



# United States Department of the Interior

BUREAU OF INDIAN AFFAIRS  
Great Plains Regional Office  
115 Fourth Avenue S.E., Suite 400  
Aberdeen, South Dakota 57401



IN REPLY REFER TO:

DESCRM

MC-208

FEB 17 2012

## MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: <sup>ACTING</sup> Regional Director, Great Plains Region

SUBJECT: Environmental Assessment Addendum and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, an Addendum has been completed and a Finding of No Significant Impact (FONSI) has been issued. The addendum authorizes land use for pipelines connecting the FBIR Black Medicine #24-21 well to the existing Arrow Phase 2E BIA 13 Pipeline on the Fort Berthold Indian Reservation.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files is a copy of the EA Addendum, FONSI and Notice of Availability. The Council on Environmental Quality (CEQ) regulations require that there be a public notice of availability of the FONSI (40 C.F.R. Section 1506.6(b)) Please post the attached notice of availability at the Agency and Tribal buildings for 30 days.

If you have any questions, please call Marilyn Bercier, Regional Environmental Scientist, Division of Environment, Safety and Cultural Resources Management, at (605) 226-7656.

Attachment

cc: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)  
Elgin Crows Breast, Tribal Historic Preservation Officer (with attachment)  
Derek Enderud, BLM, Bureau of Land Management (with attachment)  
Mike Cook, SWCA (with attachment)  
Jonathon Shelman, Corps of Engineers  
Jeff Hunt, Fort Berthold Agency

*Finding of No Significant Impact*

*Arrow Pipeline, L.L.C.*

*Addendum to Environmental Assessment to Authorize Land Use for Pipelines  
Connecting the FBIR Black Medicine #24-21 Well to the Existing Arrow Phase 2E  
BIA 13 Pipeline*

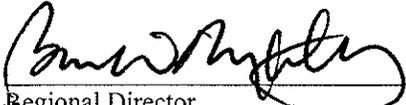
*Fort Berthold Indian Reservation  
Dunn County, North Dakota*

The U.S. Bureau of Indian Affairs (BIA) has received a proposal for land use for pipelines connecting the FBIR Black Medicine #24-21 well to the existing Arrow Phase 2E BIA 13 pipeline to transport oil, gas, and produced water to markets and approved disposal sites. The pipelines would be located on trust land originating near the northwest corner of the proposed FBIR Black Medicine #24-21 well pad, in the SE ¼ SE ¼ of Section 21, Township (T) 149 North (N), Range (R) 91 West (W), 5<sup>th</sup> Prime Meridian (P.M.), Dunn County, North Dakota (ND). The proposed pipeline would trend north through Section 21, T149N, R91W, 5<sup>th</sup> P.M., Dunn County, ND, turn northwest through Sections 16 and 17, T149N, R91W, 5<sup>th</sup> P.M., Dunn County, ND, and terminate in the NW¼ SW¼ of Section 17, T149N, R91W, 5<sup>th</sup> P.M., Dunn County, ND where it would tie into the existing Arrow Phase 2E BIA 13 pipeline (tie-in). Associated federal actions by BIA include determinations of impacts and effects regarding environmental resources for developments on tribal lands.

The potential of the proposed actions to impact the human environment is analyzed in the attached addendum to an existing EA, as required by the National Environmental Policy Act. Based on the recently completed addendum to the EA, I have determined that the proposed project will not significantly affect the quality of the human environment. No Environmental Impact Statement is required for any portion of the proposed activities.

This determination is based on the following factors:

1. Agency and public involvement solicited for the preceding NEPA document was sufficient to ascertain potential environmental concerns associated with the currently proposed project.
2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed actions and the No Action alternative.
3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species. This guidance includes the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.).
4. The proposed actions are designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.
5. Environmental justice was fully considered.
6. Cumulative effects to the environment are either mitigated or minimal.
7. No regulatory requirements have been waived or require compensatory mitigation measures.
8. The proposed projects will improve the socio-economic condition of the affected Indian community.

  
Regional Director

2/17/12  
Date

# **Notice of Availability and Appeal Rights**

Arrow Pipeline, L.L.C: Addendum to Environmental Assessment to Authorize Land Use for Pipelines Connecting the FBIR Black Medicine #24-21 Well to the Existing Arrow Phase 2E BIA 13 Pipeline

**The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to an Addendum to Authorize Land Use for Pipelines Connecting the FBIR Black Medicine #24-21 Well to the Existing Arrow Phase 2E BIA 13 Pipeline on the Fort Berthold Reservation as shown on the attached map. Construction by Arrow Pipeline, L.L.C. is expected to begin in 2012.**

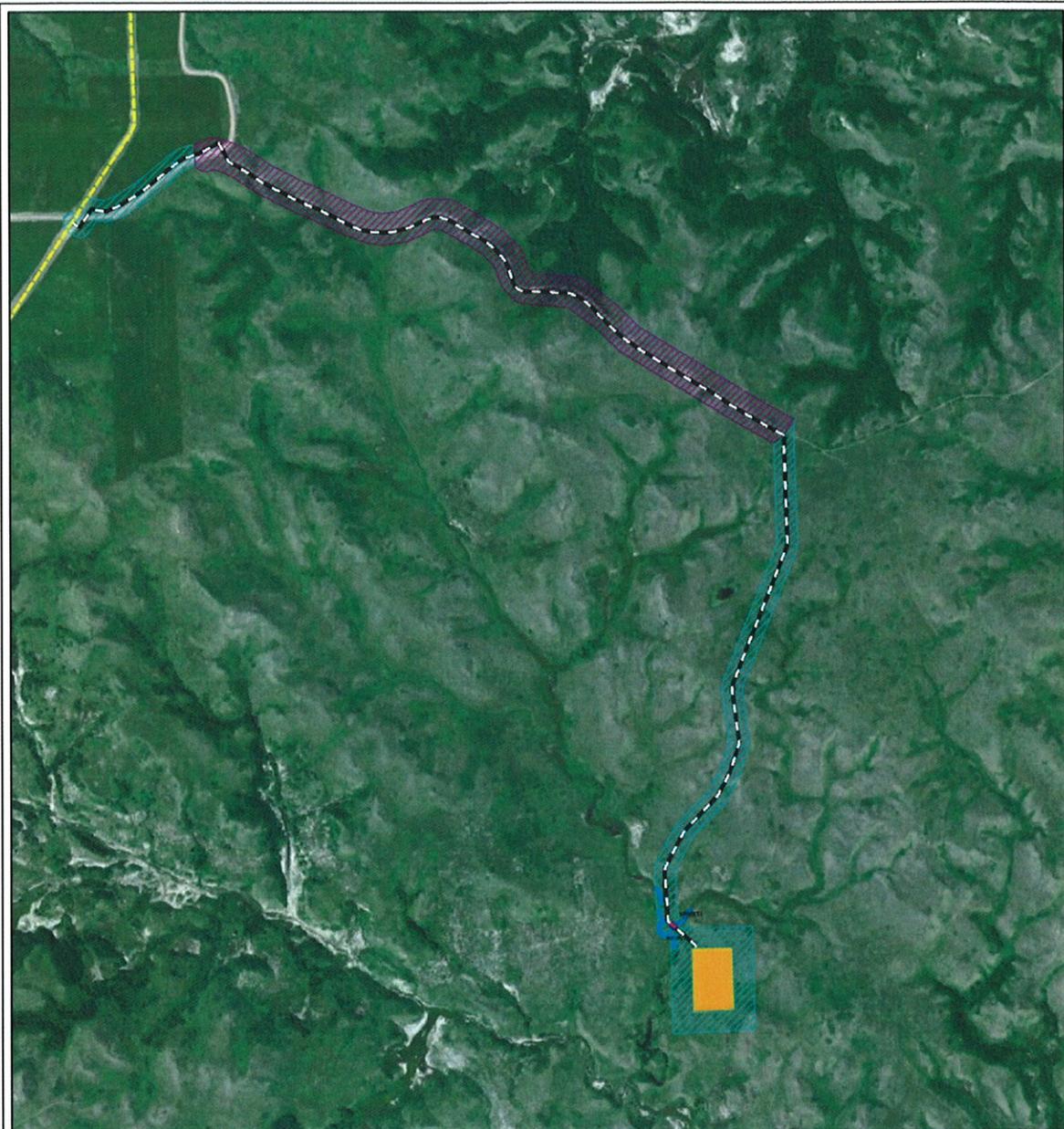
**An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Earl Silk, Superintendent at 701-627-4707 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).**

**The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA's decision to proceed with administrative actions *can* be appealed until March 18, 2012, by contacting:**

**United States Department of the Interior  
Office of Hearings and Appeals  
Interior Board of Indian Appeals  
801 N. Quincy Street, Suite 300, Arlington, Va 22203.**

**Procedural details are available from the BIA Fort Berthold Agency at 701-627-4707.**

**Project locations.**



**Legend**

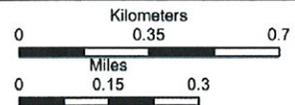
- Black Medicine #24x-21 Proposed Pipeline
- Existing Arrow Phase 2E BIA 13
- Survey Area
- Previous Survey Area
- Required Directional Drill or Bore
- 25-Foot-Wide Temporary Workspace
- Proposed Pad



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: NAIP 1-meter Aerial Imagery  
Source: ND GIS Hub  
Quadrangle: Saddle Butte, (1973)  
Township 149N & Range 91W  
Dunn County, North Dakota



Scale: 1:15,000 NAD 1983 UTM Zone 13N

**ENVIRONMENTAL ASSESSMENT  
Addendum**

**United States Bureau of Indian Affairs**

**Great Plains Regional Office  
Aberdeen, South Dakota**



**Arrow Pipeline, L.L.C**

**Addendum to Environmental Assessment to Authorize Land Use for Pipelines  
Connecting the FBIR Black Medicine #24-21 Well to the Existing Arrow Phase 2E BIA  
13 Pipeline**

**Fort Berthold Indian Reservation**

**February 2012**

For information contact:  
Bureau of Indian Affairs, Great Plains Regional Office  
Division of Environment, Safety and Cultural Resources Management  
115 4th Avenue SE, Aberdeen, South Dakota 57401  
(605) 226-7656

*Addendum to Environmental Assessment to Authorize Land Use for Pipelines Connecting the  
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*Addendum to Environmental Assessment to Authorize Land Use for Pipelines Connecting the  
FBIR Black Medicine #24-21 Well to the Existing Arrow Phase 2E BIA 13 Pipeline  
(February 2012)*

## **1. Purpose and Need for the Proposed Action**

The purpose of the proposed action is to authorize the land use by Arrow Pipeline, LLC (Arrow) for the construction and installation of three pipelines including one oil pipeline, one gas pipeline, and one produced water pipeline. As proposed, the FBIR Black Medicine #24-21 pipeline system (pipelines) would transport oil, gas, and produced water to markets and approved disposal sites. A buried electrical line may be installed within the approved right-of-way (ROW) in the future.

Developments have been proposed on land held in trust by the United States in Dunn County, North Dakota, where the Bureau of Indian Affairs (BIA) is the surface management agency for potentially affected individual allotments. The economic development of available resources and associated BIA actions are consistent with BIA's general mission. Leasing and development of mineral resources offers substantial economic benefits to the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nations and to individual tribal members.

## **2. Authorities**

Oil and gas exploration and development activities are conducted under authority of the Indian Mineral Leasing Act of 1938 (25 United States Code [USC] 396a, et seq.), the Indian Mineral Development Act of 1982 (25 USC 2101, et seq.), and the Energy Policy Act of 2005 (42 USC 15801, et seq.).

## **3. Legal Land Description for Proposed Action**

The pipelines would be located on trust land originating near the northwest corner of the proposed FBIR Black Medicine #24-21 well pad (well pad), in the SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  of Section 21, Township (T) 149 North (N), Range (R) 91 West (W), 5<sup>th</sup> Prime Meridian (P.M.), Dunn County, North Dakota (ND). The proposed pipeline would trend north through Section 21, T149N, R91W, 5<sup>th</sup> P.M., Dunn County, ND, turn northwest through Sections 16 and 17, T149N, R91W, 5<sup>th</sup> P.M., Dunn County, ND, and terminate in the NW $\frac{1}{4}$  SW $\frac{1}{4}$  of Section 17, T149N, R91W, 5<sup>th</sup> P.M., Dunn County, ND where it would tie into the existing Arrow Phase 2E BIA 13 pipeline (tie-in). A depiction of the overall proposed alignment is shown in Figure 1.

## **4. Scope of Work for Proposed Action**

Oil, gas, and produced water pipelines would be buried in either two 2.5-foot-wide trenches, spaced 5.0 feet apart, or one 5.0-foot-wide trench. Oil and gas pipelines would be no greater than 8 inches in diameter and constructed of new steel. The produced water pipeline would also be no greater than 8 inches in diameter and constructed of Fiberspar<sup>®</sup> or similar corrosion resistant material. All of the construction disturbances would occur within a 120-foot-wide temporary construction ROW and permanent surface disturbance would occur within a 50-foot-wide ROW between the well pad and the tie-in.

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Approximately 13,615 feet of oil, gas, and produced water pipe would be needed to connect the FBIR Black Medicine #24-21 wells to the tie-in. Approximately 37.51 acres would be temporarily disturbed as a result of activities associated with the construction of the proposed pipeline. Pipeline plats are provided in Appendix A.

## **5. Materials Information and Corrosion Rates**

### **Steel Pipe**

Arrow proposes to construct the oil and gas pipelines using new steel pipe rated by the American Petroleum Institute (API) as 5L X52. Arrow would ensure that each steel pipe segment is coated with approximately 14 to 16 millimeters of fusion bonded epoxy coating. Further, Arrow would deploy an active cathodic protection system for all steel pipe, which further reduces the likelihood of external corrosion. Arrow would ensure that each steel pipe segment is allotted a 1/16-inch corrosion allowance; however, because of the non-corrosive nature of Bakken crude and the low concentrations of hydrogen sulfide, Arrow does not anticipate any external or internal corrosion during the operating lifetime of the pipe, which, at a minimum, is estimated to be 50 years.

### **Fiberspar® or Similar Pipe**

Arrow proposes to construct the produced water pipeline using a material known as Fiberspar or one with the same corrosion resistant characteristics as Fiberspar. This type of material is not subject to internal or external corrosion.

## **6. Spill Response Plan**

Arrow has developed a Spill Response Plan (Plan) (Middick 2011<sup>1</sup>) for the Phase 2 East BIA 13 pipeline. The spill preventative measures and monitoring protocols, notification procedures, spill detection and on-scene spill mitigation procedures, response activities, contacts, training and drill procedures, and response plan review and update procedures, as referenced in the Plan, apply to the proposed pipelines. A copy of the Plan has been filed with the BIA and Arrow has legally committed to adhering to the procedures and requirements as defined by federal law (Title 49 Code of Federal Regulations [CFR] 194). Arrow has committed to submitting a spill response plan, specific to this proposed project, to the BIA prior to the commencement of construction activities.

## **7. Pipeline Marking Procedures**

Arrow adheres to the requirements of 49 CFR 192.707 with regard to the marking of buried pipelines. Specifically, Arrow would place pipeline markers within 1,000 feet of one another, at all public road crossings, railroad crossings, creek crossings, fence crossings, and at all points of major direction change.

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<sup>1</sup> Middick, Andy. 2011. *Operations Monitoring and Spill Response Plan*. Blackshare Environmental Solutions. Oklahoma City, Oklahoma.

## **8. Quality Control/Quality Assurance Measures**

Arrow purchases steel pipe that is rated as API 5L X52 and inspects all pipe while at the mill to ensure quality. Arrow is also present to ensure that external epoxy coating is applied to a minimum thickness of 14 millimeters. During construction, all welds are visually inspected for quality and completeness by qualified professionals. Once welds have passed visual inspection, they are subjected to 100 percent Non Destructive Testing. After passing these tests, the weld areas are covered for corrosion protection. After the weld areas have been covered, the external coating of the pipe is inspected using a jeepmeter to detect holes and cracks. The pipe is lowered into the trench and buried. Prior to being put into service, the steel pipe is hydrotested to approximately 1.5 times the minimum design pressure of 1,180 pounds per square inch gauge (psig). The produced water pipe is designed to sustain a minimum pressure of 750 psig and is hydrotested to approximately 900 psig prior to being approved for service.

## **9. Valve Locations**

Two valves would be installed at each end of the proposed pipelines. One valve would be installed at the well location while the second valve would be installed at the proposed tie-in. The installation of two valves would allow Arrow to isolate the proposed pipelines if required.

## **10. Reclamation**

### **Interim Reclamation**

Reclamation would continue to occur over the life of the pipelines. Initial reclamation would be required after initial construction and then following any maintenance work or additions of infrastructure. Reclamation would be required before final abandonment of the decommissioned pipeline. A successful reclamation would at all times be the responsibility of the system's operator.

Trenches would be back-filled immediately after the pipe is installed and testing is complete, assuming frozen or saturated soils are not present. Back-fill piles would be stored opposite of the topsoil piles during construction. If construction is to occur during winter, Arrow would partially fill the trench with useable, non-frozen, back-fill soil to the extent possible and cover the entire ROW including the trench with straw. The trench would be back-filled and topsoil distributed as soon as practicable after the soil has defrosted. Topsoil piles would be covered to eliminate the potential for rill erosion and subsequent loss of soil during spring snow melt and precipitation events.

Applicable short- and long-term best management practices would be used to minimize and control erosion in disturbed areas. To reduce compaction, the ROW would be plowed before the stockpiled topsoil is distributed.

The disturbed areas would be reclaimed and contoured as soon as possible after construction is complete (fall/spring). The ROW would be covered with stockpiled topsoil and reseeded

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with a seed mixture determined by the BIA. Arrow would control noxious weeds within the ROW and other applicable facilities by approved chemical or mechanical methods. If seeding of the ROW does not occur due to growing season constraints, Arrow will deploy approved weed-free hay across the entire ROW. The presence of hay across the ROW will reduce the potential for excessive erosion as a result of spring snow melt and precipitation.

The entire ROW would be monitored for erosion, subsidence, and noxious weeds. In areas where problems are found to occur, reclamation efforts would continue until the BIA feels the ROW is successfully reclaimed. Reclamation is considered successful when:

- seeded areas are established;
- adjacent vegetative communities spread back into the disturbed areas; and
- noxious weeds are under control.

If after two growing seasons the new seeding is not successful, the BIA may require additional efforts to establish vegetation. For noxious weeds, a survey was conducted on the ROW prior to the construction commencing. The BIA has developed a weed management plan to treat known or likely to occur noxious weed species.

### **Final Reclamation**

Final reclamation would occur when the pipeline is decommissioned. All disturbed areas would be reclaimed, reflecting the BIA's view of oil and gas exploration and production as temporary intrusions on the landscape. All facilities would be removed. Access roads and work areas would be leveled or backfilled as necessary, scarified, recontoured, and seeded. Exceptions to these reclamation measures might occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees. It is economically and environmentally unfeasible to excavate and remove the decommissioned pipeline. Instead it would be purged with water of any natural gas remaining in the lines and abandoned in place.

## **11. Surveys**

SWCA Environmental Consultants (SWCA) conducted natural resource surveys for threatened and endangered species and habitat, migratory birds and active nests, bald and golden eagles and nests, and wetlands/waterbodies on September 21, 2011. BIA Environmental Specialist Chris McLaughlin approved the location and proposed alignment of the pipelines on September 22, 2011. No threatened and endangered species or bald/golden eagles or nests were observed during the natural resource survey. Migratory bird habitat is prevalent in the survey area and Arrow has committed to following 1 of the 3 listed mitigation procedures in order to reduce the potential for impact on migratory birds and their nests. Either, conduct construction outside of the migratory bird breeding season (February 1st - July 15<sup>th</sup>), or regularly mow vegetation in ROW prior to February 1st and maintain through

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July 15<sup>th</sup>, or conduct a field survey for nesting migratory birds within 5 days of construction commencement.

A cultural resource inventory of this pipeline route was conducted by personnel of SWCA Environmental Consultants, using an intensive pedestrian methodology. Approximately 43.54 acres were inventoried between September 21 and November 11, 2011 (Leroy et al. 2011). One previously recorded archaeological site was known to exist along this pipeline route that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of no historic properties affected for this undertaking, as the archaeological site will be avoided. This determination was communicated to the THPO on January 10, 2011; however the THPO did not respond within the allotted 30 day comment period.

Leroy, Adam, Carolyn Riordan and Martin Sherman  
(2011) A Class I and Class III Cultural Resource Inventory of the FBIR Black Medicine #24x-21 Gathering Pipeline, Fort Berthold Indian Reservation, Dunn County, North Dakota. SWCA Environmental Consultants for Arrow Pipeline, LLC, Tulsa, OK.

## **12. Potential Effects**

Potential direct impacts to cultural resource sites would occur as a result of disturbance and/or the loss of sites eligible for the National Register of Historic Places. All potential impacts as a result of the proposed action were mitigated via field survey and subsequent avoidance of any eligible cultural resource sites within the proposed ROW.

Potential direct impacts to natural resources may include the loss of native vegetation and wildlife habitat, soil disturbance, and erosion during construction that may adversely affect air and water quality. Impacts would be mitigated by using best management practices during construction to minimize disturbance. Once construction activities are completed, reclamation would take place within 6 months and would include the return of topsoil and contouring, and seeding of native vegetation.

Potential indirect impacts include noise and other disturbances to wildlife during construction and the introduction of noxious weeds. Impacts would be mitigated through avoidance of any federally listed threatened or endangered species or wetlands, avoidance of nesting migratory birds, implementing best management practices to control the introduction of noxious weeds, and minimizing the length of time between trenching, pipeline burial, and reclamation. These mitigation measures are consistent with the approved National Environmental Policy Act (NEPA) document, which received a finding of no significant impact (FONSI) (September 2010).

## **13. Conditions of Approval**

Arrow has agreed to complete the following actions in order to avoid impact to sensitive natural and cultural resources:

*Addendum to Environmental Assessment to Authorize Land Use for Pipelines Connecting the  
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- NRWET1 as shown in Figure 2 must be crossed through the use of a bore or horizontal directional drill.
- NRSTR1 as shown in Figure 2 must be avoided. In order to adequately avoid impact, the temporary workspace that parallels NRSTR1 must be restricted to a width no greater than 25 feet. Therefore, the overall construction ROW through this area would not exceed a total width of 85 feet.
- All woody-stemmed vegetation with a trunk diameter at breast height of 3 inches or greater must be mulched and mixed with the topsoil.
- The width of the construction ROW must be reduced to 50 feet for a linear distance of 150 feet adjacent to the cultural site, so that all construction activities remain approximately 85 feet from the boundary of site 32DU1661
- The cultural site must be fenced and monitored by a qualified archeological monitor during ground-disturbing activities adjacent to the site.

#### **14.Applicable National Environmental Policy Act (NEPA) Document(s)**

- *Environmental Assessment and Finding of No Significant Impact: Arrow Pipeline, LLC Phase 2E BIA 13 Pipeline (September 2010).*
- *Environmental Assessment and Finding of No Significant Impact: Dakota-3 E&P Company, LLC A Potential of 18 Bakken/Three Forks Exploratory Oil and Gas Wells on Three Well Pads: Lead Woman #23-14HA, #23-14HB, #23-14HW, #23-14HY/ Morsette #26-35HA, #26-35HB, #26-35HW/ Sweet Grass Woman #22-15HC, #22-15HD, #22-15HX, #22-15HZ/Sarah Yellow Wolf #22-27HC (November 2011).*

#### **15.NEPA Adequacy Criteria**

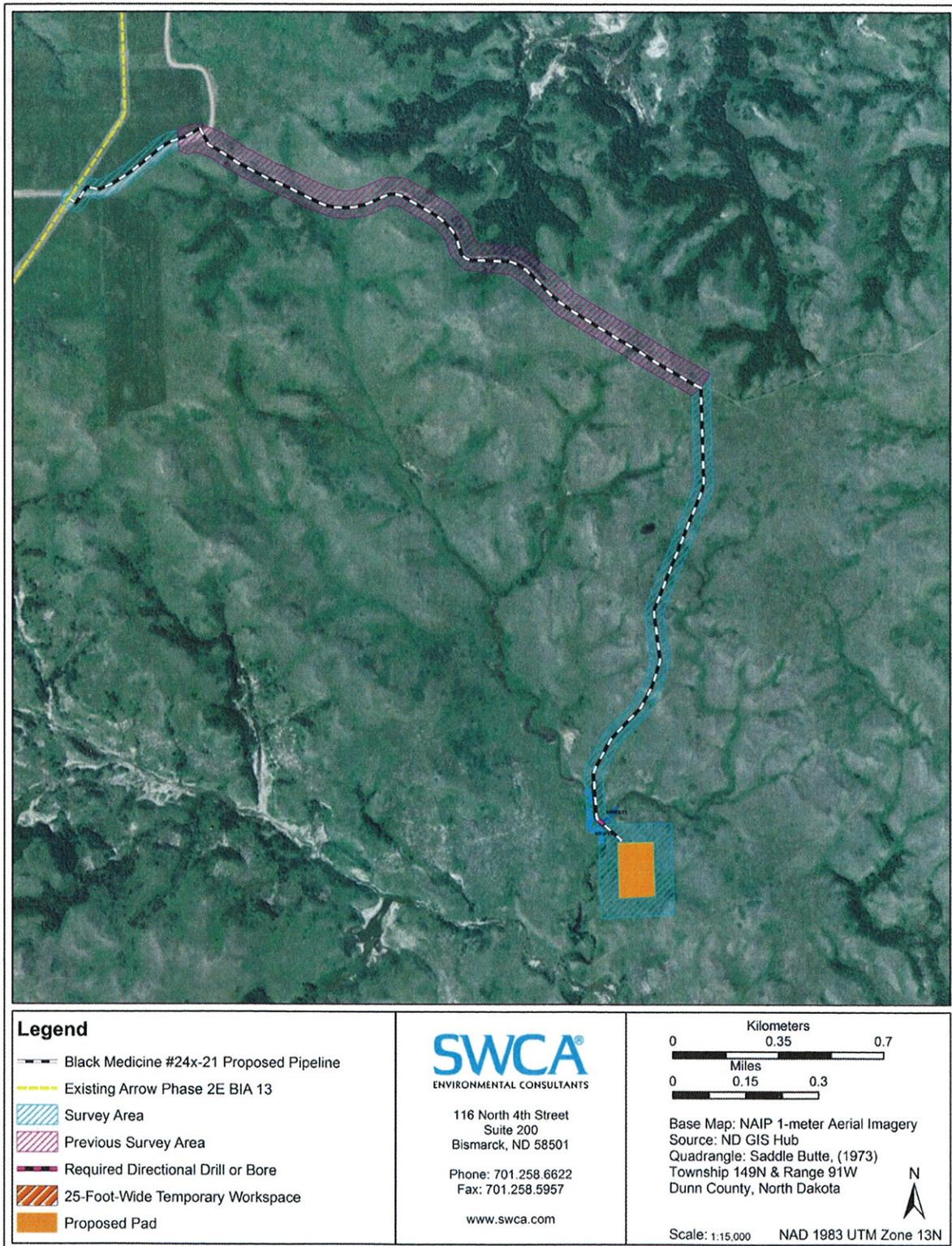
This document has identified a previously prepared NEPA document, *Environmental Assessment and Finding of No Significant Impact: Arrow Pipeline, LLC Phase 2E-BIA 13 Pipeline (September 2010) a*, which adequately describes the environmental consequences of the newly proposed action described herein, and meets the following NEPA Adequacy Criteria.

1. The proposed action is substantially the same action and at the site specifically analyzed in the existing NEPA document.
2. The range of alternatives is reasonable with respect to the current proposed action in the existing NEPA document, which appropriately considers and analyzes current environmental concerns, interests, and resource values.

*Addendum to Environmental Assessment to Authorize Land Use for Pipelines Connecting the  
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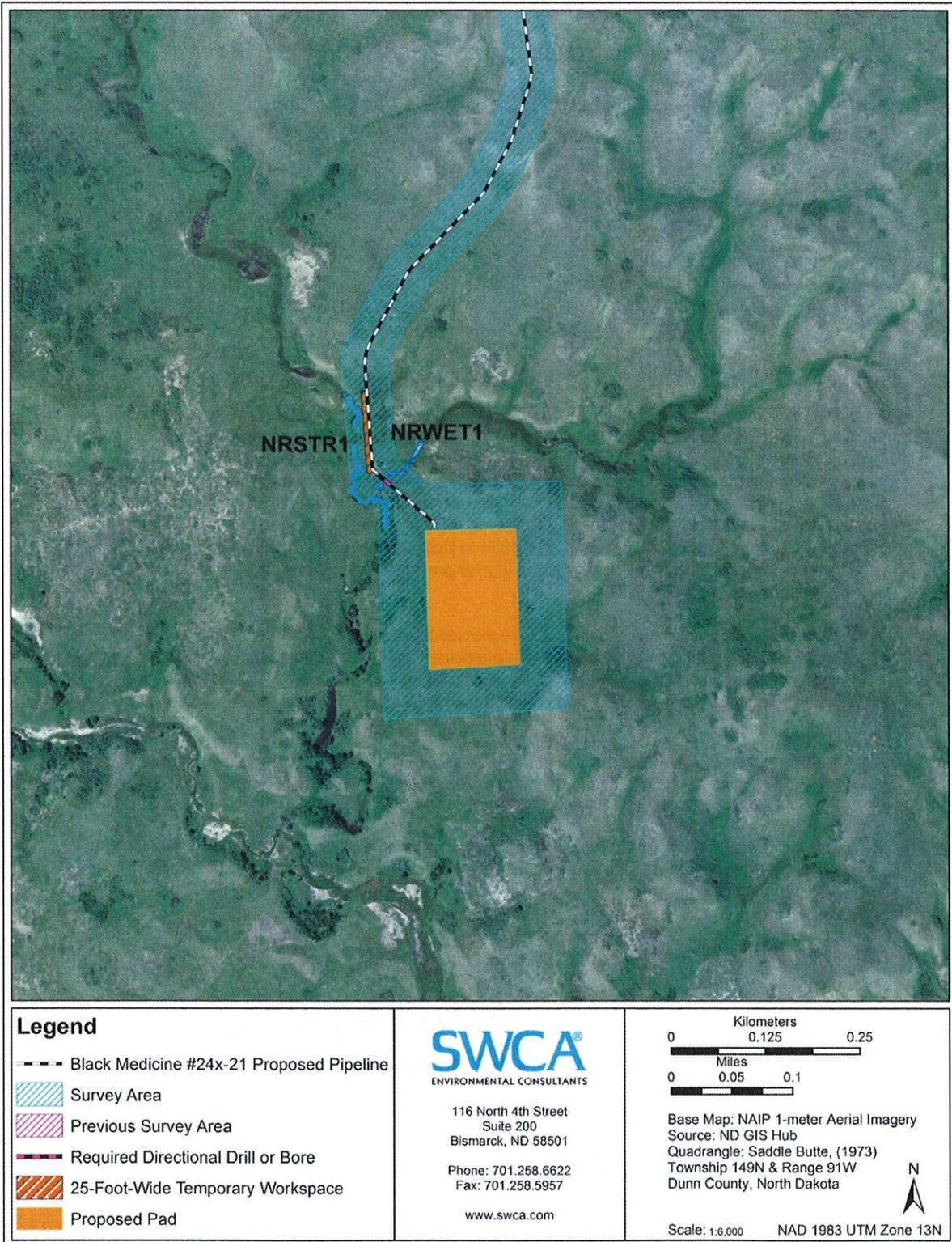
3. The existing analysis and conclusions are adequate in the existing NEPA document. The analysis is still valid in light of new studies or resource assessment information.
4. The methodology and analytical approach used in the existing NEPA document continues to be appropriate for the proposed action.
5. The direct and indirect impacts of the proposed action are unchanged from those identified in the existing NEPA document.
6. The cumulative impacts that would result from implementation of the proposed action are unchanged from those analyzed in the existing NEPA document.
7. A 30-day comment period involving public input and interagency review was used in the development of the existing NEPA document.

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**Figure 1. Proposed FBIR Black Medicine #24-21 Pipeline Alignment**

*Addendum to Environmental Assessment to Authorize Land Use for Pipelines Connecting the  
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**Figure 2. View of Natural Resource Issues and Avoidance Requirements**

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IN REPLY REFER TO:  
DESCRM  
MC-208

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS  
Great Plains Regional Office  
115 Fourth Avenue S.E., Suite 400  
Aberdeen, South Dakota 57401



JAN 10 2012

Elgin Crows Breast, THPO  
Mandan, Hidatsa and Arikara Nation  
404 Frontage Road  
New Town, North Dakota 58763

Dear Mr. Crows Breast:

We have considered the potential effects on cultural resources of an oil gathering line in Dunn County, North Dakota. Approximately 43.54 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area depicted in the enclosed report. No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. However, there is one archaeological site, 32DU1661, located along a previously inventoried section of this pipeline route which may be eligible. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for this undertaking, as the archaeological site will be avoided. Catalogued as **BIA Case Number AAO-2040/FB/12**, the proposed undertaking, location, and project dimensions are described in the following report:

Leroy, Adam, Carolyn Riordan and Martin Sherman  
(2011) A Class I and Class III Cultural Resource Inventory of the FBIR Black Medicine #24x-21 Gathering Pipeline, Fort Berthold Indian Reservation, Dunn County, North Dakota. SWCA Environmental Consultants for Arrow Pipeline, LLC, Tulsa, OK.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. We will adhere to the Standard Conditions of Compliance.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

ACTING Regional Director

Enclosure

cc: Chairman, Three Affiliated Tribes  
Superintendent, Fort Berthold Agency

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**APPENDIX A**

**Pipeline Layout and Pipeline Right-of-Way  
For FBIR Black Medicine #24-21 Pipeline**



ARROW PIPELINE, LLC

ALTERNATE PIPELINE  
RIGHT-OF-WAY  
ON TRIBAL LANDS

(For FBIR BLACKMEDICINE #24x-21)

LOCATED IN

SECTIONS 16, 17 & 21, T149N, R91W, 5th P.M.,  
DUNN COUNTY, NORTH DAKOTA

PIPELINE RIGHT-OF-WAY DESCRIPTION

A 50' WIDE RIGHT-OF-WAY 25' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

BEGINNING AT A POINT IN THE SE 1/4 SW 1/4 OF SECTION 21, T149N, R91W, 5th P.M., WHICH BEARS N61°04'18"W 1356.09' FROM THE SOUTH 1/4 CORNER OF SAID SECTION 21, THENCE N00°05'12"W 19.98'; THENCE N44°58'57"W 40.05'; THENCE N47°23'15"W 315.18'; THENCE N01°58'56"W 39.99'; THENCE N02°20'51"W 430.31'; THENCE N09°58'44"E 40.07'; THENCE N22°01'00"E 39.89'; THENCE N30°01'48"E 358.32'; THENCE N42°01'53"E 40.20'; THENCE N45°52'37"E 435.81'; THENCE N29°49'56"E 259.11'; THENCE N19°36'03"E 273.68'; THENCE N09°05'45"E 23.12' TO A POINT ON THE NORTH LINE OF THE NE 1/4 SW 1/4 OF SAID SECTION 21, WHICH BEARS N89°44'08"E 1955.41' FROM THE WEST 1/4 CORNER OF SAID SECTION 21, THENCE N09°05'45"E 16.85'; THENCE N05°53'38"W 483.29'; THENCE N01°55'39"E 39.98'; THENCE N13°59'36"E 39.97'; THENCE N23°37'09"E 811.55' TO A POINT ON THE NORTH LINE OF THE SE 1/4 NW 1/4 OF SAID SECTION 21, WHICH BEARS N59°22'28"E 2608.44' FROM THE WEST 1/4 CORNER OF SAID SECTION 21, THENCE N23°37'09"E 600.57'; THENCE N11°40'15"E 40.15'; THENCE N00°00'16"E 730.59' TO A POINT ON THE NORTH LINE OF THE NE 1/4 NW 1/4 OF SAID SECTION 21, WHICH BEARS S89°36'23"W 134.71' FROM THE NORTH 1/4 CORNER OF SAID SECTION 21, THENCE N00°00'16"E 315.49'; THENCE N60°48'28"W 116.91'; THENCE N58°35'48"W 255.19'; THENCE N57°44'41"W 207.20'; THENCE N54°44'43"W 261.36'; THENCE N59°23'40"W 208.86'; THENCE N56°48'18"W 362.94' TO A POINT ON THE WEST LINE OF THE SE 1/4 SW 1/4 OF SECTION 16, T149N, R91W, 5th P.M., WHICH BEARS N50°21'30"E 1707.19' FROM THE SOUTHWEST CORNER OF SAID SECTION 16, THENCE N56°48'18"W 264.58'; THENCE N52°14'52"W 148.73' TO A POINT ON THE NORTH LINE OF THE SW 1/4 SW 1/4 OF SAID SECTION 16, WHICH BEARS N36°21'48"E 1645.49' FROM THE SOUTHWEST CORNER OF SAID SECTION 16, THENCE N52°14'52"W 8.51'; THENCE N47°06'38"W 109.54'; THENCE N43°03'00"W 363.97'; THENCE N53°58'48"W 94.77'; THENCE N6°01'50"W 90.97'; THENCE N84°35'57"W 313.23'; THENCE N69°20'10"W 121.45'; THENCE N89°16'51"W 61.08' TO A POINT ON THE WEST LINE OF THE NW 1/4 SW 1/4 OF SAID SECTION 16, WHICH BEARS S00°18'15"E 822.59' FROM THE WEST 1/4 CORNER OF SAID SECTION 16, THENCE N69°16'51"W 7.37'; THENCE N41°17'07"W 70.21'; THENCE N14°40'47"W 161.86'; THENCE N23°28'01"W 92.91'; THENCE N40°38'35"W 143.97'; THENCE N49°05'34"W 71.94'; THENCE N54°59'42"W 65.14' TO A POINT IN THE NE 1/4 SE 1/4 OF SECTION 17, T149N, R91W, 5th P.M., WHICH BEARS S44°42'43"W 466.74' FROM THE EAST 1/4 CORNER OF SAID SECTION 17, THENCE N54°59'42"W 33.75'; THENCE N59°48'29"W 128.14'; THENCE N56°20'32"W 152.36'; THENCE N61°09'46"W 96.05'; THENCE N70°11'55"W 44.28'; THENCE N83°59'36"W 45.03'; THENCE S85°48'19"W 42.68'; THENCE S73°31'31"W 72.30'; THENCE S65°50'49"W 102.28'; THENCE S69°31'57"W 109.09'; THENCE S77°54'49"W 111.96'; THENCE S86°48'51"W 111.37'; THENCE N85°16'26"W 27.10' TO A POINT ON THE WEST LINE OF THE NE 1/4 SE 1/4 OF SAID SECTION 17, WHICH BEARS S80°10'37"W 1338.91' FROM THE EAST 1/4 CORNER OF SAID SECTION 17, THENCE N85°16'26"W 78.87'; THENCE N76°55'32"W 110.23'; THENCE N65°57'31"W 109.58'; THENCE N61°12'10"W 302.18' TO A POINT ON THE NORTH LINE OF THE NW 1/4 SE 1/4 OF SAID SECTION 17, WHICH BEARS S89°47'32"W 1870.15' FROM THE EAST 1/4 CORNER OF SECTION 17, THENCE N64°46'51"W 273.38'; THENCE N61°01'18"W 362.46'; THENCE N55°04'50"W 207.30'; THENCE N57°49'23"W 45.23' TO A POINT ON THE WEST LINE OF THE SW 1/4 NE 1/4 OF SAID SECTION 17, WHICH BEARS N80°47'59"W 2677.24' FROM THE EAST 1/4 CORNER OF SECTION 17, THENCE N57°49'23"W 135.16'; THENCE N26°42'40"W 203.03'; THENCE S63°18'50"W 192.92'; THENCE S73°07'53"W 171.98'; THENCE S60°58'43"W 94.98'; THENCE S51°42'37"W 192.04'; THENCE S53°18'25"W 237.26'; THENCE S58°50'12"W 239.30'; THENCE S68°32'41"W 156.39' TO A POINT ON THE WEST LINE OF THE SE 1/4 NW 1/4 OF SAID SECTION 17, WHICH BEARS N86°41'45"E 1370.48' FROM THE WEST 1/4 CORNER OF SAID SECTION 17, THENCE N78°59'08"W 140.81'; THENCE S35°00'41"W 120.85' TO A POINT ON THE SOUTH LINE OF THE SW 1/4 NW 1/4 OF SAID SECTION 17, WHICH BEARS N89°47'32"E 1110.74' FROM THE WEST 1/4 CORNER OF SAID SECTION 17, THENCE S35°00'41"W 87.39'; THENCE N64°44'05"W 79.96' TO A POINT IN THE NW 1/4 SW 1/4 OF SAID SECTION 17, WHICH BEARS S88°46'11"E 995.54' FROM THE WEST 1/4 CORNER OF SECTION 17. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANITOR'S PROPERTY LINES. BASIS OF BEARINGS IS A G.P.S. OBSERVATION. CONTAINS 15.627 ACRES MORE OR LESS.

RIGHT-OF-WAY LENGTHS

PROPERTY OWNER	FEET	ACRES	RODS
672A	2315.70	2.658	140.35
1577	1391.74	1.597	84.35
1813	1371.30	1.574	83.11
663A	1727.96	1.983	104.72
661A-A	1026.71	1.179	62.22
1187	1163.51	1.336	70.52
661A-F	1076.38	1.236	65.24
661A-E	600.87	0.690	36.42
1179	888.36	1.020	53.84
1178	1623.05	1.863	98.37
1173	261.66	0.300	15.86
1170	167.35	0.192	10.14
TOTAL	13614.59	15.627	825.13

CERTIFICATE

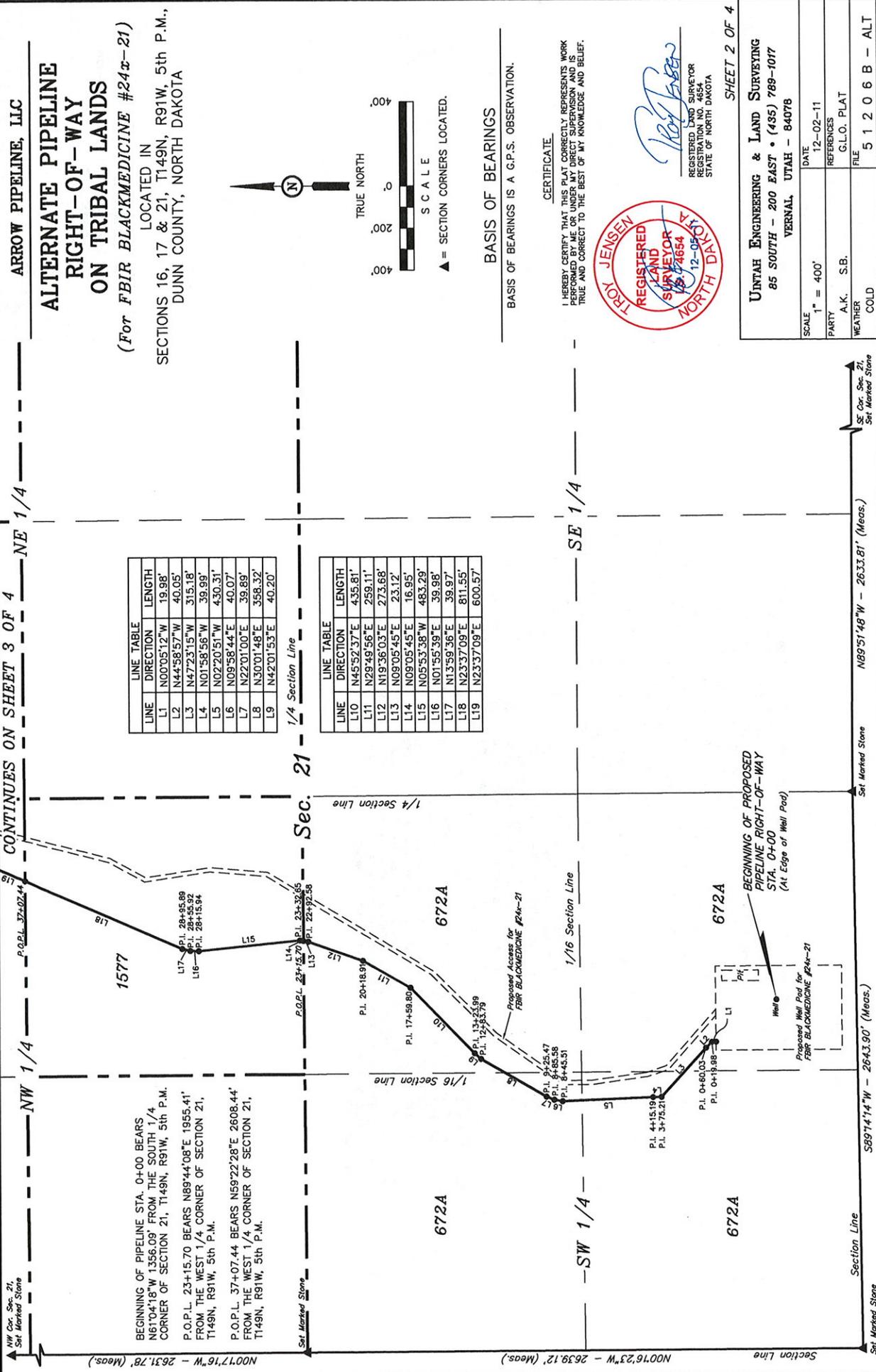
I HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



*Troy Jensen*  
REGISTERED LAND SURVEYOR  
NO. 44654  
STATE OF NORTH DAKOTA

SHEET 1 OF 4

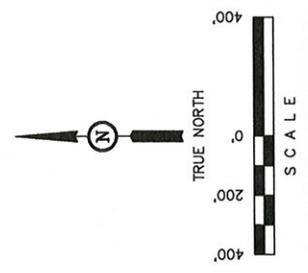
UNTAH ENGINEERING & LAND SURVEYING 85 SOUTH - 200 EAST • (485) 789-1017	
VERNAL, UTAH - 84078	
SCALE 1" = 400'	DATE 12-02-11
PARTY A.K. S.B.	REFERENCES G.L.O. PLAT
WEATHER COLD	FILE 5 1 2 0 6 A - ALT



ARROW PIPELINE, LLC  
**ALTERNATE PIPELINE  
 RIGHT-OF-WAY  
 ON TRIBAL LANDS**  
 (For FBIR BLACKMEDICINE #24x-21)  
 LOCATED IN  
 SECTIONS 16, 17 & 21, T149N, R91W, 5th P.M.,  
 DUNN COUNTY, NORTH DAKOTA

LINE	DIRECTION	LENGTH
L1	N00°05'12"W	19.98'
L2	N44°58'57"W	40.05'
L3	N47°23'15"W	315.18'
L4	N01°58'56"W	39.99'
L5	N02°20'51"W	430.31'
L6	N09°58'44"E	40.07'
L7	N22°01'00"E	39.89'
L8	N30°01'48"E	358.32'
L9	N42°01'53"E	40.20'

LINE	DIRECTION	LENGTH
L10	N45°52'37"E	435.81'
L11	N29°49'56"E	259.11'
L12	N19°36'03"E	273.68'
L13	N09°05'45"E	23.12'
L14	N09°05'45"E	16.95'
L15	N05°53'38"W	483.29'
L16	N01°55'39"E	39.98'
L17	N13°59'36"E	39.97'
L18	N23°37'09"E	811.55'
L19	N23°37'09"E	600.57'



**BASIS OF BEARINGS**  
 BASIS OF BEARINGS IS A G.P.S. OBSERVATION.

**CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK  
 PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION AND IS  
 TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



SHEET 2 OF 4

SCALE	1" = 400'	DATE	12-02-11
PARTY	A.K. S.B.	REFERENCES	G.L.O. PLAT
WEATHER	COLD	FILE	5 1 2 0 6 B - ALT

**UNTAH ENGINEERING & LAND SURVEYING**  
 85 SOUTH • 200 EAST • (435) 789-1017  
 VERNAL, UTAH - 84078

NW Cor. Sec. 21, Set Marked Stone  
 CONTINUES ON SHEET 3 OF 4  
 NW 1/4  
 BEGINNING OF PIPELINE STA. 0+00 BEARS  
 N61°04'18"W 1356.09' FROM THE SOUTH 1/4  
 CORNER OF SECTION 21, T149N, R91W, 5th P.M.  
 P.O.P.L. 23+15.70 BEARS N89°44'08"E 1955.41'  
 FROM THE WEST 1/4 CORNER OF SECTION 21,  
 T149N, R91W, 5th P.M.  
 P.O.P.L. 37+07.44 BEARS N59°22'28"E 2608.44'  
 FROM THE WEST 1/4 CORNER OF SECTION 21,  
 T149N, R91W, 5th P.M.

Sec. 21

SE 1/4

SE Cor. Sec. 21,  
 Set Marked Stone

Section Line  
 NW 1/4  
 NE 1/4  
 SW 1/4  
 SE 1/4  
 Section Line  
 N89°51'48"W - 2633.81' (Meas.)  
 Section Line  
 S89°14'14"W - 2643.90' (Meas.)  
 Section Line  
 N00°16'23"W - 2639.12' (Meas.)  
 Section Line  
 N00°17'16"W - 2631.78' (Meas.)

ARROW PIPELINE, LLC  
ALTERNATE PIPELINE  
RIGHT-OF-WAY  
ON TRIBAL LANDS  
(For FBIR BLACKMEDICINE #24x-21)

LOCATED IN  
SECTIONS 16, 17 & 21, T149N, R91W, 5th P.M.,  
DUNN COUNTY, NORTH DAKOTA

1/4 Section Line - Sec. 16

P.O.P.L. 37+07.44 BEARS N59°22'28"E 2608.44' FROM THE WEST 1/4 CORNER OF SECTION 21, T149N, R91W, 5th P.M.

P.O.S.L. 50+78.74 BEARS S89°36'23"W 134.71' FROM THE NORTH 1/4 CORNER OF SECTION 21, T149N, R91W, 5th P.M.

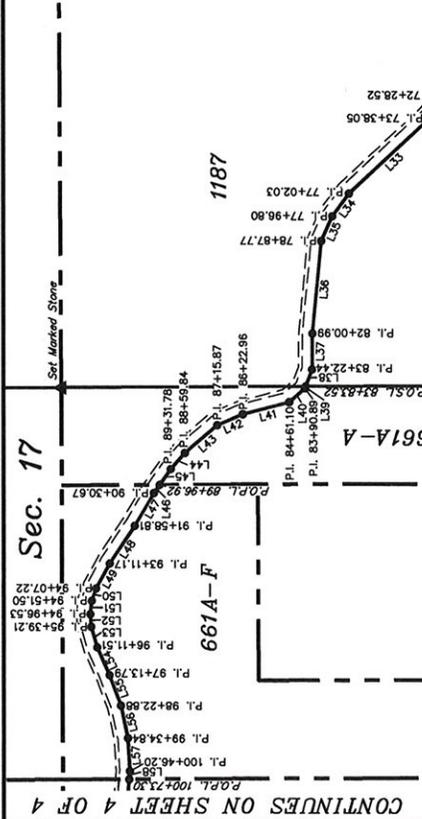
P.O.P.L. 68+08.70 BEARS N50°21'30"E 1707.19' FROM THE SOUTHWEST CORNER OF SECTION 16, T149N, R91W, 5th P.M.

P.O.P.L. 72+20.01 BEARS N36°21'48"E 1645.49' FROM THE SOUTHWEST CORNER OF SECTION 16, T149N, R91W, 5th P.M.

P.O.S.L. 83+83.52 BEARS S00°18'15"E 822.59' FROM THE WEST 1/4 CORNER OF SECTION 16, T149N, R91W, 5th P.M.

P.O.P.L. 89+96.92 BEARS S44°42'43"W 466.74' FROM THE EAST 1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.

P.O.P.L. 100+73.30 BEARS S80°10'37"W 1338.91' FROM THE EAST 1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.



BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.

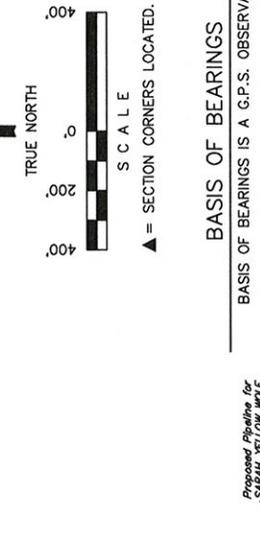
CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

TOY JENSEN  
REGISTERED  
LAND  
SURVEYOR  
18-04654  
12-05-2012  
NORTH DAKOTA

UNYAH ENGINEERING & LAND SURVEYING  
85 SOUTH - 200 EAST • (495) 789-1017  
VERNAL, UTAH - 84078

SCALE 1" = 400'  
PARTY 12-02-11  
REFERENCES G.L.O. PLAT  
A.K. S.B.  
WEATHER FILE 51206C - ALT



LINE	DIRECTION	LENGTH
L47	N59°48'29"W	128.14'
L48	N56°20'32"W	152.36'
L49	N61°09'46"W	96.05'
L50	N70°11'55"W	44.28'
L51	N83°59'36"W	45.03'
L52	S85°48'19"W	42.68'
L53	S73°31'31"W	72.30'
L54	S65°50'49"W	102.28'
L55	S89°31'57"W	109.09'
L56	S77°54'49"W	111.96'
L57	S86°48'51"W	111.37'
L58	N85°16'26"W	27.10'
L59	N85°16'26"W	78.87'
L60	N76°55'32"W	110.23'

LINE	DIRECTION	LENGTH
L19	N23°37'09"E	600.57'
L20	N11°40'15"E	40.15'
L21	N00°00'16"E	730.59'
L22	N00°00'16"E	315.49'
L23	N60°49'28"W	116.91'
L24	N58°35'48"W	255.19'
L25	N57°44'41"W	207.20'
L26	N54°44'43"W	261.36'
L27	N59°23'40"W	208.86'
L28	N56°48'18"W	362.94'
L29	N56°48'18"W	264.58'
L30	N52°14'52"W	148.73'
L31	N52°14'52"W	8.51'
L32	N47°06'38"W	109.54'

LINE	DIRECTION	LENGTH
L33	N43°03'00"W	363.97'
L34	N53°36'48"W	94.77'
L35	N66°01'50"W	90.97'
L36	N84°35'57"W	313.23'
L37	N89°20'10"W	121.45'
L38	N69°16'51"W	61.08'
L39	N69°16'51"W	7.37'
L40	N41°17'07"W	70.21'
L41	N14°40'47"W	161.86'
L42	N23°28'01"W	92.91'
L43	N40°38'35"W	143.97'
L44	N49°05'34"W	71.94'
L45	N54°59'42"W	65.14'
L46	N54°59'42"W	33.75'

CONTINUES ON SHEET 4 OF 4

SW 1/4

SE 1/4

NE 1/4

NW 1/4

1/16 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 17, S89°36'23"W - 2642.62' (Meas.)

1/16 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 21, N00°17'16"W - 2631.78' (Meas.)

1/4 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

1/4 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

1/4 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

1/4 Section Line

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Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

1/4 Section Line

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Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

1/4 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

1/4 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

1/4 Section Line

1/4 Section Line

Section Line

1/4 Cor. Sec. 21, S89°36'23"W - 2641.39' (Meas.)

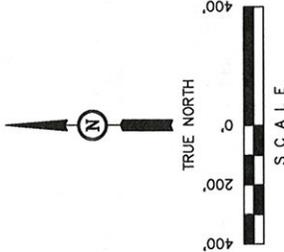
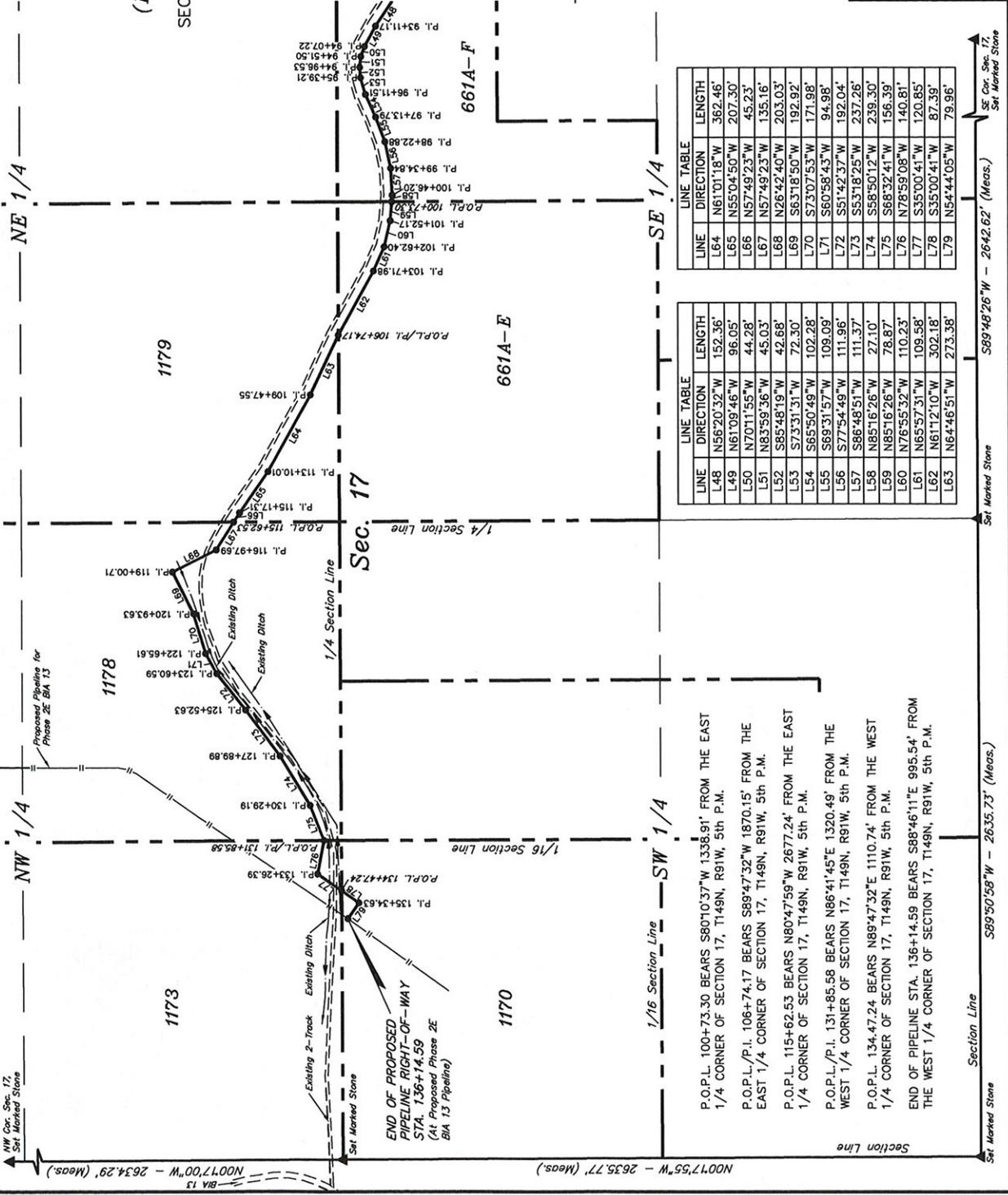
ARROW PIPELINE, LLC

**ALTERNATE PIPELINE  
RIGHT-OF-WAY  
ON TRIBAL LANDS**

(For FBIR BLACKMEDICINE #24x-21)

LOCATED IN  
SECTIONS 16, 17 & 21, T149N, R91W, 5th P.M.,  
DUNN COUNTY, NORTH DAKOTA

CONTINUED FROM SHEET 3 OF 4



BASIS OF BEARINGS  
BASIS OF BEARINGS IS A G.P.S. OBSERVATION.

CERTIFICATE  
I HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK  
PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION AND IS  
TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



REGISTERED LAND SURVEYOR  
REGISTRATION NO. 4654  
STATE OF NORTH DAKOTA

UTAH ENGINEERING & LAND SURVEYING  
85 SOUTH - 200 EAST • (435) 789-1017  
VERNAL, UTAH - 84078

SCALE 1" = 400'  
PARTY A.K. S.B.  
WEATHER COLD

DATE 12-02-11  
REFERENCES G.L.O. PLAT  
FILE 5 1 2 0 6 D - ALT

SHEET 4 OF 4

LINE	DIRECTION	LENGTH
L64	N61°01'18"W	362.46'
L65	N55°04'50"W	207.30'
L66	N57°49'23"W	45.23'
L67	N57°49'23"W	135.16'
L68	N26°42'40"W	203.03'
L69	S63°18'50"W	192.92'
L70	S73°07'53"W	171.98'
L71	S60°58'43"W	94.98'
L72	S51°42'37"W	192.04'
L73	S53°18'25"W	237.26'
L74	S58°50'12"W	239.30'
L75	S68°32'41"W	156.39'
L76	N78°59'08"W	140.81'
L77	S35°00'41"W	120.85'
L78	S35°00'41"W	87.39'
L79	N54°44'05"W	79.96'

LINE	DIRECTION	LENGTH
L48	N56°20'32"W	152.36'
L49	N61°09'46"W	96.05'
L50	N70°11'55"W	44.28'
L51	N83°59'36"W	45.03'
L52	S85°48'19"W	42.68'
L53	S73°31'31"W	72.30'
L54	S65°50'49"W	102.28'
L55	S69°31'57"W	109.09'
L56	S77°54'49"W	111.96'
L57	S86°48'51"W	111.37'
L58	N85°16'26"W	27.10'
L59	N85°16'26"W	78.87'
L60	N78°55'32"W	110.23'
L61	N65°57'31"W	109.58'
L62	N61°12'10"W	302.18'
L63	N64°46'51"W	273.38'

P.O.P.L. 100+73.30 BEARS S80°10'37"W 1338.91' FROM THE EAST  
1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.

P.O.P.L./P.I. 106+74.17 BEARS S89°47'32"W 1870.15' FROM THE  
EAST 1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.

P.O.P.L. 115+62.53 BEARS N80°47'59"W 2677.24' FROM THE EAST  
1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.

P.O.P.L./P.I. 131+85.58 BEARS N86°41'45"E 1320.49' FROM THE  
WEST 1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.

P.O.P.L. 134.47.24 BEARS N89°47'32"E 1110.74' FROM THE WEST  
1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.

END OF PIPELINE STA. 136+14.59 BEARS S88°46'11"E 995.54' FROM  
THE WEST 1/4 CORNER OF SECTION 17, T149N, R91W, 5th P.M.

Section Line  
Set Marked Stone  
S89°50'58"W - 2635.77' (Meas.)

Section Line  
Set Marked Stone  
S89°48'26"W - 2642.62' (Meas.)

Section Line  
Set Marked Stone  
S89°48'26"W - 2642.62' (Meas.)

Section Line  
Set Marked Stone  
S89°48'26"W - 2642.62' (Meas.)

ARROW PIPELINE, LLC  
FBIR BLACKMEDICINE #24x-21  
ALTERNATE PIPELINE RIGHT-OF-WAY  
SECTIONS 16, 17 & 21, T149N, R91W, 5th P.M.

TOTAL PIPELINE RIGHT-OF-WAY ON TRIBAL LANDS

TOTAL LENGTH OF RIGHT-OF-WAY IS 13614.59' OR 2.579 MILES. WIDTH OF RIGHT-OF-WAY IS 50' (25' PERPENDICULAR ON EACH SIDE OF THE CENTERLINE). CONTAINS 15.627 ACRES MORE OR LESS.

ENGINEER'S AFFIDAVIT

STATE OF MONTANA }  
COUNTY OF RICHLAND } SS

TROY JENSEN, BEING FIRST DULY SWORN DEPOSES AND STATES THAT HE IS THE REGISTERED LAND SURVEYOR, FOR ARROW PIPELINE, LLC, THAT THESE SURVEYS WERE MADE BY HIM (OR UNDER HIS SUPERVISION); THAT HE HAS EXAMINED THE FIELD NOTES OF THE SURVEYS OF THE PIPELINE RIGHT-OF-WAY AS DESCRIBED AND SHOWN ON THIS MAP, THAT THIS MAP WAS PREPARED UNDER HIS DIRECTION FROM SAID FIELD NOTES; AND THAT SAID RIGHT-OF-WAY, 2.579 MILES IN LENGTH BEGINNING AND ENDING AS SHOWN ON THIS MAP IS ACCURATELY REPRESENTED.



  
REGISTERED LAND SURVEYOR  
REGISTRATION NO. 4654  
STATE OF NORTH DAKOTA

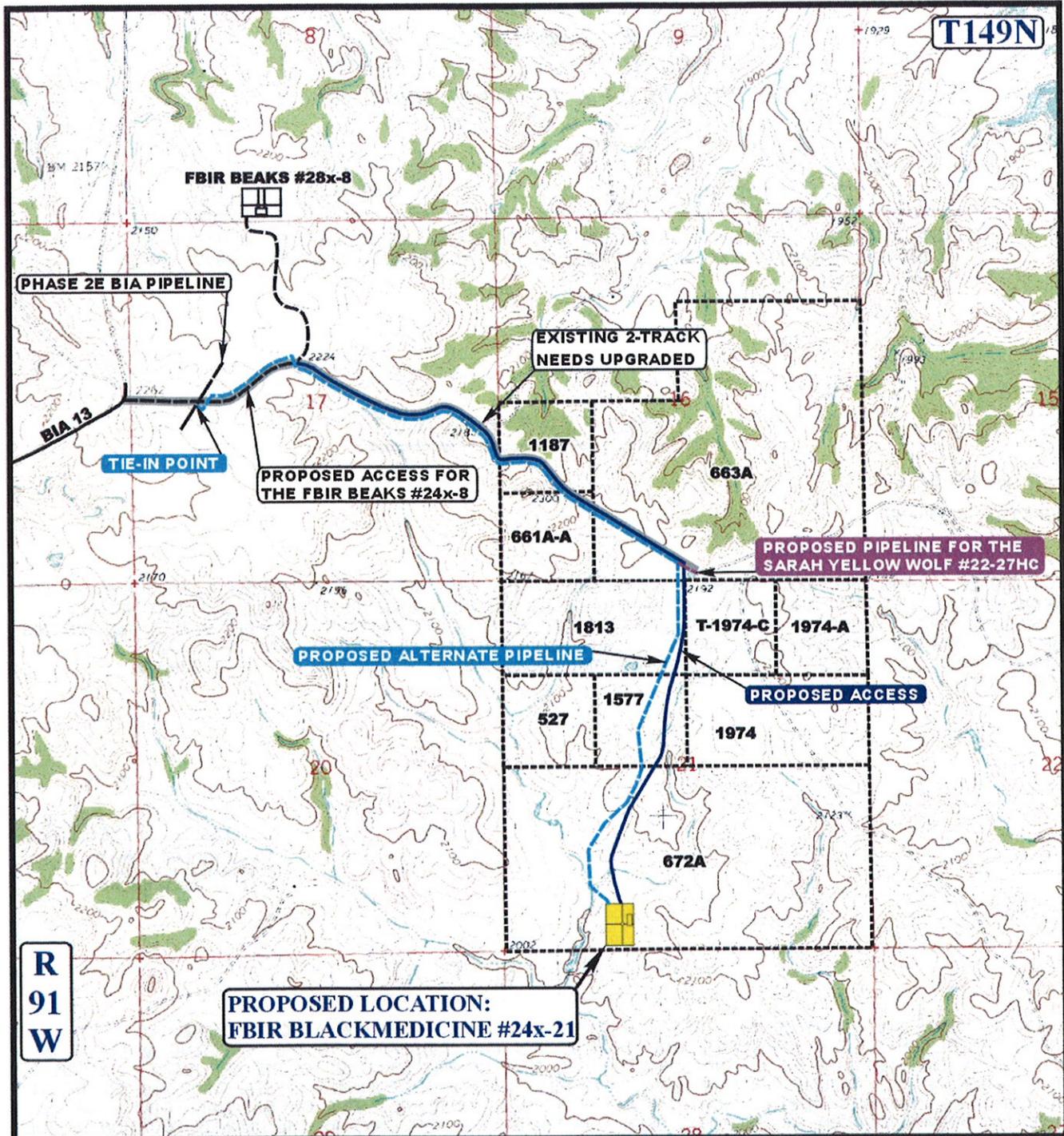
APPLICANT'S CERTIFICATE

I, JOHN M. DOLAN, DO HEREBY CERTIFY THAT I AM THE V.P. OF ENGINEERING FOR ARROW PIPELINE, LLC, HERINAFTER DESIGNATED THE APPLICANT; THAT TROY JENSEN WHO SUBSCRIBED TO THE FOREGOING AFFIDAVIT, IS EMPLOYED BY THE APPLICANT AS A LAND SURVEYOR AND THAT HE WAS DIRECTED BY THE APPLICANT TO SURVEY THE LOCATION OF THIS PIPELINE RIGHT-OF-WAY, 2.579 MILES IN LENGTH BEGINNING AT STA. 0+00 AND ENDING AT STA. 136+14.59, THAT SAID PIPELINE RIGHT-OF-WAY IS ACCURATELY REPRESENTED ON THIS MAP; THAT SUCH SURVEY AS REPRESENTED ON THIS MAP HAS BEEN ADOPTED BY THE APPLICANT AS THE DEFINITE LOCATION OF THE RIGHT-OF-WAY THEREBY SHOWN; AND THAT THE MAP HAS BEEN PREPARED TO BE FILED WITH THE SECRETARY OF THE INTERIOR OR HIS DULY AUTHORIZED REPRESENTATIVE AS PART OF THE APPLICATION FOR SAID RIGHT-OF-WAY TO BE GRANTED THE APPLICANT, ITS SUCCESSORS AND ASSIGNS, WITH THE RIGHT TO CONSTRUCT, MAINTAIN, AND REPAIR IMPROVEMENTS, THEREON AND THEREOVER, FOR SUCH PURPOSES, AND WITH THE FURTHER RIGHT IN THE APPLICANT, ITS SUCCESSORS AND ASSIGNS TO TRANSFER THIS RIGHT-OF-WAY BY ASSIGNMENT, GRANT, OR OTHERWISE.

\_\_\_\_\_  
APPLICANT

\_\_\_\_\_  
V.P. OF ENGINEERING

\_\_\_\_\_  
TITLE



APPROXIMATE TOTAL ALTERNATE PIPELINE DISTANCE = 13,615' +/-

**LEGEND:**

- PROPOSED ACCESS ROAD
- EXISTING PIPELINE
- PROPOSED PIPELINE
- PROPOSED PIPELINE (SERVICING OTHER WELLS)

ARROW PIPELINE, LLC.

**N**  
 ALTERNATE FBIR BLACKMEDICINE #24x-21  
 SECTION 21, T149N, R91W, 5th P.M.  
 380' FSL 1660' FWL

**U&Ls** Uintah Engineering & Land Surveying  
 85 South 200 East Vernal, Utah 84078  
 (435) 789-1017 \* FAX (435) 789-1813

**TOPOGRAPHIC MAP** 11 28 11  
 MONTH DAY YEAR  
 SCALE: 1" = 2000' DRAWN BY: C.I. REVISED: 00-00-00

**D**  
 TOPO