FOREST HOME CEMETERY TRUSS BRIDGES
Spanning the Des Plaines River
Forest Park
Cook County
Illinois

IL HAER No. CK-1999-4-A
IL HAER No. CK-1999-4-B

COVER SHEET
IL HAER DESCRIPTIVE DATA
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MOUNTED PHOTOGRAPHS

ILLINOIS HISTORIC ENGINEERING RECORD
ILLINOIS HISTORIC PRESERVATION AGENCY
SPRINGFIELD, ILLINOIS 62701

PREPARED BY ARCHAEOLOGICAL RESEARCH INCORPORATED
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ILLINOIS HISTORIC AMERICAN ENGINEERING RECORD

FOREST HOME CEMETERY TRUSS BRIDGES
ILLINOIS HAER NO. CK-1999-4-A and CK-1999-4-B

Location: Forest Home Cemetery (Waldheim Cemetery)
863 South Des Plaines Avenue
Forest Park, Illinois 60130
Spanning the Des Plaines River

U.S.G.S. Berwyn 7.5 Minute Series Quadrangle
Section 14, Township 39N, Range 12E
UTM Coordinates: Zone 16
E431320
N463580

Present Owner, Custodian: Forest Home Cemetery

Present Use: The truss bridges are considered unsafe and are currently closed for pedestrian and vehicular traffic. The bridges have been closed since 1998. The bridges are scheduled for reconstruction after September 30, 1999.

Significance: These truss bridges were determined eligible, by the Illinois Historic Preservation Agency, for listing on the National Register of Historic Places under Criterion C of the National Register Criteria for Evaluation as found in the Code of Federal Regulations, Title 36, part 60. Criterion C refers to properties, "That embody the distinctive characteristics of a type, period or method of construction...". The Forest Home Cemetery Truss Bridges are a good example of a truss design."

PART I. HISTORICAL INFORMATION

A. Physical History

1. Date of Erection:
   A. CK-1999-4-A, 1895, north bridge, Massillon Bridge, reconfigured 1908
   B. CK-1999-4-B, 1908, south bridge, Carnegie, Illinois I-beam

2. Engineer: Unknown

3. Original and subsequent owners: These bridges have always been within the jurisdiction of the Forest Home Cemetery.

4. Builder, contractor, suppliers:
   A. 1895, Massillon Bridge Company Ohio.
   B. 1908, I-beam Carnegie, Illinois

5. Original Plans and construction:
   A. None located
   B. None located

6. Alterations and Additions:
These alterations and additions were extrapolated from the Forest Home Cemetery Interment Books, Volumes 1 through 3. This chronology in conjunction with the historic photographs and actual field survey substantiate that the bridges are not twins. Indeed these are two separate bridges, constructed at different times and of different materials. For the purpose of this documentation the 1895, north, Massillon Bridge is CK-1999-4-A and the 1908, south, Carnegie, Illinois I-beam bridge is CK-1999-4-B.

Bridge single drive was built 1895-1896 (CK-1999-4-A)

Summer 1908 Built piers for bridge
South side (4-A) complete and north side raised (4-B)
Price $3,500 not including piers

Fall 1908 Built south bridge, steel stringers in old bridge and 2 east approaches

1912-Nov. 13th Replanked bridges

1919-Aug. 8th North bridge planked long way with fir

1919-Sept. 10th South bridge planked long way with Norway pine

Fall 1919 Planked bridge lengthwise

1923 In fall we planked both bridges all with Norway pine, no nailing pieces on driveway. Drive planked with 3" X 8" X 10' dipped in Cabots preservative (Preservo) from Warners. Top planks 2" X 12" X 16' painted with Barrett & Co's Carbosoto. Sidewalk new stringers 3" X 12" X 22', top painted with Preservo. West approach stringers 3" X 14" X 16' top painted with Preservo. Sidewalks 2" X 12" Norway pine.

1980s Urns, benches, flowerpots added to the lawn adjacent to the bridges. A single pipe on either side of the outer sidewalks sprays water in a fountain-like arches into the Des Plaines River. Public usage of the cemetery encouraged,

fishing and idle contemplation allowed.

1980's Urns, benches, flowerpots removed. Pipes spraying water fall into disrepair and are partially present on the north bridge.

1998 East approach sign ("May your passing be blessed with eternal rest") and west approach signs ("Whoever May Fall From God's Right Hand is Caught in His Left") placed to block vehicle traffic after safety was determined to be a factor

B. Historical Background

1. Forest Home Cemetery Historical Background

The truss bridges are an integral contributing feature to the Forest Home Cemetery and are significant in and of themselves. The truss bridges are the internal link to the east and west halves of the cemetery spanning the Des Plaines River. A brief historical background of early American cemeteries, park and cemetery development is necessary to place the Forest Home Cemetery in a national, state and local context. The truss bridges are subsequently discussed in the context of the cemetery and civil engineering developments on a regional, state and local level.

Early Chicago Cemeteries mirror trends of American cemetery development

The earliest American burials were categorized as frontier, domestic homestead graveyard and the potter's field in the 17th-20th centuries[1]. Prior to this date people were interred on private grounds of their residence. Chicago's historic examples include Robinson's Reserve and the Fitzpatrick homestead respectively. Dunning Cemetery is commonly known as a Chicago example of a potter's field, however, there is documentary evidence to suggest that Civil War veterans were also buried here[2].

The next phase of burials were in churchyards but as these became full the first city run cemeteries were established according to religion. The historical Encyclopedia of Illinois notes "Town of Chicago" did not feel the need to establish a public burying ground until 1835. At this point, the Protestants established a site at Chicago Avenue near Michigan Avenue and Catholics received space on the south side near 23rd and Calumet. As soon as theses burying grounds were platted and dedicated, interments were prohibited elsewhere within the limits of the "Town"[3].

The City Cemetery of Chicago was established in 1842 as a one hundred acre burial ground. The City Cemetery was one and a half miles from the "Town" and thought to be a sufficient distance from the city limits. By 1858 the limits of the city were rapidly encroaching on the City Cemetery. John H. Raush, member of the Board of Health, spoke of the City Cemetery in an 1858 paper at the Chicago Historical Society,

> Let immediate steps be taken to prevent all further interments within the corporate limits, and, as soon as practicable, let arrangements be made for the gradual removal of the remains of those already interred (in the Chicago Cemetery), with

> the ultimate view of converting these grounds into a public park, which shall contribute to the health, pleasure and credit of our city[4].

A petition was submitted to the City Council who ruled that the sale of burial plots should cease in May 1859. In 1860 arrangement was made to pass interments to Rosehill Cemetery. This arrangement was not carried out and in 1864 an ordinance was passed prohibiting any further burials in the City Cemetery[5].

Development of Park Movement on a National Level

The national development of landscape design and planning profession is important in understanding the development of the Forest Home Cemetery. The development of the profession up to 1857 was concerned with the estate, cemetery and other small-site designs; aesthetic concerns being primary[6]. The establishment of New York City's Central Park, designed by Frederick Olmstead and Calvert Vaux, changed the concept of designed historic landscapes forever.

The movement to establish Central Park merged design with social and political goals to achieve an important civic amenity. Several important social forces created this public interest in public spaces. The most significant forces were the growth of cities and the limitations that the growth of cities placed on large outdoor open spaces. The growth of cities was complicated by the new work environments within factories and workshops. Work schedules of ten to twelve hours a day, six days a week left little leisure time to travel to pastoral recreation areas. Urban growth also created problems of air, water and solid waste pollution. Parks were not recognized as the panacea to these problems, but were considered an aid to cleaner air.

Chicago Park Movement

The concept of parks as open spaces, within the city of Chicago's context, is especially important to the establishment of Forest Home Cemetery. McKinley Park on the south side was settled by Irish canal workers. Originating as a farming community in the 1840's it grew into an industrial center incorporated as the town of Brighton in 1851. Samuel E. Gross created several developments of small-scale worker's cottages that still exist within the community. The workers were employed in industrial complexes.

It should be noted that from the earliest days, Chicago had a sewage system. The city was built upon a series of beach ridges formed throughout the Holocene by the fluctuating water tables of Glacial Lake Chicago (Lake Michigan is the current stage). Consequently, the city required an efficient sewage system from its earliest days. During the 1850s, sewer lines were laid throughout the city[7] in order to prevent cholera outbreaks and to solve various sewage problems that were caused by privies and fluctuating water tables. The Bubbly Creek, a stagnant fork of the Chicago River's south branch, with its noxious stench permeated the area. Bubbly Creek was essentially an open sewer carrying offal from the slaughterhouses and packing houses. Few or no services were available in this area.

Inhumane working and living conditions attracted the attention of the progressive reformers. Their emphasis on open areas of "breathing" spaces led to the development of the neighborhood park. In particular, McKinley Park is the first of the south Park Commission's parks and was a model for the progressive park movement. The next series of parks, designed by the Olmstead Brothers and D.H. Burham, as part of the South Parks Commissions designs, were partially a result of experiments in McKinley Park. Meanwhile, O.C. Simonds was also experimenting in Quincy, Illinois parks, but with the Prairie Style, utilizing native midwest plants[8].

A testament to the progressiveness of the times is the Haymarket Martrys' Memorial in Waldheim Cemetery. This monument was built by an unknown laborer's group and honors political dissenters who were considered radical because they agitated for shorter work days, decent pay and better working conditions. The monument honors five men hung for their part in the Haymarket riots. In later years, other prominent dissenters were buried in the same area [9].

Rural Cemeteries

Concurrent with the park movement was the Rural Cemetery Movement. Prior to extensive development many cemeteries looked like large well planted estates. The grounds were often utilized for picnics and for city dwellers to commune with nature. The rural cemetery movement began on the east coast with Mount Auburn in the 1830's and was modeled after a Parisian cemetery, *Pere Lachaise*. *Pere Lachaise* is considered to be the world's first garden cemetery[10].

As the City Cemetery of Chicago was decommissioned other cemeteries, categorized as rural cemeteries were established. Rural cemeteries in Chicago include Oak Woods 1853, Calvary 1859, Rosehill 1859, and Graceland 1860. Rosehill was established in February 11, 1859 and ten percent of lot sales was reserved as a perpetual care fund[11]. The cemetery grounds were landscaped with lakes, monuments and vaults, well kept lots and shrubs, a chapel and a crypt in connection with a receiving vault and extensive greenhouses to provide flowers[12]. Cemeteries eventually limited visiting for lot holders and townspeople to Sunday's and holidays to curtail festive usage of the cemeteries.

Lawn-park Cemeteries

Criticism of the rural cemetery movement led the board of director's of Spring Grove Cemetery to redesign the cemetery as a lawn park cemetery[13]. The midwest advent of the lawn park cemetery movement may be specifically traced to a Prussian gentleman by the name of Adolph Strauch. He is considered to be a seminal landscape cemetery architect and was Superintendent of Spring Grove Cemetery in Cincinnati, Ohio. He began his tenure at Spring Grove in 1854 after having left his Prussian homeland to study in Paris and work in London. His ideas regarding cemetery "lawn plan" were revolutionary. The "lawn plan" emphasized a visual unification of the landscape that was missing in earlier cemeteries[14]. His vision also included rules regulating the type of monuments, headstones or plantings surrounding a burial plot not to mention sanctioning particular hours of visitation. These regulations were quite controversial. Strauch's vision of the lawn park cemetery was actually three years prior to the Frederick Olmstead and Calvert Vaux

concept of Central Park as a "rural" park[15]. His vision set the precedent for at least the next nine decades of cemetery design and management in the United States.

O.C.Simonds and the lawn park cemetery

O.C. Simonds was a Chicago landscape architect committed to the expression of landscape design as influenced by Strauch. Simonds, along with Jens Jensen, was a pioneer in the Prairie style landscape[16]. Simonds' major work is Graceland Cemetery and his design philosophy is based on the tenet, "Interweaving a conservation ethic into landscape design"[17]. Bachrach stipulates that Simonds was the key link between the Prairie Style and the earlier rural cemetery movement in America. Furthermore, Graceland Cemetery was the palette upon which Simonds is best known to "sculpt" his landscape art[18]. Simonds regularly submitted articles to Park and Cemetery, a magazine devoted to the profession. Bachrach notes that "Simonds' landscape architecture at Graceland earned him a national reputation as 'dean of cemetery design'[19] .

On a more prosaic level, O.C. Simonds established his own company, O.C. Simonds and Co. in 1903 which operated out of a Buena Avenue office located in the cemetery [20]. In 1925, he added J.Roy West as partner to his firm, thus, becoming Simonds and West. J. Roy West was listed as the Chief Head of Graceland Cemetery and the two remained collaborators until Simond's death in 1931[21].

More importantly, Forest Home Cemetery had at its doorstep access to Simonds: through the articles he published in Park and Cemetery, joint participation in the American Association of Cemetery Superintendents and personal contact. Thus, although a delegation visited Spring Grove, prior to the design of Forest Home Cemetery, the more significant historically contemporary contributions were probably through Graceland in Chicago.

Forest Home Cemetery

The historical context of the American Cemetery is a cultural reflection of societal attitudes and beliefs. These attitudes and beliefs are manifested in the landscape of the cemetery. Forest Home Cemetery is no exception, its landscape design and charter provide clues to cultural attitudes towards death and dying. Forest Home Cemetery is significant as an evolving cemetery: the rural, lawn park, commercialization of the cemetery, the memorial park to the view of cemeteries and death today. The Haase family and subsequent owners were practicing and currently practice the trends in the final right of passage-death.

Primary documents relating to the development of Forest Home Cemetery are sparse. The Historical Society of Oak Park and River Forest, Frank Lipo and Lauren McMahon, have spent significant time collating, cataloguing and interpreting the primary documents that are available. This commendable effort resulted in a jumping off point for the HAER historic documentation. The results of this documentation confirm the information gathered by the Historical Society and presented in their publication.

The lack of primary documents may be attributed to a historic fire that devastated the Forest Home Chapel on April 25, 1979. Many documents may have been stored in the chapel. The cemetery is also now in receivership and the previous owners may have taken, discarded or misplaced many historic photographs and documents.

The interment books remain a primary source for consultation. A few brochures relating the philosophy of Forest Home, rules and regulations and enumerating the establishment of the Perpetual Care Fund exist. Primary plats of survey for Sections 6, 11, 12, 14 and 56 are posted in the cemetery offices. These are original documents and have the seals, stamps and signatures necessary to register a parcel of land. Previously unidentified blueprints were located and recovered for the Mortuary Crematory for Waldheim Cemetery and the tool house for Waldheim Cemetery.

The lack of primary documents necessitated a shift in research strategy. Primary documents relating to the development of the cemetery in the United States were consulted. This parallels the research strategy undertaken by Julia Sniderman Bachrach for O.C. Simonds. The bound copies of The Modern Cemetery and Park and Cemetery were scanned for references to Forest Home Cemetery, Waldheim Cemetery, the Haase family and their relationship to the prominent cemetery landscape architects, Adolph Strauch and O.C. Simonds (unbound series were not examined due to their poor condition and the availability of data through bound series)

The Forest Home Cemetery was established in 1874 as a non-sectarian burial ground. However, the landscape was utilized as a prehistoric burial ground as early as 2500 B.C. Early occupation of the landscape as a village dates even earlier to 8000 B.C. The cemetery landscape is, therefore, not only significant as a designed historic landscape but also may be considered a Traditional Cultural Property.

The present day integrity of the archaeological habitation sites affiliated with the mounds is not clear. The cemetery grounds were mined for gravel that was part of the Des Plaines River valley train. The gravel valley train was well drained and Native Americans took advantage of the well drained soils that were suited for habitation. This gravel valley train extends northward to Half Day Road another heavily occupied area prehistorically and post contact.

The cemetery grounds were well known to contain a native american village site as well as burial grounds. Charles Dilg, an early armchair archaeologist, writes of Forest Home in a September 19, 1903 newspaper article. He writes,

> Forest Home cemetery is in Harlem (formerly the place was noted as “Haase Park,” and here occurred a higher knoll on a ridge, and this knoll, hill or mound contained many Indian skeletons. Some of the skeletons had French ornaments of German silver, like those found at Blue Island, among them also crosses etc., all of French make. [22]

Albert F. Scharf, also as early as 1900 and 1901, documented an indian village, chipping station and mounds within the Haas Park. Detail 15 is inventoried as "Harlem; Haase Park; Indian Cemetery...". The leanings of his research are indicated in a quote,

> Historical research and object lessons obtain a new inning to make comparisons Draw conclusions and verify landmarks to teach the future generations Any lesson taught foreigners in this "New World" should begin with the 'noble red man'.[23]

Contemporary archaeologists have classified The Forest Home Cemetery as having an Upper Mississippian component[24] as well as Woodland component[25]. A review of artifacts on display at the Forest Park Public Library confirm these affiliations. In addition, the diagnostic artifacts indicate an older prehistoric component dating to the Archaic.

Elaine Bluhm recorded the Forest Home Cemetery as a village and mound site in 1957. The University of Chicago is recorded as reporting the site in 1930. She recorded that a mound was destroyed. However, a burial mound is listed as part of a site tour for Forest Home Cemetery. This archaeologist revisited the site. Intrusive historic graves were introduced into the mound. The mound has large stones visible on the side. These large stones may be stone caps for a subsurface tomb. However, the positive identification of a mound may only be confirmed by excavation or the less intrusive and recommended geomorphological investigations.

Leon Bourassa, a metis, and his Pottawatomi wife, are reported to have the original title to this land as signed by President Van Buren in 1839. Bourassa is reported to have sold portions of the grove to Ferdinand Haase. Haase developed the land as a homestead and picnic grove. It was an attractive place for picnics as it was removed from the city proper. Attendance was high and was an extremely popular picnic area. However, by 1864, attendance dropped and Haase closed his grove as rowdiness and vandalism became a problem. At some point near 1864, he was approached by civic leaders in neighboring towns to establish a cemetery. The civic leaders proposed the establishment of a non-sectarian cemetery that would "...appeal to the English speaking, middle and upper class citizens of the area" [26]. He apparently agreed and plans progressed.

Ferdinand Haase began to design Forest Home Cemetery, and he and several other local civic leaders traveled to Cincinnati to view Spring Grove and meet with Adolph Strauch. No precise date was identified for this visit [27]. The cemetery was recorded in 1877 by the State of Illinois, County of Cook, surveyed and subdivided Section N:1 of Forest Home Cemetery being parts of the W1/2, SW of Section 13 and E1/2 of SE Sect. 14 in T39N, R12E and deeded by the Waldheim Cemetery to Ferdinand Haase October 26, 1875, Book 541 page 316[28]. The handwritten interment book log indicates that the cemetery charter was obtained on April 21, 1876. The cemetery's first burial was made February 2, 1877. The Haase family maintained ownership of the cemetery until approximately 1966.

A circular for Forest Home Cemetery "invites citizens of Chicago, but more especially those residing on the West Side and adjoining suburbs, who are desirous of procuring a family burial plot, to the beautiful rural Cemetery, Forest Home"[29] . The circular notes two addresses, one at Des Plaines Avenue and the other, the City office, was at 73 Dearborn Street in downtown Chicago. The circular names Ferdinand Haase as president, Emil Haase as secretary-treasurer, and William Haase as superintendent. H.W. Austin, O.W. Herrick, E.H. Pitken, and F.W. Scoville are listed on the circular, although, it is unclear their capacity. However, the trustees of the Forest Home Perpetual Care Fund were elected officials and included the following:

Elected Jan. 1, 1902	H.W. Austin, Treasurer
	E.W. Lyman
	B.W. Herrick
	E.A. Cummings, President
	S.E. Knecht
These officials were reelected Jan. 1905	
Elected Jan. 1908	E.A. Cummings, President
	George Eckart
	E.W. Lyman
	S.E. Knecht
	H. W. Austin, Treasurer
This slate was reelected Jan. 1911	
Elected Jan. 1914	E.A. Cumming, President
	E.W. Lyman
	S.E. Knecht
	H.W. Austin, Treasurer
	C.S. Pellet

Transportation to Forest Home Cemetery

The development of cemeteries on the periphery of cities is already established. However, not readily discussed is the logistical nightmare to access cemeteries. Forest Home Cemetery historically handled this issue through their advertisements and brochures. For example, an 1898 promotional plat of survey by Leo Haase, addressed this problem and provided several transportation options.

> Good paved roads, such as Madison and 12th streets and Washington Boulevard, lead from the city to the Cemetery. Lake Street Elevated connecting at Harlem Avenue with Chicago Ave. Electric cars, take passengers direct to the gate, and West 12th Street Electric and West Madison Street Cable connecting with Cicero and Proviso Electric, run to the Gates of the Cemetery, also the Metropolitan Elevated connecting with the Aurora, Elgin & Chicago R.R., within five minutes walk[30]

The history of street railways in Chicago began with the construction of a line in State Street

authorized by ordinance of the City Council in 1856 and later granted special charter by act of the General Assembly. The line originally opened in 1859 and was operated by horse power as were all street cars in this time period. The next forty years was technologically progressive indicated by increased mileage of track and horse power changing to electric and cable[31].

These options still required the bereaved to transfer between different types of transportation and this still did not address the difficulties in transporting a corpse. The Metropolitan Elevated took over the Aurora, Elgin & Chicago R.R. local service to Chicago, Oak Park and Harlem in 1905. The reorganized conglomerate recognized a new niche in the transportation market. Although restricted from providing service for freight or express package service, corpse cargo could not be defined as either. This was not a new concept for railroads but was innovative for the elevated. A letter describing the service was distributed to funeral directors throughout the city . The new service was established as a trial run for the Concordia and Waldheim Cemeteries. This circular stipulates that siding were arranged at Concordia Cemetery (currently north of the Eisenhower Expressway) and Waldheim Cemetery. The Metropolitan circular extolled the virtues of the service,

> We believe that this saving in time and the comfort and elegance offered by the rapid, smooth running of a high class electric car over the well laid roadbed of the Metropolitan system, delivering the party directly at the special receiving gate at the cemetery, will appeal to those now accustomed to the tedious and uncomfortable method of reaching these cemeteries by carriage...[32]

This trial service led the A, E &C to develop a funeral service to the south side, ultimately the A, E& C and the Metropolitan jointly formed the Joint Funeral Bureau to handle the boom in funeral business[33]. A line of funeral trolley cars was even developed and discussed in the magazine, Park and Cemetery. An article entitled, "The New Chicago Funeral Trolley Car", appeared in July 1910 [34]. The trolley cars were fumigated and cleaned after each funeral. The trolley car was designed to maintain taste, beauty and harmony in keeping with the solemn occasion.

Transportation innovation continued in 1912 with the advent of a "New Motor Car that Carries the Entire Funeral". The article illuminates the cost affiliated with transportation issues.

> In Chicago most of the cemeteries are from 9 to 18 miles from the business center, and often as far from the homes of the people who have to bury their dead. The transportation of a funeral with 28 mourners and the body in the usual horse-drawn vehicles to any of the cemeteries within 12 miles of the loop district costs $66 and upwards. This does not represent all the expense, for a stop is usually made at a road house to feed the horses [35].

The advent of better roads and the replacement of the automobile for the horse drawn hearse heralded the end of the funeral car[36]. The Joint Funeral Board was decommissioned on February

20, 1932[37].

Despite the decommissioning of the Joint Funeral Board, by 1933, a "How to Use Rapid Transit 'L' Lines" map, listed thirty three (33) cemetery locations readily accessible via the transit system. The thirty three included Forest Home and Waldheim Cemeteries[38].

Forest Home Cemetery Internal Transportation Modes and Infrastructure

The internal modes of transportation evolved in response to the external evolution of transportation. Throughout these transportation innovations the Haase family mirrored the trends. Leo Haase in his recollections of the family indicated that he was elected to the Illinois Highway Commissioner's in 1884. He was readily able to access the most technological innovations available to the transportation industry. The primary evidence for his involvement, or at least his family's involvement with transportation, is gleaned from the interment book logs. In 1890 the main sewer and water systems were installed. The first Macadam Road, the main drive, was set in 1892. The first brick road was set in 1893. Other transportation innovations were tracked via advertisements in Park and Cemetery. Forest Home Cemetery's use of Tarvia X is documented in an advertisement placed by the Barrett Manufacturing Company in January 1914. Forest Home Cemetery is pictured as a testimonial for waterproof roads, "The problem of clean, sightly roadways in parks and cemeteries is largely a problem of providing them with waterproof surfaces. A surface of fine stone screening is good, but it won't last under modern traffic, or under the heavy strains incident to the transportation of monuments"[39]. "Tarvia X" was utilized and was very dense and required heat for application.

The interment book log document a forty year span of transportation within the cemetery gates.

Jan. 1908	Bought bay team in West Chicago
1910	Bought Maxwell auto for Cemetery (Sept).
1911	Bought electric bus + installed rectifies in September
1913	Buick chassis $1165 Body Built spring 1914 = $800
1914	GMC Chassis in fall = $1555 Electric body built on
1914	Nov. 9th Overland 1915 Touring $1000 Maxwell Traded in
1915	Traded Overland in for Chalmers, gave $1000 with it (Nov)
1920	Bought white bus chassis + put on old bus body paid $2648.50 Oct. 20th
1922	Bought bay team in Nov. after black team had "runway" with Waldin
1923	Traded Peters big team for sorrelles in summer
1946	Last horse sold June 1946
1946	Jeep bought June 1946

1891 Rules and Regulations

The professionalization of cemeteries is reflected in the Rules and Regulations of the cemetery. The earliest glimpse available for Forest Home Cemetery is their published rules and regulations.

Open 7am- sunset

Visitors allowed
Cash only
Undertaker notice to Superintendent, permit Board of Health Deed
Interments restricted to families
No double burials
No sale valid without consent
Lots will be kept in order by Company, extra embellishments ordered from Superintendent
No monuments above ground
No walking or lying on graves
Fast driving not allowed
Bathing or fishing not allowed, no dogs
Picnic parties will not be admitted nor kids
Died of contagious cholera will not be admitted to the vault[40].

Survey of the American Association of Cemetery Superintendents in 1892 indicates that Forest Home was similar to the national trends[41]. Questions in the survey included the following,

Are size of headstones restricted?
Are lots sold on credit or strictly cash?
Are lot owners allowed to plant flowers and shrubs?
Is admission to grounds unrestricted?
Can lot owners sell their holdings or any part?

Larger cemeteries generally adopted and had similar rules and regulations by 1892. The uniformity of the rules and regulations reflect a general acceptance of the philosophy of the rural and lawn park cemetery. O.C. Simonds reflected that this type of cemetery would,

> If wisely managed they will then form extensive parks, rich in foliage, flowers, statuary and monuments, with funds ample for their perpetual care, a gift to posterity, without a corresponding burden of taxes[42]

Park and Cemetery1890-1932

The evolution of Forest Home was tracked through the magazine Park and Cemetery and its predecessor The Modern Cemetery. The magazine was devoted to the development of parks and cemeteries. The entire run from 1898 to 1932 was scanned for references to Forest Home and Waldheim Cemeteries.

The earliest reference to Forest Home and Waldheim Cemeteries was a September 1893 article that appeared in The Modern Cemetery. It is a testament to Forest Home Cemetery by its peers,

> ...Forest Home, comprises nearly 100 acres of land and is, both by nature and art, one of the most beautiful cemeteries in Chicago. Here the lawn system was

> adopted from the beginning and the uniform park-like appearance of the grounds are so much admired by all visitors is a silent but powerful testimony of the excellent results to be obtained by this system. No coping or other means of marking the boundaries of lots are allowed, except for corner stones and these are restricted in height, thus making it easy to keep the lawn uniform. The same system has been followed, though not so rigidly, in Waldheim, a German cemetery of 80 acres, just north of Forest Home. This is the favorite burial ground of the German societies, and is carefully kept by them as well as by the individual lot-owners[43].

Another early reference appeared in 1895 in a column called Cemetery Notes. The column noted that Waldheim Cemetery was platted in 1873 with 80 acres and Forest Home was platted in 1878 with 100 acres[44]

As early as 1900, advertisements for Portland Cement Grave Markers, were in Park and Cemetery. Leo Haase was the salesman and he stipulated that these markers had been in use at Forest Home Cemetery for fifteen years and in Graceland for five years[45]. Haas' appeared to be supplying with markers that conformed to the tenets of the lawn-park cemetery. This again speaks to a professional relationship with O.C. Simonds. An advertisement in 1909 gives the insight that Leo patented his moulding and tamping machines on August 13, 1901 and July 28, 1903 respectively. Leo expanded his business west of the Rockies with both a Pasadena, CA and local address by August 1909[46]. A genealogy on file at the Forest Home Cemetery confirms that Leo moved to Pasadena in 1905. The family became involved in the business by 1910 with the renamed Haase Concrete Wks., located in Oak Park, ILL, and maintained the Pasadena address[47]. Perpetual care posts were added to the grave markers as a product by January 1914[48]. A 1917 advertisement indicates that Forest Park is the primary business address, no longer is the Pasadena address utilized. The emphasis on flush grave markers is apparent as the advertisements states, "Lawn mowers, wheelbarrows, dump carts, etc., are harmless to HAASE markers"[49]. The American Vault Works were successors to Haase Concrete Works by 1920[50] and advertised as such. Leo Haase's patented markers are visible throughout the cemetery today.

The 1925 thirty ninth annual convention of the Association of American Cemetery consisting of over 350 superintendents was held in Chicago. O.C. Simonds was a keynote speaker. Visits to local cemeteries included tours of Oak Woods on the south side, Graceland on the north side and Forest Home and Waldheim on the west side. The Haase family were members of the association and Wilbert Haase was signed on as a new member [51] . The Haase family professional involvement is continued in 1926 as Herbert Haase presided over the Chicago Cemetery meeting[52] and in 1927 as he was also presided as Chairman of Arrangements for the Chicago cemetery association[53]. The Haase family continued to have local access to O.C. Simonds and his contributions to cemetery landscapes via professional meetings, lectures and his on the ground landscaping at Graceland.

Later reference to Forest Home Cemetery is a mentioned in the 1931 Notes section of Park and Cemetery. Three robbers imprisoned Herbert E. Haase, President, Fred Ewald, superintendent, and Mrs. H.O. Lilly, bookkeeper in the Forest Home Cemetery vault. The robbers fled with $300 and a passing bus driver heard the screams and released the imprisoned people[54].

Simonds, West and Blair

A 1952 plat of survey that is a composite of a Waldheim Cemetery plat of survey dated 1914 and a plat of survey for Forest Home was provided by the client. This plat of survey notes the Congress Superhighway and was surveyed by the Service Surveying & Engineering Company. The revised Service Surveying & Engineering Company survey notes that Simmons, West and Blair were the original landscape engineers. The firm of Simonds, West and Blair was established in 1932 after the death of O.C. Simonds[55] . This firm is a newly identified firm affiliated with the development of Forest Home Cemetery. The firm's involvement was previously unknown and unidentified. The period of significance for Simonds, West and Blair's involvement is extrapolated to date between 1932 and 1952. These dates are based upon the establishment of the triad and survey revisions conducted by Service Surveying & Engineering Company. This 1952 survey was at some point pasted to the 1915 plat of survey for Waldheim Cemetery. Waldheim Cemetery was subsumed into Forest Home Cemetery in 1968.

A biography listed for a presentation of Park and Cemetery national meetings lists Marshall Simonds as a member of Simonds, West and Blair. This partnership appears to have been formed in 1932. It is unclear whether Marshall Simonds, a member of the firm Simonds and West [56] became the Simonds representative, whether another brother or a grandson, was the representative Simonds. It is also possible that the firm simply did not drop O.C. Simonds as a founding partner name. However, Marshall G. Simonds lists himself as a member of Simonds, West and Blair as part of a biographic sketch for a paper presented at the Chicago Convention of A.C.O.A.[57] . He lectured on his father, O.C. Simonds, in a presentation titled "Simonds Principles of Cemetery Design". This rendition of the partnership is a continuation of O.C. Simonds philosophy. This firm is important to the history of Forest Home Cemetery as it appears to be the a seminal landscape engineer firm. No further mention of this firm was encountered in the research of Modern Cemetery 1932-1947.

James Roy West became a member of O.C. Simonds and Co. in 1910 and was promoted to partner in 1925. The firm name was changed to Simonds and West. In 1925, Simonds and West received the gold metal for landscape architecture awarded by the Architectural League of New York[58].

Details regarding Blair, in the firm Simonds, West and Blair are not known. An Oak Park resident, John Blair, a landscape architect, designed Henry Austin, Sr.'s grounds[59]. John Blair died in 1906 preceding the formation of Simonds, West and Blair. He was survived by a son who was caring for the family farm. His son's age is not known nor is it known whether he, his son, his grandson or a different Blair was the member of the firm Simonds, West and Blair.

Regardless, the firm may have led the transition to the memorial park type cemetery especially prominent on the west side of the river in sections opened after 1924[60]. The west side is visually very much different from the east side. The establishment and redesign of cemeteries to the memorial park is extensively discussed in Modern Cemetery 1932-1947.

Notable Interments at Forest Home and Waldheim Cemeteries

The Forest Home Cemetery was established as a cemetery not affiliated with a particular religion, fraternal order, or ethnicity. This tradition is still practiced today. It is not uncommon to encounter a family, gypsy, or public aid funeral. It is important to look briefly at the breadth of people who chose Forest Home Cemetery as their final resting place. The breadth of people interred at Forest Home and Waldheim Cemeteries is the visual and documentary evidence that defined and defines the philosophy of the cemetery. An examination of the interment books defines the nonsectarian policy from the establishment of the cemetery to the present. The nonsectarian philosophy of the cemetery is clear upon examination of the interment books and is confirmed with a field survey of the cemetery sections. Victims of natural and manmade disasters, epidemics, suicides, are interred amongst famous families, fraternal orders, ethnic groups and average citizens.

An exhaustive description of the notable people or interesting monuments located in Forest Park Cemetery is beyond the scope of this document. The Forest Home Cemetery averages seven hundred and fifty burials per year and currently 118,000 interments are within the cemetery (Cajrgas personal communication). An excellent overview is contained within the pages of The Historical Society of Oak Park and River Forest publication entitled “Nature’s Choicest Spot A Guide to Forest Home and German Waldheim Cemeteries”. Highlights of the notables buried in Forest Home Cemetery are from this document and are presented here. This highlight is the result of hours of research by Frank Libo and Laurel McMahon. The first and foremost notable is Ferdinand Haase, founder of Forest Home Cemetery and Forest Park., Henry W. Austin, Sr. community builder and temperance advocate, Henry Austin, Jr., banker and state legislator, his wife Edna Austin, teacher and community activist, Joseph Kettlestrings and Betty Willis Kettlestrings, pioneer settlers and community builders, Ashbel Steele, River Forest pioneer and postmaster, Cook County sheriff and coroner, Sophy and Charles Drechsler, undertakers and business leaders. Philander Barclay, historian, photographer and mechanic, he is the primary source for the historic photographs of the Forest Home Truss bridges[61].

The Haymarket Martyrs’ monument towers over the graves of eight labor activists. These eight men were brought to trial for the bomb throwing incident and wrongly convicted. All eight were convicted, four were hung, one committed suicide and the remaining three were imprisoned. German Waldheim was the only cemetery that would except the convicted dead men. Eventually Clarence Darrow, the infamous Scopes trial lawyer, and Governor John Altgeld reversed the conviction. The remaining three men were released and upon their natural deaths were buried along side their fellow activists. The Haymarket Martyrs monument was established as a National Historic Landmark by the U.S. Department of the Interior in 1997. The monument was designed

by the sculptor Albert Weinert and is held in trust by the Illinois Labor History Society. Emma Goldman, anarchist, lecturer, feminist and free speech advocate requested to be buried near her comrades from the Haymarket riot. The Haymarket Martyrs' monument is a rally point for the international labor movement[62].

The cemetery also boasts such sections devoted to the Veterans' Section, the Grand Army of the Republic, Phil Sheridan Post 615, The Independent Order of Odd Fellows, United Ancient Order of Druids monument, and International Alliance of Bill Posters and Billers, Local #1. Famous women include Martha Rayne, journalist, Doris Humphrey, dancer and choreographer and Flora Gill, independent millner[63].

Finally, one of the more colorful sections of the cemetery is reserved for gypsies. Reminiscent of the Day of the Dead in Mexico, the gypsies visit the graves and leave offerings of favorite food, drink and smoke. Visual reconnaissance of the graves today observe offerings of twinkies and Pepsi[64].

2. Forest Home Truss Bridge Background

An Illinois Bridge History, written by John Nolan for the Sumpter Bridge IL HAER No. WH-1996-1, stipulates that there are 26,256 bridges in Illinois. Steel truss bridges account for 669 of the 26,256 [65]. Nolan's primary resource was the Illinois Department of Transportation Bridge Inventory for Illinois and for Whiteside County. Unfortunately, the Bridge Inventory for Cook County is inaccurate since District 1 and Chicago Department of Transportation assigned different numbers to the same bridges (Zucchero, personal communication 1998). Cross referencing the numbers is purported to be extremely difficult. Chicago bridges are so significant that an entire evaluation is necessary for them alone. In any case, the IDOT Bridge Inventory only references bridges under the Illinois Department of Transportation jurisdiction. Very little is known or documented on bridges located on private property. An exact number of truss bridges is thus, difficult to provide.

Jurisdiction is often nebulous although common sense dictated that a civil engineer would have reviewed and signed off on plans over creeks, streams or rivers on private land. Railroad's, excepting Amtrak, are also outside the purview of national or state documentation. It was the railroads that pioneered most bridge technology in the second half of the 19th century[66]. Often original bridge plans are missing, "lost" in archives of companies or more probably were standard issue and construction was overseen in the field by a company representative with day labor.

A look to neighboring Wisconsin is helpful to provide a regional comparative context for truss bridges. Wisconsin lists a total of 909 truss bridges, pony, overhead and deck, as of September 30, 1983. The Massillon Bridge Company, the Smith Bridge Company, and the Toledo Bridge Company are listed as known prolific out-of-state builders in Wisconsin. Of the 23 prolific out-of-state builders 13 were located in Ohio and 1 in Illinois. Ohio is clearly established as a major contender for bridge building[67].

The Society for Industrial Archeology, Occasional No. 4 Publication by Victor Darnell is A Directory of American Bridge-Building Companies between 1840-1900. Eleven shops were considered to be large bridge shops between 1894 and 1903. Annual operating capacities in units of 1,000 long tons were listed to be between 2.4 and 30. In comparison, Ohio, home of the Massillon Bridge lists twenty one shops with capacities ranging from 1 to 30, Iowa 4 shops ranging in capacity of 1 to 10, Indiana 9 shops ranging from 1.5 and 10, Missouri 3 shops ranging from 1.8 to 10 and finally Wisconsin 2 shops ranging from 3 to 15 [68].

Early Pratt Trusses

Nolan writes that in 1844 Caleb Pratt and his son Thomas patented a practical truss for wooden bridges, using timber for vertical compression members and iron rods for tension diagonals and bottom chord strengthening[69] . The design was adapted later for wrought iron. Iron pratts began to appear in large numbers in 1850. The development of steel trusses after 1850 as the price of steel decreased with the invention of the Bessemer converter followed by the open hearth process[70] .

Technical Leaflet 95 is a guide to evaluating bridge truss types that was consulted. This Technical Leaflet is published by the American Association for State and Local History. Two National Park Service employees, T. Allan Camp, Senior Historian and Donald Jackson, Civil Engineer for the Historic American Engineering Record authored this leaflet. A national context was developed for metal truss bridges that is abstracted for this documentation. Metal truss bridges, according to these two authors, are the most common bridge built between 1850 and 1925. Pratt and Warren trusses are the most common as a result of competition, both proved their ability to be versatile, durable and economically viable. The Pratt truss is distinguished by vertical members acting in compression and diagonals acting in tension. This design feature reduced the length of the compression members to help prevent them from bending or buckling[71]. A pin connected through truss is representative of the most common type of early 20th century through truss. The Forest Home Cemetery bridges appear to be through Pratt trusses.

Forest Home Cemetery Bridges

The history of the Forest Home Cemetery is inextricably intertwined with the construction of the bridges over the Des Plaines River. Ostensibly the bridges were built to connect the east and west portions of Forest Home Cemetery.

Post 1877 and pre 1895 bridge over Des Plaines River

In many ways, the construction of the first bridge, a suspension bridge, epitomizes the ethos of the Haase family. Leo Haase documented the family ethos or as he characterized it “imagination” in his ad hoc memoirs regarding the development of the family land. Leo designed a light weight and inexpensive suspension bridge that was fashioned after a bridge described in an 1887 issue of Scientific American. This enabled the family to expand their cemetery business across the river[72]. An historic photograph in a promotional brochure for Forest Home Cemetery depicts the suspension bridge. This bridge literally did not withstand the weather.

1895 Massillon Bridge (CK-1999-4-A) over Des Plaines River

An early interment book contains pages documenting mile stones in the development of Forest Home Cemetery. This is analogous to a bible chronology of births and deaths. A single bridge drive was built between 1895 and 1896. Two historic photographs were identified at The Historical Society of Oak Park and River Forest. One undated photograph depicts a bridge with hand rails that match the current rails on the north bridge sidewalk. The undated photograph illustrates that the pier is either metal or wood. The formal structural abutment does not appear to be built, and appears to consists of dirt or stone. However, resolution of the photograph makes precise identification difficult. It is hypothesized that bridge construction was started in the fall of 1895 and was not completed until spring 1896. Thus, this undated photograph is hypothesized to have been taken sometime between November 1895 and March 1896 as snow and ice are apparent.

The second historic photograph clearly depicts the bridge plate that is currently on the north bridge. The bridge is a single span with sidewalks on the north and south sides of the bridge. The railings on the north sidewalk appear to match the current north sidewalk railings. A bridge plate, currently on the north bridge of the pair, reads The Massillon Bridge Company, Ohio 1895. This matches the construction date for the bridge in the historic photographs.

Joseph Davenport founded the Massillon Bridge Company in 1869 and designed the first wrought iron cantilever bridge in the United States. He was born in Massachusetts in 1815 and moved to Massillon in 1850. A biographical sketch details an inventive railroad man who at ninety four designed a three foot model of a flying machine which combined the features of a hot air balloon and the airplane[73].

Davenport moved to Massillon in the 1850's and joined forces with C.M. Russell who operated a railroad car building and repair firm. In 1859, Davenport received a patent for an iron railroad car whose floor was strengthened with a single longitudinal beam. The beam was an “open diagonally braced girder” that was “very light and yet strong and effective”[74]. A pair of these diminutive iron girders were utilized to construct a bridge in Stark County, Ohio[75]. These iron girders were actually a series of small iron Howe trusses[76]. In the mid 1860's, Davenport adapted his earlier Howe railroad car girders to the curved compression members of a bowstring. This created an iron “lattice” bowstring bridge. He patented this improvement in the bridge girders in a series of patents in 1867 and 1869 [77]. Apparently, the gas pipe and small castings used to fabricate the lattice of Davenport’s bowstring were readily available in the local economy and thus, were competitive with the tubular bowstring bridges [78].

David Simmons, Historic Bridge expert, indicated that Joseph Davenport left the Massillon Bridge Company by 1895. This is confirmed by two notes written on Massillon Bridge Company letterhead. The first, written on January 21, 1879, is a note to Joseph Davenport written on Massillon Iron Bridge Co. Manufacturers of Wrought Iron Bridges stationary, stating

> Sir We hereby agree to pay you the sum of twenty five cents for lineal foot for all the bridges we build after this date & which come under your Patent of 1867, said royalty to continue only while your Patent remains in force[79]

This note was signed by K.J Chase and Henry A. Williams, Proprietors of the bridge company. E.W. Eckert is on the letter head as engineer at this time. This note suggests that although Davenport was no longer with the company, he still retained patent rights. A second note written on March 26, 1881 details a Memoranda of Interest due on notes of E.W. Eckert held by Jos. Davenport, Esqr. The letterhead for this memoranda of interest lists Edward W. Eckert as engineer, Henry A. Williams and John E. McLain with a detail box noting the company as manufacturers of Bridges, roofs, turntables and general iron structures. It is unclear whether in the four year period between 1879 and 1881 the company expanded to general iron structures or whether the original letterhead only mentioned bridges. A historical photograph provided by the Massillon Museum depicts the erection of a steel structure with the advertisement for the Massillon Bridge & Structural Company[80]. Finally a newspaper clipping from 1941 describes a cantilever bridge built at White Pass, Yukon Range, Alaska indicates that the bridge was built in Massillon by the Massillon Bridge Company later known as the Fort Pitt Bridge Company[81].

The Massillon Bridge Company was a major and important historic bridge company in the State of Ohio. Andrew J. Sprague, a Toledo bridge builder, general contractor, and traveling salesman for the Smith Bridge Company, became interested in the smaller Massillon Company. The Smith Company was formed in 1870 and focused on patented wood bridges and composite trusses[82]. The Massillon Bridge Company reorganized in 1881 with Sprague as President. Sprague continued to maintain his Toledo address[83]. The merged Smith and Massillon Company, The Massillon Bridge Company, continued to focus on bridges with the Toledo shop focusing on wood structures and the Massillon shop focusing on fabricating iron bridges[84]. Capital was $75,000 with A.S. Sprague, president, H.A. Williams vice-president, W.C. Jacobs, secretary and treasurer, and J.H. Hilton, superintendent. An advertisement in the Ohio Society of Surveyors and Civil Engineers, 1895, places the Massillon Bridge Company in both Massillon and Toledo. The company is toted "Builders of iron, steel, combination and Howe Truss Bridges, for Railroads and Highways and Structural Steel and Iron Work"[85]. Plans and estimates appear to originate from the Toledo office. The advertisement also indicates that there was a Chicago Office at 664 Rookery[86]. The Forest Home Bridge may have been ordered through the Chicago office. By 1903, capital was increased to $150,000 [87]. The merged firm continued to construct bridges until Sprague's death in 1905. In 1909 the company reformulated as the Toledo-Massillon Bridge Company[88]. However, another source indicates that the company reconstituted as the Massillon Bridge and Structural Company[89]. Elton Rice was president and general manager, J.C. Corns, vice-president and C.D. Yost was the secretary and treasurer, according to Heald. The company capital was increased to $450,000. The great depression caused liquidation and the company became a plant for the Fort Pitt Bridge Works with Yost as the manager. In 1938 De La Grand Gregory became manager and in 1942 A.D. Graves chief engineer. The Massillon plant of the Fort Pitt Bridge Company was sold in 1943[90]. The bridge building industry ended after

seventy four years in Massillon.

The Massillon Bridge Company in its various incorporations is well known for its detailing. Very common on their bridges, is a D-shaped connector that was designed to attach three separate members at a single point on the top chord. This is a feature only used by this company[91]. Neither of the Forest Home trusses utilize the D-shaped connector as is apparent in the accompanying HAER photographs. Present in both of the Forest Home trusses is the latticework for the portal bracing. This latticework is comprised of flat members instead of the rod-like members typically utilized in Massillon Bridges[92].

The Forest Home trusses are relatively short span bridges, 124' 6". Tension members on Whipple truss bridges or Pratt through truss are proportioned according to a formula devised after the Civil War by a prominent civil engineer C. Charles Shaler [93]. Diagonals increase in section towards the end, while the lower chord eyebars are largest in the center panels. In other words the long diagonals should get thinner towards the center of the truss while the opposite is true for the lower chord eyebars. Simmons also noted that the majority of Massillon trusses were pony trusses and he never has encountered a Massillon bedstead truss (Simmons personal communication September 1999).

The suggestion that a company representative supervised the Forest Home Cemetery Massillon Bridge construction by day laborers is supported by a review of advertisements in a few professional magazines between 1895 and 1909. Advertisements in the Ohio Society of Surveyors and Civil Engineers explain the lack of information on private bridges in the late nineteenth and early twentieth century. The Iron Substructure Co., located in Columbus advertises that "Small steel bridges from 20 to 60 feet in length kept in stock for immediate shipment[94]. Another 1909 advertisement in Park and Cemetery reads, "Artistic and Practical Designs for Park and Cemetery BRIDGES"[95] . This advertisement also notes that "Standard designs for reinforced concrete highway bridges under 50 foot span, References and terms available on request"[96]. It could be argued that private bridges conform to environmental setting and are thus are usually subsumed by designed historic landscapes, rural landscapes or by historic districts.

An Iron Substructure Company advertisement claims that "Substructures of Cast Iron Pile and better and cheaper than any other plan. We have built hundreds of them in all kinds of places. When your stone work falls down, do as others do, send for us[97]. It is unclear whether the Forest Home trusses were uncased bored piles, first made in about 1905[98]. It is also possible that the Forest Home trusses were timber, reinforced or prestressed concrete post driven into the ground as a bored pile[99]. The Haase family would have been well aware of the adage "Wood will rot, sewer pipe will break, stone will crumble, frost will loosed stones, the covering will break, dirt will sift thro' and fill it up, other kinds of iron will rust"[100].

The Directory of American Bridge-Building Directory of 1840 through 1900 lists the Massillon

Bridge Company dates of operation between 1869 and 1901. The company was established in 1869 as the Massillon Iron Bridge Company. The company incorporated in 1887 and the name may have been changed at that time to the Massillon Bridge Company. The Annual Operating Capacity in units of 1,000 long tons is noted as 6.0 1894, 8.0 1896, 8.0 1898 and 8.0 in 1903[101]. The discrepancy between date of operation 1901 and operating capacity in 1903 are not explainable.

The Library of Congress, Prints and Photograph Division forwarded the narrative pages for two HAER projects listing the Massillon Bridge Company and the Toledo-Massillon Bridge Company as Fabricators. Neither presented a historical narrative of the Massillon Bridge Company. David Simmons, historic bridge specialist, Ohio Historical Society indicated that no archives were known to house the Massillon Bridge Company papers.

Summer 1908 and Fall 1908 Bridges

The interment books log the progression from the 1895 single drive bridge to its present configuration of two bridges and a double drive system. Visual inspection of the south bridge did not encounter a bridge plate, nor is a bridge plate missing as is on the west approach of the 1895 bridge. Embossed on the vertical end posts of the south bridge is "Carnegie, Illinois". It seems likely that these steel vertical end posts were manufactured in the local south side steel mills.

Summer 1908 Built piers for bridge
South side complete and north side raised
Price $3,500 not including piers

Fall 1908 Built south bridge, steel stringers in old bridge and 2 east approaches

1912-Nov. 13th Replanked bridges

1919-Aug. 8th North bridge planked long way with fir

1919-Sept. 10th South bridge planked long way with Norway pine

Fall 1919 Planked bridge lengthwise

1923 In fall we planked both bridges all with Norway pine, no nailing pieces on driveway. Drive planked with 3" X 8" X 10' dipped in Cabots preservative (Preservo) from Warners. Top planks 2" X 12" X 16' painted with Barrett & Co's Carbosoto. Sidewalk new stringers 3" X 12" X 22', top painted with Preservo. West approach stringers 3" X 14" X 16' top painted with Preservo. Sidewalks 2" X 12" Norway pine.

The interment books do not discuss painting the bridges green. Layers of paint on the bridges would seem to indicate that these bridges have been painted numerous times. This would have

reduced the weathering of the bridges. According to The Illinois Highway Commission, to which Leo Haase had been elected to in 1884, "The importance of keeping steel bridges painted is not often given proper consideration..." [102]. It was observed that it was the exception rather than the rule to see steel bridges sufficiently painted to avoid rust. The shift to reinforce concrete for abutments and bridges was seen as an alternative to the maintenance required by steel bridges. Common sense, in terms of how often a bridge ought to be painted, was to paint as often as the steel showed signs of rust.

As previously mentioned, the two bridges are comprised of different materials. The material common in the time period of 1880-1894 was wrought iron and the common design was compression members of built-up sections (sections riveted together from plates and angles); tension members of round and rectangular bars, members pin connected at the joints. The material common in the time period of 1894-1911 was steel and the design was compression and tension members of built up sections (plates and angles) and members pin connected at the joints[103].

The organization of the bridge department of the State Highway Commission was established in 1906. The Illinois Highway Commission Annual Report for 1908-1909 spoke to the demand for advice on bridge matters. The commission inspected in 26 bridges in 1906, 156 bridges in 1907, 198 bridges in 1908 and in 135 bridges in 1909. This also heralded the development of standard plans and a systemization of work. Standards were recognized to be rapidly developing and the standards were to be constantly revised to keep abreast of modern engineering practice [104].

The Carnegie Steel vertical end posts may have been manufactured in the steel mills on Chicago's south side. The Carnegie Steel Corporation is a company that was not directly examined in the context of this HAER documentation. It is also not known if these vertical end posts were the original posts for the 1908 construction or if the posts were ever replaced.

PART II. ENGINEERING INFORMATION

A. Architectural Character: The bridges, although constructed at two different times, are good representatives of Pratt through trusses. The 1895, north, Massillon Bridge is likely constructed of wrought iron and the 1908, south, Carnegie I-beam bridge is constructed of steel.

B. Condition of Fabric: The condition of fabric was conducted and evaluated by Paul Virgilio, S.E., P.E.[105]. The general condition of both bridge structures is poor. The different components of the structure are in various stages of deterioration. The approach spans are in poor shape and need to be replaced. The timber stringers of the west approach span are severely rotted, particularly at the foundation bearing points. The steel stringers at the east approach span are also very seriously deteriorated. The top flanges of the stringers are severely corroded, which has reduced their load carrying capacity. The wood decking at both approach spans must also be replaced.

The piers are in relatively good condition. There are some horizontal and vertical cracks in the piers, particularly towards the tops of the piers at the approach span stringer bearing points and at the main truss bearing points. The abutments are in relatively poor shape. The west abutment has significant spalling of its surface and large cracks. The bearing surfaces of both abutments and both piers are in poor condition with spalled, chipped and cracked surfaces.

The main support structures of both spans are in relatively poor condition. The cross beams supporting the main deck stringers are severely corroded at the connections to the trusses. The deck stringers are in good condition, except at the connections to the cross beams. Many of the pin type connections of the bottom chords are also very seriously corroded, including the segments of the vertical channel webs connected by the pins. The bar shapes of the bottom chords and diagonals are in generally good condition.

The top chord of each truss is also very deteriorated. The rivets connecting the continuous plates to the channels have corroded and expanded, causing distortion in the plates. While the top chord gusset plate connections are generally in good condition, some have corroded. There is also serious corrosion of the connections of the cross ties between the truss top chords.

C. Description of superstructure: The bridges appear visually to be twin trusses until the detail of the superstructure is outlined. The bridge manufacturers are different and the measurements are different as are some of the details of bridge design.

Both the north and south bridges main span is approximately one hundred twenty six feet long. The steel trusses supporting the main span of each bridge are Pratt type trusses. The truss top chords are double back-to-back channels. The channels are tied with an open lattice on the bottom and continuous riveted steel plates along the top. The truss bottom chords consist of double steel bars. The vertical members are double back-to-back latticed channels. The diagonal members are tension-only members consisting of double steel bars. The truss bottom chords, verticals and diagonals are connected with a pin assembly. The truss top chords, verticals and diagonals are connected with gusset plates.

The portal bracing for the north bridge is 2'4" in length. The bottom lateral bracing extends 6'2" to include the sidewalk. The vertical end post and hip verticals all measure 14'4". The top portal strut is an I beam that measures 10'5" and is approximately .55" wide. The vertical end posts and the hip verticals are I beams with flat rods that are aligned horizontally to each other. The north bridge bottom and top chords measure consistently 20'3" for all six panels. The gusset plate is missing on panels two through five beginning in the east through the west.

The portal bracing for the south bridge is 4'2" in length. The top portal strut is an I beam that measures 10'5" and .45" wide. The south bridge top lateral bracing is crisscrossed and measures 23'3"and the bottom lateral bracing measures the same. The bottom lateral bracing does not include the sidewalk. The vertical end post and hip verticals all measure 14'4", identical in height to the north bridge, thus, again giving the illusion that these are twin trusses. The vertical end posts and the hip verticals are I beams with flat rods that zig zag. The south bridge bottom and top chord is an I beam 21'1" in length, first panel after the east approach. The second through fifth panel chords are double measuring 20'3" that consist of an I beam with gusset plate missing. The last panel prior to the west approach consists of a bottom and top chord that measure 20'1".

The truss diagonal rods east to west on the both bridges measure 25'. The first two panels are single truss diagonals (1st, 2nd, 5th and 6th panels), the 3rd panel is a double truss diagonal as is the 4th . The 3rd and 4th double truss diagonals are in opposition to each other. Each panel for each bridge is a mirror reflection of its paired panels.

The differentiation between the bridges that distinguish them as individuals and not twins is in the width of the vertical end posts and hip verticals. The south vertical end post width measures 1'5" and the north vertical end post width measures 1'. The 5" difference is minimal and initially the two bridges appear to be the same.

1. Connecting Sidewalk: The bridges upon first glance appear to be twin trusses. This impression is exacerbated by a wooden platform sidewalk between the two bridges. The wooden platform sidewalk, in fact, only visually joins the two bridges. Actual field measurement of the two bridges illustrates that the bridges are similar but different. The sidewalk viewed from the underside of the substructure confirms that the sidewalk spans the two bridges. An approximately three and a half feet gap is between the two bridges (SEE HAER Photograph No.CK-1999-4.5). The wooden sidewalk is planked with the planks length lying north-south. The width of the planks is .85' and the sidewalk is 4' wide. The north-south length orientation gives decorative detail in opposition to the plank length of the main span and the approaches.

D. Description of substructure: The framing for the west approach span consists of heavy timber stringers supporting a wooden deck. The framing for the east approach span consists of structural steel stringers also supporting a wood deck. The main span consists of two 14'-6' deep structural steel trusses supporting a system of steel cross beams. The steel cross beams support longitudinal stringers which in turn support a wooden deck.

1. North Sidewalk: The north sidewalk is extended from the substructure of the bridge by a series of I-beam extenders. The north sidewalk runs parallel to the north or Massillon Bridge. The sidewalk measures 4'2". A total of eight panels

ran parallel to the bridge, two are currently in the Des Plaines River. The length of each panel is approximately 21' . The top rail is round with a flat bottom rail with decorative twisted iron posts. There are twenty four decorative posts to a panel that are doubled twisted on themselves. Each post is bent angled to meet and form a triangle with the adjoining post at the top and bottom rail. The height of the panels is 3'8". The railing appears to be identical to the railing depicted in the historic photographs on both sidewalks. The identical railing on the south of the 1895 bridge is no longer present.

2. South Sidewalk: The south sidewalk is extended from the substructure of the bridge by a series of I-beam extenders. The south sidewalk runs parallel to the south bridge. The sidewalk measures 3' wide. A total of 17 panels ran parallel to the bridge, there are only 15.5 panels currently present. The length of each panel is 8'2". Two thick rectangular rods form the top and bottom rails with 18 thin rods forming the decorative posts. The height of the posts is 5'7". It is assumed that these rails are either contemporaneous with or post date the 1908 bridge. It is not known why this sidewalk is not decoratively uniform with the north sidewalk.

E. Description of piers: The bridge piers are concrete. There is an east and west pier that are located at the current level of the Des Plaines River. During the spring season, it is likely that these piers are submerged. The piers appear to have been poured in at least three separate episodes. The separate episodes are defined by two levels of concrete, an upper level and a lower level. The upper level is also divided in half corresponding to the substructure of the Massillon and the south bridge.

The upper level concrete for the Massillon Bridge consists of aggregate that is noticeably different from the concrete underneath the south bridge. The Massillon upper level concrete aggregate, in general, is coarser and is approximately 1 to 2 inches in class size. The upper level of the south bridge concrete aggregate, in contrast, is smoother and is approximately ½ to 1" in class size. The lower level of concrete aggregate is also smoother and is approximately ½ to 1" in class size.

The lower level of concrete appears to have been laid in a series of pours of approximately one foot increments. The upper level of the south bridge also appears to have been a series of pours of approximately one foot increments. Conversely, the upper level of the Massillon Bridge appears to have been one continuous pour (no obvious layering is defined).

The interpretation of differential aggregate class size and differential pour layers is that there were different episodes of construction. This is not unexpected, however, the expectation is that the coarser aggregate would be the older and thus the lower level aggregate. Older coarser aggregate is technologically less cohesive than smoother

aggregate that is more cohesive. This initial field observation was baffling. Subsequently, historic photographs and the interment book log were examined.

In reality, the 1895 Massillon Bridge was “raised” as the second 1908 bridge was constructed. It is hypothesized that the 1895 bridge and its existing pier were “raised” simultaneously. Thus, the coarser aggregate, the older technological aggregate, is the upper level of the 1895 bridge.

The smoother and smaller class size aggregate, the more recent technological aggregate, was utilized to construct the lower level and the upper level of the 1908 bridge. Separation is occurring at the interface between the upper and lower level concrete aggregates as well as at the interface between pour layers. The separation is most pronounced at the interface between the upper level halves. The separation is most pronounced between the upper level halves for two reasons. First, the class size aggregate is different and second, the strength from a single continuous pour is lacking.

F. Description of abutments: The bridge abutments are fieldstone. The south bridge is mortared over with a thin veneer of cement. The north bridge fieldstone is mortared. Each abutment also has two side cement angle panels that measure 10'6". Historic notes regarding bridge construction indicate that the north bridge was “raised” and the pier built underneath the raised structure. This is supported by visual inspection of the actual abutments as well as the piers. Both bridge east and west abutments consist of fieldstone directly supporting the steel and timber stringers. The fieldstone for the Massillon Bridge is intertwined and overlapping to provide stronger support for the stringers. The fieldstone for the Massillon Bridge also continues further south, thus, it is wider than the actual bridge. The fieldstone for the south bridge begins one stringer over. The fieldstone for the south bridge does not intertwine with the fieldstone for the Massillon Bridge. Cement mortar joined the two fieldstone piers. The fieldstone is clearly separating along the mortar join. The north bridge was “raised” and then appears to have been lowered to rest upon the fieldstone abutment. Cement between the stringers of the north bridge appears to have been placed by hand. Cement between the stringers on the south bridge appears to have been poured from above.

G. Engineering approaches:
1. East and west approaches: The east road leading to the east approach is concrete and underlain by a brick lined street. The brick street is visible in small to large areas where the cement has worn away. The first brick road was laid in front of the receiving vault in 1893. The first Macadam Road was constructed in 1892 as the north main drive. The west road leading to the west approach is simple concrete and does not have brick underneath. The actual east approach is 9'4" wide for the Massillon bridge. The east approach is 11' wide for the north bridge. The east approach span is twenty eight feet

long and the west approach span is sixteen feet long for both bridges.

The east and west approaches for the Massillon Bridge are simple timber laid lengthwise, on an east west line, and are probably pine. The timbers were painted green and much of the paint is worn away. The timbers are in poor condition and in some places no longer exist. Portions of the stringers are thus visible. The planks measure approximately .9" and there are ten planks.

The east and west approaches for the south bridge are also timber laid lengthwise, on an east to west line, and are probably pine. The planks measure approximately .9" and there are ten planks. The planks appear to have been replaced more recently than those on the Massillon Bridge. In general, the planks are in fair to good condition. These planks are also painted green. Two parallel plates of metal roughly corresponding to the width of a truck or car run the entire span of the south bridge. These metal plates overlap and are nailed together at the joins and the sides. The metal plates are approximately two feet in width.

H. Site:

1. General Setting and orientation: The bridges are located within the Forest Home Cemetery spanning the Des Plaines River. The bridges are aligned generally east to west. East and west of the river contain portions of the early cemetery. The areas surrounding the bridges are entirely within the designed historic landscape lawn-park type cemetery. The Forest Home Cemetery is bounded on the north by the Eisenhower Expressway, the east by Des Plaines Avenue, the west by 1st Avenue and the south by Roosevelt Road.

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