

March 16th thru 18th, 2021 Wetland Restoration Training
Minnesota Technical Training and Certification Program

Homework Assignment No. 2

A landowner in Becker county is interested in enrolling 55 acres in a conservation program and restoring drained wetlands within the property.

The site was previously enrolled in CRP and the CRP contract has recently expired. No wetlands were restored on the property as part of CRP enrollment.

A number of shallow ditches exist within the site and are providing drainage to several wetland areas. Also included are a number of small, shallow wetlands that are not drained but were occasionally farmed prior to enrollment into CRP.

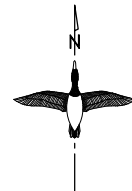
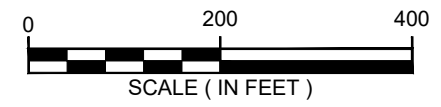
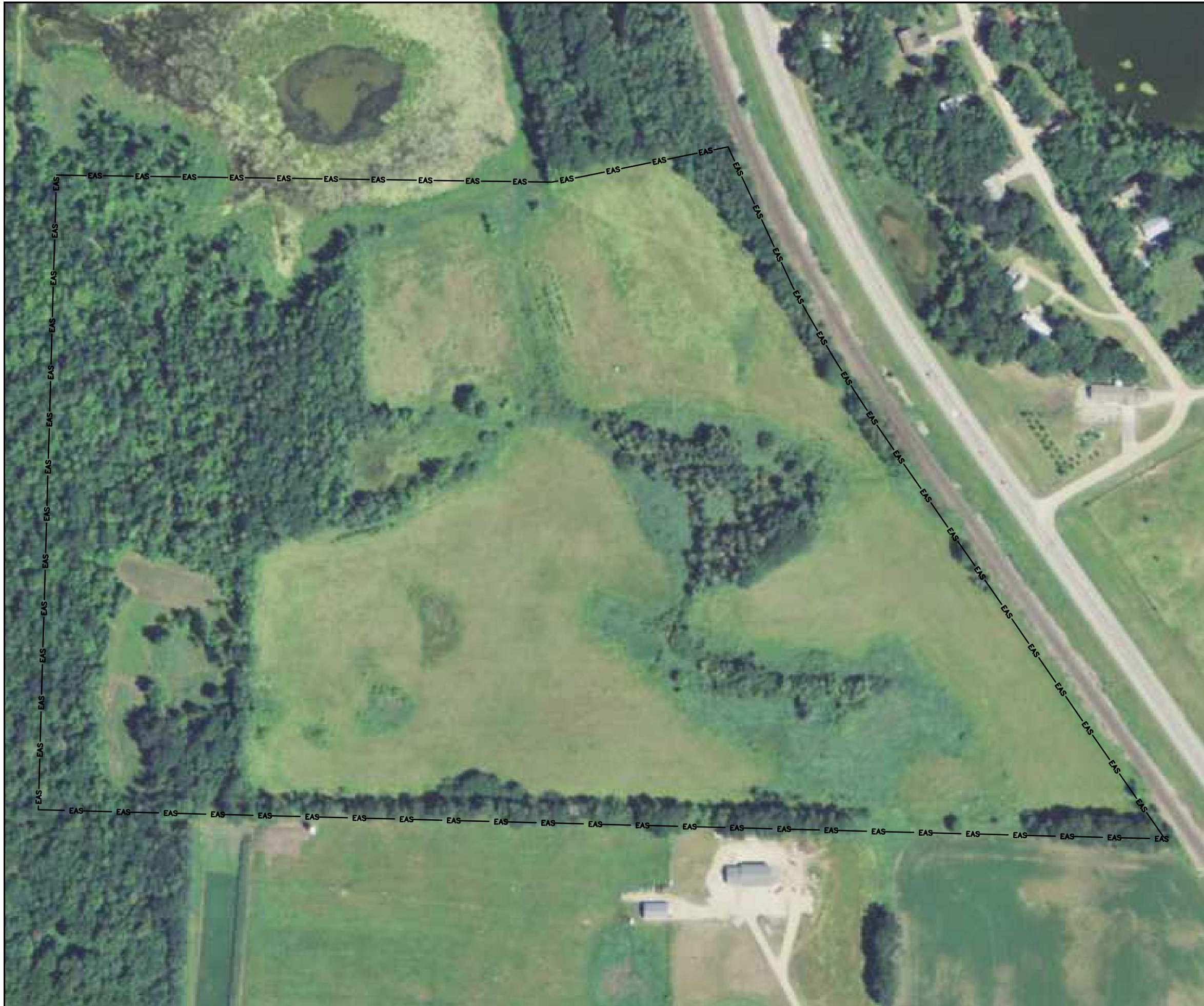
The landowner would like as much water as possible as a result of the planned restorations but is concerned about impacts to the south property line and the culvert through the highway infrastructure to the east of the site.

Included for reference are:

- Aerial photo of the site.
- LiDAR derived contour map of the site along with a survey shot displayed on the downstream invert of the highway culvert.
- Watershed map of several identified subcatchments using the ArcGIS Watershed Tools application with a depth grid background.
- Web Soil Survey - Hydric Soils map of the site and soils listing.

Homework assignment. On the provided contour map identify the following:

1. Locations and elevations of planned wetland restorations.
2. Locations and types of construction strategies planned to disable the ditch systems and achieve the identified restorations.
3. Types of outlet structures (if any) suggested for the planned wetlands.
4. Determine if any of the planned outlets are able to be designed using the design tables as part of MN EFH 13.
5. Identify other restoration strategies that might be considered to help with the restorations and improve wildlife habitat.



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

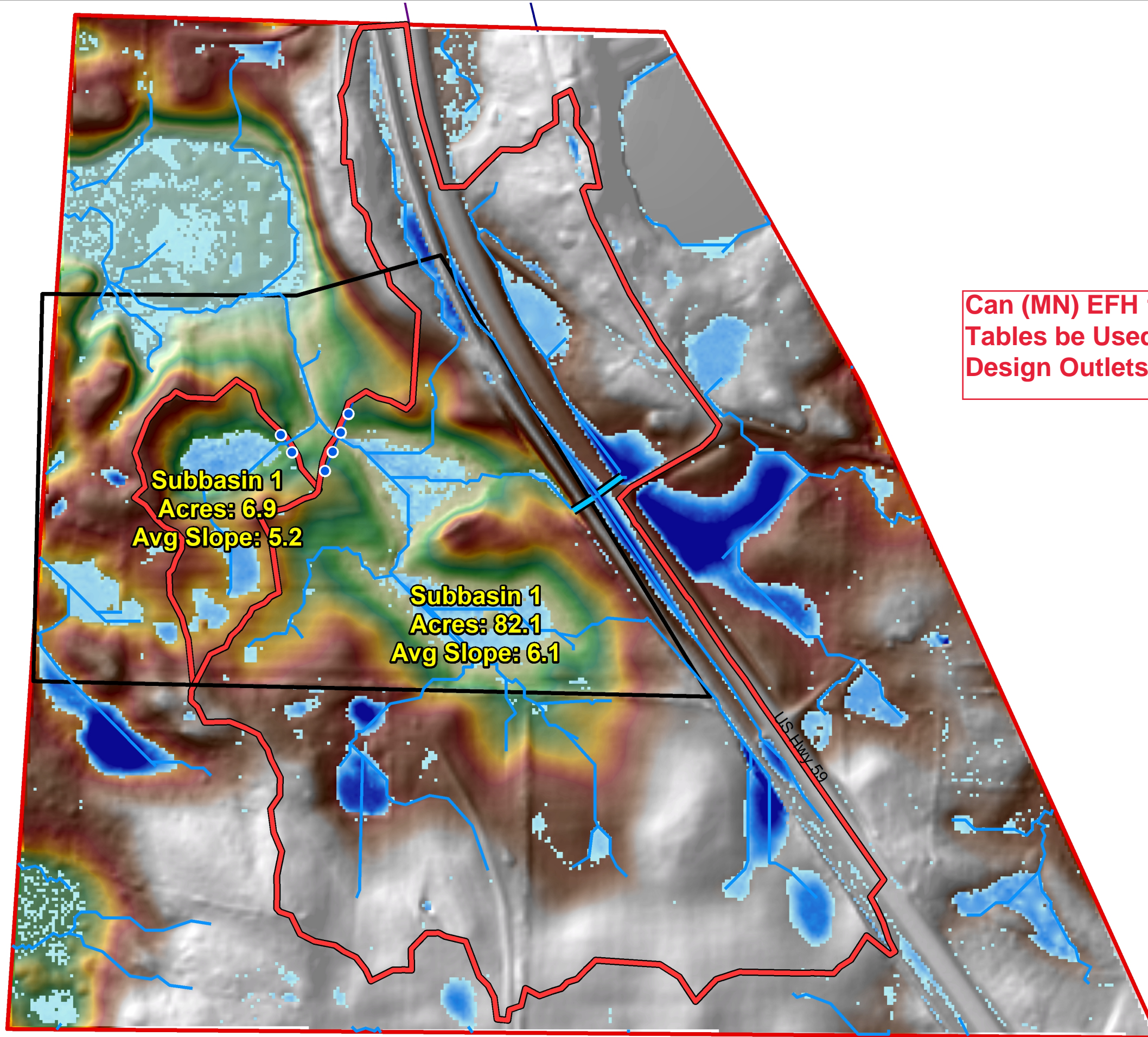
DATE: . . . LIC. NO. . .



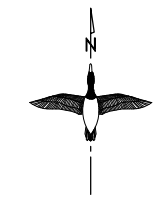
MARCH 2021 WETLAND RESTORATION TRAINING
 HOMEWORK ASSIGNMENT #2
PRELIMINARY CONCEPT PLAN

PROJECT #:

 SHEET NO.
1 OF **1**



Can (MN) EFH 13 Design Tables be Used To Design Outlets?



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

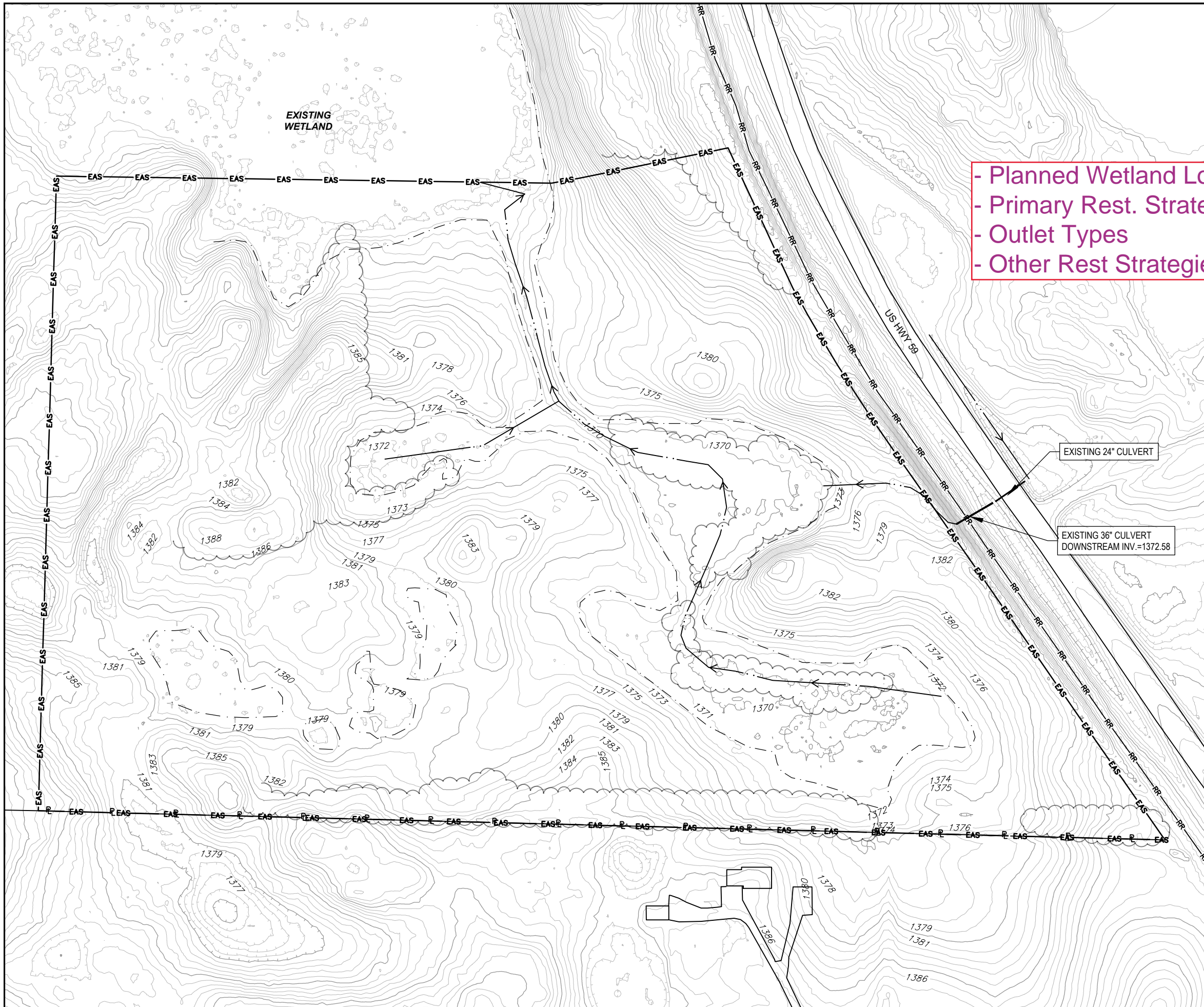
DATE: LIC. NO.



MARCH 2021 WETLAND RESTORATION TRAINING
HOMEWORK ASSIGNMENT #2
PRELIMINARY CONCEPT PLAN

PROJECT #:

SHEET NO.
1 OF **1**



- Planned Wetland Locations/Elev's
- Primary Rest. Strategies
- Outlet Types
- Other Rest Strategies

LEGEND

- EXISTING DITCH
- EXISTING WETLAND EDGE
- EXISTING TREELINE
- EXISTING PROPERTY LINE
- EXISTING RR TRACKS
- PROPOSED EASEMENT LINE



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.



MARCH 2021 WETLAND RESTORATION TRAINING
 HOMEWORK ASSIGNMENT #2
 PRELIMINARY CONCEPT PLAN

PROJECT #:

SHEET NO.
1 OF **1**

DATE: . . . LIC. NO. . .

Hydric Rating by Map Unit

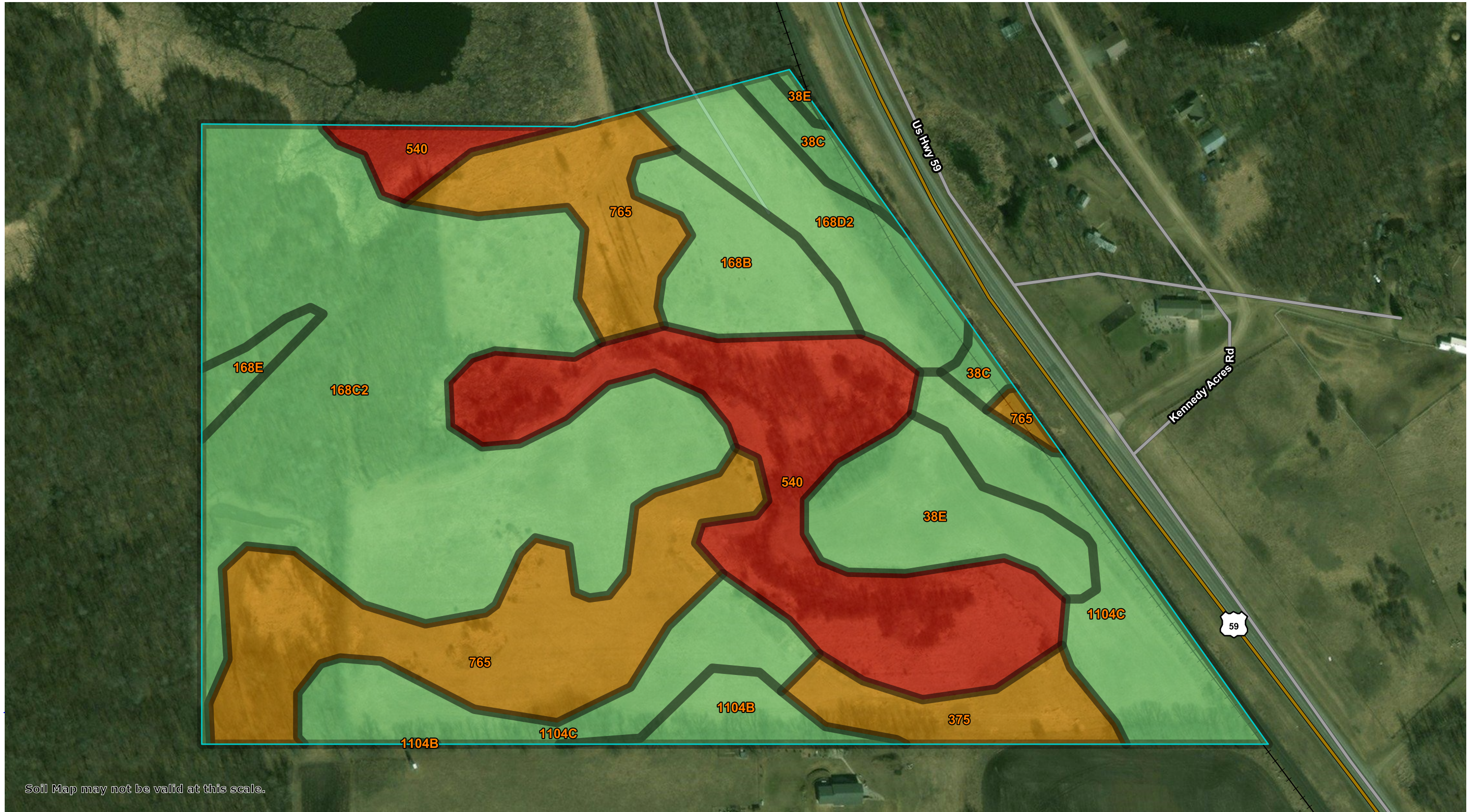
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
38C	Waukon loam, 6 to 12 percent slopes	7	0.8	1.6%
38E	Waukon loam, 15 to 30 percent slopes	8	2.9	5.5%
168B	Forman clay loam, 2 to 6 percent slopes	5	2.3	4.4%
168C2	Forman-Buse complex, 6 to 12 percent slopes, moderately eroded	8	16.1	30.6%
168D2	Forman-Buse complex, 12 to 20 percent slopes, moderately eroded	8	2.9	5.5%
168E	Forman clay loam, 20 to 30 percent slopes	4	0.5	0.9%
375	Forada sandy loam, 0 to 2 percent slopes	85	1.9	3.5%
540	Seelyeville-Seelyeville, ponded, complex, 0 to 1 percent slopes	100	8.6	16.4%
765	Smiley loam	98	9.1	17.4%
1104B	Waukon-Dorset complex, 1 to 8 percent slopes	3	1.0	2.0%
1104C	Waukon-Dorset complex, 8 to 15 percent slopes	3	6.4	12.2%
Totals for Area of Interest			52.5	100.0%

95° 54' 10" W

95° 53' 27" W

46° 52' 24" N

46° 52' 24" N



46° 52' 8" N

46° 52' 8" N

95° 54' 10" W

95° 53' 27" W



Map Scale: 1:2,490 if printed on B landscape (17" x 11") sheet.

0 35 70 140 210 Meters

0 100 200 400 600 Feet

Map projection: Web Mercator Corner coordinates: WGS84

