

8/11/2023

Farmers Electric Solar Farm
Johnson County, Washington Township
Section 13, NE Quad
3.5 acres, 988.31 KW DC
Ground-mount, Fixed mount
Adjacent to: 5063 HWY 1, Kalona, IA 52247

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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 placed 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. If required, FEC proposes to install a landscape buffer along the east side of the site that runs along Highway 1.

The solar installation will be 3.5 acres on a 6.4 acre parcel. FEC will install an 8-foot wire woven fence with no barb wire, as required by county regulations, around the entire perimeter. The bottom 42" of wire mesh has openings of 7" X 6". 'Warning/No Trespassing' signs will be mounted every 250'.

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 less than 5,000 square feet of gravel in the property for a turn-around is planned. 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. FEC will report to the county on an annual basis for the first 5 years on habitat maintenance, then a reduced amount at the Board's discretion. 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. 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.

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

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.

Stormwater Management Plan

Total graveled area on site will be less than 5,000 square feet; stormwater management planning is not required.

Glare Mitigation

According to Mike in the Iowa City Airport manager's office, the approach zone for the Iowa City airport is 1,000 feet, the distance from the airport to the solar field is 10.2 miles. The panels installed will have an anti-reflective coating.

Ground Cover Plan

The field of the solar site is currently planted in soybeans. This crop will be harvested before the construction process commences. If the Conditional Use Permit is granted at the monthly meeting on September 20th, material will be ordered and will take 6 – 7 weeks to arrive. Ground cover seed mixes will be seeded no later than November. The project will not extend multiple planting seasons, taking approximately 4 months from start to finish.

See attachments below for 2 seed mixtures for ground cover provided by The Bee And Butterfly Habitat Fund specific to the state of Iowa. The first mix listed is a fescue/bluegrass/clover blend that will be under and directly in front of the solar rows. The second is a monarch mix that will be seeded on the buffers around the perimeter of the panels. Placement is shown on page 2 of the site plan.

In the first year, when plants in the monarch mix plot reach a height of about 20" – 28", it will be mowed to a height of 10", this may need to be done 3 - 4 times the first year. By year two, the monarch mix should be established well enough to not need mowing. FEC may need to apply Clethodim by the spring of year two to control grasses that may be trying to overtake the plot.

Top soil will not be removed during development of the site.



Array Fescue -
Bluegrass - Clover BI



IA Monarch Mix
2022.pdf

Following a review of the two types of seed mixes by Dave Wehde with Johnson County Conservation, the following seeds will be withdrawn from the Monarch Mix for reasons detailed on the right of each listing. Elsa Gallagher, biologist and the Habitat Program Director for the Bee And Butterfly Habitat Fund, states there's no problem removing these seeds from the mix.

- | | |
|---|----------------------------|
| • Blanket Flower (<i>Gaillard aristata</i>) | Not Native to Iowa |
| • Claspig Coneflower (<i>Rudbeckia amplexicaulis</i>) | Not Native to Iowa |
| • Deer Vetch (<i>Acmispon americanus</i>) | Native to far Western Iowa |
| • Plains Coreopsis (<i>Coreopsis tinctoria</i>) | Not Native to Iowa |
| • Upright Coneflower (<i>Ratibida columnifera</i>) | Native to far Western Iowa |

If landscaping is required, Farmers Electric intends to plant Thuja Junior Green Giant *Arborvitae* trees or similar. These trees grow to a height of 20' and width of 5'. See example on the next page. A planting that has a lower height at maturity is necessary to maintain distance from the overhead electric transmission line that runs along the same

route. Farmers Electric proposes only planting along the east side of the property that runs along Highway 1. The west and south property lines are next to crop fields, the north property line is adjacent to an AT&T property with no daily personnel.

Farmers Electric will report to the county the ground cover maintenance activities annually for the first 5 years, then the frequency reduced with the approval of the Zoning Administrator. Vegetation that does not establish or dies during the life of the project will be replaced. FEC will follow guidelines established in a handbook provided by The Bee And Butterfly Fund 'Pollinator Habitat : Establishment & Management Guide'.

[pollinator_habitat_guide_-_2021.pdf \(beeandbutterflyfund.org\)](https://www.beeandbutterflyfund.org/pollinator_habitat_guide_-_2021.pdf)

Thuja Junior Green Giant Arborvitae



Emergency Operations Procedures

There will be one access point to the solar farm, the driveway with a locked sliding gate. Each inverter is equipped with a separate AC and DC disconnect. Each inverter will be fed by a 3-phase AC disconnect switch (non-fused). Each AC disconnect will be fed from a 3-phase breaker from a breaker box positioned between the disconnect switch and the transformer. The transformer will be in the solar farm, being fed from a cabinet positioned outside the solar farm.

If for maintenance or emergency situations, the shutdown procedure is as follows:

- 1) Place the inverter DC disconnect switch in the 'off' position.
- 2) Place the inverter AC disconnect switch in the 'off' position.
- 3) Place handle on the AC disconnect in the 'off' position.
- 4) Place the breaker in the breaker panel assigned to that inverter in the breaker in the 'off' position.

If an emergency situation requires an immediate shutdown for the entire farm:

- 1) Shut each breaker off in both breaker panels.
- 2) Transformer may then be de-energized from the cabinet positioned outside the solar farm.

In all cases, FEC personnel will be the only authorized persons to operate equipment. A sign will be posted at the entrance with Farmers Electric Cooperative's name (the owner and operator), phone number, 911 address, and GPS coordinates.

Agricultural Impact Mitigation Plan

Project Overview:

Material Used;

- 1000 KVA transformer
- 2 – Eaton 3-phase breaker panels
- 13 – Solectria PVI 60 kw inverters
- 13 – 100A – 480V AC disconnects
- 1866 – Heliene 535W bi-facial solar modules
- 1 – Terrasmart 30-degree fixed ground mount racking

Once the Conditional Use Permit is granted following the September 20th meeting of the Board of Adjustment, materials will be ordered. Material will take approximately 6-7 weeks to arrive on site. Once construction commences, it will last about 120 days until completion, roughly from November 2023 through February 2024.

No grade work is necessary for this site. Any dirt disturbed during trenching for underground electric lines or conduit installation will be backfilled in same. Construction will begin after the current soybean crop has been harvested. The bean stubble and stover

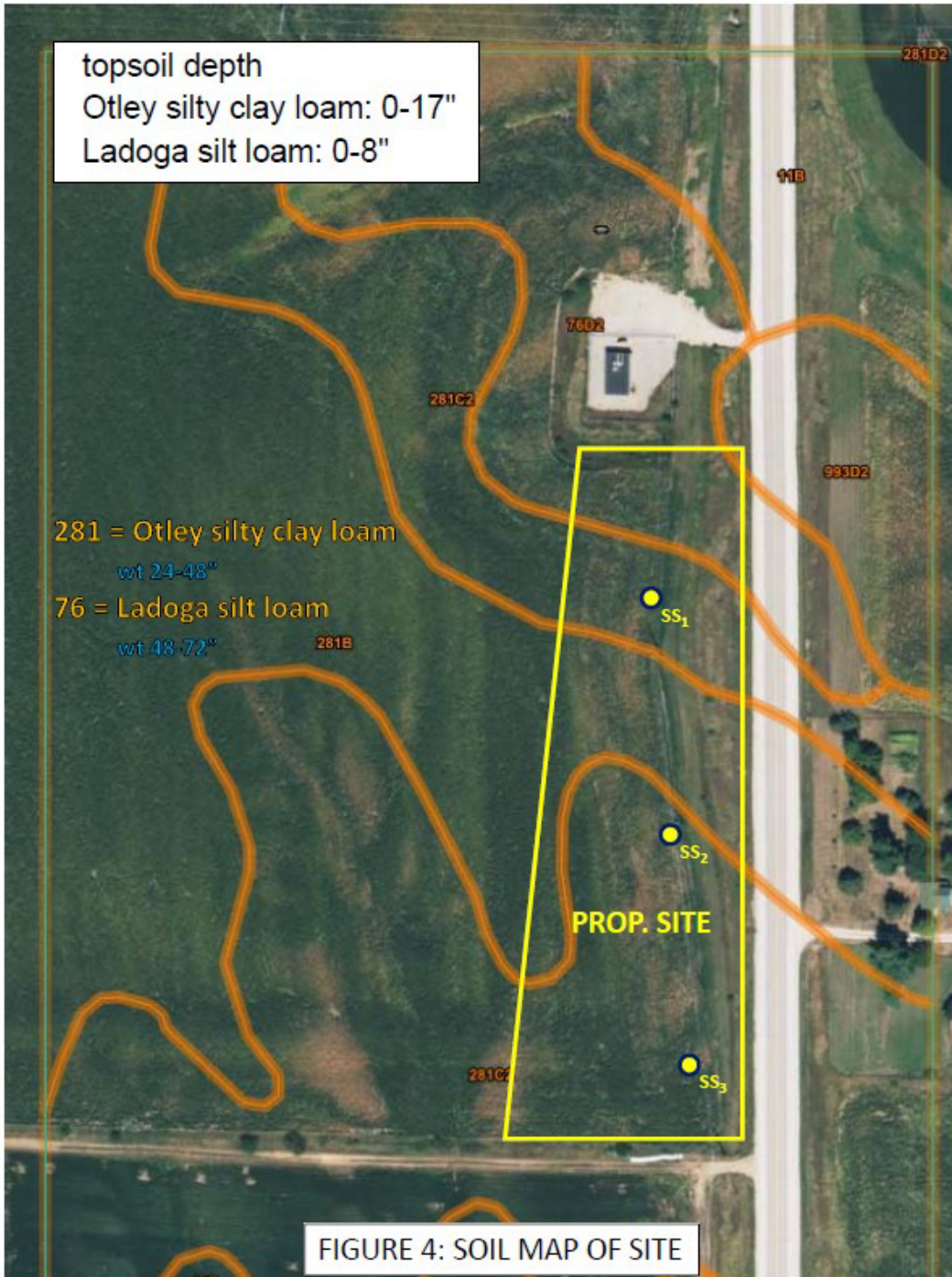
will act as ground cover until ground cover seeding is conducted in November. See on next page top soil depth as tested by Hart-Frederick.

The previous owner of the property has never installed tile on this site, nor is he aware of any current tile in place. If tile is discovered during the construction process, it will be repaired by FEC.

A dumpster will be on site for any packing materials, garbage, or debris created during the construction phase.

Erosion and Sediment Control Plan

No soil will be disturbed during the construction process. As any other similar agricultural row crop field, soybean stubble and stover will cover the field going into winter following harvest, and as stated in the ground cover plan, seeding will take place by the end of November of this year.



List of Adjacent Landowners Within 500 Feet

A separate file was sent to Johnson County personnel that contains signed statements from landowners listed below stating they do not object to FEC's intended use of the property as a solar site.

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

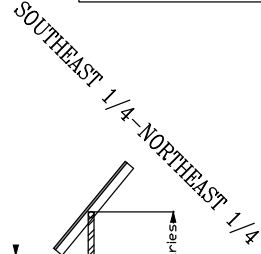
Iowa City, IA 52240

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- Ⓐ 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

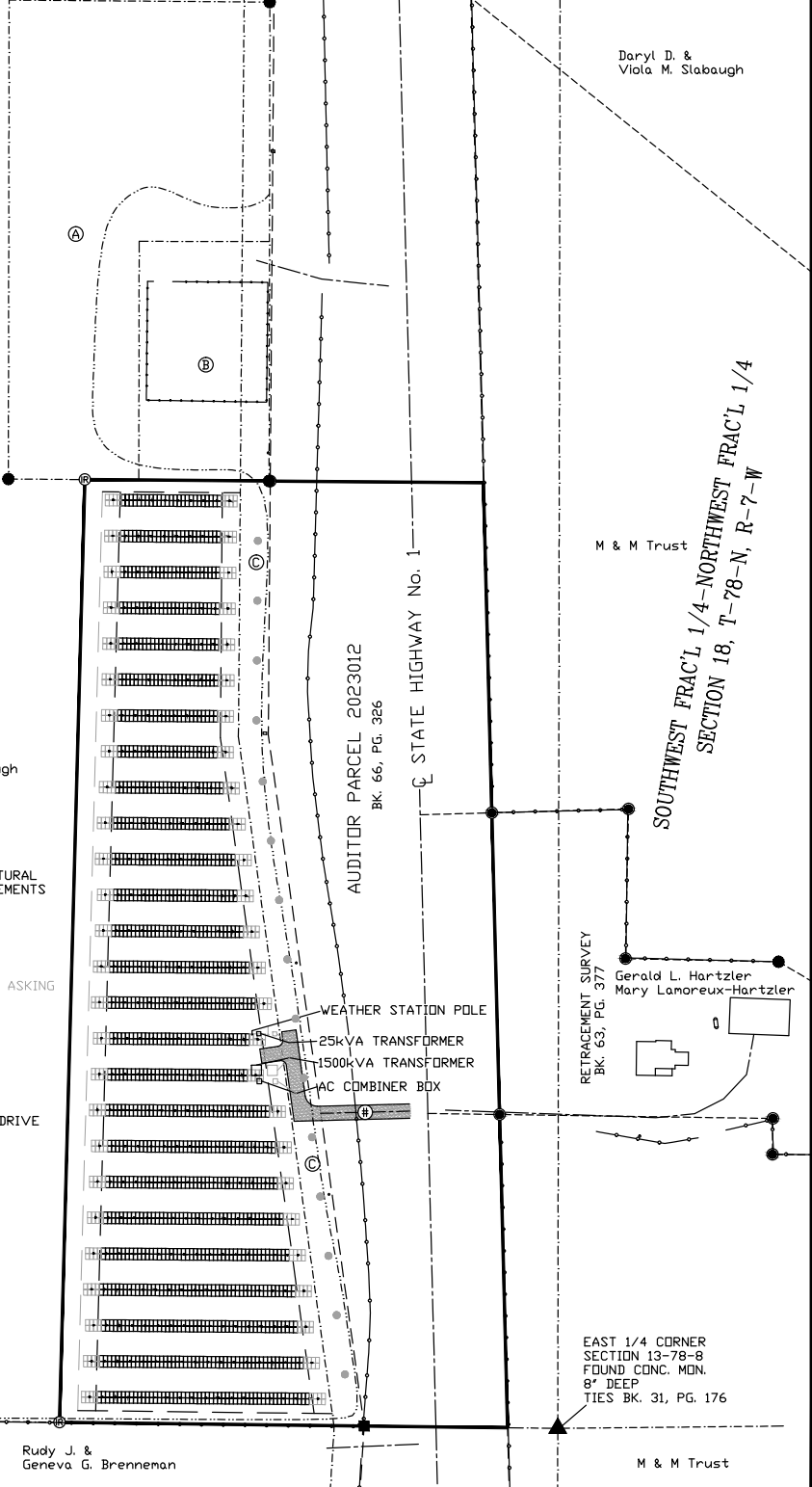
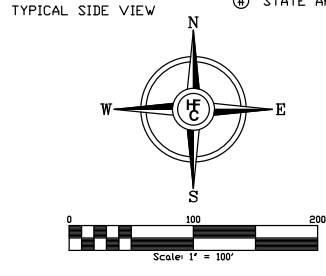
	GOVERNMENT CORNER
	SET 5/8" IRON ROD W/ WIRE CAP #16546
	FOUND 5/8" IRON ROD
	FOUND RIGHT OF WAY RAIL
	FOUND 5/8" IRON ROD #16546
	RECORDED DIMENSIONS
	MEASURED DIMENSIONS
	PROPERTY BOUNDARY LINES
	CENTER LINES
	RIGHT-OF-WAY LINES
	SECTION LINES
	EASEMENT LINES
	LOT LINES PLATTED OR BY DEED
	EXISTING FENCE
	CURRENT 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



Mark & Rosemary Slabaugh

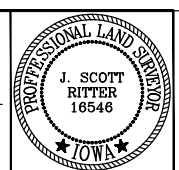
ZONED A-AGRICULTURAL SETBACK REQUIREMENTS
 FRONT = 40'
 REAR = 30'
 SIDE = 10'

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



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



Rudy J. & Geneva G. Brenneman

M & M Trust

SITE PLAN (Page 1 of 2)
 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	

