Office Use Only		$	
	Date Filed	*Fee*	*Application Number*

JOHNSON COUNTY, IOWA

APPLICATION FOR: CONDITIONAL USE PERMIT

Application is hereby made for approval of a (state the official use as listed in the Johnson County UDO, and *briefly* describe the proposed use [e.g. Home Industry for Antique shop, Special Events for Corn Maze, etc.]):

Solar Arrays

On property located at (street address if available or layman's description):

Lying West of Hwy 1 SW 1862' to 2650' South of it intersection with 500th St. SW

Parcel Number(s): 1313177005

The property consists of 6.40 **total acres, and is currently zoned** A

***Note**: This Conditional Use Permit is subject to any conditions outlined in chapter 8:1.23 of the Unified Development Ordinance and any other conditions deemed appropriate by the board of Adjustment to protect public health, safety, and welfare.*

The undersigned affirms that the information provided herein is true and correct. If applicant is not the owner, applicant affirms that the owner(s) of the property described on this application consent to this application being submitted, and said owners hereby give their consent for the office of Johnson County Planning, Development, and Sustainability to conduct a site visit and photograph the subject property.

Mark & Rosemary Slabaugh
Name of Owner

Farmers Electric Coop
Name of Applicant (if different)

1959 Yoder Ave. SW Kalona, IA. 52247
Applicant Street Address (including City, State, Zip)

319-683-2510
Applicant Phone

theisdorffer@feckalona.org
Applicant Email

Tim Theisdorffer
Applicant Signature

See back page for Application Submittal Requirements and Checklist

Applications should be emailed to planning@johnsoncountyiowa.gov and delivered to the Planning, Development and Sustainability Office (913 South Dubuque Street, Iowa City, IA 52240)

Updated 6.1.23 MS

The following items must be submitted for the application to be complete. Incomplete applications will be returned and will not be considered until the next submission deadline. Once submitted, county staff will review the materials and request revisions (if necessary). Once all revisions and outside reviews have been received, the application will be placed on the next available Board of Adjustment agenda.

If working with an engineer who can provide CAD or GIS line work, electronic submissions should be submitted in accordance with the PDS department's electronic submission guidelines (see below). Preference is that electronic submission is prior to hard copy submission, but will be accepted until 12:00 p.m. the day after the submittal deadline.

Initial each empty box below *to ensure you included all necessary information in the appropriate form for an application to be considered complete. Some items may require both electronic and physical copies.*

Item Required	Electronic Copy (PDF unless otherwise noted)	Hard copy
Application Fee (varies based on application. Fee: $ 1000)		
This application form with all information completed		(2)
Brief cover letter explaining the proposed use including but not limited to the number of employees, parking facilities, days and hours of operation, estimate of maximum number of customers expected on site an any one time, provisions for water and wastewater, types of equipment to be used, signage, etc		
Site plan identifying the access, structure(s) for the proposed use, parking areas, signage location, and addressing any Supplemental Conditions required by Chapter 8:1.23		
If working with an engineer: CAD line work of the site plan, following the guidance below		
Proof of application to the Johnson County Health Department for a Public Health Zoning Application		
For requests to establish Utility Scale Solar (use area of 20 acres or less): • Completed "Application Checklist for Utility-Scale Solar Systems (Supplemental Conditions)", accompanied by all information outlined on said checklist. • Electronic Submission of all materials is required.		
For requests for Commercial Communications Towers, include the following: • Sensitive Areas Analysis in compliance with the Sensitive Areas Ordinance, or an approved Sensitive Areas waiver. • Stormwater Management Plan (including soil erosion and sediment control) in compliance with the Stormwater Management regulations, or an approved waiver		

Electronic Submission Requirements for CAD line work:

- Must be in AutoCAD 2017 or older and .dwg format (.dxf is also acceptable, no .zip files will be accepted).
- Submissions must use Coordinate System: NAD_1983_StatePlane_Iowa_South_FIPS_1402_Feet
- If applicable, submission should include information for Sensitive Areas Analysis/Mapping and Stormwater/Soil Erosion Control infrastructure on the site. This includes any limits of disturbance or other impact areas.
- Submission should NOT include legends, legal descriptions, location maps, signature blocks, etc.

Farmers Electric Cooperative
Owned by the people we serve, since 1916

1959 Yoder Ave SW
Kalona, IA 52247
319-683-2510

7/13/2023

Letter Of Intent Explaining Proposed Use

Farmers Electric Cooperative (FEC) is seeking approval of a conditional use permit to construct and operate a ground-mounted, fixed-mount photovoltaic solar electricity generating system on the west side of Highway 1, approximately 1,900 south of 500th St. SW in Johnson County.

The project is designed to have a generating capacity of 998 KW DC, or about 850 KW AC. It will power about 220 homes annually. The electricity produced will be place on the local electric distribution system and used by residents of Johnson, Iowa, and Washington Counties. Panels will be a minimum of 18 inches above the ground, reaching a height of about 9 feet. This passive facility will not produce any discernible noise, and will co-exist with the surrounding area. FEC proposes to install a landscape buffer along the east side of the site that runs along Highway 1.

The land mass for this project will be 3.5 acres. FEC will install a 7-foot security fence with no barb wire, as required by county regulations, around the entire perimeter. 'Warning/No Trespassing' signs will be mounted every 50'.

The construction and operation of the facility will not require any public facilities or services. The project is accessible from Highway 1. Representatives of the Iowa DOT have already indicated a driveway across from the existing house can be constructed. No grading – other than a driveway – will be required on this site. Once construction is completed, there will be minimal traffic at the site, with physical visits at least once a month by FEC personnel. The solar panels being used have an anti-reflective coating.

A review by Hart-Frederick has indicated this property has been used for crops since at least the late 1800's, and no history of structures exist. A gravel driveway, with some gravel in the property for a turn-around is all that is planned, for minimal water run-off. FEC plans to work with the Bee And Butterfly Habitat Fund to seed the acreage with pollinator habitat. This cover will improve soil and retention. At the end of its 30 – 40 year expected life, this site could be repowered, or returned to its previous agricultural use. If the permit is approved, FEC will work with Johnson County to ensure all standards and regulations are followed.

Once construction is complete and the site is energized, FEC will be able to monitor from off-site, but there will still be tasks needed to be performed on-site; maintenance of landscaping, ground cover, and normal maintenance of the system. Included is a copy of the operation and maintenance of the system. If the system ceases to be in operation for one year, FEC will have one year to decommission the site and notify the Zoning Administrator when the system is

fully decommissioned. A operation and maintenance plan and a decommissioning and restoration plan is included below.

Farmers Electric has been recognized nationally for renewable generated watts per member and percentage of members that have renewables. This site will enable FEC to increase its renewable generation from 15% of annual sales of kilowatthours to approximately 23%; at the same time reducing our dependance on our wholesale suppliers by purchasing less out-of-state energy and lowering our demand. We appreciate your time and consideration.

Tim Heisdorffer
General Manager
Farmers Electric Cooperative
(O) (319) 683-2510
(C) (319) 325-7513

FOR OFFICE USE ONLY:
ZONING NUMBER: _____

Johnson County Public Health
855 S. Dubuque Street * Iowa City, Iowa 52240 * 319/356-6040 * Fax: 319/356-6044

Johnson County Public Health
Zoning Application

Applicant Name: Tim Heisdorffer Farmers Electric Coop	Phone Number: (319) 683-2510		
Address: 1959 Yoder Ave. SW	City: Kalona	State: IA	Zip: 52247

NOTE: THIS APPLICATION NEED NOT BE SUBMITTED FOR FINAL PLATS.

TYPE OF ZONING REQUEST:	APPLICATION FEE:
☐ Zoning reclassification from _____ to _____	$75.00 Application Fee
☐ Combined preliminary and final plat	$50.00 + $20.00 per Lot Application Fee*
☐ Preliminary plat using private onsite/centralized waste water systems	$50.00 + $20.00 per Lot Application Fee*
☒ Conditional Use Permit	$25.00 Application Fee
	***Outlots Exempt**

Application Fee _____ **+ Number of lots** _____ **Minus Number of Outlots =** _____ x $20.00 **Fee Per Lot**
= Enclosed Fee $25

PLEASE RETURN THIS APPLICATION AND APPROPRIATE APPLICATION FEE TO:

JOHNSON COUNTY PUBLIC HEALTH
855 S. DUBUQUE STREET
IOWA CITY, IA 52240

The application and fee must be received by the department NO LESS THAN 24 HOURS prior to the Johnson County Zoning commission public hearing and/or the Johnson County Zoning Board of Adjustment.

No refund shall be made of any required fee accompanying a required application once filed with the administrative officer.

Signature of Applicant: I Scott Metts of behalf Tim Heisdorffer Farmers Electric Coop **Date:** 7/20/23

HART-FREDERICK CONSULTANTS P.C.
www.hart-frederick.com
510 State Street P.O. Box 560 TIFFIN, IOWA 52340-0560 Phone: (319) 545-7215 www.hart-frederick.com

Ⓐ AT&T CORP.
217.80' X 400.00'
ASSIGNMENT OF EASEMENT
BK. 3873, PGS. 623-625

Ⓑ AT&T CORP.
108.90' X 200.00'
PARTIAL ASSIGNMENT OF EASEMENT
BK. 3302, PG. 537

Ⓒ ITC MIDWEST LLC
25' ELECTRIC LINE EASEMENT
BK. 5859, PG. 402

LEGEND

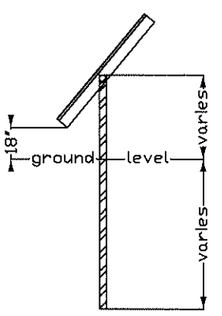
- GOVERNMENT CORNER
- (IR) SET 5/8" IRON ROD W/RED CAP #16546
- FOUND 5/8" IRON ROD
- FOUND RIGHT OF WAY RAIL
- FOUND 5/8" IRON ROD #16546
- (R) RECORDED DIMENSIONS
- (M) MEASURED DIMENSIONS
- PROPERTY/BOUNDARY LINES
- CENTER LINES
- RIGHT-OF-WAY LINES
- SECTION LINES
- EASEMENT LINES
- LOT LINES PLATTED OR BY DEED
- EXISTING FENCE
- CURRENT A ZONING SETBACKS
- PROPOSED SOLAR PANELS AND SUPPORT STRUCTURES WITHIN CURRENT SETBACKS
- SPECIAL EXCEPTION SETBACKS
- PROPOSED SOLAR PANELS AND SUPPORT STRUCTURES WITH SPECIAL EXCEPTION GRANTED
- GRAVEL ACCESS
- GREEN GIANT ARBORVITAE

Ⓐ SITE GROUND COVER TO BE BEE & BUTTERFLY SEEDING MIXTURE

SOUTHEAST 1/4-NORTHEAST 1/4

ZONED A-AGRICULTURAL
SETBACK REQUIREMENTS
FRONT = 40'
REAR = 30'
SIDE = 10'

SPECIAL EXCEPTION ASKING
SETBACK SOUGHT
FRONT = 25'
REAR = 15'
SIDE = 10'



TYPICAL SIDE VIEW

Ⓗ STATE APPROVED DRIVE

AUDITOR PARCEL 2023012
BK. 66, PG. 326

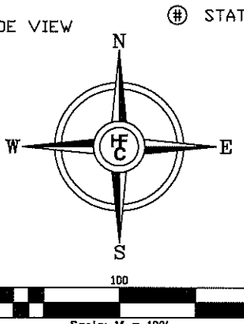
℄ STATE HIGHWAY No. 1

SOUTHWEST FRAC'L 1/4-NORTHWEST FRAC'L 1/4
SECTION 18, T-78-N, R-7-W

RETRACEMENT SURVEY
BK. 63, PG. 377

WEATHER STATION POLE
25kVA TRANSFORMER
1500kVA TRANSFORMER
AC COMBINER BOX

EAST 1/4 CORNER
SECTION 13-78-8
FOUND CONC. MON.
8' DEEP
TIES BK. 31, PG. 176



I hereby certify that this land surveying document was prepared and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Professional Land Surveyor under the laws of the State of Iowa.

J. Scott Ritter, P.L.S. Date
Iowa License Number: 16546
My license renewal date is December 31, 2024.
Pages covered by this seal: THIS SHEET ONLY

PROFESSIONAL LAND SURVEYOR
J. SCOTT RITTER
16546
IOWA

CONCEPTUAL SITE PLAN
FARMERS ELECTRIC COOP SOLAR SITE
AUDITOR PARCEL 2023012
SE 1/4-NE 1/4
SECTION 13, T-78-N, R-8-W
JOHNSON COUNTY, IOWA

DATE: 07/19/23	DRN: JSR	APP:
FLD BK: GPS	PROJ. NO: 237060	

JOHNSON COUNTY, IOWA

APPLICATION CHECKLIST FOR UTILITY-SCALE SOLAR SYSTEMS (SUPPLEMENTAL CONDITIONS)

Farmers Electric Solar Site — *Name of Project*

Tim Heisdorffer — *Name of Applicant Primary Contact*

The following items must be submitted for the Conditional Use Permit or rezoning application to be complete. Incomplete applications will be returned and will not be considered until the next submission deadline. Electronic submissions should be submitted prior to hard copy delivery when possible. In all cases, electronic submission is due by 12 p.m. (noon) local time the day after the posted submission deadline. ***Initial each item below*** *to confirm that you are aware of the submittal requirements for an application to be considered complete.* For all items, if you have questions, the contact is Johnson County Planning, Development and Sustainability, unless otherwise marked.

FOR EACH REQUIREMENT, PLEASE ENSURE YOUR SUBMITTED DOCUMENTS ARE IN COMPLIANCE WITH THE CITED CHAPTER OR SUBSECTION OF THE UNIFIED DEVELOPMENT ORDINANCE (UDO). Please also ensure you are using the **current** UDO regulations.

✓ Clearly indicate **setbacks** for all structures (including arrays) from all external parcel boundaries of the project.

✓ Provide a description of the **Security Fencing** (8:1.23.BB.2)

✓ Indicate compliance with **Panel Clearance Height** (8:1.23.BB.3)

✓ Provide a list of all **public roads** to be used within Johnson County to transport equipment, parts and materials for construction, operation or maintenance of the solar energy system and related components. (The approving authority will determine whether a Public Roads Damage Avoidance and Mitigation Plan will be required as part of the review and approval process.) (8:1.23.BB.4)

✓ One (1) copy of or inclusion in the application of the **Ground Cover Standards** (8:1.23.BB.5)

✓ One (1) copy of or inclusion in the application of any **Landscaping Buffer Plans** (8:1.23.BB.6). (Determination of screening requirements will be made by the approving authority as part of the review and approval process.)

✓ One (1) copy of the **Agricultural Impact Mitigation Plan** (8:1.23.BB.6A)

✓ Complete description of **Glare Minimization** (8:1.23.BB.7)

✓ A general **Site Plan** (8:1.23.BB.8)

✓ One (1) copy of the **Operations and Maintenance including Emergency Operations Procedures** (8:1.23.BB.9)

✓ One (1) copy of the **Decommissioning and Site Reclamation Plan** (8:1.23.BB.10)

- ✓ One (1) copy of the ***Draft*** (unsigned) **Performance Agreement** – including estimated, itemized cost of decommissioning – to accompany the Decommissioning and Site Reclamation Plan. (The County can provide template or you may provide your own.)

✓ One (1) copy of the completed **Sensitive Areas Analysis** in compliance with the Sensitive Areas Ordinance (Chapter 8:3), or an approved waiver.

✓ One (1) copy of the **Stormwater Management Plan** (including soil erosion and sediment control) in compliance with the Stormwater Management regulations (Chapter 8:3), or an approved waiver.

NOTE: If the project also proposes or includes onsite battery energy storage, additional supplemental information will be required that relates specifically to that use (subsection 8:1.23.D1). A separate Conditional Use Permit application is required if the solar project seeks a conditional use permit approval on a property zoned A-Agricultural.

The Bee & Butterfly Habitat Fund
A Unique Conservation Solution.

The Bee & Butterfly Habitat Fund

Iowa Monarch Mix

2022

Species	Scientific Name	PLS lbs per acre	Seeds per sq ft	% of Mixture	Bloom Period	Pollinator Value
Big Bluestem, Pawnee	*Andropogon gerardii*	0.100	0.33	0.94%	--	--
Canada Blue Jointgrass	*Calamagrostis canadensis*	0.007	0.62	1.74%	--	--
Canada Wildrye	*Elymus canadensis*	0.500	1.31	3.70%	--	--
Little Bluestem, VNS	*Schizachyrium scoparium*	0.350	1.93	5.46%	--	--
Plains Oval Sedge	*Carex brevior*	0.040	0.60	1.68%	--	--
Prairie Dropseed	*Sporobolus heterolepis*	0.030	0.18	0.50%	--	--
Prairie Junegrass	*Koeleria pyramidata*	0.020	1.06	3.00%	--	--
Rough Dropseed	*Sporobolus clandestinus*	0.100	1.10	3.11%	--	--
Sideoats Grama, Native Source	*Bouteloua curtipendula*	0.400	1.46	4.13%	--	--
Anise Hyssop	*Agastache foeniculum*	0.030	0.99	2.80%	3	5
Annual or Common Sunflower, Native Source	*Helianthus annuus*	0.030	0.03	0.09%	3	5
Aromatic Aster	*Aster oblongifolius*	0.008	0.95	2.68%	3	5
Ashy Sunflower, Native Source	*Helianthus mollis*	0.030	0.14	0.39%	3	5
Baldwin's Ironweed, Native Source	*Vernonia baldwinii*	0.010	0.16	0.45%	2	5
Blackeyed Susan	*Rudbeckia hirta*	0.030	1.09	3.07%	2	1
Blanketflower	*Gaillardia aristata*	0.200	0.86	2.42%	1	4
Blue Vervain	*Verbena hastata*	0.030	1.04	2.93%	2	5
Butterfly Milkweed	*Asclepias tuberosa*	0.020	0.03	0.09%	2	5
Canada Milkvetch	*Astragalus canadensis*	0.065	0.40	1.14%	2	4
Canada Tick-trefoil	*Desmodium canadense*	0.050	0.10	0.29%	2	5
Clasping Coneflower	*Rudbeckia amplexicaulis or Dracopis amplexicaulis*	0.030	1.10	3.11%	1	2
Common Evening Primrose	*Oenothera biennis*	0.025	0.79	2.23%	2	4
Common Milkweed	*Asclepias syriaca*	0.040	0.08	0.21%	2	5
Culver's Root	*Veronicastrum virginicum*	0.005	1.38	3.89%	3	4
Cup Plant, Native Source	*Silphium perfoliatum*	0.020	0.03	0.08%	2	5
Deer Vetch, Native Source	*Acmispon americanus or Lotus unifoliolatus*	0.020	0.03	0.09%	3	4
Entire-leaved Rosinweed, Native Source	*Silphium integrifolium*	0.020	0.02	0.04%	2	5
False Boneset	*Brickellia eupatorioides*	0.015	0.18	0.51%	3	3
False or Oxeye Sunflower	*Heliopsis helianthoides*	0.100	0.24	0.67%	2	5
Foxglove Beardstongue, Native Source	*Penstemon digitalis*	0.015	0.14	0.39%	1	5
Golden Alexander	*Zizia aurea*	0.060	0.24	0.69%	1	5
Gray Goldenrod	*Solidago nemoralis*	0.006	0.14	0.39%	3	4
Grayhead Coneflower	*Ratibida pinnata*	0.040	0.39	1.11%	2	4
Heath Aster	*Symphyotrichum ericoides*	0.004	0.46	1.31%	3	5
Hoary Vervain, Native Source	*Verbena stricta*	0.035	0.47	1.33%	2	5
Illinois Bundleflower	*Desmanthus illinoensis*	0.180	0.35	0.99%	2	5
Ironweed	*Vernonia fasciculata*	0.025	0.22	0.62%	2	5
Jerusalem Artichoke, Native Source	*Helianthus tuberosus*	0.010	0.03	0.08%	3	5
Lanceleaf Coreopsis	*Coreopsis lanceolata*	0.200	1.01	2.87%	2	4
Late or Giant Goldenrod, Native Source	*Solidago gigantea*	0.006	1.04	2.95%	3	5
Leadplant	*Amorpha canescens*	0.025	0.11	0.32%	2	5
Maximillian Sunflower	*Helianthus maximiliani*	0.050	0.23	0.64%	3	5
Missouri Goldenrod	*Solidago missouriensis*	0.006	0.87	2.46%	2	5
New England Aster	*Symphyotrichum novae-angliae*	0.015	0.36	1.03%	3	5
Pale Purple Coneflower	*Echinacea pallida*	0.090	0.22	0.62%	2	5
Plains Coreopsis	*Coreopsis tinctoria*	0.015	1.11	3.14%	2	2
Plains Sunflower	*Helianthus petiolaris*	0.030	0.08	0.22%	3	5
Prairie Aster	*Symphyotrichum falcatum*	0.050	0.47	1.32%	3	5
Purple Coneflower	*Echinacea purpurea*	0.100	0.27	0.75%	2	5
Purple Prairieclover, Native Source	*Dalea purpurea*	0.050	0.36	1.03%	2	5
Rattlesnake Master	*Eryngium yuccifolium*	0.020	0.08	0.23%	3	4
Rough Gayfeather	*Liatris aspera*	0.015	0.09	0.27%	3	5
Rough Purple Gerardia, Native Source	*Agalinis aspera*	0.005	0.24	0.69%	2	4
Roundhead Lespedeza	*Lespedeza capitata*	0.030	0.12	0.34%	3	4
Sawtooth Sunflower	*Helianthus grosseserratus*	0.010	0.14	0.41%	3	5
Shell-leaf Penstemon	*Penstemon grandiflorus*	0.020	0.10	0.28%	1	5
Showy Partridgepea	*Chamaecrista fasciculata*	0.400	0.60	1.69%	2	5
Showy-wand Goldenrod	*Solidago speciosa*	0.008	0.79	2.22%	3	5
Smooth Blue Aster	*Symphyotrichum laeve*	0.025	0.58	1.64%	3	5
Stiff Goldenrod, Native Source	*Solidago rigida*	0.020	0.31	0.87%	3	5
Stiff Sunflower	*Helianthus pauciflorus*	0.025	0.42	1.20%	2	4
Sullivant's Milkweed, Native Source	*Asclepias sullivantii*	0.010	0.02	0.05%	2	5
Swamp Milkweed, Native Source	*Asclepias incarnata*	0.015	0.05	0.15%	2	5
Sweet Blackeyed Susan	*Rudbeckia subtomentosa*	0.030	0.51	1.43%	2	2
Tall Boneset, Native Source	*Eupatorium altissimum*	0.007	0.13	0.36%	3	4
Tall Coreopsis	*Coreopsis tripteris*	0.015	0.57	1.60%	2	3
Tube Penstemon	*Penstemon tubaeflorus*	0.010	0.29	0.83%	2	5

Species	Scientific Name	PLS lbs per acre	Seeds per sq ft	% of Mixture	Bloom Period	Pollinator Value
Upright Coneflower	*Ratibida columnifera*	0.045	0.76	2.15%	2	2
Virginia Mountain Mint	*Pycnanthemum virginianum*	0.006	0.22	0.62%	2	4
Western Yarrow	*Achillea millefolium*	0.020	1.31	3.70%	1	2
White Prairieclover	*Dalea candida*	0.055	0.38	1.08%	2	5
Wild Bergamot	*Monarda fistulosa*	0.030	0.88	2.48%	2	5
Rice Hulls - Filler for low planting rate mixtures		3.000	0.00	0.00%	--	--
	Grasses Total:	1.547	8.589	24.27%		
	Wildflower/Forb/Legume Total:	2.611	26.801	75.73%		
	Filler Total:	3.000	0.000	0.00%		
	Total Mixture:	**7.158**	**35.389**	**100.00%**		

Bloom Period	Wildflowers Used in Mixture	% PLS Seeding Rate of Mix
1 = April to May	6	10.58%
2 = June to July	34	40.41%
3 = August to October	23	24.74%
Total :	63	

4.41	Pollinator Value (0-5)

The Pollinator value score is determined based on a combination of factors described below. A score greater than 4.0 indicates the mixture is designed for great pollinator value.

The Bee & Butterfly Habitat Fund

Iowa Honeybee Mix

2022

Species	Scientific Name	PLS lbs per acre	Seeds per sq ft	% of Mixture	Bloom Period	Pollinator Value
Alsike Clover	*Trifolium hybridum*	0.450	7.03	17.57%	2	5
Anise Hyssop	*Agastache foeniculum*	0.035	1.16	2.89%	3	5
Blackeyed Susan	*Rudbeckia hirta*	0.030	1.09	2.71%	2	1
Crimson Clover	*Trifolium incarnatum*	2.000	6.88	17.19%	2	5
Ladino or White Clover	*Trifolium repens*	0.450	7.35	18.38%	2	5
Lemon Mint or Lemon Bee Balm	*Monarda citriodora*	0.050	1.65	4.13%	2	3
Missouri Goldenrod	*Solidago missouriensis*	0.007	1.01	2.54%	2	5
Phacelia	*Phacelia spp.*	0.600	3.37	8.44%	2	5
Red Clover	*Trifolium pratense*	0.320	2.00	5.00%	2	4
Sainfoin	*Onobrychis viciifolia*	2.100	1.46	3.64%	2	5
White Dutch Clover	*Trifolium repens*	0.350	7.00	17.51%	2	5
Rice Hulls - Filler for low planting rate mixtures		3.000	0.00	0.00%	--	--
	Grasses Total:	0.000	0.000	0.00%		
	Wildflower/Forb/Legume Total:	6.392	40.004	100.00%		
	Filler Total:	3.000	0.000	0.00%		
	Total Mixture:	**9.392**	**40.004**	**100.00%**		

Bloom Period	Wildflowers Used in Mixture	% PLS Seeding Rate of Mix
1 = April to May	0	0.00%
2 = June to July	10	97.11%
3 = August to October	1	2.89%
Total :	11	

4.36	Pollinator Value (0-5)

The Pollinator value score is determined based on a combination of factors described below. A score greater than 4.0 indicates the mixture is designed for great pollinator value.

The Bee & Butterfly Habitat Fund

2022 Solar Mixture

Species	Scientific Name	Bulk lbs per acre	Seeds per sq ft	% of Mixture	Bloom Period	Pollinator Value
Fine Fescue Blend for Solar Projects	*Festuca spp.*	20.000	229.57	39.25%	--	--
Kentucky Bluegrass	*Poa pratensis*	8.000	255.25	43.64%	--	--
White Dutch Clover	*Trifolium repens*	5.000	100.05	17.11%	2	5
	Grasses Total:	28.000	484.819	82.89%		
	Wildflower/Forb/Legume Total:	5.000	100.052	17.11%		
	Filler Total:	0.000	0.000	0.00%		
	Total Mixture:	**33.000**	**584.871**	**100.00%**		

Bloom Period	Wildflowers Used in Mixture	% PLS Seeding Rate of Mix
1 = April to May	0	0.00%
2 = June to July	1	17.11%
3 = August to October	0	0.00%
Total :	1	

5.00	**Pollinator Value**

7/20/2023

Agricultural Impact Mitigation Plan

Farmers Electric Cooperative (FEC) is seeking approval of a conditional use permit to construct and operate a ground-mounted, fixed-mount photovoltaic solar electricity generating system on the west side of Highway 1, approximately 1,900 south of 500th St. SW in Johnson County.

Project Overview: The project is designed to have a generating capacity of 998 KW DC, or about 850 KW AC. It will power about 220 homes annually. The electricity produced will be place on the local electric distribution system and used by residents of Johnson, Iowa, and Washington Counties. Panels will be a minimum of 18 inches above the ground, reaching a height of about 9 feet. This passive facility will not produce any discernible noise, and will co-exist with the surrounding area. FEC proposes to install a landscape buffer along the east side of the approximately 3.5 acres site that runs along Highway 1.

Topsoil Protection and Preservation Plan: Interaction with the topsoil on this project will be from three main construction activities. First, the hardscape infrastructure like transformers and driveway installation will be surrounded by erosion control measures such as silt fence to prevent topsoil migration. The second activity will be the poles being installed in the ground. Each hole will be individually drilled and all soil resulting from this digging will be mounded around the pole. And lastly, all panels will be connected by wiring in conduit that will be buried in a minimally invasive manner with topsoil returned directly on top of installed pipe. No mass grading will take place, as such all other existing topsoil will remain in place. Construction inspection will contain environmental, sediment and run-off inspections at a minimum of weekly, or after each 1.25" rainfall event. These inspection reports will be submitted to the County every 30 days during construction.

Construction Best Management Practices: During construction care will be taken to not disturb any remaining existing crop vegetation. Upon completion of installation of improvements all seeding will be applied per supplier's specifications and all vegetation will be managed to remove invasive or undesirable competing species and promote the growth of the planted seed mixes.

Drain Tile Identification: No Drain tiles are known to be located on the property. If drain tiles are located on site, each found tile will be routed to avoid new post installations and will be tied back into existing tile downstream.

Sensitive Areas Protection: At this time there are no Sensitive Areas on the plan or site. Should any be determined at a later date, any limits of disturbances shown in the Sensitive Areas Plan will be staked prior to construction and no work will be done outside those limits.

Vegetation Management: Please find attached the seeding mixes to be applied onsite. (Iowa Honeybee, Iowa Monarch, and 2022 Solar) to be applied in the areas under the racks and the buffer areas.

Decommissioning and Site Reclamation: It is estimated that the cost (with 10% contingency) to decommission the site will be $27,896. Please see the attached Decommissioning and Site Reclamation Plan accompanying this document for the plan, components and costs associated with abandoning the infrastructure.

Farmers Electric Solar Farm

Johnson County, Washington Township

Section 13, NE Quad

3.5 acres, 988.31 KW

Ground-mount, Fixed mount

Adjacent to: 5063 HWY 1, Kalona, IA 52247

Tile Identification : Former land owner (Mark Slabaugh) through a conversation with buyer representative Tim Heisdorffer on Thursday, July 13, 2023 stated he has never installed drainage tile on this 3.5 acre plot, and is unaware of any existing tile.

Landscaping : The west and south sides are adjacent to fields of row crops, the north side is adjacent to an AT&T facility, the east side is adjacent to state Highway 1. The east side we will plant Thuja Junior Green Giant Arborvitae or similar. This arborvitae grows to 20' in height and width of 5'. We need to maintain a lower height, as this tree line will be near an ITC electric overhead transmission line.

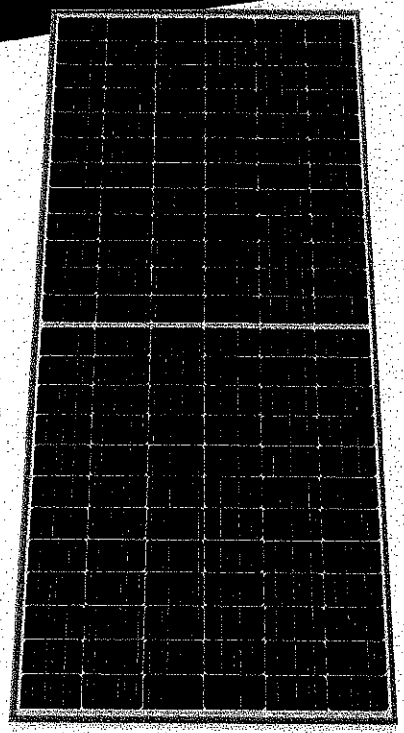
Groundcover: Farmers Electric is looking to work with the Bee And Butterfly Habitat Fund. This organization has a 'solar synergy program' that works with solar installers at no extra cost to design pollinator habitats.

Solar Modules: Solar modules being used are a quantity of 1866 Heliene 535W bi-facial with glass that has anti-reflective coating. There will be a quantity of 13 3-phase inverters; Solectria PVI 60TL-480

HELIENE

144HC M10 SL Bifacial Module

144 Half-Cut Monocrystalline 520W – 540W



21%

Utilizes the latest M10 size super high efficiency Monocrystalline PERC cells. Half cut design further reduces cell to module (CTM) losses.

Stability & Looks

Rugged, double webbed frame design withstands wind, snow, and other mechanical stresses. Framed Glass–Backsheet aesthetic is ideal for high visibility installation.

Anti-Reflective

Premium solar glass with anti reflective coating delivers more energy throughout the day

High Reliability

Proven resistance to PID and reliable in high temperature and humidity environments.

Manufactured Using International Quality System Standards: ISO9001

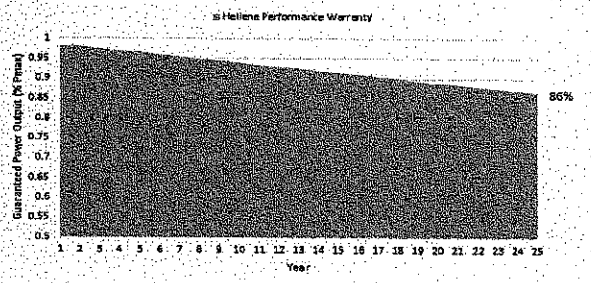
Half-Cut Design with Split Junction Box Technology

Bifacial Technology Enabling Additional Energy Harvest from Rear Side

1500V System Voltage Rating

No Compromise Guarantee

15 Year Workmanship Warranty
25 Year Linear Performance Guarantee



World-class Quality

- Heliene's fully automated manufacturing facilities with state-of-the-art robotics and computer aided inspection systems ensure the highest level of product quality and consistency
- All manufacturing locations are compliant with international quality standards and are ISO 9001 certified
- Heliene modules have received Top Performer rankings in several categories from PV Evolution Labs (PV EL) independent quality evaluations

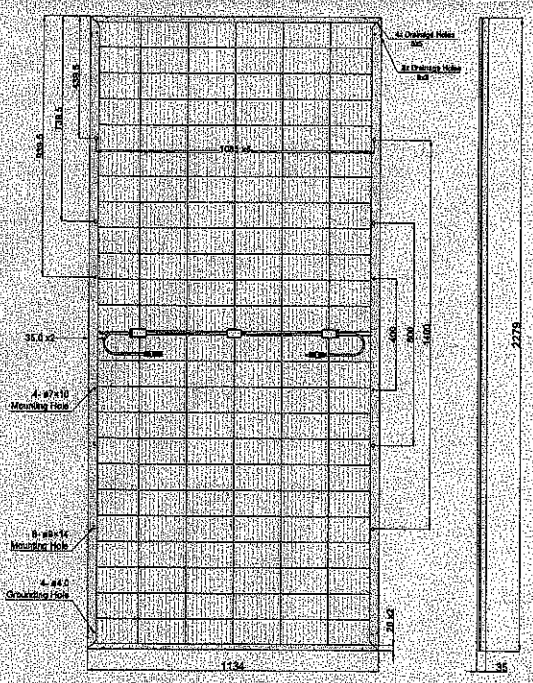
Bankable Reputation

- Established in 2010, Heliene is recognized by Bloomberg New Energy Finance (BNEF) as Tier 1 manufacturer of solar modules and has been approved for use by the U.S. Department of Defense, U.S. Army Corps of Engineers and from numerous top tier utility scale project debt providers
- By investing heavily in research and development, Heliene has been able to stay on the cutting edge of advances in module technology and manufacturing efficiency

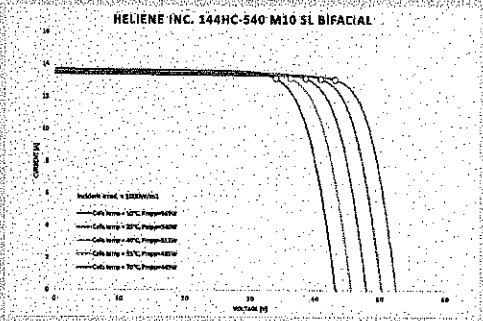
Local Sales, Service, and Support

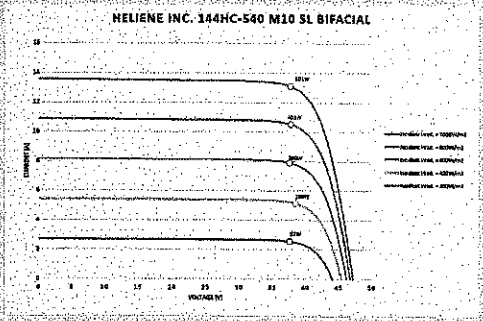
- With sales offices across the U.S. and Canada, Heliene prides itself on unsurpassed customer support for our clients. Heliene has become the brand of choice for many of the leading residential installers, developers and Independent Power Producers due to our innovative technology, product customization capability and just in time last-mile logistics support
- Local sales and customer support means answered phone calls and immediate answers to your technical and logistics questions. We understand your project schedules often change with little warning and endeavor to work with you to solve your project management challenges

Dimensions for 144HC M10 SL Bifacial Series Modules



I-V Curves for 144HC M10 SL Bifacial Series Modules





Certifications

Electrical Data (STC)

Peak Rated Power	P_{mpp} (W)	540	535	530	525	520
Maximum Power Voltage	V_{mpp} (V)	42.32	42.13	41.94	41.75	41.56
Maximum Power Current	I_{mpp} (A)	12.77	12.70	12.64	12.58	12.52
Open Circuit Voltage	V_{oc} (V)	50.22	49.97	49.72	49.23	48.73
Short Circuit Current	Isc (A)	13.50	13.44	13.37	13.32	13.28
Module Efficiency *	Eff (%)	20.9	20.7	20.5	20.3	20.1
Maximum Series Fuse Rating	MF (A)	30	30	30	30	30
Power Output Tolerance			[- 0/+3%]			
Bifaciality Factor			70%			

STC - Standard Test Conditions: Irradiation 1000 W/m2 - Air mass AM 1.5 - Cell temperature 25 °C

Electrical Data (NMOT)

Maximum Power	P_{mpp} (W)	400	395	390	385	380
Maximum Power Voltage	V_{mpp} (V)	39.19	38.58	38.58	37.97	37.96
Maximum Power Current	I_{mpp} (A)	10.21	10.24	10.11	10.14	10.01
Open Circuit Voltage	V_{oc} (V)	47.13	46.89	46.66	46.20	45.73
Short Circuit Current	Isc (A)	10.87	10.82	10.77	10.72	10.70

NMOT - Nominal Module Operating Temperature:
Irradiance at 800W/m2, Ambient Temperature 20°C, Wind speed 1m/s

Mechanical Data

Solar Cells	144 Half Cut, M10, 182mm, PERC Cells
Module Construction	Framed Glass-Backsheet
Dimensions (L x W x D)	2279 x 1134 x 35 mm (89.72 x 44.65 x 1.38 inch)
Weight	29.2 kg (64.3 lbs)
Frame	Double Webbed 15-Micron Anodized Aluminum Alloy
Glass	3.2mm Low-Iron Content, High-Transmission, PV Solar Glass with Anti Reflective Coating
Junction Box	IP-68 rated with 3 bypass diodes
Output Cables	0.3-meter Symmetrical Cables
Connectors	Multi-Contact/ Stäubli MC4

Certifications

UL Certification	UL61215, UL61730

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	+45°C (±2°C)
Temperature Coefficient of P_{max}	-0.36%/°C
Temperature Coefficient of V_{oc}	-0.28%/°C
Temperature Coefficient of I_{sc}	0.034%/°C

Maximum Ratings

Operational Temperature	-40°C to +85°C
Max System Voltage	1500V
Mech. Load Test (Front)	113 psf / 5400Pa
Mech. Load Test (Back)	50 psf / 2400 Pa
Fire Type	Type 1

Warranty

15 Year Workmanship Warranty

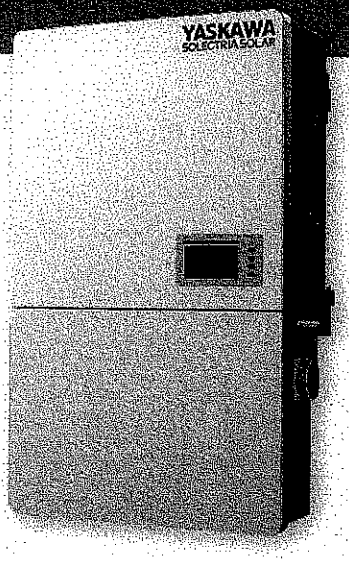
25 Year Linear Power Guarantee

Packaging Configuration

Modules per box:	31 pieces
Modules per 40' Container:	620 pieces
Modules per 53' Trailer:	806 pieces

PVI 50TL-480 / PVI 60TL-480

3-PHASE TRANSFORMERLESS COMMERCIAL STRING INVERTERS



FEATURES

- Wirebox models with built-in SunSpec compliant transmitters for Module-Level Rapid Shutdown for simple, safe NEC compliance
- UL Listed as PV Rapid Shutdown Systems with Tigo Energy and APsmart
- Dual rated listing allows selection of either 50/60 kVA (factory default) or 55/66 kVA (allowing full rated power down to ±0.91 PF)
- Integrated UL-listed Arc-Fault protection
- 15 - 90° mounting angle allows low-profile rooftop installations
- 3 MPPTs with 5 fused inputs each for PV array flexibility
- Industry-leading DC/AC ratios of 1.8 (50TL) and 1.5 (60TL)
- Integrated AC and DC disconnects
- Remote firmware upgrades and diagnostics
- NEMA 4X outdoor rated enclosure, with proven performance
- UL1741SA certified to CA Rule 21, including SA14 FW and SA 15 VW

OPTIONS

- Shade cover
- DC fuse bypass
- Web-based monitoring

Yaskawa Solectria Solar's PVI 50TL-480 and PVI 60TL-480 are transformerless 3-phase inverters, ideal for rooftops, carports and ground-mount PV systems

The PVI 50TL-480 and PVI 60TL-480 come standard with AC and DC disconnects, three MPPTs, and a wiring box with 15 fuse positions.

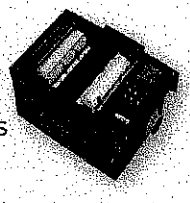
For rooftop PV systems, both Module-Level Rapid shutdown (MLRSD) wirebox models provide PV Rapid Shutdown System (PVRSS) compliance and include a built-in SunSpec compliant powerline communication transmitter.

One wirebox model is Tigo Enhanced for rapid shutdown and the other wirebox model is compatible with APsmart rapid shutdown devices.

Yaskawa Solectria Solar's family of PVI 50/60TL-480 inverters, including standard wireboxes and the rapid-shutdown ready wirebox models, provides flexibility and convenience unmatched in the industry.

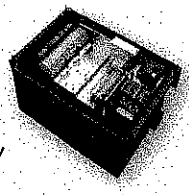
Standard Wirebox

- 20A fuses, both polarities
- No built-in PVRSS transmitter



Module-Level Rapid Shutdown Wireboxes

- 20A fuses; positive polarity only
- Built-in PVRSS transmitter
- 2 models for compatibility with Tigo and APsmart module-level shutdown devices



Tigo® Enhanced

APsmart ALTENERGY POWER

YASKAWA SOLECTRIA SOLAR

Yaskawa Solectria Solar 1-978-683-9700 | Email: inverters@solectria.com | solectria.com
Document No. FL.PVI5060TL.01 | 08/19/2021 |

PVI 50TL-480 / PVI 60TL-480 TECHNICAL DATA

SPECIFICATIONS

Inverter Model		PVI 50TL-480	PVI 60TL-480
DC Input	Maximum PV Power	90 kW (33 kW per MPPT)	90 kW (33 kW per MPPT)
	Maximum Input Voltage	1000 VDC	1000 VDC
	Dc Voltage Ranges, Operating/Max. Power (MPPT)	200-950 VDC / 480-850 VDC	200-950 VDC / 540-850 VDC
	Start-up DC Input Voltage/Power	330 V / 80 W	330 V / 80 W
	Number of MPPT Trackers/Inputs	3 Trackers / 5 Fused-inputs each	3 Trackers / 5 Fused-inputs each
	Maximum Available PV Current (Isc x 1.25)	204 A (68 A per MPPT)	204 A (68 A per MPPT)
	Maximum Operating Input Current (clipping point)	108 A (36 A per MPPT)	114 A (38 A per MPPT)
	DC Surge Protections	Type II MOV, 2800 V_c, 20 kA I_{TM} (8/20 µs)	
AC Output	Rated AC Real Power/Apparent Power/Output Current	50 kW / 50 kVA / 60.2 A	60 kW 60kVA / 72.2 A
	Overhead Mode: Real Power/Apparent Power/Output Current	50 kW / 55 kVA / 66.2 A	60 kW / 66 kVA / 79.4 A
	Nominal Output Voltage/Range	480 VAC / -12% to +10%	480 VAC / -12% to +10%
	Nominal Output Frequency/Range	60 Hz / 57-63 Hz	60 Hz / 57-63 Hz
	Power Factor	Unity, >0.99 (Adjustable 0.8 leading to 0.8 lagging)	Unity, >0.99 (Adjustable 0.8 leading to 0.8 lagging)
	Fault Current Contribution (1 Cycle RMS)	64.1 A	64.1 A
	Total Harmonic Distortion (THD) @ Rated Load	< 3%	< 3%
	Grid Connection Type	3-Ph/PE/N (neutral conductor optional)	3-Ph/PE/N (neutral conductor optional)
	Maximum OCPD Device	110 A	125 A
	AC Surge Protection	Type II MOV, 1240 V_c, 15 kA I_{TM} (8/20 µs)	
Efficiency	Peak Efficiency	98.8%	98.8%
	CEC Efficiency	98.5%	98.5%
	Tare Loss	< 1 W	< 1 W
Environment	Ambient Temperature Range	-22°F to +140°F (-30°C to +60°C); Derating occurs over +113°F (+45°C)	
	Storage Temperature Range	No low temp minimum to +158°F (+70°C)	
	Relative Humidity (non-condensing)	0-100%	
	Operating Altitude	13,123 ft (4,000 m) Derating occurs from 9,842.5 ft (3,000 m)	
Communications	Modbus Protocol	Proprietary / SunSpec	
	SolrenView Web-Based Monitoring Service	Optional	
	Revenue Grade Metering	Optional, External	
	Communication Interface	RS-485 Modbus RTU	
	Remote Firmware Upgrades	Ethernet Network Card required	
	Remote Diagnostics	Ethernet Network Card required	
Safety	Certifications and Standards	UL 1741SA-2016, UL1699B, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC Part 15 (Subpart B, Class A	
	Selectable Grid Standards	IEEE 1547, CA Rule 21, ISO-NE, HECO	
	Smart Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt	
Warranty	Standard Limited Warranty	10 Years	
Mechanical	Acoustic Noise Rating	< 60 dBA @ 1 m and 25°C	
	AC/DC Disconnect	Standard, fully-integrated, load break rated	
	Mounting Angle*	15° - 90°+ from horizontal	
	Weight	Inverter: 123.5 lbs (56 kg); Wiring Box: 33 lbs (15 kg)	
	Enclosure Rating and Finish	NEMA Type 4X; Polyester Powder Coated Aluminum	
	Dimensions (H x W x D)	Power Head: 22.7" x 23.6" x 10.24" (576 mm x 600 mm x 260 mm) Wirebox: 16.7" x 23.6" x 10.24" (424 mm x 600 mm x 260 mm) Overall: 39.4" x 23.6" x 10.24" (1000 mm x 600 mm x 260 mm)	

Wirebox Specifications			
Wirebox Versions	Fused Inputs	15 Fused Positions (5 Positions per MPPT) 20 A Standard (25, 30 A accepted)**	
	Standard	PVI 50-60TL-BX-S20 (both polarities fused), No MLRSD transmitter needed	
	APsmart Transmitter Built-in	PVI50-60TL-WB-APS (only positive polarity fused)	MLRSD compatibility: APsmart RSD-S and RSD-D ***
	Tigo Transmitter Built-in	PVI50-60TL-WB-TGO (only positive polarity fused)	MLRSD compatibility: Tigo TS4-A-F (ver 6.7+) and TS4-A-2F

* Shade cover accessory required for installation of 75° or less
** Yaskawa Solectria Solar does not supply optional fuses sizes
*** Compatibility testing with APsmart RSD-D in Q3 2021

IT'S PERSONAL

YASKAWA SOLECTRIA SOLAR

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Document No. FL.PVI5060TL.01 | 08/19/2021

Operation And Maintenance And Decommissioning Plans

Operation And Maintenance Plan

The solar facility will be monitored from our Frytown office. Routine inspections and maintenance will occur as-needed.

Item	Service Description	Frequency
1	Remote monitoring.	Daily
2	Responding to inverter/system faults. Replacing blown fuses on inverters, shorts, grounding issues, communication issues with inverters. Replacing failed inverters.	As needed
3	Following safety protocols to shut down system for repairs And replacement of equipment. Verify the system can be safely re-energized.	As needed
4	Maintain and monitor transformer, metering, disconnects, and breakers.	As needed
	Preventive Maintenance	
1	Visually inspect entire solar site. Record and correct issues.	Annually
2	Visually and with infrared camera, inspect solar panels and connections.	Annually
3	Following high-wind events, visually inspect all panels, rails, and racking to insure properly affixed.	As needed
4	Visual inspection of all wiring and grounding.	Annually
5	Visual inspection of all conduit and points of connection.	Annually
6	Verify AC and DC disconnections are free of damage, corrosion, and operate as they should.	Annually
7	Inspect interior of inverters and air filters for dirt and moisture, correct any issues.	Annually
8	Maintain the grounds. Monitor and correct any erosion. Maintain gravel and driveway. Control weeds. Water tree line and maintain ground cover	As needed
9	Maintain reports covering performance results compared to estimates, maintenance performed, and inspections performed.	Annually

Decommissioning Plan

Owner will be responsible for all decommissioning costs. Within 12 months after the project has not generated electricity for a continuous 1 year period, the owner will remove all above-grade infrastructure. Below grade infrastructure will be removed to a dept of 36 inches. Most equipment will be recyclable materials such as steel, aluminum, glass, and copper. Items will be recycled if feasible. Non-recyclable materials will be disposed off-site following rules and regulations. Driveway, fencing, and landscaping will remain for future use by the landowner.

1. **Solar Panels**
   All panels will be disconnected from the electrical system and unfastened from the racking. Panels will be recycled off-site, sold to a third party, or donated for use elsewhere.

2. **Racking System**
   The supporting racking and driven posts will be disassembled and holes backfilled. They will be taken off-site and recycled, sold to a third party, or donated for use elsewhere.

3. **Electrical And Other Equipment**
   All electrical equipment including inverters, poles, above-grade wiring, transformers, and disconnects will be dismantled and removed. Wiring and conduit up to 36 inches deep will be removed to restore for agricultural use. Deeper materials will be abandoned in place. Inspections throughout the decommissioning process will help avoid oil leaks. Equipment will be recycled, sold to a third party, or donated.

4. **Concrete Pads**
   Concrete pads will be broken up and debris will be removed from site.

5. **Site Grading**
   Area disturbed from decommissioning will be graded to comply with stormwater and soil erosion regulations. Disturbed areas may be seeded with grasses or crops to establish vegetation.

HFC CIVIL & ENVIRONMENTAL ENGINEERING
LAND SURVEYING, PLANNING & DEVELOPMENT

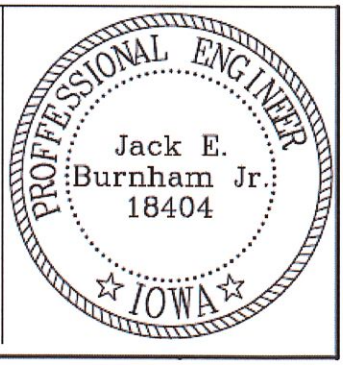
HART-FREDERICK CONSULTANTS P.C.

Farmers Electric Cooperative, Solar Array Installation
Parcel No. 1313177005
ESCROW ESTIMATE SUBMITTAL

June 20 2023

I hereby certify that this engineering document was prepared and the related work was performed by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Jack E. Burnham Jr., P.E. Date
Iowa License Number: 18404
My license renewal date is December 31, 2022.
Pages covered by this seal:



510 State Street, P.O. Box 560, Tiffin, IA 52340
(319) 545-7215 ▪ www.hart-frederick.com ▪ hfc@hart-frederick.com
HFC Project # 224452.01

HFC CIVIL & ENVIRONMENTAL ENGINEERING
LAND SURVEYING, PLANNING & DEVELOPMENT
HART-FREDERICK CONSULTANTS P.C.

For Inclusion in escrow agreement:

In pursuit of conditional use permits for the new solar array HFC has performed a walk-through the site owned by Slabaugh, consulted the proposed plans, and spoke with the applicant to determine how much work will be required to decommission the site in compliance with the County Codes. To issue the conditional use permit this work needs documented and money set in escrow in accordance with the escrow agreement and Codes. The work is estimated to be $27,896 *after 10% contingency*. It can be broken down into categories and summarized as follows.

Decommissioning and reclamation work required:

Power Down, remove solar panels, wiring.

Remove inverters, disconnects breaker panels,

Disassemble racking.

Pull posts and fill holes.

Remove transformer(s) and concrete base(s).

Remove all wiring less than 36" deep.

For item with estimated hourly quantities and unit pricing (including transportation from site) from contractors please see the accompanying TABLE; Farmers Estimated Solar Farm Retirement Costs.

510 State Street, P.O. Box 560, Tiffin, IA 52340
(319) 545-7215 ▪ www.hart-frederick.com ▪ hfc@hart-frederick.com

FARMERS ELECTRIC ESTIMATED SOLAR FARM RETIREMENT COSTS

Item	$ rate	hours	total	
Power down, remove solar panels, wiring	40	200	$	8,000
remove inverters, disconnects, breaker panels	40	30	$	1,200
disassemble racking	40	120	$	4,800
pull posts, fill holes	40	180	$	7,200
remove transformer,concrete base	40	4	$	160
remove all wiring less than 3' deep	40	100	$	4,000
TOTALS	**40**	**634**	**$**	**25,360**

Fencing will remain in place.
No grading/dirt work needed.

Sensitive Areas Review for:

Farmstead Split

Auditors Parcel Number:

2023012

Washington Township

HFC CIVIL & ENVIRONMENTAL ENGINEERING
LAND SURVEYING, PLANNING & DEVELOPMENT

HART-FREDERICK CONSULTANTS P.C.

Prepared for:

Tim Heisdorffer (Farmers Electric)

and

Johnson County Planning, Development & Sustainability

Prepared by:

Charles D. Schmidt

Hart-Frederick Consultants

July, 2023

Charles D. Schmidt

Applicant date

PDS Director date

As directed by the Johnson County Soil and Water Conservation Coordinator, this report addresses the following sensitive areas:

Wetlands
Historical Properties

As a result of our assessment, it has been determined that no wetland or historical properties sensitive areas are present on the site (Figure 1).

Figure 2 shows site photos of the parcel to be split off and adjacent areas.

Background:

The intent of the Sensitive Areas Ordinance is to ensure that the development of land protects and preserves areas defined as "sensitive". In seeking to achieve this and the goals defined in the Johnson County Land Use Plan the purpose of the SAO is to:

1. Protect and preserve areas of environmental concern (sensitive areas) while accommodating development and existing agricultural uses.
2. Implement the environmental goals of the Land Use Plan.
3. Encourage and recognize innovations that demonstrate good land stewardship.
4. Manage and conserve areas of unique or locally significant resources.
5. Prevent injury and damage from natural hazards (floods, erosion).
6. Prevent and minimize degradation of surface and groundwater.
7. Encourage higher density or clustering on non-sensitive areas of property to promote development that provides for open space.
8. Encourage incentives such as conservation easements with waivers on taxes for that portion of the property protected as sensitive areas or created as open space through the use of higher density conservation designs.
9. Provide a mechanism for on-site or off-site mitigation when it is not possible or feasible to avoid disturbance of a sensitive area during development.

Wetlands

Defined:

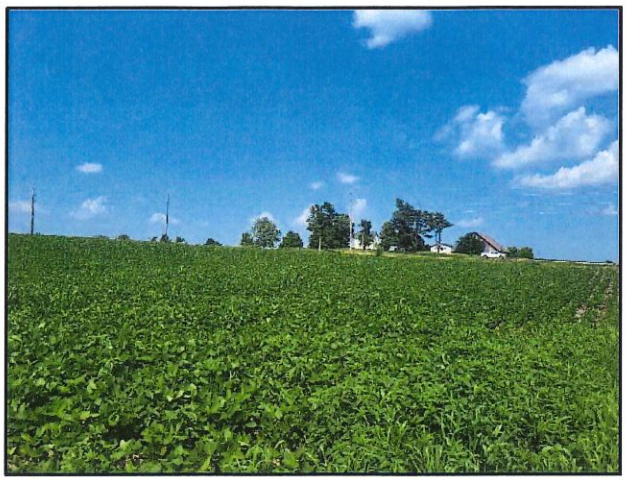
Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The diagnostic characteristics of wetlands are vegetation, hydric soils and hydrology.

Looking N at N-S swale

Analysis:

Offsite analysis

1. Site Description: The proposed site is an auditor's parcel, 3.5 acres more or less split from the existing parcel (Figure 1). Depending on the year and how wet it was, there appears to be a drainage swale that runs north & south through the property. Most years, this swale is cultivated (Figure 3).
2. According to the Web Soil Survey (Figures 4 & 5), there are no hydric soils at the site. The soil type (series) listed is Otley silty clay loam (series # 281). native vegetation is big bluestem, little bluestem, switchgrass, and other grasses of the tall grass prairie (Figure 6). Otley soil is not listed as a hydric soil and is in hydrologic soil group C, which may be sandy clay loam or silt loam with low infiltration rates when thoroughly wetted. Group C soils consist chiefly of soils with a layer that impedes downward movement of water and have moderately fine to fine structure.
3. The National Wetlands Inventory Map shows that there are no designated wetlands located on the site (Figure 7).



Looking E from bottom of swale

Onsite analysis

1. Soil: Soil probes showed no free water down to 20" at the locations analyzed (Figure 4). The soil profile showed no redoximorphic features within 20" of the surface. Soil analysis was consistent with the description given for the Otley soil series.

Typical soil profile

Depth"	color	texture	structure	mottles
0-6	10YR 2/2	silt c loam	mod. fine granular	none
6-11	10YR 2/1	silt c loam	weak fine subangular blocky	none
11-15	10YR 2/2	silt c loam	weak fine subangular blocky	none
15-20	10YR 4/2	silt c loam	mod. fine subangular blocky	none

2. Hydrology: There was no surface water in the drainage swale. At the bottom of the swale near the southern boundary of the property. there was no evidence of ponding or surface water flow.

3. Plants: this season, the field is planted to soybeans. Last years crop (as noted by volunteers) was corn. A few errant weeds grew along the southern and western border fences, including: Queen Anne's lace, reed canarygrass, lambs quarter, giant ragweed, wild carrot, and common cocklebur.

Weeds near south fence

Summary, Wetlands

1. The existing hydrology and soil types are not indicative of wetland formation.
2. The plants at the site are not wetland plants.
3. There are no wetlands on the property.

References:

1. Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.

2. United States Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region. Vicksburg, Mississippi. United States Department of Agriculture, Natural Resources Conservation Service.

4. U.S Fish & Wildlife Service. National Wetlands Inventory https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

5. Soil Survey of Johnson County, Iowa. United States Department of Agriculture, Natural Resources Conservation Service.

6. United States Department of Agriculture, Natural Resources Conservation Service. State Soil Data Access (SDA) Hydric Soils List. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316619.html

FIGURES & APPENDIX

1. SITE PLAN

2. SITE PHOTOS

3. HISTORICAL PHOTOS

4. SOIL MAP

5. HYDRIC SOILS MAP

6. ANDREAS ATLAS 1875

7. NATIONAL WETLANDS INVENTORY MAP

APPENDIX

OSA REPORT

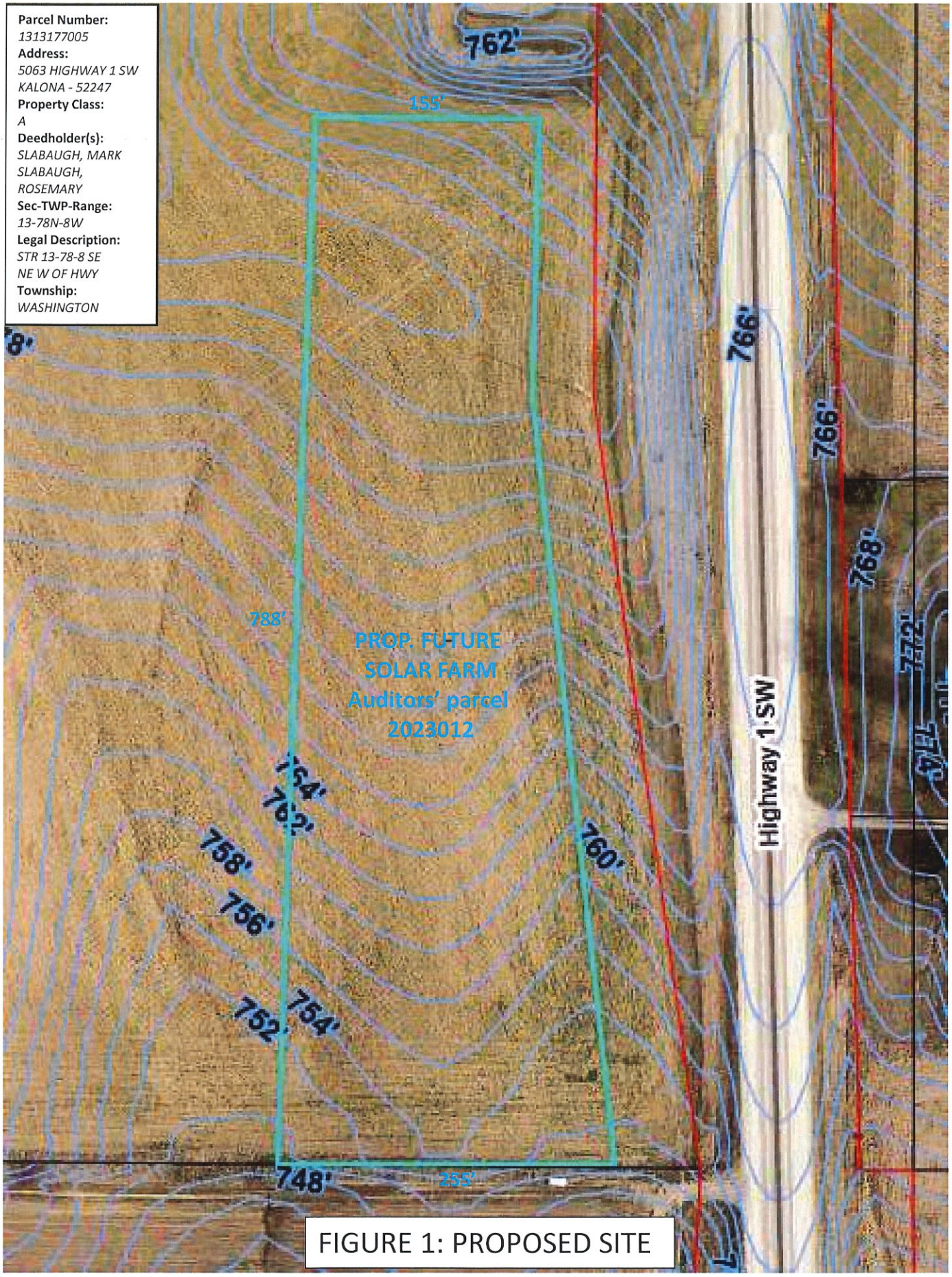


FIGURE 1: PROPOSED SITE

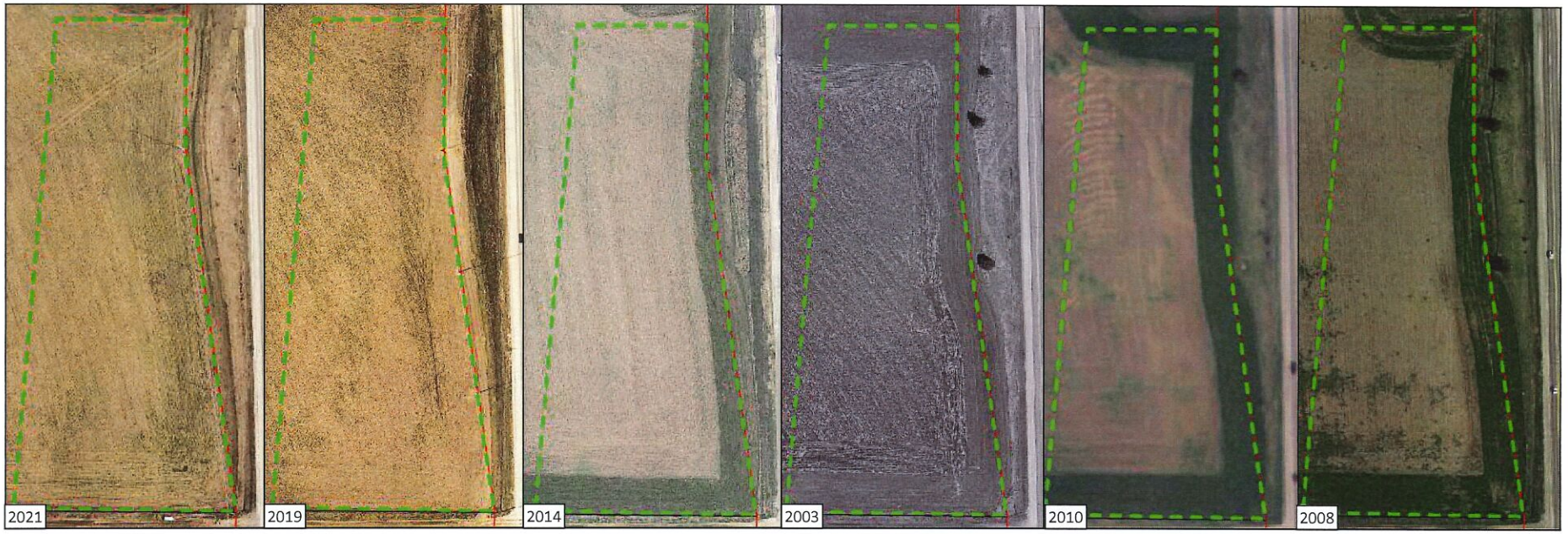
Looking Northeast

Looking East

Plants @ fence-line at south end of swale.

Looking North at swale along east boundary.

FIGURE 2: SITE PHOTOS



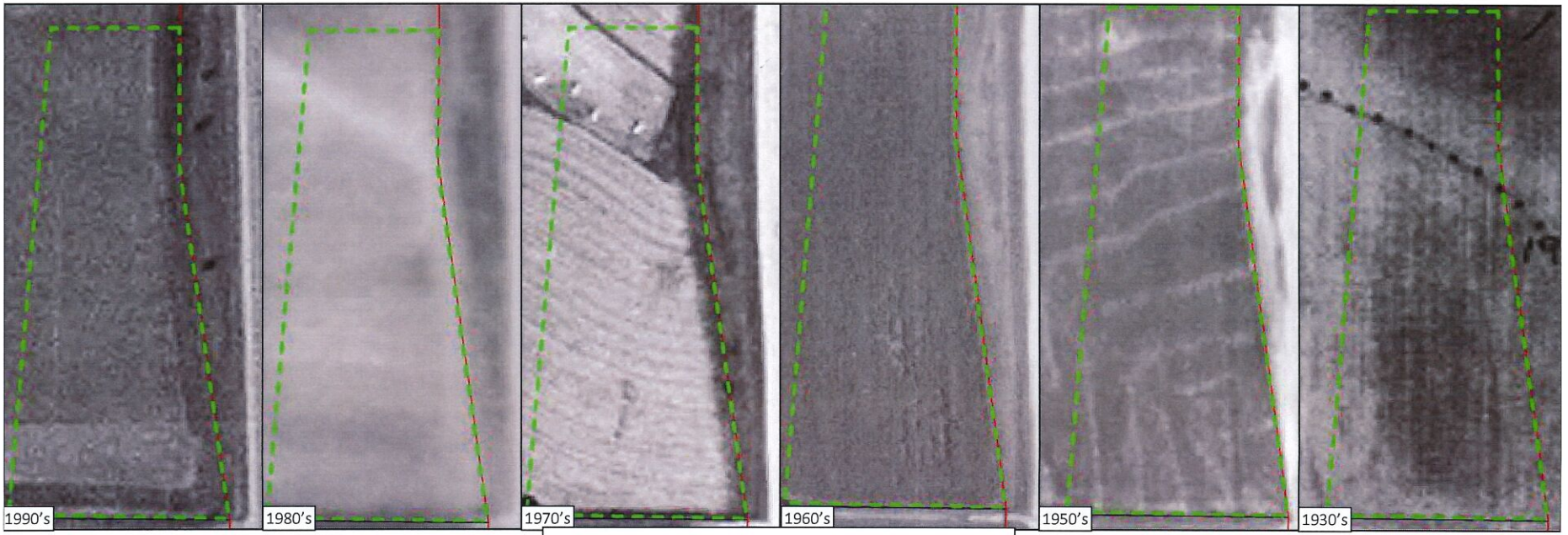


FIGURE 3: HISTORICAL PHOTOS

FIGURE 4: SOIL MAP OF SITE

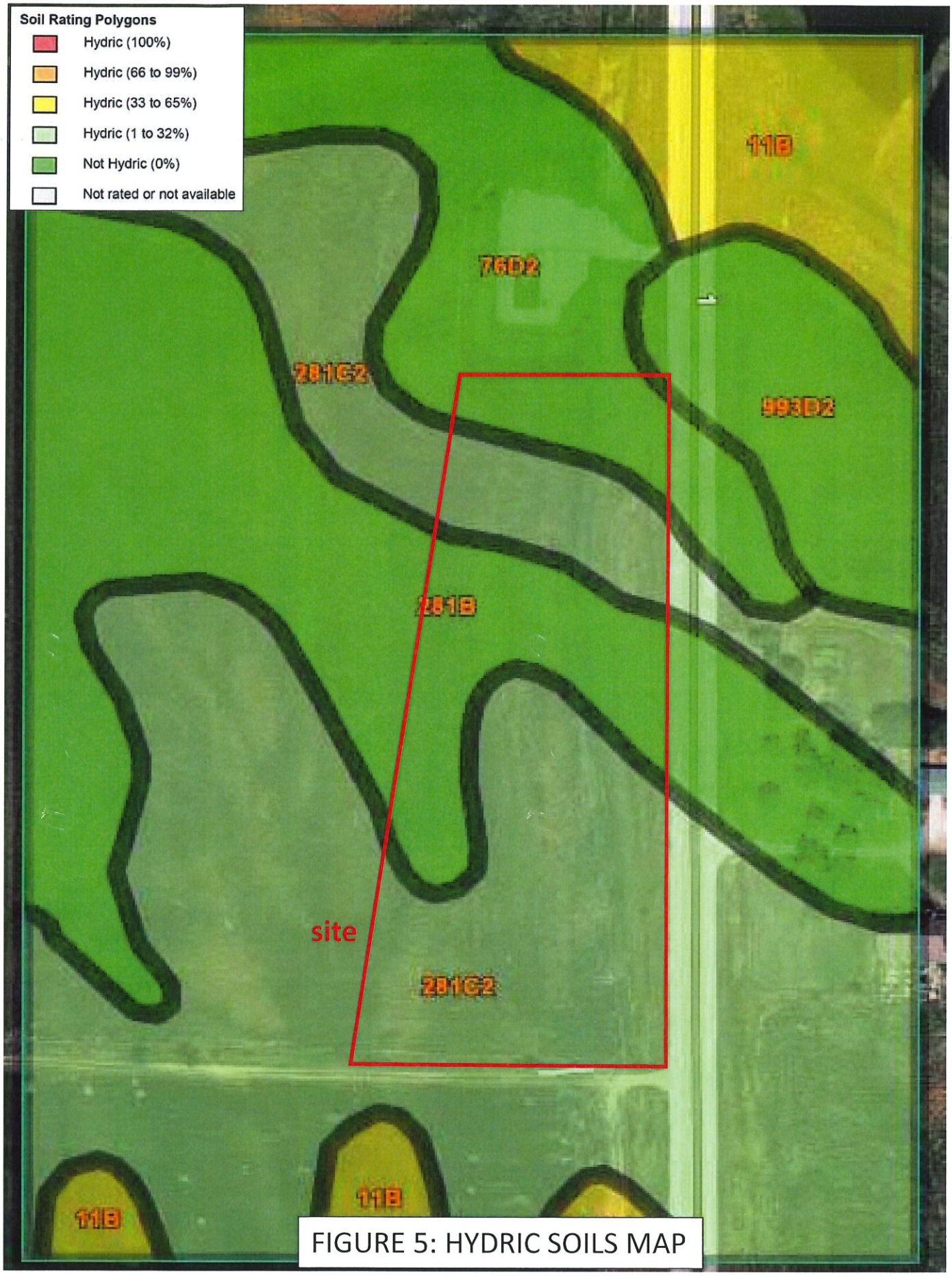


FIGURE 5: HYDRIC SOILS MAP

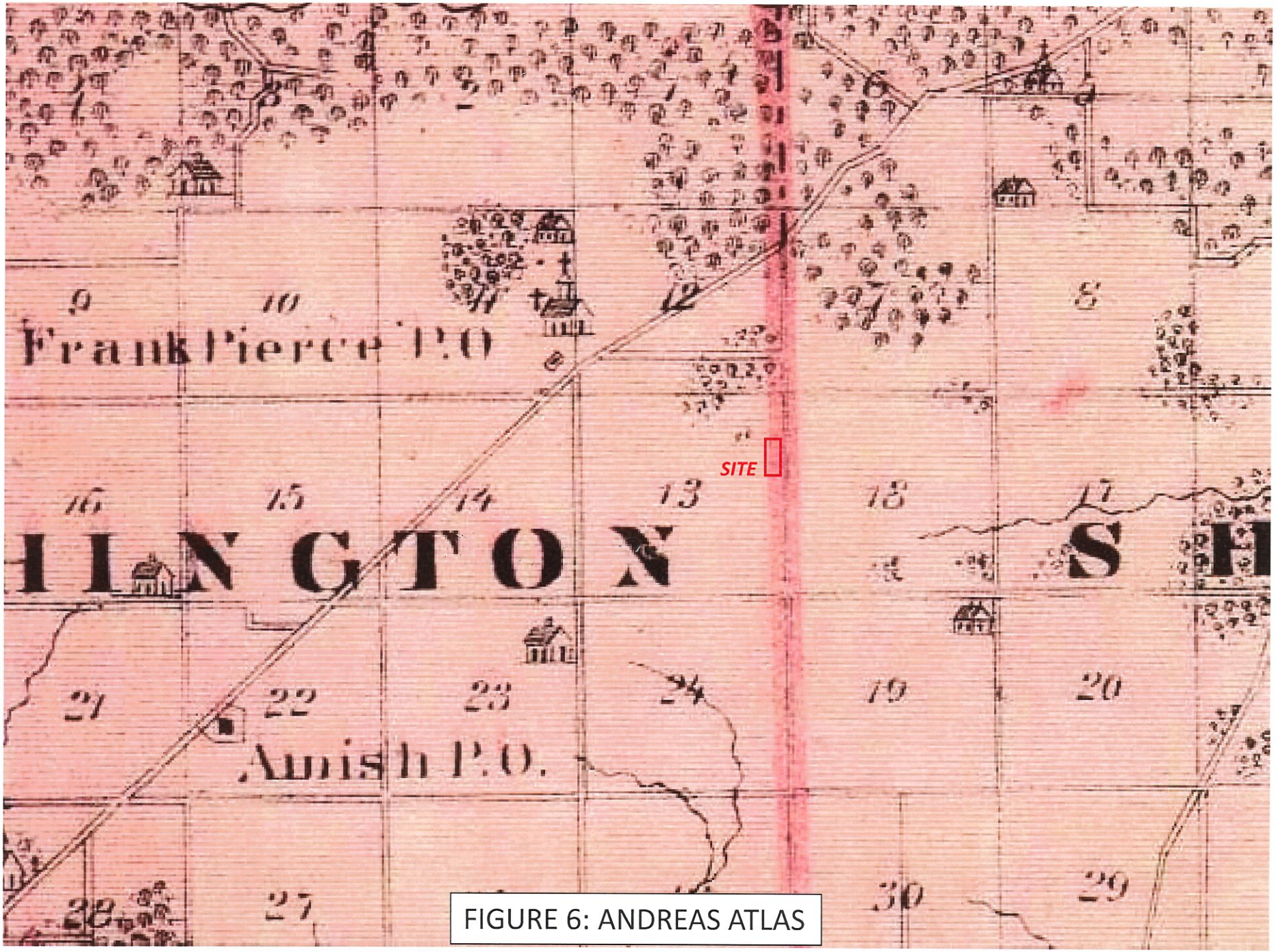


FIGURE 6: ANDREAS ATLAS

FIGURE 7: NWI MAP

THE UNIVERSITY OF IOWA

Office of the State Archaeologist

University of Iowa
700 Clinton Street Building
Iowa City, Iowa 52242
319-384-0732
archaeology.uiowa.edu

Thursday, April 20, 2023

Charles Schmidt
Hart-Frederick Consultants
510 State St.
Tiffin, IA 52340

Ref JH Johnson **Iowa Site File Search No.** 2023132

Dear Charles:

I have conducted a search of the Iowa Site File for archaeological sites recorded within a one-mile radius of the area described in your request for search on 4/20/2023. This area is within 78N-8W Sec 13. Our records indicate that no archaeological site has been reported to the OSA within 100 m of the project location. Two sites have been recorded within one mile of the project area. Other archaeological sites may be present at or near the project location but have not been discovered or reported to the OSA.

State Archaeologist John Doershuk has reviewed the location you indicated. The project area has been previously subjected to intensive Phase I survey resulting in no archaeological sites being documented. No additional archaeological field investigation is warranted prior to the proposed solar farm development. If during the course of ground disturbing activities unanticipated discovery of apparent archaeological materials (including but not limited to stone or pottery artifacts, burned earth and rocks, large charcoal deposits, etc.) occurs then construction activities must cease within 50 ft of the discovery and staff from Johnson County Planning and the Office of the State Archaeologist must be notified and allowed to evaluate and consult about next steps.

Several caveats are in order. First, this scope will likely not fulfill the requirements of Section 106 of the National Historic Preservation Act but is specifically targeted at identifying burial mounds and/or obvious human remains. No field method short of 100 percent excavation using archaeological techniques will eliminate all possibility of human remains at a location. Therefore, should human remains be exposed as part of proposed activities at any stage of the project, the Iowa burial law [Code of Iowa, Sections 263B, 523I.316(6), and 716.5; IAC 685, Ch.11.1] requires that all work in the vicinity of the finding be halted, the remains protected, local law enforcement officials notified, and the Bioarchaeology Program Director at the OSA contacted immediately (319-384-0740 or 319-384-0732).

If applicable, a map including the HILD locations (Historic Indian Location Database) and Notable Locations (database of locations with potential historical or archaeological value) is included with this search. Historic documentation indicates an archaeological site may be present at these locations. Your project should take into consideration these potential areas of archaeological interest.

Please remember that you may contract with any member of the Association of Iowa Archaeologists Consultants List; please direct your chosen consultant to provide John Doershuk (John-Doershuk@uiowa.edu) with an electronic report of their investigation which should adhere to typical AIA survey report guidelines. John will do his utmost to then review and provide you with comments within five business days of complete report submittal.

Sincerely,

Colleen Randolph

Colleen Randolph
Site Records Manager

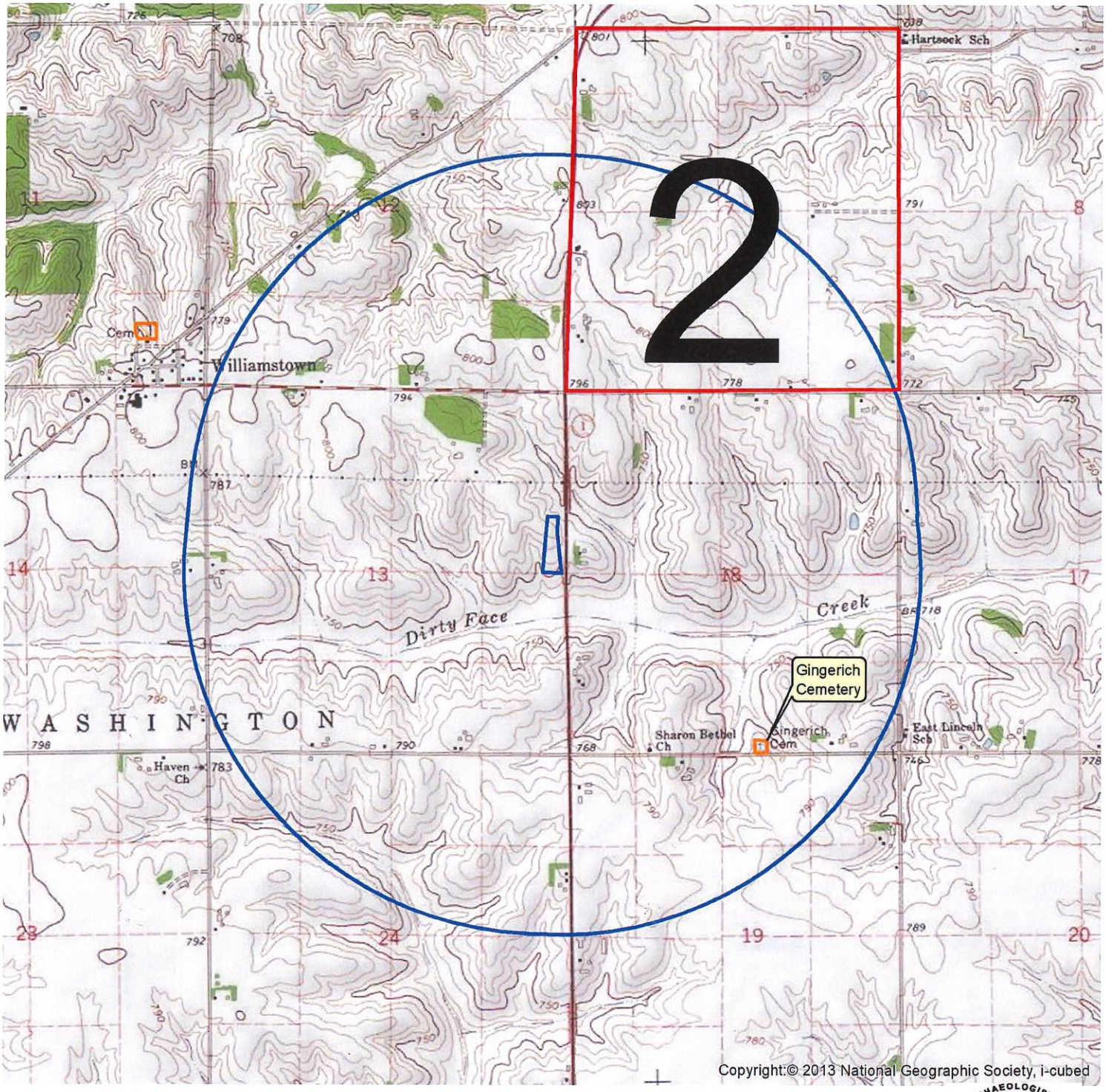
SITE	Cultural Affiliation	Site Type	SITEAREA	DTYPE
13JH1009	Prehistoric	Isolated find	314.1410	dot
13JH1351	Historic Euro-American	Historic farm/residence	389.6896	inverted triangle

Dtype definitions

Polygon:	Boundaries and location known
Triangle:	Location and boundaries not certain
Inverted Triangle:	Location known, boundaries unknown
Dot: (10 m radius)	Location known, area < 20 m in any direction
Circle:	Location and site area known, exact boundaries not known

Notable Locations Database:

Notable	Name	Reference
XX2990	Gingerich Cemetery	Merged from old cemetery shapefiles



OSA Search 2023132
Johnson County
Search Date:4/20/2023 CR

0 0.25 0.5 0.75 1 Miles

0 0.25 0.5 0.75 1 Kilometers

2 Number of sites per section which occur within 1 mile buffer

Notable_Locations

Project area

1-mile buffer

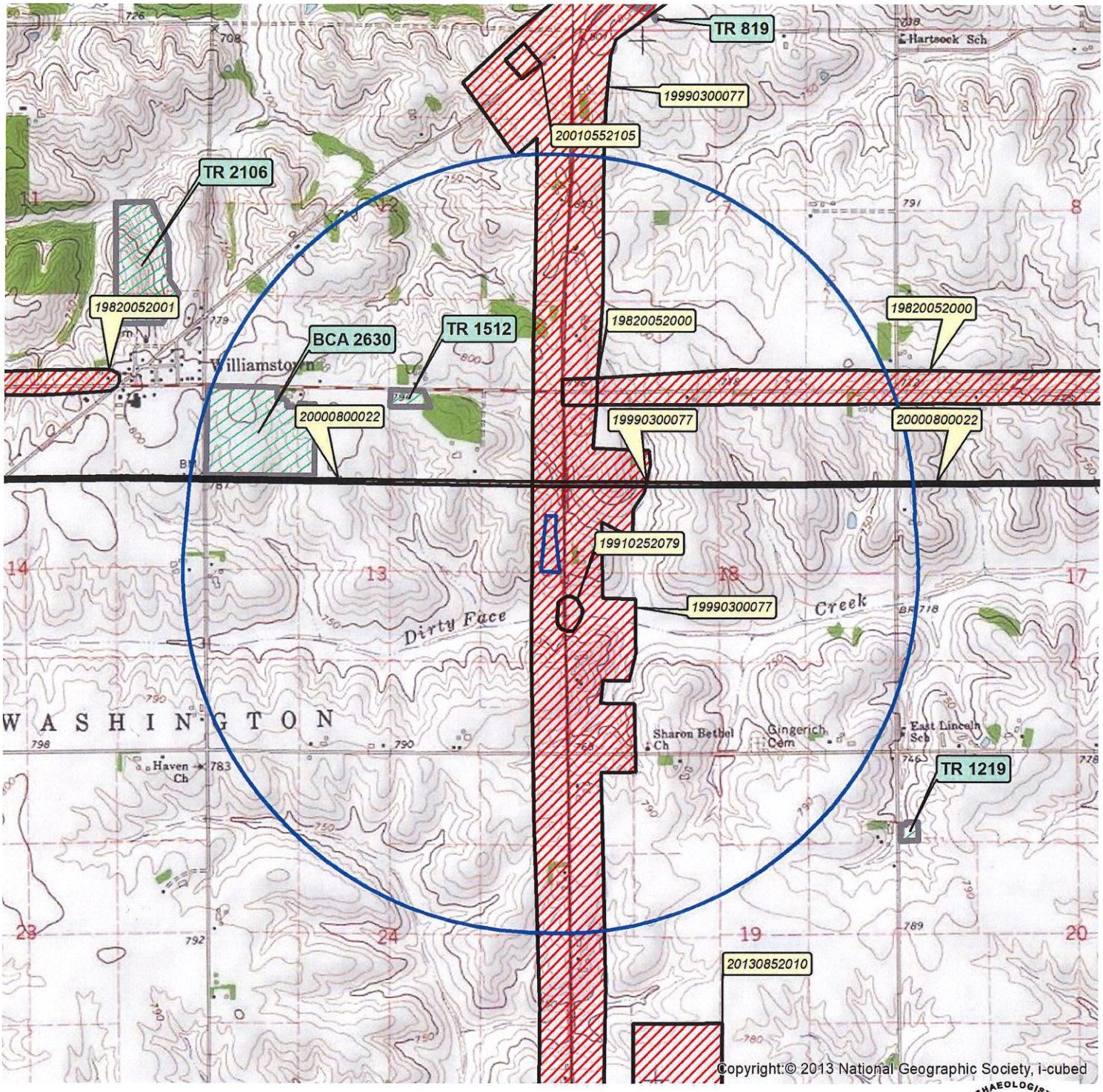
Previously surveyed area, "intense" labeled with SHPO R&C number

N

This map contains confidential site location information. Neither the map nor the associated data may be reproduced or distributed without the consent of the Office of the State Archaeologist.

Precise locations outside of the project area may be withheld pursuant to Iowa Code section 22.7 subsection 20

Data displayed on this map are current as of the date of this search, but are subject to additions and revisions without notice.



OSA Search 2023132
Johnson County
Search Date:4/20/2023 CR

0 0.25 0.5 0.75 1 Miles

0 0.25 0.5 0.75 1 Kilometers

OSA survey report
Project area
1-mile buffer
Previously surveyed area, "intense" labeled with SHPO R&C number

N

This map contains confidential site location information. Neither the map nor the associated data may be reproduced or distributed without the consent of the Office of the State Archaeologist.

Precise locations outside of the project area may be withheld pursuant to Iowa Code section 22.7 subsection 20

Data displayed on this map are current as of the date of this search, but are subject to additions and revisions without notice.

List of Adjacent Landowners

Gerald Hartzler

Mary Lamoreaux-Hartzler

5090 HWY 1 SW

Kalona, IA 52247

Mark & Rosemary Slabaugh

2049 500th St. SW

Kalona, IA 52247

Rudy Brenneman

1142 Puxico Rd.

Percy , IL 62272

M & M Trust

2275 520th St. SW

Kalona, IA 52247

Daryl D. & Viola M. Slabaugh

2895 500th St. SW

Iowa City, IA 52240

Y:\2023 SURVEYS\237060 Farmers Electric\dwgs\237060.DWG, 6/12/2023 11:32:18 AM

Doc ID: 032115640001 Type: PLA
Kind: SURVEY
Recorded: 06/29/2023 at 11:05:27 AM
Fee Amt: $7.00 Page 1 of 1
Johnson County Iowa
Kim Painter County Recorder
BK 66 PG 326

INDEX LEGEND

LOCATION: SOUTHEAST 1/4-NORTHEAST 1/4
SECTION 13, T-78-N, R-8-W
REQUESTOR: FARMERS ELECTRIC COOP
PROPRIETOR: MARK & ROSEMARY SLABAUGH
SURVEYOR: J. SCOTT RITTER, PLS #16546
COMPANY: HART-FREDERICK CONSULTANTS P.C.
510 STATE ST. PO BOX 560 TIFFIN, IA 52340
RETURN TO: sritter@hart-frederick.com (319) 545-7215

HFC HART-FREDERICK CONSULTANTS P.C.
www.hart-frederick.com
510 State Street P.O. Box 560 TIFFIN, IOWA 52340-0560 Phone: (319) 545-7215 www.hart-frederick.com

Ⓐ AT&T CORP.
217.80' X 400.00'
ASSIGNMENT OF EASEMENT
BK. 3873, PGS. 623-625

FORMERLY TOUCH AMERICA INC.
217.80' X 400.00' SITE EASEMENT
BK. 3097, PG. 75

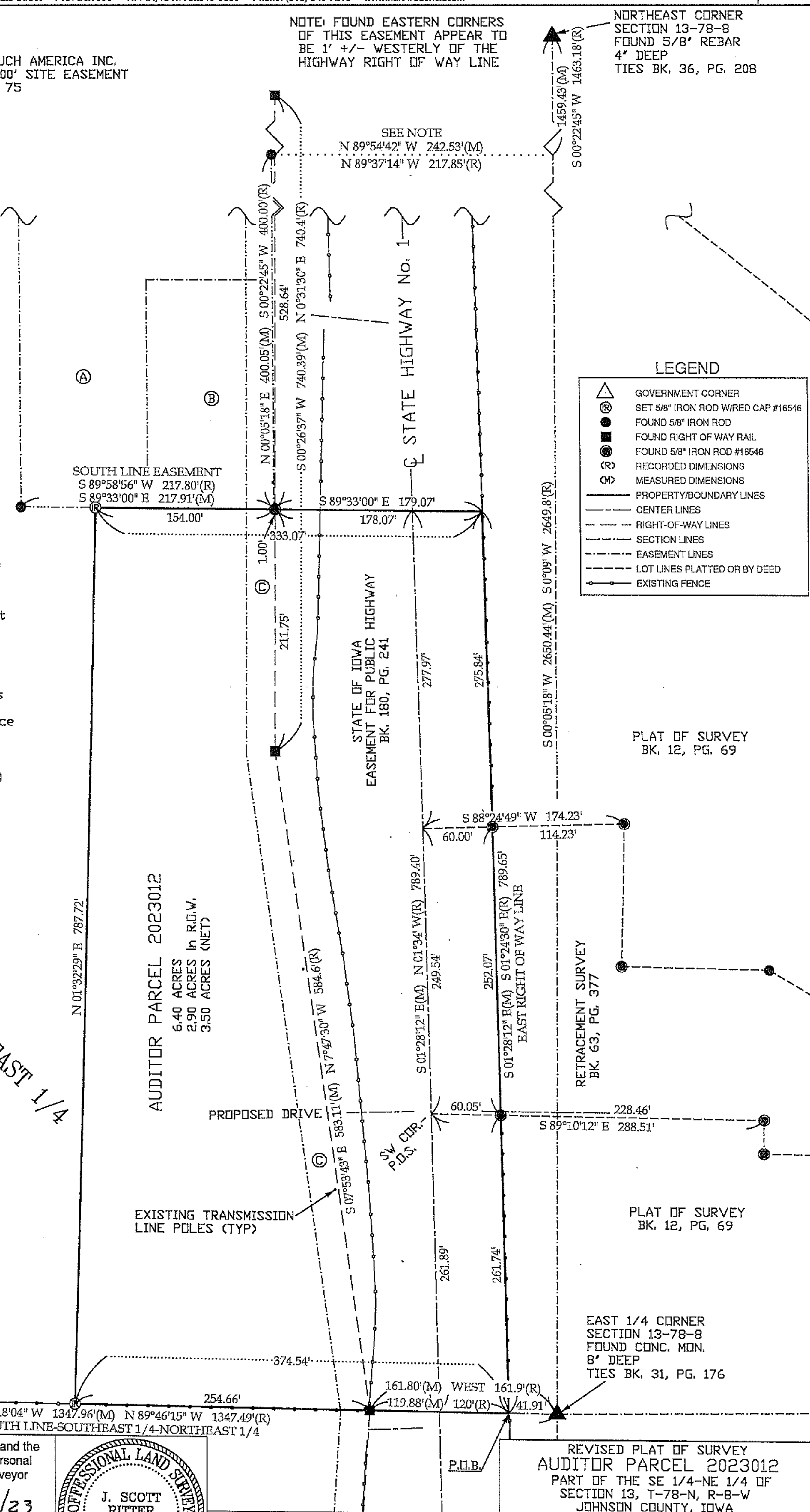
Ⓑ AT&T CORP.
108.90' X 200.00'
PARTIAL ASSIGNMENT OF EASEMENT
BK. 3302, PG. 537

Ⓒ ITC MIDWEST LLC
25' ELECTRIC LINE EASEMENT
BK. 5859, PG. 402

AUDITOR PARCEL 2023012

Auditor Parcel 2023012 is a part of the Southeast 1/4 of the Northeast 1/4 of Section 13, Township 78 North, Range 8 West of the 5th P.M., Johnson County, Iowa and is more particularly described as follows.

Commencing at the East 1/4 corner of Section 13, Township 78 North, Range 8 West; thence N 89°18'04" W along the South line of the Southeast 1/4 of the Northeast 1/4 of said Section 13, a distance of 41.91 feet to a point on the East right of way line for State Highway No. 1, being the Point of Beginning; thence continuing N 89°18'04" W along said South line, a distance of 374.54 feet; thence N 01°32'29" E, a distance of 787.72 feet to a point on the South line of a site easement as is recorded in Book 3097 on page 75 in the office of the Johnson County Recorder; thence S 89°33'00" E along said South line and its extension thereof, a distance of 333.07 feet to a point on said East right of way line for State Highway No. 1; thence S 01°28'12" E along said East right of way line, a distance of 789.65 feet to the Point of Beginning containing 6.40 acres of which 2.90 acres is state highway right of way and being subject to all easements and restrictions of record.



SOUTHEAST 1/4-NORTHEAST 1/4

Basis for bearing is IARTN network Iowa South (1402)

N W E S

0 100 200
Scale: 1" = 100'

SOUTHWEST CORNER-
SOUTHEAST 1/4-
NORTHEAST 1/4
SECTION 13-78-8
FOUND 5/8" REBAR #8165
2" EXPOSED
TIES BK. 36, PG. 207

I hereby certify that this land surveying document was prepared and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Professional Land Surveyor under the laws of the State of Iowa.

J. Scott Ritter, P.L.S. 6/29/23
Date
Iowa License Number: 16546
My license renewal date is December 31, 2024.
Pages covered by this seal: THIS SHEET ONLY

PROFESSIONAL LAND SURVEYOR J. SCOTT RITTER 16546 IOWA

THIS PLAT OF SURVEY, AUDITOR PARCEL 2023012 REPLACES AND SUPERCEDES THE PLAT OF SURVEY, AUDITOR PARCEL 2023012 AS IS RECORDED IN PLAT BOOK 66 ON PAGE 224.

REVISED PLAT OF SURVEY
AUDITOR PARCEL 2023012
PART OF THE SE 1/4-NE 1/4 OF SECTION 13, T-78-N, R-8-W
JOHNSON COUNTY, IOWA

DATE: 06/12/23	DRN: JSR	APP:
FLD BK: GPS	PROJ. NO: 237060	

Farmers Electric Cooperative
Owned by the people we serve, since 1916

1959 Yoder Ave SW
Kalona, IA 52247
319-683-2510

7/17/2023

I, Jerry Hartzler and MARY LAMOREUX-HARTZLER living at 5090 HWY 1 SW, Kalona, IA 52247 do not object to Farmers Electric placing a 3.5 acre solar farm at the proposed location on the west side of HWY 1 approximately 1,900' south of the intersection with 500th St. SW.

Jerry Hartzler
Mary Lamoreaux-Hartzler
5090 HWY 1 SW
Kaloona, IA 52247

Mary Lamoreaux-Hartzler

Farmers Electric Cooperative
Owned by the people we serve, since 1916

1959 Yoder Ave SW
Kalona, IA 52247
319-683-2510

7/17/2023

I, Mk Slab, living at 2049 500th St. SW, Kalona, IA 52247 do not object to Farmers Electric placing a 3.5 acre solar farm at the proposed location on the west side of HWY 1 approximately 1,900' south of the intersection with 500th St. SW.

Mark Slabaugh
2049 500th St. SW
Kalona, IA 52247

Farmers Electric Cooperative
Owned by the people we serve, since 1916

1959 Yoder Ave SW
Kalona, IA 52247
319-683-2510

7/17/2023

I, Marlin Miller, living at 2275 520th St. SW, Kalona, IA 52247 do not object to Farmers Electric placing a 3.5 acre solar farm at the proposed location on the west side of HWY 1 approximately 1,900' south of the intersection with 500th St. SW.

Marlin D. Miller
M & M Trust
2275 520th St. SW
Kalona, IA 52247

Farmers Electric Cooperative
Owned by the people we serve, since 1916

1959 Yoder Ave SW
Kalona, IA 52247
319-683-2510

7/17/2023

I, Daryl Slabaugh, living at 2895 500th St. SW, Iowa City, IA 52240 do not object to Farmers Electric placing a 3.5 acre solar farm at the proposed location on the west side of HWY 1 approximately 1,900' south of the intersection with 500th St. SW.

Daryl D. Slabaugh
2895 500th St. SW
Iowa City, IA 52240