

APPENDIX D – WETLAND DELINEATION REPORT

MEMORANDUM

To: Michelle Carpenter
TPE IL KN415, LLC

From: Ashley Payne
Kimley-Horn and Associates, Inc.

Date: September 20, 2023

Subject: Rutland Township, Kane County, Illinois – KN415 Level 1 Wetland Delineation
Memorandum

INTRODUCTION

Kimley-Horn was contracted by TPE IL KN415, LLC to review the KN415 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 Rutland Township, Kane County, Illinois. The study area is approximately 45 acres in size and is located in Section 1 of Township 42N, Range 7E. 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) Topographic Map

A review of the Crystal Lake, Illinois 7.5-minute topographic quadrangle depicted primarily undeveloped land with one structure in the northern section of the study area. 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 no wetland features are present within the study area. The adjacent NWI-mapped features are presented on Figure 4.

USGS National Hydrography Dataset (NHD)

Based on a review of the USGS NHD,² no NHD features are present within the study area. The adjacent NHD-mapped resources are presented on Figure 4.

¹ USFWS. 2023. National Wetlands Inventory. Vector Digital Data. Published May 26, 2023.

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

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 is gently rolling and slopes gradually to the southwest with an isolated depression in the south central portion of the study area. The study area ranges in elevation from 908 feet to 892 feet above sea level. The 2-foot contours are presented on Figure 5.

Kane County Soil Survey

A review of the Kane County soil survey via the Soil Survey Geographic (gSSURGO) database⁴ identified 6 soil types within the study area. Less than 1 percent of the study area is mapped with a hydric soils rating of 100 percent. The remainder of the study area is mapped with a predominantly non-hydric soils rating at or below 5 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. The Fox River is located approximately three miles east of the study area.

FEMA Floodplain

The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer⁶ was reviewed to determine if FEMA 100-year floodplains are located within the study area. Based on Panel 17089C0065H (effective August 3, 2009), 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 1988 to 2021 were reviewed to determine previous land use and disturbance on the study area and are presented in Attachment A. No 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 1988.

Table 1. Project Study Area Historic Aerial Review

Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
1988	Agricultural	Normal	Study area consists of cropped agricultural field with a structure present in the northern portion of the site and a north-south oriented field access road in the central portion of the study area. These features are visible on all the historic aerials. No wetland signatures present.
1999	Agricultural	Wetter than Normal	Soil saturation present in the middle of the study area.

³ USGS. 2016. USGS 3 Meter DEM Panels. Published August 17, 2016.

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>

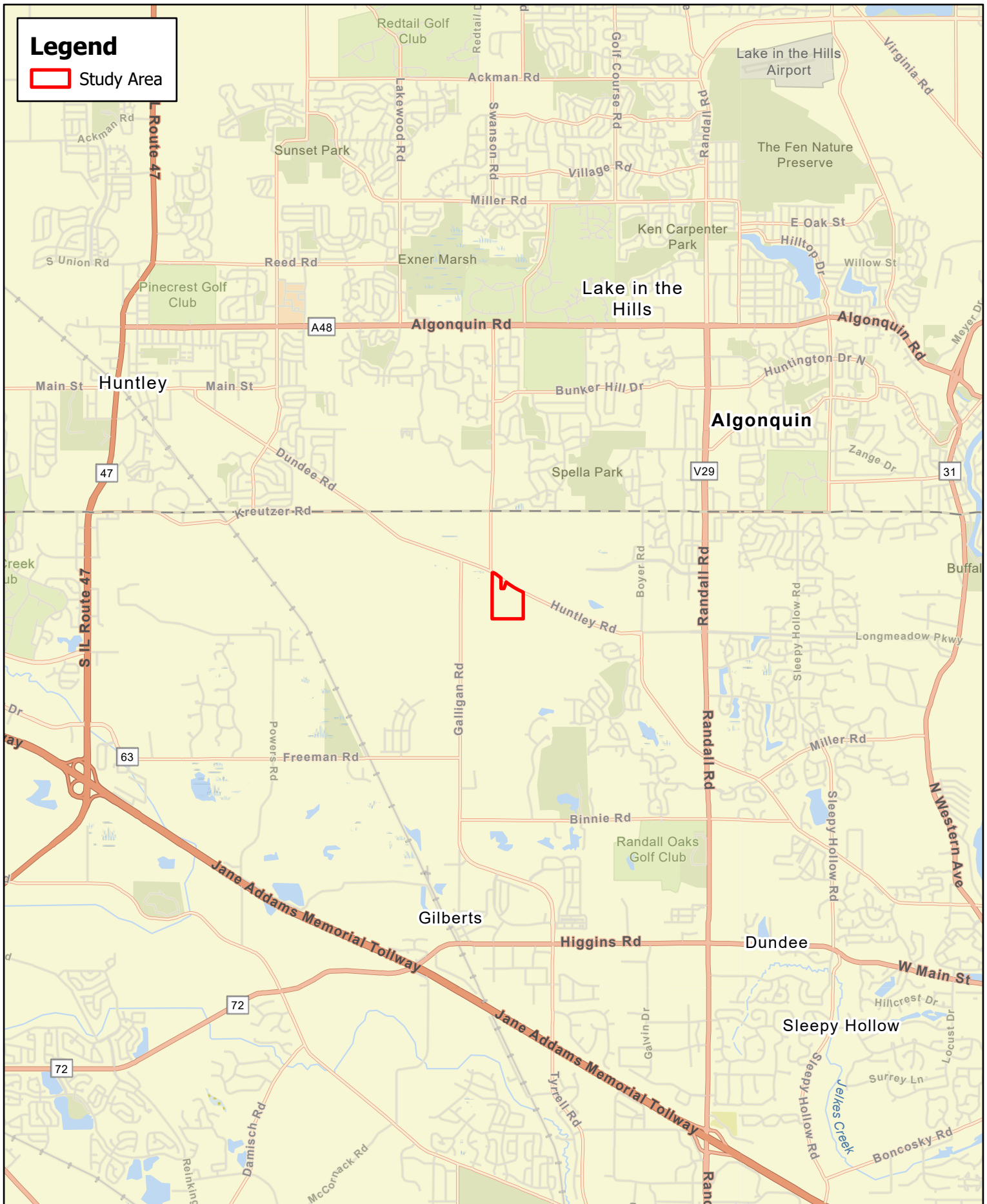
Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
2002	Agricultural	Normal	No wetland signatures present.
2006	Agricultural	Normal	Crop stress present on the southern sloped boundary of the study area.
2008	Agricultural	Wetter than Normal	No wetland signatures present.
2010	Agricultural	Wetter than Normal	Crop stress present in the middle of the study area and on the southern sloped boundary of the study area.
2011	Agricultural	Normal	Crop stress present on the southern sloped boundary of the study area.
2013	Agricultural	Wetter than Normal	Soil saturation present in the middle of the study area.
2016	Agricultural	Normal	No wetland signatures present.
2017	Agricultural	Wetter than Normal	Soil saturation present in the southwest corner of the study area.
2018	Agricultural	Wetter than Normal	Crop stress present on sloped boundaries in the southern portion of the study area.
2019	Agricultural	Wetter than Normal	No wetland signatures present.
2020	Agricultural	Wetter than Normal	Crop stress and drowned out crops present in the southwest corner and in two areas in the center of the study area.
2021	Agricultural	Drier than Normal	Soil saturation present in the southwest corner of the site.

Potential areas of stunted or stressed vegetation were visible on the reviewed historic aerials. However, none of the areas meet desktop wetland criteria.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the Level 1 Wetland Delineation, Kimley-Horn identified no potential wetlands within the property. Based on the historic review, no continued stunted or stressed vegetation is visible during the growing season within the study area. If the current (as of the date of this report) project extents remain as-is, a field delineation would not be needed. The site plan is included as Attachment B.

Figures



Legend
 Study Area



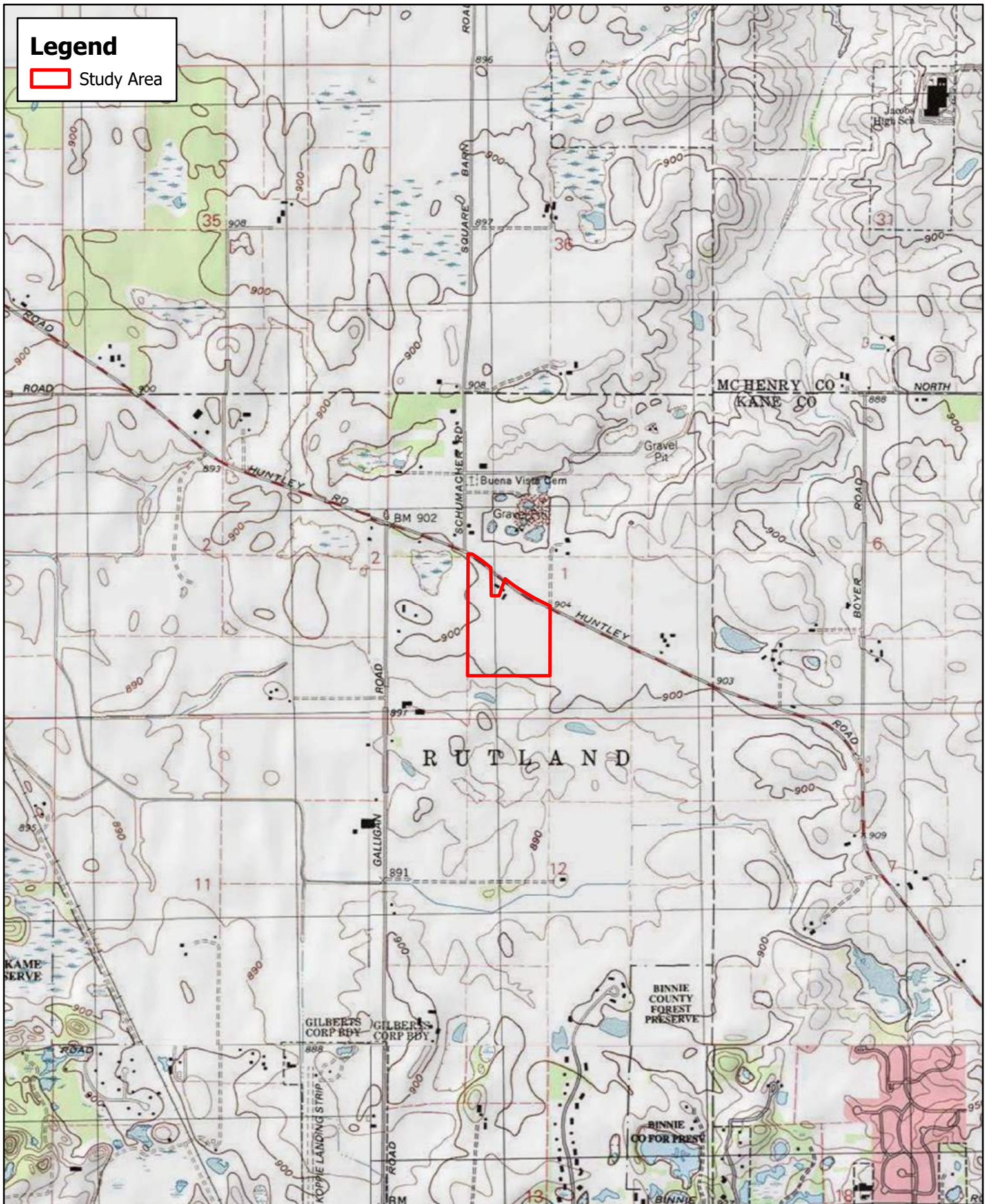
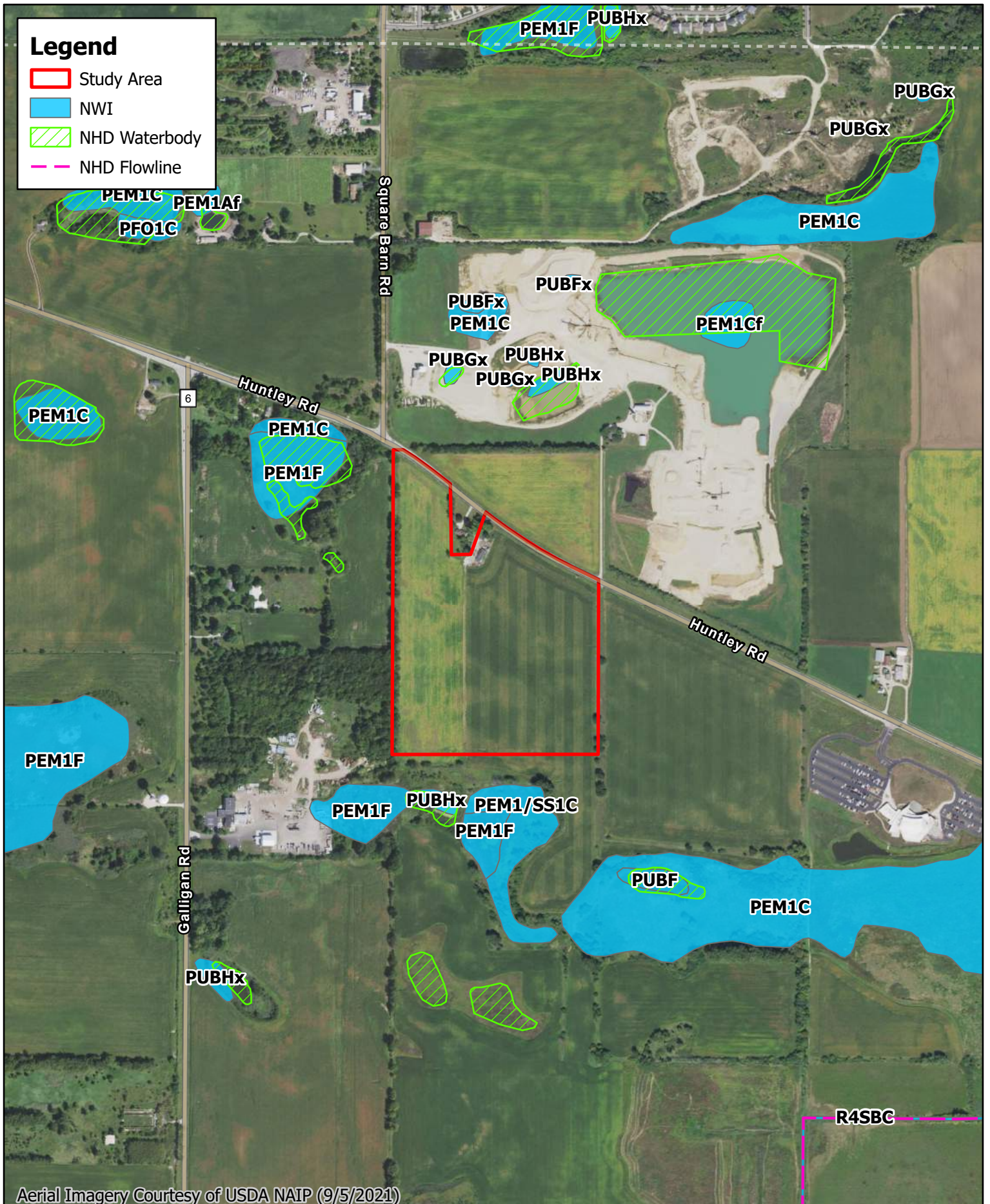


Figure 3. USGS Topographic Map
 Rutland Township, Kane County
 TPE IL KN415, LLC

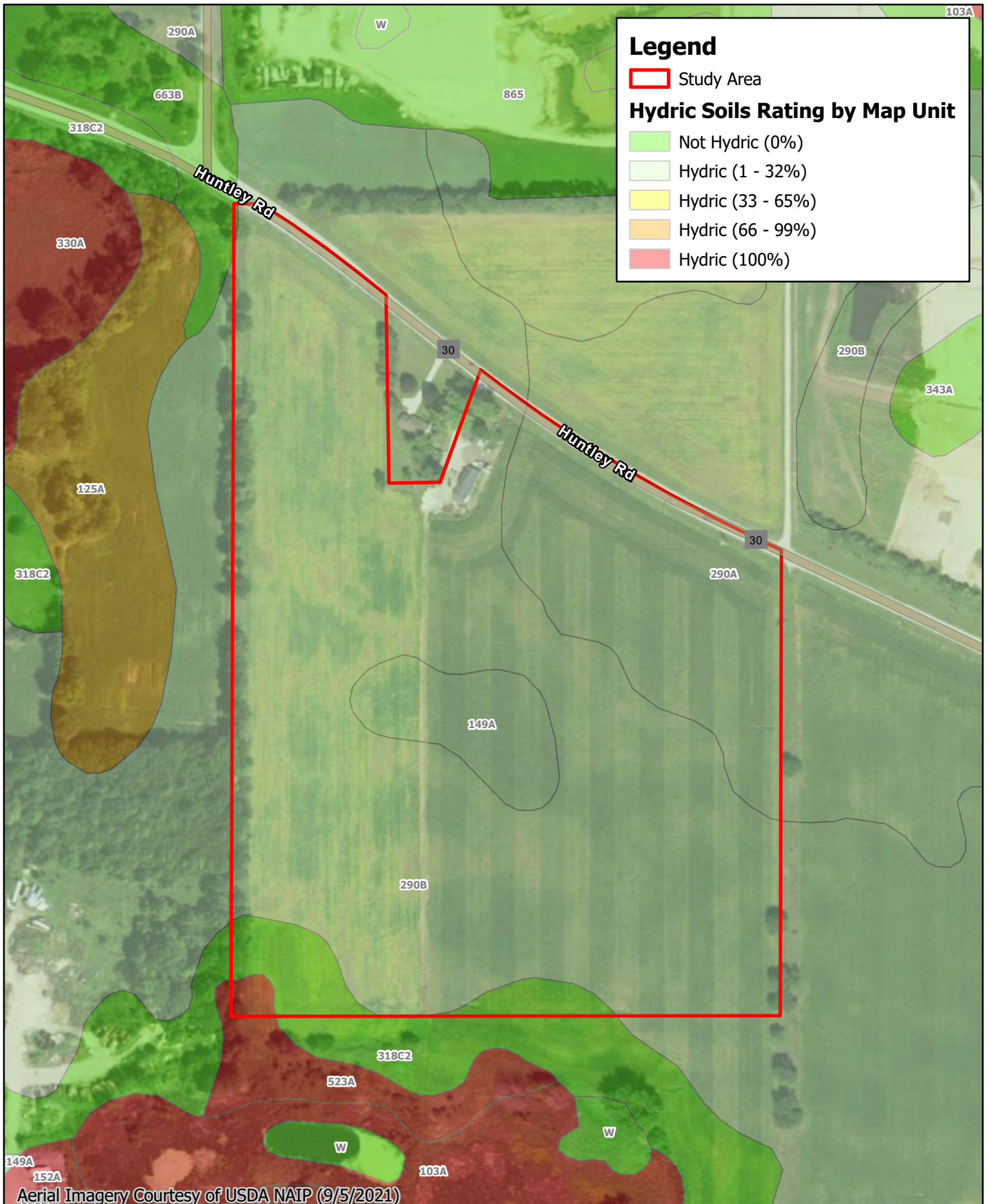




Aerial Imagery Courtesy of USDA NAIP: (9/5/2021)

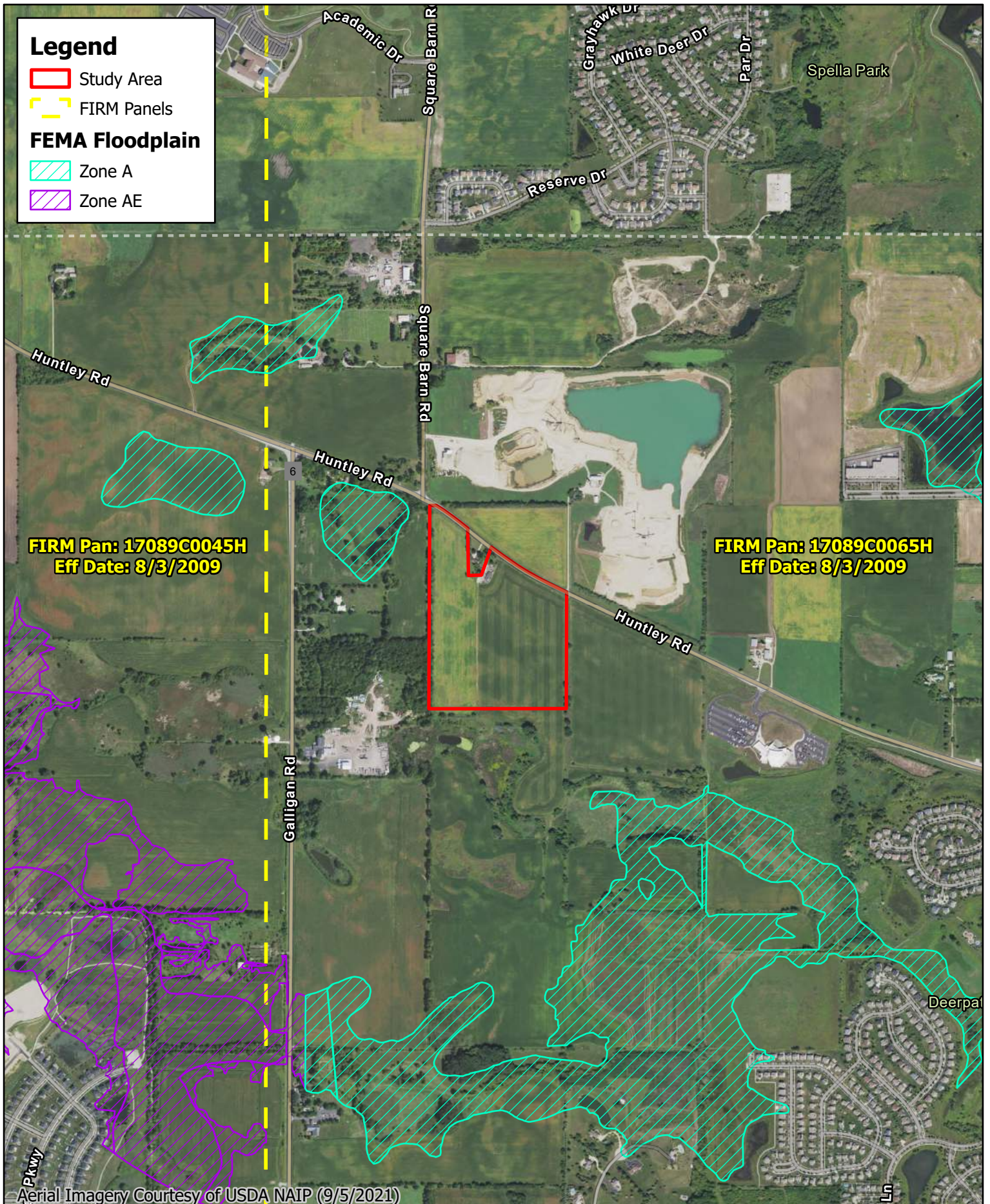


Figure 5. 2-ft Contours Map
Rutland Township, Kane County
TPE IL KN415, LLC



Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
149A	Brenton silt loam, 0 to 2 percent slopes	3	2.5	5.6%
290A	Warsaw loam, 0 to 2 percent slopes	5	7.9	17.5%
290B	Warsaw loam, 2 to 4 percent slopes	5	32.9	72.5%
318C2	Lorenzo loam, 4 to 6 percent slopes, eroded	0	1.8	3.9%
523A	Dunham silty clay loam, 0 to 2 percent slopes	100	0.2	0.5%
663B	Clare silt loam, 2 to 5 percent slopes	0	0.0	0.0%
Totals for Area of Interest			45.4	100.0%

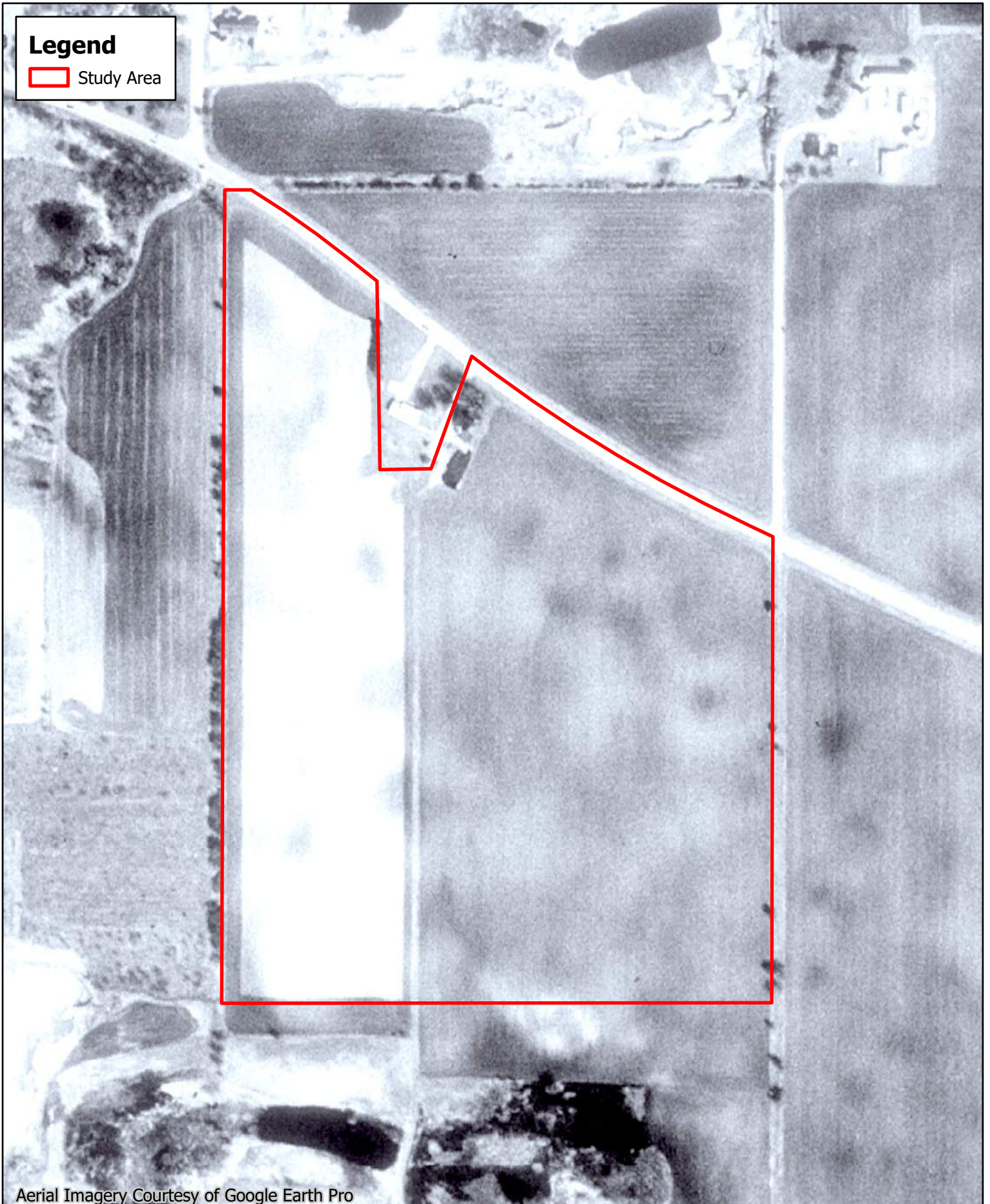


ATTACHMENT A

Historic Aerials

Legend

 Study Area



Aerial Imagery Courtesy of Google Earth Pro



Legend

 Study Area

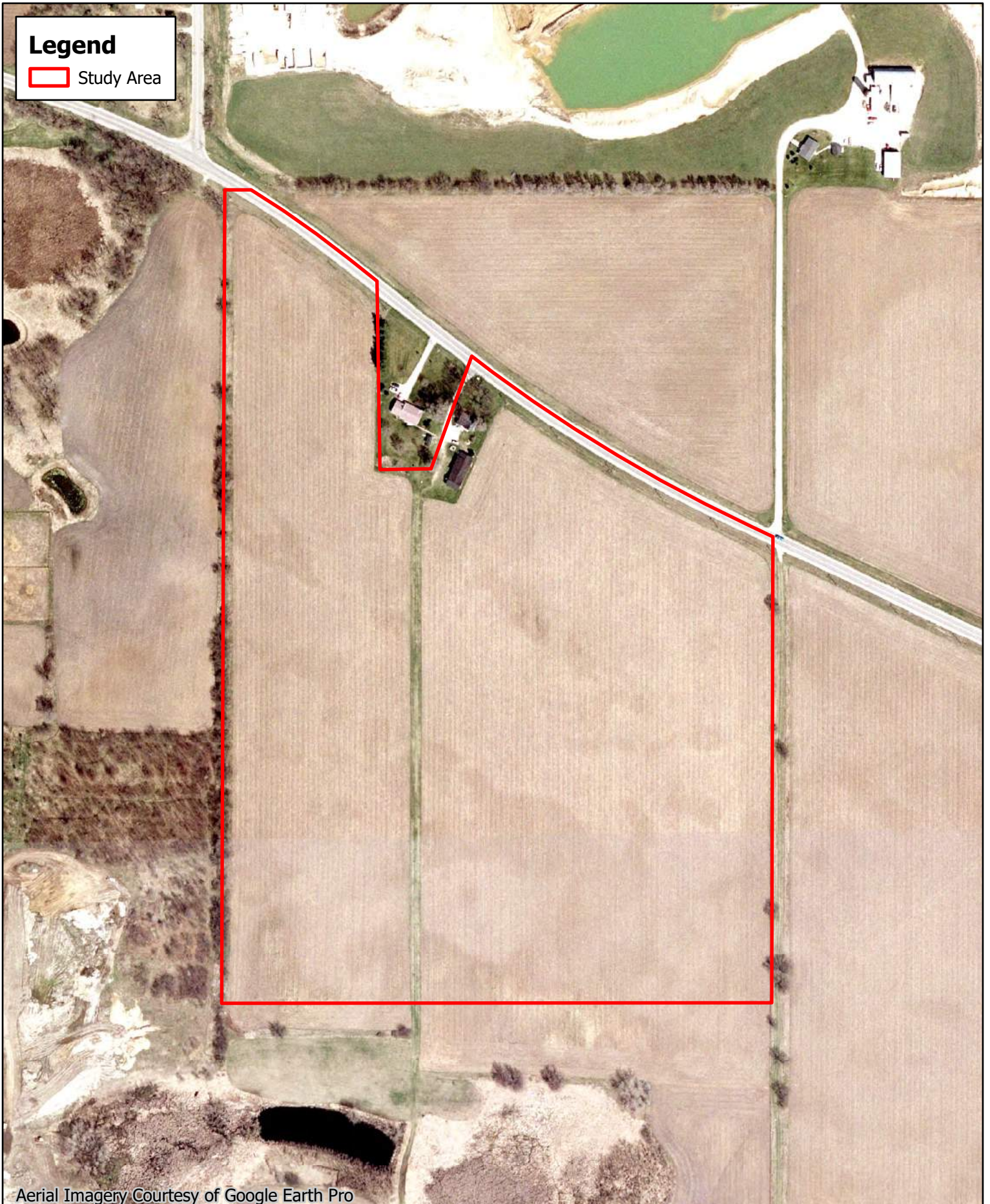


Aerial Imagery Courtesy of Google Earth Pro



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 Study Area



Aerial Imagery Courtesy of Google Earth Pro



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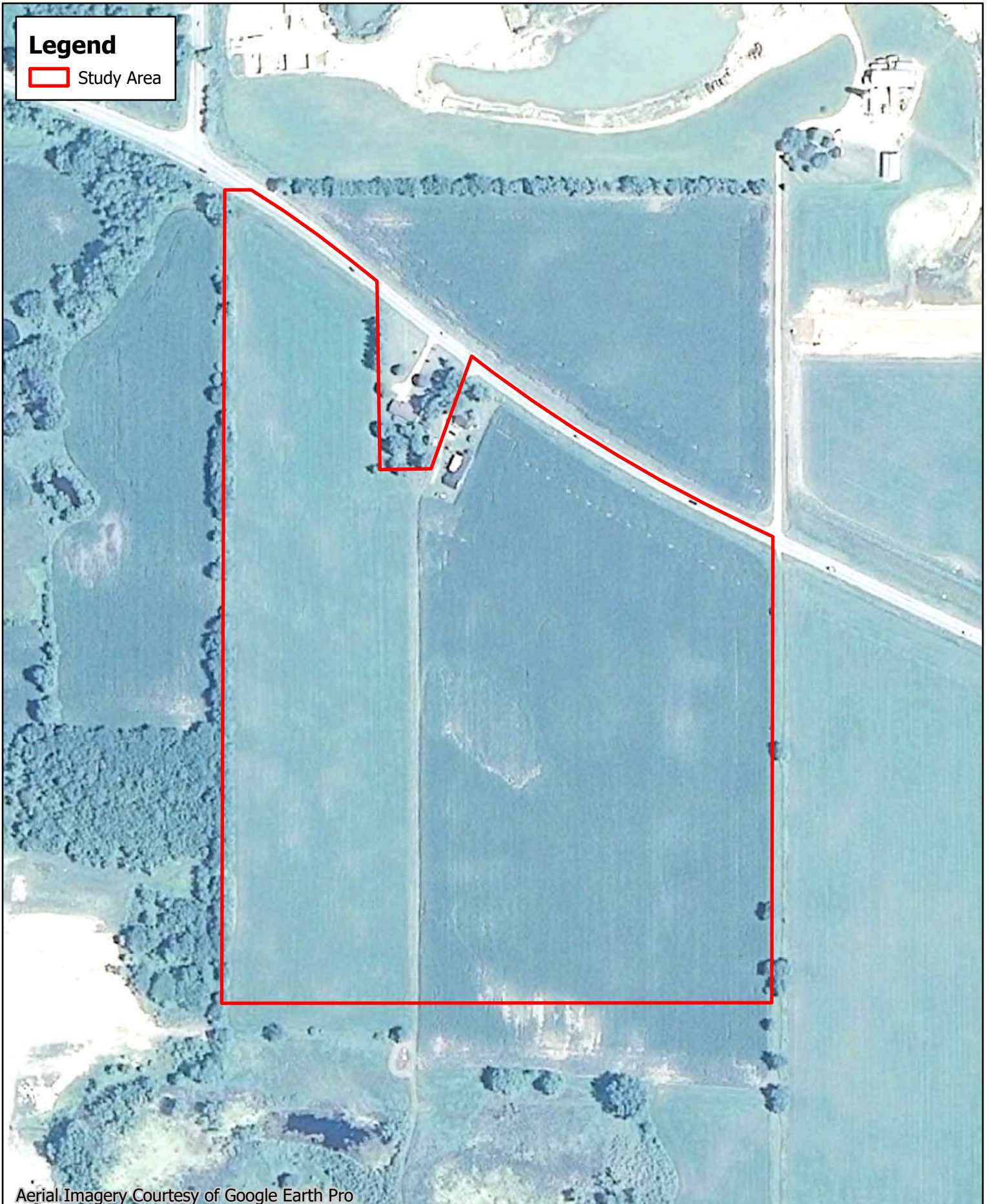


Aerial Imagery Courtesy of Google Earth Pro



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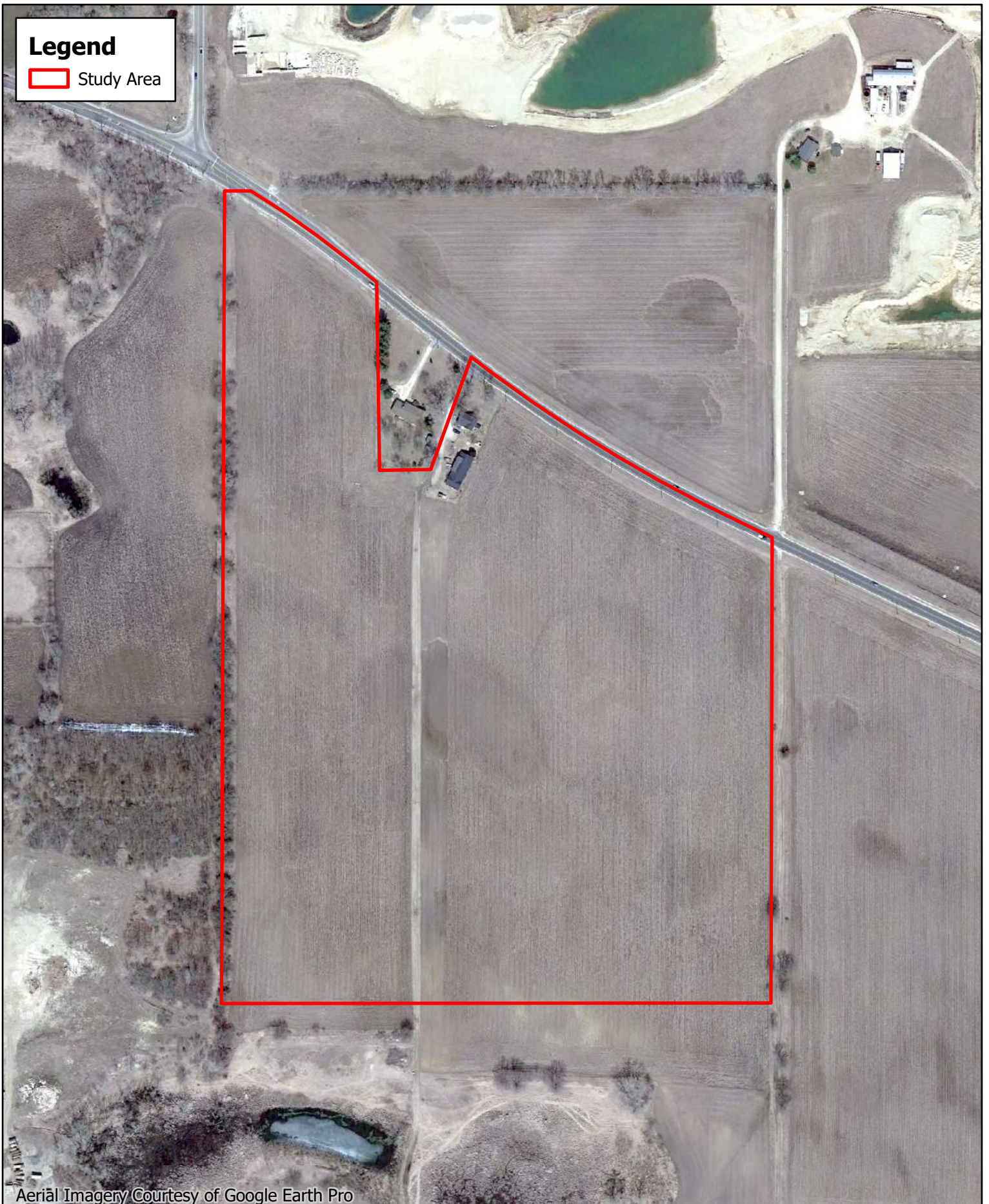


Aerial Imagery Courtesy of Google Earth Pro



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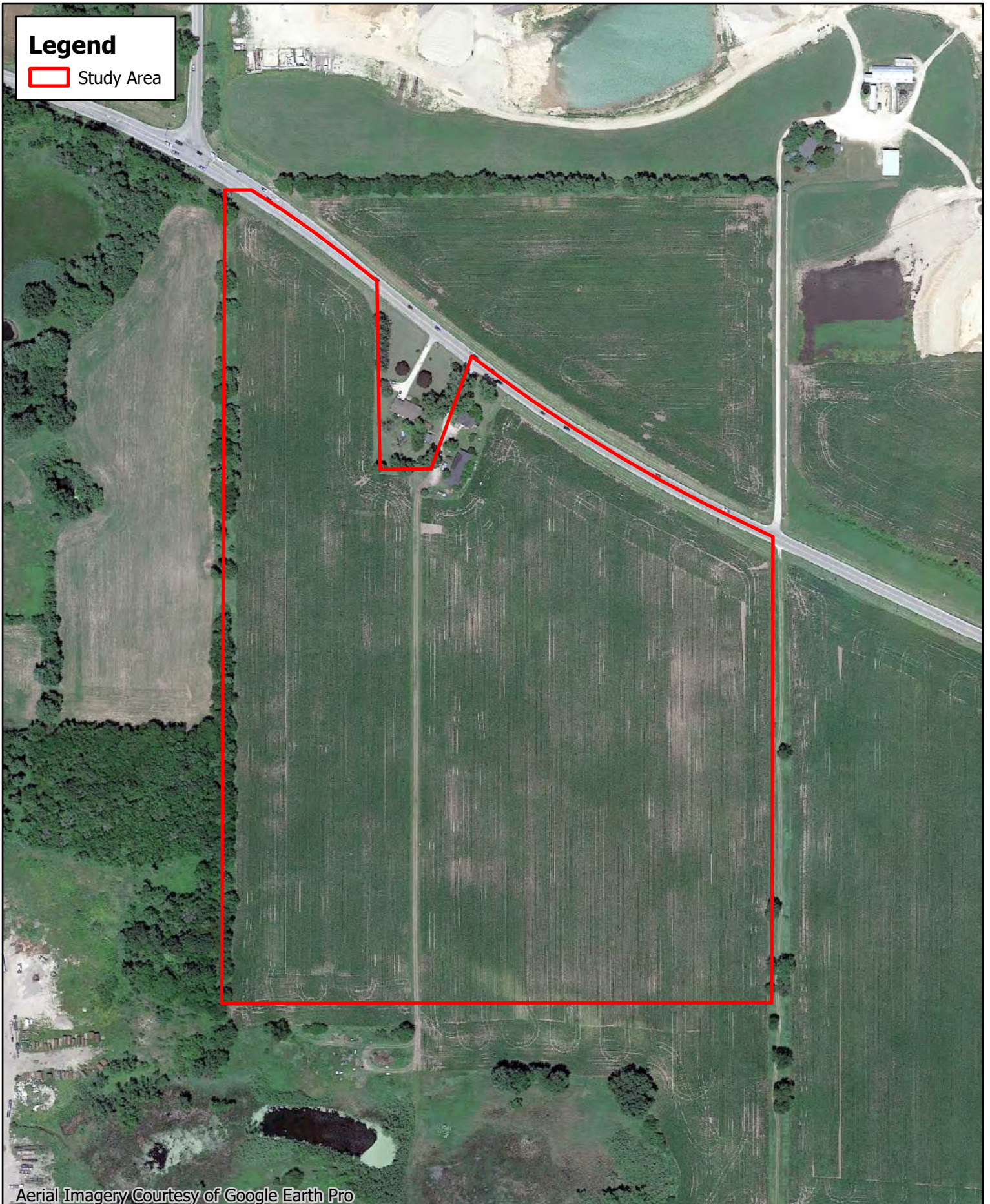


Aerial Imagery Courtesy of Google Earth Pro



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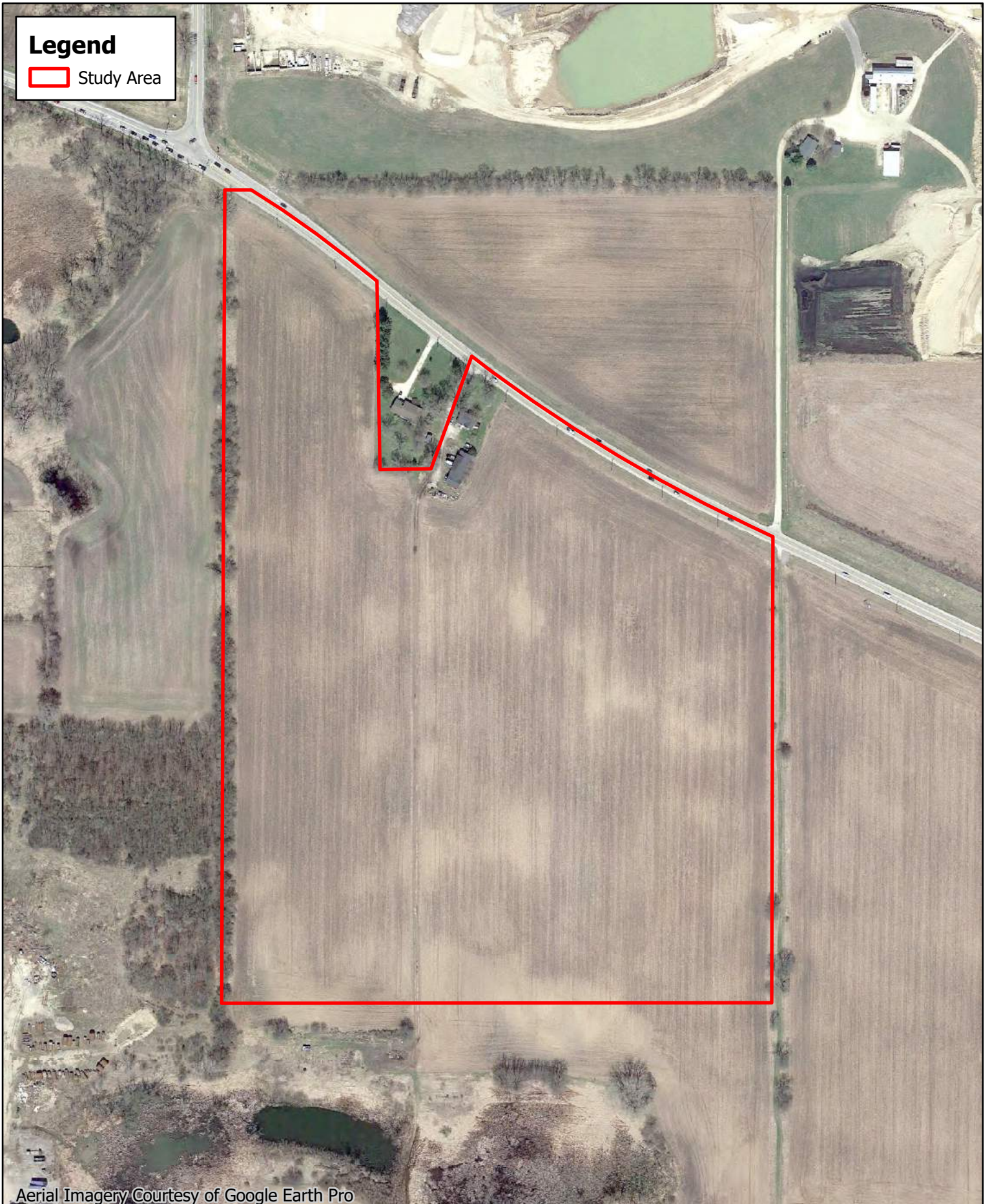


Aerial Imagery Courtesy of Google Earth Pro



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Aerial Imagery Courtesy of Google Earth Pro



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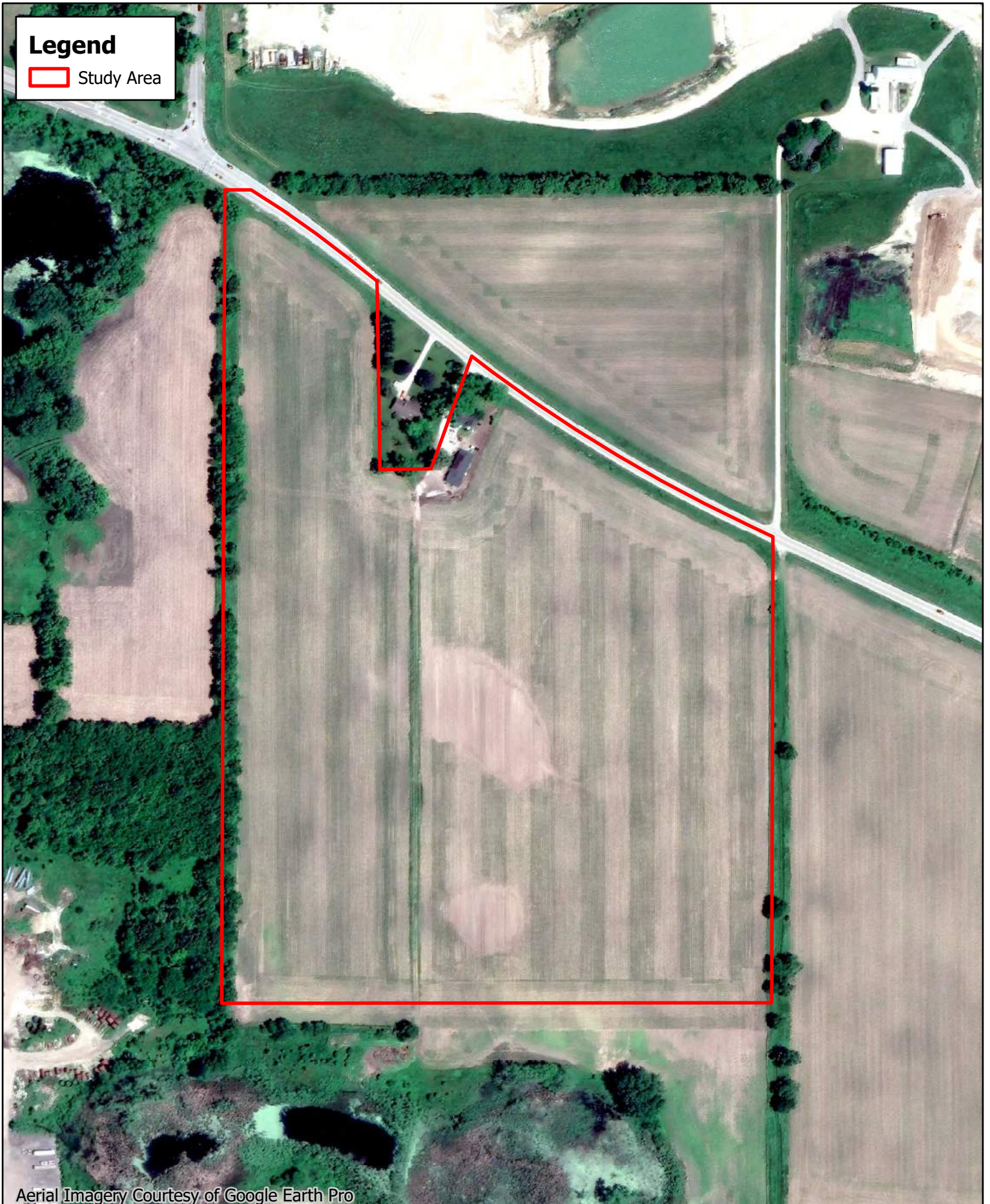


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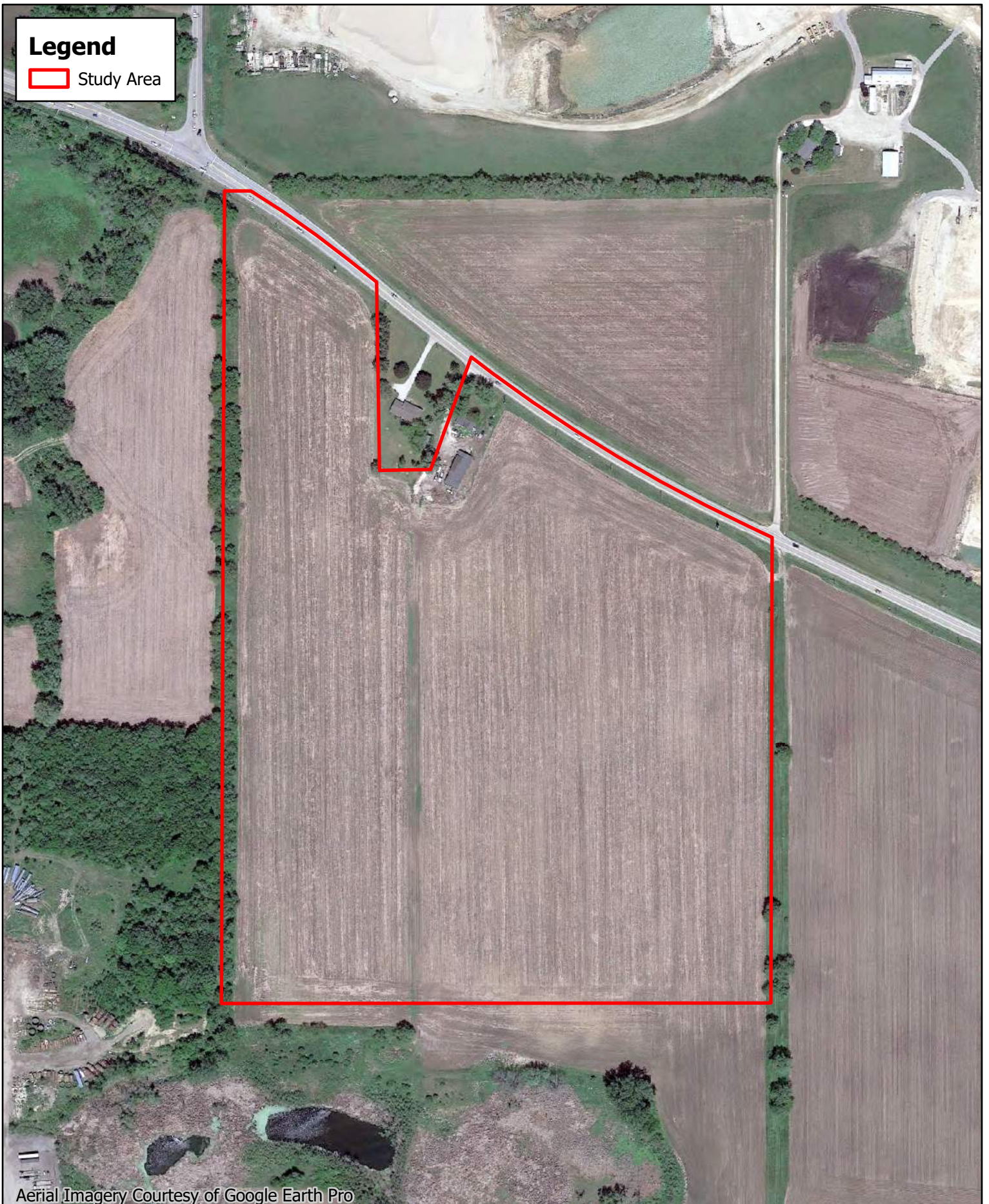


Aerial Imagery Courtesy of Google Earth Pro



Legend

 Study Area



Aerial Imagery Courtesy of Google Earth Pro



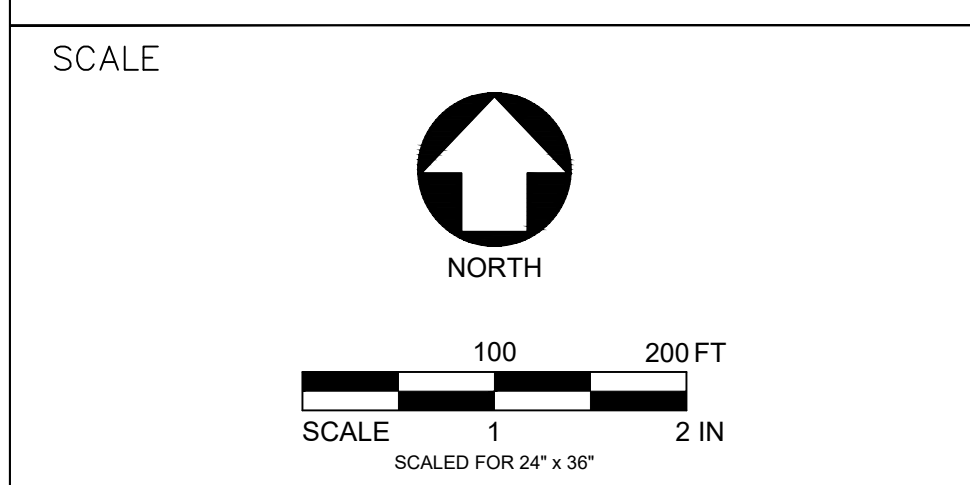
ATTACHMENT B

Site Plan



SYSTEM SUMMARY

AC SYSTEM SIZE	4.99MW _{AC}
DC SYSTEM SIZE	7.50MW _{DC}
OVERALL SITE AREA	45.39 ACRES
LEASE AREA	36.28 ACRES
TOTAL LOD	34.46 ACRES
FENCE AREA	33.08 ACRES
ARRAY AREA	29.45 ACRES
GEN-TIE LENGTH	252 FEET
TOTAL NEW ROADS LENGTH	219 FEET
TOTAL NEW ROADS AREA	4,741 SQFT
TOTAL FENCE LENGTH	5,573 FEET
TREE CLEARING AREA	0.00 ACRES
TOTAL NEW LANDSCAPING	0 FEET
GCR	33%
MODULE STC RATING	555 W
MODULE QUANTITY	13,520
STRING SIZE (# PANELS)	26
STRING QUANTITY	520
NUMBER OF TRACKERS	1 STRINGS TRACKER- 19 2 STRINGS TRACKER- 66 3 STRINGS TRACKER- 123
RACK TYPE	SINGLE AXIS TRACKER
ARRAY AZIMUTH	180°
TILT ANGLE	60° TO 60°
TOTAL LAYDOWN AREA	0.27 ACRES
PARCEL ID	02-01-300-018
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 LAND OWNER
**ILKN415 BENNER, STEVEN
G & TAMARA L**

ADDRESS
**HUNTLEY RD,
DUNDEE, IL 60118**

REV	DESCRIPTION	DATE

PROJECT # **ILKN415** DRAWN BY **EQ**

DATE **2023-06-30**

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