

APPENDIX D – WETLAND DELINEATION REPORT

MEMORANDUM

To: Michelle Carpenter
TPE IL KN309, LLC
Ashley Payne

From: Keller Leet-Otley
Kimley-Horn and Associates, Inc.

Date: March 1, 2024

Subject: Kaneville Township, Kane County, Illinois – KN309 Level 1 Wetland Delineation
Memorandum

INTRODUCTION

Kimley-Horn was contracted by TPE IL KN309, LLC to review the KN309 project study area for potential wetlands and waterways. See Figure 1 for project location and Figure 2 for the project study area boundary. The project study area is located in Kaneville Township, Kane County, Illinois. The study area is approximately 89 acres in size and is located in Section 25 of Township 39N, Range 6E. Kimley-Horn reviewed available background data to assist in determining if there are any potential wetlands and waterways within the study area.

AVAILABLE BACKGROUND DATA:

Kimley-Horn reviewed available topographic maps, the National Wetlands Inventory (NWI), the National Hydrography Dataset (NHD), LiDAR, soil survey data, public waters, floodplain data, and aerial photography to identify potential wetlands or surface waters within the study area vicinity.

U.S. Geological Survey (USGS) Topographical Map

A review of the Sugar Grove, Illinois 7.5-minute topographic map depicted the study area as undeveloped land. There are two ponds located directly north of the study area boundary. The USGS topographic map is presented on Figure 3.

National Wetlands Inventory (NWI)

Based on a review of the U.S. Fish and Wildlife Service (USFWS) NWI,¹ there are no NWI features present within the study area. There are three open water ponds located directly north of the study area. The NWI-mapped features are presented on Figure 4.

USGS National Hydrography Dataset (NHD)

Based on a review of the USGS NHD,² there are no NHD features present within the study area. There is one NHD flowline directly east of the study area boundary. There are two NHD waterbodies

¹ USFWS. 2023. National Wetlands Inventory. Vector Digital Data. Published May, 2023.

² USGS. 2023. National Hydrography Dataset. Vector Digital Data. Published May 5, 2023.

located directly north of the study area boundary that align with NWI mapped waterbodies. The NHD-mapped features are presented on Figure 4.

2-ft LiDAR Contours

Two-foot contours³ were reviewed to determine if any wetland areas or drainage swales may be present on the study area. The study area generally slopes to the south and east. There is a high point present in the northwest corner of the study area. There are notable low points present in the southwest, southeast and northeast corners of the study area. The study area ranges in elevation from 798 to 778 feet above sea level. The 2-foot contours are presented on Figure 5.

Kane County Soil Survey

A review of the Jackson County soil survey via the Soil Survey Geographic (gSSURGO) database⁴ identified 12 soil types within the study area. Approximately 15 percent of the study area is mapped with a predominantly hydric soils rating of 95 percent. The remainder of the study area is mapped with a predominantly non-hydric soils rating at or below 10 percent, or a non-hydric soils rating of 0 percent. Hydric soils rating data are presented on Figure 6.

Illinois Department of Natural Resources (IDNR) Public Waters Inventory

A review of the IDNR Public Waters Inventory⁵ was completed. No IDNR Public Waters are located within the project vicinity.

FEMA Floodplain

The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer⁶ was reviewed to determine if any FEMA 100-year floodplain is located within the project study area. Based on Panel 17089C0305J (effective July 17, 2012), the study area is not located within a FEMA 100-year floodplain. The FEMA floodplain data are presented on Figure 7.

Previous Study Area Disturbance

Historic aerials from 1998 to 2021 were reviewed to determine previous land use and disturbance on the study area and are presented in Attachment A. Several potential wetlands were visible on the reviewed historic aerials, see comments in Table 1. The study area has been used for agricultural purposes since at least 1998.

Table 1. Project Study Area Historic Aerial Review

Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
1998	Agricultural	Normal	Study area consists of cropped agricultural field. Two areas of saturation present in the western portion and one in the eastern portion of the study area.

³ USGS. 2021. USGS 1 Meter DEM Panels. Published March 30, 2020.

⁴ NRCS. 2022. National Soil Survey Geographic (gSSURGO). Illinois. Vector Digital Data. Published September 7, 2022.

⁵ IDNR. 2023. Illinois Public Waters. Available online at

<https://idnr.maps.arcgis.com/apps/webappviewer/index.html?id=b64decfb69504164a46badb2841ebb11>

⁶ USGS. FEMA National Flood Hazard Layer Viewer. Available online at <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>

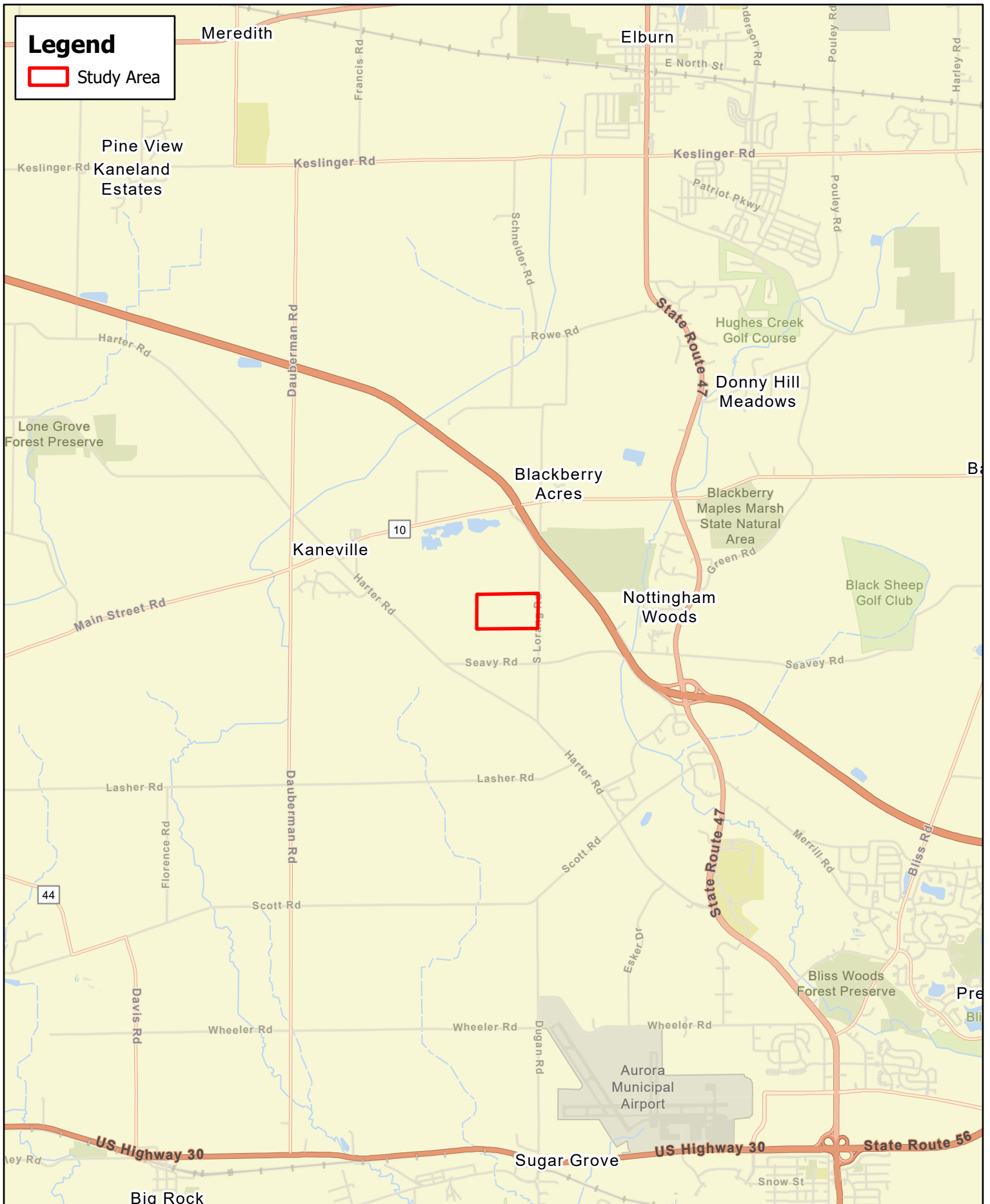
Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
2005	Agricultural	Normal	Same comment as above.
2006	Agricultural	Drier than Normal	Study area consists of cropped agricultural field.
2007	Agricultural	Normal	Same comment as above.
2008	Agricultural	Normal	Study area consists of cropped agricultural field. One area of saturation present in the western portion of the study area.
2010	Agricultural	Wetter than Normal	Study area consists of cropped agricultural field. Two areas of saturation present in the western portion of the study area.
2011	Agricultural	Normal	Study area consists of cropped agricultural field. One area of saturation present in the western portion of the study area.
2013	Agricultural	Wetter than Normal	Study area consists of cropped agricultural field. One area of saturation present in the western and one in the northeastern portion of the study area.
2015	Agricultural	Wetter than Normal	Same comment as above.
2017	Agricultural	Drier than Normal	Study area consists of cropped agricultural field. Numerous areas of crop stress present throughout the study area, concentrated in the northeastern and southwestern portions of the study area.
2018	Agricultural	Normal	Same comment as above.
2021	Agricultural	Drier than Normal	Study area consists of cropped agricultural field. Numerous areas of crop stress and saturation present throughout the study area.

Four areas of continued stunted or stressed vegetation were visible on the reviewed historic aerials.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the Level 1 Wetland Delineation, Kimley-Horn identified four potential wetlands within the property (see Figure 8). A level 2 (field) wetland delineation is recommended if project infrastructure is situated within 100 feet of desktop wetlands. If the current (as the date of this report) project extents remain as-is, a field delineation would be needed. If project infrastructure will maintain a 100-foot buffer from wetlands, a field delineation would not be needed.

Figures

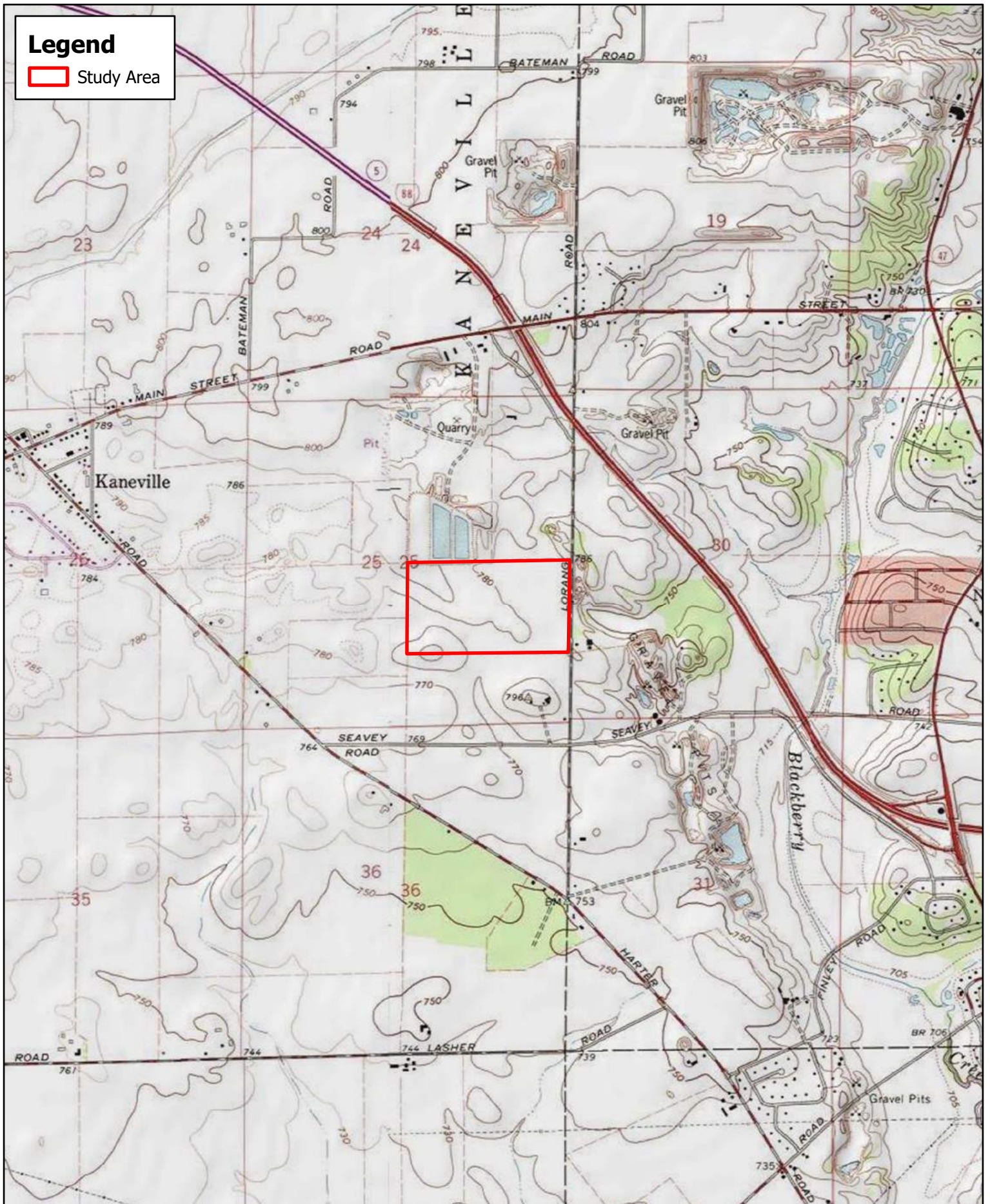


Legend

 Study Area



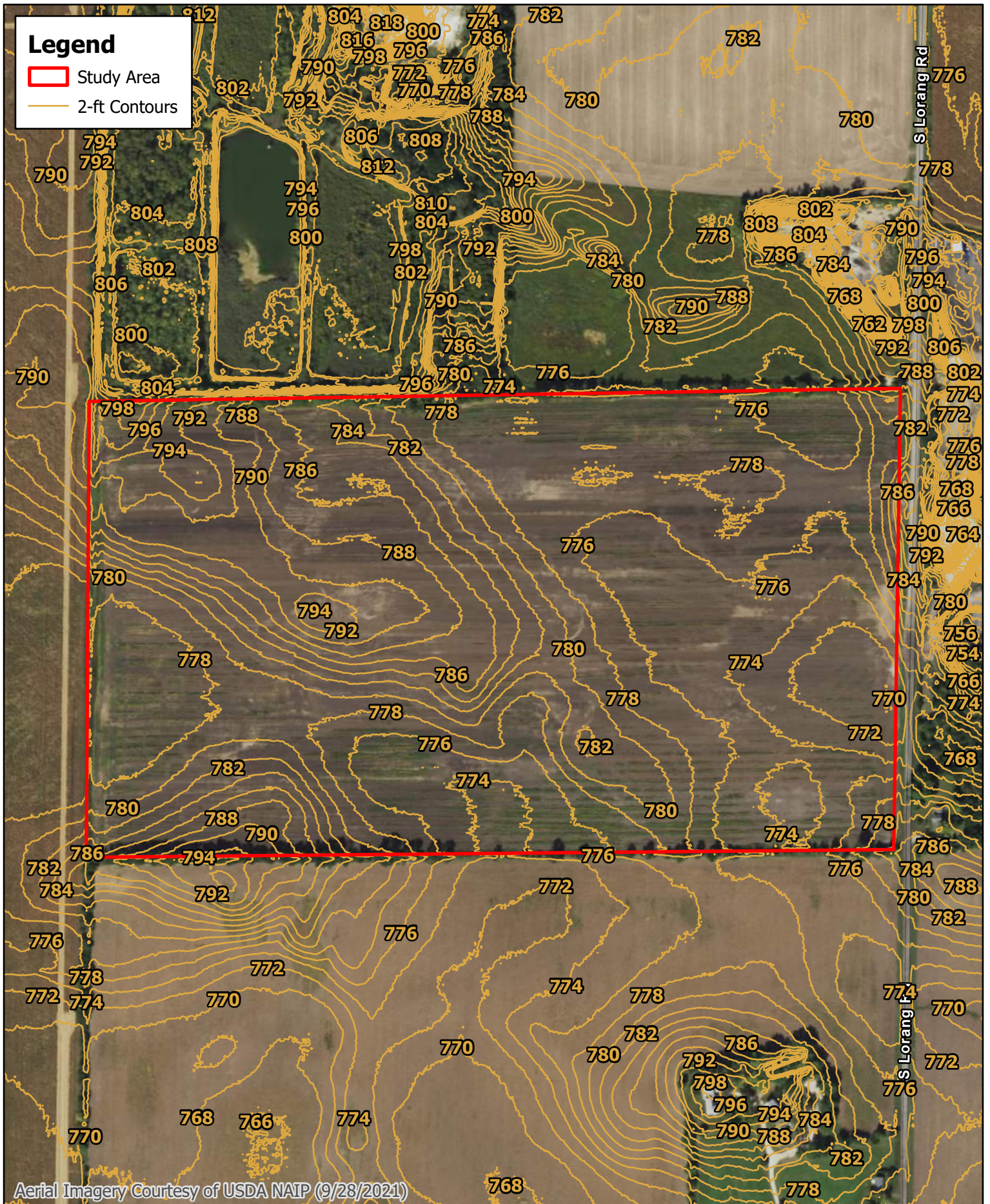
Aerial Imagery Courtesy of USDA NATP (9/28/2021)

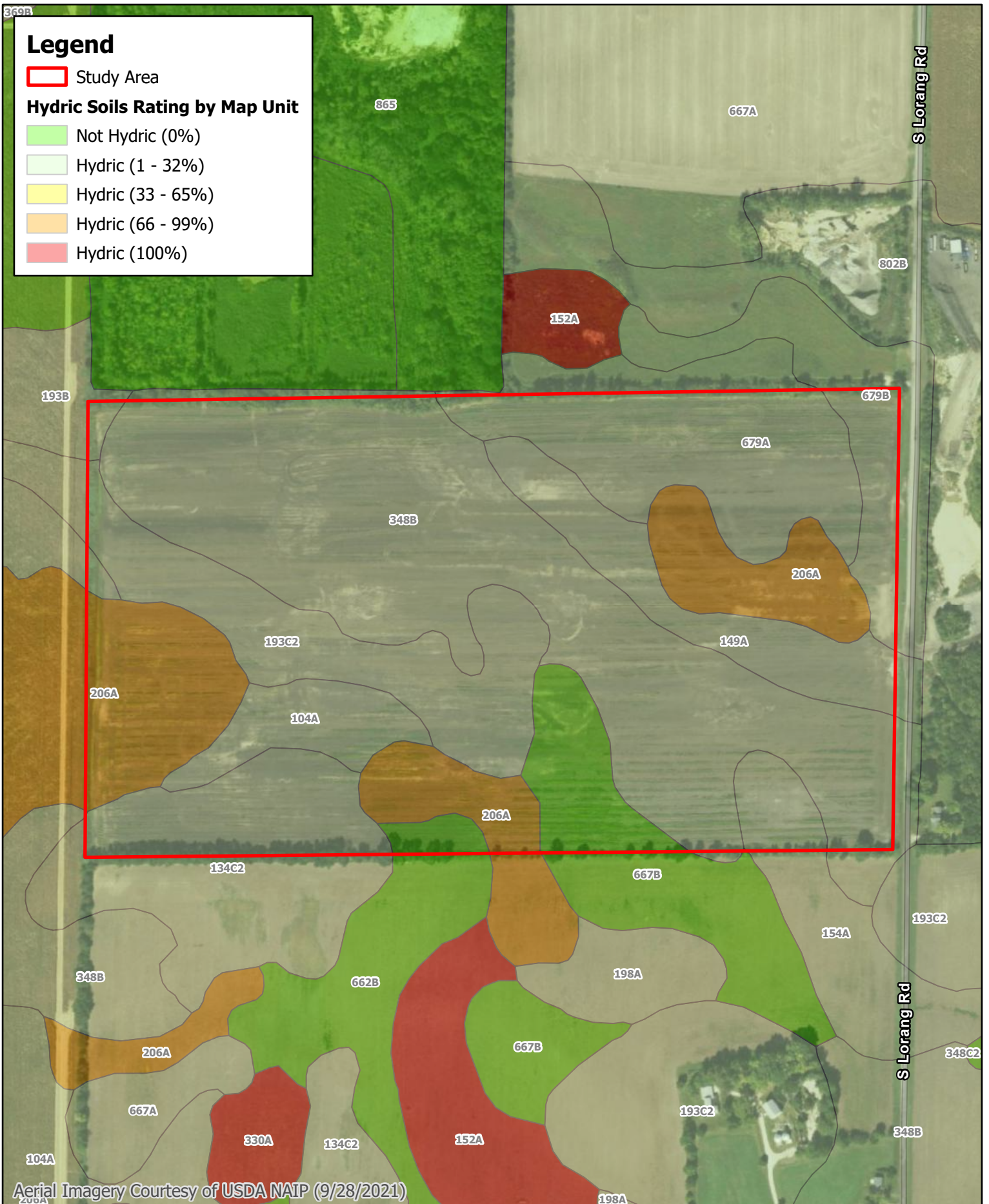


Legend

Study Area

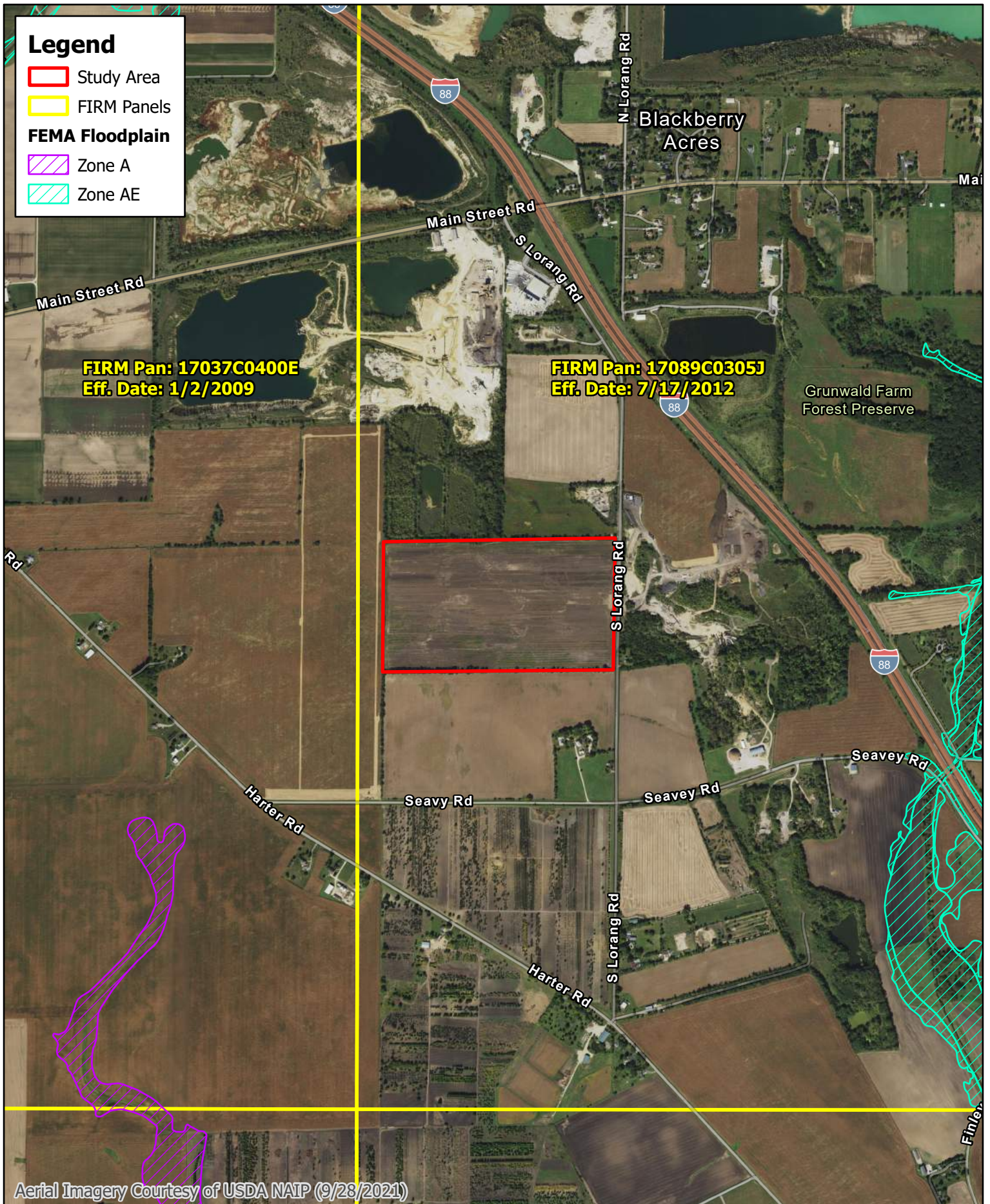








Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
104A	Virgil silt loam, 0 to 2 percent slopes	10	3.5	3.9%
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	2	5.6	6.3%
149A	Brenton silt loam, 0 to 2 percent slopes	3	5.9	6.6%
154A	Flanagan silt loam, 0 to 2 percent slopes	4	1.7	1.9%
193B	Mayville silt loam, 2 to 5 percent slopes	10	0.3	0.3%
193C2	Mayville silt loam, 5 to 10 percent slopes, eroded	7	9.7	10.9%
206A	Thorp silt loam, 0 to 2 percent slopes	95	13.4	15.1%
348B	Wingate silt loam, cool mesic, 2 to 5 percent slopes	3	31.5	35.4%
662B	Barony silt loam, 2 to 5 percent slopes	0	0.8	0.9%
667B	Kaneville silt loam, 2 to 5 percent slopes	0	3.8	4.2%
679A	Blackberry silt loam, 0 to 2 percent slopes	2	10.1	11.4%
679B	Blackberry silt loam, 2 to 5 percent slopes	2	2.6	2.9%
Totals for Area of Interest			88.9	100.0%



Legend

-  Study Area
-  Desktop Wetlands



Aerial Imagery Courtesy of USDA NAIP (9/28/2021)



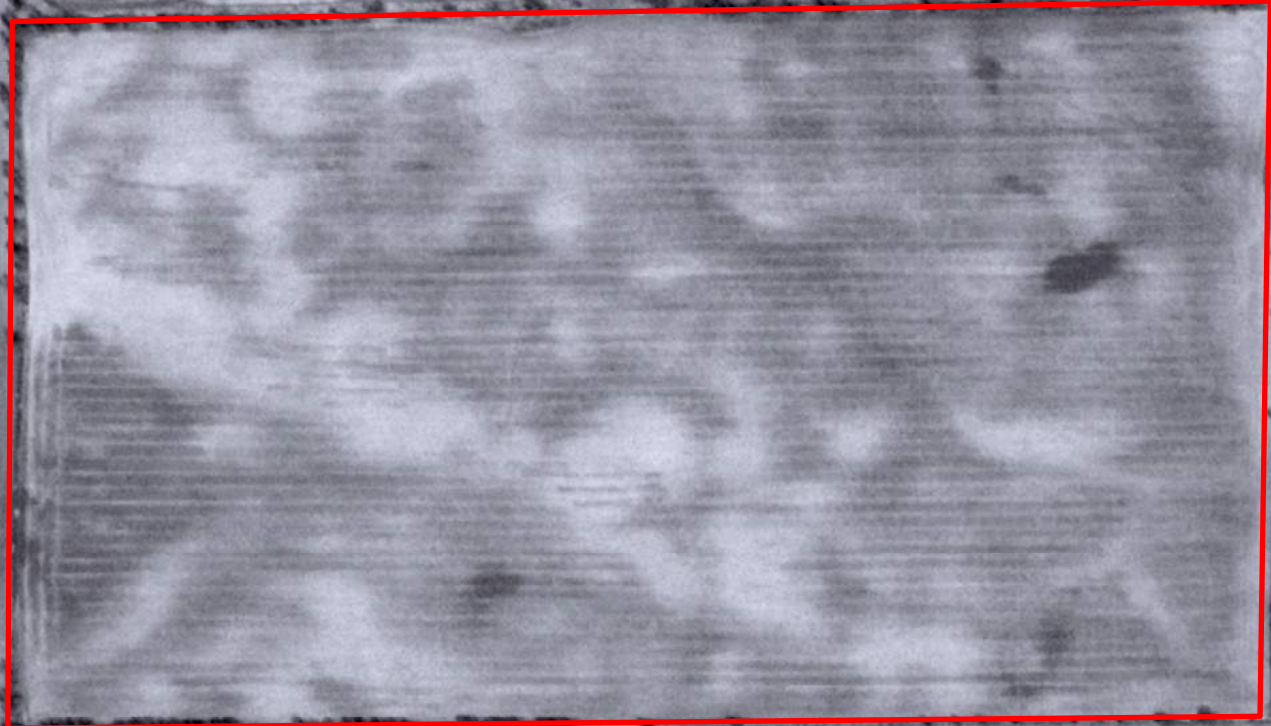
Figure 8. Desktop Resources
Kaneville Township, Kane County
TPE IL KN309, LLC

ATTACHMENT A

Historic Aerials

Legend

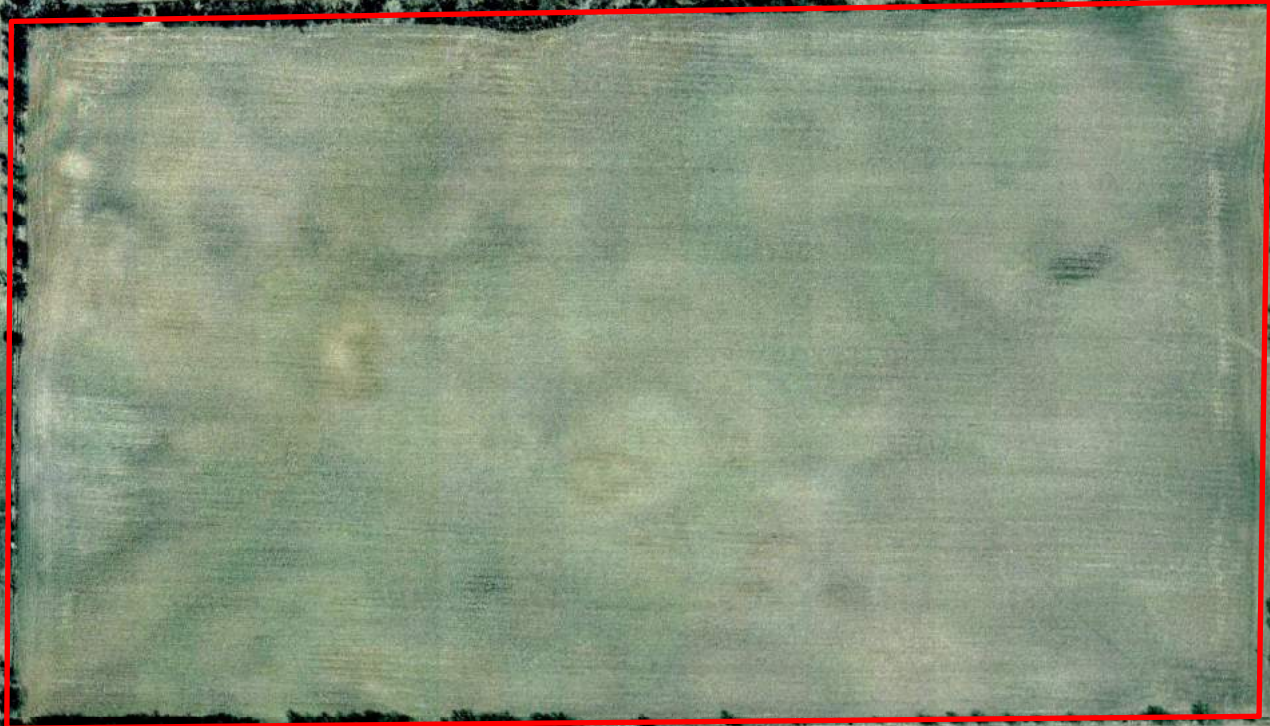
 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

 Study Area



Aerial Imagery Courtesy of Google Earth



Legend

 Study Area



Aerial Imagery Courtesy of Google Earth



Legend

 Study Area



Aerial Imagery Courtesy of Google Earth


Legend

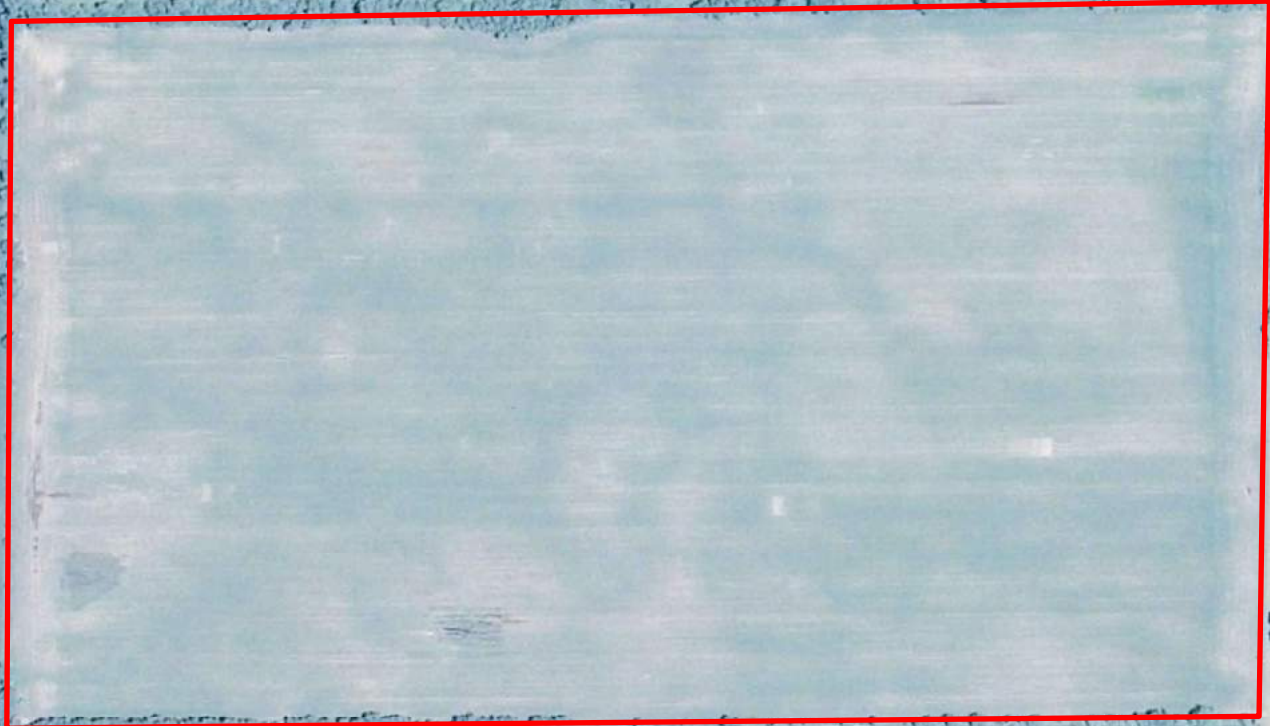
 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

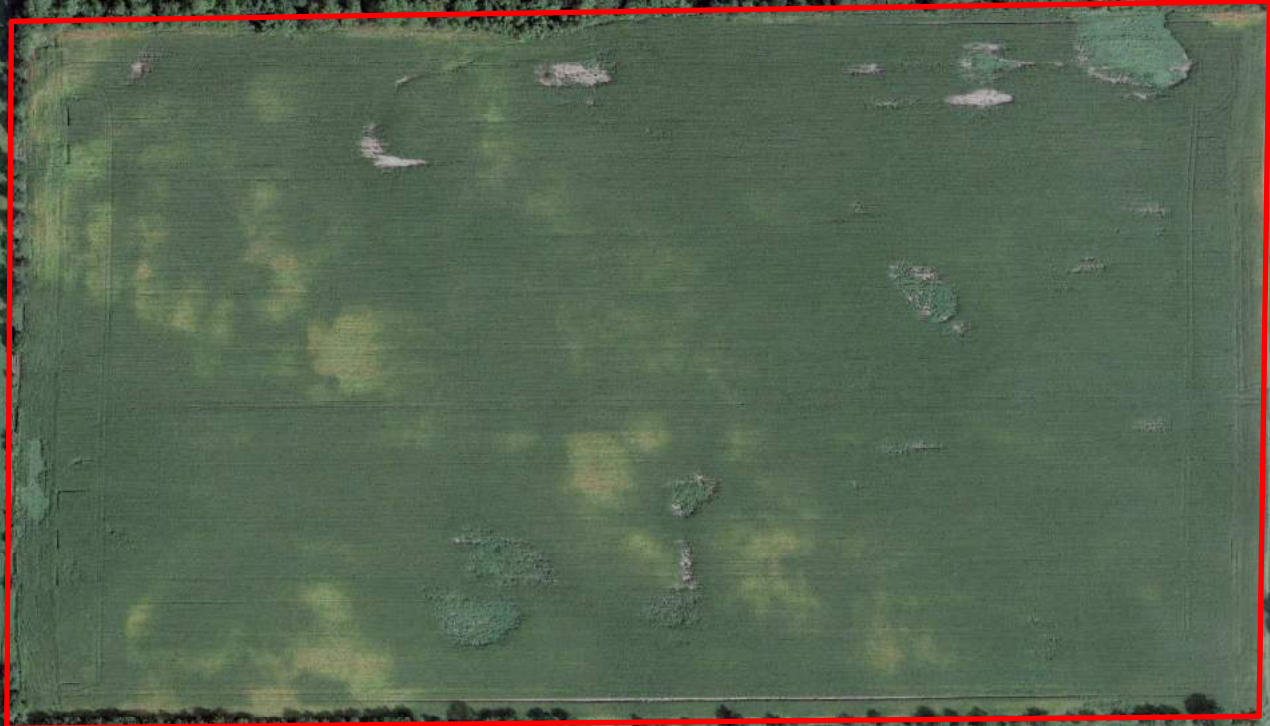
 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

 Study Area



Aerial Imagery Courtesy of Google Earth

Legend

 Study Area



Aerial Imagery Courtesy of USDA NAIP



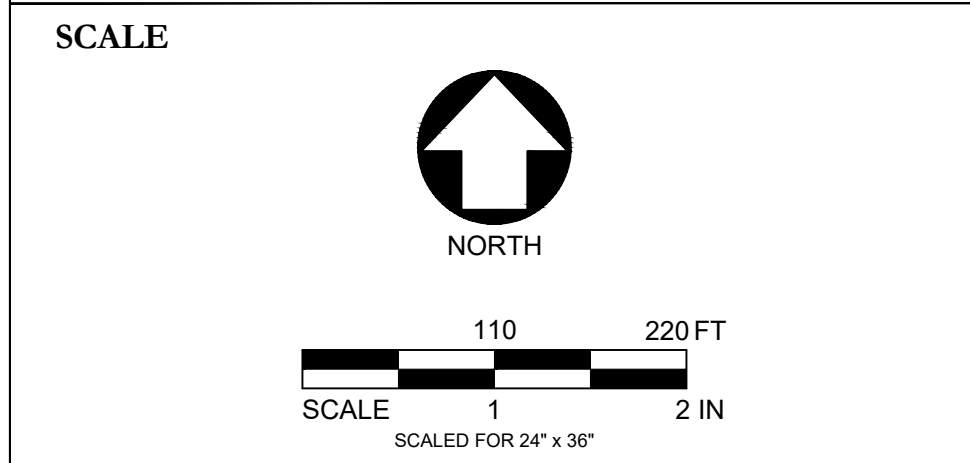
ATTACHMENT B

Site Plan



SYSTEM SUMMARY

AC SYSTEM SIZE	4.99MW _{AC}
DC SYSTEM SIZE	7.50MW _{DC}
OVERALL SITE AREA	88.84 ACRES
LEASE AREA	45.42 ACRES
TOTAL LOD	37.21 ACRES
FENCE AREA	35.80 ACRES
ARRAY AREA	32.44 ACRES
GEN-TIE LENGTH	489 FEET
TOTAL NEW ROADS LENGTH	540 FEET
TOTAL NEW ROADS AREA	10,679 SQFT
TOTAL FENCE LENGTH	5,171 FEET
TREE CLEARING AREA	0.00 ACRES
TOTAL NEW LANDSCAPING	0 FEET
GCR	30%
MODULE STC RATING	555 W
MODULE QUANTITY	13,520
STRING SIZE (# PANELS)	26
STRING QUANTITY	520
NUMBER OF TRACKERS	1 STRINGS TRACKER- 24 2 STRINGS TRACKER- 41 3 STRINGS TRACKER- 138
RACK TYPE	SINGLE AXIS TRACKER
ARRAY AZIMUTH	180°
TILT ANGLE	60° TO 60°
TOTAL LAYDOWN AREA	0.76 ACRES
PARCEL ID	10-25-400-006
MODULE MFR	LONGI SOLAR
MODULE MODEL	LR5-72HBD-555M BIFACIAL
INVERTER MFR	CPS SCH125KTL-DO/US-600
INVERTER MODEL	CHINT POWER SYSTEMS
INVERTER QUANTITY	40
INVERTER AC OUTPUT	125kW _{AC}



PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT # **ILKN309** LAND OWNER **VONDRA, MICHAEL P**
 ADDRESS **S LORANG RD ELBURN, IL 60119**

REV	DESCRIPTION	DATE

PROJECT # **ILKN309** DRAWN BY **EQ**
 DATE **2023-04-24**

SHEET NAME **SITE PLAN** SHEET NUMBER **A.1**