

Hiland Crude, LLC.

Reclamation and Revegetation Inspection Report
New Town Expansion
Crude Oil Pipeline Project
Mountrail County
Case No. PU-15-416
Contract No. PU-748-16

March 1, 2017

Prepared for:

North Dakota Public Service Commission
600 East Boulevard Ave
Bismarck, ND 58505-0480

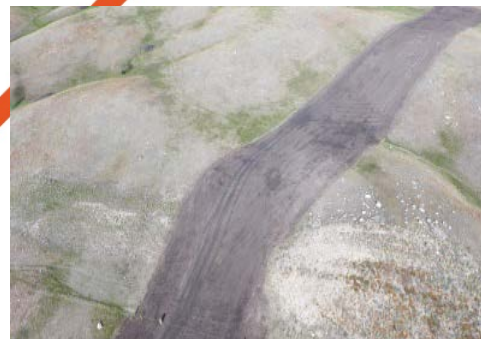




TABLE OF CONTENTS

Background and Scope.....	1
Introduction.....	1
Regulatory Purpose and Scope of Work.....	1
Executive Summary	2
Methods	2
Inspection Observations and Findings.....	2
Areas of Concern.....	2
Recommendations for Resolution.....	2
Determination of Reclamation.....	3
References	4
Signatures	5

APPENDICES

Appendix A: Figure 3.A.1 - Map of Project and Observation Points.....	6-7
Photo Locations	8-23
Appendix B: Photographs - Oct. 13, 2016	24-48





BACKGROUND AND SCOPE

Introduction

The New Town Expansion Project is an 8-inch diameter, 42.5-mile pipeline constructed by Hiland Crude Pipeline Company, LLC. The Pipeline originates five miles southwest of Ross, North Dakota at Hiland's White Earth injection station and terminates to the south at Dakota Plains Holding, Inc.'s Pioneer Rail Terminal, approximately 1.5 miles southeast of New Town, North Dakota.

Regulatory Purpose and Scope of Work

The North Dakota Energy Conversion and Transmission Facility Act authorizes the State to determine that the location, construction, and operation of energy transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. The North Dakota Public Service Commission has contracted KLJ Engineering for inspection services on Case No. Pu-15-416, New Town Expansion.

KLJ is to document the reclamation and revegetation of the Project. The process includes inspection of the reclamation of subsoil and topsoil, as well as the seeding, fertilization, and status of revegetation.



EXECUTIVE SUMMARY

Methods

The project was inspected and documented on October 13, 2016. A drone was utilized to collect aerial photography along the 42.5-mile pipeline, highlighting areas of both previous and current reclamation. The equipment used during inspection includes a DJI Phantom 4 integrated GPS and 12-megapixel digital camera. (Appendix B, Photos)

Inspection Observations and Findings

At time of inspection on October 13, 2016, much the reclamation had been completed and revegetated to match the conditions prior to construction. As seen in the photographs, most areas where vegetation has been established are nearly undetectable among the surrounding areas. Near the south end of the project, areas of topsoil replacement and seeding were recently or currently being completed, with vegetation not yet being established.

Some areas of reclamation were noted to have weed growth only as seeding was likely not completed in time, or did not have adequate time to grow during the season.

Areas of Concern

Near station 1344 (page 42, photo 53), efforts of reclamation have not successfully matched existing conditions.

Near station 1802 to 1862 (page 43-48, photo 56-72), reclamation was completed in the fall of 2016 and vegetation will not be established until the following growing season.

Recommendations for Resolution

Reclamation documented near station 1344 (page 42, photo 53) should be monitored in the spring of 2017. If proper vegetation growth has not succeeded by this time, it is recommended the area be reseeded in attempt to match the conditions that existed prior to construction.

Areas of the pipeline recently reclaimed near New Town (page 43-48, photo 56-72) will need to be inspected after the upcoming growing season, in the spring of 2017.



DETERMINATION OF RECLAMATION

The New Town Expansion Project appeared to have been reclaimed and revegetated as near as practical to match previous conditions, with minor exceptions as detailed in this report. Upon inspection, the project site was well-maintained and in satisfactory condition. It was apparent that efforts were made to minimize impacts to the surrounding environment.

All work was performed inside the right of way. During reclamation, access on and off the right of way utilized predetermined access points specifically to be used for this work.

Areas of recent construction and reclamation should be inspected the following the growing season, to determine the success of revegetation attempts. However, care was taken to preserve and replace topsoil in these locations, and there is no reason to suspect future issues.



REFERENCES

North Dakota Public Service Commission (ND PSC). 2015. Online Case Search.
Available from: <http://www.psc.nd.gov/database/companycaselist.php>
Accessed November 2015-December 2015

William E Wolf. 2016. Hiland Crude LLC.
Personal Communication: Discussions during site visits on October 8, 2016.

Soil Survey Division Staff. 1993. Soil survey manual.
Soil Conservation Service, U.S. Department of Agriculture Handbook.



SIGNATURES

The services performed by KLJ staff for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgement and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Lead Project Manager, Paul Lee, and Environmental Field Inspector, Arnie E. Siverson,

Paul Lee, PLS, Project Manager

Date

Arnie E. Siverson, Field Inspector

Date





APPENDIX A:

Maps of Project and Observation Points



Hiland Crude, LLC
Route Application
New Town Expansion Project

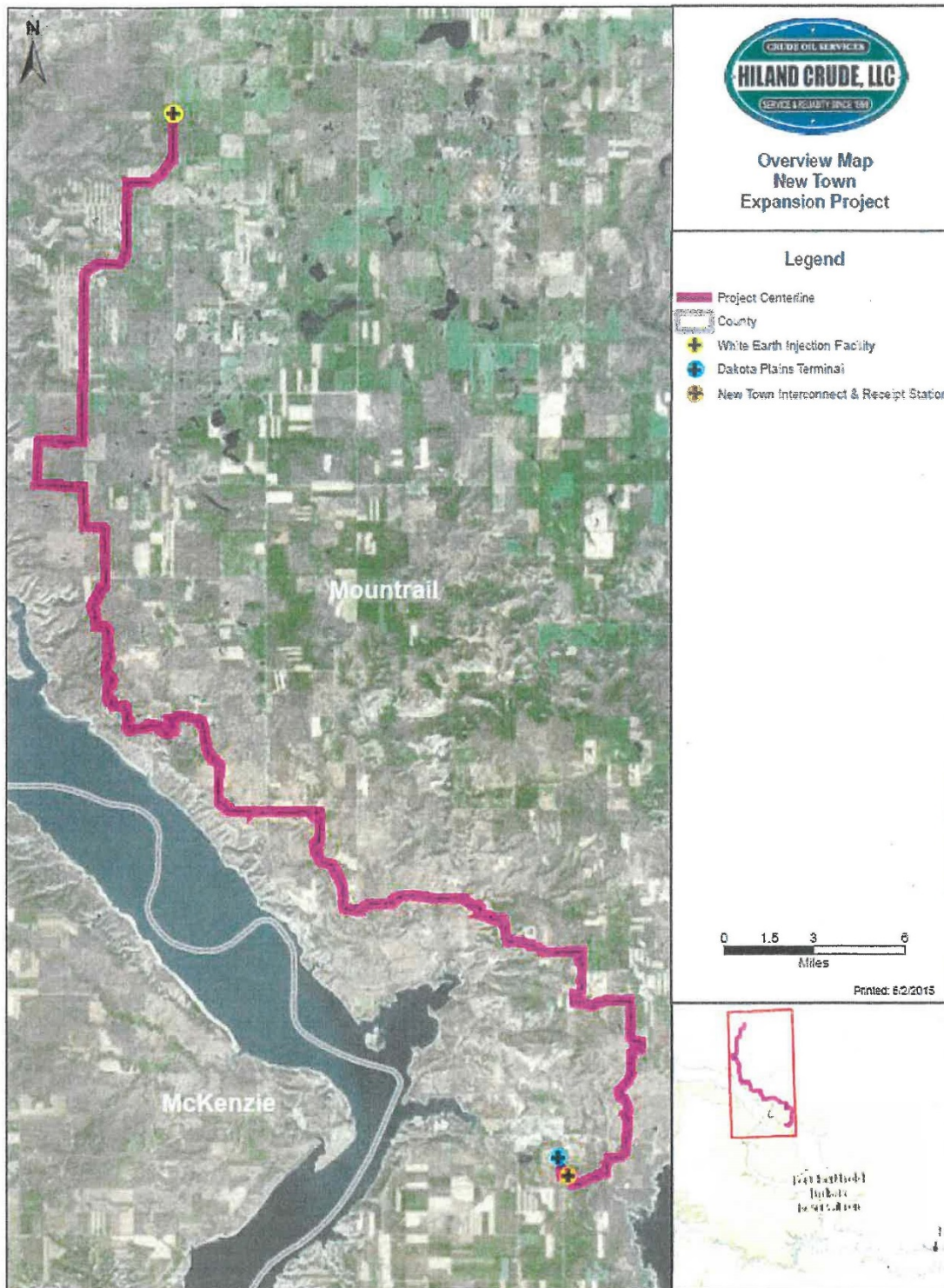
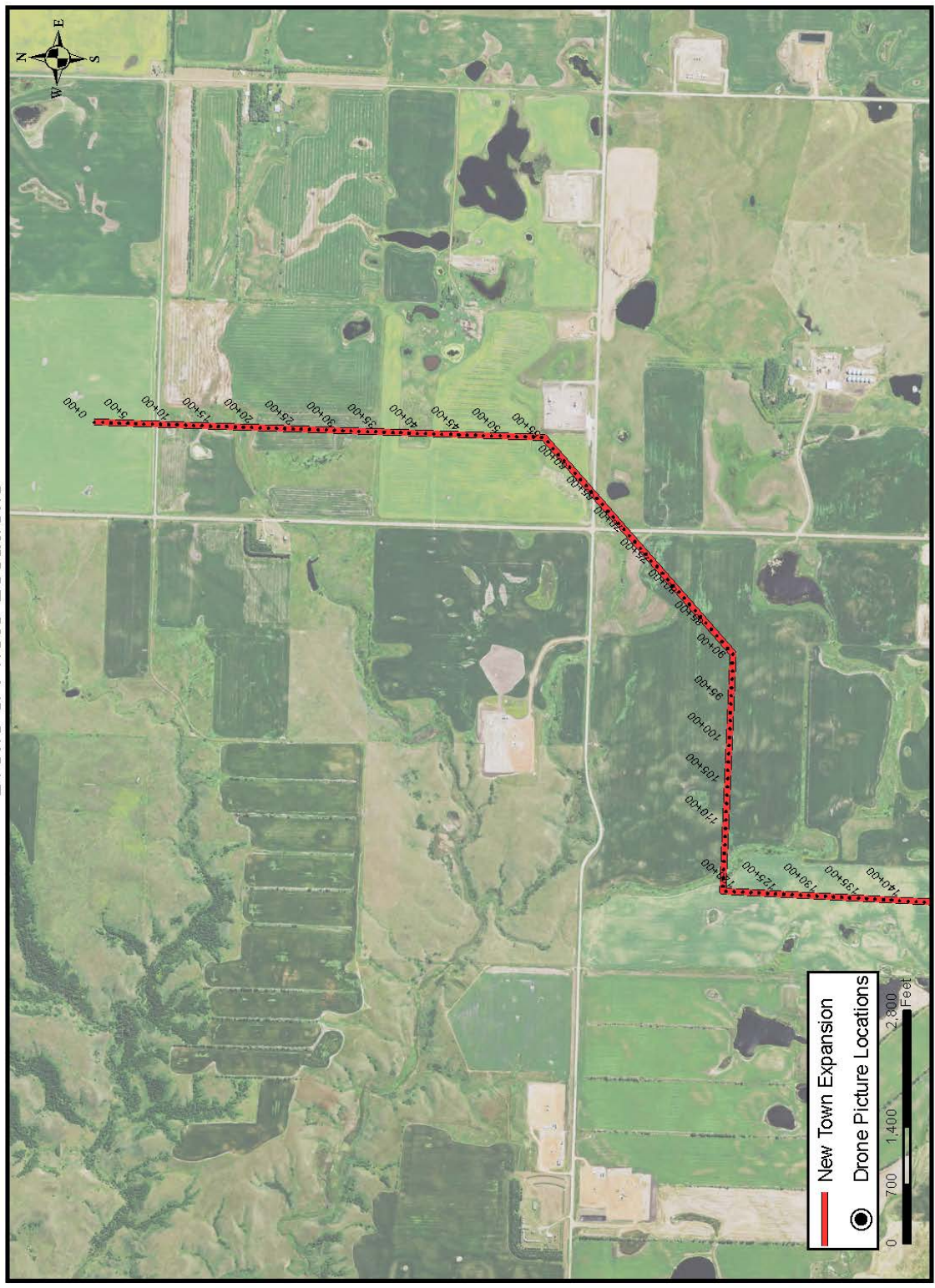


FIGURE 3.A.1 – General New Town Expansion Project Location Map



New Town Expansion

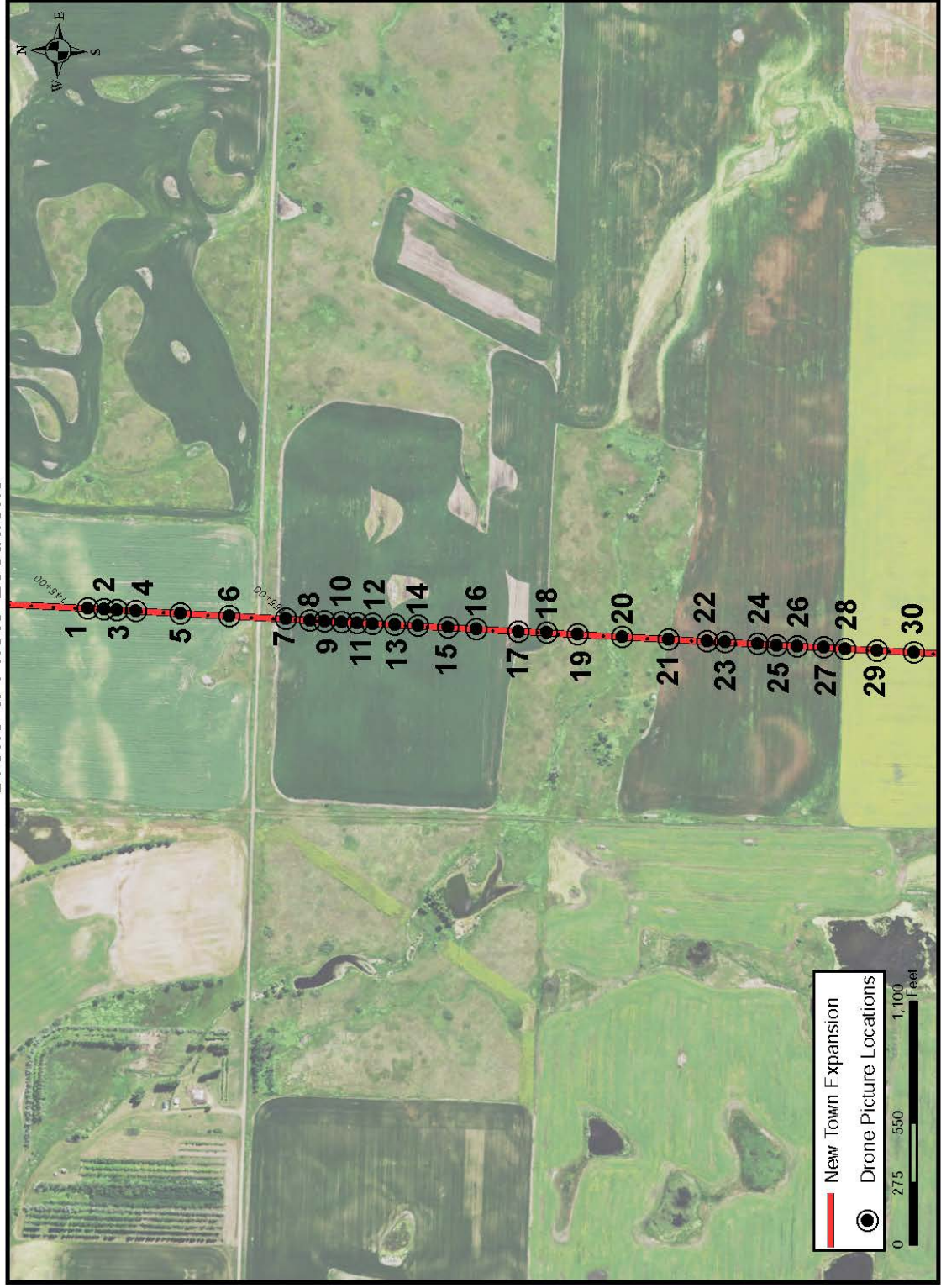
Drone & Photo Locations



New Town Expansion

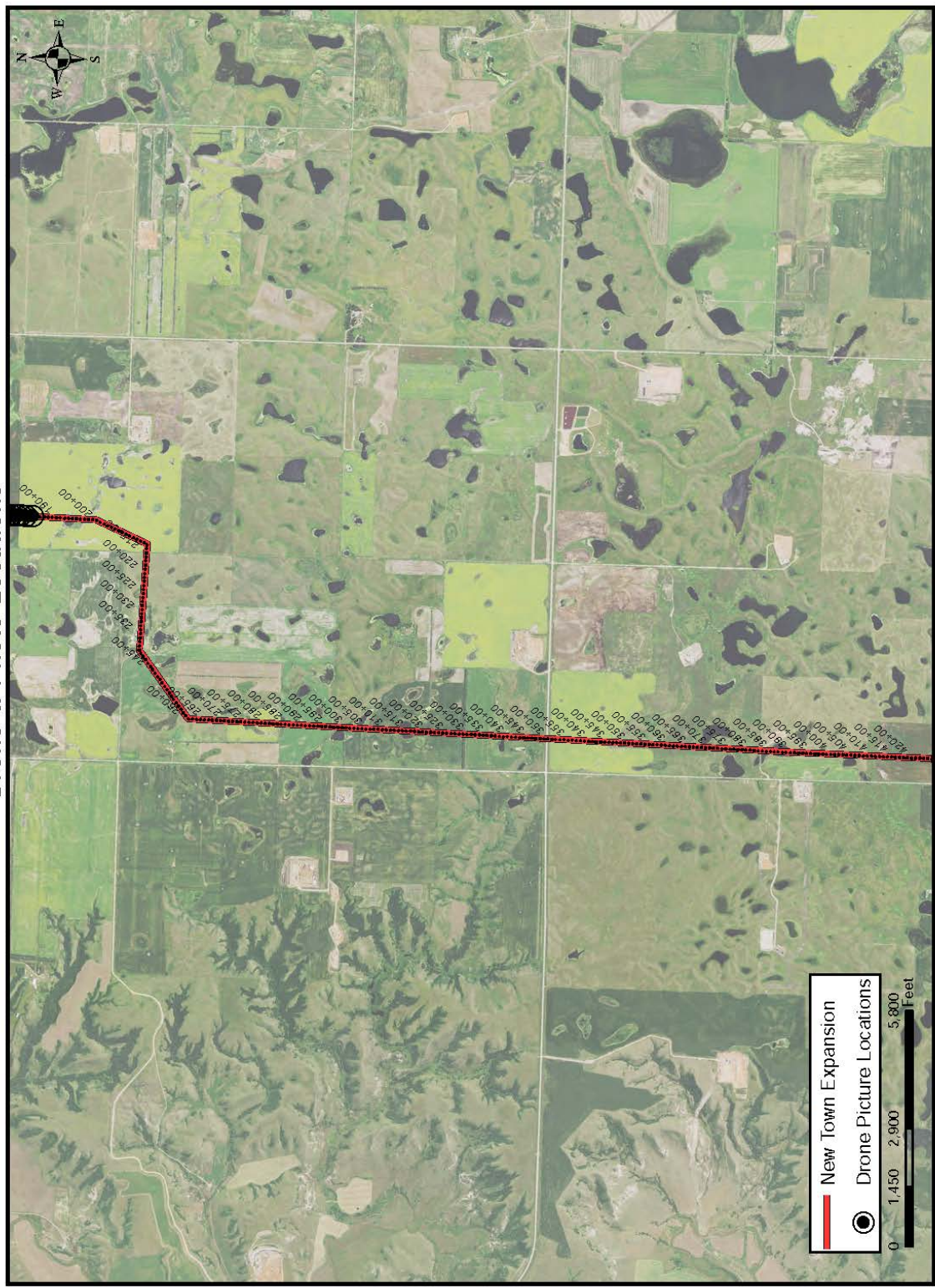
Drone & Photo Locations

Page 2 of 16

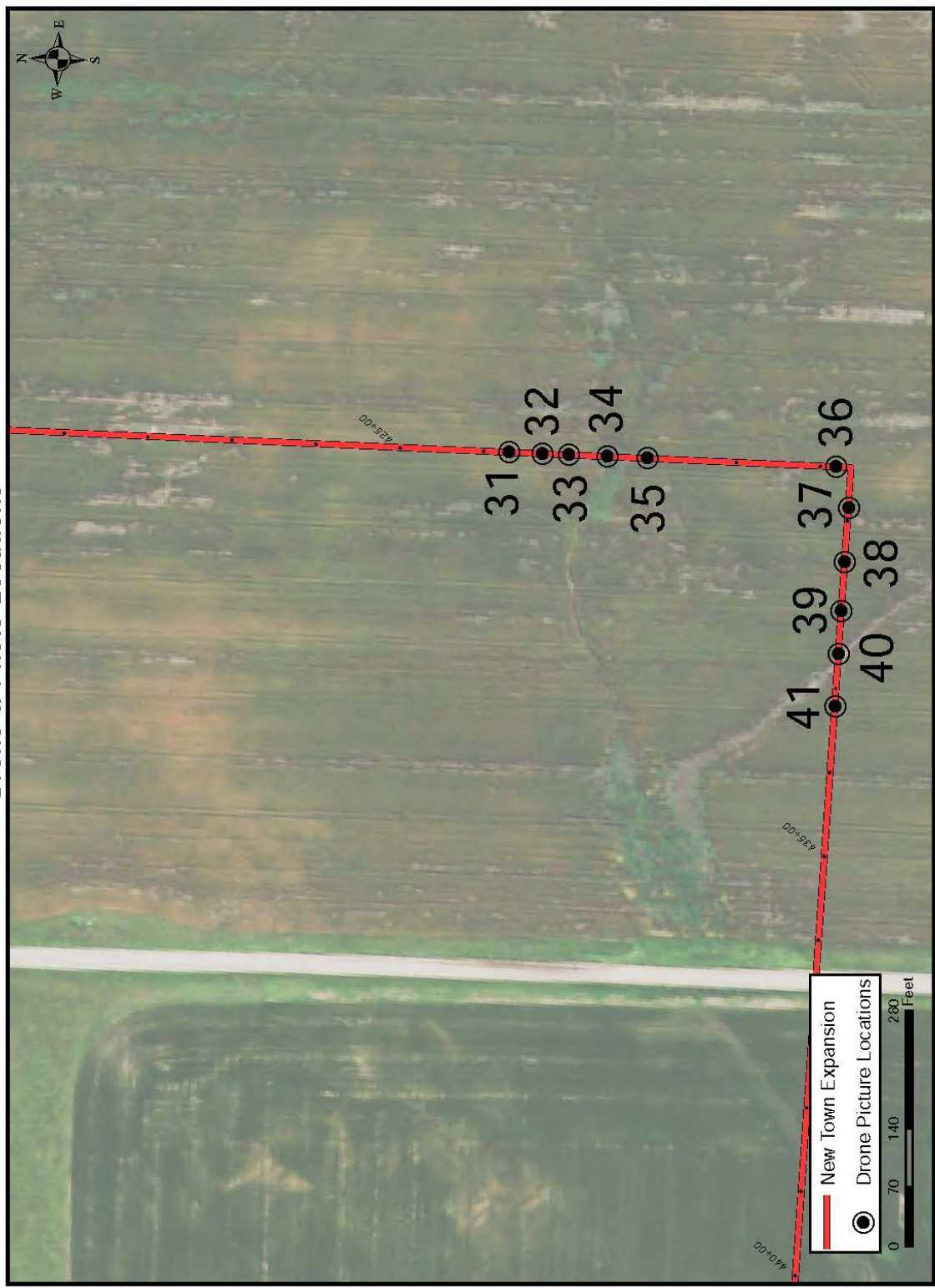




New Town Expansion Drone & Photo Locations



New Town Expansion Drone & Photo Locations





New Town Expansion Drone & Photo Locations





New Town Expansion Drone & Photo Locations





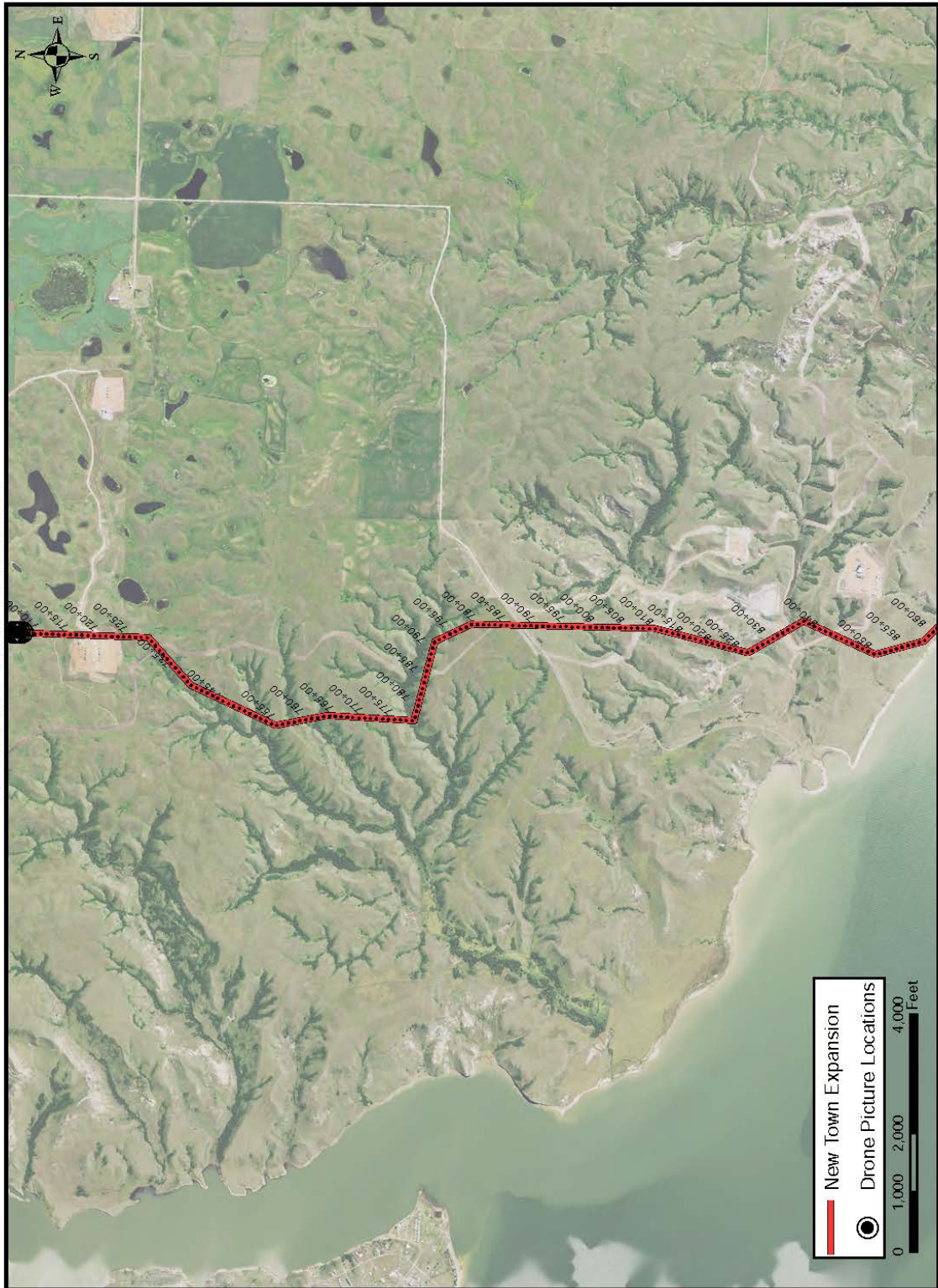
New Town Expansion

Drone & Photo Locations



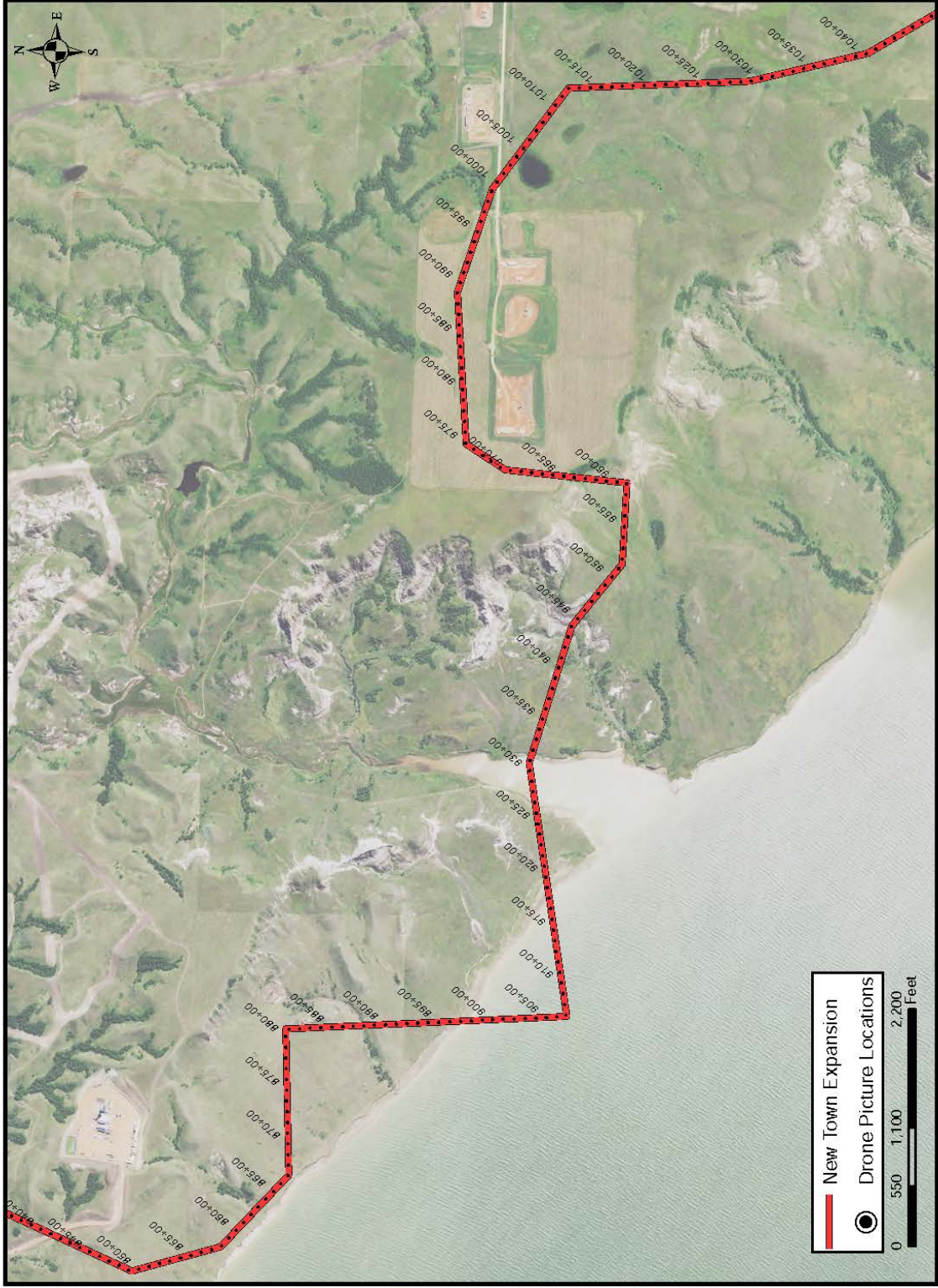


New Town Expansion Drone & Photo Locations





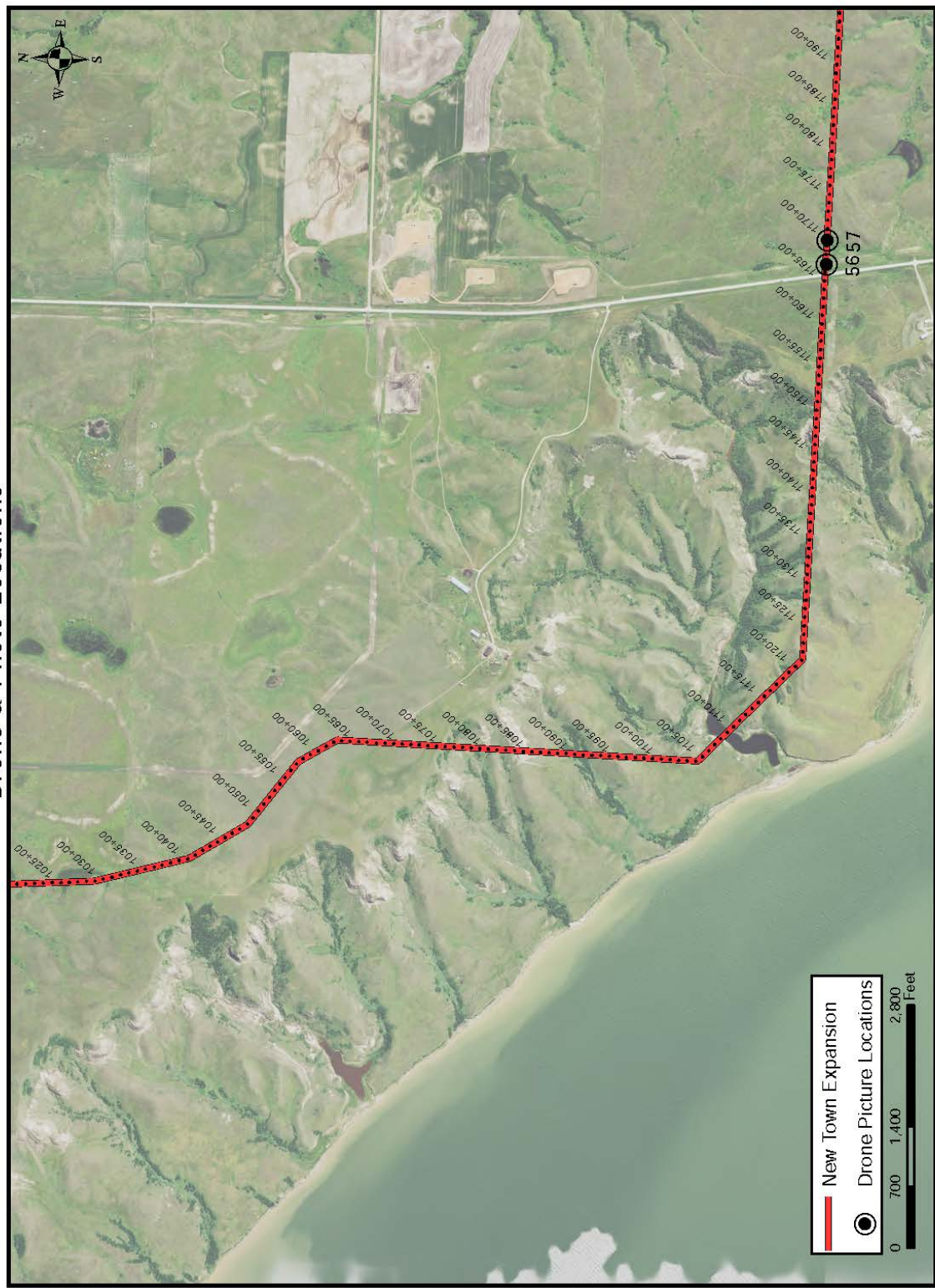
New Town Expansion Drone & Photo Locations





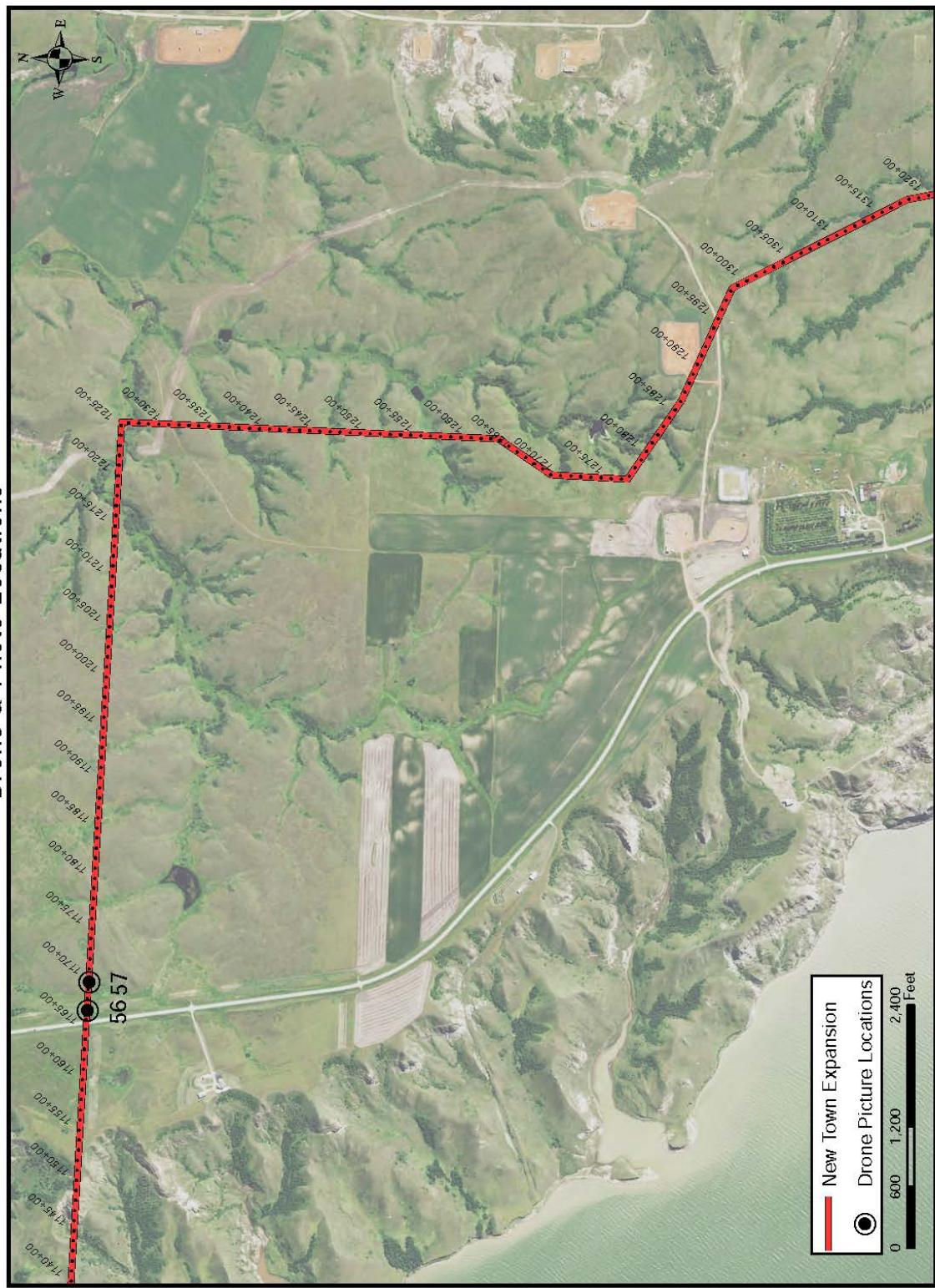
New Town Expansion

Drone & Photo Locations



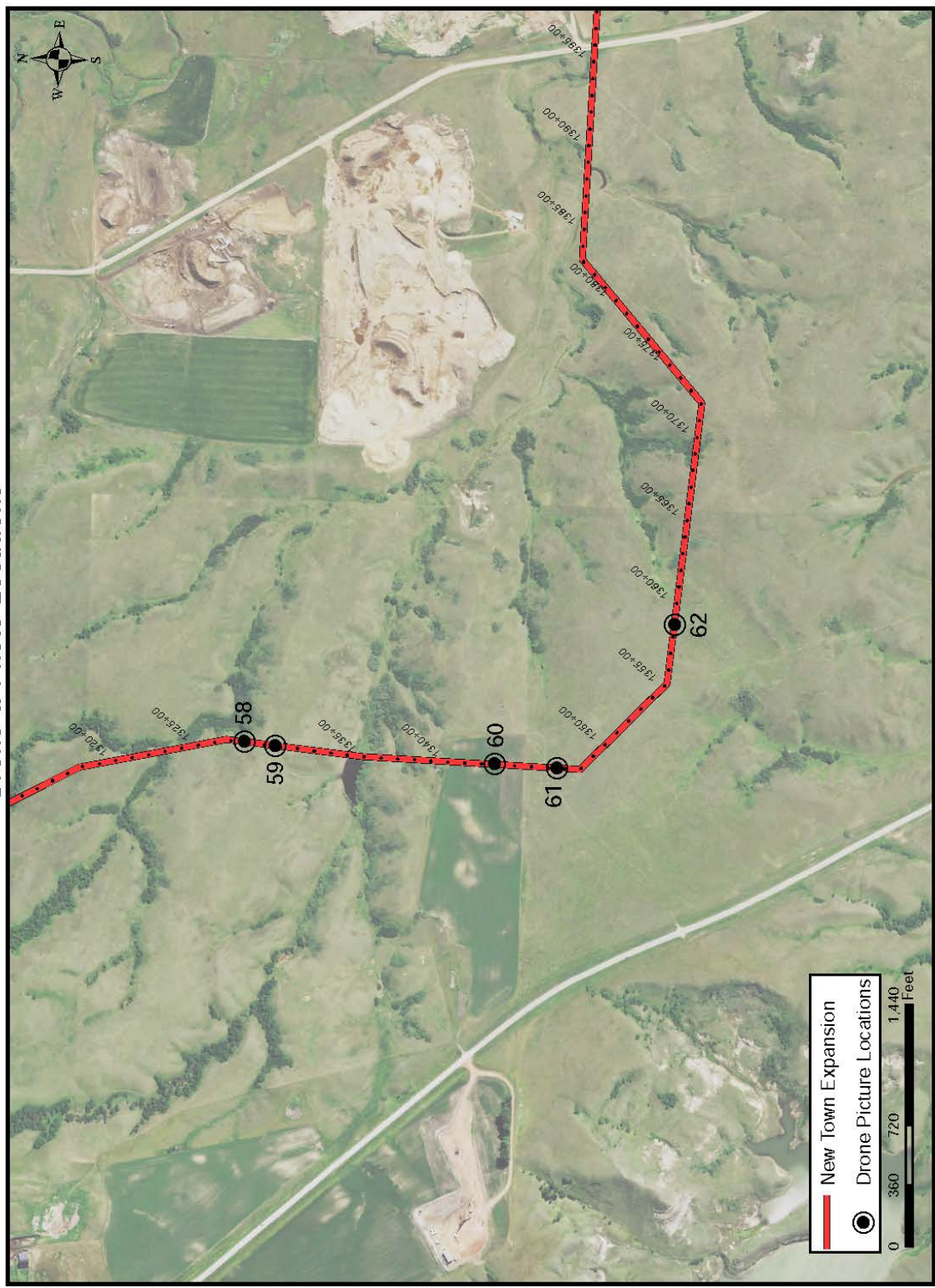


New Town Expansion Drone & Photo Locations



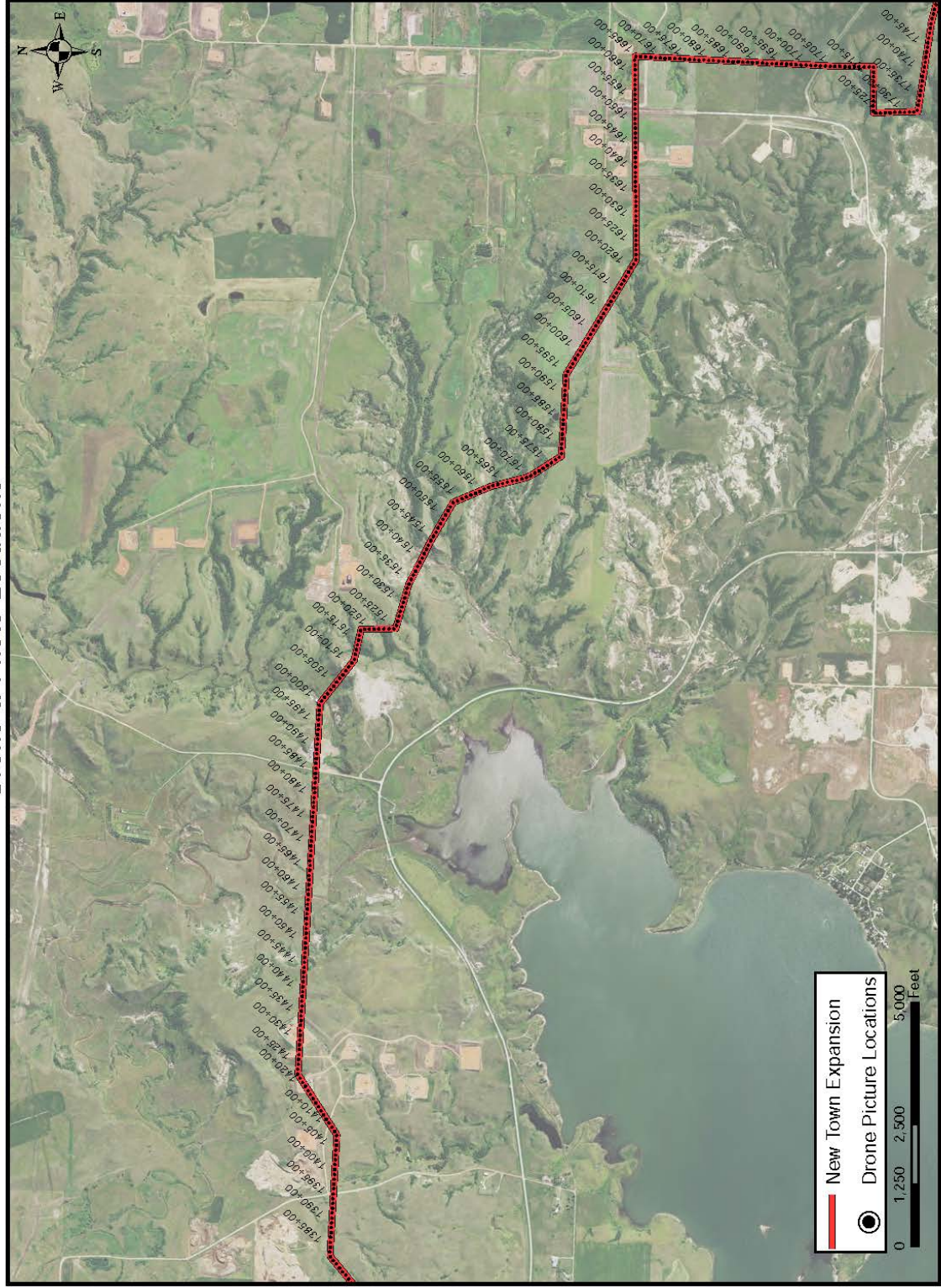


New Town Expansion Drone & Photo Locations



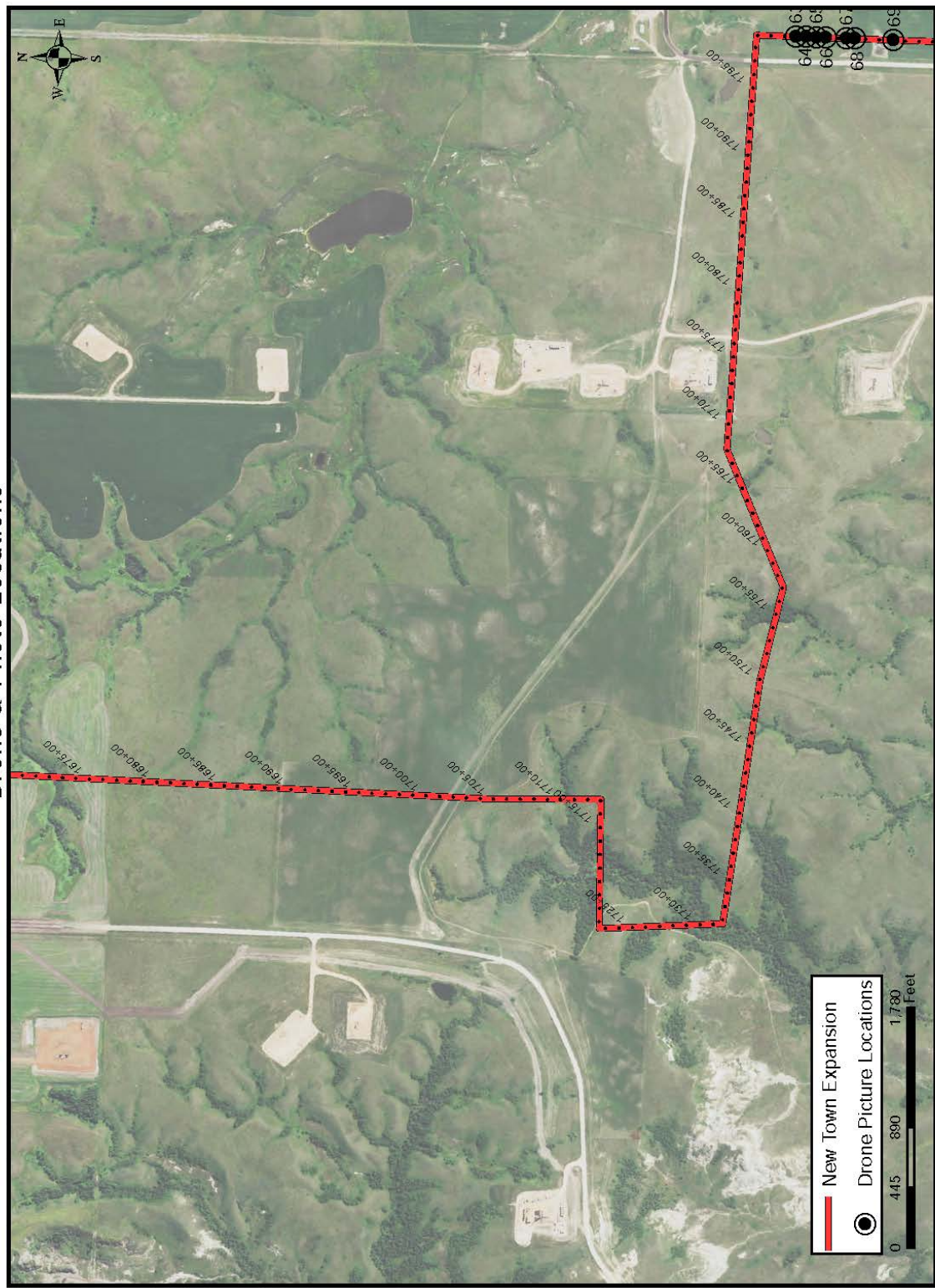


New Town Expansion Drone & Photo Locations



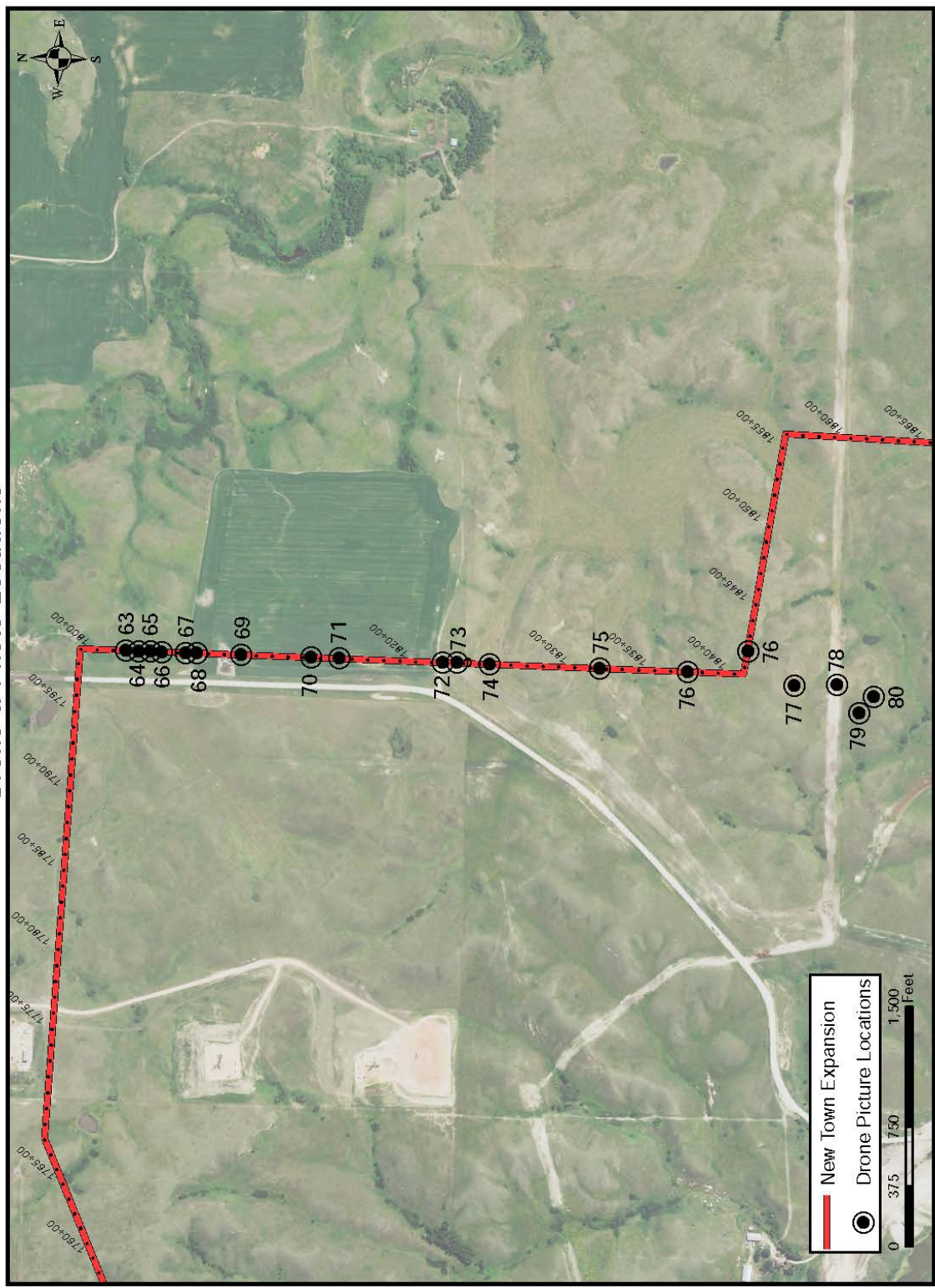


New Town Expansion Drone & Photo Locations





New Town Expansion Drone & Photo Locations





New Town Expansion

Drone & Photo Locations

Page 16 of 16





APPENDIX B: DRONE PHOTOGRAPHS

Taken October 13, 2016



Photo 1: Station 147+20.00; Latitude: 48°15'24.04"N Longitude: 102°40'26.51"W



Photo 2: Station 147+20.00; Latitude: 48°15'24.05"N Longitude: 102°40'26.48"W



Photo 3: Station 147+20.00; Latitude: 48°15'24.04"N Longitude: 102°40'26.47"W



Photo 4: Station 147+20.00; Latitude: 48°15'24.04"N Longitude: 102°40'26.47"W



Photo 5: Station 149+90.00; Latitude: 48°15'21.66"N Longitude: 102°40'26.78"W



Photo 6: Station 153+10.00; Latitude: 48°15'18.24"N Longitude: 102°40'26.67"W



Photo 7: Station 153+10.00; Latitude: 48°15'18.24"N Longitude: 102°40'26.67"W



Photo 8: Station 157+00.00; Latitude: 48°15'14.58"N Longitude: 102°40'26.65"W



Photo 9: Station 157+10.00; Latitude: 48°15'14.29"N Longitude: 102°40'26.58"W



Photo 10: Station 158+00.00; Latitude: 48°15'13.57"N Longitude: 102°40'26.60"W



Photo 11: Station 159+95.00; Latitude: 48°15'11.66"N Longitude: 102°40'26.63"W



Photo 12: Station 160+50.00; Latitude: 48°15'11.00"N Longitude: 102°40'26.67"W



Photo 13: Station 161+50.00; Latitude: 48°15'10.03"N Longitude: 102°40'26.62"W



Photo 14: Station 162+95.00; Latitude: 48°15'8.77"N Longitude: 102°40'26.87"W

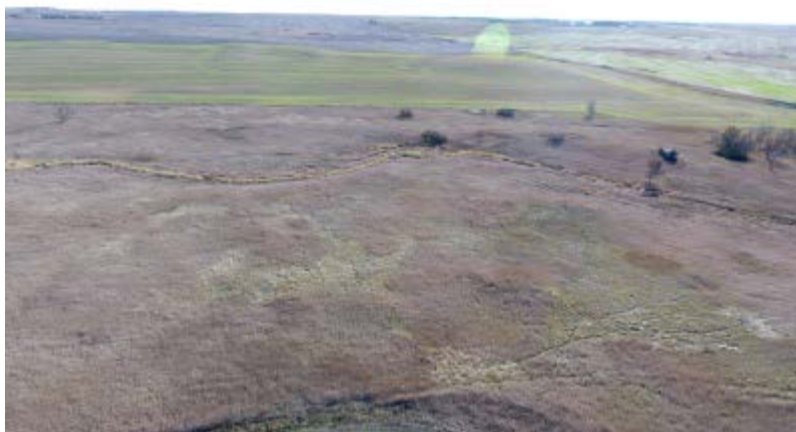


Photo 15: Station 165+00.00; Latitude: 48°15'6.69"N Longitude: 102°40'27.08"W



Photo 16: Station 165+90.00; Latitude: 48°15'5.78"N Longitude: 102°40'26.72"W

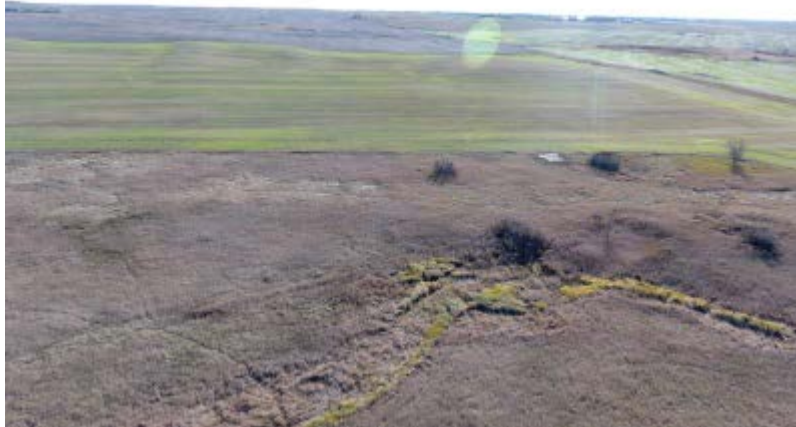


Photo 17: Station 167+70.00; Latitude: 48°15'3.94"N Longitude: 102°40'27.52"W



Photo 18: Station 169+85.00; Latitude: 48°15'1.88"N Longitude: 102°40'27.91"W



Photo 19: Station 172+00.00; Latitude: 48°14'59.79"N Longitude: 102°40'28.33"W



Photo 20: Station 173+70.00; Latitude: 48°14'58.11"N Longitude: 102°40'28.68"W



Photo 21: Station 174+05.00; Latitude: 48°14'57.62"N Longitude: 102°40'27.97"W

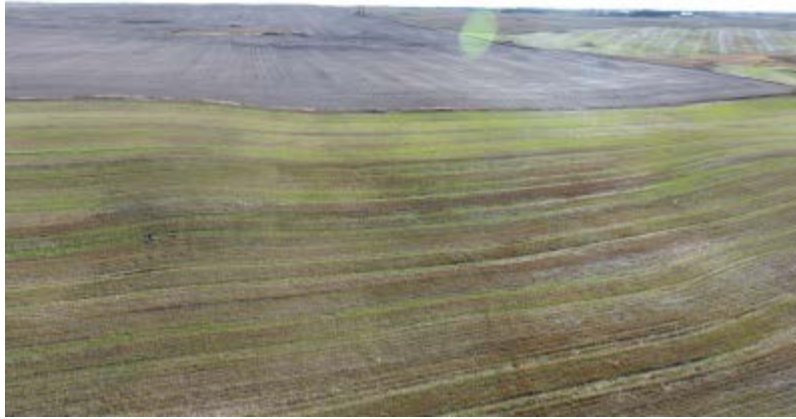


Photo 22: Station 176+00.00; Latitude: 48°14'55.86"N Longitude: 102°40'29.16"W



Photo 23: Station 176+90.00; Latitude: 48°14'54.93"N Longitude: 102°40'28.57"W



Photo 24: Station 177+50.00; Latitude: 48°14'54.27"N Longitude: 102°40'29.36"W



Photo 25: Station 179+00.00; Latitude: 48°14'52.85"N Longitude: 102°40'29.04"W



Photo 26: Station 179+15.00; Latitude: 48°14'52.63"N Longitude: 102°40'29.45"W



Photo 27: Station 180+20.00; Latitude: 48°14'51.52"N Longitude: 102°40'29.40"W



Photo 28: Station 182+40.00; Latitude: 48°14'49.52"N Longitude: 102°40'29.06"W



Photo 29: Station 427+10.00; Latitude: 48°11'4.71"N Longitude: 102°41'46.86"W



Photo 30: Station 427+10.00; Latitude: 48°11'4.71"N Longitude: 102°41'46.85"W



Photo 31: Station 427+15.00; Latitude: 48°11'4.64"N Longitude: 102°41'46.74"W



Photo 32: Station 427+15.00; Latitude: 48°11'4.63"N Longitude: 102°41'46.75"W



Photo 33: Station 427+80.00; Latitude: 48°11'4.12"N Longitude: 102°41'47.01"W



Photo 34: Station 430+20.00; Latitude: 48°11'1.70"N Longitude: 102°41'46.65"W



Photo 35: Station 430+40.00; Latitude: 48°11'1.56"N Longitude: 102°41'46.31"W



Photo 36: Station 430+40.00; Latitude: 48°11'0.65"N Longitude: 102°41'46.85"W

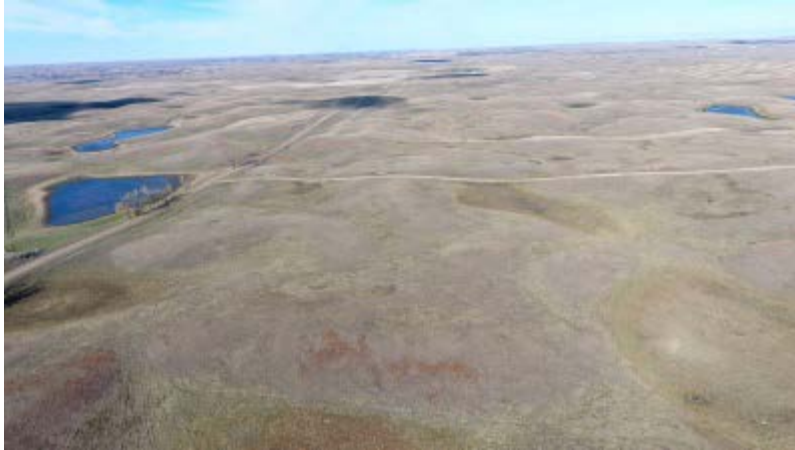


Photo 37: Station 608+00.00; Latitude: 48° 9'52.30"N Longitude: 102° 41'43.58"W

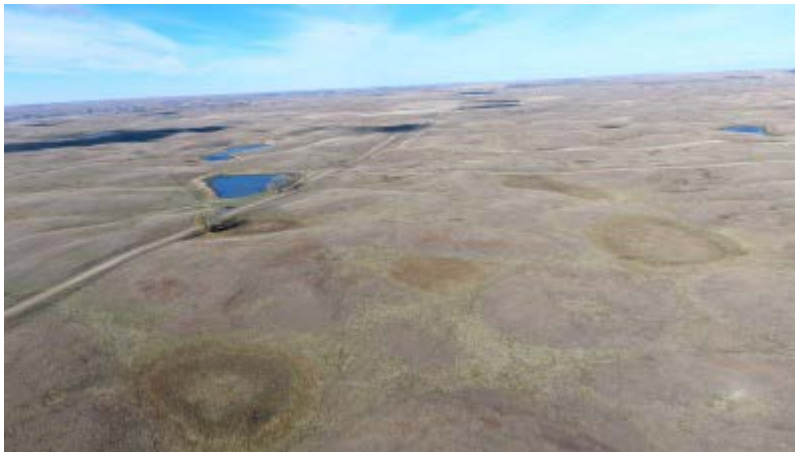


Photo 38: Station 613+60.00; Latitude: 48° 9'46.75"N Longitude: 102° 41'43.03"W



Photo 39: Station 625+50.00; Latitude: 48° 9'23.79"N Longitude: 102° 41'16.94"W



Photo 40: Station 625+50.00; Latitude: 48° 9'20.70"N Longitude: 102° 41'17.10"W



Photo 41: Station 668+20.00; Latitude: 48° 9'14.80"N Longitude: 102° 41'17.35"W



Photo 42: Station 670+70.00; Latitude: 48° 9'12.83"N Longitude: 102° 41'17.19"W

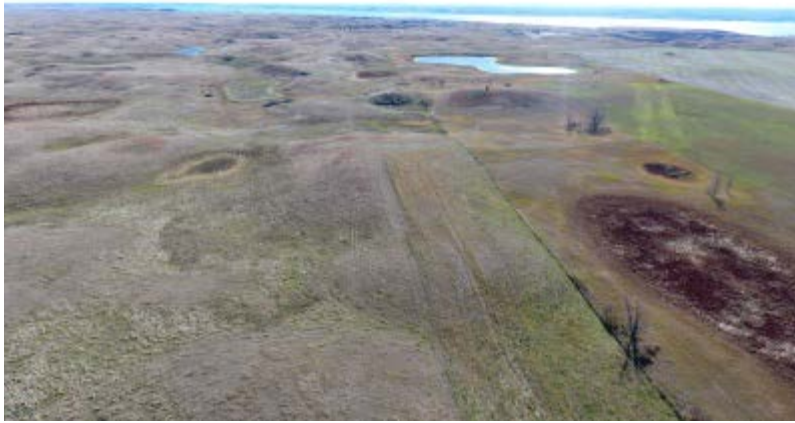


Photo 43: Station 674+00.00; Latitude: 48° 9'9.37"N Longitude: 102°41'15.58"W



Photo 44: Station 698+10.00; Latitude: 48° 8'45.55"N Longitude: 102°41'15.66"W



Photo 45: Station 703+20.00; Latitude: 48° 8'40.61"N Longitude: 102°41'15.77"W



Photo 46: Station 705+20.00; Latitude: 48° 8'38.69"N Longitude: 102° 41'16.07"W



Photo 47: Station 705+50.00; Latitude: 48° 8'38.37"N Longitude: 102° 41'16.04"W



Photo 48: Station 705+50.00; Latitude: 48° 8'38.33"N Longitude: 102° 41'16.73"W



Photo 49: Station 1166+90.00; Latitude: 48° 4'0.67"N Longitude: 102° 36'35.27"W



Photo 50: Station 1169+95.00; Latitude: 48° 4'0.39"N Longitude: 102° 36'30.80"W



Photo 51: Station 1327+90.00; Latitude: 48° 2'32.93"N Longitude: 102° 34'31.24"W



Photo 52: Station 1329+55.00; Latitude: 48° 2'31.16"N Longitude: 102°34'30.95"W



Photo 53: Station 1344+00.00; Latitude: 48° 2'16.94"N Longitude: 102°34'32.62"W



Photo 54: Station 1344+05.00; Latitude: 48° 2'16.93"N Longitude: 102°34'32.61"W



Photo 55: Station 1359+80.00; Latitude: 48° 2'8.08"N Longitude: 102°34'18.21"W



Photo 56: Station 1802+85.00; Latitude: 48° 0'15.87"N Longitude: 102°26'18.14"W



Photo 57: Station 1805+40.00; Latitude: 48° 0'13.25"N Longitude: 102°26'18.09"W



Photo 58: Station 1806+15.00; Latitude: 48° 0'12.47"N Longitude: 102°26'18.09"W



Photo 59: Station 1809+00.00; Latitude: 48° 0'9.62"N Longitude: 102°26'18.13"W



Photo 60: Station 1813+10.00; Latitude: 48° 0'5.53"N Longitude: 102°26'16.17"W



Photo 61: Station 1815+00.00; Latitude: 48° 0'3.73"N Longitude: 102°26'18.11"W



Photo 62: Station 1822+20.00; Latitude: 47°59'56.74"N Longitude: 102°26'19.74"W



Photo 63: Station 1822+20.00; Latitude: 47°59'56.74"N Longitude: 102°26'18.94"W



Photo 64: Station 1822+20.00; Latitude: 47°59'56.75"N Longitude: 102°26'18.93"W



Photo 65: Station 1824+50.00; Latitude: 47°59'54.30"N Longitude: 102°26'16.88"W



Photo 66: Station 1831+20.00; Latitude: 47°59'47.56"N Longitude: 102°26'16.52"W



Photo 67: Station 1837+20.00; Latitude: 47°59'41.82"N Longitude: 102°26'17.74"W



Photo 68: Station 1841+70.00; Latitude: 47°59'37.79"N Longitude: 102°26'19.08"W



Photo 69: Station 1839+90.00; Latitude: 47°59'35.49"N Longitude: 102°26'21.66"W



Photo 70: Station 1841+70.00; Latitude: 47°59'32.84"N Longitude: 102°26'21.48"W



Photo 71: Station 1863+00.00; Latitude: 47°59'31.42"N Longitude: 102°26'24.06"W



Photo 72: Station 1863+50.00; Latitude: 47°59'30.52"N Longitude: 102°26'22.51"W



4585 Coleman Street
PO Box 1157
Bismarck, ND 5850-1157
701 355 8400
Kljeng.com

