NPS Form 10-900
(Rev. 10-90)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Nomination 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 any 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 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Manning Water Tower

other names/site number

2. Location

street & number 620 Third Street not for publication N/A

city or town Manning vicinity N/A

state Iowa code IA county Carroll code 027 zip code 51455

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this X 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 X meets ____ does not meet the National Register Criteria. I recommend that this property be considered significant ___ nationally ___ statewide X locally. (___ See continuation sheet for additional comments.)

Signature of certifying official — Date: 8 APRIL 2016

State Historical Society of Iowa
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 or other official — Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:

Signature of Keeper — Date of Action: 5.31.16

- [x] entered in the National Register
  - [ ] 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
(Check as many boxes as apply)

- ☐ private
- **X** public-local
- ☐ public-State
- ☐ public-Federal

Category of Property
(Check only one box)

- ☐ building(s)
- ☐ district
- ☐ site
- **X** structure
- ☐ object

Number of Resources within Property
(do not include previously listed resources in count)

Contributing	Noncontributing	
		buildings
		sites
1	0	structures
		objects
1	0	Total

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

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

INDUSTRY/PROCESSING/EXTRACTION/Water Works

Current Functions
(Enter categories from instructions)

INDUSTRY/PROCESSING/EXTRACTION/Water Works

7. Description

Architectural Classification
(Enter categories from instructions)

OTHER/steel water tower

Materials
(Enter categories from instructions)

foundation CONCRETE
walls STONE/limestone
roof METAL/steel
other METAL/iron

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.)

Property is:

- ☐ 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.

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

Areas of Significance
(Enter categories from instructions)

ENGINEERING

Period of Significance

1903

Significant Dates

1903

Significant Person
(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

Architect/Builder

Marston, Anson

Chicago Bridge and Iron Co.

9. Major Bibliographical References

Bibliography
(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
- ☐ Local government
- ☐ University
- ☐ Other

Name of repository: _____

10. Geographical Data

Acreage of Property Less than one acre

LAT/LONG References (NAD83)
(Place additional UTM references on a continuation sheet)

	Zone	Latitude	Longitude		Zone	Easting	Northing
1	15	41.90885	-95.06316	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 Region XII COG, Allan Eich/commission member, and Leah D. Rogers/consultant-Tallgrass Historians L.C.

organization Manning Historic Preservation Commission date October 21, 2015

street & number 717 Third Street telephone 712-655-2176

city or town Manning state IA zip code 51455

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 Owner

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

name City of Manning

street & number 717 Third Street telephone 712-655-2176

city or town Manning state IA zip code 51455

7. Narrative Description

SUMMARY DESCRIPTION

The City of Manning is located in the southwest corner of Carroll County in west-central Iowa. The Manning Water Tower stands in the center of town on a high point overlooking the main commercial area to the west. The positioning of the water tower on the high point in Manning means that it can be seen from most views in the town and identifies the town from a distance. It sits on a small lot that is surrounded by residential properties on the west, south, and east sides but fronts Third Street on the north side of the property. This tower is a community landmark (Figure 1). It is located in the block just east of the Manning Commercial Historic District (National Register of Historic Places listing in progress in 2015) but is not within the boundaries of that district because of its residential surroundings (Figure 2).

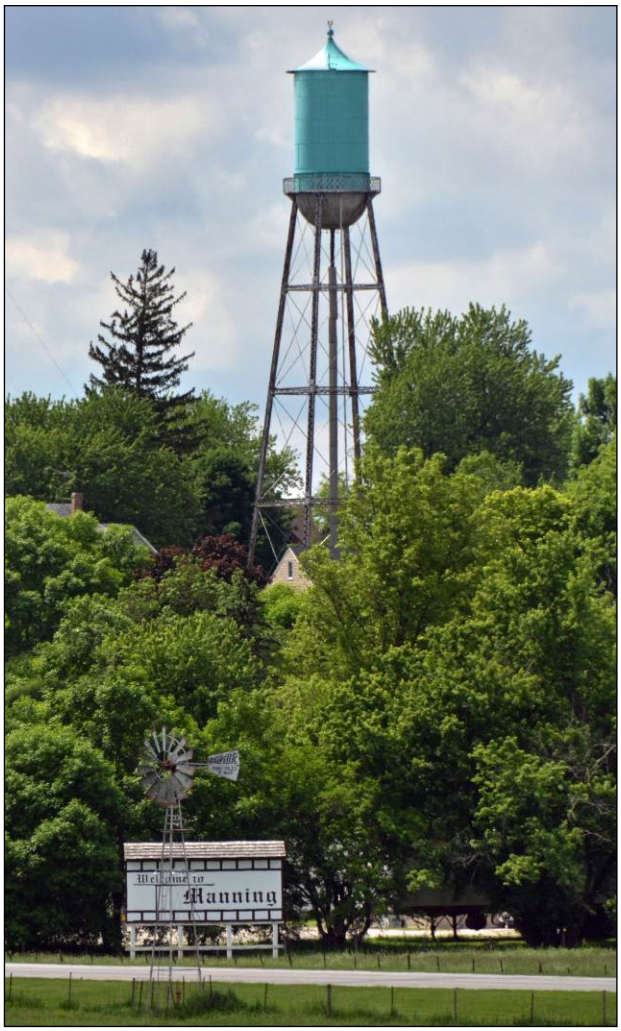

Figure 1. Manning Water Tower looking to the northeast from the east edge of Manning. Photograph taken by Judy Jacobsen in 2014.

The Manning Water Tower is an elevated water tower that has a riveted steel framework and tank and a cast-iron center pipe that extends into the hemispherical base of the tank. The large steel legs feature cross pieces that have a zig-zag pattern extending up each leg and in-between the legs up to the tank. Some of the steel sections are impressed with "CARNEGIE" the mark of the Carnegie Steel Company of Pittsburg, Pennsylvania. The only modification to the legs has been the addition of steel plates to the lower portion of the exterior sides to prevent children from climbing up the tower legs.

The tank was originally painted silver and has a pagoda-shaped steel roof. The tank is currently painted an aqua color (see Figure 1). A steel latticework railing surrounds the walkway circling the base of the tank. The tank storage capacity is 60,000 gallons.

The superstructure of the tower rests on concrete piers with limestone capstones. The capstones have rusticated or quarry-faced sides with tooled edges. The basic structure is 100 feet high from the top of the capstones to the railing. The tank measures 28 feet, 9½ inches to the top edge of the tank, with the roof adding another 12 feet to the height for a total tower elevation of 140 feet 9½ inches. The tank is 17 feet, 3 inches in diameter, with the roof having a radius of 12 feet from the edge

of the tank to the center point of the steel roof. By the 1970s, the edge of the pagoda roof had been reduced by 12 inches because of deterioration. Maguire Iron did the cutting work. The original cast iron ball finial is at the peak of the pagoda roof.

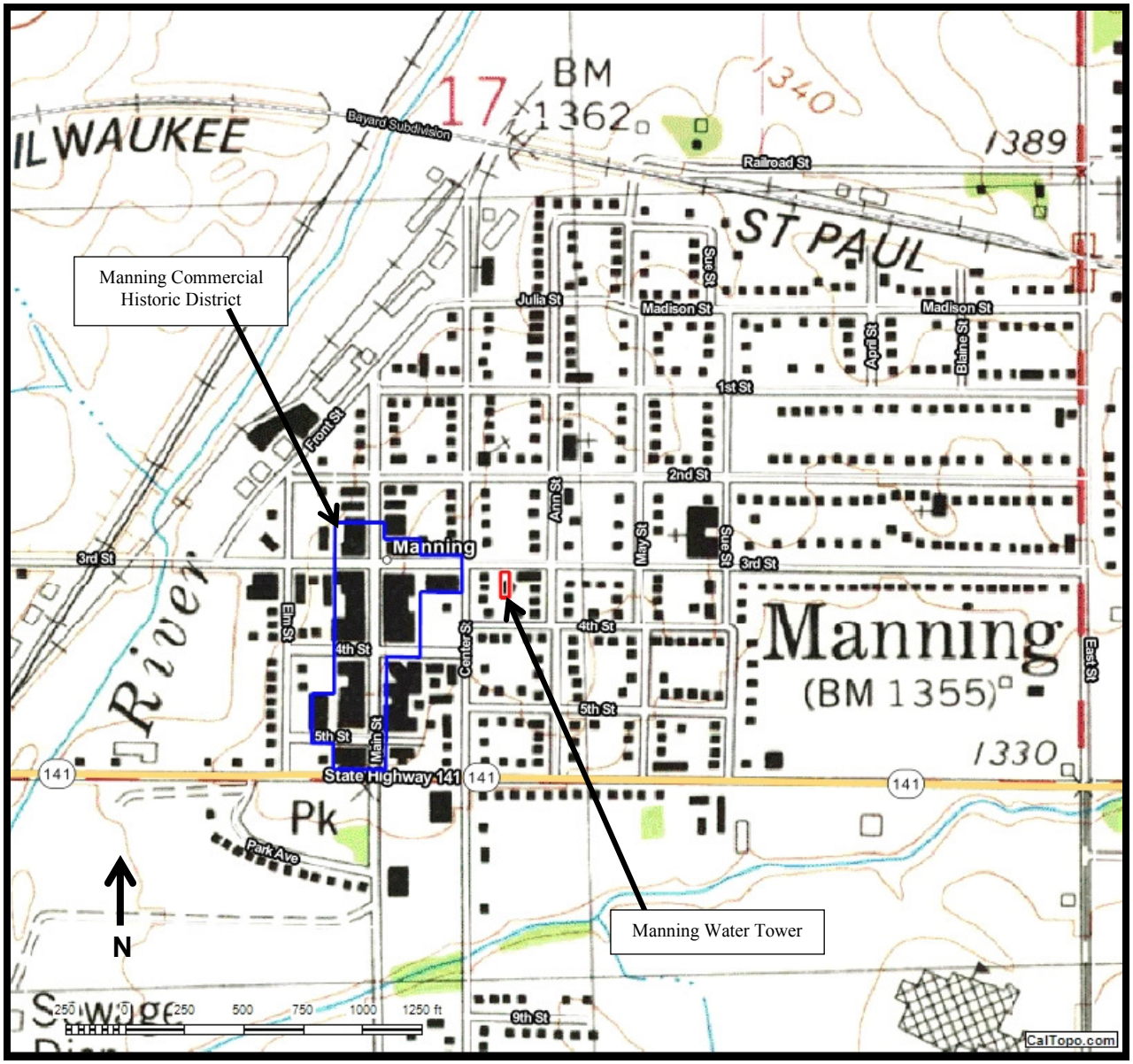

Figure 2. Topographic location of Manning Water Tower in relation to the Manning Commercial Historic District. Source: USGS Manning Quadrangle, 1978, obtained from ExpertGPS mapping software, 2015.

INTEGRITY OF THE MANNING WATER TOWER

The Manning Water Tower retains overall good integrity and is an excellent representation of an early 1900s elevated water tower in small-town Iowa. It retains a moderate to high degree of integrity of the following seven aspects of historic integrity:

Location - The Manning Water Tower retains a high degree of integrity of location because this is the place where the water tower was built in 1903 and where it has served the community's water and fire protection needs for over 100 years.

Design - The structure retains moderate to good integrity of design because the original design of the water tower as it was built in 1903 is still largely intact except for the reduction of the roof edge by 12 inches in later years, the painting of the tank in a different color than it had originally, and the addition of steel plates to the exterior of the lower legs to prevent children from climbing up the legs. Historically, the water tower also had a bell on it to warn of emergencies. The bell has been replaced with an emergency siren.

Setting - The structure retains good integrity of setting because the surrounding neighborhood has remained residential as it was in 1903, with the water tower still occupying a small lot that fronts Third Street. Many of the surrounding dwellings also date from around the time that the tower was built in the early 20th century or were already in place prior to its construction.

Materials - The structure retains good integrity of materials because it retains the original steel, cast iron, concrete and stone materials that were used in its construction, with the exception of the above-noted 12-inch reduction in the overhang of the tank roof and the later addition of steel plates to the lower exterior sides of the legs.

Workmanship - The structure retains good integrity of workmanship, with the water tower conveying the original riveted steel design as built in 1903 by the Chicago Bridge and Iron Co. with the assistance of local contractors. It also reflects the design by Anson Marston, engineering professor and soon-to-be Dean of Engineering at what was then the Iowa State College of Agricultural and Mechanic Arts and is now Iowa State University in Ames.

Feeling - The structure retains good integrity of feeling, with the water tower able to convey the aesthetic and historic sense of an early 1900s elevated water tower in small-town Iowa.

Association - The structure retains a high degree of integrity of association because this was the location where the tower was built and provided the community with water and fire protection for over 100 years. While it is no longer in use, it has served as a back-up water source within the last ten years and could serve this purpose again with some repairs. The tower is considered a landmark in the community and the City wishes to maintain and preserve the structure for posterity. It serves as a symbol of Manning's history of progressiveness because the elevated water tower was an innovative design at the time it was built and continued to be a favored design for water tower construction for several decades after it was built.

FUTURE PLANS

In the future, the Manning City Council plans to repaint the water tower including lead paint abatement. There has been some discussion on repairing the roof overhang to restore the proportions of the tower's original design; however, that rehabilitation will be dependent upon cost and funding resources.

8. Narrative Statement of Significance

STATEMENT OF SIGNIFICANCE

The Manning Water Tower is locally significant under Criterion C as an excellent example of steel elevated water tower engineering and design in the early 1900s. It is also significant for its representation of an early water tower design by engineering professor Anson Marston of the Iowa State College in Ames and for its construction by the Chicago Bridge and Iron Co., also well known for their construction of innovative elevated water towers in the 1890s to early 1900s. The water tower is also associated with Henry J. Brunnier, who was born and raised in Manning and earned his degree in civil engineering at Iowa State College under the tutelage of Anson Marston. It was Brunnier who urged the Manning City Council to build an elevated water tower of Marston's design rather than a standpipe at a time when the standpipe would have been a less expensive alternative. Brunnier assisted Marston in the design of the Manning Water Tower and went on to have his own storied career as a structural engineer in San Francisco. The period of significance and the significant date for the Manning Water Tower is 1903, the year that it was built.

HISTORY OF MANNING AND ITS WATER SYSTEM

The Manning Water Tower is located in the City of Manning, which was established in 1881 in the southwest corner of Carroll County along a branch line of the Chicago and North Western (C&NW) railroad known as the Iowa Southwestern line. One of the men responsible for the location of the branch line was Carroll attorney O.H. Manning, who had served as state representative in the Iowa Legislature and had been chair of the House Committee on Railroads. In 1881, Manning worked directly for the railroad as attorney for the Iowa Southwestern branch and as local representative of the Western Town Lot Company (a subsidiary of the C&NW). After the surveyors selected Section 17 in Warren Township as the junction point for the two branches of the Iowa Southwestern, O.H. Manning purchased the SW quarter for the Western Town Lot Company and platted a new town along the east side of the West Nishnabotna River just northeast of the confluence of Willow Creek. The new town was to be "situated on a commanding eminence, overlooking a beautiful country of rolling hills and winding valleys, rich beyond measure in soil and agricultural resources" (Iowa Publishing 1906:111). The town was soon named in honor of Manning, who was elected lieutenant governor of Iowa later that year (History Book Committee and Art Rix, ed.1981:8; Maclean 1912:241; Robb 1900:1-3).

Meanwhile, the Chicago, Milwaukee & St. Paul Railway (CM&StP) was also building its main line across Iowa, south of, and parallel to, the C&NW. In 1881, the CM&StP had selected its route through the southern townships of Carroll County, a trajectory that made it necessary to cross the Iowa Southwestern branch line at the brand new town of Manning (History Book Committee and Art Rix, ed. 1981:9). In the summer of 1881, the C&NW built railroad facilities at Manning including a substantial yard and comfortable depot (*Manning Monitor*, 11/17/1881).

The town plat was filed, and on July 28, 1881, lot sales began, some of which were purchased by residents of nearby towns who had caught what one newspaper dubbed "the Manning fever" (*Atlantic Daily Telegraph*, 08/16/1881). By mid-August, "four buildings were in the process of erection" (History Book Committee and Art Rix, ed.1981:12). The first building completed was a combination grocery and hardware store, saloon, and doctor's office. The daily train brought building and other materials and made Manning a boom town. By the end of 1881, the population had grown to

515, and the business district of Manning contained 112 buildings, 69 of which were business blocks and the remainder dwellings.

On February 17, 1882, Manning citizens voted overwhelmingly for incorporation. I.W. Callamore was elected Manning's first mayor, along with other city officials and members of the first town council. The town council met for the first time on May 15, 1882 (History Book Committee and Art Rix, ed.1981:15; Robb 1900:8, 26). By November 1882, Manning could boast of one bank, one newspaper, four hotels, a restaurant-bakery and two confectionaries, three groceries, six dry goods & general stores, three millineries, two drug stores, a jewelry store, two furniture dealers, a clothing store, five hardware stores, two implement dealers, two harness and saddle shops, four lumber dealers, a coal dealer, at least half-dozen saloons, six grain dealers, a flour and feed exchange, three livery barns, two veterinarians, two dentists, four physicians, seven lawyers, one real estate agency, two dressmakers, a photographer, five builders and contractors, four painters, a machine shop, three blacksmiths, two wagon makers, two barbers, numerous dray and delivery services, a flour mill, a broom factory, a shoe shop, and two second-floor meeting halls (*Manning Monitor*, 11/23/1882, reprinted 8/16/1956; see also Robb 1900:107-8).

Over the next 30 years, the population of Manning grew slowly, but steadily. In 1890, the town claimed 1,133 residents; in 1900, 1,169; and in 1910, 1,434. Building in Manning's business district continued apace. By 1912, Manning was the second largest town in Carroll County (Maclean 1912:241-2).

With this growth, the basic needs of the community's residents and business owners grew as well. A devastating fire on Main Street on April 16, 1882, destroyed 13 commercial buildings, dramatically illustrating the need for an adequate water source for firefighting. It also awakened the business owners to the dangers of their frame buildings prompting new construction to be of masonry. Even with this precaution, fires continued to take their toll in Manning including a big fire on May 8, 1891, that claimed nearly all of Block 5 along the east side of Main Street, and another on September 11, 1895, when eight buildings were destroyed in Block 7 (History Book Committee and Art Rix, ed.1981:63).

In response to the 1882 fire, Manning's new town government had a well dug and 4-inch and 6-inch water mains laid down Main Street and the adjoining streets with 14 water hydrants connecting the mains. A windmill with a 20-foot diameter wheel produced the proper amount of pressure. However, in 1894, when Manning's size and population had outgrown the windmill, the town built a pump house with a steam-powered engine and a large water tank near the well (History Book Committee and Art Rix, ed.1981:16). An 1895 map of Manning shows the location of the water tank on the lot where the subject water tower is located (Figure 3). The extant elevated steel water tower was built in 1903 to stabilize and improve the city's water supply and delivery (Figure 4). The city's firefighting abilities also improved with the formal establishment of the Manning Fire Department in 1891. While fires certainly continued to occur, the City now had the ability to contain fires so that whole blocks of buildings were not lost (Manning Quasquicentennial History Book Committee 2006:9). A 1906 map of Manning shows the new water tower directly behind the "Town Hall" indicating that at the time the tower was surrounded by buildings on all sides (Figure 5). This map also shows the location of the city waterworks nearly due south of the tower in-between the railroad tracks and Willow Creek (see Figure 5).

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 **Page** 7 **Property name** Manning Water Tower

County and State Carroll County, IA

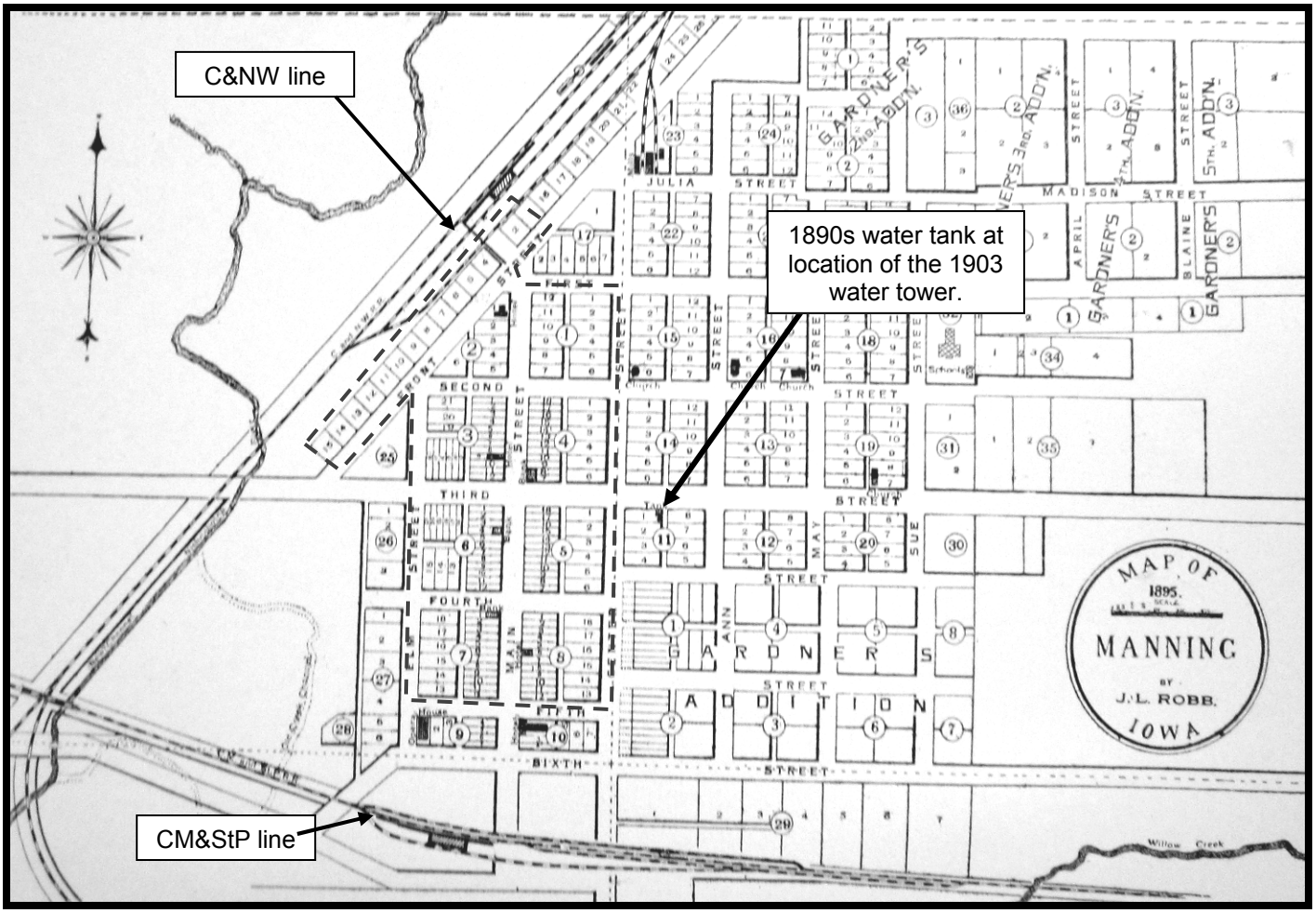

Figure 3. 1895 Map of Manning showing the location of the 1890s water tank at the location of the extant water tower in relation to the original town plat (black dashed outline). Source: Robb 1900

United States Department of the Interior
National Park Service

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Continuation Sheet

Section 8 **Page** 8 **Property name** Manning Water Tower

County and State Carroll County, IA

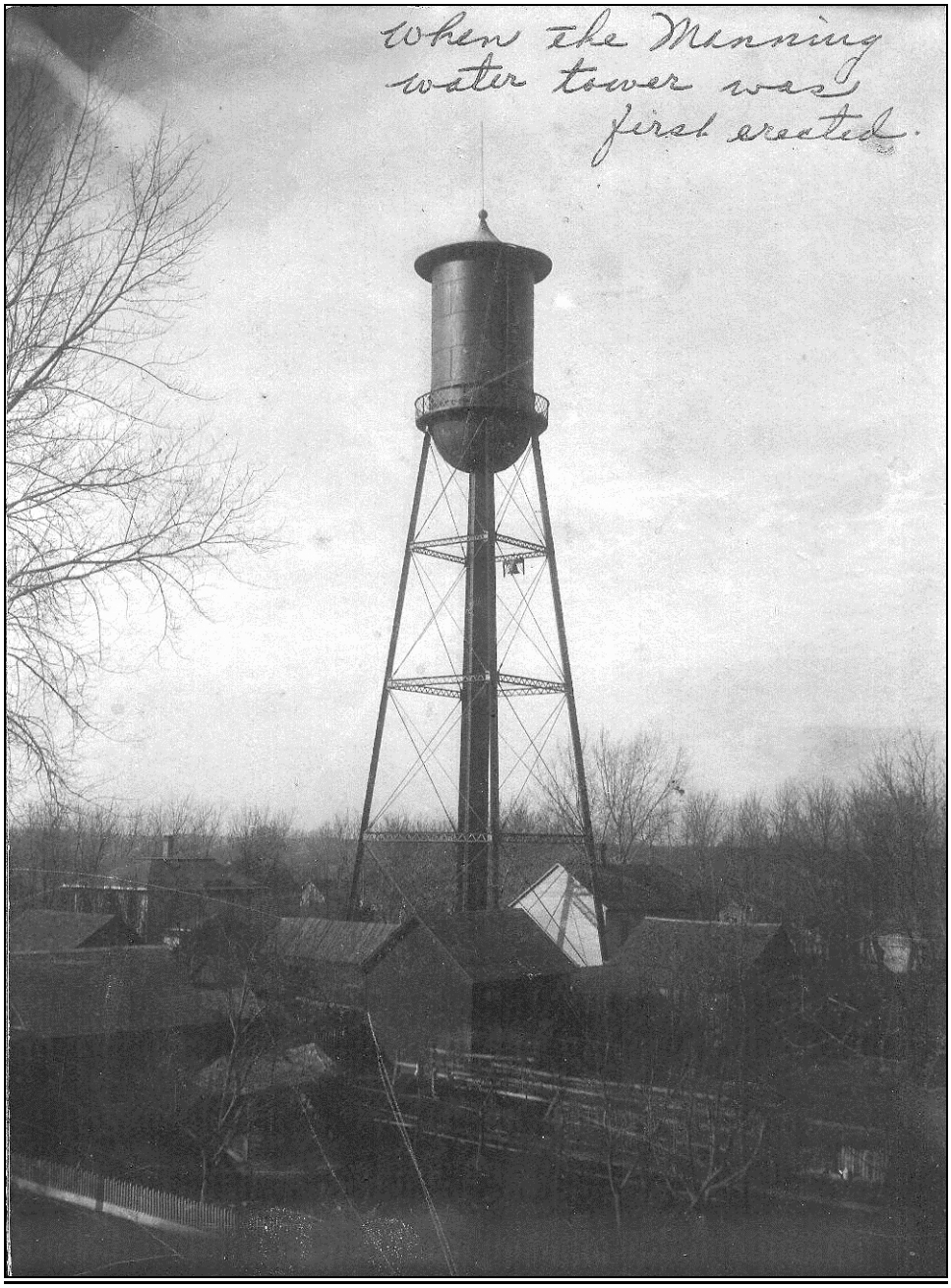

Figure 4. Photograph of the Manning Water Tower circa 1903 looking to the northeast. Copy of photograph provided by the Manning Historic Preservation Commission.

United States Department of the Interior
National Park Service

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Continuation Sheet

Section 8 **Page** 9 **Property name** Manning Water Tower

County and State Carroll County, IA

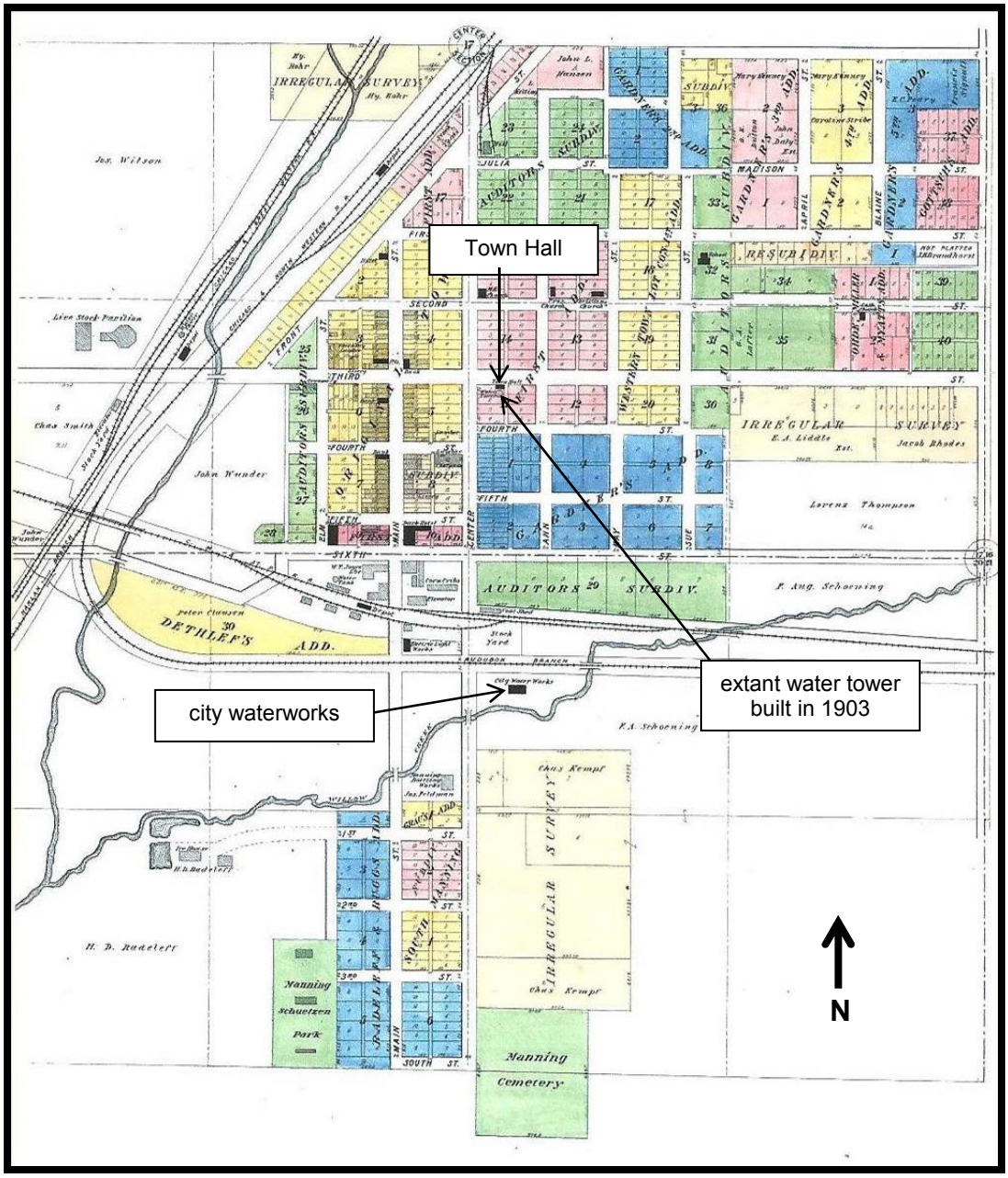

Figure 5. 1906 Plat map of Manning, Iowa, showing the location of the extant water tower (arrow) behind the Town Hall in relation to the city waterworks. Source: Iowa Publishing 1906:51.

HISTORY OF THE MANNING WATER TOWER

Henry J. Brunnier was born on a farm near the town of Manning in 1882, the same year that the town was founded. His father, Martin Brunnier, later had a general merchandising business in Manning in partnership with Martin's brothers. Henry graduated from Manning High School in 1900 and entered Iowa State College that fall (Shea, ed. 2001:1-2). He was reportedly "the first in his town to go to Iowa State College" where "he attended a lecture on the design of water towers by Professor Anson Marston" (ibid.:xiii).

> When Brunnier found out his hometown of Manning, Iowa was planning to put up the type of water tower Marston had inveighed against, Brunnier sold the city council on the advisability of a different design and asked Marston to design it.[1] Throughout college, Brunnier worked part-time for Marston drafting and drawing details. Marston told him that any freshman who could sell a job could work for him anytime. The two became close friends, as well as mentor and pupil. Years later, in 1941, Marston was honored with a medal in his name, and Henry Brunnier was the first recipient" (Shea, ed. 2001:xiii).

The design that Marston "had inveighed against" was a standpipe that the Manning City Council was considering as a replacement for its water tank.[2] He argued that because Iowa's landscape is fairly level, a hemispherical bottom type of elevated tank would be more effective than a standpipe. The disadvantages of the standpipe included low water volume and a potential to collapse when the water in the tank freezes. Brunnier recalled:

> When I went home [to Manning] from college for the summer vacation [following his freshman year], I found that the town council of Manning was planning on building a tall water standpipe. They were going to contract with some blacksmith, who was going to build them a standpipe. I immediately went to the mayor, a banker, who was a great friend of the family, and told him that wasn't the thing to do.
>
> I just repeated the Marston lecture--I didn't know anything about design. The story about the water tank failure excited him, because the standpipe accident in Marston's illustration had happened in the town he [the mayor] was raised in, but he had forgotten about it. So he said, "Will you meet with the council tonight and tell them the story?" I said I would.
>
> So I went that night, and they wanted to know if I'd take the job and design a tank tower for them. You can imagine my situation--just out of the freshman year and not knowing anything about design. I did some quick thinking and said, "I could get Dean Marston to come here--he's a pioneer in this." I thought I could get him to come and do it. So they asked me if I would try to get him to do the job, so he came to Manning and designed the tank, and I made the drawings [his first] (Shea, ed. 2001:3).

During his college years, Brunnier would continue to work with Marston on design plans for other water tanks but

[1] The June 20, 1902 *Manning Monitor* reported that the Manning City Council had heard and accepted a "report of the water works committee regarding water tanks and standpipes." This would have been during Henry Brunnier's second year at Iowa State; therefore, by his own account, his plea to the city council to change their plans from a standpipe to a water tower of Marston's recommended type should already have occurred.

[2] A standpipe is a high vertical pipe into which water is pumped to the height of the pipe in order to produce uniform pressure in a water supply system (Merriam-Webster Dictionary, accessed at http://www.merriam-webster.com/dictionary/standpipe, July 2015).

primarily on the design of sanitary sewerage systems and drainage. He and Marston also "worked on the calculations for a concrete arch bridge in Des Moines" circa 1903-04 (Shea, ed. 2001:4). Following graduation in 1904, Brunnier embarked on an engineering career working first with the American Bridge Company and subsequently with the New York Edison Company and the Ford, Bacon, and Davis Engineering Company. In the wake of the 1906 San Francisco earthquake, Brunnier was sent to assist in the survey and reconstruction of the company's railroad properties damaged during the earthquake. He stayed on in San Francisco where he established his own engineering practice in 1908 and became known for earthquake-resistant designs. He would go on to have a long and successful career including serving as one of a five-member board consulted in the design of the San Francisco-Oakland Bay Bridge. He was also noted for his membership in, and service to, the Rotary Club and Rotary International (Figure 6). He would return to Manning and Carroll County in his later years and give presentations to the local Rotary Clubs. Newspaper notices of his presentations always mentioned that "one of his first engineering projects was the Manning city water tower which still stands" (*Carroll Daily Times Herald*, 09/05/1962; see also *Carroll Times Herald,* 10/29/1968 and 12/29/1970). In 1962, Brunnier and his wife, Ann, donated their extensive art collection to Iowa State University (*Carroll Daily Times Herald,* 07/25/1962). The art museum was named for the Brunniers with a room dedicated to their collection (Shea, ed. 2001:101). Henry Brunnier died on December 10, 1971, never really having retired and had worked in his office on the day he passed away.

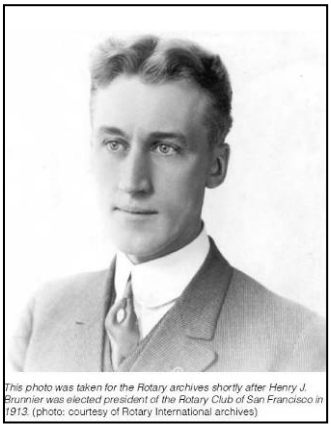

Figure 6. Henry J. Brunnier in 1913. Source: Shea, ed., 2001; courtesy Rotary International Archives.

Anson Marston was born in Illinois in 1864. He received a Construction Engineering degree in 1889 from Cornell University. He worked for a few years for the Missouri Pacific Railroad before joining the staff at Iowa State College in 1892 "as Professor and Head (1892-1917) of the Department of Civil Engineering and later became Dean (1904-1932) of the Division of Engineering" (Anson Marston Papers, Special Collections Department, Iowa State University, biographical note accessed at http://www.add/lib/iastate.edu/spcl/arch/rgrp/11-11-11.html, March 2015) (Figure 7). Marston was named Senior Dean in 1932 before retiring in 1937. He also established and served on the Iowa State Highway Commission from 1904 to 1927. In 1938, Iowa State College established the Marston Medal in his honor to recognize outstanding alumni of the College of Engineering (ibid.). Marston died on October 21, 1949, as the result of injuries he suffered in an automobile accident in Tama County, Iowa (*The Cedar Rapids Gazette,* 10/22/1949).

Figure 7. Anson Marston in 1925.

Source: Iowa State University Library Special Collections Department Blog posted May 30, 2014, at https://isuspecialcollections.wordpress.com/2014/05/30/150-years-of-professor-anson-marston/.

Among Marston's lasting works is the so-called "Marston Water Tower," which was built in 1897 on the Iowa State College campus (Figure 8). "The decision to build the Water Tower came in 1895, one year after a severe water shortage forced the cancellation of classes" (Reis n.d.). The tower "was the first elevated steel water tower west of the Mississippi" (ibid.). It stands 168 feet in height and has a 40-foot tall, 24-foot diameter tank with a 162,000-gallon capacity. The water tower continued to be used until 1978 when Iowa State switched over to the Ames city water system. The tower was listed in the National Register of Historic Places in 1982 and was restored in 1987. It was named an "American Water Landmark" in 2007 by the American Water Works Association (ibid.). This water tower has some similarities to the smaller tower that Marston designed in the early 1900s for the City of Manning. However, one of the main differences, other than size, is the use of eight legs on an octagonal base imparting a curving support structure in the Marston Water Tower, while the Manning Water Tower has four straight legs on a square base.

Figure 8. Marston Water Tower on the Iowa State College Campus circa 1897. Historical image obtained from www.isualum.org, March 2015.

The Marston Water Tower was "structurally innovative for its time," with Marston breaking "all the standard rules of the day" in its design by "incorporating steel rather than wood and doubling typical load requirements for the age" (Tofillon 1999). Marston explained his design in the *Engineers Report on Waterworks* in 1897: "Eight columns were used in preference to four, in order to bring the task placed upon the metal of the tank shell in transmitting the loads to the posts well within the limits which existing structures have shown to be safe" (ibid.). Marston also intended the tower to "serve as an object lesson, both to the citizens of the state and to hundreds of young engineers" (Christian 1982:Section 8).

> Its height and capacity were monumental for that time, but were considered necessary for a thriving campus. To provide a durable structure Marston built the tank of steel instead of the wood usually used at that time, and he doubled the minimum strength of the tower for stability. All materials and methods used in construction were subjected to complete testing before, during, and after erection to permit excellence in performance. In order to prevent freezeups, Marston designed a frostproofing apparatus for the inlet pipe to the tower, which was considered quite an innovation for the time (ibid.).

The object lesson obviously worked on engineering student Henry J. Brunnier, who sold the town of Manning on the idea of the elevated water tower design.

The need for a smaller tower at Manning likely dictated the different design in its basic structure. While Marston and Brunnier planned and designed Manning's water tower, there was another player who had a hand in its final structure and design details—the Chicago Bridge and Iron Co., which was contracted to build Manning's water tower. The Chicago Bridge and Iron Co. had also built an early elevated water tank in Fort Dodge, Iowa. In fact, the Fort Dodge Tower was the company's "first steel plate elevated water storage tank" and "was the first built with a full hemispherical

bottom, one of many technical innovations that have marked the company's history" (Chicago Bridge and Iron Co. History, accessed at http://www.cib.com/about-cib/history, March 2015). The Fort Dodge tower had four supporting legs and the storage tank was wider in diameter and perhaps shorter in height than the Marston tower (and that of the Manning water tower) (Figure 9). The Fort Dodge tower is no longer standing.

Figure 9. 1894 Fort Dodge elevated water storage tank built by Chicago Bridge and Iron Co. Undated photograph obtained from http://www.cbi.com/about-cbi/history, March 2015.

The Fort Dodge water tower was reportedly built in 1894, three years before Marston's tower was completed on the Iowa State campus, calling into some question which was truly the first elevated steel water tank west of the Mississippi. In fact, there is a third candidate, the water tower in Laredo, Texas, which was built in 1893 and "is generally considered the first all-steel water tower constructed in the United States" (Mathis and Chlebeck 2012:34). Mathis and Chlebeck (2012:34) have noted of the Marston Water Tower that it was "the largest and tallest water tower in the United States" when it was built. The planning for the Iowa State College water tower began in 1893 when the firm of Jackson & Moss (predecessor to the Pittsburgh-Des Moines Steel Company) "collaborated with their professors from their alma mater" of Iowa State College to build what became known as the Marston Water Tower. Thus, the planning for the tower did begin four years before the tower's completion in 1897. It was further noted that the Marston tower incorporated a "groundbreaking feature…in its use of arched latticed columns, whereby each panel angled outward at a slightly greater angle to create the appearance of a sweeping curve" (ibid.). Also considered new innovations were "the use of a hemispherical bottom, a pagoda roof, and angles to splice the columns to transfer stresses in the rods and struts directly to the columns without secondary stresses" (Foster and Lundgren 1992:9-11; quote from Mathis and Chlebeck 2012:34). The Marston Water Tower may also have had other unique elements in its design to grant it a "first" status. These unique elements included the design of the tank to have a frostproofing apparatus for the inlet pipe to the tower and a heating chamber in which a fire could be built (Christian 1982).

The Fort Dodge Water Tower was designed by "Horace E. Horton of the Chicago Bridge and Iron Works" and he reportedly "improved the design for hemispherical shaped bottoms," with the Fort Dodge tower further described as having been "the first ever, steel plate elevated water storage tank with a full hemispherical shaped bottom" (Mathis and Chlebeck 2012:34). Therefore, which was the actual "first" may hinge on the details of their individual designs and their importance as innovations in the field of water tower construction. It may be that there was some contention as a result that played out in the rather testy correspondence that took place between Anson Marston and the Chicago Bridge and Iron Co. during the construction of the Manning Water Tower. It started with some back and forth between the two when the Chicago Bridge and Iron Co. requested changes in Marston's design for the Manning water tower even before the company submitted a bid.

Examination of the Anson Marston Papers in the Special Collections Department of the Iowa State University Parks Library revealed a folder labeled "Concerning - Manning Water Tower." The letters contained in this file were primarily between Marston and Horace E. Horton of the Chicago Bridge & Iron Co. through Horton's various representatives. On

July 31, 1902, Marston was sending the plans and specifications for the Manning Water Tower to the company and noting that bids were due August 21st. On August 1, 1902, Horton responded with some recommended changes to the plans including the following:

> In hurriedly looking over the plans we note that you are using Zee bar columns and that you have 5" x 5" angle around balcony, also wooden roof. It is very doubtful whether the Zee bars which are not generally carried in stock, could be obtained from the rolling mills in one year from date of order, the same being true of the 5" x 5" angle.
>
> We have some 12" 20-1/2# and 25# channels in stock, also angles which would give the same section as the 5" x 5" angles and presume that you would not object to a change being made. We also wish to inquire if you would not prefer an 1/8" steel roof to the wooden roof?....
>
> We believe that we have you beat on the connection of post to tank. The center of gravity of channels is placed directly below the edge of tank plate and the post runs up on side of tank for connection, the connecting angles are figured sufficiently strong as a beam to take care of the bending moment, due to the load of tank with a lever arm from face of angles to their center of gravity.
>
> We also notice in specifications that you are calling for a quench test on soft steel. The soft steel which we are getting from the Illinois Steel Company will without doubt stand this test. On the other hand we have to pay for flange steel, as noted in the Manufacturers' Standard Specifications, if the quench test is called for (Letter from Horace E. Horton to Anson Marston dated August 1, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).[3]

Marston's response dated August 4, 1902 showed his willingness to make changes in his plans and specifications regarding the substitution of channels for "Z-bar columns and equivalent angles for the 5x5 angles, provided that in the case of the 5x5 angle the flanges are large enough to give two rows of rivets around the tank in the vertical flange and room for three rivets in each connection of the balcony floor girder" (Letter from Anson Marston to the Chicago Bridge & Iron Co. dated August 4, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, he questioned whether the channels that Horton recommended would be heavy enough since the Z-bars that the plans called for would be 53 to 64 pounds in weight. He offered that they "could use 15 inch channels by 33 lbs. or could make up the deficiency by angles" (ibid.). He was actually pleased that they had recommended a steel roof and requested that the company make a separate proposition for the roof to match the

[3] The reference to the Illinois Steel Company and the Carnegie markings on at least some of the steel used in the Manning Water Tower construction may reflect the fact that both of these steel companies had become subsidiaries of the U.S. Steel Corporation in 1901. U.S. Steel was formed by New York banker, J.P. Morgan, who along with Elbert H. Gary, who then owned Federal Steel, purchased Carnegie's steel company and combined it with their other holdings to form the giant corporation of U.S. Steel. The Illinois Steel Company was by then known as Federal Steel (Bensman and Wilson 2005; U.S. Steel Corporation 2015). Therefore, the reference to the Illinois Steel Company in 1902 by Horton and the actual use of steel stamped with "CARNEGIE" in 1903 may simply reflect that both entities were part of the same overarching corporation by 1903. It would appear that as a subsidiary that Carnegie Steel was still allowed to stamp the Carnegie name on their steel. It is known that in 1936, the Carnegie subsidiary company name was changed to the Carnegie-Illinois Steel Company. Therefore, Horton's reference in 1902 to the Illinois Steel Company, and the stamped Carnegie steel he used in the 1903 Manning Water Tower construction, likely reflect the U.S. Steel conglomeration even if he did not refer to it by that name.

curve in his design (ibid.). However, he was not receptive to the changing of the connection of the post to the tank and indicated that his "detail has the advantage of not cutting one flange of the horizontal circular girder forming the floor of balcony as yours does" (ibid.). He did allow that the quench test could be omitted.

On August 22, 1902, a *Manning Monitor* editorial noted the following:

> The City Council let the contract last evening for a new steel tower for the water works, which they expect to erect soon at the expense of $7,700. The contract was let to Horace E. Horton of Chicago. This is quite a surprise as the talk had been all along that $4,000 would erect a steel tower sufficient for Manning years to come and as the town would have $8,000 to extend water mains to the east part of town where the people have no fire protection whatever. We are not in the habit of finding fault, but as the dwellers along east third street, and north of them have been promised they should have the waterworks extended as soon as the town had means to do it, and when the town was bonded for $8,000 to put up a tower and extend the mains east everything seemed all right. Now that they have expended all the money to purchase a tower alone it puts a different phase on the matter. Our petition has been in for some time for the extension of the main, awaiting the time when they would have the money to do it and when they could get the iron, but now it seems we may yet wait another five years and perhaps longer. We would ask is this right? Is it business?

The City Council proceedings for the August 21st meeting as reported in the September 12, 1902 edition of the *Manning Monitor* stated the following:

> Moved and Seconded that the Council accept the bid of Horace E. Horton for the construction of a water tower and tank, as per specification for the sum of seven thousand seven hundred dollars ($7,700). Upon this motion the council voted by yea and nay, each member voting as follows: Grundmeier, yea, Hoffman, yea, Franke, yea, Wilson, nay, Brunnier, yea, Johnson, yea, motion carried.
>
> Moved and seconded that the Mayor and Clerk sign contract which shall be drawed [sic] on the above motion between Horace E. Horton and the town of Manning. Motion carried.

The Brunnier on the City Council was Martin Brunnier, Henry's father. At the same meeting, the Mayor was directed to appoint a committee "to advertise the $8,000 water works bonds and dispose of same in legal way" (*Manning Monitor*, September 12, 1902).

In correspondence dated August 26, 1902, the Chicago Bridge and Iron Co. sent a sketch for a 1/8-inch steel pagoda roof to Marston and noted that they have patterns for a "20[inch] cast iron ball which you may have instead of the 16" copper, if you so desire" (Letter from Horton to Marston dated August 26, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, Horton continued to offer suggestions for changes in the specifications including: making the tank in five rings instead of the proposed six rings; making the bottom out of nine plates; and changing the spacing of rivet rows from two to one. He also offered the Chicago Bridge and Iron Co.'s "standard balcony but making it 2 feet 6 inches wide instead of 2 feet as shown on the working drawing and instead of the "circular girder and plank floor" on the plans (ibid.). Horton was still arguing against the "Zee bar columns" that Marston proposed stating that "according to the American Bridge Company's specifications which you refer to" their design would provide a "stronger post for 28' length than the one which you

show" (ibid.). He further asked for "square rods instead of round ones" for the sway bracing and continued to argue for their recommended changes by stating:

> This Company has been very careful in our details for water towers that we are not obliged to make a water tight joint when riveting through more than two thicknesses of metal. As stated to you, we believe that the connection which we make of post to tank, is a thoroughly good one and as you put the burden of a water tight job on the Contractor, we would most respectfully ask that you allow us this connection. We will leave the 5" x 4" x 3/8" angle around tank at top of post, if you so desire (ibid.).

Horton ended his letter by noting that their "suggestions" were not meant "in any sense to try to save in the cost of work" and "in fact, the work as outlined will cost us more than your original plans" (ibid.). The diagram for the pagoda roof attached to the letter showed a 20-foot radius of 1/8-inch steel and a 20-inch cast iron or 16-inch copper ball (ibid.).

There followed three letters from Horton to Marston dated August 26th, September 8th, and September 9th that went unanswered by Marston due to his absence from Iowa State College during that period. Horton's letters noted that they had arranged for John Ward of Audubon, Iowa, to build the foundations for the "Manning tower and tank" but that they needed Marston's consent as "required by specifications" (Letter from Horton to Marston dated August 26, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). The company then wired Marston on September 8th and followed with a letter noting that they wished "to know whether the posts are satisfactory so as to arrange for the anchor bolts" and asking for a change in the size of the anchor bolts from 2-1/2 inches round to 3 inches round "of soft steel in stock" in order to "hurry matters along so as to pacify Mr. Ward" (Letter from Horton by Hedges to Marston dated September 8th, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). The company's September 9th letter noting that they had received a wire from Marston "late last evening saying that 12[inch] channel posts and 3[inch] anchor bolts were satisfactory" and further noted that "Mr. Ward's men are not yet at Manning" and that they were enclosing "three blue prints of foundation plans" asking him to okay one because they expected to "ship anchor bolts tomorrow" (Letter from Horton by Hedges to Marston dated September 9, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

Marston was finally able to respond on September 9, 1902, to the changes that Horton had requested in his August 26th letter noting that "on my return to the college Sunday morning I found your letter which I have not answered before on account of my absence" (Letter from Marston to the Chicago Bridge and Iron Co. dated September 9, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). He noted that "it will be satisfactory" to build the tank in five rings instead of six and gave the specifications for the size of each ring (ibid.). He also related that "it will be satisfactory to me for you to make the bottom in nine plates as you suggest" but that he preferred "to have all the seams of the bottom, including the attachment of the bottom to the shell, double riveted" (ibid.). He also preferred the "balcony shown on the original design, but would have no objection to your using solid 1/4 in. plate for the floor in place of the Web system of 5 in. x 3 in. angles if you desire" and that the "wooden floor in the balcony could be omitted" (ibid.).[4] As for their other requested changes, Marston was fine with square rods

[4] While Horton's letter of August 26th did not specifically detail the pattern of their "standard balcony," the company's water towers came to be identified by an "IXIXI" pattern to their balcony railings, while the railing on the Manning Water Tower has

instead of round regarding their post recommendations but countered with more detailed specifications for their placement. However, he was not in agreement with their argument regarding the best means to make the tank watertight.

> I have had no trouble in making water tight joints at the junction of the tank with the bottom and the posts with the number of thicknesses on the plans, and think you will have no trouble if you conform to the requirements in the specifications, clauses No. 47 & 48. It seems to me that your standard connection rivets through three thicknesses of metal in the junction of the bottom with the side shell. I think there should be extra thicknesses where the posts connect, to stiffen the side of the tank to stand the heavy shearing stresses. For this and other reason, which I will not take the time to state, I prefer to adhere to the details shown on my plans (Letter from Marston to the Chicago Bridge and Iron Co. dated September 9, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

He ended by accepting the 1/8-inch pagoda steel roof "with standard details and cresting instead of wooden roof" and that they should use the 20 inch cast iron ball and John Ward as the subcontractor for the foundation work (ibid.).

Marston replied to Horton's September 9, 1902 letter by selecting one of the proposed foundation plans and had "sent a man down to stake out the tower Tuesday" and that unless he heard otherwise from Horton, he would have the man "stake out the tower with the anchor bolts in the middle of the capstones" (Letter from Marston to the Chicago Bridge and Iron Co. dated September 11, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

It must have been a little out of the ordinary for the Chicago Bridge and Iron Co. to be under the supervision of college professor, who had other obligations than this water tower because Horton was soon requesting that Marston come to Chicago (at their expense) before they finalized the drawings and ordered the materials to "aid us in the prosecution of the work and lessen cost of working drawings" (Letter from Horton to Marston dated September 11, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). Marston replied to their invitation that he hardly knew "what to say" and that he wished "to do everything in [his] power to hasten the working drawings and to avoid making you any unnecessary trouble in connection with them" but that it was "very difficult for [him] to get away for a trip to Chicago just now" (Letter from Marston to the Chicago Bridge and Iron Co. dated September 12, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). He promised to "be prompt and reasonable in connection with the shop drawings" and recognized that his previous long absence in late August and early September from the college had caused "considerable delay" (ibid.). Telegrams dated September 15 and 16 indicated that Horace Horton had decided instead to visit with Marston in Ames, Iowa, to discuss the Manning project (Telegram from Horace E. Horton to Prof. A. Marston dated September 15, 1902, and a reply telegram from Marston to Horton dated September 16, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

On October 16, 1902, Marston wrote to the Chicago Bridge and Iron Co. noting the following:

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latticework type of pattern (Mathis and Chlebeck 2012:49). It should be noted that the original plans for the Manning Water Tower showed a chevron type of pattern; however, a historic photograph of the water tower taken when it was completed in 1903 shows the latticework type of railing that remains in place to the present day.

> Day before yesterday I sent a man over to Manning to take some levels on the tops of the concrete piers immediately under the capstones. He reports that, through some means, one pier with the anchor bolt is two inches too high and another is one inch too high. Of course if there is not sufficient leeway in the length of the anchor bolts it will be necessary to cut the concrete down in these piers to the same level as the other two before setting the capstones (Letter from Marston to the Chicago Bridge and Iron Co. dated October 16, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

It is not known for certain but it seems plausible that the "man" Marston kept sending over the Manning to survey and stake for the project was his student and collaborator on the project, Henry J. Brunnier. The Chicago Bridge and Iron Co. replied with the suggestion that they lower "one foundation 1-inch" and raise "two the same amount, leaving the fourth one as it is" (Letter from Horton to Marston dated October 18, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). They further stated that "the anchor bolts would then project above cap stone 6-inches on two of the piers, 7-inches on one and 8-inches on the fourth, which is alright" (ibid.). They ended by noting that they had shipped "one length of 10-inch cast iron flange pipe to be set in the center pier by Mr. Ward" but that they needed to know "the elevation of the top of this pipe as compared with the top of the cap stones as built" (ibid.). Marston replied that they would follow their advice and that he would send "a man down with a level at the time [of the corrective work] and he will then obtain the elevation of the section of the cast iron pipe" (Letter from Marston to the Chicago Bridge and Iron Co. dated October 20, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

By November 6, 1902, the Chicago Bridge and Iron Co. was sending Marston "pencil drawings for the tower and tank" for his approval (Letter from Horton to Marston dated November 6, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). Marston responded that he had received the drawings and would review them but in the meantime he noted that the Manning "city authorities" had "not yet sold their bonds and I think that, without giving me as the source of your information, it might be well for you to look up the matter" indicating some concern on his part as to whether the company would be paid in a timely fashion for their work (Letter from Marston to the Chicago Bridge and Iron Co. dated November 13, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

In review of the pencil drawing submitted by the company, Marston replied on November 22, 1902, with some changes to the size of the rivets in the circular girder floor of the balcony as 3/4 inches; where to splice the 5x3 angles so that they would "come clear of the post" and conforming in the splices to the original drawings; double riveting the joints of the interior splice plates of the tank and space the rivet rows "close enough together to make [a] water tight joint;" and further specifications for the machining of the exterior splice plate (Letter from Marston to the Chicago Bridge and Iron Co. dated November 13, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

Horton himself directly wrote to "A. Marston, Prof. Civil Engineering," on November 28, 1902, obviously not yet on board with Marston's final design. He stated "there are a few things which we should very much like to leave as they are shown" on their pencil drawings (Letter from Horton to Marston dated November 28, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). These included keeping "the splice

of the balcony at the posts in order to facilitate erection" and suggested putting a "thick bar over the joint on the inside of the tank" if Marston wanted "more splicing on the inside angle" (ibid.). Horton continued in what seems to be an increasingly annoyed demeanor by stating the following:

> No. 4.- Is it just possible that you overlooked the fact that the joints in this course [i.e., the splicing of the tank plates] are butt strapped outside and inside, which would be equivalent to the double riveted lap joint and in as much as a single riveted lap joint would be amply strong at very low unit stresses, you can see that we have plenty of margin.
>
> No. 5.- We never could agree to make a particularly good fit of the filler plates against the top edge of an angle. We will however do it as well as we can.
> No. 8.- When we provide a steel roof we put in a spider of rods in order to pull the tank perfectly round before putting on the roof. This spider is allowed to remain, thereby stiffening up the top of the tank far more than is possible with the use of an angle around the outside. The angle is therefore omitted as superfluous.
>
> No. 9- We have decided that a cresting such as we have used in the past is not particularly ornamental and expect on all future work to omit the same.
>
> No. 11- The 3/4" bolts at the top of each column as shown in our plans were a mistake, as it would be impossible to get at them so as to turn a nut. They had better be left out entirely as they have no particular function to perform.
>
> We hope your memory regarding these points will be sufficient and will not need to send back the plans until we hear from you (Letter from Horton to Marston dated November 28th, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

Marston attempted to placate in his return letter dated December 6, 1902 noting that he had "so much respect for [their] ability and experience in water tower construction that [he] hesitated very much in asking [them] to make the changes from [their] pencil drawings" (Letter from Marston to the Chicago Bridge and Iron Co. dated December 6, 1902, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, he went on to note that "it is not altogether a question of getting simply sufficient strength in the different parts of the structure, but since [he had] permitted the modifications from the original design it is a matter of justice that every part should be equally as strong as the original design" and that he was "sure that you understand my position in this matter" (ibid.). He granted that the splice of the balcony plate "can be made exactly at the post and possibly that also of the outside angle" but that he "would like to have the splice of the inside angles made far enough to one side of the post to make the splice angles clear the post" and that he believed that "this will not offer serious difficulty in erection" (ibid.). He also held firm on the original design to have the joints double riveted. He liked the substitution of the spider rods at the top of the tank instead of the 5x3 angles "provided that the rods are sufficient in number and size," that they could use "angles in place of the cresting at the edge of the roof," and that the suggestion of omitting the 3/4 inch bolts at the top of each column was "a good one" (ibid.). However, he noted that in their pencil drawing they had omitted the "filler plate around the tank" and did not "bring down the 3/8 [inch] splice plate to direct bearing on top of the post" (ibid.). He wanted "to secure a direct bearing of the 3/8 [inch] splice plate on top of the angle" and that "a mathematical fit is perhaps not necessary but I would like you to do the best you can" (ibid.).

There was no direct response to this letter from Horton in the Marston Papers collection but on January 20, 1903 Horton sent a letter informing Marston that they were sending him "two sets of shop plans for the tower and tank which we are to build at Manning, Iowa" (Letter from Horton to Marston dated January 20th, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). He acknowledged in the letter that the plans "embody the changes suggested in your several letters and if you find them correct, kindly approve one set and return to us at your earliest convenience so that we may proceed with the shop manufacture" (ibid.). Another letter from Horton to Marston dated January 28, 1903, stated that "it is necessary that we have the elevation above top of cap stones of the flange for the 10-inch cast iron pipe which is now set in the center of the tower and tank which we are to build at Manning, Iowa" (Letter from Horton to Marston dated January 28, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, Marston replied on January 31st that he had found "that the elbow at the base of the inlet pipe at Manning proved too small for the section of pipe sent and that this section is therefore not set" and was the reason he had not yet taken the elevations and would have to send "a man down for this special purpose" and would wait for them to respond before going to that expense (Letter from Marston to the Chicago Bridge and Iron Co. dated January, 31, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

Marston returned "by express" their shop plans for the tower approved and apologized for the delay noting again that Iowa State had just opened and he was otherwise occupied (Letter from Marston to the Chicago Bridge and Iron Co. dated February 3, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, he also emphatically stated that "you will notice that I have marked a few necessary changes in red ink, the main one being that all of the vertical seams of the tank must be double riveted as provided in the original specifications" (ibid.). In response, Horton dug his heels in regarding the double riveting and claimed that "at the time the pencil drawings were returned you made no mention of this proposed change and we ordered the material for the tank at that time and have just received invoices for same" (Letter from Horton to Marston dated February 5, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). He indicated that making this change now would "necessitate a new order to the mill which will delay the delivery" and that "it is not our practice to double rivet the vertical seams in a tank of this capacity and by computing the stress in these joints, the rivets are only strained about 5,000 pounds per square inch, which of course is very small" (ibid.). He "should be very glad" if Marston would "waive the proposed change" and will "gladly make the other additions" Marston had made to the plans (ibid.). In response, Marston conceded that since the material had already been ordered and that he "overlooked the double riveting of the vertical joints of the three upper rings, on the pencil drawings, and that the stress on these joints is low enough to make single riveting perfectly safe" that they were authorized to single rivet these joints (Letter from Marston to the Chicago Bridge and Iron Co. dated February 7, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). The wording of "perfectly safe" would seem to put the burden of the single riveted joints back on Horton and suggests that Marston may not still have been convinced that double riveting was not preferable. As for the cast iron pipe issue, Horton suggested on February 14, 1903, that the pipe would need to be "taken to a machine shop and turned to an outside diameter of eleven (11) inches" but that their foreman could "attend to it when the work is erected" (Letter from Horton to Marston dated February 14, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). He stated that they still needed the elevation of the flange of the pipe above the top of the capstones in order to "order the balance of the riser pipe" but "a variation of an inch or two will not make any particular difference as

the expansion joint allows for a motion of about twelve inches" (ibid.).

By March 31, 1903, Horton responded to an inquiry by Marston as to when the work on site in Manning would commence that they expected to ship the materials "within the next week, and have an erection crew on the ground upon its arrival at Manning" (Letter from Horton to Marston dated March 31, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, in April it was found that there was a problem with the foundation and inquiries were being made of John Ward as to their soundness, to which he responded that he "could find no evidence of frost action, or other imperfections, in the cap stones at Manning" and that the "stones are sound and perfect, and in splendid condition" (Letter from Horton to Marston dated April 28, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, Marston was still going to visit Manning on May 1st to examine the capstones himself but ended up postponing the trip until after May 14th (Letters from Marston to the Chicago Bridge and Iron Co. dated April 29, 1903, and May 14, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

D.C. McGuire of the Chicago Bridge and Iron Co. was assigned to be the on-site contractor for the erection of the Manning Water Tower. He was in Manning by May 16, 1903 to begin the work (Letter from Horton to Marston dated May 16, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). There was little archived correspondence between May and August when the tower was nearing completion. On August 7th, Marston noted that he was going to Manning in the next week "to make the final inspection of the tower and if [he found] it all right or upon correction of any defects [he presumed] that the balance [of the company's payment] will be paid by the city promptly" (Letter from Marston to the Chicago Bridge and Iron Co. dated August 7, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).[5]

As the project neared completion, the issues between the Chicago Bridge and Iron Co. and Marston came to a head. It began with a letter on August 13, 1903 from Marston to the company in which he noted that he had just been to Manning on August 11th to inspect the completed water tower and in general found that the tank is mostly "an excellent piece of work and that the tower is a good piece of work although we found a few rivets not as tight as they have been in the joints" (Letter from Marston to the Chicago Bridge and Iron Co. dated August 13, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). However, he went on to note the following bigger issues:

> The painting of the structure has not been well done and at all of the joints and at other places there are spots which have not been touched with the brush. This painting will need to be gone over again.
>
> The frost proofing is very crooked and badly warped and not of the same dimensions from top to bottom. It has been turned 45° from the position shown on the plans so it will not fit the foundation started. Apparently, only one-half of the amount of building paper shown on the plans has been used. The masonry foundation for this frost proofing has not been completed above the top of the elbow at the bottom. I will be obliged to ask you to

[5] There were a number of letters from Horton in 1903 that inquired about payment for their invoices and it appears that payments were not as prompt as they liked. There may have been some lingering concern on Horton's part planted by Marston's earlier report to him that the city was having problems selling the bonds for the project.

> tear down this frost proofing and rebuild it to give a good workmanlike job of work (ibid.).

Horton did not react well to this criticism. His reply letter on August 17th began by stating that they would "expect to make good any defects that exist in the work at Manning" but then stated that "in this connection however we feel we are being treated very roughly" and that "it would have been a very easy matter for you to have gone over to Manning yourself or had an inspector there a few times while the work was in progress so that all these defects could have been forestalled or at least repaired when our men and tools were there on the ground" (Letter from Horton to Marston dated August 17, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). Marston fired back three days later by noting that he had fully expected to inspect the tower while foreman McGuire was still on site; however, McGuire had failed to notify Marston that the tower was ready for inspection. "Instead of this [McGuire] hurried the work through after the receipt of the last material and left at once without sending me any notice whatever or without leaving time for the city authorities to do so" (Letter from Marston to Chicago Bridge and Iron Co. dated August 20, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). He further noted that "the attention of the foreman was called by the local authorities to part, at least, of the defects and he made absolutely no pretense of finishing the frost proofing" and that "in place of treating you roughly I feel that I have been very considerate in arranging the matter so that it will be unnecessary for you to send a riveting gang to finish up the work" (ibid.).

There was some minor back and forth on how best to remedy the frost proofing and whether local workers could be found to do the work. The biggest issue was the matter of the frost proofing and whether John Ward would be able to remedy that matter. D.C. McGuire entered the fray with his own letter on September 8, 1903 to the Chicago Bridge and Iron Co. in which he states that "regarding the Manning work: Mr. Marston did not treat me hardly fair as he advised me and one of the committee when he was there at the beginning of the work that he would come back in two or three weeks, but did not come" (Letter from D.C. McGuire to Chicago Bridge and Iron Co. dated September 8, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). He continued that he did "not know what [Marston] blames me for, and if you think it best for me to go back and look after the building over of the casing, I shall be glad to do so" (ibid.). At the time, McGuire was on a job in Malvern, Iowa. When Horton forwarded McGuire's letter to Marston on September 11, 1903, he indicated that they had directed McGuire to go to Manning when he was done in Malvern but noted that "we trust you will be there so there will be no unnecessary expenses" and that "we feel this expense could have been avoided if you had arranged to inspect the work before our men left" (Letter from Horton to Marston dated September 11, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

This did not sit well with Marston because he promptly fired back a two-page letter that stated that he felt "obliged to make serious complaint [in] regard to your attitude in the matter of the Manning water tower" (Letter from Marston to Chicago Bridge and Iron Co. dated September 15, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). His frustration with the matter was obvious as the tone of the letter was very direct and accusatory.

> Your men botched the work badly toward the close, as already reported to you. Many portions of the tower, not readily accessible, were not touched with paint. The frost proofing was not built in accordance with the plans

> and is a badly botched piece of work. No attempt whatsoever was made to complete the masonry foundations for the frost proofing and the inlet pipe is exposed to view for several feet. Apparently only about one-half the amount of building paper called for in the plans was used in connection with the frost proofing. After doing the work in this way the workmen left without notifying me so that I could inspect the work while they were there.
>
> I have attributed this to the carelessness of your workmen and did not assume that it was the intention to bulldoze the engineer into passing such work because the men got away without giving me notice so that I could inspect it while they were there, and I still think that you will not stand for such work. It must be admitted that by your course in the matter you are laying yourselves open to such an interpretation of your attitude.
>
> I must request you to send some one to do the work who knows that such work as was done toward the close is not good work and that you attend to the matter promptly. The people of the town are becoming very impatient over the delay. It would be natural for them, if this delay continues, to complete the tower themselves at your expense in accordance with the provision of the specifications made for such cases as this (Letter from Marston to the Chicago Bridge and Iron Co. dated September 15, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

Horton then appeared to concede defeat but risked escalating the matter even further by noting in his reply letter that after reviewing all the correspondence that he failed "to find anything which we think should warrant you in entertaining the feelings indicated by your letter; however we see no gain in pursuing this subject any further, but wish to assure you that you are mistaken and that we have already issued instructions to our Mr. McGuire to return to Manning to superintend the necessary repairs and painting under your direction. You have been advised of this" (Letter from Horton to Marston dated September 17, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). Horton went on to state that he expected a local carpenter to rebuild the frost casing, with "the condition of the riser pipe foundation" being an oversight on John Ward's part in not informing the company that an "arrangement he had made with a local contractor" (ibid.). He closed by stating that they had every intention of making the work satisfactory (ibid.).

The rest of the correspondence back and forth was brief and without rancor, with McGuire on site by late September and that by October 21, 1903, that the work was largely completed with Marston expected to be in Manning to inspect the work on October 24th (Letter from Horton to Marston dated October 21, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames). In fact, Marston sent a handwritten note to the Chicago Bridge and Iron Co. on letterhead from a general merchandise store (perhaps Martin Brunnier's?) in Manning on October 24, 1903, that stated "I have today made the final inspection of the water tower built by you for the incorporated Town of Manning, Iowa, and am reporting to them that the tower is now complete and ready in every way for acceptance" (Letter from Marston to Chicago Bridge and Iron Co. dated October 24, 1903, Series 6 Correspondence, Box 10, Folder 20, Special Collections, Iowa State University Parks Library, Ames).

Thus, despite the *Manning Monitor* reporting in July 1903, that Manning's "new water tower and tank is almost completed" with the painting in progress, it would be three more months before the work was fully completed and the tower ready to use. The *Monitor* did note that "when the tower is complete we believe we can boast of having the best and most complete water tower in the country" (*Manning Monitor* clipping printed in the *Carroll Sentinel*, July 7, 1903). It is not known for certain whether Marston's experience with being the oversight supervisor on the Manning

Water Tower project was enough to discourage him from repeating the experience, but his subsequent work turned towards designing sewer systems for towns, such as Carroll's system, which he was designing by 1905 (*Carroll Herald,* May 10, 1905). Marston's work with the Highway Commission and the Good Roads movement in Iowa would also occupy much of his time in the years to come. The fact that the only water tower project other than the Iowa State tower to have its own folder after 1903 in the Marston Papers at Iowa State University was the Manning project would suggest that his direct involvement in water tower construction ended with this project (Marston Papers, Special Collections Department, Iowa State University Parks Library, Ames).

There was nothing in the Marston Papers on the Manning project that indicated how much or even if he was paid for his services on this project. However, the Manning City Council minutes from 1903 did note of payments to Marston for "part pay on plans of Tower" in the sum of $200.00 and for "engineering and plans" in the sum of $150.00 (Manning City Council Minutes from February 3, 1903 and November 5, 1903, on file City Hall, Manning, Iowa). There were no indications in the minutes that Henry Brunnier was being compensated by the city for his role in the project.[6] His expenses could have been defrayed by the fact that he would have stayed with his parents while in Manning and likely combined visits home with work on the water tower project as Marston's student.

The Chicago Bridge and Iron Co. appeared unfazed by the Manning matter and continued to build water towers throughout Iowa and the Midwest. By 1912, this company had built water towers in Fort Dodge, Fonda, Keosauqua, Osage, Kenwood Park, Muscatine (at the County Asylum), Garner, Wilton, West Liberty, Pacific Junction (for the railroad), Rockford, Malvern, Iowa City, Battle Creek, Osceola, Durant, Sumner, Coon Rapids (railroad), Red Oak (Murphy & Co.), Madrid, and Sewel (railroad) and standpipes in Lake City, Clear Lake, Eagle Grove, Forest City, Newton, Waukon, Oelwein, Walnut, Charles City, Bonaparte, Clarinda, Humboldt. They had also built standpipes for the Rock Island Railroad in Eldon, Wilton, Washington, Iowa City, Atlantic, and Valley Junction. Of the water towers they built by 1912, the Fort Dodge Tower had the highest capacity at 104,000 gallons but the Osage water tower was the highest at 134 feet (Chicago Bridge and Iron Works 1912:52-53). The Manning tower was listed in their 1912 publication as having a 60,000-gallon capacity and 128 feet 9 inches tall in comparison (this height excluding the tower roof). Of the 18 water towers built by 1912 for Iowa municipalities by the Chicago Bridge and Iron Co., only three are still standing and include the towers in Manning, Battle Creek, and Rockford.[7]

HISTORY OF ELEVATED STEEL WATER TOWERS

Early water systems in the United States grew out of the need to meet the demand for water from expanding urban populations and industries in the 19th century. In the Midwest and the Plains where the population density was much less and agriculture was the primary industry, water systems were still needed to provide a reliable water supply and a

[6] The City of Manning did pay Henry J. Brunnier for establishing street grade elevations for the city in 1902 (Manning City Council Minutes, August 28, 1902, on file City Hall, Manning, Iowa).
[7] It is also known that the industrial water tower for Murphy & Co. in Red Oak is extant and is part of a National Register of Historic Places district based on the Thomas D. Murphy Co. Factory and Power Plant and that the standpipe in Lake City is also listed in the National Register of Historic Places.

better means of fire protection. By the 1880s-1890s the construction of town water works was accelerating, with the engineering of water works storage and delivery systems improving as well (Mathis and Chlebeck 2012:7-12).

> Faced with an exponentially increasing demand due to growing populations and increasing per capita consumption, water works engineers devised water delivery and storage systems to meet the demand for water and address fluctuations in use. This led to the development of an array of solutions ranging from storage reservoirs, to standpipes, and elevated water storage structures (water towers). As water systems and storage structures grew in size and complexity, an increasingly specialized body of engineering knowledge was required to design them. However, by the early 1880s, there was an increasing awareness of the need for oversight of water works. As the number of water works grew by the day, and as they became more complex, there was an increasing desire to develop standards for design and construction, to avoid a number of well-known early failures as well as to address concerns about health and hygiene. A major step in this effort occurred on March 29, 1881, when 22 individuals representing water systems in Illinois, Indiana, Iowa, Kansas, Kentucky, and Tennessee met in St. Louis and founded the American Water Works Association (AWWA) (Mathis and Chlebeck 2012:8).

The AWWA was a means to exchange information and ideas and provide leadership in "developing regulations governing water supplies, creating standards for water works design, and water system operations" (ibid.). The increasing knowledge of the actual cause of disease and the contamination of water supplies served as an impetus for both large cities and small towns to embrace these improvements despite the associated high costs. Manning is a good example where as they moved through various water delivery and storage systems, they were still able to see the wisdom in paying more for a better designed and more effective water tower design in the early 1900s.

Elevated steel water towers similar in design to that built in Manning became the common choice for communities large and small in the Midwest and the Plains from the 1890s into the first three decades of the 20th century (Mathis and Chlebeck 2012:15). Superior storage capacity to other alternatives and reliability in water delivery were key factors in the popularity of this design. The fact that they were built of durable steel and were comparatively easy to erect, albeit best built by contractors skilled in their construction, defrayed the initial cost over many years. The fact that many are still standing over 100 years later is a testament to their durability. However, these towers are increasingly endangered by replacement with larger structures capable of greater storage volume and equipped with modern delivery systems of newer design that meet federal regulations.

The elevated all-steel water tower developed during the period of 1893-1905, with this period in Iowa including the construction of the Marston Water Tower on the Iowa State College Campus and the construction of the Manning Water Tower. All-steel towers had the advantage over earlier water tanks and towers that had been built with wood. Rot and sanitation were major problems with wooden structures.

> As engineers began experimenting with the use of steel and iron for water towers, in the late 1880s, English engineers perfected the design for curved bottom tanks. The benefit of a curved bottom was that it used less steel and was more water tight than flat bottom tanks. In the United States, engineers experimented with curved bottom tanks, first relying on masonry structures as support, but always with some type of central support under the tank. American engineers finally came up with designs for self-supporting steel bottom tanks in the early 1890s (Mathis and Chlebeck 2012:32-33).

The development of the steel-truss support structures was slower to come but came from several sources including the railroads, who "were a leader through their efforts to develop low maintenance water towers to service their fleets of steam locomotives" (Mathis and Chlebeck 2012:33). Other influences came from the windmill industry and advancements in bridge engineering. "In 1892, Jackson & Moss, predecessor of Pittsburgh-Des Moines, designed their first steel support structure, which was intended to support a flat deck for a wood tanks" (ibid.). Around 1887, engineer Edward Flad of St. Louis "designed the first all-steel elevated water tower in the United States," with this tower having an inward-sloping support structure and a tank with a cone-shaped base, which was easier to fabricate than the curved bottom tank. However, cone-shaped tank design lost favor after 1900 because "hemispherical bottoms required less material and were therefore more economical" to build (ibid.).

Notable structures in the 1890s were the all-steel elevated water towers in Laredo, Texas, designed by Edward Flad; the Marston Water Tower designed by Anson Marston and his colleagues at Iowa State College in collaboration with their former students Jackson & Moss; the Fort Dodge Water Tower designed by Horace E. Horton and built by his Chicago Bridge and Iron Co.; and the Paris, Illinois water tower also built by the Chicago Bridge and Iron Co. (Mathis and Chlebeck 2012:34). The Paris Water Tower "had a stripped-down, simple form and design that set the design aesthetic for traditional style water towers with hemispherical bottoms for decades to come" (ibid.). "By 1905, steel water towers had become the preferred type of water storage structure in the United States" (ibid.).

As all-steel water towers grew in popularity, a number of manufacturers entered the market. The early leaders in the market were the above-noted Chicago Bridge and Iron Co. and Pittsburgh-Des Moines Steel. These two companies "emerged to dominate the market" and "grew to become large, international corporations" (Mathis and Chlebeck 2012:42). Pittsburgh-Des Moines Steel (by then known as Pitt-Des Moines, Inc.) was dismantled in 2000-2002 but Chicago Bridge and Iron, Inc., remains an industry leader into the present day and even acquired the Engineered Construction and Water divisions of Pitt-Des Moines when that company ceased to exist (ibid.:44).

The Manning Water Tower reflects this history and is significant for its association with important engineering innovations (all-steel elevated water tower with hemispherical tank bottom), an important engineer (Anson Marston), and an important water tower builder (Chicago Bridge and Iron Co.). While the Chicago Bridge and Iron Co. went on to build many more elevated water towers in Iowa, the Manning Water Tower is only one of three built by 1912 that are still standing in Iowa. Additionally, the Manning Water Tower appears to have been the first and possibly the last small-town water tower designed and supervised by Anson Marston. The tower's individual history further reflects the evolution of the town water works and the growth and development of Manning, Iowa, during its railroad boom years.

ACKNOWLEDGMENTS

This nomination was undertaken by members of the Manning Historic Preservation Commission and the Region XII COG. Contributions to the compilation of the nomination were made by Allan Eich, Pam Kusel, David Kusel, and Dawn Rohe, Manning City Administrator. The purpose of the nomination is to assist in the preservation of this significant structure for years to come and to recognize the importance of the all-steel elevated water tower in the evolution of water systems in small-town Iowa.

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Original drawings and blueprints for the Manning Water Tower by Anson Marston (believed to have been drafted by Henry J. Brunnier), City Hall, Manning, Iowa.

10. Geographical Data

Verbal Boundary Description

The Manning Water Tower is located at 630 Third Street, Manning, IA 51455. The lot is legally described as the East Thirty (30) Feet of Lot One (1) and the East Thirty (30) feet of the North Forty (40) Feet of Lot Two (2), Block Eleven (11), First Addition, Manning, Carroll County, Iowa.

Boundary Justification

The nominated property includes the entire parcel historically associated with the Manning Water Tower since its construction in 1903.

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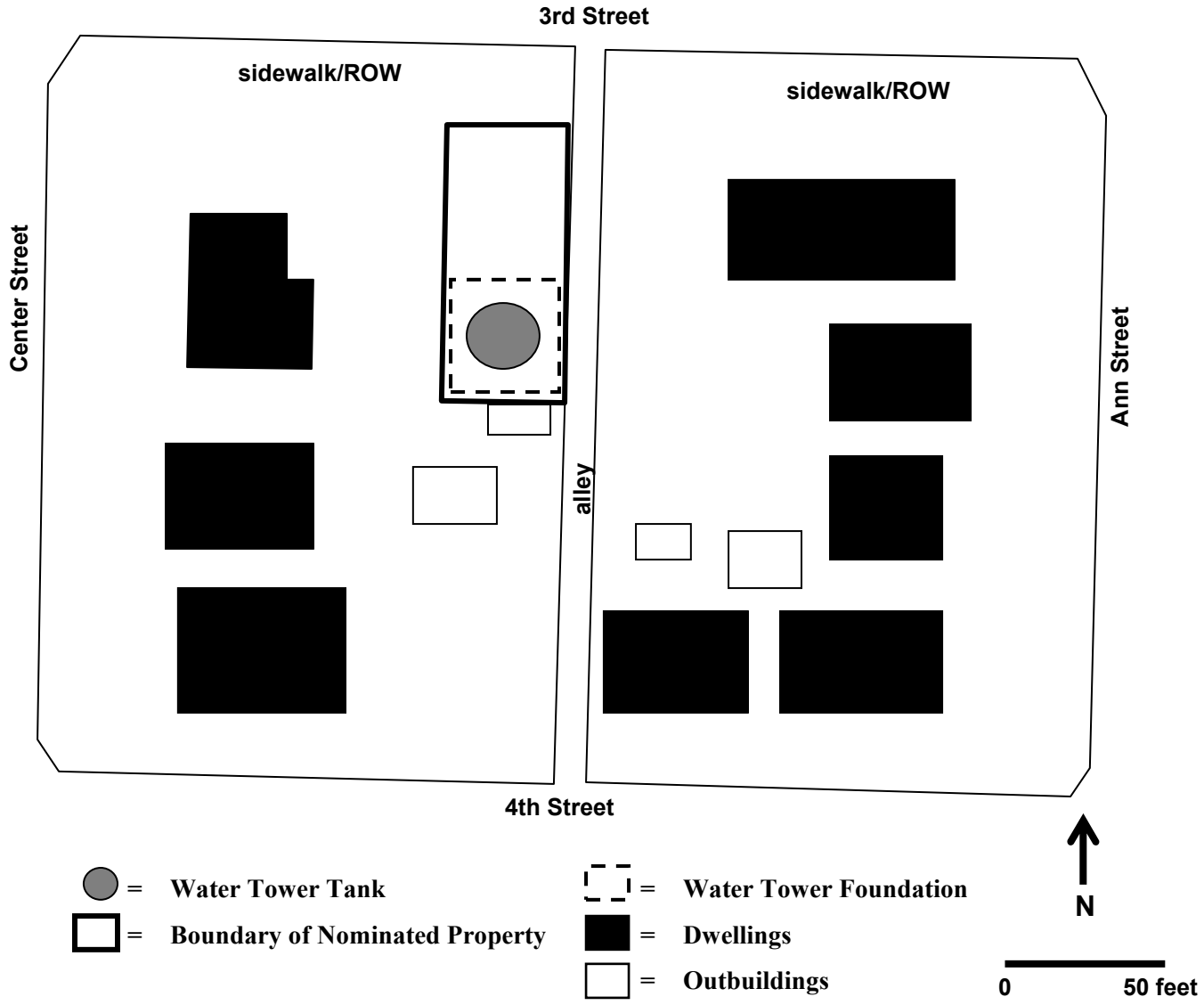
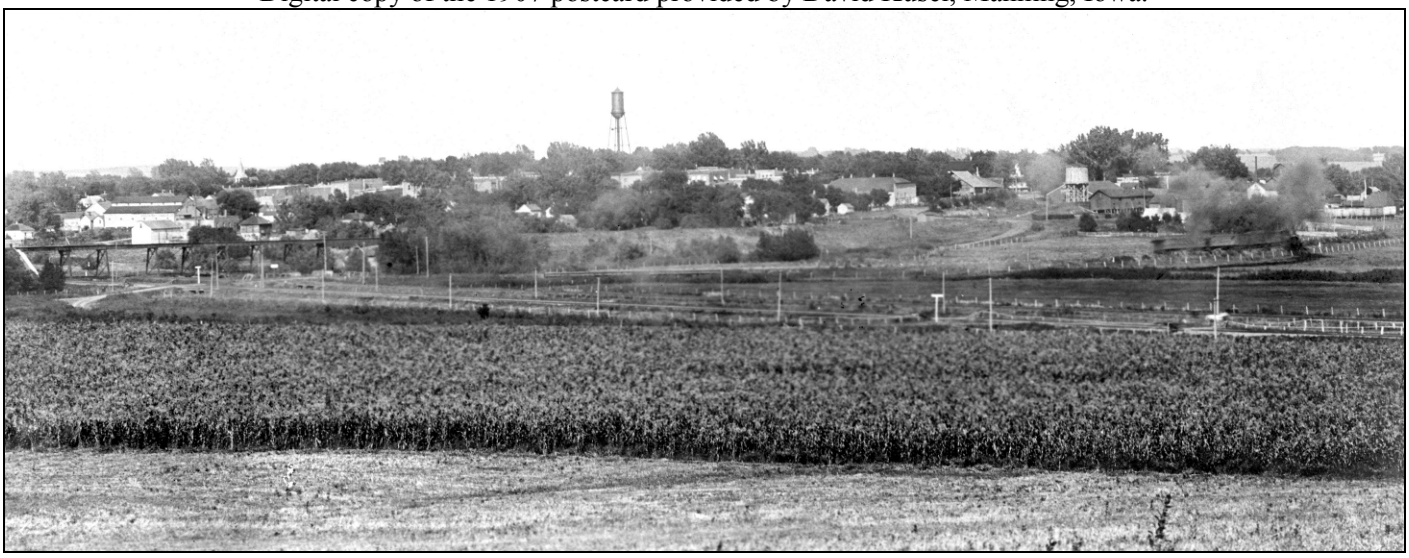
Additional Documentation

Site Plan Map of Manning Water Tower
Sketch by Tallgrass Historians L.C. based on 2013 aerial imagery
obtained from http://carrollia.mygisonline.com/, 2015.



1907 Photograph of Manning from the southwest showing the water tower on the high point of town.
Digital copy of the 1907 postcard provided by David Kusel, Manning, Iowa.



Circa 1920s-30s photograph showing the Manning Water Tower in the background in view taken from the south end of Main Street looking northeast. Digital copy provided by David Kusel, Manning, Iowa.

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1910s photograph of the Horseshoe Bar at 324-326 Main Street looking ENE with the water tower in the background. Source: Kusel 2012.

Approximate same view in 2015. Photograph taken by Tallgrass Historians L.C., March 15, 2015.

2012 (left) and 1903 (right) Photographs of the Manning Water Tower.
View of 2012 photograph is to the SSW and View of the 1903 photograph is to the NE.
Source: Manning Historic Preservation Commission.

Bird's-Eye Aerial Photograph of the Manning Water Tower looking to the North.
Source: Bing.com, accessed February 10, 2012.

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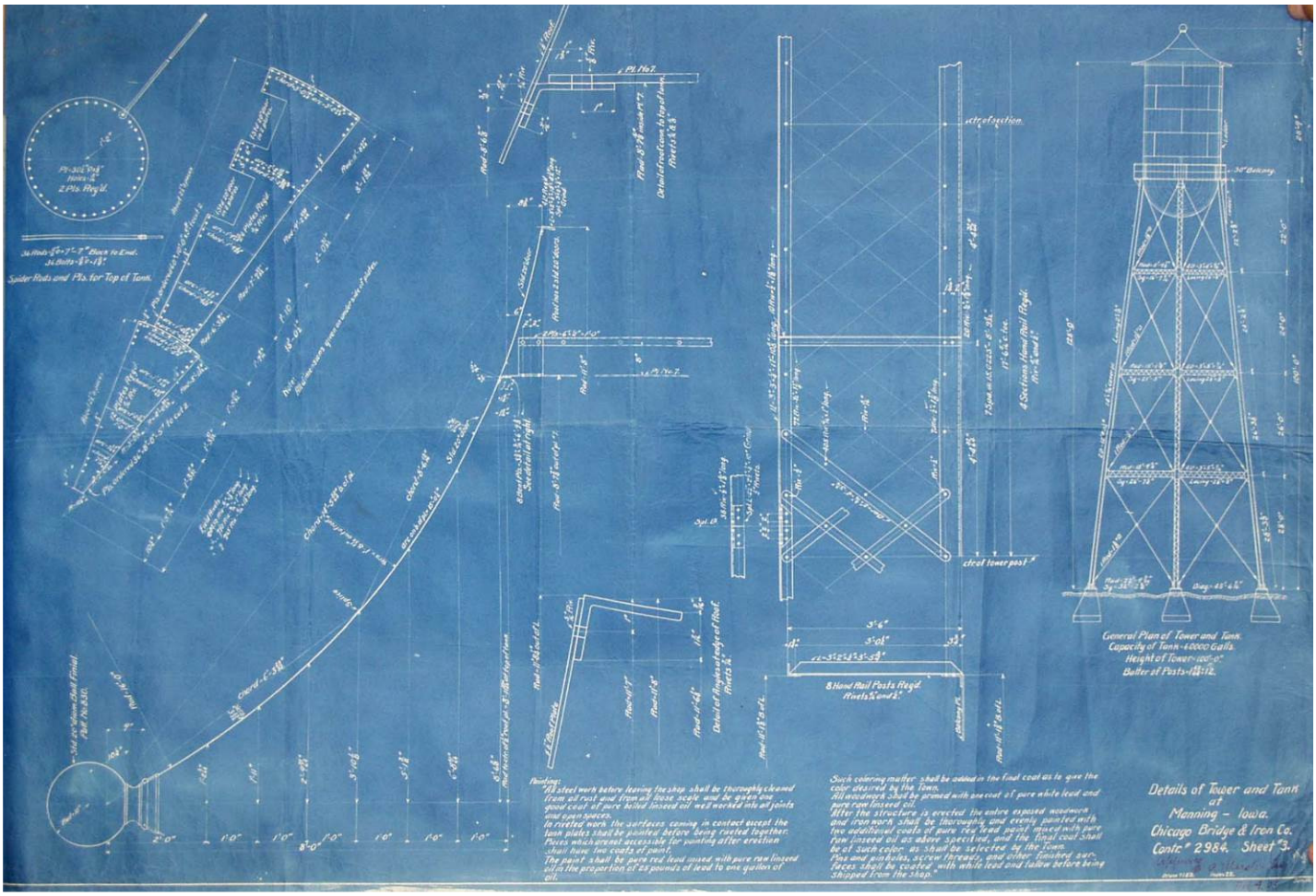
Blueprint for the Manning Water Tower, dated Feb. 4, 1903 – signed by A. Marston.
On file: City Hall, Manning, Iowa.



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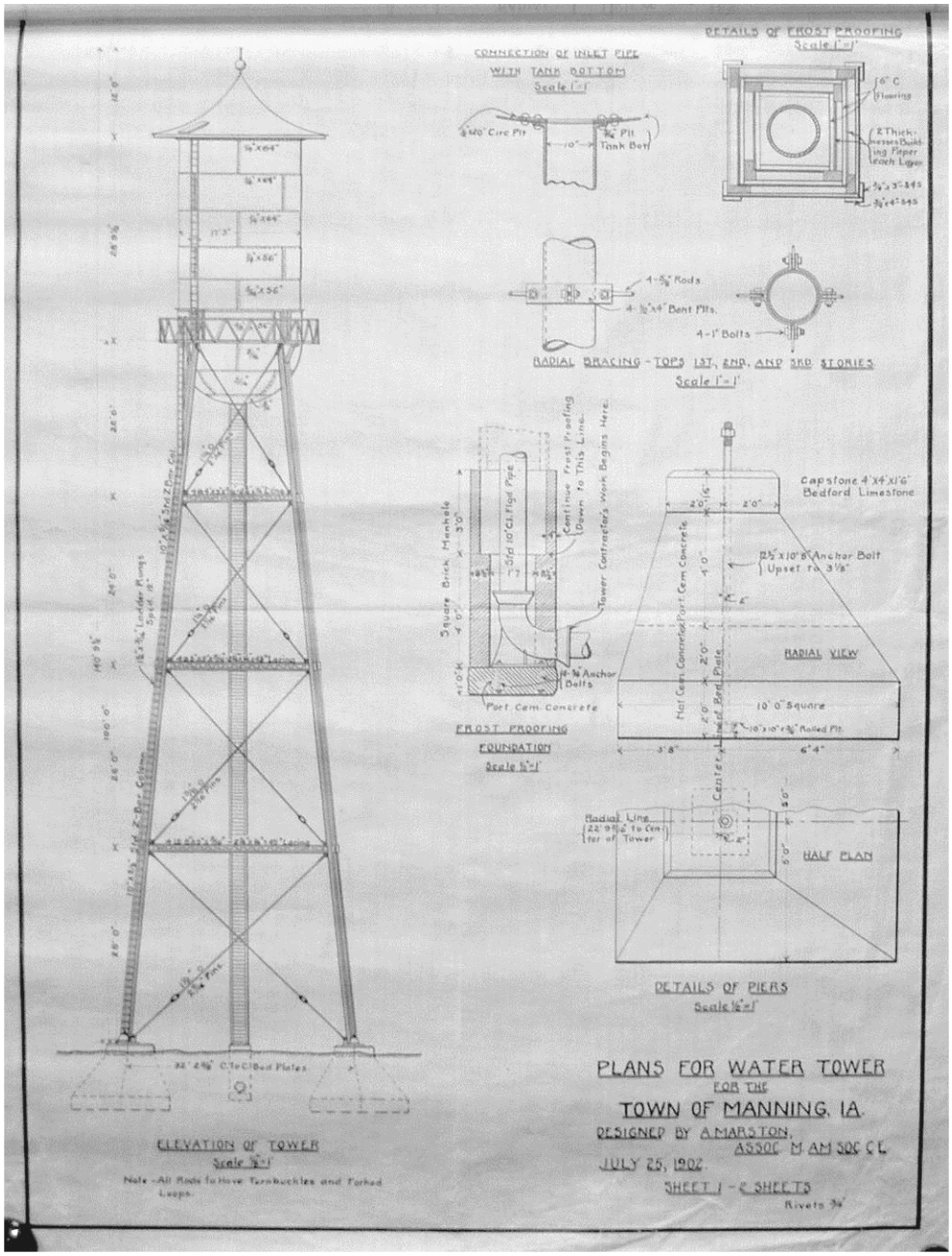
Plans for the Manning Water Tower, dated July 25, 1902.
On file: City Hall, Manning, Iowa.



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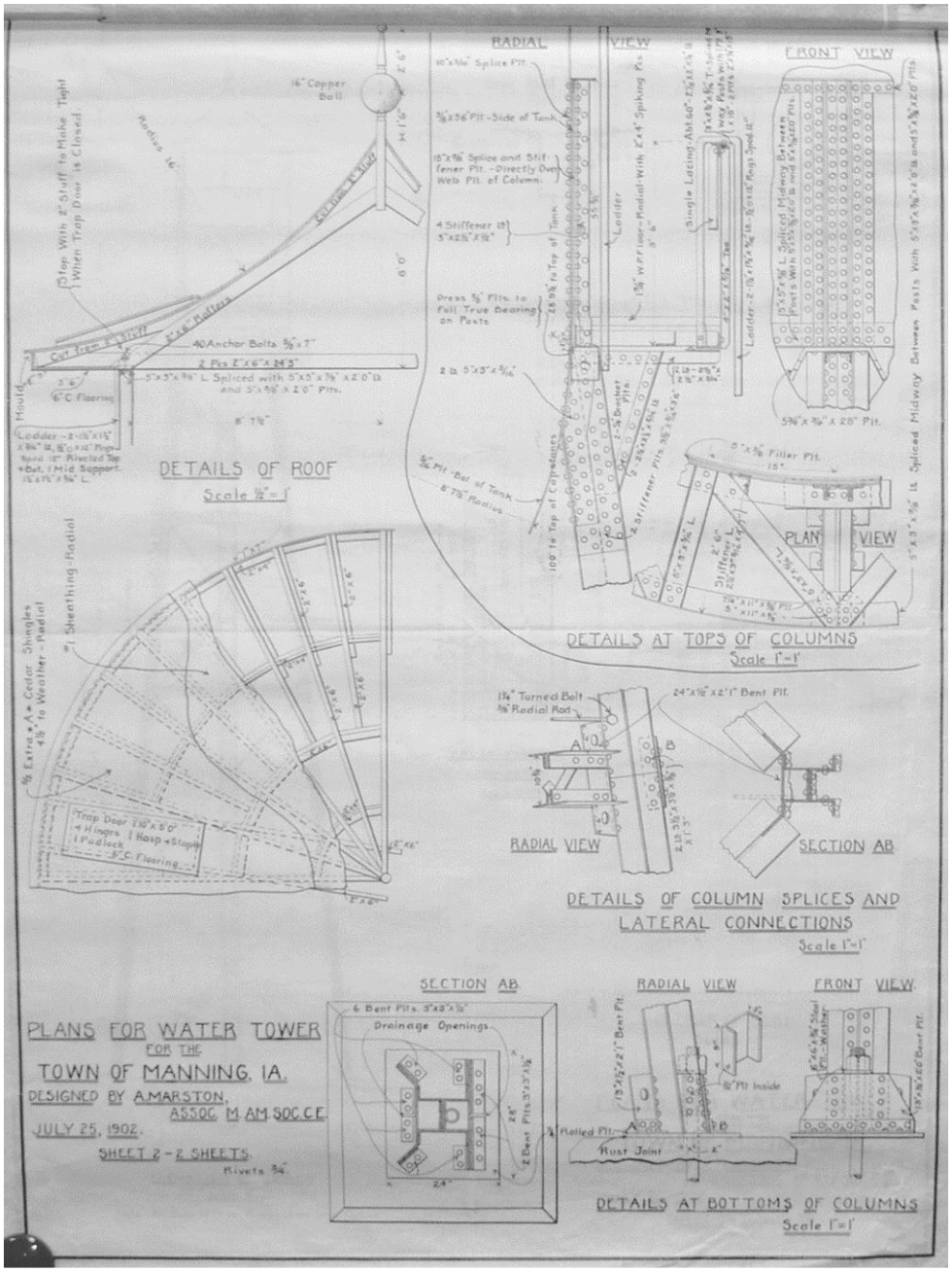
Plans for Manning Water Tower, dated July 25, 1902.
On file: City Hall, Manning, Iowa.



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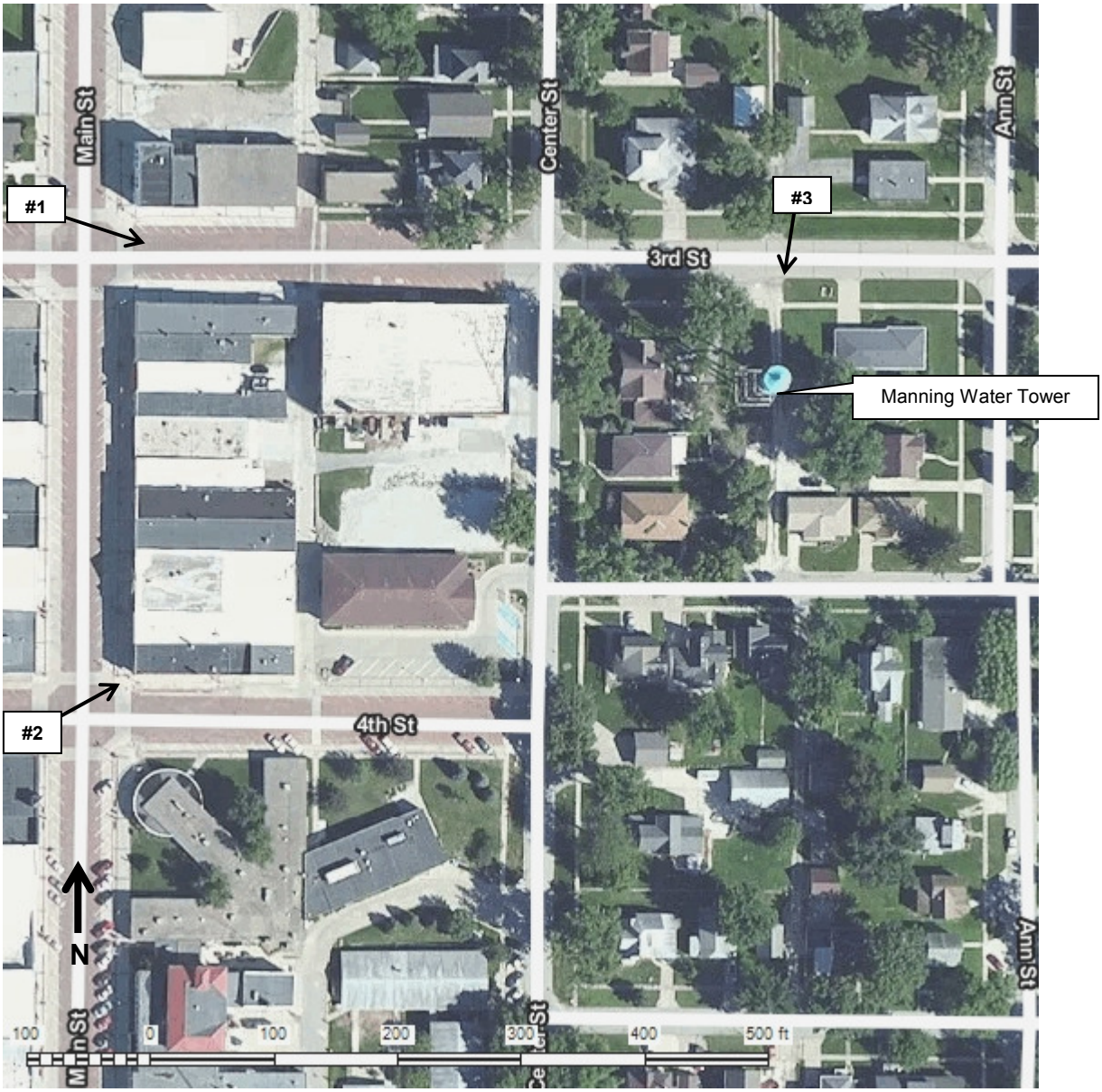
Aerial Map Showing Direction of Photographs #1-3.
2013 aerial map obtained from ExpertGPS mapping software, 2015.



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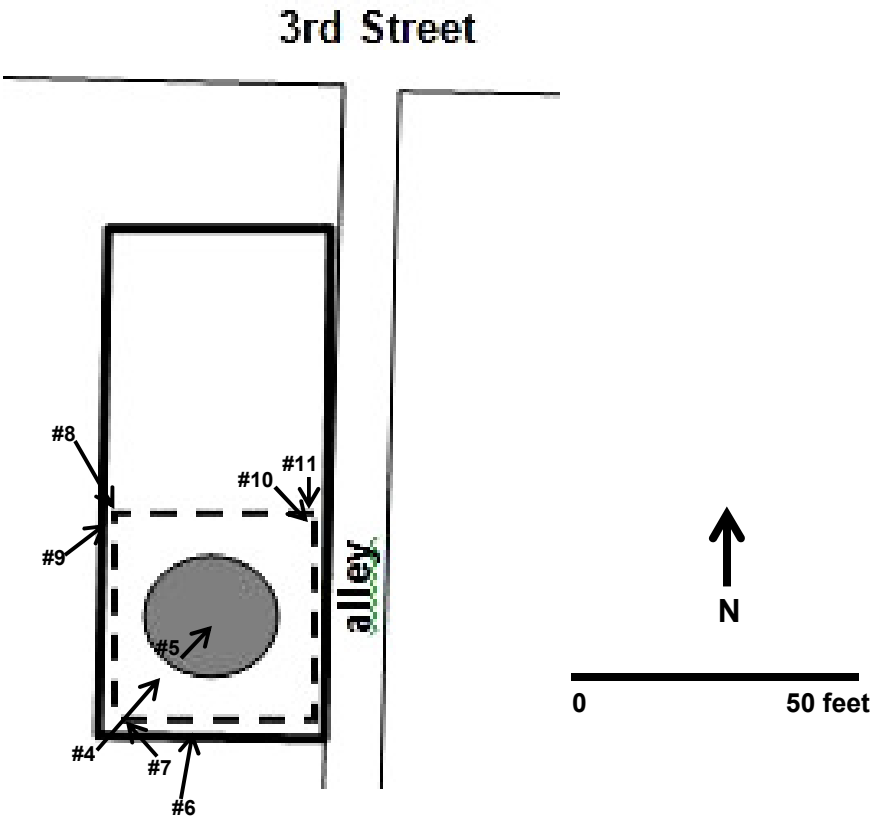
Site Plan Map Showing Direction of Photographs #4-11
Sketch by Tallgrass Historians L.C. based on 2013 aerial imagery
obtained from http://carrollia.mygisonline.com/, 2015.



= **Water Tower Tank**

= **Water Tower Foundation**

= **Boundary of Nominated Property**

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List of Photographs.

Date of Photographs: March 15, 2015 (#1-3) and July 21, 2015 (#4-11)
Name of Photographers: Leah D. Rogers, Tallgrass Historians L.C. (#1-3) and Pam Kusel, Manning, IA (#4-11)
Location of Photographs: 2460 S. Riverside Drive, Iowa City, IA 52246
Description of Photographs:

#1 General view of Manning Water Tower looking to the ESE from the corner of 3rd and Main streets

#2 General view of Manning Water Tower looking to the NE from the corner of 4th and Main streets

#3 Manning Water Tower looking to the SSW from 3rd Street

#4 Manning Water Tower from below looking up to the NE

#5 Manning Water Tower looking up from underneath the tank facing NE

#6 Manning Water Tower looking up at the tank and balcony railing facing NNE

#7 Detail of base of SW tower leg looking NW

#8 Detail of NW tower leg and capstone base looking SE

#9 Detail of NW tower leg and capstone base looking NE

#10 Detail of NE tower leg where bolted to the capstone looking SE

#11 Detail of NE tower leg showing “CARNEGIE” mark on steel plate


MAIN ST
ONE WAY


Knueven
Insurance & Real Estate
DEB'S
CORNER
CAFÉ


CARNEGIE

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Manning Water Tower

MULTIPLE NAME:

STATE & COUNTY: IOWA, Carroll

DATE RECEIVED: 4/15/16 DATE OF PENDING LIST: 5/19/16
DATE OF 16TH DAY: 6/03/16 DATE OF 45TH DAY: 5/31/16
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 16000296

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	N	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	N	SAMPLE:	N	SLR DRAFT:	N	NATIONAL:	N

COMMENT WAIVER: N

✓ ACCEPT ___RETURN ___REJECT 5.31.16 DATE

ABSTRACT/SUMMARY COMMENTS:

Entered in
The National Register
of
Historic Places

RECOM./CRITERIA_____

REVIEWER_____ DISCIPLINE_____

TELEPHONE_____ DATE_____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.

IOWA DEPARTMENT OF
CULTURAL AFFAIRS

MARY COWNIE, DIRECTOR
CHRIS KRAMER, DEPUTY DIRECTOR

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

April 11, 2016

J. Paul Loether, Deputy Keeper and Chief
National Register and National Historic Landmarks
1201 Eye St. NW, 8th Fl.
Washington D.C. 20005

Dear Mr. Loether:

The following National Register nomination(s) from Iowa are enclosed for your review and listing if acceptable.

- Manning Water Tower, 620 Third Street, Manning, Carroll County, Iowa

Thank you for your consideration.

Sincerely,

Elizabeth Foster

Elizabeth Foster
National Register Coordinator
State Historical Society of Iowa