

**DETERMINATION OF LEVEL OF REVIEW  
ENVIRONMENTAL REVIEW RECORD**  
Project Name: City of Churdan Water Line Replacement  
CDBG Contract Number: 24-WS-032  
Project Location: City of Churdan

**Project Description (Attach additional descriptive information, as appropriate to the project, including narrative, maps, photographs, site plans, budgets and other information.):** This project will include the replacement of 28,550 feet of undersized and leaking water main and water lines. The current water lines are 4" or smaller and will be replaced with 6" lines that will meet Iowa Standards for Water Supply fire protection standards. The replacement of these water mains and lines will also reduce the amount of water loss the city experiences. The specific location of this project can be found in the Preliminary Engineering Report.

*The subject project has been reviewed pursuant to HUD regulations 24 CFR Part 58 "Environmental Review Procedures for Entities Assuming HUD Environmental Responsibilities," and the following determination with respect to the project is made:*

- Exempt** from NEPA review requirements per 24 CFR 58.34(a)( )
- Categorically Excluded NOT Subject** to §58.5 authorities per 24 CFR 58.35(b)( )
- Categorically Subject** to §58.5 authorities per 24 CFR 58.35(a) (A Statutory Checklist for the §58.5 authorities is attached.)
- An **Environmental Assessment (EA)** is required to be performed in accordance with subpart E of 24 CFR Part 58 is attached.
- An **Environmental Impact Statement (EIS)** is required to be performed.

The ERR (see §58.38) must contain all the environmental review documents, public notices and written determinations or environmental findings required by Part 58 as evidence of review, decision making and actions pertaining to a particular project. Include additional information including checklists, studies, analyses and documentation as appropriate.

<b>Chief Elected Official:</b>	
<u>JOLEEN KILHEEN</u> Print Name	<u>Joleen Kilheen</u> Signature
<u>Mayor</u> Title	<u>9-9-25</u> Date

Updated 3/8/2012

All projects will need to submit this form with their ERR to IEDA prior to a release of funds being is issued.



**U.S. Department of Housing and Urban  
Development**

451 Seventh Street, SW  
Washington, DC 20410  
www.hud.gov

espanol.hud.gov

## **Environmental Assessment Determinations and Compliance Findings for HUD-assisted Projects 24 CFR Part 58**

**This is a suggested format that may be used by Responsible Entities to document completion of an  
Environmental Assessment.**

### **Project Information**

**Project Name: City of Churdan Water System Improvement**

**Responsible Entity: City of Churdan, IA**

**Grant Recipient** (if different than Responsible Entity):

**State/Local Identifier:**

**Preparer: Shannan Potts, Regional Planner, Region XII COG**

**Certifying Officer Name and Title: Joleen Killeen, Mayor**

**Grant Recipient** (if different than Responsible Entity):

**Consultant** (if applicable):

**Direct Comments to: Shannan Potts, Regional Planner, Region XII Council of Governments, 712-792-9914,  
spotts@region12cog.org**

**Project Location: 507 Sand St, Churdan, IA**

**Description of the Proposed Project** [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:

This project includes the replacement of 28,550 feet of undersized water main and service lines. The existing water mains range are primarily 4” with some 6”. The existing service lines vary in size from ¾” to 2”. These water lines will be replaced with 6” mains that meet Iowa standards for Water Supply fire protection standards. The replacement of these water lines will significantly reduce the amount of water loss that the city experiences

**Statement of Purpose and Need for the Proposal** [40 CFR 1508.9(b)]:

The purpose of the project is to replace the existing water lines to address the city’s aging water system and water losses the city experiences. The replacement of the city’s old and undersized water lines will reduce the water loss and decrease the risk of health concerns for the community.

**Existing Conditions and Trends** [24 CFR 58.40(a)]:

The significant issue with the city’s current water distribution system is the water loss from leaking pipes and connections. The original water distribution system was first constructed in the 1930’s. Most of the service lines within the water distribution system are thought to be galvanized steel pipe, some may be lead, and some may be updated PVC or copper.

**Funding Information**

<b>Grant Number</b>	<b>HUD Program</b>	<b>Funding Amount</b>
24-WS-032	CDBG	\$500,000

**Estimated Total HUD Funded Amount: \$500,000**

**Estimated Total Project Cost** (HUD and non-HUD funds) [24 CFR 58.32(d)]:

**Total Cost: \$3,400,890** (\$500,000 HUD and \$2,900,890 non-HUD)

**Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities**

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

<b>Compliance Factors:</b> Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
--	---	---------------------------

**STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6**

<p><b>Airport Hazards</b> 24 CFR Part 51 Subpart D</p>	<p>Yes No X</p>	<p>Project is not located within 2,500 feet of the end of a civil airport runway or 15,000 feet of the end of a military airfield runway. HUD policy is to promote compatible land uses in RCZ/CZ/APZ. An airport map can be found in Appendix A.</p>
<p><b>Coastal Barrier Resources</b> Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]</p>	<p>Yes No X</p>	<p>No coastal zone management programs exist in the states of HUD Region VII, as established by Nat'l Oceanic &amp; Atmospheric Administration, office of Ocean and Coastal Resource Management.</p>
<p><b>Flood Insurance</b> Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]</p>	<p>Yes No X</p>	<p>This project is not in the floodplain. The Churdan FIRM and CISA can be found in Appendix G.</p>

**STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5**

<p><b>Clean Air</b> Clean Air Act, as amended, particularly section 176(c) &amp; (d); 40 CFR Parts 6, 51, 93</p>	<p>Yes No X</p>	<p>Project is not located in an EPA-designated non-attainment area or maintenance area for one or more of six "criteria pollutants," called National Ambient Air Quality Standards (NAAQS). Map documentation included in Appendix B.</p>
<p><b>Coastal Zone Management</b> Coastal Zone Management Act, sections 307(c) &amp; (d)</p>	<p>Yes No X</p>	<p>No coastal zone management programs are in the states of HUD Region VII, per Nat'l Oceanic &amp; Atmospheric Administration, Office of Ocean and Coastal Resource Management. <a href="http://www.coastalmanagement.noaa.gov/mystate/welcome.html">www.coastalmanagement.noaa.gov/mystate/welcome.html</a></p>
<p><b>Contamination and Toxic Substances</b> 24 CFR Part 50.3(i) &amp; 58.5(i)(2)</p>	<p>Yes No X</p>	<p>Project location will not be affected by any contaminated or toxic substances. A field inspection, land use search and review of environmental compliance using All sites in proximity were in compliance. No leaking sited and no tanks were registered on the IDNR storage database for LUST sites. Documentation can be found in Appendix C.</p>
<p><b>Endangered Species</b> Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402</p>	<p>Yes No X</p>	<p>Project will likely have no effect a Federally listed endangered or threaten its habitat. A consultation with USFWS was completed and the consultation results can be found in Appendix D.</p>

<b>Environmental Justice</b> Executive Order 12898	Yes    No X	HUD does not currently require this information.
<b>Explosive and Flammable Hazards</b> 24 CFR Part 51 Subpart C	Yes    No X	Since this project is replacing water lines within the City of Churdan, it is exempt from review under this criteria.
<b>Farmlands Protection</b> Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes    No X	The project is located in an area that includes prime farmland, unique farmland, and land of statewide or local importance. However, this project includes the rehabilitation of previously installed water lines, and the project area has previously been developed. The farmland classification map can be found in Appendix F.
<b>Floodplain Management</b> Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes    No X	This project is not located in the floodplain. The Churdan FIRM is found in Appendix G.
<b>Historic Preservation</b> National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes    No X	This project is jointly funded with other federal funds. As such, SRF initially consulted with the State historic preservation office on 9/4/25 with a finding of No Historic Properties Affected and the State Historic Preservation Office concurred with their finding on 9/4/25. Documentation can be found in Appendix H.
<b>Noise Abatement and Control</b> Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes    No X	This project is exempt from noise considerations as it falls under the Water & Sewer purview. Information Sheet C, Page 43 of Appendix 3 of Iowa CDBG Management Guide is located in Appendix I.
<b>Sole Source Aquifers</b> Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes    No X	Project is not located within area of an EPA-designated sole source aquifer. Map found in Appendix J.
<b>Wetlands Protection</b> Executive Order 11990, particularly sections 2 and 5	Yes    No X	Project is NOT located within, or has impact upon, a wetland. Map found in Appendix K.
<b>Wild and Scenic Rivers</b> Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes    No X	Project is NOT located within one (1) mile of a designated Wild & Scenic River, or river being studied as a potential Wild & Scenic River system. Iowa does not have any designated rivers, but does have 1 study river (1972: upper Iowa: 0 miles. Preservation by state recommended) and 7 potential rivers listed in the NRO (Sections of the Boone River, Cedar River, Maquoketa, Middle Raccoon River, Turkey River, Upper Iowa River, Wapsipinicon, Yellow River). This information can be found in Appendix L. <a href="http://www.nps.gov/ncrc/programs/rca/nri/states/ia.html">http://www.nps.gov/ncrc/programs/rca/nri/states/ia.html</a>

**Environmental Assessment Factors** [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

**Impact Codes:** Use an impact code from the following list to make the determination of impact for each factor.

- (1) Minor beneficial impact
- (2) No impact anticipated
- (3) Minor Adverse Impact – May require mitigation
- (4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>LAND DEVELOPMENT</b>		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	2	This project will not have any impact on the conformance with comprehensive and neighborhood plans. No mitigation is necessary.
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	2	The project will not have any impact on soil suitability, slope, erosion, drainage, or storm water runoff. No mitigation is necessary.
Hazards and Nuisances including Site Safety and Noise	1	This project will improve the city’s fire protection through adequate water availability. Additionally, it will reduce the amount of water loss which can cause contamination of the water system. There will be no impact on community noise upon project completion. No mitigation necessary. (Snyder and Associates Churdan Water System Improvements- Amended, Pages 3-4 and 6, March 2023).
Energy Consumption	1	The rehabilitation of the city’s water mains will reduce the amount of water loss in the system. . (Snyder and Associates Churdan Water System Improvements- Amended, Pages 3-4, March 2023).

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>SOCIOECONOMIC</b>		
Employment and Income Patterns	2	The project will have no impact on employment of income patterns in the City of Churdan. No mitigation is necessary.

Demographic Character Changes, Displacement	2	The project will have no impact on community demographics with no changes directly related to this project. The project will not cause any residential or commercial displacements within the community. No mitigation is necessary.
Environmental Justice	1	This project will address the excessive water loss within the distribution system. Leaking service lines potentially allow contaminants into the water system. These current service lines are galvanized steel pipe and some could be lead pipes or have lead fittings. Recent leak repairs confirm this. Project will assist in a better quality of life for Churdan residents. . (Snyder and Associates Churdan Water System Improvements- Amended, Pages 3-4 and 6, March 2023).

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>COMMUNITY FACILITIES AND SERVICES</b>		
Educational and Cultural Facilities	1	There is a school in Churdan. Improved water quality will benefit the school. No mitigation is necessary. . (Snyder and Associates Churdan Water System Improvements- Amended, Pages 3-4, March 2023).
Commercial Facilities	2	This project will have no impact on the commercial facilities with the City of Churdan. No mitigation is necessary.
Health Care and Social Services	2	This project will have no impact on health care or social service facilities within the City of Churdan. No mitigation is necessary.
Solid Waste Disposal / Recycling	2	This project will have no impact on the solid waste facilities with the City of Churdan. No mitigation is necessary.
Wastewater / Sanitary Sewers	2	The project will have no impact on the wastewater utility within the City of Churdan. No mitigation is necessary.
Water Supply	1	This project will replace the city's water lines, reducing the amount of water consumed by the community. This will improve the city's available water supply. No mitigation is necessary. (Snyder and Associates Churdan Water System Improvements- Amended, Page 4, March 2023).
Public Safety - Police, Fire and Emergency Medical	1	The project will have no impact on the policing or the Emergency Medical services within the City of Churdan. The project will benefit Fire services, as it will improve the water supply within the City of Churdan. No mitigation is necessary. (Snyder and Associates Churdan Water System Improvements- Amended, Pages 3-4, March 2023).
Parks, Open Space and Recreation	2	The project will have no impact on the Parks, Open Space, or Recreation within the City of Churdan. No mitigation is necessary.
Transportation and Accessibility	2	The project will have no impact on transportation within the City of Churdan. No mitigation is necessary.

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>NATURAL FEATURES</b>		
Unique Natural Features, Water Resources	1	The project will reduce the amount of water lost due to replacing the aging water lines. The project will have no impact on the unique natural feature within the community. No mitigation is necessary. (Snyder and Associates Churdan Water System Improvements- Amended, Page 4, March 2023).
Vegetation, Wildlife	2	The project will have no impact on vegetation and wildlife. No mitigation is necessary.
Other Factors	2	The project will have no impact on other natural features within the community. No mitigation is necessary.

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>CLIMATE CHANGE / ENERGY</b>		
Impact on occupants, alteration of future site, effect on/from weather related disasters	2	This project will have no impact on the occupants within the City of Churdan. The project will not alter any future sites of development. This project will not have any impact on how weather-related disasters affect the City of Churdan. No mitigation is necessary.
Energy efficiency, Green building practices	2	The most efficient materials will be used during construction and the system is designed to reduce waste.
Energy usage, Emissions	2	This project will be replacing the city's water mains, which will reduce water loss through the system. No mitigation is necessary. (Snyder and Associates Churdan Water System Improvements- Amended, Page 4, March 2023).

**Additional Studies Performed:** The preliminary engineering report was completed: Water System Improvements- Amended, City of Churdan, March 2023 by Snyder & Associates.

**Field Inspection** (Date and completed by):  
Shannan Potts, Regional Planner, 2/19/25

**List of Sources, Agencies and Persons Consulted** [40 CFR 1508.9(b)]:

- Iowa DNR
- City of Churdan
- Snyder and Associates
- Fish and Wildlife Services
- National Park Service
- FEMA
- State Historic Preservation Office

## **List of Permits Obtained:**

### **Public Outreach** [24 CFR 50.23 & 58.43]:

A public hearing was conducted to give the public an opportunity to provide input on the project. No questions or comments were received before or during the hearing.

### **Cumulative Impact Analysis** [24 CFR 58.32]:

Overall, this project will have no adverse environmental impact. There are no concerns with contaminated substances. No endangered species will be impacted by the project.

### **Alternatives** [24 CFR 58.40(e); 40 CFR 1508.9]

The first considered alternative was replacing the city's older cast iron mains with 4' PVC and DIP. Four additional loops, at the corners of town, were also included, replacing existing water lines of similar outdated materials with 4" PVC and DIP.

The selected option will replace old cast iron water mains, with 6" PVC and DIP. Four additional loops, at the corners of town, were also included. This alternative addresses the city's water loss and creates adequate fire protection throughout the City of Churdan. This alternative was selected at a total estimated cost of \$3,208,605.

### **No Action Alternative** [24 CFR 58.40(e)]:

The no action alternative for the City of Churdan's water system would require the city to continue operating with water mains that are undersized. It would also mean that the city is to continue to function with water mains that are losing water. Compromised water mains can cause health and safety issues for the community if contaminants enter the system. Although this alternative would be the cheapest option, this alternative presents hazards to the community's health and safety, and therefore, it was not selected.

## **Summary of Findings and Conclusions:**

Overall, this project will have little to no impact on the community, its natural resources, the local climate, or other evaluated areas. Any impact that this project will have on the community will be beneficial in nature which leads to no mitigation measures being necessary.

## **Mitigation Measures and Conditions** [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure

**Determination:**

**Finding of No Significant Impact** [24 CFR 58.40(g)(1); 40 CFR 1508.27]  
 The project will not result in a significant impact on the quality of the human environment.

**Finding of Significant Impact** [24 CFR 58.40(g)(2); 40 CFR 1508.27]  
 The project may significantly affect the quality of the human environment.

Preparer Signature: Shannan Potts Date: 9-9-25

Name/Title/Organization: Shannan Potts, Regional Planner, Region XII \_\_\_\_\_

Certifying Officer Signature: Joleen Killen Date: 9-9-25

Name/Title: Joleen Killen, Mayor of Churdan \_\_\_\_\_

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

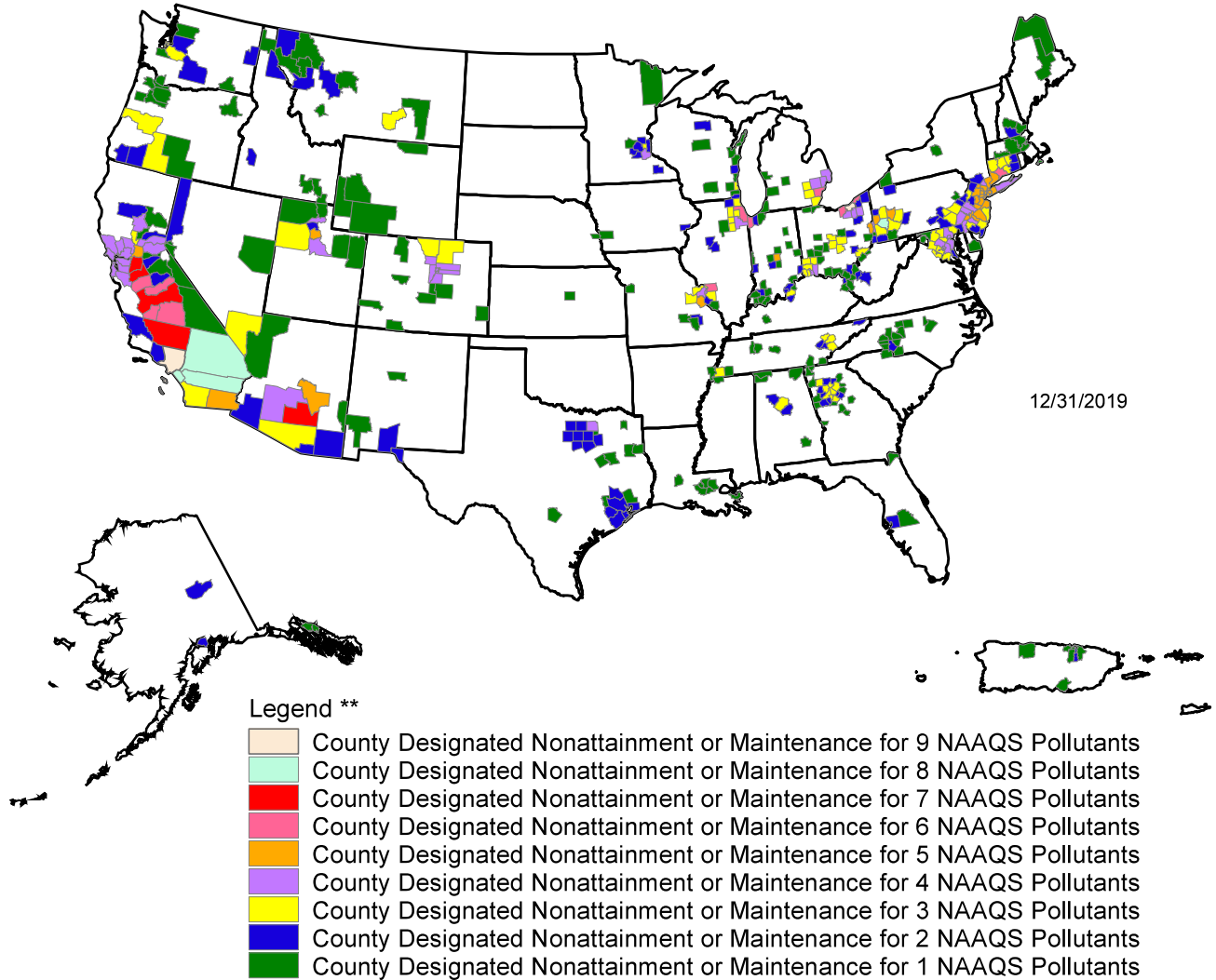
# Appendix A



# Appendix B

# Counties Designated "Nonattainment" or "Maintenance"

for Clean Air Act's National Ambient Air Quality Standards (NAAQS) \*



Guam - Piti and Tanguisson power stations are designated nonattainment for the SO<sub>2</sub> (1971) NAAQS

Piti and Cabras power stations are designated nonattainment for the SO<sub>2</sub> (2010) NAAQS

\* The National Ambient Air Quality Standards (NAAQS) are health standards for Carbon Monoxide, Lead (1978 and 2008), Nitrogen Dioxide, 8-hour Ozone (2008), Particulate Matter (PM-10 and PM-2.5 (1997, 2006 and 2012), and Sulfur Dioxide.(1971 and 2010)

\*\* Included in the counts \*\* are counties designated for NAAQS and revised NAAQS pollutants. Revoked 1-hour (1979) and 8-hour Ozone (1997) are excluded. Partial counties, those with part of the county designated nonattainment and part attainment, are shown as full counties on the map.

# Appendix C



# IOWA DEPARTMENT OF NATURAL RESOURCES

## Underground Storage Tanks Database

2/13/2025 9:30 AM user: [Login](#)

[Advanced](#) search  for  [Go](#)

### Advanced Search

UST
  LUST
  AST
  UST 3rd Party Inspections
  UST Certifications

Leak Number:

Leak Risk Classification:

Site Name:

Site Address:

Site City:

County:

Site Status:

[Search](#)

[Export Results](#)

No Lust Records Found

**DISCLAIMER:** The information on this website represents data provided to the DNR from outside entities. Although believed to be generally reliable, its accuracy cannot be guaranteed. No warranty, expressed or implied, is provided for the data herein, or its use. The Tanks database does not display nor contain all the records submitted for a site. Additional information may be obtained from the DNR Records Center at 515-725-8480 or DNR.Records@dnr.iowa.gov.

The Above Ground Storage Tank (AST) information on this website is no longer maintained. The DNR does not regulate ASTs. For additional information on ASTs, please contact the State Fire Marshal office at (515)-725-6145.

4.1.525.13227

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# CONTAMINATED SITES

## Site Search

Sites may be searched by entering text in one text boxes at the base of the columns (name, address, city or program). Other search criteria may also be entered the general text box including county, zip code, project manager, alternative name, or ownership type.

The system will start sorting as a search is initiated in the general text search box; pressing an enter or return key isn't necessary. The best results are obtained by using the column text boxes in combination with the general text box to narrow the search list.

Copy CSV Print Clear

Show  entries

Search:

ID	Name	Address	City	Program
No matching records found				
	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	-- (All) --

Showing 0 to 0 of 0 entries (filtered from 2,523 total entries)

Previous Next

# Facility Search Results

Georgia, Michigan, Nebraska, North Carolina, Pennsylvania, Vermont, Washington, West Virginia, and Wisconsin are working with EPA to fix problems with their Clean Water Act violation data. [Read More...](#)

[Report Violation](#) [Help](#)

Map Legend | EJScreen  Add EJ Summary Map Supplemental Indexes (US)

Zoom To:

Basemap Options

500 m 1,000 ft

Maxar | Esri Community Maps Contributors, Iowa DNR, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Powered by Esri

Customize Columns | Download Data | Quick CSV Download

Source Data | Results Guide | Reports Legend

Facility Name	Mapped	Street Address	City	State	FRS ID	Reports	Potential EJ Concerns	Count of Supplemental Indexes At or Above 90th Percentile (US - Block Group)	Compliance Monitoring Activity (5 years)	Significant Violations	Quarters with Noncompliance (3 years)	Formal Enforcement Actions (5 years)
<a href="#">CHURDAN CITY OF STP</a>		EAST OF TOWN ON SAND STREET	CHURDAN	IA	110010035531		No	0	1	No	8	0
<a href="#">CHURDAN HOT RODS</a>		900 FITZPATRICK ST	CHURDAN	IA	110012214987		No	0	0	No	0	0
<a href="#">CHURDAN WATER SUPPLY</a>		--	CHURDAN	IA	110013107690		No	0	0	No	0	0
<a href="#">JERRY WHITE</a>		700 BELL	CHURDAN	IA	110001761763		No	0	0	No	0	0
<a href="#">LANDUS COOPERATIVE - CHURDAN</a>		302 SAND STREET	CHURDAN	IA	110007253774		No	0	0	No	0	0
<a href="#">PATON-CHURDAN CMINTY SCH</a>		606 ADRIAN	CHURDAN	IA	110036352853		No	0	0	No	0	0

**Facility Summary**

Select a facility row from the search results table.

**Current Search**

**6 Facilities Found**

**Selected Criteria**

Media Selected: All Media Programs

City: Churdan

State/Territory: Iowa

Active/Operating: Yes

**Explore Enforcement and Compliance Criteria**

- 1 Facilities with Current Violations
- 0 Facilities with Significant Violations
- 1 Facilities with Violations (3 years)
- 0 Facilities with Formal Enforcement Actions (5 years)
- 2 Facilities with Informal Enforcement Actions (5 years)
- 0 Facilities Flagged as Potential Environmental Justice Concerns

**Modify Search**

**Filter Facilities**

**Not Filtering on 6 Facilities**

Only Show Matches

**Facility Characteristics**

Facility Type

0 Major  6 Non-Major

Facility Permit/ID

1 Has Water Permit (ICIS-NPDES)  1 Has ICIS-Air ID  3 Has RCRA ID

0 Has TRI Releases

**Enforcement and Compliance Characteristics**

1 Facilities with Violations (1 or more quarters within the past 3 years)

1 2 3 4 5 6 7 8 9 10 11 12

Facilities with Formal Enforcement Actions (5 yrs)

0 Yes  6 No

# Appendix D



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Illinois-Iowa Ecological Services Field Office  
Illinois & Iowa Ecological Services Field Office  
1511 47th Ave  
Moline, IL 61265-7022  
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:  
Project Code: 2025-0145997  
Project Name: Churdan Water System

09/08/2025 14:51:37 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

## To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website <https://ipac.ecosphere.fws.gov> at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

## **Section 7 Consultation**

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project "may affect" listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

**Note:** For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or

more Determination Keys to conclude consultation on your action.

***Technical Assistance for Listed Species***

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

**No Effect Determinations for Listed Species**

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.
2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have "no effect" on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.
3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude "no species habitat or species present" and document your finding in your project records. For example, if the project area is located entirely within a "developed area" (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project's immediate footprint.
4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

**May Effect Determinations for Listed Species**

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat, 'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.
2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.
3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action

area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.
5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.
6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: <https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance>.

You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - <https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines>
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - <https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation>

#### Tricolored Bat Update

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat (*Perimyotis subflavus*) as endangered under the Endangered Species Act (ESA). The Service has up to 12-months from the date the proposal published to make a final determination, either to list the tricolored bat under the Act or to withdraw the proposal. The Service determined the bat faces extinction primarily due to the rangewide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across North America. Because tricolored bat populations have been greatly reduced due to WNS, surviving bat populations are now more vulnerable to other stressors such as human disturbance and habitat loss. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective (typically 30 days after publication of the final rule in the Federal Register), the prohibitions against jeopardizing its continued existence and "take" will apply. Therefore, if your future or existing project has the potential to adversely affect tricolored bats after the potential new listing goes into effect, we recommend that the effects of the project on tricolored bat and their habitat be analyzed to determine whether authorization under ESA section 7 or 10 is necessary. Projects with an existing section 7 biological opinion may require

reinitiation of consultation, and projects with an existing section 10 incidental take permit may require an amendment to provide uninterrupted authorization for covered activities. Contact our office for assistance.

#### Other Trust Resources and Activities

##### ***Bald and Golden Eagles***

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website <https://www.fws.gov/library/collections/bald-and-golden-eagle-management>. We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

#### Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

## **OFFICIAL SPECIES LIST**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

#### **Illinois-Iowa Ecological Services Field Office**

Illinois & Iowa Ecological Services Field Office

1511 47th Ave

Moline, IL 61265-7022

(309) 757-5800

## PROJECT SUMMARY

Project Code: 2025-0145997  
Project Name: Churdan Water System  
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground  
Project Description: Water main replacement  
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.15346165,-94.47667880060492,14z>



Counties: Greene County, Iowa

## ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## FISHES

NAME	STATUS
Topeka Shiner <i>Notropis topeka</i> (=tristis) Population: Wherever found, except where listed as an experimental population There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/4122">https://ecos.fws.gov/ecp/species/4122</a>	Endangered

## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is <b>proposed</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Proposed Threatened

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

## **IPAC USER CONTACT INFORMATION**

Agency: Churdan city  
Name: Shannan Potts  
Address: 1009 E Anthony St  
City: Carroll  
State: IA  
Zip: 51401  
Email: spotts@region12cog.org  
Phone: 7127929914

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Community Planning and Development

**FISH & WILDLIFE SERVICE**  
**ENDANGERED SPECIES CONSULTATION**  
**NO EFFECTS DETERMINATION**

A determination has been made that the project named below will have no effect on any federally listed species or their habitats.

This determination is based on upon one or more of the following factors: (check all that apply)

- The project involves no new construction activities
- The project involves the replacement, reconstruction or resurfacing of existing infrastructure components without disturbance of previously undisturbed soil
- The project involves the removal of blight through demolition with no storage or disposal of removed materials in or adjacent any listed species habitats
- The project involves the rehabilitation of existing buildings/facilities without a significant increase in capacity or change in use
- The project site is within an already developed area containing pavement, structures and/or regularly mowed or maintained grass or landscaped area and will not involve the removal of any native vegetation, including trees
- The project will not directly or indirectly effect any habitat area utilized by a listed endangered or threatened species

CDBG Project Name: Chardon Water Mains

Nature of Project: Water Main Replacement

Signature of Certifying Person: Shannan R. Powell


Date: 9/8/25

# Appendix F











### MAP LEGEND








**Area of Interest (AOI)**






 Area of Interest (AOI)








**Soils**



**Soil Rating Polygons**

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season









-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of statewide importance, if drained
-  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated

-  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated and drained
-  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
-  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60



































-  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough
-  Farmland of statewide importance, if thawed
-  Farmland of local importance
-  Farmland of local importance, if irrigated

-  Farmland of unique importance
-  Not rated or not available

**Soil Rating Lines**

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Farmland Classification—Greene County, Iowa

	Prime farmland if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium		Farmland of unique importance		Prime farmland if subsoiled, completely removing the root inhibiting soil layer
	Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if irrigated and drained		Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season		Not prime farmland		Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
	Prime farmland if irrigated and reclaimed of excess salts and sodium		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		Prime farmland if drained		Prime farmland if irrigated and reclaimed of excess salts and sodium
	Farmland of statewide importance		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if warm enough		Prime farmland if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance
	Farmland of statewide importance, if drained		Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if thawed		Prime farmland if irrigated		Farmland of statewide importance, if drained
	Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season				Farmland of local importance		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
	Farmland of statewide importance, if irrigated				Farmland of local importance, if irrigated		Prime farmland if irrigated and drained		Farmland of statewide importance, if irrigated
							Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season		

Farmland Classification—Greene County, Iowa

<p> Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if irrigated and drained</p> <p> Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer</p> <p> Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</p>	<p> Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium</p> <p> Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season</p> <p> Farmland of statewide importance, if warm enough</p> <p> Farmland of statewide importance, if thawed</p> <p> Farmland of local importance</p> <p> Farmland of local importance, if irrigated</p>	<p> Farmland of unique importance</p> <p> Not rated or not available</p> <p><b>Water Features</b></p> <p> Streams and Canals</p> <p><b>Transportation</b></p> <p> Rails</p> <p> Interstate Highways</p> <p> US Routes</p> <p> Major Roads</p> <p> Local Roads</p> <p><b>Background</b></p> <p> Aerial Photography</p>	<p>The soil surveys that comprise your AOI were mapped at 1:15,800.</p> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Greene County, Iowa Survey Area Data: Version 30, Aug 29, 2024</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Sep 5, 2021—Oct 14, 2021</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>
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## Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
4	Knoke silty clay loam, 0 to 1 percent slopes	Farmland of statewide importance	1.0	0.2%
6	Okoboji silty clay loam, 0 to 1 percent slopes	Farmland of statewide importance	14.1	2.8%
48	Knoke mucky silty clay loam, 0 to 1 percent slopes	Farmland of statewide importance	2.1	0.4%
55	Nicollet clay loam, 1 to 3 percent slopes	All areas are prime farmland	163.6	32.1%
62C2	Storden loam, 6 to 10 percent slopes, moderately eroded	Farmland of statewide importance	3.3	0.6%
95	Harps clay loam, 0 to 2 percent slopes	Prime farmland if drained	1.8	0.3%
107	Webster clay loam, 0 to 2 percent slopes	Prime farmland if drained	126.6	24.8%
138B	Clarion loam, 2 to 6 percent slopes	All areas are prime farmland	42.9	8.4%
138B2	Clarion loam, 2 to 6 percent slopes, moderately eroded	All areas are prime farmland	18.7	3.7%
138C	Clarion loam, 6 to 10 percent slopes	Farmland of statewide importance	19.4	3.8%
138C2	Clarion loam, 6 to 10 percent slopes, moderately eroded	Farmland of statewide importance	4.7	0.9%
507	Canisteo clay loam, 0 to 2 percent slopes	Prime farmland if drained	87.3	17.1%
585B	Coland-Spillville complex, 1 to 5 percent slopes	Prime farmland if drained	10.3	2.0%
638C2	Clarion-Storden complex, 6 to 10 percent slopes, moderately eroded	Farmland of statewide importance	12.2	2.4%
639C2	Salida-Storden complex, 5 to 9 percent slopes, moderately erode	Farmland of statewide importance	1.2	0.2%
655	Crippin loam, 1 to 3 percent slopes	All areas are prime farmland	0.5	0.1%
<b>Totals for Area of Interest</b>			<b>509.6</b>	<b>100.0%</b>

## Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

## Rating Options

*Aggregation Method:* No Aggregation Necessary

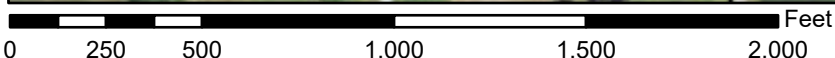
*Tie-break Rule:* Lower

# Appendix G

# National Flood Hazard Layer FIRMMette



94°28'48"W 42°9'21"N



1:6,000

94°28'10"W 42°8'55"N

Basemap Imagery Source: USGS National Map 2023

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/13/2025 at 5:55 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

# Appendix H

## Cline, Tasha - RD, IA

---

**From:** sara.andre@email.iowaeda.com  
**Sent:** Tuesday, August 26, 2025 12:53 PM  
**To:** Cline, Tasha - RD, IA  
**Cc:** Van Beek, Lauren - RD, IA; shpo106@iowaeda.com; marcus.schulenburg@iowaeda.com  
**Subject:** [External Email]R&C 250437488 - 00056488 - RD - Greene - City of Churdan Water System Improvements

---

**[External Email]**

If this message comes from an **unexpected sender** or references a **vague/unexpected topic**;  
Use caution before clicking links or opening attachments.  
Please send any concerns or suspicious messages to: Spam.Abuse@usda.gov

---

We have received your submittal for the above referenced federal undertaking. We provide the following response in accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations 36 CFR 800.

Regarding this project, please see the following comments:

**R&C 250437488 - 00056488 - RD - Greene - City of Churdan Water System Improvements -**

Construction of a new 75,000 gallon elevated water storage tank on a parcel located at the intersection of Fitzpatrick and Jay St. (old elevated tank that is located at 403 St. will remain intact)

- Concur with the federal agency and/or their designated representative (No Historic Properties Affected - No Properties).

You will not receive a hard copy of this email. It is the submitter's responsibility to maintain the official file of record. If you have any questions or comments, please feel free to contact our office.

Sincerely,

Sara André  
Review and Compliance Coordinator - Deputy State Historic Preservation Officer  
State Historic Preservation Office  
sara.andre@iowaeda.com | +1 (515) 348-6286 | culture.iowaeda.com/shpo

Iowa Economic Development Authority 



Rural Development

Rural Utilities  
Service

909 E. 2nd Ave,  
Suite C  
Indianola, IA, 50125

Voice 515.808.4025

4/9/2025

Iowa State Historical Preservation Office  
State Historical Building-3<sup>rd</sup> Floor East  
600 Locust St.  
Des Moines, IA 50319

Subject: Section 106 Review  
Finding of No Historic Properties Affected  
00056488 The City of Churdan Water System Improvements  
Churdan, IA

Dear SHPO:

The City of Churdan is seeking financial assistance from the Rural Utilities Service (RUS) under its Water and Environmental Loan and Grant Program for The City of Churdan Water System Improvements Project. The proposed project will involve replacing 27,150 linear ft of cast iron water mains with 6-inch pvc mains, 1,400 linear ft of DIP with nitrile gaskets for leaking underground storage tank area, 16,500 linear ft of ¾ copper water service line, 30 fire hydrant assemblies, and 203 connections with curb stops within the existing City Road right-of-way. The project will also include the constructing of a new 75,000-gallon elevated water storage tank. (The old, elevated water storage tank will remain intact). The updates and improvements to The City of Churdan's water distribution system will enable the town to continue to provide users with safe drinking water as much of the City's water distribution infrastructure is nearing the end of its useful life. The area of potential effects (APE) will take place within the existing city right of way and water tower property as shown on the enclosed map.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

On April 10, 2025, RUS notified the following Indian Tribes about The City of Churdan Water System Improvements Project: Apache Tribe of Oklahoma, Menominee Indian Tribe of Wisconsin, Sac & Fox Nation of Missouri in Kansas and Nebraska, Sac & Fox Nation Oklahoma, and the Sac & Fox Tribe of the Mississippi in Iowa. No responses were received.

The enclosed report titled Phase 1 Archaeological Investigation Churdan Water Tower Project, February 29, 2024, describes the results of the archaeological investigation of the area of potential effects (APE). Project investigations included background records check through the I-Sites online database, pedestrian survey, and subsurface testing. One

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isolated find was documented (13GR95). A partially buried ceramic fragment was found near the water tower location. Subsurface testing was used to determine if intact cultural materials exist at 13GR95, however, no additional artifacts were uncovered during testing and the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places. No further archaeological work is recommended for the project area. Based on the findings of the report, a finding of **no historic properties affected** in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project.

Accordingly, the RUS is submitting a finding of **no historic properties affected** in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by the Iowa SHPO. Please provide your concurrence or objection within thirty days of your receipt of this finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Tasha Cline at (515)-808-4025 or [tasha.cline@usda.gov](mailto:tasha.cline@usda.gov).

Sincerely,

*Tasha Cline*

Tasha Cline  
Environmental Protection Specialist  
Rural Development  
Phone: 515-808-4025 | Fax: 855-251-2238

Enclosures: Maps, Survey, Photo, Site Maps

cc: [lauren.vanbeek@usda.gov](mailto:lauren.vanbeek@usda.gov)

## Cline, Tasha - RD, IA

---

**From:** sara.andre@email.iowaeda.com  
**Sent:** Thursday, May 8, 2025 4:10 PM  
**To:** Cline, Tasha - RD, IA  
**Cc:** shpo106@iowaeda.com; marcus.schulenburg@iowaeda.com; william.walker@iowaeda.com; Van Beek, Lauren - RD, IA  
**Subject:** [External Email]R&C 250437488 - 00056488 - RD - Greene - City of Churdan Water System Improvements

### [External Email]

If this message comes from an **unexpected sender** or references a **vague/unexpected topic**; Use caution before clicking links or opening attachments.  
Please send any concerns or suspicious messages to: Spam.Abuse@usda.gov

We have received your submittal for the above referenced federal undertaking. We provide the following response in accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations 36 CFR 800.

Regarding this project, please see the following comments:

### **R&C 250437488 - 00056488 - RD - Greene - City of Churdan Water System Improvements -**

Construction of a new 75,000 gallon elevated water storage tank (old elevated tank will remain intact).

- At this time, we are unable to concur with Rural Development's effects determination. Identification of historic properties, as per 36 CFR 800.4, is incomplete.
- Please define the area of potential effect (APE). As defined in 800.16 the APE is "...the geographic area or areas within which an undertaking may directly or indirectly cause alteration in the character or use of historic properties, if any such properties exist." The APE is "...influenced by the scale and nature of an undertaking and may be different for different kinds of effects..." This may include, but is not limited to, the location of the existing water tower, the location of the proposed water tower, the water lines to be replaced/repaired.
- Identification of historic properties within the APE, for both above and below ground resources, is incomplete. This also includes the existing water tower.
- To fully assess effects, please provide information regarding construction methods of water line replacement and proximity to historic properties, if there are any. Additionally, include information regarding the proposed water tower.
- Please consider this a more information request (MIR). The case in ESHPO will be returned to you for ongoing consultation.

You will not receive a hard copy of this email. It is the submitter's responsibility to maintain the official file of record. If you have any questions or comments, please feel free to contact our office.

Sincerely,

Sara André  
Review and Compliance Coordinator - Deputy State Historic Preservation Officer  
State Historic Preservation Office

sara.andre@iowaeda.com | +1 (515) 348-6286 | [culture.iowaeda.com/shpo](http://culture.iowaeda.com/shpo)

Iowa Economic Development Authority 



**Rural Development**

Rural Utilities  
Service

909 E. 2nd Ave,  
Suite C,  
Indianola, Iowa  
50125

Voice 515.808.4025

7/29/2025

Iowa State Historical Preservation Office  
State Historical Building-3<sup>rd</sup> Floor East  
600 Locust St.  
Des Moines, IA 50319

Subject: Section 106 Review  
Finding of No Historic Properties Affected  
00056488 The City of Churdan Water System Improvements  
Churdan, IA

Dear SHPO:

The City of Churdan is seeking financial assistance from the Rural Utilities Service (RUS) under its Water and Environmental Loan and Grant Program for The City of Churdan Water System Improvements Project. On April 9, 2025, RUS submitted a finding of No Historic Properties Affected along with supporting documents. On May 8, 2025, SHPO responded to the finding with a request for more information regarding identification of historic properties and method of construction. The City of Churdan Water System Improvements Project was also discussed at the May 23, 2025 meeting between RUS and SHPO where an architectural survey was requested.

The project engineer confirmed that the planned method of construction for the project is trenchless construction. Additionally, the engineer has provided an architectural survey titled Architectural Reconnaissance Survey for Water System Improvements in Churdan, Iowa dated July 2025. The survey found that the properties were unlikely to qualify for listing on the National Register of Historic Places due to common styles present and later alterations and no further cultural resources investigations were recommended for the project area. An additional archeological survey titled Archeological Reconnaissance Survey for Water System Improvements in Churdan, Iowa that surveyed the vacant lot of the proposed water tank located at the intersection of Fitzpatrick and Jay streets on a 33 x 23 m parcel, that will replace the existing water tower that is located at 403 Sand St. will be preserved, and a corridor along Fitzpatrick St.. An archival review identified two previous archeological surveys and one recorded archeological site within the project area; however, both investigation areas and the site were recommended for no further work by their investigators. The current investigation determined that the project area comprised of significantly disturbed and /or poorly drained glacial landforms that have negligible potential for intact archeological deposits and no further cultural resources investigations were recommended.

Accordingly, the RUS is re-submitting a finding of RUS is re-submitting a finding of No Historic Properties Affected in accordance with 36 CFR § 800.4(d)(1). Please provide

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your concurrence or objection within thirty (30) days of your receipt of this finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in the review if we do not receive a response from you within thirty (30) days. Please direct any questions you have to Tasha Cline at (515)-808-4025 or [tasha.cline@usda.gov](mailto:tasha.cline@usda.gov).

Sincerely,

*Tasha Cline*

Tasha Cline  
Environmental Protection Specialist  
Rural Development  
Phone: 515-808-4025 | Fax: 855-251-2238

Enclosures

cc: [kate.sand@usda.gov](mailto:kate.sand@usda.gov)



September 4, 2025

**Environmental Amendment Section 106**

RE: City of Churdan Water System Improvements Project

Per 1970.53 (c)(1)

1. Minor amendments or revisions to previously approved projects provided such activities do not alter the purpose, operation, geographic scope, or design of the project as originally approved

**Project Description:**

The City of Churdan proposes to replace 27,150 linear feet of older cast iron mains with 6-inch pvc pipe, 1,400 linear ft of DIP with nitril gaskets for leaking underground storage tank area, 16,500 linear ft of copper ¾ copper water service line, 30 fire hydrant assemblies and 203 connections with curb stop within the existing city road right-of-way. The project will also include the construction of a new 75,000-gallon elevated water storage tank. The old, elevated water storage tank will remain intact. All construction will take place within the city owned right of way or on grounds that the city currently owns.

**Historic Properties/Cultural Resources/ Archaeological Sites (Amended):**

On March 28, 2023 RUS consulted with the IA SHPO and phased the Section 106 process until the location of the elevated water storage tank could be finalized and a survey completed. The Phase 1 Archaeological Investigation Churdan Water Tower Project was completed in March 1, 2024 and RUS made a determination of No Historic Properties Affected on April 9, 2025. On May 8, 2025 SHPO made a request for more information, RUS requested a meeting to get further clarification on the requests. The meeting occurred on May 23, 2025 and SHPO provided additional guidance on the information needed to move the Churdan Water System Improvements Project forward. The project engineer requested that additional architectural & archeological surveys be completed for the project area and confirmed that the planned method of construction was trenchless construction. The Architectural Reconnaissance Survey for Water System Improvements In Churdan, Iowa completed July 2025 and the Archeological Reconnaissance Survey for Water System Improvements In Churdan, Iowa completed July 2025 were provided to RUS and the determination of No Historic Properties Affected was resubmitted on July 29, 2025, along with the surveys. With the requested information provided IA SHPO gave their concurrence on August 26, 2025 with the finding of No Historic Properties Affected. All documentation and correspondence is attached.

**Tribal 106 Consultation:**

On March 28, 2023, RUS consulted with the Tribes and phased the Section 106 process until the location of the elevated water storage tank could be finalized and surveys completed. The Phase 1 Archaeological Investigation Churdan Water Tower Project was completed in March 1, 2024 and RUS initiated consultation with the Apache Tribe of Oklahoma, Menominee Indian Tribe of Wisconsin, Sac & Fox Nation of Missouri in Kansas and Nebraska, Sac & Fox Nation Oklahoma, and the Sac & Fox Tribe of the Mississippi in Iowa on April 10, 2025 and made a determination of No Historic Properties Affected. No responses were received.



Rural Development

Rural Utilities  
Service

909 E. 2nd Ave,  
Suite C  
Indianola, IA, 50125

Voice 515.808.4025

4/9/2025

Matthew Tselee  
Chairman  
PO Box 1330,  
Anadarko, OK 73005

Subject: Section 106 Review  
Finding of No Historic Properties Affected  
00056488 The City of Churdan Water System Improvements  
Churdan, IA, 50050

Dear Chairman Matthew Tselee:

The City of Churdan is seeking financial assistance from the Rural Utilities Service (RUS) under its Water and Environmental Loan and Grant Program for The City of Churdan Water System Improvements Project. The proposed project will involve replacing 27,150 linear ft of cast iron water mains with 6-inch pvc mains, 1,400 linear ft of DIP with nitrile gaskets for leaking underground storage tank area, 16,500 linear ft of ¾ copper water service line, 30 fire hydrant assemblies, and 203 connections with curb stops within the existing City Road right-of-way. The project will also include the constructing a new 75,000-gallon elevated water storage tank. (The old elevated water storage tank will remain intact). The updates and improvements to The City of Churdan's water distribution system will enable the town to continue to provide users with safe drinking water as much of the City's water distribution infrastructure is nearing the end of its useful life. The area of potential effects (APE) will take place within the existing city right of way and water tower property as shown on the enclosed map.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

The enclosed report titled Phase 1 Archaeological Investigation Churdan Water Tower Project, February 29, 2024, describes the results of the archaeological investigation of the area of potential effects (APE). Project investigations included background records check through the I-Sites online database, pedestrian survey, and subsurface testing. One isolated find was documented (13GR95). A partially buried ceramic fragment was found near the water tower location. Subsurface testing was used to determine if intact cultural materials exist at 13GR95, however, no additional artifacts were uncovered during testing and the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places. No further archaeological work is recommended for the project area. Based on the findings of the report, a finding of **no historic**

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*properties affected* in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project.

Accordingly, the RUS is submitting a finding of *no historic properties affected* in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by the Chairman. Please provide your concurrence or objection within thirty days of your receipt of this finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Tasha Cline at (515)-808-4025 or [tasha.cline@usda.gov](mailto:tasha.cline@usda.gov).

Sincerely,

*Tasha Cline*

Tasha Cline  
Environmental Protection Specialist  
Rural Development  
Phone: 515-808-4025 | Fax: 855-251-2238

Enclosures: Maps, Survey, Photo, Site Maps

cc: [lauren.vanbeek@usda.gov](mailto:lauren.vanbeek@usda.gov)



Rural Development

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909 E. 2nd Ave,  
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Indianola, IA, 50125

Voice 515.808.4025

4/9/2025

David Grignon  
Tribal Historic Preservation Officer  
P.O. Box 910,  
Keshena WI, 54135

Subject: Section 106 Review  
Finding of No Historic Properties Affected  
00056488 The City of Churdan Water System Improvements  
Churdan, IA, 50050

Dear David Grignon:

The City of Churdan is seeking financial assistance from the Rural Utilities Service (RUS) under its Water and Environmental Loan and Grant Program for The City of Churdan Water System Improvements Project. The proposed project will involve replacing 27,150 linear ft of cast iron water mains with 6-inch pvc mains, 1,400 linear ft of DIP with nitrile gaskets for leaking underground storage tank area, 16,500 linear ft of ¾ copper water service line, 30 fire hydrant assemblies, and 203 connections with curb stops within the existing City Road right-of-way. The project will also include the constructing a new 75,000-gallon elevated water storage tank. (The old elevated water storage tank will remain intact). The updates and improvements to The City of Churdan's water distribution system will enable the town to continue to provide users with safe drinking water as much of the City's water distribution infrastructure is nearing the end of its useful life. The area of potential effects (APE) will take place within the existing city right of way and water tower property as shown on the enclosed map.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

The enclosed report titled Phase 1 Archaeological Investigation Churdan Water Tower Project, February 29, 2024, describes the results of the archaeological investigation of the area of potential effects (APE). Project investigations included background records check through the I-Sites online database, pedestrian survey, and subsurface testing. One isolated find was documented (13GR95). A partially buried ceramic fragment was found near the water tower location. Subsurface testing was used to determine if intact cultural materials exist at 13GR95, however, no additional artifacts were uncovered during testing and the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places. No further archaeological work is recommended for the project area. Based on the findings of the report, a finding of **no historic**

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*properties affected* in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project.

Accordingly, the RUS is submitting a finding of *no historic properties affected* in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by the Tribal Historic Preservation Officer. Please provide your concurrence or objection within thirty days of your receipt of this finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Tasha Cline at (515)-808-4025 or [tasha.cline@usda.gov](mailto:tasha.cline@usda.gov).

Sincerely,

*Tasha Cline*

Tasha Cline  
Environmental Protection Specialist  
Rural Development  
Phone: 515-808-4025 | Fax: 855-251-2238

Enclosures: Maps, Survey, Photo, Site Maps

cc: [lauren.vanbeek@usda.gov](mailto:lauren.vanbeek@usda.gov)



Rural Development

Rural Utilities  
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909 E. 2nd Ave,  
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Indianola, IA, 50125

Voice 515.808.4025

4/9/2025

Johnathan Buffalo  
Director, Historic Preservation Department, THPO  
349 Meskwaki RD,  
Tama, IA 52339

Subject: Section 106 Review  
Finding of No Historic Properties Affected  
00056488 The City of Churdan Water System Improvements  
Churdan, IA, 50050

Dear Johnathan Buffalo:

The City of Churdan is seeking financial assistance from the Rural Utilities Service (RUS) under its Water and Environmental Loan and Grant Program for The City of Churdan Water System Improvements Project. The proposed project will involve replacing 27,150 linear ft of cast iron water mains with 6-inch pvc mains, 1,400 linear ft of DIP with nitrile gaskets for leaking underground storage tank area, 16,500 linear ft of ¾ copper water service line, 30 fire hydrant assemblies, and 203 connections with curb stops within the existing City Road right-of-way. The project will also include the constructing a new 75,000-gallon elevated water storage tank. (The old elevated water storage tank will remain intact). The updates and improvements to The City of Churdan's water distribution system will enable the town to continue to provide users with safe drinking water as much of the City's water distribution infrastructure is nearing the end of its useful life. The area of potential effects (APE) will take place within the existing city right of way and water tower property as shown on the enclosed map.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

The enclosed report titled Phase 1 Archaeological Investigation Churdan Water Tower Project, February 29, 2024, describes the results of the archaeological investigation of the area of potential effects (APE). Project investigations included background records check through the I-Sites online database, pedestrian survey, and subsurface testing. One isolated find was documented (13GR95). A partially buried ceramic fragment was found near the water tower location. Subsurface testing was used to determine if intact cultural materials exist at 13GR95, however, no additional artifacts were uncovered during testing and the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places. No further archaeological work is recommended for the project area. Based on the findings of the report, a finding of **no historic**

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*properties affected* in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project.

Accordingly, the RUS is submitting a finding of *no historic properties affected* in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by the THPO. Please provide your concurrence or objection within thirty days of your receipt of this finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Tasha Cline at (515)-808-4025 or [tasha.cline@usda.gov](mailto:tasha.cline@usda.gov).

Sincerely,

*Tasha Cline*

Tasha Cline  
Environmental Protection Specialist  
Rural Development  
Phone: 515-808-4025 | Fax: 855-251-2238

Enclosures: Maps, Survey, Photo, Site Maps

cc: [lauren.vanbeek@usda.gov](mailto:lauren.vanbeek@usda.gov)



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Indianola, IA, 50125

Voice 515.808.4025

4/9/2025

Sandra Massey  
THPO  
920883 South Highway 99  
Building A  
Stroud, OK 74079

Subject: Section 106 Review  
Finding of No Historic Properties Affected  
00056488 The City of Churdan Water System Improvements  
Churdan, IA, 50050

Dear THPO Sandra Massey:

The City of Churdan is seeking financial assistance from the Rural Utilities Service (RUS) under its Water and Environmental Loan and Grant Program for The City of Churdan Water System Improvements Project. The proposed project will involve replacing 27,150 linear ft of cast iron water mains with 6-inch pvc mains, 1,400 linear ft of DIP with nitrile gaskets for leaking underground storage tank area, 16,500 linear ft of ¾ copper water service line, 30 fire hydrant assemblies, and 203 connections with curb stops within the existing City Road right-of-way. The project will also include the constructing a new 75,000-gallon elevated water storage tank. (The old elevated water storage tank will remain intact). The updates and improvements to The City of Churdan's water distribution system will enable the town to continue to provide users with safe drinking water as much of the City's water distribution infrastructure is nearing the end of its useful life. The area of potential effects (APE) will take place within the existing city right of way and water tower property as shown on the enclosed map.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

The enclosed report titled Phase 1 Archaeological Investigation Churdan Water Tower Project, February 29, 2024, describes the results of the archaeological investigation of the area of potential effects (APE). Project investigations included background records check through the I-Sites online database, pedestrian survey, and subsurface testing. One isolated find was documented (13GR95). A partially buried ceramic fragment was found near the water tower location. Subsurface testing was used to determine if intact cultural materials exist at 13GR95, however, no additional artifacts were uncovered during testing and the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places. No further archaeological work is recommended

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for the project area. Based on the findings of the report, a finding of **no historic properties affected** in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project.

Accordingly, the RUS is submitting a finding of **no historic properties affected** in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by the THPO. Please provide your concurrence or objection within thirty days of your receipt of this finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Tasha Cline at (515)-808-4025 or [tasha.cline@usda.gov](mailto:tasha.cline@usda.gov).

Sincerely,

*Tasha Cline*

Tasha Cline  
Environmental Protection Specialist  
Rural Development  
Phone: 515-808-4025 | Fax: 855-251-2238

Enclosures: Maps, Survey, Photo, Site Maps

cc: [lauren.vanbeek@usda.gov](mailto:lauren.vanbeek@usda.gov)



Rural Development

Rural Utilities  
Service

909 E. 2nd Ave,  
Suite C  
Indianola, IA, 50125

Voice 515.808.4025

4/9/2025

Tiauna Carnes  
Chairperson  
305 North Main Street,  
Reserve, KS 66434

Subject: Section 106 Review  
Finding of No Historic Properties Affected  
00056488 The City of Churdan Water System Improvements  
Churdan, IA, 50050

Dear Chairperson Tiauna Carnes:

The City of Churdan is seeking financial assistance from the Rural Utilities Service (RUS) under its Water and Environmental Loan and Grant Program for The City of Churdan Water System Improvements Project. The proposed project will involve replacing 27,150 linear ft of cast iron water mains with 6-inch pvc mains, 1,400 linear ft of DIP with nitrile gaskets for leaking underground storage tank area, 16,500 linear ft of ¾ copper water service line, 30 fire hydrant assemblies, and 203 connections with curb stops within the existing City Road right-of-way. The project will also include the constructing a new 75,000-gallon elevated water storage tank. (The old elevated water storage tank will remain intact). The updates and improvements to The City of Churdan's water distribution system will enable the town to continue to provide users with safe drinking water as much of the City's water distribution infrastructure is nearing the end of its useful life. The area of potential effects (APE) will take place within the existing city right of way and water tower property as shown on the enclosed map.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

The enclosed report titled Phase 1 Archaeological Investigation Churdan Water Tower Project, February 29, 2024, describes the results of the archaeological investigation of the area of potential effects (APE). Project investigations included background records check through the I-Sites online database, pedestrian survey, and subsurface testing. One isolated find was documented (13GR95). A partially buried ceramic fragment was found near the water tower location. Subsurface testing was used to determine if intact cultural materials exist at 13GR95, however, no additional artifacts were uncovered during testing and the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places. No further archaeological work is recommended for the project area. Based on the findings of the report, a finding of **no historic**

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If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html), or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at [program.intake@usda.gov](mailto:program.intake@usda.gov).

*properties affected* in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project.

Accordingly, the RUS is submitting a finding of *no historic properties affected* in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by the Chairperson. Please provide your concurrence or objection within thirty days of your receipt of this finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Tasha Cline at (515)-808-4025 or [tasha.cline@usda.gov](mailto:tasha.cline@usda.gov).

Sincerely,

*Tasha Cline*

Tasha Cline  
Environmental Protection Specialist  
Rural Development  
Phone: 515-808-4025 | Fax: 855-251-2238

Enclosures: Maps, Survey, Photo, Site Maps

cc: [lauren.vanbeek@usda.gov](mailto:lauren.vanbeek@usda.gov)

**PHASE I ARCHAEOLOGICAL INVESTIGATION  
CHURDAN WATER TOWER PROJECT**

Churdan, Iowa | February 29, 2024

## PHASE I ARCHAEOLOGICAL INVESTIGATION CHURDAN WATER TOWER PROJECT

Churdan, Iowa | March 1, 2024

Prepared for:

City of Churdan

Snyder & Associates, Inc. Project No. 123.1374

Prepared by:



3/1/2024

Lina Ramirez, M.A., RPA  
Senior Archaeologist

Information contained in this report relating to the nature and location of archaeological sites is considered private and confidential and not for the public disclosure in accordance with Section 304 of the National Historic Preservation Act (54 U.S.C. § 307103); 36 CFR Part 800.6 (a)(5) of the Advisory Council on Historic Preservation's rules implementing Section 106 and 110 of the Act; Section 9(a) of the Archaeological Resource Protection Act (54 U.S.C. § 100707) and, Chapter 22.7, subsection 20 of the Iowa Code.

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## **ABSTRACT**

A Phase I cultural resource inventory was conducted for the City of Churdan, Greene County, Iowa. This survey was conducted to determine if any significant archaeological sites are within the current project boundaries.

The project covered approximately 353.6 m<sup>2</sup> in section 20, Township 85 North, Range 31 West. Snyder and Associates, Inc. completed fieldwork on February 26, 2024. Archaeological investigations included archival and records search, an intensive pedestrian survey, and subsurface testing. The records search indicated the project has not been previously inventoried and had no known archaeological sites.

An isolated find was recorded near the location of the water tower; however the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places. No further archaeological work of the area is recommended

## INTRODUCTION

This report presents the results of a Phase I archaeological survey conducted for the City of Churdan, Greene County, Iowa. The purpose of this research was to locate if any cultural resources were present within the Area of Potential Effects (APE) and determine if any significant archaeological/historic resource would be affected by the proposed construction. For the purpose of this assessment, a cultural resource site was defined as a location where human activity resulted in deposition of artifacts of at least 50 years.

The project covered approximately 353.6 m<sup>2</sup> in section 20, Township 85 North, Range 31 West. The proposed activities call for the installation of a water tower in Churdan, Iowa. Snyder and Associates, Inc. completed fieldwork on February 26, 2024. One isolated find was documented near the location of the water tower, however the isolated find does not meet eligibility requirements for nomination to the National Register of Historic Places.

Information contained in this report relating to the nature and location of archaeological sites is considered private and confidential and not for the public disclosure in accordance with Section 304 of the National Historic Preservation Act (54 U.S.C. § 307103); 36 CFR Part 800.6 (a)(5) of the Advisory Council on Historic Preservation's rules implementing Section 106 and 110 of the Act; Section 9(a) of the Archaeological Resource Protection Act (54 U.S.C. § 100707) and, Chapter 22.7, subsection 20 of the Iowa Code.

## PROJECT CONTEXTUAL DATA

The proposed project is located in the City of Churdan within Greene County, Iowa. Legal locations for the project area include the following:

Table 1. Project Location

County	Township	Range	Section(s)
Greene	85 North	31 West	20

- Within the NE ¼ of SE ¼ of the SE ¼ of Section 20, Township 85 North, Range 31 West, Highland Township, Greene County, Iowa.

Project area is located in an empty lot at the intersection of Jay Street and Fitzpatrick Street in Churdan, Iowa. Area has been completely disturbed by development and utility installation.

## PROJECT APPROACH AND RESEARCH DESIGN

The primary objective of this Phase I investigation is to identify all archaeological resources within the defined project area to ensure all NRHP eligible sites are not adversely affected by a specific undertaking. An additional objective was to add to the body of knowledge regarding the history of Greene County. According to the Secretary of the Interior's Guidelines for Identification:

Intensive survey is most useful when it is necessary to know precisely what historic properties exist in a given area or when information sufficient for later evaluation and treatment decisions is needed on historic properties. Intensive survey describes the distribution of properties in an area; determines the number, location, and condition of properties; determines the types of properties actually present within the area; permits classification of individual properties; and records the physical extent of specific properties (National Park Service 1983).

The methodology utilized to perform the objectives of the inventory was developed to follow the recommendations in the Guidelines for Archaeological Investigation in Iowa (AIA 2022):

- Complete a cultural resource records search with Iowa Office of State Archaeology (OSA), Iowa SHPO, and the database.
- Utilize historic maps/documentation, and local histories.
- Utilize soil and landform data to assess the potential for deeply buried cultural resources.
- Conduct Phase I intensive pedestrian inventory to locate any cultural resources.
- Conduct systematic subsurface testing in areas of reduced surface visibility and having archaeological potential.

## **ENVIRONMENTAL CONTEXT**

The project area is located within the Des Moines Lobe physiographic region (Prior 1991). The Des Moines Lobe was created 12,000 to 14,000 years ago as a result of the Laurentide ice sheet in central Iowa (Kemmis et al 1981; Prior 1991; Quade et al 2004). This region is characterized by areas of leveled terrain, upland hills, and poorly drained depressions. Soils in these upland settings, have shallow archaeological potential due to the parent material predating the earliest human occupation of Iowa (Schroeder 2018). Beaver Creek cuts through the northern portion of the project area travelling east to west. Beaver Creek is a tributary for the Des Moines River.

In Iowa, archaeological deposits are typically found buried in valley bottoms and along valley margins, specifically in alluvium and alluvial fan deposits across the various landform regions. The thickness and stratigraphy vary throughout the state. Fine-grained Holocene-age alluvial deposits in Iowa are subdivided into distinct units collectively known as the DeForest Formation (Bettis and Littke 1987). These units include Camp Creek Member, Corrington member, Gunder member, and Roberts Creek member. The Camp Creek member derives from overbank flooding and slope wash. This member is typically dark colored silty loam to loam with a relatively recent age from as old as 400 BP (Bettis and Littke 1987). The Camp Creek deposits hold potential for buried/unburied historic and late prehistoric components. The Corrington member is described as brown to dark grayish brown silty clay loam with sandy loam/pebbly loam ranging in age from 10,000 to 3,500 BP (Bettis and Littke 1987). The Gunder member ranges from brown to yellowish brown silt loam to loam soils. This member can overlie older alluvium, glacial till, and bedrock (Bettis and Littke 1987). The Corrington and Gunder members have potential for buried components from Paleoindian through Woodland. Finally, the Roberts Creek member accumulated during the late Holocene. This member is dark colored, loamy soils often buried by Camp Creek deposits; this member often overlies under and Corrington member deposits (Bettis

and Littke 1987). The Roberts Creek member hold potential for buried Late Archaic to early historic components.

The Web Soil Survey provided by Natural Resources Conservation Service (2024) was used to identify the soils in the project area. The entire project area is mapped the Nicollet soil series (Figure 13). These soils are deep clay loam, formed in calcareous loamy glacial till on till plains and moraines. (NRCS 2024). Descriptions of these soils are in the table below.

Table 2. Soil Map Units and Descriptions

Soil Types	Numeric Symbol	Landscape Position	Drainage	Parent Material	Slope (%)
Nicollet clay loam	55	Ground moraines, rise, talf	Somewhat poorly drained	Fine-loamy till	1-3

The predominate soil in the project area is classified as poorly drained Nicollet clay. This soil typology results in water saturated landforms that make it an unsuitable environment for human activity which leads to a perception of low archaeological potential. Furthermore, the impact of development has effectively eradicated the chance of preserving intact archaeological deposits within the project area.

## HISTORICAL AND CULTURAL CONTEXT

Previous archaeological data was provided by the Iowa Site Files (I-Sites Pro) through The Office of the State Archaeologist (OSA). I-Sites Pro was utilized to verify the presence of cultural resources, notable locations, previously recorded architectural locations, NRHP listed sites and districts, and previous survey areas. The national Register Information System website (National Park Service 2023), the Andreas atlas of Iowa (Andreas 1875), GLO maps (GLO 1853), and reviews of previous cultural resource management studies in the project vicinity were also reviewed for this survey.

Table 3.. Archaeological Periods of Iowa

Cultural Period	Tradition	Calendae Age
Paleoindian	Early Paleoindian Late Paleoindian	11,000-10,500 B.C. 10,500-8500 B.C.
Archaic	Early Archaic Middle Archaic Late Archaic	8500-5500 B.C. 5500-3000 B.C. 3000-800 B.C.

Woodland	Early Woodland Middle Woodland Late Woodland	800-200 B.C. 200 B.C.-A.D. 400 A.D. 400- 1200
Late Prehistoric	Great Oasis Mill Creek Glenwood Oneota	A.D. 900- 1100 1000-1200A.D. 1150-1290 AD 1050-1700 AD
Protohistoric	--	1650-1850 AD
Historic Euro-American	--	1850 AD- Present

\*Dates provided by Alex 2000

***Site Records and Previous Investigations***

Current records on I-Sites Pro indicated three previous archaeological inventories have taken place within a 1-mile radius of the project area. Summaries of these inventories are listed in the table below.

Table 4. Previous Inventories within .5-mile radius of project area

Report No.	Year	Author(s)	Project Type	Report Title
19870337050	1987	Billeck, W. T.	Linear Inventory	A Phase I Archaeological Survey of Local Systems Project RS-3209(1), Greene County, Iowa.
20091237092	2009	Rickers, C. S.	Block Inventory	Phase I Intensive Archaeological Investigation of the Proposed Churdan Cell Tower Project (USC Churdan #393332), Section 20, T85N-R31W, Greene County, Iowa.
20140537047	2014	Kendall, B. S.	Linear Inventory	Phase I Intensive Archaeological Investigation of the Proposed Churdan-Xenia Rural Water Connection Project, Sections 13,17, and 20, 24, T85N-R31W, Greene County, Iowa.

Nine architectural structures are located within the 1-mile radius of the project area. These sites are summarized below.

Table 5. Cultural Resources within 1-mile radius of project area

Site No.	Site Type/Affiliation	NRHP Eligibility	Distance from Project Area/ Potential Effects
37-00085	House	Non-Extant	Out of APE- No Effect

37-00105	House	Not Listed	Out of APE- No Effect
37-00106	House	Not Listed	Out of APE- No Effect
37-00188	House	Not Listed	Out of APE- No Effect
37-00208	House	Not Listed	Out of APE- No Effect
37-00222	House	Not Listed	Out of APE- No Effect
37-00249	House	Not Listed	Out of APE- No Effect
37-00253	House	Not Listed	Out of APE- No Effect
37-00293	Cemetery	Not Listed	Out of APE- No Effect

This record review indicated no historic Native American (HILD database) or notable locations within the project area. Additionally, there are no cultural resources or architectural properties within the area of potential effect (APE).

## **RESULTS OF THE INVESTIGATION**

The Phase I cultural resource survey was undertaken on February 27, 2024. Sunny and windy weather conditions were encountered at the time of the archaeological field investigation. The project area is an empty lot located at the intersection of Jay Street and Fitzpatrick Street, Churdan, in Greene County, Iowa. Project investigations included background records check through the I-Sites online database, pedestrian survey, and subsurface testing.

The project area measures 14 m by 25 m, encompassing a total of .353.6 square meters. Survey methodology included a thorough pedestrian survey conducted at 5-meter intervals and was completed before any work was initiated at the proposed project area. Ground surface visibility ranged from 0 to 30% and vegetation includes manicured grass. The project area has been highly disturbed due to development projects, house projects, utility installation, and tree removal. The location of the water tower was previously augured and staked (Figure 24). Exposed soils in the project area were dark brown to yellowish brown clay loam.

Pedestrian survey discovered a partially buried ceramic fragment near the water tower location. Subsurface testing was used to determine if intact cultural materials exist at 13GR95 with tests spaced at 3 m intervals to avoid areas with underground utilities. A total of 12 subsurface tests were conducted within the project area (Figure 14).

The shovel tests were excavated to 50-65 centimeters below ground surface with an average of 55 centimeters. The typical profile consisted of an A horizon ranging 13 to 17-centimeters in thickness. Typical color of the soil in the A horizon consist of a very dark brown (10YR 2/2) clay loam overlying a dark brown (10YR 3/3) sandy loam that overlay a dark yellowish brown (10YR 4/6) sandy clay, slightly compacted. Pebbles and cobbles were common at 13 cm.

With the exception of subsurface test 1, no additional artifacts were uncovered in the subsurface testing. However, should cultural materials be discovered during any phase of construction, construction should cease immediately, and the archaeologist should be contacted to determine

any significance of the find. If human remains are found during the construction phase of this project, all activities must be stopped, and the Office of the State Archaeologist contacted immediately.

## NEWLY RECORDED ARCHAEOLOGICAL SITES

### ***13GR95***

**Site Type:** Historic (Euro-American) period. Isolated find.

**Area:** 353.6 m<sup>2</sup>

**Legal Location:** Township 85 North, Range 31 West, Section 20, SE ¼ of the SE ¼

**Site Setting:** The isolated find was located in an empty lot that has been previously levelled. At the time of the field survey, the site location was included within a manicured lawn with ground surface visibility ranging between 0-30%. Soils included in the site area are mapped as Nicollet clay loam, 1-3% soils. The soil series are formed in glacial till deposits. Access to the site area is from Fitzpatrick Street, which is located to the east of the site area.

**Site Disturbance:** The site has been subjected ground levelling, utility installation, housing development, and tree removal. The site has also been impacted by the removal and destruction of the former residence that was located at the site area.

**Investigation Techniques:** The isolated find was identified during a pedestrian survey on February 27, 2024. The ceramic fragment was located 20 cm south from the staked water tower location. A close interval of 5m parallel transects and systematic shovel testing were implemented at the site location. A 5m. interval was maintained between parallel transects and between individual test locations. A total of 12 shovel tests (4 per transect) were performed at the site location. Subsurface tests revealed a 13-20 cm. deep A horizon and dark brown/brown to yellowish brown colored sandy to loam soils. Historic artifact was recovered from the surface only. No buried cultural materials were observed in the subsurface tests.

**Artifact Analysis:** Systematic shovel testing and pedestrian inspection led to the identification of one household related artifact between 0-4 cm. The white ceramic fragment measures 1.3 cm by .9 cm.

#### ***Ceramics:***

- White ceramic fragment with embossing on the outer rim – 1

**Interpretations:** Site 13GR95 consists of an isolated find that was identified partially on the surface of a manicured lawn. The site consisted of 1 white ceramic with embossing on the outer rim.

Further information regarding the location of 13GR95 is provided by historic records, deeds, and plat books for the site vicinity. No structures are depicted in the 1853 and 1875 plat maps, however by the 1896 plat map, the City of Churdan has been established (Figure 6). Historic imagery depicts a structure standing within the project area as early as the 1930's (Figure 8). The structure appeared to be demolished by the 1990's. Based upon historic records obtained at the Greene County records office the location of 13GR95 has been transferred approximately 5 times. The earliest change of title was for Jacob Horton in 1947 who then transferred it to his wife in 1955. By the 1980's the deed was transferred to the Browns who converted the house into a funeral home. After the demolition of the structure, the Browns transferred the deed to the City of Churdan.

**Recommendations:** : Site 13GR95 consists of a single ceramic fragment possibly associated with the former residence at site 13GR95, that was occupied during the early 20<sup>th</sup> century to the 1990's. Upon review, site 13GR95 does not appear to meet eligibility requirements for nomination to the National Register of Historic Places for the following reasons:

- Shovel testing within the site area did not reveal the presence of any cultural features, artifacts, or foundations in an undisturbed context.
- Through historic background research, this site is not associated with a significant person or event in history.
- With the lack of in situ cultural material and the limited artifact inventory indicates a relatively low potential to add to an understanding of Euro-American adaptive processes in central Iowa.

Because of these reasons, Snyder and Associates, Inc. recommends that 13GR95 is not eligible for the NRHP and no further archaeological work is recommended for this site.

## CONCLUSIONS

A Phase I cultural resource inventory was conducted for the City of Churdan, Greene County, Iowa. An intensive pedestrian survey was conducted over the project area. One newly recorded isolated find, 13GR95, was documented within the project area during this inventory. 13GR95 consisted of a partially buried white ceramic fragment possibly associated with a previously standing structure demolished in the 1990's. Subsurface testing revealed no additional artifacts within the boundary. The location of 13GR95 has been significantly disturbed by development projects and lack integrity and in situ cultural materials. 13GR95 does not meet the minimum requirements for nomination to the NRHP and thus no further archaeological work is recommended.

It should be taken into account that not all archaeological investigation survey and testing methods can guarantee all archaeological sites will be identified within a project area. If unanticipated archaeological sites or burials are encountered during implementation of the proposed project, all construction activities should cease and the State Historic Preservation Office and Snyder and Associates, Inc., should be notified immediately.

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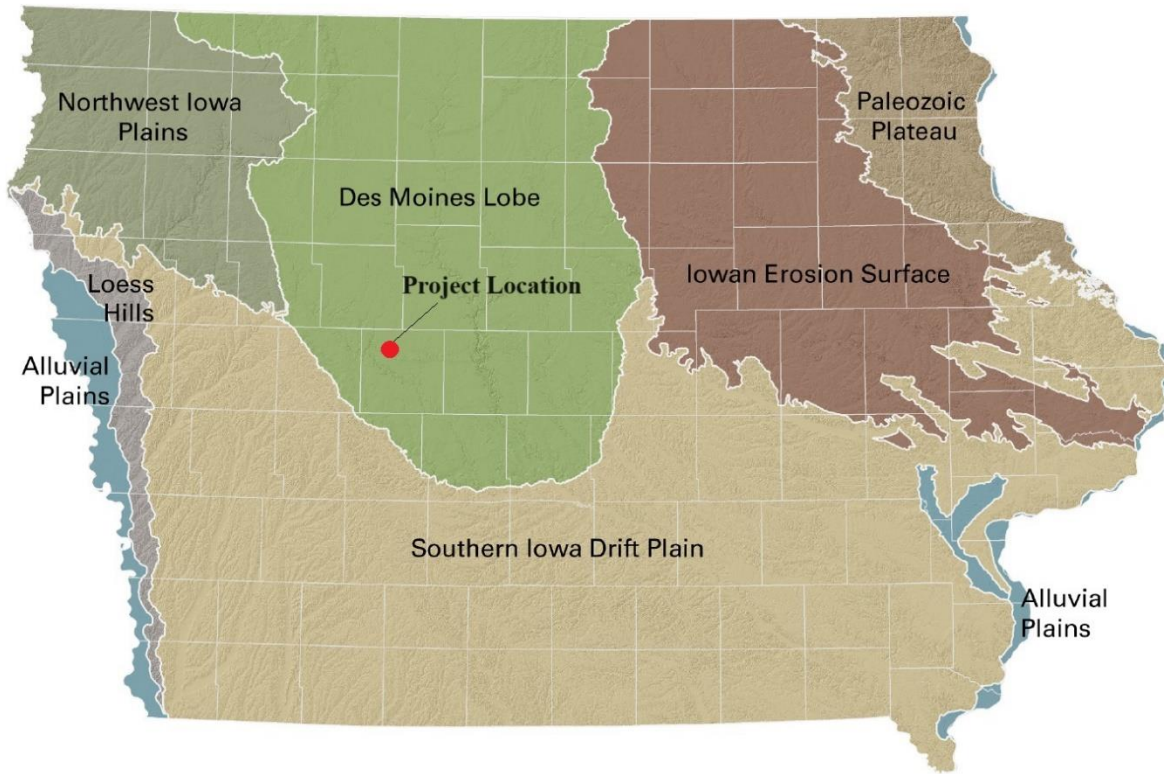
North West

1896 *Plat Book of Greene County, Iowa*. Philadelphia, PA: North West.

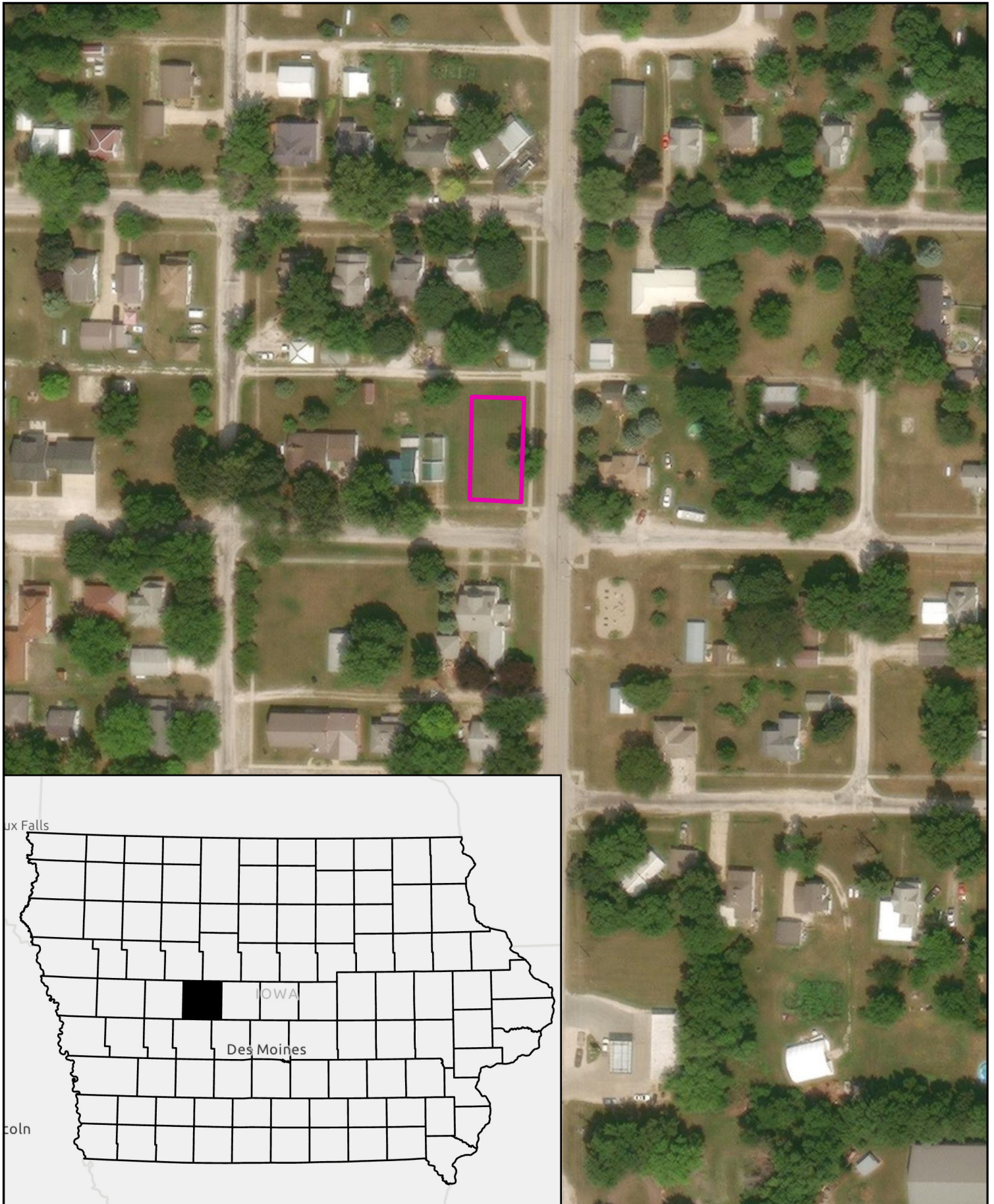
Prior, Jean C,

1991 *Landforms of Iowa*. Iowa City: University of Iowa Press.

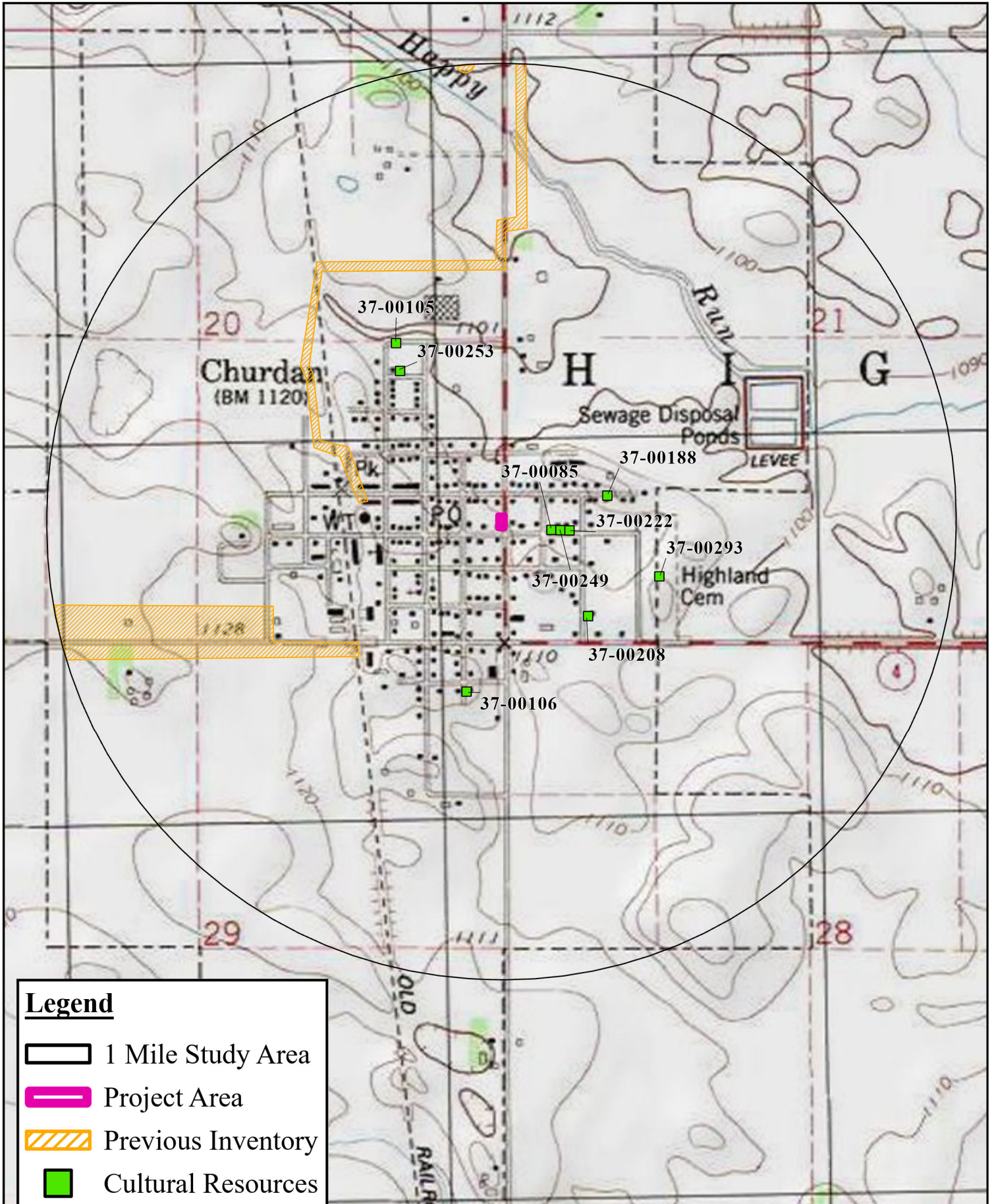
**APPENDIX I**  
**MAPS**

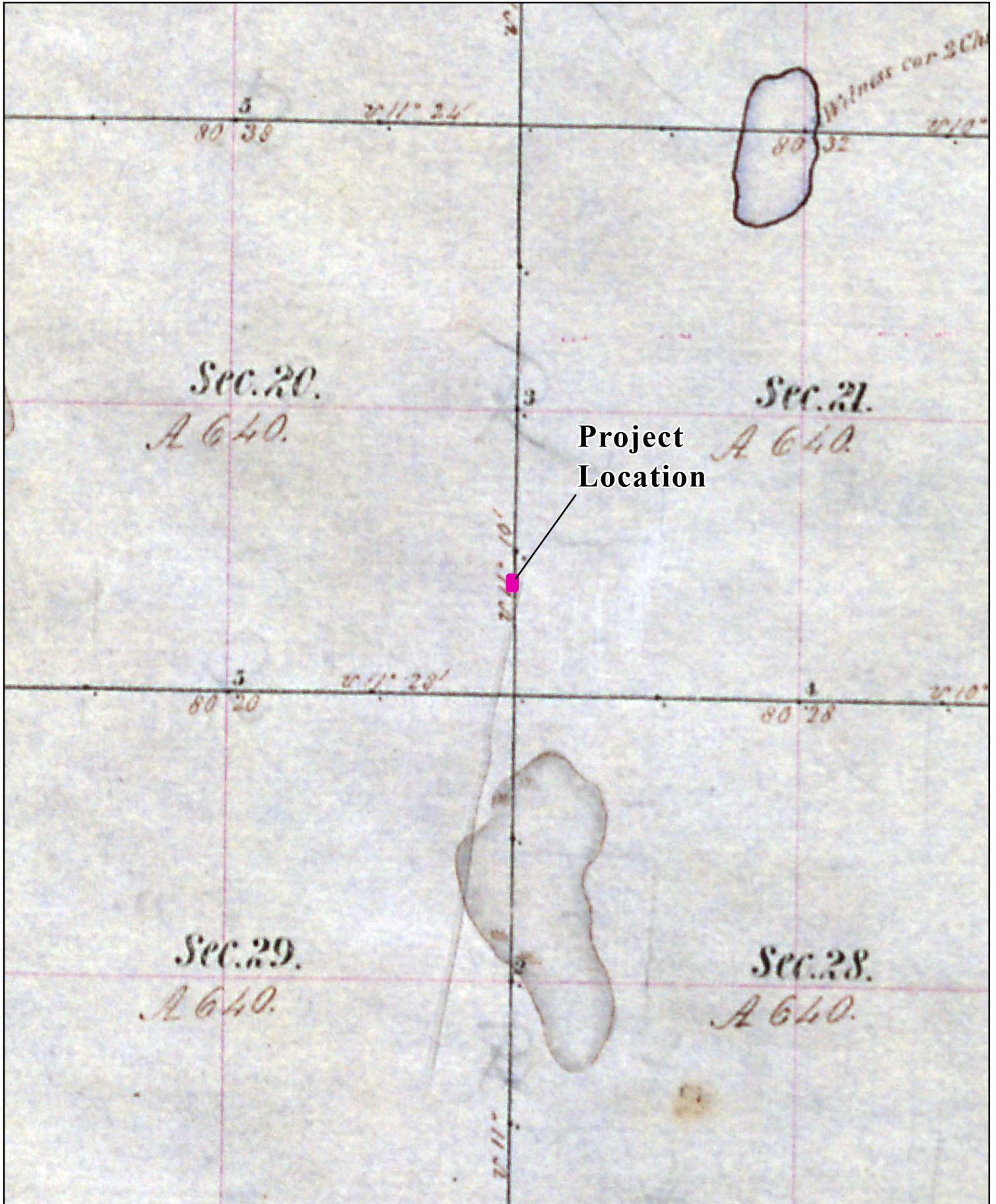


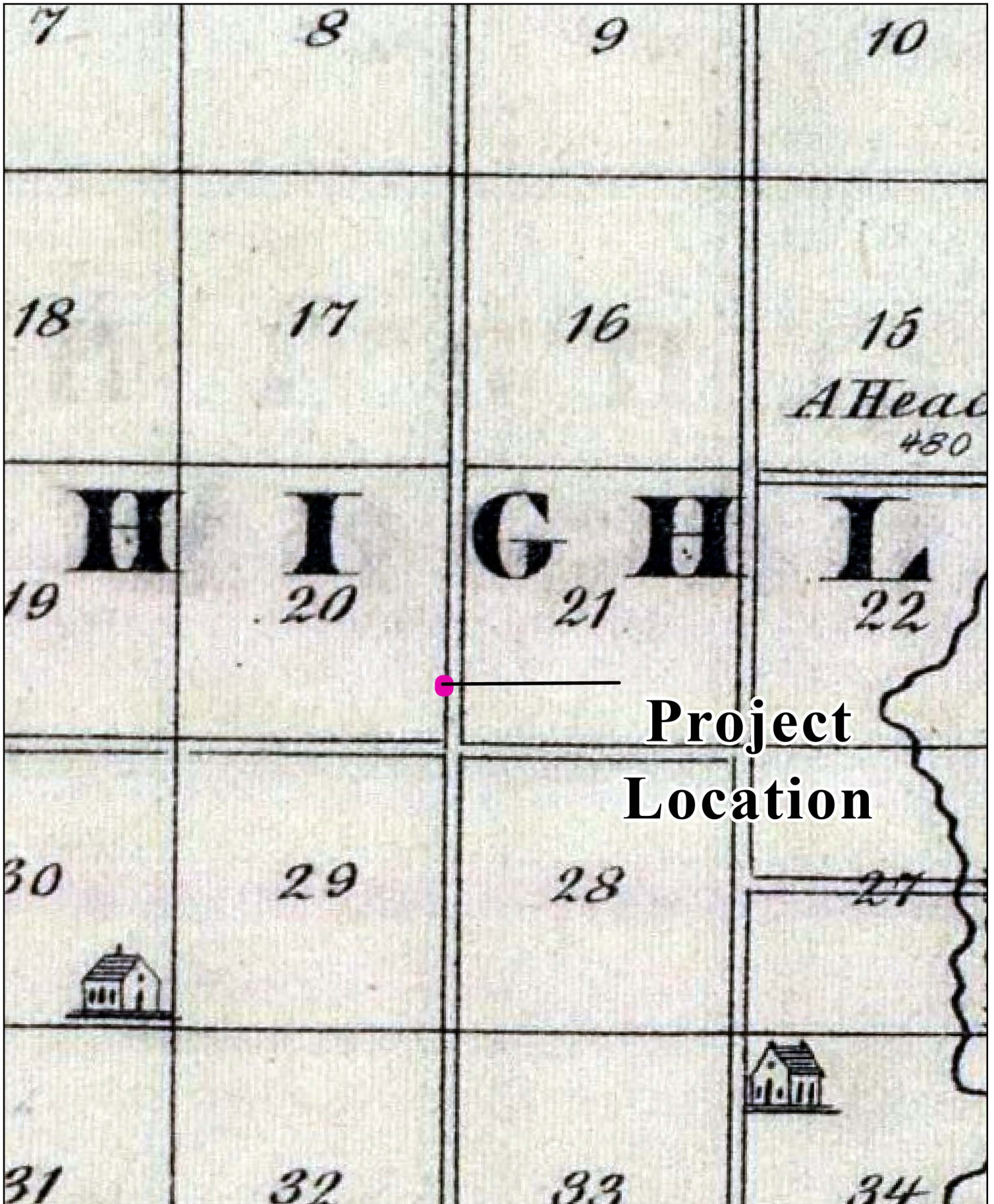
**Figure 1:** Physiographic location of project area within the Des Moines Lobe (adapted from Iowa Department of Natural Resources 2000).



**Figure 2 - Project Location**







**Figure 5 - 1875 Andreas Map**

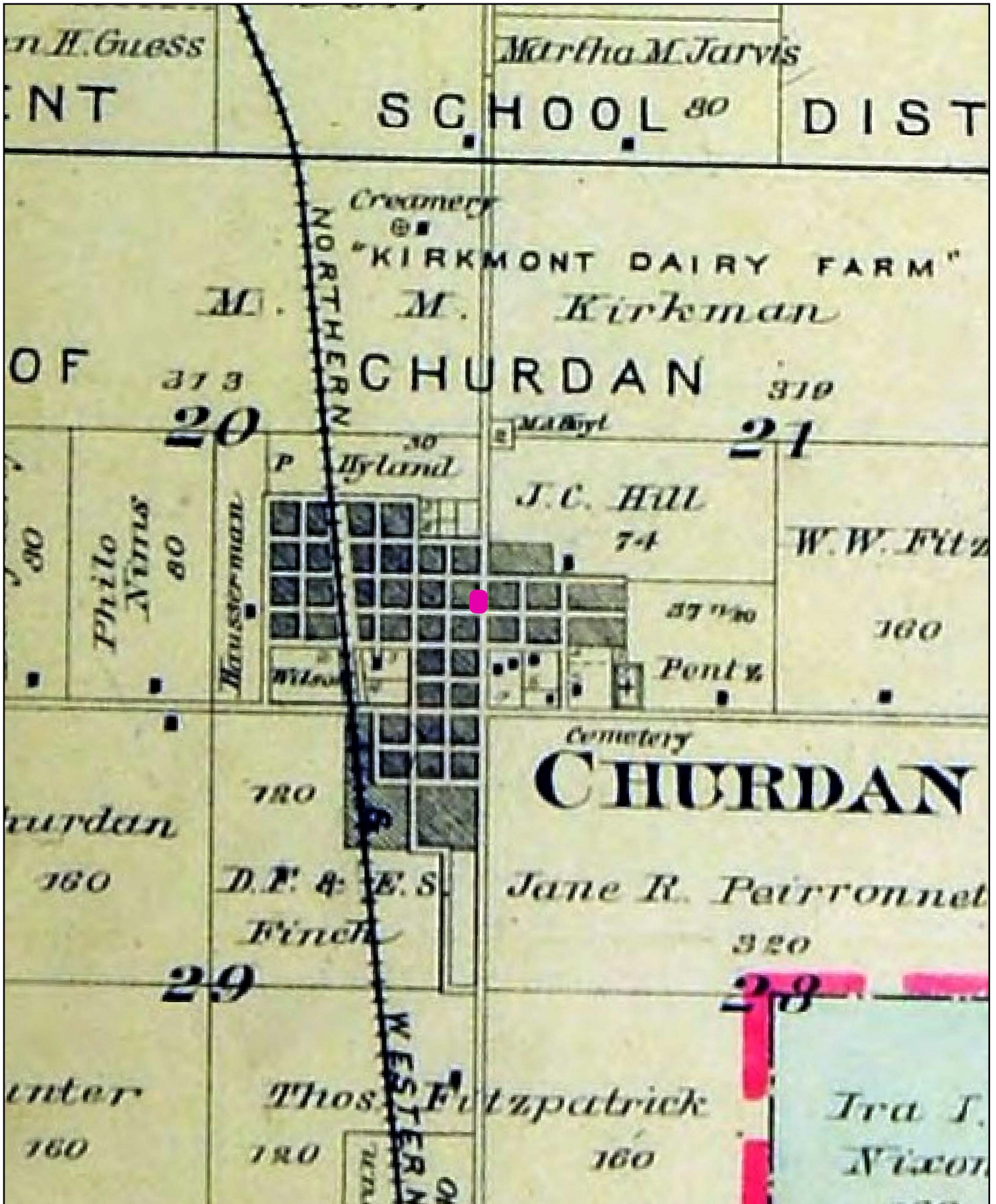
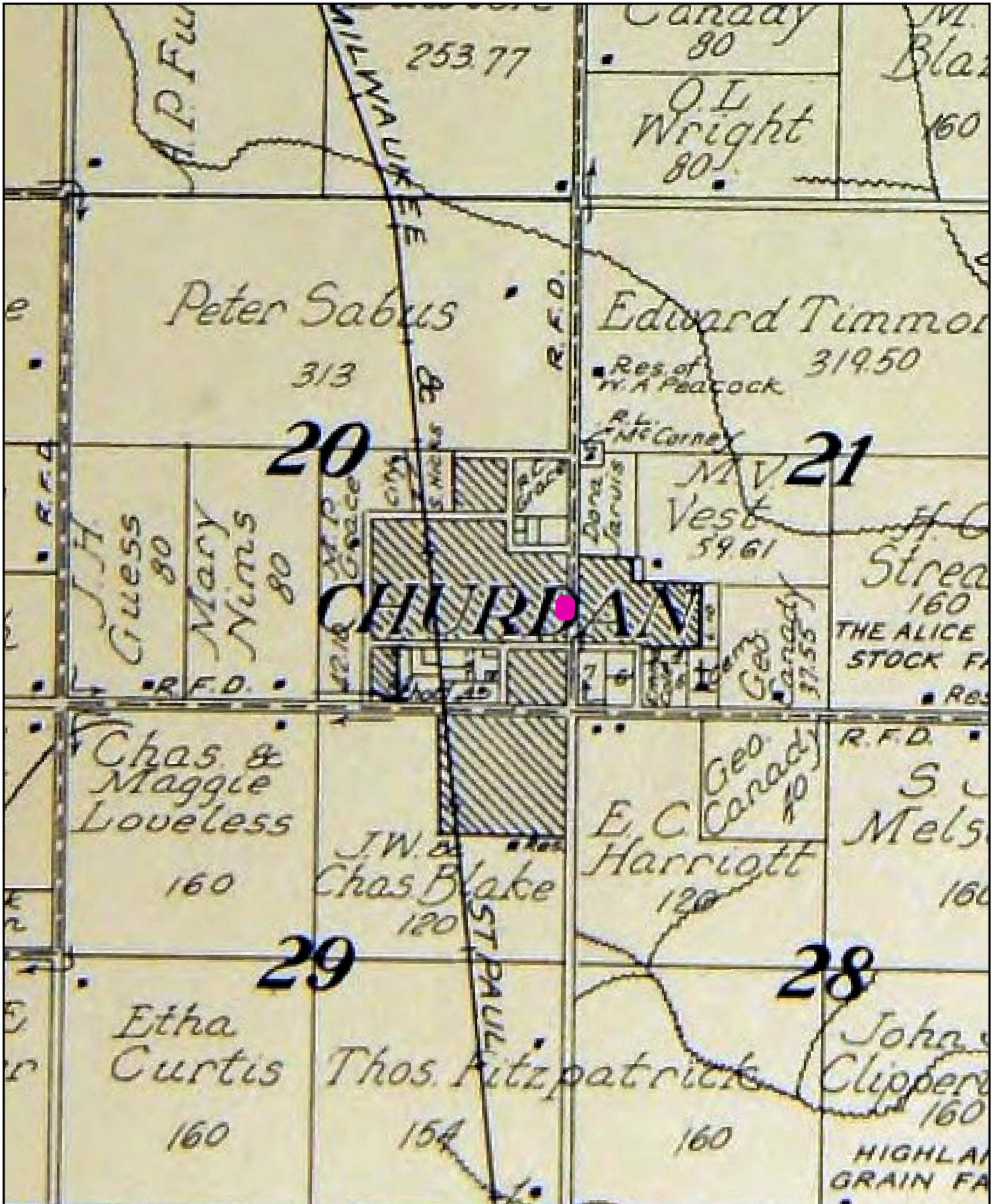


Figure 6 - 1896 Plat Map

















**Legend**

-  Inventory
-  Water Tower Location
-  13GR95
-  Subsurface Test



**Figure 14 - Subsurface Tests Map**

Churdan Water Tower Phase 1 | Greene County, IA3/11/2024|

**APPENDIX II**  
**PHOTOGRAPHS**



**Figure 15:** Overview of project area facing west.



**Figure 16:** Overview of project area facing southwest.



**Figure 17:** Project area overview facing south. Underground utilities located in this section.



**Figure 18:** Ground surface visibility.



**Figure 19:** Overview of project area, facing northwest.



**Figure 20:** Overview of project area facing north.



**Figure 21:** Overview of empty lot facing north.



**Figure 22:** Overview of empty lot facing northwest.



**Figure 23:** Overview of project area facing east.



**Figure 24:** Isolated find, 13GR95, and water tower location staked. Note exposed soils.



**Figure 25:** Overview of exposed soils and water tower location.



**Figure 26:** Interior white ceramic fragment.



**Figure 27:** Outer rim of the ceramic fragment. Note embossing decoration.



**Figure 28:** Outer rim of the ceramic fragment. Note embossing decoration.

**APPENDIX III**  
**SOIL PROFILES**

ST No.	Depth (cm)	Description
1	0-16 16-38 38-55	<b>A horizon</b> 10YR2/2 very dark brown silty clay loam, subangular blocky structure, loosely compacted, clear boundary. <b>B A horizon</b> 10YR3/3 dark brown silt clay loam, subangular blocky structure, large amount of pebbles present. <b>Bw horizon</b> 10YR3/6-10YR4/6 dark yellowish brown clay loam, subangular blocky, pebbles and cobbles.
2	0-15 15-41 41-60	<b>A horizon</b> 10YR2/2 very dark brown silty clay loam, subangular blocky structure, loosely compacted, clear boundary. <b>B A horizon</b> 10YR3/3 dark brown silt clay loam, sandy inclusions, subangular blocky structure, large amount of pebbles present. <b>Bw horizon</b> 10YR4/6 dark yellowish sandy clay loam, subangular blocky, pebbles and cobbles.
3	0-14 14-38 38-57	<b>A horizon</b> 10YR2/2 very dark brown silty clay loam, subangular blocky structure, loosely compacted, some pebbles and modern trash within layer. <b>B A horizon</b> 10YR3/3 dark brown silt clay loam, subangular blocky structure, large amount of pebbles present, small amount of charcoal at 31 cm with sandy pocket. <b>Bw horizon</b> 10YR4/6 dark yellowish brown sandy clay loam, slightly compacted subangular blocky, pebbles and cobbles.
4	0-35	<b>A B horizon</b> 10YR2/2 very dark brown to 10YR3/3 dark brown silty clay loam, subangular blocky structure, compacted soils with pebbles. Terminated due to tree root.
5	0-13 13-40 40-59	<b>A horizon</b> 10YR2/2 very dark brown silty clay loam, subangular blocky structure, loosely compacted, clear boundary. <b>B A horizon</b> 10YR3/3 dark brown sandy clay loam, large amount of pebbles present, clear boundary. <b>Bw horizon</b> 10YR4/6 dark yellowish brown to 10YR5/6 yellowish brown sandy clay loam, loosely compacted wet soil, pebbles and cobbles.
6	0-14 14-33 33-47	<b>A horizon</b> 10YR2/2 very dark brown sandy clay loam, subangular blocky, loosely compacted. <b>B A horizon</b> 10YR3/3 dark brown sandy clay loam, pebbles, 10YR4/6 dark yellowish brown sandy inclusions. <b>Bw horizon</b> 10YR4/6 dark yellowish brown sandy clay loam, loosely compacted, pebbles and cobbles.
7	0-18 18-25	<b>A horizon</b> 10YR2/2 very dark brown sandy clay loam, subangular blocky, loosely compacted. <b>B A horizon</b> 10YR3/3 dark brown sandy clay loam terminated due to impassible cobble.
8	0-15 15-40 40-47	<b>A horizon</b> 10YR2/2 very dark brown sandy clay loam, subangular blocky, slightly compacted. <b>B A horizon</b> 10YR3/3 dark brown sandy clay loam, slightly compacted. Small amount of charcoal at 27 cm., clear boundary <b>Bw horizon</b> 10YR4/6 dark yellowish brown sandy clay loam, loosely compacted, pebbles. Terminated due to tree root.
9	0-12 12-32 32-39	<b>A horizon</b> 10YR2/2 very dark brown sandy clay loam, subangular blocky, slightly compacted. <b>B A horizon</b> 10YR3/3 dark brown silty clay loam, slightly compacted. Small amount of clay loam 10YR4/6 dark yellowish brown at 24 cm., clear boundary <b>Bw horizon</b> 10YR4/6 dark yellowish brown sandy clay loam, loosely compacted. Terminated due to tree root.

10	0-13 13-40 40-53	<p><b>A horizon</b> 10YR2/2 very dark brown silty clay loam, subangular blocky structure, loosely compacted, some pebbles and modern plastic within layer.</p> <p><b>B A horizon</b> 10YR3/3 dark brown silt clay loam, subangular blocky, small amount of pebbles present, small amount of charcoal at 38, clear boundary.</p> <p><b>Bw horizon</b> 10YR4/6 dark yellowish brown silty clay loam, slightly compacted, subangular blocky.</p>
11	0-17 17-36 36-51	<p><b>A horizon</b> 10YR2/2 very dark brown silty clay loam, subangular blocky structure, compacted, cobbles.</p> <p><b>B A horizon</b> 10YR3/3 dark brown silt clay loam, subangular blocky structure, pebbles present, small amount of charcoal at 22 cm, sandy inclusions at 33 cm..</p> <p><b>Bw horizon</b> 10YR5/6 yellowish brown sandy clay loam, loosely compacted subangular blocky, pebbles</p>
12	0-14 14-41 41-55	<p><b>A horizon</b> 10YR2/2 very dark brown silty clay loam, subangular blocky structure, loosely compacted.</p> <p><b>B A horizon</b> 10YR3/3 dark brown silt clay loam, subangular blocky structure, pebbles, small amount of charcoal at 35 cm.</p> <p><b>Bw horizon</b> 10YR5/6 yellowish brown sandy clay loam, slightly compacted subangular blocky, few pebbles</p>

# IOWA ARCHAEOLOGICAL SITE FORM

Office of the State Archaeologist  
700 Clinton Street Building  
University of Iowa  
Iowa City, Iowa 52242-1030

Site Number: 13GR95  
County: GREENE  
Name/Field No.:  
New Form:  Supplemental:

## I. SITE TYPE INFORMATION

**Legal Location:**  
Township: T85N                      Range: R31W                      Section: 20  
NE 1/4 SE 1/4

**Quadrangle(s):** CHURDAN

**Reliability of Site Location:** Fair

### Site Type/Function

Historic isolated find -- Whiteware ceramic fragment

### Period/Cultural Affiliation

**Period:** Historic

**Basis:** ceramic attribute analysis Whiteware

**Have human remains been found at this location?** No

**Are mounds or cemeteries present at this location?** No

## II. CULTURAL MATERIALS: 13GR95

**Location of Artifact Collection:** other (describe): Snyder & Associates Inc

Category	Description	Collected?
Ceramic, historic	1 whiteware fragment with embossing	no

**Collection Method(s):** shovel/posthole/auger tests

**Notes on Method(s):** Intensive pedestrian survey at 5m intervals

**Ground Cover:**  row crops  grass  brush/weedy/open woods  forest/heavy timber  exposed/eroded  unknown

**Notes on Ground Cover:** Manicured grass

**Amount of Ground Surface Visible:**  <25%  25–50%  50–75%  75–100%  unknown

**Notes on Visibility:** Empty lot manicured grass

**Surface Conditions in Cropland:**  dry  recent rain  wet  unknown

**Recently Tilled Cropland:**  true  false

### III. GEOGRAPHIC INFORMATION 13GR95

**Topography/Landform:** summit, uplands

**Nearest Water Source:** Intermittent stream

**Distance to Nearest Water:** 1011 m

**Site Size**

**Dimensions:** 2 x 2 m

**Area:** 12.5 sq m

**Map Method(s):** Global Positioning System

**Integrity:** \_ excellent \_ good \_ poor  completely destroyed \_ unknown

**Threats To Site**

**Past/**

**Present**

**Future**

**Threat Type**

**Description**

X

X

pipeline/utilities

X

X

development/construction

Structure stood in project area

**Current Land Use:** residential

### IV. INVESTIGATION INFORMATION 13GR95

**Recorder(s)**

**Name**

**Address**

Ramirez, Lina

other (describe), Snyder & Associates Inc

**Start Date of Investigation:** 2/27/2024

**Level of Investigation:** Phase I

**Recommendations:** No further work

**National Register Eligibility Recommendation:** Not Eligible for NR

**Photo(s)**

**Photo Type**

**Curated At**

Color

Snyder & Associates, Inc.

## V. VERBAL DESCRIPTION 13GR95

**Location: Provide a verbal description of how to locate the site, including distances and direction.**

**This information must be sufficiently detailed to permit accurate site relocation. If possible, include permanent landmarks, roadways, and distances.**

Site is located at 706 Jay Street, Churdan, Iowa. It is west of Fitzpatrick Street and north of Jay Street in an empty lot.

**Site Description: Describe the site and include dimensions, features, nature and content of artifacts and concentrations, extent and location of disturbances, etc.**

Site 13GR95 was identified by Lina Ramirez of Snyder and Associates, Inc. during a pedestrian survey on February 27, 2024. Site 13GR95 consists of an isolated find that was identified partially on the surface of an empty lot. The isolate find consisted of 1 whiteware fragment with embossing on the outer rim. Twelve subsurface tests were placed within the vicinity of the project area. No additional cultural materials were observed on the surface or within subsurface tests. <br>Further information regarding the location of 13GR95 is provided by historic records, deeds, and plat books for the site vicinity. Inspection of historic aerials archival records has provided additional data for this site. 1850 G.L.O map and the 1875 Andreas atlas were inspected but had no indication of any structures in the area. Historic imagery accessed through the I-Sites Pro database depicts a structure in the area of site 13GR95 as early as the 1930s. Record search concluded the structure operated as a funeral home until it was demolished in the 1990s. Based upon historic records obtained at the Greene County records office the location of 13GR95 falls under multiple title transfers from as early as 1947 to as recent as 2022 and is currently owned by the city of Churdan.<br>

ARCHEOLOGICAL RECONNAISSANCE SURVEY  
FOR WATER SYSTEM IMPROVEMENTS  
IN CHURDAN, IOWA

Section 20, T85, R31W

BCA 3813

**THIS REPORT MAY CONTAIN SITE LOCATION INFORMATION  
NOT FOR PUBLIC DISTRIBUTION**

Prepared for  
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2727 SW Snyder Boulevard  
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Prepared by  
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Derek V. Lee, Director

July 2025

## MANAGEMENT SUMMARY

The following report presents the results of an archeological reconnaissance survey conducted for Snyder & Associates by Bear Creek Archeology, Inc. for water system improvements, including a proposed elevated water storage tank and water main replacements in Churdan, Iowa. The elevated water storage tank is to be constructed within a 33 x 23 m (110 x 75 ft) tract of land just northwest of the intersection of Fitzpatrick and Jay streets, while the associated water main replacements are slated to extend north from the water storage tank for approximately 0.7 km (0.4 mi) within a 5 m (16 ft)-wide corridor on the west side of Fitzpatrick Street. In total, the project area covers 0.4 ha (1.0 ac).

At the time of reconnaissance survey on July 15, 2025, the proposed water tank location was within a vacant lot, while the water main replacement corridor was entirely within the Fitzpatrick Street ditch. An archival review identified two previous archeological surveys and one recorded archeological site within the project area; however, both investigation areas and the site were recommended for no further work by their investigators. During the current investigation, a geomorphic evaluation determined that the project area is comprised of significantly disturbed and/or poorly drained glacial landforms that have negligible potential for intact archeological deposits. Therefore, Bear Creek Archeology, Inc. recommends no further cultural resources investigations for the project area.

**Information contained in this report relating to the nature and location of archeological sites is considered private and confidential and not for public disclosure in accordance with Section 304 of the National Historic Preservation Act (54 USC § 307103); 36 CFR Part 800.6(a)(5) of the Advisory Council on Historic Preservation's rules implementing Sections 106 and 110 of the National Historic Preservation Act; Section 9(a) of the Archaeological Resource Protection Act (54 USC § 100707); and Chapter 22.7, subsection 20 of the Iowa Code.**

## INTRODUCTION

The following report presents the results of an archeological reconnaissance survey conducted for Snyder & Associates by Bear Creek Archeology, Inc. (BCA) for water system improvements, including a proposed elevated water storage tank and water main replacements, in Churdan, Iowa. This archeological reconnaissance survey was conducted in accordance with the National Historic Preservation Act (Advisory Council on Historic Preservation 2004, 2016) and the Secretary of the Interior's standards for the identification of historic properties (National Park Service [NPS] 1983), the investigation meets or exceeds the guidelines for Iowa archeological investigations offered by the Association of Iowa Archaeologists (AIA; 2022). This report details the information-gathering process concerning cultural resource properties that may exist in or near the project area, provides descriptions of cultural resources when encountered, their natural contexts, and recommendations concerning the potential impact of the proposed development on existing cultural resources. This investigation included archival research, landform evaluations, and a field reconnaissance, which included a geomorphic assessment. The fieldwork portion of this investigation was conducted on July 15, 2025. The field reconnaissance data analyses, and report production were completed by BCA personnel under the supervision of the principal investigator. The resulting field notes and other records generated during this project are housed at BCA's office in Cresco, Iowa.

## PROJECT LOCATION AND DESCRIPTION

The project area is within central Iowa within the Des Moines Lobe physiographic region (Prior 1991; Figure 1). Set in the city of Churdan, the project area is comprised of the locations of the proposed elevated water storage tank and water main replacements. The elevated water storage tank is to be constructed within a 33 x 23 m (110 x 75 ft) tract of land just northwest of the intersection of Fitzpatrick and Jay streets, while the associated water main replacements are slated to extend north from the water storage tank for approximately 0.7 km (0.4 mi) within a 5 m (16 ft)-wide corridor in the ditch on the west side of Fitzpatrick Street. Positioned along a glacial moraine, the project area is within the E¼, Section 20, T85N, R31W, Greene County, Iowa (Figure 2). In total, the project area covers 0.4 ha (1.0 ac; Figure 3).

## INVESTIGATION PREMISES

The purpose of this investigation is to provide an assessment of the potential of cultural resources to occur within the project area. The survey strategy of this reconnaissance investigation was based on an analysis of the project area and the landforms that exist within it. Archeological sites are integrated into the environment by natural surficial and formation processes and may be viewed not only as cultural remains, but also as geological processes, and an awareness of these site formation processes is fundamental to any

evaluation of the archeological record. Landform and soil attributes have a strong influence on the presence, absence, and distribution of the plant and animal populations utilized by human groups. Geological processes affect not only the patterns of human habitation and environmental exploitation but are also largely responsible for the preservation, destruction, and manipulation of the archeological record. Therefore, archeological sites should be viewed as a product of both cultural and geological processes (Bettis and Green 1991).

This perspective on site location considers both the geological processes and cultural interactions of an area, allowing archeologists to use landform modeling to infer site potential within a given region (Bettis and Benn 1984; Bettis and Thompson 1981). Such an approach also proves useful in investigator recognition of post-settlement alluvium (PSA), made land, plowzones (Ap horizons), and other disturbances that may have modified the area under investigation.

As a tool of cultural resource management, this type of landform modeling is critical to the development and implementation of survey strategies. Strategies sensitive toward geomorphological context allow the investigator to focus on those areas where the probabilities of site occurrence are highest. This reduces or eliminates the cost of surveying areas where sites should not sensibly occur in situ (e.g., made land, heavily disturbed areas, and landforms consisting entirely of recent alluvium, etc.). Informed survey strategies such as those outlined above allow for the determination of the depth and distribution of subsurface tests necessary for the detection of buried cultural resource deposits. Additionally, the nature of the proposed impacts can be assessed in terms of the landforms present.

## GENERAL INVESTIGATION METHODOLOGY

Before beginning the field reconnaissance, online site and previous survey records at the Office of the State Archaeologist (OSA) in Iowa City were examined to determine if previously reported properties were recorded within or near the project area. To check for potential historic-age properties and non-extant structures, digital copies of an 1853 General Land Office (GLO) map, an 1875 state atlas, five county plat maps, and 1939–2023 aerial photographs stored on the BCA server were also consulted.

During the field reconnaissance, a geomorphic review was conducted to assess the general landform context of the survey area. A ¾” hand probe was used to inspect subsurface deposits and monitor the depth of the plowzone and other modern impacts. Representative soil profiles were recorded and supplemented by visual assessments of the project area. A submeter-accurate GPS was used to record the locations of soil cores and other data. Field notes and photographs are on file at BCA.

## ENVIRONMENTAL CONTEXT AND LANDFORM MODELS

As part of the preparation for conducting this archeological reconnaissance survey, information regarding the surficial geology of the project area and the larger region that they are in was reviewed. The following summarizes some of those data.

### *Physiographic Region*

The project area is located within the Des Moines Lobe physiographic region (Prior 1991; Figures 1 and 4). This region was created during the extension of the Wisconsin Laurentide ice sheet into Iowa approximately 14,000 years ago (Kemmis et al. 1981). Because this area was covered with glacial ice, the thick deposition of loess common in most of Iowa was prevented (Prior 1991). Subsequently, the Late Wisconsin-age glacier deposited materials commonly referred to as the Dows Formation (Kemmis et al. 1981; Ruhe 1969). Relief on the Des Moines Lobe is generally low. As the region has only been free of glacial ice for 12,000 years, the drainage system is still developing. Glacial till, more resistant to erosion than loess, further slows the process of valley incision.

A large portion of the Des Moines Lobe area is hummocky with distinct ridges and swales marking the limits of the major ice advances. The hummocky areas are comprised of elevational highs such as end moraines, kettles, and knobs. The relatively flat plains are underlain by ground moraine till (Prior 1991). Swales, depressions, and low relief drainages produce a grid across portions of the Des Moines Lobe. These linked drainage-depression systems are glacial features formed during the collapse of stagnant-ice environments rather than moving ice. Evidence for these environments can be found regionally across the lobe (Bettis et al. 1996). Additional work on the glacial and post-glacial deposition and environmental changes on the Des Moines Lobe has further refined sequences from earlier works (Bettis et al. 1996; Kemmis et al. 1981; Ruhe 1969). The following section summarizes relevant information regarding terminal Pleistocene deposits and those associated with the Holocene-age DeForest Formation for the current project area.

*Dows Formation.* Almost all uplands within the Des Moines Lobe are covered with thick, glacially deposited sediments termed the Dows Formation (Kemmis et al. 1981). The formation is subdivided into four different members: Alden, Morgan, Lake Mills, and Pilot Knob, which were deposited by glacial advances between ca. 15,000 and 12,000 B.P. (Bettis et al. 1996). The loamy Alden Member contains till that was deposited beneath the glacial ice. Morgan Member is comprised of loamy sediments that exhibit a higher density of coarse materials as compared to the Alden Member. These materials are associated with the upper and marginal portions of the glacier. Morgan Member consists of alternating beds of unsorted and size-sorted sediments. Lake Mills Member consists of an upper bed of fine-grained sediments and a thinner, lower bed of sands and gravels. This member formed in glacial lakes through the initial transport of larger sediments by glacial meltwater, followed by fine-grained deposition consistent with low-energy lake environments. Pilot Knob Member contains the coarsest sediments of the Dows

Formation. This member consists of sands and gravels associated with subglacial meltwater and streams. The sediment-laden meltwater often resulted in the formation of kames and eskers.

### *Project Area Soils and Landscape Analysis*

According to the Soil Survey of Greene County (Sherwood 1985) and the Natural Resources Conservation Service (Soil Survey Staff 2021, 2025a, 2025b), 47.6% of the project area is mapped as Webster clay loam, 0–2% slopes (107; Figure 5). Nicollet clay loam, 1–3% slopes (55) makes up 46.3% of the project area. Comprised of poorly and somewhat poorly drained soils that formed in fine-loamy till, the Webster and Nicollet series are found along talfs on ground moraines. The remaining 6.1% of the project area consists of Clarion loam, 6–10% slopes (138C). The Clarion series is comprised of well-drained soils that formed in fine-loamy till on ground moraine rises.

A review of the topographic map (Figure 2) and lidar imagery (Figure 6) indicates that the project area stretches along a glacial moraine overlooking the perennial stream Happy Run. The lidar imagery (Figure 6) depicts substantial disturbance associated with road construction, ditching, and development throughout the entire project area.

## ARCHIVAL REVIEW RESULTS

Before fieldwork, information regarding previously surveyed areas, recorded archeological sites, and inventoried properties within or near the project area was obtained from the online resources managed by OSA (I-Sites), as well as BCA survey records. The available maps and aerial photographs were also examined as part of the archival review.

### *Previous Investigations, Recorded Sites, and Inventoried Properties*

The archival search identified no inventoried properties or entries in the Historic Indian Location Database (HILD) or Notable Locations databases within the project area. However, two previous Phase I archeological investigations covering portions of the project area were identified (Figure 2). One, conducted for a water line project (Kendall 2014), intersects the northern terminus of the project area (Figure 3) which identified no archeological sites and recommended the area for no further work. The other survey (Ramirez 2024) covered the proposed water tank location associated with the current project and found the area to be significantly disturbed. During that investigation, 13GR95, an isolated historic find, was identified within the current project area (Figure 3), but Ramirez (2024) recommended both the site and the survey area for no further work. No additional archeological sites were identified within the current project area.

A wider search identified two additional previously surveyed areas, ten inventoried properties, and one entry in the Notable Locations database within 1.6 km (1 mi) of the project area. The inventoried properties and the Notable Location are located entirely

outside the project area boundaries. Additionally, no archeological sites or entries in the HILD are on record within a 1.6 km (1.0 mi) radius of the project area.

### *Historic Maps*

An 1853 GLO map, 1875 (Andreas) state atlas, and five county plat maps (Bee and Herald 1936; Melson 1928; Midland Map Company 1909; Northwest Publishing Company 1896; Ogle and Company 1917) were consulted to identify potential historic-age properties within or directly adjacent to the project area. No cultural elements are depicted in the project area on the 1853 GLO map (Figure 7). The roadway now known as Fitzpatrick Street first appears along the project area on the 1875 atlas (Figure 8). The community of Churdan is first plotted on the 1896 county plat map (Figure 9) with little change to the corporate boundary indicated on later maps aside from a slight expansion northward depicted on the 1936 plat (Figure 10).

### *Aerial Photographs*

Aerial photographs dating from 1939–2023 were examined to determine if any potential historic-age buildings or structures were located within the project area and to gain a better understanding of landscape change and land use practices since the mid-twentieth century (Figures 11–13). In the 1939 aerial photograph, the proposed water main replacement corridor extends along the ditch on the west side of Fitzpatrick Street, and structures appear inside the proposed water tank location (Figure 11). By 1995, the structures at the proposed water tank location have been removed (Figure 12). The project area itself remains relatively unchanged through 2023 (Figure 13).

## SURVEY RESULTS

The project area was subjected to an archeological reconnaissance survey by BCA personnel on July 15, 2025.

### *Reconnaissance Survey*

The project area is situated on a glacial moraine within the city of Churdan (Figures 2 and 6). At the time of survey, surfaces across the project area were generally under cover of grass, roadways, sidewalks, and driveways that offered <20% ground surface visibility (GSV; Figures 3 and 14–21). The proposed water tank location was within a vacant lot, while the water main replacements corridor was entirely within the ditch on the west side of Fitzpatrick Street. Buried utilities (i.e., water, sewer, fiber optic, and electric lines), culverts, and storm drains were identified throughout the water main replacement corridor (Figures 3, 22, and 23). Slopes across the project area ranged from nearly level to moderately sloping (0–8%).

Previously surveyed portions of the project area (the proposed water tank location and the northern terminus of the water main replacements corridor [Figures 2 and 3]) were not investigated due to the surveyors' recommendations of no further work (Kendall 2014; Ramirez 2024). To begin the current field investigation, a geomorphic evaluation of the project area was conducted utilizing visual assessments and the extraction of three soil cores, two of which were recorded as representative profiles (SP; Appendix A; Figure 3). SP 1, recorded southwest of the intersection of Fitzpatrick and Bell streets, revealed dense fill and was refused at a depth of 35 cm by impenetrable material. Several coring attempts were made at this location with similar results. Taken southwest of the intersection of Fitzpatrick and Adrain streets, SP 2 demonstrated fill truncating poorly drained Dows Formation sediments. A soil core extracted further to the north exhibited a sequence similar to SP 2. Based on the results of the geomorphic evaluation, the project area was determined to be comprised of significantly disturbed and/or poorly drained glacial landforms that have negligible potential for intact archeological deposits. Therefore, no further field investigations were conducted.

## SUMMARY AND RECOMMENDATIONS

This archeological reconnaissance survey was conducted for Snyder & Associates by BCA for water system improvements. Set in the city of Churdan, the project area is comprised of the locations of the proposed elevated water storage tank and water main replacements. The elevated water storage tank is to be constructed within a 33 x 23 m (110 x 75 ft) tract of land just northwest of the intersection of Fitzpatrick and Jay streets, while the associated water main replacements are slated to extend north from the water storage tank for approximately 0.7 km (0.4 mi) within a 5 m (16 ft)-wide corridor on the west side of Fitzpatrick Street. In total, the project area covers 0.4 ha (1.0 ac).

At the time of reconnaissance survey on July 15, 2025, the proposed water tank location was within a vacant lot, while the water main replacement corridor was entirely within the Fitzpatrick Street ditch. An archival review identified two previous archeological surveys and one recorded archeological site within the project area; however, both investigation areas and the site were recommended for no further work by their investigators. During the current investigation, a geomorphic evaluation determined that the project area is comprised of significantly disturbed and/or poorly drained glacial landforms that have negligible potential for intact archeological deposits. Therefore, BCA recommends no further cultural resources investigations for the project area.

No archeological investigation method can guarantee the discovery of all sites or cultural resource materials. If any cultural resource materials, not found in the investigation, are encountered during the implementation of the proposed construction project, the State Historic Preservation Office should be contacted immediately. It is the responsibility of the developer to protect cultural resources from disturbance until a professional examination can be made or until clearance to proceed is authorized by the State Historic Preservation Office or a designated representative.

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## FIGURES

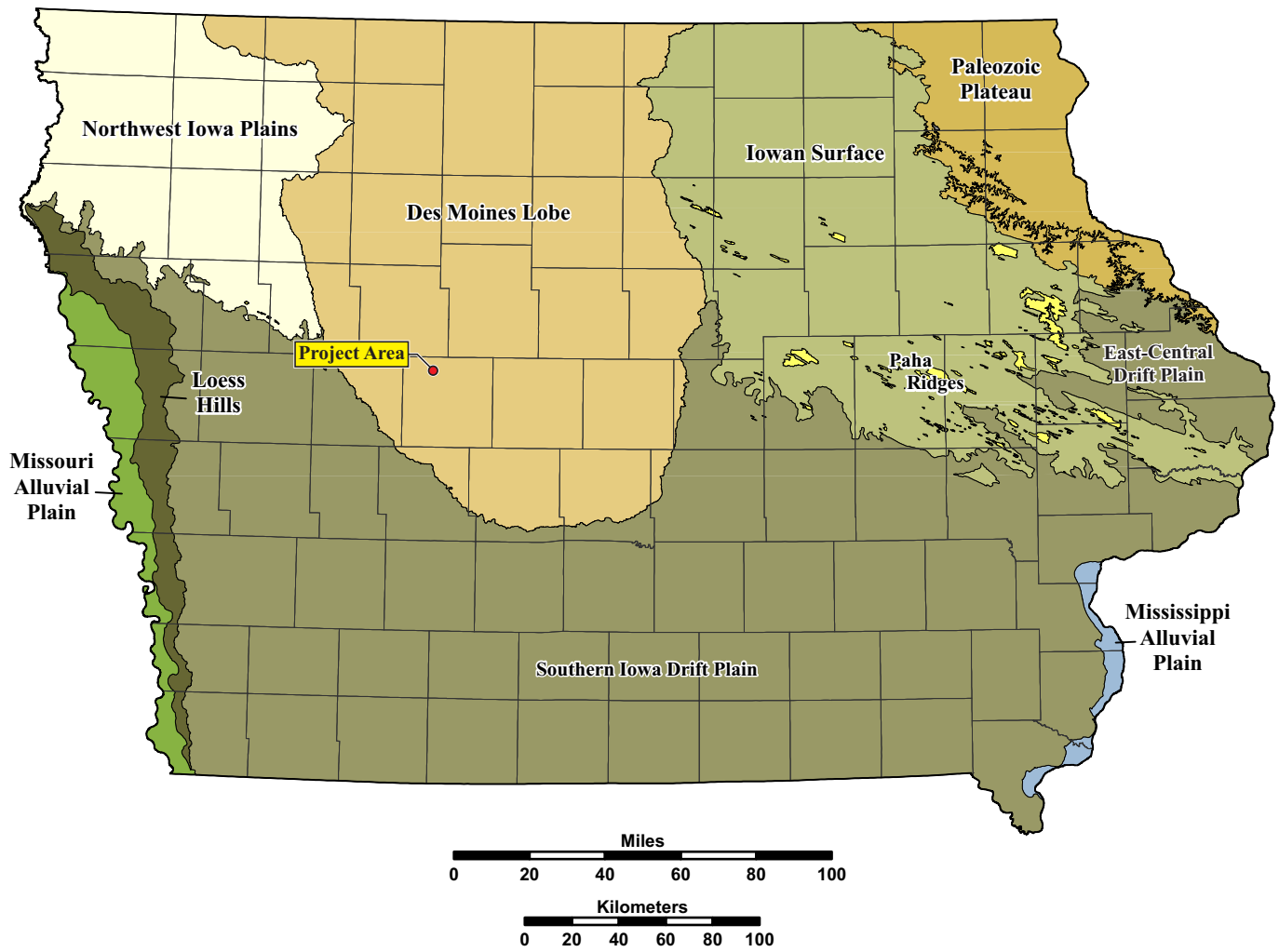


Figure 1. Physiographic location of the project area (adapted from Prior [1991:31]).

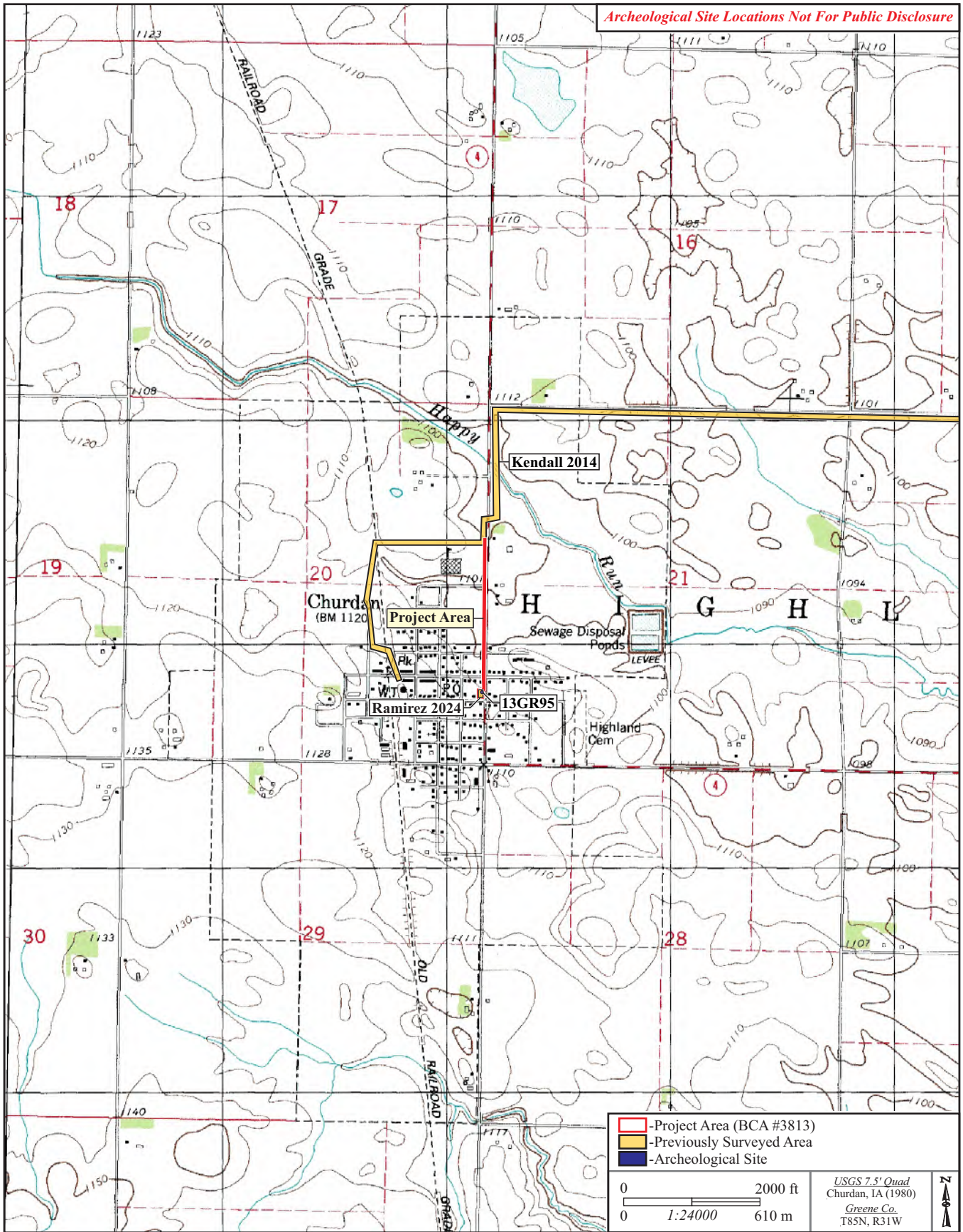


Figure 2. Topographic coverage of the project area.



Figure 3. Scale map of the project area.

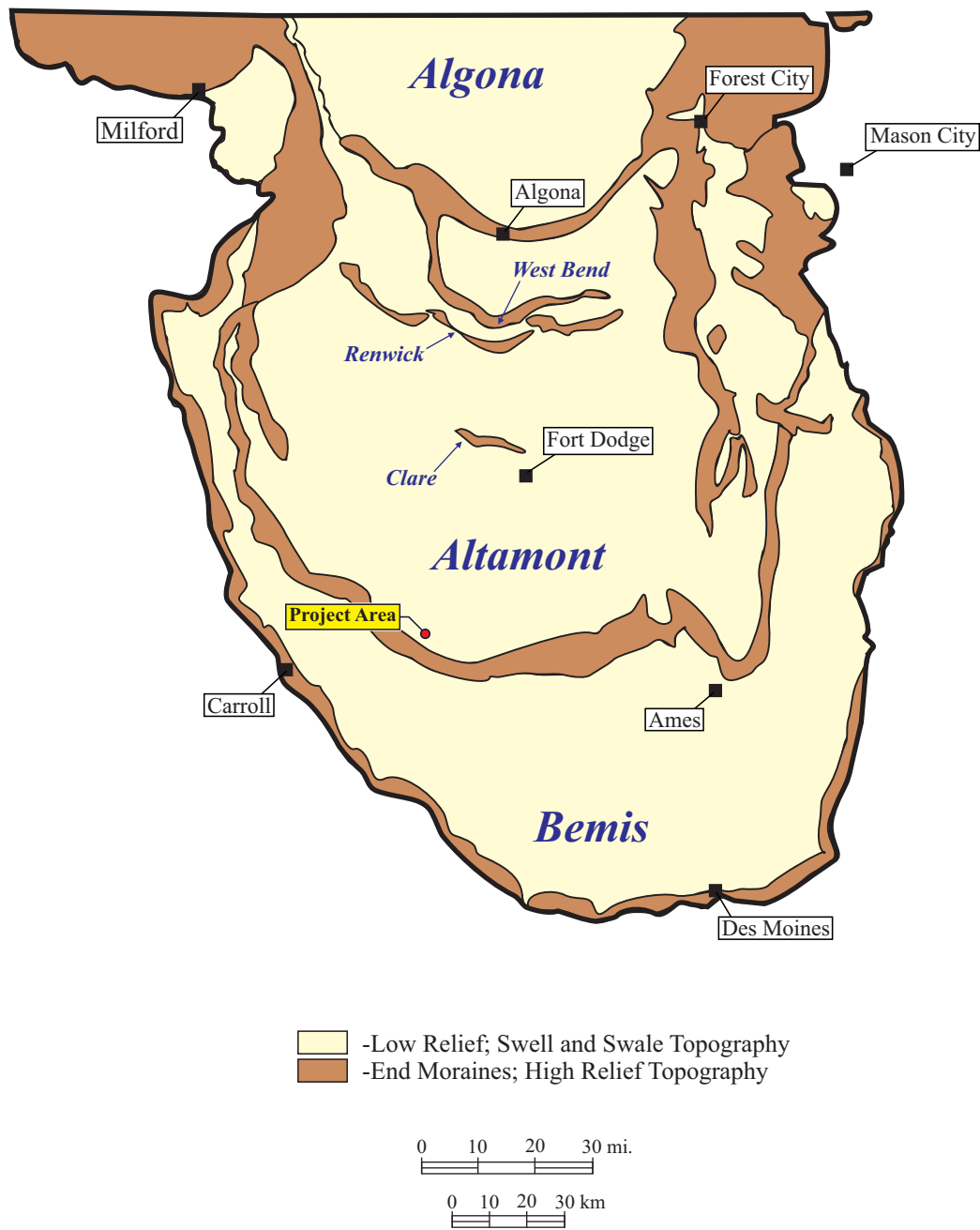


Figure 4. Location of the project area in the Des Moines Lobe (adapted from Prior [1991:38]).



Figure 5. Soil map of the project area (Soil Survey Staff 2021).

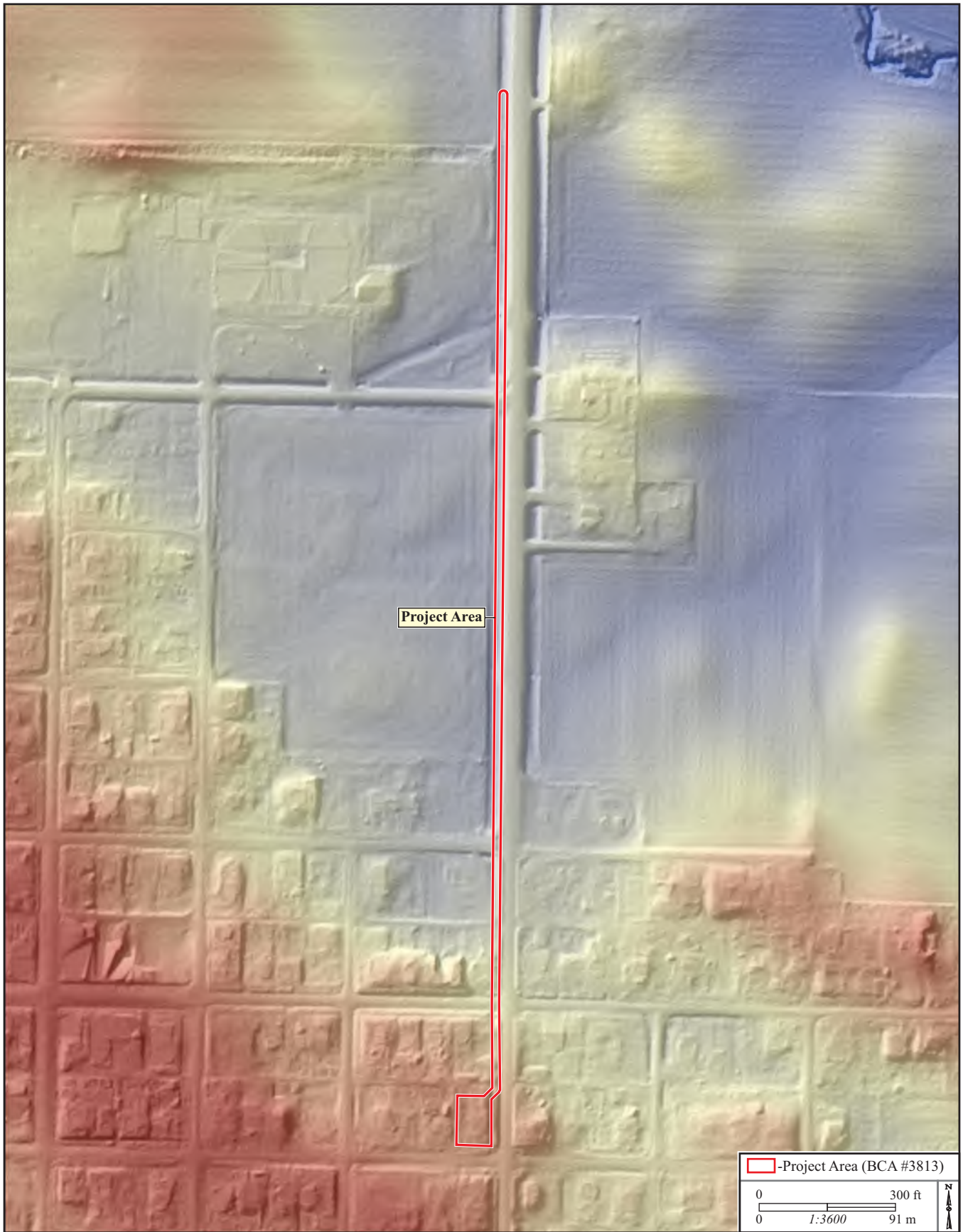


Figure 6. Lidar image of the project area.

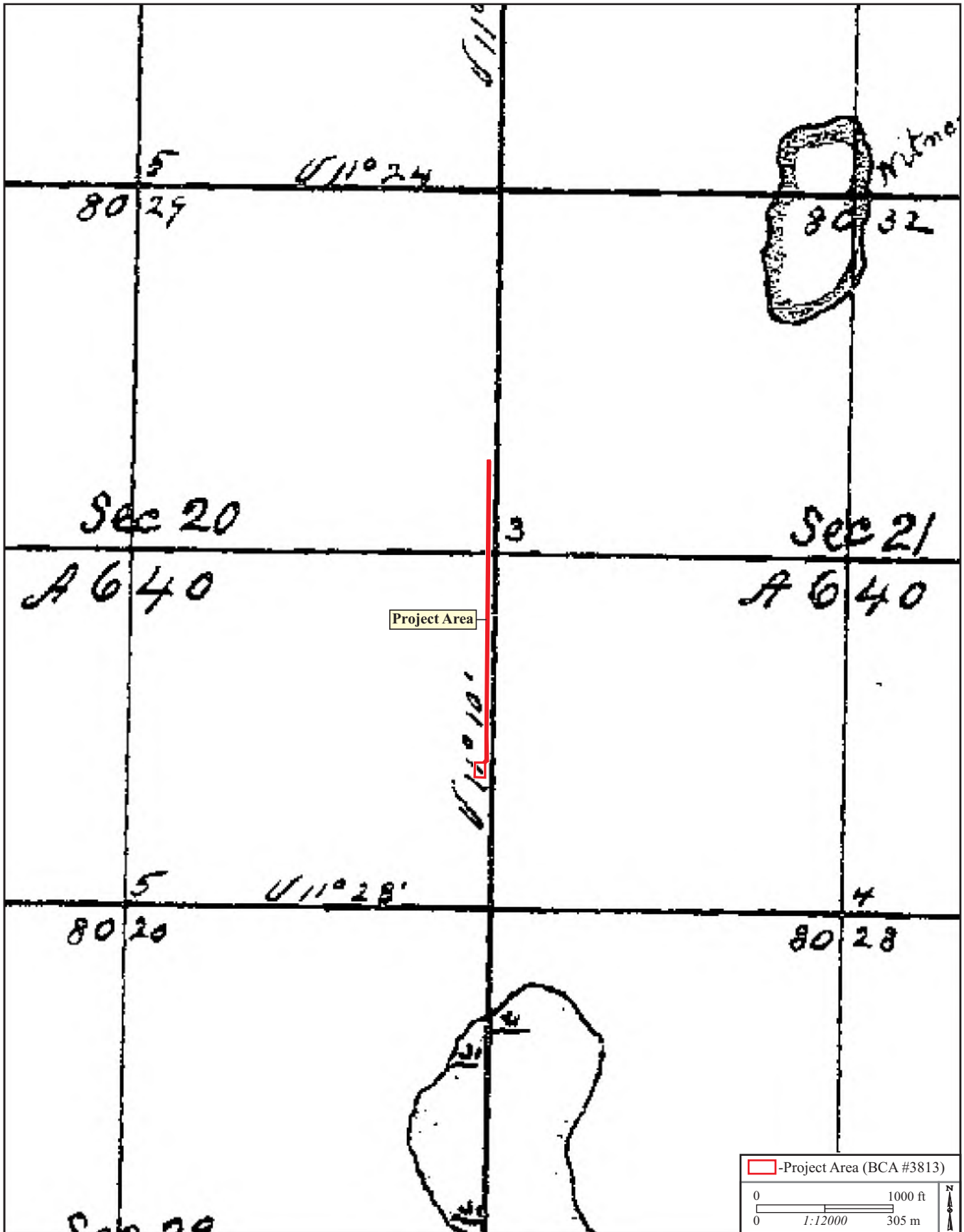


Figure 7. 1853 map of the project areas (GLO).

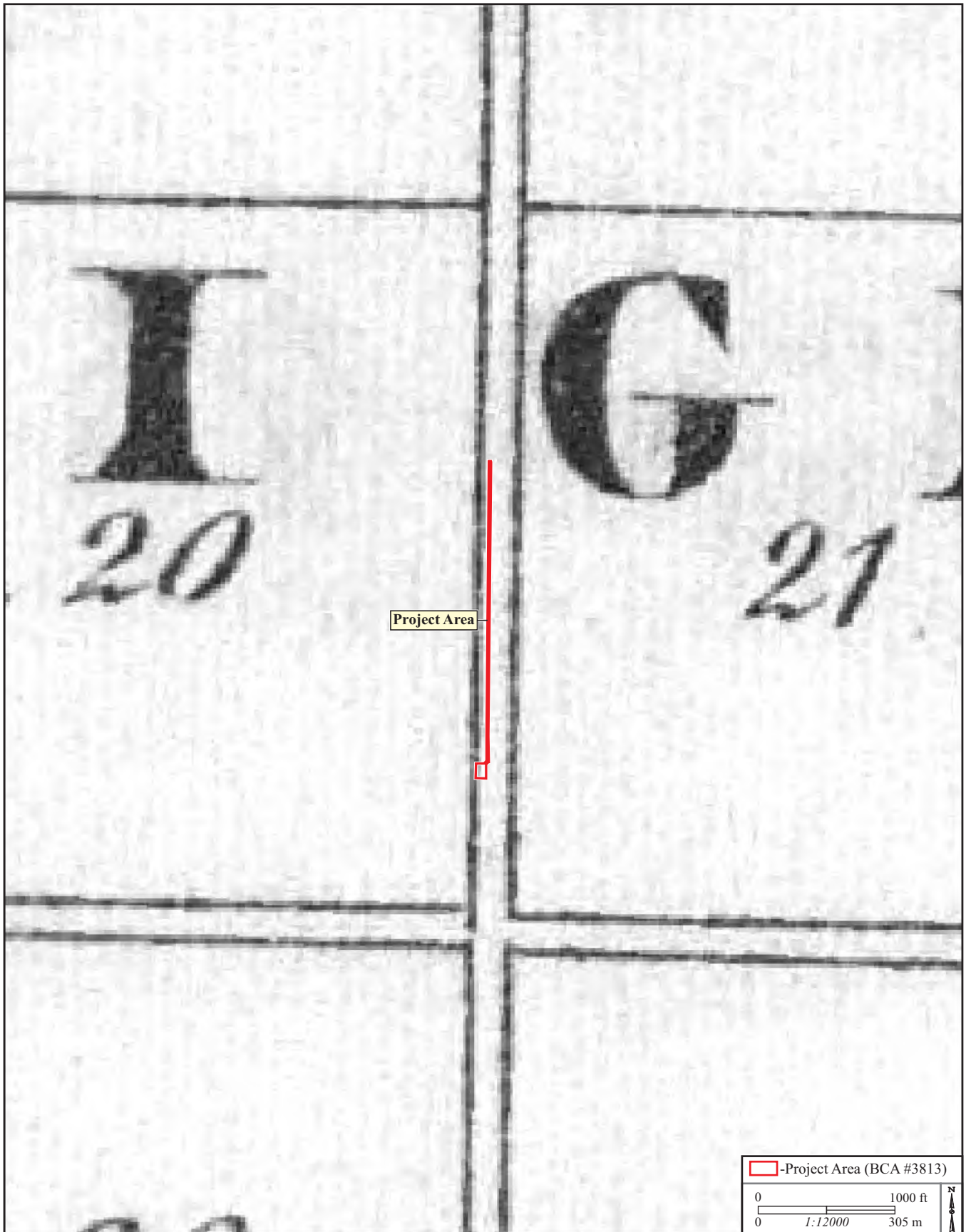


Figure 8. 1875 map of the project areas (Andreas).

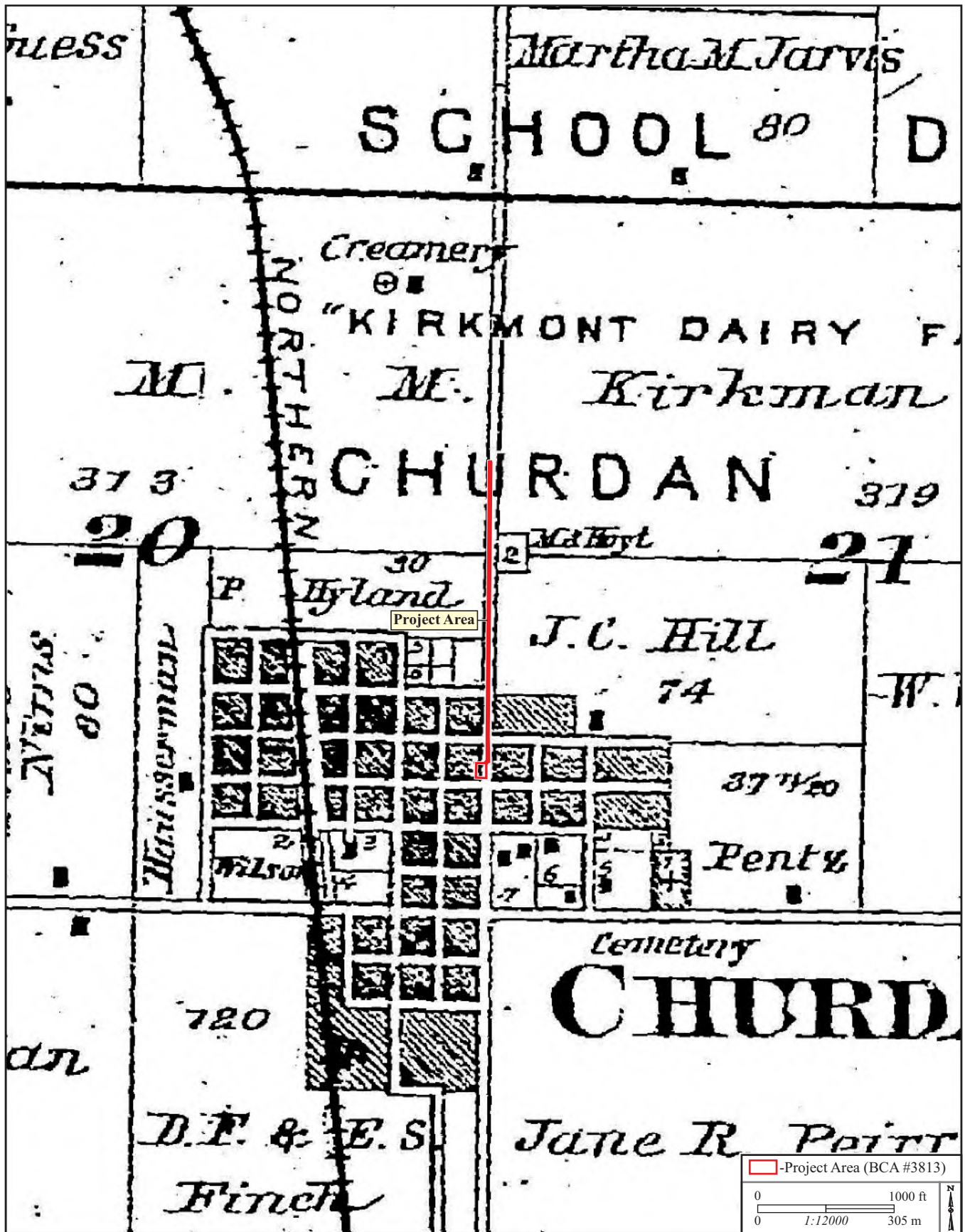


Figure 9. 1896 map of the project areas (Northwest Publishing Company).

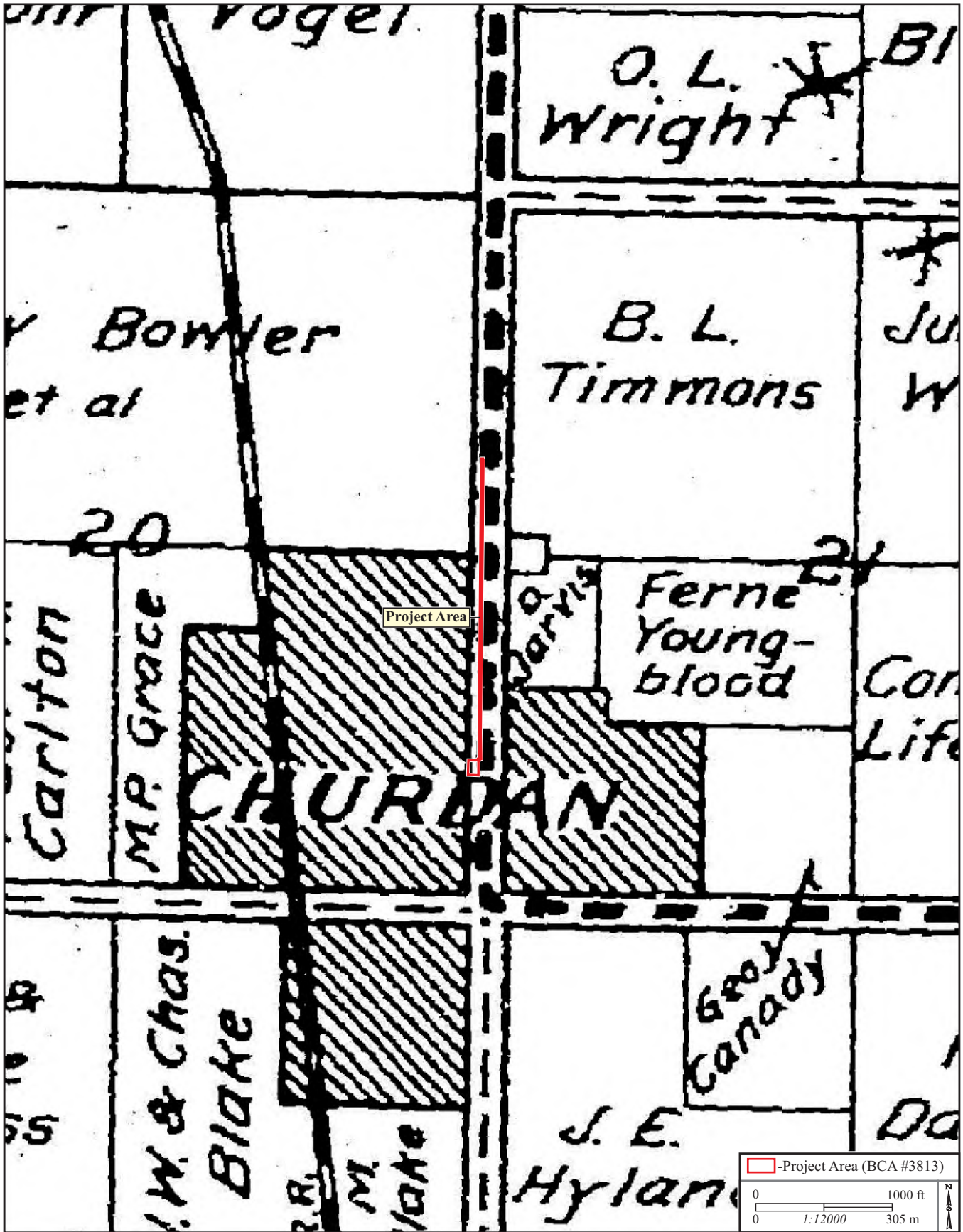


Figure 10. 1936 map of the project areas (Bee and Herald).



Figure 11. 1939 aerial photograph of the project areas.



Figure 12. 1995 aerial photograph of the project areas.

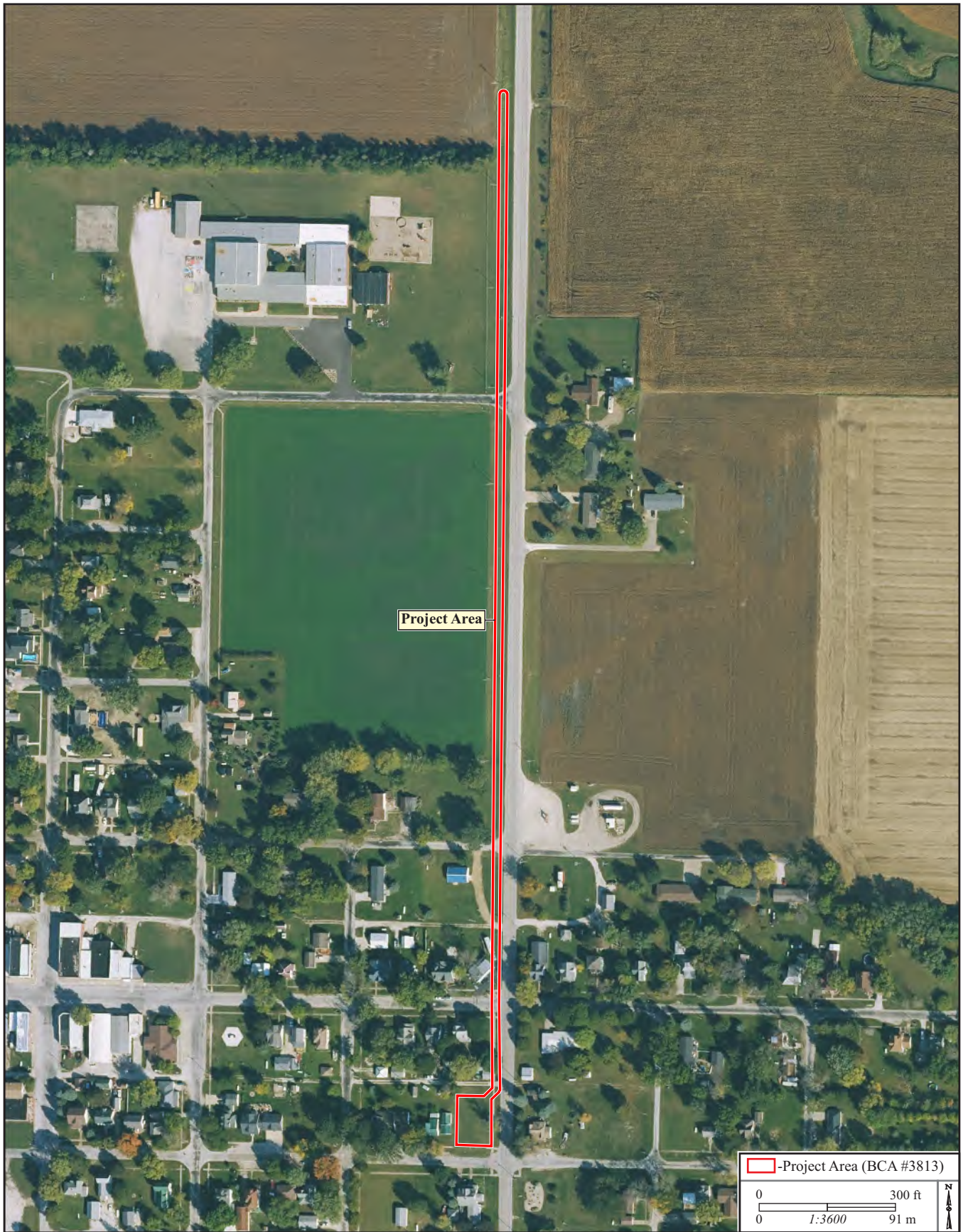


Figure 13. 2023 aerial photograph of the project areas.



**Figure 14. Proposed water tank location. View to the northeast (7/15/25).**



**Figure 15. Proposed water tank location. View to the southwest (7/15/25).**



**Figure 16. Water main replacement corridor north of the proposed water tank location. View to the north (7/15/25).**



**Figure 17. Water main replacement corridor at the intersection of Fitzpatrick and Sand streets. View to the south (7/15/25).**



**Figure 18. Water main replacement corridor at the intersection of Fitzpatrick and Sand streets. View to the north (7/15/25).**



**Figure 19. Water main replacement corridor at the intersection of Fitzpatrick and Adrian streets. View to the south (7/15/25).**



**Figure 20. Water main replacement corridor at the intersection of Fitzpatrick and Adrian streets. View to the north (7/15/25).**



**Figure 21. Water main replacement corridor from the northern terminus. View to the south (7/15/25).**



**Figure 22. Example of a culvert in the project area. View to the east (7/15/25).**



**Figure 23. Example of a storm drain in the project area (7/15/25).**

APPENDIX A  
Soil Profiles

DESIGNATION: Soil Profile (SP) 1  
 LANDSCAPE POSITION: glacial moraine (disturbed)  
 SLOPE: 3–5%  
 PARENT MATERIAL: glacial till  
 VEGETATION: grass, <20% ground surface visibility (GSV)  
 METHOD: hand probe  
 DATE DESCRIBED: 7/15/25  
 DESCRIBED BY: C. Cole

COMMENTS: Recorded southwest of the intersection of Fitzpatrick and Bell streets, this profile revealed dense fill. Several coring attempts were made at this location, with similar results. Given its significantly disturbed soils, this portion of the project area is considered to have negligible potential for intact archeological deposits.

Depth (cm)	Soil Horizon	Description
0–35	C (fill)	Very dark grayish brown (10YR 3/2) loam; massive; friable; few, fine, faint dark yellowish brown (10YR 4/4) mottles; gravels throughout. End due to obstruction.

DESIGNATION: SP 2  
 LANDSCAPE POSITION: glacial moraine (disturbed)  
 SLOPE: 3–5%  
 PARENT MATERIAL: glacial till  
 VEGETATION: grass, <20% GSV  
 METHOD: hand probe  
 DATE DESCRIBED: 7/15/25  
 DESCRIBED BY: C. Cole

COMMENTS: Recorded southwest of the intersection of Fitzpatrick and Adrain streets, this profile revealed fill truncating a poorly drained Btg subsoil (Dows Formation sediments). A similar soil sequence was observed further to the north. Given its significantly disturbed and poorly drained soils, these portions of the project area are considered to have negligible potential for intact archeological deposits.

Depth (cm)	Soil Horizon	Description
0–45	C1 (fill)	Black (10YR 2/1) loam; massive; friable; abrupt boundary.
45–61	C2 (fill)	Coarsely mottled black (10YR 2/1) and olive gray (5Y 5/2) loam; massive; friable; abrupt boundary.
61–82	Btg1	Light olive gray (5Y 6/2) clay loam; moderate, medium subangular blocky structure; plastic; common, medium, distinct redoximorphic concentrations; clear boundary.
82–93	Btg2	Gray (5Y 6/1) clay loam; moderate, medium subangular blocky structure; plastic; few, fine, distinct redoximorphic concentrations. End.

ARCHITECTURAL RECONNAISSANCE SURVEY  
FOR WATER SYSTEM IMPROVEMENTS  
IN CHURDAN, IOWA

Sections 20 and 21, T85N, R31W

BCA 3813

**THIS REPORT MAY CONTAIN SITE LOCATION INFORMATION  
NOT FOR PUBLIC DISTRIBUTION**

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July 2025

## MANAGEMENT SUMMARY

The following report presents the results of an architectural reconnaissance survey associated with water system improvements, including a proposed elevated water storage tank and water main replacements, in Churdan, Iowa. Conducted for Snyder & Associates by Bear Creek Archeology, Inc., the purpose of this investigation is to document the architectural properties within and bordering the review area.

The review area for this investigation was defined as the proposed water storage tank project area and all adjacent properties, as well as a 30 m (100 ft) buffer area around the water main replacements. The review area encompasses 5.4 ha (13.3 ac) in Churdan, Iowa. No previously inventoried properties are located inside the review area. In total, 12 properties were identified within the review area, 11 of which were identified as having at least one historic-age building or structure. Following further investigation, all 11 of these properties were interpreted to be unlikely to qualify for listing on the National Register of Historic Places due to the common styles present and later alterations. The entirely modern property was also investigated, but no structures or objects of architectural significance were identified. Bear Creek Archeology, Inc., recommends no further research for the architectural properties within the review area.

## INTRODUCTION

The following report presents the results of an architectural reconnaissance survey associated with water system improvements, including a proposed elevated water storage tank and water main replacements, in Churdan, Iowa (Figure 1). Conducted for Snyder & Associates by Bear Creek Archeology, Inc. (BCA), the purpose of this investigation is to document the architectural properties within and bordering the review area. This survey was conducted in accordance with the National Historic Preservation Act (Advisory Council on Historic Preservation 2004, 2016), the Secretary of the Interior's standards for the identification of historic properties (National Park Service 1983), and the Draft Guidelines for Historic Architectural Survey in Iowa (State Historic Preservation Office of Iowa 2019).

## SURVEY AREA LOCATION AND DESCRIPTION

The proposed elevated water storage tank is to be constructed northwest of the intersection of Fitzpatrick and Jay streets in Churdan, Iowa. The associated water main replacements are slated to extend north from the water storage tank along the west side of Fitzpatrick Street for approximately 0.7 km (0.4 mi). The review area for this investigation was defined as the proposed water storage tank project area and all adjacent properties, as well as a 30 m (100 ft) buffer area around the water main replacement corridors. In total, the review area encompasses 5.4 ha (13.3 ac; Figure 1).

## REGIONAL CONTEXT

To provide a general sense of the review area context, relevant archival information regarding the review area, including previously inventoried properties and a brief historical overview of the area, is summarized below.

### *Previously Inventoried Properties*

Information obtained from the online resource managed by the Office of the State Archaeologist indicated that there are no previously inventoried properties within the review area.

### *Historical Overview*

The review area is in Churdan, within northwest Green County, Iowa. Churdan was founded in 1882 along a railroad that was completed that same year (Lewis Publishing Company 1887). The community gained its name from its first postmaster, Joseph Churdan, and was incorporated in 1884. The town thrived as an agricultural community

during its early years and featured a variety of mercantile enterprises, banks, a newspaper, churches, and an independent school district (Stillman 1907). Similar to many rural Iowa communities, the town began to decline after the abandonment of the local railroad line in the late twentieth century (United States Census Bureau 2025). Today, the school system is consolidated with Paton to form the Paton-Churdan Community Schools (Paton-Churdan Community School District 2025), similar to the majority of rural school districts across the state. County plat maps (Bee and Herald 1936; Melson 1928; Midland Map Company 1909; Northwest Publishing Company 1896; Ogle and Company 1917), aerial photographs, and county assessor records (Schneider Geospatial 2025) indicate that since the town's incorporation, the southern portion of the review area has been within the Churdan city limits. The northern portion of the review area, however, has been subject to a combination of agricultural and recreational use since at least the mid-twentieth century. No structures are currently present within the northern portion of the review area. Currently, the majority of the properties within the review area are single-family residences, while the remaining properties include a dwelling, an American Legion post, a gas station, and a city park. All of the review area properties are typical for rural communities throughout Greene County and the state of Iowa.

## GENERAL RECONNAISSANCE METHODOLOGY

The proposed project does not involve the demolition or removal of any of the architectural properties under review. The review area was defined as the proposed water storage tank project area and all adjacent properties, as well as a 30 m (100 ft) buffer area around the water main replacements. Within this review area, any property containing a standing building, structure, or object was assigned an identification number (Property ID; Figure 1). Properties within the review area were initially identified using recent orthorectified aerial photographs and information provided by the Greene County Assessor (Schneider Geospatial 2025), with corresponding parcel numbers listed in Table 1. Individual properties were defined as all standing structures or objects occurring within a single parcel. Standing structures included any buildings or structures listed on the assessor's page. Yard features (e.g., porches or decks) were not included as structures.

Once all potential properties within the review area were identified, they were sorted based on the potential for a given property to be eligible for inclusion on the National Register of Historic Places (NRHP). The properties within the review area interpreted as having the highest potential for NRHP eligibility were selected based on age and integrity, such as if a property contained exclusively historic-age structures. Historic-age structures were defined as any buildings or structures on the Greene County Assessor's page listed as built in or before 1980. Properties containing more recently built structures were interpreted as having lower potential for NRHP eligibility, as these later disturbances decrease the historic integrity of the setting and association of the property.

Following the initial sorting of the properties within the review area, a historic architectural reconnaissance survey was then conducted to ground-truth the identified properties.

Property photographs were obtained from the closest public rights-of-way (ROW). The photographs documented the current conditions of the properties and their surrounding environments, as well as any recent alterations to the properties.

## ANALYSIS RESULTS

Within the review area, 12 properties were identified (Table 1). Using information provided by the county assessor's page, only one of these properties was found to consist of entirely modern (post-1980) construction. This property was interpreted as having negligible potential for NRHP eligibility. Four properties were found to have both historic-age and modern structures and were interpreted as having lower potential for NRHP eligibility. The remaining seven properties were identified as containing exclusively historic-age structures and were interpreted as having the highest potential for inclusion with the NRHP within the review area. Using archival aerial photographs, data from the assessor's page, Google Streetview imagery, and information collected during the architectural reconnaissance survey, these 12 properties are individually described below. Aerial imagery and field photographs of each of these properties are included as Figures 2–13. A summary of the current condition and noted alterations to properties with at least one historic-age structure is provided in Table 2.

### *Historic-Age Properties*

*Property ID 2; Ed English American Legion Post #198* (Figure 2). Located at 500 Fitzpatrick Street, this property contains a single-story fraternal building constructed in 1979. Set on a concrete foundation, the front gable-roofed building has newer vinyl siding and corrugated steel roofing. The building is accessed by a semi-circle gravel driveway on its east side. No additional structures are present on the property. Although the property is entirely of historic age, given the noted later alterations, the integrity of the property's design and materials is diminished. In addition, the building on the property was built in a style common to the area and does not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 3; William and Jennifer Cozad Residence* (Figure 3). Located at 704 Sand Street, this property contains a single-family residence built in 1912. The 1 ½-story wood frame house has a high-pitched cross gable roof covered in asphalt shingles. A dormer also extends outward on the southern face of the house. Set on a concrete block foundation, the house is primarily enclosed in newer vinyl siding. However, the dormer and the lower portion of the house front retain the original wooden clapboard siding. A large porch, accessed by poured concrete stairs, dominates the front of the house and features six Tuscan-style columns. A newer metal railing encloses the porch. County assessor data also indicates that additional later alterations to the house include a small one-story addition and two enclosed porches, although these alterations are undated. The siding, stairs, porch, columns, window frames, and gutters are deteriorating. Although the property is entirely

of historic age, given the noted later alterations and deteriorating conditions, the integrity of the property's design and materials is diminished. In addition, the house on the property was built in a style common to the area and does not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 4; William and Jennifer Cozad Dwelling* (Figure 4). Located at 706 Sand Street, this property contains a single-story wood frame dwelling listed by the county assessor as a "detached structure" built in 1929. This hip-roofed dwelling has asphalt shingles. A gable-roofed addition appears attached to the northwest side of the structure, although the county assessor does not list this addition. Further, the assessor's data indicates that there is a detached garage also constructed in 1929 on the property; however, this flat-roofed garage has since been attached to the northeast side of the dwelling. The entire structure is now enclosed in newer vinyl siding, and "false front" raised facades are present on its northeast and southeast sides. Although the property is entirely of historic age, given the noted later alterations, the integrity of the property's design and materials is diminished. In addition, the structure on the property was built in a style common to the area and does not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 5; Justin Stream Residence* (Figure 5). Located at 800 Sand Street, this property contains a single-family residence built in 1916. This wood frame, 1 ½-story house has a side gable roof with large dormers on the north and south sides. Set on a concrete block foundation, the entire building is enclosed in newer vinyl siding and asphalt shingles. Additional later alterations to the house include a single-story addition (undated), an enclosed porch, and an attached garage. Built in 1980, the front-gabled attached garage sits on a poured concrete foundation on the north side of the house. Although the property is entirely of historic age, given the noted later alterations, the integrity of the property's design and materials is diminished. In addition, the structure on the property was built in a style common to the area and does not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 6; Linda Curtis Residence* (Figure 6). Located at 705 Sand Street, this property contains a single-family residence built in 1912. This wood frame, 1 ½-story house has a cross-gambrel roof covered by asphalt shingles. Set on a concrete block foundation, the house has newer vinyl siding. Additional later alterations to the house include two enclosed porches and one wooden deck. A detached garage, constructed in 1979, is present south of the house. This side-gabled structure has vertical wood plank siding and is deteriorating. Although the property is entirely of historic age, given the noted later alterations and deteriorating conditions, the integrity of the property's design and materials is diminished. In addition, the house on the property was built in a style common to the area and does not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 10; Terry Hoyle Residence* (Figure 7). Located at 800 Jay Street, this property contains a single-family residence built in 1912. This wood frame, single-story house has a double cross-gable roof with new asphalt shingles. Set on a concrete block foundation, the entire house is enclosed in deteriorating asbestos siding. Additional later alterations to the house include two enclosed porches, one wooden deck, and a wooden porch with a ramp. A side-gabled garage, dated 1912, is attached to the east side of the house. The attached garage has asbestos siding and is currently missing a door. North of the house is a detached side-gabled garage. This garage was also built in 1912 and has asbestos siding. This entire structure, including its window frames and door, is deteriorating. Although the property is entirely of historic age, given the noted later alterations and deteriorating conditions, the integrity of the property's design and materials is diminished. In addition, the house on the property was built in a style common to the area and does not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 11; Paul and Stephanie Reedy Residence* (Figure 8). Located at 707 Jay Street, this property contains a single-family residence built in 1912. This wood frame, two-story house has a Dutch gable roof covered by asphalt shingles with a dormer extending from the north side. Set on a brick foundation, the house is enclosed in deteriorating wooden clapboard siding. A covered front porch supported by four square Tuscan-style columns dominates the house frontage. Later updates to the house include two single-story additions on the east and south sides of the house. Additionally, most of the first-floor windows are currently covered in plastic, and the attic windows have been painted over. Southwest of the house is a detached garage. The garage has brick siding and a hip roof. Although the property is entirely of historic age, given the noted later additions and deteriorating conditions, the integrity of the property's design and materials is diminished. In addition, the house on the property was built in a style common to the area and does not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

#### *Historic-Age and Modern Properties*

*Property ID 1; Star Energy, LLC Gas Station* (Figure 9). Located at 401 Fitzpatrick Street, this property contains a gas station comprised of a warehouse, a pump house, pump stations, and three gas tanks. The warehouse (constructed in 1963) and pump house (built in 1998) are small gable-roofed structures with corrugated steel siding and roofing. Southwest of the pump house are two pump stations. County assessor imagery indicates the current pump stations were installed in or after 2015. North of the warehouse is an 18,000-gallon tank installed in 1963. Two smaller tanks were added west of the warehouse in 1993. Although the property contains historic-age structures, given the noted later alterations, the integrity of the property's design and materials is diminished. In addition, structures on the property are similar to gas station styles common to the area and do not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 7; Larry and Doris Gilbertson Residence* (Figure 10). Located at 707 Sand Street, this property contains a single-family residence built in 1915. This wood frame, 1 ½-story house has a cross and clipped gable roof covered in asphalt shingles. Deteriorating wooden clapboard siding encloses the building. Later alterations to the house include a one-story addition and two enclosed porches. The front porch has asbestos siding below its windows. Across the house, several window frames are deteriorating, and one window frame has been boarded up. Two detached garages, built in 1915 and 1994, respectively, are southeast of the house. Both garages have gable roofs and wooden vertical plank siding. Although the property is entirely of historic age, given the noted later additions and deteriorating conditions, the integrity of the property's design and materials is diminished. In addition, the structures on the property were built in a style common to the area and do not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 8; Donald Karlovec Residence* (Figure 11). Located at 803 Sand Street, this property contains a single-family residence built in 1964. This wood frame, single-story, ranch-style house has a hip roof covered with corrugated steel. Set on a concrete block foundation, the house has brick siding and an enclosed porch. Two attached garages were added to the west side of the house in 1964 and 2001, respectively. One gable-roofed detached garage, built in 1964, is present southwest of the house. Covered by corrugated steel roofing and vinyl siding, the detached garage has a lean-to addition on its north side. Southeast of the house is a shed that was constructed in 2000; however, due to dense tree cover, the shed was not visible from the public ROW at the time of survey. Although the property contains historic-age structures, given the noted later alterations, the integrity of the property's design and materials is diminished. In addition, structures on the property were built relatively recently, are similar to styles common to the area, and do not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

*Property ID 9; Brian Monahan Residence* (Figure 12). Located at 704 Jay Street, this property contains a single-family residence built in 1890. This wood frame, 1 ½-story wood frame house has a cross-gable roof covered in corrugated steel. Later alterations to the building include two single-story additions and an enclosed porch. Almost the entire building has newer vinyl siding, except for the east side of the original house. This side retains the original, but deteriorating, wooden clapboard siding. A detached garage built in 1890 is east of the house. This gable-roofed structure has corrugated steel roofing and deteriorating wooden clapboard siding. South of the garage is a prefabricated metal carport that was installed in 2019. The carport also has a corrugated steel roof and covers a poured concrete pad. Although the property is entirely of historic age, given the noted later additions and deteriorating conditions, the integrity of the property's design and materials is diminished. In addition, the structures on the property were built in a style common to the area and do not appear to be architecturally significant. Therefore, the property is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

### *Modern Property*

*Property ID 12; Freedom Park* (Figure 13). Located at 801 Jay Street, this property is occupied by a city park memorializing US veterans. Aerial imagery indicates that Freedom Park was erected between 2009 and 2011. Currently, the park features benches, statues, flagpoles, and a plaque centered on a landscaped gravel pad. No standing structures are present on the property, and all park objects are of modern age. Since the property is entirely of modern age and appears similar in design and construction to several other veterans' memorials across the region, it is unlikely to be eligible for inclusion with the NRHP. No further research is recommended for this property.

### *Analysis Summary*

A total of 12 properties containing standing structures or objects were identified within the review area. Based on the pre-field analysis, seven historic-age properties within the review area were initially identified as having the highest potential for NRHP eligibility. Four properties containing both historic and modern-age structures were interpreted as having lower potential for NRHP eligibility. Following further investigation and an architectural reconnaissance, all 11 properties were found to have been constructed in a style and layout common for residential and commercial properties in Churdan, Greene County, and central Iowa. Additionally, several of the properties were found to have had significant later alterations, decreasing the integrity of the design and materials of the historic-age structures present. Alterations generally included garages, additions, enclosed porches, and newer siding and roofing. Given the noted alterations, these properties and their individual buildings and structures are unlikely to be eligible for inclusion with the NRHP. The one modern property was also subject to field reconnaissance, during which no architecturally significant objects were identified. Therefore, none of the properties within the review area are recommended for further research.

## SUMMARY AND RECOMMENDATIONS

The preceding report presents the results of an architectural reconnaissance associated with proposed water system improvements. The review area covers 5.4 ha (13.3 ac) in Churdan, Iowa. No previously inventoried properties are located inside the review area. In total, 12 properties were identified within the review area, 11 of which were identified as having at least one historic-age building or structure. Following further investigation, all 11 of these properties were interpreted to be unlikely to qualify for listing on the NRHP due to the common styles present and later alterations. The entirely modern property was also investigated, but no structures or objects of architectural significance were identified. BCA recommends no further research for the architectural properties within the review area.

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## TABLES

Table 1. Properties identified within the survey area.

Property ID	Parcel #	Property Name	Address	# of Structures	Constructed	Age
1	221302006	Star Energy, LLC Gas Station	401 Fitzpatrick Street	6	1963–post-2015	Historic-Age & Modern
2	220435002	Ed English American Legion Post #198	500 Fitzpatrick Street	1	1979	Historic-Age
3	220435005	William and Jennifer Cozad Residence	704 Sand Street	1	1912	Historic-Age
4	220435006	William and Jennifer Cozad Dwelling	706 Sand Street	1	1929	Historic-Age
5	221303008	Justin Stream Residence	800 Sand Street	1	1916	Historic-Age
6	220479003	Linda Curtis Residence	705 Sand Street	2	1912–1979	Historic-Age
7	220479004	Larry and Doris Gilbertson Residence	707 Sand Street	3	1915–1994	Historic-Age & Modern
8	221351008	Donald Karlovec Residence	803 Sand Street	3	1964–2001	Historic-Age & Modern
9	220479006	Brian Monahan Residence	704 Jay Street	3	1890–2019	Historic-Age & Modern
10	221351004	Terry Hoyle Residence	800 Jay Street	2	1912	Historic-Age
11	220483003	Paul and Stephanie Reedy Residence	707 Jay Street	2	1912	Historic-Age
12	221354001	Freedom Park	801 Jay Street	0	2010–2011	Modern

Table 2. Properties within the survey area containing at least one historic-age structure.

Property ID	Property Name	Constructed	Condition	Noted Later Alterations	More Research Recommended
1	Star Energy, LLC Gas Station	1963–post-2015	Normal	Two tanks (1993); pump house (1998); pump stations (post-2015)	No
2	Ed English American Legion Post #198	1979	Normal	Newer vinyl siding and steel roofing	No
3	William and Jennifer Cozad Residence	1912	Below normal	Addition (undated); two enclosed porches; newer siding; railing	No
4	William and Jennifer Cozad Dwelling	1929	Normal	Addition (undated); attached garage; newer siding	No
5	Justin Stream Residence	1916–1980	Normal	Addition (undated); attached garage (1980); newer siding	No
6	Linda Curtis Residence	1912–1979	Normal to below normal	Garage (1979); two enclosed porches; wooden deck; newer siding	No
7	Larry and Doris Gilbertson Residence	1915–1994	Normal to below normal	Garage (1994); addition (undated); two enclosed porches; boarded-up window	No
8	Donald Karlovec Residence	1964–2001	Normal	Attached garage (2001); shed (2000); newer roofing	No
9	Brian Monahan Residence	1890–2019	Normal to below normal	Two additions (undated); enclosed porch; newer siding; newer roofing; carport (2019)	No
10	Terry Hoyle Residence	1912	Below normal	New roofing; two enclosed porches; wooden deck; wooden porch and ramp	No
11	Paul and Stephanie Reedy Residence	1912	Normal to below normal	Two additions (undated)	No

## FIGURES



Figure 1. Scale map of architectural properties within the review area.

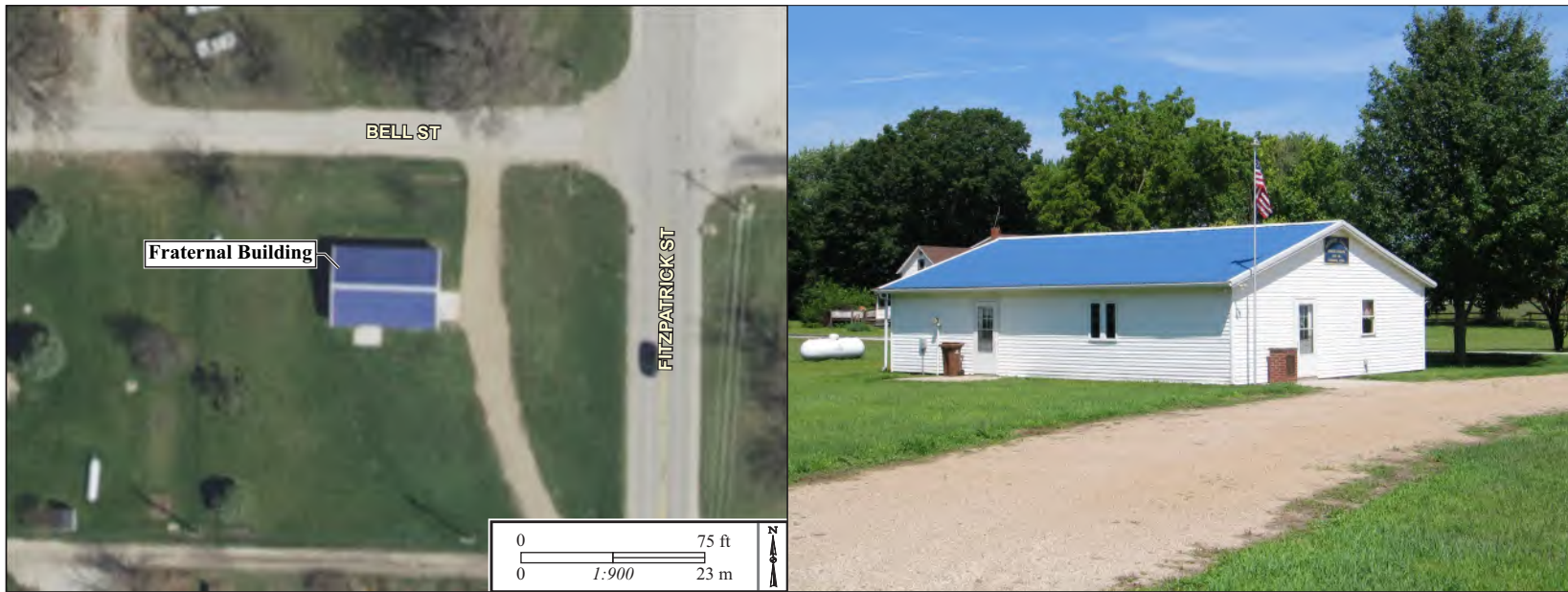


Figure 2. Property ID 2; Ed English American Legion #198. View to the northwest (7/15/25).



Figure 3. Property ID 3; William and Jennifer Cozad Residence. View to the northwest (7/15/25).



**Figure 4. Property ID 4; William and Jennifer Cozad Dwelling. View to the northeast (7/15/25).**



**Figure 5. Property ID 5; Justin Stream Residence. View to the north (7/15/25).**



Figure 6. Property ID 6; Linda Curtis Residence. View to the southwest (7/15/25).



Figure 7. Property ID 10; Terry Hoyle Residence. View to the northeast (7/15/25).



Figure 8. Property ID 11; Paul and Stephanie Reedy Residence. View to the southwest (7/15/25).

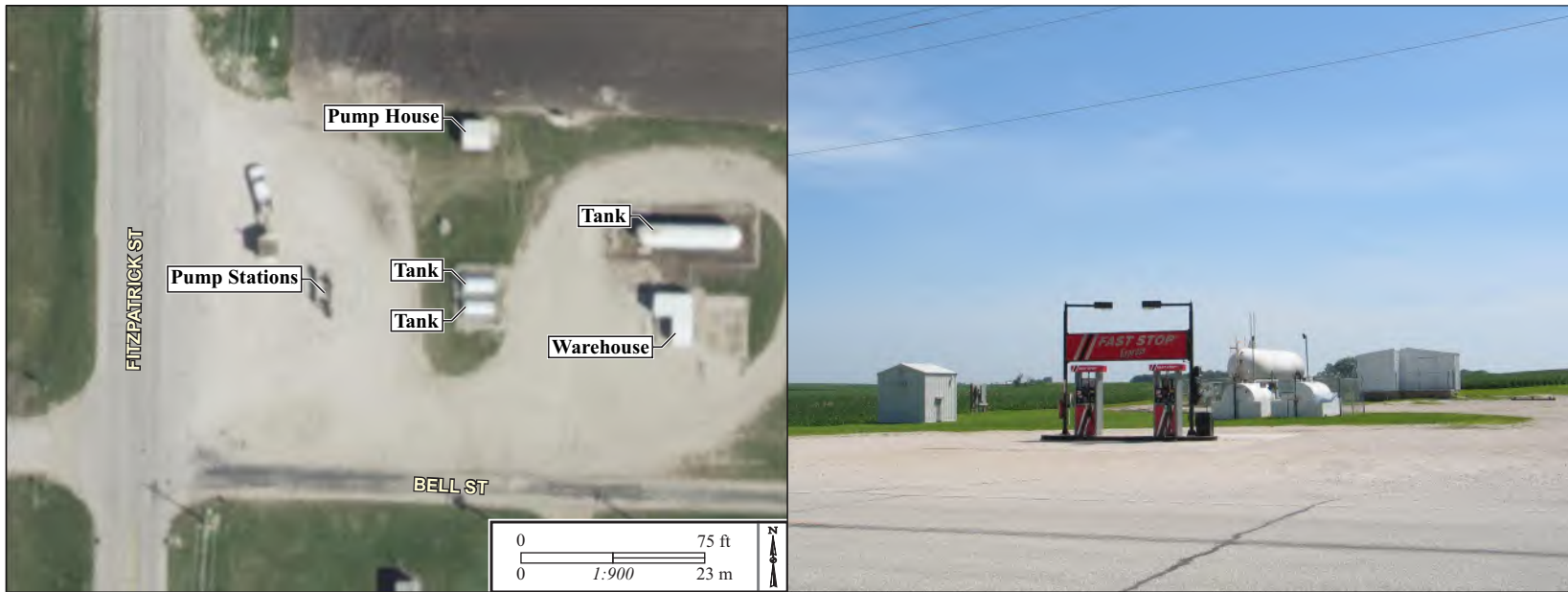


Figure 9. Property ID 1; Star Energy, LLC Gas Station. View to the east (7/15/25).



Figure 10. Property ID 7; Larry and Doris Gilbertson Residence. View to the southwest (7/15/25).



Figure 11. Property ID 8; Donald Karlovec Residence. View to the northeast (7/15/25).

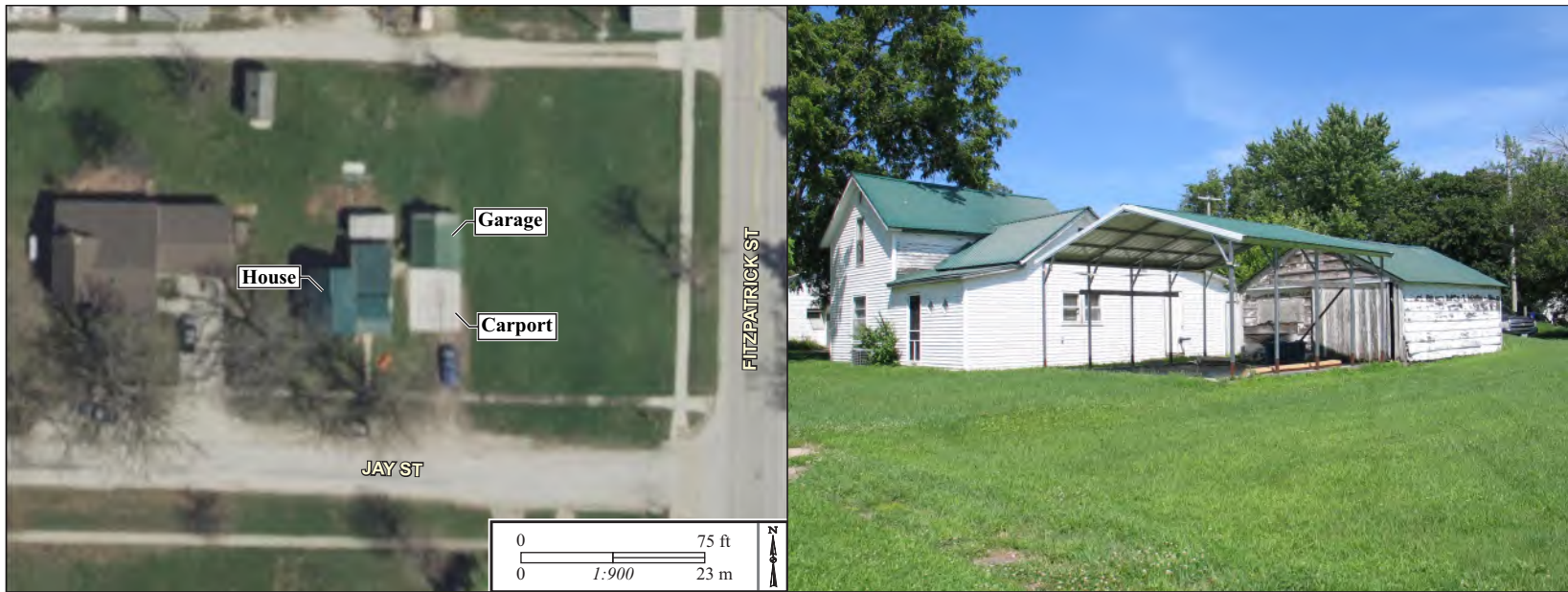


Figure 12. Property ID 9; Brian Monahan Residence. View to the northwest (7/15/25).



Figure 13. Property ID 12; Freedom Park. View to the southeast (7/15/25).

# Appendix I

# ADDITIONAL INFORMATION FOR EA AND CEST PROJECTS - SHEET C

## Noise Assessment Guidelines

### Noise: The Quiet Communities Act (24 CFR Part 51, Subpart B):

The Act establishes specific noise control requirements for CDBG-funded projects. Grant Recipients must take into consideration the noise criteria and standards in the environmental review process and consider ameliorative actions when noise sensitive land development is proposed in noise exposed areas.

The prime concern of a CDBG environmental impact assessment for noise should be the effect of existing and projected noise levels on the proposed activities and facilities.

**If your project is not noise sensitive (e.g., water & sewer projects) then you can skip this assessment and note in the environmental review that the nature of the project, as described, is not noise sensitive.**

**An assessment will be needed if housing and other noise sensitive uses are proposed:**

#### 1. Document the following on a map (either your project meets this criteria or not):

- Existing or proposed commercial or military airports within 15 miles of the site.
- Roadways within 1,000 feet of the site with such characteristics (e.g., high traffic levels, high speed, heavy truck/bus usage, slope gradients, etc.) that would indicate high ambient vehicular noise levels.
- Railroads within 3,000 feet of the site.
- Other significant noise sources (e.g., industrial/manufacturing facilities, power generating stations, firing ranges) in proximity to the site.

#### 2. If you project is within the distance criteria above, you must perform a noise calculation. It can be found here: <https://www.hudexchange.info/environmental-review/dnl-calculator/>.

- a. Airports: contact Airport for noise contour maps
- b. Road data: <https://iowadot.gov/maps/digital-maps/traffic-maps/county>
- c. Railroads: <http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/crossing/xingqryloc.aspx>
  - i. Some defaults:
    1. Diesel Engines: # of diesel = 2, # of rail cars = 50, Average Speed = 30, nighttime of ATO = .15 or 15%
    2. Electric Engines: # of electric = 1, # of rail cars = 8, Average Speed = 30, nighttime of ATO = .15 or 15%

#### 3. If your decibel level is above 65 dB – 75 dB:

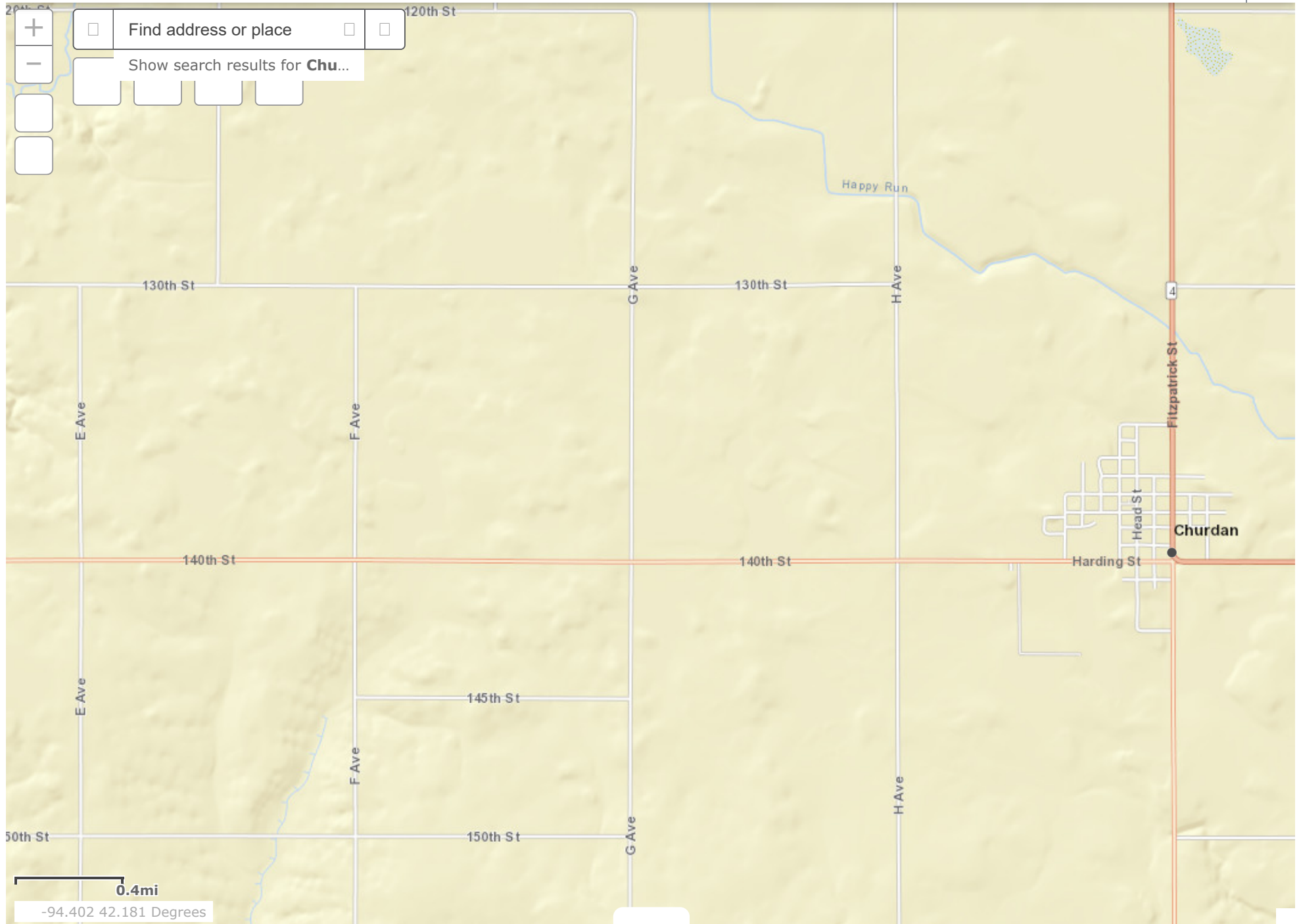
- a. For new construction – you MUST mitigate
- b. For Rehab – you are strongly encouraged to mitigate

However, if above 75 dB you MUST contact leslie leager at IEDA for additional instructions.

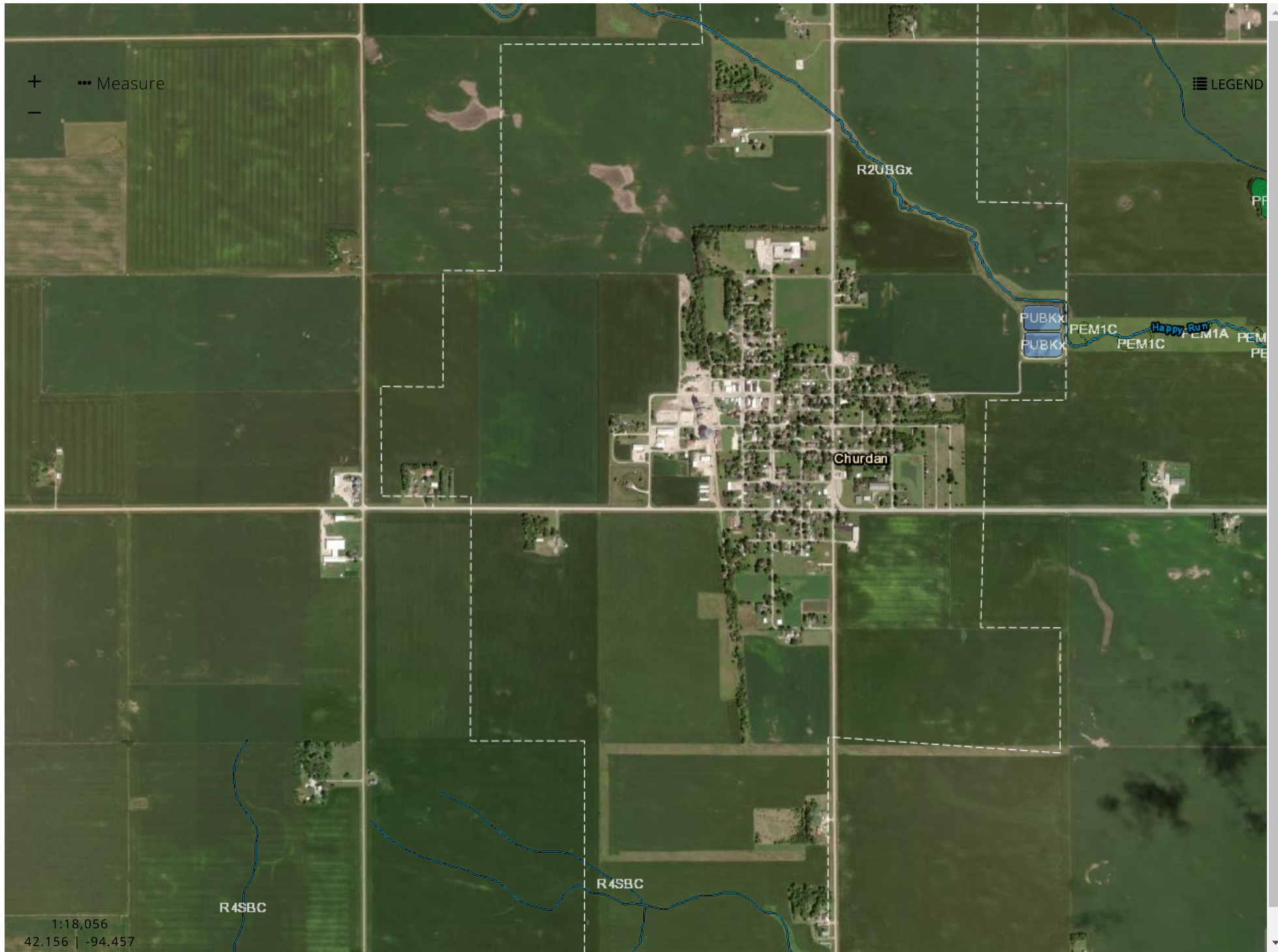
# Appendix J



# Sole Source Aquifers



# Appendix K



# Appendix L

## COVID-19 Response

Following guidance from the Centers for Disease Control and Prevention and state and local public health authorities, park operations continue to adapt to changing conditions while maintaining public access, particularly outdoor spaces. Before visiting a park, please check the [park website](#) to determine its operating status. Updates about the overall NPS response to COVID-19, including safety information, are posted on [www.nps.gov/coronavirus](#). Please [recreate responsibly](#).

## National Park Service

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# Rivers

## Iowa

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River	County	Reach	Length (miles)	Description	Potential Classification	ORVs	Watershed (HUC Code)	Year Listed/Updated	Other State
Boone River	Hamilton and Webster	From Webster City to confluence with Des Moines River.	26	Iowa's first designated "Protected Water Area." Identified for its scenic and natural qualities, including relatively undisturbed riparian habitat and excellent smallmouth bass fishery.	Recreational	Fish, Scenic, Wildlife	Middle Des Moines	1995	

Cedar River	Louisa, Muscatine	Highway 6 to mouth at Iowa River	31	Two federally listed endangered species of mussel and one federally listed species of bat may be found along the river; potentially rich in cultural resources; nice streamside relief with bluffs and ridges.	Cultural, Fish, Wildlife	Lower Cedar	1982
Maquoketa River	Jackson, Jones	US 151 Bridge to Mississippi River (omit small reservoir northwest of Maquoketa)	81	River cuts narrow, gorge-like valley up to 150 feet deep through limestone; excellent water quality supporting productive smallmouth bass fishery; potentially rich in cultural resources; threatened northern wild monkshood has been found in basin.	Cultural, Fish, Geologic, Historic, Recreational, Scenic, Wildlife, Other	Maquoketa	1982
Middle Raccoon River	Gutherie and Dallas	City of Panora to the city of Redfield dam.	17	A designated Iowa "Protected Water Area." Beautiful canoe route with good access. Excellent smallmouth bass fishing and wildlife viewing.	Fish, Recreational, Scenic, Wildlife	South Raccoon	1995
Turkey River	Clayton, Gayette, Winneshiek, Howard	Vernon Springs to Mississippi River	134	Gently rolling hills with dense stands of trees; good trout stream; high potential for significant cultural resources; northern wild monkshood, a federally listed endangered species, has been found in the basin.	Cultural, Fish, Geologic, Historic, Recreational, Scenic, Other	Turkey	1982

Upper Iowa River	Winneshick and Allamakee	City of Kendallville to Highway 76 crossing.	73	A designated "Protected Water Area." The state's most scenic canoe river with towering limestone outcroppings and beautiful riparian habitat. Good bass and trout fishing.	Wild	Scenic, Recreational, Geologic, Fish, Wildlife	Upper Iowa	1995
Wapsipinicon River	Clinton, Scott, Cedar, Jones, Linn, Buchanan, Black Hawk, Bremer	Frederika to mouth at Mississippi River omitting reservoir NW of Independence, IA.	215	A designated Iowa "Protected Water Area." Wide, wooded flood plain with only limited development and agricultural encroachment; wide diversity of fish and wildlife habitat; exposed geologic fault; historically valuable Stone City quarries.		Fish, Geologic, Historic, Scenic, Wildlife	Upper Wapsipinicon	1982
Yellow River	Allamakee	Highway W60 near Myron (section 3, Post Township) to boundary of Effigy Mounds National Monument	32	Heavily wooded with marked relief, camping and backpacking opportunities; unusual ecological niches and plant life, including the northern wild monkshood, a federally listed threatened plant, has been found in the basin; good fishery; high potential for cultural resources (Effigy Mounds National Monument adjoins near mouth).		Cultural, Fish, Historic, Recreational, Scenic, Wildlife	Coon-Yellow	1982

Yellow River	Allamakee	Entire segment within Effigy Mounds National Monument	4	One of fastest falling rivers in state, providing excellent fishing and canoeing opportunities. Numerous prehistoric Indian burial mounds. Site of Jefferson Davis Sawmill upstream from boundary.	Scenic	Cultural, Geologic, Historic, Recreational, Scenic, Wildlife	Coon-Yellow	1982/1993
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