



# WOODBURY COUNTY ZONING COMMISSION

**Monday, September 25, 2023 at 5:00 PM**

The Zoning Commission will hold a public meeting on **Monday, September 25, 2023 at 5:00 PM** in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. Please use the 7<sup>th</sup> St. entrance. Public access to the conversation of the meeting will also be made available during the meeting by telephone. Persons wanting to participate in the public meeting and public hearings on the agenda may attend in person or call: **(712) 454-1133** and enter the **Conference ID: 638 086 537#** during the meeting to listen or comment. It is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems.

## AGENDA

<b>1</b>	<b>CALL TO ORDER</b>
<b>2</b>	<b>ROLL CALL</b>
<b>3</b>	<b>PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA</b>
<b>4</b>	<b>APPROVAL OF MINUTES: September 11, 2023</b>
<b>5</b>	<b>ITEM(S) OF BUSINESS</b>
»	<b>PUBLIC HEARING: TOWNLEY ADDITION, MINOR SUBDIVISION PROPOSAL ON PARCEL #894607100007</b> PROPOSED MINOR SUBDIVISION: To be known as Townley Addition, a one-lot minor subdivision in a 4.96-acre portion of Section 7, T89N R46W (Concord Township) in the NW ¼ of the NW ¼ on Parcel #894607100007. The parent parcel abuts the corporate boundary of Sioux City along Barker Avenue. The property is located in the Agricultural Preservation (AP) Zoning District and in the Zone A of the Special Flood Hazard Area (floodplain). Owner/Applicant: Donald J. Townley in his capacity as Trustee of the Derrill J. Townley Revocable Trust, 1414 110th St., Sioux City, IA 51108.
»	<b>REVIEW OF CONDITIONAL USE PERMIT APPLICATION: PROPOSED TELECOMMUNICATION TOWER 120 FT MONOPOLE ON PARCEL #874316300005</b> Conditional Use Permit application by AMG Technology Group DBA Nextlink (Applicant) and Shelle Baldwin (Ownership) to install a 120 FT monopole telecommunication tower to supply high speed internet to surrounding areas. The property is located on Parcel #874316300005 in T87N R43W (Miller Township) in Section 16 in the SE ¼ of the SW ¼. The property is located about 2.3 miles south of Anthon and about 4.3 miles northeast of Oto. The property is located in the Agricultural Preservation (AP) Zoning District. Owner(s)/Applicant(s): Mark D. Baldwin & Shelle J. Baldwin, 3846 245th St., Anthon, IA 51004-8065 / AMG Technology Group DBA Nextlink, 95 Parker Oaks LN., Hudson Oaks, TX 76087.
»	<b>PUBLIC HEARING: SOLAR ENERGY - UTILITY-SCALE SOLAR SYSTEMS – CONSIDERATION OF SOLAR ORDINANCES FOR RECOMMENDATION(S) TO THE BOARD OF SUPERVISORS - SUMMARY OF PROPOSED ZONING ORDINANCE TEXT AMENDMENTS: AN ORDINANCE AMENDING THE TEXT OF THE WOODBURY COUNTY ZONING ORDINANCE TO AMEND PORTIONS OF: THE TABLE OF CONTENTS; SECTION 3.03.4 ENTITLED: LAND USE SUMMARY TABLE OF ALLOWED USES IN EACH ZONING DISTRICT; PORTIONS OF: SECTION 6.02 ENTITLED DEFINITIONS; AND THE RENUMBERING OF DEFINITIONS AND PAGE NUMBERS. THE PROPOSAL IS TO ADD SOLAR ENERGY SYSTEMS (UTILITY SCALE) AS A CONDITIONAL USE IN THE AGRICULTURAL PRESERVATION ZONING DISTRICT AND ADD A NEW SECTION TO THE ZONING ORDINANCE TO REGULATE SOLAR ENERGY SYSTEMS, UTILITY-SCALE SOLAR ENERGY SYSTEMS, AGRISOLAR, AGRIVOLTAICS, AND COMMUNITY SOLAR SYSTEMS.</b>
<b>6</b>	<b>PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA</b>
<b>7</b>	<b>COMMISSIONER COMMENT OR INQUIRY</b>
<b>8</b>	<b>STAFF UPDATE</b>
<b>9</b>	<b>ADJOURN</b>

## Minutes - Woodbury County Zoning Commission Special Meeting – September 11, 2023

The Zoning Commission (ZC) special meeting convened on the 11<sup>th</sup> of September at 5:00 PM at the Movable Community Center in Movable, Iowa. The meeting was also made available via teleconference.

ZC Members Present: Chris Zellmer Zant, Corey Meister, Jeff O'Tool, Tom Bride  
County Staff Present: Dan Priestley, Dawn Norton  
Public Present: Angie Heck, Tony Heck, Kim Luze, Rich Luze, Vicki Atwell, Steve Mrla, Leo Jochum, Bev Jochum, Janet Yanak, Tony Yanak, Dennis Ragan, JoAnn Sadler, Zach Hummel, Wally Wagner, John Johnston, Jeremy Taylor, Kevin Heck, Kyle Gates, Eric Nelson, Elizabeth Widman, Rebekah Moerer, Genise Hallowell, Kalyn Heetland, Josh Heetland, Elisabeth Cendejas, Jesus Cendejas, Robert Knaack, Greg Jochum, Brad Jochum, Tom Jochum, Bob Fritzmeier

### Call to Order

Chair Chris Zant formally called the meeting to order at 5:00 PM. Four Commissioners were present. Commissioner Parker was absent.

### Public Comment on Matters Not on the Agenda

None

### Approval of Previous Meeting Minutes – July 24, 2023

O'Tool motioned to approve the minutes from July 24, 2023. Second: Bride. Motion carried: 4-0.

### Formal approval of Zoning Commission Rules of Procedure

At the July 24, 2023 meeting of the Zoning Commission, the rules of procedure were approved and sent to the Board of Supervisors who voted to approve the rules on August 8, 2023. Motion to formally adopt the rules and authorize the chair to sign the Rules of Procedure by Meister. Second: O'Tool. Motion carried: 4-0.

### Public Hearing: Proposed Janet Heck Subdivision (Parcel #874724300005)

Priestley read the preliminary report and staff recommendation into the record. Kevin Heck, executor for Janet K. Heck has filed for a one (1) lot minor subdivision on the property identified as Parcel #8747243000005. This subdivision is being completed to separate the house location from the farm ground. This agricultural subdivision proposal has been properly noticed in the Sioux City Journal legal section on August 29, 2023. The neighbors within 1000 FT have been duly notified via an August 23, 2023 letter about the September 11, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment. The Woodbury County Engineer found the proposal in compliance with Iowa Code closure requirements and found that the lot(s) have adequate access. This property is located in the Agricultural Preservation (AP) Zoning District and is located in the Special Flood Hazard Area (SFHA) – Zone A. The City of Salix waived their extraterritorial review authority with the approval of Resolution No. 2023-20. The area of the subdivision is less than 5 acres and the Base Flood Elevation (BFE) data is not required. Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. Motion to close public hearing: O'Tool. Second: Bride. Carried: 4-0. Motion to recommend the approval to the Board of Supervisors as proposed: O'Tool. Second: Meister. Motion carried: 4-0.

### Public Hearing: Proposed Zoning Ordinance Map Amendment (Rezone) (Parcel #884506200006)

Priestley read into record the preliminary report and staff recommendation. Richard and Kimberly Luze (Applicants/ Owners) have filed a Zoning ordinance Map Amendment application with Woodbury County to request their property (Parcel #884506200006) be rezoned from Agricultural Preservation (AP) Zoning District to the Agricultural Estates (AE) Zoning District. The applicants are making this request to pursue an eventual split of their parcel to facilitate the ability to add a neighboring single-family dwelling in the future as there are presently two houses located within the existing quarter-quarter section. The split will likely consist of approximately three acres from the existing 18+ acres. This will be initiated at a future date. The neighbors within 1000 FT have been notified via an August 23, 2023 letter about the September 11, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment. This property is located in the Agricultural Preservation (AP) Zoning District and is not located in the floodplain. This requested zoning change is compliant with the future land use map of Woodbury County's development plan as this area is designated within the rural residential area. Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. Staff recommends approval. Priestley has received some phone inquiries regarding future land uses. A Neighboring landowner spoke with concerns of possible subdivisions and increasing density. Priestley stated with Hwy 20 abutting the land, the state

would likely not allow more driveways off Hwy 20. If additional land splits were requested through a subdivision application, there would be public conversations and meetings. Ms. Atwell expressed concerns if a subdivision would go in and how it could affect her cattle farming. Bride stated it would have no impact on what she is currently doing and stated communication between landowners is important. Steve Mrla stated DOT could build a frontage road which would allow more access. Bride discussed how eliminant domain should not be used for private use. Bride motioned to close public hearing. Second: Meister. Carried: 4-0. Motion to recommend the approval to the Board of Supervisors as proposed: Meister. Second: Bride. Motion carried: 4-0.

**Public Hearing: Utility-Scale Solar Systems – Consideration of Solar Ordinances for Recommendation(s) to the Board of Supervisors**

Priestley read into the record the direction by the Woodbury County Board of Supervisors that occurred on August 8, 2023 for Planning and Zoning and the Zoning Commission to establish/examine a new ordinance as it relates to utility-scale solar systems. The purpose of this public hearing is to receive comments from the public about solar energy systems not limited to utility-scale solar systems, agrisolar or agrivoltaics, and community solar systems as the Commission works toward preparing a recommendation for a proposed ordinance or amendments to the Woodbury County Zoning ordinance to address the permitting process for such systems in industrial and/or agricultural areas. The Board of Supervisors have indicated that “if the county was to engage in utility-scale solar, at minimum, the county should consider this only if the following is met”:

- A conditional use permit for AP “C” with Planning and Zoning and Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
- A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
- A maximum height of no more than 20’ for panel structures.
- Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered “AP.”
- Utility solar can be no more than 2% of all AP “agricultural preservation,” preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.
- Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- A requirement (or at least strong consideration) that the utility-scale solar project either be on a landowner’s property or that the owner of the land be a resident of Woodbury County.

Priestley identified additional comments/resources that were received after the printing of the Zoning Commission agenda packet with backup materials. In particular, resources were received from the Center of Rural Affairs, the Northwest Iowa Power Cooperative (NIPCO), the Woodbury County Rural Electric Cooperative, and the Iowa Land & Liberty Coalition. Additionally, Priestley provided a copy of a map illustrating soil content with less than 5% slopes in comparison with soils with CSR2 ratings greater than 65 and 75. Priestley then offered a summary of potential approaches that could be taken to craft an ordinance including which entity would be in charge of the permitting. Looking at other counties, there is a mix of permitting utility-scale solar based on a conditional use permit via the Zoning Commission and Board of Adjustment in comparison with a standalone home rule ordinance where the Board of Supervisors are the permitting body. Priestley indicated that the following concepts would be up for discussion as an ordinance is considered: Certified Abstractor’s Listing – Public Notification Area; Site Plan; Setbacks; Height; Protected Areas; Slope; Landscaping/Buffer/Screening; Fencing/Security; Signage; Lighting; Noise; Outdoor Storage; Utility Plan / Utility Connections / Agreements; Floodplain; Habitat and Natural Resource Considerations; Solar Glare Minimization; Weed Control; Grading Plan; Compliance with applicable laws (local, state, federal); Access; Road Use; Aviation Protection; Maintenance, Repair, or Replacement / Repowering; Waste; Soil Erosion / Sediment Control; Stormwater Management; Administration / Enforcement / Violations; Emergency Management; Timeline; Safety; Abandonment / Cessation of Operations; Decommissioning and Reclamation; Fees; Agrivoltaics / Agrisolar; Community Solar Systems; Concentrating Solar Power; Solar definitions; Etc.

The following paraphrased public comments were offered:

Greg Jochum (Salix) addressed the Commission regarding the differences between CSR1 and CSR2 as well as height.

Brad Jochum (Plymouth County) addressed the Commission regarding out of county ownership.

Tom Jochum (Sgt. Bluff) addressed the Commission regarding the advantages of solar.

Eric Nelson (Merville) addressed the Commission regarding solar as a commercial/industrial entity.

Ron Wood (Salix) addressed the Commission regarding the need for solar power generation for growth.

Elizabeth Widman (Sgt. Bluff) addressed the Commission regarding the stewardship and protection of agricultural land from solar development.

Bob Fritzmeier (Sioux City) addressed the Commission regarding how solar installations help soil to rejuvenate and help the wildlife population.

Leo Jochum (Salix) addressed the Commission regarding renewable energy rates, vegetation for screening, capping AP land at 2%, and soil rejuvenation.

Kim Alexander (Smithland) addressed the Commission regarding money as a principal purpose for solar.

Will Dougherty (Urbandale) addressed the Commission on how MidAmerican works with various stakeholders as they pursue solar projects and offered an opportunity to tour the Port Neal solar site.

Ann Johnston (Salix) addressed the Commission with concerns on the impact of the farm ground and keeping the land the way it is.

Wally Kuntz (Merville) addressed the Commission inquiring about the tax income.

Supervisor Jeremy Taylor (Sioux City) addressed the Commission and responded to Mr. Kuntz's inquiry about generation usage tax.

Bride asked Will Dougherty from MidAmerican where the largest project was in Iowa, Dougherty stated Holiday Creek, north of Fort Dodge has an 800-acre, 100 M/Watt project. 8 acres generally produces 1 M/Watt.

Bride asked if there have been any requests to the Iowa Utilities Board for eminent domain for a commercial solar project.

Eric Nelson asked Dougherty about storage of excess power. Dougherty stated it is not an on-demand system. The grid goes where needed first, then to next load center. Port Neal is an on-demand system. Dougherty stated coal system is used as a back up to solar.

Motion to close public hearing: Meister. Second: O'Tool. Carried: 4-0.

Priestley thanked the attendees for their comments and questions. The information gathered will be taken into consideration as a proposal is prepared and possibly recommended by the Zoning Commission that would eventually go to the Board of Supervisors for up to three hearings. The next meeting of the Zoning Commission will be held on Monday, September 25 at 5:00 PM in the basement meeting room of the Woodbury County Courthouse where the Board of Supervisors meet.

**Public Comment on Matters Not on the Agenda**

None.

**Commissioner Comment or Inquiry**

None.

**Staff Update**

Priestley stated that the minor subdivision and rezone that were recommended this evening will be sent to the Board of Supervisors for consideration at future meeting(s).

**Adjourn**

Motion by Bride to adjourn; Second by O'Tool. Carried: 4-0. Adjourned: 6:34 p.m.





# WOODBURY COUNTY COMMUNITY & ECONOMIC DEVELOPMENT

620 Douglas St. · Sixth Floor · Sioux City, IA 51101 · Phone: 712.279.6609 · Fax: 712.279.6530 · Web: woodburycountyiowa.gov

Daniel J. Priestley, MPA – Zoning Coordinator · dpriestley@woodburycountyiowa.gov

Dawn Norton – Senior Clerk · dnorton@woodburycountyiowa.gov

## PRELIMINARY REPORT – SEPTEMBER 21, 2023

### TOWNLEY ADDITION - MINOR SUBDIVISION PROPOSAL

#### Application Details

Applicant(s)/Owner(s):	Don Townley
Application Type:	Minor Subdivision
Name of Subdivision:	Townley Addition
Application Date:	August 17, 2023
Number of Lots:	1
Total Acres:	4.96
Extraterritorial Review:	July 24, 2023 (Sioux City)
Legal Notice Date:	September 14, 2023
Neighbor(s) Notice Date:	September 11, 2023
Stakeholder(s) Notice Date:	August 29, 2023
Zoning Commission Public Hearing Date:	September 25, 2023
Board of Supervisors Agenda Date:	TBD
Attorney:	Joel D. Vos
Surveyor:	Alan L. Fagan

#### Property Details

Parcel #:	894607100007
Township/Range:	T89N R46W (Concord)
Section:	7
Quarter:	NW ¼ NW ¼
Zoning District:	Agricultural Preservation
Floodplain District:	Zone A (Floodplain)
Address:	1414 110 <sup>th</sup> St., Sioux City, IA 51108



#### Contents

Summary, Location Aerial, Site Plan Excerpt, Recommendation, & Suggested Motion
Legal Notification
Neighbor(s) Notification
Stakeholder(s) Comments
Review Criteria / Applicant Responses
Application
Supporting Documentation

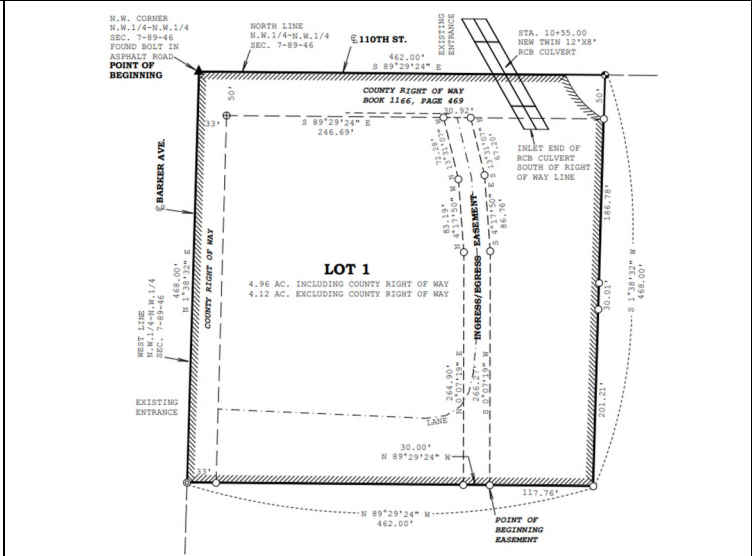
#### SUMMARY

Donald J. Townley, in his capacity as Trustee of the Derrill J. Townley Revocable Trust has filed for a one (1) lot minor subdivision on the property identified as Parcel #894607100007 and referenced above. This subdivision is being completed to separate the house location from the abutting ground. This proposal has been properly noticed in the Sioux City Journal legals section on September 14, 2023. The neighbors within 1000 FT have been duly notified via a September 11, 2023 letter about the September 25, 2023 Zoning Commission public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been notified and have been requested to comment. The Woodbury County Engineer found the proposal in compliance with Iowa Code closure requirements and found that the lot(s) have adequate access. This property is located in the Agricultural Preservation (AP) Zoning District and is located in the Special Flood Hazard Area (SFHA) – Zone A. The City of Sioux City conducted extraterritorial review with the acceptance and approval of the final plat with the approval of Resolution No. 2023-0696. The area of the subdivision is less than 5 acres and Base Flood Elevation (BFE) data is not required. Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval.

#### AERIAL VIEW



#### FINAL PLAT EXCERPT



#### STAFF RECOMMENDATION & SUGGESTED MOTION

Based on the information received and the requirements set forth in the Zoning and Subdivision Ordinance, the proposal meets the appropriate criteria for approval. Staff recommends approval. Suggested Motion: Motion to recommend the approval to the Board of Supervisors as proposed.

WOODBURY COUNTY, IOWA  
MINOR SUBDIVISION APPLICATION

Applicant: DON TOWNLEY  
Name of Owner

Mailing Address: 2323 ST. ANTHONY'S SIoux CITY, IA 51108  
Street City or Town State and Zip + 4

Property Address: 1414 110th ST SIoux CITY, IA 51108  
Street City or Town State and Zip + 4

Ph/Cell #: 712 301-8513 E-mail Address: townleyds@aol.com

To subdivide land located in the NW-NW Quarter of Section 7

Civil Township CONCORD GIS Parcel # 894607100007

Name of Subdivision: TOWNLEY ADDITION

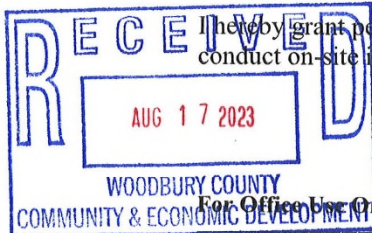
Subdivision Area in Acres 4.96 ACRES Number of Lots 1

**Attachments:**

- N/A 1. Eight (8) copies of grading plans; if required.
- 2. Eight (8) copies of final plats (Complete per Section 4.01 of the Subdivision Ordinance).
- 3. An attorney's opinion of the abstract.
- 4. A Certified abstractor's certificate to include:
  - a. Legal description of proposed subdivision.
  - b. Plat showing clearly the boundaries of the subdivision.
  - c. A list of names, mailing addresses (including the ZIP + 4), and legal descriptions of all property owners within 1000'.

Surveyor: ALAN L. FAGAN Ph/Cell: 712 539-1471

Attorney: JOEL D. JOS Ph/Cell: 712 255-8838



I hereby grant permission to the Woodbury County Zoning Staff and elected or appointed officials to conduct on-site inspections.

Owner's Signature: [Signature]  
ALAN FAGAN FOR OWNER  
Zoning Director: [Signature]

Zoning District AP Flood District A Date 8/17/23 No. 6926

Application Fee 4 Lots or less (\$300\*+ Additional Fees) \$ 300 # 13170  
5 Lots or more (\$300\* plus \$5 per lot + Additional Fees) \_\_\_\_\_

\*Owner(s)/applicant(s) shall pay the additional costs associated with the processing, printing, and the mailing of notifications of the public hearings when the number of mailings required exceeds 30. The owner(s)/applicant(s) shall pay the additional costs of the legal publication notice(s) in newspaper(s) when the fees exceed \$100.00.

**FINAL PLAT**  
A MINOR SUBDIVISION PLAT  
OF  
**TOWNLEY ADDITION**  
WOODBURY COUNTY, IOWA

**TITLE OPINION**  
Re: Townley Addition Description:

PARCEL DESCRIPTION:  
PART OF THE N.W.1/4 OF THE N.W.1/4 OF SECTION 7, TOWNSHIP 89 NORTH, RANGE 46 WEST OF THE 5TH PRINCIPAL MERIDIAN, WOODBURY COUNTY, IOWA, DESCRIBED AS FOLLOWS: BEGINNING AT THE N.W. CORNER OF SAID N.W.1/4 OF THE N.W.1/4; THENCE S.89°29'24"E. ALONG THE NORTH LINE OF SAID N.W.1/4 OF THE N.W.1/4 FOR 462.00 FEET; THENCE S.1°38'32"W. FOR 468.00 FEET; THENCE N.89°29'24"W. FOR 462.00 FEET TO THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4; THENCE N.1°38'32"E. ALONG SAID WEST LINE FOR 468.00 FEET TO THE POINT OF BEGINNING. CONTAINING 4.96 ACRES INCLUDING COUNTY RIGHT OF WAY AND 4.12 ACRES EXCLUDING SAID RIGHT OF WAY. SUBJECT TO AND TOGETHER WITH ANY AND ALL EASEMENTS, RESTRICTIONS AND COVENANTS.

NOTE: THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4 IS ASSUMED TO BEAR N.1°38'32"E. COUNTY AUDITOR AND RECORDER WOODBURY COUNTY, IOWA

Dear Auditor and Recorder:

We have this date examined a complete abstract of title, pursuant to Iowa Code Section 354.11(3), to the property described in the Surveyor's Certificate on the Plat of Townley Addition, an Addition to Woodbury County, Iowa, last certified by Sedgwick Tally Abstract, dated \_\_\_\_\_, 2023 at \_\_\_\_\_ A.M. and from said abstract find good and merchantable title to said premises vested in the Derrill J. Townley Revocable Trust under instrument dated April 15, 2021, the proprietor, free and clear of all mortgages, liens and other encumbrances, except as follows:

1. At entry 1 of the abstract is shown an Easement dated May 5, 1941 and filed August 6, 1941 at Book 154, Page 191. The easement granted to Socony-Vacuum Oil Company, Inc. and its successors and assigns, the right to lay pipelines for the transportation of oil and gas across the N 1/2 of the NW 1/4 of Section 7, Twp. 89, Range 46. From the abstract, it cannot be determined whether any portion of the pipeline, as constructed, crosses any portion of the property described in the Surveyor's Certificate on the Plat of Townley Addition. At entries 2 and 7 of the abstract are shown subsequent conveyances of the Easement, so that the current owner of the pipeline is Williams Pipe Line Company, by virtue of an assignment dated October 31, 1983 and file January 10, 1984 at Roll 138, Image 1428.

2. At entry 6 of the abstract is shown a Right of Way Easement to the Woodbury County Rural Electric Cooperative Association dated September 10, 1976 and filed April 1, 1977 in Roll 61, Page 401. The easement grants the right to construct electric transmission lines across of the N 1/2 of the NW 1/4 of Section 7, T89N, R46W of the 5th P.M., Woodbury County, Iowa.

All certified real estate taxes and special assessments due and payable have been paid. Real estate taxes and special assessments not certified are a lien in an undetermined amount.

Dated: June \_\_\_\_\_, 2023.

Joel D. Vos  
ATTORNEY AT LAW

**AUDITOR AND RECORDER'S CERTIFICATE OF RECORDING**  
STATE OF IOWA : SS  
COUNTY OF WOODBURY:

DOCKET NO: \_\_\_\_\_  
FILED FOR RECORD, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 202 \_\_\_\_\_ AT \_\_\_\_\_

O'CLOCK \_\_\_\_\_ M. RECORDED IN PLAT ENVELOPE \_\_\_\_\_, INDEXED AND  
DELIVERED TO THE COUNTY AUDITOR OF WOODBURY COUNTY, IOWA.

DATED \_\_\_\_\_

PATRICK F. GILL  
AUDITOR AND RECORDER  
WOODBURY COUNTY, IOWA  
BY: DIANE SWOBODA PETERSON, DEPUTY

**COUNTY ENGINEER'S CERTIFICATE**  
I, MARK NAHRA, P.E. COUNTY ENGINEER FOR WOODBURY COUNTY, IOWA, DO HEREBY CERTIFY THAT THE BOUNDARY LINES OF THE PLAT AND LOTS THEREIN WERE MATHEMATICALLY CHECKED AND CONFORM WITH THE REQUIREMENTS AS PROVIDED FOR IN THE SUBDIVISION ORDINANCE, THAT ALL DIMENSIONS BOTH LINEAL AND ANGULAR NECESSARY FOR THE LOCATION OF LOTS, TRACTS, STREETS, ALLEYS AND EASEMENTS ARE SHOWN.

MARK NAHRA, P.E.  
COUNTY ENGINEER  
WOODBURY COUNTY, IOWA

**CERTIFICATE OF PLANNING AND ZONING COMMISSION**  
WE DO HEREBY CERTIFY THAT WE ARE THE CHAIRPERSON AND ECONOMIC AND COMMUNITY DEVELOPMENT DIRECTOR, RESPECTIVELY, OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF SIOUX CITY, IOWA, AND WE DO FURTHER CERTIFY THAT SAID PLANNING AND ZONING COMMISSION DID TAKE UNDER ADVISEMENT THE ATTACHED PLAT OF TOWNLEY ADDITION, WOODBURY COUNTY, IOWA, AND THAT SAID PLANNING AND ZONING COMMISSION DID ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023 RECOMMEND TO THE CITY COUNCIL OF THE CITY OF SIOUX CITY, IOWA, THE ACCEPTANCE AND APPROVAL OF THE PLAT OF SAID SUBDIVISION.

DATED \_\_\_\_\_

ANDREW GLISAR  
CHAIRPERSON

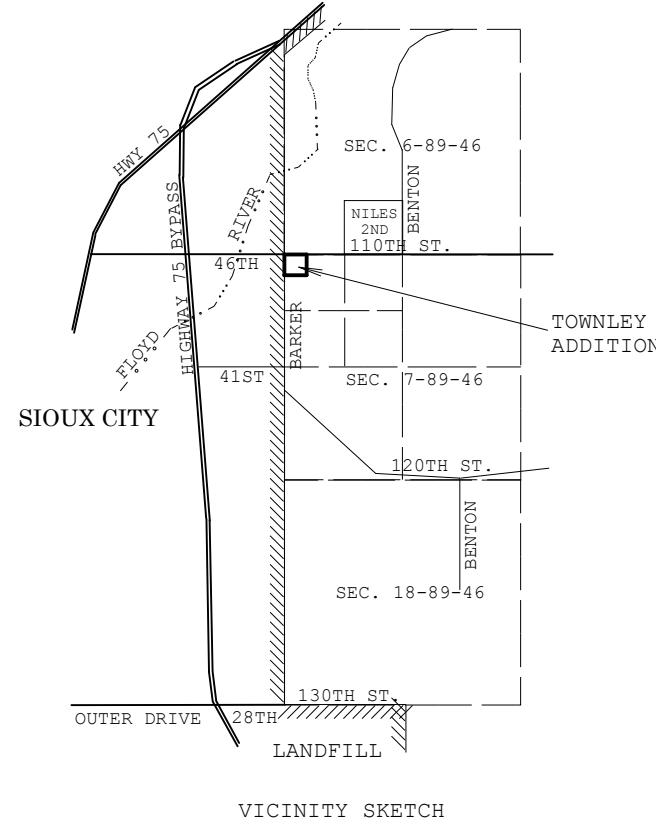
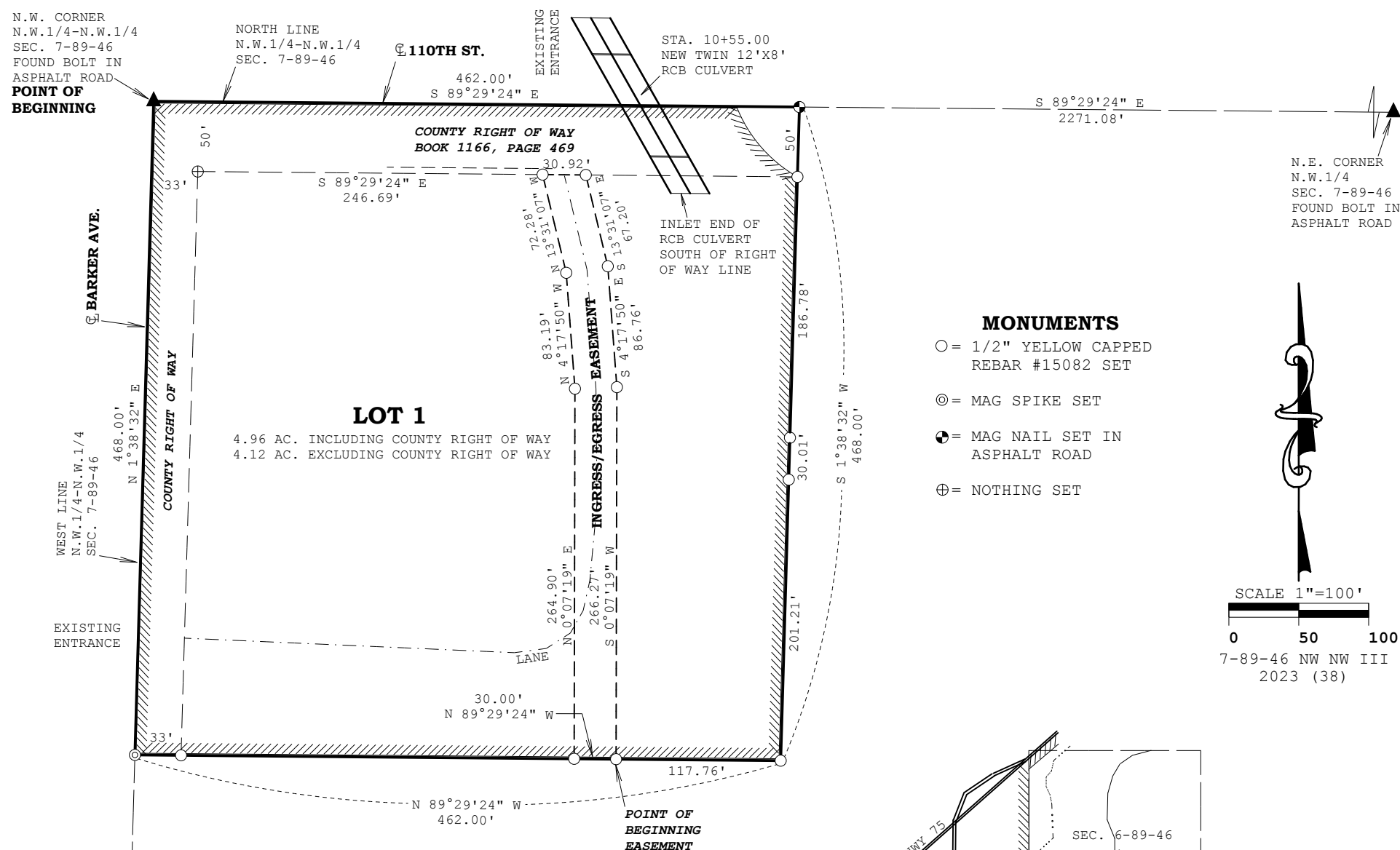
DATED \_\_\_\_\_

MARTIN DOUGHERTY  
ECONOMIC AND COMMUNITY  
DEVELOPMENT DIRECTOR

**ANNEXATION AGREEMENT CERTIFICATE**  
THE PROPERTY INCLUDED ON THE ATTACHED PLAT IS SUBJECT TO AN ANNEXATION AGREEMENT RECORDED AS INSTRUMENT # \_\_\_\_\_ IN THE WOODBURY COUNTY RECORDER'S OFFICE.

DATE OF SURVEY:  
MARCH 28, 2023

AL FAGAN  
LAND SURVEYING, P.C.  
P.O. BOX 858  
MERRILL, IA 51088  
712 539-1471



**NOTE:**  
THERE MAY BE OTHER EASEMENTS, RESTRICTIONS AND COVENANTS NOT SHOWN THAT AFFECT LOT 1, TOWNLEY ADDITION, WOODBURY COUNTY, IOWA.

**OWNER/SUBDIVIDER**  
DERRILL J. TOWNLEY  
REVOCABLE TRUST

**SURVEYOR**  
ALAN L. FAGAN

**SETBACK REQUIREMENTS**  
FRONT YARD - 100'  
SIDE YARD - 20'  
ACCESSORY STRUCTURE - 10'  
REAR YARD - 50'  
ACCESSORY STRUCTURE - 10'

**SURVEYOR'S DESCRIPTION:**  
PART OF THE N.W.1/4 OF THE N.W.1/4 OF SECTION 7, TOWNSHIP 89 NORTH, RANGE 46 WEST OF THE 5TH PRINCIPAL MERIDIAN, WOODBURY COUNTY, IOWA, DESCRIBED AS FOLLOWS: BEGINNING AT THE N.W. CORNER OF SAID N.W.1/4 OF THE N.W.1/4; THENCE S.89°29'24"E. ALONG THE NORTH LINE OF SAID N.W.1/4 OF THE N.W.1/4 FOR 462.00 FEET; THENCE S.1°38'32"W. FOR 468.00 FEET; THENCE N.89°29'24"W. FOR 462.00 FEET TO THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4; THENCE N.1°38'32"E. ALONG SAID WEST LINE FOR 468.00 FEET TO THE POINT OF BEGINNING. CONTAINING 4.96 ACRES INCLUDING COUNTY RIGHT OF WAY AND 4.12 ACRES EXCLUDING SAID RIGHT OF WAY. SUBJECT TO AND TOGETHER WITH ANY AND ALL EASEMENTS, RESTRICTIONS AND COVENANTS.

NOTE: THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4 IS ASSUMED TO BEAR N.1°38'32"E.

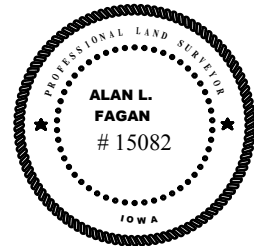
LOT 1, TOWNLEY ADDITION, WOODBURY COUNTY, IOWA IS SUBJECT TO AN INGRESS/EGRESS EASEMENT DESCRIBED AS FOLLOWS: COMMENCING AT THE S.E. CORNER OF SAID LOT 1; THENCE N.89°29'24"W. ALONG THE SOUTH LINE OF SAID LOT 1 FOR 117.76 FEET TO THE POINT OF BEGINNING OF SAID EASEMENT; THENCE CONTINUING N.89°29'24"W. ALONG SAID SOUTH LINE FOR 30.00 FEET; THENCE N.0°07'19"E. FOR 264.90 FEET; THENCE N.4°17'50"W. FOR 83.19 FEET; THENCE N.13°31'07"W. FOR 72.28 FEET TO THE SOUTH RIGHT OF WAY LINE OF 110TH STREET; THENCE S.89°29'24"E. ALONG SAID RIGHT OF WAY LINE FOR 30.92 FEET; THENCE S.13°31'07"E. FOR 67.20 FEET; THENCE S.4°17'50"E. FOR 86.76 FEET; THENCE S.0°07'19"W. FOR 266.27 FEET TO THE POINT OF BEGINNING.

**SURVEYOR'S CERTIFICATE**  
I, ALAN L. FAGAN, A DULY LICENSED LAND SURVEYOR UNDER THE PROVISIONS OF THE LAWS OF THE STATE OF IOWA, HOLDING CERTIFICATE NO. 15082, DO HEREBY CERTIFY THAT THE SUBDIVISION PLAT OF TOWNLEY ADDITION, WOODBURY COUNTY, IOWA, IS A TRUE REPRESENTATION OF A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT THE SAME IS LOCATED UPON AND COMPRISES THE WHOLE OF THE ATTACHED DESCRIBED PROPERTY.

I DO HEREBY CERTIFY THAT THERE ARE CONTAINED IN SAID DESCRIPTION THE LOTS AND STREETS DESCRIBED IN THE ADDITION PLATTED; THAT THE SAME ARE OF THE DIMENSIONS, NUMBERS, NAMES AND LOCATIONS AS SHOWN ON SAID PLAT AND THAT IRON STAKES WERE DRIVEN AT EACH CORNER OF EVERY LOT AND TRACT EXCEPT AS NOTED ON SAID PLAT.

DATED AT SIOUX CITY, IOWA \_\_\_\_\_, 2023.

ALAN L. FAGAN  
IOWA NO. 15082  
LICENSE RENEWAL DATE: DECEMBER 31, 2023



**CERTIFICATE OF COUNTY ASSESSOR**  
I, JULIE CONOLLY, HEREBY CERTIFY THAT ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 202\_\_\_\_\_, A COPY OF THIS PLAT WAS FILED IN THE WOODBURY COUNTY ASSESSOR'S OFFICE.

DATED \_\_\_\_\_  
JULIE CONOLLY  
WOODBURY COUNTY ASSESSOR

**AUDITOR'S APPROVAL OF SUBDIVISION NAME OR TITLE**  
THE COUNTY AUDITOR HEREBY ACCEPTS AND APPROVES THE NAME OF TOWNLEY ADDITION, WOODBURY COUNTY, IOWA, FOR USE IN WOODBURY COUNTY, IOWA AS REQUIRED BY IOWA CODE SECTION 354.6(2).

DATED \_\_\_\_\_, 2023.

PATRICK F. GILL  
WOODBURY COUNTY AUDITOR  
BY: DIANE SWOBODA PETERSON, DEPUTY

**TREASURER'S CERTIFICATE OF TAXES AND SPECIAL ASSESSMENTS**  
I, TINA BERTRAND, TREASURER OF WOODBURY COUNTY, IOWA, DO HEREBY CERTIFY THAT THE LAND DESCRIBED IN THE ATTACHED AND FOREGOING SURVEYOR'S CERTIFICATE IS FREE FROM CERTIFIED TAXES AND CERTIFIED SPECIAL ASSESSMENTS.

DATED \_\_\_\_\_  
TINA BERTRAND  
TREASURER,  
WOODBURY COUNTY, IOWA

**DEDICATION**  
KNOW ALL MEN BY THESE PRESENTS:

DONALD J. TOWNLEY, SUCCESSOR TRUSTEE OF THE DERRILL J. TOWNLEY REVOCABLE TRUST UNDER INSTRUMENT DATED APRIL 15, 2021, THE OWNER OF THE REAL ESTATE DESCRIBED IN THE ATTACHED SURVEYOR'S CERTIFICATE, HAS IN THE PURSUANCE OF LAW, CAUSED SAID DESCRIBED REAL ESTATE TO BE SURVEYED, STAKED AND PLATTED INTO LOTS, TOGETHER WITH AN INGRESS/EGRESS EASEMENT FOR THE BENEFIT OF ADJACENT PROPERTY, AS IS PARTICULARLY SHOWN AND SET FORTH IN THE ATTACHED PLAT AND SAID CERTIFICATE OF ALAN L. FAGAN, A LICENSED SURVEYOR WHO SURVEYED AND PLATTED THE REAL ESTATE TO BE KNOWN AS TOWNLEY ADDITION, WOODBURY COUNTY, IOWA, AND THAT THE SAME IS PREPARED WITH THE FREE CONSENT AND ACCORDANCE WITH THE DESIRES AS OWNER AND PROPRIETOR THEREOF.

EXECUTED AT \_\_\_\_\_, IOWA, THE \_\_\_\_ DAY OF \_\_\_\_\_, 2023.

DONALD J. TOWNLEY, IN HIS CAPACITY  
AS TRUSTEE OF THE DERRILL J. TOWNLEY  
REVOCABLE TRUST

**INDIVIDUAL ACKNOWLEDGMENT**  
STATE OF IOWA : SS  
WOODBURY COUNTY:

ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023, BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR THE STATE OF IOWA, PERSONALLY APPEARED DONALD J. TOWNLEY, IN HIS CAPACITY AS TRUSTEE OF THE DERRILL J. TOWNLEY REVOCABLE TRUST, TO ME KNOWN TO BE THE PERSON NAMED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED THAT THEY EXECUTED THE SAME AS THEIR VOLUNTARY ACT AND DEED.

NOTARY PUBLIC

**CITY COUNCIL RESOLUTION NO. \_\_\_\_\_**  
RESOLUTION ACCEPTING AND APPROVING THE PLAT OF TOWNLEY ADDITION, WOODBURY COUNTY, IOWA.

WHEREAS, THE PLANNING AND ZONING COMMISSION OF THE CITY OF SIOUX CITY, IOWA, HAS RECOMMENDED THE ACCEPTANCE AND APPROVAL OF SAID PLAT. NOW, THEREFORE BE, AND IT IS, RESOLVED BY THE CITY COUNCIL OF THE CITY OF SIOUX CITY, IOWA, THAT SAID PLAT OF TOWNLEY ADDITION, WOODBURY COUNTY, IOWA, AS HERETO ATTACHED AND FORMING PART OF THIS RESOLUTION BE, AND THE SAME HEREBY IS, ACCEPTED AND APPROVED.

PASSED \_\_\_\_\_

APPROVED \_\_\_\_\_

ROBERT E. SCOTT  
MAYOR

LISA MCCARDLE  
CITY CLERK

STATE OF IOWA :  
: SS  
COUNTY OF WOODBURY:

I, LISA MCCARDLE, CLERK OF THE CITY OF SIOUX CITY, IOWA, DO HEREBY CERTIFY THAT THE FOREGOING IS A FULL, TRUE, AND CORRECT COPY OF A RESOLUTION ACCEPTING AND APPROVING THE PLAT OF TOWNLEY ADDITION, WOODBURY COUNTY, IOWA, WHICH SAID RESOLUTION WAS ADOPTED BY THE CITY COUNCIL OF SAID CITY ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023 AND APPROVED BY THE MAYOR OF SAID CITY ON SAID DATE ALL AS FULL, TRUE AND COMPLETE AS THE SAME APPEARS OF RECORD IN THE OFFICE OF SAID CITY CLERK.

DATED \_\_\_\_\_

ROBERT E. SCOTT  
MAYOR

LISA MCCARDLE  
CITY CLERK

INDEX LEGEND	
SURVEYOR:	ALAN L. FAGAN 712 539-1471
MAIL TO:	AL FAGAN LAND SURVEYING, P.C. P.O. BOX 858 - MERRILL, IA 51038
COUNTY:	WOODBURY
SECTION(S):	7 T. 89 N., R. 46 W.
ALIQUOT PART:	PART OF THE N.W.1/4 OF THE N.W.1/4
CITY:	
SUBDIVISION:	
BLOCK(S):	
LOT(S):	
PROPRIETOR(S):	DERRILL J. TOWNLEY REVOCABLE TRUST
REQUESTED BY:	DONALD J. TOWNLEY



**CED STAFF - REVIEW CRITERIA (SUBDIVISION ORDINANCE)**

The County's Zoning and Subdivision Ordinances require certain actions from County staff and the Planning and Zoning Commission. Per these requirements, CED staff:

	<b>shall review a subdivision application for completeness and for approval of a final plat by ensuring it is submitted in accordance with the standards for a subdivision plat per Iowa Code.</b>
	Staff reviewed the subdivision application, deemed it complete, and verified the final plat's conformance to the County's Zoning Ordinance, Subdivision Ordinance, and the Code of Iowa, all as required by law.
	<b>shall accept payment of applicable fees, and distribute copies of the final plat to the Planning &amp; Zoning Commission, the appropriate county departments and public utilities; and</b>
	Staff received the application fee and the account is paid-in-full. Staff also distributed copies of the application, final plat, and other materials to all relevant stakeholders as required.
	<b>shall coordinate with the County Engineer who shall review the final plat to determine conformance with the engineering design standards of these regulations and to verify accuracy of the legal descriptions and survey data; and</b>
	Staff have received written confirmation that the County Engineer has reviewed and determined that the final plat conforms to the engineering and design standards of these regulations, and he has verified the accuracy of the legal descriptions and survey data.
	<b>shall review the final plat to determine conformance with the design standards of these regulations and with the required form of the plat and related documents; and</b>
	Staff verified that the final plat conforms to the design standards of these regulations, as well as the required form of the final plat.
	<b>shall assure conformance with the goals and objectives of the County's General Plan, the CED staff may make recommendations for conditions for approval including use restrictions required to preserve and improve the peace, safety, health, welfare, comfort, and convenience of the future residents of the subdivision and neighboring properties.</b>
	Staff attest to the final plat conforming to the goals and objectives of the county plan. Staff recommends approval of the final plat.

**ZONING COMMISSION - REVIEW CRITERIA (SUBDIVISION ORDINANCE)**

The County's Zoning and Subdivision Ordinances require certain actions from County staff and the Planning and Zoning Commission. Per these requirements, the Planning and Zoning Commission:

	<b>shall conduct a public hearing on a final plat for a minor subdivision. Notice of the date, time and location of the hearing will be mailed to the owners of all property within 1,000 feet for the subject property not less than four nor more than twenty days prior to the date of the hearing; and</b>
	Staff have ensured that the legal requirements have been met for publicly noticing this public hearing, all as required by law. Staff have also ensured the notice requirement for adjacent landowners within 1000 FT have also been met.
	<b>shall review the final plat and the staff reports and other information presented to determine whether the plat conforms to the ordinances, general plan and other policies of the county; and</b>
	Staff have compiled, reviewed, and analyzed all relevant materials to determine whether the plat conforms to the ordinances, general plan, and other policies of the County, or not. Staff provided this information in a "Staff Report" format and made them available to the Commission well in advance of the required public hearing. The Commission also held a public hearing to review, analyze, and discuss the final plat and other relevant information.
	<b>may recommend specific conditions for approval including use restrictions required to preserve and improve the peace, safety, health, welfare, comfort, and convenience of the future residents of the subdivision and neighboring properties; and</b>
	Staff does not recommend any specific conditions for this final plat. However, specific conditions (if any) may be recommended by the Commission.
	<b>shall forward a report of its finding and a recommendation to the Board of Supervisors. The recommendation shall be in the form of a resolution to be certified as part of the final plat materials. A copy of the report and the resolution shall also be forwarded to the property owner, the subdivider and the land surveyor for the subdivision.</b>
	During its required public hearing on the final plat, the Board of Supervisors will receive the final staff report and the Commission's recommendation on said plat and shall approve, approve with conditions, or disapprove the plat. The Supervisors may table the matter with the consent of the subdivider. Approval shall be in the form of a resolution to be certified as part of the final plat. Staff will coordinate with the subdivider and land surveyor to ensure all copies and recordings are submitted and received, all as required by law.

RESOLUTION NO. 2023 - 0696  
with attachments

RESOLUTION ACCEPTING AND APPROVING THE "FINAL PLAT OF TOWNLEY ADDITION, WOODBURY COUNTY, IOWA" (A ONE LOT RESIDENTIAL SUBDIVISION LOCATED AT 1414 110<sup>TH</sup> STREET)

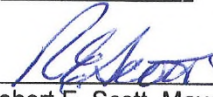
WHEREAS, Donald J. Townley, successor Trustee of the Derrill J. Townley Revocable Trust, did file with the City Clerk of the City of Sioux City, Iowa, a certain Final Plat designated as "Townley Addition, Woodbury County, Iowa"; and

WHEREAS, the Planning and Zoning Commission, at their July 11, 2023, meeting has recommended the acceptance and approval of said Final Plat.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SIOUX CITY, IOWA that said "Final Plat of Townley Addition, Woodbury County, Iowa", be, and the same hereby is, accepted and approved, and the Mayor and the City Clerk are hereby directed to furnish to the proprietors a certified copy of this resolution, as required by law.

BE IT FURTHER RESOLVED that this approval is conditional on the owner executing an Extraterritorial Agreement pursuant to Section 25.04.040 (1.b.5.E.vi) of the Sioux City Municipal Code, which Extraterritorial Agreement was recorded in the office of the Woodbury County Recorder/Auditor on \_\_\_\_\_, 2023 at Instrument No. \_\_\_\_\_.

PASSED AND APPROVED: July 24, 2023

  
\_\_\_\_\_  
Robert E. Scott, Mayor

ATTEST:   
\_\_\_\_\_  
Lisa L. McCardle, City Clerk



NATURAL RESOURCES CONSERVATION SERVICES (NRCS):	No comments.
NORTHERN NATURAL GAS:	No comments.
NORTHWEST IOWA POWER COOPERATIVE (NIPCO):	Have reviewed this zoning request. NIPCO has no issues with this request. – Jeff Zettel, 8/31/23.
NUSTAR PIPELINE:	No comments.
SIOUXLAND DISTRICT HEALTH DEPARTMENT:	No comments.
WIATEL:	No comments.
WOODBURY COUNTY ASSESSOR:	No comments.
WOODBURY COUNTY CONSERVATION:	No comments.
WOODBURY COUNTY EMERGENCY MANAGEMENT:	No comments.
WOODBURY COUNTY EMERGENCY SERVICES:	No comments.
WOODBURY COUNTY ENGINEER:	<b>SEE REVIEW MEMO BELOW.</b>
WOODBURY COUNTY RECORDER:	No comments.
WOODBURY COUNTY RURAL ELECTRIC COOPERATIVE (REC):	No comments.
WOODBURY COUNTY SOIL AND WATER CONSERVATION DISTRICT:	The WCSWCD has no comments regarding this proposal. – Neil Stockfleth, 8/29/23.



## Woodbury County Secondary Roads Department

759 E. Frontage Road • Moville, Iowa 51039  
 Telephone (712) 279-6484 • (712) 873-3215 • Fax (712) 873-3235

COUNTY ENGINEER  
 Mark J. Nahra, P.E.  
 mnahra@woodburycountyiowa.gov

ASSISTANT TO THE COUNTY ENGINEER  
 Benjamin T. Kusler, E.I.T.  
 bkusler@woodburycountyiowa.gov

SECRETARY  
 Tish Brice  
 tbrice@woodburycountyiowa.gov

To: Dan Priestley, Woodbury County Zoning Coordinator

From: Mark J. Nahra, County Engineer

Date: September 19, 2023

Subject: Townley Addition – a minor subdivision application

The Secondary Road Department has reviewed the information provided for the above referenced subdivision forwarded with your memo dated May 1, 2023.

I am offering the following comments for your consideration.

- We checked the closure on the plat and found it in compliance with the requirements for the full subdivision of 1 in 10,000 and 1 in 5,000 for each lot as required by Section 355.8 of the Code of Iowa.
- I reviewed the parcel for access. The existing driveway is adequate for access and may continue to be used. If an additional entrance is needed for any part of the remaining property, the landowner will need to file for a permit with the secondary road department for any new access.
- I note that the driveway is shown as subject to an ingress/egress easement. It is described with its own legal description on the plat. I assume this easement is for the purpose of accessing farm ground outside the platted lot 1. There are no terms for the use and maintenance of that easement specified on any document included in the application and I recommend that maintenance terms for the easement be set to writing and recorded for when the land eventually changes hands.
- I have no other concerns or issues with this minor subdivision application.

If there are any more questions or issues that arise later, please contact this office.

Cc: File

**Special Note:**  
 Following the County Engineer's comments, the applicant(s) have prepared an easement to be recorded. A copy of the easement is available in this packet in the subsequent pages.

**PRELIMINARY DRAWING**  
 A MINOR SUBDIVISION PLAT  
 OF  
**TOWNLEY ADDITION**  
 WOODBURY COUNTY, IOWA

**SURVEYOR'S DESCRIPTION:**

PART OF THE N.W.1/4 OF THE N.W.1/4 OF SECTION 7, TOWNSHIP 89 NORTH, RANGE 46 WEST OF THE 5TH PRINCIPAL MERIDIAN, WOODBURY COUNTY, IOWA, DESCRIBED AS FOLLOWS: BEGINNING AT THE N.W. CORNER OF SAID N.W.1/4 OF THE N.W.1/4; THENCE S.89°29'24"E. ALONG THE NORTH LINE OF SAID N.W.1/4 OF THE N.W.1/4 FOR 462.00 FEET; THENCE S.1°38'32"W. FOR 468.00 FEET; THENCE N.89°29'24"W. FOR 462.00 FEET TO THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4; THENCE N.1°38'32"E. ALONG SAID WEST LINE FOR 468.00 FEET TO THE POINT OF BEGINNING. CONTAINING 4.96 ACRES INCLUDING COUNTY RIGHT OF WAY AND 4.12 ACRES EXCLUDING SAID RIGHT OF WAY. SUBJECT TO AND TOGETHER WITH ANY AND ALL EASEMENTS, RESTRICTIONS AND COVENANTS.

NOTE: THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4 IS ASSUMED TO BEAR N.1°38'32"E.

LOT 1, TOWNLEY ADDITION, WOODBURY COUNTY, IOWA IS SUBJECT TO AN INGRESS/EGRESS EASEMENT DESCRIBED AS FOLLOWS: COMMENCING AT THE S.E. CORNER OF SAID LOT 1; THENCE N.89°29'24"W. ALONG THE SOUTH LINE OF SAID LOT 1 FOR 117.76 FEET TO THE POINT OF BEGINNING OF SAID EASEMENT; THENCE CONTINUING N.89°29'24"W. ALONG SAID SOUTH LINE FOR 30.00 FEET; THENCE N.0°07'19"E. FOR 264.90 FEET; THENCE N.4°17'50"W. FOR 83.19 FEET; THENCE N.13°31'07"W. FOR 72.28 FEET TO THE SOUTH RIGHT OF WAY LINE OF 110TH STREET; THENCE S.89°29'24"E. ALONG SAID RIGHT OF WAY LINE FOR 30.92 FEET; THENCE S.13°31'07"E. FOR 67.20 FEET; THENCE S.4°17'50"E. FOR 86.76 FEET; THENCE S.0°07'19"W. FOR 266.27 FEET TO THE POINT OF BEGINNING.

**OWNER/SUBDIVIDER**  
 DERRILL J. TOWNLEY, TRUSTEE OF THE  
 DERRILL J. TOWNLEY REVOCABLE TRUST

**SURVEYOR**  
 ALAN L. FAGAN

**SETBACK REQUIREMENTS**  
 FRONT YARD - 100'

SIDE YARD - 20'  
 ACCESSORY STRUCTURE - 10'

REAR YARD - 50'  
 ACCESSORY STRUCTURE - 10'

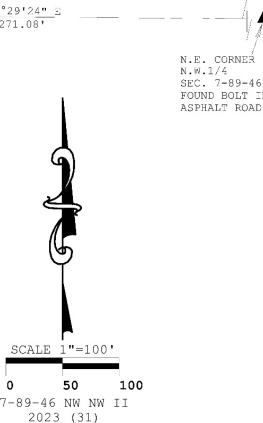
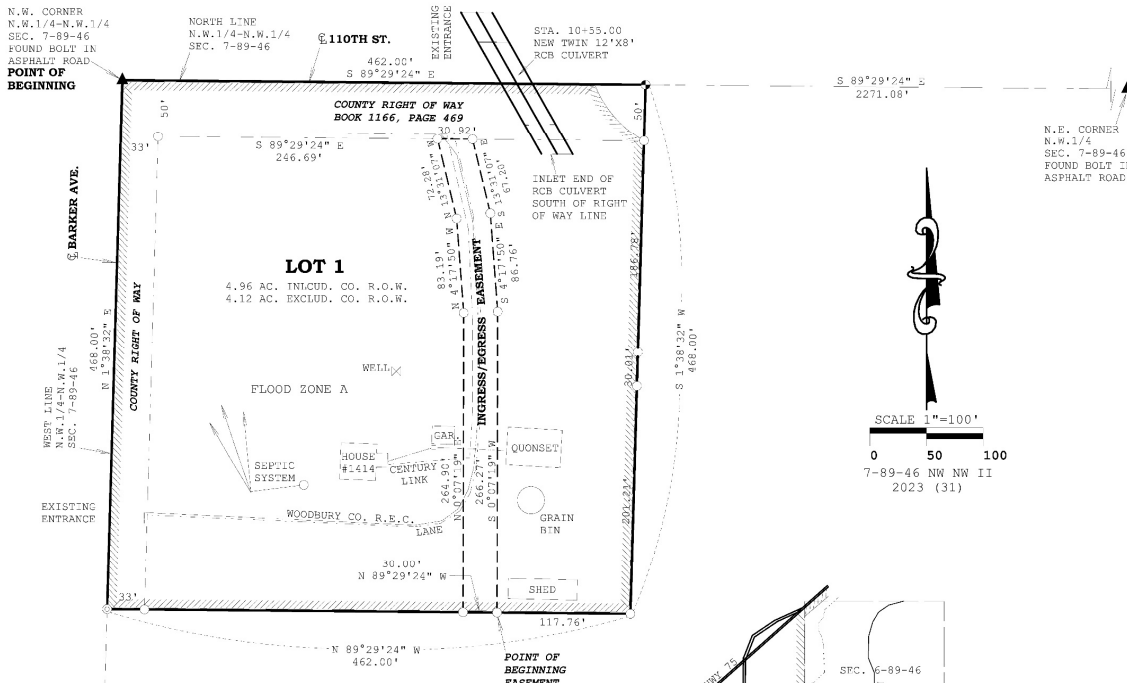
**ZONING**  
 AP AG PRESERVATION

**TELEPHONE**  
 CENTURYLINK

**POWER**  
 WOODBURY COUNTY R.E.C.  
 BURIED

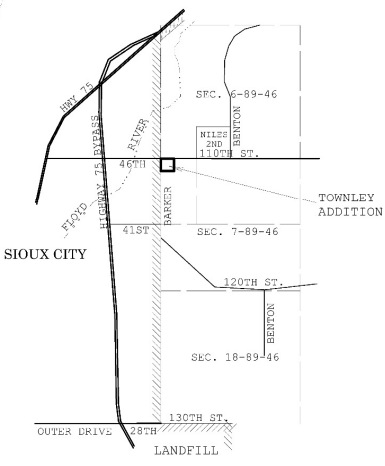
**WATER**  
 PRIVATE WELL

**SEWER**  
 PRIVATE SEPTIC SYSTEM



**NOTE:**  
 THERE MAY BE OTHER EASEMENTS, RESTRICTIONS AND COVENANTS NOT SHOWN THAT AFFECT LOT 1, TOWNLEY ADDITION, WOODBURY COUNTY, IOWA.

- MONUMENTS**
- = 1/2" YELLOW CAPPED REBAR #15082 SET
  - ⊙ = MAG SPIKE SET
  - ⊕ = MAG NAIL SET IN ASPHALT ROAD
  - ⊖ = NOTHING SET



DATE OF SURVEY:  
 MARCH 28, 2023

AL FAGAN  
 LAND SURVEYING, P.C.  
 P.O. BOX 858  
 MERRILL, IA 51038  
 712.539-1471



**DECLARATION OF EASEMENT**

**Recorder's Cover Sheet**

**Preparer Information:** Joel D. Vos, Heidman Law Firm, 1128 4<sup>th</sup> St., P.O. Box 3086, Sioux City, IA 51102-3086; Phone: 712-255-8838

**Taxpayer Information:** Derrill J. Townley Revocable Trust

**Return Document To:** Joel D. Vos, Heidman Law Firm, 1128 4<sup>th</sup> St., P.O. Box 3086, Sioux City, IA 51102-3086; Phone: 712-255-8838

**Grantor:** Derrill J. Townley Revocable Trust

**Grantee:** Derrill J. Townley Revocable Trust

**Legal Description:** See Recital C on Page 1 of the Declaration of Easement

## DECLARATION OF EASEMENT

THIS DECLARATION OF EASEMENT ("Declaration") is made this 20 day of September, 2023, on behalf of the Derrill J. Townley Revocable Trust under instrument dated April 15, 2021, by and through its successor Trustee, Donald J. Townley (hereinafter "Townley Trust").

### RECITALS:

A. TOWNLEY TRUST is the owner of the entirety of real property (hereinafter "Lot 1, Townley Addition") which is or will be subdivided into a minor subdivision in Woodbury County, Iowa, and which is legally described as follows:

PART OF THE N.W.1/4 OF THE N.W.1/4 OF SECTION 7, TOWNSHIP 89 NORTH, RANGE 46 WEST OF THE 5TH PRINCIPAL MERIDIAN, WOODBURY COUNTY, IOWA, DESCRIBED AS FOLLOWS: BEGINNING AT THE N.W. CORNER OF SAID N.W.1/4 OF THE N.W.1/4; THENCE S.89°29'24"E. ALONG THE NORTH LINE OF SAID N.W.1/4 OF THE N.W.1/4 FOR 462.00 FEET; THENCE S.1°38'32"W. FOR 468.00 FEET; THENCE N.89°29'24"W. FOR 462.00 FEET TO THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4; THENCE N.1°38'32"E. ALONG SAID WEST LINE FOR 468.00 FEET TO THE POINT OF BEGINNING. CONTAINING 4.96 ACRES INCLUDING COUNTY RIGHT OF WAY AND 4.12 ACRES EXCLUDING SAID RIGHT OF WAY. SUBJECT TO AND TOGETHER WITH ANY AND ALL EASEMENTS, RESTRICTIONS AND COVENANTS.

NOTE: THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4 IS ASSUMED TO BEAR N.1°38'32"E.

Lot 1, Townley Addition is further depicted on the attached Exhibit A.

B. After creation of the Townley Addition, the TOWNLEY TRUST intends to convey Lot 1, Townley Addition to a purchaser.

C. The proposed subdivision of the Townley Addition shows an ingress/egress easement crossing Lot 1, Townley Addition (the "Ingress/Egress Easement") legally described as follows:

COMMENCING AT THE S.E. CORNER OF SAID LOT 1; THENCE N.89°29'24"W. ALONG THE SOUTH LINE OF SAID LOT 1 FOR 117.76 FEET TO THE POINT OF BEGINNING OF SAID EASEMENT; THENCE CONTINUING N.89°29'24"W. ALONG SAID SOUTH LINE FOR 30.00 FEET; THENCE N.0°07'19"E. FOR 264.90 FEET; THENCE N.4°17'50"W. FOR 83.19 FEET; THENCE N.13°31'07"W. FOR 72.28 FEET TO THE SOUTH RIGHT OF WAY LINE OF 110TH STREET; THENCE S.89°29'24"E. ALONG SAID RIGHT OF WAY LINE FOR 30.92 FEET; THENCE S.13°31'07"E. FOR 67.20 FEET;

THENCE S.4°17'50"E. FOR 86.76 FEET; THENCE S.0°07'19"W. FOR 266.27 FEET TO THE POINT OF BEGINNING.

D. The purpose of the ingress/egress easement is to provide for access for farm implements and equipment from the County Right of Way locally known as 110<sup>th</sup> Street to farmland owned by the TOWNLEY TRUST in the N.W.1/4 of the N.W.1/4 of Section 7, Township 89 North, Range 46 West of the 5<sup>th</sup> P.M., Woodbury County, Iowa, which is adjacent to Lot 1, Townley Addition.

NOW, THEREFORE, Declarants hereby grant and impose the following easement upon that portion of Lot 1, Townley Addition described as the Ingress/Egress Easement in the foregoing recitals, which shall be for the benefit or burden, as the case may be, of all future owners, occupants, and mortgagees of Lot 1, Townley Addition or the N.W.1/4 of the N.W.1/4 of Section 7, Township 89 North, Range 46 West of the 5<sup>th</sup> P.M., Woodbury County, Iowa, and their respective heirs, devisees, legatees, assigns, representatives, tenants, invitees, and licensees ("Permittees"):

1. Declarant hereby grants a nonexclusive permanent and irrevocable ingress/egress easement upon that portion of Lot 1, Townley Addition described as the Ingress/Egress Easement in the foregoing recitals, for the purpose of providing access to the farmland in the N.W.1/4 of the N.W.1/4 of Section 7, Township 89 North, Range 46 West of the 5<sup>th</sup> P.M., Woodbury County, Iowa, which is adjacent to Lot 1, Townley Addition.

2. The owners of Lot 1, Townley Addition shall keep the Ingress/Egress Easement free from any obstructions, and no barricades, fences, or other dividers will be constructed and nothing will be done to prohibit or impede the vehicular or implement traffic within the area of the Ingress/Egress Easement granted herein.

3. The owners of Lot 1, Townley Addition shall not be required to maintain the Ingress/Egress Easement to any particular standard. The owners of the farmland in the N.W.1/4 of the N.W.1/4 of Section 7, Township 89 North, Range 46 West of the 5<sup>th</sup> P.M., Woodbury County, Iowa, which is adjacent to Lot 1, Townley Addition may maintain and repair the Ingress/Egress Easement as they see fit, including but not limited to grading, placement or replacement of gravel or other surface materials on the Ingress/Egress Easement.

4. The Ingress/Egress Easement is a permanent, private easement, which runs with the land. Each owner of Lot 1, Townley Addition or the adjacent farmland, and his or her heirs, successors and assigns, by the acceptance of a deed of conveyance, accepts the same subject to all terms and conditions of this Declaration, and all rights, benefits and privileges of every character hereby granted, created, reserved, or declared and all impositions and obligations hereby imposed shall be deemed and taken to be covenants running with the land and shall bind any person or entity having at any time any interest of estate in said property, and shall inure to the benefit of such owners on like manner as though the provisions, terms, and restrictions of this Declaration were received and stipulated at length in each and every deed of conveyance.

5. Waiver. No provision of this Declaration shall be deemed to have been abrogated or waived by reason on any failure to enforce the same at any time, irrespective of the number of violations or breaches which may occur.

6. Amendment and Modifications. This Declaration may be amended by the written consent and agreement of all of the record Owners of the Property or their successors and assigns. Any such modification or amendment shall be effective when duly recorded in the office of the County Recorder in the county in which said property is situated.

7. Governing Law. This Declaration shall be construed and governed in accordance with the laws of the State of Iowa.

8. Entire Agreement. This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreement and understanding, oral and written between the parties with respect to the subject matter of this Declaration.

**Derrill J. Townley Revocable Trust under instrument dated April 15, 2021**

By: Donald J. Townley  
Donald J. Townley, Successor Trustee

Date: Sept 20, 2023

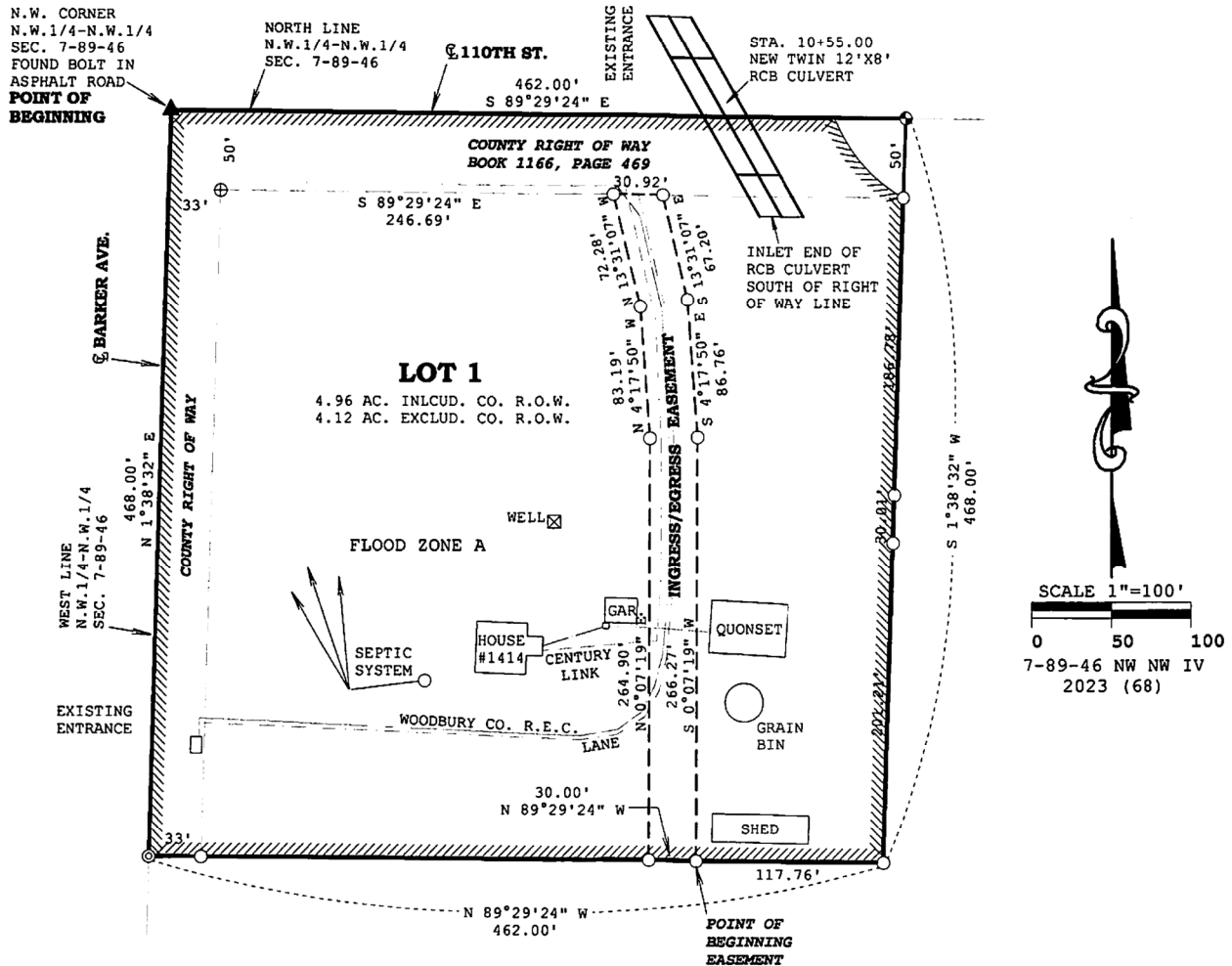
STATE OF IOWA )  
 ) ss:  
COUNTY OF WOODBURY )

The foregoing Declaration of Easement was executed and acknowledged on this 20<sup>th</sup> day of September, 2023, before me, the undersigned, a Notary Public duly commissioned and qualified for in said county and state, by Donald J. Townley, to me personally known, as the Successor Trustee of the Donald J. Townley Revocable Trust under instrument dated April 15, 2021.



Joel D. Vos  
NOTARY PUBLIC

**TOWNLEY ADDITION**  
**WOODBURY COUNTY, IOWA**



**SURVEYOR'S DESCRIPTION:**

PART OF THE N.W.1/4 OF THE N.W.1/4 OF SECTION 7, TOWNSHIP 89 NORTH, RANGE 46 WEST OF THE 5TH PRINCIPAL MERIDIAN, WOODBURY COUNTY, IOWA, DESCRIBED AS FOLLOWS: BEGINNING AT THE N.W. CORNER OF SAID N.W.1/4 OF THE N.W.1/4; THENCE S.89°29'24"E. ALONG THE NORTH LINE OF SAID N.W.1/4 OF THE N.W.1/4 FOR 462.00 FEET; THENCE S.1°38'32"W. FOR 468.00 FEET; THENCE N.89°29'24"W. FOR 462.00 FEET TO THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4; THENCE N.1°38'32"E. ALONG SAID WEST LINE FOR 468.00 FEET TO THE POINT OF BEGINNING. CONTAINING 4.96 ACRES INCLUDING COUNTY RIGHT OF WAY AND 4.12 ACRES EXCLUDING SAID RIGHT OF WAY. SUBJECT TO AND TOGETHER WITH ANY AND ALL EASEMENTS, RESTRICTIONS AND COVENANTS.

NOTE: THE WEST LINE OF SAID N.W.1/4 OF THE N.W.1/4 IS ASSUMED TO BEAR N.1°38'32"E.

LOT 1, TOWNLEY ADDITION, WOODBURY COUNTY, IOWA IS SUBJECT TO AN INGRESS/EGRESS EASEMENT DESCRIBED AS FOLLOWS: COMMENCING AT THE S.E. CORNER OF SAID LOT 1; THENCE N.89°29'24"W. ALONG THE SOUTH LINE OF SAID LOT 1 FOR 117.76 FEET TO THE POINT OF BEGINNING OF SAID EASEMENT; THENCE CONTINUING N.89°29'24"W. ALONG SAID SOUTH LINE FOR 30.00 FEET; THENCE N.0°07'19"E. FOR 264.90 FEET; THENCE N.4°17'50"W. FOR 83.19 FEET; THENCE N.13°31'07"W. FOR 72.28 FEET TO THE SOUTH RIGHT OF WAY LINE OF 110TH STREET; THENCE S.89°29'24"E. ALONG SAID RIGHT OF WAY LINE FOR 30.92 FEET; THENCE S.13°31'07"E. FOR 67.20 FEET; THENCE S.4°17'50"E. FOR 86.76 FEET; THENCE S.0°07'19"W. FOR 266.27 FEET TO THE POINT OF BEGINNING.

**Exhibit A**

# Woodbury County, IA / Sioux City

## Summary

**Parcel ID** 894607100007  
**Alternate ID** 883561  
**Property Address** 1414 110TH ST  
 SIOUX CITY IA 51108  
**Sec/Twp/Rng** 7-89-46  
**Brief Tax Description** NW NW (EXT TCT COMM NW COR THEC E 1021.02' TO POB; THEC E 295' S 361.85' W 295' & N 361.85') 7-89-46  
 (Note: Not to be used on legal documents)  
**Deed Book/Page** 2021-05003 14/16/2021  
**Gross Acres** 39.53  
**Net Acres** 39.53  
**Adjusted CSR Pts** 3031.4  
**Zoning** AP-AGRICULTURAL PRESERVATION  
**District** 0057 CONCORD/SIOUX CITY  
**School District** SIOUX CITY COMM  
**Neighborhood** N/A



## Owner

**Deed Holder**  
 TOWNLEY DERRILL J REVOCABLE TRUST  
 1414 110TH ST  
 SIOUX CITY IA 51108  
**Contract Holder**  
**Mailing Address**  
 TOWNLEY DERRILL J REVOCABLE TRUST  
 1414 110TH ST  
 SIOUX CITY IA 51108

## Land

**Lot Area** 39.53 Acres : 1,721,927 SF

## Residential Dwellings

**Residential Dwelling**  
**Occupancy** Single-Family / Owner Occupied  
**Style** 1 Story Frame  
**Architectural Style** N/A  
**Year Built** 1942  
**Condition** Above Normal  
**Roof** Asph / Gable  
**Flooring**  
**Foundation** C Blk  
**Exterior Material** Vinyl  
**Interior Material** Pls  
**Brick or Stone Veneer**  
**Total Gross Living Area** 1,587 SF  
**Main Area Square Feet** 1024  
**Attic Type** Fully Finished: 563 SF  
**Number of Rooms** 5 above; 0 below  
**Number of Bedrooms** 3 above; 0 below  
**Basement Area Type** Full  
**Basement Area** 1,024  
**Basement Finished Area**  
**Plumbing** 1 Standard Bath - 3 Ft; 1 Sink;  
**Appliances**  
**Central Air** Yes  
**Heat** Yes  
**Fireplaces**  
**Porches** 15 Frame Enclosed (120 SF);  
**Decks**  
**Additions**  
**Garages** 320 SF (16F W x 20F L) - Det Frame (Built 2001);

## Agricultural Buildings

Plot #	Type	Description	Width	Length	Year Built	Building Count
0	Steel Utility Building	QUONSET	32	48	1953	1
0	Machine or Utility Building	MACHINE SHED	18	60	1950	1
0	Bin - Grain Storage (Bushel)		24	13	1977	1

## Sales

Date	Seller	Buyer	Recording	Sale Condition - NUTC	Type	Multi Parcel	Amount
4/15/2021	TOWNLEY DERRILL J	TOWNLEY DERRILL J REVOCABLE TRUST	2021-05003	No consideration	Deed		\$0.00
2/1/2021	TOWNLEY DOLORES A	TOWNLEY DERRILL J	2021-02851	No consideration	Deed		\$0.00

Show There are other parcels involved in one or more of the above sales:

## Permits

Permit #	Date	Description	Amount
4488	08/02/2004	New Dwlg	0

## Valuation

	2023	2022	2021	2020	2019
<b>Classification</b>	Ag Dwelling / Agriculture				
+ Assessed Land Value	\$99,350	\$77,190	\$77,190	\$72,540	\$72,540
+ Assessed Building Value	\$7,130	\$4,220	\$4,220	\$3,860	\$3,860
+ Assessed Dwelling Value	\$136,320	\$112,160	\$112,160	\$110,530	\$110,530
= Gross Assessed Value	\$242,800	\$193,570	\$193,570	\$186,930	\$186,930
- Exempt Value	\$0	\$0	\$0	\$0	\$0
= Net Assessed Value	\$242,800	\$193,570	\$193,570	\$186,930	\$186,930



## Sioux City Special Assessments and Fees

[Click here to view special assessment information for this parcel.](#)

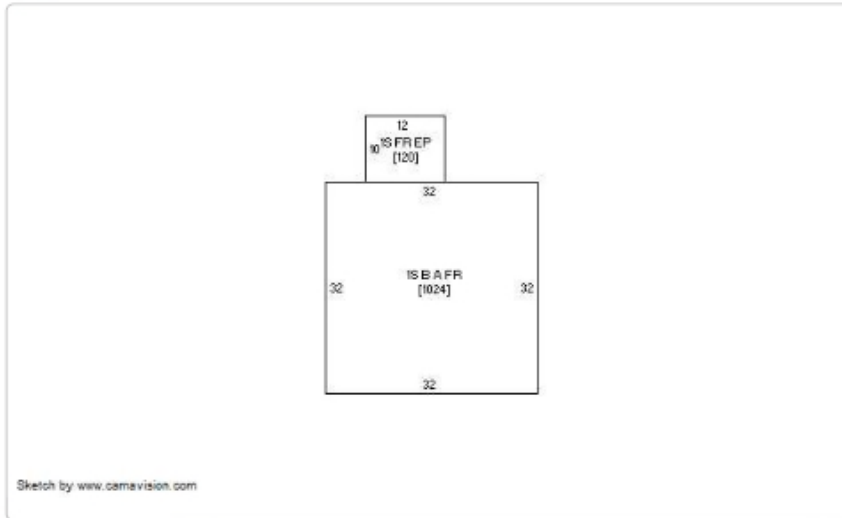
## Woodbury County Tax Credit Applications

[Apply for Homestead, Military or Business Property Tax Credits](#)

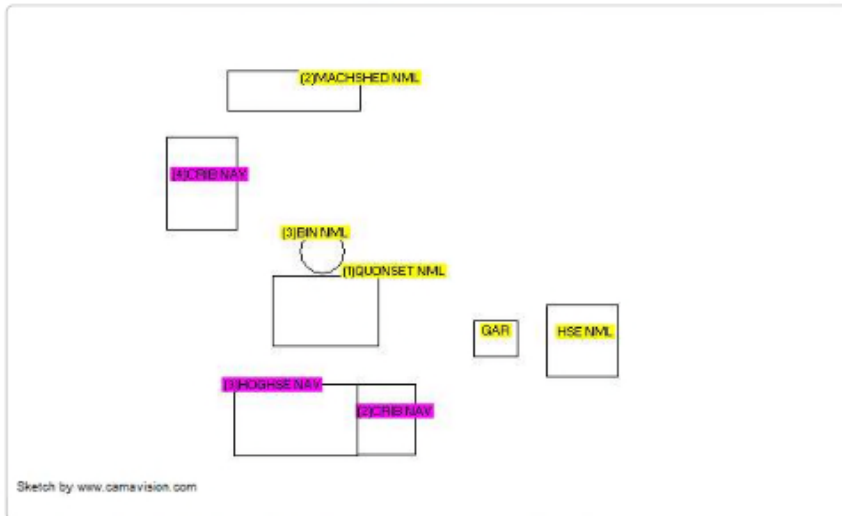
### Photos



### Sketches



Sketch by [www.camavision.com](http://www.camavision.com)



Sketch by [www.camavision.com](http://www.camavision.com)

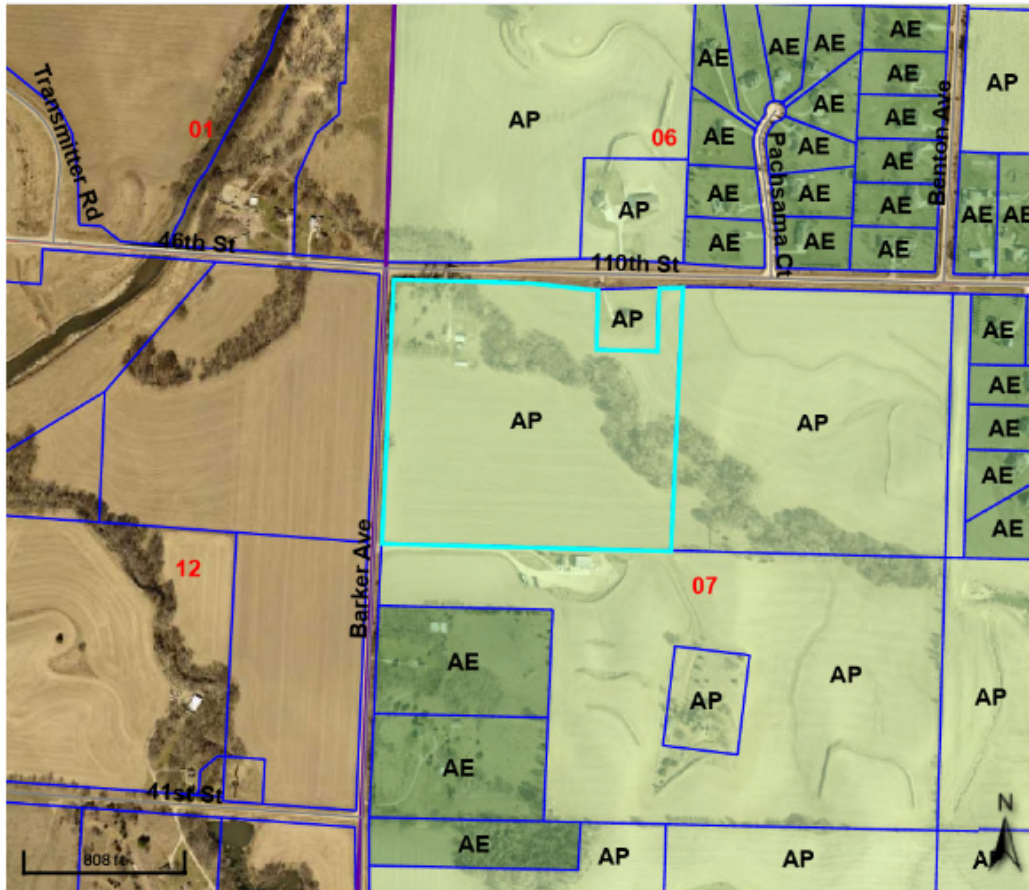
No data available for the following modules: Commercial Buildings, Yard Extras, Sioux City Tax Credit Applications, Sioux City Board of Review Petition.

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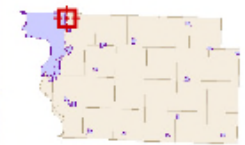
Contact Us

Developed by  
 Schneider  
GEOSPATIAL

ZONING MAP



Overview



Legend

- Roads
- ▭ Corp Boundaries
- ▭ Townships
- ▭ Parcels
- County Zoning**
- ▭ AE
- ▭ AP
- ▭ GC
- ▭ GC-PD
- ▭ GI
- ▭ LI
- ▭ LI-PD
- ▭ SR
- ▭ WR

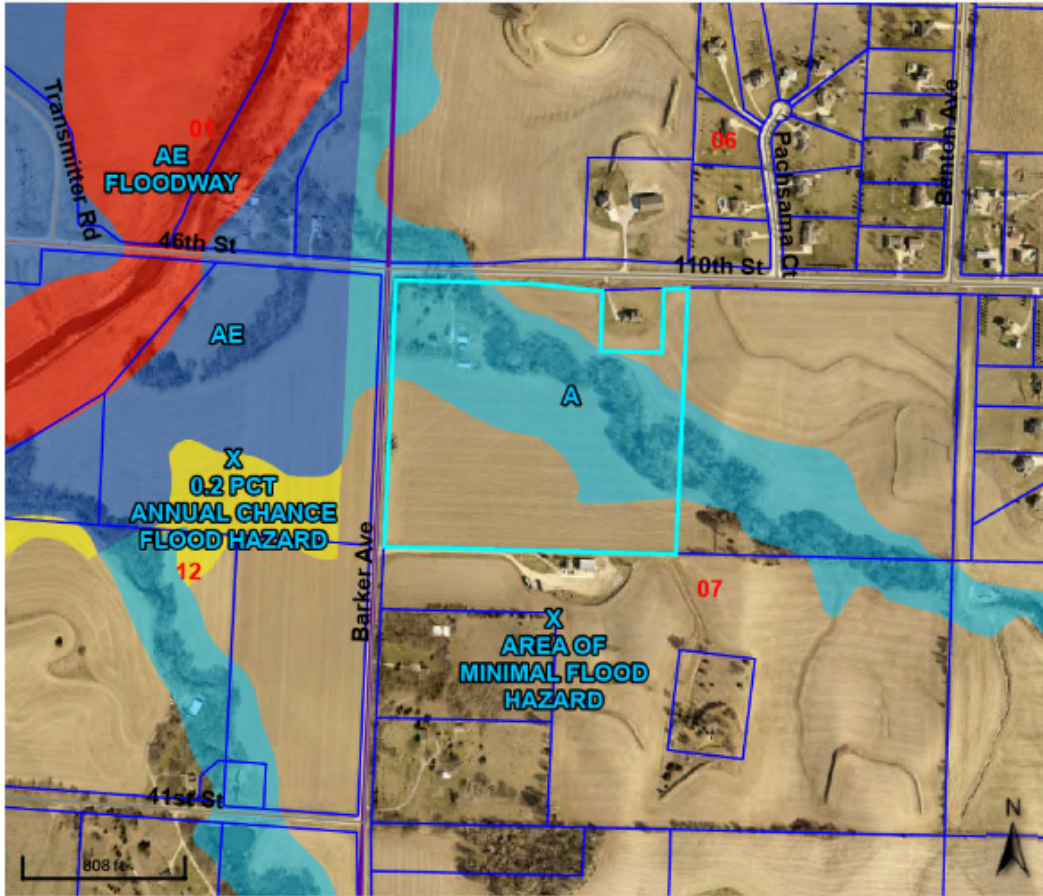
Parcel ID	894607100007	Alternate ID	883561	Owner Address	TOWNLEY DERRILL J REVOCABLE TRUST
Sec/Twp/Rng	7-89-46	Class	A		1414 110TH ST
Property Address	1414 110TH ST	Acreage	39.53		SIOUX CITY, IA 51108
	SIOUX CITY				
District	0057				
Brief Tax Description	NW NW (EX TCT COMM NW COR THEC E 1021.02' TO POB; THEC E 295' S 361.85' W 295' & N 361.85') 7-89-46				
	<i>(Note: Not to be used on legal documents)</i>				

Date created: 8/28/2023  
 Last Data Uploaded: 8/25/2023 7:58:36 PM

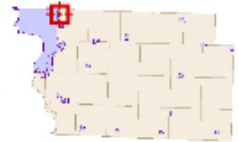
Developed by Schneider  
 GEOSPATIAL



**EFFECTIVE FLOODPLAIN MAP**



**Overview**



**Legend**

- Roads
- Corp Boundaries
- Townships
- Parcels
- FEMA Flood Map**
- A,
- AE,
- AE, FLOODWAY
- AH,
- AO,
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- X, AREA WITH REDUCED FLOOD RISK DUE TO LEVEE

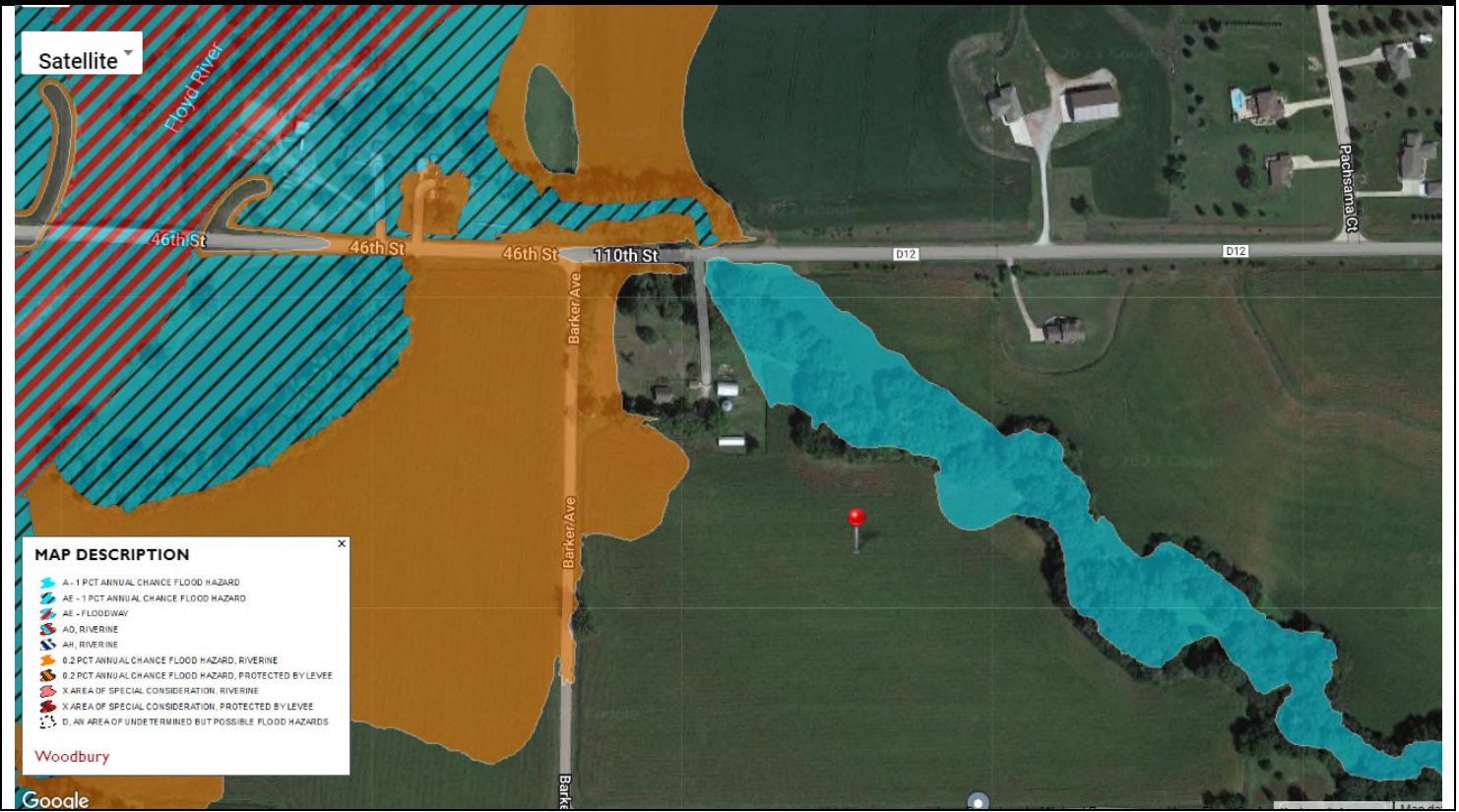
Parcel ID	894607100007	Alternate ID	883561	Owner Address	TOWNLEY DERRILL J REVOCABLE TRUST
Sec/Twp/Rng	7-89-46	Class	A		1414 110TH ST
Property Address	1414 110TH ST	Acreage	39.53		SIOUX CITY, IA 51108
	SIOUX CITY				
District	0057				
Brief Tax Description	NW NW (EX TCT COMM NW COR THEC E 1021.02' TO POB; THEC E 295' S 361.85' W 295' & N 361.85') 7-89-46				
	(Note: Not to be used on legal documents)				

Date created: 8/28/2023  
 Last Data Uploaded: 8/25/2023 7:58:36 PM

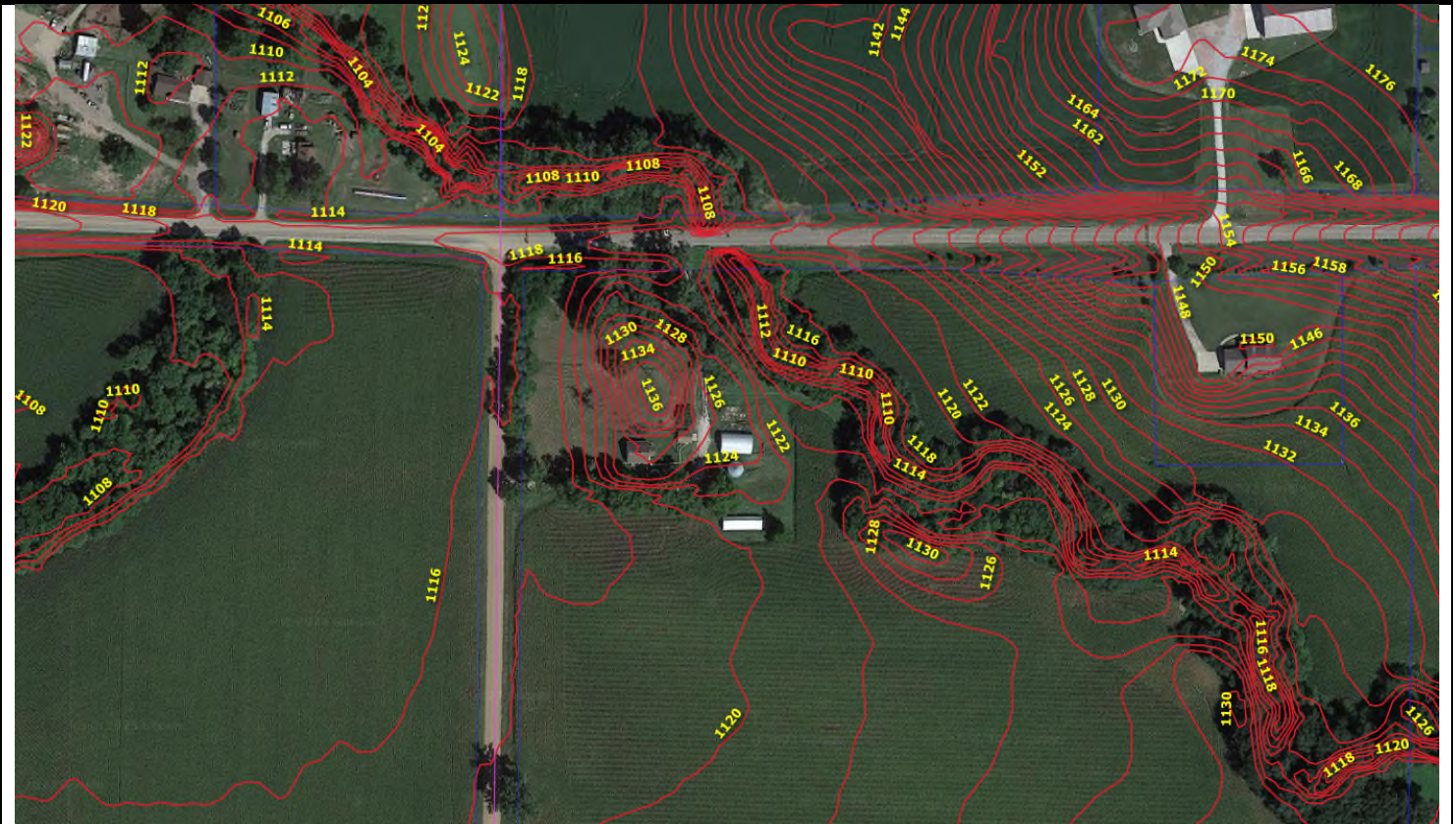
Developed by Schneider  
 GEOSPATIAL



**DRAFT FLOODPLAIN MAP**

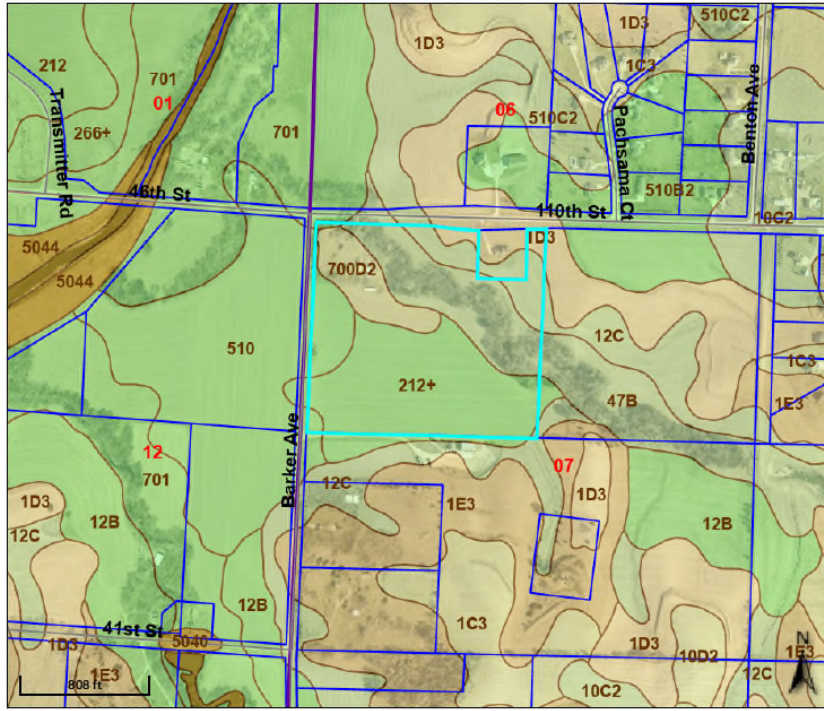


**ELEVATION MAP**

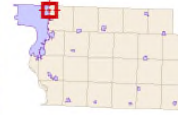




**SOIL MAP**



**Overview**



**Legend**

- Roads
- Soils**
- 0.000000 - 5.000000
- 5.000001 - 20.000000
- 20.000001 - 30.000000
- 30.000001 - 40.000000
- 40.000001 - 50.000000
- 50.000001 - 60.000000
- 60.000001 - 70.000000
- 70.000001 - 80.000000
- 80.000001 - 90.000000
- 90.000001 - 100.000000
- Corp Boundaries
- Townships
- Parcels

Parcel ID 894607100007    Alternate ID 883561    Owner Address TOWNLEY DERRILL J REVOCABLE TRUST  
 Sec/Twp/Rng 7-89-46    Class A    1414 110TH ST  
 Property Address 1414 110TH ST    Acreage 39.53    SIOUX CITY, IA 51108  
 SIOUX CITY  
 District 0057  
 Brief Tax Description NW NW (EX TCT COMM NW COR THEC E 1021.02' TO POB; THEC E 295' S 361.85' W 295' & N 361.85') 7-89-46  
 (Note: Not to be used on legal documents)

**SOIL REPORT**

**Woodbury County, IA / Sioux City**

**Summary**

Parcel ID 894607100007  
 Gross Acres 39.53  
 ROW Acres 0.00  
 Gross Taxable Acres 39.53  
 Exempt Acres 0.00  
 Net Taxable Acres 39.53 (Gross Taxable Acres - Exempt Land)  
 Average Unadjusted CSR2 84.38 (3335.6 CSR2 Points / 39.53 Gross Taxable Acres)

Agland Active Config 2017 CSR2

**Sub Parcel Summary**

Description	Acres	CSR2	Unadjusted CSR2 Points	Adjusted CSR2 Points
100% Value	30.85	86.08	2,655.43	2,655.43
Non-Crop	8.68	78.36	680.17	375.97
<b>Total</b>	<b>39.53</b>		<b>3,335.60</b>	<b>3,031.40</b>

**Soil Summary**

Description	SMS	Soil Name	CSR2	Adjusted Acres	Unadjusted CSR2 Points	Adjusted CSR2 Points
100% Value	510	MONONA SILT LOAM, BENCH, 0 TO 2 PERCENT SLOPES	96.00	3.28	314.88	314.88
100% Value	212+	KENNEBEC SILT LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOOD	90.00	17.31	1,557.90	1,557.90
100% Value	12C	NAPIER SILT LOAM, 5 TO 9 PERCENT SLOPES	89.00	2.80	249.20	249.20
100% Value	47B	NAPIER-RAWLES COMPLEX, 2 TO 5 PERCENT SLOPES	85.00	4.31	366.35	366.35
100% Value	700D2	MONONA SILTY CLAY LOAM, BENCH, 9 TO 14 PERCENT SLOPES, MODER	62.00	2.21	137.02	137.02
100% Value	1D3	IDA SILT LOAM, 9 TO 14 PERCENT SLOPES, SEVERELY ERODED	32.00	0.94	30.08	30.08
Non-Crop	510	MONONA SILT LOAM, BENCH, 0 TO 2 PERCENT SLOPES	96.00	0.24	23.04	11.50
Non-Crop	212+	KENNEBEC SILT LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOOD	90.00	0.20	18.00	9.27
Non-Crop	47B	NAPIER-RAWLES COMPLEX, 2 TO 5 PERCENT SLOPES	85.00	5.48	465.80	246.82
Non-Crop	701	WILSEY SILT LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODE	79.00	0.13	10.27	5.65
Non-Crop	700D2	MONONA SILTY CLAY LOAM, BENCH, 9 TO 14 PERCENT SLOPES, MODER	62.00	2.63	163.06	102.73
<b>Total</b>				<b>39.53</b>	<b>3,335.60</b>	<b>3,031.40</b>

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**WOODBURY COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT (PLANNING AND ZONING)**

Address: 620 Douglas Street – Sixth Floor, Sioux City, IA 51101 | Phone: 712-279-6609 | Fax: 712-279-6530 | Web: woodburycountyia.gov  
 Daniel J. Priestley, MPA – Zoning Coordinator: dpriestley@woodburycountyia.gov  
 Dawn Norton – Senior Clerk: dnorton@woodburycountyia.gov

**PRELIMINARY REPORT – SEPTEMBER 20, 2023**

**CONDITIONAL USE PERMIT REQUEST**

Application Details		Property Details		Contents	
Applicant(s)/Owner(s):	AMG Technology Investment Group DBA Nextlink / Shelle Baldwin	Parcel #:	874316300005		Summary, Location Aerial, Site Plan Excerpt, Recommendation, & Suggested Motion
Application Type:	Conditional Use	Township/Range:	T87N R43W (Miller)		Legal Notification
Zoning District:	Agricultural Preservation	Section:	16		Neighbor(s) Notification
Total Acres:	40	Quarter:	SE ¼ SW ¼		Stakeholder(s) Comments
Current Use:	Agriculture	Zoning District:	Agricultural Preservation		Review Criteria / Applicant Responses
Proposed Use:	Telecommunication Tower	Floodplain District:	Zone X (Not in Floodplain)		Application
Pre-application Meeting:	May 4, 2023	Address:	3846 245 <sup>th</sup> St., Anton, IA 51004		Supporting Documentation
Application Date:	August 29, 2023				
Legal Notice Date:	September 14, 2023				
Neighbor(s) Notice Date:	September 13, 2023				
Stakeholder(s) Notice Date:	September 1, 2023				
Board of Adjustment Public Hearing Date:	October 2, 2023				

**SUMMARY**

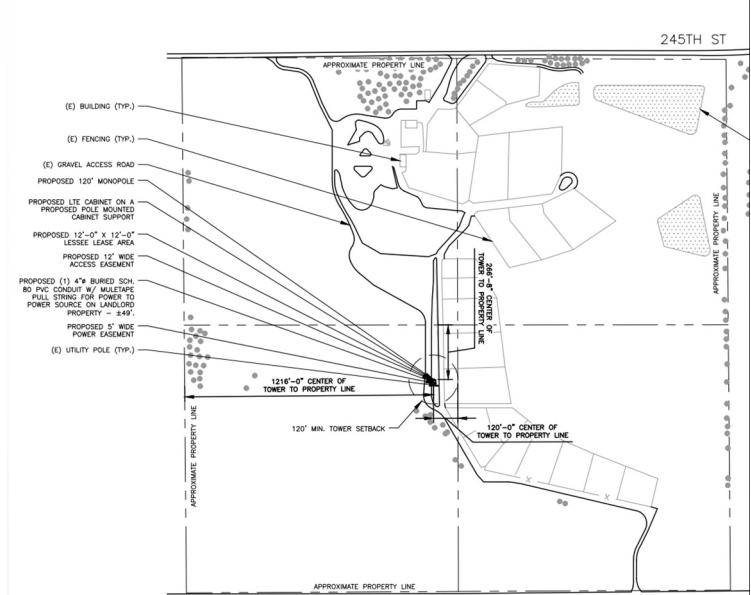
AMG Technology Investment Group DBA Nextlink have filed a conditional use permit application to request to install a 120 FT monopole communication tower to supply high speed internet to surrounding areas on the property designated as Parcel #874316300005. The proposed location is around 2.5 miles south of Anthon and about 4.2 miles northeast of Oto. This proposal has been noticed in the Sioux City Journals legal section on September 14, 2023. The neighbors within one (1) mile were duly notified via a September 13, 2023 letter about the October 2, 2023 Board of Adjustment public hearing. Appropriate stakeholders including government agencies, utilities, and organizations have been requested to comment. This property is located in the Agricultural Preservation (AP) Zoning District. Based on the information received and the requirements set forth in the Zoning Ordinance, the proposal meets the appropriate criteria for approval of the conditional use request. It is the recommendation of staff to approve the proposal.

**LOCATION / AERIAL VIEW**

**SITE PLAN EXCERPT**



Parcel ID 874316300005 Alternate ID 722970 Owner Address BALDWIN MARK D & SHELLE J  
 Sec/Twp/Rng 16-87-43 Class A 3846 245TH ST  
 Property Address  
 District 0004 Acreage 40.0 ANTHON, IA 51004-8065  
 Brief Tax Description SESW 16-87-43  
 (Note: Not to be used on legal documents)



**STAFF RECOMMENDATION & SUGGESTED MOTION**

Staff recommends approval of the proposal. Suggested Motion: motion to recommend approval of the construction and use of the communication tower on the property identified as Parcel #874316300005 to the Board of Adjustment.

**LEGAL NOTIFICATION**

Published in the Sioux City Journal's Legal Section on **September 14, 2023**

**NOTICE OF PUBLIC HEARING BEFORE THE WOODBURY COUNTY BOARD OF ADJUSTMENT**

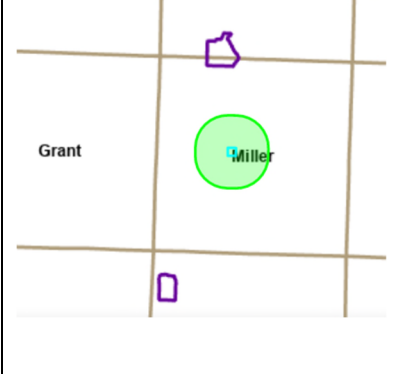
The Woodbury County Board of Adjustment will hold a public hearing on the following item on September 13, 2023 at 6:30 PM or as soon thereafter. The hearing may be continued. Said hearing will be held in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, Iowa. The item to be considered now be examined at the office of the Woodbury County Community and Economic Development, on the 8th Floor of said courthouse, by any interested persons. All persons wishing to speak in respect to the matter should appear at the public hearing in person or call 712-454-1233 and enter the Conference ID: 742 848 1239 during the meeting to listen or comment. Persons who are recommended to attend in person should be prepared to attend in person or by phone or computer systems. Item One (1)

Pursuant to Section 335 of the Code of Iowa, the Woodbury County Board of Adjustment will hold a public hearing to consider the Conditional Use Permit application by AMG Tech Group, DSA Network (Applicant) for a 120 FT microwave telecommunication tower, a 120 FT high speed internet tower, a supply high speed internet tower, a tower, located on Parcel # 28743600005 in T87N R63W (Utilize the map to the right) of the SW 1/4. The property is located about 2.3 miles south of Adair and about 4.3 miles northeast of Ott. The property is located in the Agricultural Preservation (AP), Zoning District. Owners/Applicants: Mark D. Baldwin & Shelle J. Baldwin, 3846 245th St., Anthon, IA 51034-9365 / AMG Technology Group, DSA Network, 85 Parker Oaks Ln, Hubert Oaks, TX 76087.

**PROPERTY OWNER(S) NOTIFICATION**

**MAP**

Total Property Owners within 500 FT via Certified Abstractor's Listing:	33
Notification Letter Date:	September 13, 2023
Public Meeting for Review:	September 25, 2023 (Zoning Commission)
Public Hearing Board:	Board of Adjustment
Public Hearing Date:	October 2, 2023
Phone Inquiries:	0
Written Inquiries:	0
The names of the property owners are listed below.	
When more comments are received after the printing of this packet, they will be provided at the meeting.	



Property Owner(s)	Mailing Address	Comments			
Alta Patterson Trust	36 Eastview Dr Apt 315	Sioux City	IA	51106	No comments.
Amanda Marie Wodtke / Brooke Lynn Wodtke / Marcus James Wodtke Michael Aaron Wodtke / Samantha Lea Wodtke	1106 Ridgewood Dr	Huxley	IA	50124	No comments.
Andrew J. Rosauer	3954 250th St	Anthon	IA	51004	No comments.
Baldwin Properties LLC	2406 Mason Ave	Anthon	IA	51004	No comments.
Bernard F. Ketelsen & Barbara L. Ketelsen	3812 250th St	Anthon	IA	51004	No comments.
Brett N. Baldwin & Jody A. Baldwin	2406 Mason Ave	Anthon	IA	51004	No comments.
CICS Investments LLC	2075 NE 126th Ave	Alleman	IA	50007	No comments.
David L. Bumsted & Karen K. Bumsted Trust	418 N Crawford Rd	Vermillion	SD	57069	No comments.
Dennis J. Walling	407 S 3rd Ave	Anthon	IA	51004	No comments.
Dennis J. Walling & Julie A. Walling	407 S 3rd Ave	Anthon	IA	51004	No comments.
Dorothy E. Parker Le Rem	2 Sunrise Ave Apt C	Mapleton	IA	51034	No comments.
Dorothy Parker	2 Sunrise Ave Apt C	Mapleton	IA	51034	No comments.
Douglas E. Spies Revocable Living Trust	2520 Morgan Trl	Anthon	IA	51004	No comments.
Frank Fundermann & Carol Fundermann Joint Revocable Trust	1693 260th St	Red Oak	IA	51566	No comments.
Fundermann Family Farms LLC	604 6th St	Battle Creek	IA	51006	No comments.
Gary E. Bumsted & Eileen G. Bumsted Revocable Trust	5436 Stone Ave	Sioux City	IA	51106	No comments.
Henry Patterson c/o Rose Patterson	36 Eastview Dr Apt 315	Sioux City	IA	51106	No comments.
John Dixon & Linda Dixon	2417 Morgan Trl	Anthon	IA	51004	No comments.
Joint Declaration of Trust	21024 Leesa Ln	Kearney	M O	64060	No comments.
Lavern W. Botcher & Alice E. Botcher	702 North Walnut	Avoca	IA	51521	No comments.
Mark Baldwin & Shelle Baldwin	2439 Mason Ave	Anthon	IA	51004	No comments.
Mark D. Baldwin & Shelle J. Baldwin	3846 245th St	Anthon	IA	51004	No comments.
Mary R. Hayworth	N/A - Undeliverable/Mail Returned				No comments.
Meyer Family Farm LLC	PO Box 214	Anthon	IA	51004	No comments.

Michael R. Drea & Donna C. Drea	139 Golden Dr	Sergeant Bluff	IA	51054	No comments.
Parker Land & Cattle Inc	2314 Kossuth Ave	Anthon	IA	51004	No comments.
Paul A. Rosauer	2581 Mason Ave	Anthon	IA	51004	No comments.
Paul H. Ludwig & Barbara K. Ludwig	301 2nd Ave S	Anthon	IA	51004	No comments.
Phillip E. Hayworth & Stella M. Hayworth	3818 245th St	Anthon	IA	51004	No comments.
Richard W. Enockson & Judith A. Enockson	187 Brookline Trail	Dakota Dunes	SD	57049	No comments.
Robert J. Fundermann & Angela J. Fundermann	3805 245th St	Anthon	IA	51004	No comments.
Susan Ristuben Asher Trust	3106 E Mores Trail St	Meridian	ID	83642	No comments.
Wayne C. Funderman Revocable Living Trust	3780 245th St	Anthon	IA	51004	No comments.
William A. Fleck & Judy M. Fleck	3798 240th St	Anthon	IA	51004	No comments.

#### STAKEHOLDER COMMENTS

911 COMMUNICATIONS CENTER:	No comments.
FIBERCOMM:	No comments.
IOWA DEPARTMENT OF NATURAL RESOURCES (IDNR):	No comments.
IOWA DEPARTMENT OF TRANSPORTATION (IDOT):	No comments.
LOESS HILLS NATIONAL SCENIC BYWAY:	No comments.
LOESS HILLS PROGRAM:	No comments.
LOGLINES:	No comments.
LUMEN:	No comments.   No comments.
MAGELLAN PIPELINE:	No comments.
MIDAMERICAN ENERGY COMPANY (Electrical Division):	I have reviewed the following requested conditional use permit for MEC electric and we have no conflicts. – Casey Meinen, 9/1/23.
MIDAMERICAN ENERGY COMPANY (Gas Division):	No conflicts for MEC Gas. – Tyler Ahlquist, 9/5/23.
NATURAL RESOURCES CONSERVATION SERVICES (NRCS):	No comments.
NORTHERN NATURAL GAS:	No comments.
NORTHWEST IOWA POWER COOPERATIVE (NIPCO):	Have reviewed this zoning request. NIPCO has no issues with this request. – Jeff Zettel, 9/5/23.
NUSTAR PIPELINE:	No comments.
SIOUXLAND DISTRICT HEALTH DEPARTMENT:	No comments.
WIATEL:	No comments.
WOODBURY COUNTY ASSESSOR:	No comments.
WOODBURY COUNTY CONSERVATION:	No comments.
WOODBURY COUNTY EMERGENCY MANAGEMENT:	No comments.
WOODBURY COUNTY EMERGENCY SERVICES:	No comments.
WOODBURY COUNTY ENGINEER:	I have no concerns with this proposed conditional use. Existing driveways are proposed for use, as best as I was able to determine. If dedicated access is needed, the owner will need to contact my department for a driveway permit. – Mark Nahra, 9/1/23.
WOODBURY COUNTY RECORDER:	No comments. – Diane Swoboda Peterson, 9/5/23.
WOODBURY COUNTY RURAL ELECTRIC COOPERATIVE (REC):	No comments.
WOODBURY COUNTY SOIL AND WATER CONSERVATION DISTRICT:	The WCSWCD has no comments regarding this conditional use permit. – Neil Stockfleth, 9/6/23.



**REVIEW REQUIREMENTS - IOWA CODE SECTION 8C.3 (<https://www.legis.iowa.gov/docs/code/8c.pdf>)**

**LOCAL GOVERNMENTS CANNOT:**

**In order to ensure uniformity across this state with respect to the consideration of every application, and notwithstanding any other provision to the contrary, an authority shall not do any of the following:**

1. Require an applicant to submit information about, or evaluate an applicant's business decisions with respect to, the applicant's designed service, customer demand for service, or quality of the applicant's service to or from a particular area or site, but may require propagation maps solely for the purpose of identifying the location of the coverage or capacity gap or need for applications for new towers in an area zoned residential.
2. a. Evaluate an application based on the availability of other potential locations for the placement or construction of a tower or transmission equipment. b. Require the applicant to establish other options for collocation instead of the construction of a new tower or modification of an existing tower or existing base station that constitutes a substantial change to an existing tower or existing base station. c. Notwithstanding paragraph "b", an authority shall require an applicant applying for the construction of a new tower to provide an explanation regarding the reason for choosing the proposed location and the reason the applicant did not choose collocation. The explanation shall include a sworn statement from an individual who has responsibility over placement of the tower attesting that collocation within the area determined by the applicant to meet the applicant's radio frequency engineering requirements for the placement of a site would not result in the same mobile service functionality, coverage, and capacity, is technically infeasible, or is economically burdensome to the applicant.
3. Dictate the type of transmission equipment or technology to be used by the applicant or discriminate between different types of infrastructure or technology.
4. a. Require the removal of existing towers, base stations, or transmission equipment, wherever located, as a condition to approval of an application. b. Notwithstanding paragraph "a", the authority may adopt reasonable rules regarding removal of abandoned towers or transmission equipment.
5. Impose environmental testing, sampling, or monitoring requirements, or other compliance measures, for radio frequency emissions from transmission equipment that are categorically excluded under the federal communications commission's rules for radio frequency emissions pursuant to 47 C.F.R. §1.1307(b)(1).
6. Establish or enforce regulations or procedures for radio frequency signal strength or the adequacy of service quality.
7. Reject an application, in whole or in part, based on perceived or alleged environmental effects of radio frequency emissions, as provided in 47 U.S.C. §332(e)(7)(B)(iv).
8. Prohibit the placement of emergency power systems that comply with federal and state environmental requirements.
9. Charge an application fee, consulting fee, or other fee associated with the submission, review, processing, or approval of an application, unless the fee charged is in compliance with this section. Fees imposed by an authority or by a third-party entity providing review or technical consultation to the authority shall be based on actual, direct, and reasonable administrative costs incurred for the review, processing, and approval of an application. In no case shall total charges and fees exceed five hundred dollars for an eligible facilities request or three thousand dollars for an application for a new tower, for the initial placement or installation of transmission equipment on a wireless support structure, for a modification of an existing tower or existing base station that constitutes a substantial change to an existing tower or base station, or any other application to construct or place transmission equipment that does not constitute an eligible facilities request. An authority or any third-party entity shall not include within its charges any travel expenses incurred in the review of an application for more than one trip to the authority's jurisdiction, and an applicant shall not be required to pay or reimburse an authority for consultant or other third-party fees based on a contingency-based or result-based arrangement.
10. Impose surety requirements, including bonds, escrow deposits, letters of credit, or any other type of financial surety, to ensure that abandoned or unused towers or transmission equipment can be removed, unless requirements are competitively neutral, nondiscriminatory, reasonable in amount, and commensurate with the historical record for local facilities and structures that are abandoned.
11. Condition the approval of an application on the applicant's agreement to provide space on or near the tower, base station, or wireless support structure for authority or local governmental or nongovernmental services at less than the market rate for such space or to provide other services via the structure or facilities at less than the market rate for such services.
12. Limit the duration of the approval of an application, except that construction of the approved structure or facilities shall be commenced within two years of final approval, including the disposition of any appeals, and diligently pursued to completion.
13. Discriminate on the basis of the ownership, including ownership by the authority, of any property, structure, or tower when promulgating rules or procedures for siting wireless facilities or for evaluating applications.

**ZONING ORDINANCE CRITERIA FOR BOARD APPROVAL**

Conditional Use Permits are determined by a review of the following criteria by the Zoning Commission (ZC) and Board of Adjustment (BOA). The ZC makes a recommendation to the BOA which will decide following a public hearing before the Board.

**APPLICANT'S DESCRIPTION OF THE PROPOSED CONDITIONAL USE:**

Nextlink would like the approval to install a new 120' galvanized steel mono pole to provide high speed internet to surrounding areas.

PER SECTION 2.02(9) (C )(2)(e) PROVIDE A MAP DRAWN TO SCALE, SHOWING THE SUBJECT PROPERTY, ALL STRUCTURES AND OTHER IMPROVEMENTS, WITH THE PROPOSED CONDITIONAL USE IDENTIFIED PER STRUCTURE OR IMPROVEMENT . PROVIDE BY ATTACHMENT.

1. Maps
  - a. See attachment

**CRITERIA 1:**

The conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied (Woodbury County Zoning Ordinance, Sec. 2.02-9).

**Applicant Response:**

The conditional use is for commercial/telecommunication in a AP zoned area. All standards described will be satisfied by our team and crew.

**Staff Analysis:**

This conditional use permit requested is authorized in the Agricultural Preservation (AP) Zoning District. This request will satisfy any and all requirements as per the Zoning Ordinance.

<b>CRITERIA 2:</b>
The proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan (Woodbury County Zoning Ordinance, Sec. 2.02-9).
<b>Applicant Response:</b>
Nextlink takes pride in its process of putting towers up in a timely fashion and we hold crews to high standards to complete each process thoroughly.
<b>Staff Analysis:</b>
The granting of this request will assist with adding to the communication infrastructure of the surrounding area, it complies with the general purpose of the general plan.

<b>CRITERIA 3:</b>
The proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare (Woodbury County Zoning Ordinance, Sec. 2.02-9).
<b>Applicant Response:</b>
The location that we are looking at installing this tower at, on the property, is towards the middle of the property itself. This will not have a substantial adverse effect on adjacent properties. It will not affect the character of the neighborhood, traffic conditions, parking, utility facilities, or any other factors affecting public health, safety, and general welfare. The outcome of this project is to provide high speed internet to the surrounding areas, but to do it in a safe and efficient manner.
<b>Staff Analysis:</b>
The plans submitted comply with the parameters of Section 5.05 of the Zoning Ordinance. This proposal does not appear to adversely impact the neighborhood, traffic, parking, utility facilities, public health, safety and general welfare. The proposed tower meets the setbacks from the property lines with either meeting or exceeding 120 feet from the property lines (see site plan).

<b>CRITERIA 4:</b>
The proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property (Woodbury County Zoning Ordinance, Sec. 2.02-9).
<b>Applicant Response:</b>
The proposed development will be towards the middle of the Baldwin's property. Our crews tend to work fast, when they obtain the green light from permitting and have obtained the permission to move forward with the project. This will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property. It adds to the surrounding area by providing internet to the individuals who live around this property.
<b>Staff Analysis:</b>
The plans submitted comply with the parameters of Section 5.05 of the Zoning Ordinance. This proposal is compatible with the neighborhood as noted in Criteria 3.

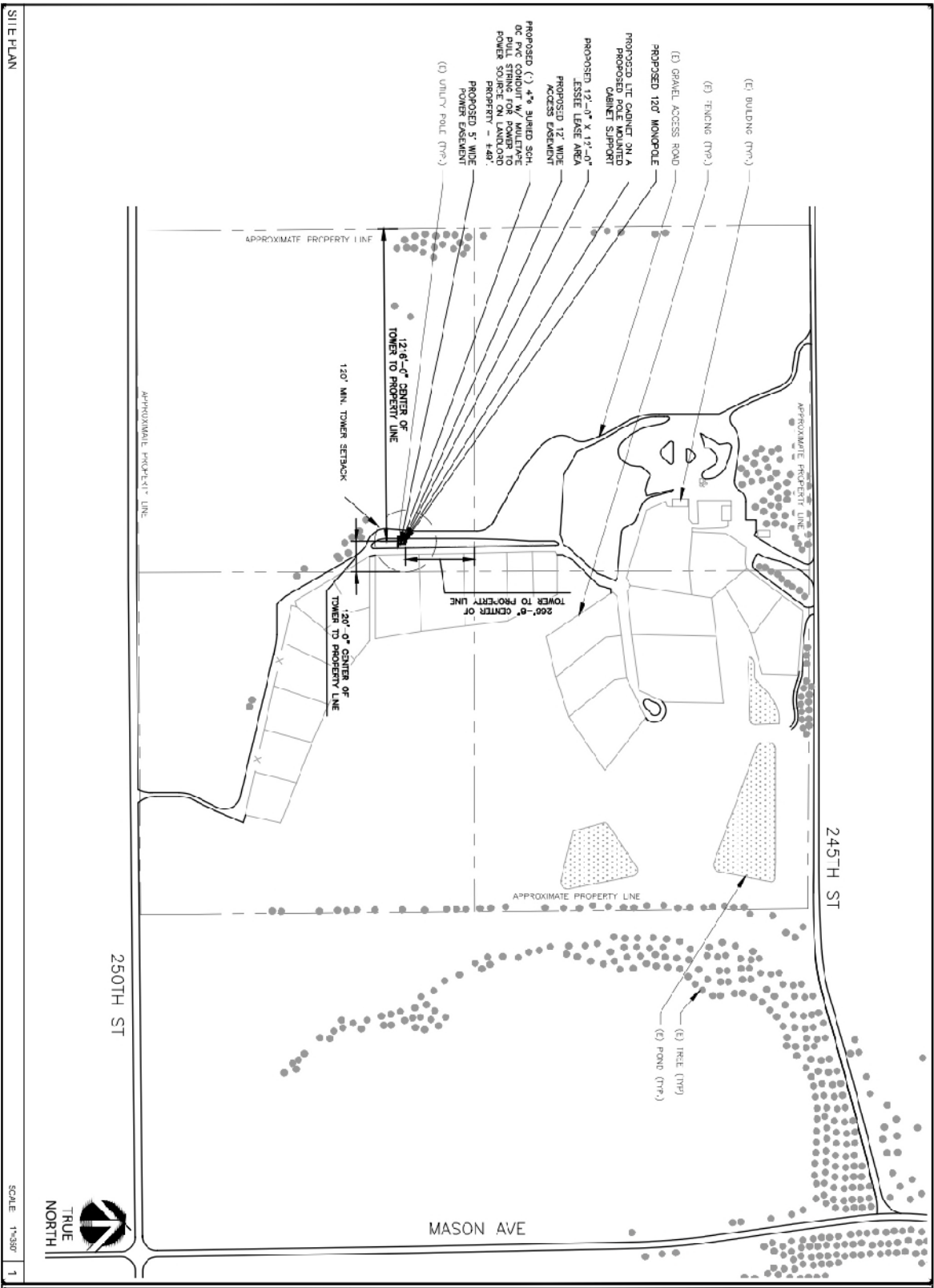
<b>CRITERIA 5:</b>
Essential public facilities and services will adequately serve the proposed use or development (Woodbury County Zoning Ordinance, Sec. 2.02-9).
<b>Applicant Response:</b>
N/A: We will not need the use of essential public facilities and services.
<b>Staff Analysis:</b>
The plans submitted comply with the Zoning Ordinance.

<b>CRITERIA 6:</b>
The proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties (Woodbury County Zoning Ordinance, Sec. 2.02-9).
<b>Applicant Response:</b>
This location is not located in any historical district, nor will it result in unnecessary adverse effects on the natural features around it due to its location.
<b>Staff Analysis:</b>
The plans submitted comply with the Zoning Ordinance. There have been no concerns presented from stakeholders.

<b>OTHER CONSIDERATION 1:</b>
The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community (Woodbury County Zoning Ordinance, Sec. 2.02-9).
<b>Staff Analysis:</b>
This CUP request could be interpreted as a contribution to the local communication infrastructure.

<b>OTHER CONSIDERATION 2:</b>
All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development (Woodbury County Zoning Ordinance, Sec. 2.02-9).
<b>Staff Analysis:</b>
The design of the tower and its proposed use clearly distinguishes itself as a communication structure. The plans submitted comply with the Zoning Ordinance. Under Iowa Code 8C, local governments cannot "dictate the type of transmission equipment or technology to be used, or discriminate between different types of infrastructure or technology."





SITE PLAN

SCALE: 1"=30'



<p>PLANNED BY: <b>ODISCOM, LLC</b> 2600 S. SHORE BLVD., LEAGUE CITY, TX 77573 (409) 531-1178 www.odiscom.com</p>		<p>CLIENT: <b>ODISCOM, LLC</b> 2600 S. SHORE BLVD., LEAGUE CITY, TX 77573 (409) 531-1178 www.odiscom.com</p>																	
<p>PROJECT NUMBER: <b>IA-ANTHON-50-4</b></p>		<p>SITE ADDRESS: <b>3846 245TH ST., ANTHON, IA 51004 WOODBURY COUNTY</b></p>																	
<p>REVISION HISTORY</p> <table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>07/20/23</td> <td>PRELIMINARY</td> <td>DK</td> </tr> <tr> <td>2</td> <td>07/20/23</td> <td>FINAL</td> <td>DK</td> </tr> <tr> <td>3</td> <td>08/29/23</td> <td>FINAL</td> <td>DK</td> </tr> </tbody> </table>				REV	DATE	DESCRIPTION	BY	1	07/20/23	PRELIMINARY	DK	2	07/20/23	FINAL	DK	3	08/29/23	FINAL	DK
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<p>DESIGNED BY: <b>Jacob Goran Sidi</b> PROFESSIONAL ENGINEER NO. 22843 STATE OF IOWA 08/29/2023</p>																			
<p>SHEET TITLE: <b>OVERALL SITE PLAN</b></p> <p>SHEET NUMBER: <b>A-1</b></p>																			



WOODBURY COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT

Zoning Ordinance Section 2.02(9)

Page 1 of 6

CONDITIONAL USE PERMIT APPLICATION

<b>Owner Information:</b>		<b>Applicant Information:</b>	
Owner	<u>Shelli Baldwin</u>	Applicant	<u>Amica Technology Investment Group</u>
Address	<u>3846 245<sup>th</sup> St.</u>	Address	<u>95 Parker Oaks Ln.</u>
	<u>Arthon, IA 51004</u>		<u>Hudson Oaks, TX 76087</u>
Phone	<u>712-870-0554</u>	Phone	<u>682-789-6680</u>

We, the undersigned, hereby apply to the Woodbury County Board of Adjustment for permission to  
install a 120' monopole to supply high speed internet to surrounding areas.

<b>Property Information:</b>			
Property Address or Address Range	<u>3846 245<sup>th</sup> St.</u>	<u>Arthon, IA 51004</u>	<u>AP SESW Miller</u>
Quarter/Quarter	<u>SESW</u>	Sec <u>16</u>	Twnshp/Range <u>87</u>
Parcel ID #	<u>B743116300005</u>	GIS #	Total Acres <u>.40</u>
Current Use	<u>Agriculture</u>	Proposed Use	<u>telecommunication tower</u>
Current Zoning	<u>AP</u>		

The filing of this application is required to be accompanied with all items and information required pursuant to section 2.02(9)(C)(2) through (C)(4) of Woodbury County's zoning ordinances (see attached pages of this application for a list of those items and information).

A formal pre-application meeting is recommended prior to submitting this application.  
Facils  
 Pre-app mtg. date 5/14/23 Facils Staff present D. Pringle  
8/10/23

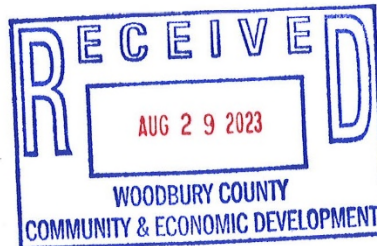
The undersigned is/are the owner(s) of the described property on this application, located in the unincorporated area of Woodbury County, Iowa, assuring that the information provided herein is true and correct. I hereby give my consent for the Woodbury County Community and Economic Development staff, Zoning Commission and Board of Adjustment members to conduct site visits and photograph the subject property.

This Conditional Use Permit Application is subject to and shall be required, as a condition of final approval, to comply with all applicable Woodbury County ordinances, policies, requirements and standards that are in effect at the time of final approval.

Owner	<u>Shelli Baldwin</u>	Applicant	<u>Megan Coop</u>
Date	<u>8/14/2023</u>	Date	<u>08/11/2023</u>

Fee:	<u>\$300</u>	Case #:	<u>6929</u>
Check #	<u>40222</u>		
Receipt #:			

Date Received



PER SECTION 2.02(9)(C )(2 (d) PROVIDE A SPECIFIC DESCRIPTION OF THE PROPOSED CONDITIONAL USE: (Tab at the end of each line to continue)

Nextlink would like the approval to install a new 120' galvanized steel mono pole to provide high speed internet to surrounding areas.

PER SECTION 2.02(9) (C )(2)(e) PROVIDE A MAP DRAWN TO SCALE, SHOWING THE SUBJECT PROPERTY, ALL STRUCTURES AND OTHER IMPROVEMENTS, WITH THE PROPOSED CONDITIONAL USE IDENTIFIED PER STRUCTURE OR IMPROVEMENT . PROVIDE BY ATTACHMENT.

Please see attached engineer plans.

PER SECTION 2.02(9) (C )(2)(e) PROVIDE A STATEMENT IN RESPONSE TO EACH OF SIX BELOW CRITEREA AND STANDARDS FOR APPROVAL OF CONDITIONAL USES AS LISTED IN SECTION 2.02(9)F OF THE ORDINANCES. (Tab at the end of each line to continue)

- (a) Provide a statement to why you feel the conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied.

The conditional use is for commercial/telecommunication in a AP zoned area. All standards described will be satisfied by our team and crew.

- (b) Provide a statement to why the proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan. (Tab at the end of each line to continue)

Nextlink takes pride in its process of putting towers up in a timely fashion and we hold crews to high standards to complete each process thoroughly.

**(e) Provide a statement to why essential public facilities and services will adequately serve the proposed use or development. (Tab at the end of each line to continue)**

**N/A: We will not need the use of essential public facilities and services.**

**(f) Provide a statement to why the proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties. (Tab at the end of each line to continue)**

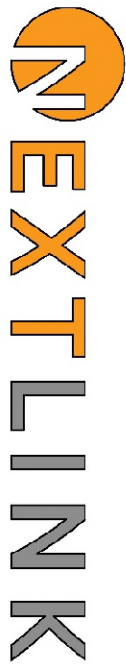
**This location is not located in any historical district, nor will it result in unnecessary adverse effects on the natural features around it due to its location.**

- 
- (c) Provide a statement to why the proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare. (Tab at the end of each line to continue)

The location that we are looking at installing this tower at, on the property, is towards the middle of the property itself. This will not have a substantial adverse effect on adjacent properties. It will not affect the character of the neighborhood, traffic conditions, parking, utility facilities, or any other factors affecting public health, safety, and general welfare. The outcome of this project is to provide high speed internet to the surrounding areas, but to do it in a safe and efficient manner.

- (d) Provide a statement to why the proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property. (Tab at the end of each line to continue)

The proposed development will be towards the middle of the Baldwin's property. Our crews tend to work fast, when they obtain the green light from permitting and have obtained the permission to move forward with the project. This will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property. It adds to the surrounding area by providing internet to the individuals who live around this property.



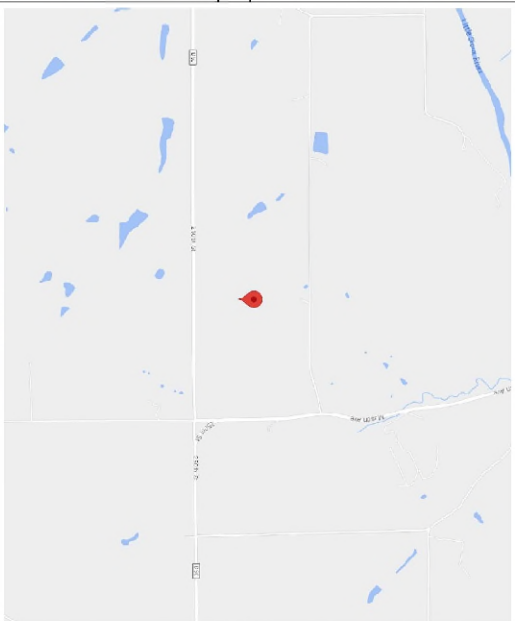
**SITE NAME:** IA-ANTHON-SO-4  
**SITE NUMBER:** IA-ANTHON-SO-4  
**SITE ADDRESS:** 3846 245TH ST., ANTHON, IA 51004  
**SITE TYPE:** MONOPOLE

**PROJECT INFORMATION**

**SITE NAME:** IA-ANTHON-SO-4  
**SITE NUMBER:** IA-ANTHON-SO-4  
**SITE ADDRESS:** 3846 245TH ST., ANTHON, IA 51004  
**SITE TYPE:** MONOPOLE  
**JURISDICTION:** WOODBURY COUNTY  
**APPLICANT:** NEXTLINK  
**ADDRESS:** 95 PARKER OAKS LN HUDSON OAKS, TEXAS 76067  
**CONTACT:** SHAUN MCINTIRE (712) 535-1466 SMCINTIRE@TEAMHXLINK.COM EMAIL: SMCINTIRE@TEAMHXLINK.COM  
**SITE COORDINATES:** NAD 83  
**EASTING:** 42,344E  
**NORTHING:** -86,655N  
**GROUND ELEV. (AMSL):** 1360'

**MAP AND DIRECTIONS**

DIRECTIONS FROM SIOUX CRESTWAY AIRPORT (2403 AVIATION BLVD, SIOUX CITY, IA 51111):  
 HEAD WEST ON HUDSON AVE TOWARD PRESHING ST (1.5 MI), CONTINUE SIOUX PRESHING S (0.2 MI), CONTINUE ONTC COHEN AVE (453 FT), SLIGHT LEFT ONTO MITCHELL ST (289 FT), TURN RIGHT ONTO AVIATION BLVD (0.4 MI), CONTINUE ONTC 1ST ST (1.4 MI), CONTINUE OYTO 210TH ST (4.9 MI), TURN RIGHT ONTO OLD HWY 41 (0.5 MI), TURN LEFT ONTO BRONSON BLVD (1.3 MI), TURN RIGHT ONTO 210TH ST (0.2 MI), TURN RIGHT ONTO MONTELEONE BLVD (1.9 MI), TURN LEFT AT THE 1ST DIVISION ST (3.2 MI), TURN LEFT ONTC 280TH ST (1.8 MI)



**APPLICABLE BUILDING CODES**

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES:  
**BUILDING CODE:** 2015 INTERNATIONAL BUILDING CODE  
**ELECTRICAL CODE:** 2020 NATIONAL ELECTRICAL CODE  
 • FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.  
 • ALL ACCESS REQUIREMENTS ARE NOT REQUIRED.  
 • THIS FACILITY DOES NOT REQUIRE PORTABLE WATER AND WILL NOT PROVIDE ANY SERVICES.

**SCOPE OF WORK**

THE SCOPE OF WORK CONSISTS OF:  
 NEW EQUIPMENT TO BE INSTALLED  
 (1) 4'-0" X 4'-0" CONCRETE PAD  
 (1) 6E CABINET  
 (1) 6E CABINET  
 (1) MONOPOLE  
 (6) PANEL ANTENNAS  
 (2) JUPITER ANTENNAS, (4) OVALS  
 (10) CP SE CABLES  
 20'X20' CHAIRLINK FENCE

- CONTRACTOR SHALL FURNISH ALL MATERIAL WITH THE EXCEPTION OF NEXTLINK
- ALL MATERIAL SHALL BE INSTALLED BY THE CONTRACTOR, UNLESS STATED OTHERWISE.

**PROJECT TEAM**

**PROJECT MANAGER**  
 NEXTLINK  
 95 PARKER OAKS LN  
 HUDSON OAKS, TEXAS 76067  
 PHONE: (850)-686-5466  
 EMAIL: RESERV@TEAMHXLINK.COM

**ENGINEER**  
 JACOB GORALSKI, PE  
 OGDSCOM, LLC  
 (817)-596-1261

**DRAWING INDEX**

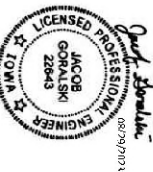
T-1	TITLE SHEET
A-1	OVERALL SITE PLAN
A-2	ENLARGED SITE PLAN
A-3	SITE ELEVATION
A-4	ANTENNA MOUNT DETAILS
A-5	ANTENNA AND EQUIPMENT SUMMARY
D-1	GENERAL DETAILS
D-2	GENERAL DETAILS
D-3	ANTENNA SPECIFICATIONS
D-4	ANTENNA SPECIFICATIONS
D-5	EQUIPMENT SPECIFICATIONS
E-1	ELECTRICAL PLAN
E-2	ELECTRICAL NOTES AND DETAILS
G-1	PANEL SCHEDULE & ONELINE
G-2	GROUNDING PLAN
G-3	GROUNDING DETAILS

Jacob Goraliski  
 Digitally signed by Jacob Goraliski  
 Date: 2023.08.29 16:32:04 -05'00'

DESIGNED BY: OGDSCOM, LLC  
 2600 S. SHORE BLVD  
 SUITE 300  
 LEAGUE CITY, TX 77573  
 (409) 531-1176  
 www.odgsc.com

SITE ADDRESS:  
 3846 245TH ST., ANTHON, IA 51004  
 WOODBURY COUNTY

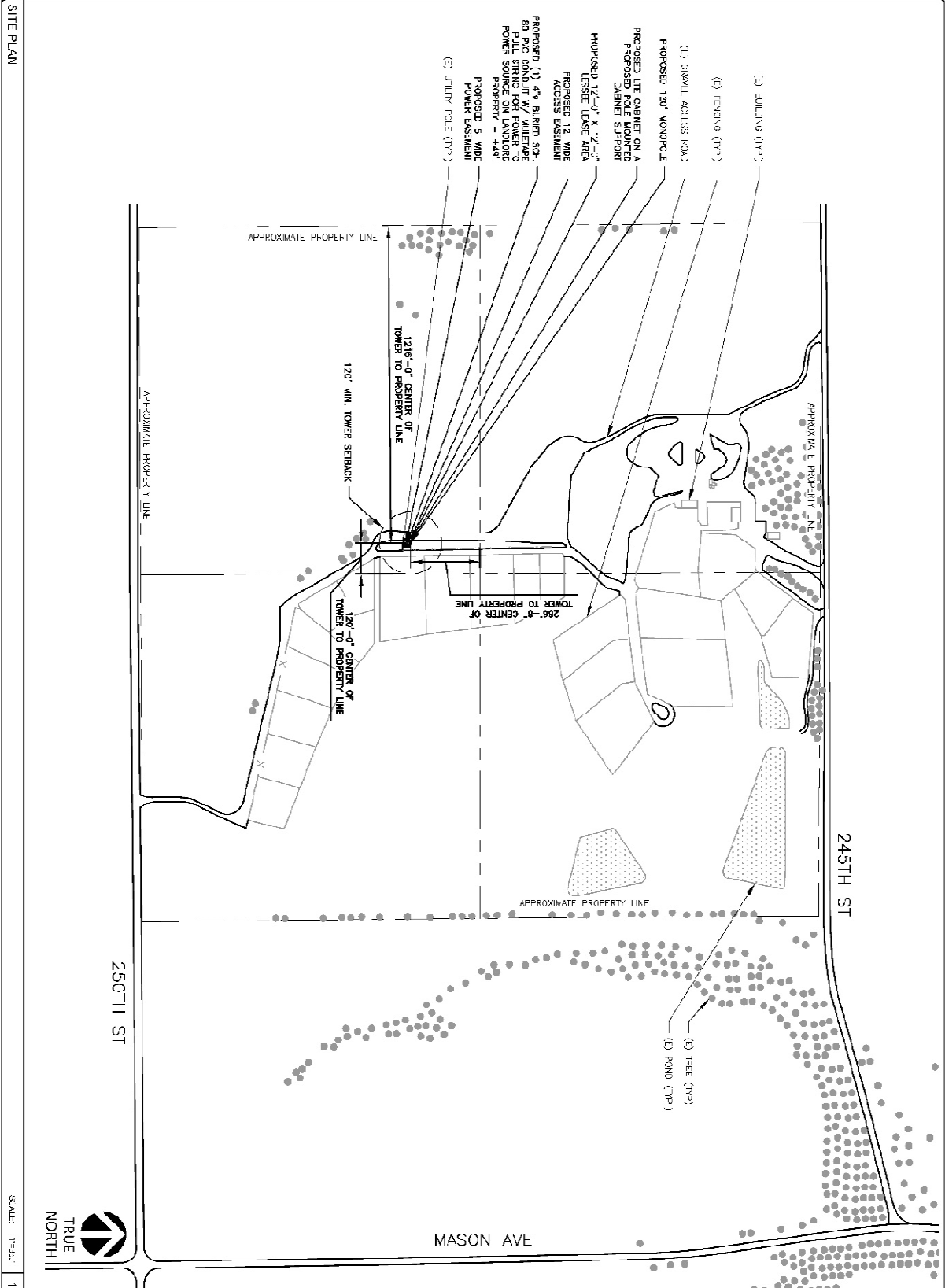
REV	DATE	DESCRIPTION	BY
A	07/20/23	PRE-DESIGN	DL
1	08/29/23	FINAL	JG



TITLE SHEET

T-1





SITE PLAN

SCALE: 1"=30'-1



250TH ST


245TH ST

MASON AVE

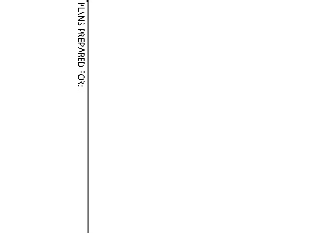
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C	07/20/21	FINAL	DL
T	08/29/21	FINAL	IR

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**3846 245TH ST.,**  
**ANTHON, IA 51004**  
**WOODBURY COUNTY**

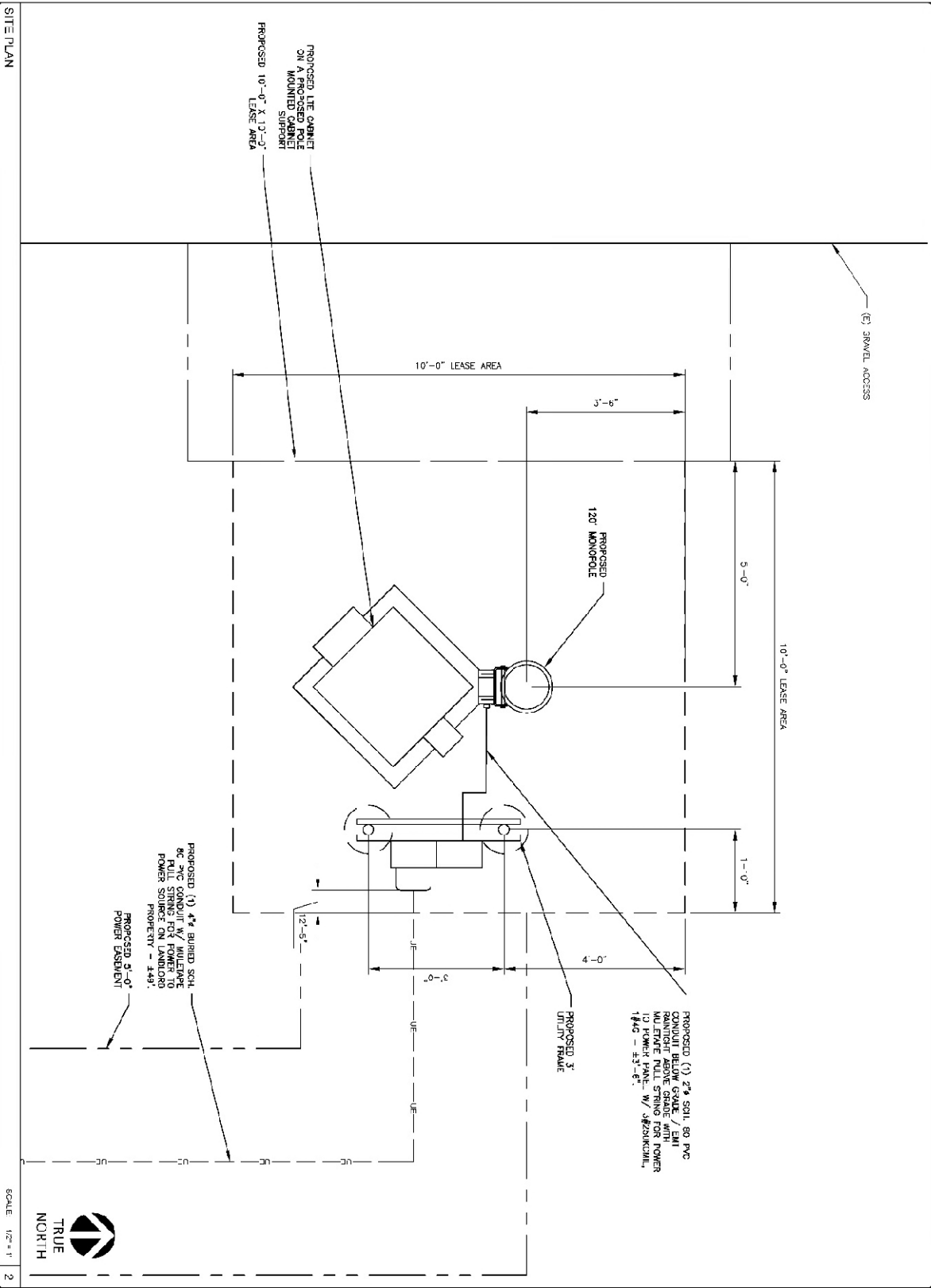
SITE NUMBER:  
**IA-ANTHON-SO-4**

  
 ODISCOM, LLC  
 2600 S. SHORE BLVD.  
 SUITE 400  
 LEAGUE CITY, TX 77573  
 (409) 931-1176  
 www.odiscom.com

  
 95 PARKER OAKS LN  
 HUDSON OAKS, TEXAS 75087

  
 JACOB GERLACH  
 22843  
 IOWA  
 LICENSED PROFESSIONAL ENGINEER  
 08/29/2025


SHEET TITLE:  
**OVERALL SITE PLAN**  
 SHEET NUMBER:  
**A-1**



SITE PLAN

SCALE 1/2" = 1'

PLANNED FOR:



95 PARKER OAKS LN  
HUDSON OAKS, TEXAS 76087


ODISCOM, L.L.C.  
2806 S. SHORE BLVD.  
SUITE 300  
LEAGUE CITY, TX 77573  
(409) 533-1376  
WWW.ODISCOM.COM

PROPOSED (1) 2 1/2" GALV. 80 PVC  
CONDUIT WITH 1/2" MIN. WALL  
THICKNESS AND 1/2" MIN. RADIUS  
RADIUS ABOVE GRADE WITH  
MULTIPLE FULL STRING FOR POWER  
TO POWER PANEL - W/ J&BCKCMMIL,  
1446 - #3-6"

SITE NUMBER:  
**1A-ANTHON-SO-4**

SITE ADDRESS:  
**3846 245TH ST.,  
ANTHON, LA 51004  
WOODBURY COUNTY**

REV	DATE	DESCRIPTION	BY
A	07/20/23	PRELIMINARY	DL
0	07/20/23	FINAL	DL
1	08/29/23	FINAL	LR



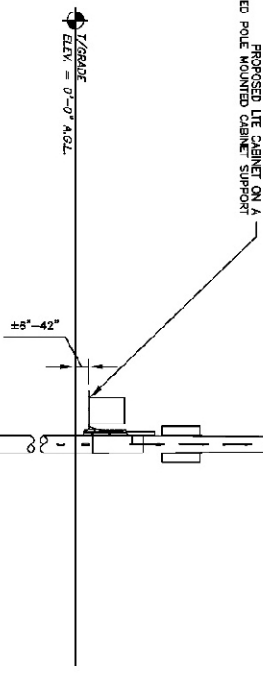
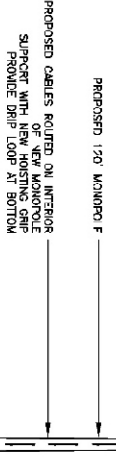
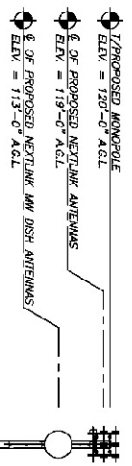
08/29/2023

SHEET NUMBER:  
**A-2**

ENLARGED SITE PLAN



- NOTES:**
1. CALCULATIONS FOR THE STRUCTURE AND ANTENNA MOUNTS WERE PREPARED BY OTHERS AND THOSE CALCULATIONS VERIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
  2. CABLES NOT SHOWN FOR CLARITY



SITE ELEVATION

SCALE: N=1:50 1

PROJ. INFORMATION

95 PARKER OAKS LN  
HUDSON OAKS, TEXAS 76087

DESIGNED BY:

DDJ&CM, LLC  
2600 S. SHORE BLVD.  
SUITE 300  
LEAGUE CITY, TX 77573  
(469) 531-1175  
WWW.DDJ&CM.COM

SITE NUMBER:  
**IA-ANTHON-SO-4**

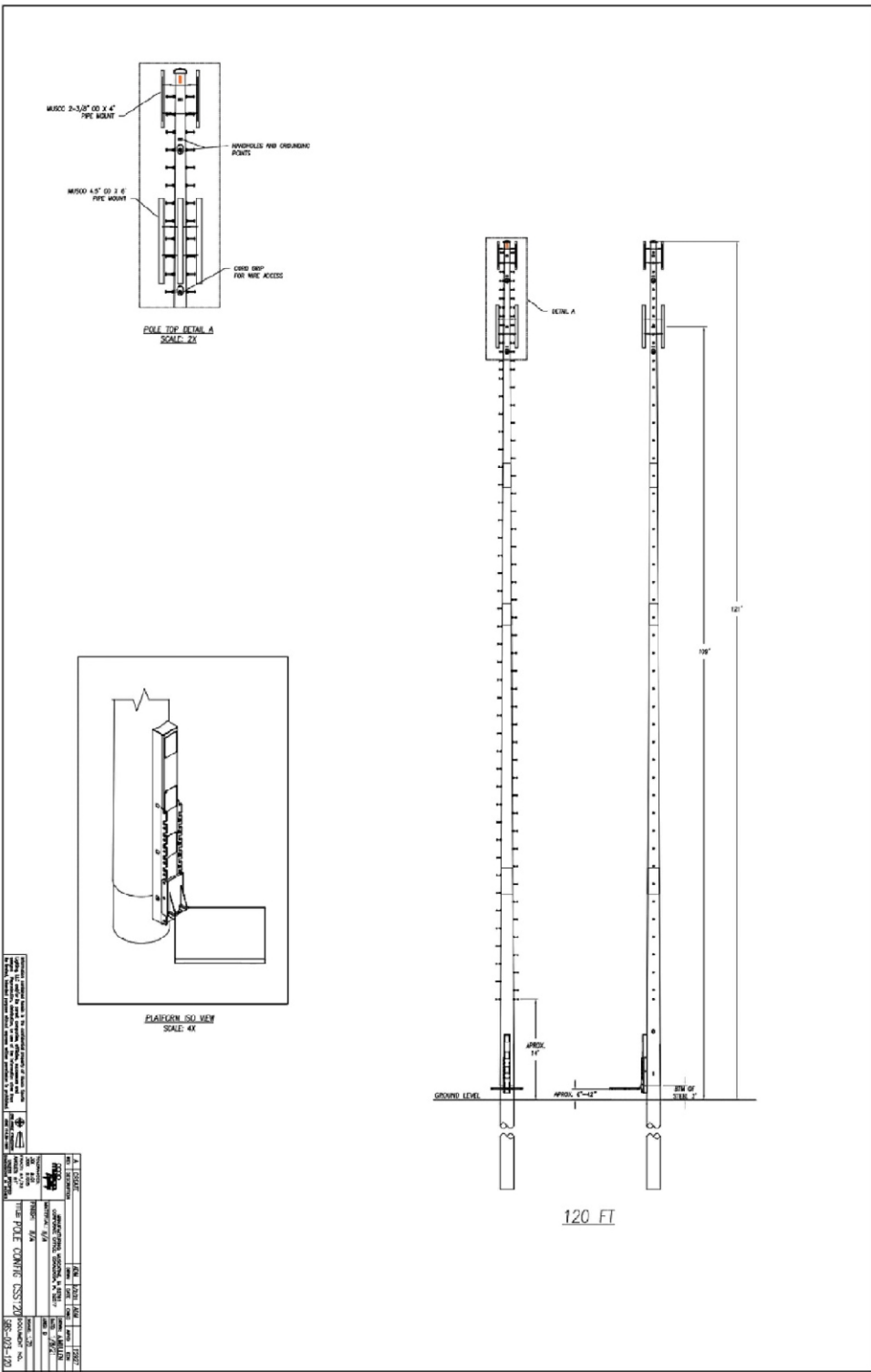
SITE ADDRESS:  
3846 245TH ST.,  
ANTHON, IA 51004  
WOODBURY COUNTY

REV.	DATE	REVISION/NOTES	BY
1	07/20/23	FINAL	DL
2	07/20/23	FINAL	JR



SHEET TITLE:  
**SITE ELEVATION**

SHEET NUMBER:  
**A-3**



DATE	DESCRIPTION
07/20/23	PRELIMINARY
08/29/23	FINAL

NO.	DATE	BY	CHKD.
1	07/20/23	JG	JG
2	08/29/23	JG	JG

SCALE	N.T.S.
1	

PROJECT: ANTENNA MOUNT DETAILS  
 SHEET NO. A-4



REV	DATE	DESCRIPTION	BY
A	07/20/23	PRELIMINARY	JG
1	08/29/23	FINAL	JG

SITE ADDRESS:  
 3846 245TH ST.,  
 ANTHON, IA 51004  
 WOODBURY COUNTY

SITE NUMBER:  
 IA-ANTHON-SQ-4

ODISCOM, LLC  
 2600 S. SHORE BLVD.  
 SUITE 300  
 LEAGUE CITY, TX 77573  
 (409) 531-1176  
 www.odiscom.com

**NEXTLINK**  
 95 PARKER OAKS LN  
 HUDSON OAKS, TEXAS 76087

FIELD NUMBER: 001

**NEXTLINK**  
 95 PARKER OAKS LN  
 HUDSON OAKS, TEXAS 76087

FIELD NUMBER: 001  
 ODISCOM, L.L.C.  
 2802 S. SHORE BLVD.  
 SUITE 300  
 LEAGUE CITY, TX 77573  
 (409) 933-1176  
 WWW.ODISCOM.LL.COM

SITE NUMBER:  
**IA-ANTHON-SO-4**  
 SITE ADDRESS:  
 3846 245TH ST,  
 ANTHON, IA 51004  
 WOODBURY COUNTY

REV	DATE	DESCRIPTION	BY
A	07/20/23	PRELIMINARY	DL
0	07/20/23	FINAL	DL
1	08/20/23	FINAL	RL



SHEET TITLE:  
**ANTENNA &  
 EQUIPMENT SUMMARY**  
 SHEET NUMBER:  
**A-5**

ELEVATION (AGL, FT)	CARRIER	MOUNT	EQUIPMENT	FEEDLINES	LOCATION
118	NEXTLINK (PROPOSED)	MUSCO TOWER RING	(0) CAMBRIA PMP-3030	(0) 0.20" CAT5E	INSIDE
113		MUSCO TOWER RING	(2) RADOMAR RP2-11 (2) CAMBRIA PTP605	(4) 0.20" CAT5E	

ANTENNA AND EQUIPMENT SUMMARY

SCALE: N.T.S. 1

**EXTLINK**  
 95 PARKER OAKS LN  
 HUDSON OAKS, TEXAS 76087

**ODISCON, LLC**  
 280C S. SHORE BLVD.  
 SUITE 300  
 LENOUE CITY, TX 77573  
 (409) 533-1766  
 www.odiscon.com

ST. NUMBER:  
**1A-ANTHON-SO-4**  
 3846 245TH ST.,  
 ANTHON, IA 51001  
 WOODBURY COUNTY

REV.	DATE	DESCRIPTION	BY
A	07/2/22	PRELIMINARY	DL
B	07/25/22	FINAL	DL
1	08/25/22	FINAL	JR



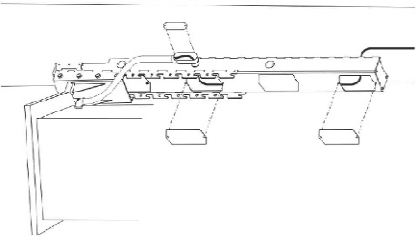
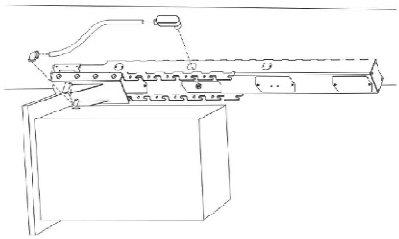
**GENERAL NOTES**

SHEET NUMBER: **D-1**

**Installation Instructions: Communication-Structure System™ Monopole Pole Mounted Cabinet Support**

**Pole Mounted Cabinet Support**

- 4** Choose desired entryway on alleyway. Using 3/16 in. wrench, remove/wireway hardware cover closest to entryway. Use handle to access wingnut and remove entryway cover.
- 5** Determine desired conduit location on equipment cabinet. Using hydraulic knock-out, cut 2 in (51 mm) entryway in cabinet.
- 6** Remove compression nut, inner sealing ring, and ferrules from 3/4 degree fitting and seal ends. Remove ferrules from 90 degree fitting. Insert threaded portion of fitting in cabinet or wireway entry way. Use ring adjustable pliers. Install back nut on fitting.
- 7** Install conduit body on remaining entryway. Using adjustable pliers, secure with chase nipple.
- 8** Remove compression nut, inner sealing ring, and ferrules from straight fitting. Install remaining portion of straight fitting in conduit body.
- 9** Test fit flexible conduit between fittings. If required, use hacksaw or utility knife to cut conduit to length. Install end piece and ferrules on each end of the conduit. Attention should be given to proper fitting and remaining end to straight fitting at conduit body.
- 10** Using standard screwdriver, remove cover on conduit body. Route cabling from wireway to cabinet through conduit. Replace cover on handles and conduit body when complete.
- 11** Connect equipment grounding conductor as required to grounding lug on pole at cabinet location.



**Installation Instructions: Communication-Structure System™ Monopole Pole Mounted Cabinet Support**

**Pole Mounted Cabinet Support**

**Overview**

The pole mounted cabinet support includes built-in hardware that allows for easy attachment to the pole and wireway channel.

**Tools/Materials Needed**

- Contractor Supplied
  - Phillips-head screwdriver
  - Standard screwdriver
  - Electrical flat tape electrician's tape
  - 10 ft (3 m) step ladder or small line truck
  - Utility knif/hacksaw
  - 2 Adjustable groove-joint pliers with 4.25 in (108 mm) jaw capacity
  - Utility knif/hacksaw
  - 2 in (51 mm) hydraulic knock-out punch driver

**Installation Procedure**

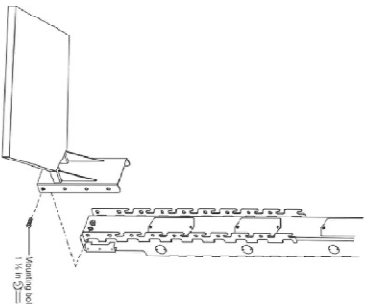
**Warning**  
**Cabinet support shell is heavy**

Cabinet support shell weighs 180 lb (72.5 kg). Lift carefully with two people to avoid injury.

- 1** Identify desired height of pole mounted cabinet support above ground level. Determine appropriate hanger position.
- 2** Lift pole mounted cabinet support into predetermined hanger location on the wireway.
- 3** Install mounting bolts on each side of shell bracket. Tighten using 1/2 in wrench.

**Warning**  
**Crush hazard**

Do not exceed cabinet support weight rating of 1,500 lb (680 kg). Overloading may cause cabinet to fall causing serious injury or death.

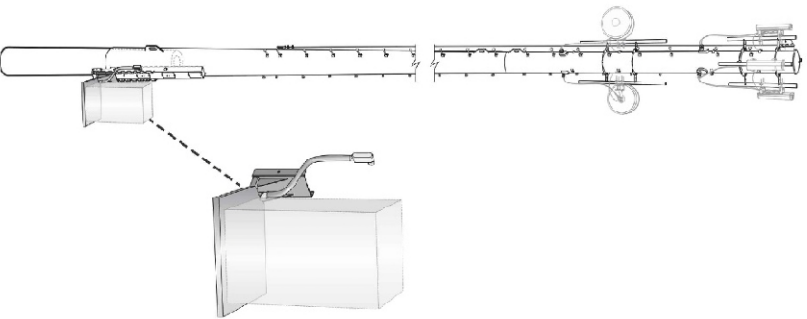


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**Cabinet Support**



**Overview**

The pole mounted cabinet support itself provides a mounting location for communication cabinets off of the ground with access to the cable management system.

**Features**

- Adjustable from approximately 0 in (152 mm) to 42 in (1067 mm) above ground level
- Planned configuration for easy access to all four cabinet sides
- Separate cabinet ground location positioned for ease of installation

**Technical Specifications**

Weight ..... 14 lb (6.4 kg)  
 Size ..... 38 in x 38 in (965 mm x 965 mm)

**Construction**

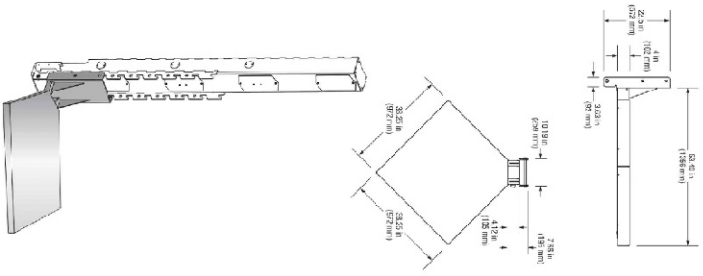
- High strength, low alloy steel construction
- Supports up to 1500 lb (680 kg)
- Attaches to structure via welded 0.75 in (19 mm) solid hanging rod and two 3/2 in stainless steel bolts
- Grounding Lug tapped for one 0.25 in and one 0.375 in bolt



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1

**Cabinet Support**



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2

FIGURE 3: MONOPOLE DETAIL

**NEXTLINK**  
 95 PARKER OAKS LN  
 HUDSON OAKS, TEXAS 76087

PLANS PREPARED BY:  
**ODISCOM, LLC**  
 2603 S. SHORE BLVD.,  
 SUITE 300  
 LEAGUE CITY, TX 77573  
 (469) 531-1176  
 WWW.ODISCOM.COM

SITE NUMBER:  
**IA-ANTHON-SO-4**  
 SITE ADDRESS:  
**3846 245TH ST.,  
 ANTHON, IA 51004  
 WOODBURY COUNTY**

REVISION HISTORY		BY
REV	DATE	DESCRIPTION
A	07/29/23	PRELIMINARY
0	07/29/23	FINAL
1	08/29/23	FINAL
		JR



SHEET TITLE:  
**GENERAL NOTES**

SHEET NUMBER:  
**D-2**



# ePMP™ 3000 Sector Antenna

Carlinum Networks has developed more than 100 different antennas and the world's leading array of outdoor LTE-RF sector antennas designed to meet the requirements of the Carlinum Networks LTE-RF sector antenna. The ePMP 3000 Sector Antenna is a 3GPP LTE-RF antenna designed for 3GPP LTE-RF operation.

### KEY DEVELOPMENT ADVANTAGES

- Frequency Reconfigurable: The antenna is designed to be reconfigurable to support multiple frequency bands within the same antenna.
- Carrier Frequency: The antenna is designed to be reconfigurable to support multiple carrier frequencies within the same antenna.
- Design for the LTE-RF: The antenna is designed to be reconfigurable to support multiple LTE-RF bands within the same antenna.
- Predictable Performance: The antenna is designed to be reconfigurable to support multiple LTE-RF bands within the same antenna.

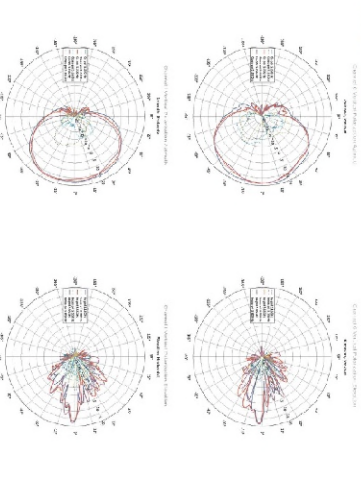
### SPECIFICATIONS

Parameter	Value
Model Name	3000S001
Frequency Range	4.75-5.25 GHz
Bandwidth	50 MHz
Gain	18 dBi
Efficiency	40%
Dimensions	400mm x 400mm x 100mm
Weight	2.5kg
Material	Aluminum
Finish	Black
Mounting	Wall Mount

### KEY FEATURES

- 18 dBi gain
- 40% efficiency
- 50 MHz bandwidth
- 4.75-5.25 GHz frequency range
- IP67 protection

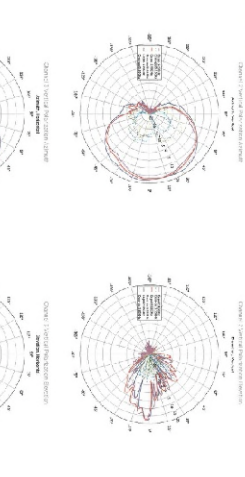
### ANTENNA PATTERNS



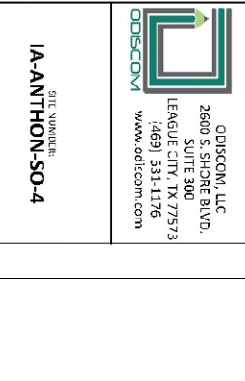
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### ANTENNA PATTERNS



### ANTENNA PATTERNS



**NEXTLINK**  
95 PARKER OAKS LN  
HUDSON OAKS, TEXAS 76087

**ODISCOM, LLC**  
2600 S. SHORE BLVD.  
SUITE 300  
LEAGUE CITY, TX 77573  
(409) 331-1176  
WWW.ODISCOM.COM

**311 WINDLE**  
**IA-ANTHON-SO-4**  
  
SITE ADDRESS:  
**3846 245TH ST,  
ANTHON, IA 51004  
WOODBURY COUNTY**

REV	DATE	DESCRIPTION	BY
A	07/20/23	PRELIMINARY	31
0	07/20/23	FINAL	31
1	08/29/23	FINAL	31



**ANTENNA SPECIFICATIONS**  
SHEET NUMBER: **D-3**



## HP2-11

0.6 M 12 FT HIGH PERFORMANCE PARABOLIC REFLECTOR ANTENNA, SINGLE-POLARIZED, 10.7-11.7GHz

The HP High Performance Series by RadioWaves offers a full line of high-performance parabolic antennas engineered to provide ETSI class Z3 radiation pattern performance as well as excellent gain. RadioWaves feed-proven pre-assembled arrays as well as gain, robust mounts ensure set and longer installation with minimal post-installation maintenance. The include factory-ensured and reliable performance under the most challenging conditions. If it's rugged, it must be RadioWaves!

### FEATURES AND BENEFITS

- High Performance ETSI Class Z3\* Parabolic Antennas – Excellent performance for a wide range of applications
- Fully Pre-assembled at the Factory – Simplifies installation on site and guarantees factory-fresh quality
- Warranty – Factory leading 7-year warranty

\*ETSI Class depends on frequency band

### SPECIFICATIONS

#### General

Antenna Type	High Performance Parabolic Reflector Antenna
Site Height	2 ft / 0.6 m
Polarization	Single

Standard RF Connector Type	CRF830
Standard RF Connector Style	HS (repeat suffix or model number)

#### Electrical

Operating Frequency Band	10.7 - 11.7 GHz
Half-Power Beamwidth, Horizontal	3.4 degrees
Half-Power Beamwidth, Vertical	3.4 degrees
Cross-Polarization Discrimination	30 dB
Front to Back Ratio (F/B)	60 dB

Gain, Low Frequency	34.2 dBi
Gain, Mid Frequency	34.0 dBi
Gain, High Frequency	34.8 dBi
VSWR	1.37:1
Return Loss	-16.1 dB



#### Mechanical

Fin Adjustment	+/- 10 degrees
Fin Elevation Adjustment	+/- 30 degrees
Mounting Pipe Diameter, Min	2 inch / 5.08 cm
Mounting Pipe Outer Dia, Max	4.9 inch / 12.4 cm
Net Weight	27 lbs / 12.3 kg
Wind Velocity, Operational	90 mph / 143 km/h
Wind Velocity, Survival Rating	128 mph / 203 km/h

Mechanical Configuration	HP2
Asail Force (F5)	242 lbs / 108 N
Side Force (F5)	110 lbs / 48 N
Tweeling Moment (M1)	144 ft-lbs / 209 Nm
Operating Temperature Range	-43 to +40 C
Max Pressure, PSIG (if applicable, reference)	5

#### Regulatory Compliance

FCC	Part 101 Ch1.3
Industry Canada Compliance	undefined

ETSI	322317 31 C2
RoHS-Compliant	Yes

#### Shipping Information

Package Type	Cardboard
Gross Weight	48 lbs / 21.7 kg

Dimensions, L x W x H	31 x 31 x 25in / 79 x 79 x 64 cm
Shipping Volume	13.8 cu ft / 0.39 cu m

\*Additional CEV Interfaces and adapters may be available. Contact RadioWaves for a complete and current list of available adapters.

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FORM REVISED 10/11

**EXSTLINK**  
95 PARKER OAKS LN  
HUDSON OAKS, TEXAS 76087

FORM REVISED BY:  
ODISCOM, LLC  
2600 S. SHORE BLVD.  
SUITE 300  
LEAGUE CITY, TX 77573  
(469) 331-1176  
www.odiscom.com

SITE NUMBER:  
**IA-ANTHON-SO-4**  
3846 245TH ST,  
ANTHON, IA 51004  
WOODBURY COUNTY

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A	07/20/23	PRELIMINARY	JL
1	08/29/23	FINAL	JR



SHEET TITLE:  
**ANTENNA SPECIFICATIONS**  
SHEET NUMBER:  
**D-4**

# PTP 820C Licensed Microwave Radio

## QUICK LOOK:

- PTP 820C, an all Outdoor dual-core radio capable of 1024 QAM with ACM
- Support 6-38 GHz
- Support 1+0 to 4+0, 4+1/2+2, 2 x 1+0 EastWest configuration
- Support Multi Band(With PTP 850E or PTP 820E)



### Radio

6-38 GHz	1+0 to 4+0, 1+1/2+2, 2 x 1+0 EastWest Multi Band(With PTP 850E or PTP 820E)
<b>Radio Features</b>	Multi-Carrier Adaptive Bandwidth Control (up to 2+0) Protection: 1+1/2+2-HB, 1+1-HS3 SD CPEK to 2048 QAM w/ACM 2x4 / 4x4 MIMO Advanced Space Diversity (ASD) Advanced Frequency Reuse (AFR)

### Ethernet

<b>Ethernet Interfaces</b>	Traffic processor – 1 x 10/100/1000Base-T (RJ-45) and 1x10/100base-X (SFP) or 1x10/100/1000Base-T (external SFP)
	Management interface – 1x 10/100 Base-T (RJ-45)
	Control SFP Types - Optional 100GBase-LX (100 nm) or SX (80nm)
	Note: SFP devices must be of industrial grade (40°C to 85°C)
<b>Ethernet Features</b>	MTU – 9600 Bytes Quality of Service Multiple Classification criteria (VLAN ID, IP-sets, IPv4 DSCP, IPv6 TC, MPLS EXP) 8 priority queues Drop scheduling (configurable up to 64 MBd per queue) WRED PBitmarking/priority marking 4K VLANs VLAN xact/enovse/forward Frame-Cat Through – controlled latency and PkT for delay sensitive applications Header De-Duplication – Checksum flooding by eliminating redundancy in all layers (L2, MP-S, L3, L4, Tunneling – GTP for LTE e3/E) V759 Ethernet QAM/V759 Ethernet Bandwidth Multiplier (ETH-3M) Adaptive Bandwidth Notification (ABN)

## PTP 820C Licensed Microwave Radio

### Management Protocols

SNMP  
REST  
SON Support NETCONF/YANG

### Synchronization

Synchronization Unit Station  
Sync Distribution over any interface (G/EPF)  
Sync E (ITU G.816, G.826)

SSA/ESMC Support for ringmesh applications (ITU-T G.8264)  
SyncE Regenerator mode, providing RFC grade (ITU-T 818) performance for small pipe applications.

Optimized Transport for reduced PkT

IEEE-1588  
IEEE-1588

ACD 256-bit Encryption  
Secure clocksource (PTPS, SNTPv3, SSNTP, SNTT)

Radio and ventilation control (statusation)  
TACO/SF air ventilation and auto/override (session-based)

### Standard

Carrier Ethernet 2.0 (CE 2.0)

Supports Ethernet Standards  
10/100/1000base-TX (IEEE 802.3)

Ethernet VLANs (IEEE 802.3ac)  
Virtual LAN (VLAN) (IEEE 802.1Q)

Class of Service (IEEE 802.1p)

Priority Bridges (802.1D – IEEE 802.3d)

Link Aggregation (IEEE 802.3ad)  
Auto MDI/MDIX for 100BaseT

RFC 1346, IPv4 TOS

RFC 2472, IPv4 DSCP

RFC 2440, IPv6 Traffic Classes

### Standards Compliance

EMC: EN 301-489-1, EN 301-489-2, Class B (Europe), FCC 47 CFR, Part 15, class B (US), ICES 003, Class B (Canada), TELEC/ATEL 00P01, class B (India)

Surge: EN61000-4-5, Class 4 (for PTP) and EMI/RFI (part)

Safety: EN 60950-1, IEC 60950-1, UL 60950-1, CSA C22.2 No. 60950-1, EN 60950-22, UL 60950-22, CSA C22.2 950-0-22 ingress protection: IP66-compliant

Storage: ETSI EN 300 019-11 Class 1.2  
Transportation: ETSI EN 300 019-1.2 Class 2.3

### Mechanical Specifications

Dimensions: 230mm(H), 233mm(W), 58mm(D), 5kg

9.05" H, 9.17" W, 3.89" D, 12.10 lbs

Pole Diameter: Range (for Remote Mount Installation): 8.89" CT – 11.43" CT, 3" S – 4.5"

### Environmental Specifications

-37°C to 155°C (45°C to 450°C extended), -27°F to 131°F (49°F to 140°F extended)

Power Input Specifications  
Standard Input: -48 VDC  
IDU DC input range: -40 to 60 VDC

Power Consumption Specifications  
Maximum Power Consumption 2+0 Operations 6 GHz: 65W, 7.8 GHz: 75W, 11 GHz: 85W, 13.45 GHz: 95W, 18.24 GHz: 48W, 28.38 GHz: 55W

Maximum Power Consumption 1+0 Operation -5.7/6 GHz: 40W, 7.8 GHz: 50W, 11 GHz: 59W, 13.45 GHz: 41W, 18.24 GHz: 39W, 28.38 GHz: 41W

PoE Injector Mechanical Specifications  
Dimensions – 194mm(L), 30mm(W), 62mm(O), 1kg, 5.28" (L), 7.48" (W), 2.4" (D), 2.2 lbs.

PoE Injector Environmental Specifications  
33°C to -55°C (45°C to -69°C extended), -27°F to 131°F (-49°F to 140°F extended)

PoE Injector Power Input Specifications  
Standard Input: -48 or 124 VDC (Optional)  
DC Input range: 18/40.5 to 60 VDC (-18VDC extended range is supported as part of the nominal +24VDC support)

PoE Injector Interfaces  
QDE Data Port (supporting 10/100/1000Base-T)  
Tower-Carrier Interface (PoE) Port

DC Power Port -40V to -60V for PoE supporting two redundant DC feeds (self-supplying 48V 60V is available)

PART NUMBER: GCR

**EXTLINK**  
95 PARKER OAKS LN  
HUDSON OAKS, TEXAS 75087

ODISCOM, LLC  
2630 S. SHORE BLVD.  
SANTA ANA, TX 77737  
-ENROUTE CTR, TX 77573  
(469) 513-1176  
www.odiscom.com

SITE NUMBER:  
**IA-ANTHON-50-4**

SITE ADDRESS:  
**3846 245TH ST,  
ANTHON, IA 51004  
WOODBURY COUNTY**

REV	DATE	REVISION HISTORY	BY
A	3/2/2023	REVISION	DL
0	3/2/2023	REV A	DL
1	3/2/2023	REV A	IR

*Jeff Stankovic*  
02/25/2023  
**JACOB STANKOVIC**  
PROFESSIONAL ENGINEER  
LICENSED IN IOWA  
2280

SHEET TITLE:  
**EQUIPMENT SPECIFICATIONS**

SHEET NUMBER:  
**D-5**



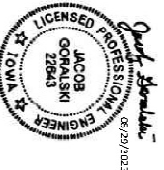
PLANS PROVIDED FOR

**NEXT LINK**  
 57 PARKER OAKS LN  
 HUDSON OAKS, TEXAS 76087

PLANS PROVIDED BY:  
**ODISCOM, LLC**  
 2600 S. SHORE BLVD., SUITE 300  
 LEAGUE CITY, TX 77573  
 (469) 531-1176  
 www.odiscom.com

STEN ABERS  
**IA-ANTHON-SO-4**  
 SFE ADDRESS:  
 3846 245TH ST.,  
 ANTHON, IA 51004  
 WOODBURY COUNTY

REV	DATE	DESCRIPTION	BY
1	07/2023	FIELD VISIT	DA
2	08/29/23	FINAL	JR

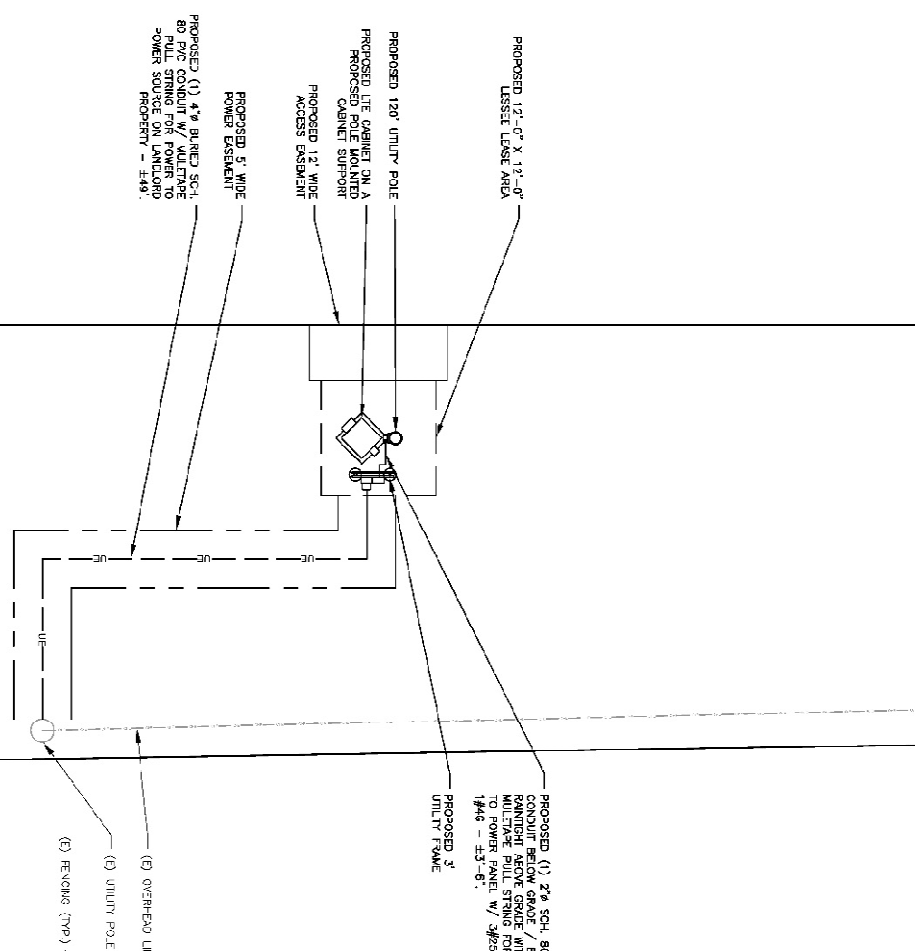


SHEET TITLE:  
**ELECTRICAL PLAN**

SHEET NUMBER:  
**E-1**

**ELECTRICAL NOTES**

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL WORK SHALL BE UL APPROVED OR LISTED AND PROVIDED PER SPECIFICATIONS IN PERMITS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL, DESIGNED BY THE ENGINEER AND APPROVED ELECTRICAL SYMBOLS, OPERATING AND HANDING ELECTRICAL SYMBOLS.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND OBTAINING ALL NECESSARY APPROVALS.
5. ELECTRICAL AND TIE-OUT WORK AT EXISTING BUILDING LOCATIONS SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).
6. ELECTRICAL AND TIE-OUT WORK AT EXISTING BUILDING LOCATIONS SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).
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9. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).
10. ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).
11. NON-ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).
12. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).
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23. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).
24. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES (AS PERMITTED BY CODE).



ELECTRICAL SITE PLAN

SCALE: N.T.S.



95 PARKER OAKS LN  
HUDSON OAKS, TEXAS 76087

ODISCOM, LLC  
2600 S. SHORE BLVD.  
SUITE 300  
LEAGUE CITY, TX 77573  
(469) 531-1176  
www.odiscom.com

SITE NUMBER:  
**1A-ANTHON-SO-4**

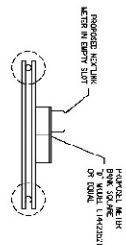
SITE ADDRESS:  
3846 245TH ST.,  
ANTHON, IA 51004  
WOODBURY COUNTY

REV	DATE	DESCRIPTION	BY
A	07/29/23	PRELIMINARY	DL
0	07/29/23	FINAL	DL
1	08/29/23	FINAL	JR

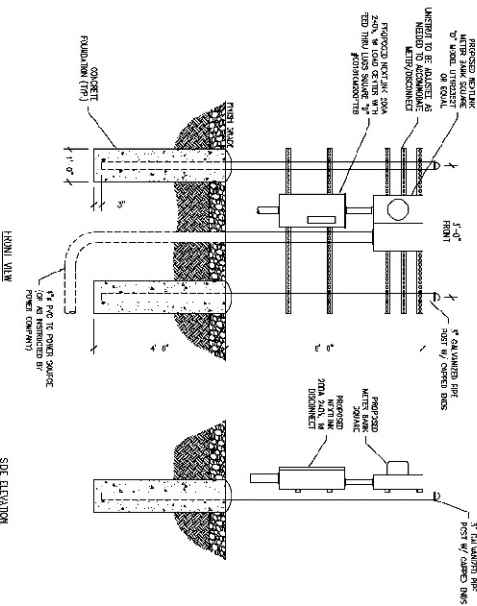


SHEET TITLE:  
**ELECTRICAL NOTES  
AND DETAILS**

SHEET NUMBER:  
**E-2**



- NOTE:
- ALL UNDERGROUND PIPES OR CABLES TO ENTER OR EXIT THROUGH WALLS OR FLOORS SHALL BE PROTECTED BY RIGID CONDUIT AND SHALL BE INSTALLED IN ACCORDANCE WITH UNDERGROUND INSTALLATION METHODS AND DETAILS OF THIS MANUAL.

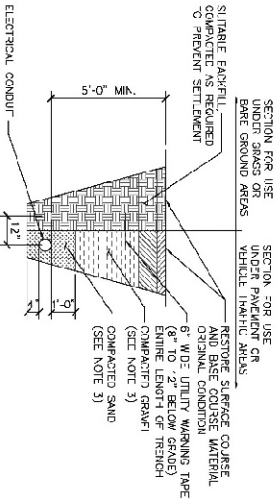


SCALE: N.T.S.

1 H/F FRAME DETAIL

SCALE: N.T.S.

3



- NOTES:
- CONTRACTOR TO VERIFY LOCAL UTILITY REQUIREMENTS FOR DEPTH, SIZE & SEPARATION OF CONDUITS PRIOR TO INSTALLATION. NOTIFY CONSTRUCTION MANAGERS IMMEDIATELY OF ANY DISCREPANCIES.
  - CONTRACTOR TO CALL 811, 48 HRS PRIOR TO EXCAVATING FOR UNDERGROUND UTILITY LOCATIONS. LOCATION SURROUNDINGS EXCAVATED AREA MUST BE PERMANENTLY LOCATED FOR NON-P-BL/C UTILITIES.
  - ALL UTILITY PIPES, WIREBUSH SHALL BE INSTALLED IN HORIZONTAL LAYERS NOT EXCEEDING A LOOSE DEPTH OF 9 INCHES AND SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY PER THE MODIFIED PROCTOR TEST, ASTM D1557.

SCALE: N.T.S.

2 UTILITY TRENCH DETAIL

SCALE: N.T.S.

4

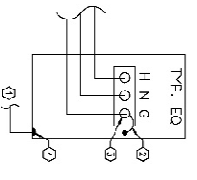
NOT USED

PANEL: "A"		EQUIPMENT GROUND			SURFACE	
VOL-TAGE	120/240V 1P 3W 30A	100AEC			VOLTA-GE	30A
SKT#	DESCRIPTION	BRK/P	VA	VA	BRK/P	DESCRIPTION
1	SPARE	20/1	1650	0	20/1	SPARE
3	SPARE	20/1	-	-	20/1	SPARE
5	SPARE	20/1	-	-	20/1	SPARE
7	SPARE	20/1	-	-	20/1	SPARE
9	SPARE	20/1	-	-	20/1	SPARE
11	SPARE	20/1	-	-	20/1	SPARE
TOTAL VOLT-AMPS			1650	0		
TOTAL VOLT-AMPS PER PHASE			1050	0		
TOTAL TER PHASE:			1650	0		0
PLUS 50% PER NEG:			413	0		0
TOTAL VA CAPACITY:			2063	0		0
TOTAL AMPACITY:			17.2	0		0

**PANEL P SCHEDULE**

LOAD ANALYSIS	QTY	VA/ST OR VA/UNIT	TOTAL VA	NEC DEMAND	TOTAL IEC VA	AMPERES/PHASE
NEW LEAD:						
RADIO	1	1650	1650	283	2033	17.2
TOTAL NEW LOAD:			1650		2033	17.2

**LOAD ANALYSIS**

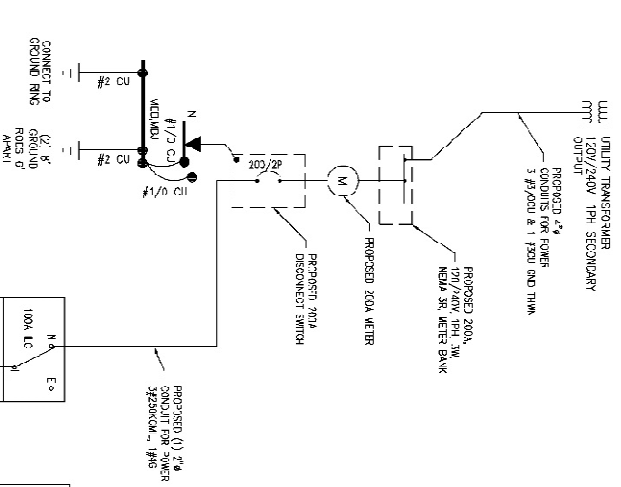


**EQUIPMENT GROUNDING DETAIL**

NOTE: THIS DETAIL PERTAINS TO ALL METALLIC EQUIPMENT AND TO ALL METALLIC ELECTRICAL PANELS AND TO ALL METALLIC ELECTRICAL GROUNDING REFERRED TO ONLY.

NEC CODES:

- ① BOND ENGINEERING TO GROUND RING OF ELECTRICAL PANELS.
- ② BONDING JUMPER TO ENCLOSURE SHALL NOT BE PROVIDED.
- ③ ELECTRICAL SYSTEM GROUND SHALL BE ESTABLISHED AND NOT BE BOND TO ENCLOSURE.
- ④ EQUIPMENT/ENCLOSURE BOND.



- NOTES:**
1. CONTRACTOR IS TO FIELD VERIFY ALL TESTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DRAWING AND REPORT THE RESULTS OF ANY DISCREPANCIES.
  2. ALL NEW CONDUITING WIRING TO BE INSTALLED SHALL BE COPPER ALL WIRING SHALL BE TYPE THHN-2, THW-2, RHW-2, OR XHHW-2 WIRE UNLESS NOTED OTHERWISE.
  3. ALL BONDING AND BONDING TO BE PER THE SPECIFIED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC).

**ONE-LINE DIAGRAM**

**ELECTRICAL RISER**

PLANS PREPARED BY:

**ODR/COM LLC**  
 2603 S. SHORE BLVD  
 SUITE 300  
 LEAGUE CITY, TX 77573  
 (409) 531-1175  
 www.odrcom.com

**ODR/COM**

SITE NUMBER:  
**1A-ANTHON-50-4**

SITE ADDRESS:  
**3846 245TH ST,  
 ANTHON, IA 51004  
 WOODBURY COUNTY**

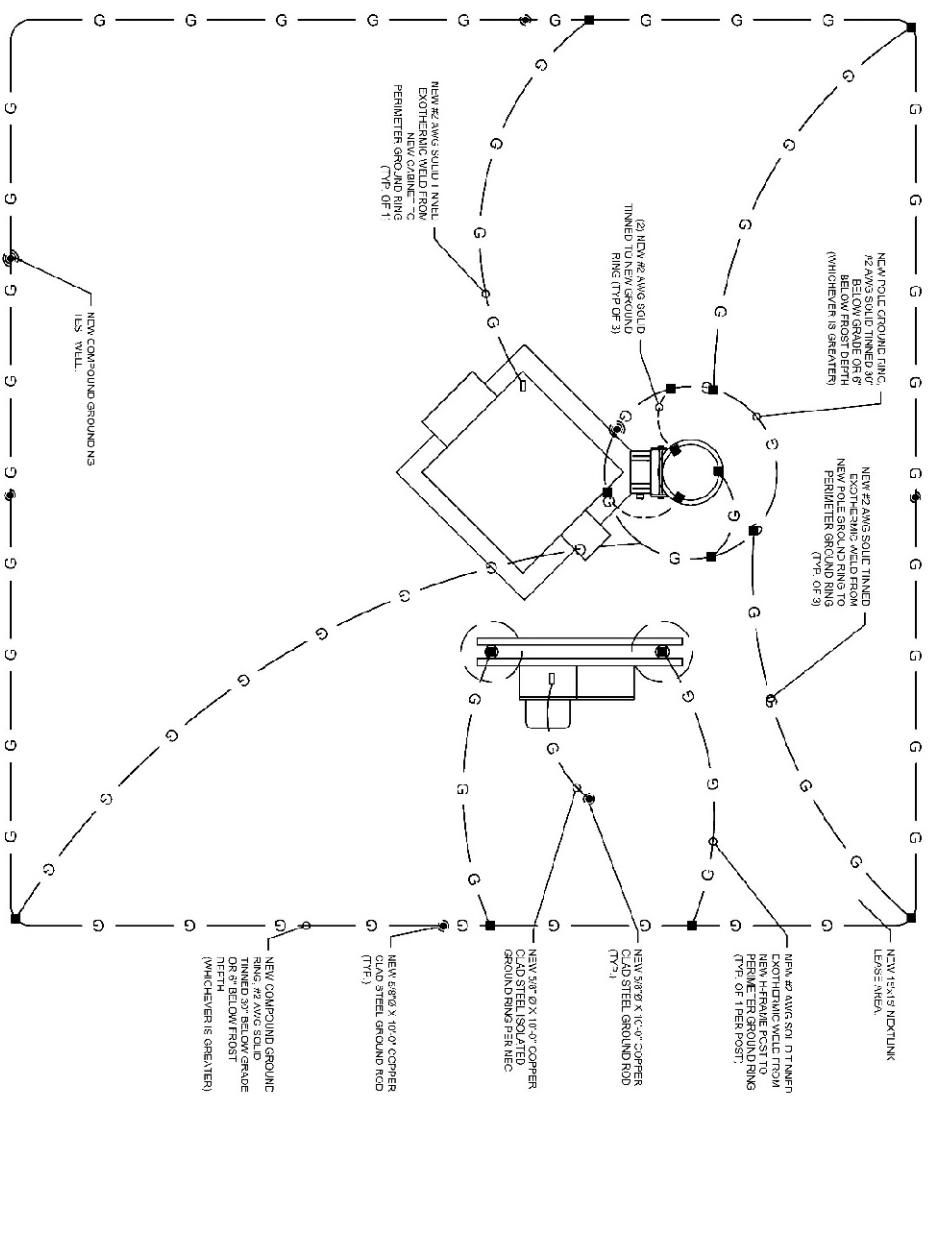
REVISION HISTORY:

REV	DATE	REVISION	BY
1	07/01/23	FINAL	JB
2	07/01/23	FINAL	JB
1	06/29/23	FINAL	JB

**JACOB COPALSKI**  
 22843  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF IOWA

SHEET TITLE:  
**PANEL SCHEDULE & ONE-LINE**

SHEET NUMBER:  
**E-3**



TYPICAL GROUNDING DIAGRAM

- LEGEND**
- 10" x 5/8" COPPER CLAD GROUND ROD
  - TEST WELL & GROUND ROD
  - NEW #2 AWG TINNED SOLID BARE (OR EXISTING RINGS SHALL BE 30" BELOW GRADE MIN.)
  - EXOTHERMIC WELD
  - MECHANICAL CONNECTION
  - GROUND BAR
- GROUNDING NOTES**
1. GROUNDING SHALL VERIFY AND LOCATE END OF THE MATERIAL EXTERIOR CORNER.
  2. ALL GROUNDING DEVICES SHALL BE FULL APPROVED OR LISTED FOR THEIR METHOD.
  3. ALL WELDS SHALL BE 1/4" MIN./1/8" MAX. COPPER WELDS KEPT DRY/NEAT.
  4. GROUNDING CONNECTIONS TO EXISTING RINGS, GROUNDING BARS AND ANCHORS SHALL BE EXOTHERMIC WELDS OR MECHANICAL CONNECTIONS. EXOTHERMIC WELDS SHALL BE 1/4" MIN. WELDS WITH 1/8" MIN. OVERLAP. EXOTHERMIC WELDS SHALL BE KEPT DRY/NEAT.
  5. GROUNDING CONNECTIONS TO EXISTING BARS AND ANCHORS SHALL BE MECHANICAL CONNECTIONS. MECHANICAL CONNECTIONS SHALL BE KEPT DRY/NEAT.
  6. GROUNDING CONNECTIONS TO EXISTING BARS AND ANCHORS SHALL BE KEPT DRY/NEAT.
  7. BONDING CONNECTIONS TO THE SYSTEM AND STRONGEST PATH POSSIBLE.
  8. INSTALL 4" AND 6" EGG-ROUNDED STRANDED WIRE FOR AIRING CONDUIT. WIRE AND 4" BOND BARS SHALL BE 1/4" MIN. OVERLAP. BONDING SHALL BE KEPT DRY/NEAT.
  9. GROUNDING SHALL BE KEPT DRY/NEAT.
  10. THE GROUNDING SYSTEM SHALL BE KEPT DRY/NEAT. THE GROUNDING SYSTEM SHALL BE KEPT DRY/NEAT. THE GROUNDING SYSTEM SHALL BE KEPT DRY/NEAT.
  11. IF RING IS BONDING TO GROUND RINGS SHALL BE FLASHER AT AN ANGLE MADE NOT TO EXCEED 15°.
  12. BONDING SHALL BE MADE IN ACCORDANCE WITH BIDDING PROVISIONS.
  13. CONNECTIONS TO GROUNDING BARS AND CONNECTIONS TO EXISTING GROUNDING SHALL BE KEPT DRY/NEAT.
  14. ALL GROUNDING DEVICES SHALL BE FULL APPROVED OR LISTED FOR THEIR METHOD.
  15. FROM TO INSTALLED LAST ON EXISTING WORK. LAST 1/4" SHALL BE KEPT DRY/NEAT.
  16. GROUNDING SHALL BE KEPT DRY/NEAT.
  17. WHERE LINES CROSS GROUND WELDS ARE RATED FROM ANY CONNECTION POINT SHALL BE KEPT DRY/NEAT.
  18. ALL GROUNDING DEVICES SHALL BE FULL APPROVED OR LISTED FOR THEIR METHOD.

- TYPICAL CADWELD CONNECTIONS**
- TYP A
  - TYP B
  - TYP C
  - TYP D
  - TYP E
  - TYP F
  - TYP G
  - TYP H
  - TYP I
  - TYP J
  - TYP K
  - TYP L
  - TYP M
  - TYP N
  - TYP O
  - TYP P
  - TYP Q
  - TYP R
  - TYP S
  - TYP T
  - TYP U
  - TYP V
  - TYP W
  - TYP X
  - TYP Y
  - TYP Z

SCALE: N.T.S. 1

SHEET NUMBER: G-1

FOUND INFORMATION FOR:

**NEXTLINK**  
95 PARKER OAKS LN  
HUDSON OAKS, TEXAS 76087

ODDISCOM, L.L.C.  
2807 S. SHORE BLVD.  
SUITE 100  
LEAGUE CITY, TX 77573  
(409) 533-1176  
WWW.ODDISCOM.COM

SITE NUMBER: IA-ANTHON-SO-4

SITE ADDRESS: 3846 245TH ST., ANTHON, IA 51004, WOODBURY COUNTY

REVISION HISTORY

REV	DATE	DESCRIPTION	BY
A	07/20/23	FINAL	DL
1	08/20/23	FINAL	DL

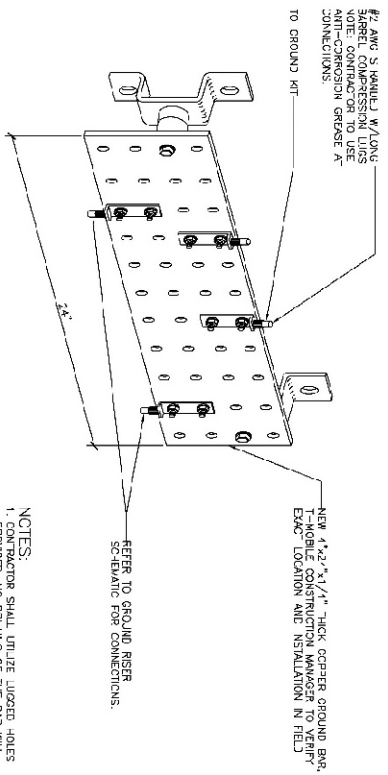
**JACOB COHEN**  
LICENSED PROFESSIONAL ENGINEER  
NO. 22843  
STATE OF IOWA

06/29/2023

SHEET TITLE: GROUNDING PLAN

SHEET NUMBER: G-1

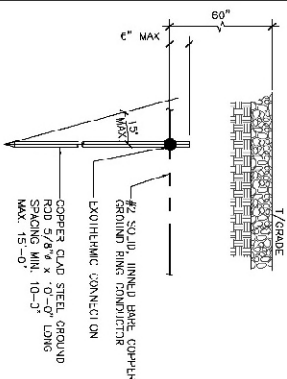




- NOTES:
1. CONTRACTOR SHALL UTILIZE LISTED HOLES FOR PENETRATION TO DRILLING OF THE BAR WILL BE PERMITTED.
  2. ALL HARDWARE SHALL BE 18-8 STAINLESS STEEL UNLESS OTHERWISE NOTED. ALL SURFACES WITH COPPER-SHIELD REQUIRE MATTING.
  3. FOR GROUND BOND TO STEEL CANY, INSERT A 200000 TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOR-SHIELD.

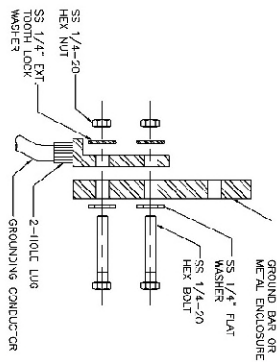
TYPICAL GROUNDING DETAIL

SCALE: N.T.S. 1



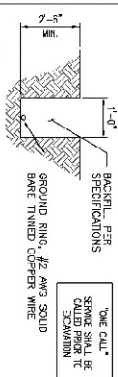
GROUND ROD DETAIL

SCALE: N.T.S. 3



LUG BOLT CONNECTION

SCALE: N.T.S. 4



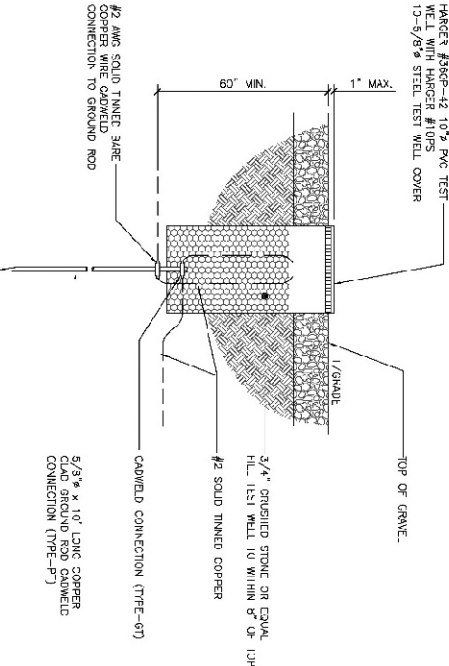
- NOTES:
1. ALL ESD/EMC RING CONNECTIONS SHALL BE BELOW ROOF LINE.

NOT USED

SCALE: N.T.S. 5

GROUND RING TRENCH DETAIL

SCALE: N.T.S. 6



TEST WELL DETAIL

SCALE: N.T.S. 2

NOT USED

SCALE: N.T.S. 7

NOT USED

SCALE: N.T.S. 8

95 PARKER OAKS LN
   
 HUDSON OAKS, TEXAS 76087

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 (409) 533-1370
   
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SITE NUMBER:
   
**IA-ANTHON-SO-4**
  
 SITE ADDRESS:
   
**3846 245TH ST.,**
  
**ANTHON, IA 51004**
  
**WOODBURY COUNTY**

REV	DATE	DESCRIPTION	BY
A	07/20/23	PRELIMINARY	DL
0	07/20/23	FINAL	DL
1	08/29/23	FINAL	DL

JACOB OAKES
   
 LICENSED PROFESSIONAL ENGINEER
   
 NO. 28843
   
 STATE OF IOWA

SHEET NUMBER:
   
**G-2**

GENERAL NOTES

1. CONCRETE BACKFILL IS CALCULATED TO 2 FT (0.6M) BELOW GRADE (NO COVER INCL. UDCED). TOP 2 FT (0.6M) TO BE CLASS 5 SOIL COMPACTED TO 95% DENSITY OF SURROUNDING UNDISTURBED SOIL UNLESS OTHERWISE SPECIFIED IN STANDARD STRUCTURAL DESIGN.
2. MINIMUM CONCRETE BACKFILL REQUIRED 5000 LB/IN<sup>3</sup> (20 MPa) WORKING WEIGHT.
3. FOUNDATION DESIGN BASED ON PRESUMPTIVE SOIL PARAMETERS AS PER ANNEX F IN ACCORDANCE WITH ANS/174-222-41 "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS AND SMALL WIND TURBINE SUPPORT STRUCTURE AND IBC 2018, CONCRETE BRIDGE CODES AND SMALL FACTORER INSTALLED CONCRETE ENCASED ELECTRODE AND CONNECTOR FOR LIGHTNING PROTECTION. GROUND CONNECTION IS MADE WHEN CONCRETE BASE IS INSTALLED AND FOOTING IS POURED. NO ADDITIONAL STEPS REQUIRED.
4. UNDISTURBED SOIL. SUPPLEMENTAL LIGHTNING PROTECTION IS REQUIRED FOR ALL STEEL RODS AND CONCRETE.
5. PRECAST BASE MUST BE PULLED TOGETHER UNTIL EIGHT OVERLAPS MUST BE PULLED TOGETHER UNTIL CRYSTALS ARE INSTALLED TO MINIMUM 1'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WHIRL/NEAR NAVY SLOPES STEEPER THAN 3H : 1V. INSTALLATION PER MUSCO LIGHTING.
6. PRECAST BASE MUST BE PULLED TOGETHER UNTIL CRYSTALS ARE INSTALLED TO MINIMUM 1'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WHIRL/NEAR NAVY SLOPES STEEPER THAN 3H : 1V. INSTALLATION PER MUSCO LIGHTING.
7. STEEL POLE SHOULD OVERLAP CONCRETE BASE AND BE SEALED TIGHT WITH 1 1/2 TON COME-ALONGS (CONTRACTOR PROVIDED).
8. ALIGN WELDMARKS ON STEEL SECTIONS BEFORE ASSEMBLING.
9. SECTION OVERLAP MUST BE PULLED TOGETHER UNTIL EIGHT OVERLAPS MUST BE PULLED TOGETHER UNTIL CRYSTALS ARE INSTALLED TO MINIMUM 1'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WHIRL/NEAR NAVY SLOPES STEEPER THAN 3H : 1V. INSTALLATION PER MUSCO LIGHTING.
10. ALL WELDS MUST BE STRENGTHENED TO MATCH THE 100% OF THE DESIGN SPECIFICATION.

TOWER STRUCTURE DATA

TOWER MANUFACTURER: MUSCO LIGHTING  
 TOWER HEIGHT = 120'  
 FOUNDATION DESIGN LOADS:  
 SHEAR = 4 K  
 MOMENT = 250 K-FT  
 CONCRETE BACKFILL = 4.4 CUBIC YARD

REFER TO THE TOWER ANALYSIS REPORT FOR DETAILED CALCULATIONS, PREPARED BY TECNIONIC, WORK # 11247-NE-ALBION, DATED 06/07/2023

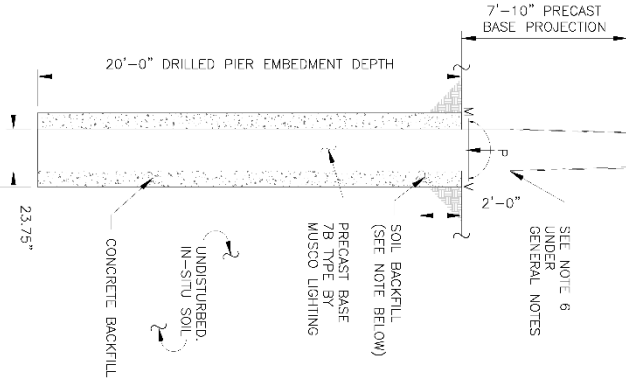
DESIGN NOTES

1. DESIGN CRITERIA:  
 WIND: 2018 INTERNATIONAL BUILDING CODE AND ASCE 7-16.  
 BASIC WIND SPEED, V: 112 MPH (ULTIMATE 5-SECOND GUST WIND SPEED)  
 EXPOSURE CATEGORY: C  
 RISK CATEGORY: II
2. GEOTECHNICAL PARAMETERS:  
 PRESUMPTIVE SOIL PARAMETERS

SOIL TYPE	N (BLOWS/FT)	φ (DEG.)	γ (LB/FT <sup>3</sup> )	c (PSF)	NET BEARING CAPACITY		S <sub>v</sub> (PSF)	k (TPI)	ε <sub>50</sub>
					SHALLOW FOUNDATIONS	DEEP FOUNDATIONS			
CLAY	8 [26]	0	110 [48]	1000 [48]	5000 [240]	9000 [430]	500 [24]	[41,000]	0.01
SAND	10 [33]	30	110 [17]	0	4000 [199]	9000 [430]	500 [24]	[9,500]	N/A

WHERE:  
 N = STANDARD PENETRATION VALUE  
 φ = ANGLE OF INTERNAL FRICTION  
 γ = EFFECTIVE UNIT WEIGHT OF SOIL  
 c = COHESION  
 k = LATERAL MODULUS OF SOIL REACTION  
 ε<sub>50</sub> = STRAIN AT 50% OF ULTIMATE COMPRESSION

3. FOUNDATION DESIGN IS BASED ON THE PRESUMPTIVE SOIL PARAMETERS PER ABOVE. WE DO NOT GUARANTEE THE ACCURACY OF THESE PARAMETERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE PARAMETERS THROUGH GEOTECHNICAL INVESTIGATION. IT IS RECOMMENDED TO EVALUATE THE FOUNDATION FOR SITE SPECIFIC SOIL PARAMETERS.
4. TO BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.
5. FOUNDATION DESIGN PARAMETERS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS AND/OR SPECIAL CONSTRUCTION REQUIREMENTS SHALL BE IDENTIFIED IN THE FOUNDATION ANALYSIS REPORT. ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDING TO REVIEWS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A REGISTERED ENGINEER.
6. ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND SOIL CONDITION. TEMPORARY CASINGS OR DRILLERS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT. CONCRETE BACKFILL MUST BE PLACED WITH A TRENCH WHEN SLURRY OR WATER IS PRESENT WITHIN THE EXCAVATION OR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.
7. CONTRACTOR OR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.



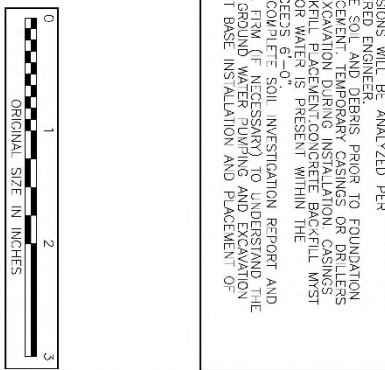
7'-10" PRECAST BASE PROJECTION  
 20'-0" DRILLED PIER EMBEDMENT DEPTH  
 UNDISTURBED, IN-SITU SOIL  
 CONCRETE BACKFILL  
 42" DRILLED PIER DIAMETER  
 23.75"  
 PRECAST BASE 7B TYPE BY MUSCO LIGHTING  
 SOIL BACKFILL (SEE NOTE BELOW)  
 SOLE NOTE 6 UNDER GENERAL NOTES  
 STEEL POLE 120A BY MUSCO LIGHTING

SOIL BACKFILL NOTE:  
 THE TOP TWO FEET OF ANNUUS SHALL BE BACKFILLED WITH SOIL WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D999).

POLE ELEVATION

0-1

SCALE: 3/16" = 1'-0"



C-1

LANDLORD: \_\_\_\_\_  
 LEASING: \_\_\_\_\_  
 RE: \_\_\_\_\_  
 CONSTRUCTION: \_\_\_\_\_

WORK ORDER NUMBER: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_

TECNIONIC CORPORATION  
 100 1<sup>st</sup> AVE WEST  
 OSKALOUSA, IA 52577  
 (563) 238-6520

LOT: 41.6396480  
 LONG: -97.9327110  
 BOONE COUNTY, NE



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Structural Analysis Report

Date: June 07, 2023

**Tower Manufacturer:** Musco – Wireless Structures  
**Tower Owner:** Nextlink  
**Tower Type:** 120A Type  
**Foundation Type:** 7B Precast Base  
**Location:** Latitude 41° 41' 54.528", Longitude -97° 55' 55.596"  
 Boone County, Nebraska  
 120 ft Monopole Tower  
**Tectonic Project Number:** 11247.NE-ALBION

Tectonic Engineering & Surveying Consultants P.C. is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation to be:

Structure: **Sufficient**  
 Foundation: **Sufficient**

This analysis has been performed in accordance with the 2018 International Building Code and the ANSI/TIA-222-H-1-2019 based upon an ultimate 3-second gust wind speed of 112 mph. Exposure Category C with a maximum topographic factor, Kzt, of 1.0 and Risk Category II were used in this analysis.

All equipment proposed in this report shall be installed in accordance with this analysis for the determined available structural capacity to be effective.

We at Tectonic appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Structural analysis prepared by: Mahesh Chillarge / Vinod Ramesh

Respectfully submitted by:  
 Tectonic Engineering & Surveying Consultants P.C.



Manojkumar Patel, P.E.  
 Managing Director

Project Contact Info

1279 Route 500 | Newburgh, NY 12550  
 845.567.8598 fax | 845.567.8539 fax  
 tectonicengineering.com  
 Equal Opportunity Employer

120 Ft Monopole Tower Structural Analysis  
 Project Number 11247.NE-ALBION

June 07, 2023  
 Albion, NE  
 Page 3

1) INTRODUCTION

This tower is a 120 ft Monopole, Type 120A designed and manufactured by Musco – Wireless Structures. The tower is proposed to be installed to support Nextlink equipments at the location referenced above.

2) ANALYSIS CRITERIA

**Building Code:** 2018 IBC  
**TIA-222 Revision:** TIA-222-H  
**Risk Category:** II  
**Wind Speed:** 112 mph  
**Exposure Category:** C  
**Topographic Factor:** 1.0  
**Ice Thickness:** 1.0 in  
**Wind Speed with Ice:** 50 mph  
**Seismic Ss:** 0.122  
**Seismic S1:** 0.042  
**Service Wind Speed:** 60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Carrier Designation	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
118.0	Nextlink	3	Alpha Wireless	AW3802-T2-H	3	7/8	-
		6	Cambium Networks	ePMP 3000			
		3	Musco	2.375" OD x 4' Mount Pipes			
110.0		3	Radiowaves	HP2-11	3	7/8	-
		3	Musco	2.375" OD x 4' Mount Pipes			
5.0		1	-	Equipment Cabinet	-	-	-

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Dated
7B CONCRETE BASE DETAILS – REV R	MUSCO	12/30/16
ICC-ES EVALUATION REPORT (ESR-3765)	ICC EVALUATION SERVICE	May 2022
TOWER ELEVATION DRAWING	MUSCO	-

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower structure shall be fabricated in accordance with the manufacturer's specifications.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1.
- 3) The material grade for the pole shaft is assumed to be A572 Gr. 55 steel.

tnxTower Report - version 8.1.1.0

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Antenna and Cable Information

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided  
 3.1) Analysis Method  
 3.2) Assumptions

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)  
 Table 4 – Tower Component Stresses vs. Capacity  
 Table 5 – Tower Service Load Deflections  
 4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Additional Calculations

tnxTower Report - version 8.1.1.0

120 Ft Monopole Tower Structural Analysis  
 Project Number 11247.NE-ALBION

June 07, 2023  
 Albion, NE  
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- 4) Precast foundation has been evaluated based on presumptive soil parameters per Annex F in accordance with the ANSI/TIA-222-H-1-2019 and per 2018 IBC, section 1806 for soil material class 5.

This analysis is solely for the supporting tower structure, and it may be affected if any assumptions are not valid or have been made in error. Tectonic should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SPP Allow (K)	% Capacity	Pass / Fail	
L1	121.107 - 86.393	Pole	TP13.1x8.5/4x0.179	1	-1.193	336.267	29.3	Pass	
L2	86.393 - 66.93	Pole	TP15.75x12.576x0.179	2	-2.026	380.776	44.9	Pass	
L3	66.93 - 28.997	Pole	TP20.7x14.974x0.239	3	-4.354	672.132	45.5	Pass	
L4	28.997 - 2	Pole	TP24x19.709x0.313	4	-7.519	1070.900	39.7	Pass	
Summary									
Pole (L3)								45.5	Pass
Rating =								45.5	Pass

Table 4 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation (Structure)	0	50.0	Pass
1	Base Foundation (Soil Interaction)	0	16.2	Pass

Structure Rating (max from all components) = **50.0%**

Note:  
 1) See additional documentation in "Appendix B – Additional Calculations" for calculations supporting the % capacity consumed.

Table 5 - Tower Service Load Deflections

Component	At Top	Allowable	Percentage Ratio	Pass / Fail
Horizontal Deflection (inch)	22.195	36.0 inch	61.16%	Pass
Twist & Sway (deg)	1.657	4.000 deg	41.42%	Pass

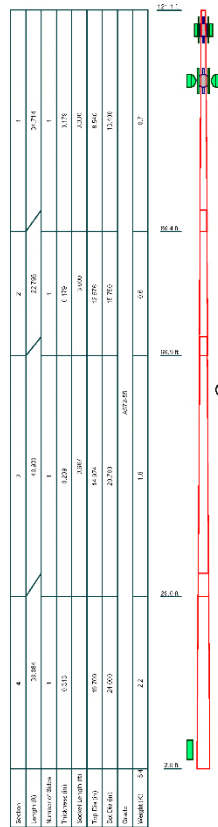
4.1) Recommendations

The proposed tower and foundation have sufficient capacity to support the load configurations as shown in Table 1. The tower shall be installed in accordance with the approved construction drawings and manufacturer recommendations.

We recommend a site-specific geotechnical investigation be performed and verify the presumptive soil parameters noted in this report and foundation design drawings prior to construction.

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APPENDIX A  
TNXTOWER OUTPUT



**DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION
WINDING TOWER	16	2 x 2 STD Ppc	16
WINDING TOWER	16	2 x 4 STD Ppc	16
WINDING TOWER	16	2 x 4 STD Ppc	16
2" SPRING ROD	16	2" SPRING ROD	16
2" SPRING ROD	16	2" SPRING ROD	16
2" SPRING ROD	16	2" SPRING ROD	16
2" SPRING ROD	16	2" SPRING ROD	16
2" SPRING ROD	16	2" SPRING ROD	16
2" SPRING ROD	16	2" SPRING ROD	16
2" SPRING ROD	16	2" SPRING ROD	16

**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50ksi	70ksi			

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**Tectonic** 1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6956  
FAX: (845) 567-8733

**120A Pole - Nextlink - NE-ALBION-EA-1**  
Project: 11247.NE-ALBION  
Drawn by: Malesh Chhabra  
Date: 06/06/23  
Scale: N 1:10  
Drawn by: [Signature]

120 Ft Monopole Tower Structural Analysis  
Project Number 11247.NE-ALBION

June 07, 2023  
Albion, NE  
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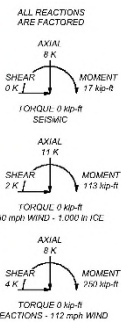


**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	70 ksi			

**TOWER DESIGN NOTES**

- Tower is located in Boone County, Nebraska.
- Tower designed for Exposure C to the TIA-222-H Standard.
- Tower designed for a 112 mph basic wind in accordance with the TIA-222-H Standard.
- Tower is also designed for a 50 mph basic wind with 1.000 in ice. Ice is considered to increase in thickness with height.
- Deflections are based upon a 60 mph wind.
- Tower Risk Category II.
- Topographic Category 1 with Crest Height of 0.000 ft.
- Musco - Wireless Structures - 120A Type Pole.
- Seismic calculations are in accordance with TIA-222-H-1.
- TOWER RATING: 45.0%



**Tower Input Data**

The tower is a monopole.  
This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- Tower is located in Boone County, Nebraska.
- Tower base elevation above sea level: 1844.000 ft.
- Basic wind speed of 112 mph.
- Risk Category II
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- Musco - Wireless Structures - 120A Type Pole.
- Seismic calculations are in accordance with TIA-222-H-1.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

**Options**

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontal</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>Use Code Safety Factors - Guys</li> <li>Exclude Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>Include Bolts in Member Capacity</li> <li>Log Bolts Are At Top Of Section</li> <li>Secondary Horizontal Braces Lag</li> <li>Use Diamond Inner Bracing (4 Sided)</li> <li>SR Members Have Cut Ends</li> <li>SR Members Are Concentric</li> </ul> | <ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Logs Pinned</li> <li>Assume Rigid Index Plate</li> <li>Use Clear Spans For Wind Area</li> <li>Use Clear Spans For KLT</li> <li>Retension Guys To Initial Tension</li> <li>By-pass Mast Stability Checks</li> <li>Use Azimuth Dish Coefficients</li> <li>Project Wind Area of Appurt.</li> <li>Autoclave Torque Arm Areas</li> <li>Add B/C 60+W Combination</li> <li>Spot Capacity Reports By Component</li> <li>Triangular Diamond Inner Bracing</li> <li>Treat Feed Line Bundles As Cylinder</li> <li>Ignore KLTry For 60 Deg. Angle Logs</li> </ul> | <ul style="list-style-type: none"> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>SR Log Bolts Resist Compression</li> <li>All Leg Panels Have Same Allowable</li> <li>Offset GHT At Foundation</li> <li>Consider Feed Line Torque</li> <li>Include Angle Block Shear Check</li> <li>Use TIA-222-H Bracing Resist.</li> <li>Exemption</li> <li>Use TIA-222-H Tension Splice Exemption</li> <li>Poles</li> <li>Include Shear-Tension Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> <li>Pole Without Linear Attachments</li> <li>Pole With Shroud Or No Appurtenances</li> <li>Outside and Inside Corner Radii Are Known</li> </ul> |
|--|--|---|

**Tapered Pole Section Geometry**

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bond Radius	Pole Grade
L1	121.107-86.393	34.714	3.300	Round	8.540	18.160	0.178		A572-50 (5S ksi)
L2	86.393-66.930	22.793	3.000	Round	12.576	15.750	0.179		A572-50

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**Tectonic** 1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6956  
FAX: (845) 567-8733

**120A Pole - Nextlink - NE-ALBION-EA-1**  
Project: 11247.NE-ALBION  
Drawn by: Malesh Chhabra  
Date: 06/06/23  
Scale: N 1:10  
Drawn by: [Signature]



Table with columns: Section, Elevation, Section Length, Splice Length, Number of Sites, Top Diameter, Bottom Diameter, Wall Thickness, Bend Radius, Pole Grade. Rows include L3 and L4.

Tapered Pole Properties

Table showing tapered pole properties with columns: Section, Top Dia, Area, I, C, I/C, J, I/Q, wt. Rows include L1, L2, L3, L4.

Table with columns: Tower Elevation, Gusset Area, Gusset Thickness, Gusset Grade, Adjust. Factor, Adjust. Factor A, Weight Mult, Double Angle Spacing, Double Angle Spacing, Double Angle Spacing. Rows include L1-L4.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Table with columns: Description, Sector, Exclude From Torque Calculation, Component Type, Placement, Total Number, Start/End Position, Width or Diameter, Porisma, Weight. Rows include Step Bolts and Safety Line 3/8.

Feed Line/Linear Appurtenances - Entered As Area

Table with columns: Description, Face or Leg, Exclude From Torque Calculation, Component Type, Placement, Total Number, C.A., Weight. Rows include LDF5-50A(7/8).

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Shielding Factor Ka

Table with columns: Tower Section, Feed Line Record No., Description, Feed Line Separation Elev., Kc No Ice, Kc Ice. Rows include L1-L4 and various safety lines.

User Defined Loads - Seismic

Table with columns: Description, Elevation, Offset From Centroid, Azimuth Angle, E, Ex, Ey, Ez. Rows include seismic tower sections and various seismic appurtenances.

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Table with columns: Description, Face or Leg, Allow or Shield, Exclude From Torque Calculation, Component Type, Placement, Total Number, C.A., Weight. Rows include tower sections.

Feed Line/Linear Appurtenances Section Areas

Table with columns: Tower Section, Tower Elevation, Face, Area, A1, A2, C.A., C.A., Weight. Rows include L1-L4 sections.

Feed Line/Linear Appurtenances Section Areas - With Ice

Table with columns: Tower Section, Tower Elevation, Face or Leg, Ice Thickness, A1, A2, C.A., C.A., Weight. Rows include L1-L4 sections with ice.

Feed Line Center of Pressure

Table with columns: Section, Elevation, CPx, CPy, CPz. Rows include L1-L4 sections.

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

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Table with columns: Description, Elevation, Offset From Centroid, Azimuth Angle, E, Ex, Ey, Ez. Rows include seismic appurtenances and safety lines.

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Description	Elevation	Offset From Centroid	Azimuth Angle	E <sub>x</sub>	E <sub>y</sub>	E <sub>z</sub>	E <sub>w</sub>
ft	ft	ft	°	K	K	K	K
to29.107ft)							
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (109.10/ft to 116)	114.554	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (99.10/ft to 109.107ft)	106.107	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (89.10/ft to 99.107ft)	96.107	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (79.10/ft to 89.107ft)	86.107	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (69.10/ft to 79.107ft)	76.107	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (59.10/ft to 69.107ft)	66.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (49.10/ft to 59.107ft)	56.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (39.10/ft to 49.107ft)	46.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (29.10/ft to 39.107ft)	36.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (19.10/ft to 29.107ft)	26.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (9.10/ft to 19.107ft)	16.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 116 (0ft to 9.10/ft)	6.554	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (99.10/ft to 108)	105.554	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (89.10/ft to 99.107ft)	96.107	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (79.10/ft to 89.107ft)	86.107	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (69.10/ft to 79.107ft)	76.107	0.000	0.000	0.000	0.000	0.000	0.001
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (59.10/ft to 69.107ft)	66.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (49.10/ft to 59.107ft)	56.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (39.10/ft to 49.107ft)	46.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (29.10/ft to 39.107ft)	36.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (19.10/ft to 29.107ft)	26.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (9.10/ft to 19.107ft)	16.107	0.000	0.000	0.000	0.000	0.000	0.000
Seismic (3) androw LDF5-50A(7/8") From 0 to 108 (0ft to 9.10/ft)	6.554	0.000	0.000	0.000	0.000	0.000	0.000

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Description	Elevation	Offset From Centroid	Azimuth Angle	E <sub>x</sub>	E <sub>y</sub>	E <sub>z</sub>	E <sub>w</sub>
ft	ft	ft	°	K	K	K	K
to9.107ft)							

**Discrete Tower Loads**

Description	Face or Leg	Offset Type	Offsets: Horiz Lateral Vert # ft	Azimuth Adjustment #	Placement #	C <sub>A</sub> Front #	C <sub>A</sub> Side #	Weight K
AW3802-T2-H	A	From Leg	1.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 3.056	2.625 2.837 1.364	1.034 1.195 0.044
AW3802-T2-H	B	From Leg	1.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 3.056	2.625 2.837 1.364	1.034 1.195 0.044
AW3802-T2-H	C	From Leg	1.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 3.056	2.625 2.837 1.364	1.034 1.195 0.044
(2) EPMP 3000	A	From Leg	1.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 3.056	0.357 0.437 0.266	0.139 0.159 0.008
(2) EPMP 3000	B	From Leg	1.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 3.056	0.357 0.437 0.266	0.139 0.159 0.008
(2) EPMP 3000	C	From Leg	1.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 3.056	0.357 0.437 0.266	0.139 0.159 0.008
4' x 2" STD Pipe	A	From Leg	0.500 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1.365	0.866 1.111 1.365	0.866 1.111 0.022
4' x 2" STD Pipe	B	From Leg	0.500 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1.365	0.866 1.111 1.365	0.866 1.111 0.022
4' x 2" STD Pipe	C	From Leg	0.500 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1.365	0.866 1.111 1.365	0.866 1.111 0.022
4' x 4" STD Pipe	A	From Leg	0.500 0.000 0.000	0.000	110.000	No Ice 1/2" Ice 1.840	1.202 1.577 1.840	1.202 1.577 0.056
4' x 4" STD Pipe	B	From Leg	0.500 0.000 0.000	0.000	110.000	No Ice 1/2" Ice 1.840	1.202 1.577 1.840	1.202 1.577 0.056
4' x 4" STD Pipe	C	From Leg	0.500 0.000 0.000	0.000	110.000	No Ice 1/2" Ice 1.840	1.202 1.577 1.840	1.202 1.577 0.056
Telzab's 36" Enclosure	C	From Leg	1.500 0.000 0.000	0.000	6.000	No Ice 1/2" Ice 7.073	6.420 6.743 6.761	6.120 6.437 6.226

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Description	Face or Leg	Offset Type	Offsets: Horiz Lateral Vert # ft	Azimuth Adjustment #	Placement #	C <sub>A</sub> Front #	C <sub>A</sub> Side #	Weight K
...								

**Dishes**

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horiz Lateral Vert # ft	Azimuth Adjustment #	3 dB Beam Width	Elevation #	Outside Diameter #	Aperture Area #	Weight K
HP2-11	A	Paraboloid w/Stroud (HP)	From Leg	1.000 0.000 0.000	Worst	110.000	2.042	No Ice 1/2" Ice 3.820	3.270 3.820 0.960	0.027 0.029 0.029
HP2-11	B	Paraboloid w/Stroud (HP)	From Leg	1.000 0.000 0.000	Worst	110.000	2.042	No Ice 1/2" Ice 3.820	3.270 3.500 0.950	0.027 0.029 0.050
HP2-11	C	Paraboloid w/Stroud (HP)	From Leg	1.000 0.000 0.000	Worst	110.000	2.042	No Ice 1/2" Ice 3.820	3.270 3.500 0.950	0.027 0.029 0.050
...										

**Load Combinations**

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 30 deg - No Ice
4	1.2 Dead+1.0 Wind 60 deg - No Ice
5	0.9 Dead+1.0 Wind 90 deg - No Ice
6	1.2 Dead+1.0 Wind 120 deg - No Ice
7	0.9 Dead+1.0 Wind 150 deg - No Ice
8	1.2 Dead+1.0 Wind 180 deg - No Ice
9	0.9 Dead+1.0 Wind 210 deg - No Ice
10	1.2 Dead+1.0 Wind 240 deg - No Ice
11	0.9 Dead+1.0 Wind 270 deg - No Ice
12	1.2 Dead+1.0 Wind 300 deg - No Ice
13	0.9 Dead+1.0 Wind 330 deg - No Ice
14	1.2 Dead+1.0 Wind 360 deg - No Ice
15	0.9 Dead+1.0 Wind 0 deg - No Ice
16	1.2 Dead+1.0 Wind 30 deg - No Ice
17	0.9 Dead+1.0 Wind 60 deg - No Ice
18	1.2 Dead+1.0 Wind 90 deg - No Ice
19	0.9 Dead+1.0 Wind 120 deg - No Ice
20	1.2 Dead+1.0 Wind 150 deg - No Ice
21	0.9 Dead+1.0 Wind 180 deg - No Ice
22	1.2 Dead+1.0 Wind 210 deg - No Ice
23	0.9 Dead+1.0 Wind 240 deg - No Ice
24	1.2 Dead+1.0 Wind 270 deg - No Ice
25	0.9 Dead+1.0 Wind 300 deg - No Ice
26	1.2 Dead+1.0 Wind 330 deg - No Ice
27	1.2 Dead+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
39	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
40	1.2 Dead+1.0 Wind 360 deg+1.0 Ice+1.0 Temp

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Comb. No.	Description	Max. Tension	Max. Compression	Max. My	Max. Vy	Max. Vx	Max. Torque
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp						
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp						
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp						
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp						
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp						
39	Dead+Wind 0 deg - Service						
40	Dead+Wind 30 deg - Service						
41	Dead+Wind 60 deg - Service						
42	Dead+Wind 90 deg - Service						
43	Dead+Wind 120 deg - Service						
44	Dead+Wind 150 deg - Service						
45	Dead+Wind 180 deg - Service						
46	Dead+Wind 210 deg - Service						
47	Dead+Wind 240 deg - Service						
48	Dead+Wind 270 deg - Service						
49	Dead+Wind 300 deg - Service						
50	Dead+Wind 330 deg - Service						
51	1.2 Dead+1.0 Ev+1.0 Eh 0 deg						
52	0.9 Dead+1.0 Ev+1.0 Eh 30 deg						
53	1.2 Dead+1.0 Ev+1.0 Eh 60 deg						
54	0.9 Dead+1.0 Ev+1.0 Eh 90 deg						
55	1.2 Dead+1.0 Ev+1.0 Eh 120 deg						
56	0.9 Dead+1.0 Ev+1.0 Eh 150 deg						
57	1.2 Dead+1.0 Ev+1.0 Eh 180 deg						
58	0.9 Dead+1.0 Ev+1.0 Eh 210 deg						
59	1.2 Dead+1.0 Ev+1.0 Eh 240 deg						
60	0.9 Dead+1.0 Ev+1.0 Eh 270 deg						
61	1.2 Dead+1.0 Ev+1.0 Eh 300 deg						
62	0.9 Dead+1.0 Ev+1.0 Eh 330 deg						
63	1.2 Dead+1.0 Ev+1.0 Eh 360 deg						
64	0.9 Dead+1.0 Ev+1.0 Eh 0 deg						
65	1.2 Dead+1.0 Ev+1.0 Eh 30 deg						
66	0.9 Dead+1.0 Ev+1.0 Eh 60 deg						
67	1.2 Dead+1.0 Ev+1.0 Eh 90 deg						
68	0.9 Dead+1.0 Ev+1.0 Eh 120 deg						
69	1.2 Dead+1.0 Ev+1.0 Eh 150 deg						
70	0.9 Dead+1.0 Ev+1.0 Eh 180 deg						
71	1.2 Dead+1.0 Ev+1.0 Eh 210 deg						
72	0.9 Dead+1.0 Ev+1.0 Eh 240 deg						
73	1.2 Dead+1.0 Ev+1.0 Eh 270 deg						
74	0.9 Dead+1.0 Ev+1.0 Eh 300 deg						

**Maximum Member Forces**

Section No.	Elevation #	Component Type	Condition	Gov. Load Comb.	Actual K	Major Axis Moment #ft-k	Minor Axis Moment #ft-k
L1	121.107 - 86.393	Pole	Max Tension	3	0.000	-0.000	-0.000
			Max. Compression	26	-2.427	0.000	-0.113
			Max. Mx	20	-1.193	30.955	-0.042
			Max. My	14	-1.193	0.000	-30.987
			Max. Vy	20	-1.547	30.955	-0.042
			Max. Vx	14	1.547	0.000	-30.987
			Max. Torque	20	0.000	0.000	-0.000
L2	86.393 - 66.93	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-3.193	0.001	-0.205
			Max. Mx	20	-		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L4	28.987 - 2	Pole	Max Vy	20	-2.782	154.266	-0.156
			Max Vx	14	2.782	0.001	-154.401
			Max Torque	12			0.000
			Max Tension	1	0.000	0.000	0.000
			Max Compression	26	-11.337	0.414	-0.768
			Max Mx	20	-7.519	249.480	-0.340
			Max My	14	-7.519	0.243	-249.564
			Max Vy	20	-3.532	249.480	-0.340
			Max Vx	14	3.532	0.243	-249.564
			Max Torque	24			0.406

**Maximum Reactions**

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal X K	Horizontal Z K
Pole	Max. Vert	33	11.337	0.001	-1.623
	Max. Hx	21	5.641	3.532	-0.003
	Max. Hy	3	5.641	-0.003	3.528
	Max. Mx	2	249.505	-0.003	3.528
	Max. My	8	-249.514	-3.532	0.003
	Max. Torzion	24	0.406	1.763	3.054
	Min. Vert	69	5.482	0.091	-0.157
	Min. Hx	9	5.641	-3.532	0.003
	Min. Hy	15	5.641	0.003	-3.528
	Min. Mx	14	-249.564	0.003	-3.528
Min. My	20	-249.480	3.532	-0.003	
Min. Torzion	12	-0.406	-1.763	-3.054	

**Tower Mast Reaction Summary**

Load Combination	Vertical K	Shear K	Shear K	Overturning Moment, Mx kip-ft	Overturning Moment, My kip-ft	Torque kip-ft
Dead Only	6.268	0.000	0.000	0.265	0.183	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	7.521	0.003	-3.528	-249.805	0.222	-0.351
0.9 Dead+1.0 Wind 0 deg - No Ice	5.641	0.003	-3.528	-245.921	0.164	-0.351
1.2 Dead+1.0 Wind 30 deg - No Ice	7.521	1.769	-3.057	-215.519	-124.400	-0.203
0.9 Dead+1.0 Wind 30 deg - No Ice	5.641	1.769	-3.057	-212.947	-122.924	-0.203
1.2 Dead+1.0 Wind 60 deg - No Ice	7.521	3.061	-1.767	-124.297	-215.627	-0.000
0.9 Dead+1.0 Wind 60 deg - No Ice	5.641	3.061	-1.767	-122.841	-213.071	-0.000
1.2 Dead+1.0 Wind 90 deg - No Ice	7.521	3.532	-0.003	0.320	-249.014	0.203
0.9 Dead+1.0 Wind 90 deg - No Ice	5.641	3.532	-0.003	0.226	-246.003	0.203
1.2 Dead+1.0 Wind 120 deg - No Ice	7.521	3.057	1.761	124.938	-215.616	0.351
0.9 Dead+1.0 Wind 120 deg - No Ice	5.641	3.057	1.761	123.319	-213.017	0.351
1.2 Dead+1.0 Wind 150 deg - No Ice	7.521	1.763	3.054	216.168	-124.381	0.406
0.9 Dead+1.0 Wind 150 deg - No Ice	5.641	1.763	3.054	213.426	-122.905	0.406
1.2 Dead+1.0 Wind 180 deg - No Ice	7.521	-0.003	3.528	249.564	0.243	0.351
0.9 Dead+1.0 Wind 180 deg - No Ice	5.641	-0.003	3.528	246.410	0.185	0.351

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Load Combination	Vertical K	Shear K	Shear K	Overturning Moment, Mx kip-ft	Overturning Moment, My kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 210 deg - No Ice	7.521	-1.769	3.057	-216.178	124.865	0.203
0.9 Dead+1.0 Wind 210 deg - No Ice	5.641	-1.769	3.057	-213.436	123.272	0.203
1.2 Dead+1.0 Wind 240 deg - No Ice	7.521	-3.061	1.767	-124.956	-216.092	0.000
0.9 Dead+1.0 Wind 240 deg - No Ice	5.641	-3.061	1.767	-123.337	-213.376	0.000
1.2 Dead+1.0 Wind 270 deg - No Ice	7.521	-3.532	0.003	0.340	-249.480	-0.203
0.9 Dead+1.0 Wind 270 deg - No Ice	5.641	-3.532	0.003	0.256	-246.352	-0.203
1.2 Dead+1.0 Wind 300 deg - No Ice	7.521	-3.057	-1.761	-124.279	-216.082	-0.351
0.9 Dead+1.0 Wind 300 deg - No Ice	5.641	-3.057	-1.761	-122.829	-213.366	-0.351
1.2 Dead+1.0 Wind 330 deg - No Ice	7.521	-1.763	-3.054	-215.509	124.848	-0.406
0.9 Dead+1.0 Wind 330 deg - No Ice	5.641	-1.763	-3.054	-212.936	123.255	-0.406
1.2 Dead+1.0 Ice+1.0 Temp	11.337	-0.000	0.000	0.768	0.471	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	11.337	0.001	-1.623	-110.939	0.473	-0.076
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	11.337	0.813	-1.406	-95.972	-58.389	-0.044
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	11.337	1.407	-0.812	-55.080	-96.282	-0.000
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	11.337	1.624	-0.001	0.781	-111.249	0.074
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	11.337	1.406	0.811	96.643	-96.281	0.044
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	11.337	0.811	1.405	97.537	-55.386	0.088
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	11.337	-0.001	1.623	112.905	0.478	0.076
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	11.337	-0.813	1.406	97.510	56.340	0.044
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	11.337	-1.407	0.812	56.617	97.231	0.000
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	11.337	-1.624	0.001	0.786	112.200	-0.044
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	11.337	-1.406	-0.811	-55.076	97.231	-0.076
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	11.337	-0.811	-1.405	-95.970	56.336	-0.088
Dead+Wind 0 deg - Service	6.268	0.001	-0.971	-70.696	0.191	-0.090
Dead+Wind 30 deg - Service	6.268	0.001	-0.812	-60.669	-51.984	-0.052
Dead+Wind 60 deg - Service	6.268	0.945	-0.486	-24.913	-60.752	-0.000
Dead+Wind 90 deg - Service	6.268	0.972	-0.001	0.271	-70.178	0.052
Dead+Wind 120 deg - Service	6.268	0.842	0.485	35.456	-60.749	0.090
Dead+Wind 150 deg - Service	6.268	0.485	0.841	61.214	-34.990	0.104
Dead+Wind 180 deg - Service	6.268	-0.001	0.971	70.643	0.197	0.090
Dead+Wind 210 deg - Service	6.268	-0.487	0.842	61.216	35.382	0.052
Dead+Wind 240 deg - Service	6.268	-0.842	0.486	35.460	61.140	0.000
Dead+Wind 270 deg - Service	6.268	-0.973	0.001	0.276	70.586	-0.052
Dead+Wind 300 deg - Service	6.268	-0.842	-0.486	-34.909	61.137	-0.090
Dead+Wind 330 deg - Service	6.268	-0.485	-0.841	-60.667	35.376	-0.104
1.2 Dead+1.0 Ev+1.0 Eh 0 deg	7.680	0.000	-0.182	-16.264	0.233	-0.000
0.9 Dead+1.0 Ev+1.0 Eh 0 deg	5.482	0.000	-0.181	-16.099	0.175	-0.000
1.2 Dead+1.0 Ev+1.0 Eh 30 deg	7.680	0.091	-0.157	-14.040	-8.064	-0.000

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Load Combination	Vertical PY K	Shear K	Shear K	Overturning Moment, Mx kip-ft	Overturning Moment, My kip-ft	Torque kip-ft
0.9 Dead+1.0 Ev+1.0 Eh 30 deg	5.482	0.001	-0.157	-13.909	-1.567	-0.000
1.2 Dead+1.0 Ev+1.0 Eh 60 deg	7.680	0.157	-0.091	-7.966	-14.138	-0.000
0.9 Dead+1.0 Ev+1.0 Eh 60 deg	5.482	0.157	-0.091	-7.927	-13.980	-0.000
1.2 Dead+1.0 Ev+1.0 Eh 90 deg	7.680	0.182	0.000	0.331	-16.361	0.000
0.9 Dead+1.0 Ev+1.0 Eh 90 deg	5.482	0.181	0.000	0.245	-16.169	0.000
1.2 Dead+1.0 Ev+1.0 Eh 120 deg	7.680	0.157	0.091	8.628	-14.138	0.000
0.9 Dead+1.0 Ev+1.0 Eh 120 deg	5.482	0.157	0.091	8.417	-13.980	0.000
1.2 Dead+1.0 Ev+1.0 Eh 150 deg	7.680	0.091	0.157	14.702	-8.064	0.000
0.9 Dead+1.0 Ev+1.0 Eh 150 deg	5.482	0.091	0.157	14.399	-7.967	0.000
1.2 Dead+1.0 Ev+1.0 Eh 180 deg	7.680	0.000	0.182	16.925	0.233	0.000
0.9 Dead+1.0 Ev+1.0 Eh 180 deg	5.482	0.000	0.181	16.589	0.175	0.000
1.2 Dead+1.0 Ev+1.0 Eh 210 deg	7.680	-0.091	0.157	14.702	8.530	0.000
0.9 Dead+1.0 Ev+1.0 Eh 210 deg	5.482	-0.091	0.157	14.399	8.347	0.000
1.2 Dead+1.0 Ev+1.0 Eh 240 deg	7.680	-0.157	0.091	8.628	14.604	0.000
0.9 Dead+1.0 Ev+1.0 Eh 240 deg	5.482	-0.157	0.091	8.417	14.329	0.000
1.2 Dead+1.0 Ev+1.0 Eh 270 deg	7.680	-0.182	0.000	0.331	16.827	-0.000
0.9 Dead+1.0 Ev+1.0 Eh 270 deg	5.482	-0.181	0.000	0.245	16.519	-0.000
1.2 Dead+1.0 Ev+1.0 Eh 300 deg	7.680	-0.157	-0.091	-7.966	14.604	-0.000
0.9 Dead+1.0 Ev+1.0 Eh 300 deg	5.482	-0.157	-0.091	-7.927	14.329	-0.000
1.2 Dead+1.0 Ev+1.0 Eh 330 deg	7.680	-0.091	-0.157	-14.040	8.530	-0.000
0.9 Dead+1.0 Ev+1.0 Eh 330 deg	5.482	-0.091	-0.157	-13.909	8.347	-0.000

**Solution Summary**

Load Comb.	PX K	PY K	PZ K	FX K	FY K	FZ K	Mx kip-ft	My kip-ft	Mz kip-ft	% Error
1	0.000	-6.268	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000%
2	0.003	-7.521	-3.528	-0.003	7.521	3.528	0.000	0.000	0.000	0.000%
3	0.003	-5.641	-3.528	0.003	5.641	3.528	0.000	0.000	0.000	0.000%
4	1.769	-7.521	-3.057	-1.769	7.521	3.057	0.000	0.000	0.000	0.000%
5	1.769	-5.641	-3.057	-1.769	5.641	3.057	0.000	0.000	0.000	0.000%
6	3.061	-7.521	-1.767	-3.061	7.521	1.767	0.000	0.000	0.000	0.000%
7	3.061	-5.641	-1.767	-3.061	5.641	1.767	0.000	0.000	0.000	0.000%
8	3.532	-7.521	-0.003	-3.532	7.521	0.003	0.000	0.000	0.000	0.000%
9	3.532	-5.641	-0.003	-3.532	5.641	0.003	0.000	0.000	0.000	0.000%
10	3.057	-7.521	1.761	-3.057	7.521	-1.761	0.000	0.000	0.000	0.000%
11	3.057	-5.641	1.761	-3.057	5.641	-1.761	0.000	0.000	0.000	0.000%
12	1.763	-7.521	3.054	-1.763	7.521	3.054	0.000	0.000	0.000	0.000%
13	1.763	-5.641	3.054	-1.763	5.641	3.054	0.000	0.000	0.000	0.000%
14	-0.003	-7.521	3.528	0.003	7.521	-3.528	0.000	0.000	0.000	0.000%
15	-0.003	-5.641	3.528	0.003	5.641	-3.528	0.000	0.000	0.000	0.000%
16	-1.769	-7.521	3.057	1.769	7.521	-3.057	0.000	0.000	0.000	0.000%
17	-1.769	-5.641	3.057	1.769	5.641	-3.057	0.000	0.000	0.000	0.000%
18	-3.061	-7.521	1.767	3.061	7.521	-1.767	0.000	0.000	0.000	0.000%

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120 Ft Monopole Tower Structural Analysis  
Project Number 11247-NE-ALBION

Table with 4 columns: #, Yes, Gov. Load Comb., Deflection in, Tilt, Twist, Radius of Curvature ft. Rows list tower sections and their characteristics.

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120 Ft Monopole Tower Structural Analysis  
Project Number 11247-NE-ALBION

Maximum Tower Deflections - Service Wind. Table with 7 columns: Section No., Elevation ft, Horiz. Deflection in, Gov. Load Comb., Tilt, Twist, Radius of Curvature ft.

Critical Deflections and Radius of Curvature - Service Wind

Table with 7 columns: Elevation ft, Appurtenance, Gov. Load Comb., Deflection in, Tilt, Twist, Radius of Curvature ft. Lists critical deflection points for various tower sections.

lnxTower Report - version 8.1.1.0

120 Ft Monopole Tower Structural Analysis  
Project Number 11247-NE-ALBION

Table with 8 columns: Elevation ft, Appurtenance, Gov. Load Comb., Deflection in, Tilt, Twist, Radius of Curvature ft. Lists tower sections and their characteristics.

Maximum Tower Deflections - Design Wind

Table with 7 columns: Section No., Elevation ft, Horiz. Deflection in, Gov. Load Comb., Tilt, Twist, Radius of Curvature ft.

Critical Deflections and Radius of Curvature - Design Wind

Table with 7 columns: Elevation ft, Appurtenance, Gov. Load Comb., Deflection in, Tilt, Twist, Radius of Curvature ft. Lists critical deflection points for various tower sections.

lnxTower Report - version 8.1.1.0

120 Ft Monopole Tower Structural Analysis  
Project Number 11247-NE-ALBION

Table with 8 columns: Elevation ft, Appurtenance, Gov. Load Comb., Deflection in, Tilt, Twist, Radius of Curvature ft. Lists tower sections and their characteristics.

Compression Checks

Table with 11 columns: Section No., Elevation ft, Size, L, Lc, K/r, A, Fc, Fc, K, Kc, RAIN Fc. Lists compression check data for various tower sections.

Pole Bending Design Data

Table with 8 columns: Section No., Elevation ft, Size, Mc, Mp, Ratio Mc/Mp, Mw, Mw, Ratio Mw/Mw. Lists pole bending design data for various tower sections.

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**Pole Shear Design Data**

Section No.	Elevation ft	Size	Actual V <sub>c</sub> K	φV <sub>c</sub> K	Ratio V <sub>c</sub> φV <sub>c</sub>	Actual T <sub>c</sub> kip-ft	φT <sub>c</sub> kip-ft	Ratio T <sub>c</sub> φT <sub>c</sub>
L1	121.107 - 86.393 (1)	TP13.1x8.51x0.179	1.547	108.513	0.015	0.000	102.637	0.000
L2	86.393 - 66.93 (2)	TP15.17x12.576x0.179	1.963	109.417	0.018	0.000	112.131	0.000
L3	66.93 - 28.997 (3)	TP20.17x14.974x0.239	2.782	196.604	0.014	0.000	265.233	0.000
L4	28.997 - 2 (4)	TP24x19.109x0.313	3.536	345.339	0.010	0.203	563.428	0.000

**Pole Interaction Design Data**

Section No.	Elevation ft	Ratio P <sub>c</sub> φP <sub>c</sub>	Ratio M <sub>c</sub> φM <sub>c</sub>	Ratio V <sub>c</sub> φV <sub>c</sub>	Ratio T <sub>c</sub> φT <sub>c</sub>	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	121.107 - 86.393 (1)	0.004	0.289	0.000	0.015	0.000	0.283	1.000
L2	86.393 - 66.93 (2)	0.005	0.443	0.000	0.018	0.000	0.449	1.000
L3	66.93 - 28.997 (3)	0.006	0.449	0.000	0.014	0.000	0.455	1.000
L4	28.997 - 2 (4)	0.007	0.390	0.000	0.010	0.000	0.397	1.000

**Section Capacity Table**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP <sub>nom</sub> K	% Capacity	Pass/Fail
L1	121.107 - 86.393	Pole	TP13.4x8.54x0.179	1	-1.193	336.267	29.3	Pass
L2	86.393 - 66.93	Pole	TP15.75x12.576x0.179	2	-2.026	280.776	44.9	Pass
L3	66.93 - 28.997	Pole	TP20.17x14.974x0.239	3	-4.354	672.132	45.5	Pass
L4	28.997 - 2	Pole	TP24x19.109x0.313	4	-7.519	1070.900	39.7	Pass
					Summary			
					Pole (L3)		45.5	Pass
					<b>RATING =</b>		<b>45.5</b>	<b>Pass</b>

**APPENDIX B  
ADDITIONAL CALCULATIONS**

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Job No. 11247.NE-ALBION  
Sheet No. 1 of 1  
Calculated By MC Date: 06/06/23  
Checked By VR Date: 06/05/23

**FOUNDATION CHECK FOR DEPTH OF EMBEDMENT FOR NONCONSTRAINED CONDITION  
(IBC 2018 - SECTION 1807)**

Precast Base Type: **7B**  
Diameter: **1.98** ft  
Base Diameter: **3.5** ft  
Design Embedment Depth: **2.0** ft

Ultimate Foundation Reactions  
Shear (V): **4** kips  
Moment (M): **250** kip-ft

Allowable Foundation Reactions  
Shear (V): **2.4** kips  
Moment (M): **150.0** kip-ft

**Embedment Depth Check**

Nonconstrained Depth of Embedment Calculations:

Applied Lateral Force, P = **2400** lbs  
Equivalent Moment Arm, h = **62.50** ft  
1/3 of embedment = **4.00** ft  
Allowable Lateral soil Bearing pressure, S<sub>u</sub> = **200** psf/ft (For Class 5 Soil)  
Note \*: Section 1806.3.4 has been considered.  
Allowable Lateral soil Bearing pressure @ 1/3 embedment, S<sub>u</sub> = **800** psf

Diameter of footing, b = **3.5** ft  
A = **2.0**

**Depth of embedment required, d = 12.74 ft <--- GOOD**

Design embedment depth is sufficient

Previous basis provided capacity is based on the ICC-ES Evaluation Report, ESR-3766, dated May 2022

Analysis Results	Units
Soil Lateral Capacity	kip/ft
Soil Cohesion	kip/ft
Soil Friction	kip/ft
Soil Safety Factor	-
Max. Moment (kip-ft)	272.77
Max. Shear (kip)	4.00
Soil Vertical Capacity	kip/ft
Soil Friction (kip)	24.22
Soil Cohesion (kip)	11.40
Total Lateral (kip)	154.97
Weight of Concrete (kip)	12.25
Reinforced Concrete Capacity	kip/ft
CRITICAL MOMENT (kip-ft)	272.78
CRITICAL SHEAR (kip)	4.00
Critical Moment Capacity	457.00
Critical Shear Capacity	50.00
Soil Interaction Rating	18.2%
Structural Foundation Rating	30.6%

**Drilled Pier Foundation**

BU #	Location	Order	Type	Height
1	121.107 - 86.393	1	Concrete	34.71
2	86.393 - 66.93	2	Concrete	19.46
3	66.93 - 28.997	3	Concrete	37.93
4	28.997 - 2	4	Concrete	26.97

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y <sub>max</sub> (ft)	Y <sub>min</sub> (ft)	Angle of Friction (degrees)	cohesion (kip/ft)	Calculated Ultimate Skin Friction (kip/ft)	Calculated Ultimate Skin Friction Comp. (kip/ft)	Ultimate Skin Friction Override (kip/ft)	Ultimate Skin Friction Comp. Override (kip/ft)	U/LT Gross Bearing Capacity (kip/ft)	SPT Blow Count	Soil Type
1	0	2	2	105	103	15	110	150	0.000	0.000	0.000	0.50	11.13	SP-2/3/4/5/6/7/8/9/10/11/12/13
2	2	20	18	110	102	15	110	150	0.000	0.000	0.000	0.50	11.13	SP-2/3/4/5/6/7/8/9/10/11/12/13

SEISMIC ANALYSIS

WG: 11247-NE-ALBION  
 Tower Type: 120A  
 Foundation Type: 7B

**Location**

Decimal Degrees	Deg	Min	Sec
Lat: 41.658480	41	41	4.53
Long: -97.932110	97	55	55.60

**Code and Site Parameters**

Seismic Design Code: TIA-222-II-1  
 Site Soil: D (Default) Default  
 Risk Category: II

**USGS Seismic Reference**

S <sub>1</sub>	0.1220	B
S <sub>s</sub>	0.0720	B
T <sub>1</sub>	12	B

**Seismic Design Category Determination**

Importance Factor, I<sub>e</sub>: 1  
 Acceleration-based site coefficient, F<sub>a</sub>: 1.6000  
 Velocity-based site coefficient, F<sub>v</sub>: 2.4000

Design spectral response acceleration short period, S<sub>DS</sub>: 0.3301 B  
 Design spectral response acceleration 1 s period, S<sub>D1</sub>: 0.0672 B  
 T<sub>1</sub>: 0.5164 B

Seismic Design Category Based on S<sub>DS</sub>: A  
 Seismic Design Category Based on S<sub>D1</sub>: B  
 Seismic Design Category Based on T<sub>1</sub>: N/A

Controlling Seismic Design Category: B

Modified

Version 2.1.1

Drilled Pier Foundation

BU #: 11247-NE-ALBION  
 Site: 120A  
 Order Number: 7B  
 TIA 222 Revision: 1  
 Tower Type: Monopole

Analysis Results

Soil Lateral Capacity (kN)	1200
Soil Safety Factor	7.27
Min Moment (kN-m)	77.86
Max Moment (kN-m)	17.86
Soil Vertical Capacity (kN)	1200
Min Axial Load (kN)	0
Max Axial Load (kN)	0
Wedges of Concrete (kN)	11.45
Final Capacity (kN)	1200
Design Capacity (kN)	1200
Design Capacity Ratio	1.00
Reinforced Concrete Capacity (kN)	1200
Design Capacity (kN)	1200
Design Capacity Ratio	1.00
Structural Foundation Rating	45.7%

Soil Profile

2 of Layers	2
Calculated Ultimate Skin Friction (kN)	0.000
Calculated Ultimate Skin Friction Limit (kN)	0.000
Angle of Friction (degree)	1
Concession (kN)	150
Y-axis (kN)	100
X-axis (kN)	150
Top (ft)	2
Bottom (ft)	2
Thickness (ft)	0
Top (ft)	2
Bottom (ft)	2
Thickness (ft)	0
Top (ft)	2
Bottom (ft)	2
Thickness (ft)	0

Foundation Depth: 11.0 ft

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y-axis (kN)	X-axis (kN)
1	0	2	2	100	150
2	2	2	0	150	100

Pier Design Data

Length	20
Dist. Above Grade	0
Dist. Below Grade	20
Dist. From Centerline	10
Dist. From Edge	10
Dist. From Face	10
Dist. From Tip	10
Dist. From Top	10
Dist. From Bottom	10
Dist. From Centerline	10
Dist. From Edge	10
Dist. From Face	10
Dist. From Tip	10
Dist. From Top	10
Dist. From Bottom	10

WG: 11247-NE-ALBION  
 Tower Type: 120A  
 Foundation Type: 7B

**Tower Details**

Tower Type: Tapered Monopole  
 Height, h: 119.107 ft  
 Effective Seismic Weight, W<sub>e</sub>: 6.05 kips  
 Amplification Factor, A: 1.0

**Seismic Base Shear**

Response Modification Factor, R: 3.5

Discrete Appearance Weight in Top 1/3 of Structure, W<sub>1</sub>: 0.348 kips  
 W<sub>2</sub>: 5.706990454 kips  
 E: 29000.0 ksi  
 I<sub>c</sub>: 386.088 in<sup>4</sup>  
 Average Moment of Inertia, I<sub>avg</sub>: 521.6721531 in<sup>4</sup>  
 F<sub>v</sub>: 0.29948725  
 Approximate Fundamental Period Monopole, T<sub>1</sub>: 3.3390 s

Seismic Response Coefficient, C: 0.0868  
 Seismic Response Coefficient Max 1, C<sub>u1</sub>: 0.0334  
 Seismic Response Coefficient Max 2, C<sub>u2</sub>: N/A  
 Seismic Response Coefficient Min 1, C<sub>m1</sub>: 0.0500  
 Seismic Response Coefficient Min 2, C<sub>m2</sub>: N/A  
 Controlling Seismic Response Coefficient, C<sub>c</sub>: 0.0500

Seismic Base Shear, V: 0.171 kips

**Vertical Distribution Factors**

Period Related Exponent, k: 2.000  
 Sum of w<sub>i</sub>h<sup>k</sup>: 21399.13

Tower Section Loads

Section Number	Length	Top Height	Mid Height, h <sub>i</sub>	Section Weight, w <sub>i</sub>	w <sub>i</sub> h <sub>i</sub>	C <sub>u</sub>	F <sub>u</sub>	F <sub>v</sub>
1-1	20.0	119.107	119.107	0.0348	4.152	0.0868	0.0300	0.0300
1-2	18.0	114.107	115.554	0.1274	14.565	0.0868	0.0300	0.0300
1-3	18.0	114.107	103.811	0.1274	14.565	0.0868	0.0300	0.0300
1-4	18.0	104.107	95.554	0.1274	14.565	0.0868	0.0300	0.0300
1-5	18.0	94.107	87.311	0.1274	14.565	0.0868	0.0300	0.0300
1-6	18.0	84.107	79.054	0.1274	14.565	0.0868	0.0300	0.0300
1-7	18.0	74.107	70.811	0.1274	14.565	0.0868	0.0300	0.0300
1-8	18.0	64.107	62.554	0.1274	14.565	0.0868	0.0300	0.0300
1-9	18.0	54.107	54.311	0.1274	14.565	0.0868	0.0300	0.0300
1-10	18.0	44.107	46.054	0.1274	14.565	0.0868	0.0300	0.0300
1-11	18.0	34.107	37.811	0.1274	14.565	0.0868	0.0300	0.0300
1-12	18.0	24.107	29.554	0.1274	14.565	0.0868	0.0300	0.0300
1-13	18.0	14.107	21.311	0.1274	14.565	0.0868	0.0300	0.0300
1-14	18.0	4.107	13.054	0.1274	14.565	0.0868	0.0300	0.0300
1-15	18.0	0.107	4.811	0.1274	14.565	0.0868	0.0300	0.0300
1-16	18.0	0.107	0.554	0.1274	14.565	0.0868	0.0300	0.0300
1-17	18.0	0.107	0.054	0.1274	14.565	0.0868	0.0300	0.0300
1-18	18.0	0.107	0.054	0.1274	14.565	0.0868	0.0300	0.0300





Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	-5 F
Gust Speed	50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Mon Jun 05 2023

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers, or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

AFFIDAVIT

The State of Texas )

) S.S.

County of Parker )

I, Megan Croop, of Hudson Oaks in Parker County Texas, being duly sworn state under oath that:

On or about August 2023, Nextlink attempted to collocate on other aerial assets within 1 mile of our current proposed location located at the address: 3846 245<sup>th</sup> St. Anthon, IA 51004. This process was unsuccessful due to one of the following reasons: Rent amount too substantial, no space for further equipment, or declined by asset owner.

Megan Croop

(Signature)

Megan Croop

STATE OF TEXAS

COUNTY OF PARKER

SUBSCRIBED TO AND SWORN BEFORE ME, this 11<sup>th</sup>

Day of August, 2023

Signature [Signature]  
NOTARY PUBLIC

My Commission Expires: 9/13/2026







SITE NAME: IA-ANTHON-SO-4  
SITE NUMBER: IA-ANTHON-SO-4  
SITE ADDRESS: 3846 245TH ST., ANTHON, IA 51004



These depictions are for demonstrative purposes only. They are to be used in addition to the engineering drawings for an accurate presentation of the site.



SITE NAME: IA-ANTHON-SO-4  
SITE NUMBER: IA-ANTHON-SO-4  
SITE ADDRESS: 3846 245TH ST., ANTHON, IA 51004



Before



After

VIEW - 1

These depictions are for demonstrative purposes only. They are to be used in addition to the engineering drawings for an accurate presentation of the site.





*Before*



Proposed 120' Tall Monopole with Proposed Antennas and Equipment

**VIEW - 2**

*After*

These depictions are for demonstrative purposes only. They are to be used in addition to the engineering drawings for an accurate representation of the site.



*Before*



Proposed 120' Tall Monopole with Proposed Antennas and Equipment

**VIEW - 3**

*After*

These depictions are for demonstrative purposes only. They are to be used in addition to the engineering drawings for an accurate representation of the site.



## TOWAIR Determination Results

**\*\*\* NOTICE \*\*\***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

### DETERMINATION Results

**Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.**

### Your Specifications

#### NAD83 Coordinates

Latitude	42-20-41.1 north
Longitude	095-51-18.4 west

#### Measurements (Meters)

Overall Structure Height (AGL)	36.6
Support Structure Height (AGL)	36.6
Site Elevation (AMSL)	420.6

#### Structure Type

MTOWER - Monopole

### Tower Construction Notifications

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW



Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V\_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

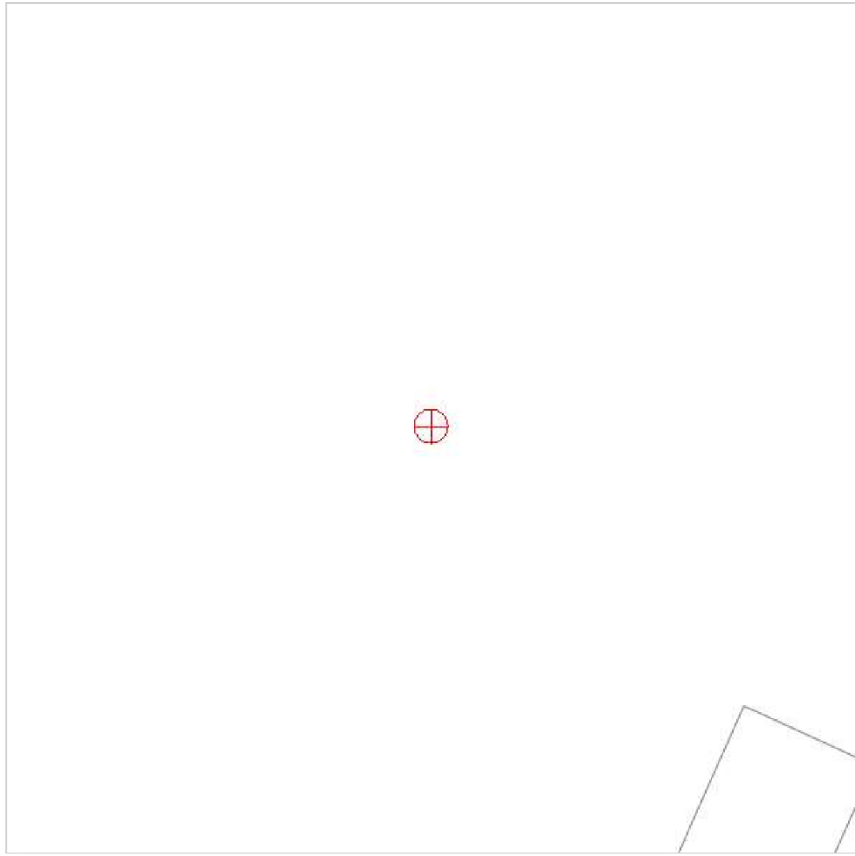
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	POLE   Monopole <span style="float: right;">▼</span>
	Please select structure type and complete location point information.
<b>Latitude:</b>	42 Deg 20 M 41.1 S N ▼
<b>Longitude:</b>	95 Deg 51 M 18.4 S W ▼
<b>Horizontal Datum:</b>	NAD83 ▼
<b>Site Elevation (SE):</b>	1380 (nearest foot)
<b>Structure Height :</b>	120 (nearest foot)
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes

Results

You do not exceed Notice Criteria.



**PARCEL REPORT**

**Summary**

Parcel ID 874316300005  
 Alternate ID 722970  
 Property Address N/A  
 Sec/Twp/Rng 16-87-43  
 Brief Tax Description SESW 16-87-43  
 (Note: Not to be used on legal documents)  
 Deed Book/Page 574-646 (1/28/2003)  
 Gross Acres 40.00  
 Net Acres 40.00  
 Adjusted CSR Pts 1572.22  
 Zoning AP - AGRICULTURAL PRESERVATION  
 District 0004 MILLER/MAPLE VALLEY ANTHON OTO SCH  
 School District MAPLE VALLEY ANTHON OTO  
 Neighborhood N/A

**Owner**

Deed Holder  
 BALDWIN MARK D & SHELLE J  
 3846 245TH ST  
 ANTHON IA 51004-8065  
 Contract Holder  
 Mailing Address  
 BALDWIN MARK D & SHELLE J  
 3846 245TH ST  
 ANTHON IA 51004-8065

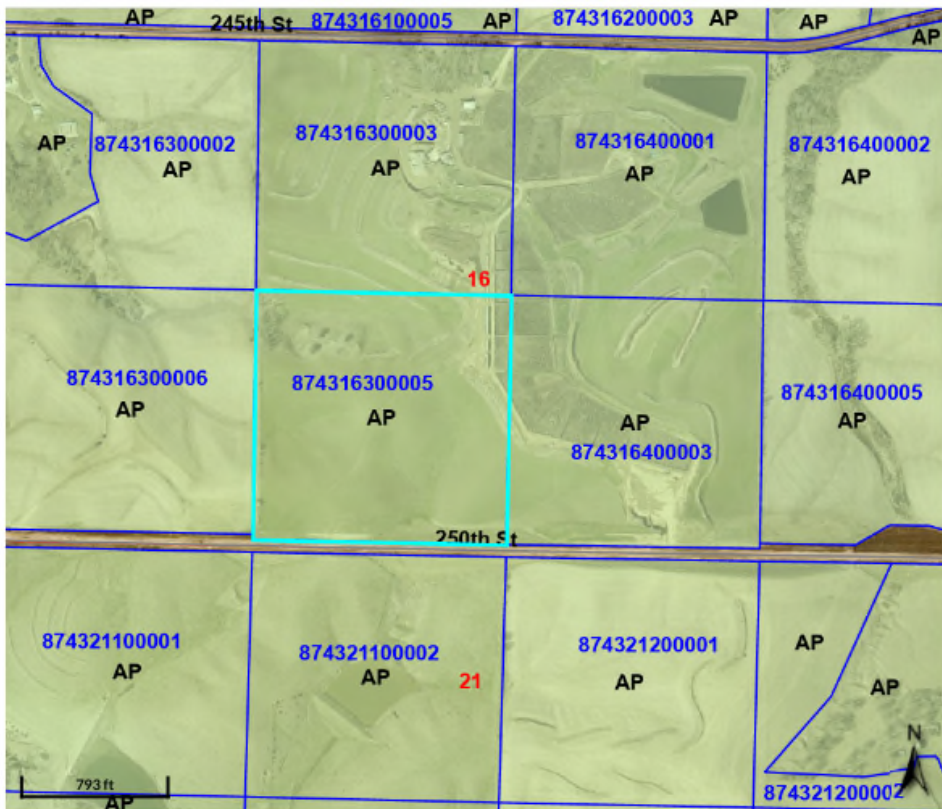
**Land**

Lot Area 40.00 Acres ;1,742,400 SF

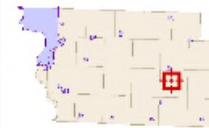
**Valuation**

	2023	2022	2021	2020	2019
Classification	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture
+ Assessed Land Value	\$51,280	\$39,840	\$39,840	\$37,670	\$37,670
+ Assessed Building Value	\$0	\$0	\$0	\$0	\$0
+ Assessed Dwelling Value	\$0	\$0	\$0	\$0	\$0
= Gross Assessed Value	\$51,280	\$39,840	\$39,840	\$37,670	\$37,670
- Exempt Value	\$0	\$0	\$0	\$0	\$0
= Net Assessed Value	\$51,280	\$39,840	\$39,840	\$37,670	\$37,670

**ZONING MAP**



**Overview**



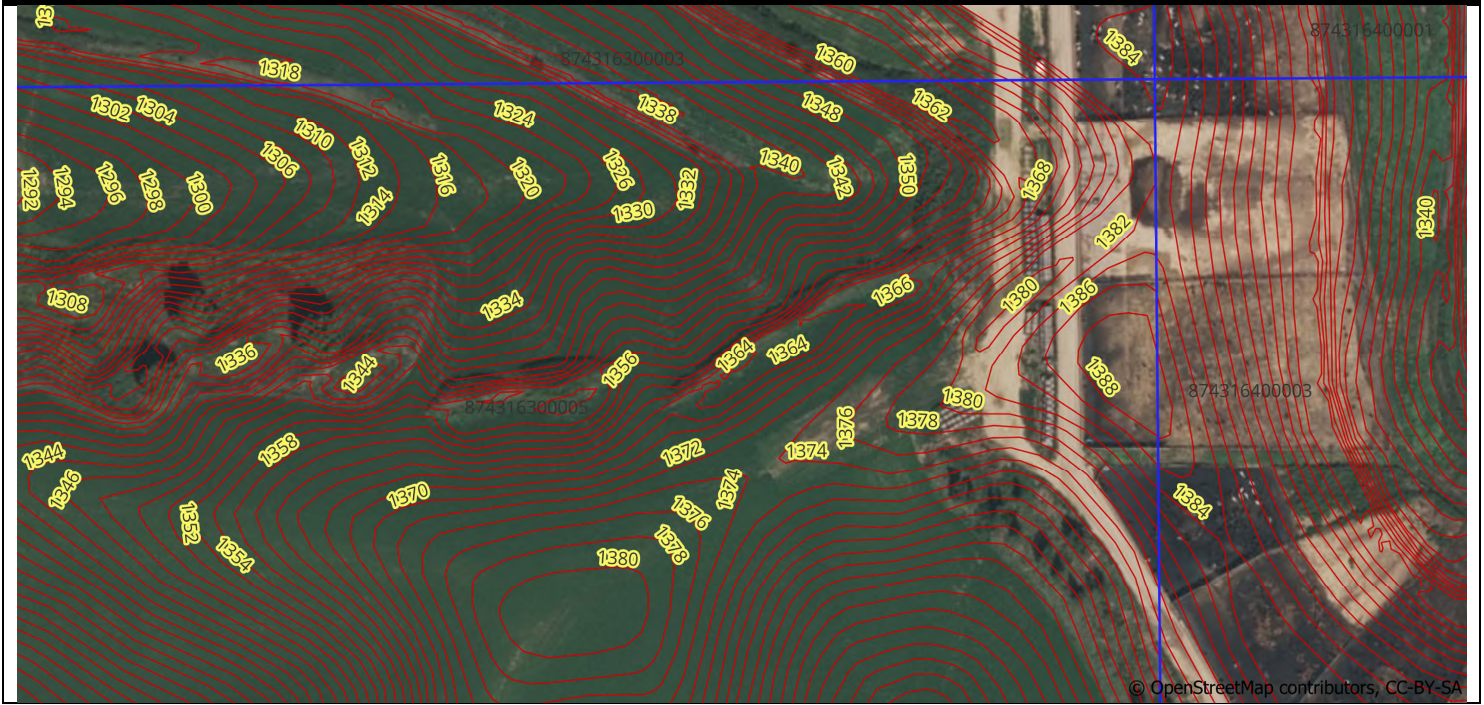
**Legend**

- Roads
- ▭ Corp Boundaries
- ▭ Townships
- ▭ Parcels
- County Zoning
- AE
- AP
- GC
- GC-PD
- GI
- LI
- LI-PD
- SR
- WR

Parcel ID 874316300005      Alternate ID 722970      Owner Address BALDWIN MARK D & SHELLE J  
 Sec/Twp/Rng 16-87-43      Class A      3846 245TH ST  
 Property Address      Acreage 40.0      ANTHON, IA 51004-8065  
 District 0004  
 Brief Tax Description SESW 16-87-43  
 (Note: Not to be used on legal documents)

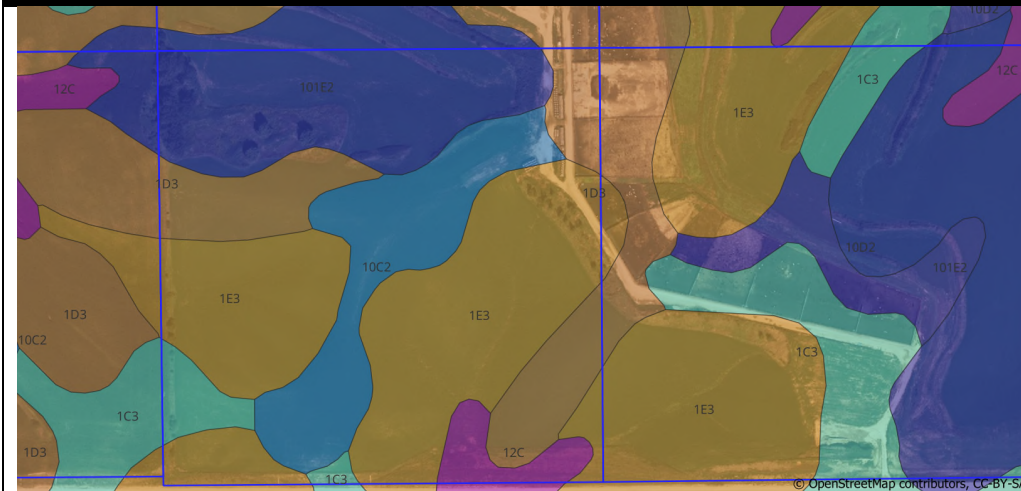


**ELEVATION MAP**



© OpenStreetMap contributors, CC-BY-SA

**SOIL MAP**



© OpenStreetMap contributors, CC-BY-SA

**SOIL REPORT**

**Summary**

Parcel ID	874316300005
Gross Acres	40.00
ROW Acres	0.00
Gross Taxable Acres	40.00
Exempt Acres	0.00
Net Taxable Acres	40.00 (Gross Taxable Acres - Exempt Land)
Average Unadjusted CSR2	39.43 (1577.23 CSR2 Points / 40 Gross Taxable Acres)
Aglond Active Config	2017 CSR2

**Sub Parcel Summary**

Description	Acres	CSR2	Unadjusted CSR2 Points	Adjusted CSR2 Points
100% Value	39.22	39.43	1,546.27	1,546.27
Non-Crop	0.78	39.69	30.96	25.95
<b>Total</b>	<b>40.00</b>		<b>1,577.23</b>	<b>1,572.22</b>

**Soil Summary**

Description	SMS	Soil Name	CSR2	Adjusted Acres	Unadjusted CSR2 Points	Adjusted CSR2 Points
100% Value	12C	NAPIER SILT LOAM, 5 TO 9 PERCENT SLOPES	89.00	1.27	113.03	113.03
100% Value	10C2	MONONA SILT LOAM, 5 TO 9 PERCENT SLOPES, MODERATELY ERODED	86.00	6.51	559.86	559.86
100% Value	1C3	IDA SILT LOAM, 5 TO 9 PERCENT SLOPES, SEVERELY ERODED	58.00	1.31	75.98	75.98
100% Value	101E2	MONONA-IDA SILT LOAMS, 14 TO 20 PERCENT SLOPES, MODERATELY E	40.00	7.75	310.00	310.00
100% Value	1D3	IDA SILT LOAM, 9 TO 14 PERCENT SLOPES, SEVERELY ERODED	32.00	6.04	193.28	193.28
100% Value	1E3	IDA SILT LOAM, 14 TO 20 PERCENT SLOPES, SEVERELY ERODED	18.00	16.34	294.12	294.12
Non-Crop	101E2	MONONA-IDA SILT LOAMS, 14 TO 20 PERCENT SLOPES, MODERATELY E	40.00	0.75	30.00	25.01
Non-Crop	1D3	IDA SILT LOAM, 9 TO 14 PERCENT SLOPES, SEVERELY ERODED	32.00	0.03	0.96	0.94
<b>Total</b>			<b>40.00</b>		<b>1,577.23</b>	<b>1,572.22</b>



# **ZONING COMMISSION**

Preparation for a Recommendation to the Board of Supervisors  
Utility-Scale Solar Energy Systems (US-SES)

## **CONTENTS**

The subsequent pages include the following contents:

- **Summary**
- **Requested Proposal**
- **Comments / Information Received from the Public since the September 11, 2023 Public Hearing**
- **Public Hearing Discussion Outline**
  - **Discussion Topics**
    1. **Citizen Concerns**
    2. **Appropriate Locations**
    3. **Ordinance Types**
    4. **Process Types**
    5. **Information Collection**
    6. **Requirements for Permitting of US-SES**
    7. **Definitions**
    8. **Commissioner Concerns**
- **Detailed Public Hearing Discussion Outline**
- **Considerations for an Ordinance Amendment with Data**

**Summary:**

- The Woodbury County Zoning Commission has been directed by the Board of Supervisors on August 8, 2023 to establish/examine a new ordinance as it relates to utility-scale solar systems. The purpose of this public hearing is to receive comments from the public about solar energy systems not limited to utility-scale solar systems, agrisolar or agrivoltaics, and community solar systems as the Commission works toward preparing a recommendation for a proposed ordinance or amendments to the Woodbury County Zoning Ordinance to address the permitting process for such systems in industrial and/or agricultural areas.
- The Zoning Commission held their first public hearing at the Merville Area Community Center on September 11, 2023. At that meeting there were over 30 members of the public in attendance with 13 offering concerns about a potential utility-scale solar proposal.

**Requested Proposal:**

- The Board of Supervisors have indicated that “if the county was to engage in utility-scale solar, at minimum, the county should consider this only if the following is met”:
  - o A conditional use permit for AP “C” with Planning and Zoning and Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.
  - o A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
  - o A maximum height of no more than 20’ for panel structures.
  - o Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered “AP.”
  - o Utility solar can be no more than 2% of all AP “agricultural preservation,” preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.
  - o Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
  - o A requirement (or at least strong consideration) that the utility-scale solar project either be on a landowner’s property or that the owner of the land be a resident of Woodbury County.

**UTILITY-SCALE SOLAR ENERGY SYSTEMS (US-SES)**  
**COMMENTS / INFORMATION RECEIVED FROM THE PUBLIC**  
**SINCE THE ZONING COMMISSION SEPTEMBER 11, 2023 PUBLIC HEARING**

---

**Daniel Priestley**

---

**From:** Dougherty, William (MidAmerican) <William.Dougherty@midamerican.com>  
**Sent:** Wednesday, September 13, 2023 1:27 PM  
**To:** Daniel Priestley  
**Subject:** RE: [INTERNET] Solar Public Hearing Postponed to September 11 in Merville at 5 PM (Comments Requested)

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

**CAUTION:** This email originated from **OUTSIDE** of the organization. Please verify the sender and use caution if the message contains any attachments, links, or requests for information as this person may NOT be who they claim. **If you are asked for your username and password, please call WGCC and DO NOT ENTER any data.**

Good afternoon Dan,

To follow up on Monday's public hearing, I just want to see if you have any questions or ideas for how the county wants to approach the solar ordinance issue. Since MidAmerican does not have plans at this time to develop another solar project in Woodbury County, I believe we can provide some perspective on many of the topics that were brought up during the meeting. Please reach out if you have any questions or want to bounce ideas off us to see how certain requirements/regulations would affect any new solar projects. Thanks and take care.

Will Dougherty, P.E.  
Project Developer  
O: 515-242-4383  
C: 515-587-7255



Topic: CSR vs. CSR2



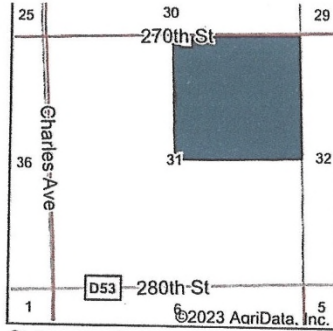
State: Iowa  
 County: Woodbury  
 Location: 36-87N-47W  
 Township: Liberty  
 Acres: 75.03  
 Date: 5/22/2023



Maps Provided By:  
**surety**  
 CUSTOMIZED ONLINE MAPPING  
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	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	llw		86	65	60
	lllw		81	47	52
	lllw	lllw	67	42	51
	lw	lw	77	63	56
	lw	lw	94	79	83
verage	2.27	*.	82.5	57.9	*n 58



State: Iowa  
 County: Woodbury  
 Location: 31-87N-46W  
 Township: Grange  
 Acres: 153.97  
 Date: 4/27/2023



Maps Provided By:  
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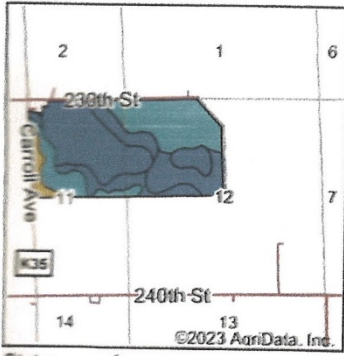


	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	llw		81	47	52
	lllw	lllw	67	42	51
verage	3.00	*.	81	47	*n 52

Similar to the original CSR, the CSR2 assumes a SMU is adequately managed, artificially drained where required, and there is no land leveling or terracing. A major difference between the CSR and the CSR2 is the CSR2 included a rainfall correction factor where the CSR2 does not.

One of the key differences between CSR and CSR2 will be the climate factor. CSR2 will not have a climate factor in its calculations. In the original CSR values, soil scientists made an adjustment based on the geographic region of a soil map unit (SMU). For example, SMUs in Northwest Iowa were adjusted downward more than SMUs in Southeast Iowa. Without a climate adjustment, CSR2 values will have an upward bias in counties located in Northwest Iowa.





State: Iowa  
 County: Woodbury  
 Location: 12-87N-47W  
 Township: Liberty  
 Acres: 306.46  
 Date: 4/26/2023



Map Provided By:  
 surety  
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Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
IIW		74	51	52
IW	IW	94	79	83
IW		84	63	55
IW		89	74	71
IIW		59	37	49
1.95	-	83.2	64.2	*n 64.9



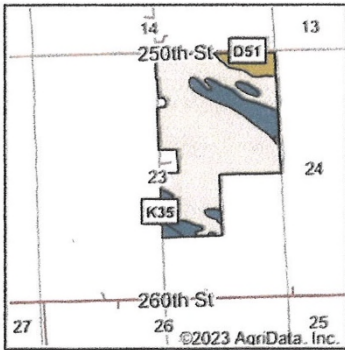
State: Iowa  
 County: Woodbury  
 Location: 5-86N-46W  
 Township: Sloan  
 Acres: 153.5  
 Date: 4/26/2023



Map Provided By:  
 surety  
 CUSTOMIZED ONLINE MAPPING  
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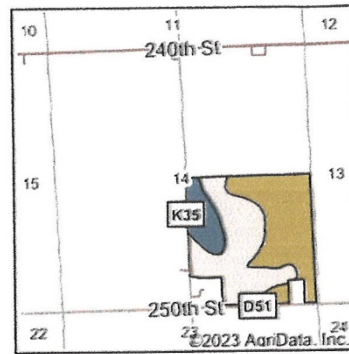
Id	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
2%		IIW	81	47	52
2%		IIW	74	51	52
5%		IW	89	74	71
<b>Weighted Average</b>			2.99	80.7	47.4
					*n 52.1



State: Iowa  
 County: Woodbury  
 Location: 23-87N-47W  
 Township: Liberty  
 Acres: 187.71  
 Date: 4/26/2023



Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
lllw	lllw	67	42	51
lw	lw	91	70	74
lllw		58	51	49
lllw		81	47	52
lw	lw	77	63	58
Age	2.75	*	69.9	*n 53.8



State: Iowa  
 County: Woodbury  
 Location: 14-87N-47W  
 Township: Liberty  
 Acres: 140.07  
 Date: 4/26/2023



SR2 Legend	Non-Irr Class *c	Irr Class *c	CSR2**	CSR	*n NCCPI Soybeans
	lllw		58	51	49
	lllw	lllw	67	42	51
	lllw		84	63	55
Weighted Average	2.87	*	65.2	48.7	*n 50.6

# WOODBURY COUNTY ZONING COMMISSION

Preparation for a Recommendation to the Board of Supervisors  
Utility-Scale Solar Energy Systems (US-SES)

## Public Hearing Topics for Consideration

Content Provided Herein is for Discussion/Informational Purposes and is Subject to Changes.

## PUBLIC HEARING DISCUSSION OUTLINE

1. **TOPIC 1: Citizen Concerns**
2. **TOPIC 2: Appropriate Location(s)**
  - a. Zoning Districts
  - b. Considerations
    - i. Zoning District(s)
    - ii. Corn Suitability Rating 1 vs. 2
    - iii. Agricultural Related Use
    - iv. Slope Cap
    - v. Acre Cap
    - vi. Height Cap
    - vii. Density
    - viii. Notification Area
    - ix. Site Considerations
    - x. Property Ownership
  - c. Other / Additional
3. **TOPIC 3: Ordinance Type (Standalone vs. Zoning Ordinance Amendment)**
  - a. Standalone Ordinance
  - b. Ordinance Amendment
  - c. Other / Additional
4. **TOPIC 4: Process Types**
  - a. Zoning Ordinance Map Amendment (Rezone)
    - i. Regular Process
    - ii. General Industrial (GI)
    - iii. Overlay District?
  - b. Conditional Use Permit
    - i. Regular Process
    - ii. Added Ordinance Requirements
    - iii. Other / Additional
5. **TOPIC 5: Information Collection (Application Requirements)**
  - a. Zoning Ordinance Map Amendment (Rezone)
  - b. Conditional use Permit Application Procedures
  - c. Certified Abstractor's Listing
  - d. General Information
  - e. Mapping
  - f. Documentation
  - g. Requirements for Development Plans / Site Plans
  - h. Other / Additional
6. **TOPIC 6: Requirements for Permitting of US-SES**
  - a. Separation Distances / Setbacks / by Zoning District
  - b. Screening

- c. Fencing / Security
- d. Signage
- e. Lighting
- f. Noise
- g. Glare Minimization
- h. Utility Connections
- i. Accessory Structures
- j. Outdoor Storage
- k. Endangered Species and Wetlands
- l. Weed Control
- m. Slope
- n. Waste
- o. Maintenance, Repair, or Replacement
- p. Cessation of Operations
- q. Repowering
- r. Decommissioning
- s. Cleaning Chemicals and Solvents
- t. Road Use Agreements
- u. Special Flood Hazard Area (Floodplain)
- v. Soil Erosion and Sediment Control
- w. Storm Water Management
- x. Compliance with Local, State, and Federal Regulations
- y. Transfer
- z. Administration and Enforcement
- aa. Fee Structure
- bb. Other / Additional

**7. TOPIC 7: Definitions**

Agreement	Non-participating Landowner	Solar Energy Systems, Private
Agrisolar or Agrivoltaics	Occupied Structure	Solar Energy Systems, Utility Scale (US-SES)
Applicant	Operator	Solar Panel
Community Solar	Owner	Solar Storage Battery
Conditional Use Permit (CUP)	Participating Landowner	Solar Storage Unit
Concentrating Solar Power Systems	Photovoltaic (PV) Cells	Solar Thermal Energy System (STES)
Corn Suitability Rating 2 (CSR2)	Professional Engineer	Structure
Critical Slope Angle	Project Area	Structure-Mounted Energy System
Developed Project Areas	Property Line	Substation
Easement	Residence	System Height
Feeder Circuits / Lines	Setback	- Other Additional -
Glare/Glint	Slope	
Grounded-Mounted System	Solar Array	
Interconnection	Solar Collector	
Module	Solar Easement	
Mounting	Solar Energy	

- These definitions are being presented for discussion and informational purposes only and is subject to changes including additions, deletions, or modifications.

**8. TOPIC 8: Commissioner Concerns**



# ZONING COMMISSION

Preparation for a Recommendation to the Board of Supervisors  
Utility-Scale Solar Energy Systems (US-SES)

## DETAILED OUTLINE

### Public Hearing Topics for Consideration

Content Provided Herein is for Discussion/Informational Purposes and is Subject to Changes.

#### 1. APPROPRIATE LOCATION(S)

- a. Zoning District(s)
  - i. General Industrial (GI)
    1. 11,221 total acres\*
  - ii. Agricultural Preservation (AP)
    1. 476,513 total acres\*
  - iii. Limited Industrial (LI)
    1. 101 total acres\* *\*includes acres already developed.*
  - iv. Possible Creation of a “Utility-Scale Solar Overlay District” to be placed over portions of AP, per rezone application.?
- b. Considerations:
  - i. Zoning District(s)
  - ii. Corn Suitability Rating 1 / Corn Suitability Rating 2
    1. Under 65 CSR (Woodbury County Development Plan)
    2. CSR1/2 Resources:
      - a. <https://crops.extension.iastate.edu/cropnews/2015/04/corn-suitability-rating-2-equation-updated>
      - b. <https://www.fbn.com/community/blog/iowa-corn-suitability-rating-index-csr2#:~:text=The%20orange%20of%20CSR2%20is.and%20it%20is%20not%20irrigated.>
      - c. [https://support.agridatainc.com/CornSuitabilityRating2\(CSR2\).ashx](https://support.agridatainc.com/CornSuitabilityRating2(CSR2).ashx)
      - d. <http://www.extension.iastate.edu/Publications/PM1168.pdf>
      - e. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>
  - iii. Agricultural Related Use (51%)
    1. Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered “AP.”
  - iv. Slope Cap
    1. A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.
    2. No greater than 5% soil slopes.
  - v. Acre Cap
    1. Utility solar can be no more than 2% of all AP “agricultural preservation,” preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.
    2. Agricultural Preservation (AP)
      - a. 2% Cap = 9,530 acres
    3. General Industrial (GI)
      - a. No cap
  - vi. Height Cap
    1. 20 FT?
  - vii. Density
    1. Separation Distances / Setbacks / By Zoning District
      - a. Occupied Residence
      - b. Occupied Structures
      - c. Non-participating Parcels
      - d. Public Right-of-Way
      - e. Airports
      - f. Etc.

- viii. Notification Area
  - 1. Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.
- ix. Site Considerations
  - 1. A conditional use permit for AP “C” with Planning and Zoning and Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/sol, and other factors when approving permit.
- x. Property Ownership
  - 1. A requirement (or at least strong consideration) that the utility-scale solar project either be on a landowner’s property or that the owner of the land be a resident of Woodbury County.

2. **ORDINANCE TYPE (STANDALONE VS. ZONING ORDINANCE AMENDMENT)**

- a. Standalone Ordinance
  - i. Similar to the Commercial Wind Energy Conversion Systems Ordinance
    - 1. Permits considered by the Board of Supervisors
    - 2. No use of Zoning Districts
- b. Zoning Ordinance Amendment
  - i. Conditional Use Process
    - 1. Zoning Commission Application Review for Recommendation
    - 2. Board of Adjustment Consideration for Approval
  - ii. Rezone to a different zoning district or overlay district
    - 1. Zoning Commission Application Review for Recommendation
    - 2. Board of Supervisors Consideration for Approval
  - iii. Zoning Districts are used to determine appropriate areas of the county to consider permits.

3. **PROCESS TYPES**

- a. Zoning Ordinance Map Amendment (Rezone)
  - i. General Industrial (GI)
  - ii. Overlay District? Utility-Scale Solar Energy Systems Overlay District?
    - 1. Appropriateness of the Area Based on Considerations referenced in Section 1.
  - iii. Zoning Commission / Board of Supervisors
- b. Conditional Use Permit
  - i. Regular Process
  - ii. Added Ordinance Requirements

4. **INFORMATION COLLECTION (APPLICATION)**

- a. Conditional Use Permit Application Procedures (Zoning Ordinance Section 2.02.9)
- b. Certified Abstractor’s Listing (1 Mile?)
- c. General Information
  - i. Name of Applicant(s), Project Owner(s), and/or Operator(s), Landowner(s) – Contact Information
  - ii. Project Summary
  - iii. General Description
  - iv. Number of Modules
  - v. Manufacturer
  - vi. Model
  - vii. Mounting Type
  - viii. System Height
  - ix. System Capacity
  - x. Total Land Area covered by the system.
  - xi. Information about facilities
    - 1. Substations
    - 2. Feeder lines
    - 3. Battery Storage
    - 4. Etc.
- d. Map of the Project Location and Surrounding Area
- e. Legal Description of the Property with the US-SES will be located

- f. Evidence of a power purchase agreement or interconnection application for the project
- g. Consultation with or notifications from relevant state and federal agencies
  - i. Demonstrating how the project will not be a hazard to:
    - 1. Wildlife
    - 2. Communications
    - 3. Air Traffic
    - 4. Etc.
- h. Documentation of easement locations acquired for US-SES and associated facilities
- i. Project Plan
  - i. Based on a plat of survey by an Iowa licensed surveyor to establish property lines and/or setbacks. Project plan shall include:
    - 1. Parcel lines;
    - 2. All existing structures, with dimensions (length, width, & height clearly marked);
    - 3. Sanitary Infrastructure (e.g. Septic Fields);
    - 4. Presence of wells, capped and otherwise functional;
    - 5. Setback Measurements;
    - 6. Easements present on the property, including those for existing utilities;
    - 7. Field tile locations with mapping;
    - 8. Floodplain Locations;
    - 9. Topography Lines (with 2-foot contours);
    - 10. Location of all solar panels, solar collectors, solar arrays, and associated equipment (with dimensions);
    - 11. The height and depths of each mounting structure including footings, and maximum area of ground cover. Include dimensions (length, width, & height clearly marked) and ground clearance for each US-SES;
    - 12. A detailed electrical grid drawing, certified by an electrical engineer, showing all connection points in the US-SES and to a connecting electrical grid. Include utility lines, telephone lines and other lines, both above and below ground within 200 feet of any and all above-ground portions of the US-SES;
    - 13. Standard drawings and dimensional representatives of the solar energy system including panels and arrays, mounting structures, and footings.
    - 14. Color photo simulations showing the proposed location of the tower with a photo-realistic representation of the proposed US-SES as it would appear viewed from the nearest residentially used and / or zoned property and nearest roadway, street or highway.
    - 15. Planned location and dimensions of security fencing;
    - 16. A grading plan with 2-foot contours showing existing and proposed topography.
    - 17. A storm water management plan showing retention/detention areas, storm sewers and drainage ways. A drainage report certified by a professional engineer is required to verify the size of retention or detention facilities and outflows from the site. Any flood hazard areas should be identified.
    - 18. A landscaping plan illustrating screening and buffering intended to minimize conflicts with nearby properties and uses. Species, numbers and initial sizes of plan materials should be indicated.
    - 19. A soil analysis illustrating the soil types, slopes and Corn Suitability Rating 2 (CSR2) for the entire footprint of the project area.
    - 20. Any other information necessary to describe the intended use.

## 5. **REQUIREMENTS**

- a. Separation Distances / Setbacks / By Zoning District
  - i. Occupied Residence
  - ii. Occupied Structures
  - iii. Non-participating Parcels
  - iv. Public Right-of-Way
  - v. Airports
  - vi. Etc.
- b. Screening

- i. Adequate safeguards shall be taken to fence or screen any on-site hazards from the public. A landscape buffer may be required to be installed and maintained. The need for screening requirements will be evaluated as part of the review by Staff and the approval process and will be based on the surroundings of the site.
- c. Fencing / Security
  - i. A security fence must be installed along all exterior sides of the US-SES installation and be equipped with a minimum of one gate and locking mechanism on the primary access side. Security fences, gates and warning signs must be maintained in good condition until the US-SES solar installation is decommissioned.
- d. Signage
  - i. No signs other than appropriate warning signs, or standard signs for operation or identification, shall be allowed.
- e. Lighting
  - i. Lighting shall be shielded and downcast such that the light does not project directly onto the adjacent properties.
- f. Noise
  - i. Noise levels caused by the US-SES measured at the residence(s) shall not exceed fifty (50) decibels (A-weighted) when located adjacent to an existing residence or residential district.
- g. Glare Minimization
  - i. The US-SES shall be designed and constructed to diminish glare or reflection onto adjacent properties and adjacent roadways and must not interfere with traffic, including air traffic, or create a safety hazard.
- h. Utility Connections
  - i. Reasonable efforts shall be made to place all project collection lines within the solar installation underground, depending on appropriate soil conditions, shape and topography of the site, distance to the connection, or other conditions or requirements. High-voltage lines between the US-SES and substations may be above ground.
- i. Accessory Structures
  - i. All accessory structures shall be subject to the bulk and height regulations of structures in the underlying zoning district, unless specified differently in the ordinance.
- j. Outdoor Storage
  - i. Only the outdoor storage of materials, vehicles, and equipment that directly support the operation and maintenance of the US-SES shall be allowed.
- k. Endangered Species and Wetlands
  - i. Applicant(s) shall consult with the Iowa Department of Natural Resources and provided verification to the Zoning Director or their designee.
- l. Weed Control
  - i. Applicant(s) must present an acceptable weed/grass control plan for property outside of the fenced area for the entire project. The operating company during the operation of the Solar Farm must maintain the fence and adhere to a weed control plan.
- m. Slope
  - i. Slope length and steepness influence both the volume and velocity of surface runoff. Long slopes produce more runoff to the bottom of slopes. Steep slopes increase runoff velocity. Both situations increase the potential for erosion. The project area shall not exceed medium erosion potential including eight (5%) percent or greater slope.
- n. Waste
  - i. All solid wastes, whether generated from supplies, equipment parts, packaging, operation, grazed animals, farming operation or maintenance of the US-SES shall be removed from the site and disposed of in an appropriate manner. All hazardous waste generated by the operation shall be removed from the site immediately and disposed of in a manner consistent with all local, state, and federal guidelines.
- o. Maintenance, Repair, or Replacement
  - i. Maintenance shall include, but not limited to painting, structural repairs, integrity of security measures. Site access shall be maintained to a level acceptable to emergency response officials. Any retrofit, replacement or refurbishment of equipment shall adhere to all applicable local, state and federal requirements. Any discarded materials or construction debris will be promptly removed in a timely manner. Said debris shall remain on the property no longer than sixty (60) days.
- p. Cessation



- i. Any US-SES provided for in this Ordinance that has not been in operation and producing electricity for at least one hundred and eighty (180) consecutive days, excluding natural catastrophic event, shall be removed. The Woodbury County Zoning Director or their designee shall notify the owner to remove the system. Within ninety (90) days, the owner shall either submit evidence showing that the system has been operating and producing electricity or remove it. IF the owner fails to or refuses to remove the US-SES, the violation shall be referred to the Woodbury County Attorney. In the case of a natural catastrophic event, a detailed restoration plan to return to operational status must be provided to the Zoning Director.
- q. Repowering
  - i. Proposals to replace more than twenty-five percent (25%) of the panels in a facility within a twelve (12) month period shall be required to submit a Conditional Use Permit Application for review and approval with all associated costs assigned to the Applicant and/or the property owner(s).
- r. Decommissioning
  - i. The US-SES's owner shall enter into a decommissioning agreement with Woodbury County prior to the start of construction of the US-SES project. Woodbury County's approval and execution of the agreement shall not be unreasonably withheld. The plan shall include:
    - 1. A description of the plan to remove the US-SES's equipment, or at landowner's request, to restore the land to its previous use upon the end of the project's life.
    - 2. Provisions for the removal of structures, debris, and associated equipment on the surface and to a level of not less than four (4) feet above the surface, and the timeline/sequence in which removal is expected to occur;
    - 3. Provisions for the restoration of the soil, vegetation and disturbed earth, which shall be graded and reseeded;
    - 4. An estimate of the decommissioning costs certified by a licensed professional engineer in current dollars. The engineer providing this estimate shall submit it to the Woodbury County Finance/Budget Director, or their designee, for review and all costs associated with this engagement shall be borne by the applicant;
    - 5. A written financial plan approved to ensure that funds will be available for decommissioning and land restoration;
    - 6. A provision that the terms of the decommissioning plan shall be binding upon the owner or operator and any of their successors, assigns, or heirs.
    - 7. Upon review of the decommissioning plan, the Woodbury County Board of Supervisors shall set an amount to be held in a bond, escrow, or other acceptable form of funds approved by the Board. The value of the surety shall not be reduced based on the salvage value of any materials or equipment. The plan shall state that Woodbury County shall have access to the project and to the funds to effect or complete decommissioning one (1) year after cessation of operations; and,
    - 8. The applicant shall provide the county with a new estimate of the cost to decommission the US-SES project every five (5) years under the same conditions as set forth in this Sections above. Salvage value of structures, electrical wire and other appurtenances shall not be considered within the cost estimate calculations. Upon receipt of this new estimate, the county may require, and the applicant, owner, and/or operator of the US-SES project shall provide, a new financial plan for decommissioning acceptable to the County. Failure to provide an acceptable financial plan shall be considered a cessation of operations.
    - 9. Release of Financial Security. Financial security shall only be released when the Board of Supervisors determines, after inspection, that the conditions of the decommissioning plan have been met.
- s. Cleaning Chemicals and Solvents
  - i. During operation of the proposed installation, all chemicals or solvents used to clean photovoltaic panels should be low in volatile organic compounds and the operator should use recyclable or biodegradable products to the extent possible. Any on-site storage of chemicals or solvents shall be referenced.
- t. Road Use Agreements
  - i. Applicant(s) shall adhere to the Woodbury County Road Use and Repair Agreement, and in doing so, shall identify all roads to be used for the purpose of transporting US-SES associated parts, cement, and/or equipment for construction, operation or maintenance of the US-SES and obtain applicable weight and size permits from the impacted road authorities prior to construction.
- u. Special Flood Hazard Area

- i. No portion of the US-SES site proposed for development may be located in a mapped 100-year floodplain.
- v. Soil Erosion and Sediment Control
  - i. The applicant(s) agree to conduct all roadwork and other site development work in compliance with a national pollutant discharge elimination system (NPDES) permit as required by the state department of natural resources and comply with requirements as detailed by local jurisdictional authorities during the plan submittal. If subject to NPDES requirements, the applicant must submit the permit for review and comment, and an erosion and sediment control plan before beginning construction. The plan must include both general "best management practices" for temporary erosion and sediment control both during and after construction and permanent drainage and erosion control measures to prevent damage to local roads or adjacent areas and to prevent sediment-laden run-off into waterways.
- w. Storm Water Management
  - i. The plan shall include details on stormwater rate and runoff management as well as pollutant removal and flood reduction. The applicant shall include a detailed analysis of pre- and post-development stormwater runoff rates for review. Such review will incorporate appropriate stormwater management practices as required by the County Engineer, Woodbury County and any State of Iowa best practices. The plan shall include detention of specified rainfall events, and infiltration components consistent with practices as detailed in the state stormwater management manual.
- x. Compliance with Local, State, and Federal Regulations
  - i. US-SES shall comply with applicable local, state, and federal regulations.
- y. Transfer
  - i. Building permits and associated decommissioning and road use agreements granted under this Ordinance may be transferred to another party subject to the Woodbury County Board of Supervisors approval, which approval shall not be unreasonably withheld. Any assignee of the building permits and associated decommissioning and road agreements shall be subject to all the requirements in this Ordinance and the agreements.
- z. Administration and Enforcement
  - i. The Zoning Director and any necessary personnel may enter any property for which a Conditional Use or Building Permit has been issued under this ordinance to conduct an inspection to determine whether the conditions stated in the permit have been met as specified by statute, ordinance, and code. Failure to provide access by appointment within 48 hours of request shall be deemed a violation of this ordinance.
- aa. Fee Structure
  - i. The Conditional Use Permit fee(s) will be approved and adopted by Resolution through the Woodbury County Board of Supervisors under Zoning Permit Fees.

## 6. **DEFINITIONS**

- a. Agreement. A legally binding document signed by both a participating lawowner and an owner or operator for a specific purpose, including but not limited to a contract, easement, or lease.
- b. Agrisolar or Agrivoltaics. A utility-scale solar system co-located on the same parcel of land primarily adapted, by reason of nature and area, for use for agricultural production, including crop production, grazing, apiaries, or other agricultural products or services. Fifty-one percent (51%) of the use of the land is for agricultural purposes.
- c. Applicant. The person or entity submitting the application under this Ordinance, which is normally expected to be the owner or operator of a US-SES, or the owner of the US-SES development.
- d. Community Solar. A utility-scale solar energy system developed by a municipality, utility, or other third party that typically allows community members to subscribe to the project.
- e. Conditional Use Permit (CUP). A use that is allowed in conformance with the regulations of the zoning district in which it is located, if and only if, approved by the Board of Adjustment as provided in subsection 2.02-9. A CUP issued by the Woodbury County Board of Adjustment is required before associated building permit(s) can be issued in unincorporated Woodbury County.

- f. Concentrating Solar Power Systems. A system that generates solar power by using mirrors, lenses, or similar reflecting surfaces to concentrate sunlight collected over large areas onto smaller focal areas.
- g. Corn Suitability Rating 2 (CSR2). An index to the inherent soil productivity of each kind of soil for row crop production. The index is scaled from 100, for the most productive soils, to 5 as the least productive.
- h. Critical Slope Angle. The maximum slope incline which the soil and rock materials underlying the slope can support, without failure, under existing climate, vegetation, and land use.
- i. Developed Project Areas. The total project area that is subject to an agreement between the Owner/Operator and the Participating Landowner and is actually developed and utilized for placement of a US-SES.
- j. Easement. A legal agreement for the use of property for a specified purpose.
- k. Feeder Circuits/Lines. A power line or network of lines used as a collection system that carries energy produced by a solar energy system to an interconnection point like a substation. Feeder circuits are most often placed underground.
- l. Glare/Glint. Light reflected off of a surface.
- m. Ground-Mounted System. A system where a rack(s) of panels is mounted on concrete posts or poles anchored in the ground and are wired or plumbed to an adjacent home or structure.
- n. Interconnection. Link between a generator of electricity and the electric grid. Interconnection typically requires connection via infrastructure such as power lines and a substation, as well as a legal agreement for the project to be connected to the grid.
- o. Module. An individual unit comprised of multiple photovoltaic (PV) cells, with multiple modules used in a solar energy system.
- p. Mounting. The method of anchoring solar energy system modules to the ground or a building.
- q. Non-Participating Landowner. A landowner who has not signed a binding agreement with the Applicant/Developer/Owner of the US-SES project.
- r. Occupied Structure. For the purpose of this ordinance, shall include any existing occupied house, apartment, barn, or machine shed regularly used by the property owner, or parties in possession of the property at the time of the permit application.
- s. Operator. The entity or individual that operates a solar energy system.
- t. Owner. The entity or entities with an equity interest in the US-SES, including their respective successors and assigns. Owner does not mean the landowner from whom a lease, easement, or other property right is acquired for locating the US-SES unless the landowner has an equity interest in the US-SES, or any person holding a security interest in the US-SES solely to secure an extension of credit, or a person foreclosing on such security interest provided that after foreclosure, such person seeks to sell the US-SES at the earliest practical date.
- u. Participating Landowner. A landowner under lease, easement or other binding property agreement with the applicant, developer, or owner of the US-SES.
- v. Photovoltaic (PV) Cells. Semiconductors which generate electricity whenever light strikes them; generally grouped on panels.
- w. Professional Engineer. A qualified individual who is licensed in the State of Iowa as a professional engineer.

- x. Project Area. The geographic area encompassing all components of a US-SES project, including border fencing.
- y. Property Line. The legal boundary between separately owned real estate parcels, and between privately owned parcels and public owned land or public right of way.
- z. Residence. A house, apartment or other shelter that is the abode of a person, family, or household and regularly occupied.
- aa. Setback. The minimum distance from a certain object, structure or point to the edge of any part or component of the US-SES.
- bb. Slope. The inclination of the land surface from the horizontal, with the steeper and longer having the most erosion potential.
- cc. Solar Array. Equipment used for private or utility scale solar energy systems. Can be mounted on primary or accessory structures, on a racking system affixed to the ground, or integrated as a mechanical or structural component of a structure.
- dd. Solar Collector. A device, structure or part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.
- ee. Solar Easement. An easement created to protect a solar project from encroachment by adjacent properties which would shade panels. See Iowa Code 564A.
- ff. Solar Energy. Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.
- gg. Solar Energy Systems, Private. An energy system that converts solar energy to usable thermal, mechanical, chemical, or electrical energy primarily for immediate onsite use that already has an existing principal use on the same parcel. Solar Energy Systems, Private shall be allowed only as a non-utility scale accessory use to a permitted principal use. Surplus energy sold back to a utility must comply with all applicable laws including but not limited to Section 199, Chapter 15.11(5) of Iowa Administrative Code, and all requirements of the Iowa Utilities Board. Systems can be mounted on primary or accessory structures, on a racking system affixed to the ground, or integrated as a mechanical or structural component of a structure.
- hh. Solar Energy Systems, Utility Scale (US-SES). An energy system, commonly referred to as a “solar farm”, which converts solar energy to useable thermal, mechanical, chemical, or electrical energy primarily for transmission through the electrical grid for offsite use or wholesale and/or retail sale. Systems can be mounted on primary or accessory structures, on a racking system affixed to the ground, or integrated as a mechanical or structural component of a structure. Utility scale solar energy systems do not include concentrating solar power (CSP) systems.
- ii. Solar Panel. 1) A grouping of photovoltaic cells used to generate electricity directly from sunlight. A grouping of these panels is called an array. 2) A panel circulating water or other liquid through tubes to collect, transfer and store the sun’s heat for domestic hot water and building heat.
- jj. Solar Storage Battery. A device that stores energy from the sun and makes it available in an electrical form.
- kk. Solar Storage Unit. A component of a solar energy device that is used to store solar-generated electricity or heat for later use.
- ll. Solar Thermal Energy System (STES). A system that directly heats water or other liquids using sunlight. The heated liquid is used for such purposes as space heating and cooling, domestic hot water, and heating pool water.
- mm. Structure. Anything constructed or erected on the ground or attached to the ground, including but not limited to, antenna(s), buildings, sheds, cabins, residences, signs, storage tanks, towers, wind turbines and other



similar objects.

- nn. Structure-Mounted Energy System. A system where photovoltaic panels or solar thermal panels are mounted on racks attached to the roof or side-walls of a building. Panels can be flush-mounted or angled for optimal sun exposure.
- oo. Substation. A facility that converts electricity produced by a generator like a solar energy system to a higher voltage, allowing for interconnection to high-voltage transmission lines.
- pp. System Height. The height of a solar energy system, usually referring to ground mounted systems. Total system height is the measurement from the ground to the top of the mounting or modules associated with a system.
- qq. Transmission lines. Power lines used to carry electricity from collection systems or substations over long distances.

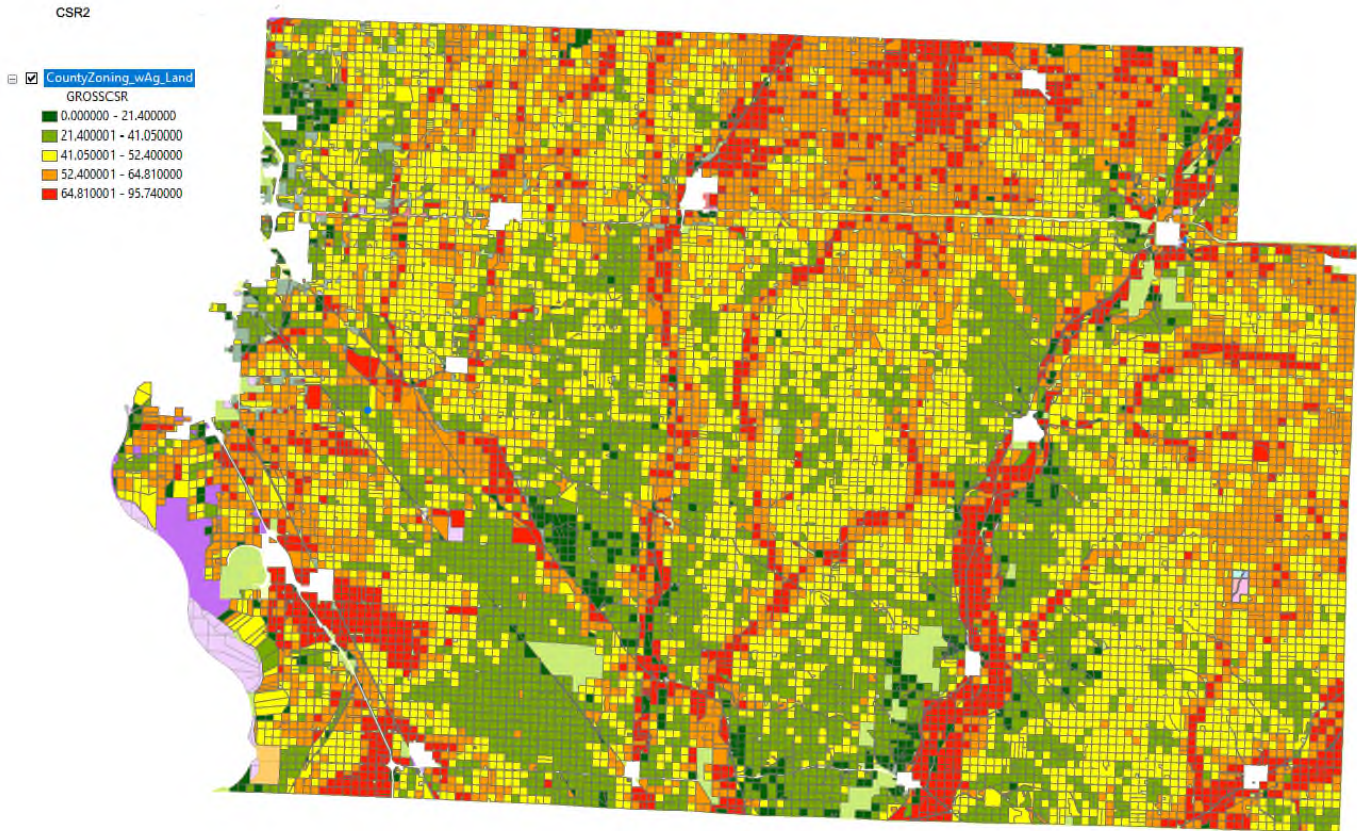
# ZONING COMMISSION

Preparation for a Recommendation to the Board of Supervisors  
Utility-Scale Solar Energy Systems (US-SES)

## UTILITY-SCALE SOLAR SYSTEMS CONSIDERATIONS FOR AN ORDINANCE AMENDMENT

**Consideration 1:** A conditional use permit for AP “C” with Planning and Zoning and Board of Adjustment to be able to site-specifically take into consideration the concerns of neighbors, land/soil, and other factors when approving permit.

- **Public Notification:** Newspaper Legals and Letter to Property Owners within 1 mile regarding public hearing before Board of Adjustment and Zoning Commission consideration.
- **Land/Soil: Corn Suitability Rating 2 (CSR2) and Soil Types with Slope Content**
  - **CSR2 Average by Parcel in Agricultural Preservation (AP) Zoning District** \*Data acquired via Schneider/Beacon
    - **Using 65+ CSR2**

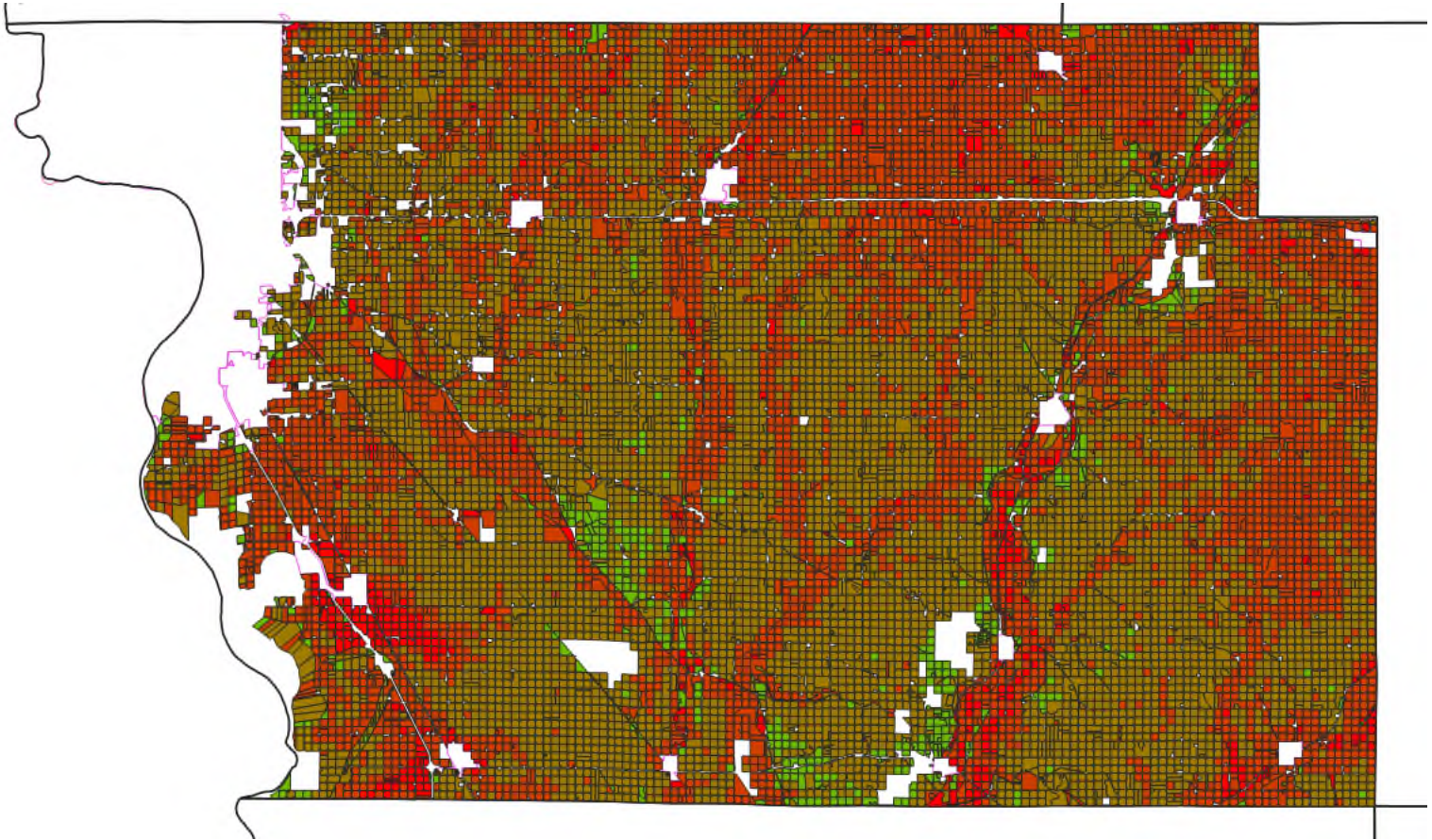


- **Agricultural Preservation: Estimated Total acres based on Schneider/Beacon gross acres with gross CSR2 greater than 65**
  - 204,405.91 Acres
- **Agricultural Preservation: Estimated Total acres based on Schneider/Beacon gross acres with gross CSR2 greater than 75**
  - 115,504.96 Acres



○ **CSR2 Average by Parcel in Agricultural Preservation (AP) Zoning District** \*Data acquired via Schneider/Beacon

- ▼   **CSR2 75**
- 0 - 25
- 25 - 50
- 50 - 75
- 75 - 100

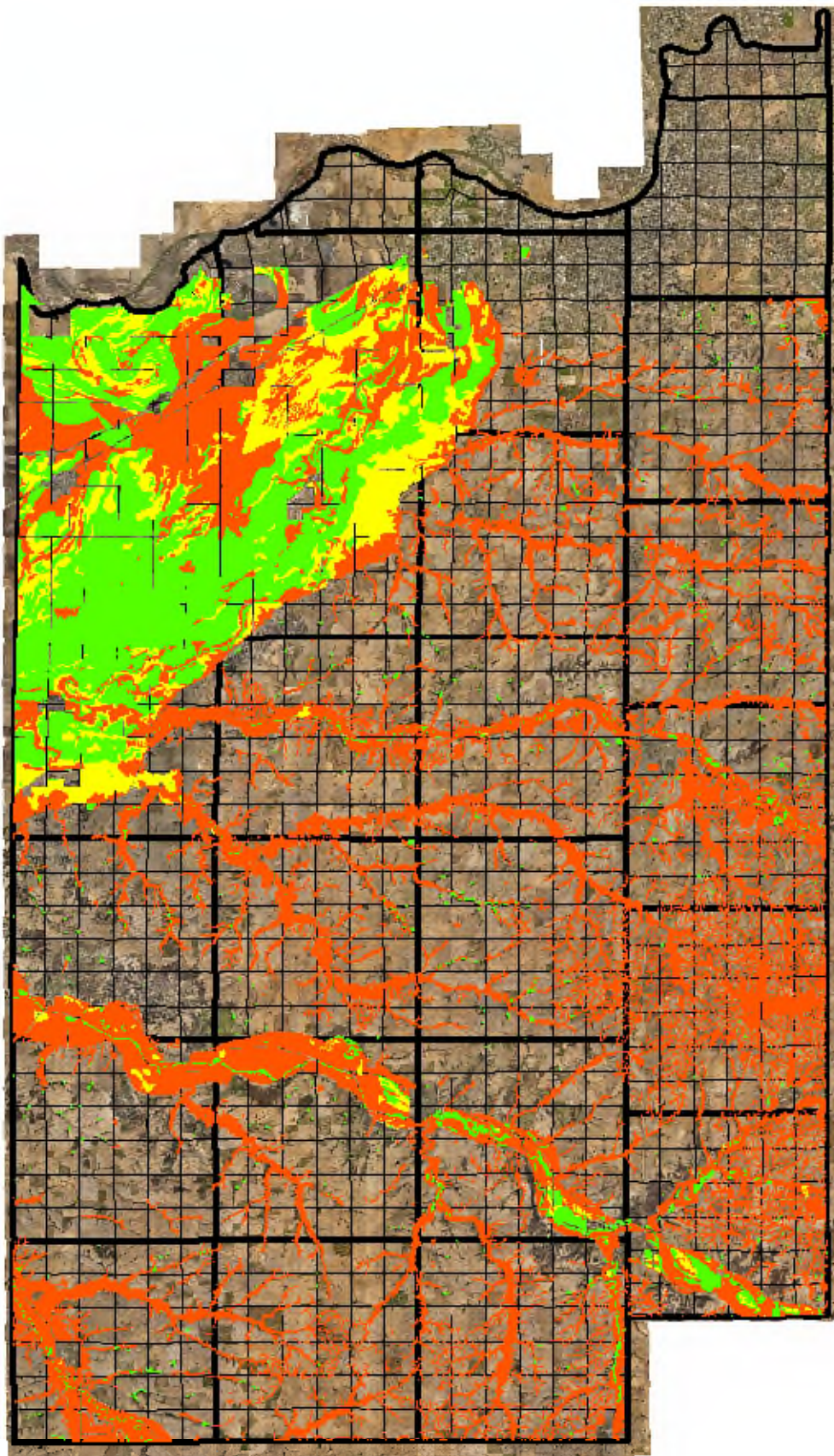


- **Agricultural Preservation: Estimated Total acres based on Schneider/Beacon gross acres with gross CSR2 greater than 65**
  - 204,405.91 Acres
- **Agricultural Preservation: Estimated Total acres based on Schneider/Beacon gross acres with gross CSR2 greater than 75**
  - 115,504.96 Acres



**Consideration 2:** A slope of no more than 5% in order to preserve the land and to account for soil erosion, compaction, and future land stewardship.

### Soil Slope and CSR2 Comparison

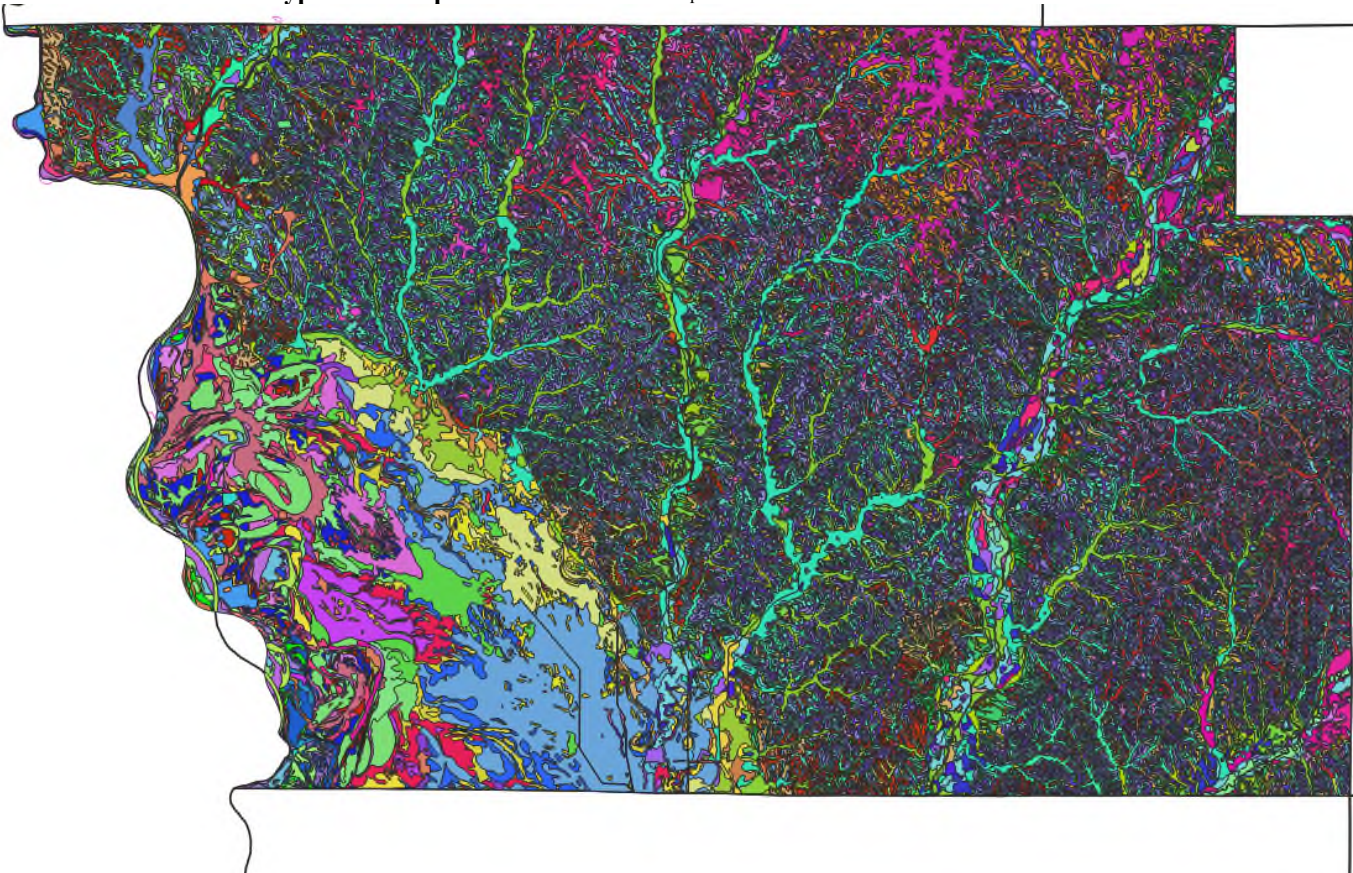


AP zoned area in  
5 or less slope 363124 acres (red)  
5 or less slope and CSR2 <= 75 138991 acres (yellow)  
5 or less slope and CSR2 <= 65 122556 acres (green)

\*NRCS data collected from the Assessor's website via Woodbury County Secondary Roads



○ Soil Types with Slope Content \*NRCS Data acquired via Schneider/Beacon



✓	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	Albaton silty clay, 0 to 2 percent slopes, rarely flooded
✓	Albaton silty clay, depressional, drained, 0 to 1 percent slopes, frequently flooded	Albaton silty clay, depressional, drained, 0 to 1 percent slopes, frequently flooded
✓	Anthon silty clay loam, 0 to 2 percent slopes	Anthon silty clay loam, 0 to 2 percent slopes
✓	Anthon silty clay loam, 2 to 5 percent slopes	Anthon silty clay loam, 2 to 5 percent slopes
✓	Blake silty clay loam, 0 to 2 percent slopes, occasionally flooded	Blake silty clay loam, 0 to 2 percent slopes, occasionally flooded
✓	Blake silty clay loam, 0 to 2 percent slopes, rarely flooded	Blake silty clay loam, 0 to 2 percent slopes, rarely flooded
✓	Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded	Blencoe-Woodbury silty clays, 0 to 2 percent slopes, rarely flooded
✓	Blend silty clay, 0 to 2 percent slopes, rarely flooded	Blend silty clay, 0 to 2 percent slopes, rarely flooded
✓	Burcham silt loam, 0 to 2 percent slopes, rarely flooded	Burcham silt loam, 0 to 2 percent slopes, rarely flooded
✓	Burchard clay loam, 9 to 18 percent slopes	Burchard clay loam, 9 to 18 percent slopes
✓	Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded	Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded
✓	Castana silt loam, 14 to 20 percent slopes	Castana silt loam, 14 to 20 percent slopes
✓	Castana silt loam, 9 to 14 percent slopes	Castana silt loam, 9 to 14 percent slopes
✓	Cooper silty clay loam, 0 to 2 percent slopes, rarely flooded	Cooper silty clay loam, 0 to 2 percent slopes, rarely flooded
✓	Danbury silt loam, 0 to 2 percent slopes, occasionally flooded	Danbury silt loam, 0 to 2 percent slopes, occasionally flooded
✓	Deloit loam, 2 to 5 percent slopes	Deloit loam, 2 to 5 percent slopes
✓	Deloit loam, 5 to 9 percent slopes	Deloit loam, 5 to 9 percent slopes
✓	Deloit loam, 9 to 18 percent slopes	Deloit loam, 9 to 18 percent slopes
✓	Dockery-Quiver silt loams, deep loess, 0 to 2 percent slopes, occasionally flooded	Dockery-Quiver silt loams, deep loess, 0 to 2 percent slopes, occasionally flooded
✓	Fairhaven silt loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	Fairhaven silt loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes
✓	Fairhaven silt loam, 32 to 40 inches to sand and gravel, 2 to 5 percent slopes	Fairhaven silt loam, 32 to 40 inches to sand and gravel, 2 to 5 percent slopes
✓	Fluvaquents, 0 to 2 percent slopes, frequently flooded	Fluvaquents, 0 to 2 percent slopes, frequently flooded
✓	Galva silty clay loam, 2 to 5 percent slopes	Galva silty clay loam, 2 to 5 percent slopes
✓	Galva silty clay loam, 5 to 9 percent slopes, eroded	Galva silty clay loam, 5 to 9 percent slopes, eroded
✓	Galva silty clay loam, terrace, 2 to 5 percent slopes	Galva silty clay loam, terrace, 2 to 5 percent slopes
✓	Galva silty clay loam, terrace, 5 to 9 percent slopes, eroded	Galva silty clay loam, terrace, 5 to 9 percent slopes, eroded
✓	Grable-Morconick complex, 0 to 2 percent slopes, occasionally flooded	Grable-Morconick complex, 0 to 2 percent slopes, occasionally flooded
✓	Grable-Morconick complex, 0 to 2 percent slopes, rarely flooded	Grable-Morconick complex, 0 to 2 percent slopes, rarely flooded
✓	Grantcenter silty clay loam, 0 to 2 percent slopes, rarely flooded	Grantcenter silty clay loam, 0 to 2 percent slopes, rarely flooded
✓	Hamburg silt loam, 40 to 75 percent slopes	Hamburg silt loam, 40 to 75 percent slopes
✓	Hawick sandy loam, 14 to 18 percent slopes	Hawick sandy loam, 14 to 18 percent slopes
✓	Hawick sandy loam, 18 to 25 percent slopes	Hawick sandy loam, 18 to 25 percent slopes
✓	Hawick sandy loam, 5 to 9 percent slopes	Hawick sandy loam, 5 to 9 percent slopes
✓	Hawick sandy loam, 9 to 14 percent slopes	Hawick sandy loam, 9 to 14 percent slopes
✓	Haynie silt loam, 0 to 2 percent slopes, occasionally flooded	Haynie silt loam, 0 to 2 percent slopes, occasionally flooded
✓	Haynie silt loam, deep loess, 0 to 2 percent slopes, rarely flooded	Haynie silt loam, deep loess, 0 to 2 percent slopes, rarely flooded
✓	Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded	Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded
✓	Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded, overwash	Holly Springs silty clay loam, 0 to 2 percent slopes, rarely flooded, overwash
✓	Ida silt loam, 14 to 20 percent slopes, severely eroded	Ida silt loam, 14 to 20 percent slopes, severely eroded
✓	Ida silt loam, 2 to 5 percent slopes, severely eroded	Ida silt loam, 2 to 5 percent slopes, severely eroded
✓	Ida silt loam, 20 to 30 percent slopes	Ida silt loam, 20 to 30 percent slopes
✓	Ida silt loam, 20 to 30 percent slopes, severely eroded	Ida silt loam, 20 to 30 percent slopes, severely eroded
✓	Ida silt loam, 30 to 40 percent slopes	Ida silt loam, 30 to 40 percent slopes
✓	Ida silt loam, 5 to 9 percent slopes	Ida silt loam, 5 to 9 percent slopes
✓	Ida silt loam, 5 to 9 percent slopes, severely eroded	Ida silt loam, 5 to 9 percent slopes, severely eroded



✓	Ida silt loam, 9 to 14 percent slopes, severely eroded	Ida silt loam, 9 to 14 percent slopes, severely eroded
✓	Ida-Urban land complex, 14 to 20 percent slopes	Ida-Urban land complex, 14 to 20 percent slopes
✓	Ida-Urban land complex, 2 to 9 percent slopes	Ida-Urban land complex, 2 to 9 percent slopes
✓	Ida-Urban land complex, 20 to 30 percent slopes	Ida-Urban land complex, 20 to 30 percent slopes
✓	Ida-Urban land complex, 9 to 14 percent slopes	Ida-Urban land complex, 9 to 14 percent slopes
✓	Judson silty clay loam, deep loess, 2 to 5 percent slopes	Judson silty clay loam, deep loess, 2 to 5 percent slopes
✓	Judson silty clay loam, deep loess, 5 to 9 percent slopes	Judson silty clay loam, deep loess, 5 to 9 percent slopes
✓	Judson-Rawles complex, 0 to 5 percent slopes	Judson-Rawles complex, 0 to 5 percent slopes
✓	Keg loam, 0 to 2 percent slopes, rarely flooded	Keg loam, 0 to 2 percent slopes, rarely flooded
✓	Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded	Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded
✓	Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded, overwash	Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded, overwash
✓	Kennebec silty clay loam, 0 to 2 percent slopes, occasionally flooded	Kennebec silty clay loam, 0 to 2 percent slopes, occasionally flooded
✓	Lakeport silty clay loam, 0 to 2 percent slopes, rarely flooded	Lakeport silty clay loam, 0 to 2 percent slopes, rarely flooded
✓	Larpenteur loam, 0 to 2 percent slopes, rarely flooded	Larpenteur loam, 0 to 2 percent slopes, rarely flooded
✓	Liston-Burchard complex, 18 to 25 percent slopes	Liston-Burchard complex, 18 to 25 percent slopes
✓	Liston-Burchard complex, 25 to 40 percent slopes	Liston-Burchard complex, 25 to 40 percent slopes
✓	Luton silty clay loam, 0 to 2 percent slopes, rarely flooded	Luton silty clay loam, 0 to 2 percent slopes, rarely flooded
✓	Luton silty clay, 0 to 2 percent slopes, rarely flooded	Luton silty clay, 0 to 2 percent slopes, rarely flooded
✓	Modale complex, 0 to 2 percent slopes, occasionally flooded	Modale complex, 0 to 2 percent slopes, occasionally flooded
✓	Modale complex, 0 to 2 percent slopes, rarely flooded	Modale complex, 0 to 2 percent slopes, rarely flooded
✓	Monona silt loam, 14 to 20 percent slopes	Monona silt loam, 14 to 20 percent slopes
✓	Monona silt loam, 14 to 20 percent slopes, severely eroded	Monona silt loam, 14 to 20 percent slopes, severely eroded
✓	Monona silt loam, 2 to 5 percent slopes	Monona silt loam, 2 to 5 percent slopes
✓	Monona silt loam, 2 to 5 percent slopes, eroded	Monona silt loam, 2 to 5 percent slopes, eroded
✓	Monona silt loam, 20 to 30 percent slopes	Monona silt loam, 20 to 30 percent slopes
✓	Monona silt loam, 5 to 9 percent slopes, eroded	Monona silt loam, 5 to 9 percent slopes, eroded
✓	Monona silt loam, 9 to 14 percent slopes, eroded	Monona silt loam, 9 to 14 percent slopes, eroded
✓	Monona silt loam, 9 to 14 percent slopes, severely eroded	Monona silt loam, 9 to 14 percent slopes, severely eroded
✓	Monona silt loam, terrace, 0 to 2 percent slopes	Monona silt loam, terrace, 0 to 2 percent slopes
✓	Monona silt loam, terrace, 2 to 5 percent slopes	Monona silt loam, terrace, 2 to 5 percent slopes
✓	Monona silt loam, terrace, 2 to 5 percent slopes, eroded	Monona silt loam, terrace, 2 to 5 percent slopes, eroded
✓	Monona silt loam, terrace, 5 to 9 percent slopes, eroded	Monona silt loam, terrace, 5 to 9 percent slopes, eroded
✓	Monona silty clay loam, 14 to 20 percent slopes, eroded	Monona silty clay loam, 14 to 20 percent slopes, eroded
✓	Monona silty clay loam, 2 to 5 percent slopes	Monona silty clay loam, 2 to 5 percent slopes
✓	Monona silty clay loam, 5 to 9 percent slopes, eroded	Monona silty clay loam, 5 to 9 percent slopes, eroded
✓	Monona silty clay loam, 9 to 14 percent slopes, eroded	Monona silty clay loam, 9 to 14 percent slopes, eroded
✓	Monona silty clay loam, terrace, 0 to 2 percent slopes	Monona silty clay loam, terrace, 0 to 2 percent slopes
✓	Monona silty clay loam, terrace, 2 to 5 percent slopes	Monona silty clay loam, terrace, 2 to 5 percent slopes
✓	Monona silty clay loam, terrace, 5 to 9 percent slopes, eroded	Monona silty clay loam, terrace, 5 to 9 percent slopes, eroded
✓	Monona silty clay loam, terrace, 9 to 14 percent slopes, eroded	Monona silty clay loam, terrace, 9 to 14 percent slopes, eroded
✓	Monona-Ida silt loams, 14 to 20 percent slopes, eroded	Monona-Ida silt loams, 14 to 20 percent slopes, eroded
✓	Monona-Urban land complex, 14 to 20 percent slopes	Monona-Urban land complex, 14 to 20 percent slopes
✓	Monona-Urban land complex, 2 to 5 percent slopes	Monona-Urban land complex, 2 to 5 percent slopes
✓	Monona-Urban land complex, 5 to 9 percent slopes	Monona-Urban land complex, 5 to 9 percent slopes
✓	Monona-Urban land complex, 9 to 14 percent slopes	Monona-Urban land complex, 9 to 14 percent slopes
✓	Morconick fine sandy loam, 0 to 2 percent slopes, occasionally flooded	Morconick fine sandy loam, 0 to 2 percent slopes, occasionally flooded
✓	Morconick fine sandy loam, 0 to 2 percent slopes, rarely flooded	Morconick fine sandy loam, 0 to 2 percent slopes, rarely flooded
✓	Moville-Holly Springs, overwash complex, 0 to 2 percent slopes, rarely flooded	Moville-Holly Springs, overwash complex, 0 to 2 percent slopes, rarely flooded
✓	Napa-Luton-Tieville silty clays, 0 to 2 percent slopes, rarely flooded	Napa-Luton-Tieville silty clays, 0 to 2 percent slopes, rarely flooded
✓	Napier silt loam, 2 to 5 percent slopes	Napier silt loam, 2 to 5 percent slopes
✓	Napier silt loam, 5 to 9 percent slopes	Napier silt loam, 5 to 9 percent slopes
✓	Napier-Castana silt loams, 9 to 20 percent slopes	Napier-Castana silt loams, 9 to 20 percent slopes
✓	Napier-Castana-Urban land complex, 9 to 14 percent slopes	Napier-Castana-Urban land complex, 9 to 14 percent slopes
✓	Napier-Gullied land complex, 5 to 14 percent slopes	Napier-Gullied land complex, 5 to 14 percent slopes
✓	Napier-Kennebec-Colo complex, 0 to 5 percent slopes	Napier-Kennebec-Colo complex, 0 to 5 percent slopes
✓	Napier-Rawles complex, 2 to 5 percent slopes	Napier-Rawles complex, 2 to 5 percent slopes
✓	Napier-Urban land complex, 2 to 5 percent slopes	Napier-Urban land complex, 2 to 5 percent slopes
✓	Napier-Urban land complex, 5 to 9 percent slopes	Napier-Urban land complex, 5 to 9 percent slopes
✓	Onawa silty clay, 0 to 2 percent slopes, occasionally flooded	Onawa silty clay, 0 to 2 percent slopes, occasionally flooded
✓	Onawa-Albaton complex, 0 to 2 percent slopes, rarely flooded	Onawa-Albaton complex, 0 to 2 percent slopes, rarely flooded
✓	Owego silty clay, 0 to 2 percent slopes, rarely flooded	Owego silty clay, 0 to 2 percent slopes, rarely flooded
✓	Percival silty clay, 0 to 2 percent slopes, rarely flooded	Percival silty clay, 0 to 2 percent slopes, rarely flooded
✓	Percival-Albaton complex, 0 to 2 percent slopes, occasionally flooded	Percival-Albaton complex, 0 to 2 percent slopes, occasionally flooded
✓	Percival-Haynie-Urban land complex, 0 to 2 percent slopes, rarely flooded	Percival-Haynie-Urban land complex, 0 to 2 percent slopes, rarely flooded
✓	Pits, clay	Pits, clay
✓	Pits, sand and gravel	Pits, sand and gravel
✓	Rawles silt loam, 0 to 2 percent slopes, occasionally flooded	Rawles silt loam, 0 to 2 percent slopes, occasionally flooded
✓	Rawles-Urban land complex, 0 to 2 percent slopes	Rawles-Urban land complex, 0 to 2 percent slopes
✓	Salix silt loam, 0 to 2 percent slopes, rarely flooded	Salix silt loam, 0 to 2 percent slopes, rarely flooded
✓	Sarpy loamy fine sand, 0 to 2 percent slopes, rarely flooded	Sarpy loamy fine sand, 0 to 2 percent slopes, rarely flooded
✓	Sarpy loamy fine sand, 2 to 5 percent slopes, occasionally flooded	Sarpy loamy fine sand, 2 to 5 percent slopes, occasionally flooded
✓	Sarpy loamy fine sand, 2 to 5 percent slopes, rarely flooded	Sarpy loamy fine sand, 2 to 5 percent slopes, rarely flooded
✓	Sarpy loamy fine sand, 5 to 9 percent slopes, occasionally flooded	Sarpy loamy fine sand, 5 to 9 percent slopes, occasionally flooded
✓	Sarpy-Morconick complex, 0 to 2 percent slopes, occasionally flooded	Sarpy-Morconick complex, 0 to 2 percent slopes, occasionally flooded
✓	Scroll silty clay, 0 to 2 percent slopes, occasionally flooded	Scroll silty clay, 0 to 2 percent slopes, occasionally flooded
✓	Sewage lagoon	Sewage lagoon
✓	Smithland silt loam, 0 to 2 percent slopes, occasionally flooded, overwash	Smithland silt loam, 0 to 2 percent slopes, occasionally flooded, overwash
✓	Smithland silty clay loam, 0 to 2 percent slopes, occasionally flooded	Smithland silty clay loam, 0 to 2 percent slopes, occasionally flooded
✓	Smithland-Danbury-Judson complex, 0 to 5 percent slopes	Smithland-Danbury-Judson complex, 0 to 5 percent slopes
✓	Spillville loam, 0 to 2 percent slopes, occasionally flooded	Spillville loam, 0 to 2 percent slopes, occasionally flooded
✓	Ticonic very fine sandy loam, 0 to 2 percent slopes, rarely flooded	Ticonic very fine sandy loam, 0 to 2 percent slopes, rarely flooded
✓	Tieville silty clay, 0 to 2 percent slopes, rarely flooded	Tieville silty clay, 0 to 2 percent slopes, rarely flooded
✓	Udorthents, loamy	Udorthents, loamy
✓	Udorthents, sanitary landfill	Udorthents, sanitary landfill
✓	Urban land	Urban land
✓	Water	Water
✓	Wilsey silt loam, 0 to 2 percent slopes, occasionally flooded	Wilsey silt loam, 0 to 2 percent slopes, occasionally flooded
✓	Woodbury silty clay, 0 to 2 percent slopes, rarely flooded	Woodbury silty clay, 0 to 2 percent slopes, rarely flooded
✓	Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded	Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded

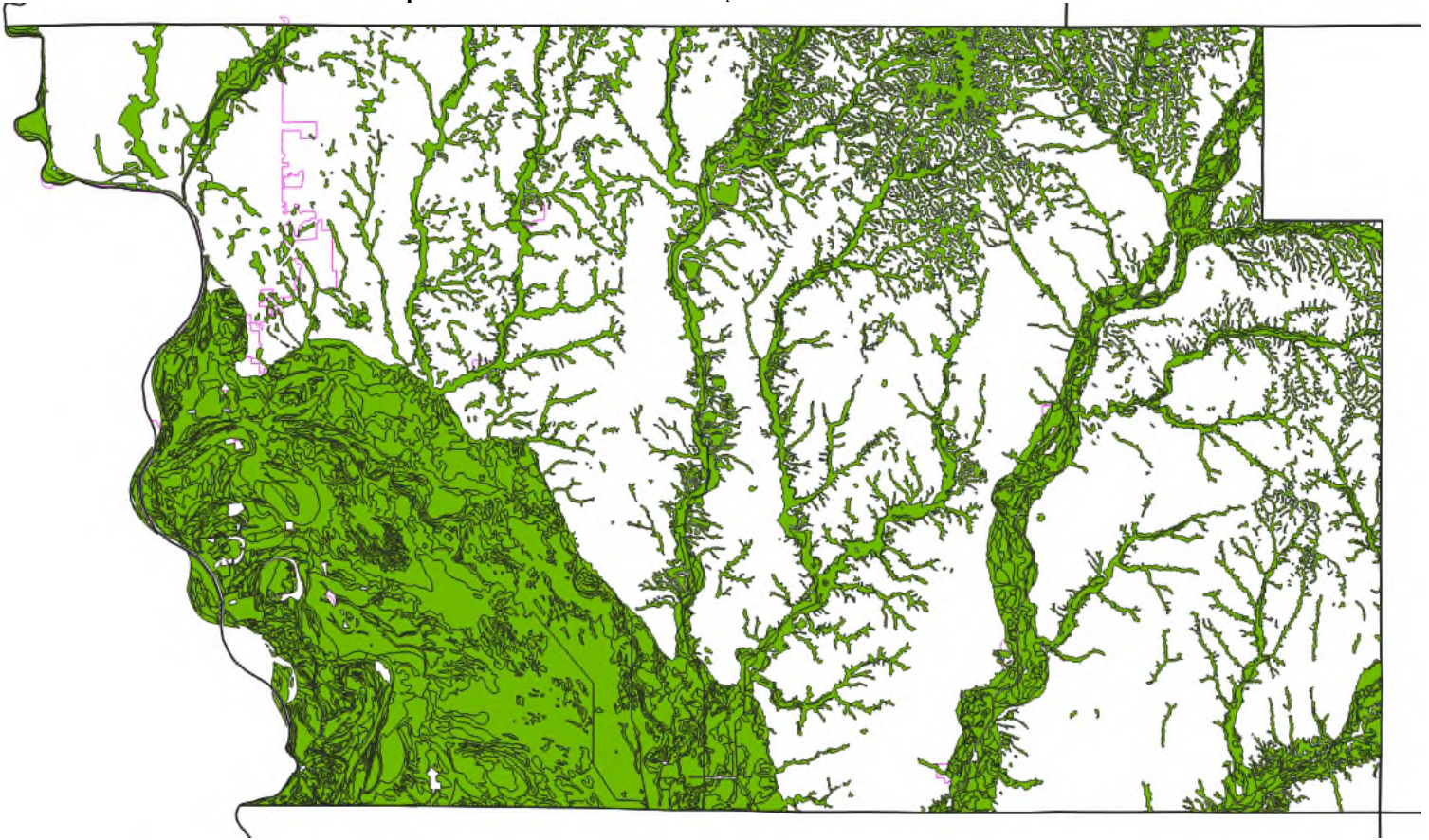
\*NRCS Data acquired via Schneider/Beacon



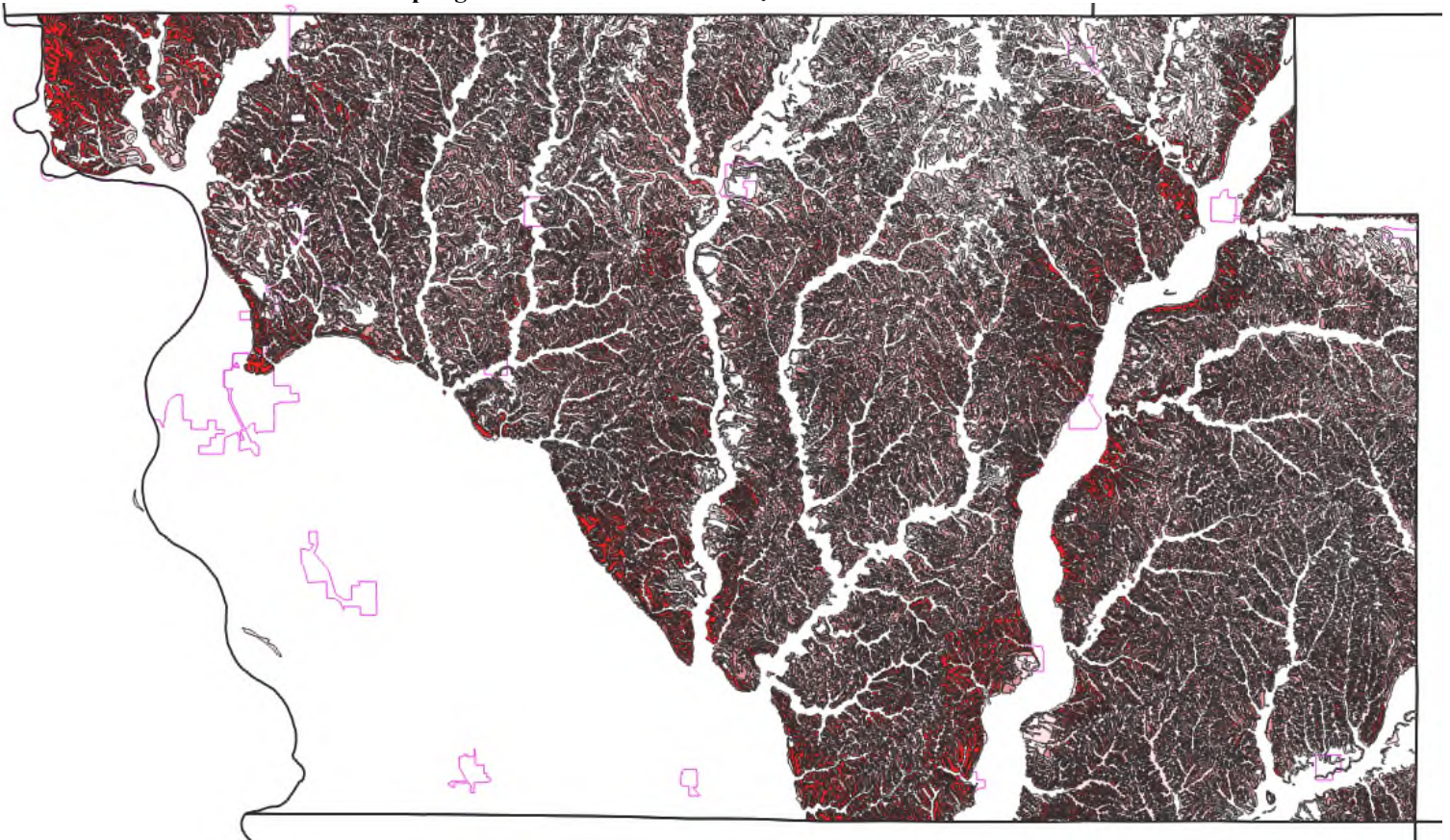




- **Areas with soil slopes between 0-5%** \*NRCS Data acquired via Schneider/Beacon

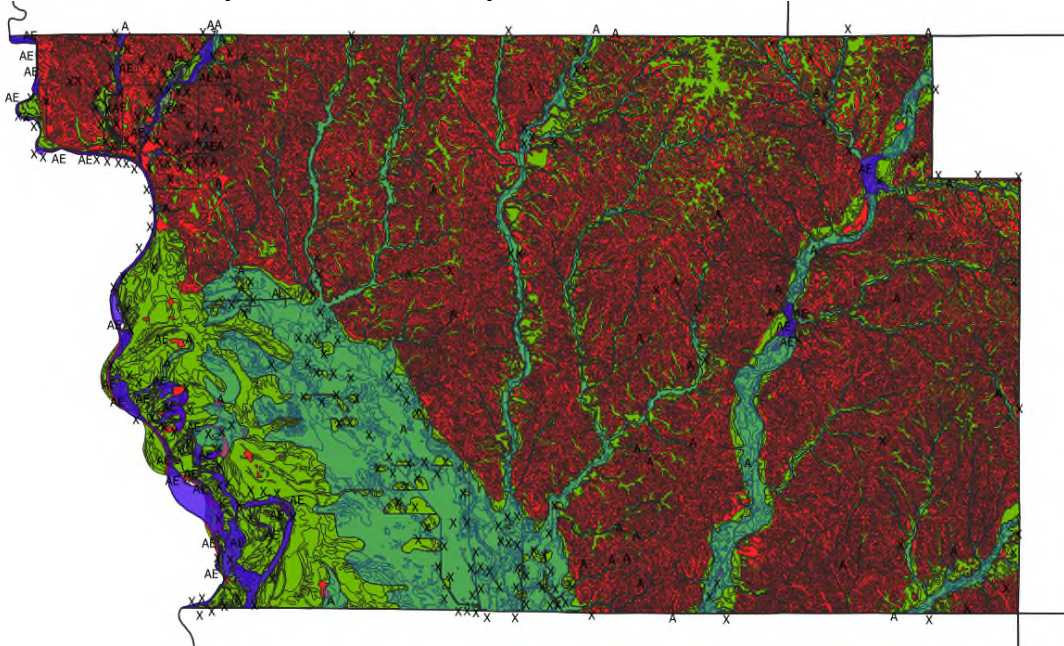


- **Areas with soil slopes greater than 5%** \*NRCS Data acquired via Schneider/Beacon

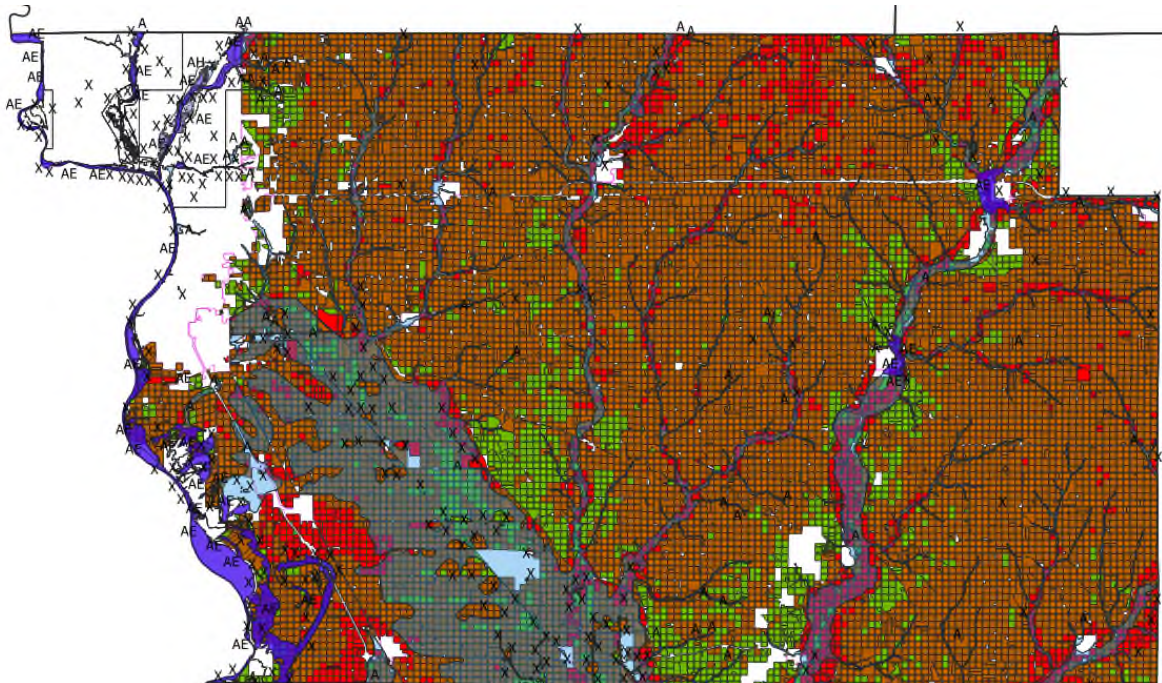




- **Floodplain and Soils with Slope over 5%** \*NRCS data and floodplain Data acquired via Schneider/Beacon
  - **Blue Represents Floodplain Areas**
  - **Red represents areas with Slope over 5%**
  - **Green represents areas with Slope under 5%**



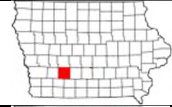



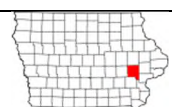

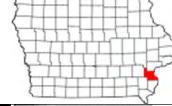
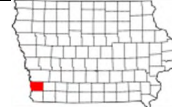
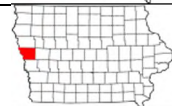


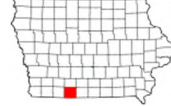
- **Floodplain and CSR2** \*NRCS data and floodplain Data acquired via Schneider/Beacon
  - **Floodplain – “Blue”**
  - **CSR2 –**
    - **0-35 – “Green”**
    - **35-64 – “Brown”**
    - **65-100 = “Red”**







**Consideration 3:** A maximum height of no more than 20’ for panel structures.

- Language could be considered that places a 20’ height limitation on the solar panels.
  - According to the *Renewable Solar Energy Systems Model Ordinance* by Guyer and Snell, 20 FT is offered as a possible height limitation for consideration. However, if agrisolar systems are to be considered in the future, the bulk regulations of the zoning district could be considered which are 45 FT. According to the AgriSolar Clearinghouse, “maximum heights range from 12 to 45 feet. Most fall between 15 and 25 feet” (Website: <https://www.agrisolarclearinghouse.org/>)

County	Location	Population (2023)	Height Requirement
Adair		7,439	Unspecified.
Clayton		16,716	Reverts to Zoning Ordinance. Varies: 25 to 35 FT.
Clinton		45,662	Bulk regulations of the ordinance for structures by Zoning District.
Dubuque		100,949	Bulk regulations of the ordinance for structures by Zoning District.
Johnson		159,445	35 FT
Linn		236,020	Not referenced.
Louisa		10,672	Not referenced.
Mills		14,310	15 FT at a maximum tilt.
Monona		8,604	No restriction.
Muscatine		43,382	Bulk regulations.
Polk		510,929	Bulk regulations.
Ringgold		4,522	No reference.

Scott		177,501	Bulk regulations of the ordinance for structures by Zoning District.
Tama		16,946	TBD

**Consideration 4:** Of all AP, no more than 49% can be in such a project. In short, 51% must be for agricultural production or no longer considered “AP.”

- This is to consider the co-existence of agricultural and utility solar. If a solar project is to co-exist on farm ground, it may be considered to require that 51% of the project be used to support agricultural purposes.

**Consideration 5:** Utility solar can be no more than 2% of all AP “agricultural preservation,” preserving 98% of AP. This equates to approximately 8,540 acres of the 427,000 acres of ag land, ag land constituting 75% of the 570,000 total acres in Woodbury County.

- Based on GIS data calculated by WCICC, it appears the Agricultural Preservation (AP) Zoning District is comprised of 508,624.55 total assessed acres. If a 2% cap is instituted, this would make approximately 10,172.49 acres available for consideration for utility-solar in the AP Zoning District.

Zoning District	Total Assessed Net Acres	2% Cap																																																																
<b>Agricultural Preservation (AP)</b> <table border="1"> <thead> <tr> <th>ParcelNumber</th> <th>County_Zoning_GIS</th> <th>area</th> <th>netacres</th> </tr> </thead> <tbody> <tr><td>1</td><td>874231300002</td><td>AP</td><td>1749948.0119600</td><td>40.00</td></tr> <tr><td>2</td><td>894328300001</td><td>AP</td><td>1687765.7362400</td><td>39.00</td></tr> <tr><td>3</td><td>864610400002</td><td>AP</td><td>1694640.7414700</td><td>39.00</td></tr> <tr><td>4</td><td>884422300005</td><td>AP</td><td>1585196.7091100</td><td>36.11</td></tr> <tr><td>5</td><td>864423100001</td><td>AP</td><td>1704218.3953600</td><td>38.43</td></tr> <tr><td>6</td><td>874301400003</td><td>AP</td><td>1676879.5581500</td><td>39.00</td></tr> <tr><td>7</td><td>864306200006</td><td>AP</td><td>1846312.5195300</td><td>40.42</td></tr> <tr><td>8</td><td>864214400001</td><td>AP</td><td>1780673.1848300</td><td>40.00</td></tr> <tr><td>9</td><td>864735200003</td><td>AP</td><td>1711274.6214900</td><td>40.00</td></tr> </tbody> </table> <table border="1"> <tr><td>Total_AP_Parcel</td><td>1</td><td>16277</td></tr> <tr><td>Total_AP_Parcel_with_calculated_area_data</td><td>1</td><td>16000</td></tr> <tr><td>Total_AP_Parcel_with_net_acres_data</td><td>1</td><td>16017</td></tr> <tr><td>Total_AP_Area_in_SqR</td><td>1</td><td>22235446657.2539488</td></tr> <tr><td>Total_AP_assessed_netacres</td><td>1</td><td>508624.55</td></tr> </table>	ParcelNumber	County_Zoning_GIS	area	netacres	1	874231300002	AP	1749948.0119600	40.00	2	894328300001	AP	1687765.7362400	39.00	3	864610400002	AP	1694640.7414700	39.00	4	884422300005	AP	1585196.7091100	36.11	5	864423100001	AP	1704218.3953600	38.43	6	874301400003	AP	1676879.5581500	39.00	7	864306200006	AP	1846312.5195300	40.42	8	864214400001	AP	1780673.1848300	40.00	9	864735200003	AP	1711274.6214900	40.00	Total_AP_Parcel	1	16277	Total_AP_Parcel_with_calculated_area_data	1	16000	Total_AP_Parcel_with_net_acres_data	1	16017	Total_AP_Area_in_SqR	1	22235446657.2539488	Total_AP_assessed_netacres	1	508624.55	508,624.55	10,172.49
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**Consideration 6:** Current notification for utility-scale solar shall be 1 mile for public comment instead of 500 feet.

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- As a conditional use, the notification area of 500 FT from the project site could be expanded to one (1) mile. It will be important to note, that this could increase administrative costs. However, the Board of Supervisors did revise the fee schedule on August 2, 2022 to require the owners(s)/applicant(s) for conditional use permits to pay additional costs associated with the processing, printing, and the mailing of notifications of the public hearings when the number of mailings exceeds 30. They shall also pay the additional costs of the legal publication notice(s) in newspaper(s) when the fees exceed \$100.00.
- The Zoning Commission may also make recommendations to the fee structure for utility-scale solar conditional use permits.

**Consideration 7:** A requirement (or at least strong consideration) that the utility-scale solar project either be on a landowner's property or that the owner of the land be a resident of Woodbury County.

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- The Zoning Commission might consider either a requirement or consideration that the utility-scale solar project either be on a landowner's property or that the owner of the land be a resident of Woodbury County.