North Dakota Tree and Shrub Mitigation Plan

230kV/115kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

June 2018

North Dakota Tree and Shrub Mitigation Report

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1.0 Introduction

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy is in the process of constructing a new substation near Minot and an approximately 20.5-mile-long double circuit 230/115 kilovolt (kV) transmission line connecting the new substation to an existing substation near the City of Velva. The Project was approved by the North Dakota Public Service Commission on October 4, 2017 under Corridor Certificate Number 200 and Route Permit Number 211 (Case No. PU-17-102). Item Number 23 in the Certificate required a tree and shrub mitigation plan. This submittal presents, for Commission approval, the plan to comply with tree and shrub mitigation requirements.

2.0 Tree and Shrub Survey

A tree and shrub survey was conducted in September 2017. Methods and results of this survey are documented in a Tree inventory memo attached as Appendix A. The tree survey identified all trees and shrubs in the proposed right of way. Tree species and size were recorded and categorized as to which parcel (plot) the tree was found.

The surveyed corridor is the 150 foot right of way for the proposed double circuit 230/115kV transmission line as permitted in Docket PU-17-102. In total 2617 trees and shrubs were identified in the project Right of Way (ROW). Inventoried tree plots are presented in Appendix B. Photos of the tree plots are presented in Appendix C.

The purpose of this survey was to inventory and categorize all trees and shrubs that would be removed so an appropriate tree mitigation plan could be developed. These mitigation requirements were set by the North Dakota PSC and are outlined within the "Tree and Shrub Mitigation Specifications" section of the PSC's "Findings of Fact, Conclusions of Law and Order," (i.e. Route Permit) issued October 4, 2017.

3.0 Tree Mitigation Plan

3.1 Mitigation Approach

Xcel has planned tree mitigation for all trees counted within the surveyed plots. The mitigation plan includes the following parameters:

- Trees will be replaced at a 2:1 ratio with saplings at least two years of age. Two shrubs (stem cuttings) will be planted for each shrub removed.
- Trees will generally be replaced in-kind; however, landowner preferences will be recognized, non-native species will be replaced with similar native species included in the North Dakota Tree Handbook. Landowner requests for specific species will be honored if requested trees are available. Similarly, if landowners request trees to replace shrubs, those requests are also accommodated.

- All mitigation trees will be planted outside of the project right-of-way, at locations on the affected parcel, unless otherwise specified by the impacted landowners.
- Some inventoried low-growing shrubs will be removed. As such, these compatible shrubs remain in the Right of Way and are not replaced in this mitigation plan.

Once the tree inventory and ROW clearing was completed, two parcels were observed to have a significant number of inventoried shrubs remaining in the ROW. These shrubs were inventoried post clearing to produce a more accurate inventory for mitigation purposes. As Parcel 005 (Basin Electric Power Coop.) was primarily inventoried using the extrapolated representative plot method, the areas of the clearings were used to extrapolate the number of mitigated trees. Parcel 10 (Colby) was inventoried using the direct count method and the number of remaining shrubs were counted and subtracted from the original inventory numbers. Calculations and inventory totals are found in Appendix A.

3.2 Landowner Coordination

Landowners were contacted in early 2018 to identify participants and locations for tree mitigation. Notes of these consultations are presented in the signed waivers included in Appendix D. The number of trees and shrubs available for mitigation was calculated using Tree and Shrub Inventory completed in September 2017.

Landowners accepting mitigation trees (Table 1) and shrubs were offered replacement species in-kind or of similar species at a 2:1 ratio. In the case of invasive or noxious tree species (i.e. buckthorn), alternate species from the North Dakota Forest Service's North Dakota Tree Handbook were offered. Alternate species were also selected based on what is typically available from commercial nursery suppliers in North Dakota. Landowner requests for species other than those offered were considered and approved on a case-by case basis. All mitigation trees and shrubs will be planted outside the transmission right-of-way (ROW) on the affected parcel, unless otherwise specified by the impacted landowner.

To maximize efficiency of tree planting and future maintenance requirements, all waived trees were offered as additional trees to landowners accepting mitigation trees (Table 2). All waived trees were accounted for in this manner.

Landowners accepting tree mitigation were asked to provide information regarding where they would like the mitigated trees planted on their properties. Species data, landowner acceptance/waiver and drawings of the mitigation planting locations are located in Appendix B.

Table 1 – Summary of Landowner Mitigation Acceptance and Number of Eligible Trees and Shrubs for Mitigation Per Landowner

Parcel #	Plot ID	Landowner	Mitigation Accepted	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity
5	1, 2A, 2B, 3, 4A, 4B, 4C, 4D, 5	Basin Electric Power Cooperative - Shad Erdmann	No	192	14	412
DOT	6	US 52 ROW	No	1	6	14
10	6, 7	Warren Colby and Shea Colby	Yes	103	15	236
14	8	Wanda I. Krumwiede - The Delbert V. Krumwiede Trust	Yes	2	1	6
20	9A	Jim Doyle	No	5	0	10
23,24	10, 11, 12, 13, 14	Philip Duchsherer and Gary Duchsherer	No Response	23	7	60
26, 29, 32,39	14A, 15, 16, 17, 18, 19, 20, 22, 23	Curtis and Bonnie Feist	Yes	26	186	424
41	24, 25	Country Edge Estates, LLC	Yes	28	20	96
55A	26, 27	Paul and Karen Thomas	Yes	56	47	206
60, 61	28, 29	Mary Ann Peterschik, Joseph A. Krumwiede, William E. Krumwiede and Jean E. Krumwiede	Yes	101	51	304
70	30	Prairie View Ranch	Yes	9	5	28
82	31	Ronald J. Effertz and Marla J. Effertz, The Effertz Family Trust	No response	55	3	116
126,131	37A, 37B, 39	Edward Saugstad and Craig Saugstad Residuary Trust of Nels Stanley Saugstad	Yes	8	54	124
135	34, 34A, 34B, 34C	Jim and Rose Hystad	Yes	19	7	52
137, 139	32, 33, 33A, 35	Jerry and Norma Effertz	Yes	1	3	8
			Total	629	419	2096

Table 2 – Summary of Landowner Mitigation Acceptance and Number of Requested Plants for Mitigation

Parcel #	Landowner	Mitigation Accepted	# of Eligible Plants Accepted		# of Additional Plants Requested		Total mitigated Plants
			Shrub	Tree	Shrub	Tree	
5	Basin Electric Power Cooperative - Shad Erdmann	No	0	0			0
DOT	US 52 ROW	No	0	0			0
10	Warren Colby and Shea Colby	Yes	0	236	0	65	301
14	Wanda I. Krumwiede - The Delbert V. Krumwiede Trust	Yes	4	2	0	12	18
20	Jim Doyle	No	0	0			0
23,24	Philip Duchsherer and Gary Duchsherer	No Response	0	0			0
26, 29, 32,39	Curtis and Bonnie Feist	Yes	52	372	0	0	424
41	Country Edge Estates, LLC	Yes	0	96	0	464	560
55A	Paul and Karen Thomas (Trees already planted as separate agreement)	Yes	56	47			242
60, 61	Mary Ann Peterschik, Joseph A. Krumwiede, William E. Krumwiede and Jean E. Krumwiede	Yes	0	40	0	0	40
70	Prairie View Ranch	Yes	0	28	0	300	328
82	Ronald J. Effertz and Marla J. Effertz, The Effertz Family Trust	No response	55	3			0
126,131	Edward Saugstad and Craig Saugstad Trust of Nels Stanley Saugstad	Yes	16	108	0	0	124
135	Jim and Rose Hystad	Yes	38	14	0	0	52
137, 139	Jerry and Norma Effertz	Yes	2	6	4	23	35
		Total	112	902	4	864	2124

3.3 McHenry Substation

The McHenry Substation is being modified by Great River Energy (GRE). This work required removal of trees on the GRE property. GRE performed a separate tree inventory and is proposing to re-plant on its own property as follows:

	Tree Type Removed	Total Removed	Tree Type Replacements	Required
Large Tree	Cottonwood	22	Black Hills Spruce / Colorado Blue Spruce	44
Small Tree/Shrub	Russian Olive	8	Buffaloberry, chokecherry, Cherry	16
Small Tree/Shrub	Cottonwood	15	American Plum, Lilac, Apple	30
Total		45		90

Additional information regarding planting at the McHenry Substation is presented in Appendix C.

3.4 Mitigation Tree Planting

Xcel will select a qualified contractor to plant mitigation trees in the designated locations. Planting is anticipated to take place in Fall 2018 or Spring 2019, depending on availability of mitigation species. Per the NDPSC permit Case No. PU-17-102, each tree will be mitigated using two year old saplings at a 2:1 ration and each shrub will be replaced with two stem cuttings. Documentation identifying the actual number, species, type, location and date of the mitigation plantings will be provided to Xcel by the contractor to be filed with the NDPSC.

The landowner at Parcel 55A negotiated landscaping as part of easement compensation. As such, planting has already been performed at this parcel and many of the trees are larger landscape trees. Details of this work are presented in Appendix D.

4.0 Maintenance and Monitoring

Xcel will select a qualified contractor to plant mitigation trees in the designated locations. Planting is anticipated to take place in Fall 2018 or Spring 2019.

Mitigated trees and shrubs will be inspected annually in September for three years. The first annual inspection will be performed at least one year from the anniversary date of the original plantings. A report of each annual inspection will be submitted to the NDPSC by October of each year. The annual report will document the condition of the plantings and any maintenance work completed as of September of each year. If, after the three-year monitoring period, the tree survival rate is less than 75 percent, the NDPSC may order additional planting(s).

Appendix A

Tree Inventory Report

Technical Memorandum

To: Jerry Lien, ND Public Service Commission
From: Tom Hillstrom, Xcel
Subject: Northern States Power Company
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102
Date:
c: Andrew Welch (Stantec)

This memorandum describes the purpose, goals, methodology and results of a tree and shrub inventory conducted by Norther States Power Company (NSP) September 12, 2017 through September 21, 2017. This survey was conducted as part of the NSP 230kV Transmission Line project. The project was authorized by Corridor Certificate Number 200 and Route Permit Number 211 Route Permit issued by the North Dakota Public Service Commission (PSC) on October 4, 2017 (Case No. PU-17-102).

The Project right-of-way (ROW) is a 17.4 miles, 125-foot wide corridor slated for transmission line construction within the State of North Dakota[1]. This segment of transmission line is planned to be constructed in late 2017. The alignment starts two miles west of the city of Voltaire extending north 3 miles to Valley Road before turning northwest for 15.5 miles to end six miles southeast of Minot at the proposed Magic City Substation.

Purpose

The purpose of this survey was meet mitigation requirements for tree and shrub removal expected to occur as part of the proposed project's construction activities. These compliance measures were set by the PSC and are outlined within the "Tree and Shrub Mitigation Specifications" section of the PSC's certificate (Item Number 23).

[1]This survey was conducted following the right-of-way corridor alignment as it existed on 8/28/17. Follow-up surveys may be required prior to construction for access or portions of the corridor that have been realigned since this date.

Goals

Survey goals included:

1. To identify survey "plots" for future referencing during construction activities using aerial photography.
2. Inventory trees and shrubs within the Project ROW per the tree and shrub mitigation specifications section of the PSC Route Permit Case No. PU-17-102.
3. GPS any additional Plots found within the ROW that were not identified from aerial photo interpretation.

The Tree and Shrub Inventory was conducted September 12, 2017 through September 21, 2017. Methods and guidelines used during this survey are described below.

Methods

Prior to the field survey, aerial photos of the corridor were examined to identify potential woody vegetation within the project corridor. Once in the field, staff traveled the alignment along existing roadways and conducted field surveys when woody vegetation was identified within the project corridor using one of three survey methods. The survey method used was dependent on the size of the plot as well as the abundance of woody vegetation within the plot area. These three survey methods are described in further detail below:

- Direct Count Method: Trees or shrubs were directly and individually counted, noting species, type (tree or shrub), stems per clump (if applicable), average diameter of the stems or trunk, and quantity (count) of each tree and shrub species. Twelve of the 15 survey plots were small enough to be counted using this method.
- Extrapolated Representative Plot Method: This method established representative 40-foot x 40-foot (40x40) sample areas within each plot. The number of representative sample areas per plot was chosen based on visual identification of plot size and homogeneity of woody vegetation within the plot. Species within each sample area were identified, measured, and counted in the field. In addition, the overall plot boundary was delineated in the field using sub-meter GPS data collection. The representative sample area data was then desktop analyzed by first averaging the stem and trunk diameters of each species identified. Then, the averaged data from the representative sample areas was extrapolated over the entire plot area to generate total plot counts. This method was used for two survey plots.

The guidelines that were used to distinguish a tree from a shrub for the purposes of this survey are as follows:

> A tree is a woody plant having one or multiple erect perennial stems (trunk(s)) at least three inches diameter at breast height (dbh, 4.5 feet), a definitely formed crown of foliage, and a mature height of at least 13 feet. A shrub was defined as a woody plant with several perennial stems that may be erect or may lie close to the ground. It will usually have a height less than 13 feet and stems no more than about three inches in diameter.

Results

A summary of the inventory results is depicted in Table 1. Figures depicting the location of each plot along the project corridor, as well as each plot boundary are found in Attachment A of this memo. A photo log illustrating site conditions of each plot at the time of the survey is located in Attachment B. Plot specific inventory data is located in Attachment C. Woody vegetation that could only be identified to genus was not given a native status. In some locations, woody vegetation extended outside of the project corridor; only vegetation that was within the actual project corridor was accounted for in this survey.

Off corridor access to reach structure 33 was inventoried by KLJ Engineering on November 14, 2017 (Attachment D). A figure of the off corridor access as well as photos of the route can be found in Attachment D. As the inventory included two trees previously inventoried in plot 21, 17 of the 19 trees were added to Table 1 and Attachment C. Post clearing, parcel 2 and parcel 5 were inventoried again as not all of the original inventoried shrubs were cleared. A map of parcels 5 and 10 with clearing limits and shrubs remaining on the ROW can be found in Attachment E.

Table 1. Inventory Summary Table[1]

Common Name	Scientific Name	Non-Native Species	Tree/Shrub	Average Stem per plant	Average DBH	Count
American Elm	*Ulmus Americana*	No	Tree	1.0	6.1	6
Ash-Leaf Maple	*Acer negundo*	No	Tree	1.1	12.7	63
Eastern Cottonwood	*Populus deltoides*	No	Tree	2.2	18.6	43
Green Ash	*Fraxinus pennsylvanica*	No	Tree	1.1	12.6	127
Russian Olive	*Elaeagnus angustifolia*	Yes	Tree	1.7	6.6	226
Siberian Elm	*Ulmus pumila*	Yes	Tree	1.1	9.5	14
White Willow	*Salix alba*	No	Tree	2.5	12.1	41
American Plum	*Prunus americana*	No	Shrub	1.5	1.6	81
Ash-Leaf Maple	*Acer negundo*	No	Shrub	6.1	1.5	12
Choke Cherry	*Prunus virginiana*	No	Shrub	1.1	1.4	890
European Buckthorn	*Rhamnus cathartica*	Yes	Shrub	1.0	6.0	1
Green Ash	*Fraxinus pennsylvanica*	No	Shrub	8.0	0.8	4
Hawthorn Species	*Crataegus sp.*	No	Shrub	2.0	2.1	116
Honeysuckle Species	*Lonicera sp.*	Yes	Shrub	5.8	2.2	12
Prickly Ash	*Zanthoxylum americanum*	No	Shrub	1.0	1.0	22
Red-Osier Dogwood	*Cornus alba*	No	Shrub	25.1	0.5	17
Russian Olive	*Elaeagnus angustifolia*	Yes	Shrub	1.3	3.5	3
Siberian Elm	*Ulmus pumila*	Yes	Shrub	1.2	2.0	78
Siberian Peashrub	*Caragana arborescens*	Yes	Shrub	12.5	1.0	752
Willow species	*Salix sp.*	-	Shrub	13.2	2.4	84
Viburnum Species	*Viburnum sp.*	-	Shrub	3.4	2.1	27
				Inventory Total		2617
				Non-native Inventory %		39.6

[1]Does not include Plots 10-14 as there was no access at the time of inventory

Inaccessible Areas

One parcel, which contained Plots 10 through 14, was a stay off property and plots were estimated from the public road right of way. Although this data was not included in Table 1, estimated data collected from accessible areas for plots 10 through 14 can be found in Attachment C.

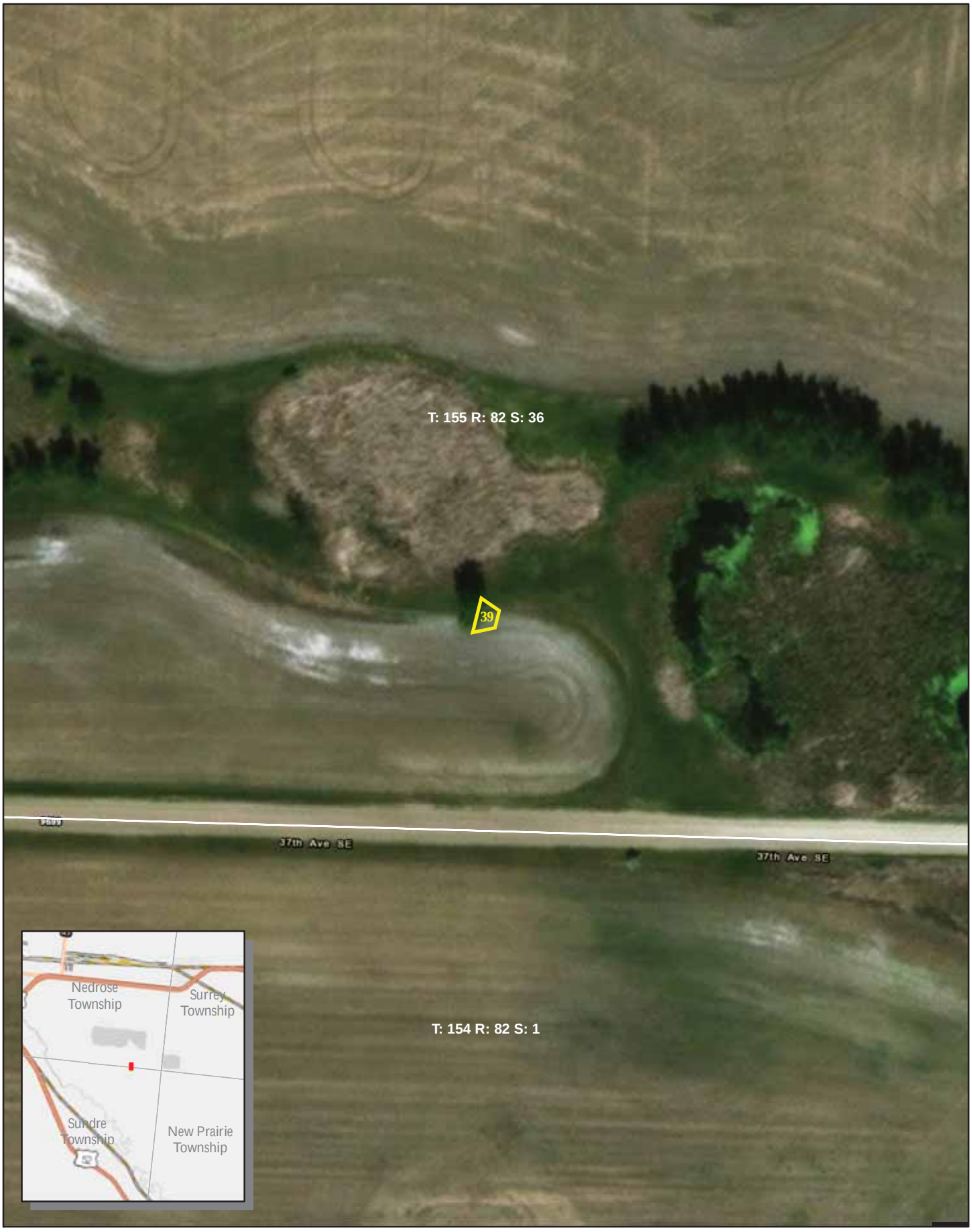
Conclusion

In conclusion, 37 plots of woody vegetation were surveyed within the project corridor, totaling approximately 11.06 acres. A total of 2,617 trees and shrubs were identified within the corridor, comprising 21 different species. Of the counted woody vegetation species, 60.4 percent were native.

A tree and shrub mitigation plan is currently being developed and will be submitted to the PSC in a separate document.

If you have any questions about the findings of this survey, please contact Thomas Hillstrom at 612-330-5835 or Thomas.Hillstrom@xcelenergy.com. Thank you.

Attachment A



Tree Plot: 39

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 1

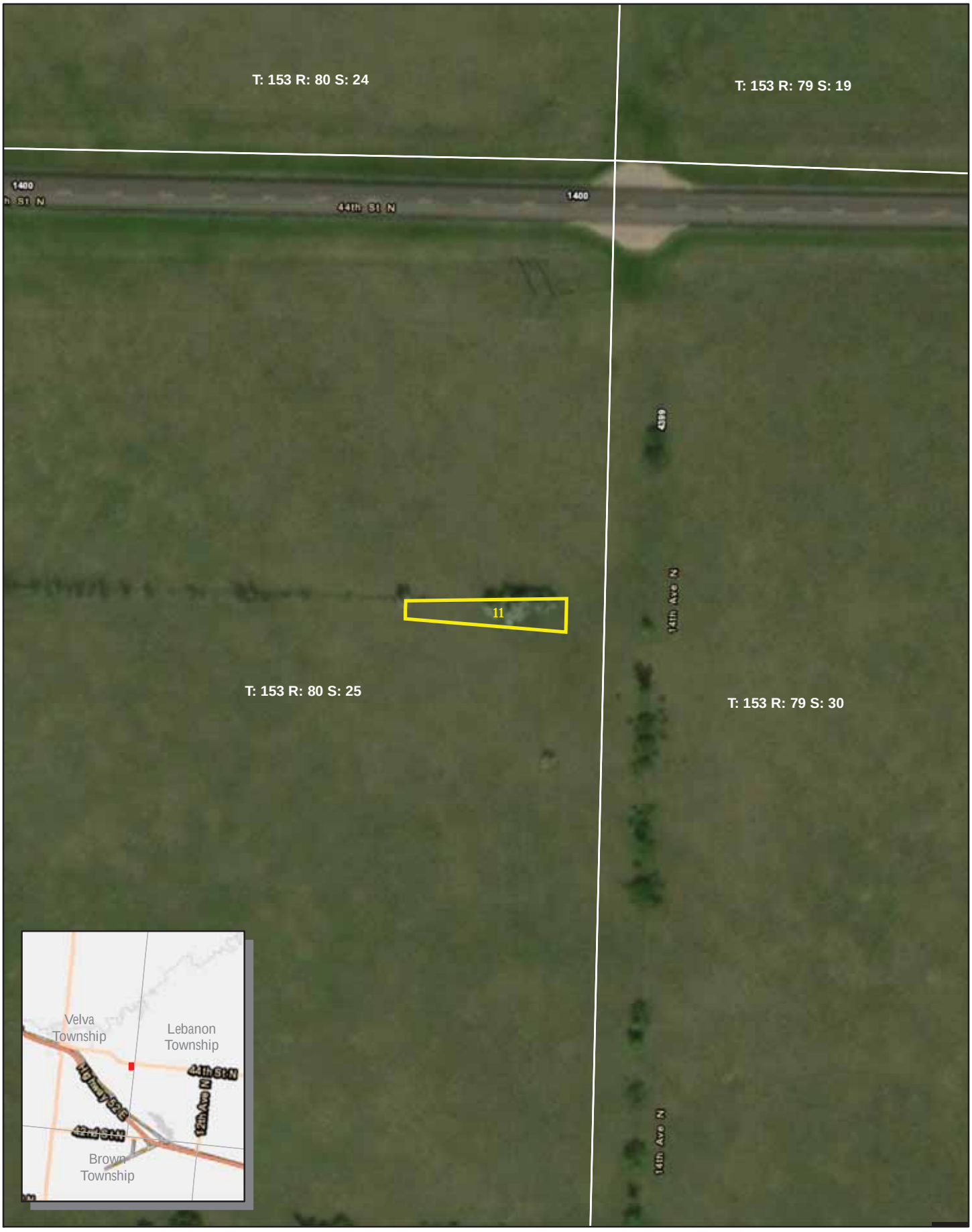
230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 10

230 kV Transmission Line Tree Inventory



Tree Plot: 11

230 kV Transmission Line Tree Inventory

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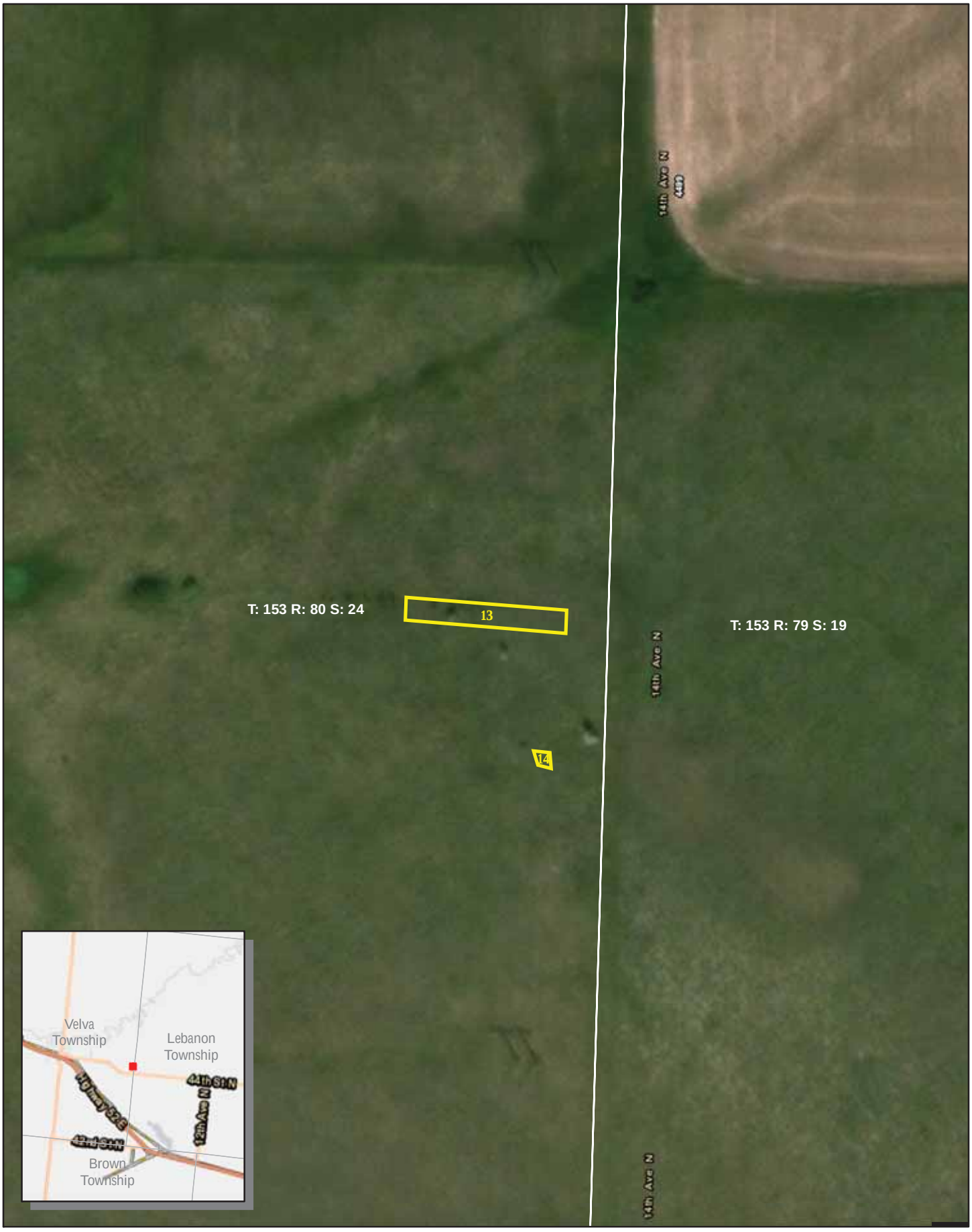
1 inch = 100 feet

Tree Plot: 12

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 13

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 14

230 kV Transmission Line Tree Inventory

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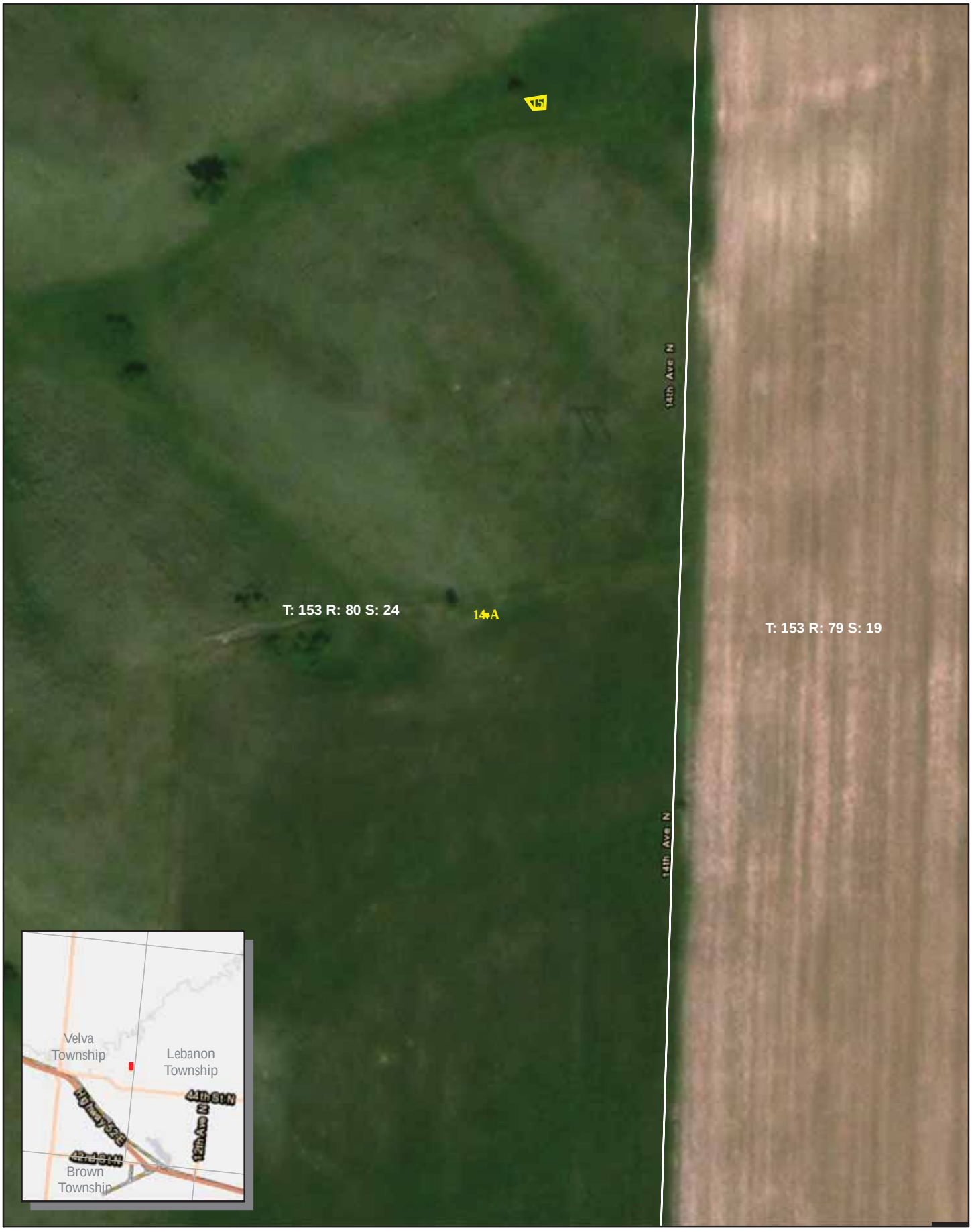
1 inch = 100 feet



Tree Plot: 14-A

230 kV Transmission Line Tree Inventory

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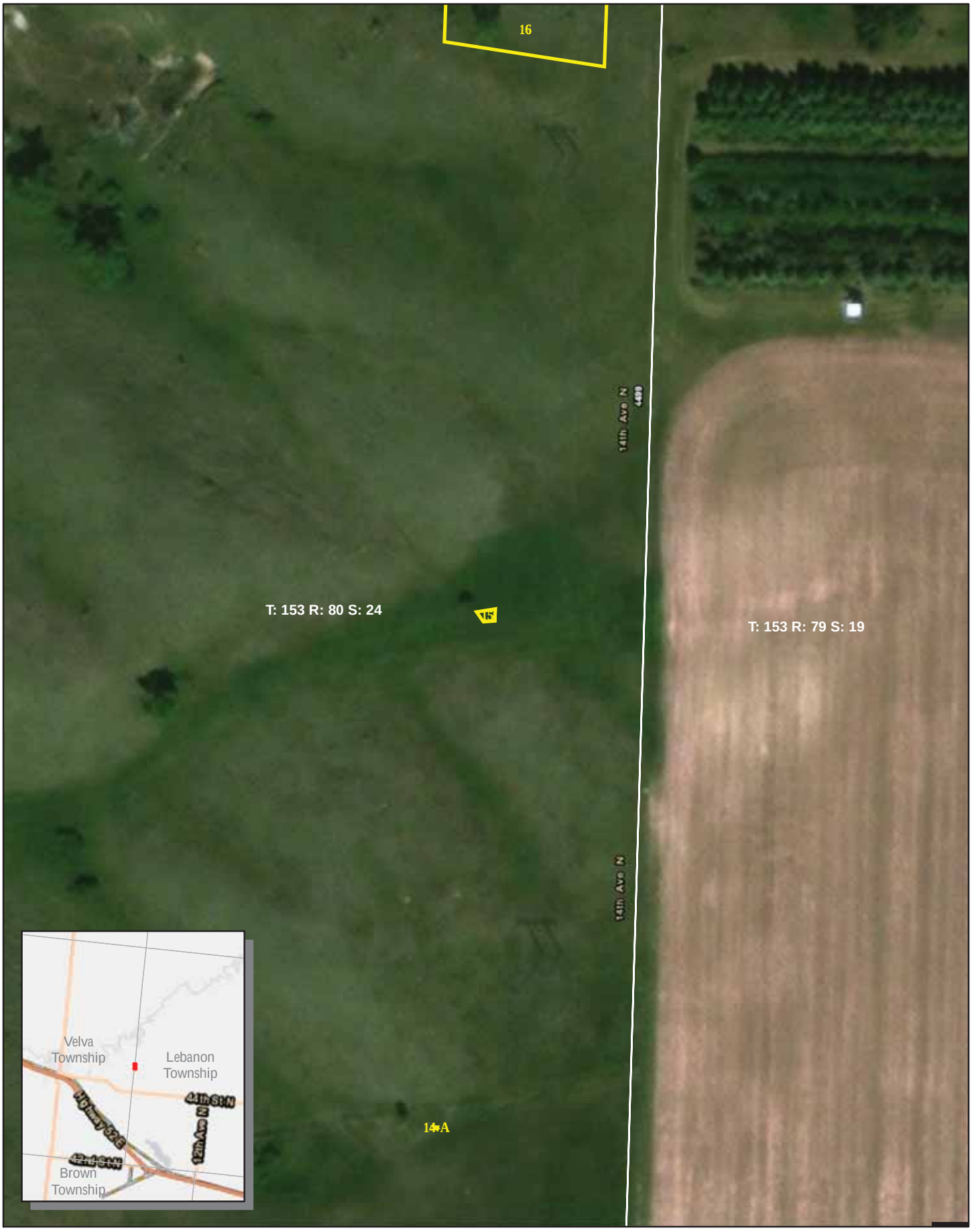
1 inch = 100 feet



Tree Plot: 15

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 16

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 17

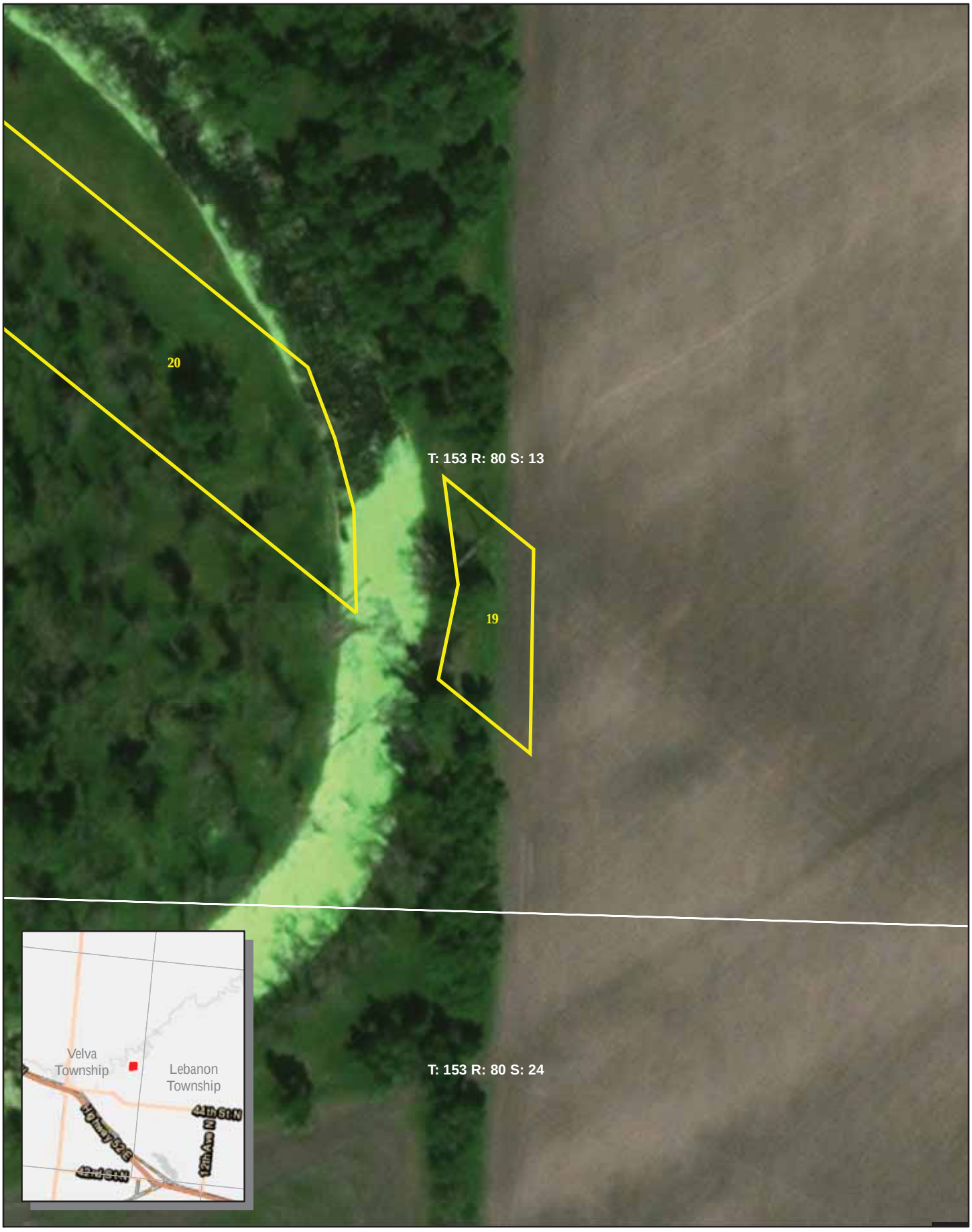
230 kV Transmission Line Tree Inventory

Tree Plot: 18

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 19

230 kV Transmission Line Tree Inventory

Tree Plot: 20

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 21

230 kV Transmission Line Tree Inventory

Tree Plot: 22

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 23

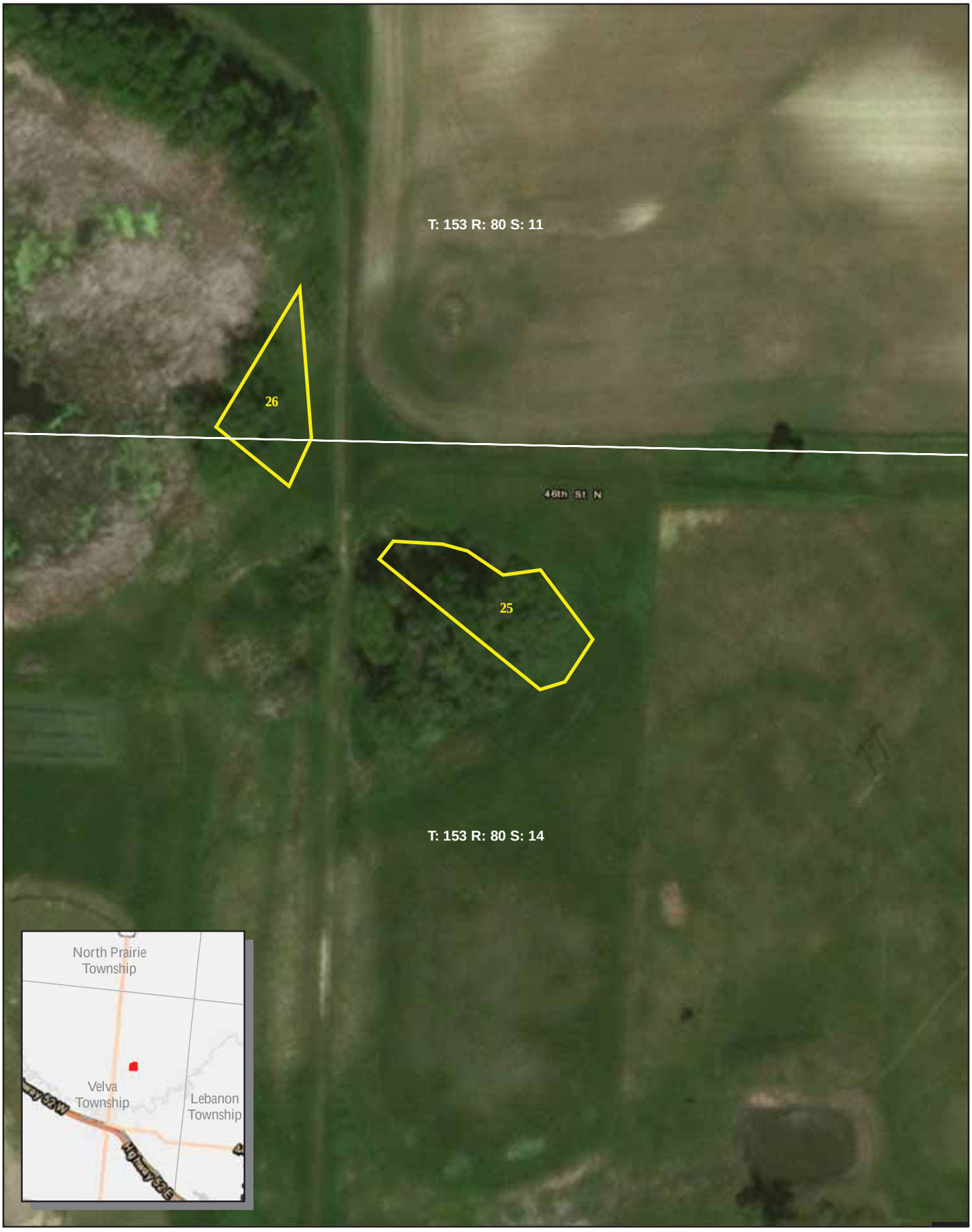
230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 24

230 kV Transmission Line Tree Inventory



Tree Plot: 25

230 kV Transmission Line Tree Inventory

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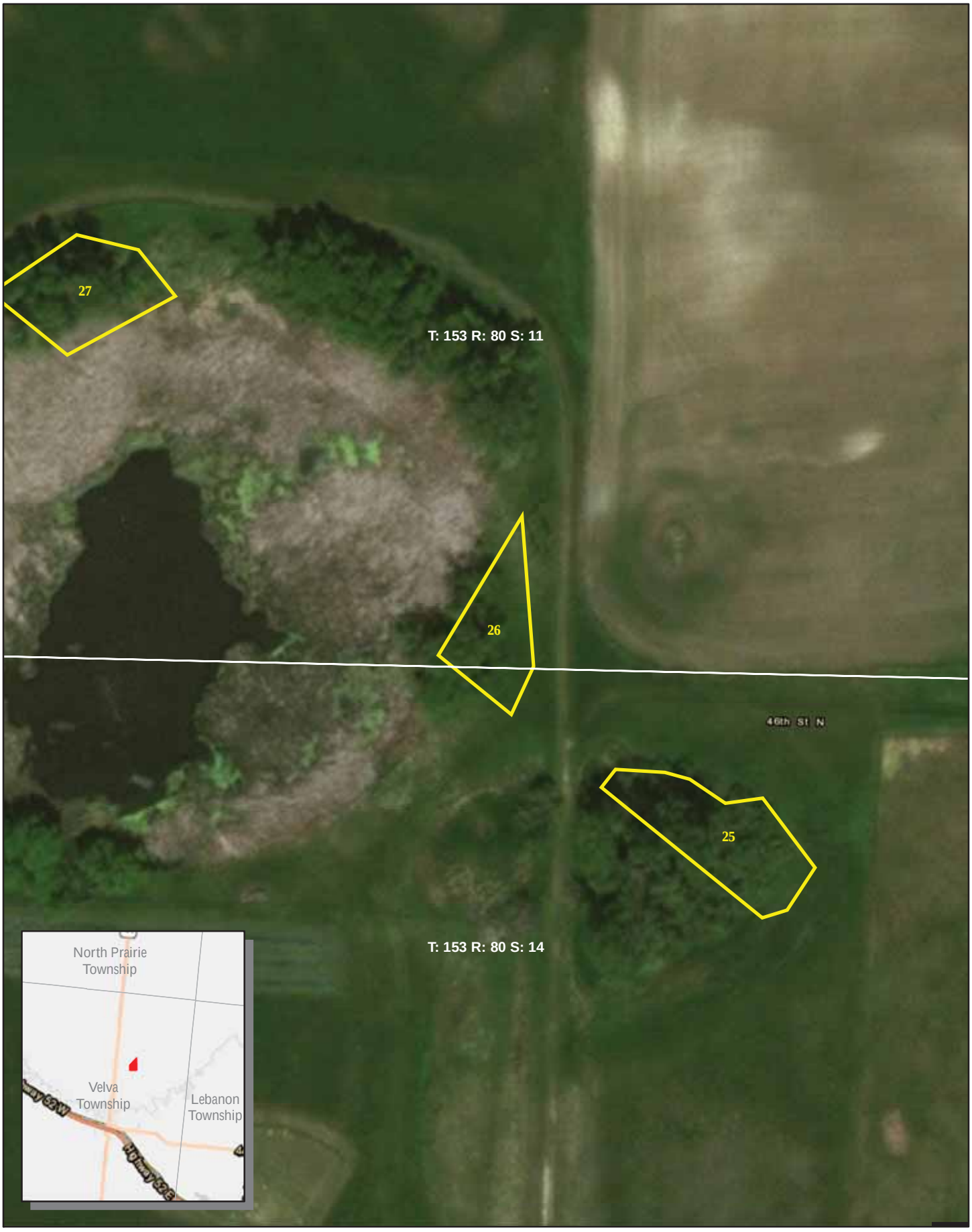
1 inch = 100 feet

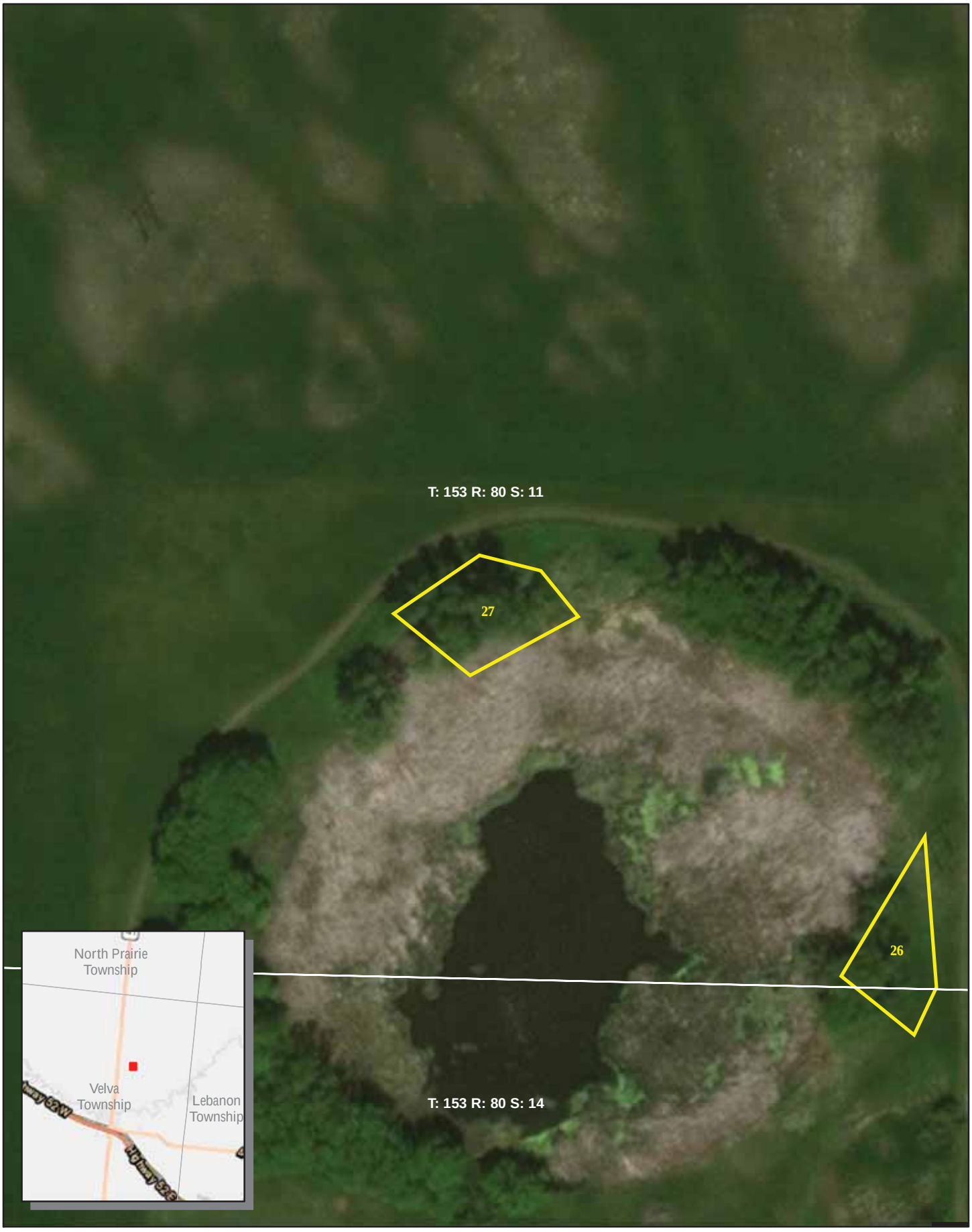


Tree Plot: 26

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 27

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 28

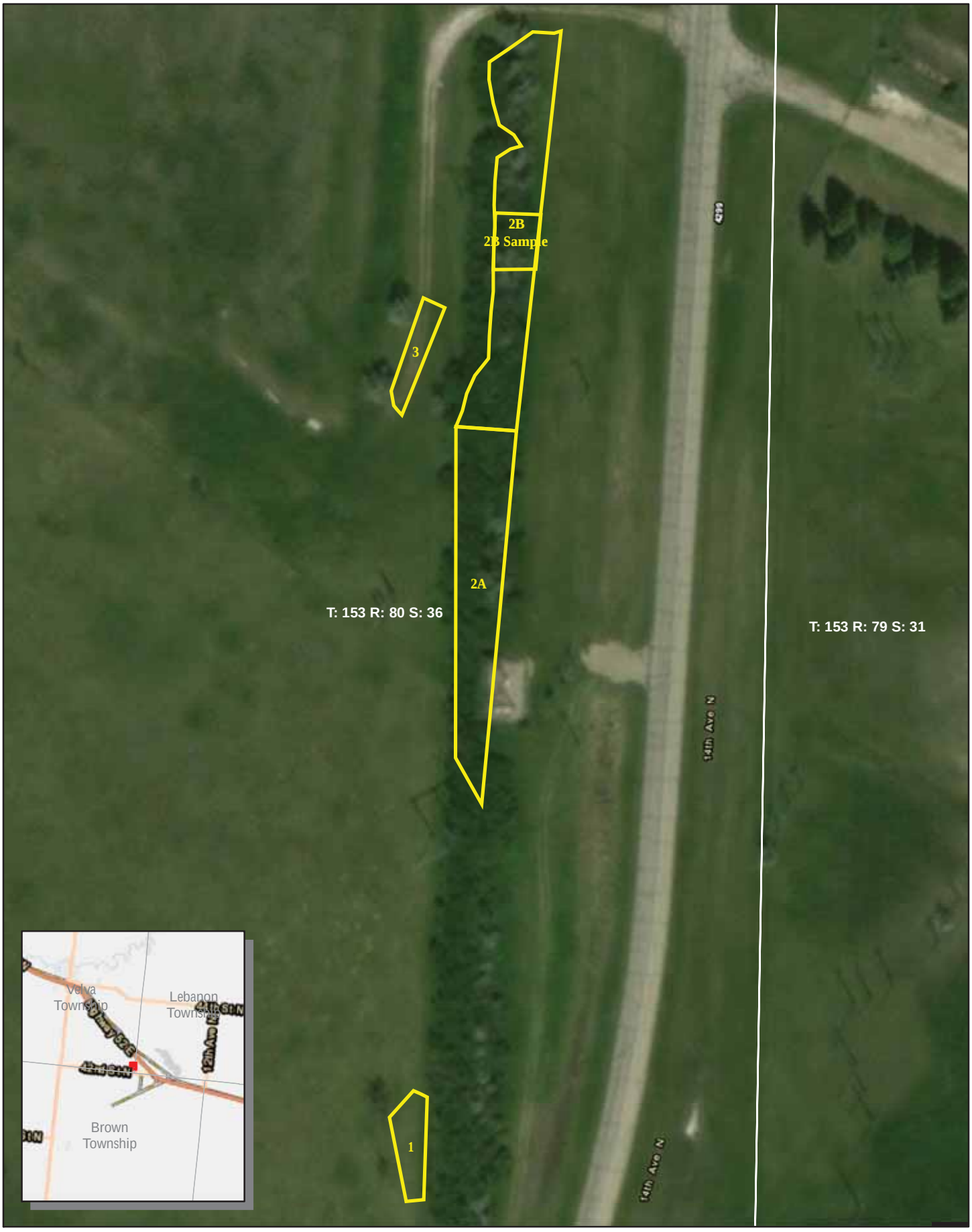
230 kV Transmission Line Tree Inventory

Tree Plot: 29

230 kV Transmission Line Tree Inventory

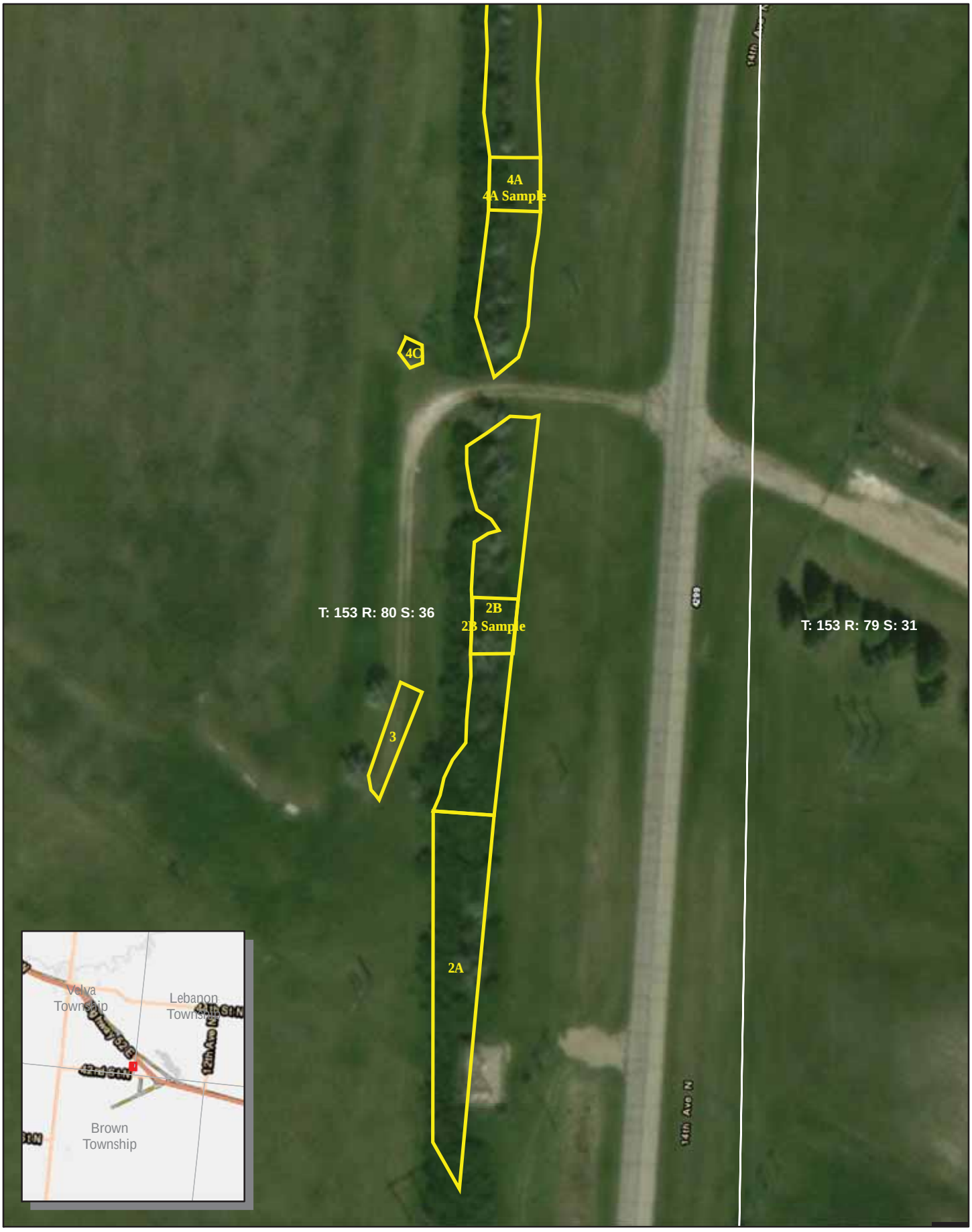
0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 2A

230 kV Transmission Line Tree Inventory

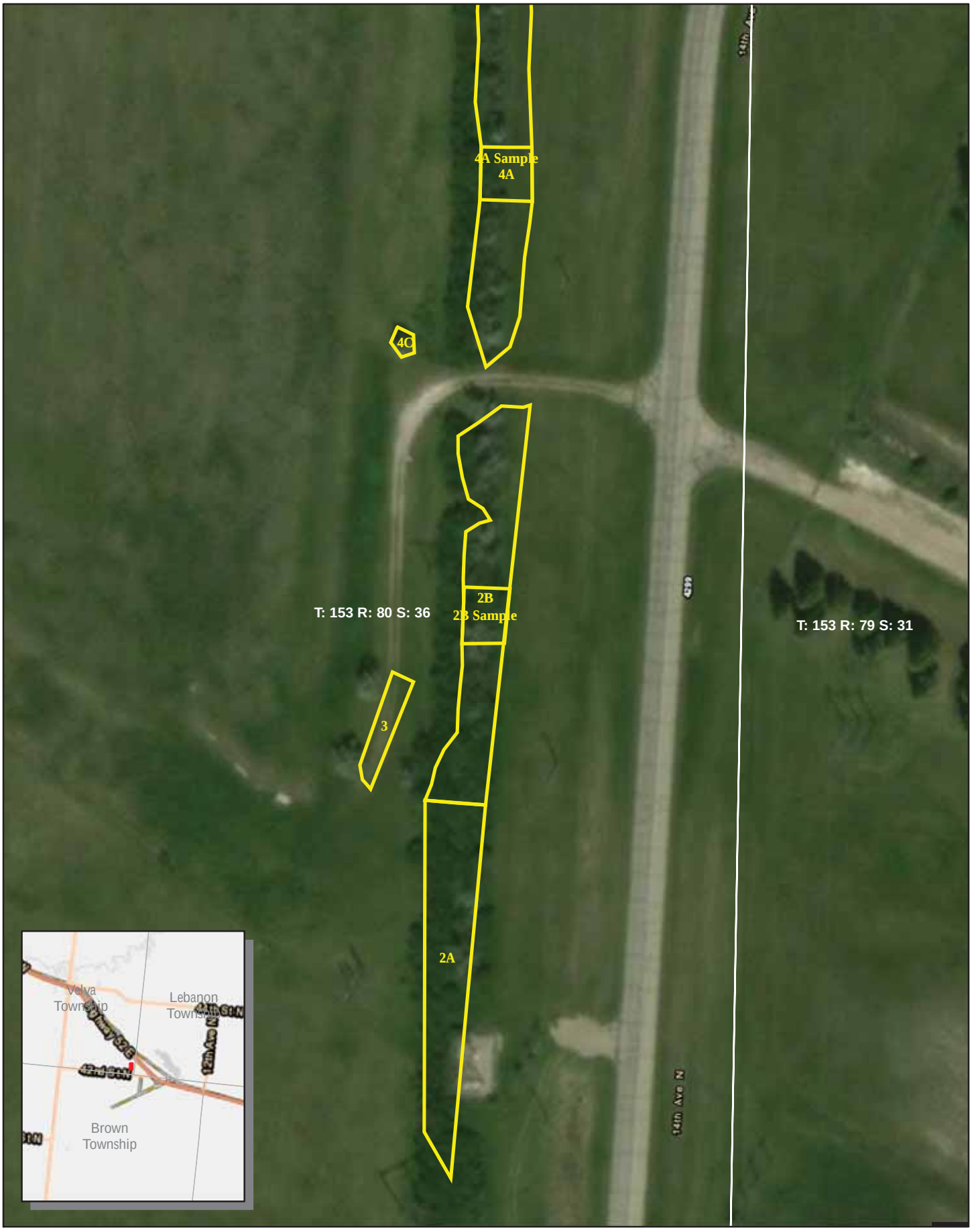


Tree Plot: 2B

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 2B Sample

230 kV Transmission Line Tree Inventory

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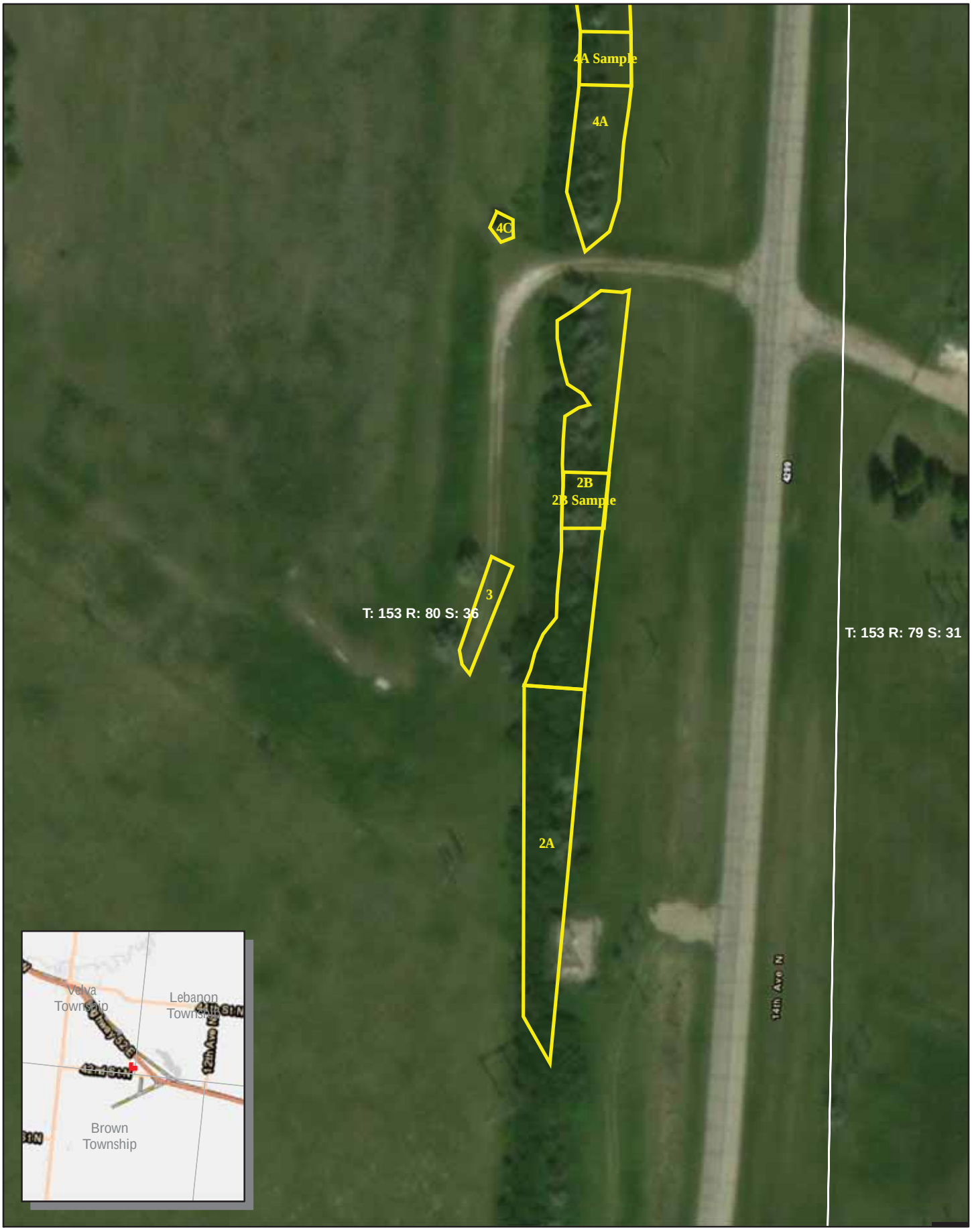
1 inch = 100 feet



Tree Plot: 3

230 kV Transmission Line Tree Inventory

Tree Plot: 30

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

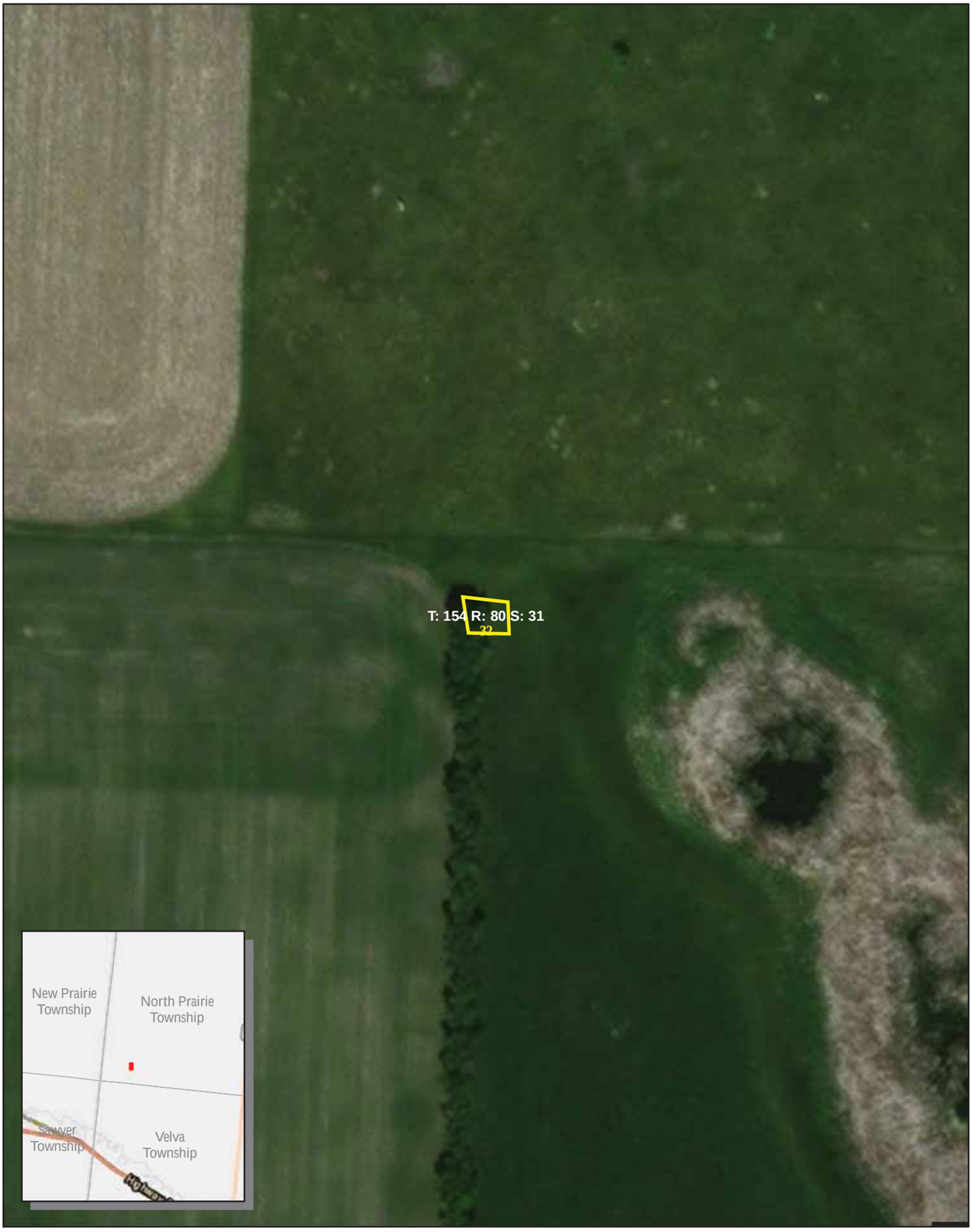
1 inch = 100 feet

Tree Plot: 31

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 32

230 kV Transmission Line Tree Inventory

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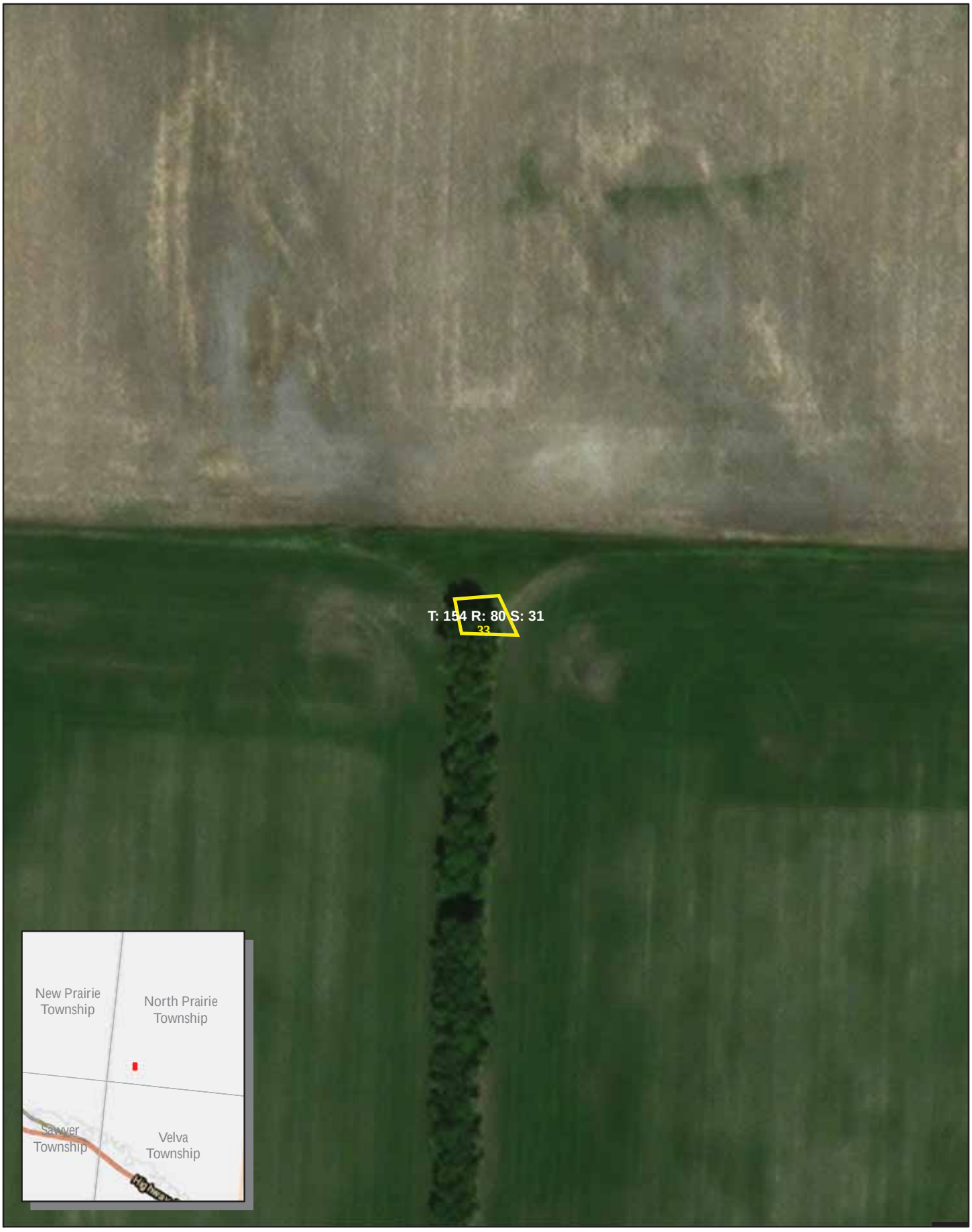
1 inch = 100 feet



Tree Plot: 33

230 kV Transmission Line Tree Inventory

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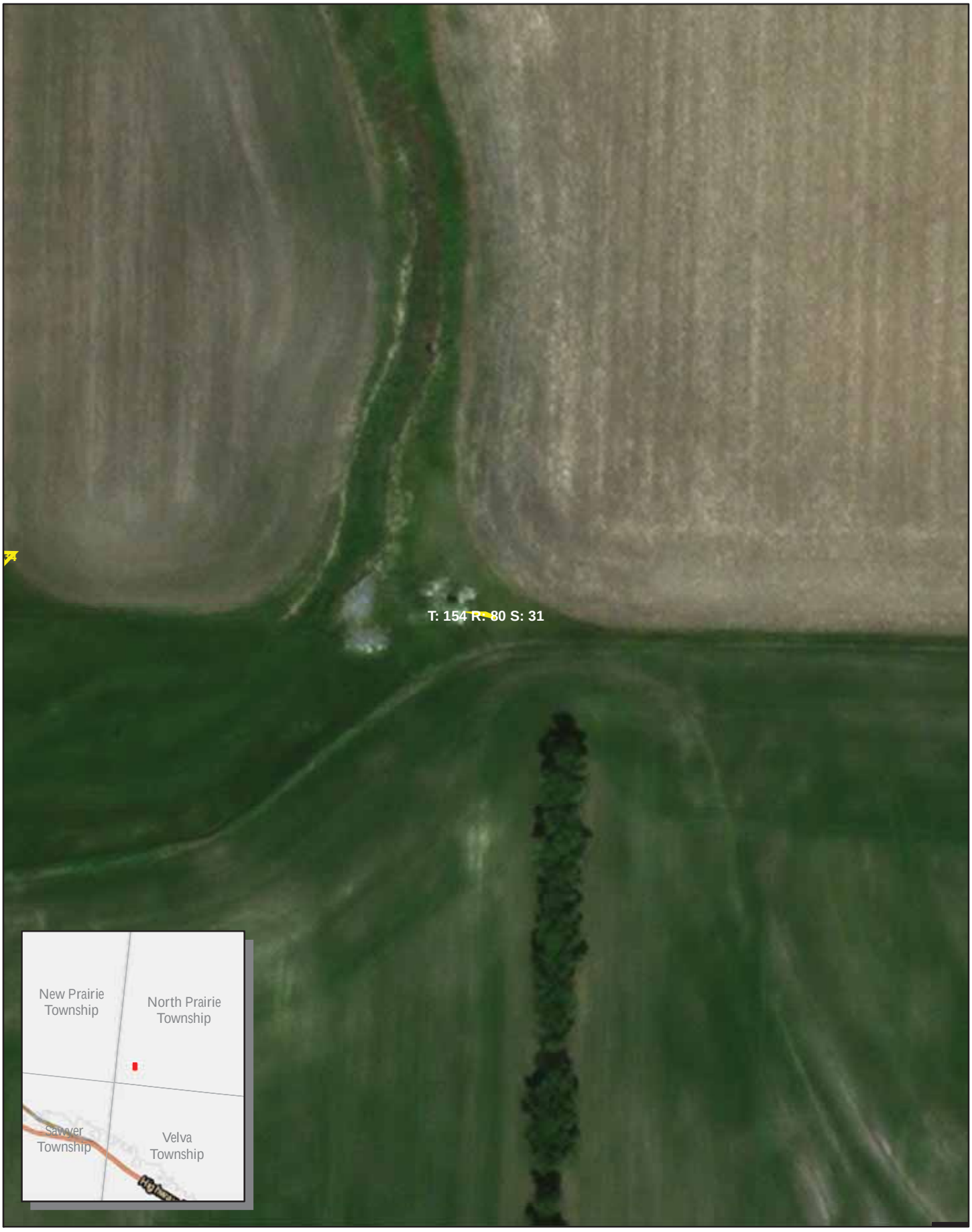
1 inch = 100 feet

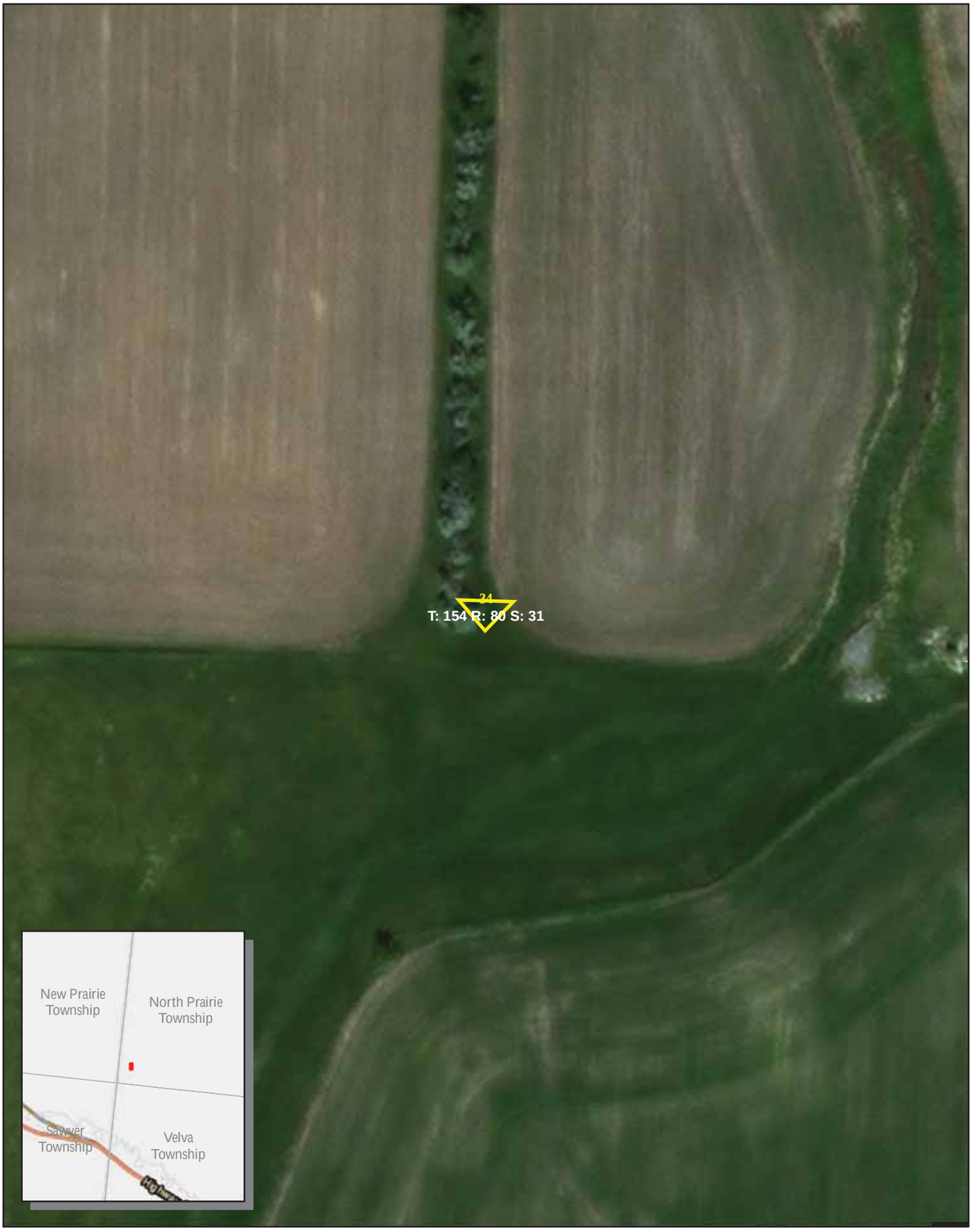


Tree Plot: 33-A

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

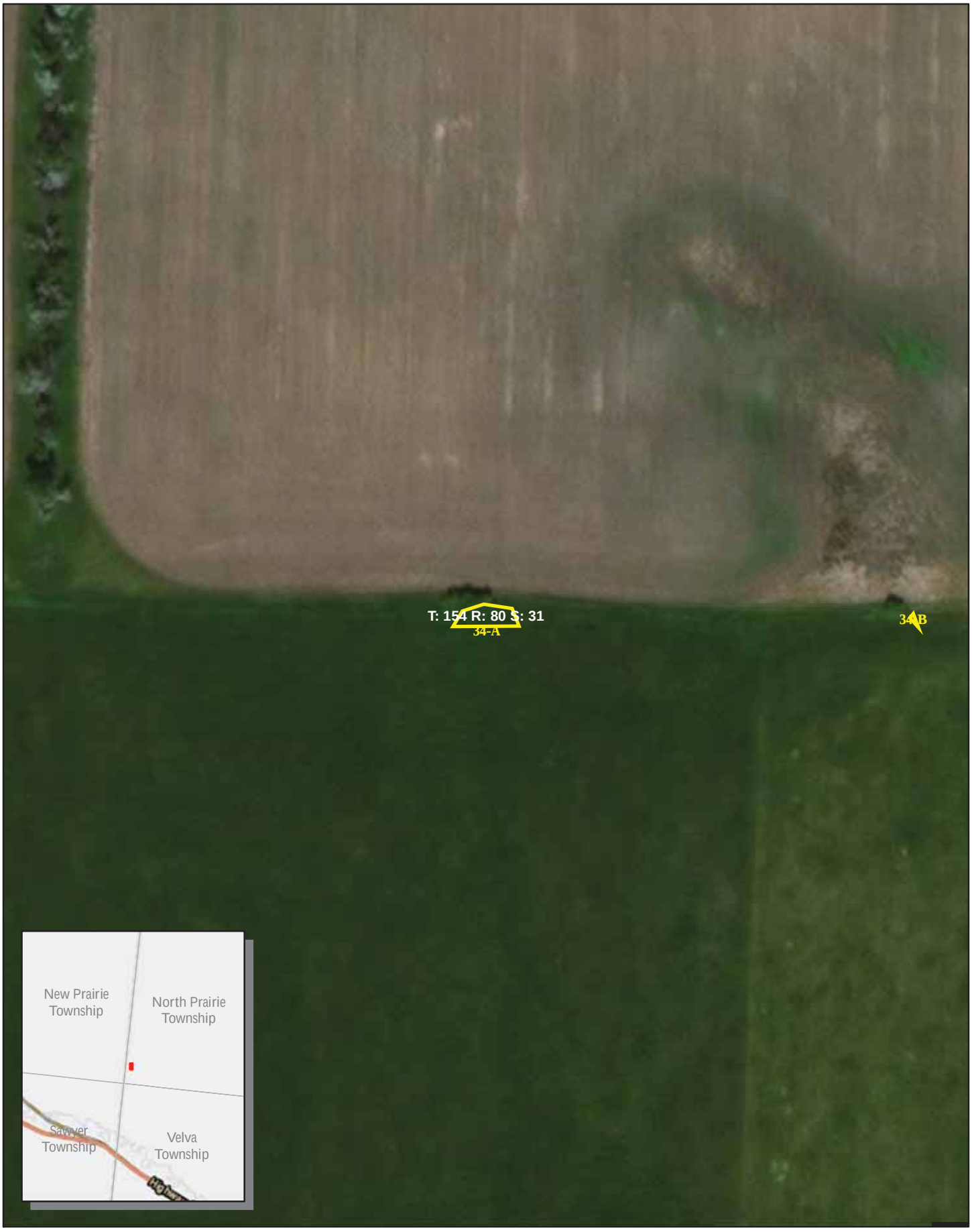


Tree Plot: 34

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 34-A

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

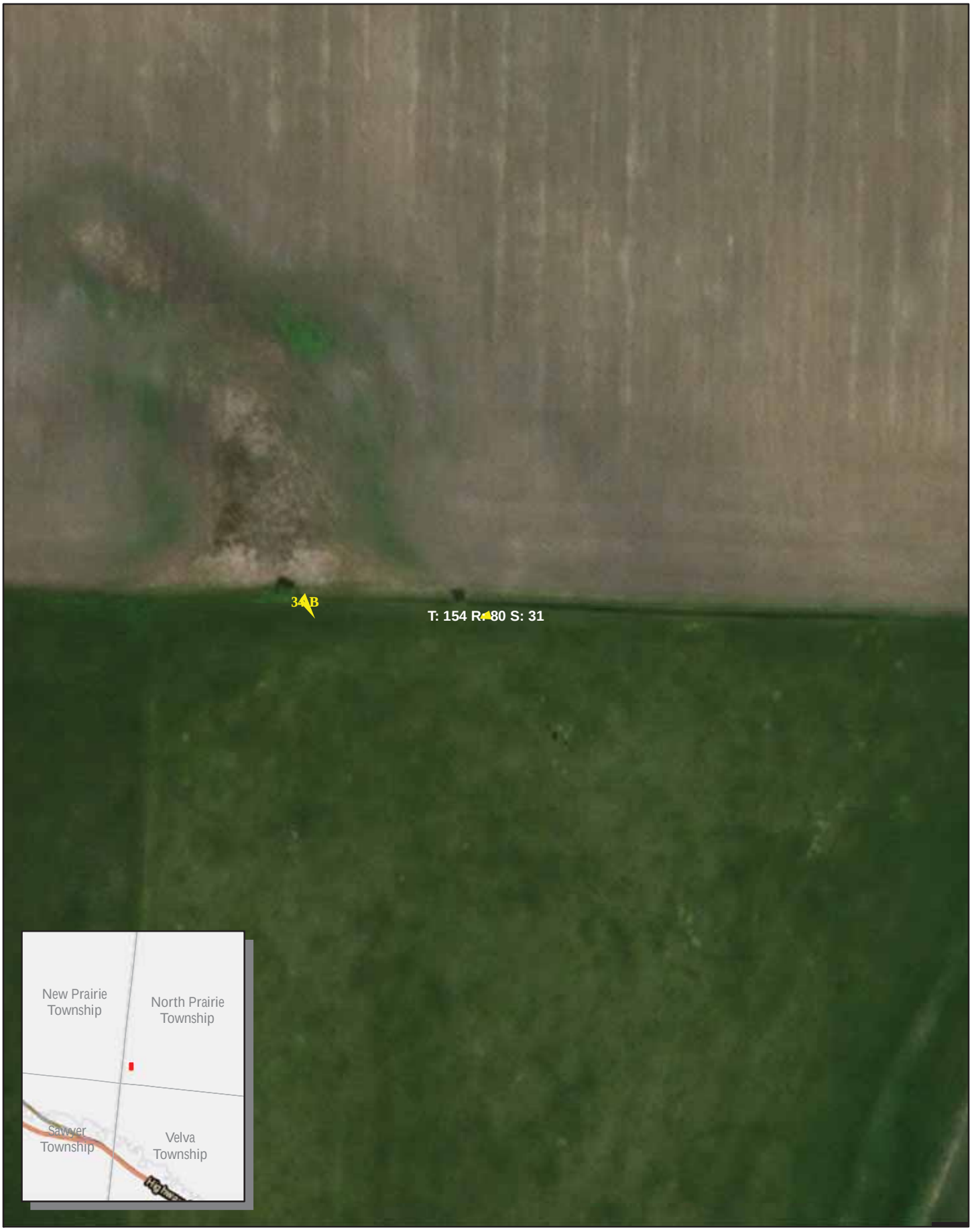
1 inch = 100 feet

Tree Plot: 34-B

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 34-C

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

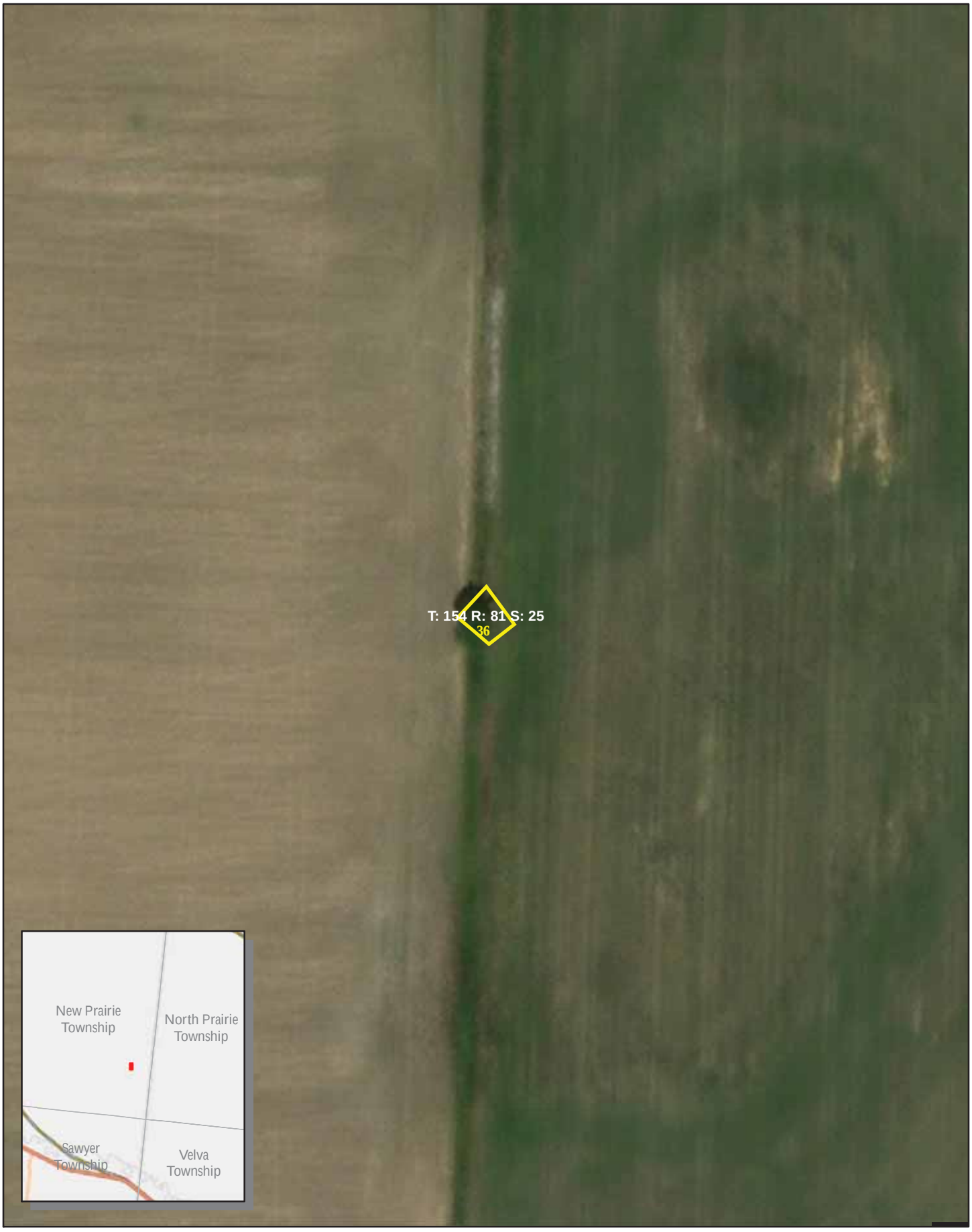
1 inch = 100 feet

Tree Plot: 35

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 36

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 37-A

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

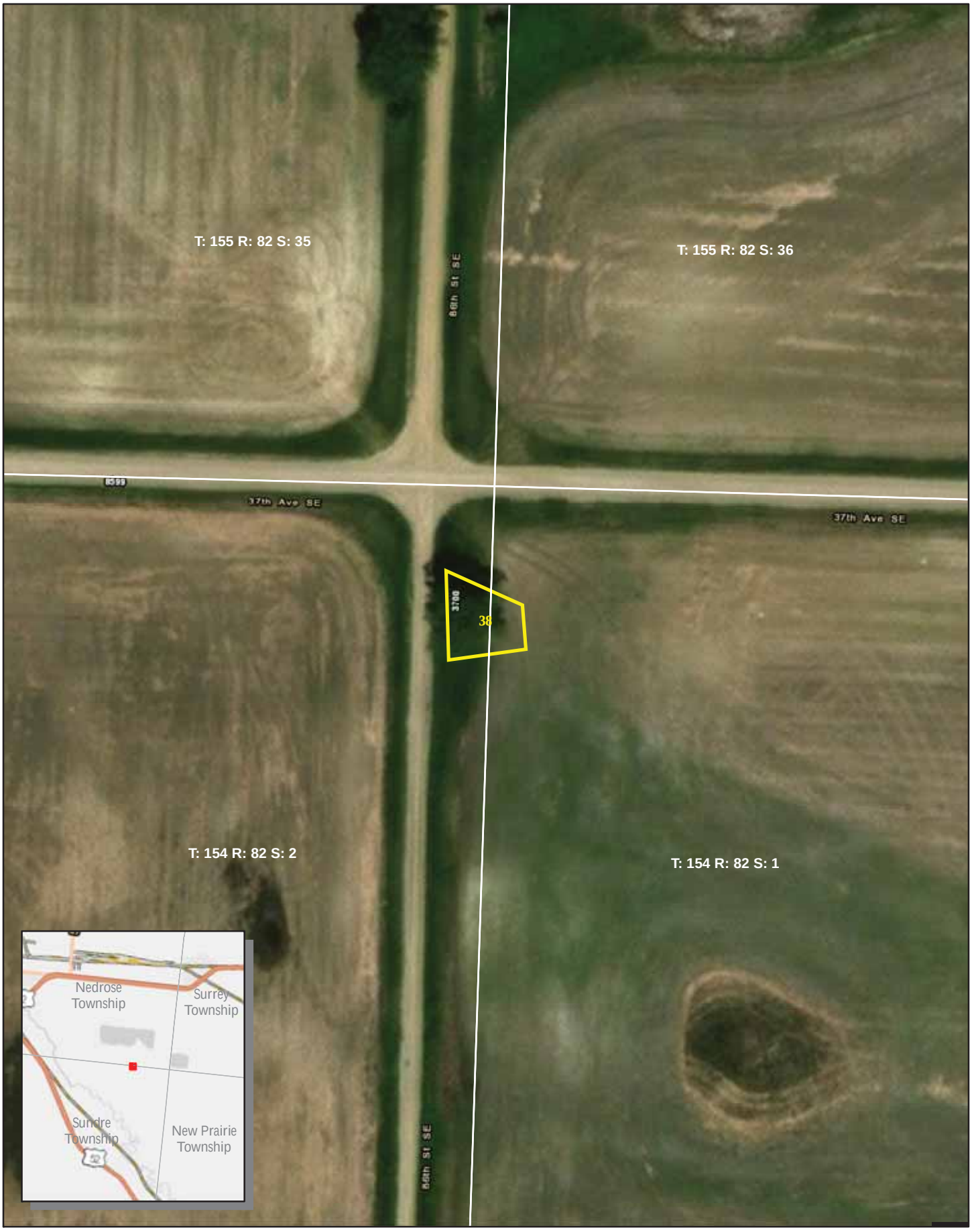
1 inch = 100 feet

Tree Plot: 37-B

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

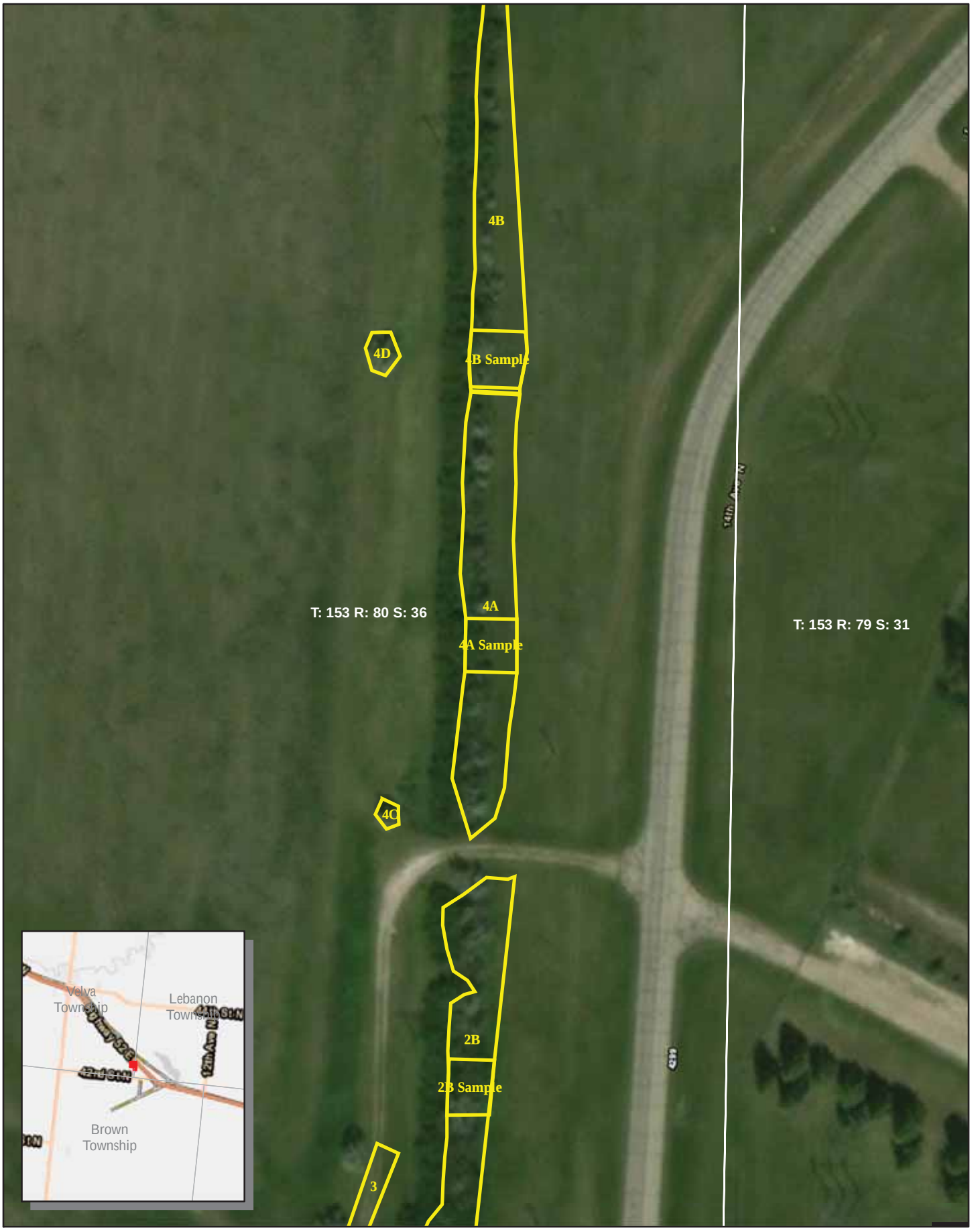


Tree Plot: 38

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

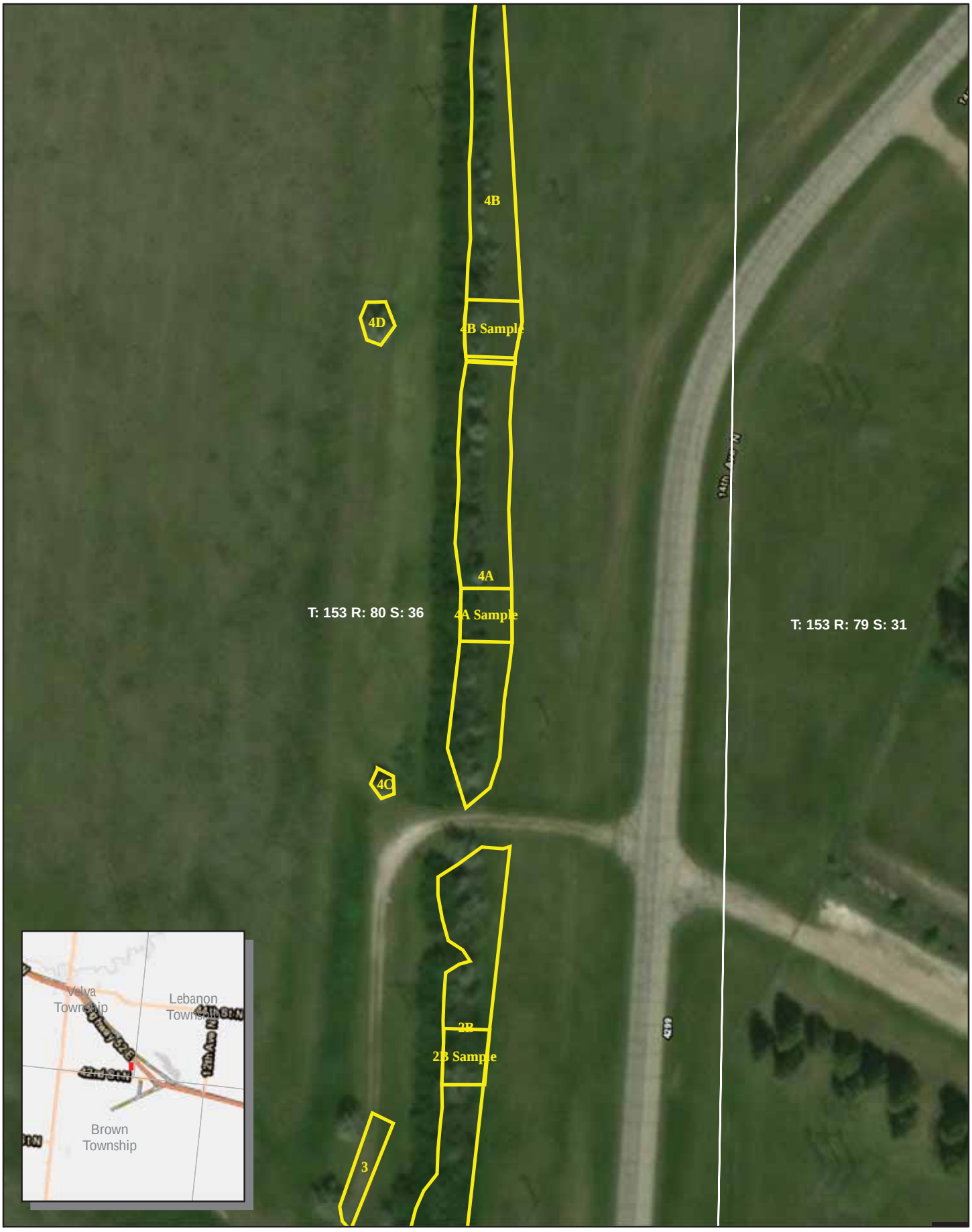


Tree Plot: 4A

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

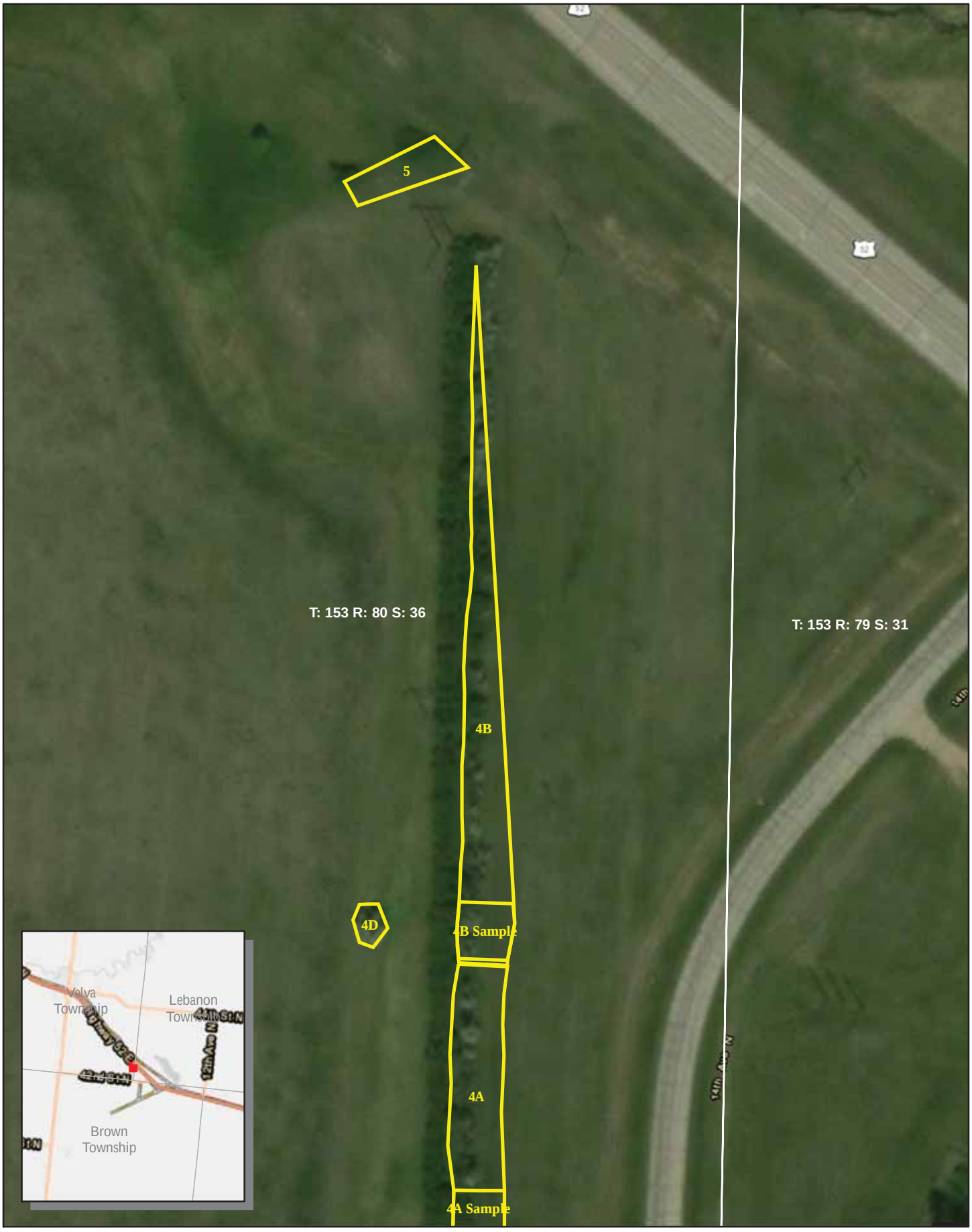


Tree Plot: 4A Sample

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

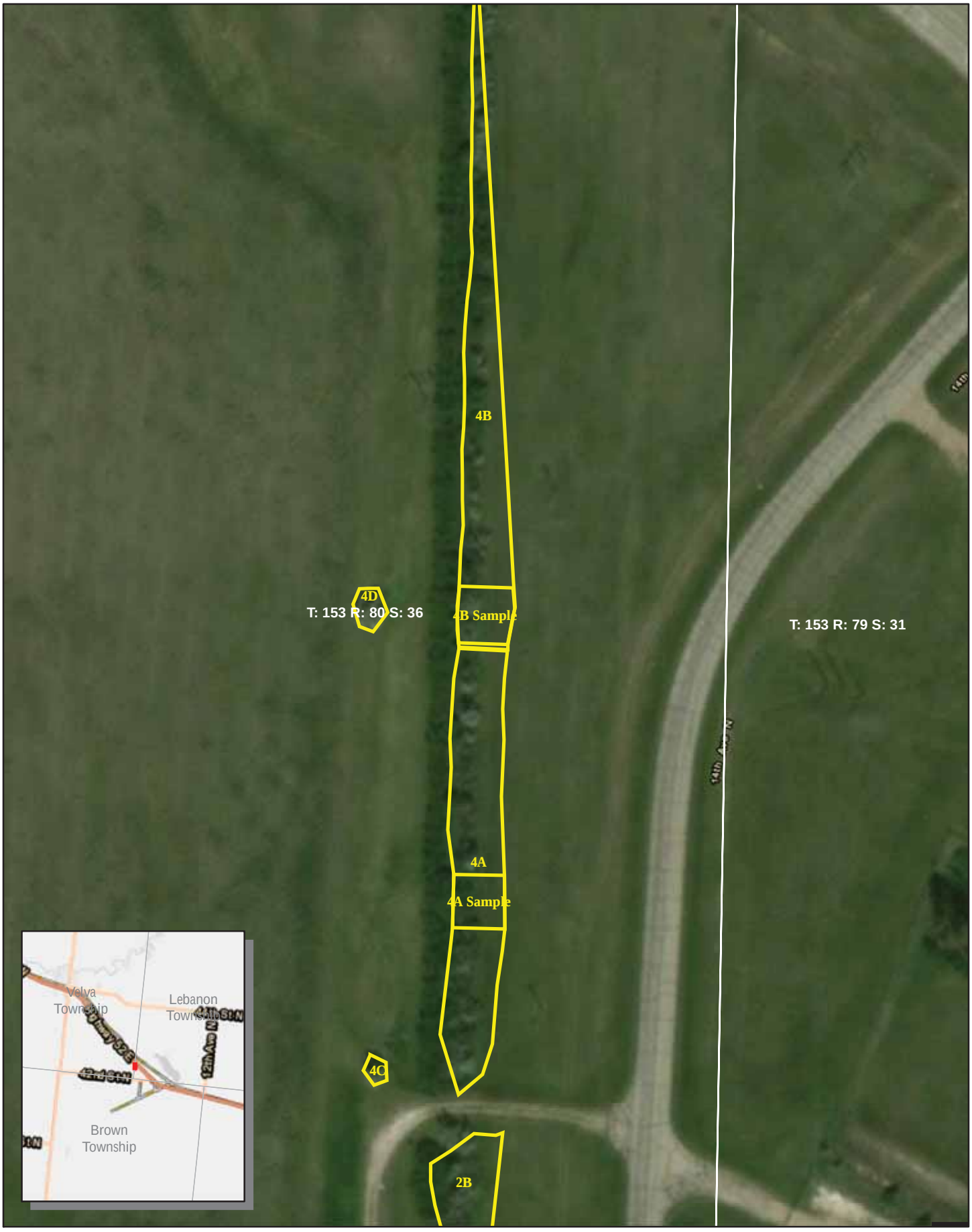


Tree Plot: 4B

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

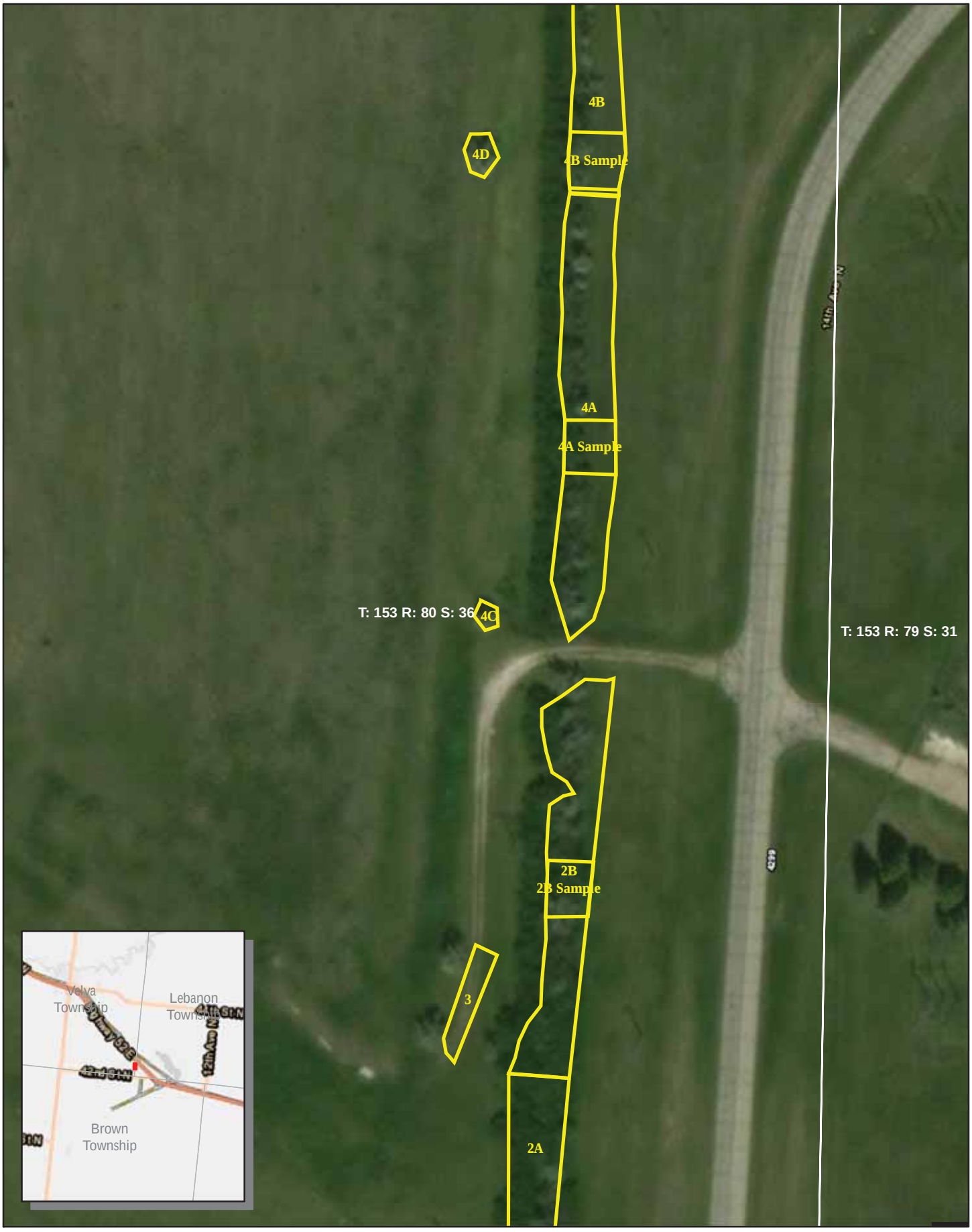


Tree Plot: 4B Sample

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

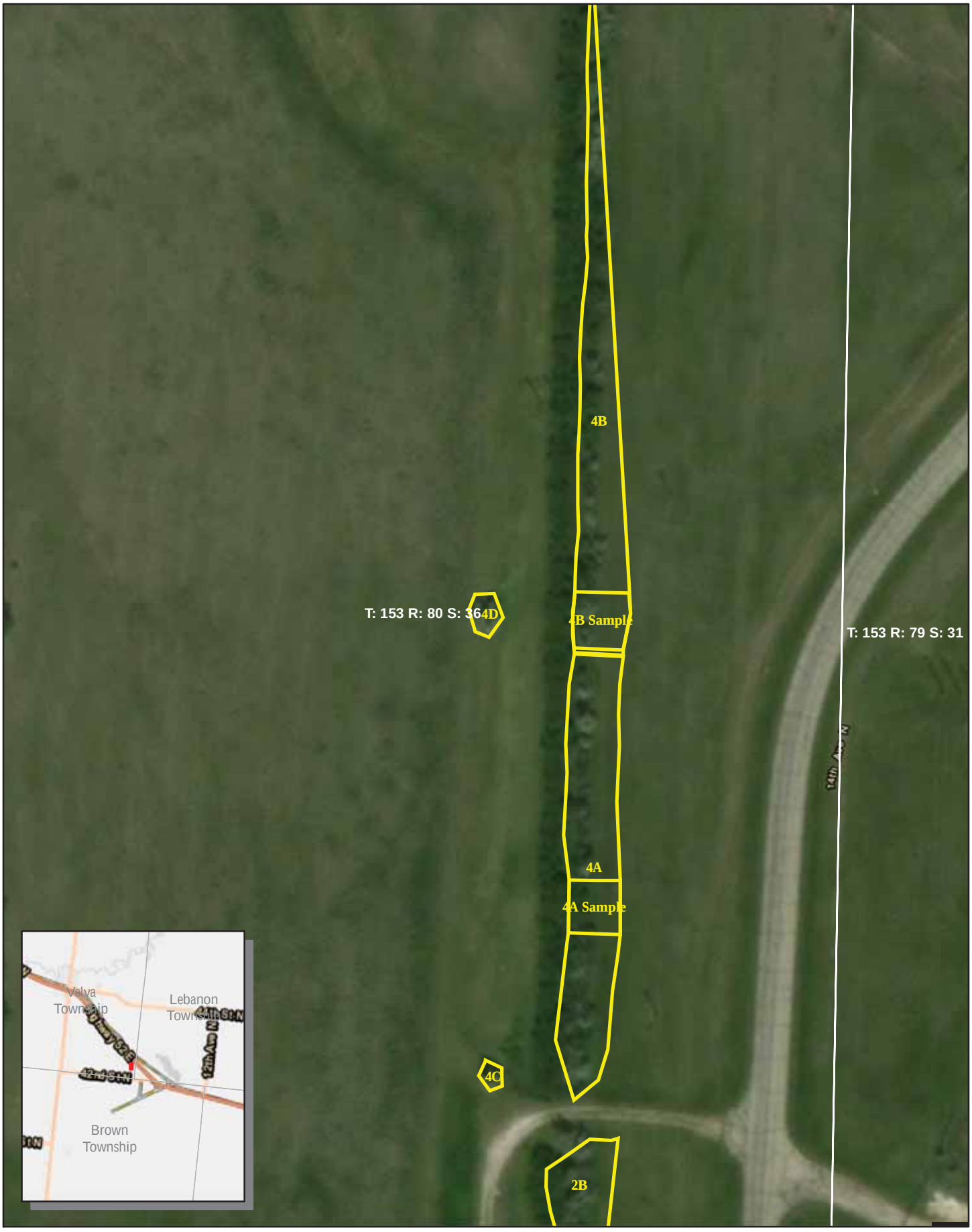


Tree Plot: 4C

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 4D

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Tree Plot: 5

230 kV Transmission Line Tree Inventory

Tree Plot: 6

230 kV Transmission Line Tree Inventory

Tree Plot: 7

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

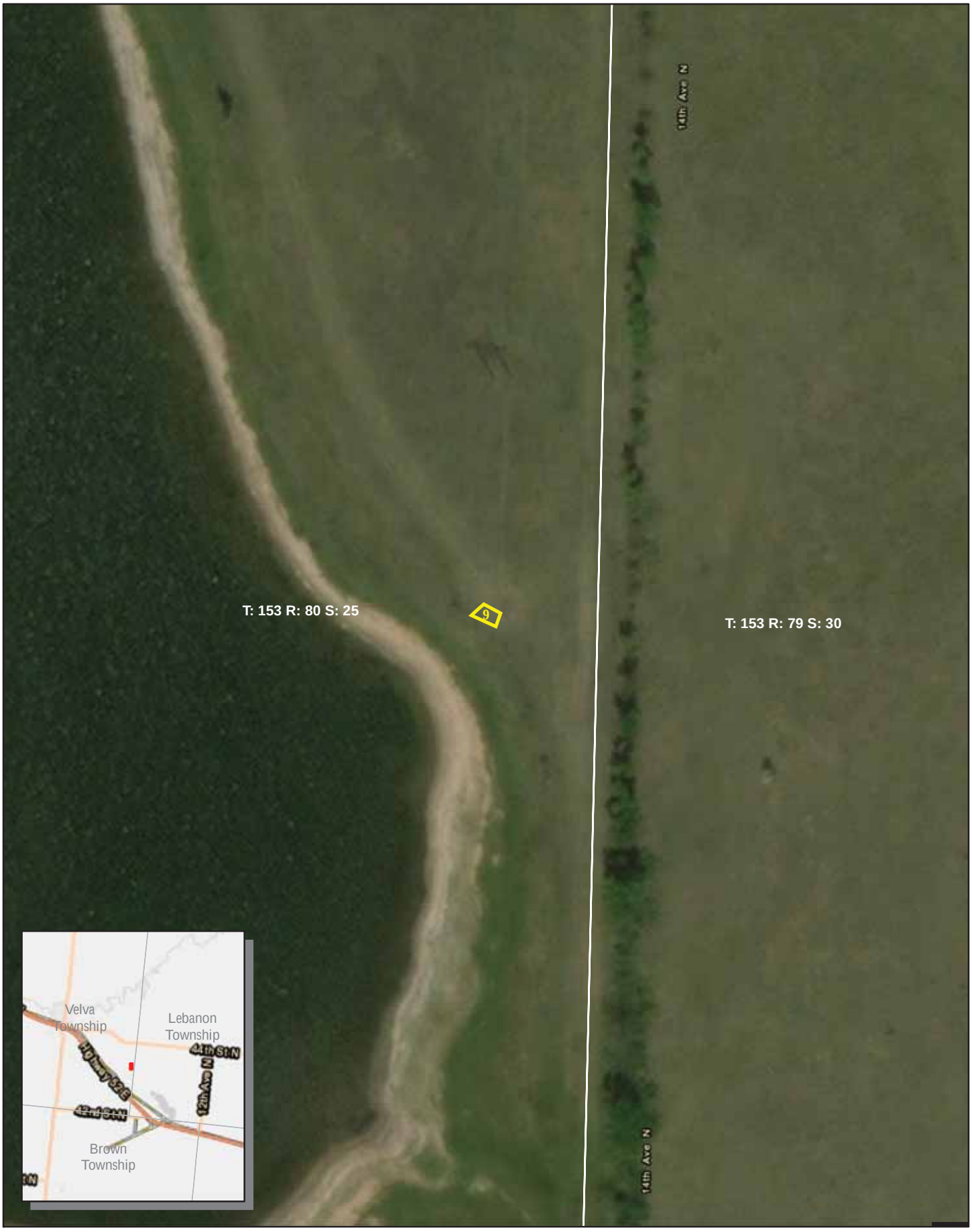
1 inch = 100 feet

Tree Plot: 8

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

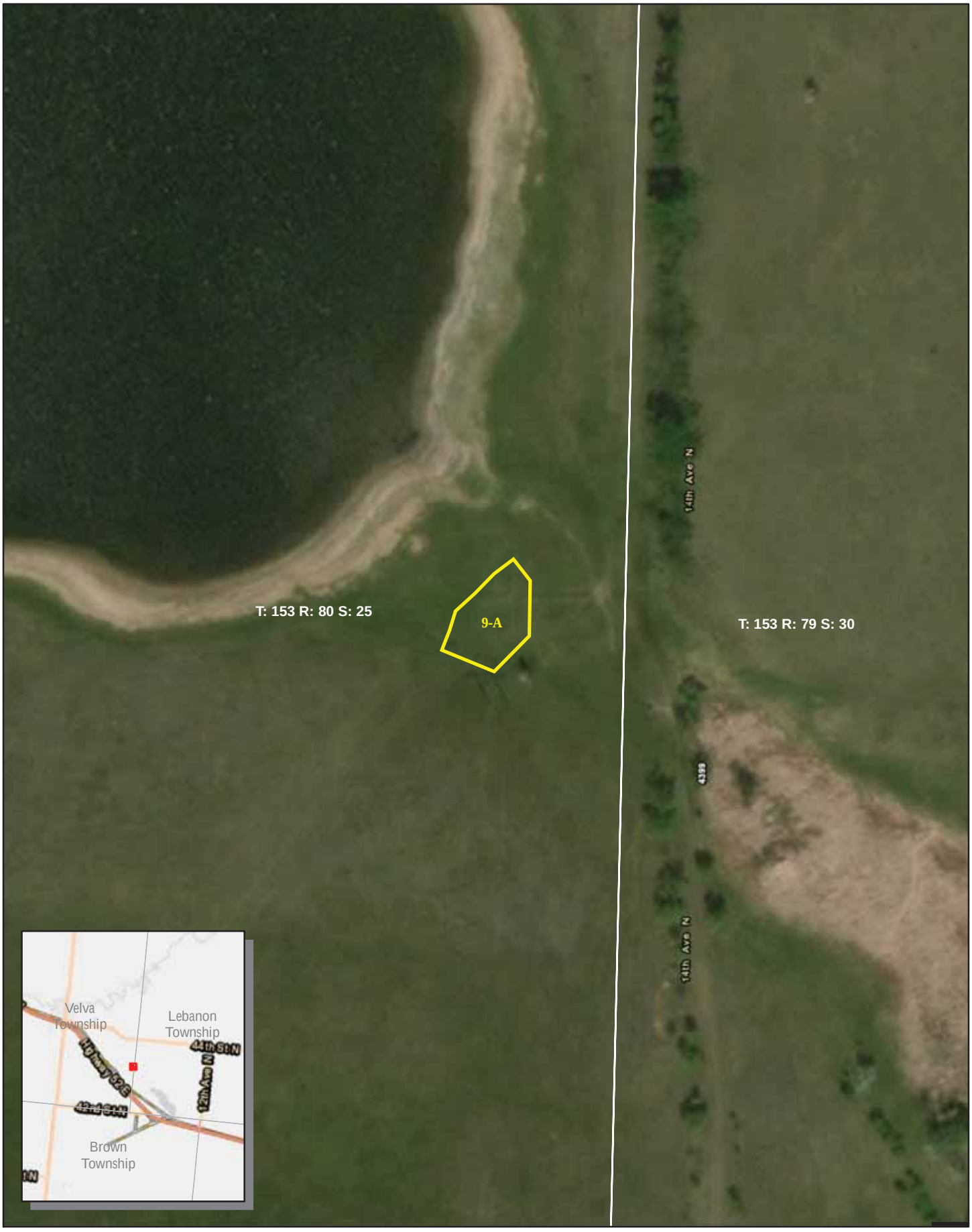


Tree Plot: 9

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet



Tree Plot: 9-A

230 kV Transmission Line Tree Inventory

0 50 100 200 Feet

1 inch = 100 feet

Attachment B

Photo 1 –Plot 1 overview

Photo 2 - Plot 2A and B Overview

Photo 3 - Plot 2B shrubs inside wind break – Sample Area

Photo 4 - Plot 3 Overview

Photo 5 - Plot 4A

Photo 6 - Plot 4B overview

Photo 7 - Plot 4C

Photo 8 - Plot 4D

Photo 9 - Plot 5 removed by landowner prior to inventory.

Photo 10 - Plot 5 overview

Photo 11 - Plot 6 in DOT right of way

Photo 12 - Plot 6 in pasture

Photo 13 - Plot 7 overview

Photo 14 - Plot 8 overview

Photo 15 - Plot 9 - lone dead tree

Photo 16 - Plot 9A - group of small shrubs

Photo 17 - Plot 10 and 11 overview from the road right of way

Photo 18 - Plot 12-14 overview taken from road right of way.

Photo 19 - Plot 14A identified during inventory

Photo 20 - Plot 15 overview

Photo 21 - Plot 16 overview

Photo 22 - Plot 17 Overview

Photo 23 - Plot 18 overview

Photo 24 - Evidence of fire in plot 18

Photo 25 - Plot 19 overview (photo take from plot 20)

Photo 26 - Plot 20 Dead ash trees

Photo 27 - Plot 20 overview

Photo 28 - Eagle nest observed off corridor west of the proposed right of way

Photo 29 - Plot 21 overview - all trees were dead

Photo 30 - Plot 22 overview

Photo 31 - Plot 22 had many dead ash trees

Photo 32 - Plot 23 overview

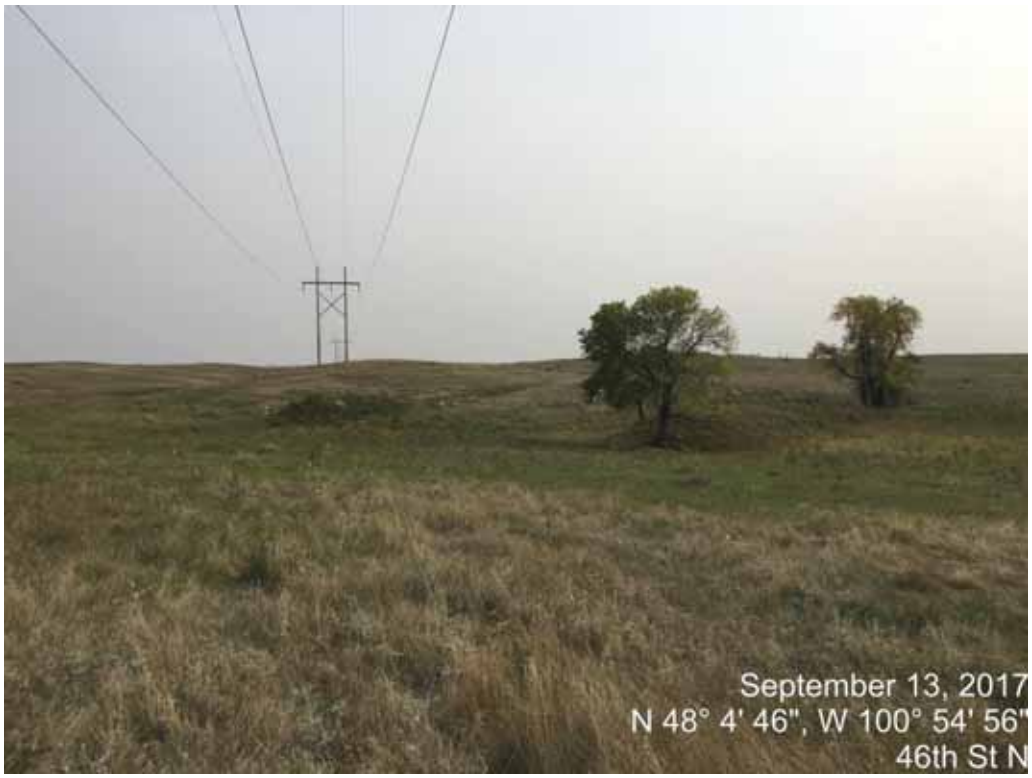


Photo 33 - Plot 24 overview

Photo 34 - Plot 25 overview

Photo 35 - Plot 25 willow sp. (shrub).

Photo 36 - Plot 26 overview

Photo 37 - Plot 27 Overview

Photo 38 - Plot 28 overview

Photo 39 - Plot 29 overview

Photo 40 - Plot 30 Overview

Photo 41 - Plot 31 overview

Photo 42 - Plot 32 overview

Photo 43 - Plot 33 overview

Photo 44 - Plot 33A - field identified plot

Photo 45 - Plot 34 overview

Photo 46 - Plot 34A overview – plot field identified.

Photo 47 - Plot 34B overview - field identified

Photo 48 - Plot 34C - plot field identified

Photo 49 - Plot 35 overview

Photo 50 - Plot 36 overview

Photo 51 - Plot 37A overview

Photo 52 - Plot 37B overview

Photo 53 - Plot 38 overview

Photo 54 - Plot 39 overview.

Attachment C

Plot 1

Type	Common Name	Scientific Name	Non-Native Species	Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1	14	1
				Inventory Total		1
				Non-native Inventory %		100

Plot 1 is located in a cow pasture approximately 2.1 miles west of the city of Voltaire, approximately 0.1 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.04 acre.

Plot 2A

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1.0	4.0	6
Shrub	Choke Cherry	Prunus virginiana	No	1.0	1.5	31
Shrub	Siberian Peashrub	Caragana arborescens	Yes	13.6	1.1	84
				Inventory Total		121
				Non-native Inventory %		74.4

Plot 2 is a wind break located approximately 2.1 miles west of the city of Voltaire, approximately 0.15 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.49 acre.

Plot 2B

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1.4	8.6	7
Shrub	Choke Cherry	Prunus virginiana	No	1.0	0.8	66
Shrub	Siberian Peashrub	Caragana arborescens	Yes	5.4	2.0	54

Total Plot Count

Total plot count is calculated by dividing the total plot area by the sample area to create a multiplier the average count of each species in the sample for the sample count. The total plot count for each species was then rounded to the nearest whole number.

$25387.26\ ft^2 \div 3302.26\ ft^2 = 7.67$

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1.4	8.6	54
Shrub	Choke Cherry	Prunus virginiana	No	1.0	0.8	506
Shrub	Siberian Peashrub	Caragana arborescens	Yes	5.4	2.0	414
				Clearing Total		974
				Non-native Inventory %		48.0

Plot 2B is a windbreak located approximately 2.1 miles west of the city of Voltaire, approximately 0.15 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the extrapolated representative plot method. The size of the plot was approximately 0.58 acres.

Clearing Plot Count

Total mitigation count is calculated by dividing the total plot area by the sample area to create a multiplier to calculate the number of each species cleared. The total plot count for each species was then rounded to the nearest whole number

3,177.7 ft^2÷3302.26 ft^2 = 0.96

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1.4	8.6	7
Shrub	Choke Cherry	Prunus virginiana	No	1.0	0.8	64
Shrub	Siberian Peashrub	Caragana arborescens	Yes	5.4	2.0	52
				Clearing Total		123
				Non-native Inventory %		48.0

Clearing was limited to areas around existing structures in Plot 2. As the clearing area was smaller than the area that was inventoried, the cleared areas in Plot 2A and Plot 2B were added up and divided by the plot count for 2B area to develop a multiplier for calculating an estimated number of trees cleared in the Plot 2. Figures of cleared areas for parcel 5 (Plot 2 and Plot 4) and 10 (Plot 6 and Plot 7) can be found in Attachment E.

Plot 3

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1	9.5	2
				Non-native Inventory %		100.0

Plot 3 is located approximately 2.1 miles west of the city of Voltaire, approximately 0.15 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the METHOD. The size of the plot was approximately 0.03 acre.

Plot 4A – Plot 1

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Choke Cherry	Prunus virginiana	No	1.0	1.9	39
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1.7	7.3	3
Shrub	Siberian Peashrub	Caragana arborescens	Yes	19.7	1.4	16

Total Plot Count

Total plot count is calculated by dividing the total plot area by the sample area to create a multiplier the average count of each species in the sample for the sample count. The total plot count for each species was then rounded to the nearest whole number.

Species Multiplier = 29675.94 ft^2 ÷ 3705.28 ft^2 = 8.01

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Choke Cherry	Prunus virginiana	No	1.0	1.9	312
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1.7	7.3	24
Shrub	Siberian Peashrub	Caragana arborescens	Yes	19.7	1.4	128
				Mitigation Total		464
				Non-native Inventory %		32.8

Plot 4A is a windbreak located approximately 2.1 miles west of the city of Voltaire, approximately 0.25 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the extrapolated representative plot method. The size of the plot was approximately 0.68 acre.

Clearing Plot Count

Total mitigation count is calculated by dividing the total plot area by the sample area to create a multiplier to calculate the number of each species cleared. The total plot count for each species was then rounded to the nearest whole number.

1,617.3 ft^2÷3302.26 ft^2 = 0.49

Type	Common Name	Scientific Name	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Choke Cherry	Prunus virginiana	No	1.0	1.9	19
Tree	Russian Olive	Elaeagnus angustifolia	Yes	1.7	7.3	1
Shrub	Siberian Peashrub	Caragana arborescens	Yes	19.7	1.4	8
				Clearing Total		28
				Non-native Inventory %		32.8

Clearing was limited to areas around existing structures in Plot 4A. As the clearing area was smaller than the area than was inventoried, the cleared areas in Plot 4A were added up and divided by the plot count area to develop a multiplier for calculating an estimated number of trees cleared in the Plot 4A. Figures of cleared areas for parcel 5 (Plot 2 and Plot 4) and 10 (Plot 6 and Plot 7) can be found in Attachment E.

Plot 4B – Plot 2

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Honeysuckle Species	*Lonicera sp.*	Yes	6.0	1.0	1
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	2.5	5.5	4
Shrub	Viburnum Species	*Viburnum Sp.*	Yes	1.0	0.3	3
Shrub	Siberian Peashrub	*Caragana arborescens*	Yes	25.1	0.1	10

Total Plot Count

Total plot count is calculated by dividing the total plot area by the sample area to create a multiplier the average count of each species in the sample for the sample count. The total plot count for each species was then rounded to the nearest whole number.

Species Multiplier = 27832.16 ft^2 ÷ 4151.49 ft^2 = 6.7

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Honeysuckle Species	*Lonicera sp.*	Yes	6.0	1.0	7
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	2.5	5.5	27
Shrub	Viburnum Species	*Viburnum Sp.*	Yes	1.0	0.3	20
Shrub	Siberian Peashrub	*Caragana arborescens*	Yes	25.1	0.1	67
				Inventory Total		121
				Non-native Inventory %		83.3

Plot 4 is a windbreak located approximately 2.1 miles west of the city of Voltaire, approximately 0.25 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the extrapolated representative plot method. The size of the plot was approximately 0.64 acres.

Clearing Plot Count

Total mitigation count is calculated by dividing the total plot area by the sample area to create a multiplier to calculate the number of each species cleared. The total plot count for each species was then rounded to the nearest whole number

Species Multiplier = 551.8 ft^2 ÷ 4,151.49 ft^2 = 0.13

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Honeysuckle Species	*Lonicera sp.*	Yes	6.0	1.0	0
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	2.5	5.5	1
Shrub	Viburnum Species	*Viburnum Sp.*	Yes	1.0	0.3	0
Shrub	Siberian Peashrub	*Caragana arborescens*	Yes	25.1	0.1	1
				Clearing Total		2

Clearing was limited to areas around existing structures in Plot 4B. As the clearing area was smaller than the area than was inventoried, the cleared areas in Plot 4A were added up and divided by the plot count area to develop a multiplier for calculating an estimated number of trees cleared in the Plot 4A. Figures of cleared areas for parcel 5 (Plot 2 and Plot 4) and 10 (Plot 6 and Plot 7) can be found in Appendix E.

Plot 4C

Type	Common Name	*Scientific Name*	Non-Native Species	Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	1	8	1
Shrub	Russian Olive	*Elaeagnus angustifolia*	Yes	2	2	1
Shrub	Siberian Peashrub	*Caragana arborescens*	Yes	1	0.25	29
				Inventory Total		31
				Non-native Inventory %		100

Plot 4C is located approximately 2.1 miles west of the city of Voltaire, approximately 0.25 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately .01 acre.

Plot 4D

Type	Common Name	*Scientific Name*	Non-Native Species	Stems per Clump	Average Diameter (in.)	Count
Shrub	Russian Olive	*Elaeagnus angustifolia*	Yes	1	8	1
				Non-native Inventory %		100

Plot 4D is located approximately 2.1 miles west of the city of Voltaire, approximately 0.25 mile north of State Highway 97. Trees and shrubs within this plot were inventoried using the METHOD. The size of the plot was approximately .03 acre.

Plot 5

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Ash-Leaf Maple	Acer negundo	No	2.0	3.5	1
Shrub	Hawthorn Species	Crataegus sp.	No	2.8	1.5	17
				Inventory Total		18
				Non-native Inventory %		0

Plot 5 is located approximately 2.1 miles west of the city of Voltaire, adjacent to the south U.S. Highway 52 ditch. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately .05 acres.

Plot 6

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Eastern Cottonwood	Populus deltoides	*No*	6.0	11.8	1
Tree	Russian Olive	Elaeagnus angustifolia	*Yes*	1.2	3.7	15
Shrub	Hawthorn Species	Crataegus sp.	*No*	1.0	3.0	1
Shrub	Prickly Ash	Zanthoxylum americanum	*No*	1.0	1.0	8
Shrub	Red-Osier Dogwood	Cornus alba	*No*	27.0	0.5	1
				Inventory Total		26
				Non-native Inventory %		57.7

Plot 6 is located approximately 2.1 miles west of the city of Voltaire, adjacent to the north U.S. Highway 52 ditch. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.17 acre.

Plot 7

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	*Yes*	1.0	10.3	8
Tree	White Willow	Salix alba	*No*	1.0	17.0	1
Shrub	American Plum	Prunus americana	*No*	0.0	0.8	9
Shrub	Choke Cherry	Prunus virginiana	*No*	1.5	1.5	41
Shrub	Hawthorn Species	Crataegus sp.	*No*	2.3	2.1	85
Shrub	Honeysuckle species	Lonicera sp.	*Yes*	10.5	0.6	4
Shrub	Prickly Ash	Zanthoxylum americanum	*No*	1.0	1.0	6
Shrub	Red-Osier Dogwood	Cornus alba	*No*	23.2	0.5	16
Shrub	European Buckthorn	Rhamnus cathartica	*Yes*	1	6	1
				Inventory Total		171
				Non-native Inventory %		7.1

Plot 7 is located approximately 2.2 miles northwest of the city of Voltaire, approximately 0.1 mile north of U.S. Highway 52. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.66 acre.

The entire ROW was not cleared in Plot 7 with many shrubs on the west half of the ROW left in place (Attachment D). To represent an appropriate count for mitigation for Plot 7, the number of remaining individual shrubs were counted in the ROW and subtracted from the above inventory numbers and summarized in the table below.

Plot 7 Mitigation Totals

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	Elaeagnus angustifolia	*Yes*	1.0	10.3	5
Tree	White Willow	Salix alba	*No*	1.0	17.0	1
Shrub	American Plum	Prunus americana	*No*	0.0	0.8	9
Shrub	Choke Cherry	Prunus virginiana	*No*	1.5	1.5	34
Shrub	Hawthorn Species	Crataegus sp.	*No*	2.3	2.1	42
Shrub	Honeysuckle species	Lonicera sp.	*Yes*	10.5	0.6	2
Shrub	Prickly Ash	Zanthoxylum americanum	*No*	1.0	1.0	4
Shrub	Red-Osier Dogwood	Cornus alba	*No*	23.2	0.5	1
Shrub	European Buckthorn	Rhamnus cathartica	*Yes*	1	6	1
				Inventory Total		99

Plot 8

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Viburnum Species	*Viburnum sp.*	Yes	1.5	3.25	2
Tree	Ash-leaf Maple	*Acer negundo*	No	1	26	1
				Inventory Total		377
				Non-native Inventory %		93.1

Plot 8 is located approximately 2.25 miles northwest of the city of Voltaire, approximately 0.3 mile north of U.S. Highway 52. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.04

Plot 9

Plot 9 is located approximately 2.5 miles northwest of the city of Voltaire, approximately 0.9 mile north of U.S. Highway 52. The plot was identified using aerial photography and was discovered to contain one dead shrub during the tree inventory.

Plot 9A

Type	Common Name	*Scientific Name*	Non-Native Species	Stems per Clump	Average Diameter (in.)	Count
Shrub	Viburnum Species	*Viburnum sp.*	Yes	1	0.5	4
Shrub	Russian Olive	*Elaeagnus angustifolia*	Yes	1	0.5	1
				Inventory Total		5
				Non-native Inventory %		100

Plot 9 is located approximately 2.5 miles northwest of the city of Voltaire, approximately 0.9 mile north of U.S. Highway 52. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.19

Plot 10

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Unknown	-	-	-	-	7

Plot 10 is a windbreak located approximately 2.8 miles northwest of the city of Voltaire, approximately 1.3 mile north of U.S. Highway 52. As plot 10 was located on a stay off property, trees and shrubs within this plot were estimated from the public road right of way using binoculars and not tallied in the inventory report. The size of the plot was 0.05 acres.

Plot 11

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Russian Olive	*Elaeagnus angustifolia*	Yes	-	-	4

Plot 11 is a windbreak located approximately 2.8 miles northwest of the city of Voltaire, approximately 1.4 miles north of U.S. Highway 52. As plot 11 was located on a stay off property, trees and shrubs within this plot were estimated from the public road right of way using binoculars and not tallied in the inventory report. The size of the plot was approximately 0.06 acre.

Plot 12

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Siberian Elm	*Ulmus pumila*	Yes	-	-	5
Shrub	Siberian Elm	*Ulmus pumila*	Yes	-	-	2

Plot 12 is located approximately 3 miles northwest of the city of Voltaire, approximately 0.1 mile north of 44th St North. As plot 12 was located on a stay off property, trees and shrubs within this plot were estimated from the public road right of way using binoculars and not tallied in the inventory report. The size of the plot was approximately 0.05 acre.

Plot 13

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Unknown	-	-	-	-	10
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	-	-	1

Plot 13 is located approximately 3 miles northwest of the city of Voltaire, approximately 0.2 mile north of 44th St North. As plot 13 was located on a stay off property, trees and shrubs within this

plot were estimated from the public road right of way using binoculars and not tallied in the inventory report. The size of the plot was approximately 0.05 acre.

Plot 14

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	-	-	1

Plot 14 is a windrow located approximately 3 miles northwest of the city of Voltaire, approximately 0.2 mile north of 44th St North. As plot 14 was located on a stay off property, trees and shrubs within this plot were estimated from the public road right of way using binoculars and not tallied in the inventory report. The size of the plot was approximately 132 square feet.

Plot 14A

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1	6	1

Plot 14A is located approximately 3 miles northwest of the city of Voltaire, approximately 0.2 mile north of 44th St North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 3.14 square feet.

Plot 15

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Viburnum Species	*Viburnum sp.*	Yes	10	4.2	1

Plot 15 is located approximately 2 miles east of the city of Velva, approximately 0.2 mile south of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 102 square feet.

Plot 16

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1.1	9.6	8
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	3.6	1.3	47
Shrub	Green Ash	*Fraxinus pennsylvanica*	No	14.5	0.5	2
Shrub	Hawthorn Species	*Crataegus sp.*	No	2.8	1.1	12
				Inventory Total		69
				Non-native Inventory %		68.1

Plot 16 is located approximately 2 miles east of the city of Velva, approximately 0.1 mile south of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.72 acre.

Plot 17

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	American Elm	*Ulmus Americana*	No	1.0	5.5	2
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	2.4	1.4	16
Shrub	Honeysuckle species	*Lonicera sp.*	Yes	1.0	5.0	1
				Inventory Total		19
				Non-native Inventory %		89.5

Plot 17 is located approximately 2 miles east of the city of Velva, just south of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.10 acre.

Plot 18

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1	8	1

Plot 18 is located approximately 2 miles northeast of the city of Velva, less than 0.1 miles northwest of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.13 acre.

Plot 19

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	American Elm	Ulmus Americana	*No*	1.0	7.0	1
Tree	Ash-Leaf Maple	Acer negundo	*No*	1.0	10.0	1
Tree	Green Ash	Fraxinus pennsylvanica	*No*	1.2	16.8	6
				Inventory Total		8
				Non-native Inventory %		0

Plot 19 is located approximately 2 miles northeast of the city of Velva, approximately 0.25 mile northwest of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.24 acre.

Plot 20

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Ash-Leaf Maple	Acer negundo	*No*	1.0	19.6	9
Tree	Green Ash	Fraxinus pennsylvanica	*No*	1.0	36.0	49
Shrub	Ash-Leaf Maple	Acer negundo	*No*	9.0	1.0	1
				Inventory Total		59
				Non-native Inventory %		0

Plot 20 is located approximately 1.9 miles northeast of the city of Velva, approximately 0.3 mile northeast of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 2.42 acres.

Plot 21

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Dead Tree	White Willow	*Salix alba*	No	1	16	2
Dead Tree	Green Ash	*Fraxinus pennsylvanica*	No	1	13	2
				Inventory Total		0

Plot 21 is located approximately 1.8 miles northeast of the city of Velva, less than 0.5 mile northeast of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.56 acre.

Plot 22

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1	14.9	19
Tree	Ash-leaf Maple	*Acer negundo*	No	1	13.8	5
Dead Tree	Green Ash	*Fraxinus pennsylvanica*	No	DEAD	33.5	26
Dead Tree	Ash-leaf Maple	*Acer negundo*	No	DEAD	19.5	4
				Inventory Total		24

Plot 22 is located approximately 1.7 miles northeast of the city of Velva, approximately 0.6 mile northeast of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 1.3 acre.

Plot 23

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	American Elm	*Ulmus Americana*	No	1	5.7	3
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1	6	1
Shrub	Hawthorn Species	*Crataegus sp.*	No	1	3	1
Shrub	Prickly Ash	*Zanthoxylum americanum*	No	1	1	8
				Inventory Total		13
				Non-native Inventory %		0

Plot 23 is located approximately 1.7 miles northeast of the city of Velva, approximately 0.7 mile northeast of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.27 acre.

Plot 24

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	White Willow	*Salix alba*	No	5	10.6	1
Tree	Ash-leaf maple	*Acer negundo*	No	1	18	1
Sapling	Honeysuckle Species	*Lonicera sp.*	Yes	1	0.1	178
				Inventory Total		2
				Non-native Inventory %		0

Plot 24 is located approximately 1.7 miles northeast of the city of Velva, approximately 0.6 mile east of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.04 acre.

Plot 25

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Eastern Cottonwood	*Populus deltoides*	No	1.0	25.7	3
Tree	White Willow	*Salix alba*	No	1.3	10.2	15
Shrub	Willow species	*Salix sp.*	-	5.0	4.3	28
				Inventory Total		46
				Non-native Inventory %		0

Plot 25 is located approximately 1.7 miles north of the city of Velva, approximately 0.5 mile east of Highway 41. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.20 acres.

Plot 26

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Ash-Leaf Maple	*Acer negundo*	No	1.0	4.8	22
Tree	White Willow	*Salix alba*	No	3.9	10.0	7
Shrub	American Plum	*Prunus americana*	No	0.0	0.7	53
Shrub	Ash-Leaf Maple	*Acer negundo*	No	7.3	1.3	3
				Inventory Total		85
				Non-native Inventory %		0

Plot 26 is located approximately 1.7 miles north of the city of Velva, approximately 0.5 mile east of Highway 41. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.13 acres.

Plot 27

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Eastern Cottonwood	*Populus deltoides*	No	1.0	20.0	4
Tree	White Willow	*Salix alba*	No	1.9	16.3	14
				Inventory Total		18
				Non-native Inventory %		0

Plot 27 is located approximately 1.8 miles north of the city of Velva, approximately 0.4 mile east of Highway 41. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.17.

Plot 28

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1.1	11.1	37
Shrub	Green Ash	*Fraxinus pennsylvanica*	No	1.5	1.0	2
Shrub	Siberian Peashrub	*Caragana arborescens*	Yes	10.0	1.1	30
				Inventory Total		69
				Non-native Inventory %		43.5

Plot 28 is located approximately 2.3 miles north of the city of Velva, approximately 0.3 mile west of Highway 41. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.19 acre.

Plot 29

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Siberian Elm	*Ulmus pumila*	Yes	1.1	9.5	14
Shrub	Siberian Elm	*Ulmus pumila*	Yes	1.0	1.9	69
				Inventory Total		83
				Non-native Inventory %		100

Plot 29 is located approximately 2.5 miles north of the city of Velva, approximately 0.5 mile west of Highway 41. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.18 acre.

Plot 30

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	2.4	4.6	5
Shrub	Siberian Elm	*Ulmus pumila*	Yes	1.3	2.0	9
				Inventory Total		14
				Non-native Inventory %		100

Plot 30 is located approximately 3.3 miles northwest of the city of Velva, approximately 1.25 miles west of Highway 41. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.08 acre.

Plot 31

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	White Willow	*Salix alba*	No	1.7	8.5	3
Shrub	Willow species	*Salix sp.*	-	4.6	0.9	55
				Inventory Total		58
				Non-native Inventory %		0

Plot 31 is located approximately 3.5 miles northeast of the city of Sawyer, approximately 0.1 mile east of 19th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.03 acre.

Plot 32

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	2	10.8	1

Plot 32 is located approximately 3.3 miles northeast of the city of Sawyer, approximately 0.1 mile west of 19th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.02 acre.

Plot 33

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1	18.5	1

Plot 33 is located approximately 3.2 miles northeast of the city of Sawyer, approximately 0.3 mile west of 19th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.03 acre.

Plot 33A

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	American Plum	*Prunus americana*	No	3	3	1

Plot 33A is located approximately 3.2 miles northeast of the city of Sawyer, approximately 0.3 mile west of 19th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 30 square feet.

Plot 34

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	1.2	12.7	6

Plot 34 is located approximately 3 miles northeast of the city of Sawyer, approximately 0.4 mile east of 20th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.01 acre.

Plot 34A

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	American Plum	*Prunus americana*	No	0.0	1.9	18

Plot 34A is located approximately 3 miles northeast of the city of Sawyer, approximately 0.4 mile east of 20th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.03 acre.

Plot 34B

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Shrub	Willow Species	*Salix sp.*	-	30	2	1

Plot 34B is located approximately 3 miles northeast of the city of Sawyer, approximately 0.4 mile east of 20th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 47 square feet.

Plot 34C

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Siberian Elm	*Ulmus pumila*	Yes	1	5	1

Plot 34C is located approximately 3 miles northeast of the city of Sawyer, approximately 0.4 mile east of 20th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 22.6 square feet.

Plot 35

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1	9	1

Plot 35 is located approximately 2.5 miles northeast of the city of Sawyer, approximately 0.4 mile east of 20th Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.01 acre.

Plot 36

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Dead Tree	Siberian Elm	*Ulmus pumila*	Yes	1		0

Plot 36 is located approximately 3.1 miles northeast of the city of Sawyer, approximately 0.5 mile east of 167thth Ave. North. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.02.

Plot 37A

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Ash-Leaf Maple	*Acer negundo*	No	1.0	6.1	17
Tree	Eastern Cottonwood	*Populus deltoides*	No	1.0	15.0	1
Tree	Green Ash	*Fraxinus pennsylvanica*	No	1.0	8.0	1
Shrub	Ash-Leaf Maple	*Acer negundo*	No	2.1	2.1	8
				Inventory Total		27
				Non-native Inventory %		0

Plot 37A is located approximately 3 miles southwest of the city of Surrey, just south of 37th Ave. Southeast. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.23 acre.

Plot 37B

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Eastern Cottonwood	Populus deltoides	*No*	Tree	1.1	13.6	32

Plot 37B is located approximately 3 miles southwest of the city of Surrey, just south of 37th Ave. Southeast. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.08 acre.

Plot 38

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Eastern Cottonwood	*Populus deltoides*	No	4	20	1

Plot 38 is located approximately 3.14 miles southwest of the city of Surrey, just south of 37th Ave. Southeast. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.07 acre.

Plot 39

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Eastern Cottonwood	*Populus deltoides*	No	1	24	1
Tree	Russian Olive	*Elaeagnus angustifolia*	Yes	2	1.5	1
				Inventory Total		2
				Non-native Inventory %		50

Plot 39 is located approximately 3 miles southwest of the city of Surrey, just north of 37th Ave. Southeast. Trees and shrubs within this plot were inventoried using the direct count method. The size of the plot was approximately 0.01 acre.

Structure 33 Access

Type	Common Name	*Scientific Name*	Non-Native Species	Average Stems per Clump	Average Diameter (in.)	Count
Tree	Green Ash	*Populus deltoides*	No	1	16.2	11
Tree	American Elm	*Elaeagnus angustifolia*	No	1	9.5	6
				Inventory Total		17
				Non-native Inventory %		0

Structure 33 access is located approximately 1.8 miles northeast of the city of Velva, less than 0.5 mile northeast of Valley Road. Trees and shrubs within this plot were inventoried using the direct count method on November 14, 2017 by KLG Engineering (Attachment D).

Attachment D

KLJ Engineering
4585 Coleman Street
PO Box 1157
Bismarck, ND 58502

Memorandum

Date: 11/15/2017

To: Tom Hillstrom

Copy to: Joe Samuel, Grady Wolf

From: Scott Brossart

RE: Structure 33 Access Route

Remarks

The purpose of this memo is to summarize the findings of the tree survey completed in conjunction with Xcel Energy's 230 kV transmission line project McHenry & Ward Counties, North Dakota. Per coordination with Bob Schneider (Xcel Energy), field surveys were completed to delineate which trees/shrubs would be selected for removal for the construction of the access route to Structure 33 as well as record the total number of individuals by species. The field survey was completed by Scott Brossart on November 14, 2017. **Attachment 1** consists of photos documenting the area of where the proposed access route will take place and some of the trees marked for removal. **Attachment 2** shows an aerial view of the rough outline of where the proposed access route is located.

A total of 2 different species of trees were identified during the field surveys, with 19 trees being marked for removal. The two species of trees recorded were Green Ash (*Fraxinus pennsylvanica*) and American Elm (*Ulmus americana*). The table below outlines the tree species identified during the survey and the total number of each species. **Attachment 3** is a table that shows specifics about each tree that was selected for removal.

Tree Species	Total Number by Species
Green Ash	13
American Elm	6
Total	**19**

Attachment 1:

Areas Subject to Tree Survey

Attachment 2:

Maps

Project Feature
- Preliminary Structure Location
- Preliminary 230/115 kV Centerline
- Right-of-Way (125 Feet)
- Existing Structure Location
- Parcel Boundary

Access Route
- Access Route

Desktop Wetland
- Wetland

Jurisdiction
- Section Boundary

Haul Route
- Township Road

Raptor Nest
- Nest

Minot Load Serving Stormwater Pollution Prevention Plan Map McHenry and Ward Counties, North Dakota

0 200 400 Feet

Prepared For: Xcel Energy

Prepared By: Tetra Tech

Drawn:	MAR 9/15/2017
Approved:	LHK 9/15/2017
Scale:	1:4,800
PROJECT NUMBER	60342328
FIGURE NUMBER	7

P:\15750_Xcel_Energy_Minot_ND\900_WorkingDocs-GIS\Layout\SWPPP\Minot_SWPPP_Sheet_Map_20170915.mxd

Attachment 3:

Tree Table

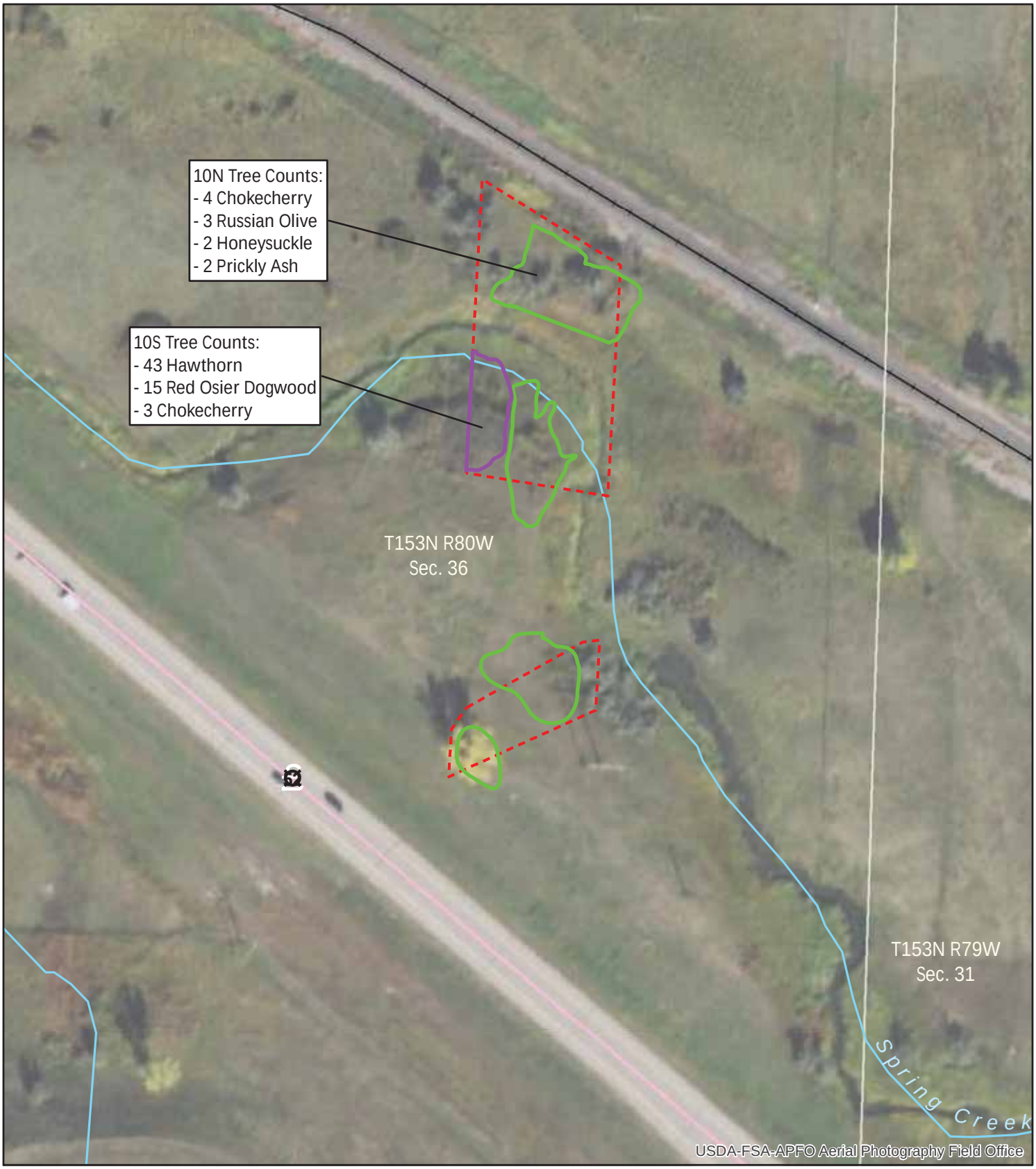
Structure 33 Access - Xcel Energy					
#	Common Name	Scientific Name	Tree/ Shrub	Stems/ Clump	Diameter
1	Green Ash	*Fraxinus pennsylvanica*	Tree	1	16"
2	Green Ash	*Fraxinus pennsylvanica*	Tree	1	15"
3	Green Ash	*Fraxinus pennsylvanica*	Tree	1	11"
4	American Elm	*Ulmus americana*	Tree	1	12"
5	Green Ash	*Fraxinus pennsylvanica*	Tree	1	15"
6	Green Ash	*Fraxinus pennsylvanica*	Tree	1	21"
7	American Elm	*Ulmus americana*	Tree	1	10"
8	American Elm	*Ulmus americana*	Tree	1	11"
9	American Elm	*Ulmus americana*	Tree	1	6"
10	Green Ash	*Fraxinus pennsylvanica*	Tree	1	13"
11	American Elm	*Ulmus americana*	Tree	1	8"
12	Green Ash	*Fraxinus pennsylvanica*	Tree	1	13"
13	American Elm	*Ulmus americana*	Tree	1	10"
14	Green Ash	*Fraxinus pennsylvanica*	Tree	1	14"
15	Green Ash	*Fraxinus pennsylvanica*	Tree	2	6", 14"
16	Green Ash	*Fraxinus pennsylvanica*	Tree	2	11", 14"
17	Green Ash	*Fraxinus pennsylvanica*	Tree	1	20"
18	Green Ash	*Fraxinus pennsylvanica*	Tree	1	20"
19	Green Ash	*Fraxinus pennsylvanica*	Tree	1	24"

19 Trees marked for Removal

13 - Green Ash

6 - American Elm

Attachment E



Parcel 10

KLJ

KLJ Project Number: 1412617184
Date Created: 3/15/2018 | Created By: JDP

Xcel Energy
Minot Load Serving Project
Tree and Shrub Removal Survey
McHenry & Ward Counties, ND

2

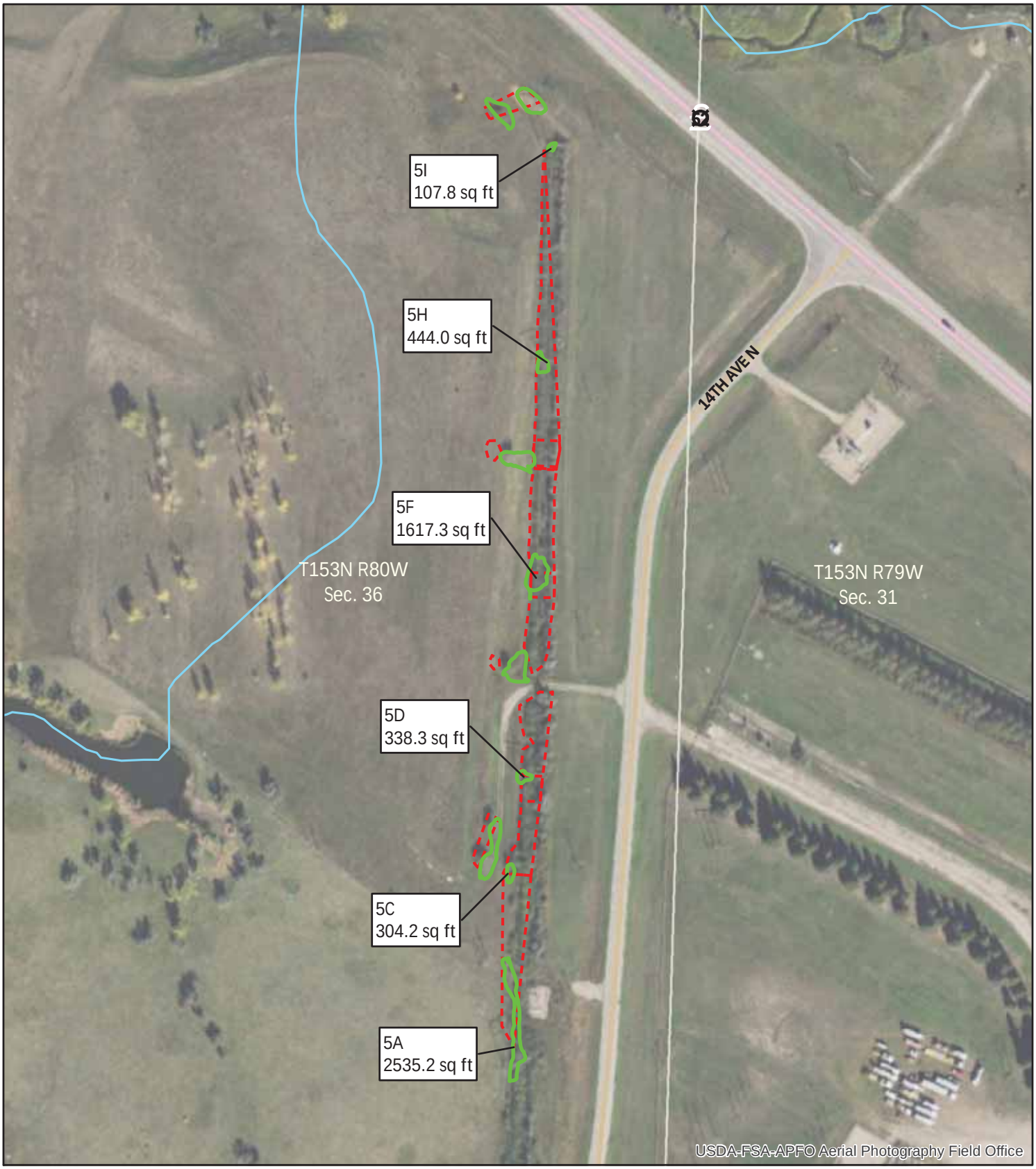
0 50 100 200 Feet

0 25 50 100 Meters

1:1,400

- Tree & Shrub Removal Area
- Trees & Shrubs Not Removed
- Preconstruction Tree and Shrub Survey Area

Document Location: \\bsmk-files01\P\Power\Xcel\1412617184_Minot_230KV\GIS\1412617184_230kV_TreeRemoval_20180315.mxd



Parcel 5

KLJ

Xcel Energy
Minot Load Serving Project
Tree and Shrub Removal Survey
McHenry & Ward Counties, ND

2

0 50 100 200 Feet

0 25 50 100 Meters

1:2,700

Tree & Shrub Removal Area

Preconstruction Tree and Shrub Survey Area

KLJ Project Number: 1412617184	
Date Created: 3/15/2018	Created By: JDP

Document Location: \\bsmk-files01\P\Power\Xcel\1412617184_Minot_230KV\GIS\1412617184_230kV_TreeRemoval_20180315.mxd

Parcel 55A

KLJ

Xcel Energy
Minot Load Serving Project
Tree and Shrub Removal Survey
McHenry & Ward Counties, ND

0 50 100 200 Feet

0 25 50 100 Meters

2

1:1,800

Tree & Shrub Removal Area

Preconstruction Tree and Shrub Survey Area

KLJ Project Number: 1412617184	
Date Created: 3/15/2018	Created By: JDP

Document Location: \\bsmk-files01\P\Power\Xcel\1412617184_Minot_230KV\GIS\1412617184_230kV_TreeRemoval_20180315.mxd

Appendix B

Signed Landowner Waivers and Agreements

Northern States power Company/Xcel Energy
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

Tree Mitigation Form

Surveyed Tree Plots: 6 and 7

Landowner Name: Warren Colby and Shae Colby

Project Parcel Number: 010

Landowner Address: Warren Colby
846 44th St. N
Voltaire, ND 58792

Shae Colby
12963 Quincy St. NE
Blaine, MN 55434

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees or shrubs (If Available)
6 and 7	103	15	30 trees ~~106 shrubs~~ TREES	65 TREES

Tree Mitigation Request (check one):

X I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations (attach map):

846 44TH ST N VOLITAIRE ND

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

Additional Comments: PREFERED SPECIES OF TREES, EVERGREEN
TAKING ADDITIONAL TREES FROM PARCELS 5 (16) PARCEL 6 (3)
AND PARCEL 23+24 (46)
OWNER IS WILLING TO PREP THE AREAS

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
010	Russian Olive	Yes	EVERGREEN	Tree	14	28	28
010	White Willow	No	EVERGREEN	Tree	1	2	2
010	American Plum	No	EVERGREEN	~~Shrub~~	9	18	18
010	Choke Cherry	No	EVERGREEN	~~Shrub~~	34	68	68
010	European Buckthorn	Yes	EVERGREEN	~~Shrub~~	1	2	2
010	Hawthorn Species	No	EVERGREEN	~~Shrub~~	43	86	86
010	Honeysuckle Species	Yes	EVERGREEN	~~Shrub~~	2	4	4
010	Prickly Ash	No	EVERGREEN	~~Shrub~~	12	24	24
010	Red-Osier Dogwood	No	EVERGREEN	~~Shrub~~	2	4	4
				Total	118	236	236

Landowner Signature

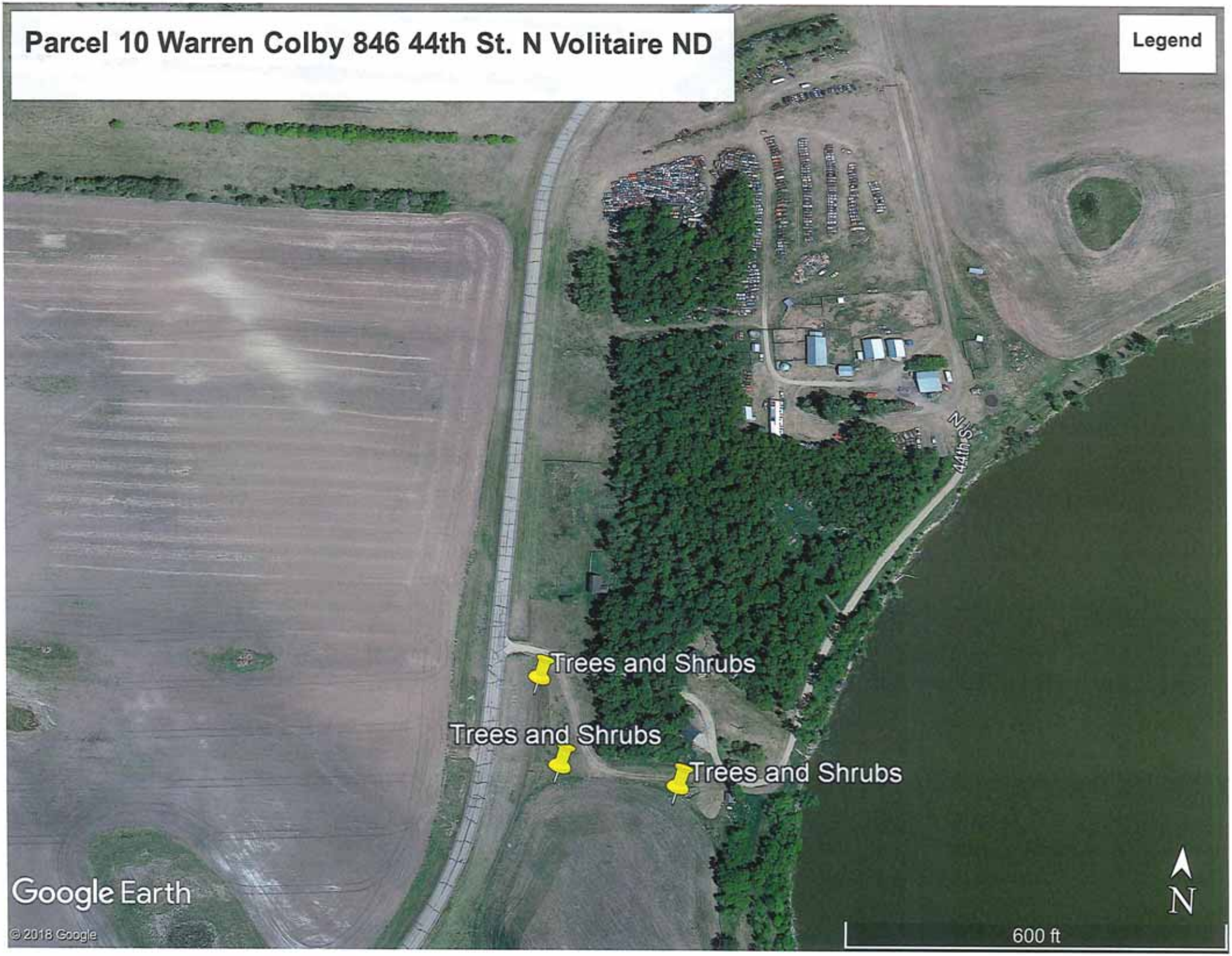
4-19-18
Date

Right-of-Way Agent Signature

4-19-18
Date

Attach map

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 10 Warren Colby 846 44th St. N Volitaire ND
Legend
N 44th St
Trees and Shrubs
Trees and Shrubs
Trees and Shrubs
Google Earth
© 2018 Google
N
600 ft

Tree Mitigation Form

Surveyed Tree Plots: 8

Landowner Name: ~~Wanda~~ TOM I. Krumwiede - The Delbert V. Krumwiede Trust

Project Parcel Number: 014

Landowner Address: ~~3568 12th Ave~~ 1550 HWY 52 W
Velva, ND 58790

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
8	2	1	2 Trees 4 shrubs	12 TREES FROM PARCEL 5

Tree Mitigation Request (check one):

X I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations (attach map):

1550 HWY 52 W, VELVA ND

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

TAKING 12 TREES FROM PARCEL 5 BASIN ELECTRIC

Additional Comments: PREFERRED SPECIES TREES PINE OR EVERGREEN

PREFERRED SPECIES SHRUBS JUNEBERRY

OWNER WILL PLANT TREES AND SAPLINGS

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
014	Ash-Leaf Maple	No	PINE OR EVERGREEN	Tree	1	2	2
014	Viburnum Species	-	JUNEBERRY	Shrub	2	4	4
				Total	3	6	6

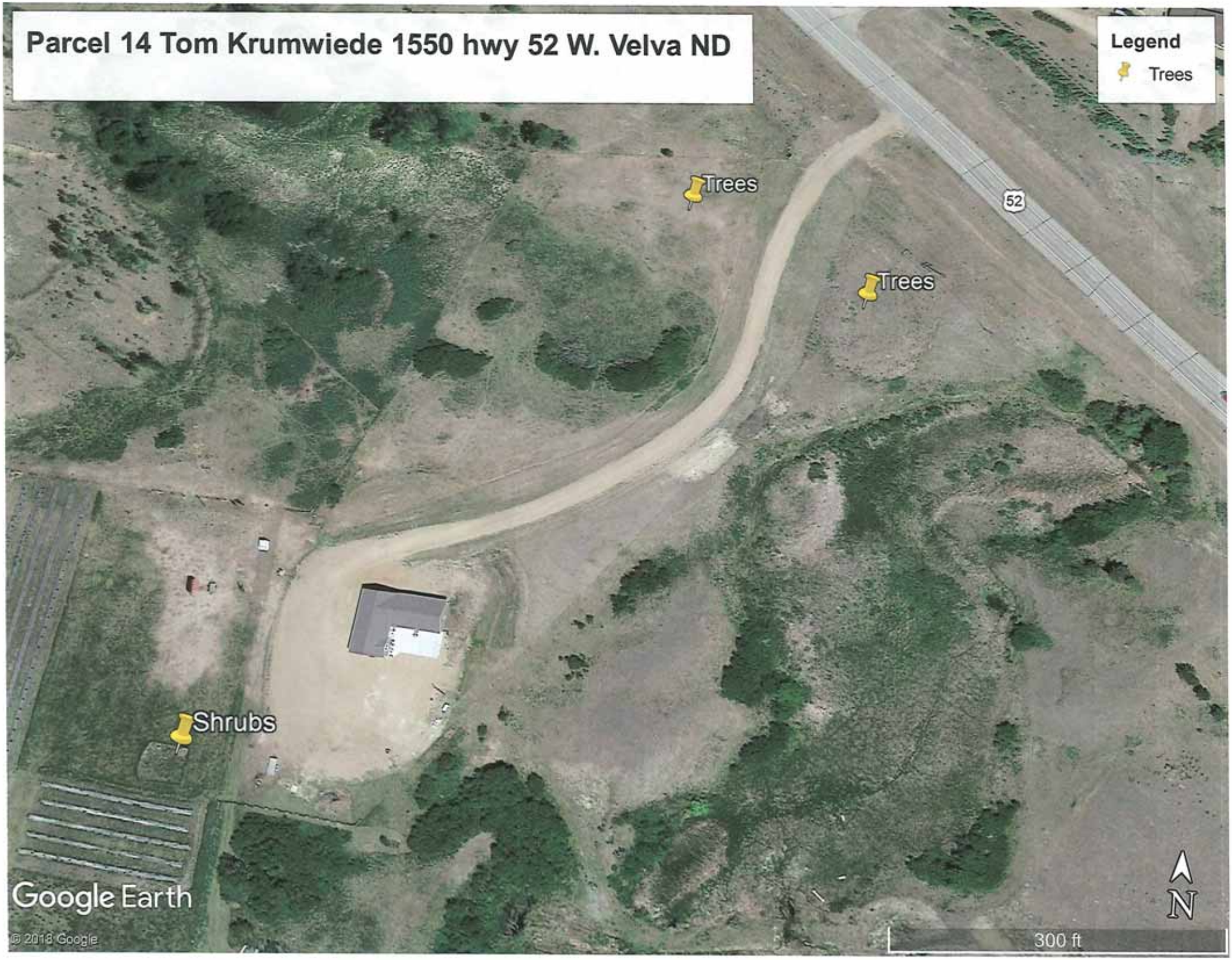
Landowner Signature

4-18-18
Date

Right-of-Way Agent Signature

4-18-18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 14 Tom Krumwiede 1550 hwy 52 W. Velva ND
Legend
Trees
Trees
Trees
52
Shrubs
Google Earth
© 2018 Google
N
300 ft

Northern States power Company/Xcel Energy
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

Tree Mitigation Form

Surveyed Tree Plots: 9A

Landowner Name: Jim Doyle

Project Parcel Number: 020

Landowner Address: PO Box 486
Velva, ND 58790

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
9A	5	0	10 shrubs	

Tree Mitigation Request (check one):

____ I request that replacement shrubs (at a 2:1 ratio) be planted on my property at the following locations:

_____

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees will be replaced in-kind unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

X I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

_____

Additional Comments: TALKED TO JIM VIA PHONE. IS NOT INTERESTED GAVE HIS TO ANOTHER LANDOWNER

_____

_____

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
020	Russian Olive	No		Shrub	1	2	0
020	Viburnum Species	-		Shrub	4	8	0
				Total	5	10	0

TEGE CALL
Landowner Signature

Date

Right-of-Way Agent Signature

4-18-18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.

Northern States power Company/Xcel Energy
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

Tree Mitigation Form

Surveyed Tree Plots: 14a, 15-20, 22-23

Landowner Name: Curtis and Bonnie Feist

Project Parcel Number: 26, 29, 32, 39

Landowner Address: PO Box 42
Velva, ND 58790

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
14a, 15, 16, 17, 18, 19, 20, 22, 23	26	186	372 trees 52 shrubs	

Tree Mitigation Request (check one):

X I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations (attach map):

PLANT AT HOMESTEAD AND SOH IN LAWS ON VALLEY ROAD

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

OWNER IS WILLING TO PREP AREAS

Additional Comments: PREFERED SPECIES TREE EVERGREEN

PREFERED SPECIES SHRUB SOME TYPE OF BERRY

JUNEBERRY PREFERED

275 TREES AND 52 SHRUBS AT HOMESTEAD
98 TREES AT SOH-IN-LAWS

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
26	Green Ash	No	EVERGREEN	Tree	1	2	2
26	Viburnum Species	-	BERRY TYPE	Shrub	1	2	2
29	American Elm	No	EVERGREEN	Tree	2	4	4
29	Green Ash	No	EVERGREEN	Tree	9	18	18
29	Russian Olive	Yes	EVERGREEN	Tree	63	126	126
29	Green Ash	No	BERRY TYPE	Shrub	2	4	4
29	Hawthorn Species	No	BERRY TYPE	Shrub	12	24	24
29	Honeysuckle Species	Yes	BERRY TYPE	Shrub	1	2	2
032	American Elm	No	EVERGREEN	Tree	7	14	14
032	Ash-Leaf Maple	No	EVERGREEN	Tree	13	26	26
032	Green Ash	No	EVERGREEN	Tree	75	150	150
032	Ash-Leaf Maple	No	BERRY TYPE	Shrub	1	2	2
039	American Elm	No	EVERGREEN	Tree	3	6	6
039	Ash-Leaf Maple	No	EVERGREEN	Tree	2	4	4
039	Green Ash	No	EVERGREEN	Tree	11	22	22
039	Hawthorn Species	No	BERRY TYPE	Shrub	1	2	2
039	Prickly Ash	No	BERRY TYPE	Shrub	8	16	16
				Total	212	424	424

Landowner Signature

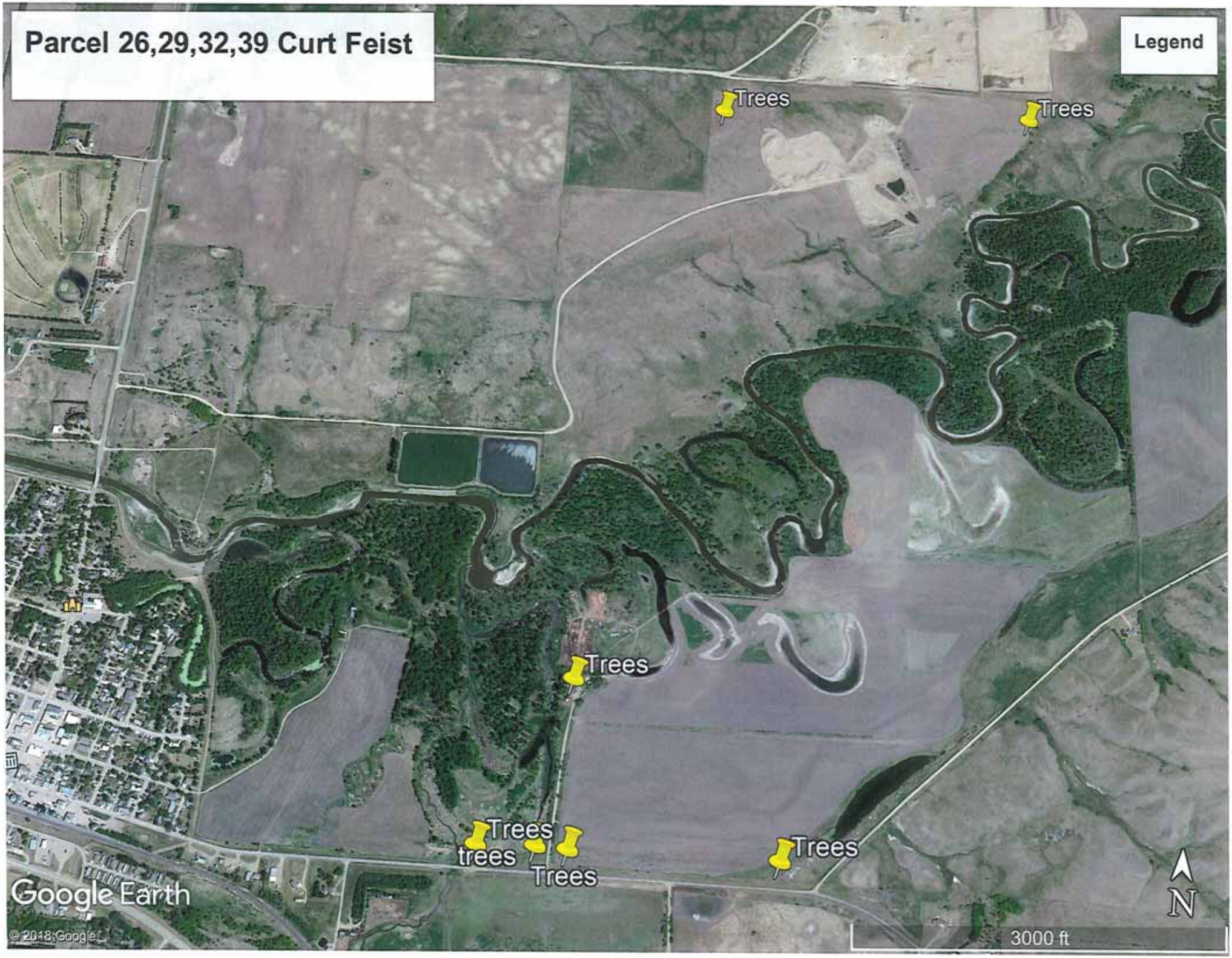
4-19-2018
Date

Right-of-Way Agent Signature

4-19-18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 26,29,32,39 Curt Feist
45th St N
Legend
98 Trees
Valley Rd
44th St N
15th Ave N
Google Earth
© 2018 Google
N
3000 ft


Parcel 26,29,32,39 Curt Feist
Legend
Trees
Trees
Trees
Trees
trees
Trees
Trees
Google Earth
© 2018 Google
3000 ft
N

Appendix C

McHenry Substation Tree Mitigation Information

Northern States power Company/Xcel Energy
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

Tree Mitigation Form

Surveyed Tree Plots: 24 and 25

Landowner Name: Country Edge Estates, LLC

Project Parcel Number: 041

Landowner Address: 4489 Highway 41 N.
Velva, ND 58790

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
24 and 25	28	20	96	464 TREES

Tree Mitigation Request (check one):

X I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations: (attach map)
CURT & SUZY LEE WILL BE TAKING THE TREES PER KANEL THOMAS'S REQUEST. CURTS # 701-626-1387

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

Additional Comments: WILL BE TAKING ADDITIONAL TREES FROM PARCEL 5(384) AND FROM PARCEL 82(80)

TREES SPECIES REQUESTED 120 CEDARS, 120 OAKS, 60 APPLE, 120 LARCH'S 120 PINES, 20 FLOWERING CRABS.

OWNER WILL PREP AREAS FOR PLANTING AND WILL PLANT SOME OF THE TREES HIMSELF

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
41	Ash-Leaf Maple	No	LOOK AT ADDITIONAL COMMENTS	Tree	1	2	2
41	Eastern Cottonwood	No		Tree	3	6	6
41	White Willow	No		Tree	16	32	32
41	Willow species	-		~~Shrub~~ TREE	28	56	56
				Total	48	96	96

Landowner Signature

April 18, 18
Date

Right-of-Way Agent Signature

4/13/18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 41 Paul Thomas
Curt and Suzy Lee 701-626-1387
Legend
Trees
Trees
45th St N
41
16th Ave N
Glenwood Ave
Riverside Dr
5th Ave
4th St W
3rd St W
Main St N
4th Ave
Church Ave
3rd Ave
2nd St W
1st St W
4th Ave NE
Google Earth
© 2018 Google
1000 ft
N


Parcel 41 Paul Thomas
Curt and Suzy Lee 701-626-1387
Legend
Trees
16th Ave N
41
Google Earth
© 2018 Google
N
1000 ft


Parcel 41 Paul Thomas
Curt and Suzy Lee 701-626-1387
Legend
Trees
51st St N
19th Ave N
Google Earth
© 2018 Google
N
2000 ft

Northern States power Company/Xcel Energy
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

Tree Mitigation Form

Surveyed Tree Plots: 28 and 29

Landowner Name: Mary Ann Peterschik, Joseph A. Krumwiede, William E. Krumwiede and Jean E. Krumwiede

Project Parcel Number: 060 and 061

Landowner Address: 424 F 32nd Ave SW
Minot, ND 58701

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
28 and 29	101	51	102 trees 202 ~~shrubs~~	

CHANGING SHRUBS TO TREES

Tree Mitigation Request (check one):

X I request that replacement trees/ shrubs (at a 2:1 ratio) be planted on my property at the following locations (attach map):

1/2 MILE EAST OF 47TH ST & 16TH AVE H INTERSECTION

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

JOEL SCHOCK TENANT IS TAKING THEM

Additional Comments: TENANT IS TAKING 40 TREES, 20 TREES EVERGREEN AND 20 TREES WILLOWS.

THE REMAINING 264 TREES WILL GO TO PARCEL 70 WHICH IS PRAIRIEVIEW RANCH OWNER IS WILLING TO PREP AREA

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
061	Green Ash	No	PIME	Tree	37	74	12
061	Siberian Elm	Yes	PIME	Tree	4	8	8
061	Green Ash	No		Shrub	2	4	0
061	Siberian Elm	Yes		Shrub	23	46	0
061	Siberian Peashrub	Yes		Shrub	30	60	0
060	Siberian Elm	Yes	CRMAS	Tree	10	20	20
060	Siberian Elm	Yes		Shrub	46	92	0
				Total	152	304	40

Landowner Signature

Date

Right-of-Way Agent Signature

4/23/18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 60-61 Joel Schock Tenant
Legend
Trees
Trees
10th Ave N
Google Earth
© 2018 Google
N
500 ft

Tree Mitigation Form

Surveyed Tree Plots: 30

Landowner Name: Prairie View Ranch

Project Parcel Number: 070

Landowner Address: 4725 17th Ave N
Velva, ND 58790

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
30	9	5	10 trees 18 ~~shrubs~~ TREES CHANGING SHRUBS TO TREES	300 TREES

Tree Mitigation Request (check one):

X I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations (attach map):

4725 17TH AVE N, VELVA ND

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

TAKING 264 TREES PARCEL 60-61 AND 36 TREES FROM PARCEL 82

Additional Comments: PREFERED SPECIES TREE EVERGREEN AND ASH
OWNER IS WILLING TO PLANT AREA

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
070	Russian Olive	Yes	EVERGREEN	Tree	5	10	10
070	Siberian Elm	Yes	EVERGREEN	~~Shrub~~ TREE	9	18	18
				Total	14	28	28

Landowner Signature 4-19-18

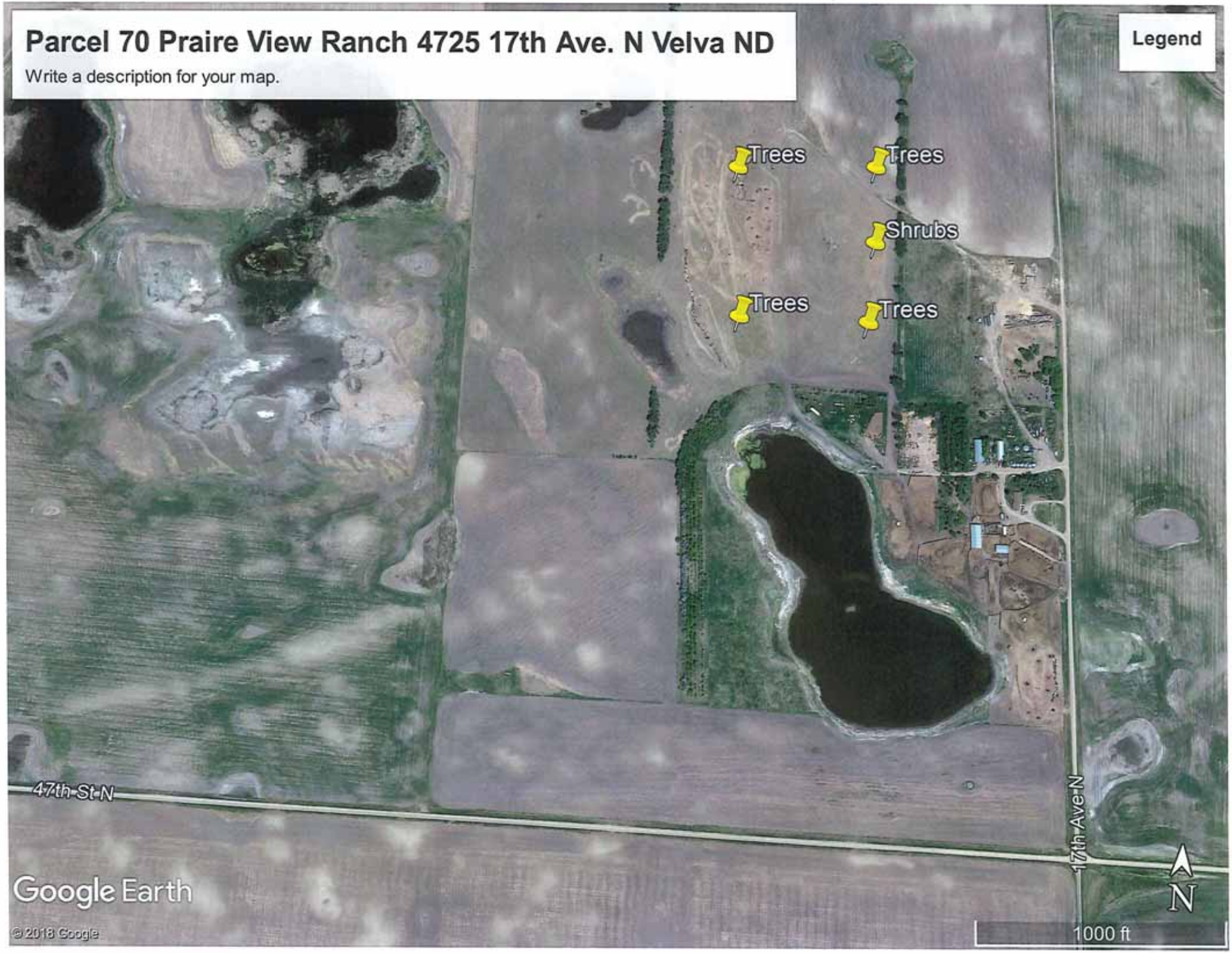
Date

Right-of-Way Agent Signature

4-19-18

Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 70 Praire View Ranch 4725 17th Ave. N Velva ND
Write a description for your map.
Legend
Trees
Trees
Shrubs
Trees
Trees
47th St N
17th Ave N
N
1000 ft
Google Earth
© 2018 Google

Tree Mitigation Form

Surveyed Tree Plots: 31

Landowner Name: Ronald J. Effertz and Marla J. Effertz, The Effertz Family Trust

Project Parcel Number: 082

Landowner Address: 866 Armada Place
Boulder City, NV 89005

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
31	55	3	110 ~~shrubs~~ TREES 6 trees 110 SHRUBS CHANGED TO TREES	

Tree Mitigation Request (check one):

____ I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations (attach map):

_____

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

____ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

CALLED SEVERAL TIMES LEFT VM'S, NO ONE RETURNED CALL

Additional Comments: 36 TREES WILL GO TO PARCEL 70

80 TREES WILL GO TO PARCEL 41

_____

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
082	White Willow	No		Tree	3	6	0
082	Willow species	-		~~Shrub~~ TREE	55	110	0
				Total	58	116	0

Landowner Signature

Date

Right-of-Way Agent Signature

4-19-18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.

Northern States power Company/Xcel Energy
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

Tree Mitigation Form

Surveyed Tree Plots: 37A, 37B and 39

Landowner Name: Edward Saugstad and Craig Saugstad
Residuary Trust of Nels Stanley Saugstad

Project Parcel Number: 126 and 131

Landowner Address: 5000 37th Ave SE
Minot, ND 58701

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
37A, 37B and 39	8	54	108 trees 16 shrubs	

Tree Mitigation Request (check one):

X I request that replacement trees (at a 2:1 ratio) be planted on my property at the following locations (attach map):

5000 37TH AVE SE, MINOT ND

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

Additional Comments: PREFERED TREE SPECIES, EVERGREENS, FLOWERING CRAB, APPLE, CHOKECHERRY, ASH
PREFERED SHRUB SPECIES, LILACS
OWNER WILLING TO PREP AREAS

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
126	Ash-Leaf Maple	No	SEE ADDITIONAL COMMENTS FOR SPECIES	Tree	17	34	34
126	Eastern Cottonwood	No		Tree	34	68	68
126	Green Ash	No		Tree	1	2	2
126	Ash-Leaf Maple	No		Shrub	8	16	16
131	Eastern Cottonwood	No		Tree	1	2	2
131	Russian Olive	Yes		Tree	1	2	2
				Total	62	124	124

Landowner Signature

4/18/18
Date

Right-of-Way Agent Signature

4/18/18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


parcel 126&131 Craig Saugstad
Write a description for your map.
Legend
trees
37th Ave SE
Lilac shrubs
Fruit trees
Evergreens
other trees
other trees
Google Earth
© 2018 Google
N
200 ft

Tree Mitigation Form

Surveyed Tree Plots: 34-34C

Landowner Name: Jim and Rose Hystad

Project Parcel Number: 135

Landowner Address: 1920 47th Street N.
Velva, ND 58790

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
135	19	7	38 shrubs 14 trees	

Tree Mitigation Request (check one):

X I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations (attach map):

SOUTH SIDE 44TH ST 3/4 WEST OF 18TH AVE JUST SE OF VELVA ND

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

Additional Comments: PREFERRED TREE SPECIES EVERGREENS

PREFERRED SHRUB SPECIES, SOME TYPE OF BERRY

OWNER WILL PLANT TREES AND SHRUBS HIMSELF

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
135	Russian Olive	Yes	EVERGREEN	Tree	6	12	12
135	Siberian Elm	Yes	EVERGREEN	Tree	1	2	2
135	American Plum	No	BERRY TYPE	Shrub	18	36	36
135	Willow species	-	BERRY TYPE	Shrub	1	2	2
				Total	26	52	52

Jim Hystad
Landowner Signature

Date

Right-of-Way Agent Signature

4/15/18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 135 Jim Hystad
Legend
52
18th Ave N
Trees and shrubs
Google Earth
© 2018 Google
N
2000 ft

Northern States power Company/Xcel Energy
230 kV Transmission Line – McHenry & Ward Counties
Case No. PU-17-102

Tree Mitigation Form

Surveyed Tree Plots: 32-33A, 35

Landowner Name: Jerry and Norma Effertz

Project Parcel Number: 137 and 139

Landowner Address: 1975 48th Street N.
Velva, ND 58790

Tall growing vegetation can interfere with the safe and reliable construction and operation of overhead transmission lines. As part of the project, trees located within the project right-of-way will require clearing. You are being contacted as your property contains trees within the project right-of-way that will need to be cleared prior to construction. Per the mitigation specifications issued by the North Dakota Public Service Commission (PSC), trees are required to be mitigated at a 2:1 ratio.

Table 1 – Landowner Tree Mitigation Summary

Plot ID	Number of Shrubs Impacted	Number of Trees Impacted	Total Eligible Mitigation Quantity	Additional Requested Trees (If Available)
32, 33, 33A, 35	1	3	3 trees 2 shrubs	23 TREES 4 SHRUBS

Tree Mitigation Request (check one):

X I request that replacement trees/shrubs (at a 2:1 ratio) be planted on my property at the following locations: (attach map)

1975 48TH ST. N VELVA ND

In requesting planting of replacement trees, I acknowledge and grant Xcel Energy access to these locations for planting, maintenance and monitoring purposes. Removed trees and shrubs will be replaced in-kind trees and shrubs depending on availability or unless otherwise requested. No invasive species (i.e. buckthorn, Russian olive) will be replanted in tree mitigation efforts and an alternate, native species will be planted instead.

___ I waive my right to planting of replacement trees on my property to mitigate for the project's removal of exiting trees on the parcel of land referenced above.

Additional Comments: TAKING 14 TREES FROM PARCEL 23 AND 24. TAKING 9 TREES FROM DOT PARCEL, TAKING 2 SHRUBS FROM DOT PARCEL AND 2 SHRUBS FROM PARCEL 20.
PREFERED TREE SPECIES GREEN ASH, SPRUCE MAPLE (NO PONDEROSA PINE)
PREFERED SHRUB SPECIES FRUITY OR HEARTY.
OWNER WILL BE PLANTING TREES AND SHRUBS HIMSELF

Table 2 – Tree Inventory Species Summary

Parcel ID#	Common Name	Non-Native Species[1]	Mitigation Options	Type	Count	Number Eligible	Quantity Selected for Mitigation
137	Green Ash	No	SEE COMMENTS	Tree	1	2	2
139	Green Ash	No		Tree	2	4	4
139	American Plum	No	SEE COMMENTS	Shrub	1	2	2
				Total	4	8	8

Landowner Signature

04/18/2018
Date

Right-of-Way Agent Signature

4-18-18
Date

[1] Per the PSC tree and shrub mitigation specifications, invasive or noxious species of trees and shrubs must be replaced with similar non-invasive or non-noxious species suitable for North Dakota Growing conditions as recommended by the North Dakota Forest service.


Parcel 137&139 Jerry Effertz 1975 48th St. N Velva ND
Legend
Trees and Shrubs
121st Ave SE
Trees and Shrubs
20th Ave N
Google Earth
© 2018 Google
N
700 ft

GREAT RIVER ENERGY

4193 14th Ave N, Velva, ND Latitude 48-01-17.95 Longitude -100-53-5.13

Section 2, Township 152N, Range 80W in McHenry County, North Dakota
Open grassland on substation property Planned by: MP/BJ Planted by:_____
Between the row spacing: 10 feet Soil Type: G658B Suitability group: 2e Loam, well drained
Protected from Grazing (Yes No) Distance from Road and/or Buildings: 100 + feet
Site Condition at Planting Time: Previous marshalling area that was restored from compaction

Planned Length (feet)	Planted Length (feet)	Planted Width (feet)	Acres	Row #	Species of Tree or Shrub	Spacing in Row (feet)	Number Planted (Estimate)	Number Planted (Actual)	Maintenance Plan
220		10		1	BHS/CHS	10	22		Landscape fabric?
210		10		2	BHS/CHS	10	21		Landscape fabric?
200		10		3	BHS/CHS	10	20		Landscape fabric?
190		10		NA	ACCESS ROAD	NA	0	NA	Prairie grasses
180		10		NA	ACCESS ROAD	NA	0	NA	Prairie grasses
170		10		4	Plum, Apple Lilac	10	17		Tubes?
160		10		5	Plum, Apple Lilac	10	16		Tubes?
150		10		6	Plum, Apple Lilac	10	15		Tubes?
140		10		NA	ACCESS ROAD	NA	0	NA	Prairie grasses
130		10		NA	ACCESS ROAD	NA	0	NA	Prairie grasses
120		10		7	Plum, Apple Lilac	10	12		Tubes?
110		10		8	Buffalo, Choke, Cherry	10	11		Tubes?
100		10		9	Buffalo, Choke, Cherry	10	10		Tubes?

See attached map for planting locations. Native prairie grasses will be planted in access road areas and other exposed soil areas outside of the tree planting areas.To aid establishment, trees will be watered consistently for three years after planting.

Appendix D

Parcel 55 Tree Planting Information

9050 Project Road South
Burlington, ND 58722
701-839-5217
TcNursery@SRT.Com

Invoice

INVOICE I-6188

Chris Tisi
Invoiced 4/28/2018
Modified 5/7/2018

PO: Parcel 55A Paul Thomas
Shipping: None

Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401

Contact
Sean Lawler
541-0283 (work)
(612) 330-1956 (mobile)

Shipping Address
414 Nicollet Mall
Minneapolis, MN 55401

Product ID	Description	Sell	Qty	BO	Total
P-2741	Boxelder Sensation Maple- 6-7'	$70.00	10	0	$700.00
P-3002	Prairie Dream Birch - BR 1''	$70.00	5	0	$350.00
P-1083	Patmore Green Ash - BR 8'	$70.00	20	0	$1400.00
P-2226	Golden Spice Pear - Std 7/8 CVI	$70.00	2	0	$140.00
P-2693	Haralred Apple - Std 9/16 CVI	$70.00	1	0	$70.00
P-2694	Haralson Apple - Std 9/16 CVI	$70.00	1	0	$70.00
P-1844	Honeycrisp - Std 11/16 CVI	$70.00	3	0	$210.00
P-1979	Planting, Woodchiped and staked Labor - Bareroot Trees	$50.00	42	0	$2100.00
P-1980	Planting & Woodchiped Labor - Bareroot Shrubs	$20.00	8	0	$160.00
P-2402	Common Purple Lilac - B&B 3'	$25.00	8	0	$200.00
		Total Qty	100		

Warranty Information

With proper treatment all our plants will survive and thrive. Since we cannot control all the different planting methods, handling, soil conditions, climates or care, we offer a seasonal limited warranty.

If Tc Nursery plants the warrantied item, we will replant a one-time replacement for the item at no cost to the homeowner.
If the customer plants the warrantied item, the customer is eligible for a merchandise credit of 50% of the invoice cost.

Warrantied item must be accompanied by receipt/invoice and proof of dead plant.
All warrantied items are given to the original buyer only and are subject to inspection.
Warranty is void if there is an outstanding balance on customers account.

Warrantied items do not include: perennials, roses, sod or customer's plants that have been transplanted. We do not warrant against losses due to neglect (this includes over watering and under watering), acts of God, vandalism, mechanical or chemical injury, pest damage, frost, drought or animal browsing.

Customer responsibility: We expect anyone experiencing problems with their plant material to call us without delay. This will allow us to work with you, to correct any problems that may exist in the care of your plants. Often we can avoid replacement by adjusting care methods.

Signature _____

Subtotal	$5400.00
ND	$172.70
Total	**$5572.70**
Payment	$0.00
Balance	**$5572.70**

9050 Project Road South
Burlington, ND 58722
701-839-5217
TcNursery@SRT.Com

Invoice

INVOICE I-6189

Chris Tisi
Invoiced 4/28/2018
Modified 5/7/2018

PO: Parcel 41 Country Edge Estates
Shipping: None

Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401

Contact
Sean Lawler
541-0283 (work)
(612) 330-1956 (mobile)

Shipping Address
414 Nicollet Mall
Minneapolis, MN 55401

Product ID	Description	Sell	Qty	BO	Total
P-3002	Prairie Dream Birch - BR 1”	$70.00	5	0	$350.00
P-1083	Patmore Green Ash - BR 8'	$70.00	20	0	$1400.00
P-3003	Cathhedral Elm - BR 8’	$70.00	30	0	$2100.00
P-2402	Common Purple Lilac - B&B 3'	$25.00	16	0	$400.00
P-1980	Planting & Woodchiped Labor - Bareroot Shrubs	$20.00	16	0	$320.00
P-1979	Planting, Woodchiped and staked Labor - Bareroot Trees	$50.00	55	0	$2750.00
		Total Qty	142		

Warranty Information

With proper treatment all our plants will survive and thrive. Since we cannot control all the different planting methods, handling, soil conditions, climates or care, we offer a seasonal limited warranty.

If Tc Nursery plants the warrantied item, we will replant a one-time replacement for the item at no cost to the homeowner.
If the customer plants the warrantied item, the customer is eligible for a merchandise credit of 50% of the invoice cost.

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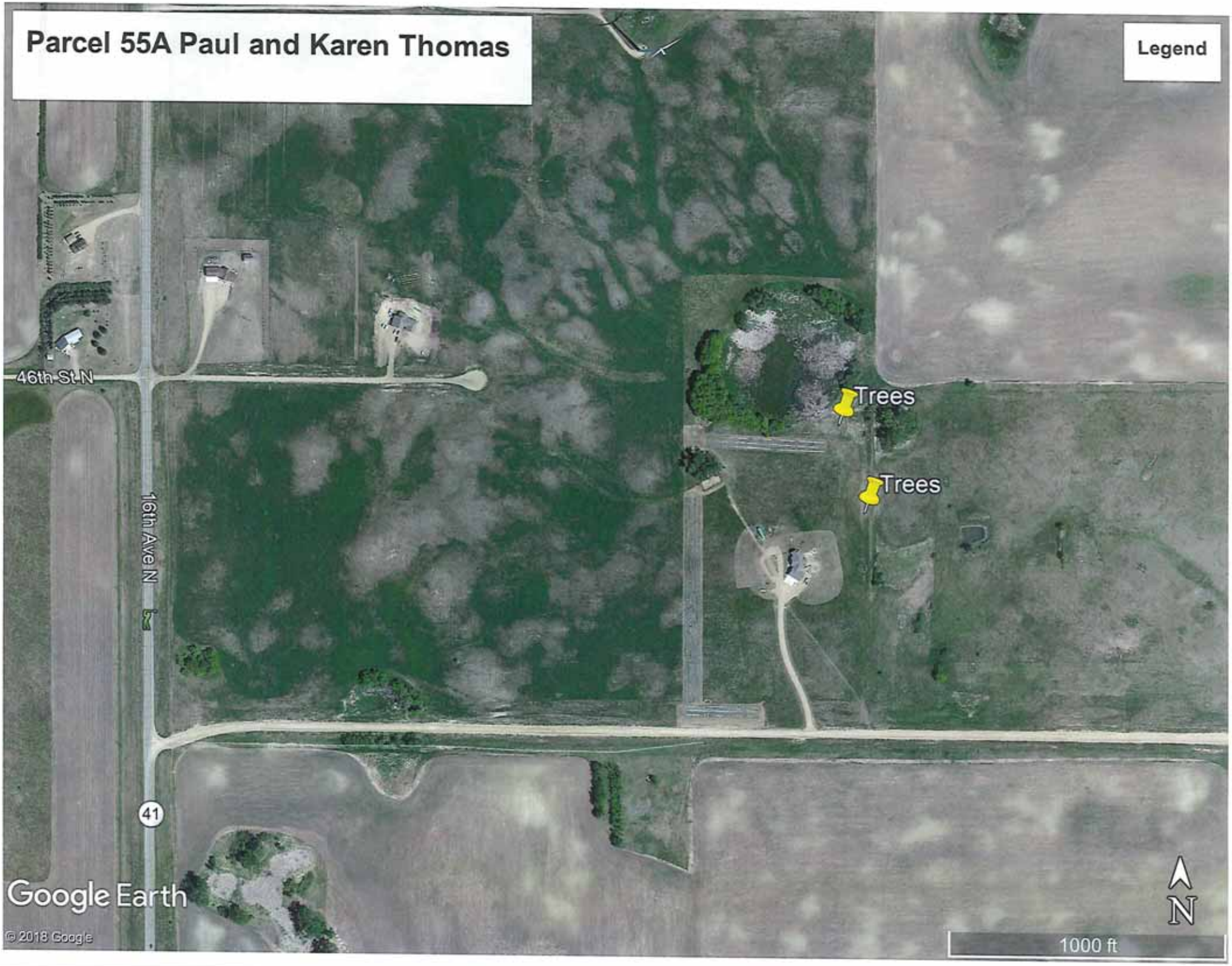
Customer responsibility: We expect anyone experiencing problems with their plant material to call us without delay. This will allow us to work with you, to correct any problems that may exist in the care of your plants. Often we can avoid replacement by adjusting care methods.

Signature _____

Subtotal	$7320.00
ND	$233.75
Total	**$7553.75**
Payment	$0.00
Balance	**$7553.75**


Parcel 55A Paul and Karen Thomas
Legend
46th St N
16th Ave N
41
Trees
Trees
Google Earth
© 2018 Google
N
1000 ft