CITY OF CRYSTAL LAKE
AGENDA
CITY COUNCIL
REGULAR MEETING

City of Crystal Lake
100 West Woodstock Street, Crystal Lake, IL
City Council Chambers
January 6, 2026
7:00 p.m.

1. **Call to Order**

2. **Roll Call**

3. **Pledge of Allegiance**

4. **Approval of Minutes – December 16, 2025 Regular Meeting**

5. **Accounts Payable**

6. **Public Presentation**
   The public is invited to make an issue-oriented comment on any matter of public concern not otherwise on the agenda. The public comment may be no longer than 5 minutes in duration. Interrogation of the City staff, Mayor or City Council will not be allowed at this time, nor will any comment from the Council. Personal invectives against City staff or elected officials are not permitted.

7. **Mayor's Report**

8. **City Council Reports**

9. **Consent Agenda**
   a. **Class 20 Temporary Liquor License Request – Crystal Lake Lions Club, January 31, 2026**
   b. **Class 16 Temporary Liquor License Requests – Knights of Columbus Fr. McCormick Council #3880**
   c. **Board and Commission Reappointments - Planning and Zoning Commission Reappointments**
   d. **County Zoning Request - Commercial solar energy facility on about 18 acres immediately north of unincorporated Ridgefield between Country Club Road and the railroad tracks, Unincorporated Crystal Lake, Illinois**

10. **Ridgefield Road - Extension of a Preliminary and Final Planned Unit Development and Special Use Permit for a Solar Farm**

11. **6000 Dvorak Road, Prairie Ridge High School - Special Use Permit Amendment to allow changes to the Prairie Ridge High School sports field facilities including Variations for: 1) 20-foot-high bleachers, instead of the maximum 15 feet for accessory structures; 2) light poles up to 70 feet in height, instead of the maximum 50 feet; and, 3) grass overflow parking, instead of the required paved surface**

12. **275 S. Main Street - Comprehensive Land Use Plan Amendment from Industry to Urban Residential; Rezoning from M PUD Manufacturing to R-2 PUD Single Family Planned Unit Development; Preliminary Planned Unit Development and Preliminary Plat of Subdivision for a 179-lot single-family residential subdivision with deviations from the code**

13. **Designation and Sale of Surplus Radio Equipment**

14. **Ordinance waiving the formal procurement requirements under City Code Section 102-3 and authorization to enter into an Electric Service Agreement with Dynegy Energy Services, LLC**

through the Northern Illinois Purchasing Cooperative for the Purchase of Power Supplies and Other Goods and Services

15. Sole Source Agreement for Byrne Software Technologies Implementation and Support Work for Accela Software

16. Council Inquiries and Requests

17. Adjourn to Executive Session for the purpose of discussing matters of pending and probable litigation, the sale, purchase or lease of real property, collective bargaining and personnel

18. Reconvene to Regular Session

19. Adjourn

If special assistance is needed in order to participate in a City of Crystal Lake public meeting, please contact Melanie Gray, Executive Assistant, at 815-459-2020, at least 24 hours prior to the meeting, if possible, to make arrangements.

Agenda Item No: 9a

City Council
Agenda Supplement

Meeting Date: January 6, 2026

Item: Class 20 Temporary Liquor License Request – Crystal Lake Lions Club, January 31, 2026

Staff Recommendation: Motion to approve issuance of a Class 20 Temporary Liquor License to Crystal Lake Lions Club

Staff Contact: Nick Hammonds, Deputy City Manager

Background:

The City received a request from the Crystal Lake Lions Club for the issuance of a Class 20 Temporary Liquor License in order to offer alcohol in the package only, as a raffle prize for their annual Winter Steak Fry on Saturday, January 31, 2026. While raffle licenses are approved administratively per the City Code, the issuance of a temporary liquor license requires consideration by the City Council.

The organization will need a temporary liquor license as the awarding of alcoholic liquor as a raffle prize is considered the sale of alcohol by the State Liquor Control Act. The alcoholic raffle prizes will be awarded at The Holiday Inn located at 800 S. IL Route 31, on Saturday, January 31, 2025, and must be picked up by Monday, February 2, 2026.

Section 329-5-T of the City Code permits the issuance of a Class 20 Temporary Liquor License for the retail sale of alcoholic liquor on the premises in packages only but not for consumption on the premises specified in the license where sold. The license shall be issued to not-for-profit corporations or organizations qualified to do business in the State of Illinois. The license shall be for a period not to exceed three days and shall be issued only for special events sponsored by the not-for-profit corporation or organization requesting the license.

Conditions of approval:

- Payment of $20 license fee
- Certificate of Insurance for Event

In addition to the license from the City, a not-for-profit special event liquor license is also needed from the State of Illinois for the event.

Votes Required to Pass:

Simple majority

CITY OF CRYSTAL LAKE

Class 20
Temporary Liquor License

General Information:

- A Class "20" **Temporary** Liquor License authorizes the retail sale of alcoholic liquor on the premises specified in the license in packages only but not for consumption on the premises where sold.

- The license applicant must be a **not-for-profit** corporation qualified to do business in the State of Illinois.

- The license is valid for a period not to exceed three (3) days and may only be used for special events sponsored by the not-for-profit corporation requesting the license.

- Issuance of a Class "20" Temporary Liquor License must be reviewed and approved by the Mayor and City Council of the City of Crystal Lake.

- ***In addition to the City of Crystal Lake Temporary Liquor License, a license is also needed from the State of Illinois. A copy of the State of Illinois License must be provided to the City as a condition of local license approval once it has been received. A license from the State of Illinois can be applied for here:***

  https://ilcc.illinois.gov/content/dam/soi/en/web/ilcc/sitecollectiondocuments/special-event-retailer-liquor-license-nfp.pdf

City of Crystal Lake
Application for Temporary Liquor License

CLASS "20"
Alcoholic Liquor in Packages Only

The undersigned hereby makes application for a license for the sale at retail of alcoholic liquor in packages only under the provisions of the City of Crystal Lake Liquor Licensing Ordinance:

1. Applicant's full name Crystal Lake Lions Club - Rob Pannach
(Must be not-for-profit organization)
Address PO Box 48 - Crystal Lake Phone Number [redacted]

2. Organization Contact Information:
Name: Rob Pannach
Address: 40 Center Street, Crystal Lake, IL 60014
Email: [redacted]
Phone Number: [redacted]

3. Location where beer in packages only will be sold:
Cork Pull & Silent Auction Raffles in the Main Hallway

4. Dates of the event (**not to exceed three (3) days**): 1/31/2026 @ Crystal Lake Holiday Inn

5. Hours of operation: 5:30 pm - 12:00pm - Raffles Close @ 9pm (approximate)

6. Describe the type of crowd and traffic control licensee will utilize. All guests must be 21 years old to enter & no alcohol (outside alcohol) to be consumed on premises

7. Describe plan for refuse pickup. Receptacles on site @ CL Holiday Inn collected & contracted clean up by Holiday Inn Staff & placed in dumpster

8. Please list the names and addresses of the members of the organization who will be selling alcoholic liquor in packages only at the location pursuant to the license. If additional space is needed, please use reverse side.
Rob Pannach - 40 Center Street, Crystal Lake, IL 60014
Kevin Byrnes - 145 W. Crystal Lake Avenue, Crystal Lake, IL 60014
Timothy A Canon - 7160 Meadow Lane, Cary, IL 60013

9. **Please attach the following to your application:**
   a. **License fee in the amount of *$20.00*. (Make checks payable to the "*City of Crystal Lake*".)**
   b. **Proof of liquor liability insurance**
   X **Proof of permission from owner of the premises, if different than applicant, authorizing the sale of beer in packages only on the property during the time requested.**
   d. **Site plan of area where beer in packages only will be sold.**
   e. **Letter to the Mayor and City Council requesting approval of the issuance of a Class "20" Temporary Liquor License to applicant.**

10. ***In addition to the City of Crystal Lake Temporary Liquor License, a license is also needed from the State of Illinois. A copy of the State of Illinois License must be provided to the City as a condition of local license approval once it has been received. A license from the State of Illinois can be applied for here:***

https://ilcc.illinois.gov/content/dam/soi/en/web/ilcc/sitecollectiondocuments/special-event-retailer-liquor-license-nfp.pdf

Name and title of individual submitting Application on behalf of the applicant:

Name: DAN E. Johnson
Title: Lions Club Secretary
Date: 12/17/2025

CERTIFICATION

☒ Under penalty of perjury, the person(s) named above, hereby certify and/or affirm as follows: (1)That I (we) are authorized on behalf of the applicant to submit this application; 2) that the Applicant will not violate any of the ordinances of the City of Crystal Lake or the laws of the State of Illinois or the laws of the United States of America, in the conduct of the place of business described herein; (2) That the statements contained in this application are true and correct to the best of my (our) knowledge and information; 3) That the statements in this application are made for the purpose of obtaining the license applied for and are made on my (our) personal knowledge and information.

12/17/2025

Dan E. Johnson

Holiday Inn
IHG
Chicago NW | Crystal Lake

October 3, 2025

City Manager's Office
Attn: Raffle License
100 W. Municipal Complex
Crystal Lake, IL 66014

RE: Raffle License Application

Greetings,

On January 31, 2026 Crystal Lake Lions Club will host the Crystal Lake Steak Fry at the Holiday Inn, Crystal Lake. We are aware that the Crystal Lake Lions Club Foundation will conduct different raffles and some packages that may include alcohol. The Holiday Inn will not receive any proceeds from these raffles. The Silent Auction and Raffle items will include alcohol not to be opened on premises. All proceeds from the event are in support of The Crystal Lake Lions Foundation.

Sincerely,

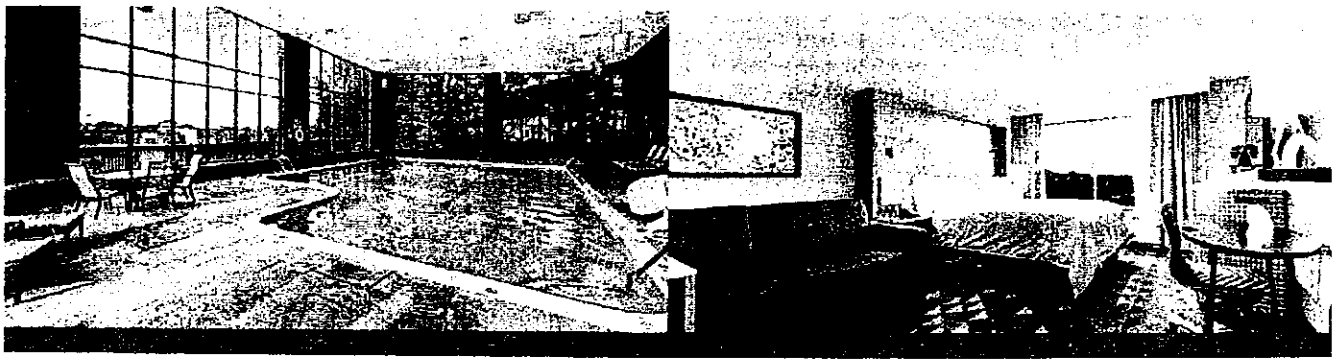
Fran Headrick
Director of Sales & Marketing
Holiday Inn Crystal Lake

Holiday Inn
Crystal Lake Meeting Space



Just 40 miles northwest of downtown Chicago, Holiday Inn Chicago NW Crystal Lake Convention Center is situated in a community full of charm and personality. The Holiday Inn Crystal Lake & Elara Convention Center is surrounded by lush acreage overlooking the quaint Lake Acorn. More than just a place for travelers to lay their heads, we're proud to be the county's only full-service hotel with 20,000 square-feet of function space perfect for weddings, meetings, tradeshows, and social events.

Holiday Inn
An IHG Hotel
IHG Rewards Club
800 South Route 31 | Crystal Lake, Illinois 60014 | elitaconvention.com
info@crystallakehi.com | 815.477.7000

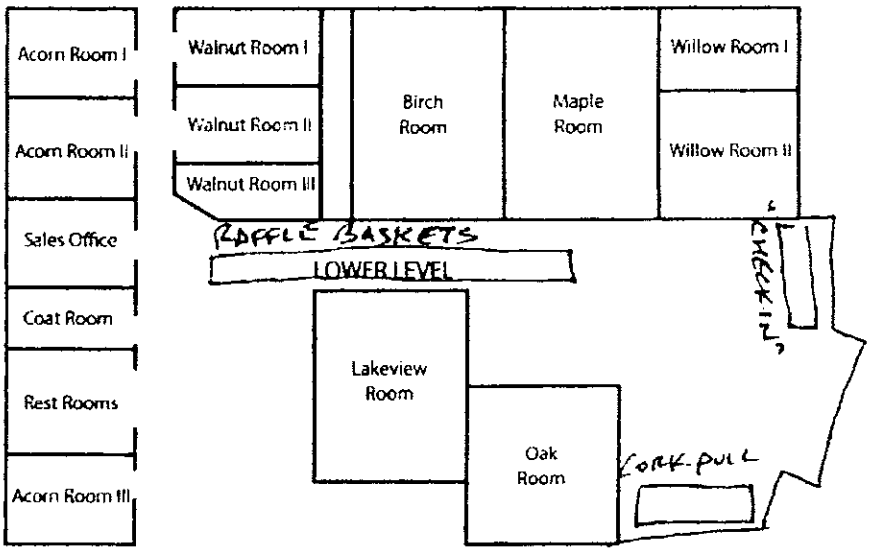


- Three Oaks Lodge Restaurant & Lounge
- Resort-Like Indoor Pool
- Complimentary Wi-fi
- Free Ample Parking
- Hertz Rental Car Onsite
- Guest Laundry Facilities
- Business Center
- Fitness Center
- Room Service

- 20,000 sq. ft. function space
- Events up to 1,200 guests
- 11,200 sq. ft. Ballroom
- 21 Meeting Rooms
- 14 foot Ceilings
- Complete Banquet & Catering Services Onsite
- State-of-the-Art AV Equipment
- Experienced Sales & Catering Staff
- 2 Executive Boardrooms
- Meeting Rooms with Natural Light
- Storage & Coat Rooms

197 Guest Rooms | **6** Floors | **139** Double Bed Rooms | **44** King Rooms
14 Suites | ADA Compliant Rooms

MAIN LEVEL



Facility	SF	Ceiling	Theater	Classroom	Banquet	Reception	U-Shape	Conference	Boardroom
Elara Ballroom	70x160	14'	1200	600	780	1000	-	-	-
Walnut Rooms	35x70	14'	150	125	130	225	-	-	-
Walnut I	23x35	14'	50	35	40	60	30	25	-
Walnut II	23x35	14'	50	35	40	60	30	25	-
Walnut III	23x35	14'	50	35	40	60	30	25	
Birch Room	39x70	14'	225	150	180	225	50	-	-
Maple Room	39x70	14'	225	150	180	225	50	-	-
Willow Rooms	39x70	14'	225	150	180	225	50	-	-
Willow I	24x39	14'	70	30	40	60	25	25	-
Willow II	47x39	14'	125	75	60	120	40	40	-
Acorn I	24x26	14'	50	25	40	50	20	15	-
Acorn II	24x26	14'	50	25	40	50	20	15	-
Acorn III	24x26	14'	50	25	40	50	20	15	-
Algonquin	16x28	8'	-	-	-	-	-	-	10
Crystal Lake	16x28	8'	-	-	-	-	-	-	10
Elara Foyer	18x160	12'	-	-	200	295	-	-	-
Lakeview	28x24	10'	50	30	40	50	20	15	-
Oak	23x23	10'	35	18	-	-	15	24	-
Sunset Deck	2,275 sq ft	-	-	-	189	228	-	-	-
Lakeview Foyer	1,150 sq ft	10'	-	-	96	115	-	-	-
Lakeview Patio	395 sq ft	-	-	-	33	40	-	-	-

Agenda Item No: 9b

City Council
Agenda Supplement

Meeting Date: January 6, 2026

Item: Class 16 Temporary Liquor License Requests – Knights of Columbus Fr. McCormick Council #3880

Staff Recommendation: Motion to approve issuance of two Class 16 Temporary Liquor Licenses to the Knights of Columbus Fr. McCormick Council #3880 – Polish Dinner, January 31, 2026 and St. Patrick's Dinner, March 21, 2026

Staff Contact: Nick Hammonds, Deputy City Manager

Background:
The City has received a request from the Knights of Columbus Fr. McCormick Council #3880 for the issuance of a Class 16 Temporary Liquor License in order to sell beer and wine at their Polish Dinner event being held at the Oak Street Church Community Center, located at 451 W. Terra Cotta Avenue on Saturday, January 31, 2026 from 5:30 p.m. to 10:00 p.m.

The City also received a second request from the Knights of Columbus Fr. McCormick Council #3880 for the issuance of a Class 16 Temporary Liquor License in order to sell beer and wine at their St. Patrick's Dinner event being held at the Oak Street Church Community Center, located at 451 W. Terra Cotta Avenue on Saturday, March 21, 2026 from 5:30 p.m. to 10:00 p.m.

Section 329-5-P of the City Code permits the issuance of a Class 16 Temporary Liquor License for the retail sale of beer and wine for consumption upon the premises specified in the license where sold. The license shall be issued to not-for-profit corporations qualified to do business in the State of Illinois. The license shall be for a period not to exceed three (3) days, and shall be issued only for special events sponsored by the not-for-profit corporation requesting the license.

The application for two licenses is required as one license cannot exceed three (3) days.

In addition to the license from the City, a not-for-profit special event liquor license is also needed from the State of Illinois for the events.

The City Council has approved these events in the past and other temporary liquor license requests for the Knights of Columbus Fr. McCormick Council #3880.

Votes Required to Pass:
Simple majority

CITY OF CRYSTAL LAKE

Class 16
Temporary Liquor License

General Information:

- A Class "16" **Temporary** Liquor License authorizes the retail sale of beer and wine for consumption upon the premises specified in the license.
- The license applicant must be a **not-for-profit** corporation qualified to do business in the State of Illinois.
- The license is valid for a period not to exceed three (3) days and may only be used for special events sponsored by the not-for-profit corporation requesting the license.
- Patrons of the premises where the beer and wine are to be sold are required to wear a non-transferrable, one use only, disposable wristband or other means of identification identifying them as patrons of the area that is subject to the license.
- Issuance of a Class "16" Temporary Liquor License must be reviewed and approved by the Mayor and City Council of the City of Crystal Lake.
- ***In addition to the City of Crystal Lake Temporary Liquor License, a license is also needed from the State of Illinois. A copy of the State of Illinois License must be provided to the City as a condition of local license approval once it has been received. A license from the State of Illinois can be applied for here:***

  https://ilcc.illinois.gov/content/dam/soi/en/web/ilcc/sitecollectiondocuments/special-event-retailer-liquor-license-nfp.pdf

City of Crystal Lake
Application for Temporary Liquor License

CLASS "16"
Beer and Wine

The undersigned hereby makes application for a license for the sale at retail of beer and wine under the provisions of the City of Crystal Lake Liquor Licensing Ordinance:

1. Applicant's full name Knights of Columbus Fr. McCormick Council 3880
(Must be not-for-profit organization)

   Address 451 W. Terra Cotta Ave Phone Number 815-455-5400

2. Organization Contact Information:
   Name: Knights of Columbus Fr. McCormick Council 3880
   Address: 451 W. Terra Cotta Ave Crystal Lake IL 60014
   Email: [redacted]
   Phone Number: 815-455-5400

3. Location where beer and wine will be sold:
   Will be Served in the Community Center

4. Dates of the event (**not to exceed three (3) days**): Polish Dinner January 31, 2026
   St. Pats Dinner March 21, 2026

5. Hours of operation: 5:30pm - 10:00pm

6. Describe the type of crowd and traffic control licensee will utilize. 200 people
   2 entrances/exits on Rt. 176 and Oak Street.

7. Describe plan for refuse pickup. 2 dumpsters within 600ft. of
   Serving Area
   Cesar Jimenez 4316 Hampshire Dr. Crystal Lake IL. 60012

8. Please list the names and addresses of the members of the organization who will be selling beer and wine at the location pursuant to the license. If additional space is needed, please use reverse side.
   Robert Kosin 856 Bennington Dr. Crystal Lake IL 60014
   Joseph Scherb 413 Huntley Rd. Crystal Lake IL 60014
   Michael Brucker 9635 Stone Castle Ln. Village of Lakewood IL. 60014
   William Bransley 178 Cascade Dr Crystal Lake IL. 60012

9. **Please attach the following to your application:**
   - **License fee in the amount of *$20.00*. (Make checks payable to the "*City of Crystal Lake*".)**
   - **Proof of liquor liability insurance**
   - **Proof of permission from owner of the premises, if different than applicant, authorizing the sale of beer and wine on the property during the time requested.**
   - **Site plan of area where beer and wine will be sold.**
   - **Letter to the Mayor and City Council requesting approval of the issuance of a Class "16"Temporary Liquor License to applicant.**

10. In addition to the City of Crystal Lake Temporary Liquor License, a license is also needed from the State of Illinois. A copy of the State of Illinois License must be provided to the City as a condition of local license approval once it has been received. A license from the State of Illinois can be applied for

here:

https://ilcc.illinois.gov/content/dam/soi/en/web/ilcc/sitecollectiondocuments/special-event-retailer-liquor-license-nfp.pdf

Name and title of individual submitting Application on behalf of the applicant:

Name: Robert Wyman
Title: Knight of Columbus Member Council 3880 Crystal Lake IL.
Date: 12-11-25

CERTIFICATION

☑ Under penalty of perjury, the person(s) named above, hereby certify and/or affirm as follows: (1)That I (we) are authorized on behalf of the applicant to submit this application; 2) that the Applicant will not violate any of the ordinances of the City of Crystal Lake or the laws of the State of Illinois or the laws of the United States of America, in the conduct of the place of business described herein; (2) That the statements contained in this application are true and correct to the best of my (our) knowledge and information; 3) That the statements in this application are made for the purpose of obtaining the license applied for and are made on my (our) personal knowledge and information.

Knights of Columbus
Fr. McCormick Council #3880
P.O. Box 1365
Crystal Lake, IL 60014

December 9th, 2025

Mayor Haig Haleblain
City Council Members
City of Crystal Lake
100 W. Woodstock Street
Crystal Lake, IL 60014

Honorable Mayor Haig Haleblain and City Council Members,

With this letter ware are respectfully requesting your permission to sell beer and wine at our Polish Dinner on January 31, 2026, and our St. Patrick's Dinner on March 21, 2026. These respective dinners will be held in the community center at St. Thomas the Apostle church located at 451 W. Terra Cotta Ave, Crystal Lake. Time for these dinners will be from 6pm to 10pm.

We are expecting the participation of around 150 people at these dinners. As usual the net proceeds of the sales will be used to support our parish ministries and local charitable organizations. The Knight's are a 100% volunteer organization and have appreciated the long history of support from The City of Crystal Lake.

Thank you for your consideration of this request, and please let us know if there are any further questions.

Cesar Jimenez, Grand Knight
Fr. McCormick Council #3880
Knights of Columbus

ST. THOMAS THE APOSTLE
CATHOLIC CHURCH

December 3, 2025

Mayor Haig Haleblian
City Council Members
City of Crystal Lake
100 W. Woodstock Street
Crystal Lake, IL 60014

Dear Mayor Haleblian and City Council Members,

With this letter we are requesting your permission to serve beer and wine at our Parish Polish Dinner. This Dinner is being hosted by the Knights of Columbus Council #3880, and will be held in our Oak Street Church Community Center at 451 W. Terra Cotta Avenue, Crystal Lake, on Saturday, January 31, 2026. Doors will open at 6:00 pm and the cash bar (beer and wine) will be opened until 9:00 pm. We are selling tickets and anticipate 250 to attend.

With this letter we are also requesting your permission to serve beer and wine at our Parish St. Patrick's Dinner. This Dinner is being hosted by the Knights of Columbus Council #3880, and will be held in our Oak Street Church Community Center at 451 W. Terra Cotta Avenue, Crystal Lake, on Saturday, March 21, 2026. Doors will open at 6:00 pm and the cash bar (beer and wine) will be opened until 9:00 pm. We are selling tickets and anticipate 250 to attend.

Thank you for your kind consideration to our request. Should you require further information, please do not hesitate to contact us.

Sincerely in Christ,

Robert W. Jones

Rev. Robert W Jones, Pastor
St. Thomas the Apostle Church

272 King St, Crystal Lake, IL 60014 *(Parish Office)*
451 W. Terra Cotta Ave, Crystal Lake, IL 60014 *(Oak Street Church)*
453 Pierson St, Crystal Lake, IL 60014 *(Pierson Street Church)*

Phone 815-455-5400
Fax 815-455-2733
www.stthomascl.church

St. Thomas the Apostle Church
451 W. Terra Cotta Ave.
Crystal Lake, IL 60014

← to Woodstock via Rt. 14

Rt. 176

← HANDICAP PARKING →

ENTER ONLY

EXIT ONLY

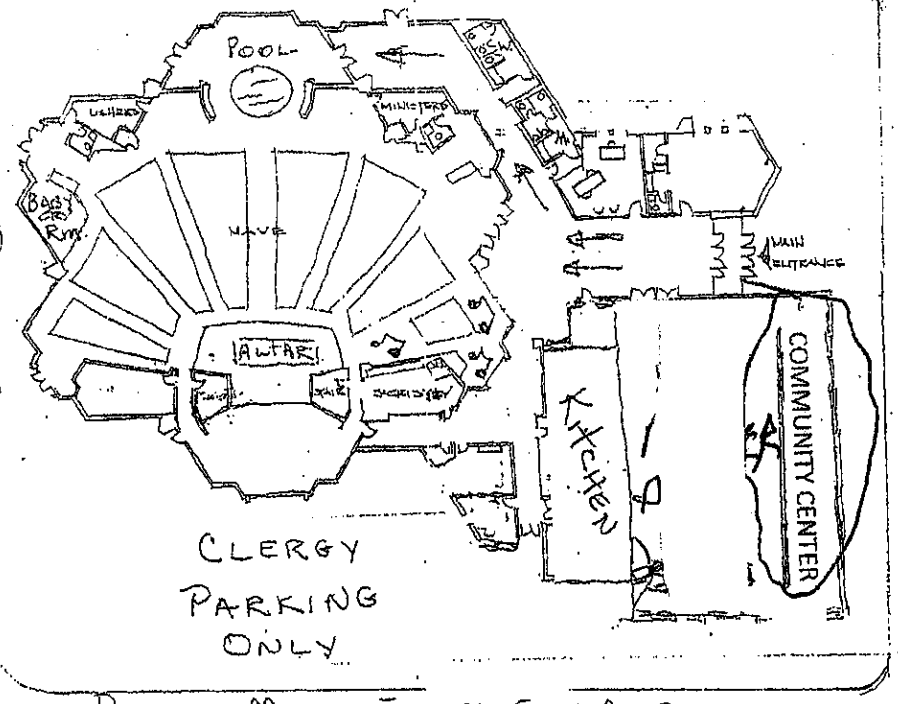
NO PARKING

OAK ST.

660'

SE

NW



PADRES, MONSEÑORES, EL OBISPO

PARKING

PARKING

PARKING

to C.L. via Rt. 14

ENTER

EXIT

OAK ST.

← PARKING →

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/10/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Arthur J. Gallagher Risk Management Services, LLC
265 Exchange Drive, Suite 100
Crystal Lake IL 60014

CONTACT NAME: Cameron Ball
PHONE (A/C, No, Ext): 815-526-4138 **FAX (A/C, No):**
E-MAIL ADDRESS: Cameron_Ball@ajg.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Underwriters at Lloyd's London	15792
INSURER B: Westfield Superior Insurance Company	16449
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

INSURED KNIGOFC-25
Knights of Columbus Father McCormick Council #3880
c/o John Stefani
1802 Cashel Lane
McHenry IL 60050

COVERAGES **CERTIFICATE NUMBER:** 1050987717 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	X COMMERCIAL GENERAL LIABILITY	Y		4846448	7/13/2025	7/13/2026	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) N / A						E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
B	Equipment Floater			4846448	7/13/2025	7/13/2026	Limit	$6,500
A	Liquor Liability			JFLLIQ24320201	8/4/2025	8/4/2026	Limit	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: Event date: January 31. 2026. Liquor Liability | Event: Knights of Columbus Polish Dinner.

Certificate Holder is an Additional Insured as respects the General Liability Policy. pursuant to and subject to the policy's terms, definitions, conditions, and exclusions.

CERTIFICATE HOLDER

City of Crystal Lake
100 W. Woodstock St.
Crystal Lake IL 60014

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/10/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Arthur J. Gallagher Risk Management Services, LLC
265 Exchange Drive, Suite 100
Crystal Lake IL 60014

CONTACT NAME: Cameron Ball
PHONE (A/C, No, Ext): 815-526-4138 **FAX (A/C, No):**
E-MAIL ADDRESS: Cameron_Ball@ajg.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Underwriters at Lloyd's London	15792
INSURER B : Westfield Superior Insurance Company	16449
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED KNIGOFC-25
Knights of Columbus Father McCormick Council #3880
c/o John Stefani
1802 Cashel Lane
McHenry IL 60050

COVERAGES **CERTIFICATE NUMBER:** 701119190 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	X COMMERCIAL GENERAL LIABILITY	Y		4846448	7/13/2025	7/13/2026	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE / OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) N / A						E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
B	Equipment Floater			4846448	7/13/2025	7/13/2026	Limit	$6,500
A	Liquor Liability			JFLLIQ24320201	8/4/2025	8/4/2026	Limit	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: Event: Knights of Columbus St. Patrick's Day Dinner and Dance on 03/21/26

Certificate Holder is an Additional Insured as respects the General Liability policy. pursuant to and subject to the policy's terms, definitions, conditions and exclusions.

CERTIFICATE HOLDER

City of Crystal Lake
100 W. Woodstock St.
Crystal Lake IL 60014

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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Agenda Item No: 9c

City Council
Agenda Supplement

Meeting Date: January 6, 2026

Item: Board and Commission Reappointments - Planning and Zoning Commission Reappointments

Recommendation: City Council Discretion

Contact: Haig Haleblian, Mayor

Background:
The Planning and Zoning Commission (PZC) consists of seven (7) voting members. The members are subject to the approval by a majority vote of the Mayor and City Council.

The terms of PZC members Stacy Mason and Laura Dzielski expire on January 31, 2026. Both have expressed an interest in continuing to serve on the Committee.

Should the Council have any questions, please contact Mayor Haleblian.

Votes Required to Pass: Simple majority

Melanie Gray

From: Elizabeth Maxwell AICP
Sent: Tuesday, December 2, 2025 8:20 AM
To: Melanie Gray
Subject: FW: PZC appointment

Follow Up Flag: Follow up
Flag Status: Flagged

From: Stacy B. [redacted]
Sent: Monday, December 1, 2025 9:43 PM
To: Elizabeth Maxwell AICP <emaxwell@crystallake.org>
Cc: Kathryn Cowlin AICP <kcowlin@crystallake.org>; Darrell Moore AICP <dmoore@crystallake.org>
Subject: Re: PZC appointment

Stop - Look - Think - Decide: This email originated from outside of the City. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Liz,

Thanks for reaching out! I've enjoyed being on zoning and welcome reappointment.

Let me know if anything needs to be done on my end.

Thanks!
Stacy

On Mon, Dec 1, 2025 at 11:20 AM Elizabeth Maxwell AICP <emaxwell@crystallake.org> wrote:

Good Morning,

We have enjoyed your contributions to the Planning and Zoning Commission. Your term expires next year and we hope you will consider being reappointed. Please let us know and we will place it on the Council agenda for reappointment.

Thank you

From: Melanie Gray <mgray@crystallake.org>

Sent: Monday, December 29, 2025 12:10 PM

To: Laura Dzielski [redacted]

Subject: Re: Planning and Zoning Reappointment

Thank you! We will get reappointments scheduled for City Council.

Sincerely,

Melanie

From: Laura Dzielski [redacted]

Sent: Monday, December 29, 2025 12:04 PM

To: Melanie Gray <mgray@crystallake.org>

Subject: RE: Planning and Zoning Reappointment

Stop - Look - Think - Decide: This email originated from outside of the City. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Yes, please.

Laura A. Dzielski, J.D.

OFFICE [redacted]

DIRECT [redacted]

FAX [redacted]

EMAIL [redacted]

Agenda Item No: 9d

City Council
Agenda Supplement

Meeting Date: January 6, 2026

Item: COUNTY ZONING REQUEST

Commercial solar energy facility on about 18 acres immediately north of unincorporated Ridgefield between Country Club Road and the railroad tracks.

Unincorporated Crystal Lake, Illinois

Recommendation: No action

Staff Contact: Kathryn Cowlin, Director of Community Development
Darrell Moore, Assistant City Planner

Background:

- The City received this County Zoning requests because it is within the City's mile-and-a-half planning jurisdiction—the City abuts the property to the west—across the Union Pacific railroad tracks.
- The request is anticipated to go before the Zoning Board of Appeals on January 7th.
- The subject property is approximately 17.9 acres. It is zoned "I-1" Light Industrial District. The former use of the site was a tree nursery, but that uses appears to have been abandoned. A variety of cultivated trees remain, including several species of oaks.
- The subject property abuts McHenry County "A-1" Agriculture District zoning to the north, "R-1" Single-Family Residential District to the east, and "I-1" Light Industrial District to the south and west. Also to the west is "M PUD" Manufacturing within City of Crystal Lake boundaries.
- The property to the north is used for agriculture, while single-family residences are located to the east and RP Lumber is south. Across the railroad tracks to the west is industrial warehousing and The MAC sports complex.
- The County's 2030 Land Use Plan labels the subject property Mixed-Use. The Crystal Lake 2030 Comprehensive Land Use Plan map labels the property Agricultural Rural Residential.
- The property is within the Crystal Lake Watershed and the Gladstone Fen Class 3 Groundwater area.

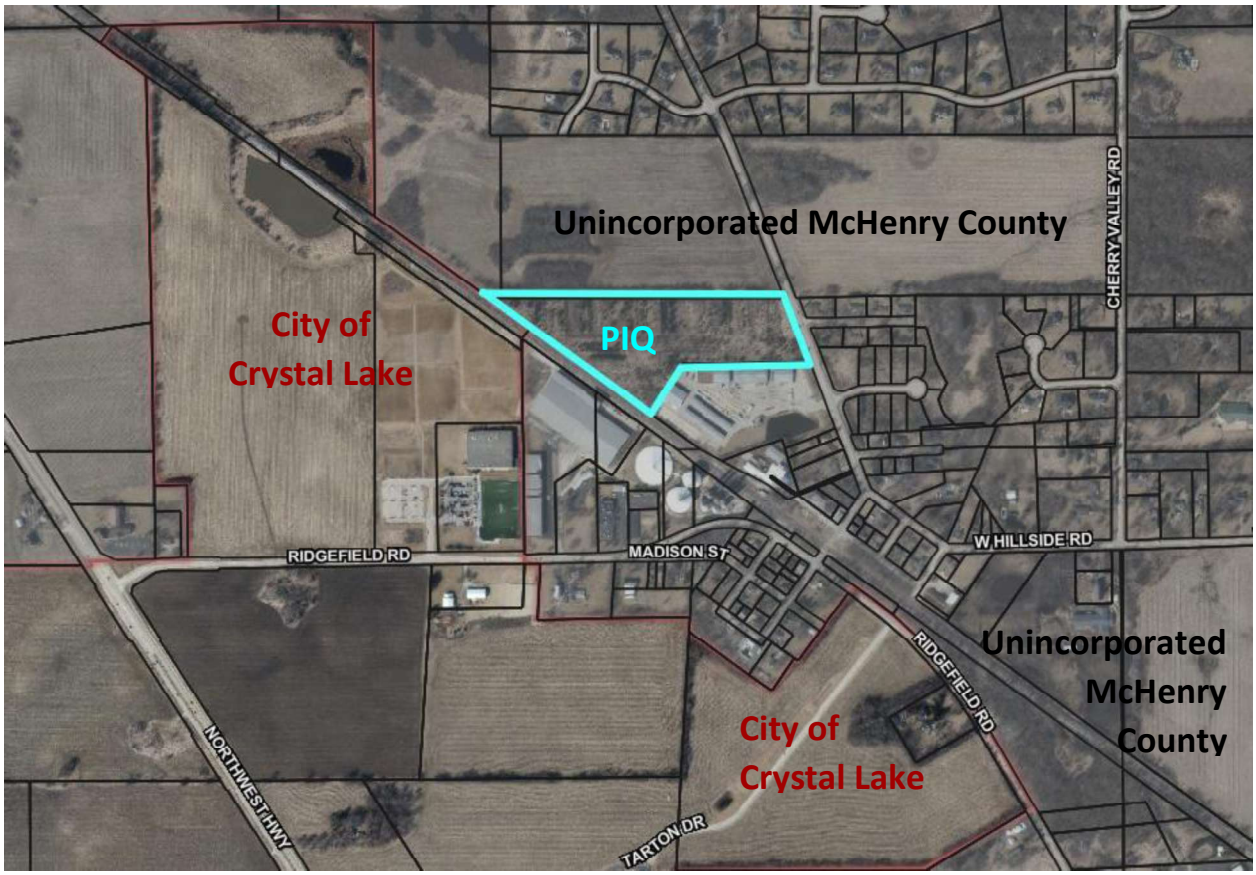
Request:

- The petitioners are requesting an 18-acre solar farm, having a 2 megawatt production capacity.
- The County requires a Conditional Use Permit for Solar Farms in the "A-1" Agriculture, "O" Office/Research, "I-1" Light Industrial and "I-2" Heavy Industrial zoning districts. The City of Crystal Lake requires a Special Use Permit in the F Farming, M-L Limited and M Manufacturing zoning districts.
- Height: Design details show rotating tracker panels with an estimated maximum height of nine feet. It is noted that the final design height will be determined during final engineering, but that all structures (excluding power lines for interconnection) will comply with the County's maximum height of 20 feet.
- Setbacks: According to the site plan, the solar array will be about 80 feet from the Country Club Road right-of-way, at its closest point. The solar panels, structures and electrical equipment will be setback no less than 50 feet from any lot line and 150 feet from the nearest point on the outside wall of any non-participating residences, in accordance the County's setback requirements.
- Safety/Security: An eight-foot-high fence with a six-inch wildlife gap and locked gates is proposed. Access codes to the gate will be provide to emergency service providers.
- Landscaping: Evergreen screening is proposed for the portion of the project facing Country Club Road. An established tree line located on the property to the north runs along the property line providing additional screening. A landscaping plan was submitted that claims to meet County and State requirements for pollinator-friendly plantings.
- Per the County's UDO's Use Standards for Commercial Solar Energy Facilities, decommissioning plans shall require removal of all solar panels, electrical equipment, poles, piles, foundations, and conduits (above and below ground). Access roads, fencing, groundcover, and landscaping may remain only by agreement of property owner.
- The City of Crystal Lake requires a Special Use Permit for solar farms in the F – Farming, M-L Manufacturing Limited and M – Manufacturing zoning districts, subject to the following criteria:
    - The entire project site shall be surrounded with landscape and a fabric-wrapped chain link fence, which would screen the property from any roadways or public driveways.
    - The grounds in and around the panels shall be repurposed for wildflowers or agriculture. A landscape plan is required.
    - One ten-foot-wide paved drive shall provide access around the entire site.
- **Staff Comments:**
    - Staff recognizes that county zoning codes do not allow fences to be wrapped in fabric.
    - The required ten-foot-wide paved drive is not included in the design. The property is within the Woodstock Fire/Rescue District, which has yet to conduct a formal review of the project or have any contact with the applicant. However, a cursory review did not reveal any major concerns.
    - Staff does not have any concerns with this request.

Votes Required to Pass: A simple majority.

Parcel in Question

Country Club Road, north of unincorporated Ridgefield

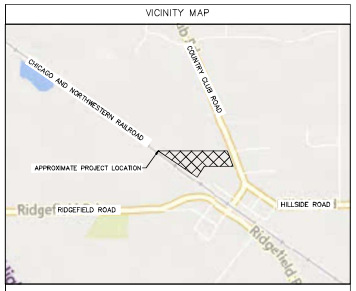




GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

VICINITY MAP



SCALE 1"=1000'

LEGEND

ROAD LABEL	COUNTRY CLUB ROAD
PROJECT BOUNDARY	
PROPERTY LINE	
PROPERTY LINE/RIGHT-OF-WAY SETBACK	
*EX. OVERHEAD ELECTRIC	EX OHE
*EX. UTILITY POLE	
EX. FLOW (DIRECTION AND SLOPE)	XXX
EX. CONTOURS	XXX
EX. SOILS	
EX. ROAD CENTERLINE	
*EX. EDGE OF PAVEMENT	
*EX. TREELINE	
*EX. STRUCTURE/RESIDENCE	
EX. NON-PARTICIPATING RESIDENCE SETBACK	
*EX. RAILROAD	
EX. HISTORIC MCHENRY COUNTY FEMA BOUNDARY	
PR. SECURITY FENCE	X X
PR. SOLAR ARRAY	
PR. PANEL EXTENTS	
PR. EQUIPMENT PAD	
PR. STAGING AREA	
PR. UNDERGROUND ELECTRIC	UGE
PR. OVERHEAD ELECTRIC	OH
PR. UTILITY POLE	
PR. GRAVEL ACCESS ROAD	

*TRACED PER MCHENRY COUNTY GIS ONLINE PORTAL

SITE DATA TABLE

PIN	13-24-300-018
PROPERTY OWNER	AMCORE TRUST 3582 NOW CHICAGO TITLE LAND TRUST COMPANY ACW3582
SITE ADDRESS	COUNTRY CLUB RD, WOODSTOCK, IL 60098
ZONING JURISDICTION	MCHENRY COUNTY
CURRENT LAND USE	FARMLAND
PROPOSED USE	COMMERCIAL SOLAR ENERGY FACILITY
TOTAL PARCEL AREA	17.88 ± AC
PRELIMINARY DISTURBED AREA	10.92 ± AC (AREA WITHIN FENCE)
PRELIMINARY SOLAR AREA	7.96 ± AC
RIGHT-OF-WAY SETBACK	50'
PROPERTY LINE SETBACK	50'
RESIDENTIAL SETBACK	150'
DC/AC RATIO	1.23
TOTAL POWER OUTPUT (DC)	2.46 MW
TOTAL MODULES	4,108
TOTAL POWER OUTPUT (AC)	2.00 MW
GROUNDCOVER RATIO (GCR)	35.0%

*SITE PLAN IS BEING SUBMITTED FOR CONDITIONAL USE PERMIT TO CONSTRUCT/OPERATE A COMMERCIAL SOLAR ENERGY FACILITY

NOTES

1. SETBACKS PER MCHENRY COUNTY CODE OF ORDINANCES SECTION 16.56.030.PP.2.a:
   1.1. SOLAR PANELS, STRUCTURES, AND ELECTRICAL EQUIPMENT, EXCLUDING FENCES AND POWER LINES FOR INTERCONNECTION, SHALL BE ERECTED NO LESS THAN FIFTY (50) FEET FROM ANY LOT LINE AND NO LESS THAN ONE HUNDRED FIFTY (150) FEET FROM ANY RESIDENCE, OTHER THAN A RESIDENCE ON THE SAME OWNERSHIP PARCEL.
2. KIMLEY-HORN ASSUMED CONSTRUCTABILITY SETBACKS:
   2.1. TREE SHADE SETBACK: 30 FT
   2.2. ADDITIONAL 30 FT CONSTRUCTABILITY SETBACK FOR ACCESS ROADS AND FENCES
3. ALL EXISTING PARCEL INFORMATION WAS OBTAINED FROM A COMPASS SURVEYING LTD SURVEY OBTAINED 11/05/2025.
4. PER THE UNIVERSITY OF ILLINOIS WATER GIS MAP (OBTAINED ON 09/15/2025), NO WELL EXISTS WITHIN THE SUBJECT PARCEL (PIN NUMBER: 13-24-300-018).
5. PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), FEMA FLOODPLAINS AND REGULATORY FLOODWAYS DO NOT EXIST WITHIN THE SUBJECT PARCEL. THE SITE RESIDES ON FEMA PANEL (17111C0215J).
6. PER A KIMLEY-HORN WETLAND DELINEATION, NO WETLANDS ARE PRESENT ON THE PROJECT PARCEL.
7. BEACON PORTAL WAS CHECKED ON 10/06/2025, AND NO HISTORICAL FLOOD ZONES WERE FOUND WITHIN THE PROJECT AREA.

NOT FOR CONSTRUCTION

Call Before You Dig
JULIE
1-800-892-0123

No.	REVISIONS	DATE

ARENA RENEWABLES

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
570 LAKE COOK RD SUITE 200
DEERFIELD, IL 60015
WWW.KIMLEY-HORN.COM

PRELIMINARY- NOT FOR CONSTRUCTION

KHA PROJECT	268685025
DATE	11/6/25
SCALE	AS SHOWN
DESIGNED BY	JEM
DRAWN BY	JEM
CHECKED BY	SMH

PROPOSED CONDITIONS

ARENA OPAL SOLAR, LLC
MCHENRY COUNTY, IL

SHEET NUMBER
C-300

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Drawing name: K:\DFS_LEC\268685025_Arena Renewables_OpalLLC\2 Design\CAD\Exhibits\CUP Plan Set\C-300 PROPOSED CONDITIONS.dwg C-300 Nov 06, 2025 9:59am by Michael.Boyke

McHenry County
Zoning Board of Appeals - Zoning Hearing
AGENDA

January 7, 2026, 1:30 PM
County Board Conference Room
Administration Building, 667 Ware Rd., Woodstock, IL 60098

Pages

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **NEW BUSINESS / PUBLIC HEARING**
   - 3.1 Z25-0100 Arena Opal Solar, LLC, I1-I1C, Dorr Twp — 2
4. **OLD BUSINESS**
5. **PUBLIC COMMENT**
   Topics unrelated to public hearing - 3-minute time limit per speaker
6. **ANNOUNCEMENTS**
7. **ADJOURNMENT**

IN THE MATTER OF THE APPLICATION OF	)
ARENA OPAL SOLAR, LLC, *APPLICANT*	)
FOR AN AMENDMENT OF THE UNIFIED DEVELOPMENT	) LEGAL NOTICE OF PUBLIC HEARING
ORDINANCE OF McHENRY COUNTY, ILLINOIS FOR A	) Z25-0100
CONDITIONAL USE	)

Notice is hereby given in compliance with the McHenry County Unified Development Ordinance, that a public hearing will be held before the **McHenry County Zoning Board of Appeals,** in connection with this Ordinance, which would result in a ***CONDITIONAL USE*** for the following described real estate:

THAT PORTION OF THE FOLLOWING DESCRIBED PROPERTY LYING WEST OF COUNTRY CLUB ROAD: PART OF THE SOUTHEAST QUARTER AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 24 AND PART OF THE NORTHEAST QUARTER OF SECTION 25, TOWNSHIP* 44 NORTH, RANGE 7 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF A PIECE OF LAND CONVEYED BY JOHN L. GIBSON AND WIFE, TO WILLIAM N. BALDWIN, BY WARRANTY DEED DATED JUNE 4, 1870, RECORDED IN BOOK 47 OF DEEDS, PAGE 124 AND RUNNING THENCE WEST ALONG THE NORTH LINE OF SAID PIECE CF LAND SO CONVEYED TO THE SAID WILLIAM N. BALDWIN, 14 CHAINS AND 66-1/2 LINKS TO THE CENTER OF THE HIGHWAY RUNNING NORTHEASTERLY TO WOODSTOCK; THENCE SOUTH 22-1/2 DEGREES EAST ALONG THE CENTER OF SAID LAST MENTIONED HIGHWAY TO A POINT IN LINE WITH THE NORTH LINE OF A STRIP OF LAND CONVEYED BY DAVID L. GIBSON AND WIFE, AND MARTHA E. GIBSON, TO BORDEN'S CONDENSED MILK COMPANY, BY WARRANTY DEED DATED NOVEMBER 9, 1906 AND RECORDED IN BOOK 118 OF DEEDS, PAGE 569; THENCE SOUTH, 71-1/4 DEGREES WEST ALONG THE NORTHERLY LINE OF SAID STRIP OF LAND SO CONVEYED TO SAID BORDEN'S CONDENSED MILK COMPANY, TO THE EASTERLY LINE OF THE OTHER PIECE OF LAND CONVEYED TO SAID BORDEN'S CONDENSED MILK COMPANY BY WARRANTY DEED LAST MENTIONED; THENCE NORTH, 17 DEGREES WEST ALONG THE EASTERLY LINE OF SAID LAST MENTIONED PIECE OF LAND, 341-1/2 FEET TO THE MOST NORTHERLY CORNER THEREOF; THENCE SOUTH, 71-1/4 DEGREES WEST ALONG THE NORTHWESTERLY LINE OF SAID LAST ABOVE MENTIONED PIECE OF LAND, 396 FEET TO THE NORTHEASTERLY LINE OF THE RIGHT OF WAY OF THE CHICAGO AND NORTHWESTERN RAILROAD COMPANY; THENCE NORTHWESTERLY ALONG THE SAID NORTHEASTERLY LINE OF SAID RIGHT-OF-WAY TO THE SOUTH LINE OF A PIECE OF LAND CONVEYED BY JOHN L. GIBSON AND WIFE, TO EDWIN S. OLMSTEAD, BY WARRANTY DEED DATED JANUARY 5, 1852 AND RECORDED IN BOOK: 6 OF DEEDS, PAGE 1; THENCE* EAST ALONG THE SOUTH LINE OF SAID PIECE OF LAND SO CONVEYED TO SAID EDWIN S. OLMSTEAD TO THE EAST LINE OF SAID SECTION 24; THENCE SOUTH ALONG SAID SECTION LINE, 750.9 FEET; THENCE SOUTH, 86 DEGREES AND 18 MINUTES WEST, 766.7 FEET TO THE PLACE OF BEGINNING (EXCEPTING AND RESERVING THEREFROM THAT PART THEREOF, DESCRIBED AS FOLLOWS: COMMENCING AT THE INTERSECTION OF THE CENTER LINE OF A PUBLIC HIGHWAY RUNNING NORTHERLY AND SOUTHERLY THROUGH THE SAID SECTIONS) AND THE SOUTHERLY LINE OF A PIECE OF PROPERTY CONVEYED BY FLORA N. MERCHANT AND SAMUEL A, MERCHANT TO RAY L. YANKE AND RUTH H. YANKE (HIS WIFE) BY WARRANTY DEED DATED OCTOBER 14, 1944 AND RECORDED IN BOOK 272, PAGE 605, FOR A PLACE OF BEGINNING; THENCE SOUTH 71 DEGREES 15 MINUTES WEST ALONG THE ABOVE MENTIONED SOUTH LINE FOR A DISTANCE OF 394.3 FEET, MORE OR LESS, TO THE EASTERLY LINE OF THE PROPERTY CONVEYED BY D. L. GIBSON AND WIFE, TO BORDEN'S CONDENSED MILK COMPANY; THENCE NORTH, 17 DEGREES, NO MINUTES WEST ALONG THE FIRST MENTIONED EASTERLY LINE, FOR A DISTANCE OF 281.4 FEET TO A POINT; THENCE NORTH, 71 DEGREES, 15 MINUTES EAST, 374.8 FEET TO THE CENTER LINE OF SAID* PUBLIC HIGHWAY; THENCE SOUTHEASTERLY ALONG THE SAID CENTER LINE OF PUBLIC ROAD, 281.0 FEET TO THE PLACE OF BEGINNING; ALSO, EXCEPTING AND RESERVING THEREFROM THAT PART THEREOF DESCRIBED AS FOLLOWS: COMMENCING ON THE SOUTH LINE OF SECTION 24 AT A POINT IN THE CENTER OF SAID HIGHWAY THAT IS 925.6 FEET EAST FROM THE SOUTH QUARTER CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE CENTER OF SAID HIGHWAY, BEING ON A LINE FORMING AN ANGLE OF 111 DEGREES 19 MINUTES TO THE LEFT WITH A PROLONGATION OF THE LAST DESCRIBED LINE* FOR A DISTANCE OF 1008.0 FEET TO A POINT; THENCE EAST ON A LINE FORMING AN ANGLE OF 111 DEGREES 17 MINUTES TO THE RIGHT WITH A PROLONGATION OF THE LAST DESCRIBED LINE FOR A DISTANCE OF 53.67 FEET TO A POINT FOR A PLACE OF BEGINNING; THENCE EAST ON A CONTINUATION OF THE LAST DESCRIBED LINE FOR A DISTANCE OF 724.47 FEET TO A POINT; THENCE SOUTH AT RIGHT ANGLES TO THE LAST DESCRIBED LINE FOR A DISTANCE OF 314 FEET TO A POINT; THENCE WEST AT RIGHT ANGLES TO THE LAST DESCRIBED LINE FOR A DISTANCE OF 602.15 FEET TO A POINT ON THE EASTERLY LINE OF THE HIGHWAY AS NOW WIDENED; THENCE NORTHWESTERLY ALONG THE EASTERLY LINE OF THE HIGHWAY AS NOW WIDENED, BEING ON A LINE FORMING AN ANGLE OF 68 DEGREES 43 MINUTES TO THE RIGHT WITH A PROLONGATION OF THE LAST DESCRIBED LINE FOR A DISTANCE OF 337.0 FEET TO THE PLACE OF BEGINNING), AND EXCEPTING THEREFROM THE FOLLOWING: PART OF THE SOUTHEAST QUARTER OF

SECTION 24, TOWNSHIP 44 NORTH, RANGE 7 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE EAST LINE OF SAID SOUTHEAST QUARTER WHICH IS 981.53 FEET NORTH FROM THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 44 NORTH, RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, SAID POINT BEING ON THE SOUTH LINE OF A TRACT OF LAND CONVEYED BY JOHN L. GIBSON AND WIFE, TO EDWIN S. OLMSTEAD BY WARRANTY DEED DATED JANUARY 5, 1852, AND RECORDED IN BOOK 6 OF DEEDS, PAGE 1; THENCE WESTERLY ALONG SAID SOUTH LINE, BEING ON A LINE FORMING AN ANGLE OF 90 DEGREES AND 13 MINUTES MEASURED TO THE LEFT WITH A PROLONGATION OF THE LAST DESCRIBED COURSE, A DISTANCE OF 266.00 FEET; THENCE SOUTH, PARALLEL WITH THE AFORESAID EAST LINE OF THE SOUTHEAST QUARTER, A DISTANCE OF 206.00 FEET; THENCE EASTERLY, 266.00 FEET TO POINT IN THE EAST LINE OF THE SOUTHEAST QUARTER WHICH IS 206.00 FEET SOUTH FROM THE PLACE OF BEGINNING; THENCE NORTH, ALONG SAID EAST LINE OF THE SOUTHEAST QUARTER, 206.00 FEET TO THE PLACE OF BEGINNING, IN MCHENRY COUNTY, ILLINOIS.
ALSO EXCEPTING THE TRACT OF LAND GRANTED TO PIERCE HARDY, LP., IN THE ILLINOIS REAL ESTATE TRANSFER DECLARATION/TRUSTEE'S DEED RECORDED JULY 18, 2006, IN DOCUMENT NO. 2006R0052165, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS. *TYPOGRAPHICAL ERRORS CORRECTED BY SURVEYOR.

PIN 13-24-300-018

The subject property is located adjacent on the west side of the intersection of Country Club Road and Prairie Drive***, with a common address of South Country Club Road, Woodstock, Illinois, in Dorr Township.***

The subject property is presently zoned ***"I-1" Light Industrial*** and consists of approximately ***17.886*** **acres** with ***"A-1" Agriculture District*** zoning to the ***North, "R-1" Single Family Residential to the East, "I-1" Light Industrial and "A-1" Agriculture District zoning to the South and the City of Crystal Lake to the West***.

The Applicant is requesting **a CONDITIONAL USE** ***of the subject property to allow for a commercial solar energy facility.***

The Applicant, Arena Opal Solar LLC, is wholly owned by Arena Renewables, LLC. The officers, managers and shareholders of Arena Renewables, LLC are Matthew McGovern, Manager; Michael Cohen, Manager; David Thigpen, Board Observer/Shareholder; Matthew Kozey, CEO; Geoff Johnson, President/CDO; Patrick Grumley, COO. The officers of Arena Opal Solar LLC are: Matthew Kozey, CEO; Geoff Johnson, President/CDO; Patrick Grumley, COO. They can be reached at 15051 North Kierland Boulevard, Floor 3, Scottsdale, Arizona. The trustees of the property owner, Amcore Bank Trust No 3582, are Kenneth Koehler, Brett Siegmeire, Sandra Korctos. Mr. Koehler can be reached at 320 Douglas Avenue, Crystal Lake, Illinois. Mr. Siegmeire can be reached at 6802 Rhode Island Trail, Crystal Lake, Illinois. Ms. Korctos can be reached at 506 W. Campland St, Arlington Hights, Illinois.

A hearing on this Petition will be held on the 7th day of January 2026 at 1:30 P.M. in the County Board conference room at the McHenry County Government Center Administration Building 667 Ware Rd, Woodstock, Illinois at which time and place any person desiring to be heard may be present. The McHenry County Government Center Mailing address is 2200 N. Seminary Avenue, Woodstock, Illinois 60098.

DATED THIS 10TH DAY OF DECEMBER 2025.

By: Linnea Kooistra, Chair
McHenry County Zoning Board of Appeals
2200 N. Seminary Avenue
Woodstock, IL 60098

APPLICANT: ARENA OPAL SOLAR, LLC

COMMERCIAL SOLAR ENERGY FACILITY CONDITIONAL USE PERMIT APPLICATION

MCHENRY COUNTY, ILLINOIS PIN: 13-24-300-018



NOVEMBER 2025 | VERSION 1

Prepared By: **Sean Hickey**, P.E. of Kimley Horn & Associates, Inc.

Arena Renewables, LLC Developer of Arena Opal Solar, LLC

Kimley»Horn

ARENA RENEWABLES

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1.0 INTRODUCTION

Arena Opal Solar, LLC, a subsidiary of Arena Renewables, LLC (collectively the Applicant), hereby submits this application for a Conditional Use Permit (CUP) (Application) to construct, operate, and maintain the Arena Opal Solar, LLC Solar Project, a proposed 2.0 MWac Commercial Solar Energy Facility (Project) on approximately 17.88 acres in McHenry County, Illinois. As shown on the Conditional Use Permit Plan Set in **Exhibit B**, the Project's site layout meets the required minimum road right-of-way setbacks and property line setbacks per of the McHenry County Code of Ordinances Section 16.56.030.PP.2.a.

The Project will be bounded to the east by Country Club Road, bounded to the west by Chicago and Northwestern Railroad, bounded to the north by agricultural land, and bounded to the south by R.P. Lumber, a building materials store. The Project has partnered with landowner Amcore Trust Co., who owns the subject parcel (13-24-300-018) which will host the Project's infrastructure. The project site in existing condition can be characterized entirely as farmland in poor condition and woodlands. Country Club Road is under the jurisdiction of McHenry Country and, if approved, the Project will enter into a Road Use Agreement with McHenry Country and any other necessary jurisdictions prior to construction. If approved, the Project will deliver power to the electrical grid through one point of interconnection to a 12.5 kV ComEd power pole east of Country Club Road.

This application is in conformance with the most recent McHenry County Code of Ordinances Section 16.56.030.PP – Commercial Solar Energy Facility. With this application, the Applicant is requesting consideration for approval by the McHenry County Board to obtain a Conditional Use Permit. Prior to the public hearing, a notice will be published in a local newspaper, mailed to all relevant parties, posted by the Applicant, and sent to all interested Official Bodies by the County per McHenry County Commercial Solar Ordinance Section 16.56.030.P.2. The notices will be circulated at least 15 days and no more than 30 days prior to the public hearing.

If the Application is approved and a Building Permit is secured, construction of the Project is anticipated to commence in 2026.

2.0 PROJECT DESCRIPTION

The Project, if approved, will be a ground-mounted Commercial Solar Energy Facility comprised of solar photovoltaic (PV) modules, a racking system, inverters, and underground electrical conduits connecting PV array blocks with inverters. There will be one (1) access driveway. The access road will continue through the site to a gated access near the center of the property. The ungated access road will provide access to the POI and authorized personnel to reach parcel 13-24-300-018.

Proposed site access to existing roads will be limited to the driveway shown on the Conditional Use Permit Plan Set, provided on **Exhibit B**. An eight foot (8') security fencing will enclose the perimeter of the Project, with road access secured through a locked metal gate. An internal access road will be used to provide access to Project equipment for future maintenance. These roads are typically gravel and will be verified upon final design with recommendations from a future Geotechnical Report.

One (1) landowner, Amcore Trust 3582 Now Chicago Title Land Trust Company ACW3582, has signed agreements to participate in the Project.

2.1 ECONOMIC BENEFITS

The Project provides a wide range of benefits, including the following:

1. Energy savings

   The Project will generate approximately 4,200,000 kWh of clean energy annually, which is enough to power approximately 600 residential homes or a few commercial users. As a community solar project, ComEd customers can subscribe directly to the Project to receive an approximately 10% discount on their monthly utility bills for the next 25 years with no signup or termination fees. Total energy cost savings across subscribers will be approximately $1,200,000 over 25 years.

2. Tax Revenue

   The Project will pay property taxes on the land and improvements during its useful life, as well as sales tax during construction.

   For property tax, the land and improvements will be assessed according to the Illinois Department of Revenue Commercial Solar Energy Systems Valuation Methodology and taxed at local rates. Total property tax revenue will be approximately $370,000 over 25 years.

   For sales tax, the project will be taxed during construction at state and local sales tax rates on the value of equipment procured. Total sales tax revenue will be approximately $150,000.

3. Environmental

   The Project will generate approximately 4,200,000 kWh of clean energy annually, which is equivalent to greenhouse gas emissions from approximately 9,000,000 miles driven by a gasoline vehicle, or from 4,000,000 pounds of coal burned. Additionally, this is equivalent to the carbon sequestered by 65,000 new tree plantings grown over 10 years, or 3,700 mature acres of US forests in one year.

   Source: EPA Greenhouse Gas Equivalencies Calculator

2.2 INTERCONNECTION FACILITIES

This solar project will tie into ComEd's existing 12.5 kV power line that run along the east side of Country Club Road, directly adjacent to the east property line. The interconnection point to the east of the parcel, east of Country Club Road. Approximately six (6) poles will be installed to connect the solar project to the grid. After the last pole, lines will run underground along the access road to the Project's transformer. This interconnection layout has been coordinated with and approved by ComEd.

2.3 PROJECT CONSTRUCTION

Construction of the Project, if approved, is intended to commence in 2026. Dust and noise from construction will be mitigated with industry standard best management practices. The anticipated work hours are Monday – Friday 9am – 5pm or otherwise dictated by the County.

All equipment uses and operations will be conducted to avoid impeding the flow of traffic on adjacent roadways. The Contractor shall maintain access to adjacent landowners for the duration of the project construction. The Contractor shall be fully responsible to provide signs, barricades, warning lights, guard rails, and employ flaggers as necessary when construction impacts either vehicular or pedestrian traffic. These devices shall remain in place until the traffic may proceed normally again. Equipment will operate in the road right-of-way only to add gravel and make minor improvements for the proposed site access driveway. It is estimated that approximately 12 deliveries via WB-67 Semi-Tractor Trailers along with approximately 10-44 total vehicles per day will be required during various stages of the construction phase, pending final engineering. The Project is also expected to employ dozens of jobs during the construction phase, pending final engineering. Project construction shall ensure all equipment is properly maintained and equipped with manufacturer's standard noise control devices.

Prior to the start of the construction, the Project will obtain a Building Permit as per the McHenry Code of Ordinances Section 16.56.030.PP.

2.4 HEALTH AND SAFETY

Prior to construction, the Project will coordinate with the appropriate fire safety personnel to ensure adequate plans and systems are in place in the unlikely event of an emergency. Appropriate signage containing necessary contact and safety information for the Commercial Solar Energy Facility will be displayed in accordance with local code and coordination with staff.

Upon request, a walk-through of the site with the local authorities and emergency agencies will be scheduled once construction is complete. Emergency personnel will also be given the key or code to access the facility. An analysis of the general health and safety effects of Commercial Solar Energy Facilities conducted by others has been included in **Exhibit N**.

Commercial Solar Energy Facilities do not raise concern for fire and explosive hazards. The solar panels and racking, which comprise most of the Project's equipment, are not flammable. Tempered glass offers protection from heat and the elements, and the panels are designed to absorb heat as solar energy. From a study by North Carolina State University:

> *…Concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-CUPport a significant fire. Flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer back sheets (framed panels only), plastic junction boxes on rear of panel, and insulation on wiring. The rest of the panel is composed of non-flammable components, notably including one or two layers of protective glass that make up over three quarters of the panel's weight.*

There are no toxic substances in the panels. The project will incorporate Tier 1 silicon-based PV panels, which have been analyzed as follows by North Carolina State University:

> *Well over 80% (by weight) of the content of a PV panel is tempered glass front and the aluminum frame, both of which are common building materials. Most of the remaining portion are common plastics, including polyethylene terephthalate in the back sheet, EVA encapsulation of the PV cells, polyphenol ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components make up less than 5% of the weight of most panels. The PV cell itself is nearly 100% silicon, and silicon is the second most common element in the Earth's crust. The silicon for PV cells is obtained by high-temperature processing of quartz sand (SiO2) that removes its oxygen molecules. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.*

Stray voltage issues and remedies are detailed in the USDA's Agriculture Handbook Number 696. While the vast majority of stray voltage concerns are caused by the existing farm's electrical system and wiring, some may be caused by off-site utility issues, including the following, per the Iowa State Dairy Association's *Stray Voltage Guide:*

- Loose neutral wire connection
- Damaged neutral wires
- Poor grounding
- Undersized neutral wires
- Load imbalances on three phase lines
- Improperly functioning utility equipment
- Ground faults at nearby locations

While malfunction of utility equipment may cause stray voltage issues for local livestock, these threats are pre-existing as the new PV generation facility will tie into existing utility-owned distribution lines. The addition of the PV facility has no bearing on these concerns. The utility is responsible for maintenance of these lines and any existing stray voltage concerns should be addressed directly with the utility provider. Note that the utility will install power quality meters and recloser devices at the new point of interconnection for the PV generation, which will assist in the identification of any issues on the local circuit, if they are present.

Undersized distribution neutral wires carrying electrical current may cause excessive neutral-to-earth voltage (NEV) which may be detectable on local premises. Unbalanced customer electrical load between the three voltage phases on a distribution circuit cause these currents to appear in the neutral wire, increasing NEV. It is the utility's responsibility to maximize the balance of customer loads across the three circuits and also ensure a properly sized neutral wire. However, electrical generators, including PV and other inverter-based generation, operate as balanced three-phase sources, meaning that all current is directed through the three phase conductors, not the neutral conductor. These PV sites in particular have

no connection to the distribution neutral, as they are designed with a “delta” connection to only the three phase lines in the circuit. Thus, the addition of a PV generation facility on the circuit has no impact on NEV induced from existing circuit imbalances or an undersized neutral conductor.

PV generation is not designed to direct electric current to the earth during normal operations. Excess power produced by the PV array is managed by inverter controllers but is not directed into the ground. However, electrical line-to-ground faults may occasionally occur in the local electrical circuit including downed power lines or transformer internal faults. These fault conditions may cause temporary rises in NEV due to current flowing through the neutral and/or to ground. The electrical protection system and site grounding system at the PV generating facility is designed to isolate ground faults in the alternating-current, high-voltage and low-voltage power systems within seconds of initiation to prevent further equipment damage. The protection system has multiple layers including UL1741/IEEE1547 compliant inverters, fuses, circuit breakers, digital relays, and reclosers, which will isolate faults and/or disconnect the site from the grid. The utility will also provide a second recloser to trip the site offline in the event of abnormal behavior.

Ground faults at the direct-current PV modules themselves have no effect on other local properties as they are electrically isolated from the distribution circuit, in addition to the fact that the modules produce relatively low-voltage and that they are unable to generate short-circuit currents of any significance. The site grounding plan developed by qualified engineers and installed by qualified electricians prevents significant ground voltage rise during a ground fault.

Stray voltage is a concern that may affect livestock behavior and dairy production. While most stray voltage concerns are due to on-farm electrical and wiring issues, issues on the utility’s distribution circuit causing high neutral-to-earth voltage (NEV) may contribute to stray voltage on local farms. However, the addition of local PV generation on the distribution circuit has no impact on the neutral-to-earth stray voltage seen by these farms.

2.5 OPERATIONS AND MAINTENANCE

Once constructed, the Commercial Solar Energy Facility will operate throughout the year passively generating renewable energy. The site and equipment will be designed, approved, maintained, and inspected to ensure safety and security. Maintenance activities during operation are expected to be minimal with occasional service for inverters and transformers. The solar panels are monitored remotely. Traffic is not anticipated to increase during the operations of the Project.

Maintenance operations are anticipated to be carried out rarely and with minimal traffic as only one vehicle will likely be needed to carry out maintenance tasks several times a year. To prevent shading of the panels for solar energy production and maintain the aesthetics of the Project, an on-going vegetation maintenance program will be implemented for all vegetated areas within the fenced boundary and buffer areas. After construction is complete and stabilized vegetation has been established within the fenced Project Area, the Project will conduct vegetative management at an appropriate frequency based on weather and moisture conditions. See **Exhibit E** for the Vegetative Management Plan. This management schedule would continue each year until implementation of the Decommissioning Plan, included in **Exhibit C**.

3.0 FEDERAL AND STATE APPROVALS, PERMITS, AND AGREEMENTS

3.1 FEDERAL AVIATION ADMINISTRATION (FAA)

The FAA's policy for Commercial Solar Energy Facility Projects on Federally Obligated Airports only requires glint and glare screening for solar projects located on federally-obligated towered airports. Since this project is not within 500 feet of an airport, it does not require a glint and glare screening. Based on the result of the FAA Notice Criteria Tool included in **Exhibit L**, the coordinates of this project and structure heights are not required to file notice with the FAA.

3.2 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) portal was consulted to determine if any FEMA 100-year floodplains are on the site. The Project Site is in Zone X – no risk, per FIRM 17111C0215J valid on date 11/16/2006. The FEMA Firmette Map is included in **Exhibit K.** McHenry County Historic Flood Zone data was also downloaded and no historical flood zone data was found within the project area.

3.3 U.S. FISH & WILDLIFE SERVICE (USFWS)

The Project will be designed such that federally listed species will not be significantly impacted. Solar projects typically impose only minimal impacts on wildlife species. The Project was evaluated for potential impact to federally protected species using the USFWS Information for Planning and Consultation (IPaC) tool. The assessment performed by Kimley-Horn identified six listed species that may be present within the project area: *Myotis septentrionalis* (Northern Long-eared Bat), *Grus americana* (Whooping Crane), *Danaus plexippus* (Monarch Butterfly), *Bombus affinis* (Rusty Patched Bumble Bee), *Argynnis idalia occidentalis* (Western Regal Fritillary), and *Platanthera leucophaea* (Eastern Prairie Fringed Orchid). Tree clearing is anticipated for the project and will take place outside of the active bat season (between October 1 and March 31) to limit potential impacts to the species. Please see **Exhibit G** for the USFWS IPaC Consultation for more information on mitigation efforts and details of each species. Prior to construction, consultation with the USFWS will occur to confirm a “No Effect” determination for these species.

3.4 ILLINOIS DEPARTMENT OF NATURAL RESOURCES (IDNR) STATE ECOLOGICAL REVIEW

The Applicant consulted with IDNR for potential impacts to state threatened or endangered species, in conformance with McHenry County Code of Ordinance Section 16.56.030.PP.1.a. This consultation is conducted pursuant to IDNR’s EcoCAT process. EcoCAT refers to IDNR’s Ecological Compliance Assessment Tool (EcoCAT). EcoCAT contains the Section, Township, and Range data of the Project and generates a Project map. Species of concern within the identified Project Area (and/or which may be affected by migrating through or, by reason of the Project, avoiding the identified area) are examined as part of the EcoCAT review process.

EcoCAT requires that state agencies and units of local governments consider the potential adverse effects of proposed actions on Illinois endangered and threatened species and sites listed on the Illinois Natural Areas Inventory.

The Applicant submitted an EcoCAT review request to IDNR in September 2025. The Applicant consulted with IDNR through the department's online EcoCAT program for potential impacts to the State threatened or endangered species. The Applicant received a formal response letter from IDNR's EcoCAT review provided in **Exhibit H**. The review indicated hat the Parker FEN Illinois Natural Areas Inventory (INIA) site, Julia M. & Royce L. Parker Fen Nature Preserve, and Gladstone Fen Class 3 Groundwater site are in proximity to the project area. The Department determined that adverse impacts to the INAI site and Nature Preserve are unlikely. The Project falls within the Gladstone Fen Class 3 Groundwater recharge area. The Department determined that if their recommendations for groundwater protection and soil removal are implemented, adverse impacts are not anticipated. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely. In other words, pursuant to 17 III. Adm. Code Part 1075, the IDNR consultation is terminated.

3.5 ILLINOIS HISTORIC PRESERVATION REVIEW (SHPO)

Under the Illinois State Agency Historic Resources Protection Act, the State Historic Preservation Office (SHPO) division at IDNR is responsible for studying possible Project effects on archaeological and/or architectural (cultural) resources. Agencies requiring SHPO evaluation concurrent with their review include the Illinois Environmental Protection Agency, IDNR, and USACE. The SHPO review package sent to SHPO in October 2025 is included in **Exhibit I.** The Project has received a clearance letter from SHPO dated 11/04/2025 stating that "the project meets the Secretary of the Interior's Standards for Rehabilitation and will not adversely affect any historic properties. The project as proposed may proceed."

3.6 ILLINOIS DEPARTMENT OF AGRICULTURE (IDOA)

The Illinois Renewable Energy Facilities Agricultural Impact Mitigation Act (505 ILCS 147/1 et seq.) requires the owner of a Commercial Solar Energy Facility to have an Agricultural Impact Mitigation Agreement (AIMA) in place within 45 days prior to the commencement of Project construction. The intent of the AIMA is to preserve and/or restore the integrity of affected agricultural land during construction and decommissioning activities. Illinois State Legislature passed Public Act 102-1123 requiring that facility owners enter into an AIMA prior to the date of the required public hearing**. The Project submitted its AIMA on October 17th, 2025, and is expected to receive the executed agreement by November 17th, 2025. The confirmation of submission is included in Exhibit D.**

4.0 MCHENRY CODE OF ORDINANCES SECTION 16.56.030.PP AND OTHER LOCAL APPROVALS

The Project will comply with the McHenry Code of Ordinances Section 16.56.030.PP as described below and as shown on the Conditional Use Permit Plan Set, included as **Exhibit B**. The Project Area is located on farmland in poor condition and woodlands. The Project will be a ground-mounted Commercial Solar Energy Facility comprised of solar photovoltaic (PV) modules, racking system, inverters and medium voltage transformers, and underground electrical conduits connecting PV array blocks with inverters. The

access road with a gated entrance shall be located for site maintenance, maintenance of inverters, as well as construction access.

Per the McHenry County Code of Ordinances Section 16.56.030.PP, a Building Permit will be obtained prior to construction.

4.1 HEIGHT REQUIREMENTS

According to the McHenry County Code of Ordinances Section 16.56.030.PP.2.b, Commercial Solar Energy Facilities may not exceed 20 feet in height when oriented at maximum tilt. The Project will ensure no component of the Commercial Solar Energy Facility exceeds the maximum height requirement.

4.2 SETBACKS

Per the McHenry Code of Ordinances Section 16.56.030.PP.2.a, Commercial Solar Energy Facilities are subject to the following setbacks:

- Solar panels, structures, and electrical equipment, excluding fences and power lines for interconnection, shall be erected no less than fifty (50) feet from any lot line and no less than one hundred fifty (150) feet from any residence, other than a residence on the same ownership parcel

These requirements may be waived subject to the written consent of the owner of each affected Nonparticipating property. The Project will adhere to the requirements set forth above. The Project demonstrates its compliance in the Conditional Use Permit Plan Set included as **Exhibit B**.

4.3 AVIATION PROTECTION AND GLARE

Per the McHenry Code of Ordinances Section 16.56.030.PP.2.d, Commercial Solar Energy Facilities shall have a surface that minimizes glare. The Project is not within five hundred (500) feet of an airport and therefore does not have to complete the Solar Glare Hazard Analysis Tool (SGHAT). The Project will be designed, constructed, and sited to minimize glare or reflections on adjacent properties and roadways and to not interfere with traffic, including air and train traffic, or otherwise create a safety hazard. The Project is designed to meet the required setbacks and the proposed solar panels include an anti-reflective coating. Utilizing these measures, the Project will not adversely affect nearby properties or traffic.

4.4 SCREENING

Per the McHenry Code of Ordinances Section 16.56.030.PP.2.i, the facility owner shall submit a Vegetation Management Plan to ensure the establishment and continued maintenance of the native prairie species, all installed landscape screening, and all existing vegetation that provides landscape screening. The Vegetation Management Plan, included in **Exhibit E**, will be in accordance with 525 ILC 55: Pollinator-Friendly Solar Site Act.

4.5 SECURITY BARRIER

Per the McHenry Code of Ordinances Section 16.56.030.PP.2.g, Commercial Solar Energy Facilities must be enclosed by perimeter security fencing or other county approved barrier in compliance with the

National Electric Code. The Project will be secured by an 8' tall, Woven Wire Fence including a 6" wildlife gap. A fence detail has been included with the Conditional Use Permit Plan Set found in **Exhibit B**. The Project fence shall comply with the requirements of McHenry Code of Ordinances Section 16.56.030.PP.2.g as well as the National Electric Code. All locked gates with access to a public road must be locked with a lock that utilizes a numeric code or be equipped with a key box as specified by the McHenry County Emergency Management Department. If equipped with a lock utilizing a numeric code, that code must be on file with the McHenry County 9-1-1 Dispatch Center and updated annually or a Knox Box can be utilized.

4.6 NOISE

The Project has been designed to locate all noise-emitting equipment (inverters and transformers) in the center of the project, furthest away from the surrounding properties. Following the issuance of the Conditional Use Permit, noise levels during construction such as possible pile driving and its duration will be determined during final engineering.

4.7 LIGHTING

Per the McHenry Code of Ordinances Section 16.56.030.PP.2.c, if lighting is provided at the site, lighting shall be shielded and downcast such that the light does not spill onto adjacent residential parcels. Due to the proposed security fence and the nature of the operations of a Commercial Solar Energy Facility, additional lighting is not typically needed. The Project will have no permanent lighting systems on site.

4.8 DECOMMISSIONING PLAN

A Decommissioning Plan is included in **Exhibit C** to ensure the Commercial Solar Energy Facility elements will be properly removed after the Commercial Solar Energy Facility is inoperable for twelve (12) months. The Decommissioning Plan was developed in accordance with both the McHenry Code of Ordinances Section 16.56.030.PP.5 and the AIMA. The Decommissioning Plan outlines a strategy for the removal of Project components such as panels, roads, fences, and racking, including any applicable recyclable items once the Commercial Solar Energy Facility is no longer in use. The Decommissioning Plan also includes the removal of landscape and restoration of soil and vegetation. The combination of the native grasses and pollinator friendly seed mix established during the Project life and temporary re-use of the soils from agricultural planting will promote soil restoration and more productive farmland after decommissioning.

Prior to Building Permit issuance and commercial operation, the Applicant shall provide McHenry County with a decommissioning bond to ensure proper decommissioning at the end of the Project life.

4.9 STANDARDS AND CODES

The Project will comply with the State of Illinois Plumbing Code, the State of Illinois Electric Code, the State of Illinois Uniform Building Code, the National Electric Code, and all international standards. The Project will comply with the McHenry Code of Ordinances Section 16.56.030.PP.3 regarding safety compliance. The Applicant understands these requirements and all final engineering documents shall be designed in accordance with these standards.

4.10 AVOIDANCE AND MITIGATION OF DAMAGES TO PUBLIC INFRASTRUCTURE

Per the McHenry Code of Ordinances Section 16.56.030.PP.2.k, the Project will enter into a Road Use Agreement (RUA) with the local government. The RUA shall require the facility owner to be responsible for the reasonable cost of repairs associated with damage created by the Construction process of the facility owner. A Pre-Construction Road Survey will establish the conditions of the roads prior to the commencement of construction. If roads are deemed unfit for construction traffic by the Pre-Construction Road survey, the Owner shall be responsible for negotiating improving the roads with the relevant Roadway Authority Having Jurisdictions (AHJs). Upon completion of the project construction, the owner shall be only responsible for damage created by the owner and not by general construction traffic. Roadways improved in preparation for and during the construction of the Commercial Solar Energy Facility will be repaired and restored to the improved condition at the reasonable cost of the Owner if the roadways have degraded or were damaged as a result of construction-related activities. The Project will work towards a Road Use Agreement with the necessary AHJ's following issuance of the Conditional Use Permit.

5.0 CONCLUSION

The Arena Opal Solar, LLC project adheres to all requirements of McHenry County and the State of Illinois and should qualify for a Conditional Use Permit to construct a Commercial Solar Energy Facility on Parcel 13-24-300-018 West of Country Club Road in McHenry County, Illinois. Arena Renewables requests that the Permit be transferable should the Project LLC be sold.

EXHIBIT A: CONTACT INFORMATION

CONTACT INFORMATION

Applicant:

Carson Weinand

Arena Renewables, LLC

15051 N Kierland Blvd, Floor 3, Scottsdale, AZ 85254

(239) 784-8080

cweinand@arenarenew.com

Property Owner:

Chicago Title Land Trust Company ACW3582

Country Club Rd, Woodstock, IL 60098

Kenneth Koehler

Kenne92711@aol.com

(815) 378-6634

Contact Person:

Sean Hickey, P.E.

Kimley-Horn & Associates, Inc.

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(708) 621-5007

Sean.Hickey@kimley-horn.com

EXHIBIT B: CONDITIONAL USE PERMIT (CUP) PLAN SET

CONDITIONAL USE PERMIT PLAN SET

FOR

ARENA OPAL SOLAR, LLC

S OF COUNTRY CLUB ROAD
WOODSTOCK, IL 60098

PROJECT TEAM

APPLICANT/OWNER
ARENA OPAL SOLAR, LLC
15051 N KIERLAND BLVD FLOOR 3,
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EMAIL: CWEINAND@ARENARENEW.COM

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WOODSTOCK, IL 60098
PHONE: (815) 334-4568
EMAIL: APWALLEN@MCHENRYCOUNTYIL.GOV

APPLICABLE CODES

- MCHENRY COUNTY ILLINOIS CODE OF ORDINANCES SECTION 16.56.030.PP

FLOOD ZONE NOTE:

PER FEMA FIRM MAP NUMBER 17111C0215J EFFECTIVE DATE 11/16/2006, THERE ARE NO FLOODPLAINS PRESENT WITHIN THE PROJECT AREA. ZONE X: AREA OF MINIMAL FLOOD HAZARD.

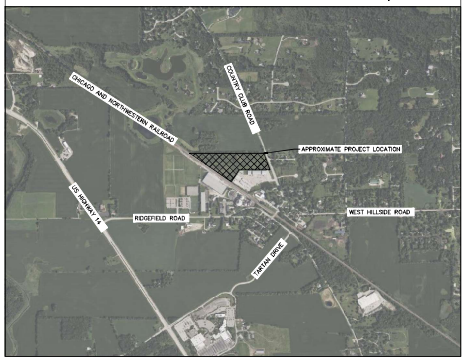
SITE INFORMATION

PARCEL INFORMATION
PIN: 13-24-300-018
OWNER: ARENA OPAL SOLAR, LLC
TOTAL PARCEL AREA: 17.88 ± AC.
PROJECT DESCRIPTION
2.0 MWAC COMMERCIAL SOLAR ENERGY FACILITY

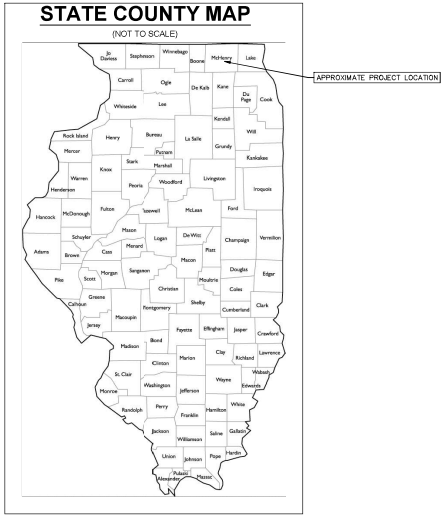
SETBACK TABLE*	
OCCUPIED BUILDINGS AND DWELLINGS ON NONPARTICIPATING PROPERTIES	150.0' FROM THE NEAREST POINT ON THE OUTSIDE WALL OF THE STRUCTURE
BOUNDARY LINES OF PARTICIPATING PROPERTIES	NONE
BOUNDARY LINES OF NONPARTICIPATING PROPERTY	50.0' TO THE NEAREST POINT ON THE PROPERTY LINE OF THE NONPARTICIPATING PROPERTY

- *SETBACKS PER MCHENRY COUNTY ILLINOIS CODE OF ORDINANCES SECTION 16.56.030.PP.2.a.

LOCATION MAP
(NOT TO SCALE)



STATE COUNTY MAP
(NOT TO SCALE)



Sheet List Table	
Sheet Number	Sheet Title
C-100	COVER SHEET
C-200	EXISTING CONDITIONS
C-300	PROPOSED CONDITIONS
C-400	CONSTRUCTION DETAILS
C-401	CONSTRUCTION DETAILS

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ARENA OPAL SOLAR, LLC
MCHENRY COUNTY, IL

COVER SHEET

SHEET NUMBER
C-100

KHA PROJECT 268685025
DATE 11/6/25
SCALE AS SHOWN
DESIGNED BY JEM
DRAWN BY JEM
CHECKED BY SMH

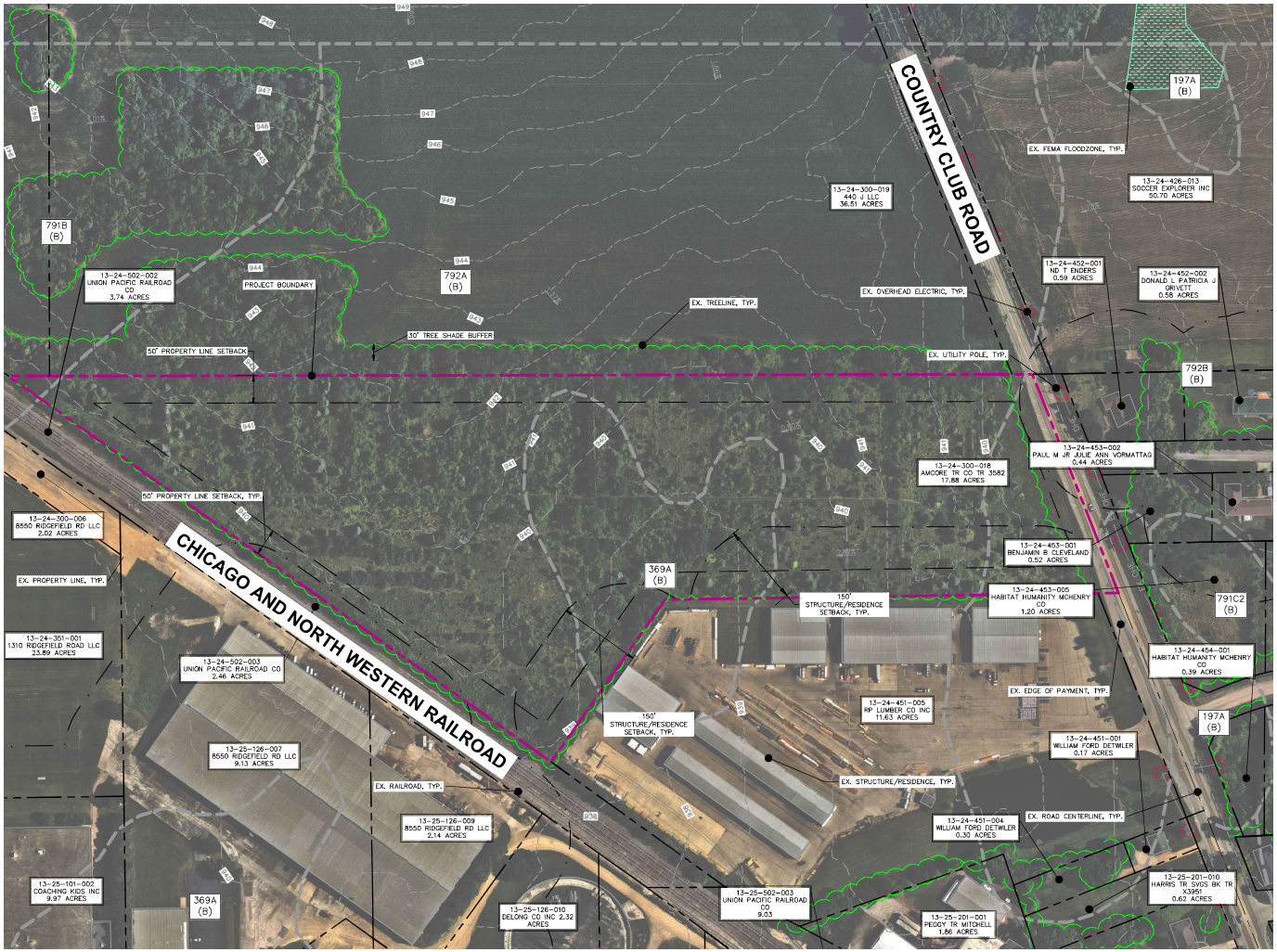
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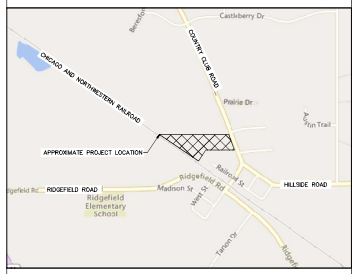
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GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

VICINITY MAP



SCALE 1"=1000'

LEGEND

ROAD LABEL	COUNTRY CLUB ROAD
PROJECT BOUNDARY	
PROPERTY LINE	
PROPERTY LINE/RIGHT-OF-WAY SETBACK	
*EX. OVERHEAD ELECTRIC	EX OHE
*EX. UTILITY POLE	
EX. FLOW (DIRECTION AND SLOPE)	XX%
EX. CONTOURS	XXX
EX. SOILS	
EX. ROAD CENTERLINE	
*EX. EDGE OF PAVEMENT	
*EX. TREELINE	
*EX. STRUCTURE/RESIDENCE	
EX. NON-PARTICIPATING RESIDENCE SETBACK	
*EX. RAILROAD	
EX. HISTORIC MCHENRY COUNTY FEMA BOUNDARY	

*TRACED PER MCHENRY COUNTY GIS ONLINE PORTAL

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
197A	TROXEL SILT LOAM, 0 TO 2PERCENT SLOPES	B
369A	WAUPECAN SILT LOAM, 0 TO 2 PERCENT SLOPES	B
791B	RUSH SILT LOAM, 2 TO 4 PERCENT SLOPES	B
791C2	RUSH SILT LOAM, 4 TO 6 PERCENT SLOPES, ERODED	B
792A	BOWES SILT LOAM, 0 TO 2 PERCENT SLOPES	B
792B	BOWES SILT LOAM, 2 TO 4 PERCENT SLOPES	B

NOTES

1. SETBACKS PER MCHENRY COUNTY CODE OF ORDINANCES SECTION 16.56.030.PP.2.a:
   1.1. SOLAR PANELS, STRUCTURES, AND ELECTRICAL EQUIPMENT, EXCLUDING FENCES AND POWER LINES FOR INTERCONNECTION, SHALL BE ERECTED NO LESS THAN FIFTY (50) FEET FROM ANY LOT LINE AND NO LESS THAN ONE HUNDRED FIFTY (150) FEET FROM ANY RESIDENCE, OTHER THAN A RESIDENCE ON THE SAME OWNERSHIP PARCEL.
2. KIMLEY-HORN ASSUMED CONSTRUCTABILITY SETBACKS:
   2.1. TREE SHADE SETBACK: 30 FT
   2.2. ADDITIONAL 30 FT CONSTRUCTABILITY SETBACK FOR ACCESS ROADS AND FENCES
3. ALL EXISTING PARCEL INFORMATION WAS OBTAINED FROM A COMPASS SURVEYING LTD SURVEY OBTAINED 11/05/2025.
4. PER THE UNIVERSITY OF ILLINOIS WATER GIS MAP (OBTAINED ON 09/15/2025), NO WELL EXISTS WITHIN THE SUBJECT PARCEL (PIN NUMBER: 13-24-300-018).
5. PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), FEMA FLOODPLAINS AND REGULATORY FLOODWAYS DO NOT EXIST WITHIN THE SUBJECT PARCEL. THE SITE RESIDES ON FEMA PANEL (17111C0215J).
6. PER A KIMLEY-HORN WETLAND DELINEATION, NO WETLANDS ARE PRESENT ON THE PROJECT PARCEL.
7. BEACON PORTAL WAS CHECKED ON 10/06/2025, AND NO HISTORICAL FLOOD ZONES WERE FOUND WITHIN THE PROJECT AREA.

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EXISTING CONDITIONS

ARENA OPAL SOLAR, LLC
MCHENRY COUNTY, IL

SHEET NUMBER
C-200

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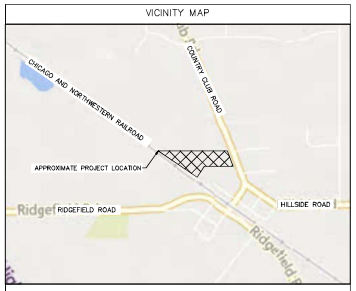
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GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

VICINITY MAP



SCALE 1"=1000'

LEGEND

ROAD LABEL	COUNTRY CLUB ROAD
PROJECT BOUNDARY	
PROPERTY LINE	
PROPERTY LINE/RIGHT-OF-WAY SETBACK	
*EX. OVERHEAD ELECTRIC	EX OHE
*EX. UTILITY POLE	
EX. FLOW (DIRECTION AND SLOPE)	XXX
EX. CONTOURS	XXX
EX. SOILS	
EX. ROAD CENTERLINE	
*EX. EDGE OF PAVEMENT	
*EX. TREELINE	
*EX. STRUCTURE/RESIDENCE	
EX. NON-PARTICIPATING RESIDENCE SETBACK	
*EX. RAILROAD	
EX. HISTORIC MCHENRY COUNTY FEMA BOUNDARY	
PR. SECURITY FENCE	X X
PR. SOLAR ARRAY	
PR. PANEL EXTENTS	
PR. EQUIPMENT PAD	
PR. STAGING AREA	
PR. UNDERGROUND ELECTRIC	UGE
PR. OVERHEAD ELECTRIC	OH
PR. UTILITY POLE	
PR. GRAVEL ACCESS ROAD	

*TRACED PER MCHENRY COUNTY GIS ONLINE PORTAL

SITE DATA TABLE

PIN	13-24-300-018
PROPERTY OWNER	AMCORE TRUST 3582 NOW CHICAGO TITLE LAND TRUST COMPANY ACW3582
SITE ADDRESS	COUNTRY CLUB RD, WOODSTOCK, IL 60098
ZONING JURISDICTION	MCHENRY COUNTY
CURRENT LAND USE	FARMLAND
PROPOSED USE	COMMERCIAL SOLAR ENERGY FACILITY
TOTAL PARCEL AREA	17.88 ± AC
PRELIMINARY DISTURBED AREA	10.92 ± AC (AREA WITHIN FENCE)
PRELIMINARY SOLAR AREA	7.96 ± AC
RIGHT-OF-WAY SETBACK	50'
PROPERTY LINE SETBACK	50'
RESIDENTIAL SETBACK	150'
DC/AC RATIO	1.23
TOTAL POWER OUTPUT (DC)	2.46 MW
TOTAL MODULES	4,108
TOTAL POWER OUTPUT (AC)	2.00 MW
GROUNDCOVER RATIO (GCR)	35.0%

*SITE PLAN IS BEING SUBMITTED FOR CONDITIONAL USE PERMIT TO CONSTRUCT/OPERATE A COMMERCIAL SOLAR ENERGY FACILITY

NOTES

1. SETBACKS PER MCHENRY COUNTY CODE OF ORDINANCES SECTION 16.56.030.PP.2.a:
   1.1. SOLAR PANELS, STRUCTURES, AND ELECTRICAL EQUIPMENT, EXCLUDING FENCES AND POWER LINES FOR INTERCONNECTION, SHALL BE ERECTED NO LESS THAN FIFTY (50) FEET FROM ANY LOT LINE AND NO LESS THAN ONE HUNDRED FIFTY (150) FEET FROM ANY RESIDENCE, OTHER THAN A RESIDENCE ON THE SAME OWNERSHIP PARCEL.
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ARENA RENEWABLES

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DRAWN BY	JEM
CHECKED BY	SMH

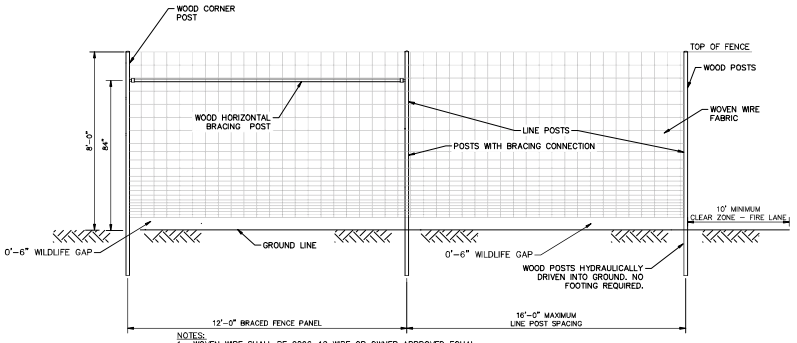
PROPOSED CONDITIONS

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MCHENRY COUNTY, IL

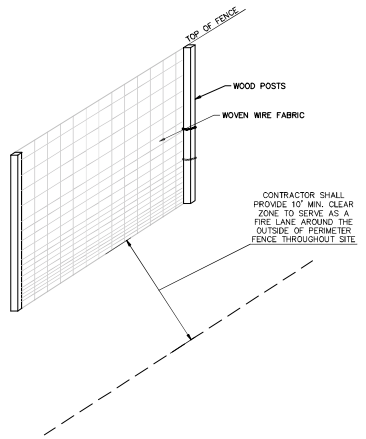
SHEET NUMBER
C-300

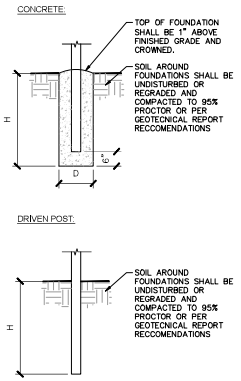
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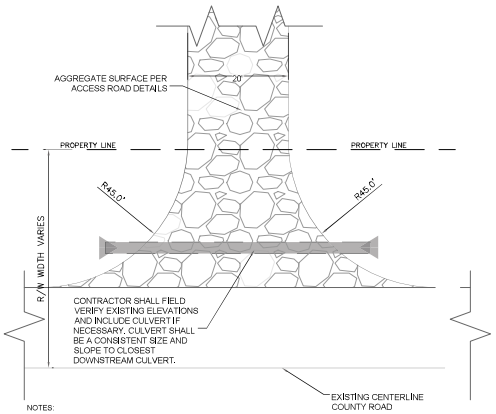
NOTES:
1. WOVEN WIRE SHALL BE 2096-12 WIRE OR OWNER APPROVED EQUAL.
2. WIRE COATING SHALL BE CLASS 3 GALVANIZED, ZINC ALUMINUM BEZINAL COATING OR PAINTED BLACK BEZINAL COATING AS SPECIFIED BY OWNER.
3. NO BARBED WIRE SHALL BE INSTALLED.
4. FENCES SHALL BE LOCATED A MINIMUM OF 20' FROM PANELS.
5. MAXIMUM MESH SQUARE SPACING SHALL BE 7".
6. FENCE DETAILS SHOWN FOR REFERENCE ONLY. EMBEDMENT DEPTH TO BE DETERMINED BY FENCING ONTRACTOR/MANUFACTURER BASED ON THE GEOTECHNICAL REPORT.





1 / C-400 — 8' GAME FENCE WITH WOOD POSTS DETAIL

SCALE: NTS

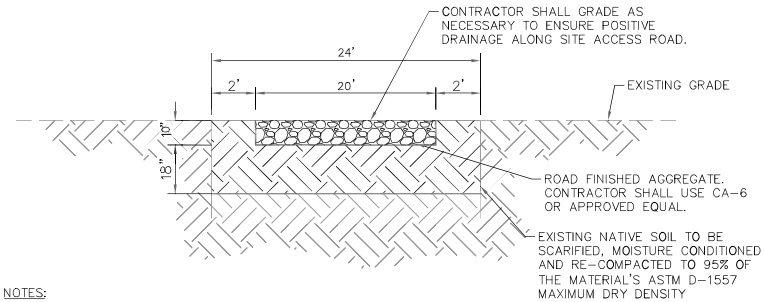


NOTES:
1. SEED DISTURBED AREA WITH FESCUE BLEND OR APPROVED EQUIVALENT.
2. CULVERT MATERIAL MUST BE CORRUGATED METAL PIPE (C.M.P) OR REINFORCED CONCRETE PIPE (R.C.P), ANY MATERIALS USED MUST BE ON APPROVED IDOT MATERIALS LIST.
3. CULVERT LENGTH MUST BE 30 FEET MINIMUM.
4. CONTRACTOR SHALL GRADE AS NECESSARY TO ENSURE MAXIMUM SLOPE OF 8% ALONG ENTRANCE AND ENSURE POSITIVE DRAINAGE.

2 / C-400 — TYPICAL ROAD ENTRANCE DETAIL

FOR REFERENCE ONLY = SUBJECT TO CHANGE PENDING FINAL ENGINEERING

SCALE: NTS



NOTES:
1. REMOVE ALL GRASSES AND ORGANICS WITHIN ACCESS ROAD AREA.
2. SCARIFY, MOISTURE CONDITION, AND RE-COMPACT EXISTING NATIVE SOILS (THICKNESS PER DETAIL) TO 95% OF THE MATERIAL'S ASTM D-1557 MAXIMUM DRY DENSITY.
3. COMPACTION SHALL BE VERIFIED BY TESTING BY THE GEOTECHNICAL CONSULTANT.

3 / C-400 — TYPICAL ACCESS ROAD DETAIL

FOR REFERENCE ONLY = SUBJECT TO CHANGE PENDING FINAL ENGINEERING

SCALE: NTS

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MCHENRY COUNTY, IL

CONSTRUCTION DETAILS

SHEET NUMBER C-400

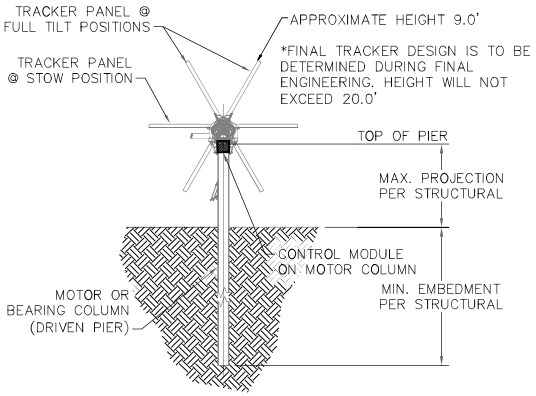
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DATE 11/6/25
SCALE AS SHOWN
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CHECKED BY SMH

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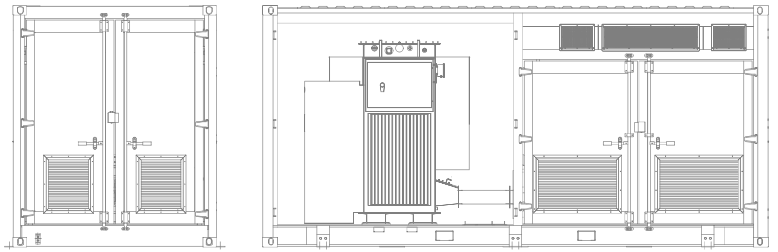
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1 C-401 EXAMPLE SINGLE-AXIS TRACKER SIDE ELEVATION

FOR REFERENCE ONLY = SUBJECT TO CHANGE PENDING FINAL ENGINEERING

SCALE: NTS



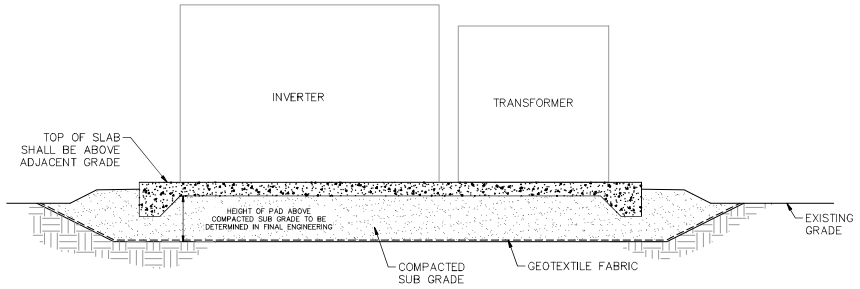
INVERTER SKID SIDE ELEVATION

INVERTER SKID FRONT ELEVATION

2 C-401 EXAMPLE INVERTER SKID FRONT & SIDE ELEVATION

FOR REFERENCE ONLY = SUBJECT TO CHANGE PENDING FINAL ENGINEERING

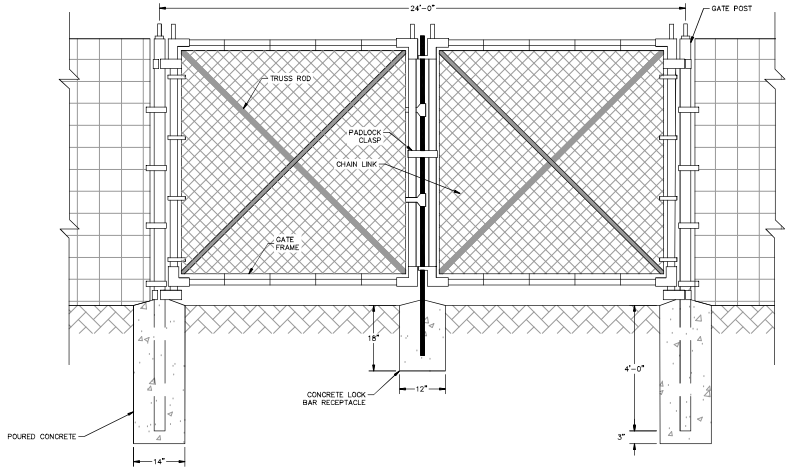
SCALE: NTS



3 C-401 EXAMPLE EQUIPMENT PAD ELEVATION DETAIL

FOR REFERENCE ONLY = SUBJECT TO CHANGE PENDING FINAL ENGINEERING

SCALE: NTS



4 C-401 DOUBLE SWING GATE DETAIL

FOR REFERENCE ONLY = SUBJECT TO CHANGE PENDING FINAL ENGINEERING

SCALE: NTS

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CHECKED BY	SMH

CONSTRUCTION DETAILS

ARENA OPAL SOLAR, LLC

MCHENRY COUNTY, IL

SHEET NUMBER

C-401

Drawing name: K:\DIS_LEC\268685025_Arena Renewables_OpalLLC\2 Design\CAD\EnhVLP Plan Set\C-400 - CONSTRUCTION DETAILS.dwg C-401 Nov 06, 2025 10:00am by MichaelBourke
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September 24, 2025

Dominic Evenson
15051 N Kierland Blvd, Floor 3
Scottsdale, AZ 85251

RE: Arena Opal Solar, LLC
Consultation Program
EcoCAT Review #2605696
McHenry County

Dear Mr. Evenson:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The proposed action consists of the construction of a solar farm with associated access roads and utilities in McHenry County, IL.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Illinois Natural Areas Inventory (INAI)
Parker Fen INAI

Illinois Nature Preserves Commission Lands
Julia M. & Royce L. Parker Fen Nature Preserve

Class 3 Groundwater
Gladstone Fen Class 3 Groundwater

Due to the project scope and proximity to protected resources, the Department offers the following comments and recommends the following actions be taken to avoid adversely impacting listed species in the vicinity of the project:

Parker Fen INAI and Julia M. & Royce L. Parker Fen Nature Preserve
The Department has determined adverse impacts to these sites are unlikely.

Gladstone Fen Class 3 Groundwater

This project falls completely within the Gladstone Fen Class 3 Groundwater recharge area, which protects the integrity of the Gladstone Fen Nature Preserve. The modification of groundwater quality and quantity which may affect conditions within a Nature Preserve is prohibited. The Department recommends the following to avoid and minimize impact to Gladstone Fen Class 3 Groundwater:

- BMPs be implemented to ensure that the quality and quantity of groundwater not be adversely affected to avoid potential liability on the part of the applicant.
- All excavated soil should be placed back in the order it was removed.

Given the above recommendations are adopted, the Department has determined that impacts to these protected resources are unlikely. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely.

In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.

Consultation on the part of the Department is closed, unless the applicant desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action 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 project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

This letter does not serve as permission to take any listed or endangered species. As a reminder, no take of an endangered species is permitted without an Incidental Take Authorization or the required permits. Anyone who takes a listed or endangered species without an Incidental Take Authorization or required permit may be subject to criminal and/or civil penalties pursuant to the *Illinois Endangered Species Act*, the *Fish and Aquatic Life Act*, the *Wildlife Code* and other applicable authority.

The Department also offers the following conservation measures be considered to help protect native wildlife and enhance natural areas in the project area:

- The Department strongly recommends that the project proponent establish pollinator-friendly habitat as groundcover wherever feasible. Solar Site Pollinator Establishment Guidelines can be found here: https://dnr.illinois.gov/conservation/pollinatorscorecard.html

- The site should be de-compacted before planting.
- Long term management of the site should be planned for prior to development to ensure successful native pollinator habitat establishment and prevent the spread of invasive species throughout the lifetime of this project. An experienced ecological management consultant should be hired to assist with long-term management.
- Required fencing, excluding areas near or adjacent to public access areas, should have a 6-inch gap along the bottom to prevent the restriction of wildlife movement. Woven wire or a suitable habitat wildlife friendly fence should be used. Barbed wire should be avoided.
- If tree clearing is necessary, the Department recommends removing trees between November 1st and March 31st to avoid impacts to the state-listed bats and birds.
- Any required night lighting should follow International Dark-Sky Association's (IDA) Five Principles for Responsible Outdoor Lighting to minimize the effect of light pollution on wildlife: Five Principles for Responsible Outdoor Lighting | DarkSky International

Please contact Isabella Newingham (Isabella.newingham@illinois.gov) with any questions about this review.
Sincerely,

Bradley Hayes
Manager, Impact Assessment Section
Division of Real Estate Services and Consultation
Office of Realty & Capital Planning
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
Bradley.Hayes@Illinois.gov
Phone: (217) 782-0031

EXHIBIT N: HEALTH AND SAFETY STUDIES

WHITE PAPER

Health and Safety Impacts of Solar Photovoltaics

By Tommy Cleveland
May 2017



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1.2.2 • Photovoltaic (PV) Technologies.....7
1.2.3. • Panel End-of-Life Management.....10
1.2.4 • Non-Panel System Components (racking, wiring, inverter, transformer)..12
1.4 • Operations and Maintenance – Panel Washing and Vegetation Control....13
2 • Electromagnetic Fields (EMF).....14
3 • Electric Shock and Arc Flash Hazards 16
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Health and Safety Impacts of Solar Photovoltaics

The increasing presence of utility-scale solar photovoltaic (PV) systems (sometimes referred to as solar farms) is a rather new development in North Carolina's landscape. Due to the new and unknown nature of this technology, it is natural for communities near such developments to be concerned about health and safety impacts. Unfortunately, the quick emergence of utility-scale solar has cultivated fertile grounds for myths and half-truths about the health impacts of this technology, which can lead to unnecessary fear and conflict.

Photovoltaic (PV) technologies and solar inverters are not known to pose any significant health dangers to their neighbors. The most important dangers posed are increased highway traffic during the relative short construction period and dangers posed to trespassers of contact with high voltage equipment. This latter risk is mitigated by signage and the security measures that industry uses to deter trespassing. As will be discussed in more detail below, risks of site contamination are much less than for most other industrial uses because PV technologies employ few toxic chemicals and those used are used in very small quantities. Due to the reduction in the pollution from fossil-fuel-fired electric generators, the overall impact of solar development on human health is overwhelmingly positive. This pollution reduction results from a partial replacement of fossil-fuel fired generation by emission-free PV-generated electricity, which reduces harmful sulfur dioxide (SO2), nitrogen oxides (NOx), and fine particulate matter (PM2.5). Analysis from the National Renewable Energy Laboratory and the Lawrence Berkeley National Laboratory, both affiliates of the U.S. Department of Energy, estimates the health-related air quality benefits to the southeast region from solar PV generators to be worth 8.0 ¢ per kilowatt-hour of solar generation.[1] This is in addition to the value of the electricity and suggests that the air quality benefits of solar are worth more than the electricity itself.

Even though we have only recently seen large-scale installation of PV technologies, the technology and its potential impacts have been studied since the 1950s. A combination of this solar-specific research and general scientific research has led to the scientific community having a good understanding of the science behind potential health and safety impacts of solar energy. This paper utilizes the latest scientific literature and knowledge of solar practices in N.C. to address the health and safety risks associated with solar PV technology. These risks are extremely small, far less than those associated with common activities such as driving a car, and vastly outweighed by health benefits of the generation of clean electricity.

This paper addresses the potential health and safety impacts of solar PV development in North Carolina, organized into the following four categories:
(1) Hazardous Materials
(2) Electromagnetic Fields (EMF)
(3) Electric Shock and Arc Flash
(4) Fire Safety

1 • Hazardous Materials

One of the more common concerns towards solar is that the panels (referred to as "modules" in the solar industry) consist of toxic materials that endanger public health. However, as shown in this section, solar energy systems may contain small amounts of toxic materials, but these materials do not endanger public health. To understand potential toxic hazards coming from a solar project, one

must understand system installation, materials used, the panel end-of-life protocols, and system operation. This section will examine these aspects of a solar farm and the potential for toxicity impacts in the following subsections:

(1.2) Project Installation/Construction
(1.2) System Components
  1.2.1 Solar Panels: Construction and Durability
  1.2.2 Photovoltaic technologies
    (a) Crystalline Silicon
    (b) Cadmium Telluride (CdTe)
    (c) CIS/CIGS
  1.2.3 Panel End of Life Management
  1.2.4 Non-panel System Components
(1.3) Operations and Maintenance

1.1 Project Installation/ Construction

The system installation, or construction, process does not require toxic chemicals or processes. The site is mechanically cleared of large vegetation, fences are constructed, and the land is surveyed to layout exact installation locations. Trenches for underground wiring are dug and support posts are driven into the ground. The solar panels are bolted to steel and aluminum support structures and wired together. Inverter pads are installed, and an inverter and transformer are installed on each pad. Once everything is connected, the system is tested, and only then turned on.



Figure 1: Utility-scale solar facility (5 MWAC) located in Catawba County. *Source: Strata Solar*

1.2 · System Components

1.2.1 Solar Panels: Construction and Durability

Solar PV panels typically consist of glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of their useful life.[2] Today there are two PV technologies used in PV panels at utility-scale solar facilities, silicon, and thin film. As of 2016, all thin film used in North Carolina solar facilities are cadmium telluride (CdTe) panels from the US manufacturer First Solar, but there are other thin film PV panels available on the market, such as Solar Frontier's CIGS panels. Crystalline silicon technology consists of silicon wafers which are made into cells and assembled into panels, thin film technologies consist of thin layers of semiconductor material deposited onto glass, polymer or metal substrates. While there are differences in the components and manufacturing processes of these two types of solar technologies, many aspects of their PV panel construction are very similar. Specifics about each type of PV chemistry as it relates to toxicity are covered in subsections a, b, and c in section 1.2.2; on crystalline silicon, cadmium telluride, and CIS/CIGS respectively. The rest of this section applies equally to both silicon and thin film panels.

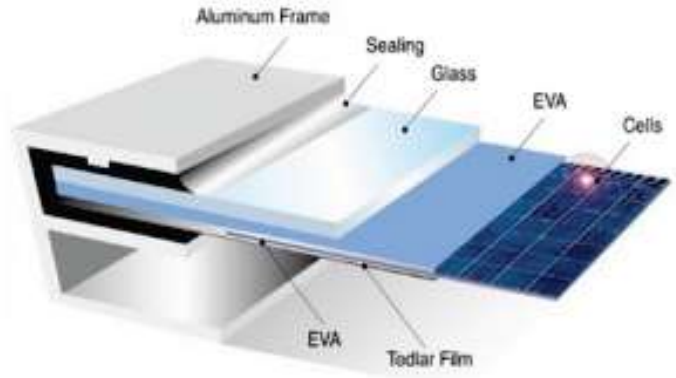


Figure 2: Components of crystalline silicon panels. The vast majority of silicon panels consist of a glass sheet on the topside with an aluminum frame providing structural support. Image Source: www.riteksolar.com.tw

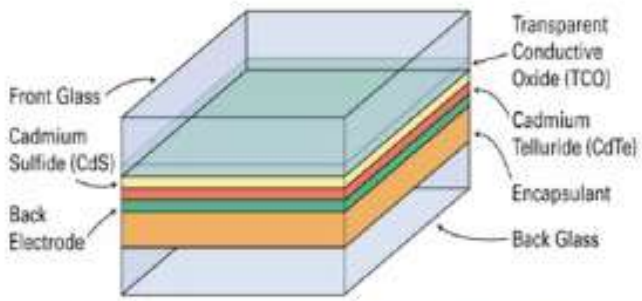


Figure 3: Layers of a common frameless thin-film panel (CdTe). Many thin film panels are frameless, including the most common thin-film panels, First Solar's CdTe. Frameless panels have protective glass on both the front and back of the panel. Layer thicknesses not to scale. Image Source: www.homepower.com

To provide decades of corrosion-free operation, PV cells in PV panels are encapsulated from air and moisture between two layers of plastic. The encapsulation layers are protected on the top with a layer of tempered glass and on the backside with a polymer sheet. Frameless modules include a protective layer of glass on the rear of the panel, which may also be tempered. The plastic ethylene-vinyl acetate (EVA) commonly provides the cell encapsulation. For decades, this same material has been used between layers of tempered glass to give car windshields and hurricane windows their great strength. In the same way that a car windshield cracks but stays intact, the EVA layers in PV panels keep broken panels intact (see Figure 4). Thus, a damaged module does not generally create small pieces of debris; instead, it largely remains together as one piece.



Figure 4: The mangled PV panels in this picture illustrate the nature of broken solar panels; the glass cracks but the panel is still in one piece. Image Source: http://img.alibaba.com/photo/115259576/broken_solar_panel.jpg

PV panels constructed with the same basic components as modern panels have been installed across the globe for well over thirty years.[3] The long-term durability and performance demonstrated over these decades, as well as the results of accelerated lifetime testing, helped lead to an industrystandard 25-year power production warranty for PV panels. These power warranties warrant a PV panel to produce at least 80% of their original nameplate production after 25 years of use. A recent SolarCity and DNV GL study reported that today's quality PV panels should be expected to reliably and efficiently produce power for thirty-five years.[4]

Local building codes require all structures, including ground mounted solar arrays, to be engineered to withstand anticipated wind speeds, as defined by the local wind speed requirements. Many racking products are available in versions engineered for wind speeds of up to 150 miles per hour, which is significantly higher than the wind speed requirement anywhere in North Carolina. The strength of PV mounting structures were demonstrated during Hurricane Sandy in 2012 and again during Hurricane Matthew in 2016. During Hurricane Sandy, the many large-scale solar facilities in New Jersey and New York at that time suffered only minor damage.[5] In the fall of 2016, the US and Caribbean experienced destructive winds and torrential rains from Hurricane Matthew, yet one leading solar tracker manufacturer reported that their numerous systems in the impacted area received zero damage from wind or flooding.[6]

In the event of a catastrophic event capable of damaging solar equipment, such as a tornado, the system will almost certainly have property insurance

that will cover the cost to cleanup and repair the project. It is in the best interest of the system owner to protect their investment against such risks. It is also in their interest to get the project repaired and producing full power as soon as possible. Therefore, the investment in adequate insurance is a wise business practice for the system owner. For the same reasons, adequate insurance coverage is also generally a requirement of the bank or firm providing financing for the project.

1.2.2 Photovoltaic (PV) Technologies

a. Crystalline Silicon

This subsection explores the toxicity of silicon-based PV panels and concludes that they do not pose a material risk of toxicity to public health and safety. Modern crystalline silicon PV panels, which account for over 90% of solar PV panels installed today, are, more or less, a commodity product. The overwhelming majority of panels installed in North Carolina are crystalline silicon panels that are informally classified as Tier I panels. Tier I panels are from well-respected manufacturers that have a good chance of being able to honor warranty claims. Tier I panels are understood to be of high quality, with predictable performance, durability, and content. Well over 80% (by weight) of the content of a PV panel is the tempered glass front and the aluminum frame, both of which are common building materials. Most of the remaining portion are common plastics, including polyethylene terephthalate in the backsheet, EVA encapsulation of the PV cells, polyphenyl ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components makeup less than 5% of the weight of most panels. The PV cell itself is nearly 100% silicon, and silicon is the second most common element in the Earth's crust. The silicon for PV cells is obtained by high-temperature processing of quartz sand (SiO2) that removes its oxygen molecules. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

The other minor components of the PV cell are also generally benign; however, some contain lead, which is a human toxicant that is particularly harmful to young children. The minor components include an extremely thin antireflective coating (silicon nitride or titanium dioxide), a thin layer of aluminum on the rear, and thin strips of silver alloy that are screen-printed on the front and rear of cell.[7] In order for the front and rear electrodes to make effective electrical contact with the proper layer of the PV cell, other materials (called glass frit) are mixed with the silver alloy and then heated to etch the metals into the cell. This glass frit historically contains a small amount of lead (Pb) in the form of lead oxide. The 60 or 72 PV cells in a PV panel are connected by soldering thin solder-covered copper tabs from the back of one cell to the front of the next cell. Traditionally a tin-based solder containing some lead (Pb) is used, but some manufacturers have switched to lead-free solder. The glass frit and/or the solder may contain trace amounts of other metals, potentially including some with human toxicity such as cadmium. However, testing to simulate the potential for leaching from broken panels, which is discussed in more detail below, did not find a potential toxicity threat from these trace elements. Therefore, the tiny amount of lead in the grass frit and the solder is the only part of silicon PV panels with a potential to create a negative health impact. However, as described below, the very limited amount of lead involved and its strong physical and chemical attachment to other components of the PV panel means that even in worst-case scenarios the health hazard it poses is insignificant.

As with many electronic industries, the solder in silicon PV panels has historically been a leadbased solder, often 36% lead, due to the superior properties of such solder. However, recent advances in lead-free solders have spurred a trend among PV panel manufacturers to reduce or remove the lead in their panels. According to the 2015 Solar Scorecard from the Silicon Valley Toxics Coalition, a group that tracks environmental responsibility of photovoltaic panel manufacturers, fourteen companies (increased from twelve companies in 2014) manufacture PV panels certified to meet the European Restriction of Hazardous Substances (RoHS) standard. This means that the amount of cadmium and lead in the panels they manufacture fall below the RoHS thresholds, which are set by the European Union and serve as the world's de facto standard for hazardous substances in manufactured goods.[8] The Restriction of Hazardous Substances (RoHS) standard requires that the maximum concentration found in any homogenous material in a produce is less than 0.01% cadmium and less than 0.10% lead, therefore, any solder can be no more than 0.10% lead.[9]

While some manufacturers are producing PV panels that meet the RoHS standard, there is no requirement that they do so because the RoHS Directive explicitly states that the directive does not apply to photovoltaic panels.[10] The justification for this is provided in item 17 of the current RoHS Directive: "The development of renewable forms of energy is one of the Union's key objectives, and the contribution made by renewable energy sources to environmental and climate objectives is crucial. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources (4) recalls that there should be coherence between those objectives and other Union environmental legislation. Consequently, this Directive should not prevent the development of renewable energy technologies that have no negative impact on health and the environment and that are sustainable and economically viable."

The use of lead is common in our modern economy. However, only about 0.5% of the annual lead consumption in the U.S. is for electronic solder for all uses; PV solder makes up only a tiny portion of this 0.5%. Close to 90% of lead consumption in the US is in batteries, which do not encapsulate the pounds of lead contained in each typical automotive battery. This puts the lead in batteries at great risk of leaching into the environment. Estimates for the lead in a single PV panel with lead-based solder range from 1.6 to 24 grams of lead, with 13g (less than half of an ounce) per panel seen most often in the literature.[11] At 13 g/panel[12], each panel contains one-half of the lead in a typical 12-gauge shotgun shell. This amount equates to roughly 1/750th of the lead in a single car battery. In a panel, it is all durably encapsulated from air or water for the full life of the panel.[14]

As indicated by their 20 to 30-year power warranty, PV modules are designed for a long service life, generally over 25 years. For a panel to comply with its 25-year power warranty, its internal components, including lead, must be sealed from any moisture. Otherwise, they would corrode and the panel's output would fall below power warranty levels. Thus, the lead in operating PV modules is not at risk of release to the environment during their service lifetime. In extreme experiments, researchers have shown that lead can leach from crushed or pulverized panels.[15, 16] However, more real-world tests designed to represent typical trash compaction that are used to classify waste as hazardous or non-hazardous show no danger from leaching.[17,18] For more information about PV panel end-of-life, see the Panel Disposal section.

As illustrated throughout this section, silicon-based PV panels do not pose a material threat to public health and safety. The only aspect of the panels with potential toxicity concerns is the very small amount of lead in some panels. However, any lead in a panel is well sealed from environmental exposure for the operating lifetime of the solar panel and thus not at risk of release into the environment.

b. Cadmium Telluride (CdTe) PV Panels

This subsection examines the components of a cadmium telluride (CdTe) PV panel. Research demonstrates that they pose negligible toxicity risk to public health and safety while significantly reducing the public's exposure to cadmium by reducing coal emissions. As of mid-2016, a few hundred MWs of cadmium telluride (CdTe) panels, all manufactured by the U.S. company First Solar, have been installed in North Carolina.

Questions about the potential health and environmental impacts from the use of this PV technology are related to the concern that these panels contain cadmium, a toxic heavy metal. However, scientific studies have shown that cadmium telluride differs from cadmium due to its high chemical and thermal stability.[19] Research has shown that the tiny amount of cadmium in these panels does not pose a health or safety risk.[20] Further, there are very compelling reasons to welcome its adoption due to reductions in unhealthy pollution associated with burning coal. Every GWh of electricity generated by burning coal produces about 4 grams of cadmium air emissions.[21] Even though North Carolina produces a significant fraction of our electricity from coal, electricity from solar offsets much more natural gas than coal due to natural gas plants being able to adjust their rate of production more easily and quickly. If solar electricity offsets 90% natural gas and 10% coal, each 5-megawatt (5 MWAC, which is generally 7 MWDC) CdTe solar facility in North Carolina keeps about 157 grams, or about a third of a pound, of cadmium *out* of our environment.[22, 23]

Cadmium is toxic, but all the approximately 7 grams of cadmium in one CdTe panel is in the form of a chemical compound cadmium telluride,[24] which has 1/100th the toxicity of free cadmium.[25] Cadmium telluride is a very stable compound that is non-volatile and non-soluble in water. Even in the case of a fire, research shows that less than 0.1% of the cadmium is released when a CdTe panel is exposed to fire. The fire melts the glass and encapsulates over 99.9% of the cadmium in the molten glass.[27]

It is important to understand the source of the cadmium used to manufacture CdTe PV panels. The cadmium is a byproduct of zinc and lead refining. The element is collected from emissions and waste streams during the production of these metals and combined with tellurium to create the CdTe used in PV panels. If the cadmium were not collected for use in the PV panels or other products, it would otherwise either be stockpiled for future use, cemented and buried, or disposed of.[28] Nearly all the cadmium in old or broken panels can be recycled which can eventually serve as the primary source of cadmium for new PV panels.[29]

Similar to silicon-based PV panels, CdTe panels are constructed of a tempered glass front, one instead of two clear plastic encapsulation layers, and a rear heat strengthened glass backing (together >98% by weight). The final product is built to withstand exposure to the elements without significant damage for over 25 years. While not representative of damage that may occur in the field or even at a landfill, laboratory evidence has illustrated that when panels are ground into a fine powder, very acidic water is able to leach portions of the cadmium and tellurium,[30] similar to the process used to recycle CdTe panels. Like many silicon-based panels, CdTe panels are reported (as far back ask 1998[31] to pass the EPA's Toxic Characteristic Leaching Procedure (TCLP) test, which tests the potential for crushed panels in a landfill to leach hazardous substances into groundwater.[32] Passing this test means that they are classified as non-hazardous waste and can be deposited in landfills.[33,34] For more information about PV panel end-of-life, see the Panel Disposal section.

There is also concern of environmental impact resulting from potential catastrophic events involving CdTe PV panels. An analysis of worst-case scenarios for environmental impact from CdTe PV

panels, including earthquakes, fires, and floods, was conducted by the University of Tokyo in 2013. After reviewing the extensive international body of research on CdTe PV technology, their report concluded, "Even in the worst-case scenarios, it is unlikely that the Cd concentrations in air and sea water will exceed the environmental regulation values."[35] In a worst-case scenario of damaged panels abandoned on the ground, insignificant amounts of cadmium will leach from the panels. This is because this scenario is much less conducive (larger module pieces, less acidity) to leaching than the conditions of the EPA's TCLP test used to simulate landfill conditions, which CdTe panels pass.[36]

First Solar, a U.S. company, and the only significant supplier of CdTe panels, has a robust panel take-back and recycling program that has been operating commercially since 2005.[37] The company states that it is "committed to providing a commercially attractive recycling solution for photovoltaic (PV) power plant and module owners to help them meet their module (end of life) EOL obligation simply, costeffectively and responsibly." First Solar global recycling services to their customers to collect and recycle panels once they reach the end of productive life whether due to age or damage. These recycling service agreements are structured to be financially attractive to both First Solar and the solar panel owner. For First Solar, the contract provides the company with an affordable source of raw materials needed for new panels and presumably a diminished risk of undesired release of Cd. The contract also benefits the solar panel owner by allowing them to avoid tipping fees at a waste disposal site. The legal contract helps provide peace of mind by ensuring compliance by both parties when considering the continuing trend of rising disposal costs and increasing regulatory requirements.

c. CIS/CIGS and other PV technologies

Copper indium gallium selenide PV technology, often referred to as CIGS, is the second most common type of thin-film PV panel but a distant second behind CdTe. CIGS cells are composed of a thin layer of copper, indium, gallium, and selenium on a glass or plastic backing. None of these elements are very toxic, although selenium is a regulated metal under the Federal Resource Conservation and Recovery Act (RCRA).[38] The cells often also have an extremely thin layer of cadmium sulfide that contains a tiny amount of cadmium, which is toxic. The promise of high efficiency CIGS panels drove heavy investment in this technology in the past. However, researchers have struggled to transfer high efficiency success in the lab to low-cost full-scale panels in the field.[39] Recently, a CIGS manufacturer based in Japan, Solar Frontier, has achieved some market success with a rigid, glass-faced CIGS module that competes with silicon panels. Solar Frontier produces the majority of CIS panels on the market today.[40] Notably, these panels are RoHS compliant,[41] thus meeting the rigorous toxicity standard adopted by the European Union even thought this directive exempts PV panels. The authors are unaware of any completed or proposed utility-scale system in North Carolina using CIS/CIGS panels.

1.2.3 Panel End-of-Life Management

Concerns about the volume, disposal, toxicity, and recycling of PV panels are addressed in this subsection. To put the volume of PV waste into perspective, consider that by 2050, when PV systems installed in 2020 will reach the end of their lives, it is estimated that the global annual PV panel waste tonnage will be 10% of the 2014 global e-waste tonnage.[42] In the U.S., end-of-life disposal of solar products is governed by the Federal Resource Conservation and Recovery Act (RCRA), as well as state policies in some situations. RCRA separates waste into hazardous (not accepted at ordinary landfill) and solid waste (generally accepted

at ordinary landfill) based on a series of rules. According to RCRA, the way to determine if a PV panel is classified as hazardous waste is the Toxic Characteristic Leaching Procedure (TCLP) test. This EPA test is designed to simulate landfill disposal and determine the risk of hazardous substances leaching out of the landfill.[43,44,45] Multiple sources report that most modern PV panels (both crystalline silicon and cadmium telluride) pass the TCLP test.[46,47] Some studies found that some older (1990s) crystalline silicon panels, and perhaps some newer crystalline silicon panels (specifics are not given about vintage of panels tested), do not pass the lead (Pb) leachate limits in the TCLP test.[48,49]

The test begins with the crushing of a panel into centimeter-sized pieces. The pieces are then mixed in an acid bath. After tumbling for eighteen hours, the fluid is tested for forty hazardous substances that all must be below specific threshold levels to pass the test. Research comparing TCLP conditions to conditions of damaged panels in the field found that simulated landfill conditions provide overly conservative estimates of leaching for field-damaged panels.[50] Additionally, research in Japan has found no detectable Cd leaching from cracked CdTe panels when exposed to simulated acid rain.[51]

Although modern panels can generally be landfilled, they can also be recycled. Even though recent waste volume has not been adequate to support significant PV-specific recycling infrastructure, the existing recycling industry in North Carolina reports that it recycles much of the current small volume of broken PV panels. In an informal survey conducted by the NC Clean Energy Technology Center survey in early 2016, seven of the eight large active North Carolina utility-scale solar developers surveyed reported that they send damaged panels back to the manufacturer and/or to a local recycler. Only one developer reported sending damaged panels to the landfill.

The developers reported at that time that they are usually paid a small amount per panel by local recycling firms. In early 2017, a PV developer reported that a local recycler was charging a small fee per panel to recycle damaged PV panels. The local recycling firm known to authors to accept PV panels described their current PV panel recycling practice as of early 2016 as removing the aluminum frame for local recycling and removing the wire leads for local copper recycling. The remainder of the panel is sent to a facility for processing the non-metallic portions of crushed vehicles, referred to as "fluff" in the recycling industry.[52] This processing within existing general recycling plants allows for significant material recovery of major components, including glass which is 80% of the module weight, but at lower yields than PV-specific recycling plants. Notably almost half of the material value in a PV panel is in the few grams of silver contained in almost every PV panel produced today. In the long-term, dedicated PV panel recycling plants can increase treatment capacities and maximize revenues resulting in better output quality and the ability to recover a greater fraction of the useful materials.[53] PV-specific panel recycling technologies have been researched and implemented to some extent for the past decade, and have been shown to be able to recover over 95% of PV material (semiconductor) and over 90% of the glass in a PV panel.[54]

A look at global PV recycling trends hints at the future possibilities of the practice in our country. Europe installed MW-scale volumes of PV years before the U.S. In 2007, a public-private partnership between the European Union and the solar industry set up a voluntary collection and recycling system called PV CYCLE. This arrangement was later made mandatory under the EU's WEEE directive, a program for waste electrical and electronic equipment.[55] Its member companies (PV panel producers) fully finance the association. This makes it possible for end-users to return the member companies' defective panels for recycling at any of the over 300 collection points around

Europe without added costs. Additionally, PV CYCLE will pick up batches of 40 or more used panels at no cost to the user. This arrangement has been very successful, collecting and recycling over 13,000 tons by the end of 2015.[56]

In 2012, the WEEE Directive added the end-of-life collection and recycling of PV panels to its scope.[57] This directive is based on the principle of extended-producer-responsibility. It has a global impact because producers that want to sell into the EU market are legally responsible for end-of-life management. Starting in 2018, this directive targets that 85% of PV products "put in the market" in Europe are recovered and 80% is prepared for reuse and recycling.

The success of the PV panel collection and recycling practices in Europe provides promise for the future of recycling in the U.S. In mid-2016, the US Solar Energy Industry Association (SEIA) announced that they are starting a national solar panel recycling program with the guidance and support of many leading PV panel producers.[58] The program will aggregate the services offered by recycling vendors and PV manufacturers, which will make it easier for consumers to select a cost-effective and environmentally responsible end-of-life management solution for their PV products. According to SEIA, they are planning the program in an effort to make the entire industry landfill-free. In addition to the national recycling network program, the program will provide a portal for system owners and consumers with information on how to responsibly recycle their PV systems.

While a cautious approach toward the potential for negative environmental and/or health impacts from retired PV panels is fully warranted, this section has shown that the positive health impacts of reduced emissions from fossil fuel combustion from PV systems more than outweighs any potential risk. Testing shows that silicon and CdTe panels are both safe to dispose of in landfills, and are also safe in worst case conditions of abandonment or damage in a disaster. Additionally, analysis by local engineers has found that the current salvage value of the equipment in a utility scale PV facility generally exceeds general contractor estimates for the cost to remove the entire PV system.[59,60,61]

1.2.4 Non-Panel System Components

(racking, wiring, inverter, transformer)

While previous toxicity subsections discussed PV panels, this subsection describes the non-panel components of utility-scale PV systems and investigates any potential public health and safety concerns. The most significant non-panel component of a ground-mounted PV system is the mounting structure of the rows of panels, commonly referred to as "racking". The vertical post portion of the racking is galvanized steel and the remaining above-ground racking components are either galvanized steel or aluminum, which are both extremely common and benign building materials. The inverters that make the solar generated electricity ready to send to the grid have weather-proof steel enclosures that protect the working components from the elements. The only fluids that they might contain are associated with their cooling systems, which are not unlike the cooling system in a computer. Many inverters today are RoHS compliant.

The electrical transformers (to boost the inverter output voltage to the voltage of the utility connection point) do contain a liquid cooling oil. However, the fluid used for that function is either a nontoxic mineral oil or a biodegradable non-toxic vegetable oil, such as BIOTEMP from ABB. These vegetable transformer oils have the additional advantage of being much less flammable than traditional mineral oils. Significant health hazards are associated with old transformers containing cooling oil with toxic PCBs. Transfers with PCB-containing oil were common before PCBs were outlawed in the U.S. in 1979. PCBs still exist in older transformers in the field across the country.

Other than a few utility research sites, there are no batteries on- or off-site associated with utility-scale solar energy facilities in North Carolina, avoiding any potential health or safety concerns related to battery technologies. However, as battery technologies continue to improve and prices continue to decline we are likely to start seeing some batteries at solar facilities. Lithium ion batteries currently dominate the world utility-scale battery market, which are not very toxic. No non-panel system components were found to pose any health or environmental dangers.

1.4 Operations and Maintenance – Panel Washing and Vegetation Control

Throughout the eastern U.S., the climate provides frequent and heavy enough rain to keep panels adequately clean. This dependable weather pattern eliminates the need to wash the panels on a regular basis. Some system owners may choose to wash panels as often as once a year to increase production, but most in N.C. do not regularly wash any PV panels. Dirt build up over time may justify panel washing a few times over the panels' lifetime; however, nothing more than soap and water are required for this activity.

The maintenance of ground-mounted PV facilities requires that vegetation be kept low, both for aesthetics and to avoid shading of the PV panels. Several approaches are used to maintain vegetation at NC solar facilities, including planting of limited-height species, mowing, weed-eating, herbicides, and grazing livestock (sheep). The following descriptions of vegetation maintenance practices are based on interviews with several solar developers as well as with three maintenance firms that together are contracted to maintain well over 100 of the solar facilities in N.C. The majority of solar facilities in North Carolina maintain vegetation primarily by mowing. Each row of panels has a single row of supports, allowing sickle mowers to mow under the panels. The sites usually require mowing about once a month during the growing season. Some sites employ sheep to graze the site, which greatly reduces the human effort required to maintain the vegetation and produces high quality lamb meat.[62]

In addition to mowing and weed eating, solar facilities often use some herbicides. Solar facilities generally do not spray herbicides over the entire acreage; rather they apply them only in strategic locations such as at the base of the perimeter fence, around exterior vegetative buffer, on interior dirt roads, and near the panel support posts. Also unlike many row crop operations, solar facilities generally use only general use herbicides, which are available over the counter, as opposed to restricted use herbicides commonly used in commercial agriculture that require a special restricted use license. The herbicides used at solar facilities are primarily 2-4-D and glyphosate (Round-up®), which are two of the most common herbicides used in lawns, parks, and agriculture across the country. One maintenance firm that was interviewed sprays the grass with a class of herbicide known as a growth regulator in order to slow the growth of grass so that mowing is only required twice a year. Growth regulators are commonly used on highway roadsides and golf courses for the same purpose. A commercial pesticide applicator license is required for anyone other than the landowner to apply herbicides, which helps ensure that all applicators are adequately educated about proper herbicide use and application. The license must be renewed annually and requires passing of a certification exam appropriate to the area in which the applicator wishes to work. Based on the limited data available, it appears that solar facilities in N.C. generally use significantly less herbicides per acre than most commercial agriculture or lawn maintenance services.

2. Electromagnetic Fields (EMF)

PV systems do not emit any material during their operation; however, they do generate electromagnetic fields (EMF), sometimes referred to as radiation. EMF produced by electricity is non-ionizing radiation, meaning the radiation has enough energy to move atoms in a molecule around (experienced as heat), but not enough energy to remove electrons from an atom or molecule (ionize) or to damage DNA. As shown below, modern humans are all exposed to EMF throughout our daily lives without negative health impact. Someone outside of the fenced perimeter of a solar facility is not exposed to significant EMF from the solar facility. Therefore, there is no negative health impact from the EMF produced in a solar farm. The following paragraphs provide some additional background and detail to support this conclusion.

Since the 1970s, some have expressed concern over potential health consequences of EMF from electricity, but no studies have ever shown this EMF to cause health problems.[63] These concerns are based on some epidemiological studies that found a slight increase in childhood leukemia associated with average exposure to residential power-frequency magnetic fields above 0.3 to 0.4 µT (microteslas) (equal to 3.0 to 4.0 mG (milligauss)). µT and mG are both units used to measure magnetic field strength. For comparison, the average exposure for people in the U.S. is one mG or 0.1 µT, with about 1% of the population with an average exposure in excess of 0.4 µT (or 4 mG).[64] These epidemiological studies, which found an association but not a causal relationship, led the World Health Organization's International Agency for Research on Cancer (IARC) to classify ELF magnetic fields as "possibly carcinogenic to humans". Coffee also has this classification. This classification means there is limited evidence but not enough evidence to designate as either a "probable carcinogen" or "human carcinogen". Overall, there is very little concern that ELF EMF damages public health. The only concern that does exist is for long-term exposure above 0.4 µT (4 mG) that may have some connection to increased cases of childhood leukemia. In 1997, the National Academies of Science were directed by Congress to examine this concern and concluded:

"Based on a comprehensive evaluation of published studies relating to the effects of power-frequency electric and magnetic fields on cells, tissues, and organisms (including humans), the conclusion of the committee is that the current body of evidence does not show that exposure to these fields presents a human-health hazard. Specifically, no conclusive and consistent evidence shows that exposures to residential electric and magnetic fields produce cancer, adverse neurobehavioral effects, or reproductive and developmental effects."[65]

There are two aspects to electromagnetic fields, an electric field and a magnetic field. The electric field is generated by voltage and the magnetic field is generated by electric current, i.e., moving electrons. A task group of scientific experts convened by the World Health Organization (WHO) in 2005 concluded that there were no substantive health issues related to electric fields (0 to 100,000 Hz) at levels generally encountered by members of the public.[66] The relatively low voltages in a solar facility and the fact that electric fields are easily shielded (i.e., blocked) by common materials, such as plastic, metal, or soil means that there is no concern of negative health impacts from the electric fields generated by a solar facility. Thus, the remainder of this section addresses magnetic fields. Magnetic fields are not shielded by most common materials and thus can easily pass through them. Both types of fields are strongest close to the source of electric generation and weaken quickly with distance from the source.

The direct current (DC) electricity produced by PV panels produce stationary (0 Hz) electric and magnetic fields. Because of minimal concern about potential risks of stationary fields, little scientific research has examined stationary fields' impact on human health.[67] In even the largest PV facilities, the DC voltages and currents are not very high. One can illustrate the weakness of the EMF generated by a PV panel by placing a compass on an operating solar panel and observing that the needle still points north.

While the electricity throughout the majority of a solar site is DC electricity, the inverters convert this DC electricity to alternating current (AC) electricity matching the 60 Hz frequency of the grid. Therefore, the inverters and the wires delivering this power to the grid are producing non-stationary EMF, known as extremely low frequency (ELF) EMF, normally oscillating with a frequency of 60 Hz. This frequency is at the low-energy end of the electromagnetic spectrum. Therefore, it has less energy than other commonly encountered types of non-ionizing radiation like radio waves, infrared radiation, and visible light.

The wide use of electricity results in background levels of ELF EMFs in nearly all locations where people spend time – homes, workplaces, schools, cars, the supermarket, etc. A person's average exposure depends upon the sources they encounter, how close they are to them, and the amount of time they spend there.[68] As stated above, the average exposure to magnetic fields in the U.S. is estimated to be around one mG or 0.1 μT, but can vary considerably depending on a person's exposure to EMF from electrical devices and wiring.[69] At times we are often exposed to much higher ELF magnetic fields, for example when standing three feet from a refrigerator the ELF magnetic field is 6 mG and when standing three feet from a microwave oven the field is about 50 mG.[70] The strength of these fields diminish quickly with distance from the source, but when surrounded by electricity in our homes and other buildings moving away from one source moves you closer to another. However, unless you are inside of the fence at a utility-scale solar facility or electrical substation it is impossible to get very close to the EMF sources. Because of this, EMF levels at the fence of electrical substations containing high voltages and currents are considered "generally negligible".[71,72]

The strength of ELF-EMF present at the perimeter of a solar facility or near a PV system in a commercial or residential building is significantly lower than the typical American's average EMF exposure.[73,74] Researchers in Massachusetts measured magnetic fields at PV projects and found the magnetic fields dropped to very low levels of 0.5 mG or less, and in many cases to less than background levels (0.2 mG), at distances of no more than nine feet from the residential inverters and 150 feet from the utility-scale inverters.[75] Even when measured within a few feet of the utility-scale inverter, the ELF magnetic fields were well below the International Commission on Non-Ionizing Radiation Protection's recommended magnetic field level exposure limit for the general public of 2,000 mG.[76] It is typical that utility scale designs locate large inverters central to the PV panels that feed them because this minimizes the length of wire required and shields neighbors from the sound of the inverter's cooling fans. Thus, it is rare for a large PV inverter to be within 150 feet of the project's security fence.

Anyone relying on a medical device such as pacemaker or other implanted device to maintain proper heart rhythm may have concern about the potential for a solar project to interfere with the operation of his or her device. However, there is no reason for concern because the EMF outside of the solar facility's fence is less than 1/1000 of the level at which manufacturers test for ELF EMF interference, which is 1,000 mG.[77] Manufacturers of potentially affected implanted devices often provide advice on electromagnetic interference that includes avoiding letting the implanted device get too close to certain sources of fields such as some

household appliances, some walkie-talkies, and similar transmitting devices. Some manufacturers' literature does not mention high-voltage power lines, some say that exposure in public areas should not give interference, and some advise not spending extended periods of time close to power lines.[78]

3. Electric Shock and Arc Flash Hazards

There is a real danger of electric shock to anyone entering any of the electrical cabinets such as combiner boxes, disconnect switches, inverters, or transformers; or otherwise coming in contact with voltages over 50 Volts.[79] Another electrical hazard is an arc flash, which is an explosion of energy that can occur in a short circuit situation. This explosive release of energy causes a flash of heat and a shockwave, both of which can cause serious injury or death. Properly trained and equipped technicians and electricians know how to safely install, test, and repair PV systems, but there is always some risk of injury when hazardous voltages and/or currents are present. Untrained individuals should not attempt to inspect, test, or repair any aspect of a PV system due to the potential for injury or death due to electric shock and arc flash, The National Electric Code (NEC) requires appropriate levels of warning signs on all electrical components based on the level of danger determined by the voltages and current potentials. The national electric code also requires the site to be secured from unauthorized visitors with either a six-foot chain link fence with three strands of barbed wire or an eight-foot fence, both with adequate hazard warning signs.

4. Fire Safety

The possibility of fires resulting from or intensified by PV systems may trigger concern among the general public as well as among firefighters. However, concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire. Flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer backsheets (framed panels only), plastic junction boxes on rear of panel, and insulation on wiring. The rest of the panel is composed of non-flammable components, notably including one or two layers of protective glass that make up over three quarters of the panel's weight.

Heat from a small flame is not adequate to ignite a PV panel, but heat from a more intense fire or energy from an electrical fault can ignite a PV panel.[80] One real-world example of this occurred during July 2015 in an arid area of California. Three acres of grass under a thin film PV facility burned without igniting the panels mounted on fixed-tilt racks just above the grass.[81] While it is possible for electrical faults in PV systems on homes or commercial buildings to start a fire, this is extremely rare.[82] Improving understanding of the PV-specific risks, safer system designs, and updated fire-related codes and standards will continue to reduce the risk of fire caused by PV systems.

PV systems on buildings can affect firefighters in two primary ways, 1) impact their methods of fighting the fire, and 2) pose safety hazard to the firefighters. One of the most important techniques that firefighters use to suppress fire is ventilation of a building's roof. This technique allows superheated toxic gases to quickly exit the building. By doing so, the firefighters gain easier and safer access to the building, Ventilation of the roof also makes the challenge of putting out the fire easier. However, the placement of rooftop PV panels may interfere with ventilating the roof by limiting access to desired venting locations.

New solar-specific building code requirements are working to minimize these concerns. Also, the

latest National Electric Code has added requirements that make it easier for first responders to safely and effectively turn off a PV system. Concern for firefighting a building with PV can be reduced with proper fire fighter training, system design, and installation. Numerous organizations have studied fire fighter safety related to PV. Many organizations have published valuable guides and training programs. Some notable examples are listed below.

- The International Association of Fire Fighters (IAFF) and International Renewable Energy Council (IREC) partnered to create an online training course that is far beyond the PowerPoint click-andview model. The self-paced online course, "Solar PV Safety for Fire Fighters," features rich video content and simulated environments so fire fighters can practice the knowledge they've learned. www.iaff.org/pvsafetytraining
- Photovoltaic Systems and the Fire Code: Office of NC Fire Marshal
- Fire Service Training, Underwriter's Laboratory
- Firefighter Safety and Response for Solar Power Systems, National Fire Protection Research Foundation
- Bridging the Gap: Fire Safety & Green Buildings, National Association of State Fire Marshalls
- Guidelines for Fire Safety Elements of Solar Photovoltaic Systems, Orange County Fire Chiefs Association
- Solar Photovoltaic Installation Guidelines, California Department of Forestry & Fire Protection, Office of the State Fire Marshall
- PV Safety & Firefighting, Matthew Paiss, Homepower Magazine
- PV Safety and Code Development: Matthew Paiss, Cooperative Research Network

Summary

The purpose of this paper is to address and alleviate concerns of public health and safety for utility-scale solar PV projects. Concerns of public health and safety were divided and discussed in the four following sections: (1) Toxicity, (2) Electromagnetic Fields, (3) Electric Shock and Arc Flash, and (4) Fire. In each of these sections, the negative health and safety impacts of utility-scale PV development were shown to be negligible, while the public health and safety benefits of installing these facilities are significant and far outweigh any negative impacts.

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Solar Panels. Photo by Mariana Proenca on Unsplash

"Clean Energy in Michigan" Series, Number 12

Facts about solar panels: PFAS contamination

By Dr. Annick Anctil, Michigan State University

Q: Do solar panels contribute to PFAS contamination?

Multiple states have raised concerns about PFAS contamination from solar farms, largely citing academic research on how PFAS could *potentially* be used in photovoltaic (PV) solar panels.[1] The fact is that PFAS is *not* customarily used in solar panels because safer, effective alternatives have already been developed and commercialized. Moreover, no studies have shown the presence or leaching of PFAS from PV panels—either while they are in active use or at the end of their life (e.g., in a landfill).

Anatomy of a solar panel

These three parts of a solar panel cause confusion about the presence of PFAS.

Self-Cleaning Coat

A self-cleaning coating on the top of a solar panel helps reduce dust, pollen, and snow adhesion, extending both the power output and the lifetime of the panel.[2] Multiple self-cleaning coating options are available on the market, many of which make use of non-hazardous silicon-based chemistry.[3] Confusion comes from the fact that some other commercialized self-cleaning coating options do make use of PFAS-based chemicals, although even those do not degrade under normal use.

Adhesives

PV panels are sealed from the elements to maximize power output and lifetime. While PFAS chemicals are found in certain adhesives, such as carpentry glues, they are not typically used in sealant adhesives for solar panels.[4] Instead, solar adhesives are based on silicone polymers, which are well known for their lack of negative health impacts and remarkable stability.[5]

Substrate

PV modules are housed in a weather-resistant substrate that offers additional protection from the elements. Thin-film PV units use glass as the substrate, while crystalline silicon PV units use a polymer substrate, which has led to the rumors of

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The Clean Energy in Michigan series provides case studies and fact sheets answering common questions about clean energy projects in Michigan.

Find this document and more about the project online at graham.umich.edu/climate-energy/energy-futures.

potential PFAS use in solar panels. The most common polymer used in silicon PV units is Tedlar, a weather resistant polymer that is *not* a PFAS compound itself and makes no use of PFAS during its manufacturing process.[6] Far more common materials, like those used in construction projects and weather resistant fabrics, present a higher risk of PFAS exposure than PV. In fact, a recent study found that these more common materials release PFAS under conditions where solar panels do not, indicating that PFAS exposure risk may be higher sitting on outdoor furniture, for example, than living next to a solar farm.[7]

What is PFAS anyway?

Per/Poly Fluoro-Alkyl Substances, PFAS for short, are a class of chemical compounds. PFAS are used in several industries for their unique properties, notably their ability to create coatings that are highly water repellent.

PFAS are extremely persistent within the environment, not breaking down over time. Certain PFAS compounds have been linked to human health issues–notably low infant birth weights, increased risk of certain cancers, and thyroid issues. As a result of their persistence and toxicity, those PFAS compounds that pose a significant risk have been banned from use and production, and subsequently replaced with safer alternatives.

It's important to note that not all PFAS compounds are dangerous. Some PFAS compounds, such as Teflon, are much more stable and present no risk to human health under normal conditions of use.[8]

1 S. Maharjan *et al.*, "Self-cleaning hydrophobic nanocoating on glass: A scalable manufacturing process," Mater. Chem. Phys., vol. 239, Jan. 2020.; . Son *et al.*, "A practical superhydrophilic self cleaning and antireflective surface for outdoor photovoltaic applications," *Sol. Energy Mater. Sol. Cells*, 2012.; H. C. Han *et al.*, "Enhancing efficiency with fluorinated interlayers in small molecule organic solar cells," *J. Mater. Chem.*, vol. 22, no. 43, 2012.

2 "How a solar cell works – American Chemical Society." [Online]; H. C. Han *et al.*, "Enhancing efficiency with fluorinated interlayers in small molecule organic solar cells," *J. Mater. Chem.*, vol. 22, no. 43, 2012.; M. Simon and E. L. Meyer, "Detection and analysis of hot-spot formation in solar cells," Solar Energy Materials and Solar Cells. pp. 106–113, 2010.

3 "Say Goodbye To Solar Panel Cleaning | Ultimate Efficiency | Solar Sharc®." [Online].

4 "Electronics Product Catalog | Dow Inc." [Online]; B. J. Henry *et al.*, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers," Integrated Environmental Assessment and Management, vol. 14, no. 3. pp. 316–334, May-2018.

5 "Electronics Product Catalog | Dow Inc."; "Properties of Silicones." [Online]; A. M. Bueche, "The curing of silicone rubber with benzoyl peroxide," *J. Polym. Sci.*, vol. 15, no. 79, pp. 105–120, Jan. 1955.

6 M. H. Alaaeddin, S. M. Sapuan, M. Y. . Zuhri, E. . Zainudin, and F. M. AL-Oqla, "Polyvinyl fluoride (PVF); Its Properties, Applications, and Manufacturing Prospects," *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 538, p. 012010, Jun. 2019.

7 R. M. Janousek, S. Lebertz, and T. P. Knepper, "Previously unidentified sources of perfluoroalkyl and polyfluoroalkyl substances from building materials and industrial fabrics," *Environ. Sci. Process. Impacts*, vol. 21, no. 11, pp. 1936–1945, Nov. 2019.

8 "Per- and Polyfluoroalkyl Substances (PFAS) | US EPA." [Online].; B. J. Henry *et al.*, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers"

EXHIBIT Q: PLAT SURVEY & TREE SURVEY

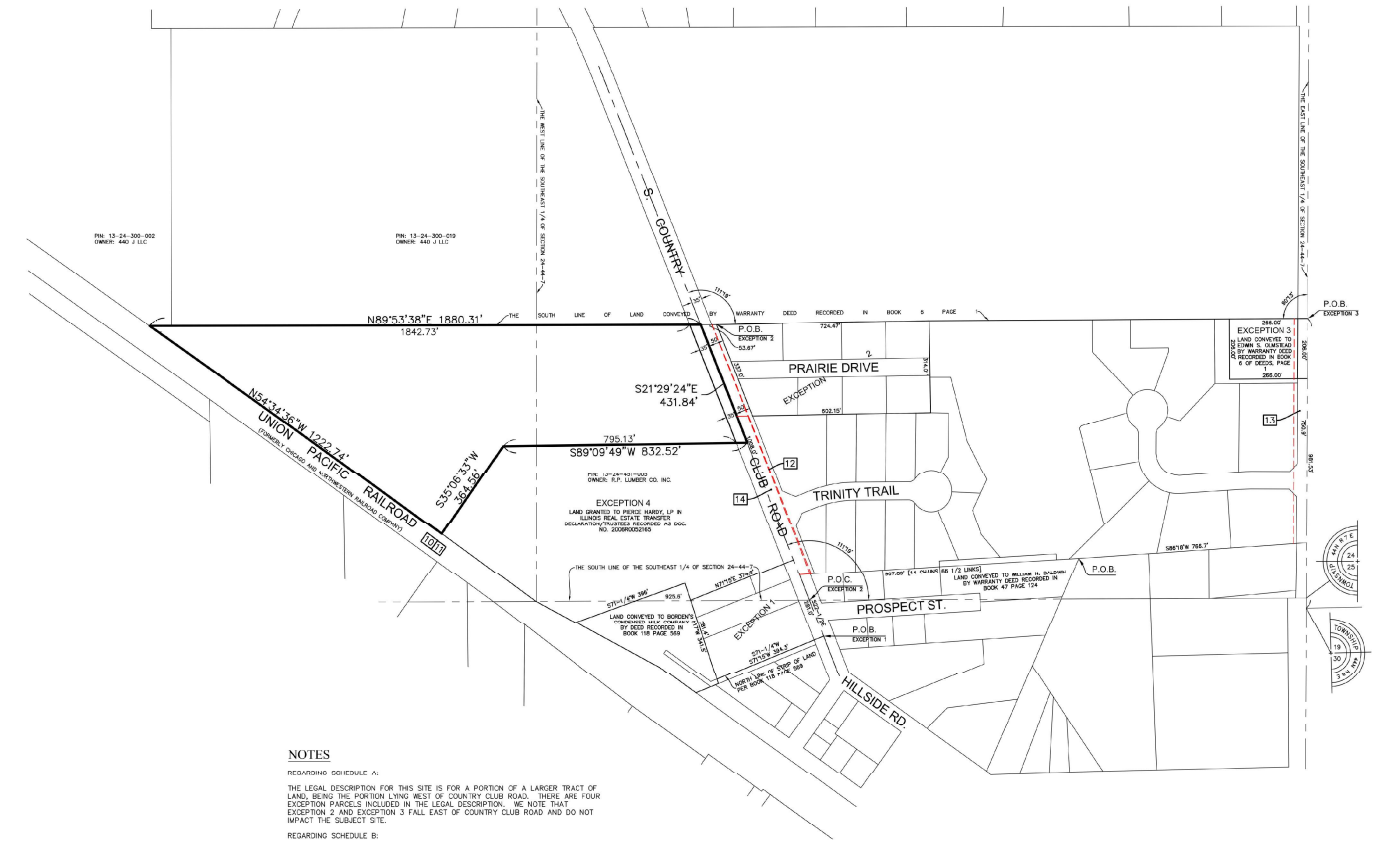
PLAT OF LAND



VICINITY MAP
NO SCALE

GRAPHIC SCALE
200 0 100 200 400 800
(IN FEET)
1 inch = 200 ft.

AREA SUMMARY
(TO HEAVY LINES)
779,104 SQUARE FEET
OR
17.885 ACRES
INCLUDES 15,122 SQUARE FEET IN COUNTRY CLUB ROAD



LEGAL DESCRIPTION

THAT PORTION OF THE FOLLOWING DESCRIBED PROPERTY LYING WEST OF COUNTRY CLUB ROAD:

PART OF THE SOUTHEAST QUARTER AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 24 AND PART OF THE NORTHEAST QUARTER OF SECTION 25, TOWNSHIP* 44 NORTH, RANGE 7 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF A PIECE OF LAND CONVEYED BY JOHN L. GIBSON AND WIFE, TO WILLIAM N. BALDWIN, BY WARRANTY DEED DATED JUNE 4, 1870, RECORDED IN BOOK 47 OF DEEDS, PAGE 124 AND RUNNING THENCE WEST ALONG THE NORTH LINE OF SAID PIECE OF LAND SO CONVEYED TO THE SAID WILLIAM N. BALDWIN, 14 CHAINS AND 66-1/2 LINKS TO THE CENTER OF THE HIGHWAY RUNNING NORTHEASTERLY TO WOODSTOCK; THENCE SOUTH 22-1/2 DEGREES EAST ALONG THE CENTER OF SAID LAST MENTIONED HIGHWAY TO A POINT IN LINE WITH THE NORTH LINE OF A STRIP OF LAND CONVEYED BY DAVID L. GIBSON AND WIFE, AND MARTHA E. GIBSON, TO BORDEN'S CONDENSED MILK COMPANY, BY WARRANTY DEED DATED NOVEMBER 9, 1906 AND RECORDED IN BOOK 118 OF DEEDS, PAGE 569; THENCE SOUTH, 71-1/4 DEGREES WEST ALONG THE NORTHERLY LINE OF SAID STRIP OF LAND SO CONVEYED TO SAID BORDEN'S CONDENSED MILK COMPANY, TO THE EASTERLY LINE OF THE OTHER PIECE OF LAND CONVEYED TO SAID BORDEN'S CONDENSED MILK COMPANY BY WARRANTY DEED LAST MENTIONED; THENCE NORTH, 17 DEGREES WEST ALONG THE EASTERLY LINE OF SAID LAST MENTIONED PIECE OF LAND, 341-1/2 FEET TO THE MOST NORTHERLY CORNER THEREOF; THENCE SOUTH, 71-1/4 DEGREES WEST ALONG THE NORTHWESTERLY LINE OF SAID LAST ABOVE MENTIONED PIECE OF LAND, 396 FEET TO THE NORTHEASTERLY LINE OF THE RIGHT OF WAY OF THE CHICAGO AND NORTHWESTERN RAILROAD COMPANY; THENCE NORTHWESTERLY ALONG THE SAID NORTHEASTERLY LINE OF SAID RIGHT-OF-WAY TO THE SOUTH LINE OF A PIECE OF LAND CONVEYED BY JOHN L. GIBSON AND WIFE, TO EDWIN S. OLMSTEAD, BY WARRANTY DEED DATED JANUARY 5, 1852 AND RECORDED IN BOOK: 6 OF DEEDS, PAGE 1; THENCE* EAST ALONG THE SOUTH LINE OF SAID PIECE OF LAND SO CONVEYED TO SAID EDWIN S. OLMSTEAD TO THE EAST LINE OF SAID SECTION 24; THENCE SOUTH ALONG SAID SECTION LINE, 750.9 FEET; THENCE SOUTH, 88 DEGREES AND 18 MINUTES WEST, 766.7 FEET TO THE PLACE OF BEGINNING (EXCEPTING AND RESERVING THEREFROM THAT PART THEREOF, DESCRIBED AS FOLLOWS: COMMENCING AT THE INTERSECTION OF THE CENTER LINE OF A PUBLIC HIGHWAY RUNNING NORTHERLY AND SOUTHERLY THROUGH THE SAID SECTIONS) AND THE SOUTHERLY LINE OF A PIECE OF PROPERTY CONVEYED BY FLORA N. MERCHANT AND SAMUEL A. MERCHANT TO RAY L. YANKE AND RUTH H. YANKE (HIS WIFE) BY WARRANTY DEED DATED OCTOBER 14, 1944 AND RECORDED IN BOOK 272, PAGE 605, FOR A PLACE OF BEGINNING; THENCE SOUTH 71 DEGREES 15 MINUTES WEST ALONG THE ABOVE MENTIONED SOUTH LINE FOR A DISTANCE OF 394.3 FEET, MORE OR LESS, TO THE EASTERLY LINE OF THE PROPERTY CONVEYED BY D. L. GIBSON AND WIFE, TO BORDEN'S CONDENSED MILK COMPANY; THENCE NORTH, 17 DEGREES, NO MINUTES WEST ALONG THE FIRST MENTIONED EASTERLY LINE, FOR A DISTANCE OF 281.4 FEET TO A POINT; THENCE NORTH, 71 DEGREES, 15 MINUTES EAST, 374.8 FEET TO THE CENTER LINE OF SAID* PUBLIC HIGHWAY; THENCE SOUTHEASTERLY ALONG THE SAID CENTER LINE OF PUBLIC ROAD, 281.0 FEET TO THE PLACE OF BEGINNING; ALSO, EXCEPTING AND RESERVING THEREFROM THAT PART THEREOF DESCRIBED AS FOLLOWS: COMMENCING ON THE SOUTH LINE OF SECTION 24 AT A POINT IN THE CENTER OF SAID HIGHWAY THAT IS 922.0 FEET EAST FROM THE SOUTH QUARTER CORNER THEREOF; THENCE NORTHWESTERLY ALONG THE CENTER OF SAID HIGHWAY, BEING ON A LINE FORMING AN ANGLE OF 111 DEGREES 19 MINUTES TO THE LEFT WITH A PROLONGATION OF THE LAST DESCRIBED LINE* FOR A DISTANCE OF 1008.0 FEET TO A POINT; THENCE EAST ON A LINE FORMING AN ANGLE OF 111 DEGREES 17 MINUTES TO THE RIGHT WITH A PROLONGATION OF THE LAST DESCRIBED LINE FOR A DISTANCE OF 53.67 FEET TO A POINT FOR A PLACE OF BEGINNING; THENCE EAST ON A CONTINUATION OF THE LAST DESCRIBED LINE FOR A DISTANCE OF 724.47 FEET TO A POINT; THENCE SOUTH AT RIGHT ANGLES TO THE LAST DESCRIBED LINE FOR A DISTANCE OF 314 FEET TO A POINT; THENCE WEST AT RIGHT ANGLES TO THE LAST DESCRIBED LINE FOR A DISTANCE OF 602.15 FEET TO A POINT ON THE EASTERLY LINE OF THE HIGHWAY AS NOW WIDENED; THENCE NORTHWESTERLY ALONG THE EASTERLY LINE OF THE HIGHWAY AS NOW WIDENED, BEING ON A LINE FORMING AN ANGLE OF 68 DEGREES 43 MINUTES TO THE RIGHT WITH A PROLONGATION OF THE LAST DESCRIBED LINE FOR A DISTANCE OF 337.0 FEET TO THE PLACE OF BEGINNING), AND EXCEPTING THEREFROM THE FOLLOWING: PART OF THE SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 44 NORTH, RANGE 7 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE EAST LINE OF SAID SOUTHEAST QUARTER WHICH IS 981.53 FEET NORTH FROM THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 44 NORTH, RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, SAID POINT BEING ON THE SOUTH LINE OF A TRACT OF LAND CONVEYED BY JOHN L. GIBSON AND WIFE, TO EDWIN S. OLMSTEAD BY WARRANTY DEED DATED JANUARY 5, 1852, AND RECORDED IN BOOK 6 OF DEEDS, PAGE 1; THENCE WESTERLY ALONG SAID SOUTH LINE, BEING ON A LINE FORMING AN ANGLE OF 90 DEGREES AND 13 MINUTES MEASURED TO THE LEFT WITH A PROLONGATION OF THE LAST DESCRIBED COURSE, A DISTANCE OF 266.00 FEET; THENCE SOUTH, PARALLEL WITH THE AFORESAID EAST LINE OF THE SOUTHEAST QUARTER, A DISTANCE OF 206.00 FEET; THENCE EASTERLY, 266.00 FEET TO POINT IN THE EAST LINE OF THE SOUTHEAST QUARTER WHICH IS 206.00 FEET SOUTH FROM THE PLACE OF BEGINNING; THENCE NORTH, ALONG SAID EAST LINE OF THE SOUTHEAST QUARTER, 206.00 FEET TO THE PLACE OF BEGINNING, IN MCHENRY COUNTY, ILLINOIS.

ALSO EXCEPTING THE TRACT OF LAND GRANTED TO PIERCE HARDY, LP., IN THE ILLINOIS REAL ESTATE TRANSFER DECLARATION/TRUSTEES DEED RECORDED JULY 18, 2006, IN DOCUMENT NO. 2006R0052165, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS.

*TYPOGRAPHICAL ERRORS CORRECTED BY SURVEYOR.

ABBREVIATIONS

O.D.I.P. = OUTSIDE DIAMETER IRON PIPE
N. = NORTH
S. = SOUTH
E. = EAST
W. = WEST
(R) = RECORD BEARING OR DISTANCE
(M) = MEASURED BEARING OR DISTANCE
(C) = CALCULATED BEARING OR DISTANCE
(D) = DEED BEARING OR DISTANCE
B.S.L. = BUILDING SETBACK LINE
U.E. = UTILITY EASEMENT
D.E. = DRAINAGE EASEMENT
P.U.E. = PUBLIC UTILITY EASEMENT
P.O.C. = POINT OF COMMENCEMENT
P.O.B. = POINT OF BEGINNING
P.U. & D.E. = PUBLIC UTILITY AND DRAINAGE EASEMENT

LINE LEGEND

SUBDIVISION BOUNDARY LINE
ADJACENT LAND PARCEL LINE
LOT LINE
EASEMENT LINE
CENTERLINE
BUILDING SETBACK LINE
SECTION LINE

SCHEDULE B EXCEPTIONS

10 EASEMENT IN FAVOR OF CHICAGO ST. PAUL & FOND DU LAC RAILROAD CO. DATED JANUARY 18, 1856, AND RECORDED JANUARY 18, 1856, IN DOCUMENT NO. 1856OR012036, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS.

11 EASEMENT IN FAVOR OF CHICAGO & NORTHWEST RAILWAY CO. DATED APRIL 17, 1871, AND RECORDED APRIL 20, 1871, IN DOCUMENT NO. 1871OR049035, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS.

12 EASEMENT IN FAVOR OF COUNTY OF MCHENRY DATED APRIL 9, 1941, AND RECORDED OCTOBER 24, 1941, IN DOCUMENT NO. 1941R0158719, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS.

13 GAS MAIN EASEMENT IN FAVOR OF NORTHERN ILLINOIS GAS COMPANY DATED SEPTEMBER 28, 1964, AND RECORDED OCTOBER 15, 1964, IN DOCUMENT NO. 1964R0434758, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS.

14 EASEMENT IN FAVOR OF ILLINOIS BELL TELEPHONE COMPANY DATED FEBRUARY 7, 1985, AND RECORDED FEBRUARY 27, 1985, IN DOCUMENT NO. 1985R0301662, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS.

15 DECLARATION OF RESTRICTIVE COVENANT AS DECLARED BY AMCORE INVESTMENT GROUP, N.A., AS TRUSTEE OF TRUST NUMBER 3582, DATED NOVEMBER 15, 2005, AND RECORDED JULY 18, 2006, IN DOCUMENT NO. 2006R0052156, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS.

NOTES

REGARDING SCHEDULE A:

THE LEGAL DESCRIPTION FOR THIS SITE IS FOR A PORTION OF A LARGER TRACT OF LAND, BEING THE PORTION LYING WEST OF COUNTRY CLUB ROAD. THERE ARE FOUR EXCEPTION PARCELS INCLUDED IN THE LEGAL DESCRIPTION. WE NOTE THAT EXCEPTION 2 AND EXCEPTION 3 FALL EAST OF COUNTRY CLUB ROAD AND DO NOT IMPACT THE SUBJECT SITE.

REGARDING SCHEDULE B:

SCHEDULE B EXCEPTIONS 1 THROUGH 9 ARE NOT PLOTTABLE EASEMENTS OR RESTRICTIONS AND THEREFORE ARE NOT SHOWN.

10 DOCUMENT NO. 1856OR012036 RECORDED JANUARY 18, 1856, APPEARS TO BE A CONVEYANCE TO THE CHICAGO ST. PAUL & FOND DU LAC RAILROAD CO. DATED JANUARY 18, 1856, NOT AN EASEMENT AND APPEARS TO DESCRIBE LAND LOCATED SOUTH AND SOUTHWEST OF THE SURVEYED SITE.

11 DOCUMENT NO. 1871OR049035 RECORDED APRIL 20, 1871 APPEARS TO BE A CONVEYANCE TO THE CHICAGO & NORTHWEST RAILWAY CO., NOT AN EASEMENT AND APPEARS TO DESCRIBE LAND LOCATED SOUTH AND SOUTHWEST OF THE SURVEYED SITE.

12 EASEMENT IN FAVOR OF COUNTY OF MCHENRY DATED APRIL 9, 1941, AND RECORDED OCTOBER 24, 1941, IN DOCUMENT NO. 1941R0158719, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS IS A RIGHT OF WAY DEDICATION —MILLENNIUM OF COUNTRY CLUB ROAD. THE PARCEL FALLS IN THE WEST HALF OF COUNTRY CLUB ROAD, NOT ON THE SUBJECT SITE AS SHOWN HEREON AND AN ADDITIONAL PARCEL FALLS SOUTH OF THE SUBJECT SITE AND IS NOT PLOTTABLE.

13 GAS MAIN EASEMENT IN FAVOR OF NORTHERN ILLINOIS GAS COMPANY DATED SEPTEMBER 28, 1964, AND RECORDED OCTOBER 15, 1964, IN DOCUMENT NO. 1964R0434758, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS. EAST LINE OF SEC. 24 ALONG CHERRY ROAD (TODAYS CHERRY VALLEY RD?) NOT ON THE SUBJECT SITE.

14 EASEMENT IN FAVOR OF ILLINOIS BELL TELEPHONE COMPANY DATED FEBRUARY 7, 1985, AND RECORDED FEBRUARY 27, 1985, IN DOCUMENT NO. 1985R0301662, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS. IS LOCATED IN THE NORTHEAST HALF OF COUNTRY CLUB RD. NOT ON THE SUBJECT SITE.

15 DECLARATION OF RESTRICTIVE COVENANT AS DECLARED BY AMCORE INVESTMENT GROUP, N.A., AS TRUSTEE OF TRUST NUMBER 3582, DATED NOVEMBER 15, 2005, AND RECORDED JULY 18, 2006, IN DOCUMENT NO. 2006R0052156, PUBLIC RECORDS OF MCHENRY COUNTY, STATE OF ILLINOIS. RESTRICTS USE AS A LUMBER BUSINESS FOR 20 YEARS "AFTER THE DATE HEREOF."

GENERAL NOTES

1. THIS PLAT REFLECTS THE LEGAL DESCRIPTION AND EASEMENTS OF RECORD AS IDENTIFIED IN TITLE COMMITMENT NUMBER 2500037670 ISSUED BY STEWART TITLE GUARANTY COMPANY HAVING AN EFFECTIVE DATE OF SEPTEMBER 23, 2025.
2. THIS PLAT WAS PREPARED UTILIZING PARCEL LINES OBTAINED FROM THE MCHENRY COUNTY GIS DEPARTMENT.
3. THIS SITE FALLS WITHIN 'OTHER AREAS: ZONE X' (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAN) AS DEFINED BY THE FLOOD INSURANCE RATE MAP, MAP NUMBER 17111C0215J, HAVING AN EFFECTIVE DATE OF NOVEMBER 15, 2006.

SURVEYOR'S STATEMENT

THE ABOVE PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION FROM EXISTING RECORDS, MAPS AND PLATS AND IS NOT A SURVEY.

COMPASS SURVEYING LTD
PROFESSIONAL DESIGN FIRM
LAND SURVEYOR CORPORATION NO. 184.002778
LICENSE EXPIRES 4/30/2027

BY: _____ DATE: 11/05/2025
DANIEL W. WALTER
ILLINOIS PROFFESSIONAL LAND SURVEYOR NO. 3585
LICENSE EXPIRES: 11/30/2026

DANIEL W. WALTER 35-3585 AURORA, ILLINOIS PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS

11/5/2025 3:27 PM – J:\PSDATA\2025 PROJECTS\25.0292\25.0292-PDL.DWG

NO.	DATE	BY	REVISIONS	DRAWN BY	PM	CHECKED BY	DW	BOOK N/A PG N/A
	11-05-25	PC	N/A					

CLIENT: Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
570 LAKE COOK ROAD, SUITE 200
DEERFIELD, ILLINOIS 60015
PHONE: (847) 520-9200

PROJECT: Opal - Woodstock
3791-3803 County Club Road

COMPASS SURVEYING LTD
ALTA SURVEYS • TOPOGRAPHIC • CONSTR. CTRS STAKING
2631 GENDER WAGNER PARKWAY, STE. 100
AURORA, IL 60502
PHONE (630) 820-9100 FAX (630) 820-7030 EMAIL ADMIN@CLSURVEYING.COM

SCALE: 1" = 200'

1 OF 1

PROJ NO.: 25.0292

MEMORANDUM

To:	Carson Weinand *Arena Renewables, LLC*
From:	Sarah Skowronski *Kimley-Horn and Associates, Inc.*
Date:	October 8, 2025
Subject:	Opal Solar, LLC Due Diligence Tree Survey & Technical Memorandum

INTRODUCTION

Arena Renewables, LLC has engaged Kimley-Horn and Associates, Inc. (Kimley-Horn) to perform a comprehensive tree survey for due diligence purposes due to the request of the Zoning Board of Appeals (ZBA) for projects located in unincorporated McHenry County. While there are no dedicated tree preservation ordinances enforced in unincorporated McHenry County, several documents produced by the local conservation authorities have been reviewed and determined how they shall apply in this project. The property (Parcel ID Number: 13-24-300-018) is located in McHenry County, Illinois, west of S Country Club Road. The property is currently zoned I-1, Light Industrial, and is a vacant silvicultural field.

On September 30, 2025, a certified arborist conducted an inventory of all viable trees on the subject property with a Diameter at Breast Height (DBH) of 3 inches or greater, documenting species, size, and general health condition. The arborist's assessment provides the necessary technical basis for site planning and regulatory decisions. Enclosed you will find a summary table of the tree survey (**Attachment A**) and georeferenced digital files in a .kmz format.

SUMMARY OF FINDINGS:

Tree Survey Procedures

Joe Cogswell, ISA Certified Arborist, Cert-ID IL-9736A, conducted a tree survey on September 30, 2025, for the purposes of identifying viable trees for due diligence purposes. The survey protocol included inventory of all trees with a DBH of 3 inches or greater, excluding invasive species such as *Rhamnus cathartica* (Buckthorn) and *Lonicera mackii/tartarica* (Honeysuckle spp).

For multistem trees, the total DBH was calculated by measuring the DBH of the dominant stem and adding 50% of the DBH of each additional stem to this value. Tree condition was measured as good, fair, poor, or dead, based upon a visual evaluation of the tree individual's health at the time of the survey.

In alignment with McHenry County's conservation priorities as outlined in the McHenry County Conservation District's Natural Areas Protection Guide and the Oaks of McHenry County addendum, special attention was given to oak and hickory species during the survey.

The tree survey area was limited to the land of development (LOD) including a 50-foot buffer surrounding the LOD. A summary of trees identified as meeting survey requirements and their associated species and condition is included below in **Table 1.** A total of 1,065 trees were identified with DBH values greater than or equal to 3 inches.

Of the trees identified, ***13 trees are considered of note to McHenry County***. The criteria to define this are those of oak and hickory species of fair or good quality with DBHs greater than 12 inches. This criterion was established due to the significant contributions of the older individuals of this species subset to the McHenry County ecosystem.

Other notable species are also called out in Table 1. These include oak and hickory individuals with DBH values less than 12 inches and other higher quality species. Hickory species individuals were not identified during survey of the subject property and therefore are not represented in Table 1 below. Trees considered as an invasive species, such as *Rhamnus cathartica* (Buckthorn) and *Lonicera maackii* (Honeysuckle), are not included. The summary table of trees identified with DBH values greater than 3 inches and their associated locations, species, and qualities for each tree is included in **Attachment A.**

Table 1: Tree Survey Summary

Trees Meeting Protocol Requirements	Total Number of Trees Surveyed	Total Number of Trees in Good or Fair Condition	Total Number of Trees in Poor or Dead Condition
Oaks with DBH Values 12 Inches or Greater	14	13	1
Notable Species - (Oaks with DBH Values Less Than 12 Inches, Elms, Sycamores, & Sugar Maples)	70	70	0
Other Species Surveyed	981	921	60
Total	**1,065**	**1,004**	**61**

Tree Preservation & Removal Plan Requirements

At this time, based on publicly available information, McHenry County does not have an active tree preservation ordinance or removal requirement. This tree survey was conducted for due diligence purposes on request of the Zoning Board of Appeals (ZBA).

While formal approval is not mandated, McHenry County encourages property owners to retain mature trees, with an emphasis on native species such as oak and hickory species. When tree removal is necessary it is recommended to document the tree's condition and to consider replacement or mitigation. In cases where tree replacement is feasible, McHenry County guidelines suggest planting native, non-invasive tree species with a minimum caliper of two inches.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the information reviewed, Kimley-Horn has identified 14 trees that are oak species. Of these 14 trees, 13 were of good or fair condition. A .kmz file of all 1,065 surveyed trees and all associated information has been included. Recommendations for replacements can be provided upon request.

ATTACHMENT A

Tree Survey Table

FID	Common Name	Species	DBH	Condition	Comments	Notable	Latitude	Longitude
0	Northern red oak	Quercus rubra	13	FAIR		YES	42.2714022	-88.364965
1	Northern red oak	Quercus rubra	12	FAIR		YES	42.271336	-88.365158
2	White oak	Quercus alba	14	FAIR		YES	42.2722314	-88.367956
3	White oak	Quercus alba	12	FAIR		YES	42.2722041	-88.368024
4	Northern red oak	Quercus rubra	15	FAIR		YES	42.2721943	-88.368177
5	Bur oak	Quercus macrocarpa	30	FAIR		YES	42.2722111	-88.368287
6	Northern red oak	Quercus rubra	24	FAIR		YES	42.2722532	-88.368439
7	Swamp white oak	Quercus bicolor	12	FAIR	Multistem	YES	42.2716922	-88.368697
8	Bur oak	Quercus macrocarpa	24	POOR		YES	42.2717888	-88.368863
9	White oak	Quercus alba	25	FAIR		YES	42.272182	-88.368947
10	White oak	Quercus alba	26	FAIR		YES	42.2721652	-88.369484
11	White oak	Quercus alba	12	FAIR		YES	42.2707314	-88.366244
12	White oak	Quercus alba	12	FAIR		YES	42.2707344	-88.366329
13	Chinkapin oak	Quercus muehlenbergii	15	FAIR		YES	42.271535	-88.366485
14	Bur oak	Quercus macrocarpa	10	FAIR		YES	42.2719428	-88.363135
15	Swamp white oak	Quercus bicolor	4	FAIR		YES	42.2720248	-88.36362
16	Swamp white oak	Quercus bicolor	4	FAIR		YES	42.2720895	-88.36374
17	Elm spp.	Ulmus spp.	3	FAIR		YES	42.2716896	-88.363752
18	Bur oak	Quercus macrocarpa	3	FAIR		YES	42.2714094	-88.36271
19	Bur oak	Quercus macrocarpa	6	FAIR		YES	42.2713475	-88.36267
20	Bur oak	Quercus macrocarpa	5	FAIR		YES	42.2713174	-88.362742
21	Bur oak	Quercus macrocarpa	3	FAIR		YES	42.2712783	-88.362641
22	Bur oak	Quercus macrocarpa	4	FAIR		YES	42.2712322	-88.362621
23	Bur oak	Quercus macrocarpa	4	FAIR		YES	42.2712438	-88.362637
24	Bur oak	Quercus macrocarpa	7	FAIR		YES	42.2712078	-88.362627
25	Elm spp.	Ulmus spp.	10	FAIR		YES	42.2711383	-88.362905
26	Swamp white oak	Quercus bicolor	3	FAIR		YES	42.2711656	-88.362867
27	Elm spp.	Ulmus spp.	6	FAIR		YES	42.2711045	-88.363399
28	Elm spp.	Ulmus spp.	6	FAIR		YES	42.2711056	-88.36342
29	Hybrid elm	Ulmus spp.	6	FAIR		YES	42.271246	-88.363678
30	Elm spp.	Ulmus spp.	6	FAIR		YES	42.2715083	-88.363551
31	Bur oak	Quercus macrocarpa	4	FAIR		YES	42.2712893	-88.36296
32	Elm spp.	Ulmus spp.	6	FAIR		YES	42.2713181	-88.362988
33	Hybrid elm	Ulmus spp.	5	FAIR		YES	42.2716514	-88.363443
34	Elm spp.	Ulmus spp.	4	FAIR		YES	42.2711375	-88.363977
35	Siberian elm	Ulmus pumila	5	FAIR		YES	42.2711245	-88.364202
36	Northern red oak	Quercus rubra	7	FAIR		YES	42.2714809	-88.36493
37	Northern red oak	Quercus rubra	10	FAIR		YES	42.2714495	-88.364949
38	Northern red oak	Quercus rubra	9	FAIR		YES	42.2714044	-88.36493
39	Hybrid elm	Ulmus spp.	6	FAIR		YES	42.2711215	-88.3649
40	Northern red oak	Quercus rubra	10	FAIR		YES	42.2713363	-88.365107
41	Northern red oak	Quercus rubra	10	FAIR		YES	42.2713883	-88.36512
42	Northern red oak	Quercus rubra	10	FAIR		YES	42.2713855	-88.365175
43	Northern red oak	Quercus rubra	4	FAIR		YES	42.2713888	-88.365155
44	Northern red oak	Quercus rubra	4	FAIR		YES	42.2713833	-88.365193
45	Hybrid elm	Ulmus spp.	4	FAIR		YES	42.2713207	-88.365189
46	Northern red oak	Quercus rubra	10	FAIR		YES	42.2717687	-88.364052
47	Northern red oak	Quercus rubra	7	FAIR		YES	42.2718068	-88.364047
48	Northern red oak	Quercus rubra	7	FAIR		YES	42.2718839	-88.364048
49	Northern red oak	Quercus rubra	8	FAIR		YES	42.2718509	-88.364046
50	Swamp white oak	Quercus bicolor	3	FAIR		YES	42.2721691	-88.364045
51	Swamp white oak	Quercus bicolor	3	FAIR		YES	42.2721625	-88.364042
52	Elm spp.	Ulmus spp.	3	FAIR		YES	42.2720994	-88.364665
53	Swamp white oak	Quercus bicolor	4	FAIR		YES	42.2716437	-88.364413
54	Swamp white oak	Quercus bicolor	4	FAIR		YES	42.2716906	-88.36449
55	Swamp white oak	Quercus bicolor	5	FAIR		YES	42.2719572	-88.36827
56	Northern red oak	Quercus rubra	8	FAIR		YES	42.2721517	-88.368279
57	Bur oak	Quercus macrocarpa	4	GOOD		YES	42.2720284	-88.368771
58	Northern red oak	Quercus rubra	7	FAIR		YES	42.272034	-88.368821
59	Swamp white oak	Quercus bicolor	7	FAIR		YES	42.2720232	-88.369332

60	Swamp white oak	Quercus bicolor	5	FAIR		YES	42.2719897	-88.36926
61	Swamp white oak	Quercus bicolor	5	GOOD		YES	42.2719514	-88.369211
62	Swamp white oak	Quercus bicolor	5	GOOD		YES	42.2718759	-88.369058
63	Swamp white oak	Quercus bicolor	4	FAIR		YES	42.2718133	-88.368923
64	Swamp white oak	Quercus bicolor	5	FAIR		YES	42.2717361	-88.368781
65	Swamp white oak	Quercus bicolor	5	FAIR		YES	42.2717162	-88.368732
66	Chinkapin oak	Quercus muehlenbergii	6	FAIR		YES	42.2709186	-88.36655
67	White oak	Quercus alba	8	FAIR		YES	42.2709172	-88.366606
68	Chinkapin oak	Quercus muehlenbergii	6	FAIR		YES	42.2709216	-88.366652
69	Chinkapin oak	Quercus muehlenbergii	5	FAIR		YES	42.2709173	-88.366669
70	White oak	Quercus alba	8	FAIR		YES	42.2709265	-88.366702
71	Chinkapin oak	Quercus muehlenbergii	5	FAIR		YES	42.2709265	-88.366702
72	Chinkapin oak	Quercus muehlenbergii	3	FAIR		YES	42.2709149	-88.366743
73	Chinkapin oak	Quercus muehlenbergii	3	FAIR		YES	42.2709149	-88.366743
74	Chinkapin oak	Quercus muehlenbergii	6	FAIR		YES	42.2709087	-88.366827
75	Northern red oak	Quercus rubra	8	FAIR		YES	42.2710341	-88.365445
76	White oak	Quercus alba	10	FAIR		YES	42.2712978	-88.365695
77	White oak	Quercus alba	10	FAIR		YES	42.2712807	-88.365806
78	White oak	Quercus alba	10	FAIR		YES	42.2712676	-88.365915
79	White oak	Quercus alba	10	FAIR		YES	42.2709056	-88.366286
80	White oak	Quercus alba	10	FAIR		YES	42.2709259	-88.366402
81	Chinkapin oak	Quercus muehlenbergii	8	FAIR		YES	42.2713733	-88.365967
82	Chinkapin oak	Quercus muehlenbergii	10	FAIR		YES	42.2714104	-88.365862
83	Chinkapin oak	Quercus muehlenbergii	10	FAIR		YES	42.2713865	-88.365749
84	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2718365	-88.36311
85	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2718894	-88.36311
86	Silver maple	Acer saccharinum	9	FAIR		NO	42.2718895	-88.363123
87	Black walnut	Juglans nigra	9	FAIR		NO	42.2722422	-88.363096
88	Black walnut	Juglans nigra	5	FAIR		NO	42.2721372	-88.363163
89	Box elder	Acer negundo	11	FAIR		NO	42.2722608	-88.363203
90	White mulberry	Morus alba	19	FAIR		NO	42.2722659	-88.363213
91	White mulberry	Morus alba	19	FAIR		NO	42.2722659	-88.363213
92	Black walnut	Juglans nigra	5	FAIR		NO	42.2721984	-88.363238
93	Cherry spp.	Prunus spp.	3	FAIR		NO	42.2722007	-88.36324
94	Cherry spp.	Prunus spp.	4	FAIR		NO	42.2721984	-88.363243
95	Callery pear	Pyrus calleryana	6	FAIR	Multistem	NO	42.2722021	-88.363244
96	Box elder	Acer negundo	7	FAIR		NO	42.2722084	-88.363241
97	Black walnut	Juglans nigra	3.5	FAIR		NO	42.2722253	-88.363347
98	Cherry spp.	Prunus spp.	3	FAIR		NO	42.2722169	-88.363346
99	Callery pear	Pyrus calleryana	10	FAIR	Multistem	NO	42.2722181	-88.363305
100	Callery pear	Pyrus calleryana	12	FAIR		NO	42.2721894	-88.363271
101	Black walnut	Juglans nigra	4	FAIR		NO	42.2722285	-88.36338
102	Black walnut	Juglans nigra	3	FAIR		NO	42.272217	-88.363381
103	Black walnut	Juglans nigra	7	FAIR		NO	42.2722232	-88.363416
104	Black walnut	Juglans nigra	8	FAIR		NO	42.2722127	-88.363442
105	Black cherry	Prunus serotina	9	FAIR		NO	42.2722405	-88.36345
106	Silver maple	Acer saccharinum	10	POOR		NO	42.2722429	-88.363496
107	Black walnut	Juglans nigra	14	FAIR		NO	42.2722694	-88.363544
108	Black walnut	Juglans nigra	13	FAIR		NO	42.2722826	-88.363607
109	Black walnut	Juglans nigra	9	FAIR		NO	42.2722365	-88.363566
110	Common juniper	Juniperus communis	6	FAIR		NO	42.2721733	-88.363554
111	Callery pear	Pyrus calleryana	8	FAIR	Multistem	NO	42.2717971	-88.363206
112	Callery pear	Pyrus calleryana	6	FAIR	Multistem	NO	42.2718366	-88.363236
113	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2718087	-88.36335
114	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2718494	-88.363363
115	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2718804	-88.363372
116	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2718967	-88.363372
117	Arborvitae	Thuja orientalis	3	FAIR		NO	42.271866	-88.363367
118	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2718363	-88.363359
119	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2718237	-88.363354
120	Arborvitae	Thuja orientalis	3	FAIR		NO	42.271922	-88.363379

121	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2719132	-88.363376
122	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2719323	-88.363382
123	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2719423	-88.363385
124	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2719506	-88.363387
125	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2719275	-88.363379
126	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720778	-88.363438
127	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2721376	-88.363462
128	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2721003	-88.363553
129	Black walnut	Juglans nigra	5	FAIR		NO	42.2720939	-88.363626
130	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720079	-88.363638
131	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2719167	-88.363528
132	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2719351	-88.363741
133	Black walnut	Juglans nigra	4	FAIR		NO	42.2720652	-88.363749
134	Magnolia spp.	Magnolia spp.	5	FAIR	Multistem	NO	42.2721139	-88.363734
135	Black walnut	Juglans nigra	6	FAIR		NO	42.2721463	-88.363789
136	Black cherry	Prunus serotina	4	FAIR		NO	42.2721043	-88.363783
137	Black walnut	Juglans nigra	4	FAIR		NO	42.2720801	-88.363785
138	Black walnut	Juglans nigra	6	FAIR		NO	42.272052	-88.363791
139	Black walnut	Juglans nigra	6	FAIR		NO	42.2720376	-88.363762
140	Black walnut	Juglans nigra	5	FAIR		NO	42.2720252	-88.363792
141	Black walnut	Juglans nigra	5	FAIR		NO	42.2719979	-88.363786
142	Cherry spp.	Prunus spp.	5	FAIR		NO	42.2719502	-88.363778
143	Black walnut	Juglans nigra	3	FAIR		NO	42.2719404	-88.363782
144	Callery pear	Pyrus calleryana	6	FAIR	Multistem	NO	42.2719307	-88.363779
145	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2718475	-88.363791
146	Serviceberry spp.	Amelanchier spp.	4	FAIR		NO	42.2718151	-88.363788
147	Black cherry	Prunus serotina	5	FAIR		NO	42.2718131	-88.36382
148	Black cherry	Prunus serotina	13	FAIR		NO	42.2717742	-88.363811
149	White spruce	Picea glauca	16	FAIR		NO	42.2715059	-88.362835
150	Callery pear	Pyrus calleryana	5	FAIR	Multistem	NO	42.2714705	-88.362787
151	Eastern red cedar	Juniperus virginiana	8	FAIR		NO	42.2714599	-88.362747
152	Eastern red cedar	Juniperus virginiana	8	FAIR		NO	42.2714496	-88.362704
153	White mulberry	Morus alba	4	FAIR		NO	42.2714337	-88.362689
154	Austrian pine	Pinus nigra	10	FAIR		NO	42.2714207	-88.362727
155	Austrian pine	Pinus nigra	6	POOR		NO	42.2714148	-88.36267
156	Austrian pine	Pinus nigra	6	FAIR		NO	42.2713777	-88.362694
157	Austrian pine	Pinus nigra	12	FAIR		NO	42.2714232	-88.362754
158	Black spruce	Picea mariana	9	FAIR		NO	42.2713823	-88.362743
159	Arborvitae	Thuja orientalis	9	FAIR		NO	42.2713518	-88.362712
160	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2713249	-88.362742
161	Callery pear	Pyrus calleryana	8	FAIR		NO	42.2712641	-88.362747
162	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2712698	-88.362701
163	White pine	Pinus strobus	22	FAIR		NO	42.2712479	-88.362574
164	Callery pear	Pyrus calleryana	8	FAIR		NO	42.2712494	-88.362655
165	Silver maple	Acer saccharinum	18	POOR		NO	42.2711609	-88.362511
166	Austrian pine	Pinus nigra	9	POOR		NO	42.2711282	-88.362556
167	Blue spruce	Picea pungens	5	POOR		NO	42.2711635	-88.362677
168	Austrian pine	Pinus nigra	20	FAIR		NO	42.2711175	-88.362702
169	Austrian pine	Pinus nigra	20	FAIR		NO	42.2711129	-88.362661
170	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2711674	-88.362734
171	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2711353	-88.362834
172	Silver maple	Acer saccharinum	3	FAIR	Multistem	NO	42.2711382	-88.362949
173	Callery pear	Pyrus calleryana	8	FAIR		NO	42.2711154	-88.362998
174	Callery pear	Pyrus calleryana	8	FAIR		NO	42.2711368	-88.362998
175	Box elder	Acer negundo	6	FAIR		NO	42.2711329	-88.363047
176	Trident maple	Acer buergerianum	3	FAIR		NO	42.271162	-88.363097
177	White spruce	Picea glauca	12	FAIR	Multistem	NO	42.2711544	-88.36314
178	Box elder	Acer negundo	3	FAIR		NO	42.2711524	-88.363181
179	Crab apple spp.	Malus spp.	3	FAIR		NO	42.2711558	-88.363222
180	White spruce	Picea glauca	8	FAIR		NO	42.2712248	-88.363141
181	White spruce	Picea glauca	12	FAIR		NO	42.2711729	-88.363269

182	White spruce	Picea glauca	12	FAIR		NO	42.271159	-88.363278
183	Eastern cottonwood	Populus deltoides	10	FAIR		NO	42.2711269	-88.363318
184	White spruce	Picea glauca	10	FAIR		NO	42.2711386	-88.363341
185	Catalpa spp.	Catalpa spp.	4	FAIR		NO	42.2711166	-88.363369
186	White pine	Pinus strobus	20	FAIR		NO	42.271193	-88.363388
187	Blue spruce	Picea pungens	12	FAIR		NO	42.2711695	-88.363365
188	Silver maple	Acer saccharinum	15	POOR	Multistem	NO	42.2712363	-88.36339
189	Box elder	Acer negundo	4	FAIR		NO	42.2711465	-88.363442
190	Blue spruce	Picea pungens	10	POOR		NO	42.2711403	-88.363509
191	Blue spruce	Picea pungens	15	FAIR		NO	42.2711433	-88.363555
192	White pine	Pinus strobus	15	FAIR		NO	42.2712526	-88.36365
193	Box elder	Acer negundo	6	FAIR		NO	42.2711414	-88.36363
194	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2712573	-88.363701
195	Crab apple spp.	Malus spp.	3	FAIR		NO	42.2713208	-88.363566
196	Crab apple spp.	Malus spp.	6	FAIR		NO	42.2713738	-88.36358
197	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2714804	-88.363654
198	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714123	-88.363746
199	Crab apple spp.	Malus spp.	5	FAIR		NO	42.2713849	-88.363711
200	Honey locust	Gleditsia triacanthos	18	FAIR		NO	42.271487	-88.363769
201	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714953	-88.36385
202	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714577	-88.363824
203	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714414	-88.36379
204	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2715466	-88.363855
205	Callery pear	Pyrus calleryana	3	FAIR		NO	42.271464	-88.363563
206	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2714859	-88.363532
207	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2714859	-88.363532
208	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2715	-88.363527
209	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2714986	-88.3635
210	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2715103	-88.363475
211	Mulberry spp.	Morus spp.	3	POOR		NO	42.2714969	-88.363455
212	Austrian pine	Pinus nigra	10	FAIR		NO	42.2714235	-88.363391
213	Austrian pine	Pinus nigra	9	FAIR		NO	42.2713852	-88.363366
214	White pine	Pinus strobus	3	FAIR		NO	42.2714244	-88.363368
215	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2714881	-88.363402
216	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2714702	-88.36337
217	Red mulberry	Morus rubra	6	FAIR		NO	42.2714925	-88.36338
218	Eastern red cedar	Juniperus virginiana	6	POOR		NO	42.2715082	-88.363363
219	Eastern red cedar	Juniperus virginiana	7	FAIR		NO	42.2714859	-88.363352
220	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2714468	-88.363301
221	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2714477	-88.363277
222	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2714441	-88.363251
223	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2714711	-88.363296
224	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2714447	-88.363229
225	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2714463	-88.36324
226	Arborvitae	Thuja orientalis	6	FAIR		NO	42.271446	-88.363286
227	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2714453	-88.363293
228	Arborvitae	Thuja orientalis	3	FAIR		NO	42.2714429	-88.363218
229	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2714447	-88.363235
230	Silver linden	Tilia tomentosa	8	FAIR		NO	42.2714885	-88.363167
231	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2714794	-88.36313
232	Red mulberry	Morus rubra	5	FAIR		NO	42.2714904	-88.363108
233	Blue spruce	Picea pungens	12	FAIR		NO	42.2714223	-88.363121
234	Red mulberry	Morus rubra	4	FAIR		NO	42.2714829	-88.363092
235	Silver linden	Tilia tomentosa	5	FAIR		NO	42.2714854	-88.363068
236	Eastern red cedar	Juniperus virginiana	7	FAIR		NO	42.2714605	-88.36305
237	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2714351	-88.363044
238	Red mulberry	Morus rubra	6	FAIR		NO	42.2714779	-88.363028
239	Eastern red cedar	Juniperus virginiana	15	FAIR		NO	42.271441	-88.363
240	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2714422	-88.362889
241	Austrian pine	Pinus nigra	15	FAIR		NO	42.2713809	-88.36281
242	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2713163	-88.362844

243	Blue spruce	Picea pungens	12	FAIR		NO	42.2712766	-88.362837
244	Blue spruce	Picea pungens	8	FAIR		NO	42.2712547	-88.362816
245	Callery pear	Pyrus calleryana	8	FAIR		NO	42.2713175	-88.362961
246	Arborvitae	Thuja orientalis	18	FAIR	Multistem	NO	42.2713281	-88.363037
247	Red mulberry	Morus rubra	10	POOR		NO	42.2713023	-88.3631
248	White pine	Pinus strobus	8	FAIR		NO	42.2713538	-88.363165
249	Austrian pine	Pinus nigra	12	FAIR		NO	42.271371	-88.363199
250	Austrian pine	Pinus nigra	8	FAIR		NO	42.2713861	-88.363123
251	Black cherry	Prunus serotina	3	FAIR		NO	42.2714041	-88.363137
252	Arborvitae	Thuja orientalis	15	FAIR		NO	42.2713483	-88.36321
253	Arborvitae	Thuja orientalis	10	FAIR		NO	42.2713479	-88.363262
254	Crab apple spp.	Malus spp.	4	POOR		NO	42.2712925	-88.363221
255	Black cherry	Prunus serotina	4	FAIR		NO	42.2712635	-88.363291
256	Catalpa spp.	Catalpa spp.	5	FAIR		NO	42.2715609	-88.363527
257	Crab apple spp.	Malus spp.	7	POOR		NO	42.271604	-88.36352
258	Crab apple spp.	Malus spp.	5	FAIR		NO	42.2716231	-88.363521
259	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2716643	-88.363427
260	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2716565	-88.363318
261	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2716717	-88.363316
262	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2716857	-88.363317
263	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2716982	-88.363324
264	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2716419	-88.363315
265	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2717152	-88.363328
266	Arborvitae	Thuja orientalis	4	FAIR		NO	42.271706	-88.363326
267	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2716026	-88.363362
268	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2715889	-88.363311
269	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2715769	-88.363294
270	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2715653	-88.363289
271	Silver maple	Acer saccharinum	4	FAIR		NO	42.2716012	-88.363279
272	Black cherry	Prunus serotina	8	FAIR	Multistem	NO	42.2716206	-88.363227
273	Black cherry	Prunus serotina	5	FAIR		NO	42.2715785	-88.363344
274	Black cherry	Prunus serotina	4	FAIR		NO	42.2715652	-88.363327
275	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2715639	-88.363308
276	Catalpa spp.	Catalpa spp.	10	FAIR		NO	42.2715572	-88.363208
277	Black cherry	Prunus serotina	3	FAIR		NO	42.2715806	-88.3632
278	Crab apple spp.	Malus spp.	10	POOR	Multistem	NO	42.2716045	-88.363103
279	Catalpa spp.	Catalpa spp.	3	FAIR		NO	42.271643	-88.363121
280	Crab apple spp.	Malus spp.	5	FAIR		NO	42.2716562	-88.36318
281	Black cherry	Prunus serotina	3	FAIR		NO	42.2714675	-88.363999
282	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2713707	-88.363976
283	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2713442	-88.363977
284	Blue spruce	Picea pungens	12	FAIR		NO	42.2711824	-88.363998
285	Eastern cottonwood	Populus deltoides	12	FAIR		NO	42.2711381	-88.364004
286	Blue spruce	Picea pungens	10	FAIR		NO	42.2711749	-88.364024
287	Blue spruce	Picea pungens	12	FAIR		NO	42.2711697	-88.364056
288	Black cherry	Prunus serotina	3	FAIR		NO	42.2711373	-88.364071
289	Catalpa spp.	Catalpa spp.	4	FAIR		NO	42.2711251	-88.364098
290	Catalpa spp.	Catalpa spp.	7	FAIR	Multistem	NO	42.2711258	-88.364179
291	White spruce	Picea glauca	12	FAIR		NO	42.2711523	-88.364159
292	Crab apple spp.	Malus spp.	4	POOR		NO	42.2712838	-88.364145
293	Eastern red cedar	Juniperus virginiana	4	GOOD		NO	42.2713847	-88.36409
294	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2714205	-88.364103
295	Black cherry	Prunus serotina	3	FAIR		NO	42.2714383	-88.364081
296	Honey locust	Gleditsia triacanthos	4	FAIR		NO	42.2714677	-88.364111
297	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2714977	-88.364115
298	Trident maple	Acer buergerianum	8	POOR		NO	42.2715678	-88.364187
299	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2715259	-88.364274
300	Honey locust	Gleditsia triacanthos	5	POOR		NO	42.2714906	-88.364293
301	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714849	-88.364335
302	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2715031	-88.364364
303	Honey locust	Gleditsia triacanthos	3	FAIR		NO	42.2715262	-88.364357

304	Honey locust	Gleditsia triacanthos	3	FAIR		NO	42.2715429	-88.364374
305	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.271458	-88.364378
306	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2714844	-88.364431
307	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2715128	-88.364454
308	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2715466	-88.364416
309	Red maple	Acer rubrum	5	FAIR		NO	42.2715583	-88.364418
310	Honey locust	Gleditsia triacanthos	6	FAIR		NO	42.2715709	-88.364374
311	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2715084	-88.36449
312	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2715509	-88.364535
313	Crab apple spp.	Malus spp.	4	FAIR		NO	42.2715356	-88.364587
314	Black cherry	Prunus serotina	4	FAIR		NO	42.2715439	-88.364605
315	Black cherry	Prunus serotina	4	FAIR		NO	42.271531	-88.364638
316	Catalpa spp.	Catalpa spp.	4	FAIR		NO	42.271531	-88.364638
317	Callery pear	Pyrus calleryana	9	FAIR	Multistem	NO	42.2714866	-88.364615
318	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2715072	-88.364547
319	Callery pear	Pyrus calleryana	6	FAIR	Multistem	NO	42.2714748	-88.364519
320	Eastern cottonwood	Populus deltoides	8	FAIR		NO	42.2714385	-88.364496
321	Austrian pine	Pinus nigra	10	FAIR		NO	42.2714407	-88.36454
322	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2713907	-88.364486
323	Black cherry	Prunus serotina	3	FAIR		NO	42.271328	-88.364517
324	Catalpa spp.	Catalpa spp.	6	FAIR		NO	42.2712913	-88.364503
325	Catalpa spp.	Catalpa spp.	4	FAIR		NO	42.2712879	-88.364489
326	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2712987	-88.364533
327	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2712052	-88.36452
328	Black cherry	Prunus serotina	4	FAIR		NO	42.2712181	-88.364469
329	Blue spruce	Picea pungens	12	FAIR		NO	42.2711811	-88.364403
330	Blue spruce	Picea pungens	12	FAIR	Multistem	NO	42.2711934	-88.364361
331	Blue spruce	Picea pungens	14	FAIR		NO	42.2711521	-88.364318
332	Black cherry	Prunus serotina	3	FAIR		NO	42.2711618	-88.364367
333	Black cherry	Prunus serotina	3	FAIR		NO	42.2711381	-88.364343
334	Arborvitae	Thuja orientalis	7	FAIR		NO	42.2711305	-88.36432
335	Arborvitae	Thuja orientalis	7	FAIR		NO	42.2711373	-88.364295
336	Arborvitae	Thuja orientalis	7	FAIR		NO	42.2711355	-88.364273
337	Black cherry	Prunus serotina	3	FAIR		NO	42.2711398	-88.364252
338	Austrian pine	Pinus nigra	5	FAIR		NO	42.2711762	-88.364237
339	Eastern red cedar	Juniperus virginiana	7	FAIR		NO	42.2713179	-88.364235
340	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2712865	-88.364319
341	Norway maple	Acer platanoides	7	POOR		NO	42.2713706	-88.364351
342	Austrian pine	Pinus nigra	3	FAIR		NO	42.2713946	-88.364334
343	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714699	-88.364563
344	Black cherry	Prunus serotina	3	FAIR		NO	42.27137	-88.364613
345	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2713617	-88.364643
346	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2713313	-88.364627
347	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2713443	-88.364643
348	Austrian pine	Pinus nigra	5	FAIR		NO	42.2714443	-88.36468
349	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.271463	-88.364678
350	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2714684	-88.364699
351	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2714624	-88.364616
352	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2715065	-88.36465
353	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2715305	-88.364654
354	Catalpa spp.	Catalpa spp.	3	FAIR		NO	42.2715556	-88.364642
355	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2714662	-88.364732
356	Callery pear	Pyrus calleryana	12	FAIR	Multistem	NO	42.2715125	-88.364763
357	Black cherry	Prunus serotina	4	FAIR		NO	42.2714297	-88.364803
358	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2714234	-88.364815
359	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2715534	-88.364903
360	Austrian pine	Pinus nigra	4	FAIR		NO	42.271529	-88.364891
361	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2715518	-88.364861
362	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2715566	-88.364937
363	Crab apple spp.	Malus spp.	4	FAIR		NO	42.2715709	-88.36492
364	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2715592	-88.364983

365	Black cherry	Prunus serotina	3	FAIR		NO	42.2713521	-88.364912
366	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2713253	-88.364867
367	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.27138	-88.364821
368	Black cherry	Prunus serotina	4	FAIR		NO	42.2713944	-88.364844
369	Black cherry	Prunus serotina	6	FAIR		NO	42.2713794	-88.364773
370	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2713442	-88.364727
371	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2713555	-88.364687
372	Crab apple spp.	Malus spp.	8	FAIR	Multistem	NO	42.2713171	-88.364658
373	Eastern red cedar	Juniperus virginiana	8	FAIR		NO	42.271156	-88.364553
374	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2711803	-88.364558
375	Black cherry	Prunus serotina	3	FAIR		NO	42.2711637	-88.364729
376	Eastern red cedar	Juniperus virginiana	8	FAIR		NO	42.2711357	-88.364626
377	Eastern red cedar	Juniperus virginiana	8	FAIR		NO	42.2711317	-88.364665
378	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2711279	-88.364692
379	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2711228	-88.364706
380	Black cherry	Prunus serotina	4	FAIR		NO	42.2711453	-88.364734
381	Black cherry	Prunus serotina	4	FAIR		NO	42.2711213	-88.36474
382	Eastern cottonwood	Populus deltoides	6	FAIR		NO	42.2711023	-88.364801
383	Black cherry	Prunus serotina	3	FAIR		NO	42.271206	-88.364866
384	Black cherry	Prunus serotina	8	FAIR	Multistem	NO	42.2712138	-88.364899
385	Crab apple spp.	Malus spp.	4	POOR		NO	42.2712877	-88.364843
386	Crab apple spp.	Malus spp.	3	FAIR		NO	42.2712881	-88.364809
387	Crab apple spp.	Malus spp.	3	FAIR		NO	42.2712845	-88.364776
388	Crab apple spp.	Malus spp.	6	FAIR		NO	42.2712841	-88.364964
389	Black cherry	Prunus serotina	4	FAIR		NO	42.2713043	-88.364948
390	Black cherry	Prunus serotina	7	FAIR	Multistem	NO	42.2711161	-88.364946
391	Black cherry	Prunus serotina	4	FAIR		NO	42.2711131	-88.364977
392	Callery pear	Pyrus calleryana	3	POOR		NO	42.2711133	-88.365001
393	Blue spruce	Picea pungens	15	FAIR		NO	42.2711448	-88.365034
394	Crab apple spp.	Malus spp.	7	POOR	Multistem	NO	42.2712778	-88.365023
395	Crab apple spp.	Malus spp.	4	POOR		NO	42.2712789	-88.36507
396	Crab apple spp.	Malus spp.	3	POOR		NO	42.2712828	-88.365095
397	Austrian pine	Pinus nigra	7	FAIR		NO	42.2711691	-88.365125
398	Black cherry	Prunus serotina	10	FAIR	Multistem	NO	42.271149	-88.365184
399	Eastern cottonwood	Populus deltoides	4	FAIR		NO	42.2711049	-88.365298
400	Paper birch	Betula papyrifera	3	FAIR		NO	42.2711067	-88.365324
401	Callery pear	Pyrus calleryana	4	POOR		NO	42.2712023	-88.365222
402	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2712972	-88.365229
403	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2713215	-88.365229
404	Black cherry	Prunus serotina	3	FAIR		NO	42.2713225	-88.365253
405	Black cherry	Prunus serotina	4	FAIR		NO	42.271327	-88.36524
406	Linden spp.	Tilia spp.	3	FAIR		NO	42.2714523	-88.365043
407	Linden spp.	Tilia spp.	10	FAIR	Multistem	NO	42.271496	-88.365115
408	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714997	-88.365155
409	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2714974	-88.365182
410	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2715296	-88.365177
411	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2714678	-88.365193
412	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2716631	-88.363937
413	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2717767	-88.363927
414	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2718313	-88.363933
415	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2718556	-88.363852
416	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2719101	-88.363861
417	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.271908	-88.363924
418	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.271938	-88.363935
419	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2719867	-88.363971
420	Austrian pine	Pinus nigra	12	FAIR		NO	42.2720129	-88.363966
421	Eastern red cedar	Juniperus virginiana	4	POOR	Topped/de	NO	42.2720357	-88.363961
422	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720544	-88.363935
423	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2719551	-88.36399
424	Eastern redbud	Cercis canadensis	4	FAIR		NO	42.2719146	-88.364016
425	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2718172	-88.363958

426	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2717572	-88.363957
427	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2717634	-88.364002
428	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2717197	-88.364022
429	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2717003	-88.364027
430	Honey locust	Gleditsia triacanthos	6	FAIR		NO	42.2716529	-88.36401
431	Honey locust	Gleditsia triacanthos	4	FAIR		NO	42.2716378	-88.364044
432	Honey locust	Gleditsia triacanthos	4	FAIR		NO	42.2716494	-88.364044
433	Callery pear	Pyrus calleryana	5	FAIR		NO	42.271671	-88.364109
434	Callery pear	Pyrus calleryana	3	FAIR		NO	42.271701	-88.364179
435	Black cherry	Prunus serotina	4	FAIR		NO	42.2718944	-88.364373
436	Black walnut	Juglans nigra	9	POOR		NO	42.2718469	-88.364397
437	Black walnut	Juglans nigra	4	FAIR		NO	42.271858	-88.364399
438	Austrian pine	Pinus nigra	3	FAIR		NO	42.271902	-88.364131
439	Austrian pine	Pinus nigra	3	FAIR		NO	42.2718951	-88.364111
440	Austrian pine	Pinus nigra	7	FAIR		NO	42.2719875	-88.36413
441	Austrian pine	Pinus nigra	3	FAIR		NO	42.2719575	-88.364035
442	Austrian pine	Pinus nigra	5	FAIR		NO	42.2720739	-88.364038
443	Eastern red cedar	Juniperus virginiana	3	GOOD		NO	42.2721213	-88.364085
444	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2721653	-88.364087
445	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2721813	-88.364042
446	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2721677	-88.36401
447	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2721863	-88.363973
448	Black walnut	Juglans nigra	4	FAIR		NO	42.2722033	-88.363926
449	Black walnut	Juglans nigra	8	FAIR		NO	42.2722211	-88.363907
450	Black walnut	Juglans nigra	6	FAIR		NO	42.2722271	-88.363875
451	Black walnut	Juglans nigra	5	FAIR		NO	42.2722113	-88.363868
452	Black walnut	Juglans nigra	8	FAIR		NO	42.2722203	-88.363856
453	Black walnut	Juglans nigra	10	FAIR		NO	42.2722662	-88.363851
454	Black walnut	Juglans nigra	10	FAIR		NO	42.2721897	-88.363783
455	Black walnut	Juglans nigra	4	FAIR		NO	42.2721675	-88.363774
456	Black walnut	Juglans nigra	10	FAIR		NO	42.2722585	-88.363781
457	Black cherry	Prunus serotina	18	FAIR		NO	42.2722663	-88.363679
458	Black walnut	Juglans nigra	3	FAIR		NO	42.2722161	-88.36371
459	Black walnut	Juglans nigra	15	FAIR	Multistem	NO	42.2721972	-88.363645
460	Black walnut	Juglans nigra	9	FAIR		NO	42.2721789	-88.363607
461	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2722003	-88.364099
462	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.272188	-88.364091
463	Black walnut	Juglans nigra	28	FAIR		NO	42.2722599	-88.36424
464	Black walnut	Juglans nigra	6	FAIR		NO	42.2722095	-88.364222
465	Black walnut	Juglans nigra	5	FAIR		NO	42.272206	-88.364188
466	Black walnut	Juglans nigra	5	FAIR		NO	42.2721874	-88.364209
467	Black walnut	Juglans nigra	6	FAIR		NO	42.2721718	-88.364222
468	Black cherry	Prunus serotina	6	GOOD		NO	42.2721819	-88.364251
469	Black walnut	Juglans nigra	8	GOOD		NO	42.2721466	-88.364259
470	Black walnut	Juglans nigra	6	FAIR		NO	42.2722309	-88.364331
471	Black walnut	Juglans nigra	6	FAIR		NO	42.27225	-88.364378
472	Black walnut	Juglans nigra	8	FAIR		NO	42.2722748	-88.364392
473	Black walnut	Juglans nigra	10	FAIR		NO	42.2722537	-88.364398
474	Black walnut	Juglans nigra	7	FAIR		NO	42.2722324	-88.364423
475	Black walnut	Juglans nigra	11	FAIR		NO	42.2722019	-88.364373
476	Black walnut	Juglans nigra	11	FAIR		NO	42.2721578	-88.364402
477	Austrian pine	Pinus nigra	22	POOR		NO	42.2721523	-88.364424
478	Eastern cottonwood	Populus deltoides	5	FAIR		NO	42.2721757	-88.364429
479	Black walnut	Juglans nigra	4	FAIR		NO	42.2721426	-88.364404
480	Black walnut	Juglans nigra	3	FAIR		NO	42.2721022	-88.364359
481	Black walnut	Juglans nigra	9	FAIR		NO	42.272102	-88.364404
482	Black walnut	Juglans nigra	5	FAIR		NO	42.2720941	-88.364401
483	Austrian pine	Pinus nigra	22	POOR		NO	42.2720889	-88.364408
484	Black walnut	Juglans nigra	4	FAIR		NO	42.272045	-88.364383
485	Black walnut	Juglans nigra	5	FAIR		NO	42.2720243	-88.364384
486	Black cherry	Prunus serotina	3	FAIR		NO	42.2720605	-88.364421

487	Black walnut	Juglans nigra	4	FAIR	NO	42.2719954	-88.364391
488	Black cherry	Prunus serotina	4	FAIR	NO	42.2720113	-88.364381
489	Black cherry	Prunus serotina	6	POOR	NO	42.2719998	-88.36427
490	White spruce	Picea glauca	20	FAIR	NO	42.2719845	-88.364494
491	Black cherry	Prunus serotina	4	FAIR	NO	42.2719708	-88.364518
492	Black walnut	Juglans nigra	3	FAIR	NO	42.2719535	-88.364496
493	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2719349	-88.364565
494	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2719577	-88.364562
495	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2719745	-88.364584
496	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2719978	-88.364584
497	Black walnut	Juglans nigra	4	FAIR	NO	42.2720654	-88.364533
498	Black walnut	Juglans nigra	5	FAIR	NO	42.2720658	-88.36457
499	Black walnut	Juglans nigra	7	FAIR	NO	42.2721182	-88.364545
500	Black walnut	Juglans nigra	6	FAIR	NO	42.2721401	-88.36454
501	Crab apple spp.	Malus spp.	6	POOR	NO	42.2721644	-88.364534
502	Black walnut	Juglans nigra	7	FAIR	NO	42.2721868	-88.364561
503	Black cherry	Prunus serotina	5	FAIR	NO	42.2722191	-88.364555
504	Black walnut	Juglans nigra	10	FAIR	NO	42.2722001	-88.364506
505	Black walnut	Juglans nigra	7	FAIR	NO	42.2722131	-88.364474
506	Black walnut	Juglans nigra	5	POOR	NO	42.2722472	-88.364565
507	Crab apple spp.	Malus spp.	6	POOR	NO	42.2722293	-88.364599
508	Eastern red cedar	Juniperus virginiana	5	FAIR	NO	42.2720675	-88.364615
509	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2720586	-88.364641
510	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2719548	-88.364675
511	Crab apple spp.	Malus spp.	4	POOR	NO	42.2720993	-88.364625
512	Black walnut	Juglans nigra	11	FAIR	NO	42.2721737	-88.364713
513	Black walnut	Juglans nigra	6	FAIR	NO	42.2721644	-88.364641
514	Black cherry	Prunus serotina	8	FAIR	NO	42.2722106	-88.36468
515	Black walnut	Juglans nigra	9	FAIR	NO	42.2722235	-88.364757
516	Black walnut	Juglans nigra	7	FAIR	NO	42.2722526	-88.364804
517	Black cherry	Prunus serotina	22	FAIR	NO	42.2722689	-88.364853
518	Black walnut	Juglans nigra	6	FAIR	NO	42.2722358	-88.364846
519	Black walnut	Juglans nigra	10	FAIR	NO	42.2721962	-88.364824
520	Black walnut	Juglans nigra	9	FAIR	NO	42.2722234	-88.364819
521	Honey locust	Gleditsia triacanthos	6	POOR	NO	42.2720702	-88.364769
522	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2720279	-88.364741
523	Eastern red cedar	Juniperus virginiana	3	FAIR	NO	42.2720074	-88.364824
524	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2720297	-88.364833
525	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2719503	-88.364754
526	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2719206	-88.364715
527	Callery pear	Pyrus calleryana	3	FAIR	NO	42.2717976	-88.364707
528	Eastern red cedar	Juniperus virginiana	4	GOOD	NO	42.271776	-88.364706
529	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2718025	-88.364726
530	Callery pear	Pyrus calleryana	3	FAIR	NO	42.2717548	-88.364749
531	Honey locust	Gleditsia triacanthos	5	FAIR	NO	42.2717695	-88.364742
532	Black walnut	Juglans nigra	4	FAIR	NO	42.2717406	-88.364733
533	Callery pear	Pyrus calleryana	4	FAIR	NO	42.271743	-88.364662
534	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2718362	-88.364629
535	Callery pear	Pyrus calleryana	4	FAIR	NO	42.2717944	-88.364659
536	Eastern red cedar	Juniperus virginiana	3	FAIR	NO	42.2717635	-88.364661
537	Blue spruce	Picea pungens	20	FAIR	NO	42.2717603	-88.364441
538	Blue spruce	Picea pungens	18	POOR	NO	42.2718098	-88.364453
539	White spruce	Picea glauca	6	POOR	NO	42.2718491	-88.364496
540	White spruce	Picea glauca	7	POOR	NO	42.2718908	-88.364514
541	White spruce	Picea glauca	4	POOR	NO	42.2718717	-88.364464
542	Austrian pine	Pinus nigra	20	POOR	NO	42.2718807	-88.364429
543	Austrian pine	Pinus nigra	18	POOR	NO	42.271902	-88.364463
544	Black walnut	Juglans nigra	7	FAIR	NO	42.271858	-88.364399
545	Austrian pine	Pinus nigra	18	FAIR	NO	42.2719277	-88.364446
546	Black walnut	Juglans nigra	4	FAIR	NO	42.2719518	-88.364426
547	Eastern cottonwood	Populus deltoides	7	FAIR	NO	42.2719532	-88.364442

548	Black walnut	Juglans nigra	7	POOR	NO	42.2719599	-88.364448
549	Black cherry	Prunus serotina	4	FAIR	NO	42.2716467	-88.364299
550	Black cherry	Prunus serotina	4	FAIR	NO	42.2717195	-88.3643
551	Black cherry	Prunus serotina	3	FAIR	NO	42.2716094	-88.364459
552	Black cherry	Prunus serotina	4	FAIR	NO	42.2716732	-88.364454
553	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2716871	-88.364543
554	Eastern red cedar	Juniperus virginiana	6	FAIR	NO	42.2716432	-88.364564
555	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2716474	-88.364654
556	Crab apple spp.	Malus spp.	5	FAIR	NO	42.2716787	-88.364616
557	Callery pear	Pyrus calleryana	4	FAIR	NO	42.2716925	-88.364676
558	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2716747	-88.364707
559	Honey locust	Gleditsia triacanthos	6	FAIR	NO	42.2717064	-88.364761
560	Honey locust	Gleditsia triacanthos	5	FAIR	NO	42.2717379	-88.364789
561	Honey locust	Gleditsia triacanthos	5	FAIR	NO	42.2717551	-88.364809
562	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2717732	-88.36485
563	Eastern red cedar	Juniperus virginiana	3	FAIR	NO	42.2717529	-88.364897
564	Callery pear	Pyrus calleryana	4	FAIR	NO	42.2716958	-88.364927
565	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2718246	-88.364884
566	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2718781	-88.364917
567	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2718526	-88.364949
568	Eastern red cedar	Juniperus virginiana	3	FAIR	NO	42.2718979	-88.364951
569	Crab apple spp.	Malus spp.	5	POOR	NO	42.2721241	-88.364864
570	Black cherry	Prunus serotina	8	FAIR	NO	42.2720005	-88.36499
571	Black walnut	Juglans nigra	11	FAIR	NO	42.2720594	-88.365104
572	Black cherry	Prunus serotina	4	FAIR	NO	42.2721371	-88.365063
573	Black walnut	Juglans nigra	8	FAIR	NO	42.2721694	-88.365046
574	Black cherry	Prunus serotina	3	FAIR	NO	42.2721586	-88.365002
575	Black walnut	Juglans nigra	3	FAIR	NO	42.2721545	-88.364965
576	Black walnut	Juglans nigra	12	FAIR	NO	42.2722276	-88.365061
577	Black walnut	Juglans nigra	8	FAIR	NO	42.2721344	-88.365122
578	Black walnut	Juglans nigra	10	FAIR	NO	42.2721844	-88.365191
579	Callery pear	Pyrus calleryana	3	FAIR	NO	42.2721779	-88.365304
580	Black walnut	Juglans nigra	4	FAIR	NO	42.2721691	-88.36537
581	Box elder	Acer negundo	18	FAIR	NO	42.272256	-88.36541
582	Black cherry	Prunus serotina	10	FAIR	NO	42.2722354	-88.365466
583	Black walnut	Juglans nigra	6	FAIR	NO	42.2721612	-88.365409
584	Black walnut	Juglans nigra	10	FAIR	NO	42.272165	-88.365413
585	Eastern red cedar	Juniperus virginiana	5	FAIR	NO	42.2721663	-88.365351
586	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2721238	-88.365484
587	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2721369	-88.365521
588	Black walnut	Juglans nigra	8	FAIR	NO	42.2721624	-88.365598
589	Black walnut	Juglans nigra	3	FAIR	NO	42.2722043	-88.365583
590	Blue spruce	Picea pungens	10	POOR	NO	42.2721858	-88.365665
591	Blue spruce	Picea pungens	12	POOR	NO	42.2721437	-88.365656
592	Blue spruce	Picea pungens	13	FAIR	NO	42.2720879	-88.365638
593	Blue spruce	Picea pungens	10	POOR	NO	42.2720455	-88.36558
594	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2720776	-88.365456
595	Eastern red cedar	Juniperus virginiana	4	GOOD	NO	42.2720501	-88.365556
596	Callery pear	Pyrus calleryana	5	FAIR	NO	42.2719578	-88.365564
597	Blue spruce	Picea pungens	14	FAIR	NO	42.2719745	-88.365614
598	Blue spruce	Picea pungens	14	FAIR	NO	42.2719192	-88.365604
599	Blue spruce	Picea pungens	12	FAIR	NO	42.2719968	-88.365675
600	Black cherry	Prunus serotina	4	FAIR	NO	42.2718606	-88.365612
601	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2718283	-88.365588
602	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2718156	-88.365523
603	Box elder	Acer negundo	4	FAIR	NO	42.271809	-88.365637
604	White spruce	Picea glauca	12	FAIR	NO	42.2717528	-88.365653
605	White spruce	Picea glauca	12	FAIR	NO	42.2717579	-88.365614
606	Callery pear	Pyrus calleryana	3	FAIR	NO	42.271713	-88.365622
607	White spruce	Picea glauca	14	FAIR	NO	42.2717056	-88.365668
608	White spruce	Picea glauca	14	FAIR	NO	42.2716826	-88.365679

609	Black walnut	Juglans nigra	12	FAIR		NO	42.2716634	-88.365646
610	White spruce	Picea glauca	10	POOR		NO	42.2716567	-88.365622
611	White spruce	Picea glauca	18	FAIR	Multistem	NO	42.2716177	-88.365621
612	White spruce	Picea glauca	12	POOR		NO	42.2716328	-88.365683
613	White spruce	Picea glauca	9	POOR		NO	42.2716398	-88.36567
614	Black cherry	Prunus serotina	11	FAIR		NO	42.2716502	-88.365742
615	Box elder	Acer negundo	6	FAIR		NO	42.2716832	-88.365756
616	Box elder	Acer negundo	5	FAIR		NO	42.271709	-88.365759
617	Black walnut	Juglans nigra	10	FAIR		NO	42.2717741	-88.365743
618	Box elder	Acer negundo	4	FAIR		NO	42.2717515	-88.365749
619	Black walnut	Juglans nigra	4	FAIR		NO	42.2717382	-88.365761
620	Box elder	Acer negundo	4	FAIR		NO	42.2717741	-88.365743
621	Norway maple	Acer platanoides	4	FAIR		NO	42.2717741	-88.365743
622	Box elder	Acer negundo	8	FAIR		NO	42.2718226	-88.365752
623	Box elder	Acer negundo	6	FAIR		NO	42.2719394	-88.365729
624	Black walnut	Juglans nigra	10	FAIR		NO	42.2719928	-88.36575
625	Black cherry	Prunus serotina	8	FAIR		NO	42.272031	-88.365752
626	Black walnut	Juglans nigra	6	FAIR		NO	42.272031	-88.365752
627	Black cherry	Prunus serotina	4	FAIR		NO	42.2720668	-88.36575
628	Black cherry	Prunus serotina	5	FAIR		NO	42.2721688	-88.365729
629	Black walnut	Juglans nigra	14	FAIR		NO	42.2721754	-88.365785
630	White spruce	Picea glauca	6	POOR		NO	42.2721978	-88.365791
631	Black walnut	Juglans nigra	10	FAIR		NO	42.2720878	-88.365779
632	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2716521	-88.365708
633	Black cherry	Prunus serotina	6	FAIR		NO	42.2716728	-88.365838
634	Black walnut	Juglans nigra	5	FAIR		NO	42.2717194	-88.365871
635	Box elder	Acer negundo	5	GOOD		NO	42.2717641	-88.365855
636	Box elder	Acer negundo	3	FAIR		NO	42.2718014	-88.365866
637	Box elder	Acer negundo	4	FAIR		NO	42.2718411	-88.365873
638	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2718258	-88.365991
639	Callery pear	Pyrus calleryana	10	FAIR		NO	42.2719139	-88.365986
640	Black cherry	Prunus serotina	5	FAIR		NO	42.2719411	-88.366012
641	Box elder	Acer negundo	4	FAIR		NO	42.2719779	-88.36597
642	Box elder	Acer negundo	4	FAIR		NO	42.2720077	-88.366032
643	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720285	-88.366065
644	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2720053	-88.366077
645	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2721609	-88.366076
646	Black cherry	Prunus serotina	14	FAIR		NO	42.272226	-88.366128
647	Black walnut	Juglans nigra	12	FAIR		NO	42.2722211	-88.366188
648	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2721184	-88.366203
649	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2721478	-88.366226
650	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720684	-88.366335
651	Arborvitae	Thuja orientalis	6	FAIR		NO	42.272149	-88.366371
652	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2721735	-88.366355
653	White pine	Pinus strobus	8	FAIR		NO	42.2720175	-88.366231
654	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2720037	-88.366341
655	Black cherry	Prunus serotina	8	FAIR		NO	42.2720249	-88.366467
656	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2721228	-88.366508
657	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2721649	-88.366529
658	Arborvitae	Thuja orientalis	6	FAIR		NO	42.2721649	-88.366529
659	Black cherry	Prunus serotina	3	FAIR		NO	42.2720549	-88.366557
660	Austrian pine	Pinus nigra	14	FAIR		NO	42.2720202	-88.366621
661	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720658	-88.366611
662	Austrian pine	Pinus nigra	14	FAIR		NO	42.2721019	-88.366651
663	Black cherry	Prunus serotina	5	FAIR		NO	42.2719639	-88.366656
664	White pine	Pinus strobus	14	FAIR		NO	42.2719524	-88.366712
665	Eastern red cedar	Juniperus virginiana	4	POOR		NO	42.2719118	-88.366705
666	Austrian pine	Pinus nigra	8	FAIR		NO	42.2721435	-88.366779
667	White pine	Pinus strobus	12	GOOD		NO	42.2721562	-88.366727
668	Black walnut	Juglans nigra	3	FAIR		NO	42.2721094	-88.366851
669	White pine	Pinus strobus	12	GOOD		NO	42.2720743	-88.366946

670	White pine	Pinus strobus	10	FAIR		NO	42.2720874	-88.366995
671	White pine	Pinus strobus	8	FAIR		NO	42.2720567	-88.367016
672	White pine	Pinus strobus	12	FAIR		NO	42.2720345	-88.366989
673	Austrian pine	Pinus nigra	10	FAIR		NO	42.2720182	-88.36702
674	White pine	Pinus strobus	16	FAIR		NO	42.2719641	-88.366989
675	White pine	Pinus strobus	10	FAIR		NO	42.2720182	-88.36702
676	Black cherry	Prunus serotina	5	FAIR		NO	42.2719721	-88.367108
677	Black cherry	Prunus serotina	4	FAIR		NO	42.2719588	-88.367078
678	Black cherry	Prunus serotina	7	FAIR		NO	42.2719384	-88.367118
679	Black cherry	Prunus serotina	4	FAIR		NO	42.2719718	-88.367142
680	Black cherry	Prunus serotina	5	FAIR		NO	42.2719928	-88.367148
681	Black cherry	Prunus serotina	5	FAIR		NO	42.2719028	-88.367148
682	Box elder	Acer negundo	5	FAIR		NO	42.2719847	-88.367228
683	Black cherry	Prunus serotina	4	FAIR		NO	42.272027	-88.367188
684	Black cherry	Prunus serotina	4	FAIR		NO	42.2720696	-88.367184
685	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720537	-88.367221
686	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2720134	-88.367245
687	Box elder	Acer negundo	5	FAIR		NO	42.2720307	-88.367235
688	Black cherry	Prunus serotina	4	FAIR		NO	42.2719824	-88.367213
689	Black cherry	Prunus serotina	4	FAIR		NO	42.2721001	-88.367217
690	Black cherry	Prunus serotina	4	FAIR		NO	42.2721105	-88.367172
691	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2721522	-88.367163
692	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2721851	-88.367182
693	Black cherry	Prunus serotina	4	FAIR		NO	42.2720887	-88.367339
694	Arborvitae	Thuja orientalis	4	POOR		NO	42.272185	-88.367405
695	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2721769	-88.367452
696	Austrian pine	Pinus nigra	10	POOR		NO	42.2721658	-88.367484
697	Austrian pine	Pinus nigra	12	FAIR		NO	42.2721569	-88.36753
698	Austrian pine	Pinus nigra	8	POOR		NO	42.2721704	-88.36751
699	Austrian pine	Pinus nigra	10	FAIR		NO	42.2721073	-88.367534
700	Austrian pine	Pinus nigra	8	FAIR		NO	42.2720717	-88.367536
701	Callery pear	Pyrus calleryana	10	FAIR		NO	42.2719965	-88.367358
702	Black cherry	Prunus serotina	7	FAIR		NO	42.2720097	-88.367467
703	Black cherry	Prunus serotina	6	FAIR		NO	42.2719302	-88.367453
704	Black cherry	Prunus serotina	4	FAIR		NO	42.2718214	-88.367346
705	Black cherry	Prunus serotina	5	FAIR		NO	42.2718832	-88.367462
706	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2718247	-88.367463
707	Black cherry	Prunus serotina	4	FAIR		NO	42.2717644	-88.367459
708	Black cherry	Prunus serotina	6	FAIR		NO	42.271818	-88.3675
709	Black cherry	Prunus serotina	5	FAIR		NO	42.2717056	-88.367328
710	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2717138	-88.367461
711	Callery pear	Pyrus calleryana	3	FAIR		NO	42.2716694	-88.367452
712	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2716791	-88.367249
713	Black cherry	Prunus serotina	4	FAIR		NO	42.2716795	-88.367132
714	Black cherry	Prunus serotina	6	FAIR		NO	42.2717183	-88.367105
715	Black cherry	Prunus serotina	6	FAIR		NO	42.2717417	-88.367095
716	Black cherry	Prunus serotina	5	POOR		NO	42.2716564	-88.366933
717	Austrian pine	Pinus nigra	8	POOR		NO	42.2717	-88.366942
718	Austrian pine	Pinus nigra	12	FAIR		NO	42.2717294	-88.366967
719	Black cherry	Prunus serotina	3	FAIR		NO	42.2717264	-88.367001
720	Eastern red cedar	Juniperus virginiana	3	FAIR		NO	42.2717516	-88.367004
721	Austrian pine	Pinus nigra	16	FAIR		NO	42.2717791	-88.366988
722	Black cherry	Prunus serotina	5	FAIR		NO	42.2718111	-88.367031
723	Black cherry	Prunus serotina	4	FAIR		NO	42.2718493	-88.367054
724	Black cherry	Prunus serotina	6	FAIR		NO	42.271804	-88.366872
725	Black cherry	Prunus serotina	8	FAIR	Multistem	NO	42.2716977	-88.366796
726	Black cherry	Prunus serotina	10	FAIR	Multistem	NO	42.2716977	-88.366796
727	Box elder	Acer negundo	4	FAIR		NO	42.2716791	-88.366736
728	Silver maple	Acer saccharinum	4	FAIR		NO	42.2716724	-88.36667
729	Box elder	Acer negundo	8	FAIR		NO	42.2716578	-88.366595
730	Austrian pine	Pinus nigra	14	POOR		NO	42.2716948	-88.366624

731	Honey locust	Gleditsia triacanthos	4	FAIR		NO	42.2716498	-88.366537
732	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2716695	-88.366516
733	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2717055	-88.366535
734	Arborvitae	Thuja orientalis	8	FAIR		NO	42.271727	-88.366537
735	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2717731	-88.366532
736	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2718015	-88.366538
737	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2718247	-88.36655
738	Arborvitae	Thuja orientalis	8	FAIR		NO	42.2718447	-88.366566
739	Black cherry	Prunus serotina	4	FAIR		NO	42.2717768	-88.366374
740	Black cherry	Prunus serotina	4	FAIR		NO	42.2718849	-88.366461
741	Black cherry	Prunus serotina	4	FAIR		NO	42.2719248	-88.366426
742	Black cherry	Prunus serotina	4	FAIR		NO	42.2718987	-88.366372
743	Eastern red cedar	Juniperus virginiana	4	FAIR		NO	42.2718932	-88.366242
744	Callery pear	Pyrus calleryana	8	FAIR		NO	42.2717685	-88.366244
745	White spruce	Picea glauca	12	FAIR		NO	42.27173	-88.367571
746	Black spruce	Picea mariana	10	FAIR		NO	42.2717001	-88.367664
747	Black spruce	Picea mariana	10	FAIR		NO	42.2717412	-88.367682
748	Blue spruce	Picea pungens	12	FAIR		NO	42.2717898	-88.3677
749	Blue spruce	Picea pungens	12	FAIR		NO	42.2718539	-88.367739
750	White pine	Pinus strobus	14	FAIR		NO	42.2716628	-88.367742
751	White pine	Pinus strobus	12	FAIR		NO	42.2716901	-88.367736
752	Paper birch	Betula papyrifera	10	FAIR		NO	42.2716862	-88.367815
753	Paper birch	Betula papyrifera	8	FAIR		NO	42.2717257	-88.367809
754	Paper birch	Betula papyrifera	4	FAIR		NO	42.2717606	-88.367844
755	Paper birch	Betula papyrifera	5	FAIR		NO	42.2717008	-88.36788
756	River birch	Betula nigra	10	FAIR		NO	42.2717425	-88.367893
757	River birch	Betula nigra	9	FAIR		NO	42.2717691	-88.367908
758	River birch	Betula nigra	6	FAIR		NO	42.2717691	-88.367908
759	River birch	Betula nigra	10	FAIR		NO	42.2717991	-88.367925
760	River birch	Betula nigra	10	FAIR		NO	42.27184	-88.367928
761	Austrian pine	Pinus nigra	10	FAIR		NO	42.271887	-88.367747
762	Austrian pine	Pinus nigra	8	FAIR		NO	42.2718161	-88.367752
763	River birch	Betula nigra	6	FAIR		NO	42.2719306	-88.367903
764	Austrian pine	Pinus nigra	6	FAIR		NO	42.2719606	-88.367889
765	River birch	Betula nigra	10	FAIR		NO	42.2720043	-88.367863
766	River birch	Betula nigra	5	FAIR		NO	42.2720311	-88.367881
767	River birch	Betula nigra	8	FAIR		NO	42.2720504	-88.367891
768	Paper birch	Betula papyrifera	8	FAIR		NO	42.2720504	-88.367891
769	Blue spruce	Picea pungens	12	FAIR		NO	42.2720163	-88.367667
770	Blue spruce	Picea pungens	12	FAIR		NO	42.2720541	-88.367653
771	White pine	Pinus strobus	12	FAIR		NO	42.272044	-88.367725
772	Black cherry	Prunus serotina	5	FAIR		NO	42.2720759	-88.36772
773	White pine	Pinus strobus	12	POOR		NO	42.2721072	-88.367733
774	White pine	Pinus strobus	12	FAIR		NO	42.2721572	-88.367728
775	River birch	Betula nigra	10	FAIR	Multistem	NO	42.2721031	-88.367873
776	River birch	Betula nigra	12	FAIR		NO	42.2721431	-88.367875
777	River birch	Betula nigra	10	FAIR	Multistem	NO	42.2720826	-88.367891
778	Callery pear	Pyrus calleryana	9	FAIR		NO	42.272032	-88.367932
779	Eastern redbud	Cercis canadensis	6	FAIR		NO	42.2720879	-88.367933
780	Black cherry	Prunus serotina	5	FAIR		NO	42.2719697	-88.367958
781	Black cherry	Prunus serotina	4	FAIR		NO	42.2719564	-88.368067
782	Black cherry	Prunus serotina	6	FAIR		NO	42.2718918	-88.368027
783	Black cherry	Prunus serotina	5	FAIR		NO	42.2718527	-88.367996
784	Black cherry	Prunus serotina	6	FAIR		NO	42.2717845	-88.367958
785	Black cherry	Prunus serotina	4	FAIR		NO	42.27171	-88.367931
786	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2716668	-88.367926
787	Box elder	Acer negundo	5	FAIR		NO	42.2717011	-88.368052
788	Black cherry	Prunus serotina	6	FAIR		NO	42.2716706	-88.368002
789	Black cherry	Prunus serotina	8	FAIR		NO	42.271665	-88.368134
790	White pine	Pinus strobus	14	FAIR		NO	42.2717724	-88.368109
791	White pine	Pinus strobus	12	FAIR		NO	42.2718504	-88.368154

792	White pine	Pinus strobus	12	FAIR	NO	42.271969	-88.368207
793	White pine	Pinus strobus	10	FAIR	NO	42.2719941	-88.368251
794	White pine	Pinus strobus	10	FAIR	NO	42.2719941	-88.368251
795	Austrian pine	Pinus nigra	10	FAIR	NO	42.2719729	-88.36836
796	Black cherry	Prunus serotina	5	FAIR	NO	42.2719383	-88.368378
797	Austrian pine	Pinus nigra	5	POOR	NO	42.2721268	-88.368328
798	Callery pear	Pyrus calleryana	6	FAIR	NO	42.2720593	-88.368507
799	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2720346	-88.368545
800	Callery pear	Pyrus calleryana	4	FAIR	NO	42.2720045	-88.368537
801	Callery pear	Pyrus calleryana	7	FAIR	NO	42.2719792	-88.368569
802	Black cherry	Prunus serotina	20	FAIR	NO	42.2722037	-88.36861
803	Blue spruce	Picea pungens	16	FAIR	NO	42.2721691	-88.368743
804	Callery pear	Pyrus calleryana	4	FAIR	NO	42.2721349	-88.368724
805	Blue spruce	Picea pungens	10	FAIR	NO	42.2720964	-88.368724
806	Blue spruce	Picea pungens	14	FAIR	NO	42.2720608	-88.368714
807	Blue spruce	Picea pungens	8	FAIR	NO	42.2720294	-88.368711
808	Blue spruce	Picea pungens	14	FAIR	NO	42.2719969	-88.368715
809	Blue spruce	Picea pungens	10	FAIR	NO	42.2719611	-88.368717
810	Blue spruce	Picea pungens	7	FAIR	NO	42.2719246	-88.36866
811	Blue spruce	Picea pungens	12	FAIR	NO	42.2719267	-88.36871
812	Blue spruce	Picea pungens	6	FAIR	NO	42.2718945	-88.368712
813	Blue spruce	Picea pungens	8	FAIR	NO	42.271851	-88.368715
814	Blue spruce	Picea pungens	12	FAIR	NO	42.2718205	-88.368748
815	Blue spruce	Picea pungens	12	FAIR	NO	42.2718205	-88.368748
816	Blue spruce	Picea pungens	12	FAIR	NO	42.2717694	-88.368714
817	Blue spruce	Picea pungens	8	FAIR	NO	42.2717668	-88.368697
818	Blue spruce	Picea pungens	6	FAIR	NO	42.2717671	-88.368652
819	Callery pear	Pyrus calleryana	5	FAIR	NO	42.271753	-88.36858
820	Eastern red cedar	Juniperus virginiana	5	FAIR	NO	42.2717125	-88.368505
821	Austrian pine	Pinus nigra	10	FAIR	NO	42.271925	-88.368554
822	Black cherry	Prunus serotina	8	FAIR	NO	42.2718877	-88.368513
823	Black cherry	Prunus serotina	6	FAIR	NO	42.2717935	-88.368418
824	Black cherry	Prunus serotina	12	FAIR	NO	42.271631	-88.368519
825	Blue spruce	Picea pungens	8	FAIR	NO	42.2718615	-88.368858
826	Blue spruce	Picea pungens	8	FAIR	NO	42.2718994	-88.368848
827	Callery pear	Pyrus calleryana	5	FAIR	NO	42.2719071	-88.368891
828	White spruce	Picea glauca	15	FAIR	NO	42.2719818	-88.368794
829	Pine spp.	Pinus spp.	16	FAIR	NO	42.27207	-88.368928
830	Pine spp.	Pinus spp.	10	FAIR	NO	42.27207	-88.368928
831	Pine spp.	Pinus spp.	12	GOOD	NO	42.2721016	-88.368909
832	Black cherry	Prunus serotina	6	FAIR	NO	42.2721248	-88.368954
833	Pine spp.	Pinus spp.	12	FAIR	NO	42.2721465	-88.368942
834	Black cherry	Prunus serotina	5	FAIR	NO	42.272138	-88.369007
835	Spruce spp.	Picea spp.	8	FAIR	NO	42.2721702	-88.369045
836	Black cherry	Prunus serotina	20	FAIR	NO	42.2722182	-88.369079
837	Black cherry	Prunus serotina	4	FAIR	NO	42.2721547	-88.369119
838	Black cherry	Prunus serotina	4	FAIR	NO	42.2721059	-88.369137
839	Callery pear	Pyrus calleryana	8	FAIR	NO	42.2720399	-88.369114
840	White spruce	Picea glauca	12	FAIR	NO	42.2720344	-88.36919
841	Callery pear	Pyrus calleryana	10	FAIR	NO	42.2720669	-88.369202
842	Blue spruce	Picea pungens	10	FAIR	NO	42.2720811	-88.369246
843	Blue spruce	Picea pungens	8	FAIR	NO	42.272116	-88.369266
844	Blue spruce	Picea pungens	8	FAIR	NO	42.2721042	-88.369214
845	Blue spruce	Picea pungens	5	POOR	NO	42.2721004	-88.369241
846	Blue spruce	Picea pungens	10	FAIR	NO	42.2721278	-88.369197
847	Blue spruce	Picea pungens	6	FAIR	NO	42.2721186	-88.369243
848	Blue spruce	Picea pungens	12	FAIR	NO	42.2721107	-88.369313
849	Blue spruce	Picea pungens	10	FAIR	NO	42.2721154	-88.369346
850	Blue spruce	Picea pungens	8	FAIR	NO	42.2721387	-88.369348
851	Blue spruce	Picea pungens	10	FAIR	NO	42.2721668	-88.369349
852	Blue spruce	Picea pungens	5	FAIR	NO	42.2721668	-88.369349

853	Blue spruce	Picea pungens	5	FAIR		NO	42.2721507	-88.36932
854	Blue spruce	Picea pungens	10	FAIR		NO	42.2721514	-88.369375
855	Blue spruce	Picea pungens	10	FAIR		NO	42.2721396	-88.369402
856	Box elder	Acer negundo	15	FAIR		NO	42.2721875	-88.369453
857	Black cherry	Prunus serotina	15	FAIR		NO	42.2722101	-88.369532
858	Black cherry	Prunus serotina	4	FAIR		NO	42.2718485	-88.368996
859	Black cherry	Prunus serotina	12	FAIR		NO	42.271558	-88.368413
860	Callery pear	Pyrus calleryana	5	POOR		NO	42.2714155	-88.36808
861	Callery pear	Pyrus calleryana	6	FAIR		NO	42.2713858	-88.367929
862	White pine	Pinus strobus	8	FAIR		NO	42.2713898	-88.367847
863	Austrian pine	Pinus nigra	12	FAIR		NO	42.2713835	-88.367732
864	Eastern red cedar	Juniperus virginiana	8	FAIR		NO	42.2713018	-88.367828
865	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2713375	-88.367679
866	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2713674	-88.367627
867	Austrian pine	Pinus nigra	10	FAIR		NO	42.2714057	-88.367617
868	Blue spruce	Picea pungens	10	FAIR		NO	42.2714236	-88.367578
869	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2715548	-88.367678
870	Black cherry	Prunus serotina	5	FAIR		NO	42.2715631	-88.367896
871	Austrian pine	Pinus nigra	9	FAIR		NO	42.2713974	-88.367542
872	Austrian pine	Pinus nigra	15	FAIR		NO	42.2714017	-88.367532
873	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2713517	-88.367512
874	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2713284	-88.367549
875	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2713517	-88.367512
876	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2713296	-88.367454
877	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2713296	-88.367454
878	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2713233	-88.36742
879	Blue spruce	Picea pungens	10	FAIR		NO	42.2713626	-88.36744
880	Eastern red cedar	Juniperus virginiana	6	FAIR		NO	42.2713379	-88.367383
881	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2713244	-88.367357
882	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2713285	-88.367326
883	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2713212	-88.36729
884	Austrian pine	Pinus nigra	8	FAIR		NO	42.2712209	-88.367439
885	Eastern red cedar	Juniperus virginiana	10	FAIR		NO	42.2713183	-88.366833
886	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2712828	-88.366861
887	Austrian pine	Pinus nigra	12	FAIR		NO	42.2713717	-88.366898
888	White spruce	Picea glauca	10	FAIR		NO	42.2713557	-88.366824
889	Austrian pine	Pinus nigra	10	FAIR		NO	42.2713933	-88.367238
890	Austrian pine	Pinus nigra	10	FAIR		NO	42.2714116	-88.367361
891	Austrian pine	Pinus nigra	10	FAIR		NO	42.2714094	-88.367432
892	White spruce	Picea glauca	10	FAIR		NO	42.2714022	-88.366829
893	Blue spruce	Picea pungens	8	FAIR		NO	42.2714145	-88.366696
894	Eastern red cedar	Juniperus virginiana	8	FAIR		NO	42.2713754	-88.366686
895	Eastern redbud	Cercis canadensis	10	FAIR	Multistem	NO	42.2713599	-88.366607
896	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2712075	-88.36662
897	River birch	Betula nigra	6	FAIR		NO	42.2712183	-88.366402
898	Callery pear	Pyrus calleryana	4	FAIR		NO	42.271078	-88.366326
899	Austrian pine	Pinus nigra	9	FAIR		NO	42.2708249	-88.366873
900	Honey locust	Gleditsia triacanthos	6	FAIR	Multistem	NO	42.2707744	-88.366675
901	Black locust	Robinia pseudoacacia	4	FAIR		NO	42.2707746	-88.366623
902	Black locust	Robinia pseudoacacia	6	FAIR		NO	42.2707698	-88.366528
903	Box elder	Acer negundo	10	FAIR	Multistem	NO	42.2706267	-88.36635
904	Norway maple	Acer platanoides	6	FAIR		NO	42.2705733	-88.366391
905	Black cherry	Prunus serotina	6	FAIR		NO	42.2705422	-88.366318
906	Box elder	Acer negundo	12	FAIR	Multistem	NO	42.270624	-88.366244
907	Pine spp.	Pinus spp.	8	FAIR		NO	42.270725	-88.36615
908	Pine spp.	Pinus spp.	6	FAIR		NO	42.2707315	-88.36607
909	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2706966	-88.366252
910	Eastern red cedar	Juniperus virginiana	5	FAIR		NO	42.2706938	-88.366301
911	Silver maple	Acer saccharinum	6	FAIR		NO	42.2706032	-88.366124
912	Eastern cottonwood	Populus deltoides	6	FAIR		NO	42.2706259	-88.36614
913	Black walnut	Juglans nigra	9	FAIR		NO	42.2706172	-88.366108

914	Box elder	Acer negundo	8	FAIR		NO	42.2705834	-88.366169
915	Box elder	Acer negundo	8	FAIR		NO	42.2705771	-88.366129
916	Box elder	Acer negundo	4	FAIR		NO	42.2705992	-88.366087
917	Box elder	Acer negundo	4	FAIR		NO	42.2706247	-88.366072
918	Box elder	Acer negundo	6	FAIR		NO	42.2706137	-88.366036
919	Box elder	Acer negundo	6	FAIR		NO	42.2705798	-88.366048
920	Box elder	Acer negundo	6	FAIR	Multistem	NO	42.2705835	-88.366013
921	Black walnut	Juglans nigra	22	FAIR		NO	42.2705435	-88.365986
922	Red mulberry	Morus rubra	18	POOR		NO	42.2704647	-88.366018
923	Red mulberry	Morus rubra	12	FAIR		NO	42.2704498	-88.366058
924	Red mulberry	Morus rubra	10	FAIR		NO	42.2704213	-88.366099
925	Black cherry	Prunus serotina	6	FAIR		NO	42.270409	-88.366195
926	Black cherry	Prunus serotina	6	FAIR		NO	42.2703795	-88.366092
927	Black cherry	Prunus serotina	5	FAIR		NO	42.2704429	-88.366035
928	Silver maple	Acer saccharinum	10	FAIR		NO	42.2704713	-88.36612
929	Red mulberry	Morus rubra	18	FAIR		NO	42.2704487	-88.366189
930	Box elder	Acer negundo	5	FAIR		NO	42.2704731	-88.36625
931	Box elder	Acer negundo	5	FAIR		NO	42.2704797	-88.366293
932	Black cherry	Prunus serotina	6	FAIR		NO	42.2706706	-88.36582
933	River birch	Betula nigra	10	FAIR	Multistem	NO	42.2708271	-88.36588
934	River birch	Betula nigra	15	FAIR		NO	42.2709489	-88.365467
935	River birch	Betula nigra	15	FAIR		NO	42.2709842	-88.365522
936	River birch	Betula nigra	15	FAIR	Multistem	NO	42.2710341	-88.365445
937	White pine	Pinus strobus	15	FAIR		NO	42.2710962	-88.36545
938	White pine	Pinus strobus	10	FAIR		NO	42.2711186	-88.365511
939	White pine	Pinus strobus	10	FAIR		NO	42.2711206	-88.365397
940	White pine	Pinus strobus	10	FAIR		NO	42.2711315	-88.365456
941	White pine	Pinus strobus	5	FAIR		NO	42.2711764	-88.365441
942	White pine	Pinus strobus	15	FAIR		NO	42.2711309	-88.365635
943	Blue spruce	Picea pungens	10	FAIR		NO	42.2712302	-88.365508
944	River birch	Betula nigra	8	FAIR		NO	42.271325	-88.365387
945	Blue spruce	Picea pungens	12	FAIR		NO	42.2712073	-88.365643
946	Blue spruce	Picea pungens	12	FAIR		NO	42.271145	-88.365723
947	River birch	Betula nigra	8	FAIR		NO	42.2712883	-88.365583
948	Callery pear	Pyrus calleryana	8	FAIR		NO	42.2712288	-88.365805
949	White pine	Pinus strobus	7	FAIR		NO	42.2711351	-88.365811
950	Callery pear	Pyrus calleryana	5	FAIR		NO	42.2711375	-88.365919
951	White pine	Pinus strobus	8	FAIR		NO	42.270938	-88.366057
952	White pine	Pinus strobus	8	FAIR		NO	42.2709262	-88.365973
953	White pine	Pinus strobus	9	FAIR		NO	42.2709314	-88.366013
954	White pine	Pinus strobus	9	FAIR		NO	42.2709403	-88.366094
955	White pine	Pinus strobus	9	FAIR		NO	42.2709366	-88.3659
956	Callery pear	Pyrus calleryana	4	FAIR		NO	42.2713031	-88.366023
957	Honey locust	Gleditsia triacanthos	15	FAIR		NO	42.2715007	-88.365951
958	Honey locust	Gleditsia triacanthos	12	FAIR		NO	42.2715111	-88.36609
959	Honey locust	Gleditsia triacanthos	12	FAIR		NO	42.2715293	-88.366217
960	Black cherry	Prunus serotina	6	FAIR		NO	42.2714035	-88.365644
961	Kentucky coffeetree	Gymnocladus dioicus	6	FAIR		NO	42.2715129	-88.365634
962	River birch	Betula nigra	7	FAIR		NO	42.2713987	-88.365531
963	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2722002	-88.365845
964	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2721848	-88.365844
965	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2721714	-88.365843
966	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2721569	-88.36584
967	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2721434	-88.36584
968	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2721261	-88.365841
969	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2721117	-88.365841
970	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2720963	-88.365841
971	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2720847	-88.365841
972	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2720664	-88.36584
973	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2720482	-88.365841
974	Arborvitae	Thuja orientalis	4	FAIR		NO	42.2720174	-88.36584

975	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719981	-88.365836
976	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719808	-88.365835
977	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719606	-88.365834
978	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719442	-88.365832
979	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271924	-88.365832
980	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719105	-88.365834
981	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271898	-88.365834
982	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718797	-88.36583
983	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718605	-88.365831
984	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271846	-88.36583
985	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718249	-88.36583
986	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718124	-88.365828
987	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271797	-88.365831
988	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717767	-88.365835
989	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717575	-88.365831
990	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717431	-88.365833
991	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717305	-88.365828
992	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717142	-88.365827
993	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271693	-88.365826
994	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2716747	-88.365822
995	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2716564	-88.365822
996	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271642	-88.36582
997	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2716324	-88.365849
998	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2716458	-88.365846
999	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2716612	-88.365854
1000	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2716824	-88.365855
1001	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717036	-88.365853
1002	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717161	-88.365855
1003	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717315	-88.365855
1004	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271745	-88.365861
1005	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717729	-88.365861
1006	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2717883	-88.365858
1007	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718047	-88.365853
1008	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718201	-88.36585
1009	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718335	-88.365857
1010	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718528	-88.365858
1011	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271872	-88.365859
1012	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2718903	-88.365858
1013	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719076	-88.365858
1014	Arborvitae	Thuja orientalis	4	FAIR	NO	42.271924	-88.365856
1015	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719346	-88.365858
1016	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719471	-88.365859
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1019	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2719962	-88.365859
1020	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2720125	-88.365865
1021	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2720279	-88.365863
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1024	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2720799	-88.365869
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1027	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2721126	-88.365871
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1030	Arborvitae	Thuja orientalis	4	FAIR	NO	42.272155	-88.365873
1031	Arborvitae	Thuja orientalis	4	FAIR	NO	42.2721675	-88.365871
1032	Arborvitae	Thuja orientalis	4	FAIR	NO	42.272181	-88.365871
1033	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713134	-88.366855
1034	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713108	-88.366889
1035	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713074	-88.366932

1036	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713032	-88.366966
1037	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713007	-88.367002
1038	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2712998	-88.367034
1039	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2712981	-88.367073
1040	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713015	-88.367123
1041	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713015	-88.367148
1042	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713006	-88.367187
1043	Eastern red cedar	Juniperus virginiana	4	FAIR	NO	42.2713031	-88.36723
1044	Austrian pine	Pinus nigra	4	FAIR	NO	42.2712052	-88.367405
1045	Austrian pine	Pinus nigra	4	FAIR	NO	42.2712046	-88.367364
1046	Austrian pine	Pinus nigra	4	FAIR	NO	42.2712023	-88.367326
1047	Austrian pine	Pinus nigra	4	FAIR	NO	42.2712035	-88.367287
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1049	Austrian pine	Pinus nigra	4	FAIR	NO	42.2712024	-88.367212
1050	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711966	-88.367123
1051	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711966	-88.367087
1052	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711943	-88.367063
1053	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711954	-88.367032
1054	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711978	-88.366997
1055	Austrian pine	Pinus nigra	4	FAIR	NO	42.271192	-88.366974
1056	Austrian pine	Pinus nigra	4	FAIR	NO	42.271185	-88.366932
1057	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711839	-88.366899
1058	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711792	-88.366861
1059	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711734	-88.366825
1060	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711723	-88.366789
1061	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711966	-88.367148
1062	Austrian pine	Pinus nigra	4	FAIR	NO	42.2712024	-88.36718
1063	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711758	-88.36676
1064	Austrian pine	Pinus nigra	4	FAIR	NO	42.2711781	-88.366722

McHENRY-LAKE COUNTY SOIL & WATER CONSERVATION DISTRICT

NATURAL RESOURCES INFORMATION REPORT

25-102-4763

November 19, 2025

This report has been prepared for:
Arena Opal Solar, LLC

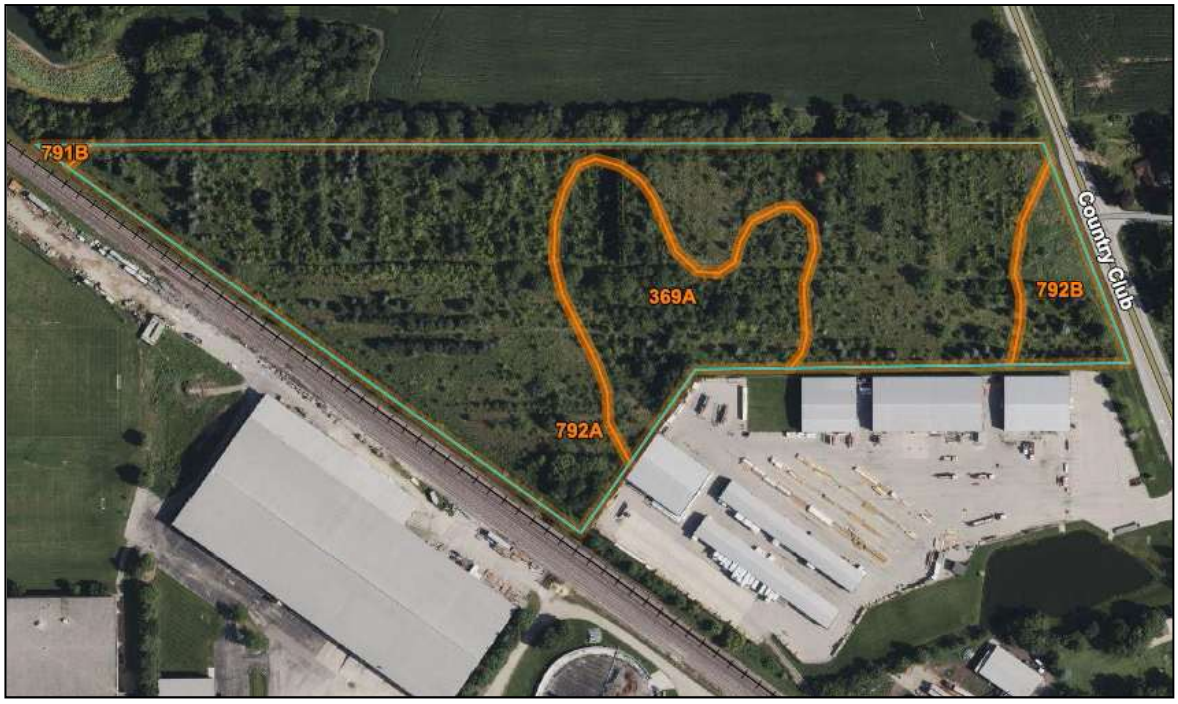
Contact Person:
Sean Hickey
Kimley-Horn

PREPARED BY:
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WOODSTOCK, IL 60098
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www.mchenryswcd.org

The McHenry-Lake County Soil & Water Conservation District is an equal opportunity provider and employer.

EXECUTIVE SUMMARY OF NRI REPORT #25-102-4763

It is the opinion of the McHenry-Lake County Soil and Water Conservation District Board of Directors that this report as summarized on these pages are pertinent to the requested zoning change.





Picture 1: Looking west from the eastern boundary.



Aquifer Sensitivity Map (*This is the area beneath the soil profile down to bedrock)
The Geologic features map indicates that the parcel is comprised of A4 geologic limitations. A4 has a high aquifer contamination potential.



Sensitive Aquifer Recharge Areas (Includes the soil profile and underlying geology).
The Sensitive Aquifer Recharge Map indicates the parcel is within an area designated as Sensitive Aquifer Recharge (identified in red).



Soil Leachability Map (This is only the soil profile within the parcel from the surface down to approx. 5 feet).
The Soil Leachability Index indicates 3.3 acres or 18.7% of the parcel contains high leachable soils, for fertilizers, on the parcel (identified in red).

Soil Permeability (This is only the soil profile within the parcel from the surface down to approx. 5 feet. Soil permeability is a reflection of the speed in which water (with or without pollutants) can move through the soil profile.)
The USDA-NRCS Soil Survey Map of the area indicates the entire parcel is comprised of highly permeable soils.

Soil Limitations (This evaluates the parcel from the surface down to approximately 5 feet.):

Erosion Ratings
The NRCS Soils Survey indicates there are no highly erodible soils on the parcel.



Prime Farmland Soils
The Natural Resources Conservation Service (NRCS) Soil Survey indicates the entire parcel is comprised of prime farmland soils (identified in green).



Ground-Based Solar Arrays
The Natural Resources Conservation Service (NRCS) Soil Survey indicates the entire parcel has very limited soils for ground-based solar arrays (identified in red).

Hydric Soils
The NRCS Soil Survey indicates there are no hydric soils on the parcel.

Floodplain Information:

The Flood Insurance Rate Map
Indicates the parcel is outside of the 100-year floodplain.

Flood of Record Map (Hydrologic Atlas)
The Flood of Record Map for this area indicates the parcel has not previously flooded.

Wetland Information:

USDA-NRCS Wetland Inventory
The NRCS Wetlands Inventory indicates there are no wetlands on the parcel.

ADID Wetland Inventory
The ADID Wetland Study indicates there are no wetlands on the parcel.

Flooding Frequency
The NRCS Soil Survey indicates that flooding is not probable on the parcel. The chance of flooding is nearly 0% in any year. Flooding occurs less than once in 500 years.

Ponding Frequency
The NRCS Soil Survey indicates ponding is not probable. The chance of ponding is nearly 0 percent in any year.

Cultural Resources: Office maps indicate there are no known cultural/historical features within the parcel in question.



Preserved or Recognized Ecological Sites: Office maps indicate McHenry County Natural Area Inventory Site (DOR05) – Ridgefield Prairie is northeast of the parcel and (DOR10) – Lily Pond Marsh is northwest of the parcel.

Ridgefield Prairie contains a wet silt loam prairie and basin marsh. It is unprotected and threatened by Reed Canary Grass.



Lily Pond Marsh is a privately protected basin marsh which is threatened by siltation, upstream impoundment, Common Reed Grass, Reed Canary Grass, and filling.

Additionally, a portion of the parcel is within Gladstone Fen's Class III Groundwater recharge area. Additional information regarding this designation, can be found at the end of this report.

Woodlands: The site contains a remnant of a tree nursery with various commercial species present.

Agricultural Areas: Office Maps indicate there are no State designated agricultural areas on the parcel in question.

Land Evaluation Site Assessment (LESA)
The Land Evaluation Score for the parcel is 91.2. A Site Assessment was not completed.

Agricultural Impact Mitigation Agreement: We have received notice from the Illinois Department of Agriculture that an Agricultural Impact Mitigation Agreement has been filed.

ADDITIONAL CONCERNS

Vegetation: The Board recommends that areas between panels and within the buffers be planted to a native prairie mix to help increase water infiltration and reduce runoff from the site. It is recommended that a planting and maintenance plan be developed with the landowner to ensure that noxious weeds are controlled, and native plantings are properly installed and managed. The petitioner should refer to the planting requirements of the Illinois Department of Natural Resources and McHenry County Department of Planning & Development.

CLASS III – SPECIAL RESOURCE GROUNDWATER

This document is a compilation of Administrative Codes which relate to Class III – Special Resource Groundwater.

Joint Committee on Administrative Rules

ADMINISTRATIVE CODE

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD
PART 620 GROUNDWATER QUALITY
SECTION 620.230 CLASS III: SPECIAL RESOURCE GROUNDWATER

Section 620.230 Class III: Special Resource Groundwater

Except as provided in Section 620.250, Special Resource Groundwater is:

a) Groundwater that is determined by the Board, pursuant to the procedures set forth in Section 620.260, to be:

1) Demonstrably unique (e.g., irreplaceable sources of groundwater) and suitable for application of a water quality standard more stringent than the otherwise applicable water quality standard specified in Subpart D; or

2) Vital for a particularly sensitive ecological system.

b) Groundwater that contributes to a dedicated nature preserve that is listed by the Agency as set forth below:

1) A written request to list a dedicated nature preserve under this subsection must contain, at a minimum, the following information:

A) A general description of the site and the surrounding land use;

B) A topographic map or other map of suitable scale denoting the location of the dedicated nature preserve;

C) A general description of the existing groundwater quality at and surrounding the dedicated nature preserve;

D) A general geologic profile of the dedicated nature preserve based upon the most reasonably available information, including but not limited to geologic maps and subsurface groundwater flow directions; and

E) A description of the interrelationship between groundwater and the nature of the site.

2) Upon confirmation by the Agency of the technical adequacy of a written request, the Agency shall publish the proposed listing of the dedicated nature preserve in the Environmental Register for a 45-day public comment period. Within 60 days after the close of the public comment period, the Agency shall either publish a final listing of the dedicated nature preserve in the Environmental Register or provide a written response to the requestor specifying the reasons for not listing the dedicated nature preserve.

3) At least once annually, the Agency shall publish in the Environmental Register a complete listing of all dedicated nature preserves listed under this subsection (b).

Joint Committee on Administrative Rules
ADMINISTRATIVE CODE

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD
PART 620 GROUNDWATER QUALITY
SECTION 620.430 GROUNDWATER QUALITY STANDARDS FOR CLASS III: SPECIAL RESOURCE GROUNDWATER

Section 620.430 Groundwater Quality Standards for Class III: Special Resource Groundwater

Concentrations of inorganic and organic chemical constituents must not exceed the standards set forth in Section 620.410, except for those chemical constituents for which the Board has adopted a standard pursuant to Section 620.260.

4) For purposes of this Section the term "dedicated nature preserve" means a nature preserve that is dedicated pursuant to the Illinois Natural Areas Preservation Act [525 ILCS 30].

(Source: Amended at 21 Ill. Reg. 6518, effective May 8, 1997)

Joint Committee on Administrative Rules
ADMINISTRATIVE CODE

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD
PART 620 GROUNDWATER QUALITY
SECTION 620.410 GROUNDWATER QUALITY STANDARDS FOR CLASS I: POTABLE RESOURCE GROUNDWATER

Section 620.410 Groundwater Quality Standards for Class I: Potable Resource Groundwater

a) Inorganic Chemical Constituents
Except due to natural causes or as provided in Section 620.450, concentrations of the following chemical constituents must not be exceeded in Class I groundwater:

Constituent	Units	Standard
Antimony	mg/L	0.006
Arsenic*	mg/L	0.010
Barium	mg/L	2.0
Beryllium	mg/L	0.004
Boron	mg/L	2.0
Cadmium	mg/L	0.005
Chloride	mg/L	200.0
Chromium	mg/L	0.1
Cobalt	mg/L	1.0
Copper	mg/L	0.65
Cyanide	mg/L	0.2
Fluoride	mg/L	4.0
Iron	mg/L	5.0
Lead	mg/L	0.0075
Manganese	mg/L	0.15

Mercury	mg/L	0.002
Nickel	mg/L	0.1
Nitrate as N	mg/L	10.0
Perchlorate	mg/L	0.0049
Radium-226	pCi/l	20.0
Radium-228	pCi/l	20.0
Selenium	mg/L	0.05
Silver	mg/L	0.05
Sulfate	mg/L	400.0
Thallium	mg/L	0.002
Total Dissolved Solids (TDS)	mg/L	1,200
Vanadium	mg/L	0.049
Zinc	mg/L	5.0

*Denotes a carcinogen.

b) Organic Chemical Constituents

Except due to natural causes or as provided in Section 620.450 or subsection (d), concentrations of the following organic chemical constituents shall not be exceeded in Class I groundwater:

Constituent	Standard (mg/L)
Acenaphthene	0.42
Acetone	6.3
Alachlor*	0.002
Aldicarb	0.003
Anthracene	2.1
Atrazine	0.003
Benzene*	0.005
Benzo(a)anthracene*	0.00013
Benzo(b)fluoranthene*	0.00018
Benzo(k)fluoranthene*	0.00017
Benzo(a)pyrene*	0.0002
Benzoic acid	28.0
2-Butanone (MEK)	4.2
Carbofuran	0.04
Carbon Disulfide	0.7
Carbon Tetrachloride*	0.005
Chlordane*	0.002
Chloroform*	0.07
Chrysene*	0.012
Dalapon	0.2
Dibenzo(a,h)anthracene*	0.0003
Dicamba	0.21

Dichlorodifluoromethane	1.4
1,1-Dichloroethane	1.4
Dichloromethane*	0.005
Di(2-ethylhexyl)phthalate*	0.006
Diethyl Phthalate	5.6
Di-n-butyl Phthalate	0.7
Dinoseb	0.007
Endothall	0.1
Endrin	0.002
Ethylene Dibromide*	0.00005
Fluoranthene	0.28
Fluorene	0.28
Heptachlor*	0.0004
Heptachlor Epoxide*	0.0002
Hexachlorocyclopentadiene	0.05
Indeno(1,2,3-cd)pyrene*	0.00043
Isopropylbenzene (Cumene)	0.7
Lindane (Gamma-Hexachlorocyclohexane)	0.0002
2,4-D	0.07
ortho-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
1,2-Dibromo-3-Chloropropane*	0.0002
1,2-Dichloroethane*	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
1,2-Dichloropropane*	0.005
Ethylbenzene	0.7
MCPP (Mecoprop)	0.007
Methoxychlor	0.04
2-Methylnaphthalene	0.028
2-Methylphenol	0.35
Methyl Tertiary-Butyl Ether (MTBE)	0.07
Monochlorobenzene	0.1
Naphthalene	0.14
P-Dioxane*	0.0077
Pentachlorophenol*	0.001
Phenols	0.1
Picloram	0.5
Pyrene	0.21
Polychlorinated Biphenyls (PCBs) (as decachloro-biphenyl)*	0.0005

alpha-BHC (alpha-Benzene hexachloride)*	0.00011
Simazine	0.004
Styrene	0.1
2,4,5-TP (Silvex)	0.05
Tetrachloroethylene*	0.005
Toluene	1.0
Toxaphene*	0.003
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
1,2,4-Trichlorobenzene	0.07
Trichloroethylene*	0.005
Trichlorofluoromethane	2.1
Vinyl Chloride*	0.002
Xylenes	10.0

*Denotes a carcinogen.

c) Explosive Constituents

Concentrations of the following explosive constituents must not exceed the Class I groundwater standard:

Constituent	Standard (mg/L)
1,3-Dinitrobenzene	0.0007
2,4-Dinitrotoluene*	0.0001
2,6-Dinitrotoluene*	0.00031
HMX (High Melting Explosive, Octogen)	1.4
Nitrobenzene	0.014
RDX (Royal Demolition Explosive, Cyclonite)	0.084
1,3,5-Trinitrobenzene	0.84
2,4,6-Trinitrotoluene (TNT)	0.014

*Denotes a carcinogen.

d) Complex Organic Chemical Mixtures

Concentrations of the following chemical constituents of gasoline, diesel fuel, or heating fuel must not be exceeded in Class I groundwater:

Constituent	Standard (mg/L)
Benzene*	0.005
BETX	11.705

*Denotes a carcinogen.

e) pH
Except due to natural causes, a pH range of 6.5 - 9.0 units must not be exceeded in Class I groundwater.

f) Beta Particle and Photon Radioactivity

1) Except due to natural causes, the average annual concentration of beta particle and photon radioactivity from man-made radionuclides shall not exceed a dose equivalent to the total body organ greater than 4 mrem/year in Class I groundwater. If two or more radionuclides are present, the sum of their dose equivalent to the total body, or to any internal organ shall not exceed 4 mrem/year in Class I groundwater except due to natural causes.

2) Except for the radionuclides listed in subsection (f)(3), the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalent must be calculated on the basis of a 2 liter per day drinking water intake using the 168-hour data in accordance with the procedure set forth in NCRP Report Number 22, incorporated by reference at Section 620.125(a).

3) Except due to natural causes, the average annual concentration assumed to produce a total body or organ dose of 4 mrem/year of the following chemical constituents shall not be exceeded in Class I groundwater:

	Critical	Standard
Constituent	Organ	(pCi/L)
Tritium	Total body	20,000.0
Strontium-90	Bone marrow	8.0

(Source: Amended at 36 Ill. Reg. 15206, effective October 5, 2012)

Joint Committee on Administrative Rules
ADMINISTRATIVE CODE

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD
PART 620 GROUNDWATER QUALITY

SECTION 620.260 RECLASSIFICATION OF GROUNDWATER BY ADJUSTED STANDARD

Section 620.260 Reclassification of Groundwater by Adjusted Standard

Any person may petition the Board to reclassify a groundwater in accordance with the procedures for adjusted standards specified in Section 28.1 of the Act and 35 Ill. Adm. Code 106.Subpart G. In any proceeding to reclassify specific groundwater by adjusted standard, in addition to the requirements of 35 Ill. Adm. Code 106.Subpart G, and Section 28.1(c) of the Act, the petition shall, at a minimum, contain information to allow the Board to determine:

a) The specific groundwater for which reclassification is requested, including but not limited to geographical extent of any aquifers, depth of groundwater, and rate and direction of groundwater flow and that the specific groundwater exhibits the characteristics of the requested class as set forth in Section 620.210(b), 620.220(b), 620.230, or 620.240;

b) Whether the proposed change or use restriction is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social benefits such as loss of jobs or closing of facilities, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards would be beneficial or necessary;

c) Existing and anticipated uses of the specific groundwater;

d) Existing and anticipated quality of the specific groundwater;

e) Existing and anticipated contamination, if any, of the specific groundwater;

f) Technical feasibility and economic reasonableness of eliminating or reducing contamination of the specific groundwater or of maintaining existing water quality;

g) The anticipated time period over which contaminants will continue to affect the specific groundwater;

h) Existing and anticipated impact on any potable water supplies due to contamination;

i) Availability and cost of alternate water sources or of treatment for those users adversely affected;

j) Negative or positive effect on property values; and

k) For special resource groundwater, negative or positive effect on:

1) The quality of surface waters; and

2) Wetlands, natural areas, and the life contained therein, including endangered or threatened species of plant, fish or wildlife listed pursuant to the Endangered Species Act, 16 U.S.C. 1531 et seq., or the Illinois Endangered Species Protection Act [415 ILCS 10].

(Source: Amended at 21 Ill. Reg. 6518, effective May 8, 1997)

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	Arena Renewables, LLC	*IDNR Project Number:*	2605696
Contact:	Dominic Evenson	*Date:*	09/19/2025
Address:	15051 N Kierland Blvd, Floor 3 Scottsdale, AR 85254		
Project:	Arena Opal Solar, LLC		
Address:	West of S Country Club Rd and east of Chicago and North Western Railroad, Ridgefield		

Description: Community scale solar farm with associated access roads and utilities.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Gladstone Fen Class III Groundwater Site
Parker Fen INAI Site
Julia M. & Royce L. Parker Fen Nature Preserve

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: McHenry

Township, Range, Section:
44N, 7E, 24



IL Department of Natural Resources Contact
Isabella Newingham
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Environmental Protection Agency
Terri LeMasters
1020 North Grand Avenue East
Springfield, Illinois 61944 -9276

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

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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.

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September 24, 2025

Dominic Evenson
15051 N Kierland Blvd, Floor 3
Scottsdale, AZ 85251

RE: Arena Opal Solar, LLC
Consultation Program
EcoCAT Review #2605696
McHenry County

Dear Mr. Evenson:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The proposed action consists of the construction of a solar farm with associated access roads and utilities in McHenry County, IL.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Illinois Natural Areas Inventory (INAI)
Parker Fen INAI

Illinois Nature Preserves Commission Lands
Julia M. & Royce L. Parker Fen Nature Preserve

Class 3 Groundwater
Gladstone Fen Class 3 Groundwater

Due to the project scope and proximity to protected resources, the Department offers the following comments and recommends the following actions be taken to avoid adversely impacting listed species in the vicinity of the project:

Parker Fen INAI and Julia M. & Royce L. Parker Fen Nature Preserve
The Department has determined adverse impacts to these sites are unlikely.

Gladstone Fen Class 3 Groundwater

This project falls completely within the Gladstone Fen Class 3 Groundwater recharge area, which protects the integrity of the Gladstone Fen Nature Preserve. The modification of groundwater quality and quantity which may affect conditions within a Nature Preserve is prohibited. The Department recommends the following to avoid and minimize impact to Gladstone Fen Class 3 Groundwater:

- BMPs be implemented to ensure that the quality and quantity of groundwater not be adversely affected to avoid potential liability on the part of the applicant.
- All excavated soil should be placed back in the order it was removed.

Given the above recommendations are adopted, the Department has determined that impacts to these protected resources are unlikely. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely.

In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.

Consultation on the part of the Department is closed, unless the applicant desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action 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 project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

This letter does not serve as permission to take any listed or endangered species. As a reminder, no take of an endangered species is permitted without an Incidental Take Authorization or the required permits. Anyone who takes a listed or endangered species without an Incidental Take Authorization or required permit may be subject to criminal and/or civil penalties pursuant to the *Illinois Endangered Species Act*, the *Fish and Aquatic Life Act*, the *Wildlife Code* and other applicable authority.

The Department also offers the following conservation measures be considered to help protect native wildlife and enhance natural areas in the project area:

- The Department strongly recommends that the project proponent establish pollinator-friendly habitat as groundcover wherever feasible. Solar Site Pollinator Establishment Guidelines can be found here: https://dnr.illinois.gov/conservation/pollinatorscorecard.html

- The site should be de-compacted before planting.
- Long term management of the site should be planned for prior to development to ensure successful native pollinator habitat establishment and prevent the spread of invasive species throughout the lifetime of this project. An experienced ecological management consultant should be hired to assist with long-term management.
- Required fencing, excluding areas near or adjacent to public access areas, should have a 6-inch gap along the bottom to prevent the restriction of wildlife movement. Woven wire or a suitable habitat wildlife friendly fence should be used. Barbed wire should be avoided.
- If tree clearing is necessary, the Department recommends removing trees between November 1st and March 31st to avoid impacts to the state-listed bats and birds.
- Any required night lighting should follow International Dark-Sky Association's (IDA) Five Principles for Responsible Outdoor Lighting to minimize the effect of light pollution on wildlife: Five Principles for Responsible Outdoor Lighting | DarkSky International

Please contact Isabella Newingham (Isabella.newingham@illinois.gov) with any questions about this review.
Sincerely,

Bradley Hayes
Manager, Impact Assessment Section
Division of Real Estate Services and Consultation
Office of Realty & Capital Planning
Illinois Department of Natural Resources
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STANDARD AGRICULTURAL IMPACT MITIGATION AGREEMENT
between
Arena Opal Solar, LLC

and the
ILLINOIS DEPARTMENT OF AGRICULTURE
Pertaining to the Construction of a Commercial Solar Energy Facility
in
McHenry 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).

Arena Opal Solar, LLC, hereafter referred to as Commercial Solar Energy Facility Owner, or simply as Facility Owner, plans to develop and/or operate a 2.0MWac Commercial Solar Energy Facility in McHenry County [GPS Coordinates: 42.271385, -88.362261], which will consist of up to 17.5 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 Arena Opal 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 McHenry 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 4

Clay Nordsiek

By Clay Nordsiek, Deputy General Counsel

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

11/5, 2025

Arena Opal Solar, LLC

Carson Weinand

By Carson Weinand

15051 N Kierland Blvd, Floor 3 #222
Scottsdale, AZ 85254

Address

October 21, 2025

Agenda Item No: 10

City Council
Agenda Supplement

Meeting Date: January 6, 2026

Item: Extension of a Preliminary and Final Planned Unit Development and Special Use Permit for a Solar Farm

Gloria Foxman, applicant

Recommendation: Motion to grant a one-year extension to the Preliminary and Final PUD and Special Use Permit approval for Ridgefield Road.

Contact: Kathryn Cowlin, Director of Community Development

Background:

- History: The City's Unified Development Ordinance sets expiration time periods for certain approvals. A Planned Unit Development (PUD) approval and Special Use Permit (SUP) approval are valid for two years, unless extended by the City Council.
- The City Council approved a Preliminary and Final PUD and Special Use Permit for a solar farm on Ridgefield Road west of the McHenry Athletic Center on March 19, 2024. The approval ordinance and site plan are included for reference.
- Options:
  - Approval of the extension preserving the ability to request building permits for a solar farm.
  - Deny the requested extension and the PUD and SUP would expire and the property would be one Manufacturing zoned property. New zoning approvals would be required for future development proposals.

Votes Required to Pass: A simple majority vote.

PIQ Map
Ridgefield Road



Liz: Good morning: Following up on our previous phone call, I would like to appear at the January 6, 2026, City Council meeting to request an extension to the TPE IL MH405, LLC SUP originally granted on March 19, 2024. I've attached the SUP here. I will prepare a brief presentation for the meeting, to present unless I'm on the consent agenda for approval. Is it also possible for me to email the board prior to the meeting?

Many thanks,
Gloria

Gloria Foxman
Development Manager
TurningPoint Energy
development - advisory - investment
gfoxman@tpoint-e.com | https://turningpoint-energy.com | (646) 229-5041

To the City Council Members:

I respectfully request a one-year extension for Petition PLN-2024-05 for a Comprehensive Land Use Plan Amendment, Preliminary/Final Planned Unit Development and Special Use Permit for a Solar Farm made by TPE IL MH405, LLC on parcel 13-23-400-005, originally granted on March 19, 2024.

As you may recall, we consulted with planning staff and presented before the city council before our application to ensure that this location was preferred by the Crystal Lake for a solar farm. This location is adjacent to a railroad, farmland and an athletic facility, at a distance from residential neighbors and set back from the road. We have reduced the size of the array area, leaving more acreage available for farming in the north. Furthermore, the landowner has retained control of several acres to the south of the array, adjacent to Ridgefield Road, for future development during the lifetime of the solar farm. I've attached an updated site plan, for your review.

Due to our timeline working with ComEd and ordering equipment with long lead times, we are not yet ready to begin full construction. We anticipate that a one-year extension would provide us with sufficient time to submit for the required permits and begin construction. I'm happy to answer any questions you may have in advance of the meeting.

Many thanks,
Gloria

Gloria Foxman
Development Manager
TurningPoint Energy
development - advisory - investment
gfoxman@tpoint-e.com | https://turningpoint-energy.com | (646) 229-5041

Ord. No. 8007
File No. 440

The City of Crystal Lake Illinois

AN ORDINANCE GRANTING COMPREHENSIVE LAND USE PLAN AMENDMENT TO INDUSTRY AND PRELIMINARY AND FINAL PLANNED UNIT DEVELOPMENT AND SPECIAL USE PERMIT FOR A SOLAR FARM WITH A DEFERRAL FROM THE REQUIREMENT TO BURY OVERHAD UTILITY LINES AND INSTALL SIDEWALK AT RIDGEFIELD ROAD (13-23-400-005)

WHEREAS, pursuant to the terms of a Petition (File #PLN-2024-05) before the Crystal Lake Planning and Zoning Commission, the Petitioner has requested the Comprehensive Land Use Plan Amendment from Agriculture/Rural Residential to Industry, a Preliminary and Final Planned Unit Development and Special Use Permit for a Solar Farm with a deferral from the requirement to bury overhead utility lines and install sidewalk at Ridgefield Road (13-23-400-005); and

WHEREAS, the Planning and Zoning Commission of the City of Crystal Lake, pursuant to notice duly published on February 17, 2024 in the Northwest Herald, held a public hearing at 7:00 p.m., on March 6, 2024, at City Hall at 100 W. Woodstock Street, Crystal Lake, Illinois to consider the proposed Comprehensive Land Use Plan Amendment, Preliminary and Final Planned Unit Development and Special Use Permit, and

WHEREAS, on March 6, 2024, the Planning and Zoning Commission, having fully heard and considered the testimony of all those present at the public hearing who wished to testify, made findings of fact as required by law and recommended to the Mayor and City Council of the City of Crystal Lake that the proposed Comprehensive Land Use Plan Amendment, Preliminary and Final Planned Unit Development and Special Use Permit be approved, as documented in the minutes, and

WHEREAS, it is in the best interests of the CITY OF CRYSTAL LAKE that the Comprehensive Land Use Plan Amendment, Preliminary and Final Planned Unit Development and Special Use Permit, deferral of the burial of overhead utility lines and installation of sidewalk be issued.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF CRYSTAL LAKE, McHENRY COUNTY, ILLINOIS, as follows:

Section I: That the Comprehensive Land Use Plan Amendment from Agriculture/Rural Residential to Industry, Preliminary and Final Planned Unit Development and Special Use Permit for a Solar Farm, deferral of the burial of overhead utility lines, and installation of sidewalk at Ridgefield Road (13-23-400-005), Crystal Lake, Illinois is hereby approved.

Section II: Said Comprehensive Land Use Plan Amendment, Preliminary and Final Planned Unit Development and Special Use Permit, deferral of the burial of overhead utility lines and installation of sidewalk be issued with the following conditions:

1. Approved plans, reflecting staff and advisory board recommendations, as approved by the City Council:
   A. Application (EIGER LLC, received 01/29/24)
   B. Site Plan (Kimley Horn, dated 11/06/23, received 01/29/24)
   C. Landscape Plan (Kimley Horn, dated 11/03/23, received 02/29/24)
   D. Narrative (Turning Point Energy, dated 01/11/24, received 01/29/24)
   E. Wetland Delineation Report (Kimley Horn, dated November 2023, received

2. The petitioner shall maintain the interior plantings and exterior screening plantings and fabric for the life of the facility.

3. The petitioner must address all of the review comments and requirements of the Community Development, Fire Rescue, Police, and Public Works Departments and the City's Stormwater Consultant.

Section III: That the City Clerk be and is hereby directed to amend all pertinent records of the City of Crystal Lake to show the issuance of the Comprehensive Land Use Plan Amendment, Preliminary and Final Planned Unit Development and Special Use Permit, deferral of the burial of overhead utility lines and installation of sidewalk in accordance with the provisions of this Ordinance, as provided by law.

Section IV: That this Ordinance shall be in full force and effect from and after its passage, approval and publication as provide by law.

DATED at Crystal Lake, Illinois, this 19th day of March, 2024.

City of Crystal Lake, an
Illinois municipal corporation

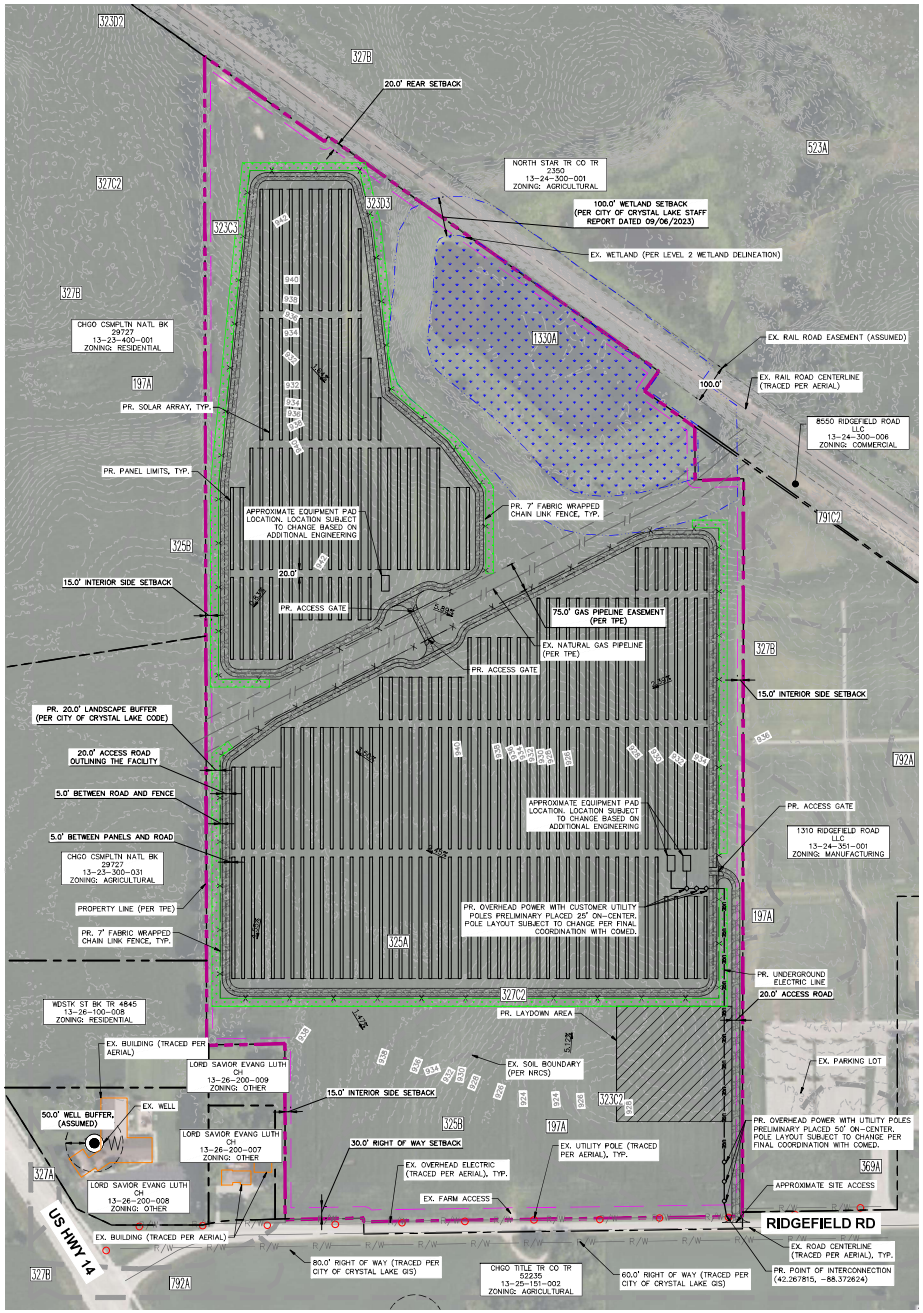
Haig Haleblian, MAYOR

SEAL

ATTEST:

Nick Kachiroubas, CITY CLERK

Passed: March 19, 2024
Approved: March 19, 2024



PRELIMINARY - NOT FOR CONSTRUCTION

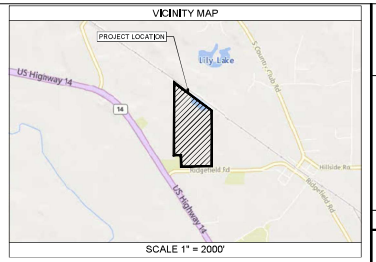
NORTH

GRAPHIC SCALE IN FEET
0 75 150 300

LEGEND

ROAD NAME	N 100 ST.
PROPERTY LINE	
PROJECT BOUNDARY	
RIGHT OF WAY	R/W
SETBACK	
EX. OVERHEAD ELECTRIC	EX OHE
EX. ROAD CENTERLINE	
EX. EASEMENT	
EX. UTILITY POLE	
EX. RESIDENCE/STRUCTURE	
EX. WETLANDS	
WETLAND SETBACK	
EX. FLOW (DIRECTION AND SLOPE)	XX%
EX. NATURAL GAS PIPELINE	
EX. PIPELINE EASEMENT	
PR. SECURITY FENCE	X
PR. ACCESS GATE	
PR. LAYDOWN AREA	
PR. PANEL LIMITS	
PR. UNDERGROUND ELECTRIC	UGE UGE
PR. OVERHEAD ELECTRIC	OHP
PR. ACCESS ROAD	
PR. UTILITY POLE	
PR. EQUIPMENT PAD	
PR. SOLAR ARRAY	
PR. LANDSCAPE BUFFER	
EX. WELL	W
WELL BUFFER	

VICINITY MAP



SCALE 1" = 2000'

SITE DATA TABLE

PIN #	13-23-40-005
PROPERTY OWNER	EIGER LLC 1625 W LAKE SHORE DR WOODSTOCK, IL 60098
SITE ADDRESS	RIDGEFIELD ROAD, CRYSTAL LAKE, IL 60098
LEGAL DESCRIPTION	DOC 2003R0085874 PT LT 15 SECS 23 & 24 LYING S OF RR /EX DOC 2012R0002480/ ASSRS PLAT
ZONING JURISDICTION	CITY OF CRYSTAL LAKE
ZONING	M PUD, MANUFACTURING PLANNED UNIT DEVELOPMENT
CURRENT LAND USE	AGRICULTURAL FIELD
PROPOSED USE	COMMERCIAL SOLAR FIELD
TOTAL PARCEL AREA	78 ± AC
PRELIMINARY DISTURBED AREA	46 ± AC
PRELIMINARY SOLAR AREA	33 ± AC
RIGHT OF WAY SETBACK	30 FT
PROPERTY LINE SETBACK	15 FT

*ZONING SITE PLAN IS BEING SUBMITTED FOR SPECIAL USE PERMIT AND PUD AMENDMENT TO CONSTRUCT/OPERATE A SOLAR FARM

NOTES

1. THE PURPOSE OF THIS PLAN IS FOR SPECIAL USE PERMIT AND PUD AMENDMENT REVIEW AND APPROVAL BY CITY OF CRYSTAL LAKE TO CONSTRUCT A SOLAR FARM.
2. THIS PLAN WAS PRODUCED UTILIZING GIS RESOURCES AND INFORMATION FROM MULTIPLE SOURCES, INCLUDING CITY OF CRYSTAL LAKE GIS, GOOGLE EARTH, AND USGS TOPOGRAPHIC INFORMATION.
3. SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AS SHOWN ON THE FLOOD INSURANCE RATE MAP (COMMUNITY PANEL 17111C0220DJ AND 17111C0215J) PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).
4. THE LOCATIONS OF PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCING, SOLAR ARRAY RACKING, INVERTER/TRANSFORMER PADS, OVERHEAD POLES AND LINES, ETC., SHOWN ARE APPROXIMATE AND ARE SUBJECT TO MODIFICATION DUE TO SITE CONDITIONS, ADDITIONAL PERMITTING REQUIREMENTS, EQUIPMENT SPECIFICATIONS, AND/OR OTHER CONSTRAINTS DURING FINAL ENGINEERING.
5. PROJECT AREA, INCLUDING CONSTRUCTION STAGING AREAS, WILL BE CLEARED AND GRUBBED AS NECESSARY, RETAINING PRE-DEVELOPMENT DRAINAGE PATTERNS TO THE BEST EXTENT POSSIBLE. CONSTRUCTION STAGING AND AREAS SUBJECT TO RUTTING DURING CONSTRUCTION WILL BE TEMPORARILY STABILIZED WITH GRAVEL. SOIL CONDITIONS AND EQUIPMENT LOADS WILL DETERMINE FINAL DESIGN.
6. ALL DIMENSIONS SHOWN ARE AT 90 DEGREES UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CALL AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. ADDITIONALLY, CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES.
8. CONTRACTOR SHALL MAINTAIN ACCESS AND UTILITY SERVICES TO ANY REMAINING BUILDING(S) OR ADJACENT BUILDING(S) THROUGHOUT THE DEMOLITION AND CONSTRUCTION PHASES. EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THE SATISFACTION OF THE OWNER BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
9. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE SIGNS, BARRICADES, WARNING LIGHTS, GUARD RAILS, AND EMPLOY FLAGGERS AS NECESSARY WHEN CONSTRUCTION ENDANGERS EITHER VEHICULAR OR PEDESTRIAN TRAFFIC. THESE DEVICES SHALL REMAIN IN PLACE UNTIL THE TRAFFIC MAY PROCEED NORMALLY AGAIN.
10. SITE WILL HAVE NO DEDICATIONS FOR OPEN SPACE, NATURAL AREA, HISTORIC BUILDING(S)/STRUCTURE(S), OR STORMWATER MANAGEMENT FACILITIES.
11. SITE WILL NOT INCLUDE WATER SOURCE OR SEWAGE DISPOSAL. APPROXIMATE LOCATION OF EXISTING WATER WELL LOCATIONS SHOWN PER THE ILLINOIS WATER WELL INTERACTIVE MAP ONLINE.
12. STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AS REQUIRED BY CITY AND/OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING. REQUIREMENTS TO BE DETERMINED DURING FINAL ENGINEERING.
13. THE MAXIMUM HEIGHTS OF ANY SOLAR PANEL SHALL NOT EXCEED 25 FEET.
14. SOLAR PANELS WILL BE DESIGNED WITH ANTI-REFLECTIVE COATING TO MINIMIZE GLARE.
15. COLLECTION LINES WITHIN THE SOLAR FARM WILL BE LOCATED AND MAINTAINED UNDERGROUND.
16. THERE SHALL BE NO EXTERIOR LIGHTING.
17. SETBACKS SHOWN ON THIS PLAN ARE BASED ON CITY OF CRYSTAL LAKE CODE OF ORDINANCES, SECTION 3-200.
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19. LANDSCAPE BUFFERS SHOWN ON THIS PLAN ARE BASED ON CITY OF CRYSTAL LAKE CODE OF ORDINANCES, SECTION 2-400C.
20. TO AVOID AND MINIMIZE IMPACT TO GLADSTONE FEN CLASS 3 GROUNDWATER, PER RECOMMENDATIONS FROM THE IDNR STATE ECOLOGICAL REVIEW, THE PROJECT WILL:
    - USE THE LIGHTEST WEIGHT EQUIPMENT POSSIBLE TO COMPLETE THE JOB.
    - USE BALLOON OR LARGE TIRES WHENEVER POSSIBLE TO REDUCE COMPACTION.
    - DISC SITE UPON COMPLETION TO DE-COMPACT THE SURFACE AFTER FINAL SOIL IS PLACED TO ENSURE GOOD INFILTRATION.
    - USE NATURALIZED PERMEABLE BASINS AND SWALES IN THE DESIGN.
21. SITE FENCE TO BE FABRIC WRAPPED PER CITY OF CRYSTAL LAKE SOLAR ORDINANCE.
22. SIGNAGE, ACCESS, GATES, AND SITE DESIGN SHALL BE IN ACCORDANCE WITH INTERNATIONAL FIRE CODE (IFC) 2018 EDITION WITH CITY OF CRYSTAL LAKE AMENDMENTS.

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
197A	TROXEL SILT LOAM, 0 TO 2 PERCENT SLOPES	B
323C2	CASCO LOAM, 4 TO 6 PERCENT SLOPES	B
323C3	CASCO CLAY LOAM, 4 TO 6 PERCENT SLOPES, SEVERELY ERODED	B
323D2	CASCO LOAM, 6 TO 12 PERCENT SLOPES, ERODED	B
323D3	CASCO CLAY LOAM, 6 TO 12 PERCENT SLOPES, SEVERELY ERODED	B
325A	DRESDEN SILT LOAM, 0 TO 2 PERCENT SLOPES	B
325B	DRESDEN SILT LOAM, 2 TO 4 PERCENT SLOPES	B
327A	FOX SILT LOAM, 0 TO 2 PERCENT SLOPES	B
327B	FOX SILT LOAM, 2 TO 4 PERCENT SLOPES	B
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369A	WAUPECAN SILT LOAM, 0 TO 2 PERCENT SLOPES	B
523A	DUNHAM SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
791B	RUSH SILT LOAM, 2 TO 4 PERCENT SLOPES	B
791C2	RUSH SILT LOAM, 4 TO 6 PERCENT SLOPES, ERODED	B
792A	BOWES SILT LOAM, 0 TO 2 PERCENT SLOPES	B
1330A	PEOTONE SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES, UNDRAINED	C/D
4103A	HOUGHTON MUCK, PONDED, 0 TO 2 PERCENT SLOPES	A/D

No.	REVISIONS	DATE

turningPoint Energy

Kimley»Horn

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.

570 LAKE COOK RD SUITE 200
DEERFIELD, IL 60015
WWW.KIMLEY-HORN.COM

KHA PROJECT
268173043

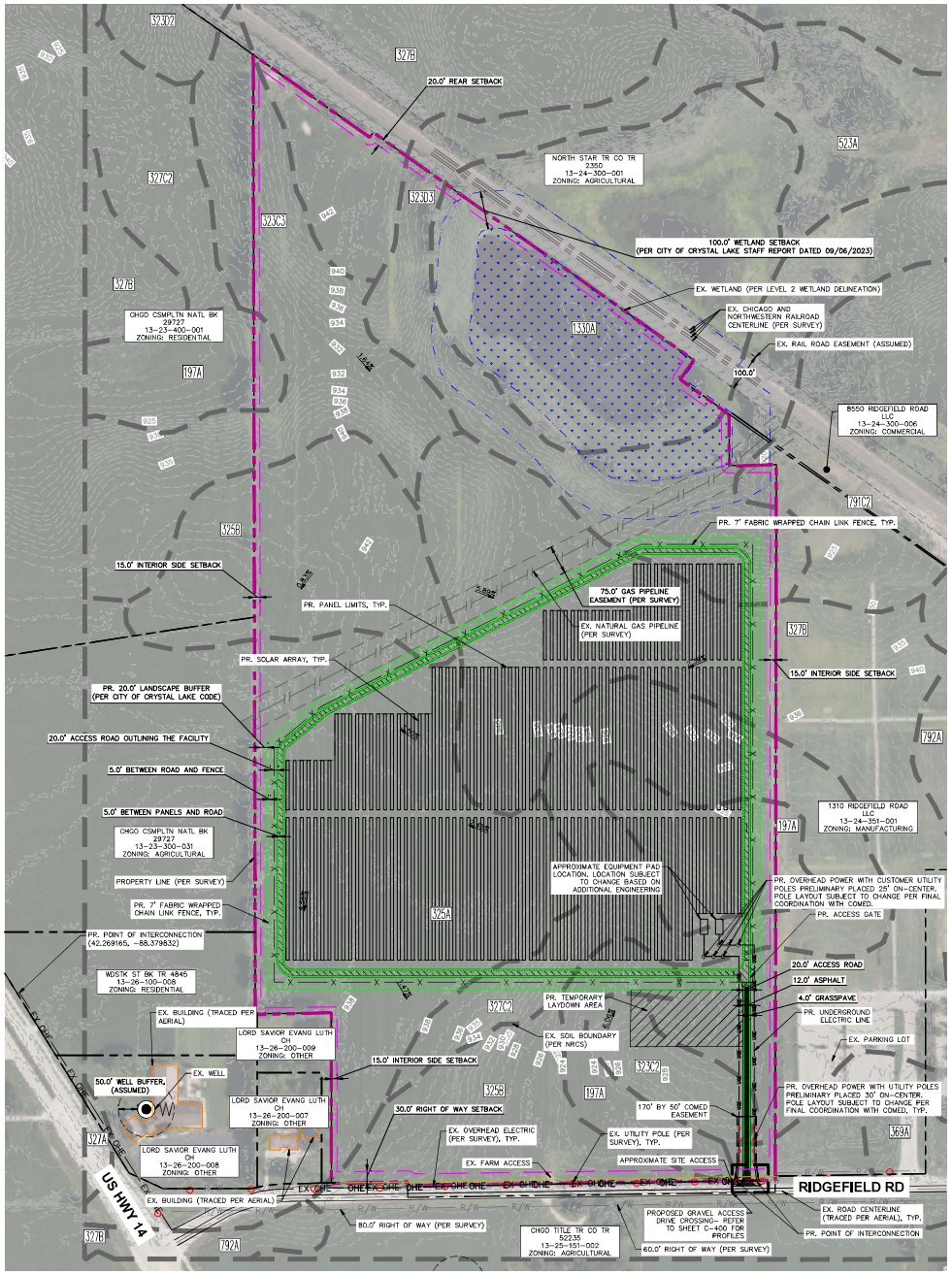
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SCALE	AS SHOWN
DESIGNED BY	AH
DRAWN BY	LAD
CHECKED BY	APK

ZONING SITE PLAN

TPE IL MH405, LLC

CITY OF CRYSTAL LAKE,
MCHENRY COUNTY, IL

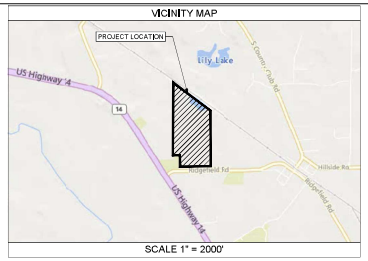
SHEET NUMBER
EX-1



PRELIMINARY - NOT FOR CONSTRUCTION



VICINITY MAP



SCALE 1" = 2000'

LEGEND

ROAD NAME	N 100 ST.
PROPERTY LINE	
PROJECT BOUNDARY	
RIGHT OF WAY	R/W
SETBACK	
EX. OVERHEAD ELECTRIC	EX. OHE
EX. ROAD CENTERLINE	
EX. EASEMENT	
EX. UTILITY POLE	
EX. RESIDENCE/STRUCTURE	
EX. WETLANDS	
WETLAND SETBACK	
EX. FLOW (DIRECTION AND SLOPE)	XX%
EX. NATURAL GAS PIPELINE	
EX. PIPELINE EASEMENT	
PR. SECURITY FENCE	X
PR. ACCESS GATE	
PR. LAYDOWN AREA	
PR. PANEL LIMITS	
PR. UNDERGROUND ELECTRIC	UGE
PR. OVERHEAD ELECTRIC	OH
PR. ACCESS ROAD (ASPHALT)	
PR. ACCESS ROAD (GRASSPAVE)	
PR. UTILITY POLE	
PR. EQUIPMENT PAD	
PR. SOLAR ARRAY	
PR. LANDSCAPE BUFFER	
EX. WELL	W
WELL BUFFER	
SOIL BOUNDARY	
PR. LIMITS OF DISTURBANCE	LoD
PR. COMED POLES	

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ZONING	M PUD, MANUFACTURING PLANNED UNIT DEVELOPMENT
CURRENT LAND USE	AGRICULTURAL FIELD
PROPOSED USE	COMMERCIAL SOLAR FIELD
TOTAL PARCEL AREA	77 ± AC
PRELIMINARY DISTURBED AREA	49 ± AC
PRELIMINARY SOLAR AREA	33 ± AC
EXISTING PERVIOUS AREA	49 ± AC
EXISTING IMPERVIOUS AREA	0 ± AC
PROPOSED PERVIOUS AREA	48.8 ± AC 2,126,558 ± SQFT
PROPOSED IMPERVOUS AREA	0.2 ± AC 7,882 ± SQFT
RIGHT OF WAY SETBACK	30 FT
PROPERTY LINE SETBACK	15 FT

*ZONING SITE PLAN IS BEING SUBMITTED FOR SPECIAL USE PERMIT AND PUD AMENDMENT TO CONSTRUCT/OPERATE A SOLAR FARM

**SEE THE STORMWATER STRATEGY EXHIBIT FOR ADDITIONAL DETAILS ON CALCULATIONS.

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    - DISC SITE UPON COMPLETION TO DE-COMPACT THE SURFACE AFTER FINAL SOIL IS PLACED TO ENSURE GOOD INFILTRATION.
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22. SIGNAGE, ACCESS, GATES, AND SITE DESIGN SHALL BE IN ACCORDANCE WITH INTERNATIONAL FIRE CODE (IFC) 2018 EDITION WITH CITY OF CRYSTAL LAKE AMENDMENTS.
23. BASE FLOOD ELEVATION WILL BE DETERMINED DURING FINAL ENGINEERING.

SOILS DATA TABLE

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323C2	CASCO LOAM, 4 TO 6 PERCENT SLOPES	B
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323D2	CASCO LOAM, 6 TO 12 PERCENT SLOPES, ERODED	B
323D3	CASCO CLAY LOAM, 6 TO 12 PERCENT SLOPES, SEVERELY ERODED	B
325A	DRESDEN SILT LOAM, 0 TO 2 PERCENT SLOPES	B
325B	DRESDEN SILT LOAM, 2 TO 4 PERCENT SLOPES	B
327A	FOX SILT LOAM, 0 TO 2 PERCENT SLOPES	B
327B	FOX SILT LOAM, 2 TO 4 PERCENT SLOPES	B
327C2	FOX SILT LOAM, 4 TO 6 PERCENT SLOPES, ERODED	B
369A	WAUPECAN SILT LOAM, 0 TO 2 PERCENT SLOPES	B
523A	DUNHAM SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
791B	RUSH SILT LOAM, 2 TO 4 PERCENT SLOPES	B
791C2	RUSH SILT LOAM, 4 TO 6 PERCENT SLOPES, ERODED	B
792A	BOWES SILT LOAM, 0 TO 2 PERCENT SLOPES	B
1330A	PEOTONE SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES, UNDRAINED	C/D
4103A	HOUGHTON MUCK, PONDED, 0 TO 2 PERCENT SLOPES	A/D

No.	REVISIONS	DATE
10	ZONING SITE PLAN REVISION 2	05/09/2025
9	ZONING SITE PLAN REVISION 2	03/05/2025
8	ZONING SITE PLAN REVISION 2	02/07/2025
7	ZONING SITE PLAN REVISION 2	12/20/2024
6	ZONING SITE PLAN REVISION 2	07/17/2024
5	ZONING SITE PLAN REVISION 2	06/13/2024
4	ZONING SITE PLAN REVISION 2	06/03/2024

TurningPoint Energy

Kimley»Horn

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570 LAKE COOK RD SUITE 200
DEERFIELD, IL 60015
WWW.KIMLEY-HORN.COM

KHA PROJECT 268173043
DATE 02/06/2024
SCALE AS SHOWN
DESIGNED BY AH
DRAWN BY LAD
CHECKED BY APK

ZONING SITE PLAN

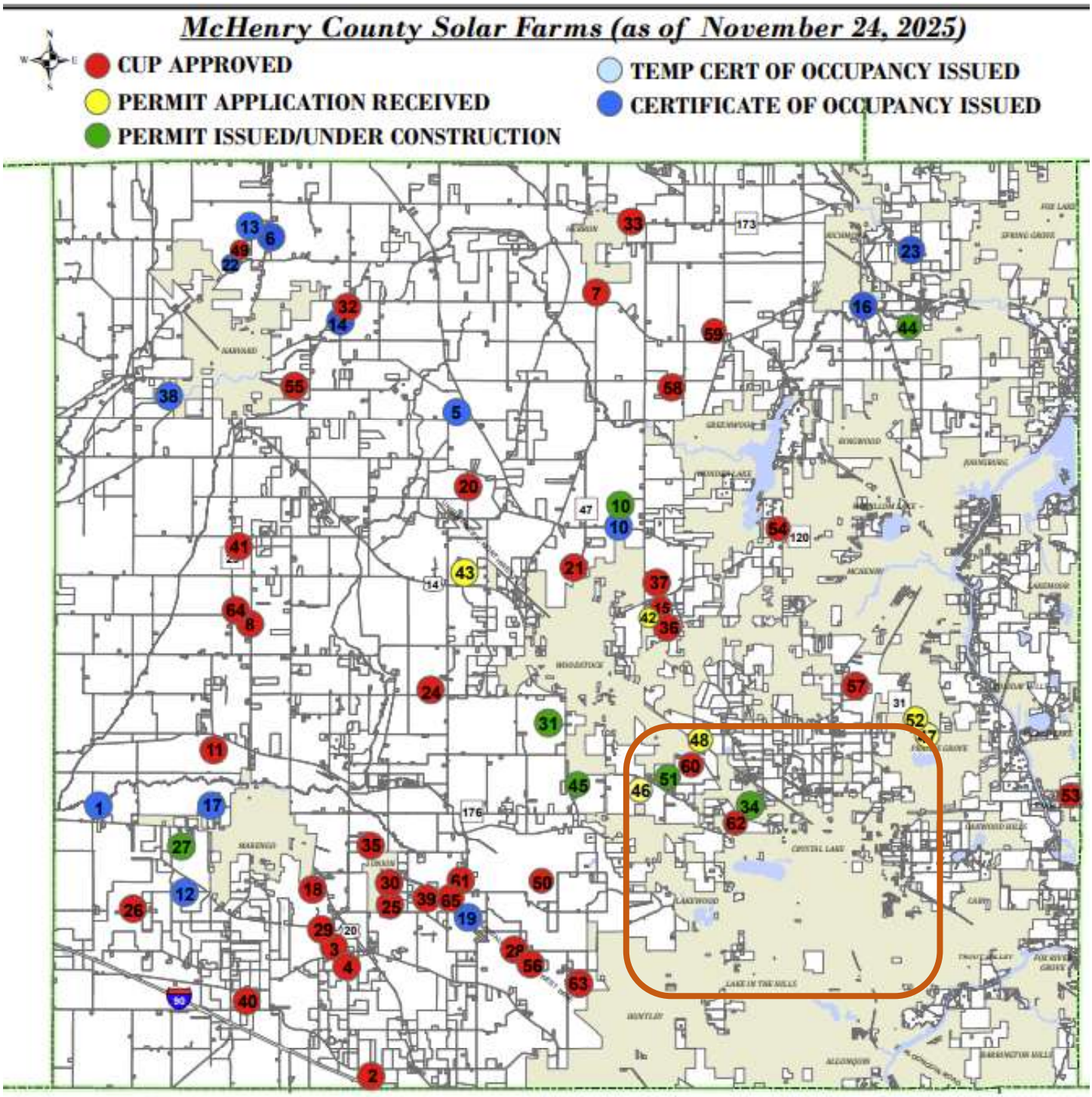
TPE IL MH405, LLC

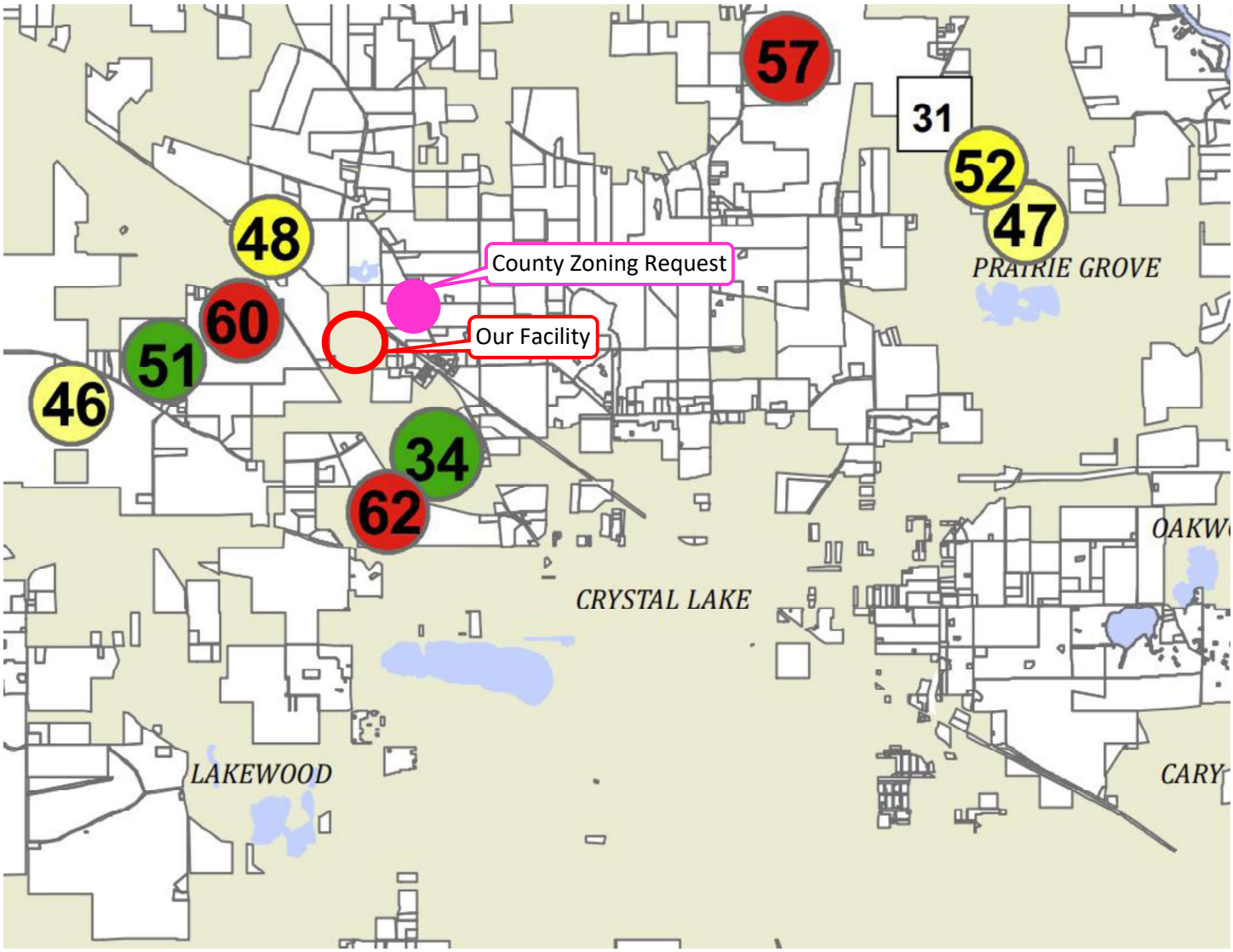
CITY OF CRYSTAL LAKE, MCHENRY COUNTY, IL

SHEET NUMBER
EX-1

Call Before You Dig
JULIE ILLINOIS ONE-CALL SYSTEM

Map of Other Solar Facilities approved by McHenry County




57
31
52
47
48
County Zoning Request
PRAIRIE GROVE
60
Our Facility
51
46
34
62
CRYSTAL LAKE
LAKEWOOD
CARY

Agenda Item No: 11

City Council
Agenda Supplement

Meeting Date: January 6, 2026

Item: REPORT OF THE PLANNING & ZONING COMMISSION

Request: Special Use Permit Amendment to allow changes to the Prairie Ridge High School sports field facilities including Variations for: 1) 20-foot-high bleachers, instead of the maximum 15 feet for accessory structures; 2) light poles up to 70 feet in height, instead of the maximum 50 feet; and, 3) grass overflow parking, instead of the required paved surface.

Location: 6000 Dvorak Road

Applicant: District 155, owner
1 N Virginia Street

PZC Recommendation: To approve the Planning and Zoning Commission recommendation and adopt an Ordinance granting a Special Use Permit Amendment and Variations at 6000 Dvorak Road.

Staff Contact: Kathryn Cowlin, Director of Community Development
Darrell Moore, Assistant City Planner

Background:

- The property is the location of Prairie Ridge High School. It was annexed prior to its construction in 1997. The property is almost entirely surrounded by residential- and agricultural-zoned properties in unincorporated McHenry County.
- Request: The petitioner is requesting a Special Use Permit Amendment to allow changes to the sports field facilities.
    - Variations:
        - 20-foot-high bleachers, instead of the maximum 15 feet for accessory structures
        - Light poles up to 70 feet in height, instead of the maximum 50 feet
        - Grass overflow parking, instead of the required paved surface
- Land Use: The land use map shows the area as Public & Semi-Public. This is an appropriate land use designation for the current use on the property.

- Zoning: The site is zoned E, Estate. Secondary Schools are allowed as a Special Use.
- Previous Approvals:
    - In 1997, the property was annexed and a Special Use Permit granted for the construction of the high school.

PZC Highlights:

The following discussion took place during the Planning and Zoning Commission (PZC) hearing:

- A public hearing was held on December 17th, at which time the petitioner and their project engineer explained that they were seeking a Special Use Permit Amendment, as well as other necessary variations, to allow for the proposed improvements to the Prairie Ridge High School sports field facilities. The scope of work includes:
    - Resurfacing
        - Replacing the grass field with artificial turf
        - Replacing the track and the asphalt pavement paths
    - Expanding facilities east and regrading
        - Relocating long jump/triple jump facilities and fencing
        - Replacing and enlarging visitor bleachers
        - Adding sports storage building under visitor bleachers
    - Widening home bleachers
    - Adding new ticket booth/booster building
    - Relocating and raising light poles and replacing light fixtures
- The petitioners further explained that three variations were required, based on the nature of the proposed improvements. The variations are:
    - A height variation to allow the new 20-foot visitor bleachers, instead of the maximum allowed 15 feet for accessory structures. (Current bleachers are 7'-8")
    - Lighting variation to allow the existing 70-foot-high pole-mounted lights to remain at that height, instead of the maximum allowed 50 feet.
    - A parking variation to allow grass overflow parking for 257 spaces, instead of the required paved surface.
- Two members of the public who reside in the subdivision to the east of the field stated their concerns about how there currently breaks in the vegetation along the property line that fail to provide adequate screening, that they have stormwater drainage concerns, and that the loudspeakers direct noise towards adjacent homes.
- The petitioner responded to the public comments by noting that infrastructure will be installed underground to improve drainage. Also, they project will include a new directional speaker system that will be focused on the stands and should significantly reduce noise in the adjacent neighborhoods. Finally, they agreed to add vegetation to improve the screening of the property.

- The PZC comments were generally favorable of the request, but believed it was best to add conditions that address the neighbors' concerns about screening and noise.
- The PZC found that the petition met the Findings of Fact and was supportive of the request.

The Planning and Zoning Commission recommended **approval (4-0)** of the petitioner's request with the following conditions:

1. Project plans shall be consistent with the information and testimony provided by the petitioner in the hearing and the following provided documents:
    A. Application (D155, received 11/25/25)
    B. Architectural Plans (FGM Architects, 08/11/25-08/22/25)
    C. Structural Engineering Plans (Sadler Group/Southern Bleacher Co., 09/16/25)
    D. Parking Plan (Eriksson Engineering, 05/07/25)
    E. Stormwater Management Report (Eriksson Engineering, 10/28/25)
    F. Civil Engineering Plans (Eriksson Engineering, 10/28/25)
    G. Lighting Plan (Musco, 05/07/25)

2. Any incidental lighting not shown on the provided plans shall be shielded and positioned such that the light source is not visible off the property.

3. The petitioner shall address all of the review comments and requirements of the Engineering and Public Works Department, the Community Development Department, and the Fire Department.

4. The petitioner shall install a directional sound system designed to mitigate impacts on surrounding residential properties.

5. The petitioner shall work with staff to close gaps in buffering along the eastern property line and provide long-term visual mitigation

Votes Required to Pass: A simple majority vote

PARCEL IN QUESTION



Ord. No.
File No.

The City of Crystal Lake Illinois

AN ORDINANCE GRANTING A SPECIAL USE PERMIT AMENDMENT FOR PRAIRIE RIDGE HIGH SCHOOL (DISTRICT 155)

WHEREAS, pursuant to the terms of the Petition (File #2025-185) before the Crystal Lake Planning and Zoning Commission, the Petitioner has requested a Special Use Permit Amendment and related Variations to allow certain changes to the Prairie Ridge High School sports field facilities at 6000 Dvorak Road; and

WHEREAS, the Planning and Zoning Commission of the City of Crystal Lake, pursuant to notice duly published on November 26, 2025 in the Northwest Herald, held a public hearing at 7:00 p.m., on December 17, 2025 at City Hall at 100 W. Woodstock Street, Crystal Lake, Illinois to consider the proposed Special Use Permit Amendment and related Variations; and

WHEREAS, on December 17, 2025, the Planning and Zoning Commission, having fully heard and considered the testimony of all those present at the public hearing who wished to testify, made findings of fact as required by law and recommended to the Mayor and City Council of the City of Crystal Lake that the proposed Special Use Permit Amendment and related Variations be approved, as documented in the minutes; and

WHEREAS, it is in the best interests of the City of Crystal Lake that the Special Use Permit Amendment and related Variations be granted as requested in said Petition,

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF CRYSTAL LAKE, McHENRY COUNTY, ILLINOIS, as follows:

SECTION I: That a Special Use Permit Amendment and related Variations be granted to allow specified changes to the Prairie Ridge High School sports field facilities at 6000 Dvorak Road (14-21-300-007, 14-28-100-013, 14-28-100-014, 14-29-226-005, and 14-29-226-006), Crystal Lake, Illinois.

SECTION II: That the Special Use Permit Amendment and related Variations be granted with the following conditions:

Draft

1. Project plans shall be consistent with the information and testimony provided by the petitioner in the hearing and the following provided documents:
   A. Application (D155, received 11/25/25)
   B. Architectural Plans (FGM Architects, 8/11/25—8/22/25)
   C. Structural Engineering Plans (Sadler Group/Southern Bleacher Co., 9/16/25)
   D. Parking Plan (Eriksson Engineering, 5/7/25)
   E. Stormwater Management Report (Eriksson Engineering, 10/28/25)
   F. Civil Engineering Plans (Eriksson Engineering, 10/28/25)
   G. Lighting Plan (Musco, 5/7/25)

2. Any incidental lighting not shown on the provided plans shall be shielded and positioned such that the light source is not visible off the property.

3. The petitioner shall address all of the review comments and requirements of the Engineering and Public Works Department, the Community Development Department, and the Fire Department.

4. The petitioner shall install a directional sound system designed to mitigate impacts on surrounding residential properties.

5. The petitioner shall work with staff to close gaps in buffering along the eastern property line and provide long-term visual mitigation

SECTION III: That the City Clerk be and is hereby directed to amend all pertinent records of the City of Crystal Lake to show the issuance of a Special Use Permit Amendment in accordance with the provisions of this Ordinance, as provided by law.

SECTION IV: That this Ordinance shall be in full force and effect from and after its passage, approval and publication as provide by law.

DATED at Crystal Lake, Illinois, this 29th day of December, 2025.

City of Crystal Lake, an
Illinois municipal corporation

_____

Haig Haleblian, MAYOR

SEAL

ATTEST:

Draft

CITY CLERK

Passed: December 29, 2025
Approved: December 29, 2025

Draft

#2025-185
6000 Dvorak Drive, Prairie Ridge High School – Special Use Permit Amendment with Variations Project Review for Planning and Zoning Commission

Meeting Date: December 17, 2025

Request: Special Use Permit Amendment to allow changes to the sports field facilities including Variations for: 1) 20-foot-high bleachers, instead of the maximum 15 feet for accessory structures; 2) light poles up to 82 feet in height, instead of the maximum 50 feet; and, 3) grass overflow parking, instead of the required paved surface.

Location: 6000 Dvorak Drive (Prairie Ridge High School)

Acreage: Approximately 140 acres

Existing Zoning: E Estate

Surrounding Properties:
North: E-1 Estate (County)
South: E-1 Estate (County) & A-1 Agriculture (County)
East: E-1 Estate (County)
West: E-1 Estate (County) & A-1 Agriculture (County)

Staff Contact: Darrell Moore (815.356.3612)

Background:

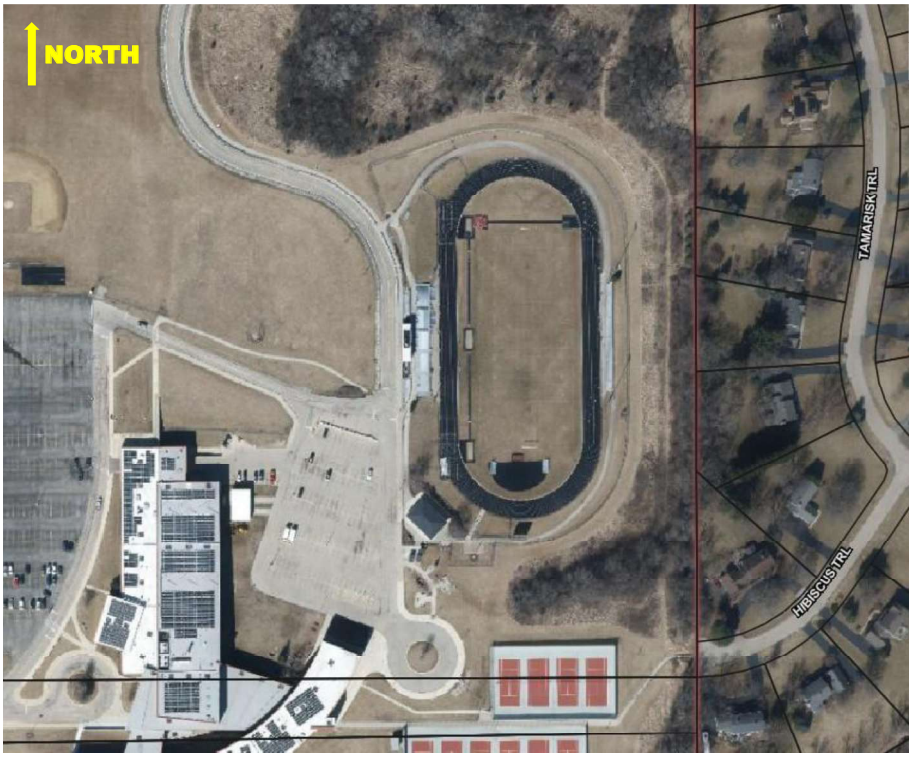
- The property is the location of Prairie Ridge High School. It was annexed prior to its construction in 1997.
- The property is almost entirely surrounded by residential- and agricultural-zoned properties in unincorporated McHenry County.
- The fence enclosing the sports field is currently about 110 feet from the nearest residential properties to the east.

Development Analysis:

General

- Request: Special Use Permit Amendment to allow changes to the sports field facilities including Variations for: 1) 20-foot-high bleachers, instead of the maximum 15 feet for accessory structures; 2) light poles up to 82 feet in height, instead of the maximum 50 feet; and, 3) grass overflow parking, instead of the required paved surface.
- Zoning: The site is zoned E, Estate. Secondary Schools are allowed as a Special Use.
- Land Use: The land use map shows the area as Public & Semi-Public.

- Previous Approvals:
    - In 1997, the property was annexed and a Special Use Permit granted for the construction of the high school.



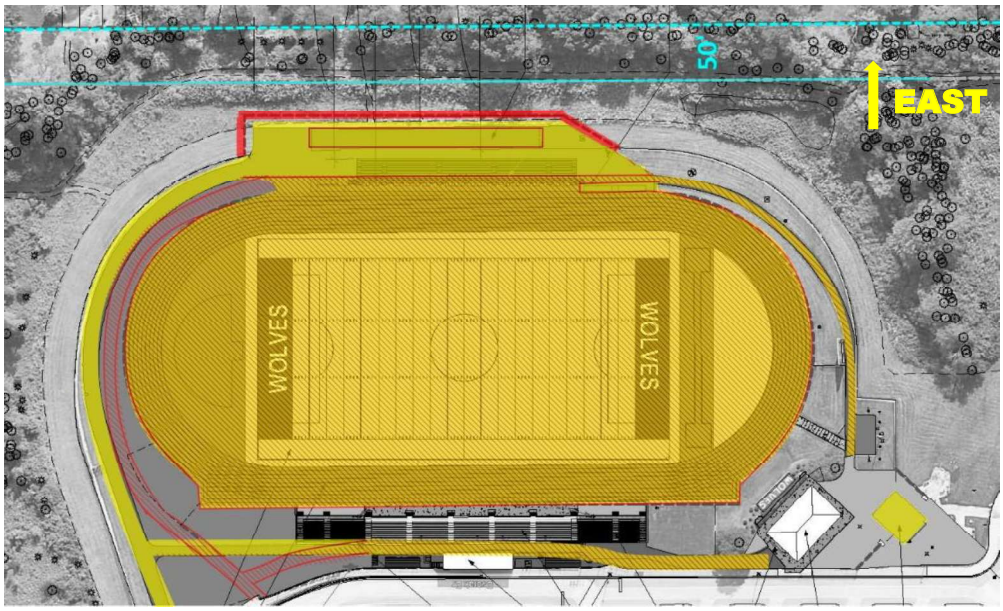
Project Details:
The purpose of the request is to allow for alterations to the main sports field. The scope of work includes:

- Resurfacing
    - Replacing the grass field with artificial turf
    - Replacing the track and the asphalt pavement paths
- Expanding facilities east and regrading
    - Relocating long jump/triple jump facilities and fencing
    - Replacing and enlarging visitor bleachers
    - Adding sports storage building under visitor bleachers
- Widening home bleachers
- Adding new ticket booth/booster building
- Relocating and raising light poles and replacing light fixtures

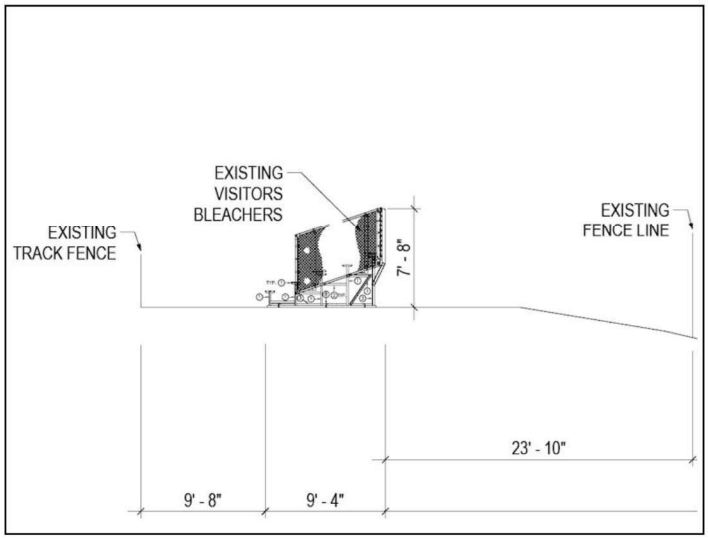
The elements of the project that will require variations are:

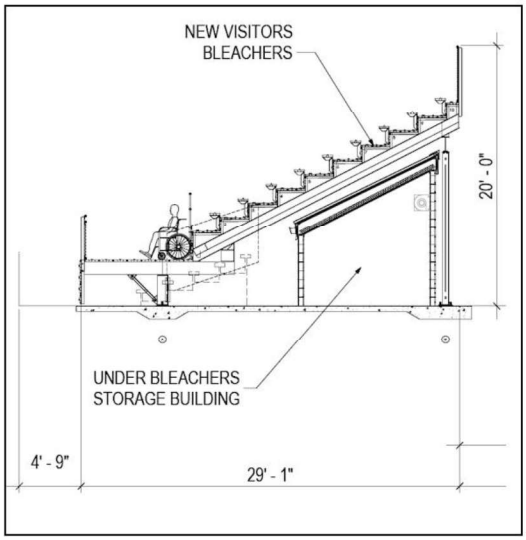
- A height variation to allow the new 20-foot visitor bleachers, instead of the maximum allowed 15 feet for accessory structures. (Current bleachers are 7'-8")
- Lighting variation to allow pole-mounted lights to be 82 feet high, instead of the maximum allowed 50 feet. (Current lights are 70 feet high)
- A parking variation to allow grass overflow parking for 257 spaces, instead of the required paved surface.

This project appears to represent the first major improvements to the Prairie Ridge High School football and track fields since they were constructed almost 30 years ago. It will involve converting the field to artificial turf and resurfacing the track and surrounding areas. A final engineering stormwater review has been completed and provided to the applicant. The City Engineer believes that the applicant will be able to address the review comments.

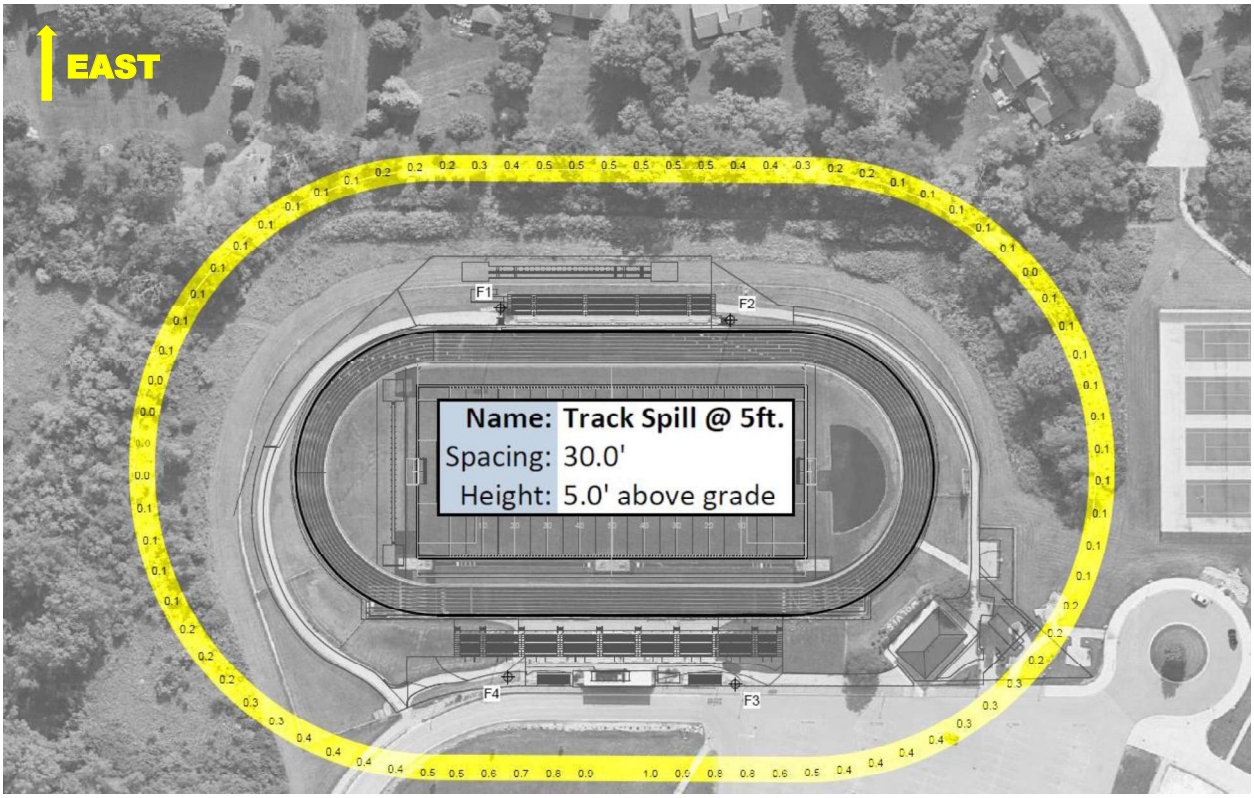


Portions of the proposed improvements will expand east toward the nearest adjoining properties. The visitor bleachers will be extended in that direction and raised to 20 feet (requiring a height variation), and an equipment building will be tucked underneath. The long jump/triple jump area will be relocated to the east of the bleachers. The eastern fence line will be rerouted to enclose this eastward expansion. It will be moved east about 30 feet, but still be more than 80 feet from adjoining properties. While the existing field lights on the east side of the field are being replaced, they will remain in their current locations and at their current heights. The long jump area will not be lit.





On the west side of the field the bleachers will be widened to the north and south. To make room for this, the light poles are proposed to be relocated behind the bleachers and raised in height from 70 feet to 82 feet (requiring a variation). A photometric plan was provided by the applicant showing the light anticipated in the rear yards of the adjoining properties to the east is 0.5 (initial max vertical) foot-candles. The applicant has agreed to adjust the lighting to comply with the UDO maximum of 0.3 foot-candles.



Under this proposal, bleacher seating would increase from 1,546 seats to 2,777 seats. The applicant asserts that this will not increase attendance to sporting events because the added seating is intended to accommodate the attendees that currently stand for games. Nonetheless, the applicant has calculated that additional seating would require an additional 237 spaces, and identified an area for overflow parking that is designed for 257 vehicles. The applicant is proposing not to pave this area and let it remain as grass (requiring a variation).



Comprehensive Land Use Plan 2030 Vision Summary Review:

The Comprehensive Plan designates the subject property as Public & Semi-Public, which is consistent with the current use of the property as a high school campus. The following goals are applicable to this request:

> **Goal:** Provide area for high quality public and semi-public facilities, such as schools, libraries, municipal facilities and private service providers, throughout the City to support the diverse and evolving needs of the people in the City.

Supporting Action: Carefully plan for a reasonable rate of growth that promotes a maximum use of existing facilities and minimizes the need for new facilities.

Success Indicator: Public and Semi-public uses should look to expand within their existing facilities.

Findings of Fact:

SPECIAL USE PERMIT AMENDMENT

Section 2-400 B General Standards for all special uses in the Unified Ordinance establishes standards for all special uses in Crystal Lake. Briefly, the criteria are as follows:

1. The use is necessary or desirable, at the proposed location, to provide a service or facility which will further the public convenience and general welfare.
   ☐ *Meets* ☐ *Does not meet*

2. The use will not be detrimental to area property values.
   ☐ *Meets* ☐ *Does not meet*

3. The use will comply with the zoning districts regulations.
   ☐ *Meets* ☐ *Does not meet*

4. The use will not negatively impact traffic circulation.
   ☐ *Meets* ☐ *Does not meet*

5. The use will not negatively impact public utilities or municipal service delivery systems. If required, the use will contribute financially to the upgrading of public utilities and municipal service delivery systems.
   ☐ *Meets* ☐ *Does not meet*

6. The use will not negatively impact the environment or be unsightly.
   ☐ *Meets* ☐ *Does not meet*

7. The use, where possible will preserve existing mature vegetation, and provide landscaping and architecture, which is aesthetically pleasing, compatible or complementary to surrounding properties and acceptable by community standards.
   ☐ *Meets* ☐ *Does not meet*

8. The use will meet requirements of all regulating governmental agencies.
   ☐ *Meets* ☐ *Does not meet*

9. The use will conform to any conditions approved as part of the issued Special Use Permit.
   ☐ *Meets* ☐ *Does not meet*

10. The use will conform to the regulations established for specific special uses, where applicable.
    ☐ *Meets* ☐ *Does not meet*

ZONING ORDINANCE VARIATION

The petitioner is requesting Variations to allow: 1) 20-foot-high bleachers, instead of the maximum 15 feet for accessory structures; 2) 82-foot-high light poles, instead of the maximum 50 feet; and, 3) grass overflow parking, instead of the required paved surface. The Unified Development Ordinance lists specific standards for the review and approval of a variation. The granting of a variation rests upon the applicant proving practical difficulty or hardship caused by the Ordinance requirements as they relate to the property. To be considered a zoning hardship, the specific zoning requirements; setbacks, lot width and lot area must create a unique situation on this property. It is the responsibility of the petitioner to prove hardship at the Planning and Zoning Commission public hearing.

Standards

When evidence in a specific case shows conclusively that literal enforcement of any provision of this Ordinance would result in a practical difficulty or particular hardship because:

a. The plight of the property owner is due to unique circumstances, such as, unusual surroundings or conditions of the property involved, or by reason of exceptional narrowness, shallowness or shape of a zoning lot, or because of unique topography, or underground conditions.

☐ *Meets* ☐ *Does not meet*

b. Also, that the variation, if granted, will not alter the essential character of the locality.

☐ *Meets* ☐ *Does not meet*

For the purposes of supplementing the above standards, the Commission may take into consideration the extent to which the following facts favorable to the application have been established by the evidence presented at the public hearing:

a. That the conditions upon which the application for variation is based would not be applicable generally to other property within the same zoning classification;

☐ *Meets* ☐ *Does not meet*

b. That the alleged difficulty or hardship has not been created by any person presently having interest in the property;

☐ *Meets* ☐ *Does not meet*

c. That the granting of the variation will not be detrimental to the public welfare or injurious to other property or improvements in the neighborhood in which the property is located; or

☐ *Meets* ☐ *Does not meet*

d. That the proposed variation will not impair an adequate supply of light or air to adjacent property, will not unreasonably diminish or impair the property values of adjacent property, will not unreasonably increase congestion in the public streets, substantially increase the danger of fire or otherwise endanger public safety.

☐ *Meets* ☐ *Does not meet*

Where the evidence is not found to justify such conditions, that fact shall be reported to the City Council with a recommendation that the variation be denied.

Recommended Conditions:

If a motion to recommend approval of the petitioner's request is made, it should be with the following conditions:

1. Project plans shall be consistent with the information and testimony provided by the petitioner in the hearing and the following provided documents:
   A. Application (D155, received 11/25/25)
   B. Architectural Plans (FGM Architects, 8/11/25—8/22/25)
   C. Structural Engineering Plans (Sadler Group/Southern Bleacher Co., 9/16/25)
   D. Parking Plan (Eriksson Engineering, 5/7/25)
   E. Stormwater Management Report (Eriksson Engineering, 10/28/25)
   F. Civil Engineering Plans (Eriksson Engineering, 10/28/25)
   G. Lighting Plan (Musco, 5/7/25)

2. Any incidental lighting not shown on the provided plans shall be shielded and positioned such that the light source is not visible off the property.

3. The petitioner shall address all of the review comments and requirements of the Engineering and Public Works Department, the Community Development Department, and the Fire Department.

City of Crystal Lake
Development Application

Office Use Only
File # 2025-185

Project Title: Prairie Ridge High School Stadium Renovation

Action Requested

__	**Annexation**	__	**Preliminary PUD**
__	**Comprehensive Plan Amendment**	__	**Preliminary Plat of Subdivision**
__	**Conceptual PUD Review**	__	**Rezoning**
__	**Final PUD**	X	**Special Use Permit**
__	**Final PUD Amendment**	X	**Variation**
__	**Final Plat of Subdivision**	__	**Other**

Petitioner Information

Name: Abraham Mora

Address: 550 W Van Buren St, Suite 1420
Chicago, IL 60607

Phone: [redacted]

Fax:

E-mail: [redacted]

Owner Information (if different)

Name:

Address:

Phone:

Fax:

E-mail:

Property Information

Project Description: New field turf, bleachers, field lighting, ticket booth building, sports storage building, and associated paving. A variation of the special use permit is being sought for the height of the proposed bleachers and field lighting, as well as, for the number of parking spaces being provided.

Project Address/Location: 6000 Dvorak Road, Crystal Lake, IL 60012

PIN Number(s): 14-21-300-007, 14-28-100-013, 14-28-100-014, 14-29-226-005, and 14-29-226-006

Development Team

Please include address, phone, fax and e-mail

Developer: _____

Architect: FGM Architects, 550 W Van Buren St, Suite 1420, Chicago, IL 60607, P: [redacted], E: [redacted]

Attorney: _____

Engineer: Eriksson Engineering Associates, 145 Commerce Dr, Suite A, Grayslake, IL 60030, P. [redacted], [redacted]

Landscape Architect: _____

Planner: _____

Surveyor: _____

Other: _____

Signatures

Abraham Mora 11/24/2025

PETITIONER: Print and Sign name (*if different from owner*) **Date**

As owner of the property in question, I hereby authorize the seeking of the above requested action.

Troy Stinger 11/25/2025

OWNER: Print and Sign name **Date**

NOTE: If the property is held in trust, the trust officer must sign this petition as owner. In addition, the trust officer must provide a letter that names all beneficiaries of the trust.

CRYSTAL LAKE PLANNING AND ZONING COMMISSION
WEDNESDAY, DECEMBER 17, 2025
HELD AT THE CRYSTAL LAKE CITY COUNCIL CHAMBERS

2025-185 – 6000 DVORAK DRIVE – PRAIRIE RIDGE HIGH SCHOOL – SPECIAL USE PERMIT

Special Use Permit Amendment to allow changes to the sport field facilities with a variation for the bleacher height and a variation from the required number of improved parking spaces.

Presenting on behalf of the petitioner were Troy Stinger of Community High School District 155, Abraham Mora of FGM Architects and Glen Eriksson of Eriksson Engineering. Mr. Mora explained that the purpose of the petition was to support District 155's request for improvements to Prairie Ridge High School's stadium facilities to better serve students and non-student visitors. The proposed improvements include replacement of the existing grass football field with artificial turf with striping for football, soccer, and lacrosse; installation of an underground stormwater detention system beneath the field; resurfacing of the existing asphalt track; replacement of track pads to improve accessibility; and construction of a new concrete-paved entry and ticket both to enhance the user experience.

Bleacher improvements were also proposed. The existing home-side bleachers would remain, with additional seating added to the north and south. New elevated bleachers would be installed on the visitor side, resulting in a total bleacher height of approximately 20 feet, which exceeds the permitted accessory structure height and requires variation. Lighting poles would remain at 70 feet, with new light heads installed and poles relocated behind the seating area on the home side. Mr. Mora also requested a parking variation, with overflow parking to remain as grass in the area west of the stadium.

Mr. Greenman opened the public comment portion of the public hearing.

Tom Pinkley, 3909 Tamarisk Trail, stated he has lived in the area since before District 155 acquired the property. He expressed concerns regarding aesthetics and requested buffering between the school and his property. Mr. Pinkley also raised concerns about lighting and the sound system, though noted that the proposed lighting may be an improvement over the existing conditions.

David McLean, 3902 Tamarisk Trail, stated he also has lived in the neighborhood prior to the school being constructed and indicated the area has experienced noise impacts since then. Mr. McLean expressed hope that the sound system would be improved and raised concerns regarding drainage beneath the field, stating that stormwater currently flows toward his property and expressed concern that the proposed improvements could exacerbate flooding conditions.

With no other public wishing to speak, Mr. Greenman closed the public comment portion of the public hearing and asked for staff to present the staff report.

Mr. Moore reviewed the request, noting the proposed replacement of the grass field with artificial turf, installation of 20-foot-high bleachers where a maximum of 15 feet is permitted, retention of 70-foot light poles, and a parking variation allowing overflow parking to remain grass instead of being paved.

Mr. Moore explained that while the light poles would remain at 70 feet, the grade in the area has changed, placing the poles on higher ground relative to surrounding properties. The request would still constitute a variation from the maximum allowed height, but not the 82 feet requested in the petition. He reviewed the site plan, noting that certain facilities would shift eastward, but remain approximately 80 feet from the property line, with no lighting directed toward adjacent residential areas. Shielded lighting and relocation of poles were also described.

Mr. Greenman asked whether comparable data existed for other high schools in the area. Mr. Moore stated that field lights at Lippold Park ranged between 66 and 70 feet tall, which was the closest comparison available.

Mr. Eriksson, in response to public comment, explained that the artificial turf field would include underground detention tanks located along the inside of the running track on the east side. These tanks are designed to accommodate changes in runoff associated with the turf installation. He noted that a stormwater basin was originally constructed along the east side of the site and that regrading would occur in the northeast and southeast corners to account for displaced volume. Mr. Eriksson stated all work would remain west of the cross-country trail and that updated rainfall data was used and previously submitted to the City Engineer. Tree lines would largely remain, with infill planting proposed where gaps exist, in order to help address concerns raised by the neighbors.

Mr. Smith stated that the photometric analysis appeared acceptable and agreed with the engineer that drainage conditions would improve. Regarding the sound system, he emphasized the importance of addressing neighbor concerns. Mr. Mora responded that the existing speakers on the press box would be removed in favor of a new directional speaker system mounted on the lighting poles and focused on the spectator areas closest to them. No longer would speakers be projecting east toward the adjacent subdivision.

Ms. Mason stated the project looked positive overall and asked about the difference between 20-foot and 15-foot bleachers and the number of seats gained. Mr. Mora stated that approximately two additional rows of seating would be added, resulting in increased visitor-side capacity. ADA accessibility improvements were confirmed.

Mr. Gronow stated the project was an improvement and asked about the height of the existing home-side bleachers, which Mr. Mora confirmed will follow the grade and be lower than the proposed visitor-side bleachers but also wider. Mr. Gronow questioned if the home-side bleachers will have more seats compared to visitor-side. Mr. Mora answered yes.

Mr. Gronow also had questions regarding overflow parking and if it is currently being used now. Mr. Stinger replied that the area is looking to be kept green as it is used for student activities such as throwing discus and not just overflow parking.

Mr. Greenman requested that sound mitigation and buffering be addressed as conditions of approval, noting the photometric lighting levels and the petitioner's willingness to enhance buffering along the eastern property line.

Mr. Smith made a motion to approve the request with the following conditions:

1. Project plans shall be consistent with the information and testimony provided by the petitioner in the hearing and the following provided documents:
    A. Application (D155, received 11/25/25)
    B. Architectural Plans (FGM Architects, 08/11/25-08/22/25)
    C. Structural Engineering Plans (Sadler Group/Southern Bleacher Co., 09/16/25)
    D. Parking Plan (Eriksson Engineering, 05/07/25)
    E. Stormwater Management Report (Eriksson Engineering, 10/28/25)
    F. Civil Engineering Plans (Eriksson Engineering, 10/28/25)
    G. Lighting Plan (Musco, 05/07/25)

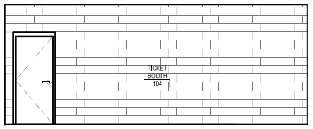
2. Any incidental lighting not shown on the provided plans shall be shielded and positioned such that the light source is not visible off the property.

3. The petitioner shall address all of the review comments and requirements of the Engineering and Public Works Department, the Community Development Department, and the Fire Department.

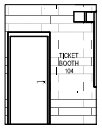
4. The petitioner shall install a directional sound system designed to mitigate impacts on surrounding residential properties.

5. The petitioner shall work with staff to close gaps in buffering along the eastern property line and provide long-term visual mitigation

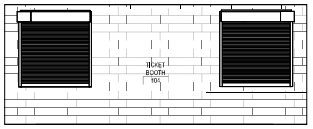
Ms. Mason seconded the motion. On roll call vote, members Greenman, Gronow, Smith and Mason voted aye. Motion passed 4-0.



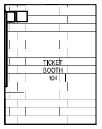
2 **INT. ELEV. - TICKET BOOTH - N/E**
1/4" = 1'-0"



3 **INT. ELEV. - TICKET BOOTH - S/E**
1/4" = 1'-0"



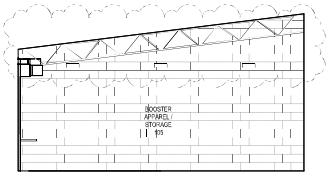
4 **INT. ELEV. - TICKET BOOTH - S/W**
1/4" = 1'-0"



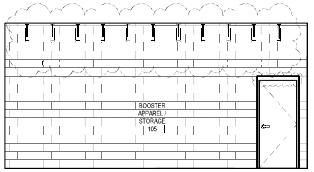
5 **INT. ELEV. - TICKET BOOTH - N/W**
1/4" = 1'-0"



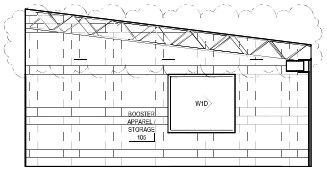
6 **INT. ELEV. - BOOSTER APPAREL / STORAGE - N/E**
1/4" = 1'-0"



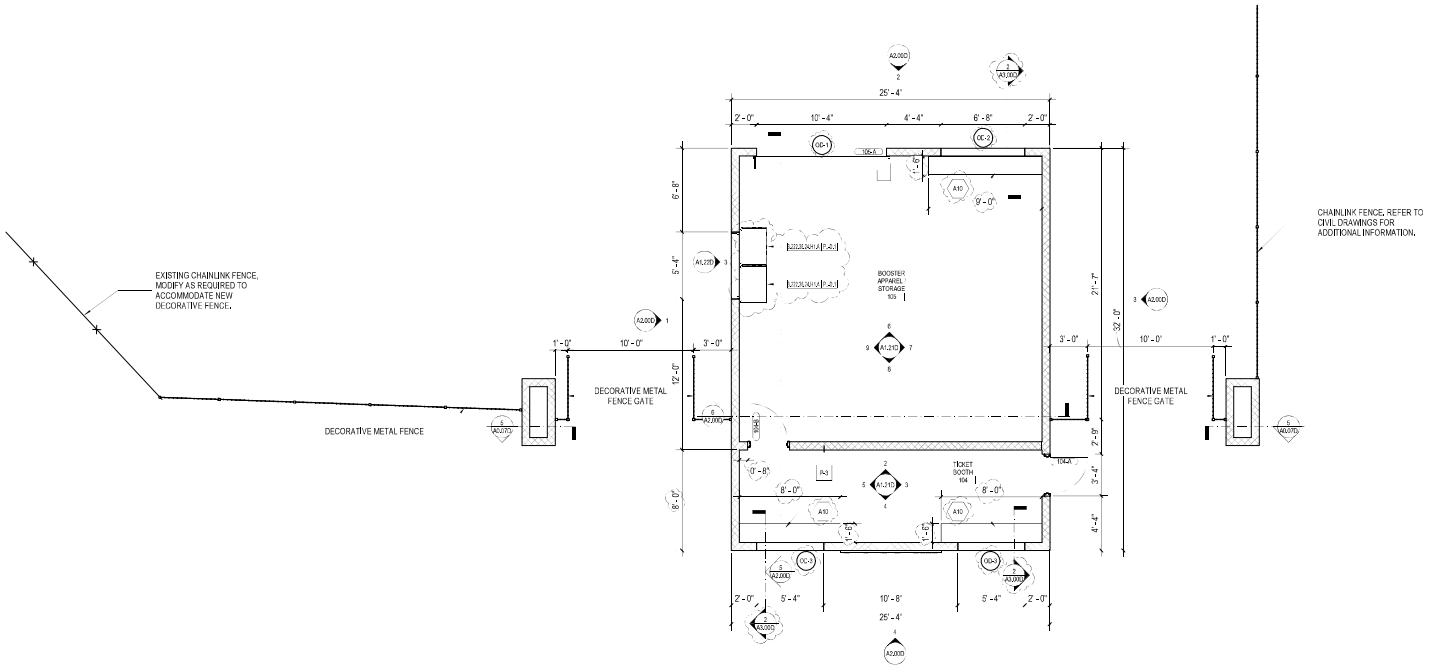
7 **INT. ELEV. - BOOSTER APPAREL / STORAGE - S/E**
1/4" = 1'-0"



8 **INT. ELEV. - BOOSTER APPAREL / STORAGE - S/W**
1/4" = 1'-0"



9 **INT. ELEV. - BOOSTER APPAREL / STORAGE - N/W**
1/4" = 1'-0"



1 **FLOOR PLAN - TICKET / BOOSTER BUILDING**
1/4" = 1'-0"

GENERAL FLOOR PLAN NOTES

1. REFER TO G-SERIES SHEETS FOR TYPICAL ABBREVIATIONS, SYMBOLS & TAGS.
2. REFER TO PARTITION TYPES FOR THICKNESS OF WALLS AND PARTITIONS.
3. WALL AND PARTITION DIMENSIONS ARE SHOWN TO FINISHED FACE OF WALL.
4. DIMENSIONS FOR AREAS DRAWN AT A LARGER SCALE ARE SHOWN ON ENLARGED SCALE PLANS, SEE A1 SERIES DRAWINGS.
5. UNLESS OTHERWISE NOTED, WALLS AND PARTITIONS WHICH ARE LAID OUT RADIALLY, ARE DIMENSIONED BY RADIAN (DEGREES) FROM THE NEAREST GRID LINES.
6. UNLESS OTHERWISE NOTED, WALLS AND PARTITIONS WHICH ARE SHOWN TO BE ON A GRID LINE OR IMMEDIATELY NEXT TO A GRID LINE SHALL BE LOCATED PARALLEL WITH THAT GRID LINE WITH THE FACE OF THE WALL 1" AWAY FROM THE LEG OF THE STEEL JOIST. SEE A1 SERIES
7. UNLESS OTHERWISE NOTED, WALL AND PARTITIONS WHICH ARE LAID OUT CONVENTIONALLY ARE DIMENSIONED FROM THE NEAREST GRID AND SHALL BE LAID OUT ALONG THE ESTABLISHED RADIUS.
8. WALLS AND PARTITIONS WHICH ARE NOT INTENDED TO BE LAID OUT ON A RADIUS, ARE SHOWN TO BE PERPENDICULAR (⊥) OR AT SOME ANGLE (∠) TO THE ADJOINING WALLS OR PERPENDICULAR TO A GRID LINE (⊥).
9. DIMENSIONS ALONG CURVED LINES ARE ACTUAL CURVED DIMENSIONED ARC LENGTHS.
10. PROVIDE HORIZONTAL JOINT REINFORCING AT ALL MASONRY PARTITIONS. PROVIDE JOINT REINFORCING @ EACH SECOND COURSE AND ONE COURSE BELOW AND ABOVE OPENINGS UNLESS NOTED OTHERWISE. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REINFORCING.
11. ALL PARTITION FRAMING AND FINISH SHALL EXTEND TO FLOOR OR ROOF STRUCTURE ABOVE AND SHALL BE TAPED AND FINISHED, UNLESS NOTED OTHERWISE. REFER TO PARTITION SPECIAL CONDITIONS NOTES FOR ADDITIONAL CONDITIONS.
12. PROVIDE 3" SOUND ATTENUATING INSULATION AT ALL STUD WALL PARTITIONS, UNLESS NOTED OTHERWISE.
13. FOR LOCATION AND RATINGS OF FIRE RESISTIVE PARTITIONS AND CEILINGS, SEE G-SERIES CODE COMPLIANCE PLANS. IN ADDITION TO INFORMATION GIVEN ON INDIVIDUAL PARTITION TYPES.
14. PROVIDE IMPACT RESISTANT GYPSUM BOARD PANELS WHERE SCHEDULED UP TO 6' ABOVE CEILINGS.
15. PROVIDE DOUBLE STUDS AT ALL JAMBS AND EXTEND TO STRUCTURE ABOVE AND TIE TOGETHER.
16. PROVIDE CMU BULLNOSE SHAPE AT ALL EXPOSED CORNERS WHICH ARE NOT COVERED BY ANOTHER MATERIAL OR FINISH.
17. PROVIDE CEMENT BACKING BOARD AT ALL WALL TILE LOCATIONS, UNLESS NOTED OTHERWISE.
18. FOR EXTERIOR WALL ASSEMBLY TYPES AND MATERIALS, SEE EXTERIOR ELEVATIONS AND WALL SECTIONS ON A3 SERIES.
19. FOR CASEWORK TYPES AND MATERIALS, SEE A1 SERIES.
20. FOR ADDITIONAL EQUIPMENT NOT SHOWN OR NOTATED ON THIS SHEET, SEE ENLARGED PLANS ON AND REFLECTED CEILING PLANS ON A1 SERIES.
21. SEE G-SERIES SHEETS FOR EQUIPMENT AND FIXTURE MOUNTING HEIGHTS.
22. FURNITURE AND EQUIPMENT SHOWN DOTTED IS NOT IN CONTRACT AND IS SHOWN FOR COORDINATION PURPOSES.
23. SEE SPECIFICATION SECTION 01000 - "SUMMARY" OR 01001 "GENERAL REQUIREMENTS FOR SMALL PROJECTS" FOR RESPONSIBILITY FOR WORK UNDER OTHER CONTRACTS AND FOR OWNER FURNISHED - CONTRACTOR INSTALLED WORK

FLOOR PLAN KEYED NOTES

TAG	DESCRIPTION
A1	PROVIDE CMU WALL INFILL TOOTH-IN AT EXISTING OPENING, NEW CMU AND MORTAR TO MATCH EXISTING TYPE, SIZE, AND TEXTURE.
A2	PROVIDE NEW CONCRETE SLAB, REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
A3	NEW WATER SERVICE WATER HEATER, AND SERVICE SINK. THIS AREA. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
A4	PATCH FLOOR WHERE EXISTING WALL WAS DEMOLISHED.
A5	NEW 4' TALL CMU KNEE WALL WITH CAPSTONE, REFER TO DETAIL FOR ADDITIONAL INFORMATION. PAINT TO MATCH EXISTING BUILDING.
A6	SLAB INFILL WHERE EXISTING FLOOR WAS DEMOLISHED, MATCH EXISTING.
A7	48" DECORATIVE METAL GATE.
A8	TEMPORARILY REMOVE SINK AND REINSTALL AFTER SLAB IN-FILL WORK IS COMPLETED.
A9	PROVIDE NEW CONCRETE FLOOR SLAB IN ENTIRE SPACE, NEW FLOOR SLAB PER STRUCTURAL REQUIREMENTS.
A10	PROVIDE SOLID SURFACE COUNTER DESK.

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M.E.P.
CS2 DESIGN GROUP LLC
CONSTRUCTION MANAGER
PEPPER CONSTRUCTION COMPANY

NO	DATE	ISSUANCE DESCRIPTION
	08/11/2025	ISSUED FOR BID
	08/22/2025	ADDENDUM No.2

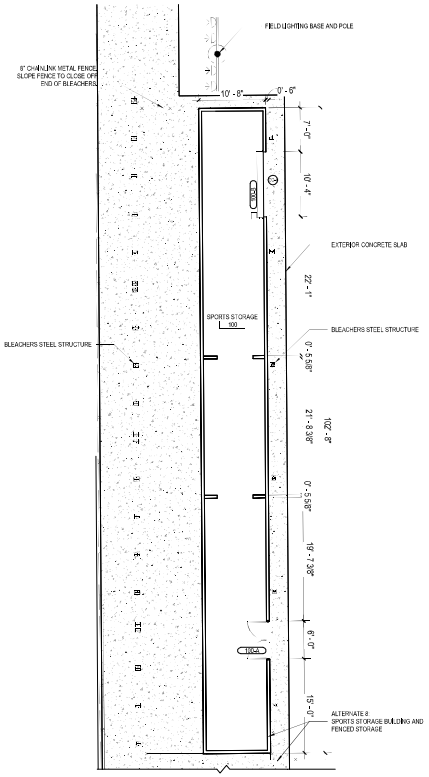
2026 CAPITAL IMPROVEMENTS PRAIRIE RIDGE HIGH SCHOOL STADIUM RENOVATION
CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012
ISSUED FOR BID

PRAIRIE RIDGE HIGH SCHOOL - FLOOR PLAN - INT. ELEVATIONS - TICKET / BOOSTER BUILDING

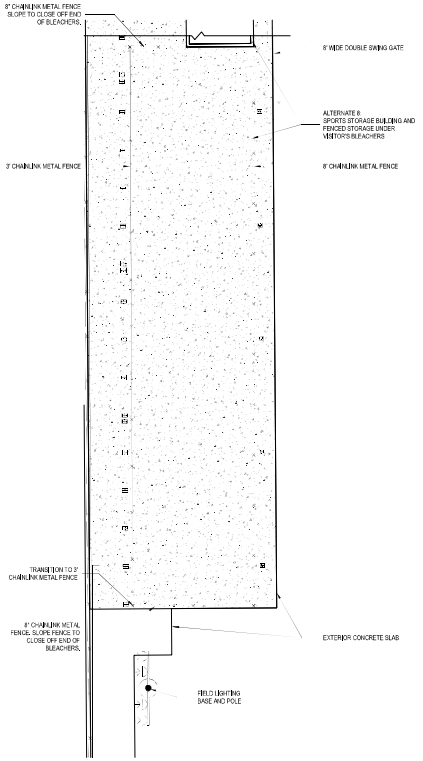
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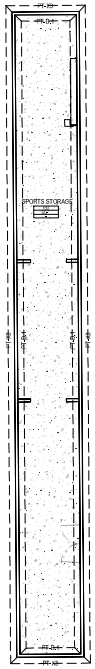
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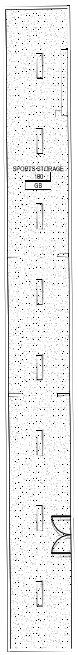
1 **PARTIAL FLOOR PLAN - SPORTS STORAGE**
1/8" = 1'-0"



2 **PARTIAL FLOOR PLAN - SPORTS STORAGE**
1/8" = 1'-0"



3 **PARTIAL FINISH PLAN - SPORTS STORAGE**
1/8" = 1'-0"



4 **PARTIAL RCP - SPORTS STORAGE**
1/8" = 1'-0"

N

CEILING TAG LEGEND

CEILING TYPE - SEE LEGEND BELOW

APPLIED FINISH (WHERE APPLICABLE)

CEILING HEIGHT AFF

APPLIED FINISH TO EXPOSED STRUCTURE, CONDUITS, DUCTWORK, PIPING, ETC.

EXPOSED CEILING

EXP — EXPOSED CEILING
FOR TAGS WITH NO FINISH INDICATED, REFER TO GENERAL RCP NOTES FOR TYPICAL APPLIED FINISH TO STRUCTURE, CONDUITS, DUCTWORK, PIPING, ETC.

9'-4"/ — EXISTING CEILING HEIGHT AFF
VERIFY IN FIELD

CEILING TYPES LEGEND

INDICATES TYPE PER TAG ON RCP

GB
SUSPENDED GYPSUM BOARD CEILING
5/8" GYPSUM BOARD ON 1/2" MTL. FURRING AT 24" O.C. ON 1 1/2" CHANNELS W/ HANGERS AT 4'-0" O.C. MAX UNO. SEE DETAILS.

EXP.
EXPOSED CEILING. PAINT ALL EXPOSED STRUCTURE, CONDUITS, DUCTWORK, PIPING, ETC. U.N.O.

CEILING FIXTURES LEGEND

- STRIP FIXTURE
- SUSPENDED STRIP FIXTURE
- RECESSED DOWNLIGHT
- AIR DIFFUSER
- RETURN AIR GRILLE
- ACCESS PANEL. SEE MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL REFLECTED CEILING PLAN NOTES

1. FOR FLOOR PLAN DIMENSIONS, SEE FLOOR PLANS.
2. REFER TO G-SERIES SHEETS FOR TYPICAL ABBREVIATIONS, SYMBOLS & TAGS.
3. ALL SOFFITS ETC. TO BE PAINTED PT-0,X UNLESS NOTED OTHERWISE.
4. AT ALL EXPOSED AREAS, PAINT ALL STRUCTURE, INCLUDING, BUT NOT LIMITED TO, CONCRETE, METAL DECK, STEEL BEAMS, COLUMNS, PIPING, CONDUIT, DUCTWORK AND OTHER EQUIPMENT ETC PT-0,X. SEE FINISH PLANS FOR MORE INFORMATION.
5. DO NOT PAINT PRE-FINISHED ACOUSTICAL DECK.
6. START POINT FOR ACT CEILINGS TO BE CENTER OF ROOM UNLESS NOTED OTHERWISE.
7. REFLECTED CEILING PLANS AND MEP DRAWINGS ARE COMPLEMENTARY, GENERALLY SEE REFLECTED CEILING PLAN FOR LOCATION AND ARRANGEMENT OF FIXTURES AND DEVICES. SEE MEP DRAWINGS FOR MEP REQUIREMENTS. PROVIDE COORDINATED DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION.
8. SPRINKLER HEADS HAVE NOT BEEN SHOWN, COORDINATE SPRINKLER HEAD LOCATIONS WITH OTHER CEILING MOUNTED ITEMS. LOCATE SPRINKLER HEADS AS REQUIRED BY CODE TO PROVIDE SPECIFIED COVERAGE. LOCATE SPRINKLER HEADS WITHIN THE CENTERLINE OF TILES OR QUARTER POINTS UNLESS OTHERWISE APPROVED.
9. CONTRACTOR IS TO LOCATE MECHANICAL ITEMS AROUND LIGHTING LAYOUT AND IN THE APPROXIMATE LOCATION OF THE MECHANICAL DRAWINGS.
10. DO NOT ATTACH CEILING HANGERS TO ROOF DECKS. ATTACH CEILING HANGERS TO STRUCTURAL BEAMS AND JOISTS ONLY. ATTACH CEILING HANGERS TO FLOOR DECKS USING SPECIFIED INSERTS ONLY.
11. SUPPORT CONDUIT, BOXES AND OTHER EQUIPMENT WITH UNISTRUT HANGERS ATTACHED TO STRUCTURAL ELEMENTS.
12. PROVIDE NON-GAS TYPE GYPSUM BOARD PANELS AT CEILING OF ALL WET AREAS SUCH AS TOILET ROOMS AND LOCKER ROOMS, UNLESS NOTED OTHERWISE.
13. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION REGARDING SOFFIT HEIGHTS AND LOCATIONS.
14. COORDINATE LOCATION OF EXIT SIGNS WITH CODE COMPLIANCE PLANS AND ELECTRICAL DRAWINGS.
15. ROUTE ALL CONDUITS ON EXPOSED CEILINGS SQUARE TO BUILDING WALLS AND GROUP TOGETHER.
16. ALL PARTITION AND SOFFIT FRAMING SHALL EXTEND TO UNDERSIDE OF STRUCTURE, UNLESS NOTED OTHERWISE.
17. PROVIDE RADIUS FITTED CEILING TRACK ACCESSORY AT ALL BULKHOSED WALL CORNERS.

GENERAL ROOM FINISH NOTES

1. REFER TO G-SERIES SHEETS FOR TYPICAL ABBREVIATIONS, SYMBOLS & TAGS.
2. FOR FINISH MATERIAL WHEN MORE THAN ONE MATERIAL OCCURS THE FINISH IS INDICATED THUS "/".
3. SEE INTERIOR ELEVATIONS, PARTITION TYPES, AND RCP'S FOR ADDITIONAL FINISH INFORMATION.
4. ALL WALLS TO BE PAINTED PT-2, 1 UNLESS NOTED OTHERWISE.
5. EXTEND SCHEDULED PAINT ON WALLS UP TO 1'-0" ABOVE THE FINISHED CEILING. IN ROOMS NOT SCHEDULED TO RECEIVE A CEILING, EXTEND SCHEDULED PAINT UP THE ENTIRE HEIGHT OF THE PARTITION, UNLESS NOTED OTHERWISE.
6. EXCEPT FOR FACTORY FINISHED ITEMS, ALL EXPOSED MECHANICAL AND ELECTRICAL EQUIPMENT, LOUVERS, PIPING, CONDUITS, ETC., SHALL BE PAINTED UNLESS OTHERWISE NOTED. REFER TO SPECIFICATIONS FOR PAINTING SYSTEMS.
7. ON WALLS WHICH ARE COVERED WITH MILLWORK, EXTEND TYPICAL WALL FINISHES BEHIND MILLWORK.
8. PAINT ALL STAIR RISERS, STRINGERS AND RAILS. PAINT EXPOSED UNDERSIDE OF STAIRS. ANY GAP BETWEEN STAIRS AND WALL SHALL BE FILLED AS REQUIRED TO BE CAULKED AND PAINTED PT-X.
9. REFER TO PAINT SPEC FOR INFORMATION. PROVIDE FULL COVERAGE FOR ALL COLORS, DARKER COLORS SHALL RECEIVE FOUR (4) COATS.
10. PROVIDE LEVEL 4 DRYWALL FINISH AT ALL LOCATIONS SCHEDULED TO RECEIVE PAINT UNLESS NOTED OTHERWISE.
11. PROVIDE TRANSITION STRIP AT ALL LOCATIONS WHERE FLOORING MATERIAL HEIGHT CHANGES UNLESS NOTED OTHERWISE. AS REQUIRED. SEE FLOORING TRANSITION DETAILS.
12. PROVIDE 4" HIGH RESILIENT BASE THROUGHOUT INCLUDING AT CASEWORK, UNLESS OTHERWISE NOTED.
13. FLOORING TRANSITIONS THAT OCCUR UNDER A DOORWAY ARE TO BE CENTERED UNDER THE DOOR IN ITS CLOSED POSITION UNLESS NOTED OTHERWISE.
14. FLOORING LAYOUT TO START AT CENTERPOINT ON ROOM UNLESS NOTED OTHERWISE ON FLOOR FINISH PLAN.
15. SEE FINISH LEGEND FOR CARPET INSTALLATION METHOD.
16. ALL FLOOR FINISH TO EXTEND UNDER ALL CASEWORK UNLESS NOTED OTHERWISE.
17. FURNITURE CANNOT BE INSTALLED UNTIL SUBSTANTIAL COMPLETION.

FINISH FLOOR TYPES LEGEND

- WALL FINISH LOCATIONS/EXTENTS
- OVERHEAD WALL FINISH LOCATIONS/EXTENTS. SEE REFLECTED CEILING PLANS AND/OR ELEVATIONS FOR MORE INFORMATION.
- WALL PAINT

FINISH FLOOR TYPES LEGEND

- SEALED CONCRETE (SC-0.1)

GENERAL FLOOR HATCH NOTE: HATCH PATTERNS TO INDICATE LOCATION OF MATERIALS ONLY, HATCH PATTERNS MAY NOT INDICATE DIRECTION OF INSTALLATION OR INTENDED PATTERN. SEE MASTER INTERIOR MATERIALS AND FINISHES INFORMATION LEGEND G8.00 FOR ADDITIONAL INFORMATION.

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DES PLAINES, IL 60018
(847) 391-2700 (O)

NO	DATE	ISSUANCE DESCRIPTION
	08/11/2025	ISSUED FOR BID
	08/22/2025	ADDENDUM No.2

2026 CAPITAL IMPROVEMENTS PRAIRIE RIDGE HIGH SCHOOL STADIUM RENOVATION

CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012

ISSUED FOR BID

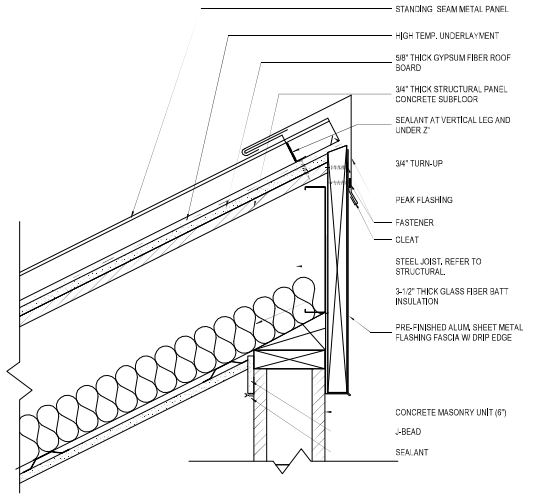
PRAIRIE RIDGE HIGH SCHOOL - SPORTS STORAGE - PARTIAL PLANS AND RCP

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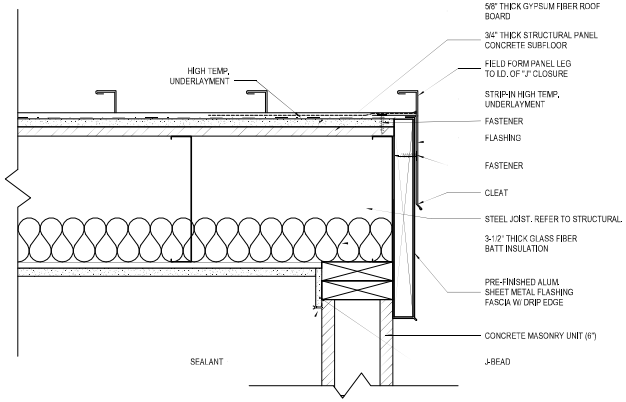
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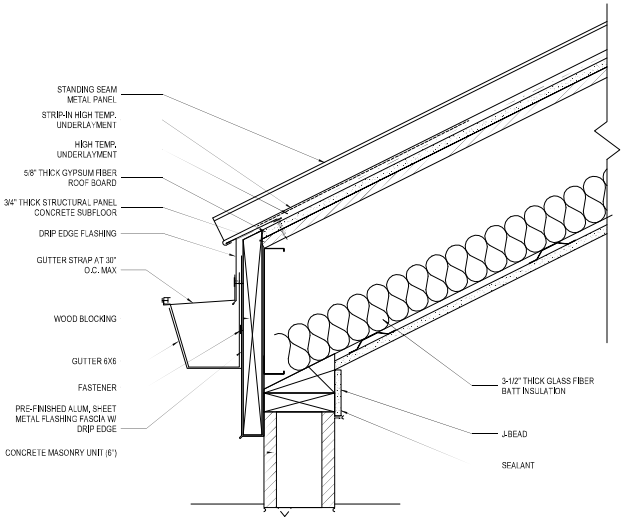
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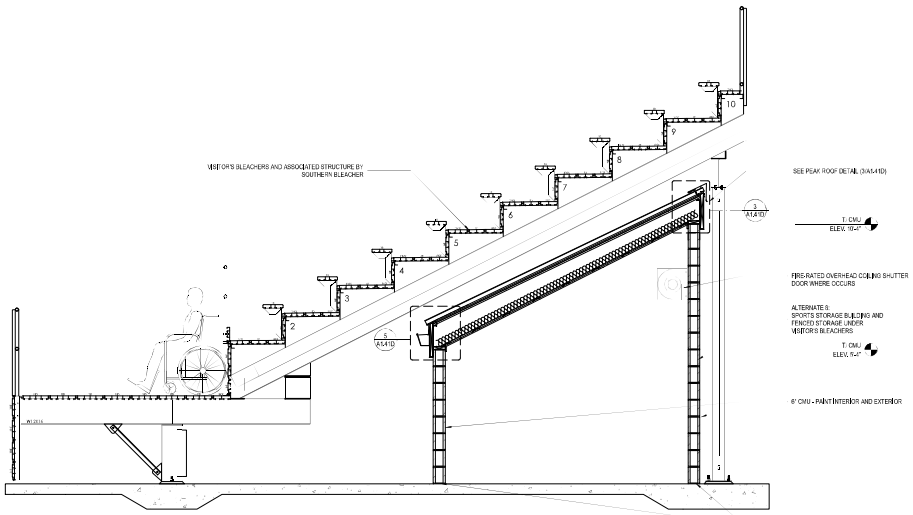
3 ROOF DETAIL - PEAK
3" = 1'-0"



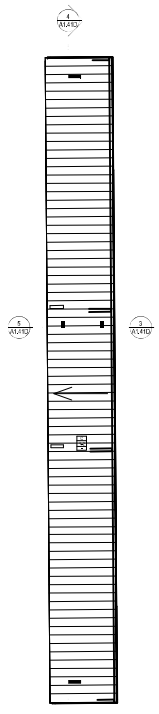
4 ROOF DETAIL
3" = 1'-0"



5 ROOF DETAIL - GUTTER
3" = 1'-0"



1 SPORTS STORAGE UNDER VISITOR'S BLEACHERS - BUILDING SECTION
1/2" = 1'-0"



2 PARTIAL ROOF PLAN - SPORTS STORAGE
1/8" = 1'-0"

GENERAL ROOF NOTES

1. REFER TO G-SERIES SHEETS FOR TYPICAL ABBREVIATIONS, SYMBOLS & TAGS.
2. COORDINATE ROOF PENETRATIONS WITH STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS.
3. ALL ROOF SADDLES/CRICKETS SHALL HAVE A MINIMUM OF 1/2" PER FOOT SLOPE, UNLESS NOTED OTHERWISE.
4. PROVIDE CRICKETS/ROOF CURBS FOR ALL EQUIPMENT SCHEDULED TO BE ON THE ROOF OR OPENINGS. COORDINATE SIZE AND LOCATION.
5. DIMENSIONS AND LOCATIONS OF EQUIPMENT ON THE ROOF ARE APPROXIMATE. DO NOT SCALE THE DRAWINGS.

ROOF ASSEMBLY LEGEND

SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ROOF ASSEMBLY 2: STANDING SEAM METAL PANEL

1. (1) LAYER 3/4" STRUCTURAL PANEL CONCRETE SUBFLOOR
2. (1) LAYER OF 5/8" THICK GYPSUM FIBER ROOF BOARD
3. (1) LAYER ICE AND WATER SHIELD HIGH TEMP. UNDERLAYMENT. PROVIDE STRIP-IN UNDERLAYMENT AS SHOWN IN DETAILS.
4. STANDING SEAM METAL PANEL SYSTEM, STANDARD SMOOTH PANEL STYLE, 12" WIDTH.

ROOF SCOPE OF WORK LEGEND

STANDING SEAM METAL PANEL

ROOF PLAN LEGEND

ROOF AREA
ROOF ASSEMBLY
INSULATION ASSEMBLY

fgma
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FGM Architects
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Chicago, Illinois 60607
312.948.8461 OFFICE
ILLINOIS PROFESSIONAL DESIGN FIRM #184-000350

CIVIL
ERIKSSON ENGINEERING ASSOC.

STRUCTURAL
McCluskey Engineering Corporation

M.E.P.
CS2 DESIGN GROUP LLC

CONSTRUCTION MANAGER
PEPPER CONSTRUCTION COMPANY

NO	DATE	ISSUANCE DESCRIPTION
	08/11/2025	ISSUED FOR BID
	08/22/2025	ADDENDUM No.2

2026 CAPITAL IMPROVEMENTS PRAIRIE RIDGE HIGH SCHOOL STADIUM RENOVATION
CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012
ISSUED FOR BID

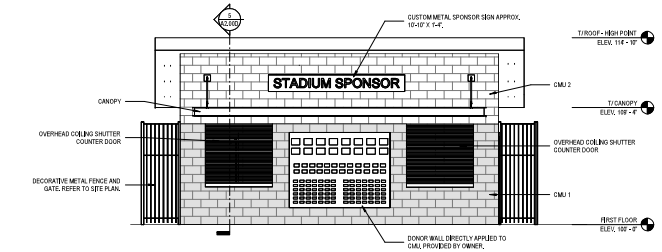
PRAIRIE RIDGE HIGH SCHOOL - SPORTS STORAGE - ROOF PLAN AND DETAILS

SHEET NO.
A1.41D

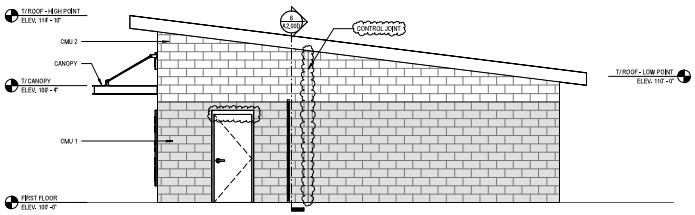
JOB NO. 25-4361.01

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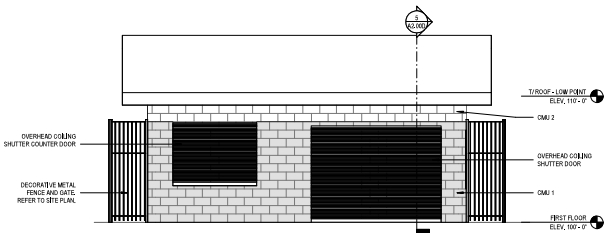
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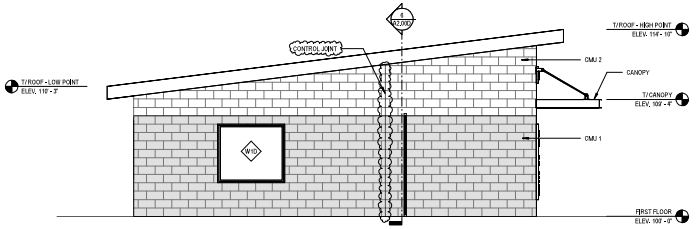
4 EXTERIOR ELEVATION - SOUTH
1/4" = 1'-0"



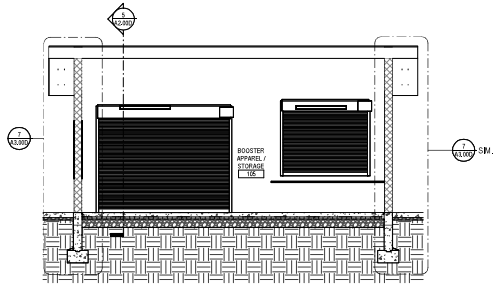
3 EXTERIOR ELEVATION - EAST
1/4" = 1'-0"



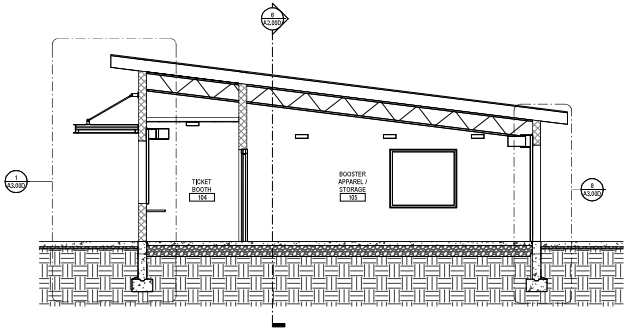
2 EXTERIOR ELEVATION - NORTH
1/4" = 1'-0"



1 EXTERIOR ELEVATION - WEST
1/4" = 1'-0"



6 BUILDING SECTION - TICKET BOOTH / BOOSTER BUILDING - E/W
1/4" = 1'-0"



5 BUILDING SECTION - TICKET BOOTH / BOOSTER BUILDING - N/S
1/4" = 1'-0"

EXTERIOR MATERIALS LEGEND

CMU-1:
BASE BID: 8" STANDARD SPLIT FACE CMU PAINTED PT-X1
ALTERNATE: 8" INTEGRAL COLOR GROUND FACE CMU
TRENDSTONE BY TRENWYTH ARCHITECTURAL MASONRY
COLOR: 'BLOOMINGTON'

CMU-2:
BASE BID: 8" STANDARD SPLIT FACE CMU PAINTED PT-X2
ALTERNATE: 8" INTEGRAL COLOR GROUND FACE CMU
TRENDSTONE BY TRENWYTH ARCHITECTURAL MASONRY
COLOR: 'CORAL'

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ISSUANCE		
NO	DATE	DESCRIPTION
	08/11/2025	ISSUED FOR BID
	08/22/2025	ADDENDUM No.2

2026 CAPITAL IMPROVEMENTS PRAIRIE RIDGE HIGH SCHOOL STADIUM RENOVATION
CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012
ISSUED FOR BID

PRAIRIE RIDGE HIGH SCHOOL - EXT. ELEV. - BULDING SECTIONS - TICKET / BOOSTER BUILDING

SHEET NO.
A2.00D

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R PLAN - POWER

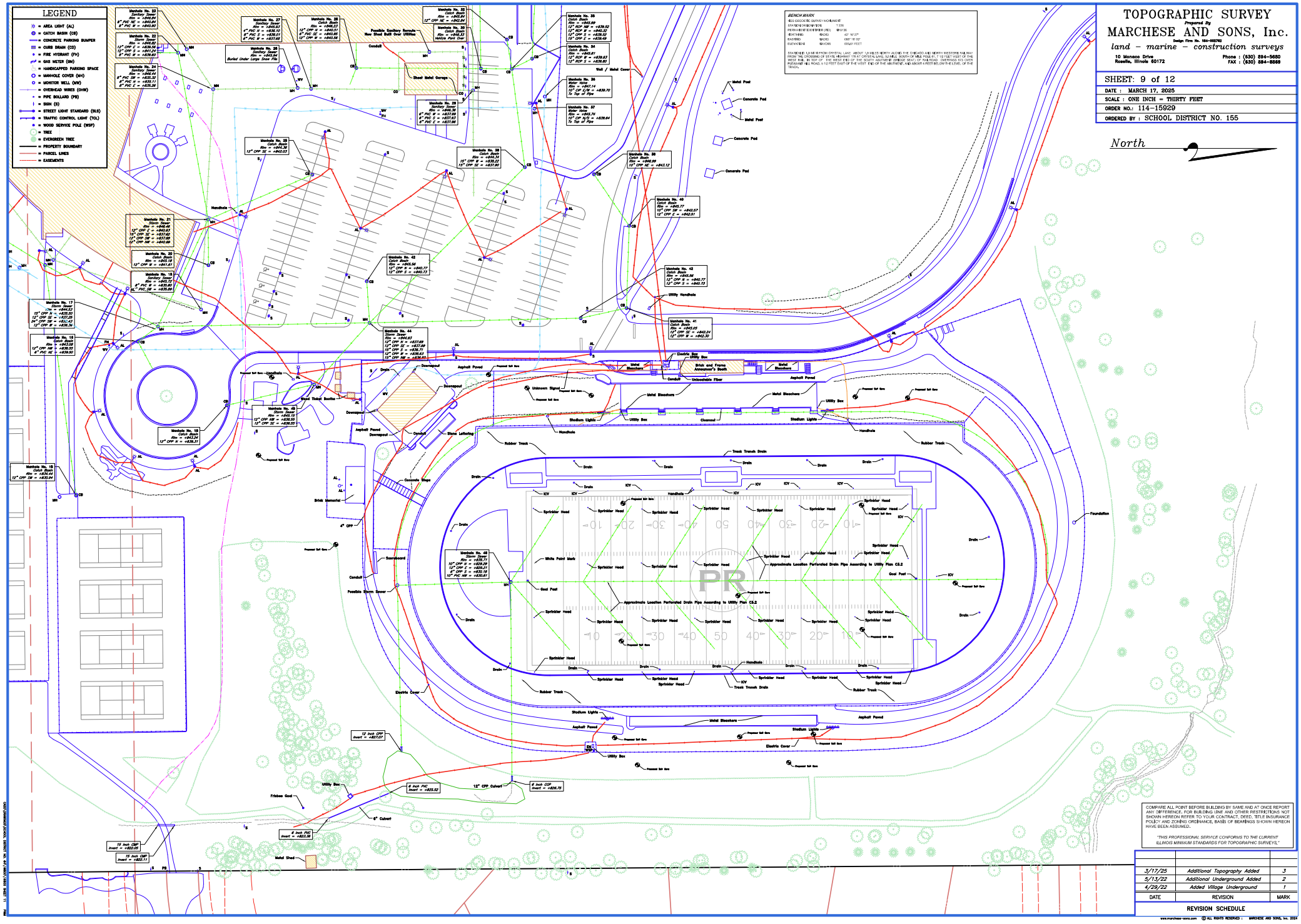
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2026 CAPITAL IMPROVEMENTS
PRAIRIE RIDGE HIGH SCHOOL
STADIUM RENOVATION
CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012

CONCESSIONS, TICKET BOOTH/BOOSTER - ELECTRICAL

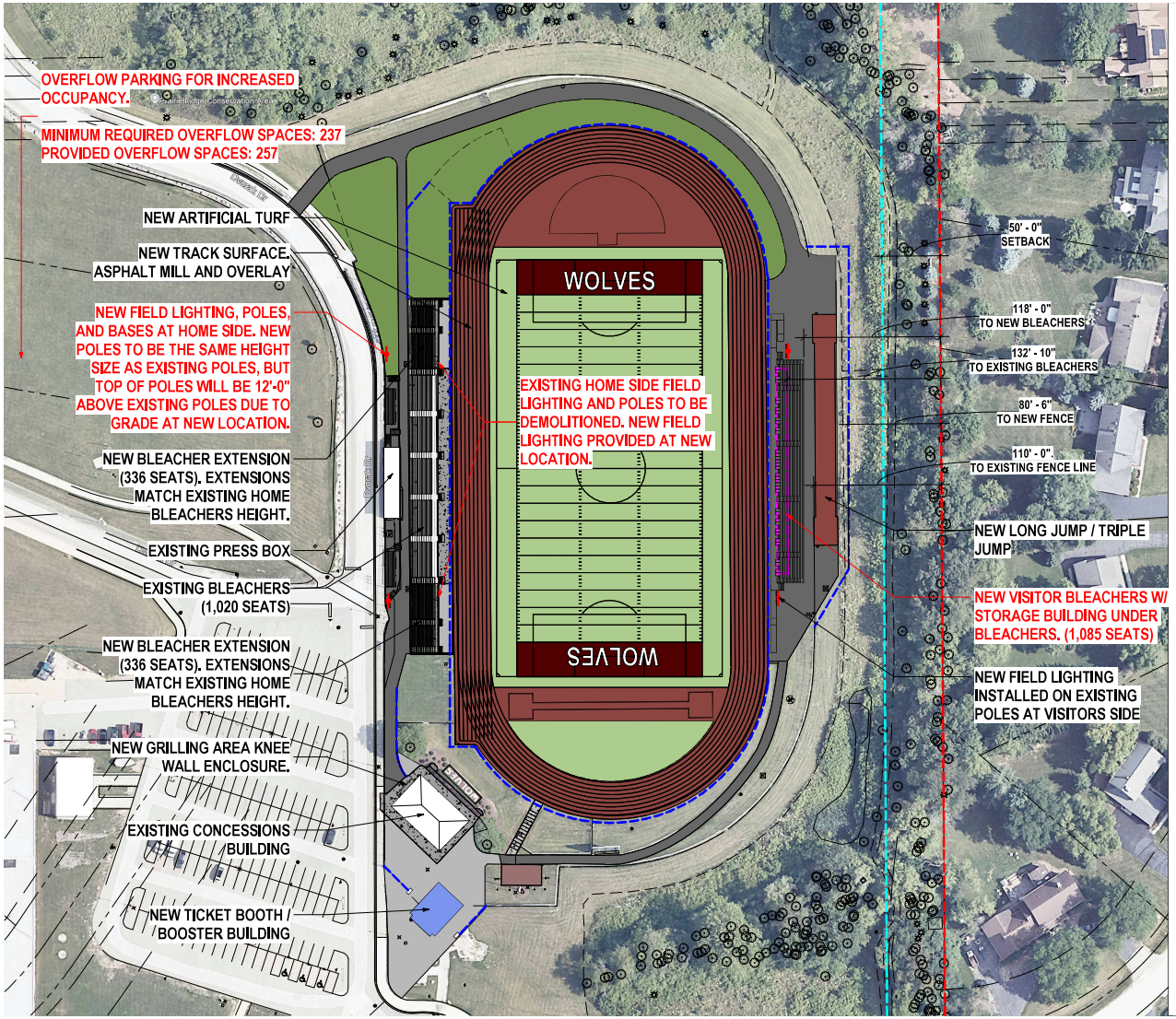
SHEET NO.
E2.11

JOB NO. 23-160.01
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LEGEND
= AREA LIGHT (AL)
= CATCH BASIN (CB)
= CONCRETE PARKING BUMPER
= CURB DRAIN (CD)
= FIRE HYDRANT (FH)
= GAS METER (GM)
= HANDICAPPED PARKING SPACE
= MANHOLE COVER (MH)
= MONITOR WELL (MW)
= OVERHEAD WIRES (OHW)
= PIPE BOLLARD (PB)
= SIGN (S)
= STREET LIGHT STANDARD (SLS)
= TRAFFIC CONTROL LIGHT (TCL)
= WOOD SERVICE POLE (WSP)
= TREE
= EVERGREEN TREE
= PROPERTY BOUNDARY
= PARCEL LINES
= EASEMENTS
BENCH MARK
Manhole No. 23
Manhole No. 22
Manhole No. 24
Manhole No. 27
Manhole No. 26
Manhole No. 28
Manhole No. 30
Manhole No. 29
Manhole No. 25
Manhole No. 31
Manhole No. 20
Manhole No. 18
Manhole No. 17
Manhole No. 19
Manhole No. 16
Manhole No. 45
Manhole No. 44
Manhole No. 43
Manhole No. 33
Manhole No. 35
Manhole No. 34
Manhole No. 36
Manhole No. 37
Manhole No. 39
Manhole No. 40
Manhole No. 42
Manhole No. 41
Manhole No. 48
Sheet Metal Garage
Possible Sanitary Reroute
New Shed Built Over Utilities
Wall / Metal Cover
Metal Pool
Concrete Pad
Metal Pool
Concrete Pad
Concrete Pad
Utility Handhole
Electric Box
Utility Box
Brick and Frame Announcer's Booth
Metal Bleachers
Asphalt Paved
Unidentifiable Fiber
Metal Bleachers
Metal Bleachers
Utility Box
Stadium Lights
Cleanout
Stadium Lights
Handhole
Handhole
Rubber Track
Track Trench Drain
Drain
ICV
Sprinkler Head
Proposed Salt Box
Approximate Location Perforated Drain Pipe According to Utility Plan C3.2
Goal Post
White Paint Mark
Scoreboard
Concrete Steps
Brick Memorial
Wood Ticket Booths
Stone Lettering
Asphalt Paved
Downspout
Drain
Conduit
Foundation
Electric Cover
Utility Box
Metal Bleachers
Asphalt Paved
Stadium Lights
Electric Cover
Utility Box
Frisbee Goal
6" Culvert
12" CPP Culvert
12 inch CPP
Invert = 827.07
6 inch PVC
Invert = 825.52
6 inch CCP
Invert = 826.70
6 inch PVC
Invert = 823.36
15 inch CMP
Invert = 822.05
15 inch CMP
Invert = 822.11
Metal Shed
PR
TOPOGRAPHIC SURVEY
Prepared By
MARCHESE AND SONS, Inc.
land – marine – construction surveys
Design Firm No. 184-002782
10 Monaco Drive
Roselle, Illinois 60172
Phone : (630) 894-5680
FAX : (630) 894-8869
SHEET: 9 of 12
DATE : MARCH 17, 2025
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5/13/22 Additional Underground Added 2
4/29/22 Added Village Underground 1
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REVISION SCHEDULE
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2026 CAPITAL IMPROVEMENTS PRAIRIE RIDGE HIGH SCHOOL STADIUM RENOVATION

6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012



LEGEND

- GRASS
- NEW ARTIFICIAL TURF
- NEW ASPHALT
- NEW CONCRETE
- NEW TRACK SURFACE, ASPHALT MILL AND OVERLAY W/ PERIMETER CHAINLINK FENCING
- NEW SUPPORT BUILDING
- NEW CHAINLINK FENCING
- REPLACE EXISTING FIELD LIGHTING & POLES

PARKING REQUIREMENTS:

PREVIOUS OCCUPANCY: 1,546

PREVIOUS PARKING SPACES REQUIRED: 515

NEW STADIUM OCCUPANCY: 2,777

REQUIREMENT:
1 PARKING SPACE FOR EVERY
3 STADIUM SEATS

TOTAL PARKING SPACES REQUIRED: 926

EXISTING PARKING SPACES: 689

MINIMUM REQUIRED OVERFLOW SPACES: 237

PROVIDED OVERFLOW SPACES: 257

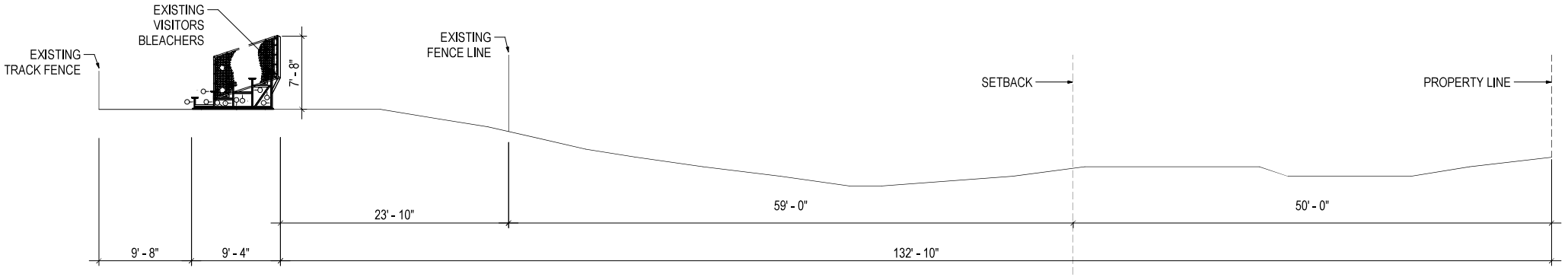
PRAIRIE RIDGE H.S. STADIUM

CHSD 155 - PRAIRIE RIDGE HS
Job No. 25-4361.01
Published 09/17/2025
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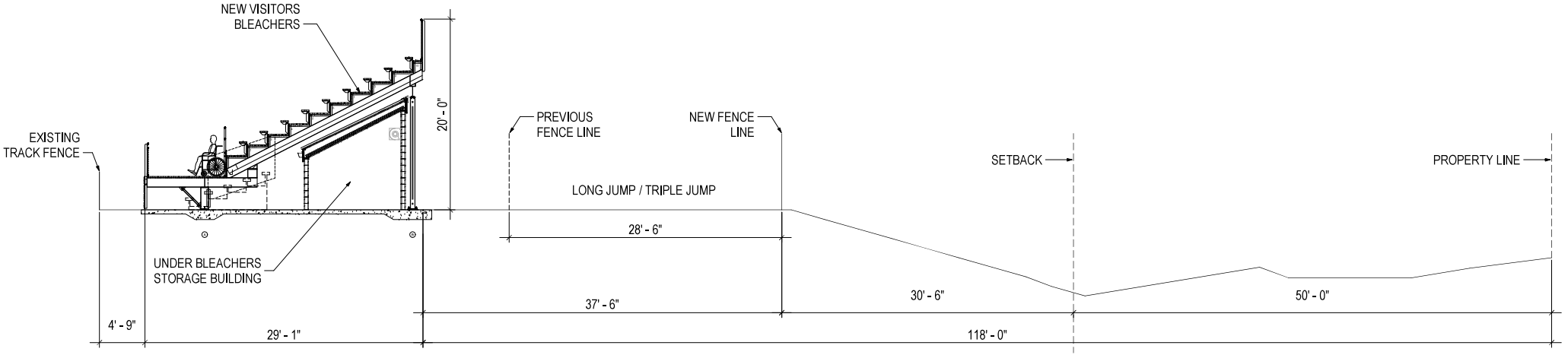
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2026 CAPITAL IMPROVEMENTS PRAIRIE RIDGE HIGH SCHOOL STADIUM RENOVATION

6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012



1 SECTION - EXISTING VISITOR BLEACHERS
1/4" = 1'-0"



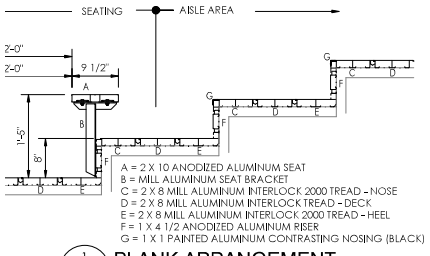
2 SECTION - NEW VISITOR BLEACHERS
1/4" = 1'-0"

VISITOR BLEACHERS - SECTIONS

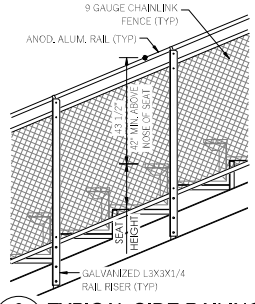
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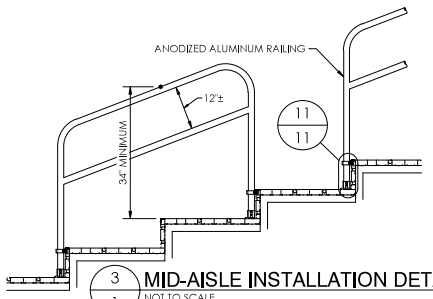
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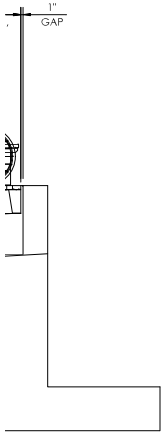
1/1 PLANK ARRANGEMENT
NOT TO SCALE 8" RISE X 24" TREAD



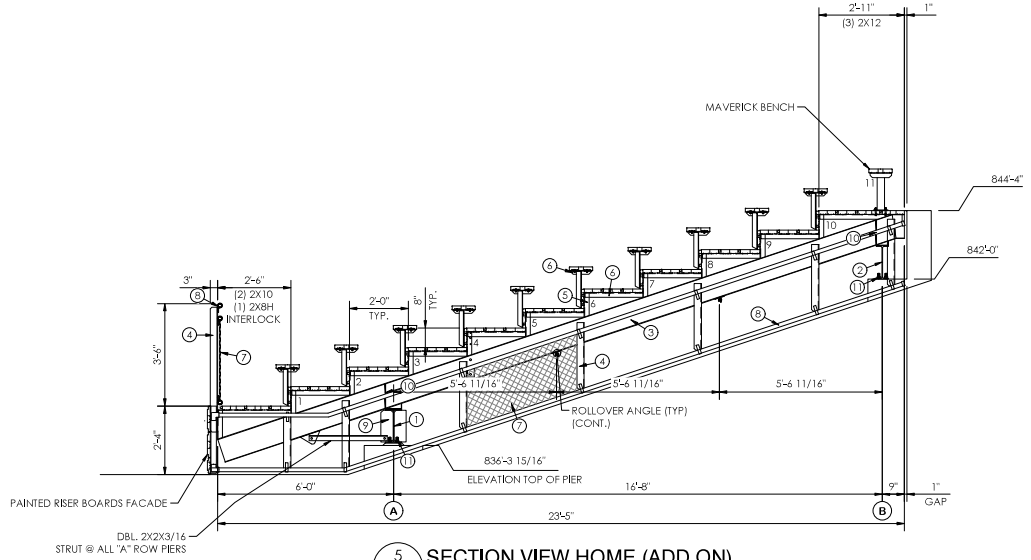
2/1 TYPICAL SIDE RAILING
SCALE:1/2"=1'-0"



3/1 MID-AISLE INSTALLATION DETAIL
NOT TO SCALE



(ADD-ON)



5/1 SECTION VIEW HOME (ADD ON)
SCALE:1/2"=1'-0"

DETAIL NUMBER
SHEET NUMBER

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Established 1946

06/16/25

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081-005553
PROFESSIONAL STRUCTURAL ENGINEER
EXPIRATION: 11/30/26

REV	BY	DATE	DESCRIPTION

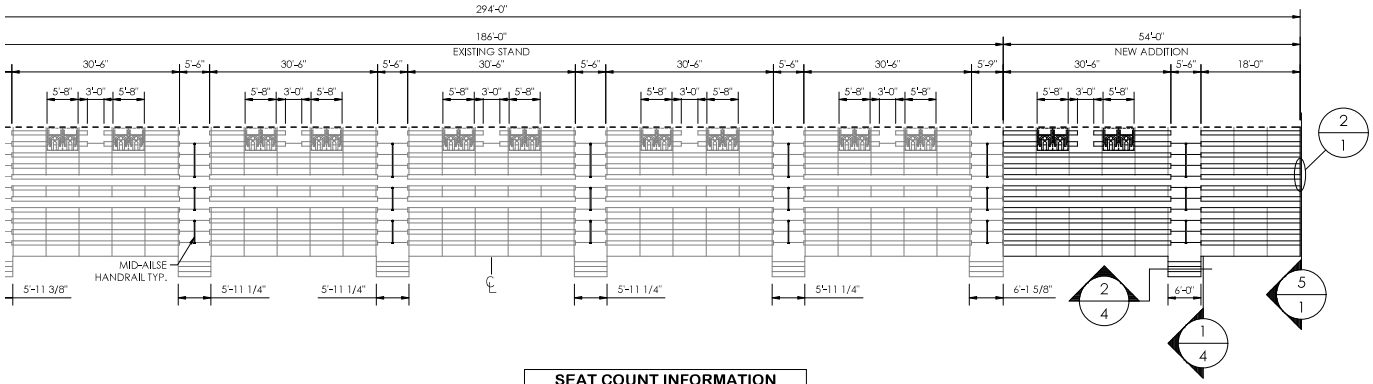
SECTION VIEW
8" RISE X 24" TREAD / (2)15-0" (11 ROWS)

PRAIRIE RIDGE HIGH SCHOOL
2025 FOOTBALL STANDS
CRYSTAL LAKE, ILLINOIS

DRAWN BY: MG
CHECKED: LD
JOB NUMBER: #25236
SHEET: 1

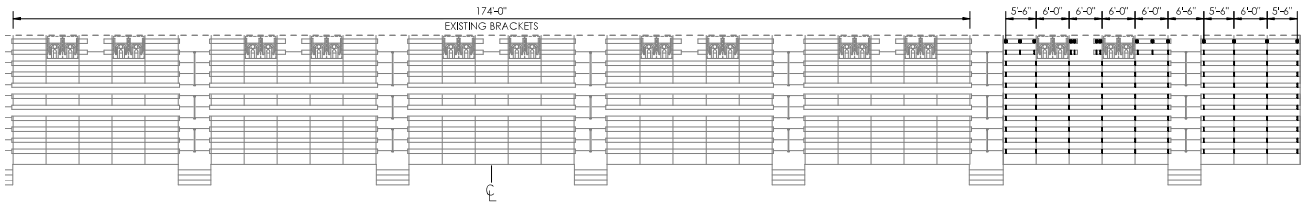
22" X 34" (11X17 = 1/2 indicated scale)

25236



1/2 SEATING LAYOUT - HOME
SCALE:3/32"=1'-0"

SEAT COUNT INFORMATION	
18" BENCH SEATS - EXISTING	1000
18" BENCH SEATS - ADD ON	664
33" WHEELCHAIR SPACES - EXISTING	20
33" WHEELCHAIR SPACES - ADD ON	8
TOTAL SEAT COUNT	**1692**



2/2 SEAT BRACKET LAYOUT - HOME
SCALE:3/32"=1'-0"

SEAT BRACKET INFORMATION	
"L" BRACKETS	208
MAVERICK BENCH BRACKETS	28

DETAIL NUMBER / SHEET NUMBER

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Established 1946

06/16/25

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THOMAS R. SADLER
081-005553
PROFESSIONAL STRUCTURAL ENGINEER
EXPIRATION: 11/30/26

SEATING / SEAT BRACKET LAYOUT
8" RISE X 24" TREAD / (2)5-6" (11 ROWS)

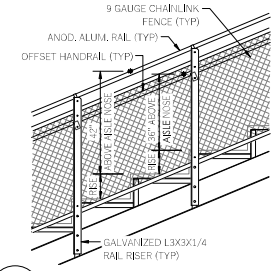
PRAIRIE RIDGE HIGH SCHOOL
2025 FOOTBALL STANDS
CRYSTAL LAKE, ILLINOIS

REV	BY	DATE	DESCRIPTION

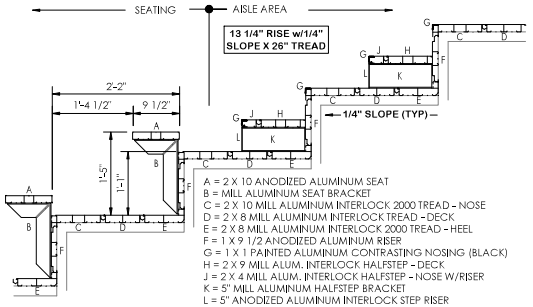
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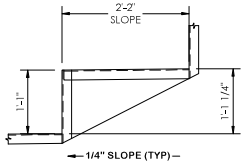
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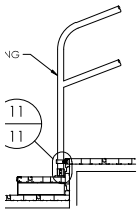
1/5 SIDE RAILING @ END AISLE
SCALE:1/2"=1'-0"



2/5 PLANK ARRANGEMENT
SCALE:1"=1'-0" 13" RISE X 26" TREAD



4/5 SECTION VIEW (VISITOR SIDE)
SCALE:1/2"=1'-0"



ALLATION DETAIL

DETAIL NUMBER
SHEET NUMBER

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Established 1946

06/16/25
STATE OF ILLINOIS
THOMAS P. SADLER
081-005553
PROFESSIONAL ENGINEER
EXPIRATION: 11/30/26

SECTION VIEW
8" RISE X 24" TREAD / (2)5-4" (11 ROWS)

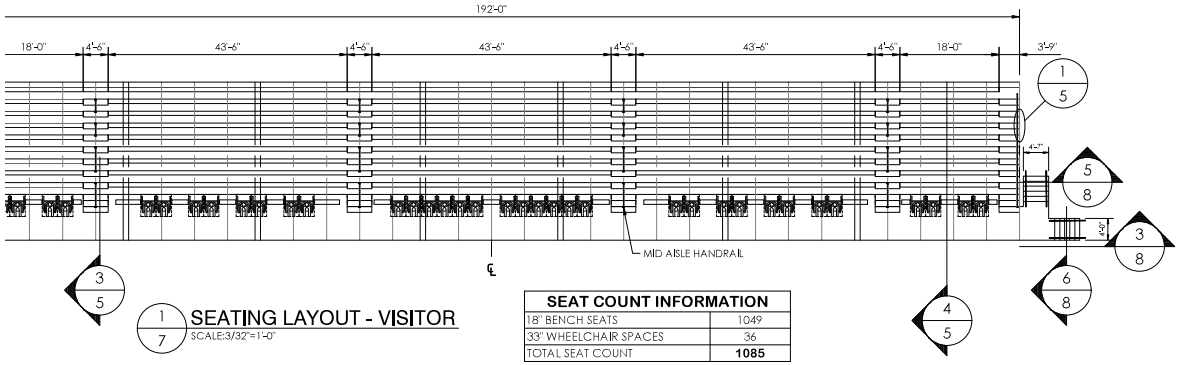
PRAIRIE RIDGE HIGH SCHOOL
2025 FOOTBALL STANDS
CRYSTAL LAKE, ILLINOIS

REV	BY	DATE	DESCRIPTION

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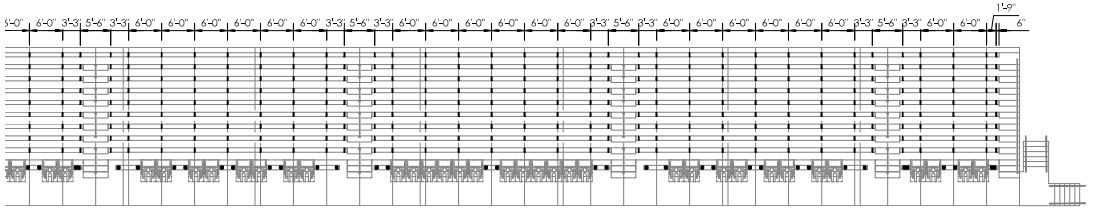
22" X 34" (1"=1/2" indicated scale)

25236



1/7 SEATING LAYOUT - VISITOR
SCALE:3/32"=1'-0"

SEAT COUNT INFORMATION	
18" BENCH SEATS	1049
33" WHEELCHAIR SPACES	36
TOTAL SEAT COUNT	**1085**



2/7 SEAT BRACKET LAYOUT - VISITOR
SCALE:3/32"=1'-0"

SEAT BRACKET INFORMATION	
"L" BRACKETS	333
MAVERICK BENCH BRACKETS	38

DETAIL NUMBER / SHEET NUMBER

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06/16/25

STATE OF ILLINOIS
THOMAS R. SADLER
081-005553
PROFESSIONAL STRUCTURAL ENGINEER

EXPIRATION: 11/30/26

PROJECT: SEATING / SEAT BRACKET LAYOUT
8" RISE X 24" TREAD / (2)15-0" (11 ROWS)

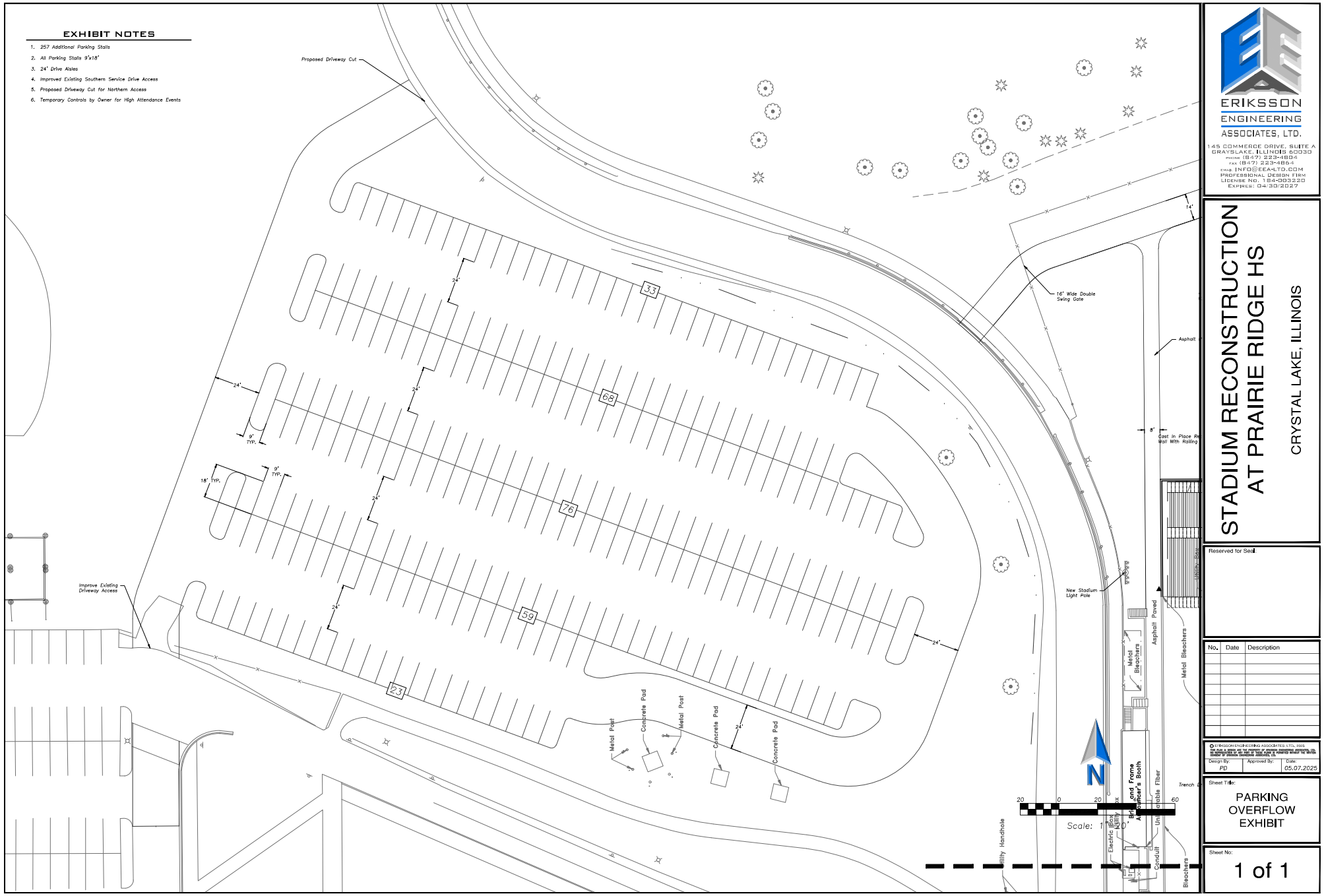
PROJECT: PRAIRIE RIDGE HIGH SCHOOL
2025 FOOTBALL STANDS
CRYSTAL LAKE, ILLINOIS

REV	BY	DATE	DESCRIPTION

DRAWN BY: MG
CHECKED: LD
JOB NUMBER: #25236
SHEET: 7

22" X 34" (1:1 X 17" = 1/2 indicated scale)

25236



ERIKSSON ENGINEERING ASSOCIATES, LTD.
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PROFESSIONAL DESIGN FIRM
LICENSE NO. 184-003220
EXPIRES: 04/30/2027

STADIUM RECONSTRUCTION AT PRAIRIE RIDGE HS

CRYSTAL LAKE, ILLINOIS

Reserved for Seal

No.	Date	Description

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Design By:	Approved By:	Date:
PD		05.07.2025

Sheet Title:

PARKING OVERFLOW EXHIBIT

Sheet No:

1 of 1

1 ELECTRICAL DEMOLITION SITE PLAN

ISSUED FOR BID

CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012

2026 CAPITAL IMPROVEMENTS
PRAIRIE RIDGE HIGH SCHOOL
STADIUM RENOVATION

OVERALL STADIUM SITE ELECTRICAL DEMOLITION PLAN

SHEET NO.
ED1.11

JOB NO. 23-160.01
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	B				BUSSED SPACE	16
	A				BUSSED SPACE	18
	B				BUSSED SPACE	20
	A				BUSSED SPACE	22
	B				BUSSED SPACE	24
5700		CONNECTED LOAD				11400 VA
5700		HIGH PHASE AMPS				47.5 A

ARD SCHEDULE: "TB"

	120 /208V, 1PH, 3W				C/B RATING: 10 k.A.I.C.	
100%	GROUND: EQUIPMEN				MOUNTING: SURFACE	
					TYPE: LOAD CENTER	
VA	PH	VA	TYPE	C/B	USE AND/OR AREA SERVED	CKT
720	A	325	L	20/1	OUTDOOR LIGHTS	2
540	B	200	L	20/1	INDOOR LIGHTS	4
180	A			20/1	SPARE	6
180	B			20/1	SPARE	8
720	A				BUSSED SPACE	10
	B				BUSSED SPACE	12
1845		CONNECTED LOAD				2865 VA
920		HIGH PHASE AMPS				16.2 A

ARD SCHEDULE: "VBS"

	120 /240V, 1PH, 3W				C/B RATING: 10 k.A.I.C.	
100%	GROUND: EQUIPMEN				MOUNTING: SURFACE	
					TYPE: LOAD CENTER	
VA	PH	VA	TYPE	C/B	USE AND/OR AREA SERVED	CKT
180	A	325	L	20/1	BLEACHER STORAGE LIGHTS	2
180	B	1080	R	20/1	RECEPT. - BLEACHER STOR.	4
180	A			20/1	SPARE	6
180	B			20/1	SPARE	8
	A				BUSSED SPACE	10
	B				BUSSED SPACE	12
685		CONNECTED LOAD				2125 VA
1440		HIGH PHASE AMPS				12.0 A

2026 CAPITAL IMPROVEMENTS
PRAIRIE RIDGE HIGH SCHOOL
STADIUM RENOVATION
CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012

ISSUED FOR BID

OVERALL STADIUM SITE ELECTRICAL PLAN

SHEET NO.
E1.11

JOB NO. 23-4561.01
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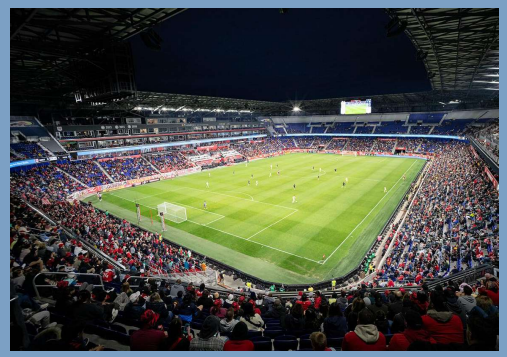
2026 CAPITAL IMPROVEMENTS
PRAIRIE RIDGE HIGH SCHOOL
STADIUM RENOVATION
CHSD 155 - PRAIRIE RIDGE HS
6000 DVORAK ROAD
CRYSTAL LAKE, IL 60012

ELECTRICAL ABBREVIATIONS, DETAIL, SYMBOLS, AND SCHEDULE

SHEET NO. E3.11

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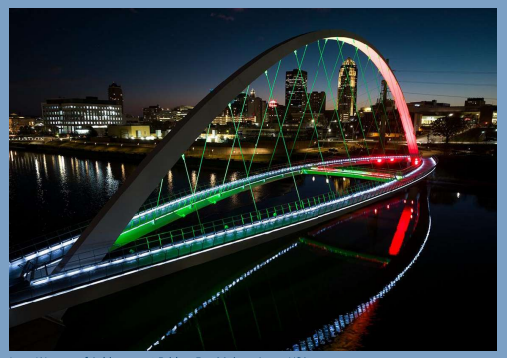
Red Bull Arena, Harrison, New Jersey, USA



UBS Arena, Elmont, New York, USA



Tottenham Hotspur FC Training Ground, Tottenham, London, UK



Iowa Women of Achievement Bridge, Des Moines, Iowa, USA

Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Sales Representative: Loussaint Minett · Designed By: Evan Gray · Design No.: 244779 · May 07, 2025

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Prairie Ridge High School Football Retrofit

Crystal Lake,IL

LIGHTING SYSTEM

Structure/Fixture Summary

Structure ID	Structure Height	Fixt. Attachment Ht.	Fixture Qty	Fixture Type	Design Load	Circuit
F1-F2	70'	70'	9	TLC-LED-1500	12.57 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
F3-F4	70'	70'	8	TLC-LED-1500	11.18 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
4			**42**		**52.10 kW**	

*Fixtures in this design have dimmed output values to meet design specific needs.

Circuit Summary

Circuit	Description	Design Load	Fixture Qty
A	Football	52.10 kW	42

Fixture Type Summary

Type	Circuit	Source	Avg. Wattage	Avg. Lumens	L90	L80	L70	Quantity
TLC-BT-575	A	LED 5700K - 75 CRI	575W	52,651	>120,000	>120,000	>120,000	8
TLC-LED-1500	A	LED 5700K - 75 CRI	1397W	182,194	>120,000	>120,000	>120,000	34

Single Fixture Amperage Draw Chart

Driver Specifications (.90 min power factor)	Line Amperage Per Fixture (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5

*Amp draw based on 100% fixture output, consult design specific datasheet for adjusted amperage draw chart

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination Ave					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Football	Horizontal Illuminance	53.09	39	64	1.64	1.36	A	42
Home Bleachers	Horizontal	21.19	17	25	1.50	1.26	A	42
Soccer	Horizontal Illuminance	52.76	38	66	1.72	1.38	A	42
Track	Horizontal Illuminance	25.45	3	57	21.91	9.76	A	42
Track Spill @ 3ft.	Horizontal Illuminance	0.0688	0.01	0.27	24.268	6.104	A	42
Track Spill @ 5ft.	Max Candela Metric	20149.2168	1876.13	47855.79	25.508	10.740	A	42
Track Spill @ 5ft.	Max Vertical Illuminance Metric	0.2976	0.04	0.99	22.313	6.690	A	42
Visitor Bleachers	Horizontal	7.04	4	9	2.18	1.69	A	42

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

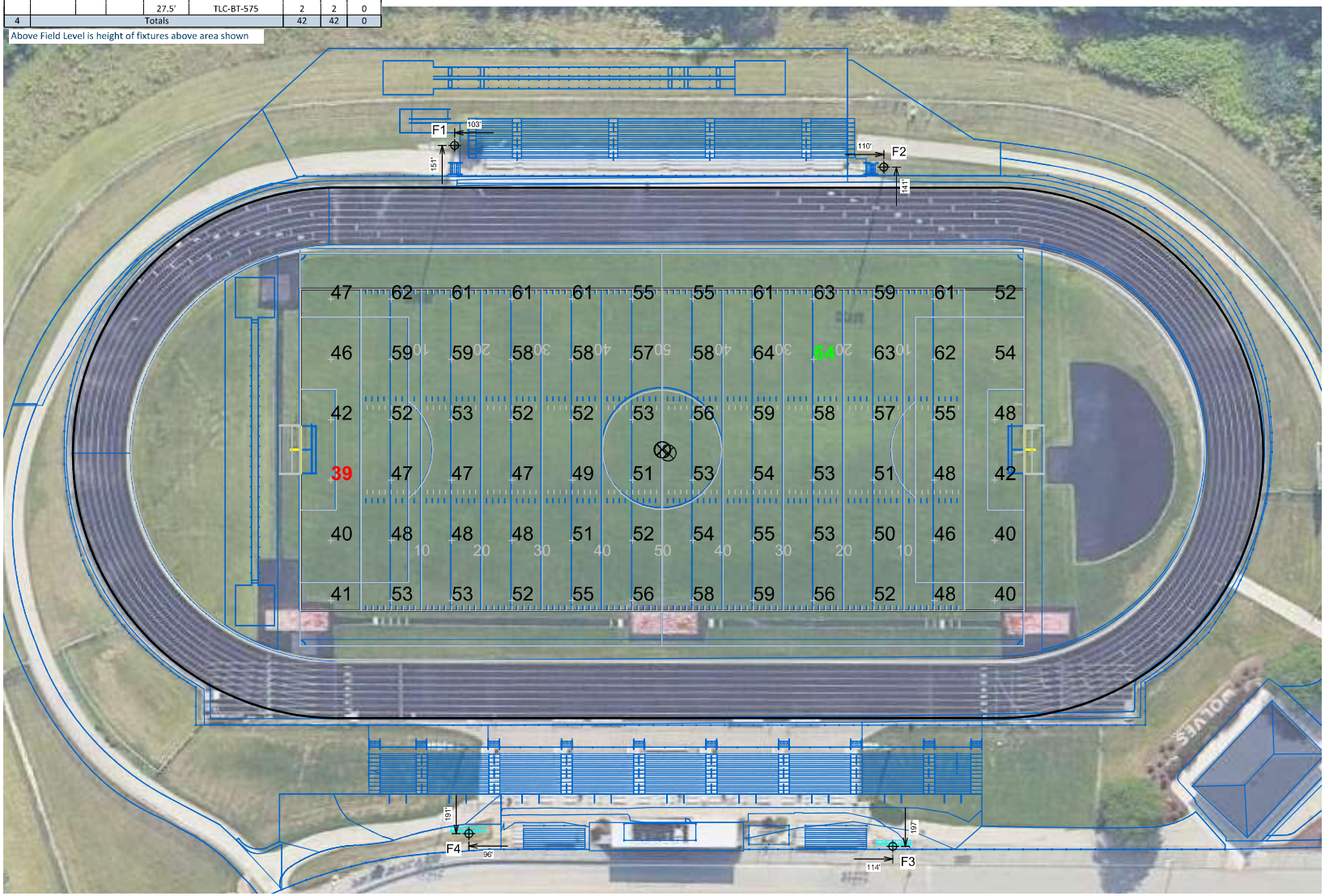


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Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	70'	-	70'	TLC-LED-1500	9	9	0
				15.5'	TLC-BT-575	2	2	0
2	F3-F4	70'	12'	82'	TLC-LED-1500	8	8	0
				27.5'	TLC-BT-575	2	2	0
4	Totals					42	42	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: Evan Gray • File #244779A • 07-May-25

Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Football**
Size:	360' x 160'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**50**
Scan Average:	53.09
Maximum:	64
Minimum:	39
Avg/Min:	1.36
Guaranteed Max/Min:	**2**
Max/Min:	1.64
UG (adjacent pts):	1.31
CU:	0.52
No. of Points:	72
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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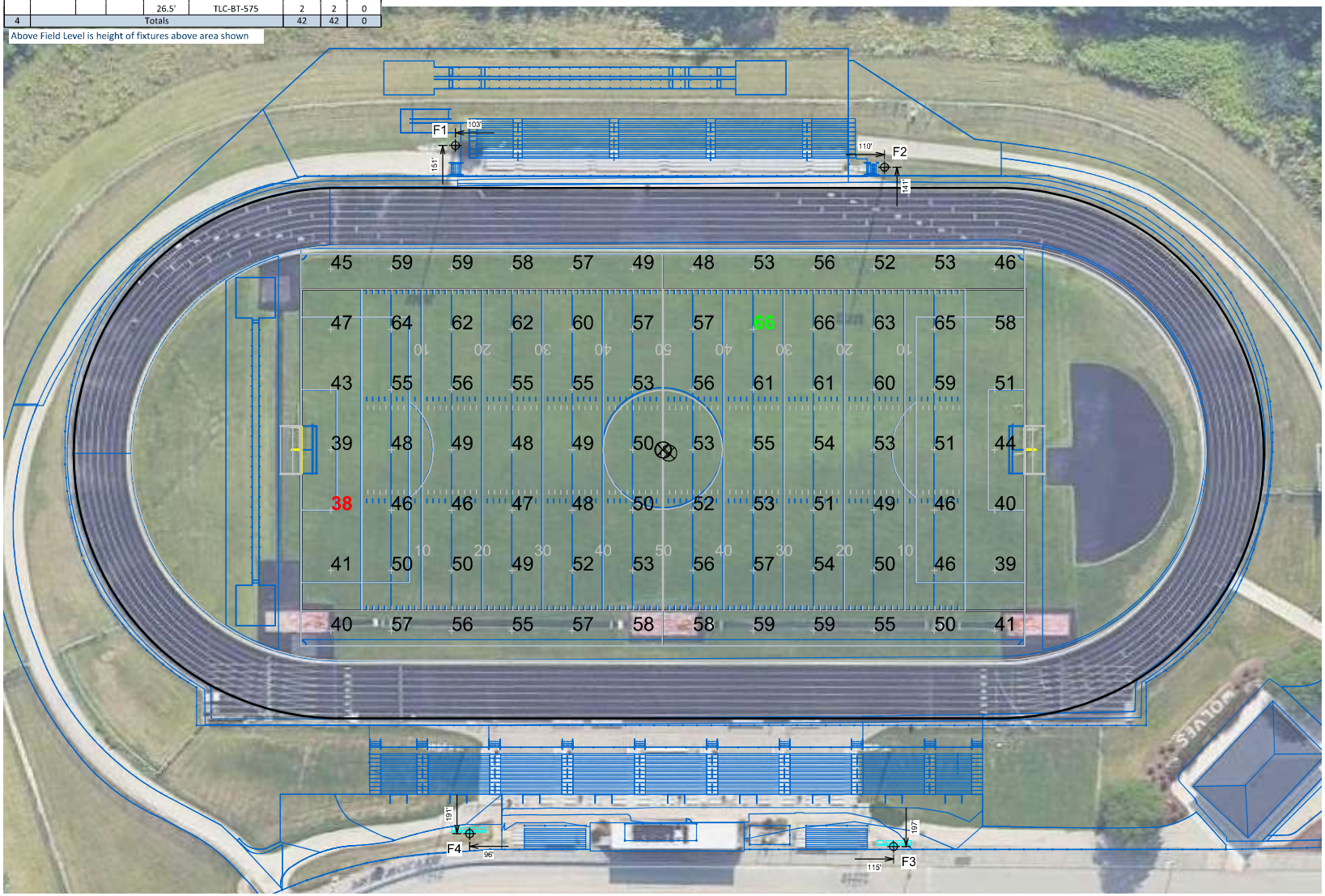
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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	70'	-1'	69' 14.5'	TLC-LED-1500 TLC-BT-575	9 2	9 2	0 0
2	F3-F4	70'	11'	81' 26.5'	TLC-LED-1500 TLC-BT-575	8 2	8 2	0 0
4	Totals					42	42	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

ENGINEERED DESIGN By: Evan Gray • File #244779A • 07-May-25

Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Soccer**
Size:	360' x 195'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**50**
Scan Average:	52.76
Maximum:	66
Minimum:	38
Avg/Min:	1.38
Guaranteed Max/Min:	**2**
Max/Min:	1.72
UG (adjacent pts):	1.43
CU:	0.60
No. of Points:	84
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	70'	-	70' 15.5'	TLC-LED-1500 TLC-BT-575	9 2	9 2	0 0
2	F3-F4	70'	12'	82' 27.5'	TLC-LED-1500 TLC-BT-575	8 2	8 2	0 0
4	Totals					42	42	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 40

0' 40' 80'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Home Bleachers**
Size:	360' x 160'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**21.19**
Maximum:	25
Minimum:	17
Avg/Min:	1.26
Max/Min:	**1.50**
UG (adjacent pts):	1.21
CU:	0.02
No. of Points:	15
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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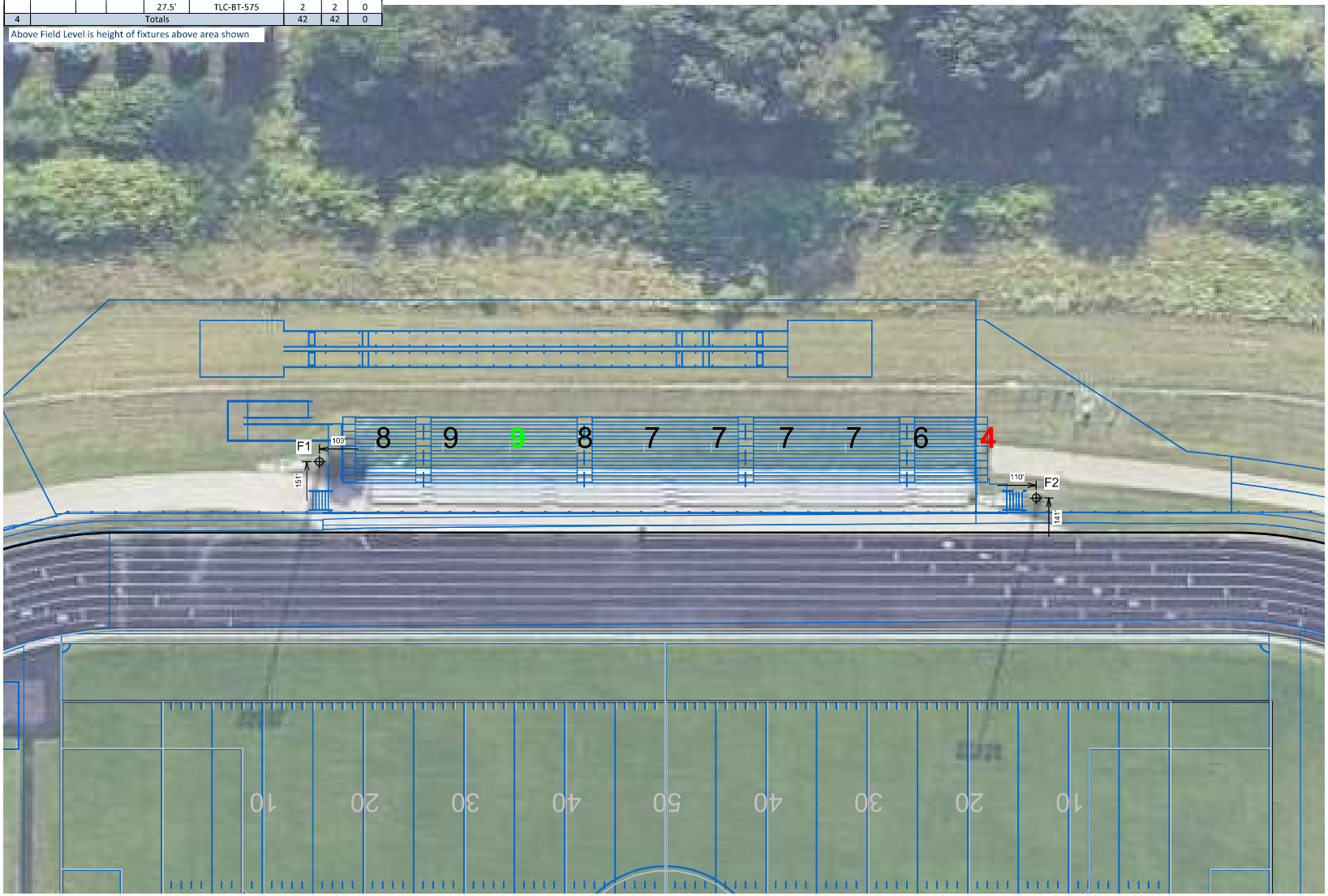
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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	70'	-	70' 15.5'	TLC-LED-1500 TLC-BT-575	9 2	9 2	0 0
2	F3-F4	70'	12'	82' 27.5'	TLC-LED-1500 TLC-BT-575	8 2	8 2	0 0
4	Totals					42	42	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Visitor Bleachers**
Size:	360' x 160'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**7.04**
Maximum:	9
Minimum:	4
Avg/Min:	1.69
Max/Min:	**2.18**
UG (adjacent pts):	1.49
CU:	0.00
No. of Points:	10
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Equipment List For Areas Shown

Structure				Fixtures				
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	70'	-	70'	TLC-LED-1500	9	9	0
				15.5'	TLC-BT-575	2	2	0
2	F3-F4	70'	12'	82'	TLC-LED-1500	8	8	0
				27.5'	TLC-BT-575	2	2	0
4	Totals					42	42	0

Above Field Level is height of fixtures above area shown



Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Track**
Size:	Irregular
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**25.45**
Maximum:	57
Minimum:	3
Avg/Min:	9.76
Max/Min:	**21.91**
UG (adjacent pts):	0.00
CU:	0.15
No. of Points:	44
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Track Spill @ 3ft.**
Spacing:	30.0'
Height:	3.0' above grade

Illumination Summary

	INITIAL HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.0688**
Maximum:	0.27
Minimum:	0.01
CU:	0.00
No. of Points:	81
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW


F1
F2
F3
F4
0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.0 0.0
0.0 0.0 0.0

Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Track Spill @ 5ft.**
Spacing:	30.0'
Height:	5.0' above grade

Illumination Summary

	INITIAL MAX VERTICAL FOOTCANDLES
	Entire Grid
Scan Average:	**0.2976**
Maximum:	0.99
Minimum:	0.04
CU:	0.00
No. of Points:	81
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW


F1
F2
F3
F4
0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.2 0.2 0.3 0.3 0.4 0.4 0.4 0.4 0.5 0.5 0.6 0.7 0.8 0.9 1.0 1.0 0.9 0.8 0.8 0.6 0.5 0.4 0.4 0.4 0.3 0.3 0.3 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1

Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Grid Summary

Name:	**Track Spill @ 5ft.**
Spacing:	30.0'
Height:	5.0' above grade

Illumination Summary

	INITIAL CANDELA (PER FIXTURE)
	Entire Grid
Scan Average:	**20149.2168**
Maximum:	47855.79
Minimum:	1876.13
CU:	0.00
No. of Points:	81
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**42**
Total Load:	52.10 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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Prairie Ridge High School Football Retrofit

Crystal Lake,IL

Equipment Layout

INCLUDES:
· Football
· Soccer
· Track

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Structure				Fixtures		
QTY	STRUCTURE ID	SIZE	GLOBAL ELEVATION	ABOVE GLOBAL LEVEL	FIXTURE TYPE	QTY/POLE
2	F1-F2	70'	-	70' 15.5'	TLC-LED-1500 TLC-BT-575	9 2
2	F3-F4	70'	12'	82' 27.5'	TLC-LED-1500 TLC-BT-575	8 2
4	Totals					42

Above Global Level is height of fixtures above design (0,0,0)

Single Fixture Amperage Draw Chart

Driver Specifications (.90 min power factor)	Line Amperage Per Fixture (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5

*Amp draw based on 100% fixture output, consult design specific datasheet for adjusted amperage draw chart



SCALE IN FEET 1 : 80

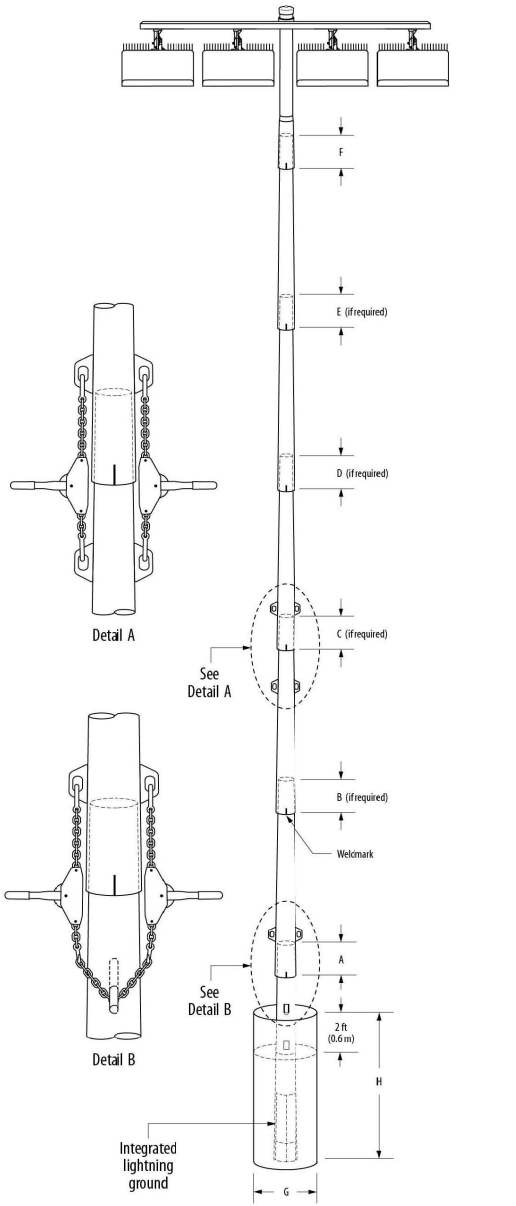
0' 80' 160'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊠

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PRELIMINARY FOUNDATION AND POLE ASSEMBLY DRAWING



R60-62-00-en04-01_B

TABLE 1: POLE ASSEMBLY			
POLE ID	POLE HEIGHT ft (m)	# OF LUMINAIRES	ASSEMBLED POLE WEIGHT [3] lb (kg)
F3	70 (21.3)	10	2691 (1221)
F4	70 (21.3)	10	2691 (1221)

Pole Assembly Notes:

1. Steel pole should overlap concrete base and be seated tight with 1 1/2 ton come-alongs (contractor provided).
2. Align weldmarks on steel sections before assembling.
3. Assembled pole weight includes steel sections, crossarms, luminaires, and electrical components enclosures. If pole has stamped structural design then use pole weight (listed as vertical force) on stamped structural design document.
4. Section overlap must be pulled together until tight. Overlap measurement should be +/- 6 in (150 mm).
5. This document is not intended for use as an assembly instruction. See *Installation Instructions: Light-Structure System™ Lighting System* for complete assembly procedure.

TABLE 2: FOUNDATION DETAILS							
POLE ID	CONCRETE BASE WEIGHT lb(kg)	BURIAL INFORMATION [3,4] G in (mm)	H ft (m)	CONCRETE BACKFILL [1,2] yd³ (m³)	CUT BASE	LIGHTNING GROUND [5] TYPE	SUPPLEMENTAL INSTRUCTION
F3	3780 (1715)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
F4	3780 (1715)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A

Foundation Notes:

1. Concrete backfill is calculated to 2 ft (0.6m) below grade (no overage included). Top 2 ft (0.6m) to be class 5 soil compacted to 95% density of surrounding undisturbed soil unless otherwise specified in stamped structural design.
2. Concrete backfill required 3000 lb/in² (20 MPa) minimum.
3. Foundation design per 2015 IBC, 115 mph, exposure category C, variation STD (Risk Category II).
4. Assumes IBC class 5 soils.
5. Standard bases include integrated lightning protection. If bases are cut, supplemental lightning protection is required. Contact Musco for materials and instruction.
6. Lightning protection is a manufacturer installed concrete encased electrode and connector. Ground connection is made when concrete base is installed and footing is poured. No additional steps required.

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Prairie Ridge High School Football Retrofit - Crystal Lake, IL, USA

Date: 05/20/2025 Scale: Not to Scale

Representative: Loussaint Minett Page: 1 of 1

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