Sacagawea Pipeline Co.

Johnson's Corner Connector
Crude Oil Pipeline Project
As-Built Inspection Report

PU-15-744
KLJ#1216109

February 24, 2017

Prepared for:

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




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APPENDICES

EXECUTIVE SUMMARY

The North Dakota Public Service Commission retained KLJ to complete an as-built inspection of Case Number PU-15-744 also known as the Johnson's Corner Connector Crude Oil Pipeline. The project consisted of a 16" crude oil pipeline, constructed by Sacagawea Pipeline, LLC in McKenzie County North Dakota. The purpose of the inspection was to ensure the project was constructed in compliance with the siting laws and rules and the applicable PSC Orders for the Project, and to identify those aspects that required compliance. The project was visually inspected on August 30, 2016 and October 13, 2016.

The Project was well-maintained and appeared to have been constructed as planned with efforts to minimize impacts. However, there were issues to be addressed for the project to be considered complete and in compliance, including 1) vegetation to be seeded and establishment throughout the project area with tree and shrub survival replacement efforts in place, and 2) As-built alignment drawings to be submitted to the PSC. KLJ recommends the PSC take the following steps to resolve these issues.

Recommended Action Steps:

- Insect seeding of construction area in spring 2017
- Request documentation of tree and shrub survival rates
- Request submittal of as-built data

BACKGROUND AND SCOPE

Introduction

The Sacagawea Pipeline Company, LLC, also known as the "Johnson's Corner Connector Crude Oil Pipeline Project" connects the proposed pipeline that originates at the Johnson's Corner Connector Service Site, located in McKenzie County, and terminates at the Keene Crude Oil Terminal, owned by Paradigm Midstream Services. **(Appendix A, Figure 3.A.1)**. The Project includes a 16-inch diameter underground crude oil pipeline with a total length of approximately 13 miles. The Project is under the jurisdiction of the North Dakota Public Service Commission, which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-15-744 on 24 May, 2016, granting a Certificate of Corridor Compatibility No. 186 and Route Permit No. 198, to Sacagawea Pipeline Company LLC, for the Johnson's Corner Connector Crude Oil Pipeline Project.

Purpose

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorized the Public Service Commission to determine that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Construction inspections ensure that such projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Orders.

The North Dakota Public Service Commission retained KLJ to complete the as-built construction inspection of the Project.

METHODS AND SCOPE OF INSPECTION

Project Compliance Items Identified

KLJ identified a list of project specifications, which Sacagawea Pipeline, LLC is obligated or responsible to follow. These specifications were verified and documented by an on-site inspection. These specifications were acquired from 1) siting laws and rules, 2) Project activities or specifications proposed in the Application for a Certificate of Corridor Compatibility and Route Permit (Application), 3) Project plans described in the Findings of Fact, and 4) Orders.

Document Review

KLJ reviewed publicly-available Project documents in the PSC Online Case Search to verify compliance of the Project. If written verification was filed, the findings were acquired and reviewed as necessary.

On-Site Inspection

Arnie Siverson, KLJ Project Inspector, visited the Project site on August 30, 2016. A representative from Sacagawea, Marc Westbrook accompanied KLJ staff during the site visit. The site was inspected visually by driving to access points and walking within the project right of way area.

A drone was used following the inspection to fly over pipeline and record photos of the 13-mile pipeline easement, showing typical project infrastructure and documenting any problem areas **(Appendix B - Photos)**. These aerial photographs were recorded on October 13, 2016.

FINDINGS-SITING AND LOCATION OF FACILITY

Designated Location & Maps of Corridor

The Project was built as proposed in the designated location described in the Application and Order in McKenzie, North Dakota. Sacagawea Pipeline, LLC constructed the project entirely within the corridor previously approved for Johnson's Corner Connector, Crude Oil Pipeline, Case Number PU-15-744.

Siting Criteria

Siting Criteria was analyzed in the application for the project (Docket #5A, Proposed findings of Fact, Conclusion of Law and Order). Sacagawea Pipeline, LLC evaluated the Project for the Exclusion, Avoidance, Selection, and Policy Criteria of the Commission.

The Little Missouri National Grassland and archeological sites were located within the study area, but not within the right of way. No Avoidance Areas were impacted.

Land & Agricultural Impacts

The Project was built as proposed within the Right-of-Way. The current land use of properties adjacent to the Project was primarily agricultural and range land. Sacagawea Pipeline, LLC negotiated easements with affected landowners. At the time of the inspection, the land had been restored to its pre-construction contours, and permanent impacts to farm/ranch operations are not expected.

Setbacks

The Project was in a rural setting. The Project Route does not pass within 500 feet of building structures. Landowner concerns and routing preferences were addressed during all phases of construction, including final restoration. Sacagawea has finalized all easement agreements with landowners along the route.

PROJECT DESIGN & ENGINEERING

Length & Infrastructure

The Project was authorized as 13 miles of 16-in diameter underground crude oil pipeline and associated valves and launcher/receivers, as described in the Application and at the notice of opportunity hearing (Docket #1, Consolidated Application). The site inspection observations coincide with these parameters.

Right-of-Way Corridor

The Order for the Project authorized construction within a temporary 100-ft Right-of-Way. The permanent Right-of-Way for the Project was 50ft wide, except as restricted by environmental conditions, foreign lines, and landowner agreements (Docket #1, Consolidated Application). The pipeline appeared to have been constructed within these maximum widths.

Compliance with US DOT Regulations

There was no written verification or certification of compliance with US DOT 49 CFR Parts 195. In the application, it stated the steel pipeline will meet U.S. Department of Transportation (DOT) regulations, specifically the design criteria outlined in 49 Code of Federal Regulations (CFR) part 195 subpart C, constructed per 49 CFR part 195 subpart D, and operated and maintained per 49 CFR part 195 subpart F (Docket #1, Consolidated Application).

Engineering Design Drawings

No engineering design drawings were provided in the Application materials. There was no documentation of a request from the PSC for Sacagawea Pipeline, LLC to provide design drawings prior to construction.

As-built Drawings and GIS Files

As-built data has not been submitted to the PSC.

PRE-CONSTRUCTION

PSC-Required Documents

A Consolidated Application for the Project was filed on 20 November 2015. A Certificate of Corridor Compatibility No. 186 and Route Permit No. 198 were issued on 24 May 2016 (Docket #54, Findings of Fact, Conclusions of Law and Order). A Ten-Year Plan was filed in Docket PU-15-188 and (Docket 13, Tab #2).

Pre-Construction Conference/Notice of Intent to Start Construction

A Pre-construction conference was held on 27 May 2016. Meeting minutes were taken, as well as a list of attendees (Docket #63, Preconstruction Meeting Minutes, template letter to landowners). The landowner letter template (Docket #63, Preconstruction Meeting Minutes, template letter to landowners) also stated that the initial construction phase was due to begin on Friday, June 3, 2016.

PSC Approval of Modifications

On 29 July 2016, 8 August 2016, and 8 September 2016, Sacagawea Pipeline Company, LLC filed notifications of project route adjustments (Docket #64, #65 Certification and documentation for route adjustments under NDCC). The route adjustments were necessary under N.D.C.C. 49-22-16.3(1). The Commission acknowledged that they received Sacagawea's filing (Docket #67, Letter acknowledging certification and documentation adjustments). Route adjustments for the Project were all located inside the designated corridor in McKenzie County.

Permits and Approvals from Other Agencies

It was indicated in the Applications that consultation with federal, state, and local agencies would be required to obtain permits for the Project. Agencies consulted with and permits identified as required for the Project included:

- North Dakota Department of Agriculture
- US Fish and Wildlife Service (USFWS)
- North Dakota Department of Transportation District #7
- North Dakota Game and Fish Department (NDGFD)
- North Dakota Parks and Recreation-Natural Heritage Program (NDPRD)
- North Dakota State Historical Preservation Office (SHPO)
- US Army Corps of Engineers (USACE)
- McKenzie County Planning Department
- McKenzie County Commission
- North Dakota Soil Conservation Committee
- North Dakota Department of Health (NDDH)
- North Dakota Industrial Commission Pipeline Authority
- North Dakota Water Commission

Associated permits were filed with the PSC as required (Docket #13, Consolidated Application, Docket #8, Comments, Docket #20, Letter enclosing September 22, 2016 SHPO letter, Docket #31, Exhibit 1-Tab #5, Docket #36, Exhibit 6-Permit Matrix. All consultations with the above-mentioned agencies and their approval have been documented with the PSC. Not all agencies responded or commented back (Docket #13, Consolidated Application).

North Dakota One-Call Participation

There was no written documentation that Sacagawea participated in North Dakota One-Call. Sacagawea does state that they will stake utilities in the Application (Docket #1, Consolidated Application). Pin flags were observed on site during previous inspections which would indicate buried utilities had been marked. A report of damage to underground facilities was reported to the PSC. An abandoned Hess Pipeline was hit during a trench excavation for new pipeline. Hess was called out to repair and mark abandoned pipe location.

CULTURAL RESOURCES

Cultural Site Avoidance

The North Dakota State Historical Preservation Office (SHPO) reviewed the Class III Cultural Resources Survey and concurred with a "No significant sites affected" determination for the project, (September 22nd 2015 letter), provided the project is of the nature stated and that it takes place in the location mapped and plotted in the overall documentation (Docket # 20 and Docket #38, Exhibit 8). A letter dated April 5, 2016 stated the North Dakota SHPO concurred with the evaluation "No Adverse Effect", provided that the project remains as mapped and described (Docket # 41).

NATURAL RESOURCES

Wildlife

The North Dakota Game and Fish Department (NDGFD) was contacted to assist in identifying species and ecologically significant habitats within the Project Corridor. The NDGFD response indicated their primary concern was the possible disturbance of native prairie and wooded draws. They requested every effort is made to prevent destruction of these areas and that the disturbed areas be reclaimed to pre-project conditions.

The NDGFD identified that the National Wetland Inventory indicates various wetlands within the proposed project corridor. The NDGFD recommended implementing precautions to minimize the potential for a pipeline failure such as pressure sensing valves on both sides of the waterway. They also requested appropriate precautions are taken to prevent the introduction or movement of aquatic nuisance species and that steps taken to protect wetland areas that cannot be avoided. (Docket #8, Comments).

A review of the US Fish and Wildlife Services (FWS) Endangered Species Information, Planning, and Conservation System (IPaC) website and the FWS North Dakota Field Office website was conducted to determine the potential for listed species and critical habitat that may be present in McKenzie County, ND. Field surveys for listed species and a general habitat assessment of the Project area were conducted by Keita in September and November 2013; August 2014 and March and August 2015. No threatened or endangered species or critical habitats were observed at the time of the on- site assessments (Docket #1, Consolidated Application, Tab #3). Sacagawea provided the FWS with the project notification on October 14, 2015, which included a description of the Project, and an assessment of its impacts relative to the interest of the FWS. Formal written responses have not yet been received (Docket #1, Consolidated Application, Tab #5).

Wetlands

Wetland and waterbody surveys were conducted within the project corridor in September and November 2013, August 2014 and March and August 2015. Approximately 10 wetlands and 4 waterbodies were crossed. No permanent impacts to the areas are expected (Docket #31, Consolidated Application, Tab #6). Sacagawea implemented mitigation measures, which included avoidance, workspace modification, HDD, construction mats or other best management practices (BMP) to minimize impacts when working in or near wetlands and waterways. Periodic site inspections confirmed the use of these measures for the Project.

The NDGFD requested appropriate precautions are taken to prevent the introduction or movement of aquatic nuisance species and that steps are taken to protect any wetlands that cannot be avoided (Docket #8, Comments). During the inspection, it appeared that neither the wetlands nor the waterbodies had been negatively impacted during construction.

Reclamation & Reseeding

At the time of the site inspection, the pipeline trench had been backfilled, soils had been recontoured, and seeding had not been started or completed in cropland and non-cropland areas, for 2016. Sacagawea plans to seed Right of Way as required from PSC guidelines in

spring 2017. A revegetation inspection contracted by the PSC is planned one year from seeding to document establishment of vegetation.

Tree & Shrub Mitigation

It appeared that in general, major woody areas were avoided through Project siting. A tree & shrub mitigation plan has been submitted by contractor (Docket #72, Tree and Shrub Plan). A replacement plan or follow-up tree and shrub report was submitted to the PSC, November 2, 2016 (Docket #73, Memorandum). It is recommended that the PSC follow up with Sacagawea to ensure that tree mitigation efforts are in progress.

Noxious Weeds

Contractors were required to clean equipment and materials prior to arriving on the construction site to prevent the introduction of undesirable species (noxious weeds) to the Project area (Docket #32, Application, Tab #4). One noxious weed, Canada Thistle, was found in a road ditch On Site.

CONSTRUCTION, RECLAMATION & SOILS

Construction Management and Safety

Monthly construction reports were submitted for the duration of construction (Docket #66, 68, 69, 71, Sacagawea Pipeline progress report). Reports indicated whether any safety or environmental incidents had occurred and documented that construction of the Project proceeded in accordance with the Application and safety requirements. Progress reports did not indicate any delays in construction due to weather.

Pipeline Depth

The pipeline must be buried to 48 inches in range land and 48 inches at the bottom of ditch for road crossings. The Application specifies that Sacagawea used a minimum 48 inches (of soil cover) from the surface contour (Docket #1, Consolidated Application, Tab #3). KLJ visually confirmed pipeline depth at a few locations during previous construction inspections and pipe depth appeared to be buried to at least the specified depth (Docket #70, Construction Inspection).

Erosion & Sedimentation

The Project Application states BMPs would be used during and after construction to minimize soil erosion and protect surface water. During the site inspection, it was evident that BMPs were being used to minimize erosion and maintain drainage. There were minimal to no erosion or drainage issues observed.

Soil Segregation & Staging

In general, it appeared that measures were taken to minimize the overall impact of the Project and the extent of land and soil disturbance. KLJ observed that topsoil appeared to be replaced to the required depth and separately from subsoils (Docket #70, Topsoil Inspection Report).

Reclamation & Roads

There were monthly construction reports to indicate that cleanup and reclamation had occurred concurrently with construction activities. At the time of the inspection, construction was complete and re-seeding had not started yet. All roads within the Project area that were bored under appeared to be in good condition and properly maintained.

Fencing, Repairs & Waste

Existing fences or gates that were impacted by pipeline construction appeared to be replaced or repaired as needed.

OPERATION

Safety & Record Keeping

No concerns were identified during the site review that would indicate that Project operation was out of compliance with the Application or safety regulations. Examples of operational safety measures observed at the site include: use of personal protective equipment and warning signs marking the pipeline route. No reports of extraordinary events were filed to date with the PSC.

Maintenance

Sacagawea indicated that the pipeline would be regularly inspected and maintained (Docket #1, Consolidated Application). There was no waste, debris, or abandoned equipment observed during the inspection. The site appeared to be regularly maintained.

Public Contact & Safety

Warning signs marking the location of the pipeline had been installed and were in place at fence lines and road crossings. Sacagawea Pipeline, LLC indicated that resident/landowner concerns and issues are handled promptly and makes every reasonable attempt to alleviate problems caused by the Project. Sacagawea sent out a letter to landowners and listed a number to call for any landowner concerns to be listened to and addressed (Docket #63, Preconstruction meeting minutes, template letter to landowners). No project- specific emergency response plan was filed in this docket. Sacagawea testified that it will incorporate this Project into its existing Emergency Response plan and will coordinate with local authorities and emergency managers regarding emergency response measures (Docket #58, Findings of Fact, Conclusion of Law and Order).

ISSUES TO RESOLVE & RECOMMENDATIONS

Vegetative Establishment

Vegetation has not fully established along the project area, as no planting was done in 2016. Sacagawea plans to seed Right of Way spring 2017. A revegetation inspection contracted by the PSC is planned within one year from seeding to document establishment of vegetation.

As-Built Drawings & GIS Files

As-built alignment drawings have not been submitted to the PSC with USB drive. It is assumed Sacagawea is compiling the associated CAD/GIS file and USB drive, based on statements from PSC requirements for submittal.

CONCLUSIONS

Overall, the Project appeared to have been constructed as designed, with minimal impacts to the surrounding natural or human environment. The project site was well-maintained and in good condition. There were a few minor issues that need to be resolved before the Project is considered in complete and full compliance, including the following: documentation of the Tree and Shrub planting reports, and survival reports by Sacagawea. Right of Way to be seeded in spring 2017. Vegetation establishment will be verified in a PSC-contracted inspection one year from the date of planting. Submit as-built drawings and GIS files with USB drive to PSC.

REFERENCES

North Dakota Public Service Commission (ND PSC). 2015. Online Case Search. Available from: http://www.psc.nd.gov/database/ company case list. php. Accessed January 2017-February 2017

Westbrook, Marc. 2017. STI Group, Sacagawea Pipeline Company, Chief Inspector. Personal Communication: Discussions on January 27, and February 16, 2017.

Adams, Joe. 2017. Paradigm Midstream, Project Manager. Personal Communication; Discussions on January 29, 2017.

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: 4-12-17

Arnie E. Siverson, Field Inspector — Date: 4-12-17

APPENDIX A:

Map of Project and Route

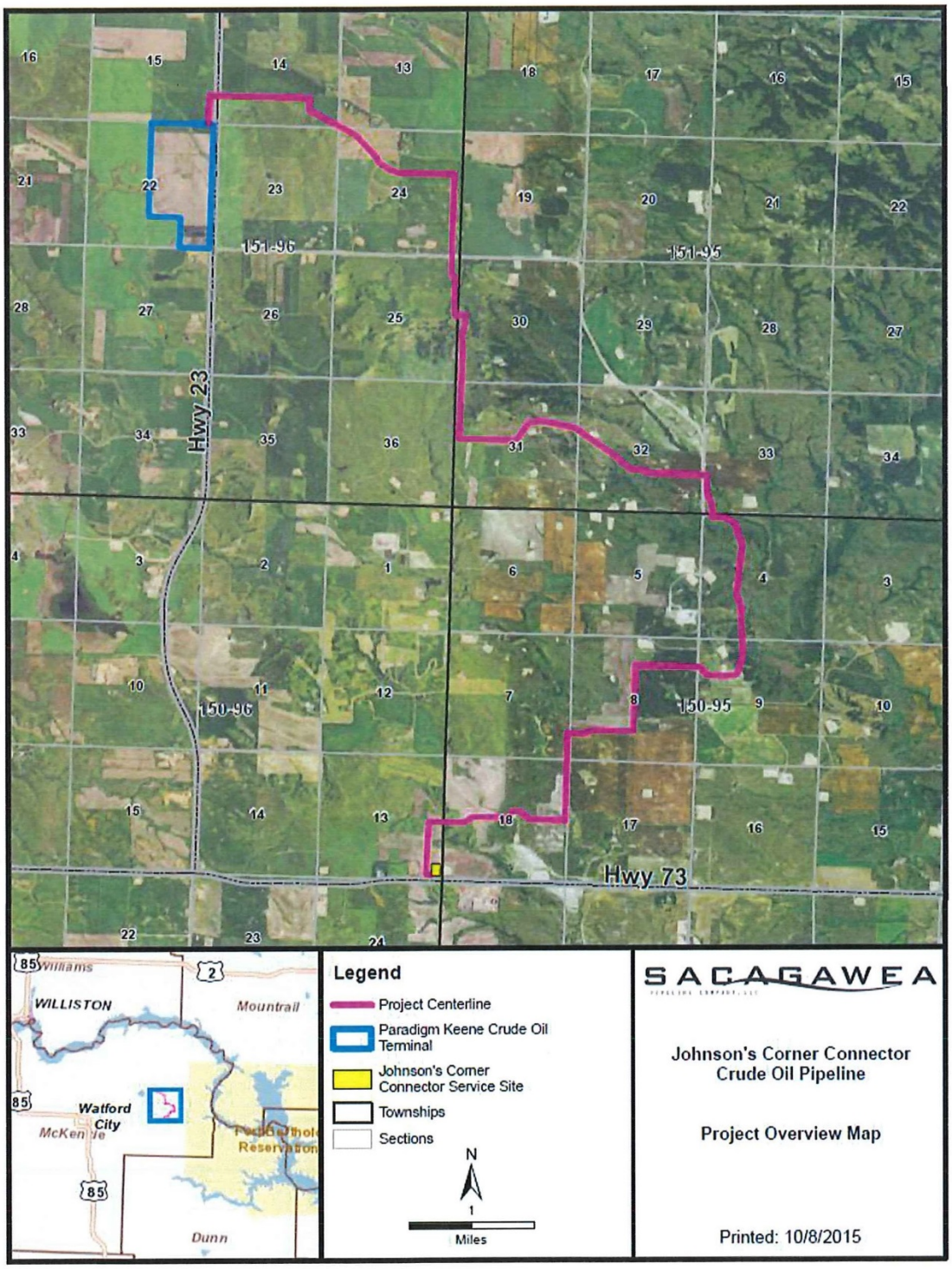
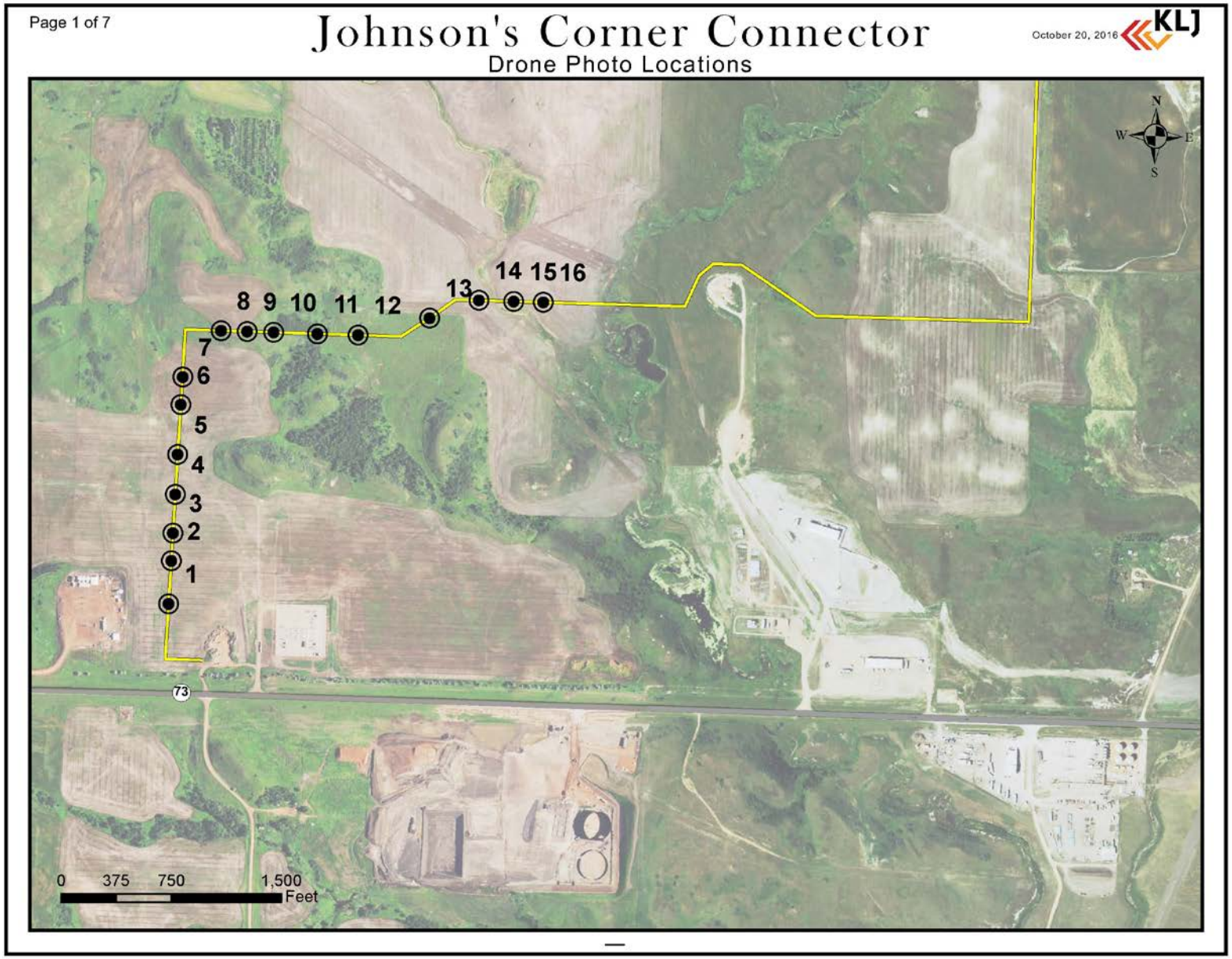


FIGURE 3.A.1 – General Project Location Map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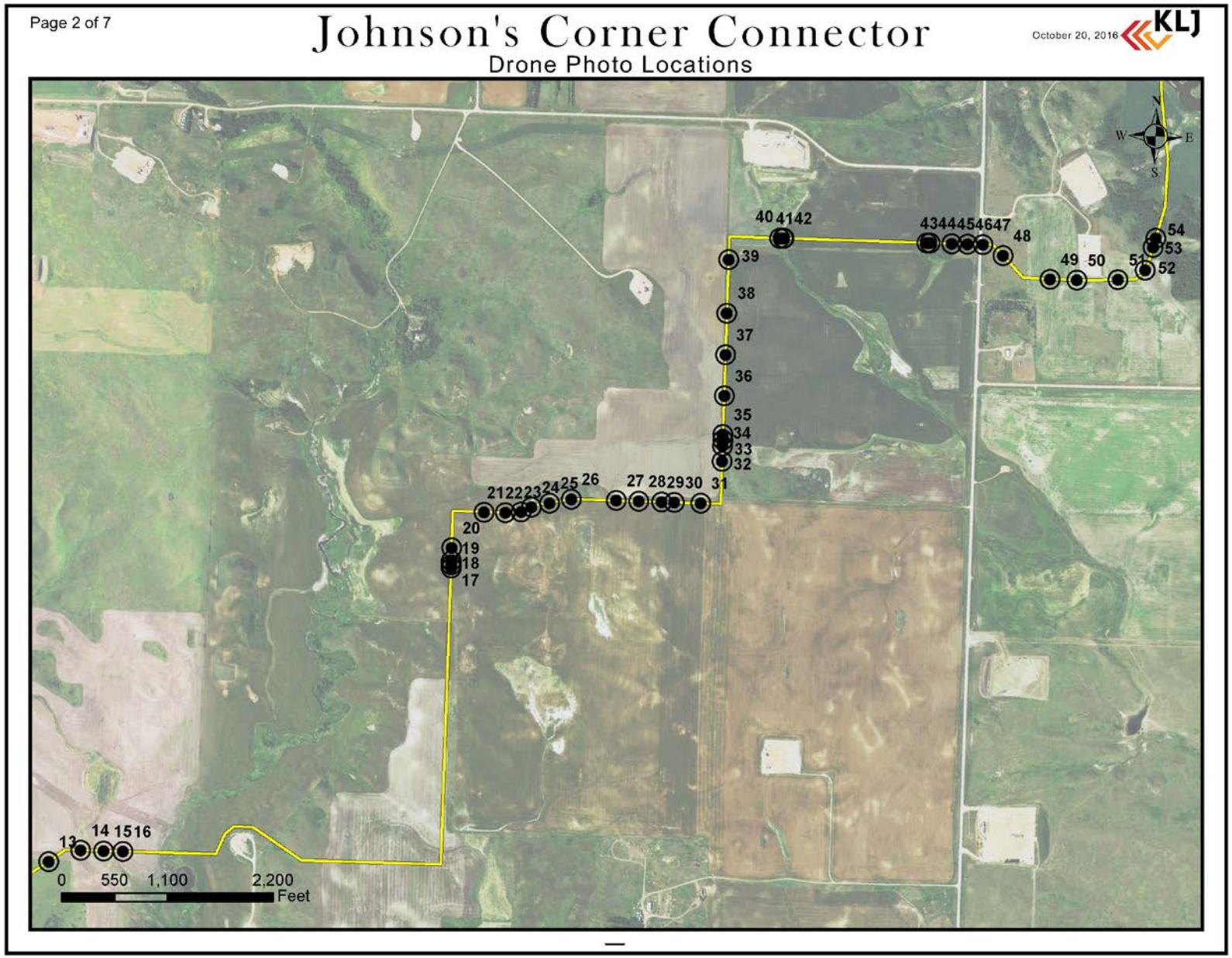
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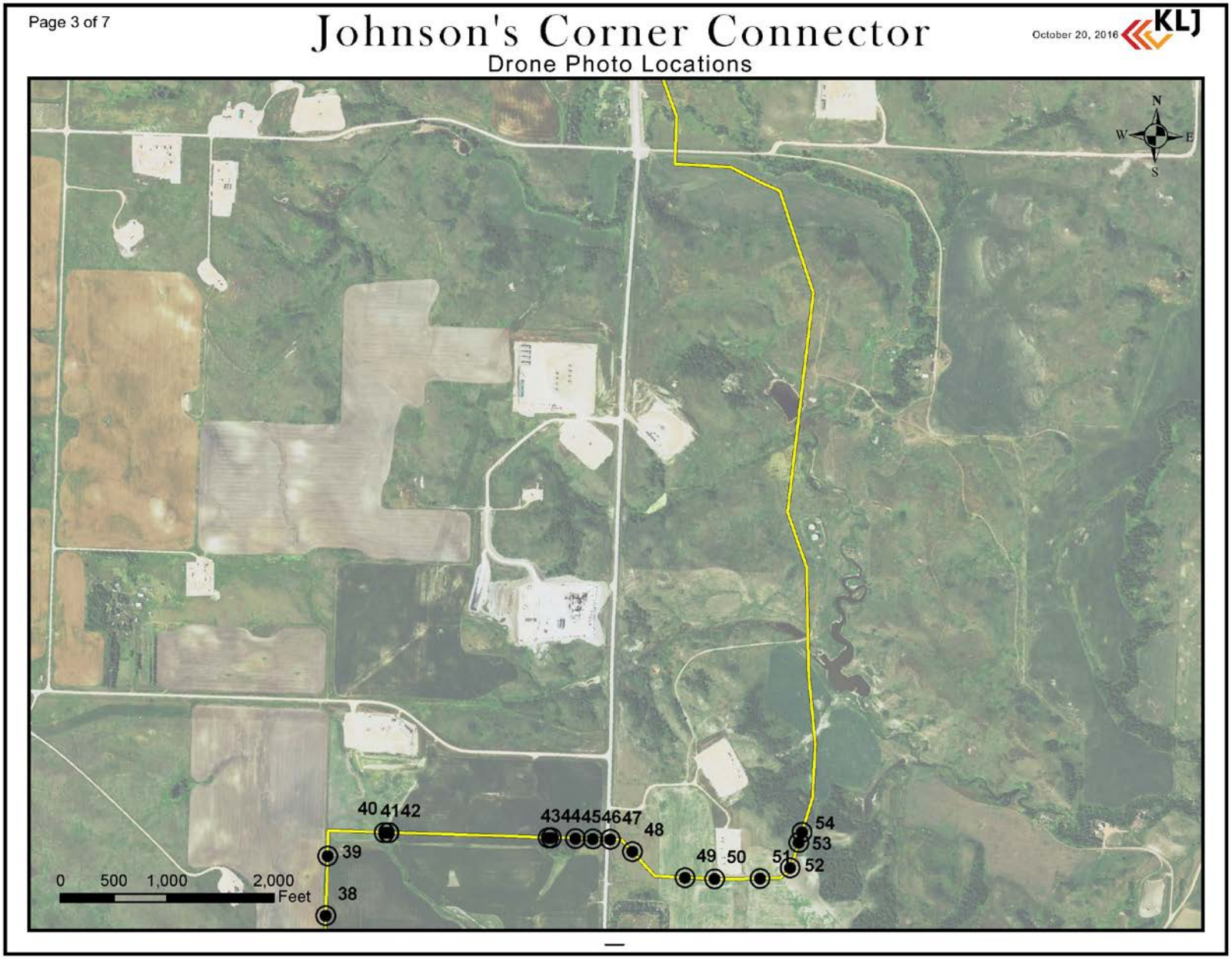
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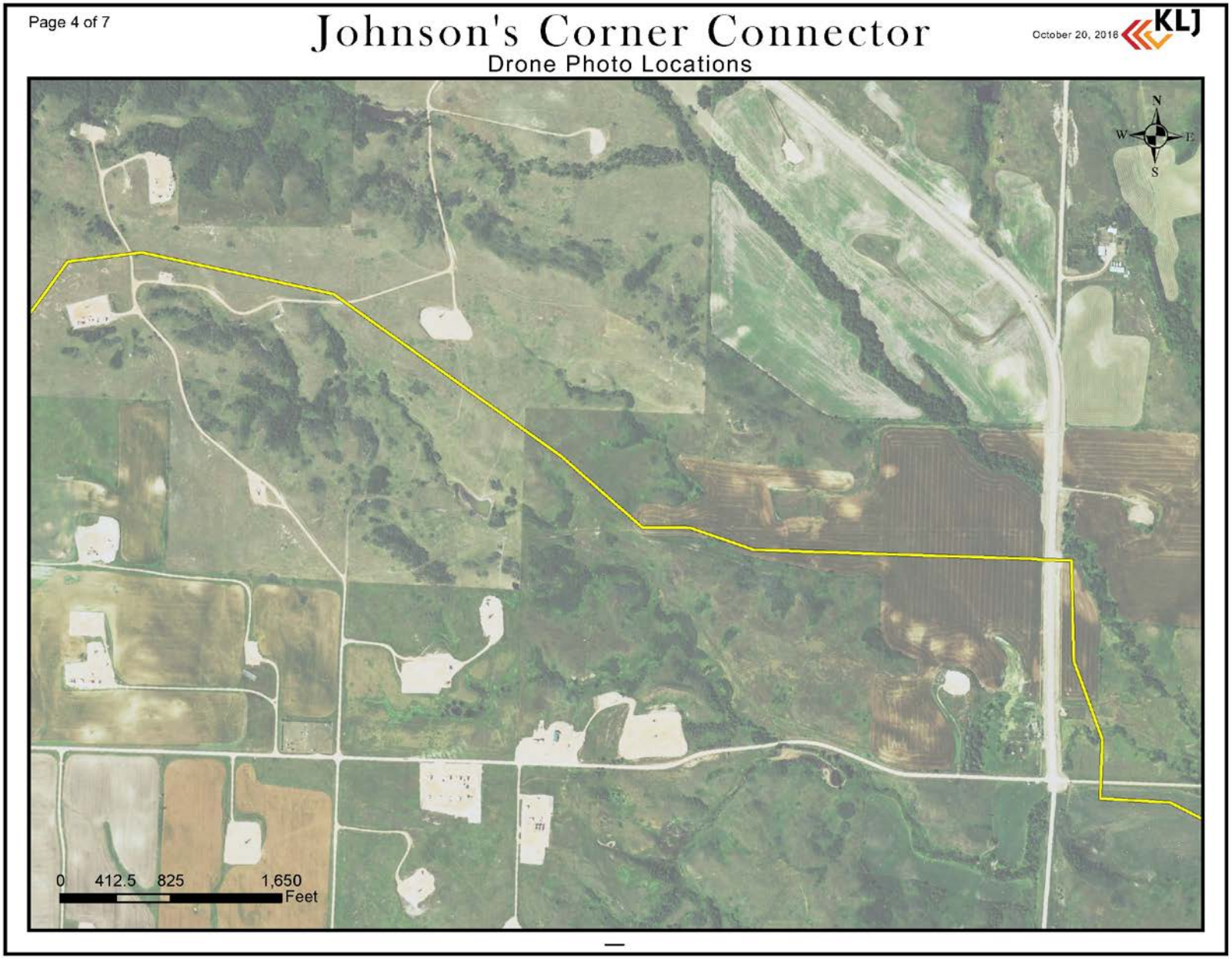
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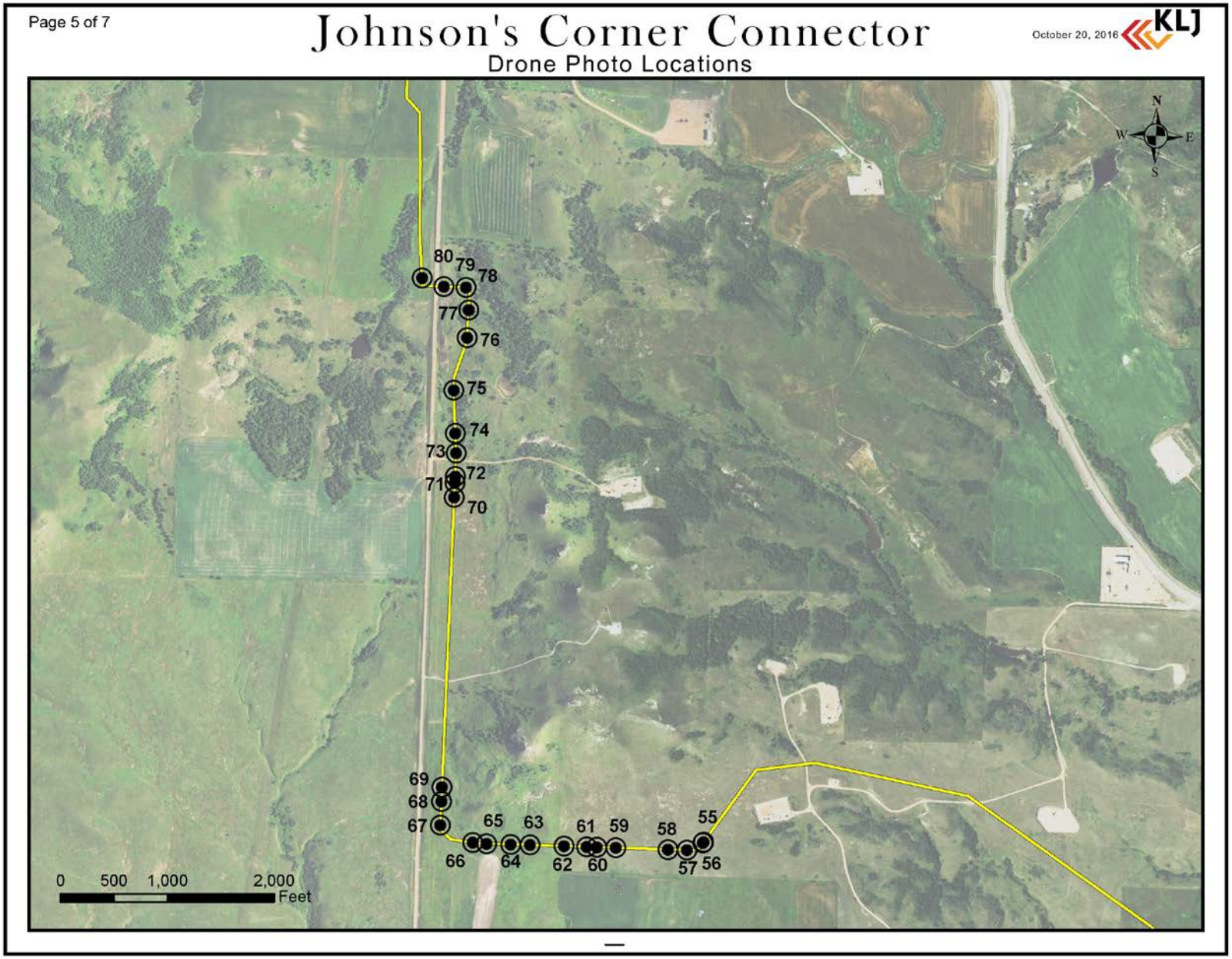
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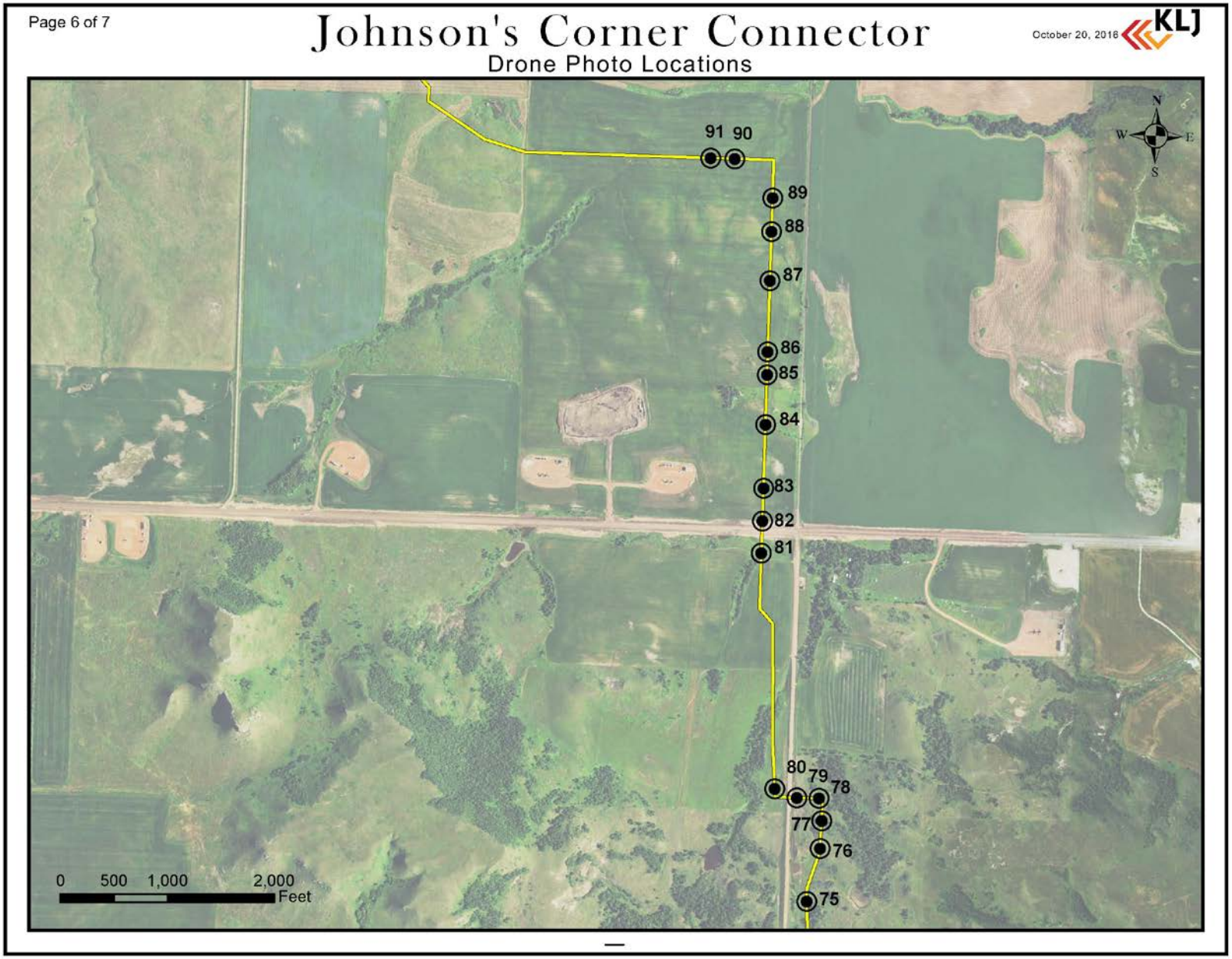
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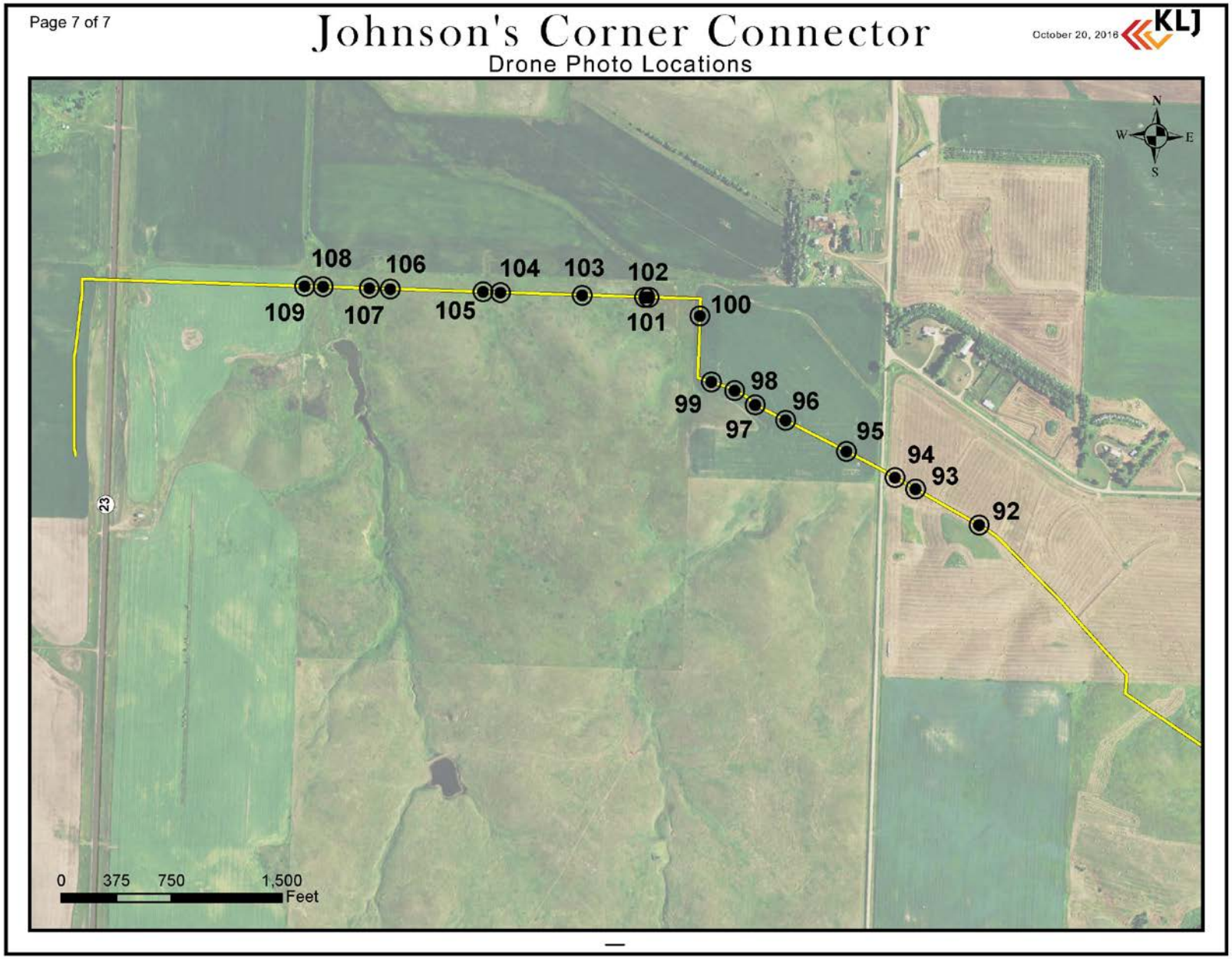
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APPENDIX B: PHOTOGRAPHS

Drone Photos

Taken October 13, 2016

Photo 1: Station 6+30; Latitude: 47°48'20.84"N Longitude: 102°54'3.73"W

Photo 2: Station 9+25; Latitude: 47°48'23.77"N Longitude: 102°54'3.36"W

Photo 3: Station 11+10; Latitude: 47°48'25.28"N Longitude: 102°54'3.52"W

Photo 4: Station 13+76; Latitude: 47°48'28.21"N Longitude: 102°54'3.85"W

Photo 5: Station 16+50; Latitude: 47°48'30.87"N Longitude: 102°54'3.65"W

Photo 6: Station 19+90; Latitude: 47°48'34.20"N Longitude: 102°54'3.40"W

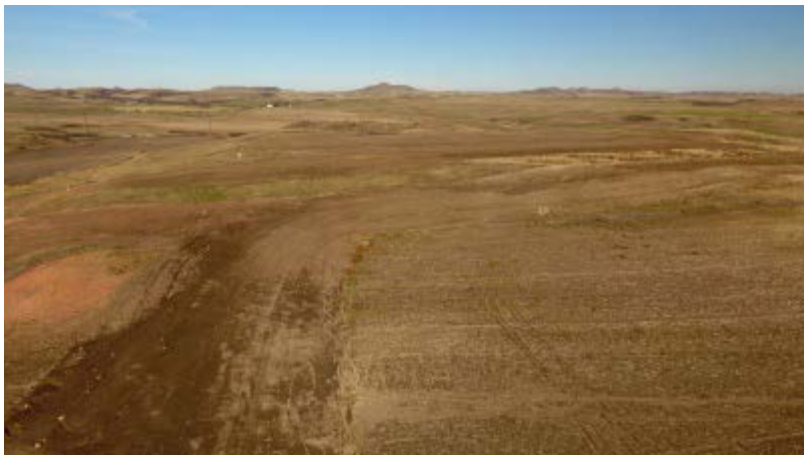

Photo 7: Station 21+76; Latitude: 47°48'35.91"N Longitude: 102°54'2.85"W

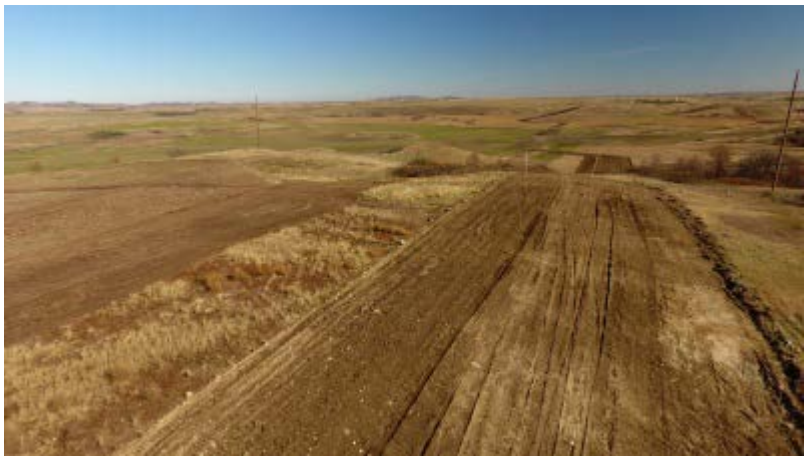

*Photo 8: Station 27+70; Latitude: 47°48'38.78"N Longitude: 102°54'0.16"*W

Photo 9: Station 29+48; Latitude: 47°48'39.05"N Longitude: 102°53'57.47"W

Photo 10: Station 31+25; Latitude: 47°48'39.29"N Longitude: 102°53'54.86"W

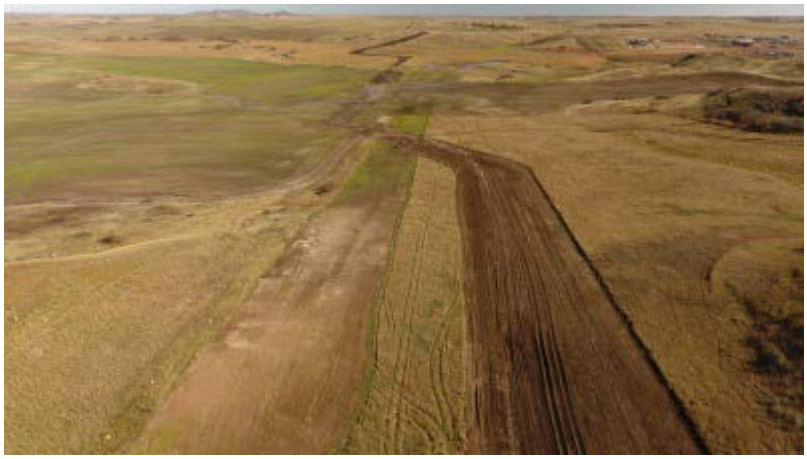

Photo 11: Station 34+00; Latitude: 47°48'39.59" Longitude: 102°53'50.47"W

Photo 12: Station 36+75; Latitude: 47°48'39.99"N Longitude: 102°53'46.36"W

Photo 13: Station42+05; Latitude: 47°48'40.67"N Longitude: 102°53'39.51"W

Photo 14: Station 45+75; Latitude: 47°48'41.35"N Longitude: 102°53'34.57"W

Photo 15: Station 48+15; Latitude: 47°48'41.81"N Longitude: 102°53'31.00"W

Photo 16: Station 50+20; Latitude: 47°48'42.31"N Longitude: 102°53'28.06"W

Photo 17: Station 116+75; Latitude: 47°49'12.33"N Longitude: 102°52'37.91"W

Photo 18: Station 117+ 25; Latitude: 47°49'12.37"N Longitude: 102°52'37.94"W

Photo 19: Station 117+50; Latitude: 47°49'12.60"N Longitude: 102°52'38.13"W

Photo 20: Station 119+85; Latitude: 47°49'13.96"N Longitude: 102°52'37.01"W

Photo 21: Station 125+85; Latitude: 47°49'16.37"N Longitude: 102°52'34.62"W

Photo 22: Station 128+10; Latitude: 47°49'17.20"N Longitude: 102°52'31.40"W

Photo 23: Station 129+75; Latitude: 47°49'17.43"N Longitude: 102°52'28.69"W

Photo 24: Station 130+95; Latitude: 47°49'17.98"N Longitude: 102°52'26.90"W

Photo 25: Station 132+85; Latitude: 47°49'18.55"N Longitude: 102°52'24.34"W

Photo 26: Station 135+15; Latitude: 47°49'18.84"N Longitude: 102°52'21.30"W

Photo 27: Station 139+85; Latitude: 47°49'19.04"N Longitude: 102°52'14.59"W

Photo 28: Station 142+20; Latitude: 47°49'18.97"N Longitude: 102°52'11.21"W

Photo 29: Station 144+60; Latitude: 47°49'18.92"N Longitude: 102°52'7.75"W

Photo 30: Station 145+90; Latitude: 47°49'19.17"N Longitude: 102°52'5.70"W

Photo 31: Station 148+60; Latitude: 47°49'20.61"N Longitude: 102°52'1.71"W

Photo 32: Station 155+20; Latitude: 47°49'23.79"N Longitude: 102°51'58.48"W

Photo 33: Station 156+75; Latitude: 47°49'25.38"N Longitude: 102°51'57.93"W

Photo 34: Station 157+45; Latitude: 47°49'25.97"N Longitude: 102°51'57.70"W

Photo 35: Station 158+00; Latitude: 47°49'26.54"N Longitude: 102°51'57.45"W

Photo 36: Station 162+00; Latitude: 47°49'30.50"N Longitude: 102°51'57.92"W

Photo 37: Station 166+25; Latitude: 47°49'34.67"N Longitude: 102°51'58.15"W

Photo 38: Station 170+55; Latitude: 47°49'38.98"N Longitude: 102°51'57.87"W

Photo 39: Station 176+15; Latitude: 47°49'44.54"N Longitude: 102°51'54.52"W

Photo 40: Station 183+74; Latitude: 47°49'46.00"N Longitude: 102°51'50.98"W

Photo 41: Station 184+15; Latitude: 47°49'46.05"N Longitude: 102°51'50.38"W

Photo 42: Station 184+20; Latitude: 47°49'46.07"N Longitude: 102°51'50.27"W

Photo 43: Station 199+05; Latitude: 47°49'46.72"N Longitude: 102°51'28.51"W

Photo 44: Station 199+30; Latitude: 47°49'46.59"N Longitude: 102°51'28.05"W

Photo 45: Station 201+65; Latitude: 47°49'46.37"N Longitude: 102°51'24.76"W

Photo 46: Station 203+27; Latitude: 47°49'46.10"N Longitude: 102°51'22.32"W

Photo 47: Station 205+90; Latitude: 47°49'45.78"N Longitude: 102°51'19.87"W

Photo 48: Station 207+48; Latitude: 47°49'45.50"N Longitude: 102°51'17.30"W

Photo 49: Station 213+40; Latitude: 47°49'43.47"N Longitude: 102°51'9.56"W

Photo 50: Station 216+45; Latitude: 47°49'43.99"N Longitude: 102°51'5.50"W

Photo 51: Station 220+45; Latitude: 47°49'44.50"N Longitude: 102°50'59.37"W

Photo 52: Station 223+70; Latitude: 47°49'45.29"N Longitude: 102°50'57.25"W

Photo 53: Station 226+20; Latitude: 47°49'47.04"N Longitude: 102°50'54.08"W

Photo 54: Station 227+15; Latitude: 47°49'48.06"N Longitude: 102°50'53.89"W

Photo 55: Station 414+55; Latitude: 47°51'20.21"N Longitude: 102°53'18.05"W

Photo 56: Station 412+55; Latitude: 47°51'20.46"N Longitude: 102°53'17.26"W

Photo 57: Station 412+72; Latitude: 47°51'20.45"N Longitude: 102°53'17.38"W

Photo 58: Station 416+35; Latitude: 47°51'18.98"N Longitude: 102°53'20.48"W

Photo 59: Station 421+24; Latitude: 47°51'18.77"N Longitude: 102°53'27.64"W

Photo 60: Station 423+00; Latitude: 47°51'18.75"N Longitude: 102°53'30.25"W

Photo 61: Station 423+97; Latitude: 47°51'18.70"N Longitude: 102°53'31.67"W

Photo 62: Station 426+10; Latitude: 47°51'18.51"N Longitude: 102°53'34.74"W

Photo 63: Station 429+24; Latitude: 47°51'18.58"N Longitude: 102°53'39.34"W

Photo 64: Station 431+05; Latitude: 47°51'18.73"N Longitude: 102°53'42.04"W

Photo 65: Station 433+30; Latitude: 47°51'18.89"N Longitude: 102°53'45.36"W

Photo 66: Station 434+60; Latitude: 47°51'19.23"N Longitude: 102°53'47.25"W

Photo 67: Station 438+50; Latitude: 47°51'21.41"N Longitude: 102°53'49.62"W

Photo 68: Station 440+70; Latitude: 47°51'22.78"N Longitude: 102°53'51.05"W

Photo 69: Station 442+05; Latitude: 47°51'24.03"N Longitude: 102°53'50.74"W

Photo 70: Station 469+10; Latitude: 47°51'50.86"N Longitude: 102°53'50.42"W

Photo 71: Station 470+50; Latitude: 47°51'52.15"N Longitude: 102°53'50.48"W

Photo 72: Station 471+05; Latitude: 47°51'52.74"N Longitude: 102°53'50.39"W

Photo 73: Station 473+25; Latitude: 47°51'55.24"N Longitude: 102°53'50.42"W

Photo 74: Station 475+10; Latitude: 47°51'56.82"N Longitude: 102°53'50.37"W

Photo 75: Station 479+15; Latitude: 47°52'0.64"N Longitude: 102°53'50.58"W

Photo 76: Station 484+25; Latitude: 47°52'5.49"N Longitude: 102°53'49.33"W

Photo 77: Station 486+85; Latitude: 47°52'8.17"N Longitude: 102°53'50.05"W

Photo 78: Station 489+30; Latitude: 47°52'9.00"N Longitude: 102°53'51.16"W

Photo 79: Station 491+40; Latitude: 47°52'9.53"N Longitude: 102°53'53.50"W

Photo 80: Station 494+20; Latitude: 47°52'10.95"N Longitude: 102°53'56.16"W

Photo 81: Station 516+70; Latitude: 47°52'32.66"N Longitude: 102°53'59.61"W

Photo 82: Station 519+65; Latitude: 47°52'35.61"N Longitude: 102°53'59.43"W

Photo 83: Stationing: 522+75; Latitude: 47°52'38.65"N Longitude: 102°53'59.18"W

Photo 84: Station 528+65; Latitude: 47°52'44.51"N Longitude: 102°53'59.42"W

Photo 85: Station 533+30; Latitude: 47°52'49.09"N Longitude: 102°53'59.18"W

Photo 86: Station 535+50; Latitude: 47°52'51.23"N Longitude: 102°53'59.24"W

Photo 87: Station 542+20; Latitude: 47°52'57.82"N Longitude: 102°53'59.31"W

Photo 88: Station 546+72; Latitude: 47°53'2.32"N Longitude: 102°53'59.54"W

Photo 89: Station 549+80; Latitude: 47°53'5.42"N Longitude: 102°53'59.54"W

Photo 90: Station 557+05; Latitude: 47°53'7.98"N Longitude: 102°54'4.76"W

Photo 91: Station 559+30; Latitude: 47°53'8.78"N Longitude: 102°54'8.13"W

Photo 92: Station 602+55; Latitude: 47°53'25.27"N Longitude: 102°55'1.21"W

Photo 93: Station 607+52; Latitude: 47°53'27.31"N Longitude: 102°55'7.85"W

Photo 94: Station 609+15; Latitude: 47°53'27.87"N Longitude: 102°55'9.93"W

Photo 95: Station 613+90; Latitude: 47°53'29.36"N Longitude: 102°55'15.25"W

Photo 96: Station 617+55; Latitude: 47°53'31.14"N Longitude: 102°55'21.61"W

Photo 97: Station 619+85; Latitude: 47°53'32.21"N Longitude: 102°55'24.36"W

Photo 98: Station 621+55; Latitude: 47°53'33.29"N Longitude: 102°55'26.48"W

Photo 99: Station 623+25; Latitude: 47°53'34.13"N Longitude: 102°55'28.10"W

Photo 100: Station 628+48; Latitude: 47°53'37.06"N Longitude: 102°55'34.48"W

Photo 101: Station 633+05; Latitude: 47°53'39.38"N Longitude: 102°55'36.24"W

Photo 102: Station 633+35; Latitude: 47°53'39.38"N Longitude: 102°55'36.40"W

Photo 103: Station 637+60; Latitude: 47°53'39.57"N Longitude: 102°55'42.46"W

Photo 104: Station 643+20; Latitude: 47°53'40.00"N Longitude: 102°55'51.05"W

Photo 105: Station 644+30; Latitude: 47°53'39.31"N Longitude: 102°55'52.24"W

Photo 106: Stationing: 650+65; Latitude: 47°53'39.41"N Longitude: 102°56'1.59"W

Photo 107: Station 652+05; Latitude: 47°53'38.61"N Longitude: 102°56'3.67"W

Photo 108: Station 655+23; Latitude: 47°53'38.55"N Longitude: 102°56'8.26"W

Photo 109: Station 656+49; Latitude: 47°53'38.66"N Longitude: 102°56'10.14"W

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