Planning, Zoning & Development Committee

June 5, 2024
5:00PM

SPECIAL MEETING
Legislative Center's Gathertorium
200 N. Main Street
Sycamore, Illinois 60178

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1. **Roll Call**

2. **Approval of Agenda**

3. **Approval of Minutes**
   a. April 24, 2024

4. **Public Comments**

   Any member of the public may address the Committee for up to 3 minutes on any topic of their choosing. There will be no yielding of time to other members of the public and agenda time for public comments is limited to 30 minutes in total.

5. **Ordinances**

   a. Ordinances O2024-06 —Ordinance approving a Special Use Permit request for a 5-megawatt Commercial Solar Energy System located on the west side of Somonauk Road, in Squaw Grove Township. (P.I.N.s 15-34-300-005 & 15-33-400-004)

   Shenandoah Solar, LLC has filed a petition for a Special Use Permit to allow for the construction and operation of a 5-megawatt Commercial Solar Energy System, on approximately 49.1-acres of the 95.733-acre property west side of Somonauk Road

   DeKalb County Hearing Officer Dale Clark conducted a public hearing on May 16, 2024 regarding the petition. The petitioner presented evidence and testimony in support of the application. Members of the public spoke and submitted correspondence against the petition. The Hearing Officer has forwarded his Findings of Fact and Recommendation, and has recommended that the petition be approved, with conditions, as shown in his Findings of Fact and Recommendation. (Petition SQ-24-02)

   b. Ordinances O2024-07 —Ordinance approving a Special Use Permit for an E-Commerce Business on property located at 8262 Baseline Road, Kingston Illinois in Mayfield Township (P.I.N. 05-04-100-006)

   Joshua Wollman has filed a petition for a Special Use Permit to allow for the operation of an E-Commerce Business, on the property located at 8262 Baseline Road, Kingston Illinois 60145.

   DeKalb County Hearing Officer Dale Clark conducted a public hearing on May 23, 2024 regarding the petition. The petitioner presented evidence and testimony in support of the application. One member of the public spoke and asked questions at the Public Hearing however no support or opposition was offered.

The Hearing Officer has forwarded his Findings of Fact and Recommendation, and has recommended that the petition be approved, with conditions, as shown in his Findings of Fact and Recommendation. (Petition MY-24-03)

c. Ordinances O2024-08 —Ordinance amending Chapter 14 of the DeKalb County Code regarding State of Illinois adopted Energy Codes.

Planning, Zoning and Development Committee of the DeKalb County Board has considered updated building codes recommended for adoption by the County Building Development Official, and has recommended that the updated building codes be updated and adopted by the County Board affirming that DeKalb County has adopted the 2021 edition of the Illinois Energy Conservation Code (IECC) compliant with the State of Illinois mandate by having the most recent energy code adopted for the citizens of DeKalb County.

6. Resolutions

7. Considerations/Discussion Items

8. Old Business

9. New Business

10. **Adjournment**

MINUTES

DeKalb County Government
Sycamore, Illinois

Planning, Zoning and Development Committee Meeting
(April 24, 2024)

The Planning, Zoning, & Development Committee of the DeKalb County Board met on April 24, 2024 at 6:00 pm in the DeKalb County Legislative Center, Gathertorium, in Sycamore, Illinois. In attendance were: Committee Members: John Frieders, Rhonda Henke, Laura Hoffman, Terri Mann-Lamb, Jerry Osland, and Roy Plote; and Community Development Department staff: Derek Hiland and Marcellus Anderson. Also, in attendance were: County Board Chair Ellingsworth Webb; James Hutcheson; and, John Lyon.

Call to Order / Roll Call

Ms. Mann-Lamb, the Planning, Zoning, & Development Chair, called the meeting to order. Mr. Luebke was not in attendance.

Approval of Agenda

Committee Action: Ms. Henke moved to approve the agenda, seconded by Mr. Osland, and the motion carried unanimously.

Approval of the Minutes of the January 24, 2024 Planning, Zoning, & Development Meeting

Committee Action: Mr. Plote moved to approve the minutes of the January 24, 2024 meeting, seconded by Mr. Osland, and the motion carried unanimously.

Public Comments

None

Ordinances

Ordinances O2024-05 —Ordinance Approving an Amendment to the Planned Development Industrial Zoning District located at 100 Gletty Road, in Sandwich Township. (P.I.N. 19-35-300-020).

Mr. Hiland informed the Committee that Arneson Tire Center, which owns the property located at 100 Gletty Road, Sandwich, had submitted a request for an amendment DeKalb County Ordinance 2021-09. He reminded the Committee that Arneson Tire Center was a vehicle repair facility operating on the subject property, and that Ordinance 2021-09 granted a map amendment to rezone the subject property to Planned Development Commercial, to allow for the Arneson Oil to operate a second business on the property, in the form of a propane storage tank. He explained that Arneson Tire Center was in need of further cold storage for the vehicle repair facility, and that to add the

proposed building required an amendment to Ordinance 2021-09. He noted that the public hearing had been held, with no members of the public in attendance, and the that the Hearing Officer had recommended approval, with conditions.

Mr. Hiland informed the Committee that Mr. Plote had noted a scrivener's error on the draft ordinance, in the form of an incorrect date, which would be corrected.

Ms. Henke confirmed with Mr. Hiland that the proposed building would not have water or sewer, but would have electric.

Ms. Hoffman noted that the draft ordinance in the Committee packet contained language that no engine repair or body work was to occur on the subject property, however, the Hearing Officer's Findings of Fact contained language that the applicants were hoping to use the proposed building to work on items in inclement weather. She inquired whether or not this would be a contradiction. Mr. Hiland responded that he would check the applicants' submittals and the statements given at the public hearing, and have an answer by the time the matter went before the Committee of the Whole.

Mr. Frieders inquired as to why the draft ordinance had such strict hours of operation. Mr. Hiland explained why such restrictions were typically included in ordinances. He also noted that this condition, along with most of the other conditions, were part of the existing ordinance (2021-09) currently governing the property, and that many of those conditions had been carried over from the ordinance (1996-20) which had originally approved the establishment of the vehicle repair facility.

Mr. Plote questioned whether the restriction on hours of operation should be removed and explained his concerns regarding the matter. Mr. Hiland explained how the concerns Mr. Plote raised were addressed by the ordinance, but that if the Committee wished to add more language to make it abundantly clear, they could.

Mr. Plote inquired whether any complaints had been raised about the businesses. Mr. Hiland responded that none had been raised during his time at the County.

Committee Action: Mr. Plote moved to recommend approval, with conditions, of the petition, seconded by Mr. Frieders. A voice vote was held, and the motion carried unanimously.

Mr. Hiland noted that the date on the draft ordinance would be corrected before the matter goes before the County Board meeting and that he would have a conversation with the Arnesons about how they intended to use the proposed building.

Resolutions

(none)

Considerations / Discussion Items

Mr. Hiland informed the Committee that due to an error in the legal description of a public notice for one of the petitions coming forward, the public hearing for this petition had to be rescheduled, which meant that the matter would not be ready to go before the Committee at its May 22, 2024 meeting. He noted that the developer was requesting that the Committee consider holding a special meeting in end of May / early June, so they could get in front of the next round of renewable energy credits being offered by the State. Mr. Hiland noted that if the Committee did hold a special meeting, two items would be addressed. He then offered up several dates for the Committee to consider. After some discussion, it was determined that 5:00 pm on June 5th could work. It was noted that there would be no Committee meeting on May 22nd, as it would have no items to consider at that time, nor would there be a Committee meeting on June 26th, due to the rescheduling of the June County Board meeting.

Mr. Osland inquired whether this solar project would be the first development coming before the Committee since the County revised its codes on commercial solar energy systems to be in compliance with the statewide standards adopted by the State in 2023. Mr. Hiland explained that this project was not the first one to come before the Committee under the new rules. Mr. Osland inquired as to where the project was located. Mr. Hiland replied that it was located on Somonauk Road, and that it was one the County Board had voted down previously. Mr. Osland inquired whether the proposed panels were to be twelve (12) feet or twenty (20) feet in height. Mr. Hiland responded that he believed they were proposing panels twenty (20) feet in height, but wasn't certain. The Committee had a brief discussion about the differences in the proposed solar facility from its previous application.

Mr. Plote inquired as to whether Mr. Hiland had heard any word about a movement for solar panels to be twenty (20) feet in height. Mr. Hiland responded that was the trend and it appeared to be pretty consistent statewide.

Ms. Mann-Lamb noted that she would like to be able to go to a solar facility and stand next to one of the panels to get a better perspective on it. Ms. Hiland responded that he could arrange to have Committee members visit one of the sites under County jurisdiction that were currently under construction, if they wished.

Mr. Plote informed the Committee about some new trends in commercial solar energy systems he had been hearing about.

Old Business

(none)

New Business

(none)

Adjournment

Mr. Osland moved to adjourn the meeting, seconded by Ms. Henke, and the motion carried unanimously.

Respectfully submitted,

_____

Terri Mann-Lamb
Chairman, Planning, Zoning, & Development Committee

MOA:moa
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ITEM 5A

Community Development Department
110 East Sycamore Street
Sycamore, IL 60178
(815) 895-7188
communitydevelopment@dekalbcounty.org

MEMORANDUM

TO: Planning, Zoning and Development Committee

FROM: Marcellus Anderson
Assistant Planner

DATE: May 30, 2024

SUBJECT: Shenandoah Solar, LLC
Commercial Solar Energy System Special Use Permit
Petitions SQ-24-02

Shenandoah Solar, LLC (wholly owned by Ironwood Projects, LLC) has submitted an application for a Special Use Permit to allow for the construction and operation of a 5-megawatt Commercial Solar Energy Systems (CSES) on 49.1-acres of a 95.733-acre property located west side of Somonauk Road, approximately 4,600 feet north of Chicago Road, in Squaw Grove Township. The property is zoned A-1, Agricultural District.

DeKalb County Hearing Officer Dale Clark conducted a public hearing on May 16, 2024 regarding the petition. Wherein, the petitioner presented evidence and testimony in support of the application, two members of the public asked questions concerning the project, and five members of the public spoke against the petition. The Hearing Officer has forwarded his Findings of Fact and Recommendation, and has recommended that the petition be approved with conditions.

The Planning, Zoning and Development Committee is requested to consider the application, the Findings of Fact and Recommendation of the Hearing Officer, and to make a recommendation to forward to the full County Board for action, and may recommend approval, approval with conditions, or denial of the requests.

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STATE OF ILLINOIS)
) SS
COUNTY OF DEKALB)

ORDINANCE O2024-06

AN ORDINANCE APPROVING A SPECIAL USE PERMIT REQUEST FOR A 5-MEGAWATT COMMERCIAL SOLAR ENERGY SYSTEM LOCATED ON THE WEST SIDE OF SOMONAUK ROAD IN SQUAW GROVE TOWNSHIP

WHEREAS, Shenandoah Solar, LLC has filed a petition for a Special Use Permit to allow for the construction and operation of a 5-megawatt Commercial Solar Energy System, on approximately 49.1-acres of the 95.733-acre property west side of Somonauk Road, said subject property being legally described as shown in Exhibit "A", attached hereto; and

WHEREAS, following due and proper notice by publication in the Daily Chronicle not less than fifteen (15) nor more than thirty (30) days prior thereto, and by mailing notice to all owners of property abutting the subject property at least ten (10) days prior thereto, the DeKalb County Hearing Officer conducted a public hearing on May 16, 2024, at which the petitioner presented evidence, testimony, and exhibits in support of the requested Special Use Permit, wherein two members of the public asked questions about the project, and wherein five members of the public spoke in opposition to the project; and

WHEREAS, the Hearing Officer having considered the evidence, testimony and exhibits presented has made his findings of fact and recommended that the Special Use Permit be granted with conditions, as set forth in the Report of Proceedings and Recommendation of the DeKalb County Hearing Officer, a copy of which is appended hereto as Exhibit "B"; and

WHEREAS, the Planning, Zoning, & Development Committee of the DeKalb County Board having considered the testimony and exhibits from the public hearing and having considered the findings of fact and recommendation of the Hearing Officer, has forwarded to the County Board a recommendation of approval, with conditions, of an ordinance to grant the Special Use Permit; and

WHEREAS, the DeKalb County Board has considered the Report of Proceedings and Recommendation of the Hearing Officer and the recommendation of the Planning, Zoning, & Development Committee, and has determined that granting the Special Use Permit to allow the establishment and operation of a commercial solar energy system would be consistent with the requirements established by Section 53-I-2.B.3 of the DeKalb County Code;

NOW, THEREFORE, BE IT ORDAINED BY THE COUNTY BOARD OF DEKALB COUNTY, ILLINOIS, as follows:

SECTION ONE: The Report of Proceedings and Recommendation of the DeKalb County Hearing Officer, Exhibit "B", attached hereto, is hereby adopted as the findings of fact and conclusions of the DeKalb County Board.

SECTION TWO: Based on the Findings of Fact set forth above, the request for a Special Use Permit for a commercial solar energy system on the subject property located on the west side of Somonauk Road, in Squaw Grove Township, is hereby approved for property being legally described in Exhibit "A" attached hereto.

SECTION THREE: This approval of a Special Use Permit is subject to the following conditions:

1. The petitioners shall install and maintain low-profile native prairie species for ground cover.

2. The petitioners shall prepare and submit a detailed Landscape Plan, incorporating the recommendations outlined in the Natural Resource Inventory Report, to the DeKalb County Soil and Water Conservation District for their review and approval. The Landscape Plan, revised as necessary, shall then be submitted as part of the Site Development Permit application.

3. The petitioners shall prepare and submit a Landscape Monitoring & Maintenance Plan to the DeKalb County Soil and Water Conservation District for their review and approval. Copies of the approved, and revised, if necessary, plan are to be submitted to DeKalb County Community Development Department and DeKalb County Soil and Water Conservation District prior to submittal of the Building Permit application.

4. Those portions of the subject property which are outside of the fenced-in area of the facility that are not to be put into agricultural production as a result of the presence of the facility shall be included in the Landscape Plan and Landscape Monitoring & Maintenance Plan, so that these areas do not go unattended and become a source for noxious weeds.

5. The petitioners shall conduct a sub-surface drain tile investigation, locating all drain tiles within the project area, and submit the resulting report shall be submitted to the DeKalb County Soil and Water Conservation District, and as part of the Site Development Permit application.

6. The applicant shall include documentation of compliance with the IEPA ILR-10 permit as part of Site Development Permit application.

7. The facility shall be setback at least one hundred fifty (150) feet from the nearest point on the outside wall of an occupied community building or dwelling on a nonparticipating property.

    a. A signed and notarized statement has been recorded (Document #: 2024002218) waiving the minimum one hundred fifty (150) foot setback from the dwelling located on the property at 6353 Somonauk Road, Hinckley (P.I.N.: 1534300004).

8. The facility shall be setback at least fifty (50) feet from a right-of-way or the property line of a nonparticipating property.

9. A spot survey shall be required at the time of installation to verify that the setbacks have been met.

10. On-site power and communication lines shall be located underground, except at the interconnection point to the grid.

11. Topsoil shall not be removed during development, unless part of a remediation effort.

12. The operators of the facility are to abide by the requirements of the DeKalb County Noxious Weed Ordinance.

13. Any part of the facility that is within 1,000 feet of an occupied community building or nonparticipating residence shall be screened; and said screening shall be in substantial conformance with the plans and materials submitted in the application for the Special Use Permit and presented and discussed at the public hearing. Additionally, screening shall be installed prior to the activation and operation of the facility, and must be maintained by the facility for the life of the project, with replacement plantings and maintenance conducted as necessary.

14. The interconnection point shall be located within or as adjacent to the right-of-way or existing power line as is possible, but shall in no case be further than twenty (20) feet from a right-of-way or existing power line, and all poles shall be placed such that they run parallel with said right-of-way or power line.

15. No component of a solar panel shall have a height of more than twenty (20) feet above the ground when at full tilt.

16. Fencing for the CSES: shall have a height of no less than six (6) feet and no more than twenty-five (25) feet, shall have appropriate warning signage clearly posted upon it, and shall be a primarily woven wire or agricultural style fencing.

17. Noise levels from the CSES shall be in compliance with applicable Illinois Pollution Control Board regulations.

18. The applicant shall demonstrate that the project will be in compliance with the NPDES permit regulations prior to issuance of any Building Permits.

19. The applicant shall submit and receive approval of a Site Development Permit application from the Community Development Department prior to the issuance of any Building Permits.

20. Any drainage systems impacted during the construction, maintenance, or operation phases of the CSES shall, at the CSES operator’s expense, be repaired or replaced in a prompt and timely manner, in accordance with the Agricultural Mitigation Agreement.

21. Visible, reflective, colored objects, such as flags, plastic sleeves, reflectors, or tape shall be placed on the anchor points of guy wires and along the guy wires up to a height of fifteen (15) feet from the ground.

22. The petitioner shall demonstrate that the project will be in compliance with the regulations of the Illinois Historic Preservation Agency (IHPA), and such approval from the IHPA shall be submitted prior to approval of the Building Permit.

23. The legal description for the specific leased/purchased area to be occupied by the facility shall be submitted to the Community Development Department and the DeKalb County Assessor prior to final approval of the Building Permit.

24. A Decommissioning and Site Reclamation Plan with cost estimation shall be submitted as part of the CSES application. This plan and estimate will then be reviewed to verify that it is in compliance with the County Code, and if approved, the appropriate financial guarantees will have to be submitted prior to the issuance of the Building Permit.

25. The project shall be in substantial conformance with the plans and materials submitted in the application for the Special Use Permit and presented at the public hearing. Additionally, a revised site plan shall be submitted incorporating any and all changes required for approval by the County Board and/or necessitated during the permitting process prior to approval of the Site Development and Building Permits. If the revised plans represent a significant deviation from the previously approved plans, then the petitioner will have to seek an amendment to the approved Special Use Ordinance from the County Board prior to approval of the Site Development and Building Permits.

26. Road Use Agreements shall be established with all appropriate road authorities prior to the issuance of a Building Permit.

27. The petitioner shall demonstrate that an interconnection agreement has been completed with the electrical utility prior to final approval of any Building Permit.

28. A Solar PV Building Permit application shall be submitted for review and approval by the DeKalb County Community Development Department.

29. A qualified engineer shall certify that the foundation and design of the solar panels racking and support is within accepted professional standards.

30. All pile driving activity during the project may only occur between the hours of 7:00 am and 5:00 pm.

31. All plans submitted for the Site Development and Building Permits shall be signed and stamped by an Illinois licensed engineer.

32. Should the facility be transferred to another entity, all conditions and requirements shall also transfer to the new entity.

33. The Special Use Permit shall expire if Site Development Permits have not been sought within eighteen (18) months of the approval of the Special Use Permit.

SECTION FIVE: This Ordinance shall be in full force and effect upon its adoption by the County Board of DeKalb County, Illinois.

PASSED BY THE COUNTY BOARD THIS 26TH DAY OF JUNE, 2024, A.D.

ATTEST:	SIGNED:
_____	_____
Tasha Sims DeKalb County Clerk	Ellingsworth Webb, Chair DeKalb County Board

Exhibit "A"

Legal Description of the Subject Property

PART OF SECTIONS 33 & 34, TOWNSHIP 38 NORTH, RANGE 5, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DEKALB COUNTY, ILLINOIS.

LEGAL DESCRIPTION PER DEED IN TRUST RECORDED APRIL 6, 2009 PER DOCUMENT NO. 2009005034

THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 33 (EXCEPT THE WESTERLY 1944.24 FEET) AS MEASURED ALONG THE EAST-WEST HALF SECTION LINE, TOWNSHIP 38 NORTH, RANGE 5 EAST OF THE THIRD PRINCIPAL MERIDIAN AND ALSO THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 34 IN AFORESAID TOWNSHIP AND RANGE EXCEPTING THEREFROM THAT PART BEING DESCRIBED BY COMMENCING AT THE SOUTHEAST CORNER OF SAID NORTH HALF OF THE SOUTHWEST QUARTER OF SAID TOWNSHIP AND RANGE; THENCE NORTH ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER SECTION, A DISTANCE OF 70 FEET FOR A POINT OF BEGINNING; THENCE NORTH ALONG SAID EAST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 515 FEET TO A POINT; THENCE WEST PARALLEL WITH THE SOUTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 462 FEET TO A POINT; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER A DISTANCE OF 515 FEET TO A POINT; THENCE EAST TO THE POINT OF BEGINNING, ALL SITUATED IN THE TOWNSHIP OF SQUAW GROVE, DEKALB COUNTY, ILLINOIS.

P.I.N. 15-34-300-005 & 15-33-400-004

Exhibit B

Shenandoah Solar LLC
Petition SQ-24-02
Report and Recommendations

Petitioner:	Shenandoah Solar LLC
Nature of Petitions:	Petition for Special Use - Solar Garden
Date of Hearing:	May 16, 2024
Prop. Address:	West side of Somonauk Road, approximately 4,600 ft. North of Chicago Road - Squaw Grove Township
Location of Hearing:	Five Seasons Room DeKalb County Community Outreach Building 2500 North Annie Glidden Road DeKalb, Illinois

I. Summary

The Petitioner, Shenandoah Solar LLC, requested approval of a special use permit to operate a nearly 5-megawatt solar garden on the subject property. If approved, the project would utilize approximately 49.1 acres of the 95.7-acre parcel. In order to proceed, the Petitioner must apply for and be granted a special use permit for the project.

Present for the County:	DeKalb County Planning Director - Derek Hiland Assistant Director - Marcellus Anderson
Present for Petitioner:	Michael Keith - Project Manager Keith Morel - Project Developer Rudy Dixon, Huddleston McBride Land Drainage Company

Exhibit B

RECEIVED IN THE RECORD AT OR PRIOR TO HEARING:

1. Public Notice, duly published within the time required by law, setting this matter for hearing.

2. DeKalb County Staff Report, with staff comments and recommendations.

3. The Petition, with attachments and required supporting materials.

4. Correspondence from Greg Maurice of the DeKalb County Health Department indicating no objection.

5. Correspondence from Nathan Schwartz, County Engineer for the DeKalb County Highway Department, indicating no objection provided that the appropriate road use agreements are properly obtained.

6. Petitioner's additional Exhibits as follows:

   Exhibit 1 - Printed copy of Petitioner's Power Point presentation at hearing.

   Exhibit 2 - March 31, 2024 Correspondence from Huddleston McBride re: drain tile investigation and tile survey.

7. Communications from the Public received at or prior to hearing:

   Roger Larson - Undated photo of extensive water pooling on subject property
   Emily Douglas - email in opposition to the project
   Patrick Mcassey - email in opposition to the project
   Eliott Konen - email in opposition to the project
   "sharonlsm@comcast.net" - email - no attachment
   Erik Pausche - email in opposition to the project
   Mike Matejovsky - email in opposition to the project
   Like Eggenberger - email in opposition to the project
   Taylor Eggenberger - email in opposition to the project
   Jacque Oconnor - email in opposition to the project
   Deborah Foster - email in opposition to the project
   Rusty Phillips - email in opposition to the project
   Laura Harmon - email in opposition to the project
   Deb Raymond - email in opposition to the project
   Lisa Hoffman - email in opposition to the project

Nan Long - email in opposition to the project
Manny Charchetas - email in opposition to the project
Stacie Ness - email in opposition to the project
Paityn Morris - email in opposition to the project
Jessie Kreke - email in opposition to the project
Amy Schoger - email in opposition to the project
Cheyanne Judd - email in opposition to the project
Brian Bark - email in opposition to the project
Mandy Mroz - email in opposition to the project
Julie Ness - email in opposition to the project
Ronald Ness -email in opposition to the project
Carole James - email in opposition to the project
Jessie Schreiner - email in opposition to the project
Joe Banigan - email in opposition to the project
Abbie Barrett - email in opposition to the project
Allen Bark - email in opposition to the project
Robert Raymond - written correspondence in opposition to the project
Andrew Bark - email in opposition to the project
Christine Bark - email in opposition to the project
Gerald and Katheryn Bark - email in opposition to the project
Barbara Raymond - email in opposition to the project
Katie Bark - email in opposition to the project

To the best information and belief of the Hearing Officer, no other correspondence or information has been received.

I. Summary of the Proceedings

A. Petitioner's Presentation of their Petition.

Please note that the following is a summary only, and is not intended to be a verbatim transcript of the proceedings.

This matter commenced at 1:00 p.m. on the record and the matter proceeded to hearing. The hearing concluded at approximately 2:35 p.m.

It should be noted that the property and project has been subject to prior proceedings, with corresponding hearings dated April 27, 2023 and August 3, 2023. However, this application is different in form and substance from the prior application, with a relocation of the proposed panels to a smaller portion of the subject property as compared to the prior application, so as to avoid a

major drainage tile maintained by the Devine Drainage District. The application has been filed with additional modifications that are now permitted, pursuant to the recently enacted state-wide standards for Commercial Solar Energy Systems, and the County's enacting ordinance.

Assistant Director Anderson provided a brief initial summary of the nature of the proceedings and the request by the Petitioner to be issued a special use permit for the project. Thereafter, the Petitioner, by counsel and witnesses, presented its petition for special use.

1. Keith Morel - Project Developer

Mr. Morel described the nature of the proposed project, via a detailed power point presentation. He described the company's history and other projects, and the tax revenue that would flow to the County and local taxing districts, including the local school district. He identified the noise and glare studies. He also fielded various questions as well from members of the public, answering all to the best of his ability.

2. Michael Keith, Civil Engineer

Mr. Keith described the preliminary site plan, and that the site plan as proposed meets or exceeds the state-mandated and ordinance-required CSES setbacks and other parameters. He identified the newly proposed location of the solar panels in this application as compared to the prior application, to the north and east of the "wash" running from the northwest to the southeast and maintained by the Devine Drainage District. He described the nature of the pilings to be used to support the panels, the vegetative screening type, location, and fencing. He identified the single access point for the project, and the increased run-off coefficient for a solar field as compared to row crops.

He was questioned by County staff, Director Hiland, as to the inconsistency in the application and site survey presented at hearing. The application noted that the solar panels would not exceed 20' in height, as permitted by state law and county code. However, the site plan notations indicated a height maximum of 12 ft., which was the prior limit per the prior county code. Mr. Leigh indicated that they would adhere to the state mandates in that regard and would reconcile the information.

He acknowledged receipt of the County staff report, and the company's ability to comply with the all state and county requirements.

3. Rudy Dixon, Huddleston-McBride -Tile work contractor

Mr. Dixon discussed the tile survey already completed for the property. He noted the placement of all tiles, which has been reduced to a survey, and available for inspection. The survey noted the size and location of all known tiles. He acknowledged that the new location for the panels will sit atop a substantial number of smaller known drain tiles, and addressed the company's process for relocating where needed, with higher quality, and warranted (50-year) tiles. He identified and discussed the location for the necessary risers as well at the intake areas of the property and tiles.

Mr. Dixon, as in prior hearings, addressed questions from members of the public. The questions generally concerned the proper identification and location of tiles; the process to relocate and or replace any tiles that may be damaged. There was some additional discussion between Mr. Dixon and Mr. Roger Larson as to the setback area of the project with respect to the major tile maintained by the Devine Drainage District, of which Mr. Larson is a member. Mr. Larson suggested that the 20ft setback identified in the project plans would be insufficient to permit the necessary earth removal and replacement, should that major tile be damaged. Mr. Larson suggested a setback of at least 30 ft. Mr. Dixon expressed confidence that the 20ft setback would be sufficient, in response.

B. Public Comment

The following persons offered public comment during the open comment period at the hearing:

1. Kristin Faber, Jasper Township - Presented questions to the Petitioner concerning the DeKalb Soil and Water Report; topsoil removal process; emergency vehicle access including access for first responders and associated vehicles; the location of the poles and power lines; the process for evaluating the cost and payment for decommissioning; the length of the property lease and life of the project; structures to be placed on the property; and the plat of the subject area for final site plan. She also had questions concerning artifacts and endangered species evaluation; tile repair and replacement; location of the risers; setbacks, again with respect to the Devine Drainage District; and how the tax benefits would be determined.

Ms. Faber also voiced her opposition to the project.

2. Allen Bark, Squaw Grove Township - Presented questions about tile lines #19 and #21 as shown on the tile survey and the process for re-routing if needed; the nature of the pilings that will be supporting the solar panels.

Mr. Bark also voiced his opposition to the project. He would like a stipulation, if the project is approved, that the company pay for any damage to adjacent landowners that may be caused by

the proposed use of the subject parcel, and that the company pay for an independent contractor selected by adjacent landowners, should that occur.

3. Christine Bark, Squaw Grove Township - Presented questions concerning the removal of pilings and the resulting disturbance of the soil; the presence of native and other artifacts that she reported finding in the area and the process for reporting/identifying the same.

Ms. Bark is opposed to the project.

4. Barbara Raymond, Big Rock Township -Presented concerns about the tile and drainage on the subject property and the project's impact. She stated her opposition to the project.

5. James Hutcheson, South Grove Township - Presented questions as to how to determine the tile replacement type and size, if that size and/or type is no longer manufactured. Mr. Dixon said the usual practice is to "size up," i.e. that if a 5-inch tile needs replacement, and the next closest size is a 6 inch, the 6 inch would be utilized. Mr. Hutcheson also questioned the depth of the pilings in relation to the location of the tiles. Mr. Dixon reiterated that it is the company's proposal to use the tile survey and re-route prior to piling, so as to avoid that issue.

6. Roger Larson, Squaw Grove Township - Presented questions about the color-scheme on the tile survey, and had questions for Mr. Dixon as to the smooth-wall clay tiles that are presently used, as compared to the plastic tile that might be used for repair/replacement. Mr. Larson also questioned the proposed 20ft setback from the main tile, and suggested a 30ft setback would be more appropriate. He also reported finding artifacts in the local area in close proximity to the proposed project. Mr. Larson questioned the height of the power lines that would cross Somonauk Road. Mr. Dixon indicated that is an IDOT and Com-Ed issue and that all requirements would be adhered to by the company. Mr. Larson presented his exhibit showing extensive water pooling in an undated photo of the subject property, thought to be from the 1950s, and which is part of the record.

Mr. Larson also stated his opposition to the project.

7. Rhonda Henke, Mayfield Township - Presented a question as to the southern end of the property. She inquired if all of the drainage flows into the ditch located at the southern end, to which the Petitioner responded in the affirmative.

There was no public comment in favor of the project.

II. Recommendation

The issues presented in the present petition are not unlike the issues presented in other applications for this type of special use, i.e. the location and maintenance of the drainage tile and watershed systems present on a particular parcel and if/how that can be addressed by the special use applicant. It is important and must be accounted for should the project proceed to the next stage, but not unique. Those same challenges are present on any number of parcels in the County, many of which have been found suitable for this type of special use and thereafter approved, with appropriate conditions and safeguards implemented as the projects worked through the various other site-plan, building, and developmental phases. Further, the recently enacted state-wide regulatory scheme for CSES projects compels approval if the newly-revised and enacted state parameters are or can be met by a Petitioner.

I find that the criteria established under Section 53-I-2.B.3 has been met by the Petitioner as to the petition, application, and evidence at hearing and is or will be in compliance with the newly enacted state-wide regulatory scheme for the production and operation of Commercial Solar Energy Systems. The Petitioner answered the questions of the public commenters, and agreed to abide by and implement all recommendations of County Staff as stated in the Staff Report.

As a condition of approval, and as per recommendation by the County Staff report, if the unused portion of the property is not going to be put into agricultural use and production, Petitioner's Landscape Plan and Landscape Monitoring and Maintenance Plan be expanded to include those areas so as to prevent those areas from going unattended and become a source of noxious weeds.

Accordingly, I hereby recommend approval of the Petitioner's Application, SQ-24-02 subject to the conditions and ordinance requirements noted in County Staff's report, and to other conditions as may be required by the County, if approved, as the developer undergoes the site development and building permit processes. In addition, the recommended approval of the project is conditioned on the Petitioner completing the project in substantial conformity to the submitted plans, and that the company enters into any and all required road use agreements. If approved, the ordinance language should also include an entity-transfer assurance to ensure that all requirements of the enacting ordinance be applicable to any subsequent owner/operating entity.

Respectfully submitted,

Dale J. Clark
Hearing Officer

IRONWOOD RENEWABLES

APPLICANT: IRONWOOD RENEWABLES, LLC
PROJECT NAME: SHENANDOAH SOLAR
A 5 MW (AC) GROUND-MOUNTED COMMERCIAL SOLAR ENERGY FACILITY

SOMONAUK ROAD
SQUAW GROVE TWP, DEKALB COUNTY, ILLINOIS

SPECIAL USE PERMIT APPLICATION PLANS

DEVELOPMENT TEAM

APPLICANT
SHENANDOAH SOLAR, LLC
910 HARDING STREET
LAFAYETTE, LA 70503
T: (337) 889-3940
E: HCARRIER@IRONWOODENERGY.COM
CONTACT: HAMILTON CARRIER

CONSULTANT
SHENANDOAH SOLAR, LLC
910 HARDING STREET
LAFAYETTE, LA 70503
T: (337) 889-3940
E: HCARRIER@IRONWOODENERGY.COM
CONTACT: HAMILTON CARRIER

CIVIL ENGINEER/LANDSCAPE ARCHITECT/SURVEYOR
ATWELL, LLC
1250 EAST DIEHL ROAD, SUITE 300
NAPERVILLE, IL 60563
T: (630) 577-0800
E: MKEITH@ATWELL-GROUP.COM
CONTACT: MICHAEL KEITH, P.E.

GOVERNING AGENCIES CONTACTS

PLANNING - ZONING
DEKALB COUNTY COMMUNITY DEVELOPMENT
110 E. SYCAMORE STREET
SYCAMORE, IL 60178
T: (815) 895-7188
CONTACT: DEREK HILAND, DIRECTOR

ENGINEERING
DEKALB COUNTY HIGHWAY DEPARTMENT
1826 BARBER GREENE ROAD
DEKALB, IL 60115
T: (815) 756-9513
CONTACT: NATHAN F. SCHWARTZ, P.E.

BUILDING
DEKALB COUNTY COMMUNITY DEVELOPMENT
110 E. SYCAMORE STREET
SYCAMORE, IL 60178
T: (815) 895-7188
CONTACT: DEREK HILAND, DIRECTOR

SHEET INDEX

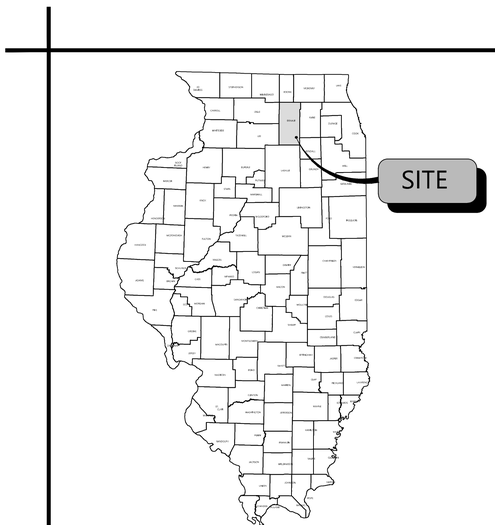
C-01	COVER SHEET
C-02	EXISTING CONDITIONS PLAN
C-03	SITE LAYOUT PLAN
C-04	GRADING PLAN
C04.1	DRAIN TILE SURVEY
C-05	LANDSCAPE PLAN
C-06	DETAILS

LEGAL DESCRIPTION

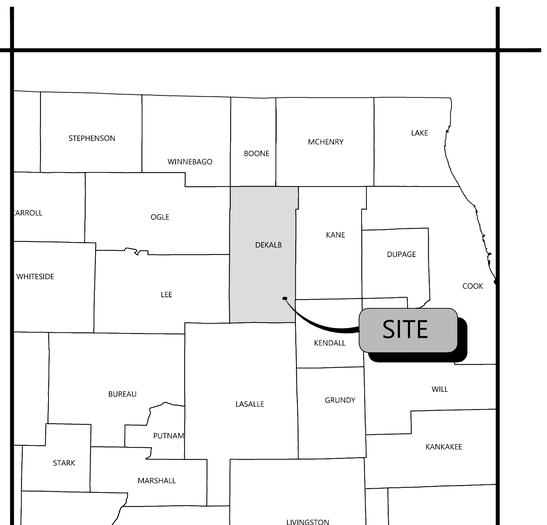
PER DEED IN TRUST RECORDED APRIL 6, 2009 PER DOCUMENT NO. 2009005034

PART OF SECTIONS 33 & 34, TOWNSHIP 38 NORTH, RANGE 5, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DEKALB COUNTY, ILLINOIS

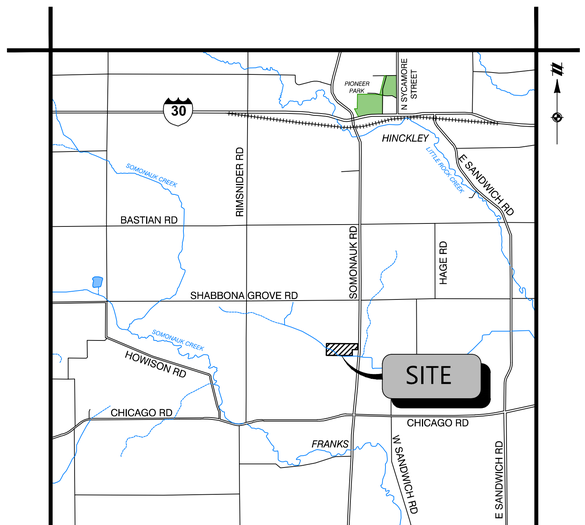
THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 33 (EXCEPT THE WESTERLY 1944.24 FEET) AS MEASURED ALONG THE EAST-WEST HALF SECTION LINE, TOWNSHIP 38 NORTH, RANGE 5 EAST OF THE THIRD PRINCIPAL MERIDIAN AND ALSO THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 34 IN AFORESAID TOWNSHIP AND RANGE EXCEPTING THEREFROM THAT PART BEING DESCRIBED BY COMMENCING AT THE SOUTHEAST CORNER OF SAID NORTH HALF OF THE SOUTHWEST QUARTER OF SAID TOWNSHIP AND RANGE; THENCE NORTH ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER SECTION, A DISTANCE OF 70 FEET FOR A POINT OF BEGINNING; THENCE NORTH ALONG SAID EAST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 515 FEET TO A POINT; THENCE WEST PARALLEL WITH THE SOUTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 462 FEET TO A POINT; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER A DISTANCE OF 515 FEET TO A POINT; THENCE EAST TO THE POINT OF BEGINNING, ALL SITUATED IN THE TOWNSHIP OF SQUAW GROVE, DEKALB COUNTY, ILLINOIS.



ILLINOIS
NOT TO SCALE



DEKALB COUNTY
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

811 Know what's below. Call before you dig.

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NOTICE:
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SECTION 33 & 34
TOWNSHIP 38 NORTH, RANGE 5 EAST
SQUAW GROVE TOWNSHIP
DEKALB COUNTY, ILLINOIS

CLIENT
IRONWOOD RENEWABLES
SOMONAUK ROAD
SQUAW GROVE, ILLINOIS 60520

SHENANDOAH SOLAR
COVER SHEET

DATE
MAY 2, 2024

07/27/23 REVISED TO ADD DRAIN TILES
03/15/24 REVISED LAYOUT
03/20/24 REVISED SUP LAYOUT
03/27/24 REVISED SUP LAYOUT
04/23/24 UPDATED LEGAL DESCRIPTION
05/02/24 UPDATED CURVE NUMBER INFO
05/22/24 UPDATED FROM PUBLIC MEETING

REVISIONS

SCALE
N.T.S.

DR. CMP | CH. MS

P.M. M. KEITH

BOOK

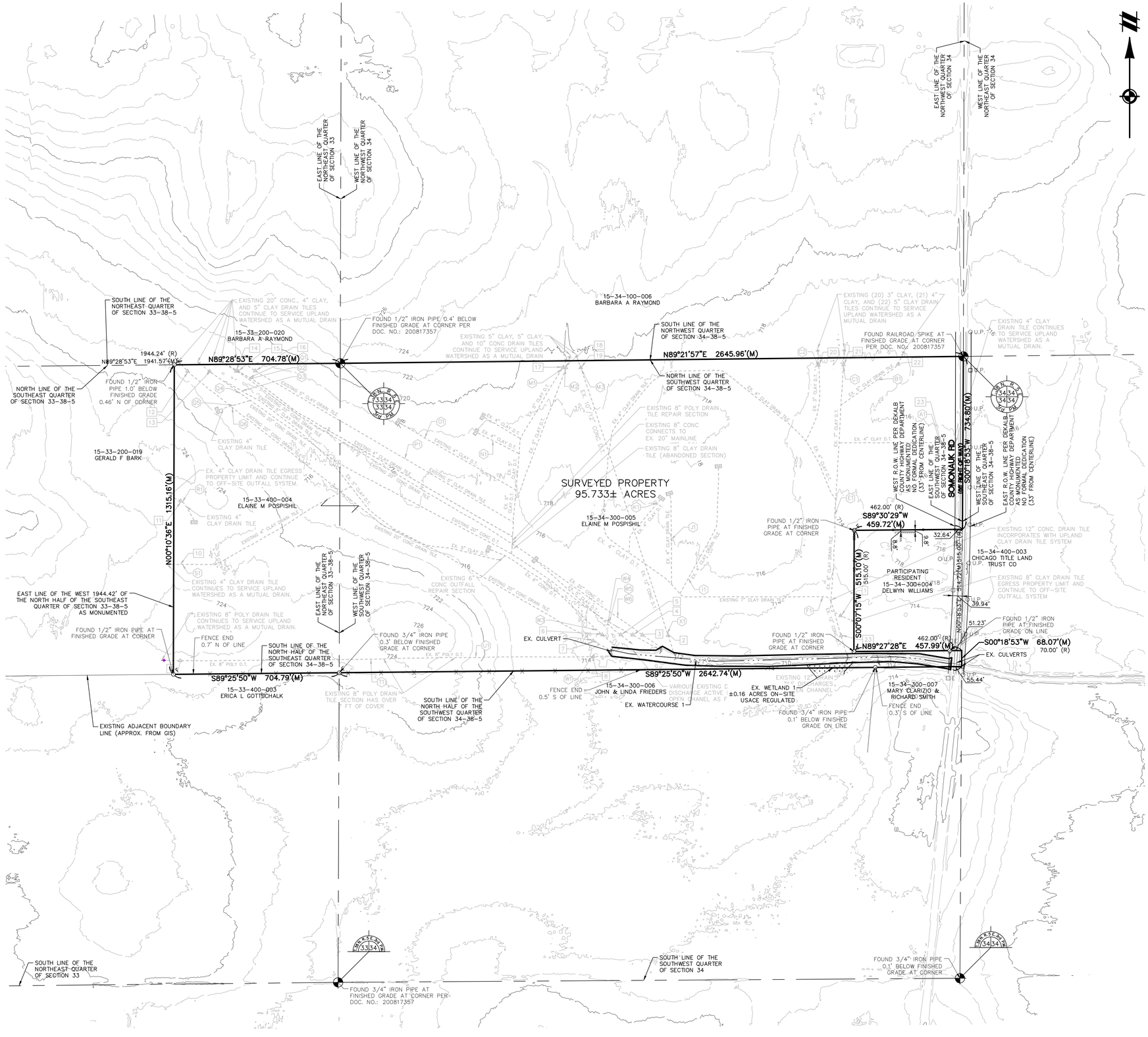
JOB 22004992

SHEET NO.
C-01

CAD FILE: 22004992C-01-CV.DWG

LEGEND

- BOUNDARY LINE
- EXISTING ROW
- EXISTING SECTION LINE
- BOUNDARY ADJACENT LINE
- EXISTING EASEMENT LINE
- EXISTING SETBACK LINE
- EXISTING CONTOUR
- EXISTING CURB AND GUTTER
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER LINE
- EXISTING UNDERGROUND GAS
- EXISTING UNDERGROUND TELEPHONE
- EXISTING OVERHEAD TELEPHONE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND CABLE
- EXISTING OVERHEAD CABLE
- EXISTING CENTERLINE OF DITCH
- EXISTING FENCE
- EXISTING RAILROAD
- EXISTING VEGETATION LINE
- EXISTING WETLAND
- EXISTING DRAIN TILE
- SECTION CORNER
- MONITORING WELL
- SOIL BORING, REFER TO GEOTECHNICAL REPORT
- FOUND IRON ROD
- SET IRON ROD
- FOUND PK NAIL
- FOUND MONUMENT
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING TREE
- EXISTING CLEANOUT
- EXISTING SANITARY MANHOLE
- EXISTING FLARED END SECTION
- EXISTING STORM CATCH BASIN/MANHOLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WATER MARKER
- EXISTING GAS METER
- EXISTING GAS VALVE
- EXISTING GAS RISER
- EXISTING GAS MARKER
- EXISTING TELEPHONE RISER
- EXISTING TELEPHONE MANHOLE
- EXISTING TELEPHONE MARKER
- EXISTING TRAFFIC SIGNAL
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC BOX
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC MARKER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING CABLE RISER
- EXISTING MAILBOX
- EXISTING FLAG POLE
- EXISTING SPOT ELEVATION
- EXISTING ASPHALT
- EXISTING CONCRETE
- EXISTING BUILDING
- EXISTING GRAVEL



GENERAL NOTES:

1. COMPARE ALL DISTANCES AND POINTS IN FIELD AND REPORT ANY DISCREPANCIES IN SAME TO SURVEYOR AT ONCE.
2. UTILITIES SHOWN HEREIN ARE BY VISIBLE LOCATION OF ABOVE GROUND STRUCTURES ONLY. UNDERGROUND UTILITIES MAY EXIST THAT ARE NOT SHOWN HEREIN.
3. CALL 811 ("COMMON GROUND ALLIANCE" NATIONAL UNDERGROUND UTILITY LOCATOR SERVICE) FOR FIELD LOCATION OF UNDERGROUND UTILITY LINES PRIOR TO ANY DIGGING OR CONSTRUCTION.
4. NO DIMENSIONS SHOULD BE ASSUMED BY SCALING.
5. THE FIELD WORK ASSOCIATED WITH THE BOUNDARY WAS COMPLETED ON **11/29/2022**.
6. FOR MISSING OR SUBSTANDARD SECTION CORNER MONUMENTS SHOWN ON THIS SURVEY AND/OR CORNERS MISSING A CURRENT & COMPLETE MONUMENT RECORD, ATWELL WILL BE SETTING AND FILING RECORDS PER THE LAND SURVEY MONUMENT ACT [765 ILCS 220] AFTER SURVEY IS COMPLETE.
7. ALL RIGHT-OF-WAY WIDTHS SHOWN HEREON ARE APPROXIMATE; NO FORMAL DEDICATION DOCUMENTS PROVIDED TO THE SURVEYOR. THE PUBLIC RIGHT-OF-WAY SHOWN HEREON IS FROM ONGOING CONVERSATIONS WITH THE TOWNSHIP HIGHWAY COMMISSIONER AND MEMBERS OF THE DEKALB COUNTY HIGHWAY DEPARTMENT. THE PUBLIC RIGHT-OF-WAY SHOWN HEREON IS SUBJECT TO CHANGE. UNLESS OTHERWISE NOTED WITH A DOCUMENT OR RECORD NUMBER.
8. TOPOGRAPHIC INFORMATION IS BASED ON COUNTY AVAILABLE GIS INFORMATION.

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SQUAW GROVE TOWNSHIP
DEKALB COUNTY, ILLINOIS

CLIENT
IRONWOOD RENEWABLES
SOMONAUK ROAD
SQUAW GROVE, ILLINOIS 60520

SHENANDOAH SOLAR
EXISTING CONDITIONS PLAN

DATE
MAY 2, 2024

07/27/23 REVISED TO ADD DRAIN TILES
03/15/24 REVISED LAYOUT
03/20/24 REVISED SUP LAYOUT
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04/23/24 UPDATED LEGAL DESCRIPTION
05/02/24 UPDATED CURVE NUMBER INFO
05/22/24 UPDATED FROM PUBLIC MEETING

REVISIONS

SCALE 0 100 200
1" = 200 FEET

DR. CMP | CH. MS
P.M. M. KEITH
BOOK
JOB 22004992
SHEET NO. C-02

CAD FILE: 22004992C-02-EC.DWG

LEGEND

- BOUNDARY LINE
- EXISTING ROW
- EXISTING SECTION LINE
- BOUNDARY ADJACENT LINE
- EXISTING EASEMENT LINE
- 20' FENCE TO ARRAY SETBACK
- SETBACK LINE
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING OVERHEAD ELECTRIC LINE
- PROPOSED OVERHEAD ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- EXISTING DRAIN TILE
- EXISTING DRAIN TILE
- EXISTING DRAIN TILE
- EXISTING DRAIN TILE
- PROPOSED GRAVEL DRIVE AISLE SEE DETAIL SHEET C-06

SITE DATA

PARCEL AREA	95.7 ACRES
LIMITS OF DISTURBANCE	49.1 ACRES
LIMITS WITHIN FENCE AREA	46.2 ACRES

ZONING DISTRICT: AGRICULTURAL (A-1) DISTRICT

FENCE SETBACK*	REQUIRED	PROVIDED
FRONT (EAST)	50'	50'
SIDE (SOUTH)	50'	178'
SIDE (NORTH)	50'	50'
REAR (WEST)	50'	721'
NON-PARTICIPATING LAND OWNER	150' TO OUTSIDE WALL OF DWELLING UNIT	477'

PANELS SETBACK*	REQUIRED	PROVIDED
FRONT (EAST)	50'	81'
SIDE (SOUTH)	50'	221'
SIDE (NORTH)	50'	72'
REAR (WEST)	50'	773'

NON-PARTICIPATING LAND OWNER	REQUIRED	PROVIDED
	150' TO OUTSIDE WALL OF DWELLING UNIT	

WETLANDS	RECOMMENDED	PROVIDED
	50'	86'

CSES MAXIMUM HEIGHT*	REQUIRED	PROVIDED
	20'	20'

* ZONING REQUIREMENTS ARE BASED ON THE CURRENT ZONING ORDINANCE AS PER THE DATE OF THIS PLAN.

GENERAL NOTES

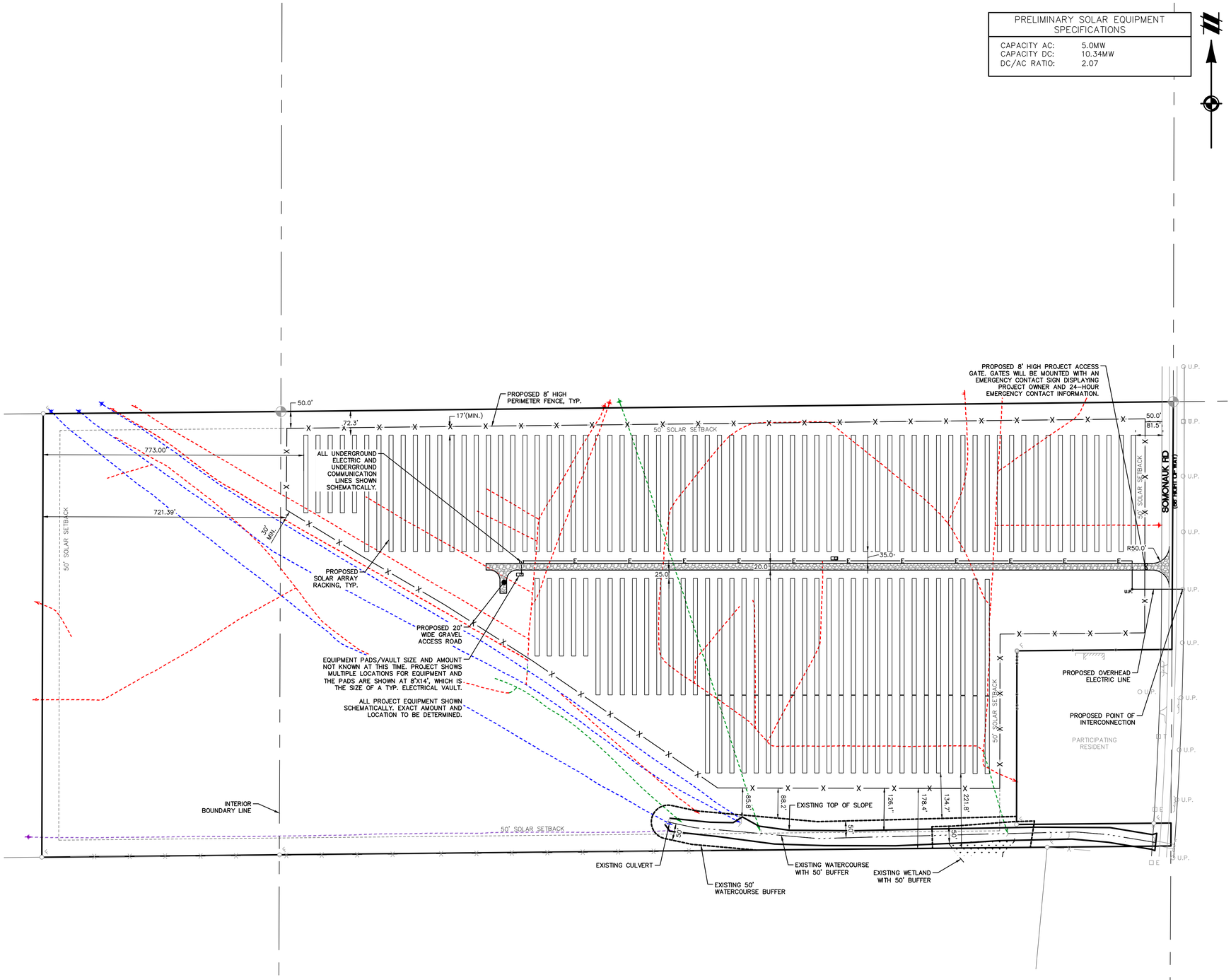
1. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL ALSO PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE ENGINEER AND ARCHITECT AS REQUIRED.
2. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AND ALL CONSTRUCTION MEANS AND METHODS.
3. LIMITS OF WORK SHALL BE EROSION CONTROL BARRIERS AS INDICATED ON DRAWINGS.
4. ANY ALTERATION TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DOCUMENTS.
5. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO OWNER.
6. EXISTING TREES AND SHRUBS OUTSIDE THE FENCE LINE SHALL NOT BE CLEARED, UNLESS OTHERWISE NOTED. ALL EXISTING VEGETATION INSIDE FENCE LINE SHALL BE CLEARED AND GRUBBED.
7. FOR DRAWING LEGIBILITY, ALL EXISTING TOPOGRAPHIC FEATURES, EXISTING UTILITIES, PROPERTY BOUNDARIES, EASEMENTS, ETC. MAY NOT BE SHOWN ON ALL DRAWINGS. REFER TO ALL REFERENCED DRAWINGS AND OTHER DRAWINGS IN THIS SET FOR ADDITIONAL INFORMATION.
8. **SOMONAUK ROAD** IS MAINTAINED BY **THE DEKALB COUNTY HIGHWAY DEPARTMENT**.
9. PER CHAPTER 53-E-12.5.14, OF THE DEKALB COUNTY CODE, "ELECTRIC CSES COMPONENTS MUST HAVE A UL LISTING, OR APPROVED EQUIVALENT, AND MUST BE DESIGNED WITH ANTI-REFLECTIVE PROPERTIES".

ZONING DISTRICT:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH CONDITIONS THAT MAY BE PROMULGATED BY THE **DEKALB COUNTY PLANNING DEPARTMENT, SOIL AND WATER CONSERVATION DISTRICT, AND MUNICIPAL AGENCIES**.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING, SECURING AND COMPLIANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT, AS ADMINISTERED BY THE STATE ENVIRONMENTAL PROTECTION AGENCY.

LAYOUT AND MATERIALS NOTES:
1. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
2. CONTRACTOR SHALL REPORT SIGNIFICANT CONFLICTS TO THE OWNER AND THE ENGINEER FOR RESOLUTION.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN SITE PLAN DIMENSIONS AND BUILDING PLANS BEFORE PROCEEDING WITH ANY PORTION OF SITE WORK WHICH MAY BE AFFECTED SO THAT PROPER ADJUSTMENTS TO THE SITE LAYOUT CAN BE MADE IF NECESSARY.
4. PROTECT EXISTING PROPERTY MONUMENTS AND ABUTTING PROPERTIES DURING CONSTRUCTION ACTIVITIES.

GRADING, DRAINAGE AND UTILITY NOTES:
1. UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES, ARE APPROXIMATE AND ASSUMED. BEFORE COMMENCING SITE WORK IN ANY AREA, CONTACT "811" OR EQUIVALENT AND THE OWNER TO ACCURATELY LOCATE UNDERGROUND UTILITIES. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. NO EXCAVATION SHALL BE DONE UNTIL UTILITY COMPANIES AND THE OWNER ARE PROPERLY NOTIFIED IN ADVANCE.
2. ALL SITE WORK SHALL MEET OR EXCEED THE SITE WORK SPECIFICATIONS TO BE PREPARED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
3. ALL WORK PERFORMED AND ALL MATERIALS FURNISHED SHALL CONFORM WITH THE LINES, GRADES, AND OTHER SPECIFIC REQUIREMENTS OR SPECIFICATIONS FOR THE PROJECT AS SHOWN ON THE PLANS.
4. THE CONTRACTOR SHALL VERIFY EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES, AS REQUIRED. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE OWNER AND ENGINEER FOR RESOLUTION.
5. CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER, AND UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION.
6. THE CONTRACTOR SHALL REMOVE ALL NON-BIODEGRADABLE EROSION CONTROL BARRIERS AFTER RE-VEGETATION OF DISTURBED AREAS.
7. WETLANDS ARE TO REMAIN UNDISTURBED. NO ENCROACHMENT PERMITTED UNLESS NOTED ON PLANS.
8. PITCH EVENLY BETWEEN SPOT GRADES.
9. THE CONTRACTOR SHALL SCHEDULE WORK TO ALLOW THE FINISHED SUBGRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PONDING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF THE FINISH SUBGRADE AND/OR SURFACE PAVING. PROVIDE TEMPORARY POSITIVE DRAINAGE AS REQUIRED.
10. EXISTING SITE SURFACE DRAINAGE PATTERNS WILL BE MAINTAINED.

PRELIMINARY SOLAR EQUIPMENT SPECIFICATIONS	
CAPACITY AC:	5.0MW
CAPACITY DC:	10.34MW
DC/AC RATIO:	2.07



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SHENANDOAH SOLAR
SITE LAYOUT PLAN

DATE
MAY 2, 2024

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REVISIONS

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1" = 150 FEET

DR. CMP	CH. MS
P.M. M. KEITH	
BOOK	
JOB 22004992	
SHEET NO. C-03	

CAD FILE: 22004992C-03-LDWG

LEGEND

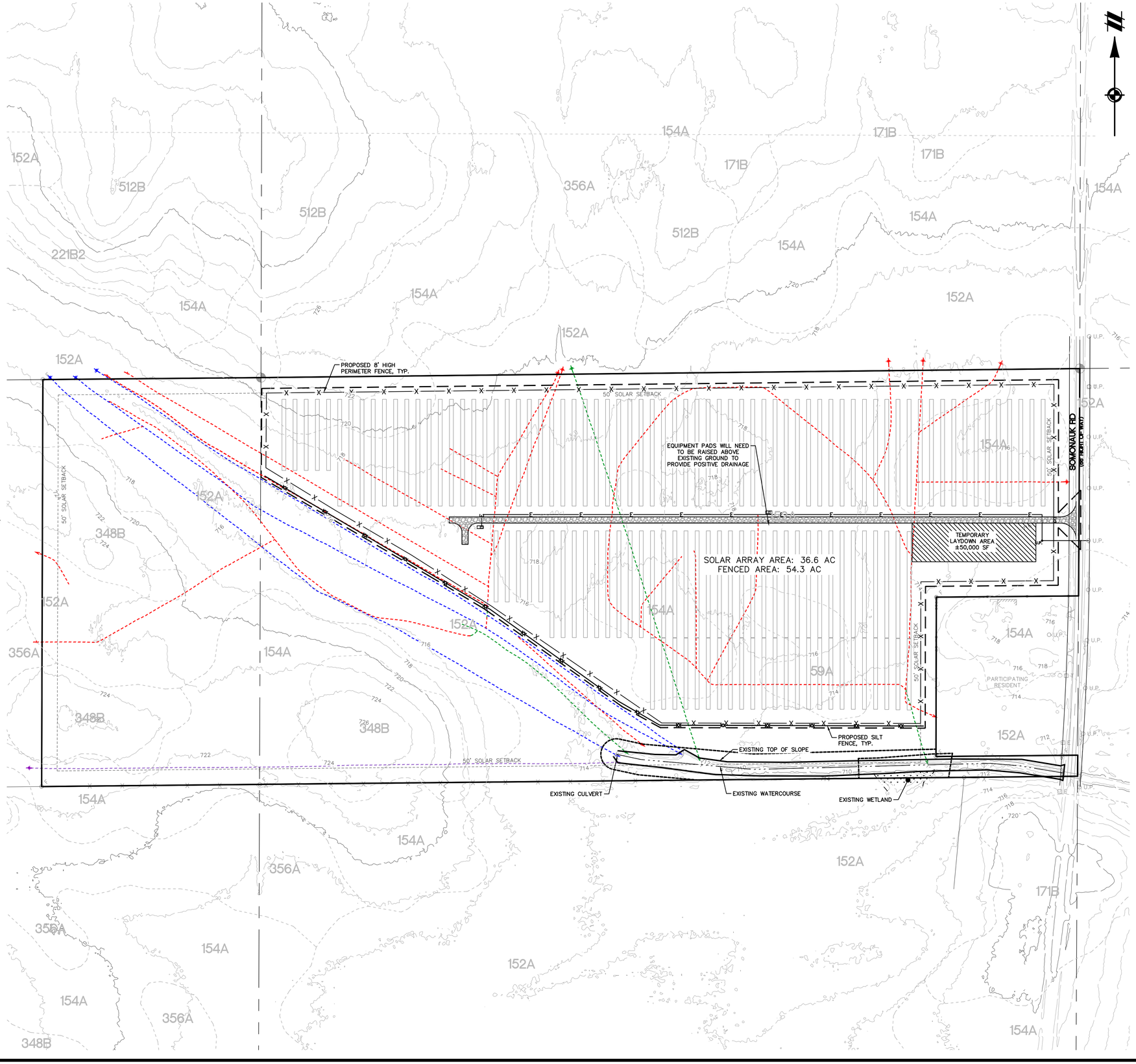
- BOUNDARY LINE
- EXISTING ROW
- EXISTING SECTION LINE
- BOUNDARY ADJACENT LINE
- EXISTING EASEMENT LINE
- 20' FENCE TO ARRAY SETBACK
- SETBACK LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING OVERHEAD ELECTRIC LINE
- PROPOSED OVERHEAD ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- EXISTING DRAIN TILE
- EXISTING DRAIN TILE
- EXISTING DRAIN TILE
- EXISTING DRAIN TILE
- APPROXIMATE LIMITS OF EXISTING SOIL TYPE
- LIMITS OF DISTURBANCE
- PROPOSED SILT FENCE
- PROPOSED GRAVEL DRIVE AISLE SEE DETAIL SHEET C-06

NOTES:

1. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.
2. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.
3. ALL SPOT GRADES ALONG CURB LINE ARE FLOWLINE GRADES UNLESS OTHERWISE NOTED. ALL RIM ELEVATIONS ARE FLOWLINE ELEVATIONS.
4. ALL STORM SEWER AND UTILITY STRUCTURE RIMS SHALL BE FLUSH WITH PAVEMENT OR FINISHED GRADE.

EROSION CONTROL AND SEDIMENTATION NOTES:

1. AN EROSION CONTROL BARRIER SHALL BE INSTALLED AS INDICATED IN THE PLAN PRIOR TO THE COMMENCEMENT OF DEMOLITION OR CONSTRUCTION OPERATIONS.
2. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES DURING ENTIRE CONSTRUCTION PERIOD.
3. ANY SEDIMENT TRACKED ONTO PUBLIC RIGHT-OF-WAYS SHALL BE SWEPT AT THE END OF EACH WORKING DAY.
4. ALL STOCKPILE AREAS SHALL BE LOCATED WITHIN LIMIT OF WORK LINE AND STABILIZED TO PREVENT EROSION.
5. ALL DEBRIS GENERATED DURING SITE PREPARATION ACTIVITIES SHALL BE LEGALLY DISPOSED OF OFF-SITE.
6. SITE ELEMENTS TO REMAIN MUST BE PROTECTED FOR DURATION OF PROJECT.
7. ALL TOPSOIL ENCOUNTERED WITHIN THE LIMITS OF THE PROPOSED PERMANENT AND TEMPORARY GRAVEL ROADS, EQUIPMENT PAD AREA, AND AREAS OF CUT AND FILL SHALL BE STRIPPED AS NEEDED AND STOCKPILED FOR REUSE. EXCESS TOPSOIL SHALL BE DISPOSED OF ON SITE AS DIRECTED BY OWNER. TOPSOIL PILES SHALL REMAIN SEGREGATED FROM EXCAVATED SUBSURFACE SOIL MATERIALS.
8. ADDITIONAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
9. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS.
10. TEMPORARY DIVERSION DITCHES, PERMANENT DITCHES, CHANNELS, EMBANKMENTS, AND ANY DENUDED SURFACE WHICH WILL BE EXPOSED FOR AN EXTENDED PERIOD OF TIME SHALL BE STABILIZED AS REQUIRED.
11. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS DURING CONSTRUCTION TO ENSURE THAT CHANNELS, DITCHES, AND PIPES ARE CLEAR OF DEBRIS AND THAT THE EROSION CONTROL BARRIERS ARE INTACT.
12. DUST SHALL BE CONTROLLED AS NEEDED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNER OR REPRESENTATIVE.
13. CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM MIGRATING OUTSIDE THE LIMIT OF WORK.
14. ADDITIONAL EROSION CONTROL SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR REPRESENTATIVE.
15. CLEAN AND MAINTAIN EROSION CONTROL BARRIER AS REQUIRED DURING CONSTRUCTION OPERATIONS TO ENSURE ITS CONTINUED FUNCTIONALITY.
16. OVERALL SITE DEVELOPMENT WILL MAINTAIN EXISTING TOPOGRAPHY AND STORM WATER DRAINAGE PATTERNS.
17. THE OVERALL DEVELOPMENT WILL BE RE-SEEDED AS NEEDED TO DEVELOP A PERMANENT VEGETATIVE COVER AS INDICATED ON THE LANDSCAPE PLAN. COVER CROP OR OTHER TEMPORARY STABILIZATION WILL BE IMPLEMENTED IN THE INTERIM.
18. NO CONSTRUCTION ACTIVITIES AS PART OF THE SITE DEVELOPMENT SHALL OCCUR WITHIN ANY DELINEATED WETLANDS OR WETLAND BUFFERS, AS REQUIRED BY THE ILLINOIS DEPARTMENT OF NATURAL RESOURCES.
19. TOPOGRAPHIC INFORMATION IS BASED ON COUNTY AVAILABLE GIS INFORMATION.
20. ALL DRAIN TILES SHALL BE FIELD ADJUSTED TO AVOID THE SOLAR PANEL PILES. ANY DAMAGE TO THE DRAIN TILES SHALL BE REPAIRED. THE CONTRACTOR SHALL ENSURE ALL DRAIN TILES ARE CARRYING WATER AS INTENDED, ENSURING THAT NO UPSTREAM FLOODING WILL OCCUR DUE TO THE CONSTRUCTION OF THIS SITE.



811 Know what's below. Call before you dig.

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SECTION 33 & 34
TOWNSHIP 38 NORTH, RANGE 5 EAST
SQUAW GROVE TOWNSHIP
DEKALB COUNTY, ILLINOIS

CLIENT
IRONWOOD RENEWABLES
SOMONAUK ROAD
SQUAW GROVE, ILLINOIS 60520

SHENANDOAH SOLAR
GRADING PLAN

DATE
MAY 2, 2024

07/27/23 REVISED TO ADD DRAIN TILES
03/15/24 REVISED LAYOUT
03/20/24 REVISED SUP LAYOUT
03/27/24 REVISED SUP LAYOUT
04/23/24 UPDATED LEGAL DESCRIPTION
05/02/24 UPDATED CURVE NUMBER INFO
05/22/24 UPDATED FROM PUBLIC MEETING

REVISIONS

SCALE 0 75 150
1" = 150 FEET
DR. CMP | CH. MS
P.M. M. KEITH
BOOK
JOB 22004992
SHEET NO. C-04

CAD FILE: 22004992C-04-GDWG

LEGEND

- BOUNDARY LINE
- EXISTING ROW
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- PROPOSED UNDERGROUND ELECTRIC LINE
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- EXISTING DRAIN TILE
- PROPOSED GRAVEL DRIVE AISLE SEE DETAIL SHEET C-06

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EXISTING SUBSURFACE AGRICULTURAL DRAIN TILE INVESTIGATION REPORT

IRONWOOD SHENANDOAH SOLAR

IRONWOOD RENEWABLES, LLC

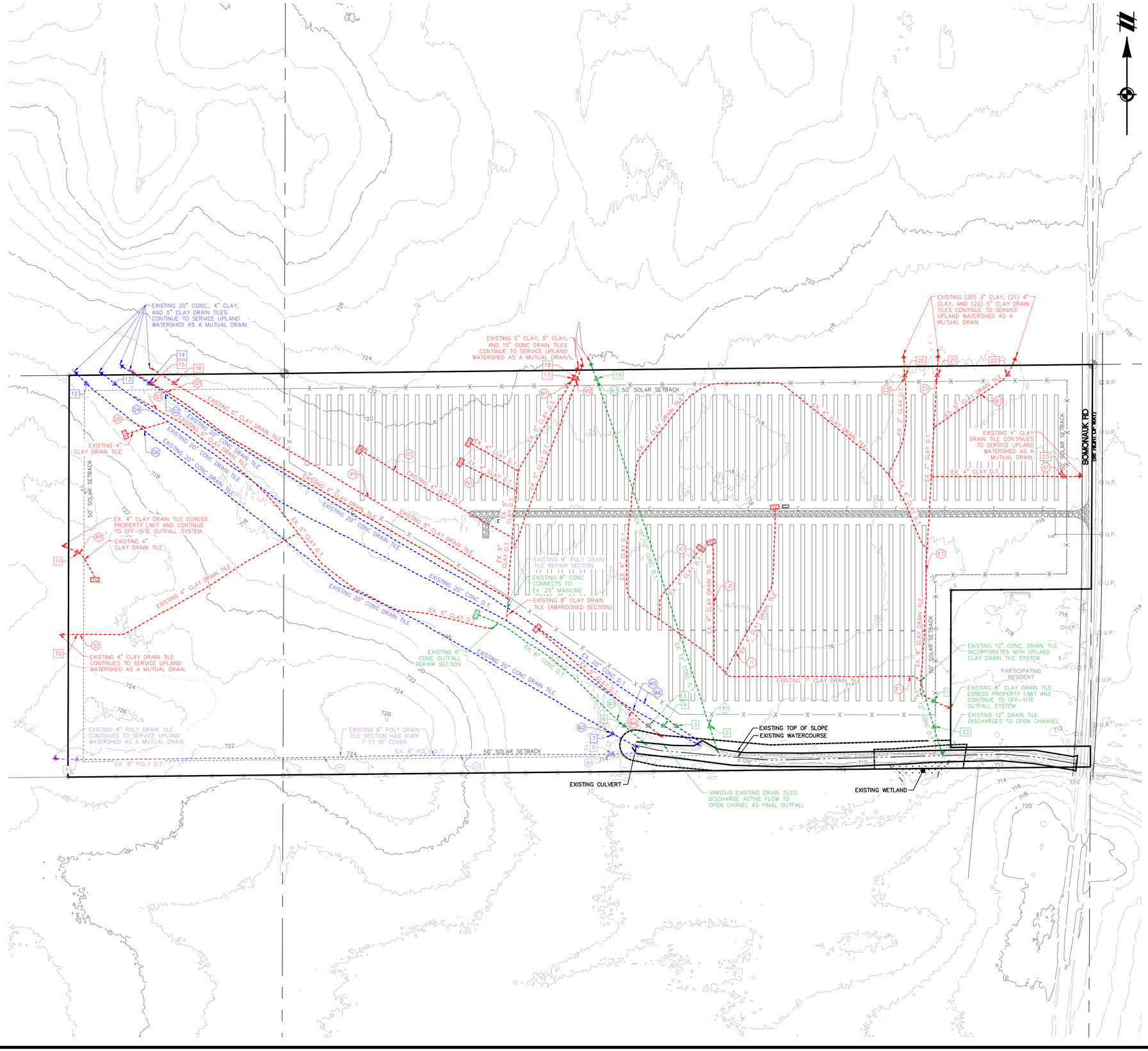
SHENANDOAH SOLAR / IRONWOOD RENEWABLES, LLC , FIELD FILE NO. 2-17-32, DATE: 7/19/23 .
IN ACCORDANCE W/ DEKALB COUNTY and A.I.M.A. EXISTING DRAIN TILE INVESTIGATION & LOCATION STANDARDS
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DESCRIPTION CHART NO. 1A : *INVESTIGATION SLIT TRENCH LOCATIONS*

ID NO.	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH GRD/INV	FIELD NOTES:
A1	4"	CLAY / GOOD	SLIGHT	SLIGHT	27"	ACTIVE FLOW RATE AND CAPACITY
B1	5"	CLAY / GOOD	SLIGHT	CLEAN	34"	ACTIVE FLOW RATE AND CAPACITY
C1	3"	CLAY / GOOD	SLIGHT	SLIGHT	28"	ACTIVE FLOW RATE AND CAPACITY
C2	7"	CLAY / FAIR	SLIGHT	SLIGHT	39"	ACTIVE FLOW RATE AND CAPACITY
D	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
E1	8"	CLAY / FAIR	30%	CLEAN	42"	ACTIVE FLOW RATE AND CAPACITY
F1	7"	CLAY / FAIR	SLIGHT	CLEAN	29"	ACTIVE FLOW RATE AND CAPACITY
G	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
H	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
I1	4"	CLAY / GOOD	SLIGHT	CLEAN	33"	ACTIVE FLOW RATE AND CAPACITY
J1	4"	CLAY / GOOD	SLIGHT	CLEAN	33"	ACTIVE FLOW RATE AND CAPACITY
K1	4"	CLAY / GOOD	SLIGHT	CLEAN	33"	ACTIVE FLOW RATE AND CAPACITY
L	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
M1	5"	CLAY / GOOD	SLIGHT	10%	39"	ACTIVE FLOW RATE AND CAPACITY
M2	5"	CLAY / GOOD	SLIGHT	25%	32"	ACTIVE FLOW RATE AND CAPACITY
M3	10"	CONC./GOOD	10%	CLEAN	47"	ACTIVE FLOW RATE AND CAPACITY
N1	4"	CLAY / GOOD	SLIGHT	10%	45"	ACTIVE FLOW RATE AND CAPACITY
O1	4"	CLAY / GOOD	SLIGHT	SLIGHT	49"	ACTIVE FLOW RATE AND CAPACITY
P1	5"	CLAY / GOOD	SLIGHT	CLEAN	60"	ACTIVE FLOW RATE AND CAPACITY
Q1	4"	CLAY / GOOD	SLIGHT	10%	40"	ACTIVE FLOW RATE AND CAPACITY
Q2	20"	CONC./GOOD	20%	CLEAN	44"	ACTIVE FLOW RATE AND CAPACITY
Q3	5"	CLAY / GOOD	SLIGHT	40%	32"	SILT RESTRICTED / PARTIAL CAPACITY
Q4	20"	CONC./GOOD	10%	CLEAN	50"	ACTIVE FLOW RATE AND CAPACITY
Q5	4"	CLAY / GOOD	SLIGHT	90%	21"	SILT RESTRICTED / PARTIAL CAPACITY
Q6	20"	CONC./GOOD	20%	CLEAN	51"	ACTIVE FLOW RATE AND CAPACITY
R1	4"	CLAY / GOOD	SLIGHT	20%	30"	ACTIVE FLOW RATE AND CAPACITY
S1	4"	CLAY / GOOD	SLIGHT	CLEAN	44"	ACTIVE FLOW RATE AND CAPACITY
T1	8"	POLY./GOOD	70%	CLEAN	76"	ACTIVE FLOW RATE AND CAPACITY
U1	8"	POLY./GOOD	70%	CLEAN	73"	ACTIVE FLOW RATE AND CAPACITY
V	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
W1	8"	CLAY / GOOD	40%	CLEAN	53"	ACTIVE FLOW RATE AND CAPACITY
W2	20"	CONC./GOOD	10%	CLEAN	46"	ACTIVE FLOW RATE AND CAPACITY
W3	6"	CONC./GOOD	SLIGHT	CLEAN	51"	ACTIVE FLOW RATE AND CAPACITY
W4	5"	CLAY / GOOD	SLIGHT	80%	45"	SILT RESTRICTED / PARTIAL CAPACITY
W5	20"	CONC./GOOD	10%	CLEAN	48"	ACTIVE FLOW RATE AND CAPACITY
W6	20"	CONC./GOOD	10%	CLEAN	54"	ACTIVE FLOW RATE AND CAPACITY
X1	12"	CONC./GOOD	25%	CLEAN	53"	ACTIVE FLOW RATE AND CAPACITY
Y	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
Z	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
2A	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
2B	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED
2C	—	NO DRAIN TILE	—	—	—	NO DRAIN TILE LOCATED

DESCRIPTION CHART NO. 1B : ▲ *SURVEY DATA POINT LOCATIONS*

DATA POINT	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH HUB/INV	FIELD NOTES:
1	8"	CLAY / GOOD	20%	CLEAN	43"	MAINLINE AT PROPERTY EGRESS
2	12"	CONC. / GOOD	25%	CLEAN	52"	MAINLINE AT PROPERTY EGRESS
3	20"	CONC./GOOD	10%	CLEAN	57"	MAINLINE AT PROPERTY EGRESS
4	20"	CONC. / GOOD	10%	CLEAN	50"	MAINLINE AT PROPERTY EGRESS
5	5"	CLAY / GOOD	SLIGHT	80%	56"	MAINLINE AT PROPERTY EGRESS
6	6"	CONC./GOOD	SLIGHT	CLEAN	52"	MAINLINE AT PROPERTY EGRESS
7	20"	CONC./GOOD	10%	CLEAN	49"	MAINLINE AT PROPERTY EGRESS
8	8"	POLY. / GOOD	40%	CLEAN	53"	MAINLINE AT PROPERTY EGRESS
9	8"	POLY. / GOOD	40%	CLEAN	57"	MAINLINE AT PROPERTY INGRESS
10	4"	NO DRAIN TILE	SLIGHT	CLEAN	45"	LATERAL AT PROPERTY INGRESS
11	4"	NO DRAIN TILE	SLIGHT	20%	31"	LATERAL AT PROPERTY EGRESS
12	20"	CONC./GOOD	10%	CLEAN	57"	MAINLINE AT PROPERTY INGRESS
13	20"	CONC./GOOD	10%	CLEAN	48"	MAINLINE AT PROPERTY INGRESS
14	20"	CONC. / GOOD	20%	CLEAN	44"	MAINLINE AT PROPERTY INGRESS
15	4"	CLAY / GOOD	SLIGHT	10%	39"	MAINLINE AT PROPERTY INGRESS
16	5"	CLAY / GOOD	SLIGHT	10%	46"	MAINLINE AT PROPERTY INGRESS
17	5"	CLAY / GOOD	SLIGHT	10%	39"	LATERAL AT PROPERTY INGRESS
18	5"	CLAY / GOOD	SLIGHT	25"	31"	LATERAL AT PROPERTY INGRESS
19	10"	CONC./GOOD	10%	CLEAN	48"	MAINLINE AT PROPERTY INGRESS
20	3"	CLAY / GOOD	SLIGHT	SLIGHT	28"	LATERAL AT PROPERTY INGRESS
21	7"	CLAY / FAIR	SLIGHT	SLIGHT	37"	MAINLINE AT PROPERTY EGRESS
22	5"	CLAY / GOOD	SLIGHT	CLEAN	30"	LATERAL AT PROPERTY INGRESS
23	4"	CLAY / GOOD	SLIGHT	SLIGHT	26"	LATERAL AT PROPERTY INGRESS
24	12"	CONC./GOOD	SLIGHT	SLIGHT	53"	MAINLINE AT PROPERTY EGRESS



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SECTION 33 & 34
TOWNSHIP 38 NORTH, RANGE 5 EAST
SQUAW GROVE
DEKALB COUNTY, ILLINOIS

CLIENT
IRONWOOD RENEWABLES
SOMONAUK ROAD
SQUAW GROVE, ILLINOIS 60520

SHENANDOAH SOLAR
DRAIN TILE SURVEY

DATE
MAY 2, 2024

07/27/23 REVISED TO ADD DRAIN TILES
03/15/24 REVISED LAYOUT
03/20/24 REVISED SUP LAYOUT
03/27/24 REVISED SUP LAYOUT
04/23/24 UPDATED LEGAL DESCRIPTION
05/02/24 UPDATED CURVE NUMBER INFO
05/22/24 UPDATED FROM PUBLIC MEETING

REVISIONS

SCALE 0 75 150
1" = 150 FEET
DR. CMP | CH. MS
P.M. M. KEITH
BOOK
JOB 22004992
SHEET NO.
C04.1

CAD FILE: 22004992C-04.1-G-DT.DWG

LEGEND

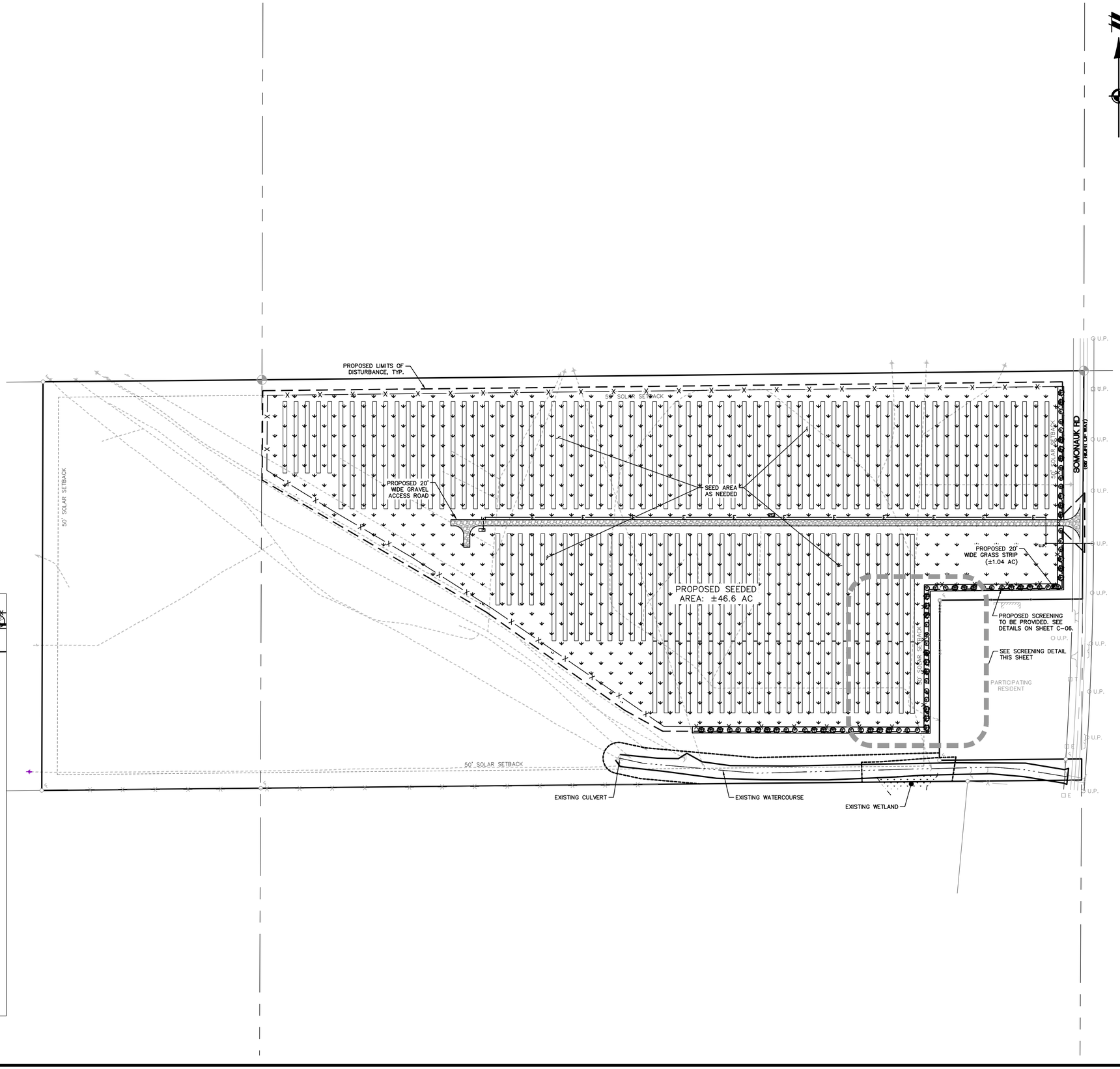
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- PROPOSED OVERHEAD ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- PROPOSED UNDERGROUND ELECTRIC LINE
- EXISTING DRAIN TILE
- LIMITS OF DISTURBANCE
- PROPOSED GRAVEL DRIVE AISLE SEE DETAIL SHEET C-06
- MESIC SOILS POLLINATOR SEED MIX

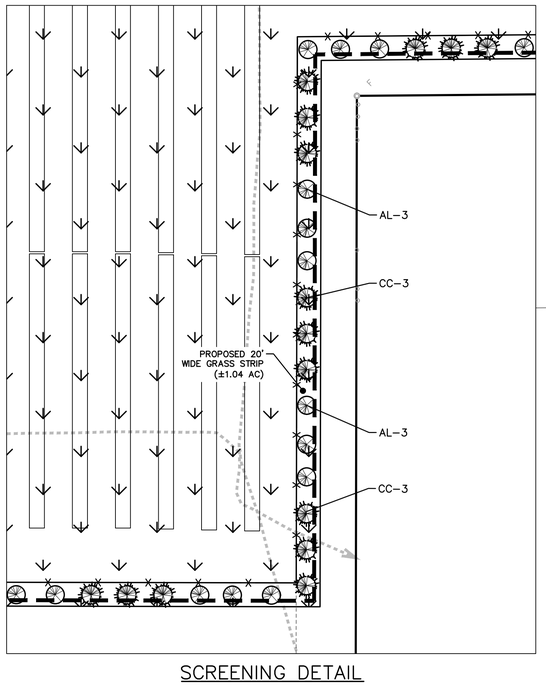
PLANTING NOTES:

1. ALL STOCKPILE AREAS SHALL BE LOCATED WITHIN LIMIT OF WORK LINE AND STABILIZED TO PREVENT EROSION.
2. ALL DEBRIS GENERATED DURING SITE PREPARATION ACTIVITIES SHALL BE LEGALLY DISPOSED OF OFF SITE.
3. PROVIDE CRIBBING AS NECESSARY TO PROTECT EXISTING UTILITY LINES DURING CONSTRUCTION.
4. SEED ALL DISTURBED AREAS, INCLUDING LAYDOWN AREAS, WITH THE MESIC SOILS POLLINATOR SEED MIX AS PROVIDED IN THE NATURAL RESOURCES SERVICE REPORT DATED APRIL 2023. THAT REPORT DETAILS OUT SOIL PREPARATION, INSTALLATION OF THE SEED, AND VEGETATION MANAGEMENT PROCEDURES TO ENSURE PROPER GROWTH AND ESTABLISHMENT OF THE POLLINATOR SEED MIX.
5. PROTECT NEWLY TOPSOILED, GRADED AND/OR SEEDED AREAS FROM TRAFFIC AND EROSION. KEEP AREAS FREE OF TRASH AND DEBRIS RESULTING FROM LANDSCAPE CONTRACTOR OPERATIONS.
6. REPAIR AND RE-ESTABLISH GRADES IN SETTLED, ERODED AND RUTTED AREAS TO THE SPECIFIED GRADE AND TOLERANCES.
7. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
8. ANY PROPOSED SUBSTITUTIONS OF PLANT MATERIAL SHALL BE MADE WITH MATERIAL EQUIVALENT TO THE DESIRED MATERIAL, OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE. PROPOSED SUBSTITUTIONS WILL ONLY BE CONSIDERED IF SUBMITTED WITH ENUMERATED REASONS WHY SUBSTITUTIONS ARE PROPOSED.
9. THE LANDSCAPE CONTRACTOR SHALL CLEAN UP AND REMOVE ANY DEBRIS FROM THE SITE CAUSED BY THE LANDSCAPE CONTRACTOR.

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS/SPEC.
CC	36	Crataegus crusgalli var. inermis	Cockspur Hawthorn	1-1/2" cal.	B&B, Native, 4' Ht., Min
AL	36	Amelanchier laevis	Allegheny Serviceberry	1-1/2" cal.	B&B, Native, 4' Ht., Min





SCREENING DETAIL

SCALE: 1"=60'

Know what's below. Call before you dig.

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SHENANDOAH SOLAR
LANDSCAPE PLAN

DATE
MAY 2, 2024

07/27/23
REVISED TO ADD DRAIN TILES
03/15/24
REVISED LAYOUT
03/20/24
REVISED SUP LAYOUT
03/29/24
REVISED SUP LAYOUT
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UPDATED LEGAL DESCRIPTION
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SCALE 0 75 150
1" = 150 FEET
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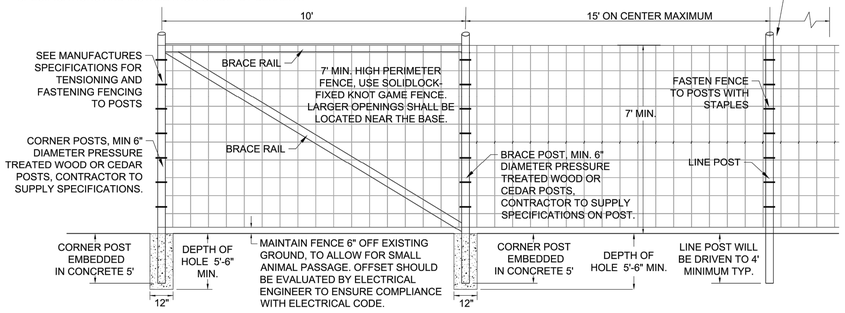
FENCE MATERIAL:
SOLIDLOCK FIXED KNOT GAME FENCE SPECIFICATION:

- FENCE FABRIC SHALL BE BEKAERT ZA-6" FIXED KNOT GAME FENCE
- 96" HIGH
- 12.5 GAUGE WIRE
- CLASS 3 GALVANIZED

INSTALL ALL FENCE COMPONENTS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS, SEE "FIXED KNOT BRACE SPECIFICATIONS AND INSTALLATION GUIDE" BY BEKAERT.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING AND CONSTRUCTING FENCE.

LINE POSTS 15' ON CENTER MAXIMUM. LINE POSTS SHALL BE MIN. 4" DIAMETER PRESSURE TREATED WOOD OR CEDAR POST CONSTRUCTED IN SIMILAR FASHION AS CORNER POSTS ON THIS DETAIL.



TYPICAL FIXED KNOT GAME FENCE

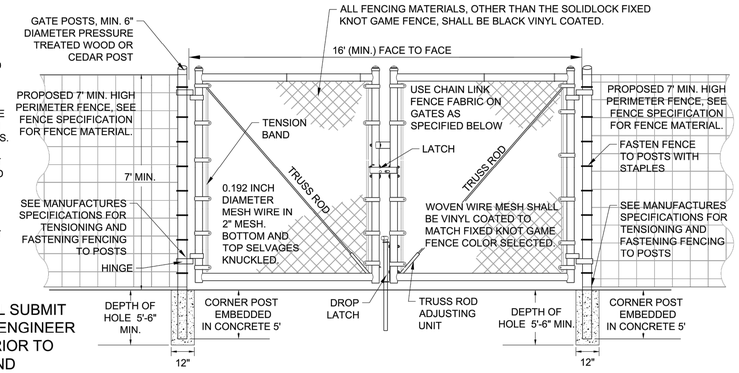
NOTES

1. ADDITIONAL BRACING MAY BE REQUIRED ON LONGER FENCE RUNS. CONTRACTOR TO ADD ADDITIONAL BRACING WHEN CONTRACTOR OBSERVES CORNER POST DEFLECTION DURING FENCE TENSINOING/FASTENING.
2. FABRIC TO BE FASTENED TO POSTS WITH STAPLES APPROVED BY THE ENGINEER.

NOTES

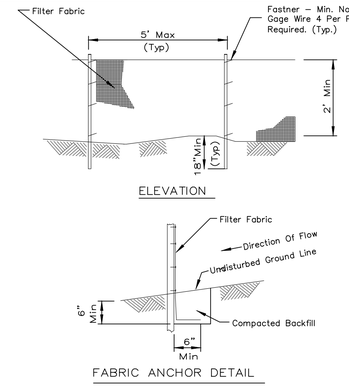
1. PAINT ALL GALVANIZED PIPE AND FITTINGS TO MATCH SOLIDLOCK FIXED KNOT GAME FENCE. PAINT SHALL BE SUITABLE FOR USE ON GALVANIZED SURFACES.
2. EMERGENCY CONTACT SIGN SHALL BE PLACED ON THE GATE, WHICH IDENTIFIES THE PROJECT OWNER AND PROVIDES A 24-HOUR EMERGENCY CONTACT PHONE NUMBER.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING AND CONSTRUCTING FENCE.



DOUBLE SWING GATE

SILT FENCE PLAN



NOTES:

1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilizations.
2. Filter fabric shall meet the requirements of materials specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size at lease 30 for nonwoven and 40 for woven.
3. Fence posts shall be either standard steel posts or wood post with minim cross sectional area of 3.0 sq. in.

MAINTENANCE:

SILT FENCE SHALL BE REMOVED ONCE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

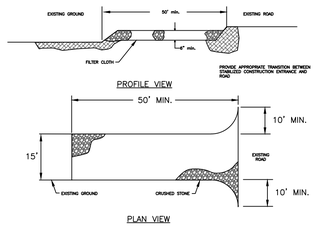
SILT FENCE SHALL BE INSPECTED NO LESS FREQUENTLY THAN EVERY WEEK DURING CONSTRUCTION. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE FENCE STILL IS NECESSARY, THE FABRIC OR THE ENTIRE SYSTEM SHALL BE REPLACED PROMPTLY.

SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE SILT FENCE.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, A SEEDBED PREPARED AND THE SITE VEGETATED.

REFERENCE
Project
Designed ____ Date
Checked ____ Date
Approved ____ Date

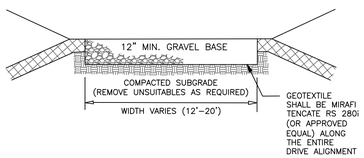
STANDARD DWG. NO. IUM-620A
SHEET 1 OF 2
DATE 3-16-2012



1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE PROPOSED ENTRANCE.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARDS THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE SURFACE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO EXISTING ROAD. THIS MANY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO EXISTING ROAD SHALL BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

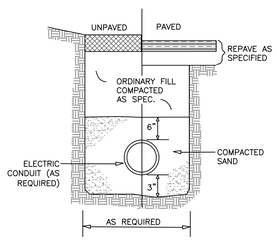


NOTES:

1. REMOVE TOPSOIL AND ALL UNSUITABLE MATERIAL AS REQUIRED AND REPLACE WITH GRAVEL.
2. ACCESS DRIVES TO SLOPE IN THE DIRECTION OF THE EXISTING GRADE AT A MINIMUM OF 2.0% DRIVEWAY SHALL BE GRADED TO ALLOW STORMWATER TO SHEET ACROSS IT AND TO PREVENT PUDDLING.

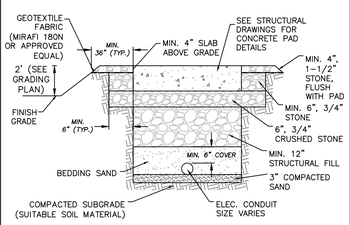
ACCESS DRIVE CROSS SECTION

NOT TO SCALE



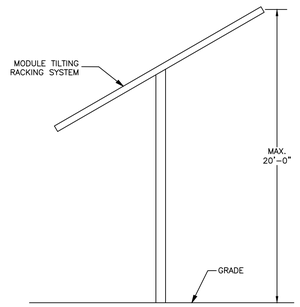
ELECTRIC CONDUIT TRENCH

NOT TO SCALE



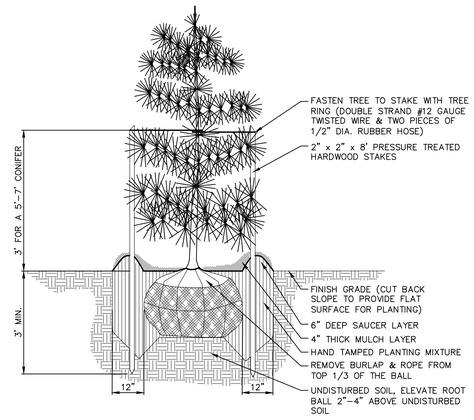
EQUIPMENT FOUNDATION DETAIL

NOT TO SCALE



SOLAR ARRAY RACK DETAIL

NOT TO SCALE



NOTES:

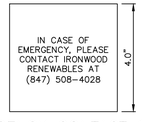
1. PLANTING DETAIL APPLIES TO ALL DECIDUOUS TREES AND LARGE EVERGREEN SHRUBS.
2. SHRUB MULCH RING AND PLANTING PIT SHALL BE TWICE THE DIAMETER OF THE ROOT BALL.
3. CONTRACTOR SHALL PRUNE PER TREE PRUNING DETAIL AS NEEDED.
4. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
5. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKES.
6. REMOVE TREE RINGS, AND GUYS/STAKES ONE YEAR AFTER INSTALLATION.
7. WATER TREE THOROUGHLY SUBSEQUENT TO INSTALLATION.
8. TREE SHALL BE PLACED IN SAME ORIENTATION AS IT WAS GROWN AT THE NURSERY.
9. PLANTING MIXTURE SHALL INCLUDE:
   - 1 PART PEAT OR OTHER APPROVED ORGANIC MATTER
   - 4 PARTS NATIVE SOIL
   - 1/2 LB 10-10-10 FERTILIZER PER CU. YD. OF BACKFILL OR APPROVED SUBSTITUTE

CONIFEROUS TREE PLANTING DETAIL BALLED AND BURLAPPED

NOT TO SCALE

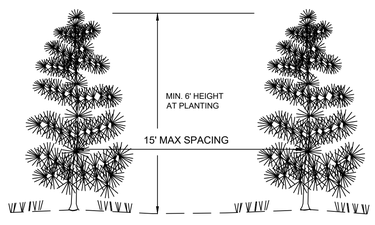
"DANGER" WARNING SIGN

NOT TO SCALE



EMERGENCY CONTACT SIGN

NOT TO SCALE



VEGETATIVE BUFFER DETAILS

NOT TO SCALE

Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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ATWELL
866.850.4200 www.atwell-group.com
1250 EAST DIEHL ROAD, SUITE 300
NAPERVILLE, IL 60563
DESIGN FIRM #184-005876

SECTION 33 & 34
TOWNSHIP 38 NORTH, RANGE 5 EAST
SQUAW GROVE TOWNSHIP
DEKALB COUNTY, ILLINOIS

CLIENT
IRONWOOD RENEWABLES
SOMONAUK ROAD
SQUAW GROVE, ILLINOIS 60520

SHENANDOAH SOLAR
DETAILS

DATE
MAY 2, 2024

07/27/23 REVISED TO ADD DRAIN TILES
01/15/24 REVISED LAYOUT
03/20/24 REVISED SUP LAYOUT
03/27/24 REVISED SUP LAYOUT
04/23/24 UPDATED LEGAL DESCRIPTION
05/02/24 UPDATED CURVE NUMBER INFO
05/22/24 UPDATED FROM PUBLIC MEETING

REVISIONS

SCALE
N.T.S.

DR. CMP | CH. MS
P.M. M. KEITH
BOOK
JOB 22004992
SHEET NO.
C-06

CAD FILE: 22004992C-06-DT.DWG

\\ATWELL.COM\DFS\NAPERVILLE\PROJECTS\22004992\CAD\SHEETS\C-06-DT.DWG 5/22/2024 8:36 AM MICHAEL KEITH

STAFF REPORT

TO: Dale Clark
DeKalb County Hearing Officer

FROM: Marcellus Anderson
Assistant Planner

DATE: April 27, 2024

SUBJECT: Shenandoah Solar, LLC
Commercial Solar Energy System Special Use Permit
Petitions SQ-24-02

Shenandoah Solar, LLC (wholly owned by Ironwood Projects, LLC) has submitted an application for a Special Use Permit to allow for the construction and operation of a 5-megawatt Commercial Solar Energy Systems (CSES) on 49.1-acres of a 95.733-acre property located west side of Somonauk Road, approximately 4,600 feet north of Chicago Road, in Squaw Grove Township. The property is zoned A-1, Agricultural District.

Surrounding Land Uses and Zoning

North:	Agricultural	A-1;
South:	Agricultural	A-1;
East:	Agricultural & Residential	A-1; and
West:	Agricultural	A-1.

Background – In 2023, Shenandoah Solar submitted an application for a Special Use Permit for the proposed CSES on the subject property; however, that petition failed to receive approval for a Special Use Permit from the County Board. Since that submittal, the State adopted statewide standards for CSES, which resulted in the County Board revising its regulations on CSES. Given these changes, the applicant has come forward with a new application that also contains revisions to the project which they believe should address the issues that resulted in the failure of the previous petition. CSES are a special use in the A-1 District, and require County Board approval before such a use can be established. In deliberating on this request, the Hearing Officer should consider the evaluation criteria for Special Uses, set forth in Section 53-I-2.B.3 of the County Code (see attached excerpt).

Correspondence – Greg Maurice, of the DeKalb County Health Department, has indicated that they have no issues with the proposal. The DeKalb County Soil and Water District (SWCD) Natural Resources Inventory Report recommends approval, provided several items highlighted in the report are addressed (see below). Nathan Schwartz, the DeKalb County Engineer, has indicated that the DeKalb County Highway Department is not opposed to the request. The Department has received correspondence from twenty-nine (29) individuals indicating their opposition to the petition, voicing their concerns that the proposed project could negatively impact drainage from neighboring agricultural properties. To date, no other correspondence related to this request has been received.

Staff Evaluation:

1. Comprehensive Plan – Per State Statute 55 ILCS 5/5-12020, a request for a special use permit for a CSES being developed in the A-1 District shall be approved if the request is in compliance with the standards and conditions imposed in this Act, the zoning ordinance adopted is consistent with this Code, and the conditions imposed under State and federal statutes and regulations.

2. Natural Resource Inventory Report – The SWCD Natural Resource Inventory Report highlighted the following required items required by the County Code.
    a. The petitioners are reminded that they are required to prepare and submit a detailed Landscape Plan, based on the recommendations outlined in the NRI, to the SWCD for their review and approval. And, the detailed landscape plan, including any revisions required by the SWCD, will need to be part of the Site Development Permit application. The petition indicates that they will comply with this requirement.
        1. If the Hearing Officer is inclined to recommend approval of the petition, staff would recommend as a condition of approval that if those portions of the subject property which are outside of the fenced-in area are not to be put into agricultural production, then the Landscape Plan and Landscape Monitoring & Maintenance Plan be expanded to include these areas, so that these areas do not go unattended and become a source for noxious weeds.
    b. The petitioners are reminded that they are required to prepare and submit a Landscape Monitoring & Maintenance Plan, for review and approval, to the SWCD prior to submittal of the Building Permit application. The petition indicates that they will comply with this requirement.
    c. The petitioners have submitted a detailed sub-surface drain tile investigation. The petitioners are remined that a copy of this report must be: forwarded to the SWCD with the Landscape Plan; and, a copy included in the Site Development Permit application.
    d. The petitioners are reminded that a soil erosion and sediment control plan will need to be in place, and that areas of land disturbance of one acre or greater are required to demonstrate compliance with the IEPA ILR-10 permit, which includes a Storm Water Pollution Prevention Plan. The petition includes a copy of the proposed Grading and Erosion Control Plan.

3. Commercial Solar Energy System Requirements – Commercial Solar Energy Systems (CSES) are expected and required to meet the requirements of Section 53-E-12.A of the DeKalb County Code.
    a. The facility shall be setback at least one hundred fifty (150) feet from the nearest point on the outside wall of an occupied community building or dwelling on a nonparticipating property. The petition indicates that the proposed facility will meet this setback requirement.

1. The DeKalb County Code allows for a waiver of this setback, if the developer of the facility can obtain and submit as part of their CSES Permit application, written, signed, and notarized statements from the owners of each affected nonparticipating property agreeing to waive this setback. The petition does include a completed waiver from this setback from the dwelling on the property located at 6353 Somonauk Road, Hinckley (P.I.N.: 1534300004).

b. The facility shall be setback at least fifty (50) feet from a right-of-way or the property line of a nonparticipating property. The petition indicates that the proposed facility will meet these setback requirements.
c. The petitioners are reminded that a spot survey will be required at the time of installation to verify that these setbacks have been met.
d. On-site power and communication lines shall be located underground, except at the interconnection point to the grid. The petitioners have indicated that they will comply with this requirement.
e. Topsoil shall not be removed during development, unless part of a remediation effort.
f. The petitioners are reminded that they are to abide by the requirements of the DeKalb County Noxious Weed Ordinance. The petitioners have indicated that they will comply with this requirement.
g. Any part of the facility that is within 1,000 feet of an occupied community building or nonparticipating residence shall be screened; and, additional screening may be required by the County Board if such is deemed necessary.
    1. There are three non-participating residences within 1,000 feet of the facility, each located southeast of the facility on the west and east sides of Somonauk Road.
    2. The petition indicates that landscape screening is proposed to be planted along the right-of-way of Somonauk Road and along the southeastern portion of the facility. The petitioners should be prepared to elaborate more on the proposed screening.
    3. The petitioner is reminded that the all screening shall be installed prior to the activation and operation of the facility, and must be maintained by the facility for the life of the project, with replacement plantings and maintenance conducted as necessary.
h. The interconnection point shall be located within, or as adjacent to a right-of-way or existing power line as is possible, but shall in no case be further than twenty (20) feet from a right-of-way or existing power line, and all poles shall be placed such that they run parallel with said right-of-way or power line.
    1. The submitted plans do not depict the proposed location or orientation of the poles to be used in the interconnection point. The narrative does indicate that the interconnection point is proposed to meet the requirement; however, they have to wait for ComEd to finish its Utility Study for the final design. The petitioners should be aware that, if this petition is approved, they will have to submit a revised site plan detailing the location and orientation of these poles to the Community Development Department Director for review and approval that will demonstrate that the poles will comply with the regulations.
i. The CSES shall be situated so that no component of a solar panel shall have a height of more than twenty (20) feet above the ground when at full tilt. The petition indicates that they will meet this requirement.
j. Fencing for CSES: shall have a height of no less than six (6) feet and no more than twenty-five (25) feet, shall have appropriate warning signage clearly posted upon it, and shall be a primarily woven wire or agricultural style fencing. The petition indicates that the fencing shall be eight (8) feet fixed knot Agricultural style fencing, and shall have the appropriate warning signage. The petition also indicates that keys, access codes, Knox Boxes, or the equivalent shall be provided at locked entrances for access by emergency personnel.
k. Documentation shall be submitted indicating that the noise levels from the CSES will be

in compliance with the Illinois Pollution Control Board regulations. The petitioner has included documentation demonstrating that the equipment used will comply with this regulation.

l. CSES are subject to the County's Stormwater and Site Development Permit regulations, and the EPA's NPDES permit requirements. The applicant should be aware that if the petition receives approval, a Site Development Permit application will need to be submitted and receive approval prior to issuance of any Building Permits. The applicant will also need to demonstrate that the project will be in compliance with the NPDES permit regulations prior to issuance of any Building Permits. The petitioners have indicated that they will comply with this requirement.

m. The applicant is reminded that any drainage systems impacted during the construction, maintenance, and operation phases of the CSES shall, at their expense, be repaired or replaced in a prompt and timely manner, in accordance with the Agricultural Mitigation Agreement.

n. Supporting facilities constructed in conjunction with the CSES are subject to the same siting requirements as the CSES, and must be fully detailed and presented as part of the CSES application packet. The petition indicates that no supporting facilities are to be constructed as part of this project.

o. The CSES will not be within five hundred (500) feet of an airport or approach zone of an airport. The petition indicates that the facility will meet this requirement.

p. The petitioner is reminded that all CSES shall be in compliance with all applicable local, state, and federal regulatory codes.

q. The petitioner is reminded that electric CSES components must have a UL listing, or approved equivalent, and must be designed with anti-reflective properties. The petitioners have indicated that they will comply with this requirement.

r. The petitioner is reminded that visible, reflective, colored objects, such as flags, plastic sleeves, reflectors, or tape shall be placed on the anchor points of guy wires and along the guy wires up to a height of fifteen (15) feet from the ground. The petitioners have indicated that they will comply with this requirement.

s. The petitioners are reminded that all lighting shall be shielded so that no glare extends substantially beyond the boundaries of the facility. The petitioners have indicated that no lighting is currently proposed for the facility, but if any is added, it will be in compliance with these regulations.

t. As part of the application submittals, the petitioner had to initiate a natural resource review consultation with the Illinois Department of Natural Resources (IDNR) through the department's online EcoCat program. The result of that consultation indicates that while protected resources may be in the vicinity, it was determined that adverse effects were unlikely.

u. The petitioner has to demonstrate that the project will be in compliance with the regulations of the Illinois Historic Preservation Agency (IHPA). The petition indicates that a Phase 1 Archaeological Reconnaissance Survey is required, and that the petitioners are in the process of arranging for said survey. The petitioners should be aware that they will need to show compliance with these requirements prior to approval of the Building Permit.

v. The petitioner has to indicate avoidance of protected lands as identified by the IDNR and the Illinois Nature Preserve Commission. The petition appears to indicate this, but the petitioner should be prepared to elaborate on this determination.

w. The petitioners had to include the results of the United States Fish and Wildlife Service's Information for Planning and Consulting environmental review. The result of that consultation appears to indicate that based on the proposed plans no unauthorized take should occur.

x. The petitioners must submit a signed & completed copies of the Agricultural Impact

Mitigation Agreement (AIMA) through the Illinois Department of Agriculture. A copy of the signed & completed AIMA has been submitted.

y. A Decommissioning and Site Reclamation Plan with cost estimation is required as part of the CSES application. The petition does include a decommissioning plan and estimate. This plan and estimate will be reviewed to verify that it is in compliance with the County Code, and if approved, the appropriate financial guarantees will have to be submitted prior to the issuance of the Building Permit.

z. Given that the submitted plans are preliminary, and are expected to be revised during the final engineering, the petitioners are reminded that any final plans must be substantial conformance with the preliminary plans and materials submitted as part of the application and presented at the public hearing, and that any revised plans would need to be submitted prior to approval of the Site Development and Building Permits. If the plans represent a significant deviation from the preliminary plans, then the petitioner would have to seek an amendment to the approved Special Use Ordinance from the County Board prior to approval of the Site Development and Building Permits.

aa. Road Use Agreements shall be established with all appropriate road authorities prior to the issuance of a Building Permit.

bb. An interconnection agreement must be completed with the electrical utility in whose service territory the projects will be located prior to approval of the Building Permit.

cc. The petitioner should be aware that a Solar PV Building Permit application will have to be submitted for review and approval by the DeKalb County Community Development Department.

dd. The petitioner is reminded that a qualified engineer shall certify that the foundation and design of the solar panels racking and support is within accepted professional standards.

ee. The petitioner is reminded that all pile driving activity during the project may only occur between the hours of 7:00 am and 5:00 pm.

ff. The petitioner should be aware that all plans submitted for the Site Development and Building Permits shall be signed and stamped by an Illinois licensed engineer.

4. Revisions – The petitioners should be prepared to describe how the project has been revised from the previously proposed petition.

5. Time Line - Typically, Special Use Permit ordinances for CSESs are set to expire approximately eighteen (18) months after adoption of the ordinance, if no Building Permits have been sought by that date. The petitioners should be prepared to elaborate on whether they anticipate any difficulties in meeting that deadline. If so, the petitioners should be prepared to elaborate on their anticipated time line for beginning these projects, and present a request for a revised deadline based upon that time line for the County Board to consider.

CC: Hamilton Carrier – hcarrier@ironwoodenergy.com
Michael Keith – mkeith@atwell-group.com

MOA: moa
P:\Zoning\Special Uses\Staff Reports\2024\SQ-24-02 Shenandoah Solar.docx

Excerpt from Zoning Ordinance
Section 53-I-2.B.3

Burden of Proof: In presenting any application for a Special Use Permit, the burden of proof shall rest with the applicant to clearly establish that the proposed special use shall meet the following criteria:

a. The proposed special use complies with all applicable provisions of the applicable district regulations.

b. The proposed special use will not be unreasonably detrimental to the value of other property in the neighborhood in which it is to be located or the public welfare at large.

c. The location and size of the special use, the nature and intensity of the operation involved in or conducted in connection with it, and the location of the site with respect to streets giving access to it are such that the special use will not dominate the immediate neighborhood so as to prevent development and use of neighboring property in accordance with the applicable zoning district regulations. In determining whether the special use will so dominate the immediate neighborhood, consideration shall be given to:

    1). The location, nature and height of buildings, structures, walls, and fences on the site; and

    2). The nature and extent of proposed landscaping and screening on the proposed site.

d. Off-street parking and loading areas will be provided in accordance with the standards set forth in these regulations.

e. Adequate utility, drainage, and other such necessary facilities have been or will be provided.

f. The proposed uses, where such developments and uses are deemed consistent with good planning practice, or can be operated in a manner that is not detrimental to the permitted developments and uses in the district; can be developed and operated in a manner that is visually compatible with the permitted uses in the surrounding area; shall in all other respects conform to the applicable regulations of the district in which it is located; and are deemed essential or desirable to preserve and promote the public health, safety, and general welfare of DeKalb County.

SHENANDOAH SOLAR, LLC

Special Use Permit Application

DeKalb County, IL

Prepared for:

Shenandoah Solar, LLC
910 Harding Street
Lafayette, LA 70503

Hamilton Carrier
hcarrier@ironwoodenergy.com
337.344.7381

Prepared by:

Atwell, LLC
1250 East Diehl Road, Suite 300
Naperville, IL 60563

Michael Keith
mkeith@atwell-group.com
630.577.0800

April 2, 2024

SHENANDOAH SOLAR
SPECIAL USE PERMIT APPLICATION

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- Ironwood Background
- Project Details

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- **SHPO Archaeological Survey Cover Letter**

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15. SOUND STUDY REPORT (ILLINOIS POLLUTION CONTROL BOARD)

1250 E. Diehl Road, Suite 300, Naperville, IL 60563 Tel: 630.577.0800 Fax: 630.577.0900
www.atwell-group.com

16. DRAINAGE DISTRICT MAP

17. ATTACHMENTS

- Plat of Survey
- Existing Agricultural Drain Tile Investigation (Prepared by Huddleston McBride)
- Wetland Determination/Delineation Letter
- Special Use Application Plans
    - C-01 Cover Sheet
    - C-02 Existing Conditions Plan
    - C-03 Site Layout Plan
    - C-04 Grading Plan
    - C-04.1 Drain Tile Survey
    - C-05 Landscape Plan
    - C-06 Standard Detail

Community Development Department
110 E Sycamore St.
Sycamore, IL 60178
T: 815-895-7188
www.dekalbcounty.org

Office Use Only
File no: _____ - _____ - _____
Date of Application: ____ /____/____
Received By: _____
Initial Deposit: $_____

APPLICATION FOR ZONING ACTIONS:

MAP AMENDMENTS, SPECIAL USES, VARIATIONS, ETC.

Name of Applicant(s): Shenandoah Solar, LLC
Address: 910 Harding Street City: Lafayette
State, Zip: LA 70503 Phone: (337) 889-3940
Email: hcarrier@ironwoodenergy.com

Primary Contact (if different from applicant): _____
Address: _____ City: _____
State, Zip: _____ Phone: _____
Email: _____

Owner of Property (if different from applicant): Elaine M. Pospishil Trust 102
Address: 207 W. Kerr Street City: Sycamore
State, Zip: IL 60178 Phone: (815) 895-2468
Email: _____

Subject Property Information:
Address (or description of location if no address exists) of subject property: Legal Description attached.

Parcel Number(s): 15-34-300-005 & 15-33-400-004
Existing Zoning District: A-1
Existing Use: Agriculture
Size of Subject Property: 95 Acres

PROPOSED ZONING ACTION(S):

Map Amendments: ____

____ FP/C, Floodplain / Conservation District
____ PD-R, Planned Development Residential
____ PD-I, Planned Development Industrial
____ A-1, Agricultural District
____ PD-C, Planned Development Commercial
____ MXD, Mixed Use Development

Special Uses: ☑

Proposed Special Use(s): Commercial Solar Energy Systems (CSES)

Use Variance: ____

Variations: ____

Bulk Variance(s): **Setback:** ____ **Height** ____ **Other:** ____

Existing Requirement: ____

Requested Requirement: ____

or

Variance from the Non-Conforming Regulations: ____

Existing Requirement: ____

Requested Requirement: ____

Notice: Permit recipients are required to comply with the Human Trafficking Resource Center Notice Act (775 ILCS 50/1, *et seq.*) to the extent that it applies to them. A State of Illinois model notice can be found at https://www.dhs.state.il.us/page.aspx?item=82023.

The Undersigned grants the DeKalb County Community Development Director or their designee and the Hearing Officer permission to enter the property described on this application for the purpose of inspection.

Elaine Pospishil
Owner or Authorized Agent

4-1-24
Date

Disclosure of Interest

Pursuant to the requirements of State Statutes (55 ILCS 5/5-12009), please provide the names and addresses of all owners of the property for which the zoning action is requested. If ownership is by a corporation, provide all the names and addresses of all officers and directors, and all stockholders owning any interest in excess of 20% of all outstanding stock of such corporation. If the petitioner for zoning action is a business or entity doing business under an assumed name, or if a partnership, joint venture, syndicate or unincorporated voluntary association, provide the names and addresses of all true and actual owners of the business or entity, the partners, joint ventures, syndicate members or members of the unincorporated voluntary association. (May be attached)

Shenandoah Solar, LLC is wholly owned by Ironwood Projects, LLC.

The officers are as follows:

Adrian Ortlieb, Manager

Tommy Hovis, Manager

SHENANDOAH SOLAR
SPECIAL USE PERMIT APPLICATION

LEGAL DESCRIPTION – OVERALL PARCEL & SPECIAL USE AREA

PART OF SECTIONS 33 & 34, TOWNSHIP 38 NORTH, RANGE 5, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DEKALB COUNTY, ILLINOIS.

LEGAL DESCRIPTION PER DEED IN TRUST RECORDED OCTOBER 9, 2009 PER DOCUMENT NO. 2009014876

THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 33 (EXCEPT THE WESTERLY 1944.24 FEET) AS MEASURED ALONG THE EAST-WEST HALF SECTION LINE, TOWNSHIP 38 NORTH, RANGE 5 EAST OF THE THIRD PRINCIPAL MERIDIAN AND ALSO THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 34 IN AFORESAID TOWNSHIP AND RANGE EXCEPTING THEREFROM THAT PART BEING DESCRIBED BY COMMENCING AT THE SOUTHEAST CORNER OF SAID NORTH HALF OF THE SOUTHWEST QUARTER OF SAID TOWNSHIP AND RANGE; THENCE NORTH ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER SECTION, A DISTANCE OF 70 FEET FOR A POINT OF BEGINNING; THENCE NORTH ALONG SAID EAST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 515 FEET TO A POINT; THENCE WEST PARALLEL WITH THE SOUTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 462 FEET TO A POINT; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER A DISTANCE OF 515 FEET TO A POINT; THENCE EAST TO THE POINT OF BEGINNING, ALL SITUATED IN THE TOWNSHIP OF SQUAW GROVE, DEKALB COUNTY, ILLINOIS.

DEKALB COUNTY

MEMORANDUM IN SUPPORT OF APPLICATION
FOR SPECIAL USE PERMIT APPROVAL
SHENANDOAH SOLAR, LLC

County Zoning Ordinanc
Chapter 53 E-12, Sustainable Energy Systems (SES).

LOCATION
The site is located on the west side of Somonauk Road halfway between the intersection of Somonauk Road/Shabbona Grove Road and Somonauk Road/Chicago Road and consists of two parcels, Parcel 15-34-300-005 & 15-33-400-004 (the "Site"). The two parcels are 95.733 acres. The proposed project location is not within 1.5 miles radius of an incorporated municipalities zoning district.

PROPOSED CONSTRUCTION
The Special Use Permit application (the "Application") proposes the construction of a large-scale, ground-mounted solar photovoltaic installation on 49.1 acres of the 95.733 -acre parcel, which will provide 5 Megawatts of renewable power to the local electrical grid to the benefit of local-energy consumers.

COUNTY ZONING ORDINANCE, CHAPTER 53 E-12 CRITERIA ADDRESSED:

The Applicant submits the following as evidence of compliance with County Zoning Ordinance, Chapter 53 E-12, Commercial Solar Energy System (CSES).

1). Zoning

The project is currently zoned A-1 with DeKalb County.

2). Setbacks

Location of proposed array field meets or exceeds County setback requirements. Please refer to page C-03 of the Site Plan. A setback waiver is being signed and recorded by the 'Nonparticipating Residence' to the east, Dwayne Williams.

3). Power and Communication Lines.

Power and communication lines running between banks of solar panels will be buried underground

Equipment poles and riser poles with overhead power lines will be installed for interconnection point on Somonauk Road. On-site power lines will be placed underground to the maximum extent possible until ComEd's point of connection. This scope of work is per ComEd's requirements; this the final design is pending a utility study.

All requirements in the Agricultural Impact Mitigation Agreements (AIMA) regarding the construction and/or burial of electric transmission lines will be adhered to

4a. Ground Cover

- Vegetation Management Plan has been submitted as part of the Application
- Top soils will not be removed during development, unless necessary.
- The Project will follow DeKalb County's Noxious Weed Ordinance
- All vegetation planted will be incompliance with County, State, and Federal laws.
- Seed mix will be planted along the edge of the access road, ensuring a minimum width compatible with commercial mowers to accommodate the maneuvering of emergency vehicles.

4b. Screening

Visual screening to mitigate views of the facility, within one thousand (1,000) feet of a nonparticipating residence or occupied community building, will be screened. The project is also proposing to screen the entire east section of the project along Somonauk Road. See Page C-05 of the Site Plan for Screening information.

4c. Buffer Areas

Landscape Monitoring and Maintenance Plan will be submitted to the DeKalb County Soil and Water Conservation District for review and approval prior to the submittal of a building permit application.

5. Interconnection Point

The interconnection point is proposed within twenty feet from the existing power line on Somonauk Road.

6. Height Requirement

The project will not exceed the County maximum of 20' above ground for any portion of the project. Manufacture specification for the proposed modules state, 54" standard, adjustable (48" min height above grade) At no point will the panels by higher than the max 20'. The project is also proposing a 8' fixed knot Ag style fence on the perimeter of the project.

7. Fencing

The Solar Project shall be fully enclosed and secured by a fixed knot Ag style fence with a height of 8', which is in compliance with the National Electric Code and County requirements for fencing. Keys, access codes, Knox Boxes, or the equivalent shall be provided at locked entrances for access by appropriate emergency personnel. The fencing shall contain appropriate warning signage that is in accordance with NESC and ANSI Z535 Safety Sign Standards and OSHA regulations. The

fence shall be maintained by the Applicant to prevent the growth of woody vegetation or noxious weeds within and along the fence.

8. Sound

A sound study report has been developed by Krebs and Lansing. The sound report has been submitted as part of the project. The noise levels stated above are in compliance with the Illinois Pollution Control Board's prohibited exceedance levels on Class A land.

9. Stormwater

The facility owner will adhere to DeKalb County's Stormwater Management regulations, erosion and sediment control provisions and will submit a Site Development Permit to demonstrate that these requirements will be met.

10. Drainage Systems:

Although not a requirement of the CSES permit application, Huddleston McBride completed an intensive drainage tile investigation on this subject property in July 2023. There will be no impacts on the main 'district' drainage tiles. The issues regarding drainage tiles are not uncommon in projects of this nature. Similar challenges, such as the management and maintenance of drainage tile and watershed systems on specific parcels, have been addressed in various other applications for special use, including in DeKalb County.

A letter from Tom Huddleston, Partner of Huddleston McBride has been submitted with the application. Tom Huddleston is qualified and experienced in agricultural, environmental, recreational and urban subsurface land drainage including existing conditions evaluation, improvement design, construction implementation and project oversight. In Mr. Huddleston's professional, the Shenandoah Solar project adheres to the County's standards of Special Use Permit approval outlined in the Zoning Code for Commercial Solar Energy Systems as it pertains to Drainage Tiles on the subject property.

11. Supporting facilities:

No Supporting facilities are proposed for this project.

12. Aviation Protection

The project is not located within 500 feet of an airport. However, as additional support for the project, an FAA Notice Criteria Tool and Glare Report have also been included as part of the application.

13. Standards and Codes:

The proposed solar farm development will comply with any applicable local, state, and federal regulatory standards including, but not limited to: the State of Illinois Plumbing Code; The State

of Illinois Electric Code; The State of Illinois Energy Code; the State of Illinois Uniform Building Code, as amended; the National Electric Code, as amended; and, all DeKalb County Health Department requirements.

14. Approved CSES Components.

Electric components installed for the project will have a UL listing. The panel material is smooth glass with anti-reflective coating to minimize glare toward any inhabited buildings on adjacent properties or roadways.

15. Guy Wires

Any visible, reflective, colored objects, such as flags, plastic sleeves, reflectors, or tape will be placed on the anchor of guy wires and along the guy wires up to a height of fifteen feet

16. Lighting

No lighting is currently proposed for the project. If desired by DeKalb County, Shenandoah Solar, LLC would place motion-sensor security lights at the project gate. If lighting is added, it will comply with requirements of the County Lighting Ordinance. All lighting will be shielded so that no glare extends substantially beyond the boundaries of the facility.

17. Utility Notification:

A copy of the Interconnection Agreement between ComEd and Shenandoah Solar has been provided with the application.

Dated: April 2, 2024

Respectfully Submitted,
Shenandoah Solar, LLC

SHENANDOAH SOLAR
SPECIAL USE PERMIT APPLICATION

LEGAL DESCRIPTION – OVERALL PARCEL & SPECIAL USE AREA

PART OF SECTIONS 33 & 34, TOWNSHIP 38 NORTH, RANGE 5, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DEKALB COUNTY, ILLINOIS.

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SHENANDOAH SOLAR
SPECIAL USE PERMIT APPLICATION

CONTACT LIST

APPLICANT
Shenandoah Solar, LLC
Hamilton Carrier
910 Harding Street
Lafayette, LA 70503
T: 337-889-3940
E: hcarrier@ironwoodenergy.com

CIVIL ENGINEER/SURVEYOR/LANDSCAPE ARCHITECT
Atwell, LLC
Michael Keith, P.E.
1250 East Diehl Road, Suite 300
Naperville, IL 60563
T: 630-577-0800
E: mkeith@atwell-group.com

OWNER
Shenandoah Solar, LLC
Hamilton Carrier
910 Harding Street
Lafayette, LA 70503
T: 337-889-3940
E: hcarrier@ironwoodenergy.com

2024002218

TASHA SIMS
RECORDER - DEKALB COUNTY, IL
RECORDED: 4/4/2024 12:24 PM
REC FEE: 56.00 RHSPS FEE: 18.00
PAGES: 3

This Instrument Prepared By
& Return to:

Shenandoah Solar, LLC
910 Harding Street
Lafayette, LA 70503

DECLARATION OF SETBACK WAIVER

STATE OF ILLINOIS §
§ **KNOW ALL MEN BY THESE PRESENTS:**
COUNTY OF DEKALB §

BEFORE ME, the undersigned authority, on this day personally appeared Dwayne Williams (the "**Declarant**"), whose address is 6353 Somonauk Rd, Hinckley, IL 60520, known to be a credible person, being over the age of twenty-one (21) years, who by me being duly sworn and on their oath, depose and state as follows: ('the Declarant').

1. Declarant owns in fee and inhabits the property with the address of 6353 Somonauk Rd, Hinckley, IL 60520 (the "**Nonparticipating Residence**").
2. The Declarant is familiar with and knowledgeable of the facts pertaining to Commercial Solar Energy Systems (CSES) Permit Application, Shenandoah Solar, LLC (the "**Application**"). The Application pertains to a parcel of land 74.9 acres in size, owned by Elaine M Pospishil Trust 102, identified in the tax records of Dekalb County by parcel identification number 15-34-300-005, legal description per deed in trust recorded October 9, 2009 per document NO. 2009014876:
THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 33 (EXCEPT THE WESTERLY 1944.24 FEET) AS MEASURED ALONG THE EAST-WEST HALF SECTION LINE, TOWNSHIP 38 NORTH, RANGE 5 EAST OF THE THIRD PRINCIPAL MERIDIAN AND ALSO THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 34 IN AFORESAID TOWNSHIP AND RANGE

EXCEPTING THEREFROM THAT PART BEING DESCRIBED BY COMMENCING AT THE SOUTHEAST CORNER OF SAID NORTH HALF OF THE SOUTHWEST QUARTER OF SAID TOWNSHIP AND RANGE; THENCE NORTH ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER SECTION, A DISTANCE OF 70 FEET FOR A POINT OF BEGINNING; THENCE NORTH ALONG SAID EAST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 515 FEET TO A POINT; THENCE WEST PARALLEL WITH THE SOUTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 462 FEET TO A POINT; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER A DISTANCE OF 515 FEET TO A POINT; THENCE EAST TO THE POINT OF BEGINNING, ALL SITUATED IN THE TOWNSHIP OF SQUAW GROVE, DEKALB COUNTY, ILLINOIS.

(the "**Project Parcel**"), which abuts the parcel of land that the Nonparticipating Residence is located on.

3. The Application is subject to the DeKalb County Zoning Code, specifically Section 53-E-12, Sustainable Energy Systems.
4. Pursuant to Section 5 of the aforementioned code, it is a standard requirement to maintain a minimum distance of one hundred fifty (150) feet from the nearest point on the outside wall of a dwelling on a non-participating property.
5. Declarant hereby waives the minimum setback requirement of one hundred fifty (150) feet as outlined in Section 5 of the DeKalb County Zoning Code for the installation and operation of sustainable energy systems on the Project Parcel.
6. By signing this declaration, Declarant understands and accepts any associated risks or consequences resulting from the reduction or elimination of the setback requirement, including but not limited to impacts on neighboring properties, aesthetics, and safety considerations.
7. This waiver is granted voluntarily and without any coercion or undue influence from any party. Declarant affirms that they have full authority to grant this waiver as the legal owner of the Nonparticipating Residence.

Declarant hereby states that the above is true and correct to the best of his or her knowledge and belief.

[Signature Page Follows]

FURTHER AFFIANT SAYETH NOT

Dwayne Williams

Printed Name:

April 3, 2024

STATE OF ILLINOIS §

COUNTY OF DEKALB §

SUBSCRIBED TO AND SWORN TO BEFORE ME, on this the 3rd day of April 2024, by Natalie Baird

Natalie H. Baird

Notary Public, State of Illinois

"OFFICIAL SEAL"
NATALIE H BAIRD
Notary Public, State of Illinois
My Commission Expires 06-15-2026

April 2, 2024

Derek Hiland, Director
DeKalb County Community Development
110 E. Sycamore Street
Sycamore, IL 60178

RE: Special Use Permit for Shenandoah Solar
Proposed Ground-Mounted Solar Farm
Somonauk Road / Hinckley, IL 60520

Dear Mr. Hiland, Zoning Hearing Officers, Members of the Planning & Zoning Committee, and Members of the County Board:

On behalf of Shenandoah Solar, LLC please find enclosed and below our completed project narrative, application fee, and supporting documents as required for a Special Use Permit application. The transmittal page can be used as a table of contents for all of the submitted application materials.

PROJECT NARRATIVE

Shenandoah Solar, LLC is requesting a Special Use Permit to allow for development of an approximately 47.1-acre Commercial Solar Energy Systems (CSES) facility on an existing farmland parcel comprised of approximately 95.733 total acres, located on the West side of Somonauk Road halfway between the intersection of Somonauk Road/Shabbona Grove Road and Somonauk Road/Chicago Road. The Project has been designed in compliance with the revised DeKalb County Solar Ordinance as well as all applicable State and Local Laws.

The proposed project would be capable of delivering up to 5,000 kW of Alternating Current (AC) into the electrical power grid.

The PV panels proposed for this project are single-axis tracking panels. The potential equipment manufacturer for the panels is Array Technologies and the model Array DuraTrack. These Panels would be placed on a racking system that is pile driven into the ground surface. The solar panels will be directly interconnected to, and provide energy to, Commonwealth Edison's local electric distribution grid via an overhead electrical service. Prior to utility interconnection, estimated 10,000 kW direct current (DC) electrical power generated by the solar panels will be transformed to AC power and modified as necessary to connect to Commonwealth Edison's electrical power supply.

The project would also include an equipment pad, a gravel access road, a pollinator soil seed, and it will be surrounded by a fixed knot Ag Style security fence. The project will supply power to the existing Sandwich substation near 3720 Somonauk Road. The project is not proposing installing a new substation.

BACKGROUND

Ironwood Renewables, LLC (Ironwood) was founded in 2015 with the vision of creating clean energy throughout the United States. The Ironwood team is comprised of energy industry veterans with decades of experience in project development and working with local, state and federal government agencies and stakeholders. Ironwood has developed hundreds of megawatts of community and utility-scale projects across the country. Our ability to identify market opportunities, execute quickly and efficiently, and focus on the unique needs of each individual project, is the basis to Ironwood's success and produces quality results.

PROJECT DETAILS

I. Project Components

- Solar modules (i.e., panels) are mounted on racking that slowly rotates and tracks the sun.
- The solar modules are treated with anti-reflective coating that demonstrate less glare than windows and water.
- Racking is mounted on posts set in the ground. Concrete foundations are not anticipated.
- The system will be remotely monitored.
- Electrical cables will be installed underground for the entire project with exception of any overhead utility poles necessary to interconnect with the ComEd grid along Somonauk Road. These proposed poles will be located per the plan, immediately adjacent to the Somonauk Road right-of-way.
- Perimeter security fencing 8 ft.
- Location of proposed structures is in compliance with County setback requirements.
- Existing drainage patterns will be maintained throughout the site.
- Limited area of gravel driveway for site access and maintenance.
- The inverter and transformer with be located on a concrete equipment pad.
- Disturbed areas will be re-vegetated with a low-mow native seed mix.
- There will be no lighting associated with this project.

II. Construction

- Estimated approximately 40 jobs will be created during construction.
- Most jobs will be local, but some may be brought in if the skill set required is not available.
- Typical jobs created include construction jobs - i.e., equipment operators, electricians, fence installers, laborers, and construction managers.
- Anticipated construction starting Q4 of 2024, depending on a number of factors.
- Duration of construction is typically 2 to 3 months.
- Construction traffic will typically be standard semi-tractor trailers – oversized loads are not anticipated.

- At the start of construction, there may be a half dozen deliveries a day and will then taper off to 1 to 2 delivery trucks per day.
- There will be an estimated 4 to 6 site visits per year for maintenance and inspection.
- There will be approximately 20 to 30 employees at a time during construction.
- A drain tile study has been completed and drain tiles will be avoided, if possible. If tiles are in conflict with the solar system, they will be repaired, re-routed, or replaced during construction.
- Should drain tiles be inadvertently damaged during construction, the tiles will be replaced and upgraded to repair such damages. Please see included in the application a letter from Huddleston McBride and the drain tile survey on page C-04.1 of the Site Plan.

On behalf of Shenandoah Solar, LLC, we thank you in advance for your consideration of our request for approval. We look forward to the review of our submittal at the next available public hearing. In the interim, please contact us with any questions regarding our submittal or if any additional information is required.

Sincerely,

Hamilton Carrier
Shenandoah Solar, LLC

STANDARD AGREEMENT FOR INTERCONNECTION OF DISTRIBUTED GENERATION FACILITIES WITH A CAPACITY LESS THAN OR EQUAL TO 10 MVA

This agreement (together with all attachments, the "Agreement") is made and entered into this 6th day of January, 2023, by and between Shenandoah Solar LLC ("interconnection customer"), as a Limited Liability Company organized and existing under the laws of the State of Illinois and Commonwealth Edison Company, ("Electric Distribution Company" or "EDC"), a corporation existing under the laws of the State of Illinois. Interconnection customer and EDC each may be referred to as a "Party", or collectively as the "Parties".

Recitals:

Whereas, interconnection customer is proposing to install or direct the installation of a distributed generation facility or is proposing a generating capacity addition to an existing distributed generation facility, consistent with the interconnection request application form completed by interconnection customer on 5/26/2022; and

Whereas, the interconnection customer will operate and maintain, or cause the operation and maintenance of, the distributed generation facility; and

Whereas, interconnection customer desires to interconnect the distributed generation facility with EDC's electric distribution system.

Now, therefore, in consideration of the premises and mutual covenants set forth in this Agreement, and other good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, the Parties covenant and agree as follows:

Article 1. Scope and Limitations of Agreement

1.1 This Agreement shall be used for all approved interconnection requests for distributed generation facilities that fall under Levels 2, 3 and 4 according to the procedures set forth in Part 466 of the Commission's rules (83 Ill. Adm. Code 466) (referred to as the Illinois Distributed Generation Interconnection Standard).

1.2 This Agreement governs the terms and conditions under which the distributed generation facility will interconnect to, and operate in parallel with, the EDC's electric distribution system.

1.3 This Agreement does not constitute an agreement to purchase or deliver the interconnection customer's power.

Article 11. Signatures

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

Project Name: Shenandoah Solar

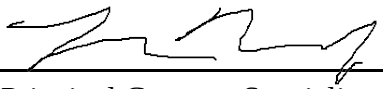
For the Interconnection Customer:

Name: George T. Hovis, Jr.

Title: George T. Hovis, Jr.

Date: 12/30/2022

For EDC:

Name: 

Title: Principal Contract Specialis

Date: 01/06/2023

SHENANDOAH SOLAR, LLC
EMERGENCY RESPONSE AND COMMUNICATIONS PLAN

The purpose of this Emergency Response and Communications Plan ("ERCP") is to establish the planned response actions that will be taken by personnel at the Shenandoah Solar facility, in the event of an emergency situation. These actions are intended to minimize health risks to plant personnel and people in the surrounding community, as well as minimize adverse impacts to the environment.

The project will be accessed off Somonank Road via an access road. There will be an 8' high double swing locked gate 80' from Somonank Road. The Fire Department will be provided with that code, if they do not already have it, or the project will provide a Knox Box at this location (or FD approved equal) for emergency access. The access drive(s) for the project will have a finished gravel surface which will be 20' wide. An emergency contact sign shall be placed on the gate which identifies the project owner and provides a 24-hour emergency contact number. The project is minimizing the gravel drives to the extent practical to reduce stormwater impacts from impervious surfaces. The access will mostly go to the larger project equipment. These locations are also the areas of concern for emergency services. The project maximized the turning radius of the access drives to the extent practical for emergency service vehicles.

Shenandoah Solar, LLC will continue to coordinate with all necessary Federal, State, and County agencies and other entities throughout the planning process for Shenandoah Solar, LLC to assure adequate levels of safety and protection. While solar energy is among the cleanest and least hazardous of energy sources, there are four significant hazards during installation and maintenance: Lifting, Trips & Falls, Electrical, and Ladders.

Shenandoah Solar, LLC is committed to protecting the community, personal property, wildlife, and the environment in adherence to all applicable local, state, and federal laws and regulations.

SHENANDOAH SOLAR, LLC
OPERATIONS AND MAINTENANCE PLAN

OPERATIONS

The Project will be inspected by qualified electrical engineers before it is energized and upon commissioning. Due to the passive nature of solar, operations activities at the site will be minimal. The Project and associated electrical equipment will be operated with remote monitoring supervisory control and data acquisition equipment, and the equipment will undergo routine maintenance as needed. Physical personal operations will be limited to maintenance which is outlined below.

MAINTENANCE

The project is an electrical generating plant and will therefore require maintenance. The site will be monitored and controlled remotely. Electrical problems, alterations, and fixes which will occur, will not be on a regimented schedule, these will be on a need-based time interval. To provide an average, the site may be visited 2-4 times a quarter for electrical maintenance. Some items and procedures to be reviewed, replaced, and repaired during electrical work are outlined below.

- Modules are free of damage to the frame, cracked front glass, cracked back sheet, signs of delamination, signs of water ingress or damage termination box.
- Modules are properly secured w/ mounting system and all hardware is properly tightened and secure.
- Thermal inspection of the modules is free of anomalies.
- Modules are free of any vegetation contacting the back sheet or vegetation growing up through the array.
- Module soiling level.
- Thermal inspection of DC connectors is free of anomalies.
- DC wiring is properly routed and secured, add zip ties as needed.
- Conduits are free of damage, properly supported and weather heads are in place and are properly sealing the conduit from water ingress.
- Using a meter, confirm continuity between the module (sample) and the racking then confirmed continuity between racking and grounding wire. Grounding connections are firmly attached, properly secured, free of corrosion, or other damage.
- Array racking is free of paint damage, corrosion, or any other physical damage.
- Racking fasteners are properly torqued, free of corrosion, or other damage.
- Inverter inspections. Inverter mechanical systems and functionality.

The project area will be maintained as a meadow. We expect in a typical growing season the site will only be mowed 3-4 times per year. The project may have vegetation screening proposed as part of the project. It would be in the scope of the project landscaper to provide upkeep and maintenance to those screening plants, if needed.

The Project will be protected by fencing and will be locked. Contractors, emergency personnel, and the Utility Company will be given the key or code to access the facility.

In concurrence with DeKalb County Code, the facility Owner will provide documentation within 30 days of request to the DeKalb County Community Development Department that proves the solar energy facility is still in use. In addition, upon request from the DeKalb Community Development Department, the Owner or Operator shall submit, within 14 days of the request, a current O&M report.

Illinois Department of
Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

JB Pritzker, Governor
Colleen Callahan, Director

November 02, 2022

Austin Aigner
Austin Aigner
1250 E. Diehl Rd
Suite 300
Naperville, IL 60563

RE: Shenandoah Solar
Project Number(s): 2306010
County: DeKalb

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

The Department encourages all new and existing solar energy facilities to participate in the Pollinator Scorecard Program. More information can be found here: https://www2.illinois.gov/dnr/conservation/pollinatorscorecard/pages/default.aspx

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Kyle Burkwald
Division of Ecosystems and Environment
217-785-5500

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois Department of **Natural Resources**

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

JB Pritzker, Governor
Colleen Callahan, Director

DeKalb County PLEASE REFER TO: SHPO LOG #017110322
Hinckley
6353 Somonauk Road, Section:34-Township:38N-Range:5E
Atwell-22004992, IEPA
*New construction, solar development - Shenandoah Solar

December 2, 2022

SURVEY REQUEST

Michael B. Keith
Atwell, LLC
1250 East Diehl Road, Suite 300
Naperville, IL 60563

Dear Mr. Keith:

The Illinois State Historic Preservation Office is required by the Illinois State Agency Historic Resources Preservation Act (20 ILCS 3420, as amended, 17 IAC 4180) to review all state funded, permitted or licensed undertakings for their effect on cultural resources. We have received information indicating that the referenced project will, under the state law cited above, require comments from our office and our comments follow. Should you have any contrary information, please contact our office at the number below.

According to the information provided to us concerning your proposed project, apparently there is no federal involvement in your project. However, please note that the state law is less restrictive than the federal cultural resource laws concerning archaeology, therefore if your project will use federal loans or grants, need federal agency permits or federal property then your project must be reviewed by us under a slightly different procedure under the National Historic Preservation Act of 1966, as amended. Please notify us immediately if such is the case.

The project area has a high probability of containing significant prehistoric/historic archaeological resources. Accordingly, a Phase I archaeological reconnaissance survey to locate, identify, and record all archaeological resources within the project area will be required, in addition to the survey we will also need clear photographs of all structures in, or adjacent to, the current project area. This decision is based upon our understanding that there has not been any large scale disturbance of the ground surface (excluding agricultural activities) or major construction activity within the project area which would have destroyed existing cultural resources prior to your project. If the area has been disturbed, please contact our office with the appropriate written and/or photographic evidence. The area(s) that need(s) to be surveyed (within the zone that needs to be surveyed) include(s) all area(s) that will be developed as a result of the issuance of the state agency permit(s) or the granting of the state funds or loan guarantees that have prompted this review. Enclosed you will find an attachment briefly describing Phase I surveys and listing archaeological contracting services. A COPY OF OUR LETTER WITH THE SHPO LOG NUMBER SHOULD BE PROVIDED TO THE SELECTED PROFESSIONAL ARCHAEOLOGICAL CONTRACTOR TO ENSURE THAT THE SURVEY RESULTS ARE CONNECTED TO YOUR PROJECT PAPERWORK.

If you have further questions, please contact Jeff Kruchten, Chief Archaeologist at 217/785-1279 or Jeffery.kruchten@illinois.gov.

Sincerely,

Carey L. Mayer

Carey L. Mayer , AIA
Deputy State Historic Preservation Officer

Enclosure

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

College of Liberal Arts & Sciences
Department of Anthropology
Public Service Archaeology & Architecture Program
1707 S. Orchard St.
Urbana, IL 61801

27 March 2024

Mr. Hamilton Carrier
Ironwood Renewables
910 Harding Street
Lafayette, LA 70503

Dear Mr. Carrier:

Thank you for your interest in a proposal from the Public Service Archaeology & Architecture Program for a 65.0-acre portion of a property located at 6353 Somonauk Road near Hinckley, Illinois. This proposal addresses both the archaeological and architectural survey needs. Enclosed you will find a copy of our proposal and budget to complete the investigations.

Based on the information provided, the project area is being conducted to meet State of Illinois standards for archaeological and architectural surveys for solar facilities and the study area is largely cultivated fields. With this understanding, the project area will primarily be examined by an archaeological pedestrian reconnaissance and a photographic architectural survey. Timing of the work will be weather and land access dependent. The actual field work can be completed in one day by a crew of four.

Should you elect to have the University of Illinois conduct the project and I will serve as the Project Director. To establish a contract, I will need a Standard Service Contract signed (attached).

Once again, thank you for considering our services and feel free to call me with questions at either (217) 333-1635 or (847) 287-9045.

Sincerely,

Kevin McGowan

Kevin P. McGowan

E: Proposal with Budget and Standard Service Contract.

Archaeological Survey Proposal-Shenandoah Solar

McGowan, Kevin Patrick <kpmcgowa@illinois.edu> Wed, Mar 27, 2024 at 2:32 PM
To: Hamilton Carrier <hcarrier@ironwoodenergy.com>
Cc: Adrian Ortlieb <adrian.ortlieb@ironwoodenergy.com>, Claire Trahan <ctrahan@ironwoodenergy.com>, Keith Morel <kmorel@ironwoodenergy.com>, Tommy Hovis <Thovis@ironwoodenergy.com>

Hamilton:

Thanks for the clarification. Here is our proposal and agreement document. This covers both the archaeology and the 0.25-mile architecture survey. The architecture survey was not mentioned in the December 2022 letter from SHPO but it is the current standard. The timeline is 4 weeks from notice to proceed to report submission. Let me know if there are any questions.

[Quoted text hidden]

3 attachments

- **24-076 Ironwood Prop Crv Ltr.pdf**
  116K
- **24-076 Ironwood Proposal.pdf**
  125K
- **24-076 Agreement - Unsigned.pdf**
  275K

United States Department of the Interior

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

In Reply Refer To: 03/25/2024 19:33:45 UTC
Project code: 2024-0067777
Project Name: Shenandoah Solar

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Shenandoah Solar'

Dear Hamilton Carrier:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on March 25, 2024, for 'Shenandoah Solar' (here forward, Project). This project has been assigned Project Code 2024-0067777 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Eastern Prairie Fringed Orchid *Platanthera leucophaea* Threatened
- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Illinois-Iowa Ecological Services Field Office and reference Project Code 2024-0067777 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Shenandoah Solar

2. Description

The following description was provided for the project 'Shenandoah Solar':

> 5 MW- 40 Acre Community Solar Farm

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.7249805,-88.65420978139792,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Hamilton Carrier
Address: 910 Harding Street
City: Lafayette
State: LA
Zip: 70503
Email hcarrier@ironwoodenergy.com
Phone: 3373447381

SHENANDOAH SOLAR, LLC
DECOMMISSIONING PLAN

Shenandoah Solar, LLC has prepared this Decommissioning Plan (the "Plan") for its proposed 47.1-acre development for a 5 mW (AC) ground-mounted solar farm (the "Facility") to be constructed off Somonauk Road, located in DeKalb County, IL (PINs 15-33-400-004 & 15-34-300-005). The Plan describes the process for decommissioning the Facility in accordance with 55 ILCS 5/5-12020. During construction, portions of the site may be compacted, excavated, and graded for optimal installation and operation. This decommissioning plan outlines the steps that will be taken to remove the solar system and its associated appurtenances from the project site and return the parcel to conditions similar to pre-installation.

This Decommissioning Plan will be updated as necessary in the future to ensure that changes in technology and site restoration methods are taken into consideration.

DECOMMISSIONING PLAN

Shenandoah Solar, LLC is responsible for decommissioning activities, as outlined in the conditions of permit approval by the local regulatory agency. At the end of its operational life or if the system is abandoned or upon cessation of activity, the entire system will be disconnected from the grid, disassembled, and removed, and all materials will either be recycled or disposed of appropriately. Any necessary permits will be obtained from the County prior to decommissioning activity.

ABANDONMENT DEFINITIONS

Per the Standard Agricultural Impact Mitigation Agreement (AIMA) executed between Shenandoah Solar, LLC and the Illinois Department of Agriculture, the Project shall be presumed to have reached the end of its useful life if deconstruction (decommissioning) has not been completed within 12 months after the Project reaches the end of its useful life. Per the AIMA, the Project is presumed to have reached the end of its useful life if the Commercial Solar Energy Facility Owner fails for a period of six consecutive months to pay the Landowner amounts owed in accordance with an Underlying Agreement.

Timing Requirements

Per the AIMA, the Commercial Solar Energy Facility Owner must complete deconstruction (decommissioning) of the Project within 12 months after the end of the useful life of the Project.

Equipment and Material Removal

Shenandoah Solar, LLC will remove all above-ground equipment (solar module panels, brackets, support structures, inverters, transformers, concrete pads for equipment) and underground equipment (buried electrical wiring and conduits, concrete foundations), structures, and fencing. All equipment and materials will be evaluated to determine the appropriate facility for salvage, recycling, or disposal. Access roads may remain intact at the landowner's request.

PV Modules
The PV modules will be disconnected from the inverters and removed from the steel racking system. The PV modules are made of silicon, glass, and aluminum and are not considered hazardous waste. PV modules will be recycled or resold on the market if determined to still be usable.

Associated Electrical Appurtenances
All associated electrical appurtenances (i.e. switchboards, transformers, meters) will be removed from their respective concrete pads or steel frames and disposed of at an approved facility.

Electric Wiring
All electric conductors made of copper and aluminum can be recycled. Above ground DC wires will be removed between the modules and inverters. Underground AC conductors will be pulled and removed. Above ground AC conductors back to the utility point of interconnection will be removed from the poles by the utility.

Racking Equipment and Fencing
Metal fencing and racking equipment will be removed and recycled at an appropriate facility. All driven posts will be removed.

Concrete Pad
Concrete pads will be excavated to a depth of two feet below grade, or the depth to retrieve all rebar and foundation bolts. Clean concrete will be crushed and removed from the site. The remaining excavation will be filled with clean material, of similar character to surrounding soils. The soil and surface grade will be restored, and revegetated with native seed mixes, excluding invasive species.

Access Road
If allowable by the landowner, the access road will remain in place for future use on the site. If required to be removed, gravel roads will be stripped of stone and any geotextile or underlying materials. Clean stone will be reused if possible, or otherwise disposed of at a proper facility, along with geotextile materials. Any asphalt roads will be broken up and similarly disposed of. If the underlying soils are compacted, these will be loosened, stabilized. The soil and surface grade will be restored, and revegetated with native seed mixes, excluding invasive species.

Disposal and Recycling of Materials
All hazardous wastes will be disposed of in accordance with laws in effect at the time decommissioning is performed. Any solid waste generated during system dismantling or demolition will be disposed of as necessary to comply with the solid waste regulations then in place. All waste will be removed from the site.

Site Restoration
The site will be restored to a state consistent with its preconstruction condition. Any necessary construction stormwater permits will be obtained prior to decommissioning, and erosion and

sediment control best management practices will be installed on site, as needed. After equipment is removed from site, soils will be de-compacted, and excavations will be filled with materials similar to soils on site. Any disturbed areas will be reseeded and erosion and sediment control BMPs will remain in place until the site is stabilized and then removed upon confirmed stabilization.

The soil and surface grade will be restored, and revegetated with native seed mixes, excluding invasive species.

Decommissioning will follow guidelines as outlined in the AIMA. The Project's AIMA is attached as Exhibit B.

DECOMMISSIONING COST ESTIMATE AND SURETY PROPOSAL

Consistent with the approach it has taken in other communities, Shenandoah Solar, LLC proposes to provide a decommissioning surety fund to be held by DeKalb County and co-owned with Shenandoah Solar, LLC. The fund will provide the requisite capital for solar project decommissioning in the unlikely event that Shenandoah Solar, LLC is unable to meet its contractual obligations for solar project removal and restoration.

The Decommissioning Engineer's Opinion of Probable Cost (OPC) attached herein as Exhibit A will be used to determine the amount of the Surety. Prior to construction, Shenandoah Solar, LLC shall obtain a bond acceptable to the County to be held by the DeKalb County Community Development Department in the amount of one hundred twenty percent (120%) of the estimate. Based on the Engineer's OPC, the value of the surety is $403,773.00 The value of the bond does not include a reduction in salvage value of certain materials.

Once the decommissioning is complete, and after the County's inspection that the work has been done in according with the Decommissioning Plan, the portion of the surety not needed to remediate shall be returned to the applicant/lessee. If the project is decommissioned or abandoned, and the amount available is insufficient to remediate, Shenandoah Solar, LLC or successors shall be liable for the deficiency in excess of the bond amount.

Exhibit A: Decommissioning Cost Estimate

Atwell, L.L.C.
1250 East Diehl Road, Suite 300
(630) 577-0800

Project: IL Shenandoah Solar, LLC
Location: Somonauk Road
DeKalb County, Illinois
Date: 4/2/2024

Decommissioning Engineer's Opinion of Probable Cost for IL Shenandoah Solar, LLC

	Estimated Quantity	Unit	Unit Cost	Total	Notes
Erosion Control/Contractor Fees					
Mobilization	1	LUMP SUM	$ 5,000.00	$ 5,000.00	
Electrical Disconnect	1	EACH	$ 800.00	$ 800.00	
Permitting (NPDES)	1	LUMP SUM	$ 750.00	$ 750.00	
Permitting (DeKalb County Site Dev. Permit)	1	LUMP SUM	$ 1,000.00	$ 1,000.00	
Wattle Filter Sock	2,362	LF	$ 6.00	$ 14,170.92	
Ripping, grading, prepping disturbed area	1.0	ACRES	$ 1,500.00	$ 1,500.00	Equipment pads and gravel drive areas
Seeding, fertilzer and mulching	1.0	ACRES	$ 5,000.00	$ 5,000.00	Equipment pads and gravel drive areas
Sub-Total				$ 28,220.92	
Site Demolition					
Mobilization	1	LUMP SUM	$ 8,000.00	$ 8,000.00	
Remove Existing Fence	6,662	LF	$ 3.85	$ 25,648.32	
Remove and Haul off Existing Gravel Entrance (12" depth)	3,046	CY	$ 15.00	$ 45,690.00	
Haul on fill material for removal of Gravel Entrance	3,046	CY	$ 12.00	$ 36,552.00	
Sub-Total				$ 115,890.32	
Racking and Module Removal					
Mobilization	1	LUMP SUM	$ 8,000.00	$ 8,000.00	
Pile Removal	1,703	EACH	$ 6.00	$ 10,218.00	Salvage is reflected in table line below.
Table Removal	131	EACH	$ 120.00	$ 15,720.00	Assume it takes 4 hours and 2 laborers to remove a table. Salvage is for all module racking.
PV Module Removal	21,540	EACH	$ 1.00	$ 21,540.00	Assume it takes 4 minutes and 1 laborer to remove a module. They will be removing 4 bolts/module, stacking those modules on a pallet which will then be lifted and dropped into a dump truck.
Transportation to recycling center	5	EACH	$ 516.00	$ 2,580.00	This includes 20 T vehicle rental, 8 round trips to center in Ohio, fuel, and driver.
PV Module Haul Off	700.0	TON	$ 43.20	$ 30,240.00	Each module is 65 pounds.
Sub-Total				$ 88,298.00	
Wiring Removal					
Mobilization	1	LUMP SUM	$ 8,000.00	$ 8,000.00	
Overhead Wire Removal	150	LF	$ 0.80	$ 120.00	
Utility Pole Removal	1	EACH	$ 750.00	$ 750.00	
DC Collector System Cables Removal	2,733	LF	$ 0.40	$ 1,093.20	This is above ground wiring, we assume it takes on average about 15 seconds to remove and place into a truck on LF of wire. This involves cutting the wire, rigging it and dropping it into a truck.
Underground AC Collector System Cables Removal	2,735	LF	$ 5.00	$ 13,675.00	Assume an equipment operator and laborer can remove conduit and wire at a cost of $5/LF. This includes pulling cable out of ground, with associated conduit, cutting and placing in truck.
Communication Cable Removal	200	LF	$ 0.40	$ 80.00	Included in above items
Combiner Box Removal	13	EACH	$ 60.00	$ 780.00	
Sub-Total				$ 24,498.20	
Power Conditioning Equipment Removal					
Mobilization	1	LUMP SUM	$ 8,000.00	$ 8,000.00	
PCU Station (inverters, etc.)	2	EACH	$ 400.00	$ 800.00	This can be completed by snipping all of the leads coming into and out of the inverter, then disconnecting the inverter from the unistrut rack and dumping it in a truck. The unistrut will be pulled with a backhoe from the ground and dumped in the truck. This will take an equipment operator, a truck driver, and a laborer approximately an hour to complete.
Scada Equipment	1	EACH	$ 280.00	$ 280.00	Assume it takes 1 electrician 4 hours to remove SCADA
Battery Energy Storage System (BESS) Removal/Haul Off	1	EACH	$ 5,000.00	$ 5,000.00	
Transformer	1	EACH	$ 1,800.00	$ 1,800.00	
Sub-Total				$ 15,880.00	

Atwell, L.L.C.
1250 East Diehl Road, Suite 300
(630) 577-0800

Project: IL Shenandoah Solar, LLC
Location: Somonauk Road
DeKalb County, Illinois
Date: 4/2/2024

Decommissioning Engineer's Opinion of Probable Cost for IL Shenandoah Solar, LLC

	Estimated Quantity	Unit	Unit Cost	Total	Notes
Equipment Pad Removal					
Mobilization	1	LUMP SUM	$ 8,000.00	$ 8,000.00	
Remove Pad	2	EACH	$ 500.00	$ 1,000.00	
Sub-Total				$ 9,000.00	
Transportation					
Removal of material to disposal facility	1	EACH	$ 20,000.00	$ 20,000.00	
Sub-Total				$ 20,000.00	
DECOMMISSIONING TOTAL (Present Value)				$ 301,788.00	
DECOMMISSIONING TOTAL (@2.2% inflation over 5 Years)				**$ 336,477.82**	
DECOMMISSIONING SURETY (TOTAL X 120%)				**$ 403,773.00**	

Assumptions:
1. Cost Estimate does not include any costs associated with the management of contaminated soils or groundwater.
2. Cost Estimate is based on the **Special Use Plans** prepared by Atwell, LLC dated **03-27-2024**.
3. Refer to Decommissioning Plan for futher information.
4. Seeding costs may not be necessary if the landlord intends to return the agricultural land to crop prodcution immediately following the decommissioning effort.

Note: This Engineer's Opinion of Probable Cost is made on the basis of Engineer's experience and qualifications using estimated quantities and represents Engineer's best judgment as an experienced and qualified professional Engineer generally familiar with the construction industry. However, since Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, or over quantities of work actually performed, Engineer cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from Opinions of Probable Construction Cost prepared by Engineer. This Opinion of Probable Construction Cost is limited to those items stated herein.

Exhibit B: Shenandoah Solar, LLC Standard Agricultural Impact Mitigation Agreement (AIMA)

STANDARD AGRICULTURAL IMPACT MITIGATION AGREEMENT
between
Shenandoah Solar, LLC

and the
ILLINOIS DEPARTMENT OF AGRICULTURE
Pertaining to the Construction of a Commercial Solar Energy Facility
in
DeKalb County, Illinois

Pursuant to the Renewable Energy Facilities Agricultural Impact Mitigation Act (505 ILCS 147), the following standards and policies are required by the Illinois Department of Agriculture (IDOA) to help preserve the integrity of any Agricultural Land that is impacted by the Construction and Deconstruction of a Commercial Solar Energy Facility. They were developed with the cooperation of agricultural agencies, organizations, Landowners, Tenants, drainage contractors, and solar energy companies to comprise this Agricultural Impact Mitigation Agreement (AIMA).

Shenandoah Solar, LLC, hereafter referred to as Commercial Solar Energy Facility Owner, or simply as Facility Owner, plans to develop and/or operate a 5MW Commercial Solar Energy Facility in DeKalb County [GPS Coordinates: 41.724207, -88.655474], which will consist of up to 88 acres that will be covered by solar facility related components, such as solar panel arrays, racking systems, access roads, an onsite underground collection system, inverters and transformers and any affiliated electric transmission lines. This AIMA is made and entered between the Facility Owner and the IDOA.

If Construction does not commence within four years after this AIMA has been fully executed, this AIMA shall be revised, with the Facility Owner's input, to reflect the IDOA's most current Solar Farm Construction and Deconstruction Standards and Policies. This AIMA, and any updated AIMA, shall be filed with the County Board by the Facility Owner prior to the commencement of Construction.

The below prescribed standards and policies are applicable to Construction and Deconstruction activities occurring partially or wholly on privately owned agricultural land.

Conditions of the AIMA

The mitigative actions specified in this AIMA shall be subject to the following conditions:

A. All Construction or Deconstruction activities may be subject to County or other local requirements. However, the specifications outlined in this AIMA shall be the minimum standards applied to all Construction or Deconstruction activities. IDOA may utilize any legal means to enforce this AIMA.

B. Except for Section 17. B. through F., all actions set forth in this AIMA are subject to modification through negotiation by Landowners and the Facility Owner, provided such changes are negotiated in advance of the respective Construction or Deconstruction activities.

C. The Facility Owner may negotiate with Landowners to carry out the actions that Landowners wish to perform themselves. In such instances, the Facility Owner shall offer Landowners the area commercial rate for their machinery and labor costs.

D. All provisions of this AIMA shall apply to associated future Construction, maintenance, repairs, and Deconstruction of the Facility referenced by this AIMA.

E. The Facility Owner shall keep the Landowners and Tenants informed of the Facility's Construction and Deconstruction status, and other factors that may have an impact upon their farming operations.

F. The Facility Owner shall include a statement of its adherence to this AIMA in any environmental assessment and/or environmental impact statement.

G. Execution of this AIMA shall be made a condition of any Conditional/Special Use Permit. Not less than 30 days prior to the commencement of Construction, a copy of this AIMA shall be provided by the Facility Owner to each Landowner that is party to an Underlying Agreement. In addition, this AIMA shall be incorporated into each Underlying Agreement.

H. The Facility Owner shall implement all actions to the extent that they do not conflict with the requirements of any applicable federal, state and local rules and regulations and other permits and approvals that are obtained by the Facility Owner for the Facility.

I. No later than 45 days prior to the Construction and/or Deconstruction of a Facility, the Facility Owner shall provide the Landowner(s) with a telephone number the Landowner can call to alert the Facility Owner should the Landowner(s) have questions or concerns with the work which is being done or has been carried out on his/her property.

J. If there is a change in ownership of the Facility, the Facility Owner assuming ownership of the Facility shall provide written notice within 90 days of ownership transfer, to the Department, the County, and to Landowners of such change. The Financial Assurance requirements and the other terms of this AIMA shall apply to the new Facility Owner.

K. The Facility Owner shall comply with all local, state and federal laws and regulations, specifically including the worker protection standards to protect workers from pesticide exposure.

L. Within 30 days of execution of this AIMA, the Facility Owner shall use Best Efforts to provide the IDOA with a list of all Landowners that are party to an Underlying Agreement and known Tenants of said Landowner who may be affected by the Facility. As the list of Landowners and Tenants is updated, the Facility Owner shall notify the IDOA of any additions or deletions.

M. If any provision of this AIMA is held to be unenforceable, no other provision shall be affected by that holding, and the remainder of the AIMA shall be interpreted as if it did not contain the unenforceable provision.

Definitions

Abandonment	When Deconstruction has not been completed within 12 months after the Commercial Solar Energy Facility reaches the end of its useful life. For purposes of this definition, a Commercial Solar Energy Facility shall be presumed to have reached the end of its useful life if the Commercial Solar Energy Facility Owner fails, for a period of 6 consecutive months, to pay the Landowner amounts owed in accordance with an Underlying Agreement.

Aboveground Cable	Electrical power lines installed above ground surface to be utilized for conveyance of power from the solar panels to the solar facility inverter and/or point of interconnection to utility grid or customer electric meter.
Agricultural Impact Mitigation Agreement (AIMA)	The Agreement between the Facility Owner and the Illinois Department of Agriculture (IDOA) described herein.
Agricultural Land	Land used for Cropland, hayland, pastureland, managed woodlands, truck gardens, farmsteads, commercial ag-related facilities, feedlots, livestock confinement systems, land on which farm buildings are located, and land in government conservation programs used for purposes as set forth above.
Best Efforts	Diligent, good faith, and commercially reasonable efforts to achieve a given objective or obligation.
Commercial Operation Date	The calendar date of which the Facility Owner notifies the Landowner, County, and IDOA in writing that commercial operation of the facility has commenced. If the Facility Owner fails to provide such notifications, the Commercial Operation Date shall be the execution date of this AIMA plus 6 months.
Commercial Solar Energy Facility (Facility)	A solar energy conversion facility equal to or greater than 500 kilowatts in total nameplate capacity, including a solar energy conversion facility seeking an extension of a permit to construct granted by a county or municipality before June 29, 2018. "Commercial solar energy facility" does not include a solar energy conversion facility: (1) for which a permit to construct has been issued before June 29, 2018; (2) that is located on land owned by the commercial solar energy facility owner; (3) that was constructed before June 29, 2018; or (4) that is located on the customer side of the customer's electric meter and is primarily used to offset that customer's electricity load and is limited in nameplate capacity to less than or equal to 2,000 kilowatts.
Commercial Solar Energy Facility Owner deemed (Facility Owner)	A person or entity that owns a commercial solar energy facility. A Commercial Solar Energy Facility Owner is not nor shall it be to be a public utility as defined in the Public Utilities Act.
County	The County or Counties where the Commercial Solar Energy Facility is located.
Construction	The installation, preparation for installation and/or repair of a Facility.
Cropland	Land used for growing row crops, small grains or hay; includes land which was formerly used as cropland, but is currently enrolled in a government conservation program; also includes pastureland that is classified as Prime Farmland.

Deconstruction	The removal of a Facility from the property of a Landowner and the restoration of that property as provided in the AIMA.
Deconstruction Plan	A plan prepared by a Professional Engineer, at the Facility's expense, that includes: (1) the estimated Deconstruction cost, in current dollars at the time of filing, for the Facility, considering among other things: i. the number of solar panels, racking, and related facilities involved; ii. the original Construction costs of the Facility; iii. the size and capacity, in megawatts of the Facility; iv. the salvage value of the facilities (if all interests in salvage value are subordinate to that of the Financial Assurance holder if abandonment occurs); v. the Construction method and techniques for the Facility and for other similar facilities; and (2) a comprehensive detailed description of how the Facility Owner plans to pay for the Deconstruction of the Facility.
Department	The Illinois Department of Agriculture (IDOA).
Financial Assurance	A reclamation or surety bond or other commercially available financial assurance that is acceptable to the County, with the County or Landowner as beneficiary.
Landowner	Any person with an ownership interest in property that is used for agricultural purposes and that is party to an Underlying Agreement.
Prime Farmland	Agricultural Land comprised of soils that are defined by the USDA Natural Resources Conservation Service (NRCS) as "Prime Farmland" (generally considered to be the most productive soils with the least input of nutrients and management).
Professional Engineer	An engineer licensed to practice engineering in the State of Illinois.
Soil and Water Conservation District (SWCD)	A unit of local government that provides technical and financial assistance to eligible Landowners for the conservation of soil and water resources.
Tenant	Any person, apart from the Facility Owner, lawfully residing or leasing/renting land that is subject to an Underlying Agreement.
Topsoil	The uppermost layer of the soil that has the darkest color or the highest content of organic matter; more specifically, it is defined as the "A" horizon.
Underlying Agreement	The written agreement between the Facility Owner and the Landowner(s) including, but not limited to, an easement, option, lease, or license under the terms of which another person has constructed, constructs, or intends to construct a Facility on the property of the Landowner.

Underground Cable	Electrical power lines installed below the ground surface to be utilized for conveyance of power within a Facility or from a Commercial Solar Energy Facility to the electric grid.
USDA Natural Resources Conservation Service (NRCS)	An agency of the United States Department of Agriculture that provides America's farmers with financial and technical assistance to aid with natural resources conservation.

Construction and Deconstruction Standards and Policies

1. Support Structures

A. Only single pole support structures shall be used for the Construction and operation of the Facility on Agricultural Land. Other types of support structures, such as lattice towers or H-frames, may be used on nonagricultural land.

B. Where a Facility's Aboveground Cable will be adjacent and parallel to highway and/or railroad right-of-way, but on privately owned property, the support structures shall be placed as close as reasonably practicable and allowable by the applicable County Engineer or other applicable authorities to the highway or railroad right-of-way. The only exceptions may be at jogs or weaves on the highway alignment or along highways or railroads where transmission and distribution lines are already present.

C. When it is not possible to locate Aboveground Cable next to highway or railroad right-of-way, Best Efforts shall be expended to place all support poles in such a manner to minimize their placement on Cropland (i.e., longer than normal above ground spans shall be utilized when traversing Cropland).

2. Aboveground Facilities

Locations for facilities shall be selected in a manner that is as unobtrusive as reasonably possible to ongoing agricultural activities occurring on the land that contains or is adjacent to the Facility.

3. Guy Wires and Anchors

Best Efforts shall be made to place guy wires and their anchors, if used, out of Cropland, pastureland and hayland, placing them instead along existing utilization lines and on land other than Cropland. Where this is not feasible, Best Efforts shall be made to minimize guy wire impact on Cropland. All guy wires shall be shielded with highly visible guards.

4. Underground Cabling Depth

A. Underground electrical cables located outside the perimeter of the (fence) of the solar panels shall be buried with:

1. a minimum of 5 feet of top cover where they cross Cropland.
2. a minimum of 5 feet of top cover where they cross pastureland or other non-Cropland classified as Prime Farmland.
3. a minimum of 3 feet of top cover where they cross pastureland and other Agricultural Land not classified as Prime Farmland.

4. a minimum of 3 feet of top cover where they cross wooded/brushy land.

B. Provided that the Facility Owner removes the cables during Deconstruction, underground electric cables may be installed to a minimum depth of 18 inches:

1. Within the fenced perimeter of the Facility; or

2. When buried under an access road associated with the Facility provided that the location and depth of cabling is clearly marked at the surface.

C. If Underground Cables within the fenced perimeter of the solar panels are installed to a minimum depth of 5 feet, they may remain in place after Deconstruction.

5. Topsoil Removal and Replacement

A. Any excavation shall be performed in a manner to preserve topsoil. Best Efforts shall be made to store the topsoil near the excavation site in such a manner that it will not become intermixed with subsoil materials.

B. Best Efforts shall be made to store all disturbed subsoil material near the excavation site and separate from the topsoil.

C. When backfilling an excavation site, Best Efforts shall be used to ensure the stockpiled subsoil material will be placed back into the excavation site before replacing the topsoil.

D. Refer to Section 7 for procedures pertaining to rock removal from the subsoil and topsoil.

E. Refer to Section 8 for procedures pertaining to the repair of compaction and rutting of the topsoil.

F. Best Efforts shall be performed to place the topsoil in a manner so that after settling occurs, the topsoil's original depth and contour will be restored as close as reasonably practicable. The same shall apply where excavations are made for road, stream, drainage ditch, or other crossings. In no instance shall the topsoil materials be used for any other purpose unless agreed to explicitly and in writing by the Landowner.

G. Based on the mutual agreement of the landowner and Facility Owner, excess soil material resulting from solar facility excavation shall either be removed or stored on the Landowner's property and reseeded per the applicable National Pollution Discharge Elimination System (NPDES) permit/Stormwater Pollution Prevention Plan (SWPPP). After the Facility reaches the end of its Useful Life, the excess subsoil material shall be returned to an excavation site or removed from the Landowner's property, unless otherwise agreed to by Landowner.

6. Rerouting and Permanent Repair of Agricultural Drainage Tiles

The following standards and policies shall apply to underground drainage tile line(s) directly or indirectly affected by Construction and/or Deconstruction:

A. Prior to Construction, the Facility Owner shall work with the Landowner to identify drainage tile lines traversing the property subject to the Underlying Agreement to the extent reasonably practicable. All drainage tile lines identified in this manner shall be shown on the Construction and Deconstruction Plans.

B. The location of all drainage tile lines located adjacent to or within the footprint of the Facility shall be recorded using Global Positioning Systems (GPS) technology. Within 60 days after Construction is complete, the Facility Owner shall provide the Landowner, the IDOA, and the respective County Soil and Water Conservation District (SWCD) with "as built" drawings (strip maps) showing the location of all drainage tile lines by survey station encountered in the Construction of the Facility, including any tile line repair location(s), and any underground cable installed as part of the Facility.

C. **Maintaining Surrounding Area Subsurface Drainage**

If drainage tile lines are damaged by the Facility, the Facility Owner shall repair the lines or install new drainage tile line(s) of comparable quality and cost to the original(s), and of sufficient size and appropriate slope in locations that limit direct impact from the Facility. If the damaged tile lines cause an unreasonable disruption to the drainage system, as determined by the Landowner, then such repairs shall be made promptly to ensure appropriate drainage. Any new line(s) may be located outside of, but adjacent to the perimeter of the Facility. Disrupted adjacent drainage tile lines shall be attached thereto to provide an adequate outlet for the disrupted adjacent tile lines.

D. **Re-establishing Subsurface Drainage Within Facility Footprint**

Following Deconstruction and using Best Efforts, if underground drainage tile lines were present within the footprint of the facility and were severed or otherwise damaged during original Construction, facility operation, and/or facility Deconstruction, the Facility Owner shall repair existing drainage tiles or install new drainage tile lines of comparable quality and cost to the original, within the footprint of the Facility with sufficient capacity to restore the underground drainage capacity that existed within the footprint of the Facility prior to Construction. Such installation shall be completed within 12 months after the end of the useful life of the Facility and shall be compliant with Figures 1 and 2 to this Agreement or based on prudent industry standards if agreed to by Landowner.

E. If there is any dispute between the Landowner and the Facility Owner on the method of permanent drainage tile line repair, the appropriate County SWCD's opinion shall be considered by the Facility Owner and the Landowner.

F. During Deconstruction, all additional permanent drainage tile line repairs beyond those included above in Section 6.D. must be made within 30 days of identification or notification of the damage, weather and soil conditions permitting. At other times, such repairs must be made at a time mutually agreed upon by the Facility Owner and the Landowner. If the Facility Owner and Landowner cannot agree upon a reasonable method to complete this restoration, the Facility Owner may implement the recommendations of the appropriate County SWCD and such implementation constitutes compliance with this provision.

G. Following completion of the work required pursuant to this Section, the Facility Owner shall be responsible for correcting all drainage tile line repairs that fail due to Construction and/or Deconstruction for one year following the completion of Construction or Deconstruction, provided those repairs were made by the Facility Owner. The Facility Owner shall not be responsible for drainage tile repairs that the Facility Owner pays the Landowner to perform.

7. Rock Removal

With any excavations, the following rock removal procedures pertain only to rocks found in the uppermost 42 inches of soil, the common freeze zone in Illinois, which emerged or were brought to the site as a result of Construction and/or Deconstruction.

A. Before replacing any topsoil, Best Efforts shall be taken to remove all rocks greater than 3 inches in any dimension from the surface of exposed subsoil which emerged or were brought to the site as a result of Construction and/or Deconstruction.

B. If trenching, blasting, or boring operations are required through rocky terrain, precautions shall be taken to minimize the potential for oversized rocks to become interspersed in adjacent soil material.

C. Rocks and soil containing rocks removed from the subsoil areas, topsoil, or from any excavations, shall be removed from the Landowner's premises or disposed of on the Landowner's premises at a location that is mutually acceptable to the Landowner and the Facility Owner.

8. Repair of Compaction and Rutting

A. Unless the Landowner opts to do the restoration work on compaction and rutting, after the topsoil has been replaced post-Deconstruction, all areas within the boundaries of the Facility that were traversed by vehicles and Construction and/or Deconstruction equipment that exhibit compaction and rutting shall be restored by the Facility Owner. All prior Cropland shall be ripped at least 18 inches deep or to the extent practicable, and all pasture and woodland shall be ripped at least 12 inches deep or to the extent practicable. The existence of drainage tile lines or underground utilities may necessitate less ripping depth. The disturbed area shall then be disked.

B. All ripping and disking shall be done at a time when the soil is dry enough for normal tillage operations to occur on Cropland adjacent to the Facility.

C. The Facility Owner shall restore all rutted land to a condition as close as possible to its original condition upon Deconstruction, unless necessary earlier as determined by the Landowner.

D. If there is any dispute between the Landowner and the Facility Owner as to what areas need to be ripped/disked or the depth at which compacted areas should be ripped/disked, the appropriate County SWCD's opinion shall be considered by the Facility Owner and the Landowner.

9. Construction During Wet Weather

Except as provided below, construction activities are not allowed on agricultural land during times when normal farming operations, such as plowing, disking, planting or harvesting, cannot take place due to excessively wet soils. With input from the landowner, wet weather conditions may be determined on a field by field basis.

A. Construction activities on prepared surfaces, surfaces where topsoil and subsoil have been removed, heavily compacted in preparation, or otherwise stabilized (e.g. through cement mixing) may occur at the discretion of the Facility Owner in wet weather conditions.

B. Construction activities on unprepared surfaces will be done only when work will not result in rutting which may mix subsoil and topsoil. Determination as to the potential of subsoil and topsoil mixing will be made in consultation with the underlying Landowner, or, if approved by the Landowner, his/her designated tenant or designee.

10. Prevention of Soil Erosion

A. The Facility Owner shall work with Landowners and create and follow a SWPPP to prevent excessive erosion on land that has been disturbed by Construction or Deconstruction of a Facility.

B. If the Landowner and Facility Owner cannot agree upon a reasonable method to control erosion on the Landowner's property, the Facility Owner shall consider the recommendations of the appropriate County SWCD to resolve the disagreement.

C. The Facility Owner may, per the requirements of the project SWPPP and in consultation with the Landowner, seed appropriate vegetation around all panels and other facility components to prevent erosion. The Facility Owner must utilize Best Efforts to ensure that all seed mixes will be as free of any noxious weed seeds as possible. The Facility Owner shall consult with the Landowner regarding appropriate varieties to seed.

11. Repair of Damaged Soil Conservation Practices

Consultation with the appropriate County SWCD by the Facility Owner shall be carried out to determine if there are soil conservation practices (such as terraces, grassed waterways, etc.) that will be damaged by the Construction and/or Deconstruction of the Facility. Those conservation practices shall be restored to their preconstruction condition as close as reasonably practicable following Deconstruction in accordance with USDA NRCS technical standards. All repair costs shall be the responsibility of the Facility Owner.

12. Compensation for Damages to Private Property

The Facility Owner shall reasonably compensate Landowners for damages caused by the Facility Owner. Damage to Agricultural Land shall be reimbursed to the Landowner as prescribed in the applicable Underlying Agreement.

13. Clearing of Trees and Brush

A. If trees are to be removed for the Construction or Deconstruction of a Facility, the Facility Owner shall consult with the Landowner to determine if there are trees of commercial or other value to the Landowner. .

B. If there are trees of commercial or other value to the Landowner, the Facility Owner shall allow the Landowner the right to retain ownership of the trees to be removed and the disposition of the removed trees shall be negotiated prior to the commencement of land clearing.

14. Access Roads

A. To the extent practicable, access roads shall be designed to not impede surface drainage and shall be built to minimize soil erosion on or near the access roads.

B. Access roads may be left intact during Construction, operation or Deconstruction through mutual agreement of the Landowner and the Facility Owner unless otherwise restricted by federal, state, or local regulations.

C. If the access roads are removed, Best Efforts shall be expended to assure that the land shall be restored to equivalent condition(s) as existed prior to their construction, or as otherwise agreed to by the Facility Owner and the Landowner. All access roads that are removed shall be ripped to a depth of 18 inches. All ripping shall be performed consistent with Section 8.

15. Weed/Vegetation Control

A. The Facility Owner shall provide for weed control in a manner that prevents the spread of weeds. Chemical control, if used, shall be done by an appropriately licensed pesticide applicator.

B. The Facility Owner shall be responsible for the reimbursement of all reasonable costs incurred by owners of agricultural land where it has been determined by the appropriate state or county entity that weeds have spread from the Facility to their property. Reimbursement is contingent upon written notice to the Facility Owner. Facility Owner shall reimburse the property owner within 45 days after notice is received.

C. The Facility Owner shall ensure that all vegetation growing within the perimeter of the Facility is properly and appropriately maintained. Maintenance may include, but not be limited to, mowing, trimming, chemical control, or the use of livestock as agreed to by the Landowner.

D. The Deconstruction plans must include provisions for the removal of all weed control equipment used in the Facility, including weed-control fabrics or other ground covers.

16. Indemnification of Landowners

The Facility Owner shall indemnify all Landowners, their heirs, successors, legal representatives, and assigns from and against all claims, injuries, suits, damages, costs, losses, and reasonable expenses resulting from or arising out of the Commercial Solar Energy Facility, including Construction and Deconstruction thereof, and also including damage to such Facility or any of its appurtenances, except where claims, injuries, suits, damages, costs, losses, and expenses are caused by the negligence or intentional acts, or willful omissions of such Landowners, and/or the Landowners heirs, successors, legal representatives, and assigns.

17. Deconstruction Plans and Financial Assurance of Commercial Solar Energy Facilities

A. Deconstruction of a Facility shall include the removal/disposition of all solar related equipment/facilities, including the following utilized for operation of the Facility and located on Landowner property:

1. Solar panels, cells and modules;
2. Solar panel mounts and racking, including any helical piles, ground screws, ballasts, or other anchoring systems;
3. Solar panel foundations, if used (to depth of 5 feet);

4. Transformers, inverters, energy storage facilities, or substations, including all components and foundations; however, Underground Cables at a depth of 5 feet or greater may be left in place;
5. Overhead collection system components;
6. Operations/maintenance buildings, spare parts buildings and substation/switching gear buildings unless otherwise agreed to by the Landowner;
7. Access Road(s) unless Landowner requests in writing that the access road is to remain;
8. Operation/maintenance yard/staging area unless otherwise agreed to by the Landowner; and
9. Debris and litter generated by Deconstruction and Deconstruction crews.

B. The Facility Owner shall, at its expense, complete Deconstruction of a Facility within twelve (12) months after the end of the useful life of the Facility.

C. During the County permit process, or if none, then prior to the commencement of construction, the Facility Owner shall file with the County a Deconstruction Plan. The Facility Owner shall file an updated Deconstruction Plan with the County on or before the end of the tenth year of commercial operation.

D. The Facility Owner shall provide the County with Financial Assurance to cover the estimated costs of Deconstruction of the Facility. Provision of this Financial Assurance shall be phased in over the first 11 years of the Project's operation as follows:

1. On or before the first anniversary of the Commercial Operation Date, the Facility Owner shall provide the County with Financial Assurance to cover ten (10) percent of the estimated costs of Deconstruction of the Facility as determined in the Deconstruction Plan.
2. On or before the sixth anniversary of the Commercial Operation Date, the Facility Owner shall provide the County with Financial Assurance to cover fifty (50) percent of the estimated costs of Deconstruction of the Facility as determined in the Deconstruction Plan.
3. On or before the eleventh anniversary of the Commercial Operation Date, the Facility Owner shall provide the County with Financial Assurance to cover one hundred (100) percent of the estimated costs of Deconstruction of the Facility as determined in the updated Deconstruction Plan provided during the tenth year of commercial operation.

The Financial Assurance shall not release the surety from liability until the Financial Assurance is replaced. The salvage value of the Facility may only be used to reduce the estimated costs of Deconstruction if the County agrees that all interests in the salvage value are subordinate or have been subordinated to that of the County if Abandonment occurs.

E. The County may, but is not required to, reevaluate the estimated costs of Deconstruction of any Facility after the tenth anniversary, and every five years thereafter, of the Commercial Operation Date. Based on any reevaluation, the County may require changes in the level of Financial Assurance used to calculate the phased Financial Assurance levels described in Section 17.D. required from the Facility Owner. If the County is unable to its satisfaction to perform the investigations necessary to approve the Deconstruction Plan filed by the Facility Owner, then the County and Facility may mutually agree on the selection of a Professional Engineer independent of the Facility Owner to conduct any necessary investigations. The Facility Owner shall be responsible for the cost of any such investigations.

F. Upon Abandonment, the County may take all appropriate actions for Deconstruction including drawing upon the Financial Assurance.

Concurrence of the Parties to this AIMA

The Illinois Department of Agriculture and Shenandoah Solar, LLC concur that this AIMA is the complete AIMA governing the mitigation of agricultural impacts that may result from the Construction and Deconstruction of the solar farm project in DeKalb County within the State of Illinois.

The effective date of this AIMA commences on the date of execution.

STATE OF ILLINOIS
DEPARTMENT OF AGRICULTURE

Jerry Costello II

By: Jerry Costello II, Director 6

[redacted]

By [redacted] General Counsel
Tess Feagans, Acting

801 E. Sangamon Avenue, 62702
State Fairgrounds, POB 19281 Springfield,
IL 62794-9281

March 23, 2023

Shenandoah Solar, LLC

George T. Hovis, Jr.

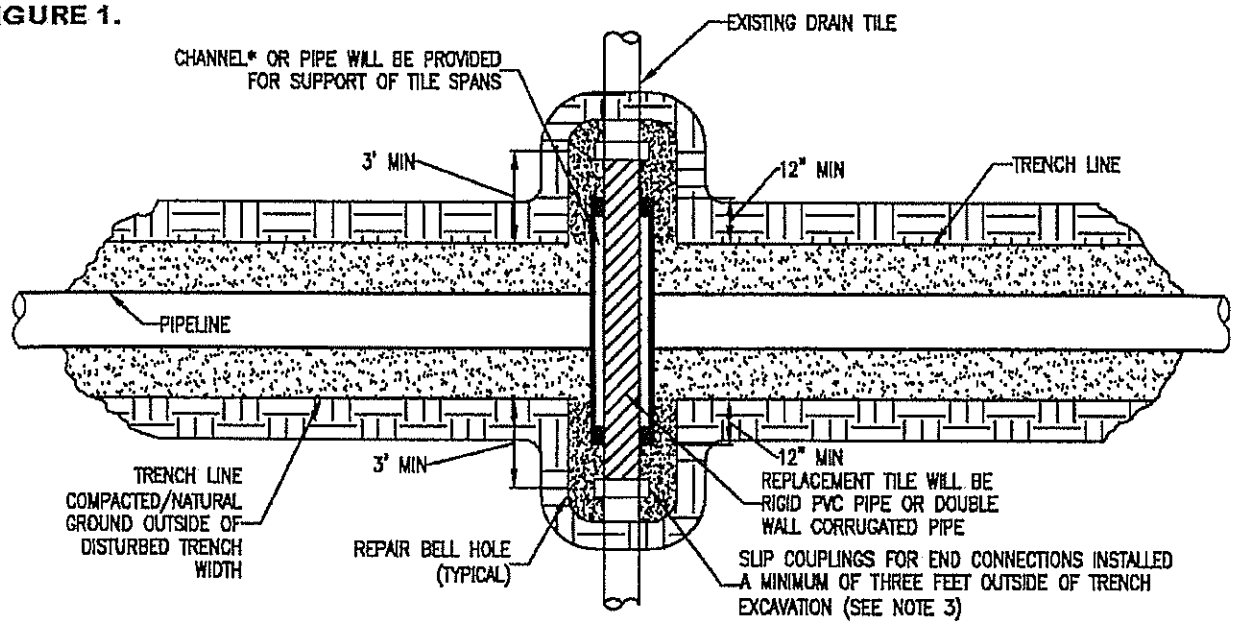
By George T. Hovis

128 Demanade Blvd. Ste 200 70503

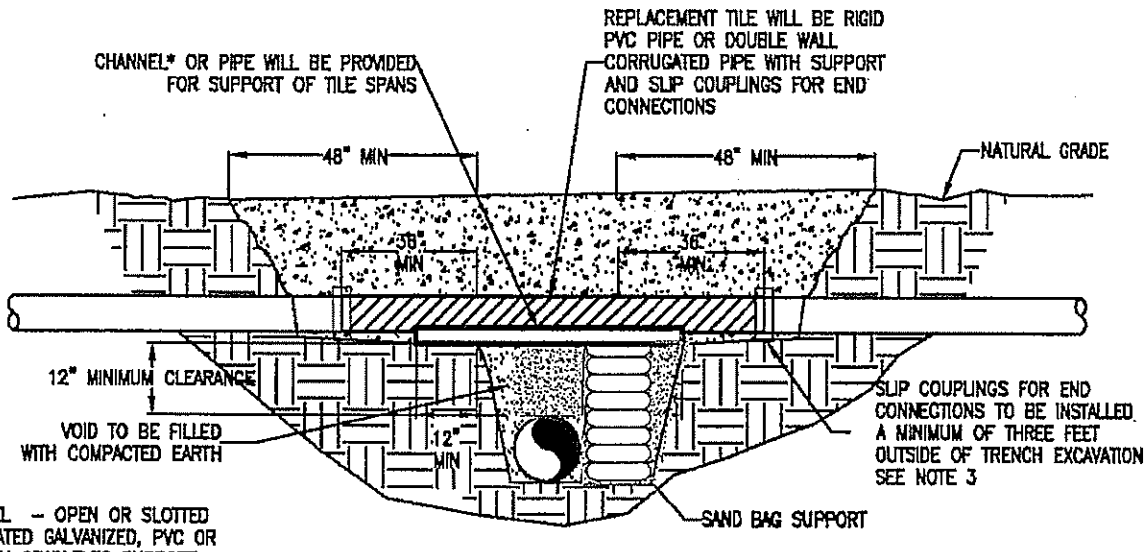
Address

March 6th, 20 23

FIGURE 1.



PLAN
N.T.S.



*CHANNEL – OPEN OR SLOTTED CORRUGATED GALVANIZED, PVC OR ALUMINUM CRADLE TO SUPPORT DRAIN TILE.

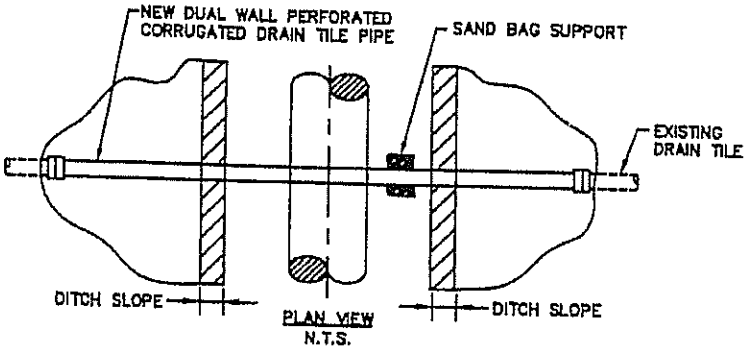
CROSS SECTION
N.T.S.

NOTE:

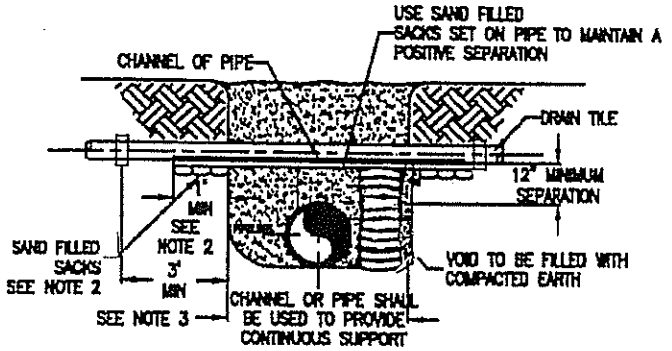
1. IMMEDIATELY REPAIR TILE IF WATER IS FLOWING THROUGH TILE AT TIME OF TRENCHING. IF NO WATER IS FLOWING AND TEMPORARY REPAIR IS DELAYED, OR NOT MADE BY THE END OF THE WORK DAY, A SCREEN OR APPROPRIATE 'NIGHT CAP' SHALL BE PLACED ON OPEN ENDS OF TILE TO PREVENT ENTRAPMENT OF ANIMALS ETC.
2. CHANNEL OR PIPE (OPEN OR SLOTTED) MADE OF CORRUGATED GALVANIZED PIPE, PVC OR ALUMINUM WILL BE USED FOR SUPPORT OF DRAIN TILE SPANS.
3. INDUSTRY STANDARDS SHALL BE FOLLOWED TO ENSURE PROPER SEAL OF REPAIRED DRAIN TILES.

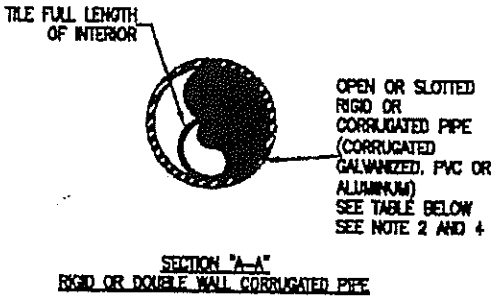
TEMPORARY DRAIN TILE REPAIR

FIGURE 2.



PLAN VIEW





END VIEWS

MINIMUM SUPPORT TABLE				
TILE SIZE	CHANNEL SIZE		PIPE SIZE	
3"	4" @ 5.4	#/ft	4"	STD. WT.
4"-5"	5" @ 6.7	#/ft	6"	STD. WT.
8"-9"	7" @ 9.8	#/ft	9"-10"	STD. WT.
10"	10" @ 15.3	#/ft	12"	STD. WT.

NOTE:

1. TILE REPAIR AND REPLACEMENT SHALL MAINTAIN ORIGINAL ALIGNMENT GRADIENT AND WATER FLOW TO THE GREATEST EXTENT POSSIBLE. IF THE TILE NEEDS TO BE RELOCATED, THE INSTALLATION ANGLE MAY VARY DUE TO SITE SPECIFIC CONDITIONS AND LANDOWNER RECOMMENDATIONS.

2. 1'-0" MINIMUM LENGTH OF CHANNEL OR RIGID PIPE (OPEN OR SLOTTED CORRUGATED GALVANIZED, PVC OR ALUMINUM CRADLE) SHALL BE SUPPORTED BY UNDISTURBED SOIL, OR IF CROSSING IS NOT AT RIGHT ANGLES TO PIPELINE, EQUIVALENT LENGTH PERPENDICULAR TO TRENCH. SHIM WITH SAND BAGS TO UNDISTURBED SOIL FOR SUPPORT AND DRAINAGE GRADIENT MAINTENANCE (TYPICAL BOTH SIDES).

3. DRAIN TILES WILL BE PERMANENTLY CONNECTED TO EXISTING DRAIN TILES A MINIMUM OF THREE FEET OUTSIDE OF EXCAVATED TRENCH LINE USING INDUSTRY STANDARDS TO ENSURE PROPER SEAL OF REPAIRED DRAIN TILES INCLUDING SLIP COUPLINGS.

4. DIAMETER OF RIGID PIPE SHALL BE OF ADEQUATE SIZE TO ALLOW FOR THE INSTALLATION OF THE TILE FOR THE FULL LENGTH OF THE RIGID PIPE.

5. OTHER METHODS OF SUPPORTING DRAIN TILE MAY BE USED IF ALTERNATE PROPOSED IS EQUIVALENT IN STRENGTH TO THE CHANNEL/PIPE SECTIONS SHOWN AND IF APPROVED BY COMPANY REPRESENTATIVES AND LANDOWNER IN ADVANCE. SITE SPECIFIC ALTERNATE SUPPORT SYSTEM TO BE DEVELOPED BY COMPANY REPRESENTATIVES AND FURNISHED TO CONTRACTOR FOR SPANS IN EXCESS OF 20', TILE GREATER THEN 10" DIAMETER, AND FOR "HEADER" SYSTEMS.

6. ALL MATERIAL TO BE FURNISHED BY CONTRACTOR.

7. PRIOR TO REPAIRING TILE, CONTRACTOR SHALL PROBE LATERALLY INTO THE EXISTING TILE TO FULL WIDTH OF THE RIGHTS OF WAY TO DETERMINE IF ADDITIONAL DAMAGE HAS OCCURRED. ALL DAMAGED/DISTURBED TILE SHALL BE REPAIRED AS NEAR AS PRACTICABLE TO ITS ORIGINAL OR BETTER CONDITION.

PERMANENT DRAIN TILE REPAIR

Natural Resource Information Report

Compiled By

The DeKalb County Soil and Water Conservation District



DeKalb County Soil and Water Conservation District
1350 West Prairie Drive, Sycamore IL, 60178
Phone: (815) 756-3234 x3
dekalbswcd@gmail.com

Project Information

Natural Resource Information File Number	#727
Date the SWCD Board Reviews Report	March 15, 2023
Name of Petitioner	Shenandoah Solar, LLC
Size of Area of Review	96 acres
Current Zoning	A1 (Agricultural)
Proposed Zoning	A-1, Special Use
Parcel Numbers	15-34-300-0005 and 15-33-400-004
Contact Person	Michael Keith

Copies of this report and notification of the proposed land use changes were provided to:	Yes	No
The Petitioner	X	
The Petitioners Legal Representation		X
DeKalb County Community Development	X	
DeKalb County SWCD District Files	X	

***Report Prepared By**: Jeff Woodyatt* ***Position**: Resource Conservationist*

Purpose and Intent of This Report

The purpose of this report is to inform officials of the local governing body and other decision-makers with natural resource information. This information may be useful when undertaking land use decisions concerning variations, amendments or relief of local zoning ordinances, proposed subdivision of vacant or agricultural lands and the subsequent development of these lands. This report is a requirement under Section 22.02a of the Illinois Soil and Water Conservation Districts Act.

The intent of this report is to present the most current natural resource information available in a readily understandable manner. It contains a description of the present site conditions, the present resources, and the potential impacts that the proposed change may have on the site and its resources. The natural resource information was gathered from standardized data, on-site investigations and information furnished by the petitioner. This report must be read in its entirety so that the relationship between the natural resource factors and the proposed land use change can be fully understood.

Due to the limitations of scale encountered with the various resource maps, the property boundaries depicted in the various exhibits in this report provide a generalized representation of the property location and may not precisely reflect the legal description of the PIQ (Parcel in Question).

This report, when used properly, will provide the basis for proper land use change decisions and development while protecting the natural resource base of the county. It should not be used in place of detailed environmental and/or engineering studies that are warranted under most circumstances, but in conjunction with those studies.

The conclusions of this report in no way indicate that a certain land use is not possible, but it should alert the reader to possible problems that may occur if the capabilities of the land are ignored. Any questions on the technical data supplied in this report or if anyone feels that they would like to see more additional specific information to make the report more effective, please contact:

DeKalb County Soil and Water Conservation District
1350 West Prairie Drive, Sycamore, IL 60178
Phone: 815-756-3234 ext. 9493
E-mail: Jeffery.Woodyatt@il.nacdnet.net

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Supplement Material

Supplemental A. - Custom Soils Resource Report

Supplemental B. - NRCS Conservation Practice Standard 560 (Access Road)

Executive Summary

Natural Resource Information File Number:	#725
Petitioners Name:	Shenandoah Solar, LLC
Contact Person:	Michael Keith
Unit of Government Responsible for Land Use Change:	DeKalb County Community Development
Location of parcel:	*Part of the Southwest Quarter in Section 34 and Southeast Quarter in Section of 33 Township 38 North, Range 5, East of the third principal meridian (Squaw Grove Township).*
Property Address, PIN Number	1534300005 and 1533400004
Existing Land Use:	A1 (Agricultural)
Surrounding Land Use:	A1, Ag. Row Crops
Proposed Land Use:	Solar Energy Farm
Proposed Water Supply:	N/A
Proposed Wastewater Treatment:	N/A
DeKalb County Unified Future Land Use Plan	A-1 (Agricultural)

Highlights of the Natural Resource Concerns

Land Evaluation and Site Assessment (LESA): Land Evaluation score is **98.1** out of 100. The Site Assessment for the proposed project was not calculated for this report; the assessment factors used for the Site Assessment are grouped into five major areas of consideration:

1. Agricultural/Land Use
2. Zoning
3. Compatibility and Impact of Uses
4. Land Use Feasibility
5. Compatibility with Comprehensive Development Plans

The proposed project is to be located in an A-1 zoned district with a Special Use condition. This project will have little impact to the factors listed above, therefore the Site Assessment would not be feasible in this situation as there would be little deviation from the current zoning for this site.

Prime Farmland: Prime farmland soils are an important resource for DeKalb County. Each soil type is assigned a rating, which is then used to determine the LESA score for the site. Sites with a LESA score of 80 or greater are considered to be prime farmland. This site has a score of **98.1** on the LESA soil evaluation system, which places it within the definition of Prime Farmland. A complete description of the farmland classification for this site is located in the **Custom Soils Resource Report** (**Supplemental A)** for this project starting on **page 37**.

Stormwater: The District encourages the use of on-site detention for stormwater runoff if required by the County. The DeKalb County Stormwater Ordinance should be used to determine detention requirements. There should be no changes made to the natural surface flow of water on the site. All roadways associated with the project should follow the natural contours of the land. Culverts should be used to a minimum or not at all. The Natural Resource Conservation Service (NRCS) Conservation **Practice Standard for Access Roads** (**Supplemental B)** is included with this report as a resource document.

NPDES Permits: An NPDES (National Pollution Discharge Elimination System) permit from the Illinois EPA is required for all construction and demolition sites that disturb 1 acre or more.

Sediment and Erosion Control: Development on this site should include a sedimentation and erosion control plan which is required by the ILR10 permit (SWPPP) with the Illinois EPA. The DeKalb County Soil and Water Conservation District recommends the use of the Illinois Urban Manual in selecting the proper Best Management Practices for development sites.

Hydrologic Soil Group: Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The specific soil types and Hydrologic soil groups associated with this site are:

Table—Hydrologic Soil Group (NRI 727)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	C/D	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	B/D	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	C/D	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	C	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	B/D	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	C	0.1	0.1%
Totals for Area of Interest			**96.0**	**100.0%**

A complete description of the Hydrologic soil groups associated for this site is located in the **Custom Soils Resource Report** for this project starting on **page 48**.

NWI Wetlands: A review of U.S. Fish & Wildlife Service National Wetland Inventory (NWI) maps identified **an area within the project site that is identified as a potential "Riverine habitat classified as a R5UBH"**. Please refer to **page 30** of the **Natural Resource Information Report.**

The District has received a "**Wetland Determination/Delineation" conducted by Atwell, LLC**. This report concluded **that there are two areas on the southeast boundary of the project site that are likely to meet Section 404 criteria to be considered jurisdictional wetlands (See report by Atwell, LLC.).** The district recommends that the developer contact the US Army Corp of Engineers for information regarding the jurisdiction status and boundary of any potential wetland area.

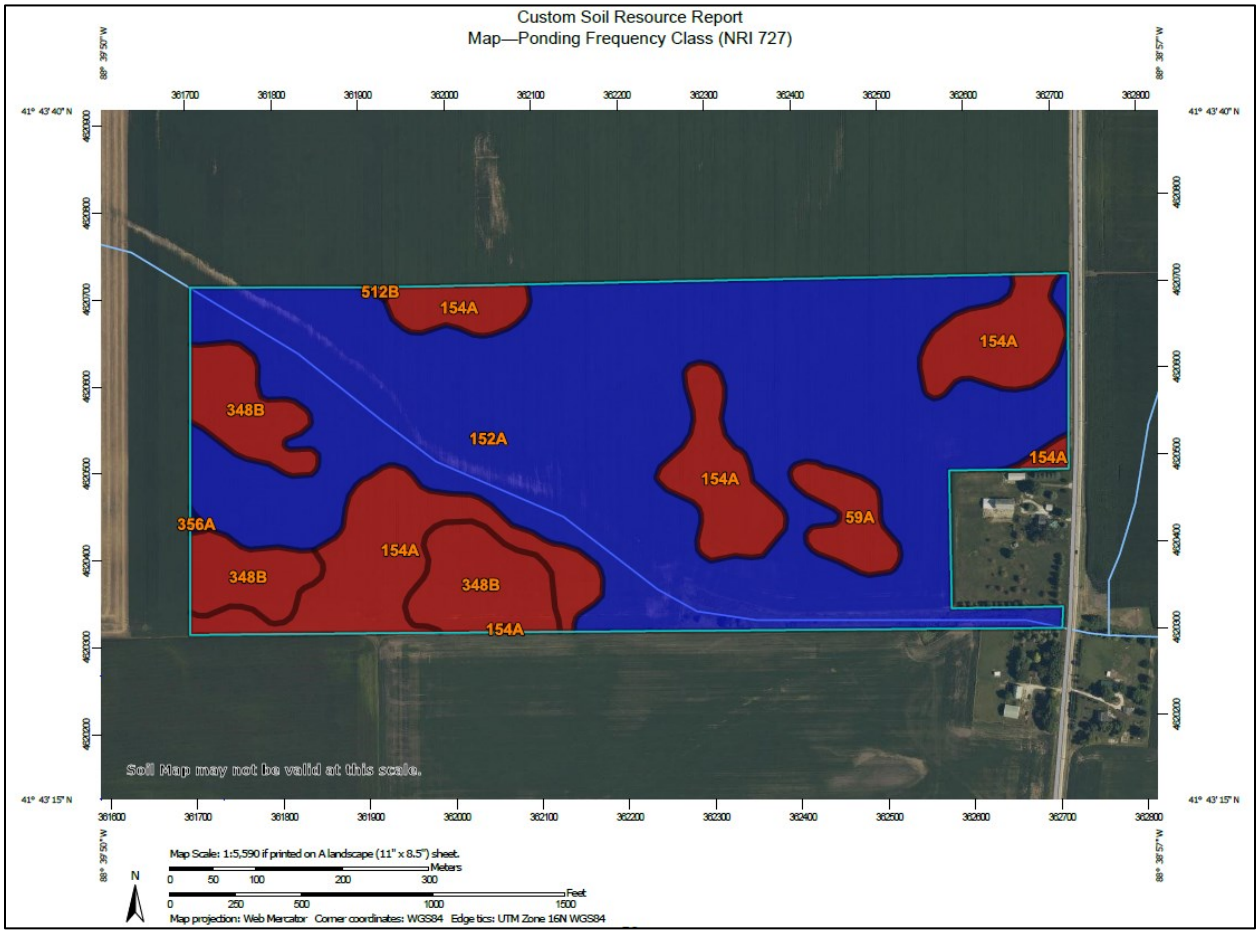
NRCS Wetlands: A review of NRCS (Natural Resources Conservation Service) Wetlands Inventory maps identified **no potential wetland areas** on this site. Please refer to the NRCS Wetland map on **page 31** of the **Natural Resource Information Report.**

Floodplain: There are **no** floodplain areas identified on this site according to the National Flood Hazard Layer produced by FEMA. Please refer to **pages 27** of the **Natural Resource Information Report.**

Aquifer Sensitivity: According to Illinois State Geological Survey, there is no aquifer material identified within 50 feet of the surface and the potential for aquifer contamination is limited.

Ponding Frequency: Drummer silty clay loam (152A) and Elpaso silty clay loam (356A), which makes up 67.7% or 65 acres of the site, is classified as poorly drained soils that frequently will pond. The rating of "frequent" means that ponding occurs, on the average, more than once in 2 years (blue areas below). The chance of ponding is more than 50% in any year. Planners should take this into consideration as

they develop this site. Please refer to **page 56** of the **Custom Soil Resource Report** for specific information.



Solar Farm Ground Cover: The District would like to remind the developer of the requirement of installing and maintaining a low-profile native prairie species for ground cover, per the DeKalb County's Ordinance 2022-21. The developer will be required to submit a detailed Landscape Plan to the DeKalb County SWCD for approval prior to issuance of building permits. This plan should detail all the items set forth in the ordinance. In addition, the developer is required to develop a Landscape Monitoring and Maintenance Plan that will be approved by the DeKalb County SWCD. It is important for the long-term success of the ground cover that these plans are developed by an experienced individual that takes into consideration the required components of the county's ordinance; and as well as thoughtful examination of the qualitative characteristics of the project site, mainly soil and hydrologic factors that affect plant growth and establishment across the site.

Benefits of native shrubs and groundcovers, such as grasses and wildflowers, include improved erosion control, pesticide avoidance, stormwater infiltration, wildlife habitat, and reduced overall maintenance. In addition, native fruiting and flowering plants provide a food source and habitat for wild native bees. Native bees make a considerable contribution to agricultural crops through pollination.

Promoting habitat for native bees and other pollinators can have a positive ecological impact on disturbed sites, as well as a positive economic impact on neighboring insect-pollinated crops. Planting

native grasses and wildflowers in low maintenance areas of solar farms also reduces long-term maintenance costs and emissions. These naturalized meadows, once established, are more drought tolerant, require little to no fertilization, and only need to be mowed once or twice a year.

Sustainable landscaping strategies serve as an educational tool to the community about positive agricultural and environmental practices, and act as a visual demonstration of commitment to land stewardship.

Ecological Considerations: The District recognizes two potential sources of water pollution from solar farms. Each of these concerns have best management practices that can be used to mitigate risks. The potential pollution sources and best management practices include:

Cracked panels - Leaching of toxic materials could be an issue if a large number of broken panels were exposed to precipitation over a long period of time. To prevent leaching from becoming an issue, solar farm operators should regularly inspect for cracked panels. Any cracked panels must be immediately stored under protective cover to prevent exposure to precipitation. No broken panels, or any parts of broken panels, shall remain exposed to the elements while stored on-site. To reduce risks over time and prevent an excessive number of panels from being stored onsite, cracked panels should be periodically transported offsite for recycling or proper offsite storage.

Oil leaks or spills from transformers - Electrical transformers are used to step up output voltage from the solar farms to the electrical grid. Electrical transformers contain oil, even those used in renewable energy systems. Oil leaks or spills resulting in environmental damage can occur. The size and voltage of the solar farm affects the size of the electrical transformers and the volume of oil being used. To mitigate risks of oil pollution from transformers, the following best management practices are recommended.

- Use only biodegradable oil in the transformers. Larger transformers typically use mineral based oil unless biodegradable oil is specifically requested. While leaks and spills of biodegradable oil must still be prevented, risks for groundwater contamination would be reduced and clean-up efforts simplified in the event of a release.
- Provide secondary containment systems such as trays, membranes, or vaults to collect and contain all oil in the event of a leak or spill. The containment systems must be designed to manage stormwater so adequate containment volume is maintained. If the containment area were to fill up with stormwater, there would not be sufficient storage volume to capture and contain the oil. A variety of secondary containment options are available. Solar farm developers would be responsible for selecting the secondary containment system and demonstrating its effectiveness.

DeKalb County SWCD
Land Use Opinion

The DeKalb County Soil and Water Conservation District (here after SWCD) has reviewed the natural resource information for a Solar Energy System proposed by Shenandoah Solar, LLC. This site is located in part of the Southwest Quarter in Section 34 and Southeast Quarter in Section of 33 Township 38 North, Range 5, East of the third principal meridian (Squaw Grove Township). The area of review includes 2 parcels totaling approximately 96 acres. The parcels in question are currently zoned A-1 with the intent to have both parcels be zoned to A-1 with Special Use for a commercial solar facility.

Based on the DeKalb County Soil Survey, this site is principally comprised of Prime Farmland soils. These types of soils are recognized for their highly productive qualities for growing agriculturally important grain and fiber crops. Preserving soil resources, especially those that are designated Prime Farmland, is an important consideration as we look forward towards the food and fiber needs in our communities. The SWCD Board of Directors is irresolute on their consideration of changing land use that has such a significant impact on agriculture production.

However, the DeKalb County SWCD acknowledges that land taken out of agriculture production and used for the purpose of a solar farm can have beneficial effects on soil health and surface water quality leaving the site. The District would like to remind the developer of the requirement of installing and maintaining a low-profile native prairie species for ground cover, per the DeKalb County's SES Ordinance 2022-21. The developer will be required to submit a detailed Landscape Plan and Landscape Monitoring and Maintenance Plan that will be approved by the DeKalb County SWCD.

The DeKalb County SWCD strongly recommends the use of diverse native ground cover, specifically plant varieties beneficial to pollinator species, be used to vegetate the site. Recent field studies have indicated the benefits of native plant use in solar arrays not only to soil health and habitat creation, but also the resiliency of such ground cover to drought and prolonged wet conditions, as well as reduced maintenance needs after successful establishment. Native vegetation will help Improve surface water quality within the project site along with the adjacent streams. It will be the responsibility of the Developer to protect the natural resources on and surrounding this site from potential contaminants that can occur from a project such as this.

The DeKalb County SWCD would like to remind the developer that a sub-surface drainage tile investigation is required prior to development of the site. At this time our office has not received this information. Damage of existing sub-surface drainage will lead to offsite drainage impacts. Based on testimonial information provided to the district, the existing sub-surface drainage tile that bisects the site drains approximately 2,500 surface acres of ag land to the north and northwest, which includes some properties that are within the Squaw Grove #12 Drainage District. Current site plans provided by the petitioner note a buffer area around this assumed path. If site plans or panel layout is altered from this proposed plan, the developer should be cognizant of activities above and around this underground drainage infrastructure.

Furthermore, studies regarding Solar Farms have been completed to evaluate hydrologic effects and examine whether water management is needed to control runoff. These studies show that it is important to have vegetative cover during construction and after to protect the soil from erosion. In some cases, it may be necessary to have detention; the County Engineer will determine any specific detention requirements that may be applicable for this site.

If development occurs, a soil erosion and sediment control plan will need to be in place. If the area has land disturbance of one acre or more the developer will need to comply with the IEPA ILR-10 permit which includes a Storm Water Pollution Prevention Plan. Sediment leaving the area can damage streams, ponds, and wetlands. Best Management Practices will need to be in place to protect the site and surrounding areas from erosion and sedimentation.

As a SWCD, we have established that it is our mission to "responsibly protect our healthy soils and clean water for all generations." The proposed project will provide vegetative cover of the soil for the length of its project life. Established vegetation will provide protection from erosion and improve soil health. This report contains information regarding potential issues with recommendations to address them accordingly.

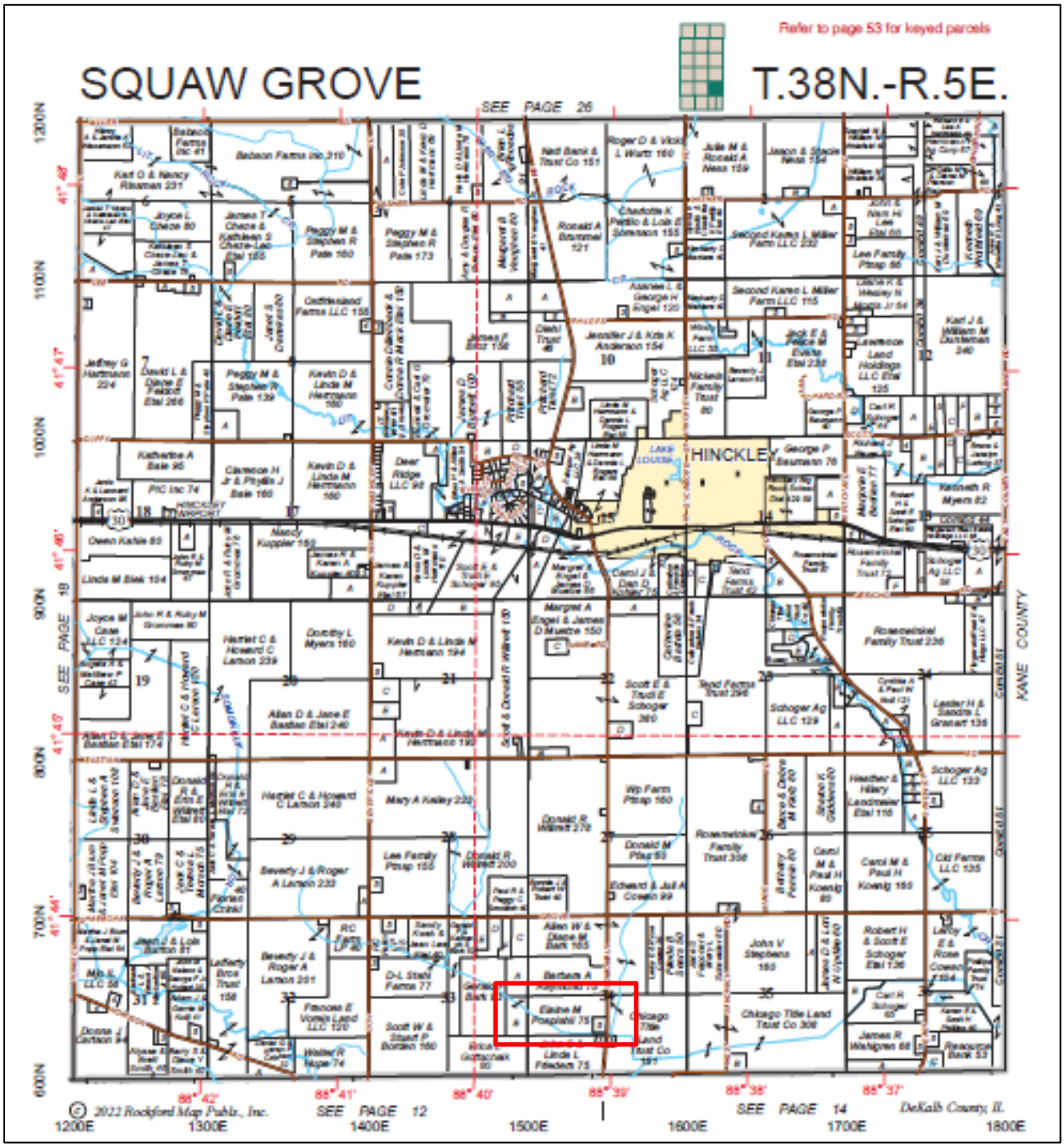
The DeKalb County Soil and Water Conservation District hereby approves the Petitioners request provided that the aforementioned items stated above are addressed, as well as the information gathered here is considered during the planning stages of any future development of this site.

The information that is included in this Natural Resource Information Report is to assure the Land Developers take into full consideration the limitations of that land that they wish to develop. Guidelines and recommendations are also a part of this report and should be considered in the planning process. The Natural Resource Information Report is required by the Illinois Soil and Water Conservation District Act (Ill Complied Statues, Ch. 70 Par 405/22.02a).

John C Bogan
SWCD Chairman

3-15-2023
Date

Parcel Location and Photos



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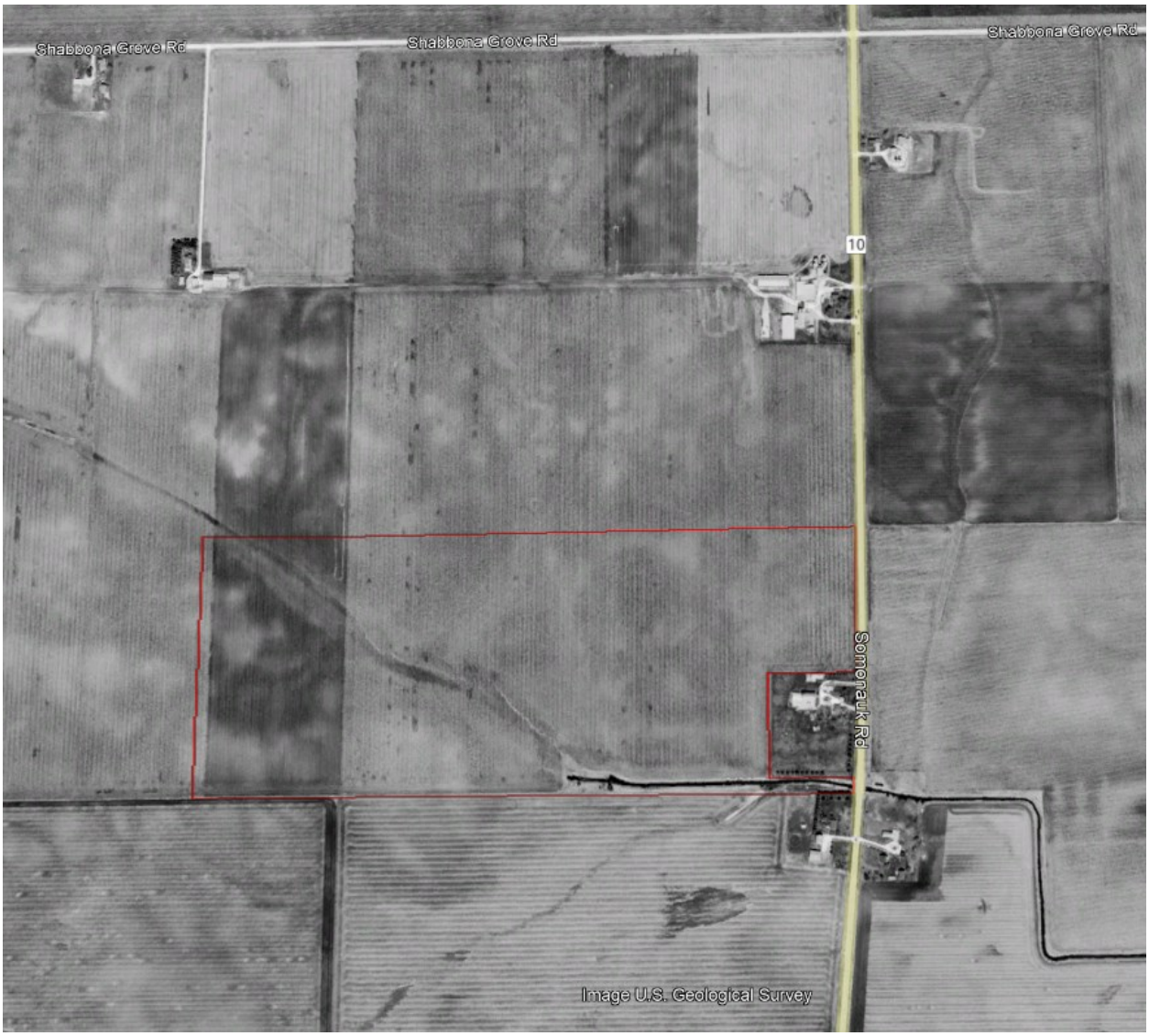
Legal Description of Property: *Part of the Southwest Quarter in Section 34 and Southeast Quarter in Section of 33 Township 38 North, Range 5, East of the third principal meridian (Squaw Grove Township).*



The parcel in question is located approximately 3 miles south of the Village of Hinckley (Google Earth).

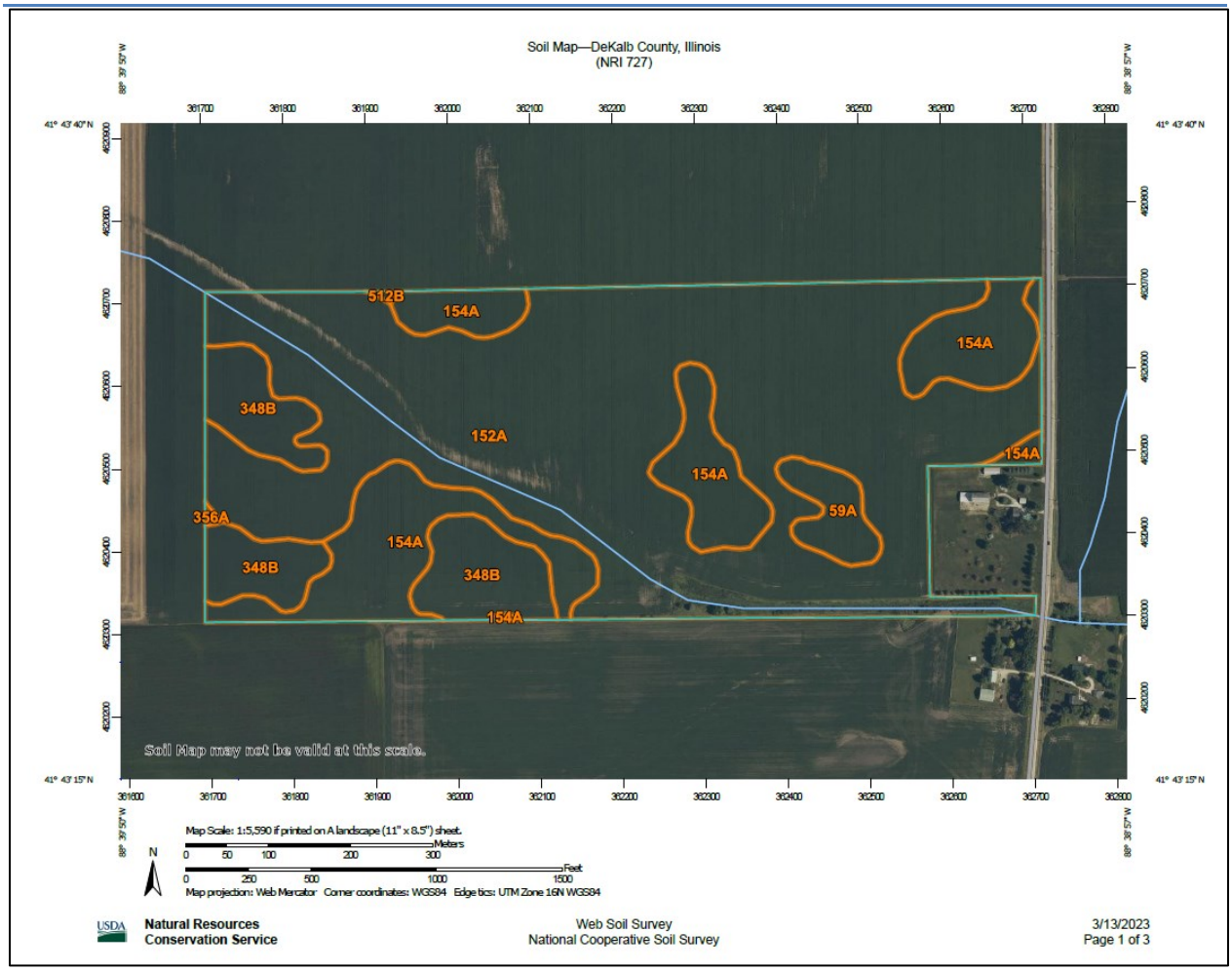


The parcel in question is located southwest of the intersection of Shabbona Grove Road and Somonauk Road (Google Earth 9/2015).



Aerial photo of parcel in question showing area of concentrated surface water flow (Google Earth 4/2001).

Soils Information



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	0.1	0.1%
Totals for Area of Interest		**96.0**	**100.0%**

Archaeologic / Cultural Resources

Simply stated, cultural resources are all the past activities and accomplishments of people. They include the following: buildings; objects made or used by people; locations; and less tangible resources, such as stories, dance forms, and holiday traditions. The Soil and Water Conservation District most often encounters cultural resources as historical properties. These may be prehistoric or historical sites, buildings, structures, features, or objects. The most common type of historical property that the Soil and Water Conservation District may encounter is non-structural archaeological sites. These sites often extend below the soil surface and must be protected against disruption by development or other earth moving activity if possible. Cultural resources are *non-renewable* because there is no way to "grow" a site to replace a disrupted site.

Landowners with historical properties on their land have ownership of that historical property. However, the State of Illinois owns all the following: human remains, grave markers, burial mounds, and artifacts associated with graves and human remains. Non-grave artifacts from archaeological sites and historical buildings are the property of the landowner. The landowner may choose to disturb a historical property but may not receive federal or state assistance to do so. If an earth moving activity disturbs human remains, the landowner must contact the county coroner within 48 hours.



*Office maps **indicate no historical property** located within the project area. However, there is a historic farmstead that is present today adjacent to the site. The Illinois Historic Preservation Agency has not been notified of the proposed land use change by the DeKalb County SWCD. The applicant may need to contact the IHPA according to current Illinois Law (1939 photo).*

Ecologically Sensitive Areas

What is Biological Diversity and why should it be conserved?

Biological diversity, or biodiversity, is the range of life on our planet. A more thorough definition is presented by botanist Peter H. Raven: "At the simplest level, biodiversity is the sum total of all the plants, animals, fungi and microorganisms in the world, or in a particular area; all of their individual variation; and all of the interactions between them. It is the set of living organisms that make up the fabric of the planet Earth and allow it to function as it does, by capturing energy from the sun and using it to drive all of life's processes; by forming communities of organisms that have, through the several billion years of life's history on Earth, altered the nature of the atmosphere, the soil and the water of our Planet; and by making possible the sustainability of our planet through their life activities now" (Raven 1994).

It is not known how many species occur on our planet. Presently, about 1.4 million species have been named. It has been estimated that there are perhaps 9 million more that have not been identified. What is known is that they are vanishing at an unprecedented rate. Reliable estimates show extinction occurring at a rate several orders of magnitude above "background" in some ecological systems (Wilson 1992, Hoose 1981).

The reasons for protecting biological diversity are complex, but they fall into four major categories.

First, loss of diversity generally weakens entire natural systems. Healthy ecosystems tend to have many natural checks and balances. Every species plays a role in maintaining this system. When simplified by the loss of diversity, the system becomes more susceptible to natural and artificial perturbations. The chances of a system-wide collapse increase. In parts of the midwestern United States, for example, it was only the remnant areas of natural prairies that kept soil intact during the dust bowl years of the 1930s (Roush 1982).

Simplified ecosystems are almost always expensive to maintain. For example, when synthetic chemicals are relied upon to control pests, the target species are not the only ones affected. Their predators are almost always killed or driven away, exasperating the pest problem. In the meantime, people are unintentionally breeding pesticide-resistant pests. A process has begun where people become perpetual guardians of the affected area, which requires the expenditure of financial resources and human ingenuity to keep the system going.

A second reason for protecting biological diversity is that it represents one of our greatest untapped resources. Great benefits can be reaped from a single species. About 20 species provide 90% of the world's food. Of these 20, just three, wheat, maize, and rice-supply over one half of that food. American wheat farmers need new varieties every five to 15 years to compete with pests and diseases. Wild strains of wheat are critical genetic reservoirs for these new varieties.

Further, every species is a potential source of human medicine. In 1980, a published report identified the market value of prescription drugs from higher plants at over $3 billion. Organic alkaloids, a class of

chemical compounds used in medicines, are found in an estimated 20% of plant species. Yet only 2% of plant species have been screened for these compounds (Hoose 1981).

The third reason for protecting diversity is that humans benefit from natural areas and depend on healthy ecosystems. The natural world supplies our air, our water, our food and supports human economic activity. Further, humans are creatures that evolved in a diverse natural environment between forest and grasslands. People need to be reassured that such places remain. When people speak of "going to the country," they generally mean more than getting out of town. For reasons of their own sanity and well-being, they need a holistic, organic experience. Prolonged exposure to urban monotony produces neuroses, for which cultural and natural diversity cure.

Historically, the lack of attention to biological diversity, and the ecological processes it supports, has resulted in economic hardships for segments of the basin's human population.

The final reason for protecting biological diversity is that species and natural systems are intrinsically valuable. The above reasons have focused on the benefits of the natural world to humans. All things possess intrinsic value simply because they exist.

Biological Resources Concerning the Subject Parcel

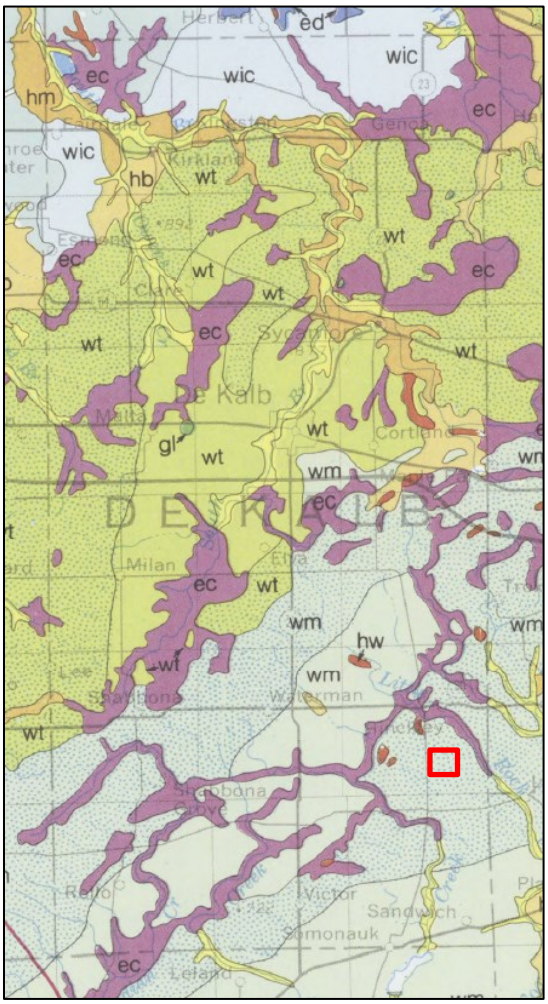
As part of the Natural Resources Information Report, staff checks office maps to determine if any nature preserves are in the general vicinity of the parcel in question. If there is a nature preserve in the area, then that resource will be identified as part of the report. The SWCD recommends that every effort be made to protect that resource. Such efforts should include, but are not limited to erosion control, sediment control, stormwater management, and groundwater monitoring.

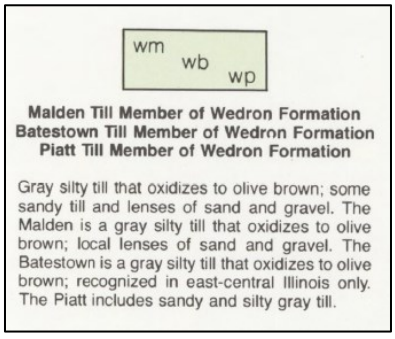
*An office review indicated that there were **no ecologically sensitive** areas in the vicinity of the parcel in question.*

Geologic/Aquifer Information

Geology and the Proposed Land Use

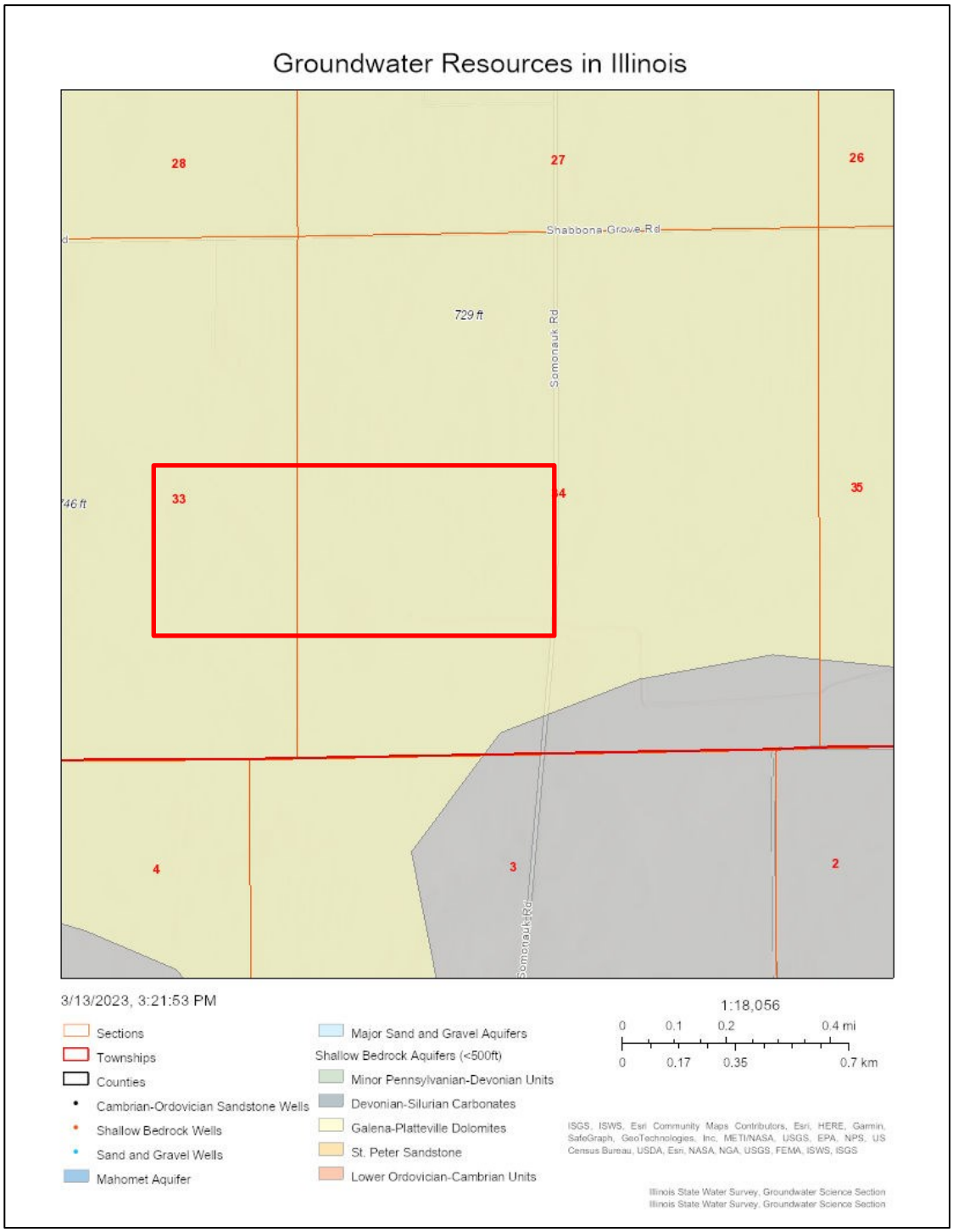
Local geology plays an important role in determining the pollution potential. Groundwater pollution potential is an important factor when determining a specific area's suitability for a given land use. The local geology is an important element of the natural resource base. This information, when compared to soils information, gives a clearer picture of conditions on this parcel.





Aquifer Information

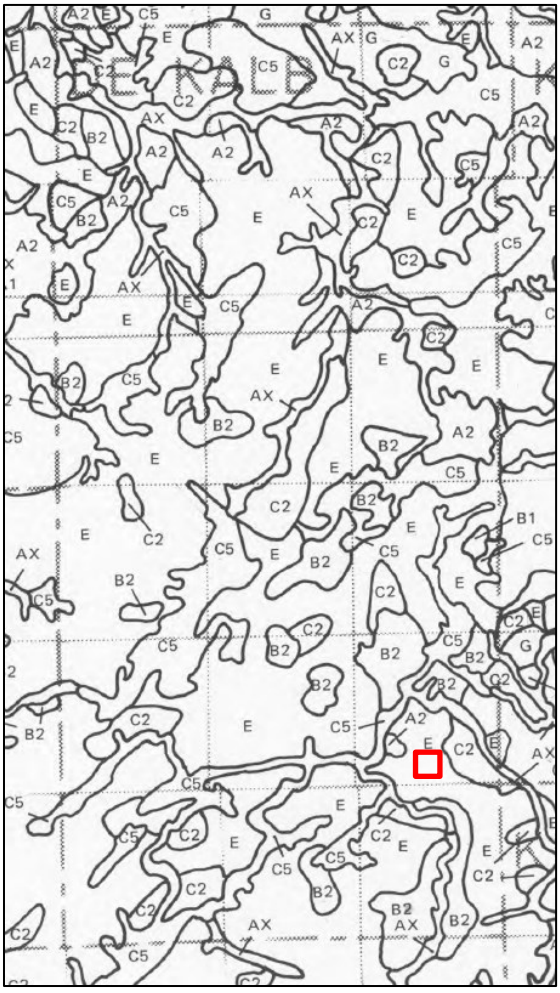
Due to the underlying materials present, the potential for aquifer contamination for the parcel in question has **few limitations.** The majority of the site is made up of uniform, relatively impermeable silty or clayey till at least 50 feet thick with no evidence of iterbedded sand and gravel.



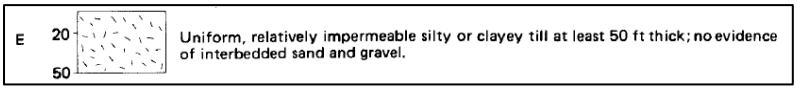
Based on Illinois State Water Survey maps this area does not have aquifer material identified within 50 feet of the surface and the potential for aquifer contamination is limited.

Potential for Contamination of Shallow Aquifers in Illinois

Illinois State Geological Survey



Approximate location of parcel in question.



Primarily bedrock		Primarily glacial drift		Materials generally having few limitations
Limitation		Limitation		
Groundwater contamination potential	Trench construction problems and/or surface contamination	Groundwater contamination potential	Trench design problems and surface contamination	
A1	(A1)*	A2		
A3 A4 A5	(A4)		AX	
		(B1) B2	B1 (B2)	
	BX			
C1		C2		
C3 C4		C5		(C5)
	(F)			D E F G

Figure 11 Summary: geologic limitations for land burial of municipal wastes. (*Map units in parentheses indicate secondary or local limitations.)

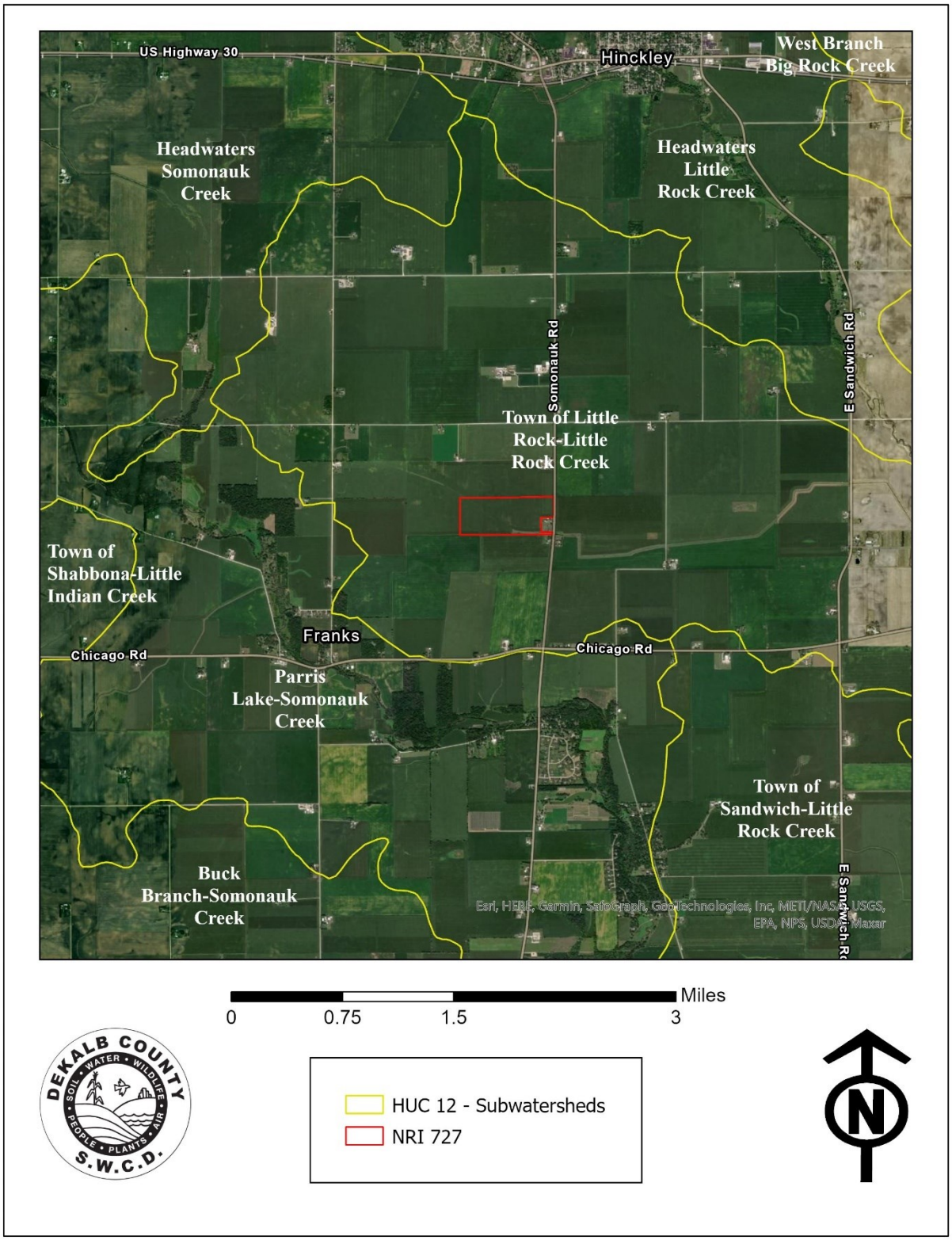
Watershed Information

Watershed and Subwatershed Information

A watershed is the area of land that drains into a specific point including a stream, lake, or other body of water. High points on the Earth's surface, such as hills and ridges define watersheds. When rain falls in the watershed, it flows across the ground towards a stream or lake. Rainwater carries any pollutants it comes in contact with such as oils, pesticides, and soil.

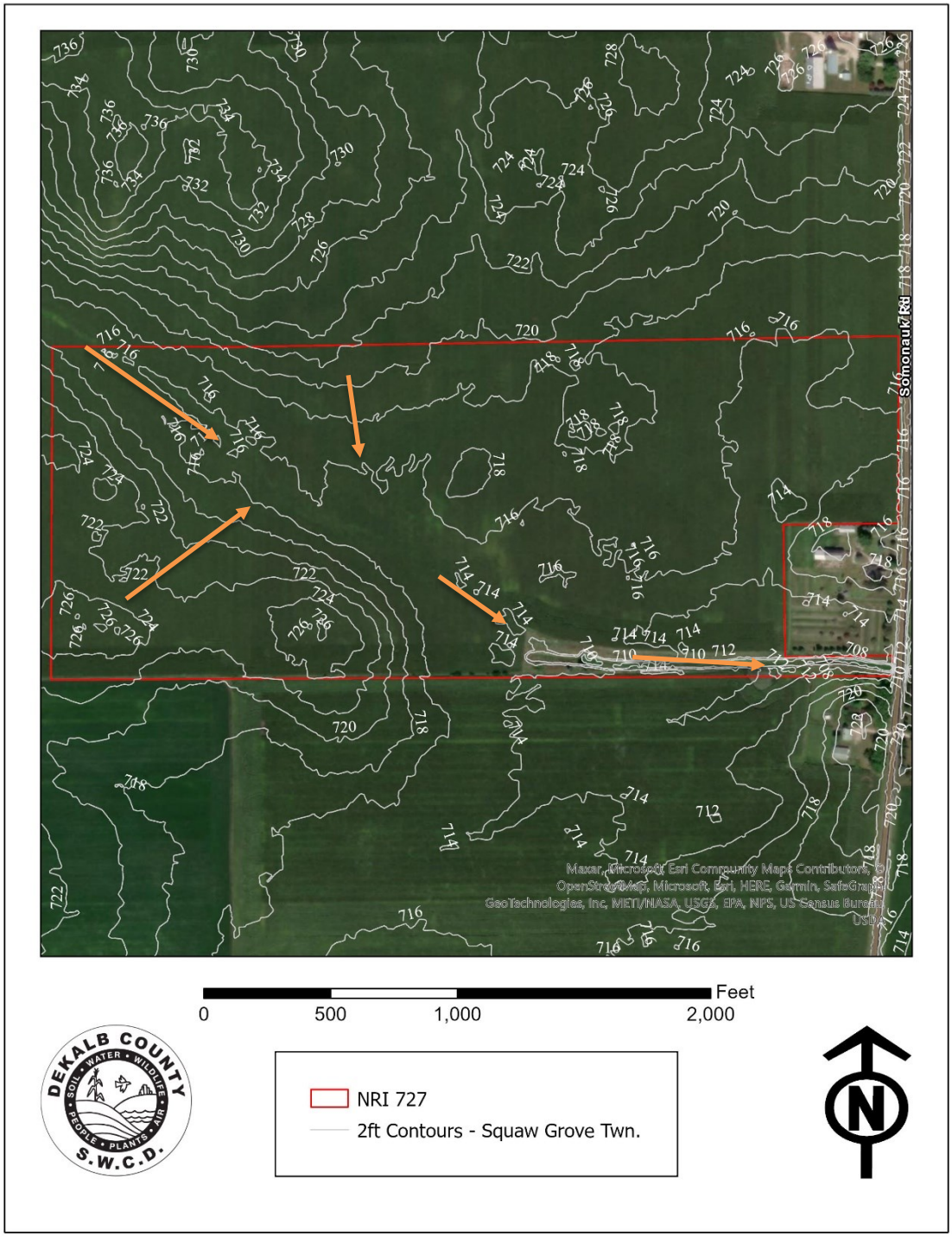
Everyone lives in a watershed. Their actions can impact natural resources and people living downstream. Residents can minimize this impact by being aware of their environment and implications of their activities, implementing practices recommended in watershed plans and educating others about their watershed. **The parcel in question is located within the Town of Little Rock-Little Rock Creek subwatershed (HUC 12).**

More information can be found about completed Watershed Improvement Plans and Best Management Practices at www.dekalbcountywatersheds-il.org



The parcel in question is located within the Town of Little Rock-Little Rock Creek subwatershed.

Topographic/FEMA Information



The elevation of this parcel ranges from 726 feet to 708 feet above sea level. The site largely drains to the east with approximately 18 feet of fall.

Importance of Flood Information

A floodplain is defined as land adjoining a watercourse (riverine) or an inland depression (non-riverine) that is subject to periodic inundation by high water. Floodplains are important areas demanding protection since they have water storage and conveyance functions which affect upstream and downstream flows, water quality and quantity, and suitability of the land for human activity. Since floodplains play distinct and vital roles in the hydrologic cycle, development that interferes with their hydrologic and biologic functions should be carefully considered.

Flooding is both dangerous to people and destructive to their properties. The following maps, when combined with wetland and topographic information, can help developers and future homeowners to "sidestep" potential flooding or ponding problems.

FIRM is the acronym for the Flood Insurance Rate Map, produced by the Federal Emergency Management Agency. These maps define flood elevation adjacent to tributaries and major bodies of water and superimpose that onto a simplified USGS topographic map. The scale of the FIRM maps is generally dependent on the size and density of parcels in that area. (This is to correctly determine the parcel location and flood plain location.) The FIRM map has three (3) zones. A is the zone of 100-year flood, zone B is the 100 to 500 year flood, and zone C is outside the flood plain.

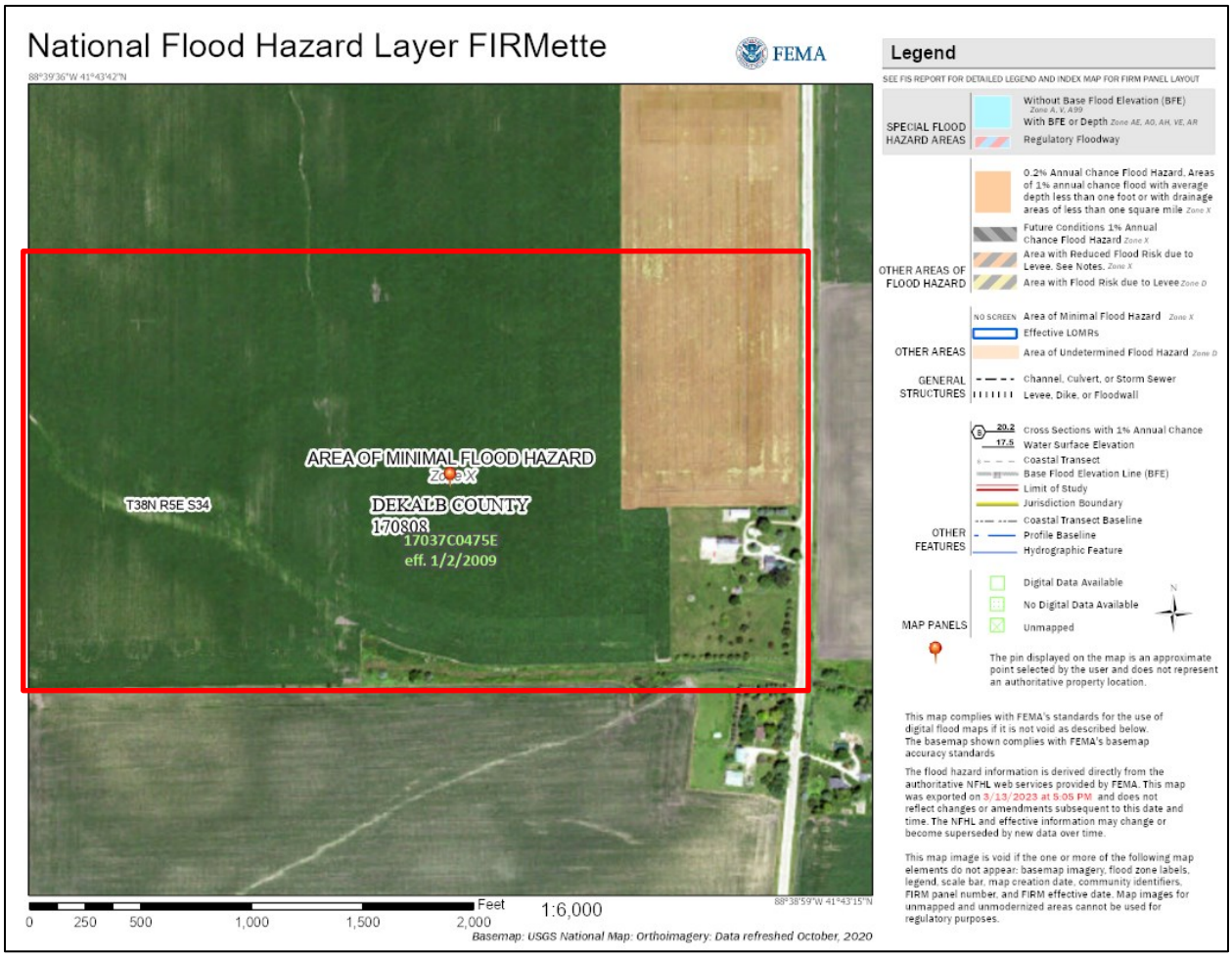
The Hydrologic Atlas (H.A.) Series of the Flood of Record Map is also used for the topographic information. This map is different from the FIRM map mainly because it will show isolated or pocketed flooded areas. DeKalb County uses both these maps in conjunction with each other for flooded area determinations. The Flood of Record maps, show the areas of flood for various years. Both of these maps stress that the recurrence of flooding is merely statistical. That is to say a 100-year flood may occur twice in one year, or twice in one week, for that matter.

It should be noted that greater floods than those shown on the two maps are possible. The flood boundaries indicated provide a historic record only until the map publication date. Additionally, these flood boundaries are a function of the watershed conditions existing when the maps were produced. Cumulative changes in runoff characteristics caused by urbanization can result in an increase in flood height of future flood episodes.

Floodplains play a vital role in reducing the flood damage potential associated with an urbanizing area and, when left in an undisturbed state, also provide valuable wildlife habitat benefits. If it is the petitioner's intent to conduct floodplain filling or modification activities, the petitioner, and the Unit of Government responsible need to consider the potentially adverse effects this type of action could have on adjacent properties. The change or loss of natural floodplain storage often increases the frequency and severity of flooding on adjacent property.

If the available maps indicate the presence of a floodplain on the PIQ, the petitioner should contact the IDOT-DWR and FEMA to delineate a floodplain elevation for the parcel. If a portion of the property is indeed floodplain, applicable state, county, and local regulations will need to be reflected in the site plans.

Another indication of flooding potential can be found in the soil's information. Hydric soils indicate the presence of drainageways, areas subject to ponding, or a naturally occurring high water table. These need to be considered along with the floodplain information when developing the site plan and the stormwater management plan. If the site does include these hydric soils and development occurs, thus raising the concerns of the loss of water storage in these soils and the potential for increased flooding in the area.



FEMA Maps indicate that there are no floodplain areas located within the parcel in question (Zone X).

Soil Erosion and Sediment Control

Erosion is the wearing away of the soil by water, wind, and other forces. Soil erosion threatens the Nation's soil productivity and contributes the most pollutants in our waterways. Water causes about two thirds of erosion on agricultural land. Four properties, mainly, determine a soil's erodibility:

1. Texture 2. Slope 3. Structure 4. Organic matter content

Slope has the most influence on soil erosion potential when the site is under construction. Erosivity and runoff increase as slope grade increases. The runoff then exerts more force on the particles, breaking their bonds more readily and carrying them farther before deposition. The longer water flows along a slope before reaching a major waterway, the greater the potential for erosion.

Soil erosion during and after this proposed construction can be a primary non-point source of water pollution. Eroded soil during the construction phase can create unsafe conditions on roadways, decrease the storage capacity of lakes, clog streams and drainage channels, cause deterioration of aquatic habitats, and increase water treatment costs. Soil erosion also increases the risk of flooding by choking culverts, ditches, and storm sewers, and by reducing the capacity of natural and man-made detention facilities.

The general principles of erosion and sedimentation control measures include:

- reducing or diverting flow from exposed areas, storing flows, or limiting runoff from exposed areas,
- staging construction to keep disturbed areas to a minimum,
- establishing or maintaining or temporary or permanent groundcover,
- retaining sediment on site and
- professionally installing, inspecting, and maintaining control measures.

Erosion control practices are useful controls only if they are properly located, installed, inspected, and maintained.

The SWCD recommends an erosion control plan for all sites, especially if near a wetland or stream.

Map Unit Symbol	Map Unit Name	Acres	Percent
59A	Lisbon silt loam, 0 to 2 percent slopes	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	0.1	0.1%
Eroded Soils		0	0%

Wetland Information

Importance of Wetland Information

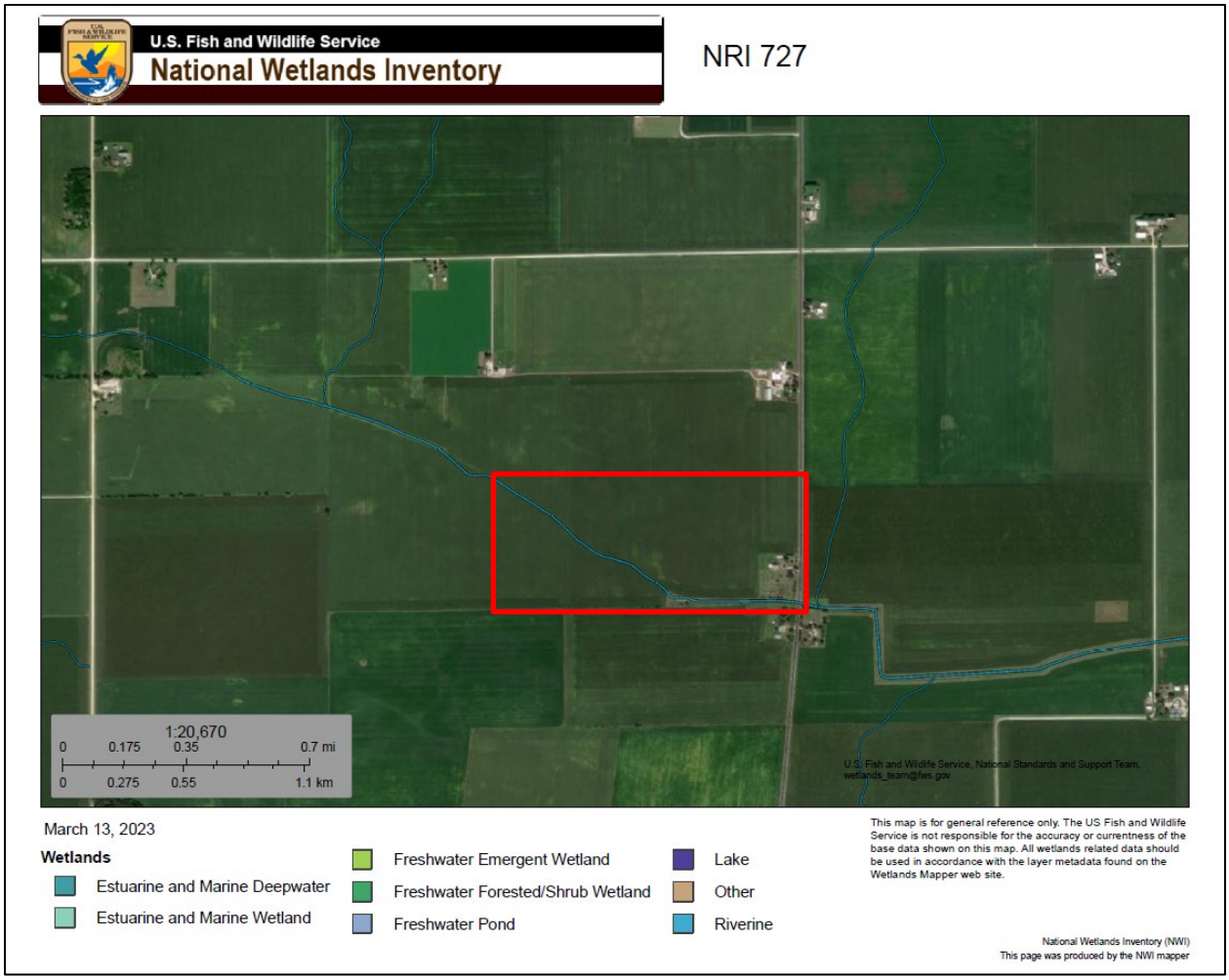
Wetlands function in many ways to provide numerous benefits to society. They control flooding by offering a slow release of excess water downstream or through the soil. They cleanse water by filtering out sediment and some pollutants and can function as rechargers of our valuable groundwater. They also are essential breeding, rearing, and feeding grounds for many species of wildlife.

These benefits are particularly valuable in urbanizing areas as development activity typically adversely affects water quality, increases the volume of stormwater runoff, and increases the demand for groundwater. In an area where many individual homes rely on shallow groundwater wells for domestic water supplies, activities that threaten potential groundwater recharge areas are contrary to the public good. The conversion of wetlands, with their sediment trapping and nutrient absorbing vegetation, to biologically barren stormwater detention ponds can cause additional degradation of water quality in downstream or adjacent areas.

It has been estimated that over 95% of the wetlands that were historically present in Illinois have been destroyed while only recently has the true environmental significance of wetlands been fully recognized. America is losing 100,000 acres of wetlands a year and has saved 5 million acres total (since 1934). One acre of wetland can filter 7.3 million gallons of water a year. These are reasons why our wetlands are high quality and important.

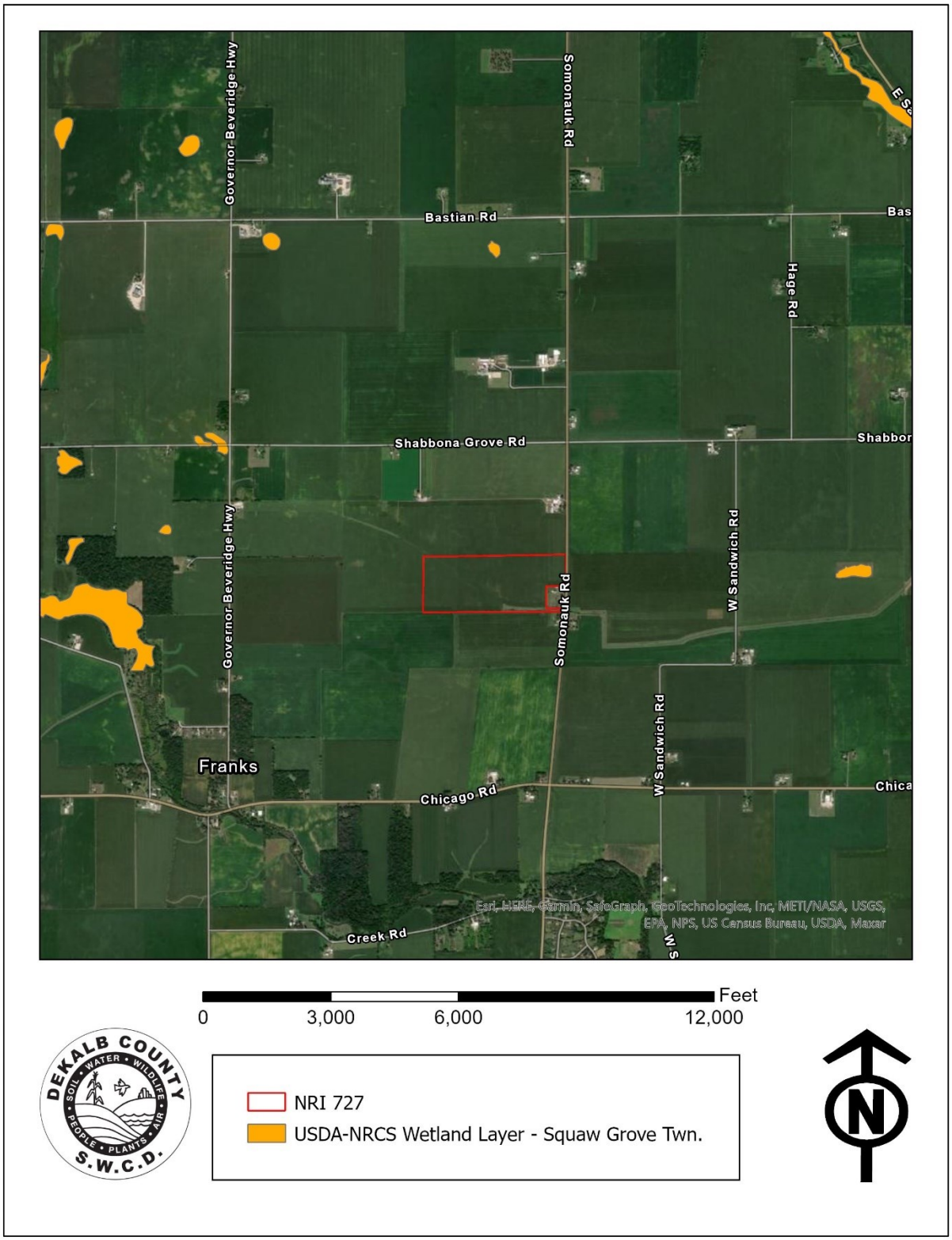
This section contains the NRCS (Natural Resources Conservation Service) Wetlands Inventory, which is the most comprehensive inventory to date. The NRCS Wetlands Inventory is reproduced from an aerial photo at a scale of 1" equals 660 feet. The NRCS developed these maps in cooperation with U.S. EPA (Environmental Protection Agency,) and the U.S. Fish and Wildlife Service, using the National Food Security Act Manual, 3rd Edition. The main purpose of these maps is to determine wetland areas on agricultural fields and areas that may be wetlands but are in a non-agriculture setting.

The NRCS Wetlands Inventory in no way gives an exact delineation of the wetlands, but merely an outline, or the determination that there is a wetland within the outline. For the final, most accurate wetland **determination** of a specific wetland, a wetland ***delineation*** must be certified by NRCS staff using the National Food Security Act Manual (on agricultural land.) On urban land, a certified wetland delineator must perform the delineation using the ACOE 1987 Manual. *See the glossary section for the definitions of "delineation" and "determination."*



There is an area within the project site that is identified as a potential "Riverine habitat classified as a R5UBH" based on U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps.

In addition, a wetland determination conducted by Atwell, LLC concluded that there are two areas on the southeast boundary of the project site that likely meet Section 404 criteria to be considered jurisdictional wetlands (See report by Atwell, LLC.).



A review of USDA-NRCS Wetland layers identify no potential wetland areas within the project site.

PLEASE READ THE FOLLOWING IF YOU ARE PLANNING TO DO ANY WORK NEAR A STREAM (THIS INCLUDES SMALL UNNAMED STREAMS), LAKE, WETLAND OR FLOODWAY.

The laws of the United States and the State of Illinois assign certain agencies specific and different regulatory roles to protect the waters within the State's boundaries. These roles, when considered together, include protection of navigation channels and harbors, protection against flood way encroachments, maintenance and enhancement of water quality, protection of fish and wildlife habitat and recreational resources, and, in general, the protection of total public interest. Unregulated use of the waters within the State of Illinois could permanently destroy or alter the character of these valuable resources and adversely impact the public. Therefore, please contact the proper regulatory authorities when planning any work associated with Illinois waters so that proper consideration and approval can be obtained.

WHO MUST APPLY

Anyone proposing to dredge, fill, rip rap, or otherwise alter the banks or beds of, or construct, operate, or maintain any dock, pier, wharf, sluice, dam, piling, wall, fence, utility, flood plain or flood way subject to State of Federal regulatory jurisdiction should apply for agency approvals.

REGULATORY AGENCIES:

- **Wetlands or U.S. Waters: U.S. Army Corps of Engineers**, Rock Island District, Clock Tower Building, P.O. Box 2004, Rock Island, IL 61204-2004. Phone: (309) 794-5379.
- **Flood plains: Illinois Department of Natural Resources \ Office of Water Resources**, Natural Resources Way, Springfield, IL 62702-1270.
- **Water Quality \ Erosion Control: Illinois Environmental Protection Agency**, Division of Water Pollution Control, Permit Section, Watershed Unit, 2200 Churchill Road, Springfield, IL 62706, phone (217)- 782-0610.

COORDINATION

We recommend early coordination with the regulatory agencies BEFORE finalizing work plans. This allows the agencies to recommend measures to mitigate or compensate for adverse impacts. Also, the agency can make possible environmental enhancement provisions early in the project planning stages. This could reduce time required to process necessary approvals.

CAUTION: Contact with the United States Army Corps of Engineers is strongly advised before commencement of any work in or near a water of the United States. This could save considerable time and expense. Persons responsible for willful and direct violation of Section 10 of the River and Harbor Act of 1899 or Section 404 of the Federal Water Pollution Control Act are subject to fines ranging up to $27,500 per day of violation and imprisonment for up to one year or both.

Land Evaluation Site Assessment

(LESA) Background Information

The DeKalb County Land Evaluation and Site Assessment System (LESA) is designed to evaluate the viability of a site for agricultural uses. Although the framework of the system was developed by the Natural Resources Conservation Service of the U.S. Department of Agriculture, the contents of the County's LESA System were prepared locally to utilize soil survey information and interpretations and to incorporate local values and objectives regarding the protection of agricultural land use and the coordination of growth, affecting land development.

Decision makers use the LESA system to determine the suitability of a land use change and/or a zoning request as it relates to agricultural land. The LESA system is a two-step procedure that includes:

* Land Evaluation (LE), soils value
* Site Assessment (SA), land use

The systems two parts are evaluated based on the assignment of points, with a maximum of 300 total. The Land Evaluation has a maximum of 100 points and is used to rate farmland for its agricultural productivity and its prime farmland category. Generally, the Land Evaluation arranges the County's soils by their relative values, represented by a score of 0 to 100, with 0 being the worst for agriculture and 100 the best. The data for formulating the land evaluation is derived from the soil survey of DeKalb County.

Moreover, Land Evaluation encompasses information regarding soils found on the site and their suitability for agricultural purposes. DeKalb County soils consist of thirty-one different soil series ranging from very poorly drained Houghton Muck to well drained Harvard. DeKalb County is known for its highly productive agricultural soils such as Drummer, Flanagan and Muscatine. For the purposes of the Land Evaluation portion of the LESA system, each soil is rated higher on the overall LESA score. DeKalb County SWCD provides a weighted average of the soils using a simple, mechanical, unbiased method of determining agricultural suitability of soils on site.

The Site Assessment considers important factors other than soils relative to a specific parcel, which determine viability for agricultural use. The maximum number of points for the Site Assessment is 200. The Site Assessment identifies and weighs 15 criteria. The determination to include the specific site assessment factors directly resulted from the following:

* DeKalb County Zoning Ordinance
* Land Use Plan
* Health Department Criteria for Septic
* Other adopted county policies.

If a parcel were to receive a total of 215 points or more for the completed evaluation, that would indicate that the site has a high rating for agriculture. In utilizing the LESA System, the higher the point value, the greater the productivity and the more viable the site for agricultural use.

The DeKalb County LESA System is a valuable tool to guide land use decisions for the County. It does not take away the power of local officials to make land use decisions; rather, it assists them in making rational, consistent, and supportable land use decisions. Applications of the LESA System will generally fall under two types of requests involving conversion of land from agricultural use to non-agricultural use. The most frequent application of LESA will be when a request is made to rezone a tract of land from the County's agricultural districts to another zoning district or for special use. The LESA System can also be used to review state and federal projects for compliance with the Illinois Farmland Preservation Act and the Federal Farmland Protection Policy Act and their impact on important farmland.

In summary, the LESA evaluation addresses all factors, including soils information, together to provide a rational, consistent, unbiased determination of the impact to agriculture from the proposed land use and zoning changes.

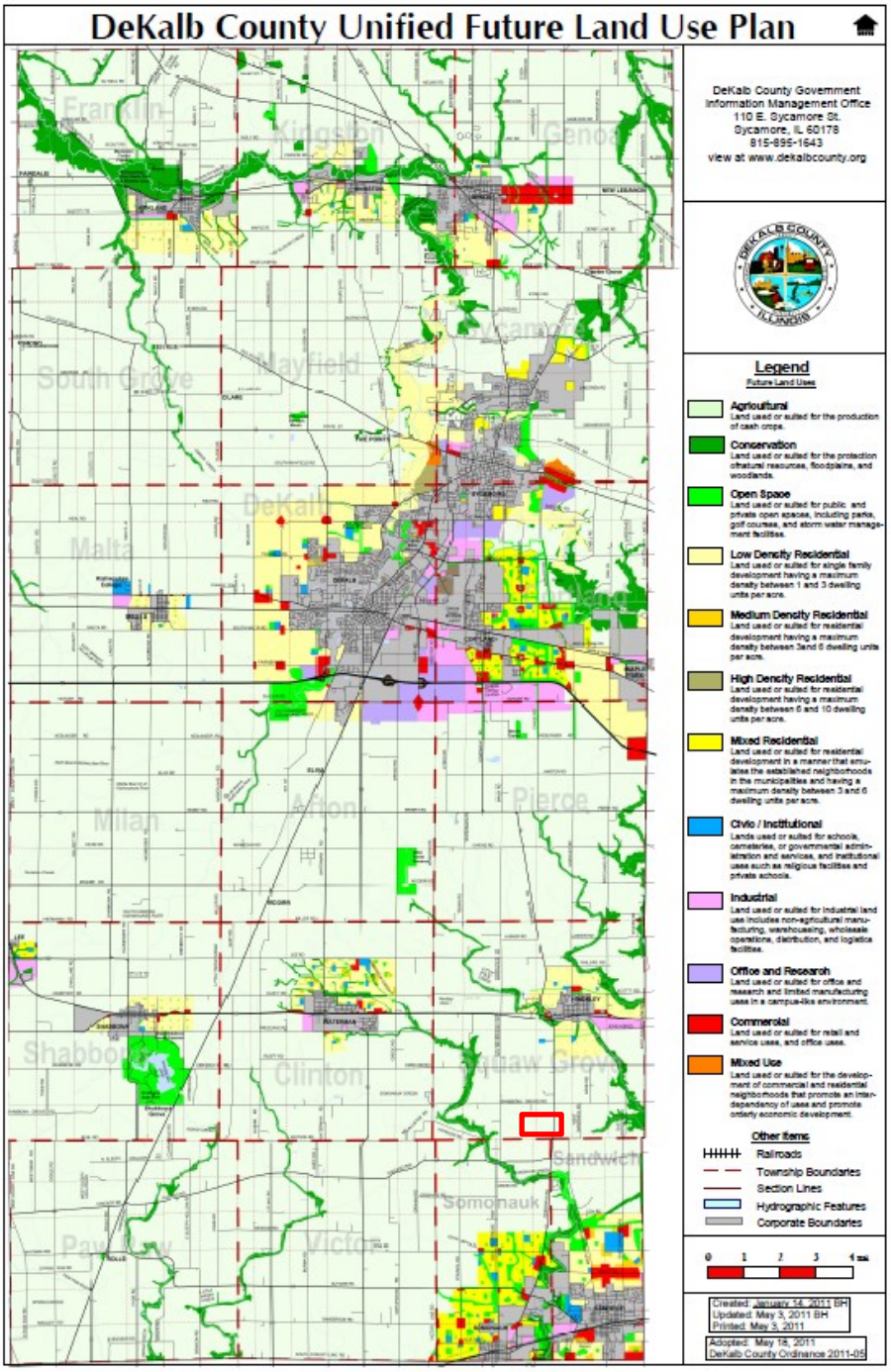
Figure 2. LAND EVALUATION (LE) WORKSHEET

Soil	Value Group	Percentage	Acreage	Value Factor	Adjusted Farm Unit Size	Adjusted Ag. Point Value
59A	1	2.40%	2.3	98	2.3	2.4
152A	1	67.60%	64.9	100	64.9	67.6
154A	1	19.00%	18.3	100	18.3	19.0
348B	4	10.80%	10.3	83	8.5	9.0
356A	1	0.10%	0.1	100	0.1	0.1
512B	2	0.10%	0.1	95	0.1	0.1
Totals		100%	96		94.2	98.1

Explanation of the LE Worksheet

Soil Number: is the soil type of the polygon on the soils map.
Percentage and Acreage: the percentages of the parcel, and the area that the soil polygon represents.
Value: the numeric value from 0-100 that is assinged that soil units.
Adjusted Farm Unit Size: the acreage multiplied by the value of that soil unit.
Adjusted Ag. Point Value: the percentage multiplied by the value factor of that soil unit.
**** The LE score is the Total Value Number (shaded on the table)***
*Note: the soil types and percentages may differ from the limitations table for this calculation because of buildings, driveways, and other manmade impediments to agriculture. See figure 9 for the approximate "footprint" of the features (if any.)

DeKalb County Unified Future Land Use Plan Map



This parcel in question is located within an area identified for A-1 (Agriculture) zoning in the 2011 DeKalb County Unified Future Land Use Plan Map.

Glossary

AGRICULTURAL PROTECTION AREAS (AG AREAS) - Allowed by P.A. 81-1173. An AG AREA consists of a minimum of 350 acres of farmland, as contiguous and compact as possible. Petitioned by landowners, AG AREAS protect for a period of ten years initially, then reviewed every eight years thereafter. AG AREA establishment exempts landowners from local nuisance ordinances directed at farming operations, and designated land cannot receive special tax assessments on public improvements that do not benefit the land, e.g., water and sewer lines.

AGRICULTURE - The growing, harvesting and storing of crops including legumes, hay, grain, fruit and truck or vegetable including dairying, poultry, swine, sheep, beef cattle, pony and horse production, fur farms, and fish and wildlife farms; farm buildings used for growing, harvesting and preparing crop products for market, or for use on the farm; roadside stands, farm buildings for storing and protecting farm machinery and equipment from the elements, for housing livestock or poultry and for preparing livestock or poultry products for market; farm dwellings occupied by farm owners, operators, tenants or seasonal or year around hired farm workers.

B.G. - Below Grade. Under the surface of the Earth.

BEDROCK - Indicates depth at which bedrock occurs. Also lists hardness as rippable or hard.

FLOODING - Indicates frequency, duration, and period during year when floods are likely to occur.

HIGH LEVEL MANAGEMENT - The application of effective practices adapted to different crops, soils, and climatic conditions. Such practices include providing for adequate soil drainage, protection from flooding, erosion and runoff control, near optimum tillage, and planting the correct kind and amount of high-quality seed. Weeds, diseases, and harmful insects are controlled. Favorable soil reaction and near optimum levels of available nitrogen, phosphorus, and potassium for individual crops are maintained. Efficient use is made of available crop residues, barnyard manure, and/or green manure crops. All operations, when combined efficiently and timely, can create favorable growing conditions and reduce harvesting losses -- within limits imposed by weather.

HIGH WATER TABLE - A seasonal high-water table is a zone of saturation at the highest average depth during the wettest part of the year. May be apparent, perched, or artesian kinds of water tables.

Water Table, Apparent - A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

Water Table, Artesian - A water table under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole.

Water Table, Perched - A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

DELINEATION - For Wetlands: A series of orange flags placed on the ground by a certified professional that outlines the wetland boundary on a parcel.

DETERMINATION - A polygon drawn on a map using map information that gives an outline of a wetland.

HYDRIC SOIL - This type of soil is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (USDA Natural Resources Conservation Service 1987)

INTENSIVE SOIL MAPPING - Mapping done on a smaller more intensive scale than a modern soil survey to determine soil properties of a specific site, e.g. mapping for septic suitability.

LAND EVALUATION AND SITE ASSESSMENT (L.E.S.A.) - LESA is a systematic approach for evaluating a parcel of land and to determine a numerical value for the parcel for farmland preservation purposes.

MODERN SOIL SURVEY - A soil survey is a field investigation of the soils of a specific area, supported by information from other sources. The kinds of soil in the survey area are identified and their extent shown on a map, and an accompanying report describes, defines, classifies, and interprets the soils. Interpretations predict the behavior of the soils under different used and the soils' response to management. Predictions are made for areas of soil at specific places. Soils information collected in a soil survey is useful in developing land-use plans and alternatives involving soil management systems and in evaluating and predicting the effects of land use.

PALUSTRINE - Name given to inland freshwater wetlands.

PERMEABILITY - Values listed estimate the range (in rate and time) it takes for downward movement of water in the major soil layers when saturated but allowed to drain freely. The estimates are based on soil texture, soil structure, available data on permeability and infiltration tests, and observation of water movement through soils or other geologic materials.

PIQ - Parcel in question

POTENTIAL FROST ACTION - Damage that may occur to structures and roads due to ice lens formation causing upward and lateral soil movement. Based primarily on soil texture and wetness.

PRIME FARMLAND - Prime farmland soils are lands that are best suited to food, feed, forage, fiber, and oilseed crops. It may be cropland, pasture, woodland, or other land, but it is not urban and built-up land or water areas. It either is used for food or fiber or is available for those uses. The soil qualities, growing season, and moisture supply are those needed for a well-managed soil economically to produce a sustained high yield of crops. Prime farmland produces in highest yields with minimum inputs of energy and economic resources and farming the land results in the least damage to the environment.

Prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The level of acidity or alkalinity is

acceptable. Prime farmland has few or no rocks and is permeable to water and air. It is not excessively erodible or saturated with water for long periods and is not frequently flooded during the growing season. The slope ranges mainly from 0 to 5 percent. (Source USDA Natural Resources Conservation Service)

PRODUCTIVITY INDEXES - Productivity indexes for grain crops express the estimated yields of the major grain crops grown in Illinois as a single percentage of the average yields obtained under basic management from several of the more productive soils in the state. This group of soils is composed of the Muscatine, Ipava, Sable, Lisbon, Drummer, Flanagan, Littleton, Elburn, and Joy soils. Each of the 425 soils found in Illinois are found in Circular 1156 from the Illinois Cooperative Extension Service.

SEASONAL - When used in reference to wetlands indicates that the area is flooded only during a portion of the year.

SHRINK-SWELL POTENTIAL - Indicates volume changes to be expected for the specific soil material with changes in moisture content.

SOIL MAPPING UNIT - A map unit is a collection of soil areas of miscellaneous areas delineated in mapping. A map unit is generally an aggregate of the delineations of many different bodies of a kind of soil or miscellaneous area but may consist of only one delineated body. Taxonomic class names and accompanying phase terms are used to name soil map units. They are described in terms of ranges of soil properties within the limits defined for taxa and in terms of ranges of tax adjuncts and inclusions.

SOIL SERIES - A group of soils, formed from a particular type of parent material, having horizons that, except for texture of the A or surface horizon, are similar in all profile characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineralogical and chemical composition.

SUBSIDENCE - Applies mainly to organic soils after drainage. Soil material subsides due to shrinkage and oxidation.

TERRAIN - The area or surface over which a particular rock or group of rocks is prevalent.

TOPSOIL - That portion of the soil profile where higher concentrations of organic material, fertility, bacterial activity, and plant growth take place. Depths of topsoil vary between soil types.

WATERSHED - An area of land that drains to an associated water resource such as a wetland, river, or lake. Depending on the size and topography, watersheds can contain numerous tributaries, such as streams and ditches, and ponding areas such as detention structures, natural ponds, and wetlands.

WETLAND - An area that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

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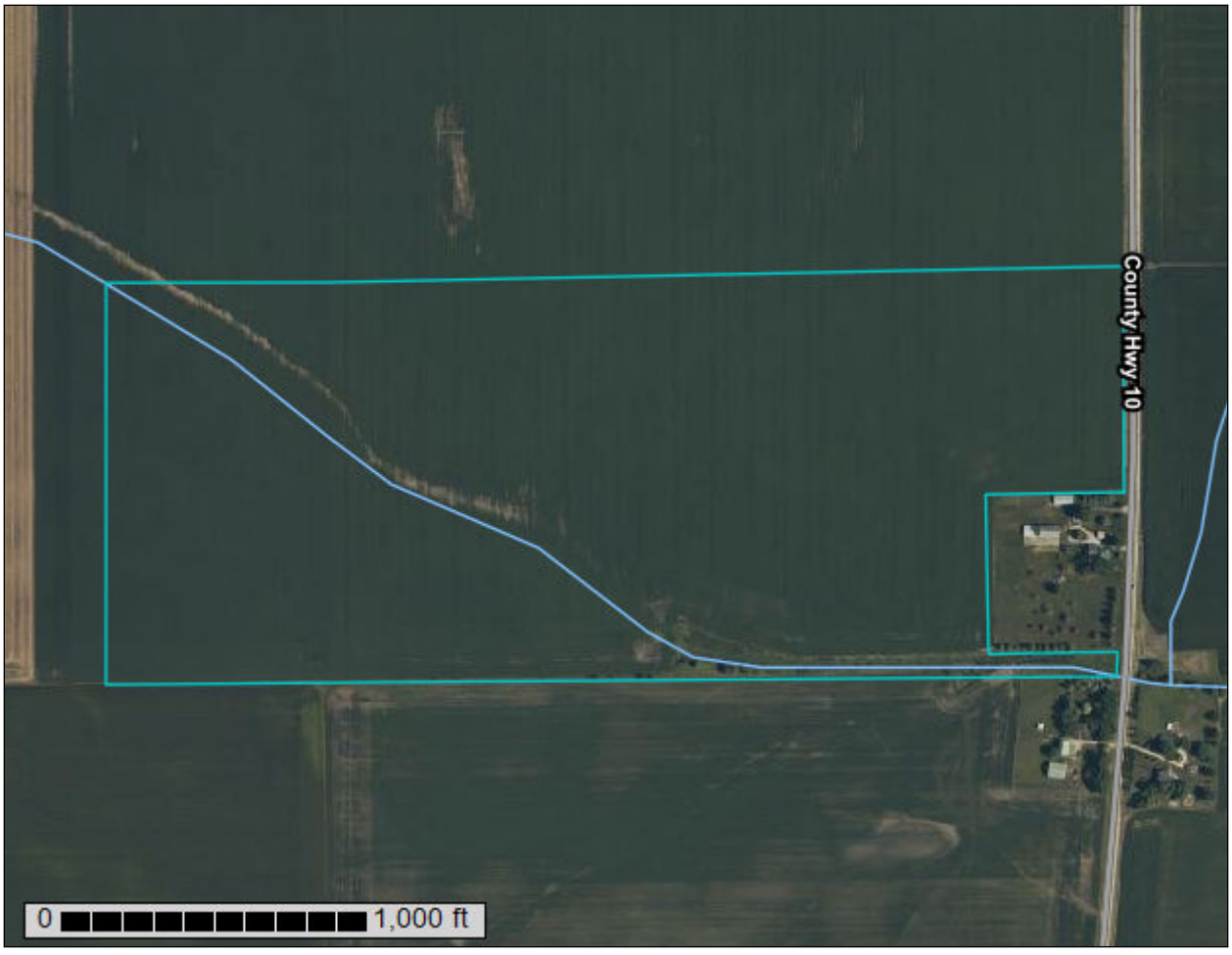
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for DeKalb County, Illinois

NRI 727



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

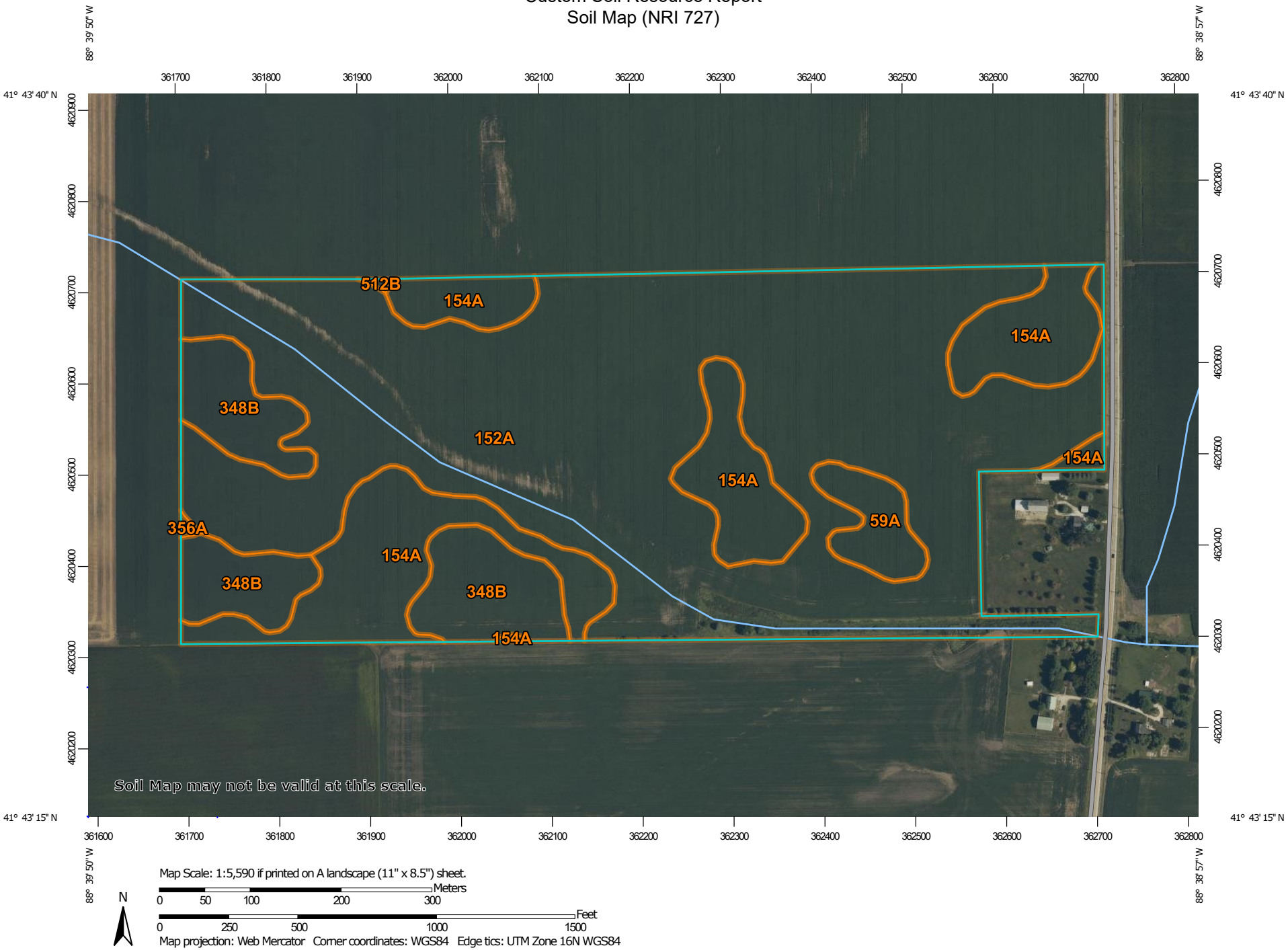
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map (NRI 727)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Illinois
Survey Area Data: Version 17, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2019—Aug 24, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (NRI 727)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	0.1	0.1%
Totals for Area of Interest		**96.0**	**100.0%**

Map Unit Descriptions (NRI 727)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

DeKalb County, Illinois

59A—Lisbon silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2ytd7
Elevation: 690 to 850 feet
Mean annual precipitation: 35 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 165 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Lisbon and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lisbon

Setting

Landform: End moraines, ground moraines
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over till

Typical profile

Ap - 0 to 11 inches: silt loam
Bt - 11 to 36 inches: silty clay loam
2Bt - 36 to 39 inches: clay loam
2C - 39 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C/D
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

Minor Components

Drummer, drained

Percent of map unit: 3 percent
Landform: Ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Elpaso, drained

Percent of map unit: 3 percent
Landform: Ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Sable, drained

Percent of map unit: 2 percent
Landform: Ground moraines, swales
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

152A—Drummer silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2ssrz
Elevation: 490 to 1,020 feet
Mean annual precipitation: 33 to 43 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 160 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Drummer, drained, and similar soils: 94 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Drummer, Drained

Setting

Landform: Swales on till plains, swales on outwash plains, stream terraces on till plains, stream terraces on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Loess over stratified loamy outwash

Typical profile

Ap - 0 to 14 inches: silty clay loam
Btg - 14 to 41 inches: silty clay loam
2Btg - 41 to 47 inches: loam
2Cg - 47 to 60 inches: stratified sandy loam to clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow, R111XD020IN - Wet Outwash Mollisol, R108XA013IL - Wet Outwash Prairie
Hydric soil rating: Yes

Minor Components

Peotone, drained

Percent of map unit: 3 percent
Landform: Depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Harpster, drained

Percent of map unit: 3 percent
Landform: Depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip

Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY025IL - Ponded Calcareous Sedge Meadow
Hydric soil rating: Yes

154A—Flanagan silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2ssry
Elevation: 570 to 990 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 160 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Flanagan and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Flanagan

Setting

Landform: Ground moraines, till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
A - 8 to 18 inches: silty clay loam
Bt1 - 18 to 32 inches: silty clay loam
Bt2 - 32 to 45 inches: silty clay loam
2Bt3 - 45 to 49 inches: silt loam
2C - 49 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 6.0
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C/D
Ecological site: R108XA006IL - Loess Upland Prairie
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: No

Minor Components

Elpaso, drained

Percent of map unit: 4 percent
Landform: Till plains, ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow, R108XA008IL - Ponded Loess Sedge Meadow, R108XA007IL - Wet Loess Upland Prairie
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: Yes

Urban land

Percent of map unit: 1 percent
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

348B—Wingate silt loam, cool mesic, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2sn03
Elevation: 660 to 960 feet
Mean annual precipitation: 33 to 40 inches
Mean annual air temperature: 46 to 51 degrees F
Frost-free period: 145 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Wingate and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wingate

Setting

Landform: End moraines, ground moraines

Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
BE - 8 to 12 inches: silt loam
Bt1 - 12 to 34 inches: silty clay loam
2Bt2 - 34 to 47 inches: clay loam
2C - 47 to 60 inches: loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R108XA010IL - Loess Upland Savanna
Hydric soil rating: No

Minor Components

Elpaso, drained

Percent of map unit: 3 percent
Landform: Swales on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R108XA008IL - Ponded Loess Sedge Meadow, R108XA007IL - Wet Loess Upland Prairie
Hydric soil rating: Yes

356A—Elpaso silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t6zs

Elevation: 580 to 1,020 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 155 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Elpaso, drained, and similar soils: 94 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elpaso, Drained

Setting

Landform: Ground moraines, till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loess over till

Typical profile

Ap - 0 to 21 inches: silty clay loam
Btg1 - 21 to 44 inches: silty clay loam
2Btg2 - 44 to 69 inches: silty clay loam
2C - 69 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow, R108XA008IL - Ponded Loess Sedge Meadow, R108XA007IL - Wet Loess Upland Prairie
Hydric soil rating: Yes

Minor Components

Harpster, drained

Percent of map unit: 4 percent
Landform: Depressions on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip

Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY025IL - Ponded Calcareous Sedge Meadow
Hydric soil rating: Yes

Peotone, drained

Percent of map unit: 2 percent
Landform: Depressions on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

512B—Danabrook silt loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2ytdf
Elevation: 800 to 930 feet
Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Danabrook and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Danabrook

Setting

Landform: End moraines, ground moraines
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over till

Typical profile

Ap - 0 to 13 inches: silt loam
Bt - 13 to 33 inches: silty clay loam
2Bt - 33 to 42 inches: clay loam
2C - 42 to 60 inches: loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Minor Components

Drummer, drained

Percent of map unit: 8 percent
Landform: Ground moraines, stream terraces on outwash plains, swales on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, talf
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Ground-based Solar Arrays, Soil-penetrating Anchor Systems (NRI 727)

Ground-based Solar Arrays, Soil-penetrating Anchor Systems

Ground-based solar arrays are sets of photovoltaic panels that are not situated on a building or pole. These installations consist of a racking system that holds the panel in the desired orientation and the foundation structures that hold the racking system to the ground. Two basic methods are used to hold the systems to the ground, based on site conditions and cost. One method employs driven piles, screw augers, or concrete piers that penetrate into the soil to provide a stable foundation. The ease of installation and general site suitability of soil-penetrating anchoring systems depends on soil characteristics such as rock fragment content, soil depth, soil strength, soil corrosivity, shrink-swell tendencies, and drainage. The other basic anchoring system utilizes precast ballasted footings or ballasted trays on the soil surface to make the arrays too heavy to move. The site considerations that impact both basic systems are slope, slope aspect, wind speed, land surface shape, flooding, and ponding. Other factors that will contribute to the function of a solar power array include daily hours of sunlight and shading from hills, trees or buildings.

Soil-penetrating anchoring systems can be used where the soil conditions are not limited. Installation of these systems requires some power equipment for hauling components and either driving piles, turning helices, or boring holes to install the anchoring apparatus.

Soils can be a non-member, partial member or complete members of the set of soils that are limited for "Ground-based Solar Panel Arrays". If a soil's property within 150 cm (60 inches) of the soil surface has a membership indices greater than zero, then that soil property is limiting and the soil restrictive feature is identified. The overall interpretive rating assigned is the maximum membership indices of each soil interpretive property that comprise the "Ground-based Solar Panel Array" interpretive rule. Minor restrictive soil features are identified but not considered as part of the overall rating process. These restrictive features could be important factors where the major restrictive features are overcome through design application.

Soils are placed into interpretive rating classes per their rating indices. These are not limited (rating index = 0), somewhat limited (rating index greater than 0 and less than 1.0), or very limited (rating index = 1.0).

Numerical ratings indicate the degree of limitation. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil has the least similarity to a good site (1.00) and the point at which the soil feature is very much like known good sites (0).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

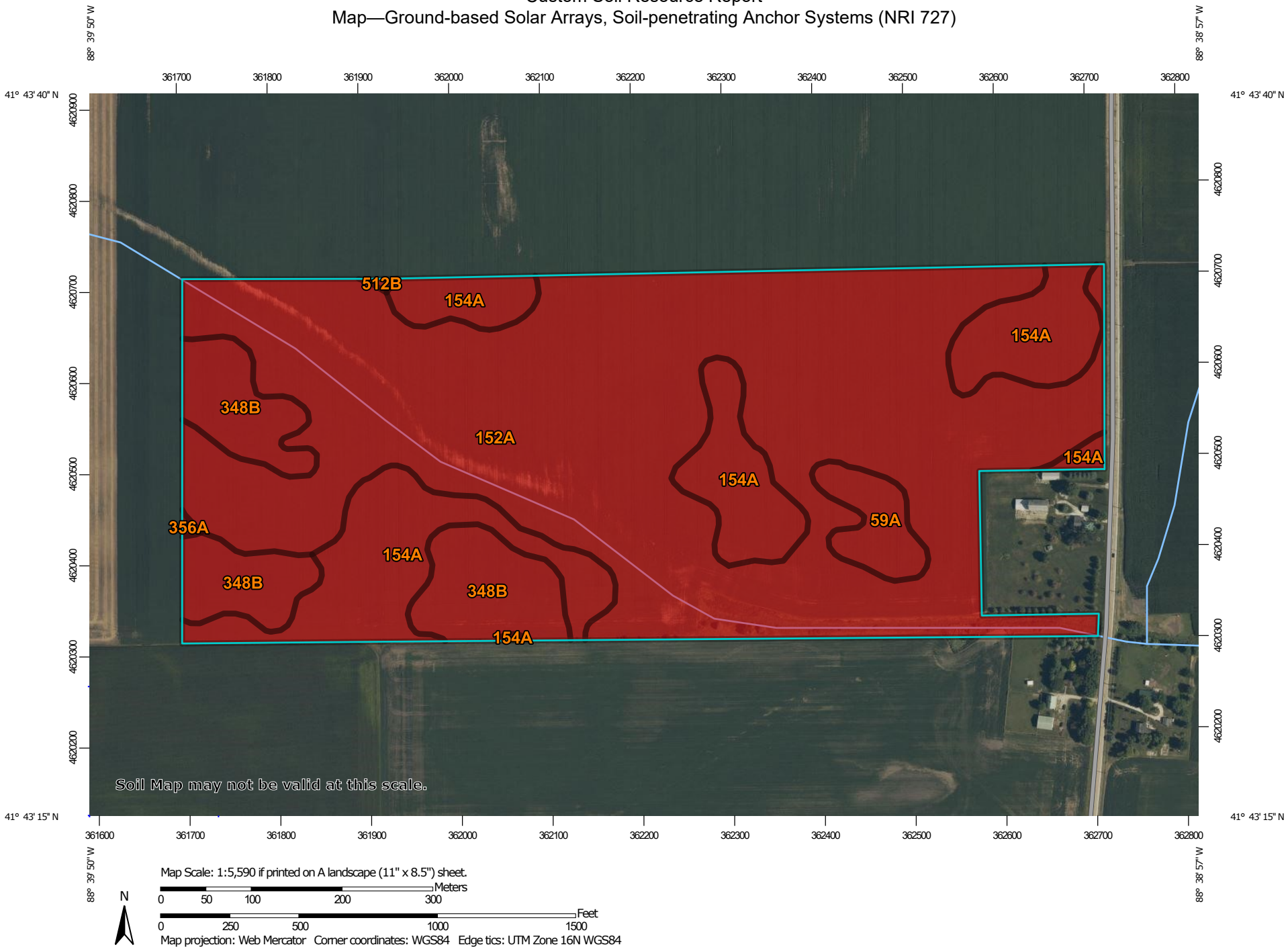
Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

References:

Canada, S. 2012. Corrosion impacts on steel piles. Solarpro. Solarprofessional.com.

Romanoff, Melvin. 1962. Corrosion of Steel Pilings in Soils. Journal of Research of the National Bureau of Standards. (Volume 66C, No. 3). July/September, 1962.

Map—Ground-based Solar Arrays, Soil-penetrating Anchor Systems (NRI 727)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Illinois
Survey Area Data: Version 17, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2019—Aug 24, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Ground-based Solar Arrays, Soil-penetrating Anchor Systems (NRI 727)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	Very limited	Lisbon (92%)	Frost action (1.00)	2.3	2.4%
				Low strength (0.99)		
				Steel corrosion (0.75)		
				Depth to saturated zone (0.75)		
				Shrink-swell (0.40)		
			Drummer, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
			Elpaso, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
			Sable, drained (2%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
152A	Drummer silty clay loam, 0 to	Very limited	Drummer, drained (94%)	Ponding (1.00)	64.9	67.6%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	2 percent slopes			Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
			Peotone, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
			Harpster, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
154A	Flanagan silt loam, 0 to 2 percent slopes	Very limited	Flanagan (95%)	Low strength (1.00)	18.3	19.0%
				Shrink-swell (0.89)		
				Steel corrosion (0.75)		
				Depth to saturated zone (0.75)		
				Frost action (0.50)		
			Elpaso, drained (4%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Steel corrosion (0.75)		
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	Very limited	Wingate (97%)	Frost action (1.00)	10.3	10.8%
				Low strength (0.98)		
				Steel corrosion (0.75)		
				Hillslope position (0.25)		
				Slope shape across (0.20)		
			Elpaso, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
356A	Elpaso silty clay loam, 0 to 2 percent slopes	Very limited	Elpaso, drained (94%)	Ponding (1.00)	0.1	0.1%
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
			Harpster, drained (4%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
			Peotone, drained (2%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Frost action (1.00)		
				Low strength (1.00)		
512B	Danabrook silt loam, 2 to 5 percent slopes	Very limited	Danabrook (92%)	Frost action (1.00)	0.1	0.1%
				Low strength (0.93)		
				Steel corrosion (0.75)		
				Hillslope position (0.25)		
				Shrink-swell (0.21)		
			Drummer, drained (8%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Steel corrosion (0.75)		
Totals for Area of Interest					**96.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	96.0	100.0%
Totals for Area of Interest	**96.0**	**100.0%**

Rating Options—Ground-based Solar Arrays, Soil-penetrating Anchor Systems (NRI 727)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Unpaved Local Roads and Streets (NRI 727)

Unpaved local roads and streets are those roads and streets that carry traffic year round but have a graded surface of local soil material or aggregate.

Description:

Unpaved local roads and streets are those roads and streets that carry traffic year round but have a graded surface of local soil material or aggregate.

The roads and streets consist of

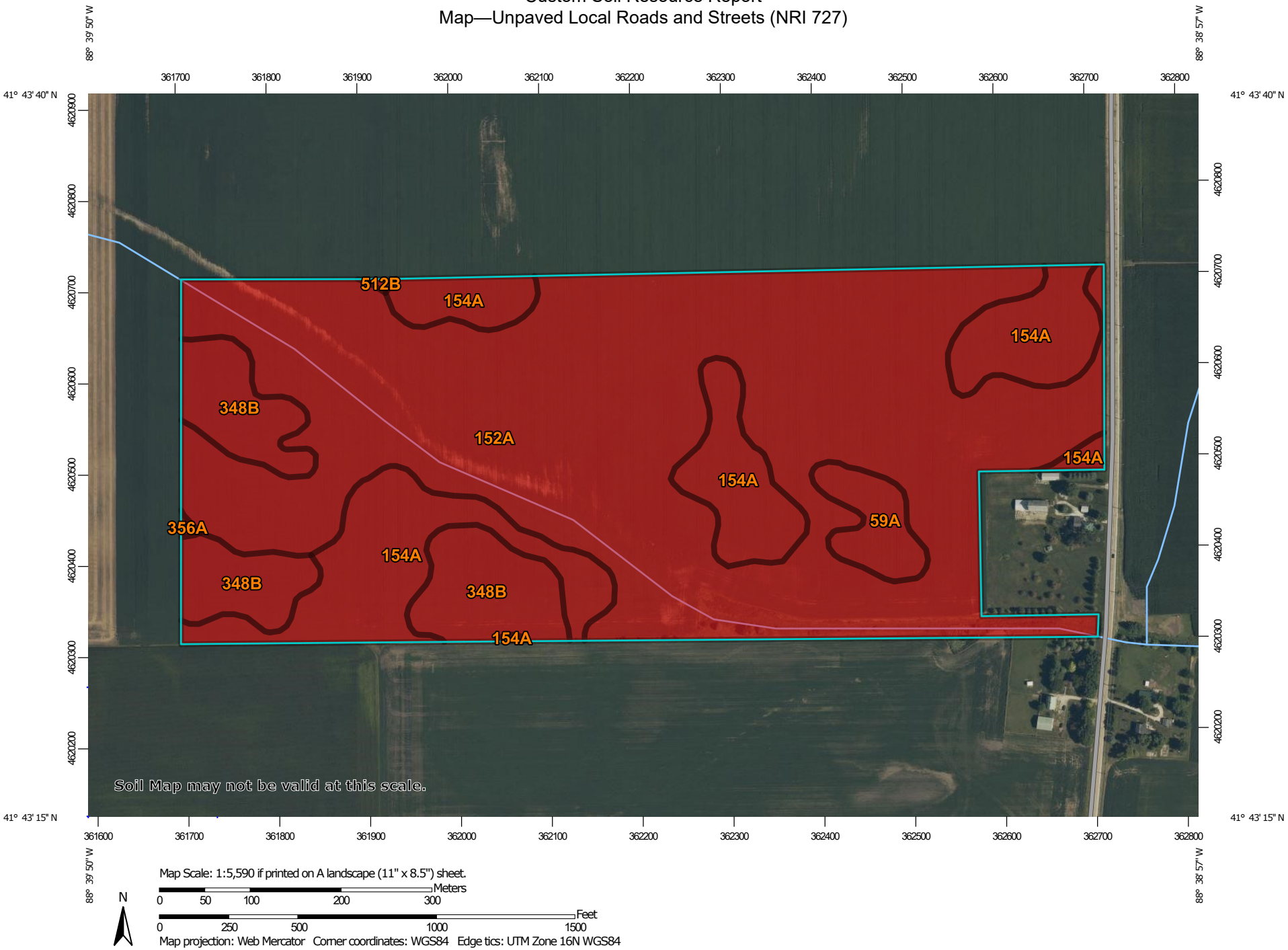
(1) the underlying local soil material, either cut or fill, which is called "the sub-grade";

(2) the surface, which may be the same as the subgrade or may have aggrate such as crushed limestone added.

They are graded to shed water, and conventional drainage measures are provided. These roads and streets are built mainly from the soil at the site. Soil interpretations for local roads and streets are used as a tool in evaluating soil suitability and identifying soil limitations for the practice. The rating is for soils in their present condition and does not consider present land use. Soil properties and qualities that

affect local roads and streets are those that influence the ease of excavation and grading and the traffic-supporting capacity. The properties and qualities that affect the ease of excavation and grading are hardness of bedrock or a cemented pan, depth to bedrock or a cemented pan, depth to a water table, flooding, the amount of large stones, and slope. The properties that affect traffic-supporting capacity are soil strength as inferred from the AASHTO group index and the Unified classification, subsidence, shrink-swell behavior, potential frost action, and depth to the seasonal high water table. The dust generating tendacy of the soil is also considered.

Map—Unpaved Local Roads and Streets (NRI 727)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Illinois
Survey Area Data: Version 17, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2019—Aug 24, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Unpaved Local Roads and Streets (NRI 727)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	Very limited	Lisbon (92%)	Frost action (1.00)	2.3	2.4%
				Low strength (0.99)		
				Depth to saturated zone (0.75)		
				Shrink-swell (0.40)		
				Dusty (0.05)		
			Drummer, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.25)		
			Elpaso, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.59)		
			Sable, drained (2%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.64)		
152A	Drummer silty clay loam, 0 to 2 percent slopes	Very limited	Drummer, drained (94%)	Ponding (1.00)	64.9	67.6%
				Depth to saturated zone (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.37)		
			Peotone, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
			Harpster, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.29)		
154A	Flanagan silt loam, 0 to 2 percent slopes	Very limited	Flanagan (95%)	Low strength (1.00)	18.3	19.0%
				Shrink-swell (0.89)		
				Depth to saturated zone (0.75)		
				Frost action (0.50)		
				Dusty (0.06)		
			Elpaso, drained (4%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.24)		
348B	Wingate silt loam, cool	Very limited	Wingate (97%)	Frost action (1.00)	10.3	10.8%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	mesic, 2 to 5 percent slopes			Low strength (0.98)		
				Shrink-swell (0.15)		
				Depth to saturated zone (0.08)		
				Dusty (0.04)		
			Elpaso, drained (3%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.19)		
356A	Elpaso silty clay loam, 0 to 2 percent slopes	Very limited	Elpaso, drained (94%)	Ponding (1.00)	0.1	0.1%
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.19)		
			Harpster, drained (4%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.29)		
			Peotone, drained (2%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Shrink-swell (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
512B	Danabrook silt loam, 2 to 5 percent slopes	Very limited	Danabrook (92%)	Frost action (1.00)	0.1	0.1%
				Low strength (0.93)		
				Shrink-swell (0.21)		
				Dusty (0.04)		
			Drummer, drained (8%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Frost action (1.00)		
				Low strength (1.00)		
				Shrink-swell (0.65)		
Totals for Area of Interest					**96.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	96.0	100.0%
Totals for Area of Interest	**96.0**	**100.0%**

Rating Options—Unpaved Local Roads and Streets (NRI 727)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Land Classifications

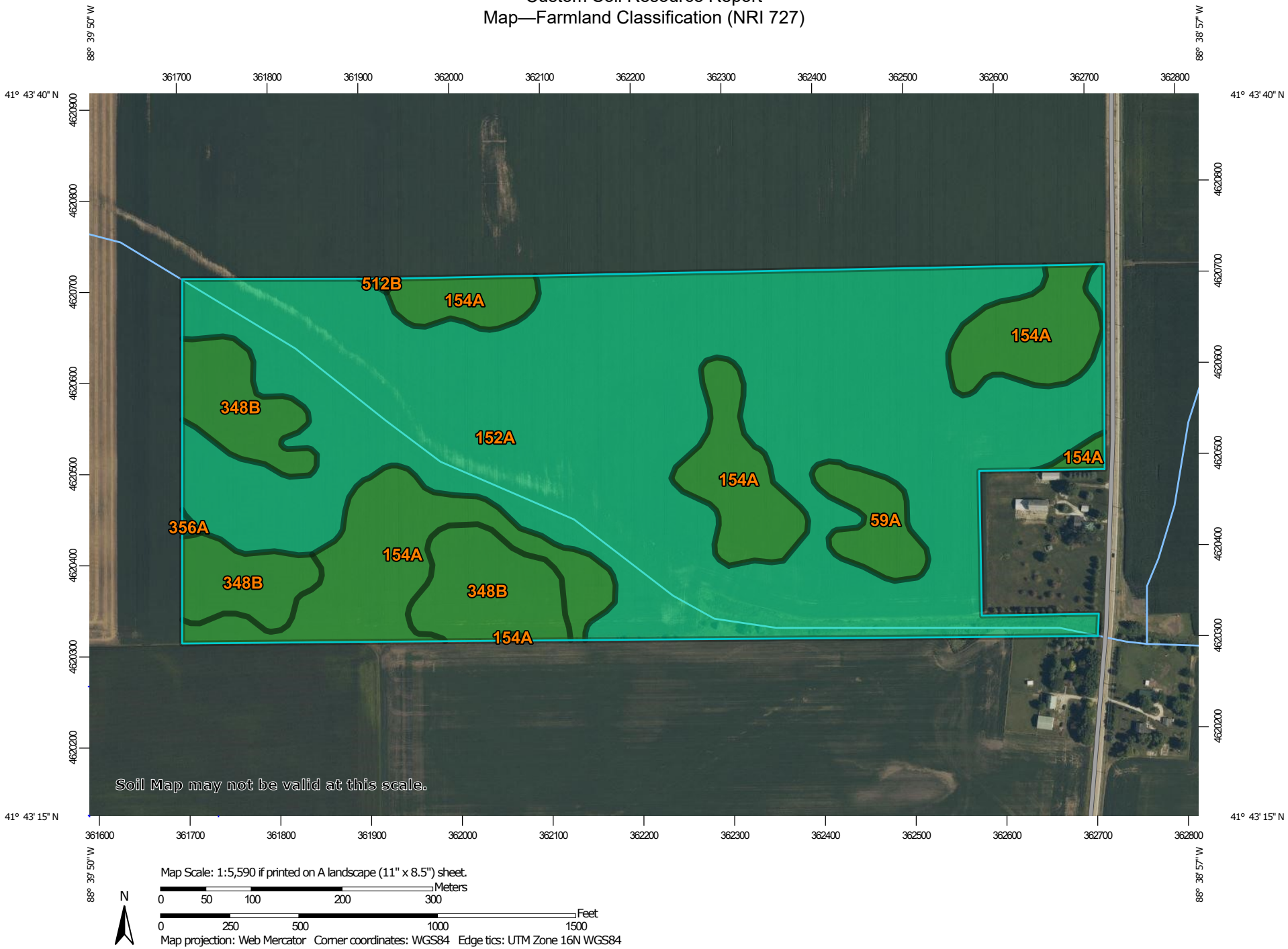
Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

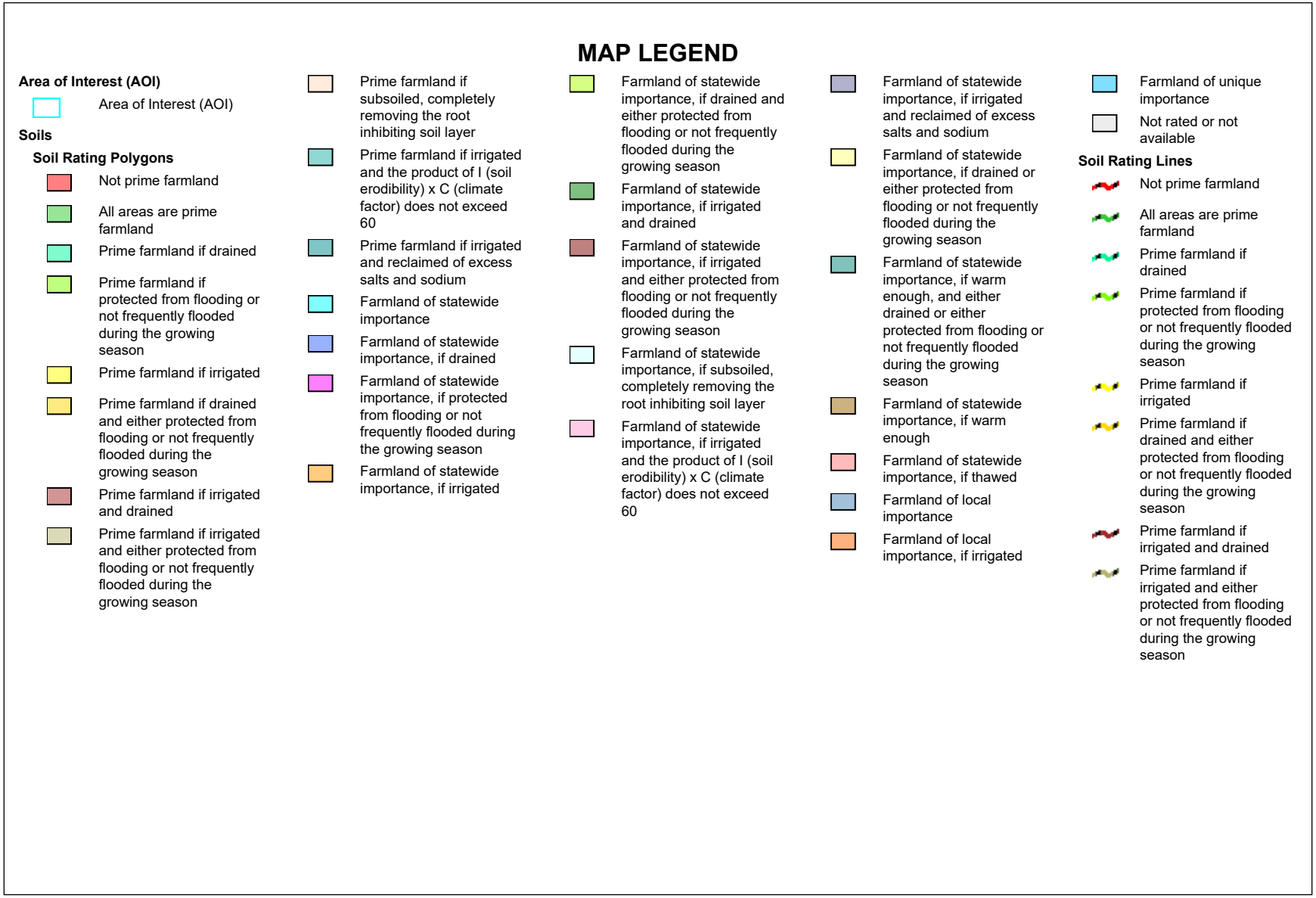
Farmland Classification (NRI 727)

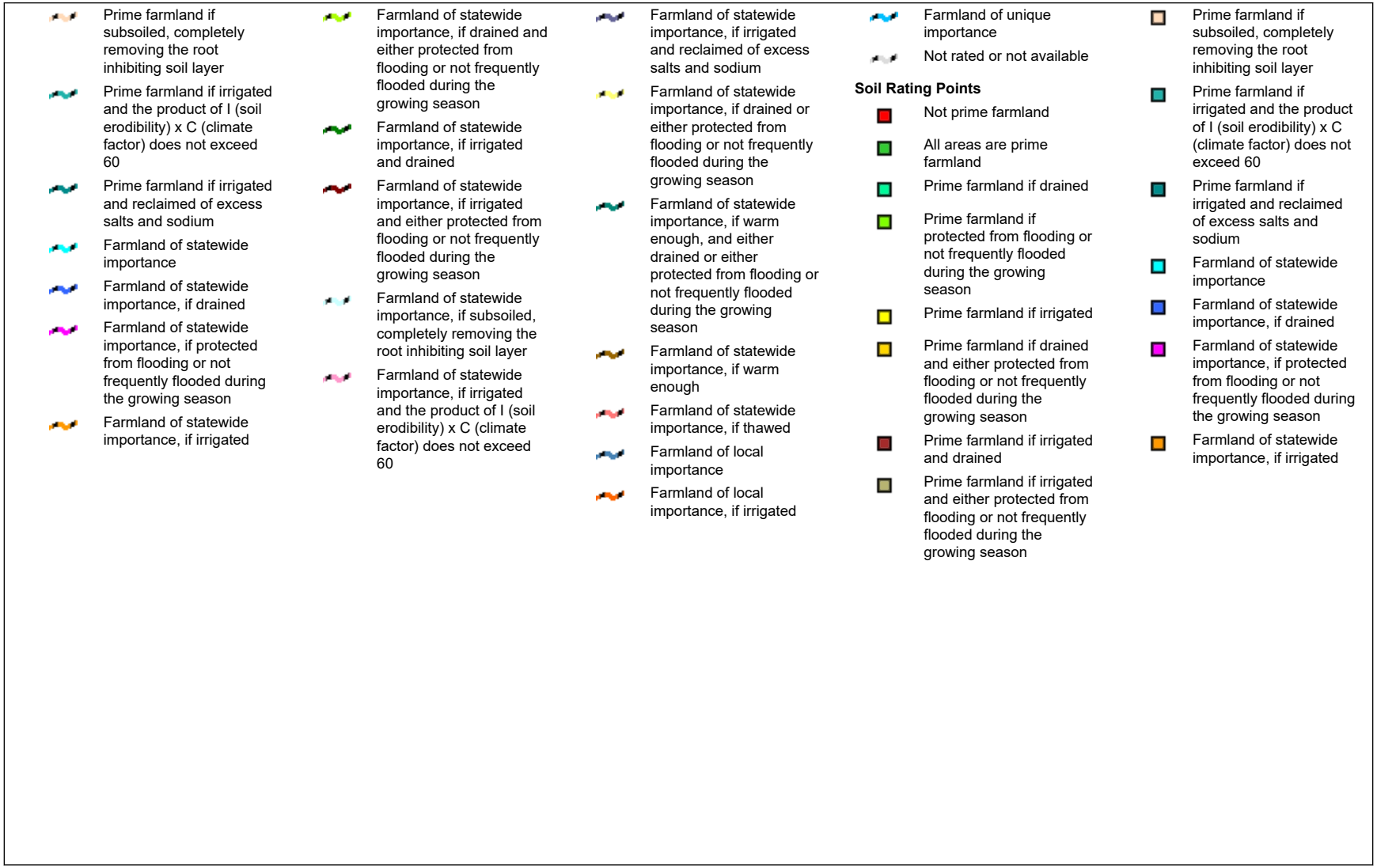
Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies

the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Map—Farmland Classification (NRI 727)




MAP LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Rating Polygons
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Lines
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


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

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

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Illinois
Survey Area Data: Version 17, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2019—Aug 24, 2019

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Table—Farmland Classification (NRI 727)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	All areas are prime farmland	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	Prime farmland if drained	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	All areas are prime farmland	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	All areas are prime farmland	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	Prime farmland if drained	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	All areas are prime farmland	0.1	0.1%
Totals for Area of Interest			**96.0**	**100.0%**

Rating Options—Farmland Classification (NRI 727)

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Water Management

Water Management interpretations are tools for evaluating the potential of the soil in the application of various water management practices. Example interpretations include pond reservoir area, embankments, dikes, levees, and excavated ponds.

Surface Water Management, System (NRI 727)

The ratings for Surface Water Management, System are based on the soil properties that affect the capacity of the soil to convey surface water across the landscape. Factors affecting the system installation and performance are considered. Water conveyances include graded ditches, grassed waterways, terraces, and diversions. The ratings are for soils in their natural condition and do not consider present land use. The properties that affect the surface system performance include depth to bedrock, saturated hydraulic conductivity, depth to cemented pan, slope, flooding, ponding, large stone content, sodicity, surface water erosion, and gypsum content.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected.

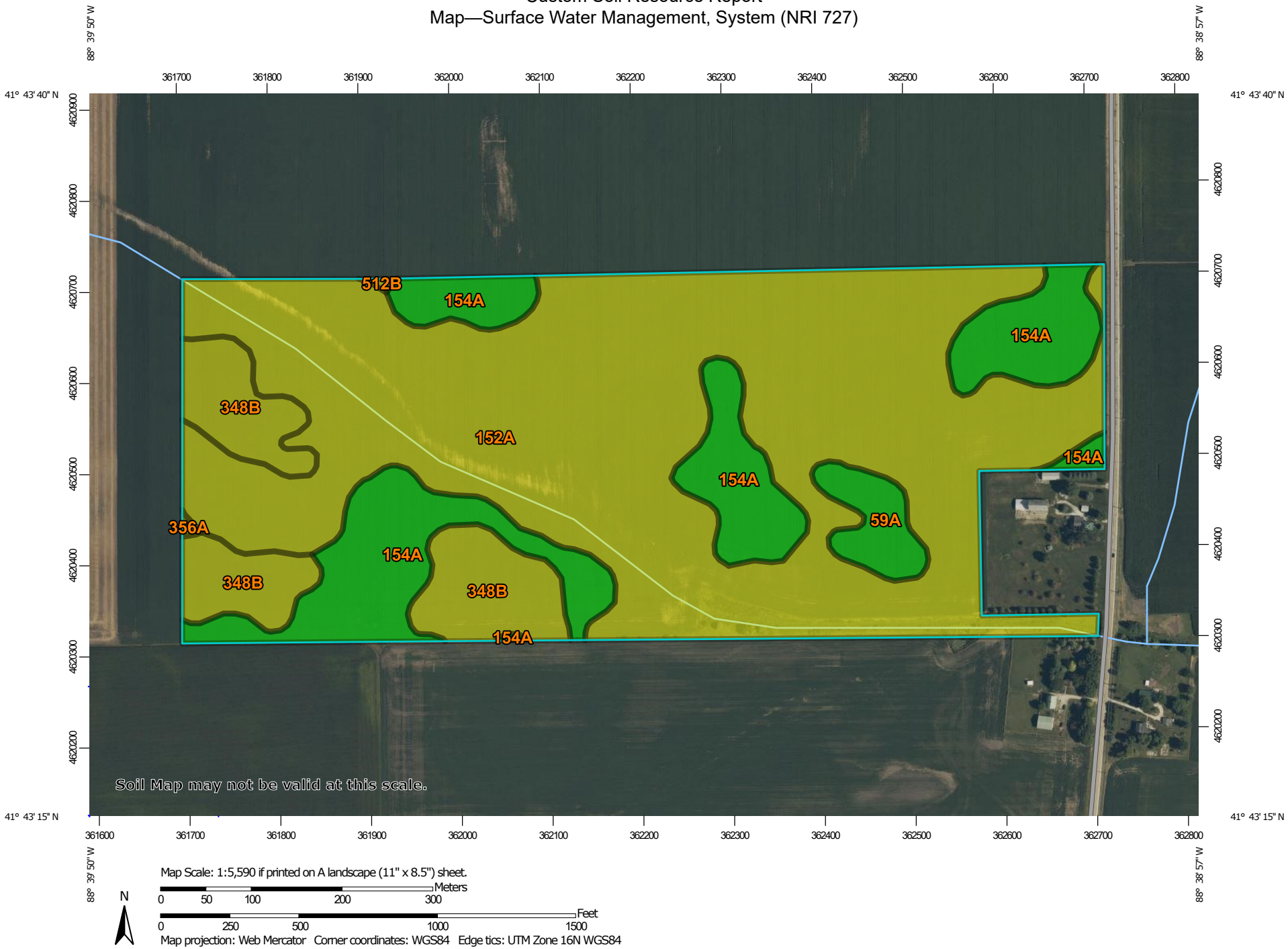
"Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as that listed for the map unit. The percent composition of each component in a particular map unit is given so that the user will realize the percentage of each map unit that has the specified rating.

A map unit may have other components with different ratings. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Map—Surface Water Management, System (NRI 727)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 17, Aug 31, 2022

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Date(s) aerial images were photographed: Aug 3, 2019—Aug 24, 2019

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Tables—Surface Water Management, System (NRI 727)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	Not limited	Lisbon (92%)		2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	Somewhat limited	Drummer, drained (94%)	Ponding (0.50)	64.9	67.6%
			Peotone, drained (3%)	Ponding (0.50)		
			Harpster, drained (3%)	Ponding (0.50)		
154A	Flanagan silt loam, 0 to 2 percent slopes	Not limited	Flanagan (95%)		18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	Somewhat limited	Wingate (97%)	Slope (0.22)	10.3	10.8%
				Water Erosion (0.12)		
			Elpaso, drained (3%)	Ponding (0.50)		
356A	Elpaso silty clay loam, 0 to 2 percent slopes	Somewhat limited	Elpaso, drained (94%)	Ponding (0.50)	0.1	0.1%
			Harpster, drained (4%)	Ponding (0.50)		
			Peotone, drained (2%)	Ponding (0.50)		
512B	Danabrook silt loam, 2 to 5 percent slopes	Somewhat limited	Danabrook (92%)	Slope (0.06)	0.1	0.1%
				Water Erosion (0.01)		
			Drummer, drained (8%)	Ponding (0.50)		
Totals for Area of Interest					**96.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Somewhat limited	75.4	78.5%
Not limited	20.6	21.5%
Totals for Area of Interest	**96.0**	**100.0%**

Rating Options—Surface Water Management, System (NRI 727)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (NRI 727)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

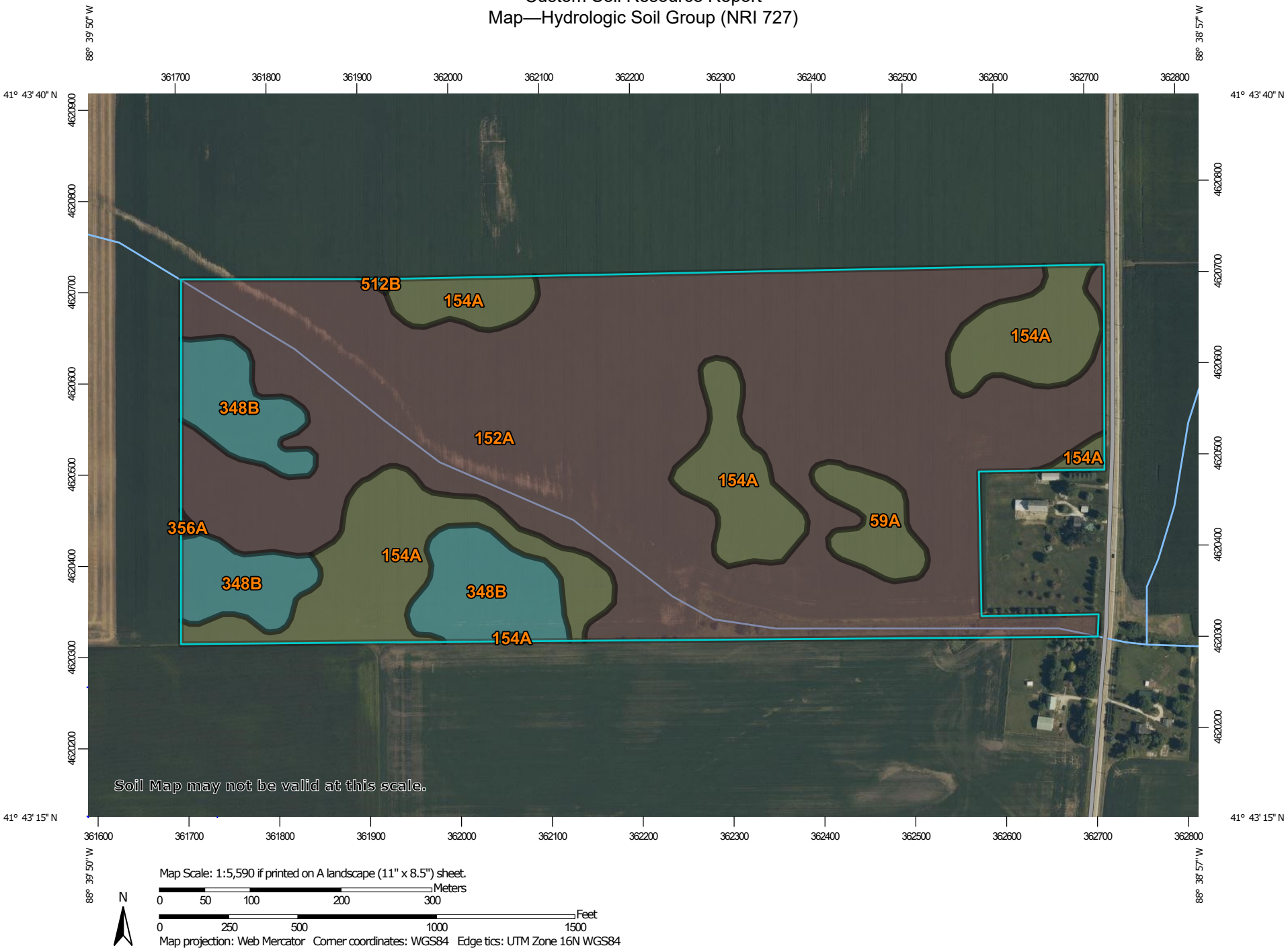
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at

or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Map—Hydrologic Soil Group (NRI 727)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Table—Hydrologic Soil Group (NRI 727)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	C/D	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	B/D	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	C/D	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	C	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	B/D	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	C	0.1	0.1%
Totals for Area of Interest			**96.0**	**100.0%**

Rating Options—Hydrologic Soil Group (NRI 727)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Water Features

Water Features include ponding frequency, flooding frequency, and depth to water table.

Flooding Frequency Class (NRI 727)

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

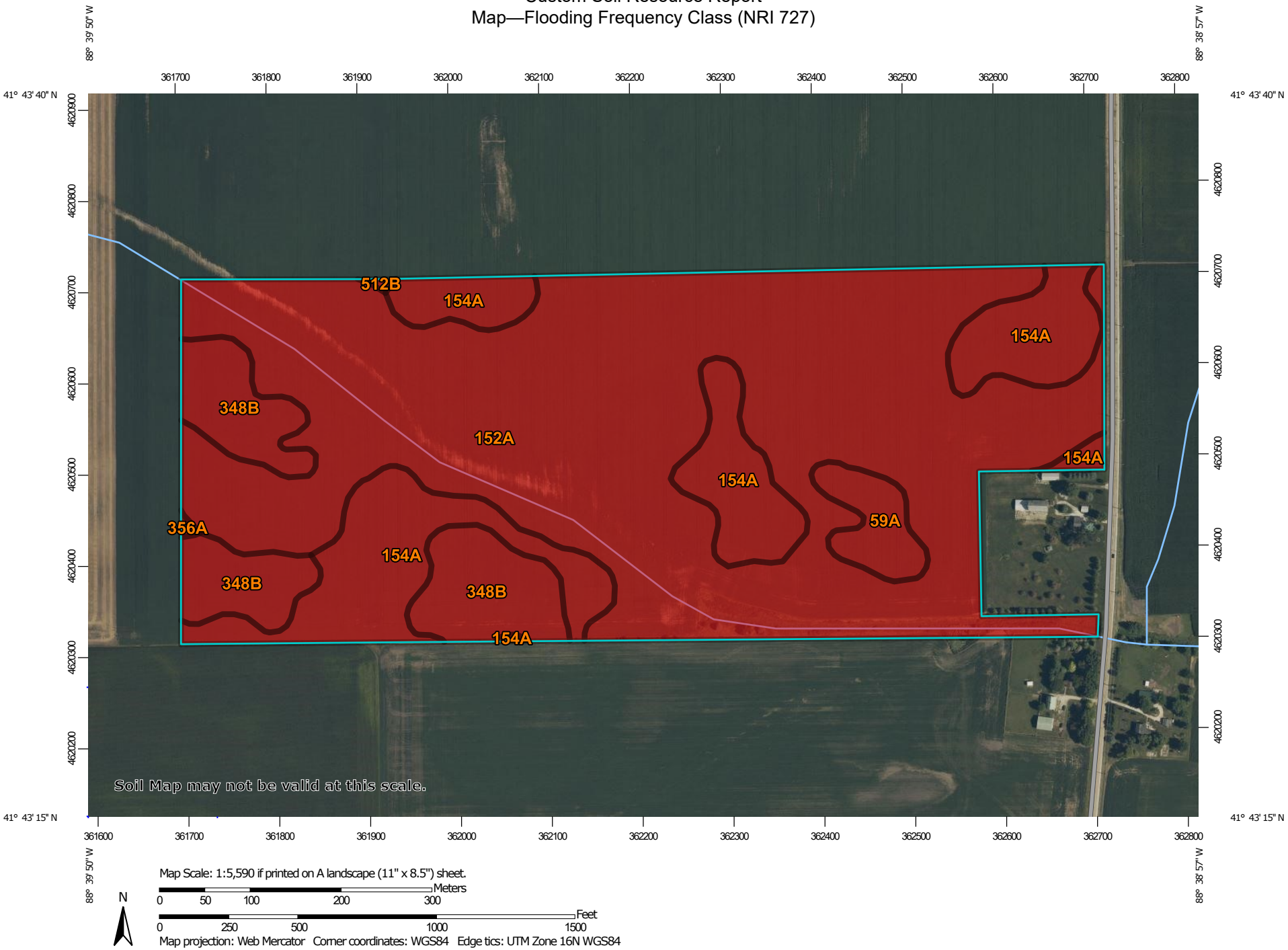
"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.

Map—Flooding Frequency Class (NRI 727)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Lines
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Points
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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Table—Flooding Frequency Class (NRI 727)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	None	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	None	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	None	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	None	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	None	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	None	0.1	0.1%
Totals for Area of Interest			**96.0**	**100.0%**

Rating Options—Flooding Frequency Class (NRI 727)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

Ponding Frequency Class (NRI 727)

Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

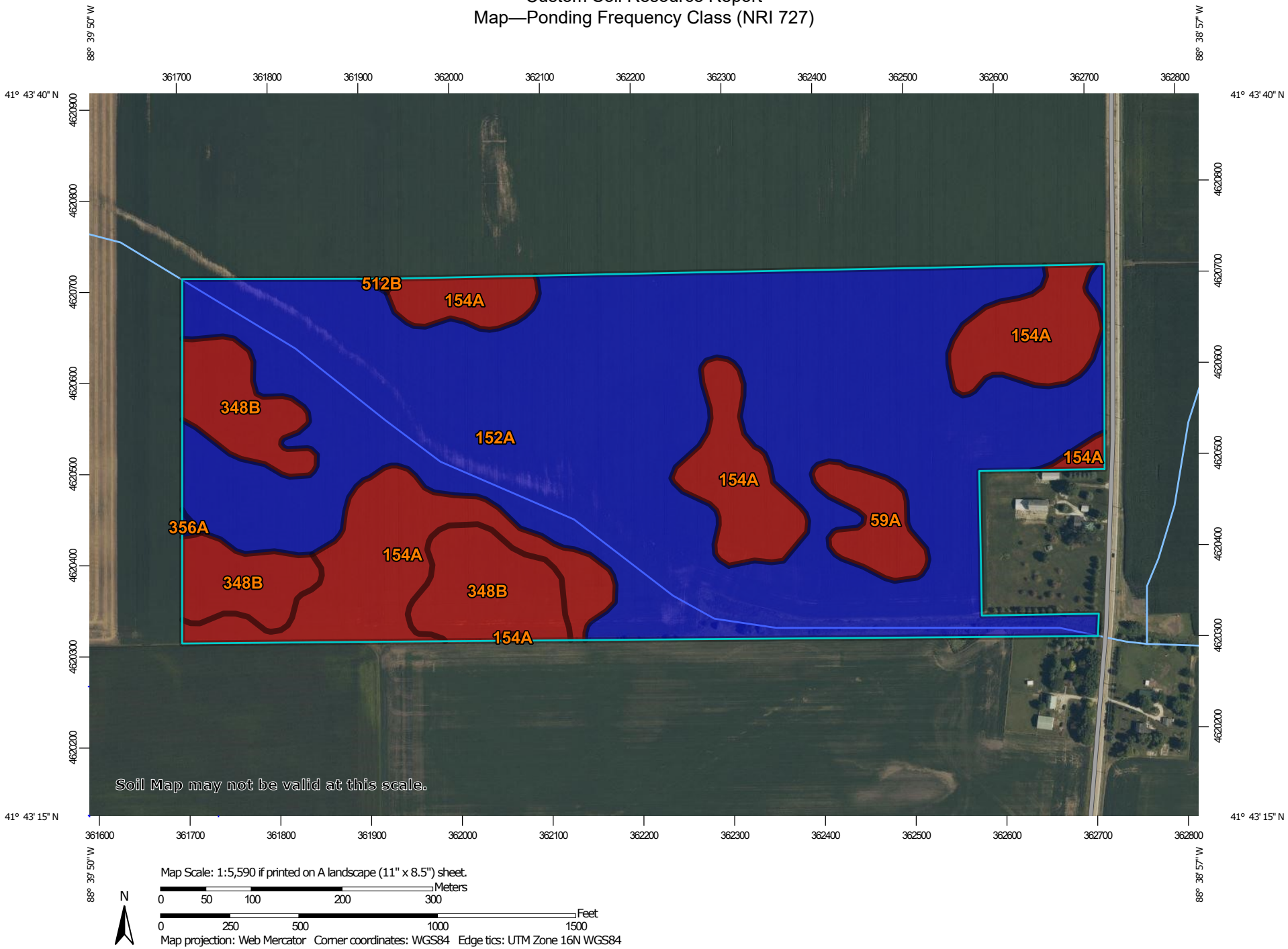
"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"Rare" means that ponding is unlikely but possible under unusual weather conditions. The chance of ponding is nearly 0 percent to 5 percent in any year.

"Occasional" means that ponding occurs, on the average, once or less in 2 years. The chance of ponding is 5 to 50 percent in any year.

"Frequent" means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50 percent in any year.

Map—Ponding Frequency Class (NRI 727)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- None
- Rare
- Occasional
- Frequent
- Not rated or not available

Soil Rating Lines
- None
- Rare
- Occasional
- Frequent
- Not rated or not available

Soil Rating Points
- None
- Rare
- Occasional
- Frequent
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
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MAP INFORMATION

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Table—Ponding Frequency Class (NRI 727)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	None	2.3	2.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	Frequent	64.9	67.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	None	18.3	19.0%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	None	10.3	10.8%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	Frequent	0.1	0.1%
512B	Danabrook silt loam, 2 to 5 percent slopes	None	0.1	0.1%
Totals for Area of Interest			**96.0**	**100.0%**

Rating Options—Ponding Frequency Class (NRI 727)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Erosion

This folder contains a collection of tabular reports that present soil erosion factors and groupings. The reports (tables) include all selected map units and components for each map unit. Soil erosion factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

RUSLE2 Related Attributes (NRI 727)

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factor Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic layer.

Report—RUSLE2 Related Attributes (NRI 727)

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.

RUSLE2 Related Attributes–DeKalb County, Illinois

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
59A—Lisbon silt loam, 0 to 2 percent slopes								
Lisbon	92	298	C/D	.28	5	7.5	69.0	23.5
152A—Drummer silty clay loam, 0 to 2 percent slopes								
Drummer, drained	94	298	B/D	.24	5	8.0	61.0	31.0

RUSLE2 Related Attributes–DeKalb County, Illinois								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
154A—Flanagan silt loam, 0 to 2 percent slopes								
Flanagan	95	298	C/D	.32	5	5.0	71.0	24.0
348B—Wingate silt loam, cool mesic, 2 to 5 percent slopes								
Wingate	97	200	C	.37	5	8.0	73.0	19.0
356A—Elpaso silty clay loam, 0 to 2 percent slopes								
Elpaso, drained	94	249	B/D	.24	5	6.0	63.0	31.0
512B—Danabrook silt loam, 2 to 5 percent slopes								
Danabrook	92	298	C	.32	5	7.0	71.0	22.0

Water Features

This folder contains tabular reports that present soil hydrology information. The reports (tables) include all selected map units and components for each map unit. Water Features include ponding frequency, flooding frequency, and depth to water table.

Hydrologic Soil Group and Surface Runoff (NRI 727)

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff (NRI 727)

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–DeKalb County, Illinois			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
59A—Lisbon silt loam, 0 to 2 percent slopes			
Lisbon	92	Low	C/D
152A—Drummer silty clay loam, 0 to 2 percent slopes			
Drummer, drained	94	Negligible	B/D
154A—Flanagan silt loam, 0 to 2 percent slopes			
Flanagan	95	Low	C/D
348B—Wingate silt loam, cool mesic, 2 to 5 percent slopes			
Wingate	97	Low	C
356A—Elpaso silty clay loam, 0 to 2 percent slopes			
Elpaso, drained	94	Negligible	B/D
512B—Danabrook silt loam, 2 to 5 percent slopes			
Danabrook	92	Low	C

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Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

ACCESS ROAD

CODE 560

(ft)

DEFINITION

An access road is an established route for equipment and vehicles.

PURPOSE

This practice is used to accomplish one or more of the following purposes:

- To provide a fixed route for vehicular travel for resource activities involving the management of conservation forestry operations, livestock, agriculture, wildlife habitat, and other conservation enterprises

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where access is needed from a private or public road or highway to a land use enterprise or conservation measure, or where access is needed in a planned land use area.

Access roads range from single-purpose, seasonal-use roads, designed for low speed and rough driving conditions, to all-purpose, all-weather roads. Single-purpose roads provide access to areas such as forest fire lines, forest management activities, remote recreation areas, or for maintenance of facilities.

This practice does not apply to temporary or infrequently used trails used for logging. Use NRCS Conservation Practice Standard (CPS) Forest Trails and Landings (Code 655) to meet this need. Trails and walkways used for animals, pedestrians, or off-road vehicles are addressed in NRCS CPS Trails and Walkways (Code 575).

CRITERIA

General Criteria Applicable to All Purposes

Design the access road to serve the enterprise or planned use with the expected vehicular or equipment traffic. Factors in the design include the type of vehicle or equipment and the speed, loads, soils, climate, turning radius, and other conditions under which vehicles and equipment are expected to operate.

Location

Locate the access road to serve the purpose intended, to facilitate the control and disposal of surface and subsurface water, to control or reduce erosion, and to make the best use of topographic features. Design the layout of the road to follow natural contours and slopes to minimize disturbance of drainage patterns. Locate the access road where it can be maintained and where water management problems are not created. To reduce potential pollution, position the road as far as possible from water bodies and watercourses. To the extent possible, do not impede overland flow.

Special PZDC Meeting June 5, 2024
https://www.nrcs.usda.gov/ and type FOTG in the search field.
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Alignment
Adapt the gradient and horizontal alignment to the intensity of use, the mode of travel, the type of equipment and load weights, and the level of development.

Grades normally should not exceed 10 percent except for short lengths. A maximum grade of 15 percent should only be exceeded if necessary for special uses such as field access roads or fire protection roads.

Width
The minimum width of the roadbed for an all-purpose road is 14 feet for one-way traffic and 20 feet for two-way traffic. The roadbed width includes a tread-width of 10 feet for one-way traffic or 16 feet for two-way traffic and 2 feet of shoulder width on each side. Increase the two-way traffic width by a minimum of 4 feet for trailer traffic. Single-purpose roads will have a minimum width of 10 feet with greater widths at curves and turnouts. Use vegetation or other measures to protect the shoulders from erosion.

Use turnouts on single lane roads where vehicles travel in both directions on a limited basis. Design the turnout to accommodate the anticipated vehicle use.

Provide a turnaround at the end of dead end roads. Size the turnaround for the anticipated vehicle type that will be using the road.

Provide parking space as needed to keep vehicles from parking on the shoulder or other undesirable locations.

Side slopes
Design all cuts and fills to have stable slopes that are a minimum of 2 horizontal to 1 vertical. For short lengths, rock areas, or very steep hillsides, steeper slopes may be permitted if soil conditions warrant and special stabilization measures are installed. Where possible, design slopes to a minimum of 4 horizontal to 1 vertical to improve establishment and maintenance of turf.

Where possible, avoid areas with geological conditions and soils that are subject to slides. When the area cannot be avoided, treat the area to prevent slides.

Drainage
The type of drainage structures used will depend on the intended use and runoff conditions. Provide a culvert, bridge, ford, or surface cross drain for water management at every natural drainageway. The capacity and design of the drainage feature must be consistent with sound engineering principles and must be adequate for the class of vehicle, road type, land use in the watershed, and intensity of use.

When a culvert or bridge is installed in a drainageway, it must have a minimum capacity that is sufficient to convey the design storm runoff without causing erosion or road overtopping. Table 1 lists minimum design storm frequencies for various road types.

Table 1: Minimum design storm frequencies

Road Intensity and Usage	Storm Frequency
Intermittent; single-purpose or farm use	2 year - 24 Hour
Frequent; farm headquarters, livestock access, isolated recreation areas	10 year - 24 Hour
High intensity; residential or public access	25 year - 24 Hour

For public access roads, design storm frequencies must also meet local standards.

Use NRCS CPSs Stream Crossing (Code 578), or Aquatic Organism Passage (Code 396) when aquatic species are present, to design stream crossings.

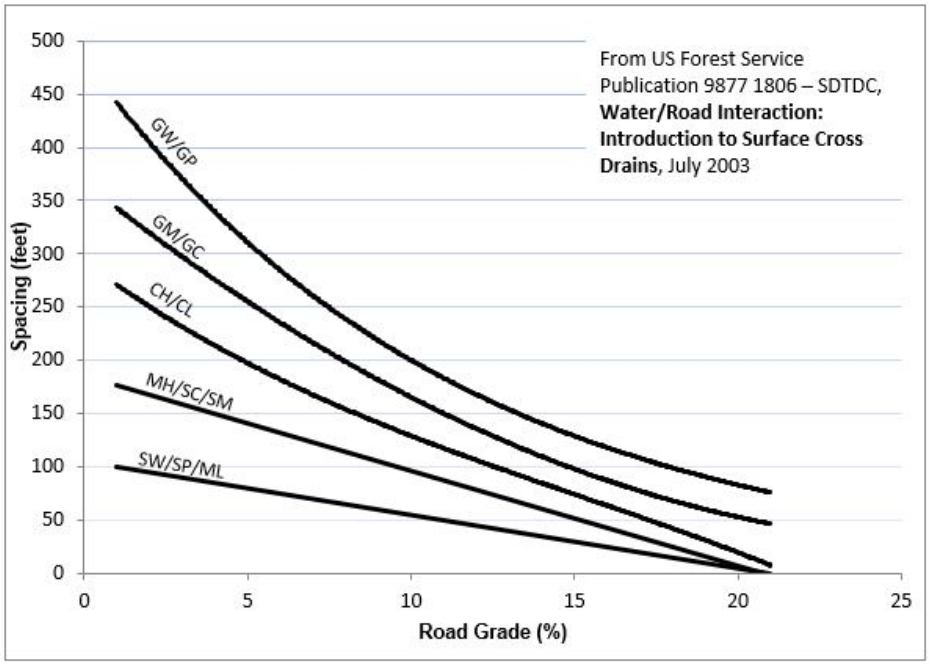
An erosion-resistant low point or overflow area may be constructed across the access road to supplement the culvert capacity on nonpublic-use roads.

Surface cross drains, such as broad-based or rolling dips, may be used to control and direct water flow off the road surface on low-intensity-use forest, ranch, or similar roads. Protect the outlets of drainage measures to limit erosion. On steep grades where water could run down the road, use a broad-based dip or other similar feature to divert runoff. The surface cross drain must be constructed of materials that are compatible with the use and maintenance of the road surface. The discharge area for a surface cross drain must be well-vegetated or have other erosion resistant materials (see fig. 1). Reduce separation distances as needed to account for local hydrologic conditions.

Design a minimum cross slope to direct precipitation off of the roadway. Cross slopes range from 1.5 to 2 percent for paved surfaces and 2 to 6 percent for unpaved surfaces.

Provide ditches, as needed, to move water away from the road. Maintain unobstructed flow into the ditches to prevent flows from causing roadside erosion. The capacity of a roadside ditch must be adequate to carry the drainage from the road surface. Design ditch channels to have stable grades and side slopes. Provide a stable outlet for the ditch. Protection may include riprap or other similar materials. Use NRCS CPSs Structure for Water Control (Code 587), Lined Waterway or Outlet (Code 468), or Grade Stabilization Structure (Code 410), if needed.

Figure 1. Recommended spacing of surface cross drains based on soil types



Surfacing

Install a wearing course or surface treatment on the access road if required by traffic needs, soil, climate, erosion control, particulate matter emission control, or other site condition. If none of these factors apply, no special treatment of the surface is required.

When a treatment is used, the type of treatment will depend on local conditions, available materials, and the existing road base. On roads made of soils with weak bearing capacity, such as silts, organics, and clays, or where it is necessary to separate the surfacing material from the foundation material, place a geotextile material specifically designed for road stabilization applications under the surface treatment. Use the criteria in NRCS CPS Heavy Use Area Protection (Code 561) to design the surface treatment. Do not use toxic and acid-forming materials to build the road.

Safety
Provide passing lanes, turnouts, guardrails, signs, and other facilities as needed for safe traffic flow. Design an intersection to a public highway to meet applicable Federal, State, and local criteria.

Erosion control
Use the criteria in NRCS CPS Critical Area Planting (Code 342) or the NRCS State-approved seeding specification to vegetate road banks and disturbed areas as soon as soil and climatic conditions are favorable. If permanent vegetation cannot be established in a timely manner, use appropriate temporary measures to control erosion. If the use of vegetation is precluded and protection against erosion is needed, use the criteria in NRCS CPS Mulching (Code 484) to provide surface protection.

During and after construction, use erosion and sediment control measures to minimize offsite damages.

CONSIDERATIONS

Consider visual resources and environmental values during planning and design of the road system.

Consider locating roads outside of the active floodplain to reduce bank erosion potential and the effects on stream hydrology.

Limiting the number of vehicles and vehicle speed will reduce the potential for generation of particulate matter and decrease safety and air quality concerns.

Consider using additional conservation practices such as NRCS CPS Windbreak/Shelterbelt Establishment (Code 380), to reduce the potential for generation and transport of particulate matter emissions.

During adverse weather, some roads may become unsafe or may be damaged by use. Consider restricting access to the road at that time.

When revegetation is needed, consider revegetating using species or diverse mixes that are native or adapted to the site and have multiple benefits. In addition, where appropriate, consider a diverse mixture of forbs and wildflowers to support pollinator and other wildlife habitat.

Consideration should be given to—

- Effects on downstream flows, wetlands, or aquifers that would affect other water uses or users.
- Effects on wildlife habitats that would be associated with the practice.
- Utilizing buffers where possible to protect surface water.
- Short-term and construction-related effects of this practice.

PLANS AND SPECIFICATIONS

Provide plans and specifications that describe the requirements for applying the practice to achieve its intended purpose. As a minimum, include—

- A plan view of the proposed road that shows water features, known utilities, and other features that affect the design.
- Road width and length with profile and typical cross section(s) including turnouts, parking, and turnarounds.
- Design road grades or maximum grades when applicable.
- Soils investigation. Include location of soil borings and plot of the soil/geologic boring showing the Unified Soil Classification System, as needed.
- Type and thickness of surface treatment including any subbase preparation.
- Grading plan.

- Cut and fill slopes where applicable.
- Planned drainage features.
- Location, size, type, length, and invert elevations of all required water control structures.
- Vegetative requirements that include vegetation materials to be used, establishment rates, and season of planting.
- Erosion and sediment control measures, as needed.
- Safety features.
- Construction and material specifications.

OPERATION AND MAINTENANCE

Prepare a written operation and maintenance plan for the access road. As a minimum, include the following activities:

- Inspect culverts, roadside ditches, water bars, and outlets after each major runoff event and restore flow capacity as needed. Ensure proper cross section is available and outlets are stable.
- Maintain vegetated areas in adequate cover to meet the intended purpose(s).
- Fill low areas in travel treads and regrade, as needed, to maintain road cross section. Repair or replace surfacing materials as needed.
- Selection of chemical treatment(s) for surface treatment or snow/ice removal, as needed. Select the chemicals used for surface treatment or snow and ice removal to minimize adverse effects on stabilizing vegetation.
- Selection of dust control measures, as needed.

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March 31, 2024

DeKalb County
Community Development
110 E. Sycamore Street
Sycamore, IL 60178

RE: Shenandoah Solar LLC
Drain Tile Support Letter
Subject Property Parcel ID Numbers: 15-34-300-005 & 15-33-400-004

Huddleston McBride conducted an intensive drainage tile investigation on the subject property in July 2023. Huddleston McBride has recently reviewed Shenandoah Solar, LLC's updated site plan dated March 27, 2024. As shown on the plan, the project has undergone revisions to its layout in order to ensure there will be no impacts on the main 'district' drainage tiles. The issues regarding drainage tiles are not uncommon in projects of this nature. Similar challenges, such as the management and maintenance of drainage tile and watershed systems on specific parcels, have been addressed in various other applications for special use, including in DeKalb County.

Having recent relevant experience with many solar development projects in Illinois where drainage tiles are almost always present, we recognize the importance of addressing these concerns in the project's progression. However, it's essential to note that these challenges are not unique to this project. Many parcels within the County and across the state of Illinois face similar issues, yet have been deemed suitable for special use with appropriate conditions and safeguards in place.

It is our professional opinion that the Shenandoah Solar project adheres to the County's standards of Special Use Permit approval outlined in the Zoning Code for Commercial Solar Energy Systems as it pertains to Drainage Tiles on the subject property.

Respectfully Submitted,
Thomas L. Huddleston III
T. L. Huddleston, Owner / Partner
Huddleston McBride Land Drainage Co.

Doc no. 24338\ tlh

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

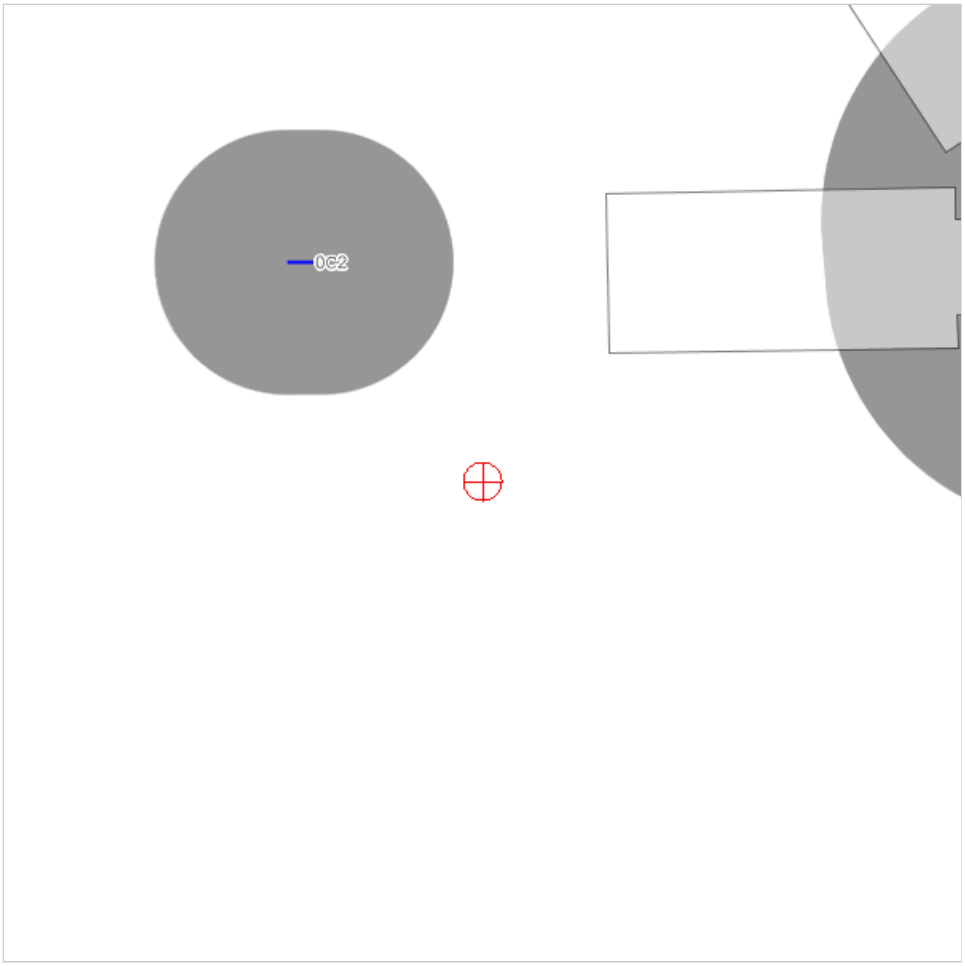
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport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

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

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	41 Deg 43 M 29.6 S N
Longitude:	88 Deg 39 M 14.1 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	717 (nearest foot)
Structure Height :	12 (nearest foot)
Is structure on airport:	(●) No ( ) Yes

Results

You do not exceed Notice Criteria.


DC2

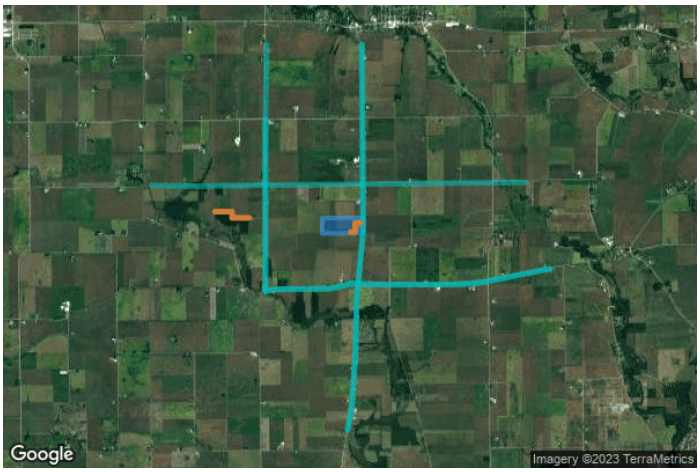
ForgeSolar

Shenandoah Solar, LLC

Shenandoah Glare

Created March 16, 2023
Updated March 16, 2023
Time-step 1 minute
Timezone offset UTC-6
Site ID 86405.15242

Project type Advanced
Project status: active
Category 1 MW to 5 MW



Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

PV Analysis Methodology: **Version 2**
Enhanced subtended angle calculation: **On**

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Total PV footprint area: 90.0 acres

Name: PV array 1
Footprint area: 90.0 acres
Axis tracking: Single-axis rotation
Backtracking: None
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg

Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.726112	-88.650500	717.16	7.50	724.66
2	41.726120	-88.662549	716.15	7.50	723.65
3	41.722621	-88.662624	722.18	7.50	729.68
4	41.722757	-88.650565	713.11	7.50	720.61
5	41.722981	-88.650586	713.41	7.50	720.91
6	41.722965	-88.651927	714.30	7.50	721.80
7	41.724358	-88.651938	714.24	7.50	721.74
8	41.724358	-88.650479	716.18	7.50	723.68

Route Receptor(s)

Name: Chicago Rd Car
Route type Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.709884	-88.679382	719.26	4.00	723.26
2	41.710141	-88.677665	719.22	4.00	723.22
3	41.710301	-88.676335	720.24	4.00	724.24
4	41.710461	-88.659941	735.16	4.00	739.16
5	41.711454	-88.654577	736.18	4.00	740.18
6	41.711647	-88.653718	735.38	4.00	739.38
7	41.711486	-88.650929	728.54	4.00	732.54
8	41.711326	-88.642318	715.28	4.00	719.28
9	41.711358	-88.623264	716.74	4.00	720.74
10	41.711550	-88.618757	716.17	4.00	720.17
11	41.711871	-88.614981	713.31	4.00	717.31
12	41.714850	-88.595025	728.04	4.00	732.04

Name: Chicago Rd Truck
Route type Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.709925	-88.679407	718.79	7.00	725.79
2	41.710245	-88.677862	720.15	7.00	727.15
3	41.710341	-88.676317	720.20	7.00	727.20
4	41.710405	-88.668163	729.54	7.00	736.54
5	41.710501	-88.659967	735.06	7.00	742.06
6	41.710982	-88.657177	733.81	7.00	740.81
7	41.711687	-88.653830	733.89	7.00	740.89
8	41.711527	-88.650954	728.56	7.00	735.56
9	41.711398	-88.646620	722.19	7.00	729.19
10	41.711366	-88.642457	715.48	7.00	722.48
11	41.711406	-88.623338	717.00	7.00	724.00
12	41.711535	-88.620677	717.49	7.00	724.49
13	41.711663	-88.617974	716.61	7.00	723.61
14	41.711919	-88.614626	712.60	7.00	719.60
15	41.714834	-88.595186	728.34	7.00	735.34

Name: Rimsnider Rd Car
Route type Two-way
View angle: 50.0 deg



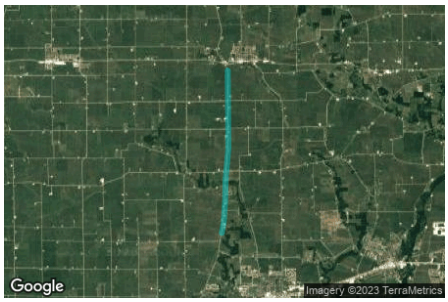
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.748042	-88.679468	737.76	3.00	740.76
2	41.710249	-88.679468	720.30	3.00	723.30

Name: Rimsnider Rd Truck
Route type Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.764421	-88.679122	746.40	7.00	753.40
2	41.746037	-88.679454	742.06	7.00	749.06
3	41.743619	-88.679454	743.43	7.00	750.43
4	41.738736	-88.679540	747.76	7.00	754.76
5	41.728872	-88.679454	743.55	7.00	750.55
6	41.719039	-88.679497	728.77	7.00	735.77
7	41.714089	-88.679476	732.46	7.00	739.46
8	41.709909	-88.679583	716.40	7.00	723.40

Name: Shabbona Grove Rd Car
Route type Two-way
View angle: 50.0 deg



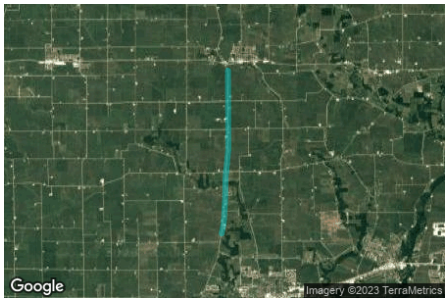
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.764338	-88.650884	734.21	4.00	738.21
2	41.723614	-88.650413	714.66	4.00	718.66
3	41.715903	-88.651314	724.70	4.00	728.70
4	41.707958	-88.652258	723.43	4.00	727.43
5	41.705459	-88.652430	706.21	4.00	710.21
6	41.696295	-88.652687	716.66	4.00	720.66
7	41.689565	-88.653288	725.96	4.00	729.96
8	41.684535	-88.653717	717.79	4.00	721.79
9	41.679151	-88.655005	714.70	4.00	718.70

Name: Shabbona Grove Rd Car
Route type Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.733311	-88.713155	727.81	4.00	731.81
2	41.733159	-88.699299	760.52	4.00	764.52
3	41.733159	-88.699299	760.52	4.00	764.52
4	41.733159	-88.699299	760.52	4.00	764.52
5	41.733159	-88.699299	760.52	4.00	764.52
6	41.733327	-88.685443	735.49	4.00	739.49
7	41.733327	-88.685443	735.49	4.00	739.49
8	41.733327	-88.685443	735.49	4.00	739.49
9	41.733327	-88.685443	735.49	4.00	739.49
10	41.733535	-88.657816	730.09	4.00	734.09
11	41.733535	-88.657816	730.09	4.00	734.09
12	41.733535	-88.657816	730.09	4.00	734.09
13	41.733535	-88.657816	730.09	4.00	734.09
14	41.734015	-88.602476	712.56	4.00	716.56

Name: Shabbona Grove Rd Truck
Route type Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.679279	-88.655091	714.39	7.00	721.39
2	41.681971	-88.654404	716.95	7.00	723.95
3	41.684663	-88.653717	717.73	7.00	724.73
4	41.687227	-88.653460	716.36	7.00	723.36
5	41.689855	-88.653288	725.44	7.00	732.44
6	41.693252	-88.653031	724.25	7.00	731.25
7	41.696585	-88.652773	716.94	7.00	723.94
8	41.701007	-88.652593	716.63	7.00	723.63
9	41.705685	-88.652507	704.67	7.00	711.67
10	41.708184	-88.652421	724.79	7.00	731.79
11	41.720037	-88.650876	716.03	7.00	723.03
12	41.722984	-88.650447	713.47	7.00	720.47
13	41.764482	-88.650705	736.30	7.00	743.30

Obstruction Components

Name: Obstruction 2
Upper edge height: 32.8 ft



Vertex	Latitude	Longitude	Ground elevation
	deg	deg	ft
1	41.727489	-88.694401	736.68
2	41.727489	-88.689337	736.71
3	41.726112	-88.689337	745.66
4	41.726112	-88.684316	743.25

Name: Vegetation Screening
Upper edge height: 16.0 ft



Vertex	Latitude	Longitude	Ground elevation
	deg	deg	ft
1	41.725024	-88.651126	714.69
2	41.725004	-88.651845	713.49
3	41.725000	-88.652832	714.98
4	41.722998	-88.652854	712.13
5	41.722990	-88.654141	713.88

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	SA tracking	SA tracking	0	0	-	

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 no glare found

Component	Green glare (min)	Yellow glare (min)
Route: Chicago Rd Car	0	0
Route: Chicago Rd Truck	0	0
Route: Rimsnider Rd Car	0	0
Route: Rimsnider Rd Truck	0	0
Route: Shabbona Grove Rd Car	0	0
Route: Shabbona Grove Rd Car	0	0
Route: Shabbona Grove Rd Truck	0	0

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provid more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

March 29, 2024

Regulatory Division

SUBJECT: CEMVR-RD-2024-0396

Hamilton Carrier
Shenandoah Solar LLC
910 Harding Street
Lafayette, LA 70503

Dear Hamilton Carrier:

Our office has reviewed your application received March 26, 2024, concerning the proposed community solar project located in Section 34, Township 38 North, Range 5 East, DeKalb County, Illinois; Lat/Long: 41.725629, -88.655419

We have determined that your project, as proposed, does not occur in a Water of the United States and therefore does not require a Department of the Army (DA) Section 404 permit. The decision regarding this action is based on information found in the administrative record which documents the District's decision-making process, the basis for the decision, and the final decision.

This letter contains an Approved Jurisdictional Determination (AJD) for the subject site. If you object to this jurisdictional determination, you may request an administrative appeal under Corps regulations found at 33 CFR Part 331. Enclosed is a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this approved jurisdictional determination, you must submit a completed RFA form to the Mississippi Valley Division Office at the following address:

Brian Oberlies
Regulatory Appeals Review Officer
Mississippi Valley Division
1400 Walnut Street
Vicksburg, Mississippi 39180

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. It is not necessary to submit an RFA form to the Division Office if you do not object to the AJD contained in this letter.

You are advised that this determination for your project is valid for five years from the date of this letter. If the project is not completed within this five-year period or your project plans change, you should contact our office for another determination.

Although a DA permit will not be required for the project, this does not eliminate the requirement that you must still acquire other applicable Federal, state, and local permits.

The Rock Island District Regulatory Division is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our web site at https://regulatory.ops.usace.army.mil/ords/f?p=136:4 (be sure to select "Rock Island District" under the area entitled: Which Corps office did you deal with?).

Should you have any questions, please contact our Regulatory Division by letter, email rowen.e.schmidt@usace.army.mil, or telephone Rowen Schmidt at 309/386-3496.

Sincerely,

Abigail A. Steele

Abigail A. Steele
Chief, Western Branch
Regulatory Division

Enclosures

cc:
Mr. William Milner, P.E.
Illinois Department of Natural Resources
bill.milner@illinois.gov

Mr. Darin LeCrone, P.E.
Division of Water Pollution Control
Illinois Environmental Protection Agency
darin.lecrone@Illinois.gov

Hamilton Carrier, Shenandoah Solar
hcarrier@ironwoodenergy.com

[CEMVR-RDW] [28 March 2024]

MEMORANDUM FOR RECORD

SUBJECT: US Army Corps of Engineers (Corps) Approved Jurisdictional Determination in accordance with the "Revised Definition of 'Waters of the United States'"; (88 FR 3004 (January 18, 2023) as amended by the "Revised Definition of 'Waters of the United States'; Conforming" (8 September 2023) ,[1] [2024-0396]

BACKGROUND. An Approved Jurisdictional Determination (AJD) is a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel. AJDs are clearly designated appealable actions and will include a basis of JD with the document.[2] AJDs are case-specific and are typically made in response to a request. AJDs are valid for a period of five years unless new information warrants revision of the determination before the expiration date or a District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.[3]

On January 18, 2023, the Environmental Protection Agency (EPA) and the Department of the Army ("the agencies") published the "Revised Definition of 'Waters of the United States,'" 88 FR 3004 (January 18, 2023) ("2023 Rule"). On September 8, 2023, the agencies published the "Revised Definition of 'Waters of the United States'; Conforming", which amended the 2023 Rule to conform to the 2023 Supreme Court decision in *Sackett v. EPA*, 598 U.S., 143 S. Ct. 1322 (2023) ("*Sackett*").

This Memorandum for Record (MFR) constitutes the basis of jurisdiction for a Corps AJD as defined in 33 CFR §331.2. For the purposes of this AJD, we have relied on Section 10 of the Rivers and Harbors Act of 1899 (RHA),[4] the 2023 Rule as amended, as well as other applicable guidance, relevant case law, and longstanding practice in evaluating jurisdiction.

1. SUMMARY OF CONCLUSIONS.

[1] While the Revised Definition of "Waters of the United States"; Conforming had no effect on some categories of waters covered under the CWA, and no effect on any waters covered under RHA, all categories are included in this Memorandum for Record for efficiency.
[2] 33 CFR 331.2.
[3] Regulatory Guidance Letter 05-02.
[4] USACE has authority under both Section 9 and Section 10 of the Rivers and Harbors Act of 1899 but for convenience, in this MFR, jurisdiction under RHA will be referred to as Section 10.

a. The review area is comprised entirely of dry land (i.e., there are no waters such as streams, rivers, wetlands, lakes, ponds, tidal waters, ditches, and the like in the entire review area and there are no areas that have previously been determined to be jurisdictional under the Rivers and Harbors Act of 1899 in the review area).
There are no waters such as streams, rivers, wetlands, lakes, ponds, tidal waters, ditches, and the like in the entire review area and there are no areas that have previously been determined to be jurisdictional under the Rivers and Harbors Act of 1899 in the review area.

2. REFERENCES.

   a. "Revised Definition of 'Waters of the United States,'" 88 FR 3004 (January 18, 2023) ("2023 Rule")

   b. "Revised Definition of 'Waters of the United States'; Conforming" 88 FR 61964 (September 8, 2023))

   c. *Sackett v. EPA*, 598 U.S. _, 143 S. Ct. 1322 (2023)

3. REVIEW AREA.
   The review area is a 50 acre parcel.
   DeKalb County, Squaw Grove, IL
   41.725629, -88.655419

4. NEAREST TRADITIONAL NAVIGABLE WATER (TNW), THE TERRITORIAL SEAS, OR INTERSTATE WATER TO WHICH THE AQUATIC RESOURCE IS CONNECTED.
   Fox River - TNW

5. FLOWPATH FROM THE SUBJECT AQUATIC RESOURCES TO A TNW, THE TERRITORIAL SEAS, OR INTERSTATE WATER.
   There are no aquatic resources present in the review area.

6. SECTION 10 JURISDICTIONAL WATERS[5]: Describe aquatic resources or other features within the review area determined to be jurisdictional in accordance with Section 10 of the Rivers and Harbors Act of 1899. Include the size of each aquatic

[5] 33 CFR 329.9(a) A waterbody which was navigable in its natural or improved state, or which was susceptible of reasonable improvement (as discussed in § 329.8(b) of this part) retains its character as "navigable in law" even though it is not presently used for commerce, or is presently incapable of such use because of changed conditions or the presence of obstructions.

resource or other feature within the review area and how it was determined to be jurisdictional in accordance with Section 10.[6] N/A

7. SECTION 404 JURISDICTIONAL WATERS: Describe the aquatic resources within the review area that were found to meet the definition of waters of the United States in accordance with the 2023 Rule as amended, consistent with the Supreme Court's decision in *Sackett*. List each aquatic resource separately, by name, consistent with the naming convention used in section 1, above. Include a rationale for each aquatic resource, supporting that the aquatic resource meets the relevant category of "waters of the United States" in the 2023 Rule as amended. The rationale should also include a written description of, or reference to a map in the administrative record that shows, the lateral limits of jurisdiction for each aquatic resource, including how that limit was determined, and incorporate relevant references used. Include the size of each aquatic resource in acres or linear feet and attach and reference related figures as needed.

    a. Traditional Navigable Waters (TNWs) (a)(1)(i): N/A
    b. The Territorial Seas (a)(1)(ii): N/A
    c. Interstate Waters (a)(1)(iii): N/A
    d. Impoundments (a)(2): N/A
    e. Tributaries (a)(3): N/A
    f. Adjacent Wetlands (a)(4): N/A
    g. Additional Waters (a)(5): N/A

8. NON-JURISDICTIONAL AQUATIC RESOURCES AND FEATURES

    a. Describe aquatic resources and other features within the review area identified in the 2023 Rule as amended as not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5). Include the type of excluded aquatic resource or feature, the size of the aquatic resource or feature within the review area and describe how it was determined to meet one of the exclusions listed in 33 CFR 328.3(b).[7] N/A

    b. Describe aquatic resources and features within the review area that were determined to be non-jurisdictional because they do not meet one or more categories of waters of the United States under the 2023 Rule as amended (e.g.,

[6] This MFR is not to be used to make a report of findings to support a determination that the water is a navigable water of the United States. The district must follow the procedures outlined in 33 CFR part 329.14 to make a determination that water is a navigable water of the United States subject to Section 10 of the RHA.
[7] 88 FR 3004 (January 18, 2023)

tributaries that are non-relatively permanent waters; non-tidal wetlands that do not have a continuous surface connection to a jurisdictional water).
N/A

9. DATA SOURCES. List sources of data/information used in making determination. Include titles and dates of sources used and ensure that information referenced is available in the administrative record.

    a. Office evaluation: 3.28.2024

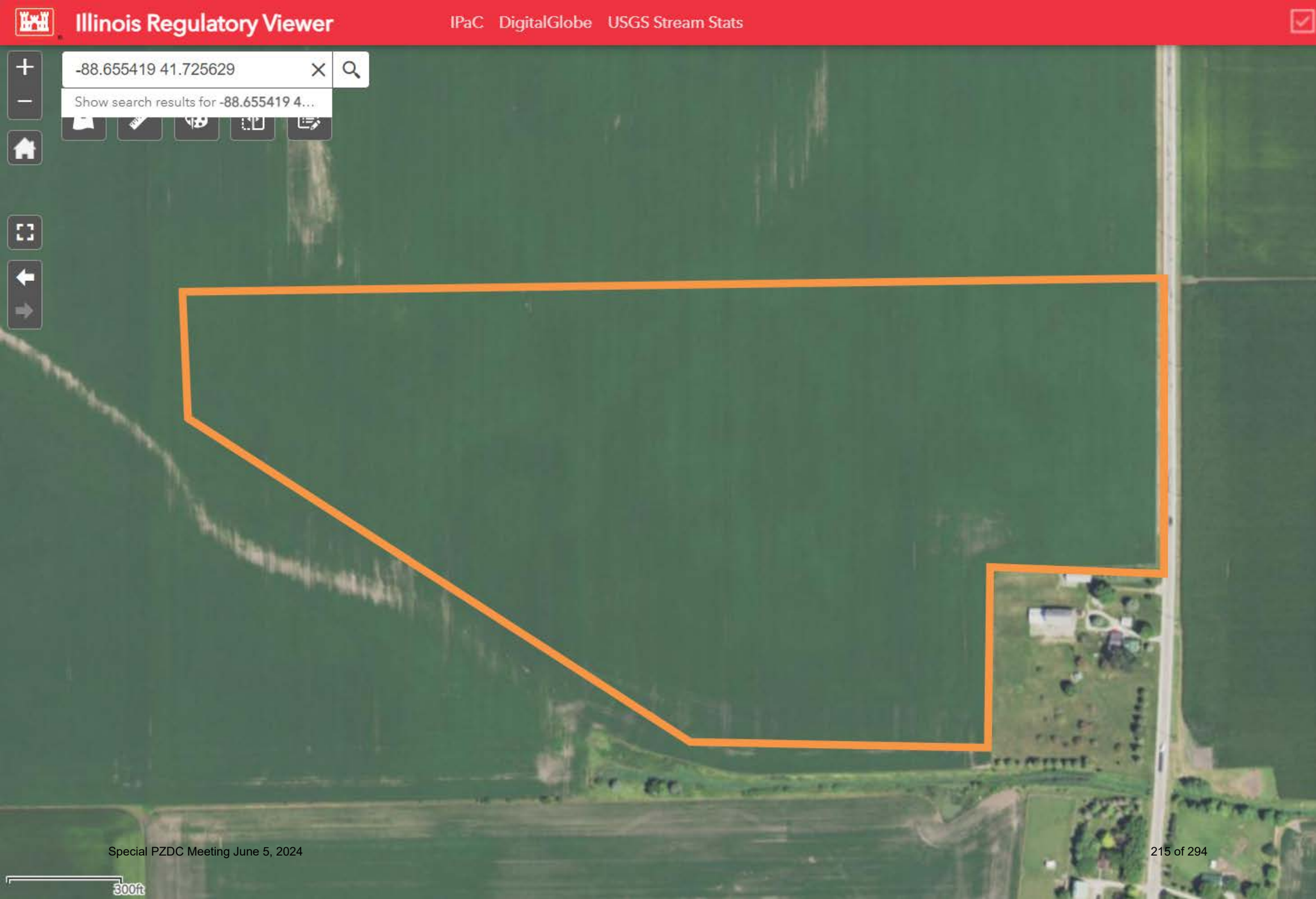
    b. Regulatory Viewer – 3.28.2024: RegViewer 2019, RegViewer lidar

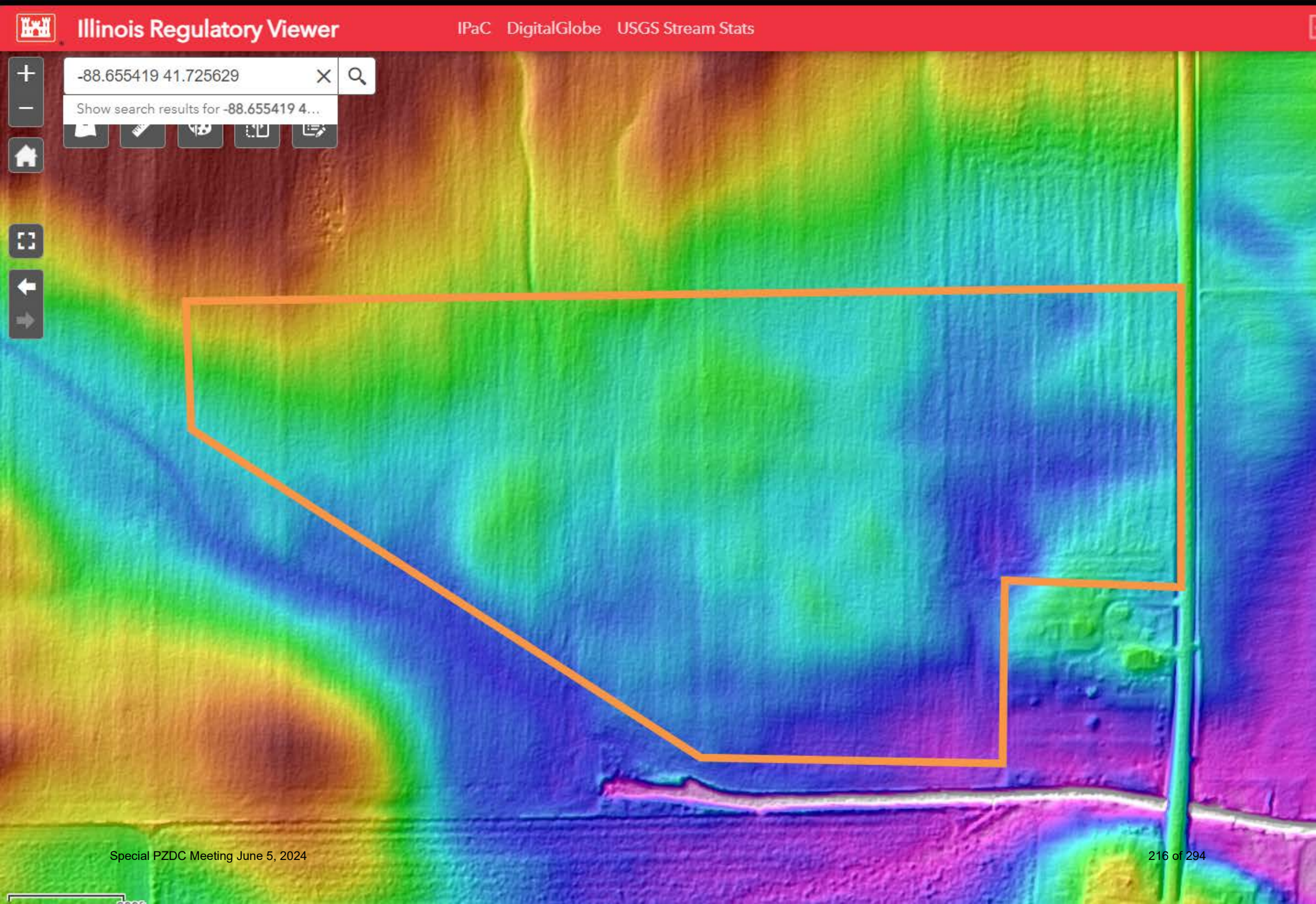
    c. National Wetland Mapper – 3.28.2024: NWI

    d. USGS Topographic Mapper – 3.28.2024: topo 2021

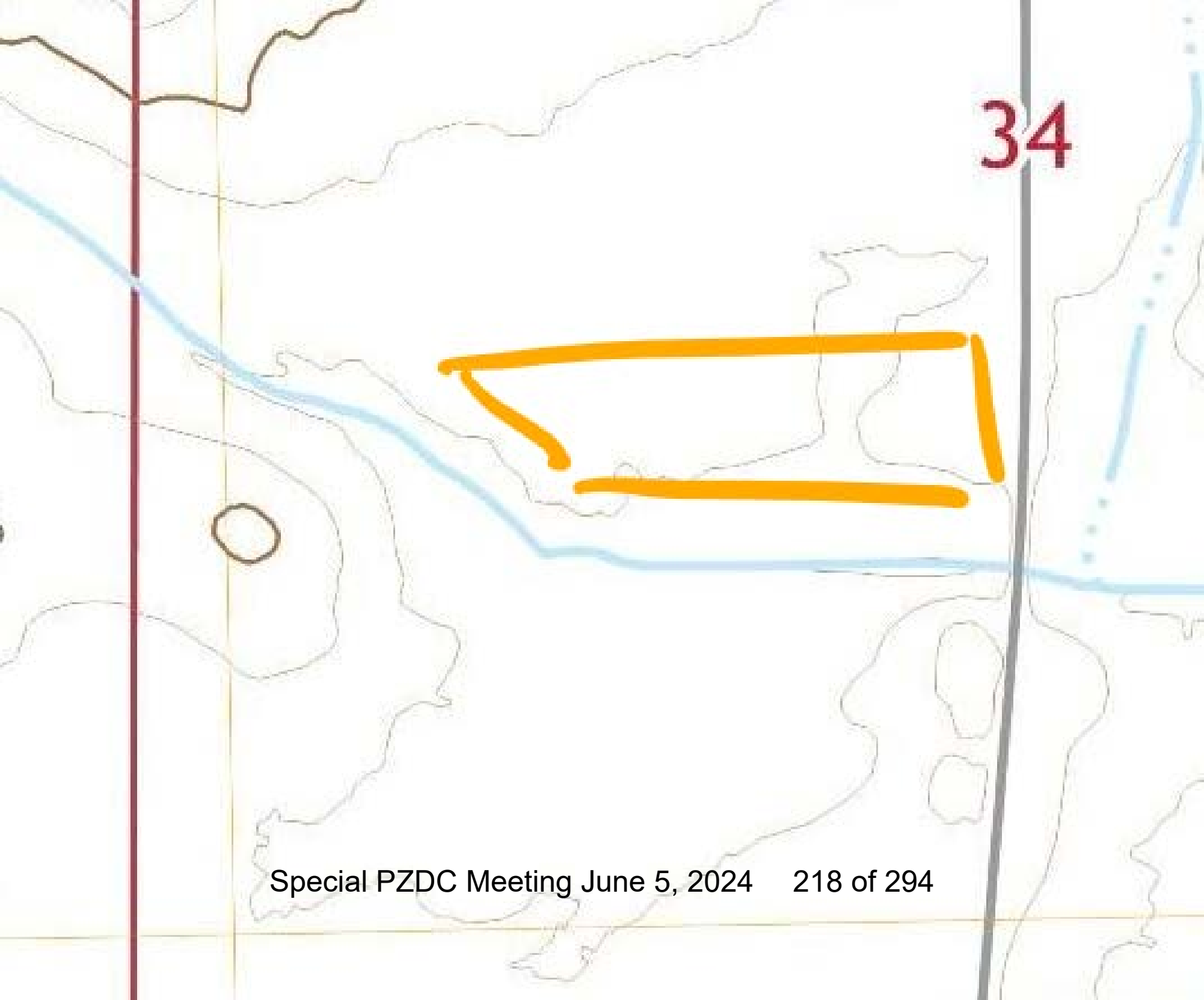
10. OTHER SUPPORTING INFORMATION.
    a. Wetland Delineation Shenandoah

11. NOTE: The structure and format of this MFR were developed in coordination with the EPA and Department of the Army. The MFR's structure and format may be subject to future modification or may be rescinded as needed to implement additional guidance from the agencies; however, the approved jurisdictional determination described herein is a final agency action.


Illinois Regulatory Viewer
IPaC
DigitalGlobe
USGS Stream Stats
-88.655419 41.725629
Show search results for -88.655419 4...
300ft


Illinois Regulatory Viewer
IPaC
DigitalGlobe
USGS Stream Stats
-88.655419 41.725629
Show search results for -88.655419 4...




34

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL			
Applicant: Shenandoah Solar, LLC	**File No.: 2024-0396**	**Date:** 03/28/2024	
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

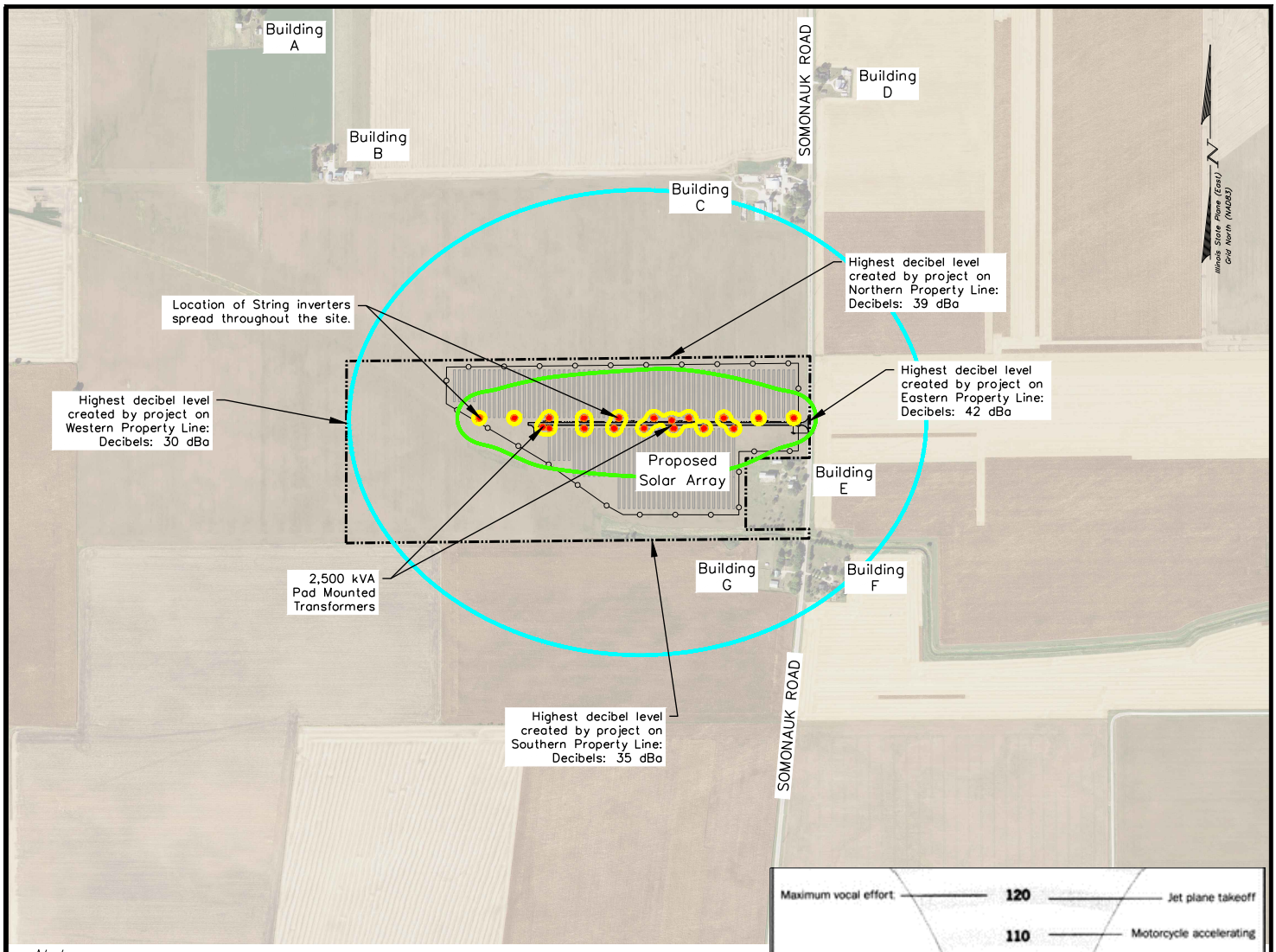
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT		
REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)		
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.		
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:		
If you have questions regarding this decision and/or the appeal process you may contact: Rowen Schmidt USACE – Rock Island District – Regulatory Branch P.O. Box 2004 Rock Island, IL 61204 309-386-3496	If you only have questions regarding the appeal process you may also contact the Division Engineer through: Administrative Appeals Review Officer US Army Engineer Division, Mississippi Valley ATTN: CEMVD-PD-OD P. O. Box 80 Vicksburg, MS 39181-0080	
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.		
_____ Signature of appellant or agent.	Date:	Telephone number:



Notes:

1. SMA specifies that the SMA Sunny Highpower PEAK3 125–172kW string inverters creates less than 69 dBa at a distance of 1.0 meters from the unit, calculated the 3 meter value to be 59.5 dBa. Cooper specifies that the 2,500 kVA pad mounted transformers create sound levels of 62 dBa. This analysis assumed 3 meters from the units to be conservative. All the equipment was modeled to be producing the maximum noise level with all equipment running simultaneously.

2. Other decibel ranges were derived using the following distance damping equation [L2 = L1 −20 Log(d1/d2)]. This damping equation was the only factor considered in decibel range attenuation estimates. Elevation, ambient noise, vegetation, proposed solar array and other structures which would further effect the attenuation of sound levels were not considered in this study. Sound levels depicted are for all (2) 2,500 Cooper Pad Mounted Transformer, and (33) SMA PEAK3 150kW string inverters operating simultaneously at maximum noise level. See additional calculation information on Sound 2, Sound 3 and Sound 4.

3. Plans Sound 3 & Sound 4 run the calculations for nighttime operation. Site inverters make negligible noise when not loaded with power. For this calculation we assume they will make no noise. The site transformers still make noise at night, to be conservative the nighttime calculation models the transformers running at maximum noise.

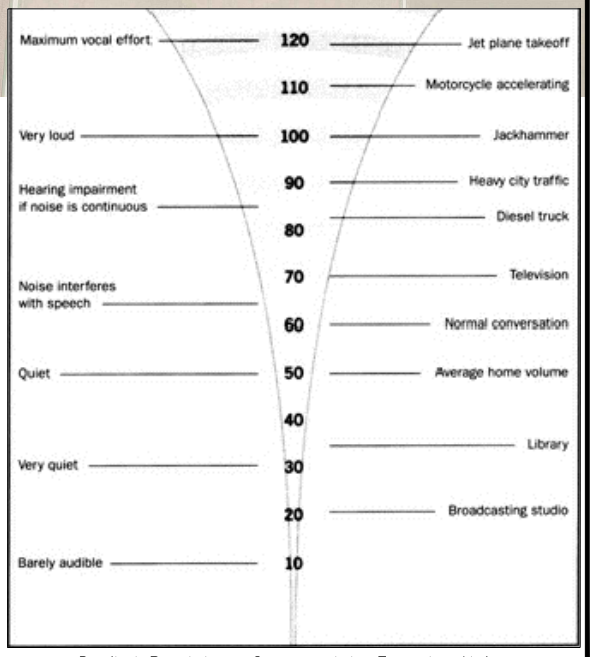
4. Sound levels reported do not account for any background noise. Local background noise, including the noise from the interstate is likely to exceed sound created by project equipment.

Legend:

- +70 dBa range
- 60 dBa range
- 50 dBa range
- 40 dBa range
- 30 dBa range

0' 600' 1,200' 2,400'

GRAPHIC SCALE 1" = 1,200'



Decibel Breakdown Compared to Everyday Noises

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

IRONWOOD RENEWABLES
128 Demanade Blvd, Ste 200
Lafayette, Louisiana 70503
P: (337) 889-3940
www.ironwoodenergy.com

FULL OPERATION DAYTIME SOUND LEVEL PLAN

Basic Sound Level Estimates for Noise Producing Project Equipment

Project: Shenandoah Solar Project

Location: Somonauk Rd, Squaw Grove TWP, IL

Source Data:
Chart found at www.soundinstitute.com/article_detail.cfm/ID/95

Plan ID: Sound 1

Scale: 1" = 1,200'

Date: 04/03/24

DRAWN BY: GTD

CHECKED BY: GTD

Revision Date:

Shenandoah Solar Project - Somonauk Road, Squaw Grove TWP, Illinois - DAYTIME

Sound Source #	Noise Level (dBa @ 3 Meters)
Cooper 2,500 kVA Pad Mounted Transformer (2)	62.0
SMA PEAK3 150 KW String inverter (33)	59.5

Formulas used for Calculations

Adding of Noise Levels

$L_T = 10 \times \text{Log}_{10} (10^{L1/10} + 10^{L1/10} + ... + 10^{Ln/10})$

Where:

L_T = Total noise level of all equipment

Ln = Noise level for each piece of equipment

Noise Level Changes with Distance

Lb = La - 20 x Log10 (Db/Da)

Where:

Lb = Noise level at new distance

La = Noise level at original distance

Db = New distance from source of noise

Da = Original distance from source of noise

	1 meter	3 meter
Cooper 2,500 kVA Pad Mounted Transformer	-	**62.0**
SMA PEAK3 150 KW String inverter	69.0	**59.5**

Points of Interest	Estimated Noise Level Based on Project Components (Sound Pressure, dBa)
Northern Property Line	39
Eastern Property Line	42
Southern Property Line	35
Western Property Line	30
Building A	23
Building B	26
Building C	30
Building D	26
Building E Closest residence to project	39
Building F	31
Building G	33

Points of Interest were chosen based on close proximity to the proposed project.

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 Colchester, Vermont 05446
P: (802) 878-0375 www.krebsandlansing.com

IRONWOOD RENEWABLES
128 Demanade Blvd, Ste 200 Lafayette, Louisiana 70503
P: (337) 889-3940 www.ironwoodrenewables.com

FULL OPERATION DAYTIME SOUND LEVEL PLAN

Basic Sound Level Estimates for Noise Producing Project Equipment

Project: Shenandoah Solar Project

Location: Somonauk Rd, Squaw Grove TWP, IL

Source Data:

DRAWN BY: GTD

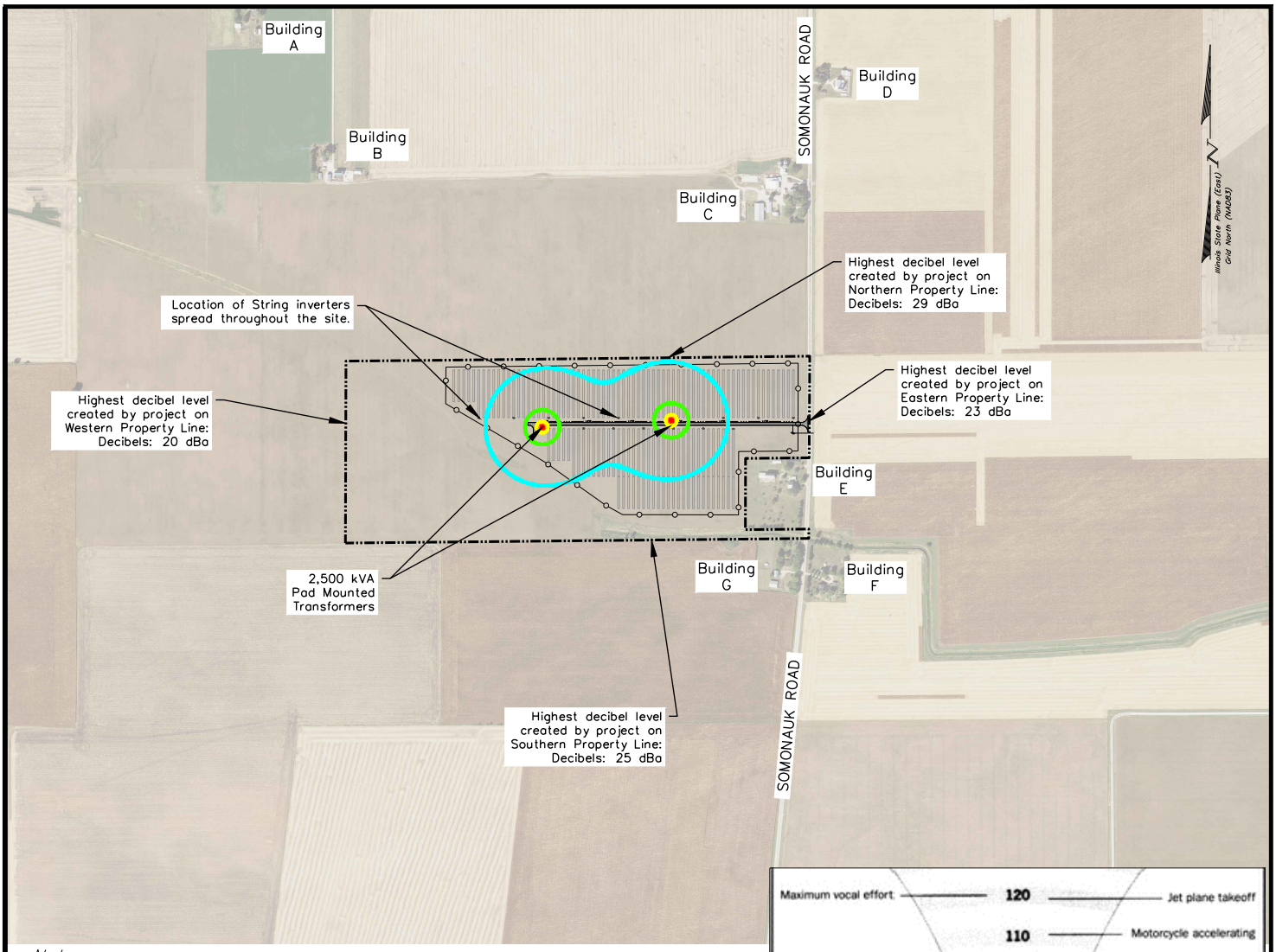
CHECKED BY: GTD

Revision Date:

Plan ID: Sound 2

Scale: N/A

Date: 04/03/24



Notes:

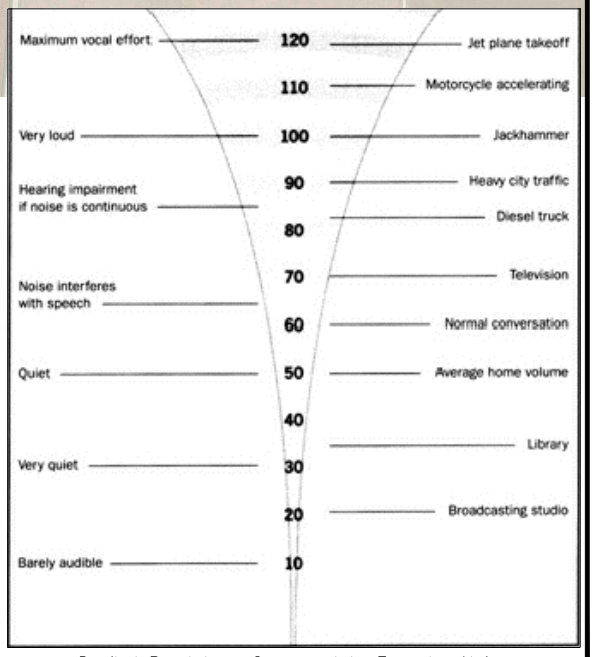
1. Cooper specifies that the 2,500 kVA pad mounted transformers create sound levels of 62 dBa. This analysis assumed 3 meters from the units to be conservative. All the equipment was modeled to be producing the maximum noise level with all equipment running simultaneously.
2. Other decibel ranges were derived using the following distance damping equation [L2 = L1 −20 Log(d1/d2)]. This damping equation was the only factor considered in decibel range attenuation estimates. Elevation, ambient noise, vegetation, proposed solar array and other structures which would further effect the attenuation of sound levels were not considered in this study. Sound levels depicted are for the (2) 2,500 Cooper Pad Mounted Transformer operating simultaneously at maximum noise level.
3. Sound levels reported do not account for any background noise. Local background noise, including the noise from the interstate is likely to exceed sound created by project equipment.

Legend:

- +70 dBa range
- 60 dBa range
- 50 dBa range
- 40 dBa range
- 30 dBa range

0' 600' 1,200' 2,400'

GRAPHIC SCALE 1" = 1,200'



Decibel Breakdown Compared to Everyday Noises

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Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

IRONWOOD RENEWABLES
128 Demanade Blvd, Ste 200
Lafayette, Louisiana 70503
P: (337) 889-3940
www.ironwoodenergy.com

NIGHTTIME OPERATION SOUND LEVEL PLAN

Basic Sound Level Estimates for Noise Producing Project Equipment

Project: Shenandoah Solar Project

Location: Somonauk Rd, Squaw Grove TWP, IL

Source Data:
Chart found at www.soundinstitute.com/article_detail.cfm/ID/95

DRAWN BY: GTD

CHECKED BY: GTD

Revision Date:

Plan ID: Sound 3

Scale: 1" = 1,200'

Date: 04/03/24

Shenandoah Solar Project - Somonauk Road, Squaw Grove TWP, Illinois - NIGHTTIME

Sound Source #	Noise Level (dBa @ 3 Meters)
Cooper 2,500 kVA Pad Mounted Transformer (2)	62.0

Formulas used for Calculations

Adding of Noise Levels

$L_T = 10 \times \text{Log}_{10} (10^{L1/10} + 10^{L1/10} + ... + 10^{Ln/10})$

Where:

L_T = Total noise level of all equipment

Ln = Noise level for each piece of equipment

Noise Level Changes with Distance

Lb = La - 20 x Log10 (Db/Da)

Where:

Lb = Noise level at new distance

La = Noise level at original distance

Db = New distance from source of noise

Da = Original distance from source of noise

	1 meter	3 meter
Cooper 2,500 kVA Pad Mounted Transformer	-	**62.0**

Points of Interest	Estimated Noise Level Based on Project Components (Sound Pressure, dBa)
Northern Property Line	29
Eastern Property Line	23
Southern Property Line	25
Western Property Line	20
Building A	13
Building B	17
Building C	20
Building D	16
Building E Closest residence to project	26
Building F	20
Building G	22

Points of Interest were chosen based on close proximity to the proposed project.

Site inverters make negligible noise when not loaded with power. For this calculation we assume they will make no noise.

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
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NIGHTTIME OPERATION SOUND LEVEL PLAN

Basic Sound Level Estimates for Noise Producing Project Equipment

Project: Shenandoah Solar Project

Location: Somonauk Rd, Squaw Grove TWP, IL

Source Data:

Plan ID: Sound 4

Scale: N/A

Date: 04/03/24

DRAWN BY: GTD

CHECKED BY: GTD

Revision Date:

/ SHP 125-US-21 / SHP 150-US-21 / SHP 165-US-21 / SHP 172-US-21



Sunny Highpower PEAK3-US

125 / 150 / 165 / 172

A superior distributed generation solution for large-scale power plants

25 YEAR DESIGN LIFE

SMA Smart Connected

c UL us

Cost effective
- Modular architecture reduces BOS and maximizes system uptime
- Compact design and high power density maximize transportation and logistical efficiency

Maximum flexibility
- Scalable 1,500 VDC building block with best-in-class performance
- Flexible architecture creates scalability while maximizing land usage

Simple install, commissioning
- Ergonomic handling and simple connections enable quick installation
- Centralized commissioning and control with SMA Data Manager

Highly innovative
- SMA Smart Connected reduces O&M costs and simplifies field-service
- Powered by award winning ennexOS cross sector energy management platform

The Sunny Highpower PEAK3 1,500 VDC inverter offers high power density in a modular architecture that achieves a cost-optimized solution for large-scale PV integrators.

With fast, simple installation and commissioning, the PEAK3 is accelerating the path to energization. SMA has also brought its field-proven Smart Connected technology to the PEAK3, which simplifies O&M and contributes to lower lifetime service costs. The PEAK3 power plant solution is powered by the ennexOS cross sector energy management platform, 2018 winner of the Intersolar smarter E AWARD.

Technical Data	Sunny Highpower PEAK3 125-US	Sunny Highpower PEAK3 150-US	Sunny Highpower PEAK3 165-US	Sunny Highpower PEAK3 172-US
Input (DC)				
Maximum array power [1]	250 kWp	300 kWp	330 kWp	344 kWp
Maximum system voltage	1500 Vdc			
Rated MPP voltage range	705 V ... 1450 V	880 V ... 1450 V	924 V ... 1450 V	968 V ... 1450 V
MPPT operating voltage range	684 V ... 1500 V	855 V ... 1500 V	898 V ... 1500 V	941 V ... 1500 V
MPP trackers	1			
Maximum operating input current	180 A			
Maximum input short-circuit current	325 A			
Output (AC)				
Nominal AC power	125 kW	150 kW	165 kW	172 kW
Maximum apparent power	125 kVA	150 kVA	165 kVA	172 kVA
Output phases / line connections	3 / 3-PE			
Nominal AC voltage	480 V	600 V	630 V	660 V
Compatible transformer winding configuration	Wye-grounded			
Maximum output current	151 A			
Rated grid frequency	60 Hz			
Grid frequency / range	50 Hz, 60 Hz / -6 Hz ... +6 Hz			
Power factor at rated power / adjustable displacement	1 / 0.8 leading ... 0.8 lagging			
Harmonics (THD)	<3%			
Efficiency				
CEC efficiency	98.5 %	99.0 %	99.0 %	99.0 %
Protection and safety features				
Ground fault monitoring: Riso / Differential current	● / ●			
DC reverse polarity protection	●			
AC short circuit protection	●			
Monitored surge protection (Type 2): DC / AC	● / ●			
Protection class / overvoltage category (as per UL 840)	I / IV			
General data				
Device dimensions (W / H / D)	770 / 830 / 462 mm (30.3 / 32.7 / 18.2 in)			
Device weight	99 kg (218 lbs)			
Operating temperature range	-25°C ... +60°C (-13°F ... +140°F)			
Storage temperature range	-40°C ... +70°C (-40°F ... +158°F)			
Audible noise emission (full power @ 1m and 25°C)	< 69 dB(A)			
Internal consumption at night	< 5 W			
Topology	Transformerless			
Cooling concept	OptiCool (forced convection, variable speed fans)			
Enclosure protection rating	Type 4X			
Maximum permissible relative humidity (non-condensing)	100%			
Additional information				
Mounting	Rack mount			
DC connection	Terminal lug (up to 600 kcmil CU/AL)			
AC connection	Screw terminal (up to 300 kcmil CU/AL)			
LED indicators (Status/Fault/Communication)	●			
SMA Speedwire (Ethernet network interface)	● (2 x RJ45 ports)			
Data protocols: SMA Modbus / SunSpec Modbus	● / ●			
Integrated Plant Control / Q on Demand 24/7	● / ●			
Off-grid capable / SMA Hybrid Controller compatible	– / ●			
Monitoring				
SMA Sunny Portal (monitoring portal)	No cost for the lifetime of the system			
SMA Smart Connected (monitoring and remote O&M service)	No cost on inverters under warranty			
Supported protocols for outbound data	SMA external API, Modbus, FTP			
Certifications				
Certifications and approvals (pending)	UL 62109, UL 1998, CAN/CSA-C22.2 No.62109			
Manufacturer's Declaration of Design Life	25 years			
FCC compliance	FCC Part 15, Class A			
Grid interconnection standards	IEEE 1547:2018, UL 1741-SA - CA Rule 21, HECO Rule 14H, UL1741SB			
Advanced grid support capabilities	L/HFRT, L/HVRT, Volt-VAr, Volt-Watt, Frequency-Watt, Ramp Rate Control, Fixed Power Factor			
Warranty				
Standard	5 years			
Optional extensions (total warranty coverage cannot exceed 25 years)	+5 / +10 / +15 / +20 years			
1) Higher DC array power permitted via site inverter load modeling in SMA Sunny Design				
Type designation	SHP 125-US-21	SHP 150-US-21	SHP 165-US-21	SHP 172-US-21

● Standard features ○ Optional features – Not available

SHPUS-DSen-23 Changes to products and services, including those resulting from country-specific requirements, as well as deviations from technical data are subject to change at any time without notice. SMA assumes no liability for typographical or other errors. Please visit www.SMA-Solar.com for the latest information.

Three-phase pad-mounted PEAK™ transformer



General

Eaton's Cooper Power™ series PEAK™ transformers represent the next generation of transformer design, and with three distinct product offerings there is a PEAK transformer to fit your needs. The first PEAK transformer option is a 75 °C average winding rise (AWR) design that offers users a potentially smaller and lighter footprint than today's 65 °C AWR transformers. This design is ideal for applications with cost, weight, or dimensional constraints. The second PEAK transformer option is a 65/75 °C AWR design that offers users sustained overload capacity while maintaining IEEE Std C57.91™-2011 standard per unit life requirements. This design offers customers flexibility in transformer sizing by offering the ability to accommodate future load growth without oversizing relative to current load, or the ability to meet periods of peak demand without oversizing based on continuous load. The third PEAK transformer option is a 55/75 °C AWR design that provides up to 22% additional loading capacity when compared to traditional mineral oil-filled transformers.

With all PEAK product offerings utilizing thermally upgraded kraft paper and Envirotemp™ FR3™ dielectric fluid, PEAK transformers offer customers a solution that is fully compatible with the new IEEE® standard for transformers using high-temperature insulation systems, IEEE Std C57.154™-2012 standard. In addition, all PEAK transformers provide the high fire point and environmental benefits of Envirotemp™ FR3™ fluid. PEAK transformers are available in various designs and configurations to match almost every application.

Powering Business Worldwide

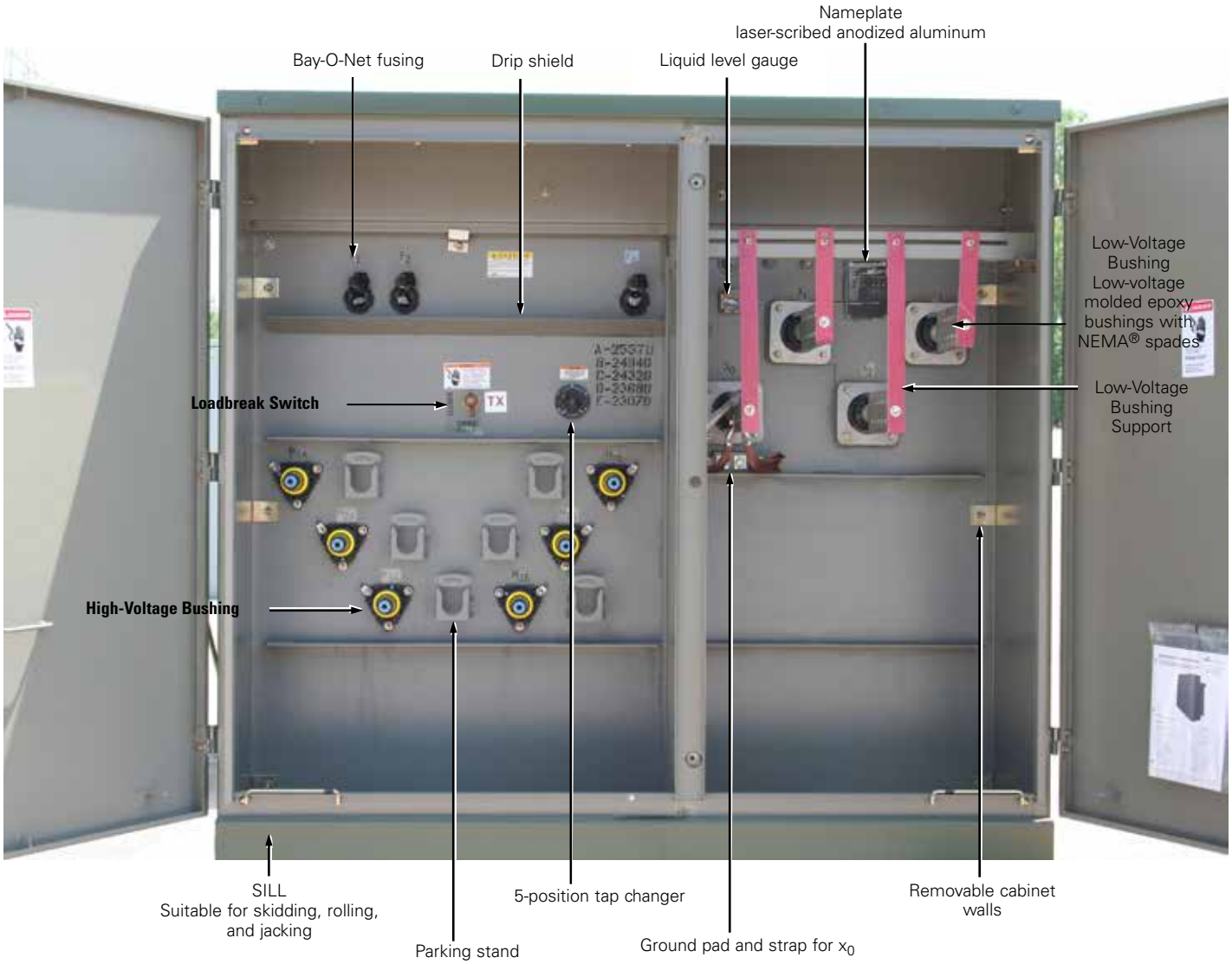


Figure 1. Three-phase pad-mounted PEAK transformer.

Table 1. Product scope

Type	Three-Phase, 50 or 60 Hz, 75 ºC Rise and 65 °C/75 °C and 55/75 °C
Fluid Type	Only Envirotemp™ FR3™ fluid
Coil Configuration	2-winding or 4-winding or 3-winding (Low-High-Low), 3-winding (Low-Low-High)
Size	45 – 10,000 kVA
Primary Voltage	2,400 – 46,000 V
Secondary Voltage	208Y/120 V to 14,400 V
Specialty Designs	Inverter/Rectifier Bridge
	K-Factor (up to K-19)
	Solar/Wind Designs
	Differential Protection
	Seismic Applications (including OSHPD)
	Hardened Data Center
	UL® Listed & Label and Classified

Table 2. Three-Phase Ratings

Three-Phase 50 or 60 Hz
kVA Available[1]: 45, 75, 112.5, 150, 225, 300, 500, 750, 1000, 1500, 2000, 2500, 3000, 3750, 5000, 7500, 10000

[1]Transformers are available in the standard ratings and configurations shown or can be customized to meet specific needs.

Table 3. Impedance Voltage

	Low-voltage rating		
Rating (kVA)	**≤ 600 V**	**2400 Δ through 4800 Δ**	**6900 Δ through 13800GY/7970 or 13800 Δ**
45-75	2.70-5.75	2.70-5.75	2.70-5.75
112.5-300	3.10-5.75	3.10-5.75	3.10-5.75
500	4.35-5.75	4.35-5.75	4.35-5.75
750-2500	5.75	5.75	5.75
3750	5.75	5.75	6.00
5000		6.00	6.50

Note: The standard tolerance is ± 7.5%

Table 4. Audible Sound Levels

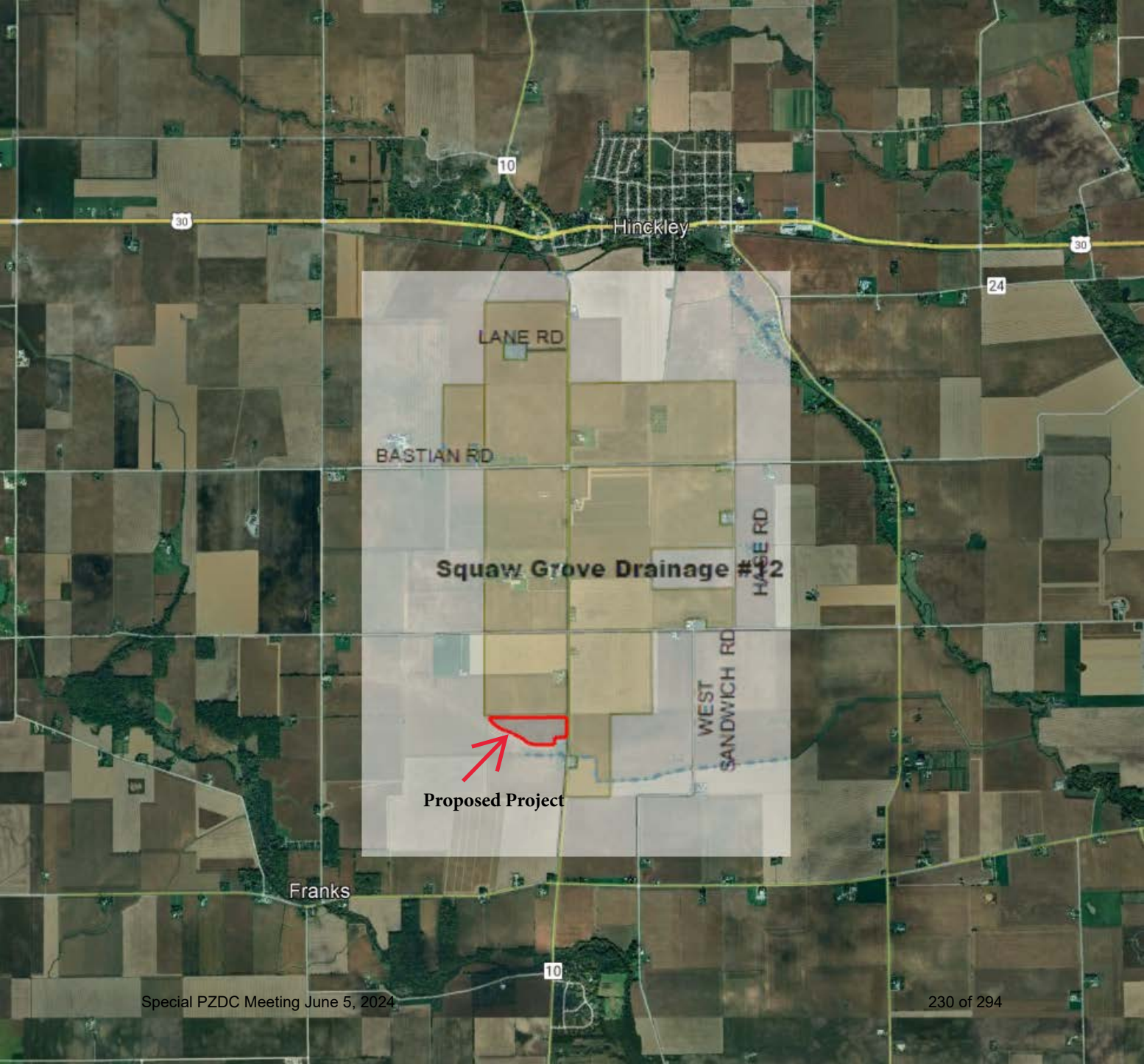
	NEMA® TR-1 Average
Self-Cooled, Two Winding kVA Rating	**Decibels (dB)**
45-500	56
501-700	57
701-1000	58
1001-1500	60
1501-2000	61
2001-2500	62
2501-3000	63
3001-4000	64
4001-5000	65
5001-6000	66
6001-7500	67
7501-10000	68

Table 5. Insulation Test Levels

KV Class	Induced Test 180 or 400 Hz 7200 Cycle	kV BIL Distribution	Applied Test 60 Hz (kV)
1.2	Twice Rated Voltage	30	10
2.5		45	15
5		60	19
8.7		75	26
15		95	34
25		125	40
34.5		150	50

Table 6. Temperature Rise Ratings 0-3300 Feet (0-1000 meters)

	Unit Rating (Temperature Rise Winding)
	75, 65/75, 55/75 °C
Ambient Temperature Max.	40 °C
Ambient Temperature 24 Hour Average	30 °C
Temperature Rise Hotspot	90 °C

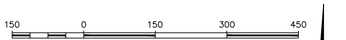

10
30
Hinckley
30
24
LANE RD
BASTIAN RD
Squaw Grove Drainage #12
HASSE RD
WEST SANDWICH RD
Proposed Project
Franks
10

PLAT OF SURVEY
OF
SHENANDOAH SOLAR

PART OF SECTIONS 33 & 34, TOWNSHIP 38 NORTH, RANGE 5, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DEKALB COUNTY, ILLINOIS



VICINITY MAP
NOT TO SCALE

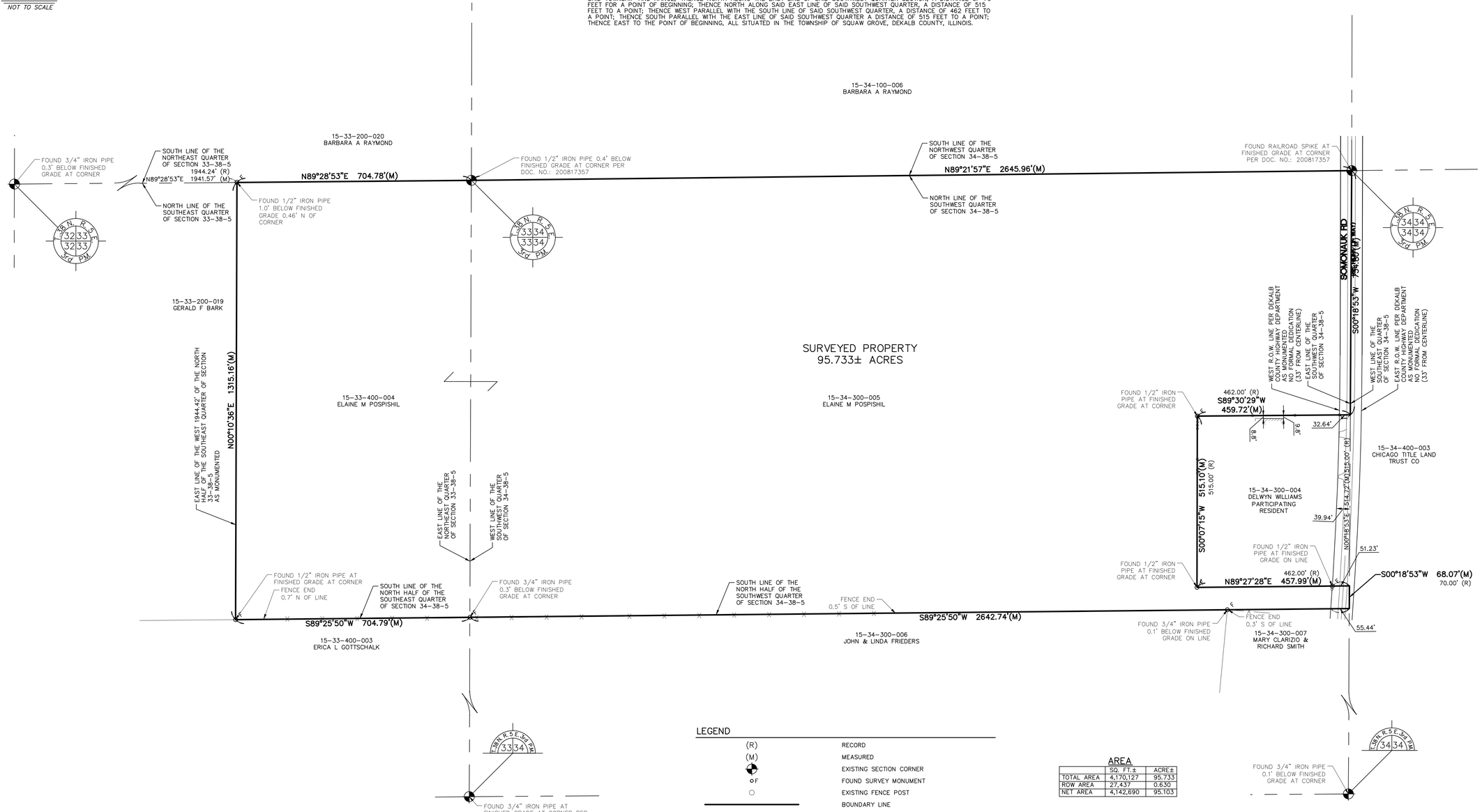


GRAPHIC SCALE
SCALE: 1"=150'

BASIS OF BEARING:
ILLINOIS STATE PLANE
EAST ZONE (NAD83)
2011 ADJUSTMENT

LEGAL DESCRIPTION PER DEED IN TRUST RECORDED OCTOBER 9, 2009 PER DOCUMENT NO. 2009014876

THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 33 (EXCEPT THE WESTERLY 1944.24 FEET) AS MEASURED ALONG THE EAST–WEST HALF SECTION LINE, TOWNSHIP 38 NORTH, RANGE 5 EAST OF THE THIRD PRINCIPAL MERIDIAN AND ALSO THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 34 IN AFORESAID TOWNSHIP AND RANGE EXCEPTING THEREFROM THAT PART BEING DESCRIBED BY COMMENCING AT THE SOUTHEAST CORNER OF SAID NORTH HALF OF THE SOUTHWEST QUARTER OF SAID TOWNSHIP AND RANGE; THENCE NORTH ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER SECTION, A DISTANCE OF 70 FEET FOR A POINT OF BEGINNING; THENCE NORTH ALONG SAID EAST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 515 FEET TO A POINT; THENCE WEST PARALLEL WITH THE SOUTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 462 FEET TO A POINT; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER A DISTANCE OF 515 FEET TO A POINT; THENCE EAST TO THE POINT OF BEGINNING, ALL SITUATED IN THE TOWNSHIP OF SQUAW GROVE, DEKALB COUNTY, ILLINOIS.



LEGEND

(R)	RECORD
(M)	MEASURED
⊕	EXISTING SECTION CORNER
●	FOUND SURVEY MONUMENT
○	EXISTING FENCE POST
———	BOUNDARY LINE
———	BOUNDARY ADJACENT / ROW LINE
— — —	SECTION LINE
—X—X—	EXISTING FENCE
— — —	EXISTING ROAD CENTERLINE
▨	EXISTING BUILDING

AREA

	SQ. FT.±	ACRE±
TOTAL AREA	4,170,127	95.733
ROW AREA	27,437	0.630
NET AREA	4,142,690	95.103

STATE OF ILLINOIS)
) SS
COUNTY OF DUPAGE)

I, KYLE ALLRED, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT THIS PLAT OF SURVEY OF THE HEREON DESCRIBED PROPERTY HAS BEEN PREPARED UNDER MY SUPERVISION AND THAT THIS PLAT IS A TRUE AND CORRECT REPRESENTATION THEREOF. ALL DIMENSIONS ARE GIVEN IN FEET AND DECIMALS THEREOF.

KYLE O. ALLRED
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 035-3714
ATWELL, LLC
MY LICENSE EXPIRES 11/30/2024

"THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY SURVEY"

STATE OF ILLINOIS
KYLE O. ALLRED
035-3714
NAPERVILLE IL
PROFESSIONAL LAND SURVEYOR

GENERAL NOTES:

1. COMPARE ALL DISTANCES AND POINTS IN THE FIELD AND REPORT ANY DISCREPANCIES IN SAME TO SURVEYOR AT ONCE.
2. CALL 811 ("COMMON GROUND ALLIANCE" NATIONAL UNDERGROUND UTILITY LOCATOR SERVICE) FOR FIELD LOCATION OF UNDERGROUND UTILITY LINES PRIOR TO ANY DIGGING OR CONSTRUCTION.
3. NO DIMENSIONS SHOULD BE ASSUMED BY SCALING.
4. THE FIELD WORK WAS COMPLETED ON 11/29/2022.
5. FOR MISSING OR SUBSTANDARD SECTION CORNER MONUMENTS SHOWN ON THIS SURVEY AND/OR CORNERS MISSING A CURRENT & COMPLETE MONUMENT RECORD, ATWELL WILL BE SETTING AND FILING RECORDS PER THE LAND SURVEY MONUMENT ACT [765 ILCS 220] AFTER SURVEY IS COMPLETE.
6. ALL RIGHT-OF-WAY WIDTHS SHOWN HEREON ARE APPROXIMATE; NO FORMAL DEDICATION DOCUMENTS PROVIDED TO THE SURVEYOR. THE PUBLIC RIGHT-OF-WAY SHOWN HEREON IS FROM ONGOING CONVERSATIONS WITH THE TOWNSHIP HIGHWAY COMMISSIONER AND MEMBERS OF THE DEKALB COUNTY HIGHWAY DEPARTMENT. THE PUBLIC RIGHT-OF-WAY SHOWN HEREON IS SUBJECT TO CHANGE. UNLESS OTHERWISE NOTED WITH A DOCUMENT OR RECORD NUMBER.

811 Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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866.850.4200 www.atwell-group.com
1250 EAST DIEHL ROAD, SUITE 300
NAPERVILLE, IL 60563
DESIGN FIRM #184-005876

SECTIONS 33 & 34
TOWN 38 NORTH, RANGE 5 EAST
SQUAW GROVE TOWNSHIP
DEKALB COUNTY, ILLINOIS

CLIENT
IRONWOOD RENEWABLES, LLC
PLAT OF SURVEY
6353 SOMONAUK ROAD
HINCKLEY, ILLINOIS 60520

DATE
12/14/2022

2024-04-03
CORRECTED PIN

REVISIONS

SCALE 0 75 150
1" = 150 FEET
DR. SEA | CH. KOA
P.M. K. ALLRED
BOOK 278
JOB 22004992
SHEET NO.
1 OF 1

CAD FILE: 22004992PL-01.DWG

S:\22004992\SURVEY\22004992PL-01.DWG 4/1/2024 11:14 AM KYLE ALLRED

EXISTING AGRICULTURAL DRAIN TILE INVESTIGATION PLAN

IRONWOOD SHENANDOAH SOLAR

Prepared for: IRONWOOD RENEWABLES, LLC

Section no. 34, Squaw Grove, Dekalb, IL.

EXISTING SUBSURFACE AGRICULTURAL DRAIN TILE INVESTIGATION REPORT

IRONWOOD SHENANDOAH SOLAR

IRONWOOD RENEWABLES, LLC

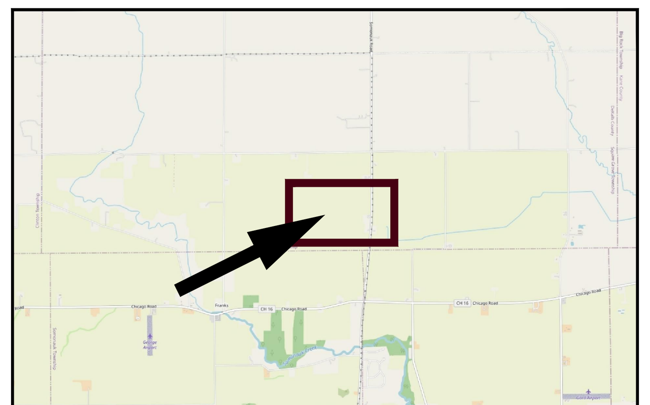
SHENANDOAH SOLAR / IRONWOOD RENEWABLES, LLC , FIELD FILE NO. 2-17-32, DATE: 7/19/23 .
IN ACCORDANCE W/ DEKALB COUNTY and A.I.M.A EXISTING DRAIN TILE INVESTIGATION & LOCATION STANDARDS
COPYRIGHT © 2023, BY HUDDLESTON MCBRIDE LAND DRAINAGE COMPANY

DESCRIPTION CHART NO. 1A : INVESTIGATION SLIT TRENCH LOCATIONS

ID NO.	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH GRD/INV	FIELD NOTES:
A1	4"	CLAY / GOOD	SLIGHT	SLIGHT	27"	ACTIVE FLOW RATE AND CAPACITY
B1	5"	CLAY / GOOD	SLIGHT	CLEAN	34"	ACTIVE FLOW RATE AND CAPACITY
C1	3"	CLAY / GOOD	SLIGHT	SLIGHT	28"	ACTIVE FLOW RATE AND CAPACITY
C2	7"	CLAY / FAIR	SLIGHT	SLIGHT	39"	ACTIVE FLOW RATE AND CAPACITY
D	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
E1	8"	CLAY / FAIR	30%	CLEAN	42"	ACTIVE FLOW RATE AND CAPACITY
F1	7"	CLAY / FAIR	SLIGHT	CLEAN	29"	ACTIVE FLOW RATE AND CAPACITY
G	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
H	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
I1	4"	CLAY / GOOD	SLIGHT	CLEAN	33"	ACTIVE FLOW RATE AND CAPACITY
J1	4"	CLAY / GOOD	SLIGHT	CLEAN	33"	ACTIVE FLOW RATE AND CAPACITY
K1	4"	CLAY / GOOD	SLIGHT	CLEAN	33"	ACTIVE FLOW RATE AND CAPACITY
L	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
M1	5"	CLAY / GOOD	SLIGHT	10%	39"	ACTIVE FLOW RATE AND CAPACITY
M2	5"	CLAY / GOOD	SLIGHT	25%	32"	ACTIVE FLOW RATE AND CAPACITY
M3	10"	CONC./GOOD	10%	CLEAN	47"	ACTIVE FLOW RATE AND CAPACITY
N1	4"	CLAY / GOOD	SLIGHT	10%	45"	ACTIVE FLOW RATE AND CAPACITY
01	4"	CLAY / GOOD	SLIGHT	SLIGHT	49"	ACTIVE FLOW RATE AND CAPACITY
P1	5"	CLAY / GOOD	SLIGHT	CLEAN	60"	ACTIVE FLOW RATE AND CAPACITY
Q1	4"	CLAY / GOOD	SLIGHT	10%	40"	ACTIVE FLOW RATE AND CAPACITY
Q2	20"	CONC./GOOD	20%	CLEAN	44"	ACTIVE FLOW RATE AND CAPACITY
Q3	5"	CLAY / GOOD	SLIGHT	40%	32"	SILT RESTRICTED / PARTIAL CAPACITY
Q4	20"	CONC./GOOD	10%	CLEAN	50"	ACTIVE FLOW RATE AND CAPACITY
Q5	4"	CLAY / GOOD	SLIGHT	90%	21"	SILT RESTRICTED / PARTIAL CAPACITY
Q6	20"	CONC./GOOD	20%	CLEAN	51"	ACTIVE FLOW RATE AND CAPACITY
R1	4"	CLAY / GOOD	SLIGHT	20%	30"	ACTIVE FLOW RATE AND CAPACITY
S1	4"	CLAY / GOOD	SLIGHT	CLEAN	44"	ACTIVE FLOW RATE AND CAPACITY
T1	8"	POLY./GOOD	70%	CLEAN	76"	ACTIVE FLOW RATE AND CAPACITY
U1	8"	POLY./GOOD	70%	CLEAN	73"	ACTIVE FLOW RATE AND CAPACITY
V	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
W1	8"	CLAY / GOOD	40%	CLEAN	53"	ACTIVE FLOW RATE AND CAPACITY
W2	20"	CONC./GOOD	10%	CLEAN	46"	ACTIVE FLOW RATE AND CAPACITY
W3	6"	CONC./GOOD	SLIGHT	CLEAN	51"	ACTIVE FLOW RATE AND CAPACITY
W4	5"	CLAY / GOOD	SLIGHT	80%	45"	SILT RESTRICTED / PARTIAL CAPACITY
W5	20"	CONC./GOOD	10%	CLEAN	44"	ACTIVE FLOW RATE AND CAPACITY
W6	20"	CONC./GOOD	10%	CLEAN	54"	ACTIVE FLOW RATE AND CAPACITY
X1	12"	CONC./GOOD	25%	CLEAN	53"	ACTIVE FLOW RATE AND CAPACITY
Y	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
Z	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
2A	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
2B	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED
2C	---	NO DRAIN TILE	---	---	---	NO DRAIN TILE LOCATED

DESCRIPTION CHART NO. 1B : SURVEY DATA POINT LOCATIONS

DATA POINT	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH HUB/INV	FIELD NOTES:
1	8"	CLAY / GOOD	20%	CLEAN	43"	MAINLINE AT PROPERTY EGRESS
2	12"	CONC. / GOOD	25%	CLEAN	52"	MAINLINE AT PROPERTY EGRESS
3	20"	CONC. / GOOD	10%	CLEAN	57"	MAINLINE AT PROPERTY EGRESS
4	20"	CONC. / GOOD	10%	CLEAN	50"	MAINLINE AT PROPERTY EGRESS
5	5"	CLAY / GOOD	SLIGHT	80%	56"	MAINLINE AT PROPERTY EGRESS
6	6"	CONC./GOOD	SLIGHT	CLEAN	52"	MAINLINE AT PROPERTY EGRESS
7	20"	CONC./GOOD	10%	CLEAN	49"	MAINLINE AT PROPERTY EGRESS
8	8"	POLY. / GOOD	40%	CLEAN	53"	MAINLINE AT PROPERTY EGRESS
9	8"	POLY. / GOOD	40%	CLEAN	57"	MAINLINE AT PROPERTY INGRESS
10	4"	NO DRAIN TILE	SLIGHT	CLEAN	45"	LATERAL AT PROPERTY INGRESS
11	4"	NO DRAIN TILE	SLIGHT	20%	31"	LATERAL AT PROPERTY EGRESS
12	20"	CONC./GOOD	10%	CLEAN	57"	MAINLINE AT PROPERTY INGRESS
13	20"	CONC./GOOD	10%	CLEAN	48"	MAINLINE AT PROPERTY INGRESS
14	20"	CONC. / GOOD	20%	CLEAN	44"	MAINLINE AT PROPERTY INGRESS
15	4"	CLAY / GOOD	SLIGHT	10%	39"	MAINLINE AT PROPERTY INGRESS
16	5"	CLAY / GOOD	SLIGHT	10%	46"	MAINLINE AT PROPERTY INGRESS
17	5"	CLAY / GOOD	SLIGHT	10%	39"	LATERAL AT PROPERTY INGRESS
18	5"	CLAY / GOOD	SLIGHT	25"	31"	LATERAL AT PROPERTY INGRESS
19	10"	CONC./GOOD	10%	CLEAN	48"	MAINLINE AT PROPERTY INGRESS
20	3"	CLAY / GOOD	SLIGHT	SLIGHT	28"	LATERAL AT PROPERTY INGRESS
21	7"	CLAY / FAIR	SLIGHT	SLIGHT	37"	MAINLINE AT PROPERTY EGRESS
22	5"	CLAY / GOOD	SLIGHT	CLEAN	30"	LATERAL AT PROPERTY INGRESS
23	4"	CLAY / GOOD	SLIGHT	SLIGHT	26"	LATERAL AT PROPERTY INGRESS
24	12"	CONC./GOOD	SLIGHT	SLIGHT	53"	MAINLINE AT PROPERTY EGRESS



SITE LOCATION
Section no. 34, Squaw Grove, Dekalb, IL.

MAP LEGEND :

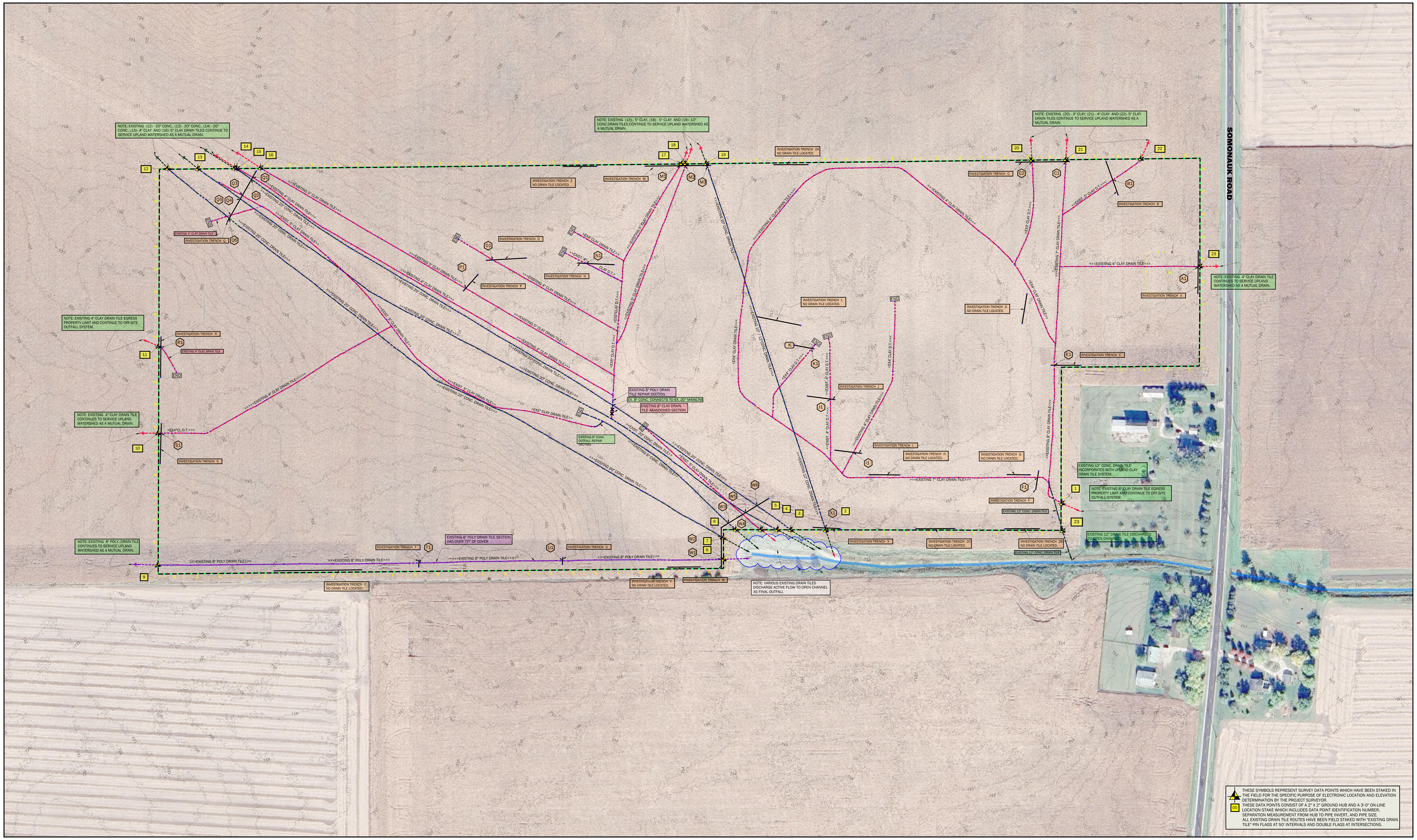
- EXIST. DRAIN TILE COVER MEASUREMENT, TOP OF TILE TO SURFACE
- EX. POLYETHYLENE MAINLINE OR SYSTEM PART
- EX. CLAY DRAIN TILE MAINLINE OR SYSTEM PARTS
- EX. CONCRETE DRAIN TILE MAINLINE OR SYSTEM PART
- EXISTING DRAIN TILE CONTINUES TO UPLAND WATERSHED
- EXISTING DRAIN TILE OUTLETS TO SURFACE
- EXIST. DRAIN TILE (1) INSPECTION STRUCTURE / (2) CATCH BASIN
- EXIST. DRAIN TILE (1) LOCATED END / (2) ASSUMED END
- EXISTING DRAIN TILE CONTINUES TO OFF-SITE OUTLET SYSTEM
- EXISTING DRAIN TILE FAILURE /FLOW SURCHARGE TO SURFACE
- EXISTING DRAIN TILE MAPPED BY SPECULATION AND ASSUMPTION
- EXISTING DRAIN TILE ABANDONED (NOT FUNCTIONAL)
- EXISTING DRAIN TILE "BLOWOUT" OR FAILURE
- HAND PROBE OR ELECTRONIC SCAN FOR DRAIN TILE LOCATION
- INVESTIGATION SLIT TRENCH FOR INVESTIGATION
- SPECIFIC PIT EXCAVATION FOR INVESTIGATION
- SURVEY DATA POINTS
- REPORT IDENTIFICATION NUMBER

SPECIAL NOTES :

- *All existing agricultural drain tiles located during this investigation survey have been identified on this plan and field staked at < 50' intervals, in some occasions certain existing local drain tile sections may be speculated and considered as an assumed route which shall be delineated on this plan.*
- *Any existing drain tile not encountered during slit trenching or probe transect procedures will remain unknown.*
- *All existing drain tiles damaged during the investigation process shall be repaired to their original state in accordance with Natural Resource Conservation Service standards for drain tile installation and repair. All*
- *existing drain tile not encountered during slit trenching procedure will remain unknown. (Huddleston McBride (62a) typical standard "A") All existing drain tile location dimensions have been mapped in state plane coordinates by gps survey*
- *systems and include sub meter accuracy, all locations pertinent to final design shall be verified by the project surveyor. This drain tile investigation report is intended to identify existing drain tile mainline systems only with*
- *additional priority on drain tiles which may service the upland property of others or with mutual drainage status.*
- *This drain tile investigation report shall be filed with Huddleston McBride Drainage Co., and will be reproduced and disbursed only by permission of the contract principals. Solar Field Development - It is our recommendation that all existing drain tile systems within the proposed solar field development should be replaced by "like kind" construction which will assure the location and replacement of unknown drain tile systems that were not located by this Existing Drain Tile Investigation.*

SPECIAL NOTES :

- *ALL EXISTING AGRICULTURAL DRAIN TILES LOCATED DURING THIS INVESTIGATION SURVEY HAVE BEEN IDENTIFIED ON THIS PLAN AND FIELD STAKED AT < 50' INTERVALS, IN SOME OCCASIONS CERTAIN EXISTING LOCAL DRAIN TILE SECTIONS MAY BE SPECULATED AND CONSIDERED AS AN ASSUMED ROUTE WHICH SHALL BE DELINEATED ON THIS PLAN.*
- *ANY EXISTING DRAIN TILE NOT ENCOUNTERED DURING SLIT TRENCHING OR PROBE TRANSECT PROCEDURES WILL REMAIN UNKNOWN.*
- *ALL EXISTING DRAIN TILES DAMAGED DURING THE INVESTIGATION PROCESS SHALL BE REPAIRED TO THEIR ORIGINAL STATE IN ACCORDANCE WITH NATURAL RESOURCE*
- *CONSERVATION SERVICE STANDARDS FOR DRAIN TILE INSTALLATION AND REPAIR. (HUDDLESTON DRAINAGE (62A) TYPICAL STANDARD "A") ALL EXISTING DRAIN TILE LOCATION DIMENSIONS HAVE BEEN SURVEYED BY AGRICULTURAL GRADE GPS SURVEY SYSTEMS AND INCLUDE SUB METER ACCURACY, ALL LOCATIONS PERTINENT TO FINAL DESIGN SHALL BE VERIFIED BY THE PROJECT SURVEYOR.*
- *THIS DRAIN TILE INVESTIGATION REPORT IS INTENDED TO IDENTIFY EXISTING DRAIN TILE MAINLINE SYSTEMS ONLY INCLUDING ADDITIONAL PRIORITY ON DRAIN TILES WHICH MAY SERVICE THE UPLAND PROPERTY OF OTHERS OR WITH MUTUAL DRAINAGE STATUS.*
- *THIS DRAIN TILE INVESTIGATION REPORT SHALL BE FILED WITH HUDDLESTON DRAINAGE LAND DRAINAGE CO., AND WILL BE REPRODUCED AND DISBURSED ONLY BY PERMISSION OF THE CONTRACT PRINCIPALS.*



PROJECT CLIENT:
IRONWOOD RENEWABLES, LLC
Hamilton Carrier , Project Manager
128 Demanade, Blvd, Ste 200, Lafayette, LA., 70502

APPROVED BY AND DATE:	PROJECT DATE:
TOM HUDDLESTON 7/19/23	7/19/23
ACKNOWLEDGMENTS: HUDDLESTON DRAINAGE MAP and ARCHIVE SYSTEMS	FIELD FILE NO.: 2-17-32
DRAWN BY AND DATE: TOM HUDDLESTON 7/19/23	DRAWING NO.: 2-17-32_X2

REVISIONS

DATE:	BY:	DESCRIPTION:
7/26/23	TLH3	ADD EXIST 12" CONC MAINLINE AT SE CORNER

WEATHER CONDITIONS:	DRAWING SCALE:	SHEET NO.
SUNNY/ WARM - 75o	1" TO 150'	ONE OF ONE

HUDDLESTON-MCBRIDE CO. 1976 47th Anniversary 2023 AGRICULTURAL DRAINAGE CONTRACTOR

ILLINOIS FARM BUREAU MEMBER

811 Know what's below. Call before you dig. X231860344 DIG NUMBER

NORTH

IRONWOOD SHENANDOAH SOLAR

HUDDLESTON McBRIDE
PROFESSIONAL LAND DRAINAGE SERVICES
9504 FOWLER RD., ROCHELLE, ILLINOIS PHONE 815-562-6007

COPYRIGHT © 2023, BY HUDDLESTON LAND DRAINAGE COMPANY

COORDINATE SYSTEM: ILLINOIS STATE PLANE EAST NAD 83

ONE COMPANY.
INFINITE SOLUTIONS.

January 18, 2023

Mr. Hamilton Carrier
Ironwood Renewables
128 Demanade Blvd. Suite 200
Lafayette, LA 70503

Atwell, LLC Project No. 22004992

Re: Wetland Determination/Delineation
Shenandoah Solar
Squaw Grove Township, Illinois

Mr. Carrier:

Ironwood Renewables (Client) contracted Atwell, LLC (Agent) to conduct a wetland delineation/determination and assessment for an approximately 95-acre parcel in Section 34 of Township 38 North, Range 05 East, Squaw Grove Township, DeKalb County, Illinois (hereinafter referred to as "site") to support a proposed solar development. The site is located approximately 0.91 miles north of the intersection of Chicago Road and Somonauk Road, on the west side of Somonauk Road. Refer to the enclosed *Site Location Map*.

The purpose of the wetland determination and delineation was to determine if wetlands, watercourses, and/or bodies of water are present on the site, and if so, if they fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE).

Prior to the field survey, Atwell reviewed the following data for any ecological and environmental constraints: aerial photography, U.S. Geological Survey (USGS) 7.5-Minute Topographic Maps, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Maps, Flood Insurance Rate Maps (FIRMs) provided by the Federal Emergency Management Agency (FEMA), and county soil data from the Natural Resources Conservation Service (NRCS).

The results of the wetland delineation site visit conducted September 28, 2022 are summarized below.

Site Setting and Characteristics

A review of aerial photography and a site visit were conducted to characterize the site and surrounding area. The surrounding landscape consisted largely of agricultural fields, paved and unpaved roads, residential structures, sparsely forested hedgerow, and a watercourse are also present. The site itself is undeveloped agricultural field with fallow areas and a wetland along a

watercourse. It should also be noted that based on desktop assessment and field reconnaissance, it appears as though an enclosed drain runs from the northwest portion to the southcentral portion of the site. This appears to be a tributary to Little Rock Creek, located (approximately 3 miles) to the east of the site.

The majority of the site is active agricultural upland with a perennial watercourse and adjacent scrub-shrub wetland in the southeast corner. Common herbaceous vegetation within uplands includes corn (*Zea mays*) Queen Anne's-Lace (*Daucus carota*), tall goldenrod (*Solidago altissima*), lambsquarters (*Chenopodium album*), velvetleaf (*Albutilon theophrasti*), common milkweed (*Asclepias syriaca*), great ragweed (*Ambrosia trifida*), giant foxtail (*Setaria faberi*), rough amaranth (*Amaranthus retroflexus*), smooth brome (*Bromus inermis*), alfalfa (*Medicago sativa*), curly dock (*Rumex crispus*), white sweetclover (*Melilotus albus*), pokeweed (*Phytolacca americana*), field thistle (*Cirsium arvense*), and Canada goldenrod (*Solidago canadensis*). Upland shrubs within the uplands includes smooth sumac (*Rhus glabra*). Common tree species within uplands includes blue spruce (*Picea pungens*), scotch pine (*Pinus sylvestris*), and white mulberry (*Morus alba*).

Wetland Delineation

The wetland delineation was performed in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2012). The delineation of any wetland depends on three basic parameters: 1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), 2) hydric soils (distinctive soil types that develop under saturated conditions), and 3) wetland hydrology (the presence of water at or near the surface for a specific period of time). The above parameters are virtually always inter-related and present in wetland systems.

In Illinois, the USACE regulates the discharge of dredged or fill material into jurisdictional wetlands and waters of the U.S. under Section 404 of the Clean Water Act (CWA). Wetlands that are hydrologically connected or adjacent to traditional navigable waters of the U. S. are regulated under Section 404. If impacts are anticipated to federally jurisdictional waters or wetlands, then a Section 404 permit obtained through review from the USACE and a Section 401 permit after review from the Illinois Environmental Protection Agency (ILEPA) would be required.

Floodplains and floodways are regulated by the Illinois Department of Natural Resources (ILDNR). All construction activities in the floodways of streams (the channel and the adjacent portion of the floodplain that is needed to safely convey and store flood waters) in urban areas where the stream drainage area is one square mile or more or in rural areas where the stream drainage area is ten square miles or more must be permitted by the ILDNR prior to construction. If impacts are anticipated to floodplains along streams with a drainage area greater than 10 square miles, then a permit would also be required from the ILDNR.

Atwell did not complete a Floristic Quality Assessment (FQA) of the site wetlands, as this assessment is only required if a permit application is needed, and Atwell is assuming that all wetland impacts would be avoided as a result of the project.

Atwell conducted a wetland determination and delineation for the site on September 28, 2022 and identified one wetland (Wetland 1) and one watercourse (Watercourse 1) on the site. Refer to the enclosed *Wetland Location Map* for information and locations of the on-site wetland. Refer to the *Photographic Log* for site conditions and physical characteristics at the time of inspection. Wetland Data Forms and the results of the USACE Antecedent Precipitation Tool are also included as attachments to this report.

Wetland 1 is a palustrine scrub-shrub (PSS) wetland located in the southeast corner of the site. Wetland hydrological indicators such as geomorphic position, drainage patterns, and FAC-Neutral test were present at the time of the site inspection. Wetland scrub-shrub species included sandbar willow (*Salix interior*; FACW), and elderberry (*Sambucus nigra*; FAC). Wetland herbaceous species include reed canary grass (*Phalaris arundinacea*; FACW), and low percentages of scouring rush (*Equisetum hymale*; FAC), blue vervain (*Verbena hastata*; FACW), and great ragweed (*Ambrosia trifida*; FAC). These species range in wetland indicator status from Facultative (FAC) to Facultative Wetland (FACW), indicating that these species can be found in or usually occur in wetlands. The soils present within the wetland were a clay loam that exhibited redox dark surface and depleted dark surface, indicating hydric soils. Wetland 1 is a small depression that continues offsite to the south, and drains into Watercourse 1 to the north, and therefore is likely regulated by USACE.

Watercourse 1 is a perennial stream running east west along the southern edge of the site. It begins approximately two-thirds of the way along the southern site boundary and exits the site in the southeast corner. Watercourse 1 is likely regulated by USACE.

According to the U.S. Department of Agriculture (USDA) NRCS Web Soil Survey, the soils contained within the site have been mapped as Drummer silty clay loam, 0 to 2 percent slopes (152A), Flanagan silt loam, 0 to 2 percent slopes (154A), Lisbon silt loam, 0 to 2 percent slopes (59A), and Wingate silt loam, cool mesic, 2 to 5 percent slopes (348B). Most of these soil types are considered hydric. Hydric soils are conducive to the growth and regeneration of hydrophytic vegetation by their ability to hold water for extended periods of time (NRCS 2010).

FEMA FIRMs were reviewed to determine if portions of the site are mapped as floodplains, floodways, or other flood prone areas. These maps record the following data: 100-year (1% chance of annual flooding) and 500-year (0.2% annual chance of flooding) floodplains, the height of the base flood elevation, and the risk to premium areas developed across a floodplain. According to FEMA FIRM panel #17037C0475E, dated 1/02/2009, the site is defined as Zone X. Zone X indicates an Area of Minimal Flood Hazard. Therefore, regulated floodplains are likely not present within the site.

Conclusions and Recommendations

Based on the desktop review of online databases and a site visit, the site contains one wetland (Wetland 1) and one watercourse (Watercourse 1). It is Atwell's professional opinion that the on-site wetland does appear to meet the criteria of Section 404 under the CWA. Therefore, the wetland on site is likely regulated by the USACE. The on-site watercourse also appears to meet

the criteria of Section 404 under the CWA and therefore is likely regulated by the USACE. According to FEMA FIRM panel #17037C0475E, dated 1/02/2009, the site is defined as Zone X. Zone X indicates an Area of Minimal Flood Hazard. Therefore, regulated floodplains are likely not present within the site.

A permit is required by the USACE for any proposed work (*e.g.*, filling, dredging, construction, draining, and/or other development) that takes place within the boundaries of a regulated wetland, watercourse, lake, pond, or floodplain. Although most construction activities that take place outside of these boundaries do not require a permit, the USACE has the final authority on the extent of regulated wetlands, lakes, streams, ponds, and floodplains in the State of Illinois.

We appreciate the opportunity to be of service to you on this project. Should you have any questions, please contact us at (248) 447-2000.

Sincerely,

ATWELL, LLC

Brianna Gainer
Environmental Technician
Environmental Services Group

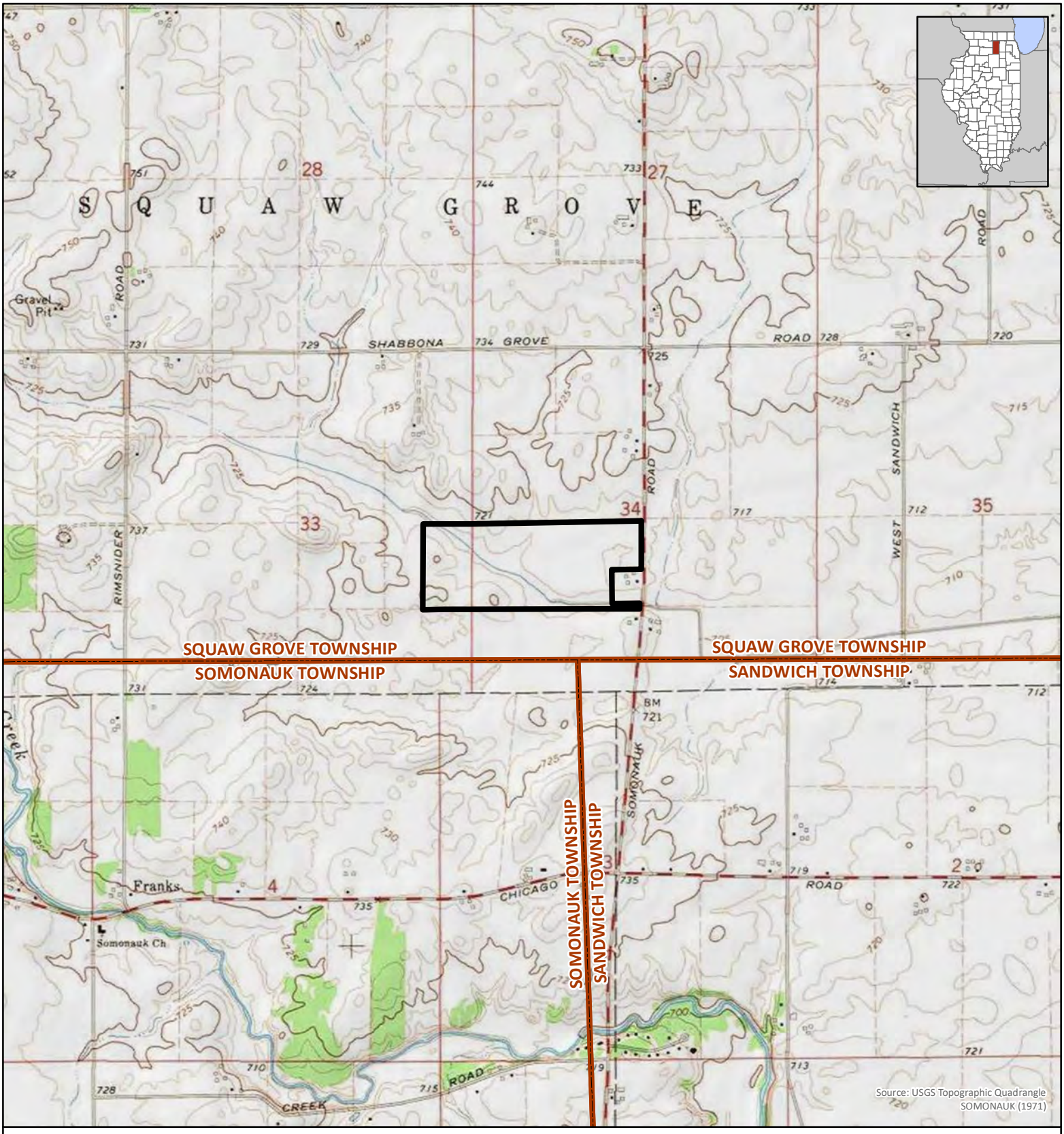
Pete Hill
Senior Project Manager
Environmental Services Group

Enclosures: Site Location Map
Wetland Location Map
Photographic Log
Wetland Data Forms
USACE Antecedent Precipitation Tool

REFERENCES

NRCS, [Natural Resources Conservation Service]. 2010. "Field Indicators of Hydric Soils in the United States (Version 7.0)." http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046970.pdf.

USACE, [U.S. Army Corps of Engineers]. 2012. "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)." ERDC/ EL TR-12-1. Vicksburg (MS): U.S. Army Engineer Research and Development Center. https://usace.contentdm.oclc.org/utils/getfile/collection/p266001coll1/id/7640.



Project Area (~96 acres)

Township

ATWELL

Shenandoah Solar
22004992
October 18, 2022
DRAFT/Confidential

2,000
Feet

Figure 1
Site Location Map
Section 33, 34 T38N R5E
Squaw Grove Township, DeKalb County, Illinois

G:\Jobs2200\T22004992_ShenandoahSolar_DeKalbCo_Il\T22004992_SLM.mxd 10/18/2022



LEGEND

- APPROXIMATE PROJECT BOUNDARY (± 96.01 ACRES)
- EXISTING WETLAND
- EXISTING WATERCOURSE
- EXISTING TOP OF BANK
- EXISTING CULVERT

NOTE: THIS ILLUSTRATION IS AN APPROXIMATE DEPICTION OF THE WETLANDS AND WATERCOURSES THAT APPEAR TO BE LOCATED ON THE SUBJECT PROPERTY AS DELINEATED BY ATWELL ON SEPTEMBER 29TH, 2022. USACE HAS THE FINAL AUTHORITY ON THE EXTENT OF REGULATED WETLANDS, LAKES, AND STREAMS IN THE STATE OF MICHIGAN.

811 Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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866.850.4200 www.atwell-group.com

SECTION 34
TOWN 38 NORTH, RANGE 05 EAST
SQUAW GROVE TOWNSHIP
DEKALB COUNTY, ILLINOIS

CLIENT
IRONWOOD RENEWABLES

DEKALB COUNTY, IL – IRONWOOD ENERGY – SHENANDOAH SOLAR

WETLAND LOCATION MAP

DATE 10/18/2022

REVISIONS

SCALE 0 60 120
1" = 120 FEET

DR. MB | CH. --
P.M. PH
BOOK --
JOB 22004992
SHEET NO. 02

CAD FILE: 22004992-WLM-02.DWG

PHOTOGRAPHIC LOG

Ironwood Energy - Shenandoah Solar

October 4, 2022 – Squaw Grove Township, Illinois



Photo 1. A west-facing, overall view of the Project Area including culverts, a watercourse, maintained lawn, and agricultural fields.



Photo 2. A west-facing view of a typical upland fallow herbaceous area within the Project Area.



Photo 3. A north-facing view of a typical upland roadside ditch located within the Project Area.



Photo 4. An east-facing photo of Wetland 1, a palustrine scrub-shrub (PSS) wetland located within the Project Area.



Photo 5. An east-facing photo of Watercourse 1, a perennial watercourse located within the Project Area.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Shenandoah Solar City/County: DeKalb County Sampling Date: 2022-09-28

Applicant/Owner: Ironwood Energy State: Illinois Sampling Point: Wetland 1

Investigator(s): K. Yantz, B. Gainer, Atwell, LLC Section, Township, Range: sec 34 T038N R005E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.722732 Long: -88.652771 Datum: WGS84

Soil Map Unit Name: Drummer silty clay loam, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
PSS wetland that drains into WC 1 and continues south offsite. Small PEM fringe that surrounds the PSS.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	90	Y	FACW
2. *Sambucus nigra*	10	N	FAC
3.			
4.			
5.			
	100	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	70	Y	FACW
2. *Equisetum hyemale*	10	N	FAC
3. *Ambrosia trifida*	10	N	FAC
4. *Verbena hastata*	8	N	FACW
5. *Cirsium vulgare*	2	N	FACU
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	____	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	168.00	x 2 =	336.00
FAC species	30.00	x 3 =	90.00
FACU species	2.00	x 4 =	8.00
UPL species	0.00	x 5 =	0.00
Column Totals:	200.00 (A)		434.00 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					CL	
4-18	10YR 2/1	80	10YR 5/1	10	C	M	CL	
			10YR 5/6	10	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ✓ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Shenandoah Solar City/County: DeKalb County Sampling Date: 2022-09-28

Applicant/Owner: Ironwood Energy State: Illinois Sampling Point: Upland 1

Investigator(s): K. Yantz, B. Gainer, Atwell, LLC Section, Township, Range: sec 34 T038N R005E

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Convex

Slope (%): _____ Lat: 41.7227000 Long: -88.6528278 Datum: WGS84

Soil Map Unit Name: Drummer silty clay loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland corn and fallow herbaceous vegetation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Zea mays*	90	Y	UPL
2. *Melilotus officinalis*	5	N	FACU
3. *Bromus inermis*	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	10.00	x 4 =	40.00
UPL species	90.00	x 5 =	450.00
Column Totals:	100.00 (A)		490.00 (B)

Prevalence Index = B/A = 4.9

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Upland 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 4/2	100					SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

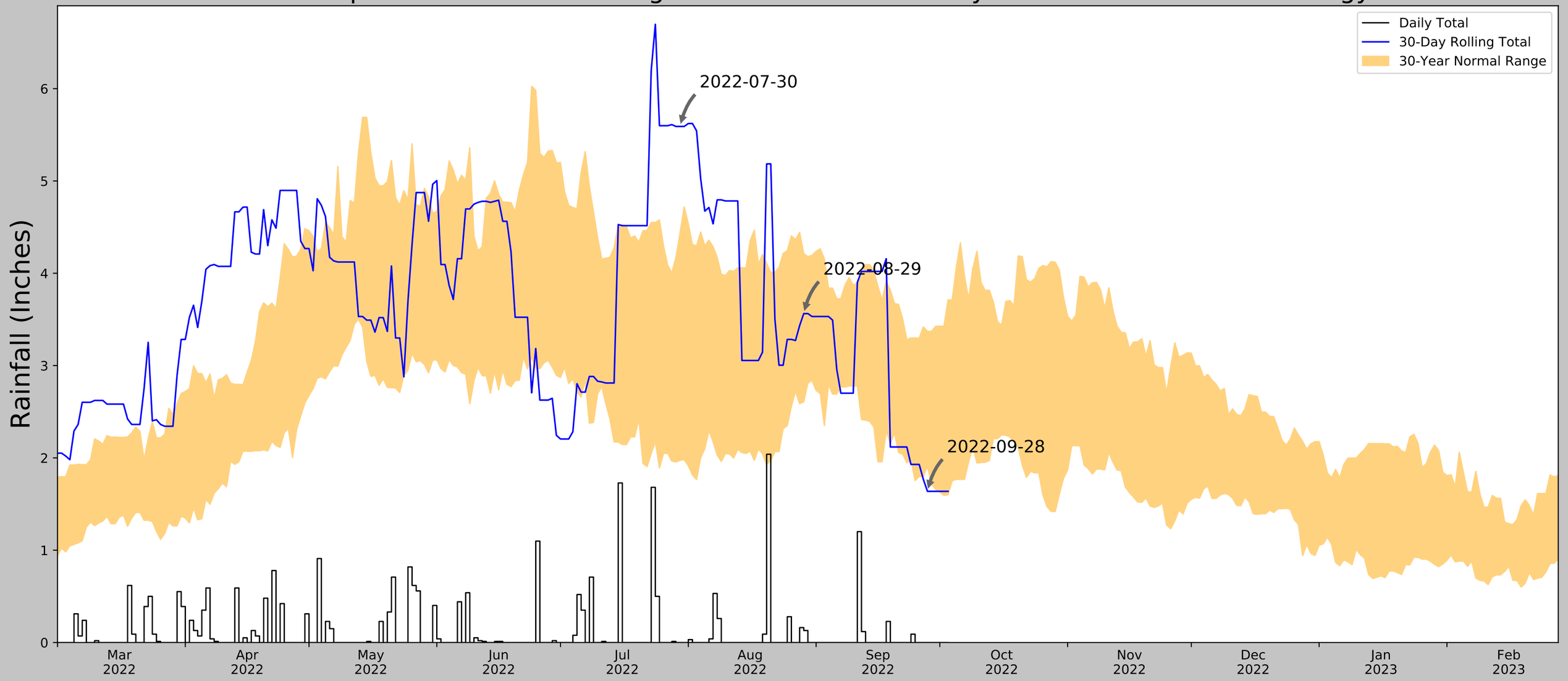
Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.724367, -88.657004
Observation Date	2022-09-28
Elevation (ft)	715.05
Drought Index (PDSI)	Incipient wetness (2022-08)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-09-28	1.911024	3.370473	1.637795	Dry	1	3	3
2022-08-29	2.60748	4.211811	3.562992	Normal	2	2	4
2022-07-30	1.973228	4.438189	5.590551	Wet	3	1	3
Result							Normal Conditions - 10

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHICAGO AURORA MUNI AP	41.77, -88.4814	709.974	9.586	5.076	4.362	8340	90
SUGAR GROVE 0.7 NE	41.7762, -88.4478	714.895	1.784	4.921	0.812	25	0
SUGAR GROVE 1.4 ENE	41.7787, -88.4343	688.976	2.5	20.998	1.177	2	0
AURORA 3.1 WSW	41.7565, -88.3518	704.068	6.744	5.906	3.075	1	0
ELBURN	41.8742, -88.4728	870.079	7.213	160.105	4.401	15	0
AURORA	41.7803, -88.3092	660.105	8.902	49.869	4.45	2923	0
DE KALB	41.9342, -88.7756	873.032	18.92	163.058	11.599	47	0

ITEM 5B

Community Development Department
110 East Sycamore Street
Sycamore, IL 60178
(815) 895-7188
communitydevelopment@dekalbcounty.org

MEMORANDUM

TO: Planning, Zoning and Development Committee

FROM: Marcellus Anderson
Assistant Planner

DATE: May 30, 2024

SUBJECT: Joshua Wollman
Special Use
Petition MY-24-03

Joshua Wollman is seeking approval for the operation of an e-commerce business on the property located at 8262 Baseline Road, Kingston, in Mayfield Township. The subject property is 4-acres and is zoned A-1, Agricultural District.

DeKalb County Hearing Officer Dale Clark conducted a public hearing on May 23, 2024 regarding the petition. Wherein, the petitioner presented evidence and testimony in support of the application, and no members of the public spoke for or against the petition and one member of the public complimented the property on the condition of the property. The Hearing Officer has forwarded his Findings of Fact and Recommendation, and has recommended that the petition be approved with conditions.

The Planning, Zoning and Development Committee is requested to consider the application, the Findings of Fact and Recommendation of the Hearing Officer, and to make a recommendation to forward to the full County Board for action, and may recommend approval, approval with conditions, or denial of the requests.

MOA:moa
P:\Zoning\Special Uses\P&ZMemos\2024\MY-24-03 Wollman.docx

STATE OF ILLINOIS)
) SS
COUNTY OF DEKALB)

ORDINANCE O2024-07

AN ORDINANCE APPROVING A SPECIAL USE PERMIT FOR AN E-COMMERCE BUSINESS ON PROPERTY LOCATED AT 8262 BASELINE ROAD IN MAYFIELD TOWNSHIP

WHEREAS, Joshua Wollman has filed a petition for a Special Use Permit to allow for the operation of an e-commerce business, on the property located at 8262 Baseline Road, said subject property being legally described as shown in Exhibit "A", attached hereto; and

WHEREAS, following due and proper notice by publication in the Daily Chronicle not less than fifteen (15) nor more than thirty (30) days prior thereto, and by mailing notice to all owners of property abutting the subject property at least ten (10) days prior thereto, the DeKalb County Hearing Officer conducted a public hearing on May 23, 2024, at which the petitioner presented evidence, testimony, and exhibits in support of the requested Special Use Permit, and wherein one member of the public made a positive comment regarding the condition of the property and no members of the public spoke for or against the project; and

WHEREAS, the Hearing Officer having considered the evidence, testimony and exhibits presented has made his findings of fact and recommended that the Special Use Permit be granted with conditions, as set forth in the Report of Proceedings and Recommendation of the DeKalb County Hearing Officer, a copy of which is appended hereto as Exhibit "B"; and

WHEREAS, the Planning, Zoning, & Development Committee of the DeKalb County Board having considered the testimony and exhibits from the public hearing and having considered the findings of fact and recommendation of the Hearing Officer, has forwarded to the County Board a recommendation of approval, with conditions, of an ordinance to grant the Special Use Permit; and

WHEREAS, the DeKalb County Board having considered the Report of Proceedings and Recommendation of the Hearing Officer and the recommendation of the Planning, Zoning, & Development Committee, and has determined that granting the Special Use Permit to allow the operation of an e-commerce business would be consistent with the requirements established by Section 53-I-2.B.3 of the DeKalb County Code;

NOW, THEREFORE, BE IT ORDAINED BY THE COUNTY BOARD OF DEKALB COUNTY, ILLINOIS, as follows:

SECTION ONE: The Report of Proceedings and Recommendation of the DeKalb County Hearing Officer, Exhibit "B", attached hereto, is hereby adopted as the findings of fact and conclusions of the DeKalb County Board.

SECTION TWO: Based on the Findings of Fact set forth above, the request for a Special Use Permit for an e-commerce business on the subject property located at 8262 Baseline Road, in Mayfield Township, is hereby approved for property being legally described in Exhibit "A" attached hereto.

SECTION THREE: This approval of a Special Use Permit is subject to the following conditions:

1. The e-commerce business shall be operated in substantial conformance with the plans and materials submitted in the application for the Special Use Permit and presented at the public hearing.

2. The property owner shall submit a Building Permit application and arrange a site visit with the County Building Inspector to verify that the building utilized for the e-commerce business meets the required commercial building codes or to determine what steps will be required to bring the building into compliance with said codes.

3. The property owner shall submit and obtain approval for all required permits and/or approvals from the DeKalb County Health Department.

4. No parking shall be required for the e-commerce business, as presented in this application and at the public hearing.

5. The driveway providing access to the pole barn containing the business shall be paved, however the requirement for curbing and landscaping shall be waived.

6. There shall be no visits to the subject property by customers of the business.

7. All products for the business shall arrive and depart via the US Postal Service or a carrier service, such as UPS.

8. All products for the business shall be stored inside of the pole barn.

9. If in the future, the business is to be expanded to include employees other than Mr. Wollman, to include vehicles to be used in the operation of the business and stored on the premises, or to allow customers to visit the site, then prior to any such expansion, a parking area shall be installed that will be in complete compliance with the DeKalb County parking regulations and with State Accessibility requirements.

10. Should the facility be transferred to another entity, all conditions and requirements shall also transfer to the new entity.

SECTION FIVE: This Ordinance shall be in full force and effect upon its adoption by the County Board of DeKalb County, Illinois.

PASSED BY THE COUNTY BOARD THIS 26TH DAY OF JUNE, 2024, A.D.

ATTEST:

_____
Tasha Sims
DeKalb County Clerk

SIGNED:

_____
Ellingsworth Webb, Chair
DeKalb County Board

Exhibit "A"

Legal Description of the Subject Property

THAT PART OF THE NORTHWEST FRACTIONAL QUARTER OF SECTION 4, TOWNSHIP 41 NORTH, RANGE 4 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT NORTHWEST CORNER OF SAID NORTHWEST FRACTIONAL QUARTER; THENCE EASTERLY, ALONG THE NORTH LINE OF SAID NORTHWEST FRACTIONAL QUARTER, 1291.98 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING EASTERLY, ALONG SAID NORTH LINE, 225.0 FEET; THENCE SOUTHERLY, AT RIGHT ANGLE TO SAID NORTH LINE, 775.0 FEET; THENCE WESTERLY, AT RIGHT ANGLE TO THE LAST DESCRIBED COURSE, 225.0 FEET: THENCE NORTHERLY, AT RIGHT ANGLE TO THE LAST DESCRIBED COURSE 775.0 FEET TO THE POINT OF BEGINNING, CONTAINING 4.00 ACRES, ALL IN MAYFIELD TOWNSHIP, DEKALB COUNTY. ILLINOIS

PIN: 05-04-100-006

Joshua Wollman – MY-24-03
Petition for Special Use - E-Commerce
Report and Recommendations

Petition:	MY-24-03
Date of Hearing:	May 23, 2024
Published Hearing Time:	1:00 p.m.
Location:	DeKalb Community Administrative Bldg. Conference Room East 110 East Sycamore Street Sycamore, IL

Report of Proceedings and Recommendation

I. Summary of Proceedings

Joshua Wollman has submitted an application for special use in order to continue operations as an e-commerce business. The subject property is located at 8262 Baseline Road, Kingston, in Mayfield Township.

The property is zoned A-1, Agricultural, and e-commerce is a permitted special use in the A-1 District. According to the County Staff report, although agricultural uses are recommended in the Unified Future Land Use Plan for the County, if the special use criteria are met, Mr. Wollman's business would not compromise the goals of that plan.

At the hearing, present for the County were Derek Hiland, DeKalb County Planning Director, and Marcellus Anderson, Assistant Director. The Petitioner, Joshua Wollman, was present to present his petition and supporting materials.

Received into the record at hearing were the following documents and information:

1. Public Notice and the legal description of the subject property.
2. DeKalb County Staff Report, with staff comments and recommendations, and attachments.

3. Correspondence and information from other responsible County agencies and/or other appropriate agencies, including the DeKalb County Health Department and DeKalb County Highway Department.

4. The petition and attachments submitted by Mr. Wollman, with attachments, including a plat of survey.

Mr. Wollman testified that he has been operating his e-commerce business since 2010, and since 2015 at this specific property location. It is also his residence. He testified that there is no unusual or out of the ordinary lighting - simply exterior lighting on his residence and on the pre-existing pole barn structure which is used for his business. He testified that there has never been nor will be any signage or additional lighting. His business is a "click-to-ship" in which online orders are placed by customers on Amazon, Walmart.com, etc., and he then processes those electronic orders and ships them from the product stored in the pole barn. He stated that in a typical year, he averages a single semi-truck load of product per month to deliver products to be stored, and nominal delivery truck traffic to load and ship the product throughout the week.

Mr. Wollman stated he is the owner and sole employee, and that the pole barn is not a brick-and-mortar location where customers will arrive, and then view/purchase product such as would occur in a traditional retail location. All of his orders are received and processed online.

Visually, there is no outward appearance of a business being conducted on the property and the pole barn and residence have similar visual characteristics. The long driveway is paved and properly maintained, and he represented at hearing he would continue to maintain it in that condition.

No one spoke in opposition to the petition. Mr. James Hutcheson, South Grove Township, said that Mr. Wollman keeps his property in immaculate condition throughout the year.

Mr. Wollman reviewed the County Staff report, and indicated he was aware that further inspections and permit fees will be needed if the special use is approved, under the County Code.

II. Analysis of Section 53-I-2.B.3 Criteria

1. The proposed special use complies with all applicable provisions of the applicable district regulations.

I find that the proposed Special Use for the petition can or will comply with all applicable district regulations.

2. The proposed special use will not be unreasonably detrimental to the value of other property in the neighborhood in which it is to be located or the public welfare at large.

I find that the proposed Special Use for the petition will not be unreasonably detrimental to the value of other property in the neighborhood, or the public welfare at large. Visually, it is indistinguishable from ordinary house and outbuilding structures present throughout the county.

3. The location and size of the special use, the nature and intensity of the operation involved in in or conducted in connection with it, and the location of the site with respect to streets giving access to it are such that the special use will not dominate the immediate neighborhood so as to prevent the development and use of neighboring property in accordance with the applicable zoning district regulations. In determining whether the special use will so dominate the immediate neighborhood, consideration shall be given to:

A. The location, nature and height of buildings, structures, walls, and fences on the site; and

B. The nature and extent of proposed landscaping and screening on the proposed site.

I find that the location, nature, and height of buildings, structure, walls, and structures on the site, and the nature and extent of the current and proposed landscaping and screening on the site is appropriate for the type/nature of the operations proposed and will not dominate the immediate neighborhood so as to prevent the development and use of neighboring properties. Again, there is no outward indication, visually, of any business being operated on the site.

4. Off-street parking and loading areas will be provided in accordance with the standards set forth in these regulations.

Petitioner has or will address these issues in a satisfactory manner consistent with the standards set forth in these regulations, in the opinion of the hearing officer. At hearing, it was discussed that a waiver of the usual square/ft - parking space ration would be useful, as he is the sole owner/employee.

5. Adequate utility, drainage, and other such necessary facilities have been or will be provided.

There was no information submitted indicating any property issues concerning drainage. Mr. Wollman was made aware that the building will have to pass inspection for its facilities, etc. and the proper permitting obtained.

6. The proposed uses, where such developments and uses are deemed consistent with good planning practice, or can be operated in a manner that is not detrimental to the permitted developments and uses in the district; can be developed and operated in a manner that is visually compatible with the permitted uses in the surrounding area; shall in all other respects conform to the applicable regulations of the district in which it is located; and are deemed essential or desirable to preserve and promote the public health, safety, and general welfare of DeKalb County.

The proposed use is deemed consistent with good planning practice. The nature of the proposed use will have nominal impact on the agricultural land. No new structures are anticipated or projected, and the pole barn in which the e-commerce business is operated has existed on the property prior to the application. Again, visually, it is indistinguishable from other home/outbuilding properties prevalent throughout the county.

III. Recommendations

Based on the above and foregoing, I hereby recommend that the application for Special Use in Petition MY-24-03 be approved by the County. This recommendation is conditioned on Petitioner complying with the agreed-upon recommendations from County Staff, and full compliance with all building code requirements, costs, and fees, including well and septic, and Petitioner obtaining all necessary agreements and permissions, as may be necessary, to insure his operations are in compliance with the County Code

Respectfully submitted,

Dale J. Clark
Hearing Officer

STAFF REPORT

TO: Dale Clark
DeKalb County Hearing Officer

FROM: Marcellus Anderson
Assistant Planner

DATE: May 14, 2024

SUBJECT: Joshua Wollman
Special Use
Petition MY-24-03

Joshua Wollman is seeking approval for the operation of an e-commerce business on the property located at 8262 Baseline Road, Kingston, in Mayfield Township. The subject property is 4-acres and is zoned A-1, Agricultural District.

Surrounding Land Uses and Zoning

North:	Agricultural	A-1;
South:	Agricultural	A-1;
East:	Agricultural & Residential	A-1; and
West:	Agricultural & Residential	A-1.

Background – Mr. Wollman has been operating an e-commerce business, called JJ's Real Buys Inc., on the subject property since 2010, wherein he acquires products, such as electronics, toys, and shoes, and then sells them on services such as Amazon, Walmart Marketplace, and eBay. The products are stored in the 120' x 50' pole barn on his property. Mr. Wollman's business was brought to staff's attention, and he was subsequently informed that the operation of a retail use such as this would be a special use in the A-1 District, and that the continued operation of the business would require that a Special Use Permit be approved by the County Board. In deliberating on this request, the Hearing Officer should consider the evaluation criteria for Special Uses, set forth in Section 53-I-2.B.3 of the Zoning Ordinance (see attached excerpt).

Correspondence – Greg Maurice, of the DeKalb County Health Department, has indicated that they have no issues. To date, no other correspondence related to this request has been received.

Staff Evaluation:

1. Comprehensive Plan – The Unified Future Land Use Plan of the DeKalb County Unified Comprehensive Plan recommends Agricultural uses on the subject property. If the business is found to meet the criteria applicable to Special Uses in the A-1 District, the land use recommendation of the Unified Comprehensive Plan would not be compromised.

2. Business – Mr. Wollman has indicated that he operates the business by himself, with no other employees. The business operates out of the pole barn, which is approximately six thousand (6,000) square feet in area, with approximately seventy-five percent (75%) of the space utilized for storage of the products he sells and the rest utilized for storage of his personal property. He has indicated that the pole barn also contains an office and a bathroom. Mr. Wollman also indicated that no customers come to the property, with all sales occurring online and then shipped direct to the customer.
   a. Pole Barn – The business is operating out of an existing pole barn on the subject property.
      1. The petitioner should be aware that the existing pole barn was constructed as a residential accessory structure. A building to be utilized for a commercial use, such as his business, is required to meet commercial building code, along with any other required State and Federal codes. If the special use permit is approved, a Building Permit application will have to be submitted and a site visit arranged with the County Building Inspector to verify that the building meets the required codes or to determine what steps will be required to bring the building into compliance.
   b. Parking – Wollman has indicated that he has a two hundred (200) foot long, paved driveway, which serves both his residence and the pole barn.
      1. Mr. Wollman's business would fall under the parking requirements for "Warehouses" in the DeKalb County Code. Per these regulations, at least: one parking space for every 1,000 square feet of floor area within the warehouse; four parking spaces for every 1,000 square feet of floor area in office use; one space for every vehicle used in the operation of the use or stored on the premises; and, at least one, ten (10) foot by forty (40) foot loading space; said parking area to be paved, curbed, and landscaped.
      2. However, given that Mr. Wollman has asserted that he owns and operates the business by himself with no employees, that all products are direct shipped to consumers, and that the property is not to be open to customers, if the Hearing Officer is inclined to recommend approval, staff would recommend the following as conditions of approval:
         a. No parking shall be required for the e-commerce business, as presented in this application and at the public hearing.
         b. The driveway providing access to the pole barn containing the business shall be paved, however the requirement for curbing and landscaping shall be waived.
         c. There shall be no visits to the subject property by customers of the business.
         d. All products for the business shall arrive and depart via the US Postal Service or a carrier service, such as UPS.
         e. All products for the business shall be stored inside of the pole barn.
         f. If in the future, the business is to be expanded to include other employees other than Mr. Wollman, to include vehicles to be used in the operation of the business and stored on the premises, or to allow customers to visit the site, then prior to any such expansion, a parking area shall be installed that will be in complete compliance with the DeKalb County parking regulations and with State Accessibility requirements.

3. Required Permits & Approvals – The petitioner should be aware that should this petition be

approved the following permits and approvals will be also required:

a. Mr. Wollman has not indicated that any signage is to be erected. However, if he wishes to do so in the future, any signage will have to meet the signage regulations of the DeKalb County Code.
b. Verification that he has received all the required permits and/or approvals from the DeKalb County Health Department regarding the existing well and septic systems.

CC: Joshua Wollman – jjwollman83@gmail.com

MOA: moa
P:\Zoning\Special Uses\Staff Reports\2024\MY-24-03 Wollman.docx

Excerpt from Zoning Ordinance
Section 53-I-2.B.3

Burden of Proof: In presenting any application for a Special Use Permit, the burden of proof shall rest with the applicant to clearly establish that the proposed special use shall meet the following criteria:

a. The proposed special use complies with all applicable provisions of the applicable district regulations.

b. The proposed special use will not be unreasonably detrimental to the value of other property in the neighborhood in which it is to be located or the public welfare at large.

c. The location and size of the special use, the nature and intensity of the operation involved in or conducted in connection with it, and the location of the site with respect to streets giving access to it are such that the special use will not dominate the immediate neighborhood so as to prevent development and use of neighboring property in accordance with the applicable zoning district regulations. In determining whether the special use will so dominate the immediate neighborhood, consideration shall be given to:

    1). The location, nature and height of buildings, structures, walls, and fences on the site; and

    2). The nature and extent of proposed landscaping and screening on the proposed site.

d. Off-street parking and loading areas will be provided in accordance with the standards set forth in these regulations.

e. Adequate utility, drainage, and other such necessary facilities have been or will be provided.

f. The proposed uses, where such developments and uses are deemed consistent with good planning practice, or can be operated in a manner that is not detrimental to the permitted developments and uses in the district; can be developed and operated in a manner that is visually compatible with the permitted uses in the surrounding area; shall in all other respects conform to the applicable regulations of the district in which it is located; and are deemed essential or desirable to preserve and promote the public health, safety, and general welfare of DeKalb County.

Community Development Department
110 E Sycamore St.
Sycamore, IL 60178
T: 815-895-7188
www.dekalbcounty.org

Office Use Only
File no: _____ - _____ - _____
Date of Application: ____/____/____
Received By: _____
Initial Deposit: $_____

APPLICATION FOR ZONING ACTIONS:

MAP AMENDMENTS, SPECIAL USES, VARIATIONS, ETC.

Name of Applicant(s): Jashua Wollman
Address: 8262 Base Line RD City: Kingston
State, Zip: IL, 60145 Phone: 815-761-6059
Email: jjwollman83@gmail.com

Primary Contact (if different from applicant): Same
Address: _____ City: _____
State, Zip: _____ Phone: _____
Email: _____

Owner of Property (if different from applicant): Same
Address: _____ City: _____
State, Zip: _____ Phone: _____
Email: _____

Subject Property Information:
Address (or description of location if no address exists) of subject property: 8262 Base Line RD Kingston, IL 60145
Parcel Number(s): 05-04-100-006
Existing Zoning District: A-1
Existing Use: Residence
Size of Subject Property: 4 Acres

PROPOSED ZONING ACTION(S):

Map Amendments: _____

____ FP/C, Floodplain / Conservation District
____ PD-R, Planned Development Residential
____ PD-I, Planned Development Industrial
_____ A-1, Agricultural District
_____ PD-C, Planned Development Commercial
_____ MXD, Mixed Use Development

Special Uses: X

Proposed Special Use(s): E-Commerce

Use Variance: _____

Variations: _____

Bulk Variance(s): Setback: _____ Height _____ Other: _____

Existing Requirement: _____

Requested Requirement: _____

or

Variance from the Non-Conforming Regulations: _____

Existing Requirement: _____

Requested Requirement: _____

Notice: Permit recipients are required to comply with the Human Trafficking Resource Center Notice Act (775 ILCS 50/1, *et seq.*) to the extent that it applies to them. A State of Illinois model notice can be found at https://www.dhs.state.il.us/page.aspx?item=82023.

The Undersigned grants the DeKalb County Community Development Director or their designee and the Hearing Officer permission to enter the property described on this application for the purpose of inspection.

_____ 4/12/24

Owner or Authorized Agent **Date**

Disclosure of Interest

Pursuant to the requirements of State Statutes (55 ILCS 5/5-12009), please provide the names and addresses of all owners of the property for which the zoning action is requested. If ownership is by a corporation, provide all the names and addresses of all officers and directors, and all stockholders owning any interest in excess of 20% of all outstanding stock of such corporation. If the petitioner for zoning action is a business or entity doing business under an assumed name, or if a partnership, joint venture, syndicate or unincorporated voluntary association, provide the names and addresses of all true and actual owners of the business or entity, the partners, joint ventures, syndicate members or members of the unincorporated voluntary association. (May be attached)

Joshua Wollman 8262 Base Line RD Kingston, IL 60145

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant: Joshua Wollman
Contact: Joshua Wollman
Address: 8262 Base Line RD
Kingston, IL 60145

Project: Special use permit ordinance
Address: 8262 Base line Rd, Kingston

IDNR Project Number: 2413119
Date: 04/12/2024

Description: Application for a special use permit ordinance for operating a e-commerce business.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: DeKalb

Township, Range, Section:
41N, 4E, 4



IL Department of Natural Resources Contact
Bradley Hayes
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
Community Development Department
Marcellus Anderson
110 E. Sycamore St.
Sycamore, Illinois 60178

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

EcoCAT Receipt

Project Code 2413119

APPLICANT	DATE
Joshua Wollman Joshua Wollman 8262 Base Line RD Kingston, IL 60145	4/12/2024

DESCRIPTION	FEE	CONVENIENCE FEE	TOTAL PAID
EcoCAT Consultation	$ 125.00	$ 2.81	$ 127.81

TOTAL PAID $ 127.81

Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
217-785-5500
dnr.ecocat@illinois.gov

Narrative Statement:

The existing 120’ X 50’ finished pole building at 8262 Base Line Rd Kingston, IL 60145 is used for operating my e-commerce business called “JJ’s Real Buys Inc” established in 2010. I use 75% of the space in the building to store products I sell online such as electronics, toys and shoes. I sell on Amazon marketplace, Walmart marketplace, and eBay. All sales are direct shipped to the consumer and online only. I am the sole owner of the business and I have no employes.
I have no future plans to make any changes in the business, or the building.

Traffic Report:

I have a pickup by USPS four times a week, and a pickup by UPS three to four times weekly. I have semi trucks delivering or making pickups ten to twelve times a year.

Community Development Department
110 E Sycamore St.
Sycamore, IL 60178
T: 815-895-7188
www.dekalbcounty.org

SPECIAL USE REQUESTS

Please provide written responses to the following questions and attach to a signed and dated copy of this sheet:

1. Will the proposed Special Use comply with all applicable provisions of the applicable district regulations?

2. Will the proposed Special Use be unreasonably detrimental to the value of other property in the neighborhood in which it is to be located or the public welfare at large?

3. Will the location and size of the Special Use, the nature and intensity of the operation involved in or conducted in connection with the property, or the location of the site with respect to the street giving access to it be such that the Special Use will dominate the immediate neighborhood so as to prevent development and use of neighboring property in accordance with the applicable Zoning District Regulations? In determining whether the Special Use would so dominate the immediate neighborhood, consideration shall be given to:

    a. What are the location, nature and height of buildings, structures, walls and fencing on the site?

    b. What is the nature and extent of proposed landscaping and screening on the proposed site?

4. Will the proposed Special Use comply with off-street parking and loading area standards?

5. Address drainage, utility and other such necessary facilities that have been or will be provided.

6. Can the proposed uses, where such developments and uses are deemed consistent with good planning practice or can be operated in a manner that is not detrimental to the permitted developments and uses in the district: be developed and operated in a manner that is visually compatible with the permitted uses in the surrounding area; conform, in all other respects, to the applicable regulations of the district in which it is located; and, be deemed essential or desirable to preserve and promote the public health, safety and general welfare of DeKalb County?

Notice: Permit recipients are required to comply with the Human Trafficking Resource Center Notice Act (775 ILCS 50/1, *et seq.*) to the extent that it applies to them. A State of Illinois model notice can be found at https://www.dhs.state.il.us/page.aspx?item=82023.

The undersigned grants the DeKalb County Community Development Director or his/her designee and the Hearing Officer permission to enter upon the property described on this application for the purpose of inspection.

_____ 4/12/24

Owner or Authorized Agent **Date**

H:\Work stuff\Zoning Changes\Forms\SPECIAL USE.docx 06222021

Special Use Requests Answers:

1. Yes it will.

2. No it will not.

3. No it will not.

A: Location: 8262 Base Line RD Kingston, IL 60145.

Structures on property: Two story 3,490 Sq ft residence. 120’ X 50’ finished pole building with 16’ ceilings.

The nature of the pole building is for personal storage use as well as storage use for my E-commerce business (JJ’S Real Buys Inc.). It is fully finished inside with an office area, and bathroom.

B: There are none proposed.

4. Yes it will. There is 200’ paved driveway leading to the pole building that is used for any and all delivery/pickup traffic. Traffic will at no time be disrupted on “Base Line Rd”.

5. There are none proposed.

6. Yes they can to all.

Record #1 140570/2242228 ABCT

C:\Program Files\AutoCAD R14\JOBS\8815.dwg Mon Nov 18 11:10:15 2002

2002026325

PLAT AND CERTIFICATE OF SURVEY

30.00 1 Pg.

PARCEL ONE:

THAT PART OF THE NORTHWEST FRACTIONAL QUARTER OF SECTION 4, TOWNSHIP 41 NORTH, RANGE 4 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHWEST FRACTIONAL QUARTER; THENCE EASTERLY, ALONG THE NORTH LINE OF SAID NORTHWEST QUARTER, 1091.98 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING EASTERLY, ALONG SAID NORTH LINE, 625.0 FEET; THENCE SOUTHERLY, AT RIGHT ANGLE TO SAID NORTH LINE, 2352.85 FEET TO THE SOUTH LINE OF SAID NORTHWEST QUARTER; THENCE WESTERLY, AT AN ANGLE OF 90°32'25", MEASURED COUNTERCLOCKWISE FROM THE LAST DESCRIBED COURSE, ALONG SAID SOUTH LINE, 1707.70 FEET TO THE SOUTHWEST CORNER OF SAID NORTHWEST FRACTIONAL QUARTER; THENCE NORTHERLY, AT AN ANGLE OF 89°41'11", MEASURED COUNTERCLOCKWISE FROM SAID SOUTH LINE, ALONG THE WEST LINE OF SAID NORTHWEST FRACTIONAL QUARTER, 250.0 FEET; THENCE EASTERLY, AT AN ANGLE OF 90°18'49", MEASURED COUNTERCLOCKWISE FROM SAID WEST LINE, PARALLEL WITH SAID SOUTH LINE, 1083.65 FEET; THENCE NORTHERLY, AT AN ANGLE OF 90°32'23", MEASURED CLOCKWISE FROM SAID PARALLEL LINE, 2108.74 FEET TO THE POINT OF BEGINNING, CONTAINING 40.02 ACRES, ALL IN MAYFIELD TOWNSHIP, DEKALB COUNTY, ILLINOIS.

PARCEL ONE-A:

THAT PART OF THE NORTHWEST FRACTIONAL QUARTER OF SECTION 4, TOWNSHIP 41 NORTH, RANGE 4 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHWEST FRACTIONAL QUARTER; THENCE EASTERLY, ALONG THE NORTH LINE OF SAID NORTHWEST FRACTIONAL QUARTER, 1291.98 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING EASTERLY, ALONG SAID NORTH LINE, 225.0 FEET; THENCE SOUTHERLY, AT RIGHT ANGLE TO SAID NORTH LINE, 775.0 FEET; THENCE WESTERLY, AT RIGHT ANGLE TO THE LAST DESCRIBED COURSE, 225.0 FEET; THENCE NORTHERLY, AT RIGHT ANGLE TO THE LAST DESCRIBED COURSE, 775.0 FEET TO THE POINT OF BEGINNING, CONTAINING 4.00 ACRES, ALL IN MAYFIELD TOWNSHIP, DEKALB COUNTY, ILLINOIS.

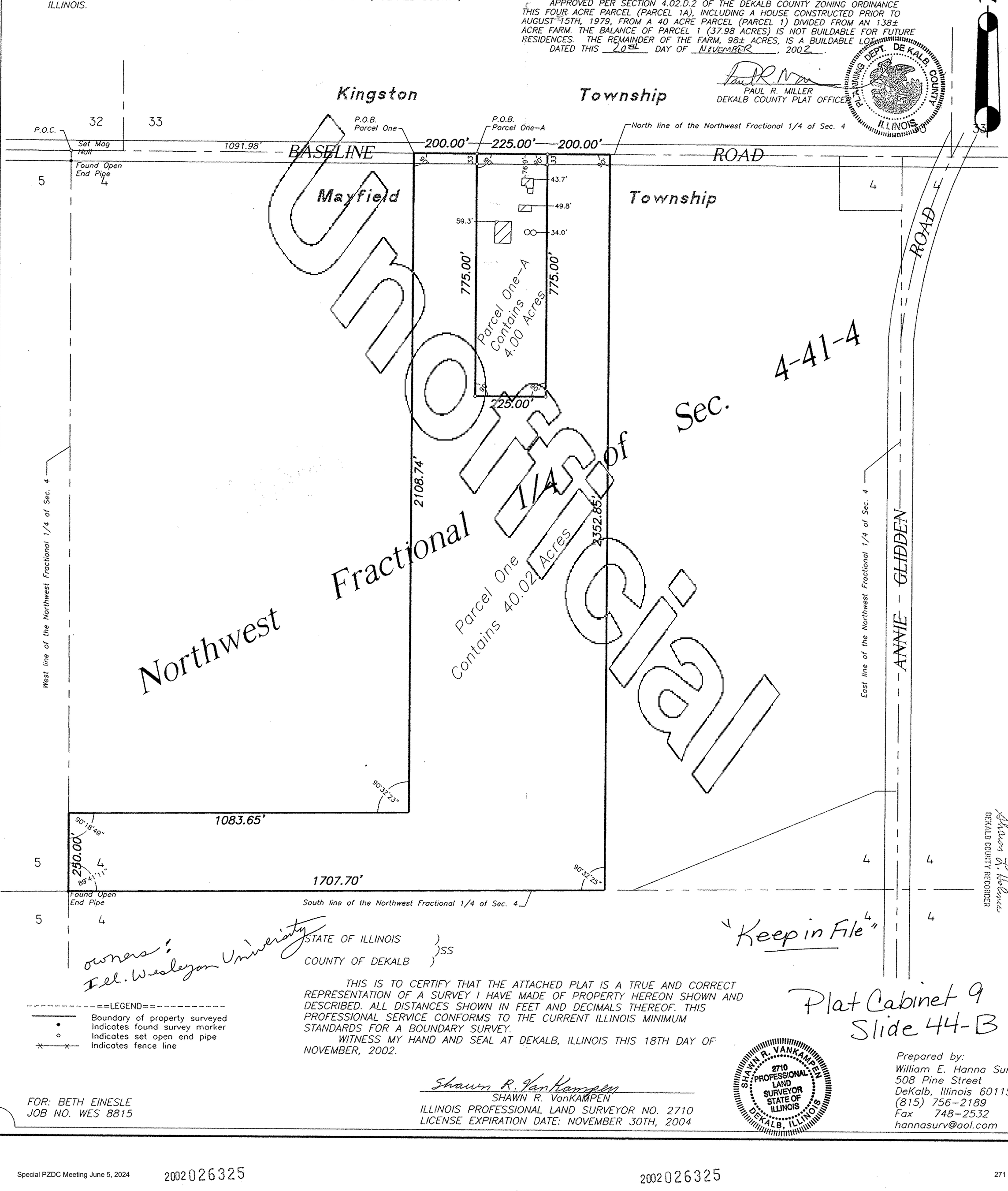
STATE OF ILLINOIS)
)SS
COUNTY OF DEKALB)

APPROVED PER SECTION 4.02.D.2 OF THE DEKALB COUNTY ZONING ORDINANCE THIS FOUR ACRE PARCEL (PARCEL 1A), INCLUDING A HOUSE CONSTRUCTED PRIOR TO AUGUST 15TH, 1979, FROM A 40 ACRE PARCEL (PARCEL 1) DIVIDED FROM AN 138± ACRE FARM. THE BALANCE OF PARCEL 1 (37.98 ACRES) IS NOT BUILDABLE FOR FUTURE RESIDENCES. THE REMAINDER OF THE FARM, 98± ACRES, IS A BUILDABLE LOT.
DATED THIS 20th DAY OF NOVEMBER, 2002.

PAUL R. MILLER
DEKALB COUNTY PLAT OFFICER

PLANNING DEPT. DE KALB COUNTY ILLINOIS

Scale 1"=200'



owners: Ill. Wesleyan University

"Keep in File"

==LEGEND==

Boundary of property surveyed
Indicates found survey marker
Indicates set open end pipe
Indicates fence line

STATE OF ILLINOIS)
)SS
COUNTY OF DEKALB)

THIS IS TO CERTIFY THAT THE ATTACHED PLAT IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY I HAVE MADE OF PROPERTY HEREON SHOWN AND DESCRIBED. ALL DISTANCES SHOWN IN FEET AND DECIMALS THEREOF. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY SURVEY.

WITNESS MY HAND AND SEAL AT DEKALB, ILLINOIS THIS 18TH DAY OF NOVEMBER, 2002.

Shawn R. VanKampen
SHAWN R. VanKAMPEN
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 2710
LICENSE EXPIRATION DATE: NOVEMBER 30TH, 2004

SHAWN R. VANKAMPEN 2710 PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS DEKALB, ILLINOIS

FOR: BETH EINESLE
JOB NO. WES 8815

Plat Cabinet 9
Slide 44-B

Prepared by:
William E. Hanna Surveyors
508 Pine Street
DeKalb, Illinois 60115
(815) 756-2189
Fax 748-2532
hannasurv@aol.com

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DEKALB COUNTY, IL.
02 DEC 12 PM 2:43
Shawn P. Haines
DEKALB COUNTY RECORDER

2002026325

Record #1 140570/2142228 ABCT

C:\Program Files\AutoCAD R14\JOBS\8815.dwg Mon Nov 18 11:10:15 2002

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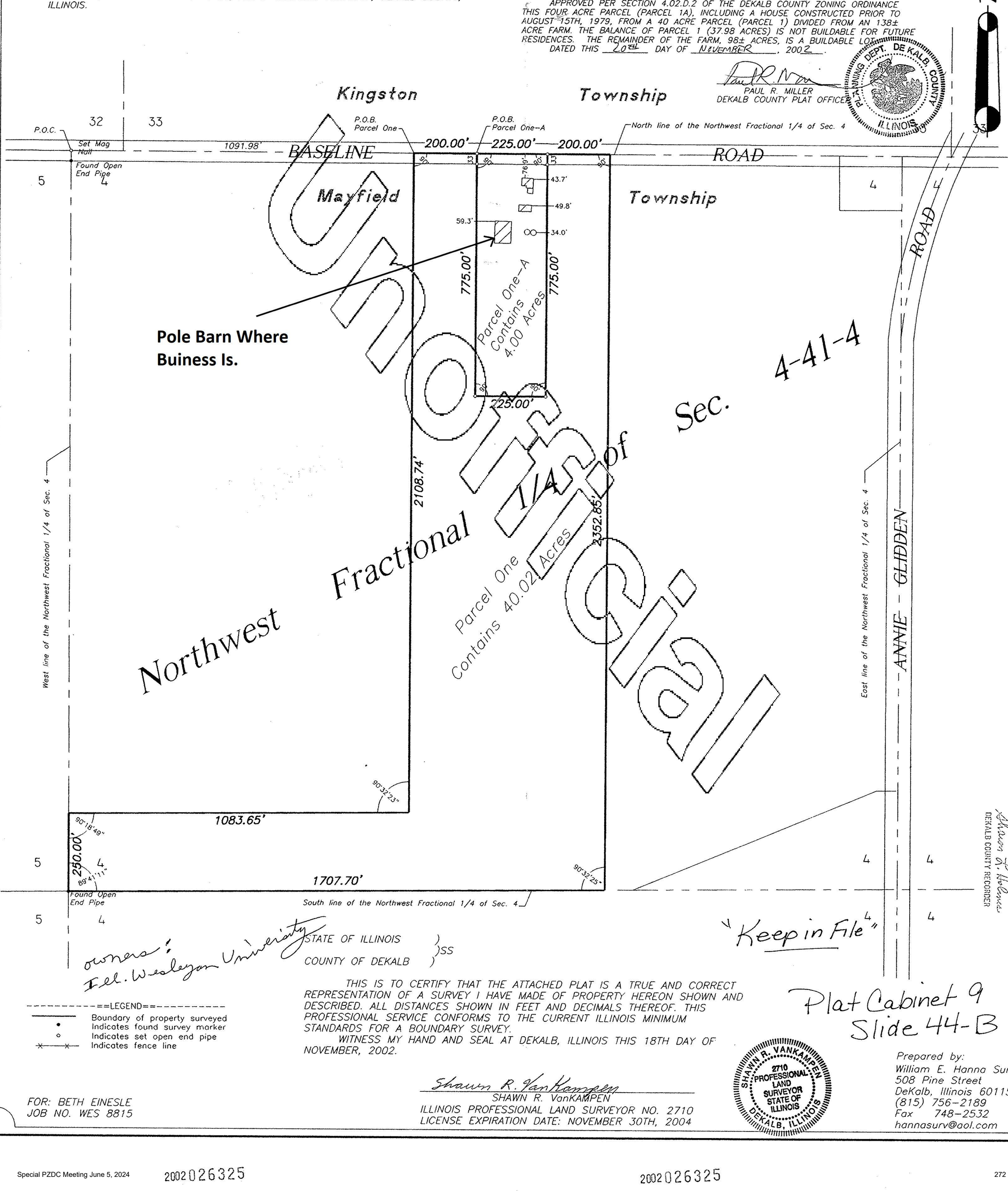
STATE OF ILLINOIS)
)SS
COUNTY OF DEKALB)

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DEKALB COUNTY PLAT OFFICER

PLANNING DEPT. DE KALB COUNTY ILLINOIS

Scale 1"=200'



owners: Ill. Wesleyan University

STATE OF ILLINOIS)
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==LEGEND==
Boundary of property surveyed
Indicates found survey marker
Indicates set open end pipe
Indicates fence line

FOR: BETH EINESLE
JOB NO. WES 8815

"Keep in File"

Plat Cabinet 9
Slide 44-B

Prepared by:
William E. Hanna Surveyors
508 Pine Street
DeKalb, Illinois 60115
(815) 756-2189
Fax 748-2532
hannasurv@aol.com

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DEKALB COUNTY, IL.
02 DEC 12 PM 2:43
Shawn R. Haines
DEKALB COUNTY RECORDER

2002026325







ITEM 5A

STATE OF ILLINOIS)
)SS
COUNTY OF DEKALB)

ORDINANCE 2024-08

AN ORDINANCE AMENDING CHAPTER 14 OF THE DEKALB COUNTY CODE REGARDING STATE OF ILLINOIS ADOPTED ENERGY CODES

WHEREAS, Chapter 14 of the DeKalb County Code adopts building and construction codes containing regulations and standards for construction of buildings and structures in DeKalb County; and

WHEREAS, the improvement in building and construction industry standards and technological advancements over time make it necessary and expedient that the County update its adopted building codes in order to continue to adequately protect the public health, safety and welfare; and

WHEREAS, the building codes adopted by the County were last updated in 2015 by adopting the 2015 International Building Code (IBC); and

WHEREAS, the Planning, Zoning and Development Committee of the DeKalb County Board has considered updated building codes recommended for adoption by the County Building Development Official, and has recommended that the updated building codes be updated and adopted by the County Board; and

WHEREAS, the County Board of DeKalb County has recommended adopting an amendment to the County's Building Code regarding the recently passed Illinois Energy Conservation Code (20 ILCS 3125-15) that is attached and incorporated as Exhibit A (the "Amendment").; and WHEREAS, the County Board finds that approving the Amendment is in the County's best interests for the protection of the public health, safety, and welfare of the citizens of the County; and

NOW, THEREFORE, BE IT ORDAINED BY THE COUNTY BOARD OF DEKALB COUNTY, ILLINOIS, as follows:

SECTION ONE: The conclusions set forth above and the recommendation of the Planning, Zoning and Development Committee are hereby adopted as the conclusions of the DeKalb County Board.

SECTION TWO: The DeKalb County Code, Chapter 14, Buildings and Building Regulations, is hereby amended as follows:

Affirming that DeKalb County has adopted the 2021 edition of the Illinois Energy Conservation Code (IECC) compliant with the State of Illinois mandate by having the most recent energy code adopted for the citizens of DeKalb County.

SECTION FOUR: This Ordinance shall be in full force and effect upon its adoption by the County Board of DeKalb County, Illinois.

PASSED BY THE COUNTY BOARD THIS 26TH DAY OF JUNE, 2024, A.D.

ATTEST:

_____
Tasha Sims
DeKalb County Clerk

SIGNED:

_____
Ellingsworth Webb, Chair
DeKalb County Board

CHAPTER 1 [CE] SCOPE AND ADMINSTRATION

SECTION C101
SCOPE AND GENERAL REQUIREMENTS

C101.1 Title. This code shall be known as the *Illinois Energy Conservation Code* or "this Code" and shall mean: ~~of [NAME OF JURISIDCTION], and shall be cited as such. It is referred to herein as "this code".~~

With respect to the State facilities covered by 71 Ill. Adm. Code 600.Subpart B:

This Part, all additional requirements incorporated within Subpart B (including the 2021 International Energy Conservation Code, including all published errata but excluding published supplements that encompass ASHRAE 90.1-2019), and any statutorily authorized adaptations to the incorporated standards adopted by CDB are effective upon adoption.

With respect to the privately funded commercial facilities covered by 71 Ill. Adm. Code 600.Subpart C:

This Part, all additional requirements incorporated within Subpart C (including the 2021 International Energy Conservation Code, including all published errata and excluding published supplements that encompass ASHRAE 90.1-2019), and any statutorily authorized adaptations to the incorporated standards adopted by CDB, are effective upon adoption.

C101.1.2 Adoption. The Board shall adopt amendments to this Code within 12 months after publication of changes to the International Energy Conservation Code. Any such update in this Code shall take effect within 6 months after it is adopted by the Board and shall apply to any new building or structure in this State for which a building permit application is received by a municipality or county, except as otherwise provided by the EEB Act.

C101.1.3 Adaptation. The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population, distribution, geography and climate of the Sate and construction within the State, consistent with the public policy objectives of the EEB Act.

C101.5 Compliance. ~~*Residential buildings* shall meet the provisions of IECC Residential Provisions.~~ *Commercial buildings* shall meet the provisions of ~~IECC Commercial Provisions~~ the *Illinois Energy Conservation Code* covered by 71 Ill. Adm. Code 600.Subpart C. The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

1. Compliance forms published in the ASHRAE 90.1 User's Manual; or
2. Compliance Certificates generated by the U.S. Department of Energy's COMcheck™ Code compliance tool; or
3. Other comparable compliance materials that meet or exceed, as determined by the AHJ, the compliance forms published in the ASHRAE 90.1 User's Manual or the U.S. Department of Energy's COMcheck™ Code compliance tool; or
4. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

SECTION C102
ALTERNATIVE MATERIALS, DESIGN AND METHODS OF CONSTRUCTION AND EQUIPMENT

C102.1.1 Above code programs. ~~The code official or other authority having jurisdiction shall be permitted to deem a national, state or local energy efficiency program as exceeding the energy efficiency required by this code. Buildings approved in writing by such an energy efficiency program shall be considered to be in compliance with this code.~~ No unit of local government, including any home rule unit, may apply energy efficient building standards to privately funded commercial facilities in a manner that is less stringent than the Code as described in 71 Ill. Adm. Code 600. Subpart C. However, nothing in the EEB Act or Subpart C prevents a unit of local government from adopting an energy efficiency code or standards that are more stringent than this Code. The requirements identified in Table C407.2 shall be met.

SECTION C110
BOARD OF APPEALS

C110.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the *code official* relative to the application and interpretation of this Code, there ~~shall be and is hereby~~ may be created a board of appeals. The *code official* shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the *code official.*

C110.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training ~~and are not employees of the jurisdiction~~.

CHAPTER 2 [CE]
DEFINITIONS

SECTION C202
GENERAL DEFINITIONS

ADD THE FOLLOWING Definitions:

APPROVED SOURCE. An independent person, firm or corporation, *approved* by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

AUTHORITY HAVING JURISDICTION or AHJ. The organization, officer or individual responsible for approving equipment, materials, an installation or procedure.

BOARD. The Illinois Capital Development Board.

COUNCIL. The Illinois Energy Conservation Advisory Council whose purpose is to recommend modifications to the *Illinois Energy Conservation Code.*

Demand Response Signal - means a signal that indicates a price or a request to modify electricity consumption for a limited time period.

Demand Responsive Control – means a control capable of receiving and automatically responding to a demand response signal.

EEB ACT. The Energy Efficient Building Act [20ILCS 3125].

Photosynthetic Photon Efficacy (PPE) – means a photosynthetic photon flux divided by input electric power in units of micromoles per second per watt, or micromoles per joule as defined by ANSI/ASABE S640.

CHAPTER 4 [CE]
COMMERCIAL ENERGY EFFICIENCY

SECTION C402
BUILDING ENVELOPE REQUIREMENTS

C402.4.1.3 Fenestration Orientation
The vertical fenestration shall comply with equation either (a) or (b) a. $AW \leq (AT)/4$ and $AE \leq (AT)/4$
b. $AW \times SHGCW \leq (AT \times SHGCC)/5$ and $AE \times SHGCE \leq (AT \times SHGCC)/5$

where

Aw = west-oriented *vertical fenestration area* (oriented within 45 degrees of true west to the south and within 22.5 degrees of true west to the north in the northern hemisphere)

Ae = east-oriented *vertical fenestration area* (oriented within 45 degrees of true east to the south and within 22.5 degrees of true east to the north in the northern hemisphere)

AT = total *vertical fenestration area*

SHGCC = *SHGC* criteria in Table C402.4

SHGCE = *SHGC* for east-oriented *fenestration*

SHGCW = *SHGC* for west-oriented *fenestration*

Exceptions:

1. *Buildings* with shade on 75% of the east- and west-oriented *vertical fenestration areas* from permanent projections, *existing buildings*, existing permanent infrastructure, or topography at 9 a.m. and 3 p.m., respectively, on the summer solstice (June 21).

2. *Alterations* and additions with no increase in *vertical fenestration area*.

3. *Buildings* where the west-oriented and east-oriented *vertical fenestration area* does not exceed 20% of the *gross wall area* for each of those façades, and *SHGC* on those facades is no greater than 90% of the criteria in Table C402.4.

C402.5.1 Air barriers. A continuous air barrier shall be provided throughout the building thermal envelope. The air barriers shall be permitted to be located on the inside or outside of the building envelope, located within the assemblies composing the ~~building thermal~~ envelope, or any combination thereof. The air barrier shall comply with Sections C402.5.1.1 and C402.5.1.2. For roof air barriers on existing buildings, refer to Section C503.1 or C504.2.

Exception: Air barriers are not required in buildings located in *Climate Zone* 2B.

C402.5.1.1 Air barrier construction. The *continuous air barrier* shall be constructed to comply with the following:

1. The air barrier shall be continuous for all assemblies that are the thermal envelope of the building and across the joints and assemblies.

2. Air barrier joints and seams shall be sealed, including sealing transitions ~~in places and changes in~~ at joints between dissimilar materials. The joints and seals shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation.

3. Penetrations of the air barrier shall be caulked, gasketed or otherwise sealed in a manner compatible with the construction materials and location. Sealing shall allow for expansion, contraction and mechanical vibration. Paths for air leakage from the building to the space between the roof deck and roof covering used as an air barrier, shall be caulked, gasketed or otherwise covered with a moisture vapor-permeable material. Joints and seams associated with penetrations shall be sealed in the same manner or taped. Sealing materials shall be securely installed around the penetration so as not to dislodge, loosen or otherwise impair the penetrations' ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation. Sealing of concealed fire sprinklers, where required, shall be in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.

4. Recessed lighting fixtures shall comply with Section C402.5.10. Where similar objects are installed that penetrate the air barrier, provisions shall be made to maintain the integrity of the air barrier.

SECTION C405
ELECTRICAL POWER AND LIGHTING SYSTEMS

C405.4 Lighting for plant growth and maintenance. ~~Not less than 95% of the~~ All permanently installed luminaires used for plant growth and maintenance shall have a photosynthetic photon ~~efficiency~~ efficacy as defined in accordance with ANSI/ASABE S640 of not less than 1.~~6~~7 µmol/J ~~as defined in accordance with ANSI/ASABE S640~~ for greenhouses and not less than 2.2 µmol/J for all other indoor growing spaces.

Exception: The following buildings are exempt:

1. Buildings with no more than 40kW of aggregate horticultural lighting load.

2. Cannabis facilities subject to 410 ILCS 705/10-45- the Cannabis Regulation and Tax Act.

SECTION C406
ADDITIONAL EFFICIENCY REQUIREMENTS

C406.1 Additional energy efficiency credit requirements. New buildings shall achieve a total of 10 credits from Tables C406.1(1) through C406.1(5) where the table is selected based on the use group of the building and from credit calculations as specified in relevant subsections of Section C406. Where a building contains multiple-use groups, credits from each use group shall be weighted by floor area of each group to determine the weighted average building credit.
Credits from the tables or calculation shall be achieved where a building complies with one or more of the following:

1. More efficient HVAC performance in accordance with Section C406.2.

2. Reduced lighting power in accordance with Section C406.3.

3. Enhanced lighting controls in accordance with Section C406.4.

4. On-site supply of renewable energy in accordance with Section C406.5.

5. Provision of a dedicated outdoor air system for certain HVAC equipment in accordance with Section C406.6.

6. High-efficiency service water heating in accordance with Section C406.7.

7. Enhanced envelope performance in accordance with Section C406.8.

8. Reduced air infiltration in accordance with Section C406.9

9. Where not required by Section C405.12, include an energy monitoring system in accordance with Section C406.10.

10. Where not required by Section C403.2.3, include a fault detection and diagnostics (FDD) system in accordance with Section C406.11.

11. Efficient kitchen equipment in accordance with Section C406.12.

12. HVAC demand responsive controls and more efficient HVAC performance in accordance with Section C406.2 and Section C406.13.

13. Water heating demand responsive controls and high-efficiency service water heating in accordance with Section C406.7 and Section C406.14.

Modify Table C406.1(1) as follows:

Table C406.1(1) Additional Energy Efficiency Credits for Group B Occupants

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	2	2
C406.14 Water heating demand responsive controls	1	1

Modify Table C406.1(2) as follows:

Table C406.1(2) Additional Energy Efficiency Credits for Group R and I Occupancies

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	4	3
C406.14 Water heating demand responsive controls	1	1

Modify Table C406.1(3) as follows:

Table C406.1(3) Additional Energy Efficiency Credits for Group E Occupancies

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	4	4
C406.14 Water heating demand responsive controls	1	1

Modify Table C406.1(4) as follows:

Table C406.1(4) Additional Energy Efficiency Credits for Group M Occupancies

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	4	3
C406.14 Water heating demand responsive controls	x	x

Modify Table C406.1(5) as follows:

Table C406.1(5) Additional Energy Efficiency Credits for Other* Occupancies

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	3	3
C406.14 Water heating demand responsive controls	2	2

C406.1.1 Tenant spaces. Tenant spaces shall comply with sufficient options from Tables C406.1(1) through C406.1(5) to achieve a minimum number of 5 credits, where credits are selected from Section C406.2, C406.3, C406.4, C406.6, C406.7 or C406.10. Where the entire building complies using credits from Section C406.5, C406.8, C406.9, or C406.13 tenant spaces shall be deemed to comply with this section.

Exception: Previously occupied tenant spaces that comply with this code in accordance with Section C501.

C406.13 HVAC demand responsive controls. Buildings shall be provided with demand responsive controls capable of executing the following actions in response to a demand response signal:

1. Automatically increasing the zone operating cooling set point by the following values: 1°F (0.5°C), 2°F (1°C), 3°F (1.5°C), and 4°F (2°C).
2. Automatically decreasing the zone operating heating set point by the following values: 1°F (0.5°C), 2°F (1°C), 3°F (1.5°C), and 4°F (2°C).

Where a demand response signal is not available the heating and cooling system controls shall be capable of performing all other functions. Where thermostats are controlled by direct digital control including, but not limited to, an energy management system, the system shall be capable of demand responsive control and capable of adjusting all thermal setpoints to comply. The demand responsive controls shall comply with either Section C406.13.1 or Section C406.13.2

C406.13.1 Air conditioners and heat pumps with two or more stages of control and cooling capacity of less than 65,000 Btu/h. Thermostats for air conditioners and heat pumps with two or more stages of control and a cooling capacity less than 65,000 Btu/h (19 kW) shall be provided with a demand responsive control that complies with the communication and performance requirements of AHRI 1380.

C406.13.2 All other HVAC systems. Thermostats for HVAC systems shall be provided with a demand responsive control that complies with one of the following:

1. Certified OpenADR 2.0a VEN, as specified under Clause 11, Conformance
2. Certified OpenADR 2.0b VEN, as specified under Clause 11, Conformance
3. Certified by the manufacturer as being capable of responding to a demand response signal from a certified OpenADR 2.0b VEN by automatically implementing the control functions requested by the VEN for the equipment it controls
4. IEC 62746-10-1
5. The communication protocol required by a controlling entity, such as a utility or service provider, to participate in an automated demand response program
6. The physical configuration and communication protocol of CTA 2045-A or CTA 2045-B.

C406.14 Water heating demand responsive controls. Electric storage water heaters with a rated water storage volume of 40 gallons (150L) to 120 gallons (450L) and a nameplate input rating equal to or less than 12kW shall be provided with demand responsive controls in accordance with Table C406.14 or another equivalent approved standard.

TABLE C406.14
DEMAND RESPONSIVE CONTROLS FOR WATER HEATING

Equipment Type	Controls	
Electric storage water heaters	Manufactured before 7/1/2025	Manufactured on or after 7/1/2025
	ANSI/CTA-2045-B Level 1 and also capable of initiating water heating to meet the temperature set point in response to a demand response signal.	ANSI/CTA-2045-B Level 2, except "Price Stream Communication" functionality as defined in the standard.

SECTION C407
TOTAL BUILDING PERFORMANCE

Modify Table C407.2 as follows:

TABLE C407.2
REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE

SECTION[a]	TITLE
Envelope	
C402.4.1.3	Fenestration Orientation

Modify Table C407.4.1(1) as follows:

TABLE C407.4.1(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

Vertical fenestration other than opaque doors	Area The proposed vertical fenestration area; where the proposed vertical fenestration area is less than 40 percent of the above- grade wall area. 40 percent of above grade wall area; where the proposed vertical fenestration area is 40 percent or more of the above grade wall area Fenestration orientation shall comply with C402.4.1.3	As proposed
	U-factor: as specified in Table C402.4	As proposed
	SHGC: as specified in Table C402.4 except that for climates with no requirement (NR) SHGC = 0.40 shall be used. Fenestration SHGC shall comply with C402.4.1.3	As proposed
	External shading and PF: none	As proposed

SECTION C503
ALTERATIONS

C503.2.1 Roof Replacement. *Roof replacements* shall comply with Section C402.1.3, C402.1.4, C402.1.5 or C407 where the existing roof assembly is part of the *building thermal envelope* and contains insulation entirely above the roof deck. In no case shall the *R*-value of the roof insulation be reduced or the *U*-factor of the roof assembly be increased as part of the *roof replacement*.

Exceptions: Where compliance with Section C402.1 cannot be met due to limiting conditions on an existing roof, an *approved* design shall be submitted with the following:

1. *Construction documents* that include a report by a *registered design professional* or an *approved source* documenting details of the limiting conditions affecting compliance with the insulation requirements.
2. *Construction documents* that include a roof design by a *registered design professional* or an *approved source* that minimizes deviation from the insulation requirements.

Referenced Standards

ASME	*ASME* *Two Park Avenue* *New York, NY 10016-5990*
BPVC	*Boiler and Pressure Vessel Code*
AHRI	Air-Conditioning, Heating, & Refrigeration Institute 2111 Wilson Blvd, Suite 500 Arlington, VA 22201
1380-2019	Demand Response through Variable Capacity HVAC Systems in Residential and Small Commercial Applications
ANSI	American National Standards Institute 25 West 43rd Street, 4th Floor New York, NY 10036
ANSI/CTA-2045-A-2018	Modular Communications Interface for Energy Management
ANSI/CTA-2045-B-2019	Modular Communications Interface for Energy Management
CTA	Consumer Technology Association 1919 S. Eads Street Arlington, VA 22202
ANSI/CTA-2045-B	Modular Communications Interface for Energy Management *C404.11*
IEC	IEC Regional Centre for North America IEC International Electrotechnical Commission 446 Main Street 16th Floor Worcester, MA 016808
IEC 62746-10-1 - 2018	Systems interface between customer energy management system and the power management system – Part 10-1: Open automated demand response

CHAPTER 1 [RE]
SCOPE AND ADMINISTRATION

SECTION R101
SCOPE AND GENERAL REQUIREMENTS

R101.1 Title. This code shall be known as the *Illinois Energy Conservation Code* or "this Code", and shall mean: ~~of [NAME OF JURISDICTION] and shall be cited as such. It is referred to herein as "this code."~~

With respect to the residential buildings covered by 71 Ill. Adm. Code 600.Subpart D:

This Part, all additional requirements incorporated within Subpart D (including the 2021 International Energy Conservation Code, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB is effective upon adoption.

R101.1.2 Adoption. The Board shall adopt amendments to this Code within 12 months after publication of changes to the International Energy Conservation Code. Any such update in this Code shall take effect within 6 months after it is adopted by the Board and shall apply to any new building or structure in this State for which a building permit application is received by a municipality or county, except as otherwise provided by the EEB Act.

R101.1.3 Adaptation. The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population distribution, geography, and climate of the State and construction within the State, consistent with the public policy objectives of the EEB Act.

R101.5 Compliance. *Residential buildings* shall meet the provisions of the *Illinois Energy Conservation Code* covered by 71 Ill. Adm. Code 600. Subpart D. ~~IECC Residental Provisions. Commercial buildings shall meet the provisions of IECC Commercial Provisions~~ The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

1. Compliance Certificates generated by the U.S. Department of Energy's REScheck™ code compliance tool; or

2. Other comparable compliance materials that meet or exceed, as determined by the AHJ, the U.S. Department of Energy's REScheck™ code compliance tool; or

3. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325]

SECTION R102
ALTERNATIVE MATERIALS, DESIGN AND METHODS OF CONSTRUCTION AND EQUIPMENT

R102.1.1 Above code programs. ~~The *code official* or other authority having jurisdiction shall be permitted to deem a national, state, or local energy efficiency program to exceed the energy efficiency required by this code~~ No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential building in a manner that is either less or more stringent than the standards established pursuant to this Code. Buildings ~~approved in writing by such an energy efficiency program~~ shall be considered to be in compliance with this code where such buildings also meet the requirements identified in Table R405.2 and the building thermal envelope is greater than or equal to levels of efficiency and solar heat gain coefficients (SHGC) in Tables 402.1.1 and 402.1.3 of the 2009 International Energy Conservation Code.

However, the following entities may regulate energy efficient building standards for residential buildings in a manner that is more stringent than the provisions contained in this Code:

i) A unit of local government, including a home rule unit, that has, on or before May 15, 2009, adopted or incorporated by reference energy efficient building standards for residential buildings that are equivalent to or more stringent than the 2006 International Energy Conservation Code;

ii) A unit of local government, including a home rule unit that has, on or before May 15, 2009, provided to the Capital Development Board, as required by Section 10.18 of the Capital Development Board Act, an identification of an energy efficient building code or amendment that is

equivalent to or more stringent than the 2006 International Energy Conservation Code; and

iii) A municipality with a population of 1,000,000 or more.

SECTION R110
MEANS OF APPEALS

R110.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the *code official* relative to the application and interpretation of this code, there may ~~shall~~ be ~~and is hereby~~ created a board of appeals. The *code official* shall be an ex officio member of the board of appeals but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the ~~applicable~~ governing body ~~authority~~ and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the *code official.*

R110.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training~~. and are not employees of the jurisdiction.~~

CHAPTER 2 [RE] DEFINITIONS

SECTION R202
GENERAL DEFINITIONS

ADD THE FOLLOWING Definitions:

APPROVED SOURCE. An independent person, firm or corporation, *approved* by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

AUTHORITY HAVING JURISDICTION or AHJ. The organization, officer or individual responsible for approving equipment, materials, an installation or procedure.

BOARD. The Illinois Capital Development Board.

COUNCIL. The Illinois Energy Conservation Advisory Council whose purpose is to recommend modifications to the *Illinois Energy Conservation Code.*

EEB ACT. The Energy Efficient Building Act [20ILCS 3125].

LOCAL EXHAUST. An exhaust system that uses one or more fans to exhaust air from a specific room or rooms within a dwelling.

RESIDENTIAL BUILDING. ~~For this code, includes detached one- and two-family dwellings and townhouses as well as *Group R-2*, *R-3* and *R-4* buildings three stories or less in height above grade plane.~~ Means a detached one-family or two-family dwelling or any building that is three stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory, and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "RESIDENTIAL BUILDING" means a building containing one or more dwelling units, not exceeding four (4) stories above grade, where occupants are primarily permanent.

WHOLE HOUSE MECHANICAL VENTILATION SYSTEM. An exhaust system, supply system, or combination thereof that is designed in accordance with Section R403.6 to mechanically exchange indoor air with outdoor air when operating continuously or through a programmed intermittent schedule to satisfy the whole house ventilation rate. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

CHAPTER 4 [RE]
RESIDENTIAL ENERGY EFFICIENCY

SECTION R401
GENERAL

R401.2 Application. Residential buildings shall comply with Section R401.2.6~~5~~ and either Sections R401.2.1, R401.2.2, R401.2.3, ~~or~~ R401.2.4 or R401.2.5.

Exception: Additions, alterations, repairs and changes of occupancy to existing buildings complying with Chapter 5.

R401.2.5 Phius Alternative Compliance Option. The Phius Alternative Compliance Option requires compliance with Section R409.

R401.2.6~~5~~ Additional energy efficiency. This Section establishes additional requirements applicable to all compliance approaches to achieve additional energy efficiency.

1. For buildings complying with Section R401.2.1, one of the additional efficiency package options shall be installed according to Section R408.2.

2. For buildings complying with Section R401.2.2, the building shall meet one of the following:
   2.1. One of the additional efficiency package options in Section R408.2 shall be installed without including such measures in the proposed design under Section R405; or
   2.2. The proposed design of the building under Section R405.3 shall have an annual energy cost that is less than or equal to 95 percent of the annual energy cost of the standard reference design.

3. For buildings complying with the Energy Rating Index alternative Section R401.2.3, the Energy Rating Index value shall be at least 5 percent less than the Energy Rating Index target specified in Table R406.5.

The option selected for compliance shall be identified in the certificate required by Section R401.3.

SECTION R402
BUILDING THERMAL ENVELOPE

Modify Table R402.1.2 as follows:

TABLE R402.1.2
MAXIMUM ASSEMBLY U-FACTORS[a] AND FENESTRATION REQUIREMENTS

CLIMATE ZONE	CEILING *U*-FACTOR
4 except Marine	0.026
5 and Marine 4	0.026

Modify Table R402.1.3 as follows:

TABLE R402.1.3
INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	CEILING *R*-VALUE
4 except Marine	49
5 and Marine 4	49

R402.2.1 Roof/Ceilings with attics. Where Section R402.1.3 requires R-49 insulation in the ceiling or attic, installing R-38 over 100 percent of the ceiling or attic area requiring insulation shall satisfy the requirement for R-49 insulation wherever the full height of uncompressed R-38 insulation extends over the wall top plate at the eaves. Where Section R402.1.3 requires R-60 insulation in the ceiling or attic, installing R-49 over 100 percent of the ceiling or attic area requiring insulation shall satisfy the requirement for R-60 insulation wherever the full height of uncompressed R-49 insulation extends over the wall top plate at the eaves. This reduction shall not apply to the insulation and fenestration criteria in Section R402.1.2 and the Total UA alternative in Section R402.1.5.

R402.2.2 Roof/Ceilings without attic spaces. Where Section R402.1.3 requires insulation *R*-values greater than R-30 in the interstitial space above a ceiling and below the structural roof deck, and the design of the roof/ceiling assembly does not allow sufficient space for the required insulation, the minimum required insulation *R*-value for such roof/ceiling assemblies shall be R-30. Insulation shall extend over the top of the wall plate to the outer edge of such plate and shall not be compressed. This reduction of insulation from the requirements of Section R402.1.3 shall be limited to 500 square feet (46 m^2) or 20 percent of the total insulated ceiling area, whichever is less. This reduction shall not apply to the Total UA alternative in Section R402.1.5.

R402.2.8.1 Basement wall insulation installation. Where basement walls are insulated, the insulation shall be installed from the top of the basement wall down to 10 feet (3048 mm) below grade or to within 6 inches (152 mm) of the basement floor, whichever is less.

SECTION R403
SYSTEMS

R403.3 Ducts. Ducts and air handlers shall be insulated, sealed, tested and installed in accordance with Sections R403.3.1 through R403.3.7. Where required by the *code official*, duct testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*.

403.3.6 Duct Leakage. The total leakage of the ducts, where measured in accordance with Section R403.3.5, shall be as follows:

1. Rough-in test: The total leakage shall be less than or equal to 4.0 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m) of *conditioned floor area* where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3.0 cubic feet per minute (85 L/min) per 100 square feet (9.29 m) of *conditioned floor area*.

   Exception: If the HVAC duct system is serving less than or equal to 1,500 square feet of *conditioned floor area*, the allowable duct leakage with the air-handler installed shall be 60 cubic feet per minute or less.

2. Postconstruction test: Total leakage shall be less than or equal to 4.0 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m) of conditioned floor area.

   Exception: If the HVAC duct system is serving less than or equal to 1,500 square feet of conditioned floor area, the allowable duct leakage shall be 60 cubic feet per minute or less.

3. Test for ducts within thermal envelope: Where all ducts and air handlers are located entirely within the building thermal envelope, total leakage shall be less than or equal to 8.0 cubic feet per minute (226.6 L/min) per 100 square feet (9.29 m) of conditioned floor area.

   Exception: If the HVAC duct system is serving less than or equal to 750 square feet of conditioned floor area, the allowable duct leakage with the air-handler installed shall be 60 cubic feet per minute or less.

R403.6 Mechanical ventilation. The buildings or ~~and~~ *dwelling units* complying with Section R402.4.1 shall be provided with ventilation that complies with the requirements of this section or ~~Section M1505 of~~ the ~~*International Residential Code or*~~ *International Mechanical Code*, as applicable, or with other *approved* means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

R403.6.4 Recirculation of air. Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or circulated to another *dwelling unit* and shall be exhausted directly to the outdoors. Exhaust air from bathrooms, toilet rooms and kitchens shall not discharge into an *attic*, crawl space or other areas inside the building. This section shall not prohibit the installation of ductless range hoods where installed in accordance with the manufacturer's instructions, and where mechanical or natural ventilation is otherwise provided, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.

R403.6.5 Exhaust equipment. Exhaust fans and whole-house ventilation fans shall be *listed* and *labeled* as providing the minimum required airflow in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.

R403.6.6 Whole-house mechanical ventilation system. Whole-house mechanical ventilation systems shall be designed in accordance with Sections R403.6.6.1 through R403.6.6.4.

R403.6.6.1 System design. The whole-house ventilation system shall consist of one or more supply or exhaust fans, or a combination of such, and associated ducts and controls. Local exhaust or supply fans are permitted to serve as such a system. Outdoor air ducts connected to the return side of an air handler shall be considered to provide supply ventilation.

R403.6.6.2 System controls. The whole-house mechanical ventilation system shall be provided with controls that enable manual override. Controls shall include text or a symbol indicating their function.

R403.6.6.3 Mechanical Ventilation Rate. The whole-house mechanical ventilation system shall provide outdoor air at a continuous rate as determined in accordance with Table R403.6.6.3 (1) or Equation 4-0.

Ventilation rate in cubic feet per minute = (0.01 x total square foot area of house) + [7.5 x (number of bedrooms +1)] Equation 4-0

Exceptions:

1. Ventilation rate credit. The minimum mechanical ventilation rate determined in accordance with Table R403.6.6.3(1) or Equation 4-0 shall be reduced by 30 percent, provided that both of the following conditions apply:
   - 1.1 A ducted system supplies ventilation air directly to each bedroom and to one or more of the following rooms:
     - 1.1.1. Living room.
     - 1.1.2 Dining room.
     - 1.1.3 Kitchen.
   - 1.2 The whole-house ventilation system is a balanced ventilation system.
2. Programmed intermittent operation. The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate in Table R403.6.6.3(1), by Equation 4-0 or by Exception 1 is multiplied by the factor determined in accordance with Table R403.6.6.3(2)

R403.6.6.3.1 Different Occupant Density. Table R403.6.6.3(1) assumes two persons in a dwelling unit and an additional person for each additional bedroom. Where higher occupant densities are known, the airflow rate shall be increased by 7.5 cfm (3.5 L/s) for each additional person. Where *approved* by the *authority having jurisdiction*, lower occupant densities may be used.

R403.6.6.3.2 Airflow Measurement. The airflow rate required is the quantity of outdoor ventilation air supplied and/or indoor air exhausted by the whole-house mechanical ventilation system installed, and shall be measured using a flow hood, flow grid, or other airflow measuring device. Ventilation airflow of systems with multiple operating modes shall be tested in all modes designed to meet Section R403.6.6.3. Where required by the *code official,* testing shall be conducted by an *approved* third party. A written report of the results of the test, indicating the verified airflow rate, shall be signed by the party conducting the test and provided to the *code official*.

R403.6.6.4 Local exhaust rates. Local exhaust systems shall be designed to have the capacity to exhaust the minimum air flow rate determined in accordance with Table R403.6.6.4.

TABLE R403.6.6.3(1) (M1505.4.3(1))
CONTINUOUS WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0 – 1	2 – 3	4 – 5	6 – 7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501 – 3,000	45	60	75	90	105
3,001 – 4,500	60	75	90	105	120
4,501 – 6,000	75	90	105	120	135
6,001 – 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

For SI: 1 square foot = 0.0929 m^2, 1 cubic foot per minute = 0.0004719 m^3/s

TABLE R403.6.6.3(2)
INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS[a, b]

RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT	25%	33%	50%	66%	75%	100%
Factor [a]	4	3	2	1.5	1.3	1.0

a. For ventilation system run time values between those given, the factors are permitted to be determined by interpolation.
b. Extrapolation beyond the table is prohibited.

TABLE R403.6.6.4
MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS

AREA TO BE EXHAUSTED	EXHAUST RATES
Kitchens	100 cfm intermittent or 25 cfm continuous
Bathrooms-Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous

For SI: 1 cubic foot per minute = 0.0004719 m3/s

a. The listed exhaust rate for bathrooms-toilet rooms shall equal or exceed the exhaust rate at a minimum static pressure of 0.25 inch water column in accordance with Section R403.6.5.

SECTION R409
PHIUS ALTERNATIVE COMPLIANCE OPTION

R409.1 Scope. This section establishes criteria for compliance via the Phius 2021 Standard.

R409.2 Phius Standard compliance. Compliance based on the Phius 2021 Standard will include its United States Department of Energy (USDOE) Energy Star and Zero Energy Ready Home co-requisites, and either performance calculations by Phius-approved software or through the use of the Phius 2021 Prescriptive Path.

R409.2.1 Phius documentation. Prior to the issuance of a building permit, the following items must be provided to the code official:

1. A list of compliance features.
2. A Phius precertification letter.

R409.2.2 Project certificate. Prior to the issuance of a certificate of occupancy, the following item must be provided to the code official:

1. A Phius 2021 (or later) project certificate.

SECTION R503
ALTERATIONS

R503.1.1.2 Roof Replacement. Insulation shall comply with Section R402.1. Alternatively, where limiting conditions prevent compliance with Section R402.1, an *approved* design that minimizes deviation from Section R402.1 shall be provided for the following alterations:

1. Roof replacements or a roof *alteration* that includes removing and replacing the *roof covering* where the *roof assembly* includes insulation entirely above the roof deck, where limiting conditions require use of an *approved* design to minimize deviation from Section R402.1 for a Group R-2 *building*, a registered design professional or other *approved source* shall provide *construction documents* that identify the limiting conditions and the means to address them.