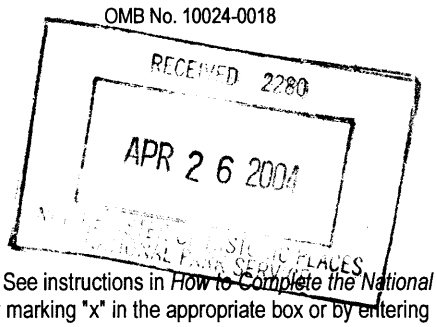
NPS Form 10-900
Oct. 1990

OMB No. 10024-0018



United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A) Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-9000a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

Historic name N/A

Other name/site number Lakewood Park Bridge; Ohio Street Bridge; Smoky Hill River Pratt Truss Bridge; 85-HT-05; 169-4900-0320

2. Location

Street & number On Lakewood Drive, 0.01 miles north of the ~~intersection with Iron Avenue~~ ☐ not for publication

City or town Salina ☐ vicinity

State Kansas Code KS County Salina Code 169 Zip code 67402

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. I recommend that this property be considered significant ☐ nationally ☐ statewide ☒ locally. (☐ See continuation sheet for additional comments.)

Richard D. Pankratz DSHPO April 21, 2004

Signature of certifying official/Title Date

Kansas State Historical Society

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional Comments.)

Signature of commenting official /Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is

Signature of the Keeper Date of Action

☑ entered in the National Register. for Edson H. Beall 6/9/04
☐ See continuation sheet.
☐ determined eligible for the National Register
☐ See continuation sheet.
☐ determined not eligible for the National Register
☐ removed from the National Register
☐ other, (explain:)

5. Classification

Ownership of Property	Category of Property	No. of Resources within Property	
		contributing	noncontributing
___ private	___ building(s)		
_X_ public-local	___ district	____	____ buildings
___ public-State	___ site	____	____ sites
___ public-Federal	_X_ structure	_1_	____ structures
	___ object	____	____ objects
		_1_	_0_ Total

Name of related multiple property listing:
(Enter "N/A" if property is not part of a multiple property listing.):

Metal Truss Bridges in Kansas

No. of contributing resources previously listed in the National Register

0

6. Functions or Use

Historic Functions
(Enter categories from instructions.)

TRANSPORTATION: Road-related (vehicular)

Current Functions
(Enter categories from instructions.)

TRANSPORTATION: Road-related (vehicular)

7. Description

Architectural Classification
(Enter categories from instructions.)

OTHER: Pratt Truss

Materials
(Enter categories from instructions.)

Foundation Concrete
Walls
Roof
Other Metal: Iron, Steel

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

____ A Property is associated with events that have made a significant contribution to the broad patterns of our history.

____ B Property is associated with the lives of persons significant in our past.

_X_ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

____ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations (Mark "x" in all the boxes that apply.)

____ A owned by a religious institution or used for religious purposes.

____ B removed from its original location.

____ C a birthplace or a grave.

____ D a cemetery.

____ E a reconstructed building, object, or structure.

____ F a commemorative property.

____ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance (Enter categories from instructions.)	Period of Significance	Significant Dates
ENGINEERING	1887	1887
TRANSPORTATION		

Cultural Affiliation: N/A

Significant Person	Architect/Builder
N/A	Missouri Valley Bridge& Iron Works (Leavenworth, Kansas)

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

____ preliminary determination of individual listing (36 CFR 67) has been requested
____ previously listed in the National Register
____ previously determined eligible by the National Register
____ designated a National Historic Landmark
____ recorded by Historic American Buildings Survey # _____
____ recorded by Historic American Engineering Record #_____

Primary location of additional data:

_X_ State Historic Preservation Office
____ Other State agency
____ Federal agency
_X_ Local government
____ University
____ Other
Specify repository:

10. Geographical Data

Acreage of property <1 acre

UTM References

	Zone	Easting	Northing		Zone	Easting	Northing
1	1/4	6/2/2/4/1/0	4/2/9/9/8/8/0	3	/	/ / / / /	/ / / / / /
2	/	/ / / / /	/ / / / / /	4	/	/ / / / /	/ / / / / /

___ See continuation sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Kerry Davis, Architectural Historian & Elizabeth Rosin, Partner

organization Historic Preservation Services date August 5, 2002

street & number 323 West Eighth Street, Suite 112 telephone (816) 221-5133

city or town Kansas City state Missouri zip code 64105

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black-and-white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items.)

Property Owners (Complete this item at the request of the SHPO or FPO.)

Name City of Salina

street & number 300 West Ash, P.O. Box 736 telephone 785-309-5725

city or town Salina state KS zip code 67402-0736

DESCRIPTION

LOCATION AND SETTING

The Lakewood Park Bridge is located at the south entrance to Lakewood Park within the city of Salina in the eastern part of the Smoky Hills region of north-central Kansas; on the NW ¼ of Section 18, Township 14S, Range 2W. The region is defined by highland prairie hills with tree-lined creek valleys and rocky bluffs. The Lakewood Park Bridge carries Lakewood Drive across the Smoky Hill River, a wide, swift course that flows northeast to join the Kansas River at Junction City. The asphalt roadway, flanked by grassy parkland, aligns directly with the Lakewood Park Bridge.

TRUSS TYPE

The Lakewood Park Bridge is a single span pin-connected through truss[1] that measures 100 feet in length and 16 feet in width.[2] Standard, box-form, poured concrete abutments support the bearings of the truss that rest directly on the abutment seats. The side walls of the abutments extend approximately 4 feet along the approach grades.

The inclined end posts rise from the bottom chords and meet the horizontal top chords to form a trapezoidal shape. The top chords and end posts consist of two channels, a top plate, and lacing bars; the bottom chords consist of paired flat eye bars.

The web members consist of vertical posts and ties that form six equivalent panels and diagonal ties that intersect within the two central panels. Channel stock, lacing bars, and stay plates compose the vertical posts; paired eye bars compose the vertical ties. Paired flat eye bars and tension rods compose the diagonal ties.

A riveted system of intersecting angle stock and lacing bars forms the portals and channel stock forms the sway struts that connect the top chords at each vertical post, leaving a vertical clearance of approximately 18 feet. Upper lateral bracing rods intersect diagonally between the top chords.

The timber deck is 16 feet wide with timber curbs. It rises 19 feet above the riverbed on steel I-beam stringers. Floor beams at the base of each vertical member are connected by lower lateral bracing rods.

The timber post and cable guardrails are intact along the length of the truss. A rectangular, cast-iron plaque on the south portal reads "MO. VALLEY BRIDGE / & / IRON WORKS. / 1887 / INSLEY SHIRE & TULLOCK / LEAVENWORTH, KAS."

INTEGRITY

The Lakewood Park Bridge is an excellent example the Pratt truss bridge type, historically the most popular in Kansas.[3] Although relocated in 1964, the Lakewood Park Bridge retains a good degree of integrity. As described

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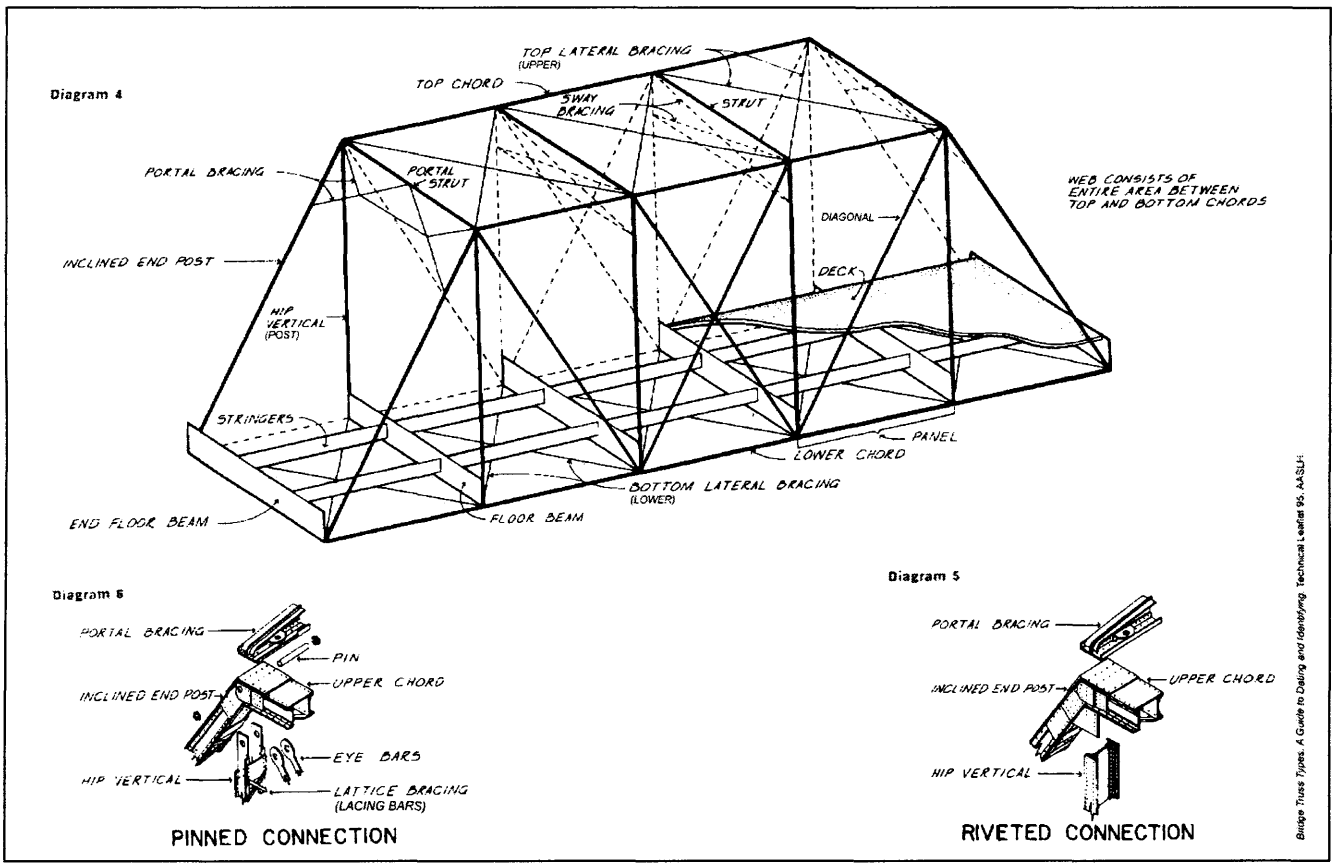
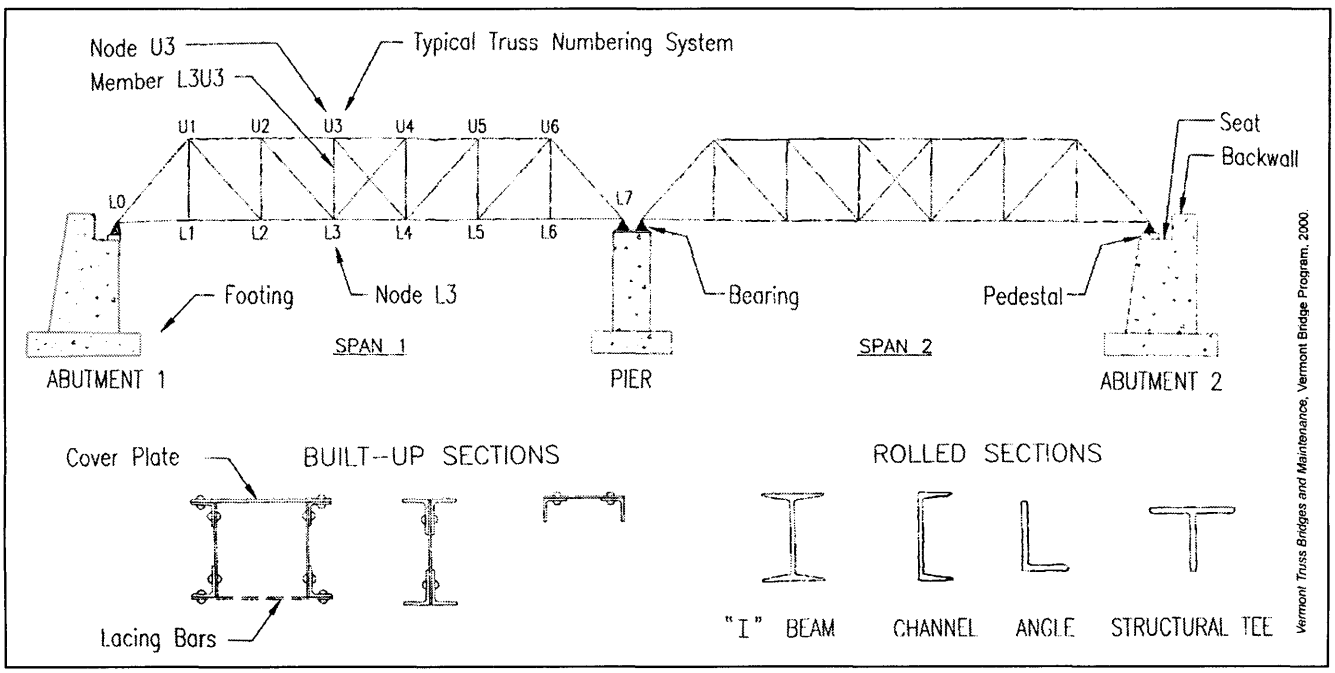
[1] A through truss is also referred to as a high truss.
[2] The length equals the distance between the abutments; the width equals the deck width.
[3] Larry Jochims, *Metal Truss Bridges in Kansas 1861-1939, National Register of Historic Places Multiple Property Documentation Form,* (Topeka: Kansas State Historical Society, 1989), E1. Jochims identified approximately 262 extant

in the *Multiple Property Documentation Form for Metal Truss Bridges in Kansas*, historically, moving bridges was a common practice and does not adversely affect a structure's significance. The original workmanship, materials, design, and feeling of the property remain readily apparent. Furthermore, the potential for preservation of the bridge is high. Located on a lightly traveled road, it is unlikely that traffic requirements will necessitate alteration or replacement.

Pratt trusses in Kansas. Dale Nimz, *Activity III Review Initial Assessment Metal Truss Bridges.* (Topeka: Kansas State Historical Society, 1998), 6. Nimz identifies approximately 800 extant Pratt trusses in Kansas.

TRUSS TERMINOLOGY





STATEMENT OF SIGNIFICANCE

The Lakewood Park Bridge is significant under National Register Criterion C in the areas of Engineering and Transportation. As defined by the *Multiple Property Documentation Form for Metal Truss Bridges in Kansas*, it is an excellent example of the Pratt truss bridge type. Built in 1887, the Lakewood Park Bridge is a common bridge solution applied to a relatively long span. Its pin-connected structure illustrates the standardization of this construction technique during the period of significance. As no consistent historic name identifies this bridge, the preferred name "Lakewood Park Bridge" has been assigned. This describes the location, design, and function of the structure.

ELABORATION

The need for all-weather crossings of rivers and streams corresponded to the growth of the market economy across Kansas during the late nineteenth and early twentieth centuries. Bridges provided farmers easy access to markets and could make the difference between growth and stagnation for the many small, young communities across the state.[1] Proximity to a bridge often secured a town's economic stability, and it contributed to a local sense of modernity.

Prior to the 1930s, the railroad was the primary means of long-distance travel and there was little need for roads to extend more than a few dozen miles. With little stimulus for improving roads that would cross multiple jurisdictions, road construction and maintenance remained local concerns. County commissioners often carried the burden of selecting bridge locations, over which much contention was common.

The range of choices for bridge designs and companies was vast. Many of the larger bridge companies sold metal truss bridges through mail order catalogues. County commissioners could simply specify the span, clearance needs, and truss type (if there was a preference), then choose the lowest bidder from the numerous competing companies that had salesmen in the field.

By the late nineteenth century, fabrication of iron and steel was widespread. The speed of construction and the relatively low cost of metal truss bridge parts ensured their popularity over labor-intensive masonry bridges and short-lived timber bridges. Toward the end of the nineteenth century, the quality, quantity, and cost of steel improved to such a degree that it virtually replaced wrought iron for bridge construction by 1910.[2]

Most metal trusses were constructed of built-up members composed of mass-produced, standard-shaped channel, plate, and angle stock purchased from one or more of the numerous steel companies nationwide. The bridge companies preassembled trusses in their factories then simply shipped them to the bridge site for installation. Installation involved grading approaches, constructing abutments and piers, erecting preassembled floor and truss members, and placing deck material.

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[1] Jochims, E.
[2] Jochims, F.

Before 1900, generally all panel point connections – the locations at which structural bridge elements intersect – were made with the use of a pin. This technique was so widespread that it became one of the distinctive features of American bridge construction in the nineteenth century.[3] The pin-connected construction of the Lakewood Park Bridge illustrates the standardization of this technique. However, subsequent advancements in pneumatic riveting techniques greatly improved rivet installation quality, enabling more reliable panel point connections. With the increased portability of this construction technology, the more rigid riveting technique rapidly surpassed pin-connected bridge construction during the first years of the twentieth century.

In addition, the contemporary development of economic cement production promoted the widespread combination of steel and concrete in bridge construction. It was not uncommon for older metal truss bridges to receive new reinforced concrete decks or poured concrete reinforcements for older stone abutments. By the 1920s, reinforced concrete was the standard material for abutments, piers, and decks of steel truss bridges.

The Lakewood Park Bridge is a classic example of this truss design. Patented in 1844, the Pratt truss incorporates vertical members in compression and diagonal members in tension, a design that reduces the required length of compression members, helping to prevent bending or buckling.[4] The Pratt truss became the most common bridge type of the late nineteenth and early twentieth centuries and spawned numerous variations including Parker, Camelback, Baltimore, Truss Leg Bedstead, Lenticular, and Pennsylvania trusses.[5]

In Kansas, Pratt truss bridges were constructed well into the twentieth century, suggesting the appeal of the design's strength and economical construction costs.[6] In 1998, approximately 800 Pratt truss bridges, including the Lakewood Park Bridge, existed throughout the state of Kansas.[7]

STRUCTURE HISTORY

Organized in 1859 near the confluence of the Saline and Smoky Hill rivers, the city of Salina grew rapidly from its inception. Through the 1860s, Salina thrived as the "jumping off" point for settlers and gold seekers heading west. Recognizing the market, the Union Pacific Railroad extended service to Salina in 1867. Following the arrival of the railroad Salina became the regional cattle-trading center for Saline County and beyond. The city boomed and the population grew five-fold during the 1870s, boasting over 3,300 citizens in 1880. Commercial and manufacturing endeavors also flourished, especially flouring mills, of which Salina had three by the early 1880s.[8] Salina quickly expanded along both banks of the Smoky Hill River, necessitating reliable, high water crossings. Salina was typical of cities throughout Kansas that served not only as trading and shipping points for the surrounding agricultural community, but as cultural and governmental centers for the county. As a result,

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[3] Ibid, F.
[4] T. Allan Comp and Donald Jackson, *Bridge Truss Types: A guide to dating and identifying.* (Nashville, Tennessee: American Association for State and Local History, Technical Leaflet 95), 8.
[5] Ibid, 8.
[6] Jochims, F2.
[7] Nimz, 6.
[8] William G. Cutler, *History of the State of Kansas[:] Saline County.* (Chicago: A. T. Andreas, 1883).

fords and bridges that provided access to and from the city's governmental buildings and commercial markets were critical to the survival of the regional economy.

The Missouri Valley Bridge Company of Leavenworth, Kansas, a prolific Kansas bridge builder, built the Lakewood Park Bridge in 1887. It originally carried Ohio Street across the Smoky Hill River on the east edge of Salina, less than one-half mile northwest of its current location. No further construction history has presently been located.[9]

In 1874, Edwin I. Farnsworth and D. W. Eaves of the Wrought Iron Bridge Company (Canton, Ohio) founded the Missouri Valley Bridge Company in an effort to manufacture and sell bridges locally rather than import them from eastern firms. By 1904, the company incorporated as the Missouri Valley Bridge and Iron Company and built everything from bridges to boats. Their most notable project was the construction of the piers for the San Francisco Bay Bridge in 1936.[10]

In 1963, the City of Salina passed a resolution to widen Ohio Street at Riverside Drive, necessitating the construction of a new bridge at the original location of the Lakewood Park Bridge. As payment for sand to fill the culvert on the new bridge, the city traded the surplus bridge (Lakewood Park Bridge) to Mel Jarvis, owner of the town sandpit. The City of Salina moved the bridge to Jarvis' property, its current location, in 1964. Three years later, Jarvis sold the sand pit property with the bridge to the City of Salina for $140,000. The City of Salina converted the property into a 100-acre city park that opened in 1967. The Lakewood Park Bridge serves as the southern entrance gateway to the park.

[9] Inquiry into the Saline County Road and Bridge records, Kansas Department of Transportation records, Kansas State Historical Society archives, Saline County Historical Society archives, and *Western Contractor* revealed no further construction history specific to the Lakewood Park Bridge.
[10] Jochims, E3.

BIBLIOGRAPHY

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"Lakewood Park Bridge," *Salina Historic Resources Survey,* Salina, Kansas: Planning & Community Development, 1985.

The Second Ohio Historic Bridge Inventory:Evaluation and Preservation Plan. Columbus: Ohio Department of Transportation, 1990.

Vermont Truss Bridges and Maintenance. Vermont Bridge Program, 2000.

WPA Guide to 1930s Kansas. Lawrence: University of Kansas Press, 1984.

GEOGRAPHICAL DATA

Verbal Boundary Description:
Located on the NW ¼ of Section 18, Township 14S, Range 2W, the Lakewood Park Bridge encompasses an area measuring approximately 100 feet by 16 feet. The northwest corner of this area corresponds to the northwest corner of the bridge.

Boundary Justification:
The boundary includes the truss, deck, abutments, and associated approaches that represent the significant features associated with the bridge structure.

PHOTO LOG

Photographer: Kerry Davis
Date of Photographs: February 2002
Location of Original Negative: Kansas State Historical Society, Topeka, Kansas

Photograph Number	Camera View
1.	View NE, bridge truss and roadway
2.	View SE, bridge truss and roadway
3.	View NE, detail, lower nodes, floor beams, and deck
4.	View NE, detail, upper nodes, vertical posts, and upper sway bracing
5.	View E, detail, northwest bearing and abutment seat
6.	View N, detail, lower node
7.	View NE, plaque detail