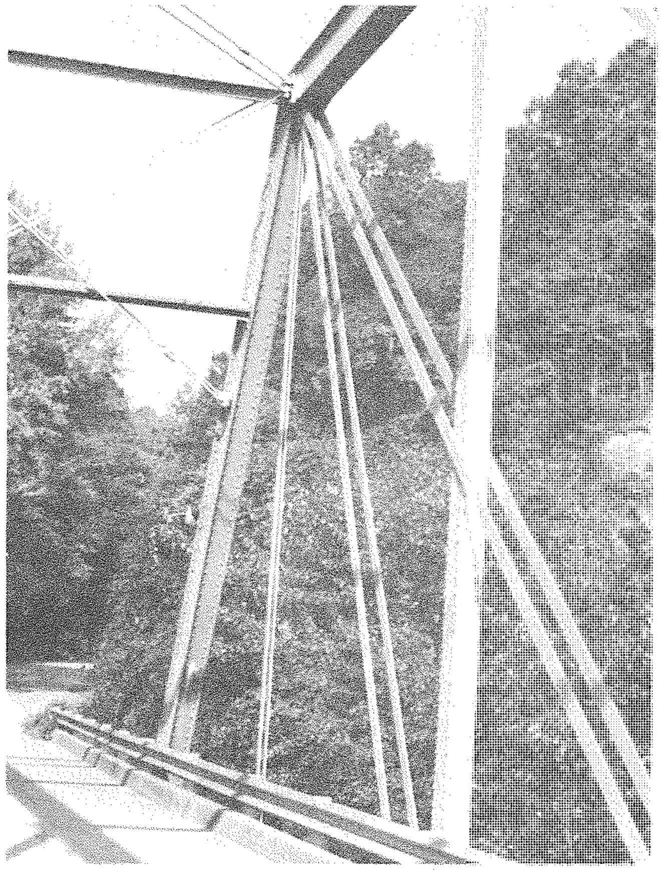
Detail showing Phoenix column compression post, square eyebar counters, and rectilinear eyebar diagonals with turnbuckles. (SF #49)

(4). The oldest Whipple-Murphy truss remaining in Kentucky is a 158 foot long span in Marion County built by the King Bridge Company in 1881 (SF #16). This structure rests on rough cut stone abutments and is probably wrought iron due to its pre-1885 construction date. A KYDOT project to replace this structure on a different alignment is still in the planning phase.



This 1881 bridge by the King Bridge Company in Marion County is the oldest Whipple-Murphy, or double-intersection Pratt, truss in Kentucky. (SF #16)

(5). The River Bridge near Frozen Creek in Breathitt County (SF #51) is another Whipple-Murphy truss built by an early local railroad and later converted to highway use. This structure was built by the Jackson-Index Railroad in 1906, was taken over by the county in 1935 to avoid its destruction, and purchased by the Kentucky Bureau of Highways in 1957. The structure is 188 feet in length, uses die-forged eyebars, solid metal plate compression members, and is structurally sound with a sufficiency rating of 60.5/100.



End panel of River Bridge, a 1906 Whipple-Murphy truss in Breathitt County built by the Jackson-Index Railroad. This detail view clearly shows the second diagonal extending past the intermediate post to the next panel. (SF #51)

7. Camelback Trusses

A camelback truss is a Pratt truss with a polygonal top chord that has, including the end posts, exactly five slopes. The change in slope on the top chord may occur at the first, second, or third top chord panel point. The polygonal top chord of the camelback truss affords greater strength and allows longer span lengths than the Pratt through truss. There are 31 camelback trusses in Kentucky. Most of these structures were built between 1901 and 1920 and 84% are pin-connected. The average length of these spans is 150 feet with the shortest example measuring 130 feet and the longest 200 feet. The two following camelback truss bridges appear to be eligible to the National Register.

(1). The Champion Bridge Company built a rare multi-span camelback truss in 1904 over Beech Fork of the Chaplin River in Nelson County (SF #20). This structure rests on rough cut stone piers, has spans of 166 feet and 161 feet, retains the original guardrailing, and utilizes loop-welded eyebars.

(2). The Saxton Bridge in Whitley County was built by the Champion Bridge Company in 1917 and is a good example of changes in truss technology in the early 20th century (SF #57). The main span is a 150 foot pin-connected camelback truss, an advancement over the pin-connected Pratt through truss. The main span is flanked by two 60 foot Warren pony trusses that exhibit rivet-connections, a practice of growing popularity in the 20th century.

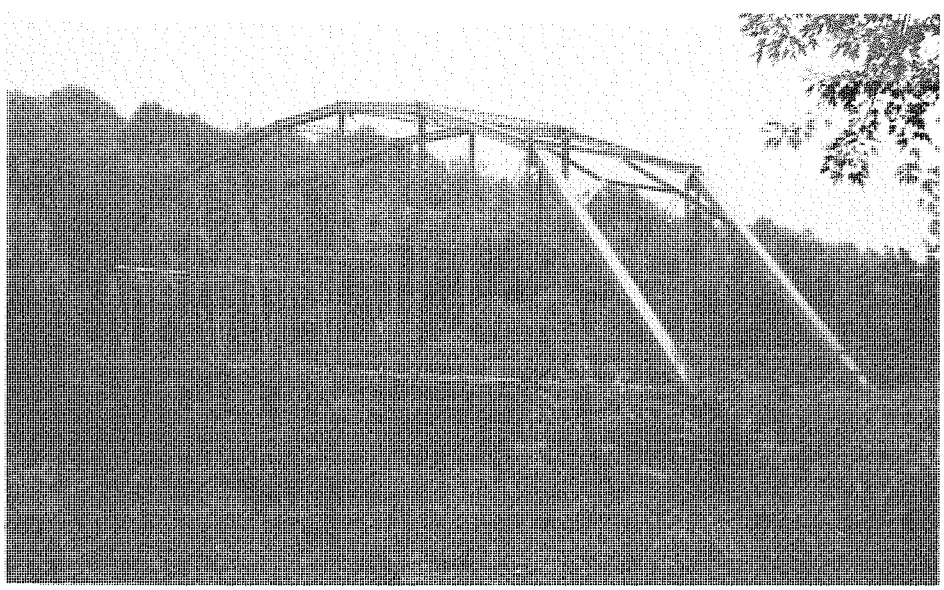
8. Parker Trusses

A parker truss is a Pratt through truss with a polygonal top chord of more than five slopes. In Kentucky, the parker truss was constructed between 1905 and 1940. Most of the 33 parker trusses still on the highway system were built between 1927 and 1936 by the Kentucky Department of Highways. During this period, few pin-connected trusses were being constructed and 88% of the parker trusses in Kentucky use riveted connections. Four of the earlier parker trusses are pin-connected. The following three parker trusses appear to meet the National Register criteria.

(1). The longest pin-connected parker truss in Kentucky is located in Pike County and crosses the Tug Fork of the Big Sandy River between South Williamson, Kentucky, and Williamson, West Virginia (SF #67). This span measures 225 feet in length. Two metal King post pony trusses complete the 318 foot bridge length.

(2). The Middle Bridge in Pikeville was built by the Champion Bridge Company of Wilmington, Ohio, in 1908 (SF #68). This crossing consists of a 200 foot long pin-connected parker truss and two pin-connected Pratt through trusses of 105 feet and 140 feet. Pin-connected through trusses are rare in eastern Kentucky.

(3). A pin-connected parker truss in Nelson County is located in a serene rural setting two miles southeast of the small community of Chaplin (SF #19). This structure is 200 feet in length, has a roadway width of 15.7 feet, uses die-forged eyebars, and has rolled channel sections from the Illinois-USA foundry.



General elevation view of one of four pin-connected parker trusses in Kentucky. A parker truss is a Pratt through truss with a polygonal top chord of more than five slopes. The parker truss is a stronger structure capable of carrying greater loads across longer spans. (SF #19).

9. Pennsylvania and Baltimore (Petit) Trusses

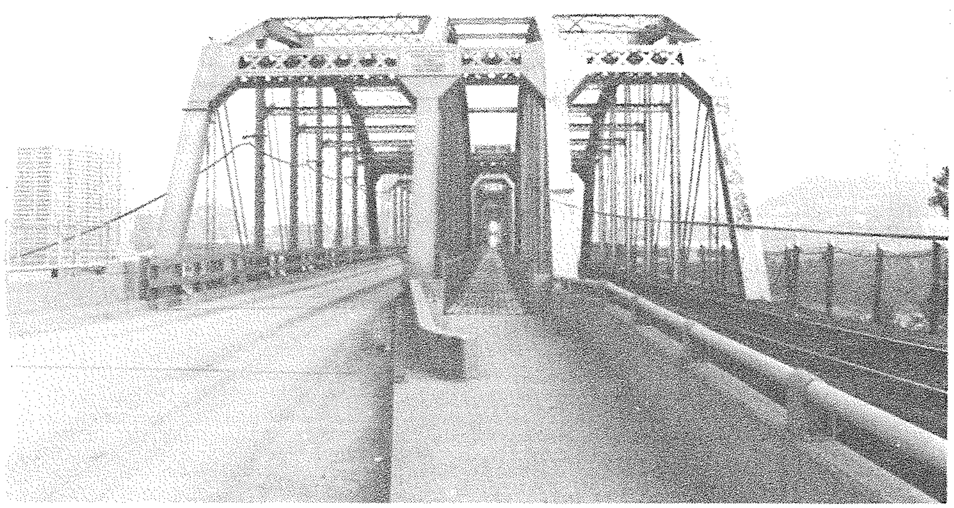
The Pennsylvania and Baltimore trusses are also modifications of the basic Pratt truss. The Baltimore truss, first introduced in 1871, adds sub-struts and/or sub-ties to the basic Pratt form with parallel top and bottom chords. The Pennsylvania truss, first introduced in 1875, has sub-struts and/or sub-ties with an arched top chord. The addition of sub-struts and sub-ties strengthened the truss as a response to the increased size, weight, and speed of locomotives in the latter part of the 19th century. These bridge types are named for their extensive use by the Baltimore and Ohio and the Pennsylvania Railroads.

There are eight Pennsylvania truss bridges on Kentucky highways ranging in length from 200 feet to 715 feet. Four of these trusses are pin-connected. There are six Baltimore trusses on the Kentucky highway system ranging in length from 150 feet to 240 feet. One of the Baltimore trusses is pin-connected.

One of the fourteen Pennsylvania and Baltimore petit truss bridges on Kentucky highways has already been placed on the National Register and a second has been determined eligible. Of the remaining twelve, five appear to be of National Register significance. Following is a description of the seven structures that have been determined eligible or appear eligible to the National Register.

(1). The oldest Pennsylvania truss in Kentucky is the Singing Bridge in Frankfort (SF #23). This bridge was built by the King Bridge Company of Cleveland, Ohio, in 1893. The Singing Bridge is 406 feet in length, has die-forged eyebars, rolled I-beam floor system, and a "singing" metal mesh deck surface. This structure is located in the Frankfort Commercial Historic District and was placed on the National Register on May 10, 1979.

(2). The Newport and Cincinnati Bridge in northern Kentucky is the only bridge in the state designed for dual highway/railroad use (SF #29). This bridge is made up of one 510 foot long Pennsylvania truss main span and four 202 foot parker truss spans. The highway and railroad bridges were built in 1896, and except for the floor system, are of the same design and materials.



"Barrell shot" view of the sidewalk on the only highway/railroad bridge in Kentucky. This 1896 five span mixed Pennsylvania-parker truss bridge connects Newport, Kentucky, and Cincinnati, Ohio. (SF #29)

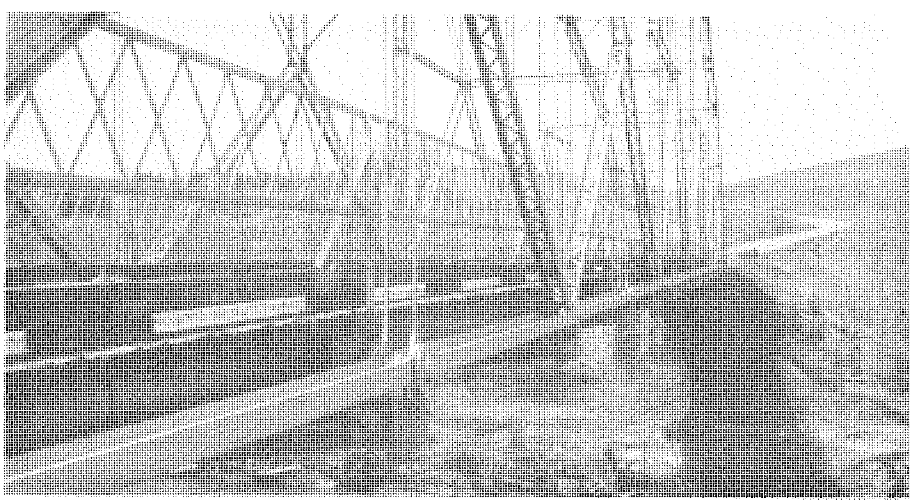
(3). The Irvin Cobb Memorial cr Brookport Bridge over the Ohio River at Paducah incorporates 14 metal trusses and was the longest bridge in Kentucky when built in 1929 (SF #2). This structure has ten Pennsylvania trusses and four Warren pony trusses with 15 approach spans and is 5340 feet in length. The Brookpost Bridge creates a strong visual impact and is a reconizable landmark on the Ohio River.

(4). Two bridges in Kentucky appear to be transitional designs between the camelback truss and the Pennsylvania petit truss. These trusses have a top chord of five slopes, a characteristic of camelback trusses, and also use sub-struts or sub-ties for added strength, a characteristic of the Pennsylvania petit truss. A 299 foot long span over the Cumberland River in Williamsburg, Whitley County, is a very tall camelback-Pennsylvania truss (SF #61). This bridge rests on rough cut stone piers, has die-forged eyebars, and heavy plate girder floor beams.

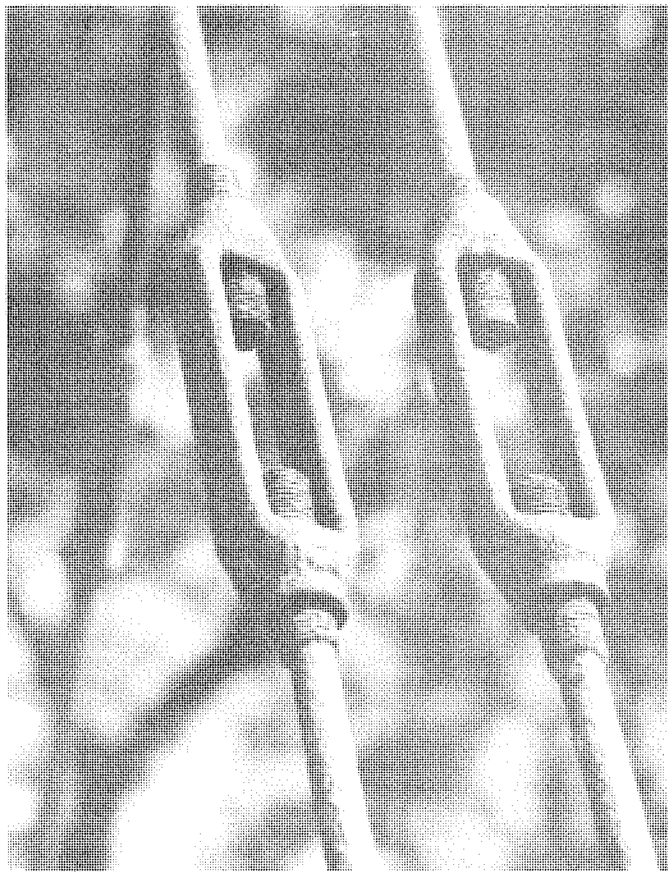
(5). The Starnes Bridge in Grant County, determined eligible to the National Register on December 19, 1980, is a 200 foot long camelback-Pennsylvania truss built by the King Bridge Company in 1890. It is interesting to note that this truss and two secondary trusses on the Central Bridge (SF #30) are camelback-Pennsylvania trusses built by the King Bridge Company in 1890. However, the Singing Bridge (SF #23), built three years later by the same company, is a typical Pennsylvania truss with a top chord of more than five slopes.

(6). The only pin-connected Baltimore truss on the Kentucky highway system is a 169 foot span in Frankfort (SF #24). This truss rests on rough cut stone abutments and piers, has die-forged eyebars, and changes from four to eight eyebars on the bottom chord in the center panels.

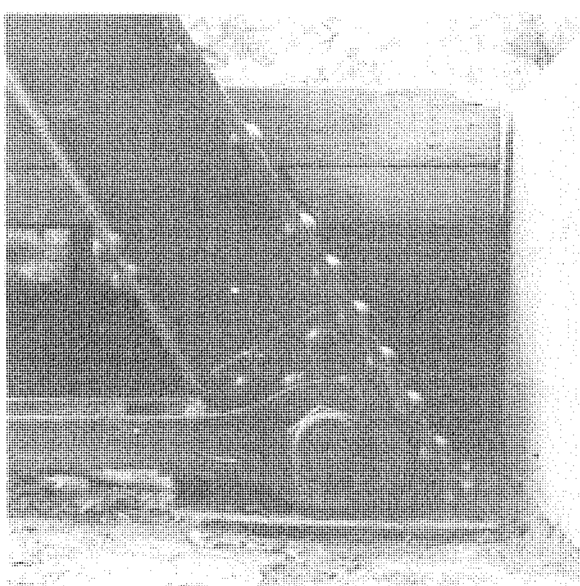
(7). The Vincennes Bridge Company of Vincennes, Indiana, built three Baltimore trusses in Harlan County during 1924. These trusses reflect the 1920's eastern Kentucky boom in coal, growth of the railroads, and ever increasing weight loads. The longest of these three 1924 bridges (SF #56) is a 240 foot span at Loyall that also has the highest structural rating (58.9/100). This span crosses the Cumberland River and is adjacent to an abandoned reinforced concrete deck girder bridge.

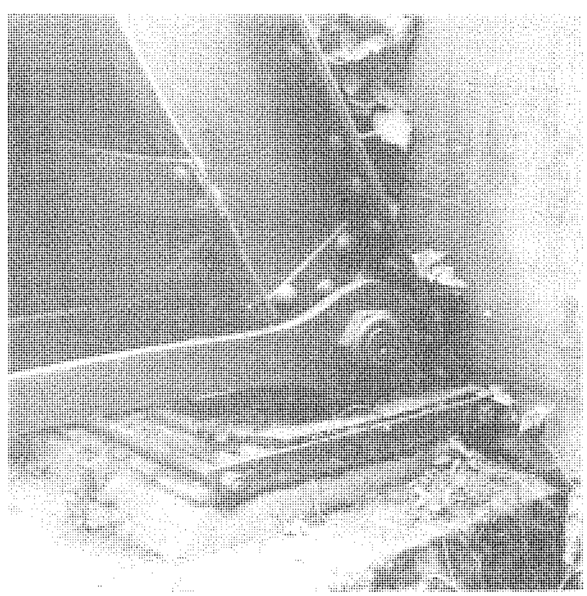


Deck level view of "Starnes Bridge" over Eagle Creek in Grant County. Note the die-forged eyes in the bottom chord eyebars. This truss appears to be a transitional design as it has a five slope top chord (camelback truss element) and sub-struts (Pennsylvania or Baltimore Petit element). (SF #31)

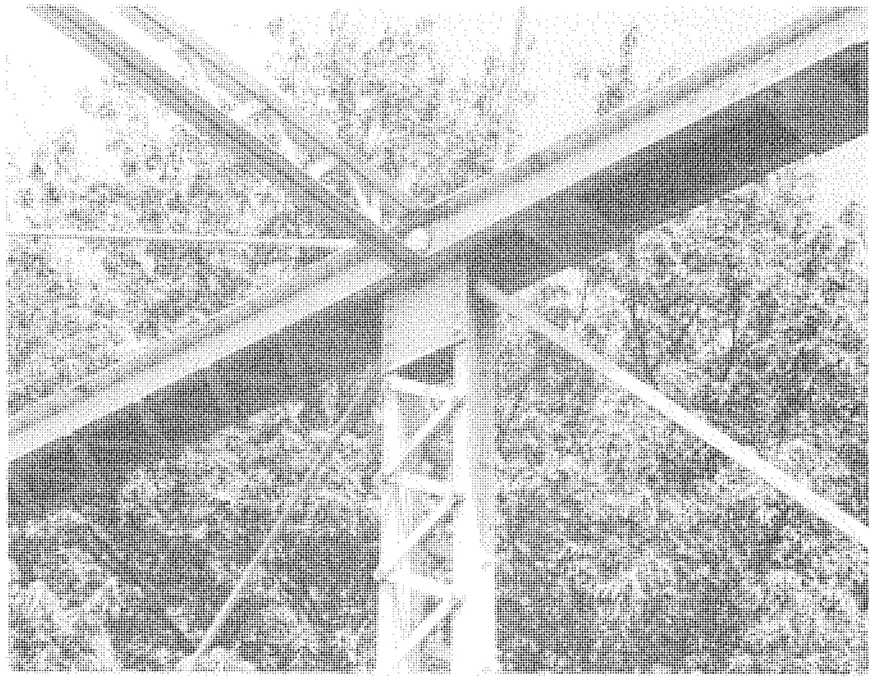


Detail view of turnbuckles used for field adjustment of round rod eyebar counters. Eyebars have threaded upset ends. (SF #38)





Bearing devices on a Meade County Whipple-Murphy truss. In a truss, one end must be able to move in response to temperature and load changes to act on the compression posts and lower chord. A bridge with rigid ends would act as an arch. At left is a fixed bearing plate and at right is a roller rest expansion bearing plate. (SF #17)



Detail view of top chord pin-connection on Pratt through truss built by the Champion Bridge Company. Intersection of paired angle/lacing bar top lateral strut, two channel/lacing bar intermediate post, rectilinear eyebar diagonal and square eyebar counter. (SF #32)

View of floor system showing corrugated metal deck, wood stringers, plate girder floor beams, and round rod bottom lateral bracing. Supports 1883 Pratt through truss by Smith Bridge Company. (SF #27)

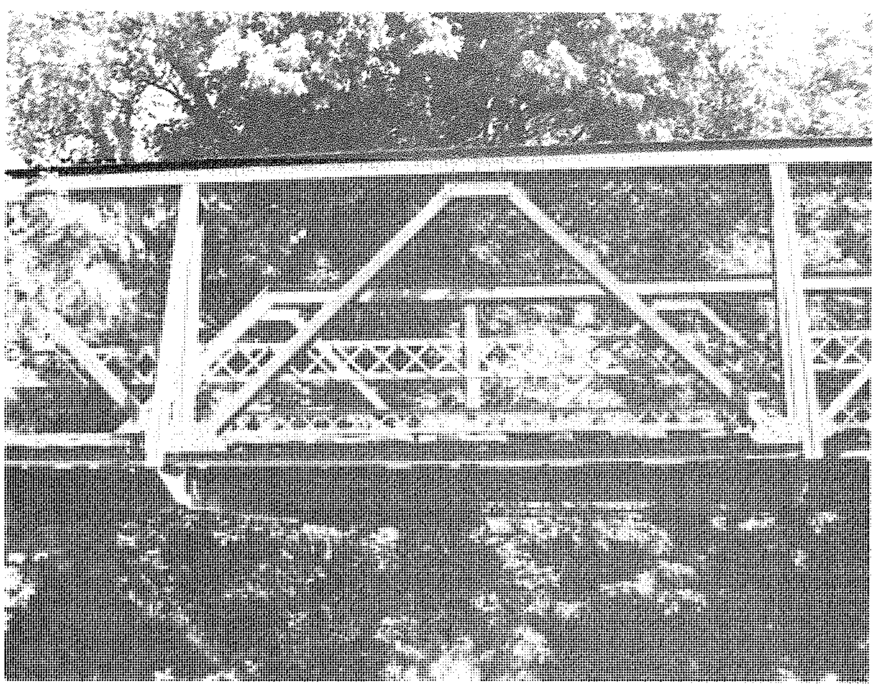
B. WARREN TRUSSES

The Warren truss is named after James Warren, one of two British engineers who first patented this truss type in 1848. The Warren truss has diagonal web members that are alternately placed in compression and tension as a load passes. Vertical members on some Warren trusses provide bracing. The vertical members can be rigid compression posts to stiffen the top chord or hangers in tension to help support the deck. A Warren truss has no counters.

The quadrangular, or Warren double-intersection, truss uses two intersecting web systems and may also be found with or without vertical members. A Warren truss is readily identified by its triangular web and a quadrangular truss by its diamond web outline.

1. Warren Pony Trusses

All of the 82 Warren pony trusses in Kentucky were constructed with riveted panel point connections. The longest Warren pony truss is 105 feet in length, the shortest is 36 feet, and the average length is 59 feet. Many of these structures were built after 1920 but suprisingly none are identified as State Department of Highways projects. Some of the early trusses were constructed of paired and single angle bars. A few of the later Warren pony spans were constructed entirely of channels or I-beams. None of the Warren pony spans have eyebar members (tension only) in their construction. One Warren pony bridge appears to meet the National Register criteria.

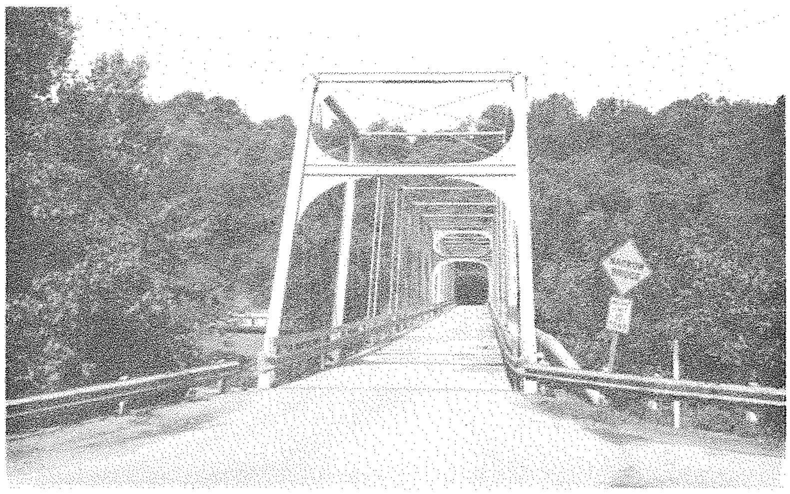


One panel of a Warren pony truss. The diagonal members alternately act in compression then tension as a load passes. Verticals and outriggers are for bracing and cut the unsupported length of the top chord between diagonals in half. (SF #8)

(1). A 75 foot long bridge in Webster County is one of two remaining Warren pony trusses in Kentucky built by the Vincennes Bridge Company of Vincennes, Indiana. This riveted truss was built on a skew and is founded on concrete abutments (SF #8).

2. Warren Through Trusses

There are 30 Warren through truss bridges on the Kentucky highway system. The average length per span on these bridges is 222 feet. The longest span is a riveted truss 500 feet long and the shortest span is a pin-connected truss measuring 78 feet in length. Sixty-five percent of these bridges have riveted connections at top and bottom chord panel points. Ten of the 13 riveted Warren through trusses have a polygonal top chord for greater strength and longer span lengths. Six of the ten structures with polygonal top chords apparently were built by the Kentucky Department of Highways. The only pre-1930 riveted Warren through truss was built by the American Bridge Company in 1920 for a railroad in eastern Kentucky. It was later converted for local highway traffic. Several of the seven pin-connected examples were also apparently built for railroads and converted to highway use. The following two Warren through trusses appear to be eligible to the National Register.

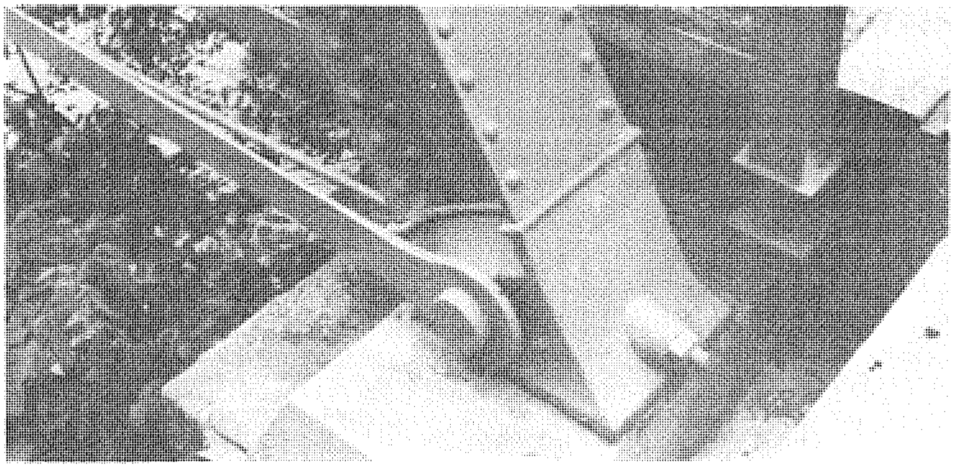


Clays Ferry Bridge, built in 1869, consists of two 217 foot Warren through truss spans and is the earliest metal truss on the Kentucky survey. (SF #40).

(1). The oldest verified metal truss bridge in Kentucky is the Clays Ferry Bridge, a Warren through truss in Fayette County. This 443 foot long structure has two 217 foot spans that were constructed over the Kentucky River 15 miles south of Lexington in 1869. This bridge has 12 inch diameter eight-sided tubular cast iron top chords, die-forged eyebars, and a rolled I-beam floor system (added in 1929). The first three diagonal members not parallel to the end posts are two eyebars that act in tension only. This structure rests on rough cut stone abutments and pier. (SF #40)

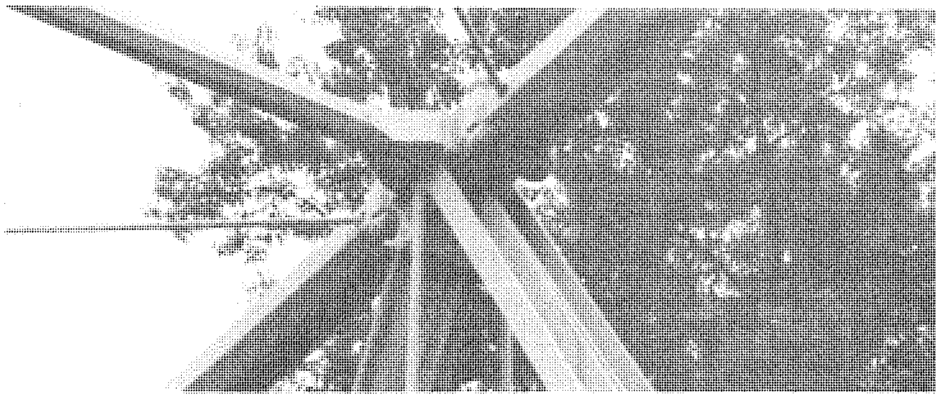
The Clays Ferry Bridge is located on an important north-south transportation route that has historical roots in the 18th century. The first license for operation of a ferry at this site was granted in 1792 to Valentine Stone. The ferry and property was purchased by Green Clay in 1798 and has been known as Clays Ferry to this day. The property eventually passed to Cassius M. Clay, the noted Abolitionist, editor, orator and statesman. He sold the property to the Richmond and Lexington Turnpike Company who built a macadam road, completed in 1835, between Richmond and Lexington. The ferry continued until 1869, when the present cast and wrought iron bridge was built.

The Clays Ferry Bridge was built and operated as a toll bridge. The railroad between Richmond and Winchester, built in 1886, later reduced operation of the toll bridge. Tolls on the bridge were removed in 1897 and the structure was sold at auction in 1906 for $4,755. The 1920's boom in auto traffic turned the bridge into a goldmine and the net income from bridge tolls in 1924 was $30,000. The Commonwealth of Kentucky purchased the bridge in 1929 for $200,000, reinforced the structure for heavy traffic, and built new approaches on both sides of the river. It took only 20 months to collect the $200,000 purchase price and then the toll gate was removed.

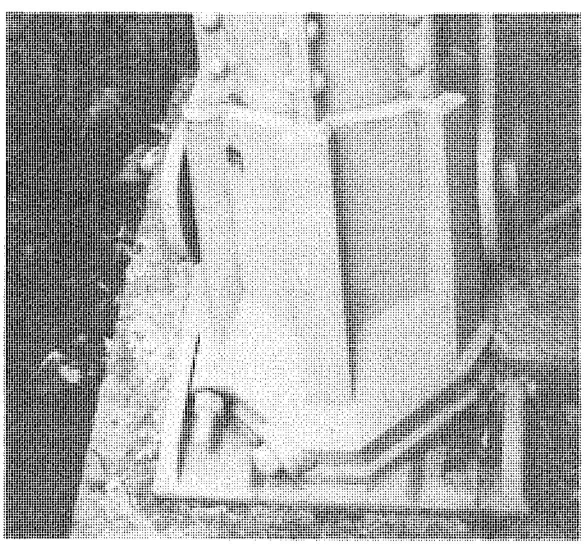


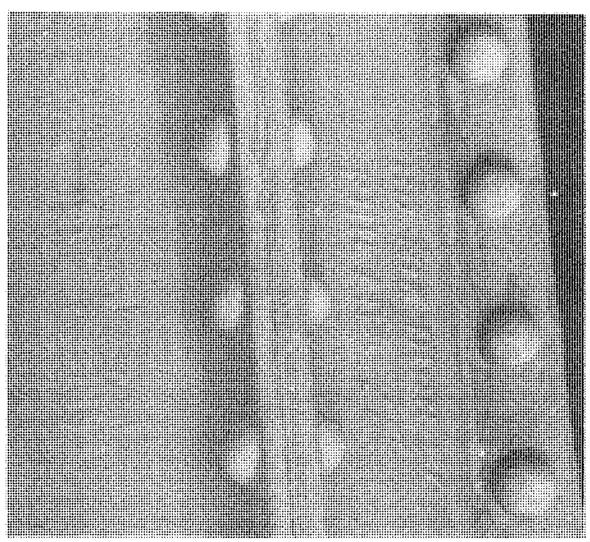
Fixed bearing plate on 1869 Warren through truss. Die-forged eyebar bottom chord is pin-connected to cast iron bearing shoe. (SF #40)

(2). The Four Mile Bridge in Bell County is a Warren through truss span built by the Louisville Bridge and Iron Company of Louisville, Kentucky, in 1873 (SF #54). This structure is 208 feet in length and uses patented (June 17, 1862 and June 9, 1863) Phoenix columns from the Phoenix Iron Company of Philadelphia, Pennsylvania.



Detail view of top chord panel point on the Four Mile Bridge, an 1873 Warren through truss. The eight-sided tubular cast iron top chord is sectional and bolted at each panel point. Diagonals are Phoenix columns (compression and tension forces) and four eyebars (tensive forces only). Vertical member is two eyebars for bracing. (SF #54)





Detail views of eight-sided Phoenix column end post and cast iron shoe on 1873 Warren through truss. Curved sections on riveted Phoenix column by "Phoenix Iron Co., Philadelphia, Pennsylvania, Pat. June 9, 1863." (SF #54)

End perspective of Four Mile Bridge over Cumberland River in Bell County. This 1873 Warren through truss has cast iron top chords and eyebar diagonals, factors that made early Warren through trusses susceptible to failure. (SF #54)

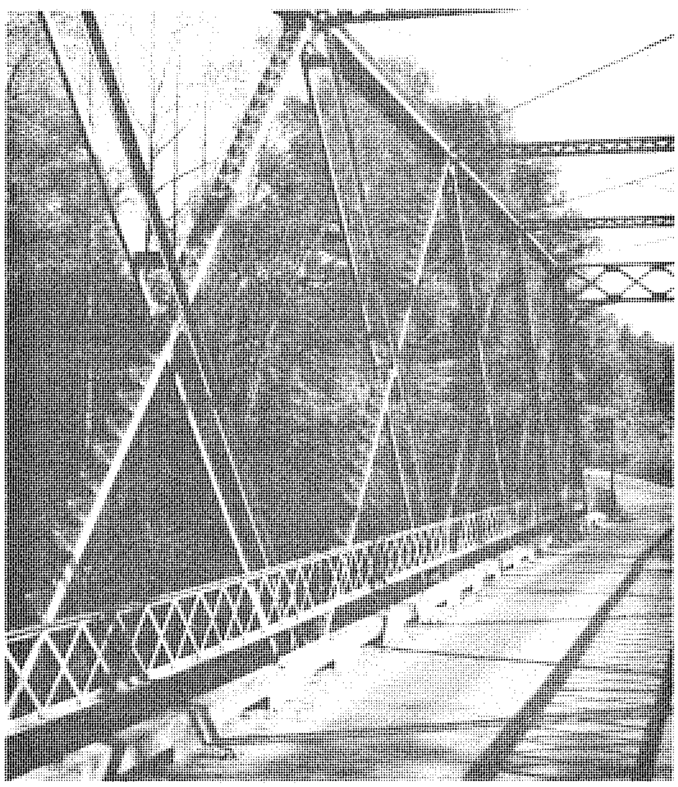
The unique top chords on this bridge are sectional eight-sided tubular cast iron columns bolted at each panel point. The unusual floor system has small pin-connected truss floor beams for lighter weight and greater strength. This structure has eyebar diagonals and verticals that act in tension but not compression, a characteristic of some early Warren through trusses.

View of floor system on 1873 Warren through truss. The unusual truss floor beams are designed to be lighter and afford greater strength than solid floor beams. (SF #54)

3. Quadrangular or Double-Intersection Warren Trusses

Only three quadrangular truss bridges are found on the highway system of Kentucky. All use riveted panel point connections and likely date post-1900. The longest truss is 117 feet in length and the shortest measures 108 feet. The following two quadrangular trusses appear to meet the National Register criteria.

(1). The only dated quadrangular truss encountered on the survey is the 1907 bridge in Whitley County, built by the Capitol Construction Company of Columbus, Ohio (SF #60). The diagonal members of this truss, like the other quadrangular examples, offer an interesting comparison. The diagonal members on a Warren truss must act in compression and tension in supporting the dead load (bridge weight) and live load (traffic) of bridge work. However, on the quadrangular trusses, these diagonal members are not identical in design (or function) within the web system. Diagonal members parallel to the nearest end post are larger and more rigid than the diagonal members not parallel to the end post. Compression members must be a sturdy rigid design but tension members can be flexible. On the quadrangular truss, the stronger built diagonals are designed to support the deal load of bridge weight acting in compression. These members are also capable of acting in tension and reverse from compression-tension under live loads. The lighter built and more flexible diagonals probably act mainly in tension under dead load and only in tension under live load work.

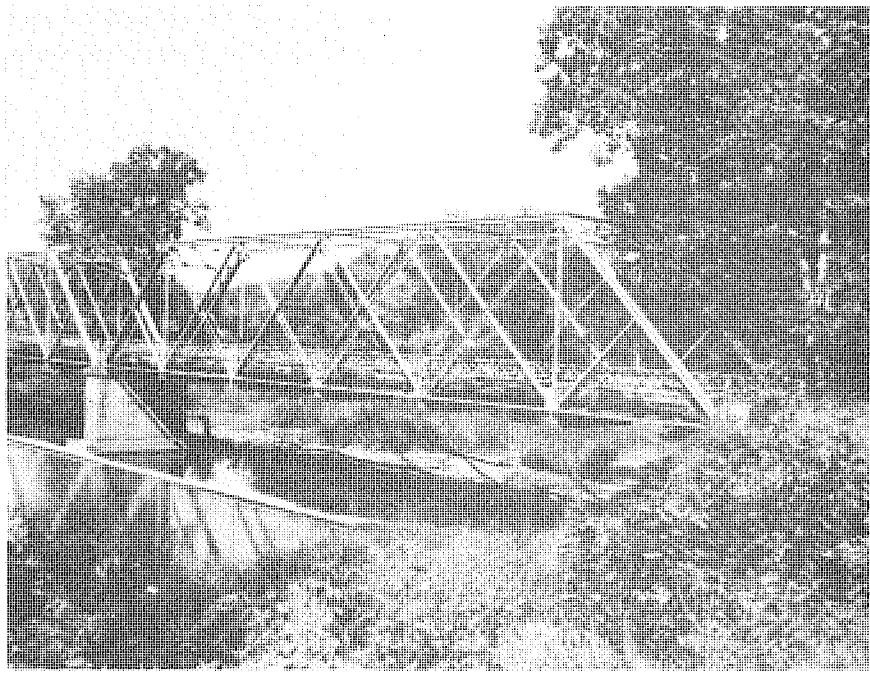


Detail view of quadrangular Warren truss diagonal members that act in compression and tension. Heavy rigid members parallel to the nearest end post are designed mainly for compressive forces while members not parallel to end posts are more flexible and act mainly in tension. (SF #60)

(2). A two span quadrangular truss bridge in Trimble County is one of the most distinctive and attractive bridges in the Kentucky survey (SF #26). The unique diamond outline of this bridge, below an old mill dam on the Little Kentucky River, creates an idyllic backdrop at this popular trout fishing spot. The two 109 foot long riveted spans have a floor system of rolled I-beam floor beams with large wood beam stringers supporting a wood deck.

4. Warren Deck Trusses

There are seven bridges in Kentucky that use the Warren deck truss as the main span. On a number of bridges, short Warren deck trusses will flank a long Pennsylvania or Warren through truss. The seven exclusive Warren deck spans average 189 feet in length with the longest example measuring 360 feet and the shortest 100 feet. All seven are rivet-connected and none are considered eligible to the National Register of Historic Places.



General elevation view of a two span quadrangular or double-intersection Warren truss bridge. Two intersecting triangular Warren webs create the distinctive diamond outline. (SF #26)

Detail floor system view showing rolled I-beam floor beam with wood stringers on top. Note round rod bottom lateral bracing passing through and bolted to the floor beam flange. (SF #26)

C. OTHER BRIDGE TYPES

1. Suspension Bridges

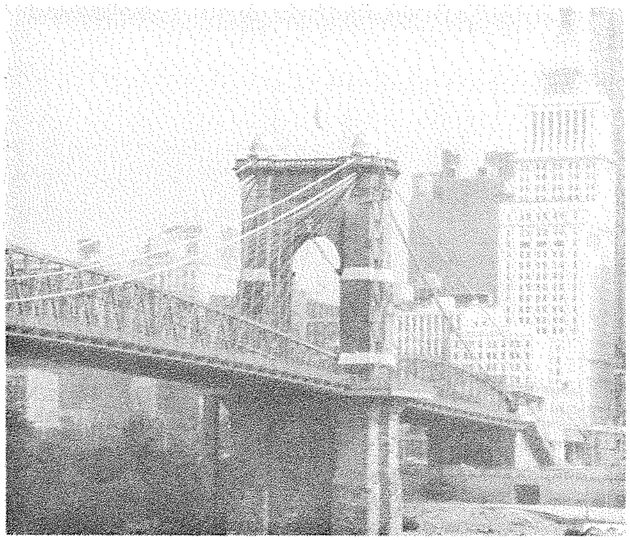
On a suspension bridge with towers, the tower is the only member that acts in compression to perform the dead and live load bridge work. The towers support the main cable (a tension member) which passes over the tower and is anchored on each end of the bridge. The deck is supported by tension hangers suspended from the main cables. On large suspension bridges, a stiffening truss is usually placed on or below the deck to evenly distribute moving loads along the length of the bridge. A stiffening truss also serves to stabilize the bridge in high winds.

Suspension bridges are relatively simple structures that use few materials for members and thus allow low transportation and erection costs. In mountainous eastern Kentucky, the lower erection costs and ease of transportation of construction materials led to the distinctive "swinging" bridge for small vehicle and pedestrian crossings. These bridges will support only light loads that "swing" in passage because no stiffening truss is used for the deck. These bridges were once numerous but are rapidly disappearing from our cultural heritage.

There are seven KYDOT maintained suspension bridges in Kentucky. The two longest spans are the Covington-Cincinnati Suspension Bridge (SF #34) at 1647 feet and the 1990 foot long Maysville-Aberdeen bridge which was built by the State Highway Commission in 1931. Five swinging suspension bridges remain in eastern Kentucky and range in length from 326 feet to 493 feet. The following four suspension bridges are either on or considered eligible to the National Register.

(1). The Covington and Cincinnati Suspension Bridge, placed on the National Register on May 15, 1975, was the first permanent bridge over the Ohio River in Kentucky and was the longest suspension bridge in the world when it was completed in 1866 (SF #34). Discussion for a bridge between Covington and Cincinnati began as early as 1815, but it was not until 1855 that the Covington and Cincinnati Bridge Company was formed.

The Covington-Cincinnati Suspension Bridge was designed and built by the noted engineer and architect John Roebling. When completed in 1866, it was the longest suspension bridge in the world. (SF #34)



View of Cincinnati and north tower of the Covington-Cincinnati Suspension Bridge over the Ohio River. Stone for the towers was quarried in Portsmouth by the Buena Vista Stone Company and floated downstream to the erection site. (SF #34)

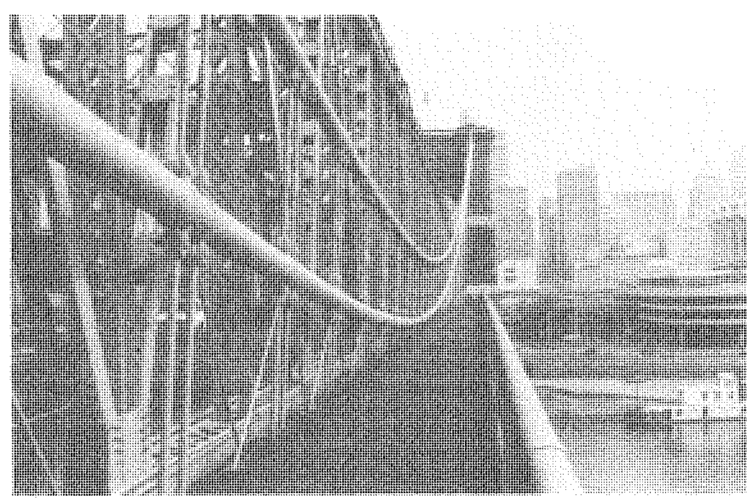
Amos Shinkle, a prominent businessman, was the prime mover and president of the Covington and Cincinnati Bridge Company. The bridge company chose the noted engineer and architect John Augustus Roebling to design and build the bridge. Construction on the bridge began in 1855 and the structure was opened amid great fanfare on December 1, 1866.

The contribution of John Roebling to bridge building is widely recognized and it has been said of him that:

> Roebling had the determination, patience, and organizing ability of the good construction engineer; at the same time, being a trained mathematician, he was capable of working out theoretical problems of bridge designing. But more important still, Roebling had the prophetic vision and unswerving conviction of the true innovator.[24]

The earliest suspension bridges were strung with cast iron chains which beyond a certain length, parted under their own weight. Roebling was the first manufacturer of wire cables in this country and became the designer and builder of the first modern suspension bridges. The other notable contribution to the design of suspension bridges by Roebling was the addition of a stiffening truss below the roadway. This distributes the weight of moving loads along the bridge and is used to steady the bridge against strong winds.

The only other remaining suspension bridge designed by John Roebling is the famous Brooklyn Bridge over the East River in New York City. Work began on this structure in 1869, but a fatal accident during construction ended his life. His son, Washington Roebling, had worked closely with him for many years and was named the new chief engineer. This monumental structure was not completed until 1883.



Sidewalk view of the two 12 1/2 inch diameter main cables on the 1866 Covington-Cincinnati Suspension Bridge. These cables are woven of 5,200 #9 (1/8 inch) wires. (SD #34)

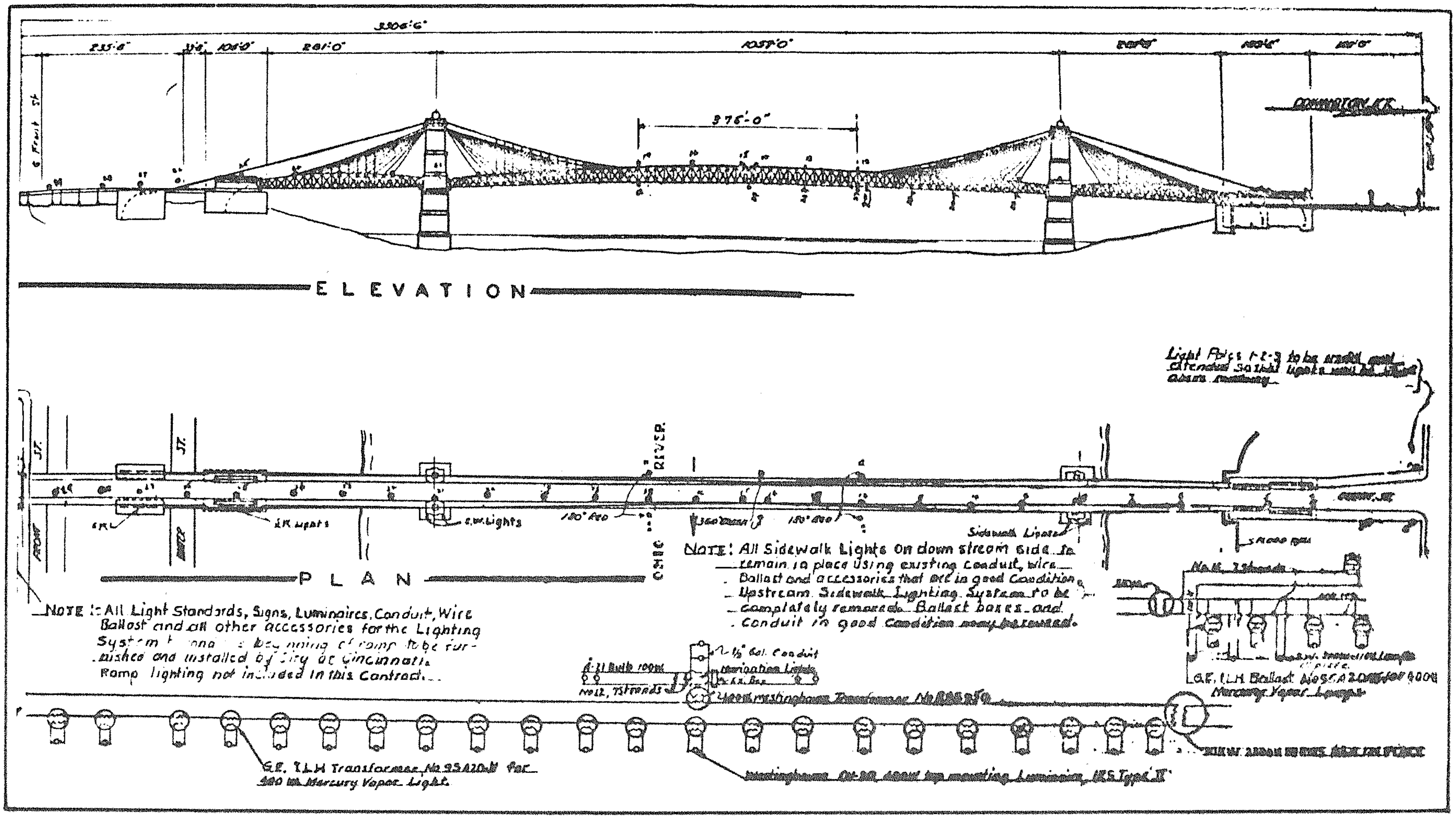


EXHIBIT 10

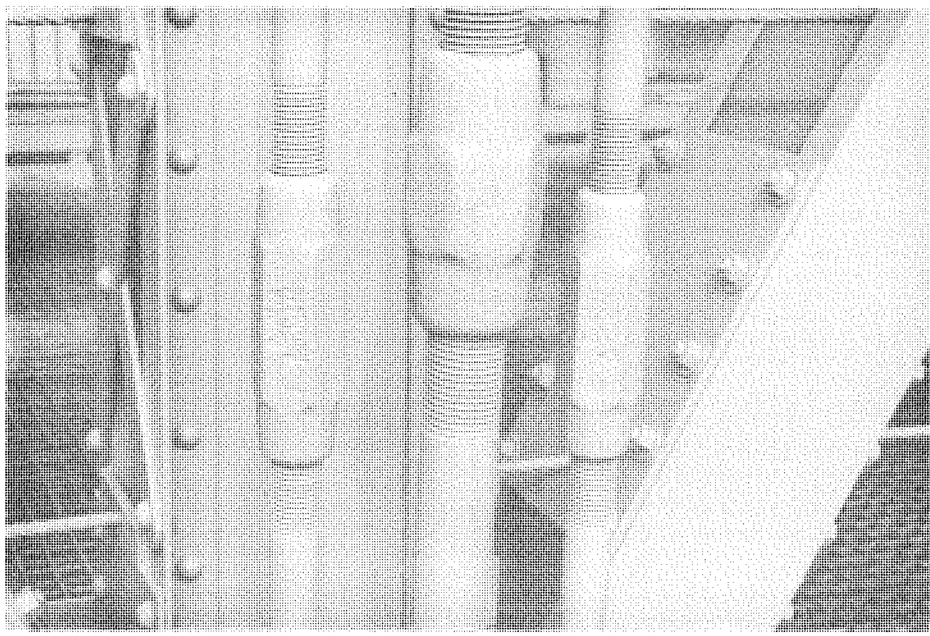
MAINTENANCE PLAN FOR INSTALLATION OF LIGHTS ON COVINGTON - CINCINNATI SUSPENSION BRIDGE

Source: Kentucky Department of Transportation
Bridge Maintenance Files

The Covington-Cincinnati Suspension Bridge has a main through span length of 1057 feet and two anchor spans 295 feet in length. The stone for the towers was quarried far upstream near Portsmouth, Ohio, by the Buena Vista Stone Company and floated downstream.

In 1896-97, at the close of the horsedrawn era, the bridge was rebuilt to handle new requirements. Tracks for new electric streetcars were added, and the roadway was raised and doubled in width. New anchorages were built and the two wrought iron main cables were matched with two new steel cables. In 1902, the gas lamps on the bridge were replaced by electric lights. (See Exhibit 10)

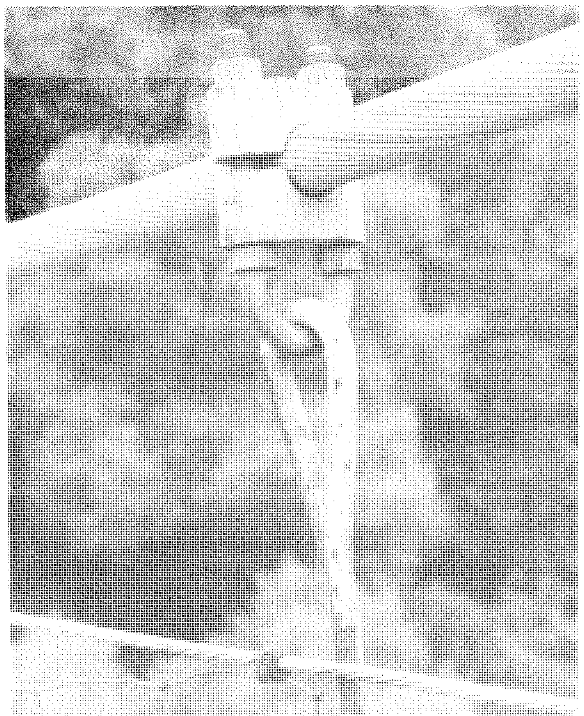
The three metal stiffening trusses that carry traffic were also added at the end of the century. These trusses are supported by suspenders or hangers between the main cables and the floor system of the trusses. The main cables are 12 1/2 inch in diameter and woven of 5,200 #9 (1/8 inch) wires. The hangers are wire ropes with adjustable stirrup ends or rectilinear and round bars with sleevenuts for adjustment. A metal mesh deck gives a "singing" effect to pedestrians on sidewalks flanking the roadway.



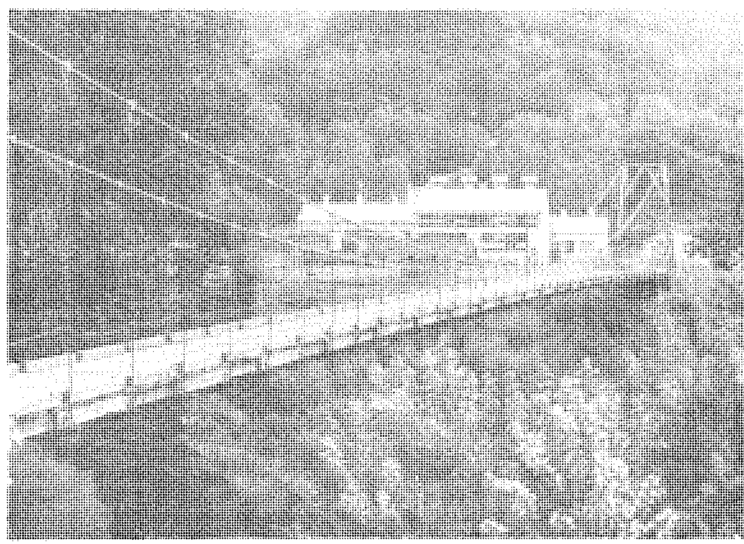
Detail view of adjustable sleevenuts on tension suspenders on the Covington-Cincinnati Suspension Bridge. "Edge Moor Pat D. Jan 1881" on sleevenuts and "Phoenix" on channels of the stiffening truss identify suppliers of materials for bridge construction. (SF #34)

(2). The oldest and most primitive of three swinging suspension structures considered eligible to the National Register is located at Tram in Floyd County (SF #65). This 382 foot structure has towers built of I-beams, channels, and angles. One anchorage is at ground level and the other is founded to a road cut face at nearly the same elevation of the tower saddle. The main cables of this bridge are wire ropes, which give and stretch more than parallel wire strand cables used on similar structures. The cable bands used to bind the hangers to the main cable are crude rod sections. The hangers bend over the main cable and form an eye or loop that accepts a threaded rod that passes under the cable and around the hanger. The structural sufficiency rating of this bridge is only 2.0/100.

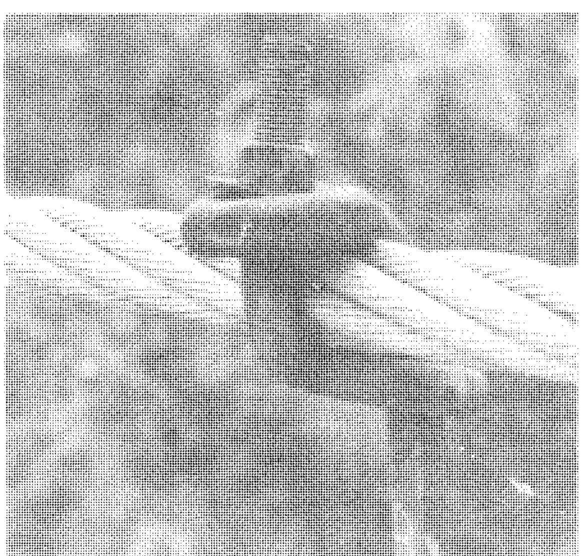
(3). A similar suspension span to the structure near Tram exhibits several material improvements. This 419 foot long bridge also crosses Levisa Fork (SF #69). The main cables on this bridge are parallel twisted wire strands rather than wire rope. The cable bands are threaded U-bolts with metal blocks that securely bind the main cable to loop-welded hangers.



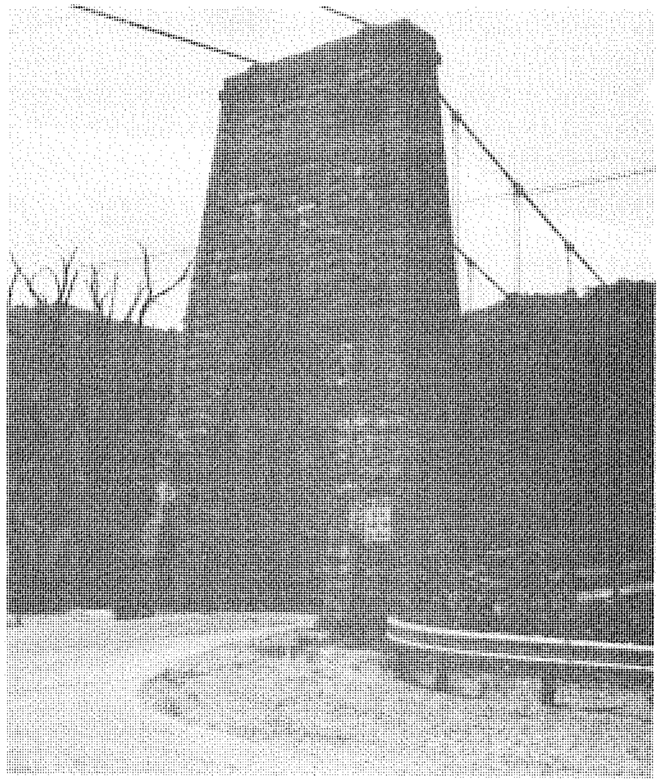
Detail view of cable connector on a "swinging" suspension bridge in Pike County. The main cable is parallel twisted wire strands, the cable band is a threaded U-bolt with metal blocks, and the hanger is a round rod loop-welded to the cable band. (SF #69)



Three-quarter view of 419 foot long "swinging" suspension bridge in Pike County. Once numerous, the "swinging" bridge was popular in mountainous eastern Kentucky because of low erection costs and ease of transport of building materials. (SF #69)



Detail view of cable connector on simple "swinging" suspension bridge in eastern Kentucky. Main cable is wire rope and cable band is formed by the hanger bending over the main cable and forming an eye or loop to accept a threaded rod that passes under the cable and around the hanger rod. (SF #65)



Rough cut stone tower of a 370 foot suspension bridge built by the WPA in 1938 at Pauley near Pikeville. This is one of five remaining "swinging" suspension bridges on the Kentucky highway system. (SF #70)

(4). The only swinging suspension bridge with rough cut stone towers in Kentucky is a 370 foot span built by the WPA near Pikeville in 1938 (SF #70). This bridge has wire rope main cables, massive concrete anchorages at ground level, U-bolt cable bands, and two round rods per panel for bottom lateral bracing. All of the swinging suspension bridges have rolled I-beam or channel floor beams, wood stringers, and wood plank decks.

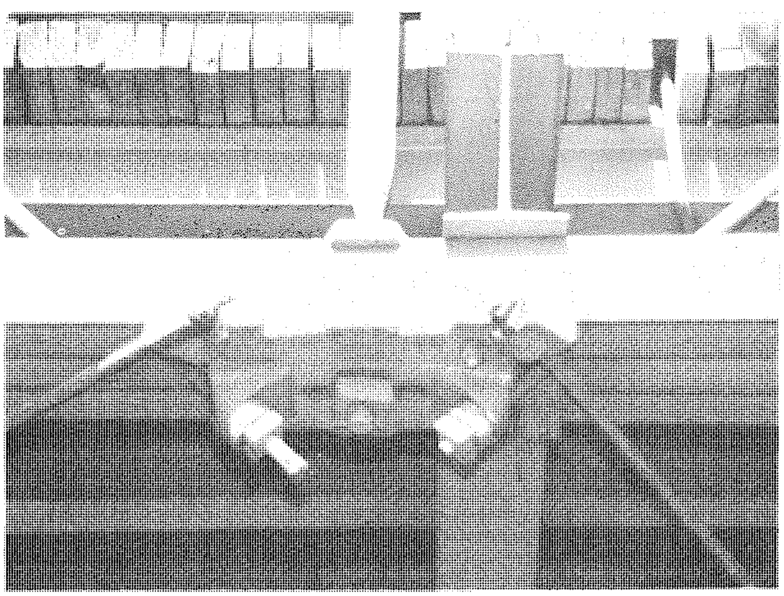
Detail of arch vault on the stone tower. WPA on keystone identifies builder of this suspension span. (SF #70)

2. Bowstring Arch Spans

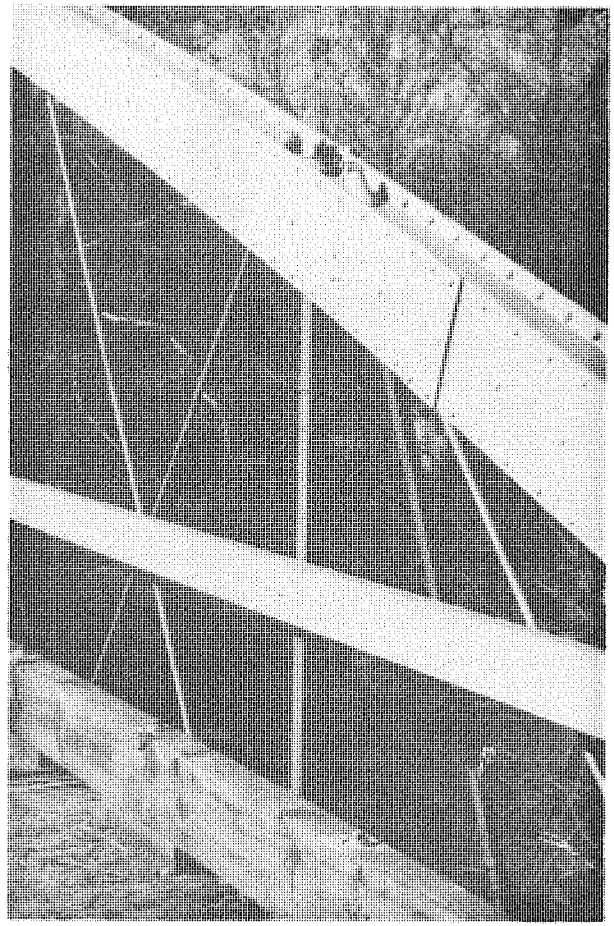
The first patent for the bowstring arch span was granted in 1841 to a civil engineer named Squire Whipple. In this structure, the arched top chord is anchored against the abutments and placed in compression. The deck is suspended from the arch by verticals placed in tension. The bottom chord also acts in tension while thin intersecting diagonal rods serve as bracing. The four bowstring arch bridges in Kentucky average 113 feet in length with a range from 59 feet to 148 feet. All four are considered eligible to the National Register and are briefly discussed as follows:

Interior view on the 148 foot long 1877 bowstring arch built by the King Iron Bridge Company next to Green Mill at Falls of Rough, Grayson County. (SF #14)

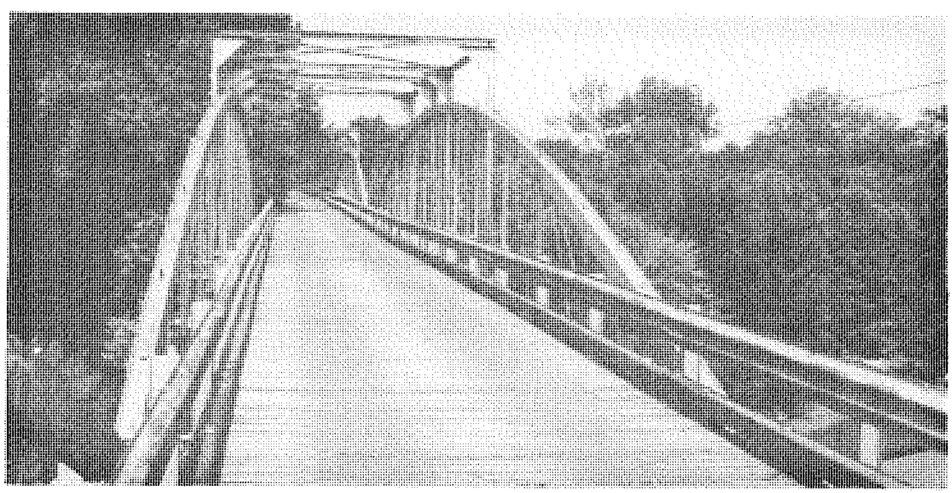
(1). The oldest bowstring arch bridge in Kentucky was built in 1877 by the King Iron Bridge and Manufacturing Company of Cleveland Ohio (SF #14). This 148 foot structure rests on rough cut stone abutments, has a bottom chord of four flat bars and cast iron connection blocks at the intersection of the bottom chord and verticals. This bowstring arch is located adjacent to historic Green Mill and is part of the Falls of Rough Historic District which was placed on the National Register of Historic Places on January 31, 1978.



Detail view of cast iron connection block on the bottom chord of a 1877 bowstring arch span. (SF #14)



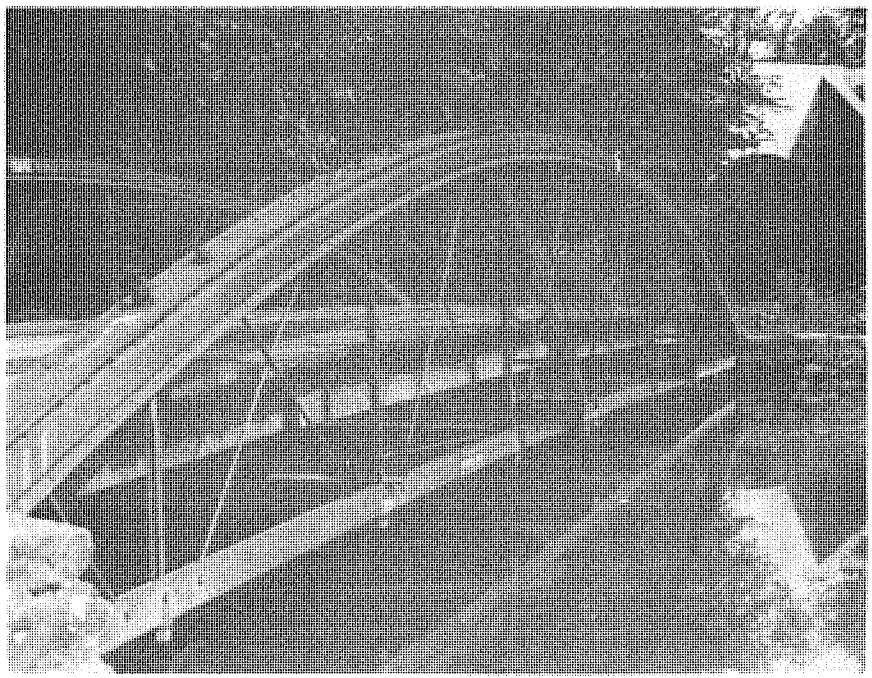
Detail of metal bowstring arch showing riveted butt joint on arch and vertical tension member and diagonal bracing members bolted on the top of the arch. (SF #14)



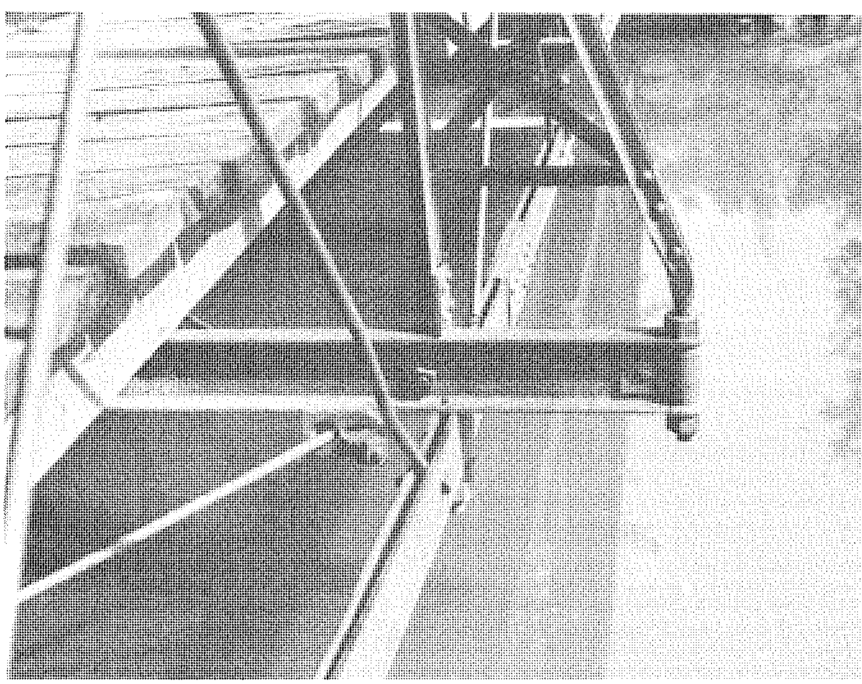
Roadway view of two spans of the three span 423 foot bowstring arch bridge over Barren River near Bowling Green. This bridge was built by the King Iron Bridge and Manufacturing Company of Cleveland, Ohio. The three panel bracing truss outside the arch is probably a later addition. (SF #12)

(2). A second bowstring arch bridge constructed by the King Iron Bridge Company is located near Bowling Green (SF #12). This 423 foot long bridge has three spans and rests on rough cut stone piers and abutments high above the Barren River. The arches are constructed of two channels and two plates in three sections per span. The two rectilinear bar bottom chords built in four sections have cast connection blocks at each bottom chord panel point. A three panel bracing truss outside the arch is probably a later addition.

(3). A pony bowstring arch span over Turtle Creek in Bracken County is located near the historic Ohio River town of Augusta (SF #28). This 58.8 foot long structure has an arch of four riveted plates, two rectilinear bar bottom chords in three sections, and bolted top and bottom chord connections. The floor system consists of rolled I-beam floor beams, wood beam stringers, and a wood plank deck.



Metal pony bowstring arch near Augusta in Bracken County. This 58.8 foot span rests on rough cut stone abutments. (SF #28)



Detail view of pony bowstring arch bottom chord, verticals, outrigger, and round rod bottom lateral bracing. (SF #28)

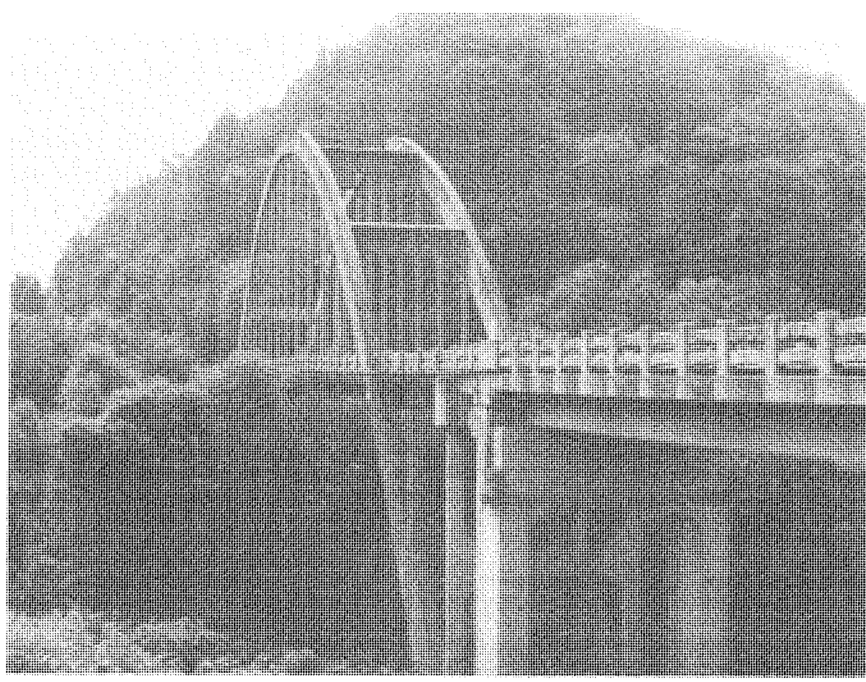
(4). The fourth bowstring arch in Kentucky is a two span structure in Hardin County (SF #15). These pony arch spans are 85 feet in length with a roadway width of 11 feet. This bridge rests on rough cut stone piers and abutments over the Nolin River. Each span has an arch of two channels and two plates, bottom chords of two rectilinear bars, and a wood deck supported by rolled I-beam stringers and floor beams.

3. Concrete and Masonry Arch Bridges

Cement concrete is a synthetic man-made stone that possesses high natural compressive strength but low tensile strength. When steel reinforcing rods are set into concrete the tensive strength is greatly increased and nearly equal to the compressive strength. Concrete can be molded into an infinite varity of shapes and has become a valuable bridge building material. The historic development of concrete arch bridges in Kentucky is exhibited by examples of massive deck arch, open spandral deck arch, and open spandral through arch bridges.

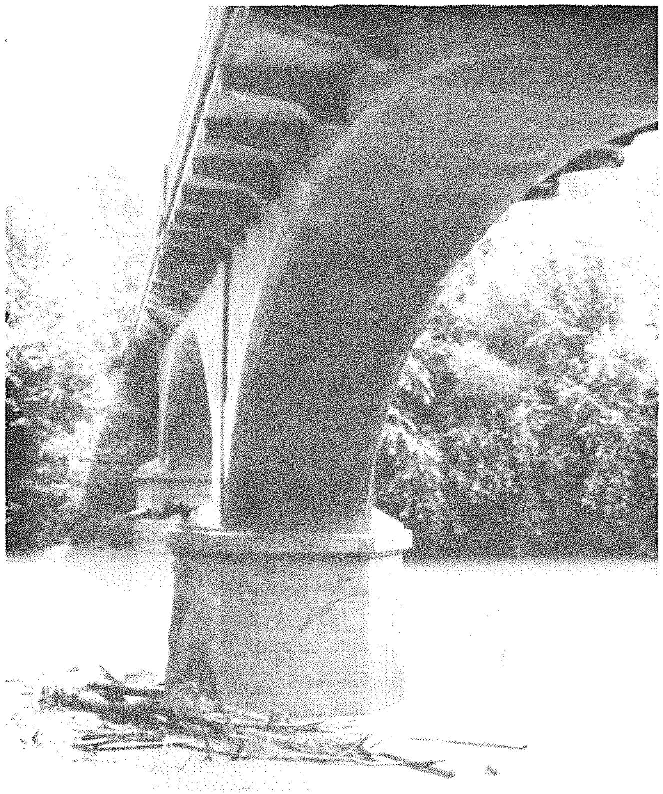
The average length of 41 concrete arch bridges found in Kentucky is 108 feet with the longest span measuring 302 feet and the shortest 20 feet. There are five open spandral concrete deck arches, one open spandral through arch, and 35 deck arches that range from massive arch spans to short "culvert" spans. There is little historical information on the 25 masonry arches and culverts in Kentucky. These deck arches are mainly of a recent vintage and average 53 feet in length. The following six concrete and masonry arch bridges appear to meet the National Register criteria.

(1). The only open spandral reinforced concrete through arch on the Kentucky highway system is a 161 foot span at Prestonsburg (SF #64). Reinforced concrete tension hangers extend from the arch and tie into floor beams to support the deck. The floor beams are concrete and are probably reinforced with steel I-beams. The builder plate is missing from this structure but KYDOT records indicate that it was built in 1910.



General view of the open spandral reinforced concrete through arch bridge in Prestonsburg. This 161 foot long span is the only arch of its kind on the Kentucky highway system. (SF #64)

The Luten Bridge Company of York, Pennsylvania, and Knoxville, Tennessee, built four arch bridges found on the highways of Kentucky. Three of these bridges were built in the 1920's over the Cumberland River in Bell and Whitley Counties in the southeast portion of the state.



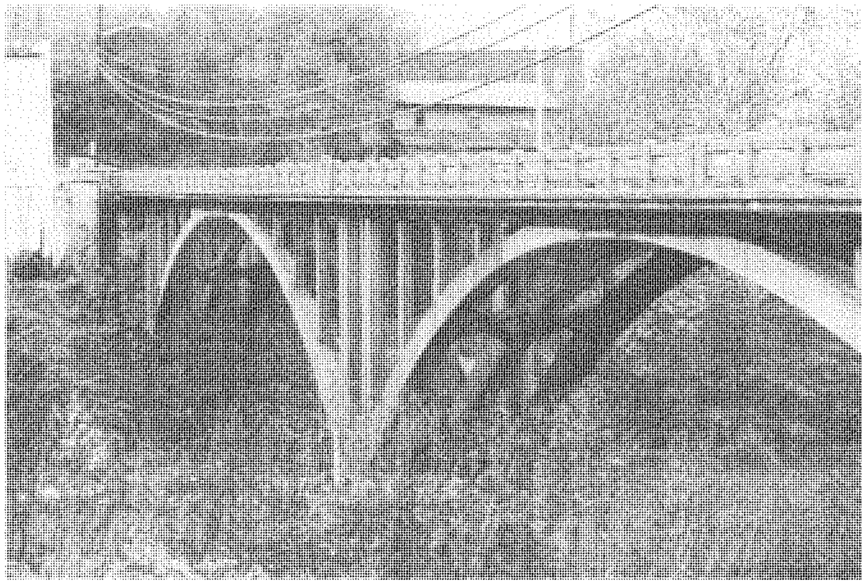
Concrete arch deck bridge with three spans and stone piers built in 1925 by the Luten Bridge Company of York, Pennsylvania. (SF #59)

(2). The oldest Luten Bridge is a three span concrete arch deck bridge near Gausdale in Whitley County built in 1925 (SF #59). This 277 foot long structure has two 94 foot and one 89 foot arch spans. The arches are not solid but probably hollow or filled with dirt. The arches are narrower than the deck which is supported by cantilevered floor beams on top of the arch. The floor beams are either I-beams encased in concrete or heavily reinforced with rods. This structure acts as an "arched girder" which supports the cantilevered floor beams which in turn support the deck.

(3). A second three span concrete arch deck bridge by the Luten Bridge Company in Whitley County was built in 1928 (SF #58). This structure is 355 feet in length and also acts as an arched girder which supports the cantilevered reinforced floor beams which in turn support the deck. Unlike the 1925 example (SF #59), the floor beams on this structure do not extend across the shallowest portion of the arches.

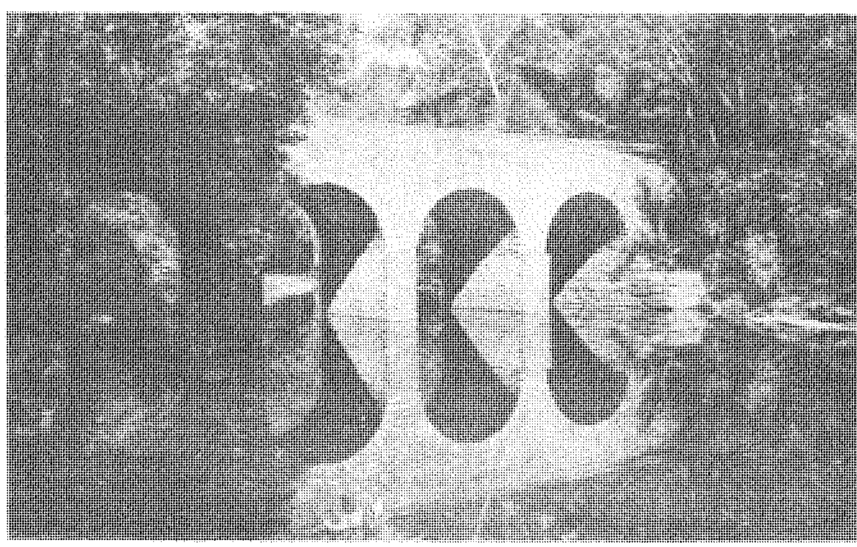
(4). The longest open spandral concrete arch span in Kentucky is found at Olive Hill in Grayson County and measures 392 feet in length (SF #46). The two 100 foot and one 102 foot arch spans have two reinforced concrete ribs with perpendicular bracing. Reinforced concrete compression posts extend from the top of the arch to support the floor beams, which in turn support the deck. The floor beams are either concrete encased I-beams or heavily reinforced with rods.

(5). The Cumberland Ford Bridge (SF #55) is located in Pineville near the historic Cumberland Ford on the Wilderness Road marked by Daniel Boone in 1775. This elegant bridge has two 150 foot long open spandral concrete arches and was built by the Luten Bridge Company in 1929. Decorative concrete work on the bridge was done by Pettyjohn of New Jersey, but only one light pole on the guardrailing remains. The two arch spans have three reinforced concrete ribs with crossed lateral bracing. Reinforced concrete compression posts extend from the top of the arch to support the deck.



This elegant two span open spandral concrete deck arch bridge is adjacent to historic Cumberland Ford. The arch spans have three reinforced concrete ribs with lateral bracing. Compression posts extend from the top of the arch to support the deck. (SF #55)

(6). One of the most picturesque bridges in Kentucky is a masonry arch over Jessamine Creek in Jessamine County (SF #41). This structure has four arches and measures 125 feet in length. The 18th century Glass Mill once operated at this location and the ruins of its dam are upstream from the bridge. This masonry arch bridge was built in 1936 by the county road department and has a structural sufficiency rating of 82.4/100.

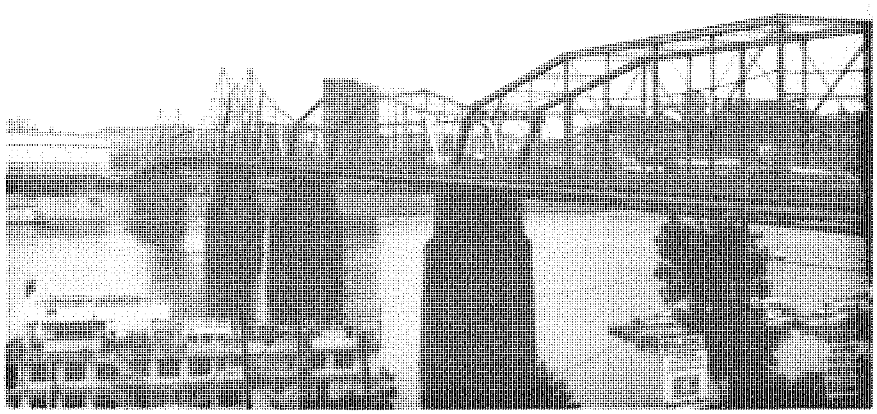


General view of a four span masonry arch deck bridge built in 1936 over Jessamine Creek in Jessamine County. This picturesque structure is one of the longest masonry arch bridges in Kentucky. (SF #41)

4. Cantilever Truss Spans

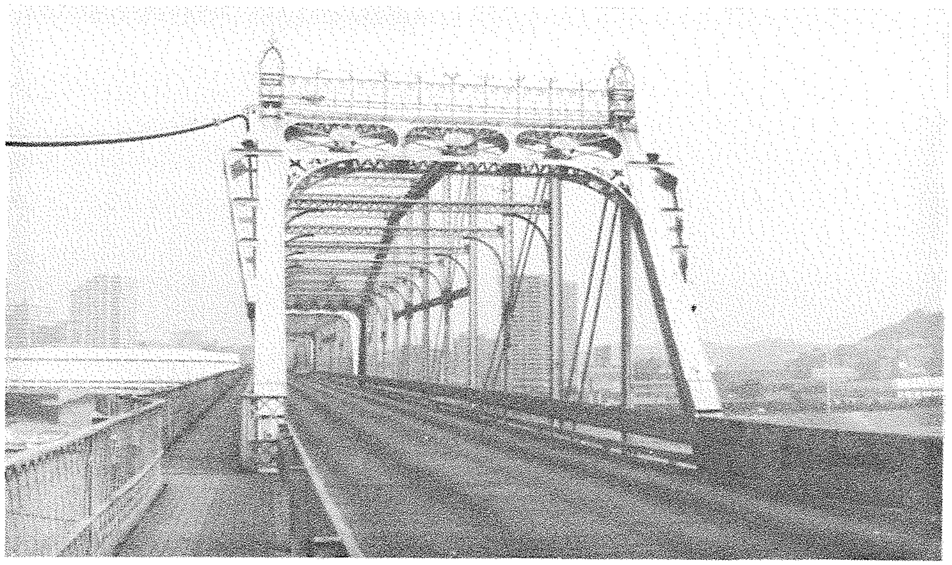
The structural design of the cantilever bridge is based on the balance and counterbalance of its anchor arms, cantilever arms, and suspended spans. The anchor arms are secured on both ends (to an abutment or pier) and counterbalance the cantilever arms. Either the cantilever arms meet in the center of the main span or a counterbalanced suspended span is placed between the cantilever arms. On a cantilever bridge the stress of moving loads sets up a complex system of strains. At one moment a steel member is under tension and at the next, as the load passes, it will be under compression. There are 13 bridges in Kentucky with cantilever spans and the average length of these spans is 1843 feet with the longest measuring 2830 feet and the shortest 1024 feet. The two following cantilever bridges appear to meet the National Register criteria.

(1). The Central Bridge between Newport, Kentucky, and Cincinnati, Ohio, is the earliest highway cantilever truss in Kentucky (SF #30). It was built by the King Iron Bridge and Manufacturing Company of Cleveland, Ohio, in 1890. This bridge has two 254 foot long camelback/Pennsylvania (petit) trusses, a 162 foot Pratt through truss, and a three span cantilever truss with a 520 foot main span and two 252 foot anchor spans. All spans use die-forged eyebars and a floor system with plate girder stringers and floor beams. Elaborate finials and decorative portal struts on the end spans highlight this memorative bridge.



General view of the Central Bridge built by the King Iron Bridge Company in 1890 over the Ohio River between Newport and Cincinnati. The cantilever truss on the north end has a main span length of 520 feet with two 252 foot anchor spans. (SF #30)

(2). The Louisville Municipal Bridge, so-called because it was financed and built by the city of Louisville, crosses the Ohio River between Louisville and Jeffersonville, Indiana (SF #25). Ralph Modjeski designed this 5,750 foot structure that has a main structure length of 3,740 feet over the river. Paul Cret was the architect for the ornamental pylons constructed of Indiana limestone and surmounted by ornate lanterns and carved eagles over the coat of arms of the two states located at each end of the bridge. The main structure has twin cantilevers, each having a main span of 820 feet center to center of piers, and anchors arms of 500 and 362 feet. These cantilever truss spans are good design examples for this type of structure.



Portal view of elaborate finials and decorative work on the portal strut of the Central Bridge between Newport, Kentucky, and Cincinnati, Ohio. (SF #30)

5. Tied Steel Arch Spans

There are three tied arch spans in Kentucky which were built in the 1970's. They are used on very long river crossings ranging from 2100 to 5634 feet in length. The individual tied arch spans measure between 534 and 760 feet. No tied arch spans are eligible to the National Register.

6. Continuous Span Bridges

Continuous span bridges, like suspension, cantilever, and tied arch spans, are capable of great span lengths. Nine continuous span bridges in Kentucky range in length from 700 feet to 1758 feet and average 983 feet per structure. All of the continuous span bridges in Kentucky were built between 1939 and 1976 and none of them are eligible for listing on the National Register.

VI. SUMMARY

This survey to inventory all truss, arch, and suspension bridges in Kentucky has determined that 70 bridges appear to meet the criteria of eligibility for inclusion on the National Register of Historic Places. These 70 structures were selected from the 651 potentially significant bridges identified in the state.

The 651 truss, arch, and suspension bridges on the Kentucky highway system break down into 573 metal trusses, 64 masonry and concrete arches, seven metal arches, and seven suspension bridges. One hundred and ninety of these bridges have identifying builder/date plates and represent the work of 35 bridge companies and builders from nine states. Independent bridge companies were most active in Kentucky beginning in the last quarter of the 19th century and continuing into the 1920's.

The Kentucky Department of Highways was incorporated in 1912 but was only advisory until 1920. By the 1930's the State Highway Department was constructing nearly all the new bridges in Kentucky. In general, metal trusses constructed before 1920 have pin-connected panel points and trusses from the 1920's on have rivet-connections.

The most notable bridge in Kentucky would be the Covington and Cincinnati Suspension Bridge across the Ohio River. This structure has national acclaim as an innovative suspension bridge and record of the work of John A. Roebling, a world famous engineer and bridge builder. Among the metal truss bridges on Kentucky highways, no exotic or truly unique bridge types such as Fink or Bollman trusses were discovered. Also, it is doubtful that any trusses in Kentucky are among the earliest examples of particular bridge types in the United States. None of the innovative 19th century bridge companies were located in, or near, Kentucky and their work undoubtly appeared here later.

Although having no other individual bridges deserving of national attention, the survey results from Kentucky should be a valuable source of bridge history. Kentucky still has a large inventory of metal truss bridges, with a sizable number (40) constructed in the 19th century. The information gained on Kentucky's historic bridges will help fill a gap in our knowledge of the distribution in time and space of late 19th and early 20th century bridge technology and history.

Specific information on the 70 bridges that appear to be eligible to the National Register is provided in the Appendix. Table 6 provides a listing of survey number, highway district, county, bridge identification number, type, builder, and date of construction for the structures. The state-wide distribution of these bridges is shown in Exhibit 12. The survey forms are arranged by the twelve highway districts in Kentucky shown in Exhibit 13. A detailed Kentucky Historic Bridge Survey form with photographs and a county map showing exact location for each bridge is also included.

VII. PRESERVATION GOALS AND OPTIONS

In selecting the outstanding examples of bridge history and technology in the state, KYDOT will be able to perform its transportation function and ensure timely consideration of preservation goals. A strategy that weighs all viable options on a case by case basis has been formulated to deal with each bridge determined eligible to the National Register. This formula to insure proper consideration of significant bridges, while providing a safe and efficient transportation network, is summarized in a proposed Programatic Memorandum of Agreement (MOA) (See Exhibit 11). A Memorandum of Agreement is necessary when a Federal undertaking will have an effect on any property on, or eligible for, the National Register. Participants in the MOA include: the Advisory Council on Historic Preservation, Kentucky Historic Preservation Officer, Federal Highway Administration, and the Kentucky Department of Transportation.

The historic bridges of Kentucky form an integral part of our cultural heritage and provide a valuable record of our technological history. This survey has attempted to identify those structures that best represent this heritage and to provide a basis for their preservation. The life span of these historic bridges is limited by the natural deterioration of their members and an inability to adapt to new requirements. It would be very difficult to maintain these historic structures far beyond their natural service life. The average 1981 structural sufficiency rating of the 70 significant bridges selected in this survey is only 25/100. Sixty-six rate below 50 and are considered structurally deficient or functionally obsolete. Some of these bridges still meet current demands but most will soon need rehabilitation or replacement.

The primary goal in considering these special links in our transportation network will be to maintain and/or rehabilitate the structures when feasible. A number of options to preserve historic bridges and allow continued vehicular use have been addressed in a Virginia study on modifying historic bridges for contemporary use.[25] The first option to be considered would be to strengthen the bridge to an acceptable safety standard. Any alteration of a historic bridge would involve careful consideration of the engineering and architectural character of the bridge. A bridge can sometimes be discreetly strengthened by replacement of individual truss members, addition of turnbuckles, or even replacement of the floor system. Rarely can a structure be widened and still preserve its integrity. However, narrow bridges can be used in a one-way couple arrangement when reduced to one lane of traffic. A new bridge could be constructed to handle traffic in one direction with the historic structure supporting traffic in the opposite direction. If a bridge cannot be sufficiently strengthened, it may be moved to a location with lower traffic demands.

When no alternatives to rehabilitate a deficient historic bridge are feasible it may become necessary to replace the existing structure. Various preservation options also exist when a decision to take a bridge out of service has been made. Sometimes a valuable historic bridge can be put to adaptive reuse as in another situation. Bridges of outstanding significance can be labeled, disassembled and put into storage for some future utilization. Individual ornamental or architectural elements may be incorporated in a new bridge or preserved in a curatorial collection. In some cases a bridge may be blocked to all traffic and preserved as a historic ruin. However, various problems of accepting responsibility for maintenance and liability would create problems in attempting to simply abandon a bridge.

When the various options to rehabilitate or adapt for reuse have been explored by all concerned parties, it will be necessary to demolish some of Kentucky's deficient historic bridges. Prior to any demolition, the bridge will be documented to the applicable standards of the National Architectural and Engineering Record. Also, prior to alteration or demolition of any architectural or ornamental elements, the Kentucky State Historic Preservation Officer will be given an opportunity to select such elements for curation or use in other projects.

EXHIBIT 11

PROPOSED PROGRAMMATIC MEMORANDUM OF AGREEMENT

WHEREAS, the Federal Highway Administration (FHWA), Department of Transportation, administers the Highway Bridge Replacement and Rehabilitation Program (HBRRP) in Kentucky; and,

WHEREAS, FHWA, in consultation with the Kentucky State Historic Preservation Officer (SHPO), has determined that this program may have adverse effects on bridges in Kentucky that are included in or eligible for inclusion in the National Register of Historic Places; and,

WHEREAS, pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320) and Section 800.8 of the regulations of the Advisory Council on Historic Preservation (Council), "Protection of Historic and Cultural Properties" (36 CFR Part 800), FHWA has requested the comments of the Council; and,

WHEREAS, pursuant to Section 800.8(b) of the Council's regulations, representatives of the Council, FHWA, and the Kentucky SHPO have consulted and reviewed the program to consider alternatives to avoid or satisfactorily mitigate the adverse effects; and,

WHEREAS, the Kentucky Department of Transportation was invited and participated in the consultation process;

NOW, THEREFORE, it is mutually agreed that the implementation of the HBRRP in Kentucky in accordance with the following stipulations will avoid, minimize or mitigate adverse effects on the above mentioned historic properties.

STIPULATIONS

FHWA will ensure that the following measures are carried out:

I. **Rehabilitation.** Where rehabilitation of a National Register eligible bridge property is proposed, FHWA will ensure that the following procedures are carried out.

1. The Kentucky SHPO will be consulted for recommendations as to rehabilitation methods that are sensitive to the historic fabric of the bridge.
2. The "Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" will be followed as closely as is reasonable.
3. The bridge will be documented to the extent necessary to maintain a record of its history and its appearance before alteration. The National Architectural and Engineering Record (NAER) will first be contacted to determine what documentation is required. All documentation must be accepted by NAER and the Council in receipt of a copy of its acceptance prior to the alteration. Copies of this documentation will also be provided to the Kentucky SHPO.
4. Prior to removal or alteration of architectural elements, the Kentucky SHPO or her designee will be afforded a reasonable opportunity to select such elements for curation or use in other projects. FHWA will be responsible for ensuring the careful removal of these elements and will convey them without cost to the Kentucky SHPO or her designee.
5. Provision will be made for the protection and/or recovery of any archaeological data that might be affected by the rehabilitation, in a manner that takes into account the Council's Handbook, **Treatment of Archeological Properties** and that is acceptable to the Kentucky SHPO.

II. **Replacement.** Where replacement of a National Register eligible bridge is proposed, FHWA will ensure that the following procedures are carried out.

1. The Kentucky SHPO will be consulted.
2. All feasible and prudent alternatives to replacement will be fully explored.
3. The public will be given a reasonable opportunity to comment.
4. The possibility of incorporating significant architectural elements of the bridge into the new bridge will be explored.

5. The possibility of relocating the bridge and putting it to new uses will be explored.

6. Prior to any demolition the bridge will be documented in order to have a record of its history and appearance. NAER will first be contacted to determine what documentation is required. All documentation must be accepted by NAER and the Council in receipt of a copy of its acceptance prior to the demolition. Copies of the documentation will also be provided to the Kentucky SHPO.

7. Prior to demolition of a bridge, the Kentucky SHPO or her designee will be afforded a reasonable opportunity to select architectural elements for curation or use in other projects. FHWA will be responsible for ensuring the careful removal of these elements and will convey them without cost to the Kentucky SHPO or her designee.

8. Provision will be made for the protection and/or recovery of any archaeological data that might be affected by the replacement, in a manner that takes into account the Council's Handbook, **Treatment of Archeological Properties** and that is acceptable to the Kentucky SHPO.

9. Within 60 days after demolition is completed, the Keeper of the National Register will be notified of that fact in order that the bridge can be removed from the list of eligible National Register properties.

III. FHWA will submit the following documentation to the Council on individual HBRRP projects:

1. A description of the way in which the affected bridge will be treated in order to reduce or mitigate adverse effects;

2. The comments of the Kentucky SHPO on the undertaking and/or on the proposed treatment of the bridge; and

3. Evidence that the views of the public have been sought, and a copy of any public comments received.

IV. The Executive Director will provide FHWA with concurrence or objection to the proposed treatment within 15 days of receipt of the request for comment. If objection is noted, the Executive Director will initiate the consultation process detailed in the Council's regulations at 36 CFR Sec. 800.6(b).

V. If the bridge proposed for replacement/rehabilitation is a National Historic Landmark, FHWA will comply with Section 110(f) of the National Historic Preservation Act and will seek the Council's comments in the manner prescribed by 36 CFR Part 800.4 et seq.; Stipulation II of the Agreement does not pertain to cases requiring FHWA compliance with the Section 110(f).

VI. If any of the signatories to this Agreement determine that the terms of the Agreement cannot be met or believes a change is necessary, that signatory will immediately request the consulting parties to consider an amendment to the Agreement.

Chairman, Advisory Council on Historic Preservation — Date

Exec. Director, Advisory Council on Historic Preservation — Date

Kentucky Historic Preservation Officer — Date

Federal Highway Administration — Date

Kentucky Department of Transportation — Date

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   and

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3. Harker, **op. cit.,** "Climate" section.
4. **Ibid.** "Soils of Kentucky" section.
5. **Ibid.** "Vegetation" section.

   and

   Mengel, **op. cit.,** pp. 16-22.
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16. Lewis, **op. cit.,** p. 8.
17. **Ibid.,** p. 6.
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19. **Ibid.,** p. 18.
20. **Ibid.,** p. 19.
21. Danko, George M., "The Development of the Truss Bridge, 1820-1930, with a Focus Toward Wisconsin," (Unpublished Report, State Historic Preservation Office, The State Historical Society of Wisconsin, 1976), p. 30.

23\. **Ibid.,** p. 31

24\. Phelps, David McCord, "The Erection of Highway Bridge over Pitman Creek Pulaski County," (Lexington, Unpublished Thesis, University of Kentucky, 1922).

24\. Billings, **op. cit.,** p. 68.

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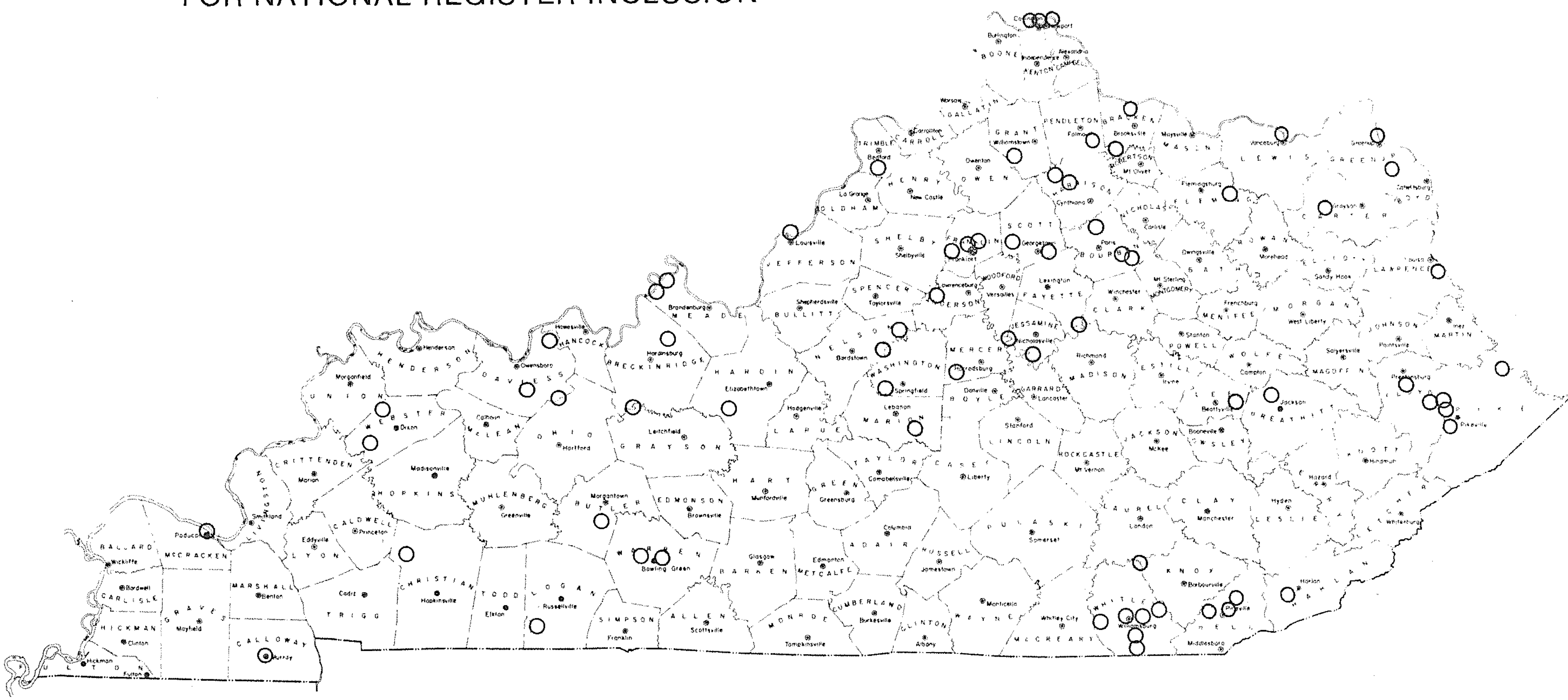
APPENDIX

EXHIBIT 12

DISTRIBUTION OF 70 BRIDGES CONSIDERED ELIGIBLE FOR NATIONAL REGISTER INCLUSION



O = Bridge Site

TABLE 6
70 HISTORIC BRIDGES IN KENTUCKY

SURVEY NO.	HWY. DIST.	COUNTY	BRIDGE NUMBER	TYPE	BUILDER	DATE
1	1	Calloway	MP 18-94-B6	Pratt Pony	KYDOT	1927
2	1	McCracken	MP 73-45-B1	Pennsylvania	Wisconsin	1929
3	2	Christian	RP 24-124-B32	Bedpost	Groton	1894
4	2	Daviess	RP 30-762-B13	Pratt Through	Wrought Iron	1897
5	2	Daviess	CR 30-1060-C18	Pratt Through	Smith	1884
6	2	Daviess	CR 30-1159-C46	Pratt Pony	Vincennes	1923
7	2	Webster	CR 117-1243-C16	1/2 Hip Pony	Champion	1890*
8	2	Webster	CR 117-1333-C23	Warren Pony	Vincennes	1925*
9	3	Butler	CR 16-1174-C11	Bedpost	Brackett	1905
10	3	Logan	CR 71-1272-C27	Pratt Pony	Penn	1880
11	3	Warren	MP 114-2159-B6	Pratt Through	Vincennes	1915
12	3	Warren	CR 114-1350-C11	Bowstring	King	1890*
13	4	Breckinridge	CR 14-1109-C9	Pratt Through	King	1886
14	4	Grayson	RP 43-1110-B48	Bowstring	King	1877
15	4	Hardin	CR 47-1259-C28	Bowstring		1890*
16	4	Marion	MP 78-49-B9	Whipple-Murphy	King	1881
17	4	Meade	RP 82-228-B10	Whipple-Murphy	Smith	1885
18	4	Meade	CR 82-1324-C4	Whipple-Murphy	Smith	1882
19	4	Nelson	MP 90-1754-B91	Parker		1910*
20	4	Nelson	CR 90-1116-C24	Camelback	Champion	1904
21	4	Washington	CR 115-1214-C19	Pratt Through	King	1884
22	5	Franklin	MP 37-1005-B26	Pratt Through	Champion	1896
23	5	Franklin	MP 37-60-B65	Pennsylvania	King	1893
24	5	Franklin	MP 37-421-B66	Baltimore		1910*
25	5	Jefferson	MP 56-31E-B136	Cantilever		1929
26	5	Trimble	CR 112-1122-C5	Quadrangular		1910*
27	6	Bracken	RP 12-539-B13	Pratt Through	Smith	1883
28	6	Bracken	CR 12-1012-C3	Bowstring		1890*
29	6	Campbell	MP 19-270-B34	Pennsylvania		1896
30	6	Campbell	MP 19-27-B36	Cantilever	King	1890
31	6	Grant	RP 41-1993-B6	Camel-Petit	King	1890
32	6	Harrison	RP 49-1032-B40	Pratt Through	Champion	1906
33	6	Harrison	CR 49-1062-C26	Pratt Through	Massillon	1885
34	6	Kenton	MP 59-17-B48	Suspension		1865
35	6	Pendleton	CR 96-1110-C17	1/2 Hip Pony	Smith	1890*

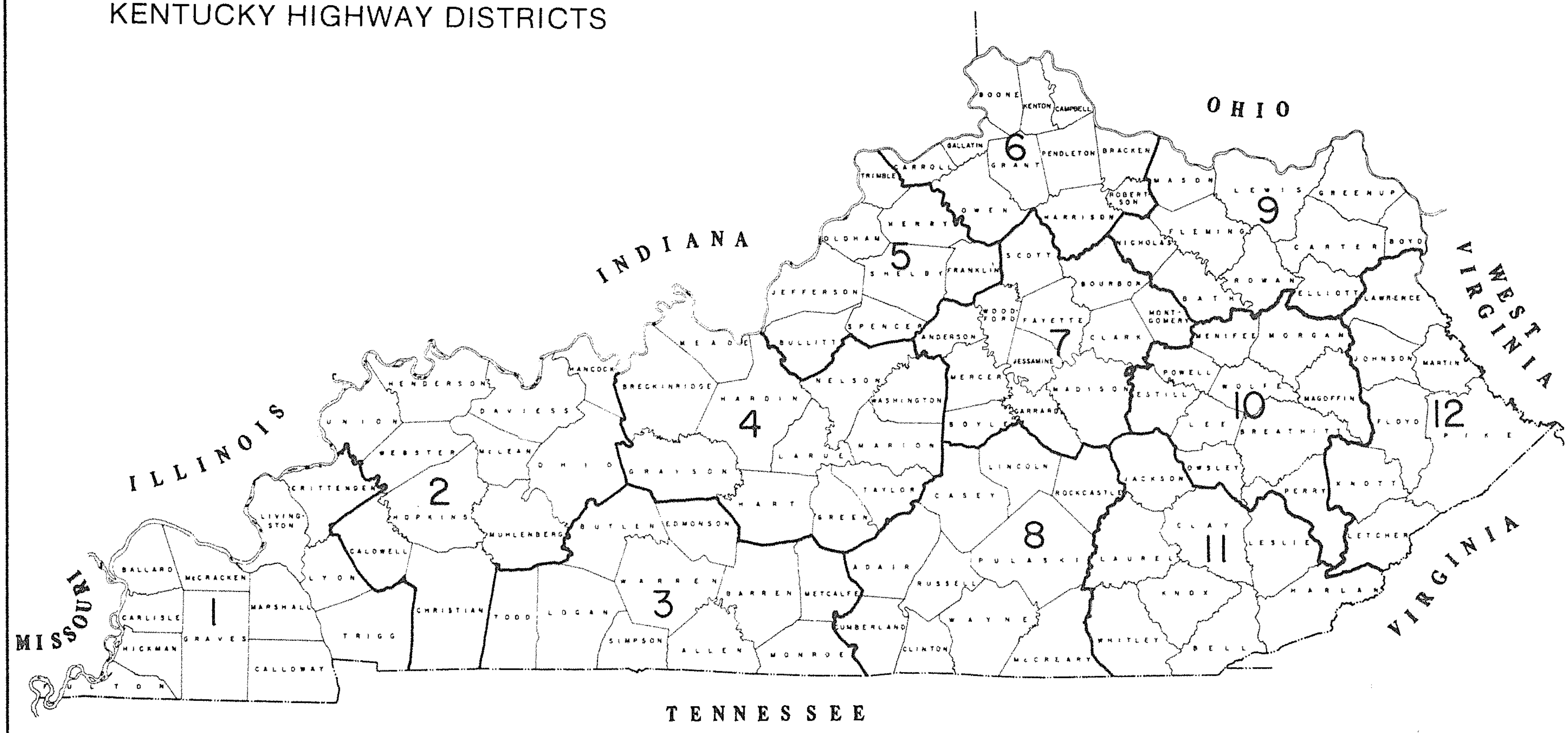
TABLE 6 (Continued)

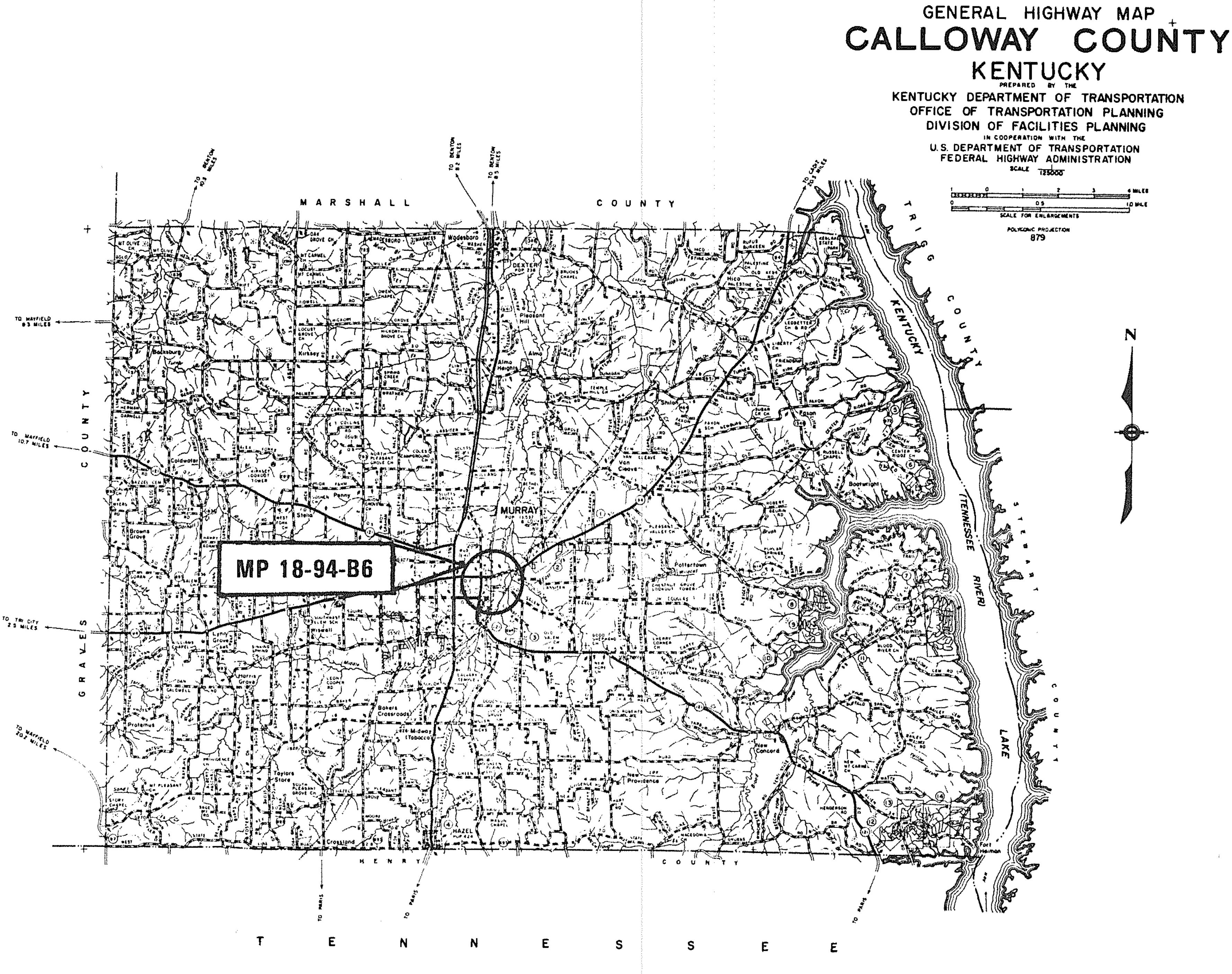
SURVEY NO.	HWY. DIST.	COUNTY	NUMBER	BRIDGE TYPE	BUILDER	DATE
36	7	Anderson	CR 3-1236-C22	1/2 Hip Pony	Canton	1890*
37	7	Bourbon	CR 9-1120-C25	Pratt Through	Champion	1885*
38	7	Bourbon	CR 9-1122-C27	Pratt Through	Toledo	1893
39	7	Bourbon	CR 9-1214-C37	Pratt Pony	King	1893
40	7	Fayette	MP 34-2328-B10	Warren Through		1869
41	7	Jessamine	MP 57-1268-B13	Masonry Arch		1936
42	7	Jessamine	CR 57-1230-C17	Pratt Pony	Brackett	1898
43	7	Mercer	CR 84-1226-C13	Pratt Through	Empire	1915
44	7	Scott	CR 105-1111-C31	Pratt Through	Champion	1890
45	7	Scott	CR 105-1218-C34	Pratt Through	Empire	1910
46	9	Carter	MP 22-60-B35	Concrete Arch		1927
47	9	Fleming	MP 35-1013-B53	1/2 Hip Pony	Pittsburg	1893
48	9	Greenup	MP 45-2541-B42	Pratt Through	King	1884
49	9	Greenup	CR 45-1268-C16	Whipple-Murphy		1890*
50	9	Lewis	CR 68-1045-C7	1/2 Hip Pony	Champion	1882
51	10	Breathitt	MP 13-15-B44	Whipple-Murphy		1906
52	10	Lee	RP 65-708-B13	Pratt Through	Oregonia	1917
53	11	Bell	MP 7-66-B3	Pratt Through	Keystone	1888
54	11	Bell	RP 7-2014-B21	Pratt Through	Louisville	1873
55	11	Bell	MP 7-66-B78	Concrete Arch	Luten	1929
56	11	Harlan	RP 48-840-B87	Baltimore	Vincennes	1924
57	11	Whitley	MP 118-1804-B16	Camelback	Champion	1917
58	11	Whitley	RP 118-904-B67	Concrete Arch	Luten	1928
59	11	Whitley	RP 118-779-B77	Concrete Arch	Luten	1925
60	11	Whitley	RP 118-478-B87	Quadrangular	Cap. Con.	1907
61	11	Whitley	RP 118-296-B88	Camel-Petit		1890*
62	11	Whitley	CR 118-1260-C27	Pratt Deck		1917
63	11	Whitley	CR 118-9999-C43	Pratt Through		1890*
64	12	Floyd	CR 36-1334-C28	Concrete Arch		1910
65	12	Floyd	CR 36-9999-C38	Suspension		1930
66	12	Lawrence	RP 64-644-B38	Pratt Through		1904
67	12	Pike	MP 98-1370-B3	Parker		1907
68	12	Pike	MP 98-23S-B10	Parker		1910*
69	12	Pike	RP 98-1384-B87	Suspension		1935*
70	12	Pike	CR 98-1526-C63	Suspension	WPA	1938

* Approximate Date

EXHIBIT 13

KENTUCKY HIGHWAY DISTRICTS




GENERAL HIGHWAY MAP
CALLOWAY COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879
N
MARSHALL COUNTY
TRIGG COUNTY
STEWART COUNTY
HENRY COUNTY
GRAVES COUNTY
TENNESSEE
KENTUCKY
(TENNESSEE RIVER)
LAKE
MP 18-94-B6
MURRAY
Dexter
Almo
Almo Heights
Pleasant Hill
Kirksey
Coldwater
Stella
Penny
Lynn Grove
Wiswell
Browns Grove
Protemus
Taylors Store
Crossland
HAZEL
New Providence
New Concord
Bakers Crossroads
Midway (Tobacco)
Van Cleave
Shiloh
Faxon
Boatwright
Hamlin
Pottertown
Fort Heiman
Wadesboro
Backusburg
Harris Grove
TO MAYFIELD 8.3 MILES
TO MAYFIELD 10.7 MILES
TO TRI CITY 2.5 MILES
TO MAYFIELD 20.7 MILES
TO BENTON 10.3 MILES
TO BENTON 8.2 MILES
TO BENTON 8.5 MILES
TO CADIZ 20.3 MILES
TO PARIS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 1

I. LOCATION

COUNTY: Calloway
CITY:
ROUTE: KY 94
SPANS: Clarks River
HWY. DISTRICT: 1
S I A RATING: 38.6/100
U T M COORDINATES: 16-384875-4052410

II. HISTORY

BRIDGE ID#: MP 18-94-B6
NAME/TYPE: Pratt Pony Truss
DESIGNER/ BUILDER: Kentucky State Highway Department / Kentucky State Highway Department
DATE: 1927
BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

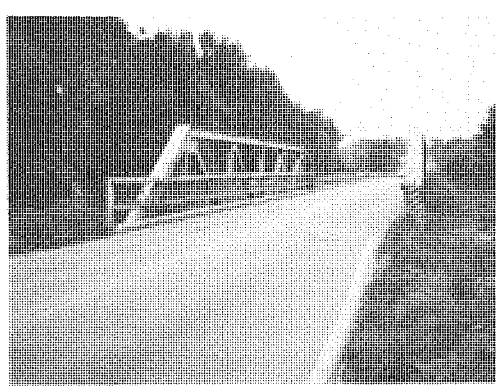
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: One of the earliest dated State Highway Department bridges constructed in Kentucky.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Long approach spans and highway are on fill in the broad Clarks River flood plain in relatively flat far western Kentucky.



FORM # 1

V. DESIGN INFORMATION

NO. SPANS: 5 OVERALL LENGTH: 285' WIDTH: 20'

SPAN TYPES:

1. Pratt Pony Truss LENGTH: 90'

2. 4 approach spans LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments

SUPERSTRUCTURE

MATERIALS: Steel BASIS: Construction date

CONNECTIONS: PINS: RIVETS: X

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 angles with stay plates

HIP VERTICALS: I-beams

INTERMEDIATE POSTS: I-beams

DIAGONALS: I-beam or 2 angles with stay bars

COUNTERS: None

TOP LATERAL BRACING: N/A

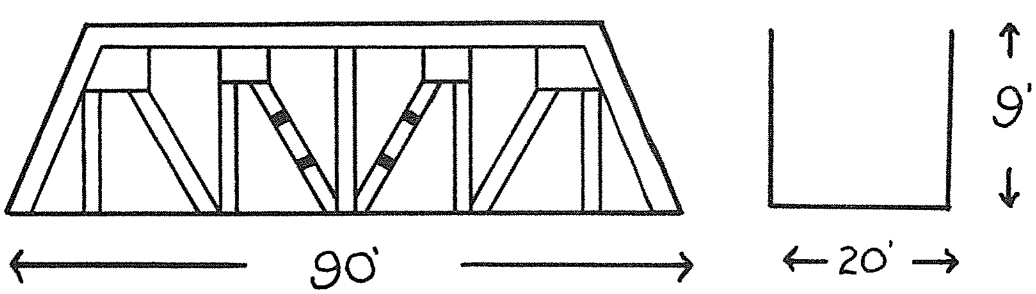
TOP LATERAL STRUTS: N/A

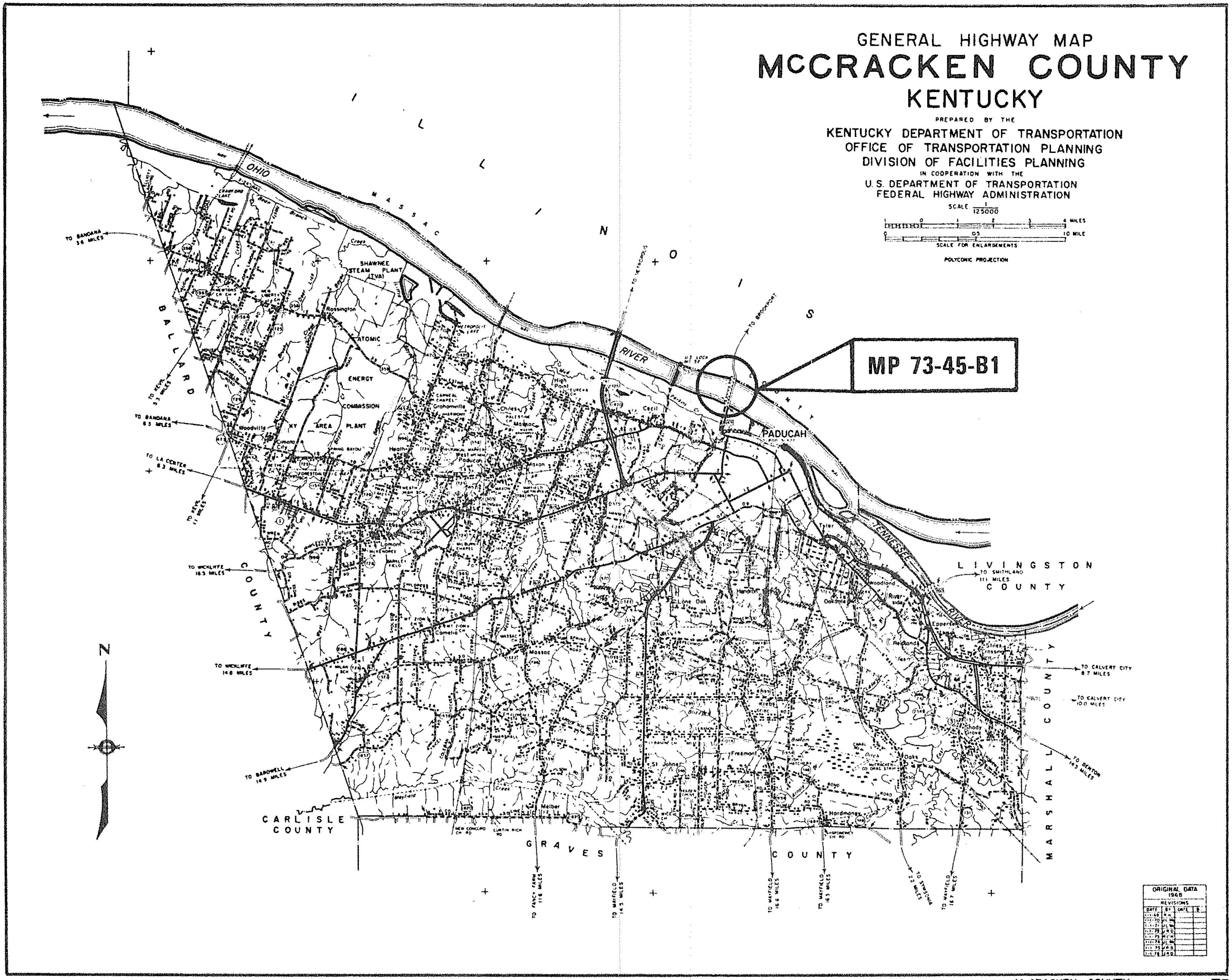
BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: No counters so some web members change from compression to tension under live load strain.

VII. TRUSS CONFIGURATION




GENERAL HIGHWAY MAP
McCRACKEN COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
MP 73-45-B1
ILLINOIS
MASSAC
OHIO
RIVER
TENNESSEE
PADUCAH
SHAWNEE STEAM PLANT (TVA)
ATOMIC ENERGY COMMISSION AREA PLANT
BALLARD COUNTY
CARLISLE COUNTY
GRAVES COUNTY
MARSHALL COUNTY
LIVINGSTON COUNTY
TO SMITHLAND 11 MILES
TO CALVERT CITY 8.7 MILES
TO CALVERT CITY 10.0 MILES
TO BENTON 14.3 MILES
TO MAYFIELD 16.7 MILES
TO SYMSONIA 22 MILES
TO MAYFIELD 16.5 MILES
TO MAYFIELD 16.6 MILES
TO MAYFIELD 14.5 MILES
TO FANCY FARM 11.6 MILES
TO BARDWELL 14.9 MILES
TO WICKLIFFE 14.8 MILES
TO WICKLIFFE 16.5 MILES
TO KEVIL 11 MILES
TO LA CENTER 6.3 MILES
TO BANDANA 6.5 MILES
TO KEVIL 3.3 MILES
TO BANDANA 3.4 MILES
N
ORIGINAL DATA 1968
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 4

I. LOCATION

COUNTY: Daviess CITY:

ROUTE: KY 762 SPANS: S. Fork Panther Creek

HWY. DISTRICT: 2 S I A RATING: 25.8/100

U T M COORDINATES: 16-504980-4164385

II. HISTORY

BRIDGE ID#: RP 30-762-B13

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Wrought Iron Bridge Co. Builders Canton, Ohio

DATE: 1897 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

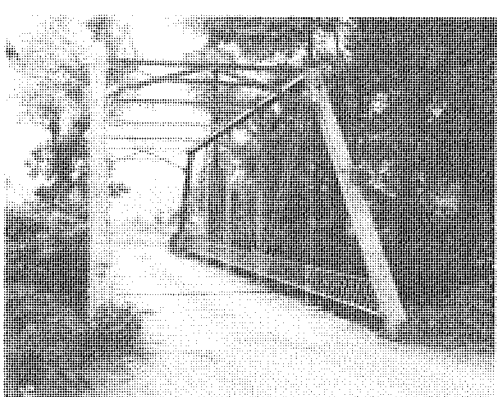
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

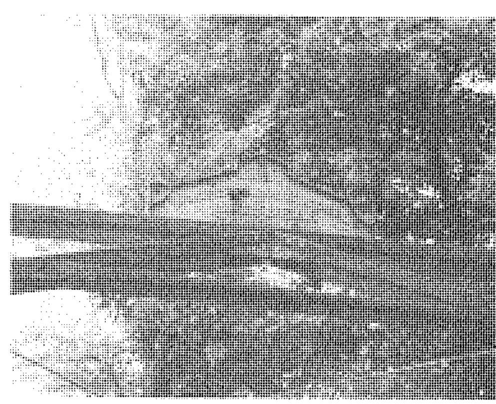
___ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only bridge in Kentucky by the Wrought Iron Bridge Company, a recognized pioneer in early metal truss technology.

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural pastoral setting on gravel road with a poor horizontal approach from the north.





FORM # 4

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 101' WIDTH: 13.5'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 99'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: from Jones & Laughlin Mills BASIS: Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars; loop-welded eyes

HIP VERTICALS: 1 round eyebar, split into two at bottom chord

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded

COUNTERS: 1 round eyebar, loop-welded; upset ends for turnbuckle

TOP LATERAL BRACING: 1 round eyebar, loop-welded; upset ends for turnbuckle

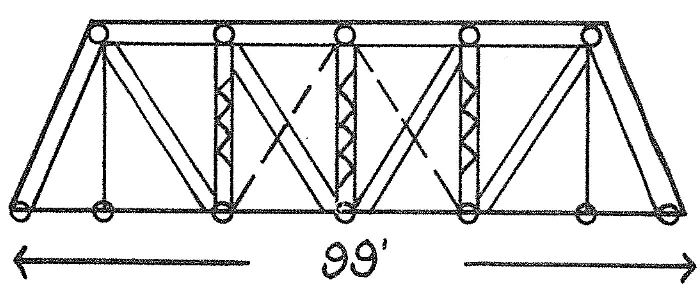
TOP LATERAL STRUTS: Small I-beams

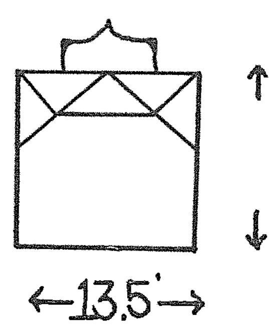
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Mixed I-beams & wood beams

OTHER DETAILS: Delicate lacing bar guardrailing, wood deck, floor beam hangers.

VII. TRUSS CONFIGURATION





KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 5

I. LOCATION

COUNTY: Daviess CITY:

ROUTE: CR 1060 SPANS: Blackford Creek

HWY. DISTRICT: 2 S I A RATING: 23.9/100

UTM COORDINATES: 16-508610-4191210

II. HISTORY

BRIDGE ID#: CR 30-1060-C18

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Smith Bridge Company Toledo, Ohio

DATE: 1884 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

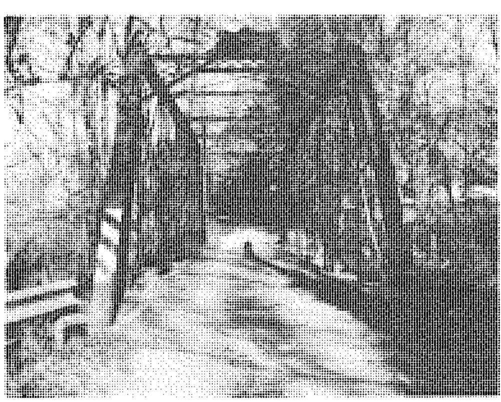
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

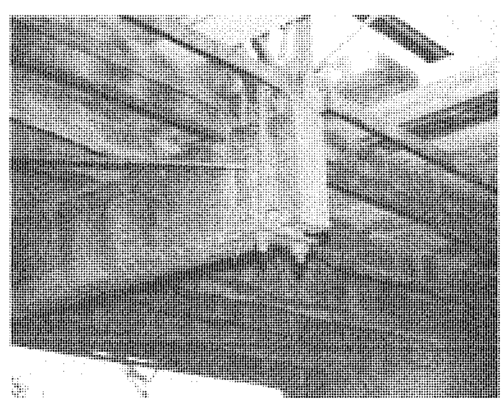
X RARE SURVIVOR/STANDARD DESIGN: One of two Smith Bridge Company Pratt through trusses in Kentucky. Probably wrought iron used in construction. Oldest metal truss in District 2.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting on gravel road crossing Blackford Creek, a low flow stream. Posted 6 ton load limit.





FORM # 5

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 92' WIDTH: 11.9'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 90'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments

SUPERSTRUCTURE

MATERIALS: From Carnegie foundry BASIS: Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded at hip-vertical, die-forged at bearing plates and center panel points

HIP VERTICALS: 2 round eyebars, loop-welded eyes

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 square eyebars, loop-welded

COUNTERS: 1 round eyebar, loop-welded, upset and threaded for sleevenut

TOP LATERAL BRACING: 1 round rod, upset and threaded for sleevenut

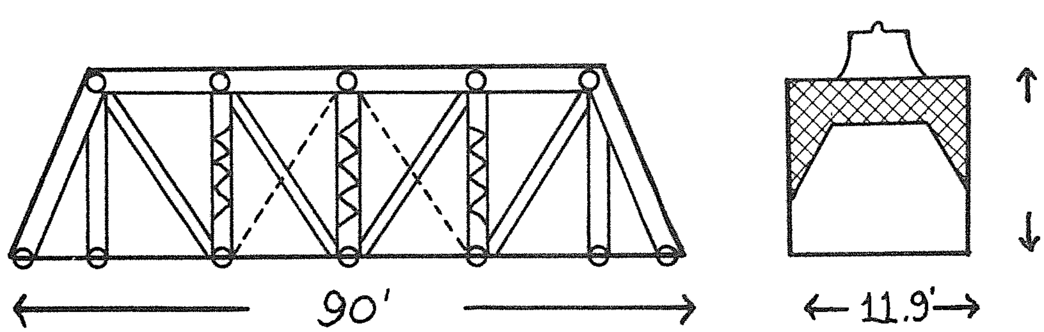
TOP LATERAL STRUTS: Small I-beams

BOTTOM LATERAL BRACING: 1 round rod, upset and threaded for sleevenut

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams, 2 channels, wood beams

OTHER DETAILS: No guardrail, floor beam hangers at each bottom chord panel point.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 6

I. LOCATION

COUNTY: Daviess CITY:

ROUTE: Old Hartford Road SPANS: S. Fork Panther Creek

HWY. DISTRICT: 2 S I A RATING: 24.7/100

U T M COORDINATES: 16-499910-4166350

II. HISTORY

BRIDGE ID#: CR 30-1159-C46

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Vincennes Bridge Company Vincennes, Indiana

DATE: 1923 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

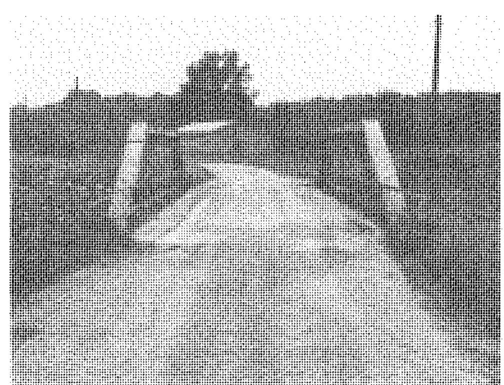
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: One of a series of bridges constructed on an early drainage project (1922-1926) in Daviess County.

IV. ENVIRONMENT/OTHER REMARKS

Crosses channel ditch of Panther Creek in rural setting on gravel road.



FORM # 6

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 66' WIDTH: 16.1'

SPAN TYPES:

1. Pratt Pony Truss LENGTH: 64'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments

SUPERSTRUCTURE

MATERIALS: from Illinois foundry BASIS: Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged eyes

HIP VERTICALS: 2 paired angles, lacing bars

INTERMEDIATE POSTS: 2 paired angles, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged eyes

COUNTERS: 1 round eyebar, loop-welded; upset ends for turnbuckle

TOP LATERAL BRACING: N/A

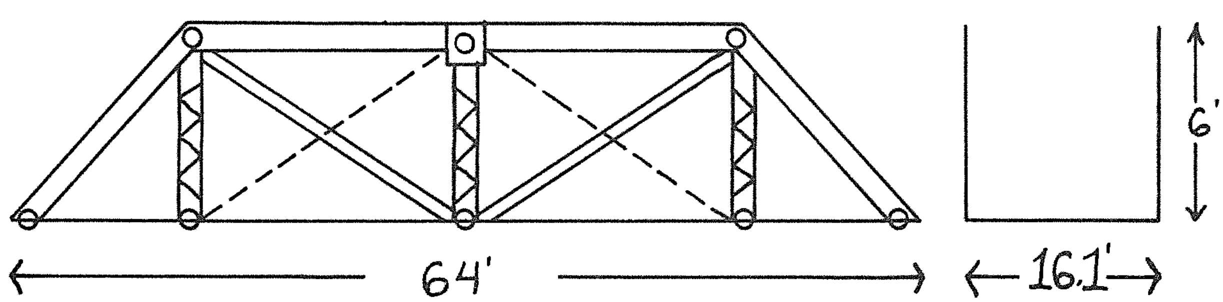
TOP LATERAL STRUTS: N/A

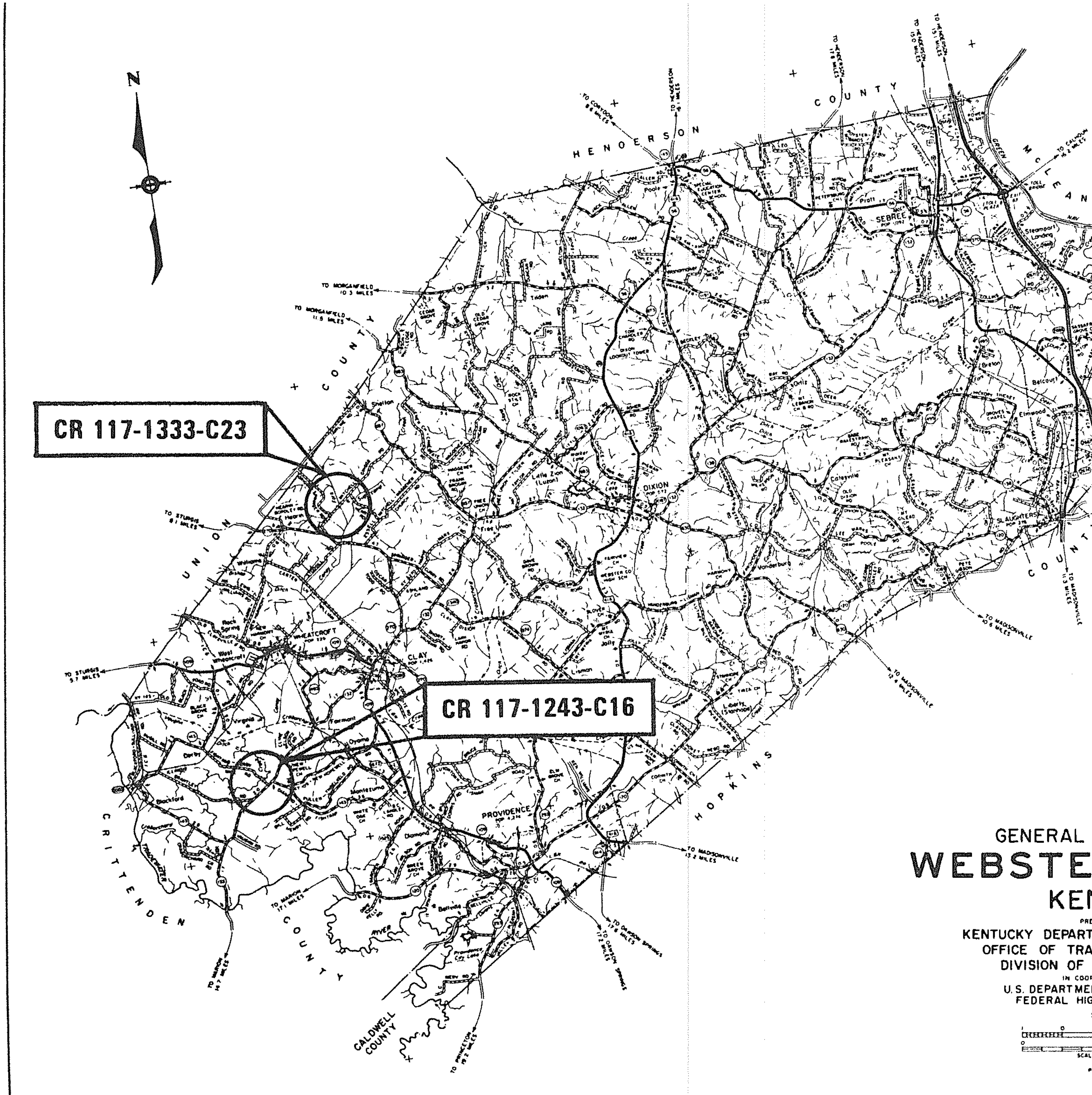
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Concrete deck surface.

VII. TRUSS CONFIGURATION





GENERAL HIGHWAY MAP
WEBSTER COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1/125,000

SCALE FOR ENLARGEMENTS

POLYCONIC PROJECTION
879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 7

I. LOCATION

COUNTY: Webster CITY:

ROUTE: CR 1243 SPANS: Craborchard Creek

HWY. DISTRICT: 2 S I A RATING: 17.7/100

U T M COORDINATES: Longitude 87°52'38" Latitude 37°26'40"

II. HISTORY

BRIDGE ID#: CR 117-1243-C16

NAME/TYPE: Pratt Half-Hip Pony

DESIGNER/ BUILDER: Champion Bridge Company Wilmington, Ohio

DATE: @ 1890 BASIS: Bridge Plate (builder only)

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

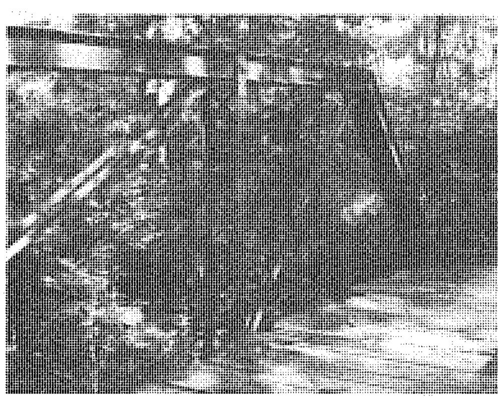
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

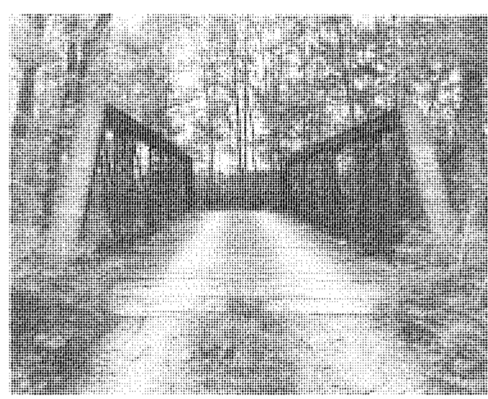
X RARE SURVIVOR/STANDARD DESIGN: One of the longest Pratt half-hip pony trusses in Kentucky. Appears to be in original location. Few builder plates found on half-hip pony trusses.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Bridge used at high water only. Ford next to bridge appears to be most frequently used crossing.





FORM # 7

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 75' WIDTH: 12'

SPAN TYPES:

1. Pratt Half-Hip Pony LENGTH: 75'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Large rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 square eyebars on end panel, loop-welded eyes
2 rectilinear eyebars on 3 middle panels, loop-welded

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 sets paired angles, lattice bars

DIAGONALS: 1 and 2 rectilinear eyebars, loop-welded

COUNTERS: 1 square rod eyebar, loop-welded;
upset threaded ends with turnbuckle

TOP LATERAL BRACING: N/A

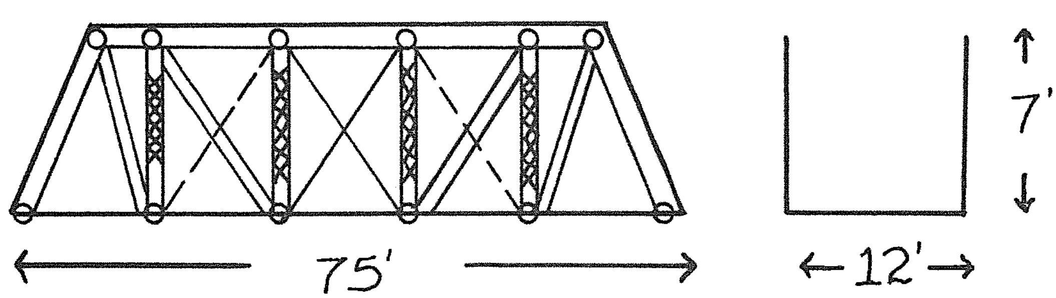
TOP LATERAL STRUTS: N/A

BOTTOM LATERAL BRACING: 1 round rod, upset and threaded
to bolt to floor beam

FLOOR BEAMS: Rolled I-beams STRINGERS: Wood beams

OTHER DETAILS: Wood deck, no guardrail.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 8

I. LOCATION

COUNTY: Webster CITY:

ROUTE: Mitchell-Griggs Road SPANS: Caney Fork

HWY. DISTRICT: 2 S I A RATING: 22.0 /100

U T M COORDINATES: 16-427400-4154715

II. HISTORY

BRIDGE ID#: CR 117-1333-C23

NAME/TYPE: Warren Pony Truss

DESIGNER/ Vincennes Bridge Company

BUILDER: Vincennes, Indiana

DATE: @ 1925 BASIS: Bridge Plate (builder only)

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

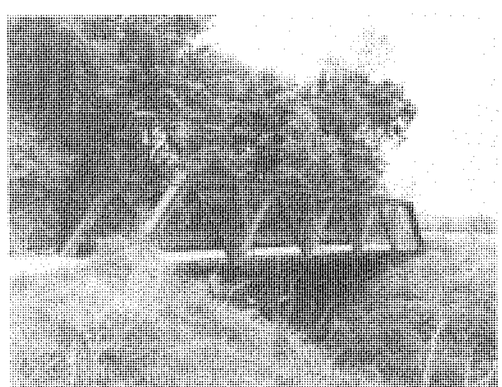
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Bridge built on a skew, one of two remaining Warren pony trusses built by Vincennes Bridge Company in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

Located on gravel road in rural setting. Ford adjacent to bridge used by farm equipment and wide loads.



FORM # 8

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 75' WIDTH: 11.6'

SPAN TYPES:

1. Warren Pony Truss LENGTH: 75'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutment

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: RIVETS: X

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 angles, held with cut angles

HIP VERTICALS: N/A

INTERMEDIATE POSTS: N/A

DIAGONALS: 2 angles, stay bars

COUNTERS: N/A

TOP LATERAL BRACING: N/A

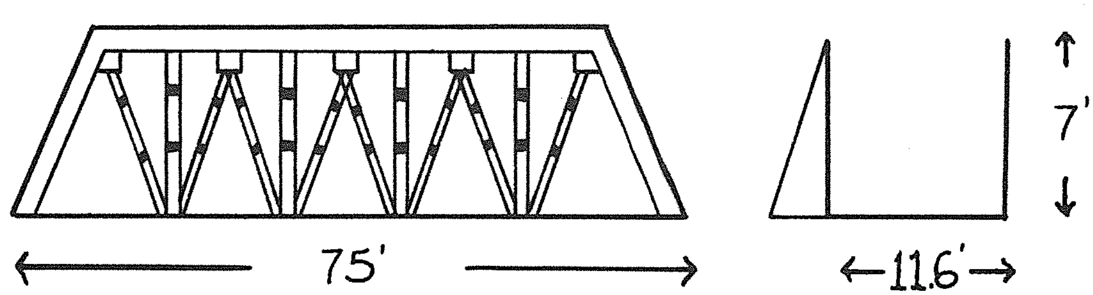
TOP LATERAL STRUTS: N/A

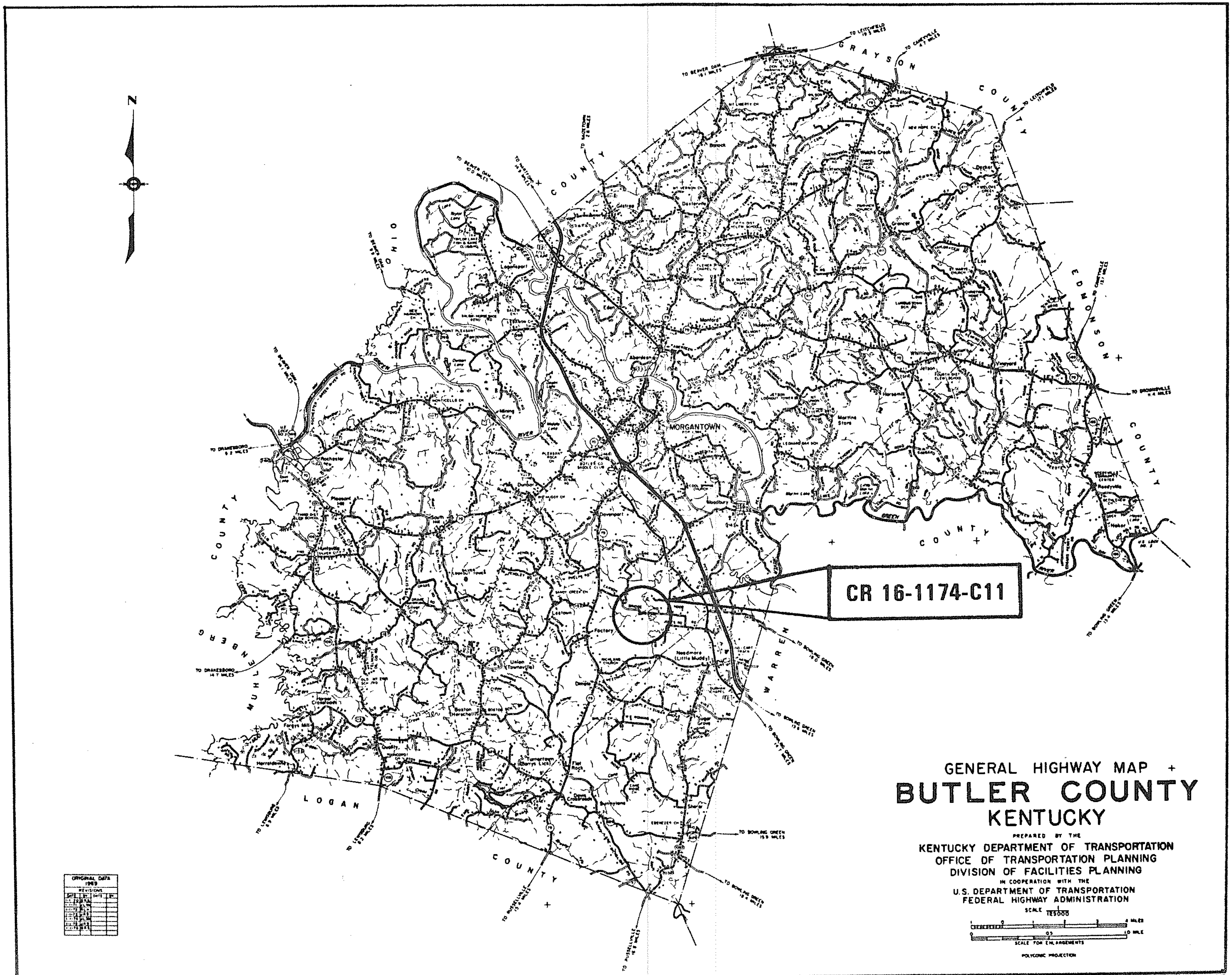
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Wood deck, guardrailing is 2 angles and lacing bars. Verticals & outriggers of paired angles & lacing bars provide bracing.

VII. TRUSS CONFIGURATION





CR 16-1174-C11
GENERAL HIGHWAY MAP
BUTLER COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
POLYCONIC PROJECTION
MORGANTOWN
GRAYSON COUNTY
EDMONSON COUNTY
WARREN COUNTY
LOGAN COUNTY
MUHLENBERG COUNTY
OHIO COUNTY
N
ORIGINAL DATA 1969
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 9

I. LOCATION

COUNTY: Butler CITY:

ROUTE: Carson Bridge Road SPANS: Little Muddy Creek

HWY. DISTRICT: 3 S I A RATING: 17.0/100

U T M COORDINATES: 16-527570-4109720

II. HISTORY

BRIDGE ID#: CR 16-1174-C11

NAME/TYPE: Carson Bridge - Bedpost Pony Truss

DESIGNER/ BUILDER: Brackett Bridge Company Cincinnati, Ohio

DATE: 1905 BASIS: Stamped on end post

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

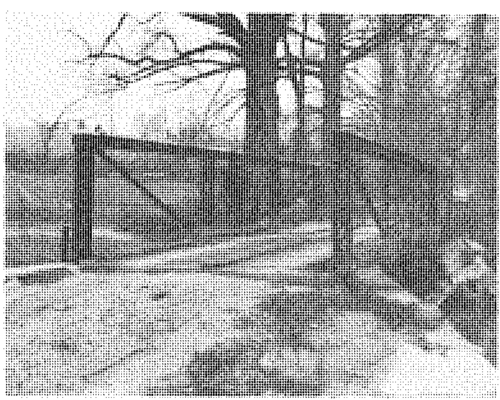
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

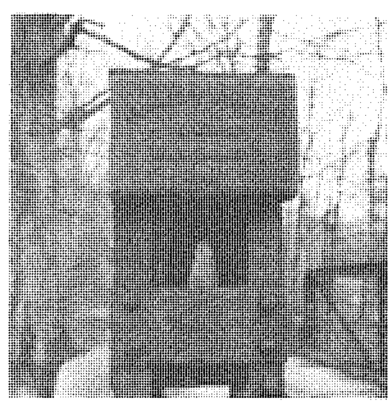
X RARE SURVIVOR/STANDARD DESIGN: Only Brackett Bridge Company bedpost truss in Kentucky. Probably on original location. Few bedpost trusses have date plates.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Located on frequently flooded dirt road. Apparently supports little or no traffic.





FORM # 9

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 40' WIDTH: 8.6'

SPAN TYPES:

1. Bedpost Pony Truss LENGTH: 36'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, lacing bars, stay bars

TOP CHORDS: 2 channels, lacing bars, stay bars, built in two sections

BOTTOM CHORDS: 2 channels, stay bars

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 channels, stay bars

DIAGONALS: 2 rectilinear eyebars, loop-welded eyes
2 round eyebars, loop-welded, turnbuckles in center panel

COUNTERS: N/A

TOP LATERAL BRACING: N/A

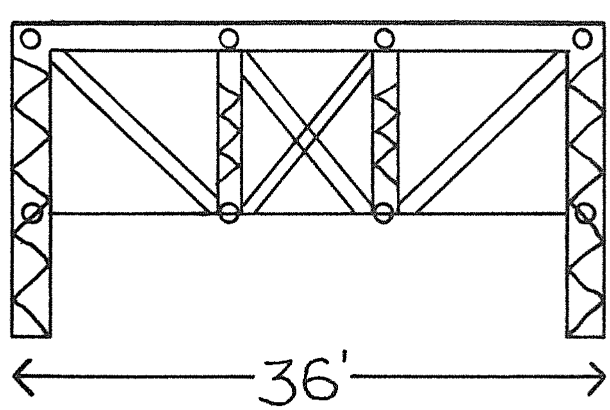
TOP LATERAL STRUTS: N/A

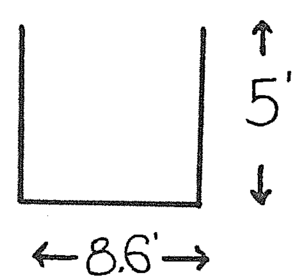
BOTTOM LATERAL BRACING: 1 round rod, loop-welded, turnbuckle

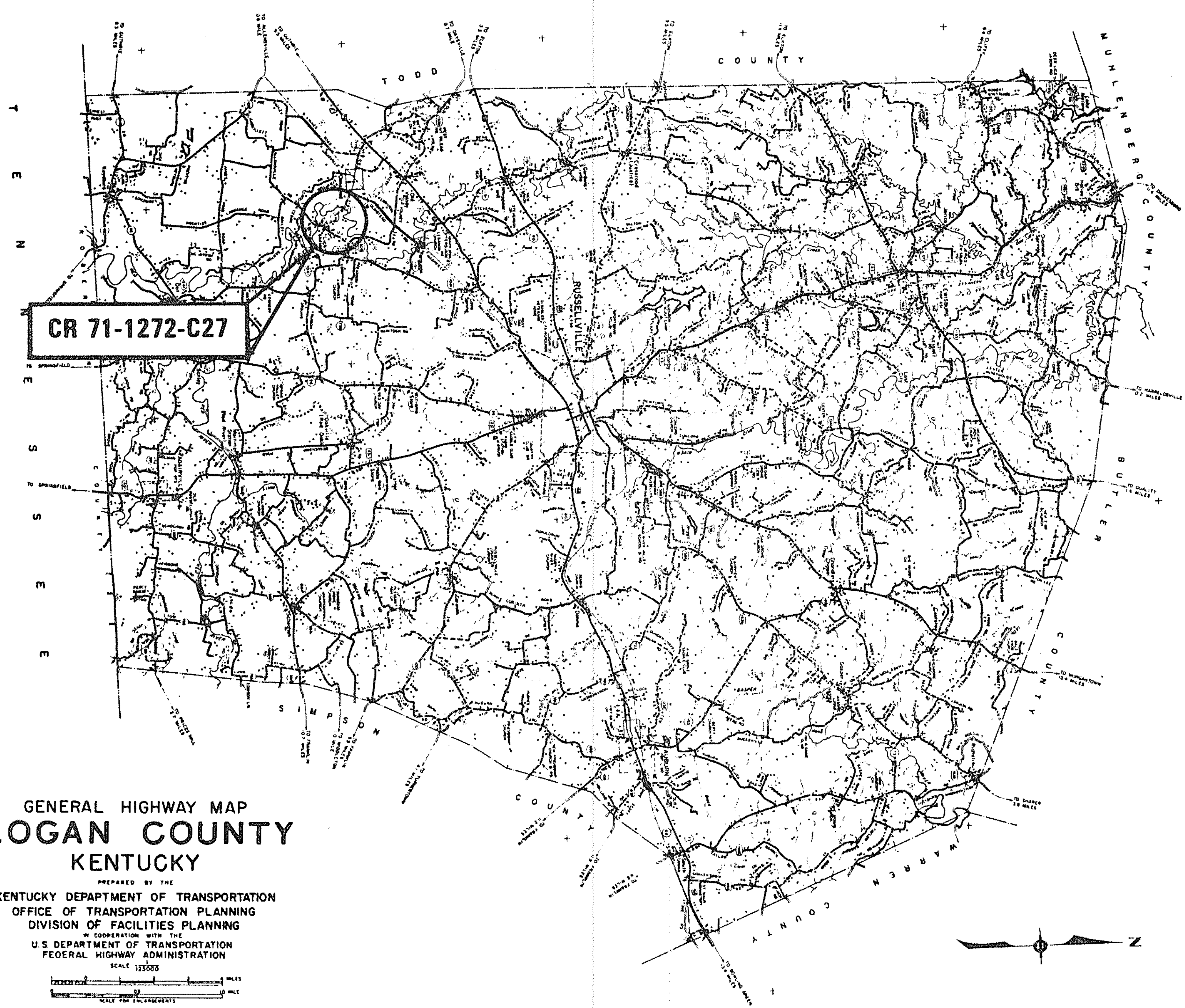
FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: End posts extend to base of abutment.

VII. TRUSS CONFIGURATION







GENERAL HIGHWAY MAP
LOGAN COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPAPTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
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FEDERAL HIGHWAY ADMINISTRATION

SCALE 1/125000

SCALE FOR ENLARGEMENTS

POLYCONIC PROJECTION

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 10

I. LOCATION

COUNTY: Logan CITY: Lickskillet

ROUTE: CR 1272 SPANS: Whippoorwill Creek

HWY. DISTRICT: 3 S I A RATING: 24.7/100

UTM COORDINATES: 16-500950-4065570

II. HISTORY

BRIDGE ID#: CR 71-1272-C27

NAME/TYPE: Pratt Pony Truss

DESIGNER/ BUILDER: Penn Bridge Works Beaver Falls, Penn.

DATE: 1880 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

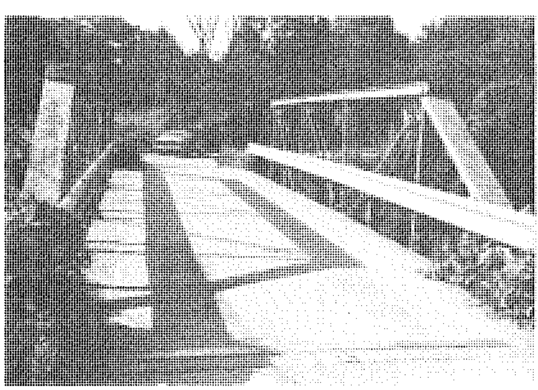
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

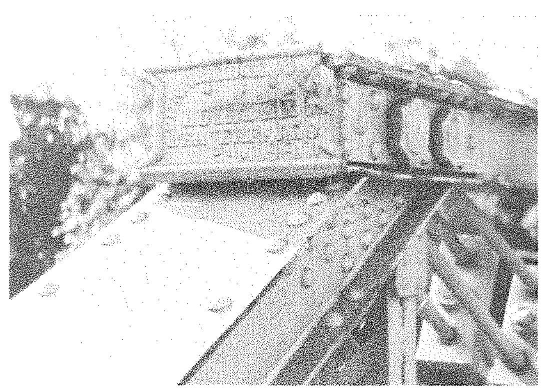
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Earliest Pratt pony truss in Kentucky. Apparently pre-dates 1886 incorporation date for Penn Bridge Works in Virginia Bridge Survey.

IV. ENVIRONMENT/OTHER REMARKS

Located in southern Logan County, near Tennessee border, this historic bridge is just downstream from an early mill site.





FORM # 11

V. DESIGN INFORMATION

NO. SPANS: 4 OVERALL LENGTH: 420' WIDTH: 17.5'

SPAN TYPES:

1. 3 Pratt Through Trusses at LENGTH: 119'
2. Warren Pony Truss LENGTH: 50'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments & pier in river. 2 concrete piers on north bank.

SUPERSTRUCTURE

MATERIALS: Steel BASIS: post 1895 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-punched - 1st 2 panels; 4 rectilinear eyebars, die-punched - 3 center panels

HIP VERTICALS: 2 angles, stay bars

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-punched eyes; 1 round rod with stirrup ends in center panel

COUNTERS: N/A

TOP LATERAL BRACING: 1 round rod

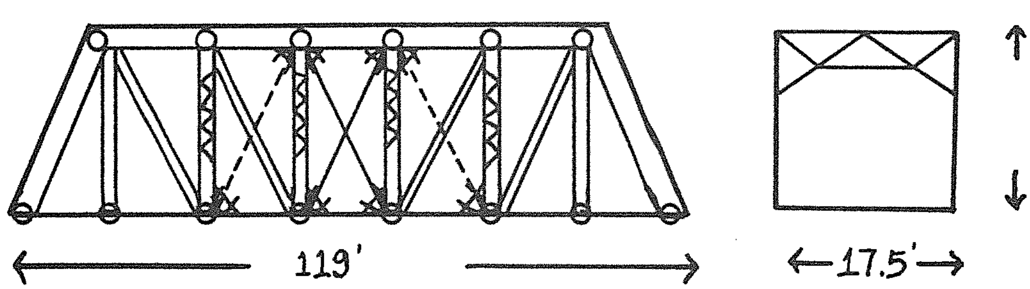
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: 1 round rod threaded & bolted to floor beam

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Paired angle knee bracing on each panel.

VII. TRUSS CONFIGURATION



FORM # 11

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: ______ WIDTH: ______

SPAN TYPES:

1. Warren Pony Truss LENGTH: 50'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: Steel BASIS: Post 1895 date

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 angles, stay bars

HIP VERTICALS: N/A

INTERMEDIATE POSTS: N/A

DIAGONALS: 2 angles, stay bars

COUNTERS: N/A

TOP LATERAL BRACING: N/A

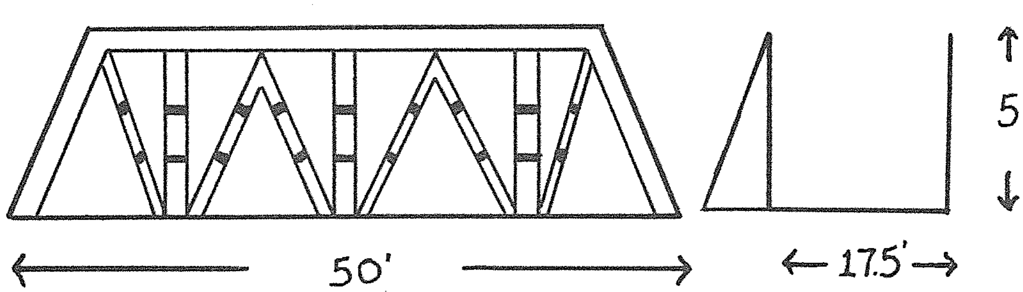
TOP LATERAL STRUTS: N/A

BOTTOM LATERAL BRACING: 1 angle

FLOOR BEAMS: Rolled I-beam STRINGERS: Rolled I-beam

OTHER DETAILS: Verticals of 2 angles, stay bars, and angle outriggers provide bracing.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 12

I. LOCATION

COUNTY: Warren CITY: Nr. Bowling Green

ROUTE: CR 1350 SPANS: Barren River

HWY. DISTRICT: 3 S I A RATING: 31.9/100

UTM COORDINATES: 16-549150-4097110

II. HISTORY

BRIDGE ID#: CR 114-1350-C11

NAME/TYPE: 3 Span Bowstring Arch

DESIGNER/ BUILDER: King Iron Bridge & Mfg. Co. Cleveland, Ohio

DATE: @ 1890 BASIS: Bridge Plate (builder)

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

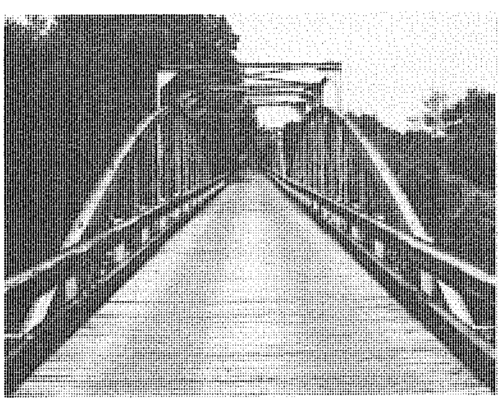
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

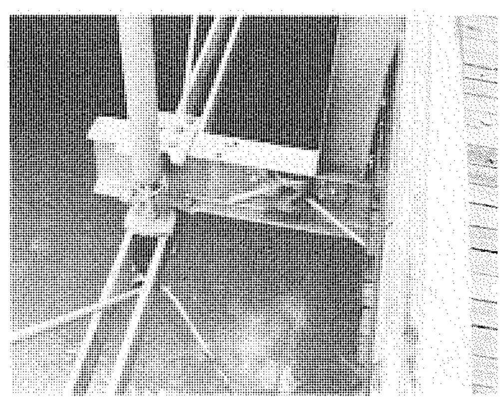
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Longest of the four bowstring arch bridges in Kentucky. Three panel squared-end truss outside bowstring gives lateral bracing (probably a later addition).

IV. ENVIRONMENT/OTHER REMARKS

High commanding view of Barren River in rural setting near Bowling Green.





FORM # 12

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 423' WIDTH: 11'

SPAN TYPES:

1. 3 Bowstring Arch Spans LENGTH: 138.8'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments and piers

SUPERSTRUCTURE

MATERIALS: BASIS:

Connections - Bolted at top chord and to cast connection block at bottom chord.

Arch - 2 channels, 2 plates, in three sections.

Bottom chords - 2 rectilinear bars in 4 sections.

Verticals - 1 round rod, threaded top and bottom.

Bracing - 2 round rods per panel, threaded & bolted to top and bottom chord.

Top lateral bracing - Angles.

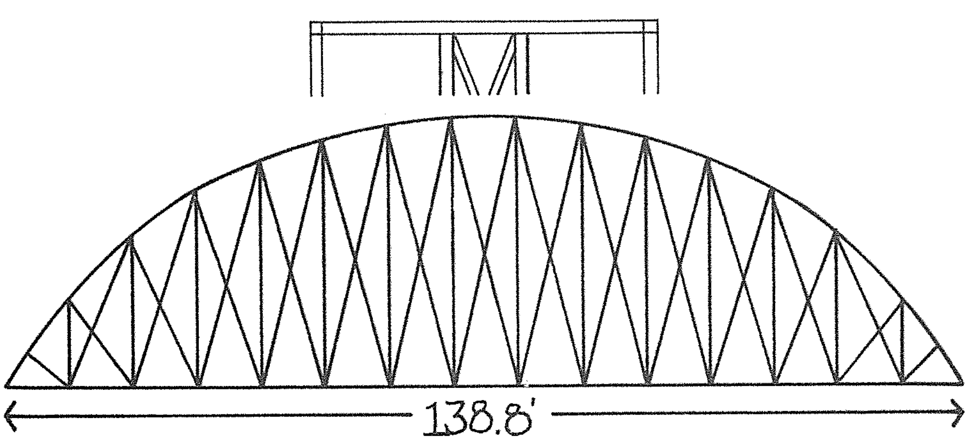
Top lateral struts - Angles.

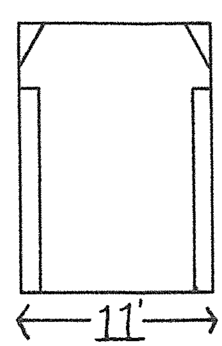
Bottom lateral bracing - 1 round rod, threaded and bolted to floor beams.

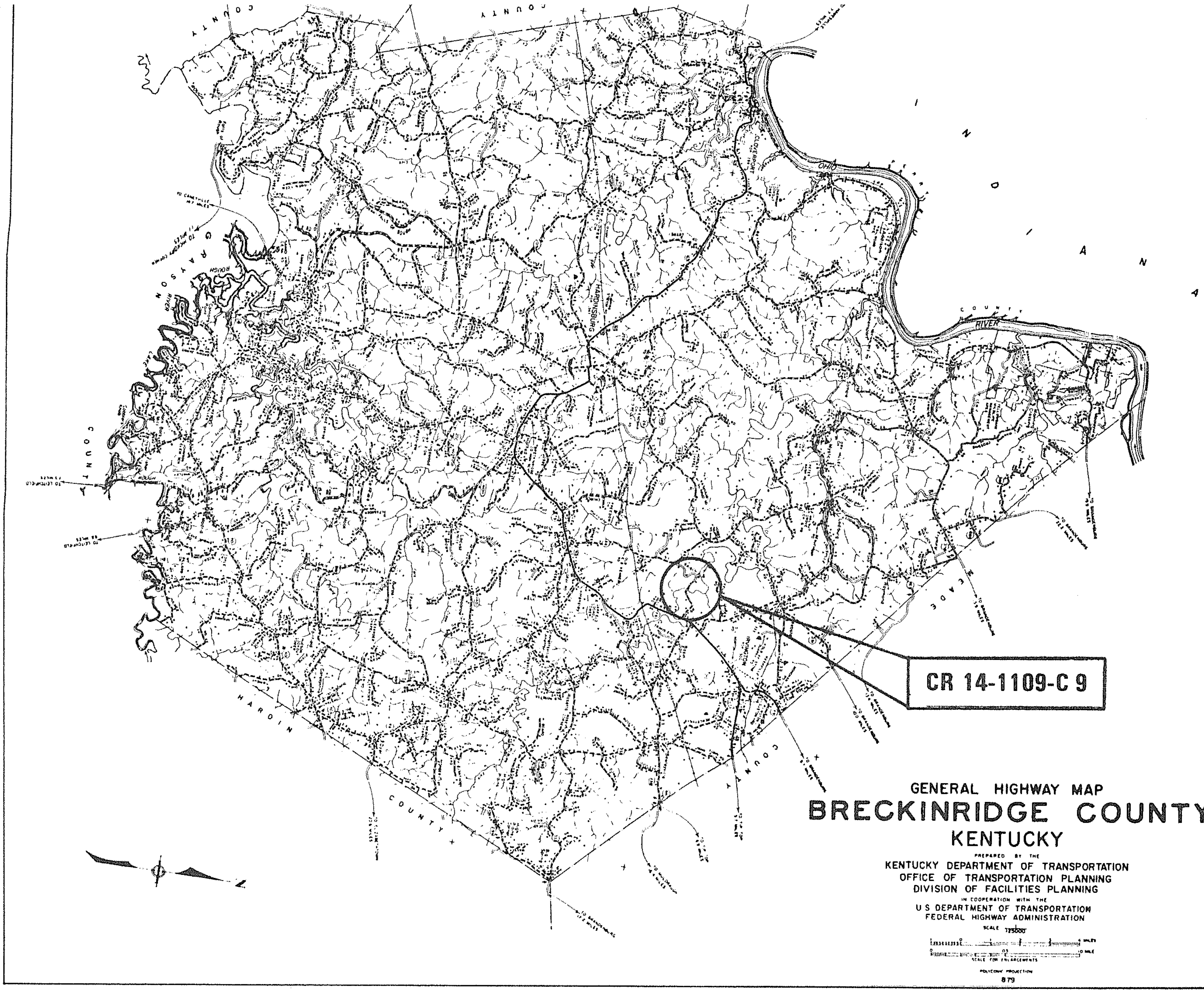
Floor beams - Rolled I-beam.

Stringers - Rolled I-beam.

Other details - 3 panel squared-end truss (probably later addition) gives lateral bracing.







CR 14-1109-C 9
GENERAL HIGHWAY MAP
BRECKINRIDGE COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
INDIANA
OHIO RIVER
MEADE COUNTY
HARDIN COUNTY
GRAYSON COUNTY
HARDINSBURG
IRVINGTON
CLOVERPORT

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 13

I. LOCATION

COUNTY: Breckinridge CITY:

ROUTE: CR 1109 SPANS: Sinking Creek

HWY. DISTRICT: 4 S I A RATING: 13.8/100

UTM COORDINATES: Longitude 86°20'28" Latitude 37°50'35"

II. HISTORY

BRIDGE ID#: CR 14-1109-C9

NAME/TYPE: Pratt Through Truss

DESIGNER/ King Iron Bridge Company

BUILDER: Cleveland, Ohio

DATE: 1886 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

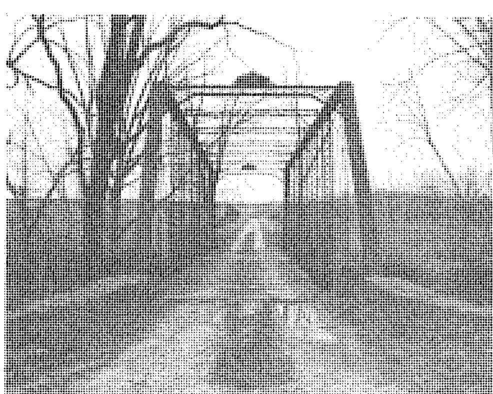
_____ TYPICAL EXAMPLE/COMMON SURVIVOR:

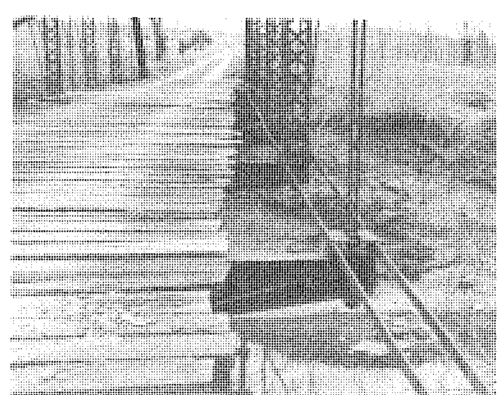
X RARE SURVIVOR/STANDARD DESIGN: May be wrought iron construction due to age, good early example apparently in original location.

_____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Supports limited farm traffic over Sinking Creek, a low flow stream. Excellent example of early bridge technology as few repairs or modifications have been made to the structure.





FORM # 13

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 105' WIDTH: 12'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 102'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: May be wrought iron BASIS: pre 1895 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged eyes

HIP VERTICALS: 2 square rods, turned 90° top to bottom chord

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 1 square eyebar with sleevenut

TOP LATERAL BRACING: 1 round rod with sleevenut

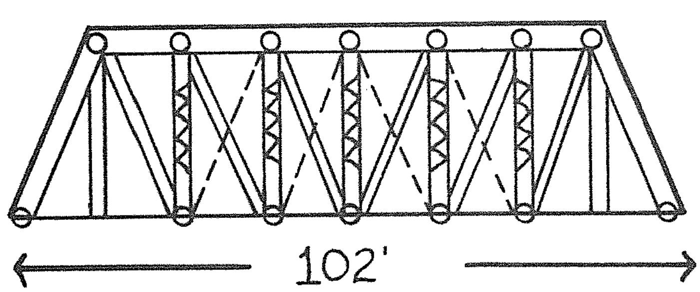
TOP LATERAL STRUTS: 2 angles, lacing bars

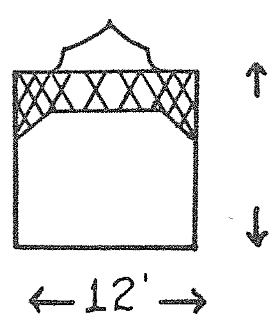
BOTTOM LATERAL BRACING: 1 round rod with sleevenut

FLOOR BEAMS: Plate girders STRINGERS: Heavy wood beams

OTHER DETAILS: Wood deck badly deteriorated.

VII. TRUSS CONFIGURATION

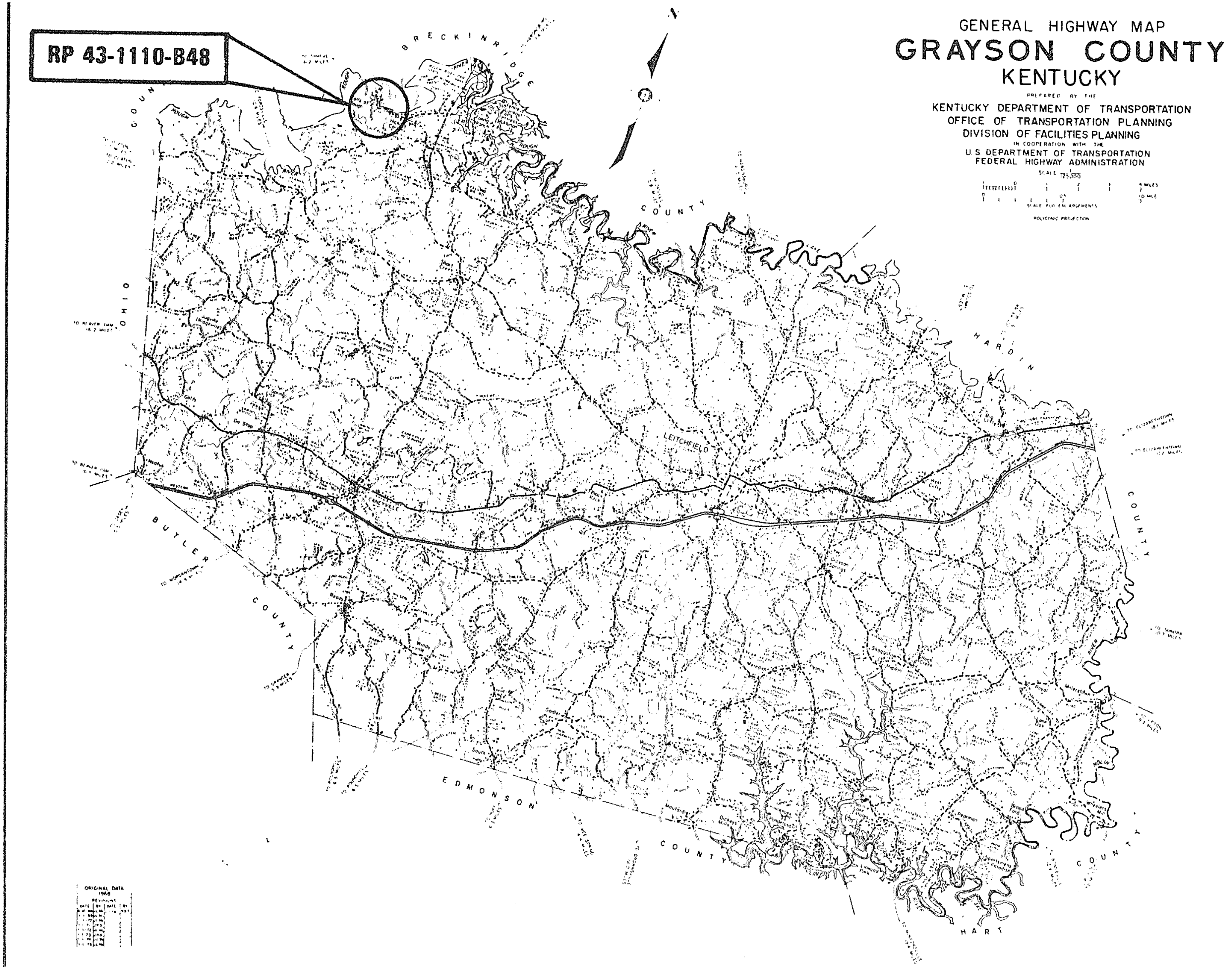




GENERAL HIGHWAY MAP
GRAYSON COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

POLYCONIC PROJECTION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 14

I. LOCATION

COUNTY: Grayson CITY: Falls of Rough

ROUTE: KY 1110 SPANS: Rough River

HWY. DISTRICT: 4 S I A RATING: 26.9/100

U T M COORDINATES: 16-540480-4160110

II. HISTORY

BRIDGE ID#: RP 43-1110-B48

NAME/TYPE: Bowstring Arch

DESIGNER/ BUILDER: King Iron Bridge & Mfg. Co. Cleveland, Ohio

DATE: 1877 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

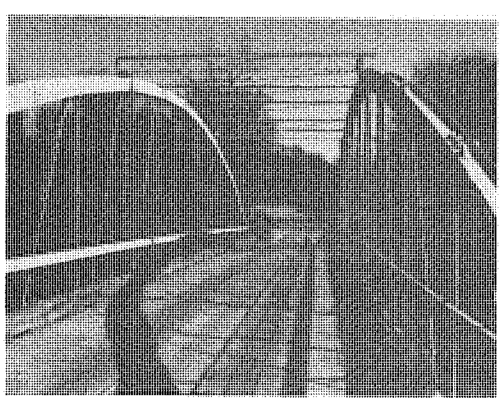
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

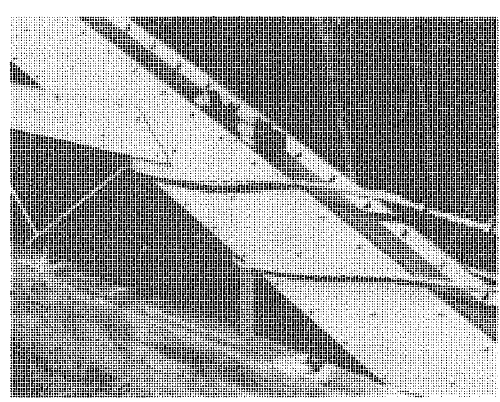
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Oldest metal bowstring arch in Kentucky. Located next to historic Green Mill.

IV. ENVIRONMENT/OTHER REMARKS

Posted 10 ton load limit. Located in Falls of Rough Historic District, placed on National Register of Historic Places January 31, 1978.





FORM # 14

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 152' WIDTH: 16'

SPAN TYPES:

1. Bowstring Through Arch LENGTH: 148'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: Wrought iron BASIS: pre 1885 date

Connections - Bolted at top chord and to cast connection block at bottom chord.

Arch - 2 channels, 2 plates.

Bottom Chords - 4 rectilinear bars bolted to end bearing plates.

Verticals - Threaded bars (cross-section +).

Bracing - Round rods threaded and bolted at arch and bottom chord.

Top lateral bracing - Thin round rods cross on 4 panels.

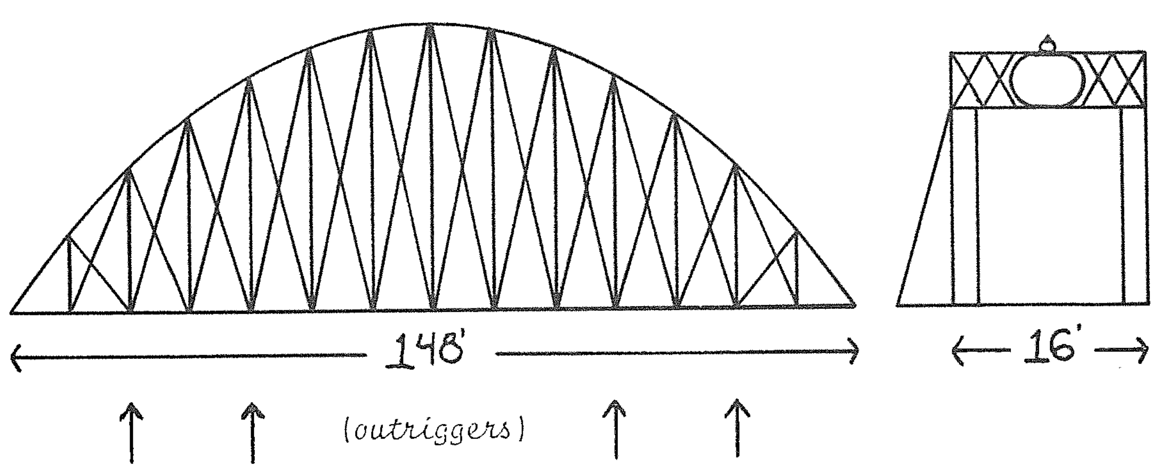
Top lateral struts - (3) thick round rods; (2) angles with lacing bars.

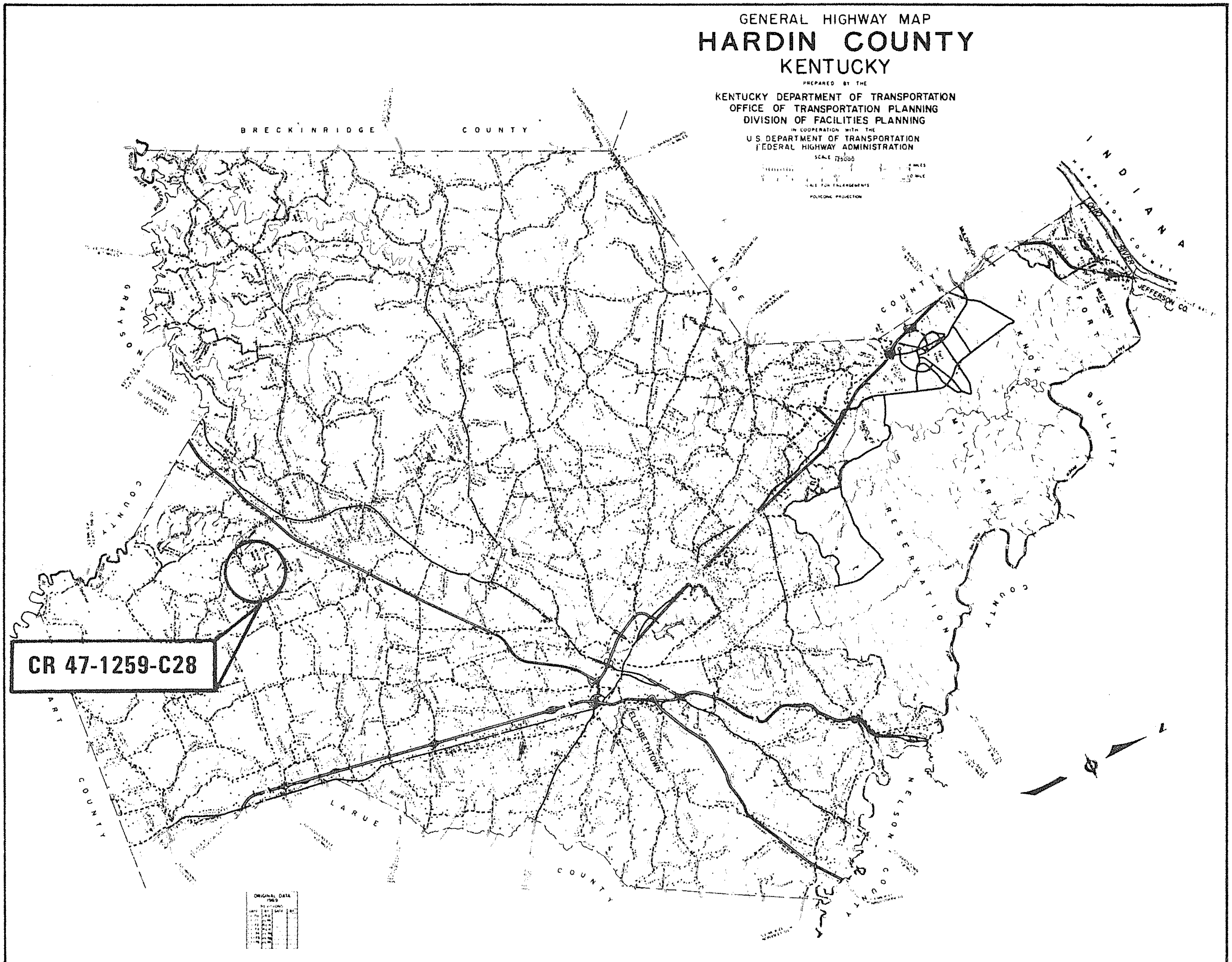
Bottom lateral bracing - Round rod.

Floor beams - Rolled I-beams.

Stringers - Rolled I-beams, 3-4 wood beams.

Other details - Outriggers at four panel points.




GENERAL HIGHWAY MAP
HARDIN COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BRECKINRIDGE COUNTY
MEADE COUNTY
INDIANA
HARRISON COUNTY
OHIO RIVER
JEFFERSON CO.
WEST POINT
FORT KNOX MILITARY RESERVATION
BULLITT COUNTY
NELSON COUNTY
LARUE COUNTY
GRAYSON COUNTY
ELIZABETHTOWN
CR 47-1259-C28

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 15

I. LOCATION

COUNTY: Hardin CITY: Harcourt

ROUTE: Harcourt-Star Mills Rd. SPANS: Nolin River

HWY. DISTRICT: 4 S I A RATING: 20.9/100

UTM COORDINATES: 16-587210-4156585

II. HISTORY

BRIDGE ID#: CR 47-1259-C28

NAME/TYPE: 2 Span Bowstring Arch

DESIGNER/ King Iron Bridge Co.

BUILDER: Cleveland, Ohio

DATE: @ 1890 BASIS: Bridge Plate (builder)

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

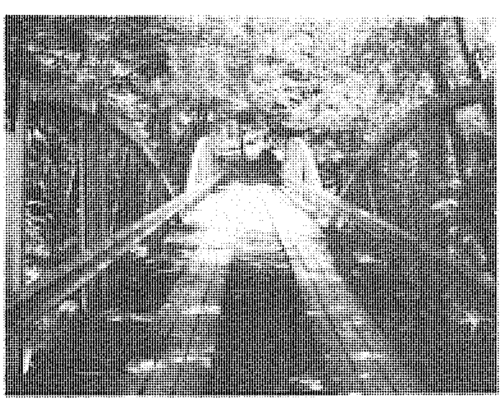
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

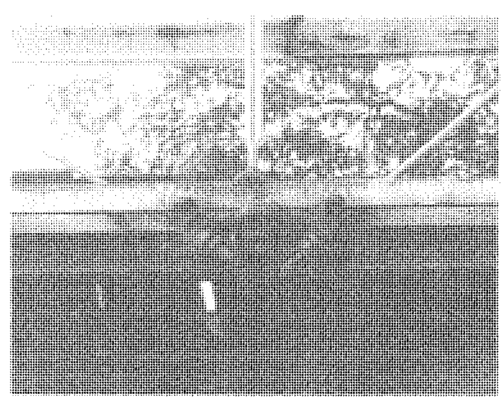
X RARE SURVIVOR/STANDARD DESIGN: One of four bowstrings and one of two multi-span bowstrings in Kentucky. Apparently in original location with few structural modifications.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting on gravel road. Bridge has poor horizontal approaches as there is a 90^0 turn at one end. This structure posted for a 4 ton load limit.





FORM # 15

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 217' WIDTH: 11'

SPAN TYPES:

1. 1 approach span - R. R. rails LENGTH: 48'
2. 2 Bowstring Pony Arches at LENGTH: 84.4'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments and piers

SUPERSTRUCTURE

MATERIALS: BASIS:

Connections - Bolted at top chord and to cast connection block at bottom chord.

Arch - 2 channels, 2 plates.

Bottom chords - 2 rectilinear bars.

Verticals - 4 - 3 channels (I)
8 - single rods (+ cross-section).

Bracing - Round rods threaded and bolted at arch and bottom chord.

Top lateral bracing - N/A.

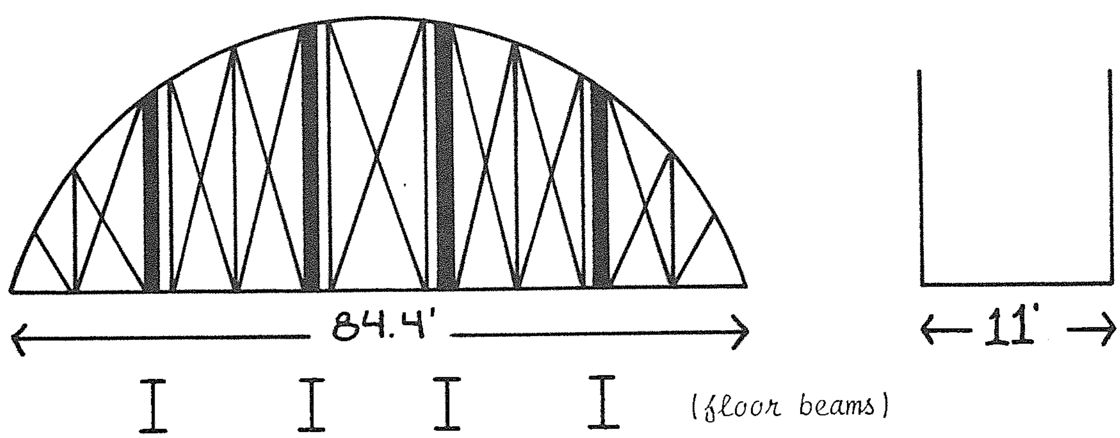
Top lateral struts - N/A.

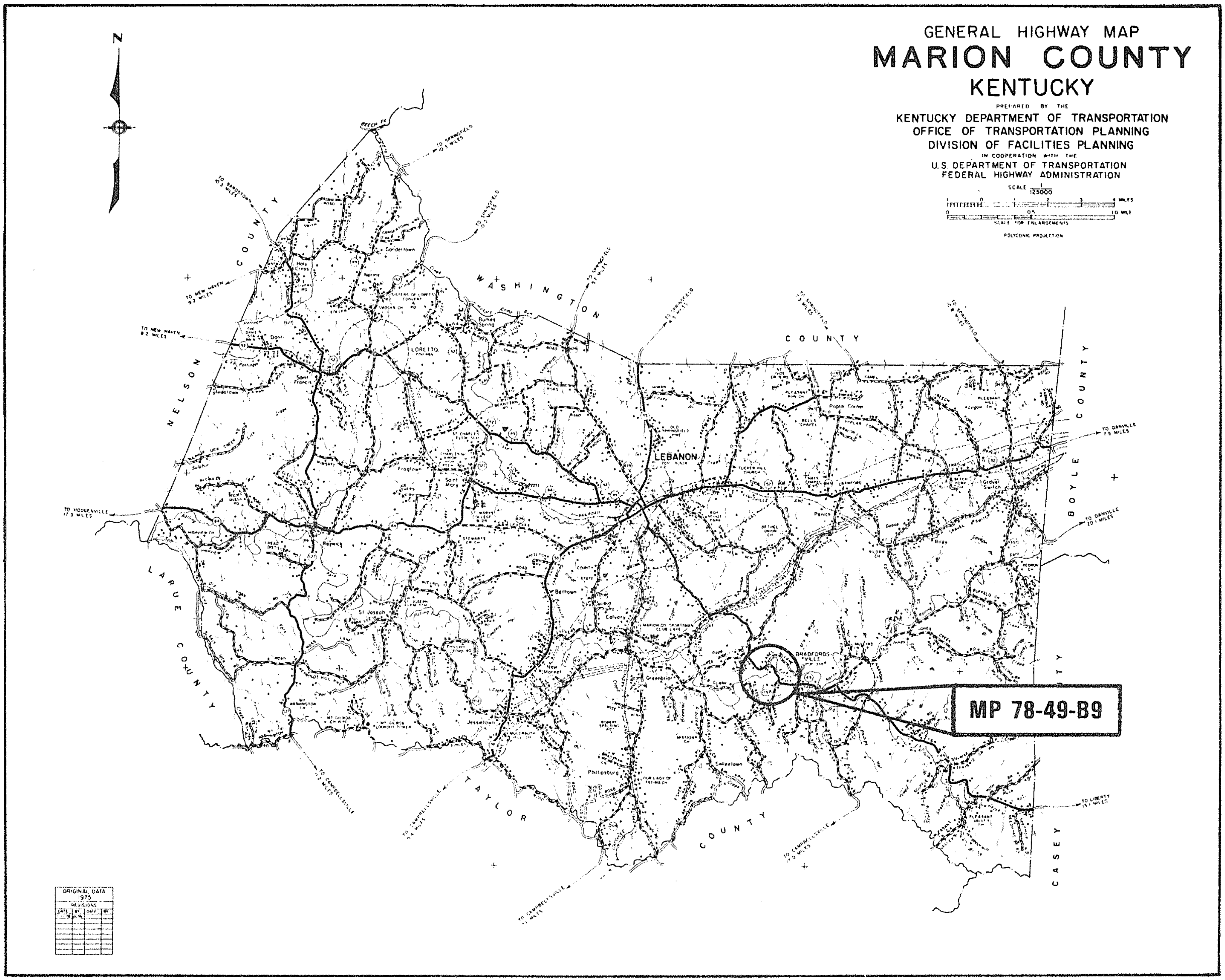
Bottom lateral bracing - 1 round rod.

Floor beams - Rolled I-beams.

Stringers - Rolled I-beams.

Other details - New guardrail, 2 (+) bar verticals replaced with round rods.




GENERAL HIGHWAY MAP
MARION COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
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FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
POLYCONIC PROJECTION
N
MP 78-49-B9
LEBANON
LORETTO
BRADFORDSVILLE
WASHINGTON COUNTY
NELSON COUNTY
LARUE COUNTY
TAYLOR COUNTY
CASEY
BOYLE COUNTY
ORIGINAL DATA 1975
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 16

I. LOCATION

COUNTY: Marion CITY:

ROUTE: KY 49 SPANS: Rolling Fork

HWY. DISTRICT: 4 S I A RATING: 9.0/100

UTM COORDINATES: 16-660300-4151950

II. HISTORY

BRIDGE ID#: MP 78-49-B9

NAME/TYPE: Whipple-Murphy or Double Intersection Pratt Truss

DESIGNER/ King Bridge Company

BUILDER: Cleveland, Ohio

DATE: 1881 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

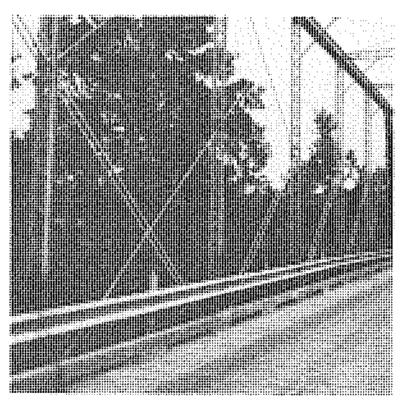
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: Oldest Whipple-Murphy truss remaining in Kentucky. Probably constructed of wrought iron.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting, posted 13 ton weight limit. Project to replace structure, with various alternates, still in planning phase.



FORM # 16

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 162' WIDTH: 15.7'

SPAN TYPES:

1. Whipple-Murphy or LENGTH: 158'
2. Double Intersection Pratt Truss LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: Probably wrought iron BASIS: pre 1885 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 and 4 rectilinear eyebars, die-forged eyes

HIP VERTICALS: 1 round rod with stirrup ends

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged; 1 round eyebar, sleevenut

COUNTERS: 1 round eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod with sleevenut

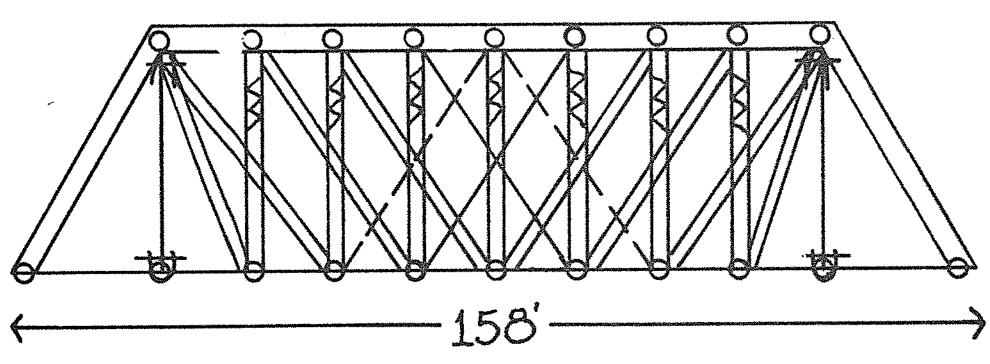
TOP LATERAL STRUTS: 2 small channels with lacing bars

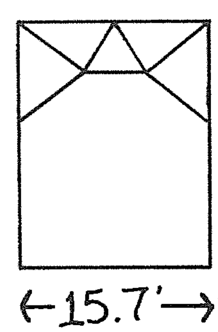
BOTTOM LATERAL BRACING: 1 round rod

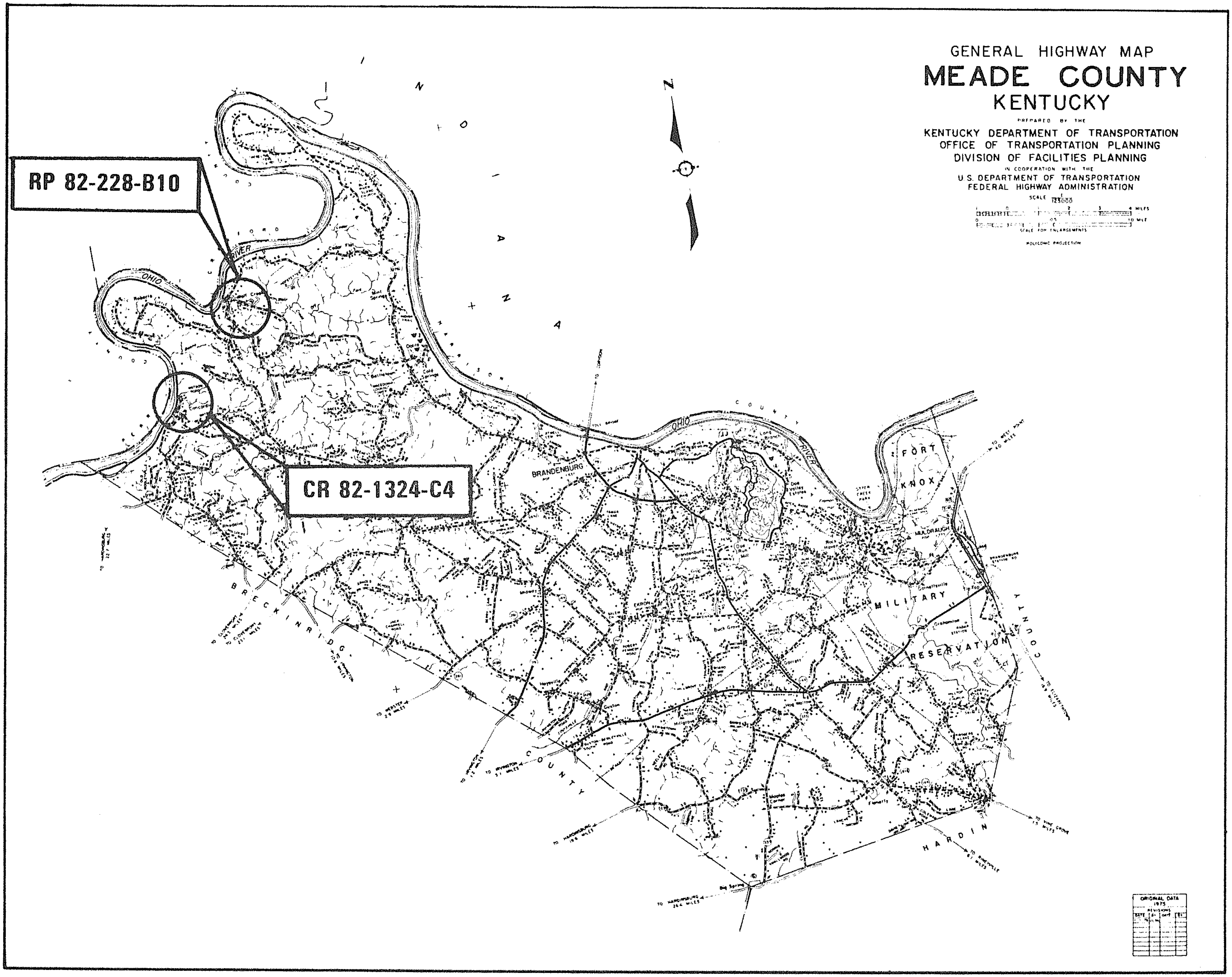
FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: New guardrail and wood deck, floor beam hangers.

VII. TRUSS CONFIGURATION






GENERAL HIGHWAY MAP
MEADE COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
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FEDERAL HIGHWAY ADMINISTRATION
POLYCONIC PROJECTION
N
INDIANA
HARRISON COUNTY
OHIO RIVER
CRAWFORD
BRANDENBURG
FORT KNOX MILITARY RESERVATION
MULDRAUGH
BRECKINRIDGE COUNTY
HARDIN
COUNTY
RP 82-228-B10
CR 82-1324-C4
ORIGINAL DATA 1975
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 17

I. LOCATION

COUNTY: Meade CITY: Wolf Creek

ROUTE: KY 228 SPANS: Wolf Creek

HWY. DISTRICT: 4 S I A RATING: 31.7/100

U T M COORDINATES: 16-553515-4217600

II. HISTORY

BRIDGE ID#: RP 82-228-B10

NAME/TYPE: Whipple-Murphy or Double Intersection Pratt Truss

DESIGNER/ BUILDER: Smith Bridge Company Toledo, Ohio

DATE: 1885 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

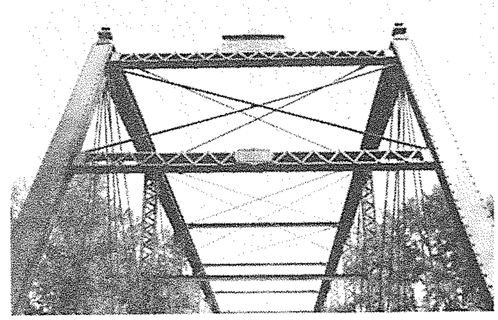
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: Longest Whipple-Murphy truss in Kentucky. May be wrought iron.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting outside Wolf Creek near Wolf Creek-Ohio River confluence.



FORM # 17

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 215' WIDTH: 15.5'

SPAN TYPES:

1. Whipple-Murphy or LENGTH: 209'
2. Double Intersection Pratt Truss LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE MATERIALS: May be wrought iron, Carnegie foundry BASIS: pre 1895 date stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged eyes 4 rectilinear eyebars, die-forged (4 center panels)

HIP VERTICALS: 2 round eyebars, loop-welded

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged eyes; 2 round eyebars, sleevenuts

COUNTERS: 1 round eyebar, loop welded, sleevenut

TOP LATERAL BRACING: 1 round rod with sleevenut

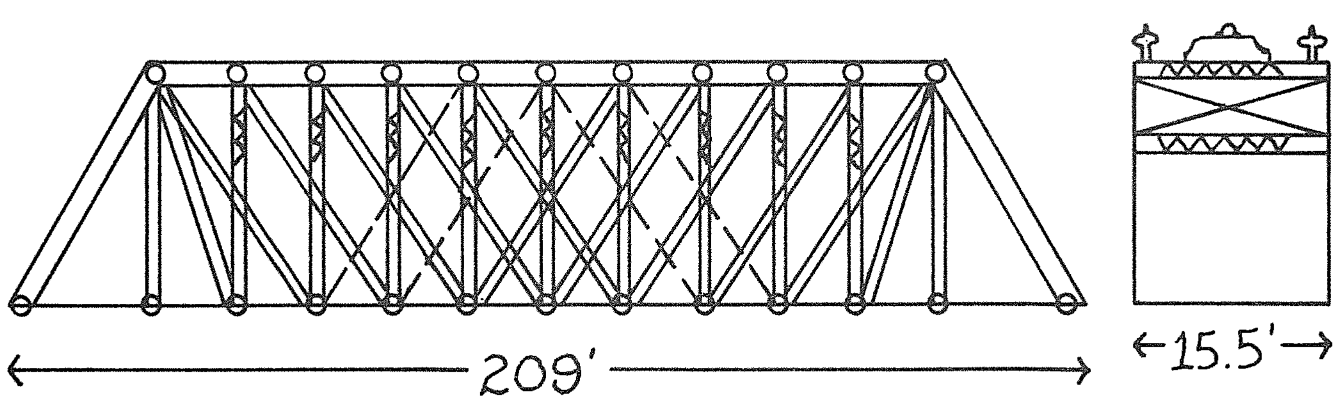
TOP LATERAL STRUTS: Small I-beams (two on alternating panels)

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girders STRINGERS: 4" x 15" wood beams

OTHER DETAILS: Floor beam hangers at each panel. Wood deck and guardrail.

VII. TRUSS CONFIGURATION



Picture was attached to
Form 18 Meade Co, Nr. Concordia
Rte. CR-1324 - Watson Rd.

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 18

I. LOCATION

COUNTY: Meade

CITY: Nr. Concordia

ROUTE: CR 1324-Watson Road

SPANS: Watson Run

HWY. DISTRICT: 4

S I A RATING: 4/100

U T M COORDINATES: 16-550285-4213090

II. HISTORY

BRIDGE ID#: CR 82-1324-C4

NAME/TYPE: Whipple-Murphy or Double Intersection Pratt Truss

DESIGNER/BUILDER: Smith Bridge Company Toledo, Ohio

DATE: 1882

BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

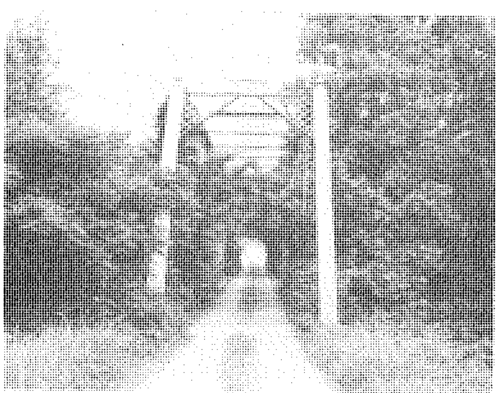
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

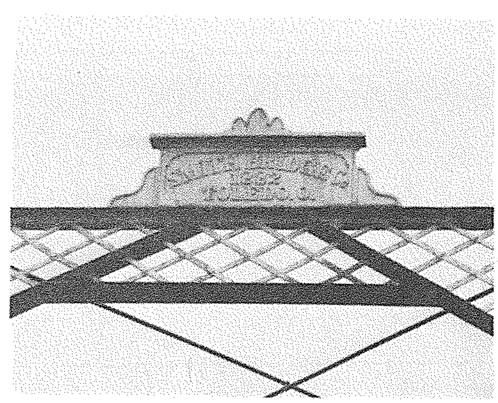
X RARE SURVIVOR/STANDARD DESIGN: Early Whipple-Murphy truss and probably constructed of wrought iron.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural pastoral setting on dirt road within site of the Watson Run-Ohio River confluence. Very low structural sufficiency (4/100) rating.





FORM # 18

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 155' WIDTH: 11.8'

SPAN TYPES:

1. Whipple-Murphy or Double Intersection LENGTH: 152'

2. Pratt Truss LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: Probably wrought iron BASIS: pre 1885 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 panels - 2 square eyebars, loop-welded; 2 panels - 2 rectilinear eyebars, (4 in middle) die-forged

HIP VERTICALS: 1 round eyebar, loop-welded to floor beam hanger

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 square eyebars, loop-welded; 2 square eyebars in center panel, loop-welded, sleevenuts

COUNTERS: 1 round eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod with sleevenut

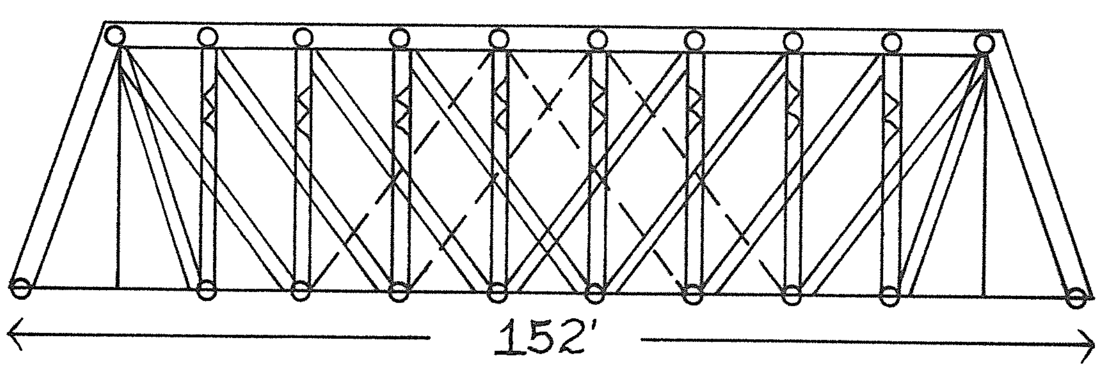
TOP LATERAL STRUTS: Small I-beams

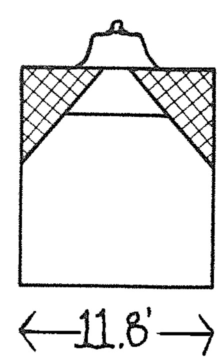
BOTTOM LATERAL BRACING: 1 round rod

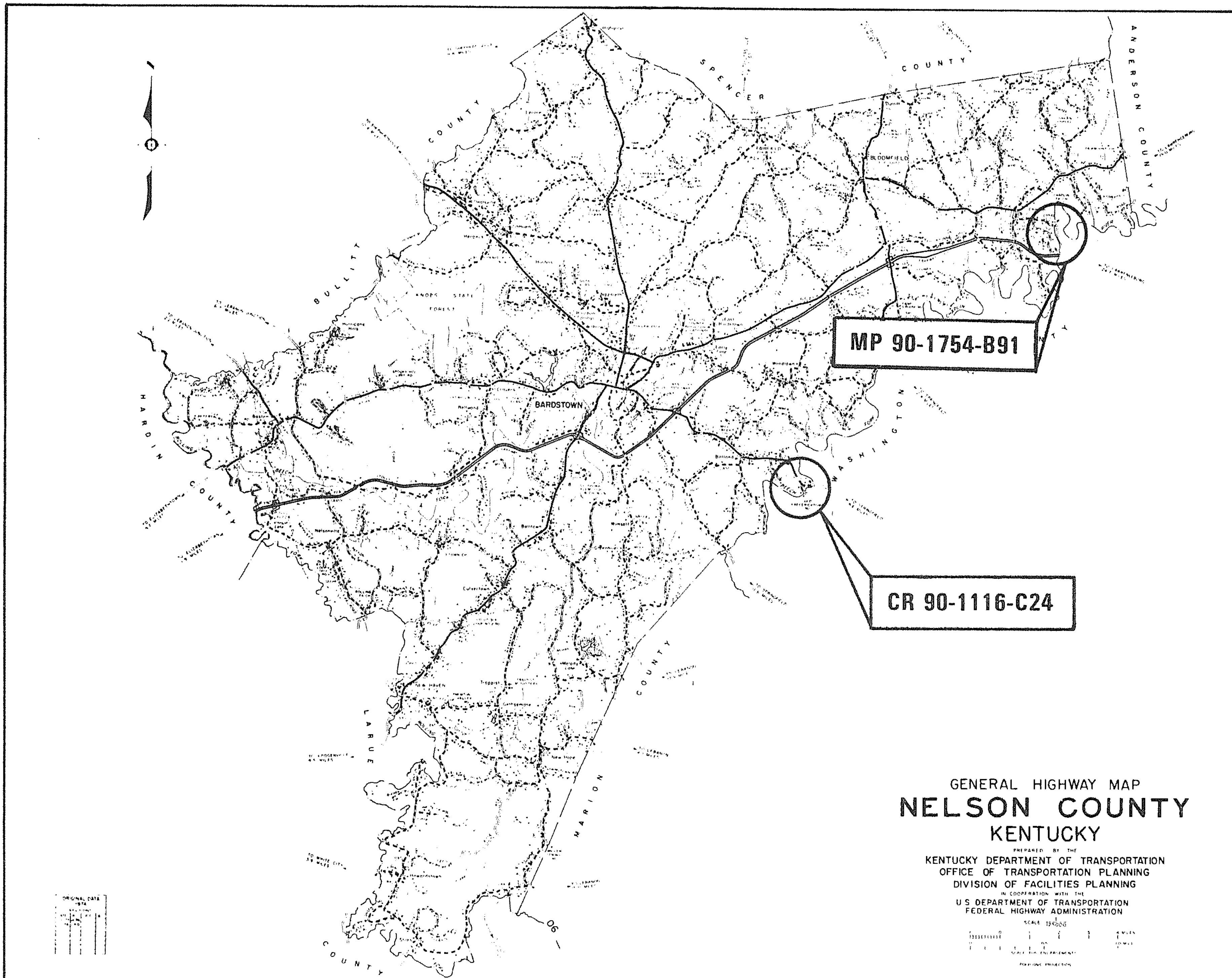
FLOOR BEAMS: Plate girders STRINGERS: 6" x 6" wood beams

OTHER DETAILS: Floor beam hangers at each panel.

VII. TRUSS CONFIGURATION






MP 90-1754-B91
CR 90-1116-C24
ANDERSON COUNTY
SPENCER COUNTY
BULLITT COUNTY
HARDIN COUNTY
LARUE COUNTY
MARION COUNTY
WASHINGTON COUNTY
BLOOMFIELD
BARDSTOWN
GENERAL HIGHWAY MAP
NELSON COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 19

I. LOCATION

COUNTY: Nelson CITY: (Near) Chaplin

ROUTE: KY 1754 SPANS: Chaplin River

HWY. DISTRICT: 4 S I A RATING: 28.1/100

UTM COORDINATES: 16-658400-4194960

II. HISTORY

BRIDGE ID#: MP 90-1754-B91

NAME/TYPE: Parker Truss

DESIGNER/ BUILDER: Unknown

DATE: @ 1910 BASIS: Similar examples

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

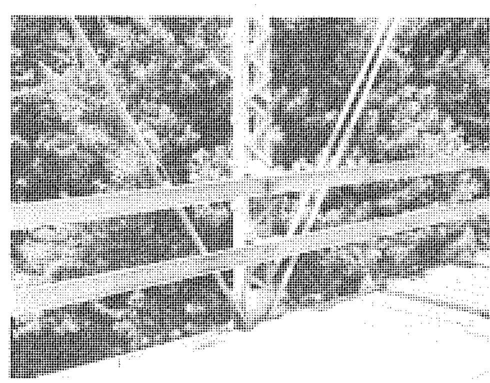
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: Early parker truss, one of only four pin-connected parker trusses in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural setting two miles southeast of the small community of Chaplin. Bridge is posted at 5 tons and has a 90 degree turn on one horizontal approach.



FORM # 19

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 200' WIDTH: 15.7'

SPAN TYPES:

1. Parker truss LENGTH: 200'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments with concrete cap

SUPERSTRUCTURE

MATERIALS: Illinois-USA foundry BASIS: Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged

HIP VERTICALS: Paired angles, lacing bars

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 2 square eyebars, loop-welded, turnbuckles

TOP LATERAL BRACING: 1 round rod

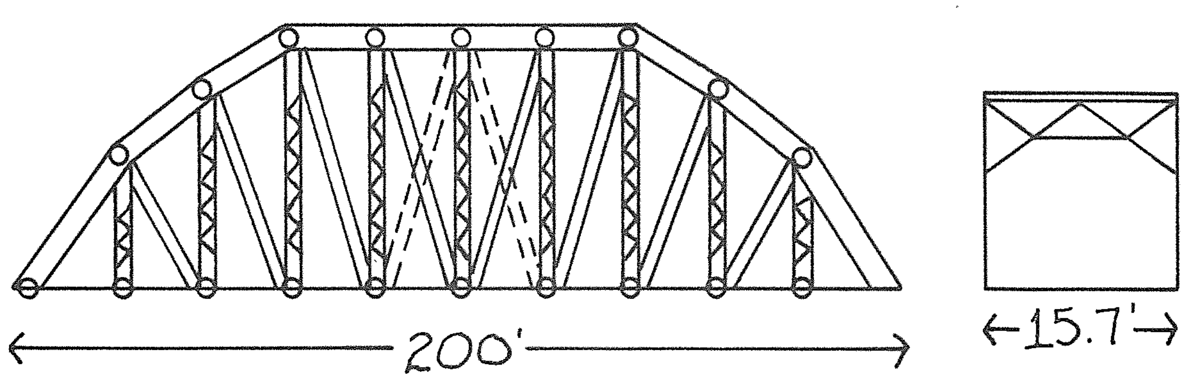
TOP LATERAL STRUTS: 2 paired angles, lacing bars and round rods

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams, channels on outside

OTHER DETAILS: Wood deck.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 20

I. LOCATION

COUNTY: Nelson CITY: Nr. Fredericktown

ROUTE: CR 1116 SPANS: Beech Fork - Chaplin R.

HWY. DISTRICT: 4 S I A RATING: 25.8/100

U T M COORDINATES: 16-645370-4180200

II. HISTORY

BRIDGE ID#: CR 90-1116-C24

NAME/TYPE: 2 Span Camelback Truss

DESIGNER/ BUILDER: Champion Bridge Company Wilmington, Ohio

DATE: 1904 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

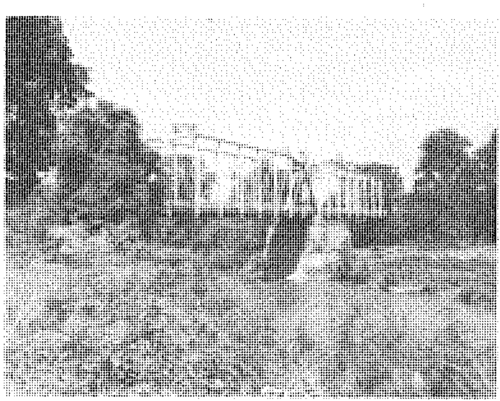
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

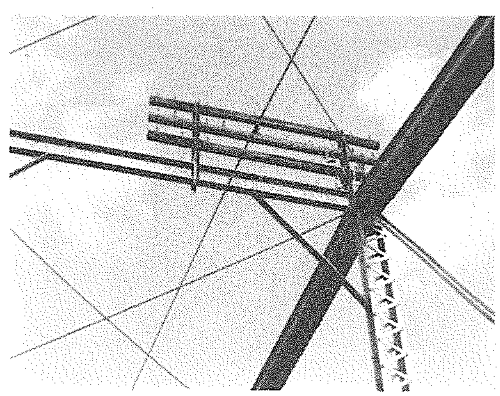
X RARE SURVIVOR/STANDARD DESIGN: This early truss is a rare multi-span camelback apparently on its original location.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Idyllic setting, high above the confluence of Cartwright Creek and Beech Fork near the early settlement village of Fredericktown.





FORM # 20

V. DESIGN INFORMATION

NO. SPANS: 2 OVERALL LENGTH: 329' WIDTH: 14.6'

SPAN TYPES:

1. Camelback Truss LENGTH: 166'
2. Camelback Truss LENGTH: 161'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone pier, concrete abutments

SUPERSTRUCTURE

MATERIALS: Steel BASIS: post 1895 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded eyes

HIP VERTICALS: 1 square eyebar, loop-welded to floor beam hanger

INTERMEDIATE POSTS: Two channels, lacing bars

DIAGONALS: 1 square eyebar, loop-welded, turnbuckle in center panel
1 and 2 rectilinear eyebars, loop-welded

COUNTERS: 1 square eyebar, loop-welded, turnbuckle

TOP LATERAL BRACING: 1 round rod

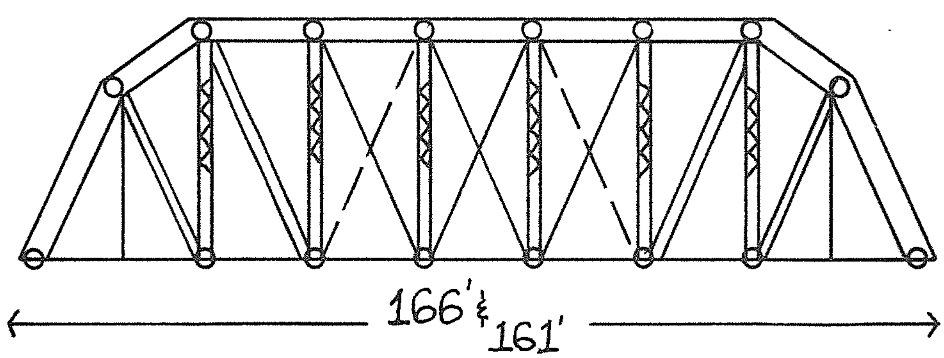
TOP LATERAL STRUTS: Paired angles, lacing bars, paired angle knee bracing

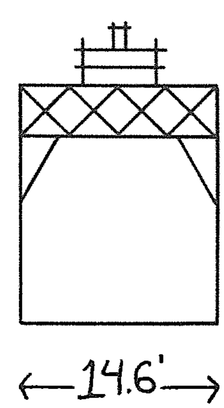
BOTTOM LATERAL BRACING: 1 round rod

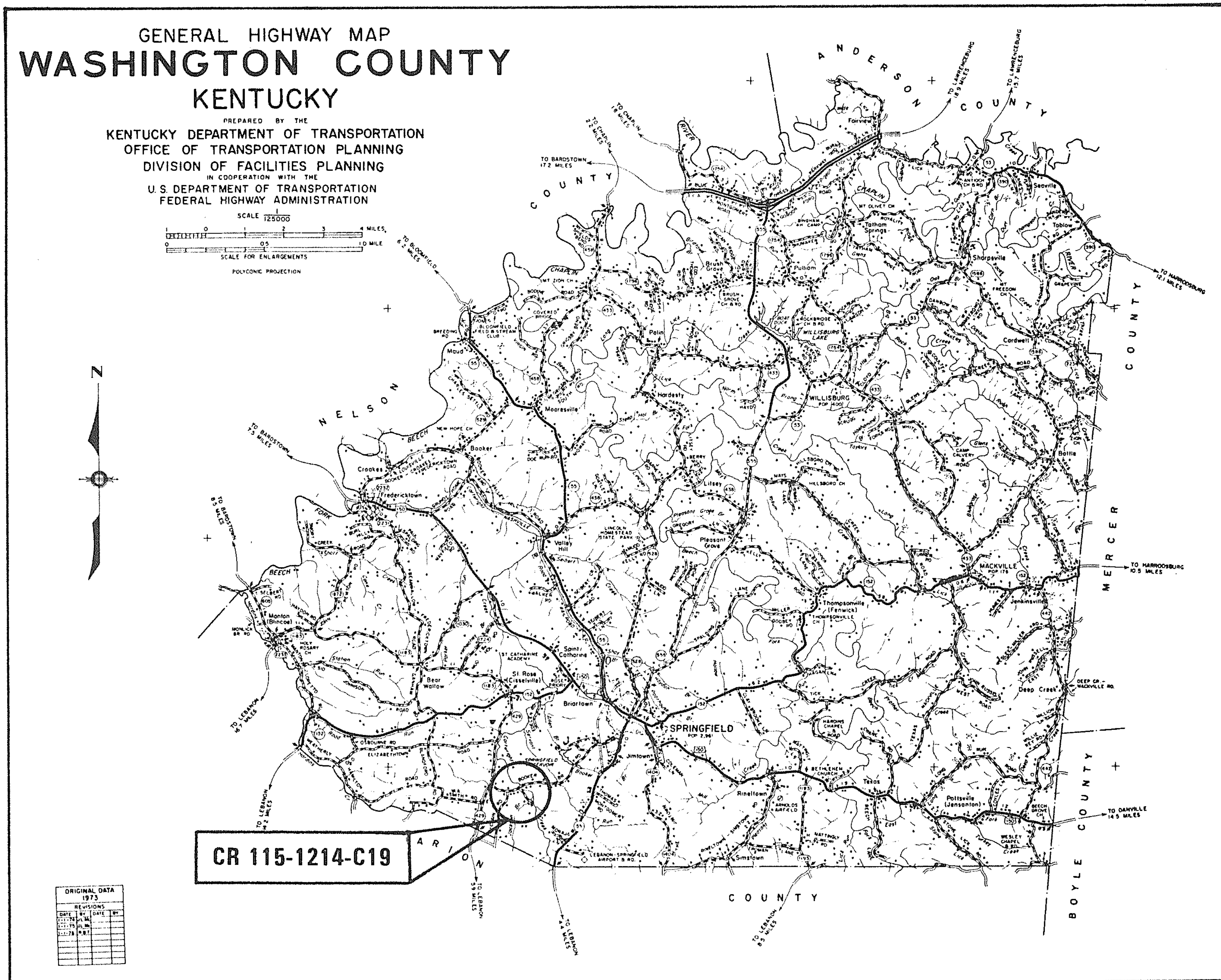
FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams
wood beams

OTHER DETAILS: Original guardrailing of angles & lacing bars,
floor beam hangers.

VII. TRUSS CONFIGURATION






GENERAL HIGHWAY MAP
WASHINGTON COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
N
ANDERSON COUNTY
MERCER COUNTY
BOYLE COUNTY
MARION COUNTY
NELSON COUNTY
SPRINGFIELD
WILLISBURG
MACKVILLE
CR 115-1214-C19
ORIGINAL DATA 1973
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 21

I. LOCATION

COUNTY: Washington CITY: (Near) Springfield

ROUTE: CR 1214 SPANS: Cartwright Creek

HWY. DISTRICT: 4 S I A RATING: 23.7/100

U T M COORDINATES: 16-652310-4169210

II. HISTORY

BRIDGE ID#: CR 115-1214-C19

NAME/TYPE: Pratt Through Truss

DESIGNER/ King Bridge Company

BUILDER: Cleveland, Ohio

DATE: 1884 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

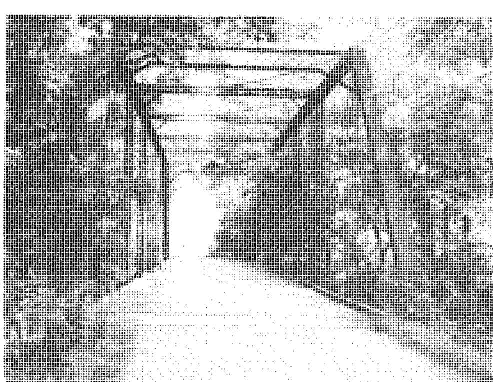
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

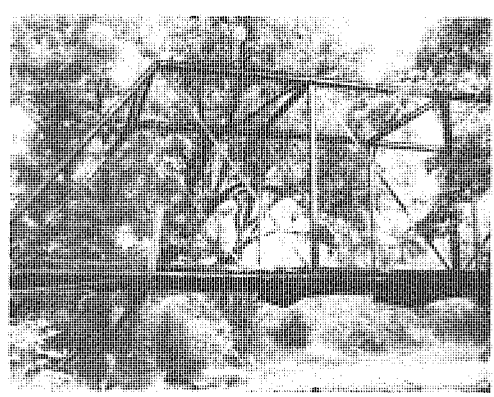
X RARE SURVIVOR/STANDARD DESIGN: 1 of the 2 oldest King Bridge Company Pratt through trusses in Kentucky. Earliest Pratt through truss in District 4.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

This elegant bridge is located on a gravel road and crosses Cartwright Creek some 3 miles southwest of Springfield.





FORM # 21

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 100' WIDTH: 15.5'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 98.6'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments, concrete caps

SUPERSTRUCTURE

MATERIALS: Probably wrought iron BASIS: pre 1885 date

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged eyes

HIP VERTICALS: 2 round eyebars, loop-welded, 90^{o} turn to bottom chord

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged eyes
2 square eyebars, loop-welded, sleevenuts in center panel

COUNTERS: 1 square eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod

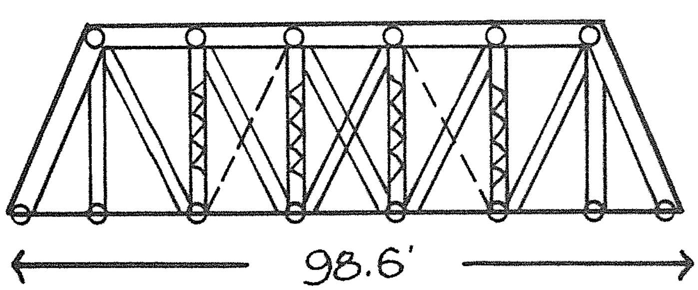
TOP LATERAL STRUTS: 2 channels, lacing bars

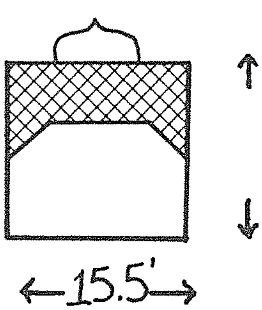
BOTTOM LATERAL BRACING: 1 round rod

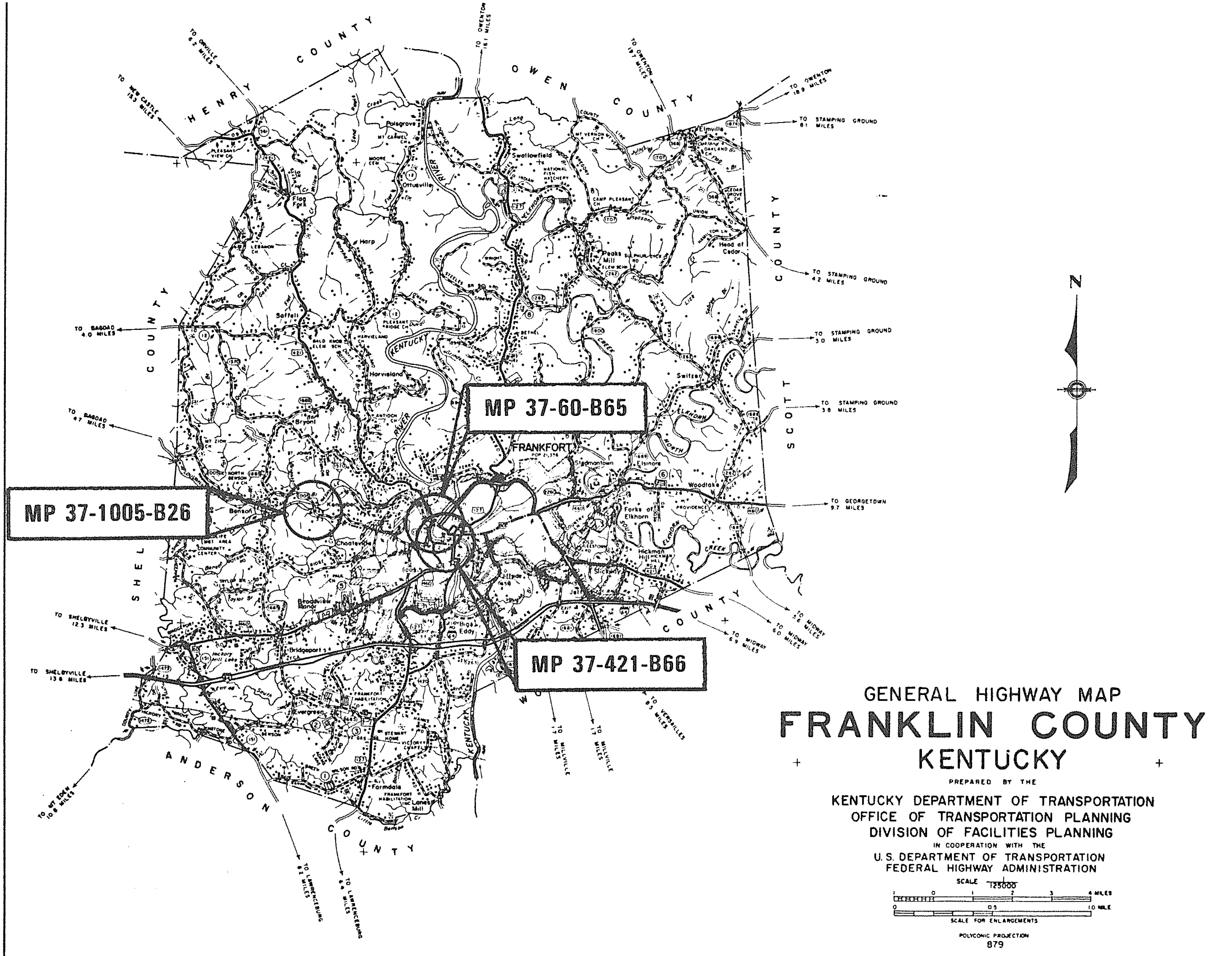
FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS: Cable guardrail, wood deck, floor beam hangers.

VII. TRUSS CONFIGURATION







MP 37-60-B65
MP 37-1005-B26
MP 37-421-B66
FRANKFORT
OWEN COUNTY
HENRY COUNTY
SCOTT COUNTY
ANDERSON COUNTY
SHELBY COUNTY
WOODFORD COUNTY
N
GENERAL HIGHWAY MAP
FRANKLIN COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 22

I. LOCATION

COUNTY: Franklin CITY:

ROUTE: CR 1005 SPANS: Benson Creek

HWY. DISTRICT: 5 S I A RATING: 27.0/100

U T M COORDINATES: 16-680620-4230700

II. HISTORY

BRIDGE ID#: MP 37-1005-B26

NAME/TYPE: "Red Bridge" Pratt Through Truss

DESIGNER/ BUILDER: King Bridge Company, Cleveland, Ohio

DATE: 1896 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

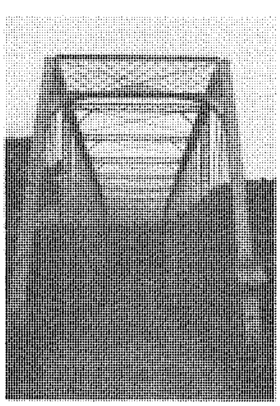
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

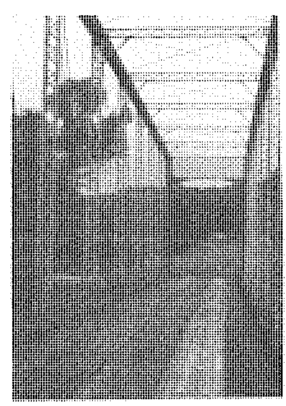
X RARE SURVIVOR/STANDARD DESIGN: Elegant simple truss with star pattern cut-outs in portal bracing. Located adjacent to site of historic Conaway Mill and Falls of Benson Creek.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Locally known as "Red Bridge" central focus for a location valuable for its artistic, traditional, recreational, and community activities that take place there. Bridge replaced by adjacent structure.





FORM # 22

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 151' WIDTH: 14'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 151'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged

HIP VERTICALS: 2 square eyebars, loop-welded at top chord die-forged at bottom chord and welded to floor beams

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged, smaller toward center, center - 1 square eyebar, loop-welded, sleevenut

COUNTERS: 1 square eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod

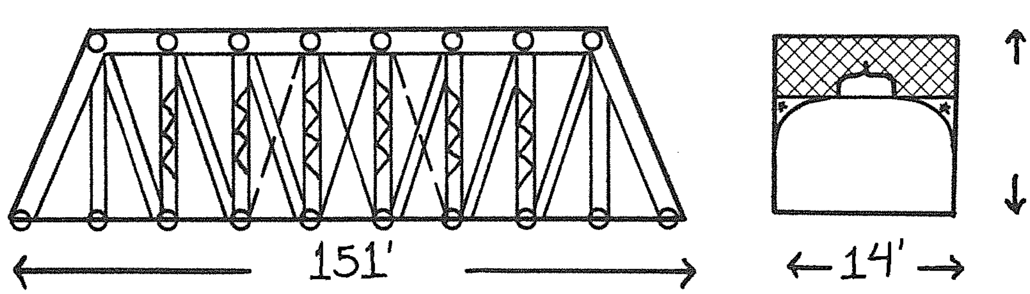
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Wood deck, railing replaced with angles. Floor beam hangers at each lower panel point.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 23

I. LOCATION

COUNTY: Franklin CITY: Frankfort

ROUTE: St. Clair/Bridge Street SPANS: Kentucky River

HWY. DISTRICT: 5 S I A RATING: 28.0/100

U T M COORDINATES: 16-685760-4229540

II. HISTORY

BRIDGE ID#: MP 37-60-B65

NAME/TYPE: "Singing Bridge" Pennsylvania - Petit

DESIGNER/ King Bridge Company

BUILDER: Cleveland, Ohio

DATE: 1893 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

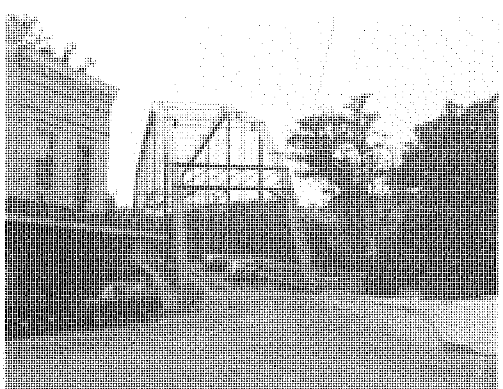
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

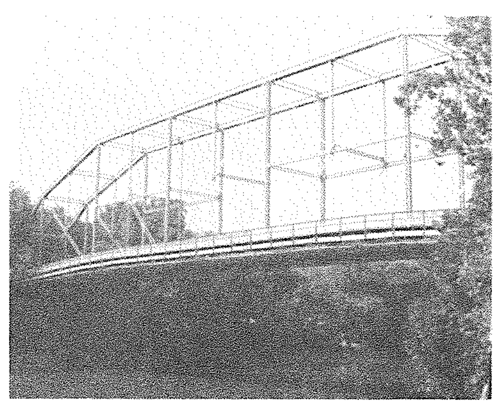
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Earliest Pennsylvania Petit truss extant in Kentucky. Site of pontoon bridge 1805-10, suspension bridge 1816-35, timber covered bridge 1848.

IV. ENVIRONMENT/OTHER REMARKS

Located in Frankfort Commercial Historic District, placed on National Register May 10, 1979. Subject of water color painting by renowned local artist Paul Sawyer.





FORM # 23

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 406' WIDTH: 25'

SPAN TYPES:

1. Pennsylvania Petit LENGTH: 406'
2. with horizontal substruts LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 3 plates (2 with angles), lacing bars

TOP CHORDS: 2 plates (2 with angles), lacing bars

BOTTOM CHORDS: 4 rectilinear eyebars, die-forged

HIP VERTICALS: 2 square eyebars, loop-welded

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged
2 square rods, loop welded, sleevenuts

COUNTERS: 2 square rods, loop-welded, sleevenuts

TOP LATERAL BRACING: 1 round rod

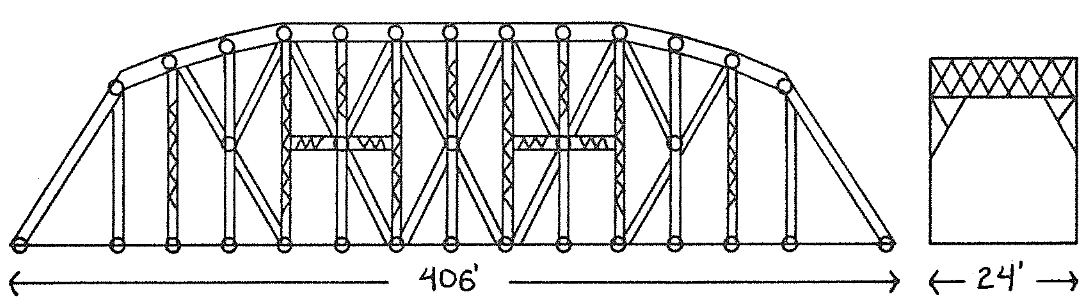
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: 2 round rods, sleevenuts

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Metal mesh deck surface.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 24

I. LOCATION

COUNTY: Franklin CITY: Frankfort

ROUTE: US 421 SPANS: Kentucky River

HWY. DISTRICT: 5 S I A RATING: 35.2/100

U T M COORDINATES: 16-685340-4230160

II. HISTORY

BRIDGE ID#: MP 37-421-B66

NAME/TYPE: Baltimore Petit Truss

DESIGNER/ BUILDER: Unknown

DATE: @ 1910 BASIS:

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

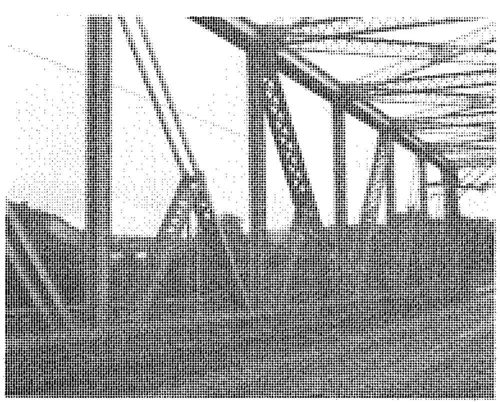
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

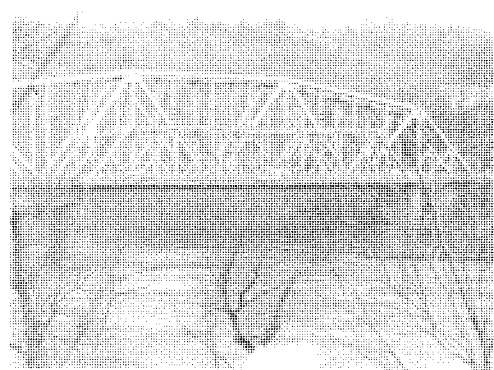
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: This is the only pin-connected Baltimore Petit truss on a Kentucky highway.

IV. ENVIRONMENT/OTHER REMARKS

The structure is located in Frankfort, capital of Kentucky, next to a massive Pennsylvania Petit railroad bridge and near an abandoned 1890 Whipple-Murphy truss built by the King Bridge Company.





FORM # 24

V. DESIGN INFORMATION

NO. SPANS: ____ OVERALL LENGTH: 516' WIDTH: 23'

SPAN TYPES:

1. Baltimore Petit Truss LENGTH: 169'

2. ____ LENGTH: ____

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments & pier

SUPERSTRUCTURE

MATERIALS: ____ BASIS: ____

CONNECTIONS: PINS: X RIVETS: ____

END POSTS: 3 plates with angles and lattice bars

TOP CHORDS: 3 plates with angles and lattice bars

BOTTOM CHORDS: 8 panels - 2 rectilinear eyebars/angles/lattice bars
8 panels in center - 4 eyebars, die-forged

HIP VERTICALS: Paired angle bars riveted to joining plate

INTERMEDIATE POSTS: Paired angle bars riveted to joining plate

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 2 plates with angles, lattice bars;
2 channels, lattice bars

TOP LATERAL BRACING: 2 angles, lacing bars

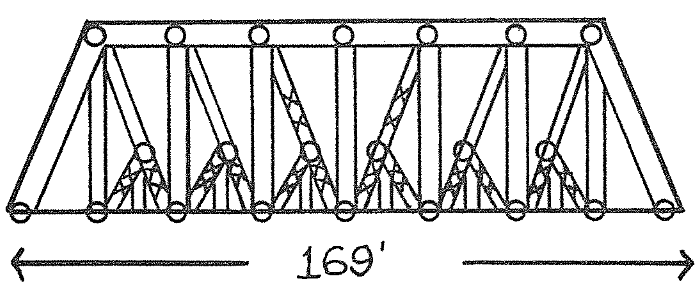
TOP LATERAL STRUTS: Paired angles, lacing bars

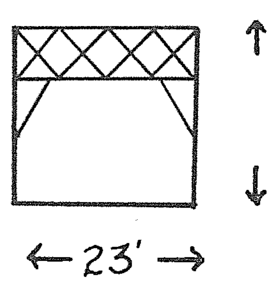
BOTTOM LATERAL BRACING: ____

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: ____

VII. TRUSS CONFIGURATION



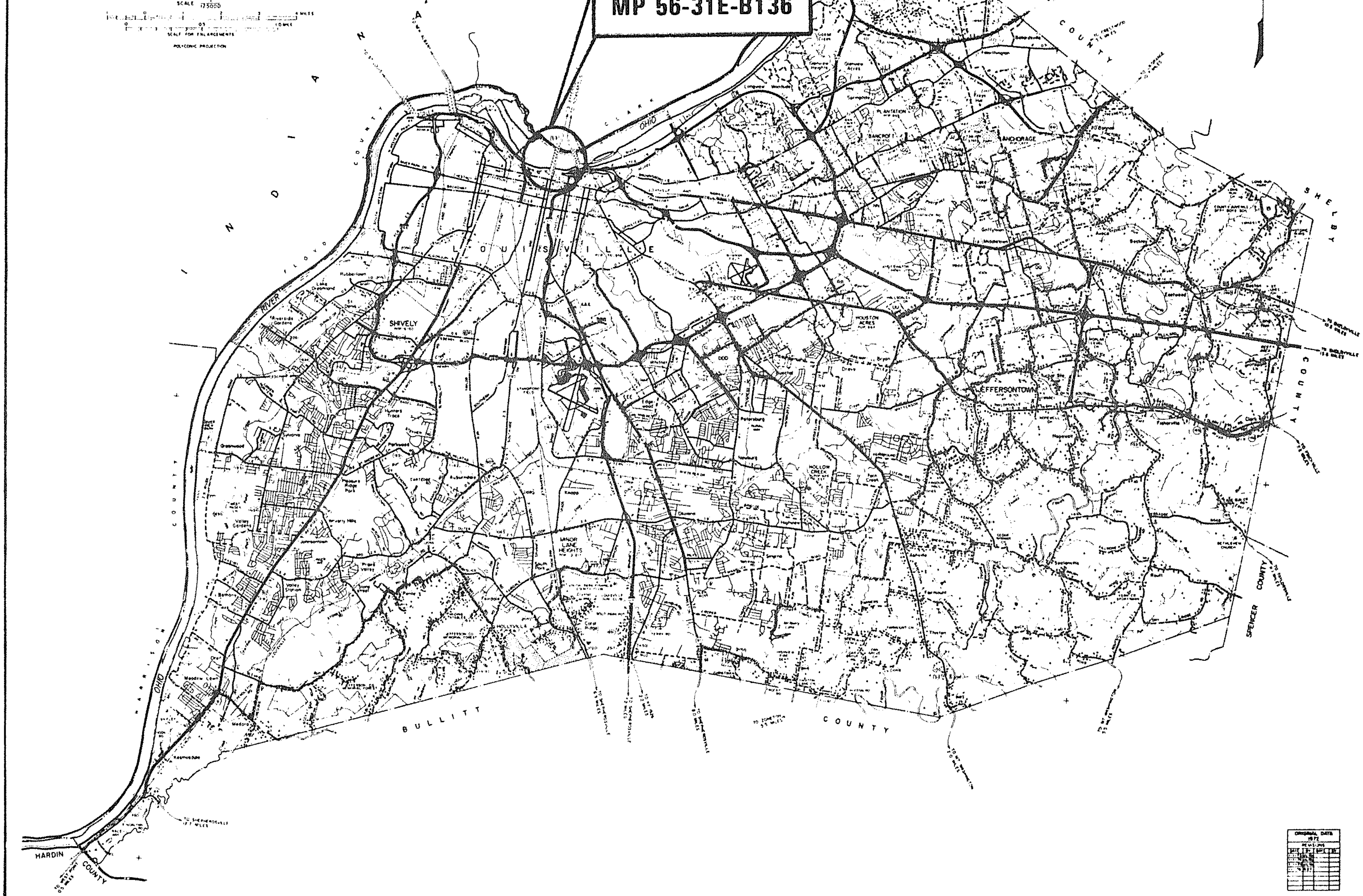


GENERAL HIGHWAY MAP

JEFFERSON COUNTY

KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 25

I. LOCATION

COUNTY: Jefferson CITY: Louisville

ROUTE: US 31E SPANS: Ohio River

HWY. DISTRICT: 5 S I A RATING: 37.6/100

U T M COORDINATES: 16-609200-4235660

II. HISTORY

BRIDGE ID#: MP 56-31E-B136

NAME/TYPE: George Rogers Clark Memorial Bridge or "Municipal Bridge" 6 Span Cantilever Truss

DESIGNER/ BUILDER: See below

DATE: 1929 BASIS: Cut stone marker

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

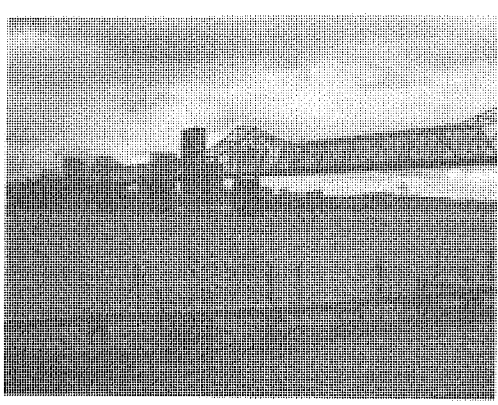
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

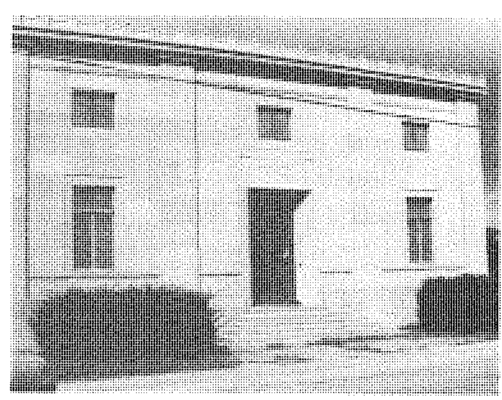
X RARE SURVIVOR/STANDARD DESIGN: This long cantilever span was a joint Kentucky-Indiana effort and was heavily advertised in tourist bulletins of the day.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Designed by Ralph Modjeski; Contractors: Masonry Piers - Vang. Const. Co. - Pittsburg; Steelwork - American Br. Co. - Pittsburg; Approaches - Henry Bickel Co. - Louisville; Admin. Building Tollhouses (gone) - Henry Bickel Co. - Louisville; Elect. Equip. - R. A. Clegg'r Co. - Louisville.





FORM # 25

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 3740' WIDTH: 40'

SPAN TYPES:

1. 6 Span Cantilever Truss (2 suspended spans) LENGTH: 3364'
2. Warren Through Truss LENGTH: 376'

VI. STRUCTURAL INFORMATION

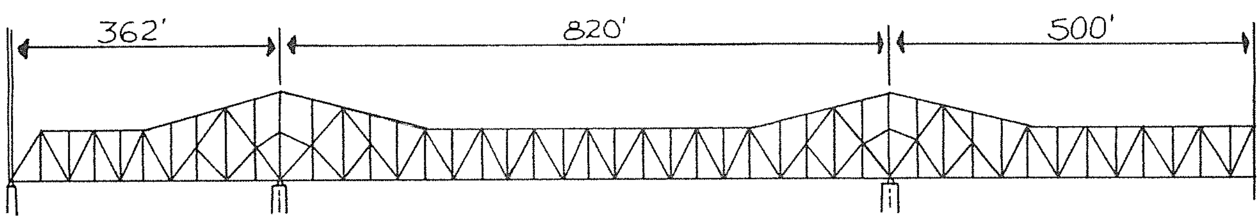
SUBSTRUCTURE: Rough cut masonry piers

SUPERSTRUCTURE

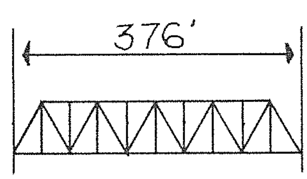
All structural web members are capable of withstanding compressive and tensive forces. They are built-up of standard rolled sections: 2 channels and lacing bars, 2 channels and cover plate, or paired angles and plates.

Lateral bracing is paired angles with lacing bars.

Floor beams and stringers in the floor system are rolled I-beams.



1 of 2 identical cantilever spans

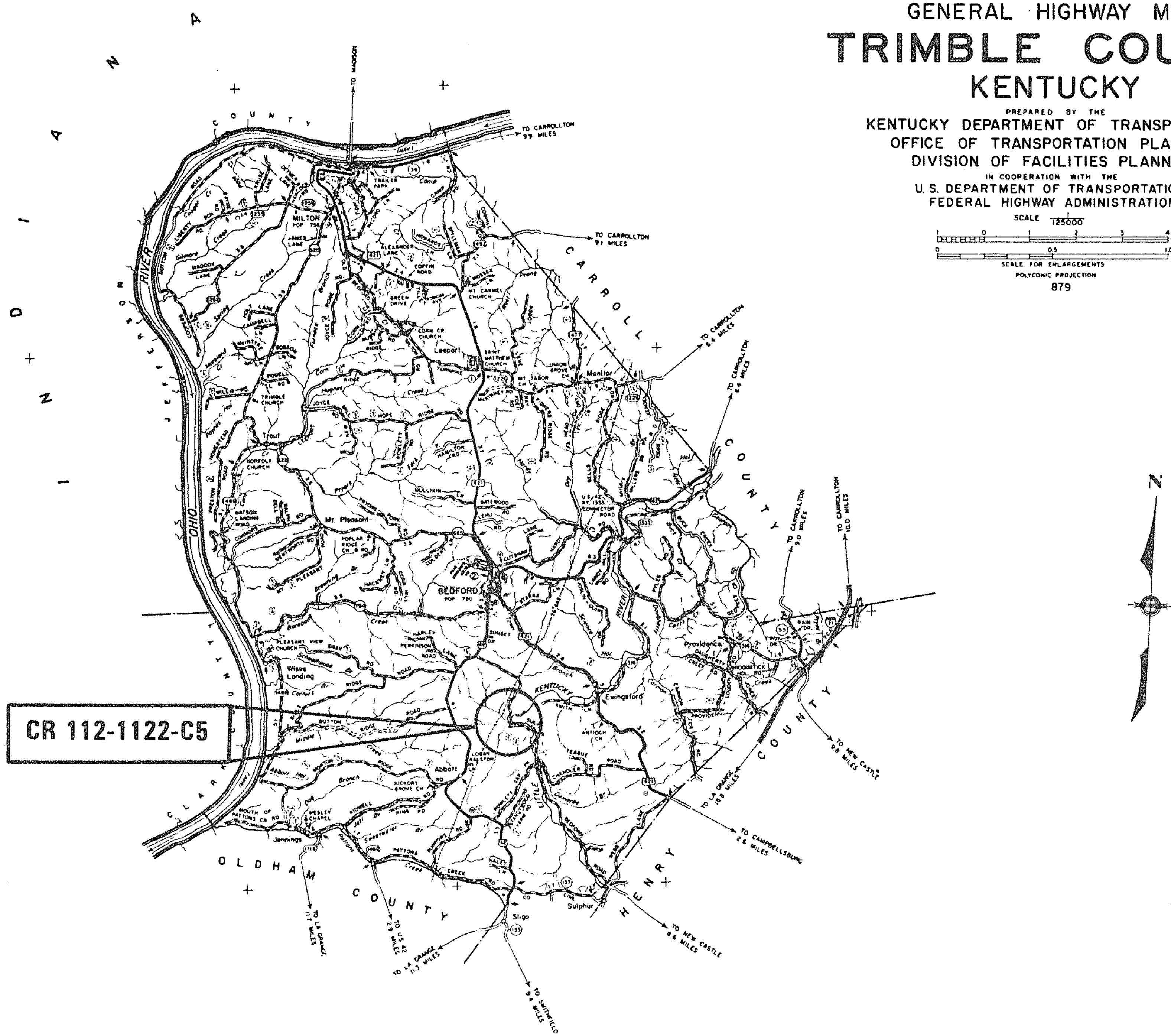


GENERAL HIGHWAY MAP
TRIMBLE COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1/125000

SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 26

I. LOCATION

COUNTY: Trimble CITY:

ROUTE: Sulphur-Bedford Road SPANS: Little Kentucky River

HWY. DISTRICT: 5 S I A RATING: 19.9/100

U T M COORDINATES: 16-647910-4267895

II. HISTORY

BRIDGE ID#: CR 112-1122-C5

NAME/TYPE: Quadrangular or Double Intersection Warren Truss

DESIGNER/ BUILDER: Unknown

DATE: @ 1910 BASIS: Similar examples

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

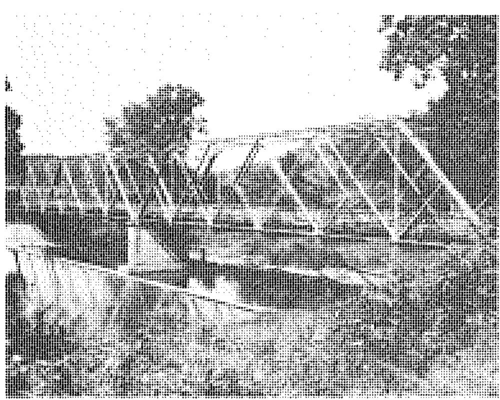
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

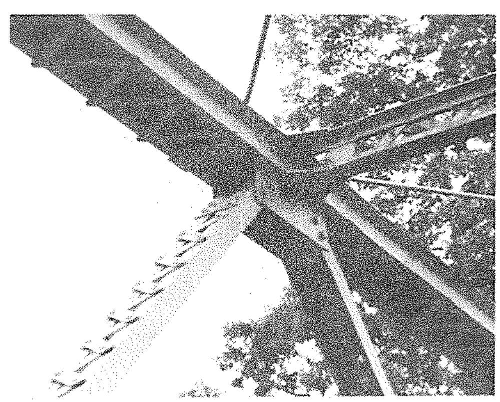
___ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only multi-span double intersection Warren truss and 1 of only 3 quadrangular bridges extant in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural pastoral setting next to old mill dam. Popular fishing spot as the stream is stocked here with trout.





FORM # 26

V. DESIGN INFORMATION

NO. SPANS: 2 OVERALL LENGTH: 225' WIDTH: 11.0'

SPAN TYPES:

1. 2 Quadrangular Trusses at LENGTH: 109'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments, pier

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: RIVETS: X

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 angles, stay bars

HIP VERTICALS: 2 angles, stay bars

INTERMEDIATE POSTS: N/A

DIAGONALS: 2 angles, stay bars (not parallel to endpost)
2 angles, lacing bars (parallel to endpost)

COUNTERS: N/A

TOP LATERAL BRACING: 1 round rod

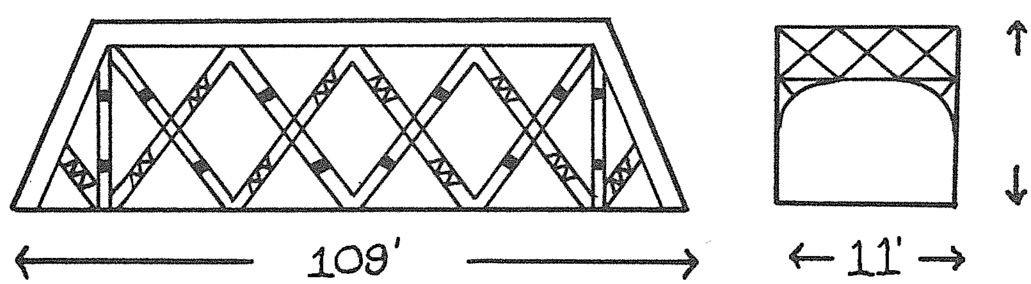
TOP LATERAL STRUTS: Paired angles, lacing bars

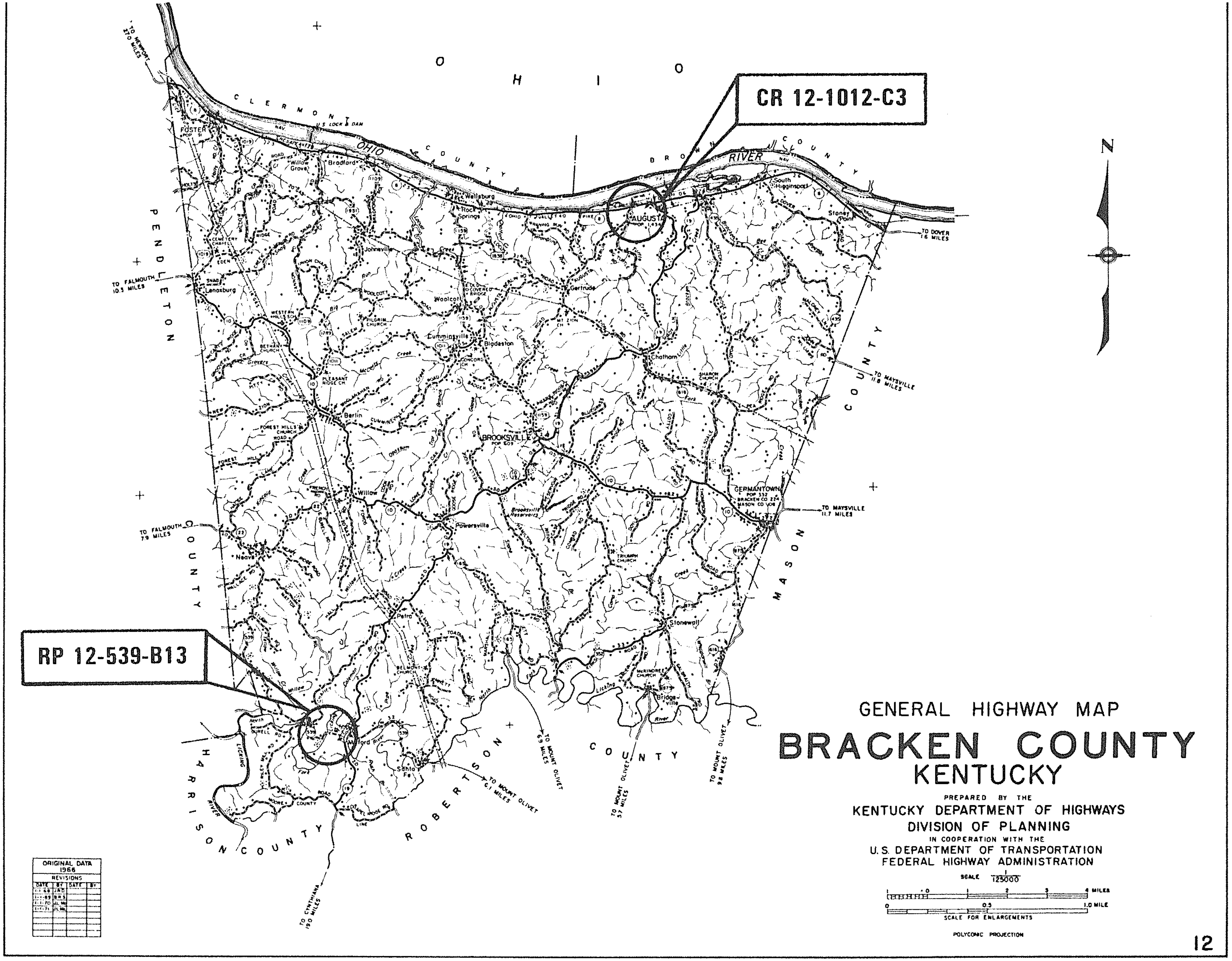
BOTTOM LATERAL BRACING: 1 round rod threaded & bolted to floor beam

FLOOR BEAMS: Rolled I-beams STRINGERS: Wood beams

OTHER DETAILS: Wood deck.

VII. TRUSS CONFIGURATION





GENERAL HIGHWAY MAP
BRACKEN COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF HIGHWAYS
DIVISION OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
4 MILES
1.0 MILE
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
CR 12-1012-C3
RP 12-539-B13
OHIO
CLERMONT COUNTY
BROWN COUNTY
OHIO RIVER
PENDLETON COUNTY
HARRISON COUNTY
ROBERTSON COUNTY
MASON COUNTY
AUGUSTA
BROOKSVILLE
GERMANTOWN
Foster
Willow Grove
Bradford
Wellsburg
Rock Springs
Johnsville
Lenoxburg
Woolcott
Gertrude
Cumminsville
Bladeston
Chatham
Berlin
Willow
Powersville
Petra
Stonewall
Santa Fe
Bridgeville
South Higginsport
Stoney Point
TO NEWPORT 27.0 MILES
TO FALMOUTH 10.3 MILES
TO FALMOUTH 7.9 MILES
TO CYNTHIANA 19.0 MILES
TO MOUNT OLIVET 6.1 MILES
TO MOUNT OLIVET 6.9 MILES
TO MOUNT OLIVET 5.7 MILES
TO MOUNT OLIVET 9.8 MILES
TO MAYSVILLE 11.7 MILES
TO MAYSVILLE 11.8 MILES
TO DOVER 1.6 MILES
N
ORIGINAL DATA 1966
REVISIONS
DATE BY DATE BY
12

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 27

I. LOCATION

COUNTY: Bracken CITY: (Near) Milford

ROUTE: KY 539 SPANS: N. Fk. Licking River

HWY. DISTRICT: 6 S I A RATING: 20.3/100

U T M COORDINATES: 16-746900-4273900

II. HISTORY

BRIDGE ID#: RP 12-539-B13

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Smith Bridge Company Toledo, Ohio

DATE: 1883 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

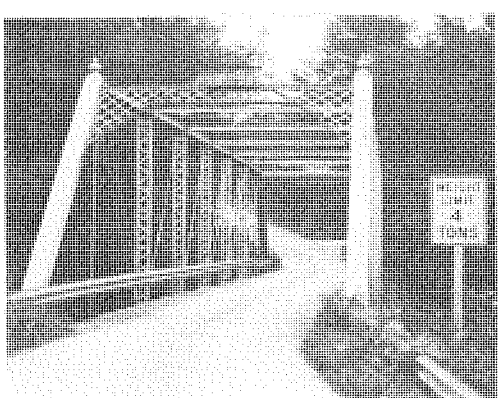
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

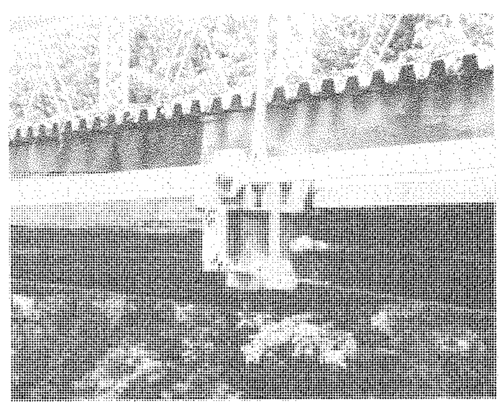
X RARE SURVIVOR/STANDARD DESIGN: One of two Smith Bridge Company Pratt through trusses in Kentucky. Probably constructed of wrought iron and has interesting decorative details.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

This bridge overlooks a beautiful valley of the Licking River. Due to deteoriation and poor alignment the bridge is posted for a 4 ton weight limit.





FORM # 27

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 115' WIDTH: 16'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 112'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Stuccoed stone abutments with concrete cap

SUPERSTRUCTURE MATERIALS: Wrought iron; Carnegie foundry BASIS: pre 1885 date; Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged

HIP VERTICALS: 1 round eyebar, loop-welded

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 square eyebars, loop-welded

COUNTERS: 1 round eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod and sleevenut

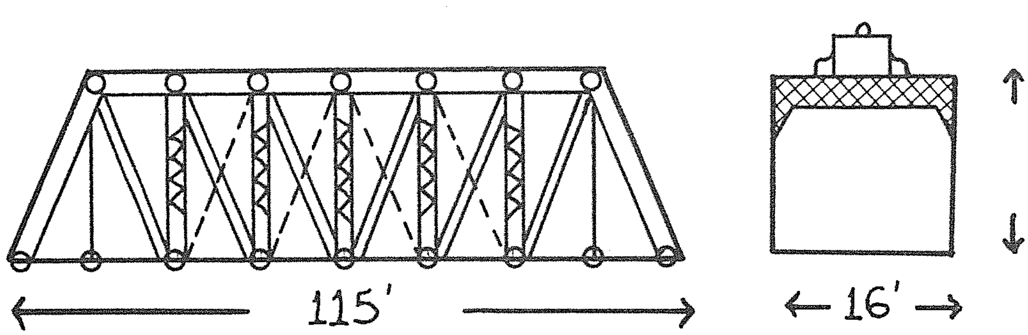
TOP LATERAL STRUTS: 2 bowed channels with stay bars

BOTTOM LATERAL BRACING: 1 round rod with sleevenut

FLOOR BEAMS: Plate girders STRINGERS: 9 wood beams 1' x 4" per panel

OTHER DETAILS: New guardrail, concrete deck, floor beam hangers at each lower chord panel point.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 28

I. LOCATION

COUNTY: Bracken CITY: Nr. Augusta

ROUTE: CR 1012 SPANS: Turtle Creek

HWY. DISTRICT: 6 S I A RATING: 16.5/100

U T M COORDINATES: 16-758615-4295100

II. HISTORY

BRIDGE ID#: CR 12-1012-C3

NAME/TYPE: Metal Bowstring Pony Arch

DESIGNER/

BUILDER:

DATE: @ 1890 BASIS:

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

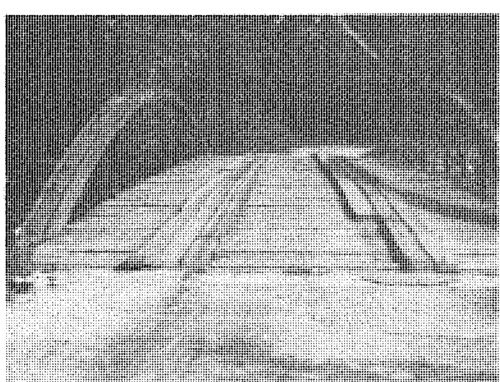
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

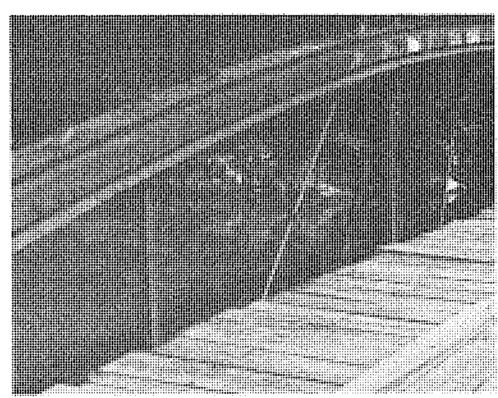
X RARE SURVIVOR/STANDARD DESIGN: One of four metal bowstring arch bridges in Kentucky.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Weight limit 3 tons. Low clearance over stream deposits heavy debris on bridge.





FORM # 28

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 63' WIDTH: 12.0'

SPAN TYPES:

1. Bowstring Pony Arch LENGTH: 588'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

Connections - Bolted at top chord and at bottom chord.

Arch - 4 plates, riveted.

Bottom chords - 2 rectilinear bars in 3 sections.

Verticals - Paired angles, lacing bars
Single rods (+ cross-section).

Bracing - Round rods, threaded on both ends, bolted at arch and bottom chord.

Top lateral bracing - N/A

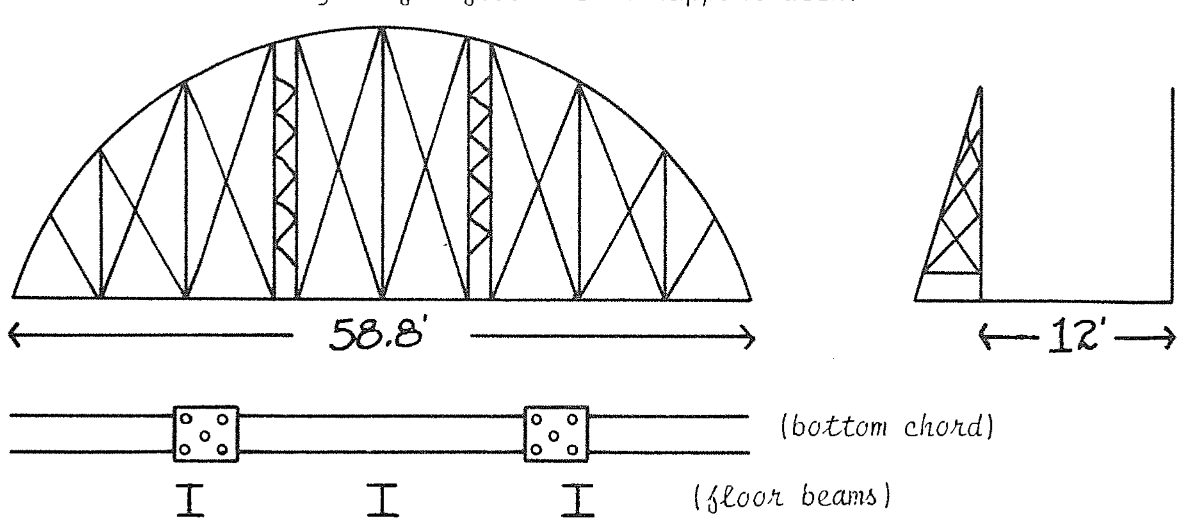
Top lateral struts - N/A

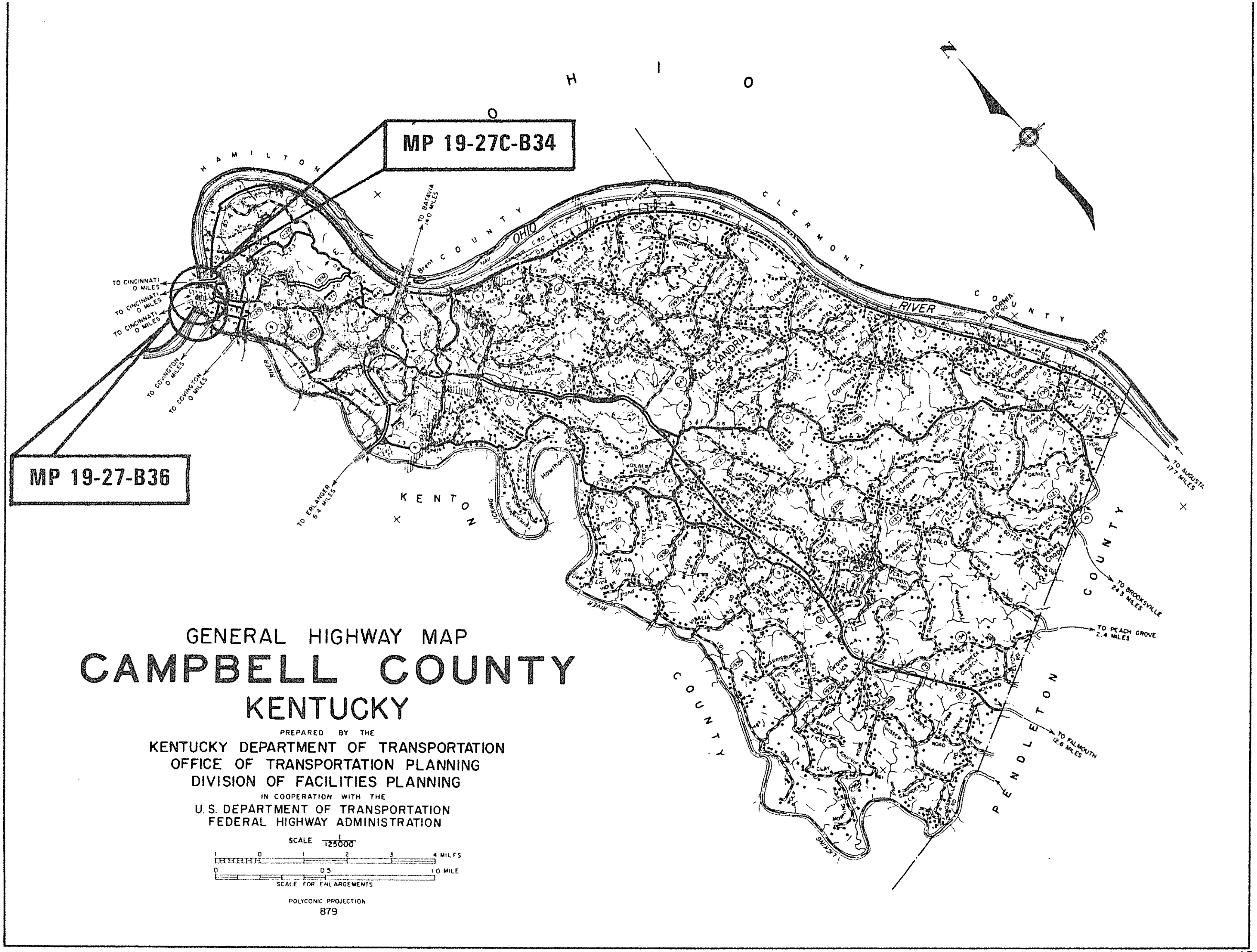
Bottom lateral bracing - Round rods, threaded and bolted on both ends.

Floor beams - Rolled I-beams.

Stringers - Wood beams.

Other details - Only 3 of 5 floor beams support deck.





MP 19-27C-B34
MP 19-27-B36
H I O
O
HAMILTON
CLERMONT
COUNTY
Brent COUNTY
OHIO
RIVER
ALEXANDRIA
KENTON
COUNTY
PENDLETON
COUNTY
TO CINCINNATI 0 MILES
TO CINCINNATI 0 MILES
TO CINCINNATI 0 MILES
TO COVINGTON 0 MILES
TO COVINGTON 0 MILES
TO BATAVIA 14.0 MILES
TO ERLANGER 6.4 MILES
TO AUGUSTA 17.7 MILES
TO BROOKSVILLE 24.3 MILES
TO PEACH GROVE 2.4 MILES
TO FALMOUTH 12.6 MILES
MENTOR
CALIFORNIA
Hawthorne
Claryville
Grants Lick
Carthage
New Richmond Sta.
Camp Springs
Persimmon Grove
Flagg Springs
Oneonta
RIVER
LICKING
GENERAL HIGHWAY MAP
CAMPBELL COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
1 0 1 2 3 4 MILES
0 0.5 1.0 MILE
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 29

I. LOCATION

COUNTY: Campbell CITY: Newport-Cincinnati

ROUTE: US 27C SPANS: Ohio River

HWY. DISTRICT: 6 S I A RATING: 28.0/100

UTM COORDINATES: MP 16-716400-4330450

II. HISTORY

BRIDGE ID#: 19-27C-B34

NAME/TYPE: Newport and Cincinnati Bridge/ L & N R.R. Bridge

DESIGNER/ BUILDER: Newport and Cincinnati Bridge Company
M.J. Becker, Chief Engineer

DATE: 1896 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

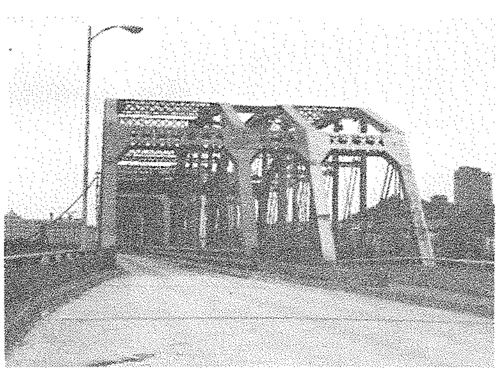
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

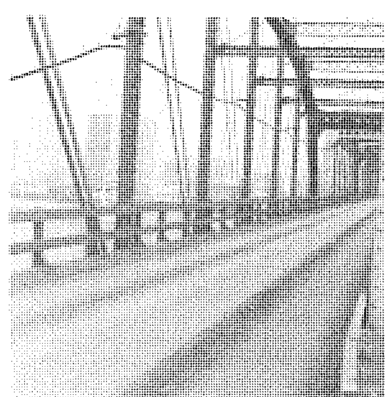
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only bridge designed and built for dual highway and railroad use in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

Railroad bridge is of nearly exact same materials and design as highway bridge. The deck is different, of course, and the bottom chord is stronger with as many as 10 eyebars between panels.





FORM # 29

V. DESIGN INFORMATION

NO. SPANS: 5 main OVERALL LENGTH: 2759' WIDTH: 18.3'

SPAN TYPES:

1. Main span - 20 panel LENGTH:

2. Pennsylvania Petit Truss LENGTH: 510'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers and abutments

SUPERSTRUCTURE

MATERIALS: Steel BASIS: Post 1895 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 3 plates with angles, lacing bars (angle sections)

TOP CHORDS: 3 plates with angles, lacing bars (angle sections)

BOTTOM CHORDS: 2-4-6-8 rectilinear eyebars, die-forged

HIP VERTICALS: 2 plates with lacing bars

INTERMEDIATE POSTS: 2 plates with angles, 2 sets lacing bars

DIAGONALS: 4 rectilinear eyebars, die-forged

COUNTERS: 1 rectilinear eyebar, die-forged

TOP LATERAL BRACING: 2 rectilinear eyebars

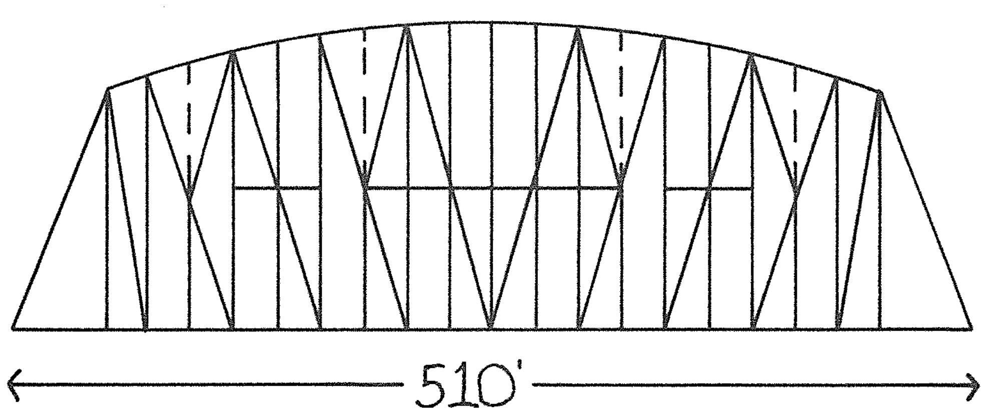
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: 1 rectilinear eyebar

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS:

VII. TRUSS CONFIGURATION



FORM # 29

V. DESIGN INFORMATION

NO. SPANS: 4 OVERALL LENGTH: 2759' WIDTH: 18.3'

SPAN TYPES:

1. 4 Parker Trusses - 8 panels at LENGTH: 202'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE:

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 3 plates with angles, lacing bars

TOP CHORDS: 3 plates with angles, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged

HIP VERTICALS: 2 plates, lacing bars

INTERMEDIATE POSTS: 2 plates with angles, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 2 square eyebars, loop-welded, sleevenuts

TOP LATERAL BRACING: 1 round rod with sleevenut

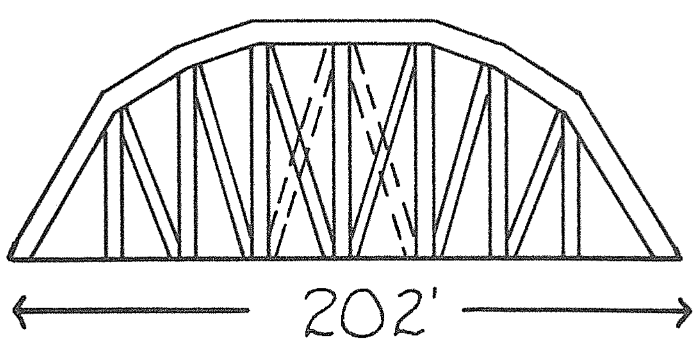
TOP LATERAL STRUTS: Paired angles, lattice bars

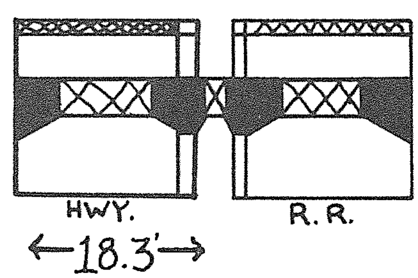
BOTTOM LATERAL BRACING:

FLOOR BEAMS: Paired girders STRINGERS: Rolled I-beams

OTHER DETAILS: 3 Pratt deck trusses, 1-6 & 2-5 panels - 137', 95', 92'.

VII. TRUSS CONFIGURATION





KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 30

I. LOCATION

COUNTY: Campbell CITY: Newport-Cincinnati

ROUTE: US 27 SPANS: Ohio River

HWY. DISTRICT: 6 S I A RATING: 7.0/100

U T M COORDINATES: 16-716100-4330200

II. HISTORY

BRIDGE ID#: MP 19-27-B36

NAME/TYPE: "Central Bridge" - Through Cantilever and Simple Truss

DESIGNER/ BUILDER: King Iron Bridge & Mfg. Co. Cleveland, Ohio

DATE: 1890 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

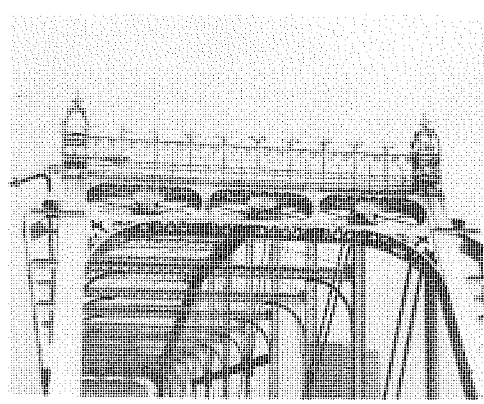
X UNIQUE/UNUSUAL FOR ITS TIME: Earliest highway cantilever truss in Kentucky. Elaborate decorative details

IV. ENVIRONMENT/OTHER REMARKS

F. C. Osborn

A. H. Porter Engineers

On "Survey of Historic Sites in Kentucky".



FORM # 30

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 2759' WIDTH: 18.3'

SPAN TYPES:

1. 3 Span Through Cantilever Truss LENGTH: ______

2. 252' - 520' - 252' LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers and abutments

SUPERSTRUCTURE

MATERIALS: Possibly wrought iron BASIS: pre 1895 date

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 3 plates with angles, lacing bars

TOP CHORDS: 3 plates with angles, lacing bars

BOTTOM CHORDS: 2 plates with angles, 2 sets lacing bars
2-4 rectilinear eyebars, die-forged, 1 round rod

HIP VERTICALS: 3 sets paired angles, lacing bars

INTERMEDIATE POSTS: 3 sets paired angles, lacing bars
2 plates with angles, lacing bars (2 sets)

DIAGONALS: 3 plates with angles, lacing bars
2-4 rectilinear eyebars, die-forged

COUNTERS: 2-4 rectilinear eyebars, die-forged

TOP LATERAL BRACING: 1 round rod

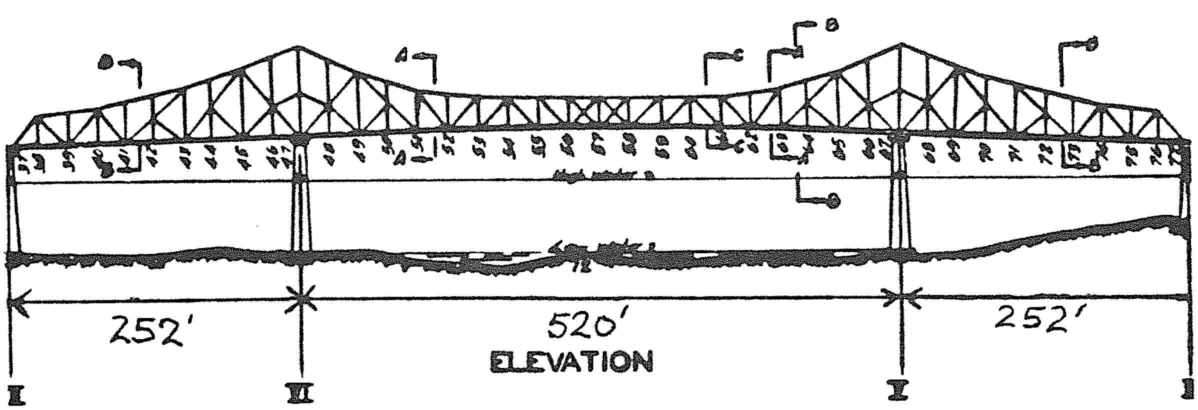
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Plate girders STRINGERS: Plate girders

OTHER DETAILS: Decorative handrailing, portals, bridge plates.

VII. TRUSS CONFIGURATION



FORM # 30

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 2759' WIDTH: 18.3'

SPAN TYPES:

1. 2 Camelback-Petit at LENGTH: 254'
2. 1 Pratt Through LENGTH: 162'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 3 plates (2 with angles), lacing bars

TOP CHORDS: 3 plates (2 with angles), lacing bars

BOTTOM CHORDS: 2 and 4 rectilinear eyebars, die-forged, 1 round rod with stirrup ends

HIP VERTICALS: 3 sets paired angles, lacing bars

INTERMEDIATE POSTS: 2 plates with angles, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 1 and 2 rectilinear or round eyebars

TOP LATERAL BRACING: 1 round rod

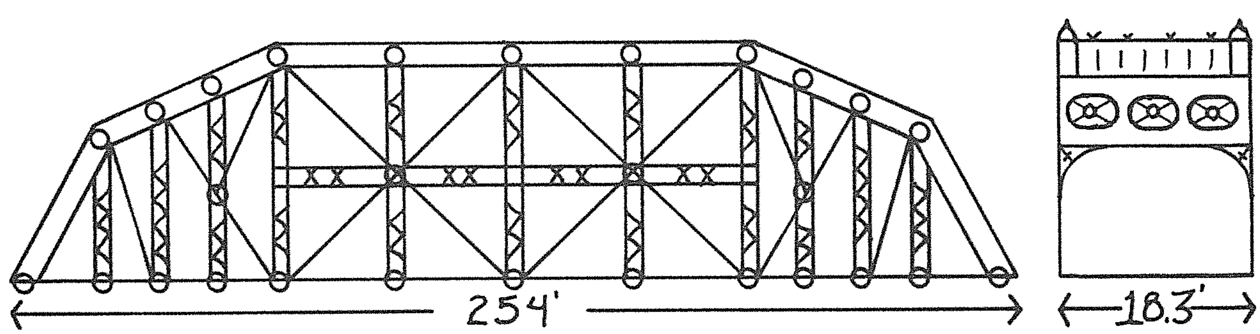
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Plate girders STRINGERS: Plate girders

OTHER DETAILS: Metal mesh deck.

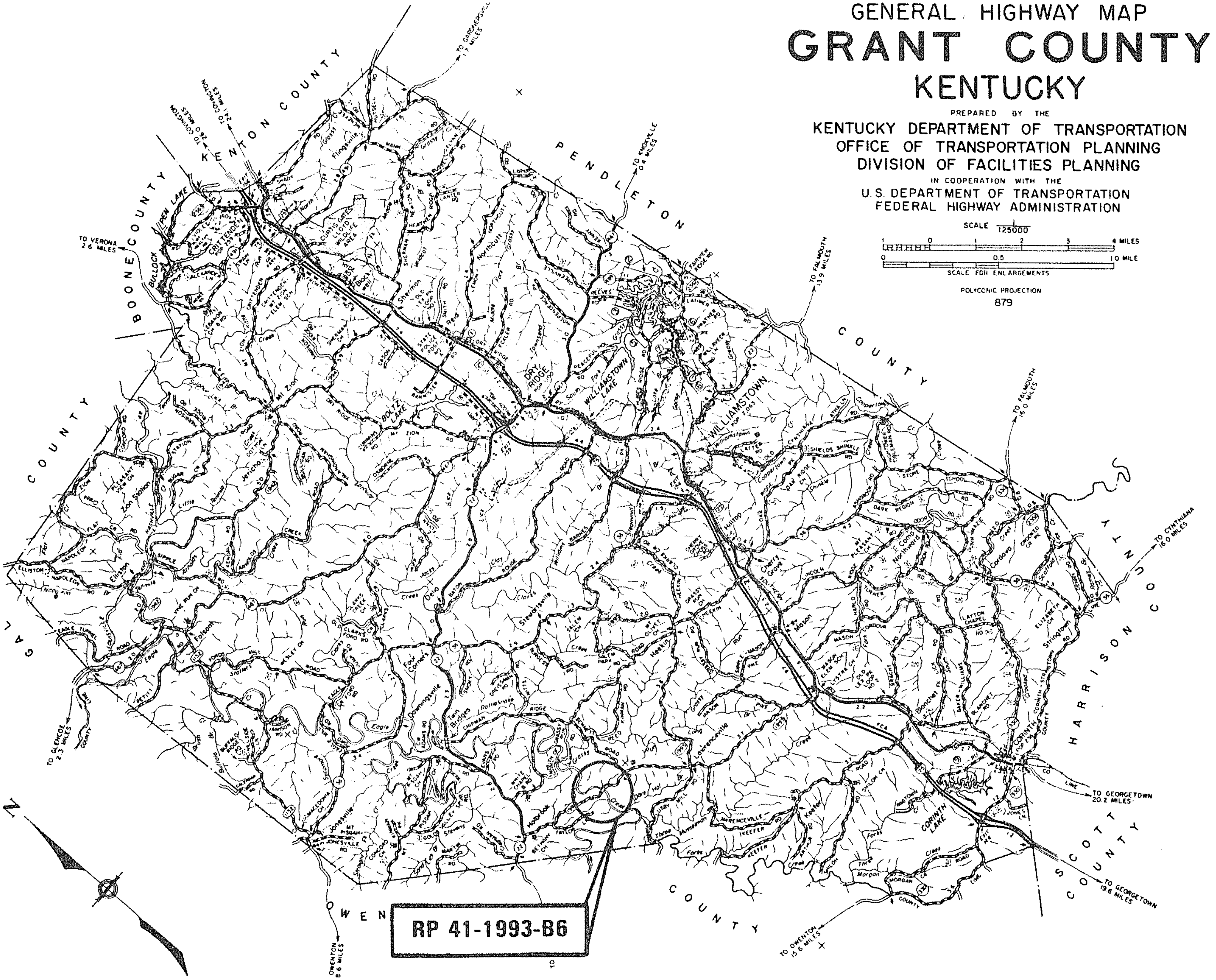
VII. TRUSS CONFIGURATION



GENERAL HIGHWAY MAP
GRANT COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1/125000
0 1 2 3 4 MILES
0 0.5 1.0 MILE
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 31

I. LOCATION

COUNTY: Grant CITY:

ROUTE: KY 1993 SPANS: Eagle Creek

HWY. DISTRICT: 6 S I A RATING: 19.6/100

UTM COORDINATES: 16-702100-4272850

II. HISTORY

BRIDGE ID#: RP 41-1993-B6

NAME/TYPE: "Starnes Bridge" Camelback-Petit

DESIGNER/ BUILDER: King Bridge Company Cleveland, Ohio

DATE: 1890 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

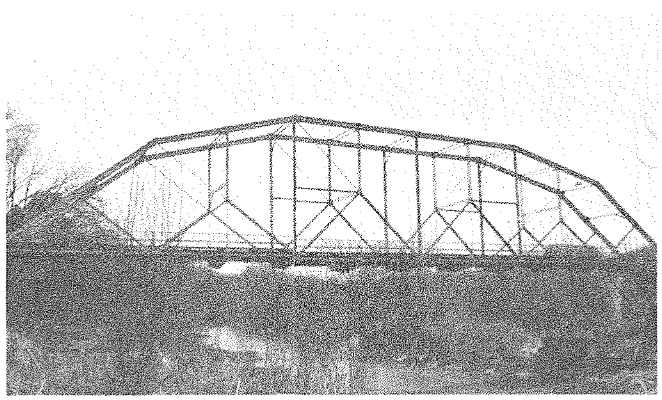
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Camelback truss with sub-struts, characteristic of petit trusses.

IV. ENVIRONMENT/OTHER REMARKS

Posted 10 ton weight limit. Determined eligible to the National Register 1981.



FORM #: 31

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 205' WIDTH: 15'

SPAN TYPES:

1. Camelback Petit Truss LENGTH: 200'
2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: CRM Co. foundry BASIS: Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, 2 sets lacing bars

TOP CHORDS: 2 channels, 2 sets lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged

HIP VERTICALS: 2 square eyebars, loop-welded top, die-forged bottom

INTERMEDIATE POSTS: Paired angles, lacing bars

DIAGONALS: 2 square eyebars or paired angles and lacing bars

COUNTERS: 2 square eyebars or paired angles and lacing bars

TOP LATERAL BRACING: 1 round rod

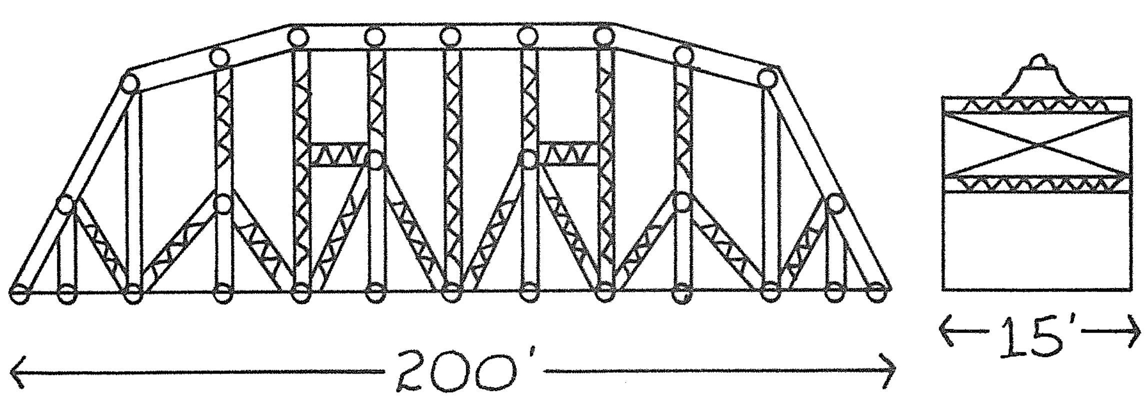
TOP LATERAL STRUTS: Paired angles, lacing bars

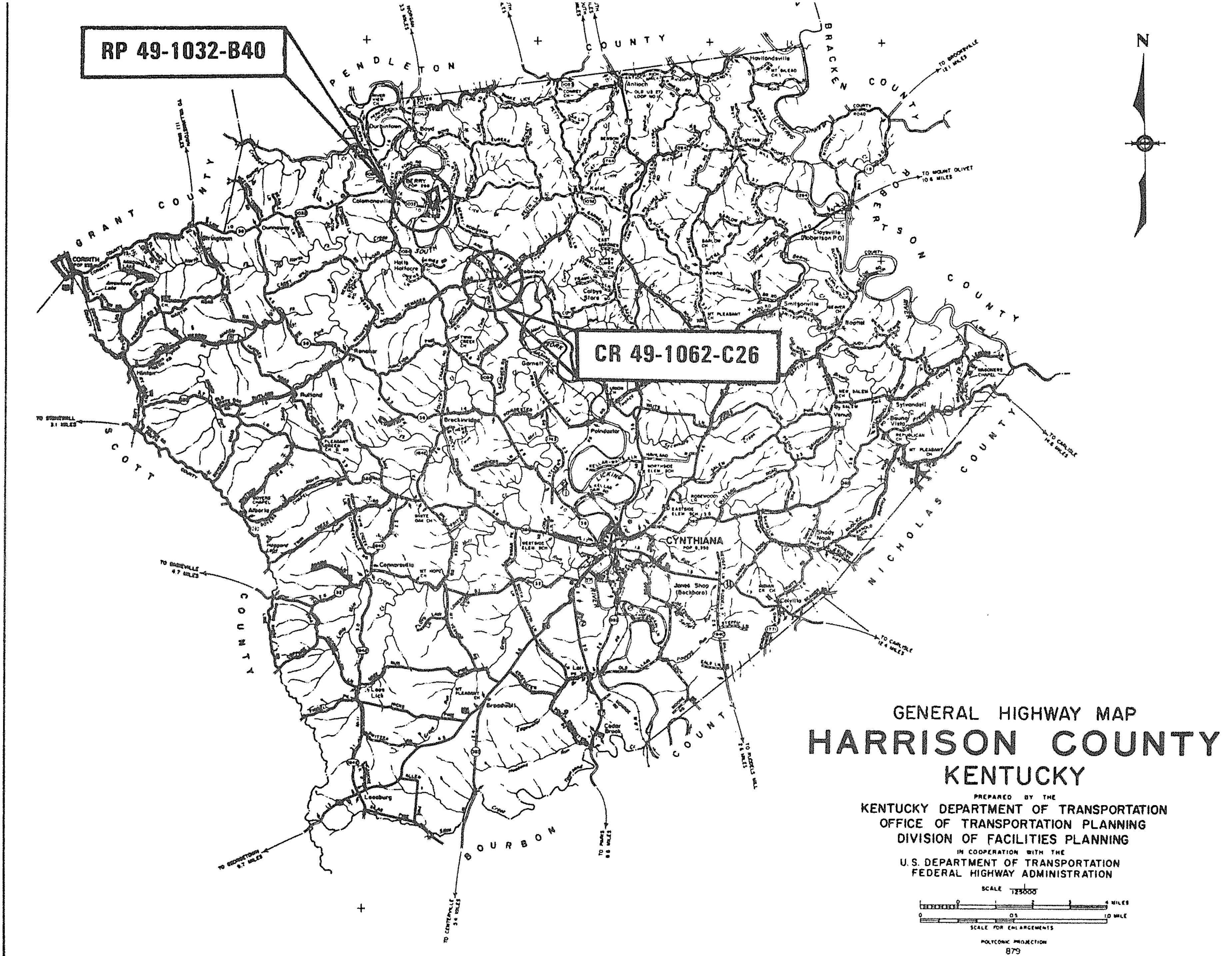
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS:

VII. TRUSS CONFIGURATION




RP 49-1032-B40
CR 49-1062-C26
N
PENDLETON COUNTY
BRACKEN COUNTY
ROBERTSON COUNTY
NICHOLAS COUNTY
BOURBON COUNTY
SCOTT COUNTY
GRANT COUNTY
CYNTHIANA
Berry
Colemansville
Boyd
Antioch
Havilandsville
Kelat
Claysville (Robertson P.O.)
Smithsonville
Colby's Store
Garnett
Poindexter
Breckinridge
Renaker
Rutland
Hinton
Corinth
Alberta
Connersville
Lees Lick
Broadwell
Leesburg
Lair
Cedar Brook
Colville
Shady Nook
Sylvandell
Boyd's Vista
Venus
New Salem
Jones Shop (Buckboro)
LICKING
RIVER
TO BROOKSVILLE 12.1 MILES
TO MOUNT OLIVET 10.6 MILES
TO CARLISLE 14.6 MILES
TO CARLISLE 12.4 MILES
TO RUDDELS MILL 2.6 MILES
TO PARIS 8.6 MILES
TO CENTERVILLE 3.4 MILES
TO GEORGETOWN 6.7 MILES
TO SADIEVILLE 4.7 MILES
TO STONEWALL 3.1 MILES
TO WILLIAMSTOWN 11.1 MILES
GENERAL HIGHWAY MAP
HARRISON COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
4 MILES
1.0 MILE
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 32

I. LOCATION

COUNTY: Harrison CITY: Berry

ROUTE: KY 1032 SPANS: S. Fk. Licking River

HWY. DISTRICT: 6 S I A RATING: 17.9/100

U T M COORDINATES: Longitude - 84°23'12" Latitude - 38°31'15"

II. HISTORY

BRIDGE ID#: RP 49-1032-B40

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Champion Bridge Company Wilmington, Ohio

DATE: 1906 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

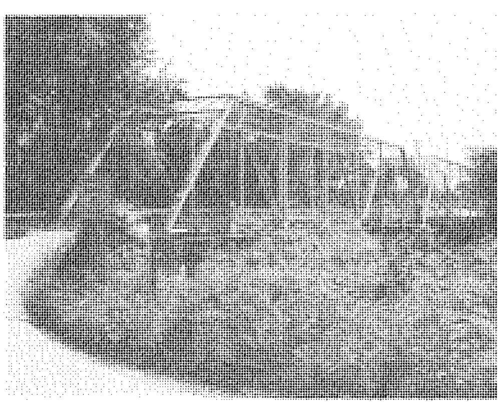
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

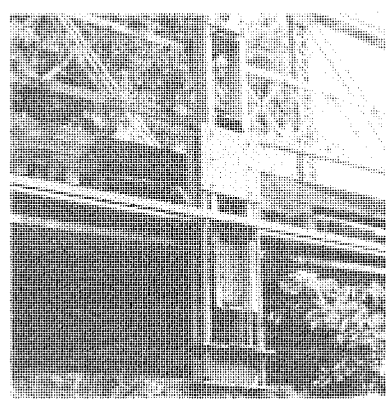
X RARE SURVIVOR/STANDARD DESIGN: Early multi-span metal truss apparently on original location built by prolific builder of bridges in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Adjacent to ruins of old Berry Mill and dam.





FORM # 32

V. DESIGN INFORMATION

NO. SPANS: 2 OVERALL LENGTH: 247' WIDTH: 160'

SPAN TYPES:

1. 2 Pratt Through Trusses at LENGTH: 120'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete capped rough cut stone pier and abutments

SUPERSTRUCTURE

MATERIALS: from Cambria foundry BASIS: Stamped on railing and channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded 1 extra round rod with stirrup on end panels

HIP VERTICALS: 1 square eyebar, loop-welded, pinned 4 feet above deck

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 1 & 2 rectilinear eyebars, 2 square eyebars; loop-welded

COUNTERS: 1 square eyebar, loop-welded, open turnbuckle

TOP LATERAL BRACING: 1 round rod

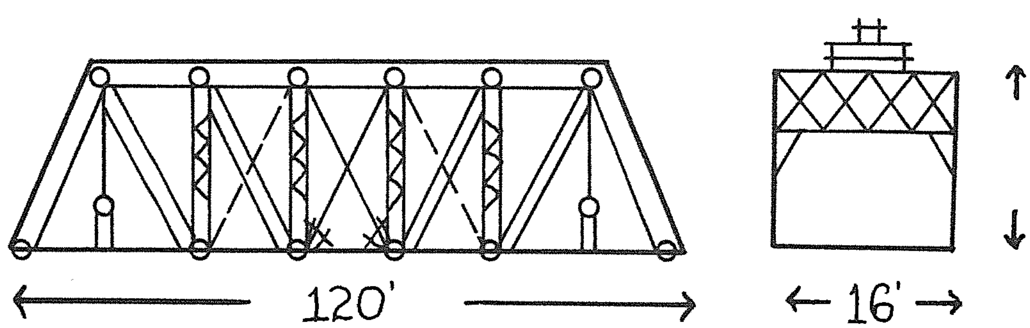
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beam STRINGERS: Rolled I-beam

OTHER DETAILS: Original handrailing, made from angles and lacing bars.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 33

I. LOCATION

COUNTY: Harrison CITY: Robinson

ROUTE: CR 1062 SPANS: S. Fk. Licking River

HWY. DISTRICT: 6 S I A RATING: 19.3/100

U T M COORDINATES: 16-730480-4263700

II. HISTORY

BRIDGE ID#: CR 49-1062-C26

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Massillon Bridge Company Massillon, Ohio

DATE: 1885 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

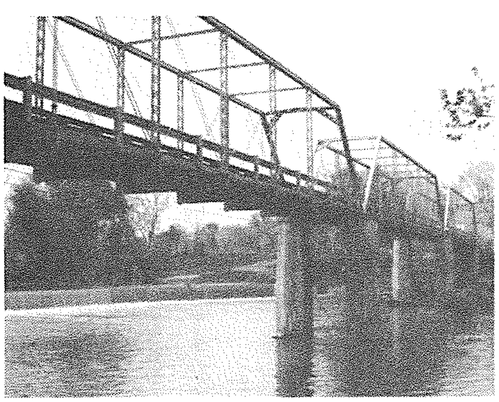
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

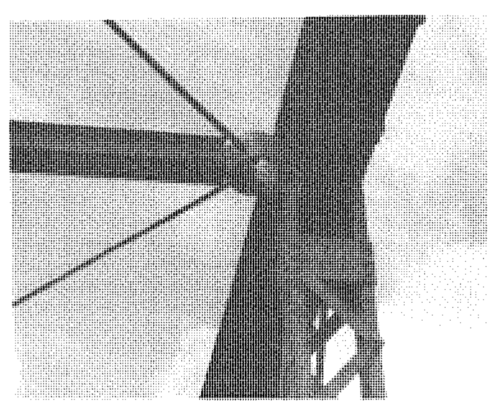
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: One of two bridges in Kentucky built by Massillon Bridge Company. Long multi-span truss on original location.

IV. ENVIRONMENT/OTHER REMARKS

Located by early mill dam. Robinson Dam public fishing overseen by Kentucky Department of Fish and Wildlife.





FORM # 33

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 408' WIDTH: 13.5'

SPAN TYPES:

1. 3 Pratt Through Trusses at LENGTH: 115'
2. 2 I-Beam Deck Approaches LENGTH: 63'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE MATERIALS: Carnegie foundry; may be wrought iron BASIS: Stamped on channels pre 1895 date

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged

HIP VERTICALS: 2 rectilinear eyebars, die-forged; 1 round rod with stirrups

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged 2 round eyebars, loop-welded, sleevenuts in center panel

COUNTERS: 1 round eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod

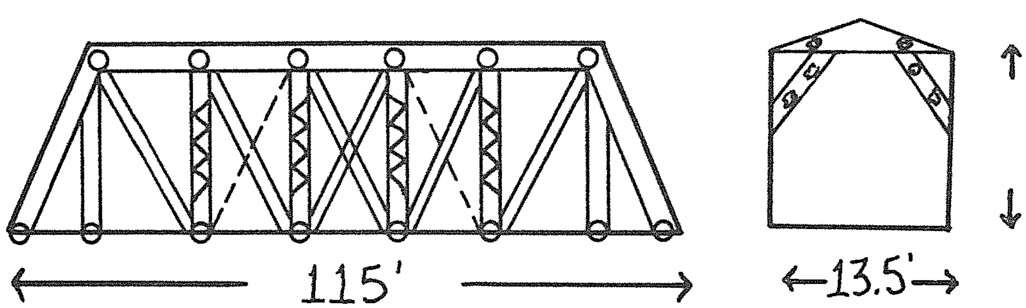
TOP LATERAL STRUTS: 2 small channels with connecting bars

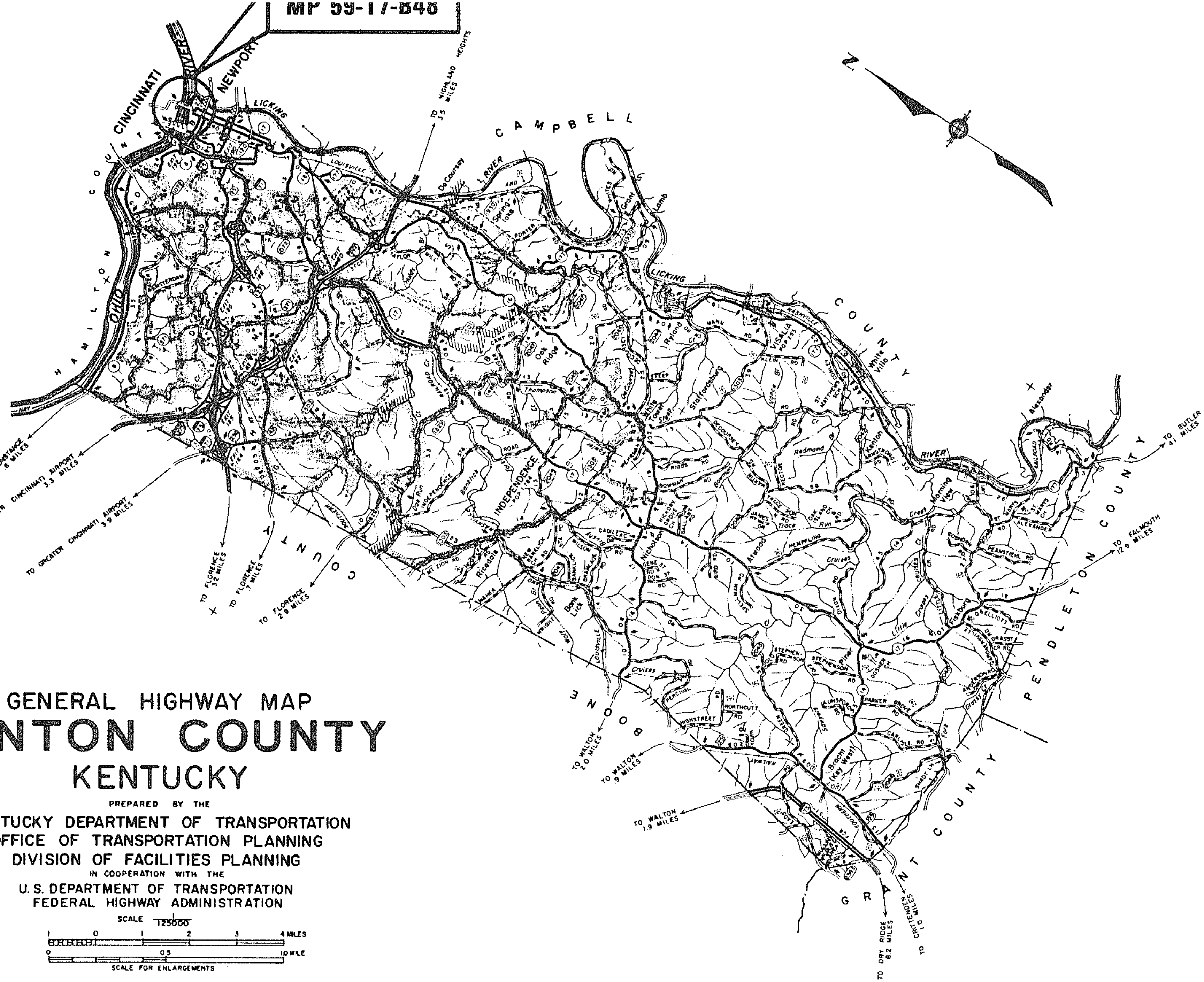
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS: Wood deck, new guardrail, floor beam hanger at each lower chord panel point.

VII. TRUSS CONFIGURATION





GENERAL HIGHWAY MAP
KENTON COUNTY
KENTUCKY

PREPARED BY THE

KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE $\frac{1}{125000}$

1 0 1 2 3 4 MILES

0 0.5 1.0 MILE

SCALE FOR ENLARGEMENTS

POLYCONIC PROJECTION
879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 34

I. LOCATION

COUNTY: Kenton CITY: Covington-Cincinnati

ROUTE: KY 17 SPANS: Ohio River

HWY. DISTRICT: 6 S I A RATING: 34.6/100

UTM COORDINATES: 16-715380-4329800

II. HISTORY

BRIDGE ID#: MP 59-17-B48

NAME/TYPE: Covington and Cincinnati Suspension Bridge

DESIGNER/ John Augustus Roebling

BUILDER: Amos Shinkle, President Covington-Cincinnati Bridge Company

DATE: 1865 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

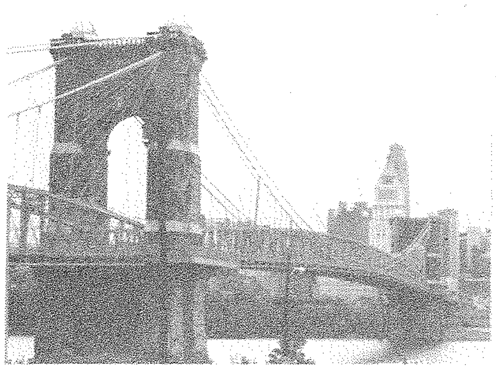
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: First bridge crossing of Ohio River in Kentucky. Longest suspension bridge in the world at the time of its completion.

IV. ENVIRONMENT/OTHER REMARKS

Listed on National Register of Historic Places in 1975. 1 of 2 remaining bridges by noted engineer/builder John A. Roebling.



FORM # 34

V. DESIGN INFORMATION

NO. SPANS: OVERALL LENGTH: 2045' WIDTH: 30.3'

SPAN TYPES:

1. Wire Cable Suspension Bridge LENGTH: 1619'

2. 295' - 1057' - 295' LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers and anchorages

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: Plate girders

TOP CHORDS: 3 plates with angles, lacing bars

BOTTOM CHORDS: 2 plates with angles, lattice bars

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 plates with angles, lattice bars

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 2 rectilinear eyebars, upset for sleevenuts, die-forged eyes

TOP LATERAL BRACING: 1 round rod with sleevenut

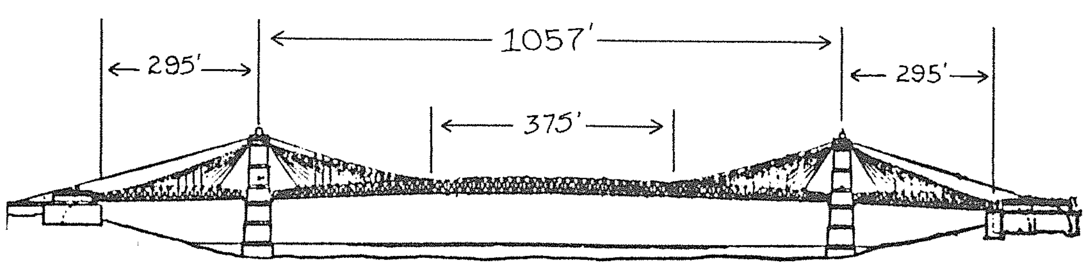
TOP LATERAL STRUTS: 4 angles with lacing and lattice bars

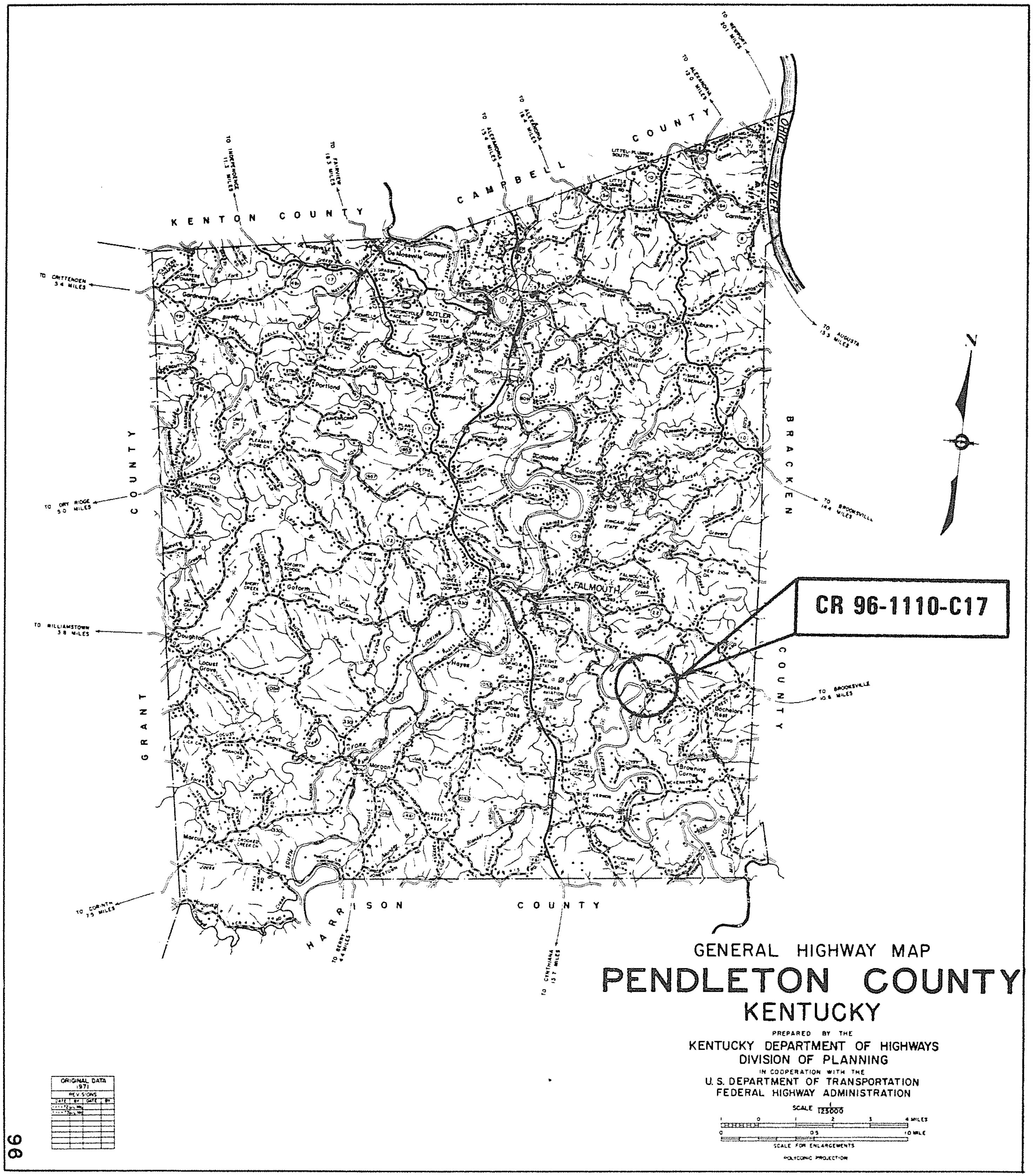
BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS: 2 cables, 12 1/3" diameter woven of 5200 #9 (1/8") wires.

VII. TRUSS CONFIGURATION




CR 96-1110-C17
KENTON COUNTY
CAMPBELL COUNTY
GRANT COUNTY
BRACKEN COUNTY
HARRISON COUNTY
OHIO RIVER
FALMOUTH
BUTLER
GENERAL HIGHWAY MAP
PENDLETON COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF HIGHWAYS
DIVISION OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
ORIGINAL DATA 1971
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 35

I. LOCATION

COUNTY: Pendleton CITY:

ROUTE: CR 1110 SPANS: Little Willow Creek

HWY. DISTRICT: 6 S I A RATING: 19.4/100

U T M COORDINATES: Longitude - 84°15'52" Latitude - 38°38'57"

II. HISTORY

BRIDGE ID#: CR 96-1110-C17

NAME/TYPE: Pratt Half-Hip Pony Truss

DESIGNER/ Smith Bridge Company

BUILDER: Toledo, Ohio

DATE: @ 1890 BASIS: Bridge plate identifies builder

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

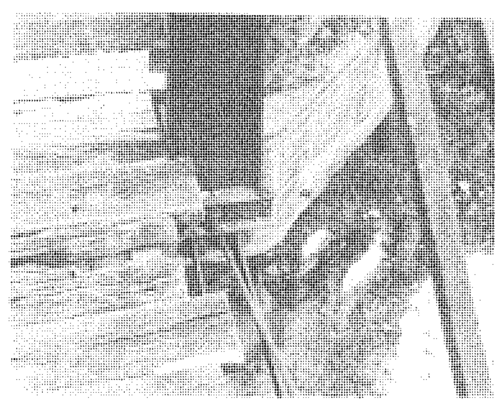
_____ TYPICAL EXAMPLE/COMMON SURVIVOR:

_____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Large decorative finials grace endposts. Unusually shaped intermediate posts are tapered between top and bottom chords.

IV. ENVIRONMENT/OTHER REMARKS

This distinctive bridge crosses Little Willow Creek near its confluence with the Licking River and is 4 miles southeast of Falmouth.



FORM # 35

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 62' WIDTH: 12.0'

SPAN TYPES:

1. Pratt Half-Hip Pony Truss LENGTH: 60'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 square loop-welded & 2 rectilinear die-forged eyebars

HIP VERTICALS: N/A

INTERMEDIATE POSTS: Paired angles, plate

DIAGONALS: 2 square eyebars, loop-welded eyes
1 round eyebar, loop-welded, sleevenuts in center panel

COUNTERS: 1 round eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: N/A

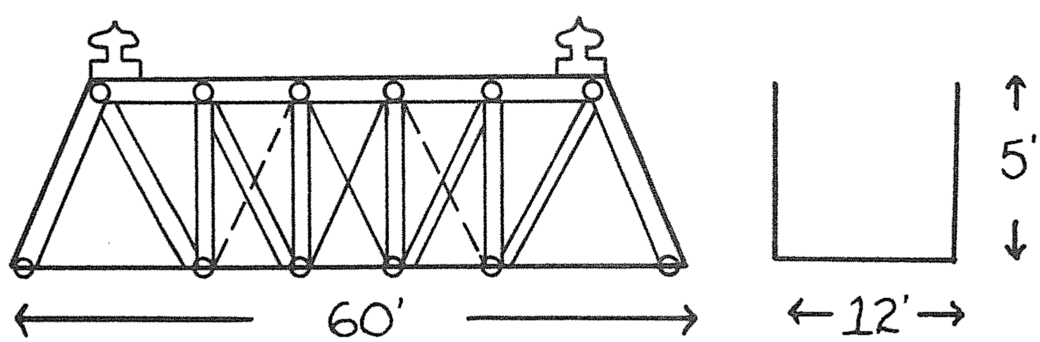
TOP LATERAL STRUTS: N/A

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Wood deck, large decorative finials.

VII. TRUSS CONFIGURATION



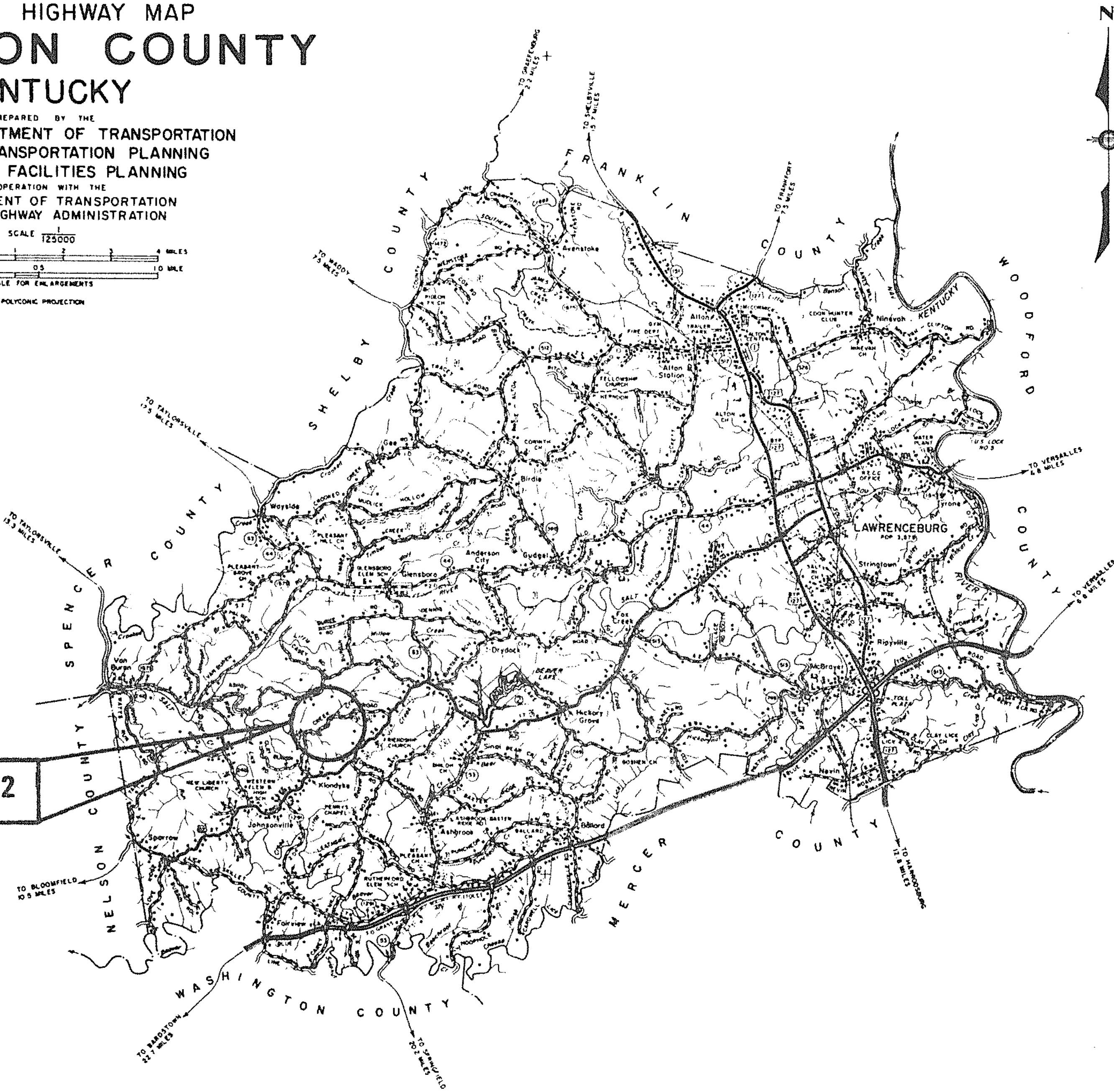
GENERAL HIGHWAY MAP
ANDERSON COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1/125000

SCALE FOR ENLARGEMENTS

POLYCONIC PROJECTION



CR 3-1236-C22

ORIGINAL DATA 1974			
REVISIONS			
DATE	BY	DATE	BY

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 36

I. LOCATION

COUNTY: Anderson CITY:

ROUTE: CR 1236 SPANS: Willow Creek

HWY. DISTRICT: 7 S I A RATING: 23.9/100

U T M COORDINATES: 16-668980-4203475

II. HISTORY

BRIDGE ID#: CR 3-1236-C22

NAME/TYPE: Pratt Half-Hip Pony

DESIGNER/ BUILDER: Canton Bridge Company Canton, Ohio

DATE: @ 1890 BASIS: Builder stamped on endpost

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

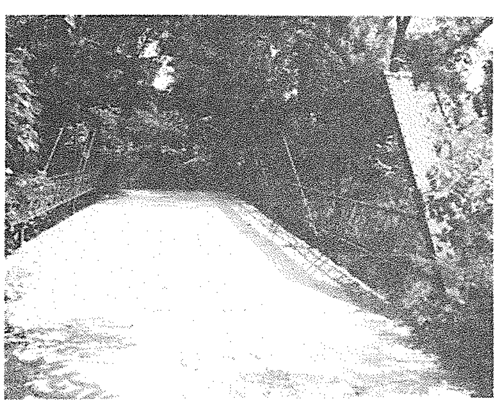
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only canton Bridge Company truss in Kentucky. Interesting decorative details. Apparently on original location.

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural pastoral setting. Posted 7 ton load limit, poor horizontal approaches.



FORM # 36

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 60' WIDTH: 12.0'

SPAN TYPES:

1. Pratt Half-Hip Pony Truss LENGTH: 59'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear or 2 square eyebars, loop-welded

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 sets paired angles, lattice bars

DIAGONALS: 2 square eyebars, loop-welded

COUNTERS: 1 square eyebar, loop-welded, turnbuckle

TOP LATERAL BRACING: N/A

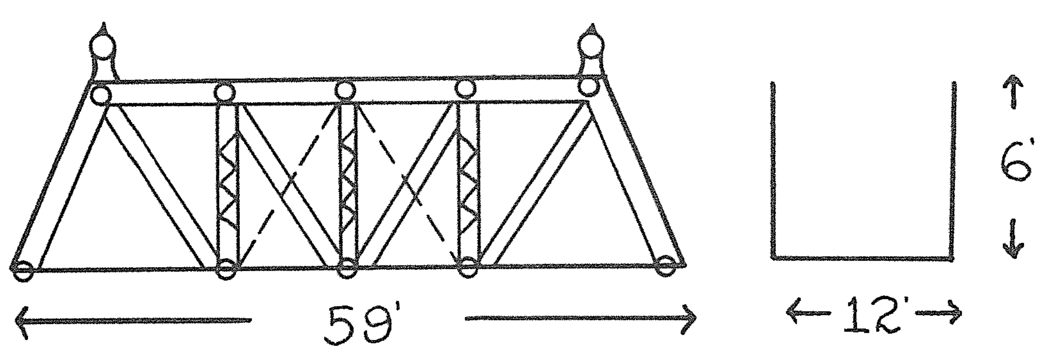
TOP LATERAL STRUTS: N/A

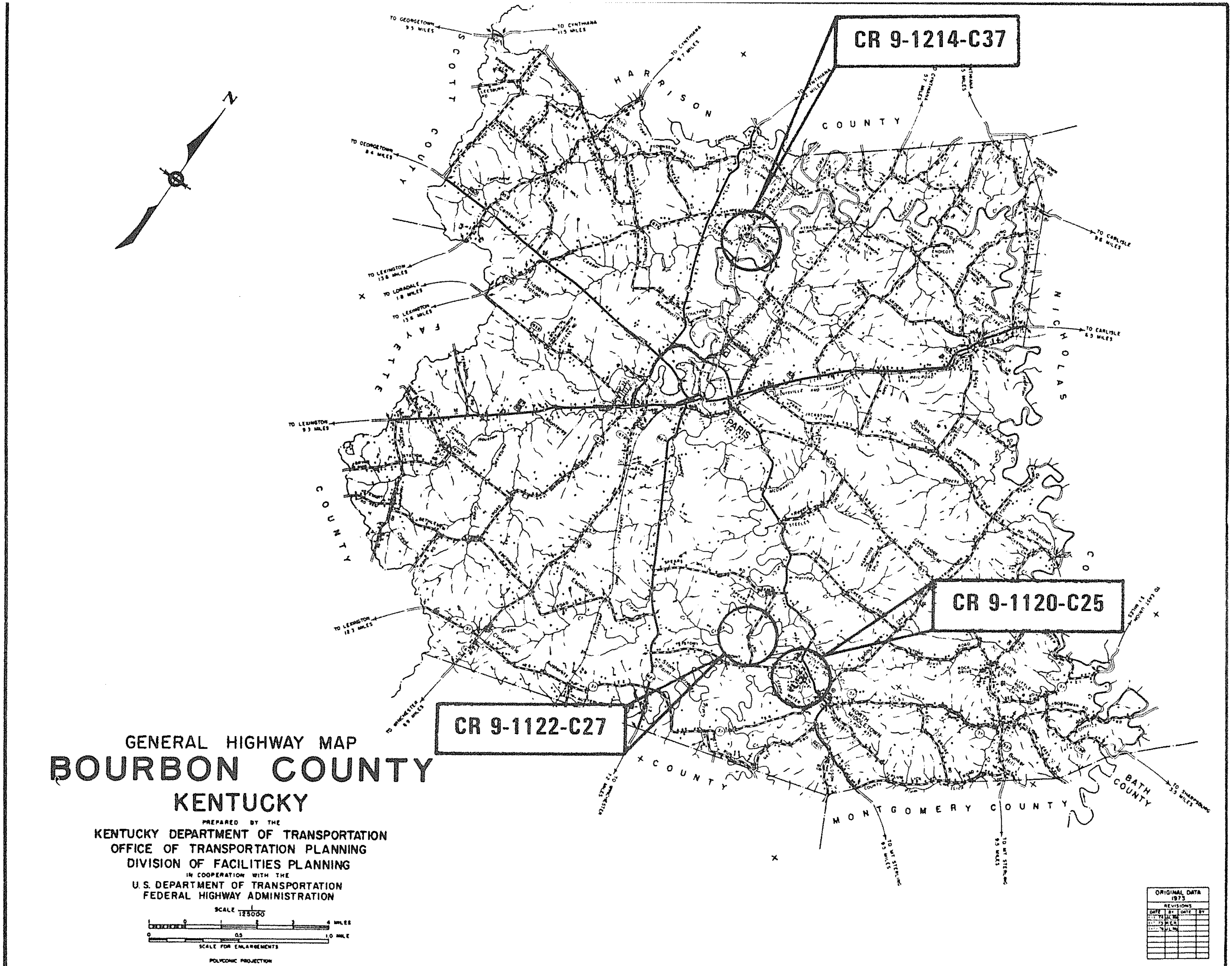
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams 1 channel on outside

OTHER DETAILS: Decorative guardrailing and finials. Threaded panel connector pins held with cotter pins on outside.

VII. TRUSS CONFIGURATION




CR 9-1214-C37
CR 9-1120-C25
CR 9-1122-C27
HARRISON COUNTY
NICHOLAS COUNTY
MONTGOMERY COUNTY
BATH COUNTY
SCOTT COUNTY
FAYETTE COUNTY
PARIS
GENERAL HIGHWAY MAP
BOURBON COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
ORIGINAL DATA 1973
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 37

I. LOCATION

COUNTY: Bourbon CITY: N. Middletown

ROUTE: CR 1120; Stony Pt. Rd. SPANS: Stoner Creek

HWY. DISTRICT: 7 S I A RATING: 30.8/100

UTM COORDINATES: 16-751915-4225980

II. HISTORY

BRIDGE ID#: CR 9-1120-C25

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Champion Bridge Company Wilmington, Ohio

DATE: @ 1885 BASIS: Bridge Plate (builder)

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

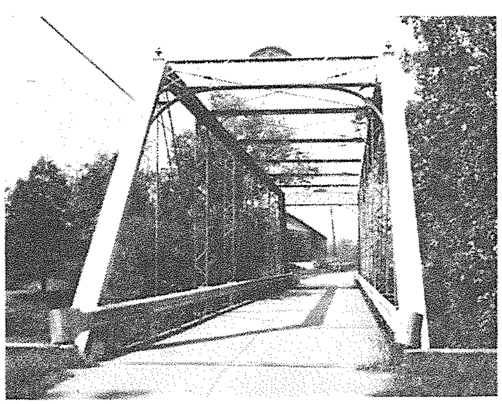
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

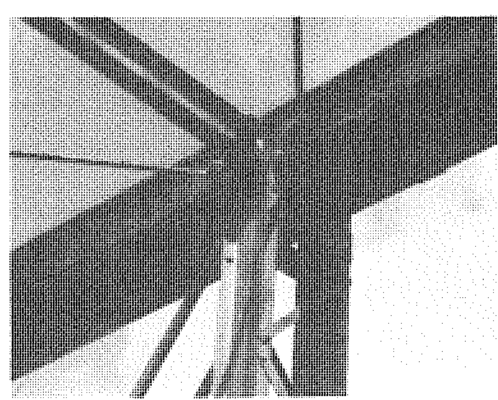
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Decorative details and bridge plate on this truss and one other unlike remainder of Kentucky's Champion Bridge Company examples.

IV. ENVIRONMENT/OTHER REMARKS

Located at edge of small rural community adjacent to water treatment plant.





FORM # 37

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 115' WIDTH: 13.5'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 111'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: from Carnegie foundry BASIS: Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded

HIP VERTICALS: 1 round rod with stirrup ends

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 1 and 2 rectilinear eyebars, loop-welded eyes

COUNTERS: 1 round eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod with sleevenut

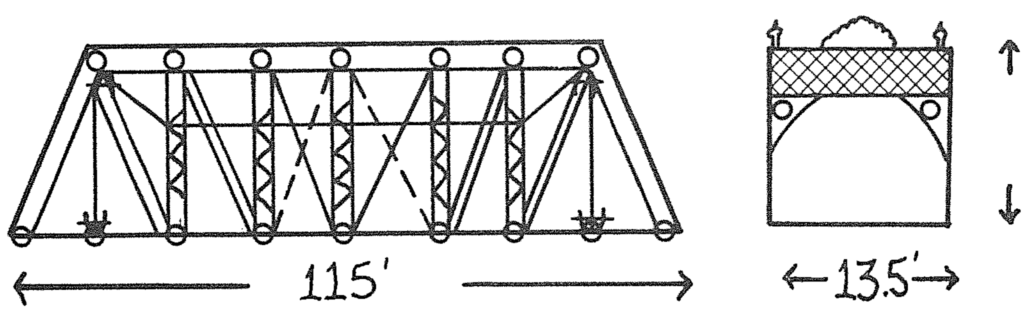
TOP LATERAL STRUTS: Small I-beam

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: New guardrail, finials on portal.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 38

I. LOCATION

COUNTY: Bourbon CITY:

ROUTE: CR 1122; Thomas Road SPANS: Stoner Creek

HWY. DISTRICT: 7 S I A RATING: 21.9/100

U T M COORDINATES: 16-748980-4226005

II. HISTORY

BRIDGE ID#: CR 9-1122-C27

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: The Toledo Bridge Company Toledo, Ohio

DATE: 1893 BASIS: Bridge & date plates

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

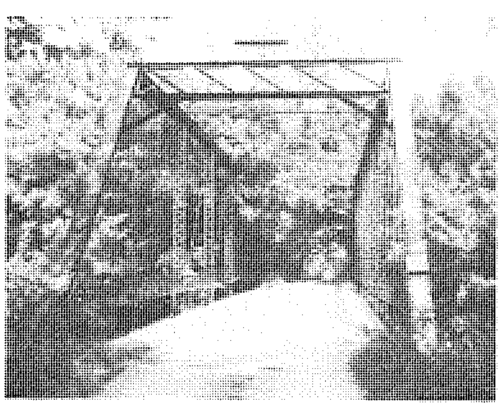
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

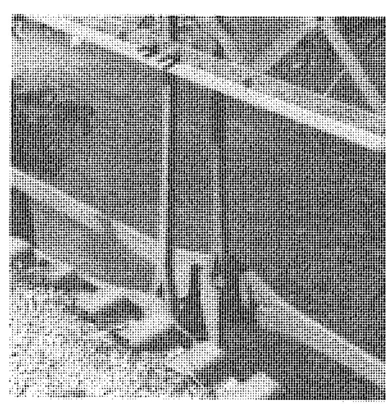
X RARE SURVIVOR/STANDARD DESIGN: 1 of 2 Toledo Bridge Company trusses in Kentucky. Possibly wrought iron used in construction.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting adjacent to historic Xalapa a noted early thoroughbred horse farm. Bend in Stoner Creek below bridge creates locally popular fishing hole.





FORM # 38

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 101' WIDTH: 16.0'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 99'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: May be wrought iron BASIS: pre 1895 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 end panels - 2 rectilinear eyebars, loop-welded
3 center panels - 2 rectilinear eyebars, die-forged

HIP VERTICALS: 2 square eyebars, loop-welded

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded
2 round eyebars, loop-welded, turnbuckles in center panel

COUNTERS: 1 round eyebar, loop-welded, turnbuckle

TOP LATERAL BRACING: 1 round rod

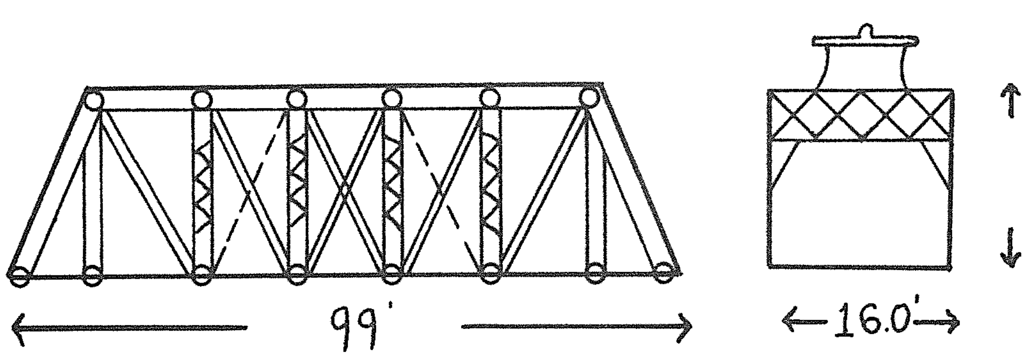
TOP LATERAL STRUTS: Paired angles

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Corrugated metal deck with asphalt surface.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 39

I. LOCATION

COUNTY: Bourbon CITY: Kiserton

ROUTE: CR 1214 SPANS: Stoner Creek

HWY. DISTRICT: 7 S I A RATING: 6.4/100

U T M COORDINATES: 16-738350-4239750

II. HISTORY

BRIDGE ID#: CR 9-1214-C37

NAME/TYPE: 2 Span Pratt Pony Truss

DESIGNER/ BUILDER: King Bridge Co. Cleveland, Ohio

DATE: 1893 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

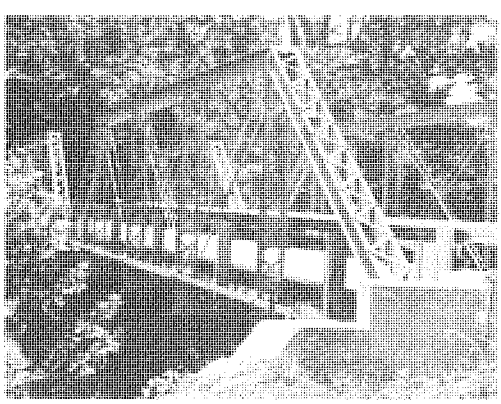
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

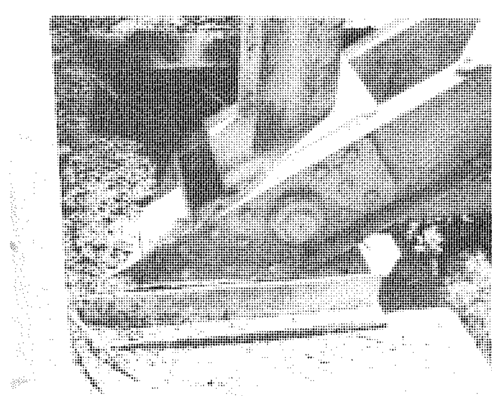
X RARE SURVIVOR/STANDARD DESIGN: May be wrought iron, rare early multi-span, 1 of 3 pony trusses by King Bridge Company in Kentucky.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting, bridge apparently in original location over valuable recreation/agricultural stream. Very low structural sufficiency rating (6.4/100).





FORM # 39

V. DESIGN INFORMATION

NO. SPANS: 2 OVERALL LENGTH: 153' WIDTH: 13.4'

SPAN TYPES:

1. 2 Pratt Pony Trusses at LENGTH: 72.5'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Pier and abutment are rough cut stone; 1 concrete abutment

SUPERSTRUCTURE

MATERIALS: May be wrought iron BASIS: pre 1895 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, lacing bars, stay bars (bottom)

TOP CHORDS: 2 channels, lacing bars, stay bars (bottom)

BOTTOM CHORDS: 2 rectilinear eyebars; die-forged

HIP VERTICALS: 2 channels, lacing bars

INTERMEDIATE POSTS: 2 channels, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged
2 square eyebars, 1 round rod with stirrups in center panel

COUNTERS: N/A

TOP LATERAL BRACING: N/A

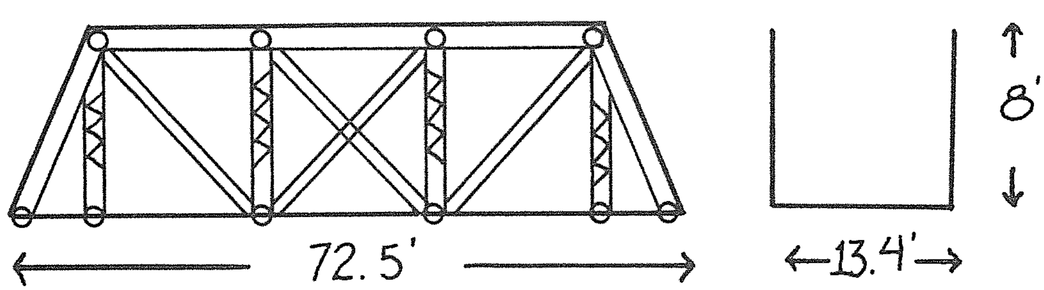
TOP LATERAL STRUTS: N/A

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Fixed bearing plate in center; roller bearing plate at abutments.

VII. TRUSS CONFIGURATION



GENERAL HIGHWAY MAP

FAYETTE COUNTY

KENTUCKY

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DIVISION OF FACILITIES PLANNING
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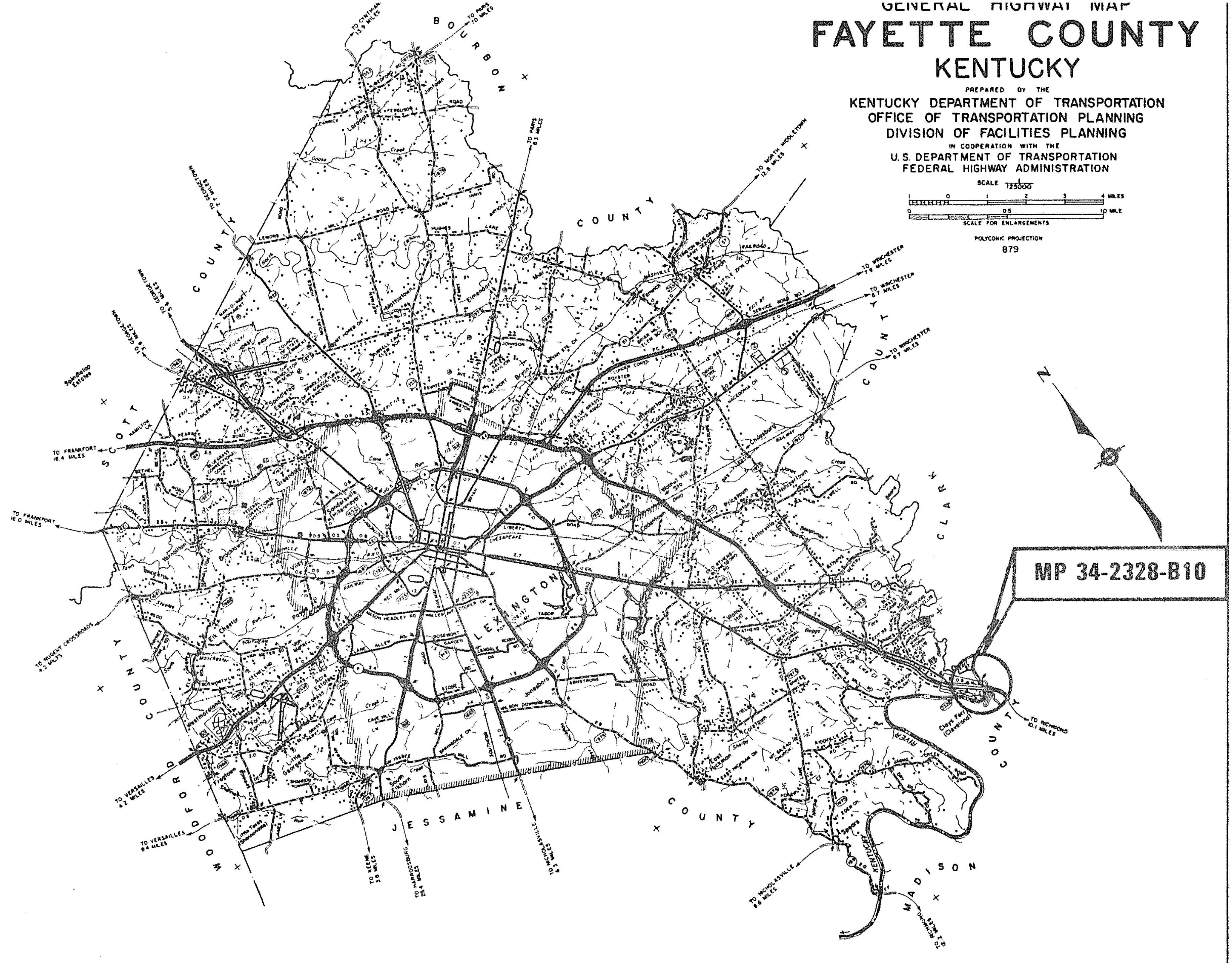
FEDERAL HIGHWAY ADMINISTRATION

SCALE $\frac{1}{125000}$

POLYCONIC PROJECTION
879



KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 40

I. LOCATION

COUNTY: Fayette CITY: Clays Ferry

ROUTE: KY 2328 SPANS: Kentucky River

HWY. DISTRICT: 7 S I A RATING: 30.2/100

U T M COORDINATES: 16-734080-4196440

II. HISTORY

BRIDGE ID#: MP 34-2328-B10

NAME/TYPE: "Clays Ferry Bridge" - Warren Through Truss

DESIGNER/ BUILDER: Unknown

DATE: 1869 BASIS: Archival research

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

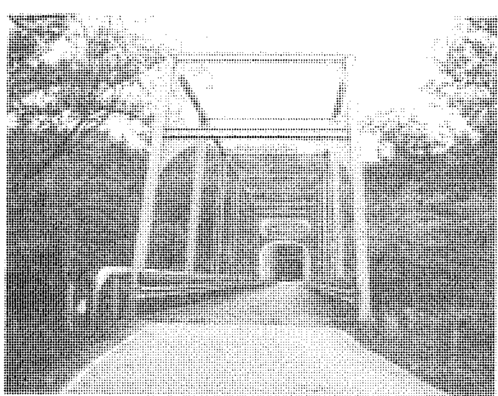
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

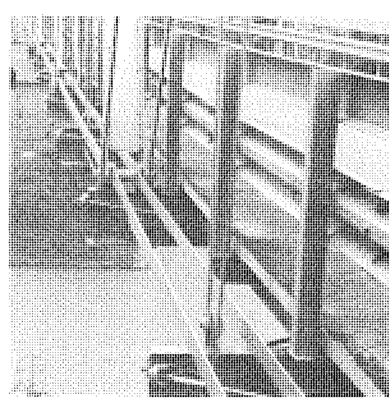
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Top chord is 8 sided tubular cast iron. Earliest verified metal truss in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

Weight limit 10 tons. Clays Ferry Bridge at historic pioneer crossing. First ferry license granted in 1792. Ferry passed to Cassuis M. Clay (1810-1903) noted statesman from Kentucky.





FORM # 40

V. DESIGN INFORMATION

NO. SPANS: 2 OVERALL LENGTH: 443' WIDTH: 16.5'

SPAN TYPES:

1. Warren Through Truss LENGTH: 217'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers and abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 4 plates and 4 angles

TOP CHORDS: 8 sided tubular cast iron columns

BOTTOM CHORDS: 1st 2 panels - 2 rectilinear eyebars, 1 round rod
10 center panels - 4 rectilinear eyebars, 1 round rod

HIP VERTICALS: N/A

INTERMEDIATE POSTS: N/A

DIAGONALS: 2 rectilinear eyebars, die-forged (tension only)
2 channels with bracing; 2 channels, 2 plates

COUNTERS: N/A

TOP LATERAL BRACING: 1 round rod

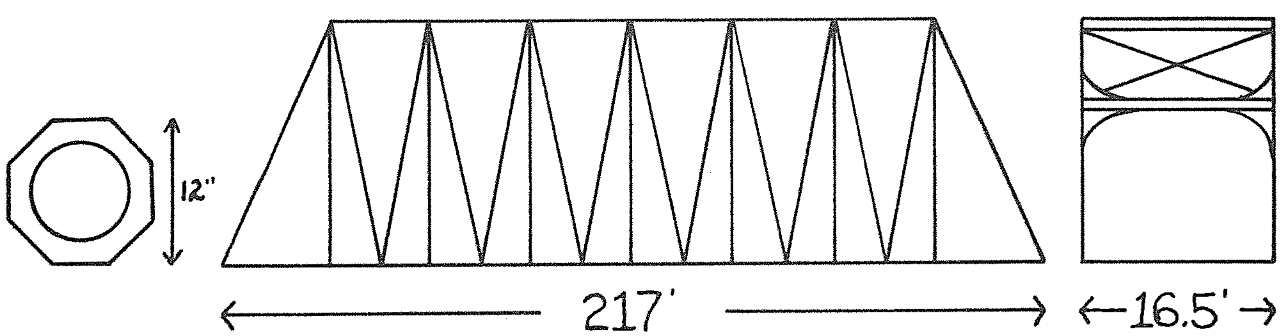
TOP LATERAL STRUTS: Small 8 sided tubular cast iron columns

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Verticals of 2 rectilinear eyebars are tension hangers and help support the deck.

VII. TRUSS CONFIGURATION



GENERAL HIGHWAY MAP

JESSAMINE COUNTY

KENTUCKY

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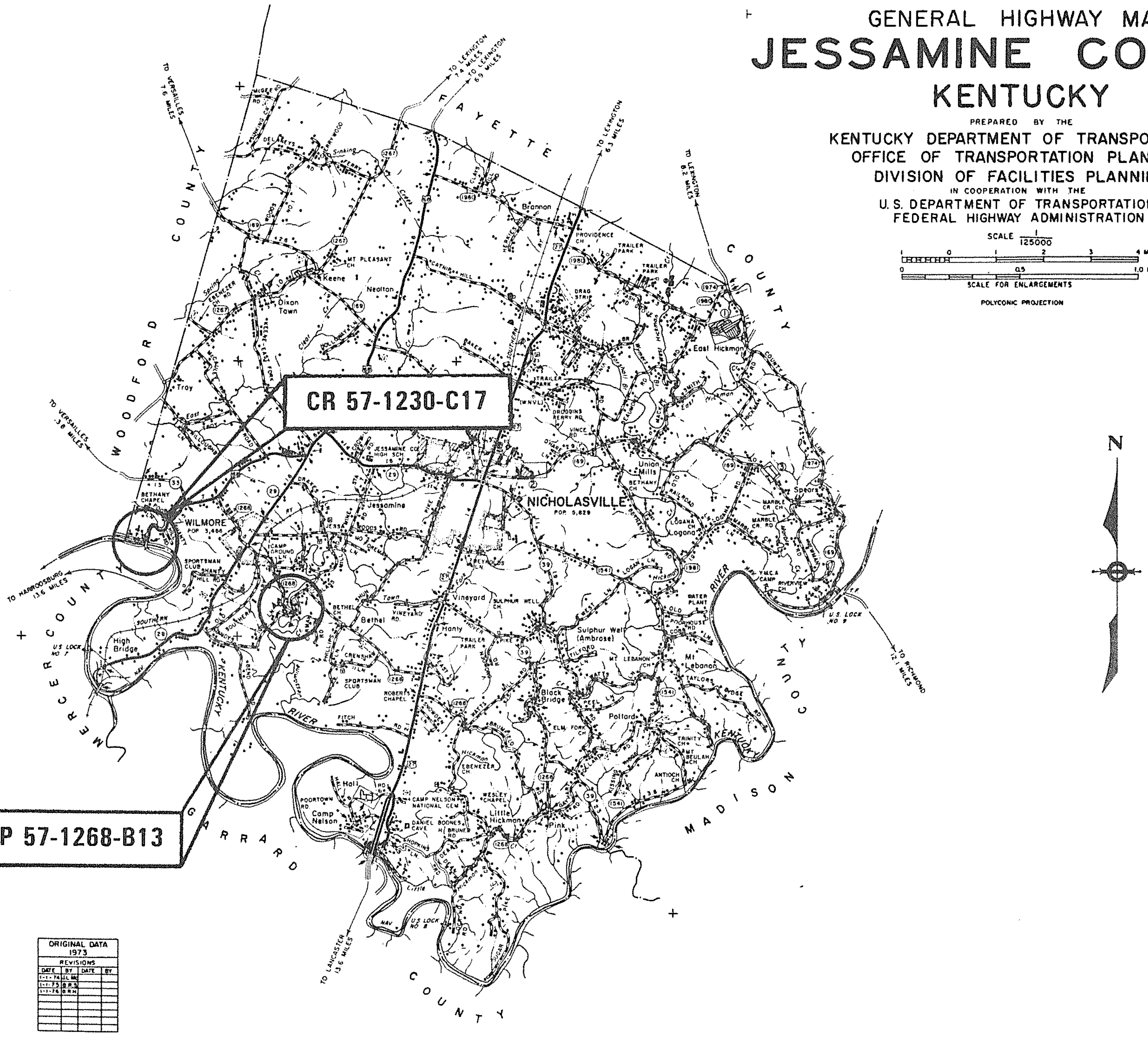
SCALE $\frac{1}{125000}$

POLYCONIC PROJECTION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 41

I. LOCATION

COUNTY: Jessamine CITY:

ROUTE: KY 1268 SPANS: Jessamine Creek

HWY. DISTRICT: 7 S I A RATING: 82.4/100

U T M COORDINATES: 16-707050-4190750

II. HISTORY

BRIDGE ID#: MP 57-1268-B13

NAME/TYPE: Masonry Deck Arch

DESIGNER/ BUILDER: County Road Department

DATE: @ 1936 BASIS: Local Historian

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

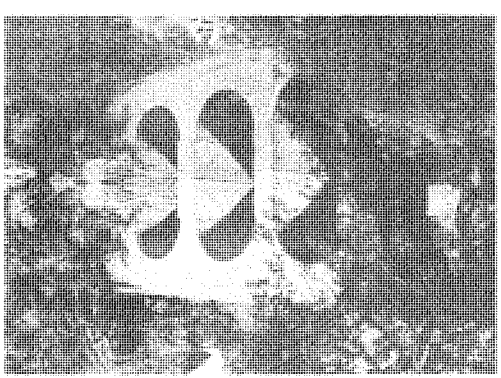
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

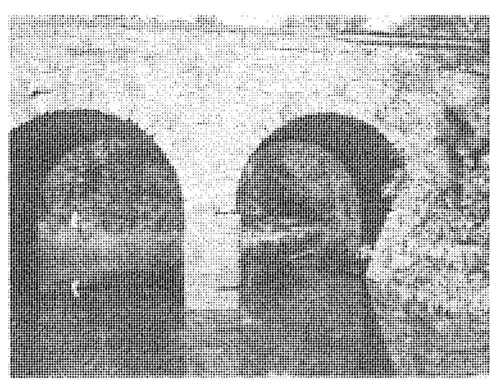
X RARE SURVIVOR/STANDARD DESIGN: One of the longest and most picturesque masonry arch bridges in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Located adjacent to the site of historic Glass Mill. Topographic map of the area shows 4 stone quarries near this bridge.





FORM # 41

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 125' WIDTH: 15'

SPAN TYPES:

1. Masonry Deck Arch LENGTH: 125'

2. ______ LENGTH: ______

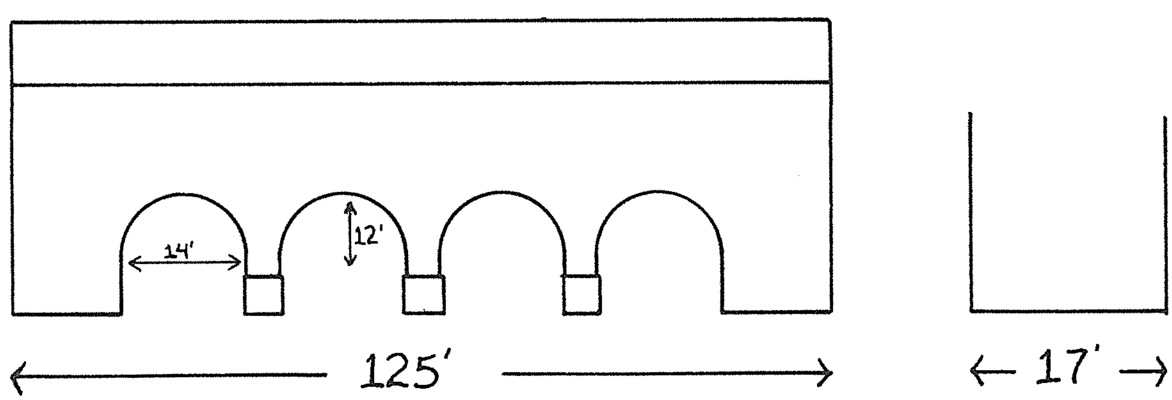
VI. STRUCTURAL INFORMATION

This deck arch is either a solid masonry arch or filled with loose gravel or dirt.

The substructure consists of masonry abutments and masonry footers or piers in the streambed.

Repointing of the arch faces and the footers to repair stream scouring has not detracted from the structures significance.

This bridge consists of 4 barrel arches measuring 12' x 14' x 17'.



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 42

I. LOCATION

COUNTY: Jessamine CITY:

ROUTE: CR 1230 SPANS: Unnamed stream

HWY. DISTRICT: 7 S I A RATING: 49.8/100

U T M COORDINATES: 16-702040-4192750

II. HISTORY

BRIDGE ID#: CR 57-1230-C17

NAME/TYPE: Pratt Pony Truss

DESIGNER/ BUILDER: Brackett Bridge Company Cincinnati, Ohio

DATE: 1898 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

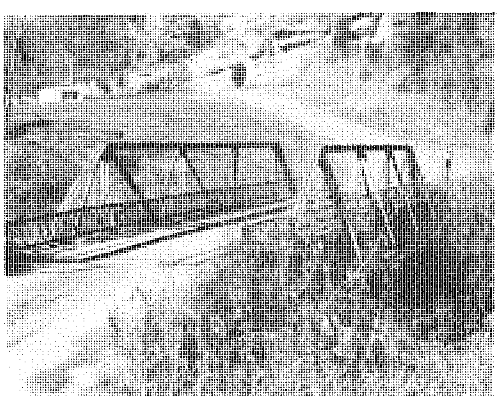
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

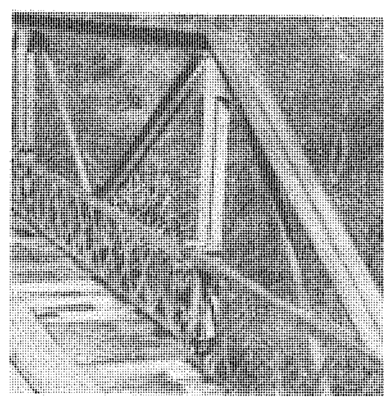
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only 19th Century Brackett Bridge Company pony truss in Kentucky. Most truss elements constructed of angles. Earliest riveted truss in the survey.

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural pastoral setting on dead end road near Kentucky River. Posted 9 ton load limit.





FORM # 42

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 59' WIDTH: 12.4'

SPAN TYPES:

1. Pratt Pony Truss LENGTH: 56'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments

SUPERSTRUCTURE

MATERIALS: Steel BASIS: post 1895 date

CONNECTIONS: PINS: RIVETS: X

END POSTS: 2 angles and stay bars

TOP CHORDS: 2 angles and stay bars

BOTTOM CHORDS: 2 angles and stay bars

HIP VERTICALS: 2 angles and stay bars, outriggers

INTERMEDIATE POSTS: 2 angles, stay bars, outriggers

DIAGONALS: 2 angles and stay bars, 1 angle in center panel

COUNTERS: N/A

TOP LATERAL BRACING: N/A

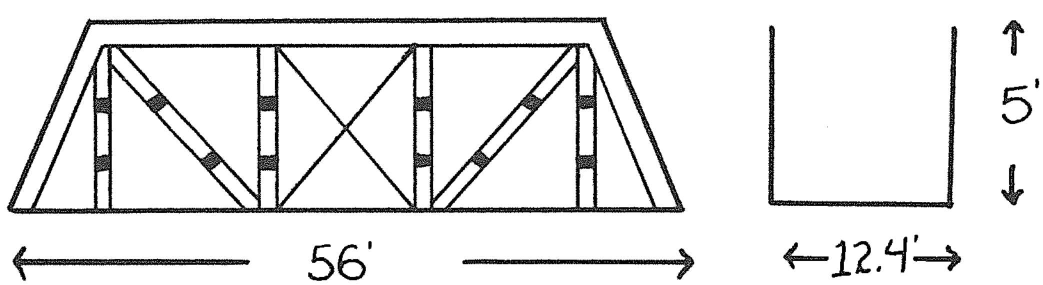
TOP LATERAL STRUTS: N/A

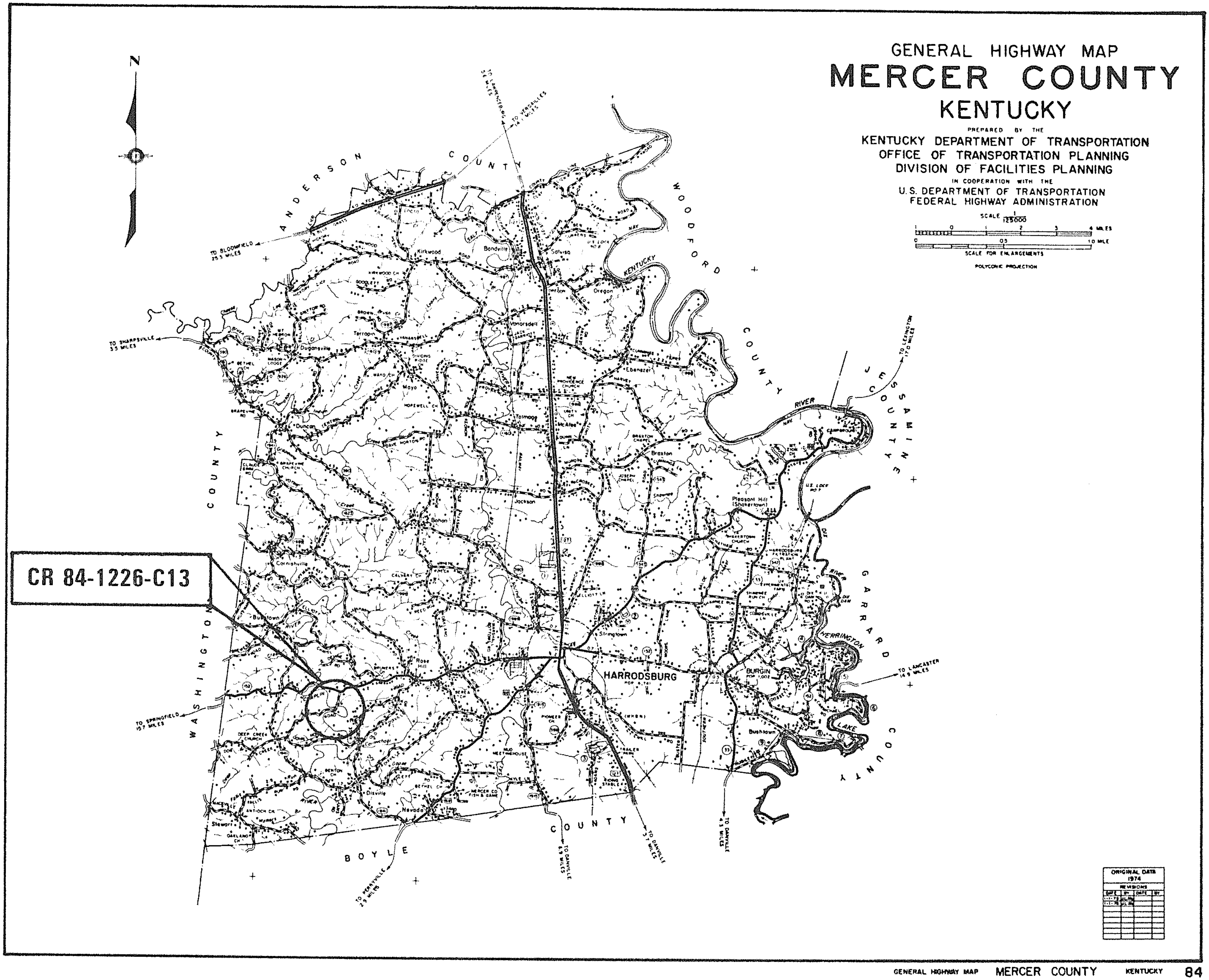
BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Wood deck.

VII. TRUSS CONFIGURATION




GENERAL HIGHWAY MAP
MERCER COUNTY
KENTUCKY
PREPARED BY THE
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DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
N
ANDERSON COUNTY
WOODFORD COUNTY
JESSAMINE COUNTY
GARRARD COUNTY
BOYLE COUNTY
WASHINGTON COUNTY
KENTUCKY RIVER
HERRINGTON LAKE
HARRODSBURG
BURGIN
Pleasant Hill (Shakertown)
Bondville
Kirkwood
Salvisa
Oregon
Duganville
Terrapin
Mayo
Tablow
Duncan
Talmage
McAfee
Ebenezer
Bruston
Jackson
Bohon
Cornishville
Bushtown
Rose Hill
Stringtown
Bushtown
Deviile
Nevada
Stewart
TO BLOOMFIELD 25.5 MILES
TO SHARPSVILLE 33 MILES
TO LEXINGTON 17.0 MILES
TO LANCASTER 14.9 MILES
TO DANVILLE 4.5 MILES
TO DANVILLE 3.7 MILES
TO DANVILLE 6.9 MILES
TO PERRYVILLE 2.9 MILES
TO SPRINGFIELD 15.7 MILES
CR 84-1226-C13
ORIGINAL DATA 1974
REVISIONS
GENERAL HIGHWAY MAP MERCER COUNTY KENTUCKY 84

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 43

I. LOCATION

COUNTY: Mercer CITY:

ROUTE: CR 1226 SPANS: Chaplin River

HWY. DISTRICT: 7 S I A RATING: 20.7/100

U T M COORDINATES: 16-679880-4178340

II. HISTORY

BRIDGE ID#: CR 84-1226-C13

NAME/TYPE: Pratt Through - Bedpost Pony Trusses

DESIGNER/ BUILDER: Empire Bridge Company Lexington, Kentucky

DATE: 1915 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

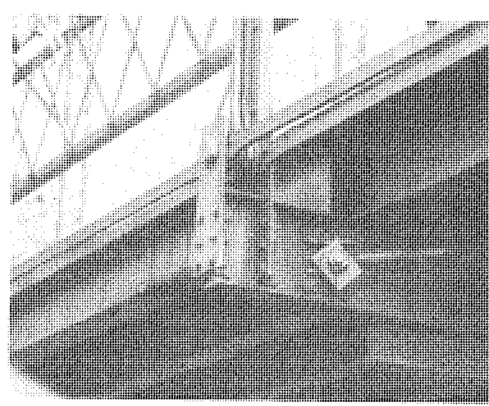
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

___ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only mixed bedpost - Pratt through truss in Kentucky. 1 of 2 Empire Bridge Company through trusses in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

This unique example from the Empire Bridge Company is located on a little used rural lane some 6 miles west of Harrodsburg, Kentucky's first permanent settlement.



FORM # 43

V. DESIGN INFORMATION

NO. SPANS: 2 main OVERALL LENGTH: 234' WIDTH: 11.5'

SPAN TYPES:

1. Bedpost Pony Truss LENGTH: 64'

2. Pratt Through Truss LENGTH: 120'

Approach Span 50'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments, lally column piers

SUPERSTRUCTURE

MATERIALS: Jones & Lauglin foundry BASIS: Stamped on channels

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded eyes

HIP VERTICALS: 2 square eyebars, loop-welded eyes

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded ~~2 square eyebars, loop-welded~~, turnbuckles (center panel)

COUNTERS: 1 square eyebar, turnbuckle

TOP LATERAL BRACING: 1 round rod

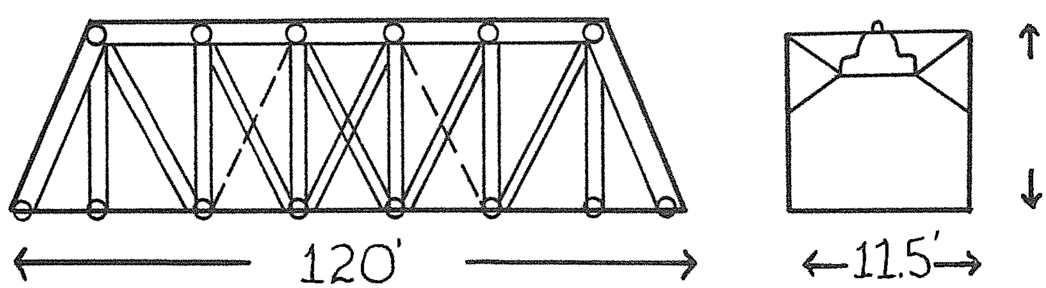
TOP LATERAL STRUTS: 2 paired angles, lattice bars

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Asphalt covered corrugated metal deck.

VII. TRUSS CONFIGURATION



FORM # 43

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: ______ WIDTH: ______

SPAN TYPES:

1. Bedpost Pony Truss LENGTH: 64'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 1st panel - 2 channels, stay bars
2 center panels - 2 rectilinear eyebars, loop-welded

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 paired angles, stay bars

DIAGONALS: 2 rectilinear eyebars; 2 square eyebars; loop-welded

COUNTERS: 1 square eyebar, turnbuckle

TOP LATERAL BRACING: N/A

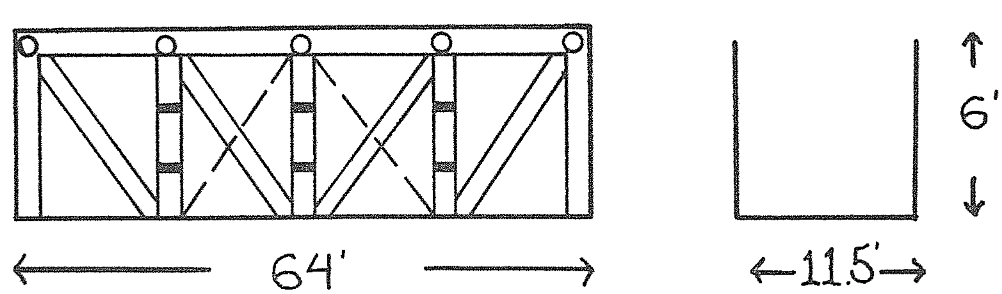
TOP LATERAL STRUTS: N/A

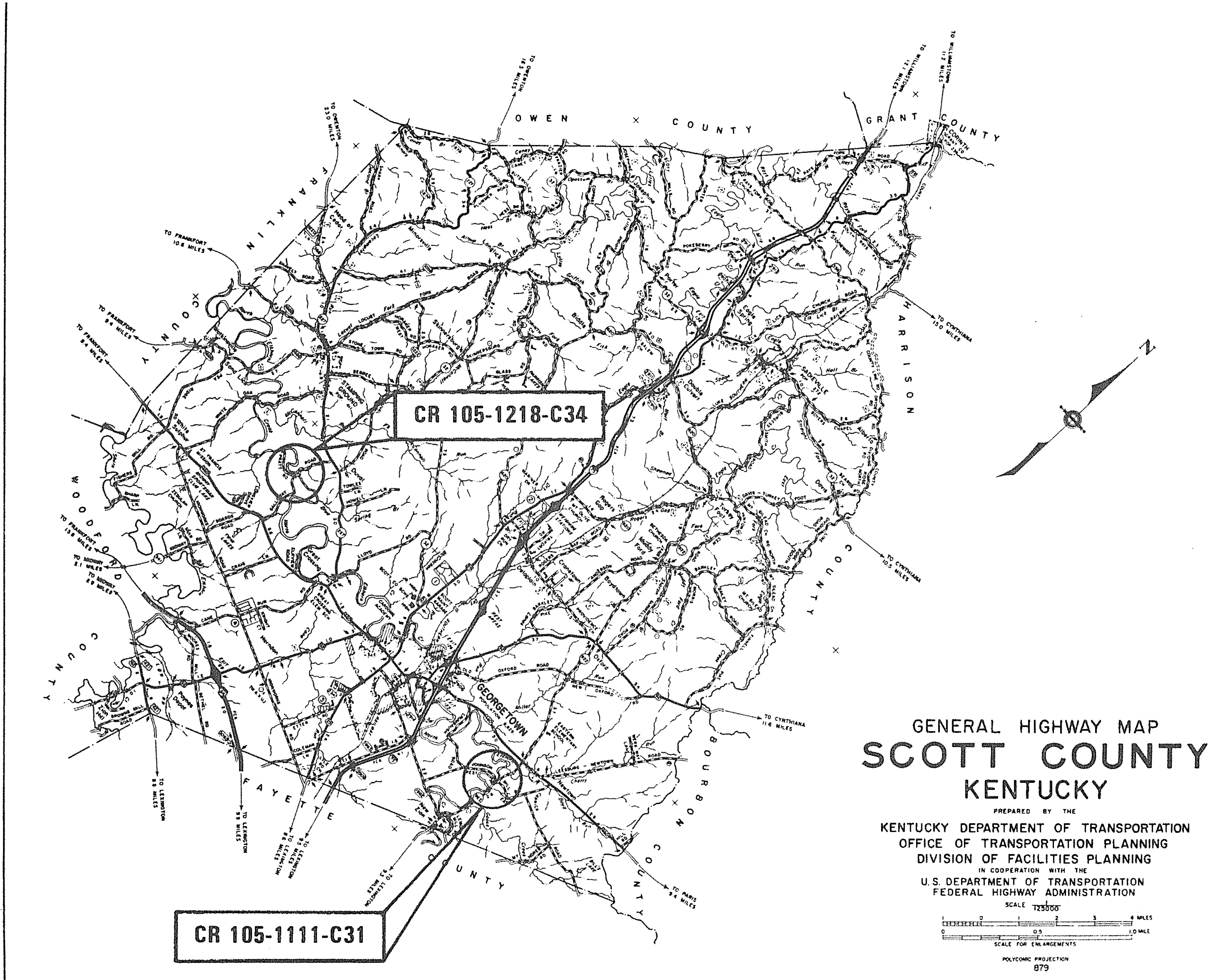
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Original guardrailing intact.

VII. TRUSS CONFIGURATION




GENERAL HIGHWAY MAP
SCOTT COUNTY
KENTUCKY
PREPARED BY THE
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FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879
CR 105-1218-C34
CR 105-1111-C31
OWEN COUNTY
GRANT COUNTY
HARRISON COUNTY
BOURBON COUNTY
FAYETTE COUNTY
WOODFORD COUNTY
FRANKLIN COUNTY
GEORGETOWN
N
TO CYNTHIANA 15.0 MILES
TO CYNTHIANA 10.5 MILES
TO CYNTHIANA 11.6 MILES
TO PARIS 9.4 MILES
TO FRANKFORT 10.8 MILES
TO OWENTON 23.0 MILES

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 44

I. LOCATION

COUNTY: Scott CITY:

ROUTE: CR 1111 SPANS: N. Elkhorn Creek

HWY. DISTRICT: 7 S I A RATING: 22.8/100

U T M COORDINATES: 16-719760-4231520

II. HISTORY

BRIDGE ID#: CR 105-1111-C31

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Champion Bridge Company Wilmington, Ohio

DATE: 1890 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

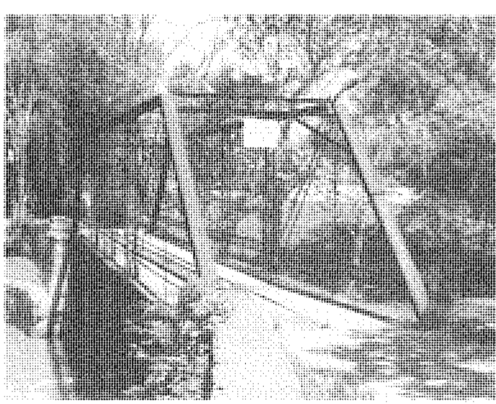
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

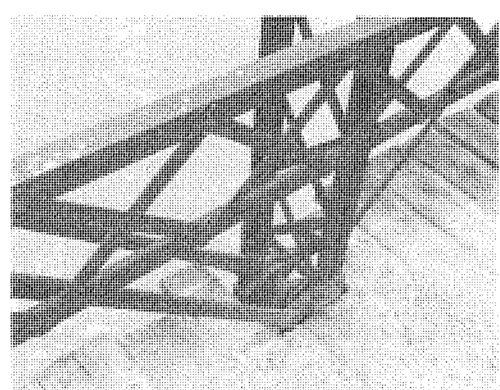
X RARE SURVIVOR/STANDARD DESIGN: Oldest dated Champion Bridge Company through truss in Kentucky. Apparently in original location.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Next to historic Johnson Mill and dam.





FORM # 44

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 91' WIDTH: 14'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 90'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments: concrete cap on one end

SUPERSTRUCTURE

MATERIALS: May be wrought iron BASIS: pre 1895 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded

HIP VERTICALS: 1 rectilinear eyebar, loop-welded eyes

INTERMEDIATE POSTS: 2 sets paired angles, lattice bars

DIAGONALS: 1 and 2 rectilinear eyebars, loop-welded

COUNTERS: 1 round eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod

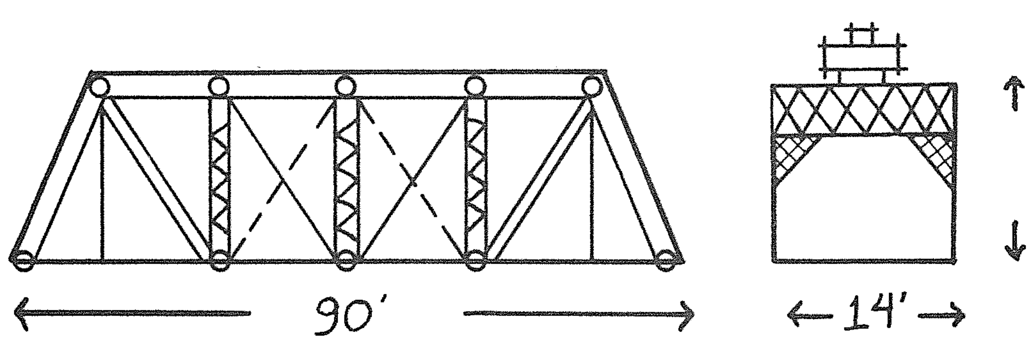
TOP LATERAL STRUTS: Small I-beams

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Hip-vertical attached to floor beam hanger at bottom chord.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 45

I. LOCATION

COUNTY: Scott CITY:

ROUTE: CR 1218 SPANS: North Fk. Elkhorn Creek

HWY. DISTRICT: 7 S I A RATING: 29.1/100

UTM COORDINATES: 16-705320-4234020

II. HISTORY

BRIDGE ID#: CR 105-1218-C34

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Empire Bridge Company Lexington, Kentucky

DATE: 1910 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

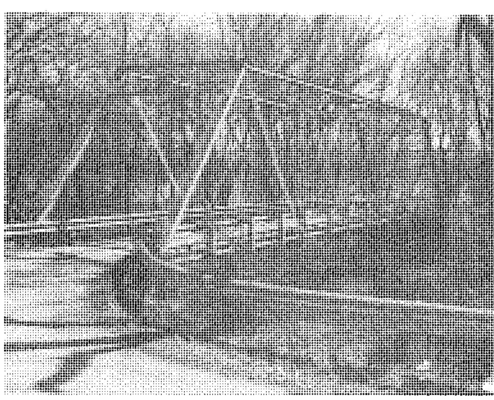
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

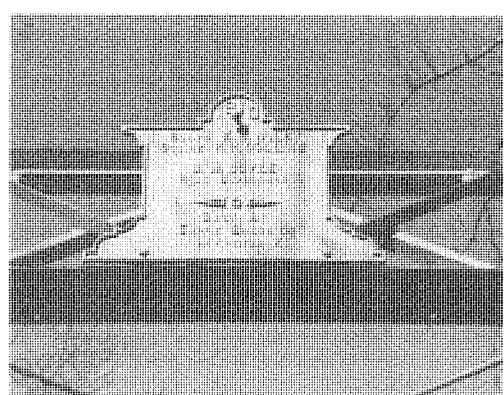
___ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: 1 of 3 extant KYDOT bridges in Kentucky built by the Empire Bridge Company.

IV. ENVIRONMENT/OTHER REMARKS

Serene rural setting over Elkhorn Creek, one of Central Kentucky's cleanest recreational/agricultural streams.





FORM # 45

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 124' WIDTH: 120'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 120'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded

HIP VERTICALS: 2 square eyebars, loop-welded

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded, 2 stirrup rods (center)

COUNTERS: 1 round rod with stirrup ends (replaces original)

TOP LATERAL BRACING: 1 round rod

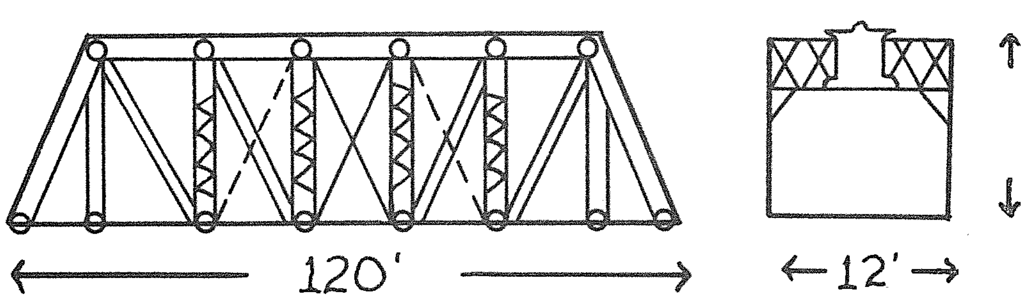
TOP LATERAL STRUTS: Paired angles

BOTTOM LATERAL BRACING: 1 round rod, upset and bolted to floor beam

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Corrugated metal and asphalt covered deck, floor beam hangers.

VII. TRUSS CONFIGURATION

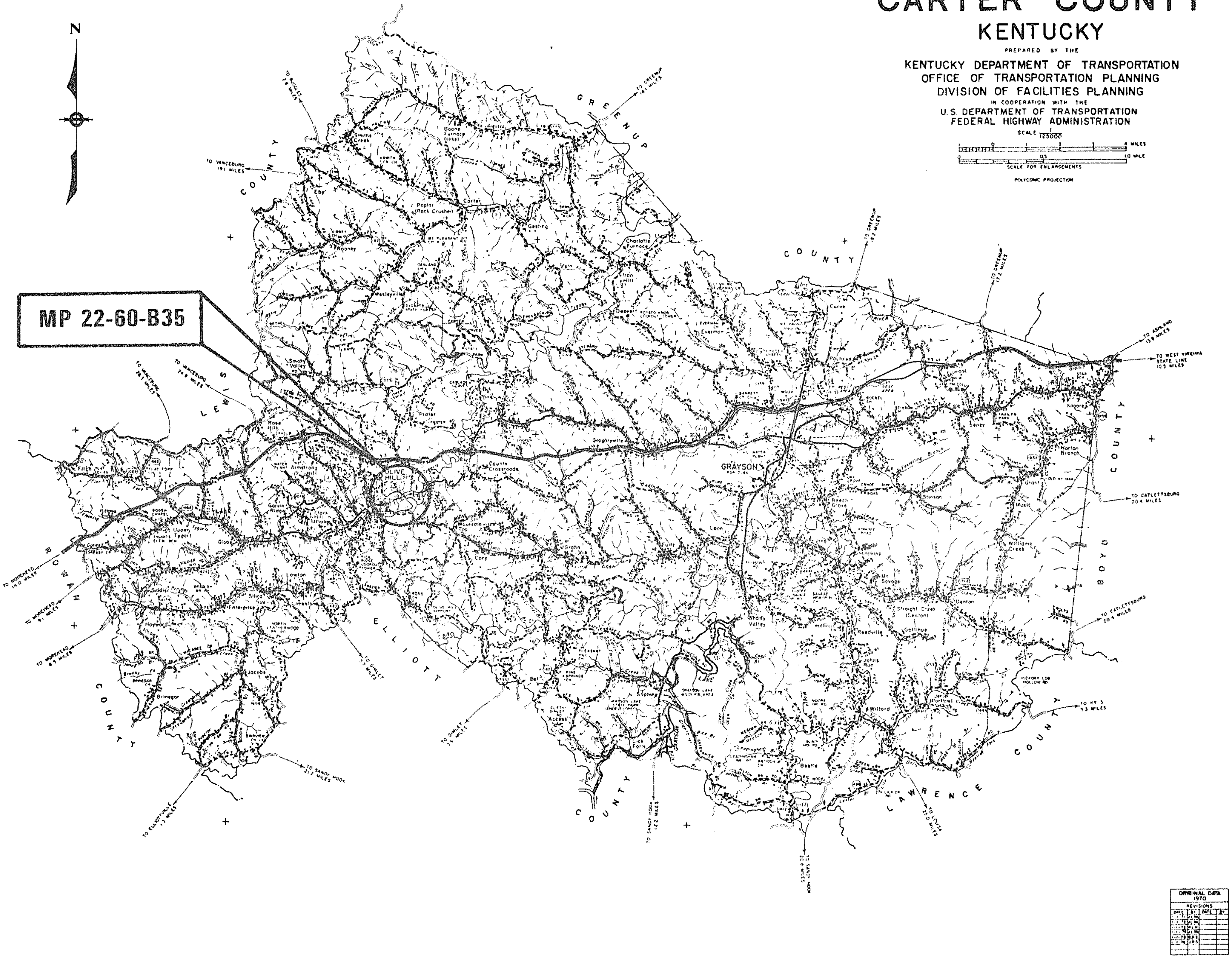


GENERAL HIGHWAY MAP
CARTER COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1/125000

POLYCONIC PROJECTION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 46

I. LOCATION

COUNTY: Carter CITY: Olive Hill

ROUTE: US 60 SPANS: Tygarts Creek

HWY. DISTRICT: 9 S I A RATING: 68.2/100

UTM COORDINATES: 17-312450-4242010

II. HISTORY

BRIDGE ID#: MP 22-60-B35

NAME/TYPE: 3 Span Open Spandral Concrete Deck Arch

DESIGNER/ BUILDER:

DATE: 1927 BASIS: KYDOT records

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

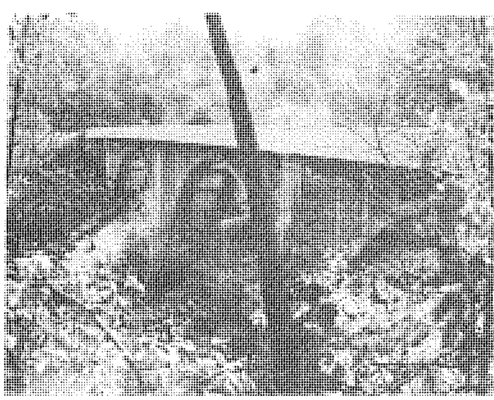
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

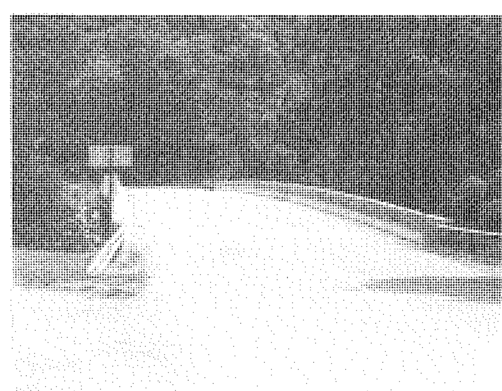
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Longest open spandral concrete arch span in Kentucky. One of only five open spandral concrete arches in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

Located on major highway on outskirts of Olive Hill. Structure has a high structural sufficiency rating (68.2/100).





FORM # 46

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 392' WIDTH: 21'

SPAN TYPES:

1. Reinforced Open Spandral Concrete Arch LENGTH: 2 x 100'

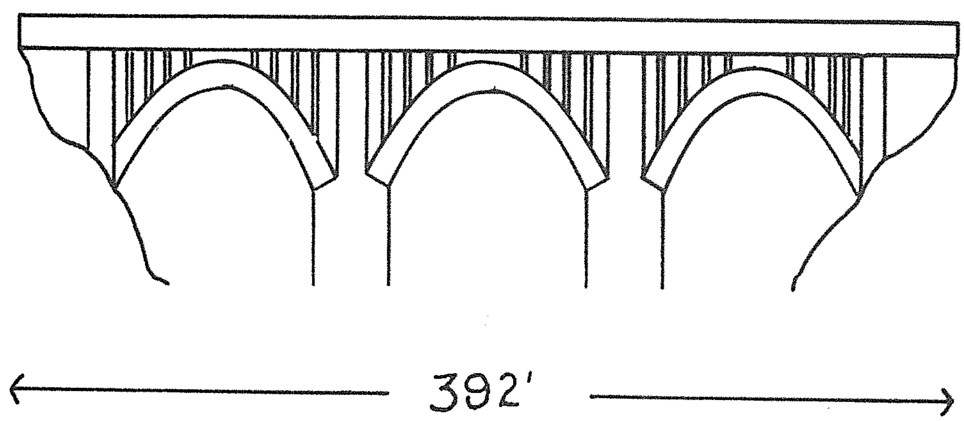
2. ______ LENGTH: 1 x 102'

VI. STRUCTURAL INFORMATION

3 arch spans have two reinforced concrete ribs with perpendicular bracing.

Reinforced concrete compression posts extend from top of arch to support floor beams which in turn support the deck.

Floor beams either concrete encased I-beams or heavily reinforced with rods.



GENERAL HIGHWAY MAP

FLEMING COUNTY

KENTUCKY

PREPARED BY THE

KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING

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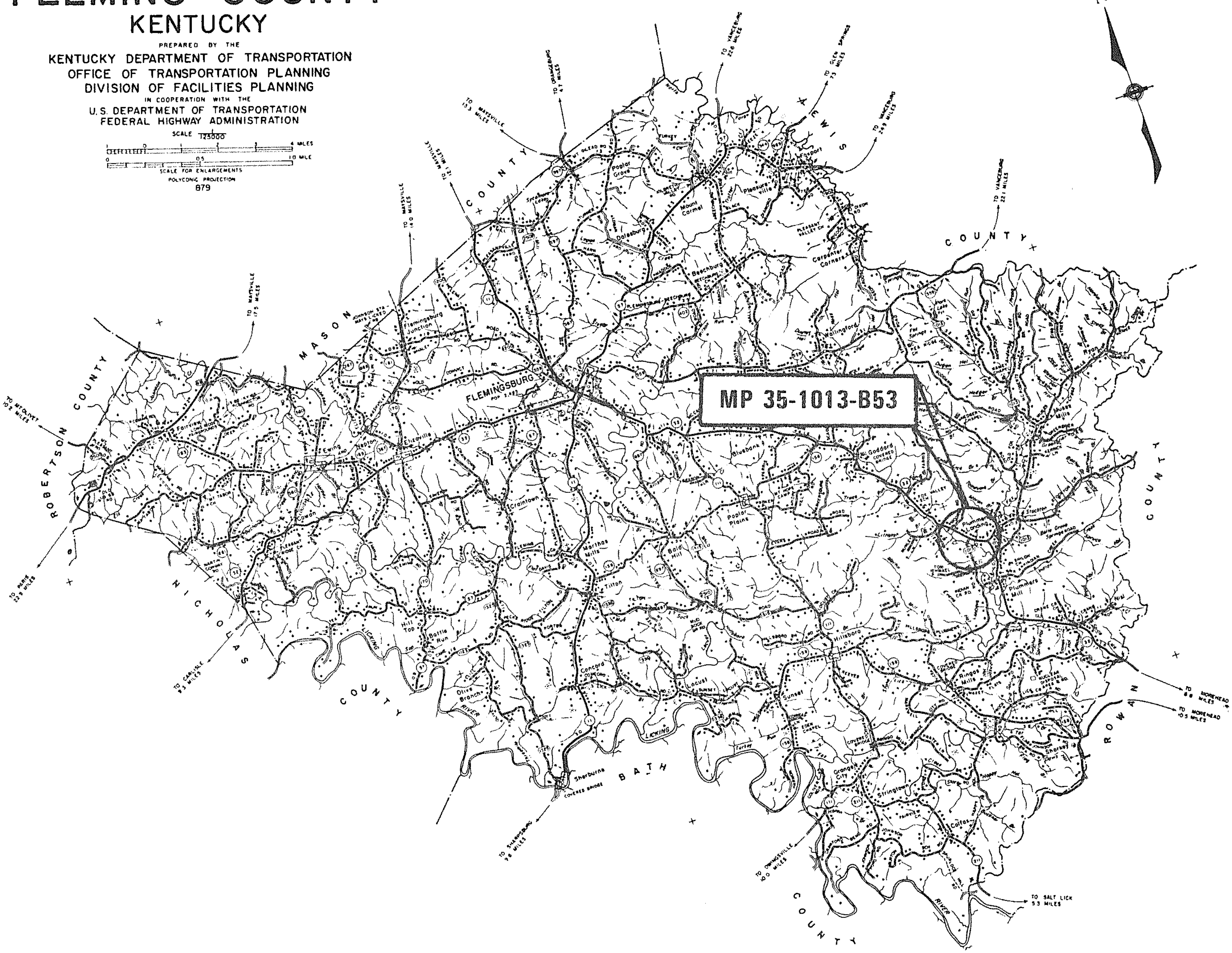
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1:125000

SCALE FOR ENLARGEMENTS

POLYCONIC PROJECTION

879



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 47

I. LOCATION

COUNTY: Fleming CITY:

ROUTE: KY 1013 SPANS: Sand Lick Creek

HWY. DISTRICT: 9 S I A RATING: 20.8/100

U T M COORDINATES: 17-274600-4243960

II. HISTORY

BRIDGE ID#: MP 35-1013-B53

NAME/TYPE: Pratt Half-Hip Pony Truss

DESIGNER/ Pittsburg Bridge Company

BUILDER: W. B. Bassett, Agent

DATE: 1893 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

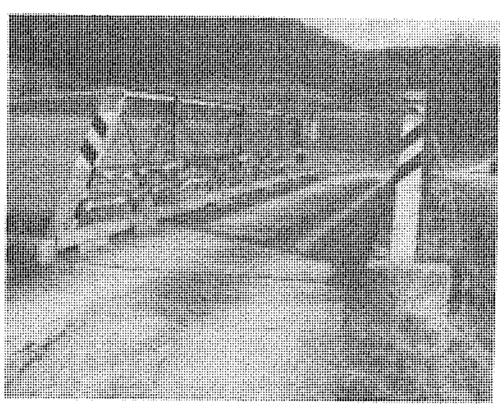
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

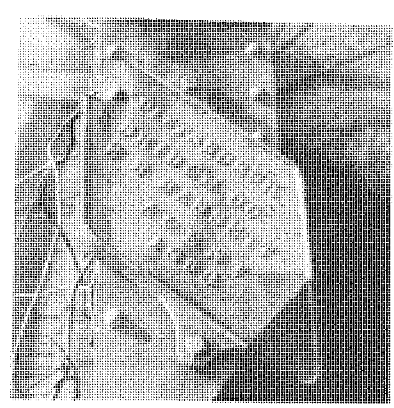
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only truss by Pittsburg Bridge Company in Kentucky. May be constructed of wrought iron.

IV. ENVIRONMENT/OTHER REMARKS

Bridge located in a rural setting near the small communities of Plummers Landing and Plummers Mill.





FORM # 47

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 54' WIDTH: 12'

SPAN TYPES:

1. Pratt Half-Hip Pony LENGTH: 52'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear; 2 round eyebars, loop-welded

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 sets paired angles, lacing bars

DIAGONALS: 2 rectilinear; 2 round eyebars, loop-welded

COUNTERS: 1 round eyebar, sleevenut

TOP LATERAL BRACING: N/A

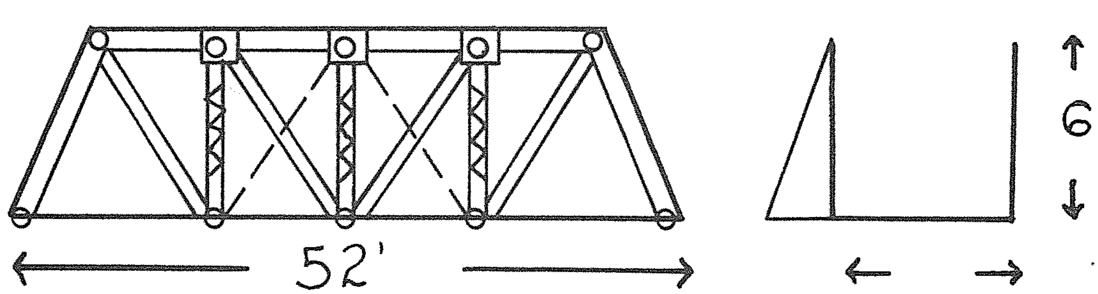
TOP LATERAL STRUTS: N/A

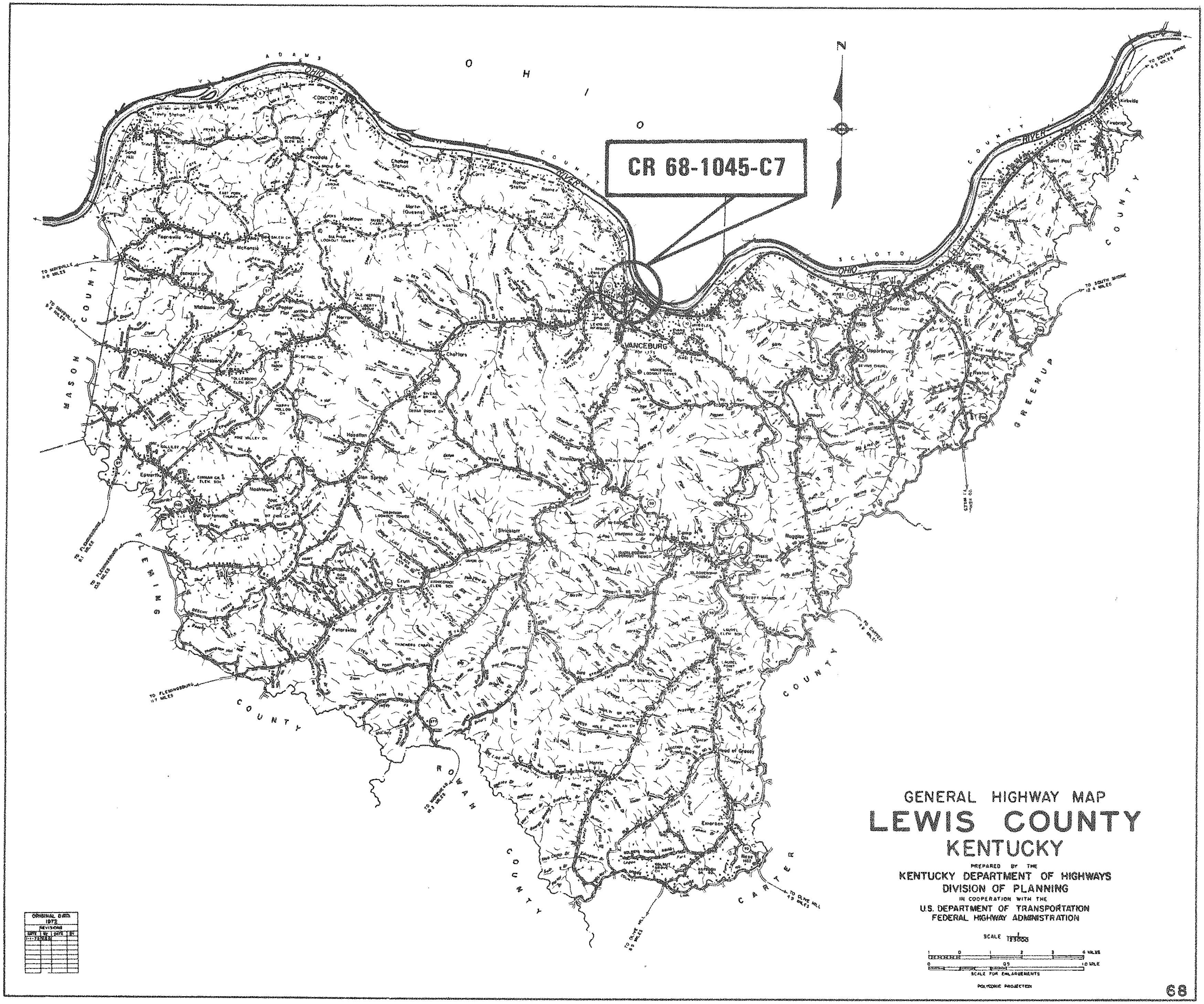
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Wood beams

OTHER DETAILS: Wood deck and guardrail.

VII. TRUSS CONFIGURATION





CR 68-1045-C7
N
O H I O
OHIO RIVER
VANCEBURG
CONCORD
Garrison
Tollesboro
Charters
Glen Springs
Crum
Petersville
Emerson
Head of Grassy
MASON COUNTY
FLEMING COUNTY
ROWAN COUNTY
CARTER COUNTY
GREENUP COUNTY
SCIOTO COUNTY
ADAMS COUNTY
GENERAL HIGHWAY MAP
LEWIS COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF HIGHWAYS
DIVISION OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
POLYCONIC PROJECTION
ORIGINAL DATA 1972
REVISIONS
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KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 48

I. LOCATION

COUNTY: Greenup CITY: Greenup

ROUTE: KY 2541 SPANS: Little Sandy River

HWY. DISTRICT: 9 S I A RATING: 48.2/100

U T M COORDINATES: 17-339700-4271660

II. HISTORY

BRIDGE ID#: MP 45-2541-B42

NAME/TYPE: 3 Span Pratt Through Truss

DESIGNER/ King Bridge Company

BUILDER: Cleveland, Ohio

DATE: 1884 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

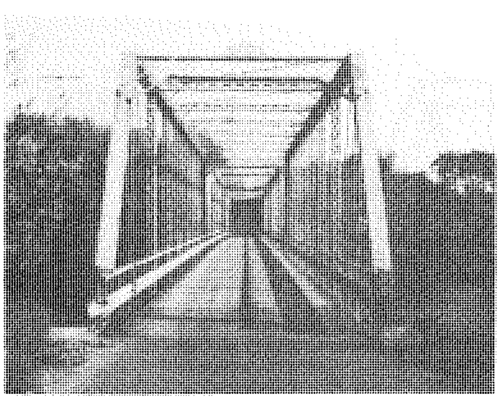
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

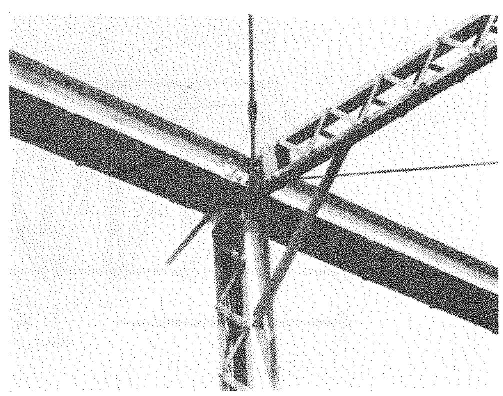
X RARE SURVIVOR/STANDARD DESIGN: 1 of the 2 oldest King Bridge Company Pratt through trusses in Kentucky. Second longest multi-span pin-connected truss in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Commands excellent Little Sandy and Ohio River views. Apparently in original location on north edge of Greenup.





FORM # 48

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 423' WIDTH: 15.5'

SPAN TYPES:

1. 3 Pratt Through Trusses at LENGTH: 139'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments and piers; concrete caps and one concrete retaining wall at south abutment.

SUPERSTRUCTURE

MATERIALS: Probably wrought iron BASIS: pre 1885 Age

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged eyes

HIP VERTICALS: 2 square eyebars, 90° turn before bolting to bottom chord

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged
2 square eyebars, loop-welded, sleevenuts in center panel

COUNTERS: 1 square eyebar, loop-welded, sleevenut

TOP LATERAL BRACING: 1 round rod with sleevenut

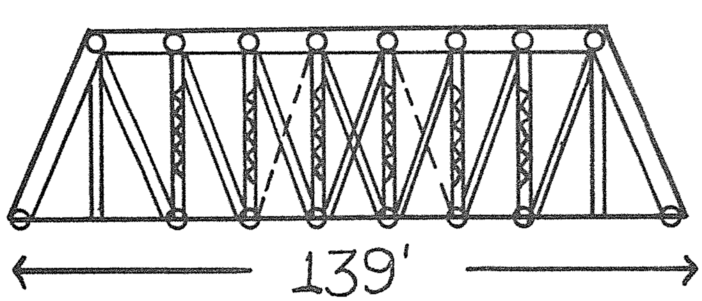
TOP LATERAL STRUTS: 2 channels, lacing bars

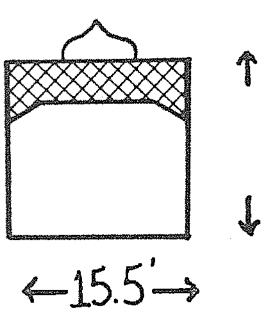
BOTTOM LATERAL BRACING: 1 round rod with sleevenut

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS: Floor beam hangers at each panel, new guardrail.

VII. TRUSS CONFIGURATION





KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 49

I. LOCATION

COUNTY: Greenup CITY: Hopewell

ROUTE: CR 1268 SPANS: Little Sandy River

HWY. DISTRICT: 9 S I A RATING: 19.9/100

UTM COORDINATES: 17-333610-4252625

II. HISTORY

BRIDGE ID#: CR 45-1268-C16

NAME/TYPE: Whipple-Murphy or Double Intersection Pratt Truss

DESIGNER/

BUILDER: East Kentucky Railroad

DATE: @ 1890 BASIS: Local informant

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

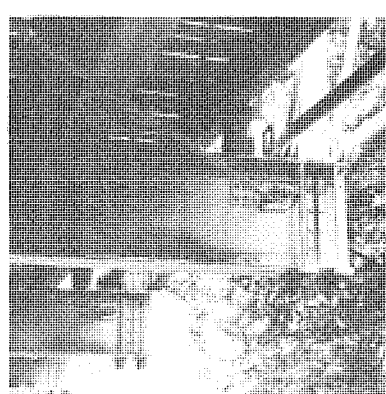
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: Built by EK (East Kentucky) Railroad, use of patented Phoenix columns. 1 of 5 Whipple-Murphy trusses in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting, posted 10 ton weight limit.



FORM # 49

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 153' WIDTH: 14.3'

SPAN TYPES:

1. Whipple-Murphy or LENGTH: 153'
2. Double Intersection Pratt Truss LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments

SUPERSTRUCTURE

MATERIALS: from Phoenix Iron Co. Philadelphia, Pa. BASIS: Stamped on columns

CONNECTIONS: PINS: X RIVETS:

END POSTS: 6 sided Phoenix column

TOP CHORDS: 6 sided Phoenix column

BOTTOM CHORDS: 3 end panels - 2 rectilinear eyebars, die-forged
3 center panels - 4 rectilinear eyebars, die-forged

HIP VERTICALS: 2 rectilinear eyebars, die-forged

INTERMEDIATE POSTS: 4 sided Phoenix column

DIAGONALS: 2 rectilinear eyebars, die-punched; turnbuckles in center panel

COUNTERS: 2 round bars, threaded for bolts at bottom chord panel points

TOP LATERAL BRACING: 1 round rod

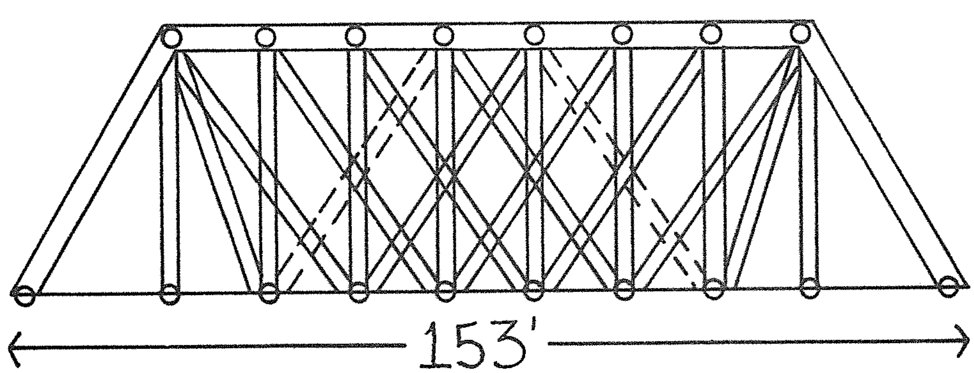
TOP LATERAL STRUTS: 4 sided Phoenix column

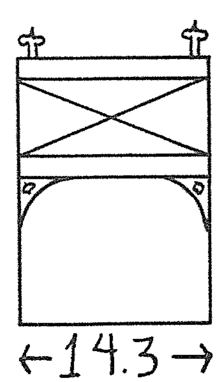
BOTTOM LATERAL BRACING: 1 round rod

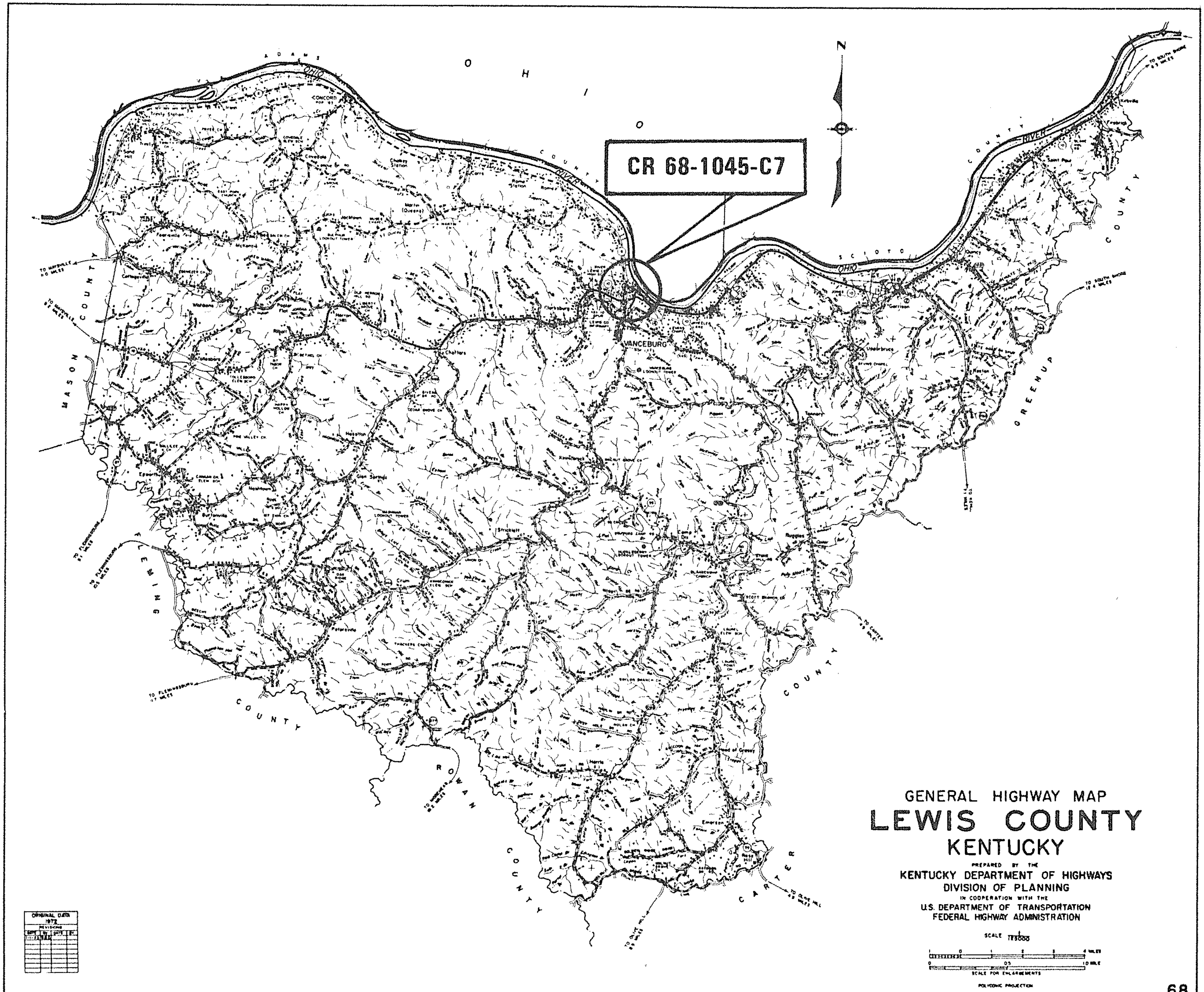
FLOOR BEAMS: Plate girders STRINGERS: 2 plate girders
3 wood beams

OTHER DETAILS: Decorative details include finials on end posts.

VII. TRUSS CONFIGURATION






CR 68-1045-C7
N
OHIO
ADAMS
COUNTY
OHIO RIVER
SCIOTO
GREENUP
CARTER
ROWAN
FLEMING
MASON
VANCEBURG
GENERAL HIGHWAY MAP
LEWIS COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF HIGHWAYS
DIVISION OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
ORIGINAL DATA
1972
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KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 50

I. LOCATION

COUNTY: Lewis CITY: Vanceburg

ROUTE: CR 1045 SPANS: Salt Lick Creek

HWY. DISTRICT: 9 S I A RATING: 29.2/100

U T M COORDINATES: 17-297805-4275050

II. HISTORY

BRIDGE ID#: CR 68-1045-C7

NAME/TYPE: 3 Span Pratt Half-Hip Pony Truss

DESIGNER/ BUILDER: Champion Bridge Company Wilmington, Ohio

DATE: 1882 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

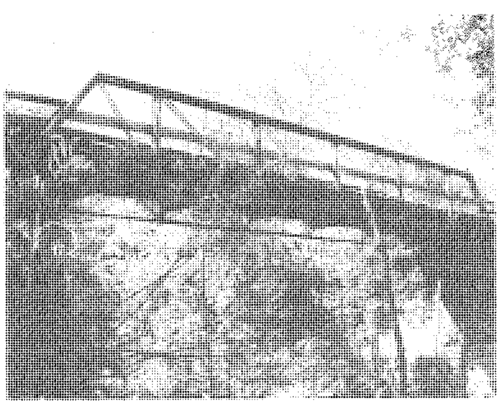
______ TYPICAL EXAMPLE/COMMON SURVIVOR:

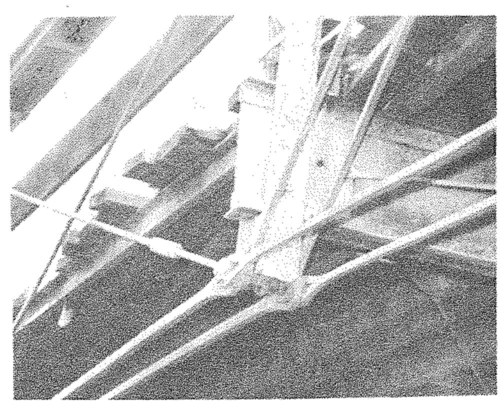
______ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Oldest documented Pratt half-hip pony truss in Kentucky, early multi-span crossing, unique Champion Bridge builder and date plate incorporated with finials.

IV. ENVIRONMENT/OTHER REMARKS

Picturesque stream crossing in Vanceburg, county seat of Lewis County.





FORM # 50

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 174' WIDTH: 18.3'

SPAN TYPES:

1. One 6 panel Pratt Half-Hip Pony Truss LENGTH: 80'
2. (Center span) LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments and piers

SUPERSTRUCTURE

MATERIALS: Wrought iron BASIS: pre 1885 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded
2 square eyebars, loop-welded (on end panels)

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 channels, lacing bars (2 sets)

DIAGONALS: 2 rectilinear eyebars, loop-welded
2 square eyebars, loop-welded (on end panels)

COUNTERS: 1 round eyebar, loop-welded, turnbuckle

TOP LATERAL BRACING: N/A

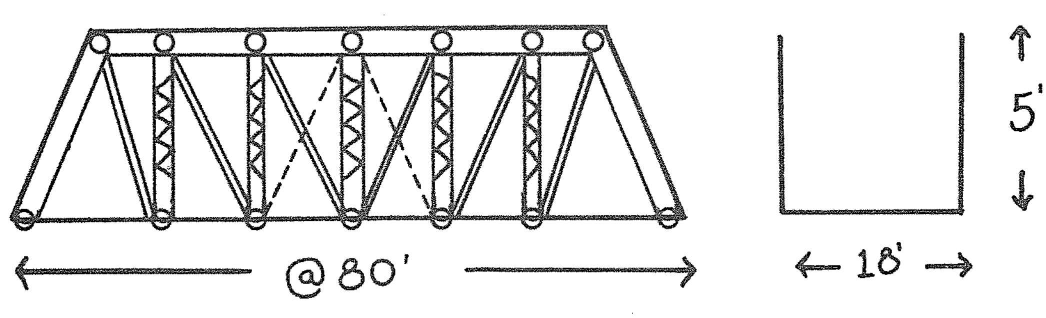
TOP LATERAL STRUTS: N/A

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girders STRINGERS: Small I-beams, wood beams
channel on outside

OTHER DETAILS: Counters appear to have been cut to add turnbuckle
for field adjustments.

VII. TRUSS CONFIGURATION



FORM # 50

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 174' WIDTH: 18.3'

SPAN TYPES:

1. 2-3 panel Pratt Half-Hip Pony Trusses LENGTH: 45'
2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments and piers

SUPERSTRUCTURE

MATERIALS: Wrought iron BASIS: pre 1885 date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded
2 square eyebars, loop-welded (on end panels)

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 channels, lacing bars (2 sets)

DIAGONALS: 2 square eyebars, loop-welded
1 round eyebar, loop-welded, sleevenuts in center panel

COUNTERS: N/A

TOP LATERAL BRACING: N/A

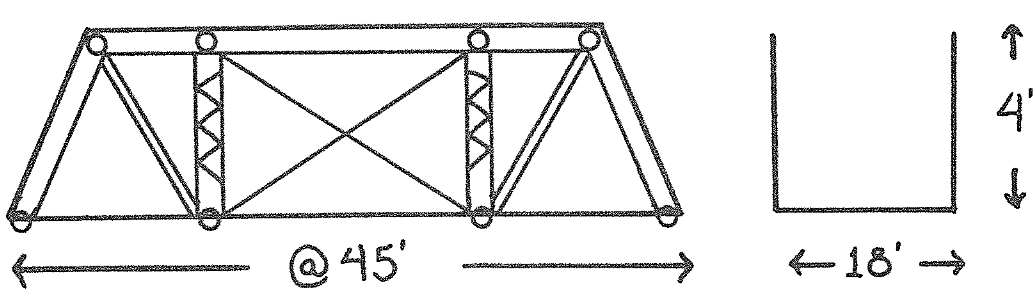
TOP LATERAL STRUTS: N/A

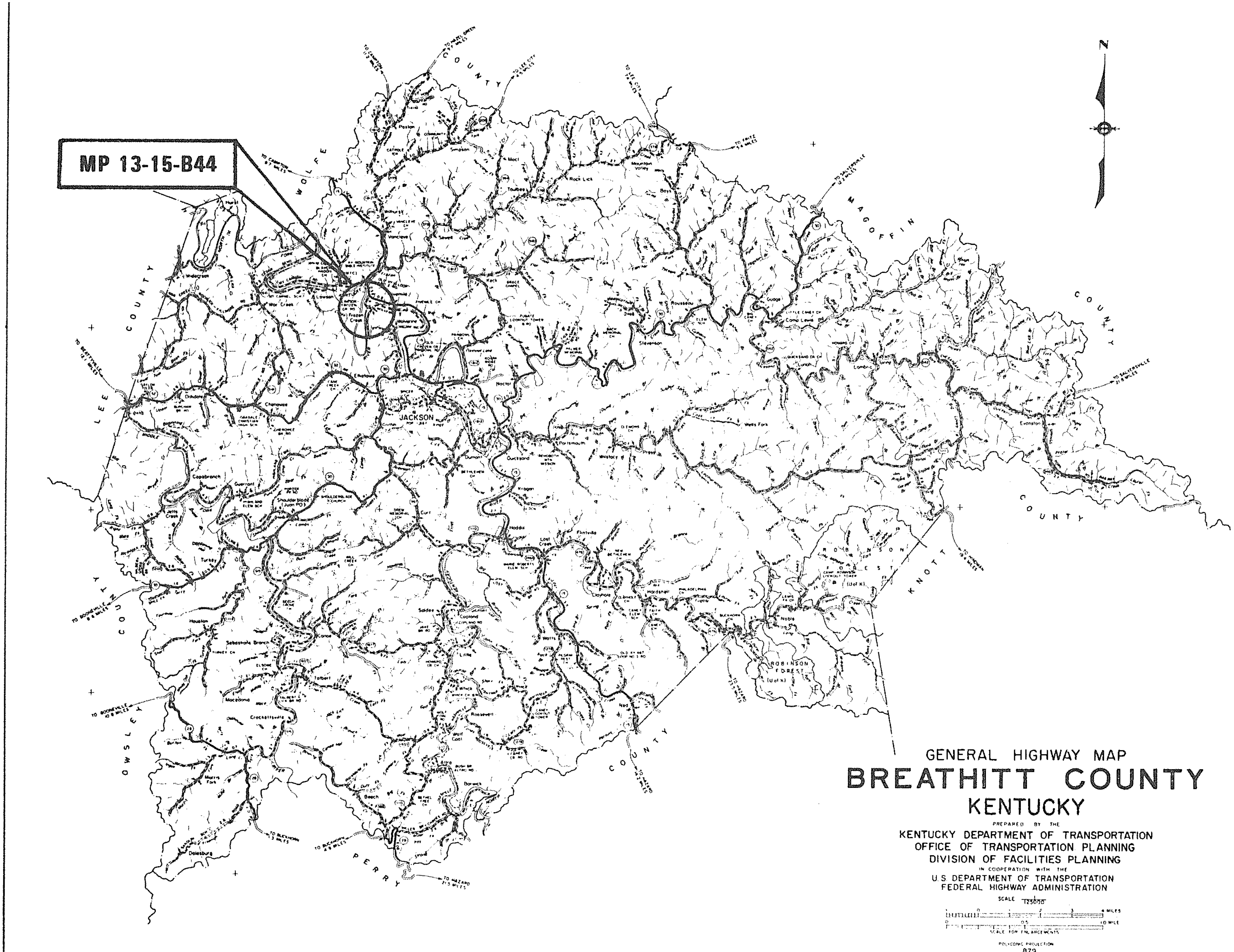
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girders STRINGERS: Small I-beams, wood beams
channel on outside

OTHER DETAILS: Wood plank deck and guardrailing.

VII. TRUSS CONFIGURATION




MP 13-15-B44
WOLFE COUNTY
MAGOFFIN COUNTY
KNOTT COUNTY
PERRY COUNTY
OWSLEY COUNTY
LEE COUNTY
JACKSON
ROBINSON FOREST (U of K)
GENERAL HIGHWAY MAP
BREATHITT COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE
POLYCONIC PROJECTION
879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 51

I. LOCATION

COUNTY: Breathitt CITY: Frozen Creek

ROUTE: KY 15 SPANS: North Fk. Kentucky River

HWY. DISTRICT: 10 S I A RATING: 60.5/100

U T M COORDINATES: 17-286080-4163200

II. HISTORY

BRIDGE ID#: MP 13-15-B44

NAME/TYPE: "River Bridge" Whipple-Murphy Truss

DESIGNER/
BUILDER: Jackson-Index Railroad

DATE: 1906 BASIS: Local informant

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

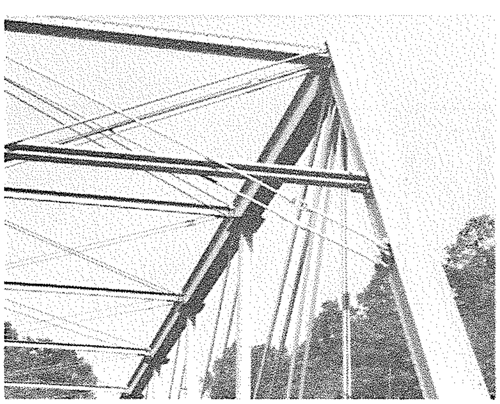
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

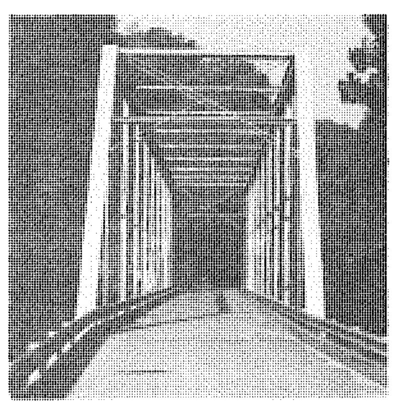
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Converted from railroad to highway use. 1 of 5 Whipple-Murphy trusses in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

Located on abandoned Jackson-Index (Breathitt, Wolfe, Morgan Counties) railroad line. Taken over by county in 1935 and Kentucky Bureau of Highways in 1937. High structural rating.





FORM # 51

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 322' WIDTH: 16.5'

SPAN TYPES:

1. Whipple-Murphy or Double Intersection Pratt Truss LENGTH: 188'
2. Approach and fill LENGTH: 134'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 4 plates with angles

TOP CHORDS: 4 plates with angles

BOTTOM CHORDS: 2, 4, & 6 rectilinear eyebars, die-forged

HIP VERTICALS: 2 rectilinear eyebars, die-forged

INTERMEDIATE POSTS: 2 plates, 2 channels

DIAGONALS: 2 rectilinear eyebars, die-forged
2 square eyebars, loop-welded, turnbuckles

COUNTERS: 2 square eyebars, loop-welded, turnbuckles

TOP LATERAL BRACING: 1 round rod, loop-welded, turnbuckle

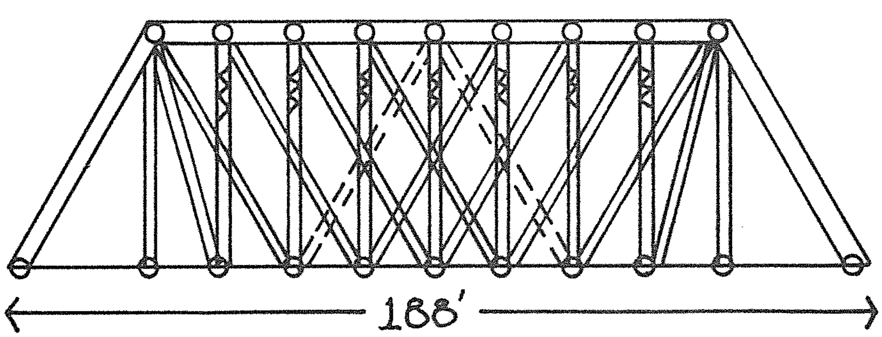
TOP LATERAL STRUTS: Small I-beams

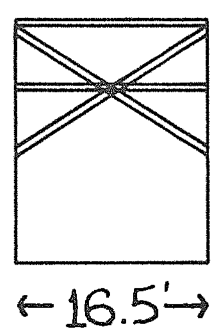
BOTTOM LATERAL BRACING: 1 round rod

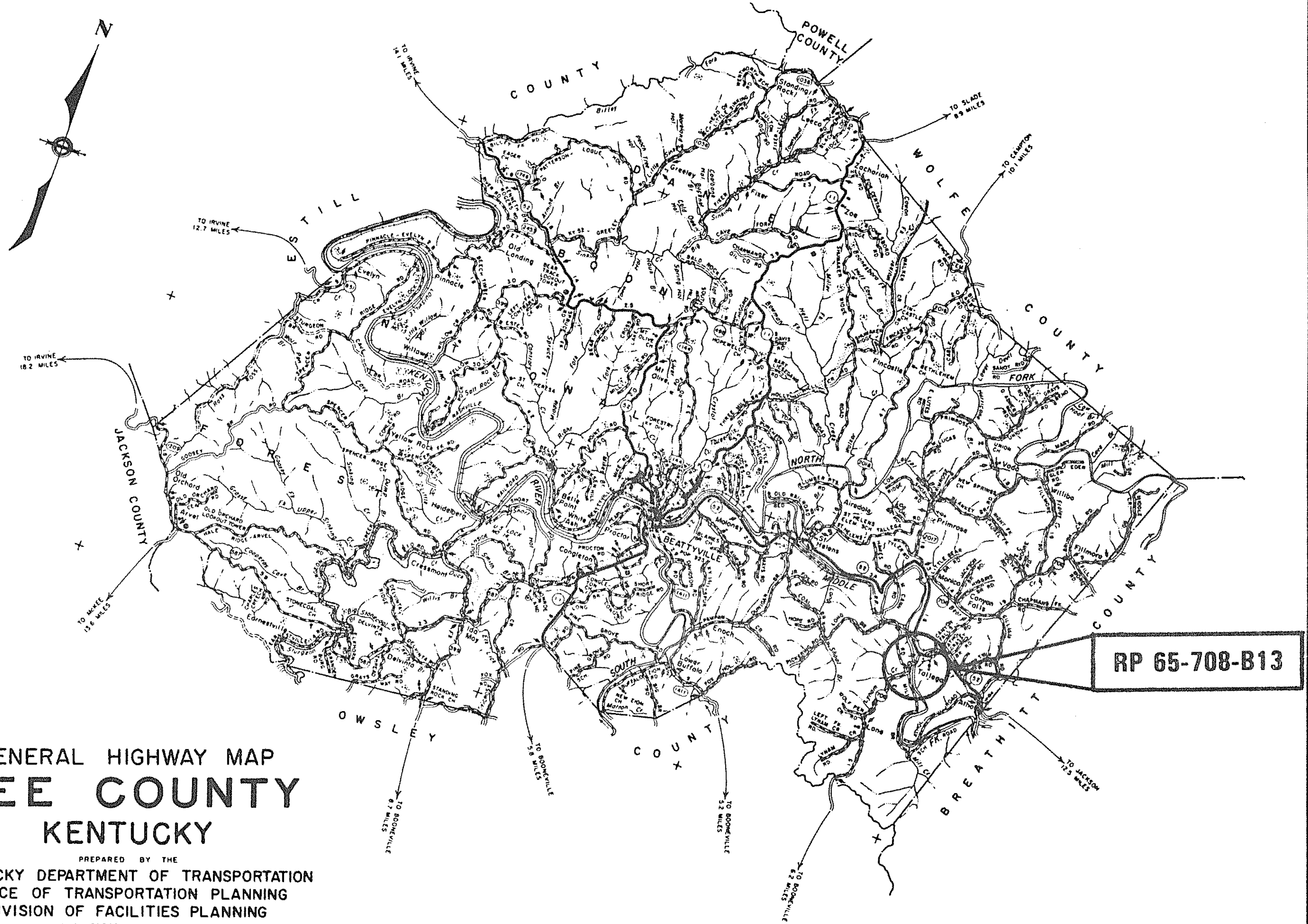
FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS:

VII. TRUSS CONFIGURATION







GENERAL HIGHWAY MAP
LEE COUNTY
KENTUCKY

PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE $\frac{1}{125000}$

1 0 1 2 3 4 MILES

0 0.5 1.0 MILE

SCALE FOR ENLARGEMENTS

POLYCONIC PROJECTION

879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 52

I. LOCATION

COUNTY: Lee CITY: Near Tallega

ROUTE: KY 708 SPANS: Middle Fk. Kentucky River

HWY. DISTRICT: 10 S I A RATING: 16.6/100

UTM COORDINATES: 17-269860-4159430

II. HISTORY

BRIDGE ID#: RP 65-708-B13

NAME/TYPE: 1 Pratt Through; 2 Pratt Half-Hip Pony Trusses

DESIGNER/ Oregonia Bridge Company

BUILDER: Lebanon, Ohio

DATE: 1917 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

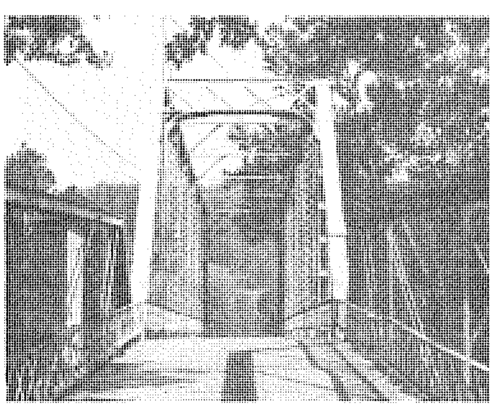
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only mixed pony-through truss by Oregonia Bridge Company in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

The high elegant truss rests on unique metal piers constructed of angles and lacing bars.



FORM # 52

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 255' WIDTH: 12'

SPAN TYPES:

1. 1 Pratt Through Truss LENGTH: 127'
2. 2 Pratt Half-Hip Pony Truss LENGTH: 62' & 66'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments, metal frame truss piers

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded

HIP VERTICALS: 2 angles, stay bars

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 round eyebars and 2 round stirrup rods in center panel
2 rectilinear eyebars, loop-welded

COUNTERS: 1 round eyebar, loop-welded, turnbuckle

TOP LATERAL BRACING: 1 round rod

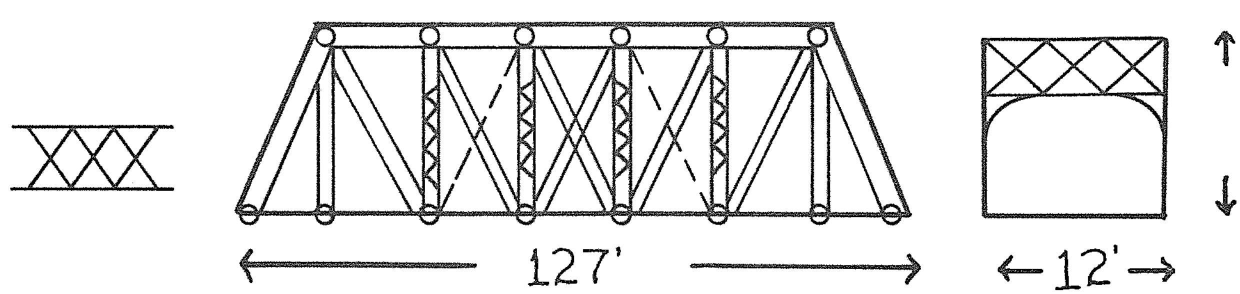
TOP LATERAL STRUTS: Paired angles

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Curved portal bracing, original guardrailing.

VII. TRUSS CONFIGURATION



FORM # 52

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 255' WIDTH: 12'

SPAN TYPES:

1. 2 Pratt Half-Hip Pony Trusses LENGTH: 62' & 66'
2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded

HIP VERTICALS: N/A

INTERMEDIATE POSTS: Paired angles, lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded

COUNTERS: 1 round eyebar, loop-welded, turnbuckle

TOP LATERAL BRACING: N/A

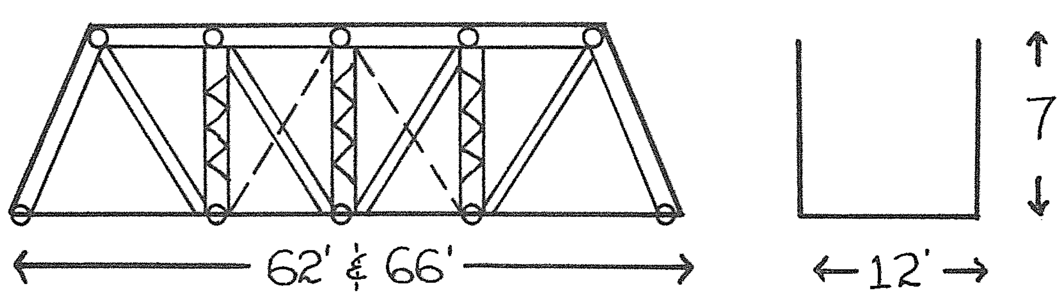
TOP LATERAL STRUTS: N/A

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Original guardrail, wood deck.

VII. TRUSS CONFIGURATION



GENERAL HIGHWAY MAP
BELL COUNTY
KENTUCKY

PREPARED BY THE
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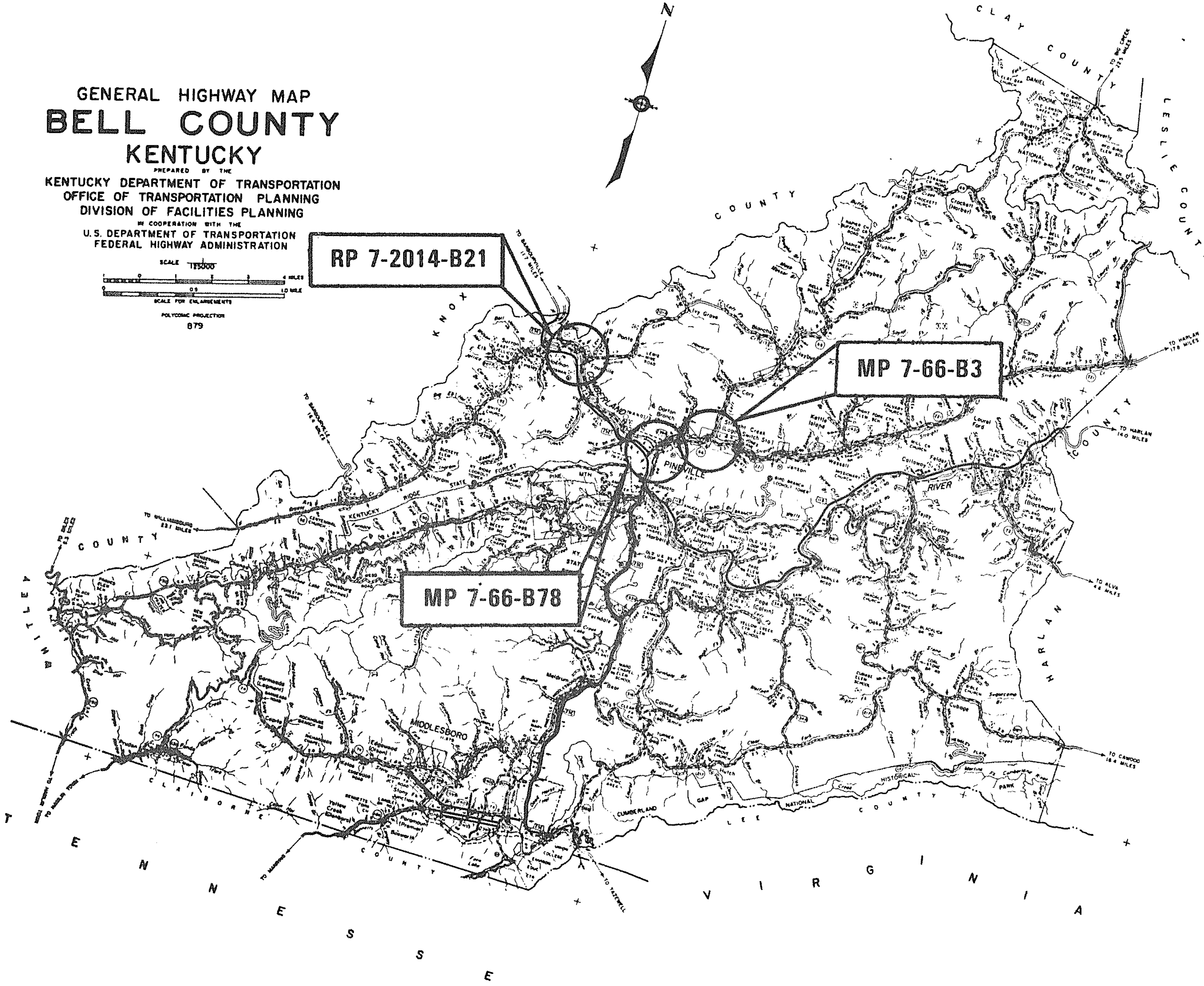
FEDERAL HIGHWAY ADMINISTRATION

SCALE 1:125000

SCALE FOR ENLARGEMENTS

POLYCONIC PROJECTION

879



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 53

I. LOCATION

COUNTY: Bell CITY: Straight Creek

ROUTE: KY 66 SPANS: Straight Creek

HWY. DISTRICT: 11 S I A RATING: 9.3/100

U T M COORDINATES: 17-261700-4072850

II. HISTORY

BRIDGE ID#: MP 7-66-B3

NAME/TYPE: Pratt Through Truss

DESIGNER/ BUILDER: Keystone Bridge Company Pittsburg, Pennsylvania

DATE: 1888 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

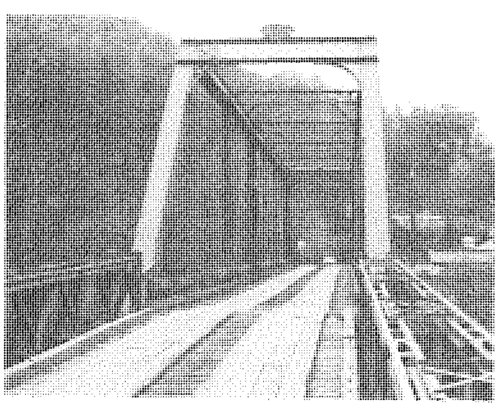
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

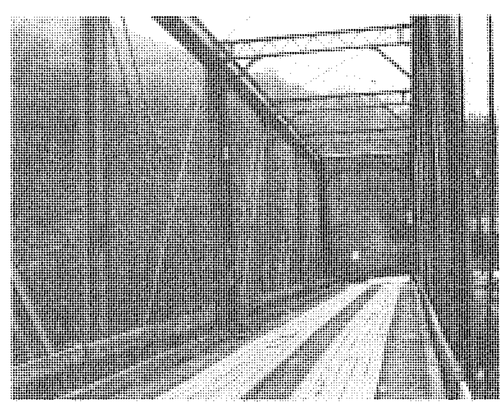
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only truss by Keystone Bridge Company, noted for early development of eyebars for tension members, in Kentucky.

IV. ENVIRONMENT/OTHER REMARKS

Narrow bridge subjected to frequent heavy coal haul traffic. Posted 15 ton weight limit.





FORM # 53

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 270' WIDTH: 14'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 150'

2. 2 Bailey Bridge Approaches LENGTH: 120'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments, lally column piers

SUPERSTRUCTURE

MATERIALS: May be wrought iron BASIS: 1888 construction date

CONNECTIONS: PINS: X RIVETS:

END POSTS: 3 plates (2 with angles), lacing bars

TOP CHORDS: 3 plates (2 with angles), lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged and threaded pins

HIP VERTICALS: 2 rectilinear eyebars, die-forged, pinned above bottom chord

INTERMEDIATE POSTS: Paired angle bars and plate

DIAGONALS: 2 rectilinear eyebars, die-forged
center - 2 rectilinear eyebars, loop-welded, upset for sleevenuts

COUNTERS: 1 square eyebar, loop-welded, upset for sleevenut

TOP LATERAL BRACING: 1 round rod with sleevenut

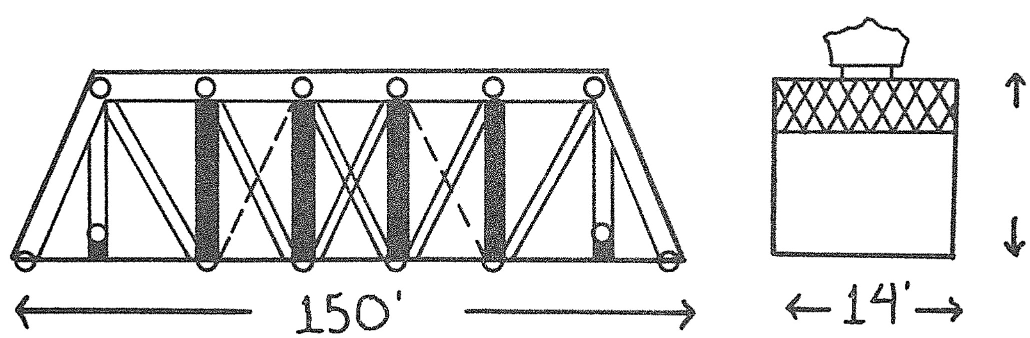
TOP LATERAL STRUTS: Paired angles, lacing bars, angle knee bracing

BOTTOM LATERAL BRACING: 1 square rod, upset and bolted to floor beam

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS: Telephone pole strapped to one intermediate post.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 54

I. LOCATION

COUNTY: Bell CITY: Fourmile

ROUTE: KY 2014 (old US 25) SPANS: Cumberland River

HWY. DISTRICT: 11 S I A RATING: 41.6/100

UTM COORDINATES: 17-255250-4075120

II. HISTORY

BRIDGE ID#: RP 7-2014-B21

NAME/TYPE: Fourmile Bridge Warren Through Truss

DESIGNER/ Louisville Bridge and Iron Company

BUILDER: Louisville, Kentucky

DATE: 1873 BASIS: Stamped on portal

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

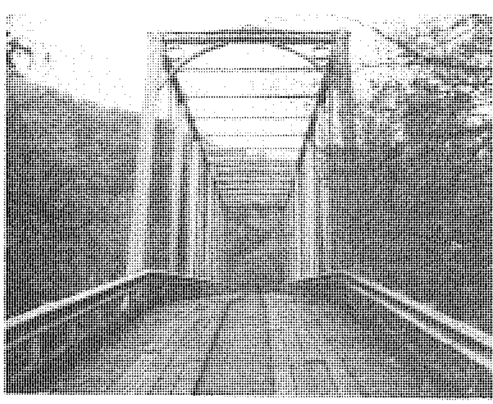
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

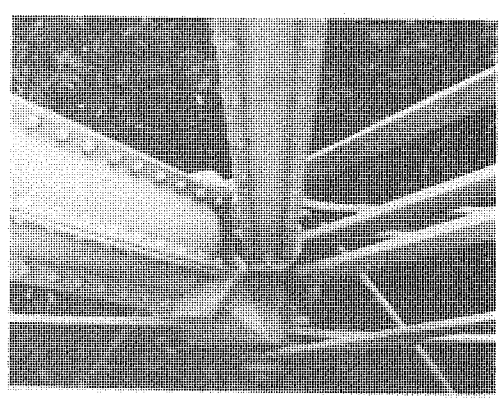
____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Early Warren through truss. Use of materials from Phoenix Iron Company, Philadelphia, Pennsylvania, Pat. June 17, 1862.

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural pastoral setting, stands high above Cumberland River. Posted weight limit 15 tons.





FORM # 54

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 328' WIDTH: 15'

SPAN TYPES:

1. Warren Through Truss LENGTH: 208'

2. I-Beam Approach Spans LENGTH: 120'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments and piers

SUPERSTRUCTURE

MATERIALS: Cast/wrought iron BASIS: 1873 construction date

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 6 sided Phoenix Column, with flanges

TOP CHORDS: 8 sided tubular column, probably cast iron

BOTTOM CHORDS: 2, 4, & 6 rectilinear eyebars, die-forged, 1 round rod

HIP VERTICALS: N/A

INTERMEDIATE POSTS: N/A

DIAGONALS: 4 rectilinear eye bars, die-forged; 2 rectilinear eyebars, lacing bars; 4 & 5 sided Phoenix Columns; 2 channels with lacing bars

COUNTERS: ______

TOP LATERAL BRACING: 1 round rod, bolted outside top chord

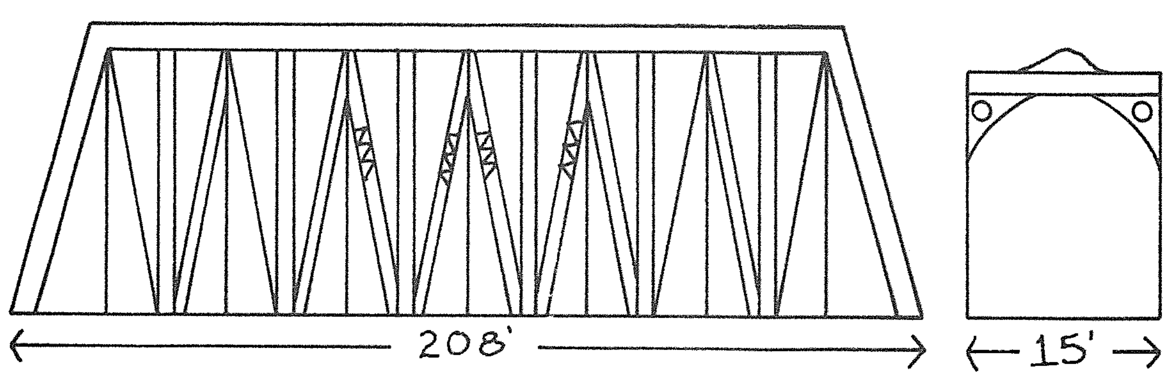
TOP LATERAL STRUTS: 8 sided tubular column, probably cast iron

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Pinned truss floor beams STRINGERS: Rolled I-beams

OTHER DETAILS: No counters, verticals - 2 eyebars are tension hangers, 4 side Phoenix Columns provide bracing

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 55

I. LOCATION

COUNTY: Bell CITY: Pineville

ROUTE: KY 66 SPANS: Cumberland River

HWY. DISTRICT: 11 S I A RATING: 25.6/100

U T M COORDINATES: 17-259590-4071920

II. HISTORY

BRIDGE ID#: MP 7-66-B78

NAME/TYPE: 2 Span Open Spandral Concrete Deck Arch

DESIGNER/ BUILDER: Luten Bridge Company Knoxville, Tennessee

DATE: 1929 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

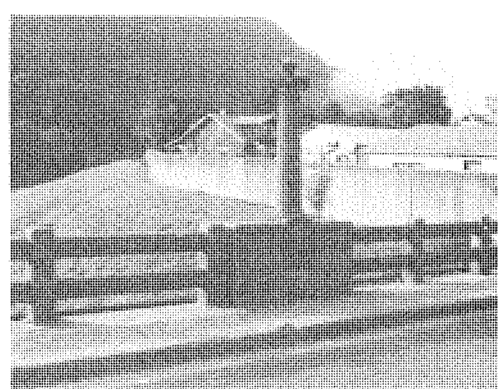
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: 1 of 5 open spandral deck arches in Kentucky.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Cumberland Ford Bridge located at historic Cumberland Ford. Ford on Wilderness Road marked by Daniel Boone in 1775. 100,000 settlers used this gateway to Kentucky. During Civil War the ford was occupied by both Union and CSA troops because of its strategic location.



FORM # 55

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 362' WIDTH: 22.0'

SPAN TYPES:

1. 2 Concrete Deck Arches at LENGTH: 150'

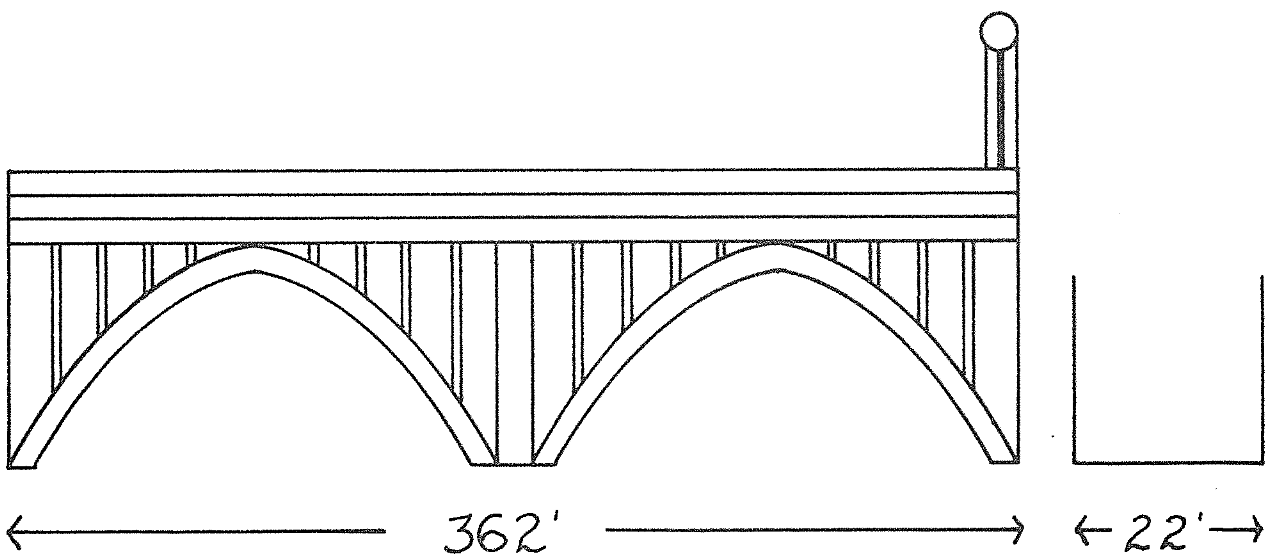
2. Concrete Trestle LENGTH: 44'

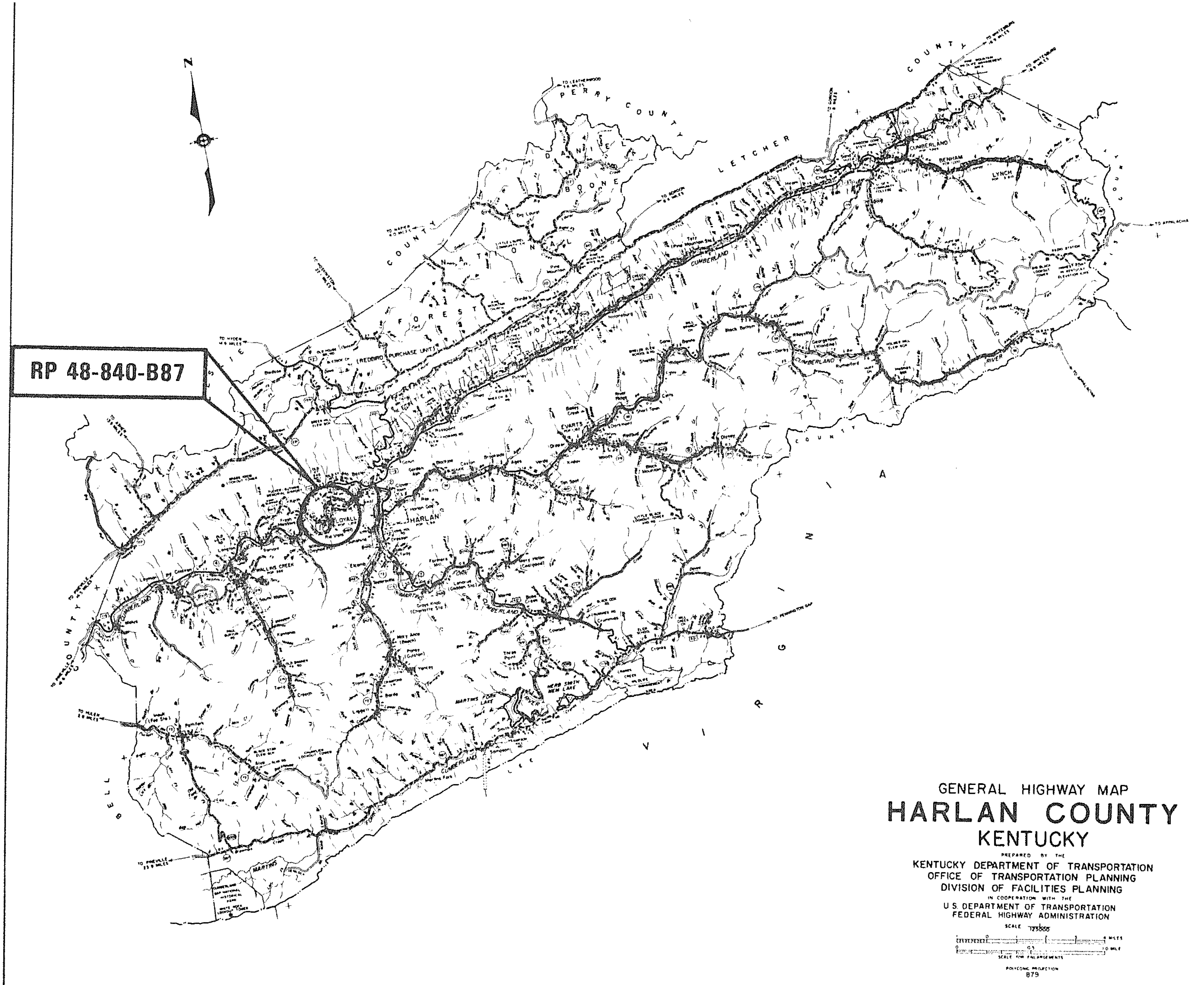
VI. STRUCTURAL INFORMATION

2 arch spans have three reinforced concrete ribs with crossed (x) bracing.

Reinforced concrete compression posts extend from top of arch to support deck.

Only one decorative light pole on guardrailing remains. Decorative concrete work by Pettyjohn of New Jersey.




RP 48-840-B87
PERRY COUNTY
LETCHER
COUNTY
DANIEL BOONE
NATIONAL FOREST
PURCHASE UNITS
CUMBERLAND
BENHAM
LYNCH
EVARTS
HARLAN
LOYALL
WALLINS CREEK
MARTINS FORK LAKE
HERB SMITH NEW LAKE
RIVER
VIRGINIA
LEE
BELL
COUNTY
MARTINS
TO APPALACHIA
TO PENNINGTON GAP
GENERAL HIGHWAY MAP
HARLAN COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
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FEDERAL HIGHWAY ADMINISTRATION
POLYCONIC PROJECTION
879

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 56

I. LOCATION

COUNTY: Harlan CITY: Loyall

ROUTE: KY 840 SPANS: Cumberland River

HWY. DISTRICT: 11 S I A RATING: 58.9/100

UTM COORDINATES: 17-290010-4080390

II. HISTORY

BRIDGE ID#: RP 48-840-B87

NAME/TYPE: Baltimore Petit Truss

DESIGNER/ BUILDER: Vincenness Bridge Company Vincennes, Indiana

DATE: 1924 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

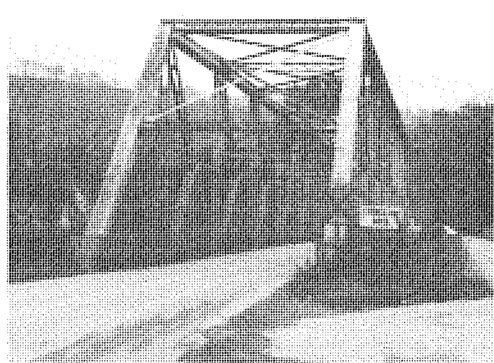
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: Longest of 3 Baltimore Petit trusses built by the Vincennes Bridge Company in Harlan County in 1924.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Adjacent to abandoned concrete tee beam bridge.



FORM # 56

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 244' WIDTH: 20.5'

SPAN TYPES:

1. Baltimore Petit Truss LENGTH: 240'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: ______ RIVETS: X

END POSTS: 2 channels, cover plate, lattice bars

TOP CHORDS: 2 channels, cover plate, lattice bars

BOTTOM CHORDS: 2 channels, 2 sets stay plates

HIP VERTICALS: Paired angles, lacing bars

INTERMEDIATE POSTS: Paired angles, lacing bars

DIAGONALS: Paired angles, with stay plates or lacing bars

COUNTERS: N/A

TOP LATERAL BRACING: Angles

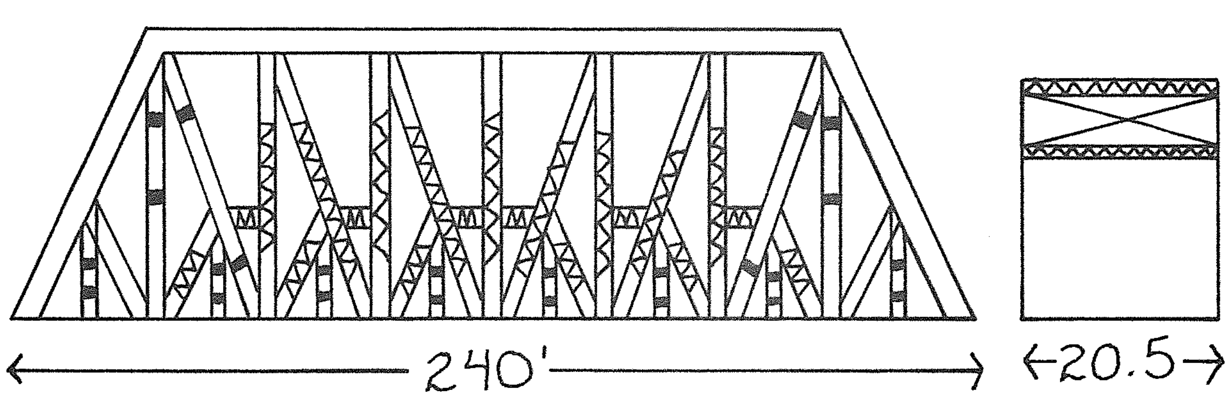
TOP LATERAL STRUTS: Paired angles, lacing bars

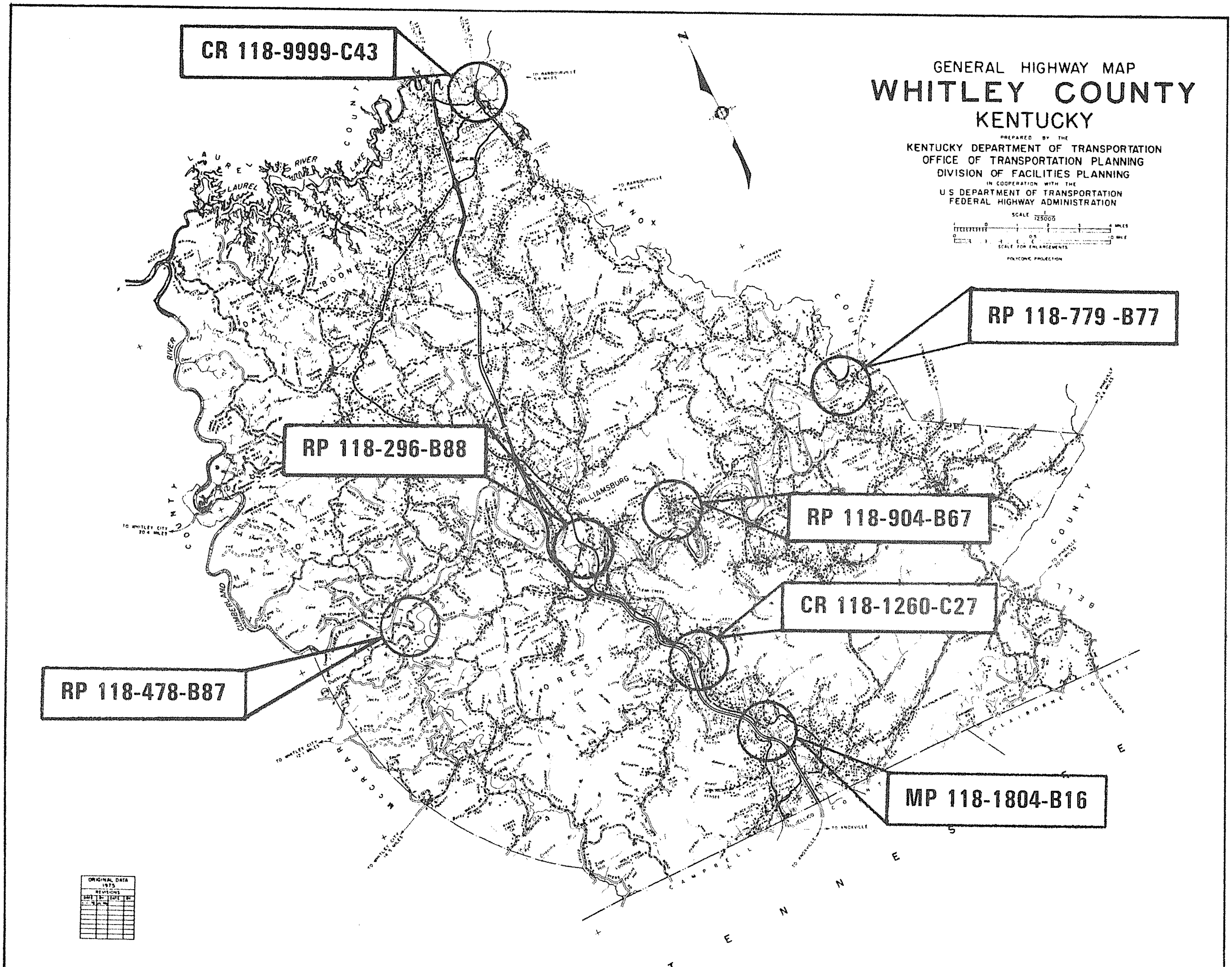
BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: ______

VII. TRUSS CONFIGURATION





GENERAL HIGHWAY MAP
WHITLEY COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CR 118-9999-C43
RP 118-779 -B77
RP 118-296-B88
RP 118-904-B67
CR 118-1260-C27
RP 118-478-B87
MP 118-1804-B16
WILLIAMSBURG
KNOX
LAUREL
LAUREL RIVER
LAKE
CUMBERLAND
RIVER
FOREST
McCREARY
CAMPBELL
CLAIBORNE
BELL
COUNTY
TENNESSEE
TO KNOXVILLE
ORIGINAL DATA
1975
REVISIONS

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 57

I. LOCATION

COUNTY: Whitley CITY: Saxton

ROUTE: KY 1804 SPANS: Clear Fork

HWY. DISTRICT: 11 S I A RATING: 29.0/100

UTM COORDINATES: 16-758100-4057950

II. HISTORY

BRIDGE ID#: MP 118-1804-B16

NAME/TYPE: Saxton Bridge - Camelback/Warren Pony

DESIGNER/ Champion Bridge Company

BUILDER: Wilmington, Ohio

DATE: 1917 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

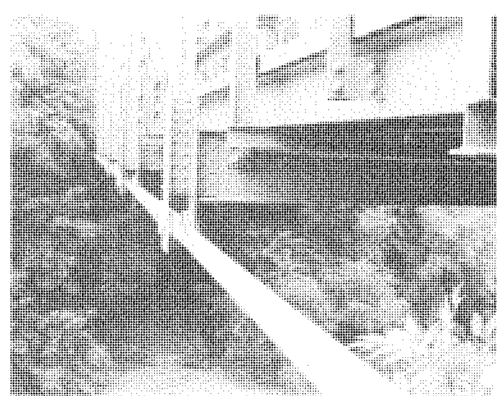
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: Rare mixed Warren and Pratt truss bridge and a good example of the changes and development that occurred in truss technology in the early twentieth century. This is apparently the only Champion bridge with die-forged eyebars in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Located on a small rural road next to a Warren through truss railroad bridge on the Louisville and Nashville line. Crosses Clear Fork approximately 2 miles north of the Tennessee-Kentucky border.



FORM # 57

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 276' WIDTH: 16'

SPAN TYPES:

1. Camelback Truss LENGTH: 150'

2. 2 Warren Pony Trusses X LENGTH: 60'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments and piers

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged

HIP VERTICALS: 2 angles, stay bars

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 and 1 rectilinear eyebars, die-forged

COUNTERS: 1 square eyebar, upset for turnbuckle

TOP LATERAL BRACING: 1 round rod

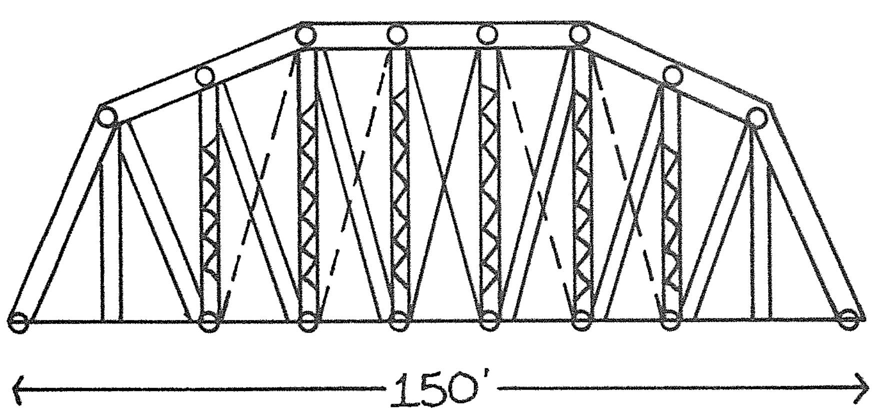
TOP LATERAL STRUTS: 2 sets (at top chord and lower) paired angles, lacing bars, round rods

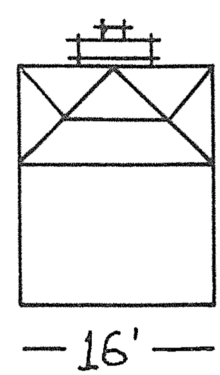
BOTTOM LATERAL BRACING: 1 round rod, upset and bolted to floor beam

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Center panel has 2 eyebars, no counters. Die-forged eyebars are unusual on Champion bridges.

VII. TRUSS CONFIGURATION





FORM # 57

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: ______ WIDTH: 16'

SPAN TYPES:

1. 2 Warren Pony Trusses at LENGTH: 60'
2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: ______ RIVETS: X

END POSTS: 2 channels, cover plate, stay bars

TOP CHORDS: 2 channels, cover plate, stay bars

BOTTOM CHORDS: 2 angles stay bars

HIP VERTICALS: N/A

INTERMEDIATE POSTS: N/A

DIAGONALS: 2 angles, stay bars

COUNTERS: N/A

TOP LATERAL BRACING: N/A

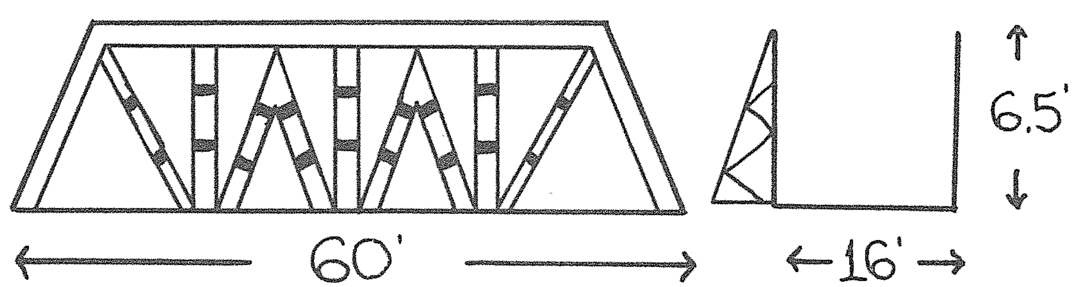
TOP LATERAL STRUTS: N/A

BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Verticals of 2 angles, stay bars and outriggers provide bracing.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 58

I. LOCATION

COUNTY: Whitley CITY: Yaden

ROUTE: KY 904 SPANS: Cumberland River

HWY. DISTRICT: 11 S I A RATING: 48.3/100

U T M COORDINATES: 16-758660-4069840

II. HISTORY

BRIDGE ID#: RP 118-904-B67

NAME/TYPE: 3 Span Concrete Arch Deck Bridge

DESIGNER/ BUILDER: Luten Bridge Company York, Pennsylvania

DATE: 1928 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

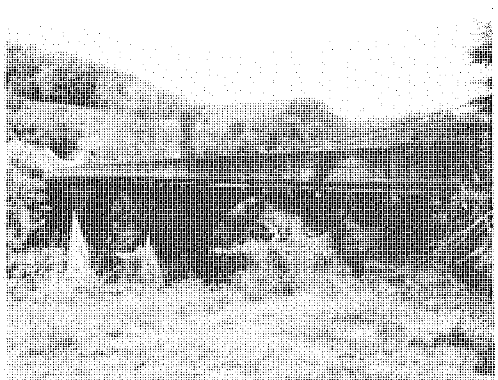
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: 1 of only 4 Luten Bridge Company structures in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Andrew J. Sullivan (1852-1924) Memorial Bridge.



FORM # 58

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 355' WIDTH: 18.7'

SPAN TYPES:

1. 3 Span Concrete Arch Deck Bridge LENGTH: 355'

2. ______ LENGTH: ______

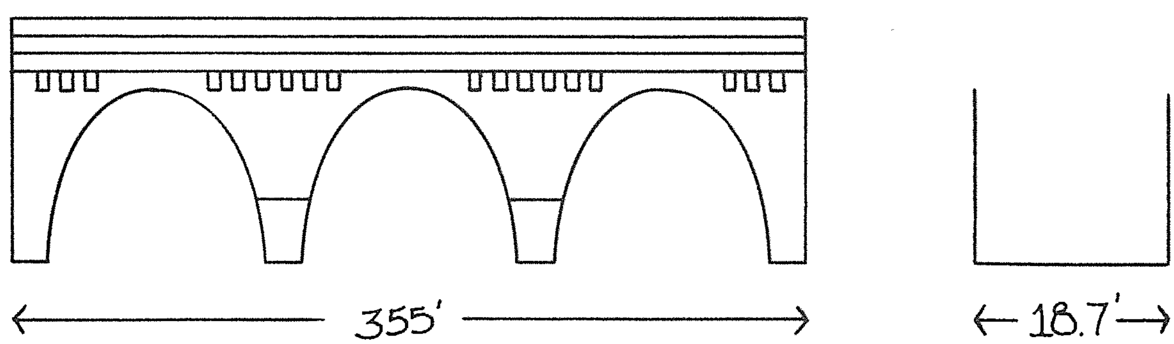
VI. STRUCTURAL INFORMATION

Arches are not solid. Probably hollow or filled with dirt.

Floor beams are either I-beams encased in concrete or heavily reinforced with rods.

Floor beams do not extend across shallowest part of arch.

Bridge acts as an "arched girder" which supports the cantilevered floor beams which in turn support the deck.



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 59

I. LOCATION

COUNTY: Whitley CITY: Near Gausdale

ROUTE: KY 779 SPANS: Cumberland River

HWY. DISTRICT: 11 S I A RATING: 45.4/100

UTM COORDINATES: 17-233350-4071770

II. HISTORY

BRIDGE ID#: RP 118-779-B77

NAME/TYPE: 3 Span Concrete Arch Deck Bridge

DESIGNER/ Luten Bridge Company

BUILDER: York, Pennsylvania

DATE: 1925 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

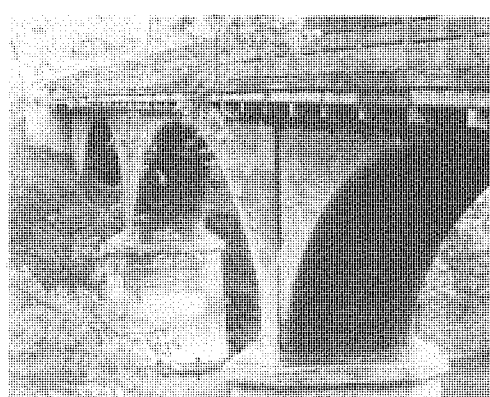
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: 1 of only 4 Luten Bridge Company structures in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting with poor horizontal approaches.



FORM # 59

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 277' WIDTH: 15.8'

SPAN TYPES:

1. 3 Span Concrete Arch Deck Bridge LENGTH: 1 x 89'

2. ______ LENGTH: 2 x 94'

VI. STRUCTURAL INFORMATION

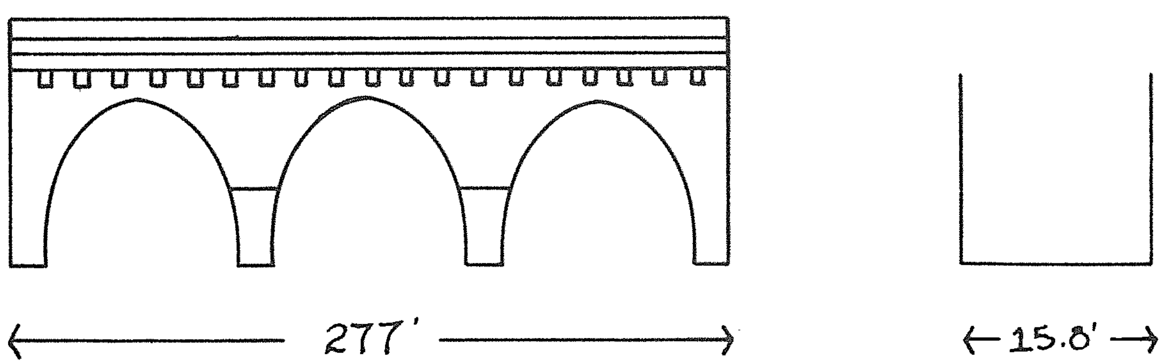
Arches on rough cut masonry piers.

Arches are not solid. Probably hollow or filled with dirt.

Floor beams are either I-beams encased in concrete or heavily reinforced with rods.

Floor beams extend across entire arch.

Bridge acts as an "arched girder" which supports the cantilevered floor beams which in turn support the deck.



KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 60

I. LOCATION

COUNTY: Whitley CITY:

ROUTE: KY 478 SPANS: Jellico Creek

HWY. DISTRICT: 11 S I A RATING: 22/100

U T M COORDINATES: 16-744110-4069900

II. HISTORY

BRIDGE ID#: RP 118-478-B87

NAME/TYPE: Quadrangular or Double Intersection Warren Through Truss

DESIGNER/ BUILDER: Capitol Construction Co., Contractors Columbus, Ohio

DATE: 1907 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

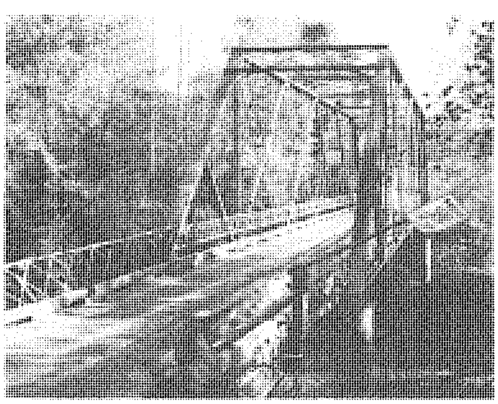
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: 1 of only 3 quadrangular, or double intersection Warren through trusses, in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Located in a rural pastoral setting, posted 10 ton weight limit, poor horizontal approaches.



FORM # 60

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 158' WIDTH: 12'

SPAN TYPES:

1. Quadrangular Truss LENGTH: 108'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments, lally column piers

SUPERSTRUCTURE

MATERIALS: Steel BASIS: post 1895 date

CONNECTIONS: PINS: ______ RIVETS: X

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 angles, stay bars

HIP VERTICALS: 2 angles, stay bars

INTERMEDIATE POSTS: N/A

DIAGONALS: 2 angles, stay bars (not parallel to end post)
2 angles, lacing bars (parallel to end post)

COUNTERS: N/A

TOP LATERAL BRACING: 1 round rod

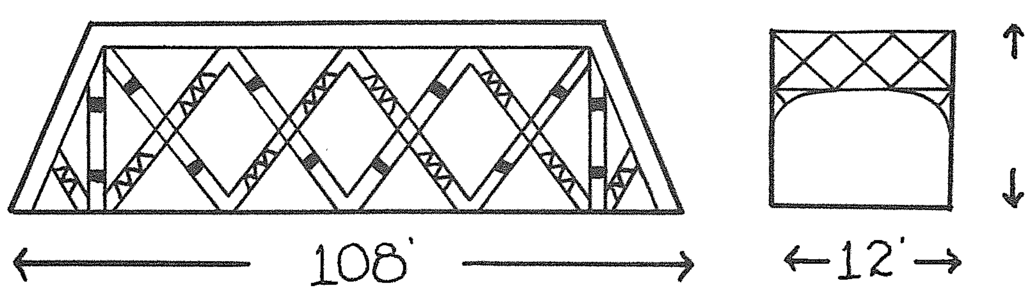
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Original guardrailing, wood deck.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 61

I. LOCATION

COUNTY: Whitley CITY: Williamsburg

ROUTE: KY 296 SPANS: Cumberland River

HWY. DISTRICT: 11 S I A RATING: 5.3/100

UTM COORDINATES: 16-753780-4070050

II. HISTORY

BRIDGE ID#: RP 118-296-B88

NAME/TYPE: Camelback-Pennsylvania Petit

DESIGNER/ BUILDER: Unknown

DATE: @ 1890 BASIS:

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

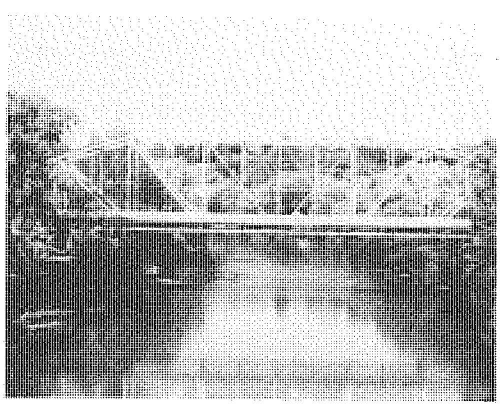
___ TYPICAL EXAMPLE/COMMON SURVIVOR:

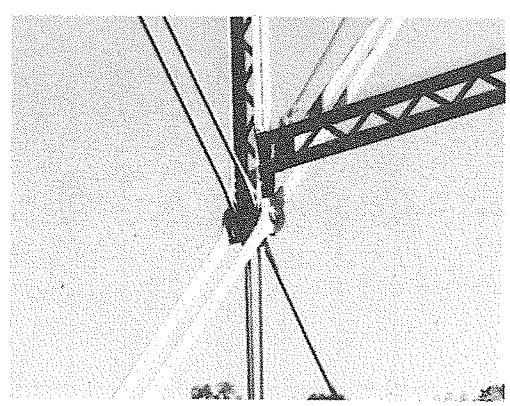
___ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Top chord of 5 slopes characteristic of camelback trusses but incorporates sub-ties a development of petit trusses.

IV. ENVIRONMENT/OTHER REMARKS

Located in Williamsburg, county seat of Whitley County and home of Cumberland College.





FORM # 61

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 468' WIDTH: 23.2'

SPAN TYPES:

1. Camelback - Pennsylvania Petit LENGTH: 299'

2. 1 Bailey Bridge - 80'; 2 I-Beam x 41' LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers, concrete abutments

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 3 plates (2 with angles), lacing bars

TOP CHORDS: 3 plates (2 with angles), lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars (with stirrup rods), die-forged

HIP VERTICALS: 2 square eyebars, loop-welded, pinned above bottom chord

INTERMEDIATE POSTS: Paired][angles, lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged, some with stirrups, turnbuckles

COUNTERS: 1 or 2 square eyebars, loop-welded, sleevenuts

TOP LATERAL BRACING: 1 square rod, turnbuckle

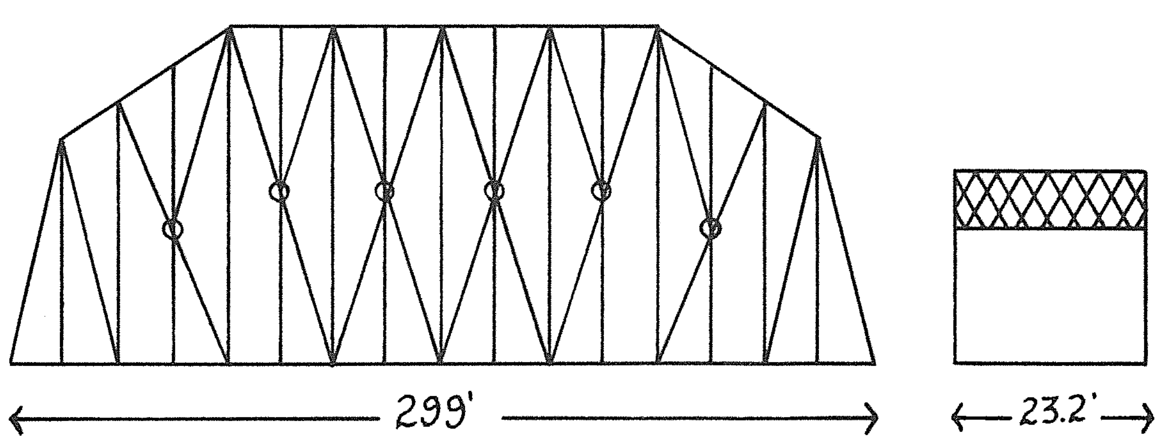
TOP LATERAL STRUTS: 2 sets paired angles with lacing bars, round rods

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girder STRINGERS: Rolled I-beams

OTHER DETAILS: Original guardrailing, sidewalk on one side.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 62

I. LOCATION

COUNTY: Whitley CITY: Mountain Ash

ROUTE: CR 1260 SPANS: Clear Fork

HWY. DISTRICT: 11 S I A RATING: 20.6/100

U T M COORDINATES: 16-756560-4060100

II. HISTORY

BRIDGE ID#: CR 118-1260-C27

NAME/TYPE: Pratt Deck Truss, Warren Deck Truss

DESIGNER/ BUILDER: Unknown

DATE: 1917 BASIS: KYDOT files

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

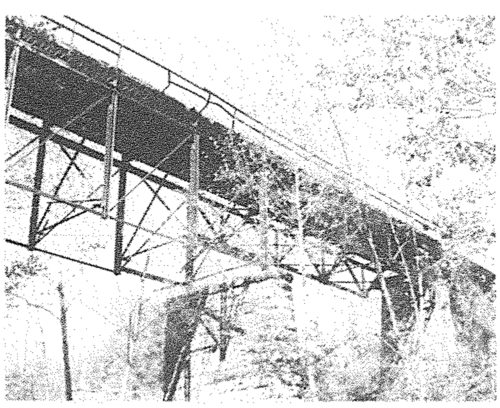
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Only pin-connected Pratt deck truss in Kentucky survey.

IV. ENVIRONMENT/OTHER REMARKS

This elegant truss spans Clear Fork high above the stream bed and is located in a rural pastoral setting.



FORM # 62

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 275' WIDTH: 16.2'

SPAN TYPES:

1. Pratt Deck Truss LENGTH: 115'

2. 2 Warren Deck Trusses X LENGTH: 55'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers and abutments

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, 2 plates with angles

TOP CHORDS: 2 channels, lacing bars

BOTTOM CHORDS: 1st panel - 2 channels, stay bars 2 rectilinear eyebars, die-forged

HIP VERTICALS: N/A

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 2 rectilinear eyebars, turnbuckles

TOP LATERAL BRACING: 1 round rod

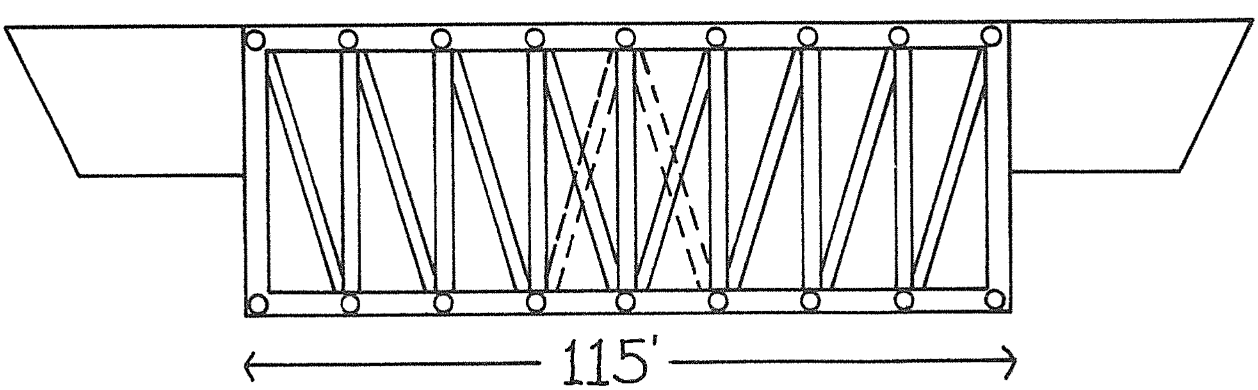
TOP LATERAL STRUTS: Paired angles

BOTTOM LATERAL BRACING: 1 round rod, upset and bolted

FLOOR BEAMS: Rolled I-beams resting on top chord STRINGERS: Rolled I-beams

OTHER DETAILS:

VII. TRUSS CONFIGURATION



FORM # 62

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: ______ WIDTH: ______

SPAN TYPES:

1. 2 Warren Deck Trusses at LENGTH: 55'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: ______ RIVETS: X

END POSTS: 2 channels, 2 sets stay bars

TOP CHORDS: 2 channels, 2 sets stay bars

BOTTOM CHORDS: 2 angles, stay bars

HIP VERTICALS: N/A

INTERMEDIATE POSTS: N/A

DIAGONALS: 2 angles, stay bars

COUNTERS: N/A

TOP LATERAL BRACING: Angles

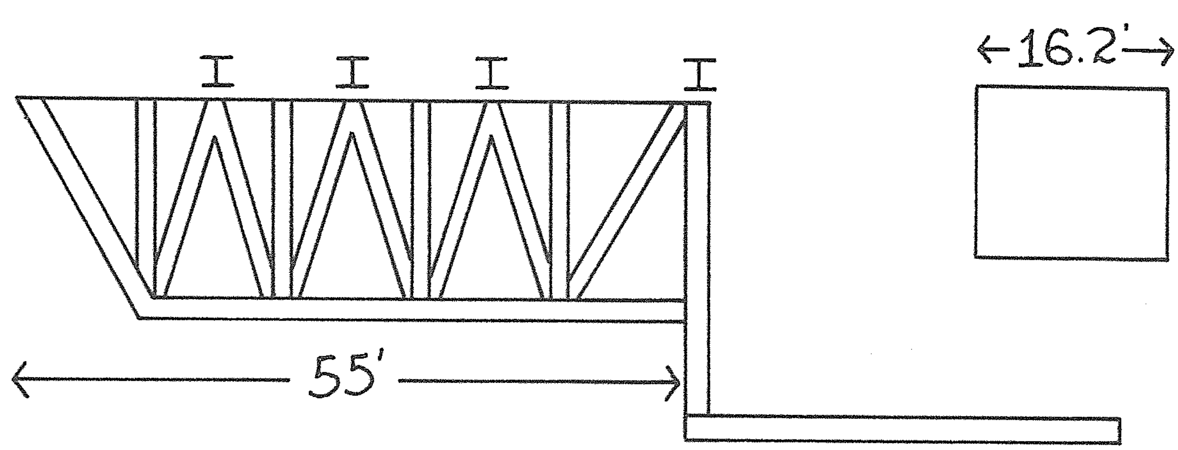
TOP LATERAL STRUTS: Angles

BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Wood beams on top of I-beam floor beams to attach wood plank deck. Verticals of 2 angles, stay bars provide bracing.

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 63

I. LOCATION

COUNTY: Whitley CITY: Corbin

ROUTE: Engineer Street SPANS: Lynn Camp Creek

HWY. DISTRICT: 11 S I A RATING: 16.0/100

UTM COORDINATES: 16-778740-4093600

II. HISTORY

BRIDGE ID#: CR 118-9999-C43

NAME/TYPE: Pratt Through Truss

DESIGNER/

BUILDER:

DATE: @ 1890 BASIS: Similar examples

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

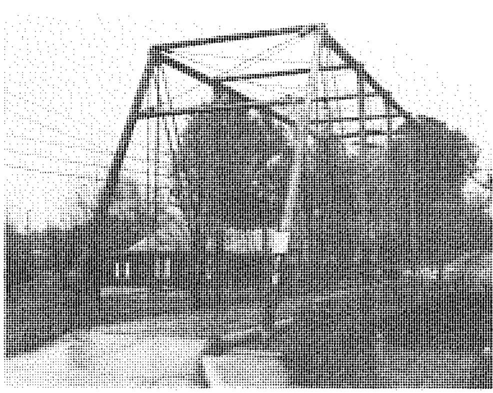
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

X RARE SURVIVOR/STANDARD DESIGN: One of only two Pratt through trusses in Kentucky that incorporate patented Phoenix columns.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Located on residential street east of US 25 and north of the business district of Corbin.



FORM # 63

V. DESIGN INFORMATION

NO. SPANS: 2 OVERALL LENGTH: 118 WIDTH: 14.2'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 75'

2. I-Beam Approach Span LENGTH: 43'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone piers and abutments. Abutment at I-beam end has concrete retaining wall.

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 4 sided Phoenix Column

TOP CHORDS: 4 sided Phoenix Column

BOTTOM CHORDS: 2 rectilinear eyebars, die-forged eyes

HIP VERTICALS: 2 rectilinear eyebars, die-forged eyes

INTERMEDIATE POSTS: 4 sided Phoenix Column

DIAGONALS: 2 rectilinear eyebars, die-forged, larger on end panel

COUNTERS: 2 round rods with upset ends, stirrup connection

TOP LATERAL BRACING: 1 round rod

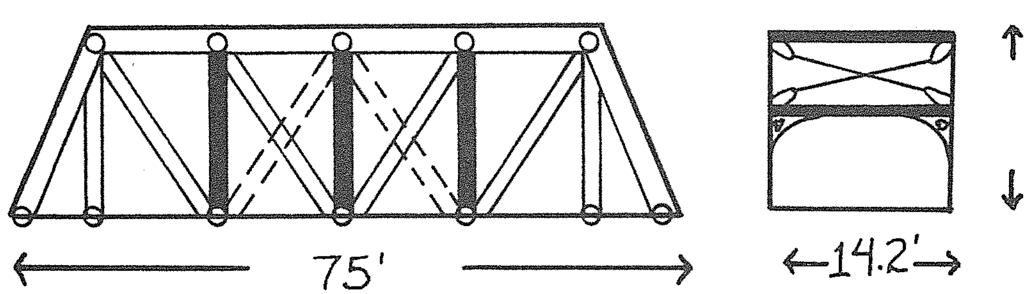
TOP LATERAL STRUTS: 4 sided Phoenix Column

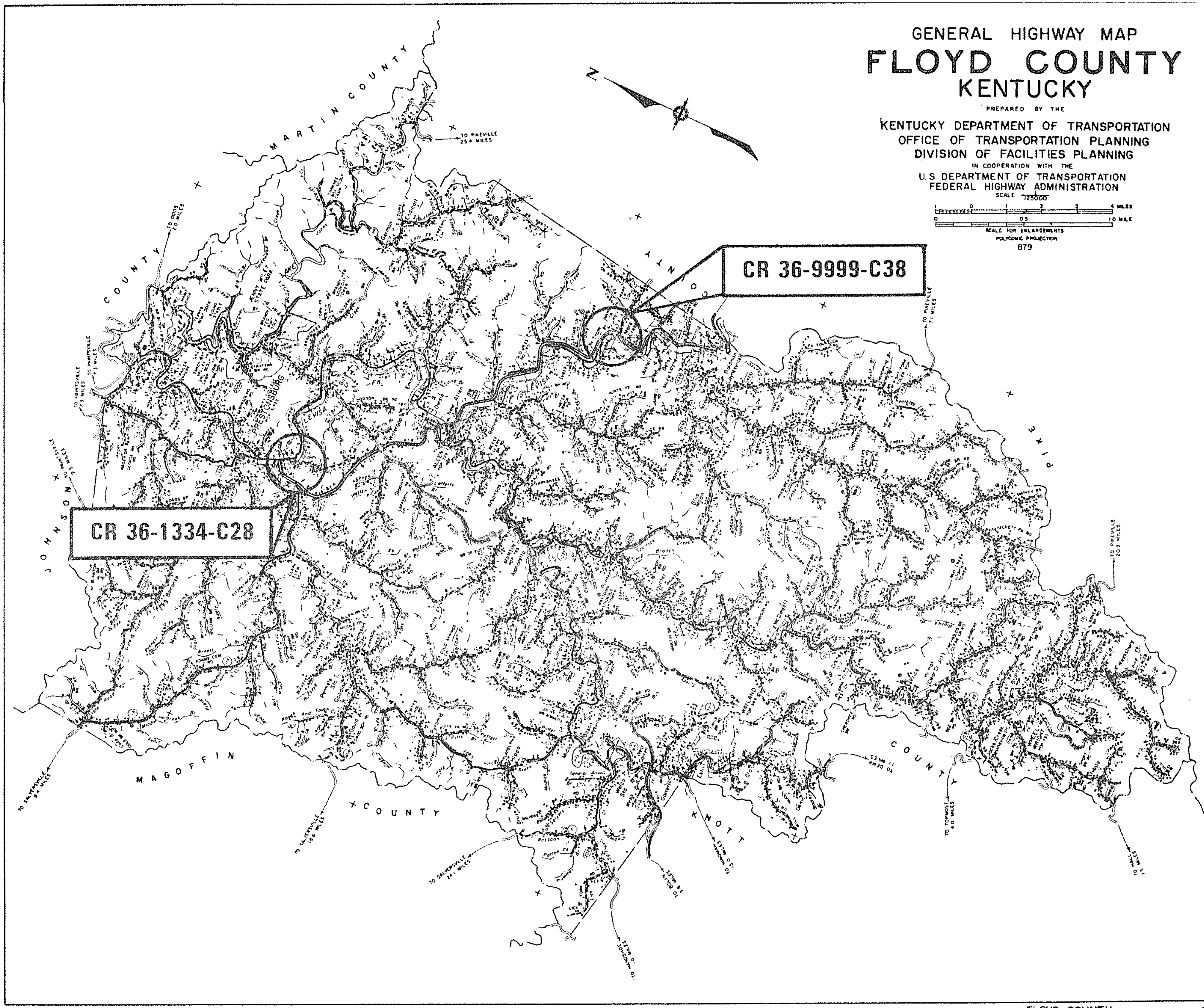
BOTTOM LATERAL BRACING: 1 round rod with upset threaded end passing through floor beam and bolted

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS: Wood beams across stringers support sidewalk. Round rods below and parallel to bottom chord for bracing.

VII. TRUSS CONFIGURATION




GENERAL HIGHWAY MAP
FLOYD COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE 1/125000
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
879
CR 36-9999-C38
CR 36-1334-C28
MARTIN COUNTY
JOHNSON COUNTY
MAGOFFIN COUNTY
KNOTT COUNTY
PIKE
PRESTONSBURG
N

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 64

I. LOCATION

COUNTY: Floyd CITY: Prestonsburg

ROUTE: CR 1334 SPANS: Levisa Fork

HWY. DISTRICT: 12 S I A RATING: 7.4/100

U T M COORDINATES: 17-343600-4169780

II. HISTORY

BRIDGE ID#: CR 36-1334-C28

NAME/TYPE: Open Spandral Concrete Through Arch

DESIGNER/ BUILDER: Plate missing - no records

DATE: 1910 BASIS: KYDOT files

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

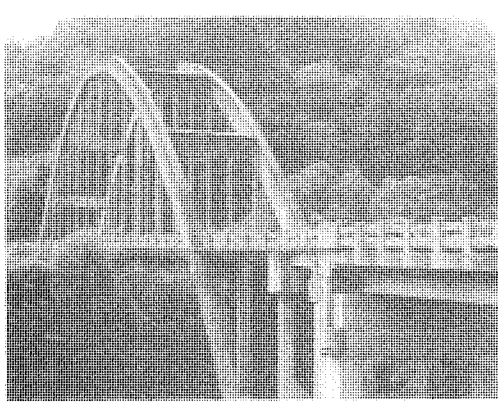
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

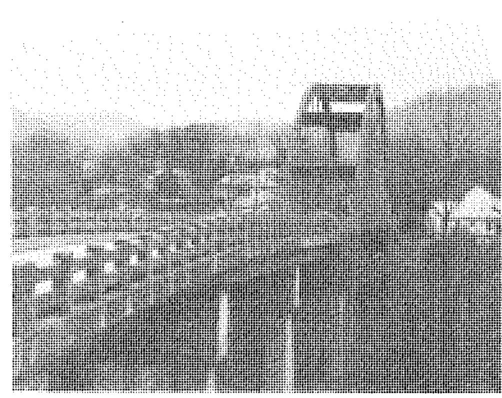
X RARE SURVIVOR/STANDARD DESIGN: Only reinforced open spandral concrete through arch on a Kentucky highway.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

This concrete through arch is an imposing site, rising high above the bridge deck and crossing the Levisa Fork in Prestonsburg.





FORM # 64

V. DESIGN INFORMATION

NO. SPANS: ________ OVERALL LENGTH: 554' WIDTH: 20.2'

SPAN TYPES:

1. Open Spandral Concrete Through Arch LENGTH: 161'

2. ________ LENGTH: ________

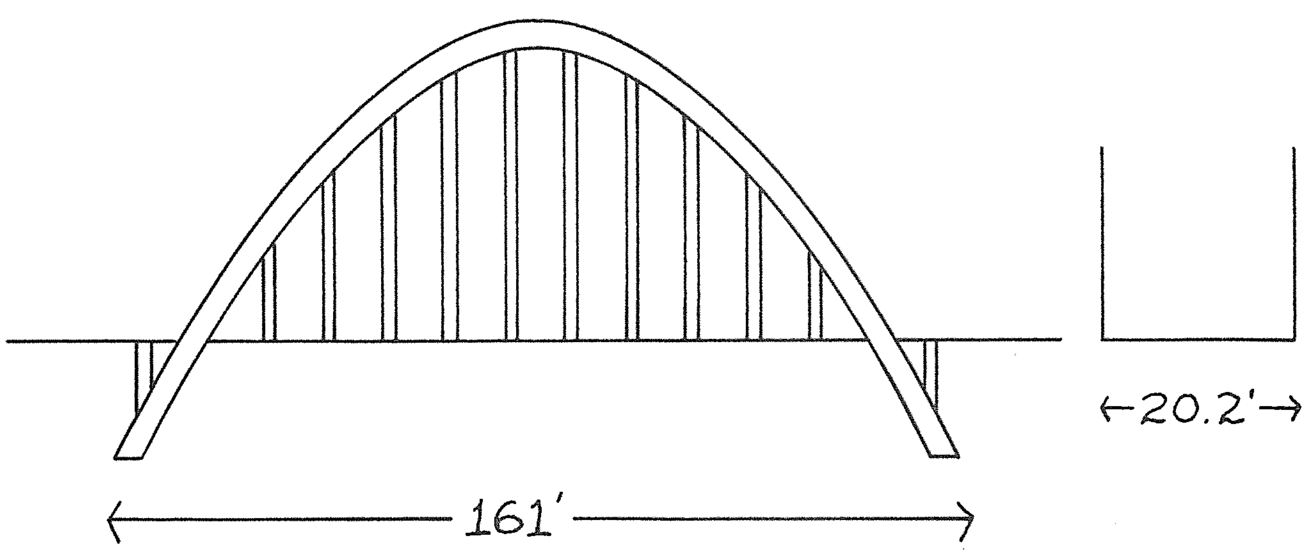
VI. STRUCTURAL INFORMATION

Substructure - Approach spans and arch on concrete piers and abutments.

Arch - Reinforced concrete.

Verticals - Reinforced concrete tension hangers, tie into floor beams to support deck.

Floor beams - Reinforced concrete, probably with I-beams.



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 65

I. LOCATION

COUNTY: Floyd CITY: Tram

ROUTE: SPANS: Levisa Fork

HWY. DISTRICT: 12 S I A RATING: 2.0/100

UTM COORDINATES: 17-354620-4159600

II. HISTORY

BRIDGE ID#: CR 36-9999-C38

NAME/TYPE: Suspension

DESIGNER/

BUILDER:

DATE: 1930 BASIS: KYDOT records

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

___ TYPICAL EXAMPLE/COMMON SURVIVOR:

_X_ RARE SURVIVOR/STANDARD DESIGN: 1 of 5 remaining "swinging" suspension highway bridges in Kentucky. Once numerous, these familiar structures have nearly disappeared.

___ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Posted 3 ton weight limit. Restricted to 1 vehicle at a time. Swinging foot and highway bridges are a distinctive cultural feature of Eastern Kentucky.

FORM # 65

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 384' WIDTH: 10.3'

SPAN TYPES:

1. Suspension LENGTH: 382'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

Towers - I-beams, channels, angles.

Anchorage - To hillside and sunken anchor.

Cables - Wire rope and changes from 2 cables to 1 cable in center portion of bridge.

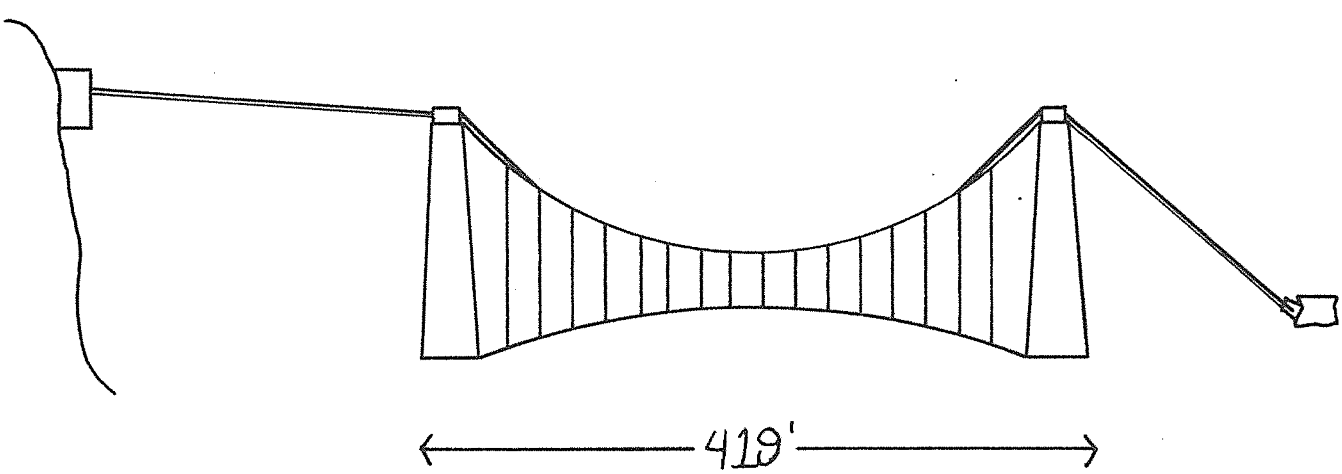
Cable bands - Hangers bend over main cable, forming an eye or loop to accept a threaded rod that passes under the cable and around the hanger rod.

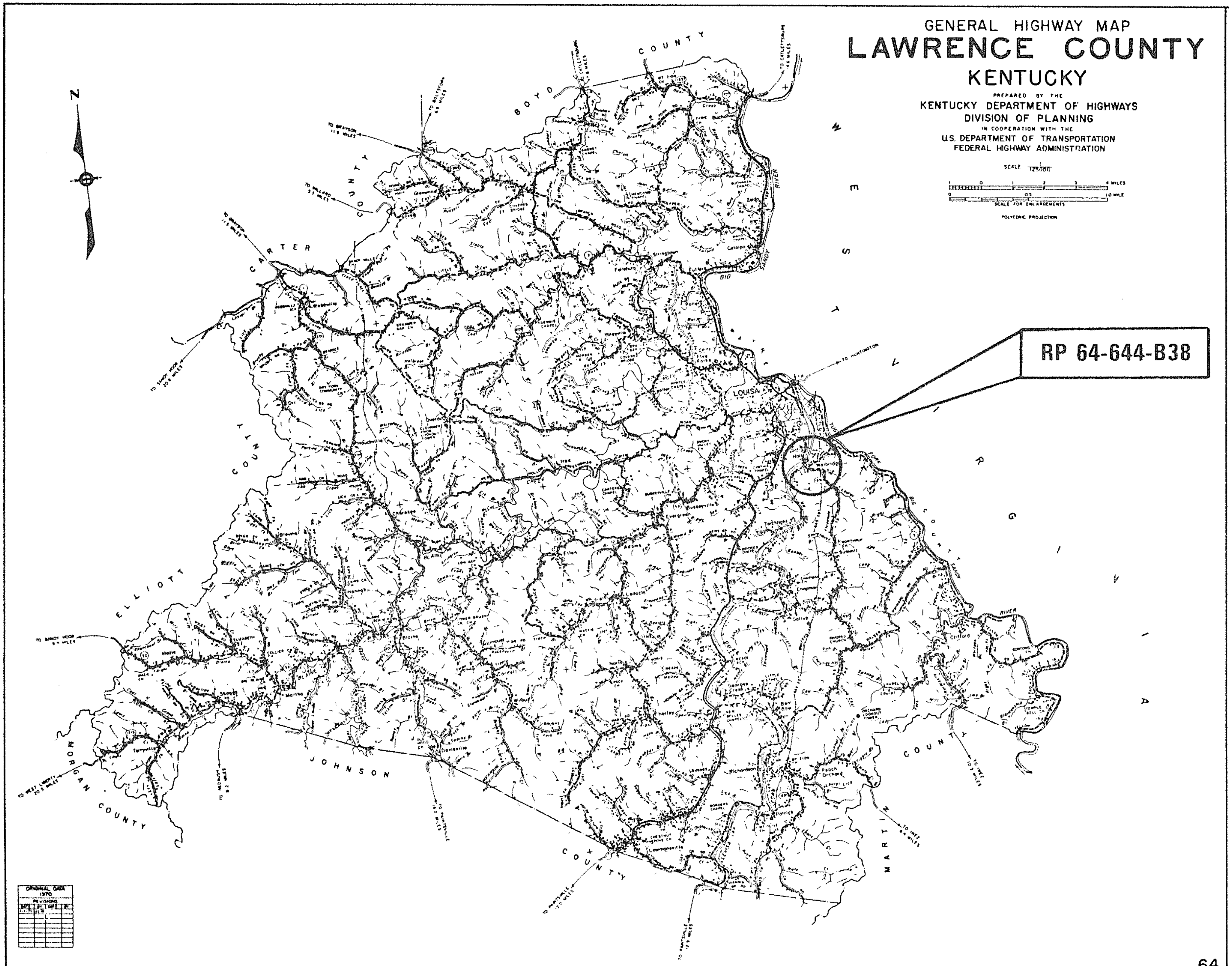
Hangers - 1 round rod, loop-welded to cable, passing through floor beams then bolted.

Floor beams - I-beams.

Stringers - Wood beams.

Deck - Wood planks.




GENERAL HIGHWAY MAP
LAWRENCE COUNTY
KENTUCKY
PREPARED BY THE
KENTUCKY DEPARTMENT OF HIGHWAYS
DIVISION OF PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE FOR ENLARGEMENTS
POLYCONIC PROJECTION
RP 64-644-B38
W E S T V I R G I N I A
BOYD COUNTY
CARTER COUNTY
ELLIOTT COUNTY
MORGAN COUNTY
JOHNSON COUNTY
MARTIN COUNTY
LOUISA
BIG SANDY RIVER
ORIGINAL DATA 1970
REVISIONS
N

KENTUCKY HISTORIC BRIDGE SURVEY

FORM #: 66

I. LOCATION

COUNTY: Lawrence
CITY:
ROUTE: KY 644
SPANS: Levisa Fk. of Big Sandy River
HWY. DISTRICT: 12
S I A RATING: 17.9/100
UTM COORDINATES: 17-359660-4215760

II. HISTORY

BRIDGE ID#: RP 64-644-B38
NAME/TYPE: 2 Pratt Through & 1 Warren Through Trusses
DESIGNER/ BUILDER:
DATE: 1904
BASIS: KYDOT records

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

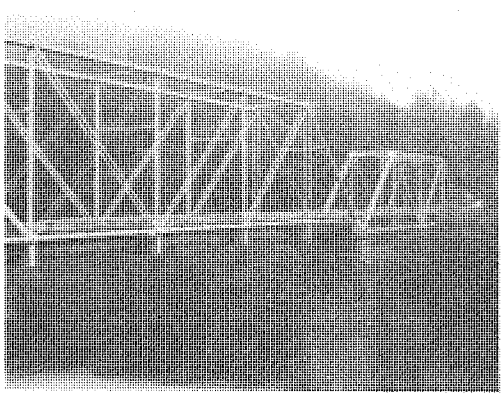
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

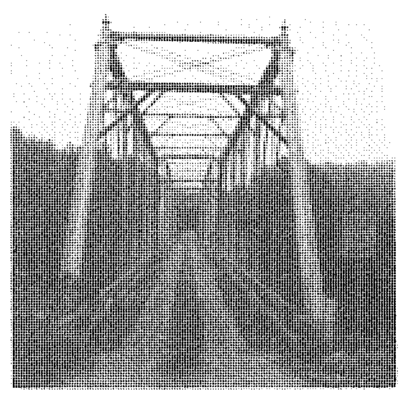
X RARE SURVIVOR/STANDARD DESIGN: Use of patented Phoenix columns, longest multi-span metal truss with pin connections in Kentucky.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Rural setting adjacent to railroad bridge built by the American Bridge Company in 1914. Posted 12 tons but supports frequent heavy coal traffic. Oldest dated truss in District 12.





FORM # 66

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 470' WIDTH: 13.4'

SPAN TYPES:

1. 2 Pratt Through Trusses LENGTH: 150' & 170'
2. Warren Through Truss
   I-Beam Approach Span - 43' LENGTH: 100'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments and piers

SUPERSTRUCTURE MATERIALS: from Phoenix Iron Company Philadelphia, Pa. BASIS: Stamped on columns

CONNECTIONS: PINS: X RIVETS:

END POSTS: 6 sided Phoenix columns

TOP CHORDS: 6 sided Phoenix columns

BOTTOM CHORDS: 2 and 4 rectilinear eyebars, die-forged

HIP VERTICALS: 2 rectilinear eyebars, die-forged

INTERMEDIATE POSTS: 4 sided Phoenix column

DIAGONALS: 2 round rods, threaded top & bottom into stirrups
2 rectilinear eyebars, die-forged

COUNTERS: 2 round rods, threaded top & bottom into stirrups

TOP LATERAL BRACING: 1 round rod

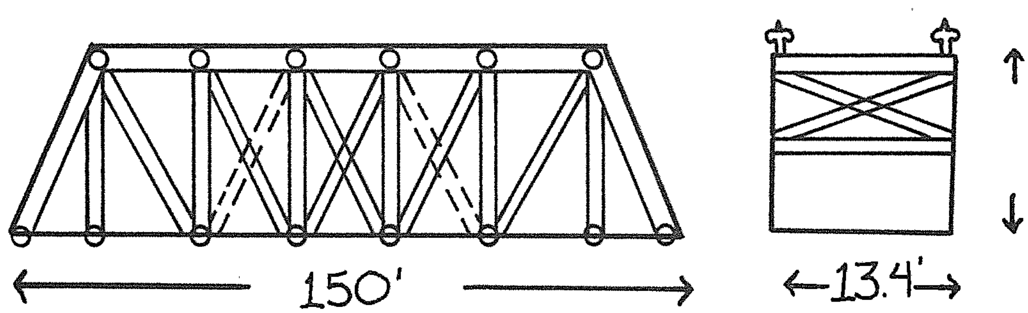
TOP LATERAL STRUTS: 4 sided Phoenix column

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girders
Railroad ties STRINGERS: Plater girders

OTHER DETAILS: Angle knee bracing on each intermediate post, interesting decorative details include finials, wood deck.

VII. TRUSS CONFIGURATION



FORM # 66

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 470' WIDTH: 13.4'

SPAN TYPES:

1. Pratt Through Truss (center span) LENGTH: 170'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Rough cut stone abutments and piers

SUPERSTRUCTURE MATERIALS: from Phoenix Iron Company Philadelphia, Pa. BASIS: Stamped on columns

CONNECTIONS: PINS: X RIVETS:

END POSTS: 6 sided Phoenix columns

TOP CHORDS: 6 sided Phoenix columns

BOTTOM CHORDS: 2 and 4 rectilinear eyebars, die-forged

HIP VERTICALS: 2 rectilinear eyebars, die-forged

INTERMEDIATE POSTS: 4 sided Phoenix column

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 2 round rods, threaded top & bottom into stirrups

TOP LATERAL BRACING: 1 round rod

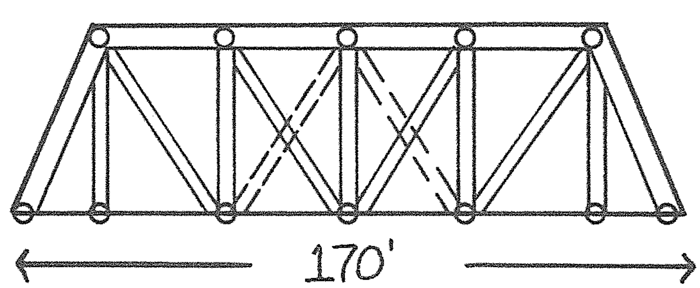
TOP LATERAL STRUTS: 4 sided Phoenix column

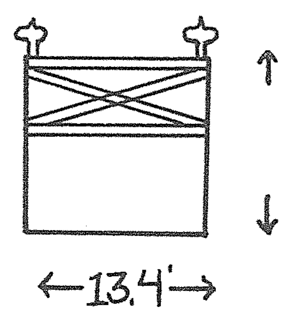
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Plate girders Railroad ties STRINGERS: Plate girders

OTHER DETAILS: Taller center span has fewer panels than shorter end span.

VII. TRUSS CONFIGURATION





FORM # 66

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: ______ WIDTH: ______

SPAN TYPES:

1. Warren Through Truss LENGTH: 100'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, 2 sets lacing bars

TOP CHORDS: 2 channels, 2 sets lacing bars

BOTTOM CHORDS: 2 channels, 2 sets lacing bars

HIP VERTICALS: N/A

INTERMEDIATE POSTS: N/A

DIAGONALS: Paired angles, lacing bars

COUNTERS: N/A

TOP LATERAL BRACING: 1 diagonal of paired angles with lacing bars

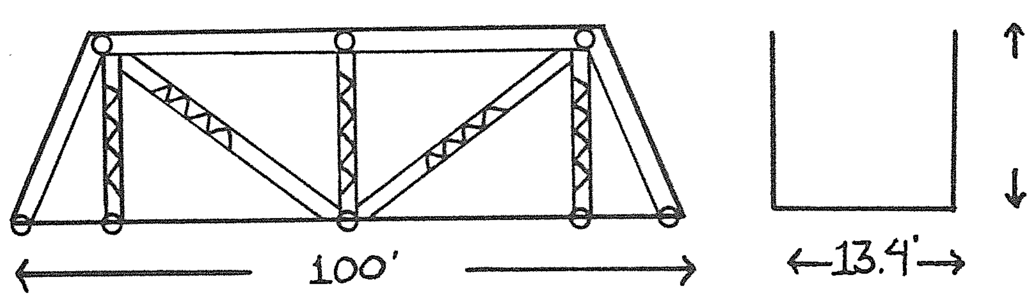
TOP LATERAL STRUTS: Paired angles, lacing bars

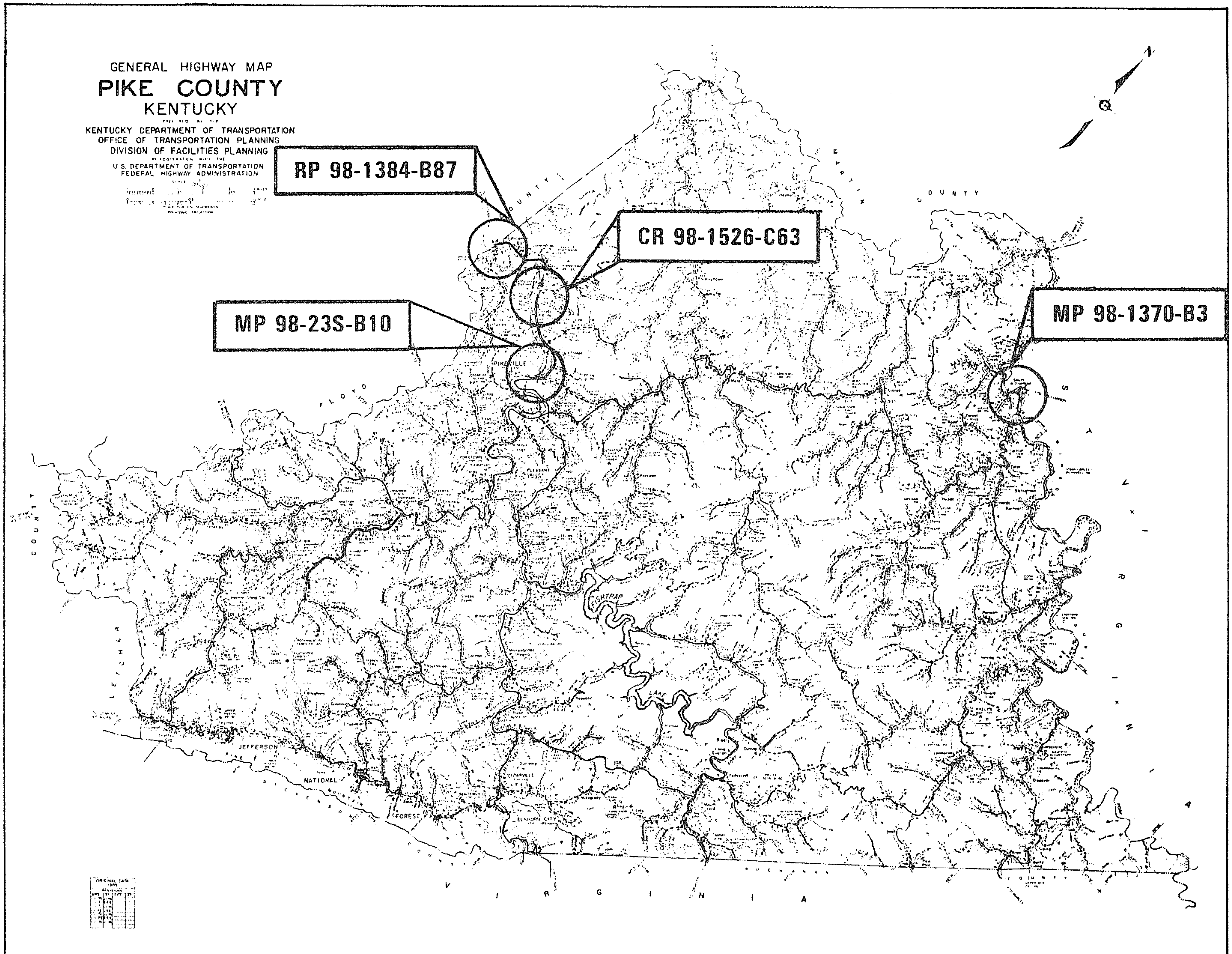
BOTTOM LATERAL BRACING: Angles

FLOOR BEAMS: Plate girders STRINGERS: Plate girders Railroad ties

OTHER DETAILS: Verticals of paired angles and lacing bars provide tension hangers and bracing.

VII. TRUSS CONFIGURATION





GENERAL HIGHWAY MAP
PIKE COUNTY
KENTUCKY
KENTUCKY DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
DIVISION OF FACILITIES PLANNING
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
RP 98-1384-B87
CR 98-1526-C63
MP 98-23S-B10
MP 98-1370-B3
MARTIN COUNTY
FLOYD
LETCHER
COUNTY
JEFFERSON
NATIONAL
FOREST
ELKHORN CITY
PIKEVILLE
LAKE
BUCHANAN
VIRGINIA
WEST VIRGINIA

KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 67

I. LOCATION

COUNTY: Pike CITY: South Williamson

ROUTE: KY 1370 SPANS: Tug Fork Big Sandy River

HWY. DISTRICT: 12 S I A RATING: 22.0/100

UTM COORDINATES: 17-385980-4170340

II. HISTORY

BRIDGE ID#: MP 98-1370-B3

NAME/TYPE: Parker and King Post Pony Trusses

DESIGNER/ BUILDER: Unknown

DATE: 1907 BASIS: KYDOT Files

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

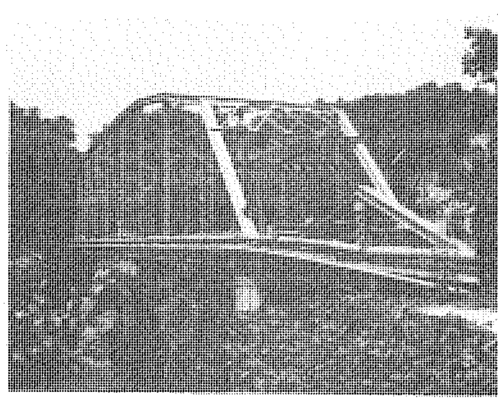
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

____ RARE SURVIVOR/STANDARD DESIGN:

X UNIQUE/UNUSUAL FOR ITS TIME: Early pin-connected parker truss and only metal King post pony trusses in Kentucky. Longest pin-connected parker truss in the state.

IV. ENVIRONMENT/OTHER REMARKS

Bridge spans Tug Fork of Big Sandy River between South Williamson, Kentucky, and Williamson, West Virginia.



FORM # 67

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 318' WIDTH: 18.9'

SPAN TYPES:

1. 2 King Post X LENGTH: 44'

2. Parker Truss LENGTH: 225'

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutment, lally column piers

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 and 4 rectilinear eyebars, die-forged

HIP VERTICALS: 2 angles, stay bars, reinforced with plates

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, die-forged

COUNTERS: 1 round rod with stirrup ends

TOP LATERAL BRACING: 1 round rod

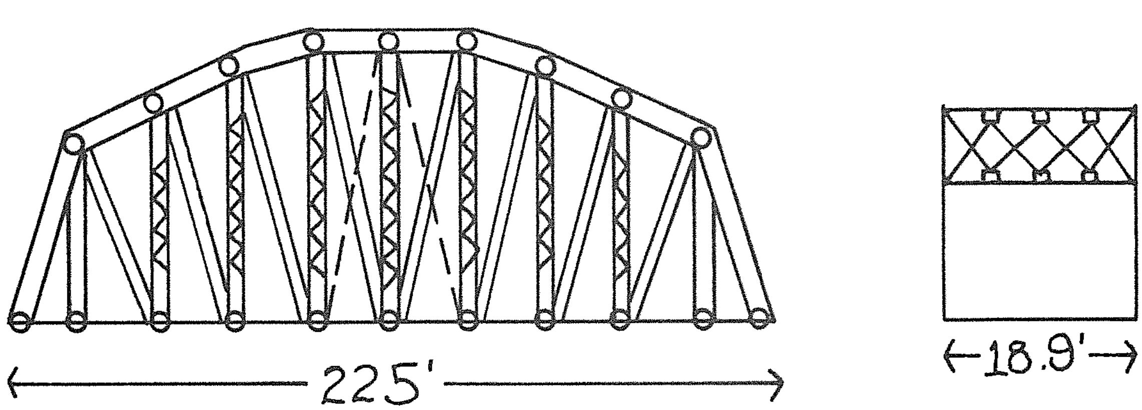
TOP LATERAL STRUTS: Angles

BOTTOM LATERAL BRACING: 1 square rod

FLOOR BEAMS: Plate girders STRINGERS: Rolled I-beams

OTHER DETAILS:

VII. TRUSS CONFIGURATION



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 68

I. LOCATION

COUNTY: Pike CITY: Pikeville

ROUTE: US 23 SPANS: Levisa Fork

HWY. DISTRICT: 12 S I A RATING: 25.6/100

UTM COORDINATES: 17-365980-4148960

II. HISTORY

BRIDGE ID#: MP 98-23S-B10

NAME/TYPE: "Middle Bridge" 1 Parker and 2 Pratt Through Trusses

DESIGNER/ BUILDER: Champion Bridge Company Wilmington, Ohio

DATE: 1908 BASIS: Bridge Plate

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

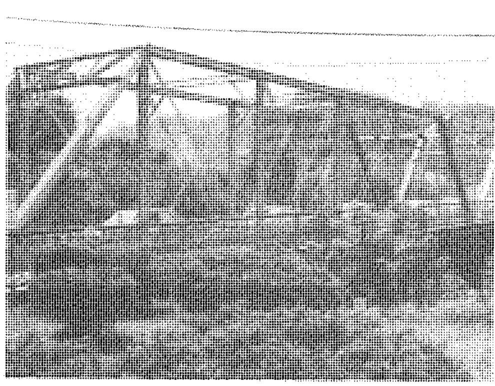
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

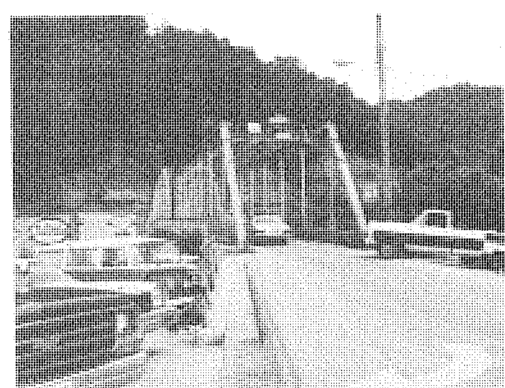
X RARE SURVIVOR/STANDARD DESIGN: Pin-connected Pratt through and parker trusses are rare in Eastern Kentucky. This multi-span truss in Pikeville is an early survivor.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Posted 10 ton weight limit. Levisa Fork soon to be diverted around Pikeville thus bypassing this bridge.





FORM # 68

V. DESIGN INFORMATION

NO. SPANS: 3 OVERALL LENGTH: 448' WIDTH: 16.0'

SPAN TYPES:

1. Parker Truss (Center span) LENGTH: 200'

2. LENGTH:

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: Concrete abutments and piers

SUPERSTRUCTURE

MATERIALS: BASIS:

CONNECTIONS: PINS: X RIVETS:

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: Paired angles, stay bars (1st 2 panels) 2 and 4 rectilinear eyebars, loop-welded

HIP VERTICALS: Paired angles, stay bars

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded, some with stirrup rods 2 square eyebars, loop-welded, turnbuckles in center panel

COUNTERS: 1 square eyebar, loop-welded, turnbuckle

TOP LATERAL BRACING: 1 round rod

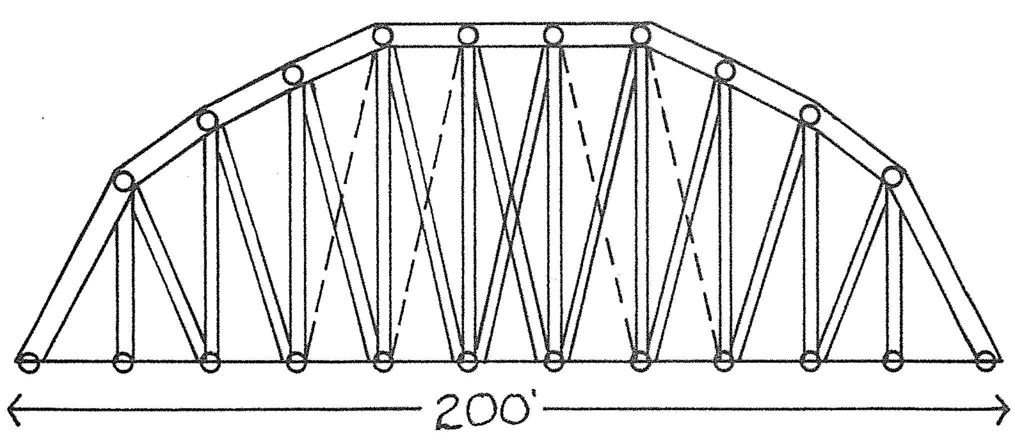
TOP LATERAL STRUTS: Paired angles, lacing bars

BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Original railing next to wood deck sidewalk.

VII. TRUSS CONFIGURATION



FORM # 68

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 448' WIDTH: 16.0'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 140'
2. East Span LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: ______ BASIS: ______

CONNECTIONS: PINS: ______ RIVETS: ______

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded

HIP VERTICALS: 2 rectilinear eyebars, loop-welded, pinned 3' above deck

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded, smaller towards middle

COUNTERS: 1 round stirrup rod

TOP LATERAL BRACING: 1 round rod

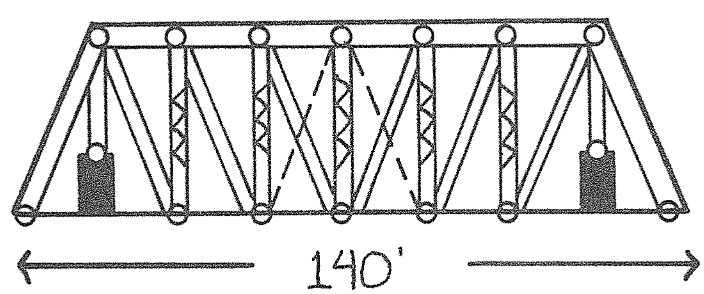
TOP LATERAL STRUTS: Paired angles, lacing bars

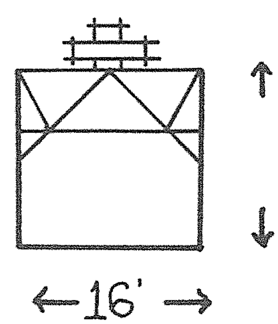
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Paired angles for knee bracing at intermediate posts.

VII. TRUSS CONFIGURATION





FORM # 68

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 448' WIDTH: 16.0'

SPAN TYPES:

1. Pratt Through Truss LENGTH: 105'
2. West Span LENGTH: ______

VI. STRUCTURAL INFORMATION

SUBSTRUCTURE: ______

SUPERSTRUCTURE

MATERIALS: Steel BASIS: Post 1895

CONNECTIONS: PINS: X RIVETS: ______

END POSTS: 2 channels, cover plate, lacing bars

TOP CHORDS: 2 channels, cover plate, lacing bars

BOTTOM CHORDS: 2 rectilinear eyebars, loop-welded eyes

2 rectilinear eyebars, loop-welded, 1 round rod (stirrups)

HIP VERTICALS: 2 channels, lacing bars (bridge shortened)

INTERMEDIATE POSTS: 2 channels, 2 sets lacing bars

DIAGONALS: 2 rectilinear eyebars, loop-welded eyes

COUNTERS: 2 rectilinear eyebars, loop-welded, 1 round rod (stirrups)

TOP LATERAL BRACING: 1 round rod

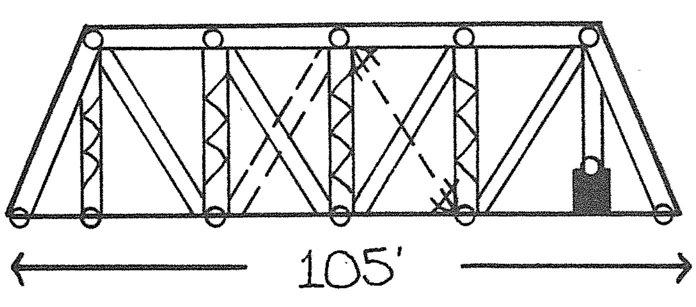
TOP LATERAL STRUTS: Paired angles, lacing bars

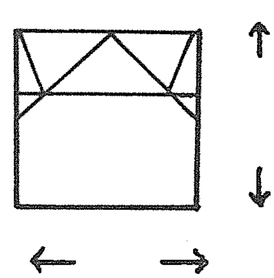
BOTTOM LATERAL BRACING: 1 round rod

FLOOR BEAMS: Rolled I-beams STRINGERS: Rolled I-beams

OTHER DETAILS: Truss apparently shortened, see diagram.

VII. TRUSS CONFIGURATION





KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 69

I. LOCATION

COUNTY: Pike CITY:

ROUTE: KY 1384 SPANS: Levisa Fork

HWY. DISTRICT: 12 S I A RATING: 20.0/100

U T M COORDINATES: 17-356950-4154860

II. HISTORY

BRIDGE ID#: RP 98-1384-B87

NAME/TYPE: Suspension

DESIGNER/

BUILDER:

DATE: @ 1935 BASIS: Similar examples

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

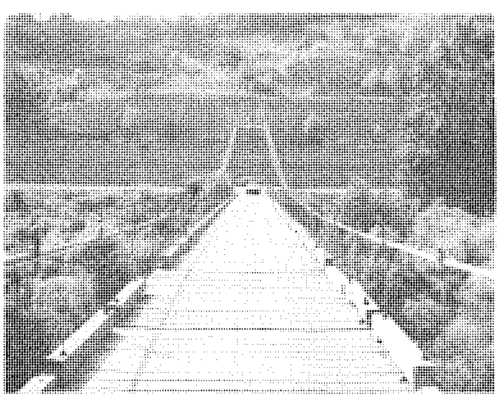
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

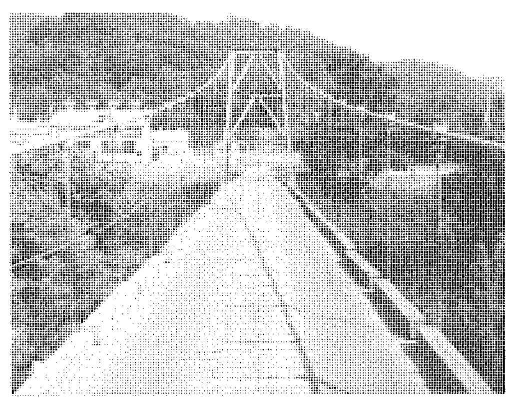
X RARE SURVIVOR/STANDARD DESIGN: 1 of 5 remaining "swinging" suspension highway bridges in Kentucky. Once numerous, these familiar structures have nearly disappeared.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

Bridge restricted to cars and pick-ups only. Limited to one vehicle at a time. Swinging foot and highway bridges are a distinctive cultural feature of Eastern Kentucky.





FORM # 69

V. DESIGN INFORMATION

NO. SPANS: ______ OVERALL LENGTH: 419' WIDTH: 9.0'

SPAN TYPES:

1. Suspension LENGTH: 419'

2. ______ LENGTH: ______

VI. STRUCTURAL INFORMATION

Towers - I-beams, channels, one tower rebuilt with relocation of US 23.

Anchorage - To hillside and massive concrete anchor.

Cables - Parallel twisted wire strands.

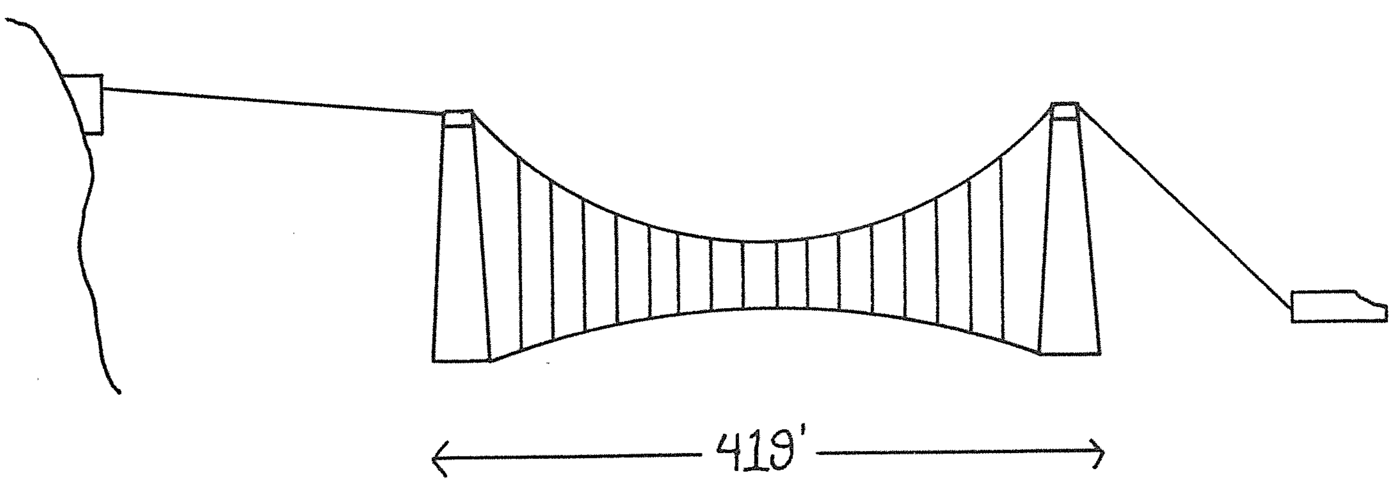
Cable bands - U bolts with metal blocks.

Hangers - 1 round rod, loop-welded to cable, passing through floor beams and then bolted.

Floor beams - I-beams.

Stringers - Wood beams.

Deck - Wood plans.



KENTUCKY HISTORIC BRIDGE SURVEY

FORM # 70

I. LOCATION

COUNTY: Pike CITY: N. Pikeville (Pauley)

ROUTE: Walnut Street SPANS: Levisa Fork

HWY. DISTRICT: 12 S I A RATING: 5.0/100

UTM COORDINATES: 17-364260-4150410

II. HISTORY

BRIDGE ID#: CR 98-1526-C63

NAME/TYPE: Suspension

DESIGNER/ BUILDER: WPA

DATE: 1938 BASIS: On keystone

III. HISTORICAL AND/OR TECHNOLOGICAL SIGNIFICANCE

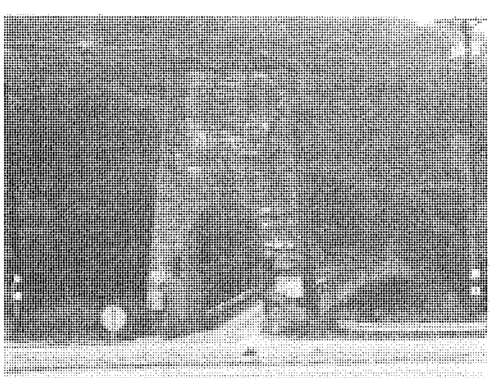
____ TYPICAL EXAMPLE/COMMON SURVIVOR:

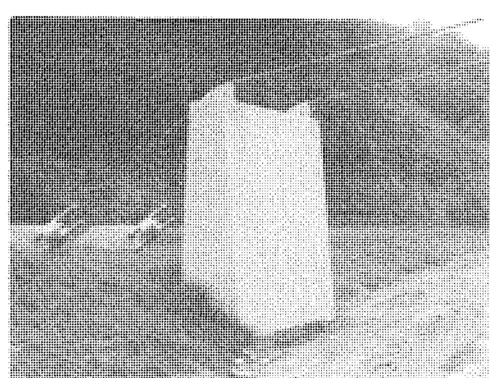
X RARE SURVIVOR/STANDARD DESIGN: 1 of 5 remaining "swinging" suspension highway bridges in Kentucky. Only example with rough cut stone towers.

____ UNIQUE/UNUSUAL FOR ITS TIME:

IV. ENVIRONMENT/OTHER REMARKS

5 ton load limit, restricted to 1 car or pick-up at a time. Swinging foot and highway bridges are a distinctive cultural feature of Eastern Kentucky.





FORM # 70

V. DESIGN INFORMATION

NO. SPANS: 1 OVERALL LENGTH: 500' WIDTH: 10.8'

SPAN TYPES:

1. Suspended Deck between Towers LENGTH: 370'

2. LENGTH:

VI. STRUCTURAL INFORMATION

Towers - Rough cut stone.

Cables - Wire rope.

Anchorage - Massive concrete anchor and sunken anchor.

Hangers - 2 round rods, loop-welded to cable, bolted under floor beams.

Cable bands - U bolts with metal blocks.

Floor beams - I-beams, welded section added on to support sidewalk.

Stringers - Wood beams.

Deck - Wood planks.

Bottom lateral bracing - 1 round rod per panel.

Guardrail - New.

Sidewalk is later addition, holes for original hangers in floor beams between sidewalk and roadway.