



# North Dakota Public Service Commission Consolidated Application

## Amendment of Application for Route Permit Highway 1804 Re-Route North (PU-15-614)

Prepared for:

**Plains Pipeline, L.P.**

Prepared by:

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September 2015



**E3 ENVIRONMENTAL**  
*Enhancing Execution with Experience*



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## **INTRODUCTION**

Plains Pipeline, L.P. (Plains) submitted a Consolidated Application for the Certificate of Corridor Compatibility and Route Permit for the Highway 1804 Pipeline Re-Route North (Project) on July 31, 2015 (PU-15-614). Since the original submittal, Plains has identified the need to alter the proposed pipeline route at three locations. Plains has prepared this Amended Application for the Route Permit (Amendment) to address these route modifications. The route modifications described in this Amendment reflect areas where the alignment as filed has shifted more than four (4) feet.

The route modifications fall entirely within the original 1-mile corridor described in the initial application for the Project. The Certificate of Corridor Compatibility portion of the Application remains unchanged and, as such, is not part of the Amendment.

This Amended Application for Route Permit provides the requisite information as stipulated by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08.1; and
- North Dakota Administrative Code, Chapter 69-06-05, Transmission Facility Permit.

## **SECTION 1: DESCRIPTION**

### **1.1 TYPE OF TRANSMISSION FACILITY**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.2 PURPOSE OF TRANSMISSION FACILITY**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.3 LENGTH, SIZE AND DESIGN OF PIPELINE FACILITY**

#### **1.3.1 LENGTH OF FACILITY**

The previously filed Application detailed the Project to be approximately 8.5 miles (8.45 miles) in length. The proposed route modifications will increase the total Project length by 0.08 miles.

#### **1.3.2 PIPE SIZE**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **1.3.3 OPERATING PRESSURE AND THROUGHPUT**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.4 ABOVEGROUND FACILITIES**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.5 WIDTH OF RIGHT-OF-WAY**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.6 LOCATION**

The Project is approximately 8.5 miles in length and is located in Williams County, North Dakota.

The table below provides the length and approximate location of each proposed route modification. Refer to Appendix B of this Amendment for Project location maps.

<b>Route Modification</b>	<b>Starting Mile Post</b>	<b>Ending Mile Post</b>	<b>Approximate Length (Miles)</b>
Re-route 1	0.46	0.8	0.43
Re-route 2	1.87	2.7	0.83
Re-route 3	5.61	6.75	1.14

## **1.7 PROJECT SCHEDULE**

### **1.7.1 ROUTE PERMIT**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.7.2 CERTIFICATE OF CORRIDOR COMPATIBILITY**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.7.3 CONSTRUCTION SCHEDULE**

Refer to the Application as filed; no changes have resulted from the route modifications.

## **SECTION 2: ROUTE ANALYSIS AND ENVIRONMENTAL STUDIES**

### **2.1 PIPELINE ROUTE**

Subsequent to the filing of the initial Application, Plains identified three locations along the proposed route where alternative alignments are necessary. Two (2) of the route modifications closely follow the original alignment and remain within the Survey Corridor as previously filed. One (1) route modification falls outside of the Survey Corridor as previously filed. Plains commissioned and completed environmental field surveys for the re-route located outside of the original Survey Corridor and also surveyed an additional area near milepost (MP) eight (8) to allow for extra temporary workspace. The results of these field surveys are summarized within this document and detailed survey results of these field surveys are summarized in the following sections; the Natural Resources Report is located in Appendix D, guidance from the NDSHPO on cultural resource report submittal and the Cultural Resources Report Abstract can be found in Appendix E. The full cultural resources report is privileged and not included in this Amendment. Refer to Appendix B for maps depicting the Survey Corridor and the location of the route modifications. A general location description of each re-route is below. Section 2.2 provides reasoning as to why the modification was chosen.

#### Re-route #1 (MP 0.46 to 0.8):

The route modification shifts the alignment a maximum of 415 feet to the west, outside of the original Survey Corridor.

#### Re-route #2 (MP 1.87 to 2.7):

The route modification shifts the alignment approximately 15 feet to the west and remains within the original Survey Corridor.

#### Re-route #3 (MP 5.61 to 6.75):

The route modification shifts the alignment approximately 13 feet to the north and remains within the original Survey Corridor.

### **2.2 ROUTE ALTERNATIVES**

#### Re-route #1 (MP 0.46 to 0.8):

Plains considered two alternatives; an eastern and western alignment. The alignment (western alignment) was chosen to accommodate a landowner request and facilitate the procurement of related easements for the Project.

#### Re-route #2 (MP 1.87 to 2.7):

Plains considered two alternatives; an eastern and western alignment. The alignment (western alignment) was chosen due to a design change resulting in a slight shift to the alignment and to minimize impacts to a stream.

Re-route #3 (MP 5.61 to 6.75):

Plains considered two alternatives; an eastern and western alignment. The alignment (western alignment) was chosen due to a design change resulting in a slight shift to the alignment. The modification also minimizes impacts to an area of woody vegetation.

## **2.3 ENVIRONMENTAL SURVEY**

Field surveys were conducted with a typical 200-foot corridor centered upon the proposed re-route alignments. Natural resource and cultural resource surveys were conducted in August of 2015.

### **2.3.1 NOXIOUS WEEDS**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **2.3.2 TREE/SAPLING/SHRUB SURVEY**

During field survey, crews performed a detailed tree/shrub inventory. This inventory recorded the pre-construction status of these resources, which would form the baseline for restoration and mitigation reconciliation. Based on this effort, one (1) additional area of woody vegetation containing seven (7) additional trees was identified within an area surveyed to provide additional workspace near milepost eight (8). Including the newly surveyed area, approximately 304 trees were identified within the 200-foot wide Project Survey Corridor. The number of trees identified within the 50-foot wide tree mitigation corridor as stipulated by the PSC increased from ninety-eight (98) in the Application as filed to 112. Refer to Appendix D for the Natural Resources Report and Section 5 of the Application as filed for planned mitigation measures.

### **2.3.3 WETLAND AND WATERBODIES SURVEY**

The proposed re-routes and additional survey areas were inventoried for wetland and waterbody features. Field crews identified features, characterized the features as wetland or waterbody and recorded feature boundaries relative to the proposed centerline.

#### **2.3.3.1 WETLAND SURVEY**

The Application as filed did not identify wetland features within the Survey Corridor. No additional wetland features were identified during field survey of the re-routes. Refer to Appendix D for the Natural Resources Report.

#### **2.3.3.2 WATERBODIES SURVEY**

The Application as filed identified five (5) streams within the Survey Corridor. Field surveys of the re-routes did not identify additional waterbodies or streams. Refer to the Project maps in Appendix B for the location of each feature, and Appendix D for the Natural Resources Report.

### **2.3.4 WILDLIFE INVENTORY**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **2.3.4.1 FEDERALLY PROTECTED SPECIES SURVEY**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **2.3.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE**

Plains commissioned a Class I (literature review) and Class III Cultural Resource Inventory of the re-routes. The updated Class I was completed on April 22, 2015 and the updated Class III was completed on August 24, 2015.

The Class I did not identify any additional cultural resources within the Project Area and no cultural resources were observed during the Class III inventory. No changes were made to any previous recommendations as noted in the original Cultural Resources Report. Based on the inventory results, SWCA recommended that a determination of *No Significant Sites Affected* be granted for the Project to proceed as planned.

Plains submitted the Cultural Resources Report Addendum to the NDSHPO on September 3, 2015 requesting concurrence with the recommendation of *No Significant Sites Affected* for the Project. Concurrence was received from the NDSHPO on September 9, 2015. Refer to Appendix C for documentation of agency consultations and Appendix E for guidance from the NDSHPO on cultural resource report submittal and the Cultural Resources Report Abstract. The full cultural resources report is privileged and not included in this Amendment.

### **2.3.6 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS**

Refer to the Application as filed; no changes have resulted from the route modifications.

**SECTION 3: ANALYSIS OF NEED BASED ON PRESENT AND PROJECTED  
DEMAND, INCLUDING SYSTEM STUDIES**

Refer to the Application as filed; no changes have resulted from the route modifications.

## **SECTION 4: SITING CRITERIA ANALYSIS**

### **4.1 FACTORS TO BE CONSIDERED IN EVALUATING APPLICATIONS AND DESIGNATIONS OF SITES, CORRIDORS AND ROUTES (NDCC 49-22-09)**

#### **4.1.1 AVAILABLE RESEARCH AND INVESTIGATION RELATING TO THE EFFECTS OF THE LOCATION, CONSTRUCTION, AND OPERATION OF THE PROPOSED FACILITY ON PUBLIC HEALTH AND WELFARE, NATURAL RESOURCES AND THE ENVIRONMENT:**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.1.2 THE EFFECTS OF NEW ENERGY CONVERSION AND TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS:**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.1.3 ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSED SITE OR ROUTE BE DESIGNATED:**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.1.4 ALTERNATIVES TO THE PROPOSED CORRIDOR OR ROUTE WHICH ARE DEVELOPED DURING THE HEARING PROCESS AND WHICH MINIMIZE ADVERSE EFFECTS:**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.1.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES SHOULD THE PROPOSED CORRIDOR AND ROUTE BE DESIGNATED:**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.1.6 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROPOSED FACILITY:**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.1.7 EXISTING PLANS OF THE STATE, LOCAL GOVERNMENT, AND PRIVATE ENTITIES FOR OTHER DEVELOPMENTS AT OR IN THE VICINITY OF THE PROPOSED ROUTE:**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.1.8 THE EFFECT OF THE PROPOSED ROUTE ON EXISTING SCENIC AREAS, HISTORIC SITES AND STRUCTURES AND PALEONTOLOGICAL OR ARCHAEOLOGICAL SITES:**

Plains commissioned a Class III cultural resource inventory for the proposed re-routes. No scenic areas, historic sites or structures, paleontological, or archaeological sites were identified. The proposed mitigation measures are detailed in the Application as filed. Related agency consultations can be found in Appendix C, and supporting documentation of field studies can be found in Appendix E. The full cultural resources report is privileged and not included in this Amendment.

**4.1.9 THE EFFECT OF THE PROPOSED ROUTE ON AREAS WHICH ARE UNIQUE BECAUSE OF BIOLOGICAL WEALTH OR BECAUSE THEY ARE HABITATS FOR RARE AND ENDANGERED SPECIES:**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.1.10 PROBLEMS RAISED BY FEDERAL AGENCIES, OTHER STATE AGENCIES AND LOCAL ENTITIES:**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2 EXCLUSION AREAS (NAC 69-06-08-02.1)**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2.1 FEDERAL RESOURCE REVIEW**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2.2 STATE RESOURCE REVIEW**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2.3 COUNTY RESOURCE REVIEW**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2.4 AREAS CRITICAL TO THE LIFE STAGES OF THREATENED AND ENDANGERED ANIMAL OR PLANT SPECIES**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2.5 AREAS WHERE ANIMAL OR PLANT SPECIES THAT ARE UNIQUE OR RARE TO THIS STATE WOULD BE IRREVERSIBLY DAMAGED**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2.6 AREAS WITHIN 1,200 FEET OF THE GEOGRAPHIC CENTER OF AN ICBM LAUNCH OR LAUNCH CONTROL FACILITY**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.2.7 AREAS WITHIN THIRTY (30) FEET ON EITHER SIDE OF A DIRECT LINE BETWEEN ICBM LAUNCH OR LAUNCH CONTROL FACILITIES TO AVOID MICROWAVE INTERFERENCE**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.3 AVOIDANCE AREAS (NAC 69-06-08-02.2)**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.3.1 FEDERAL RESOURCE REVIEW**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.3.2 STATE RESOURCE REVIEW**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.3.3 HISTORICAL RESOURCES NOT MEETING EXCLUSION AREA CRITERIA**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.3.4 AREAS OF KNOWN GEOLOGIC INSTABILITY**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.3.5 AREAS WITHIN 500 FEET OF A RESIDENCE, SCHOOL OR PLACE OF BUSINESS**

The previously filed Application detailed seven (7) potentially occupied structures were identified within 500 feet of the Route and would require landowner waivers. The

route modifications would not require additional waivers. Plains has obtained and filed all required landowner waivers from those residences within 500 feet of the Project. Refer to the Application as filed for executed landowner waivers.

#### **4.3.6 RESERVOIRS AND MUNICIPAL WATER SUPPLIES**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.3.7 WATER SOURCES FOR ORGANIZED RURAL WATER DISTRICTS**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.3.8 IRRIGATED LAND**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.3.9 AREAS OF RECREATIONAL SIGNIFICANCE WHICH ARE NOT DESIGNATED AS EXCLUSION AREAS**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **4.4 SELECTION CRITERIA (NAC 69-06-08-02.3)**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.4.1 AGRICULTURAL IMPACTS**

**Agricultural Production:** The previously filed Application detailed the Project would temporarily affect approximately 102 acres, approximately thirty-five (35) acres located on privately owned cropland. The proposed route modifications would temporarily affect approximately 103 acres, and the total acres located on privately owned cropland would remain approximately thirty-five (35) acres.

**Family Farms and Ranches:** The previously filed Application detailed the Project would temporarily affect approximately 102 acres, approximately thirty-five (35) acres located on privately owned cropland. The proposed route modifications would temporarily affect approximately 103 acres, and the total acres located on privately owned cropland would remain approximately thirty-five (35) acres.

**Lands Suitable for Irrigation:** Refer to the Application as filed; no changes have resulted from the route modifications.

**Surface Drainage:** Refer to the Application as filed; no changes have resulted from the route modifications.

**Ground Water:** Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.4.2 THE IMPACTS UPON OTHER RESOURCES**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.5 POLICY CRITERIA (NAC 69-06-08-02.4)**

##### **4.5.1 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.2 LOCATION AND DESIGN**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.3 TRAINING AND UTILIZATION OF AVAILABLE LABOR IN THIS STATE FOR THE GENERAL AND SPECIALIZED SKILLS REQUIRED**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.4 ECONOMIES OF CONSTRUCTION AND OPERATION**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.5 USE OF CITIZEN COORDINATING COMMITTEES**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.6 COMMITMENT OF A PORTION OF THE TRANSMITTED PRODUCT FOR USE IN THIS STATE**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.7 LABOR RELATIONS**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.8 THE COORDINATION OF FACILITIES**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **4.5.9 MONITORING OF IMPACTS**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.5.10 UTILIZATION OF EXISTING AND PROPOSED ROW AND CORRIDORS**

The previously filed Application detailed that approximately 16% (1.3 miles) of the Project is co-located with existing utility corridors. The proposed route modifications will increase the total to approximately 25% (2.1 miles). Refer to Appendix B for maps depicting the portions of the Project, which are co-located with other utilities.

#### **4.5.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES**

Refer to the Application as filed; no changes have resulted from the route modifications.

## **SECTION 5: MITIGATIVE MEASURES**

### **5.1 LOCATION**

The proposed route modifications have been chosen to address landowner concerns to secure the necessary easements for construction and to reduce environmental impacts. Plains has commissioned field surveys of the re-routes to assess the environmental resources that may be impacted as well as to confirm the modified alignment conforms to the siting requirements established by the state of North Dakota.

**Trees and shrubs:** Additional trees and shrubs were identified during field surveys of the re-routes. Refer to the maps in Appendix B for the location of these features.

**Wetlands and Waterbodies:** Additional wetlands and waterbodies were not identified during field surveys of the re-routes. Refer to the maps in Appendix B for the location of the features described in the Application as filed.

**Whooping crane:** Refer to the Application as filed; no changes have resulted from the route modifications.

**Northern long-eared bat:** Refer to the Application as filed; no changes have resulted from the route modifications.

**Migratory Bird Treaty Act:** Refer to the Application as filed; no changes have resulted from the route modifications.

**Bald and Golden Eagle:** Refer to the Application as filed; no changes have resulted from the route modifications.

**Cultural Resources:** On September 9, 2015 Plains received concurrence from the NDSHPO of *No Significant Sites Affected* for the Cultural Resources Report Addendum. Refer to Appendix E for guidance from the NDSHPO on cultural resource report submittal and the Cultural Resources Report Abstract. The Survey Corridor is depicted on the maps in Appendix B.

**Noxious Weeds:** Refer to the Application as filed; no changes have resulted from the route modifications.

### **5.2 CONSTRUCTION**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **5.3 OPERATION**

Refer to the Application as filed; no changes have resulted from the route modifications.

**SECTION 6: DESCRIPTION OF RIGHT-OF-WAY PREPARATION, CONSTRUCTION  
AND RECLAMATION PROCEDURES**

**6.1 PIPELINE CONSTRUCTION**

Refer to the Application as filed; no changes have resulted from the route modifications.

**SECTION 7: EASEMENT, ACQUISITION, LANDOWNER NOTIFICATION AND  
EASEMENT COMPENSATION PLAN**

**7.1 LANDOWNER INFORMATION REGARDING EASEMENT ACQUISITION, AND  
NECESSARY EASEMENT CONDITIONS AND RESTRICTIONS**

Refer to the Application as filed; no changes have resulted from the route modifications.

**7.2 COMPENSATION POLICY**

Refer to the Application as filed; no changes have resulted from the route modifications.

## **SECTION 8: LIST OF PREPARERS**

### **William McCarthy, C.W.B.**

Senior Environmental Compliance Analyst

E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

M.S. Wildlife Biology, University of Minnesota – Twin Cities; and B.S. Wildlife Biology, Michigan State University. Mr. McCarthy is an environmental compliance analyst with 20 years of environmental consulting experience working with various energy assets and regulatory agencies. As a compliance analyst, he has managed the environmental requirements for facility siting, pipeline routing, federal licensing and various federal, state and local permits. Mr. McCarthy is a certified wildlife biologist, and in this role conducts and coordinates field studies, agency consultations, mitigation and avoidance plans.

### **Katie Schmidt, EIT**

Environmental Engineer and Senior Consultant

E3 Environmental, LLC, 871 West Jefferson Avenue, St. Paul, MN 55102

B.S. Civil Engineering with an emphasis in Environmental Engineering-Iowa State University. Ms. Schmidt is a Senior Environmental Consultant with 10 years of experience working with various energy assets and regulatory agencies. As a consultant, she has managed multiple pipeline projects supporting clients through the construction permitting and siting processes, which included coordination with various federal, state and local agencies.

### **Melissa Schmit**

Consultant

E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

B.A. in Environmental Studies and Geography, Gustavus Adolphus College; and J.D., Hamline University School of Law. Ms. Schmit has seven years of environmental consulting experience. Ms. Schmit has pursued a career focused on regulatory compliance and supports energy clients by providing regulatory review and permitting services. Ms. Schmit's experience includes authoring technical reports in compliance with NEPA requirements for a variety of infrastructure projects across the Midwest and coordination with federal, state, and local agencies.

# **Appendix A**

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## Engineering Documents

Refer to Consolidated Application filed with the North Dakota  
Public Service Commission on July 31, 2015

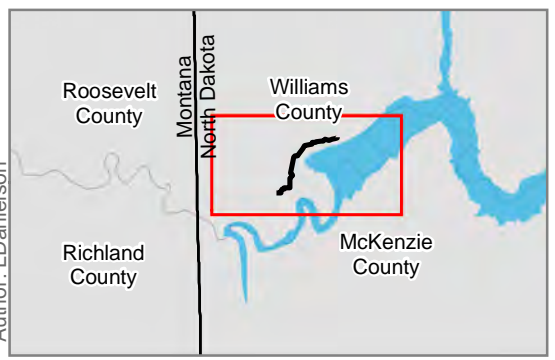
## **Appendix B**

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### Project Maps



Date: 9/4/2015  
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 Author: LDanielson



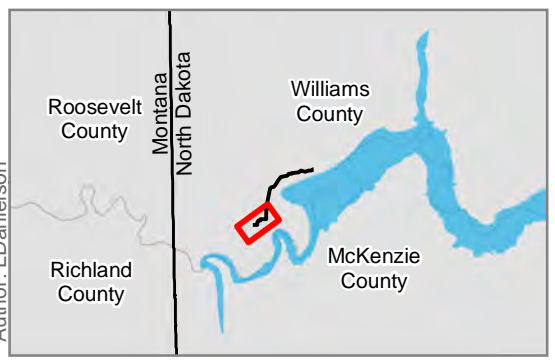
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◆ Rerouted Alignment	~ NHD Flowline	
--- Proposed Alignment	~ NHD Waterbody	

Map not to scale, for environmental review purposes only.



**Plains Pipeline, L.P.**  
 Highway 1804 Re-route North  
 Overview Map  
 Williams County, North Dakota

Date: 9/3/2015  
 Author: LDanielson  
 Document Path: P:\SWCA\PA - FortBulford to HWY1804\MXDs\PSC Maps Amendment\FB HWY1804 11x17 NaturalResource\_Final.mxd



○ Milepost	▲ Potentially Occupied Structure
◆ Rerouted Alignment	▲ Potentially Occupied Structure (w/in 500ft)
--- Proposed Alignment	⊕ NDWC Well
--- Abandoned Alignment	<b>Natural Resource Survey</b>
○ Corridor (1 mile)	~ Stream
▨ Survey Corridor	▨ Stream
	▨ Woody Vegetation

**E3 ENVIRONMENTAL**  
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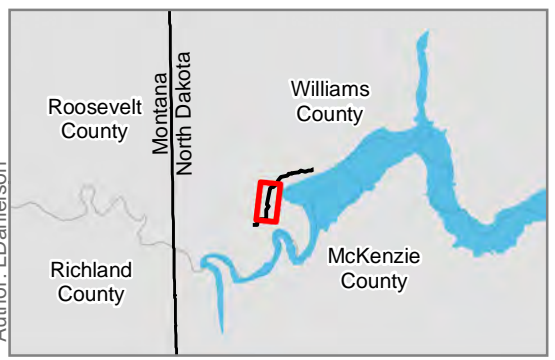
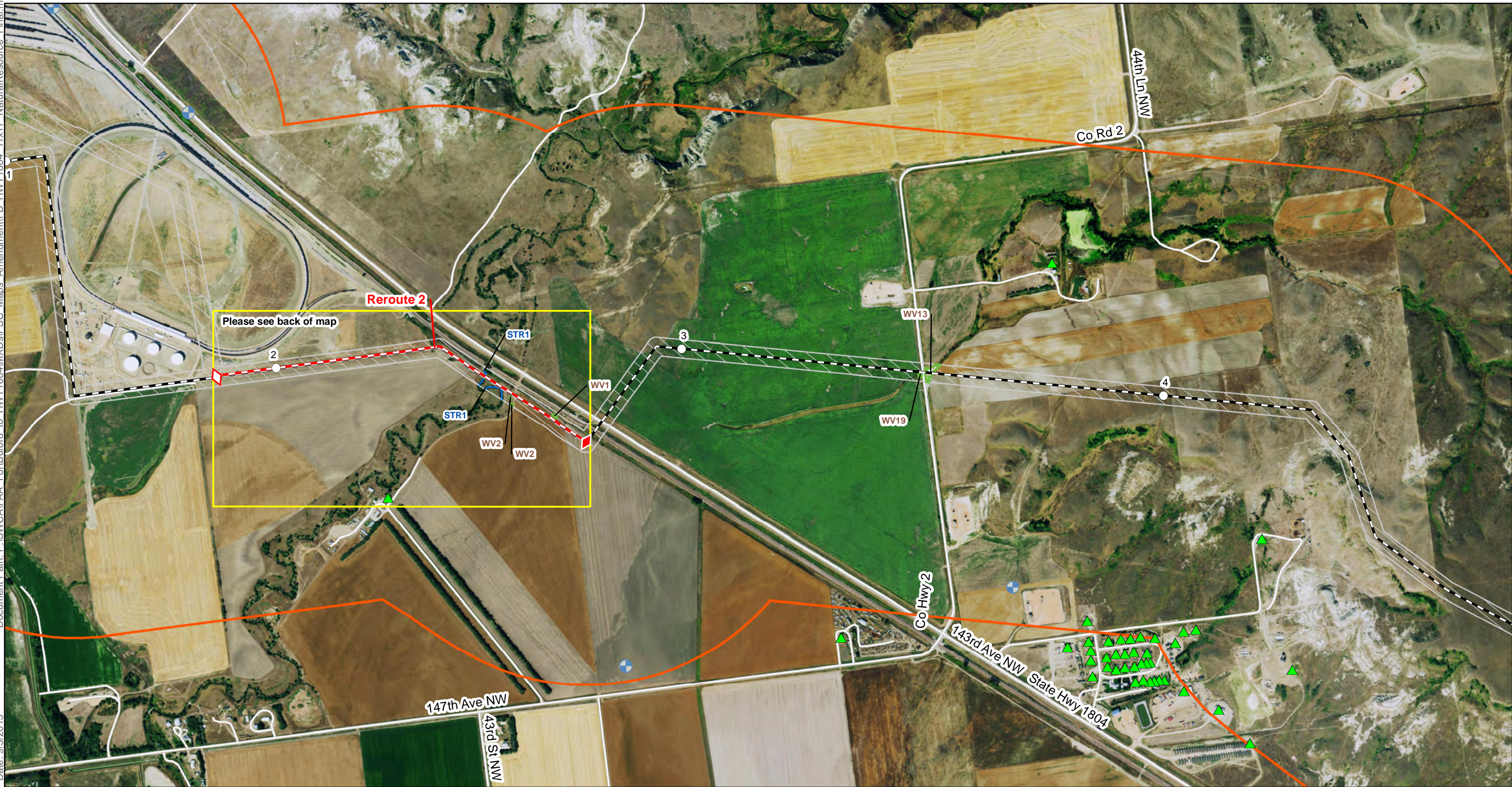
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Map not to scale, for environmental review purposes only.

**Plains Pipeline, L.P.**  
**Highway 1804 Re-route North**  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Page 1 of 4**  
 Williams County, North Dakota

Date: 9/3/2015  
 Document Path: P:\SWCA\PAAs\_FortBulford to HWY1804\MXDs\PSC\_Maps\_Amendment\FB\_HWY1804\_11x17\_NaturalResource\_Final.mxd  
 Author: LDanielson



Milepost	Potentially Occupied Structure
Rerouted Alignment	Potentially Occupied Structure (w/in 500ft)
Proposed Alignment	NDWC Well
Abandoned Alignment	<b>Natural Resource Survey</b>
Corridor (1 mile)	Stream
Survey Corridor	Woody Vegetation

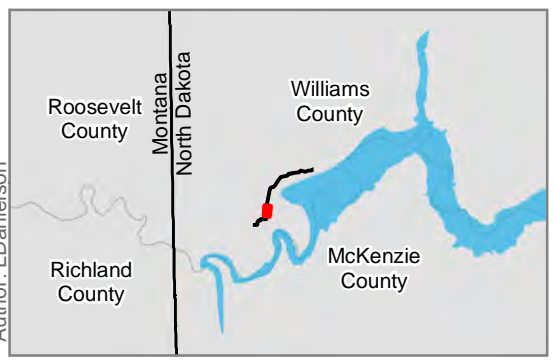
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Map not to scale, for environmental review purposes only.

**Plains Pipeline, L.P.**  
 Highway 1804 Re-route North  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Page 2 of 4**  
 Williams County, North Dakota



○ Milepost	▲ Potentially Occupied Structure
◊ Rerouted Alignment	▲ Potentially Occupied Structure (w/in 500ft)
— Proposed Alignment	⊕ NDWC Well
— Abandoned Alignment	<b>Natural Resource Survey</b>
◻ Corridor (1 mile)	~ Stream
◻ Survey Corridor	◻ Stream
	◻ Woody Vegetation

**E3 ENVIRONMENTAL**  
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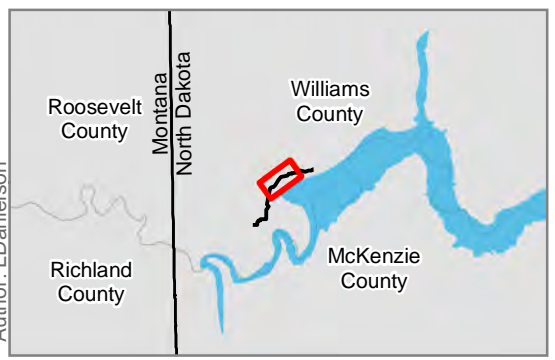
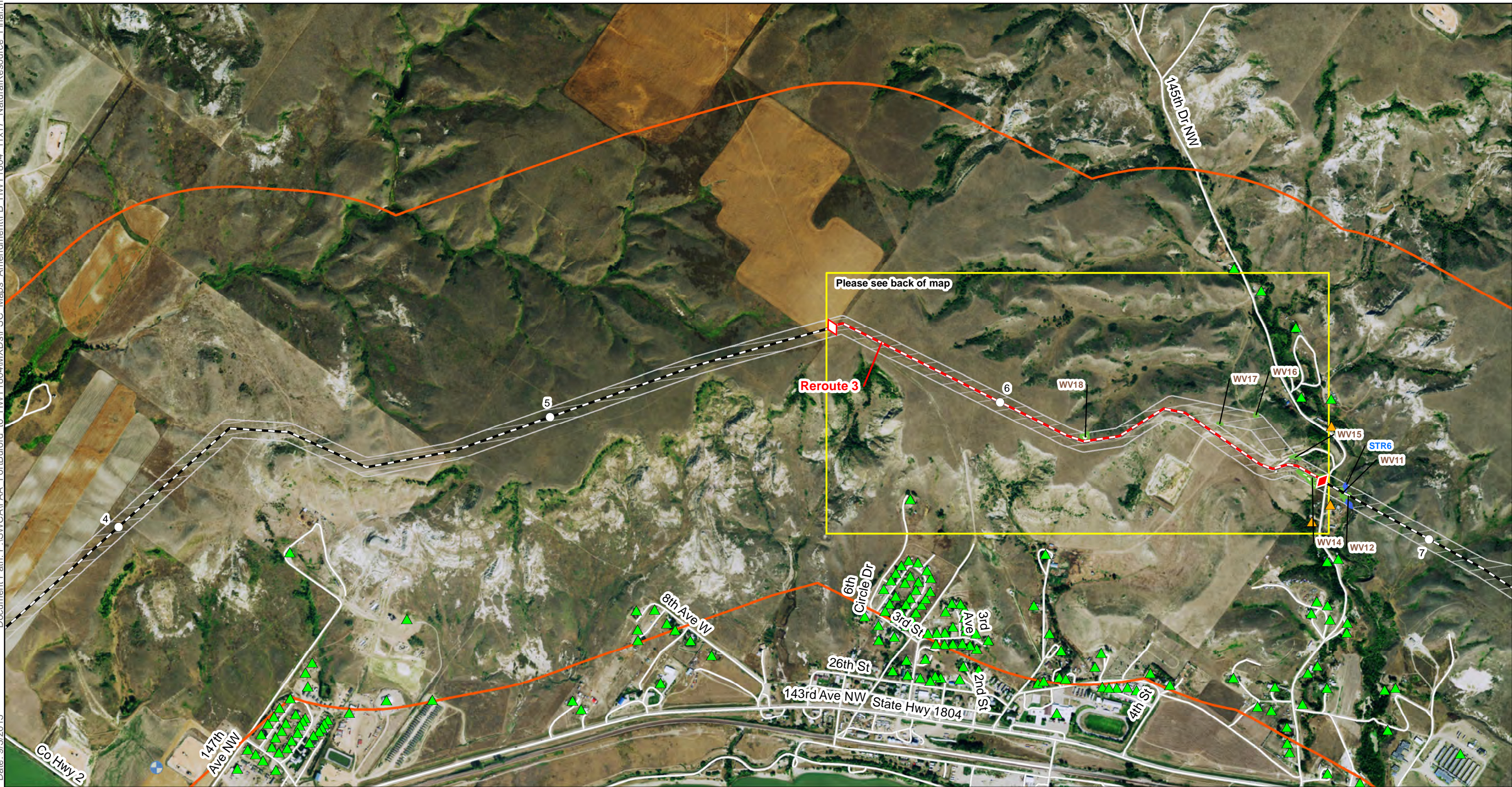
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**Plains Pipeline, L.P.**  
**Highway 1804 Re-route North**  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Reroute 2**  
 Williams County, North Dakota

Date: 9/3/2015  
 Author: LDanielson  
 Document Path: P:\SWCA\PA - FortBulford to HWY1804\MXDs\PSC Maps Amendment\FB\_HWY1804\_11x17\_NaturalResource\_Final.mxd



○ Milepost	▲ Potentially Occupied Structure
◊ Rerouted Alignment	▲ Potentially Occupied Structure (w/in 500ft)
— Proposed Alignment	⊕ NDWC Well
— Abandoned Alignment	
▭ Corridor (1 mile)	<b>Natural Resource Survey</b>
▭ Survey Corridor	~ Stream
	▭ Stream
	▭ Woody Vegetation

**E3 ENVIRONMENTAL**  
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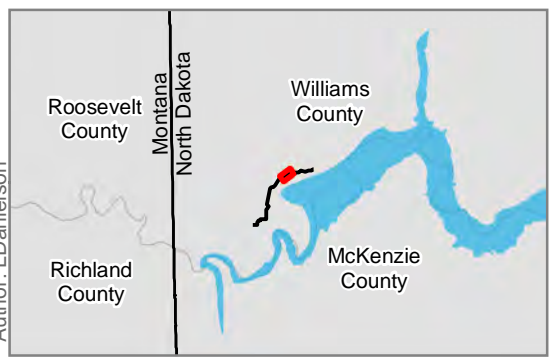
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**Plains Pipeline, L.P.**  
 Highway 1804 Re-route North  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Page 3 of 4**  
 Williams County, North Dakota

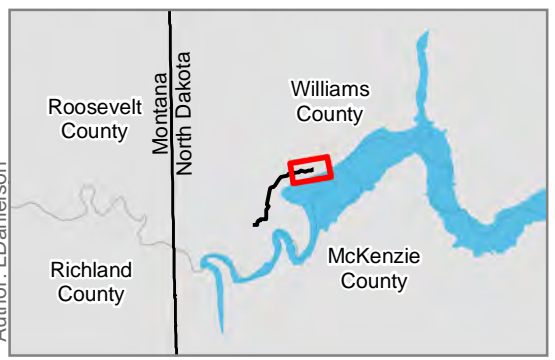
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 Author: LDanielson



Milepost	Potentially Occupied Structure	
Rerouted Alignment	Potentially Occupied Structure (w/in 500ft)	
Proposed Alignment	NDWC Well	
Abandoned Alignment	<b>Natural Resource Survey</b>	
Corridor (1 mile)	Stream	Stream
Survey Corridor	Woody Vegetation	

0    165    330    660  
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 Map not to scale, for environmental review purposes only.

**Plains Pipeline, L.P.**  
 Highway 1804 Re-route North  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Reroute 3**  
 Williams County, North Dakota



Milepost	Potentially Occupied Structure
Rerouted Alignment	Potentially Occupied Structure (w/in 500ft)
Proposed Alignment	NDWC Well
Abandoned Alignment	<b>Natural Resource Survey</b>
Corridor (1 mile)	Stream
Survey Corridor	Woody Vegetation

**E3 ENVIRONMENTAL**  
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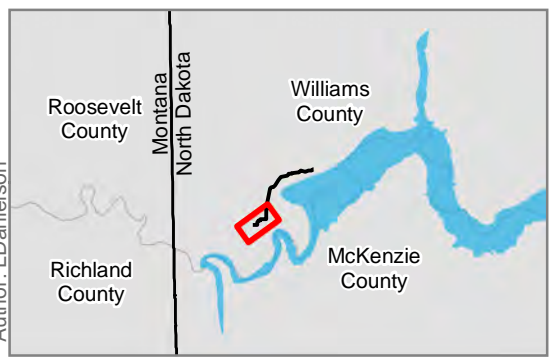
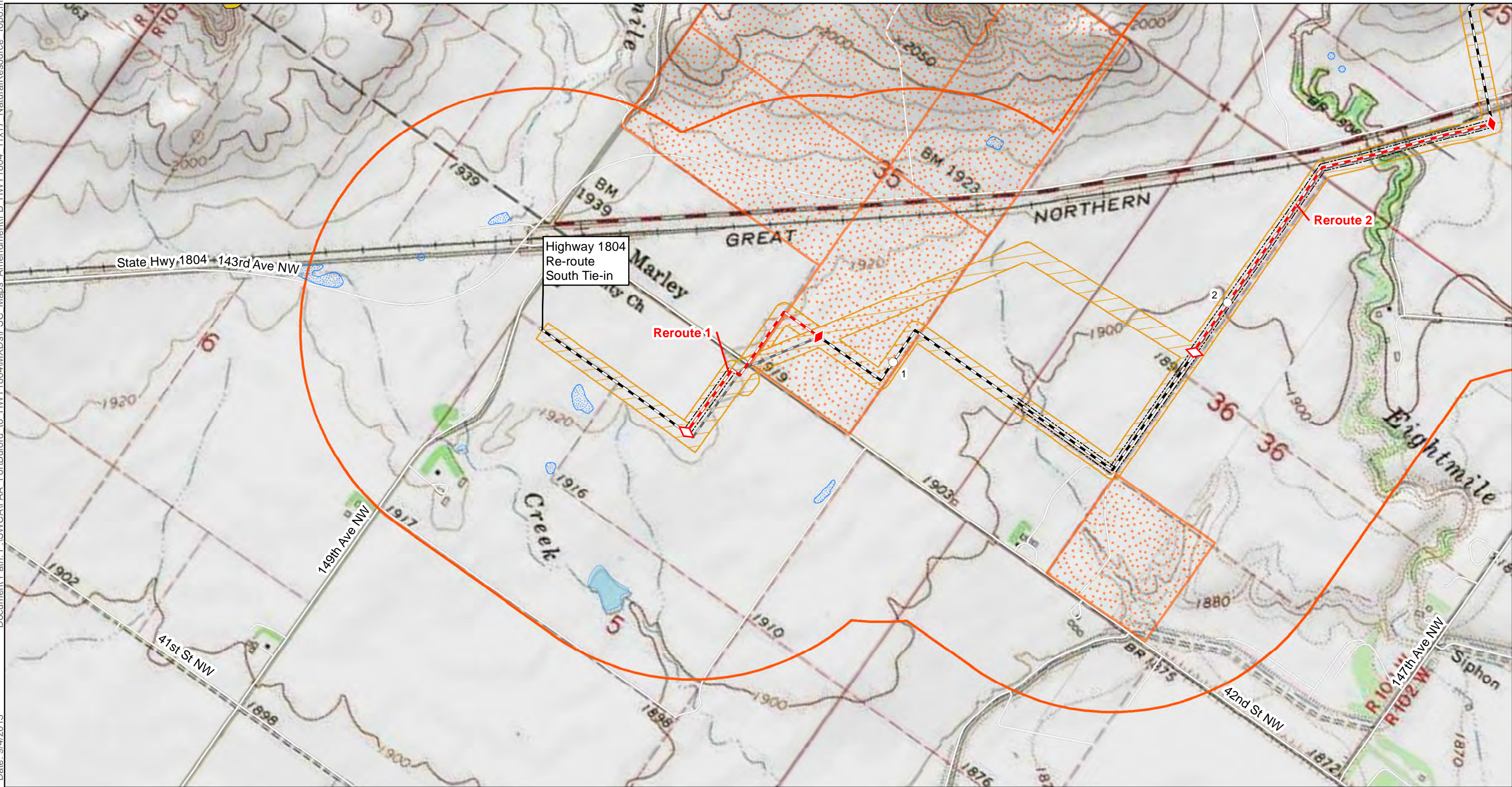
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Map not to scale, for environmental review purposes only.

**Plains Pipeline, L.P.**  
 Highway 1804 Re-route North  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Page 4 of 4**  
 Williams County, North Dakota

Document Path: P:\SWCA\PAAs\_FortBulford to HWY1804\MXDs\PSC\_Maps\_Amendment\FB\_HWY1804\_11x17\_NaturalResource\_Topo.mxd  
 Date: 9/4/2015  
 Author: LDanielson



○ Milepost	NR Survey Corridor	Federal Land
Rerouted Alignment	NHD Waterway	ND Mineral Trust Land
Proposed Alignment	NWI Wetland	NDGS Landslide Deposit
Abandoned Alignment	NHD Waterbody	
Co-Located Alignment	<b>Criteria Data</b>	
Corridor (1 mile)	Abandoned Mine	

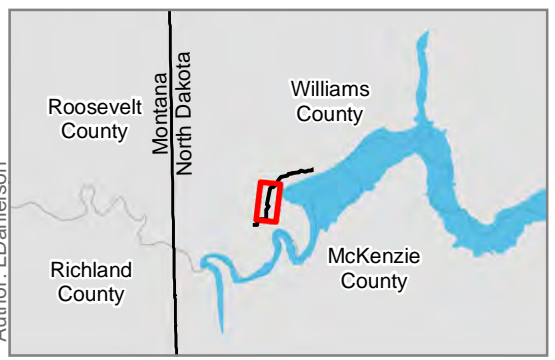
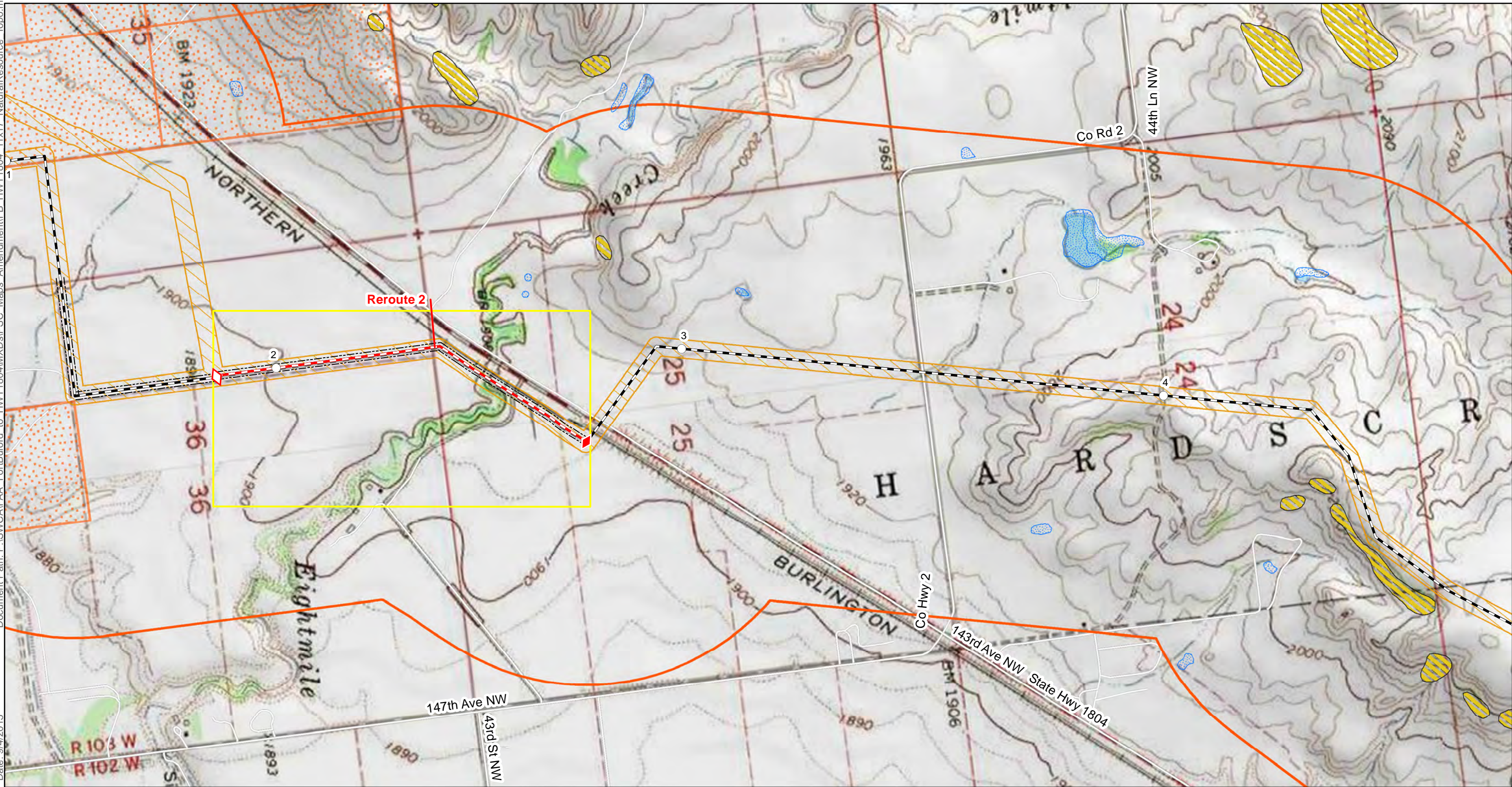
**E3 ENVIRONMENTAL**  
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Map not to scale, for environmental review purposes only.

**Plains Pipeline, L.P.**  
**Highway 1804 Re-route North**  
 Siting Criteria  
 Natural Resource - Topo Map  
**Page 1 of 4**  
 Williams County, North Dakota



○ Milepost	NR Survey Corridor	Federal Land
Rerouted Alignment	NHD Waterway	ND Mineral Trust Land
Proposed Alignment	NWI Wetland	NDGS Landslide Deposit
Abandoned Alignment	NHD Waterbody	
Co-Located Alignment	<b>Criteria Data</b>	
Corridor (1 mile)	Abandoned Mine	

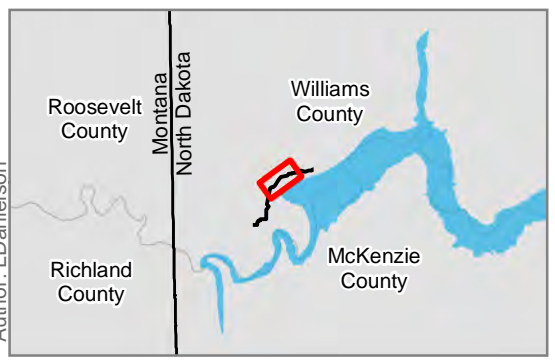
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Map not to scale, for environmental review purposes only.

**Plains Pipeline, L.P.**  
 Highway 1804 Re-route North  
 Siting Criteria  
 Natural Resource - Topo Map  
**Page 2 of 4**  
 Williams County, North Dakota



○ Milepost	NR Survey Corridor	Federal Land
Rerouted Alignment	NHD Waterway	ND Mineral Trust Land
Proposed Alignment	NWI Wetland	NDGS Landslide Deposit
Abandoned Alignment	NHD Waterbody	
Co-Located Alignment	<b>Criteria Data</b>	
Corridor (1 mile)	Abandoned Mine	

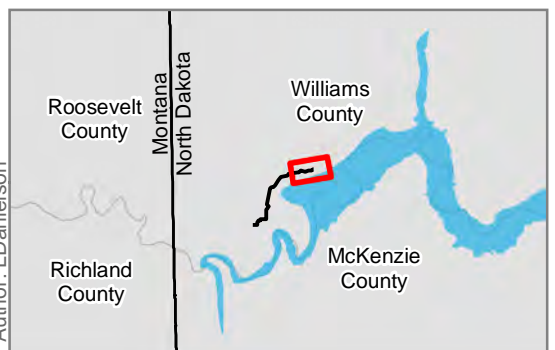
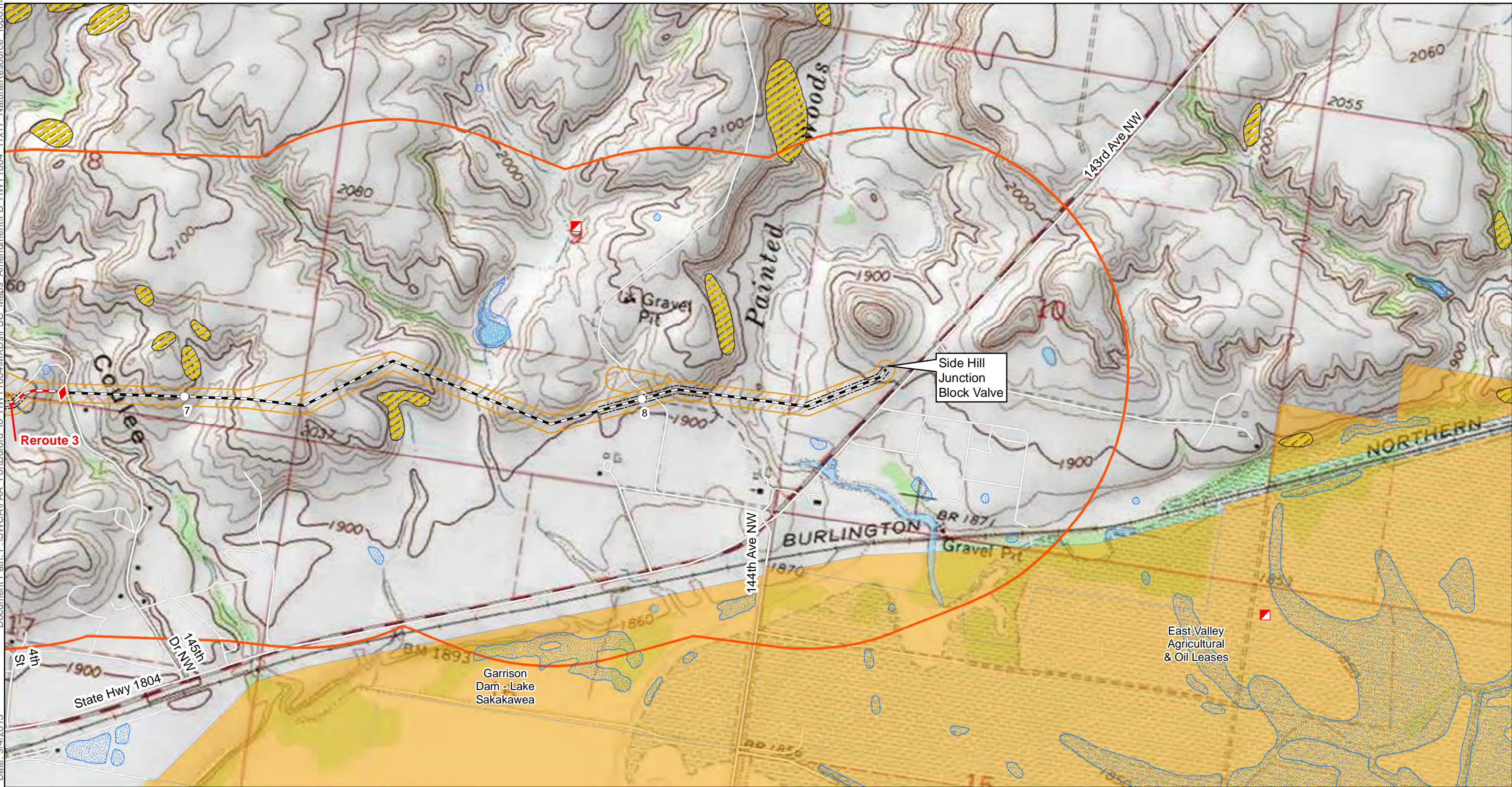
**E3 ENVIRONMENTAL**  
Enhancing Execution with Experience

0 500 1,000 2,000 Feet

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Map not to scale, for environmental review purposes only.

**Plains Pipeline, L.P.**  
**Highway 1804 Re-route North**  
 Siting Criteria  
 Natural Resource - Topo Map  
**Page 3 of 4**  
 Williams County, North Dakota



○ Milepost	NR Survey Corridor	Federal Land
Rerouted Alignment	NHD Waterway	ND Mineral Trust Land
Proposed Alignment	NWI Wetland	NDGS Landslide Deposit
Abandoned Alignment	NHD Waterbody	
Co-Located Alignment	<b>Criteria Data</b>	
Corridor (1 mile)	Abandoned Mine	

1:12,000

Map not to scale, for environmental review purposes only.

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**Plains Pipeline, L.P.**

**Highway 1804 Re-route North**

Siting Criteria  
 Natural Resource - Topo Map

**Page 4 of 4**

Williams County, North Dakota

## **Appendix C**

---

### Consultations

September 3, 2015

Paul Picha  
Chief Archaeologist  
State Historical Society of North Dakota  
Archeology & Historic Preservation Division  
North Dakota Heritage Center  
612 East Boulevard Avenue  
Bismarck, ND 58505-0830

**Subject: Addendum to Highway 1804 Reroute Pipeline, due to Reroute and Workspace on the North Segment**

Dear Mr. Picha,

Enclosed please find an addendum cultural resource report prepared by SWCA Environmental Consultants entitled *Addendum to A Class I and Class III Cultural Resource Inventory and Metal Detecting Survey of the Highway 1804 Reroute Pipeline Project, Williams County, North Dakota, Due to Reroutes and Workspace on the North Segment*.

A Class I and Class III cultural resource report (Cox et al. 2015; SWCA Report Number 15-345) was submitted for the project to the State Historic Preservation Office in July 2015 (ND SHPO Ref: 14-0281 PSC, Correspondence dated July 20, 2015). The attached document presents the results of a Class III cultural resource inventory conducted in support of project modifications to the Highway 1804 Reroute Pipeline, including reroutes and additional workspace along the North Segment of the proposed pipeline project. In total, 9.37 acres were currently inventoried. No cultural resources were identified during the inventory. It is recommended that a determination of *No Significant Sites Affected* be granted for the project to proceed as planned.

SWCA requests review and concurrence of the attached cultural resource report. Please let me know if you have any questions or suggested revisions to the document.

Sincerely,



William M. Harding, RPA  
Cultural Resource Lead/Principal Investigator  
WMH/cr



**STATE  
HISTORICAL  
SOCIETY  
OF NORTH DAKOTA**

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*Governor of North Dakota*

North Dakota  
State Historical Board

Calvin Grinnell  
*New Town - President*

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Chester E Nelson, Jr.  
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Sara Otte Coleman  
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Department*

Grant Levi  
*Director  
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Claudia J. Berg  
*Director*

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September 9, 2015

William M. Harding  
Principal Investigator  
SWCA Environmental Consultants  
116 North 4<sup>th</sup> Street, Suite 200  
Bismarck, North Dakota 58501

**NDSHPO REF.: 15-0859 PSC Plains All American Pipeline, LP  
"Addendum to a Class I and Class III Cultural Resource Inventory and Metal  
Detecting Survey of the Highway 1804 Reroute Pipeline Project, Williams  
County, North Dakota, Due to Reroutes and Workspace on the North  
Segment"**

Dear Bill:

We reviewed "Addendum to a Class I and Class III Cultural Resource Inventory and Metal Detecting Survey of the Highway 1804 Reroute Pipeline Project, Williams County, North Dakota, Due to Reroutes and Workspace on the North Segment," by Carolyn Riordan (SWCA 32369, August 24, 2015) and find it acceptable. We concur with a "No Significant Sites Affected" determination provided the project remains as described and mapped, and that the previous recommendations for avoiding and minimizing impacts including monitoring by a professional archaeologist at 32WI25 are followed. Thank you for the opportunity to review this project. If you have questions please contact either Paul Picha at [ppicha@nd.gov](mailto:ppicha@nd.gov) or (701) 328-3574 or Susan Quinnell at [squinnell@nd.gov](mailto:squinnell@nd.gov) or (701) 328-3576.

Sincerely,

Claudia J. Berg  
Director, State Historical Society of North Dakota

## **Appendix D**

---

### Natural Resources Report



ENVIRONMENTAL CONSULTANTS

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**Natural Resources and Wetland  
Delineation Report for the Savage  
Facility Reroute and Temporary  
Workspace – Highway 1804 Pipeline  
Project, Williams County, North Dakota**

Prepared for

**Plains All American, L.P.**

Prepared by

**SWCA Environmental Consultants**

September 2015



**Natural Resources and Wetland Determination Report  
for the Savage Facility Reroute and Temporary Workspace – Highway  
1804 Pipeline Project,  
Williams County, North Dakota**

Prepared for:

**Plains All American, L.P.**  
333 Clay Street, Suite 1600  
Houston, Texas 77002

Prepared by:

**Ashley C. Persinger, B.S.**  
**Natural Resource Specialist**

Reviewed by:

**Richard Wadleigh**  
**Natural Resources Lead**

**SWCA Environmental Consultants**  
**116 North 4th Street, Suite 200**  
**Bismarck, North Dakota 58501**  
**Phone (701) 258-6622, Fax (701) 258-5957**

SWCA Project No. 32369

**September 11, 2015**

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- A Vicinity and Site Layout Maps
- B Survey Area Soil Series Map
- C Photographs of Project Area

## **1.0 INTRODUCTION**

### **1.1 BACKGROUND**

Plains All American, L.P. (Plains) proposes to construct an approximately 8.5-mile-long pipeline located entirely within Williams County, North Dakota. SWCA Environmental Consultants (SWCA) conducted natural resources field surveys to identify exclusion and avoidance areas as specified in North Dakota Administrative Code 69-06-08-02 for the proposed Savage Facility reroute and a temporary workspace of the Highway 1804 Pipeline Project.

As proposed, the 10-inch-diameter Plains Highway 1804 Pipeline is approximately 8.5 miles long, spanning private lands in North Dakota (Appendix A). This report documents the findings for facilitating the Savage Facility and temporary workspace for the project. The project falls under the jurisdiction of the North Dakota Public Service Commission (NDPSC). E3 Environmental, LLC, is assisting Plains with their application to the NDPSC for a certificate of corridor compatibility and route permit for the project.

SWCA conducted field surveys of a 200-foot-wide survey corridor (100-foot-wide construction right-of-way) on August 24, 2015 (reroutes), to determine the potential presence and extent of wetlands and waterbodies, including potentially jurisdictional waters of the U.S., within the proposed survey area. Concurrently with the wetland/waterbody determinations, SWCA conducted cursory wildlife surveys including threatened and endangered species survey and habitat assessment; a tree, sapling, and shrub enumeration survey; and a noxious weed survey. Site layout maps of the survey area and natural resource features identified during the field surveys are provided in Appendix A.

This report outlines the methodology used by SWCA's ecologists to complete each of the aforementioned surveys. Additionally, this report presents the results of the completed field surveys and regulatory recommendations to facilitate compliance with the NDPSC and the U.S. Army Corps of Engineers (USACE) Nationwide Permit 12.

### **1.2 REGULATORY BACKGROUND**

#### **1.2.1 Clean Water Act, Section 404**

Section 404 of the Clean Water Act prohibits the discharge of fill material into waters of the U.S., also known as jurisdictional waters, without a permit from the USACE.

#### **1.2.2 USACE Nationwide Permit 12**

The USACE Nationwide Permit 12 authorizes the construction of utility lines and associated facilities in waters of the U.S., provided that the activity does not result in the permanent loss of greater than 0.5 acre of waters of the U.S., including wetlands, and meets the Nationwide Permit General Conditions.

Nationwide Permit 12 requires that the permittee submit a pre-construction notification prior to commencing construction if any of the following criteria are met.

- The activity involves mechanized land clearing in a forested wetland.
- A Section 10 permit is required to cross a navigable waterbody (Rivers and Harbors Act).
- The utility line exceeds 500 feet in length through any single crossing of a water of the U.S.
- The utility line is placed within a jurisdictional area (i.e., water of the U.S.) and it runs parallel to a stream bed that is within that jurisdictional area.
- Discharges result in the permanent loss of greater than 0.1 acre of waters of the U.S.
- Permanent access roads are constructed above grade in waters of the U.S. for a distance of more than 500 feet.
- Permanent access roads are constructed in waters of the U.S. with impervious materials.

### **1.2.3 U.S. Army Corps of Engineer Regional Conditions**

The USACE has published several regional conditions for projects operating under Nationwide Permits in North Dakota (USACE 2013). The regional conditions apply to wetlands classified as “fens,” waters adjacent to natural springs, the Missouri River, historic properties, and fish spawning areas.

## **2.0 METHODS**

### **2.1 SURVEY AREA**

Overall, northwest North Dakota is characterized by a moderate to cool climate, with cold, dry winters and mild to warm summers. Mean annual precipitation for the area is 14 to 16 inches (Bryce et al. 1998).

The proposed project is located in the Great Plains (level I) ecoregion. Further, the proposed project is located in the Northwestern Great Plains (level III) ecoregion and the River Breaks (level IV) ecoregion. The Northwestern Great Plains ecoregion is a semiarid rolling plain of shale, siltstone, and sandstone punctuated by occasional buttes and badlands. Native grasslands persist in areas of steep or broken topography, but they have been largely replaced by spring wheat (*Triticum* spp.) and alfalfa (*Medicago sativa*) over most of the ecoregion. The River Breaks ecoregion forms broken terraces and uplands that descend to the Missouri River and its major tributaries. Primary land uses in the ecoregion are grazing, small grain agriculture, and recreation (Bryce et al. 1998). Located in the Missouri River floodplain, the elevation of the survey area varies between 1,858 and 2,254 feet above sea level. Figures 1 and 2 provide an overview of the project area topography.



**Figure 1. Overview depicting general topography on the northern temporary workspace area, facing north (photograph taken August 24, 2015).**



**Figure 2. Overview depicting general topography on the southern reroute area, facing west (photograph taken August 24, 2015).**

The inventoried area discussed herein is situated on the U.S. Geological Survey Dore (1991) and Buford (1976), North Dakota, quadrangles. The proposed project corridor that was surveyed on August 24, 2015, encompasses portions of two sections within four townships and ranges.

- Section 9, Township 153 North, Range 102 West
- Section 35, Township 153 North, Range 103 West

## **2.2 WETLANDS**

National Wetlands Inventory (NWI) mapping for the region indicates the presence of wetlands within the project area (U.S. Fish and Wildlife Service [USFWS] 2012). SWCA ecologists conducted wetland determinations within the survey area based on the principles and guidelines provided in the 1987 *Corps of Engineers Wetlands Delineation Manual* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Determination Manual: Great Plains Region Version 2.0* (Supplement) (USACE 2010). According to the Manual, an area is a wetland if three mandatory wetland indicators are present in a given area, with special exceptions. These criteria include the presence of hydrophytic vegetation, wetland hydrology, and hydric soils. All wetlands and waterbodies geographically referenced within the survey area during field survey are depicted on the site layout maps in Appendix A.

### **2.2.1 Hydrophytic Vegetation**

Ecologists recorded all plants within the vegetative community based on the respective stratum each species occupied. A tree is defined by the Supplement to be a woody-stemmed plant with a trunk diameter at breast height (DBH) of equal to or greater than 3 inches, regardless of height. The sapling and shrub stratum is defined by the Supplement to be composed of woody-stemmed plants with a trunk DBH of less than 3 inches, regardless of height. The herbaceous stratum includes all non-woody-stemmed plants, regardless of height. Finally, the woody vine stratum includes all woody-stemmed vines, regardless of diameter.

SWCA recorded the binomial scientific name and percent cover of all plants within a 30-foot radius for the tree stratum, a 15-foot radius for the sapling/shrub stratum, a 5-foot radius for the herbaceous stratum, and a 30-foot radius for the woody vine stratum. SWCA ecologists noted each plant species' respective USFWS indicator status (i.e., upland [UPL], facultative upland [FACU], facultative [FAC], facultative wetland [FACW], and obligate [OBL]). In some instances the size and shape of the vegetative sampling plot was manipulated to better encompass each wetland or upland area, though the overall area assessed remained unchanged. Vegetation communities met the hydrophytic vegetation criterion for wetlands if more than 50% of dominant species had an indicator status of FAC, FACW, or OBL. SWCA also noted and geospatially referenced all populations of North Dakota state- or county-listed noxious weeds identified within the survey area.

### **2.2.2 Wetland Hydrology**

A wetland was determined to contain wetland hydrology if at least one primary indicator or at least two secondary indicators of wetland hydrology were present, as defined by the Manual

and Supplement. Common hydrologic indicators include the presence of surface water, high water table, soil saturation, water marks on trees or other objects, sediment deposits, water-stained leaves, and oxidized rhizospheres on living roots.

### **2.2.3 Hydric Soil**

Ecologists recorded detailed notes regarding soil profiles including the hue, value, and chroma (i.e., color) of the soil (using Munsell Soil Color Charts), the depth and extent of that soil color within the entire soil profile, the concentration of any redoximorphic concentrations or depletions, and the texture of the soil at each depth where a color change was observed. Soil pits were excavated to a minimum depth of 20 inches at each data point. Common hydric soil indicators of the Northern Great Plains subregion include the presence of hydrogen sulfide gas within the soil pit, redox depressions, redox dark surfaces, and depleted matrix.

## **2.3 WATERBODIES**

Waterbodies (i.e., ponds, creeks, streams, rivers) were identified by the presence of an ordinary high water mark (OHWM). Common identifiable indicators of an OHWM include open water or evidence of a clear, natural line visible on the bank; shelving; changes in soil characteristics; the destruction of terrestrial vegetation; the presence of litter and debris; and water marks on structures that are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE jurisdiction. The USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies.

SWCA classified streams as perennial, intermittent, or ephemeral based on field observations. During a typical year, a perennial stream contains flowing water year-round and the water table is located above the stream bed. Groundwater is the primary water source for stream flow, whereas precipitation runoff is supplemental. Ecologists classified streams that showed significant flow during the field survey as perennial. Additionally, the U.S. Geological Survey topographic maps were used as reference.

An intermittent stream has flowing water for only portions of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

## **2.4 NOXIOUS WEED SURVEYS**

SWCA conducted a noxious weed survey of all populations of North Dakota state- or county-listed noxious weeds within the project area.

## **2.5 TREE, SAPLING, AND SHRUB COUNT**

SWCA ecologists determined the total number of trees, saplings, and shrubs present within the survey area using several different techniques, depending on the type of woody vegetation habitat (i.e., forested upland, shrubland, or shelterbelt) encountered and the overall extent of each habitat within the right-of-way. The boundary of all forested upland, shrubland, and shelterbelt habitat was geographically referenced using a Trimble GeoXT series handheld global positioning system (GPS) unit. In forested upland and shrubland habitat, SWCA counted or estimated the number of all woody-stemmed vegetation with a DBH of  $\geq 1$  inch. In shelterbelt areas, all woody-stemmed vegetation, regardless of DBH, was inventoried via direct count. Ecologists taxonomically identified all recorded individuals to the species level within each habitat type.

## **2.6 WILDLIFE, INCLUDING THREATENED AND ENDANGERED SPECIES**

Prior to conducting field surveys, SWCA reviewed information obtained from the USFWS list of threatened and endangered species by North Dakota county (USFWS 2015) regarding the threatened or endangered species that may occur within the survey area. This document does not represent a comprehensive survey, but rather acknowledges the past and/or current presence of listed species. The lack of discovery of threatened or endangered species does not signify their non-existence within the area, but only that no primary or secondary indications of these species were recorded. SWCA completed a survey for all listed species and suitable habitat.

A line-of-sight binocular survey for raptor species was also conducted for a distance of approximately 0.5 mile. SWCA ecologists noted all wildlife observed during the field survey. Wildlife sightings can involve primary observations (i.e., actual sighting of an animal) or secondary observations (i.e., observation of scat, tracks, or fur deposits).

## **2.7 MAPPING**

The boundaries of each wetland, waterbody, woody vegetation habitat, and noxious weed assemblage were geographically recorded using a Trimble GeoXT GPS unit. The aforementioned GPS unit is capable of recording geographic data with sub-meter accuracy. SWCA used Universal Transverse Mercator Zone 13 North as the projected coordinate system and North American Datum 1983 as the datum. ArcGIS v10.0 (ESRI Redlands, California) was used to analyze recorded features, calculate areas, and generate the maps provided in Appendix A and Appendix B. All data collected using the GPS unit, and displayed on the attached maps, are for review purposes only and do not represent a professional civil survey.

### 3.0 RESULTS

#### 3.1 VEGETATION

During the field survey, SWCA ecologists identified two general types of vegetative communities within the survey area. These vegetative communities were classified as herbaceous upland and previously disturbed areas. Photographs of the survey area are provided in Appendix C.

##### 3.1.1 Herbaceous Upland

The herbaceous upland community consists of areas dominated by non-woody vegetation such as grasses and forbs. Herbaceous upland species observed consisted of buffalograss (*Bouteloua dactyloides*), side-oats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*), western wheatgrass (*Pascopyrum smithii*), gayfeather (*Liatris* spp.), prickly-pear (*Opuntia* spp.), fringed sagewort (*Artemisia frigida*), curly cup gumweed (*Grindelia squarrosa*), and soapweed yucca (*Yucca glauca*).

##### 3.1.2 Previously Disturbed Area

The southern reroutes are located in an area of previous disturbance, including roads, agriculture fields, and areas of invasive weeds. Invasive weeds noted include kochia (*Kochia scoparia*).

#### 3.2 HYDROLOGY

No areas showing wetland hydrology were observed during the field survey.

According to National Weather Service preliminary climatological data for Williston, North Dakota (approximately 1 mile east of the project area), 4.27 inches of precipitation were recorded from June 1 through August 24, 2015 (Table 1). This amount is 1.93 inches below normal for this time period.

**Table 1. Monthly Recorded Rainfall at National Weather Service Station in Williston, North Dakota**

Month	Recorded Precipitation (inches)	Normal Precipitation (inches)	Difference (inches)
June 2015	1.90	2.52	-0.62
July 2015	1.55	2.54	-0.99
August 1–24, 2015	0.82	1.14	-0.32
<b>Total</b>	<b>4.27</b>	<b>6.20</b>	<b>-1.93</b>

Source: National Oceanic and Atmospheric Administration (2015).

#### 3.3 WETLANDS

No additional wetlands were identified by SWCA ecologists within the survey area.

### 3.4 WATERBODIES

No additional waterbodies were identified by SWCA ecologists within the survey area.

### 3.5 SOILS

Based on Natural Resources Conservation Service (NRCS) mapping (NRCS 2014) (Appendix B), four soil types are present in the project reroute areas. Table 2 lists all soil units within the project reroute areas. The following soil component descriptions represent the most prevalent soil series found within the survey area (NRCS 2014).

**Table 2. NRCS-Derived Soil Series Present within the 100-foot-wide Right-of-Way**

Soil Types	Slopes (%)	Acres within Construction Right-of-Way	Percent within Map Unit
Shambo loam	0 to 2	3.47	37.10
Savage-Grail silty clay loams	0 to 2	2.94	31.43
Zahl-Cabba-Maschetah complex	6 to 70	2.92	31.15
Lawther silty clay	0 to 2	0.03	0.32
<b>Total</b>		<b>9.36</b>	<b>100.00</b>

Source: Natural Resources Conservation Service (2014).

#### 3.5.1 Shambo

The Shambo series consists of deep and very deep, well-drained, moderately permeable soils that formed in calcareous alluvium mainly from soft sandstone, mudstone, and shale. These soils are on terraces and fans along stream valleys and are on fans on uplands. Slope ranges from 0 to 35 percent. The mean annual precipitation found throughout the spatial extent of this soil type is 15 inches and mean annual air temperature is 42 degrees Fahrenheit (°F). Soils are cropped to small grains, hay, and pasture; some areas are irrigated and some are in native rangeland. Native vegetation includes green needlegrass (*Nasella viridula*), needle and thread (*Hesperostipa comata*), western wheatgrass, prairie junegrass (*Koeleria macrantha*), blue grama, and a variety of forbs (NRCS 2014).

#### 3.5.2 Savage

The Savage series consists of very deep, well-drained soils that formed in silty alluvium, loess, or in glaciofluvial or glaciolacustrine material. These soils are on alluvial fans, stream terraces, drainageways, and sedimentary plains and till plains. Slopes are 0 to 25 percent. The mean annual precipitation found throughout the spatial extent of this soil type is about 16 inches, and the mean annual air temperature is about 42°F. Savage soils are used mainly for dryland crops; some areas are used for irrigated crops and as rangeland. Potential native vegetation is mainly bluebunch wheatgrass (*Pseudoroegneria spicata*), western wheatgrass, green needlegrass, and perennial forbs (NRCS 2014).

### **3.5.3 Grail**

The Grail series consists of deep to very deep, slowly permeable soils which are well- to moderately well-drained. This soil type is found on uplands with slopes ranging from 0 to 15 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 15 inches and mean annual air temperature is approximately 42°F. This soil type is largely used for cultivating crops. Native vegetation species common to this soil type include western wheatgrass, big bluestem (*Andropogon gerardii*), and green needlegrass (NRCS 2014).

### **3.5.4 Zahl**

The Zahl series consists of very deep, slowly permeable, well-drained soils found on glacial till plains, moraines, and valley side slopes at approximately 1 to 60 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 40°F. This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass, little bluestem (*Schizachyrium scoparium*), and needle and thread (NRCS 2014).

### **3.5.5 Cabba**

The Cabba series consists of shallow, well-drained, moderately permeable soils found on hills, escarpments, and sedimentary plains. The soil slopes broadly range between 2 and 70 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 43°F. The most common vegetation species found on this soil type are little bluestem, green needlegrass, and other various herbs, forbs, and shrub species (NRCS 2014).

### **3.5.6 Maschetah**

The Maschetah series consists of very deep, well-drained soils found on sedimentary plains and hills. Slopes range from approximately 0 to 45 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 17 inches and mean annual air temperature is approximately 43°F. This soil type is used for rangeland foraging and cultivation of small grains. Native vegetation species common to this soil type include western wheatgrass, blue grama, green needlegrass, and fringed sagewort (NRCS 2014).

## **3.6 NOXIOUS WEEDS**

“Noxious weeds” is a general term used to describe plant species that are not native to a given area, spread rapidly, and have adverse ecological and economic impacts. These species may have high reproduction rates and are usually adapted to occupy a diverse range of habitats otherwise occupied by native species. These species may subsequently out-compete native plant species for resources, causing a reduction in native plant populations.

Noxious weeds have the potential to detrimentally affect public health, ecological stability, and agricultural practices. North Dakota Century Code (Chapter 63-01.1) and the North Dakota Department of Agriculture recognize 11 species as noxious, as shown in Table 3

(North Dakota Department of Agriculture 2013). In 2012, five noxious weed species were found on 39,192 acres in Williams County.

**Table 3. Documented Noxious Weed-Occupied Area in Williams County, North Dakota**

Common Name	Scientific Name	Williams County (acres)
Absinth wormwood	<i>Artemisia absinthium</i>	0
Canada thistle	<i>Cirsium arvense</i>	9,400
Diffuse knapweed	<i>Centaurea diffusa</i>	0
Leafy spurge	<i>Euphorbia esula</i>	10,190
Musk thistle	<i>Carduus nutans</i>	0
Purple loosestrife	<i>Lythrum salicaria</i>	1
Russian knapweed	<i>Acroptilon repens</i>	0
Spotted knapweed	<i>Centaurea stoebe</i>	5
Yellow toadflax	<i>Linaria vulgaris</i>	0
Dalmatian toadflax	<i>Linaria dalmatica</i>	0
Salt cedar	<i>Tamarix ramosissima</i>	19,596

Source: North Dakota Department of Agriculture (2013).

No noxious weeds were noted during the survey for the proposed reroutes.

### 3.7 TREE, SAPLING, AND SHRUB COUNT

During SWCA’s field survey of the reroute, one additional upland tree and shrub land area was geographically referenced within the survey area. SWCA recorded all trees and shrubs with a DBH of greater than 1 inch. Table 4 summarizes the number of trees estimated to be impacted by the project as currently proposed. The NDPSC requires a 2:1 post- to pre-construction mitigation for all trees, saplings, and shrubs impacted during the construction of the proposed pipeline. Therefore, SWCA estimates that approximately 14 2-year-old sapling individuals would need to be replanted in order to fulfill the 2:1 mitigation requirement.

**Table 4. Tree, Sapling, and Shrub Count**

Woody Vegetation (WV) ID	Species	Type	Number of Trees		Estimated Mitigation Commitment*
			Survey Corridor	50-foot-wide Tree Mitigation Corridor	
WV20	Chokecherry ( <i>Prunus virginiana</i> )	Natural	2	2	4
	Buffaloberry ( <i>Shepherdia argentea</i> )	Natural	5	5	10
<b>Total</b>			<b>0</b>	<b>7</b>	<b>14</b>

\* Estimated value based on the observed density of trees.

\*\* Located within abandoned survey corridor.

### 3.8 WILDLIFE

Several wildlife species that may exist in Williams County are listed as threatened or endangered under the Endangered Species Act (ESA) (16 United States Code 1531 et seq.). According to the USFWS, listed species in Williams County, North Dakota, include the gray wolf (*Canis lupus*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), rufa red knot (*Calidris canutus rufa*), northern long-eared bat (*Myotis septentrionalis*), interior least tern (*Sterna antillarum*), and piping plover (*Charadrius melodus*) and its designated critical habitat. One additional species has a USFWS designation: Sprague’s pipit (*Anthus spragueii*) is a candidate species (USFWS 2015). SWCA conducted a cursory threatened and endangered species survey concurrently with the wetland determination. Ecologists did not observe any primary (i.e., actual sighting) or secondary (i.e., tracks, scat, fur) indication of the presence of threatened or endangered species. Potential impacts to wildlife are outlined in the original natural resources report (Persinger 2015).

### 4.0 CONCLUSIONS AND RECOMMENDATIONS

1. No wetlands or waterbodies were recorded within the survey corridor for the reroute portions of the Highway 1804 Pipeline.
2. SWCA estimates seven trees, saplings, and shrubs may be impacted. Therefore, approximately 14 2-year-old saplings may need to be replanted to fulfill the 2:1 mitigation requirement.

According to the recommendations of the North Dakota Forest Service, tree species selection for replacement should be accomplished through collaboration with a reputable area nursery. This will allow for species to be selected based on various factors, including species hardiness and area soil type.

3. No threatened or endangered species were observed during the reroute field survey.
4. No areas of noxious weeds were identified in the survey area. If noxious weeds are confirmed during construction activities, actions should be taken to reduce the potential to spread any state listed noxious weed species, especially to native areas, undisturbed areas, or areas planted with native species.

## 5.0 LITERATURE CITED

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**APPENDIX A**  
**Vicinity and Site Layout Maps**



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo,

### Highway 1804 Reroute North

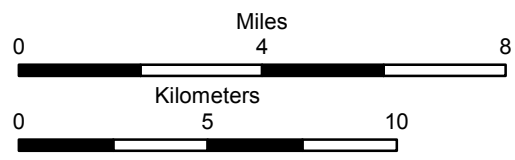
-  City
-  Proposed Gathering Line
-  U.S Highway
-  State Highway
-  Workspace and Reroute Location
-  State Boundary
-  County Boundary
-  Township/Range Boundary



116 North 4th Street  
Suite 200  
Bismarck, ND 58501

Phone: 701.258.6622  
Fax: 701.258.5957

[www.swca.com](http://www.swca.com)



Base Map: Aerial Imagery  
Source: ESRI ArcGIS online service  
Quadrangle: Trenton SW (1991), Trenton (1976)  
Township/Range: T. 152N, R. 103W, T. 153N, R. 103W,  
and T. 153N, R. 102W  
Williams County, North Dakota

Projection: NAD 1983 UTM Zone 13N





### Highway 1804 Reroute North Addendum

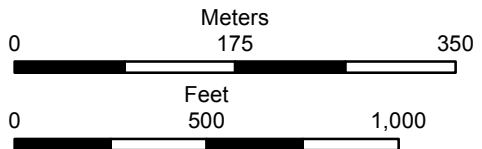
- ▲ Upland Data Point
- Proposed Gathering Line
- Existing Road
- Survey Area
- Previously Inventoried Area
- Woody Vegetation
- County Boundary
- Township/Range Boundary



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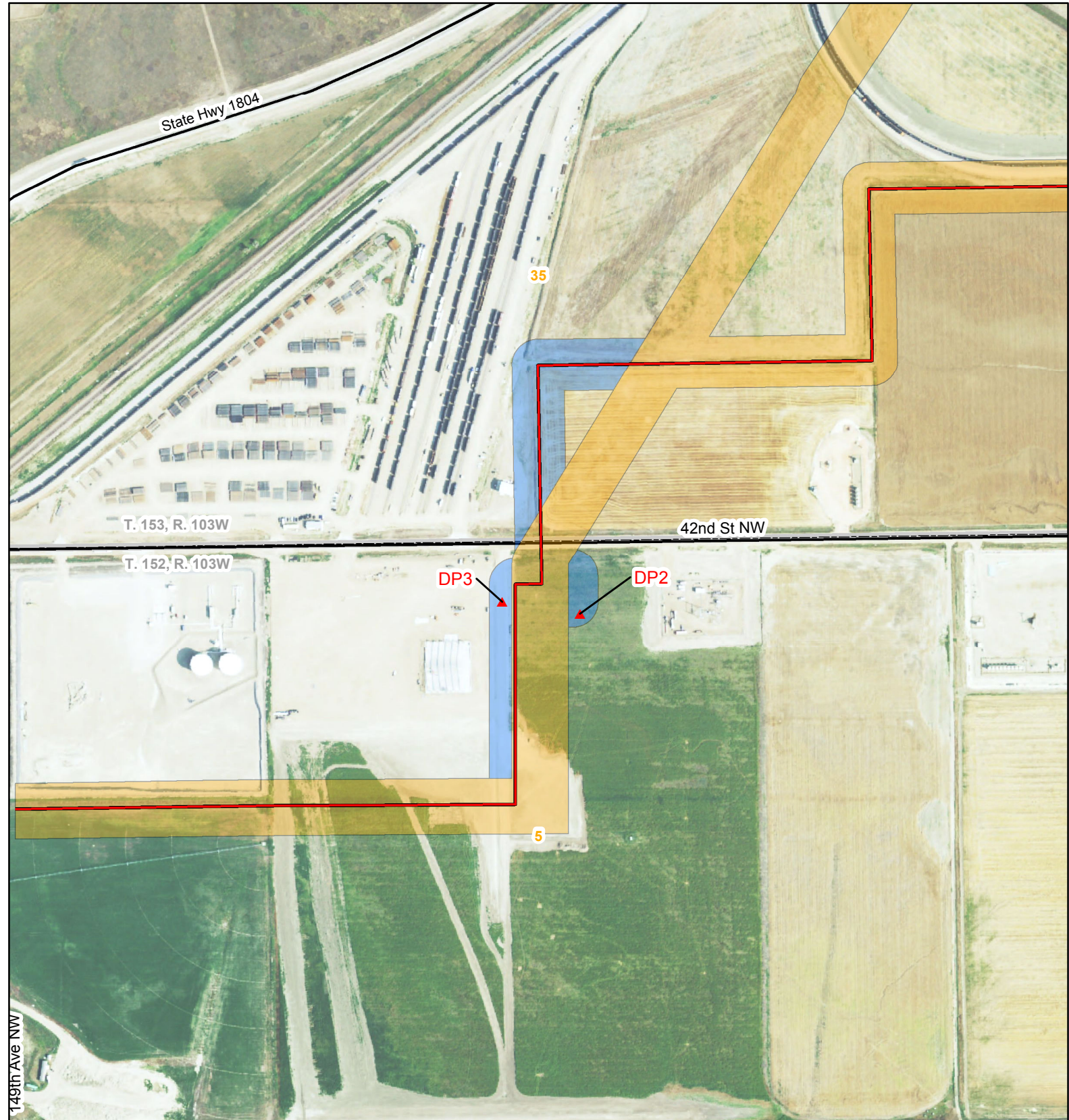
Phone: 701.258.6622  
Fax: 701.258.5957

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Base Map: 2014 NAIP Aerial Imagery  
Source: USDA/FSA  
Aerial Photography Field Office  
Trenton (1976)  
T. 153N, R. 102W  
Williams County, North Dakota  
Projection: NAD 1983 UTM Zone 13N





### Highway 1804 Reroute North Addendum

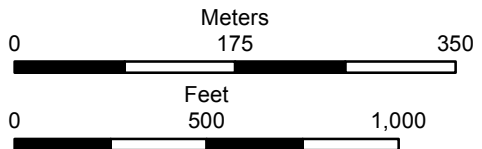
- ▲ Upland Data Point
- Proposed Gathering Line
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Base Map: 2014 NAIP Aerial Imagery  
Source: USDA/FSA  
Aerial Photography Field Office  
Trenton SW (1991)  
T. 152N, R. 103W and T. 153N, R. 103W  
Williams County, North Dakota

Projection: NAD 1983 UTM Zone 13N



**APPENDIX B**  
**Survey Area Soil Series Map**



### Highway 1804 Reroute North Addendum

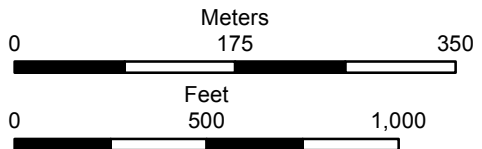
- Proposed Gathering Line
- Existing Road
- Survey Area
- Previously Inventoried Area
- Williams County Soil Unit
- County Boundary
- Township/Range Boundary
- Section Boundary



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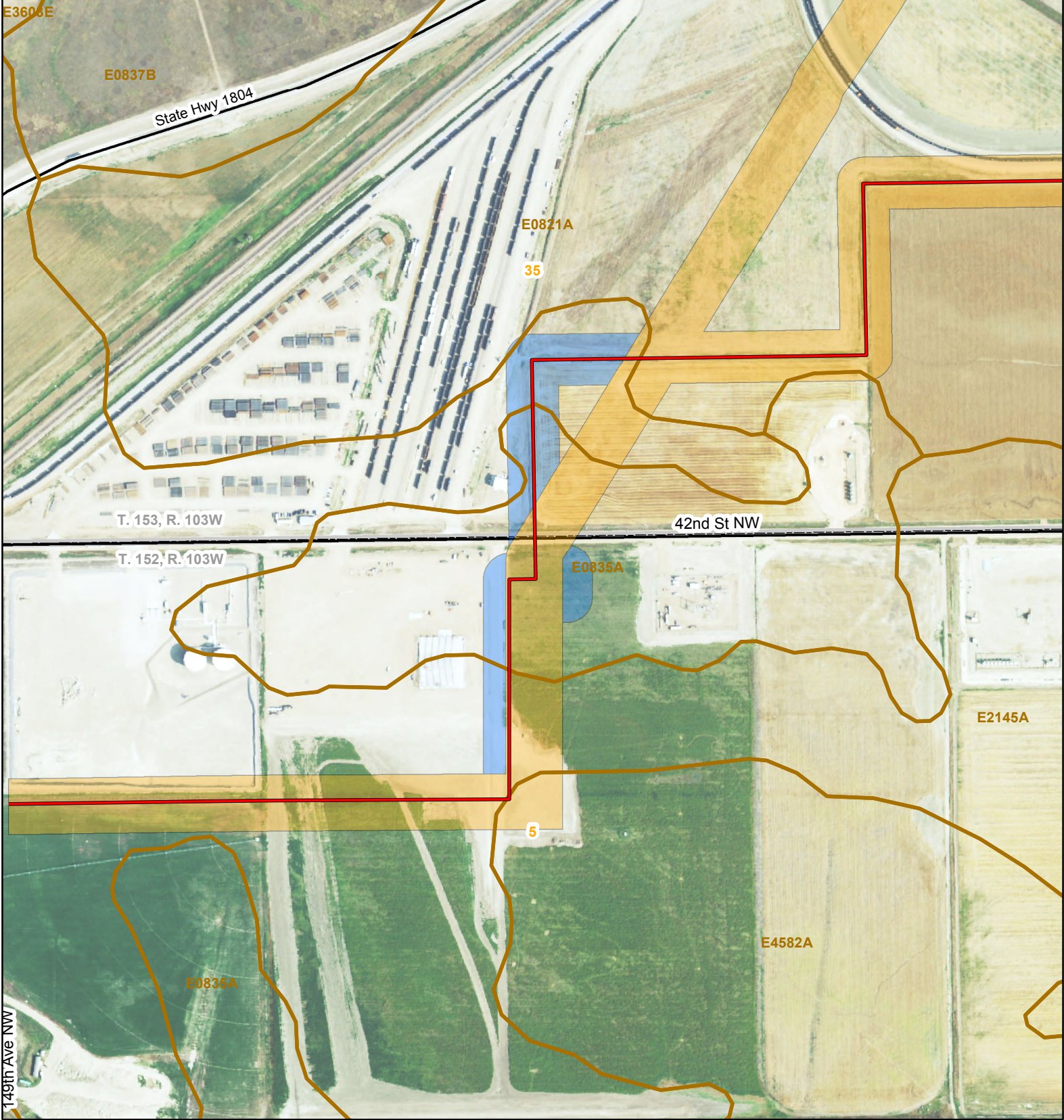
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Fax: 701.258.5957

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Base Map: 2014 NAIP Aerial Imagery  
Source: USDA/FSA  
Aerial Photography Field Office  
Trenton (1976)  
T. 153N, R. 102W  
Williams County, North Dakota  
Projection: NAD 1983 UTM Zone 13N





### Highway 1804 Reroute North Addendum

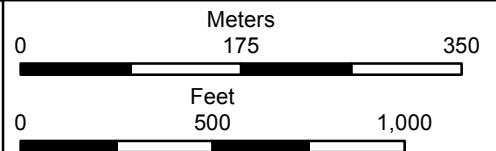
- Proposed Gathering Line
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Base Map: 2014 NAIP Aerial Imagery  
Source: USDA/FSA  
Aerial Photography Field Office  
Trenton SW (1991)  
T. 152N, R. 103W and T. 153N, R. 103W  
Williams County, North Dakota

Projection: NAD 1983 UTM Zone 13N



**APPENDIX C**  
**Photographs of Project Area**



**Figure C.1. Overview depicting general topography on the northern reroute area, facing east (photograph taken August 24, 2015).**



**Figure C.2. Overview depicting general topography on the northern reroute area, facing west (photograph taken August 24, 2015).**



**Figure C.3. Overview depicting general topography on the southern reroute area, facing north (photograph taken August 24, 2015).**



**Figure C.4. Overview depicting general topography on the northern reroute area, facing south (photograph taken August 24, 2015).**

## **Appendix E**

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### Cultural Resource Report Abstract

Jack Dalrymple  
Governor of North Dakota

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State Historical Board

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July 11, 2012

Mr. Patrick Fahn  
Public Service Commission  
600 East Boulevard Avenue  
Bismarck ND 58505-0480

RE: Cultural Resource Reports Submitted to the North Dakota Public Service  
Commission

Dear Mr. Fahn,

Here is the text to the letter we will be sending out to the permitted cultural resource  
contractors.

Locational information for archaeological and historic sites is protected under North  
Dakota Century Code § 55-02-07. Due to a problem of cultural resource reports and  
archeological site locational information appearing on the North Dakota Public  
Service Commission (PSC) website, we request that all reports (Class I, Class II or  
Class III, or documents outlining testing or data recovery methodologies) or any loose  
maps sent to the PSC offices by a permittee or their client not contain site locational  
information. Site locational information includes the location of a site on a  
topographic map or aerial photographs, the location of a site in tables, such as  
Township, Range and Section, or the photograph of a site. It is acceptable to mention  
the Smithsonian Trinomial designation (e.g., 32EM0123) as this does not contain  
locational information, other than state and county.

For reports or documents of any type omitting site locational information can most  
easily be accomplished by sending just the report cover and abstract pages. Please be  
sure that your abstracts do not contain tables of sites with Township, Range and  
Section columns, or other locational identification. Report covers sent to the PSC  
should not contain photographs of sites, which might be identifiable in reports that  
cover small areas. If for some reason you need to send a loose map, please delete all  
archaeological and historic site locations from the map before submittal to the PSC.  
We have been working with PSC staff, and the abstracts alone would be acceptable.  
Therefore full reports that are redacted are **not** necessary.

Thank you for your attention to this important matter. If you have questions, please  
contact either Susan Quinnell, Review and Compliance Coordinator at  
[squinnell@nd.gov](mailto:squinnell@nd.gov), (701) 328-3576, or Paul Picha, Chief Archaeologist at  
[ppicha@nd.gov](mailto:ppicha@nd.gov), (701) 328-3574.

Sincerely,

Susan Quinnell  
Review and Compliance Coordinator  
State Historical Society of North Dakota



ENVIRONMENTAL CONSULTANTS

Sound Science. Creative Solutions.

SWCA Environmental Consultants  
 116 North 4<sup>th</sup> Street, Suite 200  
 Bismarck, North Dakota 58501

### North Dakota Negative Results Cultural Resources Report

<b><i>Date of Report:</i></b>	September 2, 2015	
<b><i>Project Name/Report Title:</i></b>	Addendum to A Class I and Class III Cultural Resource Inventory and Metal Detecting Survey of the Highway 1804 Reroute Pipeline Project, Williams County, North Dakota, Due to Reroutes and Workspace on the North Segment	
<b><i>Project Proponent/Sponsor:</i></b>	Plains All American Pipeline, L.P. (Plains)	
<b><i>Lead Agency:</i></b>	State Historical Society of North Dakota	
<b><i>SWCA Project Number:</i></b>	32369	
<b><i>Principal Investigator:</i></b>	William Harding	
<b><i>Author of Report:</i></b>	Carolyn Riordan	
<b><i>Persons Performing Fieldwork:</i></b>	Paul Swader and Roy Plank, SWCA Environmental Consultants (SWCA)	
<b><i>Date of Fieldwork:</i></b>	August 24, 2015	
<b><i>Acres/Area Inventoried:</i></b>	Highway 1804 Reroute Pipeline additional survey areas for reroutes and workspace on the North Segment	
	<i>Total Area Inventoried</i>	9.37 acres
<b><i>Legal Locations:</i></b>	E½ NE¼ NW¼ Section 5, Township (T) 152 North (N), Range (R) 103 West (W); E½ SE¼ SW¼, W½ SW¼ SE¼ Section 35, T153N, R103W; N½ SW¼ SE¼ Section 9, T153N, R102W; Williams County, North Dakota. Trenton (1976) and Trenton SW (1991), North Dakota, U.S. Geological Survey 7.5-minute quadrangles.	
<b><i>ND Prehistoric Study Unit:</i></b>	Garrison Study Unit	
<b><i>ND Historic Study Unit:</i></b>	Historic 21	

*Addendum to A Class I and Class III Cultural Resource Inventory and Metal Detecting Survey of the Highway 1804 Reroute Pipeline Project, Williams County, North Dakota, Due to Reroutes and Workspace on the North Segment*

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***Project Description***

SWCA previously conducted a Class I and Class III cultural resource inventory on behalf of Plains for the proposed Highway 1804 Reroute Pipeline (Highway 1804) project (Cox et al. 2015). Plains retained SWCA to complete a Class I and Class III cultural resource inventory for the proposed project area in support of the North Dakota Public Service Commission's Certificate of Corridor Compatibility and Route Permit application. The proposed pipeline is approximately 14 miles long, and was reported on in its entirety to the State Historical Society of North Dakota (Cox et al. 2015). For the Certificate of Corridor Compatibility and Route Permit application, Plains has separated the pipeline into three segments: the Highway 1804 South (pipeline mile post [MP] 0 to 0.2 and 1.1 to 5.5), the Fort Buford State Historic Site (MP 0.2 to 1.1), and the Highway 1804 North (MP 5.5 to 14.0). This report presents the results of the Class III inventory of reroutes and additional workspace on the North Segment of the Highway 1804 project.

The current Class III inventory was conducted in areas not covered by previous inventory, and includes four irregularly shaped parcels extending from the previously surveyed area. In total, 9.37 acres were surveyed during the current inventory. As proposed, the pipeline project would be located within the current survey area, and also that detailed in Cox et al. (2015).

***Location Descriptions***

The proposed modifications to the Highway 1804 North Segment project are located in Section 5, T152N, R103W; Section 35, T153N, R103W; and Section 9, T153N, R102W, on privately owned lands in Williams County, North Dakota. The reroute project area is characterized by relatively flat to gently rolling upland plains, and is within areas that include mixed grass prairie and agricultural lands. The project area drains into the Missouri River to the south, where the Lake Sakakawea portion of the Missouri River begins. North Dakota Highway 1804 and the Burlington Northern Railroad parallel each other approximately 0.2 mile northwest of the southern portion of the current survey and approximately 0.4 mile south of the northern portion of the current survey. The southern portion of the current inventory is approximately 4.0 miles southwest of Trenton, North Dakota, and the northern portion of the current inventory is approximately 1.8 miles northeast.

***Files/Records Search Results***

As part of the initial phase of this investigation, SWCA conducted a background search of archaeological and historical literature and records for the project area and surrounding 1-mile study area on March 3, 2015, with updates conducted on April 22, 2015. SWCA reviewed relevant record holdings at the State Historical Society of North Dakota (SHSND) for information regarding previously recorded historic and prehistoric sites in the project area. Additionally, researchers reviewed General Land Office historic survey plats. The results of this background study are detailed in Cox et al. (2015). No previously recorded cultural resources are within the current survey area.

# **Appendix F**

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## 10-Year Plan

Refer to Consolidated Application filed with the North Dakota  
Public Service Commission on July 31, 2015

## **Appendix G**

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### Landowner Waivers

Refer to Consolidated Application filed with the North Dakota  
Public Service Commission on July 31, 2015