

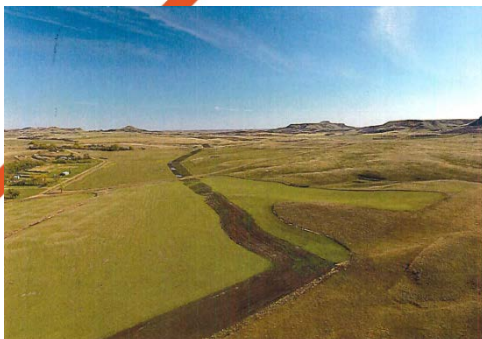
# Sacagawea Pipeline Co.

Palermo to Enbridge Crude Oil Pipeline  
Construction Inspection Report  
PU-15-670  
KLJ#1216107

*March 7, 2017*

Prepared for:

North Dakota Public Service Commission  
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## EXECUTIVE SUMMARY

The North Dakota Public Service Commission, (PSC) File Case Number PU-15-670, retained KLJ to complete a construction inspection of the 12" crude oil line from Palermo to Enbridge Pipeline (Project) in Mountrail County, North Dakota (ND), constructed by Sacagawea Pipeline, LLC. 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. KLJ reviewed project documents to identify those aspects that required compliance, and visually inspected the project area.

During inspection on March 24, 2016, the Project was well-maintained and being constructed as planned. Efforts were being made to minimize impacts to the construction areas. Trenching had begun at station 34+00 with pipe laid out near 54+00 and spliced by station 62+00. At station 70+00 pipe was laid in trench and inspected for proper depth. At station 316+00 and 368+00 pipe was also laid in trench and cover was measured from top of pipe. Other work on the project mostly consisted of bore work. At station 111.42 equipment was being staged to begin bore pits. Hydro testing had begun for bore near PI at station 128+42.8, with bore at station 158+72.8 currently in progress. See pictures for additional details.



## BACKGROUND AND SCOPE

### Introduction

The Sacagawea Pipeline Company, LLC (Project), also known as the “Palermo to Enbridge Pipeline Project” will originate at the Palermo Rail Facility owned by Phillips 66 Partners Terminal LLC in Mountrail County, and terminate at the Enbridge Crude Oil Terminal, located in Stanley North Dakota. (**Appendix A, Figure 1.A.1**). The Project will be constructed and operated by Sacagawea Pipeline Company, LLC. The Project includes a 12-inch diameter underground crude oil pipeline with a total length of approximately 8 miles. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Findings of Fact, and Conclusions of Law and Order in Case No. PU-15-670 on 9 September, 2015, granting a Certificate of Corridor Compatibility No. 172 and Route Permit No. 184 for the Project.

### Regulatory Purpose and Scope of Work

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 PSC retained KLJ to complete the construction inspection of the Project. The inspection process included a review of the Application for Corridor Compatibility and Route Permit, Order, and other applicable documents.



## METHODS AND SCOPE OF INSPECTION

### Project Compliance Items Identified

KLJ identified a list of "Project Specifications", which Sacagawea is obligated or responsible to follow and that can be verified either in written documentation or by an on-site inspection. These items were taken 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, 4) Orders, and 5) recommendations by other agencies.

### On-Site Inspection

Arnie Siverson, KLJ Project Inspector, visited the Project site on March 24, 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. (**Appendix B - Photos**). Geographic coordinates were recorded at observation points using a handheld Global Positioning System (GPS) (Garmin GPSMAP Oregon 450; <10m accuracy; NAD83 datum). (**Appendix A**).



## FINDINGS-SITING AND LOCATION OF FACILITY

### Designated Location & Maps of Corridor

The Project was built as proposed in the designated location as described in the Application and Order in Mountrail County, North Dakota. Sacagawea constructed the project entirely within the corridor previously approved for Sacagawea Pipeline in Palermo to Enbridge Crude Oil Pipeline in Case Number PU-15-670.

### Siting Criteria

Siting Criteria was analyzed in detail in the application for the project (Docket #1, Consolidated Application). There are no avoidance areas were crossed by the Project route. KLJ also confirmed that the impacts to policy criteria were considered and kept to a minimum.

### Land & Agricultural Impacts

The Project was built as proposed within the construction Right of Way. The current land use of properties adjacent to the Project was primarily agricultural and range land. Sacagawea negotiated easements with affected landowners and would not be expected to have permanent impacts to farm/ranch operations.



## PROJECT DESIGN & ENGINEERING

### Length & Infrastructure

The Project was authorized as 8 miles of 12-in diameter underground crude 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. (Appendix A)

### 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 #31, Findings of Facts). The pipeline appeared to have been constructed within these maximum widths. Sacagawea used existing public roads to access the construction Right of Way.

### 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).

### As-built Drawings and GIS Files

As-built alignment drawings have not been submitted to the PSC. It is assumed no associated CAD/GIS files have been received. The PSC should pursue receipt of these files from Sacagawea Pipeline.



## PRE-CONSTRUCTION

### PSC-Required Documents

A Certificate of Corridor Compatibility No. 180 and Route Permit No. 192 were issued on 14 September 2015 (Docket #36, Findings of Fact, Conclusions of Law, and Order), with the Order and Certification Relating to Order Provisions.

### Pre-Construction Conference/Notice of Intent to Start Construction

A Pre-construction conference was held on 29 February 2016. Meeting minutes were taken, as well as a list of attendees (Docket #42, Preconstruction Meeting Minutes, template letter to landowners). The landowner letter template (Docket #42, Preconstruction Meeting Minutes, template letter to landowners) also stated that the initial construction phase was due to begin on Thursday, March 14, 2016.

### 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:

- US Fish and Wildlife Service (USFWS)
- US Army Corps of Engineers (USACE)
- North Dakota Game and Fish Department (NDGFD)
- North Dakota Parks and Recreation-Natural Heritage Program (NDPRD)
- North Dakota State Historical Preservation Office (SHPO)
- North Dakota Department of Transportation-District #7
- Lostwood Wetland Management District
- Mountrail County Building and Planning Department
- North Dakota Water Commission
- North Dakota Department of Health (NDDH)

Associated permits were filed with the PSC as required (Docket #1, Consolidated Application, Docket #13, Comments, Docket #28, Exhibit 6, Letter enclosing August 21, 2015 SHPO letter, Docket #29, Exhibit 7 Letter enclosed October 22, 2015, ND Health Department. All consultations with the above-mentioned agencies and their approval have been documented with the PSC. Not all agencies responded or commented back (Docket #1, Consolidated Application, Tab #5).



# 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, (August 15<sup>th</sup> letter) that they find acceptable, provided the project is of the nature stated and that it takes place in the location mapped and plotted in the overall documentation (Docket # 28, Exhibit 6).



# 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 various wetlands within proposed Project area. Steps should be taken to protect any wetlands that cannot be avoided. No alterations should be made to existing drainage patterns. They requested every effort is made to prevent destruction of these areas and disturbed areas be reclaimed to pre-project conditions. The NDGFD recommended implementing precautions to minimize the potential for a pipeline failure such as not placing pressure sensing valves in wetland areas. They also requested appropriate precautions are taken to prevent the introduction or movement of aquatic nuisance species. Also, the NDGFD noted the need for raptor surveys and appropriate construction buffers (Docket #1, Consolidated Application). A total of three raptor nests were observed during the field survey. All three recorded nests were identified as active. Two nests were occupied with red tailed hawks and one was occupied with great horned owls. The great horned owl nest was occupied with at least two nestlings. When raptor nests were found during the route planning stage, Sacagawea adjusted the proposed Project route following the USFWS recommended buffers and reroute the pipeline to avoid impacts to the active nests found during the 2015 field survey.

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 Mountrail County, ND. Field surveys for listed species and a general habitat assessment of the Project area were conducted in June and August 2015. The proposed Project did cross a designated critical habitat area for piping plover. The area was crossed using HDD/Bore methods to avoid disturbance to the habitat. If construction occurred during nesting season (April 15-September 1) a preconstruction nesting survey would be completed in areas of critical habitat within 0.5 miles of construction activity (Docket #1, Consolidated Application). Sacagawea provided the FWS with the project notification on May 26, 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).

## Wetlands

Wetland and waterbody surveys were conducted within the project corridor in June and August 2015. Approximately 15 wetlands and 4 waterbodies were crossed. No permanent impacts to the areas are expected (Docket #1, Consolidated Application). 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 #1, Consolidated Application). 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 completed in non-cropland areas. Grasses appeared to be growing in most areas though it was not fully established. The pipeline ROW was seeded in all areas at the time of inspection. Seeding was completed in fall of 2016. A revegetation inspection contracted by the PSC is planned one year from seeding to document establishment of vegetation.

## Tree & Shrub Mitigation

A tree and shrub count was done within the area expected to be impacted by construction. (Docket #53, Memorandum. Sacagawea states in their Application that no trees or shrubs were removed during project construction so no plantings are necessary.

## Noxious Weeds

Contractors were required to clean equipment and materials prior to arriving on the construction spread to prevent the introduction of undesirable species (noxious weeds) to the Project area (Docket #1, Application). No large patches of weeds or noxious weeds were observed while onsite.



# CONSTRUCTION, RECLAMATION & SOILS

## Construction Management and Safety

Monthly construction reports were submitted for the duration of construction (Docket #45, 46, 47, 48, 49, 50 and 51 Monthly Construction 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 uses a minimum 48 inches (of soil cover) from the surface contour (Docket #1, Consolidated Application, Tab #3). KLJ did not visually confirm pipeline depth, but Marc Westbrook, Sacagawea lead inspector, stated that pipeline was buried to at least the specified depth and deeper where it bored under roadways.

## 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 had and were being used to minimize erosion and maintain drainage because there were minimal to no erosion or drainage problems 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 #43, Topsoil Removal Construction 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 and seeding was completed. 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.

### 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 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 #42, 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 #34, Findings of Fact, Conclusion of Law and Order).



## ISSUES TO RESOLVE & RECOMMENDATIONS

### Vegetative Establishment

Vegetation has not fully established along the project area, as it was planted in fall (2016). A revegetation inspection contracted by the PSC is planned one year from seeding to document establishment of vegetation. KLJ recommends the PSC request monitoring and documentation to ensure the vegetation is established throughout the project.

### Tree & Shrub Mitigation

Sacagawea stated in their Application that replacement of trees and shrubs will be based upon actual impacts due to construction and will meet the 2: 1 ratio specified and will be documented. A replacement plan or follow-up tree and shrub count report was submitted to the PSC November 2, 2016 (Docket #73, Memorandum). Tree and shrub survival reports will need to be done for the Project to be considered complete.

### As-Built Drawings & GIS Files

As-built alignment drawings have not been submitted to the PSC at time of inspection. It is assumed Sacagawea is compiling the associated CAD/GIS files, including the USB as directed from PSC requirements.



## 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 issues that need to be noted for the Project to be considered in full compliance, including the following: documentation of the Tree and Shrub planting and survival reports, established vegetation to be verified by a PSC-contracted inspection, and as-built drawings, GIS files and USB drive to be submitted to the 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](http://www.psc.nd.gov/database/company_case_list.php). Accessed November 2015-December 2015

Westbrook, Marc. 2016. STI Group, Sacagawea Pipeline Company, Chief Inspector. Personal Communication: Discussions on March 16, and 24, 2016.

Sullivan, Gary 2016. Boyd Construction, Proj. Manager. Personal Communication; Discussions during site visit on March 16, 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:

### Map of Project and Observation Points



Sacagawea Pipeline Company, LLC  
Route Permit Application  
Palermo to Enbridge Crude Oil Pipeline

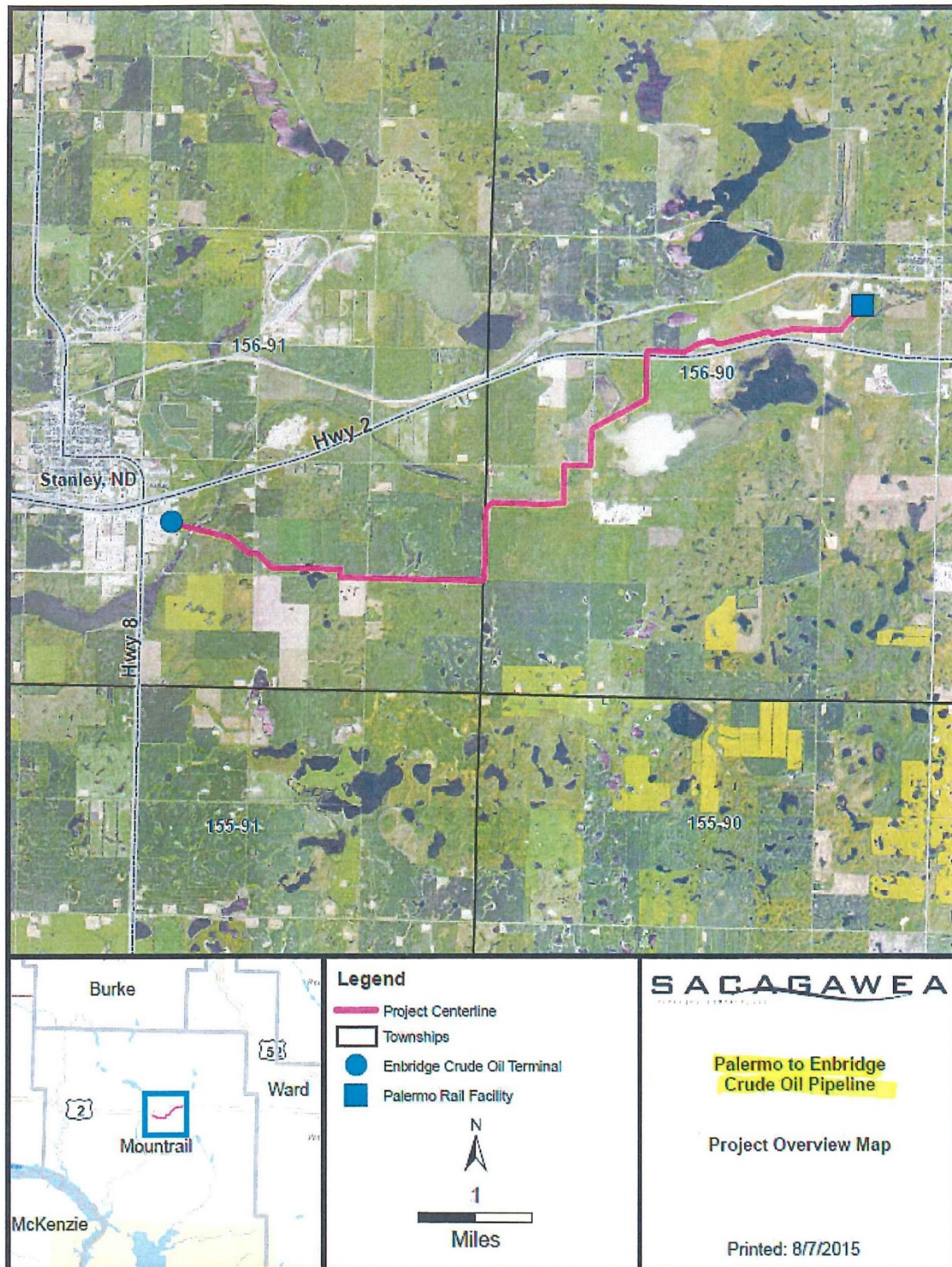
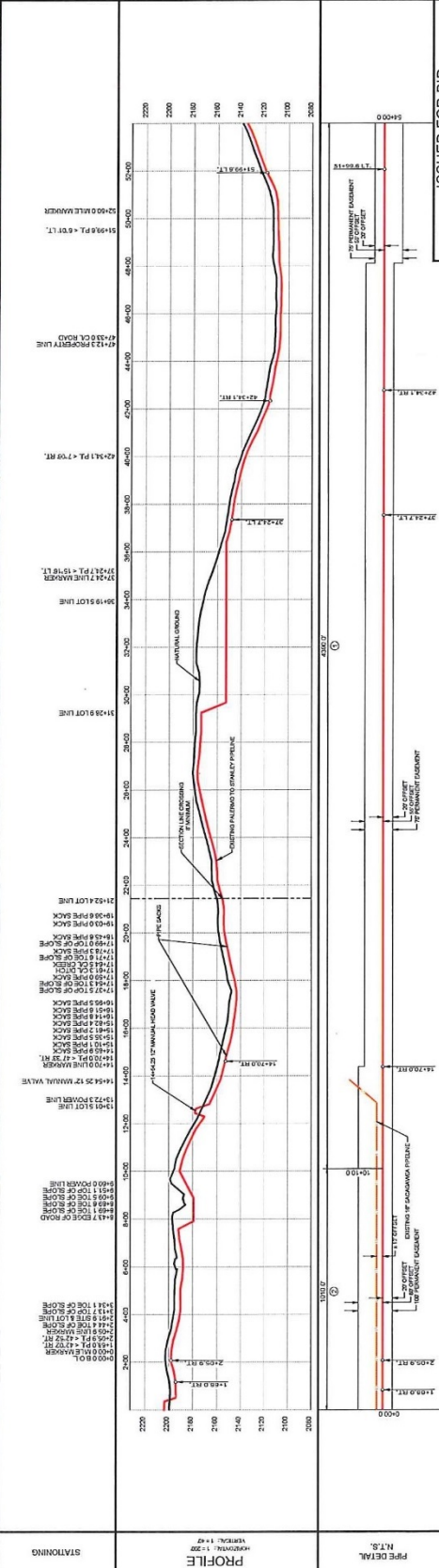
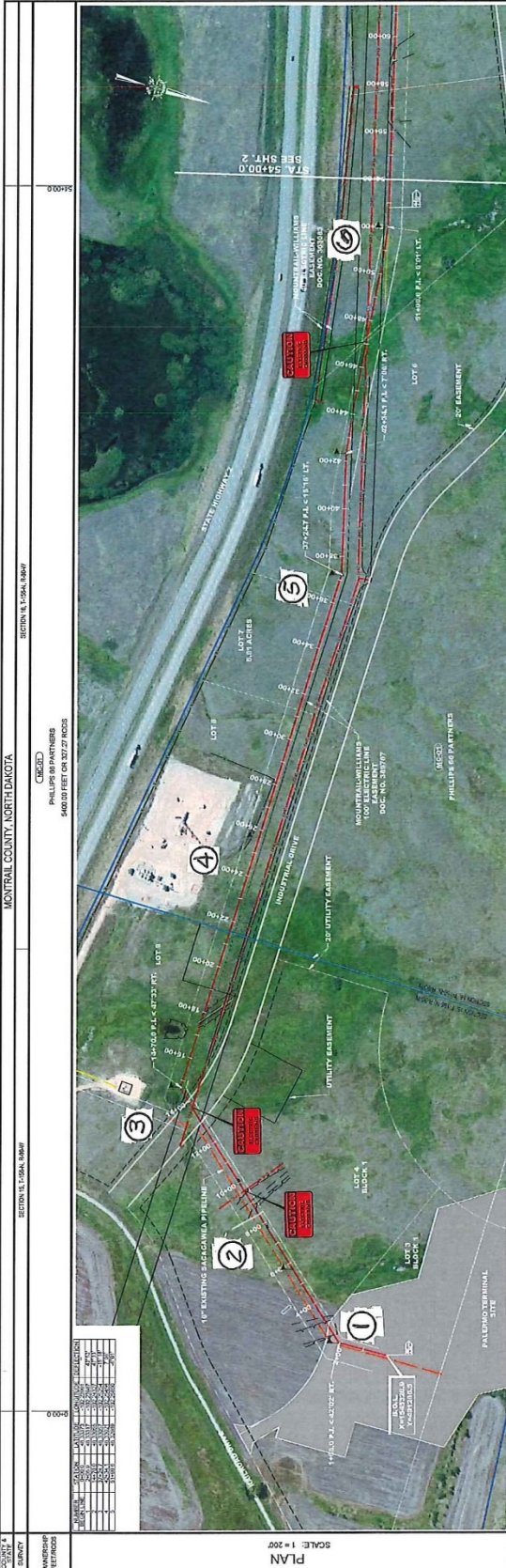


FIGURE 3.A.1 – General Project Location Map



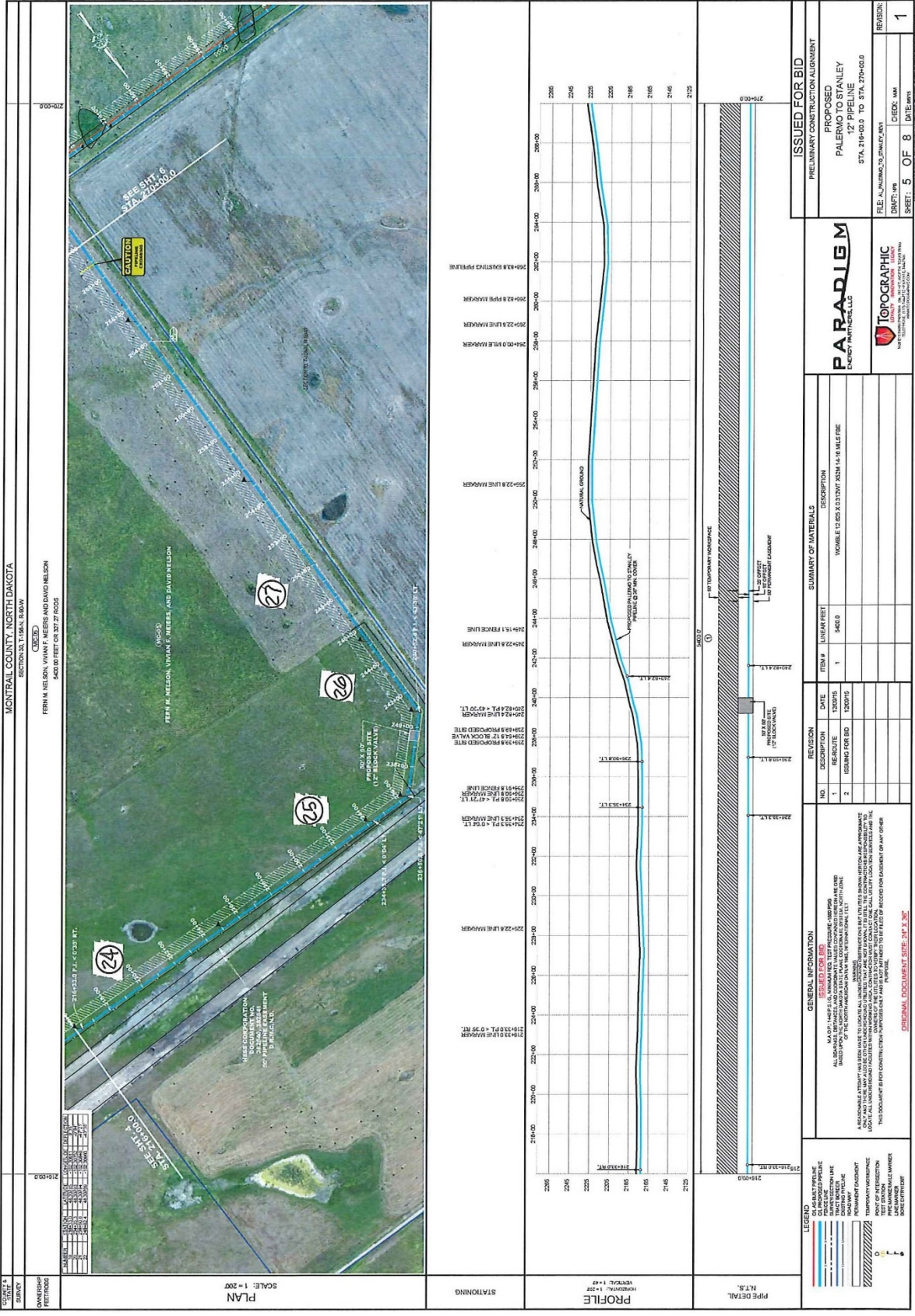


GENERAL INFORMATION		REVISION		SUMMARY OF MATERIALS		ISSUED FOR BID	
<p>MAJOR: 16\"/&gt; </p>		NO.	DESCRIPTION	DATE	ITEM #	LINEAR FEET	DESCRIPTION
1	RE-ROUTE	12/09/15	1	40507	1	40507	MOBILE 12025 X 3000T 3224 14.8 MILS FDE
2	ROUND FOR BID	12/09/15	2	10507	2	10507	MOBILE 12025 X 3000T 3224 14.8 MILS FDE
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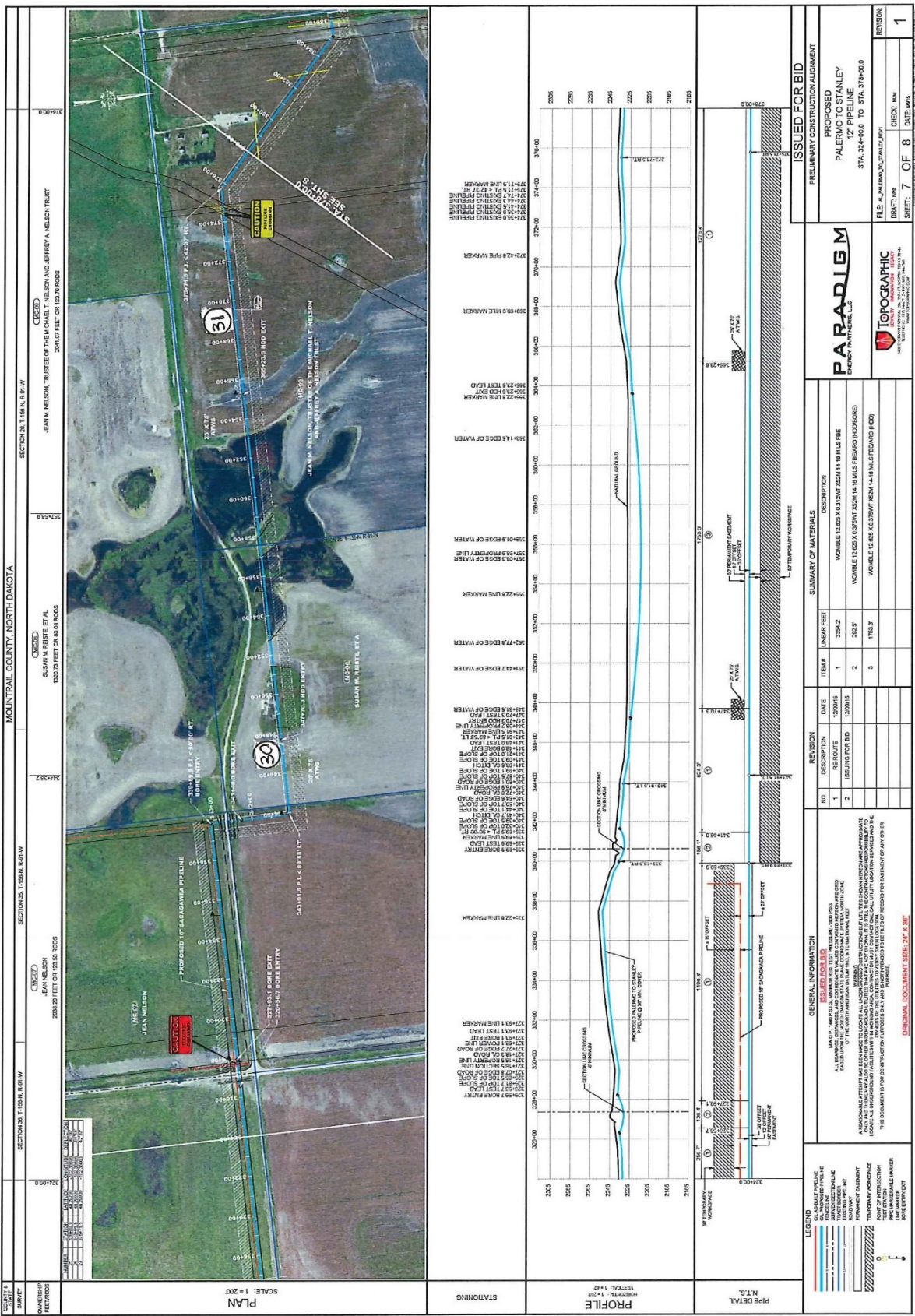












SECTION 23: TULSA ROW	SECTION 22: TULSA ROW	SECTION 21: TULSA ROW	SECTION 20: TULSA ROW
JEAN NELSON TRUSTEES OF THE MACKAY TRUST AND JEFFREY A. NELSON TRUST 50' x 27' BORE FOR 12" TO 30" RDS	SUSAN BRIDGES ET AL 1320.73 FEET ON 80' RDS	JEAN NELSON 2000.20 FEET ON 120.00 RDS	SUSAN BRIDGES ET AL 1320.73 FEET ON 80' RDS

**LEGEND**

- 12" CASING PIPELINE
- PROPOSED PIPELINE
- EXISTING PIPELINE
- 30" BORE
- EXISTING BORE
- PROPOSED BORE
- PROPOSED EASEMENT
- PROPOSED EASEMENT
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- PROPOSED EASEMENT
- POINT OF RESTRICTION

**GENERAL INFORMATION**

**ISSUED FOR BID**

PROPOSED PALERMO TO STANLEY 12" PIPELINE  
STA. 234+00.0 TO STA. 274+00.0

FILE # 16-000000-00-000000-0000  
SHEET 7 OF 8  
SHEET 100  
DATE 08/08/2016

**REVISION**

NO.	DESCRIPTION	DATE
1	REVISED FOR BID	12/09/15
2	ISSUED FOR BID	12/09/15

**SUMMARY OF MATERIALS**

NO.	DESCRIPTION	DATE	ITEM #	LINEAR FEET
1	MOBILE 12.000 X 0.375W X 20M 14.9 MILS FBE	12/09/15	336-Z	1
2	MOBILE 12.000 X 0.375W X 20M 14.9 MILS FBE (POUCHED)	12/09/15	302-F	2
3	MOBILE 12.000 X 0.375W X 20M 14.9 MILS FBE (NOI)	12/09/15	1753-F	3

**PARADIGM ENERGY PARTNERS, LLC**

**TOPOGRAPHIC**

1







# APPENDIX B: PHOTOGRAPHS

## Photos

*Taken March 24, 2016*



*Photo 1: Located at station 2+00, looking north east at Palermo tie-in locations, for Beginning of Pipe (BOP) start.*



*Photo 2: Located at station 8+00, looking south west at graded Right of Way ready for string out pipe. Right of Way has BMP's installed ready to stop any erosion sediment runoff if it should occur.*



*Photo 3: Located at station 14+00, looking west at graded Right of Way, ready for string out pipe. Bridge mats and overhead power markers are installed beyond towards wetland.*



*Photo 4: Located at station 24+00, looking west at graded Right of Way, ready for string out pipe. Bridge mats and overhead power markers are installed beyond towards wetland.*



*Photo 5: Located at station 34+00, looking east at graded Right of Way, with top and subsoil pushed off edge of Right of Way trenching was underway. No pipe has been stringed out on Right of Way.*



*Photo 6: Located at station 34+00, looking west showing Right of Way with BMP's installed with bridge matting laid across wetland for Right of Way access. Overhead power connection lines beyond.*



*Photo 7: Located at station 54+00, looking east showing piping strung out on Right of Way, ready for welding.*



*Photo 8: Located at station 62+00, looking east showing piping welded and sitting on skids ready for excavation. Piping is located on graded Right of Way.*



*Photo 9: Located at station 70+00, looking west at pipe located in trench. Depth of trench was measured and found to have 4'0" of cover from the top of pipe.*



*Photo 10: Looking west at bore pit entry Station PI 24+75.81 and exit bore pit beyond station PI 76+47.7, to cross under oil well access road. Piping has been pulled into bore pits and ready for connection.*



*Photo 11: Located at station 84+00, looking south east at graded Right of Way, ready to string out piping. Right of Way is located on north side of Highway 2.*



*Photo 12: Located at station 98+00, looking southwest at wetland to be bored. At time of inspection, contractor had not gotten to location. Highway 2 is just to the south (left).*



*Photo 13 - Located at station 111+42.20, looking north across Highway 2. Bore exit on south side of Highway. Construction equipment on excavation getting ready to start bore pits.*



*Photo 14 - Located at station 120+00, looking south showing graded Right of Way ready for pipe installation and trenching.*



*Photo 15 - Located at station 128+00, looking south showing graded Right of Way ready to string out piping and start trenching. Photo also shows Right of Way turning west with water slough nesting area beyond.*



*Photo 16 - Located at station PI 128+43.8, looking south where Right of Way turns right and heads west. Photo shows contractor on site hydro testing welded bore piping.*



*Photo 17 - Located at station 130+00, looking west showing graded Right of Way with bore pipe sitting on skids and under hydro test. Bore piping to be pulled under site slough when hydro test completed. Contractor was onsite at time of inspection.*



*Photo 18 - Located at station 142+52.8, photo taken from west end of Right of Way facing east at bore entry. Bore piping being hydro tested at time of inspection.*



*Photo 19 - Located at station 148+00, standing on west hillside, looking across waterway slough to be bored due to nesting habitat.*



*Photo 20 - Located at station 156+00, photo taken from county road 77<sup>th</sup> Ave NW, shown bridge mats in road ditch for access point to have contractor perform bore work at station 158+72.8.*



*Photo 21 - Located at station 158+72.8, photo taken at bore pit exit station, located on west side of County Road 77<sup>th</sup> Ave NW, at time of inspection contractor on site doing bore work.*



*Photo 22 - Located at station 174+00, photo looking south at graded Right of Way, ready to string out pipe. Right of Way extends left towards west.*



*Photo 23 - Located at station 199+76.6, photo looking south at bore entry station, with bore exit station 203+57.3 beyond. Right of Way graded and ready to string pipe. Bore pit was rated during inspection to have installed fence barricade for safety.*



*Photo 24 - Located at station 220+00, photo looking north west at graded Right of Way ready to string out pipe.*



*Photo 25 - Located at station 232+00, photo looking north west showing graded Right of Way with BMP silt fence installed to separate top and subsoil types from touching. Right of Way turns and heads south.*



*Photo 26 - Located at station 246+00, photo looking south with contractor bending pipe as required for installation. Pipe is strung out on graded Right of Way ready for welding and trenching.*



*Photo 27 - Located at station 250+00, photo looking south at graded Right of Way with welded piping sitting on skids ready for trenching.*



*Photo 28 - Located at station 310+00, photo looking west showing contractor working on installing welded piping into trench.*



*Photo 29 - Located at station 316+00, photo looking west showing piping installed in trench. Depth of trench was measured and was found to have top of pipe 4'-0" to top of Right of Way trench opening. Trench appeared to be ready to be backfilled.*



*Photo 30 - Located at station 347+70.3, photo looking west at bore entry at wetland. No bore work has started yet. Right of Way is graded.*



*Photo 31 - Located at station 368+00, photo looking west showing piping installed in trench. Depth of trench was measured and was found to have top of pipe 4'0" to top of Right of Way trench opening. Trench was ready to be backfilled.*



*Photo 32 - Located at station 412+75.9, photo looking east at bore pit. Piping has been bored under wetland, with pipe pulled through trench. Fenced barricade has been installed around bore pit.*



*Photo 33 - Located at station 414+00, photo looking south west, showing pipe sitting on skids ready to be bored under wetland across from Enbridge tanks.*



*Photo 34 - Located at station 423+56.8, End of Pipeline, photo looking south west at exit bore site across wetland towards tie-in at Enbridge tanks at Stanley, ND.*



# APPENDIX C:

## Field Observation Points



POINT	STATION	NAME	LATITUDE	LONGITUDE	DATE
1	2+00	Palermo valve tie-in location-Beginning of Pipe (BOP)	N 48.3337	W -102.2398	3/24/2016
2	8+00	Graded right of way ready for pipe installation. BMP's installed	N 48.3325	W -102.2347	3/24/2016
3	14+00	Graded right of way ready for pipe installation	N 48.3305	W -102.2432	3/24/2016
4	24+00	Bridge mats installed to cross right of way wetland	N 48.3305	W -102.2510	3/24/2016
5	34+00	Right of way trenching	N 48.3302	W -102.2545	3/24/2016
6	48+00	BMP's installed thru wetland	N 48.3298	W -102.2558	3/24/2016
7	54+00	Pipe strung out on graded right of way ready for welding	N 48.3296	W -102.2556	3/24/2016
8	62+00	Pipe welded and sitting on skids on graded right of way ready for trenching	N 48.3297	W -102.2555	3/24/2016
9	70+00	Graded right of way with pipe in trench	N 48.3284	W -102.2663	3/24/2016
10	PI 74+75.81	Bore entry and PI 76+47.7 bore exit under oil field service roadway	N 48.3288	W -102.2662	3/24/2016
11	84+00	Graded right of way	N 48.3274	W -102.2765	3/24/2016
12	98+00	Wetland	N 48.3274	W -102.2766	3/24/2016
13	106+24.0	Bore entry and 111+42.40 bore exit under Highway 2	N 48.3233	W -102.2763	3/24/2016
14	120+00	Graded right of way ready for string out pipe	N 48.3128	W -102.5564	3/24/2016
15	128+00	Graded right of way ready for string out pipe	N 48.2997	W -102.5516	3/24/2016
16	PI 128+43.8	Graded right of way ready for piping	N 48.3213	W -102.5496	3/24/2016
17	130+00	Graded right of way	N 48.3213	W -102.5495	3/24/2016
18	142+57.7	Bore entry for wetland	N 48.3211	W -102.5428	3/24/2016
19	148+00	Water wetland nesting habitat	N 48.3209	W -102.5376	3/24/2016
20	156+00	Access off county road 77th ave NW to bore pit	N 48.3174	W -102.5345	3/24/2016
21	158+72.8	Bore exit located on west side county road 77th Ave. NW	N48.3173	W-102.5342	3/24/2016
22	174+00	Graded right of way ready for string out pipe	N48.3168	W -102.5337	3/24/2016
23	199+76.6	Bore entry and 203+57.3 Bore exity	N48.3080	W -102.5248	3/24/2016
24	220+00	Graded right of way	N48.3078	W -102.5145	3/24/2016
25	232+00	Graded right of way with BMP silt fence installed	N48.3079	W -102.5142	3/24/2016
26	246+00	Contractor bending pipe strung out on right of way	N48.4756	W -102.5140	3/24/2016
27	250+00	Graded right of way with weld pipe on skids ready for trenching	N48.4751	W -102.5138	3/24/2016
28	310+00	Contractor working on installing pipe with side boom tractor	N 48.4740	W -102.5135	3/24/2016
29	316+00	Pipe in trench	N 48.4739	W -102.5132	3/24/2016
30	347+70.3	Bore entry thru wetland, Station 365+23.6 bore exit	N48.4736	W -102.5131	3/24/2016
31	368+00	Pipe in trench	N48.4734	W -102.5541	3/24/2016
32	412+75.9	Bore entry thru wetland, Station 423+56.8 bore exit	N48.4732	W- 102.5541	3/24/2016
33	414+00	Bore pipe on skid ready to install thru wetland	N48.4731	W -102.5538	3/24/2016
34	423+56.8	Bore exit at wetland by Embridge tanks, end of line -(E.O.L)	N48.4731	W -102.5537	3/24/2016





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