

PHMSA Response Plan

Bakken Oil Express Pipeline

Dunn & Stark County, North Dakota

Owned By: Bakken Oil Express, LLC

(701) 483-0454

Plan Date: July, 2015

Revision No. 3

07-17-2015

Prepared by

KLJ

4585 Coleman Street

Bismarck, ND 58504



OWNER/OPERATOR REVIEW AND CERTIFICATION LOG 49 CFR 194.121 and §194.107(b)

Per 49 CFR 194.121, a review and evaluation of this Response Plan is conducted at least every 5 years from the date of the last submission or last approval. In accordance with 49 CFR 194.107 (b), a review and evaluation of this Response Plan is conducted at least every year for consistency with the National Contingency Plan and Area Contingency Plans. This log is to serve as a certification of a review in accordance with 49 CFR 194.107.

I have completed review and evaluation of the Response Plan for BOE Pipeline in Dunn and Stark County, ND.			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
		<input type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	
Remarks			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
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Remarks			

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SECTION 1 BOE PIPELINE INFORMATION SUMMARY (194.113 (A))

The Bakken Oil Express Pipeline, LLC's (BOE) pipeline is located within the State of North Dakota through Dunn and Stark counties. The pipeline route is between Dickinson, ND and Killdeer, ND and carries only crude oil. The pipeline is approximately 38.3 miles (33.8 miles of 16 inch (nominal, 0.281-inch wall thickness) ERW, API-5L- X70, PSI2, B31.4, 600 # RF, and 4.5 miles 20" ERW (0.375" wall thickness) API-2, B31.4, 600 # RF steel pipe and is one response zone (Dickinson)). The transmission line also has nine mainline above ground valve sets and is divided into 8 isolation/line sections.

Pipeline Facilities With in Response Zone

BOE Pipeline, LLC

The table below lists the BOE Pipeline, LLC pipeline facilities with the Dickinson Response Zone.

TABLE 1 DICKINSON RESPONSE ZONE-BOE PIPELINE SYSTEM					
Name of Pipeline	Type of Oil	Starting Mile Post	Ending Mile Post	Counties	State
BOE Pipeline-Killdeer to Dickinson	Crude Oil	0.00	38.3	Dunn, Stark	ND

In this Section:

Name and address of the owner/operator
 Qualified Individual Response
 Line section response Zone (mile post, section station number, county, state)
 Material Transported: Crude Oil and Health Hazards
 Day-to-Day Operations and Normal Throughput
 Hazard Imposed by Spilled Material
 Zone Classification
 Spill Scenarios and Worst Probable Discharge
 OSRO Information

The Oil Pollution Act of 1990 (OPA) amended the Federal Water Pollution Control Act (FWPCA) to require facility response Plans.

The plan is intended to prepare the owner/operator of the facility to respond to an oil or hazardous substance discharge. This Response Plan (RP):

1. Implements Company Policy
2. Provides responsibilities and guidelines for personnel responding to a discharge from the BOE Pipeline
3. Helps on-scene personnel prepare for a discharge
4. Reduces chances of injury or damage to responders, the public, and the environment

5. Ensures an effective, comprehensive response
6. Defines spill detection and notification procedures to be followed once a discharge occurs
7. Outlines response and mitigation procedures for addressing a crude oil discharge
8. Identifies training and drill procedures for responders.

This written plan is intended to have flexibility based on continual assessment during an emergency. The plan can be changed during an emergency. If changes are made, they must be written down as the emergency progresses and should follow the safety plan. The written plan can be changed but is not to be ignored.

1.1 Name and address of the owner/operator:

Bakken Oil Express, LLC (Owner)

3761 115th Avenue S.W.
Dickinson, ND 58601
(701) 483-0454

Bakken Oil Express, LLC (Owner/Headquarters)

8301 East 21st N
Suite 420
Wichita, KS 67206
316-630-0287

Progress Solutions, LLC (Operator)

4585 Coleman Street
Bismarck, ND 58504
844-220-9234

1.2 Qualified Individuals (CFR 194.113(b) (2))

Table 1.2 gives the names and telephone numbers of the Qualified Individuals (QI) and Alternate Qualified Individuals available on a 24-hour basis. Qualified Individuals and Alternate Qualified Individuals in Table 1.2 have 40-hour HAZWOPER training and the required minimum requirements of OSHA 29 CFR Part 1910. This training is up-to-date.

TABLE 1.2 QUALIFIED INDIVIDUALS				
Contact Role	Agency	Response Time	Day Phone	24 Hour Phone
Qualified Individual:	Tory Neer Progress Solutions Area Manager (Bismarck)	< 2 hour	(701) 204-5109	(701) 204-5109
Qualified Individual:	Dana Rathjen Progress Solutions (Dickinson)	< 1 hour	(701) 690-6245	(701) 690-6245
Qualified Individual:	Doug Lee Progress Solutions CEO	120 minutes	(701) 250-5996	(701) 955-4230
Qualified Individual:	Chris Lewis (Dickinson) BOE General Manager	< 1 hour	(701) 483-0435	(402) 690-4742
Alternate Qualified Individual:	Brandon McDowell BOE -Director of Operations	< 8 Hours	(720) 548-3449	(303) 887-8005

1.3 Line section response zones (mile post, section station number, county, state)

The Bakken Oil Express, LLC's (BOE) pipeline is located within the State of North Dakota through Dunn and Stark counties. The pipeline route is between Dickinson, ND and Killdeer, ND and carries only crude oil. The pipeline is approximately 38.3 miles (33.8 miles of 16 inch (nominal, 0.281-inch wall thickness) ERW, API-5L- X70, PSI2, B31.4, 600 # RF, and 4.5 miles 20" ERW (0.375" wall thickness) API-2, B31.4, 600 # RF steel pipe and is one response zone (Dickinson). The transmission line also has nine mainline above ground valve sets and is divided into 8 isolation/line sections.

The pipeline has three inlets and the Rail Hub as the outlet. The BOE Pipeline receives crude oil from a truck terminal/pump station southwest of Killdeer, North Dakota (ND) near ND Highway 200 and pumps the crude oil to the BOE Rail Hub southwest of Dickinson, ND. Crude oil also enters the pipeline at the OXY interconnect 14 miles south of the truck terminal/pump station and the Belle Fourche interconnect 33.7 miles south of the truck terminal/pump station. All crude oil flow proceeds south to the BOE Rail Hub. BOE Pipeline, LLC will not own the oil in the pipeline; BOE Pipeline, LLC will maintain custody of the oil only. BOE Pipeline is a FERC regulated common carrier pipeline.

The Dickinson Response Zone/BOE pipeline crosses portions of 47 sections of predominantly rural grasslands and agricultural lands in Dunn and Stark Counties, ND. It is situated between the communities of Dickinson and Killdeer, ND. The route is characterized by rolling hills with occasional small creeks and drainages, and sparsely scattered farmsteads. Table 1.3a identifies legal description of the Dickinson Response Zone/pipeline location.

Table 1.3a			
Dickinson Response Zone/BOE Pipeline Location			
County, ND	Township	Range	Sections
Dunn	144	96	1, 12, 13, 14, 24, 25, 26, 35, 36
	143	96	1, 2, 11, 14, 23, 24, 25, 36
	142	96	1, 2, 11, 14, 23, 26, 35
	141	96	2, 3, 10, 15, 16, 21, 28, 33
Stark	140	97	1, 6, 7, 12, 13, 14, 23, 26, 27, 34
	139	97	3, 10, 11

The pipeline has nine automated mainline valves sets. The first is located at the Killdeer truck terminal and a second is at the BOE Rail Hub facility. These two valve sets have measurement devices to monitor input and output to and from the pipeline. Additionally, seven automated mainline valve sets are installed along the route. Six of these mainline valves are located on both sides of the Green River, Knife River, as well as Duck Creek to isolate the pipeline if there is a rupture or break. The Belle Fourche Interconnect mainline valve set will serve as the isolation valve set for the north side of Duck Creek. Also, the Belle Fourche interconnect will allow crude oil to enter the BOE pipeline from through a 10-inch Belle Fourche pipeline of 400 feet. The remaining mainline valve set is the OXY Interconnect. This valve set allows crude oil to enter from OXY Oil facilities to the BOE pipeline through an 8-inch OXY pipeline. OXY crude oil is transported by BOE Pipeline, LLC and metered prior to it entering the BOE pipeline. This valve set is to also be used for section isolation if necessary. BOE control room has the ability to operate the 8-inch valve from the OXY pipeline and the 10-inch valve from the Belle Fourche pipeline. These facilities meet US DOT regulations and allow for the isolation of selection segments of the pipeline. Mainline valve set areas are fenced for safety and security purposes. Additionally, the pipeline is designed to be cleaned and inspected using internal tools, such as cleaning pigs and smart pigs. Table 1.3b is identifies the line sections within the response zone. Drawing 1.2, following Table 1.3b, is a map of line sections and valves within the response zone.

Table 1.3b
Line Sections in the Dickinson Response Zone (CFR 194.113 (b) (3-4))

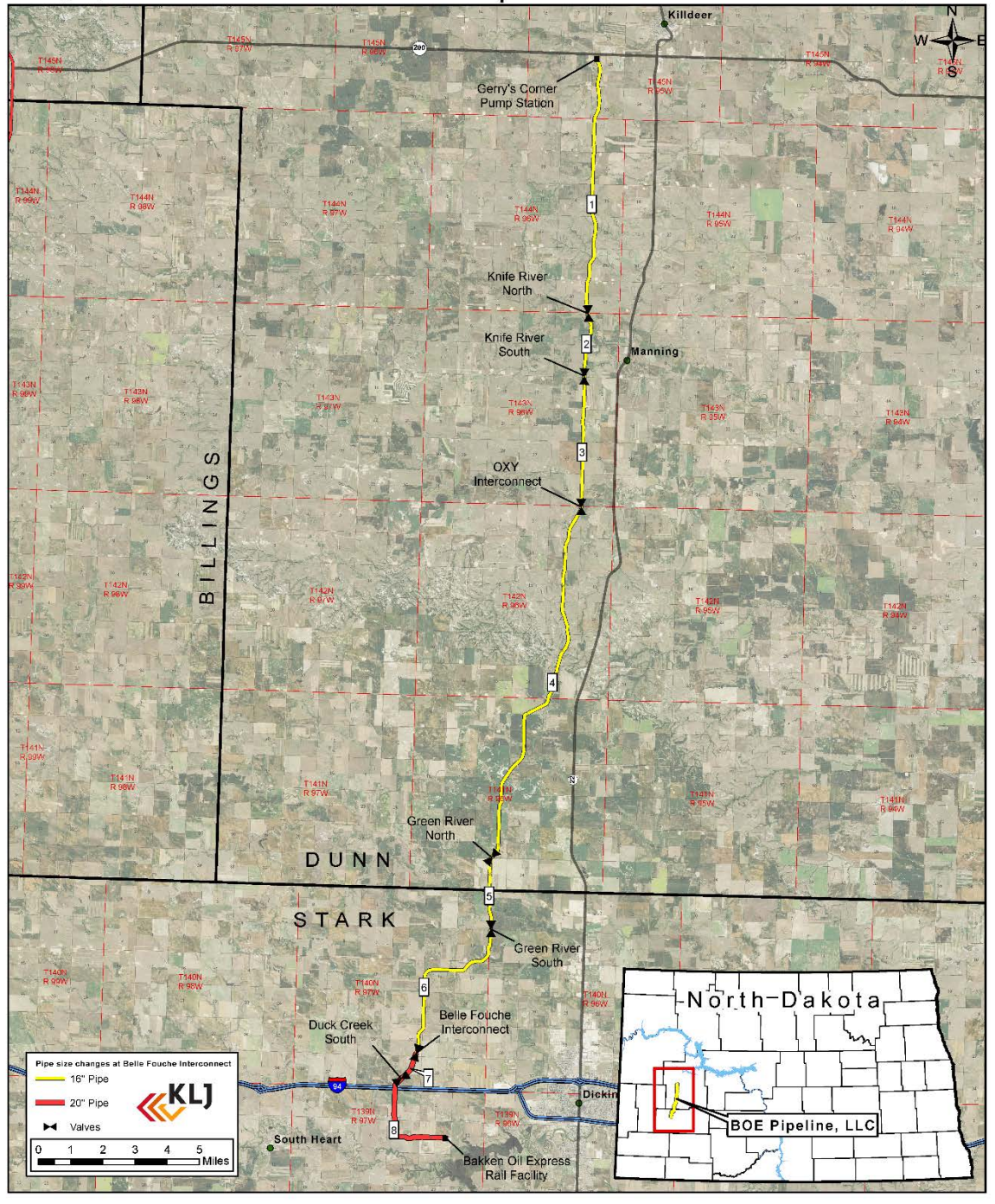
Line Section #	ISOLATION VALVES	PIPELINE LENGTH (MILES)	STATION LOCATION	COORDINATES	MILE POST	COUNTY IN NORTH DAKOTA	LEGAL DESCRIPTION
1	Pump Station	8.06	0+00	47.3555 N, 102.7982 W	0.00	Dunn	NW4NW4 S28 T145N R95W
	Knife River North		425+69	47.24106 N, 102.79925 W	8.06	Dunn	NW4NW4 S01 T143N R96W
2	Knife River North	2.01	425+69	47.24106 N, 102.79925 W	8.06	Dunn	NW4NW4 S01 T143N R96W
	Knife River South		531+60	47.21283 N, 102.80045 W	10.06	Dunn	SE4SE4 S11 T143W R96W
3	Knife River South	4.07	531+60	47.21283 N, 102.80045 W	10.06	Dunn	SE4SE4 S11 T143W R96W
	Oxy Interconnect		746+34	47.15406 N, 102.79993 W	14.14	Dunn	NE4NE4 S02 T142N R96W
4	Oxy Interconnect	11.89	746+34	47.15406 N, 102.79993 W	14.14	Dunn	NE4NE4 S02 T142N R96W
	Oxy Crude		746+34	47.15406 N, 102.79993 W	14.14	Dunn	NE4NE4 S02 T142N R96W
	Green River North		1373+89	46.96331 N, 102.851 W	26.02	Stark	SW4 SW4 S06 T140N R96W
5	Green River North	2.24	1373+89	46.96331 N, 102.851 W	26.02	Stark	SW4 SW4 S06 T140N R96W
	Green River South		1492+01	46.99558 N, 102.852 W	28.26	Stark	SW4 SE4 S28 T141N R96W
6	Green River South	5.56	1492+01	46.99558 N, 102.852 W	28.26	Stark	SW4 SE4 S28 T141N R96W
	Belle Fourche Interconnect		1785+50	46.906758 N, 102.897491 W	33.82	Stark	SE4 SE4 S27 T140N R97W
7	Belle Fourche Interconnect	0.96	1785+50	46.906758 N, 102.897491 W	33.82	Stark	SE4 SE4 S27 T140N R97W
	Duck Creek South		1836+08	46.89487 N, 102.90694 W	34.77	Stark	NE4 NW4 S34 T140W R97W
8	Duck Creek South	3.49	1836+08	46.89487 N, 102.90694 W	34.77	Stark	NE4 NW4 S34 T140W R97W
	BOE Rail Facility		2020+24	46.8687 N, 102.877 W	38.26	Stark	NE4 SE4 S11 T139N R97W

BOE Pipeline, LLC

Valves and Line Sections within Response Zone

Drawing 1.2, 9.1

April 1, 2014



1.4 Material Transported: Crude Oil and Health Hazards

Bakken Oil Express, LLC (BOE) Pipeline and its line sections transports Crude Oil. Crude oil is a mixture of components. Specific hazards for the components are listed below in Table 1.4, which is based on a Safety Data Sheet (SDS) for Crude Oil from the Bakken.

TABLE 1.4 Hazardous Material Components that could be Stored at this Pipeline						
Material Name	Vapor Density ¹	Flammable Range ²		Flash Point ³	Specific Gravity ⁴	Toxicity Level ⁵
		LEL	UEL			
Crude Oil (Sweet) 100%	3-5	0.9%	7%	<73 to >200 °F	0.7 to 0.9	ConocoPhillips-TWA:100 mg/m ³ 8 Hours
Naphthalene 0-0.9	4.4	0.9%	5.9%	174.2 °F	1.162	OSHA TWA: 10 ppm:50 mg/m ³ ACGIH-TWA/STEL: 10/15 ppm
Benzene <1.0%	2-3	~1.2%	~7.8%	-12 °F	0.88	OSHA TWA/STEL: 1/5 ppm ACGIH TWA/STEL: 0.5/2.5 ppm
Hydrogen Sulfide Variable <0.2	1.2	~4.3%	~46%	~-64 °F	1.96 (varies)	OSHA PEL-Ceiling/Peak: 20/50 ppm ACGIH-TWA/STEL: 1/5 ppm

Note 1: Vapors/gases with a vapor density of less than 1 will rise in air and be trapped at the top of enclosures. Vapors greater than 1 will sink in air, travel along ground, and settle in low areas.

Note 2: LEL (lower explosive limit) is the same as LFL (lower flammable limit). UEL (upper explosive limit) is the same as UFL (upper flammable limit).

Note 3: Flash point is the temperature at which enough vapors are present to ignite and flash across the liquids surface when an ignition source is provided.

Note 4: Specific gravity is whether a material will float or sink in water. Any number less than one means the product will float on the surface. Any number greater than one will sink beneath the water. A number equal to one will disperse throughout water.

Note 5: These are published exposure limits found on Safety Data Sheets. PEL is OSHA's permissible exposure limit. TLV is threshold limit value-time weighted average. STEL is time weighted (8-hour) average-short term (15-min.) exposure limit.

NFPA Hazard Identification: 1 Health, 3 Flammability, 0 Reactivity

Crude oil, natural gas and natural gas condensate can contain amounts of sulfur, nitrogen and oxygen containing organic compounds as well as trace amounts of heavy metals like mercury, arsenic, nickel, and vanadium. Composition can vary depending on the source of crude.

Crude Oil may cause eye, skin, respiratory and nasal irritation. Ingestion may cause vomiting, resulting in aspiration and chemical pneumonia. Central nervous system effects from inhalation may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

There have been rare occurrences of precancerous warts on the forearm, back of hands and scrotum from chronic prolonged skin contact. These warts were not necessarily on the exposed parts of the body. Crude Oil is not listed as a carcinogen by the NTP, IARC, or OSHA; however,

repeated skin contact by laboratory mice produced skin tumors. The tumors reduced in occurrence when the animals' skin was washed between applications.

Naphthalene is toxic to blood, kidneys, the nervous system, the reproductive system, liver, mucous membranes, gastrointestinal tract, upper respiratory tract, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Benzene is on the NTP, OSHA and IARC carcinogen lists. The IARC and the EPA have determined that benzene is carcinogenic to humans (Group 1 Carcinogen). Chronic inhalation of certain levels of benzene causes disorders in the blood in humans, including leukemia (cancer of blood forming organs). Benzene specifically affects bone marrow (the tissues that produce blood cells). Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Several occupational studies suggest that benzene may impair fertility in women exposed to high levels. However, these studies are limited due to lack of exposure history, simultaneous exposure to other substances, and lack of follow-up.

Inhalation (5-10 minutes) of very high levels of benzene (10,000-20,000 ppm) can result in death. Lower levels (700-3,000 ppm) can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Ingestion can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, coma, and death. Skin contact may cause redness and sores. Eye contact may cause irritation and cornea damage.

Warning Hydrogen sulfide may be present. Greater than 15-20 ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of consciousness. Greater than 500 ppm can cause rapid unconsciousness due to respiratory paralysis and death by suffocation unless the victim is removed from exposure and resuscitated. Greater than 1000 ppm can cause immediate unconsciousness and death. The characteristic "rotten egg" odor is not a reliable indicator for warning of exposure. Loss of smell occurs rapidly at concentration above 50 ppm.

Crude Oil Precautionary Items listed on a Safety Data Sheet (SDS)

1. Responders should be familiar with Safety Data Sheet (See section 9.10.4).
2. Do not handle crude oil until all safety precautions have been read and understood.
3. Keep away from heat/sparks/open flames/hot surfaces. No smoking
4. Keep container tightly closed.
5. Ground/bond container and receiving equipment.
6. Use with explosion-proof equipment.
7. Use only non-sparking tools.
8. Take precautionary measures against static discharge.
9. Avoid breathing dust/fume/gas/mist/vapors/spray.
10. Wash thoroughly after handling.
11. Use only outdoors or in a well-ventilated area.
12. Wear protective gloves/protective clothing/eye protection/ face protection
13. If on skin (or hair): Remove/take off all contaminated clothing immediately. Rinse skin with water/shower.

14. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention if eye irritation persists.
15. If swallowed: Immediately call a Poison Center or doctor/physician. Do not induce vomiting.
16. **If inhaled:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Center or doctor/physician if person feels unwell.
17. In case of fire: Use dry chemical, carbon dioxide, or foam from extinction.
18. Store in well-ventilated place. Keep cool.
19. Dispose of contents/container to approved disposal facility.

1.5 Day-to-Day Operations and Normal Throughput

The pipeline is owned by Bakken Oil Express, LLC (BOE) and operated by Progress Solutions, LLC (Progress Solutions). Above-ground mainline valves sets are installed along the pipeline route to assist with pipeline maintenance and possible leak segregation and/or flow termination. A Progress Solutions operations and maintenance team is responsible for daily operations and scheduled and unscheduled monitoring and maintenance of the pipeline.

The BOE Pipeline receives crude oil from a truck terminal/pump station southwest of Killdeer, North Dakota (ND) near ND Highway 200 and pumps the crude oil to the BOE Rail Hub southwest of Dickinson, ND. Crude oil is metered as it enters the pipeline at the OXY Interconnect located about 13 miles downstream of the truck terminal and at the Belle Fourche Interconnect located 33.7 miles downstream of the truck terminal. A tariff is charged to pipeline customers to transport oil through the pipeline. Day-to-Day volumes will vary due to Killdeer truck volumes, which can be affected by weather conditions. A Tesoro High Plains pipeline will eventually transport crude oil into the storage tank at the Killdeer truck facility in addition to the truck unloading facilities. The Tesoro High Plains pipeline is scheduled to be constructed the end of 2014. The OXY and Belle Fourche interconnects flow volume may vary from day to day. The pipeline will typically operate at a range of 10° to 100° degrees F/ 35° - 42° API Gravity and between 200 to 1,440 psig. Maximum daily flow volume through the BOE pipeline to the rail facility is estimated at about 255,000 to 275,000 barrels per day (bpd). The Killdeer truck terminal is expected to produce 115,000 bpd to the BOE pipeline, 30,000 bpd is expected from the OXY interconnect, and 100,000 bpd (120,000 bpd with flow improvers) is expected from the Belle Fourche pipeline interconnect.

The BOE Rail Hub is an existing "open access" unit train loading facility, providing producers and marketers access to the many destinations served by local rail. BOE Rail Hub consists of a 300 acre lot, and includes 6 rail loops (each approximately 8,000 feet long), a "truck center" with multiple independent bays and tank storage that can accept and contain 602,000 barrels.

1.6 Zone Classification (CFR 194.113(b) (5))

This response zone has been determined to meet the significant and substantial harm classification because at least one line section within the response zone has met at least one of the criteria listed in 194.103(c) (4), (5).

There are no state or national parks or other significant recreational areas within two miles of the pipeline.

Based on a 12 hour response time for a pipeline discharge along all nine flow paths watersheds, the pipeline is located where it could impact:

- Lake Ilo National Wildlife Refuge.
- Tributaries which flow into the Missouri River (navigable water). The pipeline cross Murphy Creek, Wolf Creek, Knife River, Crooked Creek, Lighting Creek, Russian Spring Creek, Green River, and Duck Creek. A flow path crossing the south end of the pipeline flows into the Heart River. These tributaries are environmentally sensitive areas that have the potential to be affected.
- Threatened or Endangered Species.
 - Whooping Crane, Piping Plover, Dakota Skipper, Interior Least Tern, Pallid Sturgeon, Sprague's Pipit, Black Footed Ferret, and Gray Wolf.

The 27 hour planning distance for the Oxy Interconnect worst case could impact:

- Crooked Creek and Knife River Tributaries which flow into the Missouri River (navigable water).
- Threatened or Endangered Species.
 - Whooping Crane, Piping Plover, Dakota Skipper, Interior Least Tern, Pallid Sturgeon, Sprague's Pipit, Black Footed Ferret, and Gray Wolf.
- 11 Farmsteads along the flow path.

Therefore, the potential to cause significant and substantial harm to the environment in the event of an oil discharge exists. Appendix C is a discussion of issues that could cause significant and substantial harm, including Unusually Sensitive Areas. Sensitivity of the environment at risk is also provided.

1.7 Spill Scenarios and Worst Case Discharge (CFR 194.113 (b) (6))

Volume of worst case discharge: 20,280 barrels of Crude Oil (Oxy valve set destroyed)

Section 9.8 also contains additional information about Spill Scenarios including classifications of small, medium and large spills. The worst case spill is also discussed in Section 9.8.

Spills from the BOE Pipeline can occur due to leaks, equipment failure, accidents, and human error or as a result of third party interference. Leaks can occur due to loose flange, fittings, couplings, instrument tubing, gauges, thermo well samplers, chemical analyzers, material failure, internal or external pipe corrosion, and seals or gaskets on above ground devices. Equipment failures can include pumps, compressors, meters and metering equipment, seams of pipe, remote or manually operated block or control valves, relief valves and other overpressure control devices, and rarely the body of a device. Accidents can include lightning strikes, material defect, rifle hole, stress corrosion cracking, and a break in miter bend. Human error scenarios can be a welding flaw or welding defect, lack of safely and adequately performing maintenance and repair activities, pig trap leaking due to operator error, and an operator not closing a valve or blow off valve correctly. A third party interference leak can occur from a pipeline construction dent causing a pipeline rupture or crack, boring machine striking the pipeline, the pipeline being hit or struck by an outside force.

BOE pipeline has the potential of experiencing a large/worst case discharge volume of up to 851,741 gallons (20,280 bbl.), a medium discharge of equal to or less than 36,000 gallons, as well as a small discharge of less than 2,100 gallons. Each line section of the response zone has a maximum discharge volume over 36,000 gallons and therefore has the potential to experience a large case discharge volume.

A potential large case pipeline discharge would occur if the main line pipeline was completely severed in half. Maximum potential discharge for the pipeline being severed in half would range from 60,557 gallons within section isolation section #7 to a maximum of 621,598 gallons (14,800 barrels) within isolation section #4. Table 1.7.1 lists the maximum discharge volumes for each isolation line section.

A potential worst case pipeline discharge would occur if an above ground main line valve set was destroyed. Maximum potential discharge for a valve set ranges from 190,450 gallons for the BOE Rail Facility valve set to a maximum of 851,741 gallons for the Oxy Interconnect valve set. Table 1.7.2 lists the maximum discharge volumes for each isolation valve set that could be destroyed.

This pipeline has a pump station with two 2,000 HP mainline pumps, 2-200 HP booster pumps, two pipeline meters and an associated meter provers, and a pig launcher. The pump station on the north end of the pipeline has a spill containment area in the northwest corner of the truck drive area of the truck terminal site. This containment area also serves as a containment for the truck unloading facility. The mainline pumps are located in the southeast corner of LL Terminals, LLC truck terminal site near Killdeer, ND with a flow path to the northwest and then west to the secondary containment. This containment should prevent crude oil from being discharged off owner operated property. No other secondary containment exists for the pipeline.

Spill or discharges usually would occur in a segment of the pipeline between two valve settings. These discharges can be small, medium, or a large/worst case scenario. The segments of the line are often called line sections. The pipeline has eight line sections within the one response zone. Section 1.3 shows a map of the sections along the pipeline (Drawing 1.2). Table 1.7.1 identifies the maximum discharge volumes that can occur should a section have a discharge. The Oxy pipeline interconnect line and the Belle Fourche interconnect hydraulic line fill calculations are also listed in Table 1.7.1, but are owned by other companies and response to these facilities would be the responsibility of their owner/operator and their pipeline response plan. The response plan identifies emergency numbers Oxy Pipeline and Belle Fourche Pipeline, which would be called should the BOE valve set connected to their pipeline be destroyed or damaged causing the valve set to discharge oil from the pipeline. An emergency phone number for Tesoro High Plains Pipeline is listed in the plan because Tesoro has a pipeline that flows into the truck terminal tankage in the north end of the pipeline. The maximum potential discharge for a line section ranges from 60,557 gallons (1,442 barrels) in line section #7 to a maximum in line section #4 of 621,598 gallons (14,800 barrels).

Table 1.7.3 describes all nine watershed flow paths along the pipeline. Five pages of 12-hour spill response plan maps follow Table 1.7.3. The table and maps are to be used to help spill responders determine flow paths and assist them with containment. The maps and Table 1.7.3 identify the maximum distance a discharge could flow for each watershed flow path over 12 hours. This 12-hour flow path distance does not include any distance over land in the watersheds before it would reach a waterway. Therefore, the 12-hour flow path distance is a conservative distance to assure a discharge would not exceed this distance over any 12-hour flow time. Part

of 194.1.1 (b) (2) (i) discusses an operator exception to submitting a pipeline response plan. A line section that is greater than 6 5/8 inches in outside nominal diameter and is greater than 10 miles in length, where the operator determines that it is unlikely that the worst case discharge from any point on the line section would adversely affect, within 12 hours after the initiation of the discharge, any navigable waters, public drinking water intake, or environmentally sensitive areas does not need to submit a response plan to PHMSA for review. A 12-hour planning distance evaluation was used for all nine watersheds to verify BOE/Progress Solutions needs to submit the plan. The results yielded a plan is required and will be submitted and updated as required.

Calculated discharges in Table 1.7.1 and Table 1.7.2 were calculated considering a three minute time interval for maximum detection time plus time to close a valve with the Supervisory Control and Data Acquisition (SCADA) system to avoid over pressurization and MAOP violation. The volume flow rate of the pipeline system was based on full pressure during valve closure operation. System pumps would normal shut off immediately when a detection of a discharge occurs. A discharge was calculated using the equation:

Discharge = (Maximum detection time + Shutdown time) x flow rate x 1/2 due to cross section area being reduced as valve closes + Hydraulic Line Fill of the pipeline segment

Although the entire line fill (pipeline segment drainage volume) is used in the calculations, in the event of a leak it would be hydraulically impossible to drain the entire pipeline section from one isolation valve to another. No check valves downstream of river crossings were installed to prevent oil from draining back to a river or creek. Flow rates could go in the reverse direction if a leak occurs upstream of one of the interconnects.

The EPA requires a 27-hour worst case scenario be evaluated for a planning distance. This response plan has also evaluated a 27-hour worst case pipeline scenario and identified mitigation containment points. The worst case 27 hours is based on 24 hours for the OSRO to arrive and three hours for their deployment. In the event of an actual BOE pipeline worst case discharge, the pipeline has a SCADA system that would instantly detect a large/worst case discharge, notification of the OSRO would occur immediately, and the OSRO is located less than one hour from its furthest point of the pipeline thereby reducing the actual probable planning distance requirement.

The worst case discharge would be the Oxy Interconnect isolation valve set being destroyed. A maximum discharge of 851,731 gallons (20,280 barrels) could occur. Line sections 3, 4, and a segment of the Oxy pipeline would discharge should the Oxy Interconnect isolation valve set be destroyed. A 54.39-mile, 27-hour planning distance calculation was done assuming a spill occurring under adverse weather conditions. This would be frost in the ground, a once in 25 year rain (3.6") and spring runoff. This worst case discharge would travel 0.3 miles to the west of the Oxy Interconnect on vegetated surface ground, then 32.05 miles in Crooked Creek, and then 22.04 miles in the Knife River to a furthest coordinate location of 47° 08' 54.6" N, 102° 27' 47.55" W. This 27-hour planning distance map is found on the next page.

No breakout tanks are part of this pipeline system or historic discharges have occurred.

In the event of an identified discharge, BOE/Progress Solutions Response team would be initial responders with a purpose of containing a spill and minimize environmental impact. BOE has contracted an Oil Spill Removal Organization (OSRO) to respond to assure adequate response and recovery operation.

BOE Pipeline, LLC

27 Hour Worst Case Planning Distance

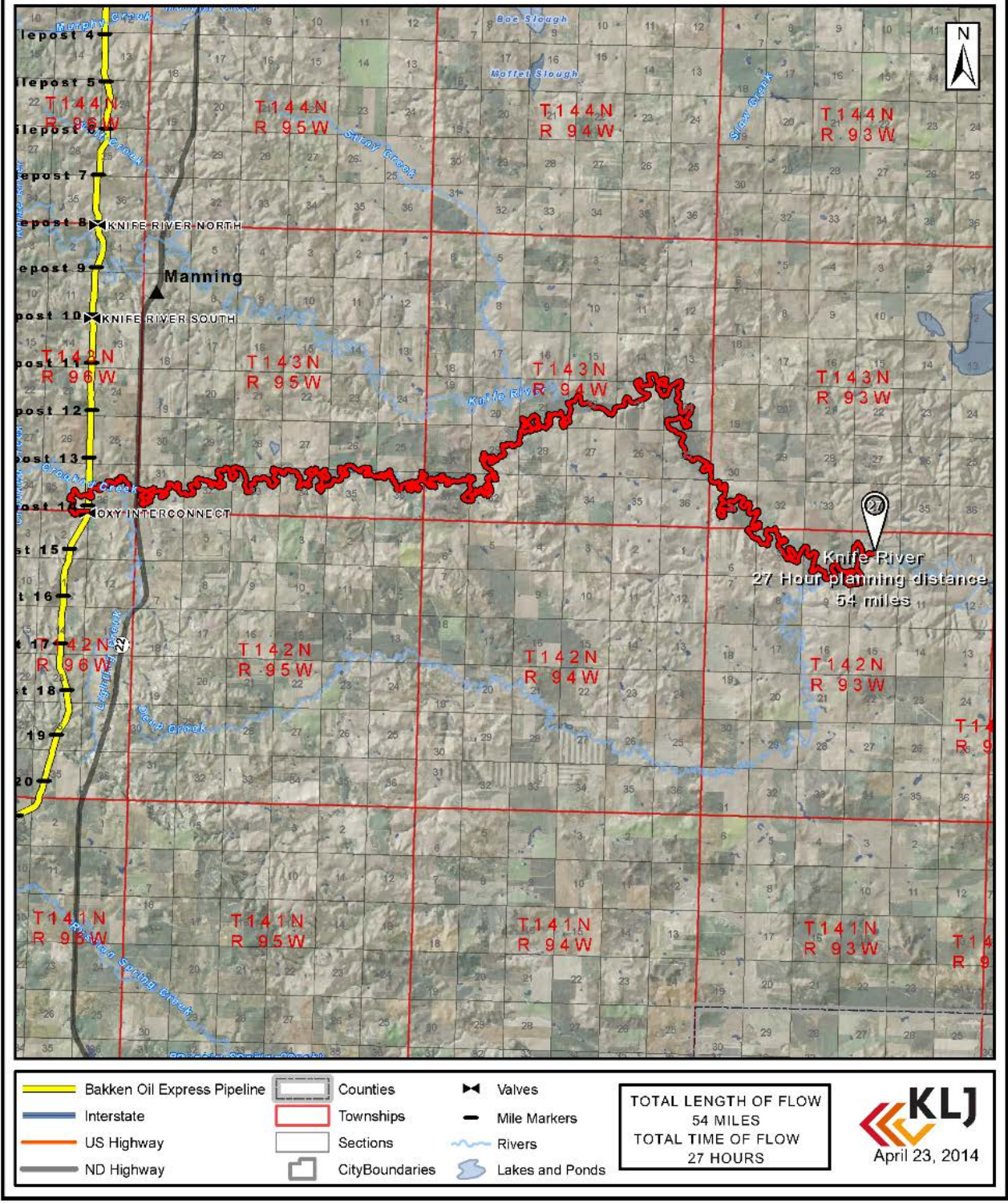


TABLE 1.7.1
MAXIMUM DISCHARGE VOLUMES PER LINE SECTION

Line Section #	ISOLATION VALVES	PIPELINE LENGTH (MILES)	STATION LOCATION	MILE POST	COUNTY IN NORTH DAKOTA	MAXIMUM DISCHARGE VOLUMES (BARRELS)	MAXIMUM DISCHARGE VOLUMES (GALLONS)
1	Pump Station	8.06	0+00	0.00	Dunn	10,126	425,311
	Knife River North		425+69	8.06	Dunn		
2	Knife River North	2.01	425+69	8.06	Dunn	2,723	114,361
	Knife River South		531+60	10.06	Dunn		
3	Knife River South	4.07	531+60	10.06	Dunn	5,243	220,186
	Oxy Interconnect		746+34	14.14	Dunn		
4	Oxy Interconnect	11.89	746+34	14.14	Dunn	14,800	621,598
	Oxy Crude		746+34	14.14	Dunn		
	Green River North		1373+89	26.02	Stark		
5	Green River North	2.24	1373+89	26.02	Stark	3,006	126,234
	Green River South		1492+01	28.26	Stark		
6	Green River South	5.56	1492+01	28.26	Stark	7,066	296,761
	Belle Fourche Interconnect		1785+50	33.82	Stark		
7	Belle Fourche Interconnect	0.96	1785+50	33.82	Stark	1,442	60,557
	Duck Creek South		1836+08	34.77	Stark		
8	Duck Creek South	3.49	1836+08	34.77	Stark	4,535	190,450
	BOE Rail Facility		2020+24	38.26	Stark		
Oxy Pipeline	OXY Tank	1.5			Dunn	508	21,332
	Oxy Crude		746+34		Dunn		
Belle Fourche line	Belle Fourche Interconnect	0.08	1785+50		Stark	39	1,632
	Belle Fourche Terminal				Stark		

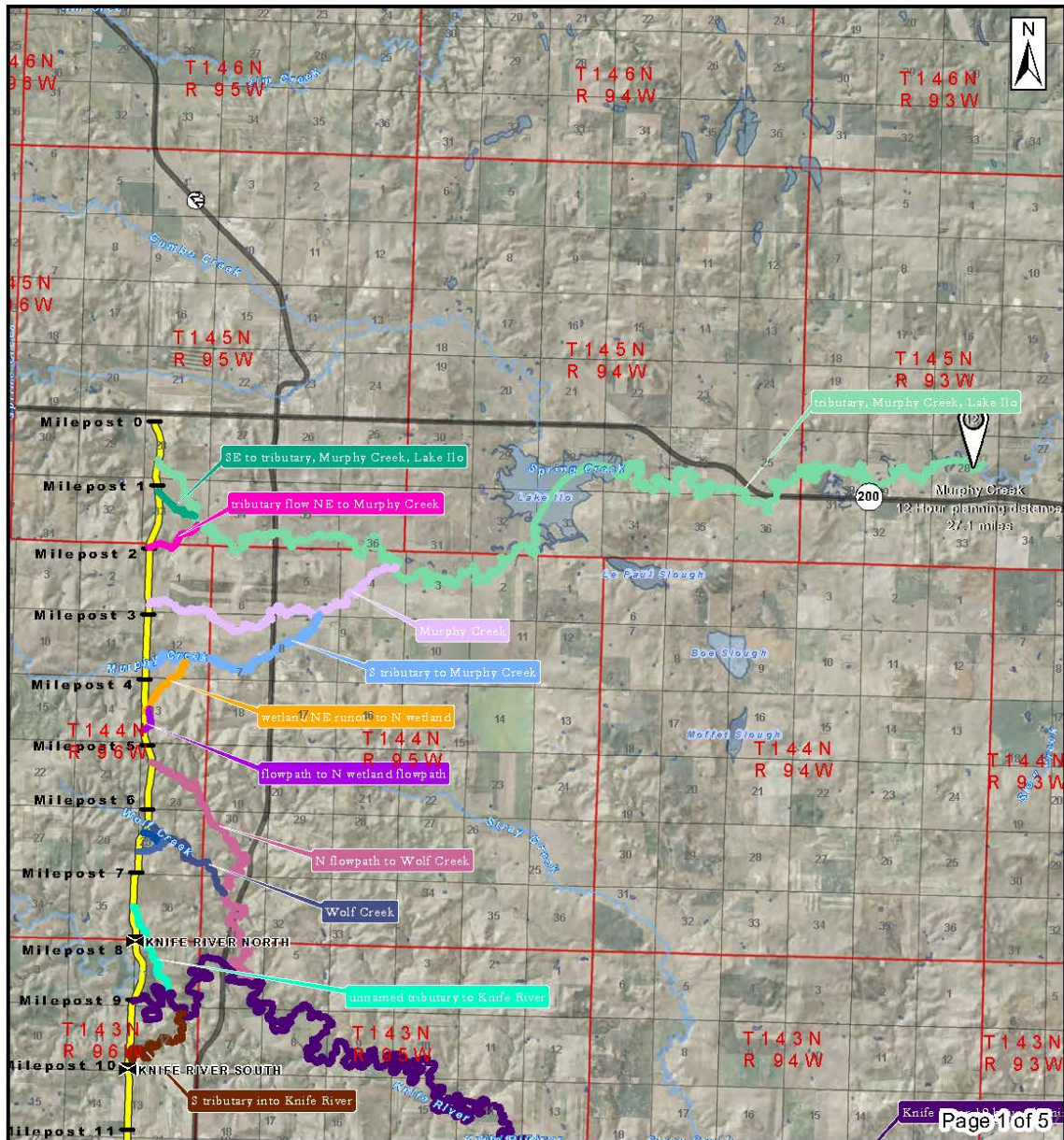
**TABLE 1.7.2
WORST CASE - VALVE SET DESTROYED DISCHARGE VOLUMES**

LINE SECTIONS DISCHARGED	ISOLATION VALVES SET DESTROYED	FLOW PATH	PIPELINE LENGTH (MILES)	STATION LOCATION	SPILL COUNTY IN NORTH DAKOTA	MAXIMUM DISCHARGE VOLUME (BARRELS)	MAXIMUM DISCHARGE VOLUME (GALLONS)
1	Pump Station	Murphy Creek	8.06	0+00	Dunn	10,126	425,311
1 and 2	Knife River North	Knife River	10.07	425+69	Dunn	12,579	528,297
2 and 3	Knife River South	Knife River	6.08	531+60	Dunn	7,695	323,172
3, 4 and Oxy Segment	Oxy Interconnect	Crooked Creek	17.46	746+34	Dunn	20,280	851,741
4 and 5	Green River North	Green River	14.13	1373+89	Dunn	17,535	736,457
5 and 6	Green River South	Green River	11.36	1492+01	Stark	9,800	411,620
6, 7 and Belle Fourche line	Belle Fourche Interconnect	Duck Creek	9.93	1793+44	Stark	8,276	347,575
7 and 8	Duck Creek South	Duck Creek	4.3	1836+08	Stark	5,706	239,632
8	BOE Rail Facility	Heart River	3.49	2020+24	Stark	4,535	190,450

TABLE 1.7.3
Flow paths Down Gradient Distance for 12 Hours

Flow Path with start origin	Maximum Distance	Maximum Distance Coordinates
<p align="center">12.7 miles in Murphy Creek, 1.6 miles spread in Lake Ilo, and 12.8 miles in Spring Creek</p> <p>Pipeline crosses Murphy Creek 2.8 miles south of truck terminal.</p>	27.1 miles	47.350289 N 102.532572 W In Spring Creek
<p align="center">5.6 miles in Wolf Creek, and 42.3 miles in Knife River</p> <p>Pipeline crosses Wolf Creek 6.2 miles south of truck terminal.</p>	47.9 miles	47.178333 N 102.536347 W In Knife River
<p align="center">49.2 miles in Knife River</p> <p>Pipeline crosses Knife River 9.84 miles south of truck terminal facility.</p>	49.2 miles	47.154439 N 102.497156 W In Knife River
<p align="center">17.3 miles in Crooked Creek</p> <p>Pipeline crosses Crooked Creek 13.8 miles south of truck terminal.</p>	17.3 miles	47.165111 N 102.663828 W In Crooked Creek
<p align="center">9.8 miles in Lighting Creek, and 12.8 miles in Crooked Creek</p> <p>Pipeline crosses tributary to Lighting Creek 19 miles south of truck terminal.</p>	22.6 miles	47.167231 N 102.697669 W In Crooked Creek
<p align="center">26.5 miles in Russian Spring Creek, and 0.9 miles in Green River</p> <p>Pipeline crosses river 22.4 miles south of truck terminal.</p>	27.4 miles	46.934075 N 102.673461 W In Green River
<p align="center">33.5 miles in Green River</p> <p>Pipeline crosses river 27.43 miles south of the truck terminal facility.</p>	33.5 miles	46.897836 N 102.635633 W In Green River
<p align="center">5.3 miles in Duck Creek, 1.7 miles spread in Patterson Lake/Dam, and 25 miles in Heart River to Lake Tschida/Dam</p> <p>Pipeline crosses river 34.7 miles south of truck terminal.</p>	31.98 miles	46.857197 N 102.594486 W In Heart River
<p align="center">0.9 to Heart River, 2.9 miles Heart River, 2.3 miles Patterson Lake/Dam spread, and 25.9 miles in Heart River to Lake Tschida/Dam</p> <p>Pipeline flow path crosses 36.6 miles south of truck terminal.</p>	32.0 miles	46.860156 N 102.586486 W In Heart River
Distance from Truck Station is approximate mileage.		

BOE Pipeline, LLC 12 Hour Spill Response Plan

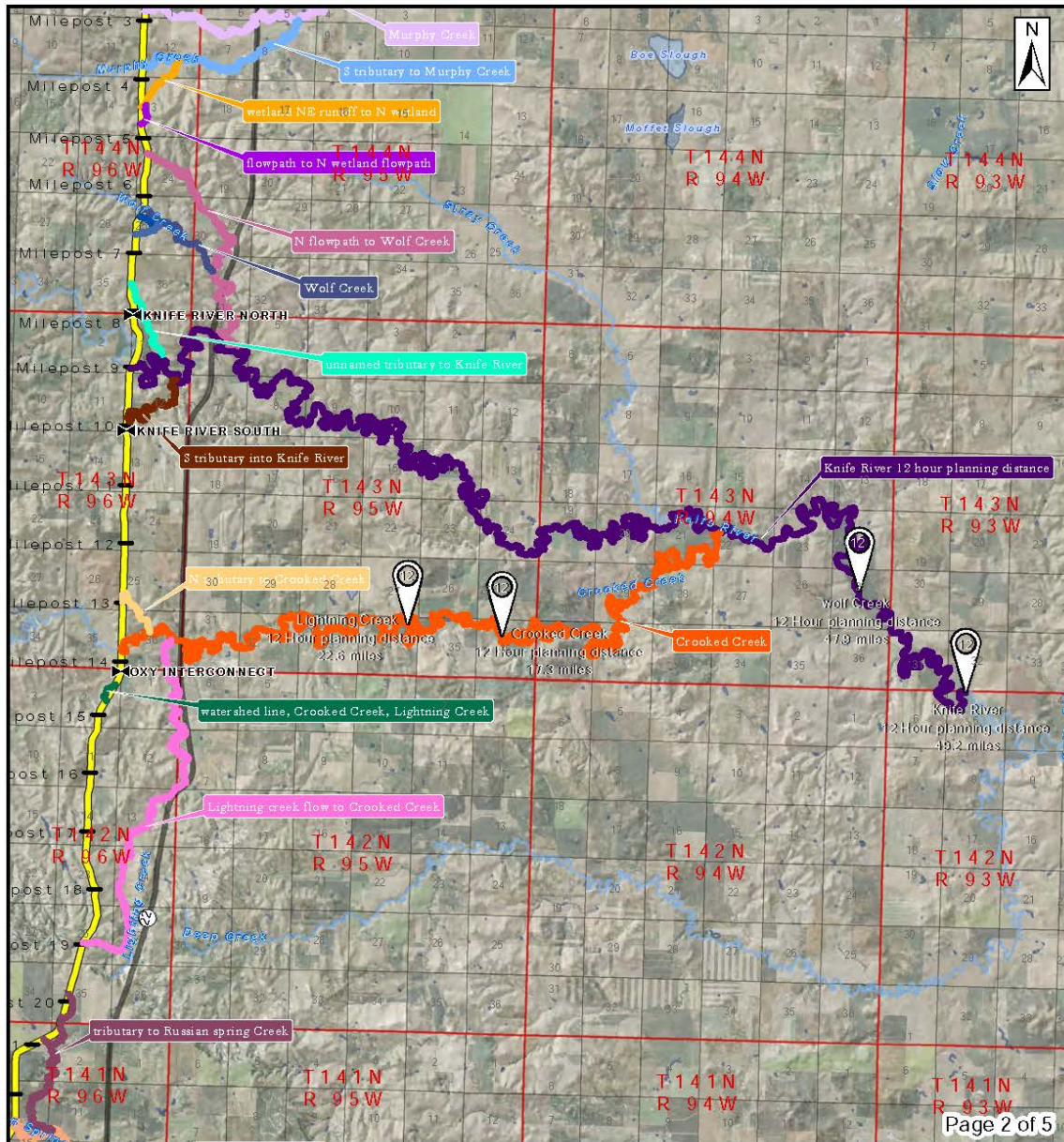


Bakken Oil Express Pipeline	Counties	Mile Markers
Interstate	Townships	Valves
US Highway	Sections	Rivers
ND Highway	City Boundaries	Lakes and Ponds

ALSO SEE TABLE 1.7.3 FOR DESCRIPTION OF 12 HOUR FLOW PATHS

KLJ
April 1, 2014

BOE Pipeline, LLC 12 Hour Spill Response Plan



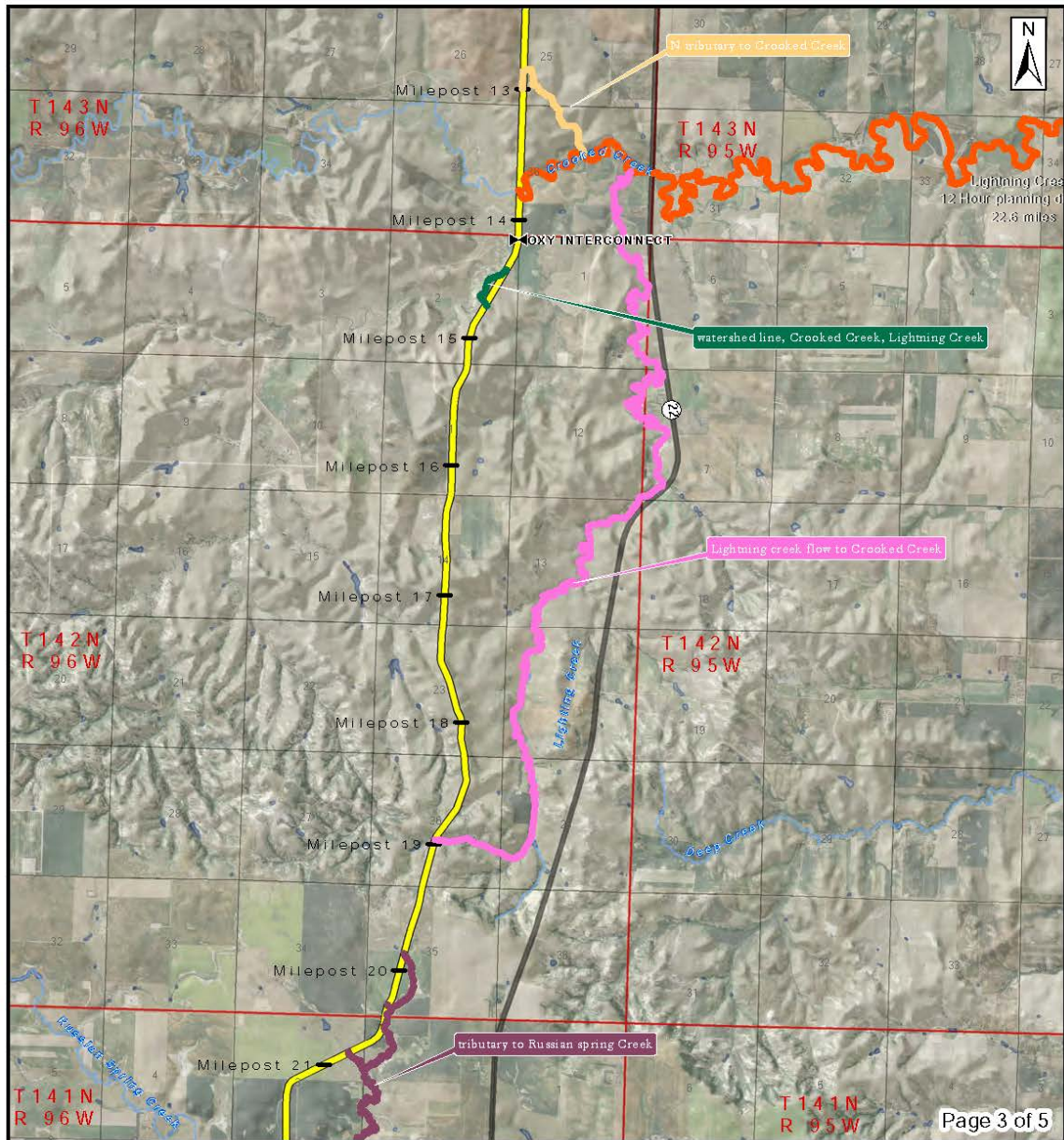
Page 2 of 5

<ul style="list-style-type: none"> Bakken Oil Express Pipeline Interstate US Highway ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> Mile Markers Valves Rivers Lakes and Ponds
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ALSO SEE TABLE 1.7.3
FOR DESCRIPTION OF
12 HOUR FLOW PATHS

April 1, 2014

BOE Pipeline, LLC 12 Hour Spill Response Plan



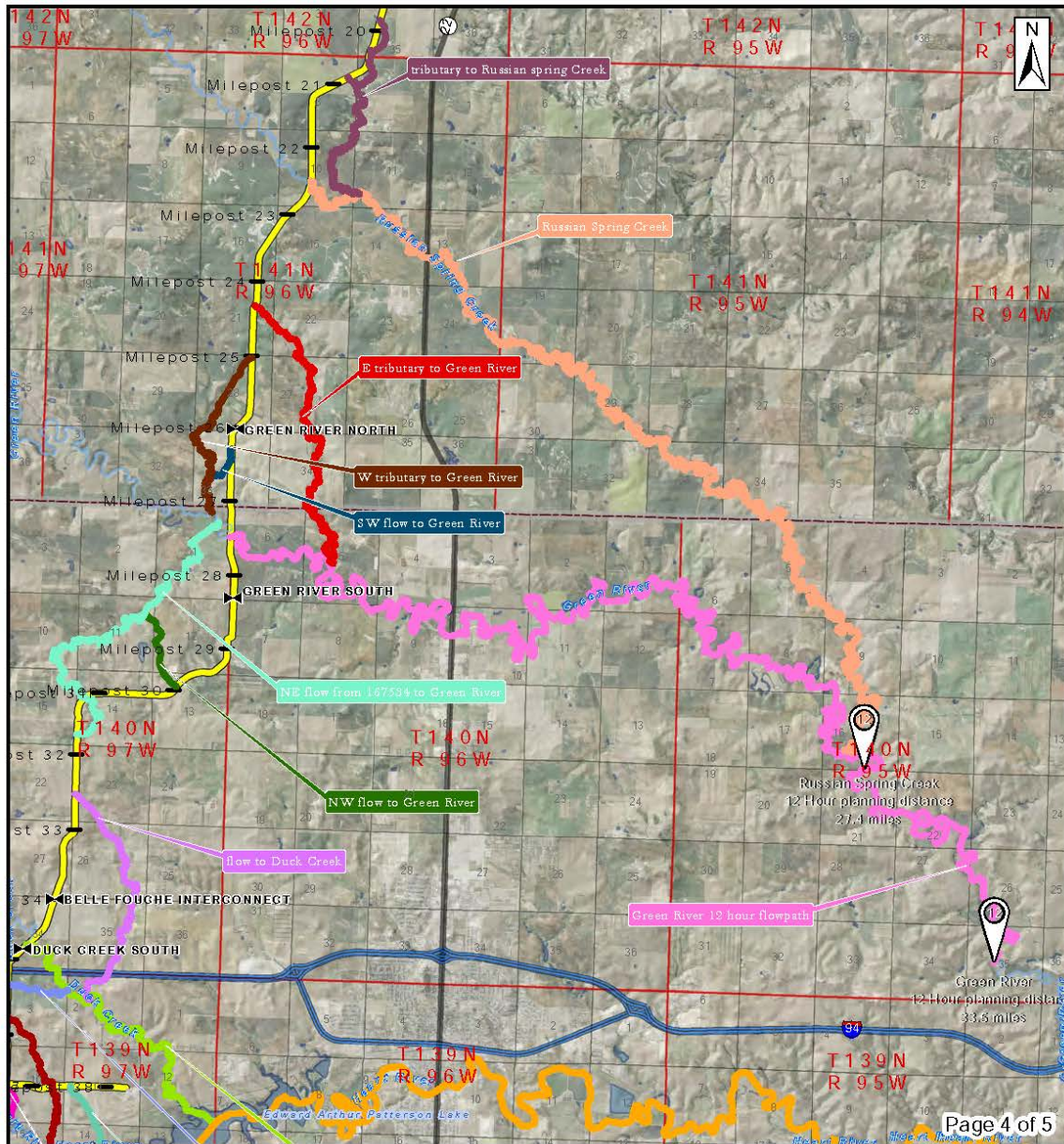
Page 3 of 5

<ul style="list-style-type: none"> — Bakken Oil Express Pipeline — Interstate — US Highway — ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> — Mile Markers — Valves — Rivers — Lakes and Ponds
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ALSO SEE TABLE 1.7.3
FOR DESCRIPTION OF
12 HOUR FLOW PATHS

April 1, 2014

BOE Pipeline, LLC 12 Hour Spill Response Plan

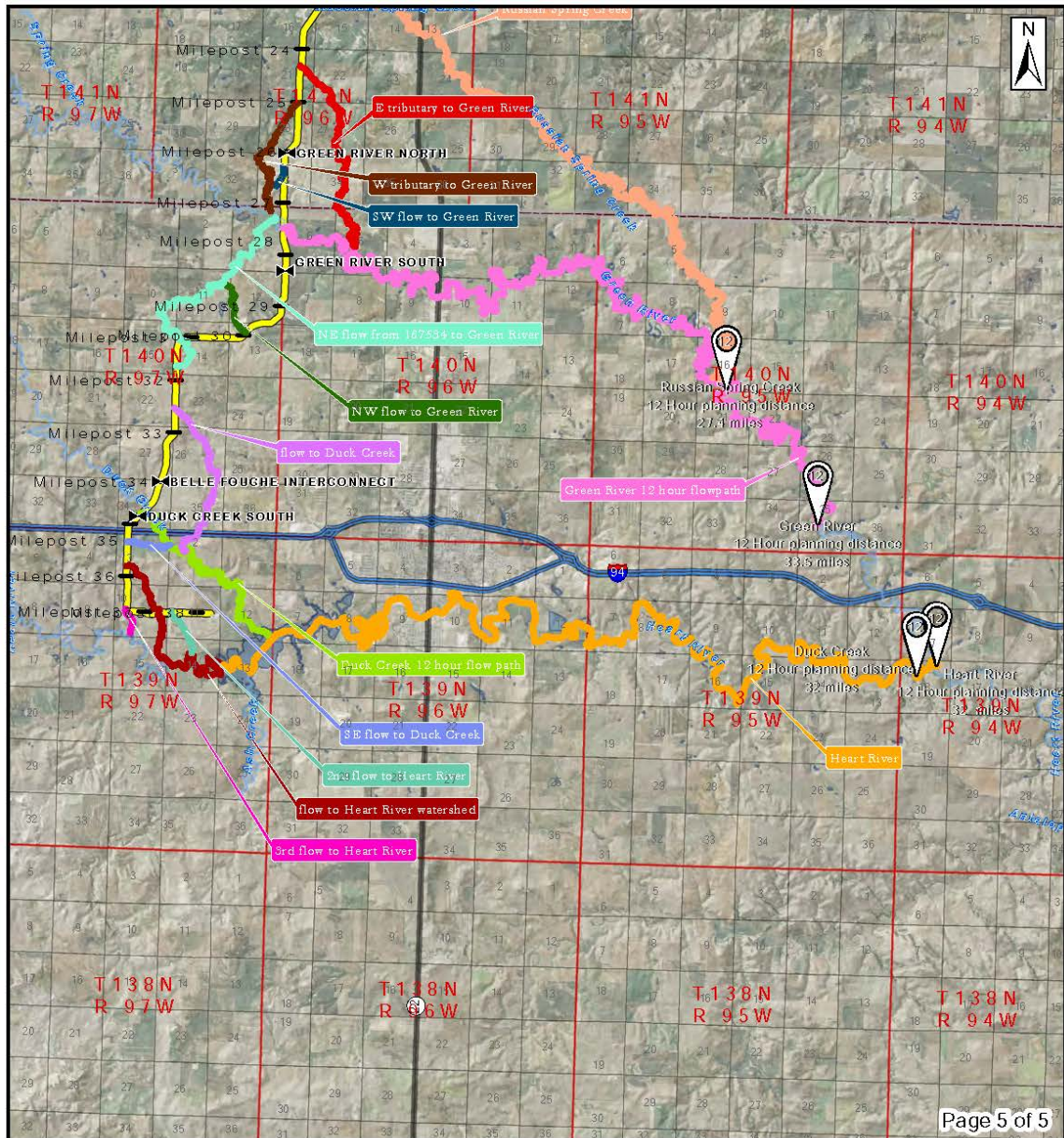


<ul style="list-style-type: none"> — Bakken Oil Express Pipeline — Interstate — US Highway — ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> — Mile Markers — Valves — Rivers — Lakes and Ponds
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ALSO SEE TABLE 1.7.3
FOR DESCRIPTION OF
12 HOUR FLOW PATHS

April 1, 2014

BOE Pipeline, LLC 12 Hour Spill Response Plan



Page 5 of 5

<ul style="list-style-type: none"> — Bakken Oil Express Pipeline — Interstate — US Highway — ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> — Mile Markers — Valves — Rivers — Lakes and Ponds
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ALSO SEE TABLE 1.7.3
FOR DESCRIPTION OF
12 HOUR FLOW PATHS

April 1, 2014

1.8 Oil Spill Response Organization (OSRO) Information

Baranko Brothers is available to respond in the event additional personnel and equipment are needed to maintain an adequate response and recovery operation. Baranko Brothers is under contract agreement to respond to a release due to the BOE Pipeline, LLC Pipeline upon request. Baranko Brothers is based out of Dickinson, ND and can be on site within 24 hours with manpower and equipment. **Baranko Brothers can be contacted at 1-701-264-5004 (24/7).** Baranko Brothers is the primary contact for contractor response and remediation. Baranko Brothers has a mutual/contracted assistance from Clean Harbors in Williston, ND. Baranko Brothers will be responsible for contacting Clean Harbors in Williston for mutual/contracted assistance. OSRO and other necessary contracts are found in Appendix A Master Service Contracts.

Table 1.8 OSRO RESPONSE TEAMS		
Team Member	Response Time	Phone or Pager Number (Day / 24 Hour)
Baranko Brothers Inc. (Dickinson)	<1 Hour (4 miles)	701-264-5004
Clean Harbors (Williston, ND) When requested by Baranko Brothers	< 2 hours (101 miles)	To be contacted by Baranko as needed

SECTION 2 NOTIFICATION PROCEDURES

In this Section:

Immediate Actions
Response Notification List
Notification Steps
Response Notification Forms
Primary and Secondary Communications Methods

2.1 Immediate Actions

BOE Pipeline has line marker signs along the pipeline with a contact number for landowners, leasers, and others to call should a spill be detected by the public. The general public may call 911 to report a spill or the BOE phone number (844-220-9234, Progress Solutions Control Room) on line marker signs along the pipeline route. A partial copy of this response plan is given to the county emergency manager so they can implement contact to BOE/Progress Solutions should the 911 operator receive a call from the general public about a spill.

The immediate responsibility for taking action resides with the BOE/Progress Solutions person discovering the spill. Persons discovering the emergency should take all steps possible to immediately alert others in the area, shut down all oil operations if safe, notify the Progress Solutions Control Center (844-220-9234) as necessary and safely initiate steps to control the emergency and reduce its hazard. The BOE Office or Control Center will contact the Qualified Individual and initial responder if necessary and not on spill site. Qualified Individual or designate will contact spill response support to respond other than initial responder. Initial responder may respond to obtain a spill trailer.

A leak detection alarm system is installed on the BOE pipeline. A telemetry system using SCADA, pressure sensors, shut-in-valves, and pump-off system is used for the alarm system. The SCADA system monitors the pressures at each mainline valve set which would alarm in the control room causing the mainline valves to close shut and pumps to cease.

The SCADA system is set up in real time to:

- Measure input volumes and output volume at the end of the pipeline.
- Monitor pressure at all block valves where SCADA is installed.
- Provide ability to open and close valves remotely from the control room.
- Provide for a pump-off system.
- Alarm for a power failures.

Should volumes at the beginning and end of the pipeline differ in real time and a pressure drop is sensed with the SCADA system. A pipeline discharge has occurred and the control room management has the ability to operate block valves on the system to limit the volume of discharge.

Progress Solutions Command Center in Bismarck, ND is the primary control center. The control room at LL Terminals, LLC truck terminal in Killdeer, ND has capability to operate as a control

center but is to be used as a backup control center. The Bakken Oil Rail Facility and LL Terminals, LLC will have read only SCADA information under normal operations.

The following initial actions in Table 2.1 must be taken if it is safe to accomplish for a crude oil spill response. These actions are prioritized based on a person being on-site at the spill to ensure person's safety. If more than one person is on-site, then the following actions can be assigned to a specific person to reduce the time required to isolate the discharge site, make immediate notifications, and initiate control actions. When there are several persons on-site, the senior person is responsible for ensuring these actions are safely accomplished. Personnel communications is conducted by land line phone and cellular phone as needed. Company radio may be used as available.

TABLE 2.1
INITIAL RESPONSE ACTIONS

Action	Notes
1. Identify the source of spill. Contact BOE /Progress Solutions Control Room dispatcher at (844) 220-9234 to implement the closing of valves and shut down of pumps to stop the flow of product. Identify the spill perimeter. Take immediate actions necessary to preserve life if safe to do.	It is critical that notification be made immediately to ensure the safety of personnel and obtain additional resources as quickly as possible to control and minimize the discharge. Control Room dispatch will contact QI/IC, Belle Fourche Pipeline (307) 234-6930, Oxy pipeline 1-800-733-3665, and Tesoro High Plains Pipeline (866) 283-7676 emergency 24/7 operations. Do not enter any spill site to accomplish the shutdown. Stay upwind and up gradient of the spill, avoid contact with the spilled material.
2. Warn personnel and public within the spill immediate area. Operations level will have nonessential personnel evacuate to the area <i>up gradient and upwind</i> and report to the meeting place (Rail Facility Office) away from spill area. Prevent any vehicles (other than response team) from entering the area.	This action is to prevent any inadvertent action from compounding the situation.
3. The senior person directing activities may call 911 for site perimeter control, personnel rescue, and/or fire assistance.	
4. Operations level should isolate the discharge spill area and eliminate ignition sources, if it can be accomplished safely . Initiate control action to confine and contain the release to the smallest area possible, if it can be accomplished safely .	Shut down vehicles, and other electrical sources as necessary. Ensure that no one is smoking near the discharge/spill site. Vehicles are not to be used in hot zones as they can be a source of ignition. Cell phones can also be a source of ignition.
Note: Once the Qualified Individual (QI)/Incident Commander (IC) arrives at the spill site, the senior person directing the initial activities will brief the QI on the current situation and actions taken. The QI will coordinate all further activities as the Incident Commander.	
5. Notify nearby locations that could be impacted.	Table 2.2 identifies impacted locations' emergency contacts.

**TABLE 2.1
INITIAL RESPONSE ACTIONS (CONT.)**

Action	Notes
<p>6. Notify spill response support to respond. If discharge is beyond the capability of the primary organization, notify other oil spill response organizations to respond with needed additional resources. BOE/Progress Solutions responds with their employees and equipment to all spills. They are primary responders. The QI may contact additional contractors for additional help.</p>	<ul style="list-style-type: none"> • Small: BOE/Progress Solutions Spill Response Team Baranko Brothers 701-264-5004 Medium to Large: BOE/Progress Solutions Spill Response Team Emergency Manager, Sheriff, Fire- local 911 Baranko Brothers 701-264-5004 • Catastrophic: BOE/Progress Solutions Spill Response Team Emergency Manager, Sheriff, Fire- local 911 Baranko Brothers 701-264-5004 Clean Harbors is requested by Baranko Brothers 701-264-5004
<p>7. County, Federal, and State notifications as needed by QI or his/her designate.</p> <p>Notify the Stark and/or Dunn County Local Emergency Manager if a release occurs. Contact appropriate federal and state agencies according to their notification requirements. Always consider if a discharge may pose a threat to human health or the environment.</p>	<ul style="list-style-type: none"> • Dunn County Emergency Management: Local 911 or (701) 290-1769. • Stark County Emergency Management: Local 911 or (701) 577-7707. • National Response Center (NRC): (800)424-8802. • North Dakota Department of Health: (701) 328-5210 or (800) 472-2121. • North Dakota Game & Fish Dept. (Dickinson): (701) 328-6300 or (701) 227-7432. • US Fish and Wildlife Service (Bismarck): (701) 250-4481. • Lake ILO National Wildlife Refuge (701) 548-8110. • USDA NRCS (Dickinson): (701) 530-2000 or (701) 225-5113(Dickinson). • ND PSC: (701) 328-2400.

2.2 Response Notification List

The Emergency Notification Phone List provided in Table 2.2 identifies and prioritizes the names and phone numbers of the organizations and personnel that need to be notified immediately in the event of an emergency. These numbers must be verified each time the plan is updated and on an annual review basis of the plan. This contact list should be placed in a location that is accessible to all employees to ensure that, in case of a discharge, personnel on-site can immediately notify the appropriate parties. Only the Qualified Individual or designee should make outside company contacts unless the fire department or an ambulance for personal injury is required.

Whenever notification of federal/state/local agencies is required, the following guideline are to be followed:

1. Never include information that has not been verified.
2. Never speculate as to cause of the incident or make any acknowledgement of liability.
3. Document persons/agencies notified and the content of the items discussed.
4. Provide as much verified information as possible.
5. Provide periodic follow-up notification to authorities on status or response actions taken and the change of location of the discharge.

Note: Notifications should be made by a representative from BOE/Progress Solutions who responds to all discharges and spills.

**TABLE 2.2
EMERGENCY NOTIFICATION PHONE LIST**

Contact Role	Agency	Day Phone	24-Hour Phone
Command Post:	LL Terminals, LLC.	(701) 483-0435	(701) 483-0435
Command Post: alternate	BOE Pipeline, LLC Dickinson Office	(701) 483-0454	(701) 483-0454
Qualified Individual:	Tory Neer Progress Solutions Area Manager (Dickinson)	(701) 204-5109	(701) 204-5109
Qualified Individual:	Dana Rathjen Progress Solutions Foreman (Dickinson)	(701) 690-6245	(701) 690-6245
Qualified Individual:	Doug Lee Progress Solutions CEO	(701) 250-5996	(701) 955-4230
Qualified Individual:	Chris Lewis BOE General Manager (Dickinson)	(701) 483-0435	(402) 690-4742
Alternate Qualified Individual:	BOE Pipeline Director of Operations Brandon McDowell	(720) 548-3449	(303) 887-8005
Responder	Mike Galliett Progress Solutions Field Operator	(701) 989-4474	(701) 989-4474
Responder	Spencer Smith Progress Solutions Field Operator	(701) 690-3986	(701) 690-3986
Responder	Justin Hill Progress Solutions Maintenance Tech.	(701) 690-0648	(701) 690-0648
National Response Center (NRC):	Federal On-Scene Coordinator (FOSC) notification and initial report NRC will contact PHMSA, EPA, OSHA	(800) 424-8802 (202) 267-2675	(800) 424-8802
Additional Pipeline Operators that Interconnect to BOE Pipeline	OXY	1-800-733-3665	(713) 215-7000
	Belle Fourche Pipeline Company	(307) 756-3292 (307)234-6930	(307) 756-3292 (307) 234-6930
	Tesoro High Plains Pipeline	(866) 283-7676	(866) 283-7676
Spill Response Support :	Baranko Brothers	(701) 264-5004	(701) 264-5004
	Clean Harbors (Williston) Only to be contacted by Baranko Brothers	(701) 774-2201	(800) 645-8265

TABLE 2.2 (continued)
EMERGENCY NOTIFICATION PHONE LIST

Contact Role	Agency	Day Phone	24-Hour Phone
EPA:	Region VIII - On-Scene Coordinator Note: For emergencies, call NRC first - they will notify EPA FOSC.	(800) 227-8917 (303) 312-6312	(800) 227-8917
	EPA Environmental Response Team - Region VIII	(800) 424-8802 (202) 267-2675	(800) 424-8802
State Notifications: <i>The responsible party is required to contact the required state and local agencies to provide further information</i>	ND Department of Health -Division of Water Quality -Division of Waste Management	(701) 328-5210 (701) 328-5166	(800) 472-2121 in state (701) 328-2121 out of state
	North Dakota Highway Patrol - Headquarters - SW Region - Dickinson	(701) 328-2455 (701) 227-6565	Local 911
	North Dakota Fire Marshal - Dickinson, ND: Don Temple Jr. - Bismarck, ND: John Elstad	(701) 227-7422 (701) 328-5555	Local 911
	North Dakota Game and Fish Dept. - Dickinson Office	(701) 328-6300 (701) 227-7432	N/A
	North Dakota Industrial Commission	(701) 328-3722	(701) 328-3722
	North Dakota Public Service	(701) 328-2400	(877) 245-6685
	State Radio	(800) 472-2121 in state	(800) 472-2121 in state
	Other Federal Agencies:	U.S. Fish and Wildlife - Region 6 - North Dakota Field Office (Bismarck) - Lake Ilo National Wildlife Refuge	(701) 250-4481 (701) 548-8110
USDA NRCS - Central Region - State Office (Bismarck) - Dickinson Field Office		(701) 530-2000 (701) 225-5113	N/A
Occupational Safety and Health Administration (OSHA)		1-800-321-6742	

TABLE 2.2 (continued)
EMERGENCY NOTIFICATION PHONE LIST

Contact Role	Agency	Day Phone	24-Hour Phone
Local Emergency Planning Committee (LEPC): <i>Provides coordination with emergency agencies within County (includes local fire department, police, etc.):</i>	ND Department of Emergency Services - Homeland Security Division - SW Regional Response Coordinator - Dunn County Emergency Management -Stark County Emergency Services	(701) 328-8100 (701) 425-4515 (701) 573-4343 (701) 456-7605	(800) 472-2121 (701) 425-4515 (701) 290-1769 cell (701) 627-4805
If Utilities were Impacted:	Roughrider Electric Coop-Dickinson (pipeline)	(701) 483-5111	800-627-8470
	Mc Kenzie Electric- New England (pump station)	(701) 444-9288	(701) 444-9288
	Consolidated Telcom- Dickinson	(701) 483-4000	(701) 483-4000
	Montana-Dakota Utilities Co.	1-800-638-3278	1-800-638-3278
	Southwest Water Authority	1-701-225-0241	1-701-225-0241
If Premises are Impacted:	See Table 3.4.3 Dwellings within 1,000 feet of the Pipeline		
Weather Report:	National Weather Service - Bismarck Forecast Office	(701) 250-4224	N/A
If Residences were Impacted: (500 ft.) of Pipeline	Gloria Learn (Rick-husband) T140N R97W S22 SE4 SE4	(701) 225-5914	(701) 225-5914
	Melissa Chruszch 11661 Highway 10, Dickinson T140N R97W S3 4 SW4 SW4	(701) 227-0980	(701) 227-0980
	H. Edward Hughes T144N R96W S12 NW4		
	Dickinson Radio Broadcasting Stations		
	MIX (105.7 FM)	(701) 225-1057	(701) 225-1057
	KCAD (99.1 FM) KLTC (AM) KZRX (Z 92 FM)	(701) 227-1876	(701) 227-1876
	KDIX (1230 AM)	(701) 225-5133	(701) 225-5133

TABLE 2.2 (continued)
EMERGENCY NOTIFICATION PHONE LIST

Contact Role	Agency	Day Phone	24-Hour Phone
North Dakota Television Broadcasting Stations			
	KXMA - 7 (NBC) - Dickinson	(701) 483-7777	N/A
	KXMA - 12 (CBS) - Bismarck/Dickinson	(701) 223-9197	N/A
Ambulance Service:	Killdeer Ambulance Service	(701) 764-5006	Local 911
	Dickinson Ambulance Service	(701) 225-1500	Local 911
Hospitals/Clinic Service	St. Joseph's Hospital -Dickinson	(701) 456-4000	701) 456-4000
	McKenzie County Hospital- Watford	(701) 842-3000	(701) 842-3000
	Sanford Health Clinic - Dickinson	(800) 695-7245	(800) 695-7245
	Killdeer Medical Clinic	(701) 764-5822	Local 911
	Sanford Medical Center -Bismarck (Level II Trauma Center)	(701) 323-6150	(701) 323-6150
	St. Alexius Medical Center-Bismarck (Level II Trauma Center)	(701) 530-7000	701) 530-7000
	Hennepin County Med Center- Minneapolis, MN (Level I Trauma)	(612) 873-3000	(612) 873-3000
Fire Departments:	West Dunn Fire Department	Local 911 (701) 764-5006	Local 911 (701) 764-5006
	Stark County Rural Fire Dept.	(701) 456-7877	Local 911
	Dickinson Fire Department	(701) 456-7625	Local 911
Police Departments:	Sheriff's Department (Dunn County)	(701) 573-4449	Local 911 or State Radio
	Sheriff's Department (Stark County)	(701) 456-7610	Local 911
	Dickinson Police	Local 911	Local 911

2.3 Notification Steps

- Regulatory reportable quantity is one barrel or more, any quantity off company property, or any quantity in water (ND Administrative Code 43-02-03-30).
- Documentations of notification should be done using the Response Notification form in Section 2.4.
- The discovery of any spill will immediately reported it to the BOE/Progress Solutions Control Room dispatcher at (844)-220-9234. Table 2.1 identifies initial response actions that need to be taken.
- If a release occurs, the QI will notify the Dunn County Emergency Management at (701) 573-4343 or (701) 290-1769 and/or Stark County Emergency Services at (701) 456-7605 or (701) 627-4805. Verify with the emergency manager that they will contact the rural fire department and county sheriff's department if needed. If they request the QI to inform them, call local 911. Additional contact number for fire departments, county sheriffs, ambulance, medical services, utilities, businesses, and residences are provided in the Emergency Notification Phone List in Table 2.2.
- In North Dakota, both the Department of Health's Environmental Health Section and the Department of Mineral Resources' Oil and Gas Division of the North Dakota Industrial Commission receive reports of environmental incidents. For a pipeline spill, a General Environmental Incident Form is required. The form is to be filled out on line at www.ndhealth.gov/ehs/eir/Eirform.htm. The QI Coordinator/designate will fill out the form. The form is distributed to 15 ND government departments once submitted. This form is to be used for any crude oil environmental incident or release which:
 1. May potentially have adverse effects to human health or the environment.
 2. May potentially result in pollution of waters of the state, either surface water or ground water.
- If any spilled amount reaches waters of the state (surface or ground water), the QI Coordinator/designate will notify the following agencies:
 - i. North Dakota Department of Health - (701) 328-5210
Division of Water Quality will handle surface water and ground water issues. Division of Waste Management will handle Emergency Spill Response (site remediation, EPA site assessment).
 - ii. If the Health Department contact is unavailable, contact:
 1. North Dakota State Radio Communication Center - (800) 474-2121 in state and (701) 328-2121 for out of state.
 - iii. National Response Center - (800) 424-8802. NRC must be notified at the earliest practicable moment (within two hours) after a discharge of oil is discovered.
 - iv. North Dakota Industrial Commission - (701) 328-3722.

- EPA and PHMSA will be contacted by the National Response Center (NRC) when necessary due to a notification to the Response Center.
EPA - If any spill reaches navigable water, i.e. storm water system, Missouri River and causes a film or sheen or discoloration of the surface of the water or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines, or violates state water quality standards,
- OR
- DOT PHMSA -
An accident report is required for each failure in a pipeline system in which there is a release of a hazardous liquid transported resulting in any of the following:
 - (a) Explosion or fire not intentionally set by the operator.
 - (b) Release of 5 gallons (19 liters) or more of hazardous liquid, except that no report is required for a release of less than 5 barrels (0.8 cubic meters) resulting from a pipeline maintenance activity if the release is:
 - i. Not otherwise reportable under section 8.4.1 of this plan;
 - ii. Not one described in section 8.4.2 of this plan;
 - iii. Confined to company property or pipeline right-of-way; and
 - iv. Cleaned up promptly;
 - (c) Death of any person;
 - (d) Personal injury necessitating hospitalization;
 - (e) Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000.

The QI/designate will notify

- v. National Response Center - (800) 424-8802

Note: It is not necessary to wait for all information before calling the NRC. NRC must be notified at the earliest practicable moment (within two hours) after a discharge of oil is discovered.

1. The Incident Coordinator will be prepared to provide the following:
 - a. Name of the reporter.
 - b. Name and address of person represented by reporter.
 - c. Phone number where reporter can be contacted.
 - d. Exact location of the incident.
 - e. Date and time of the release.
 - f. Type of material spilled.
 - g. An estimate of the quantity of material released or spilled.
 - h. Exact release location, including the waterways which may be affected.
 - i. An estimate of the quantity spilled into navigable water.

- j. Source and cause of the release.
- k. A description of the affected medium (air, water, soil, etc.).
- l. Extent of actual and potential water pollution.
- m. Any damages or injuries caused by the spill and whether a continuing danger to life.
- n. Extent of injury, if any.
- o. Steps being taken or proposed to contain and clean up the spill.
- p. Steps being taken to minimize impacts.
- q. Whether evacuation is/was necessary.
- r. Names of individuals/organizations who have also been contacted.

vi. Local Emergency Response - Local 911

Must be contacted if crude oil of any quantity gets in water.

- Should the ND Highway Patrol need to be called for escort to a medical facility or a release that may require control of a state highway (Hwy 22, Hwy 200, I-94), etc. they can be contacted at (701) 227-6565 in Dickinson or by State Radio.
- Contacting the county emergency manager by phone directly or a local 911 phone call may dispatch the local rural fire department. The fire chief is responsible for the safety of the general public. Should a fire occur due to a discharge, a call to the ND Fire Marshal should occur at (701) 227-7422 in Dickinson or (701) 328-5555. A Bismarck or Minot HAZMAT team may be contacted to assist by the rural fire chief in the event of a fire.
- Filling out the ND General Environmental Incident Form should contact the North Dakota Game and Fish Department. Should a release pose a threat to environment, the ND Game and Fish Department (Dickinson) should be called at (701) 227-7432 or Bismarck (701) 328-6300. Also two federal agencies:
 1. US Fish and Wildlife (Bismarck) at (701) 250-4481
 2. USDA NRCS at (701) 225-5113 Dickinson or (701) 530-2000 in Bismarck.
- Should a release occur on the north end in the Murphy Creek flow path, a call to the Lake Ilo National Wildlife Refuge should be made at (701) 548-8110. The wildlife refuge is located 12 miles downstream.
- As part of the pipeline siting application finding of facts with the ND PSC, they will be notified of a spill by calling (701) 328-2400 by BOE/Progress Solutions.
- If the spill or release event is associated with a fatal accident to one or more employees or which requires hospitalization of three or more employees, the Occupational Safety and Health Administration (OSHA) will be contacted at 1-800-321-6742. NRC may contact them.

- A written report of a reportable spill that required notification to the US EPA, and North Dakota Department of Health (Division of Water Quality), is due within 60 days of the spill/discharge if the spill exceeds 1,000 gallons or occurs within a year of a previous reportable spill. The written report is required and will contain, at the minimum, the following information:
 - i. Name and location of the pipeline
 - ii. Name of owner/operator
 - iii. Name and address of registered agent of the owner, if any
 - iv. Date and year of initial facility operation
 - v. Maximum storage or handling capacity of oil of the facility
 - vi. Facility description with maps, flow diagrams and topographical maps
 - vii. Cause of spill with failure analysis
 - viii. Exactly what and how much was spilled
 - ix. Corrective action taken with description of repairs and replacements
 - x. Additional preventive measures taken or contemplated to minimize the possibility of recurrence
 - xi. Other information pertinent to spill event
- BOE/Progress Solutions for a DOT Reportable Accident will submit a Report on DOT Form 7000-1 within 30 days of discovery of the incident or an unintentional release of crude oil (hazardous material).
- The Environmental Coordinator or his/her designate will be the primary contact with federal and state regulators. The QI/IC may appoint a Liaison Officer with this responsibility. A Liaison Officer will perform assigned duties and update QI/IC as needed.
- The QI/IC or his/her designate will be the primary spokesperson with news media and issue press releases as necessary. All comments issued to the press will be first approved through BOE Pipeline management. BOE may identify the spokesperson other than the QI/IC. The QI/IC may appoint an Information Officer with this responsibility upon approval of BOE management. The Information Officer will perform assigned duties and update QI/IC as needed.
- The QI/IC or designate is responsible for review and approval of resource allocation changes.
- Calling 911 and asking for Fire Department assistance is proper notification when they are needed. The City of Dickinson Fire Department may be called to assist by the local Rural Fire Chief. The Bismarck or Minot Fire Department HAZMAT team may also be contacted to assist by the local Rural Fire Chief. The Dickinson Rural Fire Department has a foam pumper truck on order. BOE has donated 2,000 gallons of foam to the Dickinson Rural Fire Department. BOE donated 2,000 gallons of foam to the Rural Fire Department in Killdeer, ND. The Fire Department's role is protection of the general public, evacuation and firefighting if necessary.

- Upon containment and control of the release, the Incident Commander or designate Operations Coordinator will assist the clean-up contractor personnel as appropriate. The OSRO will be responsible for clean-up upon notification. They are to assure proper qualified cleanup personnel are performing the cleanup. To the extent feasible, the spill material will be recovered and reclaimed.
- The QI/IC or his/her designate will approve the demobilization of equipment and resources after decontamination procedures. All emergency response equipment and materials is to be returned to their proper location and status.
- After each oil spill event where the Response Plan is implemented, a post-incident analysis should be conducted to evaluate the Response Plan's effectiveness and identify plan, resource, and response deficiencies. BOE/Progress Solutions personnel or consultant will conduct the post-incident analysis.
- All plan, resource, and training deficiencies identified shall be reporting to the BOE management, along with a corrective action plan for resolving the identified problems. The owner should monitor corrective action plan progress until final resolution. BOE/Progress Solutions is responsible for correcting Response Plan deficiencies within 30 days of the corrective action plan publication date.
- **Applicable Insurance Contacts:**
 1. All calls to BOE's insurance carrier will be handled through BOE Management. BOE Management will notify the QI/IC of the date and time of notification for response notification documentation.
 2. All calls to Progress Solutions, LLC's insurance carrier will be handled through Progress Solutions, LLC Management. BOE Pipeline Management will notify the QI/IC of the date and time of notification for response notification documentation.

2.4 Response Notification Forms

National Response Center (NRC) - 1-800-424-8802

Note: It is not necessary to wait for all information before calling the NRC. NRC must be notified at the earliest practicable moment (within two hours) after a discharge of oil is discovered.

NRC is responsible for making all necessary federal notifications to other federal agencies including, but not limited to, the:

- Occupational Safety and Health Administration (OSHA)
- U.S. Environmental Protection Agency (EPA)
- U.S. Coast Guard (USCG)

- U.S. Army Corps of Engineers (ACOE)
- Office of Pipeline Safety (DOT-PHMSA)
- U.S. DOI Mineral Management Service (Region)

Table 2.4.1 is the NRC initial response report with items needed for initial reporting to agencies and should be provide as soon as possible. Some of the initial items may not be readily known when first notification(s) are made; this information should be provided at a later time when the information can be obtained. For any given spill/release/incident, not every information item will be applicable. Skip those items or enter "N/A".

GPS coordinates are now required. They tie in to spill tracking by the National Pipeline Mapping System (NPMS) and American Petroleum Institute (API). The format does not matter, it can be converted when necessary. GPS coordinate formats may look like the following:

Leak at Oxy Interconnect valve set located at coordinates:

- 47.15406 N, 102.79993 W
- 47°9' 14.616" N, 102°47' 59.748" W

For some items on the following tables it may be necessary to consult with corrosion technicians, facility engineers, field techs/field regulatory specialists or others to obtain the information.

A call to the National Response Center (NRC) will provide notification to PHMSA, EPA, and OHSA.

TABLE 2.4.1 NRC Initial Response Report
Phone 1-800-424-8802

Initial Report _____ Supplemental Report _____ Final Report _____ Date: _____	
Date and Time Spill/Release Discovered:	
Spill/Release Discovered by:	
Date and Time Spill/Release Reported to NRC (use 24 hour time):	
Pipeline: BOE Pipeline, LLC Pipeline from Killdeer, ND to Dickinson, ND	
Owner's Name	Bakken Oil Express Pipeline, LLC.
Operator's Name:	Progress Solutions
OPID Identification Number	39106
Spill/Release/Incident location (GPS coordinates):	
City/County/State:	
Nearest Town/City:	
Driving Directions:	
Product Spilled/Released: Crude Oil	
Estimated Volume Spilled/Released:	
Current Weather Conditions:	
Line Size/Description: (circle pipe diameter where spill occurred) 16" nominal Transmission line 20" nominal Transmission line	
Volume Recovered:	
<input type="checkbox"/> Interstate <input type="checkbox"/> Intrastate Regulated:	
Cause of Spill/ Release:	
Fire: <input type="checkbox"/> YES <input type="checkbox"/> NO	Explosion: <input type="checkbox"/> YES <input type="checkbox"/> NO
Evacuations: <input type="checkbox"/> YES <input type="checkbox"/> NO	
Environmental Impact: <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Soil	
Number of Injuries:	Number of Deaths:
Reporter's Name, Phone, and Job Title:	
Actions taken at scene:	

**TABLE 2.4.2
SPILL RESPONSE NOTIFICATION FORM**

Reporter Information

Reporter's Name	
Reporter's Phone Number	
Reporter's Position	
Facility Name	BOE Pipeline
Owner's Name	Bakken Oil Express Pipeline, LLC.
Operator's Name:	Progress Solutions
OPID Identification Number	39106
Zone, and Segment number or valve set:	Zone 1, Segment or valve set _____
Date and Time Spill/ Release Discovered:	
Spill/Release Discovered by:	
Spill Address, Legal Description, Land Description:	
	State: North Dakota
Were Materials Released	<input type="checkbox"/> YES <input type="checkbox"/> NO
Confidential	<input type="checkbox"/> YES <input type="checkbox"/> NO
Meeting Federal Reporting Requirements	<input type="checkbox"/> YES <input type="checkbox"/> NO
Calling for Responsible Party	<input type="checkbox"/> YES <input type="checkbox"/> NO
Date and Time of Each NRC Notification (use 24 hour time)	Initial:
	Supplemental:
	Final:

TABLE 2.4.2 (continued)
SPILL RESPONSE NOTIFICATION FORM

Incident Description	
Source and/or Cause of Incident	(e.g., material failure, excavation damage, corrosion)
Date:	
Time of the Discharge:	
Time of Incident:	(use 24 hour time)
Incident Address/Location:	
Nearest City:	
County (circle county)	Stark or Dunn
State	North Dakota
Zip Code	
Distance from nearest City (miles)	
Largest Pipeline section volume	14,529 bbl.
Total pipeline Storage Capacity	46,774 bbl. (No breakout tanks are part of the pipeline).
Size of Pipe where leak occurred	16" or 20" Transmission line, Intrastate, Regulated
Incident Section Pipe Volume (units)	(See Table 1.7.1 or 1.7.2)
Total Incident Capacity (units)	(See Table 1.7.2)
Spill Location: Latitude North	___ Degrees ___ Minutes ___ Seconds
Spill Location: Longitude West	___ Degrees ___ Minutes ___ Seconds
Weather Conditions	
Material Released <input type="checkbox"/> YES <input type="checkbox"/> NO	Material Released: OIL - OIL: Petroleum CRUDE
	Quantity Released (include units)
	Material Released Into Water <input type="checkbox"/> YES <input type="checkbox"/> NO
	Quantity Released into Water (include units)

TABLE 2.4.2 (continued)
SPILL RESPONSE NOTIFICATION FORM

Response Actions

Initial Response Actions (Include Activity Name)	
Actions Taken to Control Incident (Include Responders Names)	
Actions Taken to Mitigate Incident (Include Responders Name)	

TABLE 2.4.2 (continued)
SPILL RESPONSE NOTIFICATION FORM

Impact	
Number of injuries	
Number of deaths	
Evacuation(s) Required	<input type="checkbox"/> YES <input type="checkbox"/> NO
Number Evacuated	
Was There Any Damage?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Damage in Dollars (estimated)	
Medium Affected (Env. Impact):	<input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Soil
Fire?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Explosion?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Volume Recovered (units)	
Landowner Notified:	<input type="checkbox"/> YES <input type="checkbox"/> NO Name:
Nearest Occupied House:	
Nearest Main Road/ Intersection:	
Description of Affect:	Livestock/ Wildlife Impacted? <input type="checkbox"/> YES <input type="checkbox"/> NO
	Did release reach a HCA? <input type="checkbox"/> YES <input type="checkbox"/> NO
	Land Description of Spill/ Release area:
Additional Information about Medium (Environmental Impact):	Could It Reach Water? <input type="checkbox"/> YES <input type="checkbox"/> NO
	If Water Impacted, Name:
Additional Information (<i>any information about the incident not recorded elsewhere in the report</i>)	

TABLE 2.4.2 (continued)
SPILL RESPONSE NOTIFICATION FORM

Additional Pipeline Incident Report Information Required for Final Written Report	
Area Manager	Tory Neer
Area Supervisor (Foreman)	Dana Rathjen
Field Operations Supervisor/FLS:	
Landowners Notified:	
Diameter: (nominal in inches):	
Pipe Wall Thickness:	
Pipe Specifications:	
Seam Type:	
MOP and SMYS:	MOP_____psig SMYS_____%
Media Coverage:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Pressure at Time of Spill/Release:	
Is Pipe Configured for In Line Inspection Devices:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Date of Last In Line Inspection:	
Type of Tool:	
Cathodically Protected:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Type of System:	
Year installed:	
Has a CIS Been Performed:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Year of Last CIS:	
Repair Method Used:	
Method of Clean-up:	
Next Remediation Steps:	
Spill Costs (in whole dollars)	Public/Private Property Damage:
	Cost of Emergency Response Phase:
	Cost of Environmental Remediation:
	Value of Product Lost:
	Value of Operator Property Damage:
	Other Costs:
	Total Costs:
Describe Other Costs:	

TABLE 2.4.2 (continued)
SPILL RESPONSE NOTIFICATION FORM

Caller Notifications			
Contact	Activity	Yes - date/time/name	No
Landowner:			
Landowner:			
Command Post	LL Terminals, LLC.		
Command Post-alternate:	Bakken Oil Express Rail Facility Office		
QI:	Tory Neer, Progress Solutions Area Manager		
QI:	Dana Rathjen, Progress Solutions Foreman		
QI:	Doug Lee, Progress Solutions CEO		
QI:	Chris Lewis (BOE General Manager)		
AQI:	Brandon McDowell (BOE Director of Operations)		
Responder	Mike Galliett, Progress Solutions Field Operator		
Responder	Spencer Smith, Progress Solutions Field Operator		
Responder	Justin Hill, Progress Solutions Maintenance Tech.		
NRC:	FOSC notification and initial report		
Spill Response Support:	Baranko Brothers (Dickinson)		
	Clean Harbors (Williston) if contacted by Baranko Broathers		
	Region VIII - On-Scene Coordinator		
	EPA Environmental Response Team		
	OSHA		
EPA:	Central Region		
	OXY		
OSHA:	Belle Fourche		
PHMSA:	Tesoro High Plains Pipeline		
Other pipelines involved:	OXY		
	Belle Fourche Pipeline Company		
	Tesoro High Plains Pipeline		
BOE Insurance	IMA, Inc.		
Progress Solutions Insurance	USI Insurance Services, LLC.		

TABLE 2.4.2 (continued)
SPILL RESPONSE NOTIFICATION FORM

Caller Notifications			
Contact	Activity	Yes - date/time/name	No
State Notifications:	ND Department of Health - Environmental Health Section - Water Quality, Waste Management		
	North Dakota Highway Patrol - Headquarters - SW Region - Dickinson		
	North Dakota Fire Marshal - Dickinson, ND: Don Temple Jr. - Bismarck, ND: John Elstad		
	North Dakota Game & Fish Department - Dickinson Office		
	ND PSC		
	ND Industrial Commission		
	State Radio		
Other Federal Agencies:	U.S. Fish and Wildlife - Region 6 - North Dakota Field Office (Bismarck)		
	Lake Ilo National Wildlife Refuge		
	USDA NRCS - Central Region - State Office (Bismarck)		
	USDA NRCS - Central Region - Dickinson Service Center		
	Occupational Safety and Health		
(LEPC):	ND Department of Emergency Services - Homeland Security Division		
	ND Department of Emergency Services - SW Regional Response Coordinator		
	ND Department of Emergency Services - Dunn County Emergency Manager		
	ND Department of Emergency Services - Stark County Emergency Manager		
If Utilities were Impacted:	Roughrider Electric Cooperative		
	McKenzie Electric Co-Op Inc.		
	Consolidated Telcom		
	Montana Dakota Utilities Company		
	Southwest Water Authority		
Fire Departments:	West Dunn Fire Department		
	Stark County Rural Fire Dept.		
	Dickinson Fire Department		

**TABLE 2.4.2 (continued)
SPILL RESPONSE NOTIFICATION FORM**

Caller Notifications			
Contact	Activity	Yes - date/time/name	No
If Premises were Impacted:			
If Residences were Impacted (500 feet or less) from pipeline	Gloria Learn (Rick - Husband)		
	Melissa Chruszch		
	H. Edward Hughes		
Weather Report:	National Weather Service - Bismarck		
Emergency Broadcast Radio and Television Stations: Local Television/Radio Stations for Evacuation Notification:	Dickinson Radio Broadcasting Stations		
	MIX (105.7 FM)		
	KCAD (99.1 FM)		
	KLTC (AM)		
	KZRX (Z 92 FM)		
	KDIX (1230 AM)		
	Dickinson Television Broadcasting Stations		
	KQCD - 7 (NBC)		
	KXMA - 12 (CBS) Dickinson/Bismarck		

TABLE 2.4.2 (continued)			
SPILL RESPONSE NOTIFICATION FORM			
Caller Notifications			
Contact	Activity	Yes - date/time/name	No
Ambulance Service:	Killdeer Ambulance Service		
	Dickinson Ambulance Service		
Hospitals/Clinic Service	St. Joseph's Hospital (Dickinson)		
	McKenzie County Hospital (Watford)		
	Sanford Health Clinic (Dickinson)		
	Sanford Medical Center (Bismarck)		
	St. Alexis Medical Center (Bismarck)		
	Hennepin County Medical Center (Minneapolis, MN)		
Police Departments:	Sheriff's Department (Dunn County)		
	Sheriff's Department (Stark County)		
	Police Department (Dickinson)		

Table 2.4.3 is a table for inventorying follow-up Written Reports/Notification Letters do to a spill/release/incident.

TABLE 2.4.3		
WRITTEN REPORTS/ NOTIFICATION LETTERS		
Agency or Company	Due Date	Date Mailed

2.5 Primary and Secondary Communications Methods

Communications will be conducted by land line phone and cellular phone as needed for primary communications. Progress Solutions Company radios or texting will be used as secondary method of communications and may be used as a primary method of communications when group communications is required.

The following communications systems may be used for notifications and emergency response operations:

- Cellular phones - All response personnel have cell phones that can be used. Cell phones are not considered intrinsically safe. Consideration must be given where and when they should be used or if they should be shut off. Non-intrinsically safe phones can be used in safe zones and are not to be powered "On" when carried into the spill response hot zone. Vehicles and their company radios should be operated at a safe distance (50 feet) from the hot zone of a spill as they can be sources of ignition as well.
- Land line phones - the BOE Office (BOE Rail Facility), LL Terminals, LLC, and Progress Solutions Control Center have land line phones.
- Emails - computers and laptops are available.
- Sending Texts - Under some emergency situations, phone line communications systems becomes overburdened and phone communication can't occur in a timely fashion. Text uses different hardware and tower capacity which can be used when phones lines are not available.

Baranko Brothers has Hand-Held intrinsically safe radios, cellular telephones and GPS units available for Communications at the Dickinson, ND location.

In addition, if necessary the BOE/Progress Solutions communications system will be integrated into the communications system mobilized by the IC, to the extent practicable.

Progress Solutions Command Center in Bismarck, ND is the primary control center. The control room at LL Terminals, LLC truck terminal in Killdeer is the back up control center.

SECTION 3 SPILL DETECTION AND ON-SCENE SPILL MITIGATION PROCEDURES

In this Section:

- General Public Discharge Detections
- Discharge Detection by Personnel
- Automated Discharge Detections
- Initial and Mitigation Response Actions
- Mitigation Procedures and Required Response Resources
- Required Response Resources
- List of Emergency Response Equipment
- Response Personnel Roster and Resources

3.1 General Public Discharge Detections

BOE Pipeline has line marker signs along the pipeline with a contact number for landowners, leasers, and others to call should a spill be detected by the public. The general public may call 911 to report a spill or the number (844) 220-9234 on line marker signs.

3.2 Discharge Detection by Personnel

BOE Pipeline employs a number of techniques to monitor and maintain the integrity of its pipeline to protect the public and the environment. Routine periodic inspections and measurements of system components and parameters provide opportunity for BOE to detect a discharge. BOE Pipeline conducts bi-weekly aerial patrols of right-of-way, biennial measurements of pipe-to-soil potentials, and annual checks of block valve functioning which provide personnel opportunity to detect discharges.

The immediate responsibility for taking action resides with the person discovering the spill. Persons discovering the emergency should take all steps possible to immediately alert others in the area, shut down all oil operations if safe, notify the Progress Solutions Control Center as necessary and safely initiate steps to control the emergency and reduce its hazard.

3.3 Automated Discharge Detections

3.3.1 ALARMS

A leak detection alarm system is installed on the BOE pipeline. A telemetry system using SCADA, pressure sensors, shut-in-valves, and pump-off system is used for the alarm system. The SCADA system monitors the pressures at each mainline valve set which SCADA is installed. A leak would alarm in the control room causing the mainline valves to close shut and pumps to cease. The valves take over a minute to close to assure a water hammer effect does not occur due to a closing of a valve. The system also has a power failure alarm which will alert the control room dispatcher of a loss of power to the leak detection system.

3.3.2 SCADA (SUPERVISORY CONTROL DATA ACQUISITION) SYSTEM

SCADA systems are used to control and monitor physical processes. The BOE pipeline was constructed with a SCADA system. Crude oil is classified as a hazardous material being transported through the pipeline, and using a SCADA system ensures Computational Pipeline Monitoring (CPM) Leak Detection system (195.444) and control room management (195.446) requirements are met. The SCADA system is set up in real time to:

- Measure input volumes and output volume at the end of the pipeline.
- Monitor pressure at all block valves where SCADA is installed.
- Provide the ability to open and close valves remotely from the control room.
- Provide for a pump-off system.
- Alarm for power failures (this includes loss of a phase if three phases are required).

If volumes at the beginning and end of the pipeline differ in real time and the SCADA system senses a pressure drop, a pipeline discharge has occurred and control room management has the ability to operate block valves on the system to limit the volume of discharge. Progress Solutions Command Center in Bismarck, ND is the primary control center. The control room at LL Terminals, LLC truck terminal in Killdeer is the back up control center.

3.4 Initial Response and Mitigation Actions

3.4.1 INITIAL RESPONSE

The following are typical response objectives and can be used for oil spills:

- Ensure the safety of citizens and response personnel.
- Control the source of the spill.
- Manage a coordinated response effort.
- Maximize protection of environmentally sensitive areas including wildlife and historic properties.
- Contain and recover spilled material.
- Recover and rehabilitate injured wildlife.
- Remove spilled material from impacted areas.
- Minimize economic impact.
- Keep stakeholders informed of response activities.
- Keep the public informed of response activities.

The first priority in any spill is always the protection of human life and health. This priority remains paramount throughout all phases of the response effort. Maximum human protection from a pipeline spill is achieved by timely evacuation (if required), effective containment to areas away from inhabited residences and workplaces, and prompt cleanup.

The next priority is to protect natural resources and minimize ecological impacts. For the BOE Pipeline, the primary effort is to contain the spill and prevent its escape into waterways, i.e., Murphy Creek, Wolf Creek, Knife River, Crooked Creek, Lighting Creek, Russian Spring Creek, Green River, Duck Creek, Heart River and surrounding wetlands.

The third priority is to minimize economic and public impact. Actions taken to achieve the first two priorities will also achieve this goal. The most effective immediate action to minimize public impact is by keeping spilled oil from reaching beyond right-of-way site boundaries, keeping it from waters of the state, and to contain the spill if it does.

The following actions in Table 3.4 must be taken if it is safe for oil spill response and mitigation. These actions are prioritized based on a person being on-site to ensure the person's safety. If more than one person is on-site, then the following actions can be assigned to a specific person to reduce the time required to isolate the discharge site, make immediate notifications, and initiate control actions. When there are several persons on-site, the senior person is responsible for ensuring these actions are safely accomplished.

TABLE 3.4	
RESPONDER-IMMEDIATE ACTIONS	
Action	Notes
1. Identify the source of spill. Contact BOE/Progress Solutions Control Room dispatcher at 844-220-9234 to implement the closing of valves and shut down of pumps to stop the flow of product once verified the spill is caused by the pipeline. Identify the spill perimeter. Take immediate actions necessary to preserve life if safe to do.	<p>It is critical that notification be made immediately to ensure the safety of personnel and obtain additional resources as quickly as possible to control and minimize the discharge.</p> <p>Control Room dispatch will contact QI/IC, Belle Fourche Pipeline (307) 234-6930, Oxy Pipeline 1-800-733-3665, and Tesoro High Plains Pipeline (866) 283-7676 emergency 24/7 operations.</p> <p>Do not enter any spill site to accomplish the shutdown. Stay upwind and up gradient of the spill and avoid contact with the spilled material.</p>
2. Warn personnel and public within the immediate spill area. The operations level will have nonessential personnel evacuate to the area <i>up gradient and upwind</i> and report to the meeting place away from the spill area. Prevent any vehicles (other than response team) from entering the area.	<p>This action is to prevent any inadvertent action from compounding the situation.</p>
3. The senior person directing activities may call 911 for site perimeter control, personnel rescue, and/or fire assistance.	
4. Operations level should isolate the discharge spill area and eliminate ignition sources, if it can be accomplished safely . Initiate control action to confine and contain the release to the smallest area possible, if it can be accomplished safely .	<p>Shut down vehicles and other electrical sources as necessary. Ensure no one is smoking near the discharge/spill site. Vehicles are not to be used in hot zones as they can be a source of ignition. Cell phones can also be a source of ignition.</p>
Note: Once the QI/IC arrives at the spill site, the senior person directing the initial activities will brief the QI on the current situation and actions taken. The QI will coordinate all further activities.	

**TABLE 3.4
IMMEDIATE ACTIONS (CONT.)**

Action	Notes
5. Notify nearby locations that could be impacted.	Table 2.2 lists phone numbers for impacted locations.
6. Notify spill response support to respond. If discharge is beyond the capability of the primary organization, notify other oil spill response organizations to respond with needed additional resources. BOE/Progress Solutions responds with their employees and equipment to all spills. They are primary responders. The QI may contact additional contractors for additional help.	<ul style="list-style-type: none"> • Small: BOE Pipeline/Progress Solutions Spill Response Team Baranko Brothers 701-264-5004 • Medium to Large: BOE Pipeline/Progress Solutions Spill Response Team Emergency Manager, Sheriff, Fire - local 911 Baranko Brothers 701-264-5004 • Catastrophic: BOE Pipeline/Progress Solutions Spill Response Team Emergency Manager, Sheriff, Fire - local 911 Baranko Brothers 701-264-5004 Clean Harbors is requested by Baranko Brothers if needed.
7. County, federal, and state notifications as needed by QI or his/her designate. Notify the Stark and/or Dunn County Local Emergency Manager if a release occurs. Contact appropriate federal and state agencies according to their notification requirements. Always consider if a discharge may pose a threat to human health or the environment.	<ul style="list-style-type: none"> • Dunn County Emergency Management: Local 911 or (701) 290-1769 • Stark County Emergency Management: Local 911 or (701) 577-7707 • National Response Center (NRC): (800) 424-8802 • North Dakota Department of Health: (701) 328-5210 or (800) 472-2121 • North Dakota Game & Fish Dept. (Dickinson): (701) 328-6300 or (701) 227-7432 • US Fish and Wildlife Service (Bismarck): (701) 250-4481 • Lake Ilo National Wildlife Refuge • (701) 548-8110 • USDA NRCS (Dickinson): (701) 530-2000 or (701) 225-5113 (Dickinson) • ND PSC (701) 328-2400

3.4.2 MITIGATION INFORMATION

3.4.2.1 BOE Pipeline Crossings of Existing Pipelines

TABLE 3.4.2 BOE PIPELINE CROSSINGS OF EXISTING PIPELINES	
Pipeline Company	Station Location Crossing
Oneok Pipeline	45+69.2
Oneok Pipeline	107+90.12
Petro Hunt Pipeline	155+16.81
Oneok Pipeline	209+72.91
Oneok Pipeline	370+08.78
Oneok Pipeline	578+19.68
Oxy Water Pipeline	578+88.47
Oxy Gas Pipeline	579+05.76
Oxy Oil Pipeline	579+35.62
WBI 16" Steel Pipeline	627+14.33
Oneok Pipeline	745+64.88
Hiland Pipeline	801+29.47
Hiland Pipeline	848+02.82
Hiland Pipeline	972+47.94
Hiland Pipeline	1066+60.38
Hiland Pipeline	1069+00
Plains Pipeline	1661+44.39
Bridger Pipeline	1661+45.76
Plains Pipeline	1661+65.36
Plains Pipeline	1661+ 73.75
Bridger 4" Oil Pipeline	1662+86.47
Bridger 4" Oil Pipeline	1680+83.07
Pipeline	1737+33.37
Bridger 4" Oil Pipeline	1744+28.65
Oneok Pipeline	1771+61.76
Oneok Pipeline	1771+76.95
Cline Pipeline	1781+45.60
Belle Fourche 6" Pipeline	1786+63.79
MDU Cooperative Pipeline	1974+66.64
Belle Fourche 6" Oil Pipeline	1976+98.89
Belle Fourche 6" Oil Pipeline	1978+89.78
Oneok Pipeline	1982+43.33
Bridger 4" Oil Pipeline	1983+15.08

3.4.2.2 Dwellings within 1,000 feet of BOE Pipeline

TABLE 3.4.3 DWELLINGS WITHIN 1,000 FEET OF BOE PIPELINE				
Premise Type	Coordinates	Between Mile Post	County in North Dakota	Legal Description
LL Terminals Truck Facility	47.35555 N, 102.798169 W	0.00	Dunn	S28 T145N R95W
Residence 1	47.352111 N, 102.800395 W	1 & 2	Dunn	S28 T145N R95W
Unknown	47.350864 N, 102.798834 W	1& 2	Dunn	S28 T145N R95W
Residence 2	47.350861 N, 102.800134 W	1& 2	Dunn	S28 T145W R95W
Residence 3	47.308256 N, 102.796688 W	3 & 4	Dunn	S12 T144W R95W
Residence 4	47.213704 N, 102.795258 W	At 10	Dunn	S12 T143N R96W
Residence 5	47.083586 N, 102.814153 W	19 & 20	Dunn	S26 T142N R96W
Residence 6	46.947953 N, 102.853821 W	29 & 30	Stark	S13 T140N R97W
Residence 7	46.947339 N, 102.875239 W	30 & 31	Stark	S14 T140N R97W
Residence 8	46.920056 N, 102.896363 W	N of 33	Stark	S22 T140N R97W
Residence 9	46.920439 N, 102.894859 W	N of 33	Stark	S22 T140N R97W
Residence 10	46.914945 N, 102.893686 W	33 & 34	Stark	S26 T140N R97W
Belle Fourche Oil Transfer Facility	46.907004 N, 102.895287 W	N of 34	Stark	S27 T140N R97W
Belle Fourche Oil Transfer Facility	46.906319 N, 102.895317 W	N of 34	Stark	S27 T140N R97W
Residence 11	46.877808 N, 102.914739 W	At 36	Stark	S3 T139W R97W
Residence 12	46.876863 N, 102.908761 W	At 36	Stark	S3 T139W R97W
Residence 13	46.875289 N, 102.914657 W	At 36	Stark	S10 T139N R97W
Residence 14	46.875041 N, 102.907536 W	At 36	Stark	S10 T139N R97W
Residence 15	46.870271 N, 102.900489 W	At 37	Stark	S10 T139N R97W
BOE Rail Facility	46.868753 N, 102.876817 W	At 38	Stark	S11 T139N R97W

3.4.2.3 Pipeline Spill Mitigation Procedures Protection for Environmentally Sensitive Area

The primary focus of containment operations must be to prevent released product from entering water supplies, drains, sewage systems, pipe and cable ducts, or other critical areas. In most instances allowing a larger surface spread on land is better than allowing product to enter a surface water system, but this determination should be made as situations arise.

The crude oil should be trapped in ditches and gullies by earth dams when possible. Where excavating machinery is available, dams can be graded to contain product. Dams, small and large, should be effectively employed to protect priority areas such as inlets to drains, sewers, ducts, and watercourses. These dams can be constructed of earth, sandbags, sorbents, planks, or any other effective method. Thin layers of product on land can be contained by using sorbent material. The use of absorbents on land should be restricted to priority areas due to the expense and disposal problems. If time does not permit construction of a large containment dam, multiple small dams can be made, each one holding a portion of the spill as it advances. The terrain will dictate the placement of containment dams. If the spill is minor, natural dams or earth absorption will stop the product before it advances any significant distance. In the case of a line strike by excavation equipment, a spill may follow an excavation. Containment and subsequently cleanup are the main concerns in such situations.

The drainage paths flow initially into nine different creeks and rivers. These waterways ultimately follow navigable waters of the Missouri River. Eight of these waterways have widths of less than 40 feet and the Heart River has a width of 130 to 450 feet. A 50-foot containment boom or 50-foot sorbent boom can be used to contain discharge flow in the eight smaller waterways by working along the shorelines. Containment can also occur relatively easy where these waterways cross under a road. Sorbent sweep or sorbent boom can be used in front of the culverts to contain discharge flow.

Due to a width of 130 feet to 450 feet, containment required for the Heart River prior to Patterson Lake will require a boat. Fifty feet pieces of containment boom should be connected together until a containment width is reached. Containment of a discharge into the west Heart River will more than likely flow into Patterson Lake and may be contained due to closing of the spillway or shoreline efforts after the spillway where the width of the waterway is reduced to 50 feet using a 50 foot containment boom. For a discharge into the Heart River, Baranko Brothers and, if necessary, Clean Harbors resources should be used for containment and clean-up.

The following list summarizes nine different drainage flow paths identifying containment control points that can be used to mitigate oil discharge flow that would reach a creek or river along the pipeline:

1. **Murphy Creek** (Stations 0+00 to 258+72) has seven flow paths along this watershed in Dunn County. Three tributaries north of Murphy Creek merge together into Murphy Creek. Three tributaries south of Murphy Creek merge together into Murphy Creek. A discharge that could get to Murphy Creek would flow east for 12.7 miles from the pipeline crossing in the creek to Ilo Dam; the discharge would spread 1.6 miles in the lake, then flow into Spring Creek. BOE Pipeline crosses Murphy Creek 2.8 miles south of the truck terminal.

Nearest Highways

- Hwy 22 north/south is located 3.74 miles downstream of the pipeline crossing Murphy Creek.
- Hwy 200 east/west is located 0.14 miles north of Station 0+00.

Containment Control Points

CP1A: North tributary to Murphy Creek. 3.74 miles downstream of pipeline crossing is a Hwy 22 crossing (47°19' 55.04"N, 102°45'28.91"W). The crossing is 1.26 miles north of 7th Street SW on Hwy 22.

CP2: North tributary to Murphy Creek. 5.13 miles downstream of pipeline crossing is a small dam (47°19' 53.4"N, 102°44'28.72"W). There is no road access. A small dam is located 0.78 miles east of Hwy 22 creek crossing.

CP3: Murphy Creek. 10.44 miles downstream of pipeline crossing is the 104th Avenue SW road crossing (47°19'29.84"N, 102°41'38.21"W). Travel 3 miles east off Hwy 22 on 7th Street SW, turn left and travel 0.76 miles north on 104th Avenue SW to the Murphy Creek road crossing.

CP4: Murphy Creek. 12.72 miles downstream of pipeline crossing is Lake ILO (47°20' 55.01"N, 102°38'48.35"W). Lake ILO Dam would be a containment control until a flow goes over the overflow spillway. Travel 5.5 miles east on Hwy 200 from Hwy 22 intersection, turn right and travel south 0.8 miles south to Lake Ilo Dam spillway flow path.

CP5: Spring Creek. 101 Street Avenue SW road crossing (47°20' 39.02"N, 102°37'16.85"W). Travel 6.66 miles east on Hwy 200 from Hwy 22 intersection, turn right and travel south 0.39 miles south on Central Avenue S (101st Avenue SW) to road crossing.

CP6: Spring Creek. Hwy 200 road crossing (47°19'55.04"N 102°45'28.91"W). Travel 7.71 miles east on Hwy 200 from Hwy 22 intersection.

CP1B: Murphy Creek. Hwy 22 crossing 0.07 miles north of 7th Street SW (47°18' 53.27"N, 102°45'28.27"W).

CP1C: South tributary to Murphy Creek. Hwy 22 crossing 0.57 miles south of 7th Street SW (47°18' 19.51"N 102°45'28.16"W).

2. Wolf Creek (258+72 to 369+50 watershed) has four major flow paths in the pipeline area located in Dunn County. The north tributary flows east into Wolf Creek just west of the creek crossing at Hwy 22. Two south tributaries flow east into the creek within 0.5 mile of their BOE pipeline crossings. The pipeline crosses Wolf Creek 6.2 miles south of the truck terminal.

Nearest Highways

- Hwy 22 north/south is located east of pipeline. Wolf Creek crosses Hwy 22 at 0.48 miles south of 11th St. SW.

Containment Control Points

CP1A: Wolf Creek. Hwy 22 crossing (47°14' 57.48"N, 102°46'00.44"W). 0.48 miles south of 11th Street SW along Hwy 22.

CP2: Wolf Creek. 12th St SW road crossing (47°14' 30.01"N, 102°45' 56.31"W). Located 0.17 miles east of Hwy 22.

CP3: Knife River. 14th St SW road crossing 25-foot bridge (47°12'32.98"N, 102°41'38.65"W).

CP4: Knife River. 101st Avenue SW road crossing (47°11' 27.71"N, 102°37'53.85"W). Located 0.53 miles north of 16th Street SW.

CP5: Knife River. 102nd Avenue SW road crossing (47°11' 18.24"N, 102°39' 7.53"W). Travel 6 miles east on 16th St. SW off of Hwy 22, then turn left and travel north 0.45 miles to road crossing.

3. Knife River (Station 369+50 to 607+35 watershed) has three major flow path pipeline crossings along this watershed in Dunn County. The Knife River flows directly into the Missouri River with all watersheds in Dunn County along the pipeline flowing into the Knife River. The north tributary flow southeast 5.6 miles from its pipeline crossing into the Knife River. The south tributary flows northeast for 2.43 miles from its pipeline crossing into the Knife River. The pipeline crosses Knife River twice at 9.01 and 9.84 miles south of the truck terminal.

Nearest Highways

- Hwy 22 is east of the pipeline with a downstream road crossing of the Knife River 0.33 miles south of 12th Street SW.

Containment Control Points

CP1: Knife River. Road crossing downstream east of pipeline crossing, Hwy 22 crossing (47°14' 12.53"N, 102°46'14.49"W). The crossing is located 0.33 miles south of 12th Street SW on Hwy 22.

CP2: Knife River. 14th Street SW road crossing, 25-foot Bridge (47°12'32.98" N, 102°41'38.65" W). Travel 3 miles east on 16th St SW, turn north (left) and travel 1 mile, turn east (right) on 15th Street SW and travel ½ mile, road turns north (left) and travel for 0.36 miles, turn east (right) and travel 0.36 miles northeast, road turns north and travel an additional 0.34 miles to road crossing.

CP3: Knife River. 101st Avenue SW road crossing (47°11' 27.71"N, 102°37'53.85"W). Travel 6.78 miles on 16 Street SW east off of Hwy 22, turn north (left) and travel 0.53 miles north of 16th Street SW.

CP4: Knife River. 102nd Avenue SW road crossing (47°11' 18.24"N, 102°39' 7.53"W). Follow 16th Street SW off of Hwy 22.

4. Crooked Creek (Station 607+35 to 977+96 watershed) has two major flow paths along this watershed in Dunn County. A north tributary flows southeast about 1 mile into Crooked Creek from its pipeline crossing. The pipeline crosses Crooked Creek at 13.8 miles south of the truck terminal and flows into the Knife River.

Nearest Highways

- Hwy 22 north/south is 2.2 miles downstream to the east of the Crooked Creek pipeline crossing. The highway crossing is located 0.5 miles south of 17th St SW.

Containment Control Points

CP1: Crooked Creek. Hwy 22 road crossing (47°09' 42.69"N, 102°46' 42.77"W) is located 2.2 miles downstream east of pipeline crossing. The crossing is 0.5 miles south of 17th Street SW along Hwy 22.

CP2: Crooked Creek. Road crossing (47° 09' 53.34"N, 102° 44' 51.37"W) is located 6.25 miles downstream of the pipeline crossing. Travel 1.64 miles east of Hwy 22 on 17th Street SW, turn right traveling south for 0.4 miles.

CP3: Crooked Creek. Road crossing (47°10' 6.53"N, 102°42'55.08"W) is located 12.64 miles downstream of the pipeline crossing. Travel 3 miles east of Hwy 22 on 17th Street SW, turn south travel 0.05 miles to water crossing.

CP4: Crooked Creek. Road crossing (47°09' 52.13"N, 102°41' 38.85"W) is located 14.02 miles downstream of the pipeline crossing. Follow 16th Street SW off of Hwy 22 for 4 miles east, turn right and travel south 1.33 miles south to water crossing.

5. Lighting Creek (Station 977+96 to 1028+20 watershed) has one major flow path along this watershed in Dunn County. Lighting Creek flows for 9.8 miles to the east from the BOE pipeline crossing where it then flows into Crooked Creek for 29.1 miles and then into the Knife River. The pipeline crosses Lighting Creek at 19 miles south of the truck terminal.

Nearest Highways

- Hwy 22 north/south runs along the east side of the Lighting Creek flow path for 9.8 miles. Lighting Creek then enters Crooked Creek for 0.17 miles where it crosses under Hwy 22. The highway crossing is located 0.5 miles south of 17th Street SW along Hwy 22.

Containment Control Points

CP1-CP3: Lighting Creek. Lighting Creek has 3 earthen dams located along the 9.8 mile Lighting Creek flow path from the pipeline to Crooked Creek. The earthen dams are located 0.33 miles, 0.86 miles, and 9.15 miles downstream of the pipeline crossing in Lighting Creek. These dams are not easy accessible with vehicles but are containment control points along the creek.

CP4: Crooked Creek. Hwy 22 road crossing (47°09' 42.69"N, 102°46' 42.77"W) is located 10 miles downstream east of pipeline crossing. Lighting Creek flows 9.8 miles before entering Crooked Creek 0.17 miles prior to Hwy 22. The highway crossing is 0.5 miles south of 17th Street SW along Hwy 22.

CP5: Crooked Creek. Road crossing (47° 09' 53.34"N, 102° 44' 51.37"W) located 14.02 miles downstream of Lighting Creek/pipeline crossing. Travel 1.64 miles east of Hwy 22 on 17th Street SW, turn right traveling south for 0.4 miles to road crossing.

CP5: Crooked Creek. Road Crossing (47°10' 6.53"N, 102°42'55.08"W) located 20.41 miles downstream of the Lighting Creek/pipeline crossing. Travel 3 miles east of Hwy 22 on 17th St SW, turn south travel .05 miles to water crossing.

6. Russian Spring Creek (Station 1028+20 to 1271+14 watershed) has three major flow paths along this watershed that flows southeast in Dunn County and then into Stark County. Two tributaries north of Russian Spring Creek flow into the Creek. A discharge could flow 26.5 miles in Russian Spring Creek from the creek/pipeline crossing to Green River, then in the Green River, and then eventually into the Heart River. The pipeline crosses Russian Spring Creek at 22.4 miles south of the truck terminal.

Nearest Highways

- Hwy 22 north/south runs along the east side of the tributaries and Russian Spring Creek until the creek crosses under the highway 4.3 miles downstream in the creek from the creek pipeline crossing. The highway crossing is located 0.35 miles north of 27th St SW.

Containment Control Points

CP1A: Russian Creek north tributaries. 25th Street SW road crossing (47°03' 11.44"N, 102° 49' 16.88"W). Travel 1.01 miles west on 25th Street SW from Hwy 22.

CP1: Russian Creek. Hwy 22 road crossing 4.3 miles downstream southeast of creek/pipeline crossing (47°01' 45.96"N, 102°47'59.57"W). The crossing is located 0.33 miles south of 12th Street SW on Hwy 22. The Hwy 22 crossing located 0.35 miles north of 27th Street SW.

CP2: Russian Creek. 110th Avenue SW road crossing (47°00' 48.05"N, 102°46'43.13"W). Travel 1 mile east on 28th Street SW, turn north (left) and travel 0.25 miles.

CP3: Russian Creek. 28th Street SW road crossing (47°00' 35.84"N, 102°45' 30.60"W). Located 8.98 miles downstream from the creek/pipeline crossing. Travel 1.95 miles on 28 Street SW east off of Hwy 22.

CP4: Russian Creek. 30th Street SW road crossing (46°58' 52.59"N, 102°41' 55.29"W). Follow 30th Street SW east 4.3 miles off of Hwy 22 to the Dunn/Stark County Section Line.

CP5: Russian Creek. 32nd Street SW road crossing (46° 56' 53.91"N, 102° 40' 28.34"W). Located 24.24 miles downstream of creek/pipeline crossing. Travel 5.10 miles east of Hwy 22 on 32nd Street SW to get to crossing.

7. Green River (Stations 1271+14 to 1706+11 watershed) has six major flow paths along this watershed in Stark County. All major flow paths flow together into the Green River within 3 miles downstream of the River/pipeline crossing. A discharge would flow 40 miles before it would flow into the Heart River. The pipeline crosses Green River three times: 27.28, 27.34, and 27.43 miles south of the truck terminal facility.

Nearest Highways

- Hwy 22 north/south is 8.36 miles downstream to the east of the Green River/pipeline crossing. Hwy crossing located 0.12 miles north of 63rd Ave NE.

Containment Control Points

CP1: Green River. State Avenue N road crossing (46°57' 43.27"N, 102°48' 39.36"W). Located 5.34 miles downstream southeast of pipeline crossing of Green River. Travel 1 mile west on 32nd St SW from Hwy 22, then turn right and travel north 1.94 miles on State Ave N to Green River road crossing.

CP2: Green River. Hwy 22 road crossing (46°57' 26.19"N, 102°47' 22.86"W). Located 8.36 miles downstream southeast of pipeline crossing. Hwy crossing located 0.12 miles north of 63rd Ave NE.

CP3: Green River. 109th Avenue SW road crossing (46° 57' 52.96"N, 102° 44' 51.15"W). Located 14.63 miles downstream of pipeline crossing. Travel 2 miles east of Hwy 22 on 32th Street SW, turn left traveling north for 1.13 miles.

CP4: Green River. 107th Avenue SW road crossing (46° 57' 17.36"N, 102° 42' 23.92"W). Located 20.54 miles downstream of river/pipeline crossing. Travel 4 miles east of Hwy 22 on 32th Street SW, turn left traveling north for 0.45 miles.

CP5: Green River. 105th Avenue SW road crossing (46° 57' 17.36"N, 102° 42' 23.92"W). Located 27.8 miles downstream of river/pipeline crossing. Travel 6.2 miles east of Hwy 22 on 32th St SW, turn right traveling south for 1.67 miles.

CP6: Green River. 35th Street SW road crossing (46° 54' 17.61"N, 102° 38' 13.19"W). Located 32.27 miles downstream of pipeline crossing. Travel 7.25 miles east of Hwy 22 on 21st Street E in Dickinson which becomes 35th Street SW outside of Dickinson city limits.

8. Duck Creek (1706+11 to 1884+69 watershed) has three major flow paths along this watershed in Stark County. The north tributary flows southeast for approximately 4 miles from the tributary/pipeline crossing into Duck Creek. The south tributary flows about 1 mile from its tributary/pipeline crossing into Duck Creek. Duck Creek is the center flow path in the watershed. The Duck Creek flow path would travel 5.3 miles before entering Edward Arthur Patterson Lake. A discharge would then spread 1.66 miles in the lake. The Patterson Dam would act as a containment structure unless the lake level caused an overflow at its spillway. Once over the spillway a discharge would flow in the Heart River. The pipeline crosses Duck Creek 34.7 miles south of the truck terminal facility.

Nearest Highways

- I-94 travels east/west. The north tributary crossing the interstate 3.33 miles downstream of the tributary crossing the pipeline. This highway crossing is east of the Duck Creek highway road crossing. Duck Creek also crosses I-94 1.01 miles downstream of Duck Creek crossing the BOE pipeline.

-Hwy 10 travels east/west. Hwy 10 parallels I-94 one mile south. The three majors flow paths of Duck Creek flow together into Duck Creek before crossing Hwy 10. The Hwy 10 road crossing is 4.02 miles downstream from the BOE pipeline crossing in Duck Creek.

Containment Control Points

North Tributary to Duck Creek

CP1A: North Tributary to Duck Creek. An Earthen Dam (46°54' 58.06"N, 102°52' 53.10"W) is located 0.85 miles downstream of the tributary crossing the pipeline. Travel 4.57 miles west on 34nd Street SW from Hwy 22, follow the flow path southeast for 1,600 feet to dam.

CP2A: North Tributary to Duck Creek. An Earthen Dam (46°54' 9.04"N, 102°52' 37.59"W) is located 2.15 miles downstream of the tributary crossing the pipeline. From Hwy 22, travel 4.04 miles west on 21st Street W in Dickinson city limits (35nd Street SW outside city limits) and then follow the flow path west of road for 1,100 feet southwest to the dam.

CP3A: North Tributary to Duck Creek. I-94 highway crossing (46°53' 26.51"N, 102°52' 58.47"W) is located 3.33 miles downstream of the tributary crossing the pipeline. From Hwy 22/I-94 intersection, travel 4.5 miles west on I-94.

South Tributary to Duck Creek

CP1B: South Tributary to Duck Creek. 116th Avenue SW north/south road crossing (46°53' 13.94"N, 102°53' 39.08"W) is located 0.97 miles downstream of the tributary/pipeline crossing. From Hwy 10 traveling west from Dickinson, turn right onto 116th Avenue SW and travel north 0.75 miles.

Duck Creek

CP1: Duck Creek. I-94 highway crossing (46°54' 13.05"N, 102°54' 48.8"W) is located 1.01 miles downstream of the Duck Creek/pipeline crossing. From Hwy 22/I-94 intersection travel 5.2 miles west on I-94.

CP2: Duck Creek. Hwy 10 road crossing (46°52' 34.17"N, 102°51' 55.50"W) is located 4.02 miles downstream of the Duck Creek/pipeline crossing. From 3rd Avenue W (Main Avenue) travel 3.6 miles west on Villard Street W and then 37th Street SW (Hwy 10).

CP3: Duck Creek. Railroad crossing (46° 51' 37.94"N, 102°51' 37.94"W) is located 5.21 miles downstream of the Duck Creek/pipeline crossing. From 3rd Avenue W (Main Avenue) travel 3 miles west on Villard Street W and then 37th Street SW (Hwy 10). Turn left on 114th Avenue SW traveling south for 0.56 miles to the railroad tracks. The flow path crossing is 2,250 feet west.

CP4: Patterson Lake. Patterson Dam is a containment but has an overflow spillway (46° 52' 2.00"N, 102° 49' 34.94"W) located downstream of creek/pipeline crossing. From Main Avenue S (north/south) turn west at SE 8th Street, travel 1.55 miles west on SE 8th Street, take a right turn and travel north, then turn left on 30th Avenue SW traveling south for 0.3 miles crossing over the railroad tracks taking the first left and following the east then south to a residence, the dam spillway is located 1,000 feet southwest of the residence. The spillway can be reached from the south side of the waterway by following a golf cart path from the Dickinson Golf Course Clubhouse.

CP5: Heart River. South State Avenue road crossing (46° 52' 11.04"N, 102° 48' 33.61"W) is located 3.65 miles south of the Patterson Dam spillway along the Heart River. From 3rd Avenue W (Main Avenue) travel 1 miles west on Villard Street, then turn left on S State Avenue traveling south for 0.67 miles to the Heart River bridge crossing.

CP6: Heart River. South Main Avenue SW road crossing (46° 52' 12.99"N, 102° 47' 23.67"W) is located 5 miles downstream of Patterson Dam spillway in the Heart River. Travel south 0.61 miles south on Main Avenue from Villard Street.

CP7: Heart River. 9th Avenue SE road crossing (46° 52' 33.01"N, 102° 46' 42.19"W) located 6.5 miles downstream of Patterson Dam spillway in the Heart River. Travel south 0.2 miles south on 9th Avenue SE from E Villard Street.

9. Heart River (1884+69 to 2020+24 watershed) has three major tributaries that flow into the Heart River west of Patterson Lake along this watershed in Stark County. The Heart River is the major river that all watersheds along the pipeline in Stark County drain into. The Heart River flows to the Missouri River. The three major tributaries would flow on ground to the Heart River and then about 3 miles in the Heart River before entering Edward Arthur Patterson Lake. A discharge would then spread 1.66 miles in the lake. The Patterson Dam would act as a containment structure unless the lake level caused an overflow at its spillway. Once over the spillway, a discharge would flow in the Heart River. The pipeline does not cross the Heart River. The Heart River watershed is the closest watershed to the rail facility on the south end of the pipeline.

Nearest Highways

-Hwy 10 travels east/west. Hwy 10 parallels I-94 one mile south. The longest Heart River tributary along the pipeline would flow under Hwy 10. The Hwy 10 road crossing is 0.6 miles downstream from the BOE pipeline tributary crossing.

-I-94 travels east/west. The northern Heart River tributary is 0.66 miles south of I-94. Therefore, no Heart River tributaries along the pipeline cross the I-94 interstate.

Containment Control Points

Land Tributaries

CP1A: North Tributary (longest) to Heart River. Hwy 10 crossing (46°52' 34.56"N, 102°54' 11.31"W) is located 0.6 miles downstream of the tributary/pipeline crossing. From 3rd Avenue W (Main Avenue) travel 5.39 miles west on Villard Street W and 37th Street SW (also called Hwy 10).

CP2A: North Tributary and West Tributary to Heart River. 116th Avenue SW road crossing (46°51' 21.58"N, 102°53' 39.13"W) is located 2.15 miles downstream of the tributary/pipeline crossing. From 3rd Avenue W (Main Avenue) travel 5 miles west on Villard Street W/37th Street SW (also called Hwy 10), turn left and travel south 1.39 miles on 116th Avenue SW to the Heart River road crossing.

Heart River

CP1: Patterson Lake. Patterson Dam is a containment but has an overflow spillway (46° 52' 2.00"N, 102° 49' 34.94"W) located downstream of flow paths/pipeline crossing. From Main Avenue South turn west at SE 8th Street, travel 1.55 miles west on SE 8th Street, take a right turn and travel north, then turn left on 30th Avenue SW traveling south for 0.3 miles crossing over the railroad tracks. Take the first left and follow east then south to a residence. The dam spillway is located 1,000 feet southwest of the residence. The spillway can be reached from the south side of the waterway by following a golf cart path from the Dickinson Golf Course Clubhouse.

CP2: Heart River. South State Avenue road crossing (46° 52' 11.04"N, 102° 48' 33.61"W) located 3.65 miles south of the Patterson Dam spillway along the Heart River. From 3rd Avenue W (Main Avenue) travel 1 miles west on Villard Street, then turn left on S State Avenue traveling south for 0.67 miles to the Heart River bridge crossing.

CP3: Heart River. South Main Avenue SW road crossing (46° 52' 12.99"N, 102° 47' 23.67"W) located 5 miles downstream of Patterson Dam spillway in the Heart River. Travel south 0.61 miles south on Main Avenue from Villard Street.

CP4: Heart River. 9th Avenue SE road crossing (46° 52' 33.01"N, 102° 46' 42.19"W) located 6.5 miles downstream of Patterson Dam spillway in the Heart River. Travel south 0.2 miles south on 9th Avenue SE from E Villard Street.

3.4.2.4 WORST Case Spill Mitigation Procedures Protection for Environmentally Sensitive Areas

A Worst Case Discharge would occur if the Oxy Interconnect Valve Set was destroyed. A maximum of 20,280 barrels could be discharged. The Oxy Interconnect would discharge line sections 3, 4, and the Oxy Segment.

OXY Interconnect Valve Set (Station 746+34) Worst Case Discharge would occur if the Oxy Interconnect Valve Set was destroyed. A maximum discharge of 20,280 barrels could be spilled. The Oxy Interconnect would discharge line sections 3, 4, and the Oxy Segment in Dunn County.

Drainage flow path: 0.3 miles across land (area very flat; pooling would occur near valve set) to Crooked Creek, then 32.05 miles in Crooked Creek to reach Knife River and 22.04 miles in the Knife River to reach the 27 hour planning distance of 54.39 miles.

The pipeline crosses Crooked Creek at 13.8 miles south of the truck terminal and flows into the Knife River.

Nearest Highways

- Hwy 22 north/south is 2.2 miles downstream to the east of the Crooked Creek pipeline crossing or 3.46 miles downstream from the Oxy Interconnect. The highway crossing is located 0.5 miles south of 17th Street SW.

Containment Control Points:

CP1: Crooked Creek. 18th Street SW road crossing (47°09' 42.69"N, 102°46' 42.77"W) is 0.34 miles down flow of the Oxy Interconnect. Crossing is 1.31 miles west on 18th Street SW from Hwy 22.

CP2: Crooked Creek. Dam located 0.54 miles downstream (47°09' 42.69"N, 102°46' 42.77"W) of the Oxy Interconnect. Dam located 1.2 miles west on 18th Street SW off Hwy 22, then proceed 800 feet northwest.

CP3: Crooked Creek. Hwy 22 road crossing (47°09' 42.69"N, 102°46' 42.77"W) located 2.2 miles downstream east of pipeline crossing (3.46 miles downstream of the Oxy Interconnect). Crossing is 0.5 miles south of 17th Street SW along Hwy 22.

CP4: Crooked Creek. Road crossing (47° 09' 53.34"N, 102° 44' 51.37"W) located 6.25 miles downstream of pipeline crossing (7.7 miles downstream of interconnect). Travel 1.64 miles east of Hwy 22 on 17th Street SW, turn right traveling south for 0.4 miles.

CP5: Crooked Creek. Road crossing (47°10' 6.53"N, 102°42'55.08"W) located 12.64 miles downstream of the pipeline crossing (14.09 miles downstream of interconnect). Travel 3 miles east of Hwy 22 on 17th Street SW, turn south travel 0.05 miles to water crossing.

CP6: Crooked Creek. Road crossing (47°09' 52.13"N, 102°41' 38.84"W) located 14.02 miles downstream of the pipeline crossing (15.46 miles downstream of interconnect). Follow 16th Street SW off of Hwy 22 for 4 miles east, turn right and travel south 1.33 miles south to water crossing.

CP7: Crooked Creek. 16th Street SW Road crossing (47°10' 57.28"N, 102° 36' 15.98"W) located 28.64 miles downstream of Oxy Interconnect. Travel 8.21 miles east of Hwy 22 on 16th Street SW.

CP8: Knife River. Road crossing (47°11' 49.39"N, 102°32'37.06"W) is located 37.08 miles downstream of the interconnect. Travel 10 miles east of Hwy 22 on 16th Street SW, turn north travel 0.97 miles to water crossing.

CP9: Knife River. 93rd Avenue SW road crossing (47°08' 33.04"N, 102°27' 47.55"W) located 51.96 miles downstream of the interconnect. Follow 19th Street SW off of Hwy 22 for 14.7 miles east, turn left and travel south 0.15 miles north to water crossing.

3.5 Required Response Resources

Appendix E provides a summary of the Worksheet of Plan Volume of Response Resources for Worst Case Discharge. BOE/Progress Solutions must provide response resources for a worst case discharge of the pipeline.

The following is a Determination and Evaluation of Required Response Resources for all spills/releases for the pipeline.

BOE Pipeline in Dunn and Stark Counties, ND

Largest pipeline containment lost due to one event = 20,280 barrels = 851,741 gallons

Oxy Interconnect valve set destroyed

Line Sections 3, 4, Oxy segment discharge

BOE Pipeline, LLC will begin operation in 2014

Determination and Evaluation of Required Response Resources for Facility Response Plans based on Title 40 Part 112 Subpart D Appendix E.

Procedures to Identify Response Resources

1.2.8 (1) A Group 2 oil specific gravity less than 0.85
Bakken Oil-Light Crude Oil-0.78 to 0.86

Table 1 Appendix E - Response Resource Operating Criteria (lists criteria for Oil Recovery devices and booms).

Oil Recovery Device for Inland \leq 3 feet significant wave length

Boom property Use \leq 3 feet wave height- Boom Height inches 18-42", Skirt Strength 100 lbs.

Reserve Buoyancy to Weight Ratio 2:1, Total Tensile Strength 15,000-20,000

Used inland water because of Missouri River is navigable.

All equipment in response plan must be designed to operation in conditions expected in the facility's geographical area.

Area Contingency Plans determine if ice, debris, and visibility are factors.

Response Resource Mobilization and Response Times

3.0 Small Discharge Evaluation

Any discharge volume less than or equal to 2,100 gallons.

Response Resources

3.3.1 Response Resources Requirement- 1,000 feet of containment boom and a means of deploying it within 2 hour of discovery of a discharge. The 1,000 feet of containment boom is at Clean Harbors in Williston, ND would be used. No navigable waters are within the planning distance and therefore the 1,000 feet containment boom will not be used in an actual small discharge. The containment boom is located on both ends of the 38.3 mile pipeline. A response trailer at the BOE Rail Hub and LL Terminals Truck Terminal is available.

3.3.2 Oil recovery devices with an effective daily recovery capacity equal to 2,100 gallons are available at the facility within 2 hours of detection of an oil discharge.

3.3.3 Oil Storage capacity - adequate temporary storage capacity (truck to rail facility and place on rail cars.)

Need twice the effective daily recovery capacity required on scene.

Recovery Capacity = 2,100 gallons/day (Baranko Brothers 2-inch trash pump with Honda GX120 engine will pump 137 gallons/min or 197,280 gallons/day is acceptable). The pumping capacity is okay. Requirement for Storage Capacity is 4,200 gallons/day. One rail car will hold 30,000 gallons. The available capacity is okay

4.0 Medium Discharge Evaluation

4.1 Response Resources capable of containing and collecting up to 36,000 gallons or 10% of largest possible discharge is greater than 36,000 gallons.

Use whichever is less

Medium Discharge Volume = 36,000 gallons

Need Recovery capacity equal to 50% of 36,000 = 18,000 gallons/day. Baranko Brothers 2-inch trash pump with Honda GX120 engine will pump 137 gallons/min or 197,280 gallons/day is acceptable.

Temporary capacity is 36,000 gallons available. Two rail cars with 60,000 gallon capacity is available, which is okay.

4.2.1 US Coast Guard - N/A because of facility being inland.

4.3 Oil recovery equipment for a medium discharge volume of 36,000 gallons will be available within 12 hours. (BOE trailers at north and south end of the pipeline are less than one hour away and Baranko Brothers is less than one hour away).

4.4 The effective daily recovery capacity for all recovery devices will be equal to or exceed 50% (18,000 gallons) of the 36,000 gallons plan volume for this facility.

18,000 gallons is the effective daily recovery capacity. Baranko Brothers 2" trash pump with Honda GX120 engine will pump 197,280 gal/day, which is all okay.

4.5 Identify sufficient quantity of containment boom available to arrive within the required response times for oil collected and containment. Code does not set quantities of boom for medium volume. Use 1,000 feet of boom for small discharge. Will use boom for Dickinson, ND.

4.6 Availability of temporary storage capacity

Adequate temporary storage capacity is equal to 2 times the effective daily recovery capacity required on scene. $2 \times 18,000 = \underline{36,000 \text{ gallons per day}}$.

The temporary storage capacity is 36,000 gallons per day required, which is twice the recovery capacity. Railcars at the Bakken Oil Express Rail Facility would be used. Two rail cars have a storage capacity of 60,000 gallons. Okay.

5.0 Determining Response Resources Required for Worst Case Discharge to Maximum Extent Practicable

5.1 Sufficient response resources to respond to the worst case discharge of oil to the maximum extent practicable.

5.2 US Coast Guard N/A

- 5.2 Oil discharge response resources identified in the plan to meet worst case discharge planning volume for BOE Pipeline, LLC Pipeline are located such that they can arrive at the scene within 12 hours for a Tier 1 level, within 36 hours for a Tier 2, and within 60 hours of a Tier 3 level Worst Case Discharge response. OSRO on site in less than 12 hours - Okay.
- 5.4 Use Section 6.0 to determine effective daily recovery capacity for oil recovery devices.
**Must identify storage locations of all response resources for each tier.
- 6.0 Determining Effective Daily Recovery Capacity for Oil Recovery Devices
- 6.1 Oil recovery devices must be identified in plan by manufacturer, model, and effective daily recovery capacity. These devices capacities must be used.
- 6.2 Effective daily recovery capacity of oil recovery devices
- 6.2.1 $R = T \times 24 \times E$, where R is the effective daily recovery capacity
T is the throughput rate in barrels/hour nameplate capacity
E is 20%. Efficiency factor (or lower as determined by RA)

Use pumps and containment boom for a worse case on spill trailers at Baranko Brothers in Dickinson, ND and Clean Harbors in Williston if necessary. BOE Pipeline, LLC/Progress Solutions can use Vacuum Trucks if necessary.

Baranko Brothers pumps in Dickinson, ND per Dwain Mansfield.

Two - 2" centrifugal trash pumps GX120 = 137 gpm = 195 barrels/hour each

Two - 2" centrifugal trash pumps GX160 = 185 gpm = 264 barrels/hour each

Using one 2-inch GX160 trash pump. $R = 264 \text{ barrels/hour} \times 24 \text{ hours} \times 0.2 = 1,267 \text{ barrels/day}$ is the effective daily recovery capacity of one pump.

Using one 2-inch GX120 trash pump. $R = 195 \text{ barrels/hour} \times 24 \text{ hours} \times 0.2 = 936 \text{ barrels/day}$ is the effective daily recovery capacity of this pump.

Four pumps $R_{\text{total}} = 2(1267) + 2(936) = 4406 \text{ barrels/day}$ is the total effective daily recovery capacity of four pumps (185,052 gallons per day).

A vacuum truck in 10 to 15 minutes will vacuum 80 to 95 barrels (super sucker).

95 barrels x 42 gallons/barrel = 3990 gallons/truck in 15 minutes.

4 trucks will recover 380 barrels/hour (4 x 95 barrels) = 266 gallons/minute = T

Vacuum trucks suck at 10 to 20 lbs. pressure. Usually a 3" hose is used. A 4" hose can be used on crude oil.

An alternative is a vacuum semi-trailer, which will vacuum 120 bbl. in 19 minutes.

Used the 95 gallon super sucker (standard vacuum truck)

$$R = T \times 24 \times E$$

$R = 380 \text{ barrels/hour} \times 24 \times 0.2 = 1,824 \text{ barrels/day}$ (76,608 gallons/day) recovery capacity using four trucks

- 6.3 Alternate method to determine effective daily recovery capacity of oil recovery devices.
- 6.3.1 $R = D \times U$, where R is the effective Daily Recovery
D is the average oil recovery rate in barrels/hour

U is the hours per day that equipment can operate under discharge conditions (10 hours/day unless owner can demonstrate recover operations of more than 10 hours.

$$R = D \times U$$

Using one 2-inch GX160 trash pump. $R = 264 \text{ barrels/hour} \times 10 \text{ hours} = 2,640 \text{ barrels/day}$ is the effective daily recovery capacity of this pump.

Using one 2-inch GX120 trash pump. $R = 195 \text{ barrels/hour} \times 10 \text{ hours} = 1,950 \text{ barrels/day}$ is the effective daily recovery capacity of one pump.

Four pumps $R_{\text{total}} = 2(2,640) + 2(1,950) = 9,180 \text{ barrels/day}$ (385,560 gallons/day) is the total effective daily recovery capacity of four 2-inch trash pumps.

If requested Vacuum trucks

$R = 380 \text{ barrels/hour} \times 10 \text{ hours}$

$R = 3,800 \text{ barrels/day}$ (159,600 gallons/day) is the effective daily recovery capacity using 4 trucks

7.0 Calculating Planning Volume Worst Case Discharge

7.1 Owner shall plan for a response to the facility's worst case discharge.

Planning for on-water oil recovery must be taken into account for a loss of some oil to the environment due to evaporation and natural dissipation, potential increase in volume due to emulsification, and the potential for deposition of oil on the shoreline.

Appendix D Part A.2 Worst Case Volume = 20,280 bbl. = 851,741 gallons

7.2 On-water oil recovery capacity

Persistent Oil Group 2 - specific gravity less than 0.85 (Bakken Crude S.G. = .78 to .86)

7.2.1 Worst Case Discharge volume of oil from the pipeline

20,280 bbl. = 851,741 gallons of crude oil

Using Table 2 of Appendix E we can determine the percentages of the total volume to be used for removal capacity planning.

Spill Location: Nearshore / Inland / Great Lakes

Sustainability of on-water: 851,741 gallons = 20,280 bbl.

Oil Recover Period: 4 Days

Oil Group: Group II Light Crude

50 % natural dissipation: $851,741 \times 0.5 = 425,871 \text{ gallons} = 10,140 \text{ bbl.}$

50 % recovered floating oil $851,741 \times 0.5 = 425,871 \text{ gallons} = 10,140 \text{ bbl.}$

30 % oil onshore $851,741 \times 0.3 = 255,522 \text{ gallons} = 6,083 \text{ bbl.}$

7.2.2 On-water oil recovery volume adjusted using emulsification factor for Group 2 = 1.8

7.2.3 Adjusted Volume on water oil recovery = $10,140 \times 1.8 = 18,252 \text{ barrels} = 766,584 \text{ gal.}$

Required Response time for each Tier in hours is:

Tier I 12 hours

Tier II 36 hours

Tier III 60 hours

On-water Oil Recovery Resource Mobilization Factors for Inland/Nearshore/Great Lakes:

Tier I 0.15

Tier II	0.25
Tier III	0.40

Total on-water oil recovery capacity worst-case discharge (barrels/day):

Oil recovery Capacity for:

Tier I	$18,252 \times 0.15 = 2,738$ bbl. per day
Tier II	$18,252 \times 0.25 = 4,563$ bbl. per day
Tier III	$18,252 \times 0.40 = 7,301$ bbl. per day

Shoreline Cleanup Volume (barrels) = 6,083 bbl. x 1.8 = 10,949 barrels

On-Water Response Capability Caps by Operating Area (From Table 5 of 40 CFR 112.20 Appendix E):

The amount needed to be contracted for in barrels/day using February 18, 1998 caps:

Tier I	12,500 barrels/day
Tier II	25,000 barrels/day
Tier III	50,000 barrels/day

On-Water Amount Needed to be identified, but not contracted for in Advance (barrel/day):

Tier I	$2,738 - 12,500 = 0$ barrels / day	N/A
Tier II	$4,563 - 25,000 = 0$ barrels / day	N/A
Tier III	$7,301 - 50,000 = 0$ barrels / day	N/A

The pipeline was constructed in 2014. No spills have occurred at this new pipeline. Since no spills have occurred of more than 10,000 gallons, the recovery response requirements should be for a Tier I.

3.6 List of Emergency Response Equipment

The Emergency Response Equipment lists on the following pages identify and provide a description and location of emergency response equipment for the pipeline. BOE/Progress Solutions spill response support will provide response to small discharges with Baranko Brothers if needed. BOE/Progress Solutions may call Baranko Brothers for 1,000 feet of containment boom if required. BOE/Progress Solutions Spill response support and Baranko Brothers will be contacted for medium and large/worst-case discharges. Baranko Brothers has a mutual agreement contract with Clean Harbors to assist if requested.

All equipment should be inspected on a regular basis and maintained in operational status. Each piece of equipment should be inspected after use and decontaminated prior to being returned to its designated location. Equipment not suitable for re-use should be immediately replaced.

TABLE 3.6.1a
EMERGENCY RESPONSE EQUIPMENT
BOE PIPELINE, LLC - DICKINSON RESPONSE AREA TRAILER INVENTORY
AT BOE RAIL HUB FACILITY (701) 483-0454
3761 115TH AVENUE S.W., DICKINSON, ND 58601

Type / Description	Quantity	Size	Date Fuel Changed	Operation Status
Non-Sparking Shovels	6	N/A	N/A	YES
Non-Sparking Rakes	6	N/A	N/A	YES
Braided Poly Rope	200 ft.	3/8 in diameter	N/A	YES
Oil Absorbent Socks	400 ft.	4"x 4' sockets	N/A	YES
Absorbent pad (High Capacity)	10- 100 packs	20.5" x 15.5"	N/A	YES
Absorbent roll (High Capacity)	4 rolls	33" x 150'	N/A	YES
8" Sorbent Boom	400 ft.	8" x 10'	N/A	YES
1-mil Plastic Sheeting	2 boxes	2 rolls	N/A	YES
Overpack Drums	2	55 gallon	N/A	YES
1-mil Drum Liner Trash bags	1 box	55-gal size	N/A	YES
Fire Blanket	1	N/A	N/A	YES
Tape "Caution"	3	200 feet	N/A	YES
Tape "Danger"	3	200 feet	N/A	YES
100' Measuring Tape	1	100' x ½"	N/A	YES
Flagging Tape	10	100 feet	N/A	YES
Vinyl Storm Suits	12	Large, X-Large	N/A	YES
Orange Safety vests	12	N/A	N/A	YES
Wooden Stakes	2 bundles	1" x 2'	N/A	YES
Life Jackets	6	N/A	N/A	YES
5-gal Plastic Buckets with lids	4	5-gallon	N/A	YES
Safety Cones	24	N/A	N/A	YES
Duct Tape	4 rolls	N/A	N/A	YES
Neoprene Safety Gloves	12 pair	Large, 12" 24-mil	N/A	YES
Leather Work Glove-Cowhide	6 pair	Large	N/A	YES
Flashlight(2 extra packs batteries)	4	N/A	N/A	YES
Protective Goggles	24 pair	N/A	N/A	YES
Safety Glasses - Clear	24 pair	N/A	N/A	YES
Ear Plugs	1 box	N/A	N/A	YES
First Aid/Blood borne Pathogen Kit	1	N/A	N/A	YES
Eye Wash solution	1	N/A	N/A	YES
Halogen Flood and Work Lights	2	N/A	N/A	YES
Hand Cleaner	2	N/A	N/A	YES

TABLE 3.6.1b
EMERGENCY RESPONSE EQUIPMENT
LL TERMINALS, LLC - KILLDEER RESPONSE AREA TRAILER INVENTORY
AT TRUCK TERMINAL FACILITY (701) 483-0435
406 109TH AVENUE S.W., KILLDEER, ND

Type / Description	Quantity	Size	Date Fuel Changed	Operation Status
Non-Sparking Shovels	6	N/A	N/A	YES
Non-Sparking Rakes	6	N/A	N/A	YES
Braided Poly Rope	200 ft.	3/8 in diameter	N/A	YES
Oil Absorbent Socks	400 ft.	4" x 4' sockets	N/A	YES
Absorbent pad (High Capacity)	10- 100 packs	20.5" x 15.5"	N/A	YES
Absorbent roll (High Capacity)	4 rolls	33" x 150'	N/A	YES
8" Sorbent Boom	400 ft.	8" x 10'	N/A	YES
1-mil Plastic Sheeting	2 boxes	2 rolls	N/A	YES
Overpack Drums	2	55 gallon	N/A	YES
1-mil Drum Liner Trash bags	1 box	55-gal size	N/A	YES
Fire Blanket	1	N/A	N/A	YES
Tape "Caution"	3	200 feet	N/A	YES
Tape "Danger"	3	200 feet	N/A	YES
100' Measuring Tape	1	100' x 1/2"	N/A	YES
Flagging Tape	10	100 feet	N/A	YES
Vinyl Storm Suits	12	Large, X-Large	N/A	YES
Orange Safety vests	12	N/A	N/A	YES
Wooden Stakes	2 bundles	1" x 2'	N/A	YES
Life Jackets	6	N/A	N/A	YES
5-gal Plastic Buckets with lids	4	5-gallon	N/A	YES
Safety Cones	24	N/A	N/A	YES
Duct Tape	4 rolls	N/A	N/A	YES
Neoprene Safety Gloves	12 pair	Large, 12" 24-mil	N/A	YES
Leather Work Glove-Cowhide	6 pair	Large	N/A	YES
Flashlight(2 extra packs batteries)	4	N/A	N/A	YES
Protective Goggles	24 pair	N/A	N/A	YES
Safety Glasses - Clear	24 pair	N/A	N/A	YES
Ear Plugs	1 box	N/A	N/A	YES
First Aid/Blood borne Pathogen Kit	1	N/A	N/A	YES
Eye Wash solution	1	N/A	N/A	YES
Halogen Flood and Work Lights	2	N/A	N/A	YES
Hand Cleaner	2	N/A	N/A	YES

TABLE 3.6.1c
EMERGENCY RESPONSE EQUIPMENT
BARANKO BROTHERS, INC. - DICKINSON INVENTORY
AT 3048 HIGHWAY 22 NORTH, DICKINSON, ND 58601-8575
1-701-264-5004 DICKINSON

Type / Description	Quantity	Size	Date Fuel Changed	Operation Status
1" Poly air diaphragm Pump	1	1"	N/A	YES
2" stainless steel air diaphragm pump	3	2"	N/A	YES
2" poly air diaphragm pumps	2	2"	N/A	YES
2" centrifugal trash pumps	2	2"	N/A	YES
Gas motor powered 2" diaphragm pumps	2	2"	N/A	YES
Wheelbarrow air compressor	2	N/A	N/A	YES
185 cfm trailer mounted air compressor	1	N/A	N/A	YES
1500 psi pressure washer	1	1500 psi	N/A	YES
3500 psi trailer mounted pressure washer, hot water	1	3500 psi	N/A	YES
16' aluminum work boats with 25 hp tiller handle motor and 60 hp for 2 nd boat	2	16 feet	N/A	YES
20' aluminum workboat with a 150 hp outboard motor	1	20 feet	N/A	YES
16 yd. dump truck	2	16 yd.	N/A	YES
Rubber tire backhoe	2	N/A	N/A	YES
4" containment boom	1,500'	4"	N/A	YES
Equipment trailer	5	20 feet	N/A	YES
Confined space and confined space rescue equipment	1 set	N/A	N/A	YES
Equipped oil spill trailer	1	N/A	N/A	YES
Equipped tank cleaning trailer	1	N/A	N/A	YES
OTR trucks	10	N/A	N/A	YES
Lowboy	3	50 ton	N/A	YES
Excavator	6	N/A	N/A	YES
D4 dozer	6	N/A	N/A	YES
Bobcat with rubber tracks	4	N/A	N/A	YES
Roll off frames	1	N/A	N/A	YES
Roll off boxes	30	N/A	N/A	YES
70 barrel vacuum trucks	1	70 barrel	N/A	YES
130 barrel vacuum tanker	2	130 barrel	N/A	YES
Dry vacuum truck	1	N/A	N/A	YES

TABLE 3.6.1d
EMERGENCY RESPONSE EQUIPMENT
CLEAN HARBORS
310 AIRPORT ROAD SUITE 500/600
WILLISTON, ND 58801
(701) 774-2201 OR 800-645-8265 24/7

Type / Description	Quantity	Size	Date Fuel Changed	Operation Status
Power Workboat, 1860CCJ/ # V423	1	18'	2013	YES
Power Workboat, 1860CCJ/#V421	1	18'	2013	YES
Landing Craft Boat-LCM/#364	1	28'	2013	YES
Boat Trailer BT421, BT419	2	18'	N/A	YES
Vessel Transport Trailer CH742	1	28'	N/A	YES
Mobile Command Trailer 6202	1	N/A	N/A	YES
High Powered Vacuum Truck/Cusco	5	N/A	2014	YES
Cyclone Vactor/Guzzler	2	N/A	N/A	YES
Straight Box Trucks	2	N/A	2014	YES
6 Wheel Dump Truck (United Rental)	1	N/A	2014	YES
Trailer (Skid Vac) CH 2157	1	N/A	N/A	YES
Crew Cab Pickup	5	N/A	2014	YES
Roll-off frames	7	N/A	N/A	YES
Vacuum Tanker	1	5,000 gallon	N/A	YES
Tractor with Side Dump Trailer	5	42'	N/A	YES
Hot water Hotsy	2	N/A	N/A	YES
Vactor Hose	200 feet	N/A	N/A	YES
Discharge Hose	500 feet	6"	N/A	YES
Discharge Hose	1000 feet	4"	N/A	YES
Oil Containment Boom-Yellow Slide Pin	10,000 feet	8"	N/A	YES
MSA Gas Indicator-Sirius 5 Gas	1	N/A	N/A	YES
Draeger Pump- Gas Tech	2	N/A	N/A	YES
Skidmount Vacuum Unit CH2157	1	N/A	N/A	YES
Drum Skimmer	2	N/A	N/A	YES
Vac Box Containers	16	N/A	N/A	YES
Roll-Off Containers	13	N/A	N/A	YES
Drums	88	55 gallon	N/A	YES
Totes	12	250 gallon	N/A	YES
Backhoe John Deere 410	1	N/A	2014	YES
Sullair Portable Compressor-185 Diesel	5	N/A	2014	YES
Winco Generator K4800/A	3	N/A	2014	YES
Coppus Blower	3	4" Pneumatic	N/A	YES
Coppus Blower	1	8" Pneumatic	N/A	YES
Coppus Blower	1	10" Pneumatic	N/A	YES
Coppus Fan RF-20	2	N/A	N/A	YES

TABLE 3.6.1d (cont.)
Emergency Response Equipment
Clean Harbors
310 Airport road Suite 500/600

TABLE 3.6.1e
EMERGENCY RESPONSE EQUIPMENT
CLEAN HARBORS

211 HOLIDAY AVE., CANNON FALLS, MN 55009
(507) 263-0200

40-HOUR OSHA TRAINED PERSONNEL: 3 FOREMAN, 7 FIELD TECHNICIANS, 5 OPERATORS

Type / Description	Quantity	Size	Date Fuel Changed	Operation Status
Power Workboat, Alweld - AWLCO525H708, V321	1	17', 25 hp	2014	YES
Workboat, TMG-BUJ65295H809, V346	1	12'	2014	YES
Workboat V328	1	21', 135 hp		
Crew Cab Pickup - F250	4	F250	2014	YES
Rack truck - F450	1	F350, 21,000 lb.	2014	YES
Cold Water Pressure Washer	2	3800 psi	2014	YES
Hot Water Pressure Washer - CH544	3	4000 psi	2014	YES
Skid Mount/ with Pressure Washer	1	500 gallons	2014	YES
Cusco 10771	1	3,000 gallons	2014	YES
3" DD pump	2	Poly and Steel	N/A	YES
2"DD pump	3	Poly and Steel	N/A	YES
Oil Containment Boom - Trailer	1000'	18", Mix	N/A	YES
Oil Containment Boom - Storage	900'	18", Mix	N/A	YES
Oil Containment Hard Boom- Storage	300	6", Mix	N/A	YES
5-Gas Meter - LEL/O2/CO/H2S/PID Sirius	3	N/A	N/A	YES
Lumex - RA-915	1	N/A	N/A	YES
Drum Skimmers-Crucial 1D18P-24	2	24 gpm capacity	N/A	YES
Skid Loader -John Deere 320	1	N/A	N/A	YES
Generator	4	4000 Watt	2014	YES
Compressor 185 CFM Pull Behind	1	185 CFM	N/A	YES
SCBA	4	2216 psi	N/A	YES
SAR 4 Way Manifold	2	N/A	N/A	YES
SAR Regulators	1	N/A	N/A	YES
SAR w/5 Minute Egress	2	N/A	N/A	YES
Air Line	1	400'	N/A	YES
APR Full Face	8	N/A	N/A	YES
Tri-pod/winch	1	75' cable	N/A	YES
ER Trailers - Enclosed Spill Trailer	3	14'	N/A	YES
Boom Trailer	1	16' Open	N/A	YES
Flat Bed Trailer	1	16' Open	N/A	YES
Vacuum Hose	350	2" chemical	N/A	YES
Vacuum Hose	200	3" & 4" chemical		
Floor Scrubbing Attachment - Hydro	1	N/A	N/A	YES
Guzzler-Straight with Highrail	1	3,000 gallon	N/A	YES
Guzzler- Straight 4256	1	3,000 gallon	N/A	YES
Roll off Truck	1	N/A	N/A	YES

3.7 Response Personnel Roster and Resources

The following rosters lists the facility response personnel for the BOE Pipeline. The roster also include phone numbers, the amount of time needed for personnel to respond, their responsibility during the emergency, and the level of response training.

3.7.1 BOE PIPELINE/PROGRESS SOLUTIONS EMERGENCY PERSONNEL

This section identifies the BOE/Progress Solutions spill response support. The personnel lists identify responsible parties and their phone numbers, the amount of time needed for personnel to respond, responsibility during an emergency, and the level of response training required.

TABLE 3.7.1a Emergency Response Personnel For Small Discharges			
Name	Phone	Response Time	Responsibility during response action
Tory Neer (Bismarck)	(701) 204-5109	< 2 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Area Manager - ND Field Operations Spill Response Support
Dana Rathjen (Dickinson)	(701) 690-6245	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Foreman Spill Response Support
Justin Hill (Dickinson)	(701) 690-0648	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Maintenance Technician Spill Response Support
Mike Galliett (Dickinson)	(701) 989-4474	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Operator Spill Response Support
Spencer Smith (Dickinson)	(701) 690-3986	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Operator Spill Response Support
Doug Lee (Bismarck)	(701) 955-4230 cell	2 Hours	<ul style="list-style-type: none"> CEO Spill Response Support
Baranko Brothers, Inc. (Dickinson)	1-701-264-5004	< 1 Hour	<ul style="list-style-type: none"> OSRO Spill Response Contracted Support

TABLE 3.7.1b
Emergency Response Personnel For Medium and Large Discharges

Name	Phone	Response Time	Responsibility during response action
Tory Neer (Bismarck)	(701) 204-5109	< 2 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Area Manager - ND Field Operations • Spill Response Support
Dana Rathjen (Dickinson)	(701) 690-6245	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Foreman • Spill Response Support
Justin Hill (Dickinson)	(701) 690-0648	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Maintenance Technician • Spill Response Support
Spencer Smith (Dickinson)	(701) 690-3986	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Mike Galliett (Dickinson)	(701) 989-4474	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Doug Lee (Bismarck)	(701) 955-4230 cell	2 Hours	<ul style="list-style-type: none"> • CEO • Spill Response Support
Brandon McDowell	(303) 887-8005	< 8 Hours	<ul style="list-style-type: none"> • BOE Director of Operations • Spill Response Support
Baranko Brothers (Dickinson)	1-701-264-5004	< 1 Hour	<ul style="list-style-type: none"> • OSRO • Spill Response Contracted Support
Emergency Manager, Sheriff, Fire	Local 911	< 1 Hour	<ul style="list-style-type: none"> • Protection of life and Surrounding Property

**TABLE 3.7.1c
Emergency Response Personnel For Worst Case Discharge**

Name	Phone	Response Time	Responsibility during response action
Tory Neer (Bismarck)	(701) 204-5109	< 2 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Area Manager - ND Field Operations • Spill Response Support
Dana Rathjen (Dickinson)	(701) 690-6245	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Foreman • Spill Response Support
Justin Hill (Dickinson)	(701) 690-0648	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Maintenance Technician • Spill Response Support
Mike Galliett (Dickinson)	(701) 989-4474	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Spencer Smith (Dickinson)	(701) 690-3986	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Doug Lee (Bismarck)	(701) 955-4230 cell	2 Hours	<ul style="list-style-type: none"> • CEO • Spill Response Support
Brandon McDowell	(303) 887-8005	< 8 Hours	<ul style="list-style-type: none"> • BOE Director of Operations • Spill Response Support
Chris Lewis (Dickinson)	(701) 483-0435 (402) 690-4742	< 1 Hour	<ul style="list-style-type: none"> • BOE General Manager • Spill Response Support
Baranko Brothers (Dickinson)	1-701-264-5004	< 1 Hour	<ul style="list-style-type: none"> • OSRO • Spill Response Contracted Support
Clean Harbors (Williston)	Baranko Brothers to call if needed	2 Hours 16 Minutes	<ul style="list-style-type: none"> • OSRO • Spill Response Contracted Support
Emergency Manager, Sheriff, Fire	Local 911	< 1 Hour	<ul style="list-style-type: none"> • Protection of life and Surrounding Property

3.7.2 RESPONSE CONTRACTORS

Table 3.7.2 has a master service agreements with BOE and can be used by BOE/Progress Solutions.

TABLE 3.7.2 OSRO Response Contractor-Multi-State			
City	Company Name	Nearest Address	Telephone
Multi-State	Baranko Brothers	3048 Highway 22 North Dickinson, ND 58601	1-701-264-5004
Multi-State	Clean Harbors	2541 132 nd C Avenue Arnegard, ND 58835	(800) 645-8265 (24-Hr.)

Baranko Brothers, Inc. (BBI) is under agreement to respond to a release on the Missouri River, its tributaries and BOE pipeline area upon request. BBI can be on site in less than 24 hours with manpower and equipment. **BBI can be contacted at 1-701-264-5004 (24/7)**. BBI has a total Effective Day Removal Capacity (EDRC) among all BBI (US domestic) facilities of 26,370 bbls.

Clean Harbors is under agreement to respond to a release upon request of BBI. **BBI is to contact Clean Harbors if additional assistance is needed.** Clean Harbors can be on site in less than 24 hours with manpower and equipment.

Clean Harbors can be contacted at **701-774-2201 or 800-645-8265 (24/7)** by BBI. Clean Harbors has 4 supervisors, 2 foreman, 8 equipment operators, and 25 field technician that are 40 hour OSHA trained personnel.

3.7.3 TANK RENTAL AND VACUUM TRUCK CONTRACTORS

In the event that adequate, conveniently located storage capacity is not available, tanks may need to be rented. Adequate storage capacity is necessary for the efficient removal of oil and impacted water during spill response operations. The following is a list of "Frac" tank rental contractors. Power Fuels has over 250 vac trucks in the Bakken area available throughout. It has 18 Super Suckers that are part of the 250 vac trucks. They have thousands of tank rentals available as well.

Contractors with vacuum trucks are indicated with a (*). All trucks have 80 to 95 bbl. capacities unless otherwise noted.

**TABLE 3.7.3
Additional Tank Rental and Vacuum Truck Contractors**

City	Company Name	Specialized Equipment	Telephone
Watford City	Nuverra Environmental Solutions/ Power Fuels *(headquarters)	6 Elastec Drum Skimmers 1000 rental tanks 7 Super Suckers 63 vacuum truck/trailers 40 Slick trucks 25 Winch trucks	(701) 842-3618
Dickinson	Power Fuels*	26 vacuum truck/trailers 2 super suckers 3 Winch trucks	(701) 483-5971
Arnegard	Clean Harbors*	(3) 2,500 gallon vacuum trucks	(800) 645-8265

3.7.4 ADDITIONAL SPECIALIZED CONTRACTORS

Nuverra Environmental/Power Fuels has earth moving and various clean up equipment available for use through a rental program. Nuverra Environmental/Power Fuels Watford City is the largest supplier of oilfield rental equipment in the Bakken Region, including trucks, trailers tanks, manifolds, pumps, hoses, light towers and forklifts. They can also deliver frac tanks, upright tanks, closed loop systems, pumps, manlifts, garbage bins, and payloaders.

These contractors are located in the BOE pipeline operating area and have a wide array of equipment available. They may also have HAZWOPER trained personnel available to BOE/Progress Solutions if needed.

TABLE 3.7.4a General Contractors		
City	Company Name	Telephone
Dickinson, ND	Power Fuels	(701) 483-5971
Minot, ND	Earthmovers, Inc.	(800) 373-5259
Glendive, MT	Environmental Restoration, LLC (OSRO)	(888) 814-7477

TABLE 3.7.4b Transportation Trucks		
City	Company Name	Telephone
Dickinson, ND	Power Fuels 3 Winch Trucks	(701) 483-5971
Watford City, ND	Power Fuels 40 Slick trucks, 25 Winch Trucks	(701) 842-3618
Minot, ND	Power Fuels (also oil skimmers)	(701) 839-5755
Arnegard, ND	Clean Harbors	(800) 645-8265
Glendive, MT	Environmental Restoration, LLC	(888) 814-7477

3.7.5 SPILL RESPONSE EQUIPMENT STORES

Expendable (disposable) spill response equipment needs to be restocked after use or supplemented during the course of a response operation. The following is a list of supply stores that carry a variety of response equipment. Equipment may be locally available but in some instances may have to be shipped in. Depending on the urgency of the need, overnight delivery or use of company planes may be required to get timely receipt of needed materials or equipment.

National Oilwell	Williston, ND	(701) 572-3781
	Dickinson, ND	(701) 227-0861
	Baker, MT	(406) 778-3378
	Gillette, WY	(307) 682-9337
	Casper, WY	(307) 235-2751

3.7.6 COMMUNICATION AND COMMUNICATION RESPONSE EQUIPMENT

Communication will be conducted by land line phone and cellular phone as needed for primary communication. Progress Solutions’ radios or texting will be used as a secondary method of

communication and may be used as a primary method of communication when group communication is required.

The following communication systems may be used for notifications and emergency response operations:

- Cellular phones - All response personnel have cell phones that can be used. Cell phones are not considered intrinsically safe. Consideration must be given where and when they should be used or if they should be shut-off. Non-intrinsically safe phones can be used in safe zones and are not to be powered on when carried into the spill response hot zone. Vehicles and their company radios should be operated at a safe distance (50 feet) from the hot zone of a spill as they can be sources of ignition as well.
- Land line phones - the BOE Office (BOE Rail Facility), LL Terminals, LLC, and Progress Solutions Control Center have land line phones.
- Emails - computers and laptops are available.
- Sending Texts - Under some emergency situations, phone line communications systems becomes overburdened and phone communication can't occur in a timely fashion. Texting uses different hardware and tower capacity, which can be used when phones lines are not available.

Baranko Brothers (OSRO) has four Motorola Hand-Held intrinsically safe radios, three cellular telephones, and three GPS units available for communication at their Dickinson, ND location.

In addition, if necessary the BOE/Progress Solutions communications system will be integrated into the communications system mobilized by the IC, to the extent practicable.

Progress Solutions Command Center in Bismarck, ND is the primary control center. The control room at LL Terminals, LLC truck terminal in Killdeer is the back up control center.

3.7.7 PLANE AND HELICOPTER SERVICES

TABLE 3.8.6a Planes and Helicopter Services		
City	Company Name	Telephone
Mandan, ND	Double M Helicopters, Inc.	(701) 226-6868
Beulah, ND	Dakota Helicopters, Inc.	(701) 873-4100
Bismarck, ND	Executive Air Taxi Corporation	(866) 694-7860
Bismarck, ND	Aberdeen Flying Service	(701) 250-7013

3.7.8 SOLID WASTE TREATMENT CENTER

Nuverra Environmental Treatment Center
13195 26th Street NE, Arnegard, ND 58835
Hours: 7 days a week, 7 AM to 7 PM
Phone number: (701) 842-3618

The Nuverra Environmental Treatment Center (Power Fuels) is a state-of-the-art, state-approved facility in the heart of the Bakken (approximately five miles west of Watford City, ND and one mile south of Hwy 85) that accepts solid waste from oilfield exploration and production activities in the area. Some of the accepted wastes are soil contaminated with crude oil, drilling fluids, drill cuttings, geothermal production fluids, and other solid waste material. This facility coordinates all solid waste disposal needs for Bakken customers to save time and money. This includes on-site collection of accepted waste material, transportation, and disposal of waste material. Additional information can be found on their website at <http://www.nuverra.com/bakken/>.

3.7.9 ADDITIONAL STORAGE FACILITIES

In the event of a BOE pipeline discharge and additional storage for spilled crude oil is required, recovered crude oil would be transported to the Bakken Oil Express LLC Rail Hub where it will be placed in rail cars and shipped. Spilled crude that is transported to the rail hub will be contaminated with soil and water; therefore, placing it in rail cars is the first preference for storage. If absolutely necessary, oil trucks would be unloaded into twelve 400-barrel above ground storage tanks from which the oil is transferred to a 32,000 barrel (1,344,000 gallon) or one of two 90,000 barrel (3,780,000 gallon) above ground storage tanks. From the large holding tanks the crude oil could be transferred to rail cars via a 12 spot loading rack for shipment to a refinery if additional capacity is needed. In 2014 the rail hub is installing additional capacity at this site. Therefore, additional capacity will be available.

Power Fuels has tanks that can be rented for spill site storage if needed.

A 105,000 barrel storage tank is located at LL Terminals, LLC. A truck terminal station is also available but is a secondary alternative if the Rail Facility did not have rail cars or available capacity.

BBI may have a reclaimer that may be used.

SECTION 4 RESPONSE PLANNING AND STRATEGIES

In this Section:

Hazard Imposed by Spilled Material

Containment and Drainage Planning - Strategy, Sectionalizing, Containment Volume, Drainage Routes, and Spill Containment Response

General Response Operations Planning - Objectives, Incident Command, Command Posts, Evacuation Plan

QI Responsibilities, Authority, and Notifications

Procedures for Coordinating Actions

Recovery and Disposal Planning

OSRO

4.1 Hazard Imposed By Spilled Material

The primary material transported in the pipeline is sweet crude oil. Numerous hazards can be posed by exposure, contact, or a spill of crude oil. Inhalation of vapors may result in irritation of the nose and throat, nausea and/or dizziness. Sulfur components contained in crude oil may form hydrogen sulfide gas both through decomposition or combustion and, depending on the concentration and the duration of exposure, hydrogen sulfide inhalation can cause respiratory failure and death.

Sweet crude oil is extremely flammable and may form an explosive atmosphere. Crude oil and associated vapor can be ignited by heat, sparks, flames, or other sources of ignition such as static electricity, mechanical and electrical equipment, and non-intrinsically safe mobile electronic devices (i.e., non-certified cell phones, laptop computers, and tablet devices). Spills of sweet crude oil can create explosion hazards in outdoor areas where the vapor can accumulate in low areas, confined spaces and sewers, and indoor areas. Additionally, vapors can mobilize and begin to accumulate near an ignition source and ignite, flash, or explode. In the event of a spill, air monitoring in the vicinity of the spill should be conducted to determine the following: if entry into the area is safe, the appropriate level of personnel protective equipment for response personnel, proper monitoring of atmospheric conditions during cleanup activities, and evaluation of evacuation measures, if necessary.

Crude oil spills from pipelines can occur due to leaks, equipment failure, accidents, and human error or as a third party interference. The most significant hazards posed by the pipeline, if released, are:

- Burn hazard to response team.
- Catastrophic failure of the pipeline could lead to significant and substantial harm to the environment on land and water pollution with a high potential for a major fire. Environmental effects from a pipeline spill could be displacement of wildlife, damage or degradation of vegetation, wetlands, streams, rivers, and soil composition.

The specific hazards scenarios are discussed in Section 1.7.

4.2 Containment and Drainage Planning

4.2.1 GENERAL STRATEGY FOR SPILLS

Bakken crude oil is considered a flammable sweet crude. Consideration must always be given to working with intrinsically safe equipment and working safely around a crude oil discharge to eliminate sources of ignition. A discharge pooled on the ground can be a fire hazard for days. The strategy for spills along the BOE Pipeline is driven by both policy and practicality. North Dakota policy and regulatory guidance directs that spills will be contained and mechanically recovered, as appropriate. Provisions are included that allow for other methods (dispersants, bioremediation, etc.) to be considered and/or used under certain conditions, provided that prior approval has been granted by the ND Department of Health, Division of Water Quality.

Recovery and bioremediation efforts in wetlands should be coordinated with state and federal authorities by Incident Commander (OI/IC) prior to disturbing this type of environment.

BOE Pipeline initial response strategy for a spill of oil or hazardous substance is to contain the spill in a defined area and focus initial spill response assets on the protection of priority sensitive areas near the spill site. Top priority efforts will be made to prohibit spilled product from entering drainage systems and waterways and limiting the flow distance. This strategy is dependent upon quick actions by BOE/Progress Solutions personnel to rapidly assess the potential impact of a discharge. Spill responders may include BBI, Clean Harbor, and public resources, e.g., the Regional HAZMAT Response Team, if required. On land, booming, trenching, or berm/dike construction can be used to confine spills to a limited area. When pooled oil results from a spill, proper disposal and recovery procedures should be initiated to collect the product for later disposal. Appropriate personnel (safety, operations, etc.) designated by the IC should be on-site during this type of recovery operation. Once the oil is contained, skimmers, vacuum trucks, and pumps should be deployed to recover the oil.

After all spilled product is recovered, the contaminated area should be layered and wiped with sorbent pads and materials to further collect product residues. Based upon guidance and direction from the IC, contaminated soil should be dug up, collected, and turned over to an authorized waste disposal contractor, along with other contaminated waste and recovered product. Installation personnel and equipment and assets from the spill cleanup contractor are coordinated by the IC to ensure priorities are addressed and recovery and remediation efforts are synchronized in accordance with the cleanup strategy and plan.

If oil from a spill has seeped into the immediately surrounding ground, it can be recovered through excavation and recovery wells. When a large spill occurs and may have seeped into the ground, IC must define the impacted area, ascertain the direction of migration within the soil, and then, working with other spill response members, develop a plan to contain and recover the oil. The extent of the spill can usually be determined by digging a network of trenches until the contaminated zone has been bracketed.

Crude Oil should be contained and removed as quickly as possible. The danger to recovery personnel is much less than most hazardous materials and allows relatively unrestricted recovery of product from both land and water spills. The faster the persistent oil is recovered, the less chance there is of long-term effects from oil residue becoming embedded in environmentally or health sensitive areas.

4.2.2 SECTIONALIZING PIPELINE SECTIONS

TABLE 4.2.2 SECTIONALIZING PIPELINE SECTIONS							
Line Section #	Isolation Valves	Pipeline Length (miles)	Station Location	Coordinates	Mile Post	County in North Dakota	Legal Description
1	Pump Station	8.06	0+00	47.3555 N, 102.7982 W	0.00	Dunn	NW4NW4 S28 T145N R95W
	Knife River North		425+69	47.24106 N, 102.79925 W	8.06	Dunn	NW4NW4 S01 T143N R96W
2	Knife River North	2.01	425+69	47.24106 N, 102.79925 W	8.06	Dunn	NW4NW4 S01 T143N R96W
	Knife River South		531+60	47.21283 N, 102.80045 W	10.06	Dunn	SE4SE4 S11 T143W R96W
3	Knife River South	4.07	531+60	47.21283 N, 102.80045 W	10.06	Dunn	SE4SE4 S11 T143W R96W
	Oxy Interconnect		746+34	47.15406 N, 102.79993 W	14.14	Dunn	NE4NE4 S02 T142N R96W
4	Oxy Interconnect	11.89	746+34	47.15406 N, 102.79993 W	14.14	Dunn	NE4NE4 S02 T142N R96W
	Oxy Crude		746+34	47.15406 N, 102.79993 W	14.14	Dunn	NE4NE4 S02 T142N R96W
	Green River North		1373+89	46.96331 N, 102.851 W	26.02	Stark	SW4 SW4 S06 T140N R96W
5	Green River North	2.24	1373+89	46.96331 N, 102.851 W	26.02	Stark	SW4 SW4 S06 T140N R96W
	Green River South		1492+01	46.99558 N, 102.852 W	28.26	Stark	SW4 SE4 S28 T141N R96W
6	Green River South	9.12	1492+01	46.99558 N, 102.852 W	28.26	Stark	SW4 SE4 S28 T141N R96W
	Duck Creek North		1793+44	46.90469 N, 102.89851 W	33.97	Stark	NE4 NE4 S34 T140N R97W
7	Duck Creek North	0.81	1793+44	46.90469 N, 102.89851 W	33.97	Stark	NE4 NE4 S34 T140N R97W
	Duck Creek South		1836+08	46.89487 N, 102.90694 W	34.77	Stark	NE4 NW4 S34 T140W R97W
8	Duck Creek South	3.49	1836+08	46.89487 N, 102.90694 W	34.77	Stark	NE4 NW4 S34 T140W R97W
	BOE Rail Facility		2020+24	46.8687 N, 102.877 W	38.26	Stark	NE4 SE4 S11 T139N R97W

4.2.3 CONTAINMENT SECTION VOLUMES

TABLE 4.2.3 MAXIMUM CONTAINMENT VOLUMES PER LINE SECTION							
Line Section #	Isolation Valves	Pipeline Length (miles)	Station Location	Mile Post	County in North Dakota	Maximum Containment Volumes (barrels)	Maximum Containment Volumes (gallons)
1	Pump Station	8.06	0+00	0.00	Dunn	9,856	413,936
	Knife River North		425+69	8.06	Dunn		
2	Knife River North	2.01	425+69	8.06	Dunn	2,452	102,986
	Knife River South		531+60	10.06	Dunn		
3	Knife River South	4.07	531+60	10.06	Dunn	4,972	208,811
	Oxy Interconnect		746+34	14.14	Dunn		
4	Oxy Interconnect	11.89	746+34	14.14	Dunn	14,529	610,223
	Oxy Crude		746+34	14.14	Dunn		
	Green River North		1373+89	26.02	Stark		
5	Green River North	2.24	1373+89	26.02	Stark	2,735	114,859
	Green River South		1492+01	28.26	Stark		
6	Green River South	9.12	1492+01	28.26	Stark	6,979	293,107
	Duck Creek North		1793+44	33.97	Stark		
7	Duck Creek North	0.81	1793+44	33.97	Stark	987	41,463
	Duck Creek South		1836+08	34.77	Stark		
8	Duck Creek South	3.49	1836+08	34.77	Stark	3,280	137,761
	BOE Rail Facility		2020+24	38.26	Stark		
Oxy Pipeline	Oxy Tank	1.5			Dunn	508	21,332
	Oxy Crude				Dunn		

4.2.4 DRAINAGE ROUTES

Table 4.2.4.1 identifies nine major drainage routes for the BOE pipeline. The routes have several major flow paths that drain into them as being part of a watershed. Table 4.2.4.2 describes the drainage routes with path lengths to navigable waters.

TABLE 4.2.4.1 Drainage Routes	
Drainage Routes	Distance/Location from Station
Murphy Creek to Lake Ilo to Spring Creek to Knife River to Missouri River	Pipeline crosses Murphy Creek 2.8 miles south of truck terminal. Seven major flow paths off Murphy Creek watersheds from station 0+00 to 258+72.
Wolf Creek to Knife River to Missouri River	Pipeline crosses Wolf Creek 6.2 miles south of truck terminal. Four major flow paths from Wolf Creek watershed from station 258+72 to 369+50.
Knife River to Missouri River	Pipeline Crosses Knife River twice- 9.01 and 9.84 miles south of truck terminal facility. Three major flow paths from Knife River (HUC 12) watershed from station 369+50 to 607+35.
Crooked Creek to Knife River to Missouri River	Pipeline crosses Crooked Creek 13.8 miles south of truck terminal. Two major flow paths from Crooked Creek watershed from station 607+35 to 977+96.
Lighting Creek to Crooked Creek to Knife River to Missouri River	Pipeline crosses tributary to Lighting Creek 19 miles south of truck terminal. One major flow path from Crooked Creek watershed from station 977+96 to 1028+20.
Russian Spring Creek to Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 22.4 miles south of truck terminal. Three major flow paths from Duck Creek watershed from station 1028+20 to 1271+14.
Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river three times- 27.28, 27.34, 27.43 miles south of the truck terminal facility. Six major flow paths from Green River watersheds from station 1271+14 to 1706+11.
Duck Creek to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 34.7 miles south of truck terminal. Three major flow paths from Duck Creek watershed from station 1706+11 to 1884+69.
Heart River to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline does not cross the Heart River. Three major flow paths to Heart River watershed from station 1884+69 to 2020+24.
Distance from Truck Station is approximate mileage.	

**TABLE 4.2.4.2
Drainage Routes and Path Lengths to the Missouri River**

Name	Crossing Distance/Location from Station	Minimum Flow Path Distance from Pipeline to Missouri River in Miles
Murphy Creek to Lake Ilo/Dam to Spring Creek to Knife River to Missouri River	Pipeline crosses Murphy Creek 2.8 miles south of truck terminal.	12.7 miles in Murphy Creek to Lake Ilo/Dam, 1.6 mile spread in Lake/Dam, 96.4 miles in Spring Creek, 40.4 miles in Knife River to Missouri River. Total: 151.1 miles
Wolf Creek to Knife River to Missouri River	Pipeline crosses Wolf Creek 6.2 miles south of truck terminal.	5.6 miles in Wolf Creek, 178.8 miles in Knife River to Missouri River. Total: 184.4 miles
Knife River to Missouri River	Pipeline Crosses Knife River twice- 9.01 and 9.84 miles south of truck terminal facility.	184.4 miles in Knife River to Missouri River. Total: 184.4 miles
Crooked Creek to Knife River to Missouri River	Pipeline crosses Crooked Creek 13.8 miles south of truck terminal.	30.9 miles in Crooked Creek, 150.1 miles in Knife River to reach Missouri River. Total: 181 miles
Lighting Creek to Crooked Creek to Knife River to Missouri River	Pipeline crosses tributary to Lighting Creek 19 miles south of truck terminal.	9.8 miles in Lighting Creek, 29.1 miles in Crooked Creek, 150.1 miles in Knife River to reach Missouri River. Total: 189 miles
Russian Spring Creek to Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 22.4 miles south of truck terminal.	26.5 miles in Russian Spring Creek, 7.8 miles in Green River, 80.8 in Heart River, 8.2 miles of spread in Lake/Dam, 124.2 miles flow in Heart River to reach Missouri River. Total: 247.5 miles
Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river three times- 27.28, 27.34, 27.43 miles south of the truck terminal facility.	40 miles in Green River, 80.8 miles in Heart River, 8.2 miles of spread in Tschida Lake/Dam, 124.2 miles flow in Heart River to reach Missouri River. Total: 253.2 miles
Duck Creek to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 34.7 miles south of truck terminal.	5.31 miles in Duck Creek, 1.66 miles of spread in Patterson Lake/Dam, 106.4 miles in Heart, 8.2 miles of spread in Lake Tschida, 124.2 miles flow in Heart River to reach Missouri River. Total: 245.8 miles
Heart River to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline does not cross the Heart River.	0.9 miles flow to Heart River, 2.9 miles in Heart River, 2.3 miles spread in Patterson Lake/Dam, 106.4 miles in Heart, 8.2 miles spread in Lake Tschida/Dam, 124.2 miles flow in Heart River to reach Missouri River. Total: 244.9 miles
Distance from Truck Station is approximate mileage.		

4.2.5 SPILL CONTAINMENT RESPONSE ON LAND

The primary focus of containment operations must be to prevent released product from entering water supplies, drains, sewage systems, pipe and cable ducts, or other critical areas. In most instances it would be better to allow a larger surface to spread on land than to allow product to enter a surface water system, but this determination should be made as such situations arise.

The crude oil should be trapped in ditches and gullies by earth dams when possible. Where excavating machinery is available, dams can be graded to contain product. Dams, small and large, should be effectively employed to protect priority areas such as inlets to drains, sewers, ducts, and watercourses. These dams can be constructed of earth, sandbags, sorbents, planks, or any other effective method. Thin layers of product on land can be contained by using sorbent material. The use of absorbents on land should be restricted to priority areas due to the expense and disposal problems. If time does not permit construction of a large containment dam, multiple small ones can be made, each one holding a portion of the spill as it advances. The terrain will dictate placement of containment dams. If the spill is minor, natural dams or earth absorption will stop the product before it advances any significant distance. In the case of a line strike by excavation equipment, a spill may follow an excavation. Containment and subsequently cleanup are the main concerns in such situations.

4.2.6 SPILL CONTAINMENT RESPONSE ON WATER

The drainage paths flow initially into nine different creeks and rivers. These waterways ultimately follow to navigable waters of the Missouri River. Eight of these waterways have widths of less than 40 feet and the Heart River has a width of 130 to 450 feet on the west side of Dickinson, ND. A 50 foot containment boom or 50 foot sorbent boom can be used to contain discharge flow in the eight smaller waterways by working along the shorelines. Containment can also occur relatively easily where these waterways cross under a road. Sorbent sweep or sorbent boom can be used in front of the culverts to contain discharge flow.

Due to a width of 130 feet to 450 feet, containment required for the Heart River prior to Patterson Lake will require a boat. 50-foot pieces of containment boom should be connected together until a containment width is reached. More than likely the discharge will flow into Lake Patterson. Containment of a discharge into the Heart River will more than likely flow into Patterson Lake and may be contained due to closing the spillway or shoreline efforts after the spillway where the width of the waterway is reduced to 50 feet using a 50-foot containment boom. For a discharge into the Heart River, BBI and, if necessary, Clean Harbors resources should be used for containment.

Section 3.4.2.3 Identifies containment control points along drainage paths into nine different creeks and rivers along the pipeline.

4.3 General Response Operations Planning

The purpose of this section is to describe response activities to be taken to ensure site safety and to mitigate or prevent discharges. Implementation methods, response actions to be performed, required and available response resources including temporary storage, and disposal, containment, and drainage planning are described in this section.

All releases of crude oil from the BOE Pipeline are reported to the BOE/Progress Control Center at (844) 220-9234. Employees who discover a release will take initial action to contain the release, including evacuation of the immediate area (if necessary). The SCADA system will normally detect a release due to a pressure drop in the pipeline. Section 2 and Table 2.1 identifies initial response actions for an initial responder on site.

4.3.1 GENERAL RESPONSE OBJECTIVES

The following are typical response objectives and can be used for oil spills:

- Ensure the safety of citizens and response personnel.
- Control the source of the spill.
- Manage a coordinated response effort.
- Maximize protection of environmentally sensitive areas including wildlife and historic properties.
- Contain and recover spilled material.
- Recover and rehabilitate injured wildlife.
- Remove spilled material from impacted areas.
- Minimize economic impact.
- Keep stakeholders informed of response activities.
- Keep the public informed of response activities.

The first priority in any spill is always the protection of human life and health. This priority remains paramount throughout all phases of the response effort. Maximum human protection from a spill from the BOE Pipeline is achieved by timely evacuation (if required), effective containment to areas away from inhabited residences and workplaces, and prompt cleanup.

The second priority is to protect natural resources and minimize ecological impacts. For the pipeline, the primary effort is to contain the spill and prevent its escape into waterways, i.e., Green River, Knife River, Duck Creek, Missouri River system and surrounding wetlands.

The third priority is to minimize economic and public impact. Actions taken to achieve the first two priorities will also achieve this goal. The most effective immediate action to minimize public impact is by keeping spilled oil from reaching beyond the right-of-way site boundaries and to contain it if it does.

4.3.2 INCIDENT COMMAND AND POSITIONS

Once a leak is reported/detected, the supervisor on-call becomes the QI. The QI will decide the level of response needed and therefore the initial complexity of the ICS. Oil discharge incidents require different levels of response depending on the severity of the incident. Table 4.3.2 describes these levels, provides a description of the type of incident, and the appropriate site response organizations. The first effort by operations personnel will be to stop the flow of oil from the pipeline while implementing containment measures, notification(s), and mobilization, if necessary. Clean-up efforts usually occur once spill containment has occurred and conditions are "made-safe".

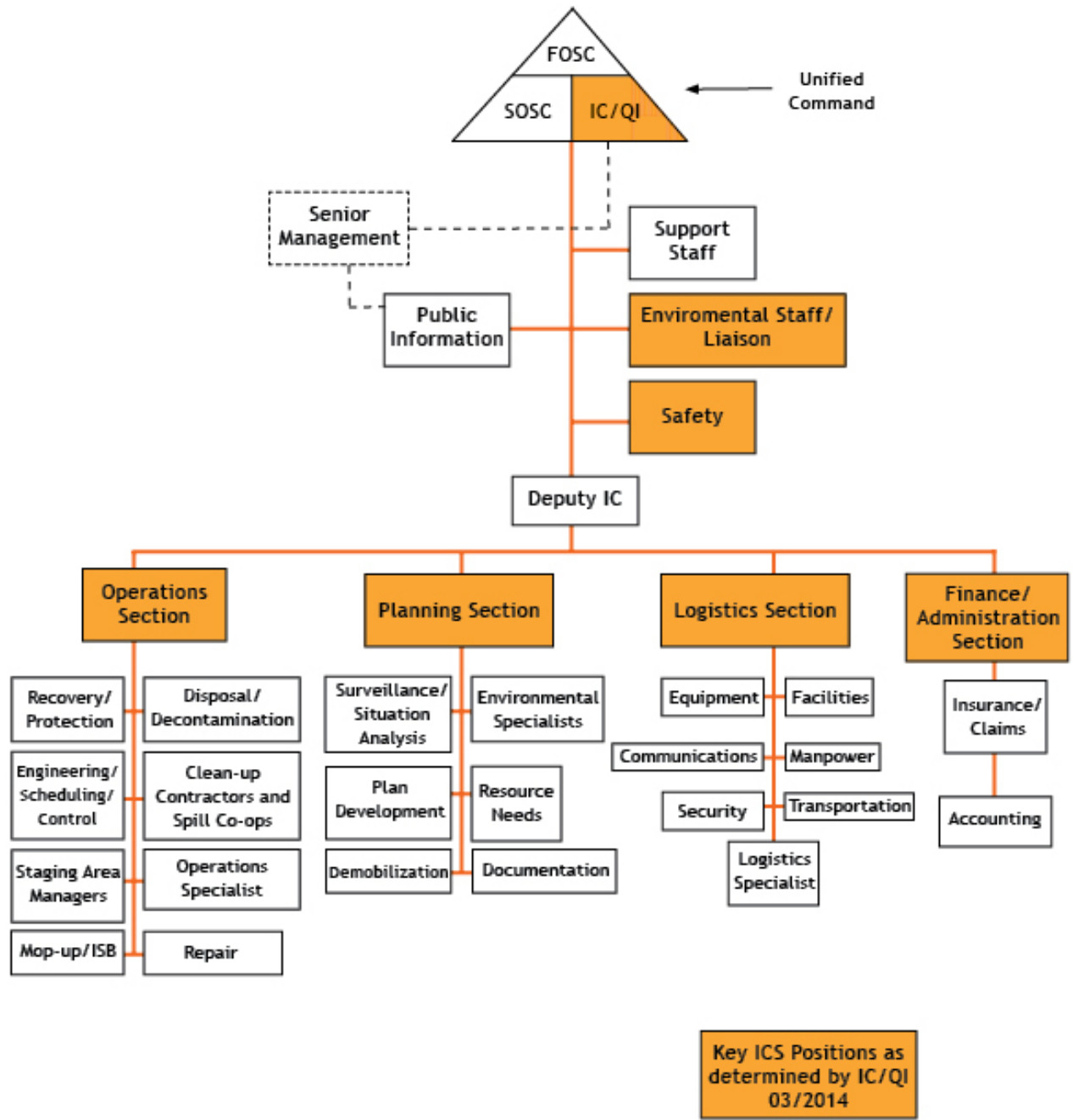
The QI will be the IC. The QI shall be English-speaking and available on a 24-hour basis. The QI has the full authority to perform the following: activate and contract with required oil spill removal organization(s); activate personnel and equipment maintained by the operator; act as liaison with the OSC; and obligate any funds required to carry out all required or directed oil response activities.

The QI has the responsibility to manage all aspects of the response. If the complexity of the response requires such, the QI is authorized to designate a spill response team and delegate authorities for logistics, planning, operations, administration, etc. The personnel and expertise of the company and its affiliates are entirely available for these tasks. All response personnel report to the QI through their task supervisors.

The BOE response team structure is loosely patterned after the NIIMS Incident Command System. As defined, this system is highly flexible, capable of being adapted to the complexity or simplicity of the response action. The BOE/Progress Solutions QI is the in-house IC and is responsible for implementing the ICS system and expanding or contracting it as he/she deems appropriate.

The following Figure 4.3.2 is a guide for development of an ICS structure.

Organizational Chart
Figure 4.3.2 - Incident Command System



The ICS is developed from the top down and is headed by the IC/QI. There are nine functional positions which report to the IC. Until the IC/QI assigns individuals to each of these positions, the IC/QI has functional responsibility for all unassigned positions. The IC/QI can request support staff fill any of the ICS positions as needed.

The Spill Management Team for each spill event comprises the QI for that event plus the on-site operating personnel and any additional and/or substitute personnel the QI designates. The environmental staff and other administrative support personnel are available as required by the QI and the complexity of the release.

All ICS personnel have the following common responsibilities:

- Receive assignment, notification, reporting location, reporting time, and travel instructions from supervisor.
- Upon arrival at the incident, check in at the designated check-in location, generally at the Incident Command Post.
- Participate in incident planning meetings.
- Use clear text and ICS terminology in all radio transmissions.
- Identify the incident by name in all radio communications.
- Receive briefing from immediate supervisor.
- Acquire work assignments and materials.
- Organize, assign and brief subordinates.
- Determine resource needs.
- Develop and implement accountability, safety, and security for personnel and resources,
- Complete forms and paperwork required of the position, including lists of supplies to be replenished.
- Ensure continuity by using in/out briefings.
- Respond to demobilize orders.
 - Brief subordinates regarding demobilization orders.

The span of control is determined by the number of people reporting to one person. ICS disciplines each member to:

- Limit the span of control to a manageable number of individuals.
- Train and prepare for exceptions.
- Assign an area of functional responsibility to another person as needed to maintain control.

Modular development enables on-scene ICS members to make decisions about expanding the ICS based on the specific requirements of the incident. Staffing of the structure can consist of one to hundreds of individuals depending upon the magnitude of the incident and the resources required to manage it.

Common Terminology ICS is a widely accepted and used emergency response process. During an emergency, response personnel may include company personnel from other locations, contractors, and governmental agencies. BOE/Progress Solutions requires the use of ICS terminology to help maintain consistency of communication.

An ICS team is disbanded by the IC once the incident is resolved.

Unified Command

A unified command will be established during an incident anytime agency representatives are present. When governmental agencies have jurisdiction in managing an incident, a unified command may be established as follows:

- The BOE/Progress Solutions IC/QI.
- One designated individual from each jurisdictional response agency.

An integrated command occurs when personnel from the responsible party and participating agencies staff one or more ICS sections below the Incident Commander. This is not a subset of unified command or decision by consensus, but rather one chief per section with assigned roles within that section.

TABLE 4.3.2 BOE RESPONSE LEVELS		
Level	Description	Response Organizations
I	An incident that can be controlled, cleaned up, and disposed of by individual organizations. The incident is confined to a small area. Only evacuation of the immediate area is required.	<ul style="list-style-type: none"> • BOE/Progress Solutions Qualified Individuals • BOE Response Team and contracted response personnel Baranko Brothers
II	An incident beyond the using organization's capabilities to respond involving a greater hazard or larger area, which could be a potential threat to life or property and may require a limited evacuation of the surrounding area.	<ul style="list-style-type: none"> • BOE/Progress Solutions Control Center • QI and BOE/Progress Solutions Response Team and contracted response personnel • Dunn and Stark County Sheriff's Offices • Baranko Brothers
III	An incident involving a severe hazard or large area which poses an extreme threat to life and property and will probably require a large scale evacuation; or an incident requiring the expertise or resources of county state, federal, or private agencies.	<ul style="list-style-type: none"> • BOE/Progress Solutions Control Center • QI and BOE/Progress Solutions Response Team and contracted personnel • Dunn and Stark County Sheriff's Offices • Baranko Brothers • Clean Harbors

After each oil spill event where the Response Plan is implemented, a post-incident analysis will be conducted to evaluate the Response Plan's effectiveness and to identify plan, resource, and response deficiencies. BOE/Progress Solutions Management will conduct the post-incident analysis.

All plan, resource, and training deficiencies will be identified along with a corrective action plan for resolving the identified problems. The owner should monitor corrective action plan progress until final resolution. BOE is responsible for correcting FRP deficiencies within 30 days of the corrective action plan publication date.

Incident Command Positions

The on-call Field Supervisor is the IC/QI. The IC oversees the entire operation. The IC sets objectives and priorities and has responsibility for the entire operation. All operational groups within the ICS report to the QI. The QI or designate coordinates with federal OSC and others. All other ICS functions, as appropriate to the response, report directly to the IC/QI.

Incident Commander (IC)

The IC is responsible for:

- Implementing overall management of the incident to protect personnel, the public, and the environment.
- Assessing the situation and/or obtaining briefing from the prior IC.
- Determine incident objectives and strategies.
- Establish priorities.
- Establish incident command post.
- Establish the appropriate organization.
- Approve and authorize implementation of an Incident Action Plan.
- Ensure adequate safety measures are in place.
- Ensuring responders are qualified to perform the tasks assigned.
- Coordinate activity of all command and general staff.
- Activating Local Response Team when required.
- Approve requests for additional resources or for the release of resources.
- Keep agencies informed about incident statuses.
- Coordinate incident investigation responsibilities.
- Order demobilization of incident resources when appropriate.
- Report directly to the BOE.

Operations Section Chief

The Operations Section Chief is responsible for managing all operations directly applicable to incident response and clean-up. The Operations Section Chief activates and supervises elements in accordance with the Incident Action Plan and directs its execution; activates and executes the Site Safety and Health Plan; directs the preparation of unit operational plans as needed; requests or releases resources; makes expedient changes to the Incident Action Plan as necessary; and reports such to the Incident Commander. The Operations Section Chief participates in developing and implementing the Incident Action Plan and activates and supervises the personnel required to accomplish Operation Section tasks.

- Develop operation portion of Incident Action Plan (IAP).
- Brief and assign operations personnel.

- Supervise execution of the IAP.
- Request resources needed to implement IAP.
- Release unneeded resources.
- Ensure safe operations.
- Make changes as needed to the Plan.
- Report information about changes to the IAP, special activities, events and occurrences to Incident Commander as well as the Planning Section Chief and Liaison Officer.

Planning Section Chief

The Planning Section Chief is responsible for collecting, evaluating, disseminating, and using information about the incident to: (1) understand the current situation (2) predict probable course of incident events, and (3) prepare alternative strategies for the incident. The Planning Section Chief participates in developing and implementing the Incident Action Plan and activates and supervises the personnel required to accomplish Planning Section tasks.

- Collect, evaluate, disseminate, and use information related to the development of the incident.
- Assist in creation of the Incident Action Plan.
- Maintain the status of resources available to handle the incident.
- Obtain information needed to resolve the situation.
- Prepare alternative response strategies to handle the situation.
- Determine the need for specialized resources to support the incident.
- Assign technical specialists as needed.
- Advise Incident Commander and Section Chiefs of significant changes in incident status.

Logistics Section Chief

The Logistics Section Chief is responsible for providing facilities, services and material in support of the incident response. The Logistics Section Chief participates in developing and implementing the Incident Action Plan and activates and supervises the personnel required to accomplish Logistics Section tasks.

- Identify service and support requirements for planning and expected operations.
- Coordinate and process requests for additional resources.
- Advise on current service and support capabilities.
- Estimate future service and support requirements.
- Provide input into demobilization plans.
- Ensure general welfare and safety of Logistics Personnel.

Finance/Administration Section

The Finance/Administration Section is responsible for all financial and cost analysis aspects of the incident and for supervising members of the Finance/Administration Section.

- Determine resource needs.
- Ensure that financial authorities are identified.
- Maintain contact with administration headquarters on finance matters.
- Establish lines of credit at local banks.

- Keep records of time sheets for contract as well as company personnel.
- Track costs and resources.
- Ensure that all obligation documents initiated at the incident are properly prepared and completed.
- Notification of Insurance carrier and ensure all insurance claims documents initiated at the incident are properly prepared and completed.

Safety Officer

The Safety Officer is responsible for monitoring and assessing hazardous and unsafe situations and developing measures to assure personnel safety. The Safety Officer will correct unsafe acts or conditions through the regular line of authority, although the Safety Office may exercise emergency authority to prevent or stop unsafe acts when immediate action is required. The Safety Officer maintains awareness of active and developing situations, ensures the Site Safety and Health Plan is prepared and implemented, and includes safety messages in each Incident Action Plan. Only one Safety Officer will be assigned for each incident. The Safety Officer may have assistants, as necessary. In addition to the common duties described above, the Safety Officer duties include:

- Monitor and assess hazardous and unsafe conditions.
- Develop and implement measures that assure personnel safety.
- Coordinate the preparation of the site safety plan.
- Make recommendations for personal protective equipment, control zones and decontamination area.
- Exercise authority to stop or prevent unsafe acts.
- Investigate accidents that occur in the incident area.
- Ensure preparation of the Site Safety and Health Plan.
- Assign assistants and manage the incident safety organization.

Environmental/Liaison Officer

The Environmental/Liaison Officer is responsible for interfacing with and reporting to the appropriate regulatory agencies, stakeholders affected by the incident after conferring with the Incident Commander or his designee. The Environmental/Liaison Officer is also responsible for assisting and cooperating with outside non-response regulatory agencies such as Red Cross, water departments, environmental agencies, etc., to disseminate or receive needed information. The Environmental/Liaison Officer provides notification and updates internally as well as seeking legal advice in support of response activities. Any press interviews or press releases will be coordinated through the Environmental/Liaison Officer. Only one Environmental/Liaison Officer will be assigned for each incident.

- Ensure incident funding is available.
- Seek appropriate legal counsel.
- Act as the point of contact for the incident.
- Report incident and provide updates as needed to appropriate regulatory agencies.
- Authorize release of information to the news media or other interested parties.
- Arrange field tours and briefings as may be necessary.
- Maintain current information summaries of the incident.
- Update management as to the status of the incident.

Roles and Responsibilities of Support Staff

The purpose of the Support Staff is to manage off-site issues associated with emergencies whenever there is a BOE pipeline incident or event for which the IC requests their assistance. The Staff will activate any of the support staff as requested by the IC and as dictated by the complexity of the event. One person may occupy more than one of the Support Staff positions.

The **Support Staff** may be composed of:

- Environmental/Regulatory Compliance.
- Public Affairs.
- Finance.
- Insurance.
- Legal.
- Engineering and Scheduling.
- Land.
- Safety.
- Documentation.

The **Support Staff Environmental/Regulatory** is responsible for:

- Emergency response coordination/planning.
- Developing and approving off-site strategies.
- Activating additional team members.
- Assuring communication with Incident Commander, Operations Manager, owners/partners, or other companies.
- Coordinating all efforts of the team members.
- Reviewing regulatory issues, and assisting in regulatory interpretations.
- Communicating with agencies and other governmental entities as needed providing miscellaneous regulatory and compliance support.
- Providing support with the emergency response process and plan implementation.
- Supporting field activities by recommending and accessing internal or external consultants and/or experts for environmental and safety regulatory issues.
- Reporting of release volumes and other response information to regulatory agencies.

The **Finance Support Staff** is responsible for developing the strategy for support of tax and accounting issues related to the incident.

The **Insurance Support Staff** is responsible for coordinating insurance claims and efforts.

The **Legal Support Staff** is responsible for:

- Communicating with owners/partners, as required.
- Making recommendations concerning legal issues and courses of action.

The **Engineering and Scheduling Support Staff** is responsible for coordinating the:

- Impact upon the business development and implementation of alternate transportation.
- Scheduling strategies and gathering control center information.
- Arranging frequency and format of communication and communication support.
- Arranging for technical recommendations and support establishing the investigation team.

Public Affairs/Public Information are responsible for coordinating development and:

- Developing and executing external affairs strategies, fact sheets, and press releases for dealing with the media, affected communities, elected officials, and other key external audiences.
- Establishing a single information center where all external summaries and statements about the incident are prepared
- Releasing information to the news media and other appropriate agencies
- Maintaining appropriate communications with the public.

The **Safety Support Staff** is responsible for:

- Providing a general oversight of safety issues
- Arranging for safety support and resources
- Supporting field activities by recommending and accessing internal or external consultants and/or experts for safety regulatory issues

The **Land/Right-of-way Support Staff** is responsible for support to field land agent activities.

The **Documentation Support Staff** is responsible for:

- Recording key meeting issues and action items
- Following the guidelines for documentation.

Record keeping: Every incident has an oral or written action plan prepared for each operational period, a period of time chosen based on the nature of the incident, typically a half day, a day or several days. The **NIIMS ICS forms** were created to help prepare the incident action plan and to record all aspects of the response action. NIIMS forms may or may not be used for tracking an individual incident. If the release is of sufficient complexity, they will be used as appropriate.

Coordination with the OSC: The "Qualified Individual" will be informed of the appointment of a State or Federal "On Scene Coordinator" (OSC) as soon as BOE/Progress Solutions headquarters is so notified. Thereafter, the "Qualified Individual" shall inform the OSC of all steps that have been taken and those that are being taken, as well as seek the OSC's directions as to appropriate additional response measures.

If the Federal OSC takes control of the response the resources of BOE/Progress Solutions will be integrated into the OSC command structure as requested by the OSC.

4.3.3 INCIDENT COMMAND POSTS

The designated command post for response personnel is located at the office of LL Terminals, LLC truck terminal office at 406 109th Avenue SW, Killdeer (701) 483-0435 temporary (701-764-7215 will be permanent number) as the primary site and the Bakken Oil Express Rail Facility at 3761 115th Avenue SW, Dickinson (701) 483-0454 as an alternate.

4.3.4 EVACUATION PLAN

For a large spill, evacuation consideration should be given initial downwind for at least 1,000 feet (300 meters). Evacuation for 1000 feet in all directions of the spill may occur if wind is changes directions often. In the case of a pipeline fire, isolate the area for ½ mile (800 meters) in all directions with consideration to initial evacuation of ½ mile (800 meters) in all directions.

The QI/IC will designate personnel member(s) as evacuation warden(s) to check the pipeline for facility personnel and all others that are in the pipeline site area. The fire department chief may make evacuation decisions and handle this. The evacuation warden(s) will assist everyone required to evacuate and verify they have left their premise. One warden should be appointed for every 20 people. The assembly location may be requested. Possible assembly locations could be the Dickinson Bakken Oil Express Rail Facility at 3761 115th Avenue SW, Dickinson or the Killdeer Truck terminal at 406 109th Avenue SW, Killdeer. The QI or fire chief may designate another location.

4.4 QI Responsibilities, Authority, and Notifications

BOE Pipeline carries crude oil from the Killdeer Truck Facility (Gerry's Corner) to the Bakken Oil Express Rail Facility. Crude oil is considered a HAZMAT and is handled as such. All emergency response procedures will be implemented when responding to a HAZMAT incident. BOE/Progress Solutions employs a Unified Command Concept when responding to HAZMAT crude oil releases. Under the Unified Command Concept, the responsibilities of the designated Qualified Individual (QI) as specified in 40 Code of Federal Regulations (CFR) 112.20(h)(3)(ix), are may be shared between the IC and the On-Scene Commander (OSCDR) or all handled by the QI position. The IC will perform the technical duties of the QI and direct the tactical aspects of the response operation. The OSCDR assumes responsibility for the logistical support duties of the QI. For a BOE pipeline emergency response the QI will be the OSCDCR. When outside resources play a major role, they will integrate into the unified command. The training performance elements for the QI are found in Section 6.2.

4.4.1 REGULATORY DUTIES OF THE QI

The regulatory duties [40 CFR 120(h)(3)(ix)] of the qualified individual are listed below along with a description of circumstances that describe how and when the alternate qualified individual will assume control of the duty from the qualified individual.

- Activate alarms office to notify all personnel.
- Notification of all response personnel will be accomplished per the Emergency Response Notification Phone List (Table 2.2).
- Identify character, exact source, amount, and extent of release, as well as other items needed for notification.
- Using knowledge of the hazards of the materials on-site, (See Section 3.5), assess interaction of spilled substance with water and/or other substances stored at the facility and notify response personnel at scene of that assessment.
- Assess possible hazards to human health and environment due to the release. The assessment should include both direct and indirect effects of the release (gases released, effects of any hazardous surface water runoffs from chemical agents used to control fire and explosion). Consideration should also be given to environmental hazards posed by releases from the foam suppression systems at the facility.
- Assess and implement prompt removal actions to contain and remove substance released.
- Coordinate rescue and response actions as previously arranged through discussions and drills with all response personnel.
- Use authority to immediately access funding to initiate cleanup activities. The qualified individual has been granted full authority to implement corrective actions.
- Direct cleanup activities until properly relieved of this responsibility. The QI will be replaced by arrival of the Alternate QI, if necessary.

4.4.2 QUALIFIED INDIVIDUAL AUTHORITY AND RESPONSIBILITY

The QI has initial command and control responsibilities for any oil spill addressed by this plan. As a minimum, the QI and the designated alternate must have:

- Authority to activate and contract with oil spill removal organizations.
- Authority to act as liaison with the Federal On-Scene Coordinator (**FOSC**).
- Authority to obligate appropriate funding to support all necessary or directed oil response activities.

See Table 4.4.4 for a more in-depth listing of the QI's responsibilities. For the BOE Pipeline the QI is:

Name: Tory Neer
Position: Progress Solutions Area Manager
Work Number: (701) 204-5109
Mobile Number: (701) 204-5109

Name: Doug Lee
Position: Progress Solutions CEO
Work Number: (701) 250-5996
Mobile Number: (402) 955-4230

Name: Dana Rathjen
Position: Progress Solutions Foreman
Work Number: (701) 690-6245
Mobile Number: (701) 690-6245

Name: Chris Lewis
Position: BOE General Manager
Work Number: (701) 483-0435
Mobile Number: (402) 690-4742

4.4.3 ALTERNATE QUALIFIED INDIVIDUAL AUTHORITY AND RESPONSIBILITY

The Alternate Qualified Individuals' (AQI) duties are identical to that of the Primary QI. The AQI will assume command and control in the absence of the QI.

See Table 4.4.4 for a full listing of the AQI's responsibilities and duties. For the BOE Pipeline the AQI's are:

Name: Brandon McDowell
Position: BOE Director of Operations
Work/Mobile Number: (303) 887-8005

4.4.4 QUALIFIED INDIVIDUAL'S DUTIES

TABLE 4.4.4	
Qualified Individual's & Alternate's Duties	
PRE-SPILL DUTIES	
	<ul style="list-style-type: none"> • Develop a facility response plan to meet current regulations and to provide for adequate personnel and other resources necessary to respond to the average most probable facility spill.
	<ul style="list-style-type: none"> • Conduct sufficient number of drills to ensure that the response plan, personnel, and equipment are adequate and work as expected.
	<ul style="list-style-type: none"> • Review response plan at least annually to ensure that it remains up-to-date.
	<ul style="list-style-type: none"> • Ensure facility response personnel maintain mandatory training levels (OSHA, etc.).
SPILL RESPONSE DUTIES	
	<ul style="list-style-type: none"> • Obtain initial incident briefing from the Initial Response Team. Characterize spill to obtain spill notification data.
	<ul style="list-style-type: none"> • Activate notification system to activate spill response management team.
	<ul style="list-style-type: none"> • Characterize the spill as to source, amount, and other items needed to make required notifications.
	<ul style="list-style-type: none"> • Request additional resources as needed. Ensure other appropriate notifications are made.
	<ul style="list-style-type: none"> • Make incompatibility/interaction assessment and notify proper response personnel.
	<ul style="list-style-type: none"> • Assess the situation for possible direct and indirect health and safety hazards, environmental risks, and coordinate prompt rescue, response, removal, containment, diversion actions, and evacuation actions as outlined in the response plan.
	<ul style="list-style-type: none"> • Ensure that personnel safety is accorded highest priority.
	<ul style="list-style-type: none"> • Develop strategic objectives and response priorities.
	<ul style="list-style-type: none"> • Ensure that spill event and response efforts, costs, orders, contracted personnel, and equipment are properly documented.
	<ul style="list-style-type: none"> • Approve Incident Action Plans, site specific Health and Safety Plans, and other plans as needed.
	<ul style="list-style-type: none"> • Serve as primary contact with state regulators.
	<ul style="list-style-type: none"> • Attend unified command meetings with the federal and state regulators.
	<ul style="list-style-type: none"> • Review and approve resource allocation changes.
	<ul style="list-style-type: none"> • Monitor response effort and adjust as necessary.
	<ul style="list-style-type: none"> • Serve as primary spokesperson with news media.
	<ul style="list-style-type: none"> • Review and approve press releases.
	<ul style="list-style-type: none"> • Approve Demobilization Plan.
AFTER SPILL DUTIES	
	<ul style="list-style-type: none"> • Develop spill report to determine strengths and weaknesses of plan, response effort, etc.
	<ul style="list-style-type: none"> • Amend plan based on lessons learned.
	<ul style="list-style-type: none"> • Review plan for deficiencies.

4.5 Procedures for Coordinating the Actions

4.5.1 GENERAL RESPONSE ACTIONS

- The landowner, general public, 911 operator, or employee discovering the spill will immediately report the spill or leak to the BOE pipeline (Progress Solutions) Call Center; then the Progress Solutions Pipeline Area Manager or his/her designate. Section 3.4 of this plan identifies emergency numbers that should also be contacted. Table 4.3.2 identifies the response personal for Level I, II, and III Spills. The Pipeline Area Manager or his/her designate will be Incident Commander/Qualified Individual.
- Personnel from BOE Pipeline/Progress Solutions should perform initial response actions as described in Section 3.4, including application of available spill response equipment using proper protective equipment (Section 3.6). All discharges should be immediately reported to Progress Solutions Control Room Dispatcher 844-220-9234.
- Personnel should not touch or walk through spilled material. Do not touch metal pipes or other metal objects in the area. Inhalation or contact with material may irritate or burn skin and eyes. If the spill is flowing along a flow path, responders should utilize containment methods which may include an oil spill trailer materials and equipment. Initial responders should establish a perimeter with physical barriers to limit traffic.
- The senior person directing activities at site may contact the Emergency Response at local 911 if necessary for law enforcement is needed to establish and maintain the perimeter.
- Upon arrival, the QI/IC will be briefed on activities performed. He will then assess the nature and extent of the release and determine the level of spill. Part of his evaluation is to determine threat to human health or the environment.
- The QI/IC can delegate any responsibilities in this action plan to qualified individuals that are available. The IC will ensure Initial Response Actions described in Section 2.1 are performed.
- The IC will assign staff positions required from Organizational Chart Figure 4.3.2. For large/worst-case spills or as conditions warrant, the structure will be expanded to include General Staff Sections (Planning Coordinator, Operations Coordinator, Logistics Coordinator, and Finance Coordinator should be appointed). The assigned responsibilities are in Section 4.3.2.
- The IC will use Table 2.2 in Section 2 to make initial contact to ensure proper personnel and equipment are contacted and respond. 40 CFR 112 Appendix E provides guidelines for response resources for small, medium, and worst-case discharges. Based on the guidelines in Appendix E, the following equipment is required:

- i. Small discharge (2,100 gallons = 50 barrels):
 1. 1,000 feet of boom that can be deployed within 1 hour.
 2. 2,100 gallon-per-day recovery capacity
 3. 4,200 gallon-per-day storage capacity
 - ii. Medium discharge (36,000 gallons = 857 barrels):
 1. Recovery capacity equal to 50 percent of the medium discharge volume = 18,000 gallons.
 2. Temporary storage capacity equal to two times the recovery capacity = 36,000 gallons.
 3. Equipment on site in no more than 12 hours.
 - iii. Worst Case discharge (851,741 gallons = 20,280 barrels)
 1. All resources must be capable of being deployed (on site) within 24 hours of discovery.
 2. BOE/Progress Solution pipeline personnel, and Baranko Brothers will respond. Baranko Brothers and Clean Harbors have water response equipment. Baranko Brothers of Dickinson, ND will be contacted for scene mitigation measures/cleanup at 1-701-264-5004 (24/7). Equipment necessary to assess, contain, and control the impact of such discharges will be contacted by the QI/IC. BOE/Progress Solutions response team and response contractors will respond with other appropriate equipment necessary to respond to a discharge involving Group 2 crude oil handling, storage, and transportation for spill volume.
- Incident Coordinator and Safety Officer should review Section 1.4 Material Transported and the Safety Data Sheet (SDS or MSDS), complete an Initial Site Safety and Control Analysis, and develop a Site Safety Plan to insure that personnel safety is accorded highest priority. Exclusion, contamination reduction zones and support zones with buddy system will need to be established. Work area should be monitored for toxic and flammable gases.

Flammable Gases Present

In addition to the immediate actions taken to secure and monitor the work area, the following precautions are to be followed if flammable vapors are present:

1. Stay well out of the identified area.
2. Keep all possible ignition sources away from the area.
3. Do not touch metal pipes or other metal objects in the area.
4. Allow the hazardous vapors to dissipate before beginning repair and cleanup.
5. Wear appropriate PPE.

Preventing Accidental Ignition

1. Special procedures are required to minimize the possibility of accidental ignition in areas identified as potentially dangerous to the public.
 2. Test the atmosphere at the leak site for vapor flammability, low oxygen levels and for toxic gases.
 3. Consideration should be given to:
 - a. Placing appropriate warning signs.
 - b. Evacuating the public.
 - c. Rerouting traffic (including trains and planes).
 - d. Removing spectators from the site.
 - e. Designating a safe place for workers and materials.
 - f. Removing and/or shutting off all motor vehicles from the site.
 - g. Removing excess products from the site.
 - h. Providing explosion proof portable power equipment.
 - i. Providing protective clothing, vapor monitoring equipment, respirators and/or other safety equipment to the workers.
 - j. Shutting off cathodic protection rectifiers.
 - k. Use of portable flare stacks.
 - l. Intrinsically safe equipment.
 - m. Attaching electric bonds to each side of the pipe to be cut.
- As necessary, the QI/IC will make arrangements to evacuate personnel, notify local authorities, and advise if area control or evacuation of the surrounding area is required. Evacuation will be coordinated with BOE/Progress Solutions personnel. Three residential homes are located within 500 feet of the pipeline. They are listed in our notification list in Section 2.2. The Rural Fire Department chief has the ultimate authority for ordering an evacuation of affected grid sections of the site. Should a large spill occur, consideration should be given to initial downwind evacuation for at least 300 meters (1,000 feet). Section 3.4.2.2 identifies all premises within 1,000 feet of the pipeline. The following procedures will occur in the event of an evacuation along part of the pipeline:
 - Radio/Phone Notification - The QI/IC or Logistics Coordinator will notify all facility personnel of the evacuation via radio or cell phone.
 - Facility Check - The QI/Incident Commander will designate personnel member(s) as evacuation warden(s) to check the facility for facility personnel

and all others that are on site. The fire department chief may make evacuation decisions and handle this. The evacuation warden(s) will assist everyone required to evacuate and verify they have left their premise. One warden should be appointed for every 20 people. The assembly location may be requested. Possible assembly locations could be the Dickinson Bakken Oil Express Rail Facility at 3761 115th Avenue SW, Dickinson or the Killdeer Truck terminal at 406 109th Avenue SW, Killdeer. The QI or fire chief may designate another location.

- Accountability - Evacuation warden(s) will respond to the QI/IC or Logistics Coordinator every 30 minutes until the premises are cleared of personnel and all others that were on site.
- Command Posts - The designated command post for response personnel is located at the office of LL Terminals, LLC truck terminal office at 406 109th Avenue SW, Killdeer (701) 483-0435 as the primary site and the Bakken Oil Express Rail Facility at 3761 115th Avenue SW, Dickinson (701) 483-0454 as an alternate.
- Should a fire occur:
The QI/IC will ensure firefighting resources. Only personnel with proper training should be used to fight fires. Personnel without prior firefighting training will be used to:
 - a. Assist trained fire fighters.
 - b. Assist with traffic control.
 - c. Man road blocks.

The proper Rural Fire Department will be contacted for emergency response and equipment for firefighting activities (if surrounding area is in danger) at local 911. The fire chief is responsible for firefighting activities and public safety once he/or she is on site. The Rural Fire Department will determine if additional Fire Departments, equipment or personnel are required to help. The fire chief will contact additional resources available to him/or her. The Incident Commander will offer assistance of BOE/Progress Solutions personnel and resources to fire chief. The fire chief and IC will give consideration to the following.

- i. Evacuation would need to be implemented for 0.5 mile surrounding the facility and along the drainage discharge route. The Rural Fire Department has the ultimate authority for ordering an evacuation of affected grid sections of the site.
- ii. Do not extinguish fire unless flow can be stopped.
- iii. Crude Oil is insoluble in water.
- iv. Caution: Crude Oil has a very low flash point. Use of water spray when fighting fire may be inefficient.
- v. Caution: For firefighting mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.
- vi. Fire may produce irritating, corrosive and /or toxic gases. Use proper respiratory equipment in the work area.

- vii. For a small fire - Use Dry chemical, CO₂, water spray or regular foam.
 - viii. For a large fire:
 1. Water spray, fog or regular foam work best. Do not use straight streams.
 2. Move any containers containing flammable substances from the area if it can be done without risk.
 - ix. For a fire involving the pipeline:
 1. If the pipeline is involved in a fire, isolate and evacuate for ½ mile in all directions.
 2. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
 3. Cool of facilities with flooding quantities of water until well after fire is out may need to be considered depending on the circumstances.
 4. Withdraw immediately in case of rising sound from venting safety devices or discoloration of piping.
 5. Always stay away from pipeline engulfed in fire.
 6. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let burn.
- Should rescue of human life be required, the QI/IC will contact the Rural Fire Department at local 911 to conduct the rescue. During initial response actions the senior person directing activities may have already made this contact.
 - If necessary, the QI/IC or designate Logistics Coordinator will contact medical assistance for transportation of injured personnel to nearest emergency medical facility. Injured personnel would be transported by local ambulance to St. Joseph's Hospital at 307th St. West, Dickinson, ND. St Joseph's Hospital phone number is (701) 456-4000.
 - The QI/IC (Pipeline Area Manager) or designate will take immediate action to control the spill and to contain the spill. Once the level of spill is determined, he and/or she should begin emergency response actions with response equipment. See Sections 3.6 and 3.7 for this equipment. BOE/Progress Solutions personnel identified in Table 2.2 are to contain and control the spill/leak. The response resources will be deployed (on site) within 12 hours of discovery for a medium discharge and 24 hours for a worst case discharge.
 - If the size of the spill presents a threat to follow a flow path, Response Personnel will be provide containment as necessary. This can include:
 - i. Installation of proper containment boom.

- ii. Prevent entry into waterways, sewers, basements or confined spaces. Block all storm drains and sanitary drains.
 - iii. Control the discharge by trenching or encircling the area with a dike of soil or absorbent material.
- Should outside assistance be required to control the spill, the QI/IC or designate contact will contact the designated area spill control and clean-up contractors. BOE/Progress Solutions responds with their employees and equipment to all spills. They are primary responders. The QI/IC may or have the Progress Solutions Control Room Dispatcher call BOE/Progress Solutions personnel and necessary response equipment. BOE/Progress Solutions may contact additional contractors for additional help. Section 3 identifies BOE/Progress Solutions personnel, equipment, and available contractors. Baranko Brothers can be used should a catastrophic spill occur. Baranko Brothers has an emergency response team which is all qualified individuals that can respond for containment, control, and remediation services. Baranko Brothers of Dickinson 24/7 phone number is 701-264-5004.
- The QI/IC or designate Documentation Coordinator will keep a log of activities during the spill event including the nature and extent of the spill, the response actions, any outside assistance, the quantity and disposition of spill materials, an assessment of environmental damage, and any contact with regulatory personnel. The QI/IC may delegate responsibility to keep this log to other site personnel, but is responsible to review the log for accuracy. The QI/IC or designate will also use Tables 2.4.1 through 2.4.3 in Section 2 to record the spill response and notifications. All notification phone numbers are identified in Table 2.2 of Section 2.
- The QI/IC, or his/her designate, is responsible for completing the following notifications and follow-up actions.

4.6 Recovery and Disposal Plan Planning

4.6.1 RECOVERY AND REMOVAL OF PRODUCT

The process of recovery and removal of product from soil surfaces is difficult. Recommended methods include:

1. Collecting the released material into tank trucks by using suction equipment, if concentrated in volumes are large enough to be sucked up. Channels can be formed to drain pools of product into storage pits so that suction equipment can be utilized.
2. Dipping small pockets by hand or using absorbent pads.

After removal of the bulk of the spill, burning, if practicable, presents the possibility of a fast, simple, and inexpensive method to complete the removal of the remainder of the product. If in-situ burning is a viable option, approval must be obtained from the IC and the North Dakota Department of Health - Air Quality Division. The following criteria must be considered prior to any in-situ burn operation:

1. Applicable authorities (e.g. local fire departments, landowners etc.) must be notified and provide their concurrence with the burn.
2. The individual in charge of the operation must ensure that there is no danger of fire spreading, directly or through secondary effects, beyond set limits.
3. All personnel, animals, equipment, and property are kept at a safe distance from the edge of the flammable area.
4. Production of smoke and soot is limited to levels acceptable to applicable governmental agencies.

If burning is not permitted, the product should be removed using the best available mechanical method. Evaporation may be the best solution for certain volatile products, such as gasoline.

4.6.2 HABITAT AND HABITAT CLEANUP

Recovery and bioremediation efforts in wetlands should be coordinated with state and federal authorities by the IC prior to disturbing this type of environment. Presently, national guidance on the cleanup of oil from freshwater habitats is not available. Such guidance is under development through the efforts of the U.S. Environmental Protection Agency, the U.S. Coast Guard, and the American Petroleum Institute. In the absence of such guidance, techniques that have proven successful in particular situations are listed below.

1. Under light oiling, wetlands should be allowed to recover naturally, as more damage is often done from cleanup than was done from the oil itself.
2. In the spring, during the early part of the growing season, low-pressure water spraying can be effective to flush free oil from wetlands.
3. Heavy accumulations of oil on the wetland surface should be manually removed. However, access to the area must be limited to prevent additional damage to the wetland. Extensive foot traffic within the wetland can result in the entrapment of oil deeper into the sediments, resulting in a long-term persistence problem.

4. Preferred manual cleanup methods in wetlands include low-pressure flushing, sorption, and vacuum pumping from boats. Also oiled debris may be removed by hand.

4.6.2.1 Streams

1. Heavy accumulation and pools of oil should be removed by vacuum, oil skimmers and sorbents.
2. Low to high-pressure flooding can be used to flush oil from areas where oil is trapped or inaccessible into collection areas.
3. Sorbent booms should be left in place after a major cleanup has terminated to pick up any oil that continues to be slowly released.
4. Under flume/siphon dams, sorbent dams, etc., can be used to concentrate oil without changing stream flow.

4.6.2.2 Soil and Groundwater

- Contaminated soil must be removed, treated if possible, and replaced.
- All efforts should focus on prevention of oil penetration into coarse sediments, where recovery is most difficult.
- It may be necessary to dig intercept trenches to keep shallow subsurface oil from flowing toward streams.
- Pooled oil in trenches should be removed by vacuum, taking extreme care not to further disrupt the adjacent vegetation.
- Recovery wells may be needed to remove oil that has migrated to and accumulated on the water table.

4.6.2.3 Vegetation

Aboveground vegetation that is heavily oiled should be cut only in the early spring, during the beginning of the growing season, taking care to let the root system remain intact and undisturbed.

4.6.2.4 Environmental Cleanup

In determining the techniques to be used for environmental cleanup, the responsible party will work with federal and state representatives to select options which generally will reduce contamination to levels which:

- Do not exceed background levels
- Do not exceed statutory limits, are not lethal
- Do not cause sub-lethal effects
- Do not cause tainting
- Do not affect ecosystem function, are not visible to the naked eye
- Do not limit human use.

4.6.3 DECONTAMINATION

During cleanup operations, it can be expected that there may be substantial quantities of personal protective equipment, drums, valves and components, piping and tank parts, tools, booming, etc., that will become contaminated. Personnel clothing should be decontaminated at a personnel shower point established at the spill site where showers are available for the initial bathing and decontamination of response workers. Water used for decontamination should be cycled through a catch basin and retained for later analysis and separation/recovery of product or disposal through an authorized Treatment, Storage, and Disposal Facility (TSDF). Alternatively, contaminated clothing can be removed and placed in containers for later, offsite management. The IC should also identify a location on BOE property where tools, equipment, parts, etc., can be decontaminated. These items should be washed with a solution that is compatible with the items being decontaminated and rinsed with aqueous solutions such as a 5% sodium carbonate or 5% trisodium phosphate. Washing and rinse waters, cleansers, and decontamination solutions should be cycled through a catch basin, a prepared holding or containment pond, or an oil/water separator and retained for later analysis and separation/recovery of product, or disposal through a TSDF. The IC should ensure that all emergency equipment used in and supplies expended during the response operation is cleaned or replenished prior to resuming normal oil handling operations. The Regional Administrator, as well as state and local agencies, must be notified that response equipment is available and ready for use before routine operations restart.

**TABLE 4.6.3
Decontamination/Disposal of Spill Response Equipment**

Topic		Description Of Methods, Facilities, and Personnel Involved
Response Equipment	Decontamination	Response contractor and/or Operations Section. For oily equipment, avoid the use of detergents that will result in an oil/water emulsion.
	Disposal Or Reuse	Minor property can be reused after decontamination. Consumables (sorbents, rags, TYVEK suits, etc.) shall be disposed of as designated waste category (i.e., hazardous/dangerous or non-hazardous solid waste). Baranko Brothers to handle. For reuse see section 3.7.9.
Personal Protective Equipment	Decontamination	Same as response equipment. Insure that the decontamination of respirators is sufficient to guarantee safe re-use.
	Disposal Or Reuse	Same as response equipment
Adsorbents	Reuse	Reuse polymeric foam pads until physical integrity fails
	Disposal	Baranko Brothers to handle.

4.6.4 DISPOSAL PLAN

BOE/Progress Solutions or OSRO Baranko Brothers will recover, reuse, decontaminate and/or dispose of materials and wastes generated in the event of a discharge at the facility.

Appropriate permits will be obtained for waste disposal in accordance with local, state and federal [i.e. Resource Conservation and Recovery Act (RCRA)] regulations. The OSRO may assist LLT in obtaining disposal approval through coordination with the QI. The disposal of generated and recovered wastes will be carried out by permitted and licensed disposal firms and the wastes will be disposed of in accordance with local, state and federal regulations. Disposal approvals, permits, waste manifests, waste profile documentation, and related documentation associated with the discharge event, such as spill report notifications, will be placed in the FRP file folder maintained in Site Manager's office.

Recovered Product

Every attempt will be made to capture free flowing crude oil with pumping equipment and skimmers. The recovered oil will be pumped directly into truck tanks and transported to the BOE Dickinson Rail Hub facility and loaded onto awaiting railcars and facility storage tanks. If necessary, additional storage of recovered product will be secured from the OSRO by way of mobile tanks (i.e., frac tanks) and/or off-site recovery facilities.

Contaminated Soil

Crude oil mixed with earthen materials is considered non-hazardous and can be disposed of as special waste pending waste profile analysis. Crude oil impacted soils will be temporary staged on-site in a designated area and placed on 1-mil plastic sheeting and covered pending waste profile analysis. Once disposal approval has been obtained, the impacted soil may be loaded onto trucks and sent to the approved landfill. Soils contaminated with potentially hazardous materials are not anticipated. In this unlikely event, the impacted soil will be segregated and placed on 1-mil plastic sheeting, covered, and the waste profiled. Following analysis and the necessary permitting (if required), the waste disposed at an approved facility.

Contaminated soil may be allowed to remain in place and treated with a liquid formulation of several microbial strains, surfactants and nutrients designed to digest organics and hydrocarbons in soil and water as well as control odors such as the product "Micro-Blaze". Approval of the ND State Health Department is required for use of this type of remediation.

Contaminated Equipment

Equipment contaminated with crude oil is considered non-hazardous and can be disposed of as special waste pending waste profile analysis. Equipment contaminated with potentially hazardous materials will be containerized in DOT-approved 55-gallon drums or other approved containers, the waste profiled, and the waste disposed at an approved facility.

Personal Protective Equipment (PPE)

PPE contaminated with crude oil is considered non-hazardous and can be disposed of as special waste pending waste profile analysis. PPE contaminated with potentially hazardous materials will be containerized in DOT-approved 55-gallon drums, the waste profiled, and the waste disposed at an approved facility.

Decontamination Solutions

Decontamination solutions that have been generated during a response action will be comingled with potentially hazardous materials as described elsewhere in this section and will be profiled and disposed of accordingly.

Absorbents

Absorbents contaminated with crude oil are considered non-hazardous and can be disposed of as special waste pending waste profile analysis so as long the absorbent does not freely release product. Absorbents contaminated with potentially hazardous materials will be containerized

in DOT-approved 55-gallon drums or other approved containers, the waste profiled, and the waste disposed at an approved facility.

Spent Chemicals

Spent chemicals that may be generated during a response action will have been comingled with potentially hazardous materials as described above and will be profiled and disposed of accordingly.

4.7 Oil Spill Response Organization and Contract

OSRO INFORMATION AND CONTRACTOR CONTRACTS

Baranko Brothers, an Oil Spill Response Organization, is available to respond in the event additional personnel and equipment are needed to maintain an adequate response and recovery operation. Baranko Brothers is under contract agreement to respond to a release due to the BOE Pipeline, LLC Pipeline upon request. Baranko Brothers is based out of Dickinson, ND and can be on site within 24 hours with manpower and equipment. Baranko Brothers can be contacted at 1-701-264-5004 (24/7). Baranko is the primary contact for contractor response and remediation. Environmental Services has a mutual/contract for assistance from Clean Harbors in Williston, ND. Baranko Brothers will be responsible for contacting Clean Harbors in Williston for mutual/contracted assistance. OSRO contracts are found in Appendix A Master Service Contracts.

Table 4.7 OSRO RESPONSE TEAMS		
Team Member	Response Time	Phone or Pager Number (Day / 24 Hour)
Baranko Brothers (Dickinson)	<1 Hour (4 miles)	701-264-5004
Clean Harbors (Williston, ND) When requested by Baranko Brothers	< 2 Hours (101 miles)	To be contacted by Baranko Brothers as needed

SECTION 5 LISTS OF CONTACTS

In this Section:

24/7 Contact list

Insurance Representatives Contacts - BOE and Progress Solutions

5.1 24/7 Contacts

TABLE 5.1			
CONTACT LIST FOR ACTIVATION OF RESPONSE RESOURCES			
Contact Role	Agency	Day Phone	24 Hour Phone
Command Post:	LL Terminals, LLC.	(701) 483-0435	(701) 483-0435
Command Post: alternate	BOE Pipeline, LLC Dickinson Office	(701) 483-0454	(701) 483-0454
Qualified Individual:	Tory Neer Progress Solutions Area Manager (Bismarck)	(701) 204-5109	(701) 204-5109
Qualified Individual:	Dana Rathjen Progress Solutions Foreman (Dickinson)	(701) 690-6245	(701) 690-6245
Qualified Individual:	Doug Lee Progress Solutions CEO	(701) 250-5996	(701) 955-4230
Qualified Individual:	Chris Lewis (Dickinson) BOE General Manager	(701) 483-0435	(402) 690-4742
Alternate Qualified Individual:	BOE Pipeline Director of Operations Branden McDowell	(720) 548-3449	(303) 887-8005
Additional Pipeline Operators that Interconnect to BOE Pipeline:	OXY	1-800-733-3665	1-800-733-3665
	Belle Fourche Pipeline Company	(307) 756-3292 (307)234-6930	307) 756-3292 (307)234-6930
	Tesoro High Plans Pipeline	(866) 283-7676	(866) 283-7676
Spill Response Support:	Baranko Brothers	(701) 264-5004	(701) 264-5004
	Clean Harbors (Williston) Only to be contacted by Baranko Brothers	(701) 774-2201	(800) 645-8265

TABLE 5.1 (continued)
CONTACT LIST FOR ACTIVATION OF RESPONSE RESOURCES

Contact Role	Agency	Day Phone	24 Hour Phone
Local Emergency Planning Committee (LEPC): Provides coordination with emergency agencies within County (includes local fire department, police, etc.):	ND Department of Emergency Services - Homeland Security Division	(701) 328-8100	(800) 472-2121
	- SW Regional Response Coordinator	(701) 425-4515	(701) 425-4515
	- Dunn County Emergency Management	(701) 573-4343	(701) 290-1769 cell
	-Stark County Emergency Services	(701) 456-7605	(701) 627-4805
If Utilities were Impacted:	Roughrider Electric Coop-Dickinson (pipeline)	(701) 483-5111	800-627-8470
	Mc Kenzie Electric- New England (pump station)	(701) 444-9288	(701) 444-9288
	Consolidated Telcom- Dickinson	701) 483-4000	701) 483-4000
	Montana-Dakota Utilities Co.	1-800-638-3278	1-800-638-3278
	Southwest Water Authority	1-701-225-0241	1-701-225-0241
If Ambulance Service is needed:	Killdeer Ambulance Service	(701) 764-5006	Local 911
	Dickinson Ambulance Service	(701) 225-1500	Local 911
If Hospitals/Clinic Service is needed:	St. Joseph's Hospital -Dickinson	(701) 456-4000	701) 456-4000
	McKenzie County Hospital- Watford	(701) 842-3000	(701) 842-3000
	Sanford Health Clinic -Dickinson	(800) 695-7245	(800) 695-7245
	Killdeer Medical Clinic	(701) 764-5822	Local 911
	Sanford Medical Center -Bismarck (Level II Trauma Center)	(701) 323-6150	(701) 323-6150
	St. Alexis Medical Center-Bismarck (Level II Trauma Center)	(701) 530-7000	701) 530-7000
	Hennepin County Med Center- Minneapolis, MN (Level I Trauma)	(612) 873-3000	(612) 873-3000
If Fire Departments are needed:	West Dunn Fire Department	Local 911 (701) 764-5006	Local 911 (701) 764-5006
	Stark County Rural Fire Dept.	(701) 456-7877	Local 911
	Dickinson Fire Department	(701) 456-7625	Local 911
If Sheriff/Police Department is needed:	Sheriff's Department (Dunn County)	(701) 573-4449	Local 911 or State Radio
	Sheriff's Department (Stark County)	(701) 456-7610	Local 911
	Dickinson Police	Local 911	Local 911

See Section 2.2 (Table 2.2) for regulatory agency contacts.

5.2 Insurance Representatives

5.2.1 BOE PIPELINE, LLC'S INSURANCE CARRIER

All calls to BOE Pipeline, LLC's insurance carrier will be handled through BOE Pipeline, LLC Management. The administrative section of the incident command system is responsible to handle this notification. BOE carries all required insurances and is insured for the amounts according to the recommendations of their carriers.

BOE Pipeline, LLC insurance company is:

IMA, Inc.	Phone (316) 267-9221
David Hawkins	
8200 E 32 nd St. North	
Wichita, KS 67226	

BOE Pipeline Management will notify the QI/IC of the date and time of notification for response notification documentation.

5.2.2 PROGRESS SOLUTIONS, LLC INSURANCE CARRIER

All calls to Progress Solutions, LLC's insurance carrier will be handled through Progress Solutions, LLC Senior Management. Progress Solutions, LLC carries required insurances and is insured for the amounts according to the recommendations of their carriers.

Progress Solutions, LLC insurance company is:

USI Insurance Services, LLC.	Phone (800) 873-8500
1020 36 th Street South	Claims Department
Fargo, ND 58103	Trish D'Avanzo or
	Gary Wetter(Claims Manager)

Progress Solutions, LLC has insurance for Contractors Pollution Liability Occurrence and Professional Liability.

BOE Pipeline Management will notify the QI/IC of the date and time of notification for response notification documentation.

SECTION 6 TRAINING PROCEDURES

In this Section:

Personnel Training- OSHA, Prevention, General Response
Training for Qualified Individuals
Training for Spill Management Teams
Training for Facility Pipeline Personnel
Training for OSRO Contracted Personnel
Discharge Prevention Meeting and Log

The Oil Pollution Act of 1990 (OPA) required facility response plans. The plans are intended to prepare the owner/operator of the facility to respond to an oil or hazardous substance discharge. Response Plans must describe the training of persons at an onshore facility where its location could reasonably be expected to cause substantial harm to the environment by discharging oil or hazardous substances into navigable waters, adjoining shoreline, or exclusive economic zone. For the purpose of this response plan the facility is the BOE pipeline. Training is required to ensure the safety of the facility and to mitigate or prevent a discharge of oil or a hazardous substance.

In addition to the OPA required response training, there are other federal and state response training requirements. Owner/operators are responsible for ensuring that all private response personnel which they employ are trained to meet the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operation Standard (29 CFR 1910.120.) These requirements, are commonly referred to as the HAZWOPER regulations, were established to ensure the health and safety of personnel employed in hazardous waste operations and emergency response. This includes clean-up operations. Crude oil, petroleum oil, and petroleum distillates are considered hazardous substances by OSHA. In addition to the HAZWOPER regulations, employers must comply with federal requirements contained in 49 CFR Parts 172 and 176 to train employees handling hazardous materials.

The following training information is intended to be a foundation for BOE/Progress Solutions employees and contractors to use to prepare them to respond to an oil spill response.

6.1 Personnel Training

Pollution response training should be directly related to the duties and responsibilities of the workers in the response organization. Workers with a limited role in a response need to be trained to protect their health and to perform their normal duties in a safe manner. They must also be trained to conduct the proper notification to the National Response Center and to immediately intervene to mitigate a spill once it has occurred. Workers with spill clean-up responsibilities (OSRO) will need to be trained to deploy and operate the equipment they will actually use in a response. Other personnel with a more active role in the response organization or with supervisory responsibilities may need additional training in such subjects as response or clean-up technology, spill trajectory forecasting or response management strategies.

6.1.1 OSHA TRAINING REQUIREMENTS

OSHA has promulgated training requirements in 29 CFR 1910.120 that fully apply to oil spill cleanup operations. OSHA issued updated guidelines in OSHA Publication 3172 in late 2001. These guidelines can be found on-line at the following website: <http://www.osha.gov/pls/publications/publication.searchResults?pSearch=3172>.

Table 6.1.1 outlines the response training plan for identified response personnel. The plan addresses USCG guidelines and OSHA training requirements in 29 CFR 1910.120 for personnel engaged in emergency response operations.

**TABLE 6.1.1
Facility Response Personnel Training Requirements**

TYPE OF RESPONDER	APPLICABLE PERSONNEL	MINIMUM TRAINING REQUIRED
FACILITY INCIDENT COMMANDER/FACILITY QUALIFIED INDIVIDUAL	FIC and designated assistants	24-HR COURSE (includes material of "First Responder Operations Level" course) AND EMPLOYER-CERTIFIED COMPETENCY IN KEY KNOWLEDGE AND SKILLS
FIRST RESPONDER OPERATIONS LEVEL (DEFENSIVE-RESPONSE-ONLY PERSONNEL; responders only qualified for containment and control)	Facility Immediate Response Team members	8-HR COURSE OR EMPLOYER-CERTIFIED COMPETENCY IN KEY SUBJECTS (see 29 CFR 1910.120(q)(6)(ii))
FIRST RESPONDER AWARENESS LEVEL (DISCOVERY-AND-REPORTING-ONLY PERSONNEL; anyone likely to discover a release and trained to report releases, but who takes no further action)	Building Emergency Coordinators and other personnel who routinely work with oils or hazardous substances	BASIC TRAINING OR EXPERIENCE IN HAZARDOUS SUBSTANCES (to understand hazardous substance hazards, risks, possible damage; be able to report any releases appropriately; see 29 CFR 1910.120(q)(6)(i))
HAZARDOUS MATERIALS TECHNICIAN (OFFENSIVE RESPONSE PERSONNEL; responders qualified to stop release at its source by plugging, patching)	Facility Immediate Response Team members and Facility Emergency Response/Cleanup Team members	24-HR COURSE (includes material of "First Responder Operations Level" course) AND EMPLOYER-CERTIFIED COMPETENCY IN KEY SUBJECTS (see 29 CFR 1910.120(q)(6)(iii))
HAZARDOUS MATERIALS SPECIALIST (SENIOR OFFENSIVE RESPONSE PERSONNEL; responders qualified to do the work of the "Hazardous Materials Technician", but on a more specialized level, and to act as liaison with authorities)	Senior Facility Immediate Response Team members	24-HR COURSE (same as "Hazardous Materials Technician" course) AND EMPLOYER-CERTIFIED COMPETENCY IN KEY SUBJECTS THAT EXTEND BEYOND TECHNICIAN LEVEL (see 29 CFR 1910.120(q)(6)(iv))
SPECIALIST EMPLOYEES (HS-TRAINED SPECIALISTS IN SPECIFIC SUBSTANCES; employees who regularly work with SPECIFIC hazardous substances and who may provide advice or assistance during response)	As required for specific areas of the Activity	ANNUAL TRAINING OR ANNUAL DEMONSTRATION OF COMPETENCY (see 29 CFR 1910.120(q)(5))
FACILITY RESPONSE MANAGEMENT TEAM PERSONNEL	Designated Personnel	See Training in Sections 6.3, and 7.4.2
<p>OSHA establishes training by type of responder, not by course, e.g., Hazardous Materials Technicians and Specialists would take the same 24-hr course, but the Specialist must have more in-depth knowledge (presumably gained by experience or other training).</p> <p>All personnel (except skilled support and specialist employees) must have ANNUAL refresher training or demonstration of competency (no minimum number of hours are stated) and a minimum for 40 hours of HAZWOPER training.</p>		

6.1.2 PREVENTION TRAINING REQUIREMENTS

Training exercises should be conducted at least yearly for all personnel. New employees should receive training within one week of beginning work, and spill prevention briefings should be scheduled and conducted for the pipeline operating personnel at least once a year. Prevention training should include, but is not limited to, the following subjects:

- Operations and maintenance of equipment
- Applicable pollution control laws
- Spill Prevention and Mitigation methods
- General Pipeline Operations.

6.1.3 GENERAL RESPONSE REQUIREMENTS

General response training should include the following topics:

- The EPA Region in which the pipeline is located.
- The site-specific drill and exercise program instituted at the pipeline.
- The pipeline communication system used for the notifications.
- Oil supply personnel responsibilities and procedures for use of response equipment that may be available to mitigate or prevent oil discharge.
- The National Contingency Plan.
- The roles and responsibilities of federal and state agencies in pollution response.
- OSHA requirements for worker health and safety (29 CFR 1910.120).
 - **Identification of those facility and/or transportation situations where oils and other hazardous materials are present by:**
 - Identifying hazardous materials associated with the pipeline.
 - Identifying the DOT hazard classes and divisions of hazardous materials and stating examples of each.
 - Identifying the primary hazards associated with each of the DOT hazard classes and divisions.
 - Identifying the difference between oil/hazardous materials incidents and other emergencies.
 - Identifying the containers that store or transport oils and other hazardous materials.
 - Identifying the pipeline and transportation markings and colors that indicate oils and other hazardous materials including: placards and labels, UN/NA identification numbers; NFPA 704 markings; special hazard communication markings; pipeline markers; and container markings.
 - Using sensory data to recognize indications of oil and other hazardous material discharges (other than occupancy or location, container shape, markings/color,

- placards/labels, and shipping papers). Describe the limitations of using the senses in determining the presence or absence of oils and other hazardous materials.
- Identifying information sources on the products stored, used, or transferred by the pipeline, including familiarity with the material safety data sheets (MSDS), special handling procedures, health and safety hazards, and spill and firefighting procedures.
 - **Analysis of the potential harm of pipeline crude oil and other hazardous materials and their releases by:**
 - Surveying an oil discharge and other hazardous materials incident to determine the pipeline segments or valve sets involved, whether oils and other hazardous materials have been released, and the surrounding conditions.
 - Using NFPA 704 marking's colors, numbers, and special symbols.
 - Identifying the location of MSDS, and understanding the basic hazard and response information on MSDSs.
 - Identifying the ways oils and other hazardous materials are harmful to people, the environment, and property at oil discharges and other hazardous materials incidents.
 - Identifying the general routes for human exposure to oils and other hazardous materials.
 - Predicting the likely behavior of a material and its container.
 - Estimating the potential harm at oil discharges and other hazardous materials incidents.
 - **Initiation of protective actions (identify the actions to be taken to protect personnel and others and to control access to the scene using the pipeline response plan) by:**
 - Identifying the required protective action distances.
 - Identifying their role during oil discharges and other hazardous materials incidents.
 - Identifying the basic precautions to be taken to protect personnel and others in a hazardous material incident.
 - Identifying the precautions necessary when providing emergency medical care to victims of oil discharges and other hazardous materials incidents.
 - Identifying the typical ignition sources found at the scenes of oil discharges and other hazardous materials incidents.
 - Identifying the techniques used to isolate the hazard area and deny entry to unauthorized persons at oil discharges and other hazardous materials incidents.
 - Identifying the appropriate notifications to be made and how to make them, consistent with the pipeline response plan.
 - Identifying the response objectives for oil discharges and other hazardous materials incidents.
 - Identifying and performing the defensive options available for a given response objective.

- Determining whether the personal protective equipment provided is appropriate for implementing each defensive option.
- Identifying the notification procedures and requirements for facility owners or operators, internal response organizations, federal and state agencies; and contracted OSRO, and the information required for those organizations.
- Identifying the facility's qualified individual and alternate(s), and how to contact him or her.
- Identifying the general responsibilities and authorities of the qualified individual as described in the facility response plan and company response organization.
- Identifying the organizational structure (internal, emergency response organizations, and contracted OSROs that will be used to manage the response actions, including: command and control; public information; safety; liaison with government agencies; spill response operations; planning; logistics support; and finance.
- Identifying the procedures to followed in the event of discharge, potential discharge, or emergency involving the following equipment or scenarios: pumps; compressors; meters and metering equipment; seams of pipe; remote or manually operated block or control valves; relief valves and other overpressure control devices; piping rupture; piping leak, both under pressure and not under pressure, if applicable; explosion or fire; equipment failure; and failure of secondary containment system (pump station); leaks due to loose flanges, fittings, couplings, instrument tubing, gauges, thermo well samplers, chemical analyzers, material failure, internal or external pipe corrosion, seals or gaskets. Other scenarios identified in section 1.7.
- Identifying the operational capabilities of the contracted oil spill response organizations to respond to the: average most probable discharge (small discharge); maximum most probable discharge (medium discharge); and worst case discharge.
- Identifying and performing emergency decontamination procedures.
- Evaluation of the progress of the actions taken to ensure that the response objectives are being met safely, effectively, and efficiently by:
 - Evaluating the status of the defensive actions taken in accomplishing the response objectives; and communicate the status of the planned response.

6.2 Training for Qualified Individuals (QI)

On owner/operator must identify a qualified individual who will act as the point of contact between the federal government and the owner or operator of the facility. The responsibilities of the QI go far beyond that of a mere intermediary. As define in OPA, the QI is that person identified in a response plan having "full authority to implement removal actions" on behalf of the plan holder. The QI must have the authority to commit the financial resources of the company to prevent or clean up a spill. This plan identifies individuals who are QI for the BOE pipeline.

All QIs must be trained to meet the requirements for oil supply personnel; and trained to meet the minimum requirements of On-Scene Incident Commander from 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

Because only a few individuals require this training, the QI will be required to attend commercially available courses. QIs should also take general response training that non QI response personnel attend. QIs must take the knowledge gained from the general course and adapt to meet facility-specific requirements.

One of the primary responsibilities of the QI is, upon learning of a spill or potential spill of the BOE crude oil pipeline, to immediately communicate with the appropriate federal official and the persons providing personnel and equipment for the spill response. This procedure will ensure timely notification of federal officials so that they may activate Area Contingency Plans notify other federal, state, and local agencies to ensure adequate measures are taken by the responsible party and activate governmental response resources when necessary. It also ensures that response resources identified by the response plan holder will commence appropriate response actions in a timely manner.

The goal of training for the QI is to ensure that he/her is fully capable to perform his or her duties. The QI must be familiar enough with the company's response plan to know what measures must be taken under the circumstances. The QI must ensure adequate steps are taken to mitigate the situation and should know the capabilities of the oil spill removal organization (OSRO) which is contacted to respond on behalf of BOE. The QI should be thoroughly familiar with procedures to activate and contact the company's OSRO. BOE/Progress Solutions should customize their training program. The QI should always know where his copy of the response plan is kept.

Training elements for QI:

Demonstrate knowledge of the following:

- Head of PHMSA in the Region the pipeline is located.
- Notification procedures and requirements for BOE, internal response organizations, federal and state agencies, and contracted oil spill removal organizations (OSROs) and the information required for those organizations.
- Communication system used for the notifications.
- Information about material transferred crude oil, including familiarity with the material safety data sheet, special handling procedures, health and safety hazards, spill and firefighting procedures.
- Procedures the facility personnel may use to mitigate or prevent any discharge or a substantial threat of a discharge of oil resulting from the pipeline.
- Procedures the personnel may use to mitigate or prevent any discharge or a substantial threat of a discharge of oil in the event of:
 - Grounding or stranding
 - Collision
 - Explosion or fire

- Pipeline failure
 - Excessive list
 - Equipment Failure
- Pipeline personnel responsibilities, and procedures for use of emergency equipment which is available to mitigate an oil discharge.
 - Operational capabilities of the contracted OSROs to respond to the following:
 - Average most probable discharge (small discharge)
 - Maximum most probable discharge (medium discharge) and
 - Worst case discharge.
 - Responsibilities and authorities of the qualified individual as described in the response plan and BOE response organization.
 - Procedures, if applicable, for transferring responsibility for direction of response activities on-site to a spill management team at corporate headquarters.
 - The organizational structure that will be used to manage the response actions, including:
 - Command and control
 - Public information
 - Safety
 - Liaison with government agencies
 - Spill response operations
 - Planning
 - Logistics support and
 - Finance
 - The responsibilities and duties of each oil spill management team member within the organizational structure.
 - The drill and exercise program to meet federal and state regulations as required under OPA.
 - The role of the qualified individual in the post discharge review of the plan to evaluate and validate its effectiveness.
 - Area Contingency Plans (ACPs) for the areas in which the pipeline is located.
 - The National Contingency Plan (NCP).
 - Roles and responsibilities of the federal and state agencies in pollution response.
 - Available response resources identified in the response plan.
 - Contracting and ordering procedures to acquire oil spill removal organization resources identified in the response plan.
 - Occupational Safety and Health Administration (OSHA) requirements for worker health and safety (29 CFR 1910.120).
 - Incident Command System/Unified Command System.
 - Public affairs.
 - Crisis management.
 - Procedures for the plan holder oil disposal or removal.

- Procedures for obtaining approval for dispersant use or in-situ burning of the spill.
- Oil spill trajectory analyses.
- Sensitive biological areas.

The QI should be able to:

Analyze an oil discharge incident and determine the magnitude of the response required, plan a response with resources available, implement a response to minimize spill outcome, evaluate the progress of the response to ensure the response is being made safely and effectively, and must be willing to change the response action if necessary.

6.3 Training for Spill Management Teams

A spill management team is also required to be designated by regulations. The function of the team is to assist or relieve the company's qualified individual in the actual response to an oil or hazardous substance spill. The team staffs the organizational structure the company has identified to manage response plan implementation. The team may also provide the operational oversight of field response personnel.

The team must be adequately staffed to ensure a credible response depending on the size of the spill. The number of members will be expected to grow if the situation warrants 24-hour per day operations and a cast of several thousand clean-up personnel. A well-structured response organization will be able to accommodate changes in the size of the spill management team and rapidly integrate additional members.

OSHA requires the senior emergency response official of hazardous substance emergency response organizations to use a site-specific Incident Command System (ICS). BOE/Progress Solutions spill management team will have an ICS model based on the basic business management principles. Managers, environmental, safety, and other leaders will perform the basic daily tasks of planning, directing, organizing, coordinating, communication, delegating, and evaluating. The response management organization is built around five major management activities:

1. Command
2. Operations
3. Planning
4. Logistics
5. Administration and Finance

OPA requires the On-Scene Coordinator (OSC) which is usually the QI to work with state and local officials in the development of Area Contingency Programs to ensure pre-planning of joint response efforts, and to expedite decisions for the use of dispersants and other mitigating substances. The Federal Government, through its NCP, uses a Unified Command Structure (UCS). This structure is intended to bring the OSC, state official, and the responsible party together to facilitate the decision making processes and optimize the combined response efforts of all participants. The UCS structure can easily integrate members of the spill management team who will be most likely invited to participate.

The key to training spill management team members is to train them according to their functional role within the response organization. Members staffing an operations center need to be trained differently from members whose primary function is logistics. BOE/Progress Solutions will draw upon team member skills they use every day if possible and training they have obtained in the company's everyday activities of running the pipeline operations. The goal is to train these personnel so that the team can function as a coordinated unit and direct the clean-up activities or preventative measures in an efficient and timely manner.

Training is to be customized as to the actual role of their spill management team members. The following are core training elements that could be used for Spill Management Team members:

Demonstrate knowledge of:

- PHMSA Region and contact number the BOE pipeline operates in.
- Notification procedures and requirements for pipeline owner/operators, internal response organizations, federal and state agencies; and contracted oil spill removal organizations and information required for those organizations.
- Communication systems used for the notifications.
- Information on the material transported: Crude oil, including familiarity with the material safety data sheets, health and safety hazards, and spill and firefighting procedures.
- Procedures to mitigate or prevent any discharge or a substantial threat of a discharge of oil.
- Pipeline personnel responsibilities, and procedures to use response equipment which may be used to mitigate an oil discharge.
- Initiating a response to a discharge.
- Operational capabilities of the contracted oil spill removal organizations (OSROs) to respond to:
 1. Average most probable discharge (small discharge);
 2. Maximum most probable discharge (medium discharge); and
 3. Worst case discharge.

- Responsibilities and authority of the qualified individual as described in the response plan and company response organization.
- Procedures, if applicable, for transferring responsibility for direction of response activities to a spill management team.
- The organizational structure that will be used to manage the response actions.
- The responsibilities and duties of the oil spill management team member within the organizational structure, in accordance with designated job responsibilities.
- The training procedures as described in the response plan for members of the spill management team.
- The drill and exercise program to meet the federal and state regulations as required by OPA.
- Procedures for the post discharge review of the plan to evaluate and validate its effectiveness.
- Roles and responsibilities of federal and state agencies in pollution response.

- Available response resources.
- Contracting and ordering procedures to acquire OSRO resources, in accordance with designated job responsibilities.
- Basic information on spill operations and oil spill clean-up including:
 1. Oil Containment;
 2. Oil recovery methods and devices;
 3. Equipment limitations and uses;
 4. Shoreline clean-up and protection;
 5. Spill trajectory analysis;
 6. Use of dispersants, in-situ burning, bioremediation, and
 7. Waste storage and disposal considerations.

- Hazard recognition and evaluation.
- Site safety and security procedures.
- OSHA requirements for worker health and safety (29 CFR 1910.120)
- Incident Command System and Unified Command System.
- Public affairs, as applicable to designated job responsibilities.
- Crisis management, as applicable to designated job responsibilities.
- Personnel management, as applicable to designated job responsibilities.
- Sensitive biological areas, as applicable to designated job responsibilities.
- Procedures for directing the deployment and use of spill response equipment, as applicable to designated job responsibilities.

6.4 Training for Facility Pipeline Personnel

Owners and operators are required to explain in detail how to implement the pipeline's emergency response plan by describing response actions to be carried out under the plan to ensure the safety of the pipeline and to mitigate or prevent discharges. They must identify the response resources for worst case discharges and identify facility personnel responsible for performing specific procedures to mitigate or prevent a discharge or potential discharge.

All facility personnel should be involved in at least one training exercise conducted yearly. Prevention training should be part of the training. Prevention training should include:

- Operations and maintenance of equipment
- Applicable pollution control laws
- Contents of the response plan
- General facility operations.

Training should be given to new employees within one week of beginning work, and spill prevention briefings should be scheduled and conducted for the facility's operating personnel at least once a year.

Owner/operator of a substantial harm facility is to have a training program for those personnel involved in oil spill response activities. The training program should be based on the pipeline's response plan and its operations. If an individual will always fill the same function in the

response plan, training requirements will be narrowed in scope. The following are elements which could be incorporated into the training program for facility personnel:

Demonstrate knowledge of:

- PHMSA Region and contact number the BOE Pipeline operates in.
- Notification procedures and requirements for pipeline owner/operators, internal response organizations, federal and state agencies, and contracted oil spill removal organizations and information required for those organizations.
- Communication systems used for the notifications.
- Information on the material transported: Crude oil, including familiarity with the material safety data sheets, health and safety hazards, and spill and firefighting procedures.
- Procedures to mitigate or prevent any discharge or a substantial threat of a discharge of oil.
- Pipeline personnel responsibilities, and procedures to use response equipment which may be used to mitigate an oil discharge.
- Specific procedures to shut down affected operations.
- Procedures to follow in the event of a discharge, potential discharge, or emergency involving the following equipment or scenarios:
 1. Pipeline rupture;
 2. Piping or pipeline leak, both under pressure and not under pressure;
 3. Explosion or fire; and
 4. Equipment failure.
- Operational capabilities of the contracted oil spill removal organizations (OSROs) to respond to:
 1. Average most probable discharge (small discharge)
 2. Maximum most probable discharge (medium discharge)
 3. Worst case discharge.
- Name of the QI and how to contact him or her.
- General responsibilities and authorities of the QI as described in the response plan.
- The organizational structure that will be used to manage the response actions, including:
 1. Command and Control
 2. Public information
 3. Safety
 4. Liaison with government agencies
 5. Spill response operations
 6. Planning
 7. Logistics support
 8. Finance
- The drill and exercise program to meet the federal requirements.
- Roles and responsibilities of the federal and state agencies in pollution response.

- OSHA requirements for worker health and safety (29 CFR 1910.120).

6.5 Training for OSRO Contracted Personnel

Federal regulations require owners and operators of pipelines to ensure, through contracts or other approved means, sufficient private resources to remove specific volumes of oil. An oil spill removal organization (OSRO) as defined by the US Coast Guard may be identified in the response plan instead of providing a detailed list of equipment and personnel resources.

Regulation require owner or operators to ensure that an OSRO identified in the response plan maintains records to document training of the OSRO's personnel. These training records must be available for inspection by owners or operators that contract the OSRO and federal inspectors. OSRO personnel must also be trained to meet OSHA regulations in 29 CFR 1910.120. Each OSRO must decide the actual role of its personnel in their own organization and customize its company's training program accordingly.

OSRO personnel are involved in the direct operational functions of oil spill clean-up. Personnel should be trained in hazard recognition, worker health and safety issues, oil containment, oil recovery methods and devices, equipment operation, shoreline clean-up, and waste storage and disposal considerations. Specialized training may involve such topics as the use of dispersants, slick trajectory forecasting, In-situ burning, bioremediation, or ship salvage. Training methods may include a variety of techniques but an emphasis should be placed on hands-on equipment deployment and operations.

BOE/Progress Solutions will ensure that all contracted OSROs are properly trained before operating at a facility discharge. BOE/Progress Solutions should obtain adequate documentation that establishes that the following training is being provided as necessary to meet initial and annual refresher training requirements for their personnel.

- Hazardous Waste General Site Worker [29 CFR 1910.120(e)(3)]
- Hazardous Waste Management and Supervisory Training [29 CFR 1910.120(e)(4)]
- Hazardous Materials First Responder Awareness Level Training [29 CFR 1910.120(q)(6)(i)]
- Hazardous Materials First Responder Operations Level Training [29 CFR 1910.120(q)(6)(ii)]
- Hazardous Materials Technician Level Training [29 CFR 1910.120(q)(6)(iii)]
- Hazardous Materials Specialist Level Training [29 CFR 1910.120(q)(6)(iv)]
- Hazardous Materials On-Scene Incident Commander Training [29 CFR 1910.120(q)(6)(v)]
- Post-Emergency Response Training [29 CFR 1910.120(q)(11)]
- Hazard Communication Training [29 CFR 1910.1200]
- Confined Space Training [29 CFR 1910.146]
- First Aid and CPR Training [29 CFR 1910.151]
- Water Craft Operations Training
- Oil Recovery and Cleanup on Surface Waters Training

- Heavy Equipment Training
- Hazardous Waste Management Training [40 CFR 262.34 & 265.16]

These records should be kept at the Progress Solutions Office in Bismarck, ND.

6.6 Discharge Prevention Meetings and Log

The following log should be maintained to document working meetings on the discharge prevention. These records should be kept at Progress Solutions Office in Bismarck, ND.

TABLE 6.6 DISCHARGE PREVENTION MEETING LOG		
Date:		
Attendees:		
Meeting Topics:		
Subject/Issue Identified	Required Action	Implementation Date
Name of Responsible Official:		
Signature of Responsible Official:		

SECTION 7 DRILL PROCEDURES

BOE/Progress Solutions participates in their own yearly drills with Progress Solutions employees involved with the BOE Pipeline.

In this Section:

PREP Guidelines

Response Equipment Inspections and Deployment Drills

QI Notification Exercises

Emergency Procedures Exercises - Pipeline Drills, Table Top Exercises, Equipment Deployment, Triennial Exercise of Response Plan, Credit Issues, LEPC, and Documentation.

7.1 National Preparedness for Response Exercise Program (PREP) Guidelines

In accordance with the National Preparedness for Response Exercise Program (PREP) Guidelines, the pipeline has developed a program for conducting pipeline drills and exercises. During each three-year cycle, a total of twelve (12) internal exercises or drills (as described below) must be performed. Drills and exercises will include required Qualified Individual Notification Exercises, Spill Management Team Tabletop Exercises, Equipment Deployment Exercises, and Unannounced Exercises. In addition, a triennial exercise must be performed in which all components of the entire Plan will be exercised. The pipeline may also be required to participate in external exercises which can include area exercises or government unannounced exercises. These exercises can be credited towards three-year exercise cycle. In addition to the facility conducting internal exercises, contracted OSRO must either participate in site deployment exercises or provide proof of internal exercises following PREP guidelines.

During an exercise, the QI, alternate QIs, and/or senior members of the response team will observe, participate in, and evaluate response procedures during the exercise and will be documented in exercise-specific logs. Facility exercise logs will be maintained in the Drill/Exercise file and retained at Progress Solutions in Bismarck for a minimum of five years.

7.2 Response Equipment Inspections and Deployment Drills

Spill response equipment and materials maintained by BOE/Progress Solutions, OSRO, and contractors are maintained at appropriate levels for response, and replenished, as necessary. All pumps are owned and inspected by OSRO prior to use and annually. Response equipment trailers are located at LL Terminals Killdeer Truck Facility, BOE Rail facility Dickinson, and Baranko Brothers, Inc. Dickinson.

Response equipment deployment exercises are conducted to ensure that response equipment is operational and the personnel who operate the equipment during a spill response are capable

of deploying and operating it. The response equipment is listed in Section 3.6. Only a representative sample of each type of response equipment is deployed and operated. BOE/Progress Solutions will inspect all equipment owned by BOE and make sure it is in working order. Federal regulations require that records of inspections be maintained for five years. These records are maintained at Progress Solutions Office in Bismarck, ND.

All response equipment under emergency response contractor control will be verified in a written confirmation from the contractor to ensure that deployment exercise requirements have been met. Response equipment testing and deployment requirements will meet the PREP guidelines and will follow Section 7.4, Emergency Procedures Exercises, as appropriate. Present and all proceeding OSRO certifications (the past five years) will be filed at Progress Solutions in Bismarck, ND. See following pages for typical forms content. Alternatively, one complete inventory checklist depicting equipment, materials, and condition may be used instead of individual forms.

7.2.1 BLANK RESPONSE EQUIPMENT TESTS AND DEPLOYMENT RECORDS

Key equipment drill records are presented on Tables 7.2.1a, 7.2.1b, and 7.2.1c. Table 7.2.1d can be used to document any item that fall short of the quantity that is supposed to be hand. The tables are on the following pages.

TABLE 7.2.1a
RESPONSE EQUIPMENT INSPECTION CHECKLIST AND LOG

INVENTORY ITEM: Skimmer/Pump Type

Quantity on-Hand:	
Short-fall from Plan Quantity:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Storage Location:	
Accessibility: [Time to Access and Respond]	
Operational Status:	<input type="checkbox"/> Operational <input type="checkbox"/> Non-Operational
Condition:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
Use Status:	Date of Last Use: Date of Last Test: Test Frequency:
Required Inspection Frequency:	
Shelf Life:	Present age: Expected Replacement Date: Date Fuel Last Changed:
Comments:	
Inspector:	Name:
	Job title:
Signature:	Date of Inspection:

TABLE 7.2.1b
RESPONSE EQUIPMENT INSPECTION CHECKLIST AND LOG

INVENTORY ITEM: Boom Type	
Quantity on-Hand:	
Short-fall from Plan Quantity:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Storage Location:	
Accessibility: [Time to Access and Respond]	
Operational Status:	<input type="checkbox"/> Operational <input type="checkbox"/> Non-Operational
Condition:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
Use Status:	Date of Last Use: Date of Last Test: Test Frequency:
Required Inspection Frequency:	
Shelf Life:	Present age: Expected Replacement Date: Date Fuel Last Changed:
Comments:	<div style="border: 1px solid black; height: 40px; width: 100%;"></div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
Inspector:	Name: Job title:
Signature:	Date of Inspection:

TABLE 7.2.1c
RESPONSE EQUIPMENT INSPECTION CHECKLIST AND LOG

INVENTORY ITEM: Communications Equipment	
Quantity on-Hand:	
Short-fall from Plan Quantity:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Storage Location:	
Accessibility: [Time to Access and Respond]	
Operational Status:	<input type="checkbox"/> Operational <input type="checkbox"/> Non-Operational
Condition:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
Use Status:	Date of Last Use: Date of Last Test: Test Frequency:
Required Inspection Frequency:	
Shelf Life:	Present age: Expected Replacement Date: Date Fuel Last Changed:
Replacement of Batteries annually if batteries are required:	Replacement Date:
Comments:	
Inspector:	Name: Job title:
Signature:	Date of Inspection:

TABLE 7.2.1d
RESPONSE EQUIPMENT INSPECTION CHECKLIST AND LOG

INVENTORY ITEM:	
Quantity on-Hand:	
Short-fall from Plan Quantity:	<input type="checkbox"/> YES <input type="checkbox"/> NO
Storage Location:	
Accessibility: [Time to Access and Respond]	
Operational Status:	<input type="checkbox"/> Operational <input type="checkbox"/> Non-Operational
Condition:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
Use Status:	Date of Last Use: Date of Last Test: Test Frequency:
Required Inspection Frequency:	
Shelf Life:	Present age: Expected Replacement Date: Date Fuel Last Changed:
Comments:	<div style="border: 1px solid black; height: 40px; width: 100%;"></div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
Inspector:	Name: <hr/> Job title:
Signature:	Date of Inspection:

7.3 Qualified Individual Notification Exercises

The purpose of the QI notification exercise is to ensure that the QI (or designee) can be reached in a spill response emergency to carry out the required duties. All command personnel can be reached at all hours through the 24 hour spill response number.

To satisfy requirements, contact by telephone, text, radio, email, message-pager, or facsimile must be made with the qualified individual, and confirmation must be received from him or her to satisfy the requirement of this exercise. Twelve Qualified Individual Notification Drills are required in a triennial cycle (three year period). It is suggested that the Qualified Individual Notification Exercise be conducted on a quarterly basis. The Qualified Individual Notification Exercise should be conducted at least once a year during non-business hours. Any time the qualified individual is notified during an actual event and this occurrence is properly documented, the notification can be credited as satisfying this requirement.

See following page for form (Table 7.3.1).

**Table 7.3.1
QUALIFIED INDIVIDUAL NOTIFICATION EXERCISE LOG**

Date:	
Company:	BOE/Progress Solutions
Qualified Individuals:	
Emergency Scenario:	
Evaluation:	
Changes to be Implemented:	
Time Table of Implements:	

7.4 Emergency Procedure Exercises and Documentation

7.4.1 PIPELINE DRILLS/EXERCISE

BOE/Progress Solutions participates in their own yearly drills with the Progress Solutions employees of the BOE Pipeline.

Table 7.4.1 PIPELINE DRILLS/ EXERCISES LOG	
Date:	
Company:	BOE/Progress Solutions
Qualified Individuals:	
Emergency Scenario:	
Evaluation:	
Changes to be Implemented:	
Time Table of Implements:	

7.4.2 SPILL MANAGEMENT TEAM TABLETOP EXERCISES (ANNUAL)

BOE/Progress Solutions has identified a spill management team (SMT) in the response plan. The Spill Management Team, including the contracted spill responders, should conduct an annual tabletop exercise (TTX) in accordance with the PREP guidelines. This table top exercise may be held in conjunction with an OSRO table top exercise or Pipeline tabletop exercise. The response plan should be utilized in the exercise to ensure the SMT is familiar with the plan and is able to use it effectively to conduct a spill response. At least one spill management team tabletop exercise in a triennial cycle should involve a worst-case discharge scenario. (See Spill Management Team Tabletop Exercise forms that follow).

The spill management team TTX should consider shift changes to ensure that all personnel serving as part of the team during an actual spill have participated in an exercise.

If a contractor's spill management team is used, only one TTX is required annually, as long as the TTX addresses individual responses to all spill scenarios covered by the SMT. One or more representatives from each plan holder organization represented by the SMT must participate in the exercise.

7.4.3 EQUIPMENT DEPLOYMENT EXERCISES

7.4.3.1 OSRO Involvement in Equipment Deployment Exercises

All of the OSRO personnel involved in equipment deployment operations must be included in a comprehensive training program. All of the OSRO equipment is included in a comprehensive maintenance program. The maintenance program ensures that the equipment is periodically inspected and maintained in good operating condition in accordance with the manufacturer's recommendations and best commercial practices. BOE/Progress Solutions ensures periodic inspection and maintenance by the OSRO is documented. The OSRO must provide inspection and maintenance information to BOE/Progress Solutions.

Plan holders citing both OSRO equipment and their own equipment in their response plans are required to exercise both types of equipment at the above described intervals. BOE/Progress Solutions ensures that a regional OSRO included in the plan conducts annual equipment deployment exercises for the operating environment for this EPA Contingency Planning Area. OSROs do not have to conduct equipment deployment exercises in each specific area (the area being the geographic boundaries for which an Area Contingency Plan has been developed) of the various plan holders they cover. BOE/Progress Solutions ensures that the OSRO has the local knowledge relevant to an effective, efficient response in the operating area. (See Equipment Deployment Exercise/OSRO form).

7.4.3.2 Plan Holders Using a Combination of OSRO Equipment and BOE Owned Operated Equipment

Minimum Amount of Equipment for Deployment

- 1,000 feet of boom in the inventory.
- One of each type of skimming system.

Operating Environments

- Fully protected, i.e. no waves. (This type would include rivers and some lakes.)

7.4.4 TRIENNIAL EXERCISE OF THE ENTIRE RESPONSE PLAN

Every three years all components of the entire Response Plan must be exercised. Rather than requiring each plan holder to conduct a major exercise every three years, the PREP allows for individual components to be exercised in portions through the required exercises. The following are the basic types of plan components that must be exercised at least once every three years. The installation exercise evaluation team ensures these components (where applicable) are properly addressed in their spill exercises. To satisfy the requirement of the triennial exercise of the entire response plan, it is not necessary to execute the entire plan at one time. The plan may be exercised in segments over a period of three years, as long as each component of the plan is exercised at least once within the three-year period. The following are the basic types of plan components that must be exercised at least once every three years:

TABLE 7.4.4a CORE TEST COMPONENTS OF THE RESPONSE PLAN		
Organizational Design	Operational Response	Response Support
Notifications	Discharge Control	Communications
Staff Mobilization	Assessment of Discharge	Transportation
Ability to operate within the response management system described in the plan	Containment of Discharge	Personnel Support
	Recovery of Spilled Material	Equipment Maintenance and Support
	Protection of Economically, Politically, Socially, and Environmentally Sensitive Areas	Procurement
	Disposal of Recovered Products	Documentation

In the triennial cycle, the following internal exercises must be conducted:

TABLE 7.4.4b INTERNAL EXERCISES	
Number	Exercise Type
12	Qualified Individual Notification Drills (QIN)
3	Spill Management Team Table Top Exercises, one of which must involve a worst case discharge scenario (TTX)
3	Unannounced Exercises (any of the exercises, with the exception of the QIN Drill, if conducted unannounced, will satisfy this requirement). One of the Unannounced Exercises must be an Equipment Deployment Exercise (U)
3	Pipeline-owned Equipment Deployment Exercises (for Pipelines with pipeline-owned equipment identified in their response plan). (FEX)
3	Oil Spill Response Organization (OSRO) Equipment Deployment Exercises (OSRO)

7.4.5 OTHER CREDIT ISSUES

7.4.5.1 Credit for Spill Response

The Pipeline can take credit for internal exercises conducted in response to actual spills. The spill response must be properly evaluated and documented. The National Scheduling and Coordinating Committee are responsible for authorizing credit for area exercises according to the following circumstances:

- The response plan was utilized in an actual spill response
- The response involved the entire response community
- The objectives of the area exercise were met as outlined in the PREP guidelines (see section 7.1)
- The response was evaluated
- The spill response was properly documented and certified

7.4.5.2 Proper Documentation for Self-Certification

Proper documentation for self-certification should include, as a minimum, the following information:

- The type of exercise.
- Date and time of the exercise.
- A description of the exercise.
- The objectives met in the exercise.
- The components of the response plan exercised.
- Lessons learned (if applicable).

This documentation must be in writing and signed by the QI or an authorized designee.

7.4.5.3 LEPC Drill Credit

LEPCs are required to conduct exercises periodically. The site should coordinate their exercises with the LEPCs, whenever possible, and should take credit, as long as the PREP exercise objectives are met.

7.4.6 EXERCISE REQUIREMENTS

The following exercise requirements are provided only as guidance to the site and should be replaced with site-specific guidelines, as developed.

QI NOTIFICATION EXERCISE EPA-REGULATED FACILITIES	
Applicability:	Facility
Frequency:	Quarterly
Initiating Authority:	EPA policy
Participating Elements:	Facility personnel and qualified individual
Scope:	Exercise communications between facility personnel and qualified individual
Objectives:	Contact must be made with a qualified individual or designee, as designated in the response plan
Certification:	Self-certification.
Verification:	EPA Region VIII
Record Retention:	5 years
Record Location:	Progress Solutions, Bismarck, ND
Evaluation:	Self-evaluation.
Credit:	Plan holder should take credit for this exercise when conducted in conjunction with other exercises as long as all objectives are met, the exercise is evaluated, and a proper record is generated. Credit should be taken for an actual spill response when these objectives are met, the response is evaluated, and a proper record is generated.

**SPILL MANAGEMENT TEAM TABLETOP EXERCISE
EPA-REGULATED FACILITIES**

Applicability:	Facility spill management team.
Frequency:	Annually.
Initiating Authority:	EPA policy.
Participating Elements:	Spill management team as established in the response plan.
Scope:	Exercise the spill management team's organization, communication, and decision-making in managing a spill response.
Objectives:	<p>Exercise the spill management team in a review of:</p> <p>Knowledge of the response plan;</p> <p>Proper notifications;</p> <p>Communications system;</p> <p>Ability to access an OSRO;</p> <p>Coordination of internal organization personnel with responsibility for spill response;</p> <p>An annual review of the transition from a local team to a regional, national, and international team, as appropriate;</p> <p>Ability to effectively coordinate spill response activity with the National Response system (NRS) infrastructure. (If personnel from the NRS are not participating in the exercise, the spill management team should demonstrate knowledge of response coordination with the NRS.)</p> <p>Ability to access information in Area Contingency Plan for location of sensitive areas, resources available within the area, unique conditions of area, etc. (This is only applicable if the Area Contingency Plan is available for the exercise).</p> <p>At least one spill management team tabletop exercise in a triennial cycle would involve simulation of a worst-case discharge scenario.</p>
Certification:	Self-certification.
Verification:	EPA Region VIII
Record Retention:	5 years
Record Location:	Progress Solutions Office, Bismarck, ND
Evaluation:	Self-evaluation.
Credit:	Plan holder may take credit for this exercise when conducted in conjunction with other exercises as long as all objectives are met, the exercise is evaluated, and a proper record is generated. Credit may be taken for an actual spill response when these objectives are met, the response is evaluated, and a proper record is generated.

EQUIPMENT DEPLOYMENT EXERCISES/OSRO EPA-REGULATED FACILITIES	
Applicability:	Facilities with OSRO response equipment cited in their response plan.
Frequency:	Annually
Initiating Authority:	EPA policy
Participating Elements:	Facility owner or operator and OSRO
Scope:	<p>Deploy and operate response equipment identified in the response plan. The equipment to be deployed would be the minimum amount of equipment for deployment as described in "Guiding Principles."</p> <p>All of the OSRO personnel involved in equipment deployment operations must be included in a comprehensive training program. All of the OSRO equipment must be included in a comprehensive maintenance program. Credit should be taken for equipment deployment conducted during training. The maintenance program must ensure that the equipment is periodically inspected and maintained in good operating condition in accordance with the manufacturer's recommendations and best commercial practices. The facility owner or operator must ensure that inspection and maintenance by the OSRO is documented. The OSRO must provide inspection and maintenance information to the owner or operator.</p>
Objectives:	<ul style="list-style-type: none"> • Demonstrate the ability of the personnel to deploy and operate response equipment. • Ensure the response equipment is in proper working order.
Certification:	The facility owner or operator should ensure that the OSRO identified in the response plan provides adequate documentation that the requirements for this exercise have been met.
Verification:	EPA. Region VIII
Records:	Progress Solutions Office, Bismarck, ND
Retention:	5 years
Evaluation:	Self-evaluation
Credit:	Plan holder may take credit for this exercise when conducted in conjunction with other exercises as long as all objectives are met, the exercise is evaluated, and a proper record is generated. Credit may be taken for an actual spill response when these objectives are met, the response is evaluated, and a proper record is generated.

Note: If a pipeline with company owned and operated equipment also identifies OSRO equipment in its response plan, the OSRO equipment must also be deployed and operated in accordance with the equipment deployment requirements for OSRO owned equipment.

GOVERNMENT-INITIATED UNANNOUNCED EXERCISES EPA-REGULATED FACILITY RESPONSE PLAN HOLDERS	
Applicability:	EPA-regulated facility response plan holders within the area.
Frequency:	Annually, if selected. <i>(Plan holders who have participated in a PREP government-initiated unannounced exercise will not be required to participate in another one for at least 36 months from the date of the exercise.)</i>
Initiating Authority:	EPA
Participating Elements:	EPA-regulated facility response plan holders
Scope:	Unannounced exercises are limited to a maximum of four exercises per area per year. Exercises are limited to approximately 4 hours in duration. Exercises would involve response to an average most probable discharge scenario. Exercise would involve equipment deployment to respond to spill scenario. RSPA would cover unannounced exercises for pipelines not part of a complex, in their exercise programs.
Objectives:	Conduct proper notifications to respond to unannounced scenario of an average most probable discharge. Demonstrate that the response is: Timely; Conducted with adequate amount of equipment for scenario; and Properly conducted.
Certification:	EPA. Region VIII
Verification:	EPA. Region VIII
Records Retention:	5 years
Record Location:	Progress Solutions Office, Bismarck, ND
Evaluation:	Evaluation to be conducted by initiating agency.
Credit:	Credit may be taken for an actual spill response when these objectives are met, the response is evaluated, and a proper record is generated. Plan holders participating in this exercise may also take credit for notification and equipment deployment exercises.

7.4.7 EXERCISE DOCUMENTATION FORMS

Exercise documentation forms the following forms are provided only as guidance to the site and will be replaced with site-specific forms, as developed. See following pages for forms.

NOTIFICATION EXERCISE

1. Date performed: _____
2. Exercise or actual response? _____
3. Facility initiating exercise: _____
4. Name of person notified:
Is this person identified in your response plan as qualified individual or designee?

5. Time initiated: _____
Time in which qualified individual or designee responded: _____
6. Method used to contact:
 Telephone
 Pager
 Radio
 Other _____
7. Description of notification procedure:

8. Emergency scenario:

9. Changes to be implemented?

10. Timetable for implementation?

Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

EMERGENCY PROCEDURES EXERCISE

1. Date performed: _____
2. Exercise or actual response? _____
If an exercise, announced or unannounced: _____
3. Location: _____
4. Facility name: _____
5. Time started: _____
Time completed: _____
6. Section of Facility emergency procedures exercised (i.e., response to collision, response to oil spill on deck, response to vessel fire, etc.)?

7. Description of exercise:

8. Identify which of the 15 core components of your response plan were exercised during this particular exercise:

9. Attach a description of the lesson(s) learned and person(s) responsible for follow up of corrective measures.

Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

SPILL MANAGEMENT TEAM TABLETOP EXERCISE

1. Date(s) performed: _____
2. Exercise or actual response? _____
If an exercise, announced or unannounced: _____
3. Location of tabletop: _____
4. Time started: _____
Time completed: _____
5. Emergency scenario: _____
6. Response plan scenario used (check one):

<input type="checkbox"/> Average discharge	most	probable
<input type="checkbox"/> Worst-case discharge	_____	Maximum most probable discharge
bbls/gals	Size of (simulated) spill	_____
7. Describe how the following objectives were exercised:
 - a) Spill management team's knowledge of oil-spill response plan:

 - b) Proper notifications:

 - c) Communications system:

 - d) Spill management team's ability to access contracted oil spill removal organizations:

SPILL MANAGEMENT TEAM TABLETOP EXERCISE (Continued)

- e) Spill management team's ability to coordinate spill response with On-Scene Coordinator, state and applicable agencies:

- f) Spill management team's ability to access sensitive site and resource information in the Area Contingency Plan:

7. Changes to be implemented: _____

8. Timetable for implementation: _____

9. Identify which of the 15 core components of your response plan were exercised during this particular exercise:

10. Attach description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

EQUIPMENT DEPLOYMENT EXERCISE

1. Date(s) performed: _____
2. Exercise or actual response? _____
If an exercise, announced or unannounced: _____
3. Deployment location(s): _____

4. Time started: _____
Time completed: _____
5. Equipment deployed was:
___ Facility-owned
___ Oil spill removal organization-owned if so, which OSRO: _____
___ Both
6. List type and amount of all equipment (e.g., boom and skimmers) deployed and number of support personnel employed:

7. Describe goals of the equipment deployment and list any Area Contingency Plan strategies tested. (Attach a sketch of equipment deployments and booming strategies:

8. For deployment of facility-owned equipment, was the amount of equipment deployed at least the amount necessary to respond to your facility's average most probable spill:
Yes _____ No _____
Was the equipment deployed in its intended operating environment?
Yes _____ No _____
What was the operating environment? _____

EQUIPMENT DEPLOYMENT EXERCISE (Continued)

9. For deployment of OSRO-owned equipment, was a representative sample (at least 1000 feet of each boom type and at least one of each skimmer type) deployed?

Yes _____ No _____

Was the equipment deployed in its intended operating environment?

Yes _____ No _____

What was the operating environment? _____

10. Are all oil supply personnel that are responsible for response operations involved in a comprehensive training program, and all population response equipment involved in a comprehensive maintenance program?

Yes _____ No _____

If so, describe the program: _____

11. Date of last equipment inspection: _____

12. Was the equipment deployed by personnel responsible for its deployment in the event of an actual spill?

13. Was all deployed equipment operational? If not, why not?

14. Identify which of the 15 core components of your response plan were exercised during this particular exercise:

15. Attach a description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

SECTION 8 RESPONSE PLAN REVIEW AND UPDATE PROCEDURES

In this Section:

PHMSA Submittal
Plan Reviews - Review and Certification Log, OPA Change Log
Plan Updates and Amendments Discussion
PHMSA Notification and Response
PHMSA Petition Reconsideration
Record of Changes
Distribution List

8.1 Submittal of Plan for PHMSA Review

BOE/Progress Solutions shall submit two copies of the response plan required by 194.119 (a). Copies of the response plan shall be submitted to:

Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration
Department of Transportation, PHP 80
1200 New Jersey Avenue, SE.
Washington, DC 20590-0001

PHMSA prefers submission of plans in electronic format. Part of the submission will be a Master Service Agreement with OSRO.

8.2 Plan Reviews

8.2.1 OWNER/OPERATOR REVIEW AND CERTIFICATION LOG 49 CFR 194.121 AND §194.107(B)

Per 49 CFR 194.121, a review and evaluation of this Response Plan is conducted at least every 5 years from the date of the last submission or last approval. In accordance with 49 CFR 194.107 (b), a review and evaluation of this Response Plan is conducted at least every year for consistency with the National Contingency Plan and Area Contingency Plans. This log is to serve as a certification of a review in accordance with 49 CFR 194.107.

I have completed review and evaluation of the Response Plan for the BOE Pipeline, LLC Pipeline in Dunn and Stark County, ND.			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
		<input type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	
Remarks			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
		<input type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	
Remarks			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
		<input type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	
Remarks			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
		<input type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	
Remarks			

8.3 Plan Amendments: Updates to Address New or Different Operating Conditions or Information (194.121, 194.107 (b))

BOE/Progress Solutions shall update its response plan to address new or different operating conditions or information. In addition, BOE/Progress Solutions shall review its response plan in full at least every 5 years from the date of the last submission or the last approval as follows:

(1) For substantial harm plans, BOE/Progress Solutions shall resubmit its response plan to OPS every 5 years from the last submission date.

(2) For significant and substantial harm plans, an operator shall resubmit every 5 years from the last approval date.

If a new or different operating condition or information would substantially affect the implementation of a response plan, BOE/Progress Solutions will immediately modify its response plan to address such a change and, within 30 days of making such a change, submit the change to PHMSA. Examples of changes in operating conditions that would cause a significant change to an operator's response plan are:

(1) An extension of the existing pipeline or construction of a new pipeline in a response zone not covered by the previously approved plan.

(2) Relocation or replacement of the pipeline in a way that substantially affects information included in the response plan, such as a change to the worst case discharge volume.

(3) The type of oil transported if the type affects the required response resources, such as a change from crude oil to gasoline.

(4) The name of the oil spill removal organization.

(5) Emergency response procedures.

(6) The QI.

(7) A change in the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) or an Area Contingency Plan (ACP) that has significant impact on the equipment appropriate for response activities.

(8) Any other information relating to circumstances that may affect full implementation of the plan.

The plan's review shall incorporate any changes in the listing of economically important or environmentally sensitive areas identified in the Missouri River Area Contingency Plan (MRACP) in effect six months prior to plan review. In addition, relevant portions of the NCP and any applicable ACP shall be reviewed annually to ensure consistency between these plans and this Response Plan.

If PHMSA determines a change to a response plan does not meet the requirements of this section, PHMSA will notify BOE/Progress Solutions of any alleged deficiencies and provide BOE/Progress Solutions an opportunity to respond, including an opportunity for an informal conference, to any proposed plan revisions and an opportunity to correct any deficiencies.

If BOE/Progress Solutions disagrees with a determination that proposed revisions to a plan are deficient may petition PHMSA for reconsideration, within 30 days from the date of receipt of PHMSA's notice. After considering all relevant material presented in writing or at the conference, PHMSA will notify the operator of its final decision. The operator must comply with the final decision within 30 days of issuance unless PHMSA allows additional time.

After each oil spill event where the Response Plan is implemented, a post-incident analysis will be conducted to evaluate the Response Plan's effectiveness and identify plan, resource, and response deficiencies. BOE management or a consultant will conduct the post-incident analysis. The response plan may be updated if deficiencies or enhancements are identified.

All plan, resource, and training deficiencies identified shall be reported to the BOE management team and at least one team member from an independent consulting firm, along with a corrective action plan for resolving the identified problems. The BOE/Progress Solutions should monitor corrective action plan progress until final resolution. BOE is responsible for correcting FRP deficiencies within 30 days of the corrective action plan publication date.

8.4 Notification and Response

PHMSA Accident Reporting and Notification is found in 49 CFR 195.50-195.54.

8.4.1 REPORTABLE ACCIDENTS (49 CFR 195.50)

An accident report is required for each failure in a pipeline system in which there is a release of a hazardous liquid transported resulting in any of the following:

- (a) Explosion or fire not intentionally set by the operator.
- (b) Release of 5 gallons (19 liters) or more of hazardous liquid, except that no report is required for a release of less than 5 barrels (0.8 cubic meters) resulting from a pipeline maintenance activity if the release is:
 - (1) Not otherwise reportable under 49 CFR 195.50;
 - (2) Not one described in 8.4.2 (49 CFR 195.52);
 - (3) Confined to company property or pipeline right-of-way; and
 - (4) Cleaned up promptly;
- (c) Death of any person;
- (d) Personal injury necessitating hospitalization;
- (e) Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000.

8.4.2 TELEPHONIC NOTICE OF ACCIDENTS (49 CFR 195.52, ALERT NOTICE ALN-91-01, ADB-2013-01)

Owners and operators of hazardous liquid pipeline systems are required to provide telephonic reports of pipeline accidents to the National Response Center promptly, accurately, and fully communicate the estimated extent of the damages.

BOE/Progress Solutions must notify the National Response Center (NRC) at the earliest practicable moment (within two hours) following discovery of a release of crude oil transported resulting in an event described in section 8.4.1, they shall give notice by telephone to the National Response Center (NRC) at (800) 424-8802 (toll free) or (202) 267-2675 (toll call) or online at <http://www.nrc.uscg.mil>. Each notice must include the following information:

- (1) Name and address of the operator.
- (2) Name and telephone number of the reporter.
- (3) The location of the failure.
- (4) The time of the failure.
- (5) The fatalities and personal injuries, if any.
- (6) All other significant facts known by the operator that are relevant to the cause of the failure or extent of the damages.

BOE/ Progress Solutions shall give notice of any failure that:

- (1) Caused a death or a personal injury requiring hospitalization;
- (2) Resulted in either a fire or explosion not intentionally set by the operator;
- (3) Caused estimated property damage, including cost of cleanup and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000;
- (4) Resulted in pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines; or
- (5) In the judgment of the operator was significant even though it did not meet the criteria of any other paragraph of this section.

The National Response Center will contact PHMSA providing the information provided by BOE/Progress Solutions.

8.4.3 ACCIDENT REPORTS (49 CFR 195.54)

BOE/Progress Solutions when it experiences an accident that is required to be reported under Section 8.4.1 of this plan shall as soon as practicable but not later than 30 days after discovery of the accident, prepare and file an accident report on DOT Form 7000-1, or a facsimile.

Whenever BOE/Progress Solutions receives any changes in the information reported or additions to the original report on the DOT Form 7000-1, it shall file a supplemental report within 30 days.

8.5 PHMSA Petition Reconsideration (49 CFR 194.119(b-f))

The pipeline Safety Enforcement Program is designed to monitor and enforce compliance with pipeline safety regulations and confirm operators are meeting PHMSA expectations for safe, reliable, and environmentally sound operations of their facilities. In some selected areas, enforcement guidance is available that clarifies PHMSA's enforcement authority by identifying and summarizing precedent, including Interpretations, Advisory Bulletins, Final Orders, and Decisions on Petitions for Reconsideration.

If PHMSA determines BOE's Response Plan requiring approval does not meet all requirements of this part, PHMSA will notify BOE/Progress Solutions of any alleged deficiencies, and to provide BOE/Progress Solutions an opportunity to respond, including the opportunity for an informal conference, on any proposed plan revisions and an opportunity to correct any deficiencies.

Should BOE/Progress Solutions disagree with the PHMSA determination that a plan contains alleged deficiencies, it may "Petition for Reconsideration" PHMSA for reconsideration within 30 days from the date of receipt of PHMSA's notice. After considering all relevant material presented in writing or at an informal conference, PHMSA will notify BOE/Progress Solutions of its final decision. BOE/Progress Solutions must comply with the final decision within 30 days of issuance unless PHMSA allows additional time. PHMSA and its partnering State pipeline safety agencies will provide inspections and enforcement to monitor and enforce the actions. BOE/Progress Solutions will complete all corrective actions and address any inadequate procedures that were identified by PHMSA after a decision on the Petition for Reconsideration is reached.

OPS will approve the response zones for the BOE pipeline Response Plan. OPS may consult with the U.S. Environmental Protection Agency (EPA) or the U.S. Coast Guard (USCG) if a Federal on-scene coordinator (FOSC) has concerns about the operator's ability to respond to a worst case discharge.

If OPS does not approved the response plan for a pipeline due to significant and substantial harm issues, BOE/Progress Solutions may submit a certification to OPS that the operator has obtained, through contract or other approved means, the necessary personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge or a substantial threat of such a discharge. The certificate must be signed by the qualified individual or an appropriate corporate officer.

If OPS receives a request from a FOSC to review a response plan, OPS may require BOE/Progress Solutions to give a copy of the response plan to the FOSC. OPS may consider FOSC comments on response techniques, protecting fish, wildlife and sensitive environments, and on consistency with the ACP. OPS remains the approving authority for the response plan.

8.6 Record of Changes

If no changes are needed, this should be appropriately noted in this section in each plan copy. Any required changes must be entered in the plan and noted on in this section.

This 1st edition of the BOE Response Plan. No Record of changes occurred.

It is the Plan Holder's responsibility to:

1. Ensure that all changes and updates are made
2. Remove and discard obsolete pages
3. Replace obsolete pages with the updated pages

TABLE 8.6			
Revision Record			
CHANGE DATE	REMOVE	INSERT	DESCRIPTION OF CHANGE(S)
	PAGE NUMBER(S)		
Revision 1 06-12-2014	47,49,51-56 Appendix C	Reissued Body of Plan and 47,49, 51-56 of Appendix C	Added phone numbers for QIs; Removed Keitu Engineers, K&R Roustabout, WCE Oil Field Services; Corrections Appendix C in C.3.1, C3.2, and C.4; Removed Keitu equipment trailer inventory in Section 3.7; added CEO of Progress Solutions to Dist. List; Changed Progress Solutions insurance carrier.
Revision 2 08-11-2014	Replaced entire written plan	Replaced entire written plan	Added Appendix G &H. Updated table of contents, cover page, footer dates. Added on breakout tanks and historical leak records are currently part of the plan. Major rewrite of section 8.4 to include 49 CFR 195.50- 195.54. NRC notification changes 5 other place in plan. Added additional pipeline crossing to Table 3.4.2. Change accident written report to DOT Form 7000-1. Added page 2 of Table 3.6.1b (cont.).
Revision 3	Replaced entire written plan	Replaced entire written plan	Changed US Environmental Services to Baranko Brothers Removed Kevin Schmidt as Operator and Spill Responder and added Mike Galliett

SECTION 9 RESPONSE ZONE APPENDICES (194.113 (B))

In this Section:

Response Zone One
Notification Steps
Spill Detection
Mitigation Procedures and Required Response Resources
Reference Contact Numbers
Lists of Emergency Response Equipment
Discharge Scenarios
As-Built Plan and Profile Drawings
Material Transported: Crude Oil, Hazards, Response

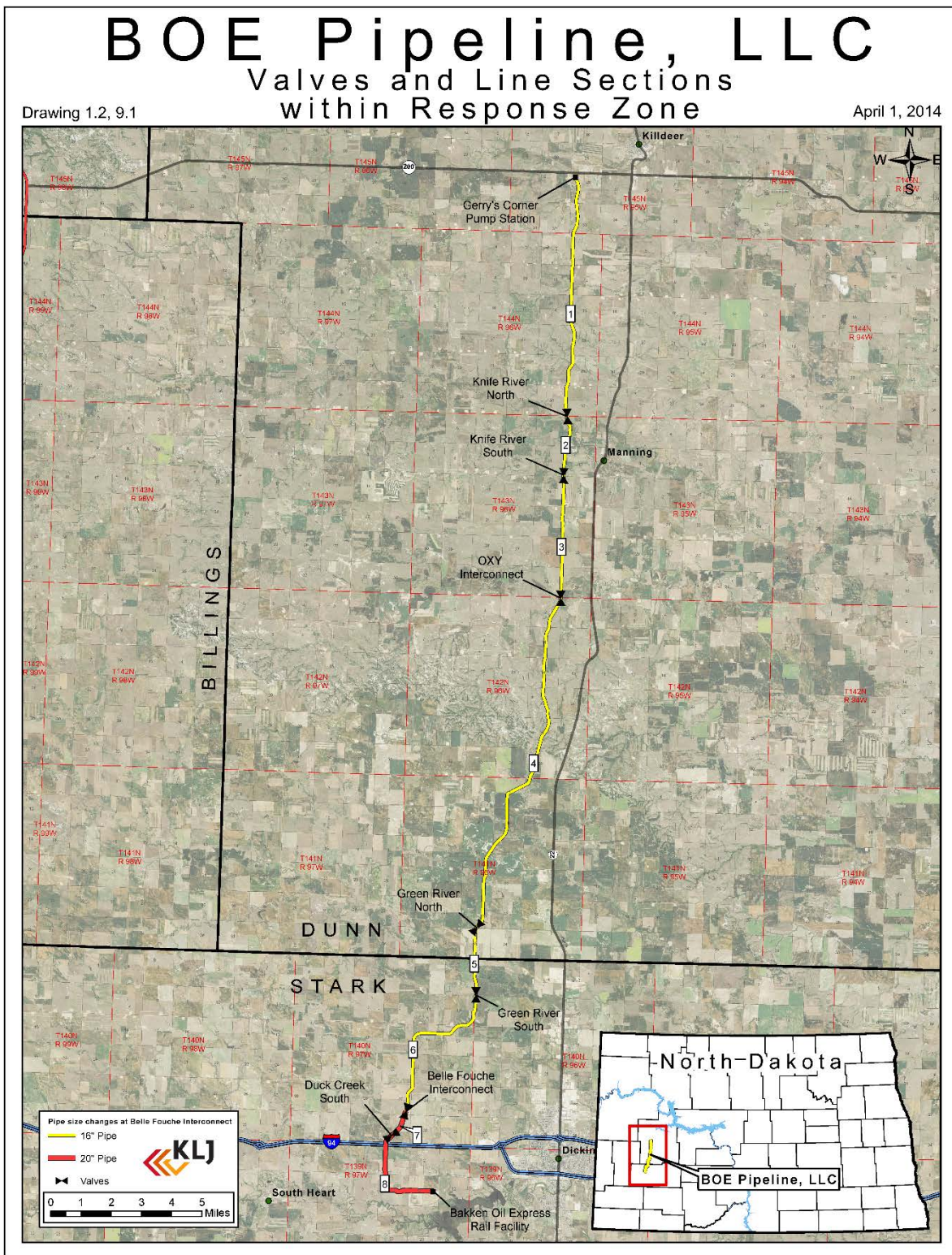
9.1 Response Zone One

The BOE pipeline is located within the State of North Dakota through Dunn and Stark counties. The pipeline route is between Dickinson, ND and Killdeer, ND and carries only crude oil. **The pipeline is approximately 38.3 miles** (33.8 miles of 16 inch (nominal, 0.281-inch wall thickness) ERW, API-5L- X70, PSI2, B31.4, 600 # RF, and 4.5 miles 20" ERW (0.375" wall thickness) API-2, B31.4, 600 # RF steel pipe **and is one response zone (Dickinson)**). The transmission line also has nine mainline above ground valve sets and is divided into 8 isolation/line sections.

The pipeline has three inlets and the Rail Hub as the outlet. The BOE Pipeline receives crude oil from a truck terminal/pump station southwest of Killdeer, ND near ND Highway 200 and pumps the crude oil to the BOE Rail Hub southwest of Dickinson, ND. Crude oil also enters the pipeline at the OXY interconnect 14 miles south of the truck terminal/pump station and the Belle Fourche interconnect 33.7 miles south of the truck terminal/pump station. All crude oil flow proceeds south to the BOE Rail Hub. BOE Pipeline does not own the oil in the pipeline, BOE Pipeline maintains custody of the oil only. BOE Pipeline is a FERC regulated common carrier pipeline.

The pipeline has 9 automated mainline valve sets. The first is located at the Killdeer truck terminal, a second is at the BOE Rail Hub facility. These two valve sets have measurement devices to monitor input and output to and from the pipeline. An additional, seven automated mainline valve sets are installed along the route. Six of these mainline valves are located on both sides of the Green River, Knife River, as well as Duck Creek to isolate the pipeline if there is a rupture or break. The Belle Fourche Interconnect mainline valve set will serve as the isolation valve set for the north side of Duck Creek. Also, the Belle Fourche interconnect will allow crude oil to enter the BOE pipeline from through a 10-inch Belle Fourche pipeline of 400 feet. The last mainline valve set is the OXY Interconnect. This valve set allows crude oil to enter from OXY Oil facilities to the BOE pipeline through an 8-inch OXY pipeline. The valve set is to also be used for section isolation if necessary. BOE control room has the ability to operate the 8-inch valve from the OXY pipeline and the 10-inch valve from the Belle Fourche pipeline. These facilities meet U.S. DOT regulations and allow for the isolation of selection segments of the pipeline. Mainline valve set areas are fenced off for safety and security purposes. Additionally, the pipeline would be designed to be cleaned and inspected using internal tools,

such as cleaning pigs and smart pigs. Drawing 9.1 identifies the line sections within the response zone. A map of the line sections and valves within the response zone follows the table.



9.2 Notification Steps

- Regulatory reportable quantity is 1 barrel or more, any quantity off company property, or any quantity in water (ND Administrative Code 43-02-03-30).
- Documentations of notification should be done using the Response Notification form in section 2.4.
- The discovery of any spill will immediately reported it to the BOE pipeline, LLC/Progress Solutions Control Room dispatcher at (844)-22-9234. Table 2.1 identifies initial response actions that are to be taken.
- If a release occurs, the QI will notify the Dunn County Emergency Management at (701) 573-4343 or (701) 290-1769 and/or Stark County Emergency Services at (701) 456-7605 or (701) 627-4805. Verify with the emergency manager that they will contact the rural fire department and county sheriff's department if needed. If they request you inform them, call local 911. Additional contact number for fire departments, county sheriffs, ambulance, medical services, utilities, businesses, and residences are provided in the Emergency Notification Phone List in Table 2.2.
- In North Dakota, both the Department of Health's Environmental Health Section and the Department of Mineral Resources' Oil and Gas Division of the North Dakota Industrial Commission receive reports of environmental incidents. For a pipeline spill, a General Environmental Incident Form is required. The form is to be filled out on line at www.ndhealth.gov/ehs/eir/Eirform.htm. The QI Coordinator/designate will fill out the form. This form is distributed to 15 ND government departments once submitted. This form is to be used for any crude oil environmental incident or release which:
 1. May potentially have adverse effects to human health or the environment.
 2. May potentially result in pollution of waters of the state, either surface water or ground water.
- If any spilled amount reaches waters of the state (surface or ground water), the QI Coordinator/designate will notify the following agencies:
 - i. North Dakota Department of Health - (701) 328-5210
Division of Water Quality will handle Surface water and ground water issues. Division of Waste Management will handle Emergency Spill Response (site remediation, EPA site assessment).
 - ii. If the Health Department contact is unavailable, contact:
 1. North Dakota State Radio Communication Center
(800) 474-2121 in state and 701-328-2121 for out of state.
 - iii. National Response Center (800) 424-8802. NRC must be notified at the earliest practicable moment (within two hours) after a discharge of oil is discovered.
 - iv. North Dakota Industrial Commission 701-328-3722.

- EPA and PHMSA will be contacted by the National Response Center (NRC) when necessary due to a notification to the Response Center.

EPA - If any spill reaches navigable water, i.e. storm-water system, Missouri River and causes a film or sheen or discoloration of the surface of the water or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines, or violates state water quality standards,

OR

DOT PHMSA - An accident report is required for each failure in a pipeline system in which there is a release of a hazardous liquid transported resulting in any of the following:

- (a) Explosion or fire not intentionally set by the operator.
- (b) Release of 5 gallons (19 liters) or more of hazardous liquid, except that no report is required for a release of less than 5 barrels (0.8 cubic meters) resulting from a pipeline maintenance activity if the release is:
 - i. Not otherwise reportable under section 8.4.1 of this plan;
 - ii. Not one described in section 8.4.2 of this plan;
 - iii. Confined to company property or pipeline right-of-way; and
 - iv. Cleaned up promptly;
- (c) Death of any person;
- (d) Personal injury necessitating hospitalization;
- (e) Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000.

The Qualified Individual/or designate will notify

- v. National Response Center - (800) 424-8802

Note: It is not necessary to wait for all information before calling the NRC. NRC must be notified at the earliest practicable moment (within two hours) after a discharge of oil is discovered.

1. The Incident Coordinator will be prepared to provide the following:
 - a. Name of the reporter.
 - b. Name and address of person represented by reporter.
 - c. Phone number where reporter can be contacted.
 - d. Exact location of the incident.
 - e. Date and time of the release.
 - f. Type of material spilled.
 - g. An estimate of the quantity of material released or spilled.
 - h. Exact release location, including the waterways which may be affected.
 - i. An estimate of the quantity spilled into navigable water.

- j. Source and cause of the release.
- k. A description of the affected medium (air, water, soil, etc.).
- l. Extent of actual and potential water pollution.
- m. Any damages or injuries caused by the spill and whether a continuing danger to life.
- n. Extent of injury, if any.
- o. Steps being taken or proposed to contain and clean up the spill.
- p. Steps being taken to minimize impacts.
- q. Whether evacuation is/was necessary.
- r. Names of individuals/organizations who have also been contacted.

vi. Local Emergency Response - Local 911

Must be contacted if crude oil of any quantity gets in water.

- Should the ND Highway Patrol need to be called for escort to a medical facility or a release that may require control of a state highway (Hwy 22, Hwy 200, I-94, etc.) they can be contacted at (701) 227-6565 in Dickinson or State Radio.
- Contacting the county emergency manager by phone directly or a local 911 phone call may dispatch the local rural fire department. The fire chief is responsible for the safety of the general public. Should a fire occur due to a discharge, a call to the North Dakota Fire Marshal should occur at (701) 227-7422 in Dickinson or (701) 328-5555. A Bismarck or Minot HAZMAT team may be contacted to assist by the rural fire chief in the event of a fire.
- Filling out the North Dakota General Environmental Incident Form should contact the North Dakota Game and Fish Department. Should a release pose a threat to environment, the North Dakota Game and Fish Department (Dickinson) should be called at (701) 227-7432 or Bismarck (701) 328-6300. Also two federal agencies:
 1. US Fish and Wildlife (Bismarck) at (701) 250-4481
 2. USDA NRCS at (701) 225-5113 Dickinson or (701) 530-2000 in Bismarck.
- Should a release occur on the north end in the Murphy Creek flow path, a call to the Lake Ilo National Wildlife Refuge should be contacted at (701) 548-8110. The wildlife refuge is 12 miles downstream.
- As part of the pipeline siting application finding of facts with the North Dakota PSC, they will be notified of a spill by calling (701) 328-2400.
- If the spill or release event is associated with a fatal accident to one or more employees or which requires hospitalization of 3 or more employees, the Occupational Safety and Health Administration (OSHA) will be contacted at 1-800-321-6742. NRC may contact them.

- A written report of a reportable spill that required notification to the US EPA and North Dakota Department of Health (Division of Water Quality), is due within 60 days of the spill/discharge if the spill exceeds 1,000 gallons or occurs within a year of a previous reportable spill. The written report is required and will contain, at the minimum, the following information:
 - i. Name and location of the pipeline
 - ii. Name of owner/operator
 - iii. Name and address of registered agent of the owner, if any
 - iv. Date and year of initial facility operation
 - v. Maximum storage or handling capacity of oil of the facility
 - vi. Facility description with maps, flow diagrams and topographical maps
 - vii. Cause of spill with failure analysis
 - viii. Exactly what and how much was spilled
 - ix. Corrective action taken with description of repairs and replacements
 - x. Additional preventive measures taken or contemplated to minimize the possibility of recurrence
 - xi. Other information pertinent to spill event.

- BOE Pipeline, LLC/Progress Solutions for a DOT Reportable Accident will submit DOT Form 7000-1 within 30 days of discovery of the accident or an unintentional release of crude oil (hazardous material).

- The Environmental Coordinator or his/her designate will be the primary contact with federal and state regulators. The QI/IC may appoint a Liaison Officer with this responsibility. A Liaison Officer will perform assigned duties and update QI/IC as needed.

- The QI/IC or his/her designate will be the primary spokesperson with news media and issue press releases as necessary. All comments issued to the press will should be first approved through BOE Pipeline management. BOE may identify the spokesperson other than the QI/IC. The QI/IC may appoint an Information Officer with this responsibility with the approval of BOE management. The Information Officer will perform assigned duties and update QI/IC as needed.

- The QI/IC or designate is responsible for review and approval of resource allocation changes.

- Calling 911 and asking for Fire Department assistance is proper notification when they are needed. The City of Dickinson Fire Department may be called to assist by the local Rural Fire Chief. The Bismarck or Minot Fire Department HAZMAT team may also be contacted to assist by the local Rural Fire Chief. The Dickinson Rural Fire Department has a foam pumper truck on order. BOE has donated 2,000 gallons of foam to the Dickinson Rural Fire Department. BOE also donated 2,000 gallons of foam to the Rural Fire Department in Killdeer, ND. The Fire Department's role is protection of the general public, evacuation, and firefighting if necessary.

- Upon containment and control of the release, the Incident Commander or designate Operations Coordinator will assist the clean-up contractor personnel as appropriate. The OSRO will be responsible for clean-up. They are to assure proper qualified cleanup personnel are performing the cleanup. To the extent feasible, the spill material will be recovered and reclaimed.
- The QI/IC of his/her designate will approve the demobilization of equipment and resources after decontamination procedures. All emergency response equipment and materials is to be returned to their proper location and status.
- After each oil spill event where the Response Plan is implemented, a post-incident analysis should be conducted to evaluate the Response Plan's effectiveness and identify plan, resource, and response deficiencies. The BOE/Progress Solutions personnel or a consultant will conduct the post-incident analysis.
- All plan, resource, and training deficiencies identified shall be reporting to the BOE management, along with a corrective action plan for resolving the identified problems. The owner should monitor corrective action plan progress until final resolution. BOE/Progress Solutions is responsible for correcting Response Plan deficiencies within 30 days of the corrective action plan publication date.
- **Applicable Insurance Contacts:**
 1. All calls to BOE's insurance carrier will be handled through BOE Management. BOE Management will notify the QI/IC of the date and time of notification for response notification documentation.
 2. All calls to Progress Solutions, LLC's insurance carrier will be handled through Progress Solutions, LLC Senior Management. BOE Pipeline Management will notify the QI/IC of the date and time of notification for response notification documentation.

9.3 Spill Detection

BOE Pipeline has line marker signs along the pipeline with a contact number for landowners, leasers, and others to call should a spill be detected by the public. The general public may call 911 to report a spill or the number (844) 220-9234 on line marker signs.

BOE Pipeline employs a number of techniques to monitor and maintain the integrity of its pipeline to protect the public and the environment. Routine periodic inspections and measurements of system components and parameters provide opportunity for BOE to detect a discharge. BOE Pipeline conducts bi-weekly aerial patrols of right-of-way, biennial measurements of pipe-to-soil potentials, and annual checks of block valve functioning which provide personnel opportunity to detect discharges.

The immediate responsibility for taking action resides with the employee discovering the spill. Persons discovering the emergency should take all steps possible to immediately alert others in the area, shut down all oil operations if safe, notify the Progress Solutions Control Center as necessary and safely initiate steps to control the emergency and reduce its hazard.

A leak detection alarm system is installed on the BOE pipeline. A telemetry system using SCADA, pressure sensors, shut-in-valves, and pump-off system is used for the alarm system. The SCADA system monitors the pressures at each mainline valve set where SCADA is installed which would alarm in the control room causing the mainline valves to close shut and pumps to cease. The valves take over a minute to close to assure a water hammer effect does not occur due to a closing of a valve. The system also has a power failure alarm which will alert the control room dispatcher of a loss of power to the leak detection system.

9.4 Mitigation Procedures

See Section 3.4 and Section 4.2 for additional discussion about mitigation.

9.4.1 IMPACTS

Transporting crude oil by pipeline does involve some risk of release of hazardous material by way of a break or leak in the pipeline; however, this risk is minimal, as the pipeline is designed, constructed, and maintained in accordance with PHMSA Part 195. Additionally, the Pipeline must be pressure tested for leaks prior to commissioning. Transporting the crude oil via pipeline also decreases the potential release of hazardous materials onto a roadway or adjacent land resulting from tanker truck accidents. A SCADA system is installed to provide automated discharge detection.

The pipeline was constructed 500 feet or more from all inhabited rural residences except for three (see table 2.2 residences). There are 20 dwellings located within 1,000 feet of the BOE Pipeline (see Table 3.4.3). These dwellings or some of them would be impacted if a large spill occurred and evacuation was required for 1,000 feet downwind. A pipeline fire would require isolation for ½ mile in all directions, and consideration of initial evacuation for ½ mile in all directions.

9.4.2 SECURITY

The pipeline is located in rural portions of Dunn and Stark Counties west of ND Highway 22. Most of the access to pipeline requires permission from property owners. This minimizes general public access. Farms and rural residences are located in and around the transmission pipeline. No towns are within a mile boundary of the pipeline. The pipeline is marked with signs at roads and river crossings.

The pipeline is located underground except for mainline valve sets and the pump station. Unauthorized access to these facilities is avoided by perimeter fencing surrounding the mainline valve sets and fencing of the pump station within the truck terminal. These fences have gates and are locked for safety and security purposes. BOE/Progress Solutions employees must use keys to gain access. The inlet valve at Killdeer truck terminal/pump station (Gerry's corner) and the outlet valve at the BOE Rail Facility has perimeter fencing surrounding these facilities

and controlled access points (guarded or locked gates). To maximize opportunities for surveillance and minimize possibilities for trespassers, the facilities have adequate lighting at night. The BOE Rail facility and Killdeer truck terminal facility is manned 24/7 by BOE contracted personnel and are visited at least once a day by BOE/Progress Solutions employees. At the Killdeer Truck Facility trucks are normally on site unloading. Dunn County Sheriff personnel normally patrols the area of the Killdeer truck terminal along Hwy 200 at least twice a day. Stark County Sheriff patrols the area of the BOE Rail Facility along Hwy 10 West at least twice a day. Valve setting along the pipeline are located along county roads for access and surveillance.

All valves sets have remote control valves that close shut should flow input to the line not equal the flow output of the line due to vandalism or a leak. The control room dispatcher can also control these valves. The main line valves have a SCADA system attached to them and are automatic emergency cut-off valve. Other manual valves are located within the valve set fencing as well as pipeline connection caps for the pig launcher and receiver. Valve set locations are identified on Table 1.3B.

9.5 Quick Reference Contact Numbers

TABLE 9.5 EMERGENCY NOTIFICATION PHONE LIST			
Contact Role	Agency	Day Phone	24 Hour Phone
Command Post:	LL Terminals, LLC.	(701) 483-0435	(701) 483-0435
Command Post:	BOE Pipeline, LLC Dickinson Office	(701) 483-0454	(701) 483-0454
Qualified Individual:	Tory Neer Progress Solutions Area Manager (Bismarck)	(701) 204-5109	(701) 204-5109
Qualified Individual:	Dana Rathjen Progress Solutions Foreman (Dickinson)	(701) 690-6245	(701) 690-6245
Qualified Individual:	Doug Lee Progress Solutions CEO	(701) 250-5996	(701) 955-4230
Qualified Individual:	Chris Lewis (Dickinson) BOE General Manager	(701) 483-0435	(402) 690-4742
Alternate Qualified Individual:	Brandon McDowell BOE Pipeline Director of Operations	(720) 548-3449	(303) 887-8005
Responder	Mike Galliett Progress Solutions Pipeline Operator (Dickinson)	(701) 989-4474	(701) 989-4474
Responder	Spencer Smith Progress Solutions Pipeline Operator (Dickinson)	(701) 690-3986	(701) 690-3986
Responder	Justin Hill Progress Solutions (Dickinson) Maintenance Technician	(701) 690-0648	(701) 690-0648
National Response Center (NRC):	Federal On-Scene Coordinator (FOSC) notification and initial report NRC will contact PHMSA and EPA	(800) 424-8802 (202) 267-2675	(800) 424-8802
Additional Pipeline Operators that Interconnect to BOE Pipeline	OXY	1-800-733-3665	1-800-733-3665
	Belle Fourche Pipeline Company	(307)234-6930	(307)234-6930
	Tesoro High Plains Pipeline	(866)283-7676	(866)283-7676
Spill Response Support :	Baranko Brothers	(701) 264-5004	(701) 264-5004
	Clean Harbors (Williston) Only to be contacted by Baranko Brothers	(701) 774-2201	(800) 645-8265
Local Emergency Management:	County Emergency Manager, Police, Sheriff's Dept., and Fire Dept.	Local 911	Local 911

TABLE 9.5 (continued)
EMERGENCY NOTIFICATION PHONE LIST

Contact Role	Agency	Day Phone	24 Hour Phone
EPA:	Region VIII - On-Scene Coordinator Note: For emergencies, call NRC first - they will notify EPA FOSC.	(800) 227-8917 (303) 312-6312	(800) 227-8917
	EPA Environmental Response Team - Region VIII	(800) 424-8802 (202) 267-2675	(800) 424-8802
State Notifications: <i>The responsible party is required to contact the required state and local agencies to provide further information</i>	ND Department of Health -Division of Water Quality	(701) 328-5210 (800) 472-2121	(800) 472-2121
	North Dakota Highway Patrol - Headquarters - SW Region - Dickinson	(701) 328-2455 (701) 227-6565	Local 911
	North Dakota Fire Marshal - Dickinson, ND: Don Temple Jr. - Bismarck, ND: John Elstad	(701) 227-7422 (701) 328-5555	Local 911
	North Dakota Game and Fish Dept. - Dickinson Office	(701) 328-6300 (701) 227-7432	N/A
	ND Industrial Commission	(701) 328-3722	(701) 328-3722
	North Dakota Public Service	(701) 328-2400	(877) 245-6685
	State Radio	Local 911	Local 911
Other Federal Agencies:	U.S. Fish and Wildlife - Region 6 - North Dakota Field Office (Bismarck) - Lake Ilo National Wildlife Refuge	(701) 250-4481 (701)548-8110	N/A
	USDA NRCS - Central Region - State Office (Bismarck) - Dickinson Field Office	(701) 530-2000 (701) 225-5113	N/A
	Occupational Safety and Health Administration (OSHA)	1-800-321-6742	

TABLE 9.5 (continued)
EMERGENCY NOTIFICATION PHONE LIST

Contact Role	Agency	Day Phone	24 Hour Phone
Local Emergency Planning Committee (LEPC): <i>Provides coordination with emergency agencies within County (includes local fire department, police, etc.):</i>	ND Department of Emergency Services - Homeland Security Division - SW Regional Response Coordinator - Dunn County Emergency Management -Stark County Emergency Services	(701) 328-8100 (701) 425-4515 (701) 573-4343 (701) 456-7605	(800) 773-3259 (701) 425-4515 (701) 290-1769 cell (701) 627-4805
If Utilities were Impacted:	Roughrider Electric Coop-Dickinson	(701) 483-5111	800-627-8470
	Slope Electric- New England	(701) 579-4191	(701) 579-4191
	Consolidated Telcom - Dickinson	701) 483-4000	701) 483-4000
	Montana-Dakota Utilities Co.	1-800-638-3278	1-800-638-3278
	Southwest Water Authority	1-701-225-0241	1-701-225-0241
If Businesses were Impacted:	See Table 3.4.3 Dwellings within 1,000 feet of the Pipeline		
Weather Report:	National Weather Service - Bismarck Forecast Office	(701) 250-4224	N/A
If Residences were Impacted within 500 feet of pipeline:	Gloria Learn (Rick-husband) T140N R97W S22 SE4 SE4	(701) 225-5914	(701) 225-5914
	Melissa Chruszch 11661 Highway 10, Dickinson T140N R97W S3 4 SW4 SW4	(701) 227-0980	(701) 227-0980
	H. Edward Hughes T144N R96W S12 NW4		
	Dickinson Radio Broadcasting Stations		
	MIX (105.7 FM)	(701) 225-1057	(701) 225-1057
	KCAD (99.1 FM) KLTC (AM) KZRZ (Z 92 FM)	(701) 227-1876	(701) 227-1876
	KDIX (1230 AM)	(701) 225-5133	(701) 225-5133

TABLE 9.5 (continued)
EMERGENCY NOTIFICATION PHONE LIST

Contact Role	Agency	Day Phone	24 Hour Phone
	North Dakota Television Broadcasting Stations		
	KXMA - 7 (NBC) - Dickinson	(701) 483-7777	N/A
	KXMA - 12 (CBS) - Bismarck/Dickinson	(701) 223-9197	N/A
	Killdeer Ambulance Service	(701) 764-5006	Local 911
	Dickinson Ambulance Service	(701) 225-1500	Local 911
Hospitals/Clinic Service	St. Joseph's Hospital -Dickinson	(701) 456-4000	701) 456-4000
	McKenzie County Hospital- Watford	(701) 842-3000	(701) 842-3000
	Sanford Health Clinic -Dickinson	(800) 695-7245	(800) 695-7245
	Killdeer Medical Clinic	(701) 764-5822	Local 911
	Sanford Medical Center -Bismarck (Level II Trauma Center)	(701) 323-6150	(701) 323-6150
	St. Alexius Medical Center-Bismarck (Level II Trauma Center)	(701) 530-7000	701) 530-7000
	Hennepin County Med Center- Minneapolis, MN (Level I Trauma)	(612) 873-3000	(612) 873-3000
Fire Departments:	West Dunn Fire Department	Local 911 (701) 764-5006	Local 911 (701) 764-5006
	Stark County Rural Fire Dept.	(701) 456-7877	Local 911
	Dickinson Fire Department	(701) 456-7625	Local 911
Police Departments:	Sheriff's Department (Dunn County)	(701) 573-4449	Local 911 or State Radio
	Sheriff's Department (Stark County)	(701) 456-7610	Local 911
	Dickinson Police	Local 911	Local 911

9.6 Response Personnel and Resources

The following rosters list the response personnel for the BOE Pipeline. The rosters also include phone numbers, the amount of time needed for personnel to respond, their responsibility during the emergency, and the level of response training.

9.6.1 EMERGENCY RESPONSE TEAMS FOR DISCHARGES

This section identifies the BOE/Progress Solutions spill response support. The personnel lists identify responsible parties and their phone numbers, the amount of time needed for personnel to respond, responsibility during an emergency. Contract personnel have HAZWOPER training and the required minimum requirements of OSHA 29 CFR Part 1910.

TABLE 9.6.1a Emergency Response Personnel For Small Discharges			
Name	Phone	Response Time	Responsibility during response action
Tory Neer (Bismarck)	(701) 204-5109	< 2 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Area Manager - ND Field Operations Spill Response Support
Dana Rathjen (Dickinson)	(701) 690-6245	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Foreman Spill Response Support
Justin Hill (Dickinson)	(701) 690-0935	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Maintenance Technician Spill Response Support
Mike Galliett (Dickinson)	(701) 989-4474	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Operator Spill Response Support
Spencer Smith (Dickinson)	(701) 690-3986	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> Pipeline Operator Spill Response Support
Doug Lee (Bismarck)	(701) 955-4250	2 Hours	<ul style="list-style-type: none"> CEO Spill Response Support
Baranko Brothers (Dickinson)	1-701-264-5004	< 1 Hour	<ul style="list-style-type: none"> OSRO Spill Response Contracted Support

TABLE 9.6.1b
Emergency Response Personnel For Medium and Large Discharges

Name	Phone	Response Time	Responsibility during response action
Tory Neer (Bismarck)	(701) 204-5109	< 2 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Area Manager - ND Field Operations • Spill Response Support
Dana Rathjen (Dickinson)	(701) 690-6245	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Foreman • Spill Response Support
Justin Hill (Dickinson)	(701) 690-0648	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Maintenance Technician • Spill Response Support
Mike Galliett (Dickinson)	(701) 989-4474	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Spencer Smith (Dickinson)	(701) 690-3986	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Doug Lee (Bismarck)	(701) 955-4230	2 Hours	<ul style="list-style-type: none"> • CEO • Spill Response Support
Brandon McDowell	(303) 887-8005	< 8 Hours	<ul style="list-style-type: none"> • BOE Director of Operations • Spill Response Support
Baranko Brothers (Dickinson)	1-701-264-5004	< 1 Hour	<ul style="list-style-type: none"> • OSRO • Spill Response Contracted Support
Emergency Manager, Sheriff, Fire	Local 911	< 1 Hour	<ul style="list-style-type: none"> • Protection of life and Surrounding Property

**TABLE 9.6.1c
Emergency Response Personnel For Worst Case Discharge**

Name	Phone	Response Time	Responsibility during response action
Tory Neer (Dickinson)	(701) 204-5109	< 2 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Area Manager - ND Field Operations • Spill Response Support
Dana Rathjen (Dickinson)	(701) 690-6245	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Foreman • Spill Response Support
Justin Hill (Dickinson)	(701) 690-0648	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Maintenance Technician • Spill Response Support
Mike Galliett (Dickinson)	(701) 989-4474	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Spencer Smith (Dickinson)	(701) 690-3986	< 1 Hour (Immediate if on site)	<ul style="list-style-type: none"> • Pipeline Operator • Spill Response Support
Doug Lee (Bismarck)	(701) 955-4230	2 Hours	<ul style="list-style-type: none"> • CEO • Spill Response Support
Brandon McDowell	(303) 887-8005	< 8 Hours	<ul style="list-style-type: none"> • BOE Director of Operations • Spill Response Support
Chris Lewis (Dickinson)	(701) 483-0454 (402)631-7708	< 1 Hour	<ul style="list-style-type: none"> • BOE General Manager • Spill Response Support
Baranko Brothers (Dickinson)	1-701-264-5004	< 1 Hour	<ul style="list-style-type: none"> • OSRO • Spill Response Contracted Support
Clean Harbors (Williston)	Baranko Brothers to call if needed	2 Hours 16 minutes	<ul style="list-style-type: none"> • OSRO • Spill Response Contracted Support
Emergency Manager, Sheriff, Fire	Local 911	< 1 Hour	<ul style="list-style-type: none"> • Protection of life and Surrounding Property

9.6.2 RESPONSE CONTRACTORS

Table 9.6.2 has OSRO Contractors under contract with BOE.

TABLE 9.6.2 OSRO Response Contractor-Multi-State			
City	Company Name	Nearest Address	Telephone
Multi-State	Baranko Brothers	3048 Highway 22 North Dickinson, ND 58601	1-701-264-5004
Multi-State	Clean Harbors	2541 132 nd C Avenue Arnegard, ND 58835	(800) 645-8265 (24-Hr.)

Baranko Brothers (BBI) is under agreement to respond to a release on the Missouri River, its tributaries and BOE pipeline area upon request. Baranko Brothers can be on site in less than 24 hours with manpower and equipment. **Baranko Brothers can be contacted at 1-701-264-5004 (24/7)**. BBI has a total Effective Day Removal Capacity (EDRC) among all BBI (US domestic) facilities of 26,370 bbls.

Clean Harbors is under agreement to respond to a release upon request of Baranko Brothers. Clean Harbors can be on site in less than 24 hours with manpower and equipment. **Clean Harbors can be contacted at 701-774-2201 or 800-645-8265 (24/7)**. Clean Harbors has 4 supervisors, 2 foreman, 8 equipment operators, and 25 field technician that are 40-hour OSHA trained personnel.

9.6.3 TANK RENTAL AND VACUUM TRUCK CONTRACTORS

In the event that adequate, conveniently located storage capacity is not available tanks may need to be rented. Adequate storage capacity is necessary for the efficient removal of oil and impacted water during spill response operations. Following is a list of "Frac" tank rental contractors. Contractors with vacuum trucks are indicated with a (*). All trucks have 80 to 95 Bbls capacities unless otherwise noted.

TABLE 3.8.3 Tank Rental and Vacuum Truck Contractors			
City	Company Name	Specialized Equipment	Telephone
Tioga	Power Fuels*	3 vacuum trucks, 2 double bottoms	(701) 664-2594
Stanley	Power Fuels*	1 Super Sucker, 3 vacuum trailers	(701) 628-5151
Minot	Power Fuels*	4 vacuum trucks	(701) 839-5755
Watford City	Power Fuels*	6 Elastec Drum Skimmers	(701) 842-3618
Arnegard	Clean Harbors*	(3) 2,500 gallon vacuum trucks	(800) 645-8265

9.6.4 ADDITIONAL SPECIALIZED CONTRACTORS AVAILABLE

Front end loader contractors of Earthmovers, Inc. may be contacted for emergency snow removal and construction of secondary berms. Power Fuels has earth moving and various clean up equipment available for use through a rental program.

These contractors are located throughout the BOE pipeline operating area and have a wide array of equipment available. They may also have HAZWOPER trained personnel available to BOE/Progress Solutions if needed.

TABLE 3.8.4a General Contractors		
City	Company Name	Telephone
Minot, ND	Earthmovers, Inc.	(800) 373-5259
Tioga, ND	Power Fuels	(701) 664-2594
Glendive, MT	Environmental Restoration, LLC	(888) 814-7477

TABLE FRP 3.8.4b Transportation Trucks		
City	Company Name	Telephone
Tioga, ND	Power Fuels	(701) 664-2594
Tioga, ND	Braun Trucking	(701) 664-0161
Stanley, ND	Cascade Trucking	(701) 621-1373
Minot, ND	Power Fuels (also oil skimmers)	(701) 839-5755
Watford City, ND	Power Fuels (also oil skimmers)	(701) 842-3618
Arnegard, ND	Clean Harbors	(800) 645-8265
Glendive, MT	Environmental Restoration, LLC	(888) 814-7477

9.6.5 SPILL RESPONSE EQUIPMENT SUPPLY STORES

Expendable (disposable) spill response equipment needs to be restocked after use or supplemented during the course of a response operation. Following is a list of supply stores that carry a variety of response equipment. Equipment may be locally available but in some instances may have to be shipped in. Depending on the urgency of the need, overnight delivery or use of the company planes may be required to get timely receipt of needed materials or equipment.

National Oilwell	Williston	(701) 572-3781
	Dickinson	(701) 227-0861
	Baker, MT	(406) 778-3378
	Gillette, WY	(307) 682-9337
	Casper, WY	(307) 235-2751

9.6.6 COMMUNICATION EQUIPMENT

Communications will be conducted by land line phone, and cellular phone as needed for primary communications. Progress Solutions Company radios or texting will be used as secondary method of communications and may be used as a primary method of communications when group communications is required.

The following communications systems may be used for notifications and emergency response operations:

- Cellular phones - All response personnel have cell phones that can be used. Cell phones are not considered intrinsically safe. Consideration must be given where and when they should be used or if they should be shut-off. Non-intrinsically safe can be used in safe zones and are not too be powered "On" when carried into the spill response hot zone. Vehicles and their company radios should be operated at a safe distance (50 feet) from the hot zone of a spill as they can be sources of ignition as well.
- Land line phones - the BOE Office (BOE Rail Facility), LL Terminals, LLC, and Progress Solutions Control Center have land line phones.
- Emails - computers and laptops are available.
- Sending Texts - Under some emergency situations, phone line communications systems becomes overburdened and phone communication can't occur in a timely fashion. Text uses different hardware and tower capacity which can be used when phones lines are not available.

Baranko Brothers Hand-Held intrinsically safe radios, cellular telephones, and GPS units available for Communications at their Dickinson, ND location.

In addition, if necessary the BOE/Progress Solutions communications system will be integrated into the communications system mobilized by the IC, to the extent practicable.

Progress Solutions Command Center in Bismarck, ND is the primary control center. The control room at LL Terminals, LLC truck terminal in Killdeer is the back up control center.

9.7 Emergency Response Equipment

The emergency response equipment inventory lists are found in Section 3.6. The emergency response equipment lists found in Section 3.6 identify and provide a description of the emergency response equipment and location of the response equipment for the pipeline. BOE/Progress Solutions spill response support will provide response to small discharges with Baranko Brothers if needed. BOE/Progress Solutions may call Baranko Brothers (OSRO) if 1,000 feet of containment boom is required. BOE/Progress Solutions Spill response support and, if needed, OSRO Baranko Brothers will be contacted for medium and large/worst-case discharges. Baranko Brothers has a mutual agreement contract with Clean Harbors to assist if requested.

All equipment should be inspected on a regular basis and maintained in operational status. Each piece of equipment should be inspected after it is used and decontaminated prior to being returned to its designated location. Equipment that is not suitable for re-use should be immediately replaced.

9.8 Discharge Scenarios

9.8.1 PLANNING DISTANCE FLOW PATHS DOWN GRADIENT DISTANCE FOR 12 HOURS

Spills from the BOE pipeline can occur due to leaks, equipment failure, accidents, and human error or as a result of third party interference. The pipeline has 9 major watershed flow paths along the pipeline which a discharge could follow in the event of a spill. These nine flow paths are identified in Table 9.8.1 with the maximum flow distance that could occur in 12 hours within a creek or river. This 12 hour flow path distance does not include any distance over land in the watersheds before it would reach a waterway. Therefore, the 12 hour flow path distance is a conservative distance to assure a discharge would not exceed this distance over any 12 hour flow time. Part of 194.1.1 (b) (2) (i) discusses an operator exception to submitting a pipeline response plan. A line section that is greater than 6 5/8 inches in outside nominal diameter and is greater than 10 miles in length, where the operator determines that it is unlikely that the worst case discharge from any point on the line section would adversely affect, within 12 hours after the initiation of the discharge, any navigable waters, public drinking water intake, or environmentally sensitive areas does not need to submit a response plan to PHMSA for review. A 12-hour planning distance evaluation was used for all 9 watersheds to verify that BOE/Progress Solutions needs to submit the plan. The results yielded a plan is required and will be submitted and updated as required.

The nine 12-hour flow paths are identified in Table 9.8.1 with five map pages that follow physically showing the 9 paths and their 12 hour planning distances. The table and maps are to be used to help spill responders determine flow paths and assist them with containment. The method of planning distance calculations are based on Federal Regulations Title 40 Part 112 Appendix C. Appendix B of this response plan shows the calculations for the distances in Table 9.8.1. Mitigation containment points were determined for all 9 watersheds and are found in Section 3.4.2.3.

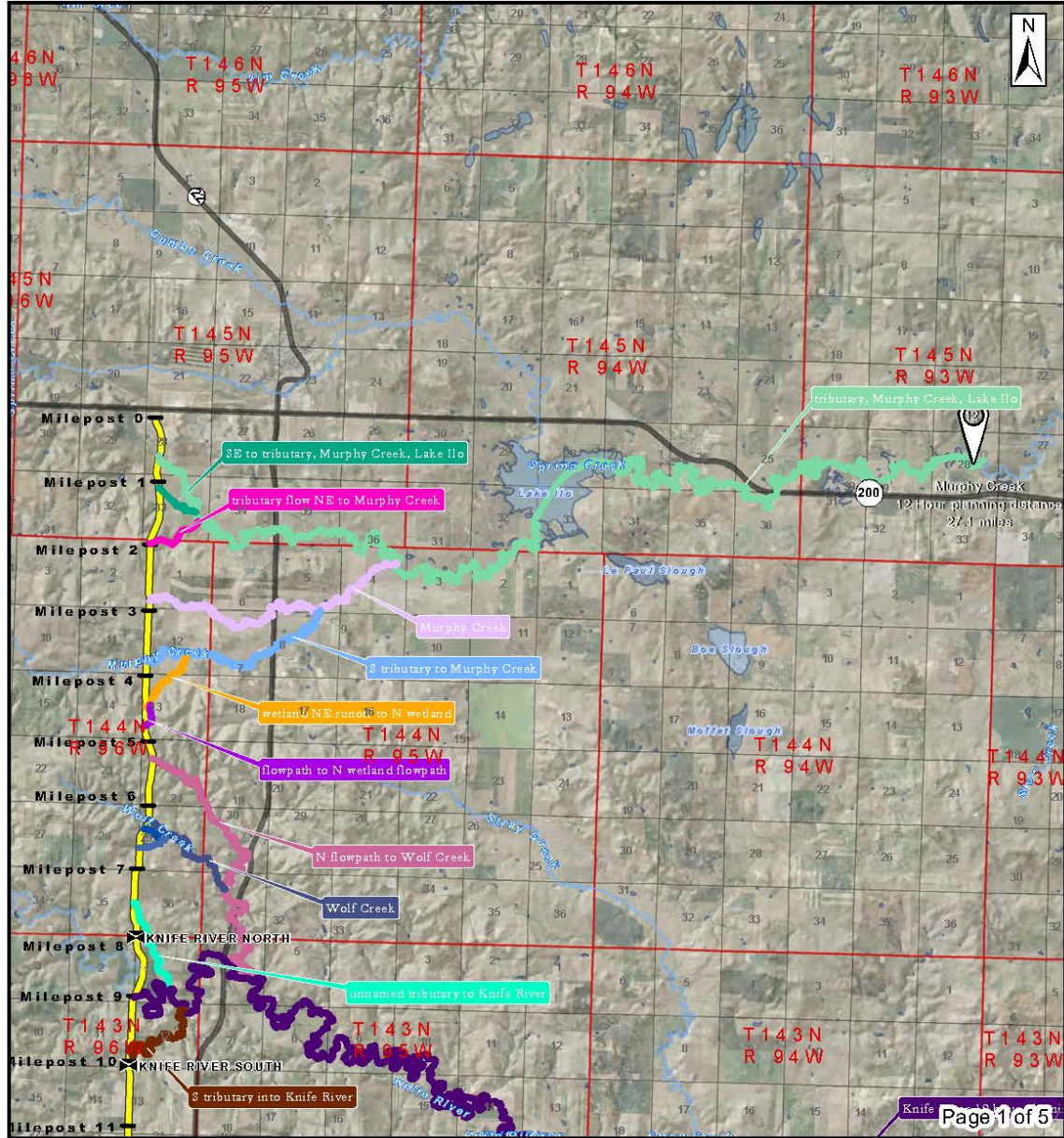
The EPA requires a 27-hour worst case scenarios be evaluated for a planning distance. This response plan has also evaluated a 27-hour worst case pipeline scenario and identified mitigation containment points. The worst case 27 hours is based on 24 hours for the OSRO to arrive and 3 hours for their deployment. In the event of an actual BOE pipeline worst case discharge, the pipeline has a SCADA system that would instantly detect a large/worst case discharge, notification of the OSRO would occur immediately, and the OSRO is located less than 1 hour from its furthest point of the pipeline thereby reducing the actual probable planning distance requirement.

In the event of an identified discharge, BOE/Progress Solutions Response team would be initial responders with a purpose of containing a spill and minimize environmental impact. BOE/Progress Solutions has contracted an Oil Spill Removal Organization (OSRO) to respond to assure adequate response and recovery operation.

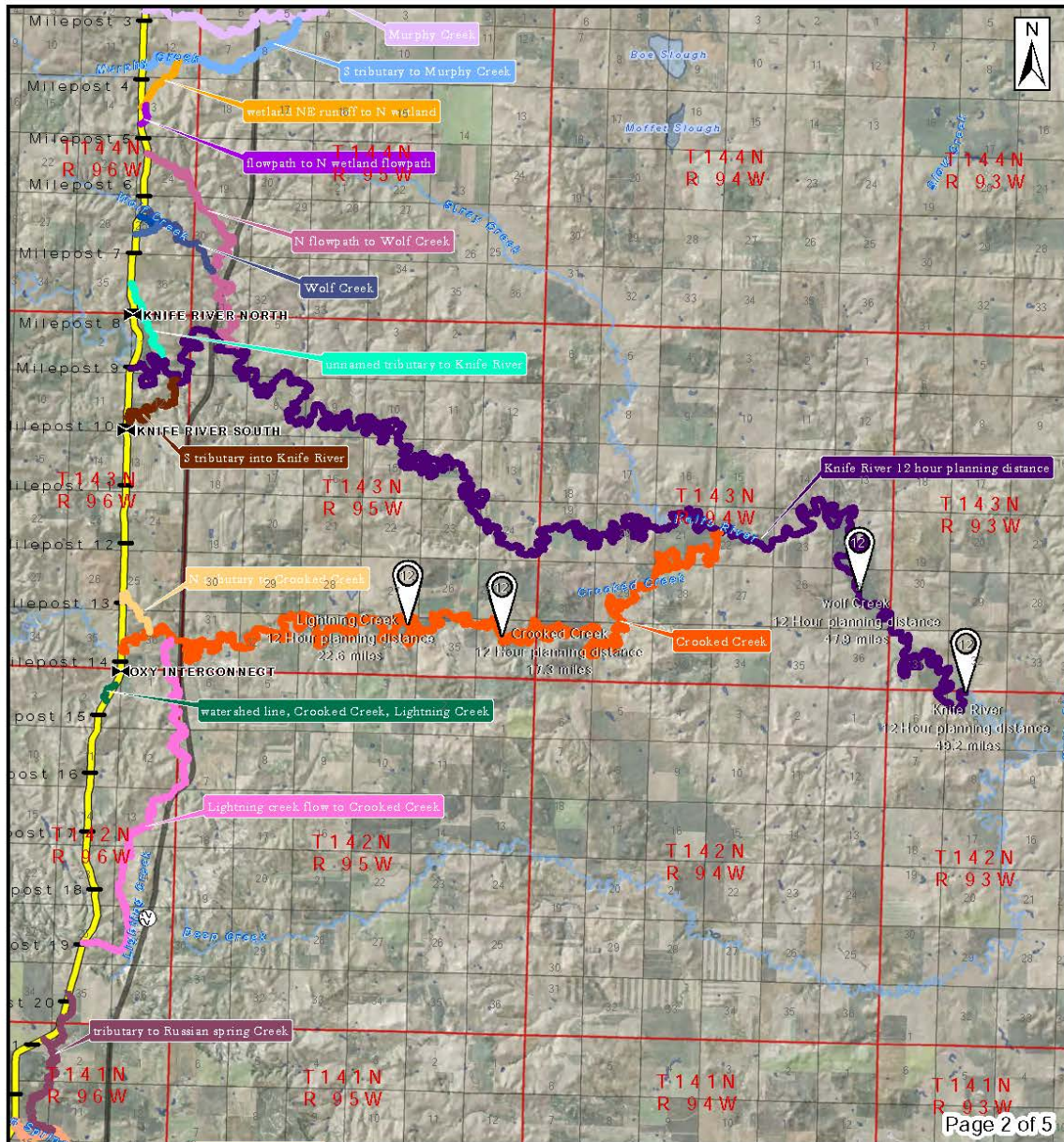
TABLE 9.8.1
Planning Distance Flow paths Down Gradient Distance for 12 Hours

Flow Path with start origin	Maximum Distance	Maximum Distance Coordinates
12.7 miles in Murphy Creek, 1.6 miles spread in Lake Ilo, and 12.8 miles in Spring Creek Pipeline crosses Murphy Creek 2.8 miles south of truck terminal.	27.1 miles	47.350289 N 102.532572 W In Spring Creek
5.6 miles in Wolf Creek, and 42.3 miles in Knife River Pipeline crosses Wolf Creek 6.2 miles south of truck terminal.	47.9 miles	47.178333 N 102.536347 W In Knife River
49.2 miles in Knife River Pipeline crosses Knife River 9.84 miles south of truck terminal facility.	49.2 miles	47.154439 N 102.497156 W In Knife River
17.3 miles in Crooked Creek Pipeline crosses Crooked Creek 13.8 miles south of truck terminal.	17.3 miles	47.165111 N 102.663828 W In Crooked Creek
9.8 miles in Lighting Creek, and 12.8 miles in Crooked Creek Pipeline crosses tributary to Lighting Creek 19 miles south of truck terminal.	22.6 miles	47.167231 N 102.697669 W In Crooked Creek
26.5 miles in Russian Spring Creek, and 0.9 miles in Green River Pipeline crosses river 22.4 miles south of truck terminal.	27.4 miles	46.934075 N 102.673461 W In Green River
33.5 miles in Green River Pipeline crosses river 27.43 miles south of the truck terminal facility.	33.5 miles	46.897836 N 102.635633 W In Green River
5.3 miles in Duck Creek, 1.7 miles spread in Patterson Lake/Dam, and 25 miles in Heart River to Lake Tschida/Dam Pipeline crosses river 34.7 miles south of truck terminal.	31.98 miles	46.857197 N 102.594486 W In Heart River
0.9 to Heart River, 2.9 miles Heart River, 2.3 miles Patterson Lake/Dam spread, and 25.9 miles in Heart River to Lake Tschida/Dam Pipeline flow path crosses 36.6 miles south of truck terminal.	32.0 miles	46.860156 N 102.586486 W In Heart River
Distance from Truck Station is approximate mileage.		

BOE Pipeline, LLC 12 Hour Spill Response Plan



BOE Pipeline, LLC 12 Hour Spill Response Plan



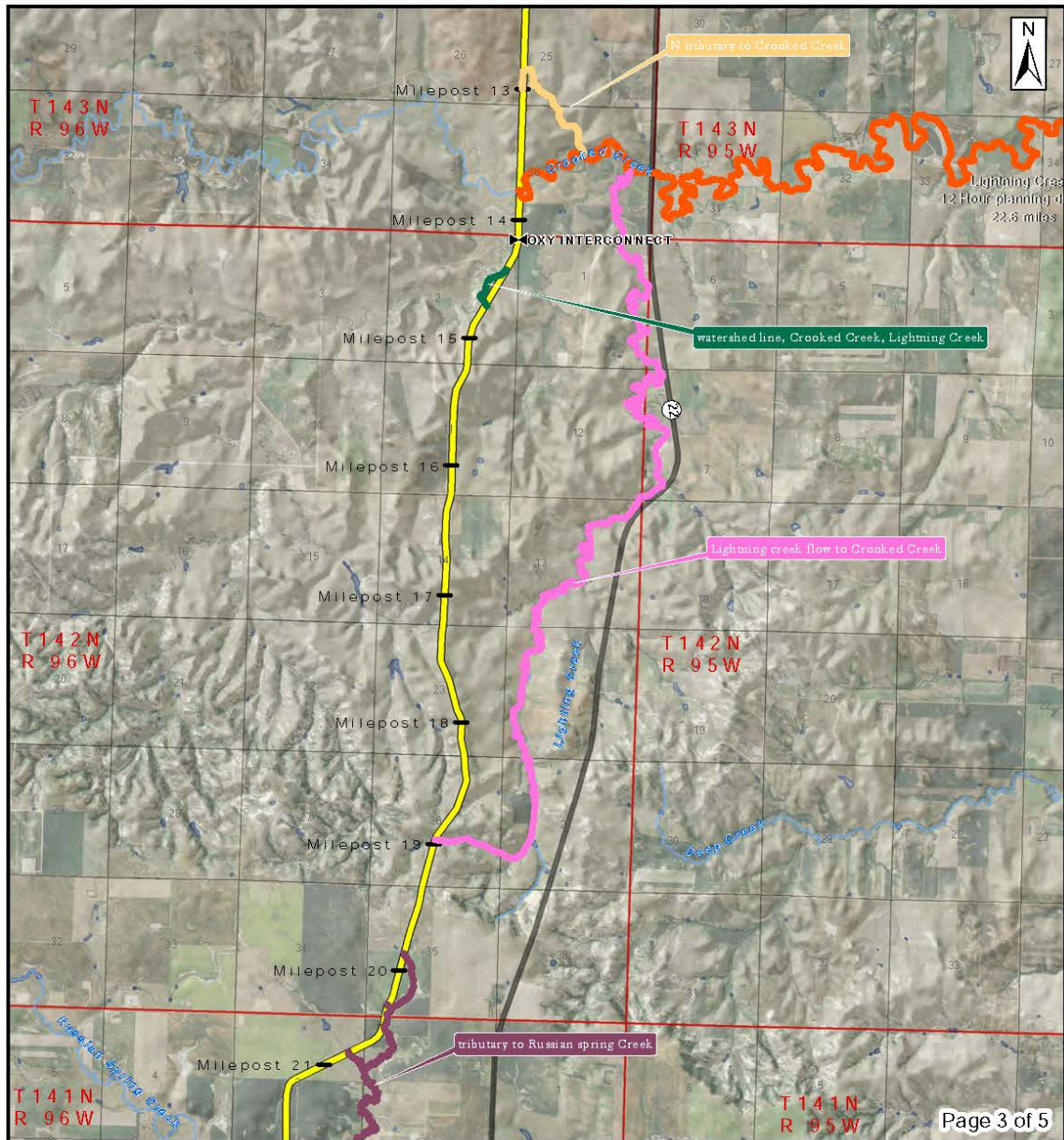
Page 2 of 5

<ul style="list-style-type: none"> Bakken Oil Express Pipeline Interstate US Highway ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> Mile Markers Valves Rivers Lakes and Ponds
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ALSO SEE TABLE 1.7.3
FOR DESCRIPTION OF
12 HOUR FLOW PATHS

April 1, 2014

BOE Pipeline, LLC 12 Hour Spill Response Plan



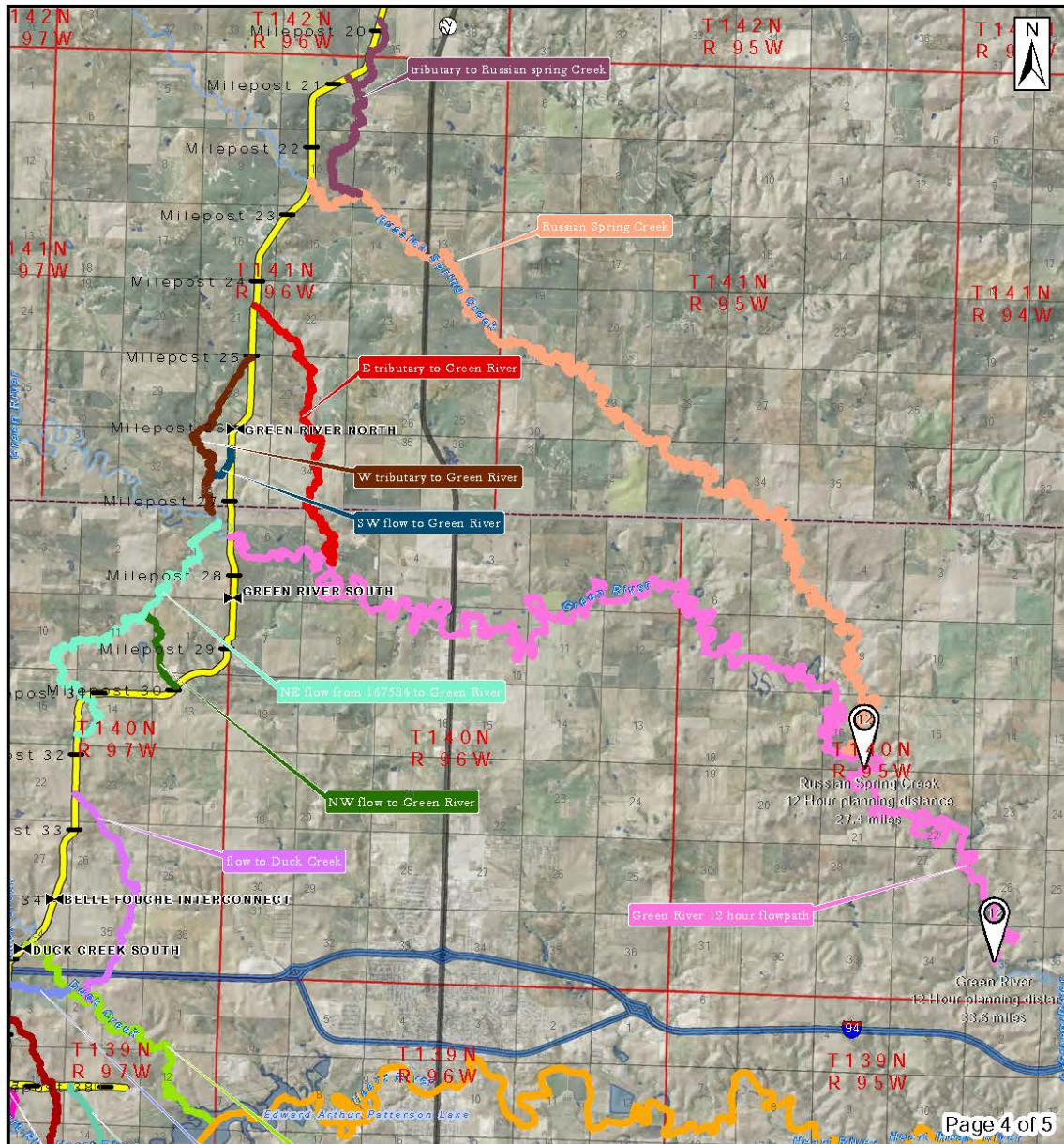
Page 3 of 5

<ul style="list-style-type: none"> — Bakken Oil Express Pipeline — Interstate — US Highway — ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> — Mile Markers — Valves — Rivers — Lakes and Ponds
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ALSO SEE TABLE 1.7.3 FOR DESCRIPTION OF 12 HOUR FLOW PATHS

April 1, 2014

BOE Pipeline, LLC 12 Hour Spill Response Plan

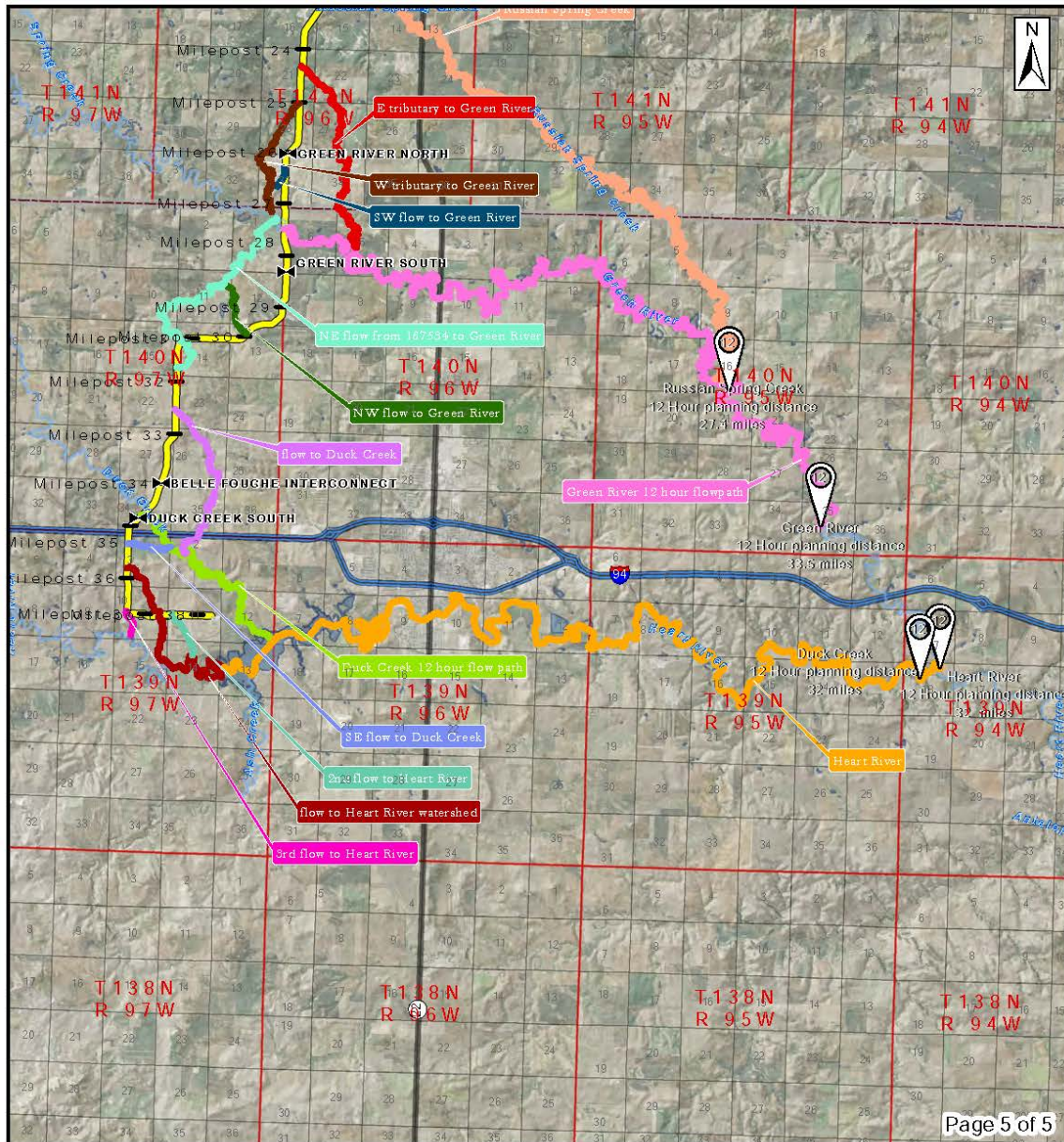


<ul style="list-style-type: none"> Bakken Oil Express Pipeline Interstate US Highway ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> Mile Markers Valves Rivers Lakes and Ponds
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ALSO SEE TABLE 1.7.3
FOR DESCRIPTION OF
12 HOUR FLOW PATHS

April 1, 2014

BOE Pipeline, LLC 12 Hour Spill Response Plan



Page 5 of 5

<ul style="list-style-type: none"> — Bakken Oil Express Pipeline — Interstate — US Highway — ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections City Boundaries 	<ul style="list-style-type: none"> — Mile Markers — Valves — Rivers — Lakes and Ponds
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ALSO SEE TABLE 1.7.3
FOR DESCRIPTION OF
12 HOUR FLOW PATHS

April 1, 2014

9.8.2 WORST CASE DISCHARGE VOLUME AND CALCULATIONS

Volume of worst case discharge: 20,280 barrels of Crude Oil (Oxy valve set destroyed)

The worst case discharge would be the Oxy Interconnect isolation valve set being destroyed. A maximum discharge of 851,731 gallons (20,280 barrels) could occur. Line sections 3, 4, and a segment of the Oxy pipeline would discharge should the Oxy Interconnect isolation valve set be destroyed. A 54.39 mile 27 hour planning distance calculation was done assuming a spill occurring under adverse weather conditions. This would be frost in the ground, a once in 25 year rain (3.6") and spring runoff. This worst case discharge would travel 0.3 miles to the west of the Oxy Interconnect on vegetated surface ground, then 32.05 miles in Crooked Creek, and then 22.04 miles in the Knife River to a furthest coordinate location of 47° 08' 54.6" N, 102° 27' 47.55" W. This 27 hour flow path is found below.

No breakout tanks are part of this pipeline system. No historical discharges have occurred as this pipeline was commissioned into operation in July of 2014.

The following are the maximum discharge volume of the three line segments and total volume that would be discharge in the case of the Oxy Interconnect valve set being destroyed.

Volume Calculations

Section Line #3 Volume

74634-53160 = 21474 feet of length

$$L \times \frac{\pi d^2}{4} = 21474 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 21474 \left(\frac{5.199}{4}\right) = 27,914 \text{ ft}^3$$
$$27914 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = \mathbf{208,810.84 \text{ gallons} = 4,972 \text{ barrels}}$$

Section Line #4 Volume

137389 - 74634 = 62755 feet of length

$$L \times \frac{\pi d^2}{4} = 62755 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 62755 \left(\frac{5.199}{4}\right) = 81,571 \text{ ft}^3$$
$$81571 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = \mathbf{610,233 \text{ gallons} = 14,529 \text{ barrels}}$$

Oxy Interconnect

Pipeline from tank to BOE Pipeline ≈ 1.5 miles.

Assumed: Standard 8" pipe.

Valving would prevent tank discharge into pipeline.

D inside = 8.125"

5280 x 1.5 = 7920 feet of length

$$L \times \frac{\pi d^2}{4} = 7920 \times \frac{\pi \left(\frac{8.125}{12}\right)^2}{4} = 7920 \left(\frac{1.4402}{4}\right) = 2,852 \text{ ft}^3$$

$$2852\text{ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = \mathbf{21,332 \text{ gallons} = 508 \text{ barrels}}$$

Discharge Volumes at Maximum Pressure

Pump at truck terminal = 3354 gal/min
 Oxy Interconnect = 729 gal/min
 Belle Fourche Interconnect = 3500 gal/min

Total Volume discharge due to Pressure = (3354 + 729 + 3500) x 3 minutes x ½ volume due to valve closure
 = 11,375 gallons

Worst case total maximum volume discharge = section 3 + section 4 + Oxy
 = 208,811 gals. + 610,223 gals. + 21,332 gallons + 11,375 = 851,741 gallons = 20,280 barrels of Oil

9.8.3 WORST CALCULATION PLANNING DISTANCE

Worst Case Planning Distance Calculations BOE Pipeline, LLC Stark and Dunn County, ND Calculations based on Appendix C Subpart 112 of Title 40 Substantial Harm

Worse case discharge calculations assume a spill occurring under adverse weather conditions. Frost in ground, One in 25 year rain event (3.6 inches) and spring runoff flood condition.

Drainage Flow Path: 0.3 miles in drain feature on land to Crooked Creek, then 30.9 miles in Crooked Creek to reach Knife River, and 150.1 miles in Knife River to reach Missouri River.

Elevations: 2233 feet at Oxy Interconnect Valve Set. 2223 feet where drainage feature would enter Crooked Creek. 2067 feet elevation where Crooked Creek enters Knife River.

Response Time: 27 hours= 24 hours for arrival + 3 hours for deployment

A) Transit time from valve set to Crooked Creek tributary in drainage feature. (1584 feet= 0.3 miles)
 Slope from Oxy Interconnect valve set to Crooked Creek tributary= (2233-2223)/1584

$$=10 \text{ feet}/1584 \text{ feet}= 0.0063$$

N1= Manning roughness coefficient to drain feature (Steam<100') Winding= 0.04
 A midstream depth of 2 feet was used for flood condition.

Chezy-Manning equation

$$\text{Velocity}_A = (1.5/0.04) (0.667 \times 2.0)^{2/3} [(0.0063)^{1/2}] = 3.61 \text{ ft./sec.}$$

$T_A = \text{Travel Time} = (1584 \text{ ft.}) / (3.61 \text{ ft. /sec}) = 438 \text{ seconds} = 7.3 \text{ minutes} = 0.122 \text{ hours}$
 $= 1282.64 \text{ minutes} = 21.38 \text{ hours}$ to get to Knife River - 12 hour transit will be in Crooked Creek
 $2.12 \text{ ft/sec} (60 \text{ sec/min}) (60 \text{ min/hr.}) = 7,632 \text{ ft. /hr.} = 1.445 \text{ mi/hr.}$
 $T_{12 \text{ hours}} = (12) (1.445 \text{ mi/hr.}) = 17.34 \text{ miles} = 91,584 \text{ feet}$ in Crooked Creek

B) Transit from pipeline in Crooked Creek (32.05 miles x 5280 = 169,224 feet)

Slope = $(2223-2067/163152)/169,224 = 0.000922$

$N_1 = (\text{Stream less than 100 feet})$ winding 0.04 Google width 7 feet

Midstream Depth = 4 feet

Velocity_B = $(1.5/0.04) (0.667 \times 4.0)^{2/3} [(0.000922)^{1/2}]$

= $(37.5) (1.92) (0.0304) = 2.19 \text{ ft. /sec}$

$T_B = \text{Travel Time} = (169224 \text{ ft.}) / (2.19 \text{ ft. /sec}) = 77,410.2 \text{ seconds}$

= 1290.17 minutes = 21.5 hours to get to Knife River

$T_C = \text{Time Remaining in Knife River} = 27 \text{ hours} - T_B - T_A = 5.376 \text{ hours} = 322.5 \text{ minutes}$

C) Drainage Flow Path: Knife River to Missouri River is 150.1 miles

USGS 06339100 Knife River at Manning, ND

Peak Velocity = 6.01 ft. /sec on March 3, 1992 15:55

$V_C = 6.01 \text{ ft. /sec} (60 \text{ sec/min}) (60 \text{ min/hr.}) = 21,636 \text{ ft. /hr.} = 4.1 \text{ miles/hour}$

$D_C = T_C V_C = 5.376 \text{ hours} (4.1 \text{ miles/hour}) = 22.04 \text{ miles}$

Total Distance = 0.3 + 32.05 miles + 22.04 miles = 54.39 miles = 287,188 feet

27 Hour Planning Distance = 54.39 miles

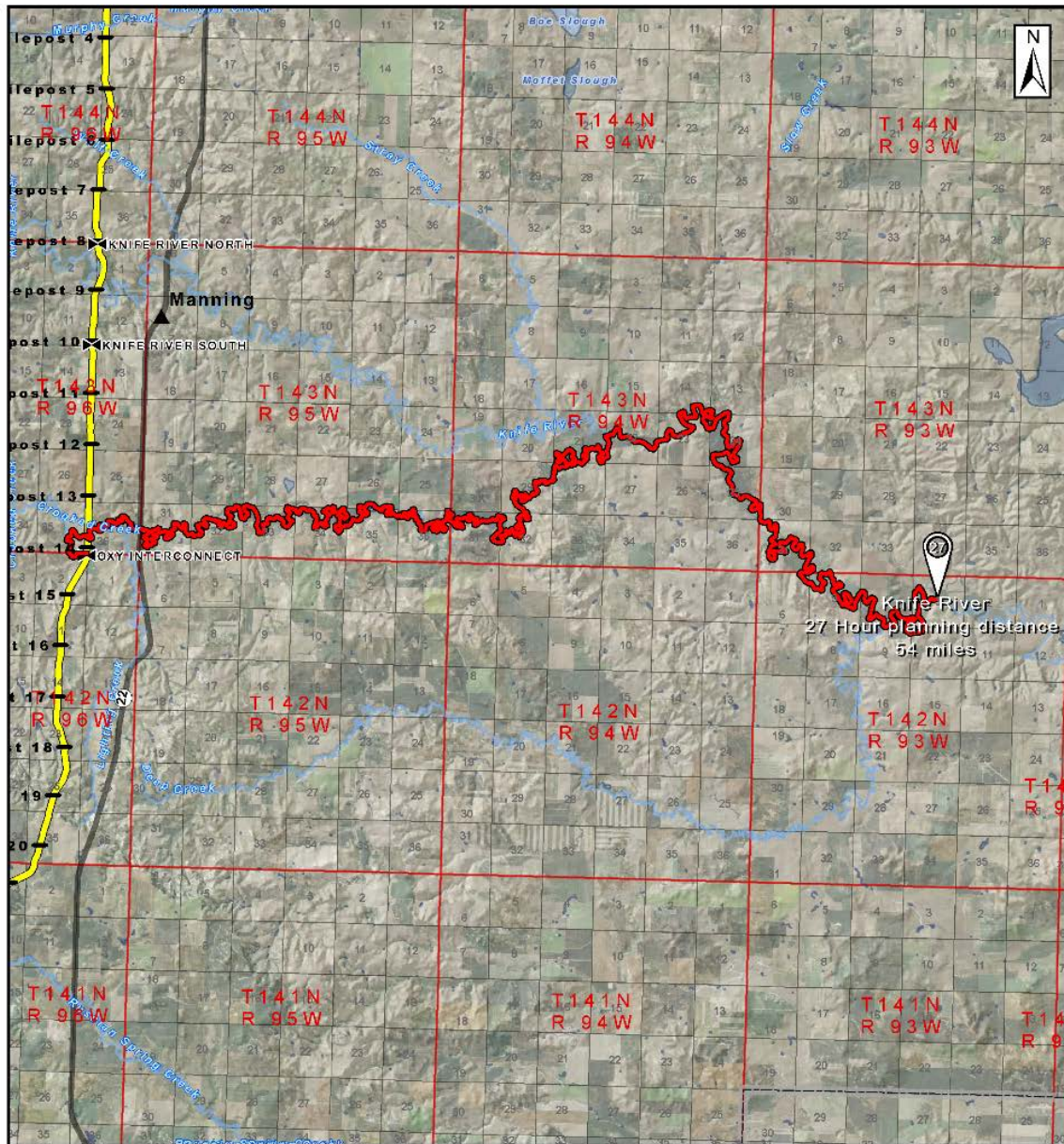
This worst case discharge would travel 0.3 miles to the west of the Oxy Interconnect on vegetated surface ground, then 32.05 miles in Crooked Creek, and then 220.4 miles in the Knife River to a furthest coordinate location of 47°08' 54.6" N, 102°27' 47.55" W.

9.8.4 WORST CASE DISCHARGE MAP

Volume of worst case discharge: 20,280 barrels of Crude Oil (Oxy valve set destroyed)

This worst case discharge would travel 0.3 miles west of the Oxy Interconnect on vegetated surface ground, then 32.05 miles in Crooked Creek, and then 220.4 miles in the Knife River to a furthest coordinate location of 47°08' 54.6" N, 102°27' 47.55" W.

BOE Pipeline, LLC 27 Hour Worst Case Planning Distance



<ul style="list-style-type: none"> — Bakken Oil Express Pipeline — Interstate — US Highway — ND Highway 	<ul style="list-style-type: none"> Counties Townships Sections CityBoundaries 	<ul style="list-style-type: none"> ▶ Valves — Mile Markers ~ Rivers ~ Lakes and Ponds
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TOTAL LENGTH OF FLOW
54 MILES

TOTAL TIME OF FLOW
27 HOURS

KLJ
April 23, 2014

9.8.5 SMALL, MEDIUM, AND LARGE DISCHARGES

This pipeline has the potential of experiencing a large/worst case discharge volume of up to 851,741 gallons (20,280 bbl.), a medium discharge of equal to or less than 36,000 gallons, as well as a small discharge of less than 2,100 gallons. Each line section of the response zone has a maximum discharge volume of over 36,000 gallons and therefore has the potential to experience a large/worst case discharge volume.

A potential large case pipeline discharge would occur if the main line pipeline was completely severed in half. Maximum potential discharge for the pipeline being severed in half would range from 60,557 gallons within section isolation Section #7 to a maximum of 621,898 gallons (14,800 barrels). Table 1.7.1 lists the maximum discharge volumes for each isolation line section.

A potential worst case pipeline discharge would occur if an above ground main line valve set was destroyed. Maximum potential discharge for a valve set ranges from 190,450 gallons for the BOE Rail Facility valve set to a maximum of 851,741 gallons for the Oxy Interconnect valve set. Table 1.7.2 lists the maximum discharge volumes for each isolation valve set that could be destroyed.

The pump station on the north end of the pipeline has a drainage catch basin in the northwest corner of the site. A discharge would flow northwest and then west to the catch basin. This containment should prevent crude oil from being discharged off owner operated property. No other secondary containment exists for the pipeline.

Due to the installation of a SCADA system, the potential impact to sensitive environments and waterways is minimized.

The most significant hazards posed by the pipeline product, if released, are:

- Burn hazard to response team.
- Pipeline discharge that could lead to water pollution with a high potential for a major fire.

Remediation equipment is available for discharge scenarios associated with the pipeline. OSRO would be contacted for assistance with remediation.

9.8.5.1 Small and Medium Discharges

A **small discharge** is defined as a discharge volume less than or equal to 2,100 gallons. The discharge scenarios for this facility for small spills are described in this section. Immediate actions for Crude Oil Storage Areas and for all other areas are contained in Section 2.1 Immediate Actions and Section 4.2.3 General Emergency Spill Response Actions.

40 CFR 112 Appendix E provides guidelines for response resources for small discharges. Based on the guidelines in Appendix E, the following equipment is required:

Small discharge (2,100 gallons = 50 barrels):

- 1,000 feet of boom that can be deployed within 1 hour
- 2,100 gallon-per-day recovery capacity
- 4,200 gallon-per-day storage capacity

BOE/Progress Solutions spill response personnel will respond as contacted by the Control Room dispatcher or QI. Response equipment listed in Section 3.6 is located in various locations and is expected to be used in the event of a spill. The 1,000 feet of boom is owned and stored at Baranko Brothers in Dickinson, ND. The Bakken Oil Express Rail Facility or the Killdeer truck terminal is to be the main containment response equipment for use in a spill.

A **medium discharge** has a volume greater than 2,100 gallons but less than 36,000 gallons. In the event of a medium spill, site personnel would take initial response actions as described in Section 2.1 and Section 4.1.3 General Emergency Spill Response Actions. A representative from BOE/Progress Solutions will contact the County Sheriff Department (911), the BOE/Progress Solutions spill response team, and emergency contractors as needed (listed in Table 2.1 and 2.2) to respond and provide emergency response and clean-up resources to handle medium spill scenarios.

Response to a medium discharge may require assistance from multiple contractor response units, and potentially, local or contacted mutual aid organizations. Contacting the local 911 emergency number will cause the emergency operator to contact all necessary sheriff and fire department personnel to assist with emergency response. BOE Pipeline LLC/Progress Solutions will utilize equipment trailers from the Bakken Oil Express Rail Facility and the Killdeer Truck Facility will respond with contractor equipment, and Sakakawea Area Spill Response, LLC will provide boats and trailers if necessary.

40 CFR 112 Appendix E provides guidelines for response resources for medium discharges. Based on the guidelines in Appendix E, the following equipment is required:

Medium discharge (36,000 gallons = 857 barrels):

- Recovery capacity equal to 50 percent of the medium discharge volume = 18,000 gallons.
- Temporary storage capacity equal to two times the recovery capacity = 36,000 gallons.
- Equipment on site in no more than 12 hours.
- 1,000 feet of boom that can be deployed within 1 hour.

The pipeline consists of 178,550 feet of 16-inch pipe and 23,474 feet of 20-inch pipe, nine valve sets, and a pump/metering station. All areas of the pipeline contain crude oil. Only the pump/metering station at Gerry's Corner has secondary containment. The likelihood of experiencing a small or medium discharge from the storage tanks is minimal. Discharge scenarios for small and medium discharges are as follows.

- A leak or rupture of the pipeline and/or fitting connections is possible. Isolation of the pipeline leak or rupture will occur to minimize the spill by closing valving when necessary. This reduces the amount of crude oil that could be discharged due to pipe and/or fitting connection failures.
- The potential for a quantity of oil to be discharged during a fire does exist. Should the fire create an explosion, a small to medium quantity of oil will flow on the ground or within the trench of a cut line should a discharge occur. For the pump/metering station,

a discharge may be able to extend past the secondary containment structure should firefighting liquids be used; however, most would be contained within the tank secondary containment structure.

9.8.5.2 Large/Worse Case Discharges

This pipeline has the potential of experiencing a large/worst case discharge volume of up to 851,741 gallons (20,280 bbl.) A large discharge is any discharge greater than 36,000 gallons (857 barrels). Each line section of the response zone has a maximum discharge volume of over 36,000 gallons and therefore has the potential to experience a large/worst case discharge volume.

A potential large case pipeline discharge would occur if the main line pipeline was completely severed in half. Maximum potential discharge for the pipeline being severed in half would range from 60,557 gallons within section isolation Section #7 to a maximum of 621,598 gallons (14,800 barrels) for isolation Section #4. Table 1.7.1 lists the maximum discharge volumes for each isolation line section. Line ruptures or third party damage have capabilities of being a large/worst case leak.

A potential worst case pipeline discharge would occur if an above ground main line valve set was destroyed. Maximum potential discharge for a valve set ranges from 190,450 gallons for the BOE Rail Facility valve set to a maximum of 851,741 gallons for the Oxy Interconnect valve set. Table 1.7.2 lists the maximum discharge volumes for each isolation valve set that could be destroyed.

Worst-case discharge (barrels per day):

	<u>Tier I</u>	<u>Tier II</u>	<u>Tier III</u>
Oil recovery capacity	2,701	4,502	7,203
Contracted on water response capacity	1,875	3,750	7,500
Identified on water response capacity	827	752	0

- Equipment on site in no more than 12 hours.
- 1,000 feet of boom that can be deployed within 1 hour.

The worksheet for calculating the worst-case discharge is located in Appendix D.

9.8.5.3 Potentially Public Drinking Water Intakes and Public Water Systems

It is common for rural residences in the area to use private wells for domestic and agricultural purposes. According to North Dakota State Water Commission data, several observations and stock/domestic wells exist within the pipeline corridor. In addition, five active public water systems, both community and non-community, exist near the city of Killdeer, ND at the northeast end of the north end of the pipeline.

The closest surface water intake is the Southwest Water Authority Antelope Valley Station in Mercer County, approximately 45 miles east of the pipeline. This water intake is not located within the discharge flow paths and is a surface water source from Lake Sakakawea. The city of Dickinson receives its drinking water from the Southwest Water Authority intake from Lake Sakakawea. The ND Department of Health assessment of Dickinson's source water for their water system is moderately susceptible to potential contaminant sources.

**TABLE 9.8.5.3
Active Public Water Systems**

ID	LATITUDE/LONGITUDE	DISTANCE FROM PIPELINE	OWNER
Industrial Wells			
13449	47.355955N, -102.804155W	1605.62 feet	William Pavlenko
64263	47.351276N, -102.791817W	1044.00 feet	Missouri Basin Well Service
64725	47.35674N, -102.802497W	1155.20 feet	Bill Pavlenko
65287	47.355819N, -102.798498W	127.10 feet	Manley Truchan
69146	47.362142N, -102.79982W	2438.61 feet	John Reiss
69147	47.362142N, -102.79982W	2438.61 feet	John Reiss
Domestic Wells			
12767	47.126301 N, -102.806575W	633.07 feet	Earl Gustafson
12774	47.083862N, -102.818092W	1703.60 feet	Val Staudinger
12921	47.214124N, -102.796632W	829.80 feet	Howard Brew
12923	47.214124N, -102.796632	829.80 feet	Howard Brew
12935	47.19256N, -102.791492W	2141.44 feet	Del Dvorak
13138	47.300908N, -102.796474W	424.50 feet	Zabalotony Farms Inc.

**TABLE 9.8.5.3 (Cont.)
Active Public Water Systems**

ID	LATITUDE/LONGITUDE	DISTANCE FROM PIPELINE	OWNER
Domestic Wells (continued)			
13445	47.348521N, -102.798203W	652.33 feet	Manley Truchan
13448	47.339712N, -102.806412W	2632.60 feet	Pat Wetch
52046	46.876943N, -102.913703W	947.15 feet	Allan Thompson
52051	46.881604N, -102.918295W	1973.61 feet	Milo Burwick
52052	46.876969N, -102.917017W	1754.92 feet	Tom Ehli
52054	46.88253N, -102.919572W	2293.68 feet	Milo Burwick
52061	46.881604N, -102.918295W	1973.61 feet	Milo Burwick
52082	46.874584N, -102.907364W	642.23 feet	Nick Mosbrucker
52083	46.870852N, -102.902256W	850.96 feet	Boniface Knopik
52084	46.875712N, -102.88759W	2474.24 feet	Nick Mosbrucker
52446	46.96224N, -102.843132W	1887.89 feet	Barber Transportation
52901	46.904356N, -102.905937W	1874.92 feet	Tim Zander
62539	46.96318N, -102.85598W	1219.90 feet	Al Roshau
64264	47.353999N, -102.795824W	352.50 feet	Manley Truchan
64436	46.892417N, -102.912603W	492.20 feet	Vern Bleich
65185	47.349485N, -102.802455W	1590.44 feet	Frontier Services
65209	47.351276N, -102.791817W	1044.30 feet	Manley Truchan
67149	47.34138N, -102.80379W	1790.42 feet	Carroll Drilling
67154	47.355831N, -102.803823W	1402.76 feet	John Bang
69131	47.355831N, -102.803823W	1402.76 feet	Bill Pavlenko
69132	47.355819N, -102.798498W	127.10 feet	Manley Truchan
69587	47.359427N, -102.793153W	1884.81	Killdeer Man
Domestic/Stock Wells			
12599	47.049675N, -102.836622W	1012.49 feet	Charles V. Kadrmas
52876	46.937472N, -102.878395W	2154.94 feet	Anton V. Tuhy

**TABLE 9.8.5.3 (Cont.)
Active Public Water Systems**

ID	LATITUDE/LONGITUDE	DISTANCE FROM PIPELINE	OWNER
Stock Wells			
12659	47.47814N, -102.839178W	1669.67 feet	Charles V. Kadrmas
12768	47.126301N, -102.806575W	633.07 feet	Frank C. Sadwosky
12775	47.084792N, -102.814276W	832.25 feet	Lester Metz
12791	47.080521N, -102.807854W	1103.50 feet	Otto Ridl
12916	47.228556N, -102.80236W	937.30 feet	Melvin Kadrmas
13137	47.308279N, -102.807429W	2297.72 feet	Andrew Kulish
13145	47.268673N, -102.796618W	155.73 feet	Walt Steffen
13147	47.266857N, -102.804998W	2256.65	Trica Schlegel
52047	46.877864N, -102.907315W	732.06 feet	Darrell Chruszch
52050	46.877864N, 102.907312W	732.06 feet	Darrell Chruszch
52875	46.942189N, -102.853427W	2794.14 feet	Walt Steiner
52878	46.922958N, -102.88875W	1103.34 feet	Experiment
52900	46.903424N, -102.907215W	2080.17 feet	Rod & Gordon Kostelecky
55981	47.095019N, -102.813004W	1878.12 feet	Harlan Bullinger
63937	47.352184N, -102.793153W	763.20 feet	Manley Truchan
65963	47.349472N, -102.799785W	928.12 feet	Manley Truchan
68451	46.974068N, -102.84951W	736.90 feet	Delmar Ficek
Test Hole			
52444	46.949145N, -102.850461W	814.73 feet	Dorman Bezdicek
52870	46.944875N, -102.857216W	1548.17 feet	Walt Steiner
52871	46.944983N, -102.857277W	1463.30 feet	Walt Steiner
55982	47.09037N, -102.809188W	482.92 feet	Harlan Bullinger
64793	47.315541N, -102.80205	963.53 feet	Gerald Kulish
64794	47.31461N, -102.800715W	632.20 feet	Gerald Kulish
65184	47.344097N, -102.802433W	1284.10 feet	Frontier Services
67151	47.315541N, -102.80205	963.48 feet	Gerald Kulish
69133	47.355819N, -102.798498W	127.10 feet	Manley Truchan

In the event of a catastrophic failure, rapid containment plans will be implemented to ensure any petroleum leaks or spill do not enter surface water streams or contaminate groundwater. Every effort should be made for quick and complete containment. Also see Appendix C for additional information.

9.8.5.4 Potentially Affected Environmentally Sensitive Areas

There are no state or national parks or other significant recreational areas within 2 miles of the pipeline.

Based on a 12-hour response time for a pipeline discharge along all nine flow paths watersheds, the pipeline is located where it could impact:

- Lake Ilo National Wildlife Refuge.
- Tributaries, which flow into the Missouri River (navigable water). The pipeline crosses Murphy Creek, Wolf Creek, Knife River, Crooked Creek, Lighting Creek, Russian Spring Creek, Green River, and Duck Creek. A flow path crossing the south end of the pipeline flows into the Heart River. These tributaries are environmentally sensitive areas that have the potential to be affected.
- Threatened or Endangered Species.
 - Whooping Crane, Piping Plover, Dakota Skipper, Interior Least Tern, Pallid Sturgeon, Sprague's Pipit, Black Footed Ferret, and Gray Wolf.

The 27-hour planning distance for the Oxy Interconnect worst case could impact:

- Crooked Creek and Knife River Tributaries, which flow into the Missouri River (navigable water).
- Threatened or Endangered Species.
 - Whooping Crane, Piping Plover, Dakota Skipper, Interior Least Tern, Pallid Sturgeon, Sprague's Pipit, Black Footed Ferret, and Gray Wolf.
- 11 Farmsteads along the flow path.

Therefore, the potential to cause significant and substantial harm to the environment in the event of an oil discharge exists. Appendix C is a discussion of issues that could cause significant and substantial harm including Unusually Sensitive Areas. Sensitivity of the environment at risk is also provided.

9.9 As-Built Plan and Profile Drawings

BOE Pipeline is currently under construction. Alignment sheets for the as-built plans will be completed three months after construction is complete. The issued for construction alignment sheets will be added to the response plan once they are completed. Appendix F contains a copy of the BOE alignment sheets for the pipeline that are issued for construction. They are to serve as as-built plans until actual plans are completed and added to the response plan.

9.10 Material Transported: Crude Oil, Hazards, Response

9.10.1 HEALTH HAZARD

Bakken Oil Express, LLC (BOE) Pipeline and its line sections transport crude oil. Crude oil is a mixture of components. Specific hazards for the components are listed below, based on a Safety Data Sheet (SDS) for crude oil from the Bakken.

TABLE 9.10.1 Hazardous Material Components that could be Stored at this Pipeline						
Material Name	Vapor Density ¹	Flammable Range ²		Flash Point ³	Specific Gravity ⁴	Toxicity Level ⁵
		LEL	UEL			
Crude Oil (Sweet) 100%	3-5	0.9%	7%	<73 to >200°F	0.7 to 0.9	ConocoPhillips-TWA:100 mg/m ³ 8 Hours
Naphthalene 0-0.9	4.4	0.9%	5.9%	174.2°F	1.162	OSHA TWA: 10 ppm:50 mg/m ³ ACGIH-TWA/STEL: 10/15 ppm
Benzene <1.0%	2-3	~1.2%	~7.8%	-12°F	0.88	OSHA TWA/STEL: 1/5 ppm ACGIH TWA/STEL: 0.5/2.5 ppm
Hydrogen Sulfide Variable <0.2	1.2	~4.3%	~46%	~-64°F	1.96 (varies)	OSHA PEL-Ceiling/Peak: 20/50 ppm ACGIH-TWA/STEL: 1/5 ppm

Note 1: Vapors/gases with a vapor density of less than one will rise in air and be trapped at the top of enclosures. Vapors greater than 1 will sink in air, travel along ground, and settle in low areas.

Note 2: LEL (lower explosive limit) is the same as LFL (lower flammable limit). UEL (upper explosive limit) is the same as UFL (upper flammable limit).

Note 3: Flash point is the temperature at which enough vapors are present to ignite and flash across the liquid's surface when an ignition source is provided.

Note 4: Specific gravity is whether a material will float or sink in water. Any number less than one means the product will float on the surface. Any number greater than one will sink beneath the water. A number equal to one will disperse throughout water.

Note 5: These are published exposure limits found on Safety Data Sheets. PEL is OSHA's permissible exposure limit. TLV is threshold limit value-time weighted average. STEL is time weighted (8-hour) average-short term (15-min.) exposure limit.

NFPA Hazard Identification: 1 Health, 3 Flammability, 0 Reactivity

Crude oil, natural gas and natural gas condensate can contain amounts of sulfur, nitrogen and oxygen containing organic compounds as well as trace amounts of heavy metals like mercury, arsenic, nickel, and vanadium. Composition can vary depending on the source of crude.

Crude Oil may cause eye, skin, respiratory and nasal irritation. Ingestion may cause vomiting, resulting in aspiration and chemical pneumonia. Central nervous system effects from inhalation may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

There have been rare occurrences of precancerous warts on the forearm, back of hands and scrotum from chronic prolonged skin contact. These warts were not necessarily on the exposed parts of the body. Crude oil is not listed as a carcinogen by the NTP, IARC, or OSHA; however, repeated skin contact by laboratory mice produced skin tumors. The tumors reduced in occurrence when the animals' skin was washed between applications.

Naphthalene is toxic to blood, kidneys, the nervous system, the reproductive system, liver, mucous membranes, gastrointestinal tract, upper respiratory tract, and the central nervous system (CNS). Repeated or prolonged exposure to the substance can target organ damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or multiple human organs.

Benzene is on the NTP, OSHA and IARC carcinogen lists. The IARC and EPA have determined benzene is carcinogenic to humans (Group 1 Carcinogen). Chronic inhalation of certain levels of benzene causes blood disorders in humans, including leukemia (cancer of blood forming organs). Benzene specifically affects bone marrow (the tissues that produce blood cells). Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Several occupational studies suggest benzene may impair fertility in women exposed to high levels. However, these studies are limited due to lack of exposure history, simultaneous exposure to other substances, and lack of follow-up.

Inhalation (5-10 minutes) of very high levels of benzene (10,000-20,000 ppm) can result in death. Lower levels (700-3,000 ppm) can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Ingestion can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, coma, and death. Skin contact may cause redness and sores. Eye contact may cause irritation and cornea damage.

Warning - Hydrogen sulfide may be present. Continuous exposure greater than 15-20 ppm can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of consciousness. Greater than 500 ppm can cause rapid unconsciousness due to respiratory paralysis and death by suffocation unless the victim is removed from exposure and resuscitated. Greater than 1,000 ppm can cause immediate unconsciousness and death. The characteristic "rotten egg" odor is not a reliable indicator for warning of exposure, as loss of smell occurs rapidly at concentration above 50 ppm.

9.10.2 INITIAL SPILL RESPONSE

The following initial actions in Table 9.10.2 must be taken (if it is safe to accomplish) for a crude oil spill response. These actions are prioritized based on a person being on-site at the spill to ensure the person's safety. If more than one person is on-site, the following actions can be assigned to a specific person to reduce the time required to isolate the discharge site, make immediate notifications, and initiate control actions. When there are several persons on-site, the senior person is responsible for ensuring these actions are safely accomplished. Personnel communication is conducted by land line phone and cellular phone as needed. Company radio may be used as available.

**TABLE 9.10.2
INITIAL RESPONSE ACTIONS**

Action	Notes
1. Identify the source of spill. Contact BOE /Progress Solutions Control Room dispatcher at (844) 220-9234 to implement the closing of valves and shut down of pumps to stop the flow of product. Identify the spill perimeter. Take immediate actions necessary to preserve life if safe to do.	It is critical that notification be made immediately to ensure the safety of personnel and obtain additional resources as quickly as possible to control and minimize the discharge. Control Room dispatch will contact QI/IC, Belle Fourche Pipeline (307) 234-6930, Oxy pipeline 1-800-733-3665, and Tesoro High Plains Pipeline (866) 283-7676 emergency 24/7 operations. Do not enter any spill site to accomplish the shutdown. Stay upwind and up gradient of the spill, avoid contact with the spilled material.
2. Warn personnel and public within the spill immediate area. Operations level will have nonessential personnel evacuate to the area <i>up gradient and upwind</i> and report to the meeting place (Rail Facility Office) away from the spill area. Prevent any vehicles (other than response team) from entering the area.	This action is to prevent any inadvertent action from compounding the situation.
3. The senior person directing activities may call 911 for site perimeter control, personnel rescue, and/or fire assistance.	
4. Operations level should isolate the discharge spill area and eliminate ignition sources, if it can be accomplished safely . Initiate control action to confine and contain the release to the smallest area possible, if it can be accomplished safely .	Shut down vehicles and other electrical sources as necessary. Ensure no one is smoking near the discharge/spill site. Vehicles are not to be used in hot zones as they can be a source of ignition. Cell phones can also be a source of ignition.
Note: Once the QI/IC arrives at the spill site, the senior person directing the initial activities will brief the QI on the current situation and actions taken. The QI will coordinate all further activities as the IC.	
5. Notify nearby locations that could be impacted.	Table 2.2 identifies impact locations.

**TABLE 9.10.2
INITIAL RESPONSE ACTIONS (CONT.)**

Action	Notes
<p>6. Notify spill response support to respond. If discharge is beyond the capability of the primary organization, notify other oil spill response organizations to respond with needed additional resources. BOE/Progress Solutions responds with their employees and equipment to all spills. They are the primary responders. The QI may contact additional contractors for additional help.</p>	<ul style="list-style-type: none"> • Small: BOE/Progress Solutions Spill Response Team Baranko Brothers 701-264-5004 • Medium to Large: BOE/Progress Solutions Spill Response Team Emergency Manager, Sheriff, Fire- local 911 Baranko Brothers 701-264-5004 • Catastrophic: BOE/Progress Solutions Spill Response Team Baranko Brothers 701-264-5004 Clean Harbors is requested by BBI
<p>7. County, federal, and state notifications as needed by QI or his/her designate.</p> <p>Notify the Stark and/or Dunn County Local Emergency Manager if a release occurs. Contact appropriate federal and state agencies according to their notification requirements. Always consider if a discharge may pose a threat to human health or the environment.</p>	<ul style="list-style-type: none"> • Dunn County Emergency Management: Local 911 or (701) 290-1769. • Stark County Emergency Management: Local 911 or (701) 577-7707. • National Response Center (NRC): (800) 424-8802. • North Dakota Department of Health: (701) 328-5210 or (800) 472-2121. • North Dakota Game & Fish Dept. (Dickinson): (701) 328-6300 or (701) 227-7432. • US Fish and Wildlife Service (Bismarck): (701) 250-4481. • Lake ILO National Wildlife Refuge (701) 548-8110. • USDA NRCS (Dickinson): (701) 530-2000 or (701) 225-5113 (Dickinson). • ND PSC: (701) 328-2400.

9.10.2 FIREFIGHTING METHODS

9.10.2.1 Procedures and Fire Department Resources

BOE/Progress Solutions does not maintain adequate resources along the pipeline or at its Dickinson Office for fighting a fire along the pipeline. BOE/Progress Solutions would isolate the operating line section where a fire was occurring in using isolation valves as needed. This would reduce the available fuel source, which is crude oil. BOE/Progress Solutions' strategy would be to let a fire burn itself out as the fuel source is depleted should a fire occur. The local rural fire department would be contacted dialing local 911 and asking for fire assistance. The fire department would look to contain the fire to the fuel source area if possible and may ask additional fire departments to assist due to mutual aid agreements between departments. Primary fire department responders are the Killdeer/Dunn county rural fire department and the Stark County Fire Department. Assistance may be supplied by the Dickinson Fire Department should the rural fire department chief request them.

The pipeline is outside any city limits. Towns close to the pipeline are Killdeer, ND near Section 1 on the north end, Manning, ND near Section 2, 3, 4 toward the middle of the pipeline and Dickinson, ND near Sections 5, 6, 7, 8 on the south end. The response zone Sections 1, 2, 3, and 4 are in Dunn County and Sections 5, 6, 7, and 8 are in Stark County. Upon discovery of an incident, BOE/Progress Solutions will call 911 if necessary to notify all appropriate emergency response departments. The West Dunn Fire District (Killdeer Fire Department) will be contacted and will provide emergency response personnel and equipment for firefighting activities along Sections 1, 2, 3, and 4. The Dickinson Rural fire department will respond in Sections 5, 6, 7, and 8. Each Fire Department Chief will determine if additional resources are required to assist. The Incident Commander will offer assistance of BOE/Progress Solutions personnel and resources to the commanding fire chief. Once the responding agency arrives, a command structure will be established.

The West Dunn Fire District and Killdeer Fire Department are one group based out of one building using the equipment available. The West Dunn Fire District will be called and resources would respond from the Killdeer fire station at 151 Central Avenue North in Killdeer, ND. Estimated arrival time is 30 minutes along the pipeline in Dunn County. The West Dunn Fire District/Killdeer Fire Department can be contacted at (701) 764-5006. Initial response personnel would be 5-8 firemen; the West Dunn County/Killdeer fire department has two engine trucks and one initial responder truck. All trucks will be dispatched from the fire station at 209 Central Avenue in Killdeer, ND. Killdeer has 24 active volunteer firemen. At least two of the initial responding fire department personnel would have 24-hour First Responder Operations Level HAZMAT training.

Upon assessment of the incident, a county HAZMAT equipment truck and team may be called to respond from Minot, ND or Bismarck, ND. Additional resources may be called and will respond from surrounding communities by mutual aid agreements. The Dickinson Rural Fire Department has a mutual aid agreement with the Killdeer Fire Department. The Minot Air Force Base can respond with specialized equipment for petroleum fires if needed.

Should a fire occur in Stark County, the Dickinson Rural Fire Department would have jurisdiction. The Dickinson Rural Fire Department provides fire and rescue to parts of Stark County, Dunn County and neighboring communities. This Rural Fire and Rescue Department has

40 volunteer fireman, which can be contacted at (701) 456-7877. The fire chief is Andy Paulson and the assistant chief is Kevin Berger. The department has 10 captains and they operate out of two fire stations. The main station is at 706 South Main and the North fire station is at 2489 3rd Avenue West. They have one fire truck housed at the Dickinson City Fire Department at 25 2nd Avenue West. The Dickinson Rural Fire and Rescue Department serves a 380-square mile area in Stark and Dunn County. The fire department has three pumper trucks, one tanker truck, three grass trucks, one equipment truck, one rescue truck, one tow vehicle, two Polaris 4 x4 grass units and a rescue transport unity, one dive rescue truck, two dive rescue boats, and one dive rescue command trailer. The Dickinson Rural Fire Department provides mutual aid with the following city fire departments: Dickinson, Gladstone, New England, South Heart and Killdeer (Dunn County). They also provide Dive Rescue service to southwestern North Dakota. Response time will vary depending on location along the pipeline, personnel, and weather conditions. Fire response personnel have state-of-the-art paging systems. The Dickinson Rural Fire Department estimated response time is between 20 to 30 minutes to a pipeline site in Stark County. At least three of the initial fire department personnel responding would have 24-hour First Responder Operations Level HAZMAT training.

The Dickinson Rural Fire Department may have the City of Dickinson's Fire Department also respond for a fire caused by the BOE pipeline through mutual aid agreement. The City of Dickinson's Fire Department has six full time, 41 volunteer, and two Chaplin fireman. The fire chief is Robert Sivak and he can be contacted at (701) 456-7848. The Dickinson fire department is stationed at 25 2nd Avenue West in Dickinson, ND. This fire department has four pumper trucks, one regional response vehicle, one Decon trailer, one tow vehicle, and two inspection vehicles. An alert crew would be the initial responder to a fire call. Response time is estimated between 20 to 30 minutes.

If the incident is beyond the control of the local fire department or mutual aid, the IC has the option to mobilize an Oil and Gas industry Fire Specialist, such as Wild Well Control. If he/she determines this is the proper course of action, mobilization of resources to the site will require 24 hours for arrival. Wild Well Control's Emergency Number is 1-281-784-4700. Wild Well Control is based out of Houston, TX. The corporate office phone number is (281) 784-4700. Wild Well Control has facilities in Texas, Louisiana, Pennsylvania, and Casper, WY. Wild Well Control has previously worked in the Bakken area.

9.10.2.2 BOE/Progress Solutions Equipment-- Fire Suits

BOE/Progress Solutions employees have fire retardant clothing for each staff member and personnel protective equipment (PPE) that will be worn. PPE includes hardhats, leather gloves, safety glasses and steel-toed boots. Ten pound Class ABC fire extinguishers are available from the Rail Terminal Facility and the Truck Loading facility trailers.

Table 9.10.2.2a and 9.10.2.2b are BOE Emergency Response Trailer inventory located on the south end of the pipeline (BOE Rail Hub Facility) and the north end of the pipeline (Killdeer Truck Terminal). The entire 38.3 miles is considered one response zone. These trailers will be deployed based on the need for the equipment. This equipment is provided along the pipeline to ensure spill response and containment equipment is available for a response. Additional equipment is available from other responders and is identified in Section 3.5.

TABLE 9.10.2.2a
EMERGENCY RESPONSE EQUIPMENT
BOE PIPELINE, LLC - DICKINSON RESPONSE AREA TRAILER INVENTORY
AT BOE RAIL HUB FACILITY (701) 483-0454
3761 115TH AVENUE S.W., DICKINSON, ND 58601

8' x 20' Wells Cargo Trailer- Equipment

Type / Description	Quantity	Size	Date Fuel Changed	Operation Status
Shovels	4	N/A	N/A	YES
Rakes	2	N/A	N/A	YES
Braided Poly Rope	200 ft.	3/8 in diameter	N/A	YES
		4" x 4' sockets		
3M Absorbent pad (High Capacity)	10- 100 packs	20.5" x 15.5"	N/A	YES
3M Absorbent roll (High Capacity)	4 rolls	33" x 150'	N/A	YES
3M typeT-270 sorbent Boom	400 ft.	8 in. x 10' /4 in case	N/A	YES
Spare Tire	1	N/A	N/A	YES
Fire Blanket	1	N/A	N/A	YES
Tape "Caution-Spill Area Tape"	3	200 feet	N/A	YES
Tape "Danger-Do Not Enter"	3	200 feet	N/A	YES
Flagging Tape	10	100 feet	N/A	YES
Vinyl Storm Suits	18	Large, X-Large	N/A	YES
Orange Safety vests	18	N/A	N/A	YES
Wooden Stakes	2 bundles	1" x 2'	N/A	YES
Life Jackets	12	N/A	N/A	YES
Safety Cones	24	N/A	N/A	YES
Duct Tape	4 rolls	N/A	N/A	YES
Neoprene Safety Gloves	12 pair	Large, 12" 24-mil	N/A	YES
Leather Work Glove-Cowhide	1 pair	Large	N/A	YES
Flashlight(2 extra packs batteries)	4	N/A	N/A	YES
Protective Goggles	24 pair	N/A	N/A	YES
Safety Glasses - Clear	24 pair	N/A	N/A	YES
Ear Plugs	1 box	N/A	N/A	YES
First Aid/Blood borne Pathogen Kit	1	N/A	N/A	YES
Eye Wash solution	1	N/A	N/A	YES
Halogen Flood and Work Lights	2	N/A	N/A	YES
Hand Cleaner	2	N/A	N/A	YES
Fire Extinguishers	4	Class B-30 lb.	N/A	YES
Tyvek Shoe Covers	1 case/200	N/A	N/A	YES
Tyvek Suits QC Haz Mat	12-3x, 12-2x	3x (2x)	N/A	YES
Rags	2 boxes	N/A	N/A	YES

TABLE 9.10.2.2b (cont.)
EMERGENCY RESPONSE EQUIPMENT
LL TERMINALS, LLC. - KILLDEER RESPONSE AREA TRAILER INVENTORY
AT KILLDEER TRUCK FACILITY, 406 109TH AVENUE SW, KILLDEER, ND 58640
(701) 483-0435

8' x 20' Wells Cargo Trailer- Equipment

Type / Description	Quantity	Size	Date Fuel Changed	Operation Status
Shovels	4	N/A	N/A	YES
Rakes	2	N/A	N/A	YES
Braided Poly Rope	200 ft.	3/8 in diameter	N/A	YES
		4" x 4' sockets		
3M Absorbent pad (High Capacity)	10- 100 packs	20.5" x 15.5"	N/A	YES
3M Absorbent roll (High Capacity)	4 rolls	33" x 150'	N/A	YES
3M typeT-270 sorbent Boom	400 ft.	8 in. x 10'/4 in case	N/A	YES
Spare Tire	1	N/A	N/A	YES
Fire Blanket	1	N/A	N/A	YES
Tape "Caution-Spill Area Tape"	3	200 feet	N/A	YES
Tape "Danger-Do Not Enter"	3	200 feet	N/A	YES
Flagging Tape	10	100 feet	N/A	YES
Vinyl Storm Suits	18	Large, X-Large	N/A	YES
Orange Safety vests	18	N/A	N/A	YES
Wooden Stakes	2 bundles	1" x 2'	N/A	YES
Life Jackets	12	N/A	N/A	YES
Safety Cones	24	N/A	N/A	YES
Duct Tape	4 rolls	N/A	N/A	YES
Neoprene Safety Gloves	12 pair	Large, 12" 24-mil	N/A	YES
Leather Work Glove-Cowhide	1 pair	Large	N/A	YES
Flashlight(2 extra packs batteries)	4	N/A	N/A	YES
Protective Goggles	24 pair	N/A	N/A	YES
Safety Glasses - Clear	24 pair	N/A	N/A	YES
Ear Plugs	1 box	N/A	N/A	YES
First Aid/Blood borne Pathogen Kit	1	N/A	N/A	YES
Eye Wash solution	1	N/A	N/A	YES
Halogen Flood and Work Lights	2	N/A	N/A	YES
Hand Cleaner	2	N/A	N/A	YES
Fire Extinguishers	4	Class B-30 lb.	N/A	YES
Tyvek Shoe Covers	1 case/200	N/A	N/A	YES
Tyvek Suits QC Haz Mat	12-3x, 12-2x	3x (2x)	N/A	YES
Rags	2 boxes	N/A	N/A	YES

9.10.3 OSHA HAZARDOUS COMMUNICATIONS 29 CFR 1910.1200

BOE/Progress Solutions must ensure all private response personnel, volunteers, or casual laborers, who they employ are trained to meet OSHA standards for emergency response operations promulgated in 29 CFR 1910.120. These requirements, commonly referred to as the HAZOPER regulations, were established to ensure the health and safety of personnel employed in hazardous substance response and cleanup operations. OSHA has defined hazardous substances as any substance "exposure to which results or may result in adverse effects on health or safety of employees." (29 CFR 1919.120). This includes substances defined under 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, those listed by the Department of Transportation (DOT) as designated hazardous substances under 49 CFR Part 172.101, hazardous wastes, and biological agents. DOT regulations designate petroleum crude oil, petroleum distillates, and petroleum oil (DOT hazard class 3, flammable liquids) as hazardous substances.

Responding to oil spills is typically different from other hazardous material emergencies in that worker safety issues are often a more significant concern than is protection from toxic chemicals. This focus on worker safety does not mean we are not concerned with the potential effects of toxic chemicals to the worker. The danger to the responder, however, from a large variety of oils is more likely to occur from common hazards such as slipping or tripping while trying to clean up a highly slippery substance. Relatively minor health problems, such as dermatitis, can be prevented by wearing proper gloves, boots, and protective clothing; however, oils such as high sulfur crude oils or oils with a high benzene content may cause life threatening health concerns. Proper PPE, including respiratory protection, must be worn by the responder when responding to incidents involving these oils or other hazardous substances with a respiratory hazard.

In general, personnel must be provided with adequate training to do their jobs safely. This includes the fundamentals of site safety, which apply generally to personnel working at hazardous waste sites. It further includes safety conscious operational training for the particular job (e.g., methods of deploying boom safely by boat). An ongoing training program to reinforce and build upon previous training is also required (i.e., annual refresher training). It is not necessary to conduct all training in one block of time, or restrict it to a single training event.

OSHA's Hazardous Waste Operations Standard (29 CFR 1910.120) sets basic requirements for training of personnel. These requirements are dependent on operations (e.g., general site operations, emergency and post-emergency response operations) and the individual's duties (e.g., first responders, general site workers, supervisors, special short term operations, technicians, etc.). It is important to recognize these requirements may change as the operations progress from emergency phase to post-emergency phase. At the same time, the degree of exposure risk is also changing with time. For example, as high vapor pressure products, which might pose an inhalation hazard, evaporate from the weathering oil, or as the hazards become better characterized the amount of potential danger is also altered.

9.10.3.1 General Requirements for Emergency Phase and Post-Emergency Response Operations

1. General requirements for emergency phase response operations (e.g., spill control measures conducted prior to recovery). Specific competencies are listed in 29 CFR 1919.120(q) (6).
 - a. Level 1 - First Responder (Awareness)

This level is characterized as personnel that might discover a release and who are simply expected to report the incident.

 - (1) Sufficient training or proven experience in specific competencies
 - (2) Annual refresher training
 - b. Level 2 - First Responder (Operations)

This level is characterized by responding to a release in a defensive manner and generally without being exposed to risk (e.g., no attempts to stop leaks).

 - (1) Level 1 competency
 - (2) Eight hours initial training or proven experience in specific competencies
 - (3) Annual refresher training
 - c. Level 3 - Hazardous Material (HAZMAT) Technician

This level is characterized by responding aggressively to stop a release (e.g., expecting some risk of exposure).

 - (1) Twenty-four hours of Level 2 training
 - (2) Proven experience in specific competencies
 - (3) Annual refresher training
 - d. Level 4- HAZMAT Specialist

This level is characterized by responding with and in support of technicians but having specialty knowledge and competence.

 - (1) Twenty-four hours of Level 3 training
 - (2) Proven experience in specific competencies
 - (3) Annual refresher training
 - e. Level 5 - (OI/On-Scene IC)

This level is for personnel that may be called upon to assume supervisory (IC) responsibilities on-scene.

 - (1) Twenty-four hours of Level 2 training
 - (2) Proven experience in specific competencies
 - (3) Annual refresher training

9.10.3.2 General Requirements for Post-Emergency Response Operation

These requirements are described in 29 1910.120(q) (11), which simply refers to the training requirements for general hazardous waste operations at 29 CFR 1910.120. The regulations require initial training, management and supervisory training, and annual refresher training.

- a. The general subjects to be covered by this training include:
 - (1) Key personnel responsible for site safety and health
 - (2) Hazards present on site
 - (3) Use of personal protective equipment
 - (4) Safe work practices
 - (5) Safe use of engineering controls and other equipment on site
 - (6) Medical surveillance requirements and recognition of signs and symptoms of overexposure
 - (7) The contents of site specific safety and health plans e.g., decontamination procedures, emergency procedures, confined space entry procedures, and spill containment program in particular).

- b. **Initial training.** There are three categories of initial training depending on the degree of exposure and the amount of time expected to be spent on site.
 - (1) **General site workers.** General site workers (e.g., general laborers or equipment operators) must have the following:
 - 40 hours off-site training
 - 24 hours supervised field experience
 - 8 hours annual refresher training
 - (2) **Minimal hazard workers.** Routine site workers who work in areas that have been monitored and fully characterized such that exposures are within permissible limits,

OR

Non-routine site employees who are on site only occasionally for a specific limited task and who are unlikely to be exposed over permissible exposure limits (or published limits) may be trained as follows:
 - 24 hours off-site training.
 - 8 hours supervised field experience.
 - 8 hours annual refresher training.

- c. **Management and supervisory training.** On-site management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations shall have the same initial training as the

personnel they supervise. They then must receive at least another 8 hours of training in hazardous waste operations management as follows:

- 40 hours off-site training, which may be reduced to 24 hours if all employees supervised are permitted to be trained at this level
 - 24 hours supervised field experience, which may be reduced to 8 hours if all employees supervised are permitted to be trained at this level
 - 8 hours annual refresher training
 - 8 hours of hazardous waste operation management training
- d. **Refresher training.** Refresher training may include incident debriefs or response drills and exercises. OSHA officials have indicated workers involved in the post-emergency phase of a spill response whose job duties and responsibilities have a low magnitude of risk may be allowed to have fewer than 24 hours of training. Specifically, OSHA has issued an instruction stating that a minimum of 4 hours of training is appropriate in most situations involving post-emergency clean-up workers (Inspection Guidelines for Post-Emergency Operations under 29 CFR 1910.120", OSHA Instructions CPL 2-2.41, Nov. 5, 1990). Under OSHA instruction, an OSHA Regional Response Team representative is responsible for making determinations when fewer than 24 hours of training is required.
- E. **Certain oil spill response personnel.** Guidelines have been published by OSHA with regards to the training requirements for post-emergency response to oil spills. OSHA recognizes that reduced training for certain categories of personnel involved in oil spill operations may be necessary and may not constitute a serious violation of the regulations (i.e., a "de minimis" violation). In general, 4 hours of training is expected to be adequate to meet the "de minimis" criteria. This requirement may change based on the specific state requirements, response circumstances, or both. Other requirements must also be met (e.g., adequate characterization of minimal hazards, and adequate supervision by fully trained personnel).

9.10.4 SDS - 49 CFR 172.602

On the following pages is a Safety Data Sheet for Sweet Crude Oil which is transported by the BOE Pipeline. The Safety Data sheet includes the name, description, physical and chemical characteristics, health and safety hazards, and initial spill-handing and firefighting methods.

Section 1: Identification of the substance or mixture and of the supplier

Product Name: Crude Oil, Sweet
SDS Number: 724160
Synonyms/Other Means of Identification: Crude Oils, Desalted, Sweet
Field Crude
Petroleum Crude
Petroleum Oil
Rock Oil
Separator Crude
Sweet Crude
MARPOL Annex I Category: Crude Oils
Intended Use: Refinery Feed
Manufacturer: ConocoPhillips
600 N. Dairy Ashford
Houston, Texas 77079-1175
Emergency Health and Safety Number: Chemtrec: 800-424-9300 (24 Hours)
SDS Information: Phone: 855-244-0762
Email: SDS@conocophillips.com
URL: www.conocophillips.com

Section 2: Hazard(s) Identification

Classification
H224 -- Flammable liquids -- Category 1
H304 -- Aspiration Hazard -- Category 1
H319 -- Eye damage/irritation -- Category 2
H336 -- Specific target organ toxicity (single exposure) -- Category 3
H350 -- Carcinogenicity -- Category 1B
H373 -- Specific target organ toxicity (repeated exposure) -- Category 2
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2

Hazards not Otherwise Classified
May contain or release poisonous hydrogen sulfide gas

Label Elements



DANGER
Extremely flammable liquid and vapor. (H224)*
Causes serious eye irritation. (H319)*
May contain or release poisonous hydrogen sulfide gas
May be fatal if swallowed and enters airways. (H304)*
May cause drowsiness or dizziness. (H336)*
May cause damage to organs through prolonged or repeated exposure. (H373)*
May cause cancer. (H350)*
Toxic to aquatic life with long lasting effects. (H411)*

Precautionary Statement(s):

Obtain special instructions before use. (P201)*
 Do not handle until all safety precautions have been read and understood. (P202)*
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. (P210)*
 Keep container tightly closed. (P233)*
 Ground/bond container and receiving equipment. (P240)*
 Use with explosion-proof equipment. (P241)*
 Use only non-sparking tools. (P242)*
 Take precautionary measures against static discharge. (P243)*
 Avoid breathing dust/fume/gas/mist/vapours/spray. (P261)*
 Wash thoroughly after handling. (P264)*
 Use only outdoors or in a well-ventilated area. (P271)*
 Wear protective gloves / protective clothing / eye protection / face protection. (P280)*
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. (P361)*
 Rinse skin with water/shower. (P353)*
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338)*
 If eye irritation persists: Get medical advice/attention. (P313)*
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. (P301+P310)*
 Do NOT induce vomiting. (P331)*
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. (P304+P340)*
 Call a POISON CENTER or doctor/physician if you feel unwell. (P312)*
 In case of fire: Use dry chemical, carbon dioxide, or foam for extinction.(P370+P378)*
 Store locked up. (P405)*
 Store in a well-ventilated place. Keep cool.(P403+P235)*
 Dispose of contents/container to approved disposal facility. (P501)*

* (Applicable GHS hazard code.)

Section 3: Composition / Information on Ingredients

Component	CASRN	Concentration ¹
Crude Oil (Petroleum)	8002-05-9	100
Naphthalene	91-20-3	0-0.9
Benzene	71-43-2	<1
Hydrogen Sulfide	7783-06-4	<0.2
Total Sulfur: < 0.5 wt%		

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Crude oil, natural gas and natural gas condensate can contain minor amounts of sulfur, nitrogen and oxygen containing organic compounds as well as trace amounts of heavy metals like mercury, arsenic, nickel, and vanadium. Composition can vary depending on the source of crude.

Section 4: First Aid Measures

Eye Contact: For direct contact, remove contact lenses if present and easy to do. Immediately hold eyelids apart and flush the affected eye(s) with clean water for at least 20 minutes. Seek immediate medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation (Breathing): If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Most important symptoms and effects

Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue

Delayed: Dry skin and possible irritation with repeated or prolonged exposure.

Notes to Physician: At high concentrations hydrogen sulfide may produce pulmonary edema, respiratory depression, and/or respiratory paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. Animal studies suggest that nitrites are a useful antidote, however, documentation of the efficacy of nitrites in humans is lacking. If the diagnosis of hydrogen sulfide poisoning is confirmed and if the patient does not respond rapidly to supportive care, the use of nitrites may be an effective antidote if delivered within the first few minutes of exposure. For adults the dose is 10 mL of a 3% NaNO₂ solution (0.5 gm NaNO₂ in 15 mL water) I.V. over 2-4 minutes. The dosage should be adjusted in children or in the presence of anemia, and methemoglobin levels, arterial blood gases, and electrolytes should be monitored closely.

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (j)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

Other Comments: Before attempting rescue, first responders should be alert to the possible presence of hydrogen sulfide, a poisonous gas with the smell of rotten eggs, and should consider the need for respiratory protection (see Section 8). Remove casualty to fresh air as quickly as possible. Immediately begin artificial respiration if breathing has ceased. Consider whether oxygen administration is needed. Obtain medical advice for further treatment.

Section 5: Fire-Fighting Measures



NFPA 704 Hazard Class

Health: 1 **Flammability:** 3 **Instability:** 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: Extremely flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire. Hazardous combustion/decomposition products, including hydrogen sulfide, may be released by this material when exposed to heat or fire. Use caution and wear protective clothing, including respiratory protection.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: Long-duration fires involving crude or residual fuel oil stored in tanks may result in a boilover. The contents of the tank may be expelled beyond the containment dikes or ditches. All personnel should be kept back a safe distance when a boilover is anticipated (reference NFPA 11 or API 2021).

For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Hydrogen sulfide and oxides of nitrogen and sulfur may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

Section 6: Accidental Release Measures

Personal Precautions: Extremely flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. May contain or release poisonous hydrogen sulfide gas. If the presence of dangerous amounts of H₂S around the spilled product is suspected, additional or special actions may be warranted, including access restrictions and use of protective equipment. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

Section 7: Handling and Storage

Precautions for safe handling: Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Nonsparking tools should be used. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. May contain or release dangerous levels of hydrogen sulfide. Do not breathe vapors or mists. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Extremely Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

Mercury and other heavy metals may be present in trace quantities in crude oil, raw natural gas, and condensates. Production and processing of these materials can lead to "drop-out" of elemental mercury in enclosed vessels and pipe work, typically at the low point of any process equipment because of its density. Mercury may also occur in other process system deposits such as sludges, sands, scales, waxes, and filter media. Personnel engaged in work with equipment where mercury deposits might occur (confined space entry, sampling, opening drain valves, draining process lines, etc), may be exposed to a mercury hazard (see sections 3 and 8).

Conditions for safe storage: This material may contain or release poisonous hydrogen sulfide gas. In a tank, barge, or other closed container, the vapor space above this material may accumulate hazardous concentrations of hydrogen sulfide. Check atmosphere for oxygen content, H₂S, and flammability prior to entry. Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Section 8: Exposure Controls / Personal Protection

Component	ACGIH	OSHA	Other
Crude Oil (Petroleum)	---	---	TWA: 100 mg/m ³ - 8 hr (ConocoPhillips Guidelines)
Naphthalene	STEL: 15 ppm TWA: 10 ppm 2 ppm TWA; skin; A3 - confirmed animal carcinogen with unknown relevance to humans; TLV basis: upper respiratory tract irritation Skin	TWA: 10 ppm : 50 mg/m ³	TWA: 0.2 mg/m ³ (as total of 17 PNA's measured by NIOSH Method 5506) (ConocoPhillips Guidelines)
Benzene	STEL: 2.5 ppm TWA: 0.5 ppm Skin	Ceiling: 25 ppm STEL: 5 ppm TWA: 10 ppm TWA: 1 ppm	---
Hydrogen Sulfide	STEL: 5 ppm TWA: 1 ppm	Ceiling: 20 ppm	TWA: 5 ppm 8hr TWA: 2.5 ppm 12hr STEL: 15 ppm (ConocoPhillips Guidelines)

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Suggested protective materials: Nitrile

Respiratory Protection: Where there is potential for airborne exposure to hydrogen sulfide (H₂S) above exposure limits, a NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used. Under conditions where hydrogen sulfide (H₂S) is NOT detected, a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

If benzene concentrations equal or exceed applicable exposure limits, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29CFR1910.1028 - Benzene).

Workplace monitoring plans should consider the possibility that heavy metals such as mercury may concentrate in processing vessels and equipment presenting the possibility of exposure during various sampling and maintenance operations. Implement appropriate respiratory protection and the use of other protective equipment as dictated by monitoring results (See Sections 2 and 7).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

Section 9: Physical and Chemical Properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Amber to Black
Physical Form:	Liquid
Odor:	Petroleum. Rotten egg / sulfurous
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure:	0.6-10 psia (Reid VP) @ 100°F / 37.8°C
Vapor Density (air=1):	>1
Initial Boiling Point/Range:	-128 to 1000 °F / -89 to 538 °C
Melting/Freezing Point:	No data
Solubility in Water:	Negligible
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity (water=1):	0.7-1.03 @ 60°F (15.6°C)
Bulk Density:	5.83-8.58 lbs/gal
Evaporation Rate (nBuAc=1):	No data
Flash Point:	< 20 °F / < -7 °C
Test Method:	(estimate)
Lower Explosive Limits (vol % in air):	1.1
Upper Explosive Limits (vol % in air):	6.0
Auto-ignition Temperature:	590 °F / 310 °C

Section 10: Stability and Reactivity

Stability: Stable under normal ambient and anticipated conditions of use.

Conditions to Avoid: Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use.

Hazardous Polymerization: Not known to occur.

Section 11: Toxicological Information

Information on Toxicological Effects of Substance/Mixture

<u>Acute Toxicity</u>	<u>Hazard</u>	<u>Additional Information</u>	<u>LC50/LD50 Data</u>
Inhalation	Expected to have a low degree of toxicity by inhalation	May contain or release poisonous hydrogen sulfide gas - see Other Comments.	> 5 mg/L (vapor)
Skin Absorption	Unlikely to be harmful		> 2 g/kg
Ingestion (Swallowing)	Unlikely to be harmful		> 5 g/kg

Aspiration Hazard: May be fatal if swallowed and enters airways.

Skin Corrosion/Irritation: Causes mild skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes serious eye irritation.

Signs and Symptoms: Effects of overexposure may include irritation of the digestive tract, irritation of the respiratory tract, nausea, vomiting, diarrhea and signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure. Laboratory animal studies of crude oil by the dermal and inhalation exposure routes have demonstrated toxicity to the liver, blood, spleen and thymus

Carcinogenicity: May cause cancer. Chronic application of crude oil to mouse skin resulted in an increased incidence of skin tumors. IARC concluded in its Crude Oil Monograph that there is limited evidence of carcinogenicity in animals, and that crude oil is not classifiable as to its carcinogenicity in humans (Group 3). It has not been listed as a carcinogen by NTP or OSHA.

Germ Cell Mutagenicity: Inadequate information available.

Reproductive Toxicity: Inadequate information available. Dermal exposure to crude oil during pregnancy resulted in limited evidence of developmental toxicity in laboratory animals. Decreased fetal weight and increased resorptions were noted at maternally toxic doses. No significant effects on pup growth or other developmental landmarks were observed postnatally.

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain varying concentrations of polycyclic aromatic hydrocarbons (PAHs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples), and possible skin cancers.

Information on Toxicological Effects of Components

n-Hexane

Target Organs: Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone.

Reproductive Toxicity: Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

Xylenes

Target Organs: Rats exposed to xylenes at 800, 1000 or 1200 ppm 14 hours daily for 6 weeks demonstrated high frequency hearing loss. Another study in rats exposed to 1800 ppm 8 hours daily for 5 days demonstrated middle frequency hearing loss.

Reproductive Toxicity: Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions, but no evidence of teratogenicity.

Ethyl Benzene

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC.

Target Organs: In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilic foci, hypertrophy, necrosis), lung (alveolar epithelium metaplasia), thyroid (hyperplasia), thyroid (hyperplasia) and pituitary (hyperplasia). In animal models (particularly rats), ethyl benzene affects the auditory function mainly in the cochlear mid-frequency range and ototoxicity was observed after combined exposure to noise and ethyl benzene. There is no evidence of either ethyl benzene-induced hearing losses or ototoxicity with combined exposure to ethyl benzene and noise in workers.

Naphthalene

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

Benzene

Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by IARC, the US National Toxicology Program and the US-Occupational Safety and Health Administration.

Target Organs: Prolonged or repeated exposures to benzene vapors can cause damage to the blood and blood forming organs, including disorders like leukopenia, thrombocytopenia, and aplastic anemia.

Reproductive Toxicity: Some studies in occupationally exposed women have suggested benzene exposure increased risk of miscarriage and stillbirth and decreased birth weight and gestational age. The size of the effects detected in these studies was small, and ascertainment of exposure and outcome in some cases relied on self-reports, which may limit the reliability of these results.

Germ Cell Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells. Exposure has also been associated with chromosomal aberrations in sperm cells in human and animal studies.

Section 12: Ecological Information

Toxicity: Experimental studies of acute aquatic toxicity show values for crude oil in the range of 2 to over 100 mg/L. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. Crude oil should be regarded as harmful to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411; Chronic Cat 2.

Persistence and Degradability: Most crude oils are not regarded as readily biodegradable. Most of the non-volatile constituents are inherently biodegradable; some of the highest molecular weight components are persistent in water.

Persistence per IOPC Fund definition: Persistent

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material range from less than 2 to greater than 6, and therefore would be regarded as having the potential to bioaccumulate.

Mobility in Soil: Crude oil spreads as a film on the surface of water, facilitating loss of its lighter components by volatilization. In air, the volatile hydrocarbons undergo photodegradation by reaction with hydroxyl radicals with half-lives varying from 0.5 days for n-dodecane to 6.5 days for benzene. The lower molecular weight aromatic hydrocarbons and some polar compounds have low but significant water solubility. Some higher molecular weight compounds are removed by emulsification and these also slowly biodegrade; others adsorb to sediment and sink. A further removal process from water involving the heavier fraction is agglomeration to form tars, some of which sink.

Other Adverse Effects: None anticipated.

Section 13: Disposal Considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

EPA Waste Number(s)

- D001 - Ignitability characteristic
- D018 - Toxicity characteristic (Benzene)

Section 14: Transport Information

U.S. Department of Transportation (DOT)

Shipping Description: UN1267, Petroleum crude oil, 3, I or II
Non-Bulk Package Marking: Petroleum crude oil, UN1267
Non-Bulk Package Labeling: Flammable liquid
Bulk Package/Placard Marking: Flammable / 1267
Packaging - References: 49 CFR 173.150; 173.201; 173.243 [PG I]

-or-

49 CFR 173.150; 173.202; 173.242 [PG II]
(Exceptions; Non-bulk; Bulk)

Hazardous Substance: See Section 15 for RQ's

Emergency Response Guide: 128

Note: *Packing group is dependent on boiling point (BP) of the material:
I if BP <=35° C (95° F); II if BP > 35° C (95° F)*

The following alternate shipping description order may be used until January 1, 2013:

Proper Shipping name, Hazard Class or Division, (Subsidiary Hazard if any), UN or NA number, Packing Group

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

Other shipping description elements may be required for DOT compliance.

International Maritime Dangerous Goods (IMDG)

Shipping Description: UN1267, Petroleum crude oil, 3, I or II, (FP° C cc), [where FP is the material's flash point in degrees Celsius closed cup]

Non-Bulk Package Marking: Petroleum crude oil, UN1267

Labels: Flammable liquid

Placards/Marking (Bulk): Flammable / 1267

Packaging - Non-Bulk: P001

EMS: F-E, S-E

Note: *U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25. If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.*

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UN/ID #: UN1267
 Proper Shipping Name: Petroleum crude oil
 Hazard Class/Division: 3
 Subsidiary risk: None
 Packing Group: I or II
 Non-Bulk Package Marking: Petroleum crude oil, UN1267
 Labels: Flammable liquid
 ERG Code: 3H
 Note: U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24.

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	Forbidden - [PG I] Y341 - [PG II]	351 - [PG I] 353 - [PG II]	361 - [PG I] 364 - [PG II]
Max. Net Qty. Per Package:	Forbidden - [PG I] 1L - [PG II]	1L - [PG I] 5 L - [PG II]	30 L - [PG I] 60 L - [PG II]

Section 15: Regulatory Information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material contains the following chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372:

Component	TPQ	EPCRA RQ
Hydrogen Sulfide	500 lb	100 lb

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health: Yes
 Chronic Health: Yes
 Fire Hazard: Yes
 Pressure Hazard: No
 Reactive Hazard: No

CERCLA/SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Component	Concentration ¹	de minimis
n-Hexane	0-5	1.0%
Xylenes	0-3	1.0%
Ethyl Benzene	<2	0.1%
Naphthalene	0-0.9	0.1%
Benzene	<1	0.1%

EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65:

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the warning requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Type of Toxicity
Ethyl Benzene	Cancer
Naphthalene	Cancer
Various Polycyclic Aromatic Hydrocarbons	Skin Cancer
Toluene	Developmental Toxicant Female Reproductive Toxicant
Benzene	Cancer Developmental Toxicant Male Reproductive Toxicant

International Hazard Classification

Canada:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

WHMIS Hazard Class:

B2 - Flammable Liquids
D2A
D2B

National Chemical Inventories

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA
All components are either on the DSL, or are exempt from DSL listing requirements

U.S. Export Control Classification Number: 1C981

Section 16: Other Information

Date of Issue:	06-Jul-2011
Status:	FINAL
Previous Issue Date:	02-Apr-2012
Revised Sections or Basis for Revision:	Identified Hazards (Section 2) Precautionary Statement(s) (Section 2) First Aid (Section 4) Shipping information (Section 14) Regulatory information (Section 15)
SDS Number:	724160

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

REFERENCES

15 CFR 990 NATURAL RESOURCE DAMAGE ASSESSMENT (NRDA). Final Rule. Federal Register of 05 January 1996, as amended.

29 CFR 1910.120 HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE U.S. DEPARTMENT OF LABOR. Federal Register of 06 March 1898, as amended. The OSHA requirement defining training required for workers at the site of a spill.

33 CFR 154. RESPONSE PLANS. U.S. DEPARTMENT OF TRANSPORTATION (COAST GUARD). Federal Register of 29 February 1996, as amended. The Coast Guard regulation on facility response plans for marine transportation-related facilities.

40 CFR 112. OIL POLLUTION PREVENTION. U.S. ENVIRONMENTAL PROTECTION AGENCY. Federal Register of 1 January 2002, as amended. The EPA regulation on facility response plans for non-transportation-related facilities.

49 CFR 130. OIL SPILL PREVENTION AND RESPONSE PLANS. U.S. DEPARTMENT OF TRANSPORTATION (RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION). Federal Register of 17 June 1996, as amended. The RSPA regulation on facility response plans for bulk packaging (tank cars and tank trucks).

49 CFR 194. RESPONSE PLANS FOR ONSHORE OIL PIPELINES. U.S. DEPARTMENT OF TRANSPORTATION (RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION). Federal Register of 5 January 1993, as amended. The DOT regulation on facility response plans for pipelines off a facility's property.

49 CFR 195. PIPELINE SAFETY REGULATIONS FOR TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE. U.S. DEPARTMENT OF TRANSPORTATION (Pipeline and Hazardous Materials Safety Administration-Office of Pipeline Safety). Federal Register of October 2010, as amended.

40 CFR 300. NATIONAL OIL AND HAZARDOUS SUBSTANCE POLLUTION CONTINGENCY PLAN. U.S. Environmental Protection Agency. Federal Register of 15 September 1994, as amended.

Brady, Nyle C. and Ray R. Weil. (1999). *The Nature and Properties of Soils* (12th ed.). Upper Saddle River, NJ: Prentice Hall, Inc.

Bronson, David M., Environ International Corporation. LL Terminals, LLC Truck Unloading Terminal. "Facility Response Plan". April 2014.

Canadian Wildlife Service and U.S. Fish & Wildlife Service. (2007). *International Recovery Plan for the Whooping Crane*. Ottawa: Recovery of Nationally Endangered Wildlife (RENEW), and U.S. Fish & Wildlife Service, Albuquerque, New Mexico.

City Data. Retrieved July 28 2013, from <http://www.city-data.com>.

ConocoPhillips Safety Data Sheet. "Sweet Crude Oil". Date of Issue: 02-April, 2012. Retrieved from http://conocophillips.com/sustainable-development/Documents/SMID_213_Crude%20Oil%20Sweet.pdf.

US EPA Oil Program Center. "Facility Response Planning" Compliance Assistance Guide. 1200 Pennsylvania Avenue (5203G), Washington, DC 20460.

ExxonMobil Pipeline Company & Mobil Pipeline Company. Emergency Response Plan-Corsicana Response Zone Appendix Manual. June, 2009 - Rev #9. As retrieved from: http://www.phmsa.dot.gov/pv_obj_cache/pv_obj_id_1F29AD54D0E87C64ED099749D6958CBA040C8701/filename/corsicana_zone_plan_12_2009_redact.pdf

GUIDE FOR DEVELOPMENT OF STATE AND LOCAL EMERGENCY OPERATIONS PLANS. FEDERAL EMERGENCY MANAGEMENT AGENCY. September 1990. Available from FEMA Publications Office: (202) 646-3484.

GUIDE FOR THE REVIEW OF STATE AND LOCAL EMERGENCY OPERATIONS PLANS. FEDERAL EMERGENCY MANAGEMENT AGENCY. September 1988. Available from FEMA Publications Office: (202) 646-3484.

GUIDELINES FOR THE U. S. COAST GUARD OIL SPILL REMOVAL ORGANIZATION CLASSIFICATION PROGRAM. U. S. COAST GUARD. MAY 2001. This publication is available online at <http://www.uscg.mil/hq/G-m/nmc/response/index.htm>

Hagen, Sandra K., Patrick T. Isakson, and Steve R. Dyke. (2005). *North Dakota Comprehensive Wildlife Conservation Strategy*. Bismarck: North Dakota Game & Fish Department. Retrieved April 27, 2010, from <http://gf.nd.gov/gnf/conservation/docs/North-Dakota-Wildlife-Action-Plan.pdf>

HAZARDOUS MATERIALS CONTINGENCY PLANNING COURSE (STUDENT MANUAL). FEDERAL EMERGENCY MANAGEMENT AGENCY. June 1990. Available from FEMA Publications Office: (202) 646-3484.

http://www.hess.com/sustainability/environment/MSDS/6607_CrudeOilsweet.pdf

International Finance Corporation. "Environmental, Health, and Safety Guidelines for Pipelines-Spills", Onshore Oil and Gas Development. April 30, 2007, World Bank Group.

Leonardo Maugeri. "The Shale Oil Boom: A U.S. Phenomenon" Discussion Paper 2013-05, Belfer Center for Science and International Affairs, Harvard Kennedy School, June 2013.

Major Research Gives New Insights into the Needs of Whooping Cranes. *Guadalupe-Blanco River Trust*. (2009, April 29). Retrieved from <http://www.gbra.org/news/2009/042901.aspx>

MEMORANDUM OF UNDERSTANDING BETWEEN THE SECRETARY OF TRANSPORTATION AND THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY. Signed 24 November 1971. Published in the Federal Register on 36 FR 24080.

National Park Service, retrieved July 2, 2013, from <http://www.nps.gov/thro/index.htm>

National Spill Control School, Corpus Christi State University. May 1990. Oil Spill Prevention & Control. Thirteenth Edition.

North Dakota Administrative Code, Chapter 43-02-03-30. Oil and Gas Conservation. Notification of fires, leaks, spills, or blowouts.

North Dakota Atlas & Gazetteer, first edition, 1999. DeLorme PO Box 298, Yarmouth, Maine 04096. www.delorme.com

North Dakota Department of Health. Ground Water- Environmental Releases & Investigations, "Spill Reporting", retrieved January 14th, 2014, from <http://www.ndhealth.gov/WO/GW/spills.htm>.

North Dakota Department of Transportation, retrieved July 28, 2013, from <http://www.dot.nd.gov/road-map/traffic/>

North Dakota Game and Fish Department. 1994. Fishes of the Dakotas. North Dakota Game and Fish Department, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/fish/dakfish/index.htm> (Version 16JUL97).

North Dakota Geological Survey, retrieved June 28, 2013, from <https://www.dmr.nd.gov/ndgs/landslides/KillDeer/24K.100K.KillDeer.asp>

North Dakota Industrial Commissions, Department of Mineral Resources, Oil and Gas Division, retrieved July 18, 2013, from <https://www.dmr.nd.gov/oilgas/>

North Dakota Parks and Recreation Department, retrieved July 2, 2013, from <http://www.parkrec.nd.gov/parks/lmosp/lmosp.html>

North Dakota State Water Commission, retrieved July, 21 2013, from <http://www.swc.nd.gov/4dlink9/4dcgi/redirect/index.html>

North Dakota State Water Commission and U.S. Geological Survey. (2010a). *USGS Digital Elevation Models for North Dakota* [Data file]. Retrieved from <http://www.nd.gov/gis/>

North Dakota State Water Commission and U.S. Geological Survey. (2010b). Hydrography for North Dakota [Data file]. Retrieved from <http://nhd.usgs.gov/>

OIL POLLUTION ACT OF 1990. Public Law 101.380 dated 18 August 1990.

PREPAREDNESS-FOR-RESPONSE EXERCISE PROGRAM (PREP) GUIDELINES. U.S. COAST GUARD. AUGUST 1994. This publication provides guidelines for the PREP program that will be written into the final OPA 90 regulations. This publication is available on line at: <http://www.uscg.mil/hq/G-m/nmc/response/index.htm>

Regional Response Team - USEPA. Region 8 Regional Contingency Plan. June 2010.

Seaber, P.R., Kapinos, F.P., and Knapp, G.L. 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, page 63.

Stahlecker, D.A. (1997). *Predicting Availability of Stopover Roosting Habitat for Migrant Whooping Cranes in the Northern Great Plains*. Rept. by Eagle Ecological Services for US Fish & Wildlife Service.

State Historical Society of North Dakota. (2013) Killdeer Mountain Battlefield *Historic Site*. Retrieved July 2, 2013, from <http://www.history.nd.gov/historicsites/kmb/index.html>

State of North Dakota. (2009b). *EMPOWER North Dakota: Comprehensive State Energy Policy*. Retrieved June 28, 2013, from <http://www.communityservices.nd.gov/uploads/resources/626/empower-nd-policy-03.17.09.pdf>

The National Response Team. 1990. Oil Spill Contingency Planning, National Status: A Report to the President. Washington, DC. U.S. Government Printing Office.

The National Response Team. 2001. Hazardous Materials Emergency Planning Guide. Washington, DC.

"Training Reference for Oil Spill Response", by Department of Transportation-US Coast Guard Research and Special Programs Administration-Environmental Protection Agency-Department of the Interior-Mineral Management Service, 1994.

U.S. Army Corps of Engineers, retrieved July 2, 2013, from <http://www.usace.army.mil/>

U.S. Census Bureau. (2010). *Census 2010*. Retrieved from <http://www.census.gov>

U.S. COAST GUARD INCIDENT MANAGEMENT HANDBOOK. U.S. Coast Guard Publication COMDTPUB P3120.17). 11 April 2002. This publication is available on line at: <http://www.uscg.mil/hq/nsfcc/nsfweb/NSF/onlinedoc.html>

- U.S. Department of Agriculture, retrieved July 29, 2013, from <http://www.agcensus.usda.gov/index.php>
- U.S. Department of Agriculture. (2007). *USDA 2007 Census of Agriculture*. Retrieved from http://www.agcensus.usda.gov/Publications/2007/Full_Report/Census_by_State/North_Dakota/index.asp
- U.S. Department of Agriculture. *Web Soil Survey*. Retrieved from <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>
- US Department of Housing and Urban Development. 1987. Siting of HUD-Assisted Projects Near Hazardous Facilities: Acceptable Separation Distances from Explosive and Flammable Hazards. Prepared by the Office of Environment and Energy, Environmental Planning Division, Department of Housing and Urban Development. Washington, DC.
- US DOT, FEMA and U.S. EPA. Handbook of Chemical Hazard Analysis Procedures.
- US DOT, FEMA and U.S. EPA. Technical Guidance for Hazards Analysis: Emergency Planning for Extremely Hazardous Substances.
- USDOT, USCG, USEPA, and US Department of Interior. 2002. National Preparedness For Response Exercise Program (PREP) Guidelines.
- U.S. Fish & Wildlife Service. (2010a). *County Occurrence of Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota*. Retrieved June 3, 2013, from http://www.fws.gov/northdakotafieldoffice/county_list.htm
- U.S. Fish & Wildlife Service. (2010b). *National Wildlife Refuges in the Mountain-Prairie Region*. Retrieved July 8, 2013, from <http://www.fws.gov/mountain-prairie/refuges/nd/>
- U.S. Fish & Wildlife Service. (2010b). *National Wildlife Refuges in the Mountain-Prairie Region*. Retrieved January 7, 2014, from <http://www.fws.gov/mountain-prairie/refuges/nd/lakeilo>
- U.S. Fish & Wildlife Service. *County Occurrence of Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota*. Retrieved June 3, 2013, from http://www.fws.gov/northdakotafieldoffice/county_list.htm
- U.S. Geological Survey, retrieved June 29, 2013, from <http://water.usgs.gov/ogw/aquiferbasics/lowtert.html>
- U.S. Geological Survey, retrieved January 7, 2014, from <http://npwrc.usgs.gov/resource/fish/dakfish/index.html>
- U.S. Geological Survey. (2006). *The Cranes: Status Survey and Conservation Action Plan, Whooping Crane (Grus americana)*. Retrieved June 7, 2013, from <http://www.npwrc.usgs.gov/resource/birds/cranes/grusamer.htm>

U.S. Geological Survey. (2006). *Northern Prairie Wildlife Research Center*. Retrieved July 8, 2013, from <http://www.npwrc.usgs.gov/resource/habitat/ndsdeco/nodak.htm>

U.S. Geological Survey. USGS Releases New Oil and Gas Assessment for Bakken and Three Forks Formation. Retrieved June 25, 2013.

U.S. Geological Survey. Assessment of Undiscovered Oil Resources in the Bakken and Three Forks Formations, Williston Basin Province, Montana, North Dakota, and South Dakota, 2013. Retrieved June 25, 2013.

U.S. Geological Survey. Assessment of Undiscovered Oil Resources in the Devonian-Mississippian Bakken Formations, Williston Basin Province, Montana, and North Dakota. 2013. Retrieved June 25, 2013.

USGS TNM 2.0 Viewer (USGS The National Map Viewer), <http://viewer.nationmap.gov/viewer/>, Base Layer: Hydrography (NHD), HUC 12's for Dunn and Stark County, North Dakota.

U.S. Geological Survey. USGS National Water Information System: Web Interface. Data Category: Surface Water- Peak stream flows, Geographic Area United States. Retrieved December 19, 2013.

Web Soil Survey, retrieved August 23 2013, from <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

APPENDIX A

MASTER SERVICES CONTRACT WITH OSRO AND RESPONSE CONTRACTORS

- A) ENVIRONMENTAL SERVICE AGREEMENT WITH BARANKO BROTHERS INC.
- B) CLEAN HARBORS ENVIRONMENTAL SERVICES-RECIPROCAL RESPONSE AGREEMENT A

ENVIRONMENTAL SERVICE AGREEMENT

This Service Agreement (the "Agreement") is entered into effective the 24 day of FEBRUARY, 2015 (the "Effective Date"), by and between Baranko Brothers Inc., a North Dakota Corporation (the "Contractor"), and Bakken Oil Express, LLC, a North Dakota limited liability company, LL Terminals, LLC, a Kansas limited liability company, BOE Pipeline, LLC, a Kansas limited liability company and Lario Shipping, LLC, a Kansas limited liability company (each a "Client" and collectively, the "Clients"). The Contractor and Clients are sometimes collectively referred to herein as the "Parties" and each may be referred to as a "Party."

I. Services.

A. Contractor is engaged in the business of providing emergency response environmental services ("Services") and Clients desires to engage Contractor to provide such Services.

B. This Agreement establishes the terms and conditions pursuant to which Contractor may furnish Client with certain Services in connection with response to discharges of oil and other hazardous substances.

C. The Services contemplated in connection with the response to discharges of oil or other hazardous substances may include, but not limited to, the following:

- i. Containment, recovery, repackaging and removal of materials;
- ii. Site evaluation, decontamination and restoration;
- iii. Transportation, storage, treatment or disposal of wastes;
- iv. Technical services, including sampling, laboratory analysis, and other services as required such that Client's facility response plans, to the extent relying on the services of a classified Oil Spill Removal Organization ("OSRO"), are in compliance with the Oil Pollution Act of 1990 and regulations promulgated hereunder, as each may be amended from time to time (collectively, "OPA 90").
- v. Standby of personnel and equipment in anticipation of imminent activities.

D. This Agreement does not obligate any Client to purchase Services from Contractor, nor shall it obligate Contractor to provide Services, but shall govern all orders for Services issued by Client and which are accepted by Contractor. Contractor will respond to request for Services by Client within one (1) hour of confirmed receipt.

II. Service Fees.

A. Client agrees to pay Contractor for the Services in accordance with the terms of Exhibit A attached hereto (the "Rate Schedule") in effect at the time Services are rendered. Contractor shall provide Client with any updates or amendments Contractor makes to the Rate Schedule at least forty-five (45) days in advance of the effectiveness of the new Rate Schedule. In the event the Parties agree to change the scope of the Services provided hereunder, Contractor shall communicate to Client the rates for each dispatch of Services on or before such dispatch and such rates will be confirmed by written statement or invoice prepared by the Contractor and issued to the Client.

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B. Contractor shall invoice Client for Services in accordance with the Rate Schedule. All payments will be due and payable by Client within thirty (30) calendar days from Client's receipt of the invoice (the "Due Date"). If Client fails to make any payments by the Due Date, then Contractor may assess a late fee on the unpaid and undisputed balance at the rate of one and a half percent (1.5%) per month or the highest rate allowed under applicable law, whichever is less. In the event that unpaid invoices are turned over for collection, Client shall pay for all costs and expenses, including attorney's fees.

III. Termination.

This Agreement may be terminated by either Party upon forty-eight (48) hours prior notice to the other Party.

IV. General Conditions of Services.

Unless otherwise stated, Client is responsible for furnishing Contractor with all pertinent data and information concerning the Services to be performed hereunder, the nature of the work site, the nature of the conditions to be remediated, and performing certain other functions in support of the Services, including, but not limited to, providing the following:

- A. A designated Client representative to communicate with Contractor, its employees, and representatives regarding the site and all necessary information;
- B. Access to the work site for Contractor, its employees, representatives, and subcontractors;
- C. Information regarding Hazardous Substances (as hereinafter defined), materials, and conditions that may be present at the work site;
- D. Information concerning any equipment, vehicles, or vessels at the site, and any special conditions or circumstances which might affect the Services;
- E. Filing all required reports with governmental authorities including, but not limited to, spill or release reports;
- F. Informing Contractor promptly of any request of a governmental authority directing a change which may affect the Services; and
- G. Completing manifests, forms, and regulatory filings to permit the transport and disposal of Hazardous Wastes or other materials or wastes.

Any variance in these conditions might be considered a change in the scope of Services unless expressly stated otherwise herein. If any of the waste contains materials which do not conform to the descriptions in this Agreement, Contractor may, at its option, properly dispose of it and have Client reimburse Contractor for all expenses incurred, return it to Client, or require Client to remove and dispose of the non-conforming waste at Client's expense.

V. Standard of Care.

- A. Contractor agrees to perform the Services in a competent and workmanlike manner.
- B. Unless otherwise in the Agreement, Contractor will provide all of the labor, tools, machinery, equipment, and supplies necessary to perform the Services.
- C. Contractor represents that it holds active permits, licenses and classifications, including without limitation OSRO Coast Guard classification, required for

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the performance of Services. In the event of a lapse or termination of Contractor's permits, licenses or classifications necessary to perform the Services, Contractor will notify Client within three (3) days following such lapse or termination. Upon receipt of such notice, Client shall have the right to terminate this Agreement immediately upon written notification to the Contractor.

D. In its performance of the Services Contractor may handle certain Hazardous Substances (as hereinafter defined). Client agrees that in no event shall Contractor:

- i. be deemed to have title to any Hazardous Substances or any real or personal property contaminated with or otherwise affected by such Hazardous Substances;
- ii. be deemed to be a "generator" of any Hazardous Substance; or
- iii. be deemed to be in possession or control of any Hazardous Substance except as Client's or the generator's general agent.

E. In the event the performance of this Agreement by Contractor requires the treatment or disposal of a Hazardous Substance, Contractor shall transport the substance, or cause the substance to be transported, only to a disposal or treatment facility selected by Client, unless otherwise agreed by the Parties. Any transportation of Hazardous Substances undertaken or arranged by Contractor under this Agreement is done solely as the agent of Client and on behalf of Client. Client hereby designates Contractor as its agent for the purpose of obtaining all permits and authorizations required in connection with the transportation of Hazardous Substances to the applicable disposal or treatment facility selected by Client. Client acknowledges this and agrees to fully indemnify and hold harmless Contractor, its employees, and its subcontractors from any liabilities, costs, damages, or expenses which arise out of Contractor's, its employees, or its subcontractor's performance except to the extent such damages are caused by Contractor's negligence or willful misconduct or its agents, employees or subcontractors of the Services set forth herein.

F. In its performance of the Services Contractor may be using chemicals, solvents, and other materials which could impair the use or function, or cause damage to Client's real or personal property or to Client's personnel. Client acknowledges this and agrees to fully indemnify and hold harmless Contractor, its employees, and its subcontractors from any liability for damage to Client's real or personal property or personnel caused by the Services or the materials used in performing the Services except to the extent such damages are caused by Contractor's negligence or willful misconduct or its agents, employees or subcontractors.

G. Specifically, Contractor does not warrant that the Services will render the areas affected by a Fire or the Hazardous Substances safe for any form of human activity or in compliance with any Environmental Laws.

VI. Representation and Warranty.

Each Party represents and warrants:

A. That it is duly organized, validly existing, and in good standing under the laws of its state of formation, and that it is duly registered as a foreign business entity in those states in which it is required, if necessary.

B. That it has the full right and authority to enter into, execute, deliver, and perform its obligations under this Agreement.

C. That it has taken all requisite corporate or limited liability company action

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necessary to approve the execution, delivery, and performance of this Agreement.

D. This Agreement constitutes a legal, valid, and binding obligation enforceable against such Party in accordance with its terms, subject to bankruptcy, insolvency, creditors' rights, and general equitable principles.

VII. Limitation of Liability.

In no event shall either Party be liable to the other Party (or any person claiming through the other Party) in connection with this Agreement or the Services performed hereunder, for any consequential, indirect, special, punitive, or incidental damages, or for lost revenues or lost opportunities arising out of or in connection with this Agreement. Neither Party shall be liable to the other (or any person claiming through Client) in any amount for any personal injury, illness, death, or property damage caused in whole or in part by a Hazardous Substance or any other substance regulated by law, and handled by either Party in the performance of this Agreement.

VIII. Indemnification.

A. Contractor, for itself and its successors and assigns, agrees to defend, indemnify, and hold harmless each Client, its successors and assigns, its shareholders, directors, members, and employees from and against any and all liability, direct and indirect losses and expenses (including without limitation reasonable attorneys' fees, expert fees, and court costs), claims, demands, suits, costs, and causes of action (collectively referred to hereinafter as "Liabilities"), arising out of or resulting from: (1) Contractor's breach of this Agreement; or (2) the gross negligence or intentional misconduct of Contractor, its employees, and its subcontractors in the performance of the Services.

B. Each Client, for itself and its successors and assigns, agrees to defend, indemnify, and hold harmless Contractor, its successors and assigns, its shareholders, directors, members, and employees from and against any and all Liabilities arising out of or resulting from: (1) Client's breach of this Agreement; (2) the acts or omissions of each Client and its employees or any third party; (3) Contractor's, its employees, or its subcontractor's inability to access the work site; or (4) any claim or liability which arises out of, is related to, or is based on the actual, alleged, or threatened dispersal, discharge, escape, release, saturation, containment, remediation, or cleanup of any substances, whether sudden or not, in or into the atmosphere or on, onto, upon, in, or into the surface or subsurface soil, water or watercourse, or any tangible or intangible matter.

IX. Insurance.

Contractor shall keep in effect during the term of this Agreement the following insurance coverages:

A. Insurance in an amount not less than the applicable state statutory requirements for workers compensation for its employees:

B. Employers liability insurance with a limited of not less than \$1,000,000 per accident;

C. Commercial general liability insurance for bodily injury, property damage, and personal injury liability, on an occurrence form with a combined single limit of not less than \$2,000,000 per occurrence, \$2,000,000 aggregate specific per jobsite, including contractual liability for the obligations assumed in this contract, products and completed operations;

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D. Business automobile liability insurance for bodily injury and property damage with a combined limit of not less than \$1,000,000 per occurrence (which business automobile liability insurance policy must include an MCS90 endorsement);

E. Contractor's pollution liability insurance in an amount not less than \$10,000,000 per occurrence. \$10,000,000 aggregate per Client's site.

Contractor shall provide Customer with a certificate of insurance upon written request. The obligation to carry the insurance required by this Section shall not limit or modify in any way any other obligations assumed by any party under this Agreement.

X. Liens.

Contractor shall keep Client's property free from any liens of its agents. Contractor agrees to indemnify and hold harmless Client from and against any and all liability, losses, claims, demands, damages, suits, costs, expenses (including reasonable attorneys' fees) and causes of action arising out of any lien placed on Client's property by Contractor's agents.

XI. Notices.

All notices required or allowed to be given herein shall be in writing and shall be given either by hand delivery, by certified or registered mail, return receipt requested, postage prepaid, by overnight delivery service, or by facsimile and sent to the address specified below. Any such notice shall be deemed effective upon receipt.

Either Party may change its address for purposes of this Section by giving the other Party notice of same in compliance with this Section.

Contractor: Baranko Bros. Inc.
PO Box 820 3048 Hwy 22 North
Attn: Glenn Baranko
Dickinson ND 58602

Clients : Bakken Oil Express, LLC
LL Terminals, LLC
BOE Pipeline, LLC
Lario Shipping, LLC
717 17th Street, Suite 1825
Denver, CO 80202
Attn: John Wadsworth
Fax: 720-548-1284
with a copy to mhagler@boemidstream.com

XII. Hazardous Substance Defined.

As used in this Agreement, the term "Hazardous Substance" shall mean and include any substance, material, waste, gas, or particulate matter which is regulated by any local or state government authority, or the United States Government, including, but not limited to, any material or substance which is (i) defined or designated as a hazardous waste, hazardous material, hazardous substance, extremely hazardous waste, or restricted hazardous waste under any Environmental Laws, (ii) petroleum (including crude oil and any of its fractions and oils, Groups 1 through 5 as defined in OPA 90 response guideline documents NVIC 7-92 and 8-92), (iii) asbestos, (iv) polychlorinated biphenyl, or (v) radioactive material. "Environmental Laws" means any and all federal, state, or local environmental, health, or

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safety statutes, ordinances, codes, rules, regulations, orders or decrees, including without limitation the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq., the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq., the Hazardous Materials Transportation Act, 49 U.S.C. § 1802 et seq., the rules and regulations of the Environmental Protection Agency, and all other applicable federal and state environmental, health, or safety laws and regulations as of the date of this Agreement. As used in this Agreement, "Hazardous Substance" shall include Biological Wastes and Substances.

XIII. Assignment.

Neither Party may assign this Agreement without the prior written consent of the other Party.

XIV. Severability.

In the event that one or more of the provisions of this Agreement, for any reason, is held by a court of competent jurisdiction to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal, or unenforceable provision or provisions had never been contained herein.

XV. Waiver.

Any waiver of the provisions of this Agreement by either Party shall not be effective unless it is in writing and signed by the Party against whom it is asserted. No such waiver constitutes the waiver of any subsequent breach or default.

XV. Relationship of the Parties.

Except as specifically provided herein, neither Contractor nor Clients shall act or represent or hold itself out as having authority to act as an agent or partner of the other, or in any way bind or commit the other Party to any obligations. Nothing contained in this Agreement shall be construed as creating a partnership, joint venture, agency, trust, or other association of any kind, each Party being individually responsible only for its obligations as set forth in this Agreement. This Agreement is not exclusive and Clients understand and acknowledge that Contractor performs and will perform similar services for other clients.

XVI. Governing Law.

This Agreement shall be governed by, and construed under, the laws of the State of North Dakota, without regard to its conflicts of laws principles. The Parties agree to submit to the jurisdiction of the courts of the State of North Dakota any disputes arising under this Agreement.

XVII. Permits, Access, and Cooperation.

Client agrees to obtain and maintain (at Client's sole cost and expense) any and all governmental and third party permits, easements, and approvals necessary for Contractor to access the work site and perform the Services as required under this Agreement (without prejudice to the obligations of the Contractor in Section V.c). Client agrees to take all reasonably necessary steps to fully cooperate with Contractor in the performance of this Agreement.

XVIII. Force Majeure.

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No Party shall be in default under this Agreement to the extent any delay in such Party's performance is caused by any of the following conditions: acts of God such as hurricane, flood, back water caused by flood or hurricane, tornado, earthquake, and unforeseeably severe weather; fire; strikes or labor unrest; changes in applicable laws; war or civil disorder; vandalism; or acts of terrorists, provided the Party claiming relief under this Section shall promptly notify the other in writing of the existence of the event relied on and the cessation and termination of said event. The Party claiming relief under this Section shall use their best efforts to minimize the time for any such delay.

XIX. Confidentiality.

The Parties recognize the importance of confidentiality and discretion in all activities related to the Services and the work site and performance under this Agreement. Both Parties agree to cause each of its employees and representatives with a need to know to hold all information relating to the business of the other Party ("Disclosing Party") disclosed to it by reason of this Agreement confidential and will not disclose any of such information to any person or entity unless legally compelled to do so; provided, however, that to the extent that any of them may become so legally compelled they may only disclose such information if they shall, if permitted, have first notified the Disclosing Party of the legal obligation and afforded Disclosing Party the opportunity to oppose such legal obligation or seek a protective order.

XX. Survival.

Sections II, V, VI, VII, VIII, XVII and XX will survive the completion of performance and termination of this Agreement.

XXI. Counterparts.

This Agreement may be executed in one or more counterparts (including by means of facsimile), all of which shall be considered one and the same Agreement, shall become effective when one or more counterparts have been signed by each of the Parties and delivered to the other Parties.

XXII. Entire Agreement.

This Agreement and the Exhibit A attached hereto constitute the entire agreement between the Parties relating to the subject matter of this Agreement, and expressly supersedes any previous agreements or understandings between the Parties, whether written or oral. This Agreement may only be modified by a written instrument executed by both Parties.

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IN WITNESS WHEREOF, the undersigned authorized representatives of the Parties do hereby execute this Agreement effective as of the Effective Date.

CONTRACTOR:

Baranko Brothers Inc.

By: *Steven Baranko*

Title: President

On behalf of each CLIENT:

*BAKKEN OIL SERVICES, LLC
B&B PIPELINE, LLC
LANDO SHIPPING, LLC
LLT ENERGY, LLC*

By: *J.P. Wedburn*

Title: *COO*

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Exhibit A
Rate Schedule

Baranko Bros., Inc.

Environmental
Services

2015 Rate Schedule

	Hourly Rate	Hourly Rate
Labor:	<u>Straight Time</u>	<u>Overtime</u>
Senior Project Manager	\$137.50	\$168.75
Project Manager	\$106.25	\$159.38
Radiation Safety Officer (RSO)	\$93.75	\$140.63
NORM Survey Technician	\$56.25	\$84.38
Site Safety Officer	\$87.50	\$131.25
Supervisor	\$81.25	\$121.88
Foreman	\$68.25	\$102.38
Heavy Equipment Operator	\$72.50	\$108.75
Boat Operator	\$57.75	\$86.63
Recovery Technician	\$52.50	\$78.75
Field Clerk	\$53.75	\$80.63
Truck Driver	\$53.75	\$80.63
Vacuum Truck Driver	\$56.25	\$84.38
Accounting Specialist	\$68.75	\$103.13

Vehicles, Trailer, Vessels, Heavy Trucks and Heavy Equipment :

Vehicles: Daily rate & mileage charges are portal-to-portal. Pickup truck and automobile mileage will be charged according to the cost per gallon of diesel fuel using the following schedule:

	Rate	Unit
Gallon of Diesel ≤ \$2.00	\$0.60	mile
Gallon of Diesel = \$2.01-\$2.50	\$0.75	mile
Gallon of Diesel = \$2.51-\$3.00	\$0.90	mile
Gallon of Diesel = \$3.01-\$3.50	\$1.05	mile
Gallon of Diesel = \$3.51-\$4.00	\$1.20	mile
Gallon of Diesel = \$4.01-\$4.50	\$1.35	mile
Gallon of Diesel = \$4.51-\$5.00	\$1.50	mile
Gallon of Diesel = \$5.01-\$5.51	\$1.65	mile
Gallon of Diesel = \$5.51-\$6.00	\$1.80	mile
Gallon of Diesel = \$6.01-\$6.51	\$1.95	mile
Gallon of Diesel = \$6.51-\$7.00	\$2.10	mile
Gallon of Diesel = \$7.01-\$7.50	\$2.25	mile
Gallon of Diesel = \$7.51-\$8.00	\$2.40	mile

The cost per gallon of fuel is based on the U.S D.O.E. average cost for the applicable Rock Mountains of Midwest Region. This average per gallon cost may be found at www.eia.doe.gov/. If the cost of diesel fuel exceeds \$8.00 per gallon, the mileage rate will increase \$0.15 per every \$0.50 increase in the cost of diesel fuel.

Automobile Sport Utility Vehicle	\$130.00	day
Pick-up Truck (F-150 to F-350 or equivalent)	\$200.00	day

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Pick-up Truck (F-450 to F-550 or equivalent)	\$250.00	day
Passenger Van	\$200.00	day
Vacuum Trucks and other Heavy Trucks: Charged portal-to-portal.		
Heavy Trucks (vacuum, dump, roll off, OTR, etc) mileage will be charged according to the cost per gallon using the following schedule.		
Gallon of Diesel \leq \$2.00	\$1.00	mile
Gallon of Diesel = \$2.01-\$2.50	\$1.25	mile
Gallon of Diesel = \$2.51-\$3.00	\$1.50	mile
Gallon of Diesel = \$3.01-\$3.50	\$1.75	mile
Gallon of Diesel = \$3.51-\$4.00	\$2.00	mile
Gallon of Diesel = \$4.01-\$4.50	\$2.25	mile
Gallon of Diesel = \$4.51-\$5.00	\$2.50	mile
Gallon of Diesel = \$5.01-\$5.51	\$2.75	mile
Gallon of Diesel = \$5.51-\$6.00	\$3.00	mile
Gallon of Diesel = \$6.01-\$6.51	\$3.25	mile
Gallon of Diesel = \$6.51-\$7.00	\$3.50	mile
Gallon of Diesel = \$7.01-\$7.50	\$3.75	mile
Gallon of Diesel = \$7.51-\$8.00	\$4.00	mile
The cost per gallon of diesel fuel is based on the U.S.D.O.E. average cost for the Rocky Mountain or Midwest Region. This average per gallon cost may be found at www.eia.doe.gov/ .		
If the cost of diesel fuel exceeds \$8.00 per gallon, the mileage rate will increase \$0.15 per every \$.50 increase in the cost of diesel fuel.		
Due to excessive fuel costs, BBI will assess a fuel surcharge on vacuum truck hours-of-service. This surcharge only applies to vacuum truck time actually spent working and does not include travel time. This surcharge will apply as follows:		
Cost of diesel less than \$4.00/gallon	\$0.00	working hour
Cost of diesel between \$4.00 and \$5.99	\$5.00	working hour
Cost of diesel between \$6.00 and \$7.99/gallon	\$10.00	working hour
Cost of diesel between \$8.00 and \$10.00/gallon	\$15.00	working hour
The cost per gallon of diesel fuel is based on the U.S.D.O.E. average cost for the Rocky Mountain or Midwest Region. This average per gallon cost may be found at www.eia.doe.gov/ .		
Vacuum Truck, <70 Barrel (Operator and mileage not included)	\$60.00	hour
Emergency Response	\$70.00	hour
Vacuum Truck 70-80 Barrel (Operator and mileage not included)	\$65.00	hour
Emergency Response	\$75.00	hour
King Vac/Guzzler or equivalent (Operator and mileage not included)	\$120.00	hour
Emergency Response	\$140.00	hour
Hydro-Excavator, Truck Mounted (Operator and mileage not included)	\$160.00	hour
Emergency Response	\$180.00	hour
Vacuum Tanker with OTR 110-130 barrel (Operator and mileage not included)	\$95.00	hour
Emergency Response	\$105.00	hour
Vacuum Truck Washout---Cost +20% plus rinsate disposal		
End-Dump Trailer with OTR (Driver and mileage not included)	\$105.00	hour
Water Truck (Driver and mileage not included)	\$65.00	hour

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Box Trailer Greater than 40"without trailer	\$350.00	day
Over-The-Road (OTR) Tractor (Driver, mileage and permits not included)	\$95.00	hour
OTR Standby (Not exceed \$560.00 a Day)	\$70.00	hour
OTR with 50 Ton Lowboy (Drive, mileage and permits not included)	\$125.00	hour
OTR with Roll off Frame (Drive, mileage and permits not included)	\$115.00	hour
Roll off Truck, Tri axle with Tarp (Driver, mileage and permits not included)	\$95.00	hour
Vacuum Box (25 cubic yard)	\$50.00	day
Roll-off Box (25 cubic yard)	\$20.00	day
Liners (25 cubic yard)	\$35.00	each
Frac Tank Steel	\$95.00	day
Frac-Tank Containment Berm	\$48.00	day
Frac-Tank, Poly, 6,000-7,000 Gallons	\$70.00	day
Heavy Equipment (Does not include operator or fuel)		
>Fuel for all heavy equipment will be charged at Cost +20%		
Backhoe:		
Backhoe Rubber-Tire (Cat 416, JD 310, Case 580 or equivalent)	\$62.40	hour
Forklift to 5,000 LB Capacity	\$32.40	hour
Forklift, All Terrain, to 6,000 LB Cap	\$49.20	hour
Forklift, Extenda-boom (Telehandler), to 5,000 LB Cap., CatTH255 or equivalent	\$61.20	hour
Forklift, Extenda-boom (Telehandler), 5,501 to 10,000 LB Cap, Cat TL or equivalent	\$93.60	hour
Skid Steer Loaders:		
Skid Steer Loader (50-70 HP range)	\$62.40	hour
Hydraulic Excavators:		
Cat 303 mini excavator or equivalent (5.5-9K lb class)	\$51.80	hour
Cat 305 mini excavator or equivalent (9.1-14k lb class)	\$68.40	hour
Cat 307 mini excavator or equivalent (14.1-22K lb class)	\$96.00	hour
Cat 312 excavator or equivalent (22-30K lb class)	\$104.40	hour
Cat 315 excavator or equivalent (30.1-41K lb class)	\$124.80	hour
Cat 320 excavator or equivalent (41.1- 52K lb class)	\$136.80	hour
Cat 325 excavator or equivalent (52.1 – 65K lb class)	\$183.60	hour
Dozers:		
Cat D4 dozer or equivalent (90 HP class)	\$93.60	hour
Cat D4 LGP dozer or equivalent (71 -90 HP class)	\$103.20	hour
Attachments / Implements:		
Skidsteer Forks	\$60.00	day
Skidsteer Attachments, Non-hydraulic (Skidsteer not included)	\$120.00	day
Skidsteer Attachments, -Hydraulic (Skidsteer not included)	\$300.00	day
Vessels: (Does not include operator/captain, crew or fuel on Response Boats or Skimming Vessels)		
> Fuel & two-cycle oil for Response Boats and Skimming Vessels will be charged at Cost +20%.		
> Personal Flotation Device charges are included only for USES personal		
Response Boat, 10" to"<14 (Not motor)	\$126.50	day
Response Boat, 10" to"<16" 50 HP	\$258.75	day
Response Boat, 18" to"<21" 150 HP	\$460.00	day
Trailers:		
Response Trailer, 20"-27" (Enclosed)	\$367.50	day
Boom Trailer	\$157.50	day

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Confined Space Rescue Trailer (Equipment included)	\$787.50	day
Equipment Trailer, Bumper Pull =>20'	\$210.00	day
Equipment Trailer, Bumper Pull, <20'	\$183.75	day
Equipment Trailer, Gooseneck Greater than 20" Low Profile Tandem Axle, 20K GWWR	\$236.25	day
Travel Trailer	\$288.75	day
PUMPS, HOSE, FITTINGS AND ASSOCIATED EQUIPMENT :		
Pumps and Pumping Equipment:		
Chemical Pumps and Equipment:		
Air Diaphragm Pump, 1" Polyethylene	\$175.00	day
Air Diaphragm Pump, 2" Polyethylene	\$275.00	day
Air Diaphragm Pump, 3" Polyethylene	\$350.00	day
Air Diaphragm Pump, 1" Stainless Steel	\$175.00	day
Air Diaphragm Pump, 2" Stainless Steel	\$300.00	day
Petroleum Pumps and Equipment		
Fuel Pump, 12 Volt	\$50.00	day
Hydraulic Power Units:		
Hydraulic Power Packs to 25 HP	\$275.00	day
Hydraulic Power Packs 25.1 to 50 HP	\$500.00	day
Miscellaneous Pumps and Equipment:		
Trash/Wash Pump, 2" Diesel	\$125.00	day
Trash/Wash Pump, 3" Diesel	\$150.00	day
Trash/Wash Pump, 1" Gas	\$75.00	day
Trash/Wash Pump, 2" Gas	\$100.00	day
Trash/Wash Pump, 3" Gas	\$125.00	day
Hose:		
Chemical Hose:		
Chemical Hose Teflon, 2"	\$20.00	foot/day
Chemical Hose UHMWP or equivalent, 1"	\$10.00	foot/day
Petroleum Hose:		
Petroleum Hose, 1"	\$1.50	foot/day
Petroleum Hose, 2"	\$2.75	foot/day
Miscellaneous Hose:		
Air Compressor Hose, 3/4, 50"	\$15.00	day
Air Compressor Hose, 3/8, 50"	\$10.00	day
Corrugated Polyethylene Hose, Flexible, 4"-6"	\$2.00	foot/day
Fire Hose, 1.5"- 3.0"	\$1.15	foot/day
Fire Hose, 4.0"- 5.0"	\$2.50	foot/day
Hydraulic Hose	\$2.50	foot/day
Discharge Hose (Lay-flat), 1.5"-20"	\$0.65	foot/day
Discharge Hose (Lay-flat), 3.0"	\$1.00	foot/day
Suction/Discharge Hose, 4"	\$3.50	foot/day
Suction/Discharge Hose, 6"	\$5.00	foot/day
Ventilation Duct Hose, 12"- 18", 25"	\$50.00	day
Ventilation Duct Hose, 19"- 24", 25"	\$75.00	day
Water Hose 1/2" - 3/4", 50"	\$25.00	job
Associated Fittings and Capping Kits:		

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Capping Kits:		
Conversion Kit, Metric Thread to Stanford Pipe Thread (ISO Kit)	\$350.00	day
Drum Vacuum, 2" Stainless Steel	\$316.25	day
Fittings Charge for Transfers	\$300.00	day
Grounding/Bonding System	\$100.00	each/day
Flowmeter, 2" Stainless Steel	\$175.00	day
Boom, Skimmers, and Sorbents:		
Boom:		
18" Containment Boom	\$1.92	foot/day
4"-6" Containment Boom	\$1.20	foot/day
Containment Boom, magnetic Hull Connector	\$72.00	day
Boom Anchors:		
10 Pound	\$24.00	each
15 Pound	\$36.00	each
22 Pound	\$90.00	each
Anchor Marker Buoy	\$48.00	each
Boom Lights, Electric Strokes	\$30.00	day
Skimmers:		
Hydraulic Power Pack to 25 HP	\$330.00	day
Hydraulic Power Pack, 25.1 to 50 HP	\$600.00	day
Skimmers, Drum 24"	\$780.00	day
Skimmers, Drum 36"	\$900.00	day
Skimmers, Drum 72"	\$1,080.00	day
Sorbents:		
Astrogel, or equivalent	\$187.50	bag
Bic-Sorb	\$112.50	bale
Floor Dry	\$20.00	bag
Industrial Mat, 3" 150"	\$281.25	each
Nature's Broom Absorbent, 20 lbs	\$18.75	bag
Oil Gator	\$35.00	bag
Oil Snare, Loose	\$75.00	15 lb. box
Sorbent Boom:		
5"x10"Section (4 Sections per bag)	\$131.25	bag
8"x10"Section (4 Sections per bag)	\$193.75	bag
HEALTH, SAFETY, MONITORING AND PERSONNEL PROTECTIVE EQUIPMENT:		
Protective Clothing:		
Suits and Coveralls:		
Chemical Resistant Suit, Tychem SL with Respirator Fit, or Equivalent	\$72.60	each
Chemical Resistant Suit, CPF-3 with Respirator Fit, or Equivalent	\$95.70	each
Tyvek coveralls & 2 pair of PVC Nitrile or Neoprene gloves	\$55.00	man/day
Level D Modified (Includes 2 Tychem SL coveralls and 2 pair pf PVC, Nitrile or Neoprene gloves	\$154.00	man/day
Tyvek/Next Gen	\$13.20	each
Gloves:		
Gloves, Buly, with inner gloves	\$60.50	pair
Gloves, Inner	\$1.10	pair
Gloves, Leather	\$9.35	pair

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Gloves, PVC, Nitrile, Neoprene, with inter gloves	\$8.80	pair
Gloves, Natural Rubber/Neoprene Blend	\$3.30	pair
Gloves, Silver Shield or equivalent	\$8.80	pair
Gloves, Level IV Puncture/Cut Resistant gloves	\$88.00	pair
Boots and Boot Covers:		
Boot, 16" PVC/Rubber with Steel Toe	\$22.00	pair/day
Boot, Level A, Chemical Resistant with Steel Toe (Beta or Equivalent)	\$88.00	pair/day
Boot Covers, Latex	\$8.80	pair
Boot Covers, Tyvek or equivalent	\$4.40	pair
Miscellaneous:		
Level A Suit Pressure Test Kit	\$38.50	day
Muffs, Hearing Protection, 3 Position	\$5.50	day
Personal Flotation Device (PFD)	\$16.50	day
Rain Suit, (Limited use)	\$17.60	day
Rain Suit, Class III Compliant	\$16.50	day
Splash Shield/Full Face Shield System	\$5.50	day
Splash Shield/Full Face Replacement Polycarbonate Visor	\$11.00	day
Survival Suit, Cold Weather/Flotation	\$55.00	day
Tape, Chemical Resistant	\$38.50	roll
Tape, Duct	\$9.90	roll
Waders, Chest	\$110.00	day
Fall Protection and Confined Space Entry Equipment:		
Confined Space Rescue Trailer (♦ Equipment listed below included)	\$787.50	day
♦ Confined Space Rescue Kit	\$275.00	day
♦ Full Body Harness	\$38.50	day
♦ Lanyard, Shock Absorbing	\$22.00	day
♦ Lock Out/Tag Out Kit	\$27.50	day
♦ Retrieval Tripod with Winch	\$220.00	day
♦ Stokes Stretcher with Flotation Kit	\$110.00	day
♦ Sked Rescue Stretcher W/Backboard (poly)	\$110.00	day
Flood Light, Explosion Proof	\$110.00	day
Life Safety Rope (Replacement Cost)	\$1.49	foot
Tank Car Entry Ladder	\$33.00	
Trauma Kit, Basic, Inc. O2	\$55.00	
Respiratory Protection:		
Air Hose, Breathing Air, 50'	\$27.50	day
Breathing Air Trailer (Does not include ancillary equipment)	\$440.00	day
Cascade System, Per Person (Including hip mounted unit, 50' air hose and mask)	\$247.50	day
Cascade System Bottle Refill	\$27.50	day
Dust Mask, Disposable	\$2.20	each
Respirator, Disposable, P-100 Particulate	\$13.20	each
Respirator, Full Face, APR	\$66.00	day
Respirator Cartridges, P-100 Particulate	\$27.50	pair
Self Contained Breathing Apparatus (SCBA), Industrial, 60 Min	\$247.50	day
Self Contained Breathing Apparatus (SCBA), NFPA-Rated, 60 Min	\$385.00	day
SCBA Bottle, Spare	\$22.00	bottle
Traffic Control Equipment:		

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Traffic Control Trailer with barrels, cones, signs, sign lights, signal flags, etc. for 0.25 -1.0 mile of lane closure	\$1,210.00	day
Individual barrels, cones, signs, sign lights, signal flags, etc. for less than 0.25 or greater than 1.0 mile lane closure	\$27.50	each/day
Flashing Arrow Trailer, Solar Powered	\$275.00	day
Field Instrumentation and Related Supplies:		
Air Monitoring Equipment:		
Area RAE System (Includes 4 Units, RAElink Receiver, and Computer)	\$858.00	day
4-Gas Meter Plus PID	\$302.50	day
Benzene Meter	\$330.00	day
Compound-specific filter tube	\$19.80	each
Calibration Gas	Cost + 20%	
Colorimetric Detector Tube	\$22.00	each
Colorimetric Detector Tube, Exotic Compounds	Cost + 20%	
Colorimetric Tube Pump	\$82.50	day
Combustible Gas Indicator/4-Gas Meter	\$137.50	day
Random Aerosol Monitor (Mini Ram)	\$165.00	day
Sampling Pump, Personal	\$55.00	day
Toxic Gas Detector, Multiple Gases	\$247.50	day
Toxic Gas Detector, Single Gas-Personal	\$38.50	day
Vacuum Canister	Cost + 20%	
Testing/Sampling Equipment:		
Conductivity Meter	\$82.50	day
pH Indicator Strips	\$38.50	pack
pH Meter	\$82.50	day
pH Pen	\$33.00	day
Radiation Survey Meter	\$165.00	day
Sample Bottles, 4-12 ounce	\$6.60	each
Sample Bottles, 16-32 ounce	\$8.80	each
Sample Bottles, VOC	\$13.20	each
Sample Kit	\$33.00	each
Thermometer, Infrared Laser	\$49.50	day
TOOLS AND RELATED EQUIPMENT, HAND AND POWER:		
Air Compressor, to 12 CFM	\$104.50	day
Blower, Leaf	\$88.00	day
Chain Saw	\$110.00	day
Chop Saw/Cut-off Saw, Gas Powered	\$110.00	day
Chop Saw/Cut-off Saw Blade (Carbide/Diamond)	Cost + 20%	
Cutting Torch, Gauges & Gas (1 oxygen & 1 acetylene cylinder)	\$220.00	day
Drill, Pneumatic	\$55.00	day
Drill Kit, Pneumatic for drilling tankers	\$165.00	day
Exhaust Blower, Non-Intrinsically Safe	\$49.50	day
Extension Cord, Electrical	\$11.00	each/day
Fan, Intrinsically-Safe Blower/Exhaust	\$71.50	day
Hand Tools (Shovels, Rakes, Nets, Pitchforks, etc)	\$27.50	each

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Hand Tools (Pipe wrenches, Crescent wrenches, etc.)	\$27.50	each/day
Hand Tools, Non-Sparking	\$27.50	per tool
Hand Tools, Pneumatic, Miscellaneous	\$55.00	each/day
Hand Tools, Power (Skill Saw, Reciprocating Saw, Drill, Band Saw, etc.)	\$55.00	each/day
Hand Tools, Replacement Baldes/Bits	Cost + 20%	
Heater, Torpedo (Fuel not included)	\$71.50	day
Impact Wrench, 1"	\$55.00	day
Ladder, Step or Extension	\$27.50	day
Pallet Jack	\$38.50	day
Pallet Puller	\$16.50	day
Pipe Cutter and Threader (Manual)	\$49.50	day
Tank Gauging Stick, 10' - 12'	\$11.00	day
Tape Measure, 100' - 300'	\$11.00	day
Tape, Roller-Wheel	\$11.00	day
Tool Kit, Manual, SAE/Metric	\$27.50	day
Vise, Portable Pipe	\$27.50	day
Weed Eater, Industrial, with Tiller Attachment	\$104.50	day
Welding Machine, Portable with rods, hood, hand tools, etc.	\$302.50	day
Wheelbarrow	\$27.50	day
DECONTAMINATION, CLEANING SUPPLIES AND NEUTRALIZING AGENTS:		
Biological Decontamination Equipment:		
Degreaser, Foaming for Food-Handling Surfaces	\$36.80	quart
Foamer, Pump Sprayer	\$46.00	day
Hand Sanitizer, 2 oz	\$3.45	bottle
Sterilex Ultra Kleen Disinfectant	\$71.30	gallon
Decontamination Equipment:		
Brushes, Decontamination/Scrub with 4' - 6' Handle	\$23.00	each
Containment Pool, Pop-up (20 gallons)	\$143.75	each
Eye Wash Station, Portable	\$40.25	day
Eye Wash Station, Saline Solution	\$8.63	gallon
Personnel Decon Station (1 poly pool, brushes, decon solution, rubber matting, 2 pump sprayers)	\$109.25	each
Pool, Decontamination (Disposable)	\$28.75	each
Sprayer, Pump	\$43.70	each
Cleaning Supplies, Neutralizing Agents and Inoculants:		
Bleach, Household Strength (5%)	\$5.75	gallon
Degreaser, Foaming for Food-Handling Surfaces +	\$36.80	quart
Degreaser, General Purpose Petroleum Based	\$34.50	gallon
Detergent (Dawn, Joy, etc.)	\$4.60	12 oz.
Hand Cleaner	\$5.75	tube
Lime, Agricultural, 50 lbs.	\$11.50	bag
Lime, Hydrated, 50 lbs.	\$13.80	bag
Micro Blaze	\$287.50	5-gallons
Simple Green	\$29.90	gallon
Simple Green	\$138.00	5-gallons
Soda Ash	\$23.50	bag

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FIREFIGHTING EQUIPMENT:		
Fire Extinguishers:		
Fire Extinguisher, Dry Chemical 20 lb unit	\$12.00	day
Refill (If used)	\$48.00	each
Fire Extinguisher, PKP 20 lb unit	\$18.00	day
Refill (If used)	\$132.00	each
Personal Protective Equipment:		
Firefighter Structural Turn-out Gear/Bunker Gear (Plus decontamination charge)	\$360.00	day
Flame Retardant Coveralls	\$30.00	day
Self Contained Breathing Apparatus (SCBA), NFPA-Rated, 60 Minute	\$385.00	day
SCBA Bottle, Spare	\$66.00	day
COMMUNICATIONS AND OFFICE EQUIPMENT:		
Cellular Phone	\$11.00	day
Copier, Portable	\$16.50	day
Camera, Digital	\$16.50	day
Camera, Video	\$82.50	day
Fax Machine	\$38.50	day
Global Positioning System Receiver, Handheld	\$11.00	day
Laptop Computer with Printer	\$38.50	day
Radio, 2-way Hand-Held	\$33.00	day
MISCELLANEOUS EQUIPMENT AND SUPPLIES:		
All-Terrain Vehicles:		
ATV (4-wheeler) Trailer	\$345.00	day
ATV (4-wheeler) Trailer	\$57.50	day
ATV - Utility Vehicle (Mule, Gator, or equivalent)	\$431.25	day
Utility Truck, 6 x 6	\$632.50	day
Containment Berm, Portable (10'-15' x 10'-15')	\$86.25	day
Containment Berm, Portable (10'-12' x 50')	\$115.00	day
Drums and Small Containers:		
95-Gallon Poly Overpack	\$312.50	each
85-Gallon Steel Recovery	\$281.25	each
55-Gallon Closed/Open Top Steel (New)	\$106.25	each
55-Gallon Closed/Open Top Steel (Reconditioned)	\$81.25	each
55-Gallon Closed/Open Top Poly (New)	\$106.25	each
55-Gallon Closed/Open Top Poly (Reconditioned)	\$68.75	each
5 Gallon Bucket with Lid	\$17.50	each
Drum Dolly	\$31.25	day
Drum Insert, 55 Gallon (Polyethylene)	\$43.75	each
Drum Labels and Placards	\$2.50	each
Drum Liners, 3.0 mil	\$2.50	each
Drum Pump - Disposable	\$31.25	each
Drum Wrench, Non-sparking	\$12.50	day
Fence, Construction Safety, 100'	\$81.25	roll
Generators, Power/Electrical:		
Generator, 4.1 to 8 KW	\$201.25	day

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Generator, 15.1 to 25 KW	\$316.25	day
Grounding Equipment, Rods and Cables	\$40.25	each job
Labels and Forms:		
Drum Labels and Placards	\$2.30	each
Form, Bill of Lading	\$5.75	each
Form, Waste Manifest	\$5.75	each
Lighting:		
Flashlight, Intrinsically Safe	\$13.80	day
Flashlight, Non-Intrinsically Safe	\$6.90	day
Light Plant, Trailer Mounted	\$345.00	day
Light Stand, Portable	\$40.25	day
Pallet	\$11.50	day
Polyethylene Bags, 6 mil (50" x 33")	\$97.75	roll of 50
Polyethylene Sheeting, 20' x 100' 6 mil	\$161.00	roll
Pressure Washing Equipment:		
Pressure Washer	\$172.50	day
Pressure Washer Hose, 50' (3,500 psi)	\$28.75	day
Pressure Washer Nozzle, Turbo (3,500 psi)	\$23.00	day + rebuild
Pressure Washer-Hot Water, trailer mounted, self contained (to 3,500 psi)	\$575.00	day
Rope:		
Polypropylene:		
3/8", 600' spool	\$92.00	spool
3/8" (<1/2 spool)	\$0.25	foot
1/2", 600' spool	\$166.75	spool
1/2" (<1/2 spool)	\$0.35	foot
3/4", 600' spool	\$345.00	spool
3/4" (<1/2 spool)	\$0.55	foot
Shelter, Pop-up (10x10)	\$40.25	day
Stakes, Wood	\$13.80	tube
Storage Tanks, Bulk:		
Tank, Polyethylene to 2,000 Gallons	\$115.00	day
Tote Container, Polyethylene	\$51.75	day
Stress Relief (Sports drinks, bottle water, vitamin water, etc.)	\$10.00	man/day
Stretch Wrap	\$51.75	roll
"T" Post	\$10.35	day
"T" Post Driver	\$11.50	day
Table, Polyethylene	\$17.25	day
Tape:		
Barrier	\$34.50	roll
Chemical Resistant	\$40.25	roll
Duct	\$10.35	roll
Electrical	\$3.45	roll

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STANDBY EMERGENCY RESPONSE AGREEMENT

This Agreement is made this 24th day of February 2015, by and between Clean Harbors Environmental Services, Inc., and affiliates, a Massachusetts corporation, with offices located at 42 Longwater Drive, P.O. Box 9149, Norwell, MA 02061-9149, ("Contractor") and Bakken Oil Express, LLC, a North Dakota limited liability company. LL Terminals, LLC, a Kansas limited liability company, BOE Pipeline, LLC, a Kansas limited liability company and Lario Shipping, LLC, a Kansas limited liability company, with its principal place of business at 717 17th Street, Suite 1825, Denver, CO, 80202 (each a "Customer" and collectively, the "Customers").

WHEREAS, Contractor is engaged in the business of providing Emergency Response Services ("Services") to respond to discharges of oil or other hazardous substances; and

WHEREAS, Customers desire to engage Contractor to provide such Services; and

WHEREAS, Customers and Contractor desire to establish the terms and conditions pursuant to which such Services will be provided.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties, intending to be legally bound, agree as follows:

ARTICLE 1. Purpose

- 1.1 This Agreement establishes the terms and conditions pursuant to which Contractor may furnish Customer with certain Services in connection with response to discharges of oil or other hazardous substances.
- 1.2 This Agreement shall not obligate Customer to purchase Services from Contractor, nor shall it obligate Contractor to provide Services, but shall govern all orders for Services issued by Customer and which are accepted by Contractor. Contractor will use best efforts to respond to requests by Customer for Services.
- 1.3 This Agreement will allow Customer to list Contractor as its provider of Services, as defined in Article 2, in emergency response plans and regulatory reporting.

ARTICLE 2. Scope of Services

- 2.1 The Services contemplated in connection with the response to discharges of oil or other hazardous substances may include, but not be limited to, the following:
 - o Containment, recovery, repackaging and removal of materials;
 - o Site evaluation, decontamination and restoration;

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- o Transportation, storage, treatment or disposal of wastes;
- o Technical services, including sampling, laboratory analysis, and other related services;
- o Standby of personnel and equipment in anticipation of imminent activation;
- o Training and mock spill drill deployments.

ARTICLE 3. Contractor's Warranties

- 3.1 Contractor shall provide supervision, labor, materials, tools, equipment and subcontracted items for the performance of the Services.
- 3.2 Contractor shall take necessary precautions for the safety of its employees, and shall comply with applicable provisions of the Occupational Safety and Health Act. It is understood and agreed, however, that Contractor shall not be responsible for the elimination or abatement of safety hazards created by or otherwise resulting from work being performed by Customer's employees, its other contractors or agents.
- 3.3 Contractor represents that it holds the permits, licenses, and certifications required for the performance of Services, including, without limitation, OSRO Coast Guard classification which is required for the performance of Services. In the event of a lapse or termination of Contractor's permits, licenses or certifications necessary to perform the Services, Contractor will notify Customer within three (3) days following such lapse or termination.

ARTICLE 4. Customer's Warranties

- 4.1 Customer shall provide full and complete information in writing regarding its requirements for the Services.
- 4.2 Customer shall designate a representative ("Customer's Representative") who shall be fully acquainted with the Services to be provided hereunder and who shall be authorized to approve changes in the Services; render decisions promptly; authorize commitments and expenditures on behalf of Customer; approve Contractor's daily worksheets and to accept, verify and approve Contractor's invoices.
- 4.3 Customer shall be responsible for repairs to all private property, roadways, structures and rights-of-way resulting from Contractor's reasonable use thereof.
- 4.4 Customer represents and warrants that it shall provide payment to Contractor for the services provided by Contractor as set forth in Article 5.

- 4.5 Customer shall communicate to Contractor all special hazards or risks known to or learned by the Customer during the term hereof which are related to the performance of Services pursuant to this Agreement.
- 4.6 Customer shall provide full and complete information regarding the site, surface and subsurface conditions, utility locations, site ownership, contractor access, hazardous materials or wastes and other substances or hazards known to be present and any other reports, documentation or information concerning the site or Services which may reasonably be provided to Contractor. Customer represents and warrants to Contractor that Customer has the requisite legal right, title, and interest necessary to provide access to the job site. In the event subsurface or latent conditions at the work site materially differ from those indicated in the contract documents or if the latent or subsurface physical conditions are of an unusual nature not ordinarily found to exist in environmental service activities identified in the contract documents, the Contractor shall promptly inform Customer's Representative of the condition and any necessary adjustment to the Rates, and be entitled to an equitable adjustment of the Contract price and time.

ARTICLE 5. Compensation

- 5.1 The payment terms set forth herein are contingent upon the approval of Contractor's Credit Department. In the event of a change in Customer's financial condition, Contractor reserves the right to alter, change, or modify payment terms, and to immediately stop work. The failure of Contractor to exercise its rights under this article at any time shall not constitute a waiver of Contractor's continuing right to do so.
- 5.2 Customer agrees to pay Contractor for Services in accordance with Contractor's Rate Schedule attached hereto as Exhibit A for emergency response work ("Rates") in effect at the time Services are rendered. Contractor shall provide Customer with any updates or amendments Contractor makes to the Rates at least forty-five (45) days in advance of the effectiveness of the new Rates. Customer's obligation to pay amounts due pursuant to this Agreement shall not be conditioned upon or limited by the types, amounts or availability of insurance coverage.
- 5.3 Contractor will present its first invoice to Customer as soon as possible following commencement of Services provided hereunder, and may issue subsequent invoices every fifteen (15) days thereafter. Customer agrees to pay the full undisputed amount of each invoice amount within thirty (30) days of the date of receipt of said invoice by Customer's Representative.
- 5.4 Customer agrees that interest shall accrue and will be paid to Contractor on any unpaid balance of any invoice after thirty (30) days of receipt of invoice by Customer at the rate of one and one half percent (1.5%) per month or the maximum amount allowed by law.

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- 5.5 In the event that legal or other action is required to collect unpaid balances of invoices due Contractor, Customer agrees to pay all costs of collection, litigation or settlement incurred by Contractor, including reasonable attorneys fees. "Legal or other action" as used above shall include bankruptcy and insolvency proceedings.
- 5.6 In the event that work is suspended or terminated for any reason prior to the completion of the Services, Customer agrees to pay for labor, equipment, materials, disposal and other costs incurred prior to termination by Contractor at the Rates and for reasonable demobilization costs, unless such costs are a result of Contractor's breach of the terms of this Agreement. In addition, Customer will not be responsible for demobilization costs incurred by Contractor in the event Agreement is terminated as a result of Contractor's breach of the terms of this Agreement.
- 5.7 Services related to litigation support or testimony in connection with or arising out of the work performed by Contractor hereunder is not within the Scope of Services covered by this Agreement unless specifically indicated as an add-on service. In the event such services are required and are not indicated as an add-on service, Customer agrees to pay Contractor in accordance with the Rates for any litigation support or testimony provided by Contractor in connection with, or arising out of, the work performed by Contractor hereunder.

ARTICLE 6. Changes in Work

- 6.1 In the event that changed or unforeseen circumstances which threatens safety of persons or property at the work site necessitate immediate changes in the performance of Services, Customer agrees to pay Contractor at the Rates, or for such costs incurred which are not delineated in the Rates.
- 6.2 If any change occurs during the term of this Agreement with respect to any laws, rules, regulations or ordinances which affect the rights or obligations of Customer or Contractor under this Agreement, or the applicability of any taxes or fees, or the cost of handling waste materials, Customer and Contractor shall negotiate in good faith to bring this Agreement into conformance with such change or changes. In the event that such agreement cannot be reached, Customer or Contractor shall have the right to terminate this Agreement immediately upon written notice to the other party.

ARTICLE 7. Insurance

- 7.1 Contractor shall keep in effect during the term of this Agreement the following insurance coverages:

COVERAGE	LIMITS
a. Worker's Compensation	Statutory
b. Employer's Liability	\$2,000,000
c. General Commercial Liability	\$2 million per occurrence \$4 million aggregate

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d. Automobile (MSC 90 and ISO Form CA 9948 endorsements)	\$5 million combined single limit
e. Contractors Pollution Liability	\$10 million each Claim \$10 million all Claims

- 7.2 Contractor shall provide Customer with a certificate of insurance upon written request.
- 7.3 The obligation to carry the insurance required by this Section shall not limit or modify in any way any other obligations assumed by any party under this Agreement.

ARTICLE 8. Indemnification

- 8.1 Contractor shall indemnify, defend and hold harmless each Customer, severally and not jointly, its parent and affiliated companies and their respective directors, officers, employees and agents from and against any and all costs, liabilities, claims, demands and causes of action including, without limitation, bodily injury to or death of any person or destruction of or damage to any property, except natural resource and other damages as provided in Section 8.3, which a Customer may suffer, incur, or pay out, to the extent such are caused by the negligence or willful misconduct of Contractor, its agents or employees during the performance of this Agreement, or Contractor's failure to comply with any laws, regulations or lawful authority, or failure to comply with its obligations under this Agreement; except to the extent such liabilities, claims, demands and causes of action result from the Customer's failure to comply with any laws, regulations or other lawful authority, or the Customer's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Customer, its employees or agents.
- 8.2 Each Customer, severally and not jointly, shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees and agents from and against any and all costs, liabilities, claims, demands and causes of action including, without limitation, any bodily injury to or death of any person or destruction of or damage to property which Contractor may suffer, incur, or pay out, to the extent such are caused by the negligence or willful misconduct of Customer, its employees or agents or the failure of Customer to comply with any laws, regulations or other lawful authority or the failure of Customer to comply with its duties or obligations under this Agreement; except to the extent such liabilities, claims, demands and causes of action result from Contractor's failure to comply with any laws, regulations or lawful authority, or Contractor's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Contractor, its employees or agents.
- 8.3 Notwithstanding the foregoing, each Customer shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees, agents and subcontractors from and against any and all costs, liabilities, claims, demands and causes of action for pollution damages; contamination or adverse effects on the environment; destruction of, damage to, or loss of, whether

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actual or alleged, any property or natural resources, including the cost of assessing the damage; injury to or economic losses resulting from destruction of real or personal property; damages for loss of subsistence use of natural resources; damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction or loss of real property, personal property or natural resources; damages for net costs of providing increased or additional public services; removal costs; and any other costs assessable under the Oil Pollution Act of 1990, the Comprehensive Environmental Response, Compensation and Liability Act or other local, state or Federal law or lawful authority applicable to discharges or releases of oil or hazardous substances which Contractor, individually or collectively, may suffer, incur, or pay out in connection with, or arising out of, the release of oil or hazardous substances by Customer; provided, however, that the foregoing indemnity shall not apply to any claims, liabilities or causes of action caused by the transportation or disposal of waste materials by Contractor.

ARTICLE 9. Excuse of Performance

The performance of this Agreement, except for the payment of money for Services already rendered, may be suspended by either party in the event performance of this Agreement is prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include but not be limited to: acts of God, acts of war, riot, fire, explosion, accidents, inclement weather, or sabotage; changes in government laws, regulations, orders, or defense requirements; restraining orders, labor dispute, strike, lock-out or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgments). The party which is prevented from performing by a cause beyond its reasonable control shall use its best efforts to eliminate such cause or event.

ARTICLE 10. Termination

This Agreement may be terminated by either party upon forty-eight (48) hours prior notice to the other party.

ARTICLE 11. Notice

Any notice to be given under this Agreement shall be in writing and delivered to the address listed below:

Customer: Bakken Oil Express, LLC
LL Terminals, LLC
BOE Pipeline, LLC
Lario Shipping, LLC
717 17th Street, Suite 1825
Denver, CO 80202
Attn: Director of Operations
Email: notice@boemidstream.com

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Contractor: Clean Harbors Environmental Services, Inc.
42 Longwater Drive,
P.O. Box 9149
Norwell, MA 02061-9149
Attn: General Counsel (Urgent Contract Matter)

ARTICLE 12. Additional Provisions

- 12.1 Limitation of Liability - Customer agrees that Contractor shall not be responsible for pre-existing contamination at the job location or natural resource damage. Neither party shall be responsible to the other or for indirect, incidental, consequential or special damages, including loss of use or lost profits, resulting from or arising out of or in connection with this Agreement. Except to the extent caused by the negligence or willful misconduct of one party, neither Party shall be liable to the other (or any person claiming through Customer) in any amount for any personal injury, illness, death, or property damage caused in whole or in part by a hazardous substance or any other substance regulated by law, and handled by either Party in the performance of this Agreement.
- 12.2 Confidentiality- The Parties recognize the importance of confidentiality and discretion in all activities related to the Services and the work site and performance under this Agreement. Both Parties agree to cause each of its employees and representatives with a need to know to hold all information relating to the business of the other Party ("Disclosing Party") disclosed to it by reason of this Agreement confidential and will not disclose any of such information to any person or entity unless legally compelled to do so; provided, however, that to the extent that any of them may become so legally compelled they may only disclose such information if they shall, if permitted, have first notified the Disclosing Party of the legal obligation and afforded Disclosing Party the opportunity to oppose such legal obligation or seek a protective order.
- 12.3 Waiver - Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition.
- 12.4 Assignment - Neither Party may assign this Agreement without the prior written consent of the other Party.
- 12.5 Relationship of the Parties - Except as specifically provided herein, neither Contractor nor Customers shall act or represent or hold itself out as having authority to act as an agent or partner of the other, or in any way bind or commit the other Party to any obligations. Nothing contained in this Agreement shall be construed as creating a partnership, joint venture, agency, trust, or other association of any kind, each Party being individually responsible only for its obligations as set forth in this Agreement. This Agreement is not exclusive and Customers understand and acknowledge that Contractor performs and will perform similar services for other clients.

- 12.6 **Severability** - If any section, subsection, sentence or clause of this Agreement shall be deemed to be illegal, invalid or unenforceable for any reason, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of this Agreement or other sections of this Agreement.
- 12.7 **Entire Agreement** - This Agreement and any Exhibits to this Agreement represent the entire understanding and agreement between Customer and Contractor and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. Modifications to this Agreement shall be in writing and shall be signed by the Customer and Contractor. Additional, conflicting or different terms on any purchase order or other preprinted document issued by Customer shall be void and are hereby expressly rejected by Contractor.
- 12.8 **Survival** - The provisions contained in Articles 3, 4, 5, 8 and 12 shall survive and remain in effect following the termination of this Agreement.
- 12.9 **Applicable Law** - This Agreement shall be interpreted and enforced according to the Laws of the State of North Dakota and the parties agree to submit to the jurisdiction of the courts of the State of North Dakota for any disputes arising under this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

On behalf of each CUSTOMER
 BAKKEN OIL EXPRESS, LLC
 BOE PIPELINE, LLC
 LARID SHIPPING, LLC
 LL TERMINALS, LLC

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.

Signature: 

Signature: _____

By: JOHN C WADSWORTH
 PRINT NAME

By: _____
 PRINT NAME

Title: COO

Title: _____



**Exhibit A
Rate Schedule**

jlw



Regional Rate Sheet

Region: Bakken Shale Region US

Rate Category Type: Emergency Response Rates

Currency Code: USD

Description	UOM	Price (USD)
FIELD PERSONNEL		
Field Technician	HR	\$58.00
Equipment Operator	HR	\$69.00
Foreman	HR	\$76.00
Chemist	HR	\$90.00
Supervisor	HR	\$98.00
Lead Chemist	HR	\$116.00
Project Manager	HR	\$126.00
Site Safety Officer	HR	\$134.00
TECHNICAL PERSONNEL		
Field Inspector	HR	\$82.00
Senior Mechanical Technician	HR	\$87.00
Associate Engineer	HR	\$95.00
Mechanic	HR	\$96.00
Welder	HR	\$96.00
Designer	HR	\$100.00
Wastewater Treatment Operator	HR	\$102.00
Field Engineer/Scientist/Geologist	HR	\$107.00
Senior Engineer/Scientist/Geologist	HR	\$120.00
Professional Engineer/LSP	HR	\$151.00
ADMINISTRATIVE/MANAGERIAL PERSONNEL		
On Site Administration	HR	\$65.00
Emergency Response Coordinator	HR	\$126.00
General Manager	HR	\$161.00
PER DIEM / SUBSISTENCE		
Per Diem / Subsistence	DAY	\$184.00

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AW



Regional Rate Sheet

Description	UOM	Price (USD)
HEAVY DUTY TRUCKS		
Box Truck	HR	\$64.00
Dump Truck, 10 Wheel	HR	\$80.00
High Powered Vacuum Truck/Cusco	HR	\$135.00
Rolloff Straightjob	HR	\$82.00
Skid Mounted Vacuum System	HR	\$63.00
Tractor Only, No Trailer	HR	\$60.00
Tractor w/Box Van	HR	\$80.00
Tractor w/Dump Trailer	HR	\$85.00
Tractor w/Flatbed/Lowbed Trailer	HR	\$82.00
Tractor w/Liquid Transporter	HR	\$87.00
Tractor w/Rolloff Trailer	HR	\$82.00
Tractor w/Vacuum Trailer	HR	\$93.00
Vacuum Truck, Straight	HR	\$75.00
Wet/Dry High Powered Vacuum Truck/Guzzler	HR	\$135.00
LIGHT DUTY TRUCK/RESPONSE EQUIPMENT		
Emergency Response Van	HR	\$79.00
Pickup/Van/Car/Crew Cab	HR	\$21.00
Spill Trailer	DAY	\$195.00
Stake Body/Utility Truck	HR	\$37.00
Utility / Support Trailer	DAY	\$195.00
PRESSURE WASHING EQUIPMENT		
1000psi Pressure Washer	DAY	\$100.00
2000psi Pressure Washer	DAY	\$109.00
2500psi Hot Water Pressure Washer	DAY	\$341.00
2500psi Pressure Washer	DAY	\$118.00
3000psi Hot Water Pressure Washer	DAY	\$376.00
High Pressure Blaster - 10,000 PSI 150 HP	HR	\$71.00
High Pressure Blaster - 20,000 PSI 300 HP (10 GPM)	HR	\$140.00
High Pressure Blaster - 40,000 PSI 200 HP (6 GPM)	HR	\$195.00
Nozzle - 2D Automated	HR	\$65.00

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ACW



Regional Rate Sheet

Description	UOM	Price (USD)
Nozzle - 3D Automated	HR	\$85.00
PUMPING/TRANSFERRING PUMPS		
Drum Loader	DAY	\$172.00
Drum Vacuum, Pneumatic	HR	\$32.00
Pump - Centrifugal, 2 in	DAY	\$110.00
Pump - Diesel Lister, 3 in	DAY	\$154.00
Pump - Double Diaphragm, 1 in	DAY	\$97.00
Pump - Double Diaphragm, 2 in	DAY	\$137.00
Pump - Double Diaphragm, 2 in, Chemical	DAY	\$182.00
Pump - Double Diaphragm, 3 in	DAY	\$154.00
Pump - Double Diaphragm, 3 in, Chemical	DAY	\$201.00
Pump - Double Diaphragm, 4 in	DAY	\$212.00
Pump - Electric Drum	DAY	\$109.00
Pump - Electric Submersible, 2 in	DAY	\$86.00
Pump - Electric Submersible, 3 in	DAY	\$109.00
Pump - Electric Submersible, 4 in	DAY	\$159.00
Pump - Hale, 2 in	DAY	\$109.00
Pump - Hand	DAY	\$35.00
Pump - Hydraulic Transfer, 4 in	HR	\$35.00
Pump - Hydraulic Transfer, 6 in	HR	\$262.00
Pump - Mudhen / Single Diaphragm, 2 in	DAY	\$65.00
Pump - Trash, 4 in	DAY	\$285.00
MARINE RESPONSE EQUIPMENT		
Airboat, Single Engine	DAY	\$1200.00
Airboat, Twin Engine	DAY	\$3500.00
Boat/Workskiff without Motor	DAY	\$142.00
Brush Skimmer	DAY	\$800.00
Containment Boom - 10" Per Foot Per Day	FT	\$1.78
Containment Boom - 18" Per Foot Per Day	FT	\$1.99
Containment Boom - 24" Per Foot Per Day	FT	\$2.57
Containment Boom - 36" Per Foot Per Day	FT	\$2.88
Drum Skimmer (24in-36in)	DAY	\$627.00

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ACW



Regional Rate Sheet

Description	UOM	Price (USD)
Drum Skimmer, Double Barrel	DAY	\$950.00
Hydraulic Power Pack for Skimmer	DAY	\$220.00
Landing Craft (LCM), 26ft-29ft	DAY	\$950.00
Landing Craft (LCM), 30ft-34ft	DAY	\$1200.00
Landing Craft (LCM), 35ft-45ft	DAY	\$1800.00
Landing Craft (LCM), 46ft-75ft	DAY	\$4800.00
PFD Life Vest	DAY	\$26.00
PFD Survival Suit / Cold Weather Survival Work Suits	DAY	\$79.00
Power Barge Boat, 26ft-30ft	DAY	\$1100.00
Power Barge Boat, 30ft-42ft	DAY	\$2000.00
Power Workboat, Fast Response, 12-14ft	DAY	\$298.00
Power Workboat, Fast Response, 15-17ft	DAY	\$356.00
Power Workboat, Fast Response, 18-22ft	DAY	\$596.00
Power Workboat, Fast Response, 23-26ft	DAY	\$750.00
Power Workboat, Fast Response, 27-36ft	DAY	\$950.00
Rigid Hull Inflatable (RIB) (18ft-22ft)	DAY	\$785.00
Rope Mop - 4" (Per Foot)	FT	\$30.00
Rope Mop - 9" (Per Foot)	FT	\$38.00
Rotating Disc Skimmer Unit	DAY	\$816.00
Skim Pack Skimmer	DAY	\$162.00
Skimmer - C24H Hydraulically Powered Rope Mop Wringer	DAY	\$650.00
Skimmer - C29H Hydraulically Powered Rope Mop Wringer	DAY	\$875.00
Skimmer - CV-46H Hydraulically powered Vertical Mop Wringer	DAY	\$775.00
Skimmer, Duck Bill	DAY	\$28.00
Skimming Vessel (Marco/JBF or Equivalent) 28-30ft	DAY	\$5475.00
Skimming Vessel Belt Drive Replacement	EA	\$1302.00
Underwater ROV	DAY	\$1255.00
Weir Skimmer Unit	DAY	\$173.00
FIELD ANALYTICAL		
4 Gas/5 Gas Meter	DAY	\$178.00
Bailer & Sampling Equipment	DAY	\$60.00
Draeger Air Monitoring Pump	DAY	\$79.00
Explosion/Oxygen Meter	DAY	\$126.00

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Law



Regional Rate Sheet

Description	UOM	Price (USD)
Geiger Counter Meter	DAY	\$157.00
Geoprobe	DAY	\$228.00
Hydrogen Cyanide Meter	DAY	\$130.00
Hydrostatic Tester	DAY	\$115.00
Interface Probe	DAY	\$126.00
Lumex RA915+ Mercury Vapor Analyzer	DAY	\$513.00
Mercury Vapor Analyzer	DAY	\$262.00
Particulate Meter, Mini Ram or equivalent	DAY	\$126.00
Personal Air Pump Meter	DAY	\$60.00
pH Meter	DAY	\$60.00
PID Meter	DAY	\$126.00
Well Purging/Sampling Pump	DAY	\$60.00
HOSES/PIPE		
Hose - Chemical, 2 in X 20 ft	DAY	\$37.00
Hose - Chemical, 3 in X 20 ft	DAY	\$51.00
Hose - Chemical, 4 in X 20 ft	DAY	\$67.00
Hose - Flex, 4 in, per ft	FT	\$2.75
Hose - Flex, 6 in, per ft	FT	\$3.50
Hose - Lay Flat, 4 in X 25 ft	DAY	\$60.00
Hose - Lay Flat, 6 in X 25 ft	DAY	\$79.00
Hose - Suction, 2 in X 25 ft	DAY	\$31.00
Hose - Suction, 3 in X 25 ft	DAY	\$42.00
Hose - Suction, 4 in X 25 ft	DAY	\$60.00
Hose - Suction, 6 in X 25 ft	DAY	\$87.00
Wash Hose, 1/2in x 50ft	DAY	\$5.00
EARTH MOVING EQUIPMENT		
Backhoe Loader, 1 Yard Bucket	HR	\$79.00
Bobcat Loader/Mini Excavator	HR	\$74.00
Dozer, <100 HP	DAY	\$680.00
Excavator, 20-30 Ton	HR	\$100.00
Fork Attachment for Bobcat Loader	DAY	\$58.00
Loader, 2-3 Yard Bucket	HR	\$77.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Sweeper Attachment for Bobcat Loader	DAY	\$142.00
PNEUMATIC POWER TOOLS		
3/4in Drill, Rotary Hammer	DAY	\$91.00
Jackhammer, 40Lb	DAY	\$65.00
Jackhammer, 60Lb	DAY	\$82.00
Jackhammer, 90Lb	DAY	\$98.00
Pneumatic Chipping Gun	DAY	\$105.00
Steel Nibbler, Pneumatic	DAY	\$131.00
GAS POWERED TOOLS		
Brush Cutter/Power Broom	DAY	\$122.00
Cutoff Saw (Demo)	DAY	\$131.00
ELECTRIC POWER TOOLS		
1/2in Drill, Electric	DAY	\$43.00
Circular Saw, Electric	DAY	\$60.00
Mercury Vacuum	DAY	\$206.00
Reciprocating Saw (Sawzall), Electric	DAY	\$79.00
Wet Vacuum (Shop Vac)	DAY	\$43.00
SITE SUPPORT		
15 Gal HEPA Vacuum	DAY	\$172.00
150,000 BTU Portable Heater	DAY	\$272.00
2 CU YD self dumping hopper	DAY	\$4.30
2,000 - 2,900 Gal Poly Storage Tank	DAY	\$79.00
20,000 Gal Frac Tank	DAY	\$162.00
3,000 - 3,900 Gal Steel Storage Tank	DAY	\$27.00
300 - 500 Gal Poly Storage Tank	DAY	\$42.00
4,000 - 6,000 Gal Poly Storage Tank	DAY	\$96.00
Air Compressor 175-185 CFM	DAY	\$262.00
Air Compressor 8-10 CFM	DAY	\$121.00
ATV, 4X4 or 4X6	DAY	\$366.00
Carbon Filter System	DAY	\$249.00
Decon Pool, 10ft x 10ft	DAY	\$150.00

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Jan



Regional Rate Sheet

Description	UOM	Price (USD)
Decon Pool, 20ft x 100ft	DAY	\$450.00
Decon Pool, 25ft x 50ft	DAY	\$300.00
Decontamination Trailer	DAY	\$183.00
Dewatering Box	DAY	\$172.00
Dump Trailer (Trailer Only, Staged on Site)	DAY	\$74.00
Eyewash Station	DAY	\$53.00
Frac Tank, Double Walled	DAY	\$194.00
Generator - 12K Watt	DAY	\$250.00
Generator - 4,000 Watt	DAY	\$139.00
Generator - 5,000 Watt	DAY	\$157.00
Generator - 8,000 Watt	DAY	\$183.00
Halogen Spotlight	DAY	\$105.00
Incident Command Unit	DAY	\$1568.00
Intermodal Container	DAY	\$32.00
Intrinsically Safe Drop Light	DAY	\$105.00
Light Stand	DAY	\$105.00
Light Tower w/Generator	DAY	\$523.00
Office Trailer	DAY	\$115.00
On-site Van Trailer (Tractor not included)	DAY	\$201.00
Personnel Staging Tent, 10x10 ft, Purchased	EA	\$175.00
Personnel Staging Tent, 20' x 30'	DAY	\$150.00
Portable Boiler	DAY	\$910.00
Rolloff Container with Tarp & Bows	DAY	\$20.00
Sea Container / Conex / Tool Crib, 20 ft.	DAY	\$30.00
Secondary Containment Unit	DAY	\$41.00
Skid Mounted Liquid Phase Carbon System (10GPM)	DAY	\$68.00
Tank Trailer/Transporter, No Tractor (For Storage Only)	DAY	\$455.00
Traffic Cone/Barricade Unit	DAY	\$1.50
Utility/Cross Terrain Vehicle (Mule/Gator)	DAY	\$366.00
Vacuum Box, Watertight	DAY	\$109.00
SPECIALTY EQUIPMENT		
Antiviral Disinfectant Fogger	DAY	\$175.00
Auger, Manual	DAY	\$65.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Compactor	DAY	\$65.00
Confined Space Entry Gear (Retrieval & Rescue Equip)	DAY	\$364.00
Cutting Torch/Acetylene Torch	DAY	\$120.00
DBI/Rogliss Tripod	DAY	\$65.00
Digital Camera	DAY	\$86.00
Drum Crusher, Portable	DAY	\$455.00
Drum Tilter, Mechanical	DAY	\$172.00
Electric Auger	DAY	\$74.00
Electric Blower	DAY	\$87.00
Explosion Proof Pneumatic Fan Blower	DAY	\$87.00
Fiber Optic Camera	HR	\$58.00
Fiber Optic Camera Truck	HR	\$149.00
Forklift, 2,000Lb Capacity	DAY	\$418.00
Forklift, 6,000Lb Capacity (High Reach / Lull)	DAY	\$450.00
Plasma Cutting Torch	DAY	\$237.00
Remote Drum Opener, Pnuematic	DAY	\$1192.00
Sand Blaster and Hose	HR	\$29.00
Transit Set	DAY	\$125.00
Walk Behind Concrete Saw	DAY	\$228.00
RESPIRATORY PROTECTION		
2 Man Breathing System	DAY	\$288.00
4 Man Breathing System	DAY	\$366.00
Acid Cartridges	PAIR	\$29.00
Asbestos Cartridges	PAIR	\$30.00
Breathing Air Hose, 100ft	DAY	\$105.00
Chlorine Cartridges	PAIR	\$29.00
Mercury Cartridges	PAIR	\$54.00
MSA Chemical Cartridge	EA	\$30.00
Negative Air Machine (Blower w/ HEPA filter)	DAY	\$262.00
Organic Vapor Cartridges (No Dust)	PAIR	\$29.00
Organic Vapor/Dust Combination Cartridges	PAIR	\$51.00
Respirator, Full Face	DAY	\$32.00
Self Contained Breathing Apparatus (SCBA)	DAY	\$262.00

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Regional Rate Sheet

Description	UOM	Price (USD)
PERSONAL PROTECTIVE EQUIPMENT (PER PERSON PER CHANGE OUT)		
Level A w/ResponderPlus Suit/Changeout	EA	\$950.00
Level B w/CPF2 or Polytyvec/Changeout	EA	\$200.00
Level B w/CPF3 or Saranex Suit/Changeout	EA	\$250.00
Level B w/CPF4 or Barricade Suit/Changeout	EA	\$300.00
Level C w/CPF1,2 or Polytyvec/Changeout	EA	\$60.00
Level C w/CPF3 or Saranex Suit/Changeout	EA	\$75.00
Level C w/CPF4 or Barricade Suit/Changeout	EA	\$120.00
Modified Level D (Tyvec, Gloves and Boots)	EA	\$30.00
CHEMICAL PROTECTIVE GARMENTS		
Chemrel Suit, Level C	EA	\$80.00
Kappler CPF1 Suit (Blue)	EA	\$34.00
Kappler CPF2 Suit (Grey)	EA	\$56.00
Kappler CPF2 Suit w/Strapped Seams (Grey)	EA	\$94.00
Kappler CPF3 Suit w/Hood & Boots (Tan)	EA	\$127.00
Kappler CPF3 Suit w/Hood & Strapped Seams (Tan)	EA	\$160.00
Kappler CPF4 Suit w/Hood & Boots (Green)	EA	\$132.00
Nomex Suit and Hood	EA	\$55.00
Polycoated Rain Gear, 22mil	EA	\$18.00
Tyvec, Polycoat HD/BT	EA	\$18.00
Tyvec, Saranex	EA	\$57.00
Tyvec, White	EA	\$22.00
HAND PROTECTION		
14in Neoprene Gloves	PAIR	\$13.00
14in Nitrile Gloves	PAIR	\$13.00
Cotton Winter Glove Liners	PAIR	\$6.00
Cut Resistant Gloves	PAIR	\$29.00
Gloves - 12 in PVC	PAIR	\$11.00
Gloves - 18 in PVC	PAIR	\$12.10
Gloves - Leather	PAIR	\$8.00
Latex Gloxes	BOX	\$13.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Puncture Resistant Gloves	PAIR	\$34.00
Silver Shield Gloves	PAIR	\$34.00
FOOT PROTECTION		
Disposable Boot Covers (Chicken Boots)	PAIR	\$12.50
Non Steel Toe Chest Waders - Purchased	PAIR	\$225.00
Steel Toe Hip Boots - Purchase	PAIR	\$160.00
Steel Toe Knee Boots	PAIR	\$80.00
HEAD / FACIAL PROTECTION		
16oz Eyewash	EA	\$22.00
Bottled Water / Stress Relief (Case)	CA	\$25.00
Earplugs	PAIR	\$1.92
Face/Splash Shield	EA	\$22.00
First Aid Kit, 25 Person	EA	\$83.00
DOT SHIPPING CONTAINERS		
1 Cubic Yard Supersac 13H2/Y/06	EA	\$82.00
10 Gal / 40 Litre Fiber Drum	EA	\$40.00
110 Gal Steel Drum, Reconditioned 1A2/Y400S	EA	\$455.00
16 Gal / 70 L Closed Poly Drum	EA	\$61.00
16 Gal / 70 L Poly Drum 1H2/Y56/S	EA	\$64.00
16 Gal Fiber Drum	EA	\$29.00
18x18x24in Nonhazardous Pathological Waste Box	EA	\$10.00
20 Gal / 80 Litre Fiber Drum	EA	\$34.00
20 Gal / 80 Litre Poly Drum (1H2/Y56/S)	EA	\$100.00
30 Gal / 120 Litre Closed Poly Drum 1H1/Y1.8/100	EA	\$78.00
30 Gal / 120 Litre Closed Steel Drum, New 1A1/Y1.6/200	EA	\$94.00
30 Gal / 120 Litre Closed Steel Drum, Reconed 1A1/Y1.4/100	EA	\$89.00
30 Gal / 120 Litre Fiber Drum 1G/X56/S	EA	\$51.00
30 Gal / 120 Litre Poly Drum 1H2/Y142/S	EA	\$84.00
30 Gal / 120 Litre Steel Drum, New 1A2/Y1.4/100	EA	\$111.00
30 Gal / 120 Litre Steel Drum, Reconditioned 1A2/Y1.2/100	EA	\$80.00
4ft Fluorescent Tube Box 4G/Y275	EA	\$25.00

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Jan



Regional Rate Sheet

Description	UOM	Price (USD)
5 Gal / 20 Litre Closed Poly Drum 1H1/Y1.8/170	EA	\$29.00
5 Gal / 20 Litre Closed Steel Drum 1A1/Y1.8/300	EA	\$34.00
5 Gal / 20 Litre Poly Drum 1H2/Y1.5/60	EA	\$22.00
5 Gal / 20 Litre Steel Drum 1A2/Y1.8/100	EA	\$34.00
5.5 Gal / 20 L Steel Drum 1A2/Y23/S	EA	\$22.00
55 G / 205 L Closed Steel Drum, Recon 1A1/Y1.4/100 (17-E)	EA	\$44.00
55 G / 205 L Steel Drum, Reconditioned 1A2/Y1.2/100 (17-H)	EA	\$66.00
55 Gal / 205 L Stainless Steel Drum, Reconditioned	EA	\$252.00
55 Gal / 205 Litre Closed Poly Drum 1H1/Y1.8/150	EA	\$100.00
55 Gal / 205 Litre Closed Poly Drum 1H1/Y1.8/150, Recycled	EA	\$98.00
55 Gal / 205 Litre Closed Steel Drum, New 1A1/Y1.8/300	EA	\$97.00
55 Gal / 205 Litre Fiber Drum 1G/Y190/S	EA	\$56.00
55 Gal / 205 Litre Poly Drum 1H2/Y237/S	EA	\$149.00
55 Gal / 205 Litre Steel Drum, New 1A2/Y1.5/100	EA	\$110.00
85 Gal / 320 Litre Steel Drum, New 1A2/X400/S	EA	\$230.00
85 Gal / 320 Litre Steel Drum, Recycled 1A2/X400/S	EA	\$195.00
8ft Fluorescent Tube Box 4G/Y275	EA	\$27.00
95 Gal Poly Drum 1H2/Y318/S (Overpack)	EA	\$270.00
95 Gal Poly Drum, Recycled 1H2/Y318/S (Overpack)	EA	\$268.00
Asbestos Bag	EA	\$1.60
Drum 15 Gal / 60 Litre Poly (1H2/Y1.8/100)	EA	\$71.00
Drum Liners	EA	\$22.00
Drum Rings/Bolts/Gaskets	EA	\$29.00
Dump Trailer Poly Liner	EA	\$96.00
Filter/Liner for Filter Box	EA	\$356.00
Flexbin, 1 Cubic Yard Flexbin 11G/Y/2022/1122	EA	\$154.00
Flexbin, Cubic Yard Box for Non-Haz Waste	EA	\$100.00
Flexbin/Cubic Yard Box Liner	EA	\$29.00
Fluorescent Bulb Tubes, 4ft 100 bulb capacity	BOX2	\$61.00
Fluorescent Bulb Tubes, 8ft 100 bulb capacity	BOX2	\$88.00
Hazardous Waste Labels	EA	\$1.30
Labels - DOT	EA	\$1.50
Pathological Waste Bag	EA	\$6.10

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jen



Regional Rate Sheet

Description	UOM	Price (USD)
Poly Bags, 6mil, per Roll	EA	\$170.00
Poly Sheet, 6mil 20ft x 100ft	EA	\$115.00
Rolloff Poly Liner	EA	\$78.00
Vacbox Liner/Bladder	EA	\$770.00
Waste Wrangler	EA	\$187.00
ABSORBENT MATERIALS		
Absorbent Boom, 3in x 4ft	EA	\$8.00
Absorbent Boom, 5in x 10ft x 4/Bale	BALE	\$154.00
Absorbent Boom, 8in x 10ft x 4/Bale	BALE	\$247.00
Absorbent Pad (101 Grade) 100/bale	BALE	\$127.00
Absorbent Roll, 38in x 144ft	EA	\$181.00
Absorbent Rug, 36in x 300ft	EA	\$300.00
Absorbent Sweep, 17in x 100ft	BALE	\$159.00
Activated Carbon for Water treatment systems	LBS	\$3.10
Corn Cob Absorbent 40lb / 18 kg bag	BAG	\$17.00
HGX Absorbent (Mercury absorbent)	LBS	\$20.00
Oil Snare, Loose in Bag	BOX	\$66.00
Oil Snare, on a Line, 50ft	EA	\$97.00
Poly Absorbent, 20 lb / 23 kg	BAG	\$105.00
Rags, 50 lb / 23 kg	BOX	\$61.00
Saw Dust, 20 lb / 9 kg	BAG	\$10.00
Speedi Dry	BAG	\$12.00
SPI Solidification Particulate (Oil Bond)	LBS	\$19.00
SPI Waterbond	LBS	\$16.00
Vermiculite 4 cuft	BAG	\$47.00
DEGREASERS & NEUTRALIZING AGENTS		
142 Solvent	GAL	\$11.00
Antifreeze, Concentrate	GAL	\$5.80
Antiviral Disinfectant Solution	GAL	\$45.00
Capsur	GAL	\$170.00
Cirtic Acid Solution, 15%	GAL	\$7.00
Citrus Cleaner Degreaser	GAL	\$61.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Diesel Fuel for Off-Road Use	GAL	\$6.00
Hydrated Lime, 50 lb / 23 kg	BAG	\$8.00
Hydrochloric Acid	LBS	\$3.60
Penetone Degreaser	GAL	\$33.00
Pink Stuff Degreaser	GAL	\$22.00
Sanimate Degreaser	GAL	\$22.00
Simple Green Degreaser	GAL	\$34.00
Soda Ash, 100 lb / 45 kg	BAG	\$52.00
Sodium bisulfate 50 lb / 23 kg	BAG	\$121.00
Sodium Hypochlorite, 15% (Bleach)	GAL	\$9.00
SAMPLING AND LAB SUPPLIES		
8oz Sample Jars	EA	\$14.00
CHLOR'N'OIL Test Kit 0-50ppm PCB	EA	\$39.00
CHLOR-D-TECT 4000 Test Kit (Halogens)	EA	\$29.00
Draeger Tube	EA	\$29.00
pH Paper, 1-14/Roll	EA	\$17.00
Sample Tube	EA	\$17.00
MARINE EQUIPMENT		
1/2in Nylon Rope	FT	\$1.00
1/2in Poly Rope	FT	\$0.50
1/8in Poly Rope	FT	\$0.40
3/8in Unguarded Galvanized Chain	FT	\$7.00
Anchor, 18Lb	EA	\$137.00
PFD Deck Suit	EA	\$676.00
PFD Safety Light	EA	\$29.00
HAND TOOL/CONSTRUCTION ACCESSORIES		
12in Metal Cutting Wheel Blade	EA	\$21.00
16in Street Broom	EA	\$35.00
24in Floor Broom	EA	\$35.00
3 Gal Pump Spray Bottle	EA	\$54.00
3/8in Manilla Rope	FT	\$0.50

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Regional Rate Sheet

Description	UOM	Price (USD)
3/8in Manilla Rope Coil, 600ft	EA	\$165.00
3in Long Handle Scraper	EA	\$23.00
3in Scraper	EA	\$15.00
Caution Tape/Roll	EA	\$56.00
Chemical Tape/Roll	EA	\$51.00
Deck/Scrub Brush	EA	\$18.00
Disposable Hand Pump/Syphon Pump	EA	\$34.00
Duct Tape/Roll	EA	\$12.00
Extension Cord, 50ft	EA	\$56.00
Fence Stakes	EA	\$9.10
Fence, Slit 100ft	EA	\$143.00
Flat Shovel	EA	\$32.00
Garden Hoe	EA	\$30.00
Garden Rake	EA	\$30.00
Pitch Fork	EA	\$100.00
Plastic Shovel	EA	\$55.00
Sawzall Blade	EA	\$34.00
Shrink Wrap	ROL	\$48.00
Small Sledge Hammer	EA	\$40.00
Snow Fence/Safety Fence, 50ft	EA	\$77.00
Spaded Shovel	EA	\$35.00
Squeegee	EA	\$37.00
WASTE MATERIAL APPROVAL		
Profile Approval Fee (No Sample)	EA	\$75.00
Sample & Profile Approval Fee	EA	\$109.00
MISCELLANEOUS		
Acetylene Bottle	EA	\$45.00
Breathing Air Bottle Refill	EA	\$30.00
Chain Saw	DAY	\$122.00
Collection Jar for Mercury Vacuum	EA	\$44.00
Dump Truck Tarp	EA	\$363.00
Filter Bags - 25 Micron Nominal	EA	\$9.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Filtration Bag for Mercury Vacuum	EA	\$29.00
Hand Cleaner	EA	\$33.00
Misc. Handtools	DAY	\$34.00
Nitrogen Cylinder	DAY	\$63.00
Rolloff Bow	EA	\$42.00
Rolloff Tarp	EA	\$418.00

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Regional Rate Sheet

NOTES:

FIFTEEN 15%

- 1) All labor, equipment, materials and services outlined in this Schedule of Rates will be invoiced at the rates listed, regardless of Clean Harbors' method of acquisition. Any items not described in this Schedule of Rates which are acquired by Clean Harbors shall be invoiced at Clean Harbors' cost plus a markup of ~~thirty-five percent (35%)~~ ^{FIFTEEN 15%}. (Unless otherwise specified, these rates are not valid for response to Infectious Agents/Biologicals.) The Schedule of Rates includes the cost of Clean Harbors' basic medical monitoring program. Any special medical monitoring required by the client or the nature of the work will be added to the project scope and the client will be invoiced at cost plus a markup listed above. ACW
2/25/15
- 2) Lodging and subsistence for Clean Harbors personnel and our subcontractors in the field are included in a per diem charge per person per day when working more than 30 miles from the employee's normal operations center and when overnight accommodations are required. The rate is outlined in the labor section of this document. When overnight accommodations are not required but work exceeds 12 hours, \$40.00 per day per person may apply to cover meals and incidentals.
- 3) At its sole discretion, Clean Harbors will determine the level of protection required for each project. Level A, B, C or D personal protection and safety packages will be invoiced at the rates shown in the Schedule of Rates.
- 4) Clean Harbors' personnel and equipment will be charged portal-to-portal (mobilization and demobilization included). Services provided prior, during and/or subsequent to actual project site activities will also be charged at the Hourly Rate. This includes, but is not limited to, time taken by personnel to decontaminate and re-don protective clothing and equipment that is billed as part of the project.
- 5) Clean Harbors' normal employee workday is 7:00 am to 3:30 pm, Monday through Friday. Other work hours must be agreed to in writing in advance. No more than eight (8) hours of straight time will be billed for one person for one day. All time will be based upon a 24 hour day.
- 6) All hours worked in excess of eight (8) hours in the normal workday, as described above, as well as all hours worked all day Saturday are considered overtime and will be billed at 1.5 times the applicable straight time rate for all billable personnel.
- 7) Sunday and Holidays are considered premium time and will be billed at 2.0 times the applicable straight time rate for all billable personnel. Holidays are the legally observed United States Federal Holidays plus the day after Thanksgiving. When local laws or regulations recognize additional holidays or when local laws or regulations define premium hours in excess of this definition, Clean Harbors will invoice in accordance with local laws or regulations.
- 8) All emergency call-outs (i.e., less than 24-hour notice) will be subject to a minimum four (4) hour response charge or \$2000.00 minimum charge, whichever is greater. Minimum charges do not apply to Transportation and Disposal.
- 9) Charges for Safety Plans are assessed on all projects involving OSHA regulated substances or when required by the Customer or other Agency. In some instances a Site Safety Officer charge will apply per hour to create and administer the Safety Plan.
- 10) A variable Energy and Security Recovery Fee (that fluctuates with the DOE national average diesel price), will be applied to the total invoice, excluding sales tax.
- 11) Unless specifically notated, these rates do not apply to any projects with Prevailing Wage requirements. Any Prevailing Wage rates will be negotiated on a case-by-case basis.
- 12) Equipment billed on an hourly basis will be billed a minimum of four hours upon activation. For equipment with only Daily Rates, a day will be charged up to 12 hours. No more than 2 Daily Rates will apply per calendar day. For boats and other marine equipment, Daily Rates will apply regardless of the hours used per day.
- 13) Unless specifically notated in the equipment description, all equipment rates are un-operated.
- 14) All waste disposal from project and or response activities will be charged additionally to the rates lists herein. A Waste Document Preparation Fee of \$125 per day will apply to any work generating waste. The fee includes labels, manifests/bills of lading and profiles.
- 15) Standby charges will be negotiated on a case-by-case basis.
- 16) Clean Harbors guarantees to hold prices firm for 60 days.

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ENVIRONMENTAL SERVICE AGREEMENT

This Service Agreement (the "Agreement") is entered into effective the 24 day of FEBRUARY, 2015 (the "Effective Date"), by and between Baranko Brothers Inc., a North Dakota Corporation (the "Contractor"), and Bakken Oil Express, LLC, a North Dakota limited liability company, LL Terminals, LLC, a Kansas limited liability company, BOE Pipeline, LLC, a Kansas limited liability company and Lario Shipping, LLC, a Kansas limited liability company (each a "Client" and collectively, the "Clients"). The Contractor and Clients are sometimes collectively referred to herein as the "Parties" and each may be referred to as a "Party."

I. Services.

A. Contractor is engaged in the business of providing emergency response environmental services ("Services") and Clients desires to engage Contractor to provide such Services.

B. This Agreement establishes the terms and conditions pursuant to which Contractor may furnish Client with certain Services in connection with response to discharges of oil and other hazardous substances.

C. The Services contemplated in connection with the response to discharges of oil or other hazardous substances may include, but not limited to, the following:

- i. Containment, recovery, repackaging and removal of materials;
- ii. Site evaluation, decontamination and restoration;
- iii. Transportation, storage, treatment or disposal of wastes;
- iv. Technical services, including sampling, laboratory analysis, and other services as required such that Client's facility response plans, to the extent relying on the services of a classified Oil Spill Removal Organization ("OSRO"), are in compliance with the Oil Pollution Act of 1990 and regulations promulgated hereunder, as each may be amended from time to time (collectively, "OPA 90").
- v. Standby of personnel and equipment in anticipation of imminent activities.

D. This Agreement does not obligate any Client to purchase Services from Contractor, nor shall it obligate Contractor to provide Services, but shall govern all orders for Services issued by Client and which are accepted by Contractor. Contractor will respond to request for Services by Client within one (1) hour of confirmed receipt.

II. Service Fees.

A. Client agrees to pay Contractor for the Services in accordance with the terms of Exhibit A attached hereto (the "Rate Schedule") in effect at the time Services are rendered. Contractor shall provide Client with any updates or amendments Contractor makes to the Rate Schedule at least forty-five (45) days in advance of the effectiveness of the new Rate Schedule. In the event the Parties agree to change the scope of the Services provided hereunder, Contractor shall communicate to Client the rates for each dispatch of Services on or before such dispatch and such rates will be confirmed by written statement or invoice prepared by the Contractor and issued to the Client.

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B. Contractor shall invoice Client for Services in accordance with the Rate Schedule. All payments will be due and payable by Client within thirty (30) calendar days from Client's receipt of the invoice (the "Due Date"). If Client fails to make any payments by the Due Date, then Contractor may assess a late fee on the unpaid and undisputed balance at the rate of one and a half percent (1.5%) per month or the highest rate allowed under applicable law, whichever is less. In the event that unpaid invoices are turned over for collection, Client shall pay for all costs and expenses, including attorney's fees.

III. Termination.

This Agreement may be terminated by either Party upon forty-eight (48) hours prior notice to the other Party.

IV. General Conditions of Services.

Unless otherwise stated, Client is responsible for furnishing Contractor with all pertinent data and information concerning the Services to be performed hereunder, the nature of the work site, the nature of the conditions to be remediated, and performing certain other functions in support of the Services, including, but not limited to, providing the following:

- A. A designated Client representative to communicate with Contractor, its employees, and representatives regarding the site and all necessary information;
- B. Access to the work site for Contractor, its employees, representatives, and subcontractors;
- C. Information regarding Hazardous Substances (as hereinafter defined), materials, and conditions that may be present at the work site;
- D. Information concerning any equipment, vehicles, or vessels at the site, and any special conditions or circumstances which might affect the Services;
- E. Filing all required reports with governmental authorities including, but not limited to, spill or release reports;
- F. Informing Contractor promptly of any request of a governmental authority directing a change which may affect the Services; and
- G. Completing manifests, forms, and regulatory filings to permit the transport and disposal of Hazardous Wastes or other materials or wastes.

Any variance in these conditions might be considered a change in the scope of Services unless expressly stated otherwise herein. If any of the waste contains materials which do not conform to the descriptions in this Agreement, Contractor may, at its option, properly dispose of it and have Client reimburse Contractor for all expenses incurred, return it to Client, or require Client to remove and dispose of the non-conforming waste at Client's expense.

V. Standard of Care.

- A. Contractor agrees to perform the Services in a competent and workmanlike manner.
- B. Unless otherwise in the Agreement, Contractor will provide all of the labor, tools, machinery, equipment, and supplies necessary to perform the Services.
- C. Contractor represents that it holds active permits, licenses and classifications, including without limitation OSRO Coast Guard classification, required for

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the performance of Services. In the event of a lapse or termination of Contractor's permits, licenses or classifications necessary to perform the Services, Contractor will notify Client within three (3) days following such lapse or termination. Upon receipt of such notice, Client shall have the right to terminate this Agreement immediately upon written notification to the Contractor.

D. In its performance of the Services Contractor may handle certain Hazardous Substances (as hereinafter defined). Client agrees that in no event shall Contractor:

- i. be deemed to have title to any Hazardous Substances or any real or personal property contaminated with or otherwise affected by such Hazardous Substances;
- ii. be deemed to be a "generator" of any Hazardous Substance; or
- iii. be deemed to be in possession or control of any Hazardous Substance except as Client's or the generator's general agent.

E. In the event the performance of this Agreement by Contractor requires the treatment or disposal of a Hazardous Substance, Contractor shall transport the substance, or cause the substance to be transported, only to a disposal or treatment facility selected by Client, unless otherwise agreed by the Parties. Any transportation of Hazardous Substances undertaken or arranged by Contractor under this Agreement is done solely as the agent of Client and on behalf of Client. Client hereby designates Contractor as its agent for the purpose of obtaining all permits and authorizations required in connection with the transportation of Hazardous Substances to the applicable disposal or treatment facility selected by Client. Client acknowledges this and agrees to fully indemnify and hold harmless Contractor, its employees, and its subcontractors from any liabilities, costs, damages, or expenses which arise out of Contractor's, its employees, or its subcontractor's performance except to the extent such damages are caused by Contractor's negligence or willful misconduct or its agents, employees or subcontractors of the Services set forth herein.

F. In its performance of the Services Contractor may be using chemicals, solvents, and other materials which could impair the use or function, or cause damage to Client's real or personal property or to Client's personnel. Client acknowledges this and agrees to fully indemnify and hold harmless Contractor, its employees, and its subcontractors from any liability for damage to Client's real or personal property or personnel caused by the Services or the materials used in performing the Services except to the extent such damages are caused by Contractor's negligence or willful misconduct or its agents, employees or subcontractors.

G. Specifically, Contractor does not warrant that the Services will render the areas affected by a Fire or the Hazardous Substances safe for any form of human activity or in compliance with any Environmental Laws.

VI. Representation and Warranty.

Each Party represents and warrants:

A. That it is duly organized, validly existing, and in good standing under the laws of its state of formation, and that it is duly registered as a foreign business entity in those states in which it is required, if necessary.

B. That it has the full right and authority to enter into, execute, deliver, and perform its obligations under this Agreement.

C. That it has taken all requisite corporate or limited liability company action

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necessary to approve the execution, delivery, and performance of this Agreement.

D. This Agreement constitutes a legal, valid, and binding obligation enforceable against such Party in accordance with its terms, subject to bankruptcy, insolvency, creditors' rights, and general equitable principles.

VII. Limitation of Liability.

In no event shall either Party be liable to the other Party (or any person claiming through the other Party) in connection with this Agreement or the Services performed hereunder, for any consequential, indirect, special, punitive, or incidental damages, or for lost revenues or lost opportunities arising out of or in connection with this Agreement. Neither Party shall be liable to the other (or any person claiming through Client) in any amount for any personal injury, illness, death, or property damage caused in whole or in part by a Hazardous Substance or any other substance regulated by law, and handled by either Party in the performance of this Agreement.

VIII. Indemnification.

A. Contractor, for itself and its successors and assigns, agrees to defend, indemnify, and hold harmless each Client, its successors and assigns, its shareholders, directors, members, and employees from and against any and all liability, direct and indirect losses and expenses (including without limitation reasonable attorneys' fees, expert fees, and court costs), claims, demands, suits, costs, and causes of action (collectively referred to hereinafter as "Liabilities"), arising out of or resulting from: (1) Contractor's breach of this Agreement; or (2) the gross negligence or intentional misconduct of Contractor, its employees, and its subcontractors in the performance of the Services.

B. Each Client, for itself and its successors and assigns, agrees to defend, indemnify, and hold harmless Contractor, its successors and assigns, its shareholders, directors, members, and employees from and against any and all Liabilities arising out of or resulting from: (1) Client's breach of this Agreement; (2) the acts or omissions of each Client and its employees or any third party; (3) Contractor's, its employees, or its subcontractor's inability to access the work site; or (4) any claim or liability which arises out of, is related to, or is based on the actual, alleged, or threatened dispersal, discharge, escape, release, saturation, containment, remediation, or cleanup of any substances, whether sudden or not, in or into the atmosphere or on, onto, upon, in, or into the surface or subsurface soil, water or watercourse, or any tangible or intangible matter.

IX. Insurance.

Contractor shall keep in effect during the term of this Agreement the following insurance coverages:

A. Insurance in an amount not less than the applicable state statutory requirements for workers compensation for its employees:

B. Employers liability insurance with a limited of not less than \$1,000,000 per accident;

C. Commercial general liability insurance for bodily injury, property damage, and personal injury liability, on an occurrence form with a combined single limit of not less than \$2,000,000 per occurrence, \$2,000,000 aggregate specific per jobsite, including contractual liability for the obligations assumed in this contract, products and completed operations;

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D. Business automobile liability insurance for bodily injury and property damage with a combined limit of not less than \$1,000,000 per occurrence (which business automobile liability insurance policy must include an MCS90 endorsement);

E. Contractor's pollution liability insurance in an amount not less than \$10,000,000 per occurrence. \$10,000,000 aggregate per Client's site.

Contractor shall provide Customer with a certificate of insurance upon written request. The obligation to carry the insurance required by this Section shall not limit or modify in any way any other obligations assumed by any party under this Agreement.

X. Liens.

Contractor shall keep Client's property free from any liens of its agents. Contractor agrees to indemnify and hold harmless Client from and against any and all liability, losses, claims, demands, damages, suits, costs, expenses (including reasonable attorneys' fees) and causes of action arising out of any lien placed on Client's property by Contractor's agents.

XI. Notices.

All notices required or allowed to be given herein shall be in writing and shall be given either by hand delivery, by certified or registered mail, return receipt requested, postage prepaid, by overnight delivery service, or by facsimile and sent to the address specified below. Any such notice shall be deemed effective upon receipt.

Either Party may change its address for purposes of this Section by giving the other Party notice of same in compliance with this Section.

Contractor: Baranko Bros. Inc.
PO Box 820 3048 Hwy 22 North
Attn: Glenn Baranko
Dickinson ND 58602

Clients : Bakken Oil Express, LLC
LL Terminals, LLC
BOE Pipeline, LLC
Lario Shipping, LLC
717 17th Street, Suite 1825
Denver, CO 80202
Attn: John Wadsworth
Fax: 720-548-1284
with a copy to mhagler@boemidstream.com

XII. Hazardous Substance Defined.

As used in this Agreement, the term "Hazardous Substance" shall mean and include any substance, material, waste, gas, or particulate matter which is regulated by any local or state government authority, or the United States Government, including, but not limited to, any material or substance which is (i) defined or designated as a hazardous waste, hazardous material, hazardous substance, extremely hazardous waste, or restricted hazardous waste under any Environmental Laws, (ii) petroleum (including crude oil and any of its fractions and oils, Groups 1 through 5 as defined in OPA 90 response guideline documents NVIC 7-92 and 8-92), (iii) asbestos, (iv) polychlorinated biphenyl, or (v) radioactive material. "Environmental Laws" means any and all federal, state, or local environmental, health, or

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safety statutes, ordinances, codes, rules, regulations, orders or decrees, including without limitation the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq., the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq., the Hazardous Materials Transportation Act, 49 U.S.C. § 1802 et seq., the rules and regulations of the Environmental Protection Agency, and all other applicable federal and state environmental, health, or safety laws and regulations as of the date of this Agreement. As used in this Agreement, "Hazardous Substance" shall include Biological Wastes and Substances.

XIII. Assignment.

Neither Party may assign this Agreement without the prior written consent of the other Party.

XIV. Severability.

In the event that one or more of the provisions of this Agreement, for any reason, is held by a court of competent jurisdiction to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal, or unenforceable provision or provisions had never been contained herein.

XV. Waiver.

Any waiver of the provisions of this Agreement by either Party shall not be effective unless it is in writing and signed by the Party against whom it is asserted. No such waiver constitutes the waiver of any subsequent breach or default.

XV. Relationship of the Parties.

Except as specifically provided herein, neither Contractor nor Clients shall act or represent or hold itself out as having authority to act as an agent or partner of the other, or in any way bind or commit the other Party to any obligations. Nothing contained in this Agreement shall be construed as creating a partnership, joint venture, agency, trust, or other association of any kind, each Party being individually responsible only for its obligations as set forth in this Agreement. This Agreement is not exclusive and Clients understand and acknowledge that Contractor performs and will perform similar services for other clients.

XVI. Governing Law.

This Agreement shall be governed by, and construed under, the laws of the State of North Dakota, without regard to its conflicts of laws principles. The Parties agree to submit to the jurisdiction of the courts of the State of North Dakota any disputes arising under this Agreement.

XVII. Permits, Access, and Cooperation.

Client agrees to obtain and maintain (at Client's sole cost and expense) any and all governmental and third party permits, easements, and approvals necessary for Contractor to access the work site and perform the Services as required under this Agreement (without prejudice to the obligations of the Contractor in Section V.c). Client agrees to take all reasonably necessary steps to fully cooperate with Contractor in the performance of this Agreement.

XVIII. Force Majeure.

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No Party shall be in default under this Agreement to the extent any delay in such Party's performance is caused by any of the following conditions: acts of God such as hurricane, flood, back water caused by flood or hurricane, tornado, earthquake, and unforeseeably severe weather; fire; strikes or labor unrest; changes in applicable laws; war or civil disorder; vandalism; or acts of terrorists, provided the Party claiming relief under this Section shall promptly notify the other in writing of the existence of the event relied on and the cessation and termination of said event. The Party claiming relief under this Section shall use their best efforts to minimize the time for any such delay.

XIX. Confidentiality.

The Parties recognize the importance of confidentiality and discretion in all activities related to the Services and the work site and performance under this Agreement. Both Parties agree to cause each of its employees and representatives with a need to know to hold all information relating to the business of the other Party ("Disclosing Party") disclosed to it by reason of this Agreement confidential and will not disclose any of such information to any person or entity unless legally compelled to do so; provided, however, that to the extent that any of them may become so legally compelled they may only disclose such information if they shall, if permitted, have first notified the Disclosing Party of the legal obligation and afforded Disclosing Party the opportunity to oppose such legal obligation or seek a protective order.

XX. Survival.

Sections II, V, VI, VII, VIII, XVII and XX will survive the completion of performance and termination of this Agreement.

XXI. Counterparts.

This Agreement may be executed in one or more counterparts (including by means of facsimile), all of which shall be considered one and the same Agreement, shall become effective when one or more counterparts have been signed by each of the Parties and delivered to the other Parties.

XXII. Entire Agreement.

This Agreement and the Exhibit A attached hereto constitute the entire agreement between the Parties relating to the subject matter of this Agreement, and expressly supersedes any previous agreements or understandings between the Parties, whether written or oral. This Agreement may only be modified by a written instrument executed by both Parties.

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IN WITNESS WHEREOF, the undersigned authorized representatives of the Parties do hereby execute this Agreement effective as of the Effective Date.

CONTRACTOR:

Baranko Brothers Inc.

By: *Steven Baranko*

Title: President

On behalf of each CLIENT:

*BAKKEN OIL SERVICES, LLC
B&B PIPELINE, LLC
LANDO SHIPPING, LLC
LLT ENERGY, LLC*

By: *J.P. Wedbush*

Title: *COO*

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Exhibit A
Rate Schedule

Baranko Bros., Inc.

Environmental
Services

2015 Rate Schedule

	Hourly Rate	Hourly Rate
Labor:	<u>Straight Time</u>	<u>Overtime</u>
Senior Project Manager	\$137.50	\$168.75
Project Manager	\$106.25	\$159.38
Radiation Safety Officer (RSO)	\$93.75	\$140.63
NORM Survey Technician	\$56.25	\$84.38
Site Safety Officer	\$87.50	\$131.25
Supervisor	\$81.25	\$121.88
Foreman	\$68.25	\$102.38
Heavy Equipment Operator	\$72.50	\$108.75
Boat Operator	\$57.75	\$86.63
Recovery Technician	\$52.50	\$78.75
Field Clerk	\$53.75	\$80.63
Truck Driver	\$53.75	\$80.63
Vacuum Truck Driver	\$56.25	\$84.38
Accounting Specialist	\$68.75	\$103.13

Vehicles, Trailer, Vessels, Heavy Trucks and Heavy Equipment :

Vehicles: Daily rate & mileage charges are portal-to-portal. Pickup truck and automobile mileage will be charged according to the cost per gallon of diesel fuel using the following schedule:

	Rate	Unit
Gallon of Diesel ≤ \$2.00	\$0.60	mile
Gallon of Diesel = \$2.01-\$2.50	\$0.75	mile
Gallon of Diesel = \$2.51-\$3.00	\$0.90	mile
Gallon of Diesel = \$3.01-\$3.50	\$1.05	mile
Gallon of Diesel = \$3.51-\$4.00	\$1.20	mile
Gallon of Diesel = \$4.01-\$4.50	\$1.35	mile
Gallon of Diesel = \$4.51-\$5.00	\$1.50	mile
Gallon of Diesel = \$5.01-\$5.51	\$1.65	mile
Gallon of Diesel = \$5.51-\$6.00	\$1.80	mile
Gallon of Diesel = \$6.01-\$6.51	\$1.95	mile
Gallon of Diesel = \$6.51-\$7.00	\$2.10	mile
Gallon of Diesel = \$7.01-\$7.50	\$2.25	mile
Gallon of Diesel = \$7.51-\$8.00	\$2.40	mile

The cost per gallon of fuel is based on the U.S D.O.E. average cost for the applicable Rock Mountains of Midwest Region. This average per gallon cost may be found at www.eia.doe.gov/. If the cost of diesel fuel exceeds \$8.00 per gallon, the mileage rate will increase \$0.15 per every \$0.50 increase in the cost of diesel fuel.

Automobile Sport Utility Vehicle	\$130.00	day
Pick-up Truck (F-150 to F-350 or equivalent)	\$200.00	day

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Pick-up Truck (F-450 to F-550 or equivalent)	\$250.00	day
Passenger Van	\$200.00	day
Vacuum Trucks and other Heavy Trucks: Charged portal-to-portal.		
Heavy Trucks (vacuum, dump, roll off, OTR, etc) mileage will be charged according to the cost per gallon using the following schedule.		
Gallon of Diesel \leq \$2.00	\$1.00	mile
Gallon of Diesel = \$2.01-\$2.50	\$1.25	mile
Gallon of Diesel = \$2.51-\$3.00	\$1.50	mile
Gallon of Diesel = \$3.01-\$3.50	\$1.75	mile
Gallon of Diesel = \$3.51-\$4.00	\$2.00	mile
Gallon of Diesel = \$4.01-\$4.50	\$2.25	mile
Gallon of Diesel = \$4.51-\$5.00	\$2.50	mile
Gallon of Diesel = \$5.01-\$5.51	\$2.75	mile
Gallon of Diesel = \$5.51-\$6.00	\$3.00	mile
Gallon of Diesel = \$6.01-\$6.51	\$3.25	mile
Gallon of Diesel = \$6.51-\$7.00	\$3.50	mile
Gallon of Diesel = \$7.01-\$7.50	\$3.75	mile
Gallon of Diesel = \$7.51-\$8.00	\$4.00	mile
The cost per gallon of diesel fuel is based on the U.S.D.O.E. average cost for the Rocky Mountain or Midwest Region. This average per gallon cost may be found at www.eia.doe.gov/ .		
If the cost of diesel fuel exceeds \$8.00 per gallon, the mileage rate will increase \$0.15 per every \$.50 increase in the cost of diesel fuel.		
Due to excessive fuel costs, BBI will assess a fuel surcharge on vacuum truck hours-of-service. This surcharge only applies to vacuum truck time actually spent working and does not include travel time. This surcharge will apply as follows:		
Cost of diesel less than \$4.00/gallon	\$0.00	working hour
Cost of diesel between \$4.00 and \$5.99	\$5.00	working hour
Cost of diesel between \$6.00 and \$7.99/gallon	\$10.00	working hour
Cost of diesel between \$8.00 and \$10.00/gallon	\$15.00	working hour
The cost per gallon of diesel fuel is based on the U.S.D.O.E. average cost for the Rocky Mountain or Midwest Region. This average per gallon cost may be found at www.eia.doe.gov/ .		
Vacuum Truck, <70 Barrel (Operator and mileage not included)	\$60.00	hour
Emergency Response	\$70.00	hour
Vacuum Truck 70-80 Barrel (Operator and mileage not included)	\$65.00	hour
Emergency Response	\$75.00	hour
King Vac/Guzzler or equivalent (Operator and mileage not included)	\$120.00	hour
Emergency Response	\$140.00	hour
Hydro-Excavator, Truck Mounted (Operator and mileage not included)	\$160.00	hour
Emergency Response	\$180.00	hour
Vacuum Tanker with OTR 110-130 barrel (Operator and mileage not included)	\$95.00	hour
Emergency Response	\$105.00	hour
Vacuum Truck Washout---Cost +20% plus rinsate disposal		
End-Dump Trailer with OTR (Driver and mileage not included)	\$105.00	hour
Water Truck (Driver and mileage not included)	\$65.00	hour

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Box Trailer Greater than 40"without trailer	\$350.00	day
Over-The-Road (OTR) Tractor (Driver, mileage and permits not included)	\$95.00	hour
OTR Standby (Not exceed \$560.00 a Day)	\$70.00	hour
OTR with 50 Ton Lowboy (Drive, mileage and permits not included)	\$125.00	hour
OTR with Roll off Frame (Drive, mileage and permits not included)	\$115.00	hour
Roll off Truck, Tri axle with Tarp (Driver, mileage and permits not included)	\$95.00	hour
Vacuum Box (25 cubic yard)	\$50.00	day
Roll-off Box (25 cubic yard)	\$20.00	day
Liners (25 cubic yard)	\$35.00	each
Frac Tank Steel	\$95.00	day
Frac-Tank Containment Berm	\$48.00	day
Frac-Tank, Poly, 6,000-7,000 Gallons	\$70.00	day
Heavy Equipment (Does not include operator or fuel)		
>Fuel for all heavy equipment will be charged at Cost +20%		
Backhoe:		
Backhoe Rubber-Tire (Cat 416, JD 310, Case 580 or equivalent)	\$62.40	hour
Forklift to 5,000 LB Capacity	\$32.40	hour
Forklift, All Terrain, to 6,000 LB Cap	\$49.20	hour
Forklift, Extenda-boom (Telehandler), to 5,000 LB Cap., CatTH255 or equivalent	\$61.20	hour
Forklift, Extenda-boom (Telehandler), 5,501 to 10,000 LB Cap, Cat TL or equivalent	\$93.60	hour
Skid Steer Loaders:		
Skid Steer Loader (50-70 HP range)	\$62.40	hour
Hydraulic Excavators:		
Cat 303 mini excavator or equivalent (5.5-9K lb class)	\$51.80	hour
Cat 305 mini excavator or equivalent (9.1-14k lb class)	\$68.40	hour
Cat 307 mini excavator or equivalent (14.1-22K lb class)	\$96.00	hour
Cat 312 excavator or equivalent (22-30K lb class)	\$104.40	hour
Cat 315 excavator or equivalent (30.1-41K lb class)	\$124.80	hour
Cat 320 excavator or equivalent (41.1- 52K lb class)	\$136.80	hour
Cat 325 excavator or equivalent (52.1 – 65K lb class)	\$183.60	hour
Dozers:		
Cat D4 dozer or equivalent (90 HP class)	\$93.60	hour
Cat D4 LGP dozer or equivalent (71 -90 HP class)	\$103.20	hour
Attachments / Implements:		
Skidsteer Forks	\$60.00	day
Skidsteer Attachments, Non-hydraulic (Skidsteer not included)	\$120.00	day
Skidsteer Attachments, -Hydraulic (Skidsteer not included)	\$300.00	day
Vessels: (Does not include operator/captain, crew or fuel on Response Boats or Skimming Vessels)		
> Fuel & two-cycle oil for Response Boats and Skimming Vessels will be charged at Cost +20%.		
> Personal Flotation Device charges are included only for USES personal		
Response Boat, 10" to"<14 (Not motor)	\$126.50	day
Response Boat, 10" to"<16" 50 HP	\$258.75	day
Response Boat, 18" to"<21" 150 HP	\$460.00	day
Trailers:		
Response Trailer, 20"-27" (Enclosed)	\$367.50	day
Boom Trailer	\$157.50	day

few

Confined Space Rescue Trailer (Equipment included)	\$787.50	day
Equipment Trailer, Bumper Pull =>20'	\$210.00	day
Equipment Trailer, Bumper Pull, <20'	\$183.75	day
Equipment Trailer, Gooseneck Greater than 20" Low Profile Tandem Axle, 20K GWWR	\$236.25	day
Travel Trailer	\$288.75	day
PUMPS, HOSE, FITTINGS AND ASSOCIATED EQUIPMENT :		
Pumps and Pumping Equipment:		
Chemical Pumps and Equipment:		
Air Diaphragm Pump, 1" Polyethylene	\$175.00	day
Air Diaphragm Pump, 2" Polyethylene	\$275.00	day
Air Diaphragm Pump, 3" Polyethylene	\$350.00	day
Air Diaphragm Pump, 1" Stainless Steel	\$175.00	day
Air Diaphragm Pump, 2" Stainless Steel	\$300.00	day
Petroleum Pumps and Equipment		
Fuel Pump, 12 Volt	\$50.00	day
Hydraulic Power Units:		
Hydraulic Power Packs to 25 HP	\$275.00	day
Hydraulic Power Packs 25.1 to 50 HP	\$500.00	day
Miscellaneous Pumps and Equipment:		
Trash/Wash Pump, 2" Diesel	\$125.00	day
Trash/Wash Pump, 3" Diesel	\$150.00	day
Trash/Wash Pump, 1" Gas	\$75.00	day
Trash/Wash Pump, 2" Gas	\$100.00	day
Trash/Wash Pump, 3" Gas	\$125.00	day
Hose:		
Chemical Hose:		
Chemical Hose Teflon, 2"	\$20.00	foot/day
Chemical Hose UHMWP or equivalent, 1"	\$10.00	foot/day
Petroleum Hose:		
Petroleum Hose, 1"	\$1.50	foot/day
Petroleum Hose, 2"	\$2.75	foot/day
Miscellaneous Hose:		
Air Compressor Hose, 3/4, 50"	\$15.00	day
Air Compressor Hose, 3/8, 50"	\$10.00	day
Corrugated Polyethylene Hose, Flexible, 4"-6"	\$2.00	foot/day
Fire Hose, 1.5"- 3.0"	\$1.15	foot/day
Fire Hose, 4.0"- 5.0"	\$2.50	foot/day
Hydraulic Hose	\$2.50	foot/day
Discharge Hose (Lay-flat), 1.5"-20"	\$0.65	foot/day
Discharge Hose (Lay-flat), 3.0"	\$1.00	foot/day
Suction/Discharge Hose, 4"	\$3.50	foot/day
Suction/Discharge Hose, 6"	\$5.00	foot/day
Ventilation Duct Hose, 12"- 18", 25"	\$50.00	day
Ventilation Duct Hose, 19"- 24", 25"	\$75.00	day
Water Hose 1/2" - 3/4", 50"	\$25.00	job
Associated Fittings and Capping Kits:		

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Capping Kits:		
Conversion Kit, Metric Thread to Stanford Pipe Thread (ISO Kit)	\$350.00	day
Drum Vacuum, 2" Stainless Steel	\$316.25	day
Fittings Charge for Transfers	\$300.00	day
Grounding/Bonding System	\$100.00	each/day
Flowmeter, 2" Stainless Steel	\$175.00	day
Boom, Skimmers, and Sorbents:		
Boom:		
18" Containment Boom	\$1.92	foot/day
4"-6" Containment Boom	\$1.20	foot/day
Containment Boom, magnetic Hull Connector	\$72.00	day
Boom Anchors:		
10 Pound	\$24.00	each
15 Pound	\$36.00	each
22 Pound	\$90.00	each
Anchor Marker Buoy	\$48.00	each
Boom Lights, Electric Strokes	\$30.00	day
Skimmers:		
Hydraulic Power Pack to 25 HP	\$330.00	day
Hydraulic Power Pack, 25.1 to 50 HP	\$600.00	day
Skimmers, Drum 24"	\$780.00	day
Skimmers, Drum 36"	\$900.00	day
Skimmers, Drum 72"	\$1,080.00	day
Sorbents:		
Astrogel, or equivalent	\$187.50	bag
Bic-Sorb	\$112.50	bale
Floor Dry	\$20.00	bag
Industrial Mat, 3" 150"	\$281.25	each
Nature's Broom Absorbent, 20 lbs	\$18.75	bag
Oil Gator	\$35.00	bag
Oil Snare, Loose	\$75.00	15 lb. box
Sorbent Boom:		
5"x10"Section (4 Sections per bag)	\$131.25	bag
8"x10"Section (4 Sections per bag)	\$193.75	bag
HEALTH, SAFETY, MONITORING AND PERSONNEL PROTECTIVE EQUIPMENT:		
Protective Clothing:		
Suits and Coveralls:		
Chemical Resistant Suit, Tychem SL with Respirator Fit, or Equivalent	\$72.60	each
Chemical Resistant Suit, CPF-3 with Respirator Fit, or Equivalent	\$95.70	each
Tyvek coveralls & 2 pair of PVC Nitrile or Neoprene gloves	\$55.00	man/day
Level D Modified (Includes 2 Tychem SL coveralls and 2 pair pf PVC, Nitrile or Neoprene gloves	\$154.00	man/day
Tyvek/Next Gen	\$13.20	each
Gloves:		
Gloves, Buly, with inner gloves	\$60.50	pair
Gloves, Inner	\$1.10	pair
Gloves, Leather	\$9.35	pair

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Gloves, PVC, Nitrile, Neoprene, with inter gloves	\$8.80	pair
Gloves, Natural Rubber/Neoprene Blend	\$3.30	pair
Gloves, Silver Shield or equivalent	\$8.80	pair
Gloves, Level IV Puncture/Cut Resistant gloves	\$88.00	pair
Boots and Boot Covers:		
Boot, 16" PVC/Rubber with Steel Toe	\$22.00	pair/day
Boot, Level A, Chemical Resistant with Steel Toe (Beta or Equivalent)	\$88.00	pair/day
Boot Covers, Latex	\$8.80	pair
Boot Covers, Tyvek or equivalent	\$4.40	pair
Miscellaneous:		
Level A Suit Pressure Test Kit	\$38.50	day
Muffs, Hearing Protection, 3 Position	\$5.50	day
Personal Flotation Device (PFD)	\$16.50	day
Rain Suit, (Limited use)	\$17.60	day
Rain Suit, Class III Compliant	\$16.50	day
Splash Shield/Full Face Shield System	\$5.50	day
Splash Shield/Full Face Replacement Polycarbonate Visor	\$11.00	day
Survival Suit, Cold Weather/Flotation	\$55.00	day
Tape, Chemical Resistant	\$38.50	roll
Tape, Duct	\$9.90	roll
Waders, Chest	\$110.00	day
Fall Protection and Confined Space Entry Equipment:		
Confined Space Rescue Trailer (♦ Equipment listed below included)	\$787.50	day
♦ Confined Space Rescue Kit	\$275.00	day
♦ Full Body Harness	\$38.50	day
♦ Lanyard, Shock Absorbing	\$22.00	day
♦ Lock Out/Tag Out Kit	\$27.50	day
♦ Retrieval Tripod with Winch	\$220.00	day
♦ Stokes Stretcher with Flotation Kit	\$110.00	day
♦ Sked Rescue Stretcher W/Backboard (poly)	\$110.00	day
Flood Light, Explosion Proof	\$110.00	day
Life Safety Rope (Replacement Cost)	\$1.49	foot
Tank Car Entry Ladder	\$33.00	
Trauma Kit, Basic, Inc. O2	\$55.00	
Respiratory Protection:		
Air Hose, Breathing Air, 50'	\$27.50	day
Breathing Air Trailer (Does not include ancillary equipment)	\$440.00	day
Cascade System, Per Person (Including hip mounted unit, 50' air hose and mask)	\$247.50	day
Cascade System Bottle Refill	\$27.50	day
Dust Mask, Disposable	\$2.20	each
Respirator, Disposable, P-100 Particulate	\$13.20	each
Respirator, Full Face, APR	\$66.00	day
Respirator Cartridges, P-100 Particulate	\$27.50	pair
Self Contained Breathing Apparatus (SCBA), Industrial, 60 Min	\$247.50	day
Self Contained Breathing Apparatus (SCBA), NFPA-Rated, 60 Min	\$385.00	day
SCBA Bottle, Spare	\$22.00	bottle
Traffic Control Equipment:		

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Traffic Control Trailer with barrels, cones, signs, sign lights, signal flags, etc. for 0.25 -1.0 mile of lane closure	\$1,210.00	day
Individual barrels, cones, signs, sign lights, signal flags, etc. for less than 0.25 or greater than 1.0 mile lane closure	\$27.50	each/day
Flashing Arrow Trailer, Solar Powered	\$275.00	day
Field Instrumentation and Related Supplies:		
Air Monitoring Equipment:		
Area RAE System (Includes 4 Units, RAElink Receiver, and Computer)	\$858.00	day
4-Gas Meter Plus PID	\$302.50	day
Benzene Meter	\$330.00	day
Compound-specific filter tube	\$19.80	each
Calibration Gas	Cost + 20%	
Colorimetric Detector Tube	\$22.00	each
Colorimetric Detector Tube, Exotic Compounds	Cost + 20%	
Colorimetric Tube Pump	\$82.50	day
Combustible Gas Indicator/4-Gas Meter	\$137.50	day
Random Aerosol Monitor (Mini Ram)	\$165.00	day
Sampling Pump, Personal	\$55.00	day
Toxic Gas Detector, Multiple Gases	\$247.50	day
Toxic Gas Detector, Single Gas-Personal	\$38.50	day
Vacuum Canister	Cost + 20%	
Testing/Sampling Equipment:		
Conductivity Meter	\$82.50	day
pH Indicator Strips	\$38.50	pack
pH Meter	\$82.50	day
pH Pen	\$33.00	day
Radiation Survey Meter	\$165.00	day
Sample Bottles, 4-12 ounce	\$6.60	each
Sample Bottles, 16-32 ounce	\$8.80	each
Sample Bottles, VOC	\$13.20	each
Sample Kit	\$33.00	each
Thermometer, Infrared Laser	\$49.50	day
TOOLS AND RELATED EQUIPMENT, HAND AND POWER:		
Air Compressor, to 12 CFM	\$104.50	day
Blower, Leaf	\$88.00	day
Chain Saw	\$110.00	day
Chop Saw/Cut-off Saw, Gas Powered	\$110.00	day
Chop Saw/Cut-off Saw Blade (Carbide/Diamond)	Cost + 20%	
Cutting Torch, Gauges & Gas (1 oxygen & 1 acetylene cylinder)	\$220.00	day
Drill, Pneumatic	\$55.00	day
Drill Kit, Pneumatic for drilling tankers	\$165.00	day
Exhaust Blower, Non-Intrinsically Safe	\$49.50	day
Extension Cord, Electrical	\$11.00	each/day
Fan, Intrinsically-Safe Blower/Exhaust	\$71.50	day
Hand Tools (Shovels, Rakes, Nets, Pitchforks, etc)	\$27.50	each

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Hand Tools (Pipe wrenches, Crescent wrenches, etc.)	\$27.50	each/day
Hand Tools, Non-Sparking	\$27.50	per tool
Hand Tools, Pneumatic, Miscellaneous	\$55.00	each/day
Hand Tools, Power (Skill Saw, Reciprocating Saw, Drill, Band Saw, etc.)	\$55.00	each/day
Hand Tools, Replacement Baldes/Bits	Cost + 20%	
Heater, Torpedo (Fuel not included)	\$71.50	day
Impact Wrench, 1"	\$55.00	day
Ladder, Step or Extension	\$27.50	day
Pallet Jack	\$38.50	day
Pallet Puller	\$16.50	day
Pipe Cutter and Threader (Manual)	\$49.50	day
Tank Gauging Stick, 10' - 12'	\$11.00	day
Tape Measure, 100' - 300'	\$11.00	day
Tape, Roller-Wheel	\$11.00	day
Tool Kit, Manual, SAE/Metric	\$27.50	day
Vise, Portable Pipe	\$27.50	day
Weed Eater, Industrial, with Tiller Attachment	\$104.50	day
Welding Machine, Portable with rods, hood, hand tools, etc.	\$302.50	day
Wheelbarrow	\$27.50	day
DECONTAMINATION, CLEANING SUPPLIES AND NEUTRALIZING AGENTS:		
Biological Decontamination Equipment:		
Degreaser, Foaming for Food-Handling Surfaces	\$36.80	quart
Foamer, Pump Sprayer	\$46.00	day
Hand Sanitizer, 2 oz	\$3.45	bottle
Sterilex Ultra Kleen Disinfectant	\$71.30	gallon
Decontamination Equipment:		
Brushes, Decontamination/Scrub with 4' - 6' Handle	\$23.00	each
Containment Pool, Pop-up (20 gallons)	\$143.75	each
Eye Wash Station, Portable	\$40.25	day
Eye Wash Station, Saline Solution	\$8.63	gallon
Personnel Decon Station (1 poly pool, brushes, decon solution, rubber matting, 2 pump sprayers)	\$109.25	each
Pool, Decontamination (Disposable)	\$28.75	each
Sprayer, Pump	\$43.70	each
Cleaning Supplies, Neutralizing Agents and Inoculants:		
Bleach, Household Strength (5%)	\$5.75	gallon
Degreaser, Foaming for Food-Handling Surfaces +	\$36.80	quart
Degreaser, General Purpose Petroleum Based	\$34.50	gallon
Detergent (Dawn, Joy, etc.)	\$4.60	12 oz.
Hand Cleaner	\$5.75	tube
Lime, Agricultural, 50 lbs.	\$11.50	bag
Lime, Hydrated, 50 lbs.	\$13.80	bag
Micro Blaze	\$287.50	5-gallons
Simple Green	\$29.90	gallon
Simple Green	\$138.00	5-gallons
Soda Ash	\$23.50	bag

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FIREFIGHTING EQUIPMENT:		
Fire Extinguishers:		
Fire Extinguisher, Dry Chemical 20 lb unit	\$12.00	day
Refill (If used)	\$48.00	each
Fire Extinguisher, PKP 20 lb unit	\$18.00	day
Refill (If used)	\$132.00	each
Personal Protective Equipment:		
Firefighter Structural Turn-out Gear/Bunker Gear (Plus decontamination charge)	\$360.00	day
Flame Retardant Coveralls	\$30.00	day
Self Contained Breathing Apparatus (SCBA), NFPA-Rated, 60 Minute	\$385.00	day
SCBA Bottle, Spare	\$66.00	day
COMMUNICATIONS AND OFFICE EQUIPMENT:		
Cellular Phone	\$11.00	day
Copier, Portable	\$16.50	day
Camera, Digital	\$16.50	day
Camera, Video	\$82.50	day
Fax Machine	\$38.50	day
Global Positioning System Receiver, Handheld	\$11.00	day
Laptop Computer with Printer	\$38.50	day
Radio, 2-way Hand-Held	\$33.00	day
MISCELLANEOUS EQUIPMENT AND SUPPLIES:		
All-Terrain Vehicles:		
ATV (4-wheeler) Trailer	\$345.00	day
ATV (4-wheeler) Trailer	\$57.50	day
ATV - Utility Vehicle (Mule, Gator, or equivalent)	\$431.25	day
Utility Truck, 6 x 6	\$632.50	day
Containment Berm, Portable (10'-15' x 10'-15')	\$86.25	day
Containment Berm, Portable (10'-12' x 50')	\$115.00	day
Drums and Small Containers:		
95-Gallon Poly Overpack	\$312.50	each
85-Gallon Steel Recovery	\$281.25	each
55-Gallon Closed/Open Top Steel (New)	\$106.25	each
55-Gallon Closed/Open Top Steel (Reconditioned)	\$81.25	each
55-Gallon Closed/Open Top Poly (New)	\$106.25	each
55-Gallon Closed/Open Top Poly (Reconditioned)	\$68.75	each
5 Gallon Bucket with Lid	\$17.50	each
Drum Dolly	\$31.25	day
Drum Insert, 55 Gallon (Polyethylene)	\$43.75	each
Drum Labels and Placards	\$2.50	each
Drum Liners, 3.0 mil	\$2.50	each
Drum Pump - Disposable	\$31.25	each
Drum Wrench, Non-sparking	\$12.50	day
Fence, Construction Safety, 100'	\$81.25	roll
Generators, Power/Electrical:		
Generator, 4.1 to 8 KW	\$201.25	day

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Generator, 15.1 to 25 KW	\$316.25	day
Grounding Equipment, Rods and Cables	\$40.25	each job
Labels and Forms:		
Drum Labels and Placards	\$2.30	each
Form, Bill of Lading	\$5.75	each
Form, Waste Manifest	\$5.75	each
Lighting:		
Flashlight, Intrinsically Safe	\$13.80	day
Flashlight, Non-Intrinsically Safe	\$6.90	day
Light Plant, Trailer Mounted	\$345.00	day
Light Stand, Portable	\$40.25	day
Pallet	\$11.50	day
Polyethylene Bags, 6 mil (50" x 33")	\$97.75	roll of 50
Polyethylene Sheeting, 20' x 100' 6 mil	\$161.00	roll
Pressure Washing Equipment:		
Pressure Washer	\$172.50	day
Pressure Washer Hose, 50' (3,500 psi)	\$28.75	day
Pressure Washer Nozzle, Turbo (3,500 psi)	\$23.00	day + rebuild
Pressure Washer-Hot Water, trailer mounted, self contained (to 3,500 psi)	\$575.00	day
Rope:		
Polypropylene:		
3/8", 600' spool	\$92.00	spool
3/8" (<1/2 spool)	\$0.25	foot
1/2", 600' spool	\$166.75	spool
1/2" (<1/2 spool)	\$0.35	foot
3/4", 600' spool	\$345.00	spool
3/4" (<1/2 spool)	\$0.55	foot
Shelter, Pop-up (10x10)	\$40.25	day
Stakes, Wood	\$13.80	tube
Storage Tanks, Bulk:		
Tank, Polyethylene to 2,000 Gallons	\$115.00	day
Tote Container, Polyethylene	\$51.75	day
Stress Relief (Sports drinks, bottle water, vitamin water, etc.)	\$10.00	man/day
Stretch Wrap	\$51.75	roll
"T" Post	\$10.35	day
"T" Post Driver	\$11.50	day
Table, Polyethylene	\$17.25	day
Tape:		
Barrier	\$34.50	roll
Chemical Resistant	\$40.25	roll
Duct	\$10.35	roll
Electrical	\$3.45	roll

for



STANDBY EMERGENCY RESPONSE AGREEMENT

This Agreement is made this 24th day of February 2015, by and between Clean Harbors Environmental Services, Inc., and affiliates, a Massachusetts corporation, with offices located at 42 Longwater Drive, P.O. Box 9149, Norwell, MA 02061-9149, ("Contractor") and Bakken Oil Express, LLC, a North Dakota limited liability company. LL Terminals, LLC, a Kansas limited liability company, BOE Pipeline, LLC, a Kansas limited liability company and Lario Shipping, LLC, a Kansas limited liability company, with its principal place of business at 717 17th Street, Suite 1825, Denver, CO, 80202 (each a "Customer" and collectively, the "Customers").

WHEREAS, Contractor is engaged in the business of providing Emergency Response Services ("Services") to respond to discharges of oil or other hazardous substances; and

WHEREAS, Customers desire to engage Contractor to provide such Services; and

WHEREAS, Customers and Contractor desire to establish the terms and conditions pursuant to which such Services will be provided.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties, intending to be legally bound, agree as follows:

ARTICLE 1. Purpose

- 1.1 This Agreement establishes the terms and conditions pursuant to which Contractor may furnish Customer with certain Services in connection with response to discharges of oil or other hazardous substances.
- 1.2 This Agreement shall not obligate Customer to purchase Services from Contractor, nor shall it obligate Contractor to provide Services, but shall govern all orders for Services issued by Customer and which are accepted by Contractor. Contractor will use best efforts to respond to requests by Customer for Services.
- 1.3 This Agreement will allow Customer to list Contractor as its provider of Services, as defined in Article 2, in emergency response plans and regulatory reporting.

ARTICLE 2. Scope of Services

- 2.1 The Services contemplated in connection with the response to discharges of oil or other hazardous substances may include, but not be limited to, the following:
 - o Containment, recovery, repackaging and removal of materials;
 - o Site evaluation, decontamination and restoration;

- o Transportation, storage, treatment or disposal of wastes;
- o Technical services, including sampling, laboratory analysis, and other related services;
- o Standby of personnel and equipment in anticipation of imminent activation;
- o Training and mock spill drill deployments.

ARTICLE 3. Contractor's Warranties

- 3.1 Contractor shall provide supervision, labor, materials, tools, equipment and subcontracted items for the performance of the Services.
- 3.2 Contractor shall take necessary precautions for the safety of its employees, and shall comply with applicable provisions of the Occupational Safety and Health Act. It is understood and agreed, however, that Contractor shall not be responsible for the elimination or abatement of safety hazards created by or otherwise resulting from work being performed by Customer's employees, its other contractors or agents.
- 3.3 Contractor represents that it holds the permits, licenses, and certifications required for the performance of Services, including, without limitation, OSRO Coast Guard classification which is required for the performance of Services. In the event of a lapse or termination of Contractor's permits, licenses or certifications necessary to perform the Services, Contractor will notify Customer within three (3) days following such lapse or termination.

ARTICLE 4. Customer's Warranties

- 4.1 Customer shall provide full and complete information in writing regarding its requirements for the Services.
- 4.2 Customer shall designate a representative ("Customer's Representative") who shall be fully acquainted with the Services to be provided hereunder and who shall be authorized to approve changes in the Services; render decisions promptly; authorize commitments and expenditures on behalf of Customer; approve Contractor's daily worksheets and to accept, verify and approve Contractor's invoices.
- 4.3 Customer shall be responsible for repairs to all private property, roadways, structures and rights-of-way resulting from Contractor's reasonable use thereof.
- 4.4 Customer represents and warrants that it shall provide payment to Contractor for the services provided by Contractor as set forth in Article 5.

- 4.5 Customer shall communicate to Contractor all special hazards or risks known to or learned by the Customer during the term hereof which are related to the performance of Services pursuant to this Agreement.
- 4.6 Customer shall provide full and complete information regarding the site, surface and subsurface conditions, utility locations, site ownership, contractor access, hazardous materials or wastes and other substances or hazards known to be present and any other reports, documentation or information concerning the site or Services which may reasonably be provided to Contractor. Customer represents and warrants to Contractor that Customer has the requisite legal right, title, and interest necessary to provide access to the job site. In the event subsurface or latent conditions at the work site materially differ from those indicated in the contract documents or if the latent or subsurface physical conditions are of an unusual nature not ordinarily found to exist in environmental service activities identified in the contract documents, the Contractor shall promptly inform Customer's Representative of the condition and any necessary adjustment to the Rates, and be entitled to an equitable adjustment of the Contract price and time.

ARTICLE 5. Compensation

- 5.1 The payment terms set forth herein are contingent upon the approval of Contractor's Credit Department. In the event of a change in Customer's financial condition, Contractor reserves the right to alter, change, or modify payment terms, and to immediately stop work. The failure of Contractor to exercise its rights under this article at any time shall not constitute a waiver of Contractor's continuing right to do so.
- 5.2 Customer agrees to pay Contractor for Services in accordance with Contractor's Rate Schedule attached hereto as Exhibit A for emergency response work ("Rates") in effect at the time Services are rendered. Contractor shall provide Customer with any updates or amendments Contractor makes to the Rates at least forty-five (45) days in advance of the effectiveness of the new Rates. Customer's obligation to pay amounts due pursuant to this Agreement shall not be conditioned upon or limited by the types, amounts or availability of insurance coverage.
- 5.3 Contractor will present its first invoice to Customer as soon as possible following commencement of Services provided hereunder, and may issue subsequent invoices every fifteen (15) days thereafter. Customer agrees to pay the full undisputed amount of each invoice amount within thirty (30) days of the date of receipt of said invoice by Customer's Representative.
- 5.4 Customer agrees that interest shall accrue and will be paid to Contractor on any unpaid balance of any invoice after thirty (30) days of receipt of invoice by Customer at the rate of one and one half percent (1.5%) per month or the maximum amount allowed by law.

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- 5.5 In the event that legal or other action is required to collect unpaid balances of invoices due Contractor, Customer agrees to pay all costs of collection, litigation or settlement incurred by Contractor, including reasonable attorneys fees. "Legal or other action" as used above shall include bankruptcy and insolvency proceedings.
- 5.6 In the event that work is suspended or terminated for any reason prior to the completion of the Services, Customer agrees to pay for labor, equipment, materials, disposal and other costs incurred prior to termination by Contractor at the Rates and for reasonable demobilization costs, unless such costs are a result of Contractor's breach of the terms of this Agreement. In addition, Customer will not be responsible for demobilization costs incurred by Contractor in the event Agreement is terminated as a result of Contractor's breach of the terms of this Agreement.
- 5.7 Services related to litigation support or testimony in connection with or arising out of the work performed by Contractor hereunder is not within the Scope of Services covered by this Agreement unless specifically indicated as an add-on service. In the event such services are required and are not indicated as an add-on service, Customer agrees to pay Contractor in accordance with the Rates for any litigation support or testimony provided by Contractor in connection with, or arising out of, the work performed by Contractor hereunder.

ARTICLE 6. Changes in Work

- 6.1 In the event that changed or unforeseen circumstances which threatens safety of persons or property at the work site necessitate immediate changes in the performance of Services, Customer agrees to pay Contractor at the Rates, or for such costs incurred which are not delineated in the Rates.
- 6.2 If any change occurs during the term of this Agreement with respect to any laws, rules, regulations or ordinances which affect the rights or obligations of Customer or Contractor under this Agreement, or the applicability of any taxes or fees, or the cost of handling waste materials, Customer and Contractor shall negotiate in good faith to bring this Agreement into conformance with such change or changes. In the event that such agreement cannot be reached, Customer or Contractor shall have the right to terminate this Agreement immediately upon written notice to the other party.

ARTICLE 7. Insurance

- 7.1 Contractor shall keep in effect during the term of this Agreement the following insurance coverages:

COVERAGE	LIMITS
a. Worker's Compensation	Statutory
b. Employer's Liability	\$2,000,000
c. General Commercial Liability	\$2 million per occurrence \$4 million aggregate

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d. Automobile (MSC 90 and ISO Form CA 9948 endorsements)	\$5 million combined single limit
e. Contractors Pollution Liability	\$10 million each Claim \$10 million all Claims

- 7.2 Contractor shall provide Customer with a certificate of insurance upon written request.
- 7.3 The obligation to carry the insurance required by this Section shall not limit or modify in any way any other obligations assumed by any party under this Agreement.

ARTICLE 8. Indemnification

- 8.1 Contractor shall indemnify, defend and hold harmless each Customer, severally and not jointly, its parent and affiliated companies and their respective directors, officers, employees and agents from and against any and all costs, liabilities, claims, demands and causes of action including, without limitation, bodily injury to or death of any person or destruction of or damage to any property, except natural resource and other damages as provided in Section 8.3, which a Customer may suffer, incur, or pay out, to the extent such are caused by the negligence or willful misconduct of Contractor, its agents or employees during the performance of this Agreement, or Contractor's failure to comply with any laws, regulations or lawful authority, or failure to comply with its obligations under this Agreement; except to the extent such liabilities, claims, demands and causes of action result from the Customer's failure to comply with any laws, regulations or other lawful authority, or the Customer's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Customer, its employees or agents.
- 8.2 Each Customer, severally and not jointly, shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees and agents from and against any and all costs, liabilities, claims, demands and causes of action including, without limitation, any bodily injury to or death of any person or destruction of or damage to property which Contractor may suffer, incur, or pay out, to the extent such are caused by the negligence or willful misconduct of Customer, its employees or agents or the failure of Customer to comply with any laws, regulations or other lawful authority or the failure of Customer to comply with its duties or obligations under this Agreement; except to the extent such liabilities, claims, demands and causes of action result from Contractor's failure to comply with any laws, regulations or lawful authority, or Contractor's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Contractor, its employees or agents.
- 8.3 Notwithstanding the foregoing, each Customer shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees, agents and subcontractors from and against any and all costs, liabilities, claims, demands and causes of action for pollution damages; contamination or adverse effects on the environment; destruction of, damage to, or loss of, whether

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actual or alleged, any property or natural resources, including the cost of assessing the damage; injury to or economic losses resulting from destruction of real or personal property; damages for loss of subsistence use of natural resources; damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction or loss of real property, personal property or natural resources; damages for net costs of providing increased or additional public services; removal costs; and any other costs assessable under the Oil Pollution Act of 1990, the Comprehensive Environmental Response, Compensation and Liability Act or other local, state or Federal law or lawful authority applicable to discharges or releases of oil or hazardous substances which Contractor, individually or collectively, may suffer, incur, or pay out in connection with, or arising out of, the release of oil or hazardous substances by Customer; provided, however, that the foregoing indemnity shall not apply to any claims, liabilities or causes of action caused by the transportation or disposal of waste materials by Contractor.

ARTICLE 9. Excuse of Performance

The performance of this Agreement, except for the payment of money for Services already rendered, may be suspended by either party in the event performance of this Agreement is prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include but not be limited to: acts of God, acts of war, riot, fire, explosion, accidents, inclement weather, or sabotage; changes in government laws, regulations, orders, or defense requirements; restraining orders, labor dispute, strike, lock-out or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgments). The party which is prevented from performing by a cause beyond its reasonable control shall use its best efforts to eliminate such cause or event.

ARTICLE 10. Termination

This Agreement may be terminated by either party upon forty-eight (48) hours prior notice to the other party.

ARTICLE 11. Notice

Any notice to be given under this Agreement shall be in writing and delivered to the address listed below:

Customer: Bakken Oil Express, LLC
LL Terminals, LLC
BOE Pipeline, LLC
Lario Shipping, LLC
717 17th Street, Suite 1825
Denver, CO 80202
Attn: Director of Operations
Email: notice@boemidstream.com

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Contractor: Clean Harbors Environmental Services, Inc.
42 Longwater Drive,
P.O. Box 9149
Norwell, MA 02061-9149
Attn: General Counsel (Urgent Contract Matter)

ARTICLE 12. Additional Provisions

- 12.1 Limitation of Liability - Customer agrees that Contractor shall not be responsible for pre-existing contamination at the job location or natural resource damage. Neither party shall be responsible to the other or for indirect, incidental, consequential or special damages, including loss of use or lost profits, resulting from or arising out of or in connection with this Agreement. Except to the extent caused by the negligence or willful misconduct of one party, neither Party shall be liable to the other (or any person claiming through Customer) in any amount for any personal injury, illness, death, or property damage caused in whole or in part by a hazardous substance or any other substance regulated by law, and handled by either Party in the performance of this Agreement.
- 12.2 Confidentiality- The Parties recognize the importance of confidentiality and discretion in all activities related to the Services and the work site and performance under this Agreement. Both Parties agree to cause each of its employees and representatives with a need to know to hold all information relating to the business of the other Party ("Disclosing Party") disclosed to it by reason of this Agreement confidential and will not disclose any of such information to any person or entity unless legally compelled to do so; provided, however, that to the extent that any of them may become so legally compelled they may only disclose such information if they shall, if permitted, have first notified the Disclosing Party of the legal obligation and afforded Disclosing Party the opportunity to oppose such legal obligation or seek a protective order.
- 12.3 Waiver - Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition.
- 12.4 Assignment - Neither Party may assign this Agreement without the prior written consent of the other Party.
- 12.5 Relationship of the Parties - Except as specifically provided herein, neither Contractor nor Customers shall act or represent or hold itself out as having authority to act as an agent or partner of the other, or in any way bind or commit the other Party to any obligations. Nothing contained in this Agreement shall be construed as creating a partnership, joint venture, agency, trust, or other association of any kind, each Party being individually responsible only for its obligations as set forth in this Agreement. This Agreement is not exclusive and Customers understand and acknowledge that Contractor performs and will perform similar services for other clients.

- 12.6 Severability - If any section, subsection, sentence or clause of this Agreement shall be deemed to be illegal, invalid or unenforceable for any reason, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of this Agreement or other sections of this Agreement.
- 12.7 Entire Agreement - This Agreement and any Exhibits to this Agreement represent the entire understanding and agreement between Customer and Contractor and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. Modifications to this Agreement shall be in writing and shall be signed by the Customer and Contractor. Additional, conflicting or different terms on any purchase order or other preprinted document issued by Customer shall be void and are hereby expressly rejected by Contractor.
- 12.8 Survival - The provisions contained in Articles 3, 4, 5, 8 and 12 shall survive and remain in effect following the termination of this Agreement.
- 12.9 Applicable Law - This Agreement shall be interpreted and enforced according to the Laws of the State of North Dakota and the parties agree to submit to the jurisdiction of the courts of the State of North Dakota for any disputes arising under this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

On behalf of each CUSTOMER
 BAKKEN OIL EXPRESS, LLC
 BOE PIPELINE, LLC
 LARID SHIPPING, LLC
 LL TERMINALS, LLC

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.

Signature: 

Signature: _____

By: JOHN C WADSWORTH
 PRINT NAME

By: _____
 PRINT NAME

Title: COO

Title: _____



**Exhibit A
Rate Schedule**

A handwritten signature in black ink, appearing to be the initials 'JW', is located in the bottom right corner of the page.



Regional Rate Sheet

Region: Bakken Shale Region US

Rate Category Type: Emergency Response Rates

Currency Code: USD

Description	UOM	Price (USD)
FIELD PERSONNEL		
Field Technician	HR	\$58.00
Equipment Operator	HR	\$69.00
Foreman	HR	\$76.00
Chemist	HR	\$90.00
Supervisor	HR	\$98.00
Lead Chemist	HR	\$116.00
Project Manager	HR	\$126.00
Site Safety Officer	HR	\$134.00
TECHNICAL PERSONNEL		
Field Inspector	HR	\$82.00
Senior Mechanical Technician	HR	\$87.00
Associate Engineer	HR	\$95.00
Mechanic	HR	\$96.00
Welder	HR	\$96.00
Designer	HR	\$100.00
Wastewater Treatment Operator	HR	\$102.00
Field Engineer/Scientist/Geologist	HR	\$107.00
Senior Engineer/Scientist/Geologist	HR	\$120.00
Professional Engineer/LSP	HR	\$151.00
ADMINISTRATIVE/MANAGERIAL PERSONNEL		
On Site Administration	HR	\$65.00
Emergency Response Coordinator	HR	\$126.00
General Manager	HR	\$161.00
PER DIEM / SUBSISTENCE		
Per Diem / Subsistence	DAY	\$184.00

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Regional Rate Sheet

Description	UOM	Price (USD)
HEAVY DUTY TRUCKS		
Box Truck	HR	\$64.00
Dump Truck, 10 Wheel	HR	\$80.00
High Powered Vacuum Truck/Cusco	HR	\$135.00
Rolloff Straightjob	HR	\$82.00
Skid Mounted Vacuum System	HR	\$63.00
Tractor Only, No Trailer	HR	\$60.00
Tractor w/Box Van	HR	\$80.00
Tractor w/Dump Trailer	HR	\$85.00
Tractor w/Flatbed/Lowbed Trailer	HR	\$82.00
Tractor w/Liquid Transporter	HR	\$87.00
Tractor w/Rolloff Trailer	HR	\$82.00
Tractor w/Vacuum Trailer	HR	\$93.00
Vacuum Truck, Straight	HR	\$75.00
Wet/Dry High Powered Vacuum Truck/Guzzler	HR	\$135.00
LIGHT DUTY TRUCK/RESPONSE EQUIPMENT		
Emergency Response Van	HR	\$79.00
Pickup/Van/Car/Crew Cab	HR	\$21.00
Spill Trailer	DAY	\$195.00
Stake Body/Utility Truck	HR	\$37.00
Utility / Support Trailer	DAY	\$195.00
PRESSURE WASHING EQUIPMENT		
1000psi Pressure Washer	DAY	\$100.00
2000psi Pressure Washer	DAY	\$109.00
2500psi Hot Water Pressure Washer	DAY	\$341.00
2500psi Pressure Washer	DAY	\$118.00
3000psi Hot Water Pressure Washer	DAY	\$376.00
High Pressure Blaster - 10,000 PSI 150 HP	HR	\$71.00
High Pressure Blaster - 20,000 PSI 300 HP (10 GPM)	HR	\$140.00
High Pressure Blaster - 40,000 PSI 200 HP (6 GPM)	HR	\$195.00
Nozzle - 2D Automated	HR	\$65.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Nozzle - 3D Automated	HR	\$85.00
PUMPING/TRANSFERRING PUMPS		
Drum Loader	DAY	\$172.00
Drum Vacuum, Pneumatic	HR	\$32.00
Pump - Centrifugal, 2 in	DAY	\$110.00
Pump - Diesel Lister, 3 in	DAY	\$154.00
Pump - Double Diaphragm, 1 in	DAY	\$97.00
Pump - Double Diaphragm, 2 in	DAY	\$137.00
Pump - Double Diaphragm, 2 in, Chemical	DAY	\$182.00
Pump - Double Diaphragm, 3 in	DAY	\$154.00
Pump - Double Diaphragm, 3 in, Chemical	DAY	\$201.00
Pump - Double Diaphragm, 4 in	DAY	\$212.00
Pump - Electric Drum	DAY	\$109.00
Pump - Electric Submersible, 2 in	DAY	\$86.00
Pump - Electric Submersible, 3 in	DAY	\$109.00
Pump - Electric Submersible, 4 in	DAY	\$159.00
Pump - Hale, 2 in	DAY	\$109.00
Pump - Hand	DAY	\$35.00
Pump - Hydraulic Transfer, 4 in	HR	\$35.00
Pump - Hydraulic Transfer, 6 in	HR	\$262.00
Pump - Mudhen / Single Diaphragm, 2 in	DAY	\$65.00
Pump - Trash, 4 in	DAY	\$285.00
MARINE RESPONSE EQUIPMENT		
Airboat, Single Engine	DAY	\$1200.00
Airboat, Twin Engine	DAY	\$3500.00
Boat/Workskiff without Motor	DAY	\$142.00
Brush Skimmer	DAY	\$800.00
Containment Boom - 10" Per Foot Per Day	FT	\$1.78
Containment Boom - 18" Per Foot Per Day	FT	\$1.99
Containment Boom - 24" Per Foot Per Day	FT	\$2.57
Containment Boom - 36" Per Foot Per Day	FT	\$2.88
Drum Skimmer (24in-36in)	DAY	\$627.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Drum Skimmer, Double Barrel	DAY	\$950.00
Hydraulic Power Pack for Skimmer	DAY	\$220.00
Landing Craft (LCM), 26ft-29ft	DAY	\$950.00
Landing Craft (LCM), 30ft-34ft	DAY	\$1200.00
Landing Craft (LCM), 35ft-45ft	DAY	\$1800.00
Landing Craft (LCM), 46ft-75ft	DAY	\$4800.00
PFD Life Vest	DAY	\$26.00
PFD Survival Suit / Cold Weather Survival Work Suits	DAY	\$79.00
Power Barge Boat, 26ft-30ft	DAY	\$1100.00
Power Barge Boat, 30ft-42ft	DAY	\$2000.00
Power Workboat, Fast Response, 12-14ft	DAY	\$298.00
Power Workboat, Fast Response, 15-17ft	DAY	\$356.00
Power Workboat, Fast Response, 18-22ft	DAY	\$596.00
Power Workboat, Fast Response, 23-26ft	DAY	\$750.00
Power Workboat, Fast Response, 27-36ft	DAY	\$950.00
Rigid Hull Inflatable (RIB) (18ft-22ft)	DAY	\$785.00
Rope Mop - 4" (Per Foot)	FT	\$30.00
Rope Mop - 9" (Per Foot)	FT	\$38.00
Rotating Disc Skimmer Unit	DAY	\$816.00
Skim Pack Skimmer	DAY	\$162.00
Skimmer - C24H Hydraulically Powered Rope Mop Wringer	DAY	\$650.00
Skimmer - C29H Hydraulically Powered Rope Mop Wringer	DAY	\$875.00
Skimmer - CV-46H Hydraulically powered Vertical Mop Wringer	DAY	\$775.00
Skimmer, Duck Bill	DAY	\$28.00
Skimming Vessel (Marco/JBF or Equivalent) 28-30ft	DAY	\$5475.00
Skimming Vessel Belt Drive Replacement	EA	\$1302.00
Underwater ROV	DAY	\$1255.00
Weir Skimmer Unit	DAY	\$173.00
FIELD ANALYTICAL		
4 Gas/5 Gas Meter	DAY	\$178.00
Bailer & Sampling Equipment	DAY	\$60.00
Draeger Air Monitoring Pump	DAY	\$79.00
Explosion/Oxygen Meter	DAY	\$126.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Geiger Counter Meter	DAY	\$157.00
Geoprobe	DAY	\$228.00
Hydrogen Cyanide Meter	DAY	\$130.00
Hydrostatic Tester	DAY	\$115.00
Interface Probe	DAY	\$126.00
Lumex RA915+ Mercury Vapor Analyzer	DAY	\$513.00
Mercury Vapor Analyzer	DAY	\$262.00
Particulate Meter, Mini Ram or equivalent	DAY	\$126.00
Personal Air Pump Meter	DAY	\$60.00
pH Meter	DAY	\$60.00
PID Meter	DAY	\$126.00
Well Purging/Sampling Pump	DAY	\$60.00
HOSES/PIPE		
Hose - Chemical, 2 in X 20 ft	DAY	\$37.00
Hose - Chemical, 3 in X 20 ft	DAY	\$51.00
Hose - Chemical, 4 in X 20 ft	DAY	\$67.00
Hose - Flex, 4 in, per ft	FT	\$2.75
Hose - Flex, 6 in, per ft	FT	\$3.50
Hose - Lay Flat, 4 in X 25 ft	DAY	\$60.00
Hose - Lay Flat, 6 in X 25 ft	DAY	\$79.00
Hose - Suction, 2 in X 25 ft	DAY	\$31.00
Hose - Suction, 3 in X 25 ft	DAY	\$42.00
Hose - Suction, 4 in X 25 ft	DAY	\$60.00
Hose - Suction, 6 in X 25 ft	DAY	\$87.00
Wash Hose, 1/2in x 50ft	DAY	\$5.00
EARTH MOVING EQUIPMENT		
Backhoe Loader, 1 Yard Bucket	HR	\$79.00
Bobcat Loader/Mini Excavator	HR	\$74.00
Dozer, <100 HP	DAY	\$680.00
Excavator, 20-30 Ton	HR	\$100.00
Fork Attachment for Bobcat Loader	DAY	\$58.00
Loader, 2-3 Yard Bucket	HR	\$77.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Sweeper Attachment for Bobcat Loader	DAY	\$142.00
PNEUMATIC POWER TOOLS		
3/4in Drill, Rotary Hammer	DAY	\$91.00
Jackhammer, 40Lb	DAY	\$65.00
Jackhammer, 60Lb	DAY	\$82.00
Jackhammer, 90Lb	DAY	\$98.00
Pneumatic Chipping Gun	DAY	\$105.00
Steel Nibbler, Pneumatic	DAY	\$131.00
GAS POWERED TOOLS		
Brush Cutter/Power Broom	DAY	\$122.00
Cutoff Saw (Demo)	DAY	\$131.00
ELECTRIC POWER TOOLS		
1/2in Drill, Electric	DAY	\$43.00
Circular Saw, Electric	DAY	\$60.00
Mercury Vacuum	DAY	\$206.00
Reciprocating Saw (Sawzall), Electric	DAY	\$79.00
Wet Vacuum (Shop Vac)	DAY	\$43.00
SITE SUPPORT		
15 Gal HEPA Vacuum	DAY	\$172.00
150,000 BTU Portable Heater	DAY	\$272.00
2 CU YD self dumping hopper	DAY	\$4.30
2,000 - 2,900 Gal Poly Storage Tank	DAY	\$79.00
20,000 Gal Frac Tank	DAY	\$162.00
3,000 - 3,900 Gal Steel Storage Tank	DAY	\$27.00
300 - 500 Gal Poly Storage Tank	DAY	\$42.00
4,000 - 6,000 Gal Poly Storage Tank	DAY	\$96.00
Air Compressor 175-185 CFM	DAY	\$262.00
Air Compressor 8-10 CFM	DAY	\$121.00
ATV, 4X4 or 4X6	DAY	\$366.00
Carbon Filter System	DAY	\$249.00
Decon Pool, 10ft x 10ft	DAY	\$150.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Decon Pool, 20ft x 100ft	DAY	\$450.00
Decon Pool, 25ft x 50ft	DAY	\$300.00
Decontamination Trailer	DAY	\$183.00
Dewatering Box	DAY	\$172.00
Dump Trailer (Trailer Only, Staged on Site)	DAY	\$74.00
Eyewash Station	DAY	\$53.00
Frac Tank, Double Walled	DAY	\$194.00
Generator - 12K Watt	DAY	\$250.00
Generator - 4,000 Watt	DAY	\$139.00
Generator - 5,000 Watt	DAY	\$157.00
Generator - 8,000 Watt	DAY	\$183.00
Halogen Spotlight	DAY	\$105.00
Incident Command Unit	DAY	\$1568.00
Intermodal Container	DAY	\$32.00
Intrinsically Safe Drop Light	DAY	\$105.00
Light Stand	DAY	\$105.00
Light Tower w/Generator	DAY	\$523.00
Office Trailer	DAY	\$115.00
On-site Van Trailer (Tractor not included)	DAY	\$201.00
Personnel Staging Tent, 10x10 ft, Purchased	EA	\$175.00
Personnel Staging Tent, 20' x 30'	DAY	\$150.00
Portable Boiler	DAY	\$910.00
Rolloff Container with Tarp & Bows	DAY	\$20.00
Sea Container / Conex / Tool Crib, 20 ft.	DAY	\$30.00
Secondary Containment Unit	DAY	\$41.00
Skid Mounted Liquid Phase Carbon System (10GPM)	DAY	\$68.00
Tank Trailer/Transporter, No Tractor (For Storage Only)	DAY	\$455.00
Traffic Cone/Barricade Unit	DAY	\$1.50
Utility/Cross Terrain Vehicle (Mule/Gator)	DAY	\$366.00
Vacuum Box, Watertight	DAY	\$109.00
SPECIALTY EQUIPMENT		
Antiviral Disinfectant Fogger	DAY	\$175.00
Auger, Manual	DAY	\$65.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Compactor	DAY	\$65.00
Confined Space Entry Gear (Retrieval & Rescue Equip)	DAY	\$364.00
Cutting Torch/Acetylene Torch	DAY	\$120.00
DBI/Rogliss Tripod	DAY	\$65.00
Digital Camera	DAY	\$86.00
Drum Crusher, Portable	DAY	\$455.00
Drum Tilter, Mechanical	DAY	\$172.00
Electric Auger	DAY	\$74.00
Electric Blower	DAY	\$87.00
Explosion Proof Pneumatic Fan Blower	DAY	\$87.00
Fiber Optic Camera	HR	\$58.00
Fiber Optic Camera Truck	HR	\$149.00
Forklift, 2,000Lb Capacity	DAY	\$418.00
Forklift, 6,000Lb Capacity (High Reach / Lull)	DAY	\$450.00
Plasma Cutting Torch	DAY	\$237.00
Remote Drum Opener, Pnuematic	DAY	\$1192.00
Sand Blaster and Hose	HR	\$29.00
Transit Set	DAY	\$125.00
Walk Behind Concrete Saw	DAY	\$228.00
RESPIRATORY PROTECTION		
2 Man Breathing System	DAY	\$288.00
4 Man Breathing System	DAY	\$366.00
Acid Cartridges	PAIR	\$29.00
Asbestos Cartridges	PAIR	\$30.00
Breathing Air Hose, 100ft	DAY	\$105.00
Chlorine Cartridges	PAIR	\$29.00
Mercury Cartridges	PAIR	\$54.00
MSA Chemical Cartridge	EA	\$30.00
Negative Air Machine (Blower w/ HEPA filter)	DAY	\$262.00
Organic Vapor Cartridges (No Dust)	PAIR	\$29.00
Organic Vapor/Dust Combination Cartridges	PAIR	\$51.00
Respirator, Full Face	DAY	\$32.00
Self Contained Breathing Apparatus (SCBA)	DAY	\$262.00

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Regional Rate Sheet

Description	UOM	Price (USD)
PERSONAL PROTECTIVE EQUIPMENT (PER PERSON PER CHANGE OUT)		
Level A w/ResponderPlus Suit/Changeout	EA	\$950.00
Level B w/CPF2 or Polytyvec/Changeout	EA	\$200.00
Level B w/CPF3 or Saranex Suit/Changeout	EA	\$250.00
Level B w/CPF4 or Barricade Suit/Changeout	EA	\$300.00
Level C w/CPF1,2 or Polytyvec/Changeout	EA	\$60.00
Level C w/CPF3 or Saranex Suit/Changeout	EA	\$75.00
Level C w/CPF4 or Barricade Suit/Changeout	EA	\$120.00
Modified Level D (Tyvec, Gloves and Boots)	EA	\$30.00
CHEMICAL PROTECTIVE GARMENTS		
Chemrel Suit, Level C	EA	\$80.00
Kappler CPF1 Suit (Blue)	EA	\$34.00
Kappler CPF2 Suit (Grey)	EA	\$56.00
Kappler CPF2 Suit w/Strapped Seams (Grey)	EA	\$94.00
Kappler CPF3 Suit w/Hood & Boots (Tan)	EA	\$127.00
Kappler CPF3 Suit w/Hood & Strapped Seams (Tan)	EA	\$160.00
Kappler CPF4 Suit w/Hood & Boots (Green)	EA	\$132.00
Nomex Suit and Hood	EA	\$55.00
Polycoated Rain Gear, 22mil	EA	\$18.00
Tyvec, Polycoat HD/BT	EA	\$18.00
Tyvec, Saranex	EA	\$57.00
Tyvec, White	EA	\$22.00
HAND PROTECTION		
14in Neoprene Gloves	PAIR	\$13.00
14in Nitrile Gloves	PAIR	\$13.00
Cotton Winter Glove Liners	PAIR	\$6.00
Cut Resistant Gloves	PAIR	\$29.00
Gloves - 12 in PVC	PAIR	\$11.00
Gloves - 18 in PVC	PAIR	\$12.10
Gloves - Leather	PAIR	\$8.00
Latex Gloxes	BOX	\$13.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Puncture Resistant Gloves	PAIR	\$34.00
Silver Shield Gloves	PAIR	\$34.00
FOOT PROTECTION		
Disposable Boot Covers (Chicken Boots)	PAIR	\$12.50
Non Steel Toe Chest Waders - Purchased	PAIR	\$225.00
Steel Toe Hip Boots - Purchase	PAIR	\$160.00
Steel Toe Knee Boots	PAIR	\$80.00
HEAD / FACIAL PROTECTION		
16oz Eyewash	EA	\$22.00
Bottled Water / Stress Relief (Case)	CA	\$25.00
Earplugs	PAIR	\$1.92
Face/Splash Shield	EA	\$22.00
First Aid Kit, 25 Person	EA	\$83.00
DOT SHIPPING CONTAINERS		
1 Cubic Yard Supersac 13H2/Y/06	EA	\$82.00
10 Gal / 40 Litre Fiber Drum	EA	\$40.00
110 Gal Steel Drum, Reconditioned 1A2/Y400S	EA	\$455.00
16 Gal / 70 L Closed Poly Drum	EA	\$61.00
16 Gal / 70 L Poly Drum 1H2/Y56/S	EA	\$64.00
16 Gal Fiber Drum	EA	\$29.00
18x18x24in Nonhazardous Pathological Waste Box	EA	\$10.00
20 Gal / 80 Litre Fiber Drum	EA	\$34.00
20 Gal / 80 Litre Poly Drum (1H2/Y56/S)	EA	\$100.00
30 Gal / 120 Litre Closed Poly Drum 1H1/Y1.8/100	EA	\$78.00
30 Gal / 120 Litre Closed Steel Drum, New 1A1/Y1.6/200	EA	\$94.00
30 Gal / 120 Litre Closed Steel Drum, Reconded 1A1/Y1.4/100	EA	\$89.00
30 Gal / 120 Litre Fiber Drum 1G/X56/S	EA	\$51.00
30 Gal / 120 Litre Poly Drum 1H2/Y142/S	EA	\$84.00
30 Gal / 120 Litre Steel Drum, New 1A2/Y1.4/100	EA	\$111.00
30 Gal / 120 Litre Steel Drum, Reconditioned 1A2/Y1.2/100	EA	\$80.00
4ft Fluorescent Tube Box 4G/Y275	EA	\$25.00

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Regional Rate Sheet

Description	UOM	Price (USD)
5 Gal / 20 Litre Closed Poly Drum 1H1/Y1.8/170	EA	\$29.00
5 Gal / 20 Litre Closed Steel Drum 1A1/Y1.8/300	EA	\$34.00
5 Gal / 20 Litre Poly Drum 1H2/Y1.5/60	EA	\$22.00
5 Gal / 20 Litre Steel Drum 1A2/Y1.8/100	EA	\$34.00
5.5 Gal / 20 L Steel Drum 1A2/Y23/S	EA	\$22.00
55 G / 205 L Closed Steel Drum, Recon 1A1/Y1.4/100 (17-E)	EA	\$44.00
55 G / 205 L Steel Drum, Reconditioned 1A2/Y1.2/100 (17-H)	EA	\$66.00
55 Gal / 205 L Stainless Steel Drum, Reconditioned	EA	\$252.00
55 Gal / 205 Litre Closed Poly Drum 1H1/Y1.8/150	EA	\$100.00
55 Gal / 205 Litre Closed Poly Drum 1H1/Y1.8/150, Recycled	EA	\$98.00
55 Gal / 205 Litre Closed Steel Drum, New 1A1/Y1.8/300	EA	\$97.00
55 Gal / 205 Litre Fiber Drum 1G/Y190/S	EA	\$56.00
55 Gal / 205 Litre Poly Drum 1H2/Y237/S	EA	\$149.00
55 Gal / 205 Litre Steel Drum, New 1A2/Y1.5/100	EA	\$110.00
85 Gal / 320 Litre Steel Drum, New 1A2/X400/S	EA	\$230.00
85 Gal / 320 Litre Steel Drum, Recycled 1A2/X400/S	EA	\$195.00
8ft Fluorescent Tube Box 4G/Y275	EA	\$27.00
95 Gal Poly Drum 1H2/Y318/S (Overpack)	EA	\$270.00
95 Gal Poly Drum, Recycled 1H2/Y318/S (Overpack)	EA	\$268.00
Asbestos Bag	EA	\$1.60
Drum 15 Gal / 60 Litre Poly (1H2/Y1.8/100)	EA	\$71.00
Drum Liners	EA	\$22.00
Drum Rings/Bolts/Gaskets	EA	\$29.00
Dump Trailer Poly Liner	EA	\$96.00
Filter/Liner for Filter Box	EA	\$356.00
Flexbin, 1 Cubic Yard Flexbin 11G/Y/2022/1122	EA	\$154.00
Flexbin, Cubic Yard Box for Non-Haz Waste	EA	\$100.00
Flexbin/Cubic Yard Box Liner	EA	\$29.00
Fluorescent Bulb Tubes, 4ft 100 bulb capacity	BOX2	\$61.00
Fluorescent Bulb Tubes, 8ft 100 bulb capacity	BOX2	\$88.00
Hazardous Waste Labels	EA	\$1.30
Labels - DOT	EA	\$1.50
Pathological Waste Bag	EA	\$6.10

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Regional Rate Sheet

Description	UOM	Price (USD)
Poly Bags, 6mil, per Roll	EA	\$170.00
Poly Sheet, 6mil 20ft x 100ft	EA	\$115.00
Rolloff Poly Liner	EA	\$78.00
Vacbox Liner/Bladder	EA	\$770.00
Waste Wrangler	EA	\$187.00
ABSORBENT MATERIALS		
Absorbent Boom, 3in x 4ft	EA	\$8.00
Absorbent Boom, 5in x 10ft x 4/Bale	BALE	\$154.00
Absorbent Boom, 8in x 10ft x 4/Bale	BALE	\$247.00
Absorbent Pad (101 Grade) 100/bale	BALE	\$127.00
Absorbent Roll, 38in x 144ft	EA	\$181.00
Absorbent Rug, 36in x 300ft	EA	\$300.00
Absorbent Sweep, 17in x 100ft	BALE	\$159.00
Activated Carbon for Water treatment systems	LBS	\$3.10
Corn Cob Absorbent 40lb / 18 kg bag	BAG	\$17.00
HGX Absorbent (Mercury absorbent)	LBS	\$20.00
Oil Snare, Loose in Bag	BOX	\$66.00
Oil Snare, on a Line, 50ft	EA	\$97.00
Poly Absorbent, 20 lb / 23 kg	BAG	\$105.00
Rags, 50 lb / 23 kg	BOX	\$61.00
Saw Dust, 20 lb / 9 kg	BAG	\$10.00
Speedi Dry	BAG	\$12.00
SPI Solidification Particulate (Oil Bond)	LBS	\$19.00
SPI Waterbond	LBS	\$16.00
Vermiculite 4 cuft	BAG	\$47.00
DEGREASERS & NEUTRALIZING AGENTS		
142 Solvent	GAL	\$11.00
Antifreeze, Concentrate	GAL	\$5.80
Antiviral Disinfectant Solution	GAL	\$45.00
Capsur	GAL	\$170.00
Cirtic Acid Solution, 15%	GAL	\$7.00
Citrus Cleaner Degreaser	GAL	\$61.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Diesel Fuel for Off-Road Use	GAL	\$6.00
Hydrated Lime, 50 lb / 23 kg	BAG	\$8.00
Hydrochloric Acid	LBS	\$3.60
Penetone Degreaser	GAL	\$33.00
Pink Stuff Degreaser	GAL	\$22.00
Sanimate Degreaser	GAL	\$22.00
Simple Green Degreaser	GAL	\$34.00
Soda Ash, 100 lb / 45 kg	BAG	\$52.00
Sodium bisulfate 50 lb / 23 kg	BAG	\$121.00
Sodium Hypochlorite, 15% (Bleach)	GAL	\$9.00
SAMPLING AND LAB SUPPLIES		
8oz Sample Jars	EA	\$14.00
CHLOR'N'OIL Test Kit 0-50ppm PCB	EA	\$39.00
CHLOR-D-TECT 4000 Test Kit (Halogens)	EA	\$29.00
Draeger Tube	EA	\$29.00
pH Paper, 1-14/Roll	EA	\$17.00
Sample Tube	EA	\$17.00
MARINE EQUIPMENT		
1/2in Nylon Rope	FT	\$1.00
1/2in Poly Rope	FT	\$0.50
1/8in Poly Rope	FT	\$0.40
3/8in Unguarded Galvanized Chain	FT	\$7.00
Anchor, 18Lb	EA	\$137.00
PFD Deck Suit	EA	\$676.00
PFD Safety Light	EA	\$29.00
HAND TOOL/CONSTRUCTION ACCESSORIES		
12in Metal Cutting Wheel Blade	EA	\$21.00
16in Street Broom	EA	\$35.00
24in Floor Broom	EA	\$35.00
3 Gal Pump Spray Bottle	EA	\$54.00
3/8in Manilla Rope	FT	\$0.50

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Regional Rate Sheet

Description	UOM	Price (USD)
3/8in Manilla Rope Coil, 600ft	EA	\$165.00
3in Long Handle Scraper	EA	\$23.00
3in Scraper	EA	\$15.00
Caution Tape/Roll	EA	\$56.00
Chemical Tape/Roll	EA	\$51.00
Deck/Scrub Brush	EA	\$18.00
Disposable Hand Pump/Syphon Pump	EA	\$34.00
Duct Tape/Roll	EA	\$12.00
Extension Cord, 50ft	EA	\$56.00
Fence Stakes	EA	\$9.10
Fence, Slit 100ft	EA	\$143.00
Flat Shovel	EA	\$32.00
Garden Hoe	EA	\$30.00
Garden Rake	EA	\$30.00
Pitch Fork	EA	\$100.00
Plastic Shovel	EA	\$55.00
Sawzall Blade	EA	\$34.00
Shrink Wrap	ROL	\$48.00
Small Sledge Hammer	EA	\$40.00
Snow Fence/Safety Fence, 50ft	EA	\$77.00
Spaded Shovel	EA	\$35.00
Squeegee	EA	\$37.00
WASTE MATERIAL APPROVAL		
Profile Approval Fee (No Sample)	EA	\$75.00
Sample & Profile Approval Fee	EA	\$109.00
MISCELLANEOUS		
Acetylene Bottle	EA	\$45.00
Breathing Air Bottle Refill	EA	\$30.00
Chain Saw	DAY	\$122.00
Collection Jar for Mercury Vacuum	EA	\$44.00
Dump Truck Tarp	EA	\$363.00
Filter Bags - 25 Micron Nominal	EA	\$9.00

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Regional Rate Sheet

Description	UOM	Price (USD)
Filtration Bag for Mercury Vacuum	EA	\$29.00
Hand Cleaner	EA	\$33.00
Misc. Handtools	DAY	\$34.00
Nitrogen Cylinder	DAY	\$63.00
Rolloff Bow	EA	\$42.00
Rolloff Tarp	EA	\$418.00

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Regional Rate Sheet

NOTES:

FIFTEEN 15%

- 1) All labor, equipment, materials and services outlined in this Schedule of Rates will be invoiced at the rates listed, regardless of Clean Harbors' method of acquisition. Any items not described in this Schedule of Rates which are acquired by Clean Harbors shall be invoiced at Clean Harbors' cost plus a markup of ~~thirty-five percent (35%)~~ ^{FIFTEEN 15%}. (Unless otherwise specified, these rates are not valid for response to Infectious Agents/Biologicals.) The Schedule of Rates includes the cost of Clean Harbors' basic medical monitoring program. Any special medical monitoring required by the client or the nature of the work will be added to the project scope and the client will be invoiced at cost plus a markup listed above. ACW
2/25/15
- 2) Lodging and subsistence for Clean Harbors personnel and our subcontractors in the field are included in a per diem charge per person per day when working more than 30 miles from the employee's normal operations center and when overnight accommodations are required. The rate is outlined in the labor section of this document. When overnight accommodations are not required but work exceeds 12 hours, \$40.00 per day per person may apply to cover meals and incidentals.
- 3) At its sole discretion, Clean Harbors will determine the level of protection required for each project. Level A, B, C or D personal protection and safety packages will be invoiced at the rates shown in the Schedule of Rates.
- 4) Clean Harbors' personnel and equipment will be charged portal-to-portal (mobilization and demobilization included). Services provided prior, during and/or subsequent to actual project site activities will also be charged at the Hourly Rate. This includes, but is not limited to, time taken by personnel to decontaminate and re-don protective clothing and equipment that is billed as part of the project.
- 5) Clean Harbors' normal employee workday is 7:00 am to 3:30 pm, Monday through Friday. Other work hours must be agreed to in writing in advance. No more than eight (8) hours of straight time will be billed for one person for one day. All time will be based upon a 24 hour day.
- 6) All hours worked in excess of eight (8) hours in the normal workday, as described above, as well as all hours worked all day Saturday are considered overtime and will be billed at 1.5 times the applicable straight time rate for all billable personnel.
- 7) Sunday and Holidays are considered premium time and will be billed at 2.0 times the applicable straight time rate for all billable personnel. Holidays are the legally observed United States Federal Holidays plus the day after Thanksgiving. When local laws or regulations recognize additional holidays or when local laws or regulations define premium hours in excess of this definition, Clean Harbors will invoice in accordance with local laws or regulations.
- 8) All emergency call-outs (i.e., less than 24-hour notice) will be subject to a minimum four (4) hour response charge or \$2000.00 minimum charge, whichever is greater. Minimum charges do not apply to Transportation and Disposal.
- 9) Charges for Safety Plans are assessed on all projects involving OSHA regulated substances or when required by the Customer or other Agency. In some instances a Site Safety Officer charge will apply per hour to create and administer the Safety Plan.
- 10) A variable Energy and Security Recovery Fee (that fluctuates with the DOE national average diesel price), will be applied to the total invoice, excluding sales tax.
- 11) Unless specifically notated, these rates do not apply to any projects with Prevailing Wage requirements. Any Prevailing Wage rates will be negotiated on a case-by-case basis.
- 12) Equipment billed on an hourly basis will be billed a minimum of four hours upon activation. For equipment with only Daily Rates, a day will be charged up to 12 hours. No more than 2 Daily Rates will apply per calendar day. For boats and other marine equipment, Daily Rates will apply regardless of the hours used per day.
- 13) Unless specifically notated in the equipment description, all equipment rates are un-operated.
- 14) All waste disposal from project and or response activities will be charged additionally to the rates lists herein. A Waste Document Preparation Fee of \$125 per day will apply to any work generating waste. The fee includes labels, manifests/bills of lading and profiles.
- 15) Standby charges will be negotiated on a case-by-case basis.
- 16) Clean Harbors guarantees to hold prices firm for 60 days.

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ACW

APPENDIX B

PLANNING DISTANCE CALCULATIONS

Planning Distance Calculations (9 flow paths)

BOE Pipeline, LLC

Stark and Dunn County, ND

Calculations based on Appendix C Subpart 112 of Title 40 Substantial Harm

1) **Drainage Flow Path:** 12.7 miles in Murphy Creek to Lake Ilo/Dam, 1.6 mile spread in Ilo lake/Dam, 96.4 miles in Spring Creek, 40.4 miles in Knife River to Missouri River Dunn County

Elevations: Murphy Creek elevation 2318 feet. Elevation of Inlet at Lake Ilo 2195 feet. Elevation of Inlet at Spring Creek 2195 feet. Elevation of Inlet at Knife River 1781 feet. Elevation of Inlet at Missouri River 1675 feet.

Response Time: 12 hours

A) Transit time from pipeline to Murphy Creek (12.72 miles x 5280 = 67,161.60 feet)

Elevation Change: 2318-2195=123 feet over 67,162 feet

Slope=123 feet/67,162 feet= .001831392752

N₁=Manning roughness coefficient to tributary

(Stream less than 100 feet) Winding=0.04 Google Width 19 feet

Midstream Depth = 5 feet

Chezy-Manning's Equation:

Velocity_A = (1.5/0.04) (0.667x5)^{2/3} [(0.018314)^{1/2}] = (37.5)(2.23)(0.0428)=3.58ft/sec

Travel Time_A = (67,162 ft.) / (3.58 ft. /sec) = 18,767 seconds = 312.78 minutes
= 5.21 hours

B) Lake Ilo (still waters) spreading of oil over the surface

Assume a 20 knot wind under storm conditions where 1 knot=1.15 miles/hour

20 knots x 1.15 miles/hour/knot = 23 miles/hour

Assume oil slick moves at 3% wind speed from Oil Spill Prevention & Control (National Spill Control School, Corpus Christi State University, Thirteenth Edition; May 1990)

(23 miles/hour)(0.03) = 0.69 miles/hour spread

Travel Time_B = (1.69 miles)/(0.69 miles/hour) = 2.45 hours

C) Transit in Spring Creek after overflow of Lake Ilo Spillway (96.4 miles)

Using max velocity from USGS test station 06340000 for Spring Creek at Zap, ND.

Max velocity occurred March 23, 1987 = 4.82 feet/second

Travel Time_C = (12-5.21-2.45) = 4.34 hours in Spring Creek

(4.82feet/second)(60second/minute)(60minute/hour) =
15,624 feet/hour = 2.96 miles/hour

Distance_C = 4.34 hours (2.96 miles/hour) = 12.84 miles in Spring Creek = 67,808 feet in Spring Creek

12 Hour Planning Distance: 12.7miles+1.6miles+12.84miles = 27.1 miles

47°21'01.04"N 102°31'57.26"W elevation 2142

47.350289N 102.532572W

2) **Drainage Flow Path:** Wolf Creek to Knife River to Missouri River. 5.6 miles in Wolf Creek, 178.8 miles in Knife River.
 Elevations: Elevation at pipeline and Wolf Creek 2299 feet. Elevation of inlet at Wolf Creek to Knife River 2165 feet.

A) Transit from pipeline in Wolf Creek (5.6 miles x 5280 = 29,568 feet)
 Slope = $(2299-2165/29,568) = 0.00452$
 $N_1 = (\text{Stream less than 100 feet}) \text{ Winding } 0.04 \text{ Google Width } 14 \text{ feet}$
 Midstream Depth = 4 feet
 $\text{Velocity}_A = (1.5/0.04)(0.667 \times 4)^{2/3} [(0.00452)^{1/2}] = (37.5)(1.9236)(0.06723)$
 $= 4.85 \text{ feet/second}$
 $\text{Travel Time}_A = (29,568 \text{ ft.}) / (4.85 \text{ ft. /sec}) = 6097 \text{ seconds} = 101.6 \text{ minutes}$
 $= 1.69 \text{ hours}$

B) Possible 178.8 miles in Knife River
 137.41 miles to Beulah- USGS 06339100 Knife River at Manning, ND 6.01 ft. /sec max March 3, 1992
 USGS 06340010 Knife River near Beulah, ND 3.88 ft. /sec max velocity August 4, 2011
 USGS 06340500 Knife River at Hazen, ND 5.62 ft. /sec max velocity March 23, 2009 10:25am
 $\text{Travel Time}_B = 12\text{hours} - \text{Travel Time}_A = 12\text{hrs} - 1.69 \text{ hrs.} = 10.31 \text{ hours in Knife River}$
 $(6.01 \text{ ft. /sec})(60 \text{ sec/min})(60 \text{ min/hr.}) = 4.1 \text{ miles/hour}$
 $D_B = T_B (V_B) = 10.31 \text{ hours} (4.1 \text{ mi/hr.}) = 42.24 \text{ miles} = 223,191 \text{ feet in Knife River}$

12 Hour Planning Distance: 5.6 miles + 42.3 miles = 47.9 miles
 47°10'42.00"N 102°32'10.85"W 2044 feet elevation
 47.178333N 102.536347W

- 3) **Drainage Flow Path:** Knife River to Missouri River. 184.4 miles in Knife River to reach Missouri River.

USGS 06339100 Knife River at Manning, ND

Peak Velocity 6.01 ft. /sec on March 3, 1992 15:55

6.01 ft. /sec (60sec/min) (60min/hr.) = 21,636 ft. /hr. = 4.1 miles/hour

$T_{12} = (12 \text{ hours})(4.1 \text{ miles/hour}) = 49.17 \text{ miles} = 259,632 \text{ feet in Knife River}$

12 Hour Planning Distance:

47°09'15.98"N 102°29'49.76"W

47.154439N 102.497156W

- 4) **Drainage Flow Path:** Crooked Creek to Knife River to Missouri River. 30.9 miles in Crooked Creek to reach Knife River, 150.1 miles in Knife River to reach Missouri River.

Elevations: 2208 feet at Pipeline. 2067 feet Crooked Creek inlet to Knife River

Response Time: 12 hours

- A) Transit from pipeline in Crooked Creek (30.9miles x 5280 = 163,152 feet)

Slope = $(2208-2067/163152) = 0.000864224772$

$N_1 = (\text{Stream less than 100 feet})$ Winding 0.04 Google Width 7 feet

Midstream Depth = 4 feet

Velocity_A = $(1.5/0.04)(0.667 \times 4.0)^{2/3} [(0.000864)^{1/2}]$

= (37.5) (1.92) (0.0294) = 2.12 ft. /sec

$T_{A=}$ Travel Time = $(163152 \text{ ft.}) / (2.12 \text{ ft. /sec}) = 76958.5 \text{ seconds}$

= 1282.64 minutes = 21.38 hours to get to Knife River - 12 hour

transit will be in Crooked Creek

2.12ft/sec (60 sec/min) (60 min/hr.) = 7,632 ft. /hr. = 1.445 mi/hr.

$T_{12 \text{ hours}} = (12) (1.445 \text{ mi/hr.}) = 17.34 \text{ miles} = 91584 \text{ feet in Crooked Creek}$

12 Hour Planning Distance: 17 miles at Point in Crooked Creek

47°9'54.4"N 102°39'49.78"

47.165111N 102.663828W

- 5) **Drainage Flow Path:** 9.8 miles in Lightning Creek, 29.1 miles in Crooked Creek, 150.1 miles in Knife River to reach Missouri River

Elevations: 2508 feet at pipeline and Lightning Creek, 2200 feet at Inlet to Crooked Creek, 2067 feet at Crooked Creek inlet to Knife River

Response Time: 12 hours

- A) Transit from pipeline in Lightning creek (9.8miles x 5280 = 51,744 ft.)

Slope_A = $(2508-2200) / (51,744 \text{ ft.}) = (308/51,744) = 0.0059524$

$N_1 = (\text{Stream less than 100 feet})$ Winding 0.04 Google Width 8 feet

Midstream Depth = 3 feet

Velocity = $(1.5/0.04)(0.667 \times 3)^{2/3} [(0.0008656)^{1/2}] = (37.5) (1.59) (0.07715) =$

4.59 ft. /sec

Travel Time_A = $(51,744) / (4.59) = 11,273 \text{ seconds} = 187.9 \text{ minutes} = 3.13 \text{ hours}$

B) Transit in Crooked Creek (29.1 miles x 5280 = 153,648 ft.)

$$\text{Slope}_B = (2200-2067)/(153,648) = 0.0008656$$

$N_1 =$ (Stream less than 100 feet) Winding 0.04 Google Width 7 feet

Midstream Depth = 4 feet

$$\text{Velocity}_B = (1.5/0.04)(0.667 \times 4)^{2/3} [(0.0008656)^{1/2}] = (37.5)(1.92)(.0294) =$$

$$2.12 \text{ ft. /sec} = 1.445 \text{ miles/hour}$$

$$(12-3.13)(1.445 \text{ mi/hr.}) = 12.8 \text{ miles in Crooked Creek}$$

12 Hour Planning Distance: $D_A + D_B = 9.8 \text{ miles} + 12.8 \text{ miles} = 22.6 \text{ miles}$

$$47^\circ 10' 2.03'' \text{N} \quad 47.167231 \text{N}$$

$$102^\circ 41' 51.61'' \text{W} \quad 102.697669 \text{W}$$

6) **Drainage Flow Path:** 26.47 miles in Russian Spring Creek, 7.8 miles in Green River, 80.8 miles in Heart, 8.2 mile spread in Lake Tschida/Dam, 124.2 mile flow in Heart River to Missouri River.

Elevations: Russian Spring Creek at pipeline 2540 feet, Russian Spring Creek Inlet to Green River 2367 feet, Green to Heart

Response Time: 12 hours

A) Transit from pipeline in Russian Spring Creek (26.47 mi x 5280 = 139,762 ft.)

$$\text{Slope}_A = (2540-2367)/(139,762) = 0.0012378$$

$N_1 =$ (Stream less than 100 feet) Winding 0.04 Google Width 29 feet

Midstream Depth = 6 feet

$$\text{Velocity}_A = (1.5/0.04) (0.667 \times 6)^{2/3} [(0.0012378)^{1/2}] = (37.5) (2.52) (0.03518)$$

$$= 3.33 \text{ ft. /sec}$$

$$(139,762) / (3.33 \text{ ft. /sec}) = 42028.5 \text{ sec} = 700 \text{ minutes} = 11.67 \text{ hours}$$

B) Transit in Green River (7.8 miles max)

USGS 06344600 Green River near New Hradec, ND

Max Velocity 4.1 ft. /sec on March 10, 1993 15:15 = 14,760 ft. /hr. = 2.8 mi/hr.

12-11.67 = 0.33 hours flowing in Green River

$$(0.33 \text{ hours})(2.8 \text{ miles/hr.}) = 0.924 \text{ miles}$$

12 Hour Planning Distance: 26.47+0.92 = 27.39 miles in Green River

$$46^\circ 56' 2.67'' \quad 46.934075 \text{N}$$

$$102^\circ 40' 24.46'' \text{W} \quad 102.673461 \text{W}$$

- 7) **Drainage Flow Path:** 40 miles in Green River, 80.8 miles in Heart River, 8.2 miles of spread in Tschida Lake/Dam, 124.2 miles flow in Heart to reach Missouri River

USGS 06344600 Green River near New Hradec, ND

Max Velocity = 4.1 ft. /sec March 10, 1993 15:15

Velocity = 4.1 ft. /sec = 14,760 ft. /hr. = 2.8 miles/hour

12 Hour Response Time x 2.8 miles/hour = 33.545 miles = 177,120 feet in Green River

46°53'52.21"N 49.897836N

102°38'8.28"W 102.635633W

- 8) **Drainage Flow Path:** 5.31 miles in Duck Creek, 1.66 miles of spread in Patterson Lake/Dam, 106.4 miles in Heart, 8.2 miles of spread in Lake Tschida, 124.2 mile flow in Heart River to reach Missouri River

Elevation: 2469 feet Duck Creek at pipeline, 2419 Duck Creek at inlet to Patterson Lake

- A) Transit from pipeline in Duck Creek (5.31 miles x 5280 = 28037 feet)

Slope = $(2469-2419)/(28037) = 0.001783$

N_1 = (Stream less than 100 feet) Winding 0.04 Google Width 16 feet

Midstream Depth = 5 feet

Velocity_A = $(1.5/0.04)(0.667 \times 5)^{2/3} [(0.001783)^{1/2}] = (37.5)(2.23)(0.04223) = 3.53$ feet/second

T_A=Travel Time_A = $(28,037)/(3.53 \text{ ft. /sec}) = 7939$ seconds = 132.3 minutes = 2.2 hours

- B) Patterson Lake/Dam 1.66 miles spreading over surface (1.66 miles given)

Assume a 20 knot wind under storm conditions where 1 knot = 1.15 miles/hour. 20 knots x 1.15 miles/hour/knot = 23 miles/hour

Assume oil slick moves at 3% wind speed from Oil Spill Prevention Control, National Spill Control School, Corpus Christi State University, thirteenth edition, May 1990.

T_B = $(1.66 \text{ miles})/(0.69 \text{ miles/hour}) = 2.4$ hours

- C) 106.4 miles in Heart River before getting to Lake Tschida/Dam

Given: USGS 06345500 Heart River near Richardton, ND

Max Velocity = 4.96 ft. /sec March 22, 1997 15:15 = 17,856 feet/hour = 3.38 miles/hour

T_C=12-T_A-T_B = 12-2.2-2.4=7.4 hours

Distance in Heart River = $(7.4 \text{ hours})(3.38 \text{ miles/hour}) = 25.012$ miles = 132063 feet

Total Distance = 5.31+1.66+25.01 miles = 31.98 miles

46°51'25.91"N 46.857197N

102°35'40.15"W 102.594486W

- 9) **Drainage Flow Path:** 0.9 miles flow to Heart River, 2.9 miles in Heart River, 2.3 miles spread in Patterson Lake/Dam, 106.4 miles in Heart before getting to Lake Tschida

Elevation: Elevation at pipeline 2467 feet, Elevation at Heart River 2416 feet

Response Time: 12 hours

A) Transit time from site to Heart River (0.9 miles)

$$\text{Slope} = (2467-2416)/(0.9 \times 5280) = (51)/(4752) = 0.010732$$

$$N_1 = (\text{Stream less than 100 feet}) 0.03$$

Midstream Depth = 3 feet

$$\text{Velocity}_A = (1.5/0.03)(0.667 \times 3)^{2/3} [(0.010732)^{1/2}] = (50)(1.59)(0.1036) = 8.2 \text{ ft. /sec}$$

$$\text{Travel Time}_A = (4752 \text{ feet}) / (8.2 \text{ ft. /sec}) = 578 \text{ seconds} = 10 \text{ minutes} = 0.16 \text{ hours}$$

B) 2.9 miles in Heart River to flow into Patterson Lake

Used USGS 06345500 Heart River near Richardton, ND

Max Velocity = 4.96 ft. /sec March 22, 1997 15:15

$$(2.9 \times 5280) / (4.96 \text{ ft. /sec}) = 3087 \text{ seconds} = 51 \text{ minutes} = 0.86 \text{ hours}$$

C) Lake Patterson/Dam (Still Water) spreading of oil over the surface

Assume a 20 knot wind under storm conditions where 1 knot = 1.15 miles/hour. 20 knots x 1.15 miles/hour/knot = 23 miles/hour

Assume oil slick moves at 3% wind speed from Oil Spill Prevention of Control, National Spill Control School, Corpus Christi State University, 13th edition, May 1990.

$$(23 \text{ miles/hour})(0.03) = 0.69 \text{ miles/hour spread}$$

$$T_C = \text{Distance within Lake Patterson} / 0.69 = (2.3 \text{ miles}) / (0.69 \text{ miles/hour}) = 3.33 \text{ hours}$$

D) 106.4 miles in Heart before getting to Lake Tschida/Dam

Given: USGS 06345500 Heart River near Richardton, ND

Max Velocity = 4.96 ft. /sec March 22, 1997 15:15 = 17856 ft. /hr. = 3.38 miles/hour

$$T_D = 12 - T_A - T_B - T_C = 12 - 0.16 - 0.86 - 3.33 \text{ hours} = 7.65 \text{ hours remaining}$$

Distance Traveled in Heart River after Lake Patterson

$$(7.65 \text{ hours})(3.38 \text{ mi/hr.}) = 25.85 \text{ miles in Heart} = 136,465 \text{ feet in Heart River after spillway}$$

Total Distance: 0.9 miles + 2.9 miles + 2.3 miles + 25.9 miles = 32.0 miles

46°51'36.56"N 46.860156 N

102°35'11.35"W 102.586486W

APPENDIX C

**Significant and Substantial Harm to the Environment
including Unusually Sensitive Areas (USAs) (195.6)**

Appendix C is an analysis performed to address potential effect to human health, property, and/or the environment if a pipeline release were to occur along the BOE Pipeline. This analysis is consistent with the Environmental Protection Agency's (EPA) final rules published July 1, 1994 which revised the Oil Pollution regulation under the Clean Water Act (CWA) and incorporated new regulations added by the Oil Pollution Act of 1990 (OPA 90). This analysis identifies the proximity of environmentally sensitive areas to a theoretical pipeline release location and helps prioritize vulnerable areas for protection if a discharge were to occur.

Based on a 12-hour response time for a pipeline discharge, the pipeline is located where it would impact:

- Lake Ilo National Wildlife Refuge.
- Tributaries which flow into the Missouri River.
- Threatened or Endangered Species.
 - Whooping Crane, Piping Plover, Dakota Skipper, Interior Least Tern, Pallid Sturgeon, Sprague's Pipit, Black Footed Ferret, and Gray Wolf.

Therefore, the potential to cause significant and substantial harm to the environment in the event of an oil discharge exists. This section is a discussion of issues that could cause significant and substantial harm including Unusually Sensitive Areas. Sensitivity of the environment at risk is also provided.

Spill prevention and control measures specific to a pipeline help reduce the chances of significant and substantial harm. BOE/Progress Solutions has implemented or will implement the following measures for their BOE pipeline:

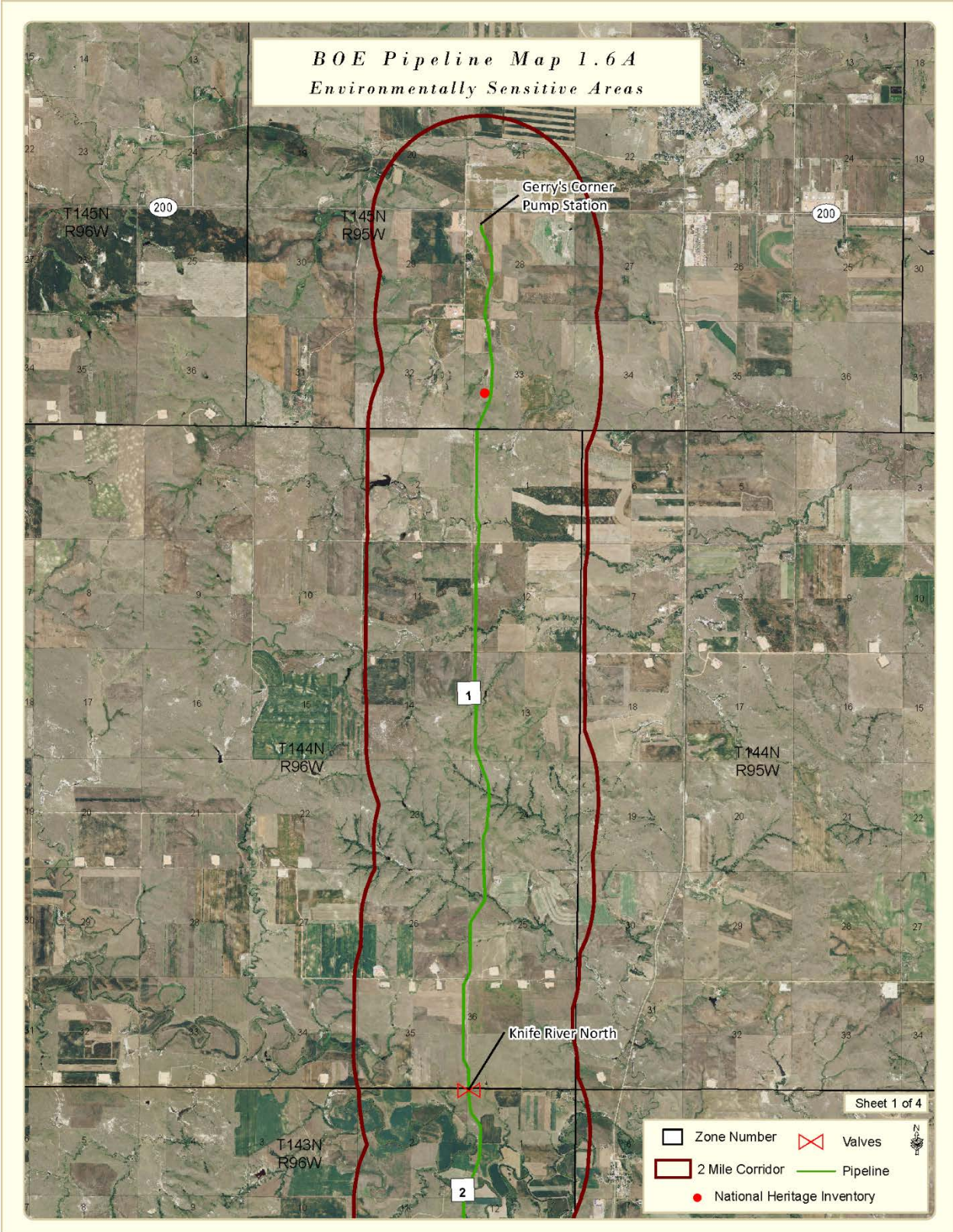
- Conducted a risk assessment for the pipeline.
- Designed the pipeline to reduce the risk of major uncontained spills.
- Authored this Spill Response Plan and will ensure the capability to implement the plan is in place.
- Ensure adequate corrosion allowance for the lifetime of the pipeline by installation and maintenance of a cathodic protection system for the pipeline meeting regulatory standards.
- Installed shutdown valves along the pipeline to allow early shutdown or isolation in the event of a spill. Valving was constructed on both sides of the Knife River, Green River, and Duck Creek and at inlets and outlets to the pipeline.
- Developed automatic shutdown actions through an emergency shutdown system for significant spill scenarios so that the pipeline may be rapidly brought into a safe condition.
- Install a Supervisory Control and Data Acquisition (SCADA) system with pressure sensors, shut-in valves, and pump-off system as a leak detecting/mitigation procedure.
- An alarm system as part of the SCADA system for loss of power to any part of the system.
- Development of a maintenance program that includes regular pigging to clean the pipeline, and intelligent pigging as required.

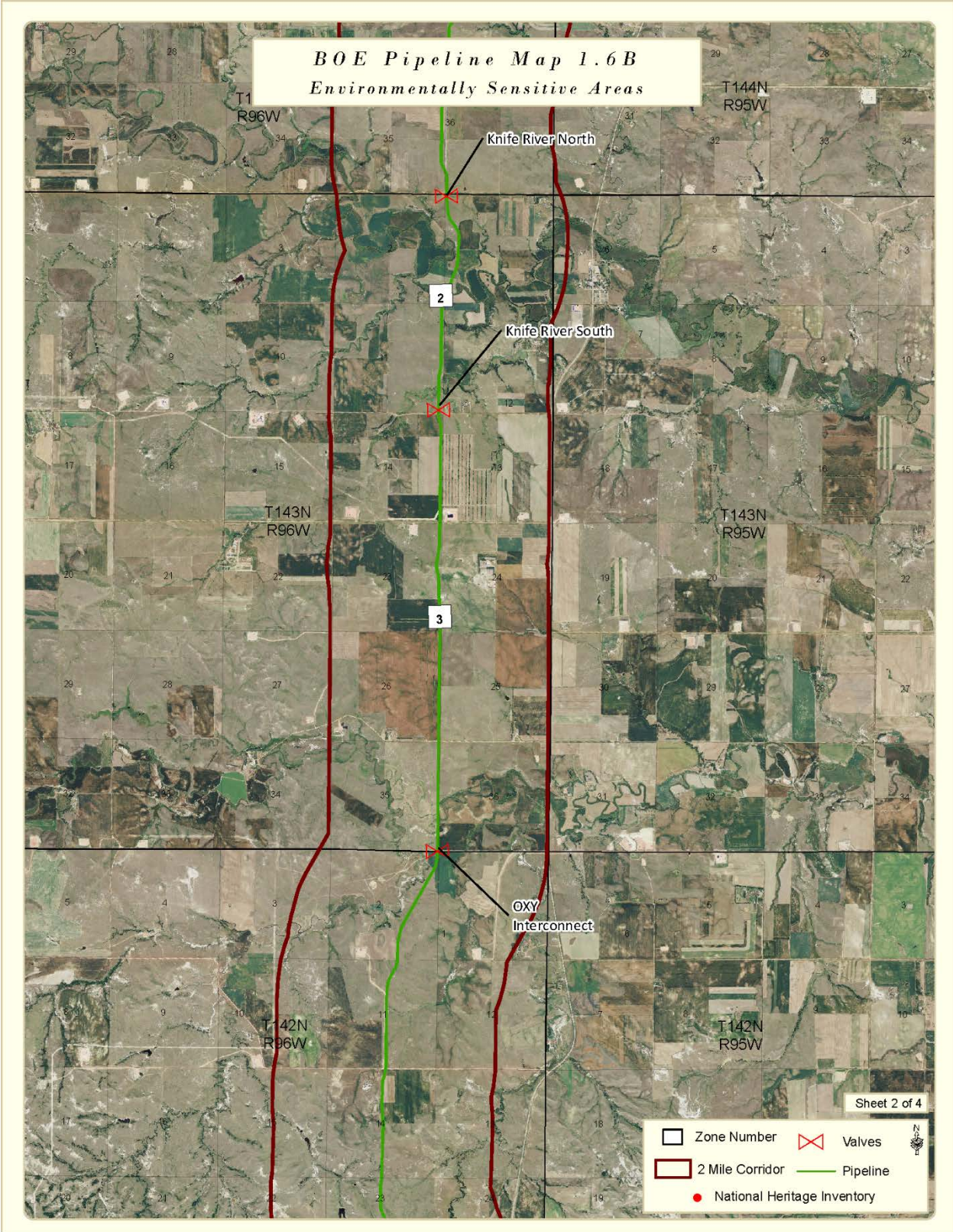
- Ensure adequate personnel training in oil spill prevention, containment, and response.
- Ensure spill response and containment equipment is deployed or available for a response.

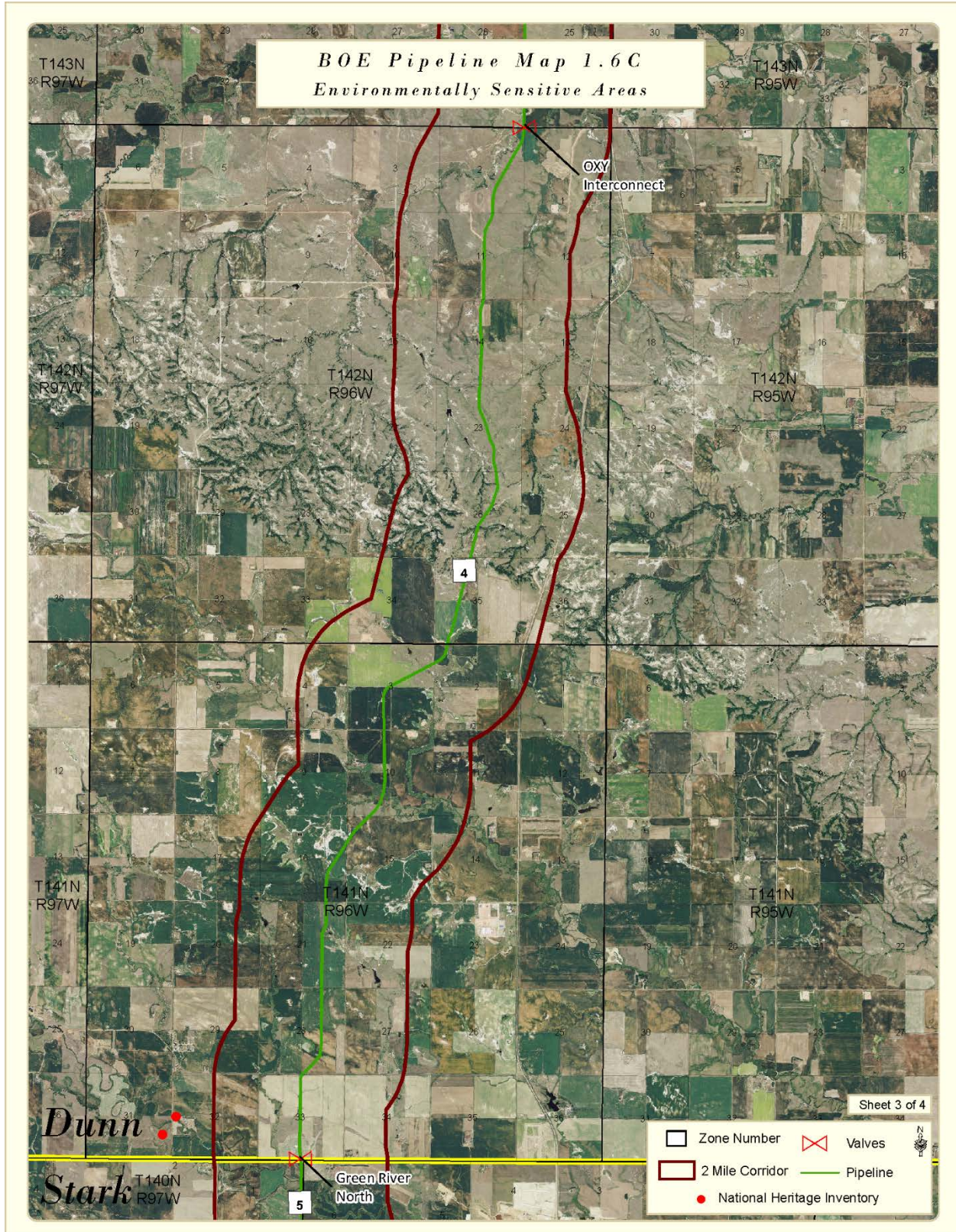
Part 194.107 of the United States Federal Regulations defines environmentally sensitive areas as “an area of environmental importance which is in or adjacent to navigable waters.” Appendix C includes sensitivity mapping of the environment at risk. Information included in this section includes soil types; groundwater and surface water resource; compiled farmland; sensitive ecological and protected areas. All environmentally sensitive areas within a two-mile corridor of the pipeline have been identified. Therefore, each potentially affected environmentally sensitive area within a radius of 1 mile is identified. Maps 1.6A-1.6D, “Environmentally Sensitive Areas” provide a visual overview of resources in the area of the BOE Pipeline. Environmentally Sensitive Areas mapped are based on the National Heritage Inventory sites near the BOE Pipeline Area.

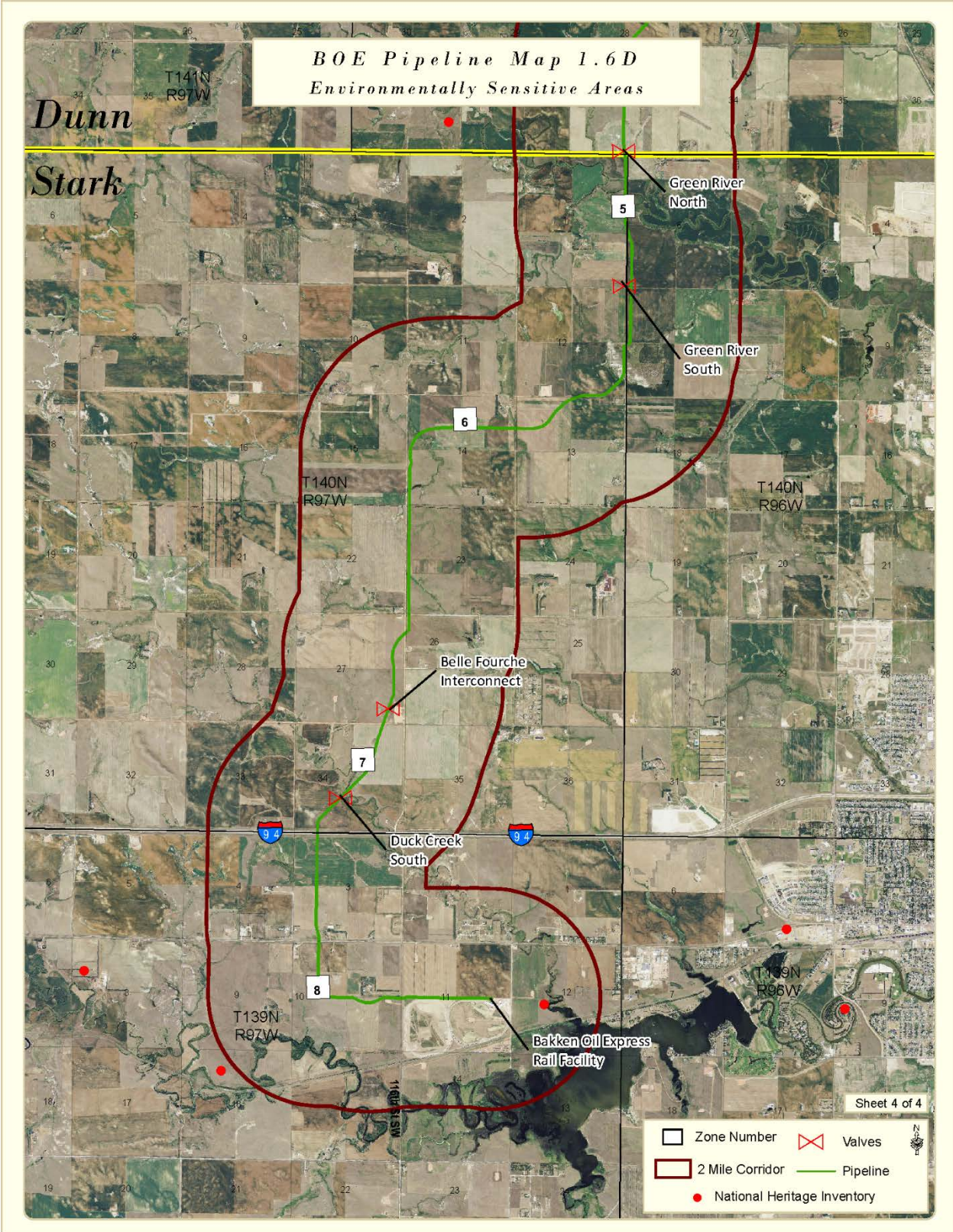
Sensitive Resources for the purpose of this evaluation are those provided by the EPA in 40 CFR 112, Appendix C and Section 1.4.2 of Appendix F. Such resources include schools, medical facilities, residential areas, wetlands, drinking water intakes, wildlife areas, marine and estuarine reserves, and recreational areas. Identification of these resources is aimed at focusing planning and response efforts towards protection of sensitive resources in the vicinity of the theoretical release site and spill flow path.

Sensitive resources were identified through review of published information sources, agency websites, and communication with appropriate Federal, State, and local government agencies and a limited field review. The study area consisted of 1-mile corridor on both sides of the pipeline and items along flow paths. The sensitive resources identified in this study area are described on the following pages. Contact information available for the sensitive resources identified are listed in the Response Notification List in Section 2.2









C.1 USA DRINKING WATER SENSITIVE RESOURCES

C.1.1 Water Intakes and Public Water Systems

It is common for rural residences in the area to use private wells for domestic and agricultural purposes. According to North Dakota State Water Commission data, several observation and stock/domestic exist within the pipeline corridor. In addition, five Active Public Water Systems, both Community and Non-Community, exist near the city of Killdeer, ND, northeast end of the north end of the pipeline.

The closest surface water intake is the Southwest Water Authority Antelope Valley Station in Mercer County, approximately 45 miles east of the pipeline. This water intake is not located within the discharge flow paths and is a surface water source from Lake Sakakawea. The City of Dickinson receives its drinking water from the Southwest Water Authority intake from Lake Sakakawea. The ND Dept. of Health assessment of Dickinson's source water for their water system is moderately susceptible to potential contaminant sources.

TABLE C.1.1 Active Public Water Systems			
ID	LATITUDE/LONGITUDE	DISTANCE FROM PIPELINE	OWNER
Industrial Wells			
13449	47.355955N, -102.804155W	1605.62 feet	William Pavlenko
64263	47.351276N, -102.791817W	1044.00 feet	Missouri Basin Well Service
64725	47.35674N, -102.802497W	1155.20 feet	Bill Pavlenko
65287	47.355819N, -102.798498W	127.10 feet	Manley Truchan
69146	47.362142N, -102.79982W	2438.61 feet	John Reiss
69147	47.362142N, -102.79982W	2438.61 feet	John Reiss
Domestic Wells			
12767	47.126301 N, -102.806575W	633.07 feet	Earl Gustafson
12774	47.083862N, -102.818092W	1703.60 feet	Val Staudinger
12921	47.214124N, -102.796632W	829.80 feet	Howard Brew
12923	47.214124N, -102.796632	829.80 feet	Howard Brew
12935	47.19256N, -102.791492W	2141.44 feet	Del Dvorak
13138	47.300908N, -102.796474W	424.50 feet	Zabalotony Farms Inc.

**TABLE C.1.1 (Cont.)
Active Public Water Systems**

ID	LATITUDE/LONGITUDE	DISTANCE FROM PIPELINE	OWNER
Domestic Wells (continued)			
13445	47.348521N, -102.798203W	652.33 feet	Manley Truchan
13448	47.339712N, -102.806412W	2632.60 feet	Pat Wetch
52046	46.876943N, -102.913703W	947.15 feet	Allan Thompson
52051	46.881604N, -102.918295W	1973.61 feet	Milo Burwick
52052	46.876969N, -102.917017W	1754.92 feet	Tom Ehli
52054	46.88253N, -102.919572W	2293.68 feet	Milo Burwick
52061	46.881604N, -102.918295W	1973.61 feet	Milo Burwick
52082	46.874584N, -102.907364W	642.23 feet	Nick Mosbrucker
52083	46.870852N, -102.902256W	850.96 feet	Boniface Knopik
52084	46.875712N, -102.88759W	2474.24 feet	Nick Mosbrucker
52446	46.96224N, -102.843132W	1887.89 feet	Barber Transportation
52901	46.904356N, -102.905937W	1874.92 feet	Tim Zander
62539	46.96318N, -102.85598W	1219.90 feet	Al Roshau
64264	47.353999N, -102.795824W	352.50 feet	Manley Truchan
64436	46.892417N, -102.912603W	492.20 feet	Vern Bleich
65185	47.349485N, -102.802455W	1590.44 feet	Frontier Services
65209	47.351276N, -102.791817W	1044.30 feet	Manley Truchan
67149	47.34138N, -102.80379W	1790.42 feet	Carroll Drilling
67154	47.355831N, -102.803823W	1402.76 feet	John Bang
69131	47.355831N, -102.803823W	1402.76 feet	Bill Pavlenko
69132	47.355819N, -102.798498W	127.10 feet	Manley Truchan
69587	47.359427N, -102.793153W	1884.81	Killdeer Man
Domestic/Stock Wells			
12599	47.049675N, -102.836622W	1012.49 feet	Charles V. Kadrmas
52876	46.937472N, -102.878395W	2154.94 feet	Anton V. Tuhy

**TABLE C.1.1 (Cont.)
Active Public Water Systems**

ID	LATITUDE/LONGITUDE	DISTANCE FROM PIPELINE	OWNER
Stock Wells			
12659	47.47814N, -102.839178W	1669.67 feet	Charles V. Kadrmas
12768	47.126301N, -102.806575W	633.07 feet	Frank C. Sadwosky
12775	47.084792N, -102.814276W	832.25 feet	Lester Metz
12791	47.080521N, -102.807854W	1103.50 feet	Otto Ridl
12916	47.228556N, -102.80236W	937.30 feet	Melvin Kadrmas
13137	47.308279N, -102.807429W	2297.72 feet	Andrew Kulish
13145	47.268673N, -102.796618W	155.73 feet	Walt Steffen
13147	47.266857N, -102.804998W	2256.65	Trica Schlegel
52047	46.877864N, -102.907315W	732.06 feet	Darrell Chruszch
52050	46.877864N, 102.907312W	732.06 feet	Darrell Chruszch
52875	46.942189N, -102.853427W	2794.14 feet	Walt Steiner
52878	46.922958N, -102.88875W	1103.34 feet	Experiment
52900	46.903424N, -102.907215W	2080.17 feet	Rod & Gordon Kostelecky
55981	47.095019N, -102.813004W	1878.12 feet	Harlan Bullinger
63937	47.352184N, -102.793153W	763.20 feet	Manley Truchan
65963	47.349472N, -102.799785W	928.12 feet	Manley Truchan
68451	46.974068N, -102.84951W	736.90 feet	Delmar Ficek
Test Hole			
52444	46.949145N, -102.850461W	814.73 feet	Dorman Bezdicek
52870	46.944875N, -102.857216W	1548.17 feet	Walt Steiner
52871	46.944983N, -102.857277W	1463.30 feet	Walt Steiner
55982	47.09037N, -102.809188W	482.92 feet	Harlan Bullinger
64793	47.315541N, -102.80205	963.53 feet	Gerald Kulish
64794	47.31461N, -102.800715W	632.20 feet	Gerald Kulish
65184	47.344097N, -102.802433W	1284.10 feet	Frontier Services
67151	47.315541N, -102.80205	963.48 feet	Gerald Kulish
69133	47.355819N, -102.798498W	127.10 feet	Manley Truchan

In the event of a catastrophic failure, rapid containment plans will be implemented to ensure that any petroleum leaks or spill do not enter surface water streams or contaminate groundwater. Every effort should be made for quick and complete containment.

C.1.2 Source Water Protection Area (SWPA)

Per part 194 of the United States Federal Regulations, all public water resources within a 10-mile corridor of the pipeline have been identified. Please refer to Maps 1.6.1.2A-1.6.1.2D, *Public Water Resources*, for a visual overview of each resource discussed below.

GEOLOGY AND GROUNDWATER RESOURCES

The pipeline is located in a region of North Dakota known as the Missouri Plateau. The Missouri plateau consists of the “wide open spaces” of the American West. The topography of this ecoregion was largely unaffected by glaciation and retains its original soils and complex stream drainage pattern. The Missouri plateau is a moderately dissected level to rolling plain with isolated sandstone buttes. The geology is characterized by tertiary sandstone, shale and some coal. The pipeline is located above the Lower Tertiary aquifer, and the Killdeer surface aquifer. The North Dakota Geological Survey, 100k sheets do not indicate any landslide areas within the pipeline corridor. The Killdeer landslide 1:24,000 map for Manning SE quadrant also shows no conflict with the pipeline corridor. No landslide data was available for Stark county due to lack of landslide activity.

SURFACE WATER AND FLOODPLAIN RESOURCES

Several drainage ways, wetland and smaller streams/creeks are crossed by the pipeline. These water complexes may be used by wildlife, and cattle, and may support hydrophytic vegetation, and in some cases large woody vegetation. Surface water also provides crucial areas for hunting, bird watching, and fishing. The North Dakota Game and Fish Department has classified the Green and Knife Rivers, as well as Spring Creek as fisheries.

Several drainage ways, wetlands and smaller streams/creeks are crossed by the pipeline. The main discharge flow path tributaries from the north end of the BOE pipeline to the south end are:

- Murphy Creek - watershed from pipeline station 0+00 to 258+72.
- Wolf Creek - watershed from pipeline station 258+72 to 369+50.
- Knife River - watershed from pipeline station 369+50 to 607+35.
- Crooked Creek - watershed from pipeline station 607+35 to 977+96.
- Lighting Creek - watershed from pipeline station 977+96 to 1028+20.
- Russian Spring Creek- watershed from pipeline station 1028+2000 to 1271+14.
- Green River - watershed from pipeline station 1271+14 to 1706+11.
- Duck Creek - watershed from pipeline station 1706+11 to 1884+69.
- Heart River (pipeline does not cross river, flow path drains into Heart River) - watershed from pipeline station 1884+69 to 2020+24.

Main Line valves on both sides of the Duck Creek, Green River, and Knife River were installed as a mitigation measure to provide a means to quickly reduce a discharge near these main waterways. The Belle Fourche interconnect valve set is used for a north isolation valve for Duck

Creek. These main line valves can be operated by SCADA from the control room when necessary. Valve would have to be closed manually by operators should there be a failure to the SCADA system.

The Missouri River north of the pipeline is part of Lake Sakakawea and is a commercially navigable water of the US. Lake Sakakawea is restrained by the Garrison Dam at Pick City, ND. Beyond the Garrison Dam the waterway becomes the Missouri River. All drainage paths flow eventually into the Missouri River south of Garrison Dam. These drainage paths would not carry a spill or discharge from the BOE pipeline into the Missouri River based on a 12-hour maximum flow velocity from each drainage way.

In the event of a catastrophic failure, rapid containment plans will be implemented to ensure that any petroleum leaks or spills do not enter surface water streams or contaminate groundwater. Every effort should be made for quick and complete containment. Protection of the drainage ways into creeks and rivers including the Missouri River would be the highest priority for flow containment. Table 1.6.1.2 describes the different flow paths with watershed points along the pipeline. These flow paths are all oil spill trajectory paths with potential to affect surface water bodies. A spill can potentially impact any for the creeks and rivers should a discharge get in the waterway. It is important in the discovery process to identify the flow path and as a responder contain the discharge to as minimum of flow distance as possible.

WETLANDS

Wetlands are defined in both the 1977 Executive Order 11990, Protection of Wetlands, and in Section 404 of the Clean Water Act of 1986, as those areas that are inundated by surface or ground water with a frequency to support and, under normal circumstances, do or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wetlands containing various hydrology and vegetation exist within the pipeline corridor. Wetlands are found along several perennial streams, intermittent streams and drainages within the Project Corridor. Wetlands associated with streams and drainages may fall under United States Army Corps of Engineers (USACE) jurisdiction as waters of the United States.

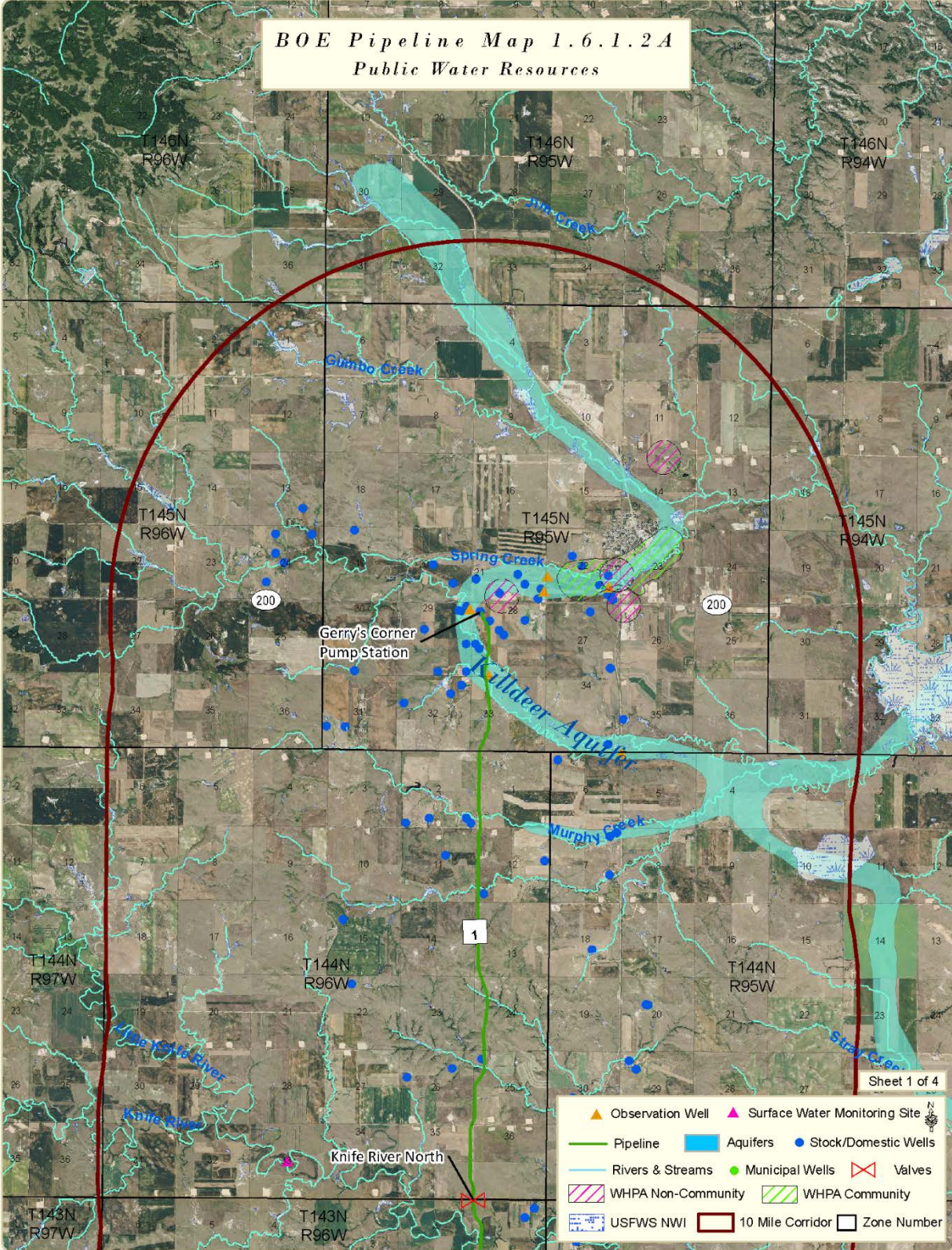
Wetlands containing various hydrology and vegetation exist along the pipeline. Wetlands are found along several perennial streams, intermittent streams and drainages within the pipeline. A total of 18 wetlands exist along the pipeline. All wetlands along the pipeline were bored during the construction. Thicker pipe with additional coating were used in wetland areas. The potential for a leak under a wetland or a spill running into a wetland exists along the pipeline. The risk of occurrence is very minimum that a wetland could be adversely affected by a spill or discharge.

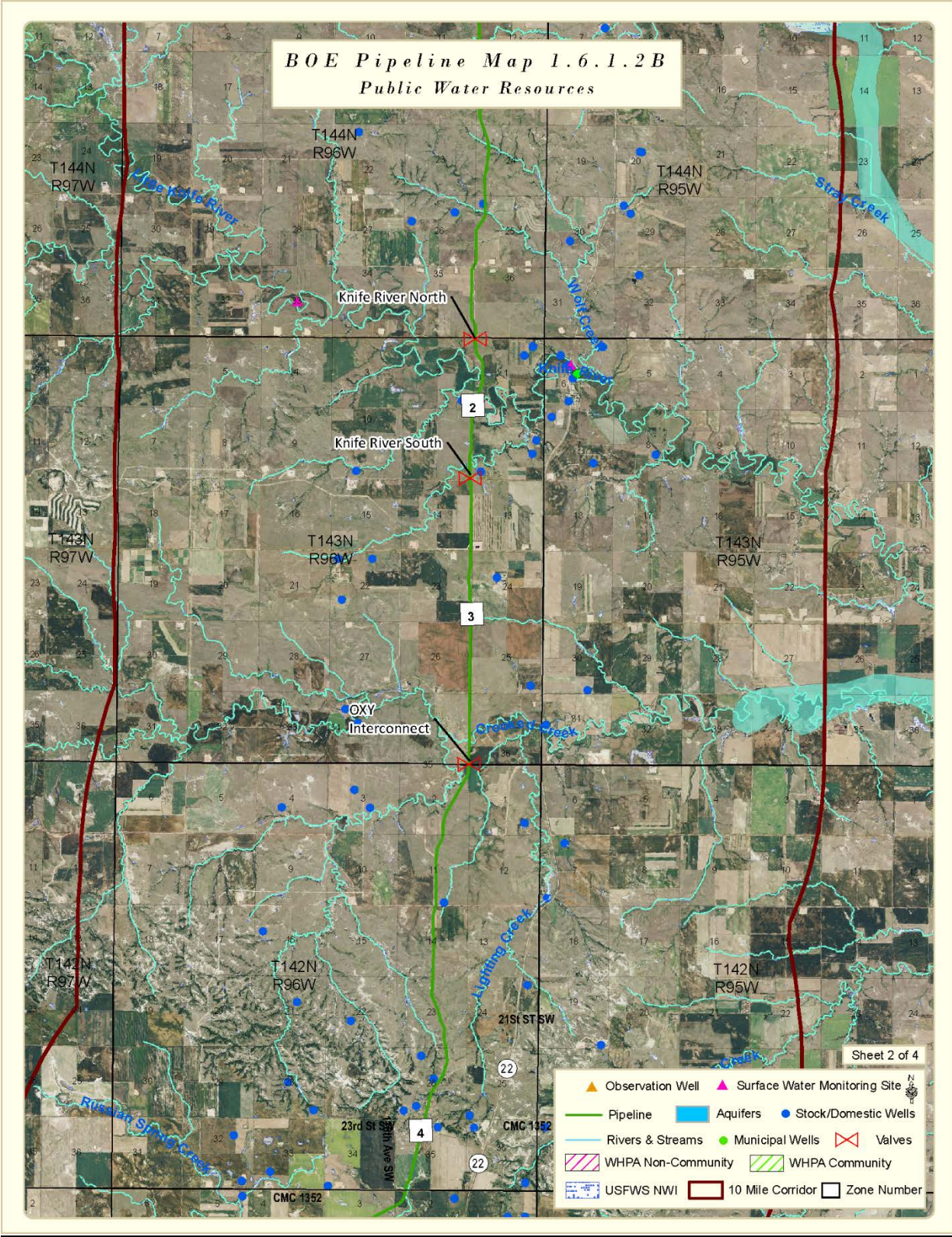
In the event of a catastrophic failure, rapid containment plans will be implemented to ensure that any petroleum leaks or spill do not enter surface water streams, wetlands or contaminate groundwater. Every effort should be made for quick and complete containment.

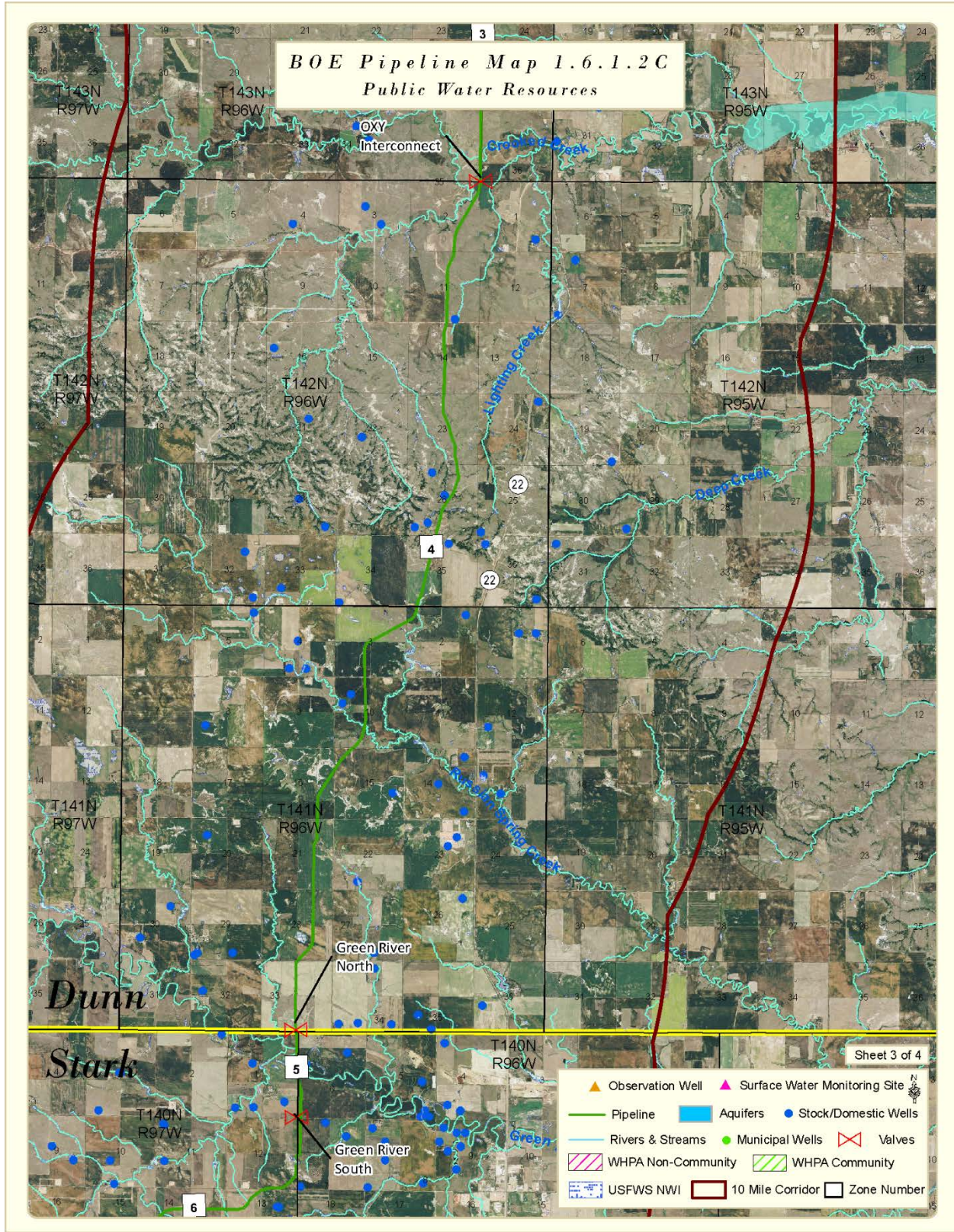
**TABLE C.1.2
Flow paths, Lakes and Creeks Down Gradient
And Potentially Impacted**

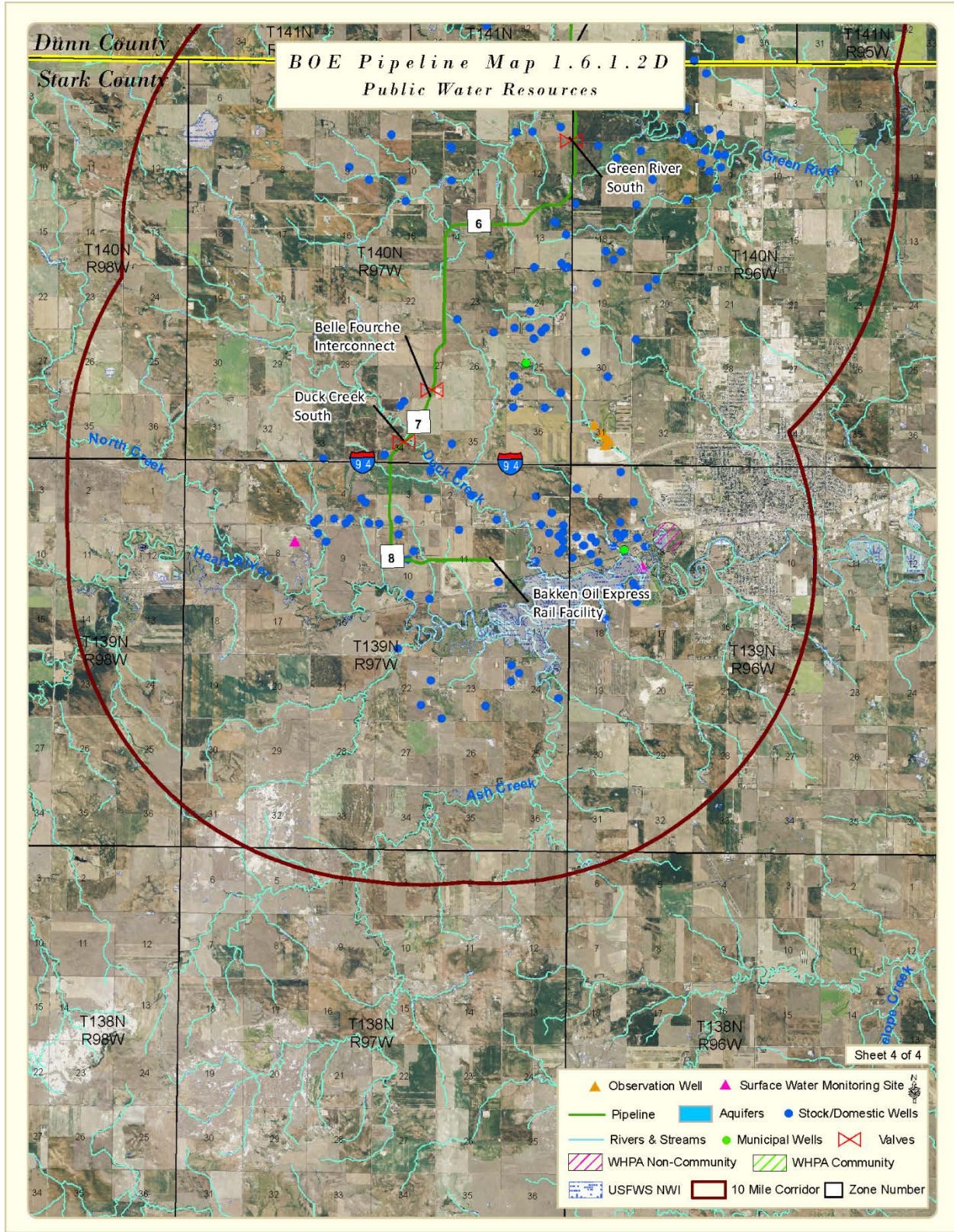
FLOW PATH	DISTANCE/LOCATION FROM STATION
Murphy Creek to Lake Ilo to Spring Creek to Knife River to Missouri River	Pipeline crosses Murphy Creek 2.8 miles south of truck terminal. Seven major flow paths off Murphy Creek watersheds from station 0+00 to 258+72.
Wolf Creek to Knife River to Missouri River	Pipeline crosses Wolf Creek 6.2 miles south of truck terminal. Four major flow paths from Wolf Creek watershed from station 258+72 to 369+50.
Knife River to Missouri River	Pipeline Crosses Knife River twice- 9.01 and 9.84 miles south of truck terminal facility. Three major flow paths from Knife River (HUC 12) watershed from station 369+50 to 607+35.
Crooked Creek to Knife River to Missouri River	Pipeline crosses Crooked Creek 13.8 miles south of truck terminal. Two major flow paths from Crooked Creek watershed from station 607+35 to 977+96.
Lighting Creek to Crooked Creek to Knife River to Missouri River	Pipeline crosses tributary to Lighting Creek 19 miles south of truck terminal. One major flow path from Crooked Creek watershed from station 977+96 to 1028+20.
Russian Spring Creek to Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 22.4 miles south of truck terminal. Three major flow paths from Duck Creek watershed from station 1028+20 to 1271+14.
Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river three times- 27.28, 27.34, 27.43 miles south of the truck terminal facility. Six major flow paths from Green River watersheds from station 1271+14 to 1706+11.
Duck Creek to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 34.7 miles south of truck terminal. Three major flow paths from Duck Creek watershed from station 1706+11 to 1884+69.
Heart River to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline does not cross the Heart River. Three major flow paths to Heart River watershed from station 1884+69 to 2020+24.
Distance from Truck Station is approximate mileage.	

BOE Pipeline Map 1.6.1.2A
Public Water Resources









C.2 USA ECOLOGICAL RESOURCES

C.2.1 Critically Imperiled Species Area or Ecological Community

RECREATIONAL AND WILDLIFE REFUGE AREAS

There are no state or national parks or other significant recreational areas within 2 miles of the pipeline. The following state, national, and municipal parks are the closest such areas within the vicinity of the Pipeline:

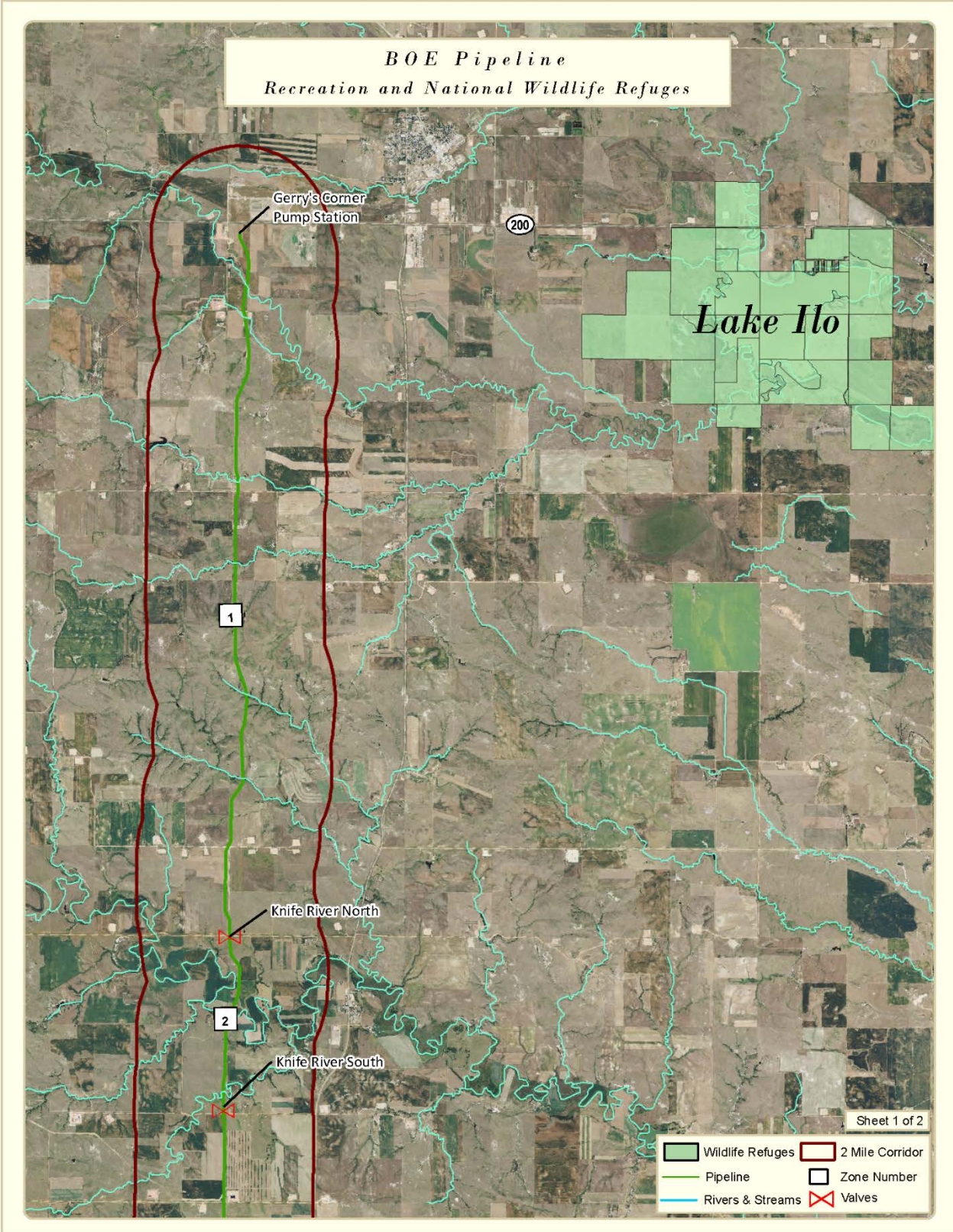
Little Missouri National Grasslands/Theodore Roosevelt National Park parallels the pipeline approximately 14 to 15.5 miles west of the pipeline route. The park offers visitors picnic shelters, hiking, horseback trails, and camping. This park has significant historic sites including Teddy Roosevelt's Elkhorn Ranch. The grasslands/park is up gradient and is not in the pipeline's flow paths.

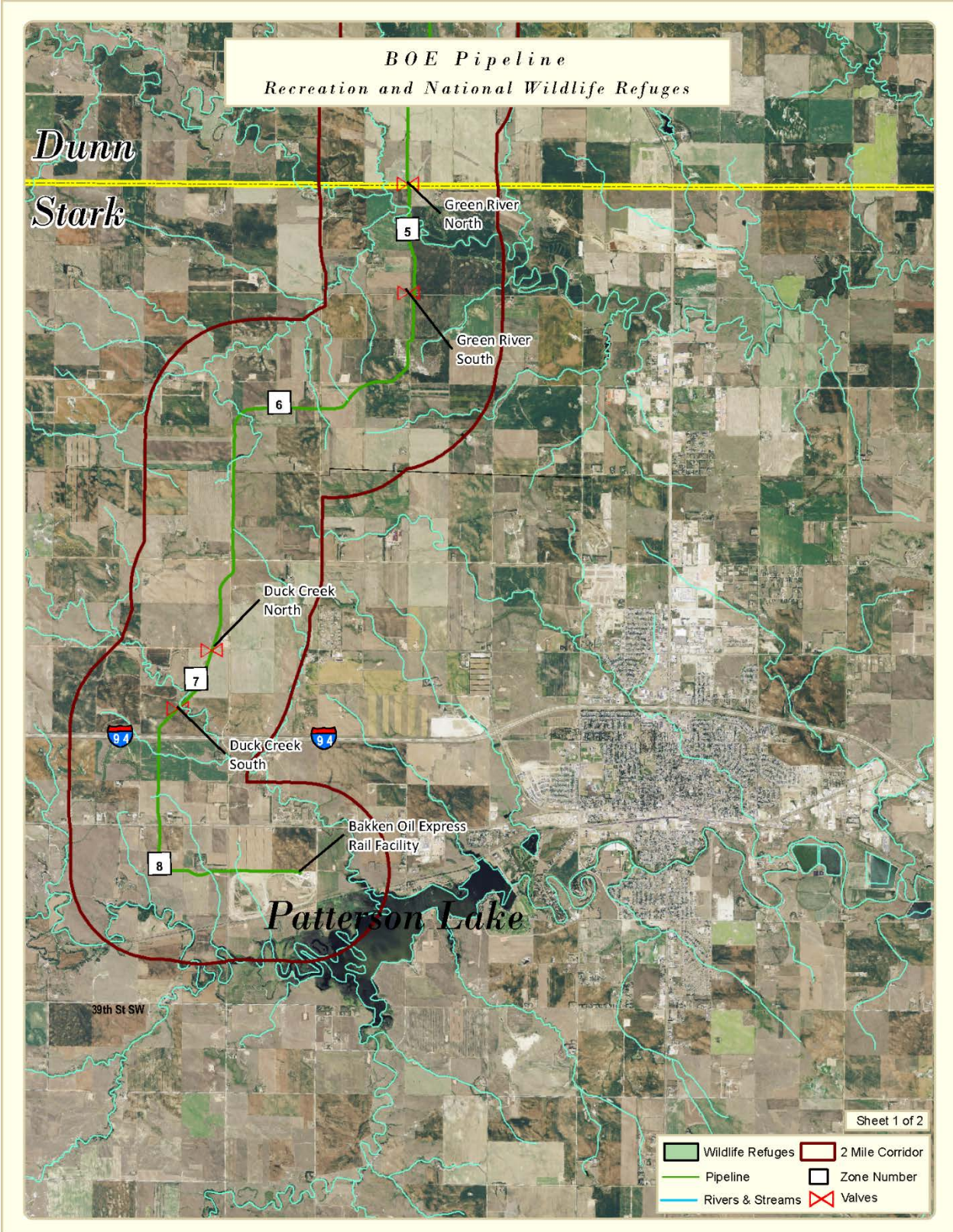
Killdeer Mountain Battlefield State Historic Site: This historic site marks the battle General Alfred Sully's troops fought against the Sioux in 1864. The historic site includes a portion of the battlefield and a small museum which is located approximately 9.6 miles northwest of the north end of the pipeline. The Historic Site is up gradient and is not in the pipeline's flow paths.

Lake ILO National Wildlife Refuge is located 1 mile west of Dunn Center along State Highway 200. The Refuge contains 4,034 acres of prairie, grasslands, and wetlands. The uplands are characterized by gently sloping hills and terraces with creeks and an occasional slough. Lake Ilo/Dam is 12.7 miles downstream of the pipeline in the Murphy Creek watershed and is within the 12-hour planning flow distance calculations. Page 1 of the following Recreation and National Wildlife Refuges map identifies the Lake Ilo National Wildlife Refuge.

Killdeer Mountain Four Bears Scenic Byway: The Killdeer Mountain Four Bears Scenic Byway goes from Killdeer to New Town on ND Highway 22. The Scenic Byway is located 2 miles east of the north end of the BOE pipeline in Killdeer, ND. The byway is up gradient of the pipeline flow paths.

North Park Campground, is located in the northeast of Dickinson. The campground is up gradient of the pipeline flow paths. The campground is 5.7 miles east of the pipeline. Lake Patterson on the south end of the pipeline is used as a City of Dickinson municipal recreational area. Page 2 of the following Recreation and National Wildlife Refuges map identifies the Lake Patterson area.





Vegetation

Primary vegetation communities in North Dakota include short grass prairie in the drier western part of the state and tall grass prairie in the eastern part of the state. In between the short and tall grass prairies is a transitional area called the mixed grass prairie, which consists of a mixture of both short and tall grasses. The pipeline is located on the edge of the mixed grass prairie and short grass prairie of western North Dakota. Vegetation of the mixed grass prairie consists mainly of brome (*Bromus inermis*), western wheatgrass (*Pascopyrum smithii*), bluestem (*Andropogon gerardii* and *Schizachyrium scoparium*), and needlegrass (*Achnatherum sp.*), with short grass prairie mainly comprised of blue grama (*Bouteloua gracilis*), little bluestem (*Schizachyrium scoparium*), and side oats grama (*Bouteloua curtipendula*).

The pipeline corridor consists of cropland and native rangeland. Native rangeland is highly valued by resource agencies due to the diversity of habitat it provides for wildlife and insect species. However, the presence of cropland in the area fragments these habitat areas and restricts native rangeland to areas adjacent to active agricultural areas and to areas around drainages and hilly areas. No USFWS grassland easements are located within the pipeline corridor.

Soils

According to the 2007 U.S. Department of Agriculture (USDA) Census of Agriculture, Dunn County contains 563 farms, which primarily produce wheat, corn, sunflower and other grains along with cattle. The 2007 market value of all agricultural products sold which were produced in Dunn County was \$68.7 million. Stark County contains 865 farms, which also primarily produces wheat, corn, sunflower and other grains along with raising cattle. The 2007 market value of all agricultural products sold which were produced in Stark County was \$96.8 million.

There are 107 soil types found within the pipeline corridor. The majority of these soil types are loamy soils, which are a broad textural class of soils that contain a mixture of sand, silt, and clay particles. While most soils contain some mixture of these three particles, an ideal loam exhibits the properties of sand, silt, and clay in approximately equal proportions (not equal amounts). The presence of clay in a soil has a greater influence on a soil than the presence of silt or sand; therefore, a soil name can include the modifier "clay" with as little as 20 percent clay, while a soil must contain at least 40 percent sand or 45 percent silt in order to contain those respective modifiers in its name.

Soils identified as sandy loams have moderately coarse textures, silt loams have medium textures, and clay loams have moderately fine textures. Soil types located within the pipeline corridor include loams, silt loams, sandy loams, and clay loams.

Of the 107 soil types within the pipeline corridor, 61 soil types are classified by the Natural Resource Conservation Service (NRCS) as not being prime or statewide important farmland. Of the remaining soil types, 5 are classified as prime farmland and 41 are classified as farmland of statewide importance. Please refer to *Table 1.6.2.1, Soil Summary* and Maps 1.6.2.1A-1.6.2.1D, *Prime and Unique Farmland*, for a visual overview of soil types.

**Table C.2.1
Soil Summary**

MAP UNIT SYMBOL	SOIL TYPE	IDENTIFIED WITHIN CORRIDOR		PRIME FARMLAND	FARMLAND OF STATEWIDE IMPORTANCE	TOTAL ACRES WITHIN PROJECT ROUTE (200 FOOT ROW)
		DUNN	STARK			
3	Straw loam, channeled, 0 to 2% slopes	X				3
4	Arnegard loam, 0 to 2% slopes	X		X		2.2
4B	Arnegard loam, 2 to 6% slopes	X		X		1.6
7	Straw-Rhoades loams, 0 to 2% slopes	X				3.2
8C	Cabba-Chama silt loams, 6 to 9% slopes	X				7.7
9D	Amor-Cabba loams, 9 to 15% slopes	X				15
9E	Cabba loam, 15 to 45% slopes	X				36.9
13D	Wabek gravelly loam, 2 to 15% slopes	X				3.6
15	Belfield-Farland silt loams, 0 to 2% slopes	X			X	17.6
16B	Belfield-Savage silty clay loams, 0 to 6% slopes	X			X	2.7
18	Belfield-Grail silty clay loams, 0 to 2% slopes	X			X	5.1
19B	Belfield-Morton silt loams, 0 to 6% slopes	X			X	9.9
21B	Cherry silty clay loam, 0 to 6% slopes	X			X	8.6
27	Farland silt loam, 0 to 2% slopes	X			X	2.6
27B	Farland silt loam, 2 to 6% slopes	X			X	0.4
29B	Farland-Rhoades silt loam, 0 to 6% slopes	X				6
30E	Cohagen-Vebar fine sandy loams, 9 to 25% slopes	X				52.9
31F	Cohagen-Vebar-Rock outcrop complex, 15 to 40% slopes	X				12
33	Grail silt loam, 0 to 2% slopes	X		X		0.8
39	Havrelon silt loam, 0 to 2% slopes	X			X	0.7
44D	Lihen loamy fine sand, 6 to 15% slopes	X				2
46	Bowdle loam, 0 to 2% slopes	X			X	3
47	Moreau silty clay, 0 to 3% slopes	X			X	7.6
47B	Moreau silty clay, 3 to 6% slopes	X			X	16.8

**Table C.2.1 (Cont.)
Soil Summary**

MAP UNIT SYMBOL	SOIL TYPE	IDENTIFIED WITHIN CORRIDOR		PRIME FARMLAND	FARMLAND OF STATEWIDE IMPORTANCE	TOTAL ACRES WITHIN PROJECT ROUTE (200 FOOT ROW)
		DUNN	STARK			
47C	Moreau silty clay, 6 to 9% slopes	X				2.1
49B	Morton silt loam, 3 to 6% slopes	X			X	5.3
49C	Morton silt loam, 6 to 9% slopes	X			X	1.1
52B	Morton-Dogtooth silt loams, 0 to 6% slopes	X				22.6
52C	Morton-Dogtooth silt loams, 6 to 9% slopes	X				0.9
54B	Parshall fine sandy loam, 0 to 6% slopes	X			X	5
58B	Regent silty clay loam, 3 to 6% slopes	X			X	7.5
58C	Regent silty clay loam, 6 to 9% slopes	X			X	2.9
61B	Regent-Dogtooth silty clay loams, 0 to 6% slopes	X				68.3
61C	Regent-Dogtooth silty clay loams, 6 to 9% slopes	X				1.3
62B	Rhoades silt loam, 0 to 6% slope	X				73.6
67	Savage silty clay loam, 0 to 2% slopes	X			X	9
69B	Savage-Rhoades silty clay loams, 0 to 6% slopes	X				14.4
71B	Sen silt loam, 3 to 6% slopes	X			X	15.7
71C	Sen silt loam, 6 to 9% slopes	X			X	3.2
75	Straw loam, 0 to 2% slopes	X		X		6.8
79	Velva fine sandy loam, 0 to 2% slopes	X			X	4.3
81B	Vebar-Parshall fine sandy loams, 0 to 6% slopes	X			X	28.7
81C	Vebar-Parshall fine sandy loams, 6 to 9% slopes	X				56.6
81D	Vebar fine sandy loams, 9 to 15% slopes	X				27.1
94E	Wayden silty clay, 9 to 25% slopes	X				4.6
101B	Amor-Shambo loams, 3 to 6% slopes	X			X	33.3
101C	Amor loam, 6 to 9% slopes	X			X	10.5
102	Shambo loam, 0 to 2% slopes	X			X	5.1
102B	Shambo loam, 2 to 6% slopes	X			X	2.6

**Table C.2.1 (Cont.)
Soil Summary**

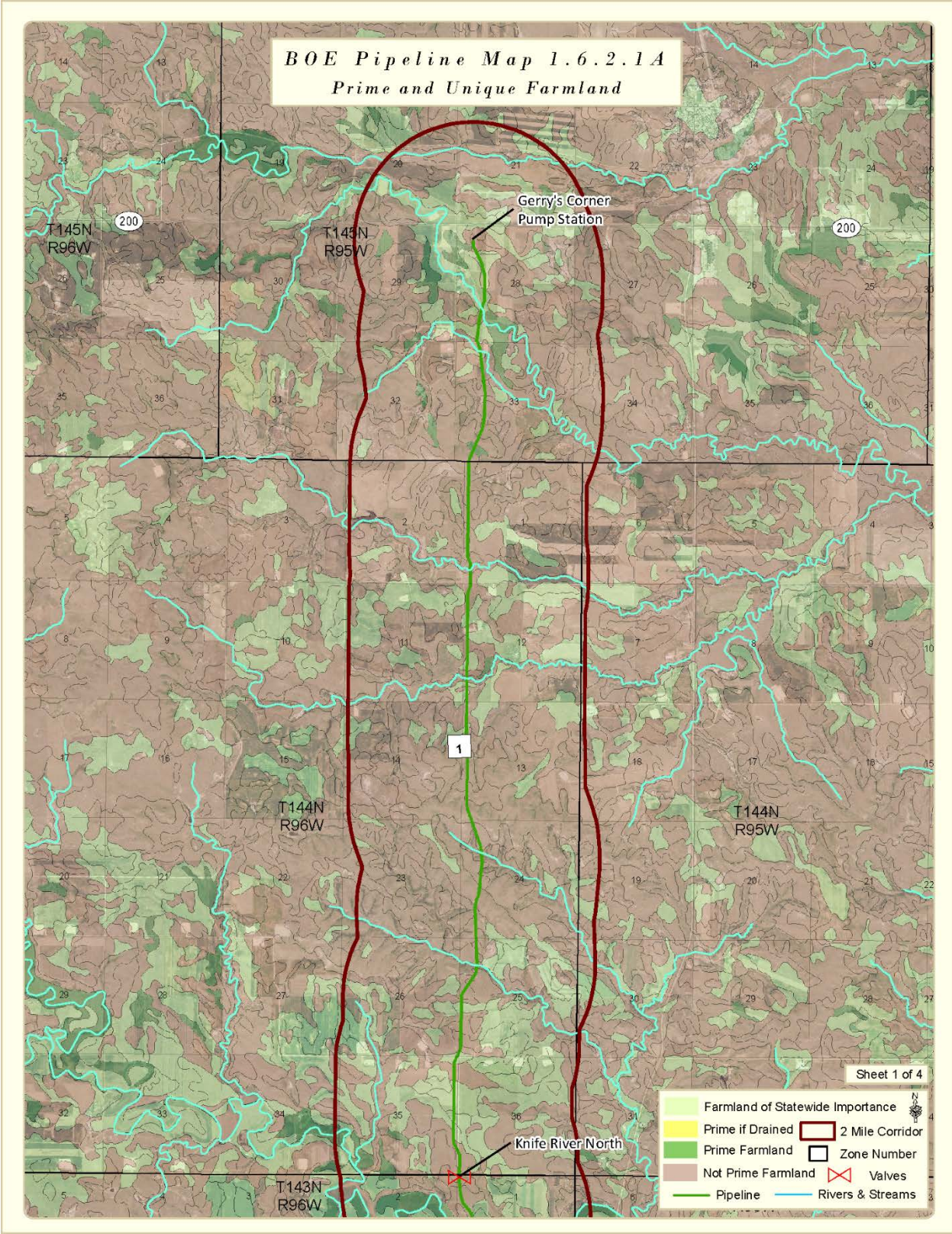
MAP UNIT SYMBOL	SOIL TYPE	IDENTIFIED WITHIN CORRIDOR		PRIME FARMLAN D	FARMLAND OF STATEWIDE IMPORTANCE	TOTAL ACRES WITHIN PROJECT ROUTE (200 FOOT ROW)
		DUNN	STARK			
105	Harriet silt loam, 0 to 2% slopes	X				6.7
106B	Daglum silt loam, 0 to 6% slopes	X				8.9
E0611B	Belfield-Savage silty clay loams, 2 to 6% slopes	X	X		X	11.7
E4173A	Straw loam, channeled, 0 to 2% slopes	X				2.4
E0415A	Belfield-Daglum silt loams, 0 to 2% slopes		X			4.5
E0453A	Daglum-Rhoades complex, 0 to 2% slopes		X			3.3
E0515A	Rhoades-Daglum complex, 0 to 2% slopes		X			5.9
E0543A	Rhoades-Daglum complex, saline, 0 to 2% slopes		X			4.6
E0563B	Janesburg-Dogtooth silt loams, 3 to 6% slopes		X			0.5
E0605A	Belfield-Grail silty clay loams, 0 to 2% slopes		X		X	8.3
E0651A	Regent-Janesburg complex, 0 to 3% slopes		X			4.2
E0651B	Regent-Janesburg complex, 3 to 6% slopes		X			9.7
E0835A	Savage silty clay loam, 0 to 2% slopes		X		X	1.4
E1025B	Regent-Savage silty clay loams, 3 to 6% slopes		X		X	4.7
E1351C	Vebar-Flasher complex, 6 to 9% slopes		X			18
E1355D	Vebar-Flasher-Tally complex, 9 to 15% slopes		X			6.2
E1423F	Flasher-Vebar-Parshall complex, 9 to 35% slopes		X			1
E1625B	Vebar-Parshall fine sandy loams, 3 to 6% slopes		X		X	27.3
E1635C	Vebar-Tally fine sandy loams, 6 to 9% slopes		X			2.4
E1823A	Parshall fine sandy loam, 0 to 2% slopes		X		X	5.2
E2145B	Shambo loam, 2 to 6% slopes		X		X	4
E2439B	Sen-Janesburg silt loams, 3 to 6% slopes		X			13.3

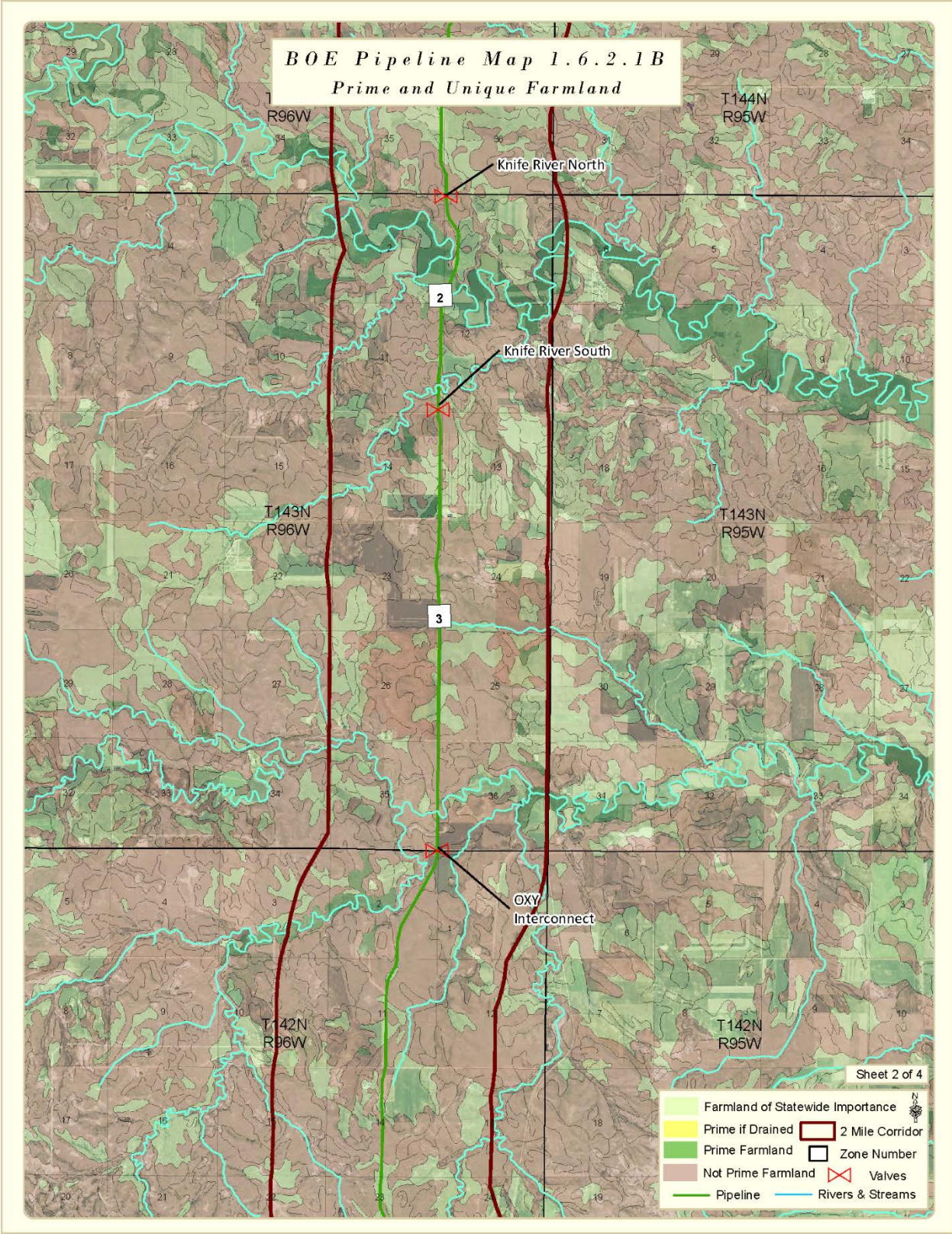
**Table C.2.1 (Cont.)
Soil Summary**

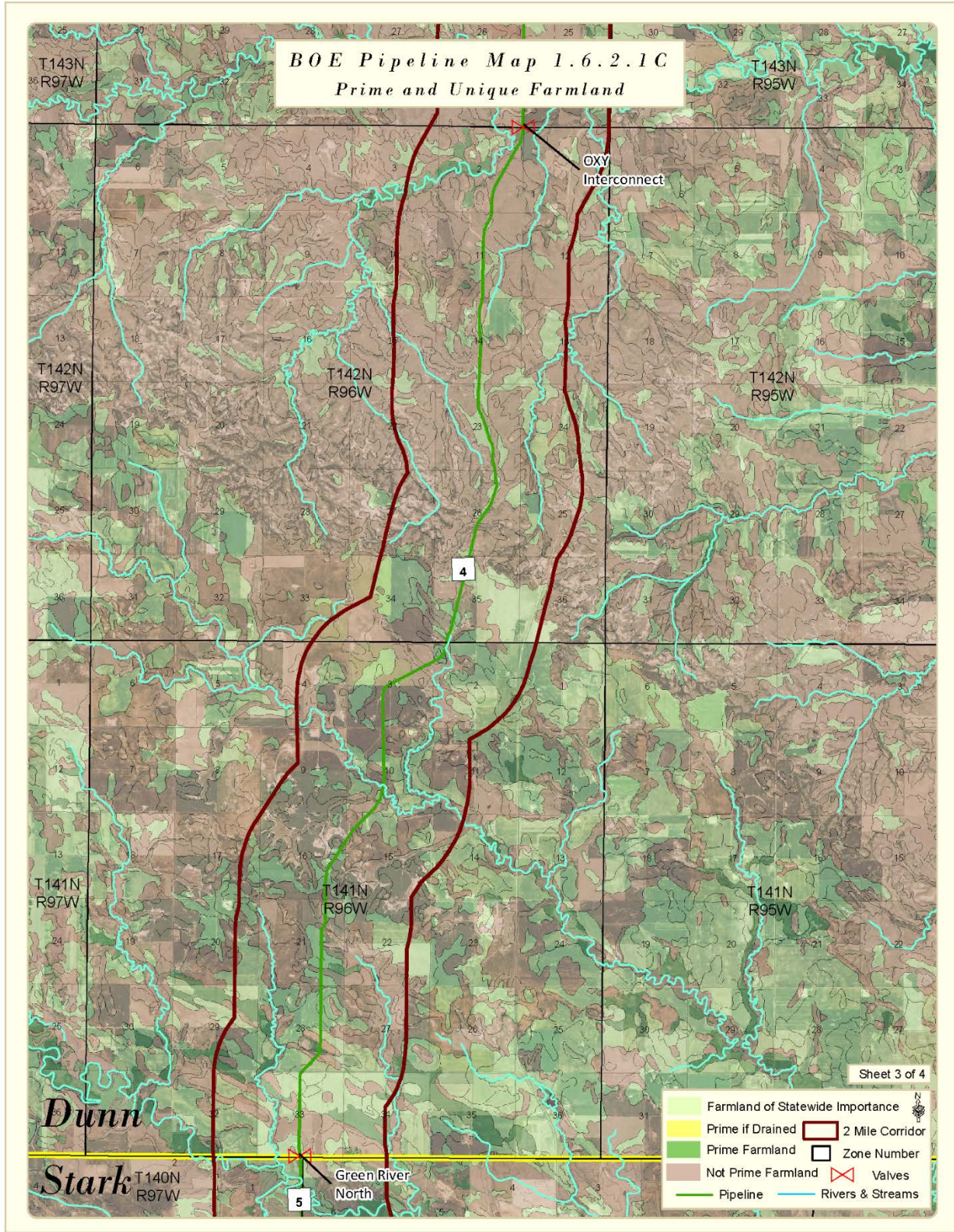
MAP UNIT SYMBOL	SOIL TYPE	IDENTIFIED WITHIN CORRIDOR		PRIME FARMLAND	FARMLAND OF STATEWIDE IMPORTANCE	TOTAL ACRES WITHIN PROJECT ROUTE (200' ROW)
		DUNN	STARK			
E2601C	Amor-Cabba loams, 6 to 9% slopes		X			6.1
E2601D	Amor-Cabba loams, 9 to 15% slopes		X			1.1
E2617F	Cabba-Amor loams, 15 to 50% slopes		X			2.8
E2737C	Chama-Cabba-Sen silt loams, 6 to 9% slopes		X			4.4
E2803B	Amor-Shambo loams, 3 to 6% slopes		X		X	2.2
E3003E	Amor-Brandenburg complex, 3 to 25% slopes		X			0.2
E3107F	Cabba-Badland outcrop complex, 6 to 70% slopes		X			0.7
E4005A	Harriet silt loam, 0 to 2% slopes		X			2.6
E4121A	Havrelon silt loam, 0 to 2% slopes		X		X	2
E4123A	Havrelon silt loam, channeled, 0 to 2% slopes		X			2.6
E4180A	Straw-Daglum complex, channeled, 0 to 2% slopes		X			2.2
E4585B	Manning fine sandy loam, 2 to 6% slopes		X			0.8
E4729A	Heil silt loam, 0 to 1% slopes		X			0.6
E4981F	Orthents-Highway complex, 0 to 35% slopes		X			1.9
E6045B	Belfield-Daglum silt loams, golden valley, 2 to 6% slopes		X			2.1
E6060A	Belfield-Grail silty clay loams, golden valley, 0 to 2% slopes		X		X	0.3
E6065B	Regent-Janesburg complex, golden valley, 3 to 6% slopes		X			6
E6065C	Regent-Janesburg complex, golden valley, 6 to 9% slopes		X			2.6
E6067A	Savage-Daglum silt loams, golden valley, 0 to 2% slopes		X			2.8
E6085B	Savage silty clay loam, golden valley, 2 to 6% slopes		X		X	0.9
E6131C	Vebar-Cohagen fine sandy loams, golden valley, 3 to 9% slopes		X			10.6
E6135D	Vebar-Flasher-Tally complex, golden valley, 9 to 15% slopes		X			20.6

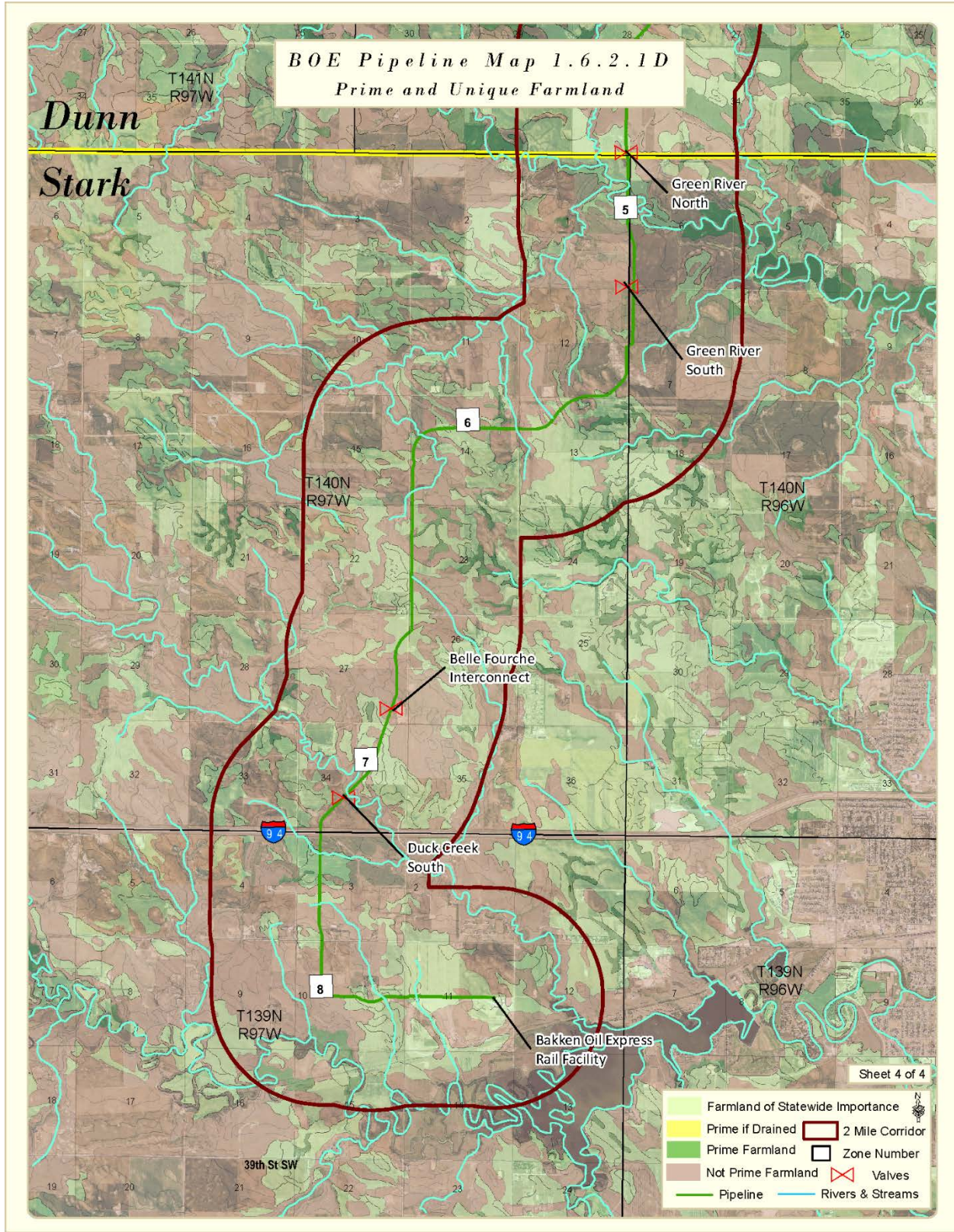
**Table C.2.1 (Cont.)
Soil Summary**

MAP UNIT SYMBOL	SOIL TYPE	IDENTIFIED WITHIN CORRIDOR		PRIME FARMLAND	FARMLAND OF STATEWIDE IMPORTANCE	TOTAL ACRES WITHIN PROJECT ROUTE (200 FOOT ROW)
		DUNN	STARK			
E6141D	Beisigl-Flasher-Telfer loamy fine sands, golden valley, 6 to 15% slopes		X			3.4
E6153D	Lefor-Cohagen fine sandy loam, golden valley, 6 to 15% slopes		X			0.3
E6163B	Vebar-Parshall fine sandy loams, golden valley, 3 to 6% slopes		X		X	39.3
E6165C	Vebar-Tally fine sandy loams, golden valley, 6 to 9% slopes		X			2.2
E6183A	Parshall fine sandy loam, golden valley, 0 to 2% slopes		X		X	5
E6215A	Shambo loam, golden valley, 0 to 2% slopes		X		X	1.1
E6215B	Shambo loam, golden valley, 2 to 6% slopes		X		X	1.6
E6217A	Arnegard loam, golden valley, 0 to 2% slopes		X	X		0.9
E6249B	Sen-Janesburg silt loams, golden valley, 3 to 6% slopes		X			1.1
E6261C	Amor-Cabba loams, golden valley, 6 to 9% slopes		X			1.4
E6261D	Amor-Cabba loams, golden valley, 9 to 15% slopes		X			5.1
E6289B	Reeder-Farnuf loams, golden valley, 3 to 6% slopes		X		X	1.5
E6410A	Straw-Daglum complex, channeled, golden valley, 0 to 2% slopes		X			1.9
E6451E	Manning-Schaller-Wabek complex, golden valley, 6 to 25% slopes		X			1.4
Total	Dunn	53	-	4	26	656.4
	Stark	-	55	1	16	274.5
	Total	107		5	41	930.9



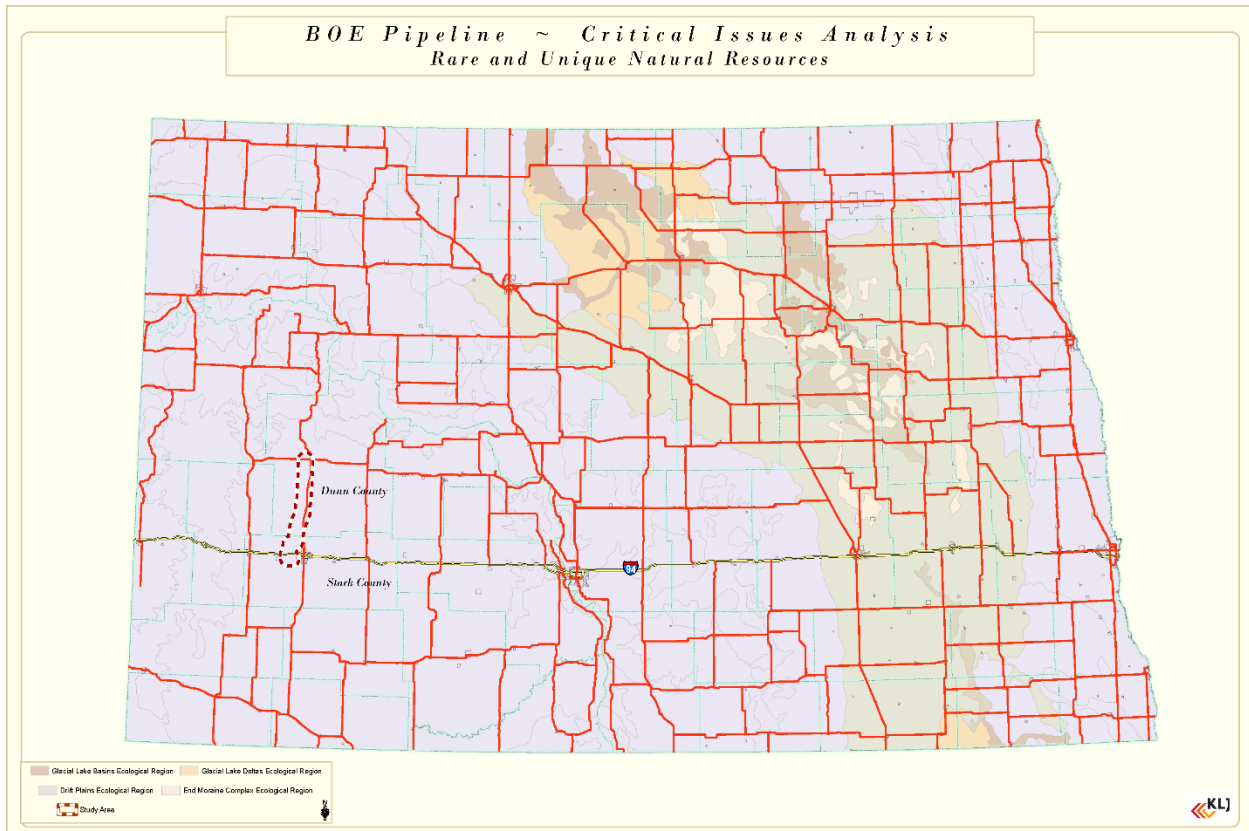






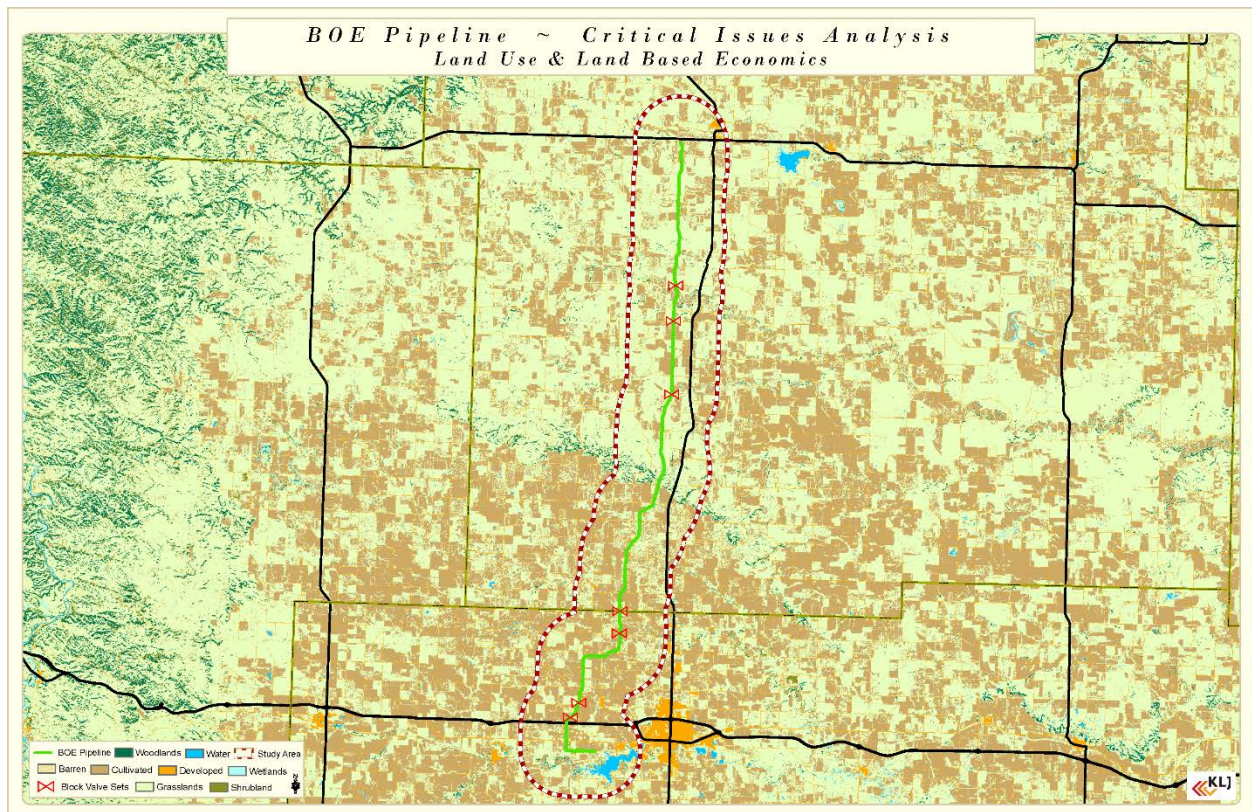
RARE AND UNIQUE NATURAL RESOURCES

North Dakota rare and unique natural resources include four ecological regions. They are the Glacial Lake Basin, Glacial Lake Deltas, Drift Plains, and the End Moraine Complex Ecological Regions. Each of these regions in North Dakota is identified on the map below. As can be seen by the map of rare and unique natural resources, the BOE pipeline is not located within any of these areas. Therefore, the BOE pipeline is of minimum risk to rare and unique natural resources.



LAND USE & LAND BASED ECONOMICS

Below is a sensitivity map of land use and land based economics. This map identifies woodlands, water, barren, cultivated, developed, wetlands, grasslands, and scrubland in the area of the BOE Pipeline. The map clearly identifies that the pipeline is not located in developed areas. Potential oil discharge would occur along the pipeline route and follow water flow paths to the east of the pipeline. The pipeline is primarily located within cultivated and grasslands with some water areas. Woodlands are located at least 20 miles west of the pipeline and up gradient of the flow paths.



C.2.2 A Multi-Species Assemblage Area

C.2.2.1 WILDLIFE

Mammal Species

White-tailed (*Odocoileus virginianus*) and mule (*Odocoileus hemionus*) deer flourish in the vicinity of the Project Corridor due to the ample forage from surrounding cropland intermingled with the native rangeland, ridge lines, and draws. Numerous other mammals such as Eastern cottontail rabbit (*Sylvilagus floridanus*), long-tailed weasels (*Mustela frenata*), red fox (*Vulpes vulpes*), beaver (*Castor canadensis*), muskrats (*Ondatra zibethicus*), black-tailed prairie dog (*Cynomys ludovicianus*) and coyotes (*Canis latrans*) also inhabit this part of the state.

While wildlife may use the pipeline corridor for breeding and feeding, wildlife are anticipated to adapt to changing conditions and continue to thrive. Approximately one-half of the pipeline route has been previously and continues to be disturbed due to farming practices.

Fish Species

Current comprehensive inventories of all the streams crossed by the pipeline are not available. The North Dakota Game and Fish Department has classified the Green and Knife Rivers, as well as Spring Creek as fisheries. The Green River flows into the Heart River. The Heart River is known to have Walleye, Saugeye, Pike, Perch, Crappie, Catfish, Largemouth and Smallmouth Bass fish species. The USGS list of fishes for North Dakota and the North Dakota Game and Fish include the following fishes within the State. It is possible that they are found within the drainages between the pipeline and the Missouri River.

- Percidae (Perch Family)
 - Walleye
 - Sauger
 - Yellow Perch
 - Johnny Darter
- Centrarchidae (Sunfish Family)
 - Largemouth Bass
 - Smallmouth Bass
 - Bluegill
 - Orange-Spotted Sunfish
 - Pumpkinseed
 - Rock Bass
 - Green Sunfish
 - Black Crappie
 - White Crappie

- Sciaenidae (Drum Family)
 - Freshwater Drum
- Ictaluridae (Catfish Family)
 - Channel Catfish
 - Flathead Catfish
 - Black Bullhead
- Salmonidae (Trout Family)
 - Rainbow Trout
 - Brown Trout
- Hiodontidae (Mooneye Family)
 - Mooneye and Goldeye
- Catostomidae (Sucker Family)
 - White Sucker
 - Bigmouth Buffalo
 - Quillback Carpsucker
 - Shorthead Redhorse
- Cyprinidae (Minnow Family)
 - Carp
 - Fathead Minnow
 - Creek Chub
 - Golden Shiner
- Gasterosteidae (Stickleback Family)
 - Brook Stickleback

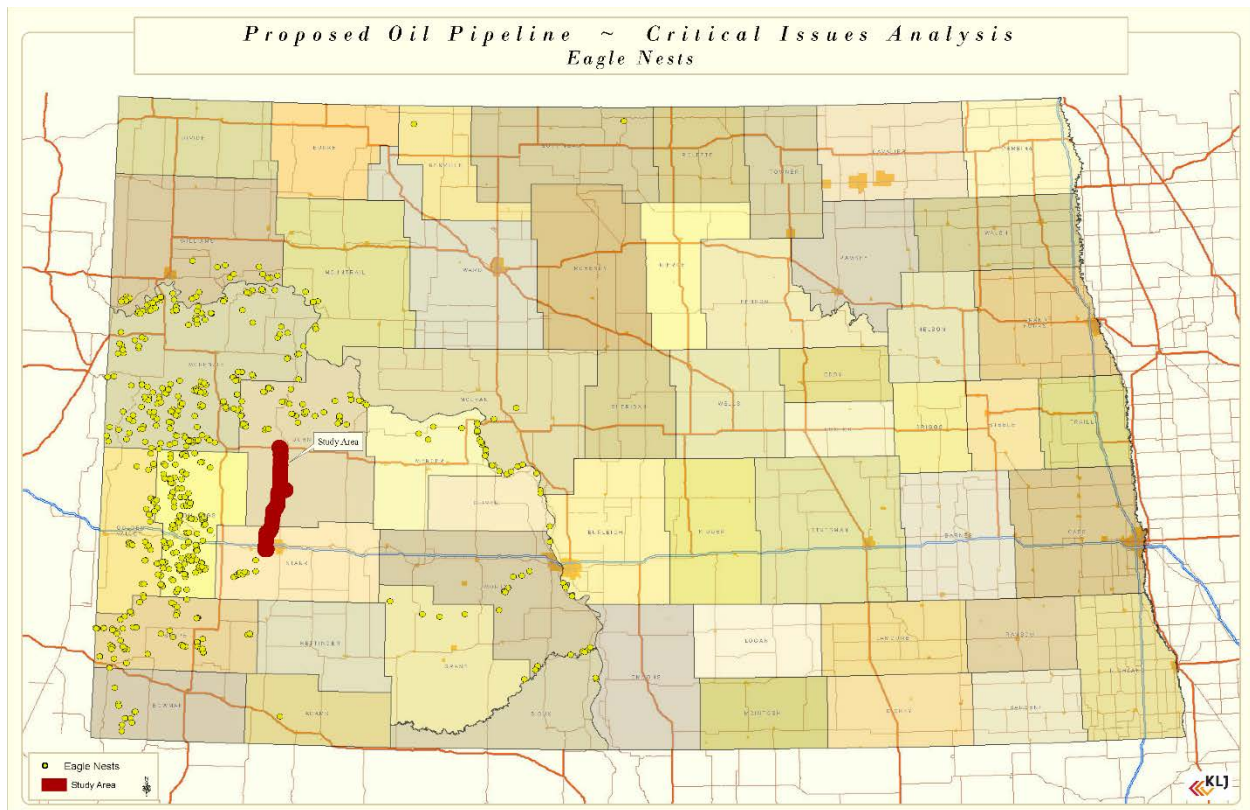
C.2.3 Migratory Water bird Concentration Area

C.2.3.1 AVIAN SPECIES

The pipeline lies in the central flyway of North America. As such, this area is used as resting grounds for many birds on their spring and fall migrations, as well as nesting and breeding grounds for many song, wading, shore, upland, and waterfowl species. The closest USFWS Waterfowl Production Area is located approximately 25 miles from the pipeline.

Protection is provided for the bald (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*), as well as other migratory birds, through the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). The BGEPA of 1940, 16 U.S.C. 668-668d, as amended, was written with the intent to protect and preserve bald and golden eagles, both of which are treated as species of concern within the Department of the Interior. The MBTA, 916 U.S.C. 703-711, regulates impacts to these species such as taking, direct mortality, habitat degradation, and/or displacement of individual birds. The MBTA defines "taking" to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof, except when specifically permitted by regulations. The BGEPA provides additional protection to all bald and golden eagles. Under the BGEPA, "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb, wherein "disturb" means to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment. Additionally red-tailed (*Buteo jamaicensis*), Swainson (*Buteo swainsoni*), and ferruginous (*Buteo regalis*) hawk are provided protection under the MBTA and by North Dakota Game and Fish (NDGF).

Preferred habitat for bald eagles includes open areas, forests, rivers and large lakes. Bald eagles tend to use the same nest year after year, building atop the previous year's nest. The golden eagle can be spotted in North Dakota through the badlands and along the upper reaches of the Missouri River in the western part of the state. Golden eagle pairs maintain territories that can be as large as 60 square miles and nest in high places including, trees and human-made structure. Preferred habitat includes open prairie, plains and forested areas. Vegetation in the pipeline corridor consists of cropland and native rangeland, making the pipeline corridor an unlikely habitat for both eagle species. In 2013, as part of the siting application, a consulting firm studied the BOE Pipeline route and mapped established eagle nesting area with eagle nest along the pipeline corridor. No nests were identified. Based on this study, the pipeline is minimum risk to the eagle habitat.



C.2.4 Imperiled Species, Threatened or Endangered Species, Depleted Marine Mammal Species, and Imperiled Ecological Community

THREATENED AND ENDANGERED SPECIES

The pipeline route was evaluated to determine the potential for occurrences of federally-listed threatened, endangered, and candidate species. The USFWS has identified the whooping crane (*Grus americana*), interior least tern (*Sterna antillarum*), black footed ferret (*Mustela nigripes*), pallid sturgeon (*Scaphirhynchus albus*), gray wolf (*Canis lupus*), piping plover (*Charadrius melodus*), Dakota skipper (*Hesperia dacotae*) and Sprague's pipit (*Anthus spragueii*) for Dunn County and whooping crane, black footed ferret, gray wolf and Sprague's pipit for Stark County. In addition, Dunn County contains designated critical habitat for the piping plover. Habitat requirements and other information regarding listed species for Dunn and Stark Counties are discussed below. Please refer to **Table 1.6.2.4A, USFWS Threatened, Endangered, and Candidate Species**, for a summary of such listed species.

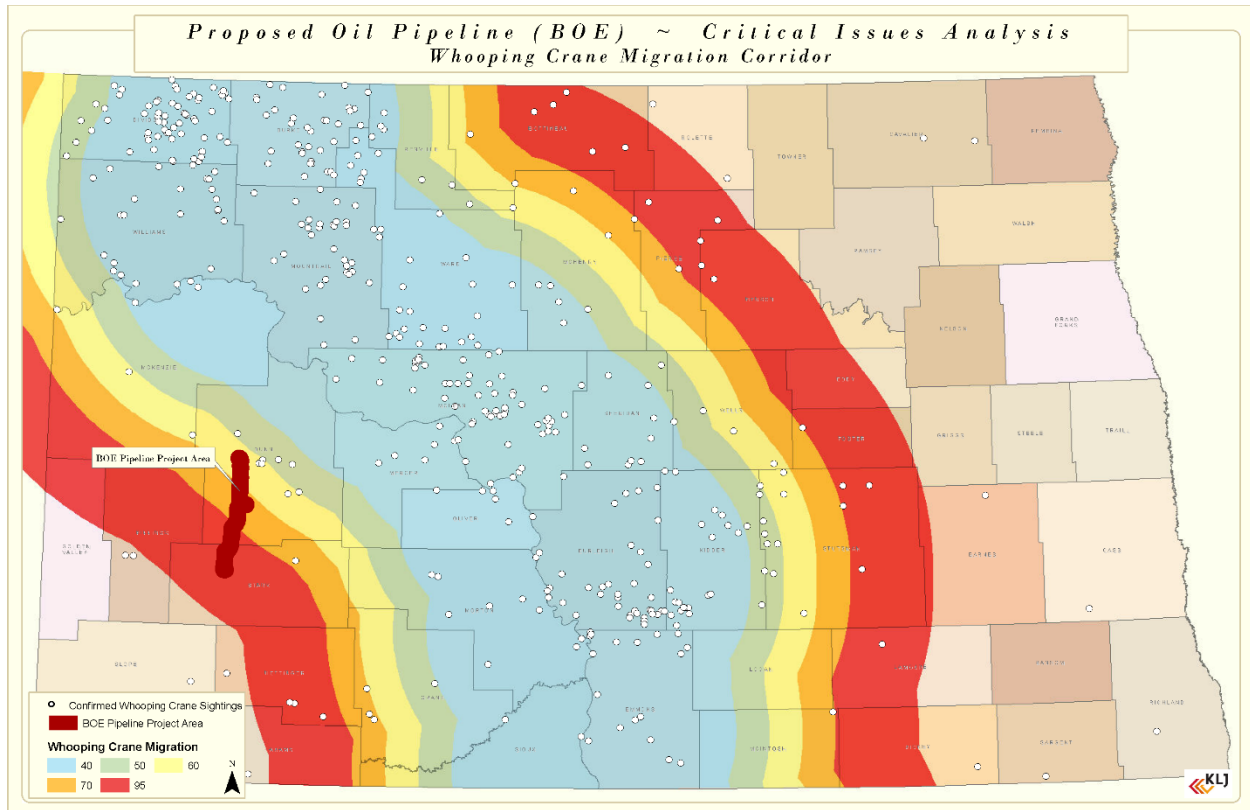
The whooping crane (endangered) is the tallest bird in North America. In the United States, this species ranges through the Midwest and Rocky Mountain regions from North Dakota, south to Texas, and west into Colorado. Whooping cranes migrate through North Dakota along a band running from the south central to the northwest parts of the state. They use shallow, seasonally and semi-permanently flooded Palustrine (marshy) wetlands for roosting and various cropland

and emergent wetlands for feeding. Currently, there are three wild populations of whooping cranes, yielding a total species population of about 384. Of these flocks, only the Aransas-Wood Buffalo population, comprised of approximately 247 cranes, is self-sustaining.

The pipeline is located on the western edge of the whooping crane migration corridor, away from where 95 percent of the sightings occur. The closest whooping crane observation was approximately 5.5 miles east of the pipeline.

It is understood that whooping cranes are opportunistic, and the potential exists for whooping cranes to fly over the area during migration. Habitat for migrating whooping cranes exists in and around the pipeline. Whooping crane could occur in the area of the pipeline during the spring migration and nesting season, as well as the conclusion of fall migration. According to Whooping Crane Recovery Activities November 2007-September 2008 by T. Stehn, and Predicting Availability of Stopover Roosting Habitat for Migrant Whooping Cranes in the Northern Great Plains by D.A. Stahlecker, suitable stopover habitat is prevalent throughout the Dakotas and Nebraska. All land area within the pipeline corridor, as well as most of the prairie pothole region, would likely be suitable habitat for whooping cranes.

In 2013, as part of the BOE pipeline siting application, a consulting firm studied the BOE Pipeline route and mapped established whooping crane siting's in North Dakota and preformed a field survey along the pipeline corridor. No whooping crane sightings occurred in the pipeline corridor. The following is a map of Confirmed Whooping Crane Sightings within North Dakota, and it is easy to identify that no crane siting's have occurred in the BOE Pipeline Project Area. Due to the wide spread availability of stop-over habitat for migration, a pipeline discharge is not likely to adversely affect the whooping crane within the pipeline corridor. There have been 8 confirmed Whooping Crane siting's in the 12 hour flow paths of all 9 watershed oil spill trajectory paths based on the map below. Based on siting's within the flow paths there is a minimum risk that a Whooping Crane would be affected by a pipeline oil discharge and that would only occur during migration season during significant water runoff periods.



The piping plover (endangered) is a small migratory shorebird. Historically, piping plovers could be found throughout the Atlantic Coast, Northern Great Plains, and the Great Lakes. Drastically reduced, sparse populations presently occur throughout this historic range. In North Dakota, breeding and nesting sites can be found along the Missouri River and saline wetlands. Preferred habitat for the piping plover includes riverine sandbars, gravel beaches, alkali areas of wetlands, and flat, sandy beaches with little vegetation. The USFWS has identified that the closest critical habitat for the piping plover within Dunn County along the Missouri River and Lake Sakakawea shorelines approximately 12.5 miles northeast of the pipeline. Additionally the North Dakota Natural Heritage Biological Database indicated no occurrences of piping plover within the pipeline corridor.

The pipeline is within the piping plover’s range; however, preferred piping plover habitat does not occur within the pipeline corridor. Due to the minimal potential piping plover habitat identified within the pipeline corridor, a pipeline discharge would have no adverse effect on the piping plover.

The Dakota skipper (candidate) is a small sized butterfly which is endemic to the northern prairies. Preferred habitat consists of undisturbed, flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. The Dakota skipper has been rapidly disappearing from much of its historic range. This is attributed to the conversion of native prairie to cropland and overgrazing of grasslands. The adult Dakota skipper is active for approximately three weeks during June and July. Due to the lack of presence of potential habitat for the Dakota Skipper, the pipeline is anticipated to have no impact to individuals. An “effect determination” under

Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

The **interior least tern** (endangered) nests along inland rivers. It is found in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande Rivers. In North Dakota, it is sighted along the Missouri River during the summer nesting season and can be found in its preferred habitat from mid-April into September. The interior least tern nests on sandbars or barren beaches, preferably in the middle of a river for increased safety while nesting. These birds nest close together, using safety in numbers to scare away predators. The closest habitat for the least tern occurs along the Missouri River and Lake Sakakawea shorelines approximately 12.5 miles northeast of the pipeline, creating the potential for accidentally released fluids reaching the lake possible, but unlikely. Due to the distance of the pipeline to preferred habitat, a pipeline discharge is not likely to have an adverse effect on the least tern.

The **pallid sturgeon** (endangered) is known to exist in the Yellowstone, Missouri, middle and lower Mississippi, and Atchafalaya Rivers, and seasonally in some tributaries. In North Dakota, the pallid sturgeon is found primarily in the Missouri River and upstream of Lake Sakakawea in the Yellowstone River. Dating to prehistoric times, the pallid sturgeon has become well-adapted to living close to the bottom of silty river systems. According to the USFWS, its preferred habitat includes a diversity of water depths and velocities formed by braided river channels, sand bars, sand flats, and gravel bars. Weighing up to 80 pounds, pallid sturgeons are long lived, with individuals possibly reaching 50 years of age. The closest habitat for the pallid sturgeon is located approximately 12.5 miles northeast of the pipeline in Lake Sakakawea; therefore, the pipeline or a discharge would likely have no adverse effect on the pallid sturgeon.

The **Sprague's pipit** (candidate) is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie of intermediate height with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance. Historically, natural disturbances such as fire and bison grazing were major drivers in maintaining a healthy prairie ecosystem that provided ideal habitat for the Sprague's pipit. Today, fire is no longer a widespread regular phenomenon as it was in earlier times, and bison grazing has largely been replaced by cattle grazing. Little information exists at this time to conclusively determine how grazing or substituting cattle for bison throughout much of the range has impacted the Sprague's pipit, but from the information available, it is believed that grazing cattle are not a significant threat to the species. Although potential Sprague's pipit habitat does occur within the pipeline corridor, it is unlikely that the Sprague's pipit would use the corridor due to a significant amount of human disturbance near the pipeline. The Project would have no impact on the Sprague's pipit. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

The **black-footed ferret** (endangered) is the only ferret species endemic to North America and have been classified as an endangered species by the USFWS since 1967. Most of the Great Plains was once home to the black-footed ferret. Specifically in North Dakota, the southwestern corner of the State provided suitable habitat and supported the black-footed ferret. The black-footed ferret is no longer considered present within the state due to a lack of sightings or evidence of their occurrence. The last known population in the wild was found at Meeteetse,

Wyoming, in 1981 and included 18 animals. These individuals were trapped and bred in captivity until 1991 when 49 were reintroduced into the wild in Wyoming. In 1994, 40 ferrets were released in Montana and 36 into South Dakota. From 1994 to 2009, ferrets were reintroduced to sites in seven different states, Canada, and Mexico. Black-footed ferrets have not been reintroduced in North Dakota, and a pipeline discharge would likely have no effect on the black-footed ferret or its associated habitat.

The gray wolf (endangered) is the largest wild canine species in North America. While the gray wolf is not common in North Dakota; occasionally, individual wolves do pass through the state. Historically, its preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. Gray wolves live in packs of up to 21 members, although some individuals will roam alone. The pipeline is located far from known wolf populations. There is potential for a transient gray wolf to pass through the pipeline area. However, due to the lack of preferred habitat characteristics and the distance to known populations, a spill or discharge may effect, but is not likely to adversely affect the gray wolf.

TABLE C.2.4a
USFWS Threatened, Endangered and Candidate
Species in Dunn and Stark Counties

COMMON NAME	SCIENTIFIC NAME	STATUS	HABITAT
Interior Least Tern	<i>Sterna antillarum</i>	Endangered	Sparsely vegetated sand/gravel bars
Whooping Crane	<i>Grus americana</i>	Endangered	Aquatic/wetland habitats
Black-footed Ferret	<i>Mustela nigripes</i>	Endangered	Short grass prairie where prairie dog towns occur
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	Endangered	Large, turbid rivers with sand/gravel bottom
Gray Wolf	<i>Canis lupus</i>	Endangered	Forested areas
Piping Plover	<i>Charadrius melodus</i>	Endangered	Sand/gravel shore, avoid dense vegetation
Dakota Skipper	<i>Hesperia dacotae</i>	Candidate	Native tall grass prairie with white camass
Sprague's Pipit	<i>Anthus spragueii</i>	Candidate	Grazed prairie

RARE AND SENSITIVE SPECIES

BOE Pipeline has coordinated with the USFWS, NDGF, and North Dakota Parks and Recreation Department (NDPRD) to help identify sensitive species and sensitive habitat that may exist near the pipeline.

The NDPRD administers the North Dakota Natural Heritage Inventory. North Dakota Natural Heritage Inventory provides a comprehensive system (Heritage System) for identifying and prioritizing ecologically significant natural features in the state. The Natural Heritage Database emphasizes features that are exemplary, unique, or endangered on a statewide or national level. The basis for inclusion on the Natural Heritage Database includes species occurrence, vulnerability, types of threats, degree of protection and Taxonomy. The NDPRD noted that because their information is not based on a comprehensive survey, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database.

GIS shapefiles of species listed on the Natural Heritage Database that occur within or adjacent to pipeline were provided by the NDPRD. The North Dakota Natural Heritage Biological Database identified sturgeon chub within the Green River approximately, 1.7 miles west of where the pipeline would be bored under the River. The sturgeon chub is ranked in North Dakota as an S2 (Imperiled) species and considered endangered in the State.

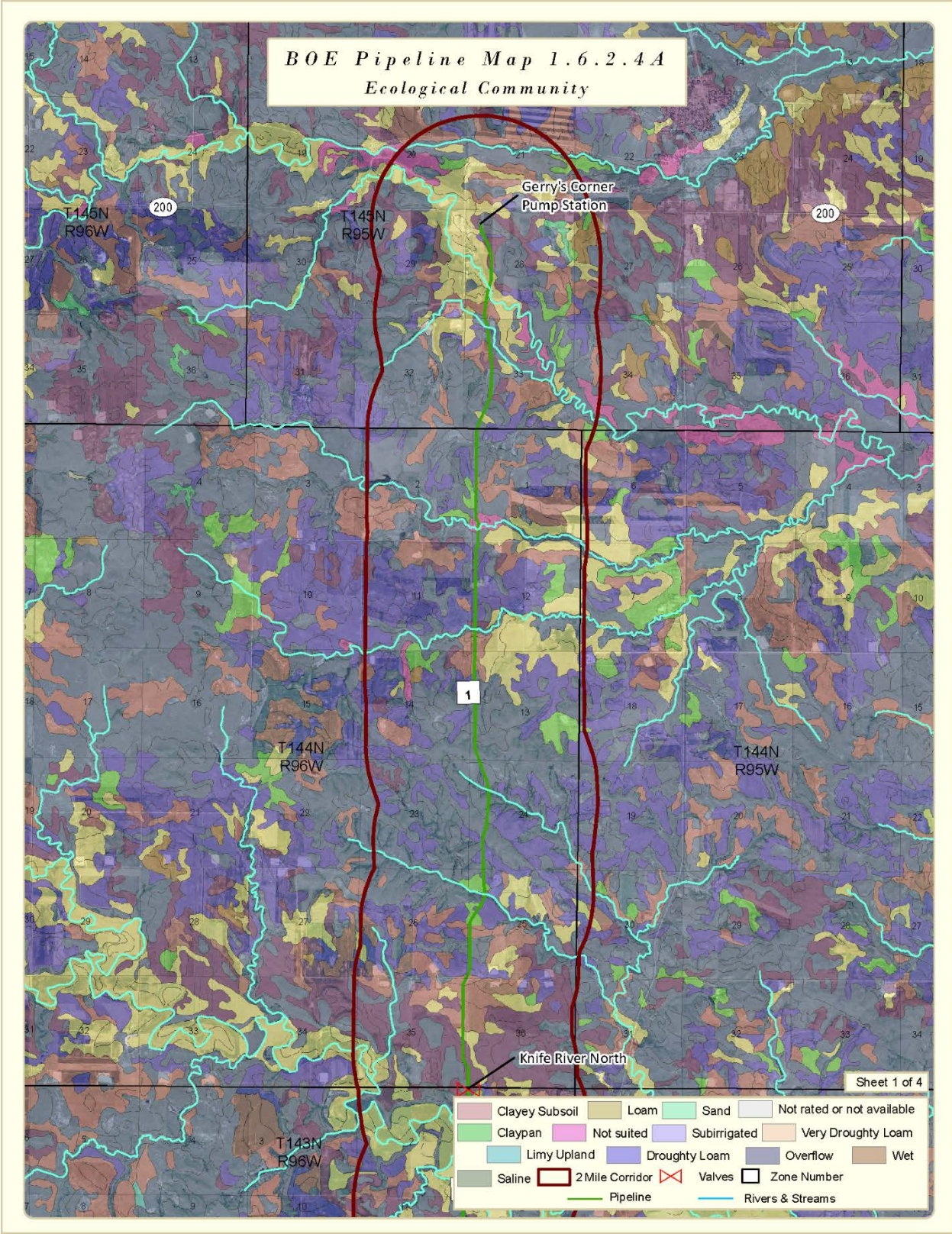
North Dakota has identified 100 Species of Conservation Priority within the state and has ranked those species into three levels (Level I, Level II and Level III). Level I species are in decline and receive little or no monetary support or conservation effort. NDGF has an obligation to use State Wildlife Grant (SWG) funding to implement conservation actions that directly benefit these Level I species. Level II species receive state wildlife grant funding to implement conservation actions to benefit these species if SWG funding for Level I species is sufficient or conservations needs have been met. Level III species receive a moderate level of conservation priority, but are believed to be peripheral or nonbreeding in North Dakota. Several of these species could potentially occur along the survey corridor. The pipeline was sited to avoid active raptor nests. Please refer to Table 1.6.2.4B, North Dakota Species of Conservation Priority Surveyed for in Pipeline Route, for a complete list of species.

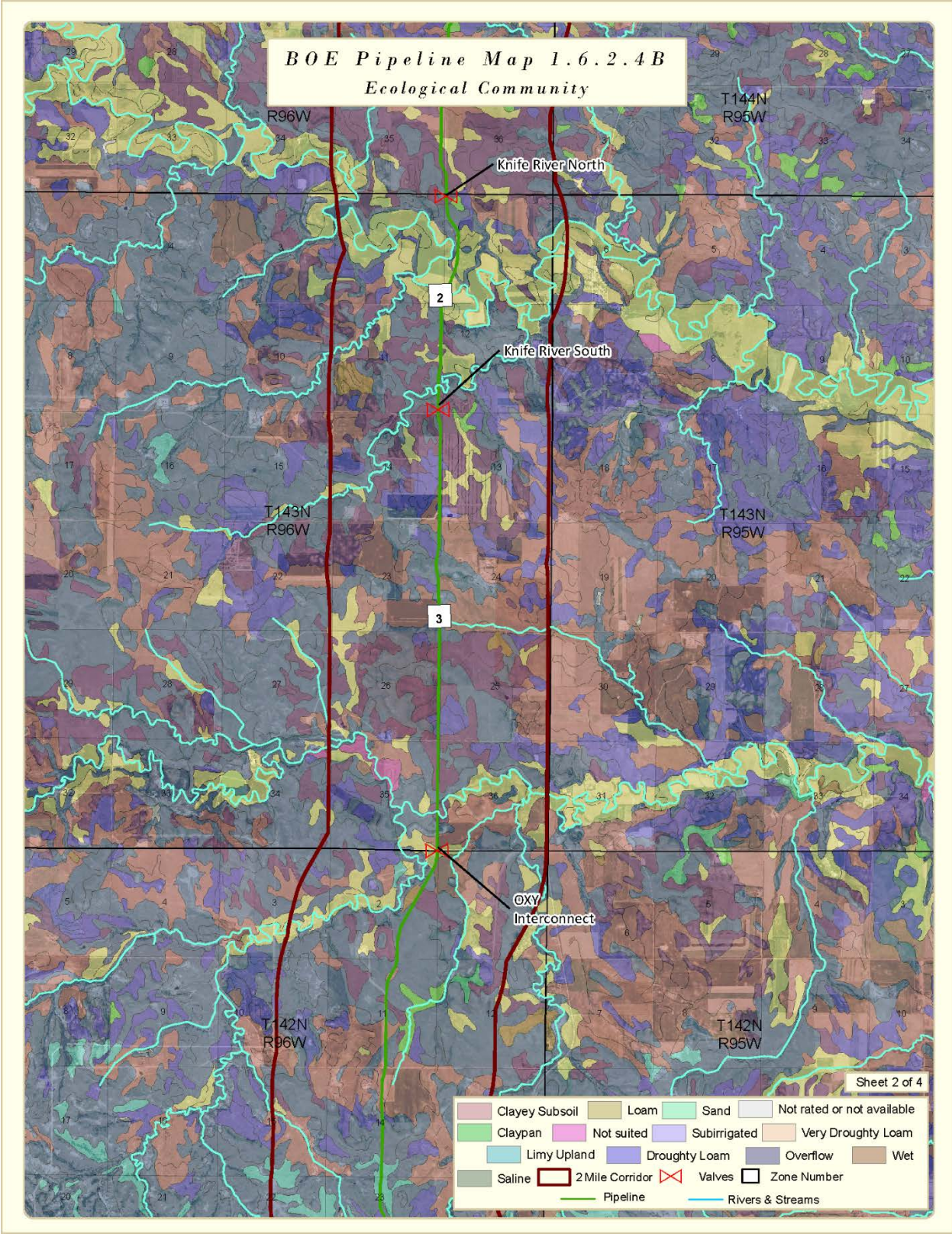
COMMUNITIES OF ECOLOGICAL IMPORTANCE (195.450 (4))

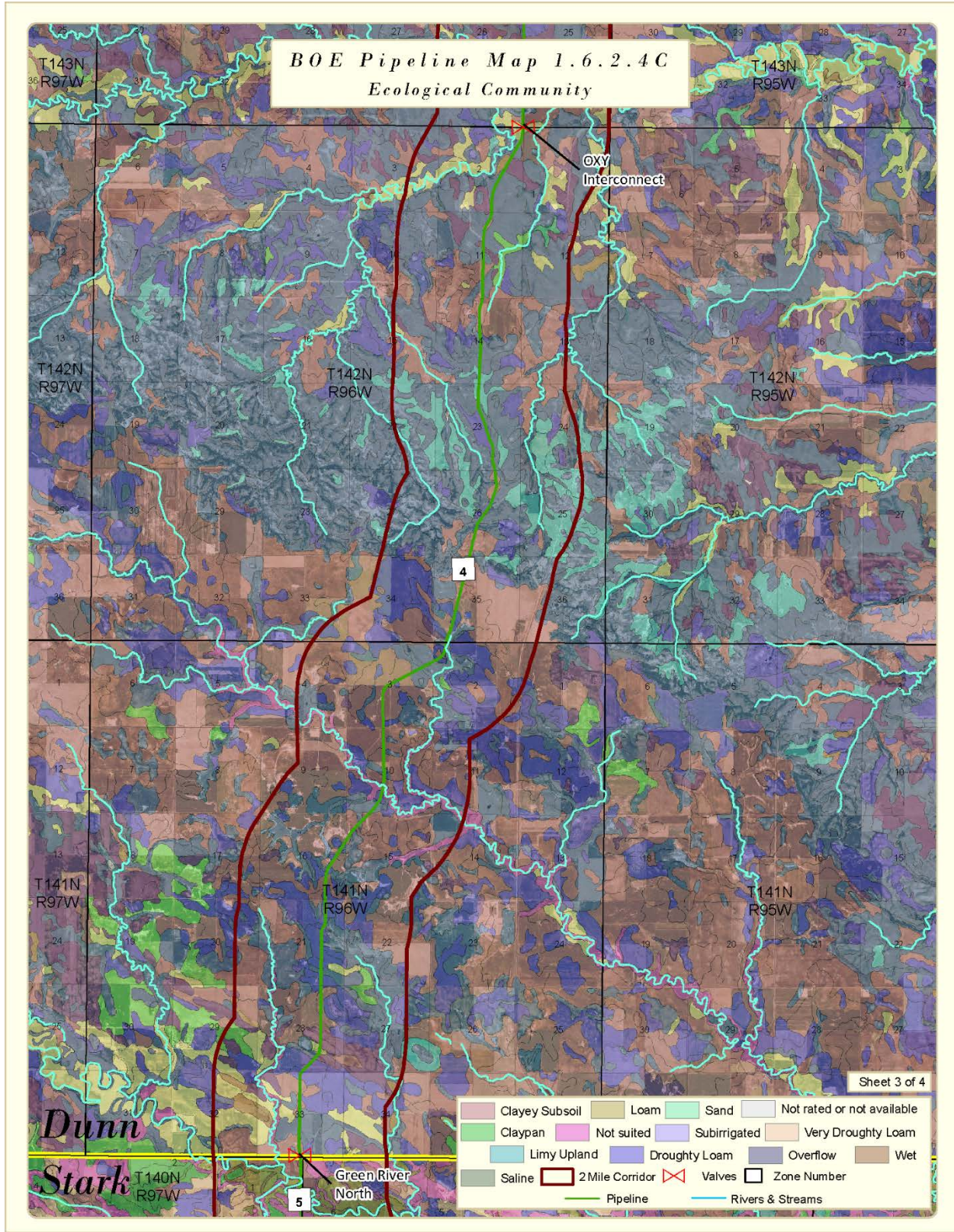
The North Dakota Natural Heritage Inventory indicated that a brackish wet meadow, which is considered a significant ecological community, may be within the pipeline corridor. After multiple pedestrian surveys by an environmental consultant to locate the meadow, this community was not identified within the pipeline corridor. There are several western floodplain forests along the Green and Heart rivers. All examples are significant ecological communities and are outside of the pipeline corridor. There are occasional trees representing several species in and near the pipeline, none of which include a community or species of concern. Maps 1.6.2.4 A-D identifies Ecological Communities along the pipeline.

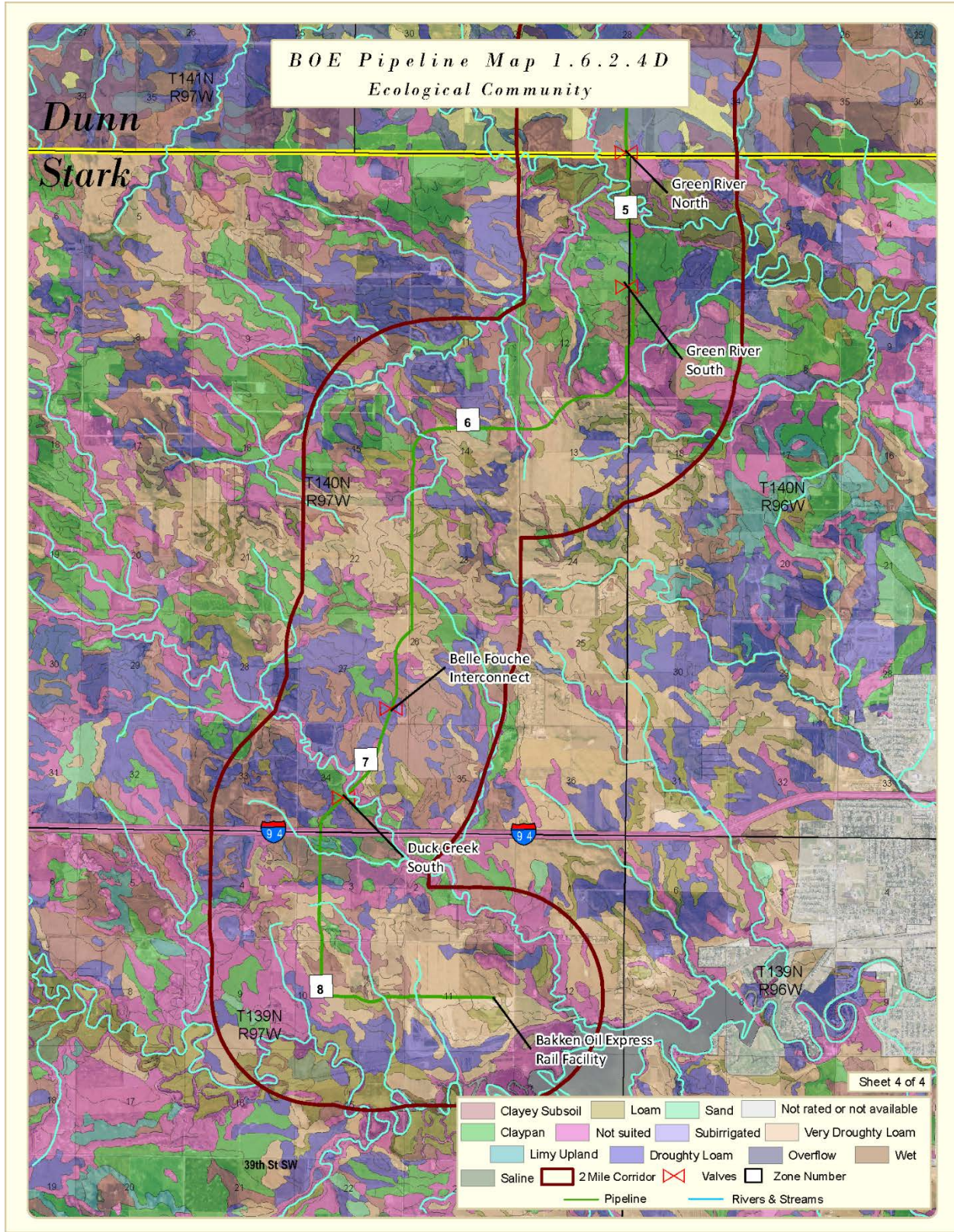
TABLE C.2.4b
North Dakota Species of Conservation Priority
Surveyed For in Pipeline Route

COMMON NAME	SCIENTIFIC NAME	LEVEL
Baird's Sparrow	<i>Ammodramus bairdii</i>	I
Black Tern	<i>Chlidonia niger</i>	I
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	I
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	I
Ferruginous Hawk	<i>Buteo regalis</i>	I
Franklin's Gull	<i>Larus pipixcan</i>	I
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	I
Lark Bunting	<i>Calamospiza melanocorys</i>	I
Marbled Godwit	<i>Limosa fedoa</i>	I
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsonii</i>	I
Smooth Green Snake	<i>Liochlorophis vernalis</i>	I
Sprague's Pipit	<i>Anthus spragueii</i>	I
Swainson's Hawk	<i>Buteo swainsoni</i>	I
Upland Sandpiper	<i>Bartramia longicauda</i>	I
Western Hognose Snake	<i>Heterodon nasicus</i>	I
Willet	<i>Catoptrophorus semipalmatus</i>	I
Yellow Rail	<i>Coturnicops noveboracensis</i>	I
Bald Eagle	<i>Haliaeetus leucocephalus</i>	II
Bobolink	<i>Dolichonyx oryzivorus</i>	II
Brewer's Sparrow	<i>Spizella breweri</i>	II
Burrowing Owl	<i>Athene cunicularia</i>	II
Golden Eagle	<i>Aquila chrysaetos</i>	II
Loggerhead Shrike	<i>Lanius ludovicianus</i>	II
Northern Harrier	<i>Circus cyaneus</i>	II
Prairie Falcon	<i>Falco mexicanus</i>	II
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	II









C.3 HIGH CONSEQUENCE AREA EVALUATION (195.450)

Part of an evaluation for significant and substantial harm involves that the area is considered a high consequence area (195.450). High consequence area includes a commercially navigable waterway, a high population area, other populated areas, and unusually sensitive areas. These items are discussed in this section with the exception of unusually sensitive areas which is in earlier section C.2.

C.3.1 Proximity to Commercially Navigable Waters (195.450)

The BOE Pipeline, LLC (BOE) pipeline is located within the State of North Dakota through Dunn and Stark counties. The nearest commercial navigable water is the Lake Sakakawea/Missouri River which closest point is 29.7 miles northeast of the north end of the pipeline. The Missouri River/Lake Sakakawea is considered a high consequence area as defined by (195.450). The pipeline is not located in watershed areas that flow into Lake Sakakawea which is the lake backed up by the Garrison Dam near Pick City, ND. The watershed areas in which the pipeline is located flow east/southeast to the Missouri River downstream of Garrison Dam.

The pipeline is located in two hydrologic unit code eight watersheds which eventually flow to the Missouri River. The first is 10130201 Knife River watershed and the second is 10130202 is the Heart River watershed. Both watersheds flow into the Missouri River.

The Knife River watershed would have to flow a minimum of over 150 miles within the Knife River watershed to reach the Missouri River north of Stanton, ND, approximately 15 miles south of Garrison Dam. The maximum 12-hour planning distance of flow within the Knife River would only travel 49.14 miles from the pipeline within the Knife River. Therefore, a spill occurring from the BOE pipeline that would be within the Knife River Watershed would not reach the Missouri River with a 12-hour response time. Knife River water tributaries flow paths are the first five flow paths listed in Table C.3.1. Flow path distances to the Missouri River is given in Table C.3.1. The Heart River watershed would have to flow a minimum of over 240 miles and pass over at least one Lake/Dam before it could reach the Missouri River just south of Mandan, ND. The maximum 12-hour planning distance of flowing tributaries within the Heart Watershed would not reach Lake Tschida or its Dam. Heart River water tributaries are the last four tributaries listed in Table C.3.1 Water Tributaries flow path lengths to the Missouri River.

Based on 12-hour maximum flow distances, a pipeline spill would not reach commercially navigable water, which would be the Missouri River. Therefore, there is not a substantial likelihood of a spill from the BOE pipeline reaching a commercially navigable waterway.

**TABLE C.3.1
Water Tributaries flow path lengths to the Missouri River**

NAME	CROSSING DISTANCE/LOCATION FROM STATION	MINIMUM FLOW PATH DISTANCE FROM PIPELINE TO MISSOURI RIVER IN MILES
Murphy Creek to Lake Ilo/Dam to Spring Creek to Knife River to Missouri River	Pipeline crosses Murphy Creek 2.8 miles south of truck terminal.	12.7 miles in Murphy Creek to Lake Ilo/Dam, 1.6 mile spread in Lake/Dam, 96.4 miles in Spring Creek, 40.4 miles in Knife River to Missouri River. Total: 151.1 miles
Wolf Creek to Knife River to Missouri River	Pipeline crosses Wolf Creek 6.2 miles south of truck terminal.	5.6 miles in Wolf Creek, 178.8 miles in Knife River to Missouri River. Total: 184.4 miles
Knife River to Missouri River	Pipeline Crosses Knife River twice- 9.01 and 9.84 miles south of truck terminal facility.	184.4 miles in Knife River to Missouri River. Total: 184.4 miles
Crooked Creek to Knife River to Missouri River	Pipeline crosses Crooked Creek 13.8 miles south of truck terminal.	30.9 miles in Crooked Creek, 150.1 miles in Knife River to reach Missouri River. Total: 181 miles
Lighting Creek to Crooked Creek to Knife River to Missouri River	Pipeline crosses tributary to Lighting Creek 19 miles south of truck terminal.	9.8 miles in Lighting Creek, 29.1 miles in Crooked Creek, 150.1 miles in Knife River to reach Missouri River. Total: 189 miles
Russian Spring Creek to Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 22.4 miles south of truck terminal.	26.5 miles in Russian Spring Creek, 7.8 miles in Green River, 80.8 in Heart River, 8.2 miles of spread in Lake/Dam, 124.2 miles flow in Heart River to reach Missouri River. Total: 247.5 miles
Green River to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river three times- 27.28, 27.34, 27.43 miles south of the truck terminal facility.	40 miles in Green River, 80.8 miles in Heart River, 8.2 miles of spread in Tschida Lake/Dam, 124.2 miles flow in Heart River to reach Missouri River. Total: 253.2 miles
Duck Creek to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline crosses river 34.7 miles south of truck terminal.	5.31 miles in Duck Creek, 1.66 miles of spread in Patterson Lake/Dam, 106.4 miles in Heart, 8.2 miles of spread in Lake Tschida, 124.2 miles flow in Heart River to reach Missouri River. Total: 245.8 miles
Heart River to Patterson Lake/Dam to Heart River to Lake Tschida/Dam to Heart River to Missouri River	Pipeline does not cross the Heart River.	0.9 miles flow to Heart River, 2.9 miles in Heart River, 2.3 miles spread in Patterson Lake/Dam, 106.4 miles in Heart, 8.2 miles spread in Lake Tschida/Dam, 124.2 miles flow in Heart River to reach Missouri River. Total: 244.9 miles
Distance from Truck Station is approximate mileage.		

C.3.2 Consideration of Population Areas (195.450)

The BOE pipeline is not located within a high population area high consequence area as defined in 195.450. No urbanized area that contains 50,000 or more people and has a population density of at least 1,000 people per square mile is located within over 100 miles from the pipeline.

Other populated area such as incorporated city, town, village, or other designated residential or commercial area include:

- The city of Manning, ND has a population of 74 people and is located 1.25 miles east of the pipeline.
- The city of Killdeer, ND has a 2012 population of 818 people is located 2.05 miles NE of the north end of the pipeline.
- The city of Dickinson, ND has a 2012 population of 26,771 people is located 3.2 miles NE of the south end of the pipeline. The nearest edge of Dickinson's residential area is ½ mile NE of the south end of the pipeline on the north side of Hwy 10.

Three house are located within 500 feet of the pipeline along the pipeline. Other farmsteads do exist along the flow paths. The flow paths does not run along or by any highly residential areas.

The south side of Dickinson, ND is the only populated area that is incorporated or unincorporated city, town, village, or other designated residential or commercial area that is within normal evacuation areas for crude oil as identified in the 2012 Emergency Response Guidebook. The Emergency Response Guidebook identifies evacuation of 1000 feet downwind of discharge as a possible evacuation area.

C.3.2.1 SCHOOLS

Manning, ND (population 74) does not have a school. Schools in the cities of Killdeer and Dickinson are located within closest proximity of the BOE Pipeline. Although these schools' locations are closest to the pipeline, they are not in the flow drainage paths of a potential spill. The Killdeer schools have elevations greater than the north end of the pipeline. Dickinson Schools, except Dickinson State University, have elevations lower than the pipeline near the rail terminal. A spill/discharge should not have on adverse effect on these schools because they are not in the direct flow path of a discharge. The emergency personnel for Dunn and Stark Counties will be contacted by BOE Pipeline and they will have human health and property responsibility in their jurisdiction.

**TABLE C.3.2.1
SCHOOLS NEAR BOE PIPELINE**

SCHOOL	NEAREST DISTANCE FROM PIPELINE		PHONE
Killdeer High School	3.5 miles NE	Killdeer, ND	(701) 764-5877
Killdeer Elementary School	3.5 miles NE	Killdeer, ND	(701) 764-5877
Jefferson Elementary School	4.2 miles NE	Dickinson, ND	(701) 456-0013
Hagen Junior High	4.2 miles NE	Dickinson, ND	(701) 456-0020
Dickinson High School	3.6 miles NE	Dickinson, ND	(701) 456-0030
Hope Christian Academy	5.2 miles E	Dickinson, ND	(701) 225-3919
Trinity High School	4.01 miles NE	Dickinson, ND	(701) 483-6081
Trinity Elementary East	4.8 miles NE	Dickinson, ND	(701) 225-9493
Trinity Elementary West	4.2 miles NE	Dickinson, ND	(701) 225-8094
Dickinson State University	4.2 miles NE	Dickinson, ND	(701) 483-2507

***Note: Distance from pipeline is approximate mileage.**

C.3.2.2 MEDICAL FACILITIES

Injured personnel would be transported by local ambulance to the St. Joseph’s Hospital at 30 7th Street West, Dickinson, ND. Medical facilities in Stanley, ND and Williston, ND are listed as alternatives. Sanford Medical Center (701) 323-6150 and St. Alexius Medical Center in Bismarck, ND are Level II Trauma Centers. Hennepin County Medical Center is a Level I Trauma Center.

**TABLE C.3.2.2
Emergency Medical Facilities**

MEDICAL FACILITY	DISTANCE FROM PIPELINE	LOCATION	PHONE
St. Joseph’s Hospital	4 miles NE from south end 37 miles SE from north end (46 min)	Dickinson, ND	(701) 456-4000
McKenzie County Hospital	53 miles NW from north end (58 min)	Watford City, ND	(701) 842-3000
Mercy Medical Center	99 miles NW from north end (1 hour 50 min)	Williston, ND	(701) 774-7400 (800) 544-3579
St. Alexius Medical Center (Level II Trauma Center)	520 to 560 miles (2 hours 15 minutes)	Bismarck, ND	(701) 530-7000
Hennepin County Medical Center (Level I Trauma Center)	(10 Hours)	Minneapolis, MN	(612) 873-3000

***Note: Distance from station is approximate mileage.**

C.3.2.3 TRANSPORTATION ROUTES (AIR, LAND, WATER)

The BOE pipeline is located in a rural area of Dunn and Stark County of North Dakota.

Pete's Port Airport is located 4.1 miles east of the north end of the pipeline. Weydahl Field (Killdeer Airport) is 2.89 miles NE of the north end of the BOE pipeline. The Dickinson Regional Airport (Theodore Roosevelt Regional Airport) is 6.15 miles SE of the pipeline from the rail terminal. Airports are up gradient of the pipeline flow paths and a spill would not affect the airports.

The pipeline parallels Hwy 22 on its west side from Killdeer, ND to Dickinson, ND. BOE pipeline is anywhere from 1 mile to 6 miles west of Hwy 22. Drainage flow paths from the watersheds along the pipeline would flow in culverts under Hwy 22. The pipeline crosses Interstate 94 approximately 4.5 west of Dickinson. A spill or discharge could affect traffic along a highway.

No commercial traffic waterway lie along the pipeline and are a significant distance from the pipeline. The BOE pipeline does not cross any railroad. BNSF rail tracks run east/west about a ½ mile south of the south end of the pipeline. Spill flow paths would go through culverts under the rail tracks. A spill could affect rail traffic should a spill flow follow the drain paths which would flow under the railroad tracks.

C.3.2.4 PUBLIC UTILITIES

Roughrider Electric Cooperative is the electric utility for the northern part pipeline area (Dunn County). Slope Electric is the electric utility for the southern part of the pipeline area (Stark County). Consolidated Telcom provides telephone for the area. Montana-Dakota Utilities Co. is an electric and natural gas utility in the Dickinson area and may have facilities in the area of the pipeline. Notification to these utilities may be made in the event of a discharge.

C.3.2.5 BUSINESSES

In the event of a discharge, nearby businesses that are located within a 1,000-foot radius of the crude oil pipeline would be of highest priority. Consideration is given to downwind evacuation for at least 1,000 feet. In the event that a discharge was carried off by rainwater, businesses located within a 1,000 foot radius of the pipeline and businesses/residences located to the east of the pipeline (flow paths down gradient to the east) would be of highest priority. There is a low risk level of businesses being affected by a spill. Plans will be implemented to ensure that any discharges do not affect nearby businesses. Every effort should be made for quick and complete containment.

C.4 VULNERABILITY TO NATURAL DISASTERS

Section 5 Scenarios considers weather and natural disasters for small, medium, and worst cases.

The following is a summary of scenarios discussed:

- **Precipitation Runoff**

The Dickinson, ND area has an average annual precipitation of 16.1 inches and an annual evaporation of 32 inches. A 4% chance (25-year) 24-hour rainfall is 3.5 inches. The 3.5-inch precipitation is used for the freeboard for berm volume calculations. June is the month of maximum precipitation averaging 2.5 inches. Low risk level of occurrence during a spill.

- **Snow runoff**

The average annual snow fall for the Dickinson, ND area is 33 inches. The majority of the snow fall occurs in the months of November through March. Should a winter/spring spill occur and secondary containment fails; containment booms should be used if snow melt runoff is occurring. A boom will allow water to pass through and contain the spill materials. The monthly average temperature is 45° F in March, 76° F for June, 65° F in September, and 30° F in December. Low risk level of occurrence during a spill.

- **Tornadoes**

Tornadoes are incredibly violent local storms that extend to the ground with whirling winds that can reach 300 MPH. The National Weather Service Forecast Office in Bismarck, ND recorded that North Dakota averages 22 reported tornadoes a year (1950-2008). The average speed of a tornado is 30 mph and can range from stationary to 70 mph. Tornadoes mostly move to the northeast but may move in any direction. Most tornadoes in North Dakota occur from 3 PM to 11 PM local time in the months of June, July, and August.

Based on Homefacts.com website, historical tornado data for the Dickinson area classifies this area as a very low risk area. The tornado risk is calculated from the destruction path that has occurred within 30 miles of Dickinson. According to records, the largest Tornado in the Dickinson area was an F4 in 1975 that caused 4 injuries and 1 death. Ten tornadoes have been recorded over the past 10 years within 30 miles of Dickinson. Two injuries and no deaths were recorded due to the tornadoes. No tornadoes have occurred in this area since 2011. Tornadoes could cause destruction of an above ground valve set or the pump station on the north end of the pipeline. Very low risk level of occurrence during a spill.

- **Thunderstorms**

Severe thunderstorms are those storms with winds in excess of 58 mph or hail larger than ¾ inches in diameter. The formation of thunderstorms requires warm, moist air.

Thunderstorms usually occur when the surface air is warmest (2 to 4 PM). Thunder is produced by lightning, all thunderstorms include lightning.

Thunderstorms can cause heavy rain and can lead to flash flooding. Strong winds, hail, and tornadoes may be associated with thunderstorms. Thunderstorms are relatively rare in North Dakota compared to other parts of the US because the air is generally cold. Tornadoes, windstorms and hailstorms have well-developed daily cycles in North Dakota. According to the Northern Prairie Wildlife Research Center discussion on Climate in ND, "Peak activity occurs between 2:00 p.m. and 8:00 p.m. During these hours, about 75 percent of the tornadoes, 62 percent of the windstorms, and 83 percent of the hailstorms take place. It should be emphasized that although three-fourths of the tornadoes are reported between the hours of 2:00 p.m. and 8:00 p.m., a scattering of tornadoes has occurred for nearly all hours of the day during the 12-year period for which the data were processed. Fewer windstorms with winds greater than 57 mph occurred during the six-hour peak activity period than tornadoes or hailstorms, but the windstorm activity continued at a substantially higher rate between the hours of 8:00 p.m. and 1:00 a.m. than the other two types of severe storms. Hailstorms producing large hail appear to be rare between the hours of 5:00 a.m. and 2:00 p.m. However, after 2:00 p.m. hailstorm activity increases sharply and continues at a high rate until dropping off at 8:00 p.m." Thunderstorms are the most severe precipitation observed during 20% of those day with precipitation in the Dickinson area. They are most likely around July 11, when it is observed during 27% of all days. A total of 315 thunderstorm events and 469 hailstorms have occurred within 50 miles of Dickinson, ND recorded from 1950 to 2010 according to usa.com website for Dickinson, ND. Low risk level of occurrence during a spill.

- **Hurricanes**

Hurricane is an intense tropical weather system that has a well-defined circulation and sustained winds of 74 mph or higher. Hurricanes generally occur June 1st to November 30th. North Dakota does not have hurricane weather or tropical storms as it is an inland state. No risk level of occurrence during a spill.

- **Floods**

Tioga, ND has had 16 recorded floods from 1950 to 2010 within 50 miles of the city. Low risk level of occurrence during a spill.

- **Power Failure**

If there is a power outage on the SCADA system, the Control Center in the Bismarck and the administrative buildings at the truck terminal and rail terminal will get a com failure alarm. A power failure at the pipeline pumps, a power failure alarm will be displayed. Low risk level of occurrence during a spill.

- **Worst-Case Catastrophic Valve set due to elements of nature disasters (Earthquakes and Lightning)**

Dickinson, ND is in an area that receives 6 to 8 lightning strikes per square kilometer per year. This number is based on data from April 1995-February 2003 from the combined

observations of NASA OTD (9/95-3/00) and LIS (1/98-2/03). This is considered a moderate lightning strike area. Lightning strikes could cause damage to the pipeline, pump, or a valve set. The damage could cause an oil discharge from the pipeline system. This event has a low probability of occurrence. Areas with high numbers (15 to 70 lightning strikes per squared kilometer per year) usually install a lightning protection system to prevent damage. Low risk level of occurrence during a spill.

- No earthquakes of intensity V or above (Modified Mercalli Scale) have occurred within North Dakota during historical times. Earthquakes centered in Iowa, Minnesota, Montana, Nebraska, and a few Canadian shocks have been felt in the State. North Dakota is not a very tectonically active earthquake state. The earthquake Index for Dickinson as well as North Dakota has a value of 0.00 compared to the U.S with a value of 1.81 calculated based on historical earthquake events data using USA.com website algorithms. This value of 0.00 means a low to no chance of an earthquake. The probability of an occurrence is very remote. Low risk level of occurrence during a spill.

Fire and explosion hazards of the pipeline crude oil may result from the presence of combustible gases and liquids, oxygen, and ignition sources during a discharge/spill. Possible ignition sources include sparks associated with the buildup of static electricity, lightning, and open flames. Within 50 miles of Dickinson, ND has only had one major wildfire recorded from 1950 to 2010.

The potential for a quantity of oil to be discharged during a fire or igniting during a spill exists. A fire could lead to an explosion. Crude oil is considered highly flammable and can be easily ignited by heat, sparks or flames or source of ignition. The vapors may form explosive mixtures with air. Vapors sometimes travel long distances to a source of ignition and flash back. Many vapors are heavier than air. They can spread along the ground and collect in low or confined areas such as sewers. The vapors can be a fire or explosion hazard if caught indoors or outdoors. Runoff to any low lying area may also create fire or an explosion hazard. The potential of a tank exploding is possible should a fire heat the tank to high temperatures.

Towns close to the pipeline are Killdeer, ND near section 1 on the north end, Manning, ND near section 2, 3, 4 toward the middle of the pipeline and Dickinson, ND near sections 5,6,7,8 on the south end. The response zone sections 1, 2, 3, and 4 are in Dunn County and Sections 5, 6, 7, and 8 are in Stark County. Upon discovery of an incident, BOE/Progress Solutions will call 911 if necessary to notify all appropriate emergency response departments. The West Dunn Fire District (Killdeer Fire Department) will be contacted and will provide emergency response personnel and equipment for firefighting activities along sections 1, 2, 3, and 4. The Dickinson Rural fire department will respond in sections 5, 6, 7, and 8. Each Fire Department Chief will determine if additional resources are required to assist. The Incident Commander will offer assistance of BOE/Progress Solutions personnel and resources to the commanding fire chief. Once the responding agency arrives, a command structure will be established.

The West Dunn Fire District and Killdeer fire department are one group based out of one building using the equipment available. The West Dunn Fire District will be called and resources would respond from the Killdeer fire station at 151 Central Avenue North in Killdeer, estimated arrival time is 30 minutes along the pipeline in Dunn County. The West Dunn fire District/Killdeer Fire

Department can be contacted at 701-764-5006. The Initial response personnel would be 5-8 firemen; the West Dunn County/Killdeer fire department has 2 engine trucks and one initial responder truck. All trucks will be dispatched from the fire station at 209 Central Avenue in Killdeer, ND. Killdeer has 24 active volunteer firemen. At least 2 of the initial fire department personnel responding would have had the 24 hour First Responder operations level HAZMAT training.

Upon assessment of the incident, a County HAZMAT equipment truck and team may be called to respond from Minot, ND or Bismarck, ND. Additional resources may be called and will respond from surrounding communities by mutual aid agreements. The Dickinson Rural Fire Department has a mutual aid agreement with the Killdeer Fire Department. The Minot Air Force Base can respond with specialized equipment for petroleum fires if needed.

Should a fire occur in Stark County the Dickinson Rural Fire Department would have jurisdiction. The Dickinson Rural Fire Department provides fire and rescue to parts of Stark County, Dunn County and neighboring communities. This Rural Fire and Rescue Department has 40 volunteer fireman which can be contacted at 701-456-7877. The fire chief is Andy Paulson and assistant Chief is Kevin Berger. The department has 10 captains. They operate out of two fire stations: The main station is at 706 South Main and the North fire station is at 2489 3rd Avenue West. They have one fire truck housed at the Dickinson City fire Department at 25 2nd Avenue West. The Dickinson Rural Fire and Rescue Department serves a 380 square mile area in Stark and Dunn County. The fire department has 3 pumper trucks, 1 tanker truck, 3 grass trucks, 1 equipment truck, 1 rescue truck, 1 tow vehicle, 2 Polaris 4 x4 grass units and a rescue transport unity, 1 dive rescue truck, 2 dive rescue boats, and 1 dive rescue command trailer. The Dickinson Rural Fire Department provides mutual aid with the cities of Dickinson F.D., Gladstone F.D., New England F.D., South heart F.D. and Killdeer F.D. (Dunn County). They also provide Dive Rescue service to southwestern North Dakota. Response time will very on location along the pipeline, personnel, and weather conditions. Fire response personnel have state-of-the-art paging systems. The Dickinson Rural fire department estimated response time is between 20 to 30 minutes to a pipeline site in Stark County. At least 3 of the initial fire department personnel responding would have had the 24 hour First Responder operations level HAZMAT training.

The Dickinson Rural Fire Department will have the City of Dickinson's Fire department also respond for a fire caused by the BOE pipeline through mutual aid agreement. The City of Dickinson's Fire Department has 6 full time, 41 volunteer, and 2 Chaplin fireman. The fire chief is Robert Sivak and he can be contacted at 701-456-7848. The Dickinson fire department is stationed at 25 2nd Avenue West in Dickinson. This fire department has 4 pumper trucks, 1 regional response vehicle, 1 Decon trailer, 1 tow vehicle, and 2 inspection vehicles. An alert crew would be the initial responder to a fire call. Response time is estimated between 20 to 30 minutes.

If the incident is beyond the control of the local Fire Department or Mutual Aid the Incident Commander has the option to mobilize an Oil and Gas industry Fire Specialist such as Wild Well Control. If he/she determines this is the proper course of action mobilization of resources to the site will require 24 hours for arrival. Wild Well Control's Emergency Number is 1-281-784-4700. Wild Well Control is based out of Houston Texas. The corporate office phone number is

281-784-4700. Wild well Control has facilities in Texas, Louisiana, Pennsylvania, and Casper, Wyoming. Wild Well Control has worked in the Bakken area previously.

APPENDIX D

DISCHARGE VOLUME CALCULATIONS

Discharge Volume Calculations

Area
 $A = \pi d^2 / 4 = \pi r^2$
 1 barrel = 42 gallons
 1 gallon = 0.13368 ft³
 1 ft³ = 7.4805 gallons

Perimeter
 $P = \pi d$
 $Q = VA$
 $Q = \text{flow rate} = \text{ft}^3/\text{sec}$
 $V = \text{velocity} = \text{ft.}/\text{sec}$
 $A = \text{ft}^2$

Diameter
 $d \text{ inside} = 16 - 2(0.281) = 15.438''$
 16" pipe diameter outside with 0.281" wall thickness
 20" pipe diameter outside with 0.375" wall thickness
 20" pipe starts at 1785+50

Section Line #1 Volume

42569 feet of length

$$L \times \frac{\pi d^2}{4} = 42569 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 42569 \left(\frac{5.199}{4}\right) = 55,335.38 \text{ ft}^3$$

$$55335.38 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 413,936.32 \text{ gallons} = 9,856 \text{ barrels}$$

Section Line #2 Volume

53160-42569 = 10591 feet of length

$$L \times \frac{\pi d^2}{4} = 10591' \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 10591 \left(\frac{5.199}{4}\right) = 13,767.2 \text{ ft}^3$$

$$13767.2 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 102,985.73 \text{ gallons} = 2,452 \text{ barrels}$$

Section Line #3 Volume

74634-53160 = 21474 feet of length

$$L \times \frac{\pi d^2}{4} = 21474 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 21474 \left(\frac{5.199}{4}\right) = 27,914 \text{ ft}^3$$

$$27914 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 208,810.84 \text{ gallons} = 4,972 \text{ barrels}$$

Section Line #4 Volume

137389 - 74634 = 62755 feet of length

$$L \times \frac{\pi d^2}{4} = 62755 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 62755 \left(\frac{5.199}{4}\right) = 81,571 \text{ ft}^3$$

$$81571 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 610,233 \text{ gallons} = 14,529 \text{ barrels}$$

Section Line #5 Volume

149201 - 137389 = 11812 feet of length

$$L \times \frac{\pi d^2}{4} = 11812 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 11812 \left(\frac{5.199}{4}\right) = 15,354 \text{ ft}^3$$

$$15354 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 114,859 \text{ gallons} = 2,735 \text{ barrels}$$

Section Line #6 Volume

178550-149201 = 29349 feet of length

$$L \times \frac{\pi d^2}{4} = 29349 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 29349 \left(\frac{5.199}{4}\right) = 38,151 \text{ ft}^3$$

$$38151 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 285,386 \text{ gallons} = 6,795 \text{ barrels}$$

Section Line #7 Volume

183608-178550 = 5058 feet of length

$$L \times \frac{\pi d^2}{4} = 5058 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 5058 \left(\frac{5.199}{4}\right) = 6,575 \text{ ft}^3$$

$$6575 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 49,182 \text{ gallons} = 1,171 \text{ barrels}$$

Section Line #8 Volume

202024-183608 = 18416 feet of length

$$L \times \frac{\pi d^2}{4} = 18416 \times \frac{\pi \left(\frac{15.438}{12}\right)^2}{4} = 18416 \left(\frac{5.199}{4}\right) = 23,939 \text{ ft}^3$$

$$23939 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 179,175 \text{ gallons} = 4,264 \text{ barrels}$$

Oxy Interconnect

Pipeline from tank to BOE Pipeline ≈ 1.5 miles.

Assumed: Standard 8" pipe.

Valving would prevent tank discharge into pipeline.

D inside = 8.125"

5280 x 1.5 = 7920 feet of length

$$L \times \frac{\pi d^2}{4} = 7920 \times \frac{\pi \left(\frac{8.125}{12}\right)^2}{4} = 7920 \left(\frac{1.4402}{4}\right) = 2,852 \text{ ft}^3$$

$$2852 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 21,332 \text{ gallons} = 508 \text{ barrels}$$

Belle Fourche Pipeline Interconnect

200' to 400' of 10" pipe.

Assumed: d=10" inside

$$L \times \frac{\pi d^2}{4} = 400 \times \frac{\pi \left(\frac{10}{12}\right)^2}{4} = 400 \left(\frac{2.1817}{4}\right) = 218 \text{ ft}^3$$

$$218 \text{ ft}^3 \times \frac{7.4805 \text{ gallons}}{1 \text{ ft}^3} = 1,632 \text{ gallons} = 39 \text{ barrels}$$

APPENDIX E

WORKSHEET TO PLAN VOLUME OF RESPONSE RESOURCES FOR WORST CASE DISCHARGE

Part I. Background information: Largest Possible Discharge Volume 20,280 barrels (851,741 gal.) Crude Oil

Step (A). Calculate Worst Case Discharge in barrels (in accordance with 40 CFR 112.20 Appendix D)

20,280
(A)

Step (B). Oil Group¹ (From Table 3 of 40 CFR 112.20 Appendix E) 2

Step (C). Operating Area (choose one) x Nearshore/Inland or Rivers
Great Lakes and Canals

Step (D). Percentages of Oil (From Table 2 of 40 CFR 112.20 Appendix E)

Percentage Lost to Natural Dissipation	Percentage Recovered Floating Oil	Percent Oil Onshore
50	50	30
(D1)	(D2)	(D3)

Step (E1). On-Water Oil Recovery: Step (D2) x Step (A) 10,140

100 (E1)

Step (E2). Shoreline Recovery: Step (D3) x Step (A) 6,084

¹ Pipeline is to contain ND crude oil. North Dakota crude oil has a specific gravity of 0.78 to 0.86; therefore, Group 2 was chosen.

100

(E2)

Step (F). Emulsification Factor

1.8

(From Table 3 of 40 CFR 112.20 Appendix E)

(F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor

(From Table 4 of 40 CFR 112.20 Appendix E)

Tier 1

0.15

(G1)

Tier 2

0.25

(G2)

Tier 3

0.40

(G3)

Part II. On-Water Oil Recovery Capacity (barrels/day)

-

Tier 1	Tier 2	Tier 3
2,738	4,563	7,301
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III. Shoreline Cleanup Volume (barrels)

10,951
Step (E2) x Step (F)

Part IV. On-Water Response Capability Caps by Operating Area

(From Table 5 of 40 CFR 112.20 Appendix E)

Tier 1	Tier 2	Tier 3
12,500	25,000	50,000
(J1)	(J2)	(J3)

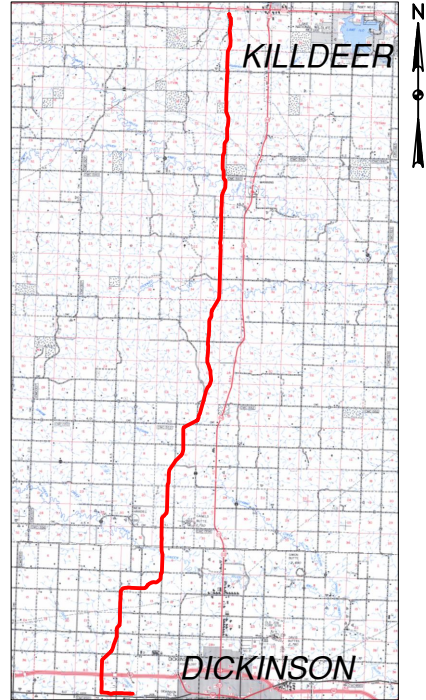
Part V On-Water Amount Needed to be identified, but not contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
0	0	0
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 2 - Step (J3)

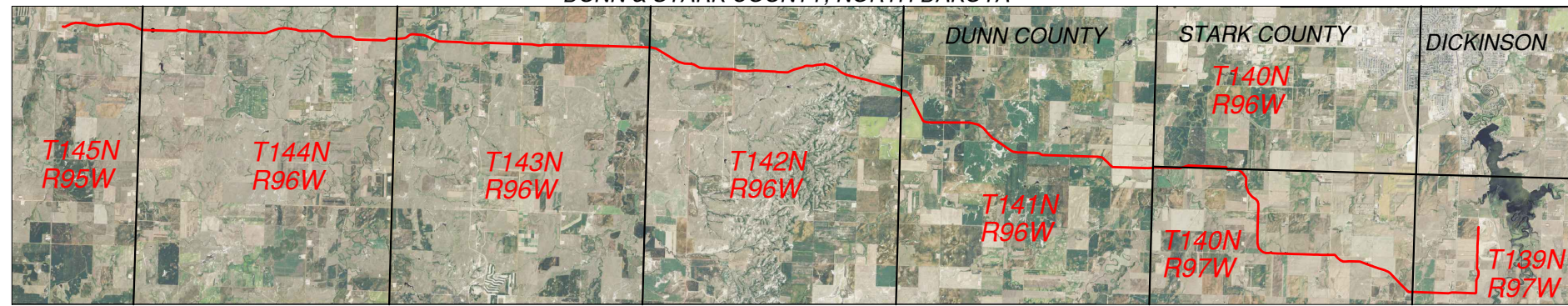
APPENDIX F

BAKKEN OIL EXPRESS ALIGNMENT SHEETS

Location Map



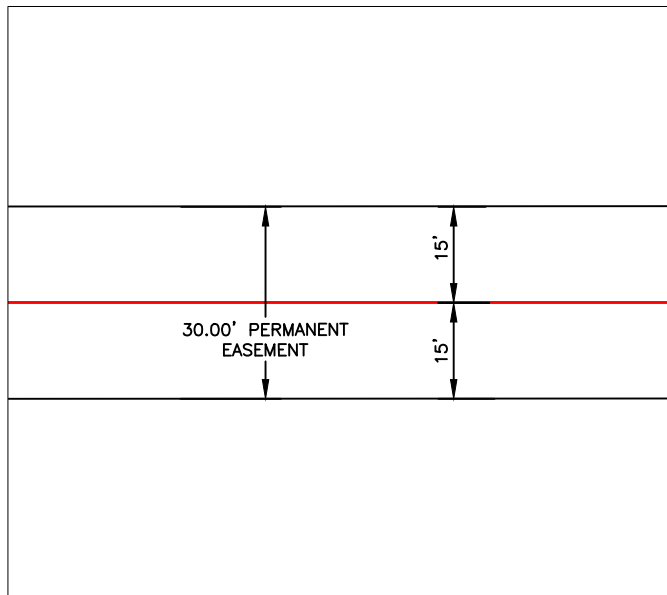
BOE PIPELINE PHASE I
AS-CONSTRUCTED ALIGNMENT SHEETS
 DUNN & STARK COUNTY, NORTH DAKOTA



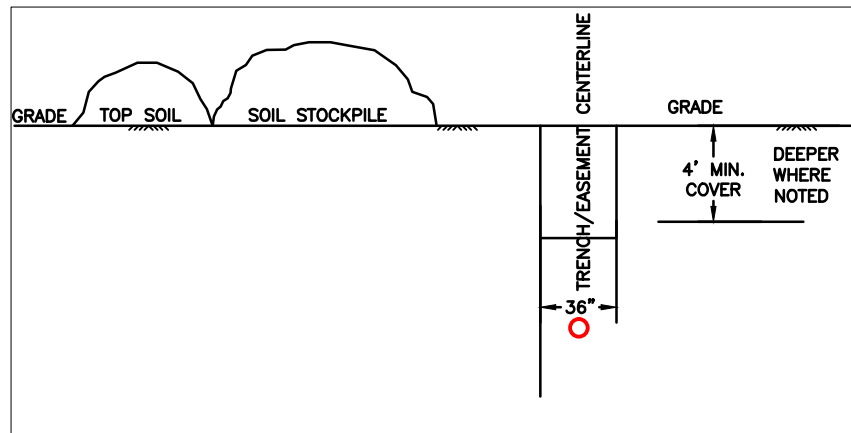
FINAL
6/11/15

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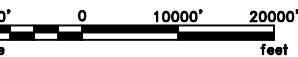
EASEMENT TRENCH PLAN VIEW
 NTS



EASEMENT TRENCH PROFILE
 NTS

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NOTE:
 Survey is based on North Dakota State Plane System, NAD83 (2011), North Dakota South Zone, US Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000165099 to go from grid distance to ground distance.



AS-CONSTRUCTED

LEGEND

—	PROPERTY LINE	—*—	EXISTING FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE	▨	WETLAND EASEMENT
- · - · -	EASEMENT LINE	—R—	RAILROAD	▨	TEST LEAD
—	PIPELINE CENTERLINE	—E—	OVERHEAD ELECTRIC	▨	VALVE SETTING
—W—	WATER LINE	—U—	UTILITY POLE	▨	MARKER POST
—F—	FOREIGN PIPELINE	—B—	AS-CONSTRUCTED BORE		
—	EXISTING ROAD	—M—	MARKER POST		
—	UNDERGROUND COM. LINE				



MATERIAL SUMMARY			REFERENCE DRAWINGS		
MK.NO.	QTY.	DESCRIPTION	MK.NO.	DWG. NO.	DESCRIPTION
1	165,618'	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FBE	V1	95	16" VALVE SETTING W/ FUTURE, DETAIL "A"
2	20,121'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO	V2	98	16" VALVE SETTING, DETAIL "B"
3	21,188'	20" OD, 0.375" W.T. API 5L X60, 13-15 MIL FBE	V3	104	16" RISER, DETAIL "C"
4	2,747'	20" OD, 0.375" W.T. API 5L X65, 13-15 MIL FBE, 30-35 MIL ARO	V4	105	20"X16" TRUE OIL VALVE SETTING, DETAIL "D"
T1	30	TYPE-1 TEST LEAD	V5	107	20" VALVE SETTING, DETAIL "E"
			V6	110	20" RISER, DETAIL "F"

REVISIONS		
NO.	DATE	DESCRIPTION
0	6/11/15	AS-CONSTRUCTED

SCALE: 1:20000
DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 1

BOE PIPELINE, LLC
 BOE PIPELINE PHASE I
 INDEX SHEET
 DUNN & STARK COUNTY, NORTH DAKOTA

KLJ
 4585 Coleman Street
 Bismarck, ND 58502
 © KLJ 2015

BOE PIPELINE PHASE I AS-CONSTRUCTED ALIGNMENT SHEETS

DUNN & STARK COUNTY, NORTH DAKOTA

SPECIFIC LANDOWNER'S STIPULATIONS		
NAME	LEGALS	COMMENTS
MANLEY TRUCHAN	E1/2W1/2 & W1/2W1/2 LESS 4.02 ACRES & LESS 18.77 ACRES TRACT 28-145-95, NW1/4 & SW1/4 33-145-95	CONTACT BEFORE STARTUP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. 701-764-5943 HOME. 701-260-2221 CELL.
ALVIN SADOWSKY	S1/2NW1/4, LOTS 3 & 4 & SW1/4 1-144-96	CONTACT BEFORE STARTUP AND WITH ANY ISSUES THAT MAY ARISE. NO ABOVE GROUND STRUCTURES. SEED WITH WESTERN WHEAT GRASS AND GREEN NEEDLE, 3 LBS. PER ACRE MIXED WITH ALFALFA AND CLOVER. SINGLE PIPELINE ONLY. 701-764-5903 HOME. 701-590-9568 CELL.
TOBIAS & PEGGY SUE STROH	NW1/4 LESS 9.50 ACRES, N1/2SW1/4, SW1/4SW1/4 LESS 0.97 ACRES 12-144-96	CONTACT BEFORE STARTUP, AND WITH ANY ISSUES THAT MAY ARISE. 4" ROCK, NOXIOUS WEED CONTROL, ACCESS LIMITED TO EASEMENT ONLY UNLESS APPROVED BY OWNER. RESEEDING TO BE 2.5 LB. OF PURE LIVE SEED, PER ACRE OF EACH WESTERN WHEAT, BAD RIVER BLUE GRAMMA AND GREEN NEEDLE CERTIFIED WEED FREE SEED AND MULCH. BORING MUST START AND END BEYOND TREE LINE. NO TREES ARE TO BE CUT DOWN. MINIMUM 4 FOOT BURY. SINGLE PIPELINE ONLY. 701-225-2480 HOME. 701-590-1151 CELL.
H & P HOLDINGS	9.50 ACRES 12-144-96	CONTACT BEFORE STARTUP AND WITH ANY ISSUES THAT MAY ARISE. BORE ONLY. BORE ALL OF PROPERTY. SHANE 970-462-5633 CELL. EDDIE 970-462-5005 CELL.
LANCE & CHRISTY LARSEN	NW1/4 & SW1/4 13-144-96, NW1/4 24-144-96	BE SURE TO CLOSE ALL GATES.
WALTER STEFFEN	SW1/4 24-144-96, NW1/4 25-144-96	CONTACT BEFORE STARTUP AND WITH ANY ISSUES THAT MAY ARISE. NOXIOUS WEED CONTROL. RESEED WITH COUNTY EXTENSION RECOMMENDATIONS. 701-573-4596
AGNES M SCOTT	SW1/4 25-144-96	SINGLE PIPELINE ONLY. PICK UP ROCKS BIGGER THAN 4".
LEO W. & SUSAN E. KRENZEL	SE1/4 26-144-96	CONTACT BEFORE STARTUP AND WITH ANY ISSUES THAT MAY ARISE. BORE ONLY. SINGLE PIPELINE. 701-974-3681.
ROGER & LINDA BREW	NE1/4 35-144-96	
AGNES M. & BILLY K. SCOTT AS TRUSTEES OF WILLIAM D. & AGNES M. SCOTT FAMILY TRUST	SE1/4 LESS 2.51 ACRES 35-144-96	
ND TRUST LANDS	SW1/4 36-144-96	
GERALD & DONNA J ELKINS	LOTS 3 & 4, S1/2NW1/4 1-143-96	CONTACT BEFORE STARTUP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. 307-682-0335 HOME. 307-660-0579 CELL.
SHAWN & JENNIFER BREW	SW1/4 LESS 13 ACRES IN SE1/4SW1/4 1-153-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. NO ABOVE GROUND APPURTENANCES. IF, DURING 2 YEARS AFTER INSTALLATION, THE SETTLING OR COMPACTION OF BACKFILL OF TRENCH CAUSES DEPRESSIONS IN OWNER'S FIELD, THEN UPON NOTIFICATION BY OWNER, GRANTEE SHALL FILL SUCH DEPRESSIONS WITH TOPSOIL. ALL GATES AND FENCING SPECS MUST BE REVIEWED AND APPROVED BY LAND OWNER PRIOR TO INSTALLATION. 701-573-4439
MELVIN KADRMAS	S1/2SE1/4SE1/4 2-143-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. 701-573-4529
GEORGE KUBIK	NE1/4 & SE1/4 11-143-96	
WILLIAM & BEATRICE KUBISCHTA	NE1/4 LESS 1.50 ACRES & N1/2SE1/4 14-143-96	

SPECIFIC LANDOWNER'S STIPULATIONS		
NAME	LEGALS	COMMENTS
BYRON & CARLA KUBIK	S1/2SE1/4 14-143-96, NE1/4 LESS 2.51 ACRES & SE1/4 23-143-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. NO ABOVE GROUND APPURTENANCES. IF, DURING 2 YEARS AFTER INSTALLATION, THE SETTLING OR COMPACTION OF BACKFILL OF TRENCH CAUSES DEPRESSIONS IN OWNER'S FIELD, THEN UPON NOTIFICATION BY OWNER, GRANTEE SHALL FILL SUCH DEPRESSIONS WITH TOPSOIL. 701-225-3759
WARREN & LES SCHNEIDER	NE1/4 & SE1/4 26-143-96 ALL 35-143-96	CONTACT BEFORE STARTUP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. NO ABOVE GROUND APPURTENANCES. INSTALL 24" CULVERT TO REPLACE OLD CULVERT AT CREEK. EASEMENT EDGE 33 FT. FROM EAST LINE OF SECTION. GRANTEE WILL BUILD A NEW 4 WIRE, RED BARB, AMERICAN MADE WIRE FENCE, WITH STEEL FENCE POSTS SPACED EVERY 16 1/2 FEET (ONE ROD) ALONG THE EAST LINE OF SECTION 35, T143N R96W. NEED TO BE INFORMED AND PRESENT BEFORE THE START OF FENCING OPERATIONS. LES 701-573-4549 HOME, 701-260-0354 CELL. WARREN 701-573-4328 HOME.
DAVID & LAURA SADOWSKY	LOTS 1 & 2, S1/2NE1/4, 2-142-9 NW 1/4 & SE1/4, 14-142-96	701-573-4331 HOME. 701-264-9677 CELL.
LAVONNE BULLINGER	SE1/4 2-142-96	
DAVID & PAULINE SADOWSKY FAMILY TRUST	ALL 11-142-96	RECLAMATION IS CRITICAL. 701-483-3769 HOME.
MARK & TINA KOVASH	NE1/4 14-142-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. APPROVE PASTURE GRASS SEED WITH LANDOWNER. 701-573-4531 HOME.
HARLAN & BUDDINE BULLINGER	ALL 23-142-96, W1/2 LESS 19.96, 76.76, 94.28, 20.70 ACRES, NE1/4 & SE1/4 26-142-96, NW1/4 35-142-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. NOXIOUS WEED CONTROL. SINGLE PIPELINE ONLY. 48" MINIMUM BURY. RESEED ALL DISTURBED SURFACES UNTIL RE-ESTABLISHING VEGETATION. LADAK SEED WILL BE PLANTED IN ALL HAY LAND AREAS. ALL REMAINING LANDS SHALL BE PLANTED IN NATIVE GRASSES AS PER RECOMMENDATION OF THE DUNN COUNTY NRCS OFFICE. 701-573-4346 HOME. 701-290-9557 CELL.
LEE & CORRINE PAVLICEK	SW1/4 LESS 2.52 ACRES & 1.98 ACRES 35-142-96, S1/2NW1/4 LOTS 3 & 4 LESS 2.52 ACRES 2-141-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. 701-483-2467
DON & MARJORIE BINSTOCK	S1/2NE1/4, LOTS 1 & 2 LESS 2.52 ACRES & S1/2NW1/4, LOTS 3 & 4 LESS 2.52 ACRES 3-141-96	LOCATE ALL UTILITIES. 701-483-2358 HOME. 701-290-4833 CELL.
KENNETH & RENA KADRMAS	SW1/4 3-141-96, NW1/4 LESS 1 ACRE & SW1/4 10-141-96 NE1/4 & SE1/4 21-141-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. 701-225-2883
WILLARD & EMMA JAEGER	NE1/4SE1/4 16-141-96 NW1/4 15-141-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. BECKY 701-225-9256 HOME. 701-290-6095 CELL.
JOHN JR. & EMMA JAEGER	E1/2NE1/4 16-141-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. (SON) MARK 701-260-0449 CELL.

AS-CONSTRUCTED

FINAL
6/11/15

LEGEND 	MATERIAL SUMMARY <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>MK. NO.</th> <th>QTY.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	MK. NO.	QTY.	DESCRIPTION																															REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DATE	DESCRIPTION																<small>SCALE: NONE</small> <small>DRAWN BY: D. BUNKERS</small> <small>DATE: 6/11/15</small> <small>CHECKED BY: D. DIONNE</small> <small>APPROVED BY: S. BESMER</small> <small>KLJ JOB NUMBER: 1713140</small> <small>REVISION: - SHEET: 2</small>	 BOE PIPELINE, LLC BOE PIPELINE PHASE I LANDOWNER STIPULATION DUNN & STARK COUNTY, NORTH DAKOTA	 <small>4585 Coleman Street Bismarck, ND 58502</small> <small>© KLJ 2015</small>
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BOE PIPELINE PHASE I AS-CONSTRUCTED ALIGNMENT SHEETS

DUNN & STARK COUNTY, NORTH DAKOTA

SPECIFIC LANDOWNER'S STIPULATIONS		
NAME	LEGALS	COMMENTS
MARTHA A. KOSTELECY	W1/2SE1/4 & SE1/4SE1/4 16-141-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. (GARY) 701-225-3344
DELMAR FICEK	NE1/4 28-141-96 LOTS 1, 2, 7, 8, 9, & 10 1-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. NO ABOVE GROUND SURFACE STRUCTURES. 701-225-3865.
MARY KUPPER, ETAL	LOTS 12, 13, & 14 7-140-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. MARTIN (CORK) 218-496-2321 CELL. CARMEN, POA FOR MARY 515-252-4777 CELL
NORBERT & GLADYS ZASTOUPIL	SE1/4 LESS .42 & 2.09 ACRES 28-141-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. STRIP TOPSOIL FIRST. RECLAMATION IS CRITICAL. 701-483-3932 HOME. 701-290-1229 CELL.
EUGENE & KATHLEEN KINZEL	W1/2E1/2 LESS 1.06 ACRES, SW1/4, NW1/4 LESS 2.12 ACRES & LESS 5 ACRES TRACT (440X495) 33-141-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. 5 FT MINIMUM BURY. NO ABOVE GROUND APPURTENANCES. CONSTRUCTION NEEDS TO BE COMPLETED 60 DAYS FROM COMMENCEMENT OF CONSTRUCTION. 701-225-9764 HOME. 701-260-1550 CELL.
LEO EHRMANTRAUT, ETAL	LOT 3 7-140-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. BORE ONLY. NO ABOVE GROUND APPURTENANCES. LEO 701-290-2710 CELL.
MJK FAMILY LIMITED PARTNERSHIP	SE1/4 12-140-97 LOTS 1 & 2 7-140-96	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. MARTY KUPPER 952-841-2160
ALLEN & JOSELLE SCHMIDT	NE1/4 LESS 2 TRACTS 133.3 ACRES 13-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. 5 FT MINIMUM BURY. BORE IF POSSIBLE. 701-573-4584 HOME. 701-290-7145 CELL.
DOUGLAS & KATHLEEN SCHMIDT	NW1/4 13-140-97, NW1/4 & NE1/4 14-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. 701-483-3586 HOME, 701-290-2267 CELL.
CLARENCE TUHY	SW1/4 14-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. STRIP TOPSOIL FIRST. RECLAMATION IS CRITICAL. 701-483-3932 HOME. 701-290-1229 CELL.
STATE OF NORTH DAKOTA	NW1/4 & SW1/4 23-140-97	
ARTHUR S RIDL, ETAL	NW1/4 26-140-97, NE1/4 27-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. BROTHERS KURT AND KEITH WOULD LIKE TO BE ON SITE WHEN TOPSOIL IS PULLED OFF. RECLAMATION IS CRITICAL. 701-483-5836 HOME. 701-260-8277 CELL.
FALLER FAMILY REVOKABLE TRUST	SE1/4 27-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. BUD FALLER 701-225-8563 HOME.
ROGETTE SHANNON	NE1/4 & SE1/4 34-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. LANDOWNER WOULD LIKE TO BE PRESENT WHEN TOPSOIL IS STRIPPED. DO NOT WANT ANY FROZEN SOIL RECLAIMED IN THE DITCH.
GORDON & RODNEY KOSTELECKY	SW1/4 34-140-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. SINGLE PIPELINE ONLY. GORDON 701-483-7028
RUDOLPH PAZOUREK	NW1/4 3-139-97	701-483-9182 HOME.
MELISSA CHRUSZCH	SW1/4 LESS SW1/4SW1/4 & 1 TRACT 3-139-97	NO RESEEDING NECESSARY.

SPECIFIC LANDOWNER'S STIPULATIONS		
NAME	LEGALS	COMMENTS
DARRELL A CHRUSZCH	SW1/4SW1/4 3-139-97	
KEN & LEONA BARNHART	W1/2NW1/4 10-139-97	701-483-3782 HOME.
EDOG MANIFEST, LLC	SW1/4 & SE1/4 10-139-97	
BOE MATERIALS LLC	SW1/4 LESS 16.287 11-139-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. JOHN WADSWORTH 316-295-2911 OFFICE. 316-619-5944 CELL.
BAKKEN OIL EXPRESS LLC	SE1/4 11-139-97	CONTACT BEFORE START UP AND WITH ANY ISSUES THAT MAY ARISE. JOHN WADSWORTH 316-295-2911 OFFICE. 316-619-5944 CELL.

AS-CONSTRUCTED

FINAL
6/11/15

<p>LEGEND</p> <ul style="list-style-type: none"> — PROPERTY LINE - - - SECTION LINE - - - EASEMENT LINE — PIPELINE CENTERLINE — WATER LINE — FOREIGN PIPELINE — EXISTING ROAD --- UNDERGROUND COM. LINE — * — EXISTING FENCE — FO — FIBER OPTIC COM. LINE — RAILROAD — OVERHEAD ELECTRIC — UTILITY POLE — AS-CONSTRUCTED BORE — MARKER POST — AVOIDANCE AREA — WETLAND EASEMENT — TEST LEAD — VALVE SETTING 	 <p>811 CALL BEFORE YOU DIG</p>	<p>MATERIAL SUMMARY</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>MK.NO.</th> <th>QTY.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	MK.NO.	QTY.	DESCRIPTION																												<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DATE	DESCRIPTION																<p>SCALE: NONE DRAWN BY: D. BUNKERS DATE: 6/11/15 CHECKED BY: D. DIONNE APPROVED BY: S. BESMER KLJ JOB NUMBER: 1713140 REVISION: — SHEET: 3</p>	 <p>BOE PIPELINE, LLC</p> <p>BOE PIPELINE PHASE I LANDOWNER STIPULATION DUNN & STARK COUNTY, NORTH DAKOTA</p>	 <p>KLJ</p> <p>4585 Coleman Street Bismarck, ND 58502</p>
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BOE PIPELINE PHASE I AS-CONSTRUCTED ALIGNMENT SHEETS

DUNN & STARK COUNTY, NORTH DAKOTA

BORE LIST						
BORE NO.	STATIONING	TYPE	COMMENTS	LENGTH	SECTION	SHEET
1	31+11.90	PRIVATE	DRAINAGE	492'	28-145-95	7
2	44+60.71	PRIVATE	ACCESS ROAD	252'	28-145-95 33-145-95	7
3	150+07.99	PRIVATE	MURPHY CREEK	502'	1-144-96	9-10
4	155+69.40	COUNTY	7TH ST. SW	245'	1-144-96 12-144-96	10
5	177+74.92	PRIVATE	H & P HOLDINGS	316'	12-144-96	10
6	198+18.15	PRIVATE	DRAINAGE	708'	12-144-96	10-11
7	235+80.85	PRIVATE	DRAINAGE	784'	13-144-96	11
8	277+90.06	PRIVATE	DRAINAGE	755'	24-144-96	12
9	285+37.98	PRIVATE	DRAINAGE	667'	24-144-96	12
10	328+03.82	PRIVATE	WOLF CREEK	529'	25-144-96	13
11	370+58.81	COUNTY	11TH ST. SW	374'	25-144-96 26-144-96 35-144-96	14
12	413+32.88	COUNTY	109TH AVE. SW	354'	35-144-96 36-144-96	15
13	424+25.59	COUNTY	12TH ST. SW	301'	36-144-96 1-143-96	15
14	476+03.96	PRIVATE	KNIFE RIVER	622'	1-143-96 2-143-96	16
15	519+81.49	PRIVATE	CREEK	646'	11-143-96	17
16	532+83.92	COUNTY	14TH ST. SW	179'	11-143-96 14-143-96	17
17	585+73.55	COUNTY	15TH ST. SW	269'	14-143-96 23-143-96	18
18	691+50.68	COUNTY	17TH ST. SW	215'	26-144-96 35-143-96	20
19	726+36.47	PRIVATE	AVOIDANCE AREAS & CROOKED CREEK	2142'	35-143-96	21
20	744+21.00	COUNTY	18TH ST. SW	275'	35-143-96 2-142-96	21
21	844+23.50	PRIVATE	DRAINAGE	446'	11-142-96	23
22	855+18.76	COUNTY	20TH ST. SW	251'	11-142-96 14-142-96	24
23	916+15.35	PRIVATE	TERRAIN	639'	23-142-96	25
24	982+21.28	PRIVATE	TERRAIN	553'	26-142-96	26
25	999+92.25	PRIVATE	RAVINE	848'	26-142-96	26-27
26	1024+08.54	PRIVATE	AVOIDANCE AREA	416'	35-142-96	27
27	1074+35.72	COUNTY	24TH ST. SW	299'	35-142-96 2-141-96	28
28	1096+34.76	PRIVATE	WETLAND	435'	3-141-96	28
29	1148+27.94	COUNTY	25TH ST. SW	165'	3-141-96 10-141-96	29
30	1183+18.63	PRIVATE	RUSSIAN SPRING CREEK	495'	10-141-96	30

BORE LIST						
BORE NO.	STATIONING	TYPE	COMMENTS	LENGTH	SECTION	SHEET
31	1374+99.53	COUNTY	29TH ST. SW	301'	28-141-96 33-141-96	34
32	1395+44.65	PRIVATE	WETLAND	334'	33-141-96	34
33	1444+84.66	PRIVATE	GREEN RIVER	1563'	1-140-97	36
34	1493+75.27	COUNTY	31ST ST. SW	166'	6-140-97 7-140-97	36
35	1522+27.08	COUNTY	114TH AVE. SW & PROPERTY	330'	7-140-97 12-140-97	37
36	1565+48.36	PRIVATE	WATERLINE	377'	12-140-97 13-140-97	38
37	1599+02.19	COUNTY	115TH AVE. SW	224'	13-140-97 14-140-97	39
38	1646+95.24	PRIVATE	DRAINAGE	462'	14-140-97	40
39	1674+04.45	PRIVATE	DRAINAGE	573'	14-140-97	40
40	1734+78.78	COUNTY	34TH ST. SW	377'	23-140-97 26-140-97	41
41	1744+66.97	COUNTY	116TH AVE. SW	240'	26-140-97 27-140-97	41
42	1791+21.57	COUNTY	35TH ST. SW	204'	27-140-97 34-140-97	42
43	1831+41.23	PRIVATE	DUCK CREEK	595'	34-140-97	43
44	1854+69.94	STATE	INTERSTATE 94	519'	34-140-97 3-139-97	44
45	1907+30.13	STATE	HIGHWAY 10	270'	3-139-97 10-139-97	45
46	1975+21.57	COUNTY	116TH AVE. SW	941'	10-139-97 11-139-97	46
47	2015+39.13	COUNTY	BRIDGE	218'	11-139-97	47

FINAL
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DUNN & STARK COUNTY, NORTH DAKOTA

TEST STATION SCHEDULE		
STATION	TYPE	NOTE
45+51.50	TYPE-1	FOREIGN CROSSING ONEOK PIPELINE
288+91.92	TYPE-1	FENCE LINE
309+85.38	TYPE-1	POWER LINE CROSSING
425+52.21	TYPE-1	12TH ST. SW CROSSING
479+37.95	TYPE-1	FENCE LINE
531+93.45	TYPE-1	14TH ST. SW CROSSING
577+85.70	TYPE-1	FOREIGN CROSSING ONEOK PIPELINE
579+42.34	TYPE-1	FOREIGN CROSSING PIPELINE
626+99.19	TYPE-1	FOREIGN CROSSING WBI PIPELINE
692+72.05	TYPE-1	17TH ST. SW CROSSING
745+79.35	TYPE-1	FOREIGN CROSSING ONEOK PIPELINE
801+70.70	TYPE-1	FOREIGN CROSSING HILAND PARTNERS PIPELINE
846+25.61	TYPE-1	FOREIGN CROSSING HILAND PARTNERS PIPELINE
971+50.65	TYPE-1	FOREIGN CROSSING HILAND PARTNERS PIPELINE
1072+69.99	TYPE-1	24TH ST. SW CROSSING
1149+20.68	TYPE-1	25TH ST. SW CROSSING

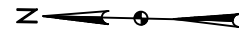
TEST STATION SCHEDULE		
STATION	TYPE	NOTE
1203+34.20	TYPE-1	26TH ST. SW CROSSING
1562+86.84	TYPE-1	FENCE LINE
1660+54.49	TYPE-1	FOREIGN CROSSING PLAINS PIPELINE
1662+30.15	TYPE-1	FOREIGN CROSSING BRIDGER PIPELINE
1679+99.68	TYPE-1	FOREIGN CROSSING BRIDGER PIPELINE
1682+18.21	TYPE-1	FENCE LINE
1733+39.33	TYPE-1	34TH ST. SW CROSSING
1770+95.92	TYPE-1	FOREIGN CROSSING ONEOK PIPELINE
1780+68.65	TYPE-1	FOREIGN CROSSING CLINE PIPELINE
1786+17.78	TYPE-1	FOREIGN CROSSING BELLE FOURCHE PIPELINE
1851+99.90	TYPE-1	I-94 CROSSING
1905+61.04	TYPE-1	HWY-10 CROSSING
1973+18.70	TYPE-1	FOREIGN CROSSING MDU PIPELINE

FINAL
6/11/15

AS-CONSTRUCTED

<p>LEGEND</p> <table style="width: 100%; font-size: 8pt;"> <tr> <td>—</td><td>PROPERTY LINE</td> <td>—*—</td><td>EXISTING FENCE</td> <td></td><td>AVOIDANCE AREA</td> </tr> <tr> <td>- - -</td><td>SECTION LINE</td> <td>—FO—</td><td>FIBER OPTIC COM. LINE</td> <td></td><td>WETLAND EASEMENT</td> </tr> <tr> <td>- · - · -</td><td>EASEMENT LINE</td> <td>—R—</td><td>RAILROAD</td> <td></td><td>TEST LEAD</td> </tr> <tr> <td>—</td><td>PIPELINE CENTERLINE</td> <td>—E—</td><td>OVERHEAD ELECTRIC</td> <td></td><td>VALVE SETTING</td> </tr> <tr> <td>—W—</td><td>WATER LINE</td> <td>—</td><td>UTILITY POLE</td> <td></td><td>MARKER POST</td> </tr> <tr> <td>—R—</td><td>FOREIGN PIPELINE</td> <td>—</td><td>AS-CONSTRUCTED BORE</td> <td></td><td></td> </tr> <tr> <td>—</td><td>EXISTING ROAD</td> <td></td><td></td> <td></td><td></td> </tr> <tr> <td>— · — · —</td><td>UNDERGROUND COM. LINE</td> <td></td><td></td> <td></td><td></td> </tr> </table>	—	PROPERTY LINE	—*—	EXISTING FENCE		AVOIDANCE AREA	- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE		WETLAND EASEMENT	- · - · -	EASEMENT LINE	—R—	RAILROAD		TEST LEAD	—	PIPELINE CENTERLINE	—E—	OVERHEAD ELECTRIC		VALVE SETTING	—W—	WATER LINE	—	UTILITY POLE		MARKER POST	—R—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE			—	EXISTING ROAD					— · — · —	UNDERGROUND COM. LINE					<p style="text-align: center; font-weight: bold;">MATERIAL SUMMARY</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: 8pt;"> <thead> <tr> <th>MK.NO.</th> <th>QTY.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	MK.NO.	QTY.	DESCRIPTION																									<p style="text-align: center; font-weight: bold;">REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: 8pt;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	DATE	DESCRIPTION																<p>SCALE: NONE DRAWN BY: D. BUNKERS DATE: 6/11/15 CHECKED BY: D. DIONNE APPROVED BY: S. BESMER KLJ JOB NUMBER: 1713140 REVISION: — SHEET: 5</p>	 BOE PIPELINE, LLC BOE PIPELINE PHASE I TEST STATION SCHEDULE DUNN & STARK COUNTY, NORTH DAKOTA	 <small>4585 Coleman Street Bismarck, ND 58502</small> <small>© KLJ 2015</small>
—	PROPERTY LINE	—*—	EXISTING FENCE		AVOIDANCE AREA																																																																																													
- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE		WETLAND EASEMENT																																																																																													
- · - · -	EASEMENT LINE	—R—	RAILROAD		TEST LEAD																																																																																													
—	PIPELINE CENTERLINE	—E—	OVERHEAD ELECTRIC		VALVE SETTING																																																																																													
—W—	WATER LINE	—	UTILITY POLE		MARKER POST																																																																																													
—R—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE																																																																																															
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MK.NO.	QTY.	DESCRIPTION																																																																																																
NO.	DATE	DESCRIPTION																																																																																																

**BOE PIPELINE PHASE I
AS-CONSTRUCTED ALIGNMENT SHEETS
MAINLINE VALVE SCHEMATIC
DUNN & STARK COUNTY, NORTH DAKOTA**



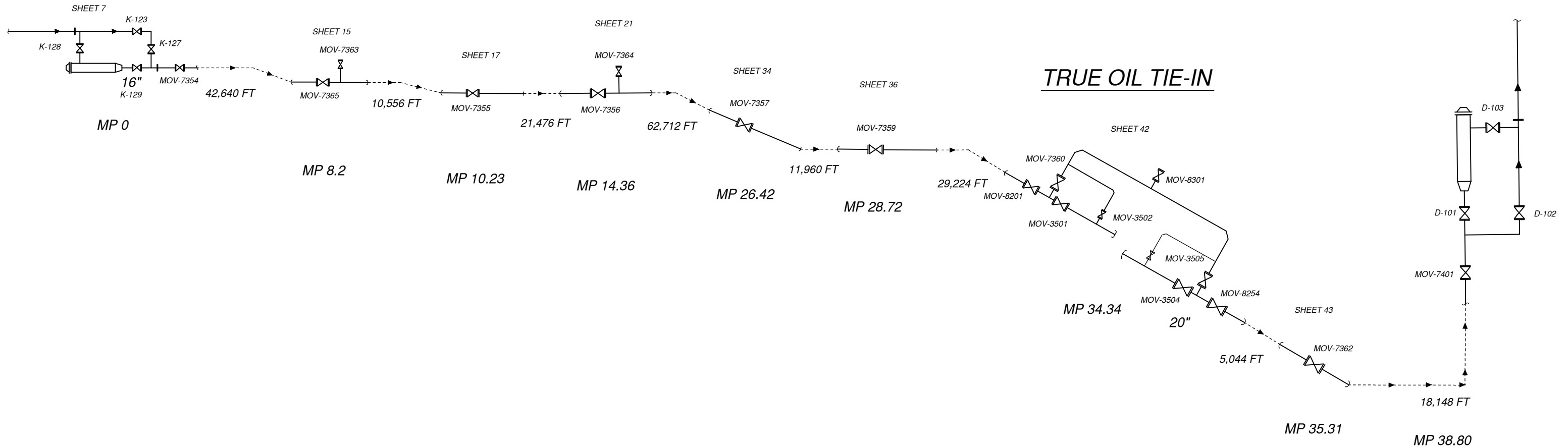
KILLDEER

**VALVE SETTING
W/ FUTURE**

**VALVE SETTING
W/ FUTURE**

DICKINSON

SHEET 47



AS-CONSTRUCTED

**FINAL
6/11/15**

LEGEND

—	PROPERTY LINE	—*—	EXISTING FENCE		AVOIDANCE AREA
- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE		WETLAND EASEMENT
- · - · -	EASEMENT LINE	—R—	RAILROAD		EASEMENT
— — —	PIPELINE CENTERLINE	—E—	OVERHEAD ELECTRIC		TEST LEAD
—W—	WATER LINE	—U—	UTILITY POLE		VALVE SETTING
—F—	FOREIGN PIPELINE	—B—	AS-CONSTRUCTED BORE		MARKER POST
—E—	EXISTING ROAD				
—U—	UNDERGROUND COM. LINE				

811 CALL BEFORE YOU DIG

MATERIAL SUMMARY			REVISIONS		
MK.NO.	QTY.	DESCRIPTION	NO.	DATE	DESCRIPTION

SCALE:	NONE
DRAWN BY:	D. DIONNE
DATE:	6/11/15
CHECKED BY:	C. FOSTER
APPROVED BY:	S. BESMER
KLJ JOB NUMBER:	1713140
REVISION:	SHEET: 6

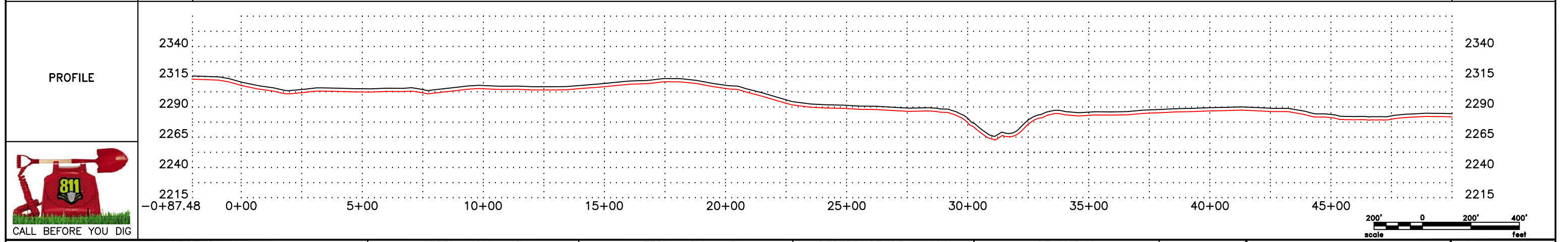
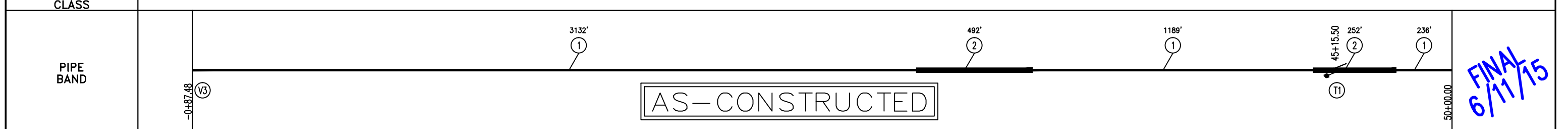
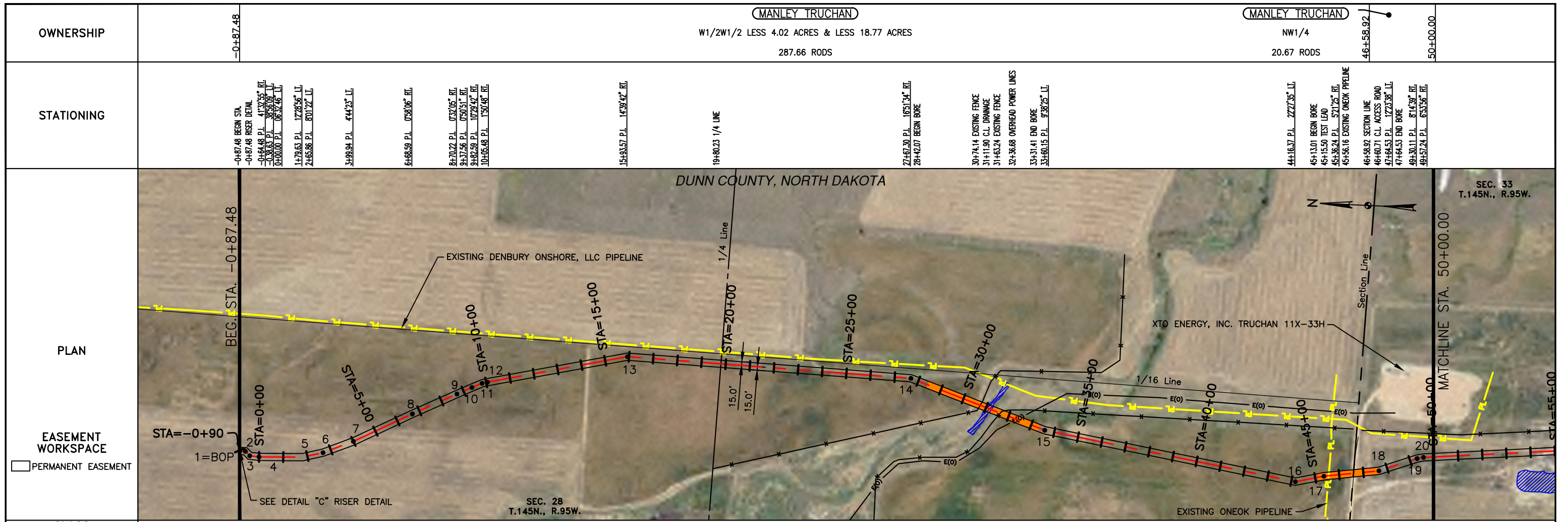
BOE PIPELINE, LLC

**BOE PIPELINE PHASE I
MAINLINE VALVE SCHEMATIC
DUNN & STARK COUNTY, NORTH DAKOTA**

KLJ

4585 Coleman Street
Bismarck, ND 58502

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MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	NO.	DATE
1	4886 LF	16" OD, 0.281" W.T. API 5L X70, 15-15 MIL FIB			V5 104	0	6/11/15
2	744 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FIB, 30-35 MIL AD					
T1	1 EA	TYPE-1					

DWG. NO.	DESCRIPTION	NO.	DATE
V5 104	RISER DETAIL PLAN & PROFILE DETAIL "C"	0	6/11/15

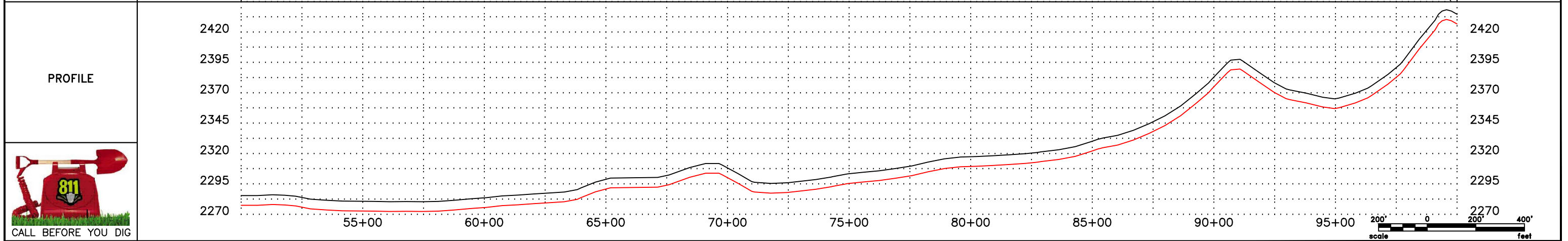
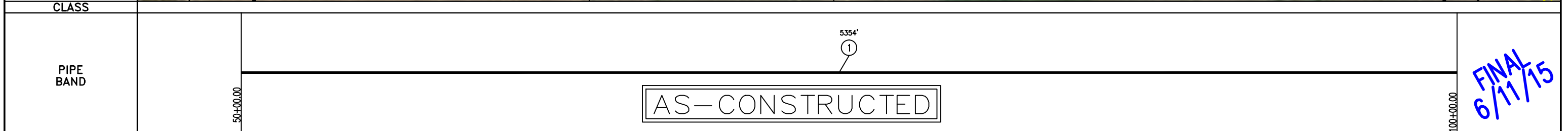
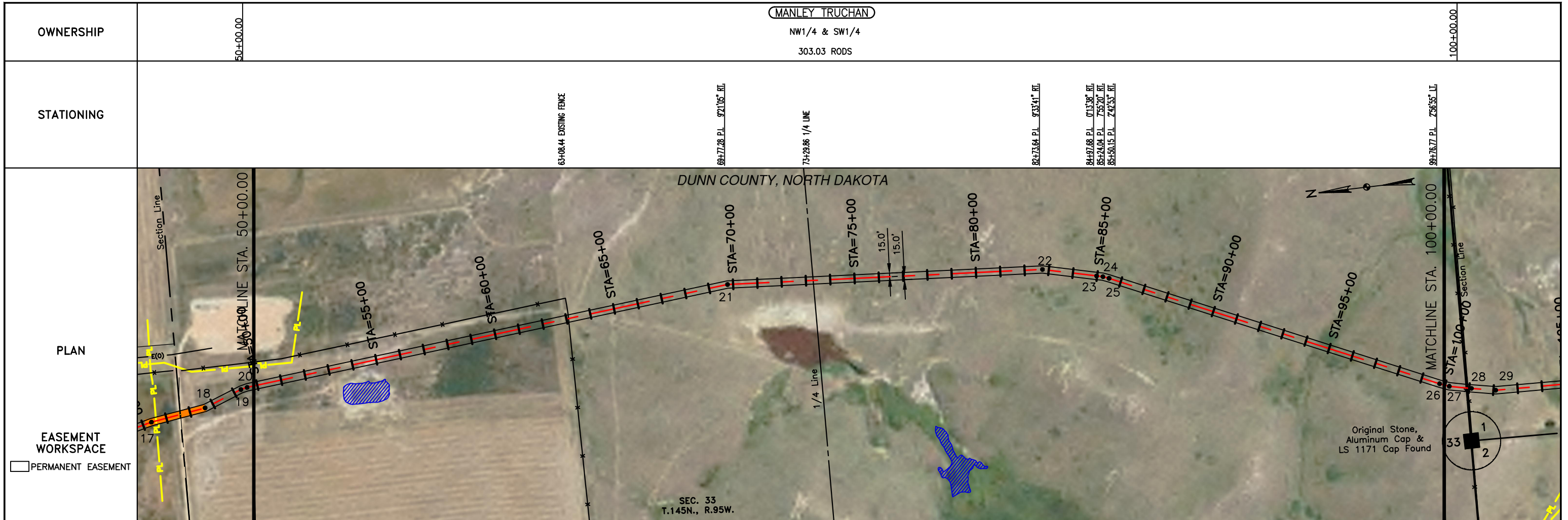
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

LEGEND

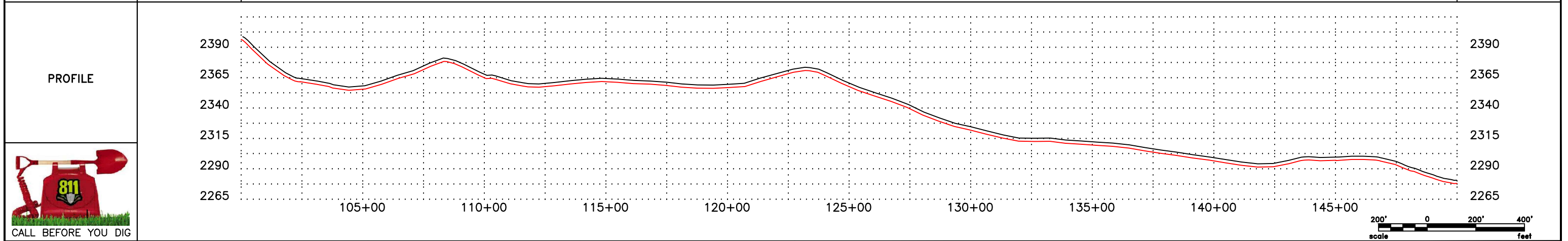
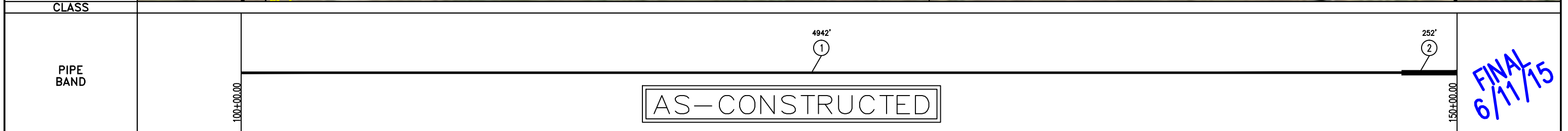
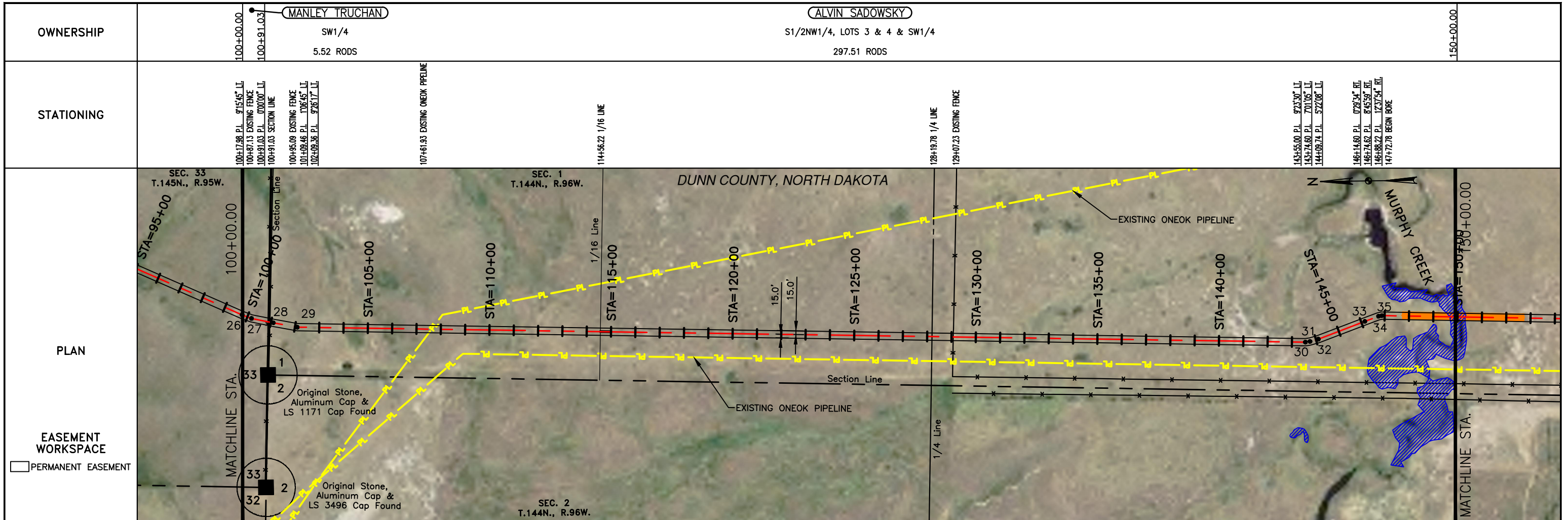
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- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	—	WETLAND EASEMENT
- · - · -	EASEMENT LINE	—	RAILROAD	—	TEST LEAD
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	VALVE SETTING
—	WATER LINE	—	UTILITY POLE	—	MARKER POST
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE		
—	EXISTING ROAD	—	UNDERGROUND COM. LINE		

BOE PIPELINE, LLC.
 BOE PIPELINE, LLC.
 BOE PIPELINE PHASE I
 SECTIONS 28 & 33, T145N, R95W
 DUNN COUNTY, NORTH DAKOTA

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 Bismarck, ND 58503
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LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
SYMBOL	DESCRIPTION	MK.NO.	QTY.	MK.NO.	QTY.	DWG. NO.	DESCRIPTION	NO.	DATE
---	PROPERTY LINE	1	5354 LF					0	6/11/15
- - -	SECTION LINE								
- · - · -	EASEMENT LINE								
- - -	PIPELINE CENTERLINE								
- - -	WATER LINE								
- - -	FOREIGN PIPELINE								
- - -	EXISTING ROAD								
- - -	UNDERGROUND COM. LINE								
---	BARBED WIRE FENCE								
---	FIBER OPTIC COM. LINE								
---	RAILROAD								
---	OVERHEAD ELECTRIC								
---	UTILITY POLE								
---	AS-CONSTRUCTED BORE								
---	MARKER POST								
---	AVOIDANCE AREA								
---	WETLAND								
---	EASEMENT								
---	TEST LEAD								
---	VALVE SETTING								



LEGEND

—	PROPERTY LINE	— x —	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	4942 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FIBE
2	252 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FIBE, 30-35 MIL ANO

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

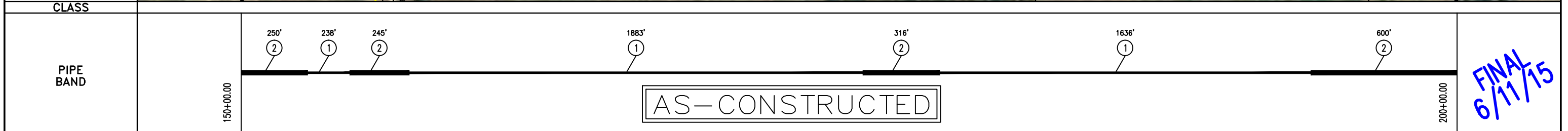
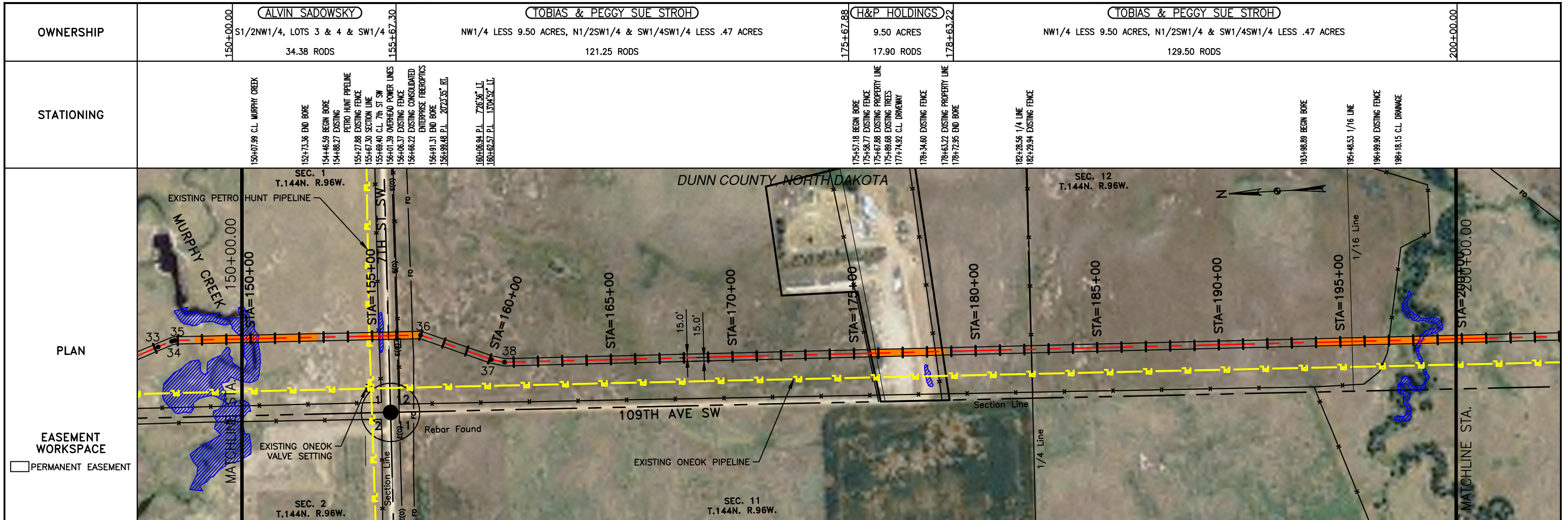
DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 9

BOE PIPELINE, LLC.
 BOE PIPELINE PHASE I
 SECTION 33, T145N, R95W & SECTION 1, T144N, R96W
 DUNN COUNTY, NORTH DAKOTA

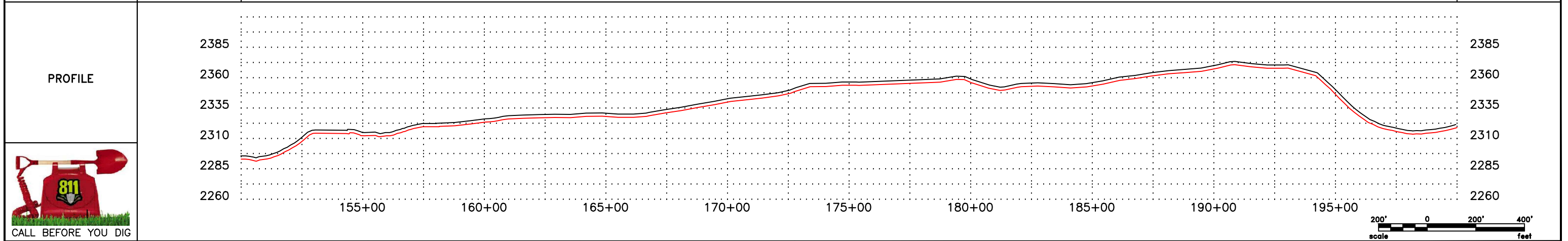
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 Bismarck, ND 58503

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FINAL
6/11/15



LEGEND

—	PROPERTY LINE	-x-	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	FO	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	E00	OVERHEAD ELECTRIC	—	TEST LEAD
- - -	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
- - -	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
- - -	EXISTING ROAD	—	MARKER POST		
- - -	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	3757 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB
2	1411 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL ANO

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

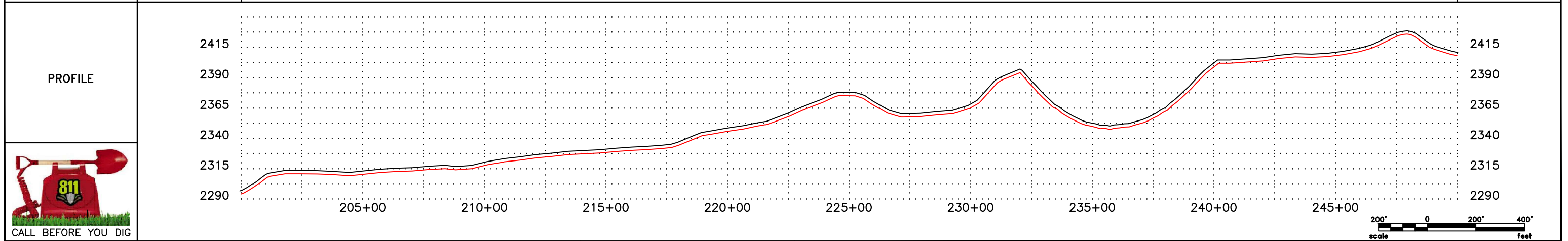
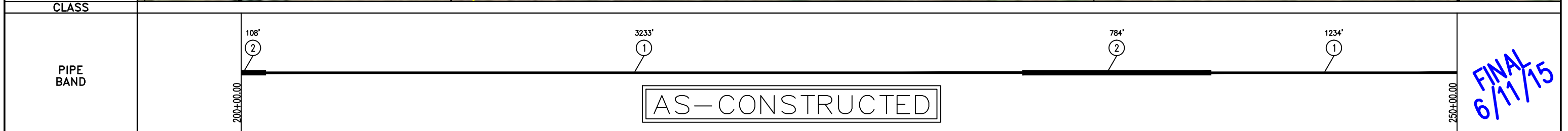
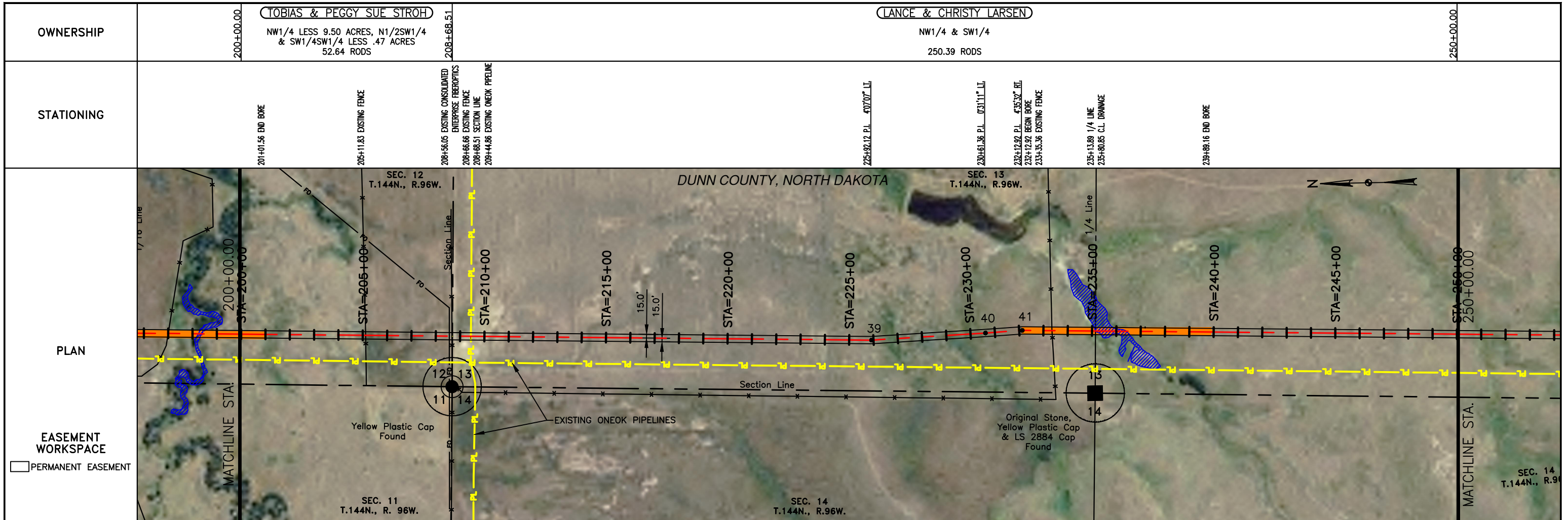
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DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 10

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

BOE PIPELINE PHASE I
SECTIONS 1 & 12, T144N, R96W
DUNN COUNTY, NORTH DAKOTA

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Bismarck, ND 58503
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LEGEND

--- PROPERTY LINE	-x- BARBED WIRE FENCE	--- AVOIDANCE AREA
- - - SECTION LINE	-FO- FIBER OPTIC COM. LINE	--- WETLAND
- - - EASEMENT LINE	--- RAILROAD	--- EASEMENT
- - - PIPELINE CENTERLINE	-R- OVERHEAD ELECTRIC	--- TEST LEAD
-w- WATER LINE	-U- UTILITY POLE	--- VALVE SETTING
-r- FOREIGN PIPELINE	-A- AS-CONSTRUCTED BORE	
- - - EXISTING ROAD	-M- MARKER POST	
- - - UNDERGROUND COM. LINE		

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	4467 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB
2	892 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL ANO

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

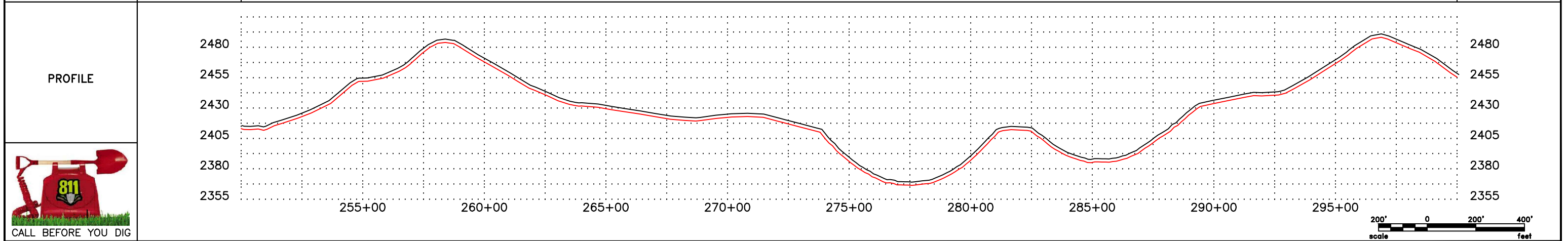
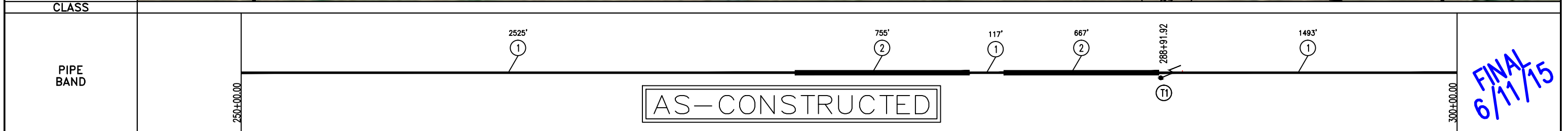
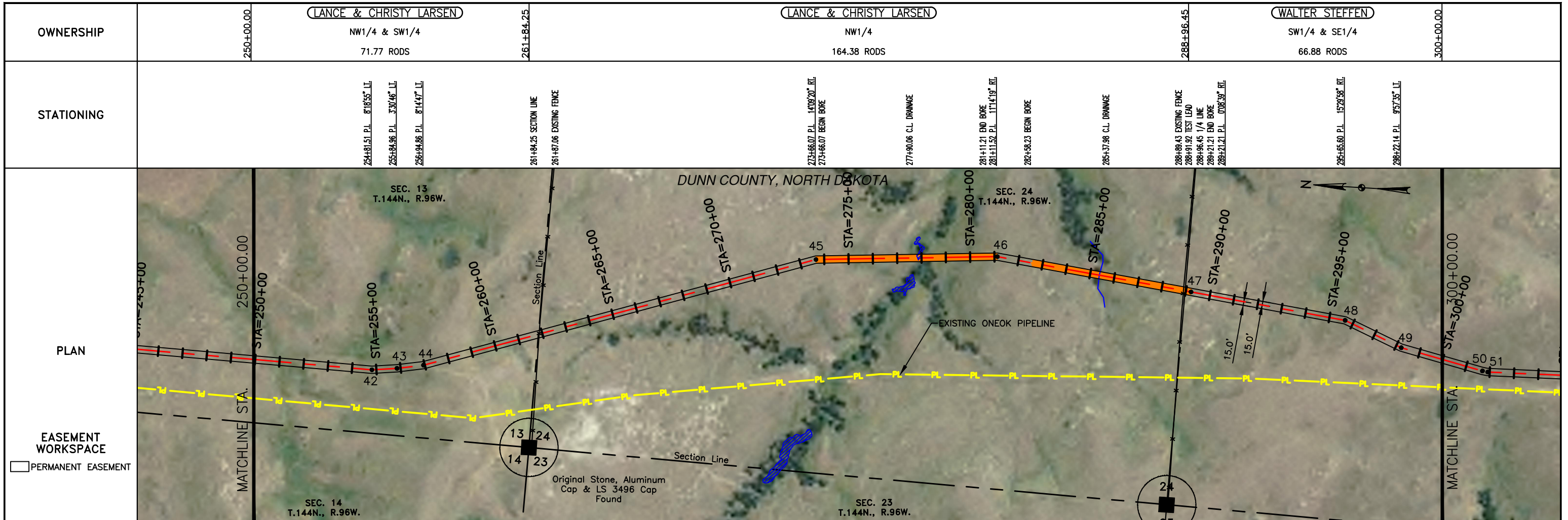
REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'
 DRAWN BY: D. BUNKERS
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 11

BOE Bakken Oil Express BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
 SECTIONS 12 & 13, T144N, R96W
 DUNN COUNTY, NORTH DAKOTA

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 Bismarck, ND 58503
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LEGEND

—	PROPERTY LINE	— x —	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	— FO —	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	— R —	RAILROAD	▨	EASEMENT
—	PIPELINE CENTERLINE	— E —	OVERHEAD ELECTRIC	—	TEST LEAD
— W —	WATER LINE	— U —	UTILITY POLE	—	VALVE SETTING
— F —	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	4135 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIBE
2	1422 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIBE, 30-35 MIL ANO
T1	1 EA	TYPE-1

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 12

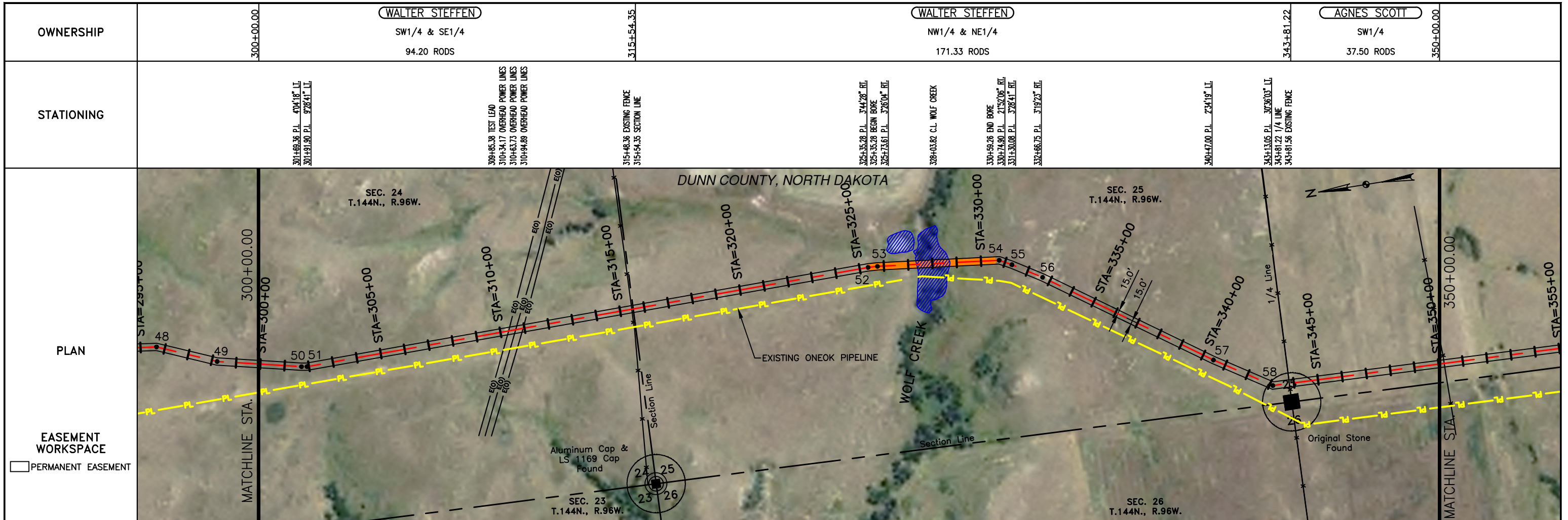
BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

BOE PIPELINE PHASE I
SECTIONS 13 & 24, T144N, R96W
DUNN COUNTY, NORTH DAKOTA

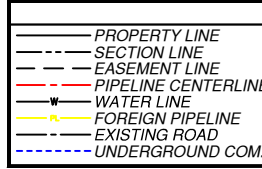
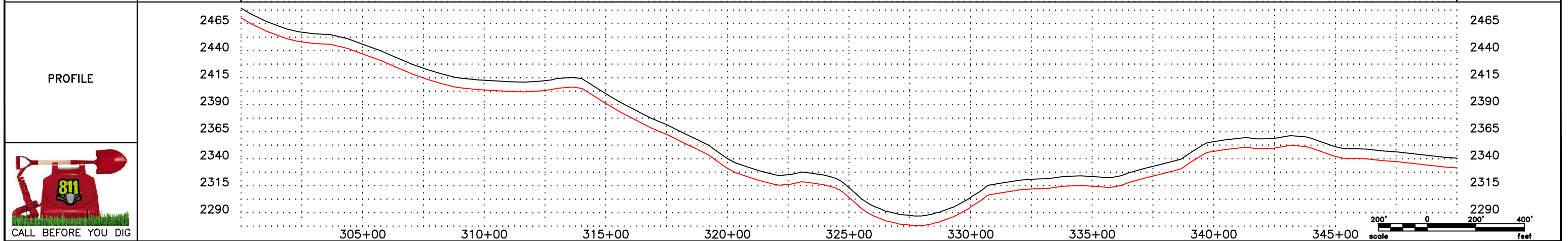
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Bismarck, ND 58503

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CLASS



LEGEND

—	PROPERTY LINE	—x—	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	-o-	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	- - -	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	-o-	OVERHEAD ELECTRIC	▨	TEST LEAD
- - -	WATER LINE	-o-	UTILITY POLE	▨	VALVE SETTING
- - -	FOREIGN PIPELINE	-o-	AS-CONSTRUCTED BORE	▨	MARKER POST
- - -	EXISTING ROAD	-o-	MARKER POST		
- - -	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK.NO.	QTY.	DESCRIPTION
1	4816 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB
2	529 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO
T1	1 EA	TYPE-1

MATERIAL SUMMARY

MK.NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

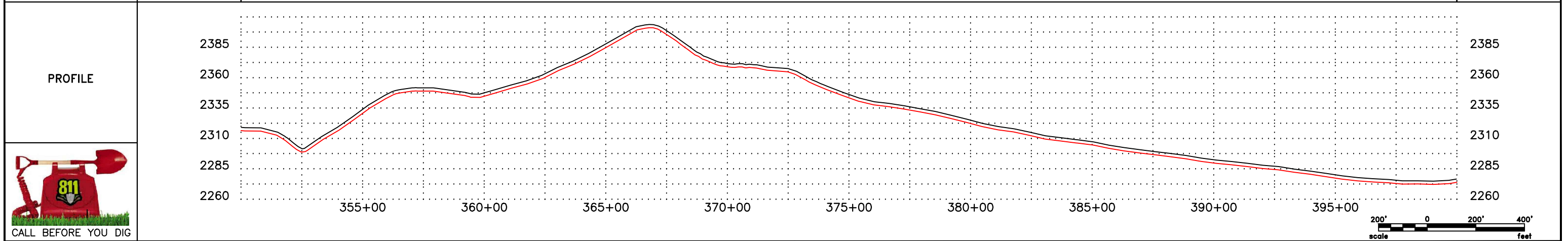
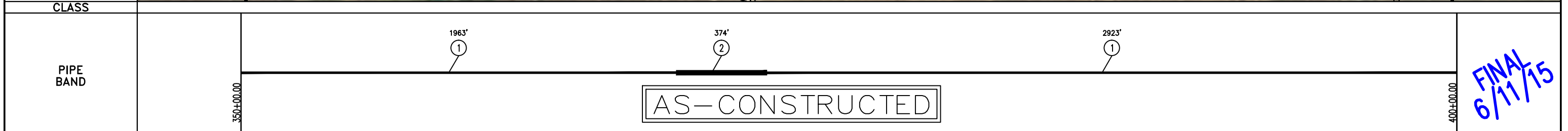
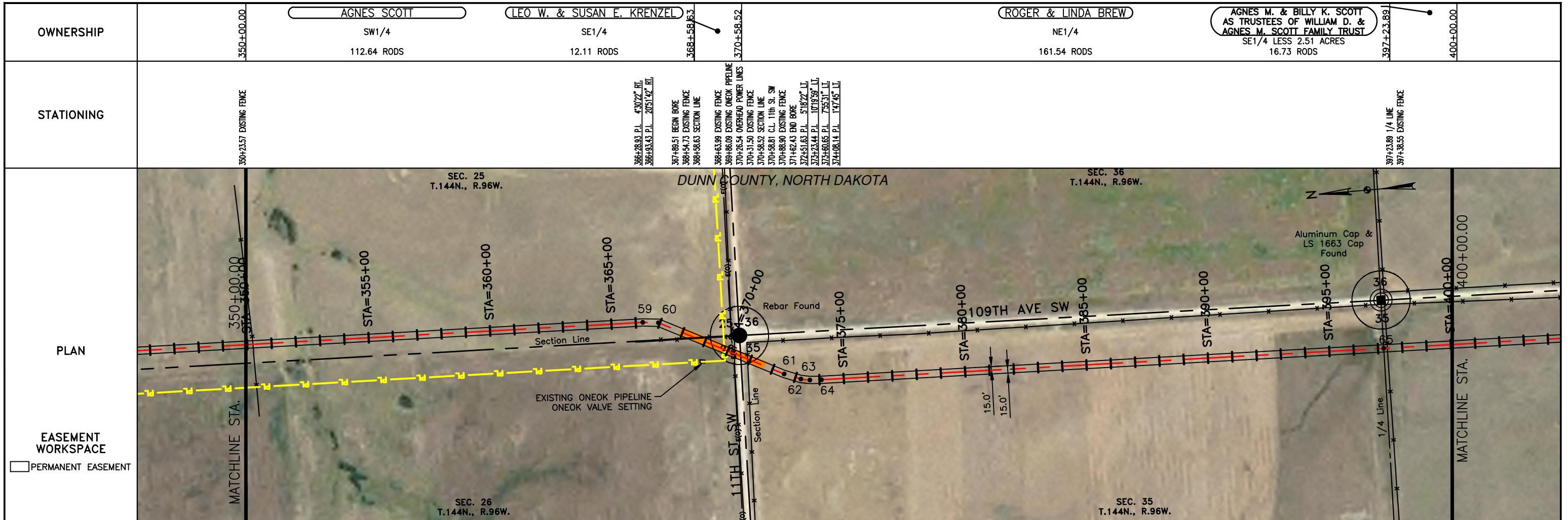
NO.	DATE	DESCRIPTION
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SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLI JOB NUMBER: 1713140
 REVISION: SHEET: 13

BOE PIPELINE, LLC.
 BOE PIPELINE PHASE 1
 SECTIONS 24 & 25, T144N, R96W
 DUNN COUNTY, NORTH DAKOTA

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 Bismarck, ND 58503
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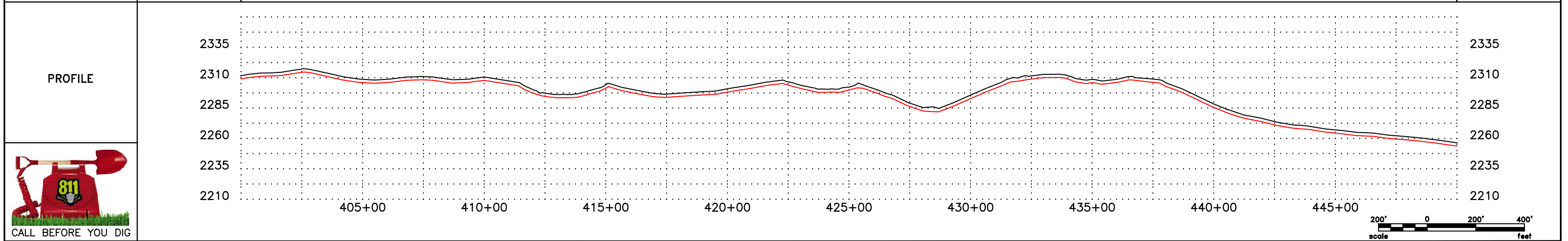
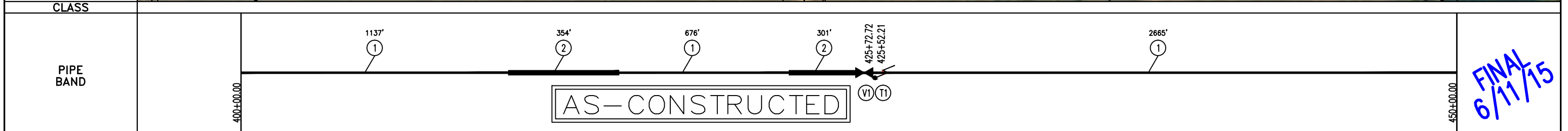
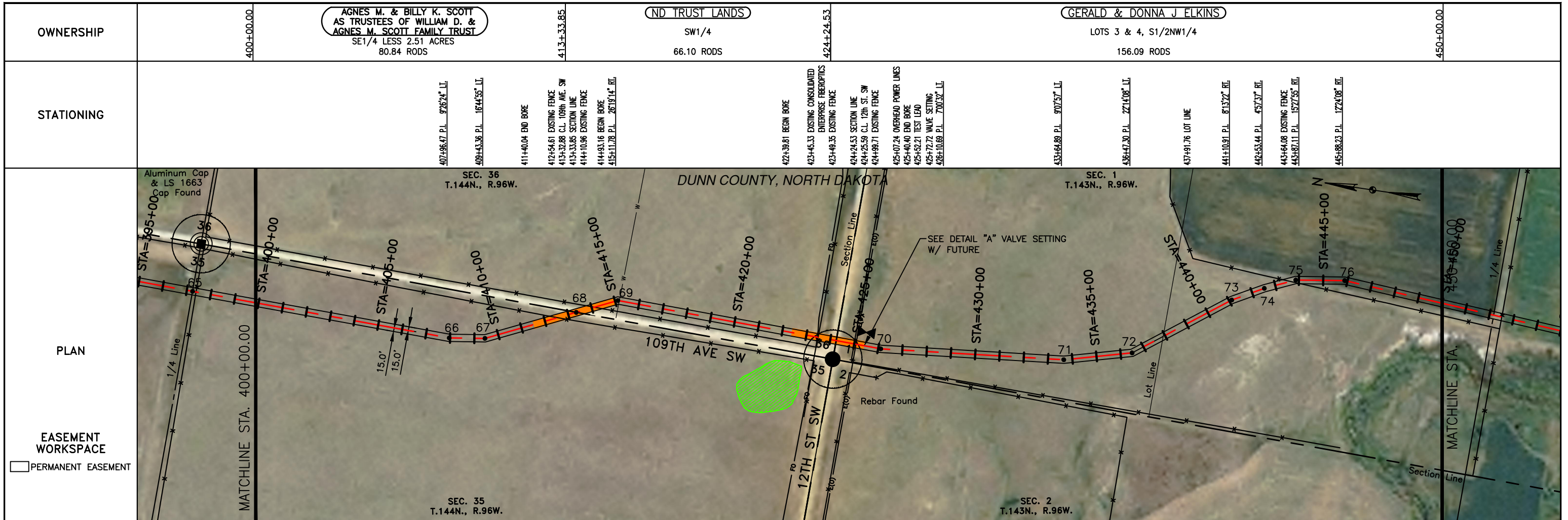
LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
SYMBOL	DESCRIPTION	MK. NO.	QTY.	MK. NO.	QTY.	DWG. NO.	DESCRIPTION	NO.	DATE
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---	SECTION LINE	2	374 LF						
---	EASEMENT LINE								
---	PIPELINE CENTERLINE								
---	WATER LINE								
---	FOREIGN PIPELINE								
---	EXISTING ROAD								
---	UNDERGROUND COM. LINE								
---	BARBED WIRE FENCE								
---	FIBER OPTIC COM. LINE								
---	RAILROAD								
---	OVERHEAD ELECTRIC								
---	UTILITY POLE								
---	AS-CONSTRUCTED BORE								
---	MARKER POST								
---	AVOIDANCE AREA								
---	WETLAND								
---	EASEMENT								
---	TEST LEAD								
---	VALVE SETTING								

SCALE: 1" = 400'

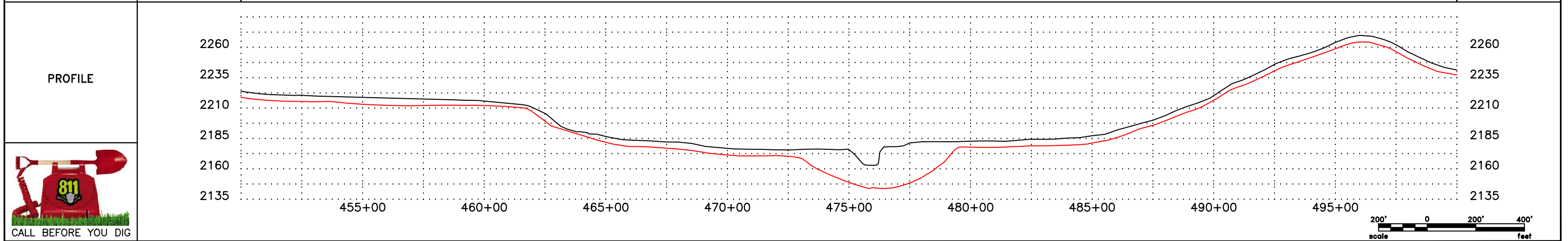
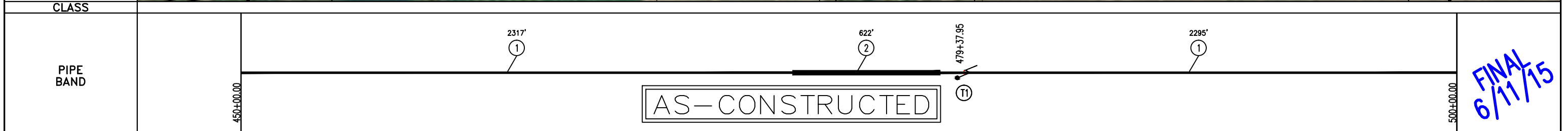
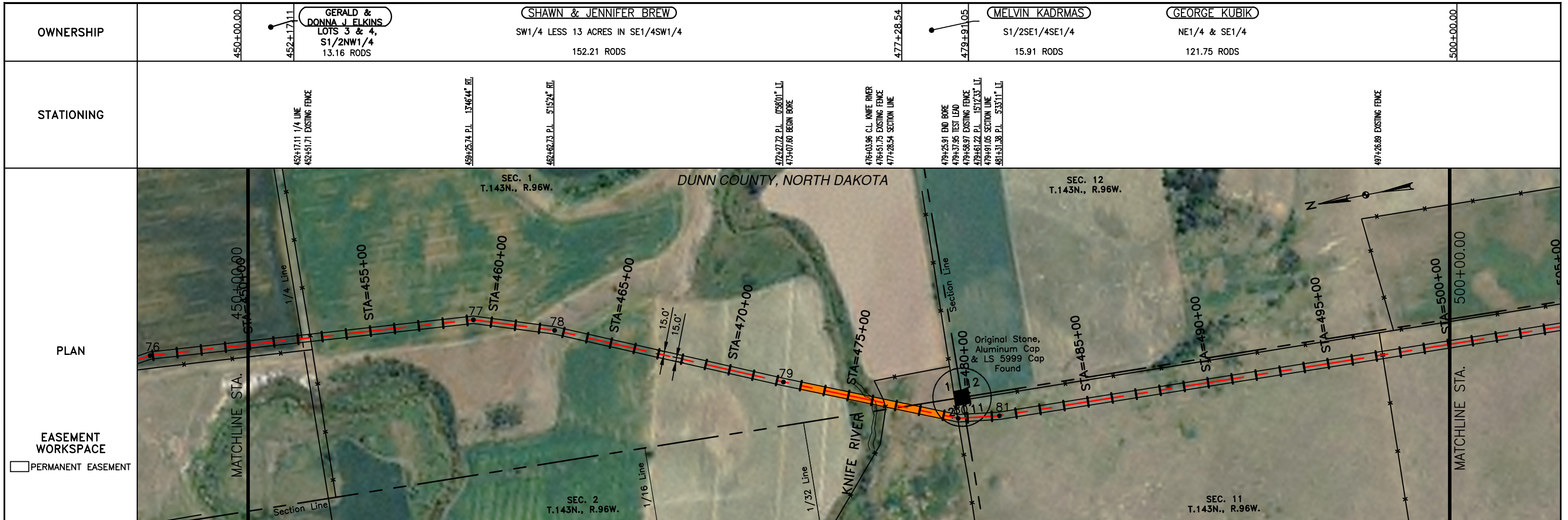
DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 14

BOE OIL EXPRESS BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTIONS 25, 26 & 35, T144N, R96W
DUNN COUNTY, NORTH DAKOTA

KLJ
4585 Coleman Street
Bismarck, ND 58503
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LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
SYMBOL	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION	NO.	DATE
---	PROPERTY LINE	1	4478 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIBE			V1	95	VALVE SETTING PLAN AND PROFILE VIEW DETAIL "A"
---	SECTION LINE	2	655 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIBE, 30-35 MIL AMO					
---	EASEMENT LINE	TI	1 EA	TYPE-1					
---	PIPELINE CENTERLINE								
---	WATER LINE								
---	FOREIGN PIPELINE								
---	EXISTING ROAD								
---	UNDERGROUND COM. LINE								
---	BARBED WIRE FENCE								
---	FIBER OPTIC COM. LINE								
---	RAILROAD								
---	OVERHEAD ELECTRIC								
---	UTILITY POLE								
---	AS-CONSTRUCTED BORE								
---	MARKER POST								
---	AVOIDANCE AREA								
---	WETLAND								
---	EASEMENT								
---	TEST LEAD								
---	VALVE SETTING								



LEGEND

—	PROPERTY LINE	— x —	BARBED WIRE FENCE	—	AVOIDANCE AREA
- - -	SECTION LINE	FO	FIBER OPTIC COM. LINE	—	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	—	EASEMENT
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY			MATERIAL SUMMARY		
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION
1	4612 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB			
2	622 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO			
TI	1 EA	TYPE-1			

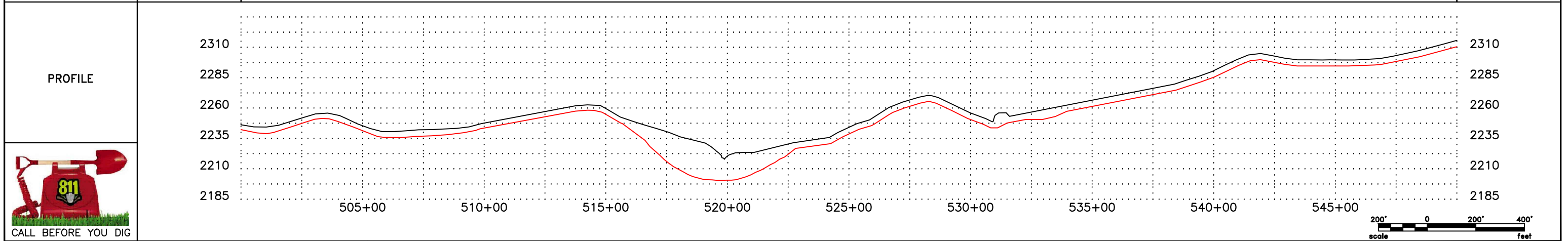
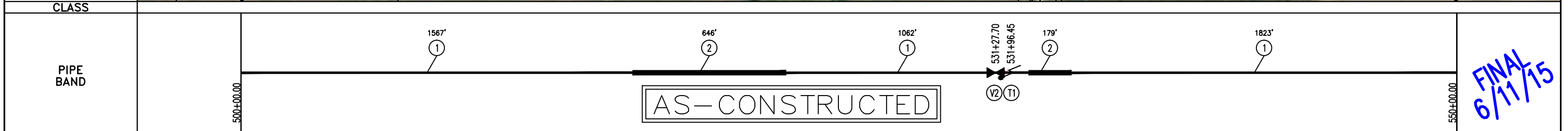
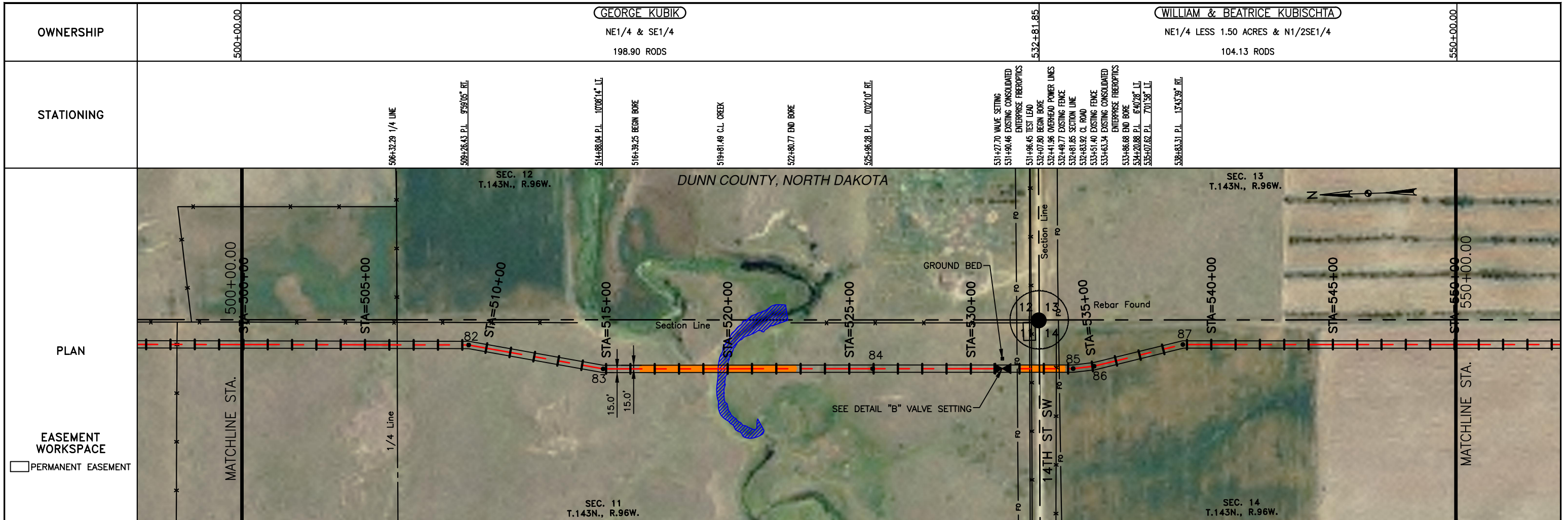
REFERENCE DRAWINGS		REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15
			AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 16

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTIONS 1, 2 & 11, T144N, R96W
DUNN COUNTY, NORTH DAKOTA

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Bismarck, ND 58503
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LEGEND

--- PROPERTY LINE	-x-x- BARBED WIRE FENCE	--- AVOIDANCE AREA
--- SECTION LINE	-FO- FIBER OPTIC COM. LINE	--- WETLAND
--- EASEMENT LINE	--- RAILROAD	--- EASEMENT
--- PIPELINE CENTERLINE	--- OVERHEAD ELECTRIC	--- TEST LEAD
-w- WATER LINE	--- UTILITY POLE	--- VALVE SETTING
-r- FOREIGN PIPELINE	--- AS-CONSTRUCTED BORE	--- MARKER POST
--- EXISTING ROAD	--- MARKER POST	
--- UNDERGROUND COM. LINE		

MATERIAL SUMMARY			MATERIAL SUMMARY		
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION
1	4452 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB			
2	825 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO			
T1	1 EA	TYPE-1			

REFERENCE DRAWINGS		REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE
V2	98 VALVE SETTING PLAN AND PROFILE VIEW DETAIL "V"	0	6/11/15

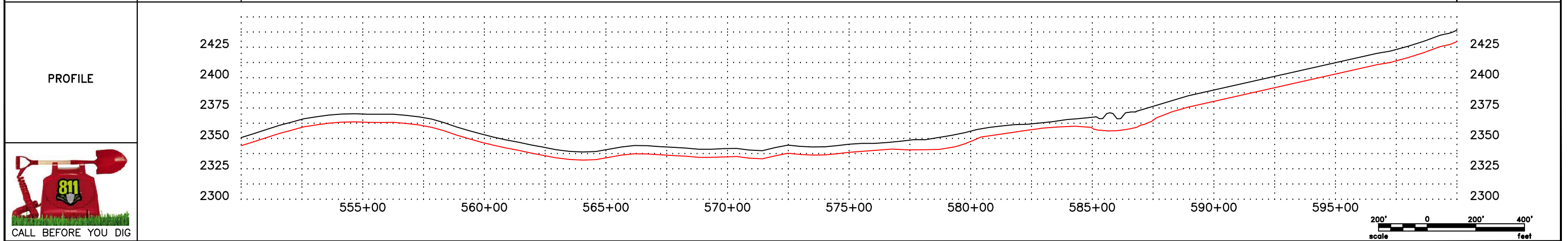
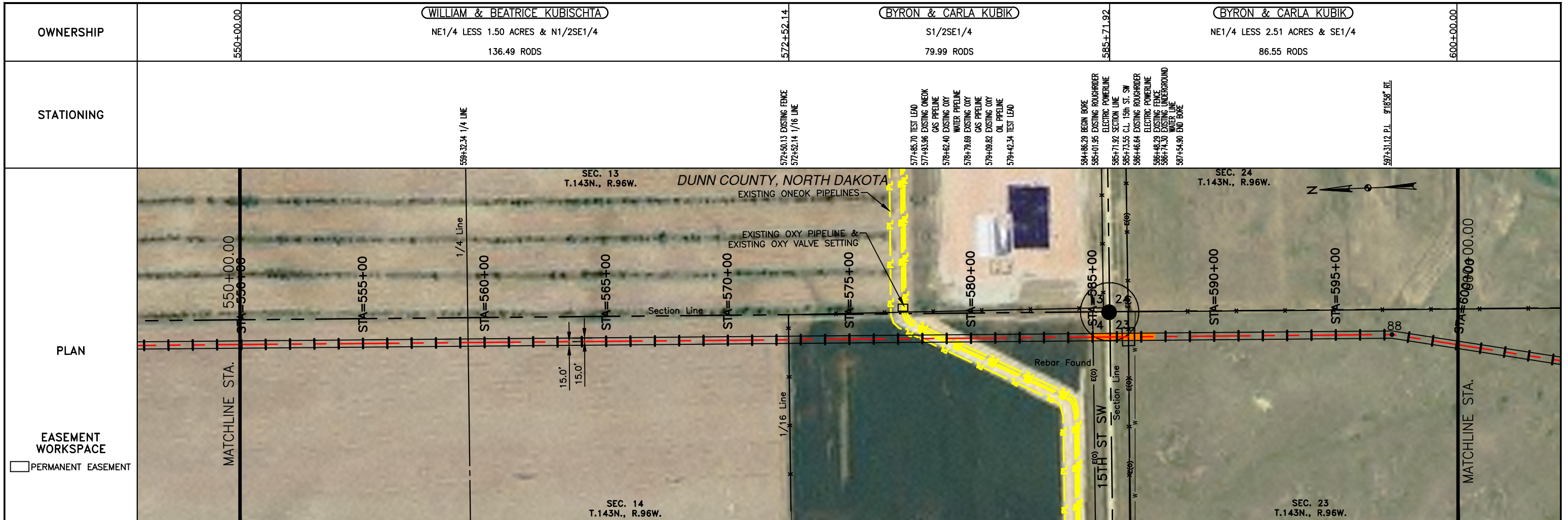
SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 17

BOE **BAKKEN OIL EXPRESS** BOE PIPELINE, LLC.

BOE PIPELINE PHASE I
SECTIONS 11 & 14, T143N, R96W
DUNN COUNTY, NORTH DAKOTA

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LEGEND

—	PROPERTY LINE	—x—	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	-FO-	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	E(0)	OVERHEAD ELECTRIC	—x—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—x—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	4835 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB
2	260 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO
T1	2 EA	TYPE-1

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

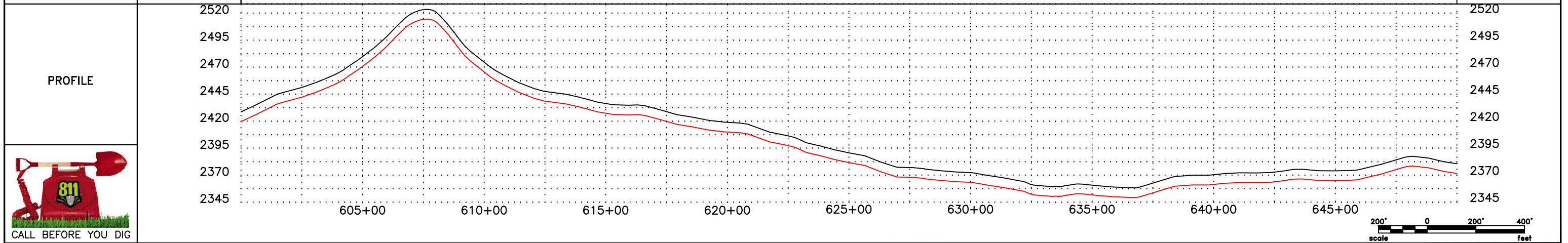
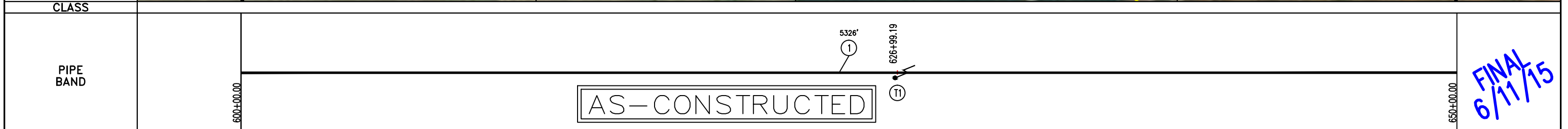
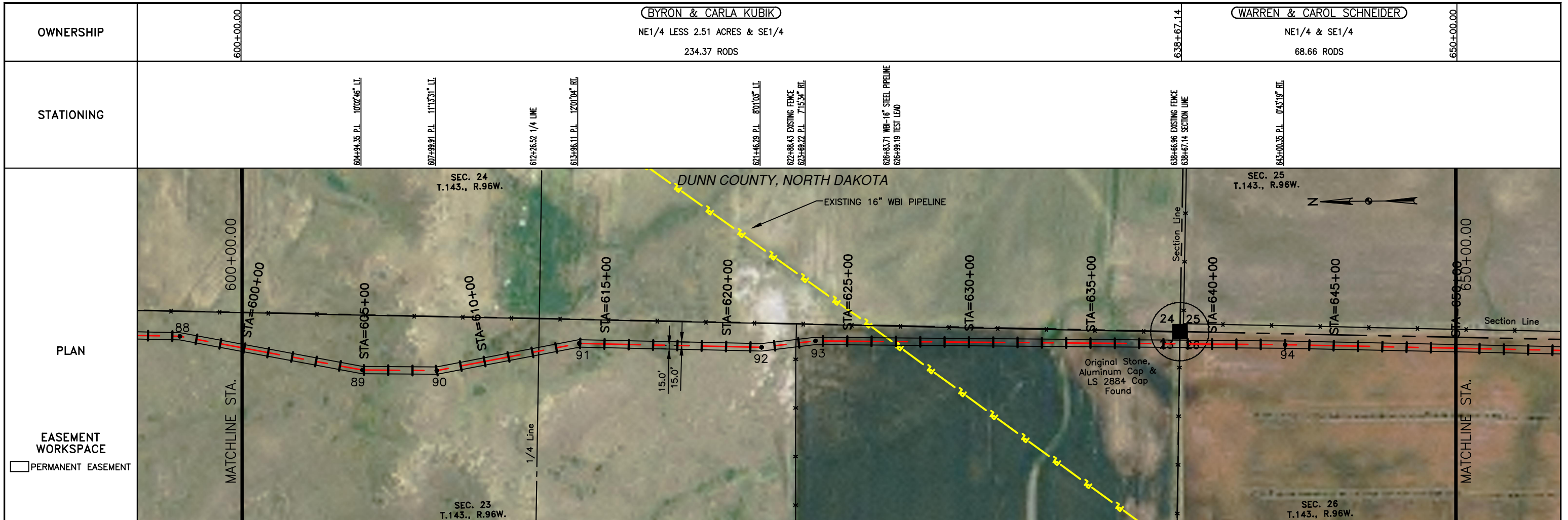
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 18

BOE Bakken Oil Express BOE PIPELINE, LLC.
 BOE PIPELINE PHASE I
 SECTIONS 14 & 23, T144N, R96W
 DUNN COUNTY, NORTH DAKOTA

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 Bismarck, ND 58503
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LEGEND

—	PROPERTY LINE	—x—	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	-o-	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	▨	TEST LEAD
—	WATER LINE	—	UTILITY POLE	▨	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	▨	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION
1	5326 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB			
11	1 EA	TYPE-1			

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 19

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

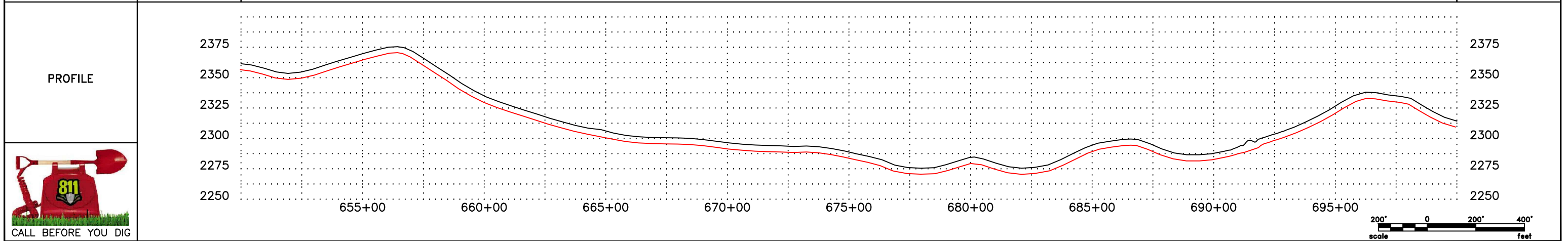
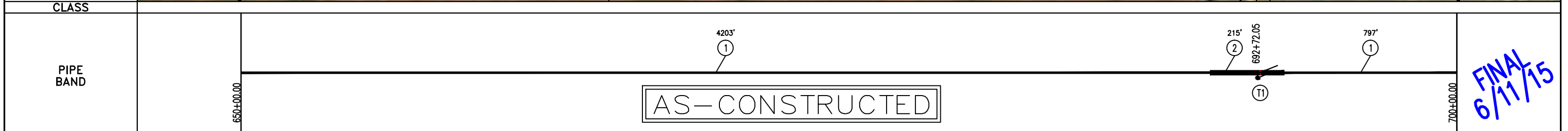
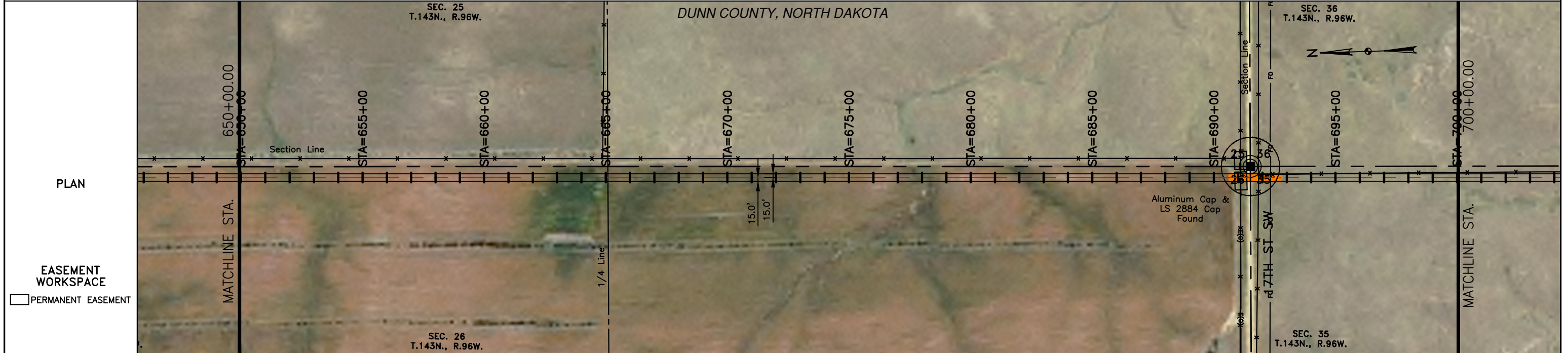
KLJ

4585 Coleman Street
Bismarck, ND 58503

BOE PIPELINE PHASE I
SECTIONS 23 & 26, T143N, R96W
DUNN COUNTY, NORTH DAKOTA

OWNERSHIP: WARREN & CAROL SCHNEIDER, NE1/4 & SE1/4, 251.55 RODS (650+00.00 to 691+50.61); WARREN & CAROL SCHNEIDER, NE1/4 & SE1/4, 51.48 RODS (691+50.61 to 700+00.00)

STATIONING: 650+00.00, 655+00, 660+00, 665+00, 670+00, 675+00, 680+00, 685+00, 690+00, 695+00, 700+00.00



LEGEND

--- PROPERTY LINE	-x-x- BARBED WIRE FENCE	--- AVOIDANCE AREA
--- SECTION LINE	-FO- FIBER OPTIC COM. LINE	--- WETLAND
--- EASEMENT LINE	--- RAILROAD	--- EASEMENT
--- PIPELINE CENTERLINE	--- OVERHEAD ELECTRIC	--- TEST LEAD
--- WATER LINE	--- UTILITY POLE	--- VALVE SETTING
--- FOREIGN PIPELINE	--- AS-CONSTRUCTED BORE	
--- EXISTING ROAD	--- MARKER POST	
--- UNDERGROUND COM. LINE		

MATERIAL SUMMARY

MK.NO.	QTY.	DESCRIPTION
1	5000 LF	16" OD, 0.281" WT. API 5L X70, 12-15 MIL FIB
2	215 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO
T1	1 EA	TYPE-1

MATERIAL SUMMARY

MK.NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

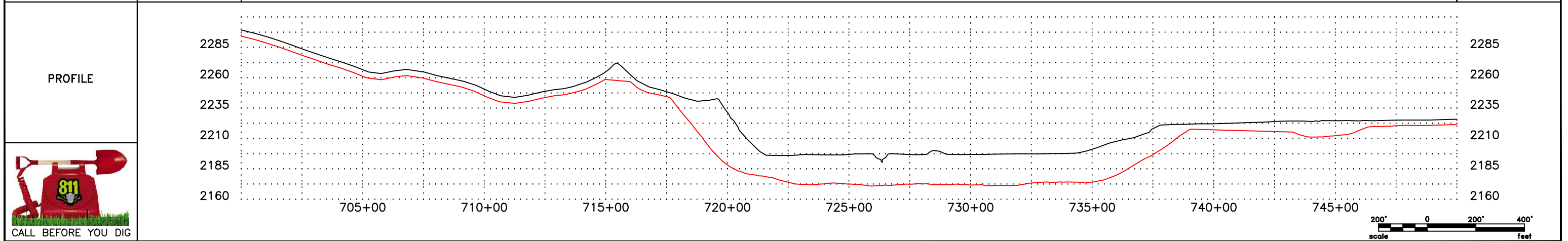
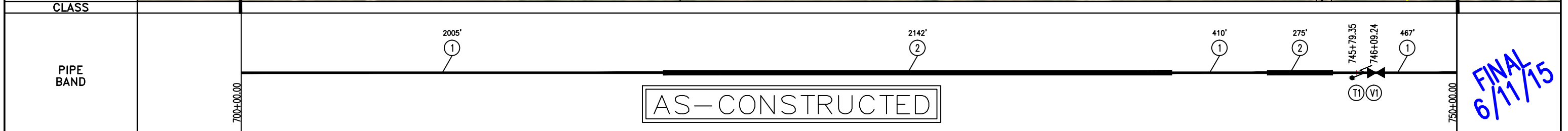
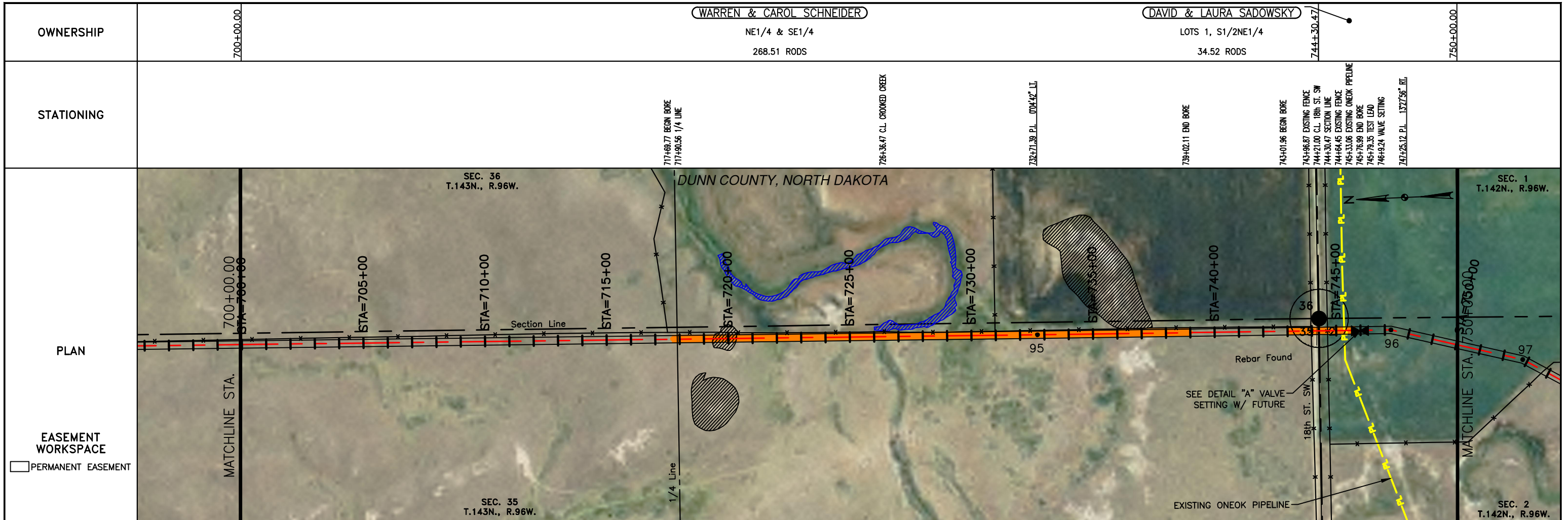
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 11/7/14
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 20

BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTIONS 26 & 35, T143N, R96W
DUNN COUNTY, NORTH DAKOTA

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LEGEND

--- PROPERTY LINE	-x-x- BARBED WIRE FENCE	--- AVOIDANCE AREA
--- SECTION LINE	-FO- FIBER OPTIC COM. LINE	--- WETLAND
--- EASEMENT LINE	--- RAILROAD	--- EASEMENT
--- PIPELINE CENTERLINE	--- OVERHEAD ELECTRIC	--- TEST LEAD
-w- WATER LINE	--- UTILITY POLE	--- VALVE SETTING
-y- FOREIGN PIPELINE	--- AS-CONSTRUCTED BORE	--- MARKER POST
--- EXISTING ROAD	--- MARKER POST	
--- UNDERGROUND COM. LINE		

MATERIAL SUMMARY			MATERIAL SUMMARY		
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION
1	2882 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB			
2	2417 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL ARC			
T1	1 EA	TYPE-1			

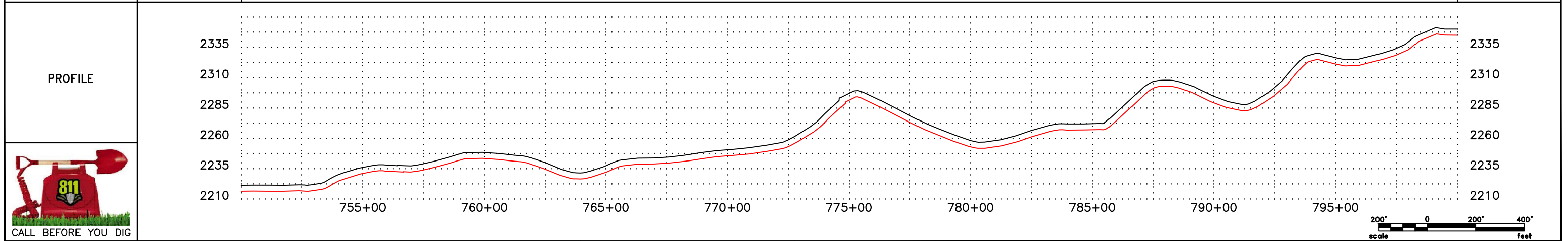
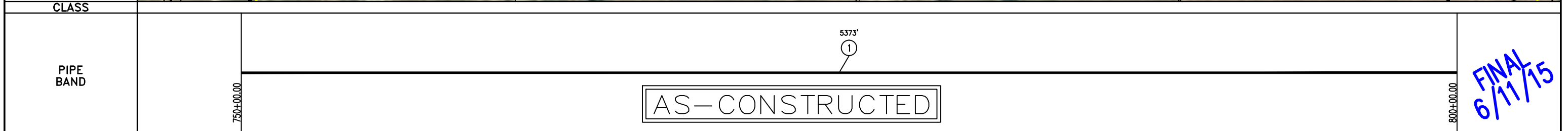
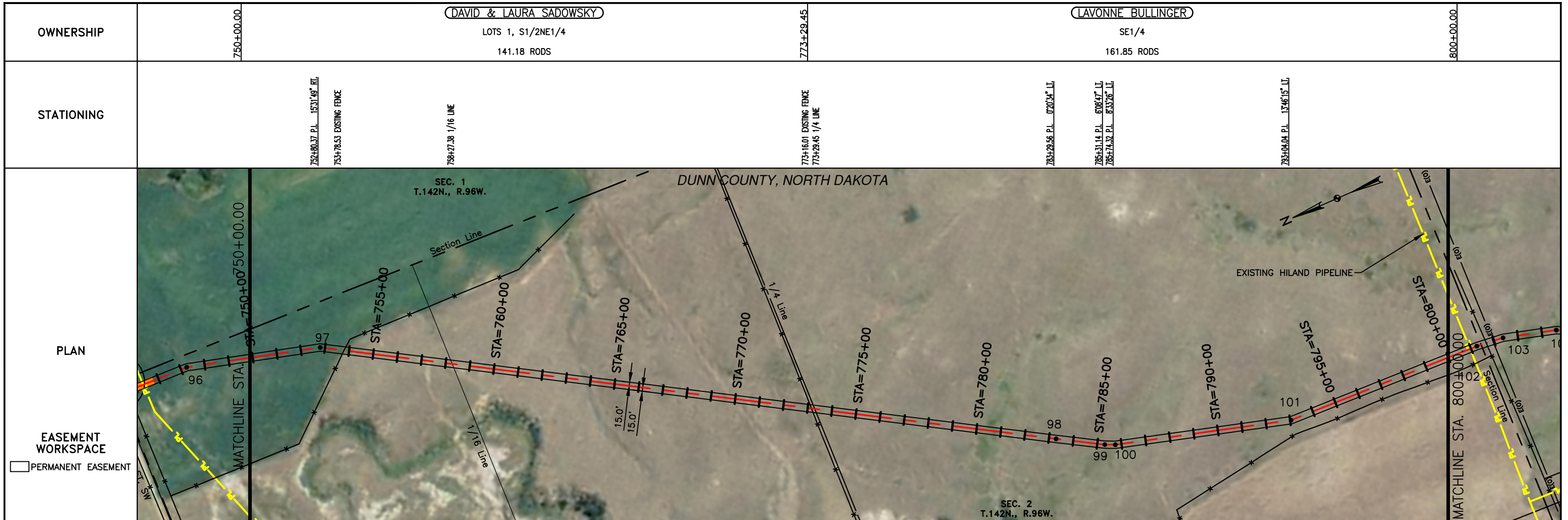
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DWG. NO.	DESCRIPTION
V1	95 VALVE SETTING W/ FUTURE PLAN & PROFILE VIEW DETAIL "A"

REVISIONS		
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'
 DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 21

BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
 SECTIONS 35, T143N, R96W & SECTION 2, T142N, R96W
 DUNN COUNTY, NORTH DAKOTA

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LEGEND

—	PROPERTY LINE	-x-x-	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	-o-o-	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
-w-	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
-y-	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
- - -	EXISTING ROAD	—	MARKER POST		
- - -	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	5373 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

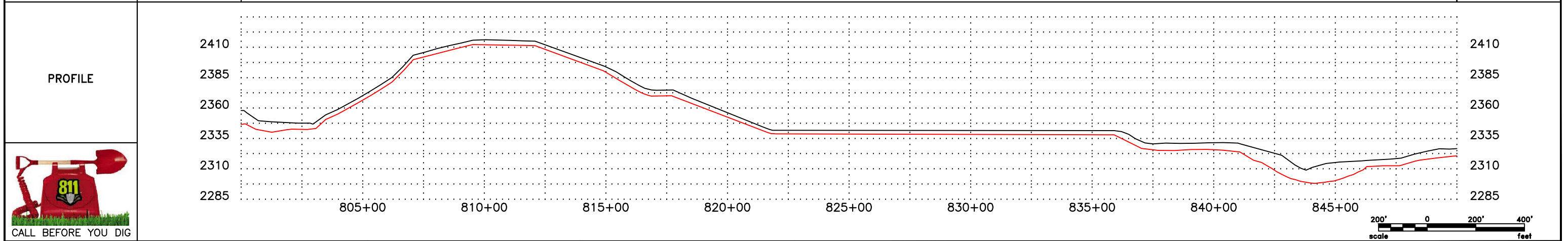
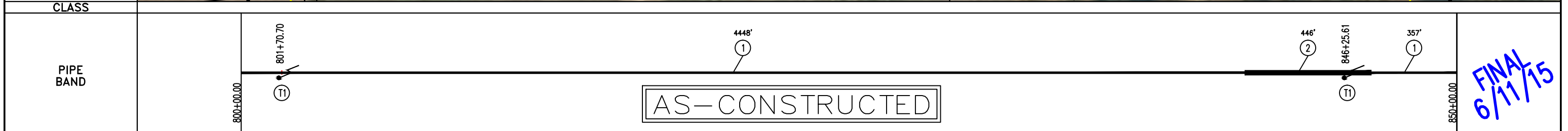
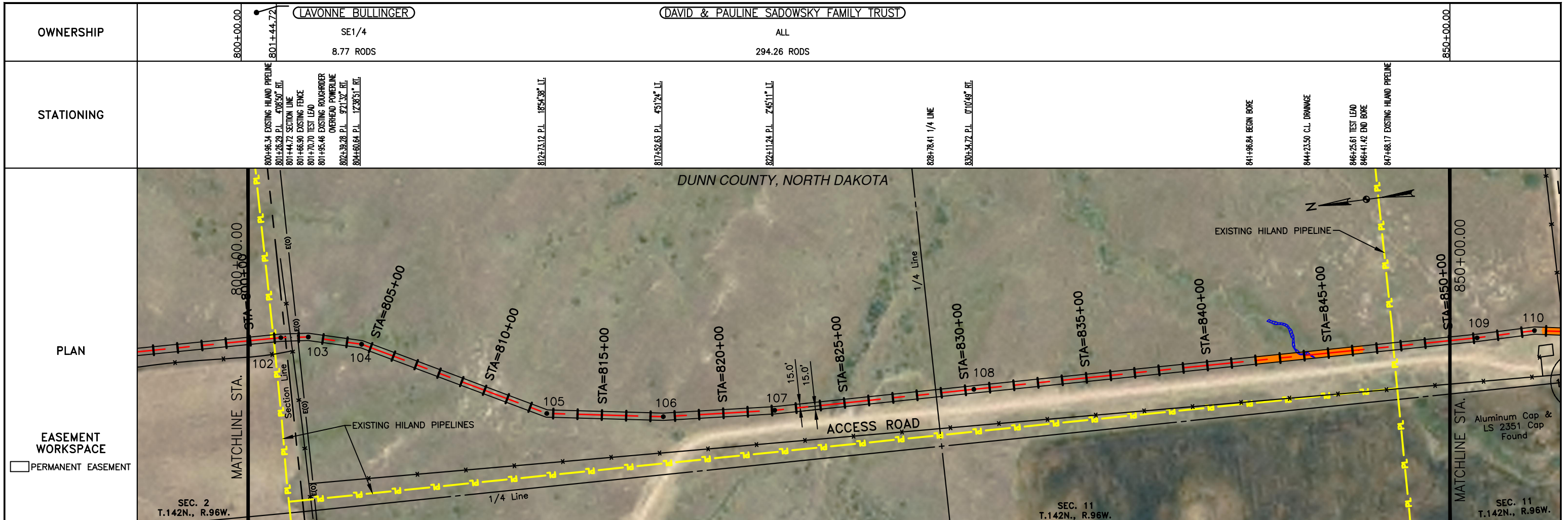
REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'
 DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 22

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.
 BOE PIPELINE PHASE I
 SECTION 2, T142N, R96W
 DUNN COUNTY, NORTH DAKOTA

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 Bismarck, ND 58503
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LEGEND

--- PROPERTY LINE	-x-x- BARBED WIRE FENCE	--- AVOIDANCE AREA
- - - SECTION LINE	-FO- FIBER OPTIC COM. LINE	--- WETLAND
- - - EASEMENT LINE	--- RAILROAD	--- EASEMENT
- - - PIPELINE CENTERLINE	-E(O)- OVERHEAD ELECTRIC	--- TEST LEAD
-w- WATER LINE	--- UTILITY POLE	--- VALVE SETTING
-r- FOREIGN PIPELINE	--- AS-CONSTRUCTED BORE	--- MARKER POST
- - - EXISTING ROAD	--- MARKER POST	
- - - UNDERGROUND COM. LINE		

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	4005 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB
2	446 LF	16" OD, 0.304" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO
T1	2 EA	TYPE-1

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'
 DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 23

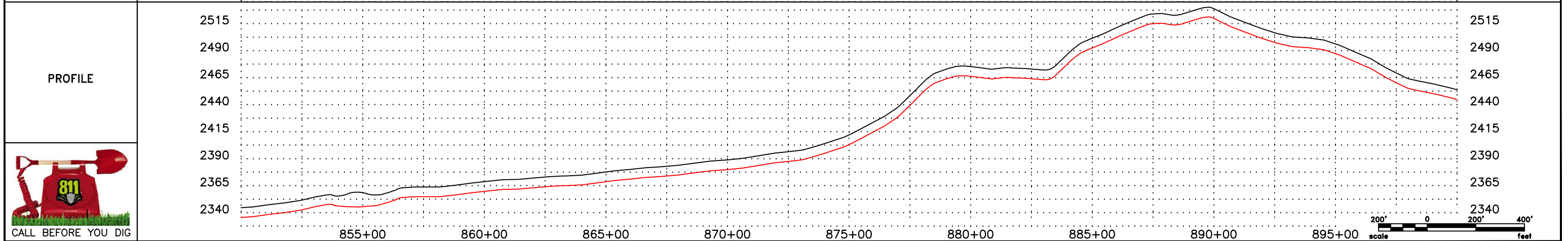
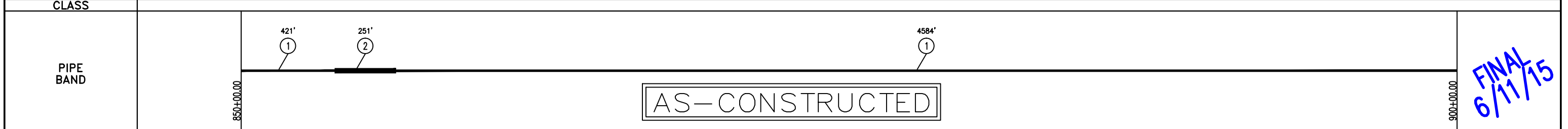
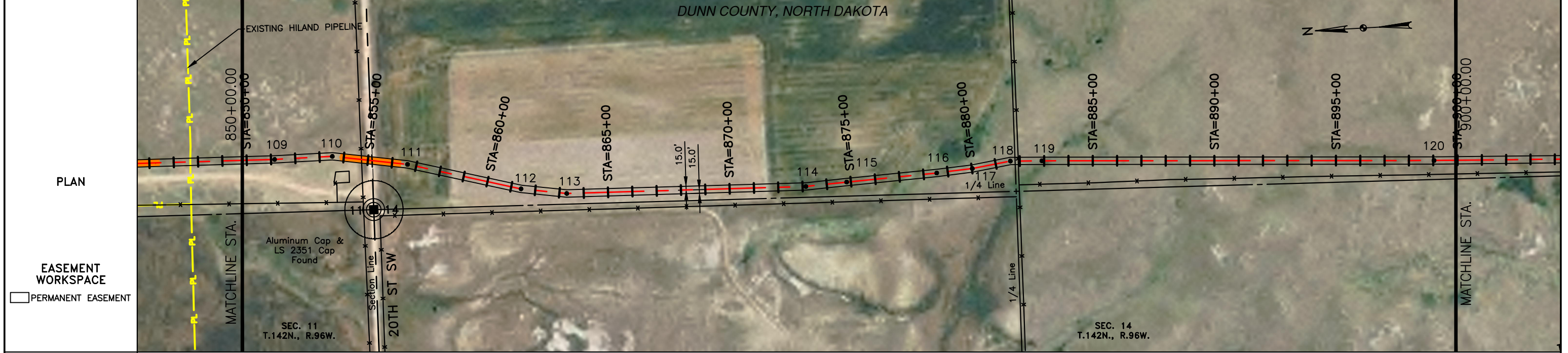
BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
 SECTIONS 2 & 11, T142N, R96W
 DUNN COUNTY, NORTH DAKOTA

KLJ
 4585 Coleman Street
 Bismarck, ND 58503
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FINAL
6/11/15

OWNERSHIP	850+00.00	DAVID & PAULINE SADOWSKY FAMILY TRUST ALL 32.33 RODS	MARK & TINA KOVASH NE1/4 161.44 RODS	881+80.72	DAVID & LAURA M. SADOWSKY NW1/4 & SE1/4 110.26 RODS	900+00.00
-----------	-----------	--	--	-----------	---	-----------

STATIONING	851+14.94 P.L. 1722'16" L.L.	853+52.62 P.L. 911'59" R.L. 853+85.80 BEGIN BORE 854+73.29 EXISTING FENCE 855+16.88 SECTION LINE 855+18.76 C.L. 20th ST SW	856+35.01 END BORE 856+63.88 P.L. 601'12" R.L.	861+41.22 P.L. 623'92" L.L.	863+29.94 P.L. 776'45" L.L.	873+13.31 P.L. 477'46" L.L.	874+82.31 P.L. 072'29" R.L.	878+54.54 P.L. 175'11" L.L.	880+02.07 P.L. 351'29" L.L.	881+61.46 P.L. 1037'23" R.L. 881+80.72 1/4 LINE 881+94.05 EXISTING FENCE 882+91.21 P.L. 072'15" R.L.	889+03.67 P.L. 072'57" L.L.
------------	------------------------------	--	---	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	---	-----------------------------



LEGEND	
—	PROPERTY LINE
- - -	SECTION LINE
- - -	EASEMENT LINE
- - -	PIPELINE CENTERLINE
- - -	WATER LINE
- - -	FOREIGN PIPELINE
- - -	EXISTING ROAD
- - -	UNDERGROUND COM. LINE
- x -	BARBED WIRE FENCE
- o -	FIBER OPTIC COM. LINE
- - -	RAILROAD
- - -	OVERHEAD ELECTRIC
- o -	UTILITY POLE
- - -	AS-CONSTRUCTED BORE
- o -	MARKER POST
▨	AVOIDANCE AREA
▨	WETLAND
▨	EASEMENT
▨	TEST LEAD
▨	VALVE SETTING

MATERIAL SUMMARY		MATERIAL SUMMARY			
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION
1	5005 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FBE			
2	251 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL AMCO			

REFERENCE DRAWINGS		REVISIONS		
DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION
		0	6/11/15	AS CONSTRUCTED

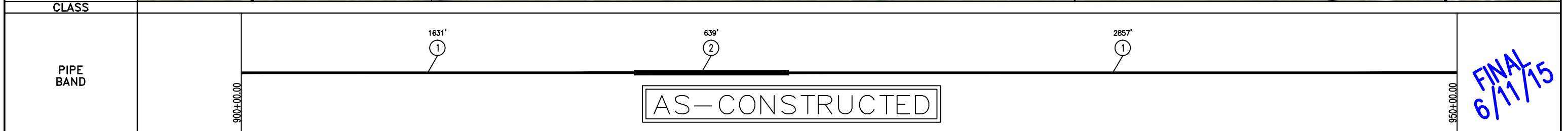
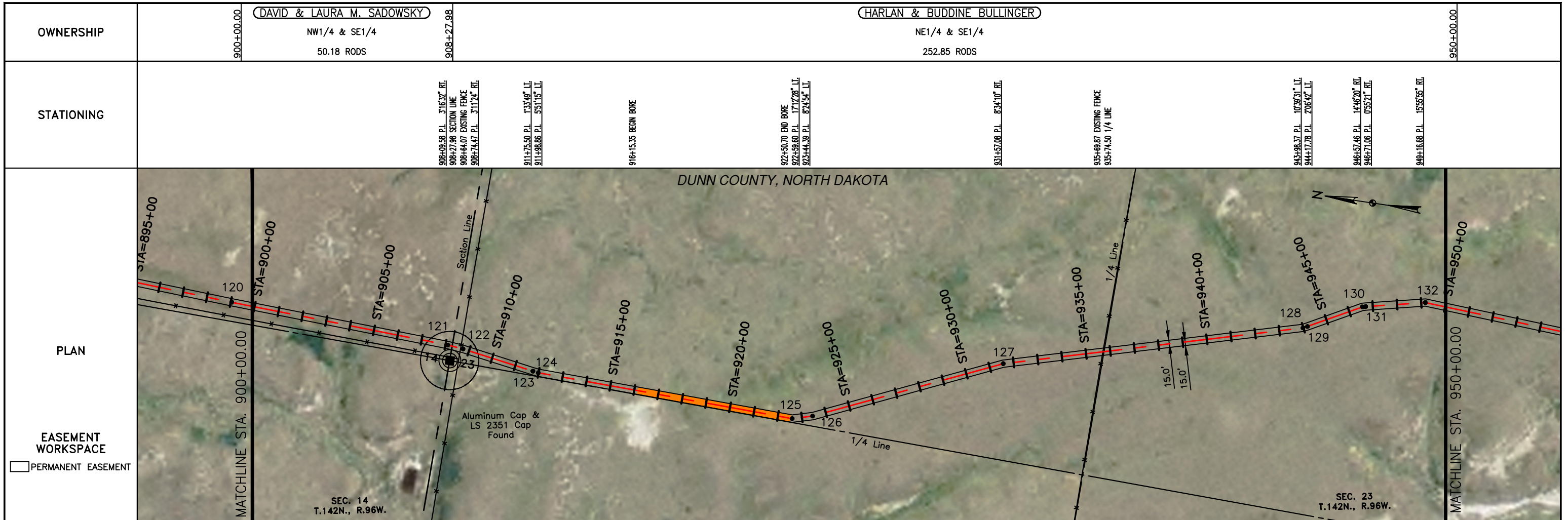
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DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 24

BOE PIPELINE, LLC.

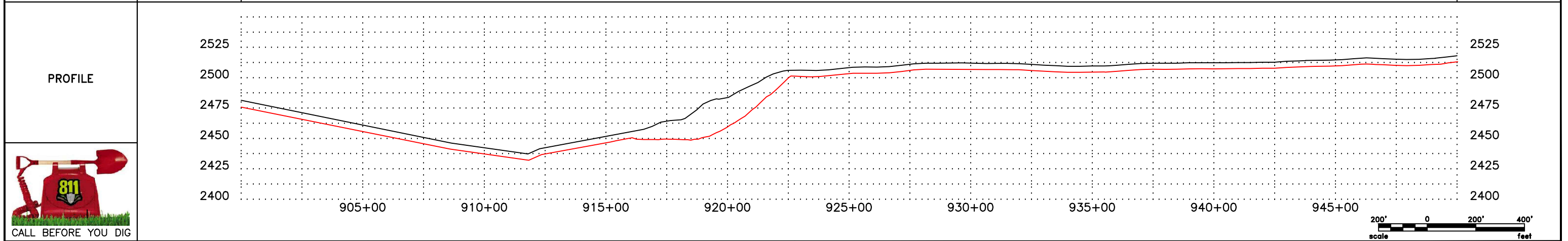
BOE PIPELINE PHASE I

SECTIONS 11 & 14, T142N, R96W

DUNN COUNTY, NORTH DAKOTA



FINAL
6/11/15



LEGEND

—	PROPERTY LINE	— x —	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	FO	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	4488 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB
2	630 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 25

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTIONS 14 & 23, T142N, R96W
DUNN COUNTY, NORTH DAKOTA

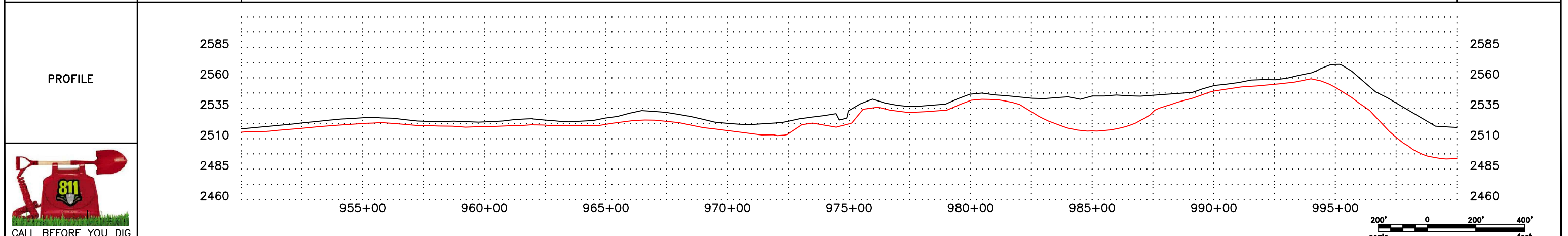
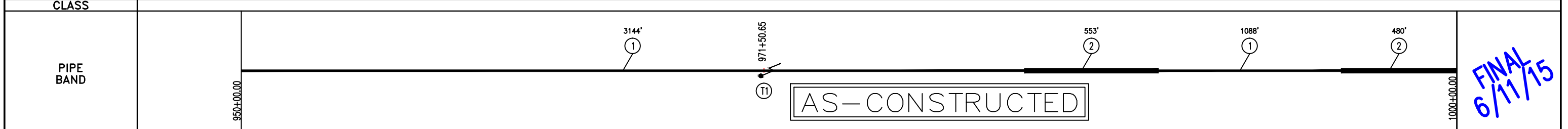
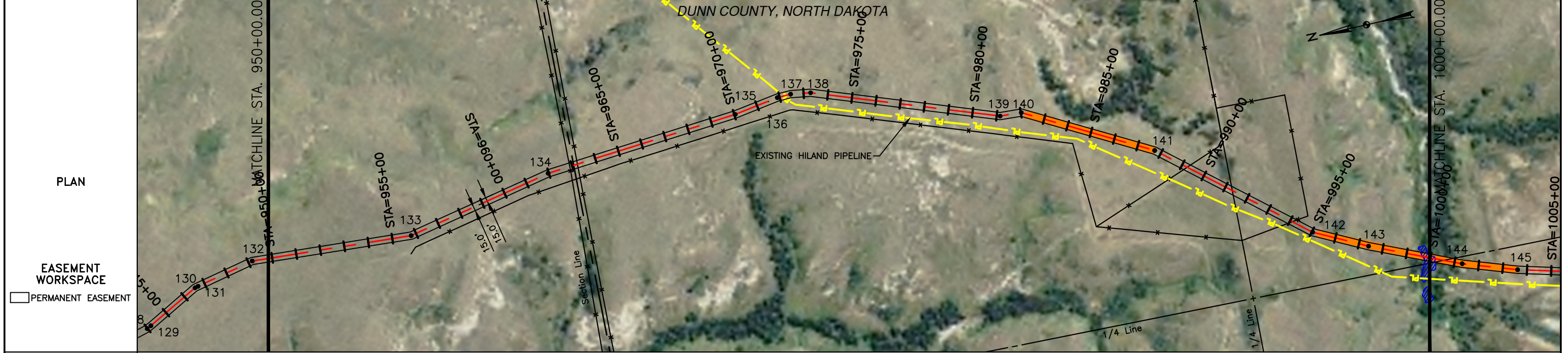
KLJ
4585 Coleman Street
Bismarck, ND 58503
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OWNERSHIP
 HARLAN & BUDDINE BULLINGER
 NE1/4 & SE1/4
 79.23 RODS

HARLAN & BUDDINE BULLINGER
 W1/2 LESS 19.96, 76.76, 94.28, 20.70 ACRES, NE1/4 & SE1/4
 223.80 RODS

STATIONING

955+78.67 P.I. 1523.30' LI.
 961+97.26 P.I. 6591.06' RT.
 962+90.70 EXISTING FENCE
 963+07.33 SECTION LINE
 963+23.44 EXISTING FENCE
 970+03.26 P.I. 4171.16' LI.
 971+50.65 TEST LEAD
 971+89.73 P.I. 7707.02' RT.
 972+14.87 EXISTING HILAND PIPELINE
 972+46.62 P.I. 10391.15' RT.
 973+29.13 P.I. 11001.92' RT.
 981+14.09 P.I. 16171.11' LI.
 982+02.01 P.I. 23053.37' RT.
 982+21.28 BEGIN BORE
 987+72.24 END BORE
 987+72.24 P.I. 113131.48' RT.
 988+22.63 EXISTING FENCE
 991+31.70 1/4 LINE
 994+09.81 EXISTING FENCE
 995+03.39 P.I. 13116.58' LI.
 995+23.44 BEGIN BORE
 997+40.52 P.I. 3741.39' LI.
 999+92.25 CL. OF ROW



LEGEND

—	PROPERTY LINE	—	BARBED WIRE FENCE	—	AVOIDANCE AREA
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	—	WETLAND
- - -	EASEMENT LINE	- - -	RAILROAD	—	EASEMENT
- - -	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION
1	4232 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB			
2	1033 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AWC			
T1	1 EA	TYPE-1			

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

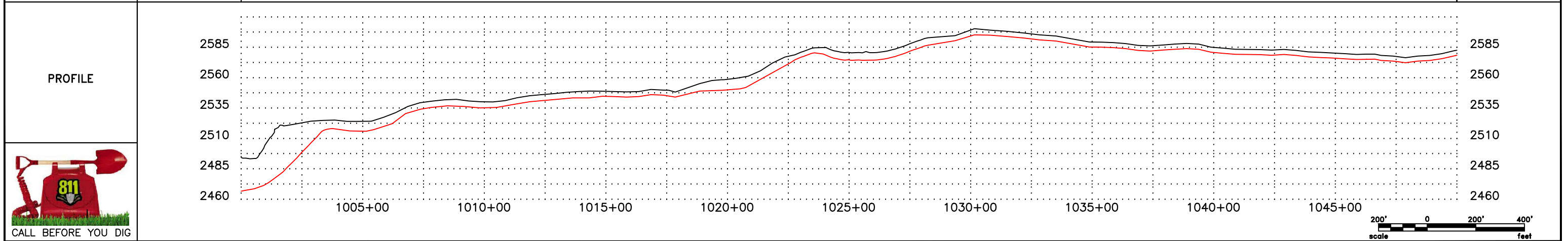
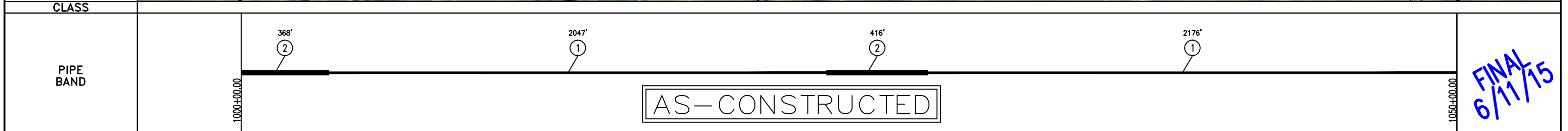
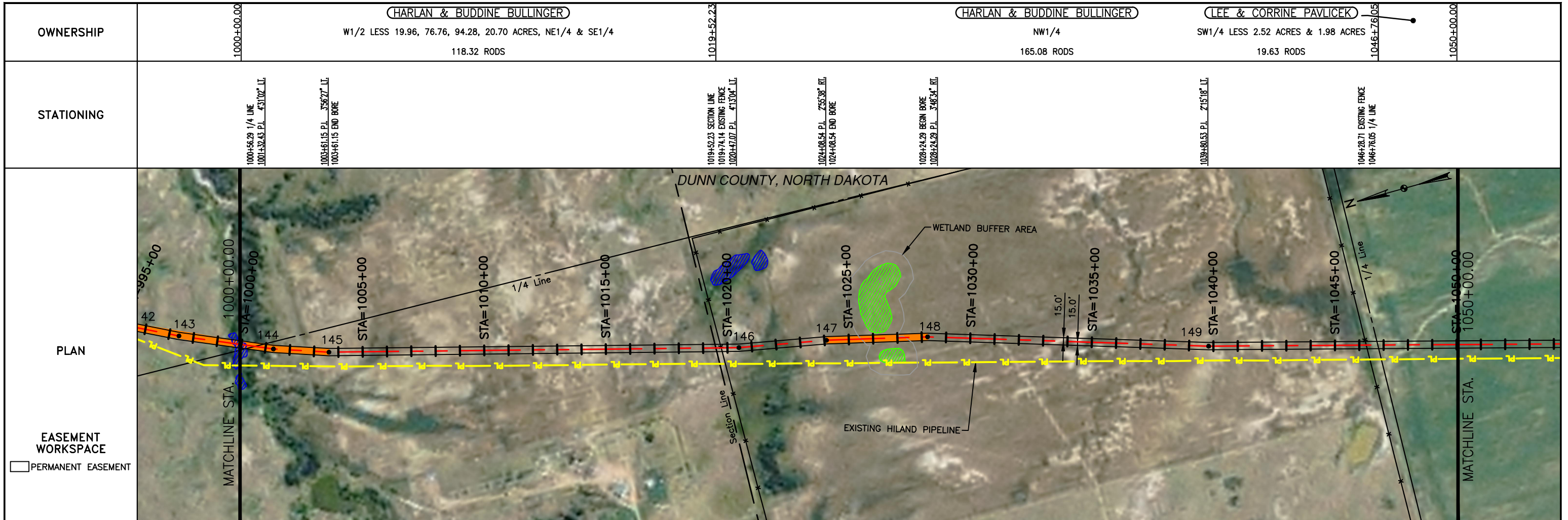
DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 26

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

KLJ

4585 Coleman Street
 Bismarck, ND 58503

BOE PIPELINE PHASE I
 SECTIONS 23 & 26, T142N, R96W
 DUNN COUNTY, NORTH DAKOTA



LEGEND

—	PROPERTY LINE	-x-x-	BARBED WIRE FENCE	▨	AVOIDANCE AREA
-o-o-	SECTION LINE	-f-o-	FIBER OPTIC COM. LINE	▨	WETLAND
-d-d-	EASEMENT LINE	-r-r-	RAILROAD	▨	EASEMENT
-c-c-	PIPELINE CENTERLINE	-e-e-	OVERHEAD ELECTRIC	▨	TEST LEAD
-w-w-	WATER LINE	-u-u-	UTILITY POLE	▨	VALVE SETTING
-y-y-	FOREIGN PIPELINE	-a-a-	AS-CONSTRUCTED BORE	▨	MARKER POST
-g-g-	EXISTING ROAD	-m-m-	MARKER POST		
-b-b-	UNDERGROUND COM. LINE				

MATERIAL SUMMARY			MATERIAL SUMMARY		
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION
1	4375 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB			
2	784 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL ANO			

REFERENCE DRAWINGS		REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

SCALE: 1" = 400'

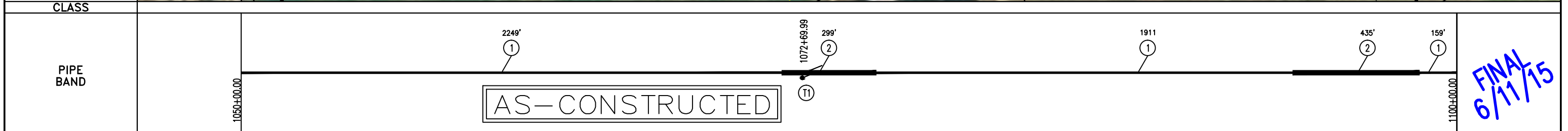
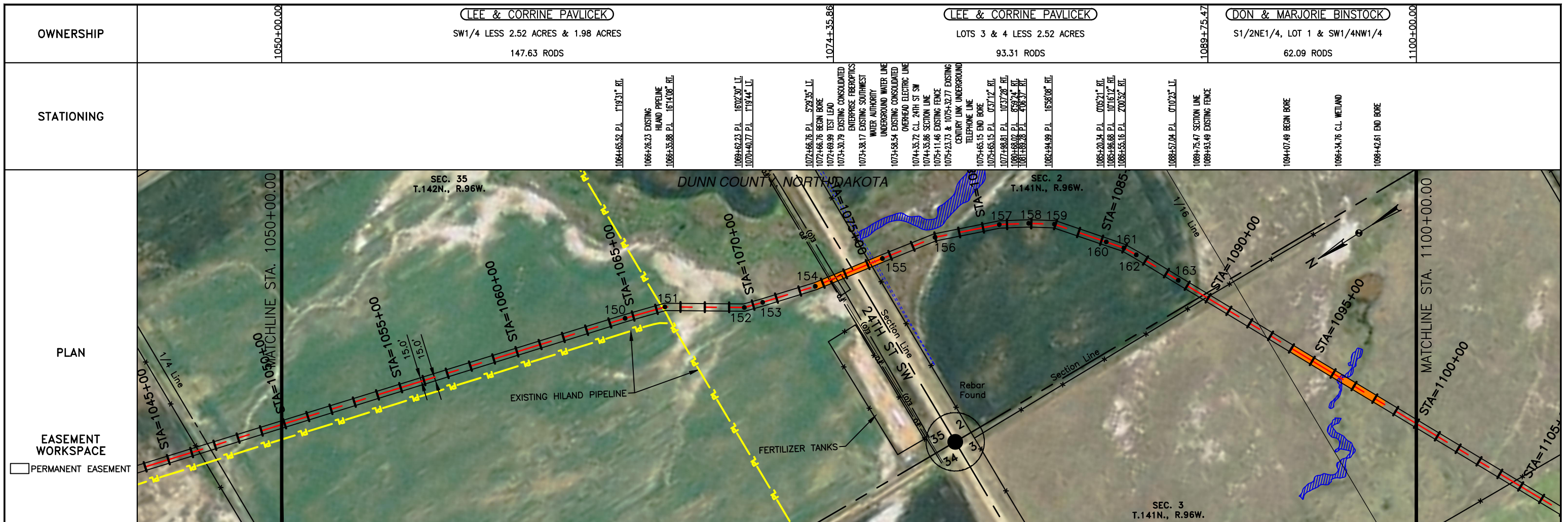
DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 27

BOE Bakken Oil Express BOE PIPELINE, LLC.

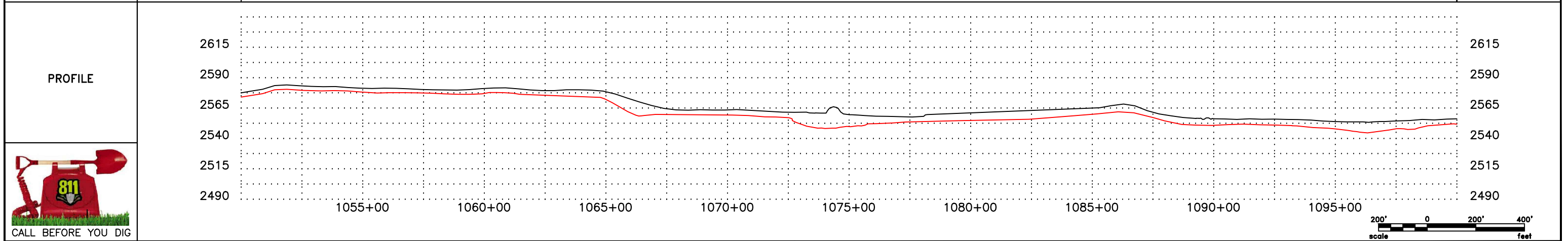
KLJ

BOE PIPELINE PHASE I
 SECTIONS 26 & 35, T142N, R96W
 DUNN COUNTY, NORTH DAKOTA

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6/11/15



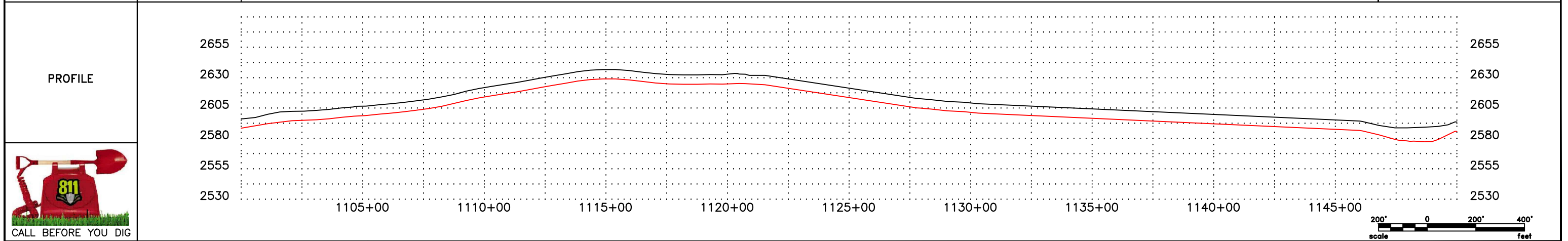
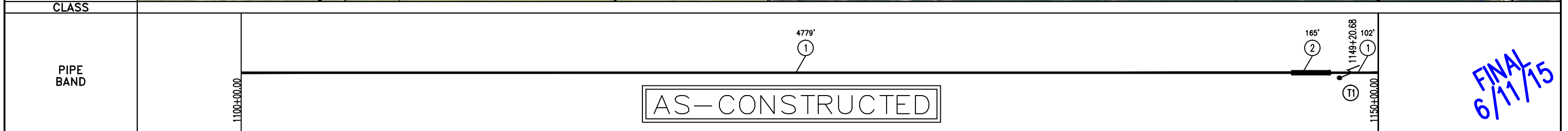
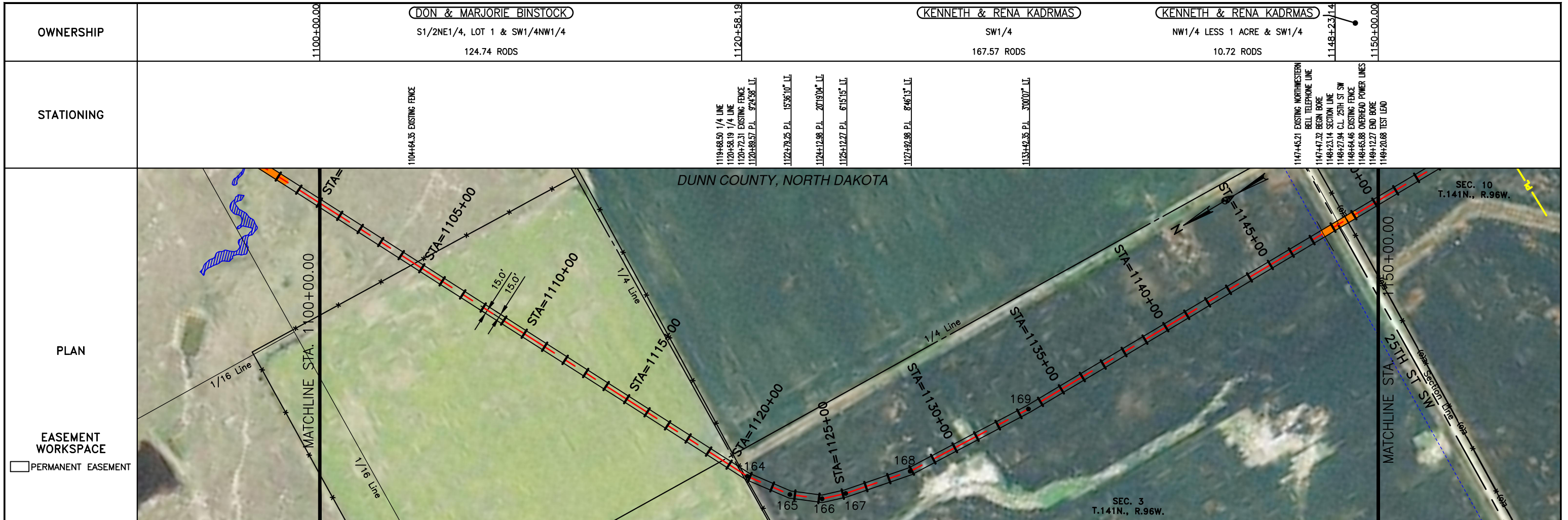
LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
SYMBOL	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	NO.	DATE
---	PROPERTY LINE	1	4319 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB				0	6/11/15
---	SECTION LINE	2	734 LF	16" OD, 0.304" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL AMO					
---	EASEMENT LINE	T1	1 EA	TYPE-1					
---	PIPELINE CENTERLINE								
---	WATER LINE								
---	FOREIGN PIPELINE								
---	EXISTING ROAD								
---	UNDERGROUND COM. LINE								
---	BARBED WIRE FENCE								
---	FIBER OPTIC COM. LINE								
---	RAILROAD								
---	OVERHEAD ELECTRIC								
---	UTILITY POLE								
---	AS-CONSTRUCTED BORE								
---	MARKER POST								
---	AVOIDANCE AREA								
---	WETLAND								
---	EASEMENT								
---	TEST LEAD								
---	VALVE SETTING								

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 28

BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTIONS 36, T142N, R96W & SECTION 2 & 3 T141N, R96W
DUNN COUNTY, NORTH DAKOTA

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LEGEND

—	PROPERTY LINE	—	BARBED WIRE FENCE	—	AVOIDANCE AREA
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	—	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	—	EASEMENT
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
1	4881 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB
2	165 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL ANO
T1	1 EA	TYPE-1

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 29

BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTIONS 3 & 10, T141N, R96W
DUNN COUNTY, NORTH DAKOTA

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KENNETH & RENA KADRMAS

NW1/4 LESS 1 ACRE & SW1/4

303.03 RODS

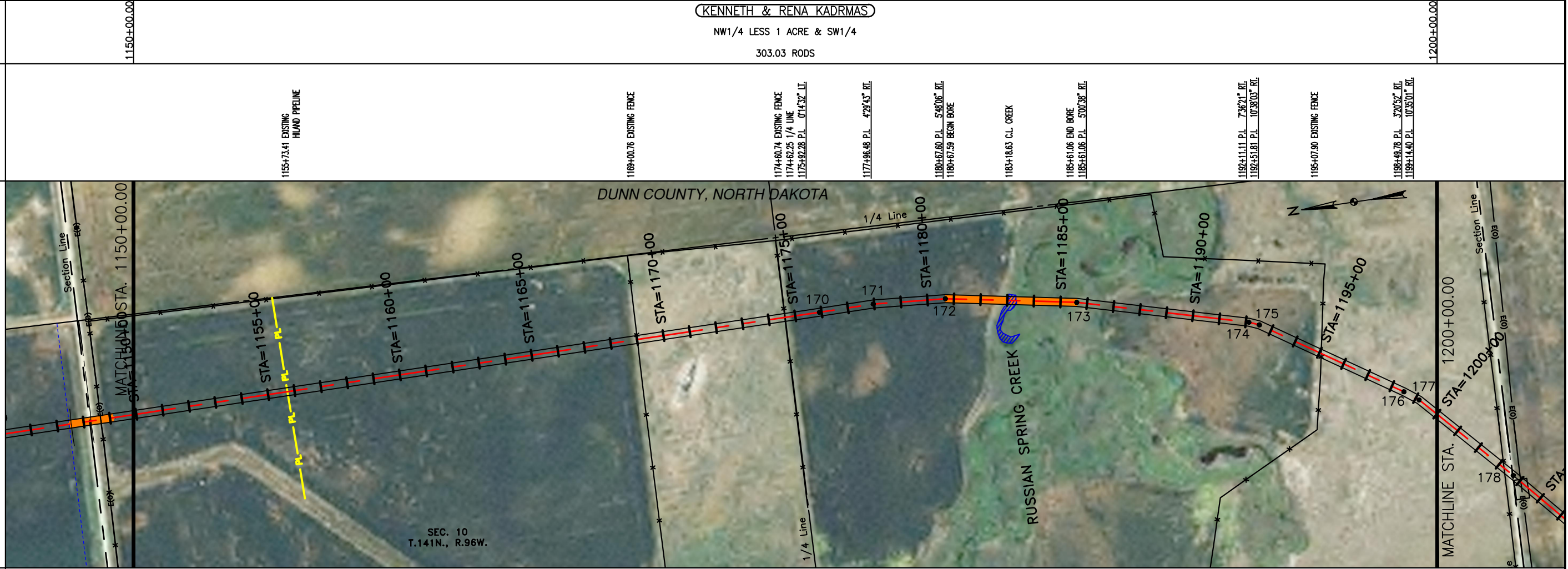
OWNERSHIP

STATIONING

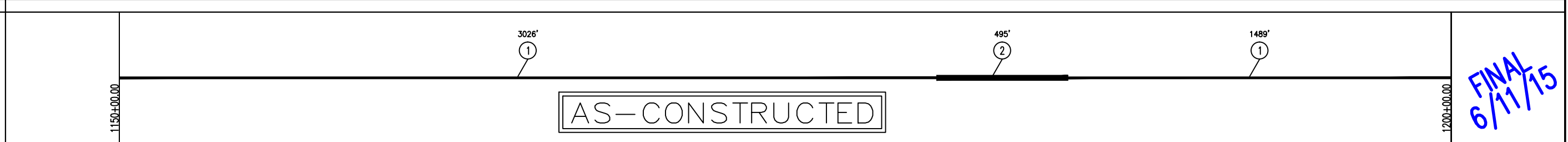
PLAN

EASEMENT WORKSPACE

PERMANENT EASEMENT

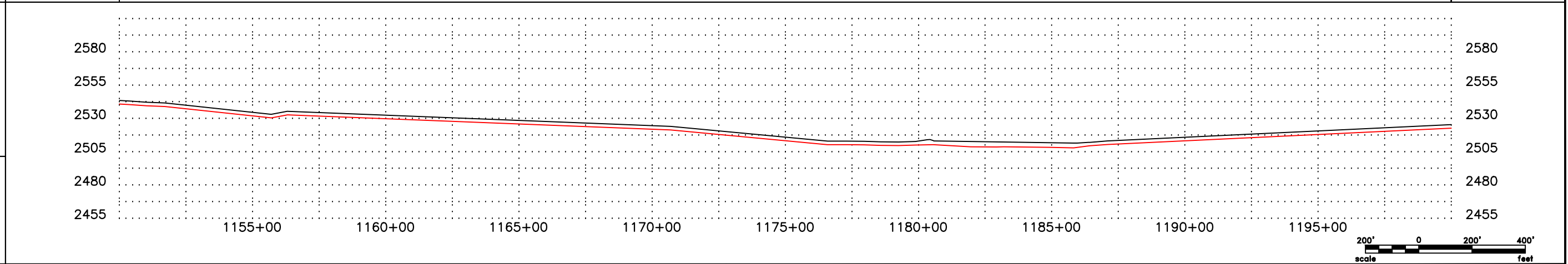


CLASS



FINAL
6/11/15

PROFILE



LEGEND

— x —	PROPERTY LINE	— x —	BARBED WIRE FENCE	—	AVOIDANCE AREA
— x —	SECTION LINE	—	FIBER OPTIC COM. LINE	—	WETLAND
—	EASEMENT LINE	—	RAILROAD	—	EASEMENT
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION
1	4515 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL FIB			
2	495 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MIL FIB, 30-35 MIL ANO			

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE	REVISIONS
		0	6/11/15	AS CONSTRUCTED

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 30

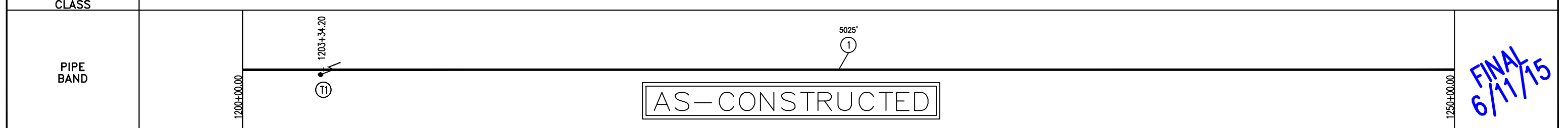
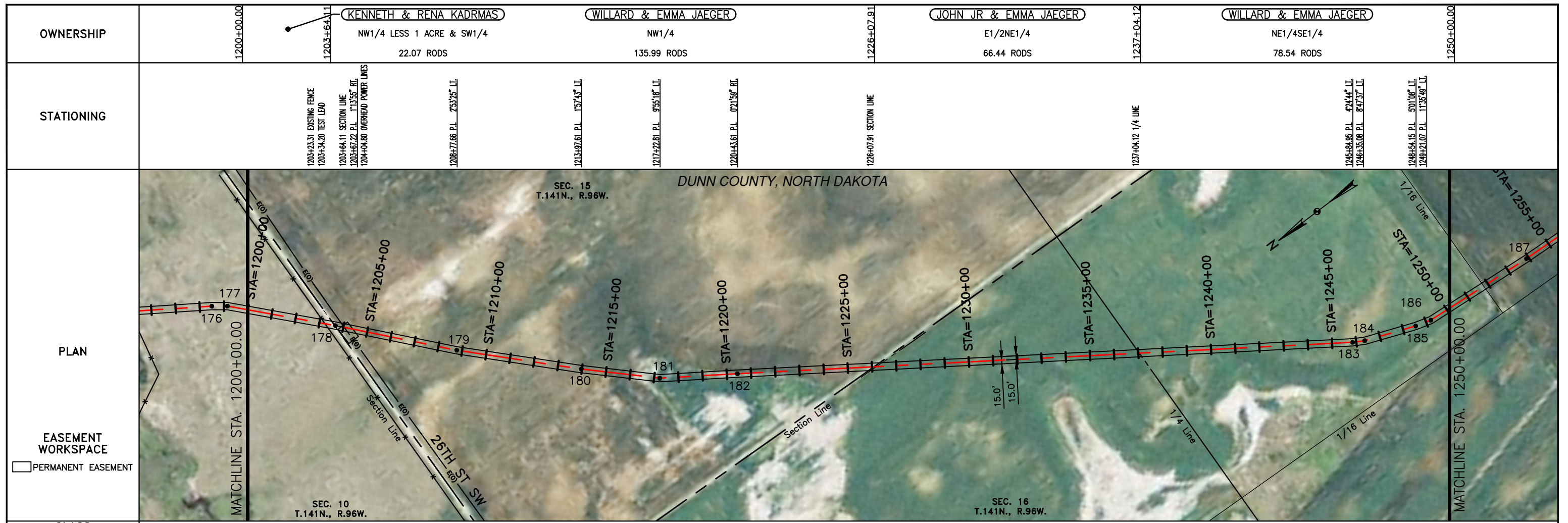
BOE **BAKKEN OIL EXPRESS** BOE PIPELINE, LLC.

BOE PIPELINE PHASE I
SECTION 10, T141N, R96W
DUNN COUNTY, NORTH DAKOTA

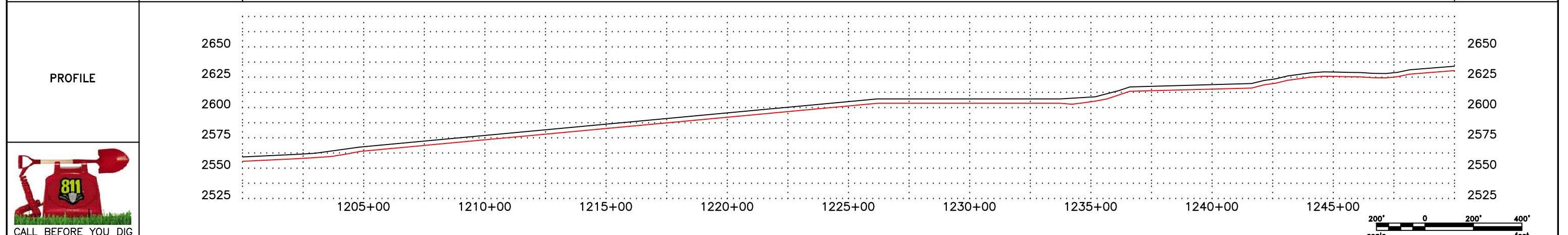
KLJ

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Bismarck, ND 58503

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6/11/15



LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
SYMBOL	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	NO.	DATE
---	PROPERTY LINE	1	5025 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL. FIB				0	6/11/15
---	SECTION LINE	TI	1 EA	TYPE-1					
---	EASEMENT LINE								
---	PIPELINE CENTERLINE								
---	WATER LINE								
---	FOREIGN PIPELINE								
---	EXISTING ROAD								
---	UNDERGROUND COM. LINE								
---	BARBED WIRE FENCE								
---	FIBER OPTIC COM. LINE								
---	RAILROAD								
---	OVERHEAD ELECTRIC								
---	UTILITY POLE								
---	AS-CONSTRUCTED BORE								
---	MARKER POST								
---	AVOIDANCE AREA								
---	WETLAND EASEMENT								
---	TEST LEAD								
---	VALVE SETTING								

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

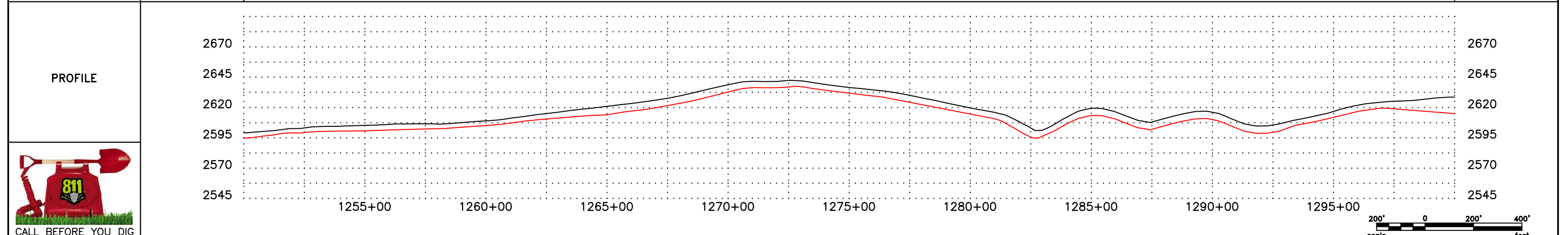
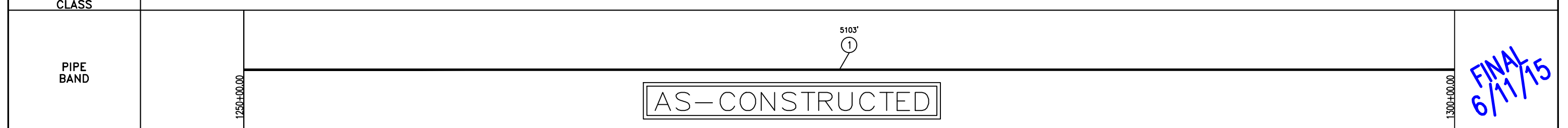
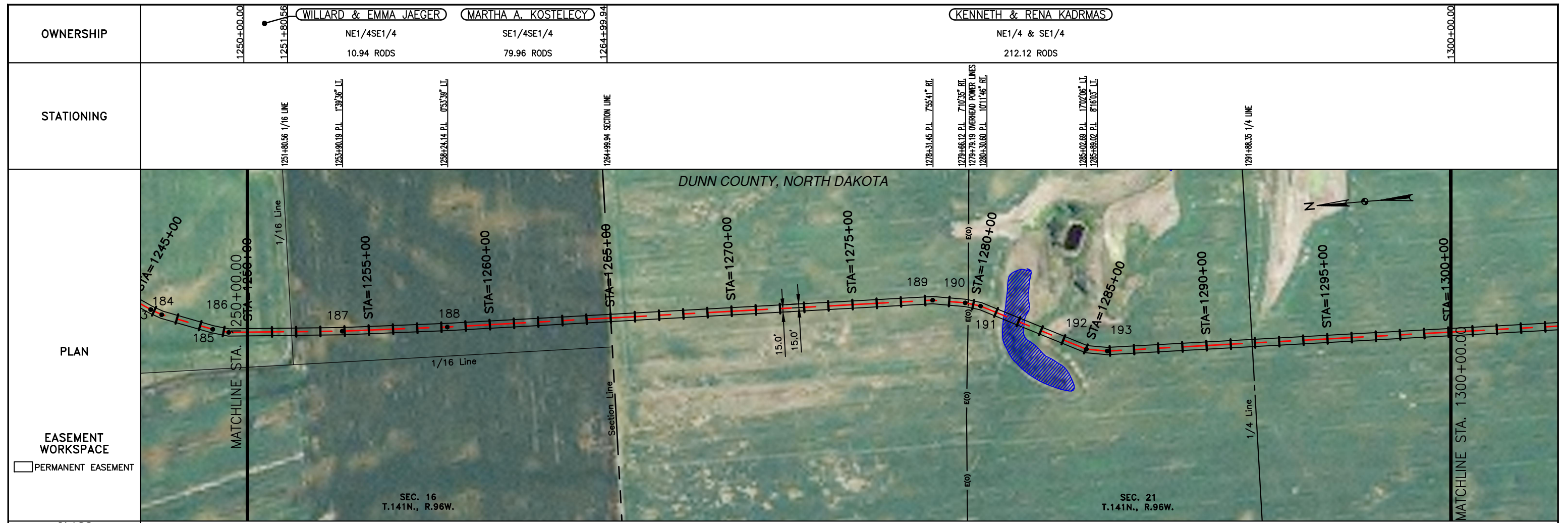
BOE PIPELINE PHASE I
SECTIONS 10, 15 & 16, T141N, R96W
DUNN COUNTY, NORTH DAKOTA

4585 Coleman Street
Bismarck, ND 58503

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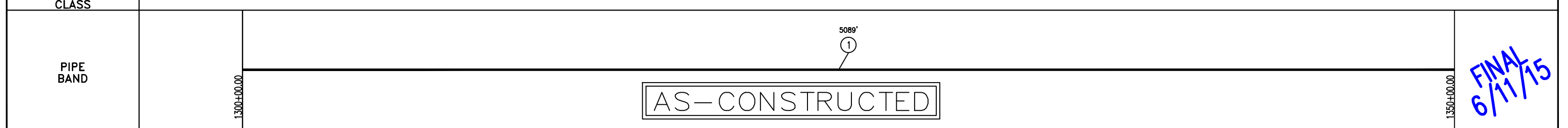
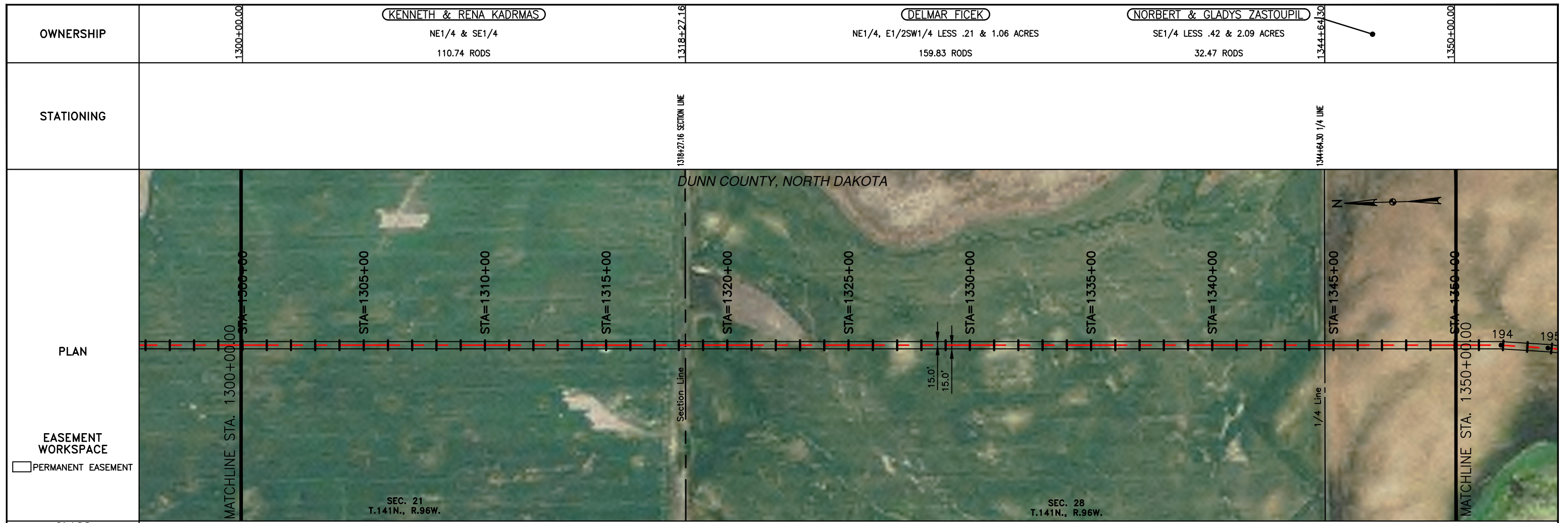
4585 Coleman Street
Bismarck, ND 58503

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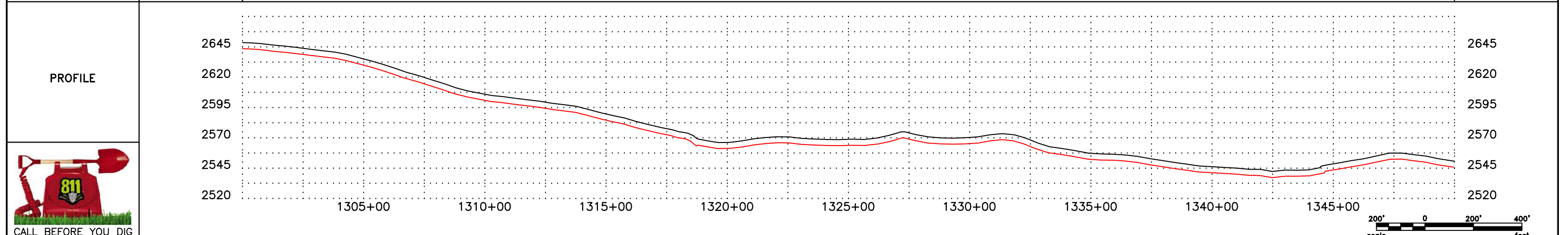


MATERIAL SUMMARY			MATERIAL SUMMARY			REFERENCE DRAWINGS		REVISIONS		
MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION
1	5103 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MIL. FBE						0	6/11/15	AS CONSTRUCTED

LEGEND			
—	PROPERTY LINE	—	BARBED WIRE FENCE
- - -	SECTION LINE	—	FIBER OPTIC COM. LINE
- - -	EASEMENT LINE	—	RAILROAD
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC
—	WATER LINE	—	UTILITY POLE
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE
—	EXISTING ROAD	—	MARKER POST
—	UNDERGROUND COM. LINE	—	AVOIDANCE AREA
—		—	WETLAND EASEMENT
—		—	TEST LEAD
—		—	VALVE SETTING



FINAL
6/11/15



MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
MK.NO.	QTY.	MK.NO.	QTY.	DWG. NO.	DESCRIPTION	NO.	DATE
1	5089 LF					0	6/11/15

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

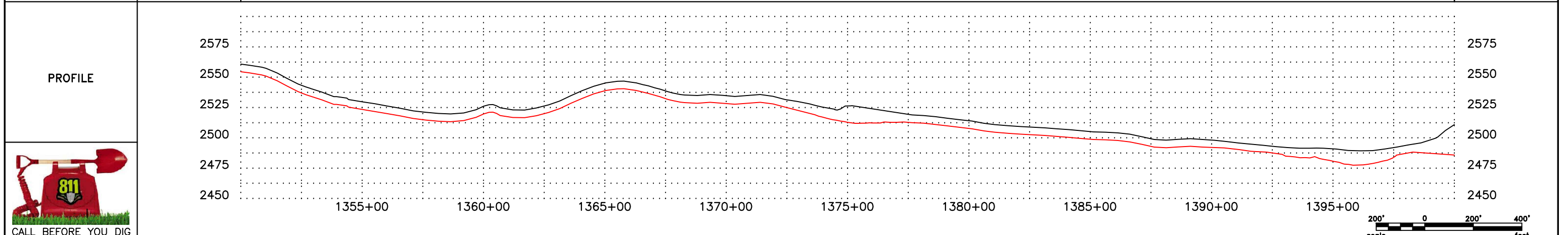
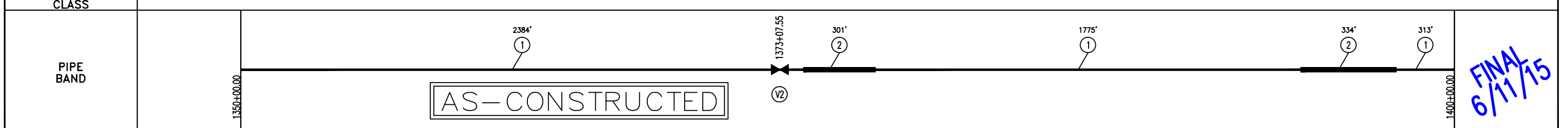
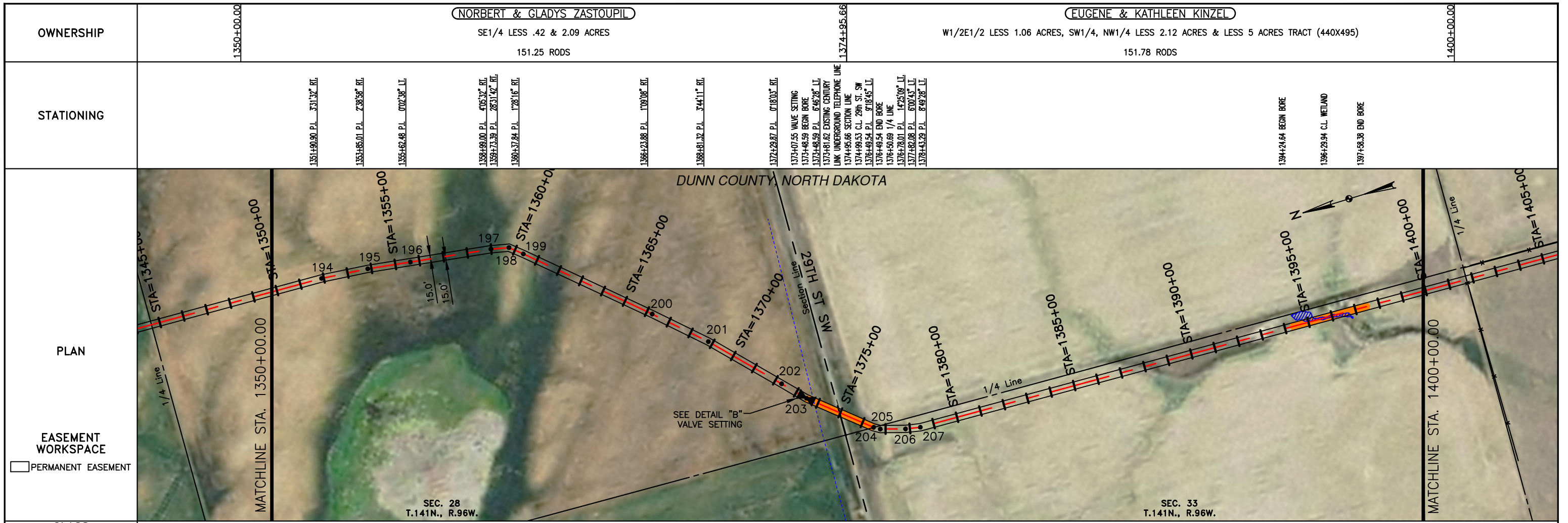
LEGEND			
—	PROPERTY LINE	—	BARBED WIRE FENCE
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE
- - -	EASEMENT LINE	- - -	RAILROAD
- - -	PIPELINE CENTERLINE	- - -	OVERHEAD ELECTRIC
- - -	WATER LINE	- - -	UTILITY POLE
- - -	FOREIGN PIPELINE	- - -	AS-CONSTRUCTED BORE
- - -	EXISTING ROAD	- - -	MARKER POST
- - -	UNDERGROUND COM. LINE	- - -	AVOIDANCE AREA
- - -		- - -	WETLAND EASEMENT
- - -		- - -	TEST LEAD
- - -		- - -	VALVE SETTING

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

BOE PIPELINE PHASE I
SECTIONS 21 & 28, T141N, R96W
DUNN COUNTY, NORTH DAKOTA

KLJ
4585 Coleman Street
Bismarck, ND 58503

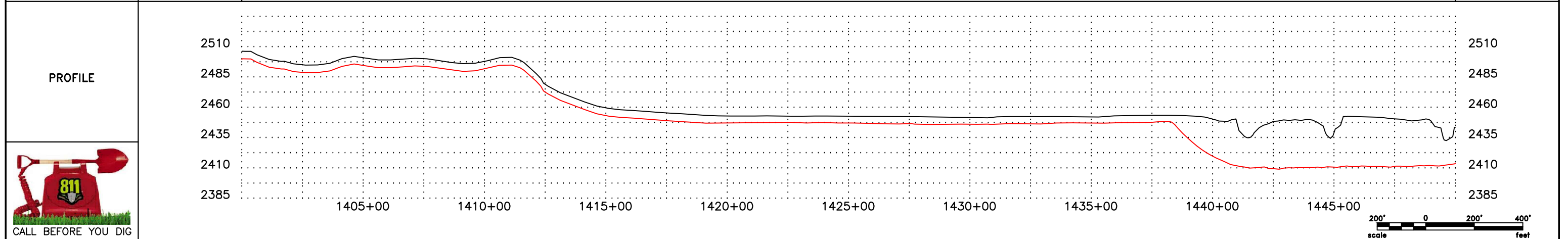
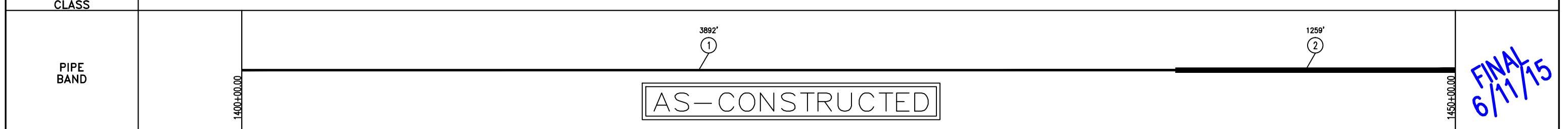
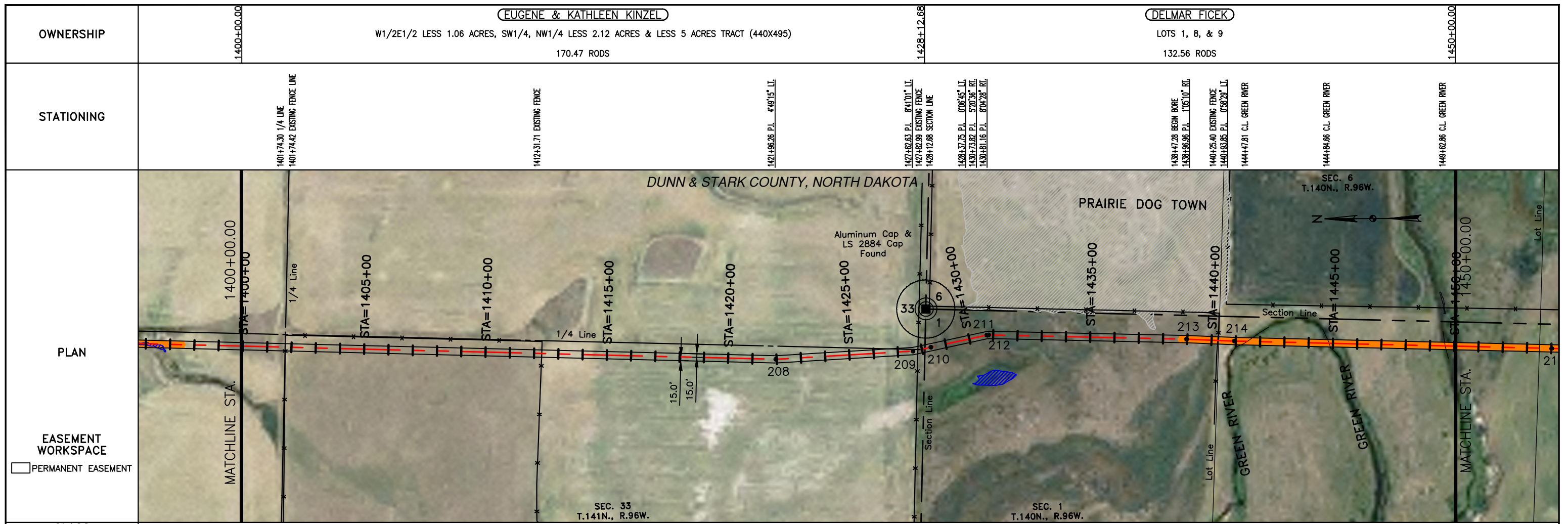
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DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 713140
REVISION: SHEET: 33



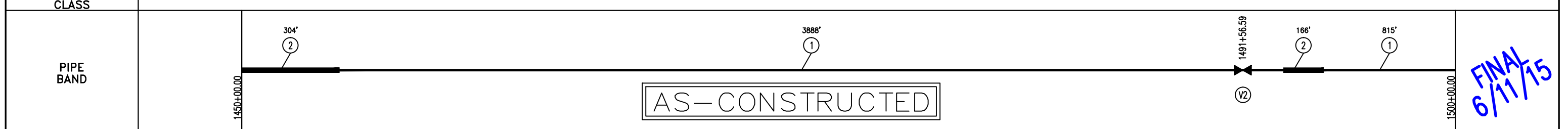
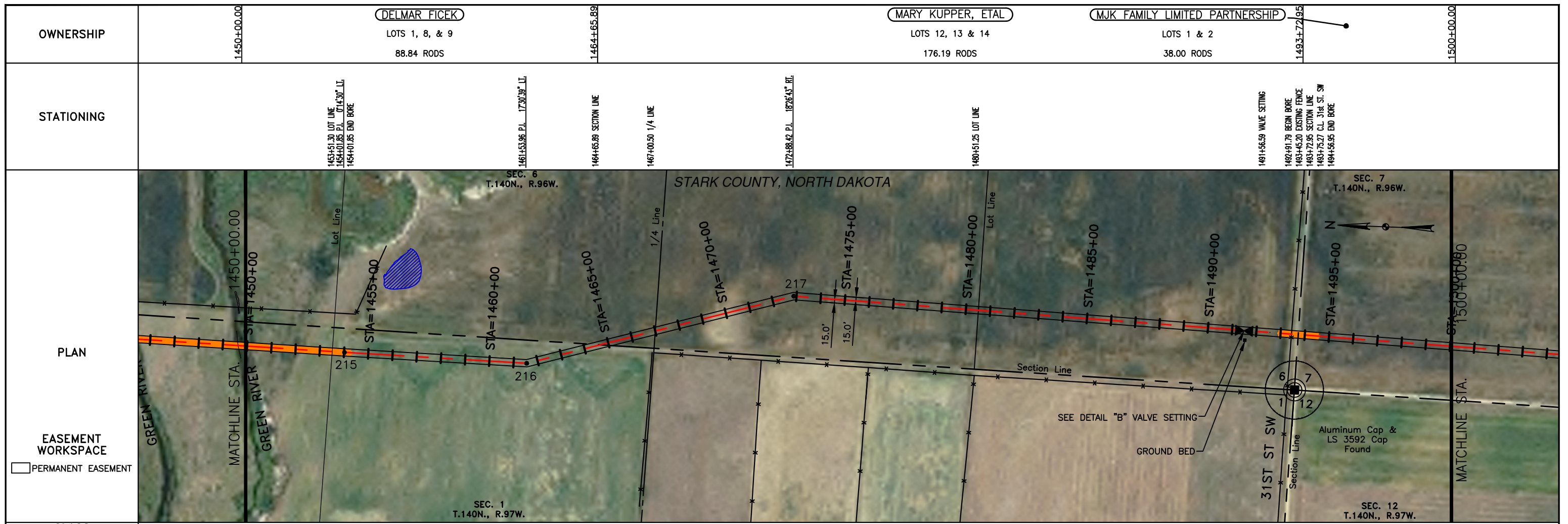
MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS		
MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	NO.	DATE	DESCRIPTION
1	4472 LF	16" OD, 0.281" WT. API 5L X70, 13-15 MI. FIB			V2	98	6/11/15	AS CONSTRUCTED
2	635 LF	16" OD, 0.344" WT. API 5L X70, 14-16 MI. FIB, 30-35 MI. ABO						

LEGEND

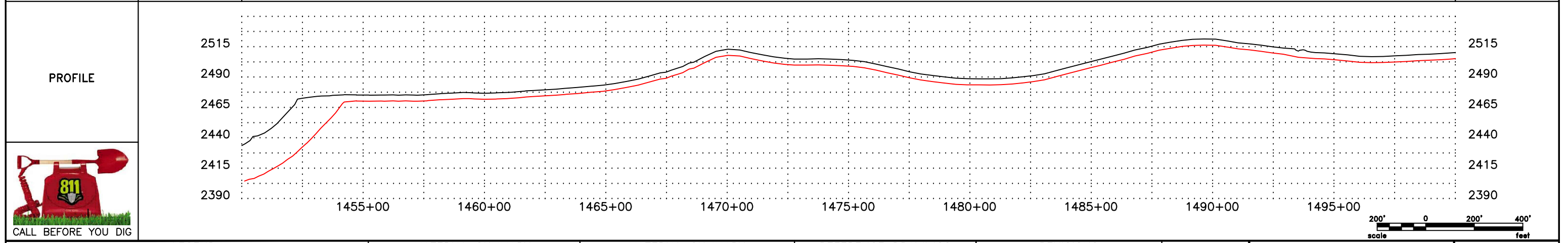
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- SECTION LINE
- EASEMENT LINE
- PIPELINE CENTERLINE
- WATER LINE
- FOREIGN PIPELINE
- EXISTING ROAD
- UNDERGROUND COM. LINE
- BARBED WIRE FENCE
- FIBER OPTIC COM. LINE
- RAILROAD
- OVERHEAD ELECTRIC
- UTILITY POLE
- AS-CONSTRUCTED BORE
- MARKER POST
- AVOIDANCE AREA
- WETLAND EASEMENT
- TEST LEAD
- VALVE SETTING



LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS		BOE PIPELINE, LLC.	
—	PROPERTY LINE	MK.NO.	QTY.	MK.NO.	QTY.	DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION	
- - -	SECTION LINE	1	3892 LF					0	6/11/15	AS CONSTRUCTED	
- · - · -	EASEMENT LINE										
- - -	PIPELINE CENTERLINE										BOE PIPELINE PHASE I SECTION 33, T141N, R96W & SECTION 1, T140N, R97W DUNN & STARK COUNTY, NORTH DAKOTA
- - -	WATER LINE										4585 Coleman Street Bismarck, ND 58503
- - -	FOREIGN PIPELINE										811 CALL BEFORE YOU DIG
- - -	EXISTING ROAD										SCALE: 1" = 400' DRAWN BY: D. BUNKERS DATE: 6/11/15 CHECKED BY: S. BESMER APPROVED BY: S. BESMER KLJ JOB NUMBER: 1713140 REVISION: SHEET: 35
- - -	UNDERGROUND COM. LINE										© KLJ 2015



FINAL
6/11/15



LEGEND

—	PROPERTY LINE	—*—	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	FO	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	▨	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	—	—	—
—	UNDERGROUND COM. LINE	—	—	—	—

MATERIAL SUMMARY			MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION
1	4765 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FIB			
2	470 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FIB, 30-35 MIL AD			

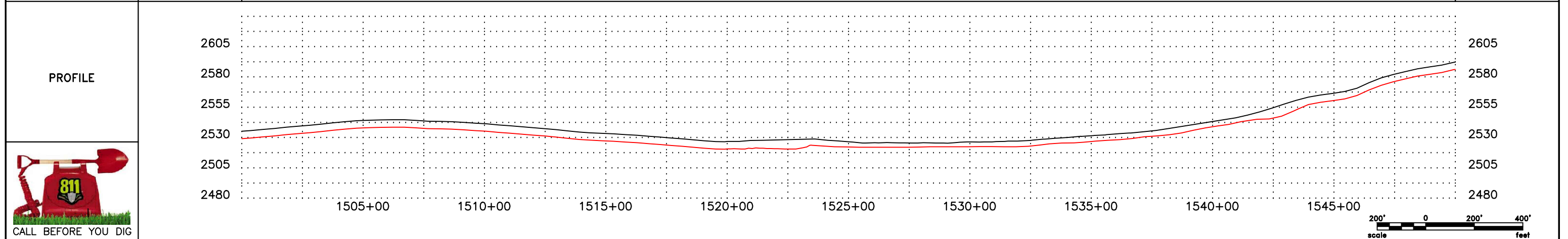
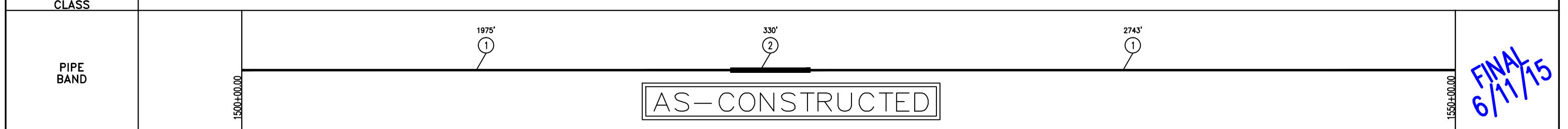
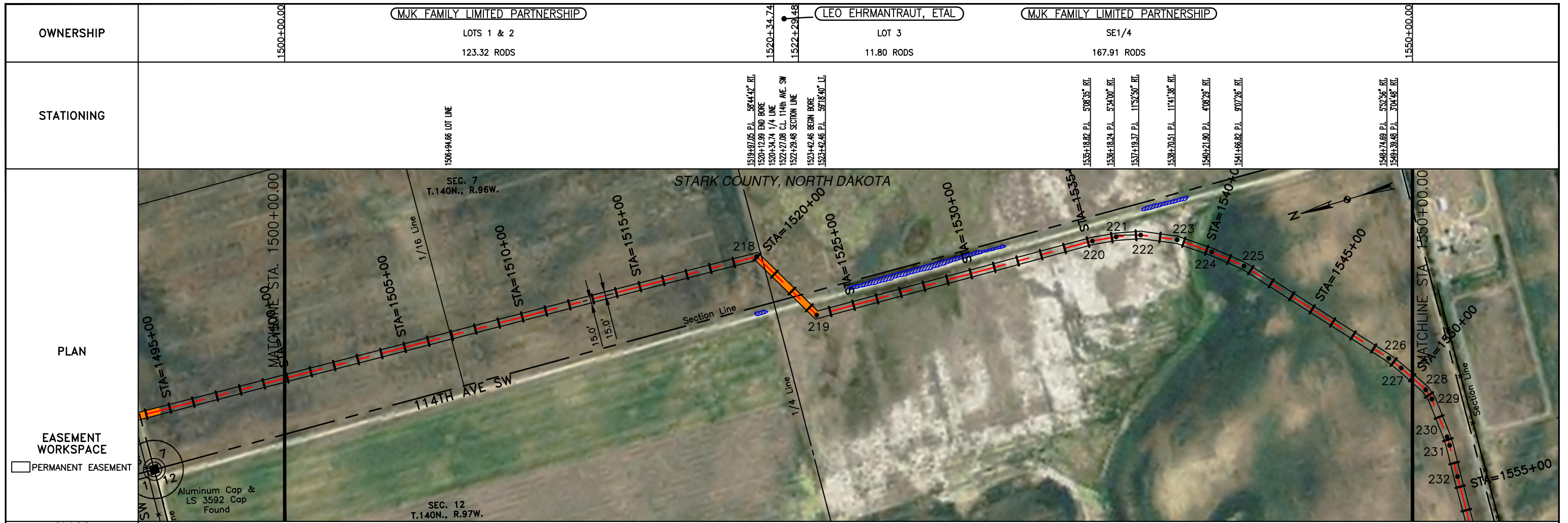
REFERENCE DRAWINGS	
DWG. NO.	DESCRIPTION
V2	98 16" VALVE SETTING, DETAIL "B"

REVISIONS		
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'
 DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KJL JOB NUMBER: 1713140
 REVISION: SHEET 36

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.
BOE PIPELINE PHASE 1
 SECTION 1, T140N, R97W & SECTIONS 6 & 7, T140N, R96W
 STARK COUNTY, NORTH DAKOTA

KJL
 4585 Coleman Street
 Bismarck, ND 58503
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LEGEND	
—	PROPERTY LINE
- - -	SECTION LINE
- · - · -	EASEMENT LINE
- - -	PIPELINE CENTERLINE
- · - · -	WATER LINE
- · - · -	FOREIGN PIPELINE
- · - · -	EXISTING ROAD
- · - · -	UNDERGROUND COM. LINE
—	BARBED WIRE FENCE
—	FIBER OPTIC COM. LINE
—	RAILROAD
—	OVERHEAD ELECTRIC
—	UTILITY POLE
—	AS-CONSTRUCTED BORE
—	MARKER POST
—	AVOIDANCE AREA
—	WETLAND
—	EASEMENT
—	TEST LEAD
—	VALVE SETTING

MATERIAL SUMMARY		MATERIAL SUMMARY			
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION
1	4718 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FIB			
2	330 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FIB, 30-35 MIL ADH			

REFERENCE DRAWINGS	
DWG. NO.	DESCRIPTION

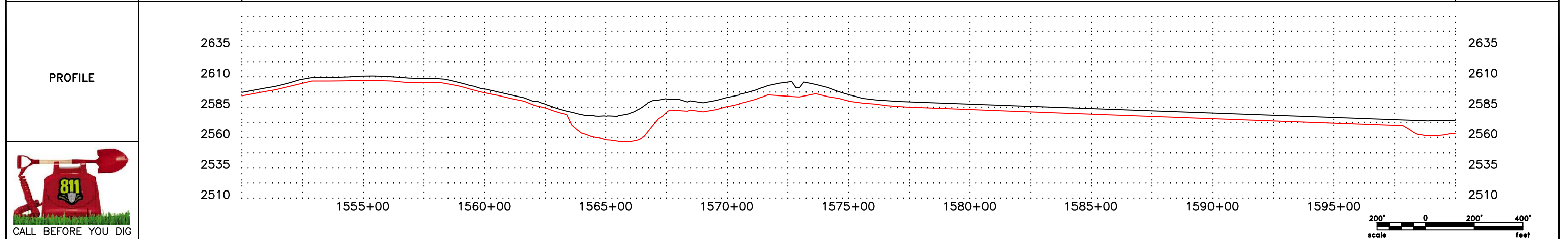
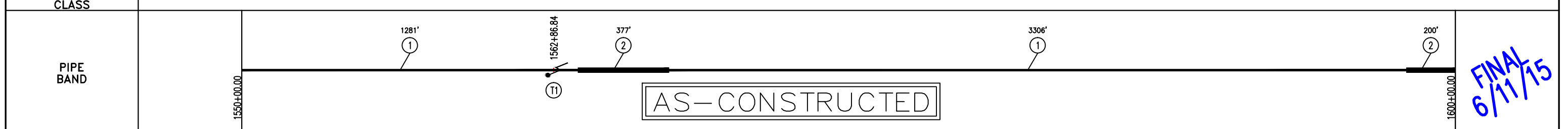
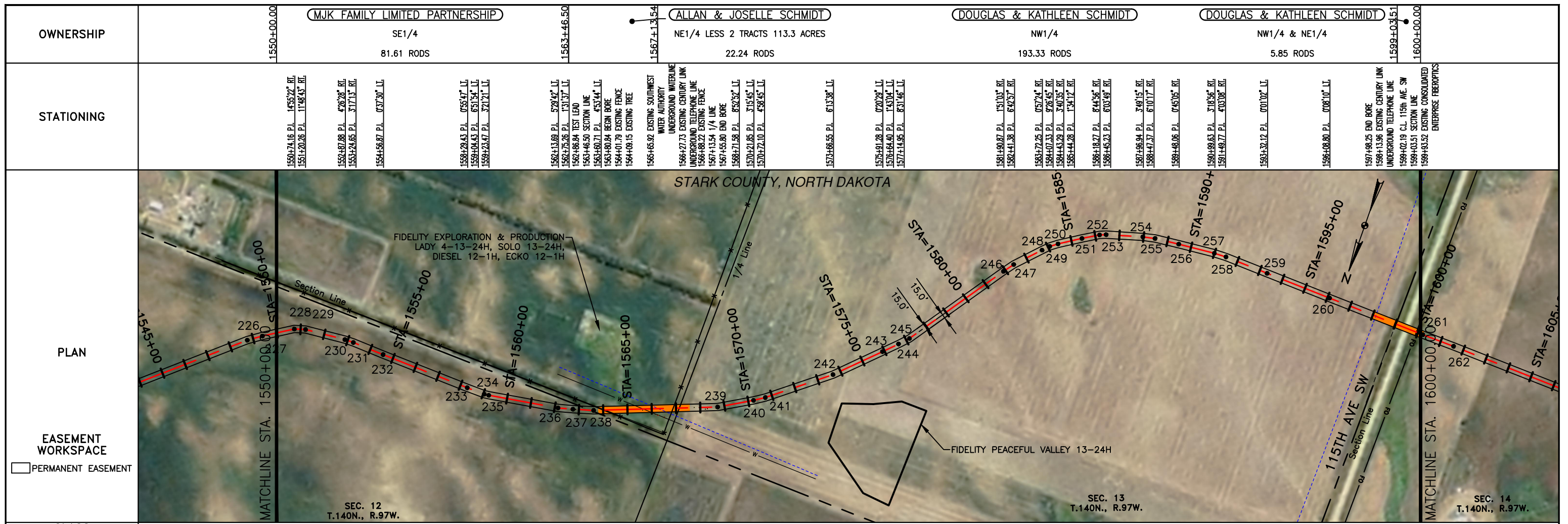
REVISIONS		
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'
 DRAWN BY: D. BUNKERS
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 37

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.
 BOE PIPELINE PHASE I
 SECTION 7, T140N, R96W & SECTION 12, T140N, R97W
 STARK COUNTY, NORTH DAKOTA

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 4585 Coleman Street
 Bismarck, ND 58503
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FINAL
 6/11/15



MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	NO.	DATE
1	4887 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FIB				0	6/11/15
2	577 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FIB, 30-35 MIL ADH					
TI	1 EA	TYPE-1					

REVISIONS	
NO.	DESCRIPTION
0	AS CONSTRUCTED

LEGEND

—	PROPERTY LINE	—*—	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	▨	TEST LEAD
- - -	WATER LINE	—	UTILITY POLE	▨	VALVE SETTING
- - -	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	▨	MARKER POST
- - -	EXISTING ROAD	—	MARKER POST		
- - -	UNDERGROUND COM. LINE				

BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
 SECTIONS 12, 13 & 14, T140N, R97W
 STARK COUNTY, NORTH DAKOTA

4585 Coleman Street
 Bismarck, ND 58503

KLJ

DOUGLAS & KATHLEEN SCHMIDT

NW1/4 & NE1/4

303.03 RODS

OWNERSHIP

STATIONING

1600+00.00

1650+00.00

1600+21.43 BEGIN BORE
1600+21.43 P.L. 0°54'51" LL
1601+56.93 P.L. 0°52'33" RL

1624+32.12 P.L. 0°00'12" RL

1625+36.47 1/4 LINE

1627+51.27 P.L. 0°38'25" LL
1628+09.65 P.L. 2°41'12" LL

1629+85.56 P.L. 0°06'33" LL

1631+61.99 P.L. 0°16'19" RL

1635+46.15 P.L. 0°10'43" LL

1638+11.95 P.L. 8°41'11" LL
1639+48.66 P.L. 0°11'35" LL

1642+90.34 P.L. 7°21'48" LL
1643+16.30 P.L. 1°10'10" LL

1645+86.37 P.L. 16°07'50" LL
1646+86.37 BEGIN BORE

1646+95.24 C.I. DRAINAGE

STARK COUNTY, NORTH DAKOTA

SEC. 14
T.140N., R.97W.

PLAN

EASEMENT WORKSPACE

PERMANENT EASEMENT

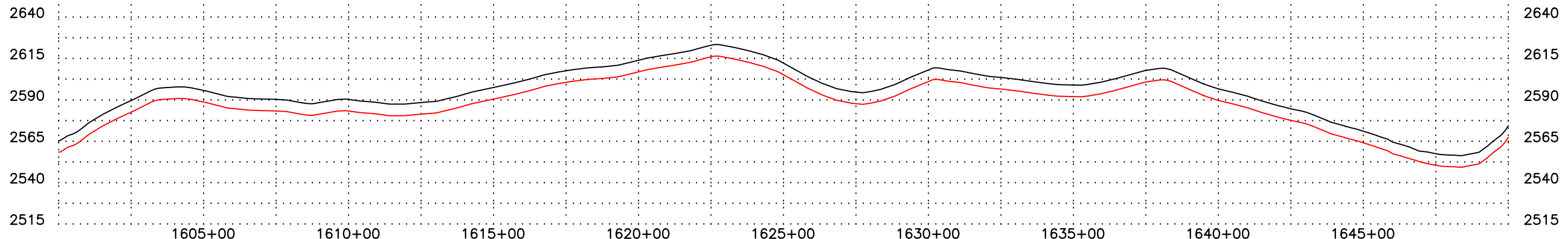
CLASS

PIPE BAND

AS-CONSTRUCTED

FINAL
6/11/15

PROFILE



CALL BEFORE YOU DIG



LEGEND

- PROPERTY LINE
- SECTION LINE
- EASEMENT LINE
- PIPELINE CENTERLINE
- WATER LINE
- FOREIGN PIPELINE
- EXISTING ROAD
- UNDERGROUND COM. LINE
- BARBED WIRE FENCE
- FIBER OPTIC COM. LINE
- RAILROAD
- OVERHEAD ELECTRIC
- UTILITY POLE
- AS-CONSTRUCTED BORE
- MARKER POST
- AVOIDANCE AREA
- WETLAND
- EASEMENT
- TEST LEAD
- VALVE SETTING

MK.NO.	QTY.	DESCRIPTION
1	4782 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FIB
2	439 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FIB, 30-35 MIL AD

MK.NO.	QTY.	DESCRIPTION

DWG. NO.	DESCRIPTION

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 11/7/14

CHECKED BY: J. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 39

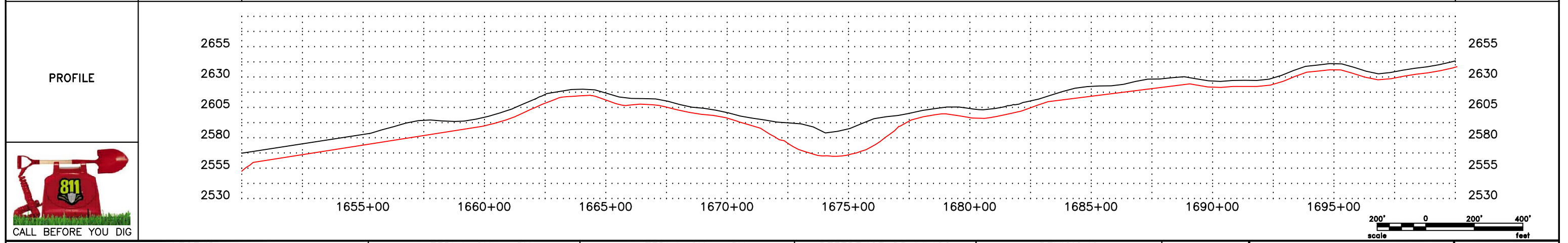
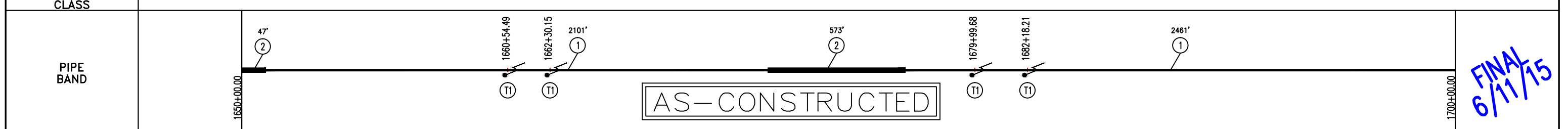
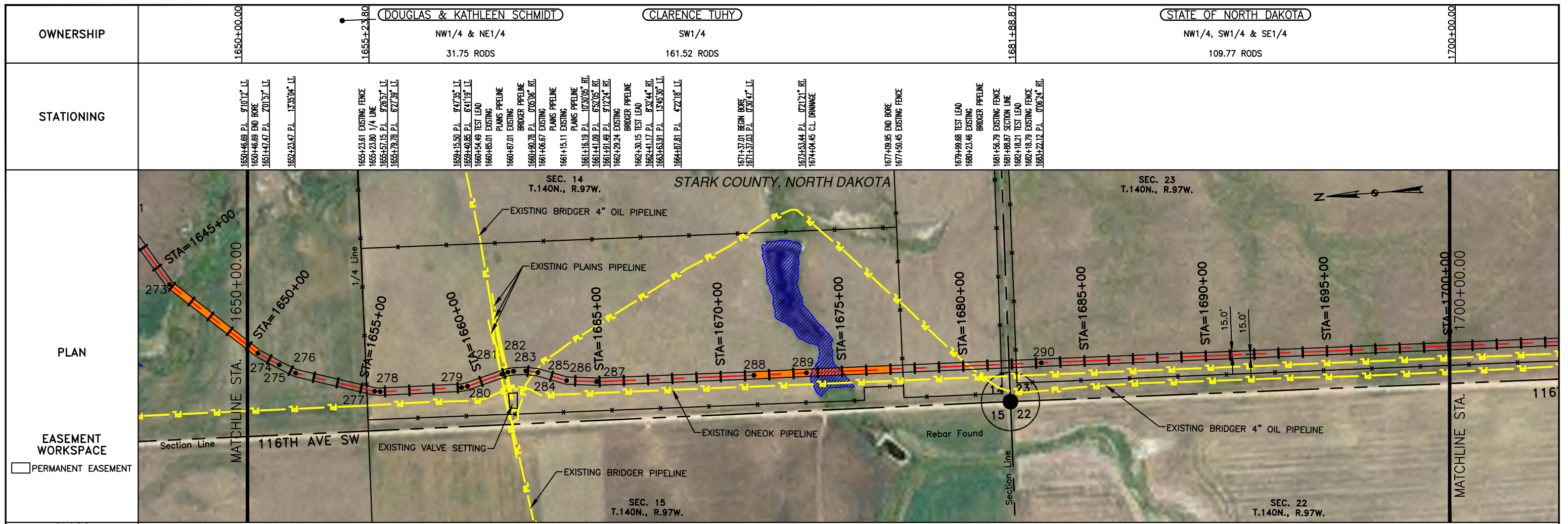
BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

BOE PIPELINE PHASE I
SECTION 14, T140N, R97W
STARK COUNTY, NORTH DAKOTA

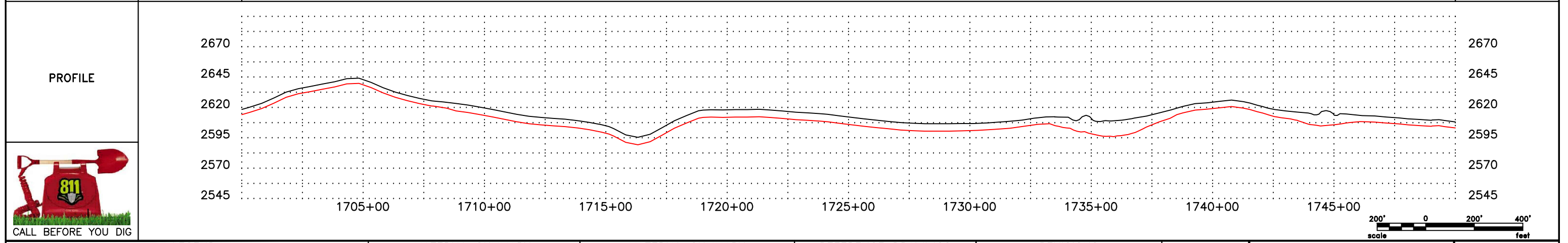
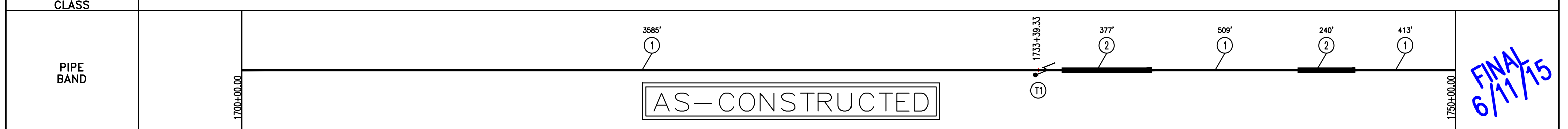
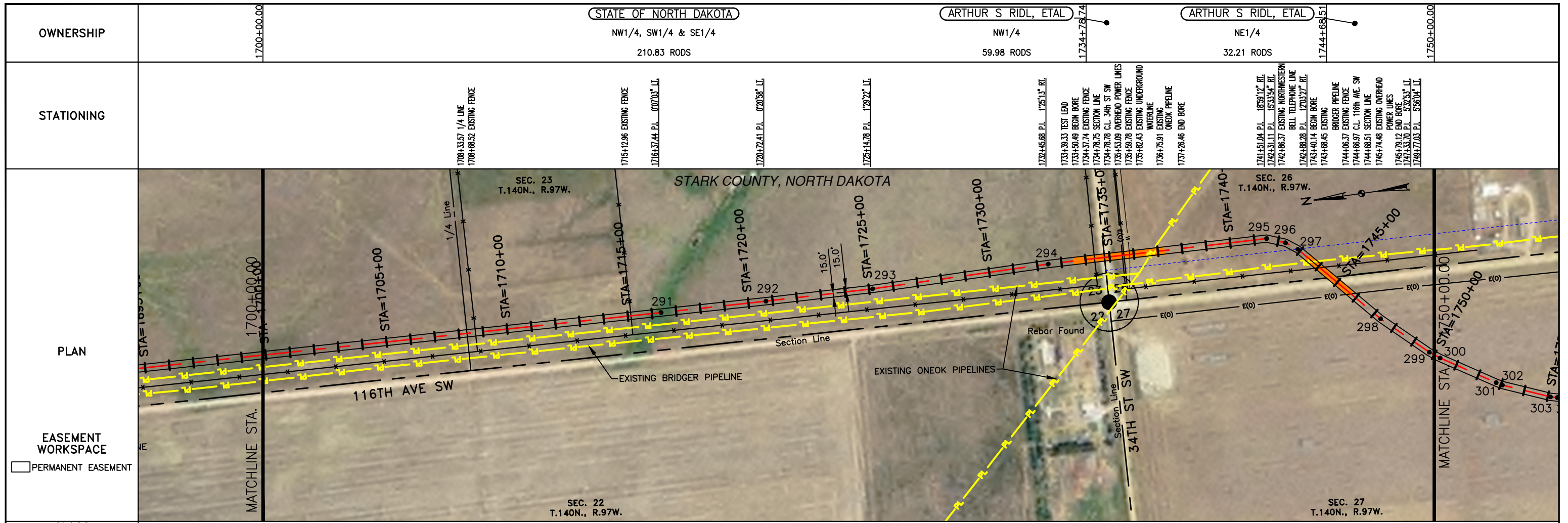
KLJ

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Bismarck, ND 58503

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LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
SYMBOL	DESCRIPTION	MK.NO.	QTY.	MK.NO.	QTY.	DWG. NO.	DESCRIPTION	NO.	DATE
---	PROPERTY LINE	1	4982 LF					0	6/11/15
---	SECTION LINE	2	620 LF						
---	EASEMENT LINE	TI	4 EA						
---	PIPELINE CENTERLINE								
---	WATER LINE								
---	FOREIGN PIPELINE								
---	EXISTING ROAD								
---	UNDERGROUND COM. LINE								
---	BARBED WIRE FENCE								
---	FIBER OPTIC COM. LINE								
---	RAILROAD								
---	OVERHEAD ELECTRIC								
---	UTILITY POLE								
---	AS-CONSTRUCTED BORE								
---	MARKER POST								
---	AVOIDANCE AREA								
---	WETLAND								
---	EASEMENT								
---	TEST LEAD								
---	VALVE SETTING								



MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION	NO.	DATE
1	4507 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FIB				0	6/11/15
2	617 LF	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FIB, 30-35 MIL AD					
TI	1 EA	TYPE-1					

DWG. NO.	DESCRIPTION

NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

LEGEND

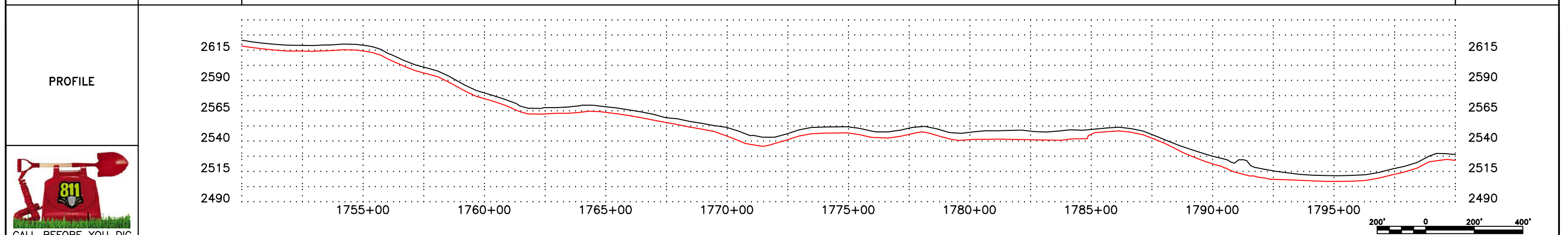
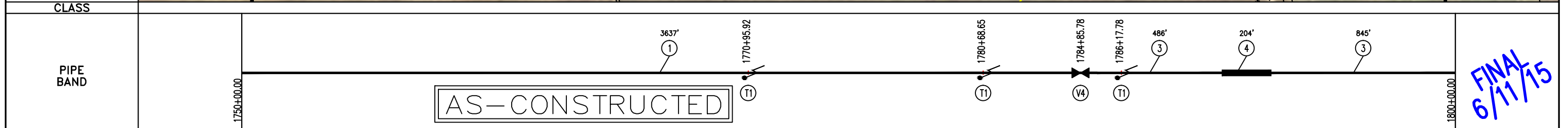
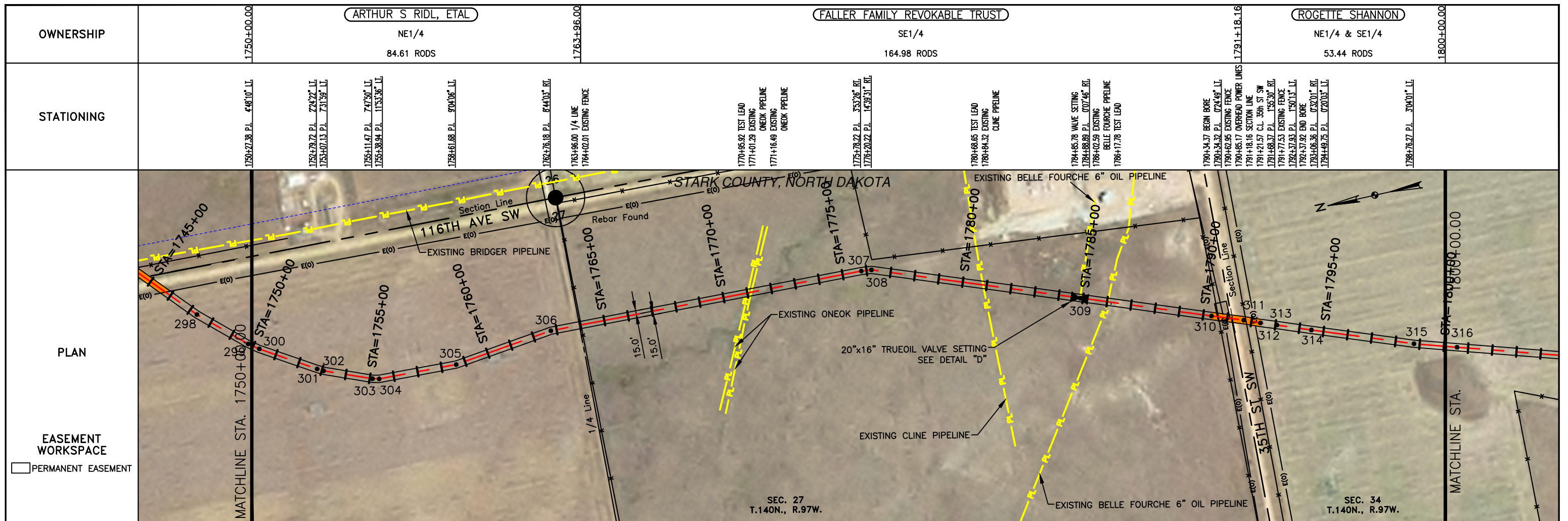
—	PROPERTY LINE	—*—	BARBED WIRE FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	▨	EASEMENT
- - -	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—			
—	UNDERGROUND COM. LINE				

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: S. BESMER
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 41

BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTIONS 23, 26 & 27, T140N, R97W
STARK COUNTY, NORTH DAKOTA

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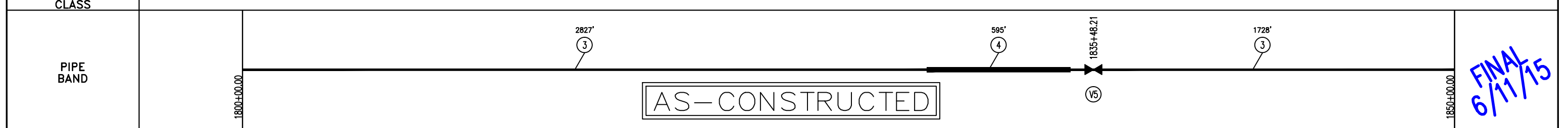
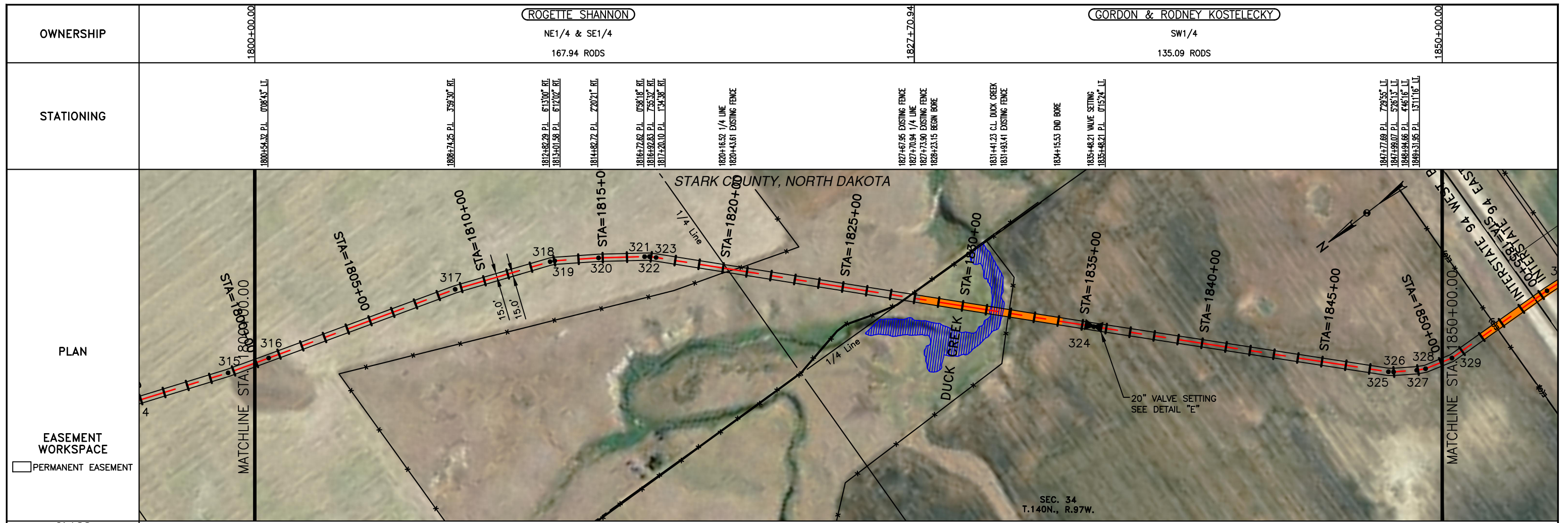


CALL BEFORE YOU DIG

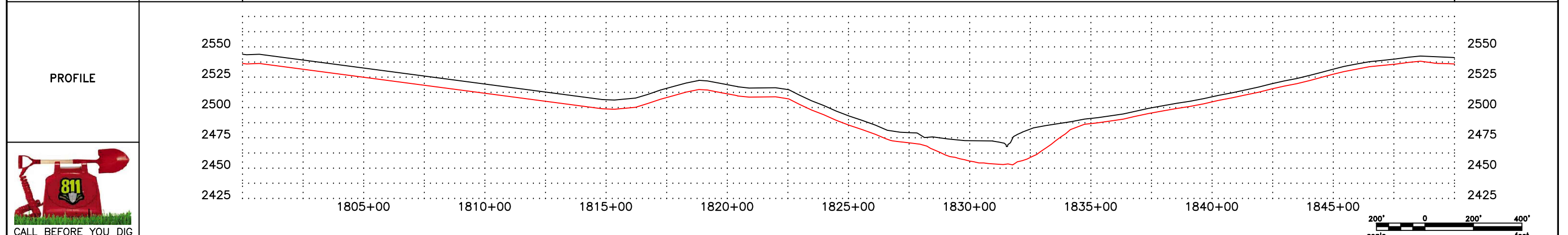
LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS		SCALE: 1" = 400'	
SYMBOL	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION	DWG. NO.	NO.	DATE	DESCRIPTION
---	PROPERTY LINE	1	3637 LF	16" OD, 0.281" W.T. API 5L X70, 13-15 MIL FIB	105	1	20"x16" TRUE OIL VALVE SETTINGS DETAIL "D"	105	0	6/11/15	AS CONSTRUCTED
---	SECTION LINE	3	1300 LF	20" OD, 0.375" W.T. API 5L X80, 13-15 MIL FIB							
---	EASEMENT LINE	4	204 LF	20" OD, 0.375" W.T. API 5L X80, 13-15 MIL FIB, 30-35 MIL AHD							
---	PIPELINE CENTERLINE	T1	3 EA	TYPE-1							
---	WATER LINE										
---	FOREIGN PIPELINE										
---	EXISTING ROAD										
---	UNDERGROUND COM. LINE										
---	BARBED WIRE FENCE										
---	FIBER OPTIC COM. LINE										
---	RAILROAD										
---	OVERHEAD ELECTRIC										
---	UTILITY POLE										
---	AS-CONSTRUCTED BORE										
---	MARKER POST										
---	AVOIDANCE AREA										
---	WETLAND										
---	EASEMENT										
---	TEST LEAD										
---	VALVE SETTING										

BOE PIPELINE, LLC.
 BOE PIPELINE PHASE I
 SECTIONS 27 & 34, T140N, R97W
 STARK COUNTY, NORTH DAKOTA

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 Bismarck, ND 58503
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FINAL
6/11/15



MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION	NO.	DATE
3	4555 LF	20" OD, 0.375" WT API 5L X60, 13-15 MIL FIB			V5	107	6/11/15
4	595 LF	20" OD, 0.375" WT API 5L X60, 13-15 MIL FIB, 30-35 MIL ARD					

DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION
V5	107		6/11/15	AS CONSTRUCTED

CALL BEFORE YOU DIG

LEGEND

—	PROPERTY LINE	—	BARBED WIRE FENCE	—	AVOIDANCE AREA
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	—	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	—	EASEMENT
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	UNDERGROUND COM. LINE		

BOE PIPELINE, LLC.

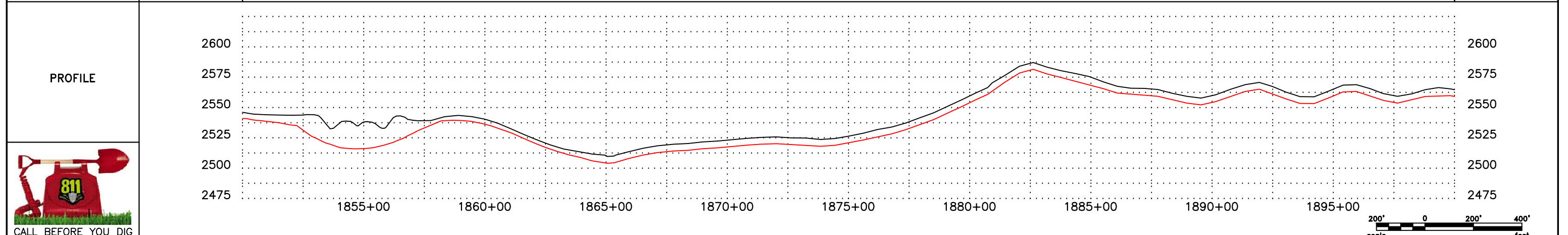
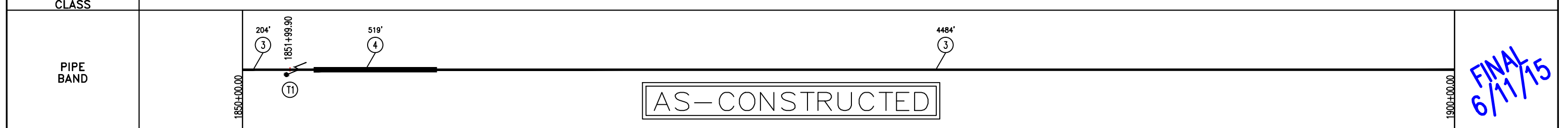
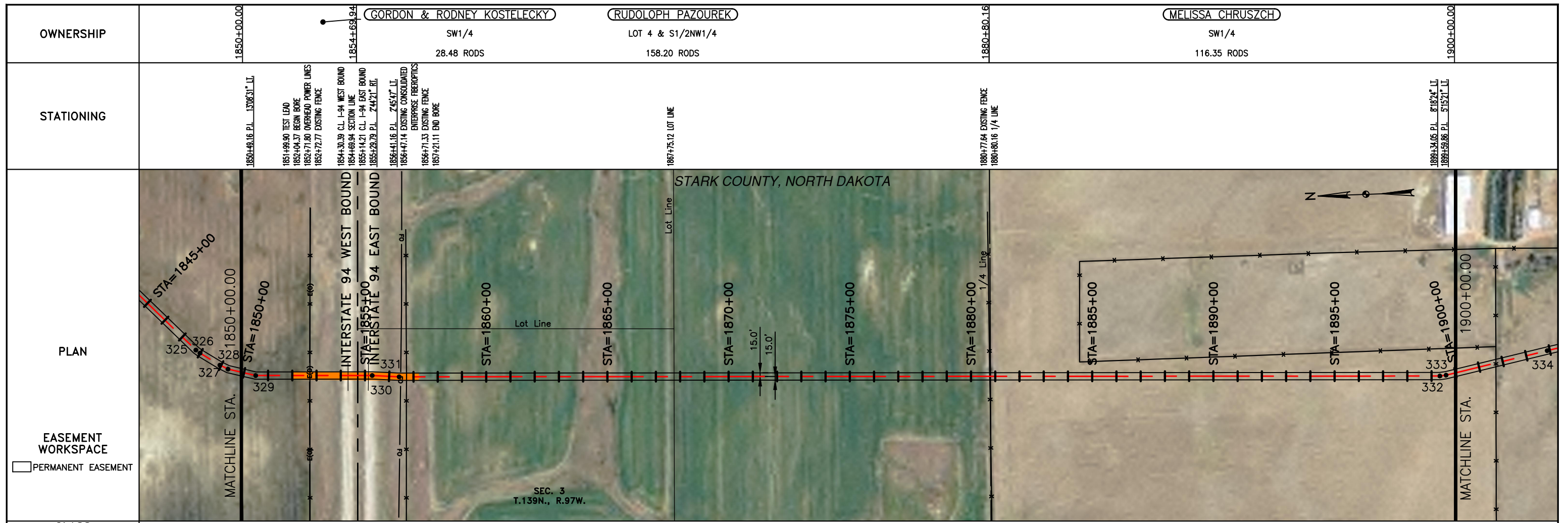
BOE PIPELINE PHASE I
SECTION 34, T140N, R97W
STARK COUNTY, NORTH DAKOTA

KLJ

4585 Coleman Street
Bismarck, ND 58503

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 713140
REVISION: SHEET: 43



CALL BEFORE YOU DIG

LEGEND

—	PROPERTY LINE	—*—*	BARBED WIRE FENCE	—	AVOIDANCE AREA
- - -	SECTION LINE	- - -	FIBER OPTIC COM. LINE	—	WETLAND
- - -	EASEMENT LINE	—	RAILROAD	—	EASEMENT
—	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	—	TEST LEAD
—	WATER LINE	—	UTILITY POLE	—	VALVE SETTING
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	MARKER POST
—	EXISTING ROAD	—	MARKER POST		
—	UNDERGROUND COM. LINE				

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
3	4888 LF	20" OD, 0.375" WT API 5L 200, 13-15 MIL FIB
4	519 LF	20" OD, 0.375" WT API 5L 200, 13-15 MIL FIB, 30-35 MIL HD
11	1 EA	TYPE-1

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

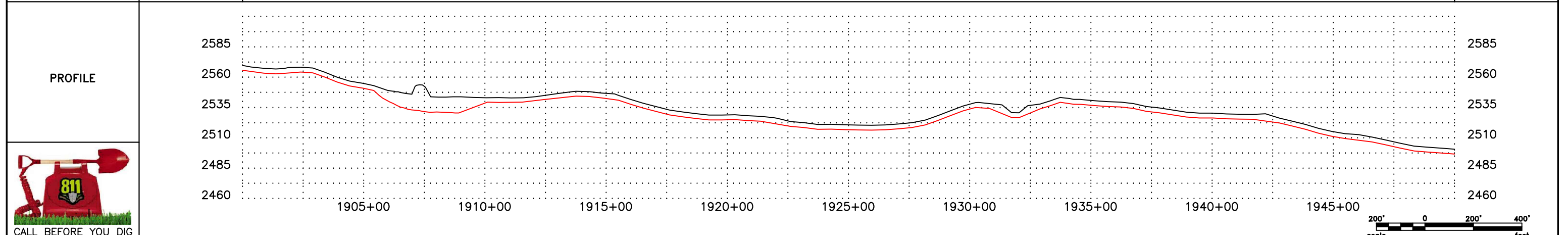
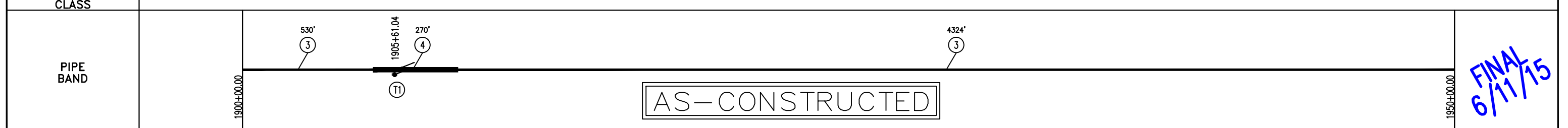
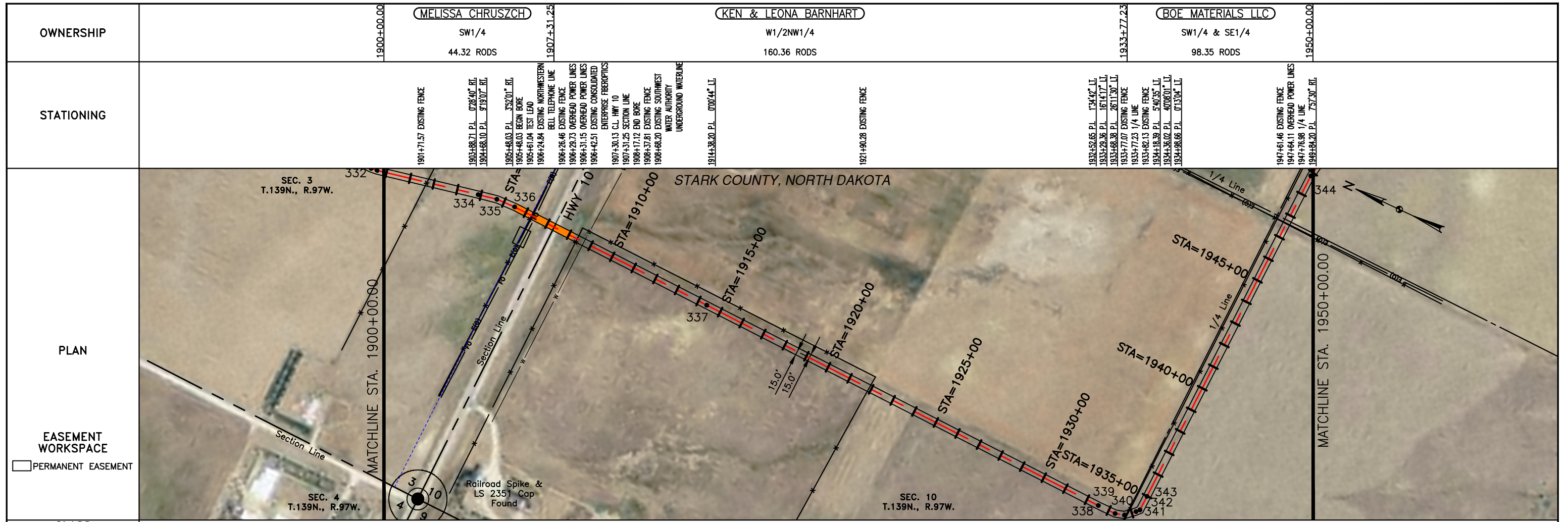
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 713140
REVISION: SHEET: 44

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.
BOE PIPELINE PHASE I
SECTION 34, T140N, R97W & SECTION 3, T139N, R97W
STARK COUNTY, NORTH DAKOTA

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Bismarck, ND 58503
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LEGEND		MATERIAL SUMMARY		MATERIAL SUMMARY		REFERENCE DRAWINGS		REVISIONS	
SYMBOL	DESCRIPTION	MK. NO.	QTY.	MK. NO.	QTY.	DWG. NO.	DESCRIPTION	NO.	DATE
---	PROPERTY LINE	3	4854 LF					0	6/11/15
---	SECTION LINE	4	270 LF						
---	EASEMENT LINE	T1	1 EA						
---	PIPELINE CENTERLINE								
---	WATER LINE								
---	FOREIGN PIPELINE								
---	EXISTING ROAD								
---	UNDERGROUND COM. LINE								
---	BARBED WIRE FENCE								
---	FIBER OPTIC COM. LINE								
---	RAILROAD								
---	OVERHEAD ELECTRIC								
---	UTILITY POLE								
---	AS-CONSTRUCTED BORE								
---	MARKER POST								
---	AVOIDANCE AREA								
---	WETLAND EASEMENT								
---	TEST LEAD								
---	VALVE SETTING								

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 713140
REVISION: SHEET: 45

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

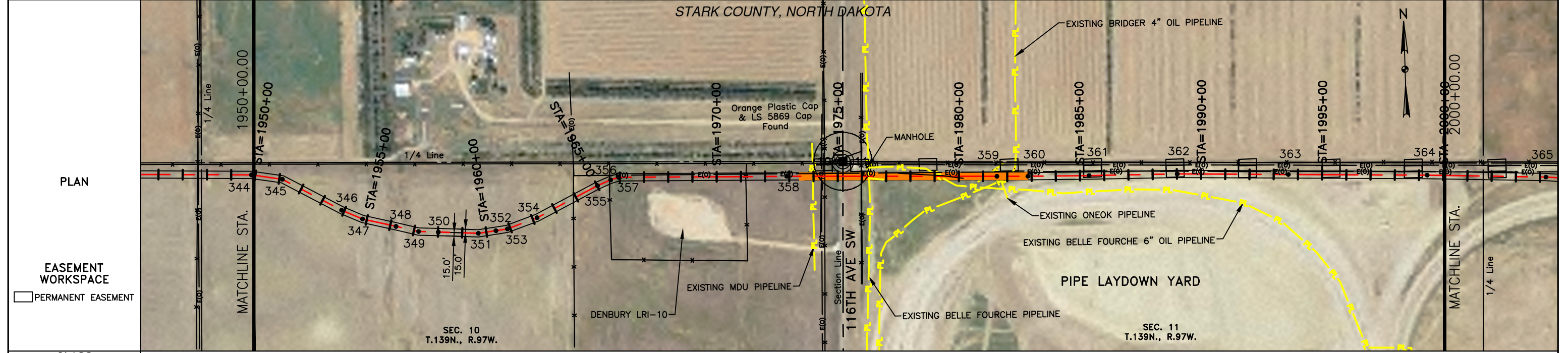
KLJ

BOE PIPELINE PHASE I
SECTIONS 3 & 10, T139N, R97W
STARK COUNTY, NORTH DAKOTA

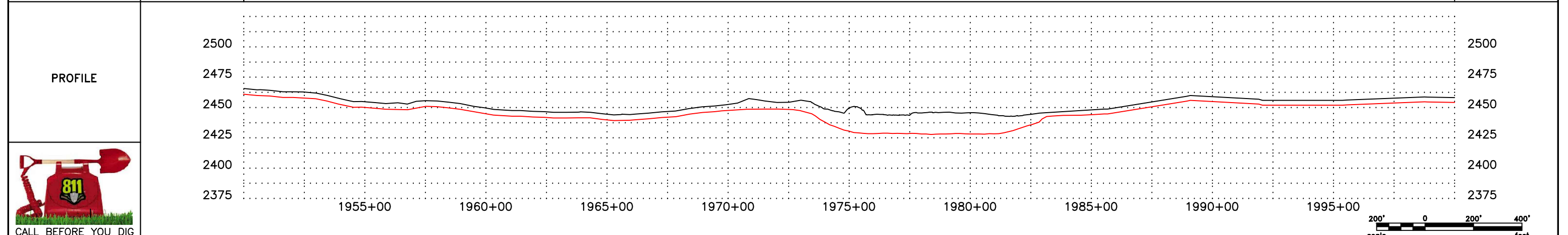
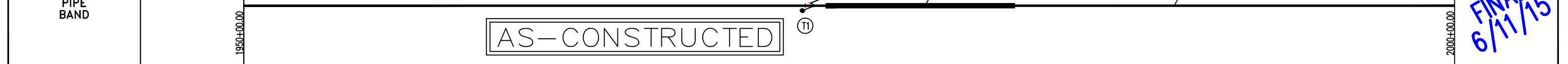
4585 Coleman Street
Bismarck, ND 58503

OWNERSHIP	1950+00.00	BOE MATERIALS LLC SW1/4 & SE1/4 152.79 RODS	1975+20.97	BOE MATERIALS LLC SW1/4 LESS 16.287 150.24 RODS	2000+00.00
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STATIONING	1951+12.95 P.L. < 1972.37' RT.	1953+88.65 P.L. < 4.3611" LI.	1954+82.79 P.L. < 10.34' LI.	1956+23.98 P.L. < 0.7216' RT.	1957+19.78 P.L. < 11.1557' LI.	1958+00.99 P.L. < 0.1557' RT.	1959+66.26 P.L. < 10.7506' LI.	1960+39.88 P.L. < 0.7631' LI.	1960+87.72 P.L. < 17.7719' LI.	1962+19.11 P.L. < 7.3221' LI.	1963+88.21 EXISTING FENCE	1965+01.26 P.L. < 4.7639' RT.	1965+55.63 EXISTING FENCE	1965+60.51 P.L. < 5.5308' RT.	1965+95.37 P.L. < 17.7207' RT.	1971+20.24 EXISTING FENCE	1972+88.40 P.L. < 0.1842' RT.	1973+18.70 TEST LEAD	1973+32.72 OVERHEAD POWER LINES	1973+46.10 BEGIN BORE	1973+96.29 EXISTING MDU PIPELINE	1974+32.16 EXISTING CONSOLIDATED ENTERPRISE FIBEROPTICS	1974+40.10 OVERHEAD POWER LINES	1974+46.57 EXISTING FENCE	1975+20.97 SECTION LINE	1975+21.12 CL OF 116TH AVE SW	1975+96.30 EXISTING FENCE	1975+97.95 OVERHEAD POWER LINES	1976+28.57 EXISTING BELLE FOURCHE PIPELINE	1979+20.34 EXISTING BELLE FOURCHE PIPELINE	1979+52.62 EXISTING CULVERT	1981+10.18 EXISTING ONEOK PIPELINE	1981+57.09 P.L. < 0.0251" LI.	1981+67.97 EXISTING ONEOK PIPELINE	1982+05.47 EXISTING BRIDGER PIPELINE	1982+85.24 P.L. < 0.3317' LI.	END BORE	1985+37.74 P.L. < 0.7213' LI.	1989+01.51 P.L. < 121.54' RT.	1993+60.37 P.L. < 0.0107' LI.	1999+33.43 P.L. < 0.3803' RT.
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CLASS	PERMANENT EASEMENT
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LEGEND	
—	PROPERTY LINE
- - -	SECTION LINE
- - -	EASEMENT LINE
—	PIPELINE CENTERLINE
—	WATER LINE
—	FOREIGN PIPELINE
—	EXISTING ROAD
—	UNDERGROUND COM. LINE
—	BARBED WIRE FENCE
—	FIBER OPTIC COM. LINE
—	RAILROAD
—	OVERHEAD ELECTRIC
—	UTILITY POLE
—	AS-CONSTRUCTED BORE
—	MARKER POST
—	AVOIDANCE AREA
—	WETLAND
—	EASEMENT
—	TEST LEAD
—	VALVE SETTING

MK. NO.	QTY.	DESCRIPTION	MK. NO.	QTY.	DESCRIPTION
3	4112 LF	20" OD, 0.375" WT API 5L X60, 13-15 MIL FIB.			
4	941 LF	20" OD, 0.375" WT API 5L X60, 13-15 MIL FIB, 30-35 MIL HD			
11	1 EA	TYPE-1			

REF. DWG. NO.	DESCRIPTION

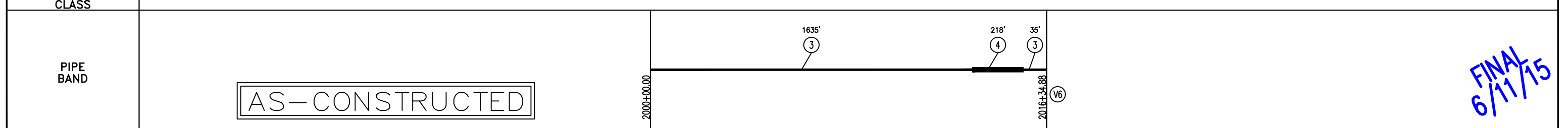
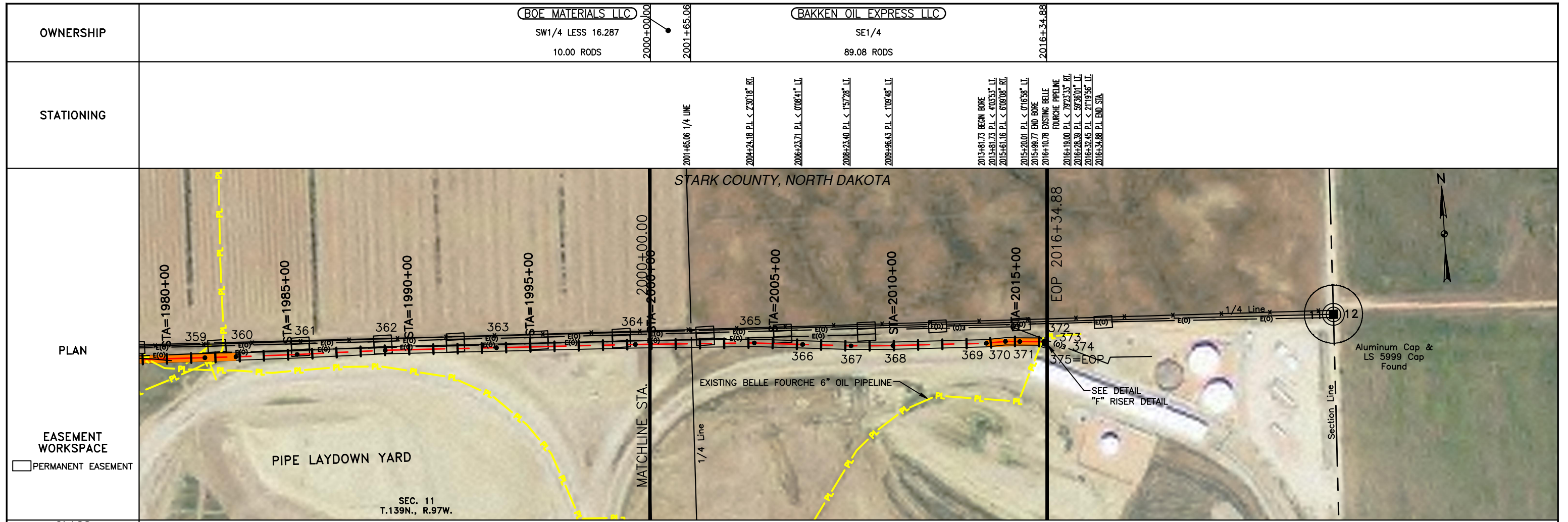
NO.	DATE	DESCRIPTION
0	6/11/15	AS CONSTRUCTED

SCALE: 1" = 400'
DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 713140
REVISION: SHEET: 46

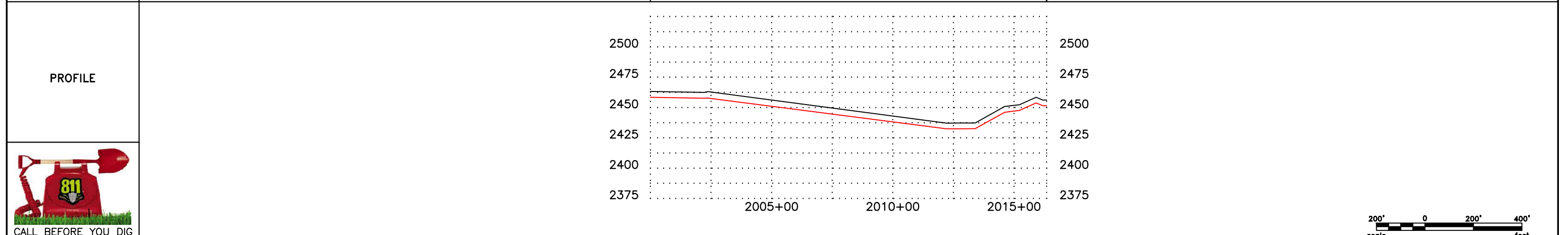
BOE PIPELINE, LLC.

4585 Coleman Street
Bismarck, ND 58503

BOE PIPELINE PHASE I
SECTIONS 10 & 11, T139N, R97W
STARK COUNTY, NORTH DAKOTA



FINAL
6/11/15



CALL BEFORE YOU DIG



MATERIAL SUMMARY			MATERIAL SUMMARY			REFERENCE DRAWINGS		REVISIONS		
MK.NO.	QTY.	DESCRIPTION	MK.NO.	QTY.	DESCRIPTION	DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION
3	1670 LF	20" OD, 0.375" WT API 5L X60, 13-15 MIL FIB				V6 110	20" RISER, DETAIL "F"	0	6/11/15	AS CONSTRUCTED
4	218 LF	20" OD, 0.375" WT API 5L X60, 13-15 MIL FIB, 30-35 MIL ARD								

LEGEND			
—	PROPERTY LINE	—*—	BARBED WIRE FENCE
- - -	SECTION LINE	FO	FIBER OPTIC COM. LINE
- - -	EASEMENT LINE	—	RAILROAD
—	PIPELINE CENTERLINE	E(O)	OVERHEAD ELECTRIC
—	WATER LINE	—	UTILITY POLE
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE
—	EXISTING ROAD	—	MARKER POST
—	UNDERGROUND COM. LINE	—	AVOIDANCE AREA
—		—	WETLAND EASEMENT
—		—	TEST LEAD
—		—	VALVE SETTING

SCALE: 1" = 400'

DRAWN BY: D. BUNKERS
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 713140
REVISION: SHEET: 47

BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC.

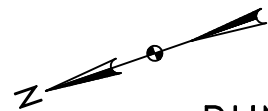
KLJ

BOE PIPELINE PHASE I
SECTION 11, T139N, R97W
STARK COUNTY, NORTH DAKOTA

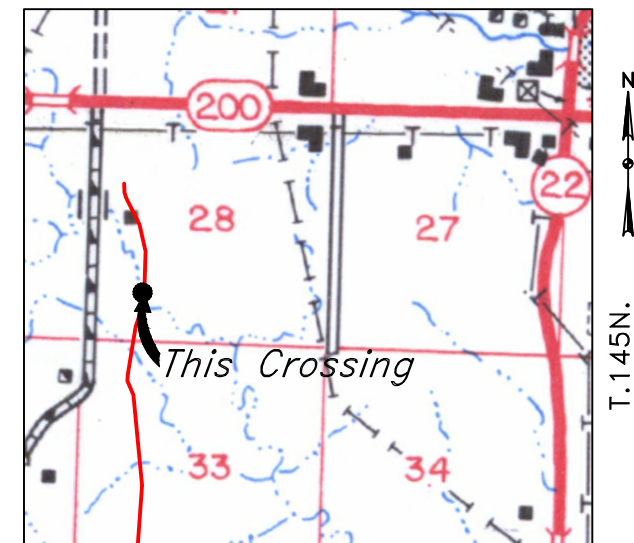
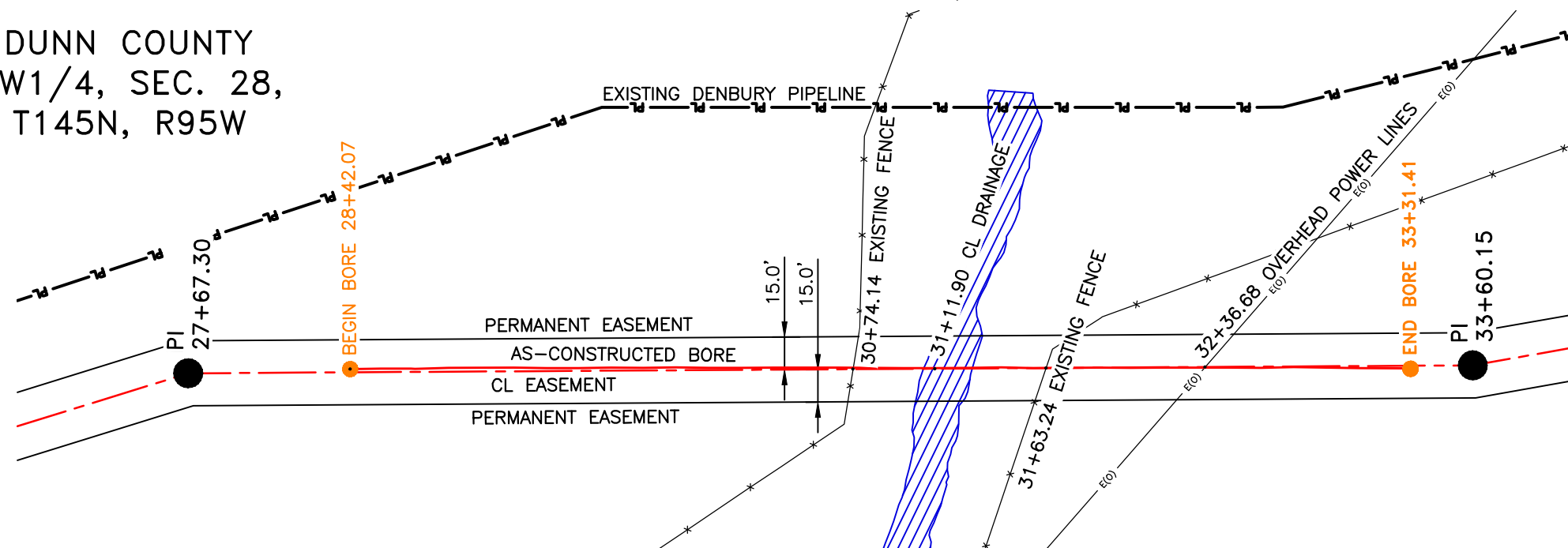
4585 Coleman Street
Bismarck, ND 58503

BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #1

DUNN COUNTY, NORTH DAKOTA



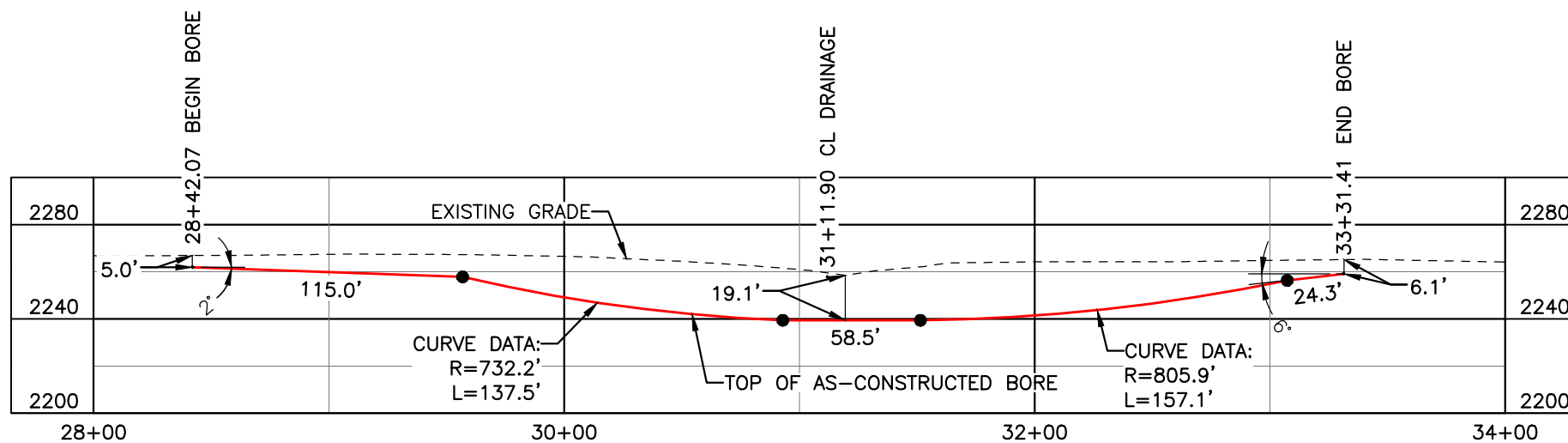
DUNN COUNTY
SW1/4, SEC. 28,
T145N, R95W



R.95W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 MILS FBE, 30-35 MILS ARO

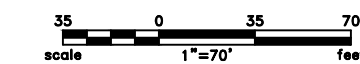
AS-CONSTRUCTED



FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	28+42.07	47°20'52.87" N	102°47'46.13" W
END BORE	33+31.41	47°20'48.26" N	102°47'48.25" W

TOTAL HORIZONTAL DISTANCE = 489.34 FT.
 TOTAL BORE LENGTH = 492.4 FT.



LEGEND

— AS-CONSTRUCTED BORE

LEGEND	
— PROPERTY LINE	—*—*— EXISTING FENCE
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE
- - - EASEMENT LINE	— RAILROAD
— PIPELINE CENTERLINE	—(EO)— OVERHEAD ELECTRIC
— WATER LINE	— UTILITY POLE
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE
— EXISTING ROAD	— MARKER POST
— UNDERGROUND COM. LINE	— VALVE SETTING
— AVOIDANCE AREA	— WETLAND
— EASEMENT	— TEST LEAD

MATERIAL SUMMARY		
MK.NO.	QTY.	DESCRIPTION
2	492'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS		REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

SCALE: 1" = 70'
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: S. IRWIN
APPROVED BY: D. DICKINE
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 48

BOE PIPELINE, LLC

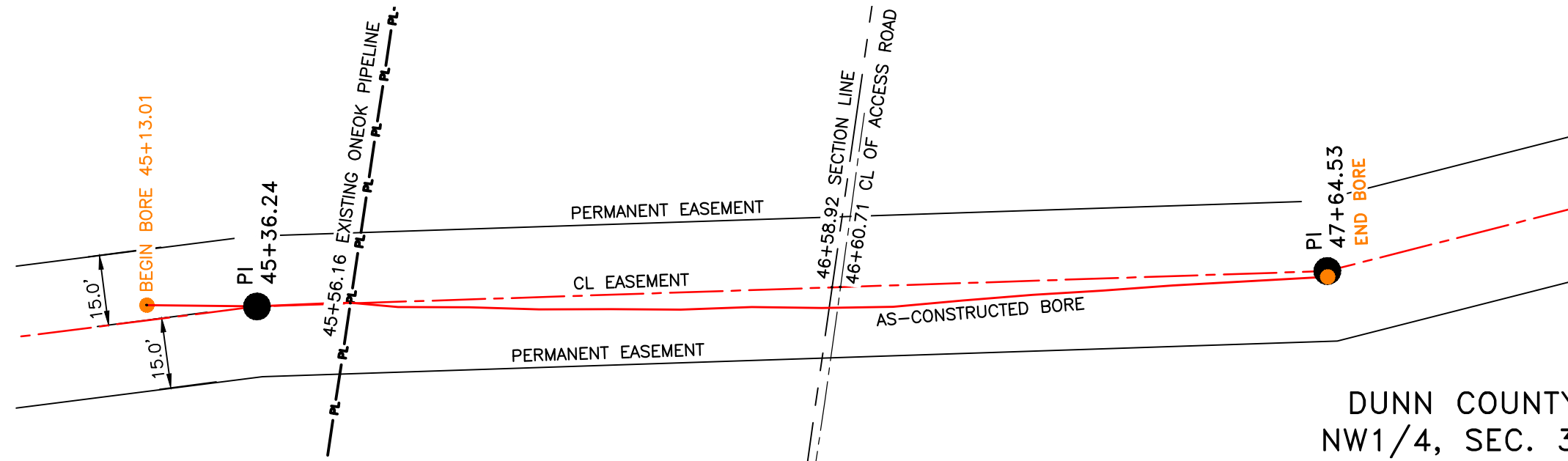
BOE PIPELINE PHASE I
DRAINAGE CROSSING BORE #1
SECTION 28, T.145N., R.95W., DUNN COUNTY, ND

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Bismarck, ND 58503
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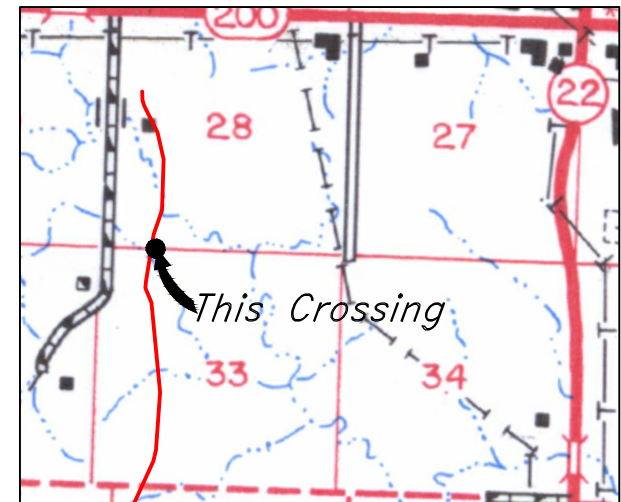


DUNN COUNTY
SW1/4, SEC. 28,
T145N, R95W

BOE PIPELINE PHASE I
ACCESS ROAD CROSSING BORE #2
DUNN COUNTY, NORTH DAKOTA



DUNN COUNTY
NW1/4, SEC. 33,
T145N, R95W

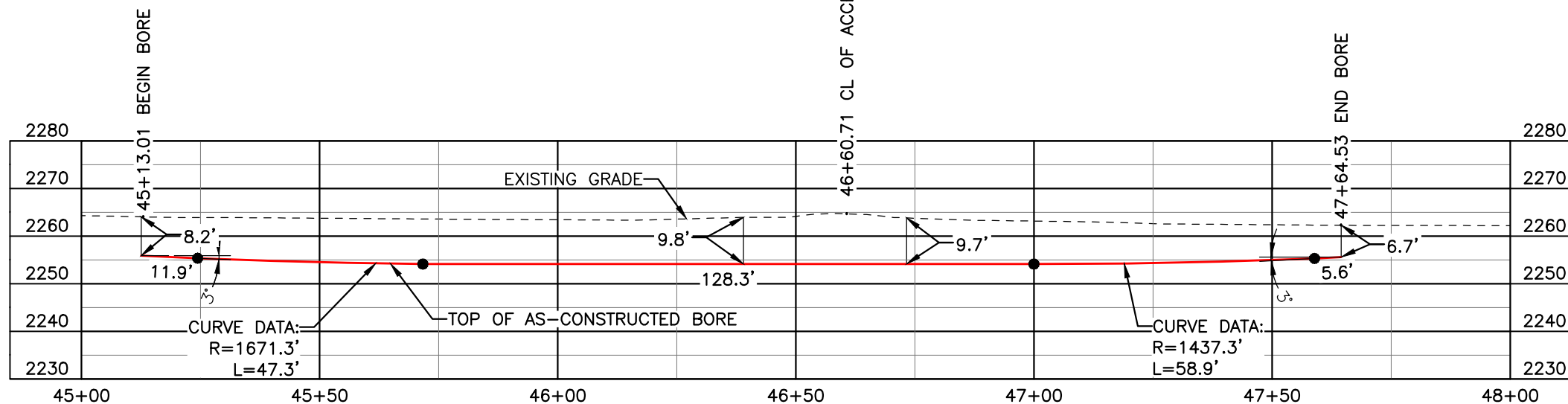


R.95W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

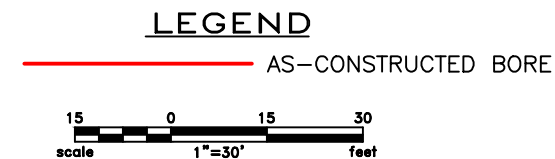
AS-CONSTRUCTED

FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	45+13.01	47°20'36.73" N	102°47'49.89" W
END BORE	47+64.53	47°20'34.28" N	102°47'49.31" W

TOTAL HORIZONTAL DISTANCE = 251.52 FT.
TOTAL BORE LENGTH = 252.0 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	— AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	— WETLAND
--- EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
--- UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	252'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: S. IRWIN
APPROVED BY: D. DIONNE
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 49

BOE BAKKEN OIL EXPRESS

BOE PIPELINE, LLC

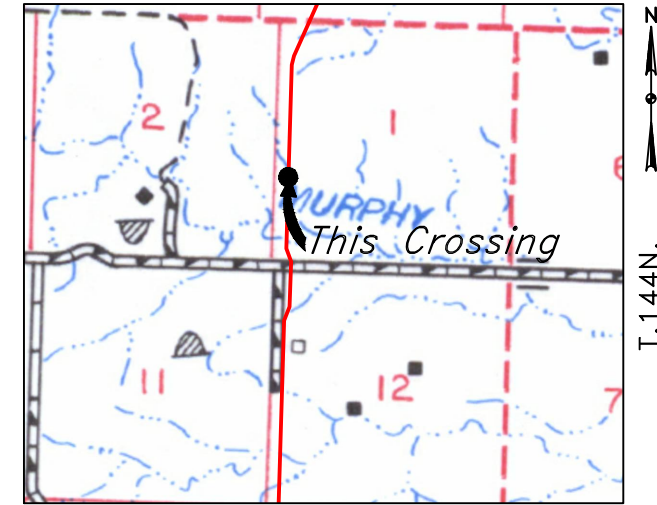
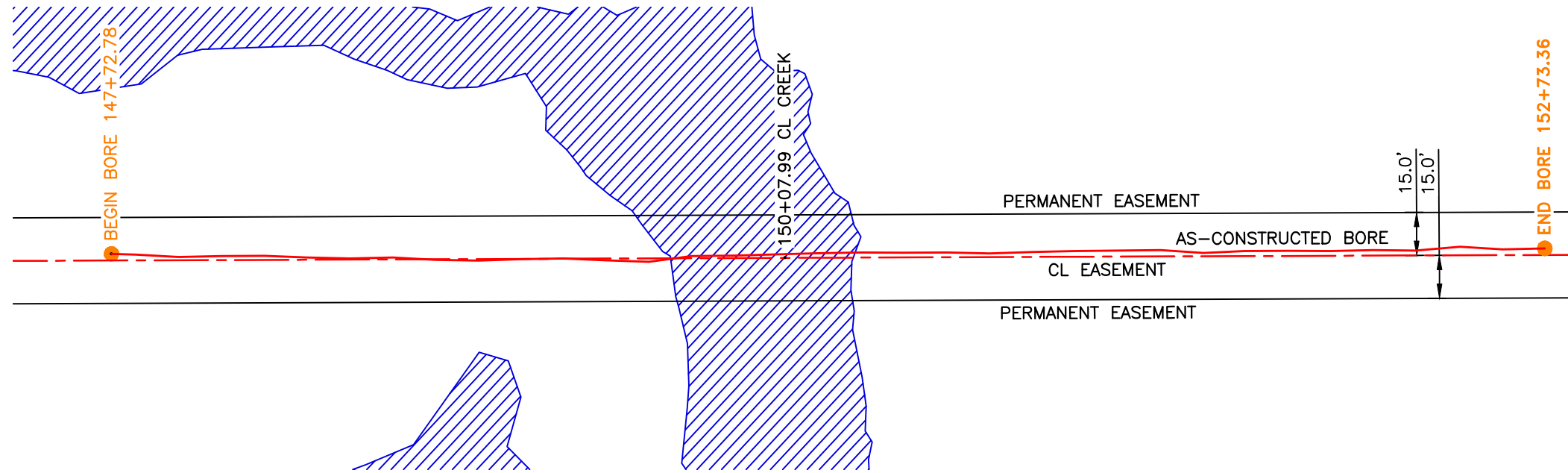
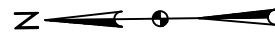
BOE PIPELINE PHASE I
ACCESS ROAD CROSSING BORE #2
SECTIONS 28 & 33, T.145N., R.95W., DUNN COUNTY, ND

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Bismarck, ND 58503
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DUNN COUNTY
SW1/4, SEC. 1,
T144N, R96W

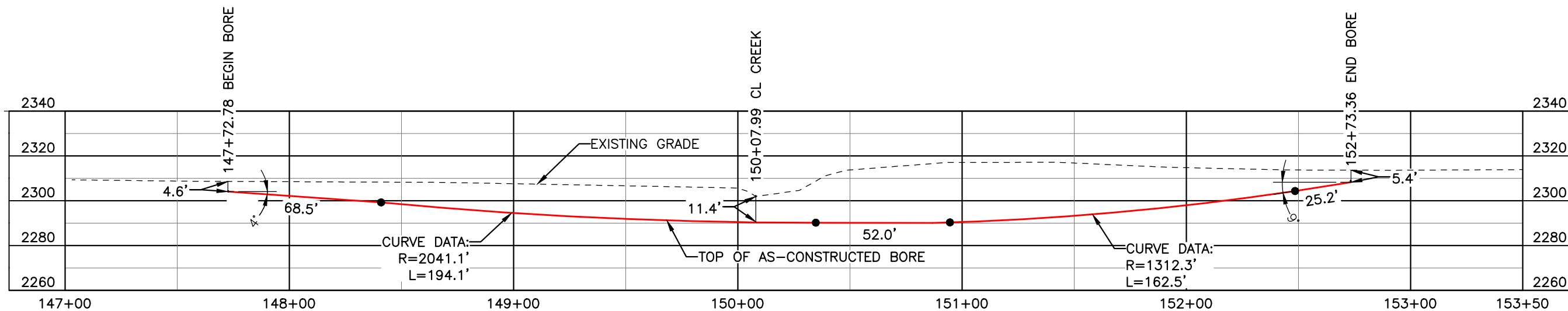
BOE PIPELINE PHASE I
MURPHY CREEK CROSSING BORE #3
DUNN COUNTY, NORTH DAKOTA



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

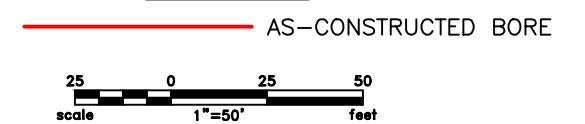


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	147+72.78	47°18'57.21" N	102°47'53.34" W
END BORE	152+73.36	47°18'52.27" N	102°47'53.35" W

TOTAL HORIZONTAL DISTANCE = 500.58 FT.

TOTAL BORE LENGTH = 502.3 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	— AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	— WETLAND
- - - EASEMENT LINE	— RAILROAD	— EASEMENT
- - - PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK.NO.	QTY.	DESCRIPTION
2	502'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 50'

DRAWN BY: K.FROST
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 50

BOE BOE PIPELINE, LLC

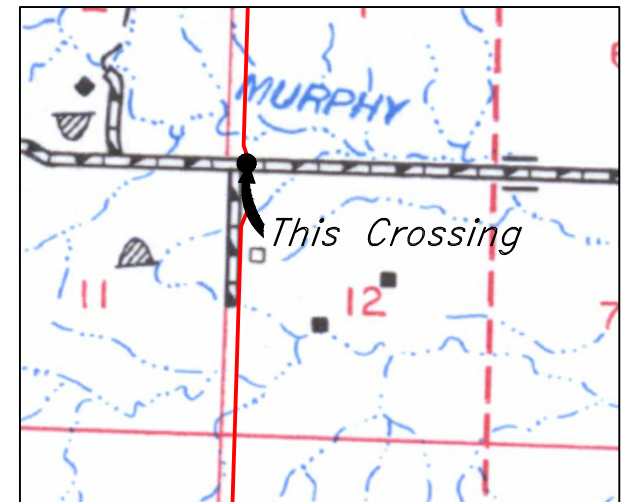
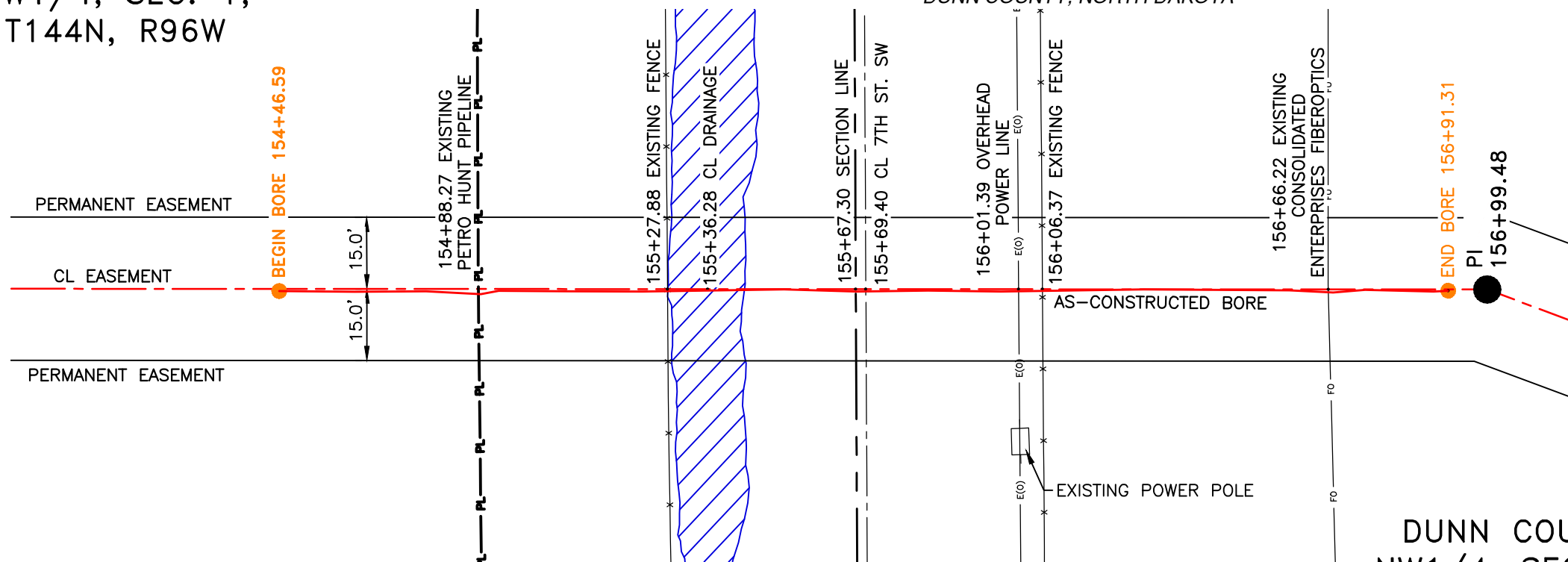
BOE PIPELINE PHASE I
MURPHY CREEK CROSSING BORE
BORE #3
SECTION 1, T.144N., R.96W., DUNN COUNTY, ND

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DUNN COUNTY
SW1/4, SEC. 1,
T144N, R96W

BOE PIPELINE PHASE I
7TH ST. SW CROSSING BORE #4
DUNN COUNTY, NORTH DAKOTA

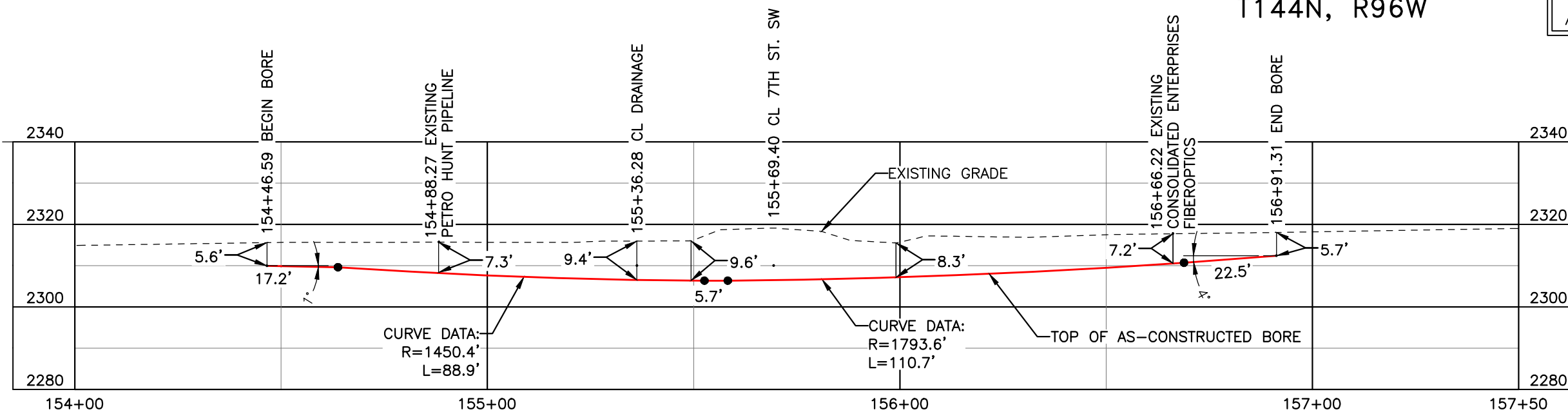


R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

DUNN COUNTY
NW1/4, SEC. 12,
T144N, R96W

AS-CONSTRUCTED

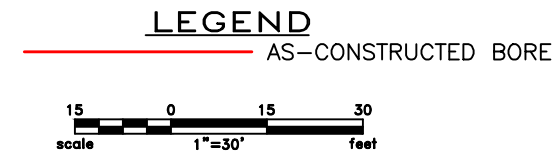


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	156+91.31	47°18'50.56" N	102°47'53.40" W
END BORE	154+46.59	47°18'48.14" N	102°47'53.40" W

TOTAL HORIZONTAL DISTANCE = 244.72 FT.

TOTAL BORE LENGTH = 245.0 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	— WETLAND
- - - SECTION LINE	-FO- FIBER OPTIC COM. LINE	— WETLAND
- - - EASEMENT LINE	— RAILROAD	— WETLAND
- - - PIPELINE CENTERLINE	-EO- OVERHEAD ELECTRIC	— WETLAND
— WATER LINE	— UTILITY POLE	— WETLAND
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	— WETLAND
— EXISTING ROAD	— MARKER POST	— WETLAND
— UNDERGROUND COM. LINE	— VALVE SETTING	— WETLAND

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	245'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 51

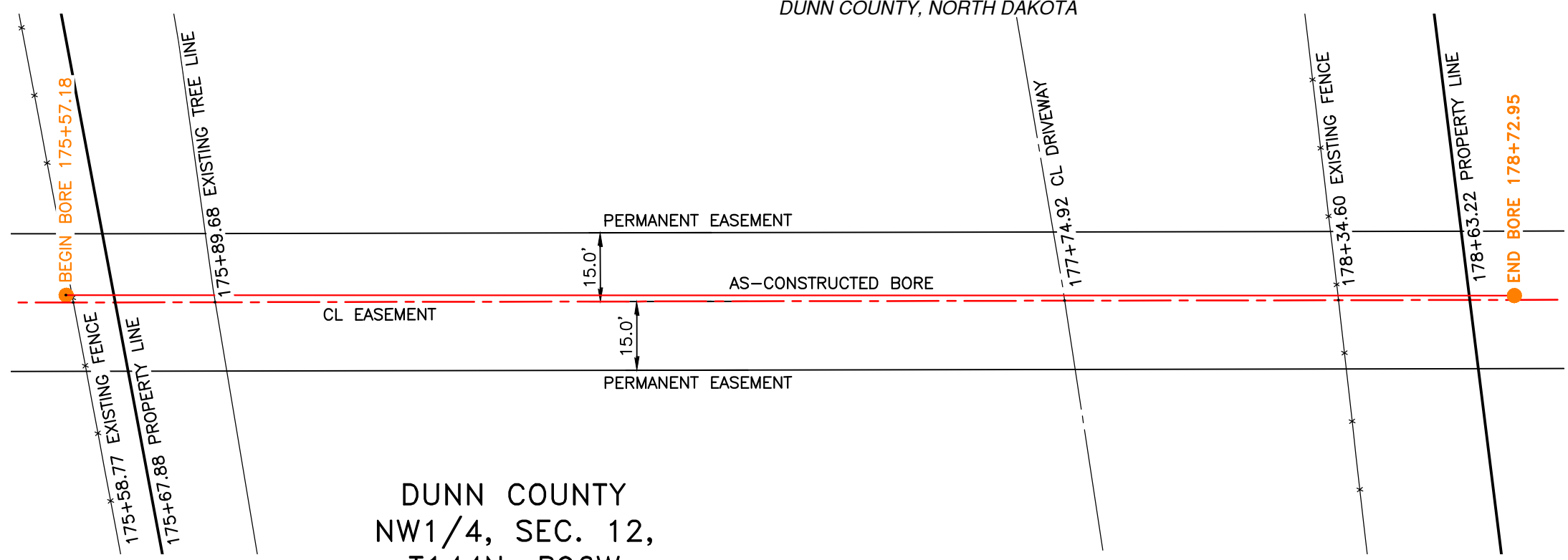
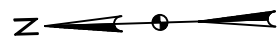
BOE BOE PIPELINE, LLC

BOE PIPELINE PHASE I
7TH ST. SW CROSSING BORE #4
SECTIONS 1 & 12, T.144N., R.96W., DUNN COUNTY, ND

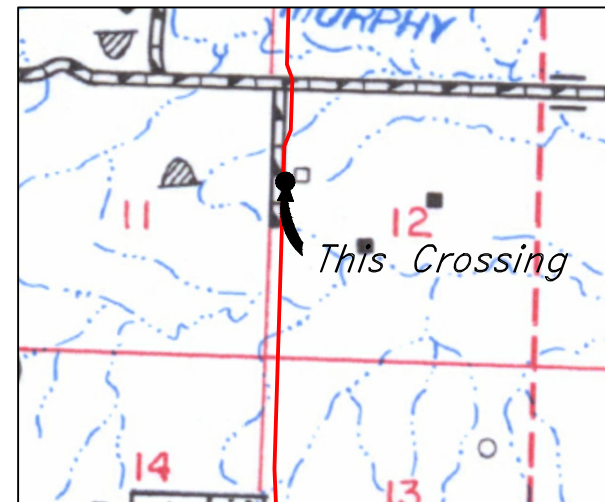
KLJ

4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I H & P HOLDINGS CROSSING BORE #5 DUNN COUNTY, NORTH DAKOTA



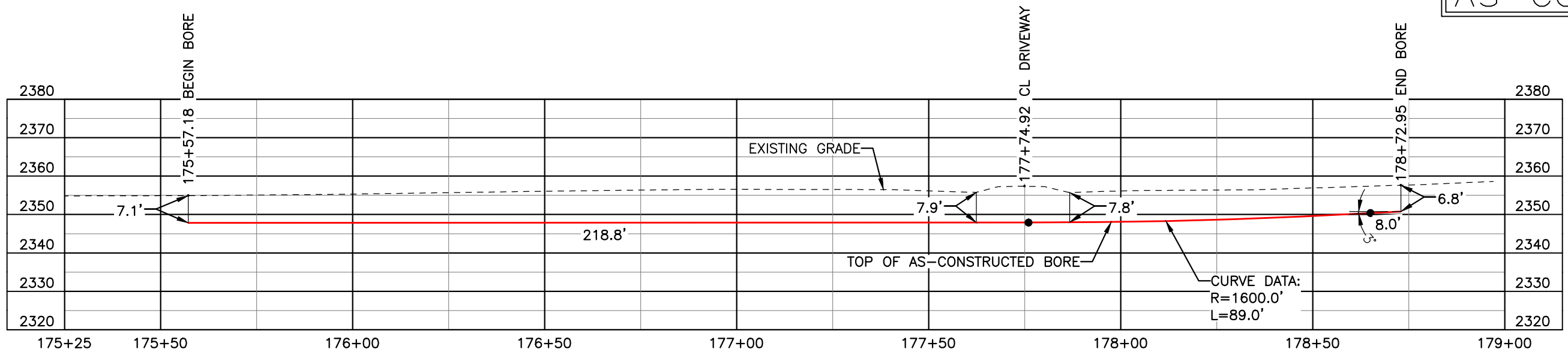
DUNN COUNTY
NW1/4, SEC. 12,
T144N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mills FBE, 30-35 Mills ARO

AS-CONSTRUCTED



FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	175+57.18	47°18'29.93" N	102°47'55.09" W
END BORE	178+72.95	47°18'26.82" N	102°47'55.12" W

TOTAL HORIZONTAL DISTANCE = 315.77 FT.
TOTAL BORE LENGTH = 315.8 FT.

LEGEND

— AS-CONSTRUCTED BORE

LEGEND

— PROPERTY LINE	— EXISTING FENCE	— AVOIDANCE AREA
— SECTION LINE	— FIBER OPTIC COM. LINE	— WETLAND EASEMENT
— EASEMENT LINE	— RAILROAD	— TEST LEAD
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC	
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	316'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 52

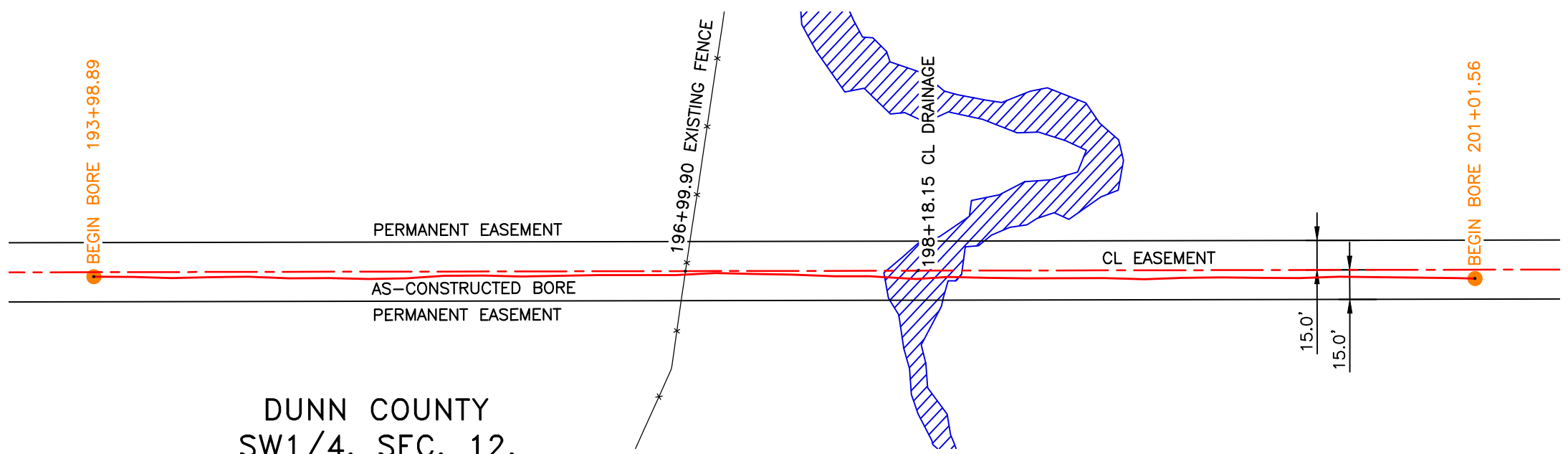
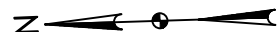
BOE PIPELINE, LLC

BOE PIPELINE PHASE I
H & P HOLDINGS CROSSING BORE #5
SECTION 12, T.144N., R.96W., DUNN COUNTY, ND

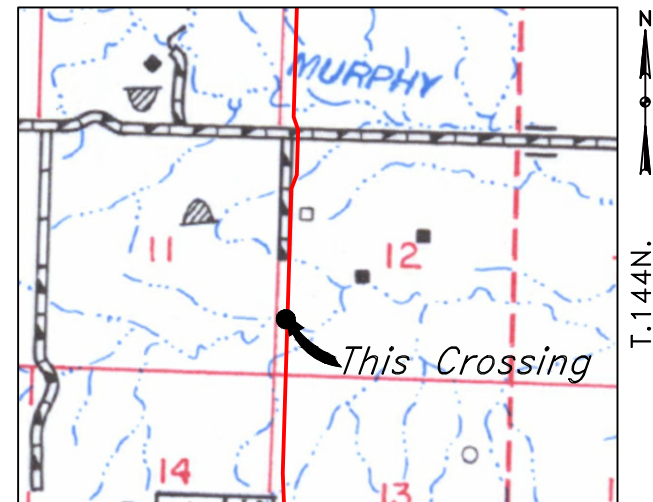
4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #6

DUNN COUNTY, NORTH DAKOTA



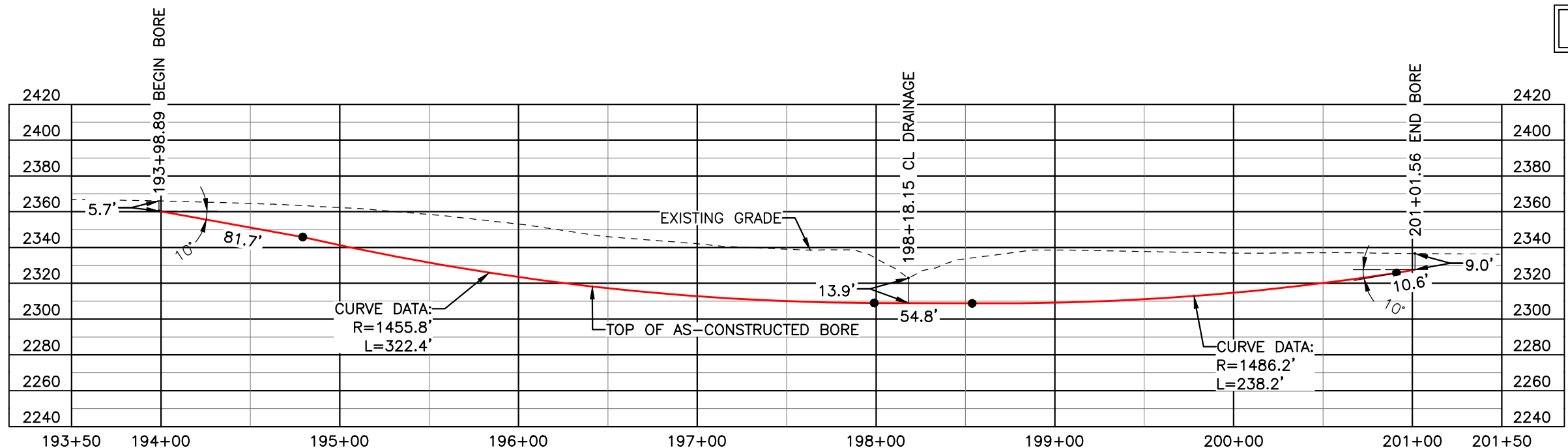
DUNN COUNTY
SW1/4, SEC. 12,
T144N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED



FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	193+98.89	47°18'11.76" N	102°47'55.15" W
END BORE	201+01.56	47°18'04.82" N	102°47'55.18" W

TOTAL HORIZONTAL DISTANCE = 702.67 FT.
TOTAL BORE LENGTH = 707.7 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	—□— MARKER POST	
— UNDERGROUND COM. LINE	—□— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	708'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 70'

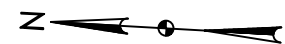
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 53

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
DRAINAGE CROSSING BORE #6

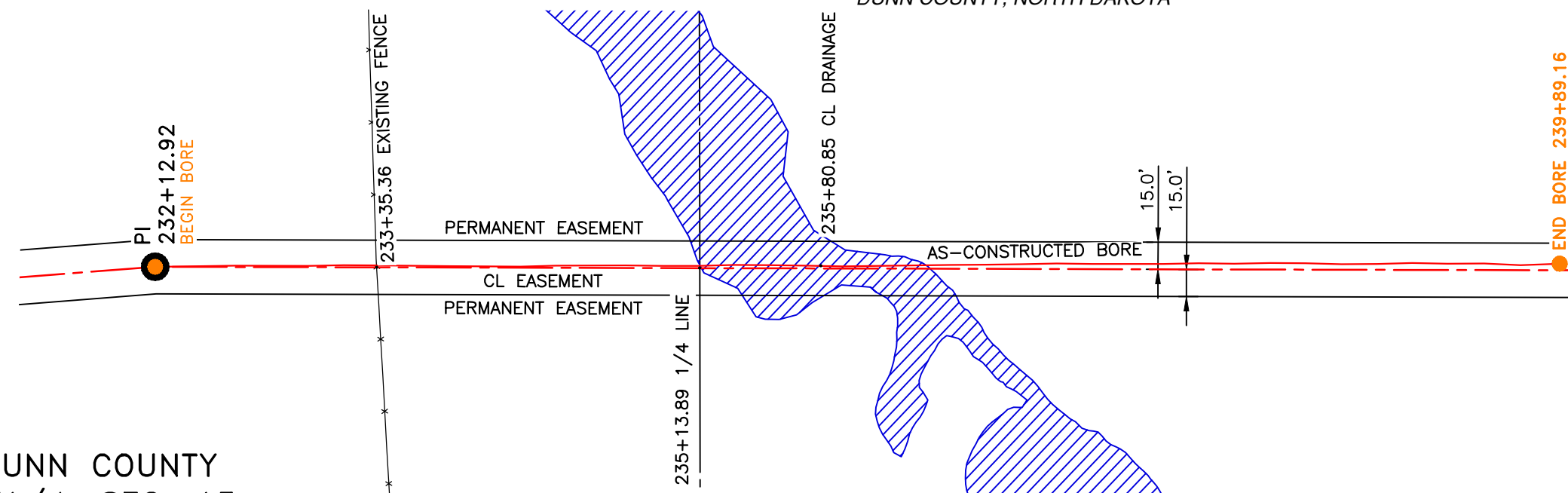
SECTION 12, T.144N., R.96W., DUNN COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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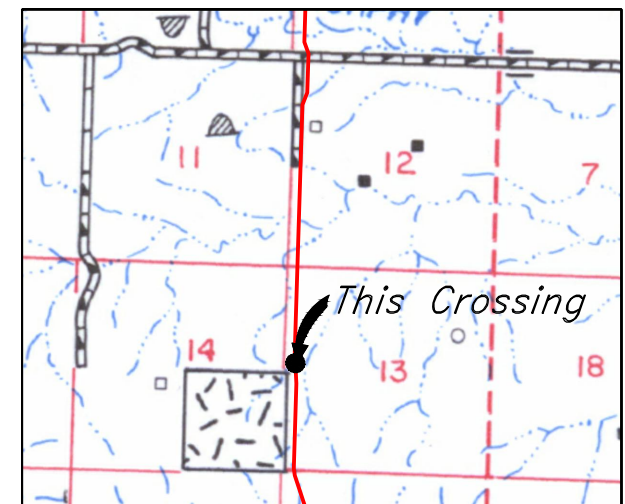
BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #7

DUNN COUNTY, NORTH DAKOTA



DUNN COUNTY
NW1/4, SEC. 13,
T144N, R96W

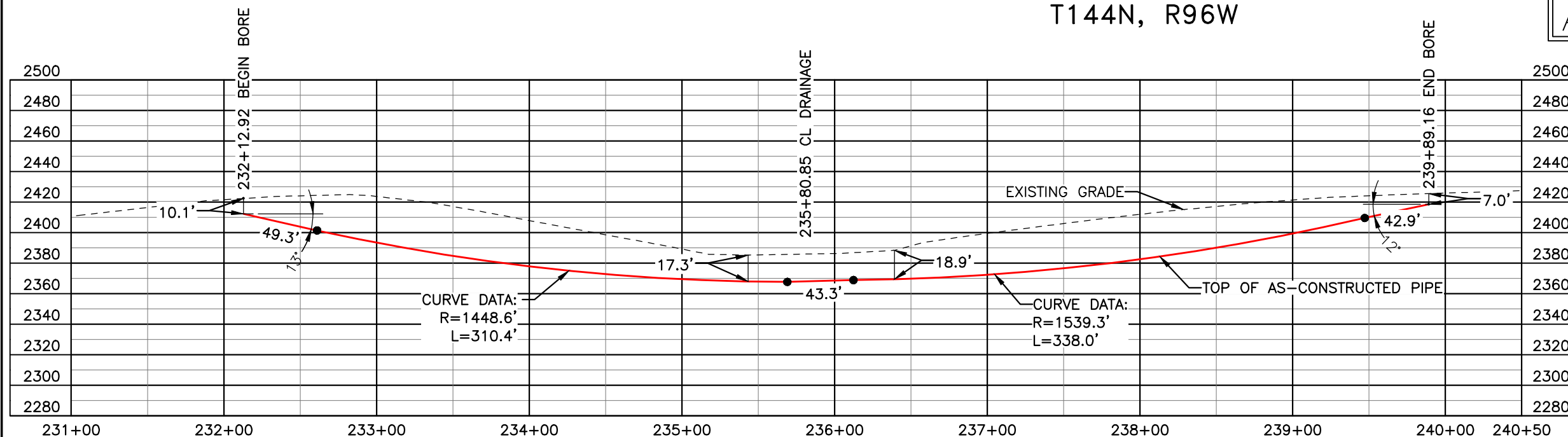
DUNN COUNTY
SW1/4, SEC. 13,
T144N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED



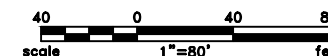
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	232+12.92	47°17'34.13" N	102°47'54.42" W
END BORE	239+89.16	47°17'26.47" N	102°47'54.35" W

TOTAL HORIZONTAL DISTANCE = 776.24 FT.

TOTAL BORE LENGTH = 783.9 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND	
— PROPERTY LINE	— EXISTING FENCE
--- SECTION LINE	— FIBER OPTIC COM. LINE
- - - EASEMENT LINE	— RAILROAD
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC
— WATER LINE	— UTILITY POLE
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE
— EXISTING ROAD	— MARKER POST
— UNDERGROUND COM. LINE	— VALVE SETTING
— AVOIDANCE AREA	— WETLAND
— EASEMENT	— TEST LEAD

MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
2	784'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS		REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

SCALE: 1" = 80'
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION:
SHEET: 54

BOE PIPELINE, LLC

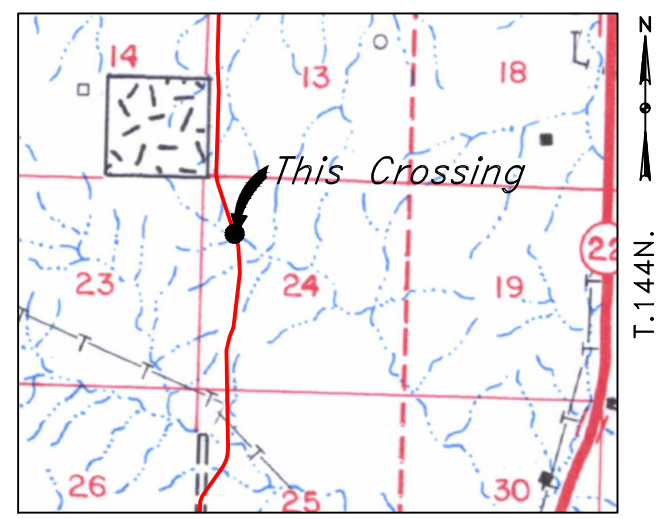
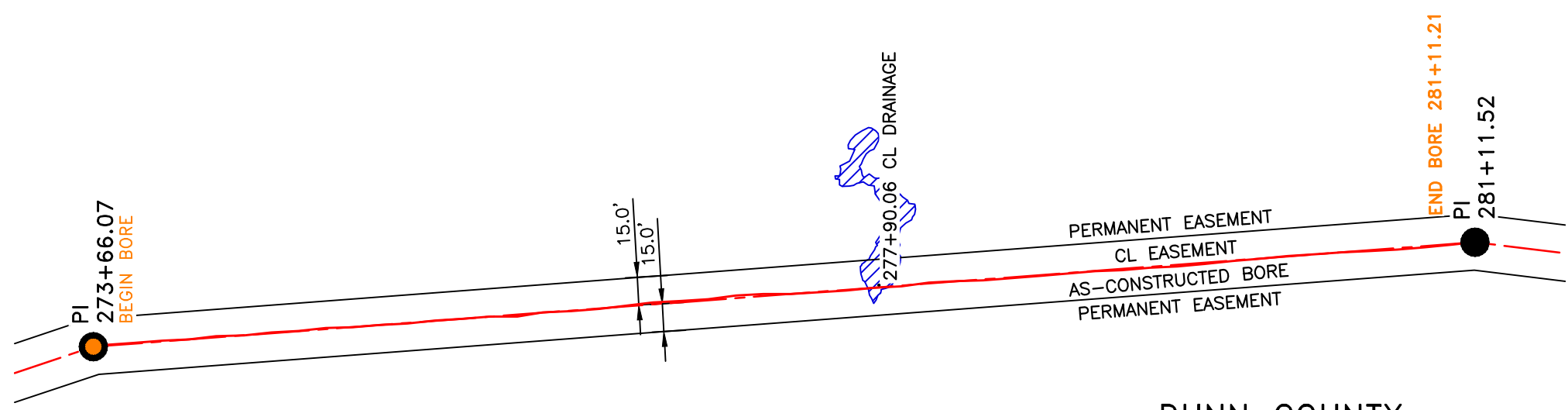
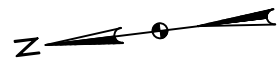
**BOE PIPELINE PHASE I
DRAINAGE CROSSING BORE #7**

SECTION 13, T.144N., R.96W., DUNN COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #8

DUNN COUNTY, NORTH DAKOTA

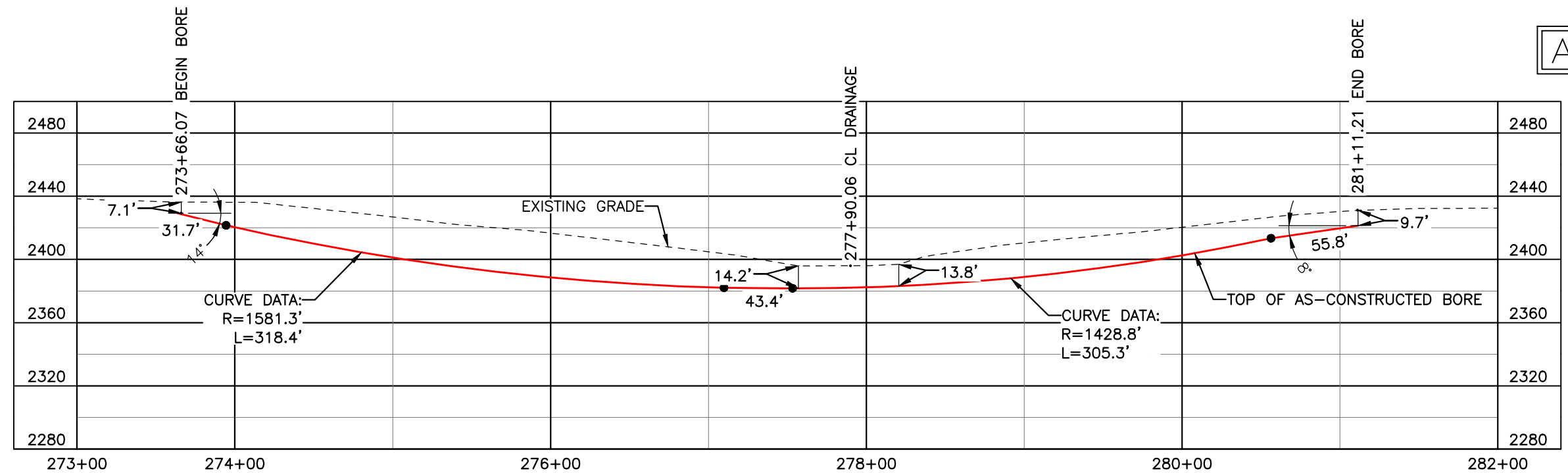


R.96W.
Location Map

**DUNN COUNTY
NW1/4, SEC. 24,
T144N, R96W**

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mills FBE, 30-35 Mills ARO

AS-CONSTRUCTED



**FINAL
6/11/15**

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	273+66.07	47°16'54.18" N	102°47'45.48" W
END BORE	281+11.21	47°16'46.87" N	102°47'44.35" W

TOTAL HORIZONTAL DISTANCE = 745.14 FT.

TOTAL BORE LENGTH = 754.6 FT.

LEGEND

— AS-CONSTRUCTED BORE

LEGEND

— PROPERTY LINE	— X — EXISTING FENCE	▨ AVOIDANCE AREA
— SECTION LINE	— FO — FIBER OPTIC COM. LINE	▨ WETLAND
— EASEMENT LINE	— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	— (E) — OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— □ — UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	755'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

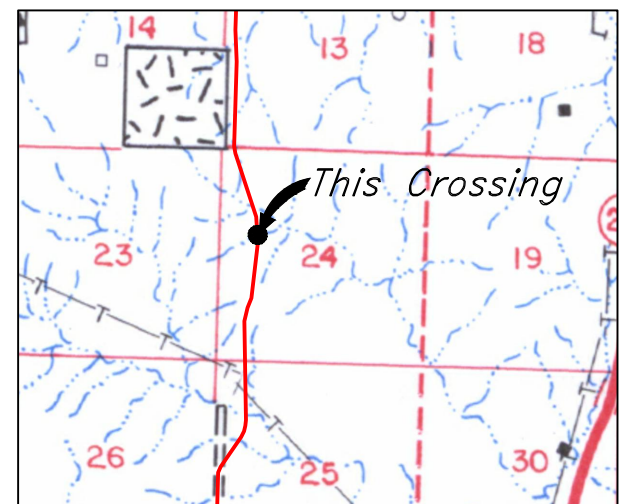
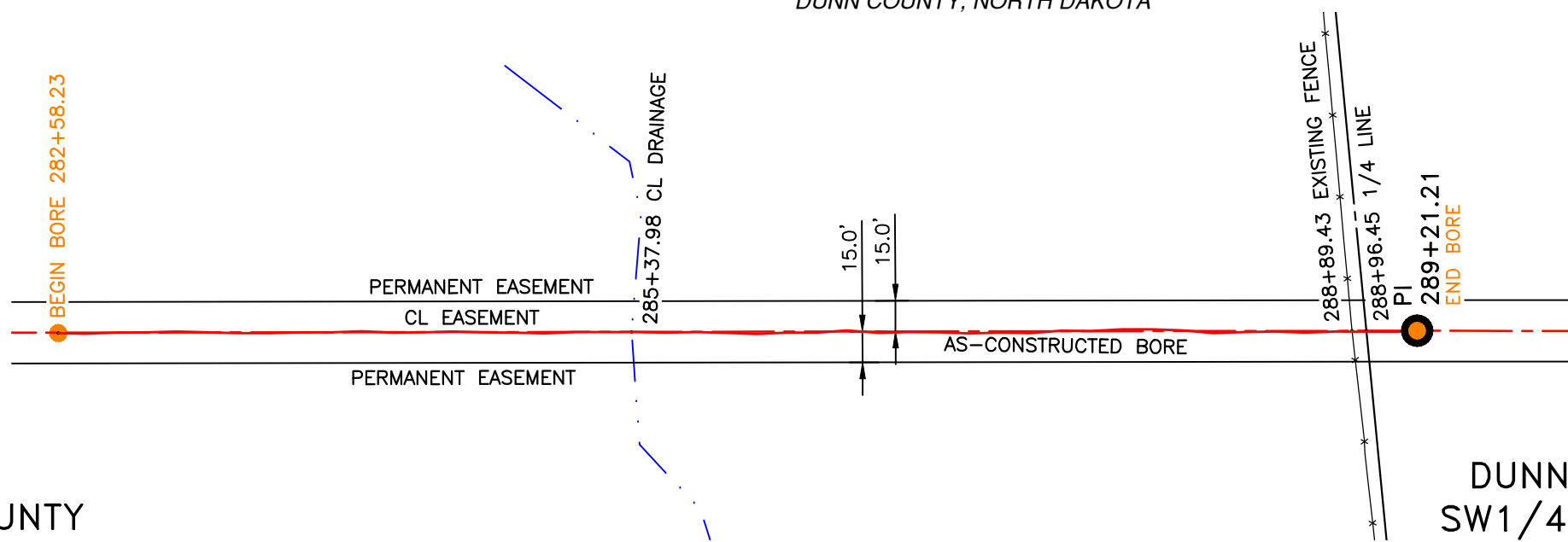
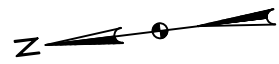
SCALE: 1" = 80'

DRAWN BY: M. STICKLAND
DATE: 01/15/30
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 55

BOE PIPELINE, LLC
BOE PIPELINE PHASE I
DRAINAGE CROSSING BORE #8
SECTION 24, T.144N., R.96W., DUNN COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #9 DUNN COUNTY, NORTH DAKOTA



R.96W.

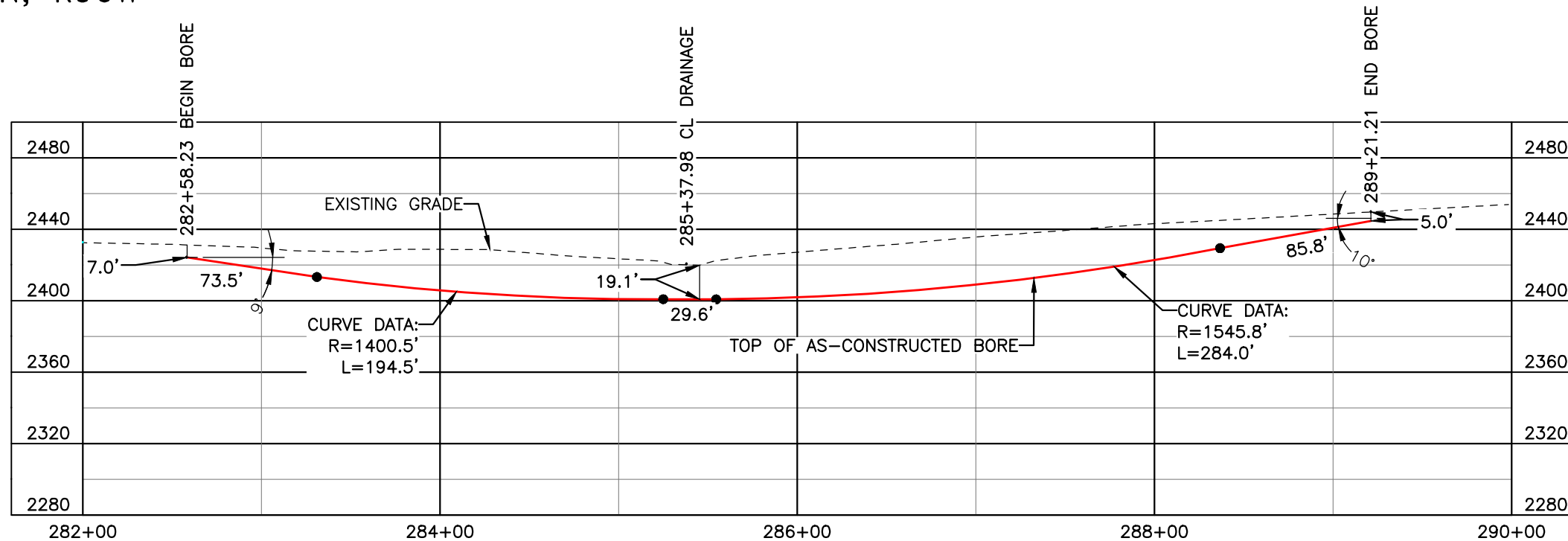
Location Map

DUNN COUNTY
NW1/4, SEC. 24,
T144N, R96W

DUNN COUNTY
SW1/4, SEC. 24,
T144N, R96W

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

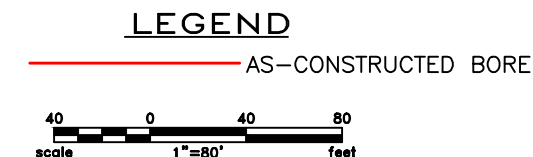


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	282+58.23	47°16'45.42" N	102°47'44.55" W
END BORE	289+21.21	47°16'38.90" N	102°47'45.43" W

TOTAL HORIZONTAL DISTANCE = 662.98 FT.

TOTAL BORE LENGTH = 667.4 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	667'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 80'

DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 56

BOE BOE PIPELINE, LLC

BOE PIPELINE PHASE I
DRAINAGE CROSSING BORE
BORE #9
SECTION 24, T.144N., R.96W., DUNN COUNTY, ND

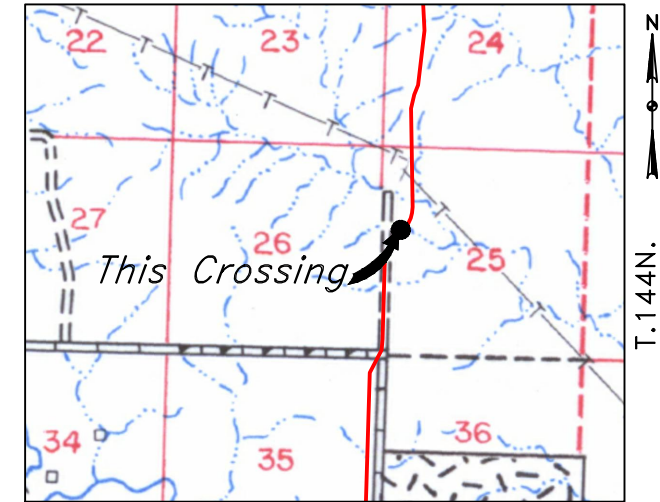
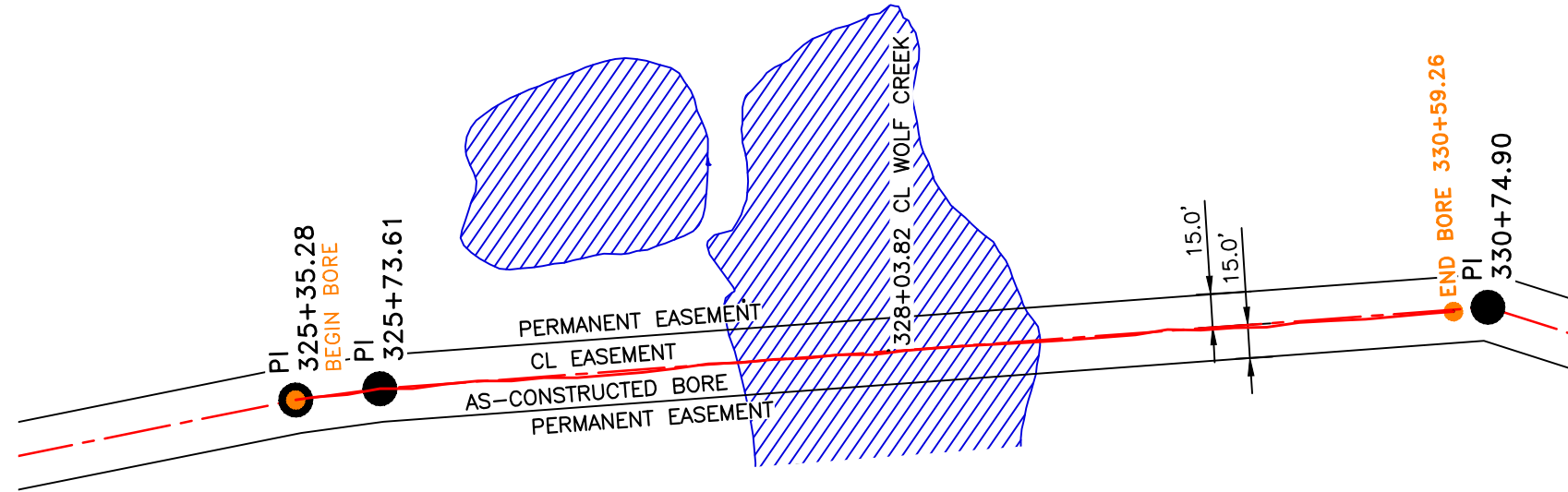
KLJ

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Bismarck, ND 58503
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BOE PIPELINE PHASE I WOLF CREEK CROSSING BORE #10

DUNN COUNTY, NORTH DAKOTA



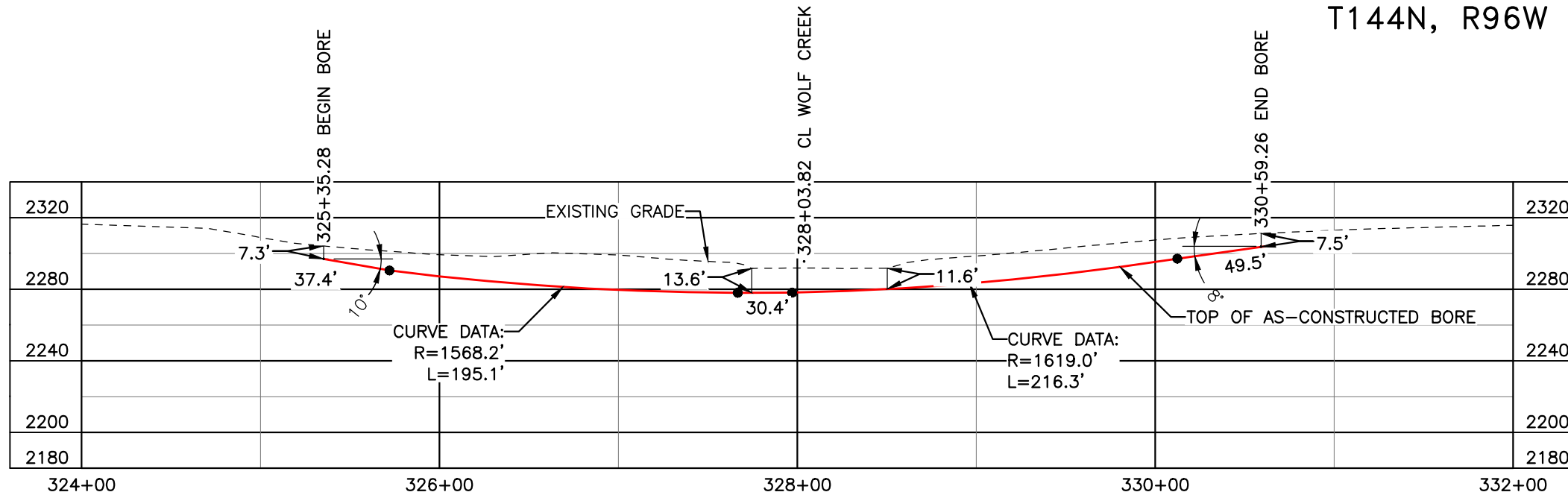
R.96W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

DUNN COUNTY
NW1/4, SEC. 25,
T144N, R96W

AS-CONSTRUCTED

FINAL
6/11/15



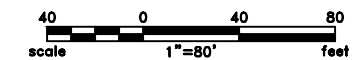
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	325+35.28	47°16'03.51" N	102°47'47.07" W
END BORE	330+59.26	47°15'58.36" N	102°47'47.65" W

TOTAL HORIZONTAL DISTANCE = 523.98 FT.

TOTAL BORE LENGTH = 528.7 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	▨ AVOIDANCE AREA
- - - SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—(U)— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	529'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

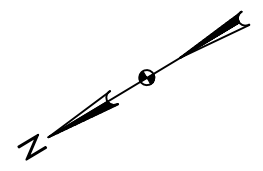
REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
 WOLF CREEK CROSSING BORE #10
 SECTION 25, T.144N., R.96W., DUNN COUNTY, ND

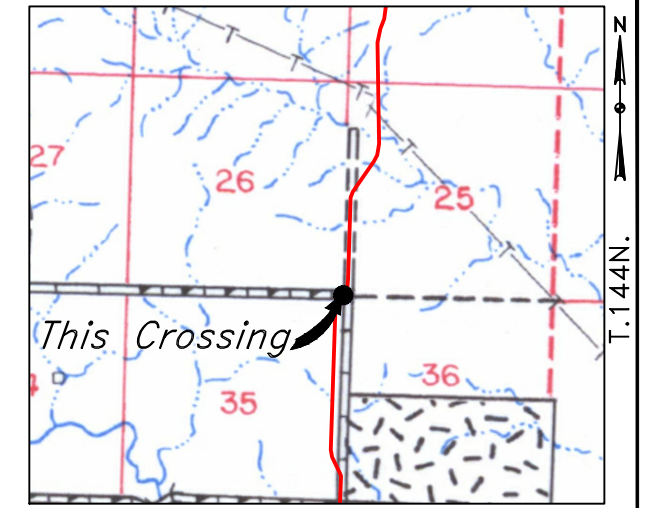
4585 Coleman Street
 Bismarck, ND 58503
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DUNN COUNTY
SW1/4, SEC. 25,
T144N, R96W

BOE PIPELINE PHASE I
11TH ST. SW CROSSING BORE # 11
DUNN COUNTY, NORTH DAKOTA

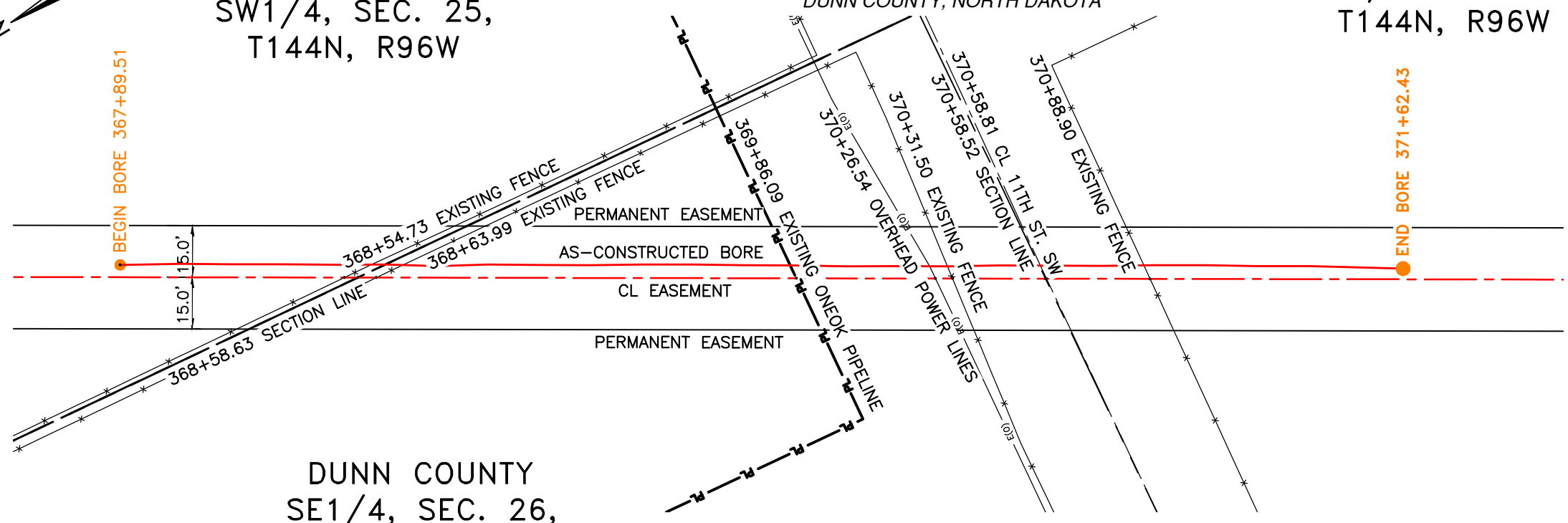
DUNN COUNTY
NE1/4, SEC. 35,
T144N, R96W



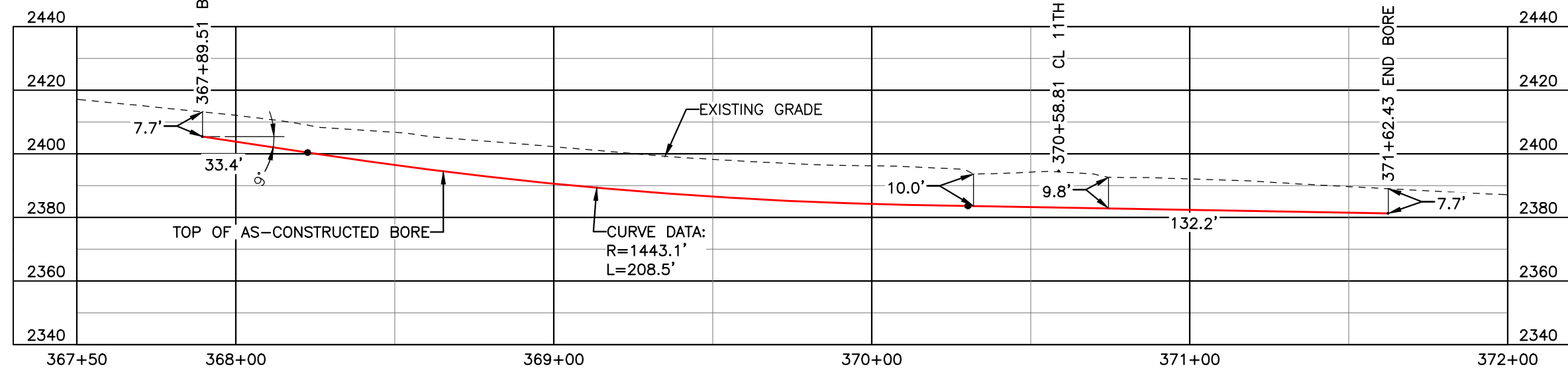
R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED



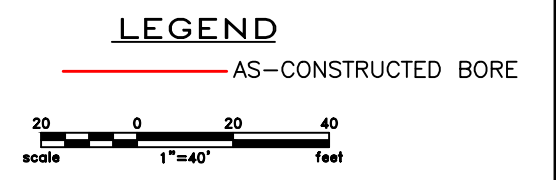
DUNN COUNTY
SE1/4, SEC. 26,
T144N, R96W



FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	367+89.51	47°15'23.48" N	102°47'57.82" W
END BORE	371+62.43	47°15'20.16" N	102°48'00.15" W

TOTAL HORIZONTAL DISTANCE = 372.92 FT.
TOTAL BORE LENGTH = 374.1 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	▨ AVOIDANCE AREA
- - - SECTION LINE	-FO- FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	— RAILROAD	▨ EASEMENT
- - - PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
- - - EXISTING ROAD	— MARKER POST	
- - - UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	374'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 40'

DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 58

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
11TH ST. SW CROSSING BORE #11
SECTIONS 25, 26 & 35, T.144N., R.96W., DUNN COUNTY, ND

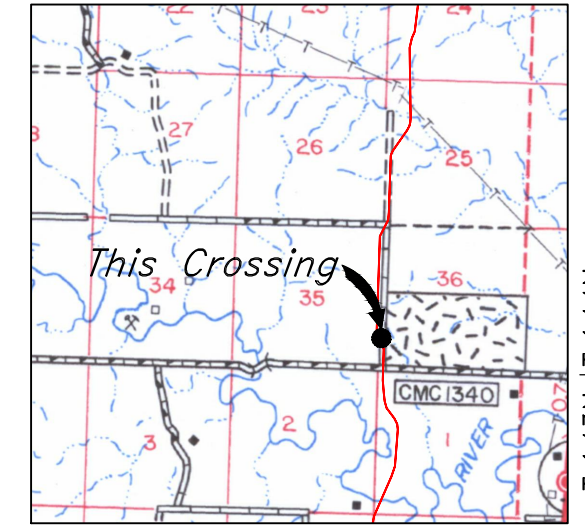
KLJ

4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I
109TH AVE. SW CROSSING BORE #12
 DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
 SW1/4, SEC. 36,
 T144N, R96W

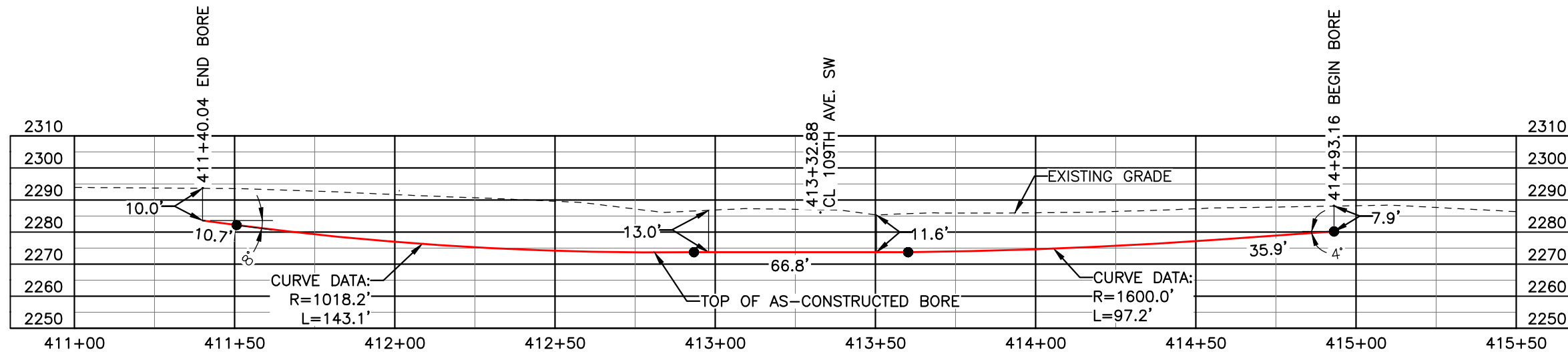
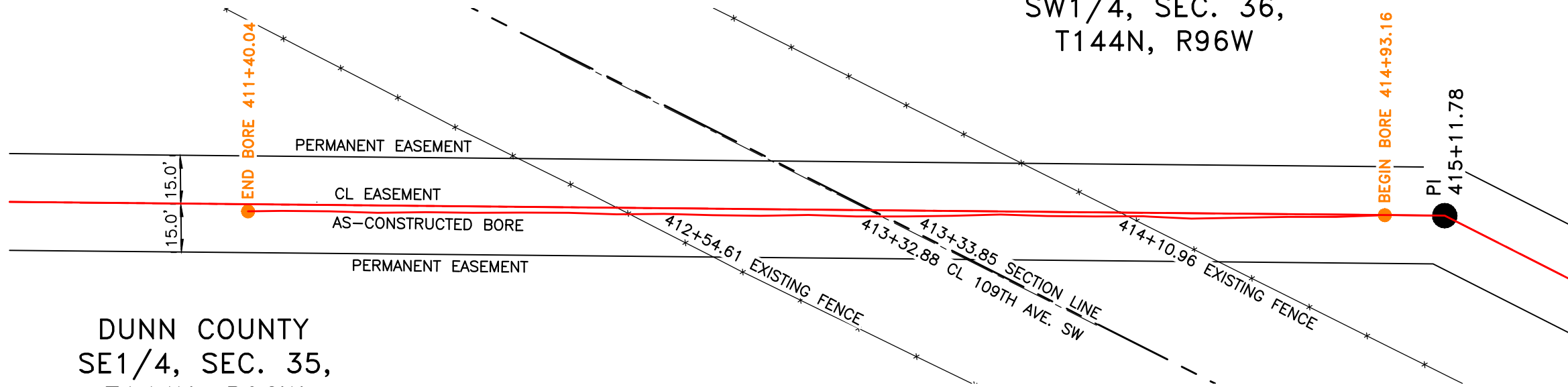
DUNN COUNTY
 SE1/4, SEC. 35,
 T144N, R96W



Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

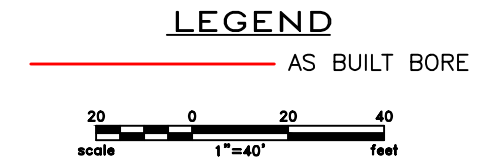


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	414+93.16	47°14'38.14" N	102°47'57.41" W
END BORE	411+40.04	47°14'41.25" N	102°47'59.69" W

TOTAL HORIZONTAL DISTANCE = 353.12 FT.

TOTAL BORE LENGTH = 353.7 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
--- UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	354'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

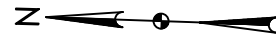
REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
 109TH AVE. SW CROSSING BORE #12
 SECTIONS 35 & 36, T.144N., R.96W., DUNN COUNTY, ND

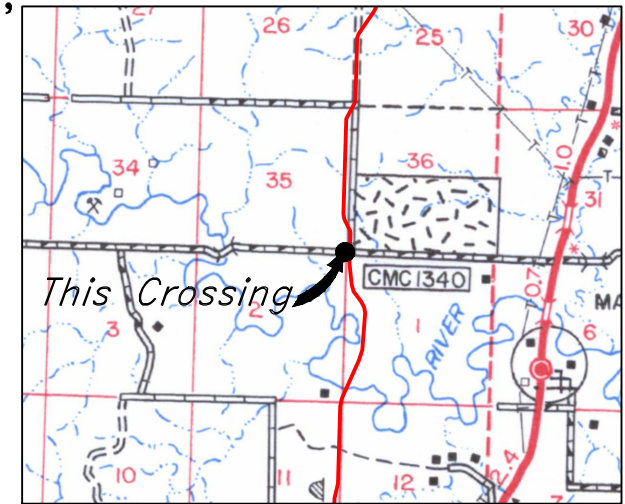
4585 Coleman Street
 Bismarck, ND 58503
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DUNN COUNTY
SW1/4, SEC. 36,
T144N, R96W

BOE PIPELINE PHASE I
12TH ST. SW CROSSING BORE #13
DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
NW1/4, SEC. 1,
T143N, R96W



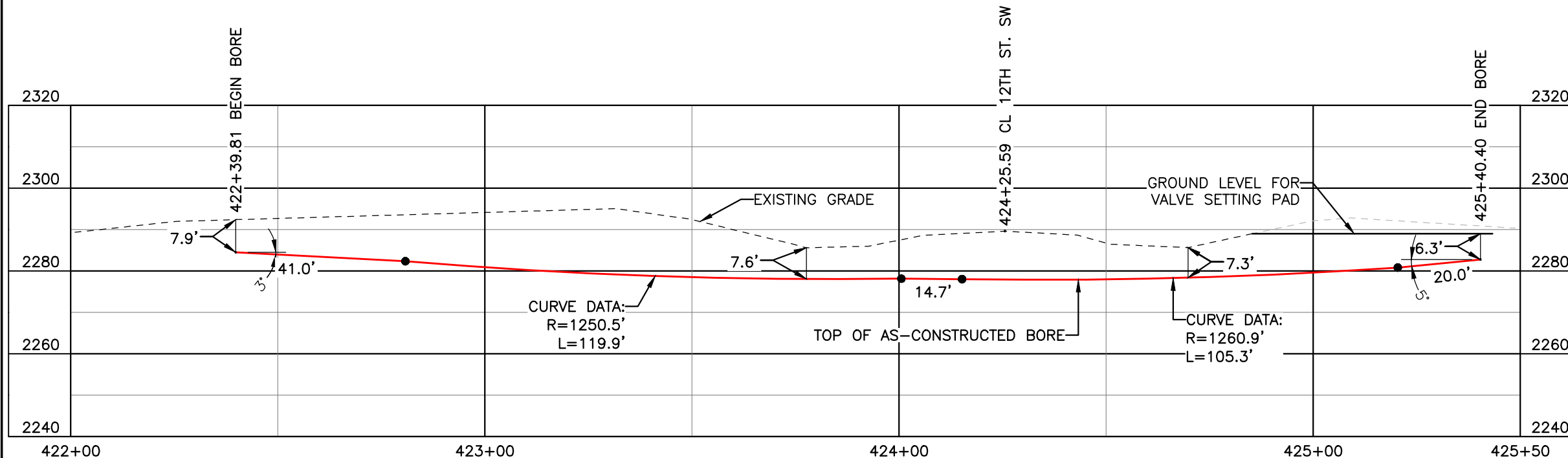
R.96W.

Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 MILS FBE, 30-35 MILS ARO

AS-CONSTRUCTED

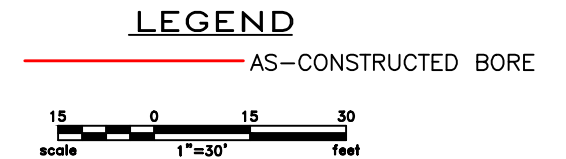
FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	422+39.81	47°14'30.78" N	102°47'57.29" W
END BORE	425+40.40	47°14'27.82" N	102°47'57.29" W

TOTAL HORIZONTAL DISTANCE = 300.59 FT.

TOTAL BORE LENGTH = 300.9 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
- - - SECTION LINE	-FO- FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
- - - PIPELINE CENTERLINE	-E(O)- OVERHEAD ELECTRIC	—○— TEST LEAD
— W WATER LINE	—□— UTILITY POLE	
— F FOREIGN PIPELINE	—○— AS-CONSTRUCTED BORE	
- - - EXISTING ROAD	—□— MARKER POST	
- - - UNDERGROUND COM. LINE	—○— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	301'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 60

BOE PIPELINE, LLC
BOE PIPELINE PHASE I
12TH ST. SW CROSSING BORE #13
SECTION 36, T.144N., R.96W. & SECTION 1, T.143N., R.96W., DUNN COUNTY, ND

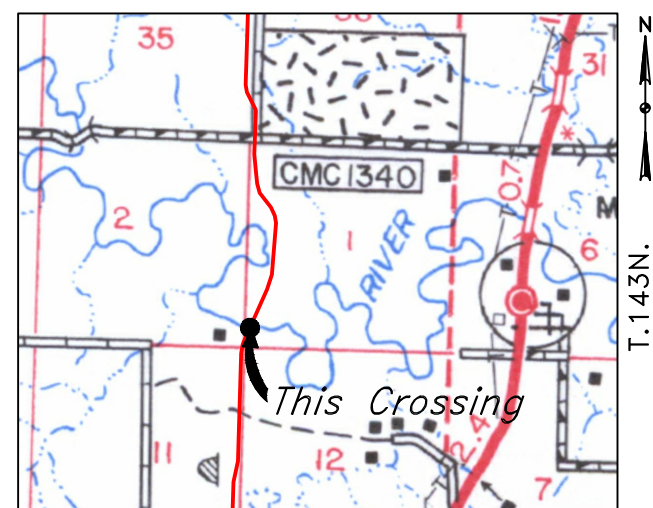
KLJ
4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I KNIFE RIVER CROSSING BORE #14

DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
SW1/4, SEC. 1,
T143N, R96W

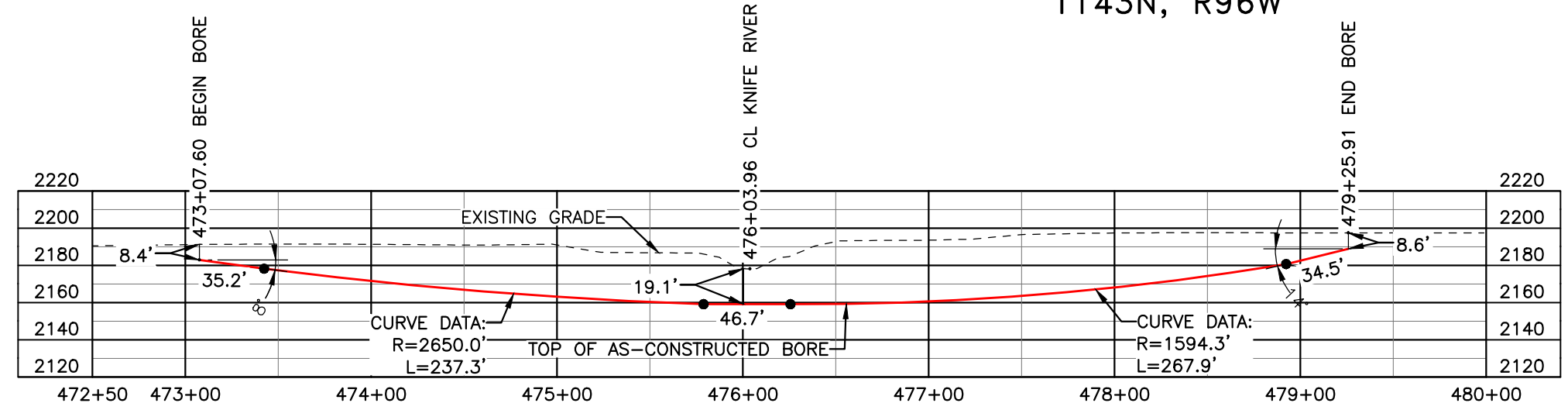
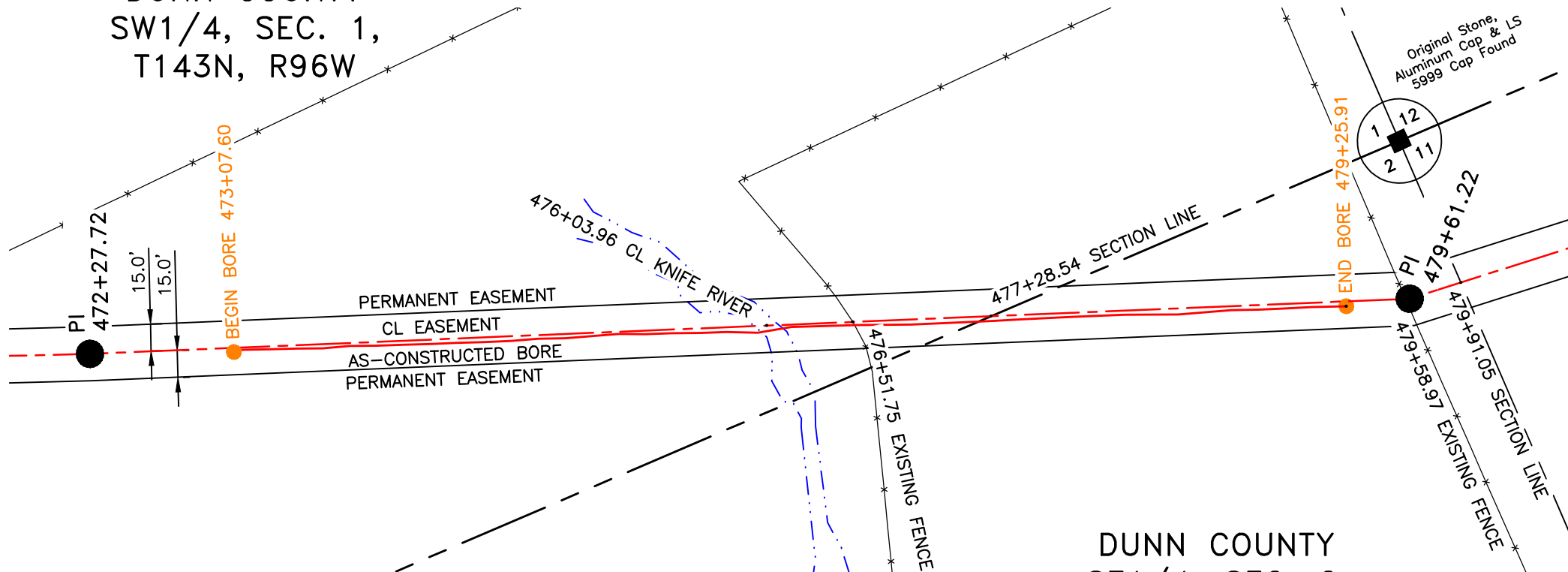
DUNN COUNTY
SE1/4, SEC. 2,
T143N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 MILS FBE, 30-35 MILS ARO

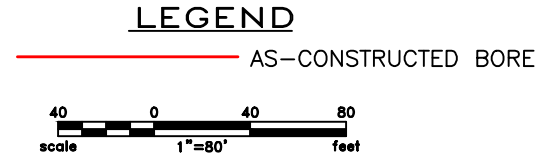
AS-CONSTRUCTED



FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	473+07.60	47°13'43.15" N	102°47'56.46" W
END BORE	479+25.91	47°13'37.45" N	102°47'59.66" W

TOTAL HORIZONTAL DISTANCE = 618.31 FT.
 TOTAL BORE LENGTH = 621.6 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND EASEMENT
- - - EASEMENT LINE	—R— RAILROAD	—O— OVERHEAD ELECTRIC EASEMENT
— PIPELINE CENTERLINE	—(O)— UTILITY POLE	— AS-CONSTRUCTED BORE
— WATER LINE	— VALVE SETTING	— MARKER POST
— FOREIGN PIPELINE	—	— TEST LEAD
— EXISTING ROAD	—	—
--- UNDERGROUND COM. LINE	—	—

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	622'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
1	6/11/15	AS-CONSTRUCTED

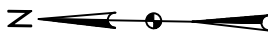
SCALE: 1" = 80'

DRAWN BY: M. STICKLAND
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 61

BOE PIPELINE, LLC

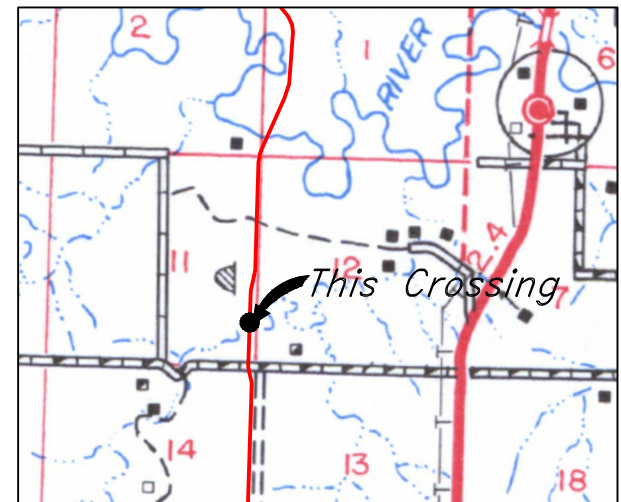
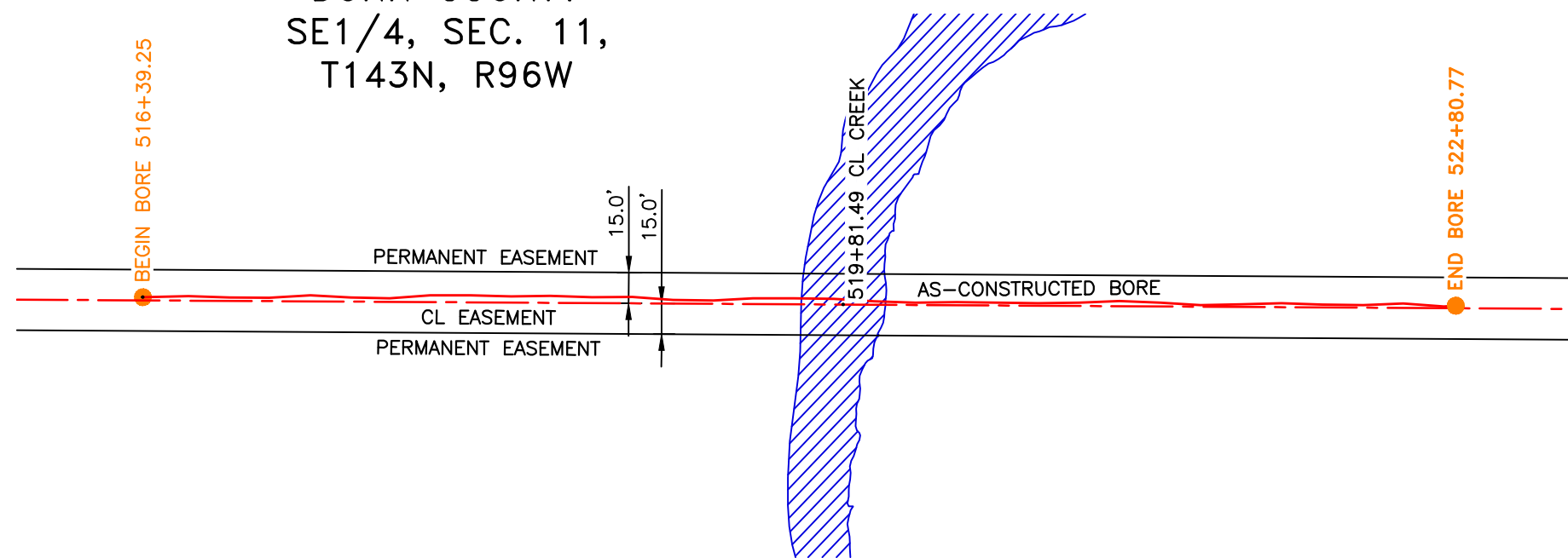
BOE PIPELINE PHASE I
KNIFE RIVER CROSSING BORE #14
SECTIONS 1 & 2, T.143N., R.96W., DUNN COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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**BOE PIPELINE PHASE I
CREEK CROSSING BORE #15**
DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
SE1/4, SEC. 11,
T143N, R96W



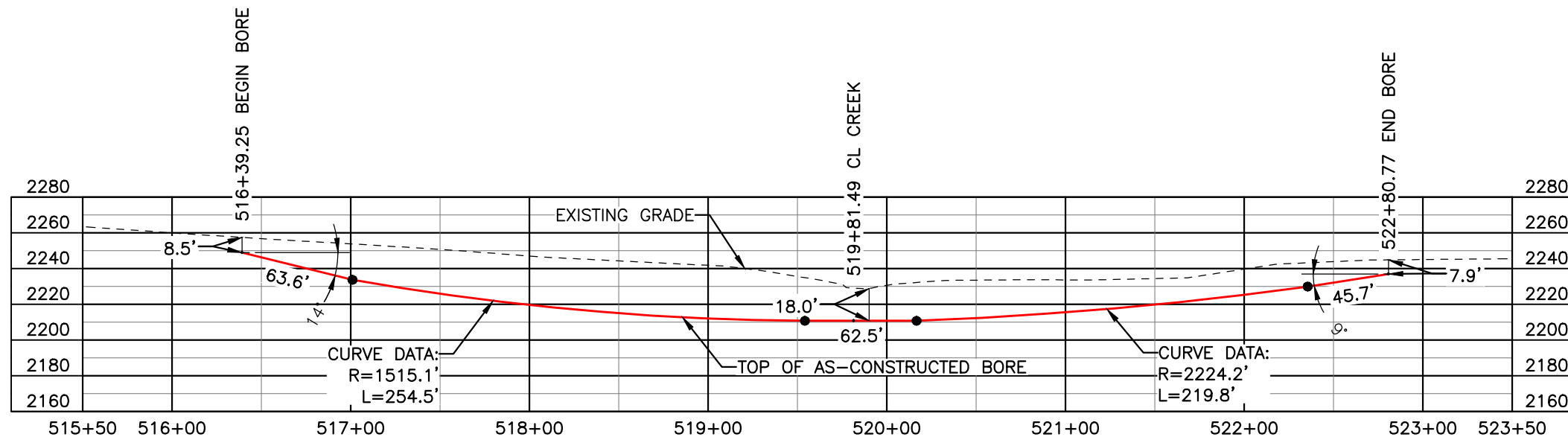
R.96W. | R.95W.

Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 MILS FBE, 30-35 MILS ARO

AS-CONSTRUCTED

FINAL
6/11/15



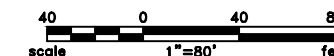
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	516+39.25	47°13'00.90" N	102°48'01.59" W
END BORE	522+80.77	47°12'54.57" N	102°48'01.59" W

TOTAL HORIZONTAL DISTANCE = 641.52 FT.

TOTAL BORE LENGTH = 646.1 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND	
—	PROPERTY LINE
- - -	SECTION LINE
- · - · -	EASEMENT LINE
—	PIPELINE CENTERLINE
—	WATER LINE
—	FOREIGN PIPELINE
—	EXISTING ROAD
—	UNDERGROUND COM. LINE
— x —	EXISTING FENCE
— FO —	FIBER OPTIC COM. LINE
—	RAILROAD
— (O) —	OVERHEAD ELECTRIC
—	UTILITY POLE
—	AS-CONSTRUCTED BORE
—	MARKER POST
—	VALVE SETTING
—	AVOIDANCE AREA
—	WETLAND
—	EASEMENT
—	TEST LEAD

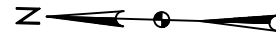
MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
2	646'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS			REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION
		0	6/11/15	AS-CONSTRUCTED

SCALE: 1" = 80'
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 62

BOE PIPELINE, LLC
 BOE PIPELINE PHASE I
 CREEK CROSSING BORE #15
 SECTION 11, T.143N., R.96W., DUNN COUNTY, ND

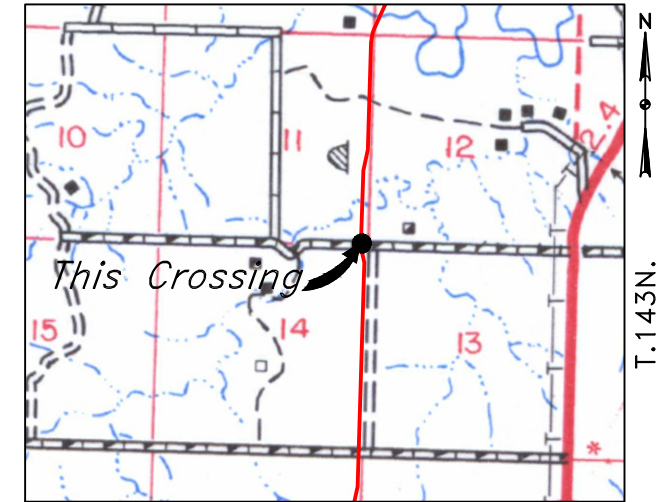
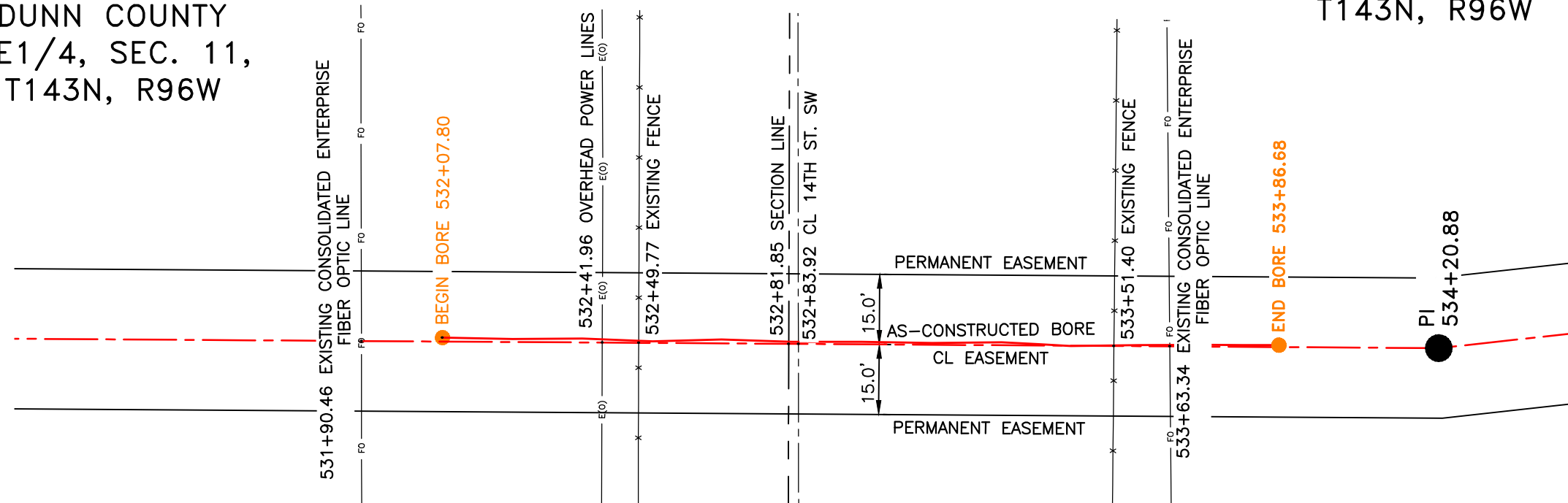
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BOE PIPELINE PHASE I
14TH ST. SW CROSSING BORE #16
 DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
 NE1/4, SEC. 14,
 T143N, R96W

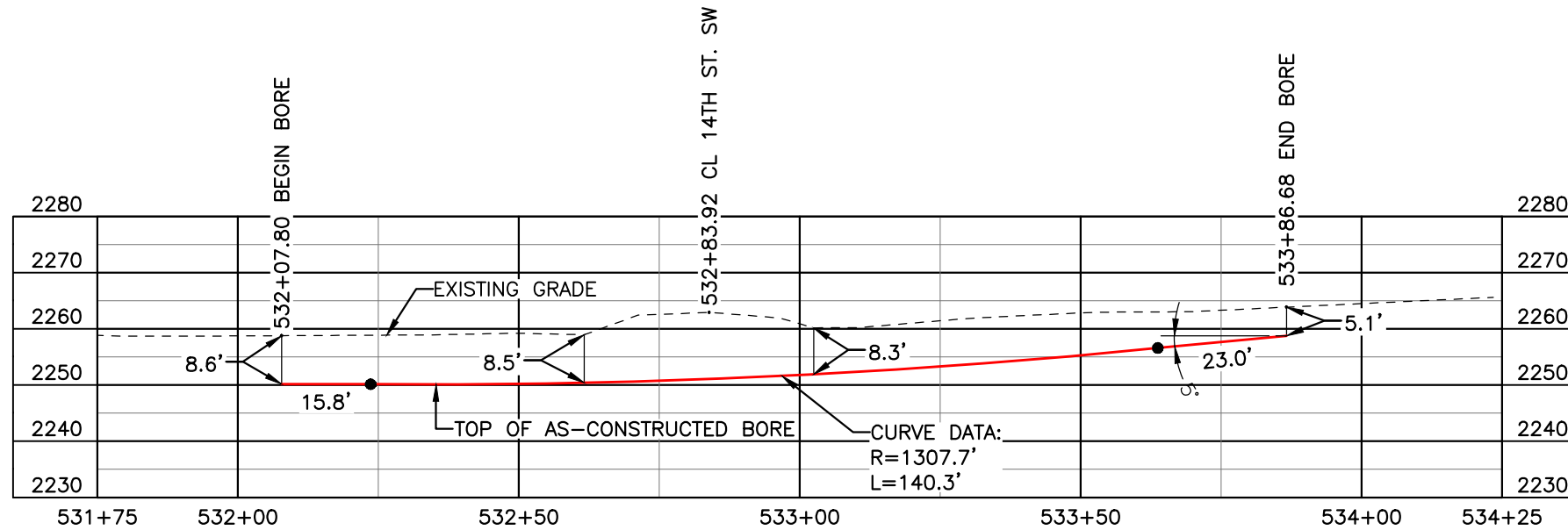
DUNN COUNTY
 SE1/4, SEC. 11,
 T143N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 MILS FBE
 30-35 MILS ARO

AS-CONSTRUCTED

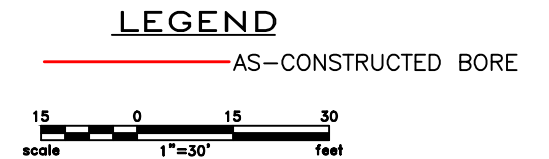


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	532+07.80	47°12'45.42" N	102°48'01.61" W
END BORE	533+86.68	47°12'43.66" N	102°48'01.62" W

TOTAL HORIZONTAL DISTANCE = 178.88 FT.

TOTAL BORE LENGTH = 179.1 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
- - - SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—E(O)— OVERHEAD ELECTRIC	— UTILITY POLE
— WATER LINE	— AS-CONSTRUCTED BORE	— TEST LEAD
— FOREIGN PIPELINE	— MARKER POST	
— EXISTING ROAD	— VALVE SETTING	
— UNDERGROUND COM. LINE		

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	179'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

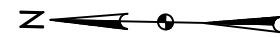
SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLI JOB NUMBER: 1713140
 REVISION: SHEET: 63

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
14TH ST. SW CROSSING BORE #16
 SECTIONS 11 & 14 T.143N., R.96W., DUNN COUNTY, ND

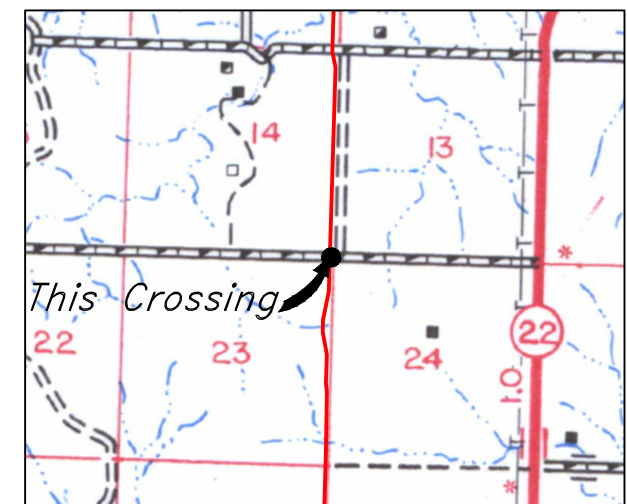
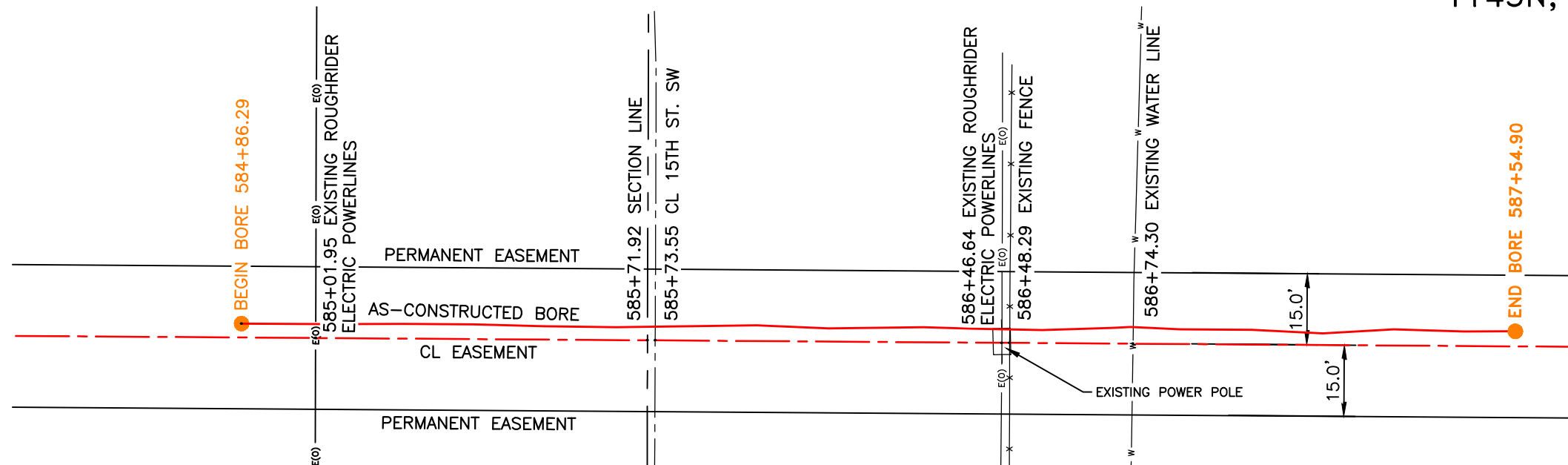
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DUNN COUNTY
SE1/4, SEC. 14,
T143N, R96W

BOE PIPELINE PHASE I
15TH ST. SW CROSSING BORE #17
DUNN COUNTY, NORTH DAKOTA

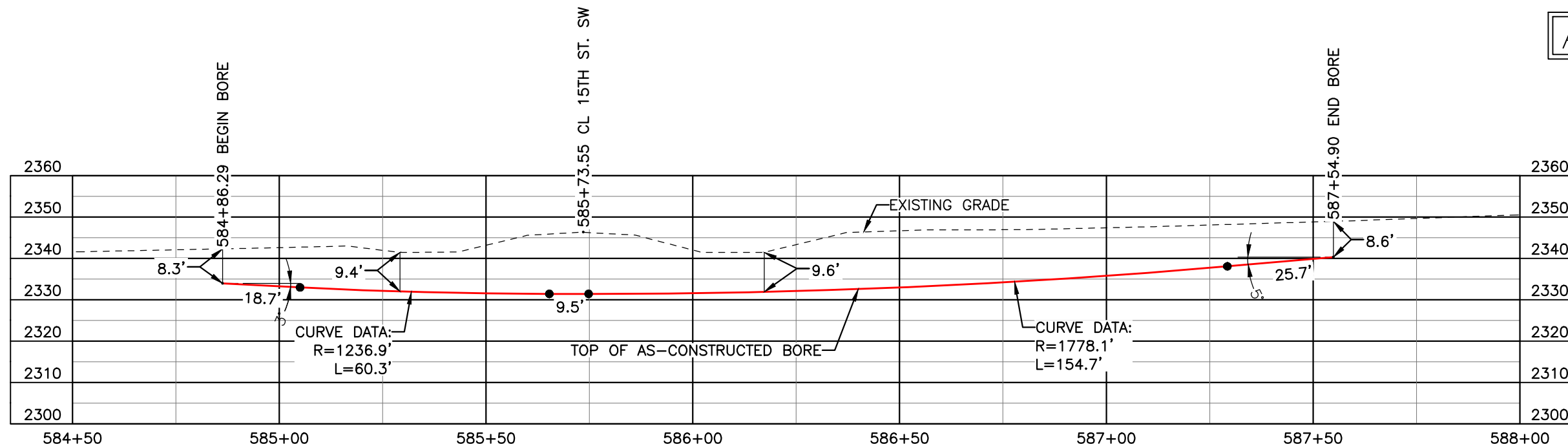
DUNN COUNTY
NE1/4, SEC. 23,
T143N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 MILS FBE, 30-35 MILS ARO

AS-CONSTRUCTED



FINAL
6/11/15

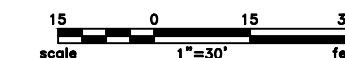
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	584+86.29	47°11'53.43" N	102°48'00.24" W
END BORE	587+54.90	47°11'50.78" N	102°48'00.24" W

TOTAL HORIZONTAL DISTANCE = 268.61 FT.

TOTAL BORE LENGTH = 268.9 FT.

LEGEND

— AS-CONSTRUCTED BORES



LEGEND	
—	PROPERTY LINE
- - -	SECTION LINE
- - -	EASEMENT LINE
- - -	PIPELINE CENTERLINE
- - -	FOREIGN PIPELINE
- - -	EXISTING ROAD
- - -	UNDERGROUND COM. LINE
- x -	EXISTING FENCE
- FO -	FIBER OPTIC COM. LINE
-	RAILROAD
- E(O)	OVERHEAD ELECTRIC
- U(P)	UTILITY POLE
-	AS-CONSTRUCTED BORE
-	MARKER POST
-	VALVE SETTING
-	AVOIDANCE AREA
-	WETLAND
-	EASEMENT
-	TEST LEAD

MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
2	269'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS			REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION
		0	6/11/15	AS-CONSTRUCTED

SCALE: 1" = 30'
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 64

BOE PIPELINE, LLC

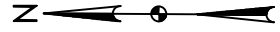
BOE PIPELINE PHASE I
15TH ST. SW CROSSING BORE #17
SECTIONS 14 & 23 T.143N., R.96W., DUNN COUNTY, ND

KLJ

4585 Coleman Street
Bismarck, ND 58503

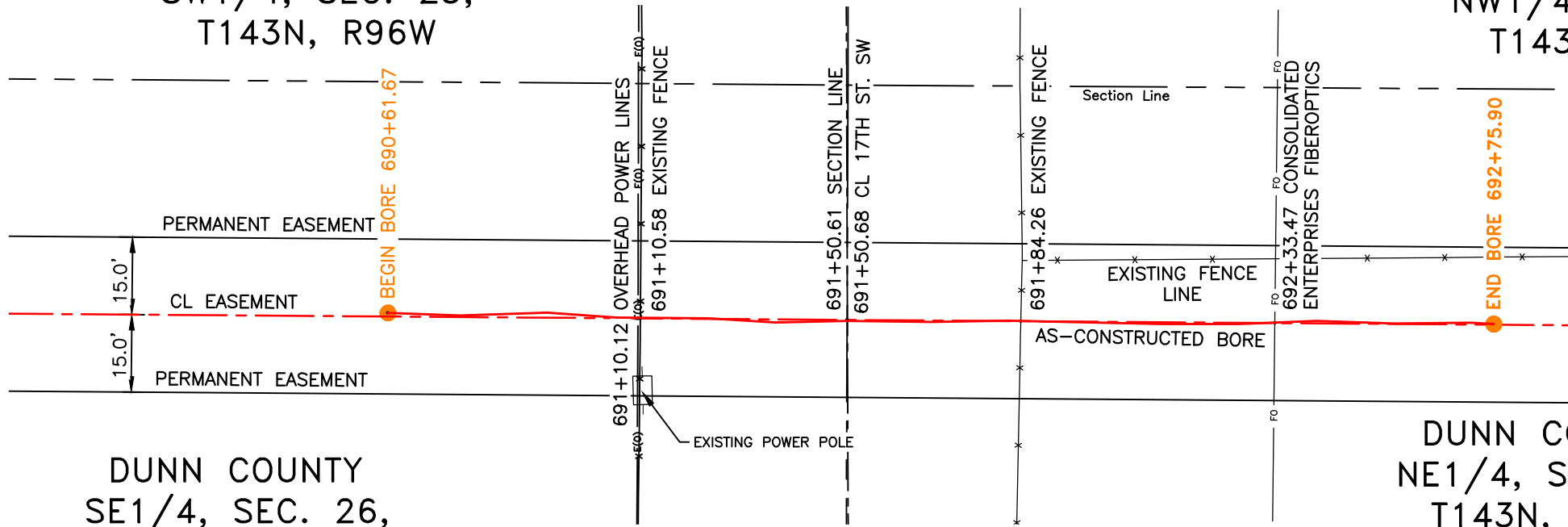
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BOE PIPELINE PHASE I
17TH ST. SW CROSSING BORE #18
 DUNN COUNTY, NORTH DAKOTA



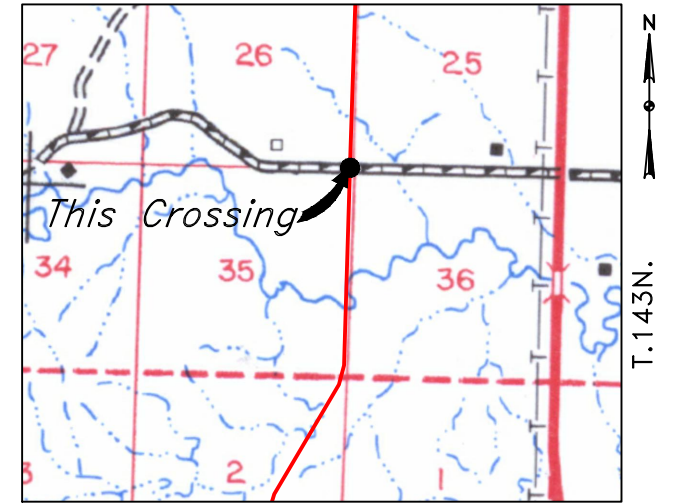
DUNN COUNTY
 SW1/4, SEC. 25,
 T143N, R96W

DUNN COUNTY
 NW1/4, SEC. 36,
 T143N, R96W



DUNN COUNTY
 SE1/4, SEC. 26,
 T143N, R96W

DUNN COUNTY
 NE1/4, SEC. 35,
 T143N, R96W



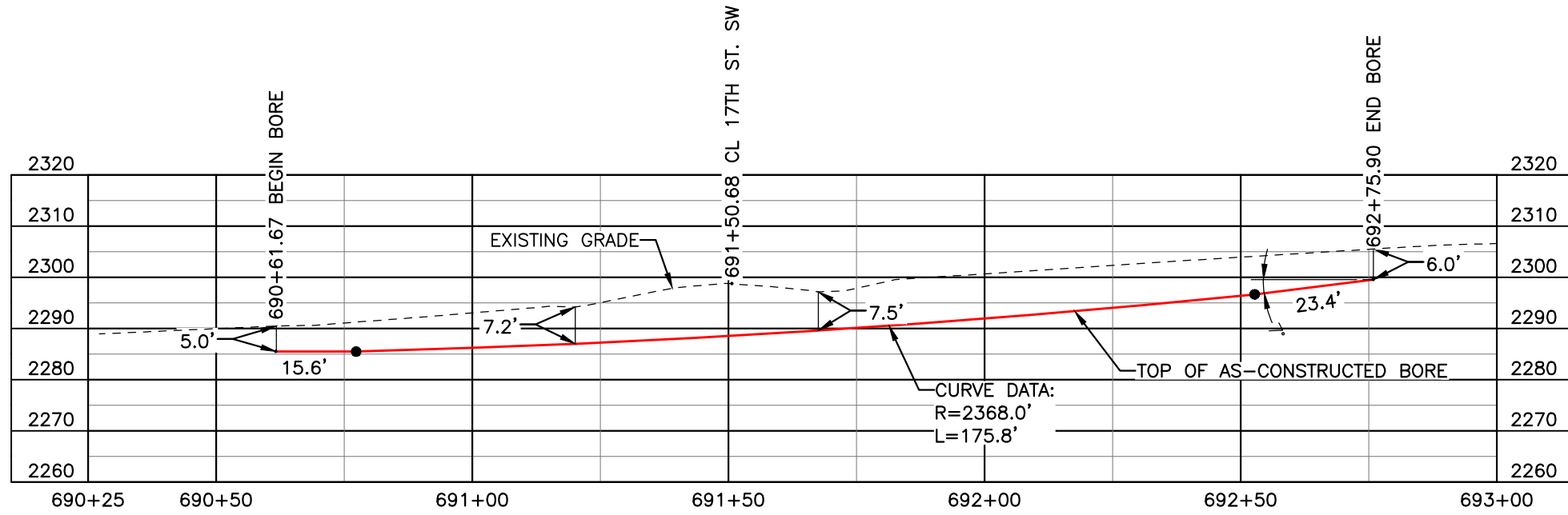
R.96W. | R.95W.

Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 MILS FBE, 30-35 MILS ARO

AS-CONSTRUCTED

FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	690+61.67	47°10'09.30" N	102°47'59.66" W
END BORE	692+75.90	47°10'07.18" N	102°47'59.68" W

TOTAL HORIZONTAL DISTANCE = 214.23 FT.

TOTAL BORE LENGTH = 214.8 FT.



LEGEND

— PROPERTY LINE	— X — EXISTING FENCE	— AVOIDANCE AREA
— SECTION LINE	— FO — FIBER OPTIC COM. LINE	— WETLAND
— EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— (E) — OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— □ — UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— □ — MARKER POST	
— UNDERGROUND COM. LINE	— X — VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	215'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

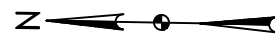
DRAWN BY: M. STICKLAND
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 65

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
15TH ST. SW CROSSING BORE #18
 SECTIONS 26 & 35 T.143N., R.96W., DUNN COUNTY, ND

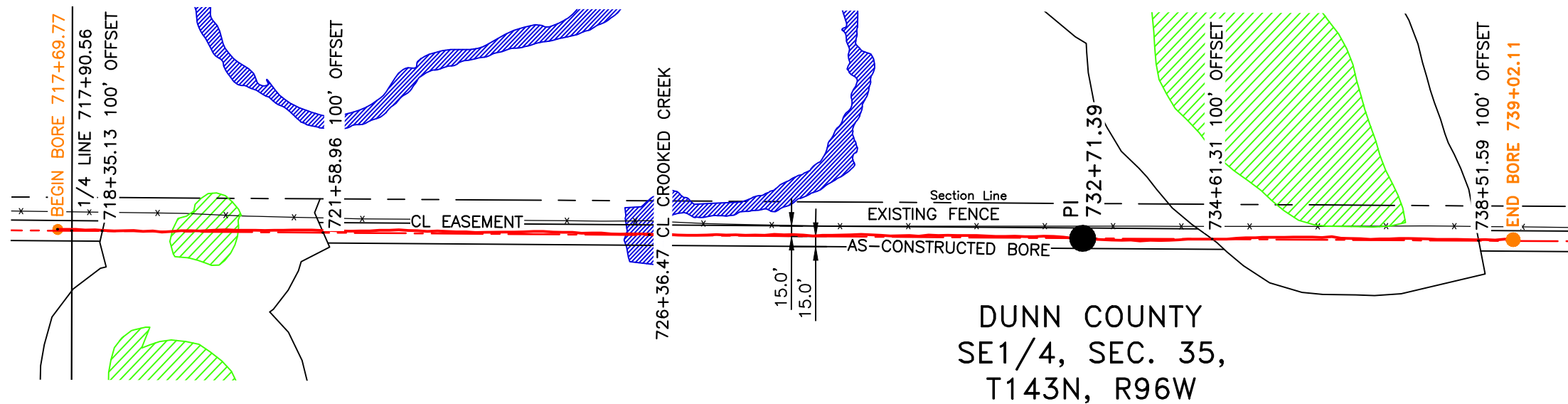
KLJ

4585 Coleman Street
 Bismarck, ND 58503
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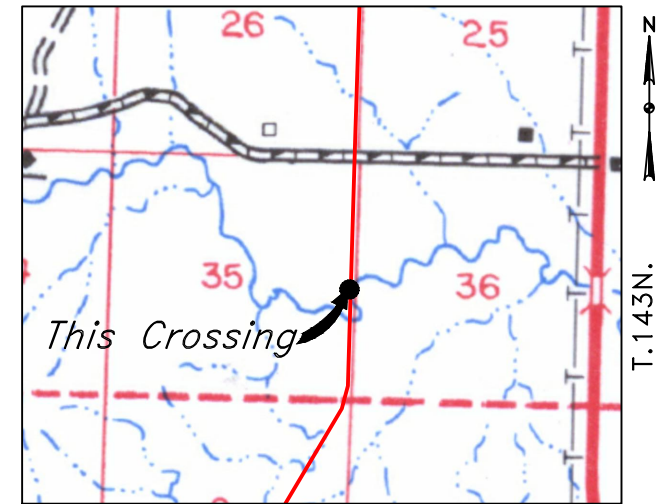


DUNN COUNTY
SW1/4, SEC. 36,
T143N, R96W

BOE PIPELINE PHASE I
AVOIDANCE AREAS AND CROOKED CREEK CROSSING BORE #19
DUNN COUNTY, NORTH DAKOTA



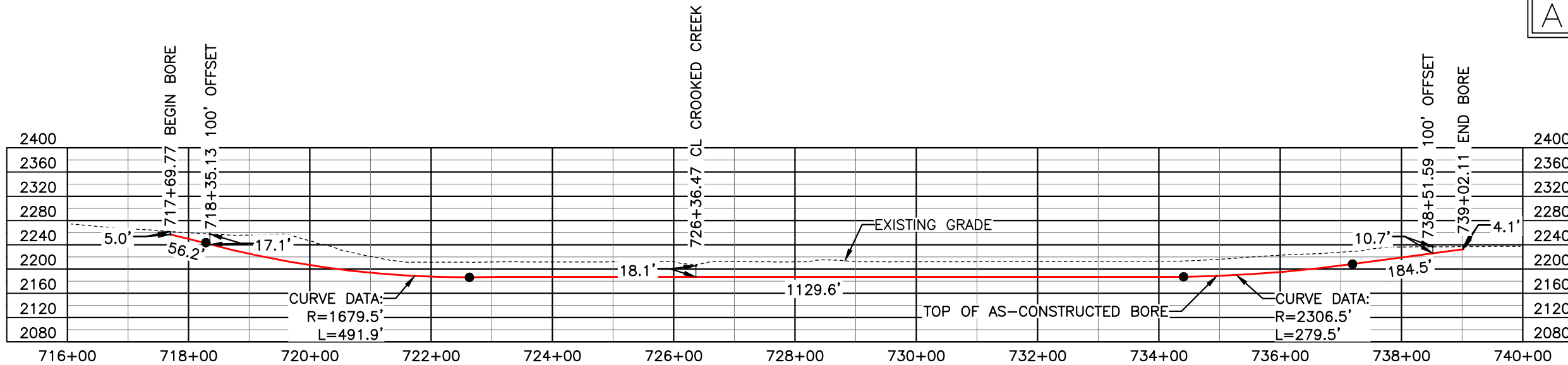
DUNN COUNTY
SE1/4, SEC. 35,
T143N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mills FBE, 30-35 Mills ARO

AS-CONSTRUCTED

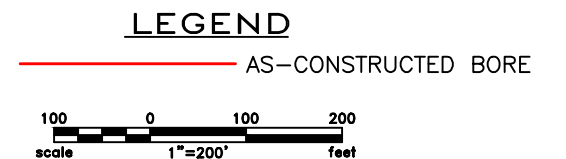


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	717+69.77	47°09'42.57" N	102°47'59.72" W
END BORE	739+02.11	47°09'21.52" N	102°47'59.76" W

TOTAL HORIZONTAL DISTANCE = 2132.34 FT.

TOTAL BORE LENGTH = 2141.7 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	— AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	— WETLAND
--- EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
--- UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	2142'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 200'

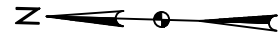
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: 1 SHEET: 66

BOE **BAKKEN OIL EXPRESS** BOE PIPELINE, LLC

BOE PIPELINE PHASE I
AVOIDANCE AREAS AND CROOKED CREEK CROSSING BORE #19
SECTION 35 T.143N., R.96W., DUNN COUNTY, ND

KLJ

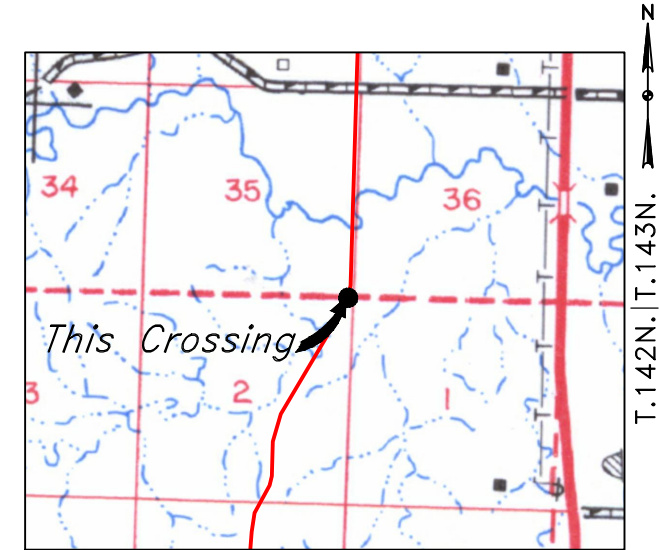
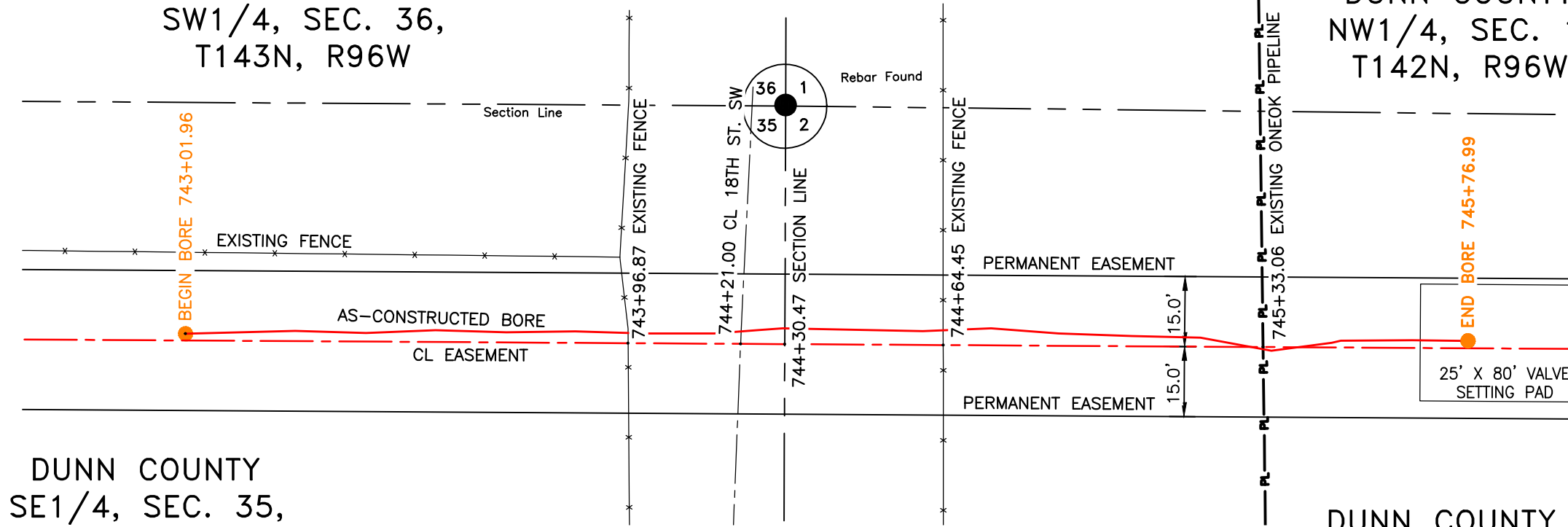
4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I
18TH ST. SW CROSSING BORE #20
 DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
 SW1/4, SEC. 36,
 T143N, R96W

DUNN COUNTY
 NW1/4, SEC. 1,
 T142N, R96W



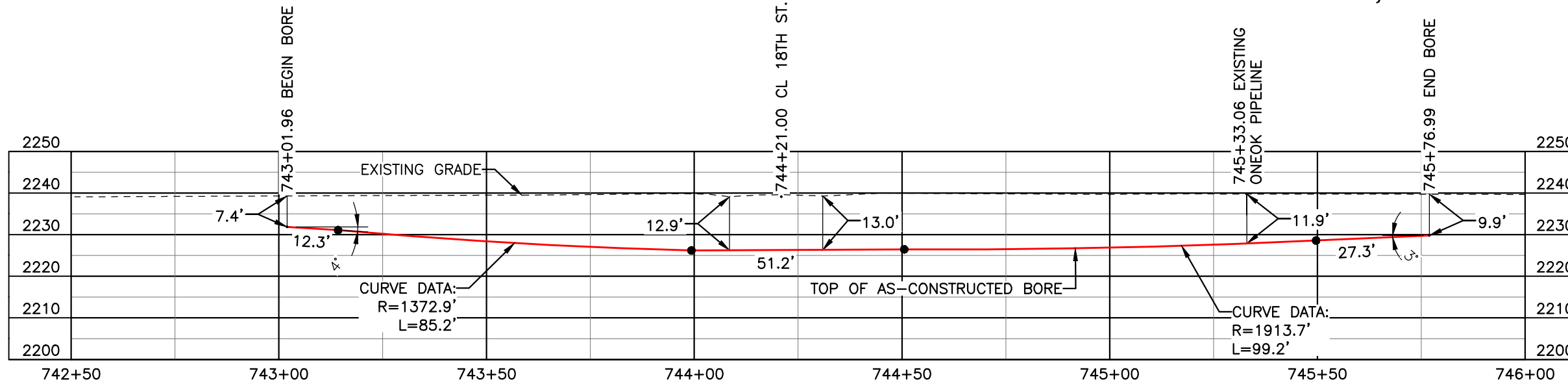
R.96W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 MILS FBE, 30-35 MILS ARO

AS-CONSTRUCTED

DUNN COUNTY
 SE1/4, SEC. 35,
 T143N, R96W

DUNN COUNTY
 NE1/4, SEC. 2,
 T142N, R96W

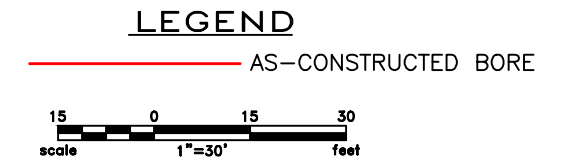


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	743+01.96	47°09'17.58" N	102°47'59.76" W
END BORE	745+76.99	47°09'14.86" N	102°47'59.76" W

TOTAL HORIZONTAL DISTANCE = 275.03 FT.

TOTAL BORE LENGTH = 275.2 FT.



LEGEND

— PROPERTY LINE	— EXISTING FENCE	— AVOIDANCE AREA
— SECTION LINE	— FIBER OPTIC COM. LINE	— WETLAND
— EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	275'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

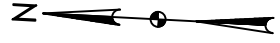
DRAWN BY: M. STICKLAND
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLI JOB NUMBER: 1713140
 REVISION: SHEET: 67

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
 18TH ST. SW CROSSING BORE #20
 SECTION 35 T.143N., R.96W. & SECTION 2 T.142N., R.96W., DUNN COUNTY, ND

KLJ

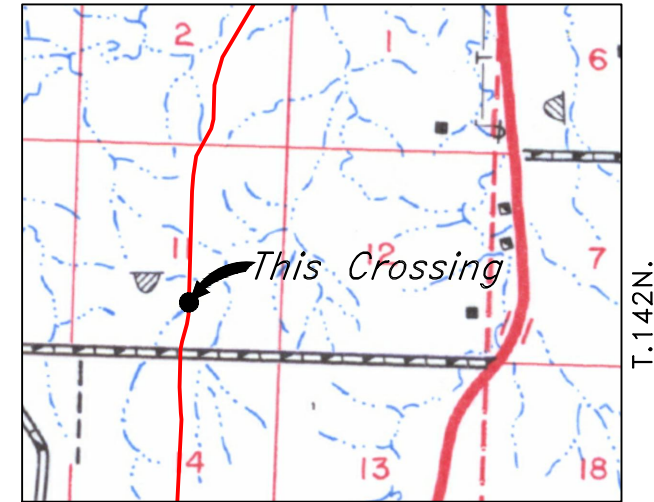
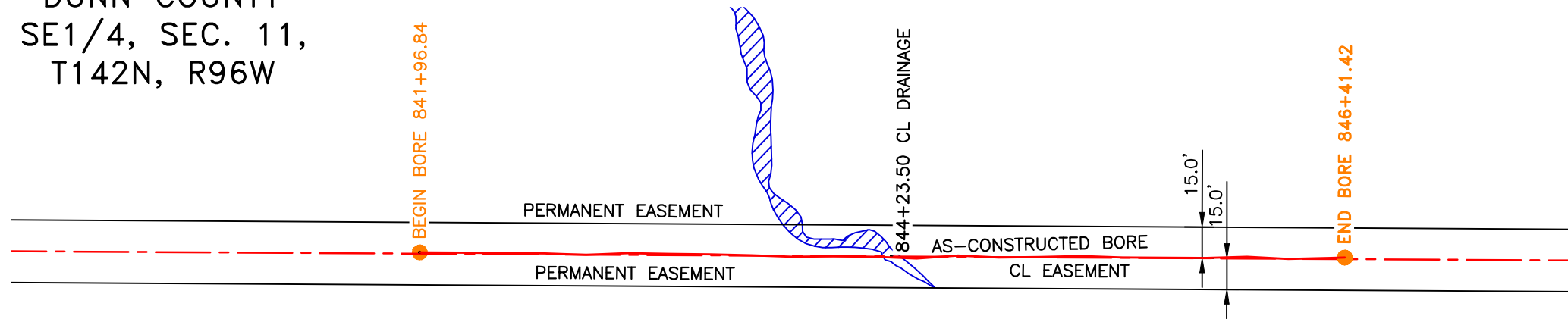
4585 Coleman Street
 Bismarck, ND 58503
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BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #21

DUNN COUNTY, NORTH DAKOTA

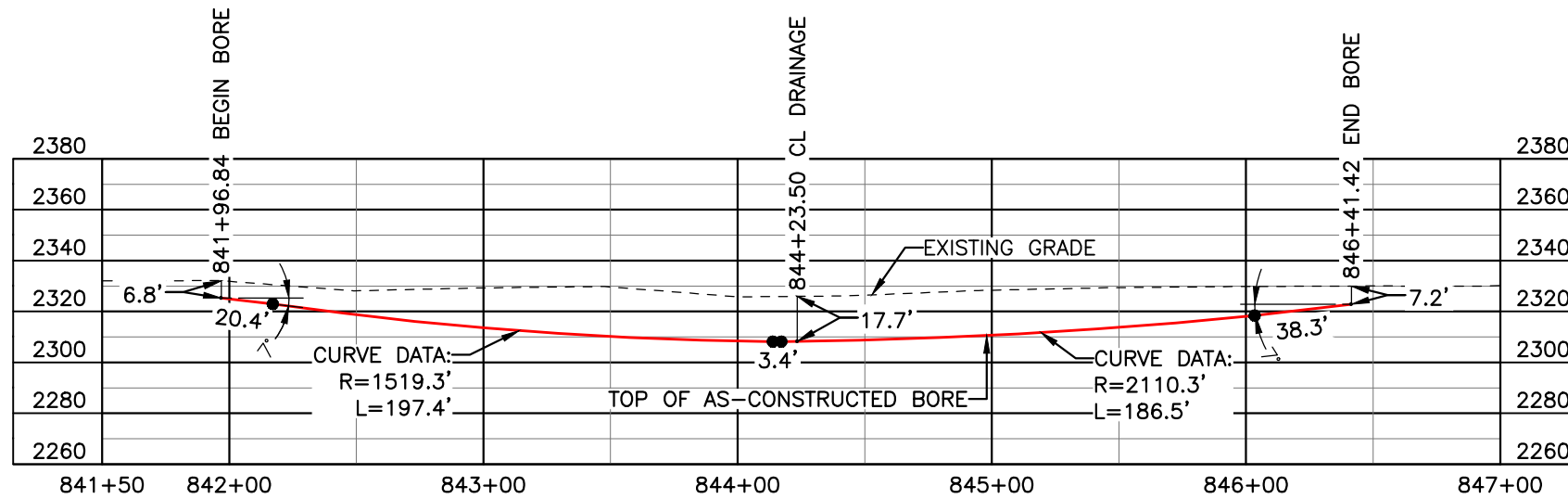
DUNN COUNTY
SE1/4, SEC. 11,
T142N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mills FBE, 30-35 Mills ARO

AS-CONSTRUCTED



FINAL
6/11/15

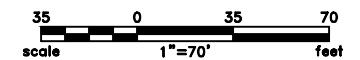
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	841+96.84	47°07'45.27" N	102°48'34.54" W
END BORE	846+41.42	47°07'40.88" N	102°48'34.53" W

TOTAL HORIZONTAL DISTANCE = 444.58 FT.

TOTAL BORE LENGTH = 446.0 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
--- EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—U— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
--- UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	446'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

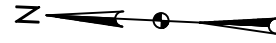
REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
 DRAINAGE CROSSING BORE
 BORE #21
 SECTION 11 T.142N., R.96W., DUNN COUNTY, ND

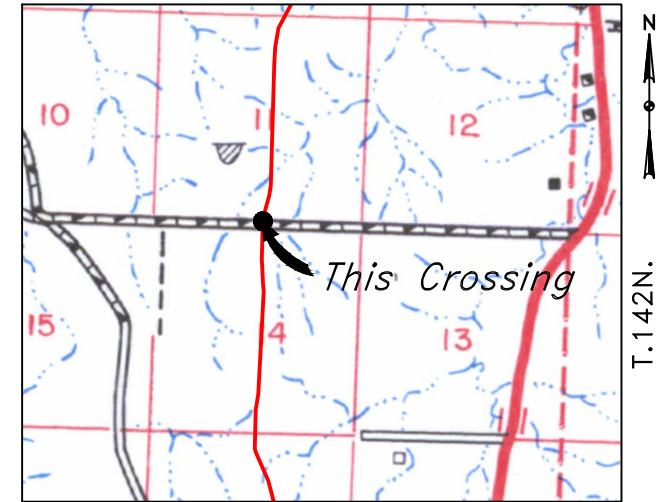
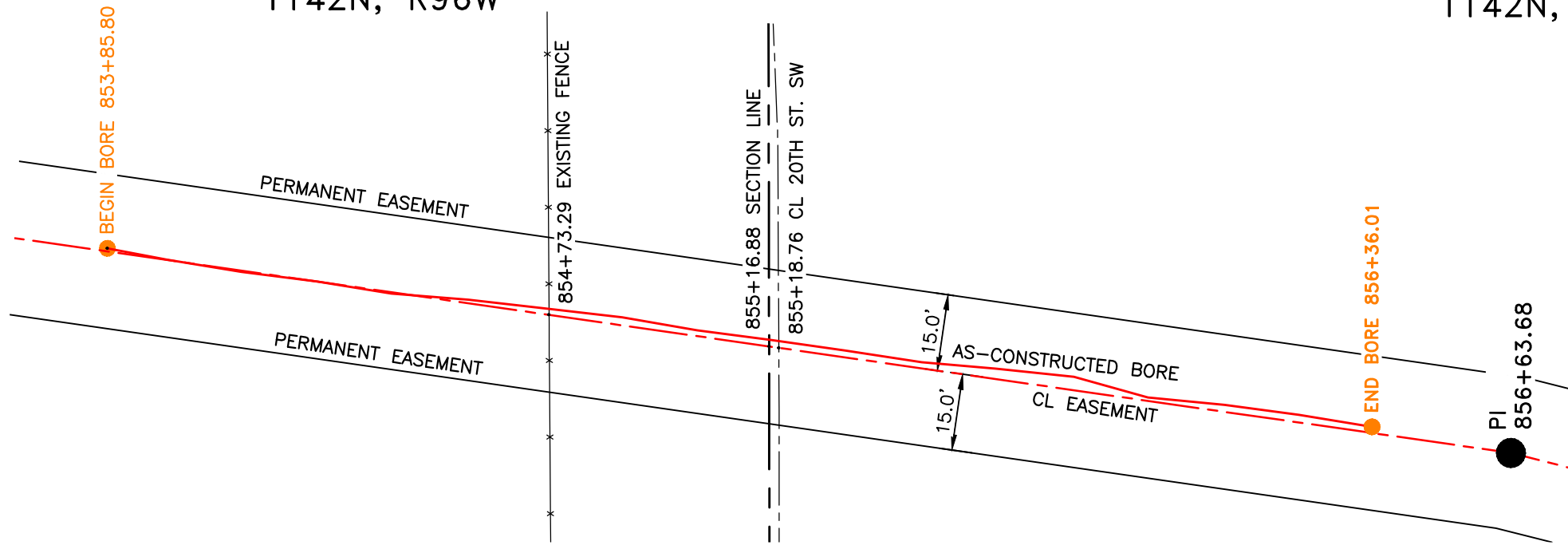
4585 Coleman Street
 Bismarck, ND 58503
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DUNN COUNTY
SE1/4, SEC. 11,
T142N, R96W

BOE PIPELINE PHASE I
20TH ST. SW CROSSING BORE #22
DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
NE1/4, SEC. 14,
T142N, R96W

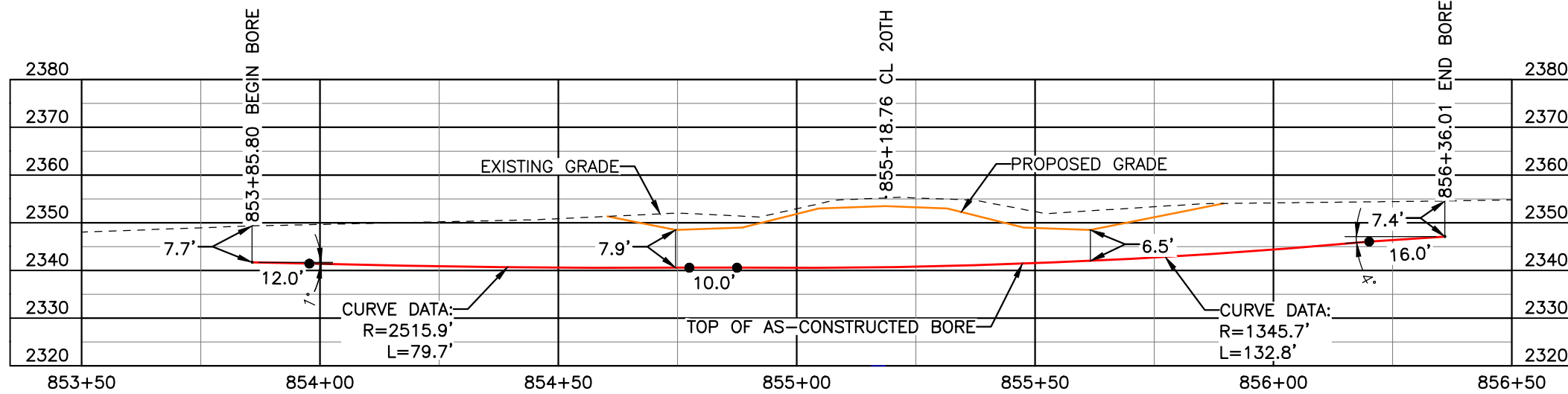


R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 MILS FBE, 30-35 MILS ARO

AS-CONSTRUCTED

FINAL
6/11/15



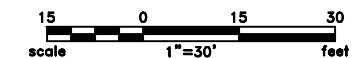
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	853+85.80	47°07'33.54" N	102°48'34.52" W
END BORE	856+36.01	47°07'31.09" N	102°48'35.00" W

TOTAL HORIZONTAL DISTANCE = 250.21 FT.

TOTAL BORE LENGTH = 250.5 FT.

LEGEND

AS-CONSTRUCTED BORE



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
- - - SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
- - - PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	—○— TEST LEAD
— W WATER LINE	—□— UTILITY POLE	
— F FOREIGN PIPELINE	—○— AS-CONSTRUCTED BORE	
— X EXISTING ROAD	—○— MARKER POST	
— U UNDERGROUND COM. LINE	—○— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	251'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
0	6/11/15	AS-CONSTRUCTED

SCALE: 1" = 30'
DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 69

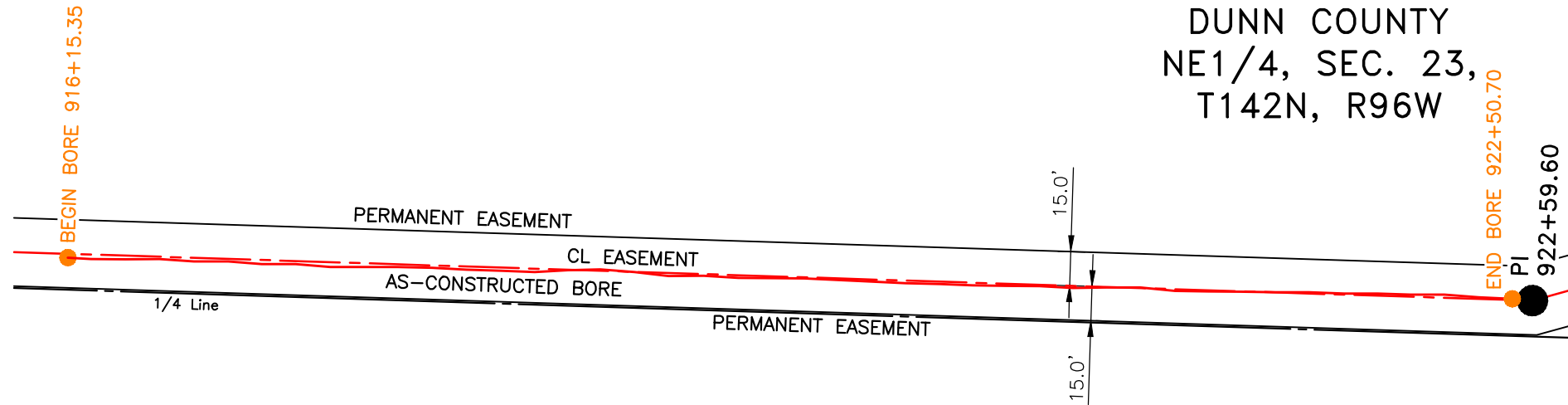
BOE PIPELINE, LLC
BOE PIPELINE PHASE I
20TH ST. SW CROSSING BORE #22
SECTIONS 11 & 14 T.142N., R.96W., DUNN COUNTY, ND

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Bismarck, ND 58503
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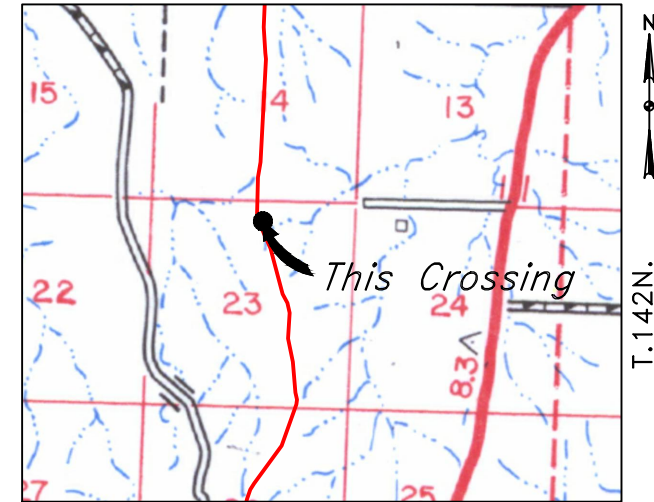


**BOE PIPELINE PHASE I
TERRAIN BORE #23**
DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
NE1/4, SEC. 23,
T142N, R96W



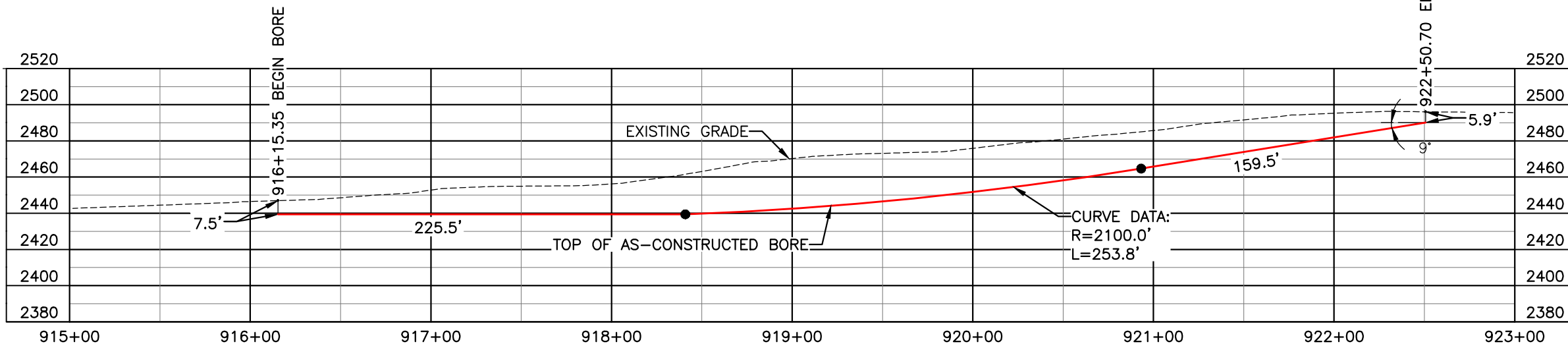
DUNN COUNTY
NW1/4, SEC. 23,
T142N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED



FINAL
6/11/15

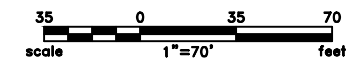
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	916+15.35	47°06'32.31" N	102°48'37.62" W
END BORE	922+50.70	47°06'26.03" N	102°48'37.61" W

TOTAL HORIZONTAL DISTANCE = 635.35 FT.

TOTAL BORE LENGTH = 638.8 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— □ — UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— □ — MARKER POST	
— UNDERGROUND COM. LINE	— □ — VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	639'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 70'

DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 70

BOE PIPELINE, LLC

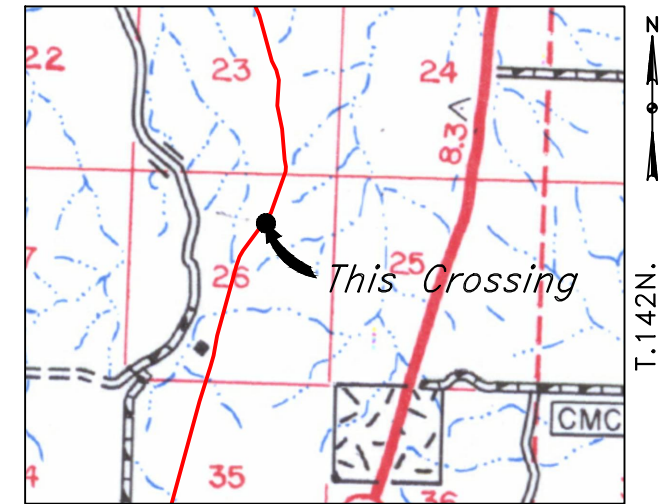
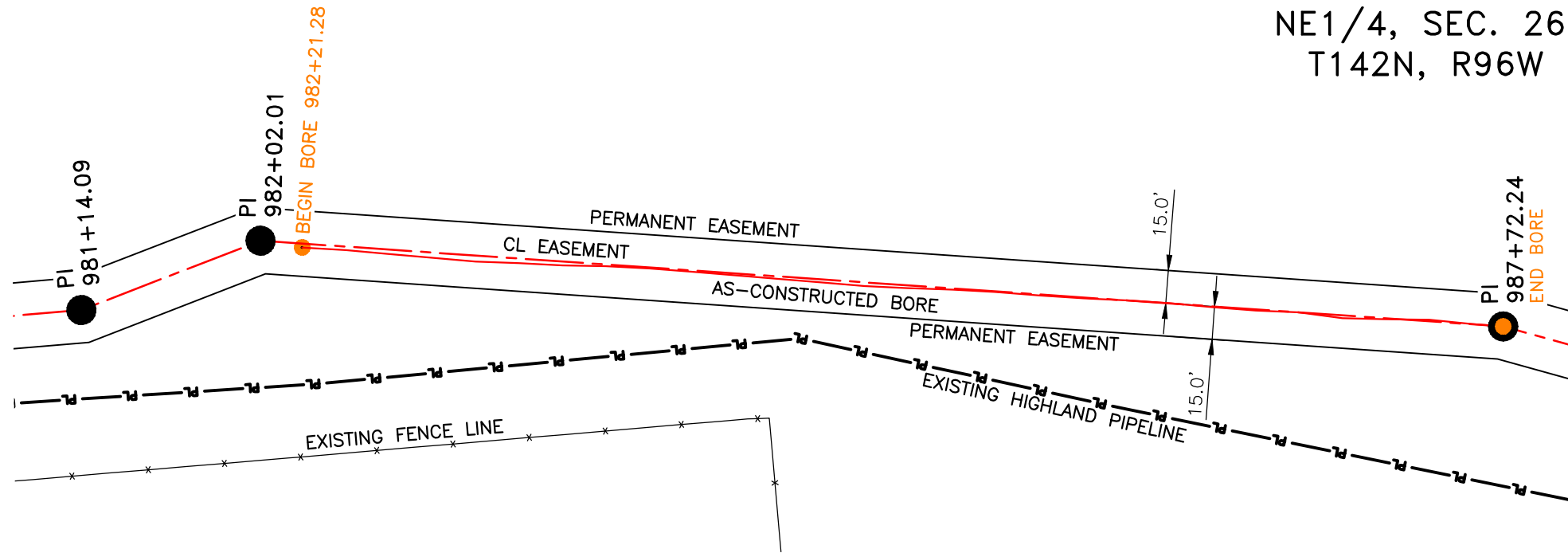
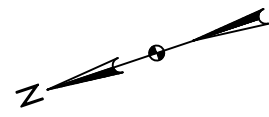
**BOE PIPELINE PHASE I
TERRAIN BORE
BORE #23**
SECTION 23 T.142N., R.96W., DUNN COUNTY, ND

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Bismarck, ND 58503
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**BOE PIPELINE PHASE I
TERRAIN BORE #24**
DUNN COUNTY, NORTH DAKOTA

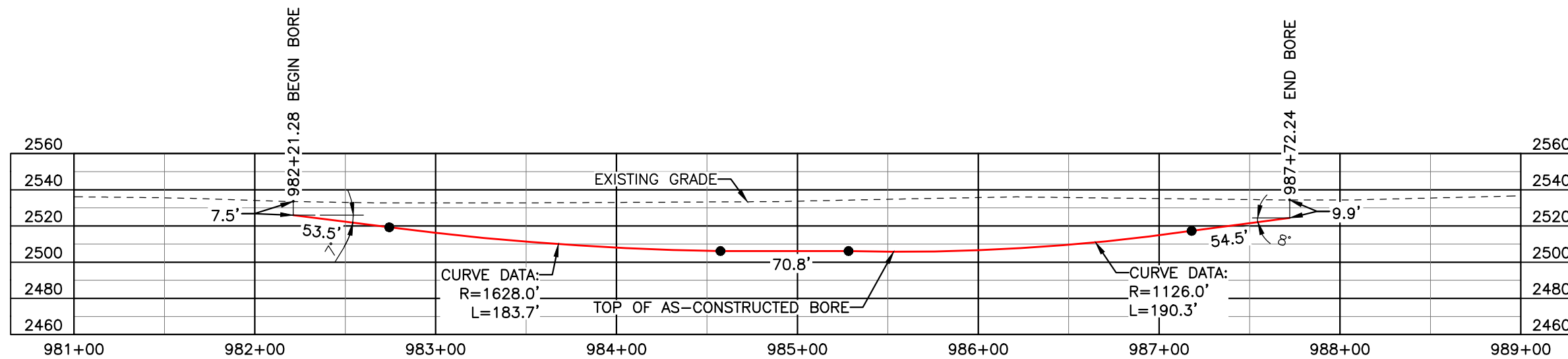
DUNN COUNTY
NE1/4, SEC. 26,
T142N, R96W



R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

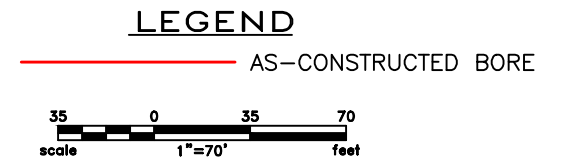


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	982+21.28	47°05'29.53" N	102°48'24.46" W
END BORE	987+72.24	47°05'24.67" N	102°48'28.04" W

TOTAL HORIZONTAL DISTANCE = 550.96 FT.

TOTAL BORE LENGTH = 552.8 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	553'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 70'

DRAWN BY: M. STICKLAND
DATE: 6/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 71

BOE BOE PIPELINE, LLC

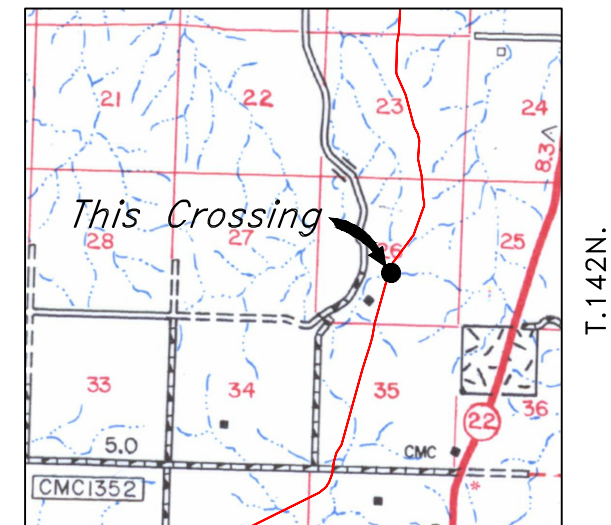
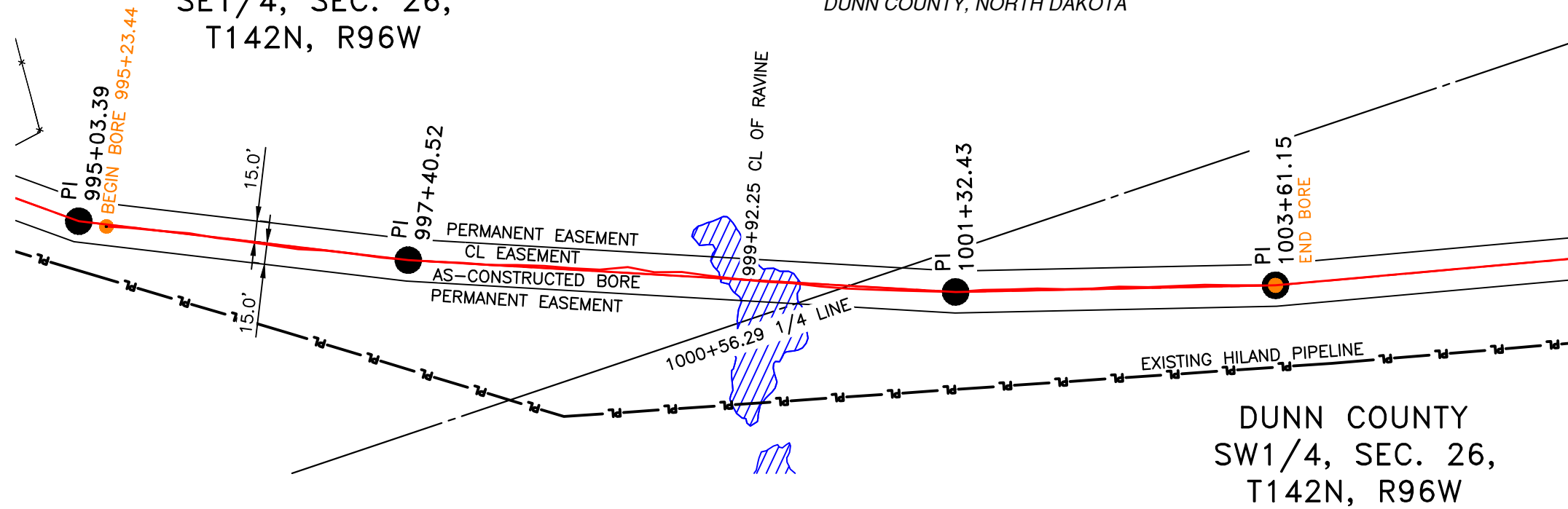
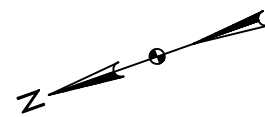
BOE PIPELINE PHASE I
TERRAIN BORE
BORE #24
SECTION 26 T.142N., R.96W., DUNN COUNTY, ND

KLJ

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**BOE PIPELINE PHASE I
RAVINE CROSSING BORE #25**
DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
SE1/4, SEC. 26,
T142N, R96W



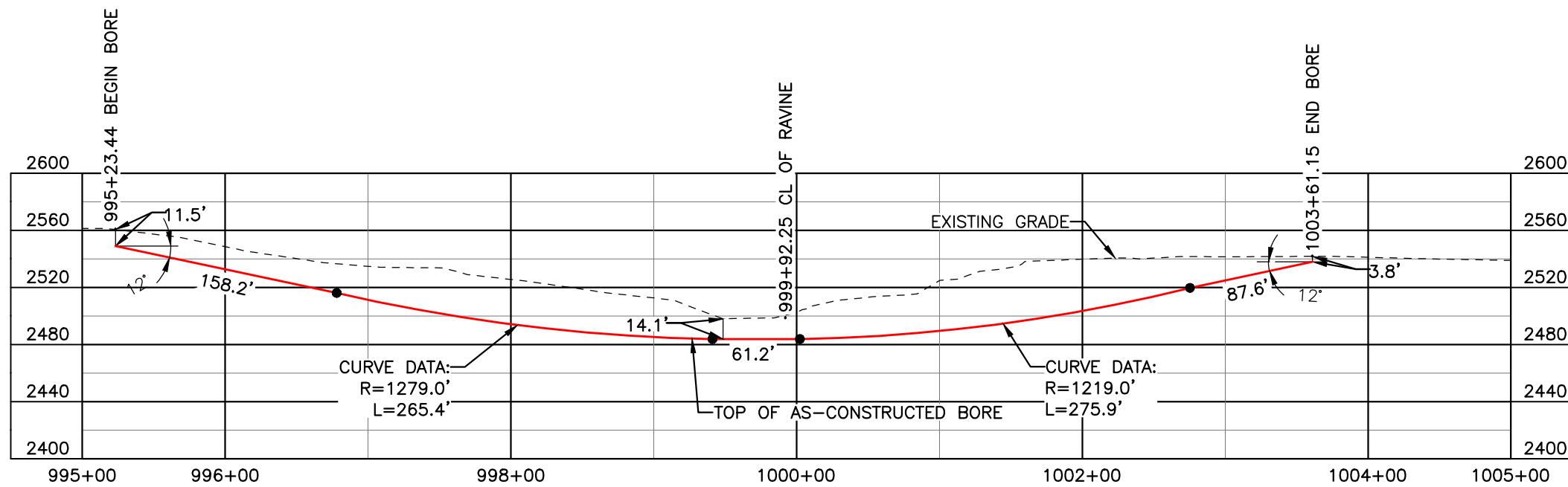
R.96W.

Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

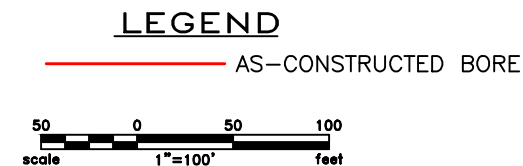
FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	995+23.44	47°05'18.84" N	102°48'34.74" W
END BORE	1003+61.15	47°05'11.14" N	102°48'39.11" W

TOTAL HORIZONTAL DISTANCE = 837.71 FT.

TOTAL BORE LENGTH = 848.3 FT.



LEGEND

— PROPERTY LINE	— EXISTING FENCE	— AVOIDANCE AREA
— SECTION LINE	— FIBER OPTIC COM. LINE	— WETLAND
— EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	848'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30+35 MIL ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

BOE PIPELINE, LLC

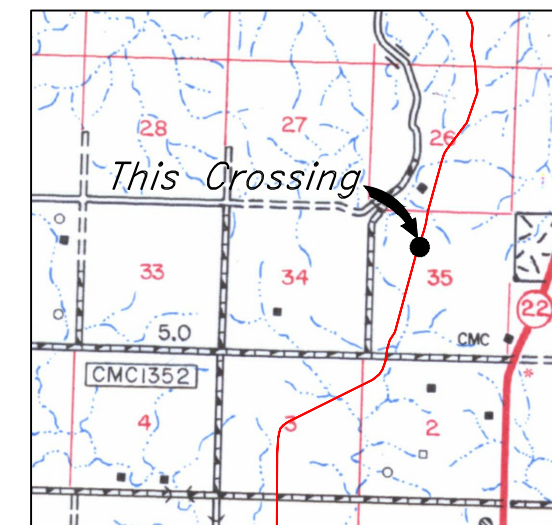
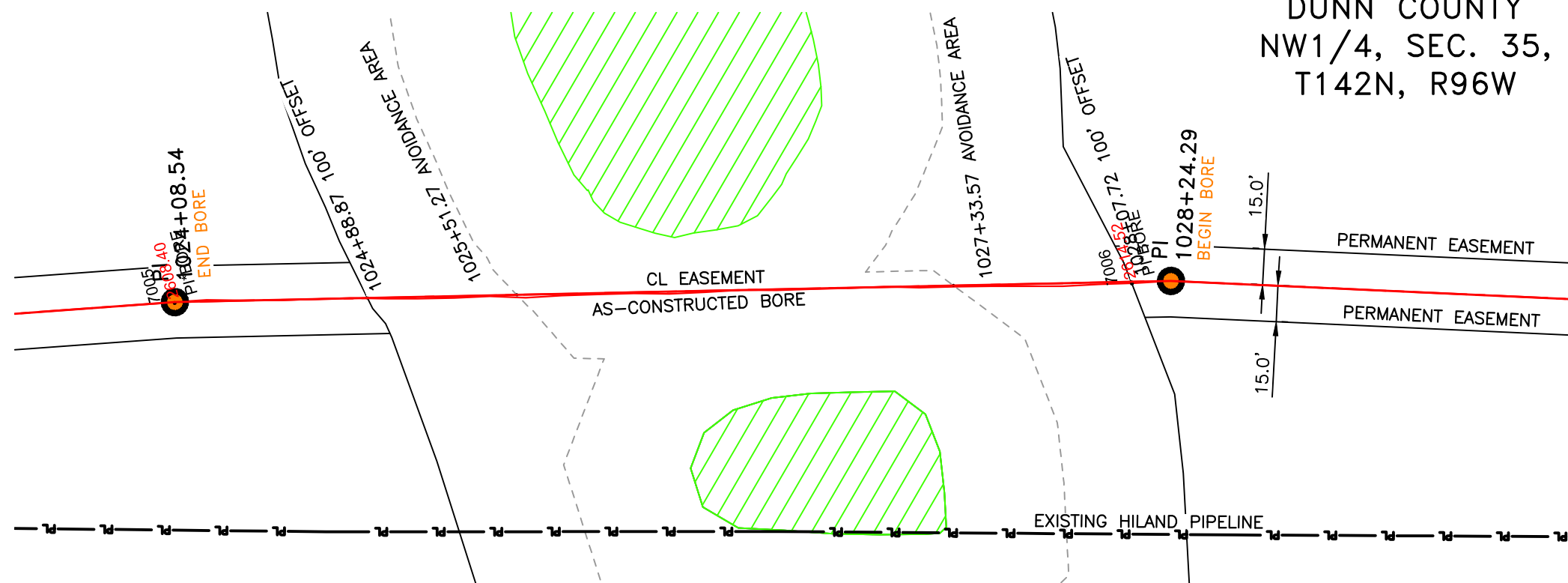
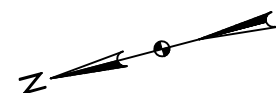
**BOE PIPELINE PHASE I
RAVINE CROSSING BORE #25**
SECTION 26, T.142N., R.96W., DUNN COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503

BOE PIPELINE PHASE I AVOIDANCE AREA BORE CROSSING #26

DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
NW1/4, SEC. 35,
T142N, R96W

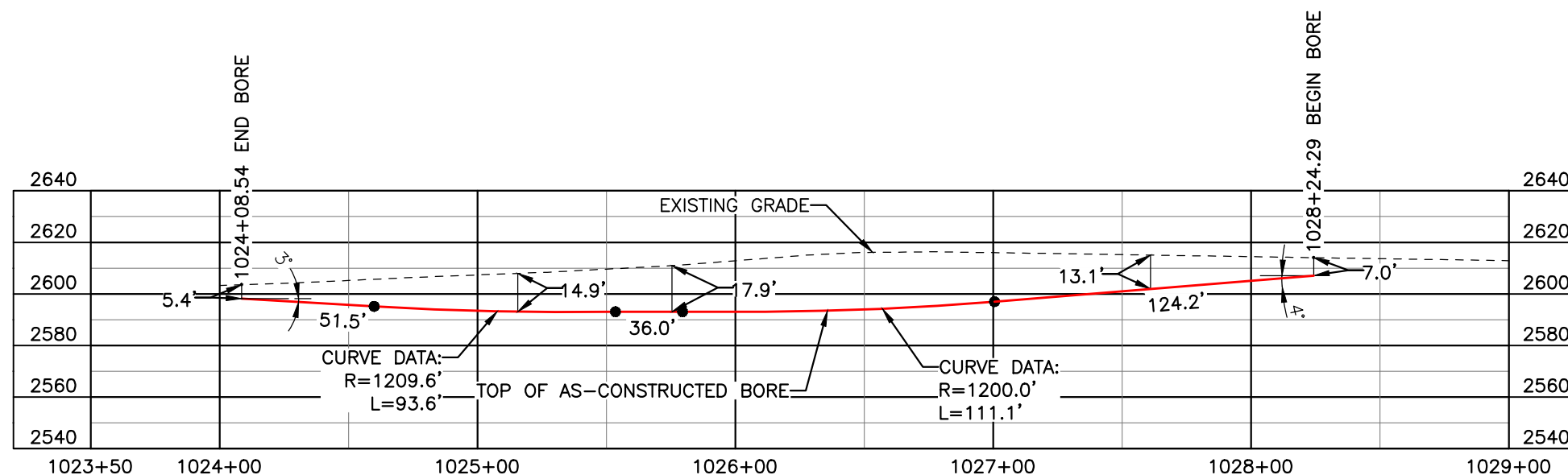


R.96W.

Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

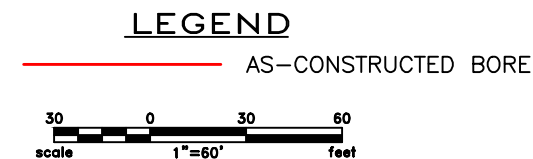
AS-CONSTRUCTED



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1028+24.29	47°04'47.39" N	102°48'46.72" W
END BORE	1024+08.54	47°04'51.41" N	102°48'45.48" W

TOTAL HORIZONTAL DISTANCE = 415.75 FT.

TOTAL BORE LENGTH = 416.4 FT.



LEGEND

— PROPERTY LINE	— EXISTING FENCE	— AVOIDANCE AREA
— SECTION LINE	— FIBER OPTIC COM. LINE	— WETLAND
— EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	416'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
0	06/11/15	AS-CONSTRUCTED

SCALE: 1" = 60'

DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 73

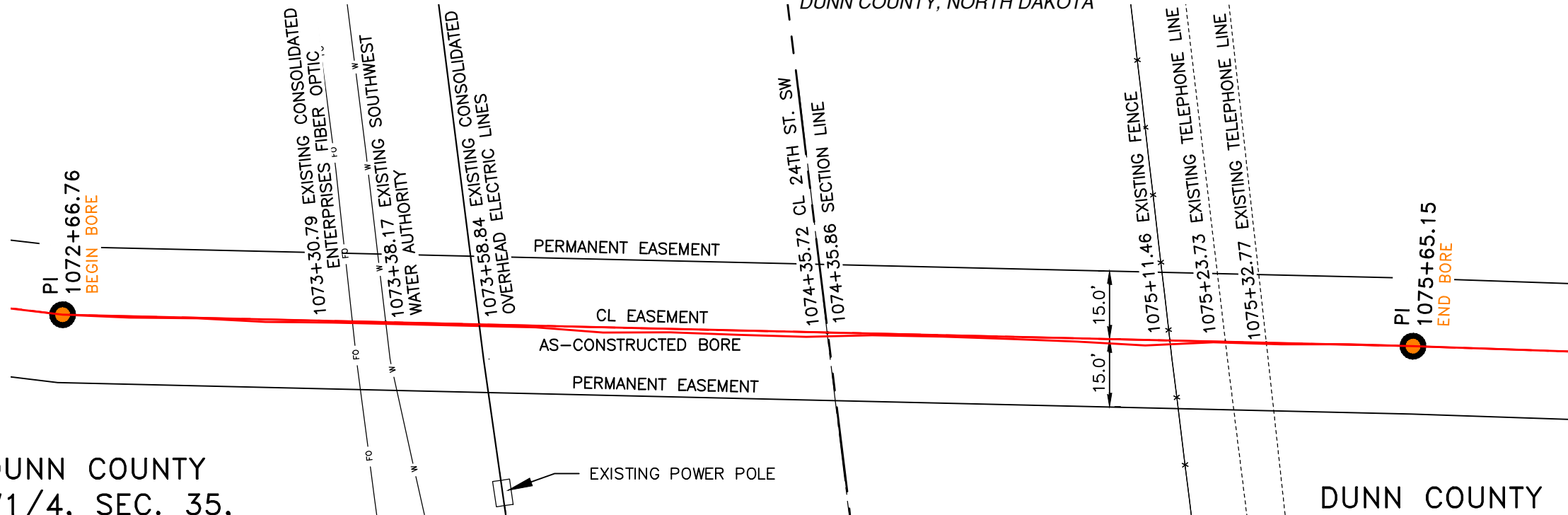
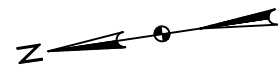
BOE PIPELINE, LLC

BOE PIPELINE PHASE I
AVOIDANCE AREA BORE CROSSING
BORE #26
SECTION 35, T.142N., R.96W., DUNN COUNTY, ND

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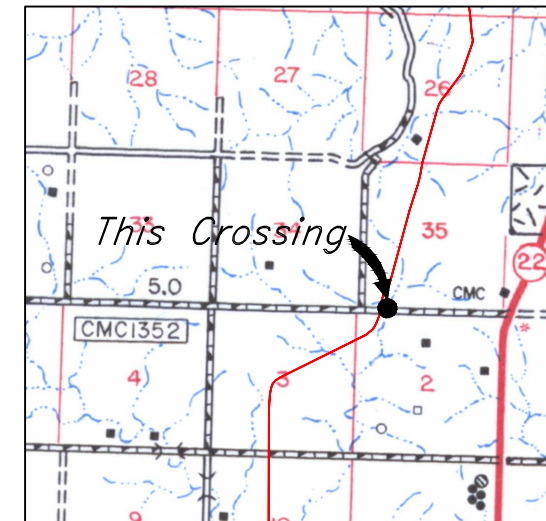
BOE PIPELINE PHASE I 24TH ST. SW CROSSING BORE #27

DUNN COUNTY, NORTH DAKOTA



DUNN COUNTY
SW1/4, SEC. 35,
T142N, R96W

DUNN COUNTY
NW1/4, SEC. 2,
T141N, R96W

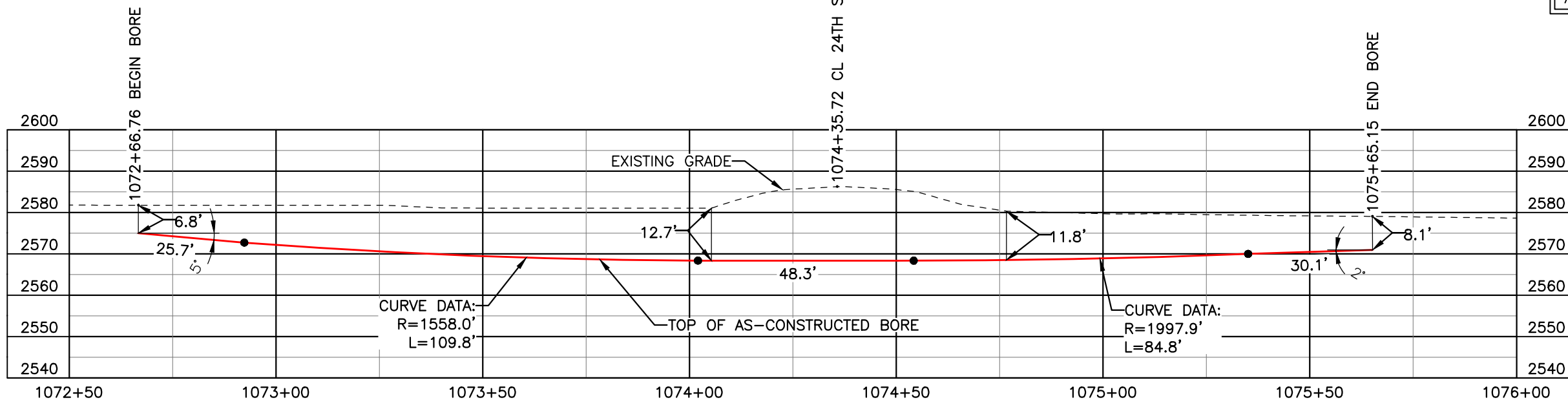


Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
6/11/15



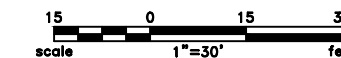
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1072+66.76	47°04'05.25" N	102°49'03.71" W
END BORE	1075+65.15	47°04'02.33" N	102°49'04.33" W

TOTAL HORIZONTAL DISTANCE = 298.39 FT.

TOTAL BORE LENGTH = 298.7 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND	
— PROPERTY LINE	— EXISTING FENCE
--- SECTION LINE	— FIBER OPTIC COM. LINE
--- EASEMENT LINE	— RAILROAD
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC
— WATER LINE	— UTILITY POLE
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE
— EXISTING ROAD	— MARKER POST
--- UNDERGROUND COM. LINE	— VALVE SETTING
— AVOIDANCE AREA	— WETLAND
— EASEMENT	— TEST LEAD

MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
2	299'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS		
DWG. NO.	DESCRIPTION	NO. DATE
		0 06/11/15

REVISIONS	
NO.	DESCRIPTION
AS-CONSTRUCTED	

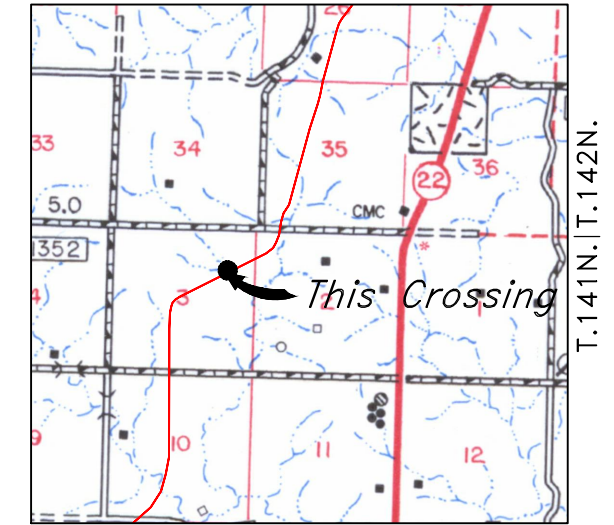
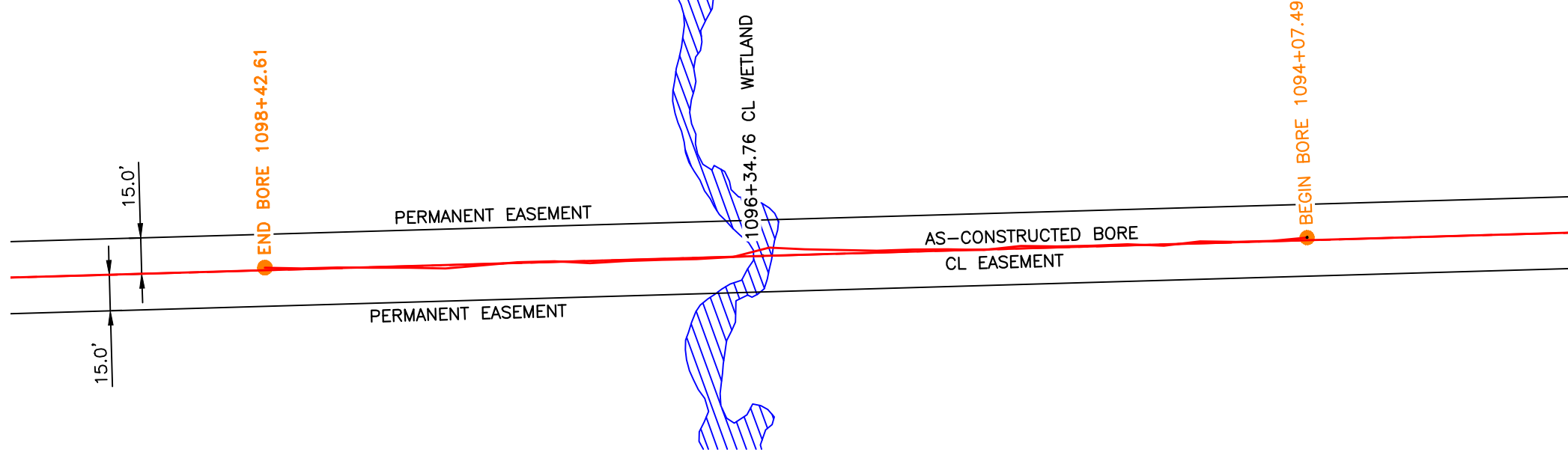
BOE PIPELINE, LLC

BOE PIPELINE PHASE I
24TH ST. SW CROSSING BORE #27
SEC. 35, T.142N., R.96W. & SEC. 2, T.141N., R.96W., DUNN COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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**BOE PIPELINE PHASE I
WETLAND CROSSING BORE #28**
DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
NE1/4, SEC. 3,
T141N, R96W



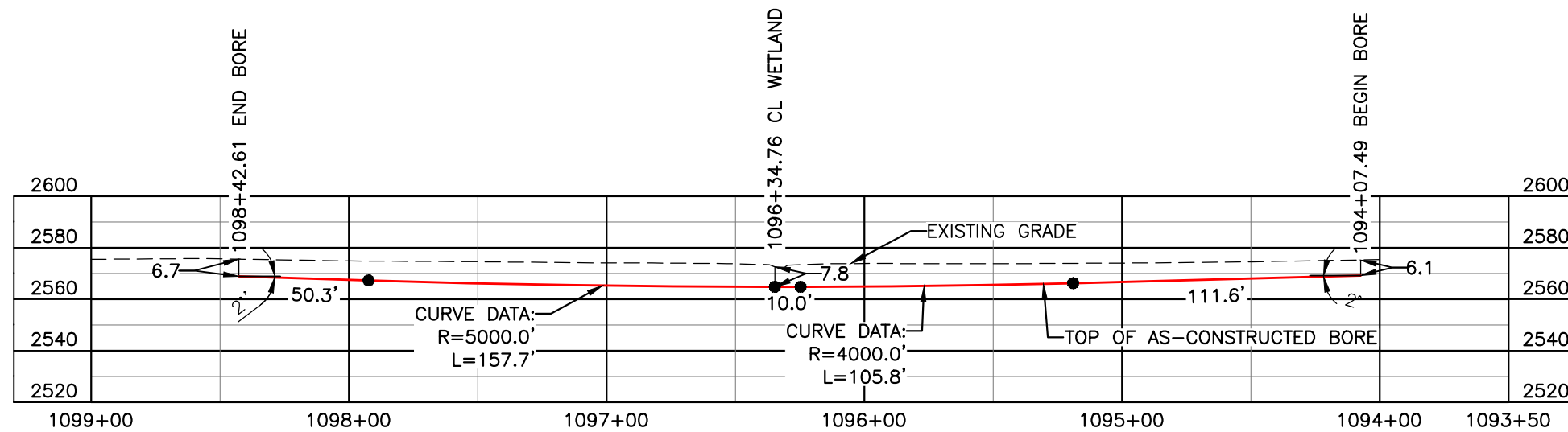
R.96W.

Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
6/11/15



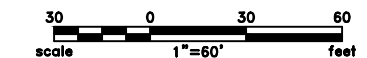
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1094+07.49	47°03'49.88" N	102°49'21.40" W
END BORE	1098+42.61	47°03'47.84" N	102°49'26.94" W

TOTAL HORIZONTAL DISTANCE = 435.12 FT.

TOTAL BORE LENGTH = 435.4 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND	
—	PROPERTY LINE
- - -	SECTION LINE
- - -	EASEMENT LINE
- - -	PIPELINE CENTERLINE
- - -	WATER LINE
- - -	FOREIGN PIPELINE
- - -	EXISTING ROAD
- - -	UNDERGROUND COM. LINE
- x -	EXISTING FENCE
- FO -	FIBER OPTIC COM. LINE
-	RAILROAD
-	OVERHEAD ELECTRIC
-	UTILITY POLE
-	AS-CONSTRUCTED BORE
-	MARKER POST
-	VALVE SETTING
▨	AVOIDANCE AREA
▨	WETLAND EASEMENT
●	TEST LEAD

MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
2	435'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 MIL ARO

REFERENCE DRAWINGS		REVISIONS	
DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

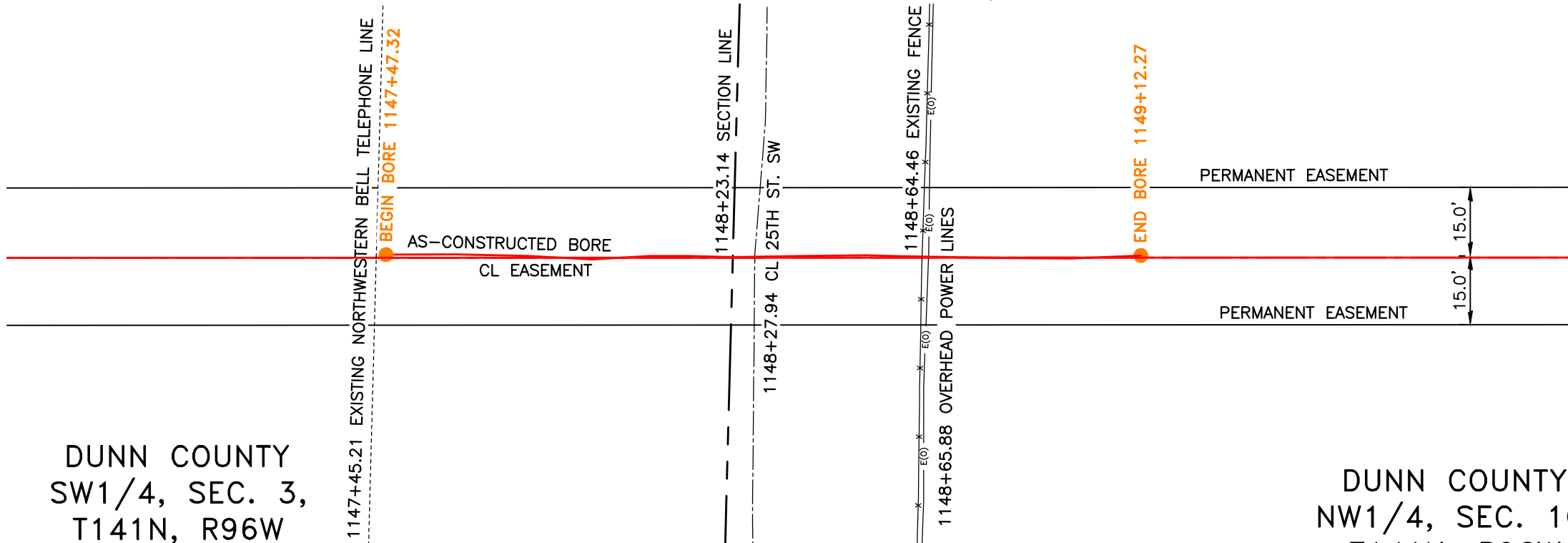
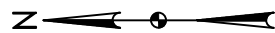
REVISIONS	
NO.	DESCRIPTION
AS-CONSTRUCTED	

SCALE: 1" = 60'
DRAWN BY: M. STICKLAND
DATE: 06/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 75

BOE PIPELINE, LLC
BOE PIPELINE PHASE I
WETLAND BORE CROSSING
BORE #28
SECTION 3, T.141N., R.96W., DUNN COUNTY, ND

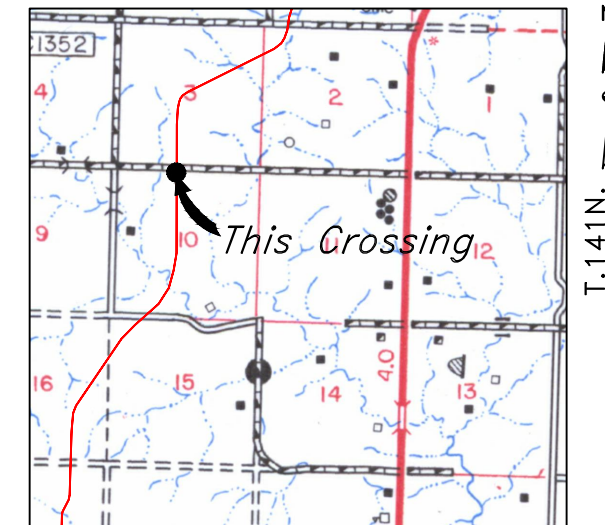
KLJ
4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I
25TH ST. SW CROSSING BORE #29
 DUNN COUNTY, NORTH DAKOTA



DUNN COUNTY
 SW1/4, SEC. 3,
 T141N, R96W

DUNN COUNTY
 NW1/4, SEC. 10,
 T141N, R96W



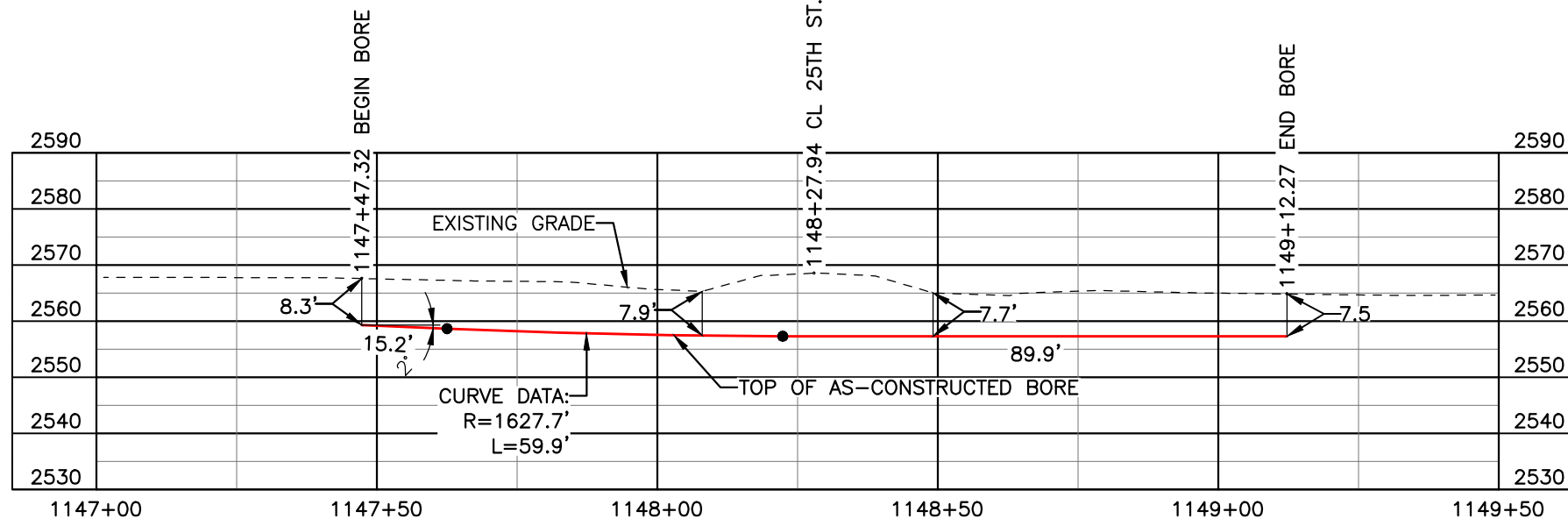
R.96W.

Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
 6/11/15



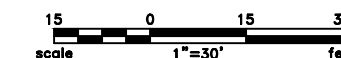
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1147+47.32	47°03'12.14" N	102°49'59.48" W
END BORE	1149+12.27	47°03'10.51" N	102°49'59.41" W

TOTAL HORIZONTAL DISTANCE = 164.95 FT.

TOTAL BORE LENGTH = 165.0 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND	
—	PROPERTY LINE
- - -	SECTION LINE
- - -	EASEMENT LINE
—	PIPELINE CENTERLINE
—	WATER LINE
—	FOREIGN PIPELINE
—	EXISTING ROAD
—	UNDERGROUND COM. LINE
—	EXISTING FENCE
—	FIBER OPTIC COM. LINE
—	RAILROAD
—	OVERHEAD ELECTRIC
—	UTILITY POLE
—	AS-CONSTRUCTED BORE
—	MARKER POST
—	VALVE SETTING
—	AVOIDANCE AREA
—	WETLAND
—	EASEMENT
—	TEST LEAD

MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
2	165'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS		
DWG. NO.	DESCRIPTION	NO. DATE
		0 06/11/15

REVISIONS	
NO.	DESCRIPTION
0	AS-CONSTRUCTED

SCALE: 1" = 30'
 DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 76

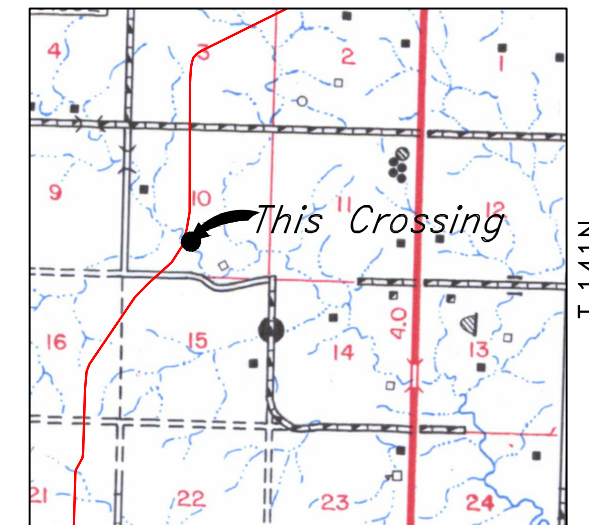
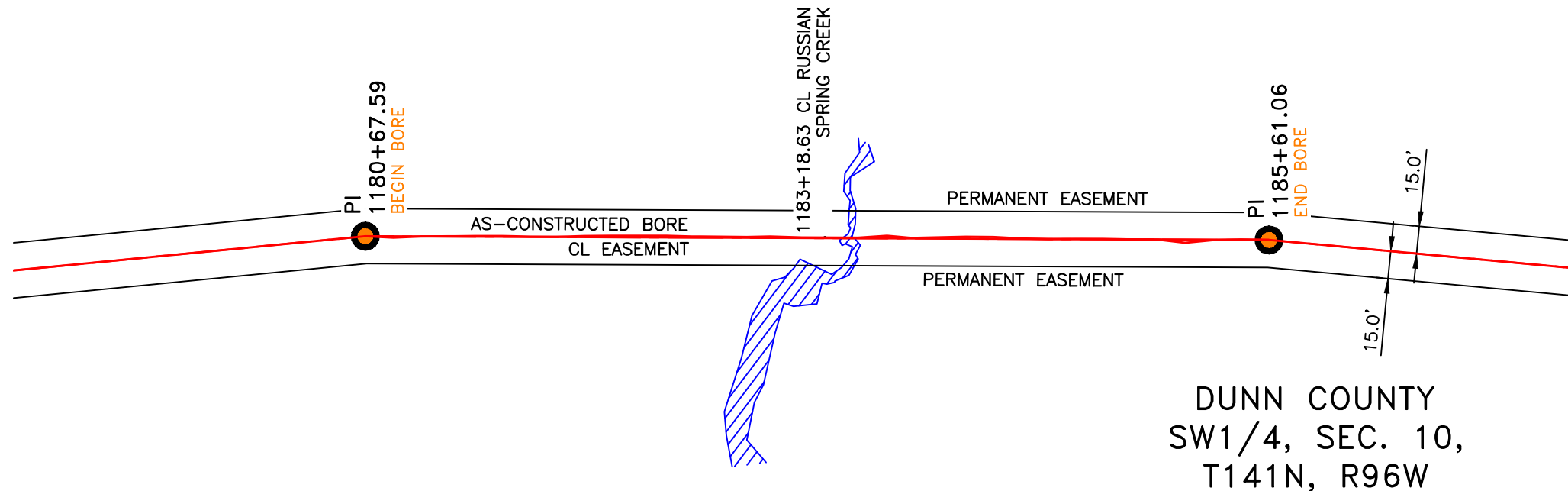
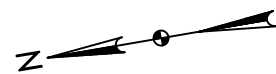
BOE PIPELINE, LLC

BOE PIPELINE PHASE I
 25TH ST. SW CROSSING BORE #29
 SECTIONS 3 & 10, T.141N., R.96W., DUNN COUNTY, ND

KLJ

4585 Coleman Street
 Bismarck, ND 58503
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BOE PIPELINE PHASE I
RUSSIAN SPRING CREEK CROSSING BORE #30
 DUNN COUNTY, NORTH DAKOTA



R.96W.

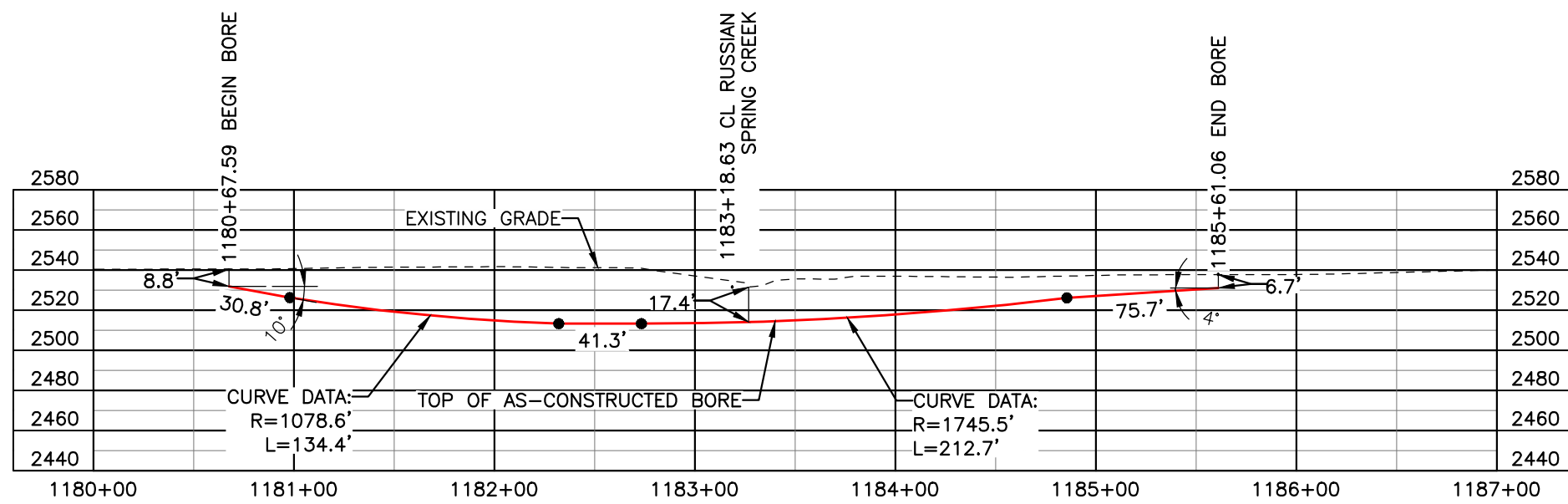
Location Map

DUNN COUNTY
SW1/4, SEC. 10,
T141N, R96W

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

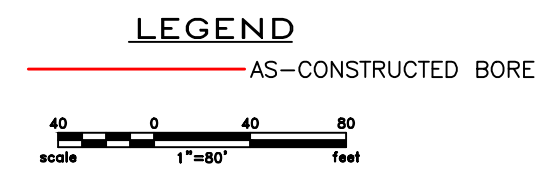
AS-CONSTRUCTED

FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1180+67.59	47°02'39.38" N	102°49'58.33" W
END BORE	1185+61.06	47°02'34.56" N	102°49'59.37" W

TOTAL HORIZONTAL DISTANCE = 493.47 FT.
 TOTAL BORE LENGTH = 494.9 FT.

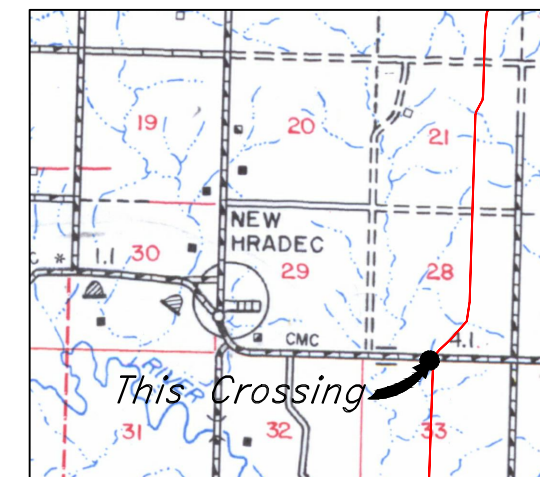


LEGEND				MATERIAL SUMMARY		REFERENCE DRAWINGS			REVISIONS		DRAWING INFORMATION	
—	PROPERTY LINE	—x—x—	EXISTING FENCE	▨	AVOIDANCE AREA	DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION	SCALE: 1" = 80'	BOE PIPELINE, LLC BOE PIPELINE PHASE I RUSSIAN SPRING CREEK CROSSING BORE BORE #30 SECTION 10, T.141N., R.96W., DUNN COUNTY, ND
- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE	▨	WETLAND			0	06/11/15	AS-CONSTRUCTED	DRAWN BY: M. STICKLAND	
- - -	EASEMENT LINE	—R—	RAILROAD	▨	EASEMENT						DATE: 06/11/15	
—	PIPELINE CENTERLINE	—E(O)—	OVERHEAD ELECTRIC	▨	TEST LEAD						CHECKED BY: D. DIONNE	
—	WATER LINE	—P—	UTILITY POLE								APPROVED BY: S. BESMER	
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE								KLJ JOB NUMBER: 1713140	
—	EXISTING ROAD	—	MARKER POST								REVISION:	
—	UNDERGROUND COM. LINE	—	VALVE SETTING								SHEET: 77	



BOE PIPELINE PHASE I
29TH ST. SW CROSSING BORE #31
 DUNN COUNTY, NORTH DAKOTA

DUNN COUNTY
 NE1/4, SEC. 33,
 T141N, R96W



R.96W.

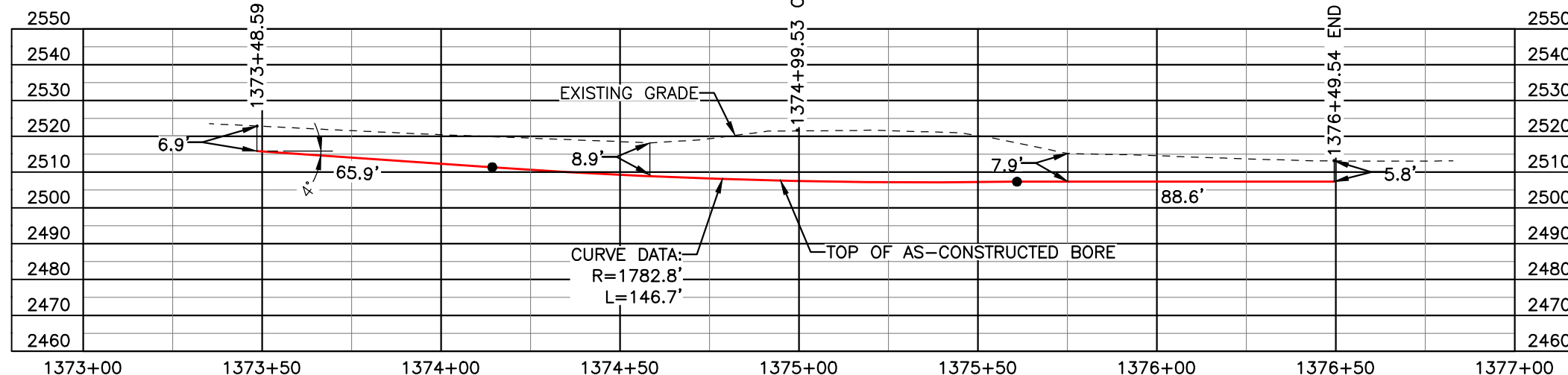
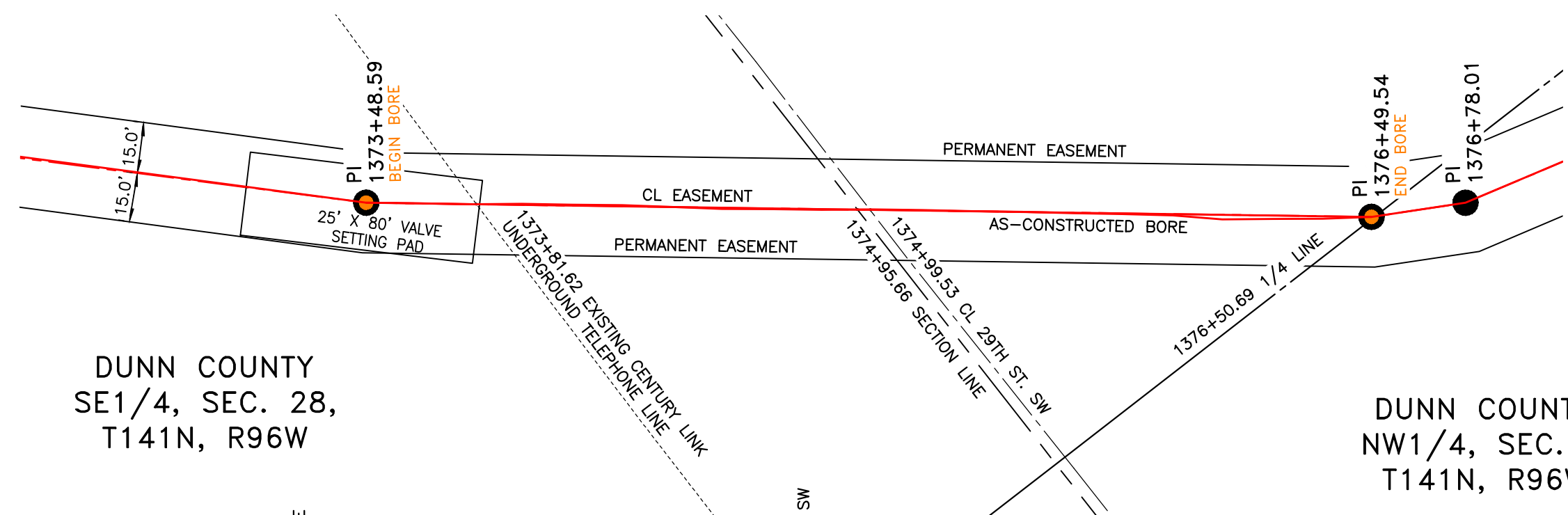
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

DUNN COUNTY
 SE1/4, SEC. 28,
 T141N, R96W

DUNN COUNTY
 NW1/4, SEC. 33,
 T141N, R96W

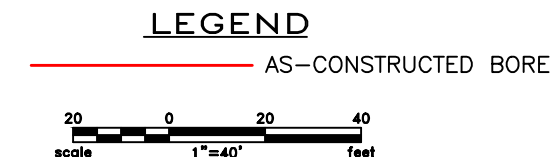


FINAL
 6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1373+48.59	46°59'44.08" N	102°51'07.17" W
END BORE	1376+49.54	46°59'41.76" N	102°51'09.88" W

TOTAL HORIZONTAL DISTANCE = 300.95 FT.

TOTAL BORE LENGTH = 301.2 FT.



LEGEND

— PROPERTY LINE	— X — EXISTING FENCE	— AVOIDANCE AREA
--- SECTION LINE	— FO — FIBER OPTIC COM. LINE	— WETLAND
- - - EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— (E) — OVERHEAD ELECTRIC	— UTILITY POLE
— WATER LINE	— □ — UTILITY POLE	— AS-CONSTRUCTED BORE
— FOREIGN PIPELINE	— □ — AS-CONSTRUCTED BORE	— MARKER POST
— EXISTING ROAD	— □ — MARKER POST	— VALVE SETTING
--- UNDERGROUND COM. LINE	— □ — VALVE SETTING	— TEST LEAD

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	301'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 40'

DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 78

BOE BOE PIPELINE, LLC

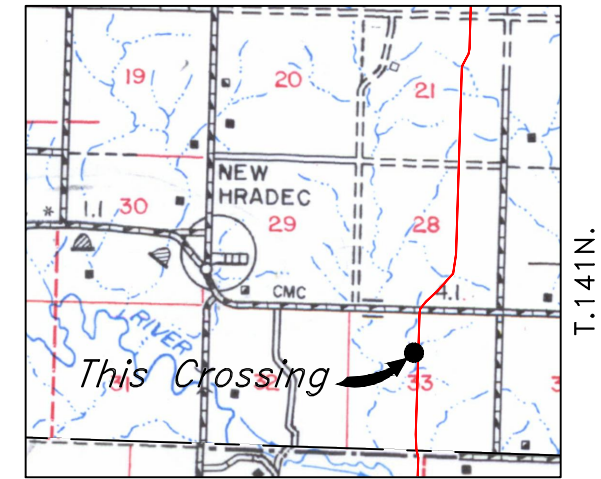
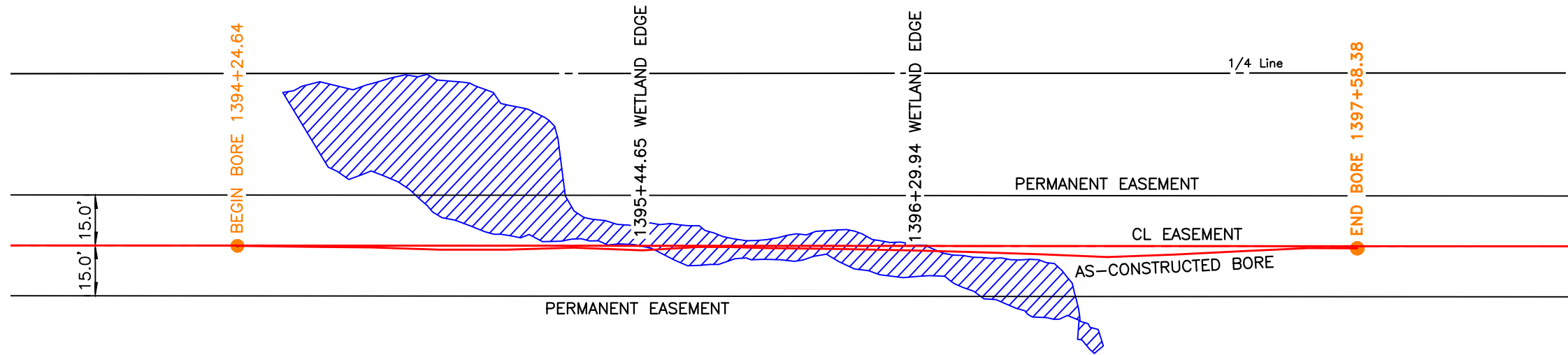
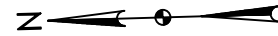
BOE PIPELINE PHASE I
 29TH ST. SW CROSSING BORE #31
 SECTIONS 28 & 33, T.141N., R.96W., DUNN COUNTY, ND

KLJ

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 Bismarck, ND 58503
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BOE PIPELINE PHASE I WETLAND CROSSING BORE #32

DUNN COUNTY, NORTH DAKOTA



R.96W.

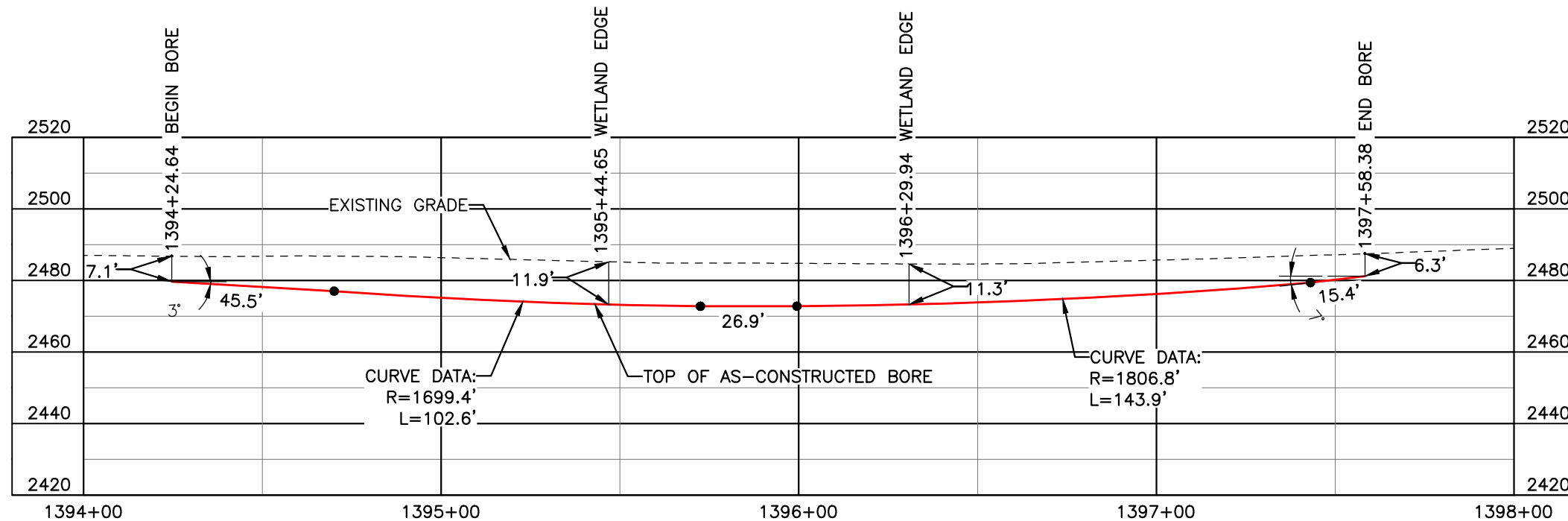
Location Map

DUNN COUNTY
NW1/4, SEC. 33,
T141N, R96W

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
6/11/15



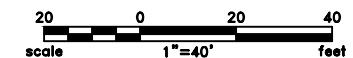
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1394+24.64	46°59'24.32" N	102°51'10.61" W
END BORE	1397+58.38	46°59'21.02" N	102°51'10.62" W

TOTAL HORIZONTAL DISTANCE = 333.74 FT.

TOTAL BORE LENGTH = 334.3 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND EASEMENT
- - - EASEMENT LINE	—R— RAILROAD	—○— TEST LEAD
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	—○— AS-CONSTRUCTED BORE	
— EXISTING ROAD	—□— MARKER POST	
--- UNDERGROUND COM. LINE	—▲— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	334'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 40'

DRAWN BY: M. STICKLAND
DATE: 06/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLI JOB NUMBER: 1713140
REVISION: SHEET: 79

BOE PIPELINE, LLC

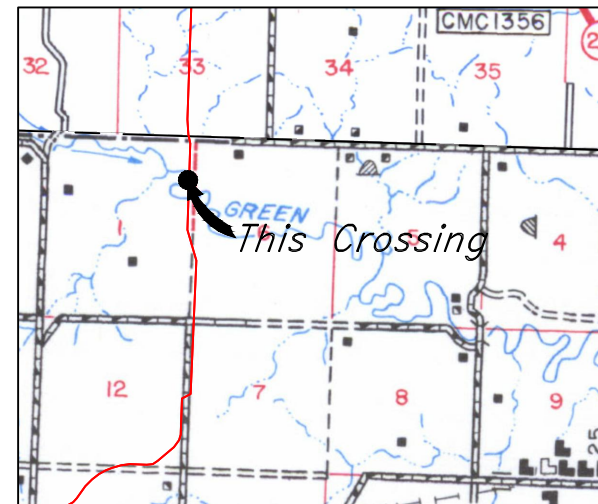
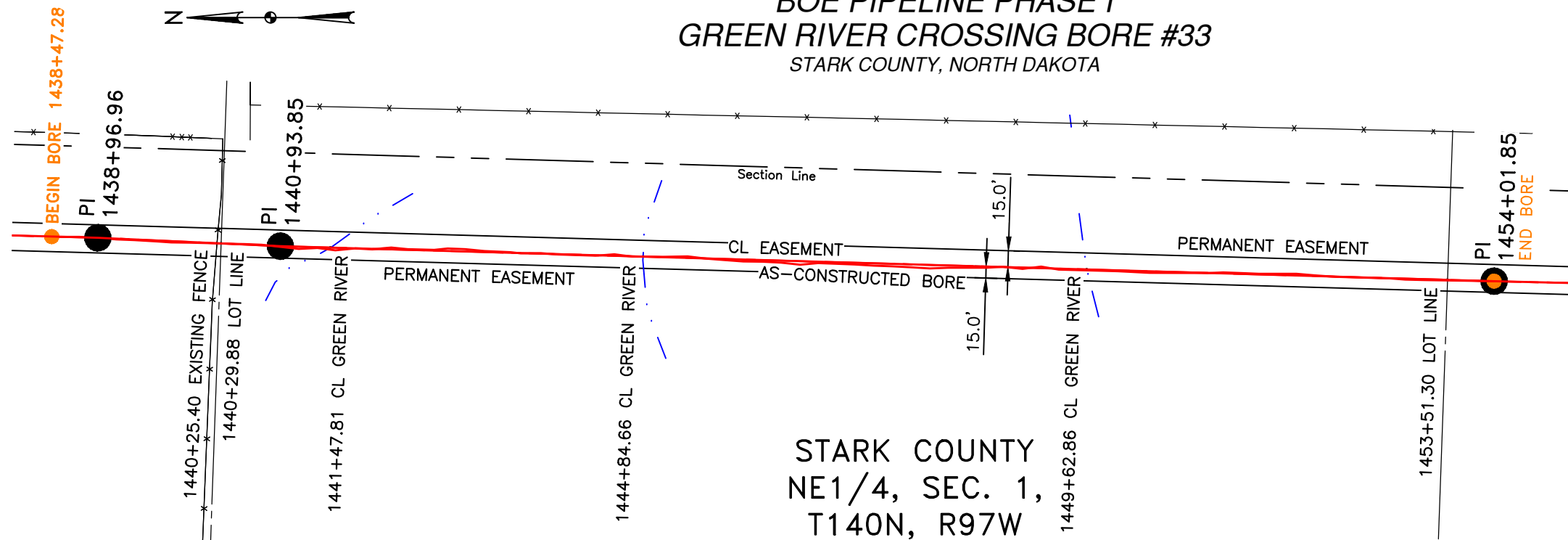
BOE PIPELINE PHASE I
WETLAND CROSSING BORE #32
SECTION 33, T.141N., R.96W., DUNN COUNTY, ND

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BOE PIPELINE PHASE I GREEN RIVER CROSSING BORE #33

STARK COUNTY, NORTH DAKOTA



R.97W. | R.96W.

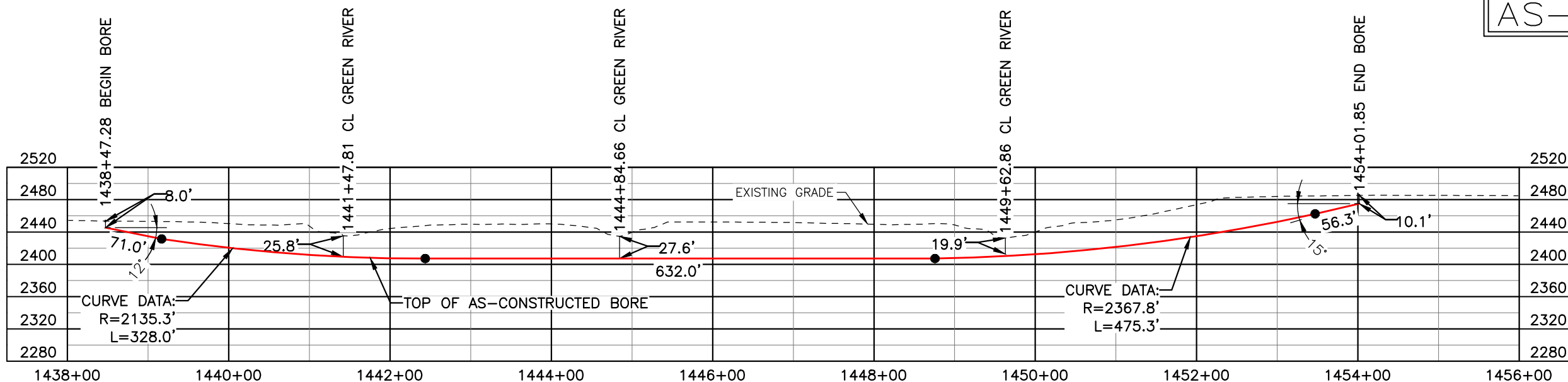
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

STARK COUNTY
NE1/4, SEC. 1,
T140N, R97W

AS-CONSTRUCTED

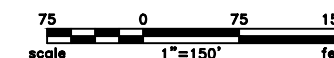
FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1438+47.28	46°58'40.77" N	102°51'08.84" W
END BORE	1454+01.85	46°58'25.42" N	102°51'08.86" W

TOTAL HORIZONTAL DISTANCE = 1554.57 FT.

TOTAL BORE LENGTH = 1562.6 FT.



LEGEND

— AS-CONSTRUCTED BORE

LEGEND	
— PROPERTY LINE	— EXISTING FENCE
--- SECTION LINE	— FIBER OPTIC COM. LINE
- - - EASEMENT LINE	— RAILROAD
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC
— WATER LINE	— UTILITY POLE
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE
— EXISTING ROAD	— MARKER POST
— UNDERGROUND COM. LINE	— VALVE SETTING
— AVOIDANCE AREA	— WETLAND
— TEST LEAD	

MATERIAL SUMMARY		
MK. NO.	QTY.	DESCRIPTION
2	1563'	16.0" O.D. X 0.344" W.T., API 5L X70, 14-16 MILS FBE

REFERENCE DRAWINGS		
DWG. NO.	DESCRIPTION	NO. DATE
		0 06/11/15

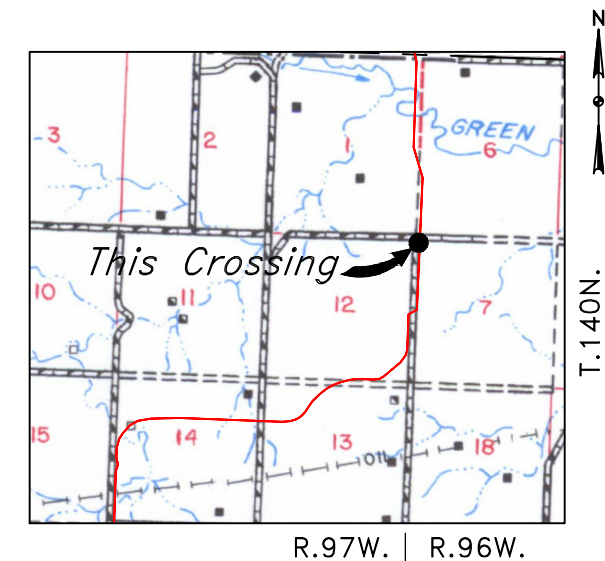
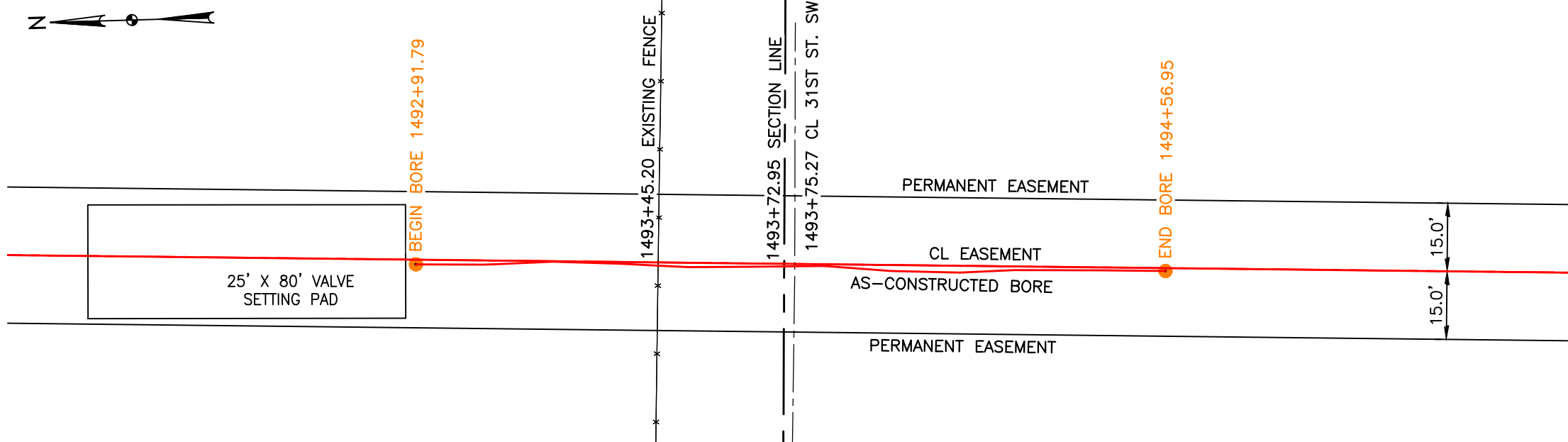
REVISIONS	
NO.	DESCRIPTION
0	AS-CONSTRUCTED

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
GREEN RIVER CROSSING BORE #33
SECTION 1, T.140N., R.97W., STARK COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I 31ST ST. SW CROSSING BORE #34 STARK COUNTY, NORTH DAKOTA



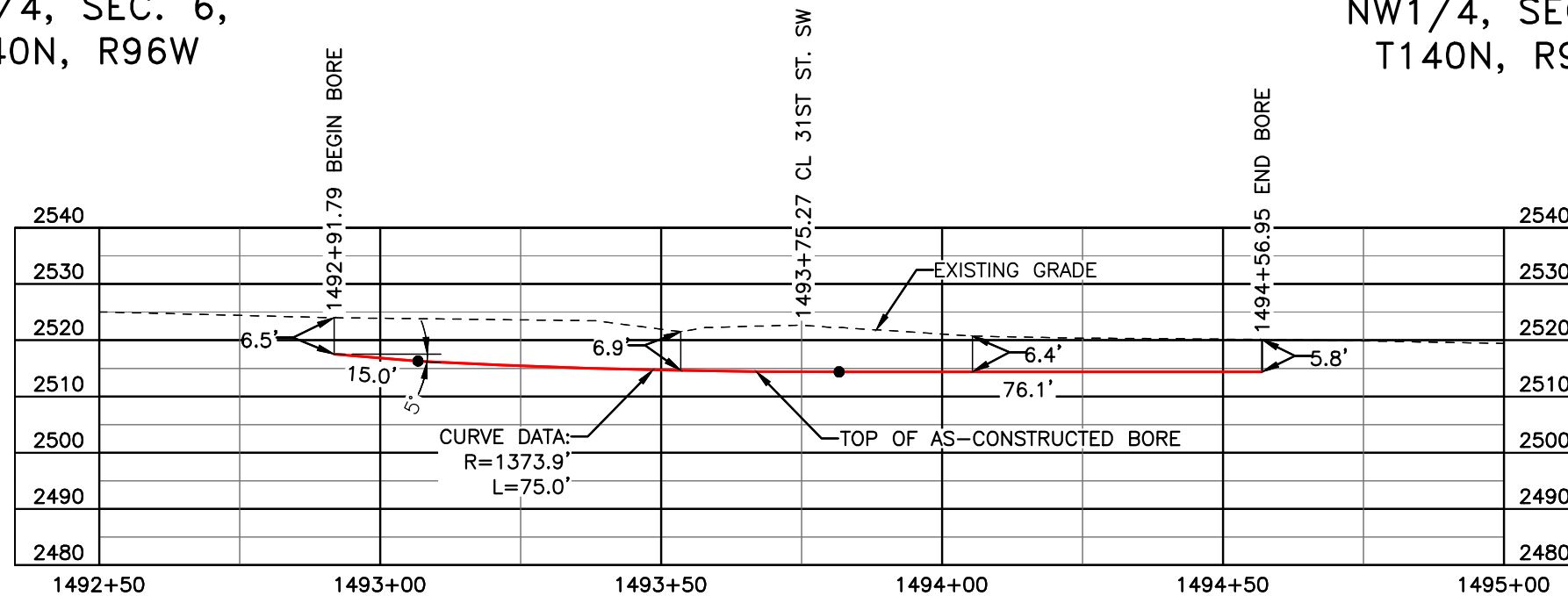
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

STARK COUNTY
SW1/4, SEC. 6,
T140N, R96W

STARK COUNTY
NW1/4, SEC. 7,
T140N, R96W

AS-CONSTRUCTED

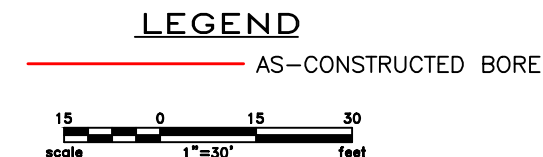


FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1492+91.79	46°57'47.56" N	102°51'04.13" W
END BORE	1494+56.95	46°57'45.93" N	102°51'04.15" W

TOTAL HORIZONTAL DISTANCE = 165.16 FT.

TOTAL BORE LENGTH = 166.1 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— □ — UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— □ — MARKER POST	
--- UNDERGROUND COM. LINE	— □ — VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	166'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
0	06/11/15	AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 81

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
31ST ST. SW CROSSING BORE
BORE #34
SECTIONS 6 & 7, T.140N., R.96W., STARK COUNTY, ND

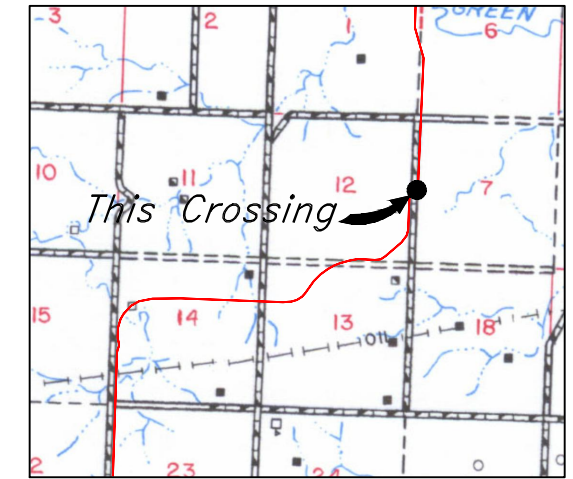
4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I
114TH AVE. SW & PROPERTY CROSSING BORE #35
 STARK COUNTY, NORTH DAKOTA

STARK COUNTY
 SW1/4, SEC. 7,
 T140N, R96W

STARK COUNTY
 NW1/4, SEC. 7,
 T140N, R96W

STARK COUNTY
 SE1/4, SEC. 12,
 T140N, R97W



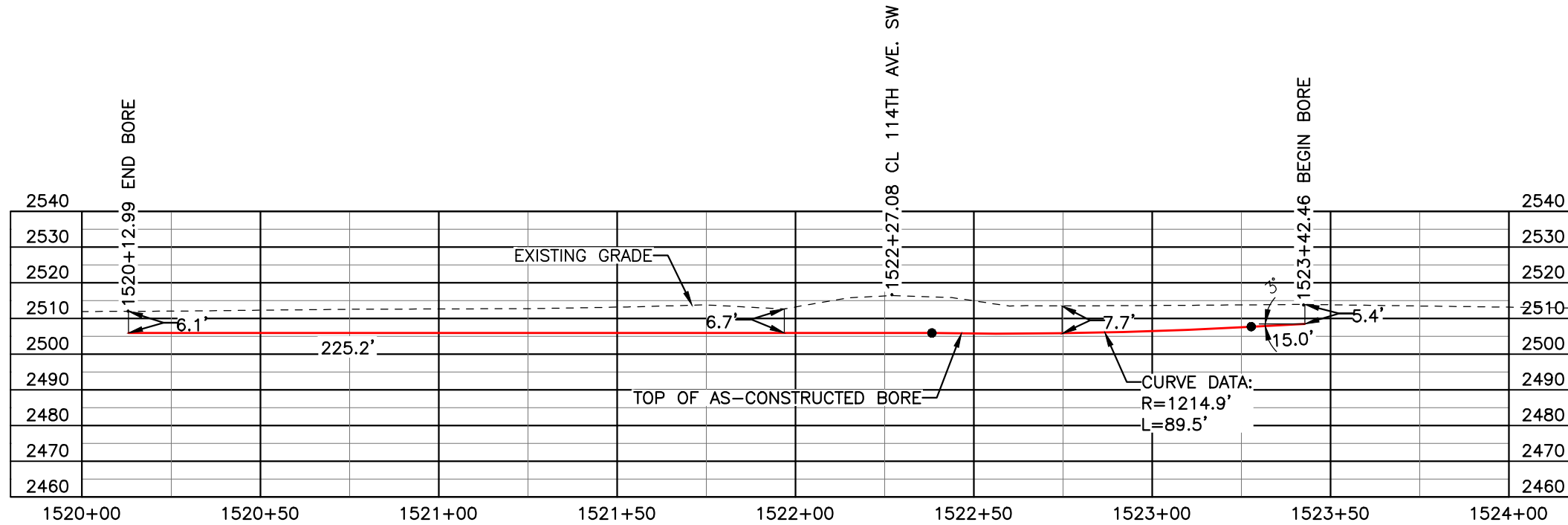
R.97W. | R.96W.

Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
 6/11/15



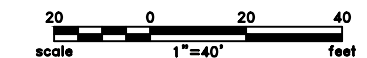
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1523+42.46	46°57'19.12" N	102°51'08.83" W
END BORE	1520+12.99	46°57'20.77" N	102°51'04.73" W

TOTAL HORIZONTAL DISTANCE = 329.47 FT.

TOTAL BORE LENGTH = 329.7 FT.

LEGEND

— AS-CONSTRUCTED BORE



LEGEND

— PROPERTY LINE	— EXISTING FENCE	— AVOIDANCE AREA
--- SECTION LINE	— FIBER OPTIC COM. LINE	— WETLAND
- - - EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	330'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 40'
 DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 82

BOE PIPELINE, LLC
 BOE PIPELINE PHASE I
 114TH AVE. SW CROSSING BORE #35
 SEC. 7, T.140N., R.96W. & SEC. 12, T.140N., R.97W., STARK COUNTY, ND

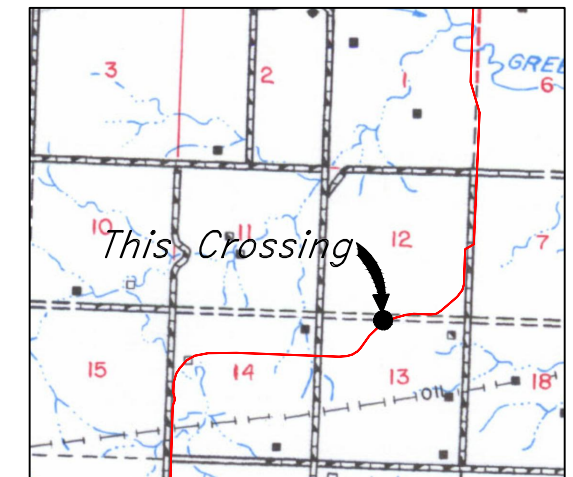
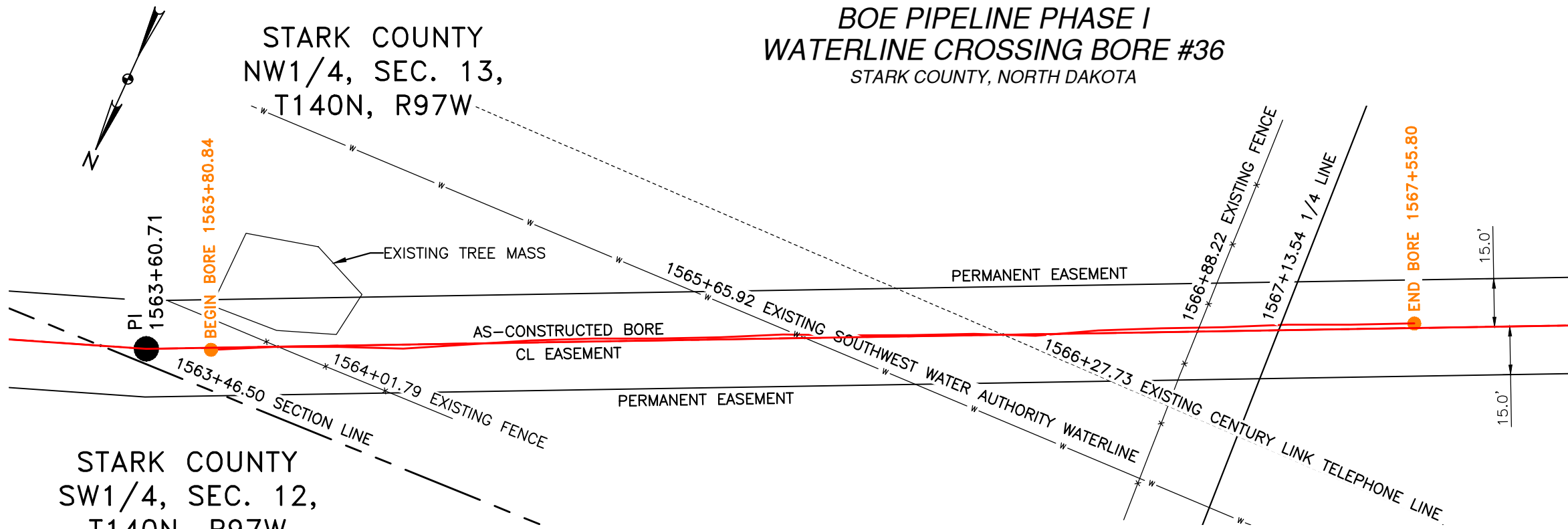
KLJ
 4585 Coleman Street
 Bismarck, ND 58503
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BOE PIPELINE PHASE I WATERLINE CROSSING BORE #36

STARK COUNTY, NORTH DAKOTA

STARK COUNTY
NW1/4, SEC. 13,
T140N, R97W

STARK COUNTY
SW1/4, SEC. 12,
T140N, R97W



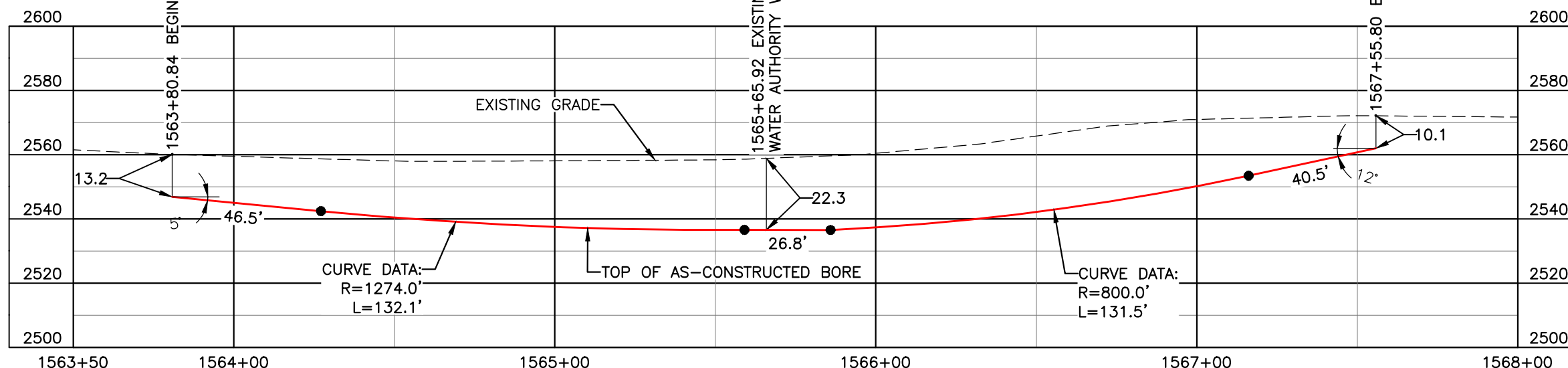
R.97W. | R.96W.

Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1563+80.84	46°56'54.64" N	102°51'41.12" W
END BORE	1567+55.80	46°56'53.19" N	102°51'46.10" W

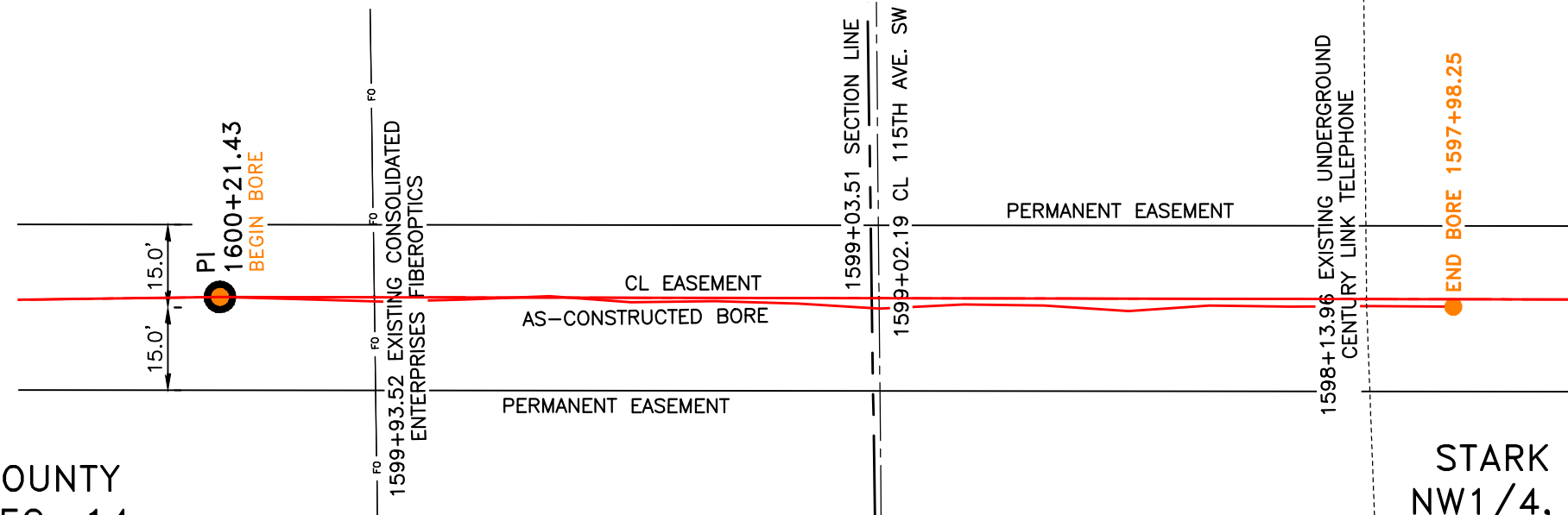
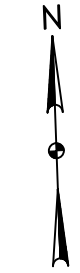
TOTAL HORIZONTAL DISTANCE = 374.96 FT.
 TOTAL BORE LENGTH = 377.4 FT.

LEGEND

— AS-CONSTRUCTED BORE

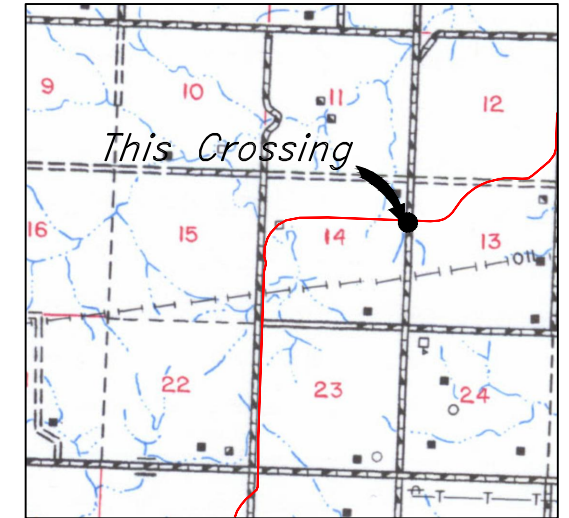
LEGEND				MATERIAL SUMMARY		REFERENCE DRAWINGS			REVISIONS		DRAWING INFORMATION	
—	PROPERTY LINE	—	EXISTING FENCE	▨	AVOIDANCE AREA	NO.	DATE	NO.	DATE	SCALE: 1" = 40'	BOE PIPELINE, LLC BOE PIPELINE PHASE I WATERLINE CROSSING BORE #36 SECTIONS 12 & 13, T.140N., R.97W., STARK COUNTY, ND	4585 Coleman Street Bismarck, ND 58503 © KLJ 2015
---	SECTION LINE	FO	FIBER OPTIC COM. LINE	▨	WETLAND	DWG. NO.	DESCRIPTION	NO.	DATE	DRAWN BY: M. STICKLAND		
---	EASEMENT LINE	—	RAILROAD	▨	EASEMENT			0	06/11/15	DATE: 06/11/15		
---	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC	▨	TEST LEAD					CHECKED BY: D. DIONNE		
---	FOREIGN PIPELINE	—	UTILITY POLE							APPROVED BY: S. BESMER		
---	EXISTING ROAD	—	AS-CONSTRUCTED BORE							KLJ JOB NUMBER: 1713140		
---	UNDERGROUND COM. LINE	—	MARKER POST							REVISION:		
			VALVE SETTING							SHEET: 83		

BOE PIPELINE PHASE I
115TH AVE. SW CROSSING BORE #37
 STARK COUNTY, NORTH DAKOTA



STARK COUNTY
 NE1/4, SEC. 14,
 T140N, R97W

STARK COUNTY
 NW1/4, SEC. 13,
 T140N, R97W



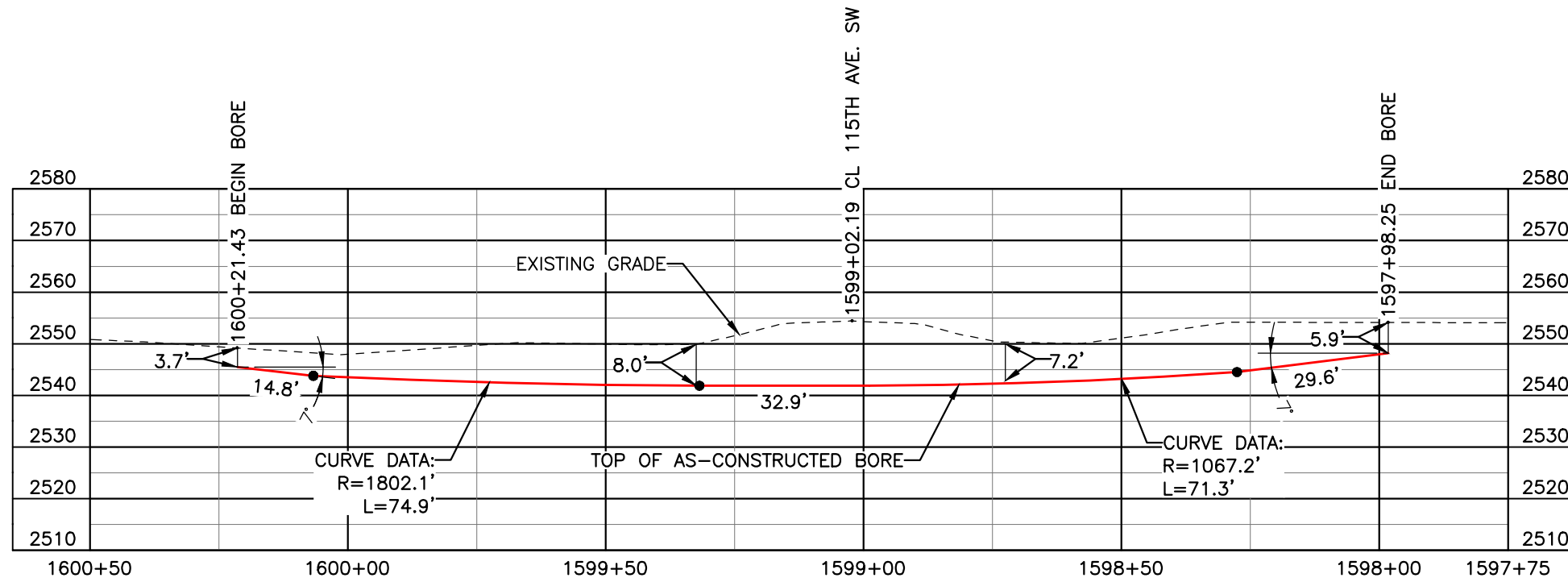
R.97W.

Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

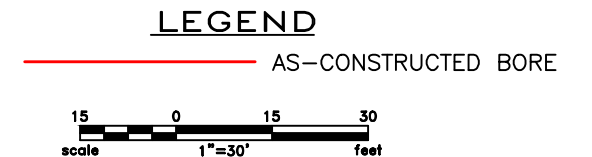
FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1600+21.43	46°56'39.70" N	102°52'25.17" W
END BORE	1598+98.25	46°56'39.67" N	102°52'21.95" W

TOTAL HORIZONTAL DISTANCE = 223.18 FT.

TOTAL BORE LENGTH = 223.5 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	— UTILITY POLE
— WATER LINE	—(U)— UTILITY POLE	— AS-CONSTRUCTED BORE
— FOREIGN PIPELINE	—(V)— VALVE SETTING	— MARKER POST
— EXISTING ROAD	—(M)— MARKER POST	— VALVE SETTING
--- UNDERGROUND COM. LINE	—(V)— VALVE SETTING	— TEST LEAD

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	224'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 84

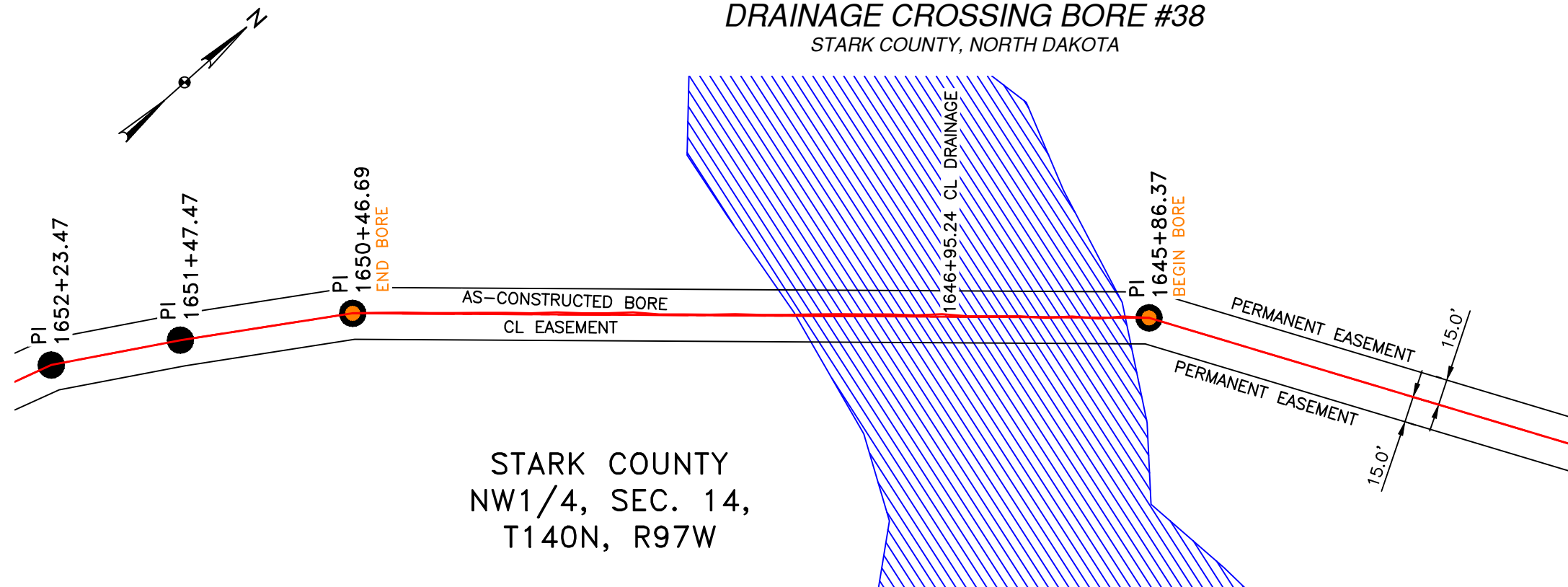
BOE PIPELINE, LLC

BOE PIPELINE PHASE I
115TH AVE. SW CROSSING BORE #37
 SECTIONS 13 & 14, T.140N., R.97W., STARK COUNTY, ND

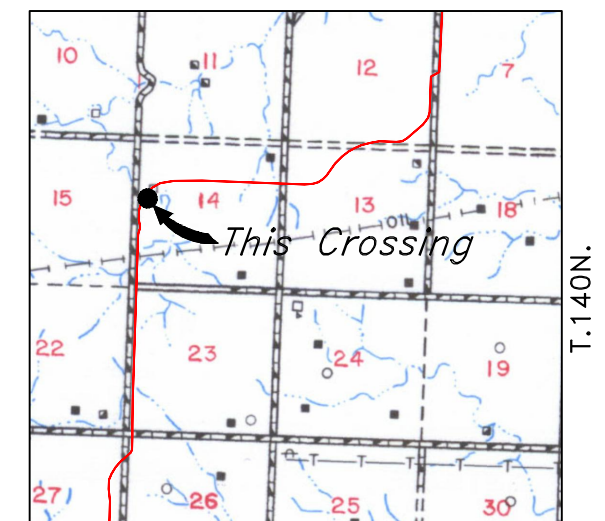
4585 Coleman Street
 Bismarck, ND 58503
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BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #38

STARK COUNTY, NORTH DAKOTA



STARK COUNTY
NW1/4, SEC. 14,
T140N, R97W

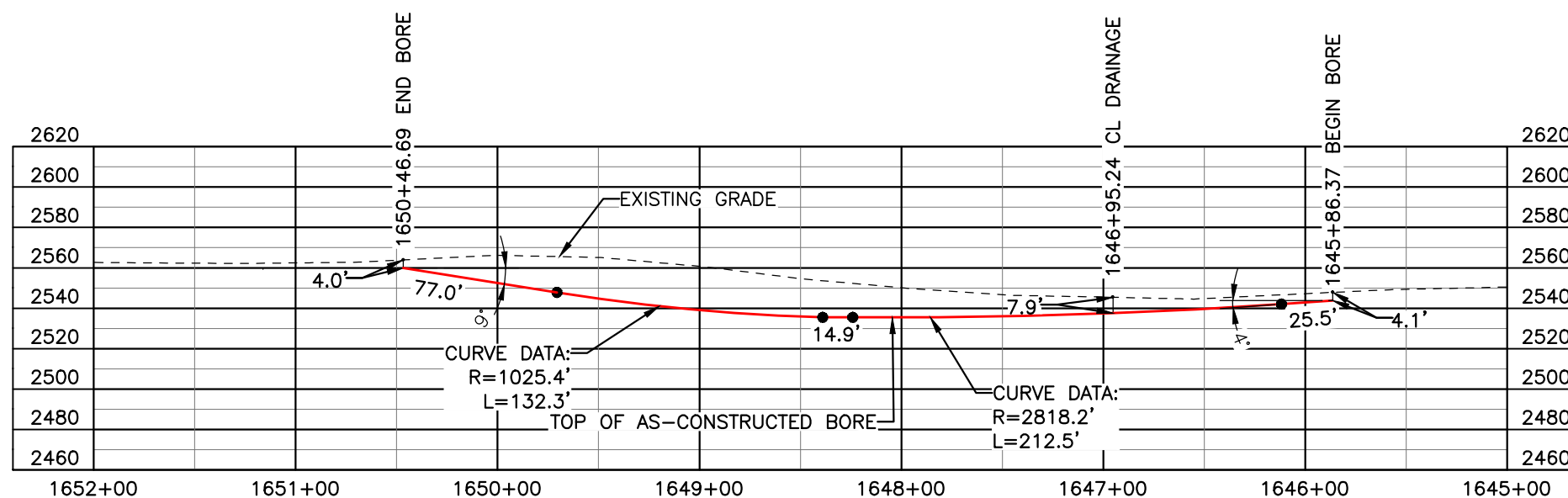


Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

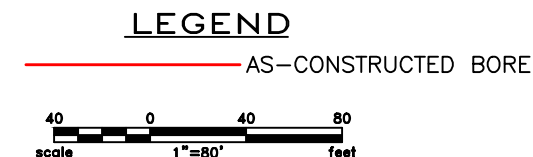
FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1645+86.37	46°56'36.80" N	102°53'30.13" W
END BORE	1650+46.69	46°56'33.33" N	102°53'34.42" W

TOTAL HORIZONTAL DISTANCE = 460.32 FT.

TOTAL BORE LENGTH = 462.2 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
--- UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	462'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
0	06/11/15	AS-CONSTRUCTED

SCALE: 1" = 80'

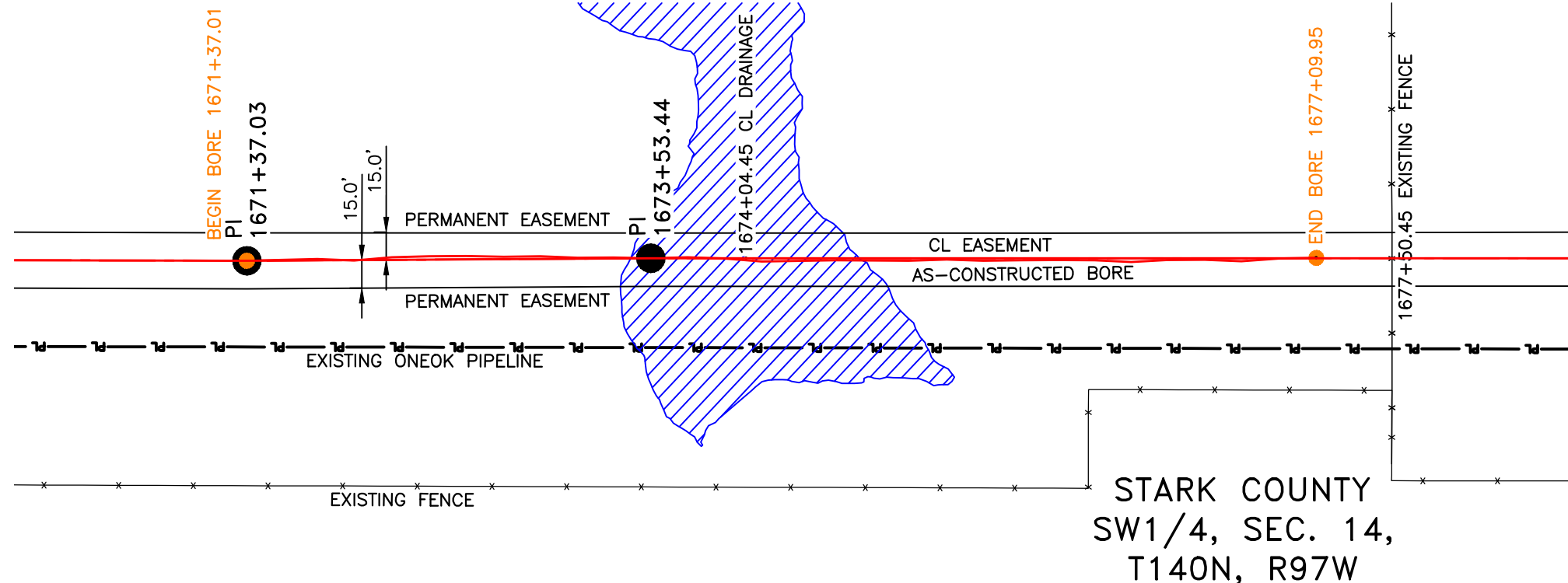
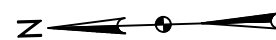
DRAWN BY: M. STICKLAND
DATE: 06/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 85

BOE PIPELINE, LLC

**BOE PIPELINE PHASE I
DRAINAGE CROSSING BORE #38**
SECTION 14, T.140N., R.97W., STARK COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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BOE PIPELINE PHASE I DRAINAGE CROSSING BORE #39 STARK COUNTY, NORTH DAKOTA



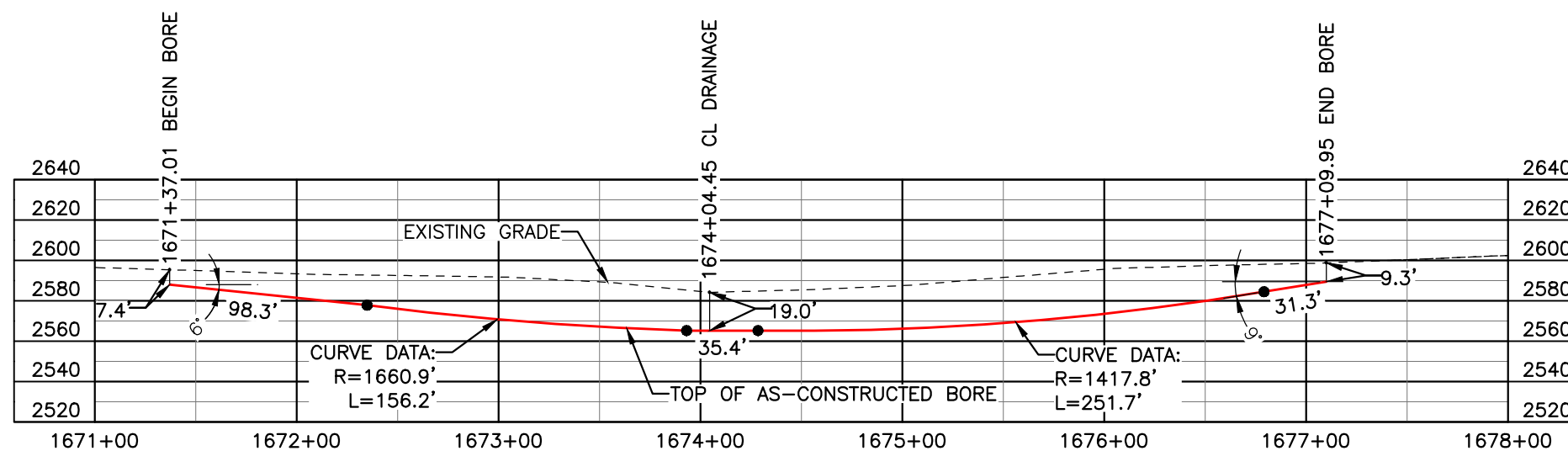
R.97W. | R.96W.

Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

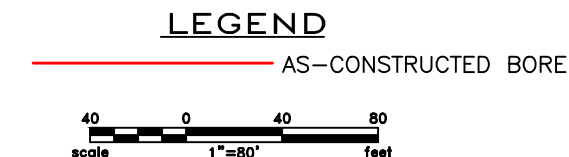
FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1671+37.01	46°56'13.21" N	102°53'37.00" W
END BORE	1677+09.95	46°56'07.55" N	102°53'36.98" W

TOTAL HORIZONTAL DISTANCE = 572.94 FT.

TOTAL BORE LENGTH = 572.9 FT.



LEGEND

— PROPERTY LINE	—*— EXISTING FENCE	▨ AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— □ — MARKER POST	
--- UNDERGROUND COM. LINE	— ▽ — VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	573'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	10/31/14

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 80'

DRAWN BY: M. STICKLAND
 DATE: 10/31/2014
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 86

BOE
 BAKKEN OIL EXPRESS
 BOE PIPELINE, LLC

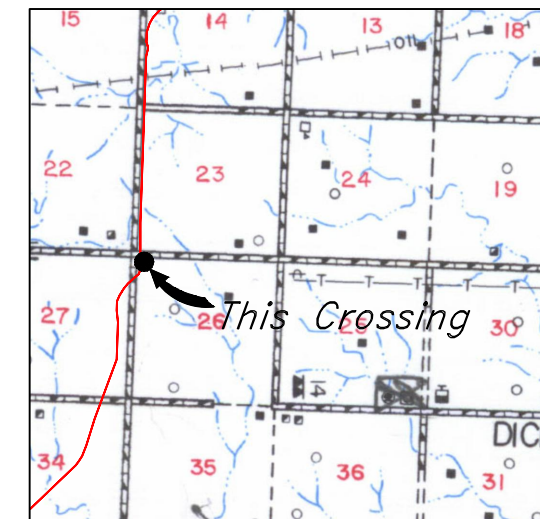
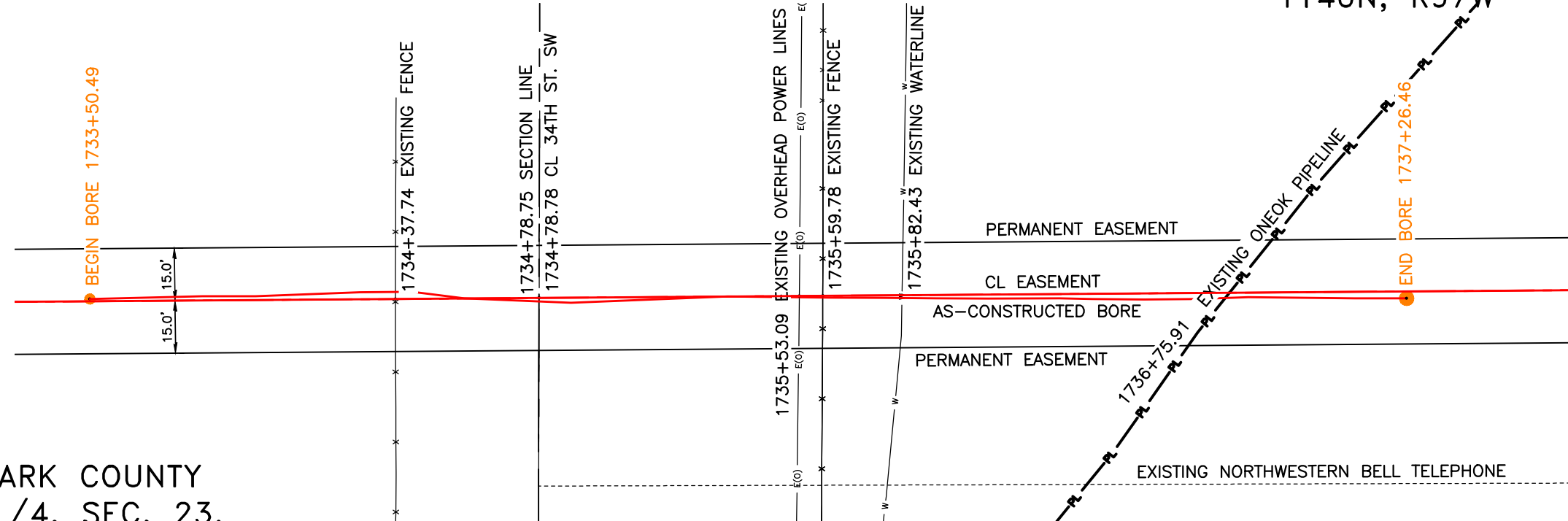
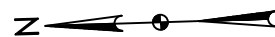
**BOE PIPELINE PHASE I
 DRAINAGE CROSSING BORE
 BORE #39
 SECTION 14, T.140N., R.97W., STARK COUNTY, ND**

KLJ

4585 Coleman Street
 Bismarck, ND 58503
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BOE PIPELINE PHASE I
34TH ST. SW CROSSING BORE #40
 STARK COUNTY, NORTH DAKOTA

STARK COUNTY
 NW1/4, SEC. 26,
 T140N, R97W



R.97W. | R.96W.

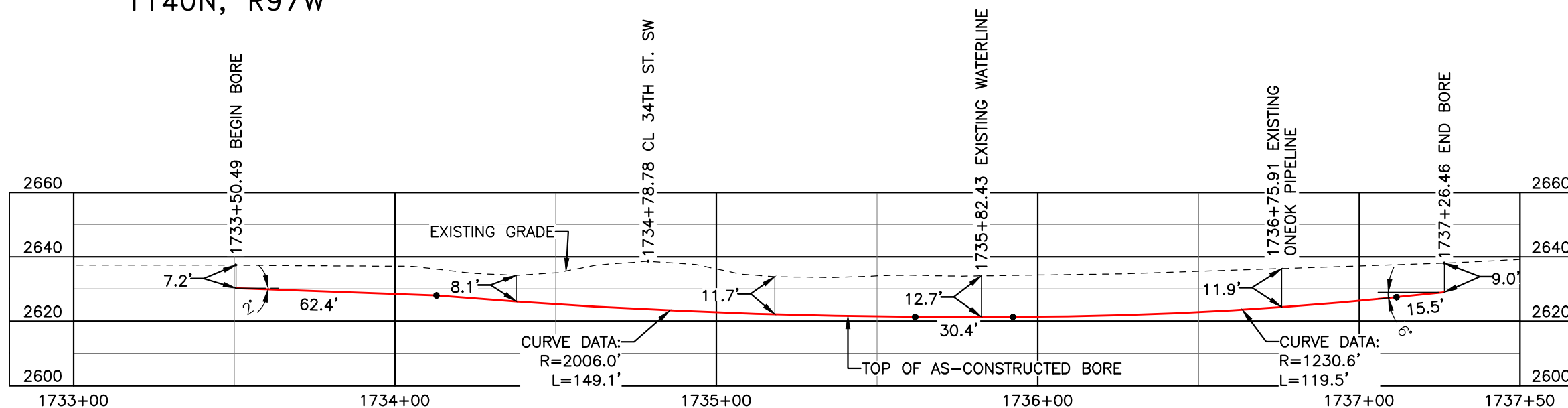
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

STARK COUNTY
 SW1/4, SEC. 23,
 T140N, R97W

AS-CONSTRUCTED

FINAL
 6/11/15



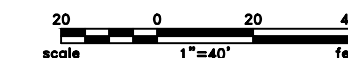
BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1733+50.49	46°55'11.88" N	102°53'36.70" W
END BORE	1737+26.46	46°55'08.17" N	102°53'36.70" W

TOTAL HORIZONTAL DISTANCE = 375.97 FT.

TOTAL BORE LENGTH = 376.9 FT.

LEGEND

AS-CONSTRUCTED BORE



LEGEND

—	PROPERTY LINE	—*—*	EXISTING FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE	▨	WETLAND
- - -	EASEMENT LINE	—R—R—	RAILROAD	▨	EASEMENT
—	PIPELINE CENTERLINE	—E(O)—	OVERHEAD ELECTRIC	—	TEST LEAD
—W—	WATER LINE	—	UTILITY POLE	—	
—P—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	
—	EXISTING ROAD	—	MARKER POST	—	
—	UNDERGROUND COM. LINE	—	VALVE SETTING	—	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	377'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 87

BOE PIPELINE, LLC

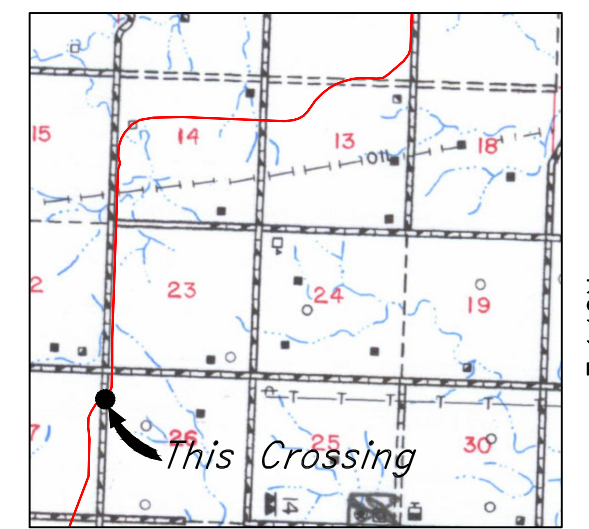
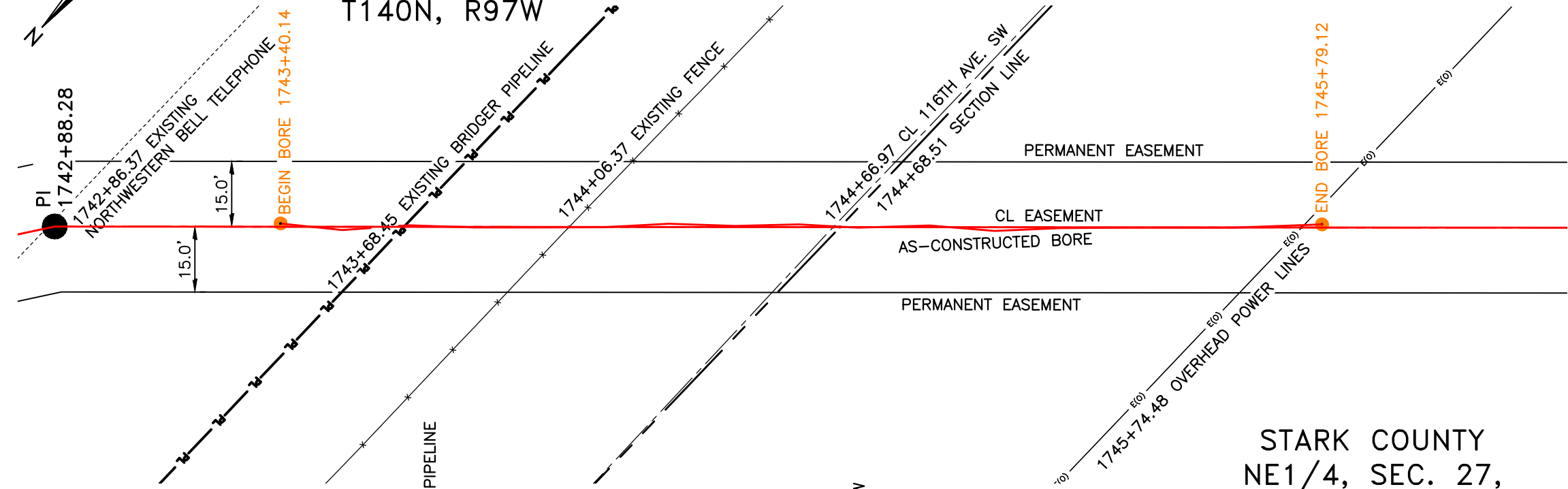
BOE PIPELINE PHASE I
 34TH ST. SW CROSSING BORE #40
 SECTIONS 23 & 26, T.140N., R.97W., STARK COUNTY, ND

KLJ

4585 Coleman Street
 Bismarck, ND 58503
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STARK COUNTY
NW1/4, SEC. 26,
T140N, R97W

BOE PIPELINE PHASE I
116TH AVE. SW CROSSING BORE #41
STARK COUNTY, NORTH DAKOTA

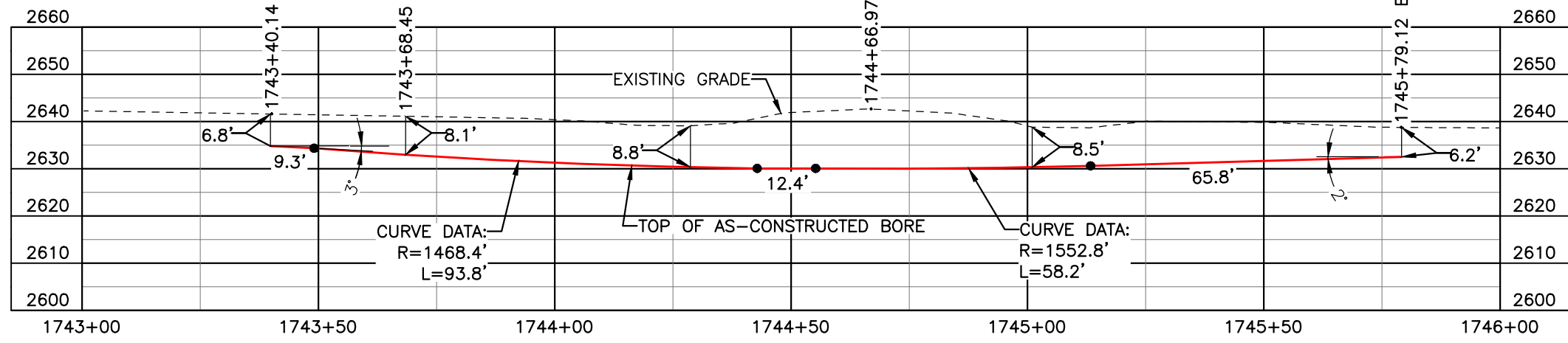


R.97W. | R.96W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 16.0" OD x 0.344" W.T., API 5L X70
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1743+40.14	46°55'02.40" N	102°53'37.99" W
END BORE	1745+79.12	46°55'00.77" N	102°53'40.48" W

TOTAL HORIZONTAL DISTANCE = 238.98 FT.

TOTAL BORE LENGTH = 239.5 FT.

LEGEND

AS-CONSTRUCTED BORE

LEGEND

—	PROPERTY LINE	—x—x—	EXISTING FENCE		AVOIDANCE AREA
- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE		WETLAND
- - -	EASEMENT LINE	—	RAILROAD		EASEMENT
—	PIPELINE CENTERLINE	—E(O)—	OVERHEAD ELECTRIC		UTILITY POLE
—W—	WATER LINE	—	UTILITY POLE		TEST LEAD
—P—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE		MARKER POST
—	EXISTING ROAD	—	MARKER POST		VALVE SETTING
—	UNDERGROUND COM. LINE	—	VALVE SETTING		

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
2	240'	16" OD, 0.344" W.T. API 5L X70, 14-16 MIL FBE, 30-35 ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
DATE: 06/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLI JOB NUMBER: 1713140
REVISION: SHEET: 88

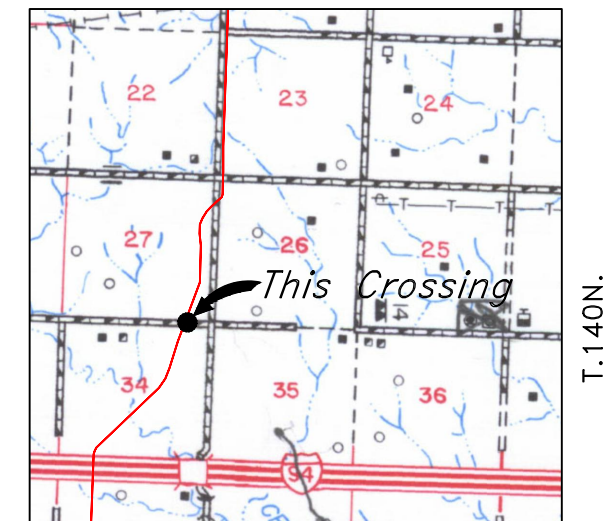
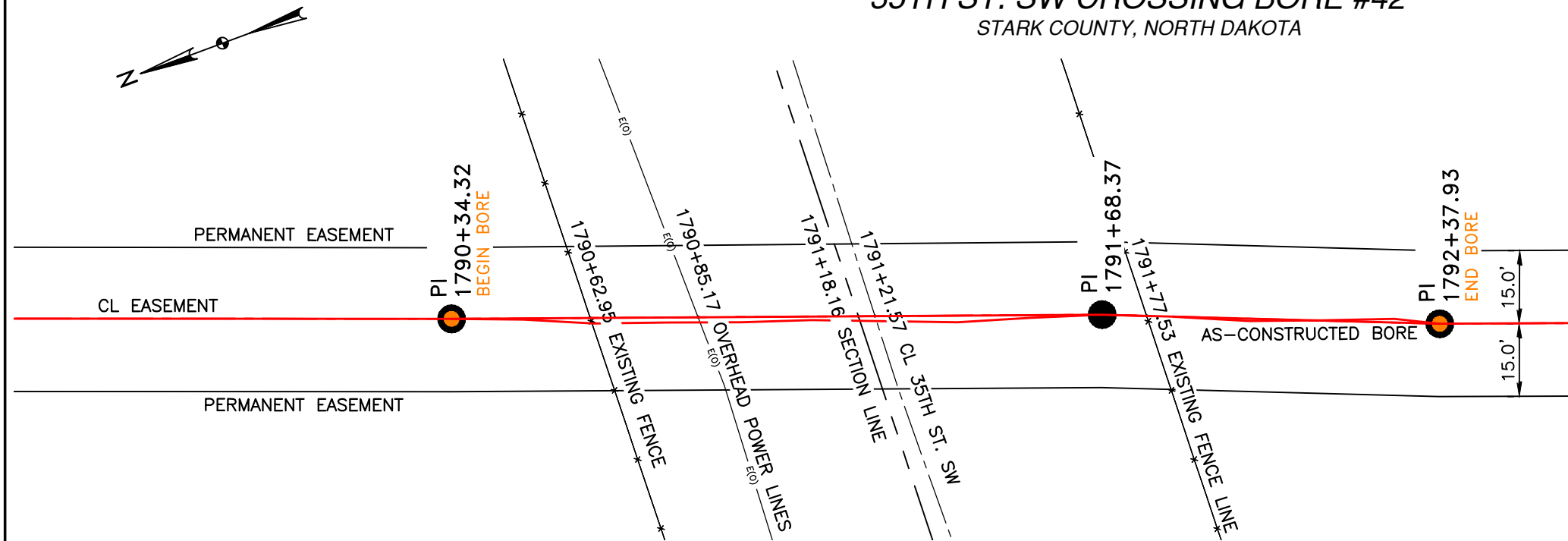
BOE BOE PIPELINE, LLC

BOE PIPELINE PHASE I
116TH AVE. SW CROSSING BORE #41
SECTIONS 26 & 27, T.140N., R.97W., STARK COUNTY, ND

KLJ

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Bismarck, ND 58503
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BOE PIPELINE PHASE I
35TH ST. SW CROSSING BORE #42
 STARK COUNTY, NORTH DAKOTA



R.97W.

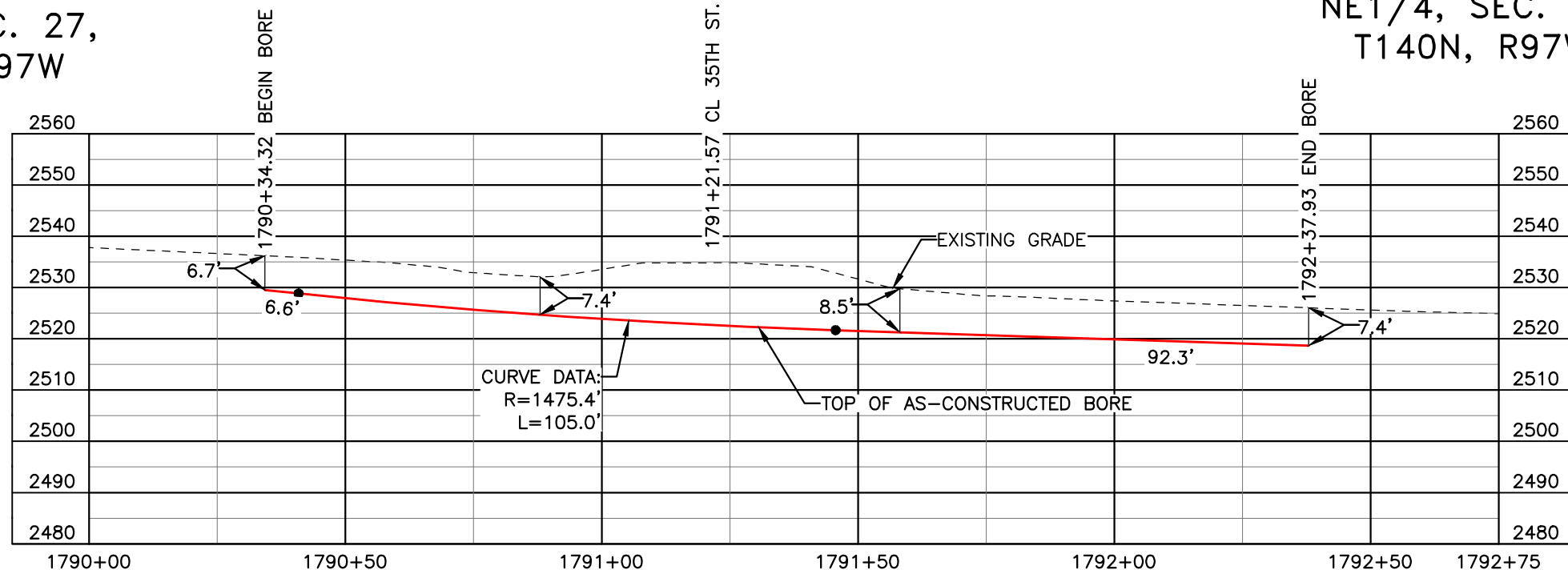
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 20.0" OD x 0.375" W.T., API 5L X65
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

STARK COUNTY
 SE1/4, SEC. 27,
 T140N, R97W

STARK COUNTY
 NE1/4, SEC. 34,
 T140N, R97W

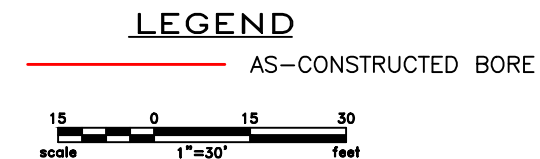


FINAL
 6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1790+34.32	46°54'19.20" N	102°53'53.48" W
END BORE	1792+37.93	46°54'17.30" N	102°53'54.43" W

TOTAL HORIZONTAL DISTANCE = 203.61 FT.

TOTAL BORE LENGTH = 203.9 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	▨ AVOIDANCE AREA
- - - SECTION LINE	—FO— FIBER OPTIC COM. LINE	▨ WETLAND
- - - EASEMENT LINE	—R— RAILROAD	▨ EASEMENT
— PIPELINE CENTERLINE	—(E)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	—□— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	—□— MARKER POST	
- - - UNDERGROUND COM. LINE	—□— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
4	204'	20" OD, 0.375" W.T. API 5L X65, 14-16 MIL FBE, ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
 DATE: 06/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: S. BESMER
 KLI JOB NUMBER: 1713140
 REVISION: SHEET: 89

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
 35TH ST. SW CROSSING BORE #42
 SECTIONS 27 & 34, T.140N., R.97W., STARK COUNTY, ND

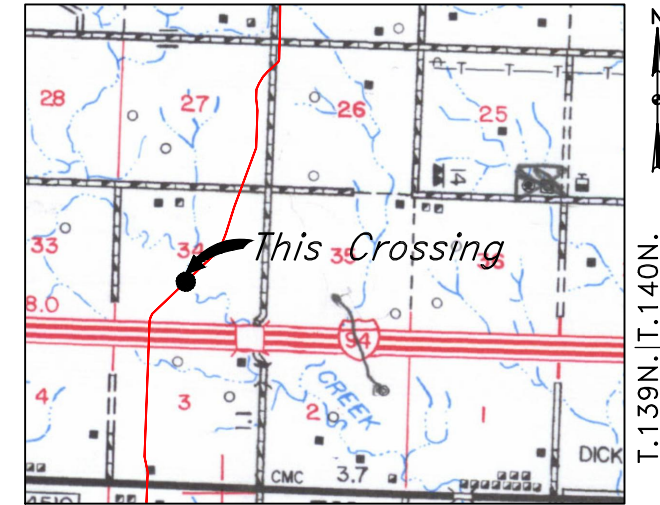
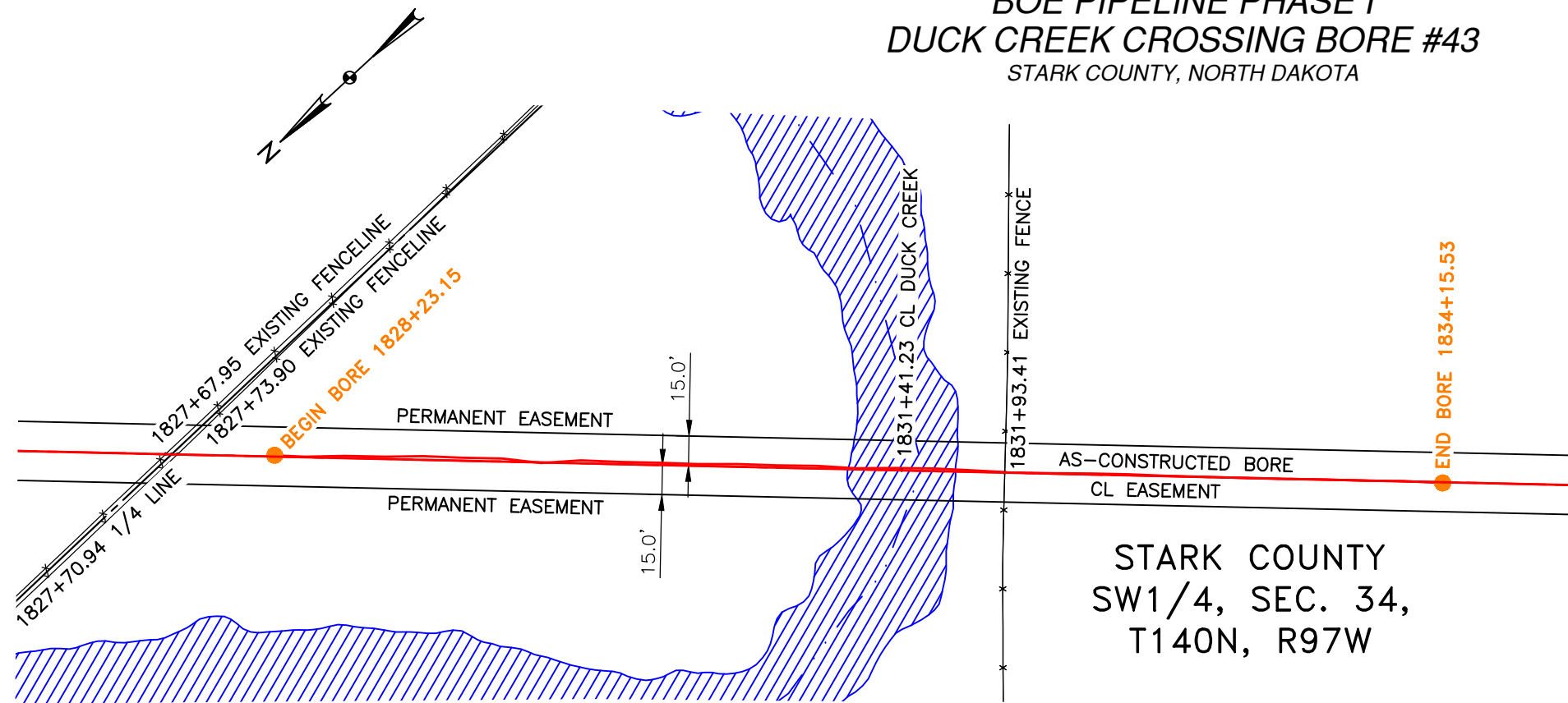
KLJ

4585 Coleman Street
 Bismarck, ND 58503

© KLJ 2015

BOE PIPELINE PHASE I DUCK CREEK CROSSING BORE #43

STARK COUNTY, NORTH DAKOTA

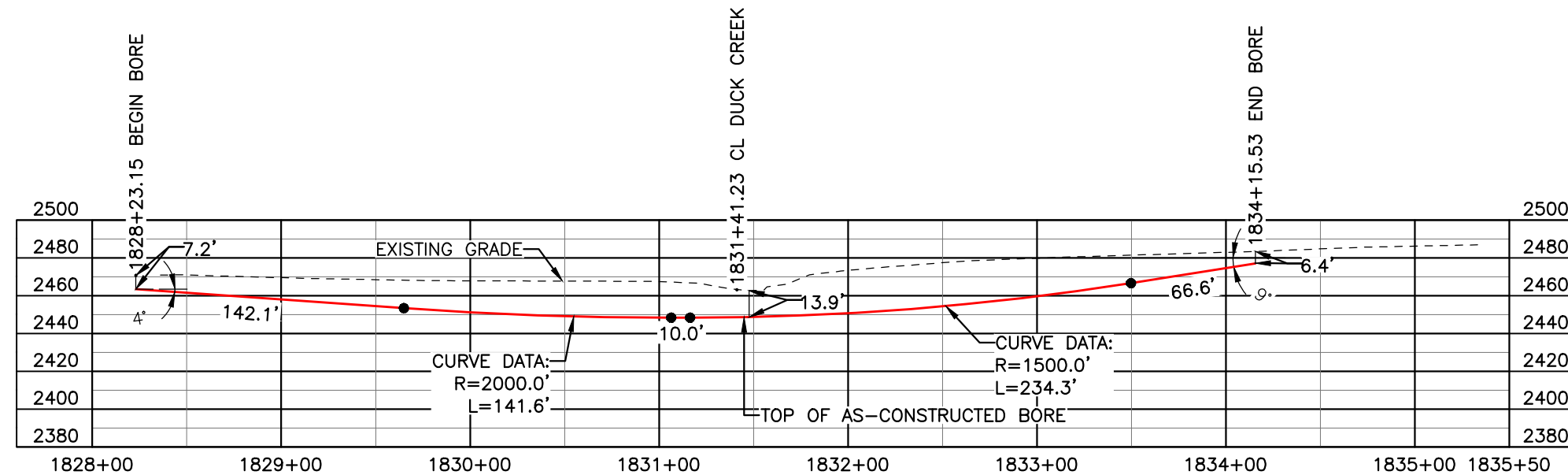


R.97W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 20.0" OD x 0.375" W.T., API 5L X65
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1828+23.15	46°53'46.64" N	102°54'17.68" W
END BORE	1834+15.53	46°53'42.48" N	102°54'23.67" W

TOTAL HORIZONTAL DISTANCE = 592.38 FT.
 TOTAL BORE LENGTH = 594.6 FT.

LEGEND

— AS-CONSTRUCTED BORE

LEGEND				MATERIAL SUMMARY		REFERENCE DRAWINGS			REVISIONS		SCALE: 1" = 80'	
—	PROPERTY LINE	—	EXISTING FENCE	▨	AVOIDANCE AREA	MK. NO.	QTY.	DWG. NO.	DESCRIPTION	NO.	DATE	DESCRIPTION
---	SECTION LINE	FO	FIBER OPTIC COM. LINE	▨	WETLAND	4	595'			0	06/11/15	AS-CONSTRUCTED
---	EASEMENT LINE	—	RAILROAD	▨	EASEMENT							
---	PIPELINE CENTERLINE	EO	OVERHEAD ELECTRIC	—	TEST LEAD							
---	WATER LINE	—	UTILITY POLE									
---	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE									
---	EXISTING ROAD	—	MARKER POST									
---	UNDERGROUND COM. LINE	—	VALVE SETTING									

BOE
 BAKKEN OIL EXPRESS
 BOE PIPELINE, LLC

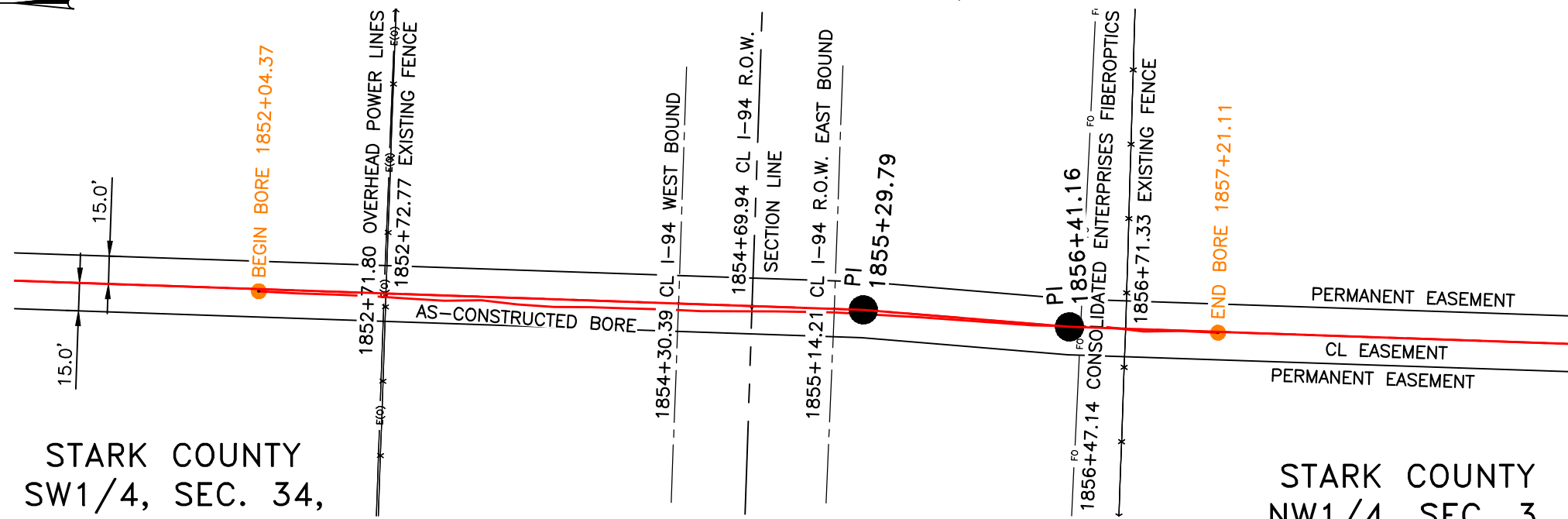
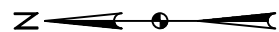
BOE PIPELINE PHASE I
 DUCK CREEK CROSSING BORE
 BORE #43
 SECTION 34, T.140N., R.97W., STARK COUNTY, ND

KLJ

4585 Coleman Street
 Bismarck, ND 58503
 © KLJ 2015

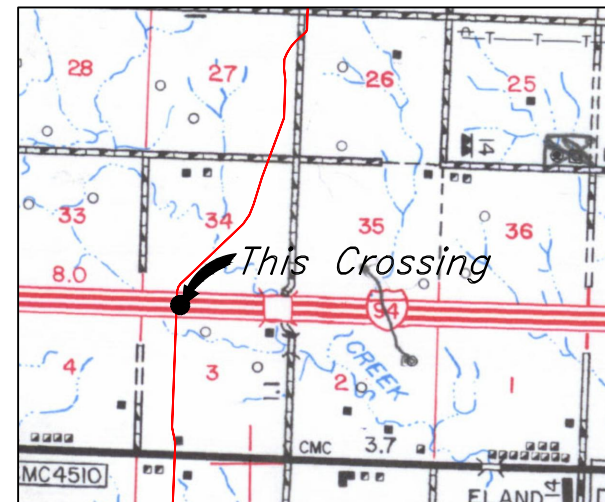
BOE PIPELINE PHASE I INTERSTATE 94 CROSSING BORE #44

STARK COUNTY, NORTH DAKOTA



STARK COUNTY
SW1/4, SEC. 34,
T140N, R97W

STARK COUNTY
NW1/4, SEC. 3,
T139N, R97W

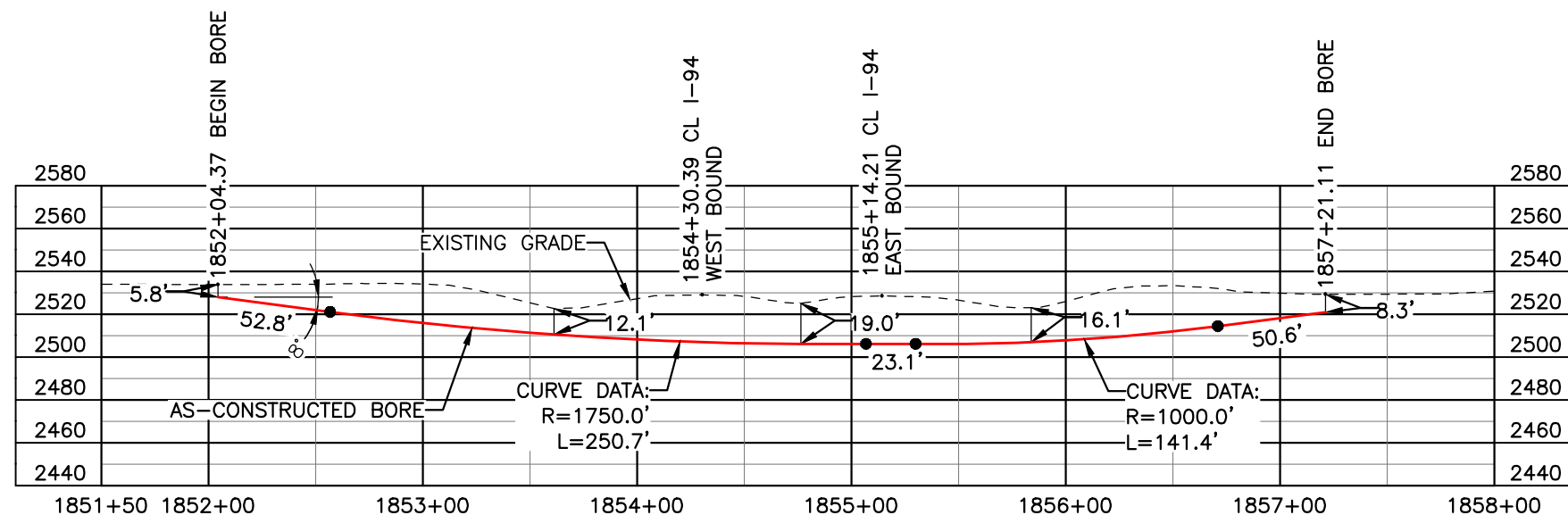


R.97W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 20.0" OD x 0.375" W.T., API 5L X65
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1852+04.37	46°53'28.89" N	102°54'38.91" W
END BORE	1857+21.11	46°53'23.79" N	102°54'39.00" W

TOTAL HORIZONTAL DISTANCE = 516.74 FT.

TOTAL BORE LENGTH = 518.6 FT.

LEGEND

— AS-CONSTRUCTED BORE

scale 1"=80' feet

LEGEND

— PROPERTY LINE	— EXISTING FENCE	— AVOIDANCE AREA
— SECTION LINE	— FIBER OPTIC COM. LINE	— WETLAND
— EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC	— UTILITY POLE
— WATER LINE	— AS-CONSTRUCTED BORE	— MARKER POST
— FOREIGN PIPELINE	— VALVE SETTING	— TEST LEAD
— EXISTING ROAD		
— UNDERGROUND COM. LINE		

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
4	519'	20.0" O.D. X 0.375" W.T., API 5L X65, 14-16 MIL FBE

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	06/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1" = 80'

DRAWN BY: M. STICKLAND
DATE: 06/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 91

BOE PIPELINE, LLC

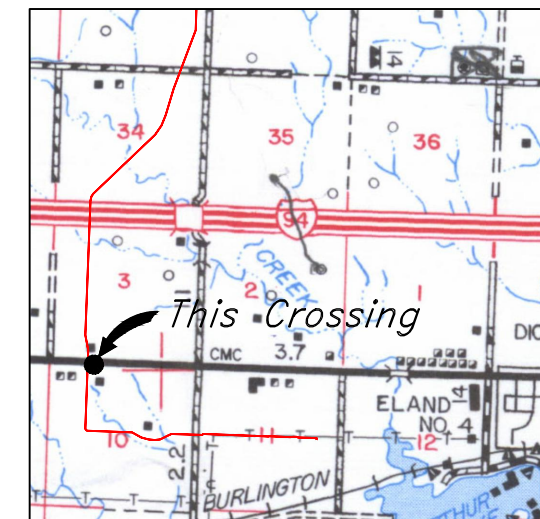
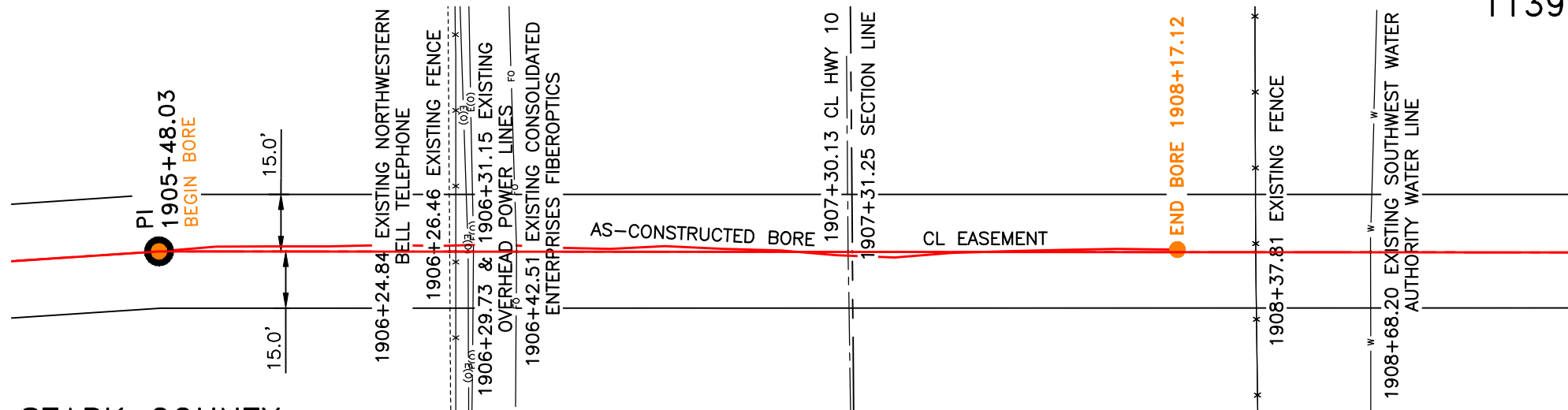
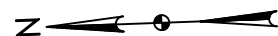
**BOE PIPELINE PHASE I
I-94 CROSSING BORE #44**

SEC. 34, T.140N., R.97W. & SEC. 3, T.139N., R.97W., STARK COUNTY, ND

4585 Coleman Street
Bismarck, ND 58503
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**BOE PIPELINE PHASE I
HIGHWAY 10 CROSSING BORE #45**
STARK COUNTY, NORTH DAKOTA

STARK COUNTY
NW1/4, SEC. 10,
T139N, R97W



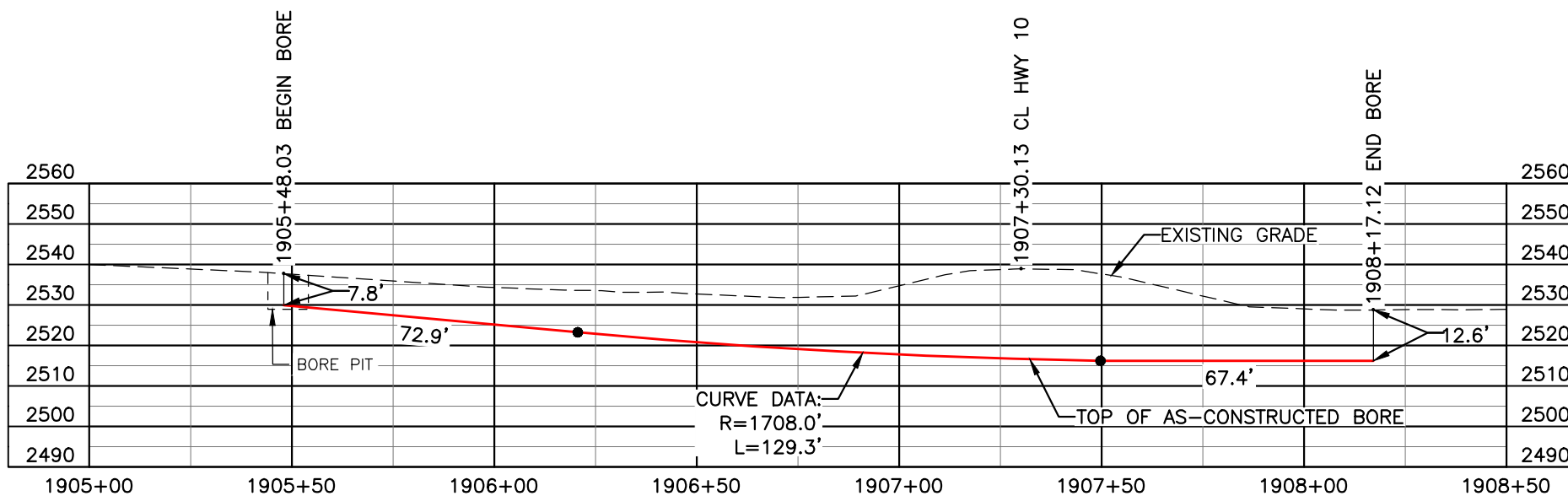
STARK COUNTY
SW1/4, SEC. 3,
T139N, R97W

R.97W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 20.0" OD x 0.375" W.T., API 5L X65
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED

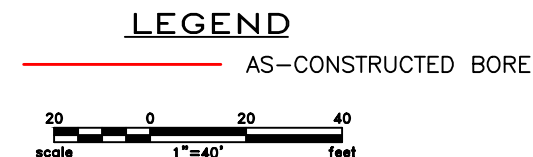
FINAL
6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1905+48.03	46°52'36.28" N	102°54'37.38" W
END BORE	1908+17.12	46°52'33.62" N	102°54'37.39" W

TOTAL HORIZONTAL DISTANCE = 269.09 FT.

TOTAL BORE LENGTH = 269.6 FT.



LEGEND

— PROPERTY LINE	—*—*— EXISTING FENCE	— AVOIDANCE AREA
--- SECTION LINE	—FO— FIBER OPTIC COM. LINE	— WETLAND
- - - EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	—(O)— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— □ — UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— □ — MARKER POST	
— UNDERGROUND COM. LINE	— □ — VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
4	270'	20" OD, 0.375" W.T. API 5L X65, 14-16 MIL FBE, ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION
0	10/31/14 AS-CONSTRUCTED

REVISIONS

NO.	DATE	DESCRIPTION
0	10/31/14	AS-CONSTRUCTED

SCALE: 1" = 40'

DRAWN BY: M. STICKLAND
DATE: 10/31/2014
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KLJ JOB NUMBER: 1713140
REVISION: SHEET: 92

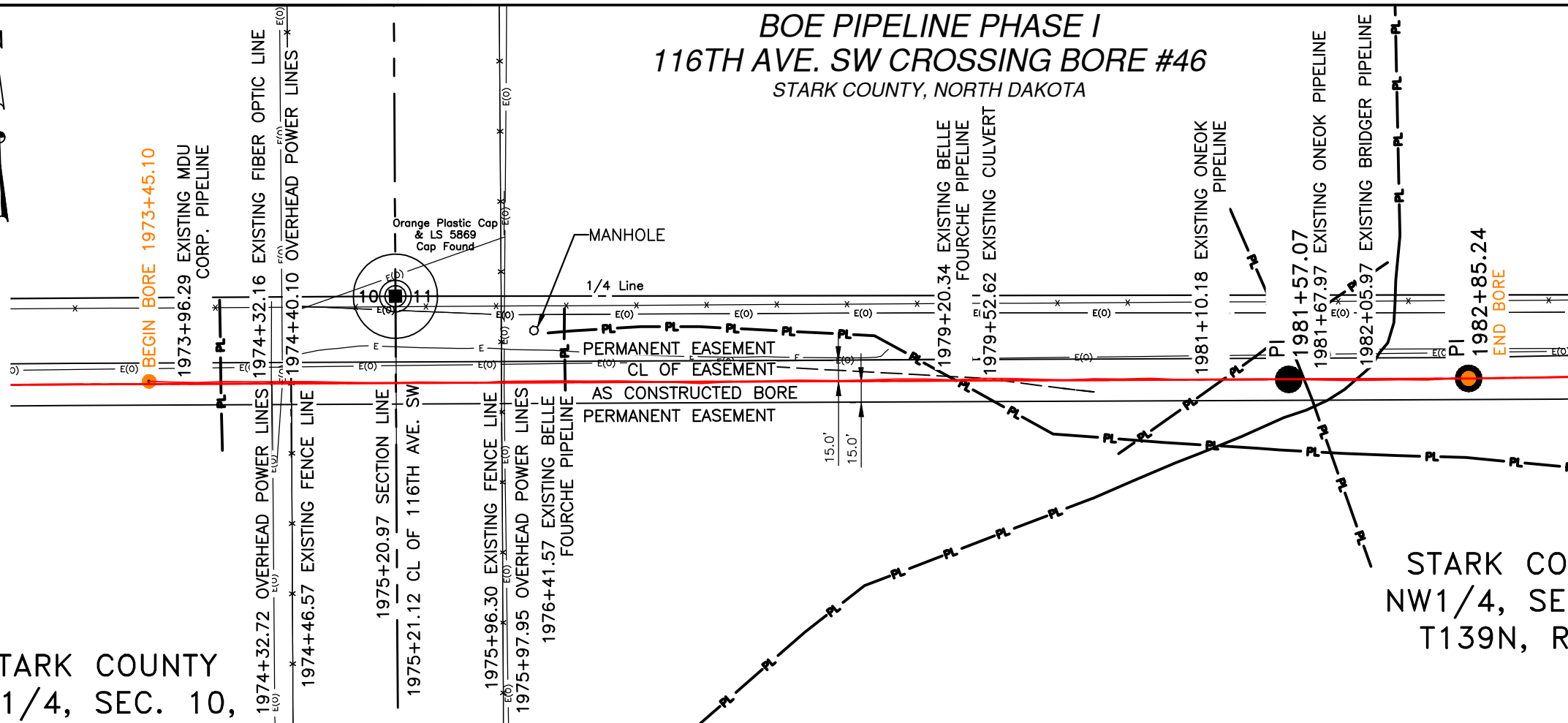
BOE **BAKKEN OIL EXPRESS**
BOE PIPELINE, LLC

BOE PIPELINE PHASE I
HIGHWAY 10 CROSSING BORE
BORE #45
SECTIONS 3 & 10, T.139N., R.97W., STARK COUNTY, ND

KLJ

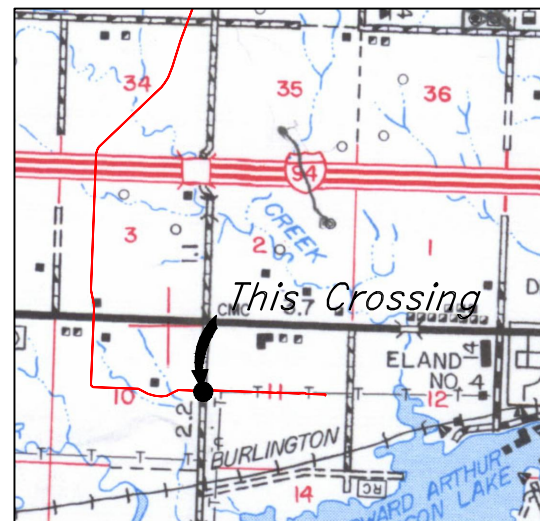
4585 Coleman Street
Bismarck, ND 58503

BOE PIPELINE PHASE I
116TH AVE. SW CROSSING BORE #46
 STARK COUNTY, NORTH DAKOTA



STARK COUNTY
 NE1/4, SEC. 10,
 T139N, R97W

STARK COUNTY
 NW1/4, SEC. 11,
 T139N, R97W

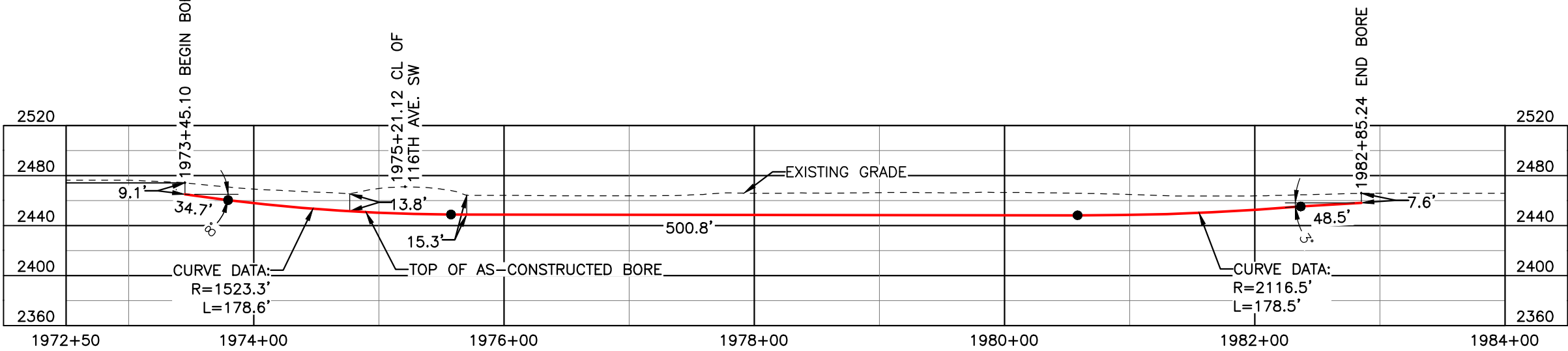


R.97W.
Location Map

PIPE SPECIFICATION
 Crossing designed using: PRCI Report PR-227-9424
 Contents: Oil
 Carrier Pipe: 20.0" OD x 0.375" W.T., API 5L X65
 Coating: 14-16 Mils FBE, 30-35 Mils ARO

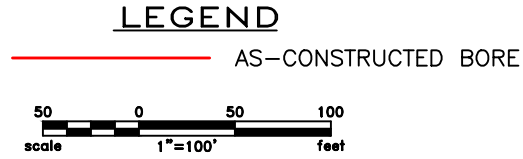
AS-CONSTRUCTED

FINAL
 6/11/15



BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	1973+45.10	46°52'07.87" N	102°52'41.79" W
END BORE	1982+85.24	46°52'07.84" N	102°53'28.26" W

TOTAL HORIZONTAL DISTANCE = 940.44 FT.
 TOTAL BORE LENGTH = 941.2 FT.



LEGEND

— PROPERTY LINE	— EXISTING FENCE	— AVOIDANCE AREA
— SECTION LINE	— FIBER OPTIC COM. LINE	— WETLAND
— EASEMENT LINE	— RAILROAD	— EASEMENT
— PIPELINE CENTERLINE	— OVERHEAD ELECTRIC	— TEST LEAD
— WATER LINE	— UTILITY POLE	
— FOREIGN PIPELINE	— AS-CONSTRUCTED BORE	
— EXISTING ROAD	— MARKER POST	
— UNDERGROUND COM. LINE	— VALVE SETTING	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
4	941'	20" OD, 0.375" W.T. API 5L X65, 14-16 MIL FBE, ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION	NO.	DATE
		0	6/11/15

REVISIONS

NO.	DATE	DESCRIPTION
		AS-CONSTRUCTED

SCALE: 1"=100'

DRAWN BY: M. STICKLAND
 DATE: 6/11/15
 CHECKED BY: D. DIONNE
 APPROVED BY: D. DIONNE
 KLJ JOB NUMBER: 1713140
 REVISION: SHEET: 93

BOE **BAKKEN OIL EXPRESS**

BOE PIPELINE, LLC

BOE PIPELINE PHASE I
 116TH AVE. SW CROSSING BORE #46
 SECTION 10 & 11, T.139N., R.97W., STARK COUNTY, ND

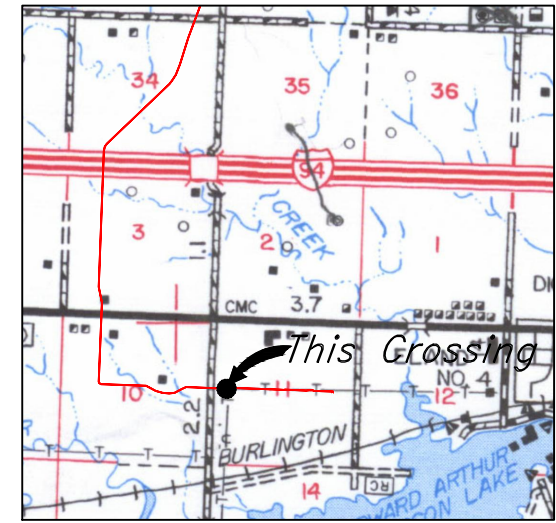
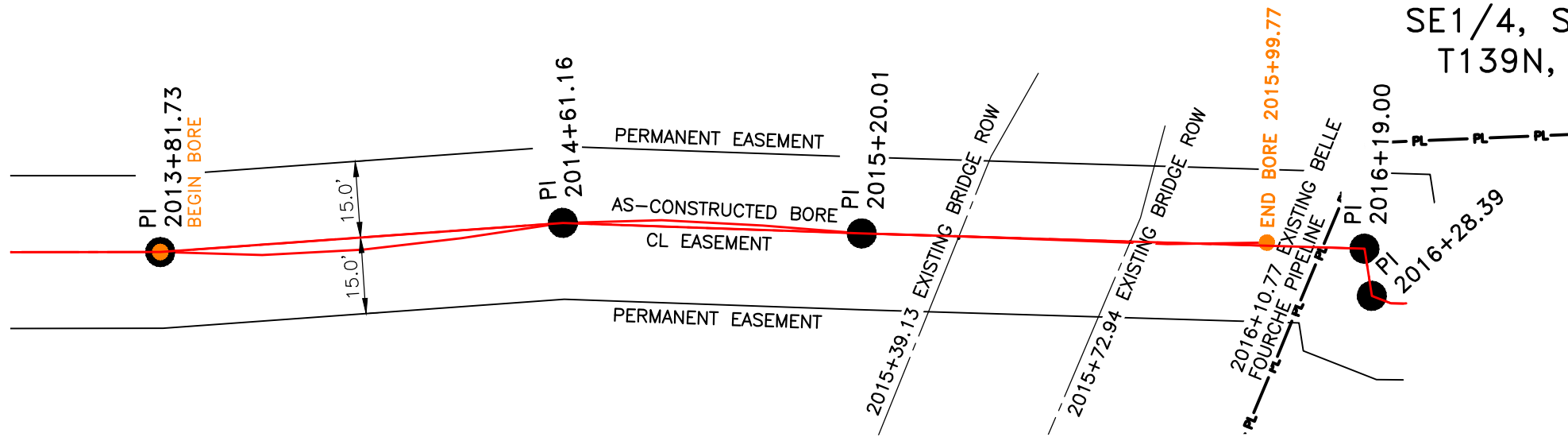
KLJ

4585 Coleman Street
 Bismarck, ND 58503

BOE PIPELINE PHASE I BRIDGE CROSSING BORE #47

STARK COUNTY, NORTH DAKOTA

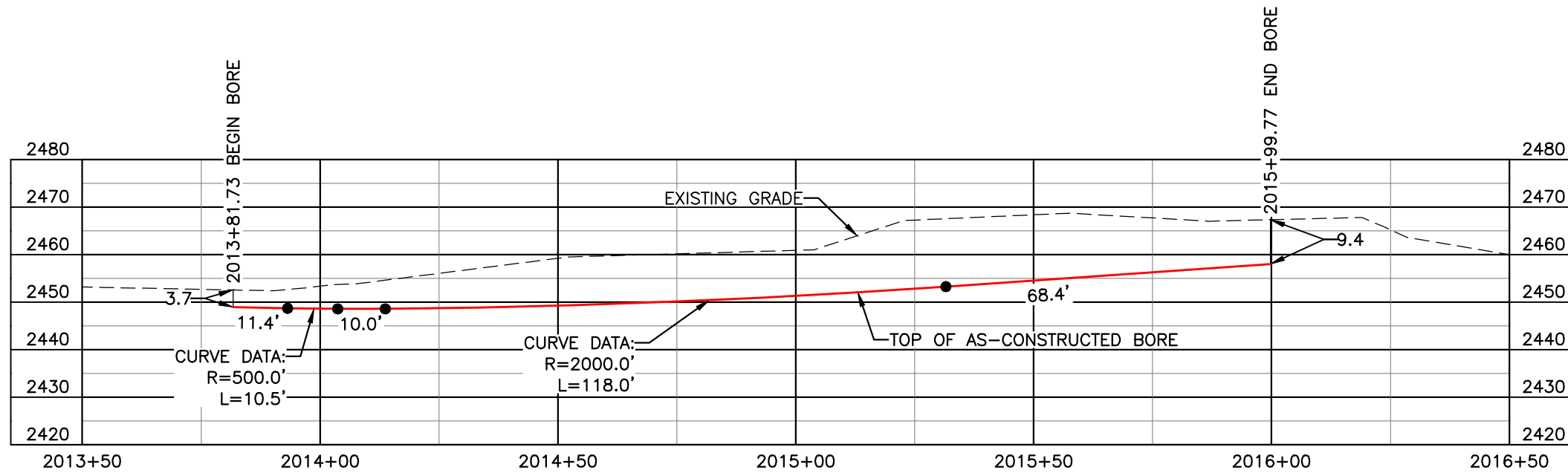
STARK COUNTY
SE1/4, SEC. 11,
T139N, R97W



R.97W.
Location Map

PIPE SPECIFICATION
Crossing designed using: PRCI Report PR-227-9424
Contents: Oil
Carrier Pipe: 20.0" OD x 0.375" W.T., API 5L X65
Coating: 14-16 Mils FBE, 30-35 Mils ARO

AS-CONSTRUCTED



FINAL
6/11/15

BORE	STATIONING	LATITUDE	LONGITUDE
BEGIN BORE	2013+81.73	46°52'07.51" N	102°52'43.71" W
END BORE	2015+99.77	46°52'07.52" N	102°52'40.57" W

NOTE:
INSTALL MARKER POSTS ON BOTH SIDES OF
RIGHT OF WAY FOR ALL LINE CROSSINGS

TOTAL HORIZONTAL DISTANCE = 218.04 FT.

TOTAL BORE LENGTH = 218.3 FT.

LEGEND

AS-CONSTRUCTED BORE

LEGEND

—	PROPERTY LINE	—x—x—	EXISTING FENCE	▨	AVOIDANCE AREA
- - -	SECTION LINE	—FO—	FIBER OPTIC COM. LINE	▨	WETLAND
- · - · -	EASEMENT LINE	—R—R—	RAILROAD	▨	EASEMENT
— — — —	PIPELINE CENTERLINE	—(E)—	OVERHEAD ELECTRIC	—	TEST LEAD
—W—W—	WATER LINE	—	UTILITY POLE	—	
—F—F—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE	—	
—	EXISTING ROAD	—	MARKER POST	—	
—	UNDERGROUND COM. LINE	—	VALVE SETTING	—	

MATERIAL SUMMARY

MK. NO.	QTY.	DESCRIPTION
4	218'	20" OD, 0.375" W.T. API 5L X65, 14-16 MIL FBE, ARO

REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION
0	06/11/15	AS-CONSTRUCTED

SCALE: 1" = 30'

DRAWN BY: M. STICKLAND
DATE: 06/11/15
CHECKED BY: D. DIONNE
APPROVED BY: S. BESMER
KJL JOB NUMBER: 1713140
REVISION: SHEET: 9.4

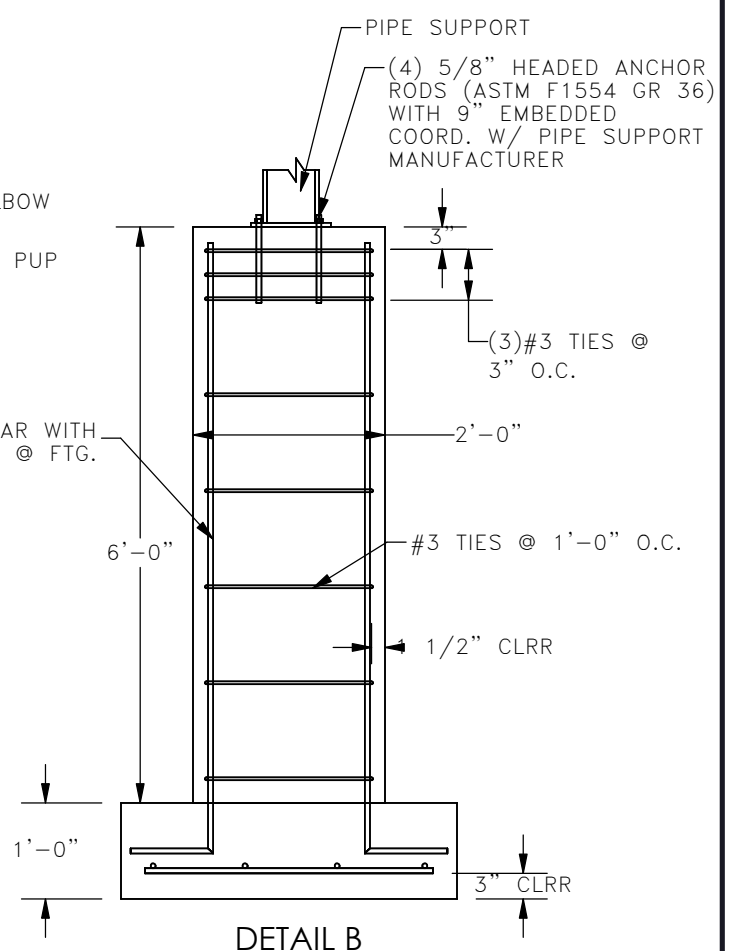
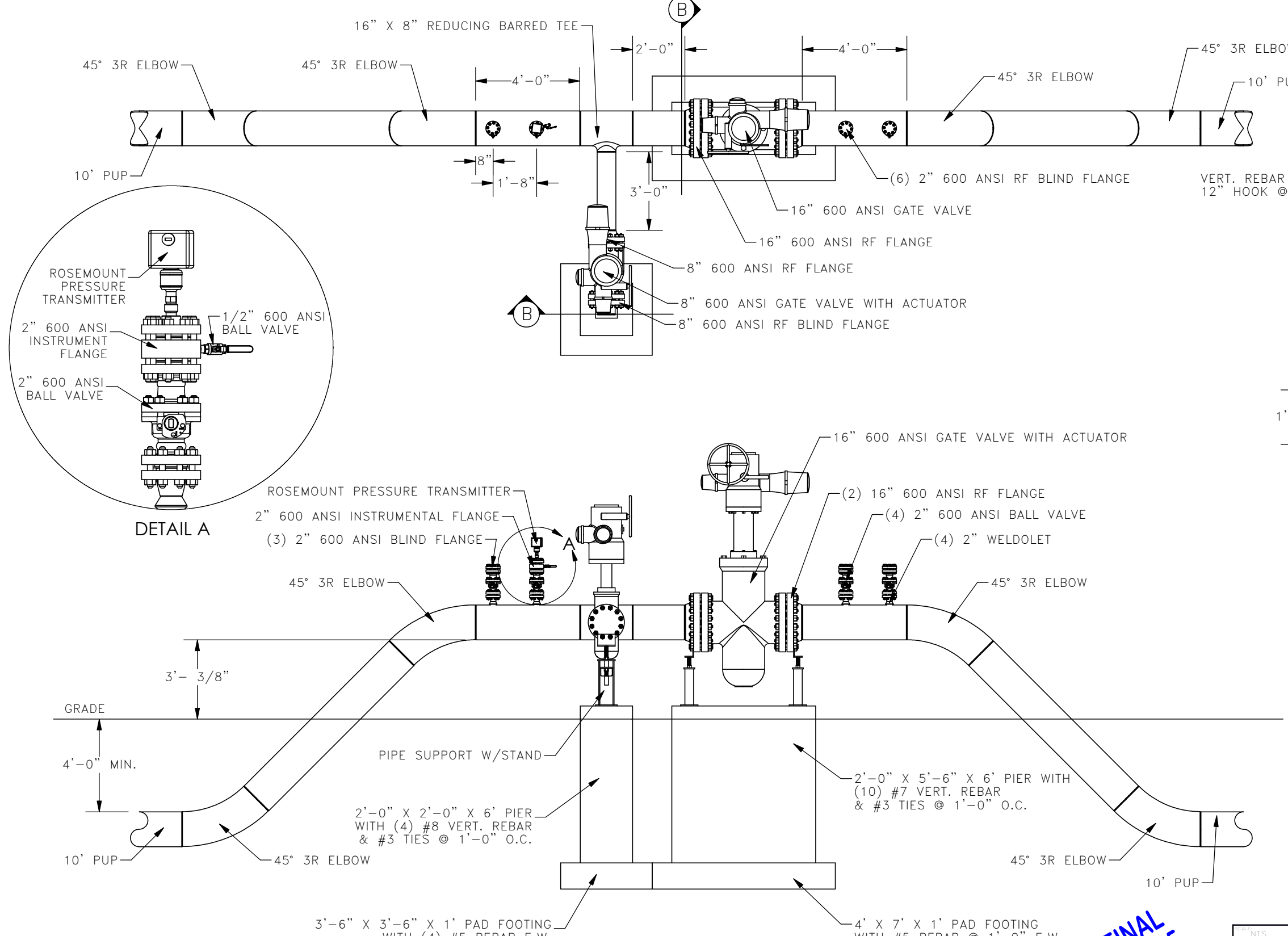
BOE BAKKEN OIL EXPRESS BOE PIPELINE, LLC

BOE PIPELINE PHASE I
BRIDGE CROSSING BORE
BORE #47
SECTION 11, T.139N., R.97W., STARK COUNTY, ND

KJL

4585 Coleman Street
Bismarck, ND 58503
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16" VALVE SETTING W/ FUTURE
 PLAN AND PROFILE VIEW
 DETAIL "A"



- DESIGN CODES:**
 1. AMERICAN CONCRETE INSTITUTE (ACI) 318-11: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
- DESIGN LOADS:**
 1. LIVE LOADS:
 1.1. MAXIMUM VALVE LOAD 15,000 #
- MATERIAL PROPERTIES:**
 CONCRETE PROPERTIES, 28-DAY COMPRESSIVE STRENGTH:
 1. FOUNDATION WALLS, PIERS & FOOTINGS 3,000 PSI
 REINFORCING PROPERTIES:
 1. REINFORCING BARS 60 KSI
 STRUCTURAL STEEL:
 1. HEADED ANCHOR RODS (ASTM F1554) 36 KSI
- SOILS AND FOUNDATIONS:**
 1. THE FOUNDATION HAS BEEN DESIGNED FOR AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF AS PER IBC 2012 TABLE 1806.2 AND USGS WEB SOIL SURVEY CLASS "CL" SOILS. A GEOTECHNICAL ENGINEER SHALL VERIFY SOIL CONDITION AND DESIGN ASSUMPTIONS PRIOR TO CONSTRUCTION.
 2. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED TO COMPLY WITH OSHA STANDARDS.
 3. PROTECT BOTTOM OF EXCAVATIONS AND SOIL ADJACENT TO AND BENEATH FOUNDATION FROM FREEZING.
 4. CONTRACTOR IS RESPONSIBLE FOR DEWATERING FOUNDATION DURING CONSTRUCTION.
- CONCRETE:**
 1. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS AND PIERS UNLESS OTHERWISE NOTED.
 2. CONCRETE REINFORCING SHALL BE DETAILED AS PER THE CRSI MANUAL OF STANDARD PRACTICE.
 3. CONCRETE SHALL BE PROTECTED FROM FREEZING DURING CONSTRUCTION.
 4. CONCRETE SHALL NOT BE PLACED ON SATURATED OR FROZEN SOIL.
 5. WATER SHALL NOT BE ADDED TO THE CONCRETE ON SITE.
 6. REINFORCING SHALL BE FREE OF LOOSE RUST AND MILL SCALE, EARTH, ICE AND OTHER FOREIGN MATERIALS THAT WOULD REDUCE BOND TO CONCRETE.
 7. CONCRETE CONTRACTOR SHALL COORDINATE LOCATION OF EMBEDDED ITEMS BY OTHER DISCIPLINES WITH GENERAL CONTRACTOR.

NOTE:
 SUB-ASSEMBLY PRE-FABRICATION BY THIRD PARTY. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SUB-ASSEMBLIES.

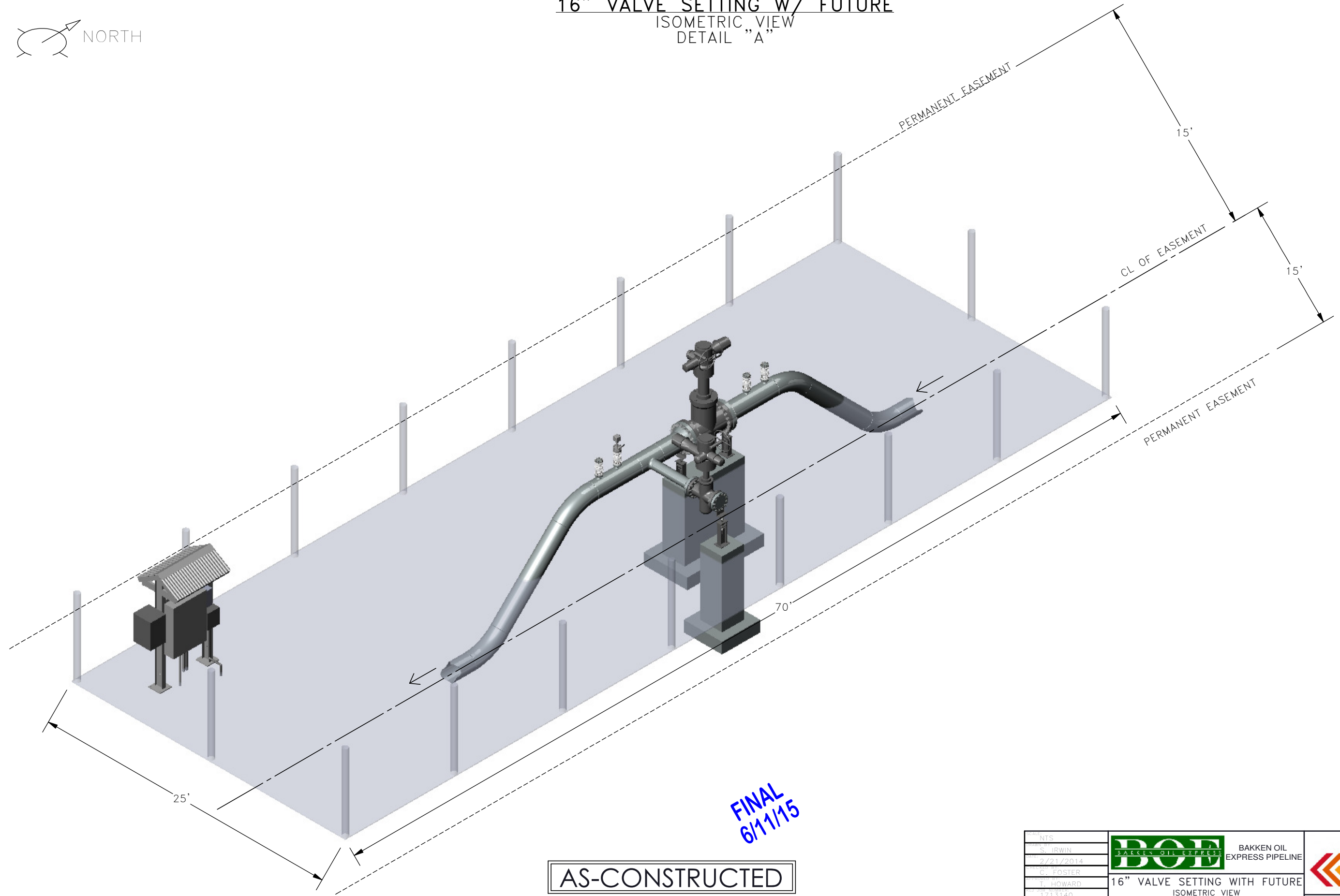
AS-CONSTRUCTED

FINAL
 6/11/15

SCALE: NTS	 BAKKEN OIL EXPRESS PIPELINE	 4585 Coleman Street Bismarck, ND 58503 © KLJ 2014
DESIGNED BY: R. IRWIN		
DATE: 2/21/2014		
BY: E. FOSTER		
PROJECT NO: 1713140		
16" VALVE SETTING WITH FUTURE PLAN & PROFILE VIEW STARK & DUNN COUNTY, NORTH DAKOTA		



16" VALVE SETTING W/ FUTURE ISOMETRIC VIEW DETAIL "A"



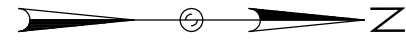
FINAL
6/11/15

AS-CONSTRUCTED

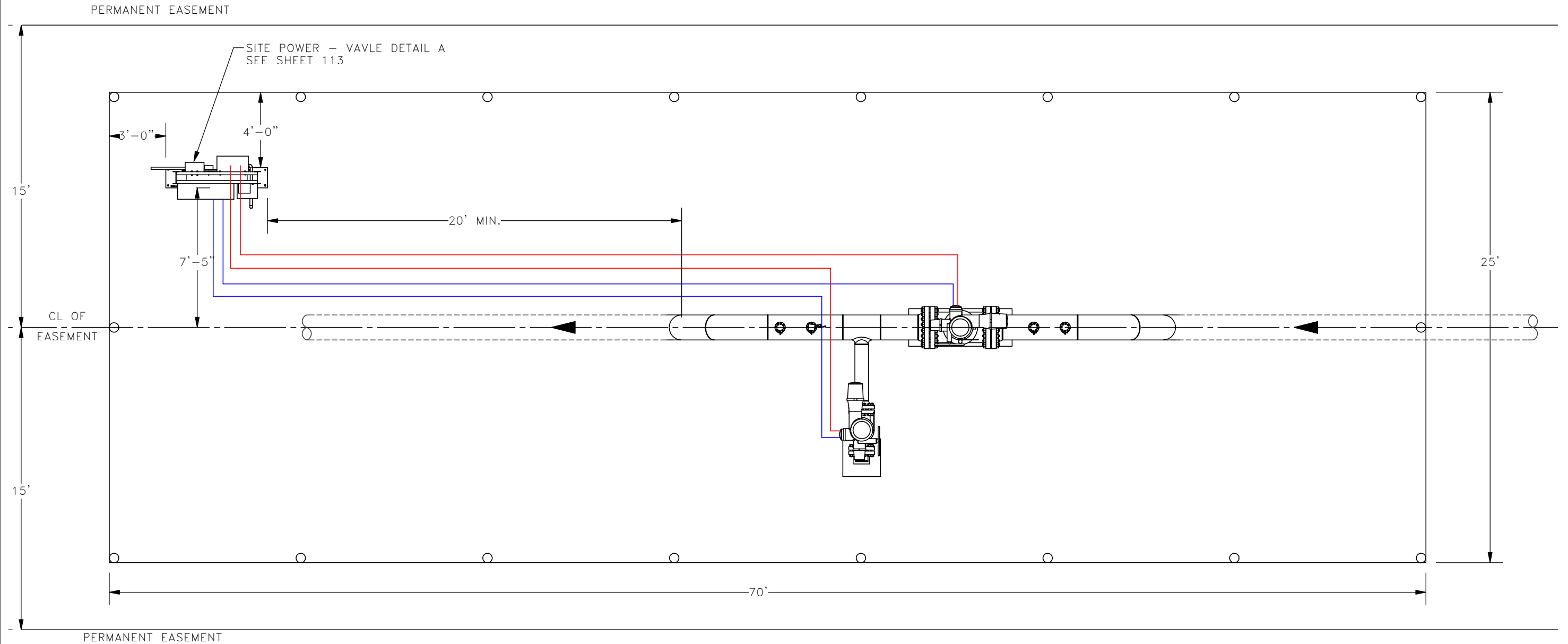
DATE: NTS		BAKKEN OIL EXPRESS PIPELINE	
BY: S. IRWIN			
DATE: 2/21/2014			
BY: C. FOSTER			
BY: T. HOWARD			
PROJECT: 1713140	16" VALVE SETTING WITH FUTURE ISOMETRIC VIEW	4585 Coleman Street Bismarck, ND 58503	
SCALE: 3/8"	96	STARK & DUNN COUNTY, NORTH DAKOTA	© KLJ 2014

16" VALVE SETTING W/ FUTURE

PLAN VIEW
DETAIL "A"




— 1 1/2" RMC (POWER)
— 1 1/4" RMC (COMMUNICATION)

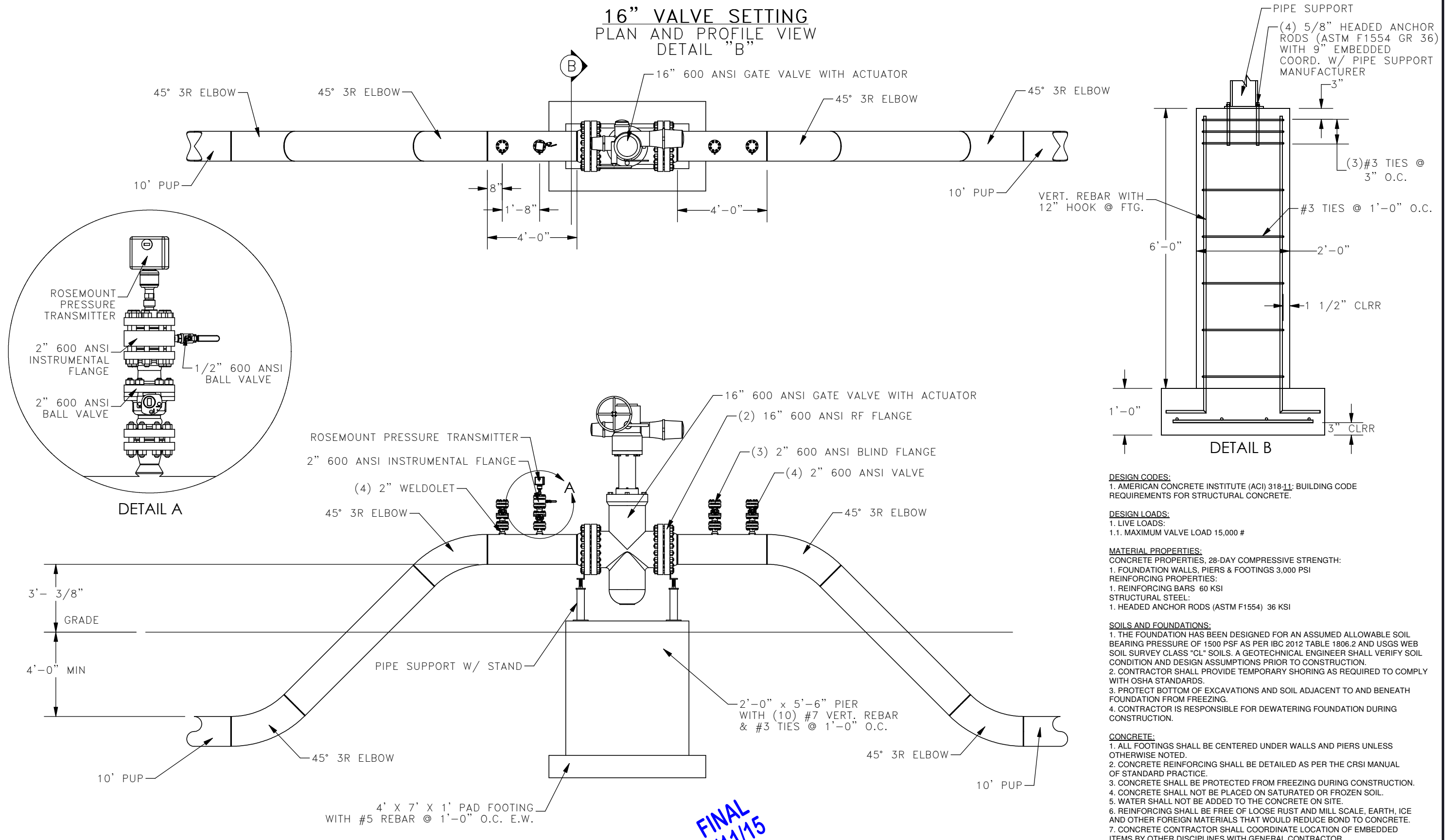


FINAL
6/11/15

AS-CONSTRUCTED

SCALE: NTS	 BAKKEN OIL EXPRESS PIPELINE	
DESIGNED BY: S. IRWIN		
DATE: 2/21/2014		
CHECKED BY: FOSTER		
PROJECT NO: 1713140		
DATE: 07	16" VALVE SETTING WITH FUTURE PLAN VIEW STARK & DUNN COUNTY, NORTH DAKOTA	4585 Coleman Street Bismarck, ND 58503 <small>© KLJ 2014</small>

**16" VALVE SETTING
PLAN AND PROFILE VIEW
DETAIL "B"**



- DESIGN CODES:**
1. AMERICAN CONCRETE INSTITUTE (ACI) 318-11: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
- DESIGN LOADS:**
1. LIVE LOADS:
1.1. MAXIMUM VALVE LOAD 15,000 #
- MATERIAL PROPERTIES:**
CONCRETE PROPERTIES, 28-DAY COMPRESSIVE STRENGTH:
1. FOUNDATION WALLS, PIERS & FOOTINGS 3,000 PSI
REINFORCING PROPERTIES:
1. REINFORCING BARS 60 KSI
STRUCTURAL STEEL:
1. HEADED ANCHOR RODS (ASTM F1554) 36 KSI
- SOILS AND FOUNDATIONS:**
1. THE FOUNDATION HAS BEEN DESIGNED FOR AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF AS PER IBC 2012 TABLE 1806.2 AND USGS WEB SOIL SURVEY CLASS "CL" SOILS. A GEOTECHNICAL ENGINEER SHALL VERIFY SOIL CONDITION AND DESIGN ASSUMPTIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED TO COMPLY WITH OSHA STANDARDS.
3. PROTECT BOTTOM OF EXCAVATIONS AND SOIL ADJACENT TO AND BENEATH FOUNDATION FROM FREEZING.
4. CONTRACTOR IS RESPONSIBLE FOR DEWATERING FOUNDATION DURING CONSTRUCTION.
- CONCRETE:**
1. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS AND PIERS UNLESS OTHERWISE NOTED.
2. CONCRETE REINFORCING SHALL BE DETAILED AS PER THE CRSI MANUAL OF STANDARD PRACTICE.
3. CONCRETE SHALL BE PROTECTED FROM FREEZING DURING CONSTRUCTION.
4. CONCRETE SHALL NOT BE PLACED ON SATURATED OR FROZEN SOIL.
5. WATER SHALL NOT BE ADDED TO THE CONCRETE ON SITE.
6. REINFORCING SHALL BE FREE OF LOOSE RUST AND MILL SCALE. EARTH, ICE AND OTHER FOREIGN MATERIALS THAT WOULD REDUCE BOND TO CONCRETE.
7. CONCRETE CONTRACTOR SHALL COORDINATE LOCATION OF EMBEDDED ITEMS BY OTHER DISCIPLINES WITH GENERAL CONTRACTOR.

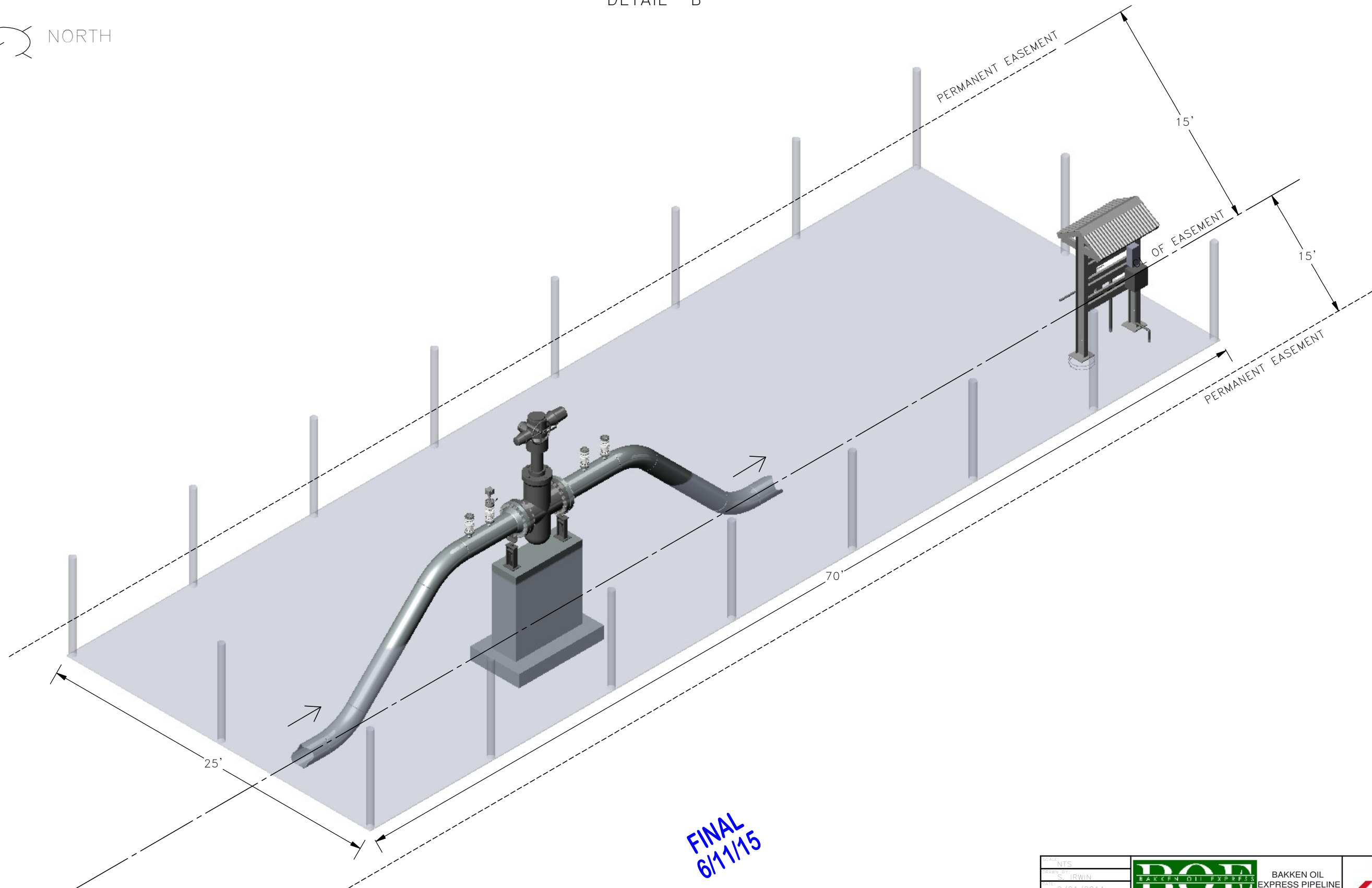
NOTE:
SUB-ASSEMBLY PRE-FABRICATION BY THIRD PARTY. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SUB-ASSEMBLIES.

AS-CONSTRUCTED

**FINAL
6/11/15**

SCALE: NTS	BOE BAKKEN OIL EXPRESS	BAKKEN OIL EXPRESS PIPELINE	
DATE: 2/21/2014			
DESIGNED BY: EDSTER	KDU&CAYC, &P, LLH 1		KLJ PROJECT NO: 1713140
CHECKED BY: HOWARD	6YAL &R &6NV"HY, &CH G		
DATE: 1713140	PLAN &R &OF I I &EVFI LWS&I VNLT &OA VLA		KLJ PROJECT NO: 1713140

16" VALVE SETTING
ISOMETRIC VIEW
DETAIL "B"

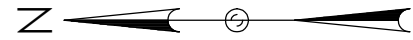


FINAL
6/11/15

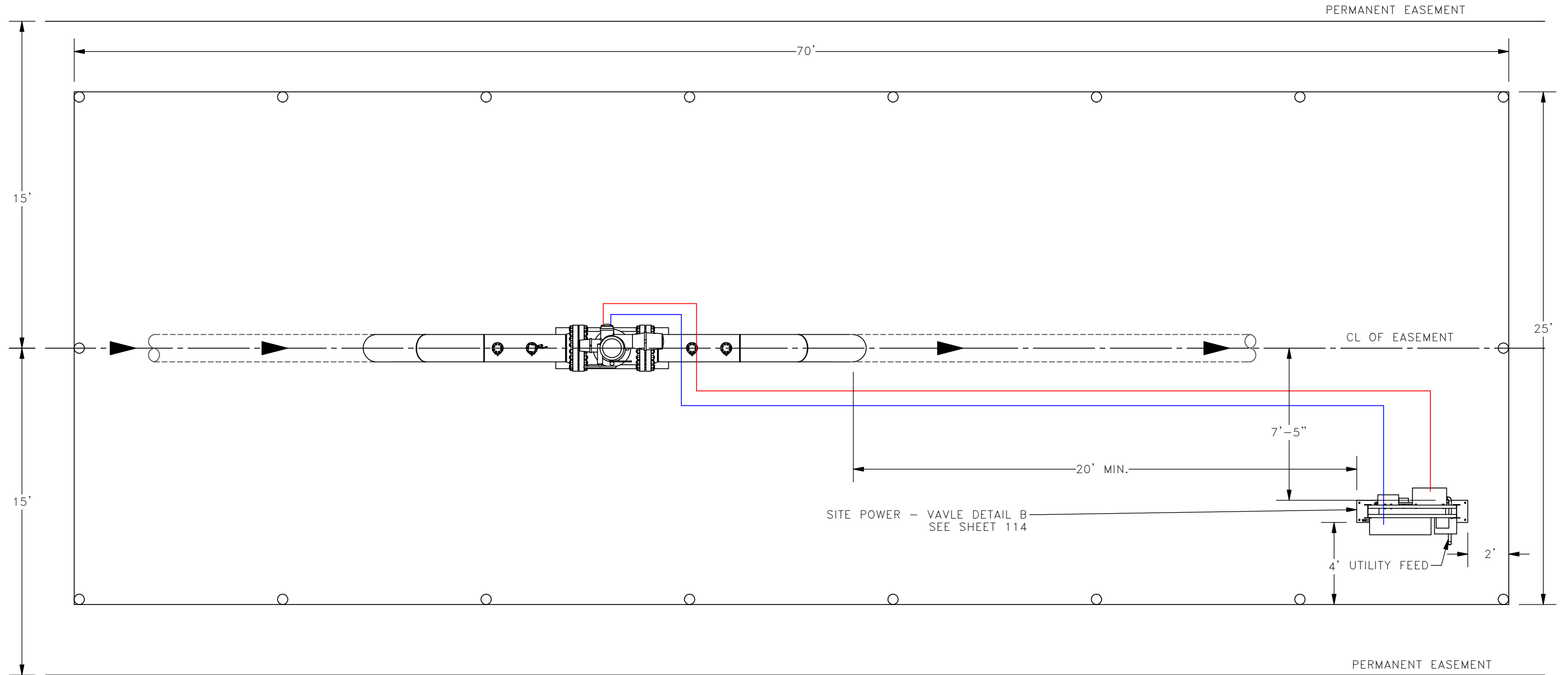
AS-CONSTRUCTED

SCALE: NTS	 BAKKEN OIL EXPRESS PIPELINE	
DATE: 2/21/2014		
DESIGNER: FOSTER	KDU&CAYC, &P, LLH 1 HPVM, LN&CH G	<small> ni el 88 rHC 2i 8 c03E: KJIC 23-48 o 8 el m © NEBkm </small>
CLIENT: HOWARD		
PROJECT: 1713140		
DATE: 6/11/15	PLAN &R &OF I I &EVFI LWS&d VNLT &OA VLA	

16" VALVE SETTING
 PLAN VIEW
 DETAIL "B"



— 1 1/2" RMC (POWER)
 — 1 1/4" RMC (COMMUNICATION)

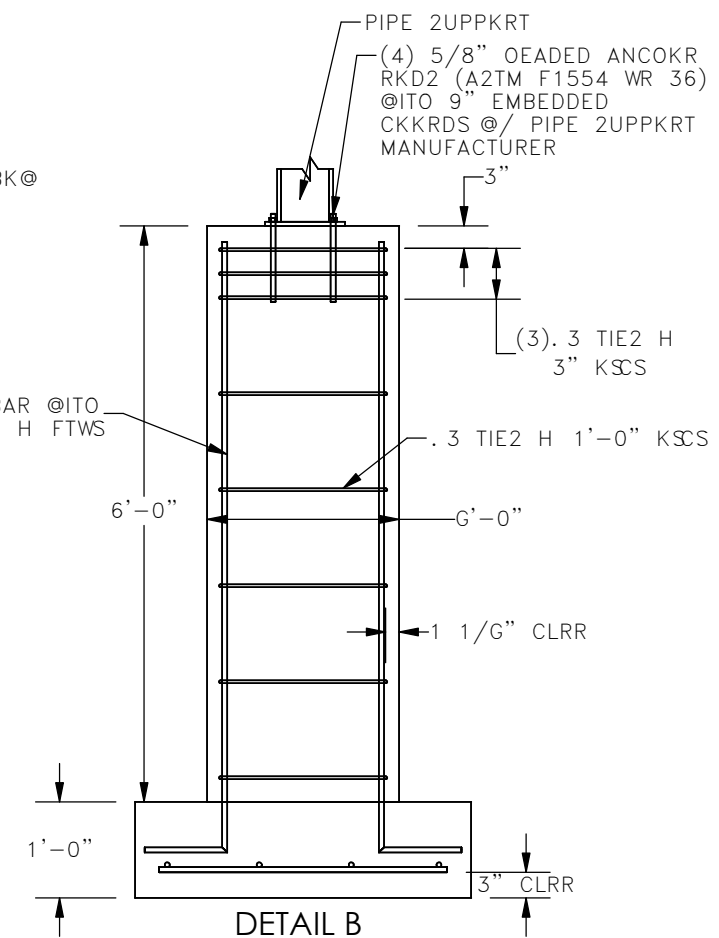
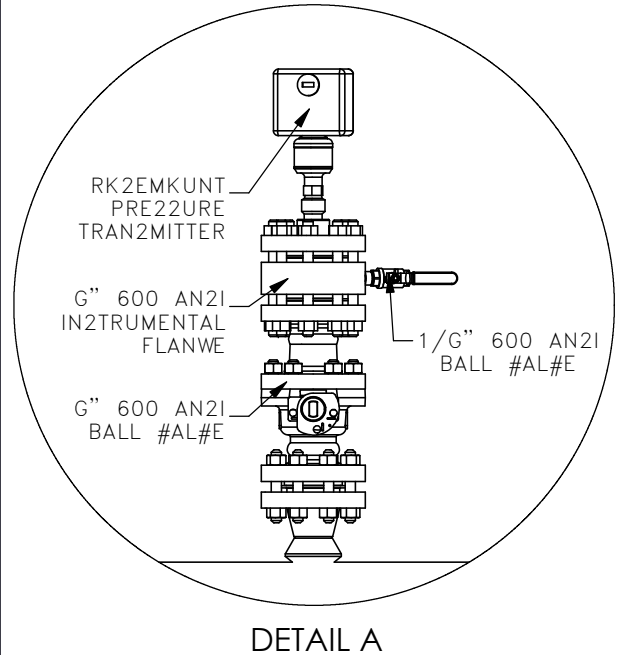
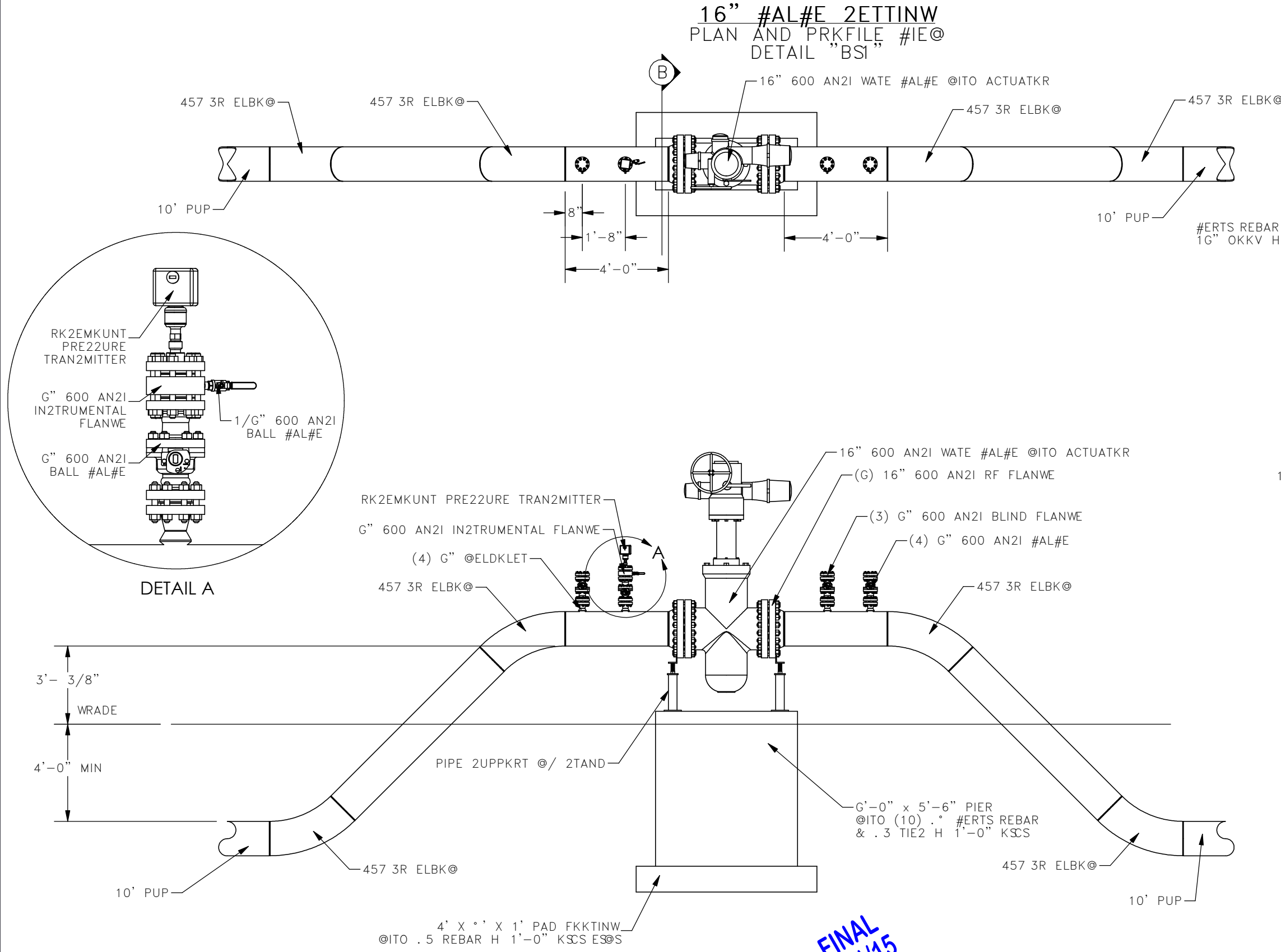


FINAL
 6/11/15

AS-CONSTRUCTED

SCALE: NTS		BAKKEN OIL EXPRESS PIPELINE	
DATE: 2/21/2014			
DESIGNER: G. EDSTER	KDU&CAYC, &P, LLH 1		
CHECKER: T. HOWARD	6YAI &CH G		
PROJECT NO: 1713140	PLAN &R &OF I I &EVFI LWS&d VNLT &OA VLA		
SCALE: 100	<small> n l e l 8 8 r H C 2 i 8 c l R E K J C 2 0 1 4 5 8 o 8 e l m m © NEB km m </small>		

16" #AL#E 2ETTINW
PLAN AND PRKFILE #IE@
DETAIL "BSI"



- DESIGN CODES:**
1. AMERICAN CONCRETE INSTITUTE (ACI) 318-11: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
- DESIGN LOADS:**
1. LIVE LOADS:
1.1. MAXIMUM VALVE LOAD 15,000 #
- MATERIAL PROPERTIES:**
CONCRETE PROPERTIES, 28-DAY COMPRESSIVE STRENGTH:
1. FOUNDATION WALLS, PIERS & FOOTINGS 3,000 PSI
REINFORCING PROPERTIES:
1. REINFORCING BARS 60 KSI
STRUCTURAL STEEL:
1. HEADED ANCHOR RODS (ASTM F1554) 36 KSI
- SOILS AND FOUNDATIONS:**
1. THE FOUNDATION HAS BEEN DESIGNED FOR AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF AS PER IBC 2012 TABLE 1806.2 AND USGS WEB SOIL SURVEY CLASS "CL" SOILS. A GEOTECHNICAL ENGINEER SHALL VERIFY SOIL CONDITION AND DESIGN ASSUMPTIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED TO COMPLY WITH OSHA STANDARDS.
3. PROTECT BOTTOM OF EXCAVATIONS AND SOIL ADJACENT TO AND BENEATH FOUNDATION FROM FREEZING.
4. CONTRACTOR IS RESPONSIBLE FOR DEWATERING FOUNDATION DURING CONSTRUCTION.
- CONCRETE:**
1. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS AND PIERS UNLESS OTHERWISE NOTED.
2. CONCRETE REINFORCING SHALL BE DETAILED AS PER THE CRSI MANUAL OF STANDARD PRACTICE.
3. CONCRETE SHALL BE PROTECTED FROM FREEZING DURING CONSTRUCTION.
4. CONCRETE SHALL NOT BE PLACED ON SATURATED OR FROZEN SOIL.
5. WATER SHALL NOT BE ADDED TO THE CONCRETE ON SITE.
6. REINFORCING SHALL BE FREE OF LOOSE RUST AND MILL SCALE, EARTH, ICE AND OTHER FOREIGN MATERIALS THAT WOULD REDUCE BOND TO CONCRETE.
7. CONCRETE CONTRACTOR SHALL COORDINATE LOCATION OF EMBEDDED ITEMS BY OTHER DISCIPLINES WITH GENERAL CONTRACTOR.

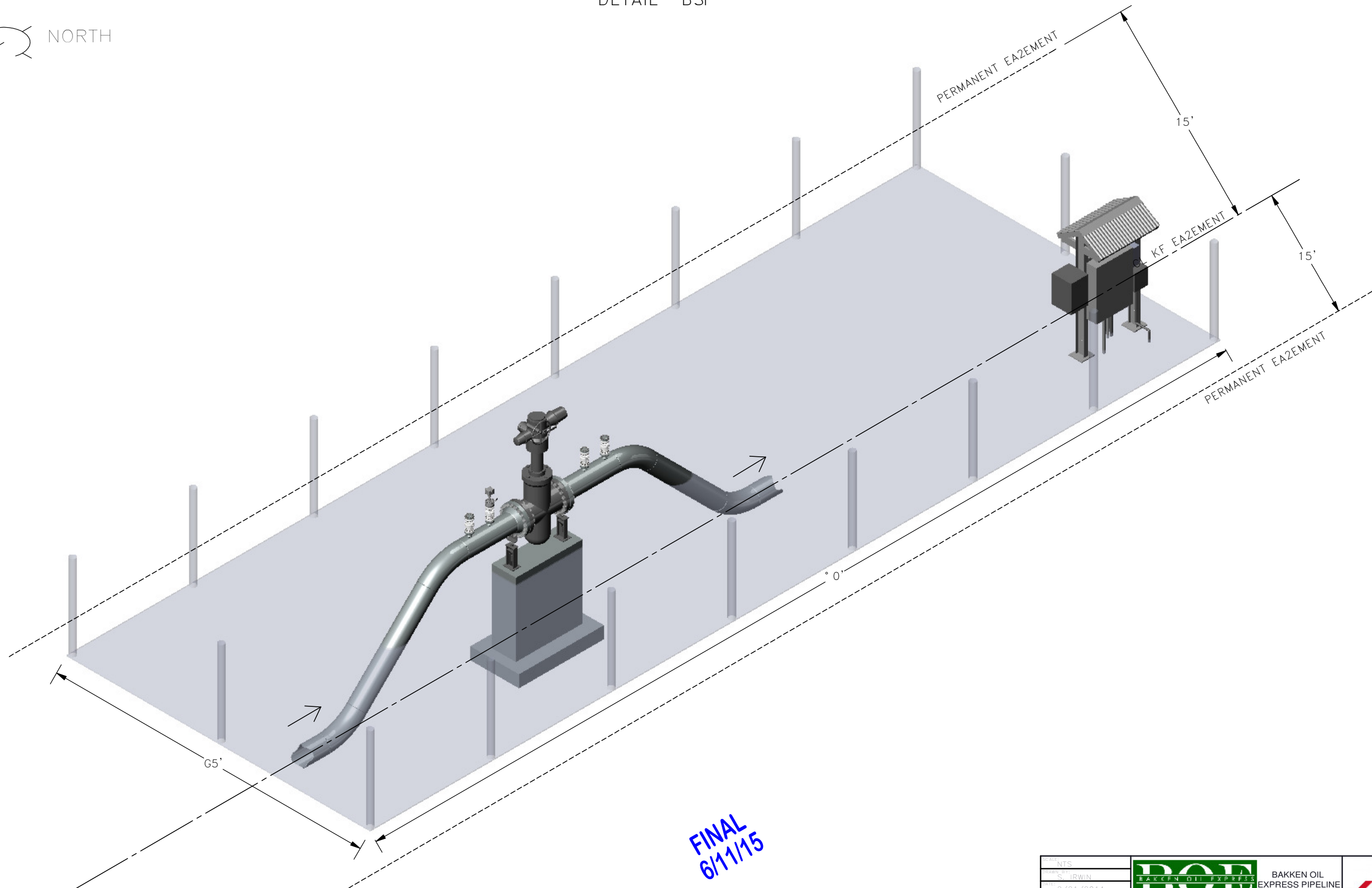
FINAL
6/11/15

AS-CONSTRUCTED

NKTE:
2UB-A22EMBLY PRE-FABRICATIKN BY
TOIRD PARTYS CKNTRACTKR RE2PKN2IBLE
FKR IN2TALLATIKN KF 2UB-A22EMBLIE2S

SCALE: NTS	 BAKKEN OIL EXPRESS EXPRESS PIPELINE	 KLJ
DESIGNED BY: S. IRWIN		
DATE: 2/21/2014		
DESIGNED BY: G. EDSTER		
DATE: 1/13/14		
SCALE: 10:1	KDU&CAYC, &P, LLH 1 6YAL &R 6NV"Y, &CH G PLAN &R OF I I &EVFI LWS&d VNLT &OA VLA	nl el 88 r&K 2i 8 d&R: KJC 2014-8 0 8 el m © NEB km

16" #AL#E 2ETTINW
 12KMETRIC #IE@
 DETAIL "BS1"

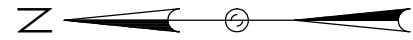


FINAL
 6/11/15

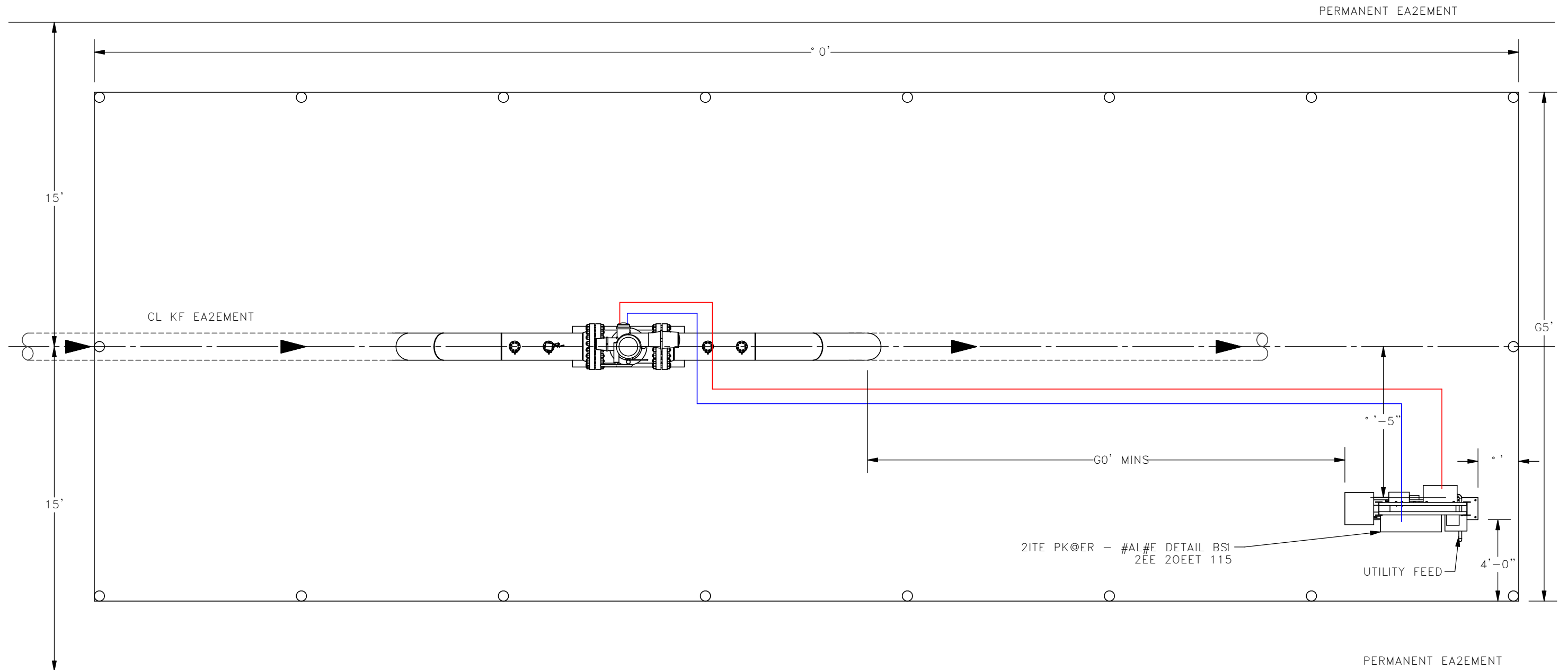
AS-CONSTRUCTED

SCALE: NTS	 BAKKEN OIL EXPRESS PIPELINE	
DATE: 2/21/2014		
DESIGNER: FOSTER	KDU&CAYC, &P, LLHI 1 HPVM, LNHE&CH G PLAN &R &OF I I &EVFI LWS&d VNLT &OA VLA	<small>© 2015 KLJ</small>
CLIENT: HOWARD		
PROJECT: 1713140		
REVISION: 102		

16" #AL#E 2ETTINW
 PLAN #E@
 DETAIL "BSI"



— 1 1/4" RMC (PK@ER)
 — 1 1/4" RMC (CKMMUNICATIKN)

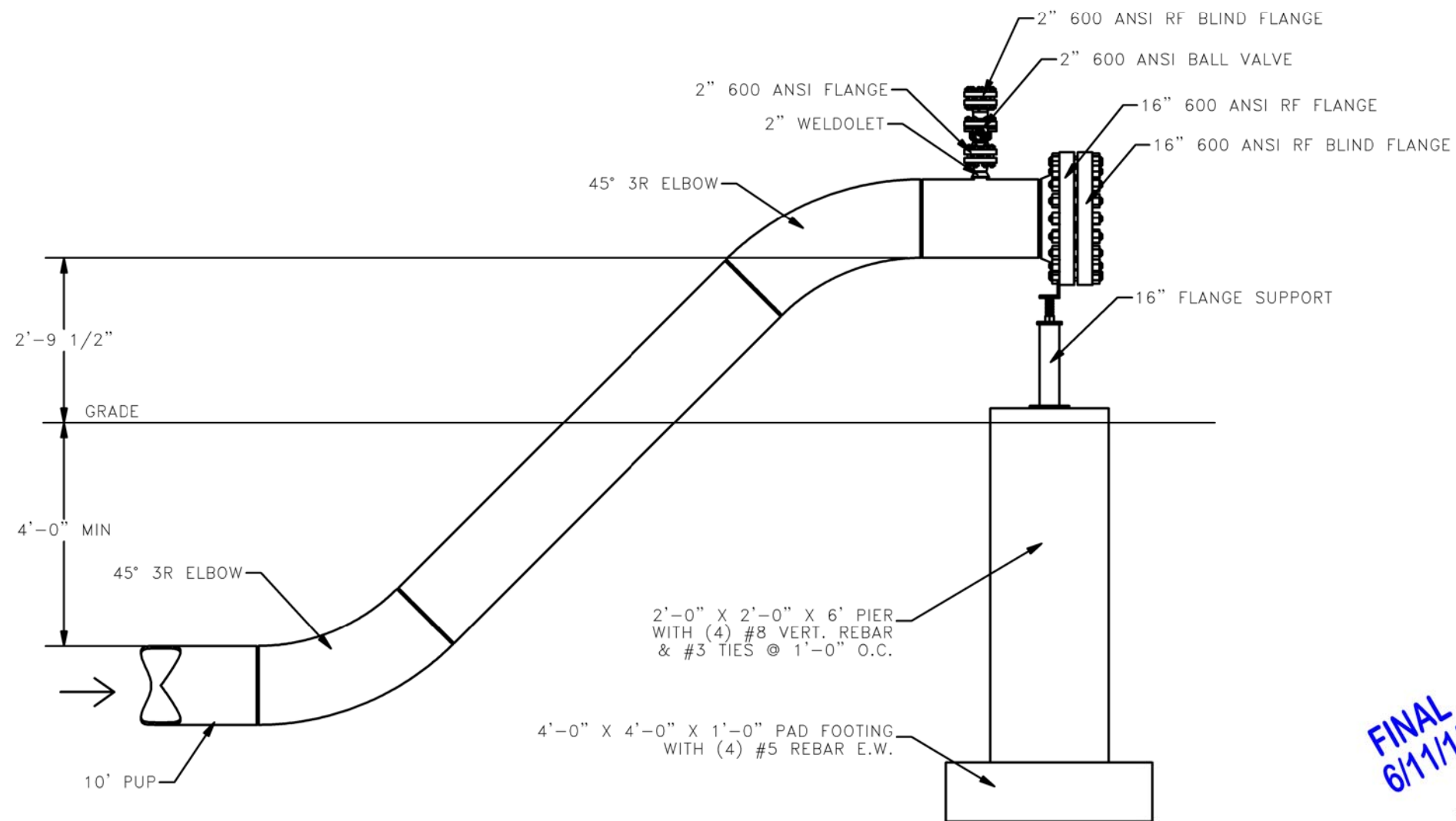
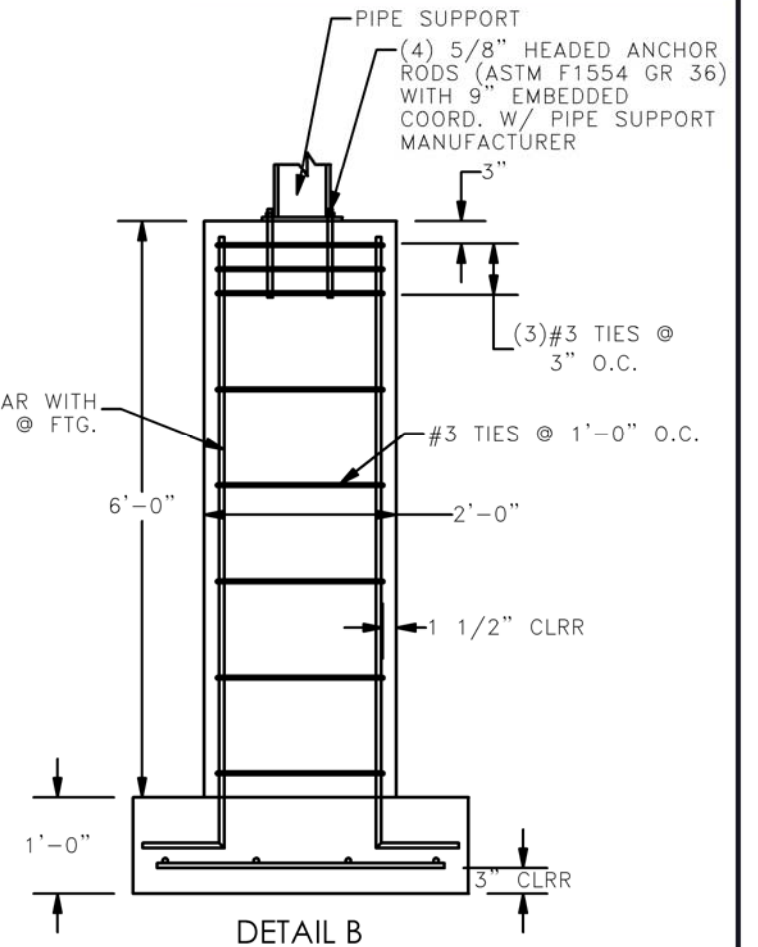
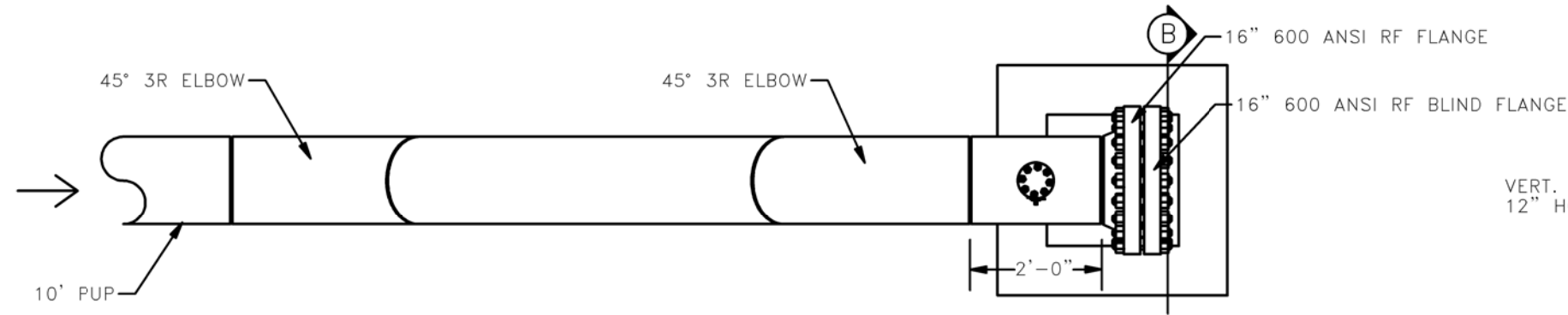


FINAL
 6/11/15

AS-CONSTRUCTED

SCALE: NTS		BAKKEN OIL EXPRESS PIPELINE	
DATE: 2/21/2014			
DESIGNER: G. EDSTER	KDU&CAYC, &P, LLH 1 6YAI &CH G		<small> n l e l 8 8 r H C 2 i 8 c l F E K J C 2 0 1 4 5 8 o 8 e l m m © NEB km n </small>
PROJECT: 1713140	PLAN &R &OF I I &EVFI LWS&d VNL T &OA VLA		

16" RISER DETAIL
PLAN AND PROFILE VIEW
DETAIL "C"



DESIGN CODES:
 1. AMERICAN CONCRETE INSTITUTE (ACI) 318-11: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

DESIGN LOADS:
 1. LIVE LOADS:
 1.1. MAXIMUM VALVE LOAD 15,000 #

MATERIAL PROPERTIES:
 CONCRETE PROPERTIES, 28-DAY COMPRESSIVE STRENGTH:
 1. FOUNDATION WALLS, PIERS & FOOTINGS 3,000 PSI
 REINFORCING PROPERTIES:
 1. REINFORCING BARS 60 KSI
 STRUCTURAL STEEL:
 1. HEADED ANCHOR RODS (ASTM F1554) 36 KSI

SOILS AND FOUNDATIONS:
 1. THE FOUNDATION HAS BEEN DESIGNED FOR AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF AS PER IBC 2012 TABLE 1806.2 AND USGS WEB SOIL SURVEY CLASS "CL" SOILS. A GEOTECHNICAL ENGINEER SHALL VERIFY SOIL CONDITION AND DESIGN ASSUMPTIONS PRIOR TO CONSTRUCTION.
 2. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED TO COMPLY WITH OSHA STANDARDS.
 3. PROTECT BOTTOM OF EXCAVATIONS AND SOIL ADJACENT TO AND BENEATH FOUNDATION FROM FREEZING.
 4. CONTRACTOR IS RESPONSIBLE FOR DEWATERING FOUNDATION DURING CONSTRUCTION.

CONCRETE:
 1. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS AND PIERS UNLESS OTHERWISE NOTED.
 2. CONCRETE REINFORCING SHALL BE DETAILED AS PER THE CRSI MANUAL OF STANDARD PRACTICE.
 3. CONCRETE SHALL BE PROTECTED FROM FREEZING DURING CONSTRUCTION.
 4. CONCRETE SHALL NOT BE PLACED ON SATURATED OR FROZEN SOIL.
 5. WATER SHALL NOT BE ADDED TO THE CONCRETE ON SITE.
 6. REINFORCING SHALL BE FREE OF LOOSE RUST AND MILL SCALE, EARTH, ICE AND OTHER FOREIGN MATERIALS THAT WOULD REDUCE BOND TO CONCRETE.
 7. CONCRETE CONTRACTOR SHALL COORDINATE LOCATION OF EMBEDDED ITEMS BY OTHER DISCIPLINES WITH GENERAL CONTRACTOR.

FINAL
6/11/15

NOTE:
 SUB-ASSEMBLY PRE-FABRICATION BY THIRD PARTY. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SUB-ASSEMBLIES.

AS-CONSTRUCTED

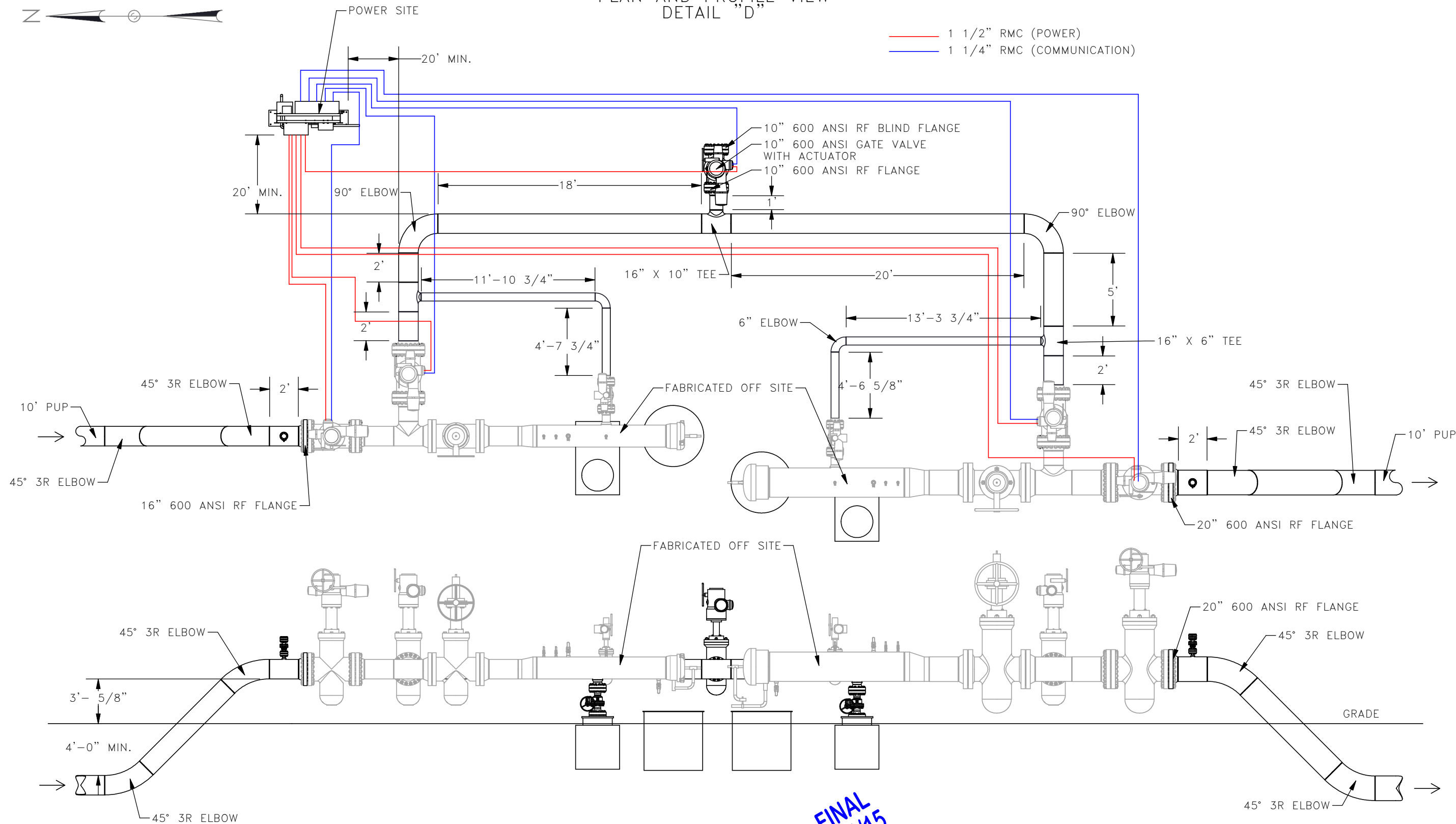
SCALE: NTS	BOE BAKKEN OIL EXPRESS	BAKKEN OIL EXPRESS PIPELINE	
DESIGNED BY: S. IRWIN			
DATE: 2/21/2014	16" RISER DETAIL PLAN & PROFILE VIEW		
DRAWN BY: EDOSTER			
CHECKED BY: T. HOWARD	STARK & DUNN COUNTY, NORTH DAKOTA		
KLJ JOB NUMBER: 1713140	4585 Coleman Street Bismarck, ND 58503		
REVISION: 104	© KLJ 2014		

20" X 16" TRUE OIL VALVE SETTING

PLAN AND PROFILE VIEW
DETAIL "D"



— 1 1/2" RMC (POWER)
— 1 1/4" RMC (COMMUNICATION)



NOTE:
SUB-ASSEMBLY PRE-FABRICATION BY
THIRD PARTY. CONTRACTOR RESPONSIBLE
FOR INSTALLATION OF SUB-ASSEMBLIES.

AS-CONSTRUCTED

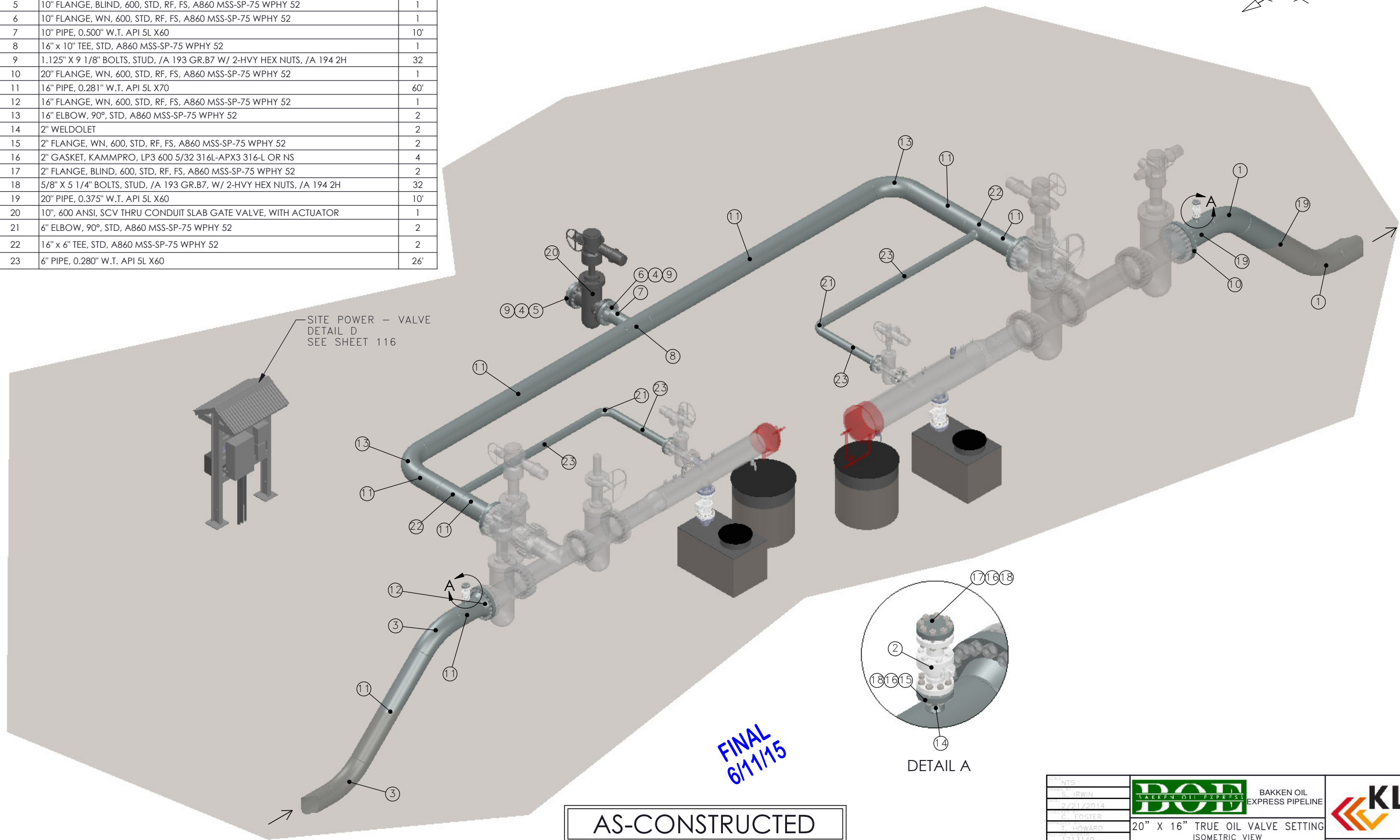
FINAL
6/11/15

DATE	NTS	 BAKKEN OIL EXPRESS PIPELINE	
BY	S. IRWIN		
DATE	2/21/2014		
BY	G. FOSTER		
DATE	T. HOWARD		
PROJECT NO.	1713140	20" X 16" TRUE OIL VALVE SETTING PLAN & PROFILE VIEW	
SCALE	10E	STARK & DUNN COUNTY, NORTH DAKOTA	<small> n1 el 8 r HC 21 8 d ffr KJC 2014 08 08 el m © NEB kmn </small>

ITEM NO.	DESCRIPTION	QTY.
1	20" ELBOW, 45°, 3R, STD, A860 MSS-SP-75 WPHY 52	2
2	2" 600 ANSI, BALON BALL VALVE	2
3	16" ELBOW, 45°, 3R, STD, A860 MSS-SP-75 WPHY 52	2
4	10" GASKET, KAMMPRO, LP3 600 5/32 316L-APX3 316-L OR NS	2
5	10" FLANGE, BLIND, 600, STD, RF, FS, A860 MSS-SP-75 WPHY 52	1
6	10" FLANGE, WN, 600, STD, RF, FS, A860 MSS-SP-75 WPHY 52	1
7	10" PIPE, 0.500" W.T. API 5L X60	10'
8	16" x 10" TEE, STD, A860 MSS-SP-75 WPHY 52	1
9	1.125" X 9 1/8" BOLTS, STUD, /A 193 GR.B7 W/ 2-HVY HEX NUTS, /A 194 2H	32
10	20" FLANGE, WN, 600, STD, RF, FS, A860 MSS-SP-75 WPHY 52	1
11	16" PIPE, 0.281" W.T. API 5L X70	60'
12	16" FLANGE, WN, 600, STD, RF, FS, A860 MSS-SP-75 WPHY 52	1
13	16" ELBOW, 90°, STD, A860 MSS-SP-75 WPHY 52	2
14	2" WELDOLET	2
15	2" FLANGE, WN, 600, STD, RF, FS, A860 MSS-SP-75 WPHY 52	2
16	2" GASKET, KAMMPRO, LP3 600 5/32 316L-APX3 316-L OR NS	4
17	2" FLANGE, BLIND, 600, STD, RF, FS, A860 MSS-SP-75 WPHY 52	2
18	5/8" X 5 1/4" BOLTS, STUD, /A 193 GR.B7, W/ 2-HVY HEX NUTS, /A 194 2H	32
19	20" PIPE, 0.375" W.T. API 5L X60	10'
20	10", 600 ANSI, SCV THRU CONDUIT SLAB GATE VALVE, WITH ACTUATOR	1
21	6" ELBOW, 90°, STD, A860 MSS-SP-75 WPHY 52	2
22	16" x 6" TEE, STD, A860 MSS-SP-75 WPHY 52	2
23	6" PIPE, 0.280" W.T. API 5L X60	26'

20" X 16" TRUE OIL VALVE SETTING

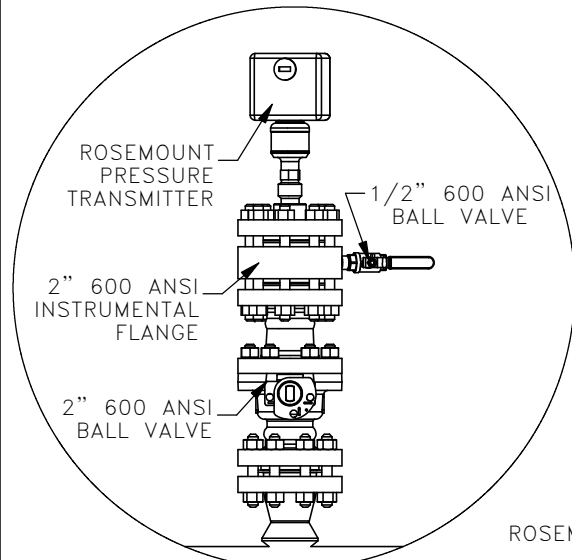
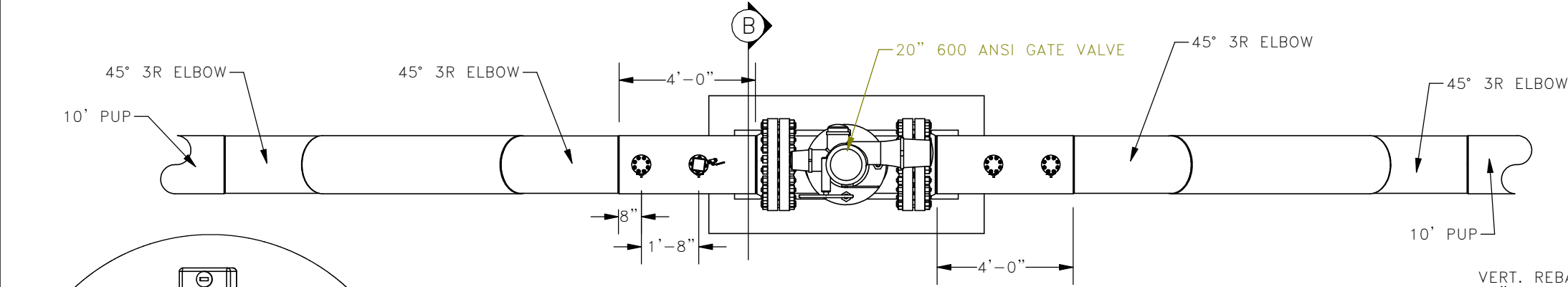
ISOMETRIC VIEW DETAIL "D"



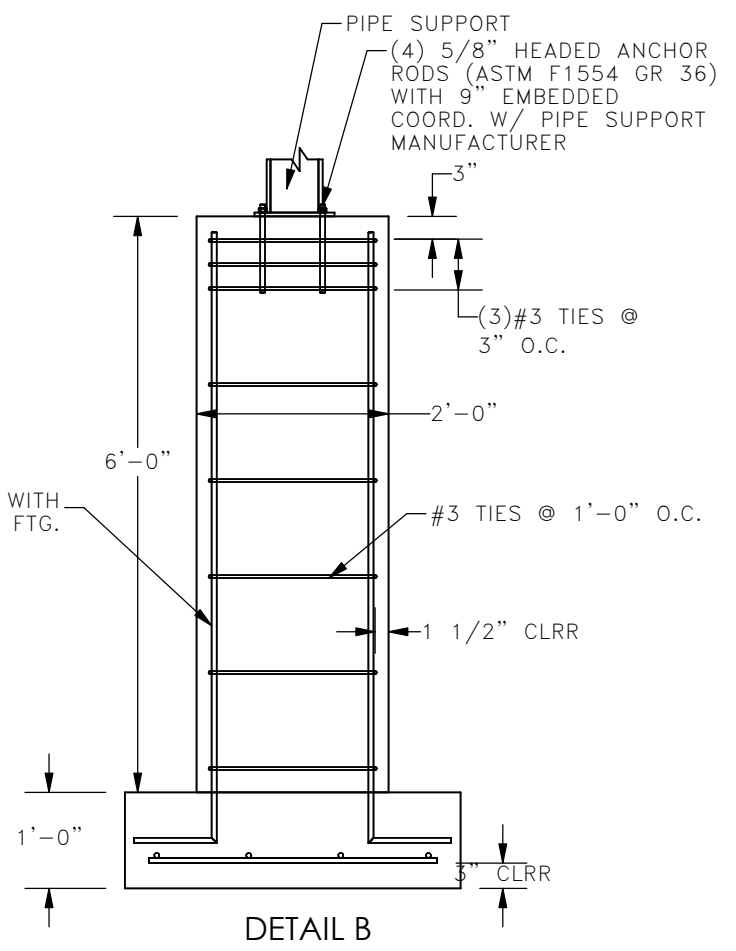
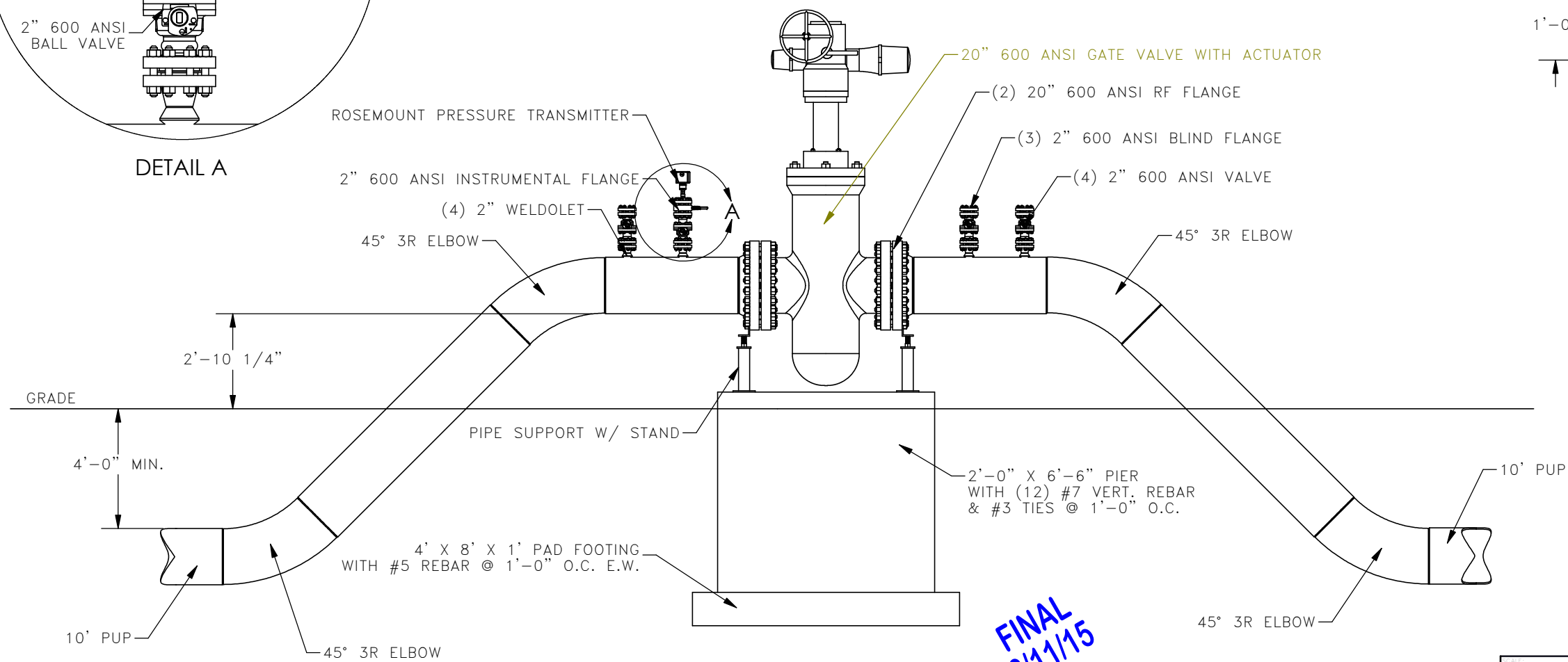
AS-CONSTRUCTED

DATE: NTS DRAWN BY: S. IRWIN DATE: 2/21/2014 CHECKED BY: G. FOSTER DATE: 1/15/2014 PROJECT NO: 1713140	 BAKKEN OIL EXPRESS PIPELINE	 KLJ
20" X 16" TRUE OIL VALVE SETTING ISOMETRIC VIEW		STARK & DUNN COUNTY, NORTH DAKOTA <small>KLJ CONSULTANTS & ENGINEERS 1713140-08.dwg</small>

**20" VALVE SETTING
PLAN AND PROFILE VIEW
DETAIL "E"**



DETAIL A



DETAIL B

- DESIGN CODES:**
1. AMERICAN CONCRETE INSTITUTE (ACI) 318-11: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
- DESIGN LOADS:**
1. LIVE LOADS:
1.1. MAXIMUM VALVE LOAD 15,000 #
- MATERIAL PROPERTIES:**
CONCRETE PROPERTIES, 28-DAY COMPRESSIVE STRENGTH:
1. FOUNDATION WALLS, PIERS & FOOTINGS 3,000 PSI
REINFORCING PROPERTIES:
1. REINFORCING BARS 60 KSI
STRUCTURAL STEEL:
1. HEADED ANCHOR RODS (ASTM F1554) 36 KSI
- SOILS AND FOUNDATIONS:**
1. THE FOUNDATION HAS BEEN DESIGNED FOR AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF AS PER IBC 2012 TABLE 1806.2 AND USGS WEB SOIL SURVEY CLASS "CL" SOILS. A GEOTECHNICAL ENGINEER SHALL VERIFY SOIL CONDITION AND DESIGN ASSUMPTIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED TO COMPLY WITH OSHA STANDARDS.
3. PROTECT BOTTOM OF EXCAVATIONS AND SOIL ADJACENT TO AND BENEATH FOUNDATION FROM FREEZING.
4. CONTRACTOR IS RESPONSIBLE FOR DEWATERING FOUNDATION DURING CONSTRUCTION.
- CONCRETE:**
1. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS AND PIERS UNLESS OTHERWISE NOTED.
2. CONCRETE REINFORCING SHALL BE DETAILED AS PER THE CRSI MANUAL OF STANDARD PRACTICE.
3. CONCRETE SHALL BE PROTECTED FROM FREEZING DURING CONSTRUCTION.
4. CONCRETE SHALL NOT BE PLACED ON SATURATED OR FROZEN SOIL.
5. WATER SHALL NOT BE ADDED TO THE CONCRETE ON SITE.
6. REINFORCING SHALL BE FREE OF LOOSE RUST AND MILL SCALE, EARTH, ICE AND OTHER FOREIGN MATERIALS THAT WOULD REDUCE BOND TO CONCRETE.
7. CONCRETE CONTRACTOR SHALL COORDINATE LOCATION OF EMBEDDED ITEMS BY OTHER DISCIPLINES WITH GENERAL CONTRACTOR.

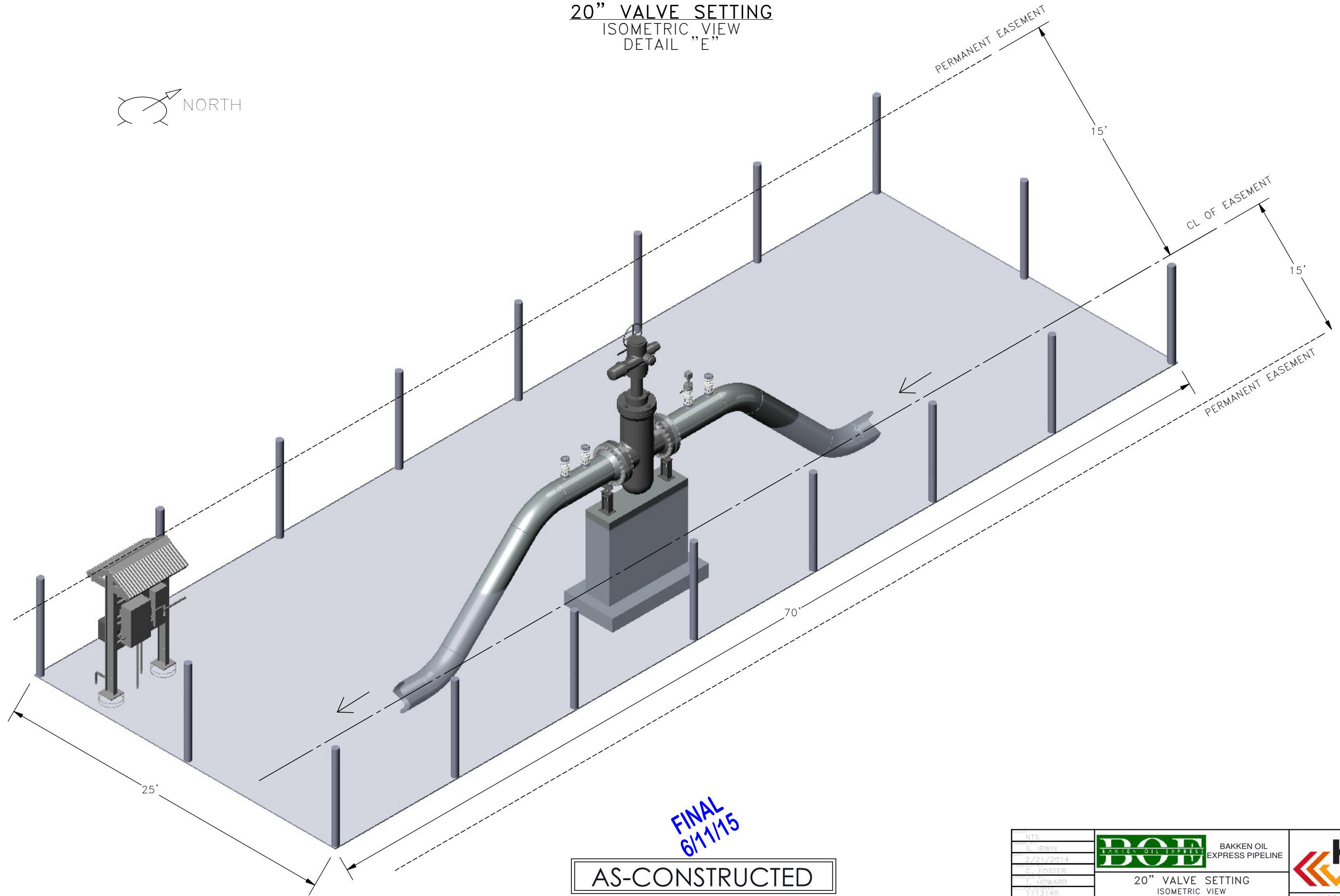
NOTE:
SUB-ASSEMBLY PRE-FABRICATION BY THIRD PARTY. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SUB-ASSEMBLIES.

AS-CONSTRUCTED

**FINAL
6/11/15**

SCALE: NTS	BOE BAKKEN OIL EXPRESS PIPELINE	
DATE: 2/21/2014		
DESIGNED BY: E. FOSTER	20" VALVE SETTING PLAN & PROFILE VIEW	
CHECKED BY: T. HOWARD	STARK & DUNN COUNTY, NORTH DAKOTA	
PROJECT NO: 1713140	4585 Coleman Street Bismarck, ND 58503	
DATE: 107	© KLJ 2014	

20" VALVE SETTING
ISOMETRIC VIEW
DETAIL "E"

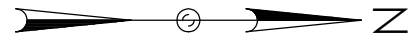


FINAL
6/11/15

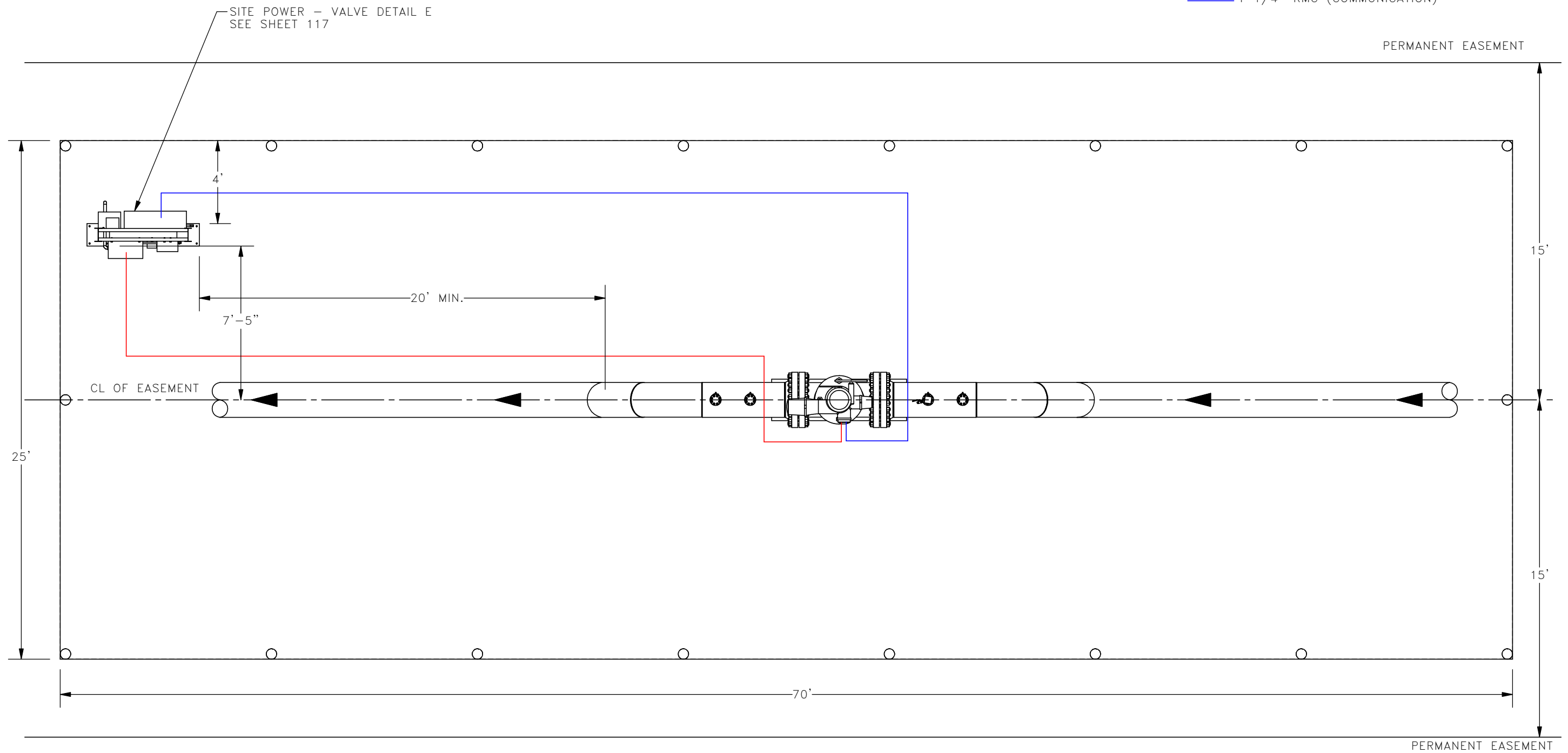
AS-CONSTRUCTED

NTS	 BAKKEN OIL EXPRESS PIPELINE	
S. IRWIN		
2/21/2014		
G. FOSTER		
T. HOWARD		
1713140	20" VALVE SETTING ISOMETRIC VIEW	4585 Coleman Street Bismarck, ND 58503
108	STARK & DUNN COUNTY, NORTH DAKOTA	© KLJ 2014

20" VALVE SETTING
 PLAN VIEW
 DETAIL "E"



— 1 1/2" RMC (POWER)
 — 1 1/4" RMC (COMMUNICATION)



FINAL
 6/11/15

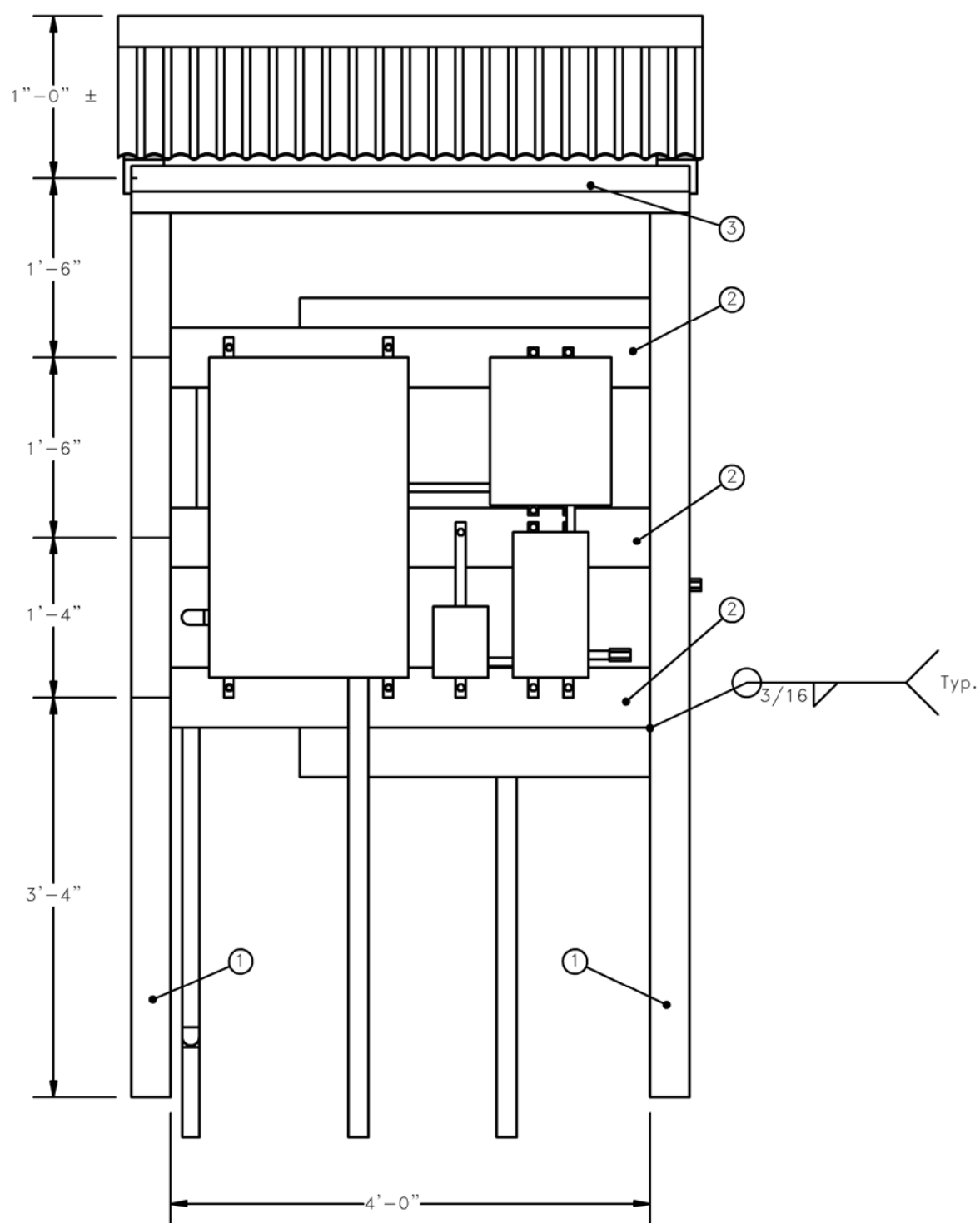
AS-CONSTRUCTED

DATE: NTS	 BAKKEN OIL EXPRESS PIPELINE	 4585 Coleman Street Bismarck, ND 58503 <small>©KLJ 2014</small>
BY: S. IRWIN		
DATE: 2/21/2014		
BY: G. FOSTER		
BY: T. HOWARD		
DATE: 1713140	20" VALVE SETTING PLAN VIEW STARK & DUNN COUNTY, NORTH DAKOTA	
SCALE: 1"=100'		

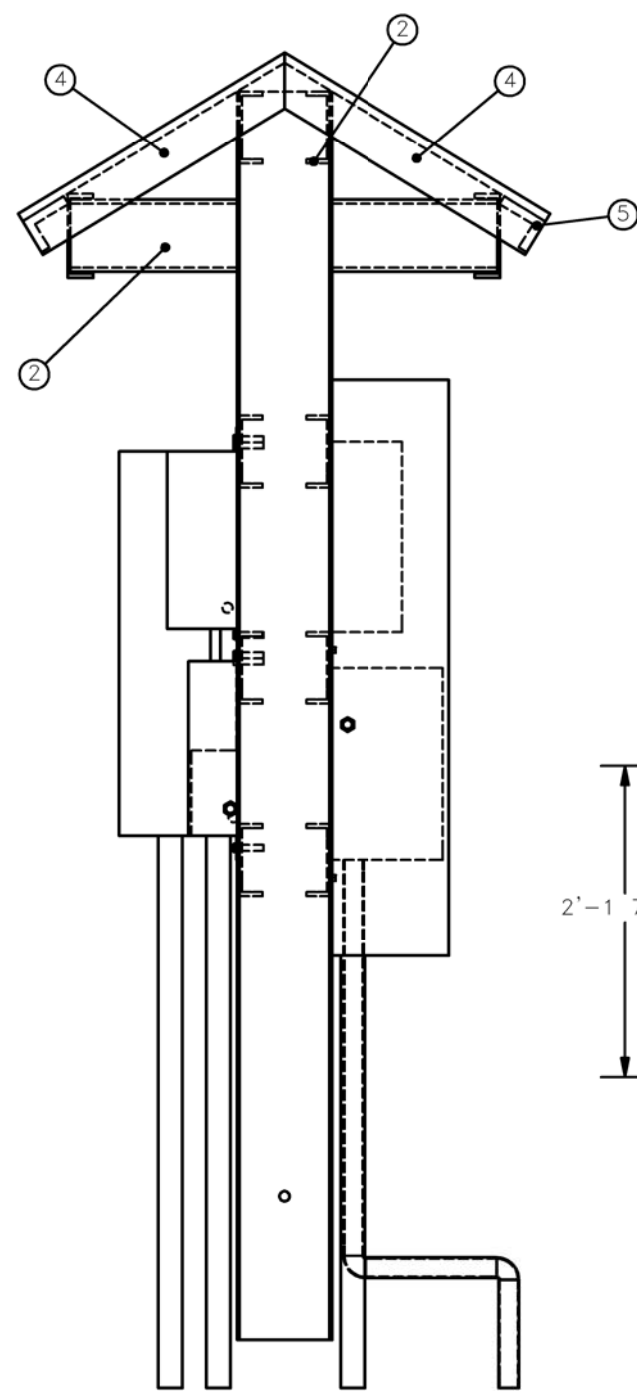
SITE POWER
FRAMING MOUNT PLAN AND PROFILE VIEW
DETAIL "A"

Structural Members	
1	W8X10
2	C6X8.2
3	C7X9.8
4	L4X4X3/4
5	L3X4X3/4
6	2 1/2" CORRUGATED METAL ROOF AND RIDGE

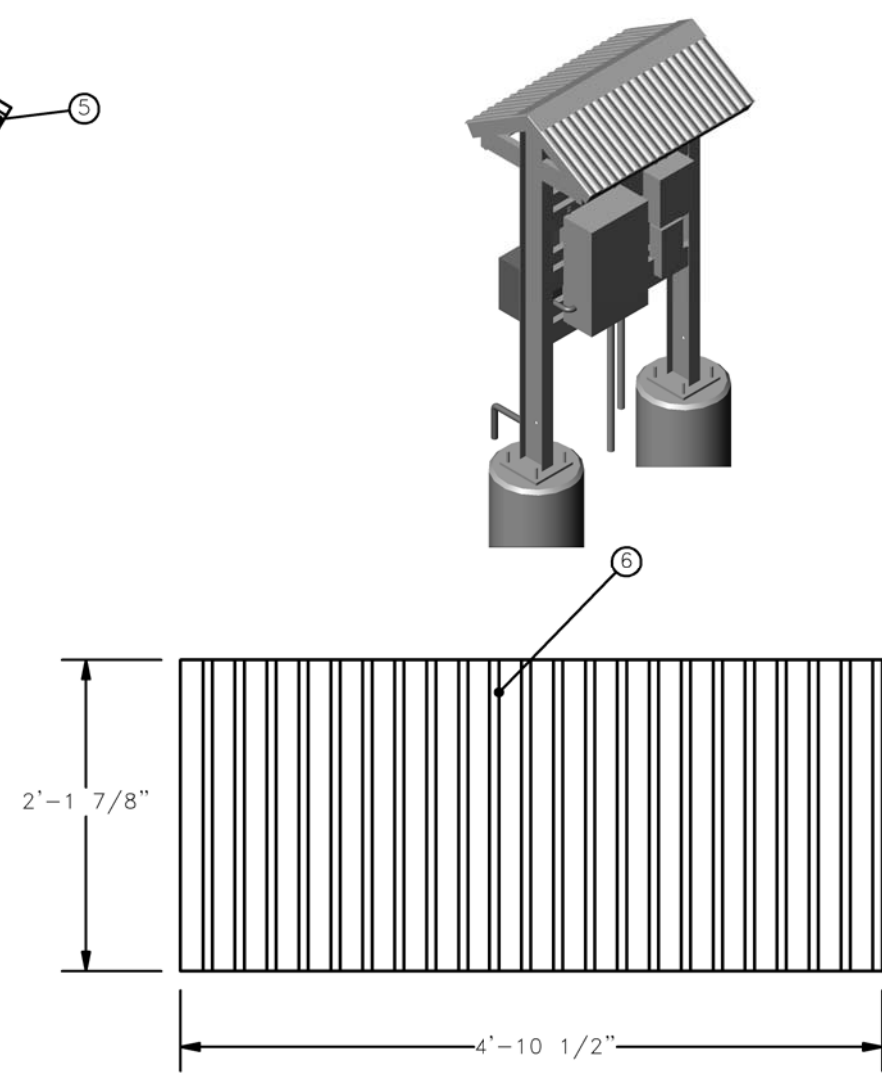
* See manufactures spec for attachment pattern



FRONT VIEW



SIDE VIEW



CORRUGATED METAL ROOF

FINAL
6/11/15

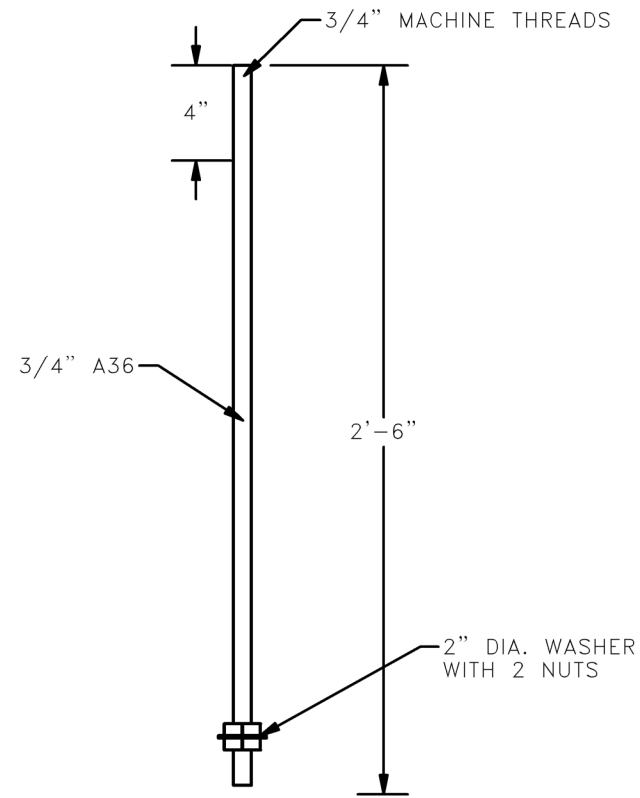
AS-CONSTRUCTED

SCALE: NTS DRAWN BY: S. IRWIN DATE: 2/21/2014 CHECKED BY: C. FOSTER APPROVED BY: T. HOWARD KL JOB NUMBER: 1713140 LAYOUT: 111	 BAKKEN OIL EXPRESS BAKKEN OIL EXPRESS PIPELINE	 4585 Coleman Street Bismarck, ND 58503 <small>© KLJ 2014</small>
SITE POWER FRAMING MOUNT PLAN & PROFILE VIEW STARK & DUNN COUNTY, NORTH DAKOTA		

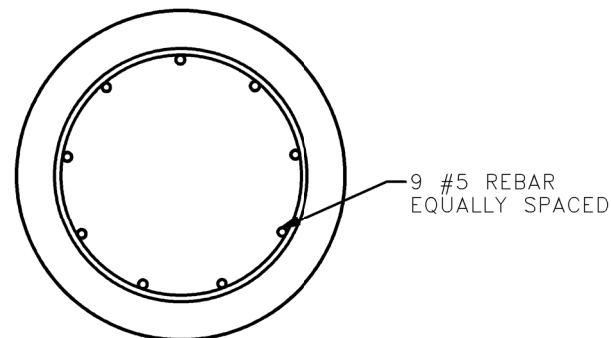
SITE POWER
CONCRETE AND REBAR
DETAIL "B"

NOTES

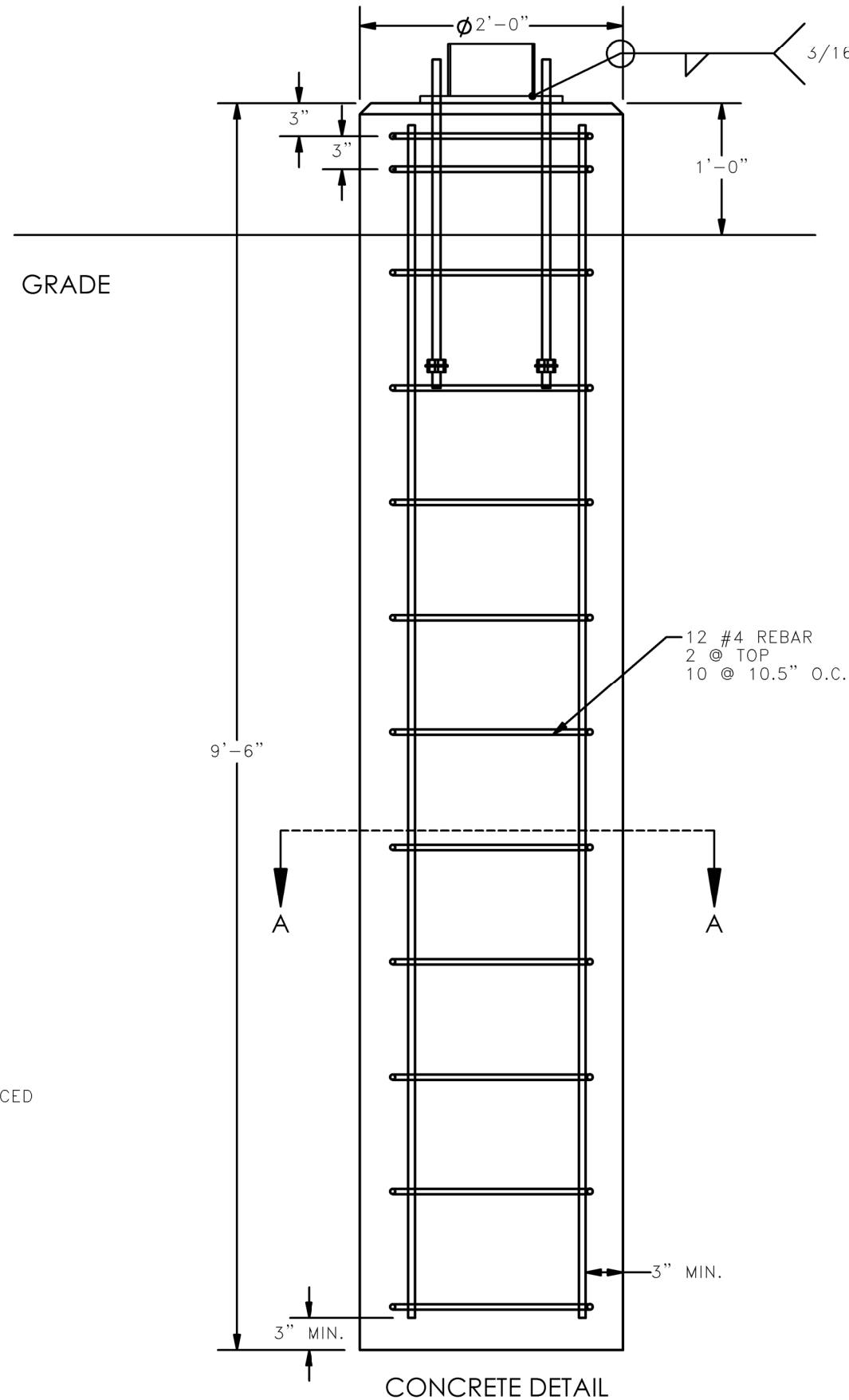
1. DRILLED PIER STANDARD: COMPLY WITH ACI 336.1, "SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS", UNLESS NOTED OTHERWISE. SLURRY DISPLACEMENT METHOD OF INSTALLATION WILL NOT BE PERMITTED.
2. OFFSET STAKING AND ANCHOR BOLT ALIGNMENT STAKING SHALL BE DONE BY KLJ.
3. LOCATE EXISTING UNDERGROUND UTILITIES BEFORE EXCAVATION FOR DRILLED PIERS.
4. REINFORCING BARS:
 - 4.1 CONFORM WITH ASTM A-615, GRADE 60, DEFORMED
 - 4.2 SPLICES AND LAP LENGTHS TO CONFORM TO ACI 318.
 - 4.3 HORIZONTAL/TIE REINFORCEMENT DIAMETER DIMENSIONS GIVEN ARE OUTSIDE TO OUTSIDE MEASUREMENT.
5. CONCRETE MATERIALS:
 - 5.1 CEMENT TO CONFORM TO ASTM C 150, TYPE 1, 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
 - 5.2 3/4" MAXIMUM AGGREGATE SIZE TO CONFORM TO ASTM C 33
 - 5.3 AIR-ENTRAINING ADMIXTURE TO CONFORM TO ASTM C 260 TO PRODUCE 4%-6% ENTRAINED AIR.
 - 5.4 POTABLE WATER COMPLYING WITH ASTM C 94 REQUIREMENTS
 - 5.5 SEE SPECIFICATIONS FOR TESTING REQUIREMENTS
6. ANCHOR BOLTS:
 - 6.1 TO BE BONDED TO REINFORCING STEEL WITH #6A COPPERWELD BARE STRANDED WIRE.
 - 6.2 COORDINATE PLACEMENT WITH ANCHOR BOLT AND STEEL POLE SHOP DRAWINGS.
7. CONCRETE PLACEMENT:
 - 7.1 TO BE PLACED IN ONE CONTINUOUS POUR.
 - 7.2 STEEL CASINGS TO BE USED IN UNSTABLE SOIL CONDITIONS AND MAY BE REMOVED AS CONCRETE IS PLACED. IF CASING IS LEFT IN PLACE, VOID AREA TO BE FILLED WITH ACCEPTABLE FLUID GROUT OR OTHER ACCEPTED MATERIAL.



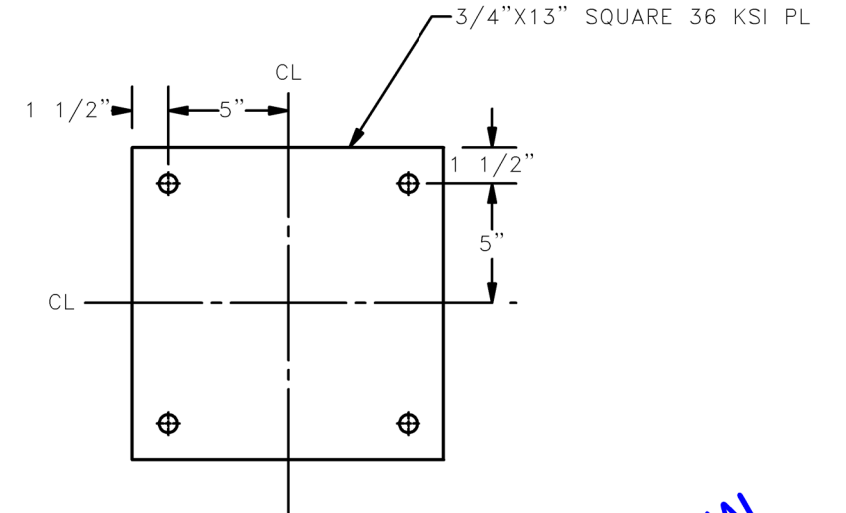
ANCHOR BOLT DETAIL



SECTION A-A
SCALE 1 : 14



CONCRETE DETAIL



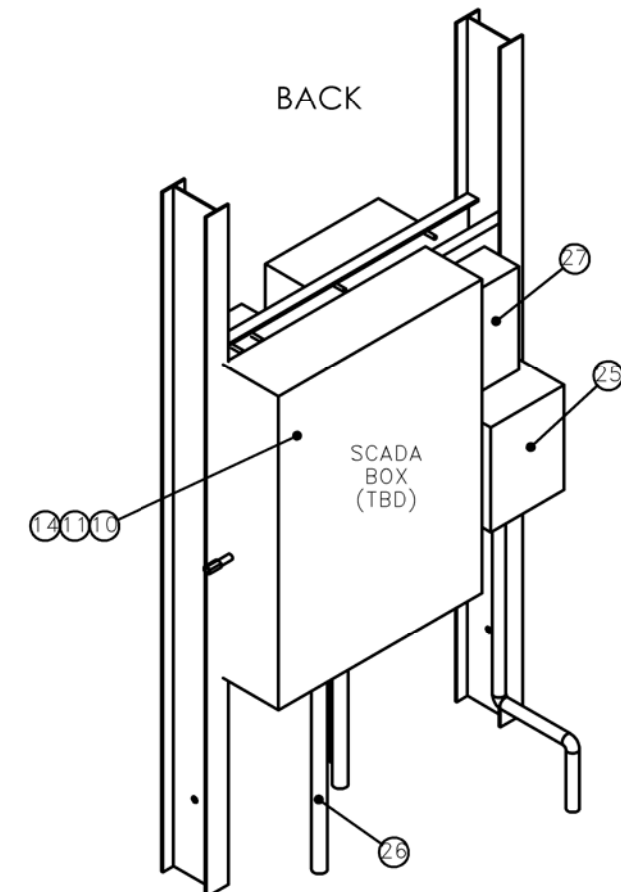
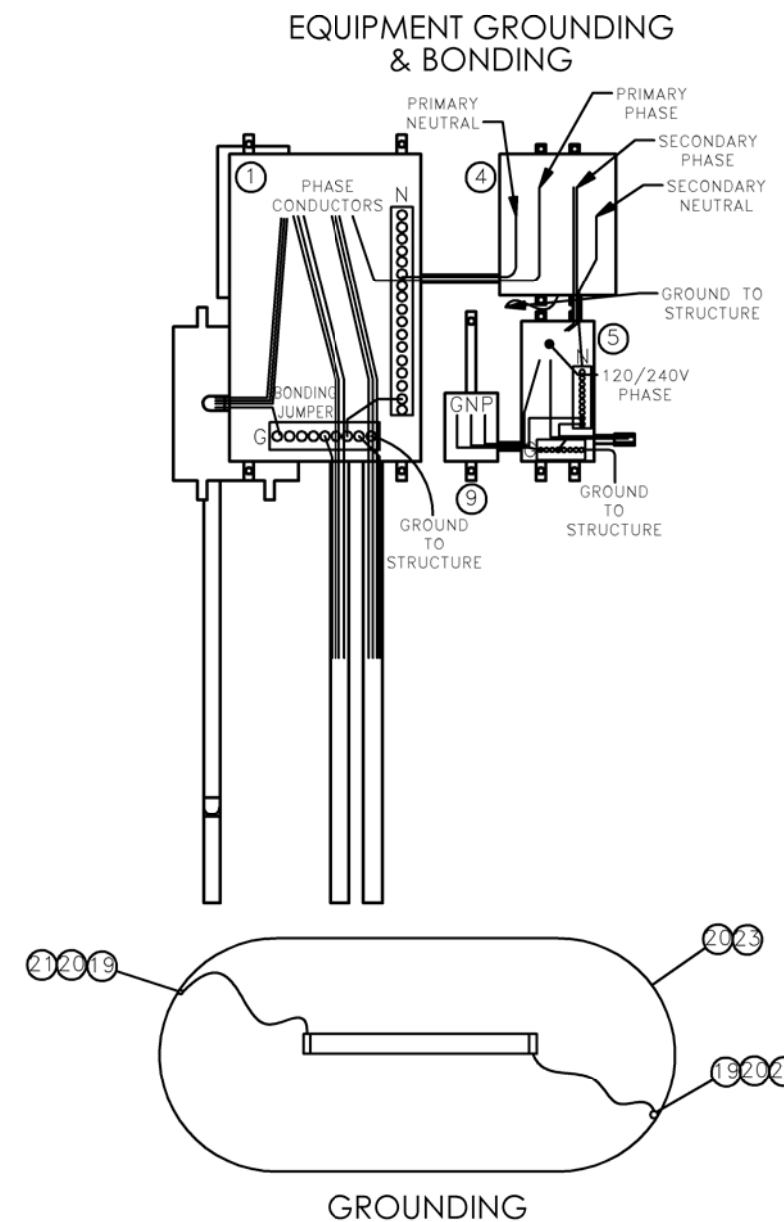
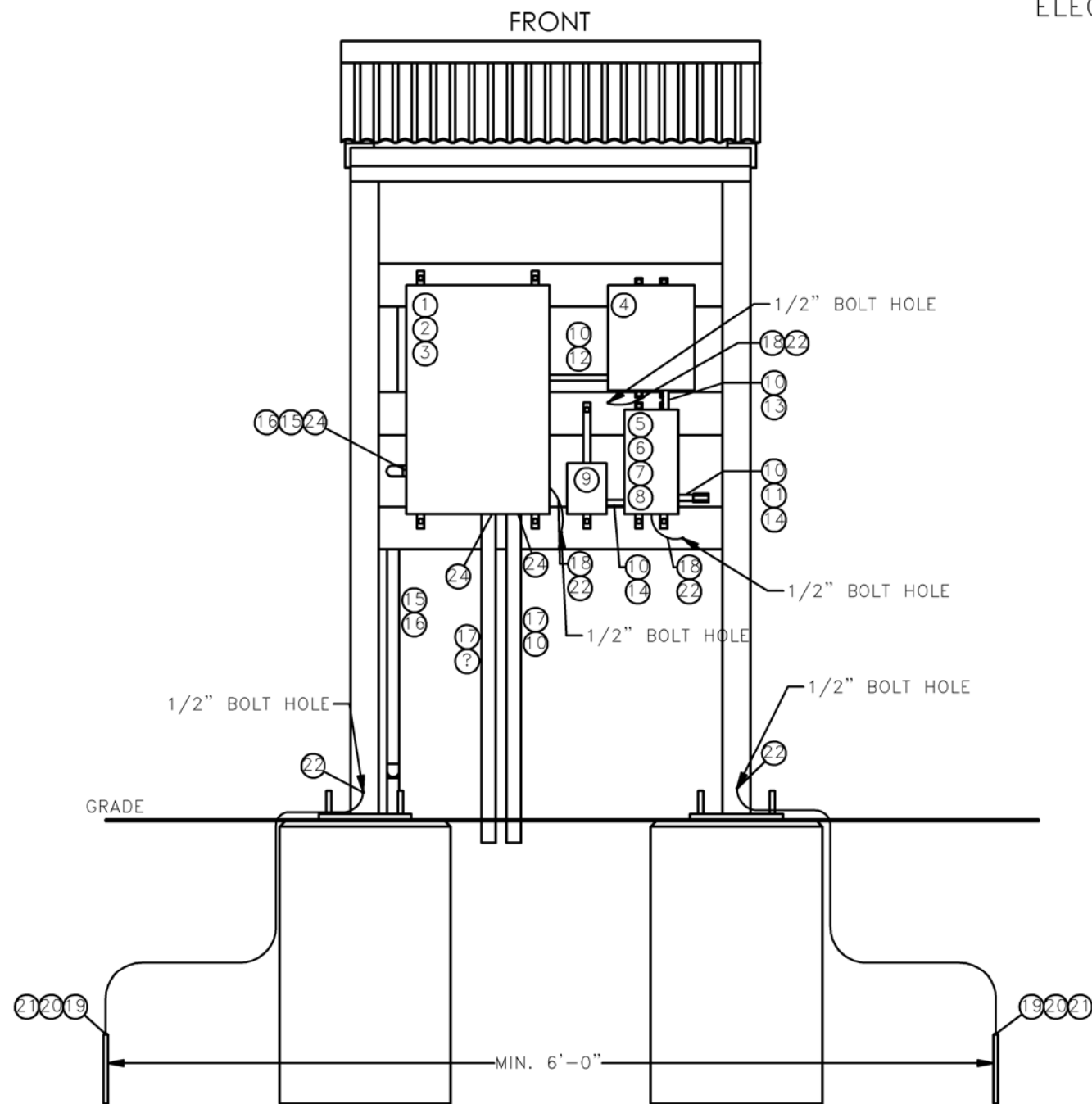
BASE PLATE DETAIL

AS-CONSTRUCTED

**FINAL
6/11/15**

SCALE: NTS	BOE BAKKEN OIL EXPRESS	BAKKEN OIL EXPRESS PIPELINE	
DRAWN BY: S. IRWIN			
DATE: 2/21/2014	SITE POWER CONCRETE & REBAR DETAILS STARK & DUNN COUNTY, NORTH DAKOTA		
CHECKED BY: C. FOSTER			
APPROVED BY: T. HOWARD	4585 Coleman Street Bismarck, ND 58503		
KLJ JOB NUMBER: 1713140	KLJ 2014		
REVISION: SHEET 12			

SITE POWER – VALVE DETAIL A
ELECTRICAL DETAILS
DETAIL "C"



**FINAL
6/1/15**

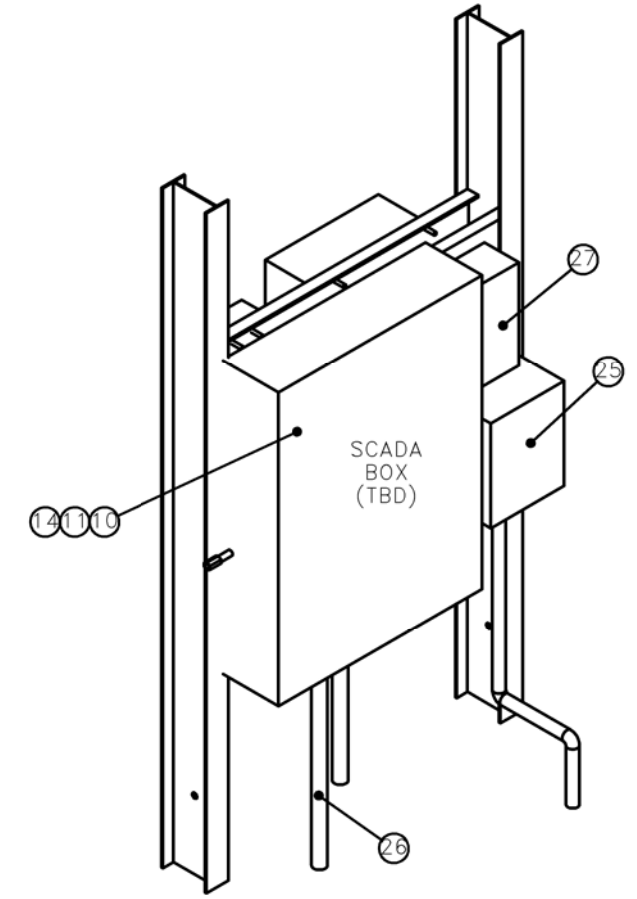
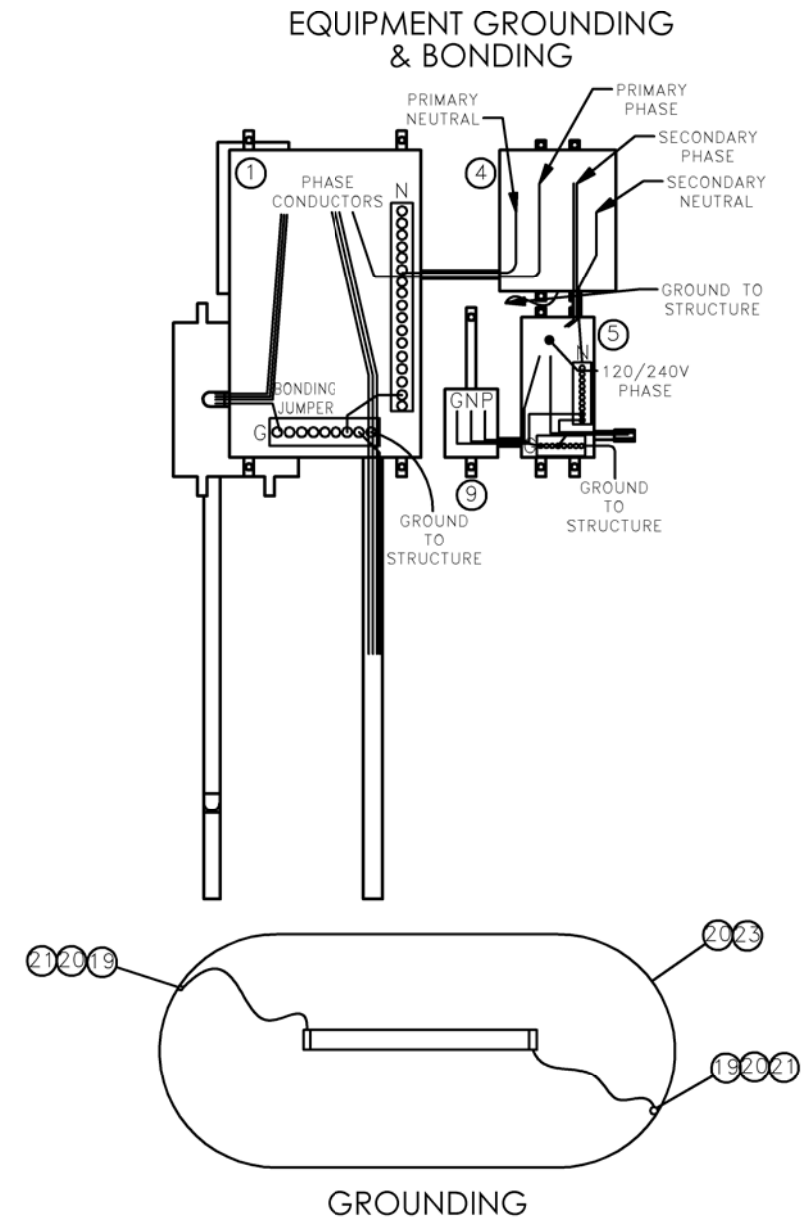
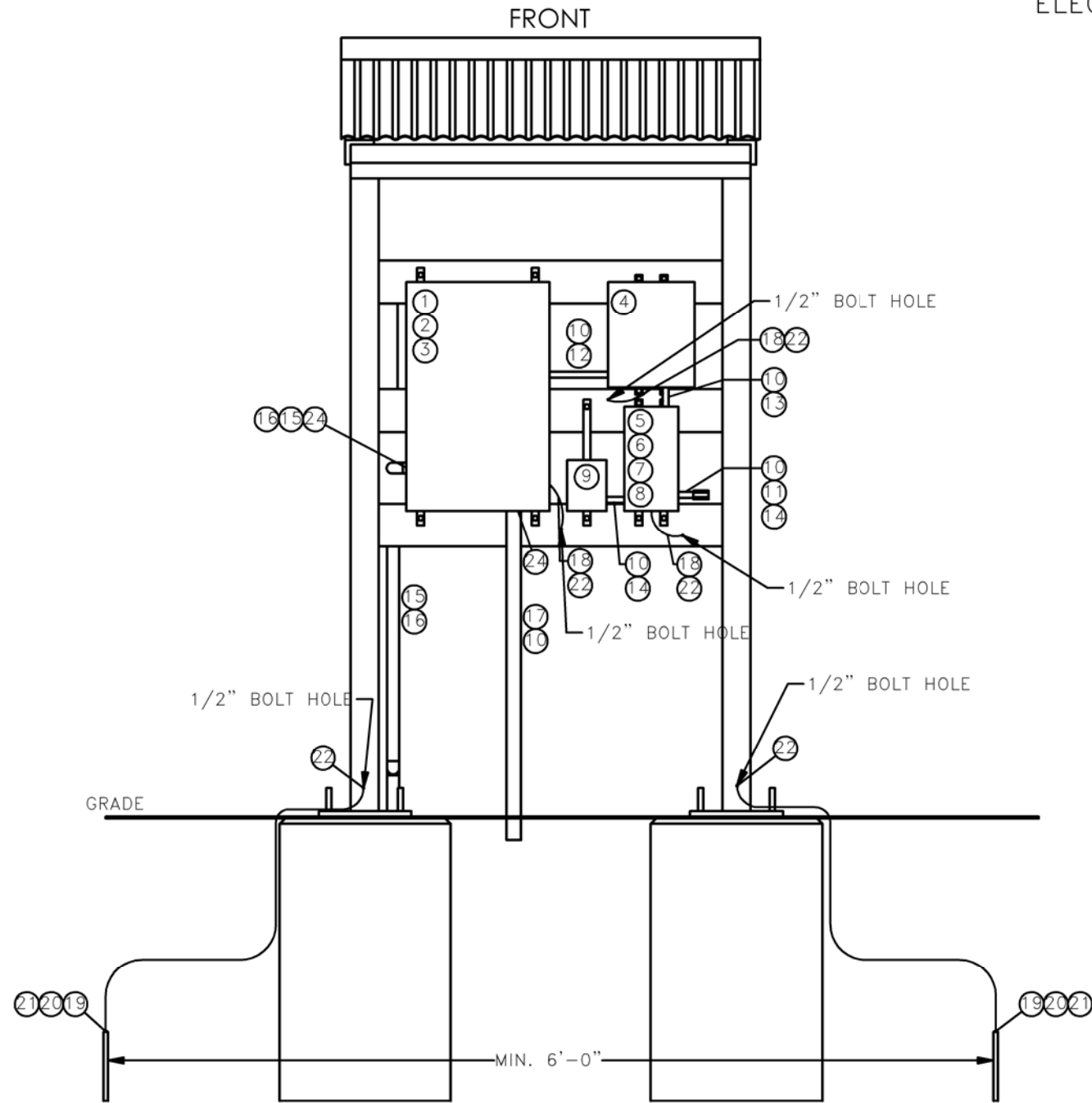
AS-CONSTRUCTED

#	QTY	DESCRIPTION	#	QTY	DESCRIPTION
1	1	480V PANEL - SIEMENS P1E18BQ100CBS (OR EQUAL)	15	1	#4 AL QUADRAPLEX 600V USE-2 CABLE CODENAME "TULSA"
2	2	20A/3P BREAKER - SIEMENS BQD320 (OR EQUAL)	16	-	1 1/2" RIGID METAL CONDUIT
3	1	30A/1P BREAKER - SIEMENS BQD130 (OR EQUAL)	17	4	#10 MTW CU 600V CABLE
4	1	277V - 120/240V DRY TYPE TRANSFORMER - SIEMENS 1E1U005 (OR EQUAL)	18	-	#2 THWN CU 600V CABLE - GREEN PER NEC FOR GROUNDING
5	1	120/240V PANEL - SIEMENS W0816ML1125CU (OR EQUAL)	19	2	5/8" X 8' COPPER CLAD STEEL GROUND ROD - HARGER 588 (OR EQUAL)
6	1	30A/2P 120/240V MAIN BREAKER - SIEMENS Q230 (OR EQUAL)	20	-	#6 BARE COPPER GROUNDING CONDUCTOR
7	1	QP RETAINER CLIP - SIEMENS ECMBR1 (OR EQUAL)	21	2	#6 CU TO 5/8" GROUND ROD EXOTHERMIC CONNECTOR
8	2	20A/1P SWITCHED NEUTRAL BREAKER - SIEMENS QG220 (OR EQUAL)	22	5	#6 CU TO SUPPORT STRUCTURE - EXOTHERMIC CONNECTION
9	1	OUTDOOR RECEPTACLE ASSEMBLY - MIDWEST ELECTRIC U010010 (OR EQUAL)	23	2	#6 CU TO #6 CU COMPRESSION CONNECTOR
10	-	1/2" RIGID METAL CONDUIT	24	4	CONDUIT SEAL
11	2	1/2" LB TYPE CONDUIT BODY - KILLARK OLB-1M (OR EQUAL)	25	1	4-POLE 100 AMP CONTRACTOR, SIEMENS CLM2E04120 (OR EQUAL)
12	2	#10 THWN CU 600V CABLE	26	-	1 1/4" RIGID METAL CONDUIT, COMMUNICATION
13	3	#10 THWN CU 600V CABLE	27	1	PCR DECOUPLER
14	3	#12 THWN CU 600V CABLE			

- NOTES:**
- GROUND RING SHALL BE INSTALLED AT A DEPTH NO LESS THAN 18".
 - INSTALLATION TO BE PLACED 25' FROM OIL PIPELINE. INSTALLATION SHALL NOT BE CLOSER THAN 20' OR GREATER THAN 100'.

SCALE: NTS DRAWN BY: J. IRWIN DATE: 2/21/2014 CHECKED BY: EDOSTER APPROVED BY: T. HOWARD KJL JOB NUMBER: 1713140 REVISION: _____ SHEET: 112	<p>BAKKEN OIL EXPRESS EXPRESS PIPELINE</p>	<p>KLJ</p> <p style="font-size: x-small;">4585 Coleman Street Bismarck, ND 58503</p>
SITE POWER ELECTRICAL DETAILS STARK & DUNN COUNTY, NORTH DAKOTA		

SITE POWER – VALVE DETAIL B
ELECTRICAL DETAILS
DETAIL "C"



FINAL
6/11/15

AS-CONSTRUCTED

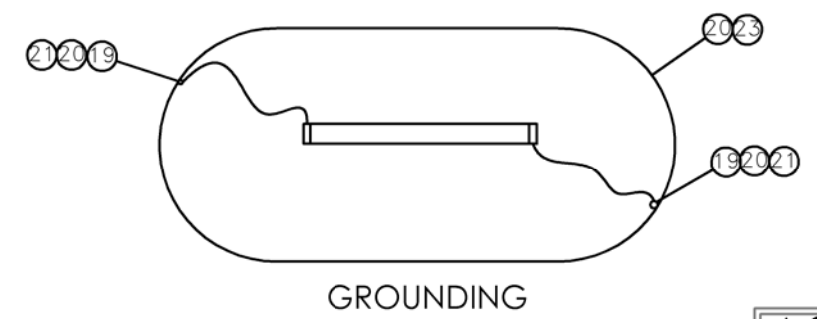
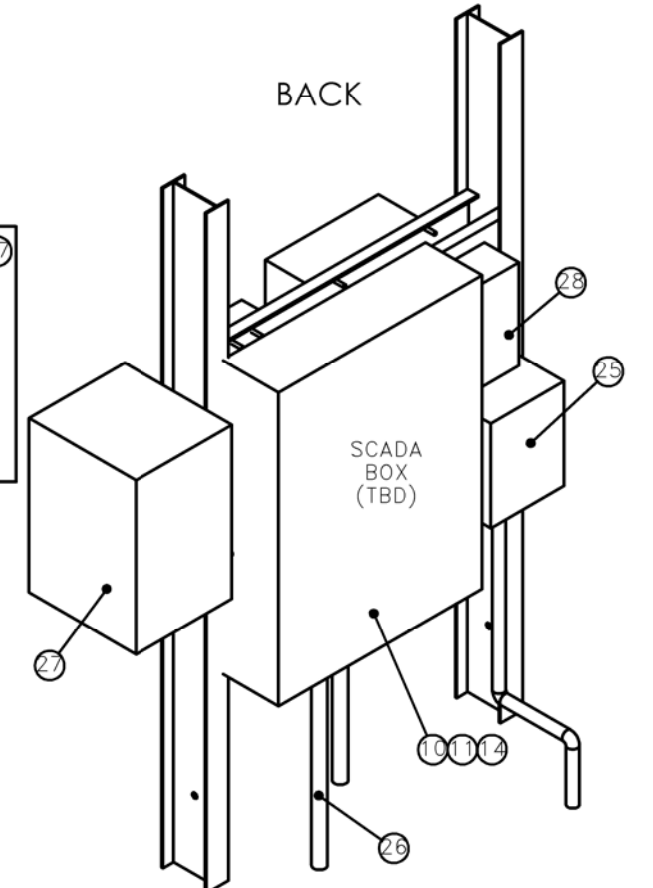
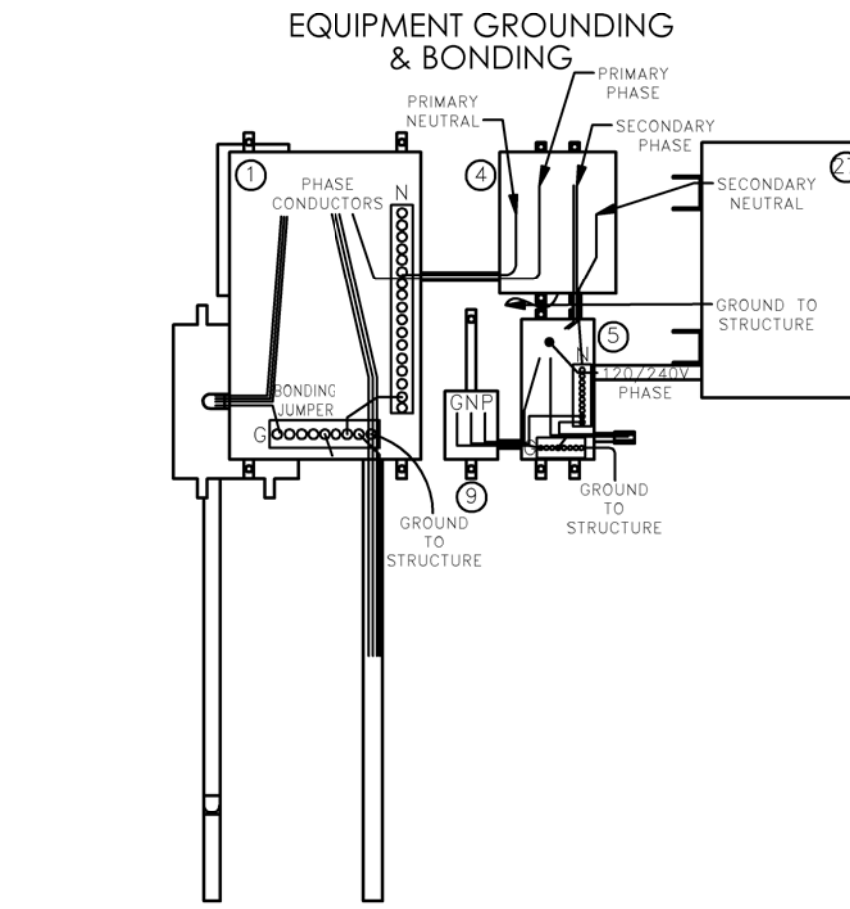
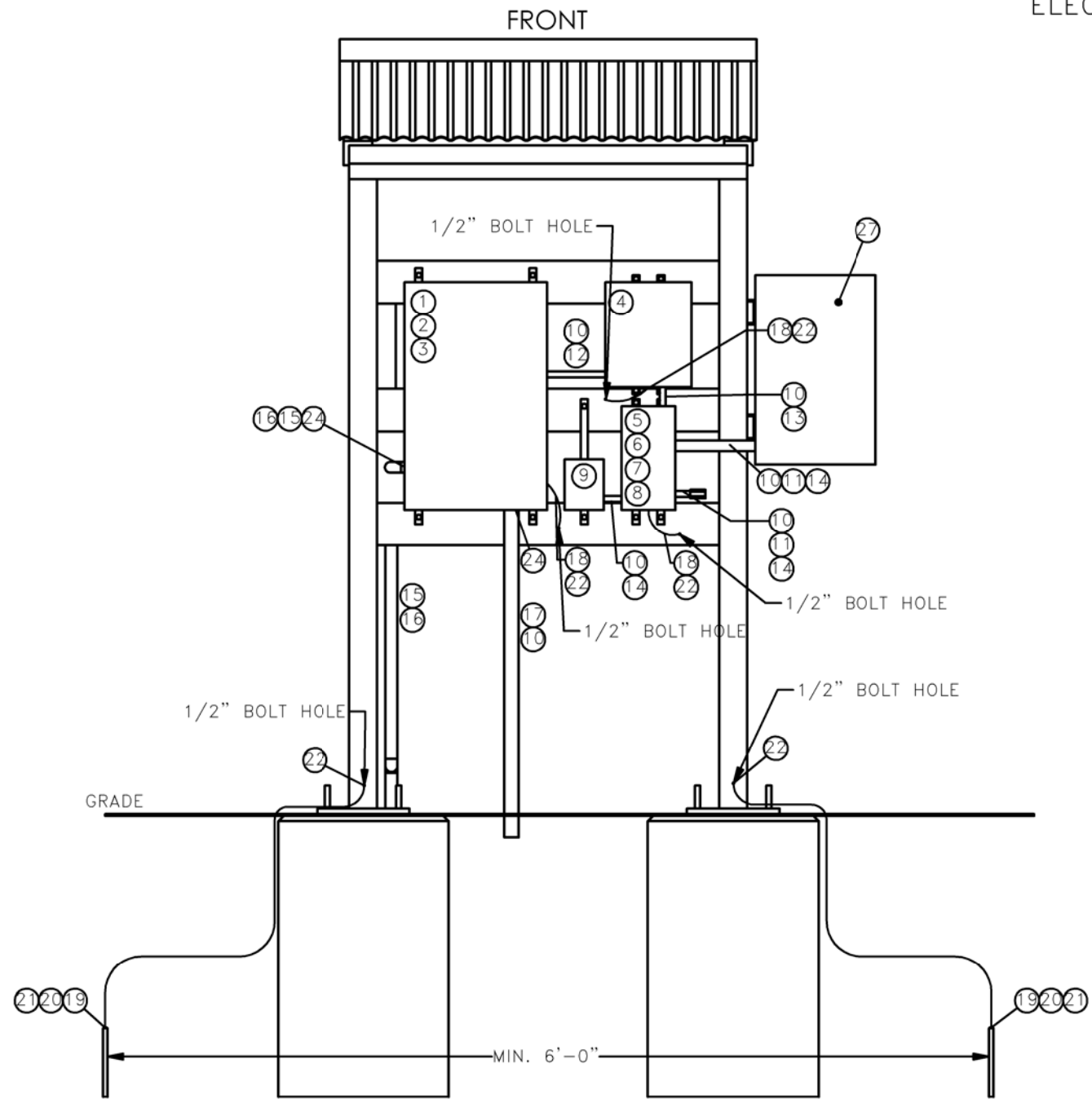
#	QTY	DESCRIPTION	#	QTY	DESCRIPTION
1	1	480V PANEL - SIEMENS P1E18BQ100CBS (OR EQUAL)	15	1	#4 AL QUADRAPLEX 600V USE-2 CABLE CODENAME "TULSA"
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3	1	30A/1P BREAKER - SIEMENS BQD130 (OR EQUAL)	17	4	#10 MTW CU 600V CABLE
4	1	277V - 120/240V DRY TYPE TRANSFORMER - SIEMENS 1E1U005 (OR EQUAL)	18	-	#2 THWN CU 600V CABLE - GREEN PER NEC FOR GROUNDING
5	1	120/240V PANEL - SIEMENS W0816ML1125CU (OR EQUAL)	19	2	5/8" X 8' COPPER CLAD STEEL GROUND ROD - HARGER 588 (OR EQUAL)
6	1	30A/2P 120/240V MAIN BREAKER - SIEMENS Q230 (OR EQUAL)	20	-	#6 BARE COPPER GROUNDING CONDUCTOR
7	1	QP RETAINER CLIP - SIEMENS ECMBR1 (OR EQUAL)	21	2	#6 CU TO 5/8" GROUND ROD EXOTHERMIC CONNECTOR
8	2	20A/1P SWITCHED NEUTRAL BREAKER - SIEMENS QG220 (OR EQUAL)	22	5	#6 CU TO SUPPORT STRUCTURE - EXOTHERMIC CONNECTION
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12	2	#10 THWN CU 600V CABLE	26	-	1 1/4" RIGID METAL CONDUIT, COMMUNICATION
13	3	#10 THWN CU 600V CABLE	27	1	PCR DECOUPLER
14	3	#12 THWN CU 600V CABLE			

NOTES:

- GROUND RING SHALL BE INSTALLED AT A DEPTH NO LESS THAN 18".
- INSTALLATION TO BE PLACED 25' FROM OIL PIPELINE. INSTALLATION SHALL NOT BE CLOSER THAN 20' OR GREATER THAN 100'.

SCALE: NTS	BOE BAKKEN OIL EXPRESS EXPRESS PIPELINE	KLJ
DESIGNED BY: S. IRWIN		
DATE: 2/21/2014	SITE POWER ELECTRICAL DETAILS	4585 Coleman Street Bismarck, ND 58503
DRAWN BY: EDOSTER		
CHECKED BY: T. HOWARD	STARK & DUNN COUNTY, NORTH DAKOTA	
FILE JOB NUMBER: 1713140		
REVISION: 1		

SITE POWER – VALVE DETAIL B.1
ELECTRICAL DETAILS
DETAIL "C"



AS-CONSTRUCTED

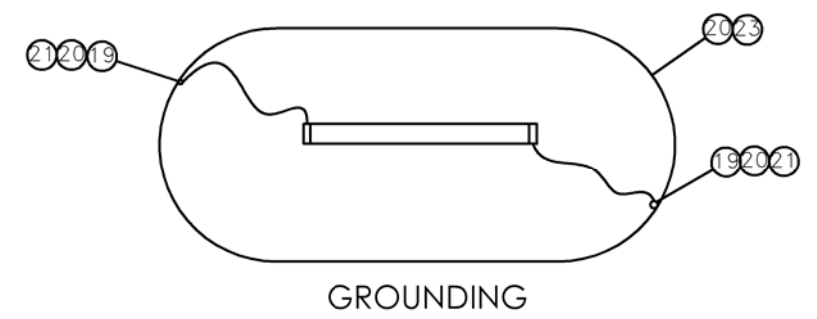
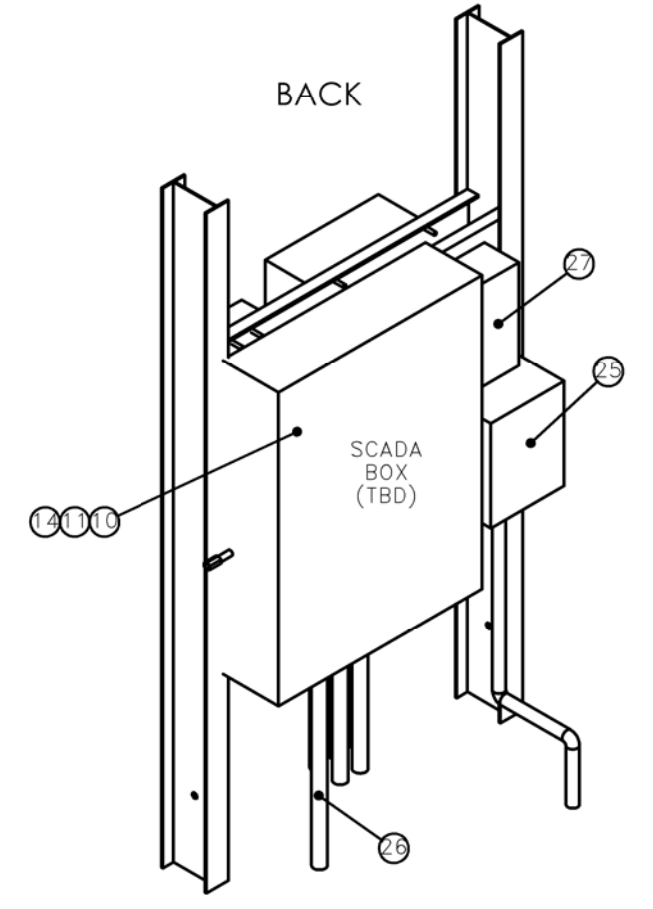
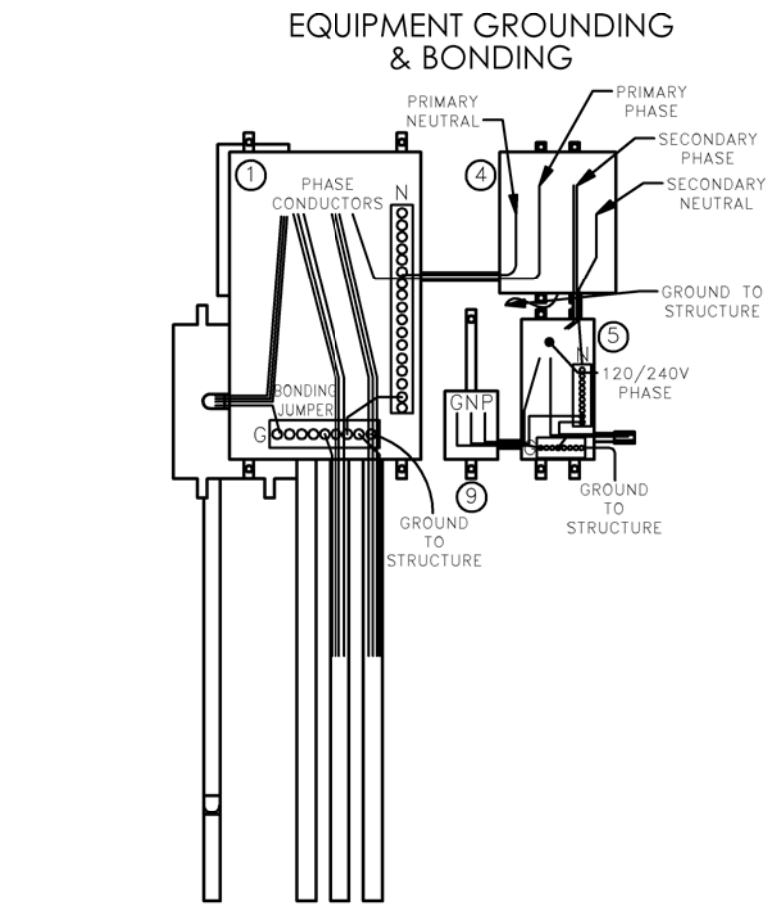
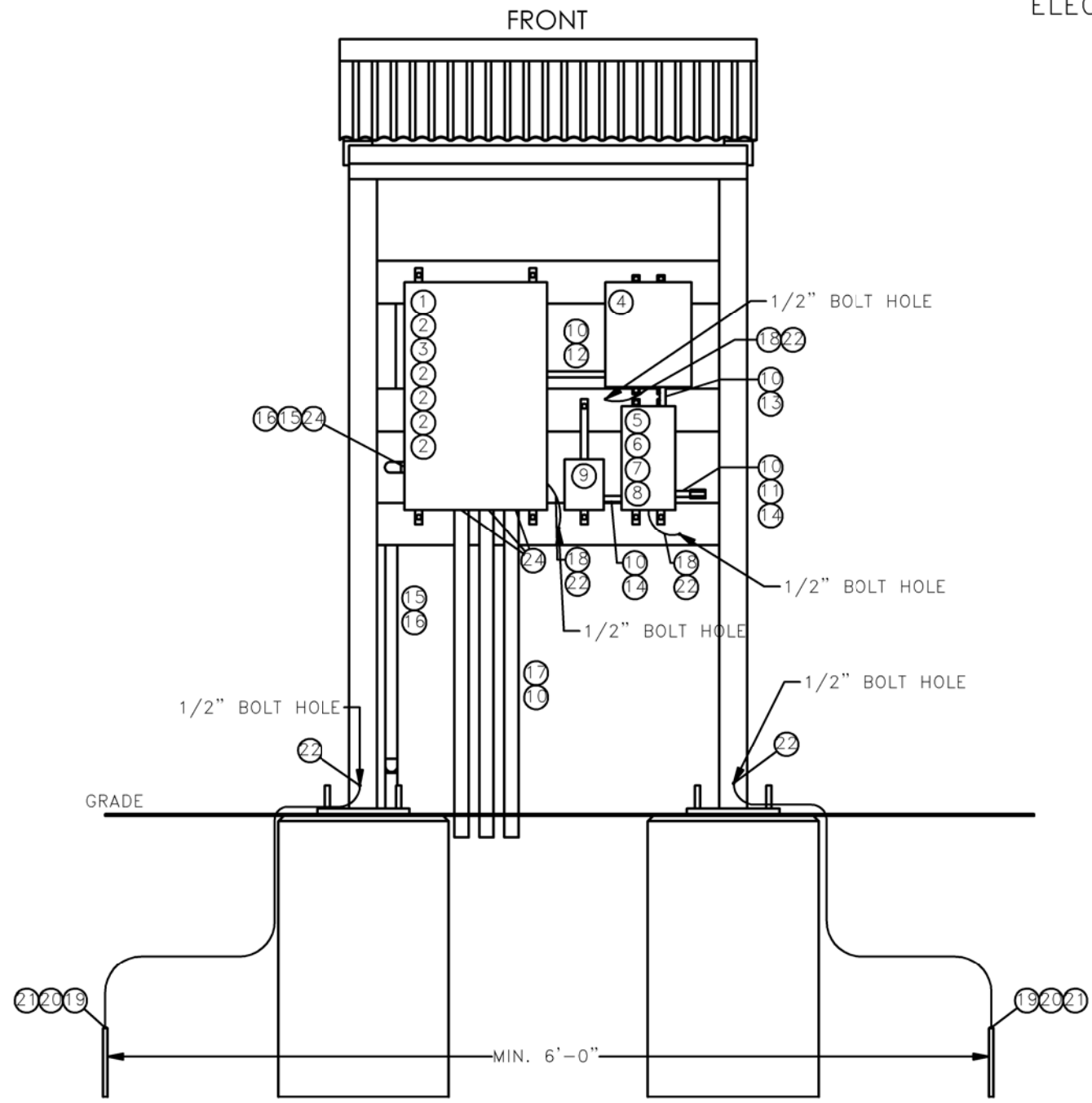
FINAL
6/11/15

#	QTY	DESCRIPTION	#	QTY	DESCRIPTION
1	1	480V PANEL - SIEMENS P1E18BQ100CBS (OR EQUAL)	15	1	#4 AL QUADRAPLEX 600V USE-2 CABLE CODENAME "TULSA"
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3	1	30A/1P BREAKER - SIEMENS BQD130 (OR EQUAL)	17	4	#10 MTW CU 600V CABLE
4	1	277V - 120/240V DRY TYPE TRANSFORMER - SIEMENS 1E1U005 (OR EQUAL)	18	-	#2 THWN CU 600V CABLE - GREEN PER NEC FOR GROUNDING
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11	3	1/2" LB TYPE CONDUIT BODY - KILLARK OLB-1M (OR EQUAL)	25	1	4-POLE 100 AMP CONTRACTOR, SIEMENS CLM2E04120 (OR EQUAL)
12	2	#10 THWN CU 600V CABLE	26	-	1 1/4" RIGID METAL CONDUIT, COMMUNICATION
13	3	#10 THWN CU 600V CABLE	27	1	ADASFS 60-42 B, A-2, ADVANTAGE AIR SERIES CPU
14	3	#12 THWN CU 600V CABLE	28	1	PCR DECOUPLER

- NOTES:
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SCALE: NTS	 BAKKEN OIL EXPRESS EXPRESS PIPELINE	
DRAWN BY: IRWIN DATE: 2/21/2014 CHECKED BY: EDOSTER APPROVED BY: HOWARD KJL JOB NUMBER: 1713140 REVISION: 1 SHEET: 115		
SITE POWER ELECTRICAL DETAILS STARK & DUNN COUNTY, NORTH DAKOTA		4585 Coleman Street Bismarck, ND 58503 <small>KJL 2014</small>

SITE POWER – VALVE DETAIL D
ELECTRICAL DETAILS
DETAIL "C"



FINAL
6/11/15

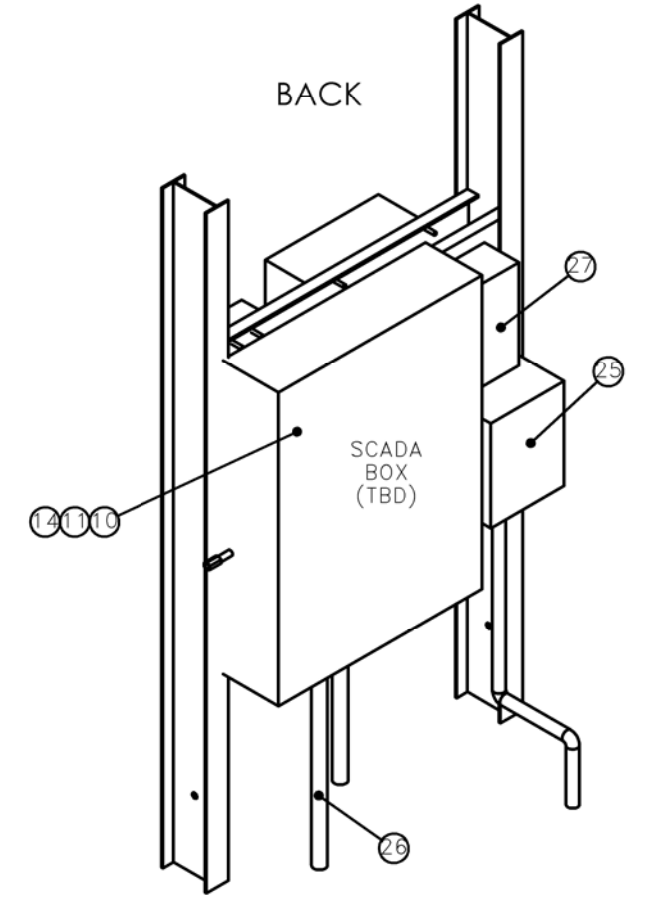
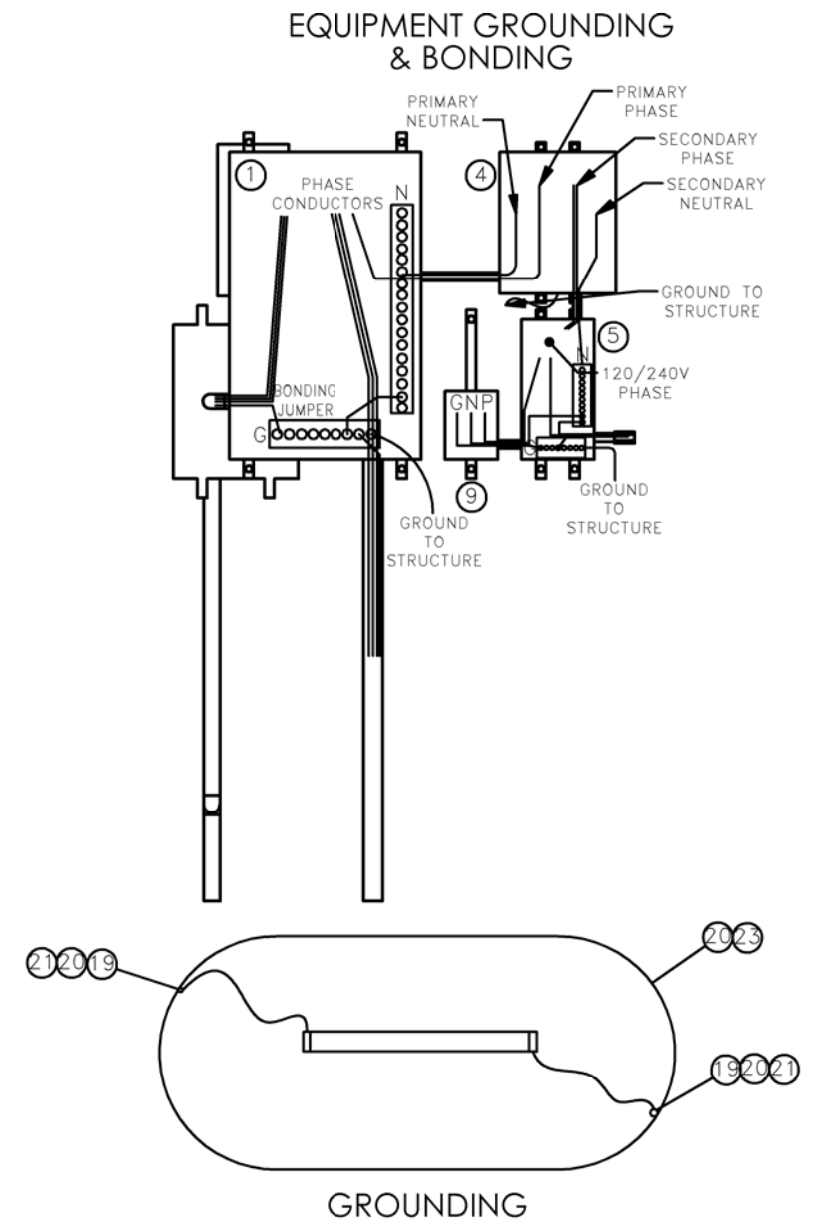
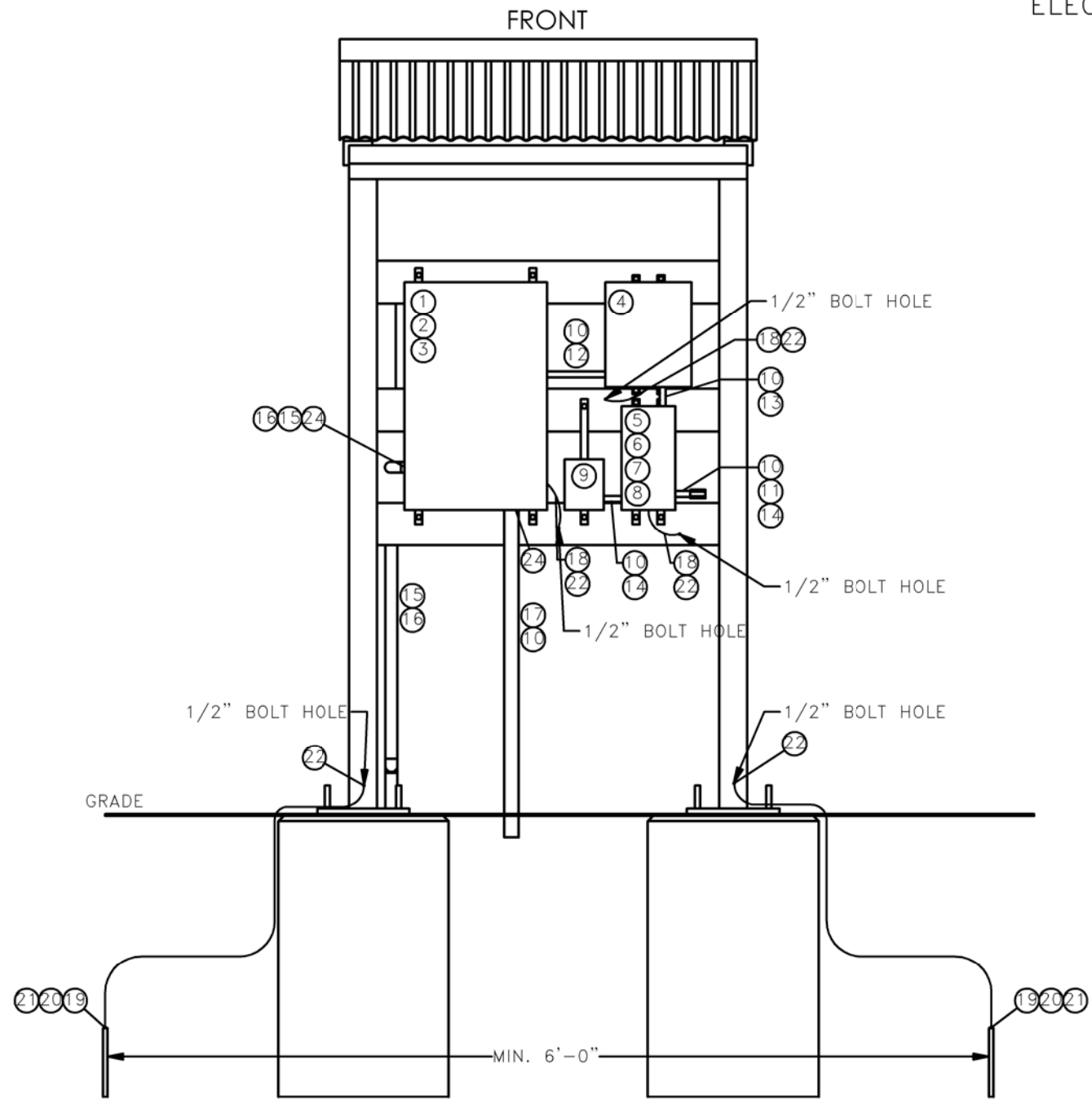
AS-CONSTRUCTED

#	QTY	DESCRIPTION	#	QTY	DESCRIPTION
1	1	480V PANEL - SIEMENS P1E18FX200CBS (OR EQUAL)	15	1	#4 AL QUADRAPLEX 600V USE-2 CABLE CODENAME "TULSA"
2	5	20A/3P BREAKER - SIEMENS BQD320 (OR EQUAL)	16	-	1 1/2" RIGID METAL CONDUIT
3	1	30A/1P BREAKER - SIEMENS BQD130 (OR EQUAL)	17	4	#10 MTW CU 600V CABLE
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SCALE: NTS	BOE BAKKEN OIL EXPRESS	BAKKEN OIL EXPRESS PIPELINE	KLJ
DESIGNED BY: IRWIN			
DATE: 2/21/2014	SITE POWER ELECTRICAL DETAILS STARK & DUNN COUNTY, NORTH DAKOTA		
DRAWN BY: EDOSTER			
CHECKED BY: HOWARD	4585 Coleman Street Bismarck, ND 58503		
KLJ JOB NUMBER: 1713140	KJ 2014		

SITE POWER – VALVE DETAIL E
ELECTRICAL DETAILS
DETAIL "C"



FINAL
6/11/15

AS-CONSTRUCTED

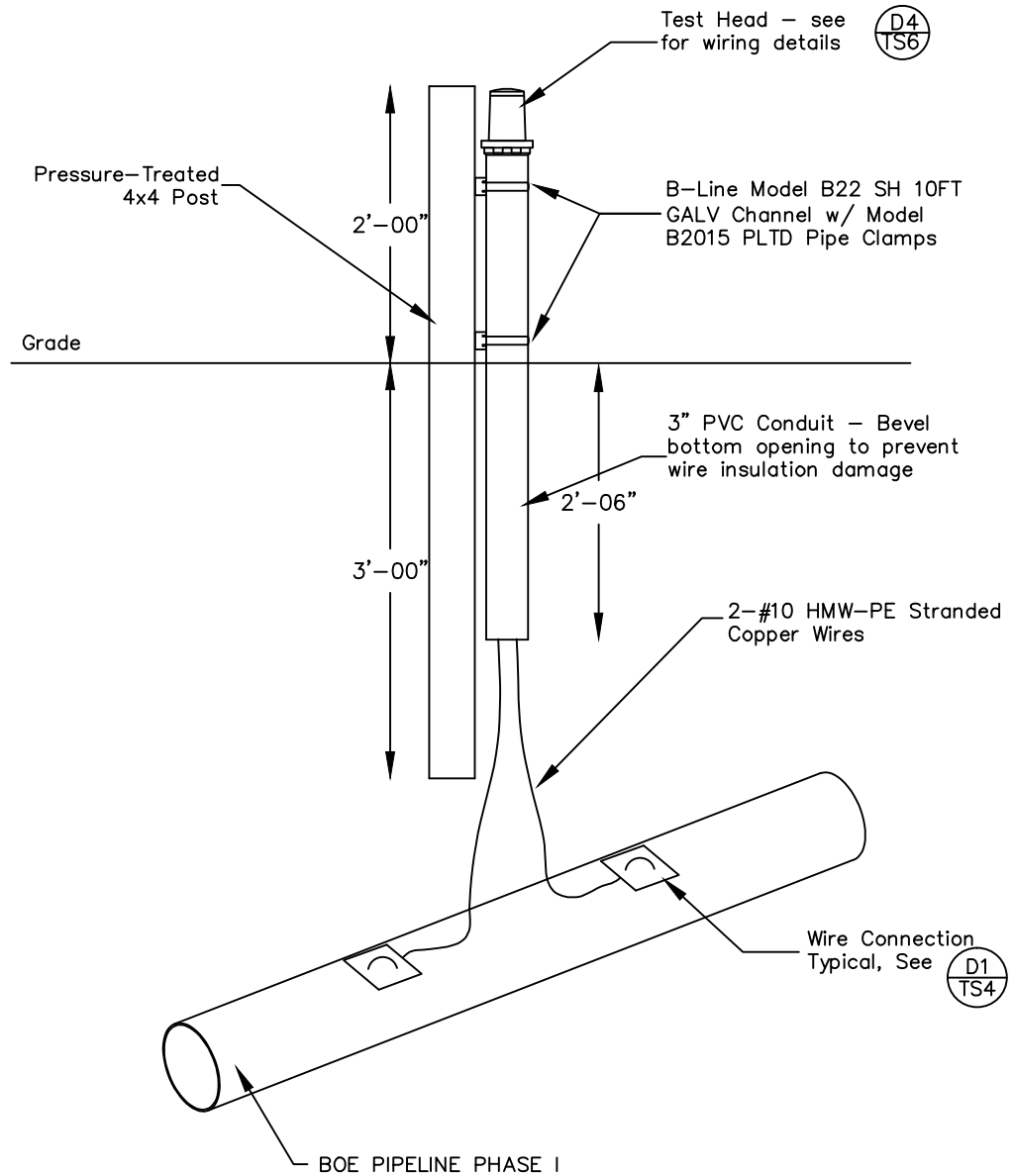
#	QTY	DESCRIPTION	#	QTY	DESCRIPTION
1	1	480V PANEL - SIEMENS P1E18BQ100CBS (OR EQUAL)	15	1	#4 AL QUADRAPLEX 600V USE-2 CABLE CODENAME "TULSA"
2	1	20A/3P BREAKER - SIEMENS BQD320 (OR EQUAL)	16	-	1 1/2" RIGID METAL CONDUIT
3	1	30A/1P BREAKER - SIEMENS BQD130 (OR EQUAL)	17	4	#10 MTW CU 600V CABLE
4	1	277V - 120/240V DRY TYPE TRANSFORMER - SIEMENS 1E1U005 (OR EQUAL)	18	-	#2 THWN CU 600V CABLE - GREEN PER NEC FOR GROUNDING
5	1	120/240V PANEL - SIEMENS W0816ML1125CU (OR EQUAL)	19	2	5/8" X 8' COPPER CLAD STEEL GROUND ROD - HARGER 588 (OR EQUAL)
6	1	30A/2P 120/240V MAIN BREAKER - SIEMENS Q230 (OR EQUAL)	20	-	#6 BARE COPPER GROUNDING CONDUCTOR
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8	2	20A/1P SWITCHED NEUTRAL BREAKER - SIEMENS QG220 (OR EQUAL)	22	5	#6 CU TO SUPPORT STRUCTURE - EXOTHERMIC CONNECTION
9	1	OUTDOOR RECEPTACLE ASSEMBLY - MIDWEST ELECTRIC U010010 (OR EQUAL)	23	2	#6 CU TO #6 CU COMPRESSION CONNECTOR
10	-	1/2" RIGID METAL CONDUIT	24	4	CONDUIT SEAL
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13	3	#10 THWN CU 600V CABLE	27	1	PCR DECOUPLER
14	3	#12 THWN CU 600V CABLE			

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 - INSTALLATION TO BE PLACED 25' FROM OIL PIPELINE. INSTALLATION SHALL NOT BE CLOSER THAN 20' OR GREATER THAN 100'.

SCALE: NTS DRAWN BY: S. IRWIN DATE: 2/21/2014 CHECKED BY: J. EDISTER APPROVED BY: T. HOWARD KLI JOB NUMBER: 1713140 REVISION: _____ SHEET: 1-17	 BAKKEN OIL EXPRESS EXPRESS PIPELINE	 4585 Coleman Street Bismarck, ND 58503 © KLJ 2014
SITE POWER ELECTRICAL DETAILS STARK & DUNN COUNTY, NORTH DAKOTA		

BOE PIPELINE PHASE I AS-CONSTRUCTED ALIGNMENT SHEETS

DUNN & STARK COUNTY, NORTH DAKOTA



Construction Notes:

1. Pipeline Contractor shall be responsible for the installation of Type 1 test stations at all locations listed in the Test Station Schedule.
2. Cathodic Protection Contractor (CPC) shall supply all materials required for the installation of the Type 1 Test Stations to the Project Staging area in quantities per the Test Station Bill-of-Material. Pipeline Contractor shall be responsible for purchasing additional materials required to complete project due to Contractor wastage, damage or loss of supplied materials. Pipeline contractor shall return any unused materials to Project Staging Area.
3. CPC will have Test Station and mounting post pre-assembled to facilitate ease of installation by pipeline Contractor.

Notes:

Allow sufficient slack in test station wires for backfilling and settling

TYPE 1 TEST STATION
NTS Standard

T1

AS-CONSTRUCTED

FINAL
6/11/15

LEGEND

- PROPERTY LINE
- - - SECTION LINE
- - - EASEMENT LINE
- - - PIPELINE CENTERLINE
- - - WATER LINE
- - - FOREIGN PIPELINE
- - - EXISTING ROAD
- - - UNDERGROUND COM. LINE
- *—*— EXISTING FENCE
- FO— FIBER OPTIC COM. LINE
- RAILROAD
- OVERHEAD ELECTRIC
- UTILITY POLE
- AS-CONSTRUCTED BORE
- MARKER POST
- AVOIDANCE AREA
- WETLAND EASEMENT
- TEST LEAD
- VALVE SETTING



MATERIAL SUMMARY			REVISIONS		
MK.NO.	QTY.	DESCRIPTION	NO.	DATE	DESCRIPTION

REVISIONS		
NO.	DATE	DESCRIPTION

SCALE: NTS
DRAWN BY: B.C.
DATE: 6/11/15
CHECKED BY: —
APPROVED BY: —
KLJ JOB NUMBER: 1713140
REVISION: — SHEET: 118

BOE PIPELINE, LLC

BOE PIPELINE PHASE I

CATHODIC PROTECTION TEST STATION TYPICAL DRAWING

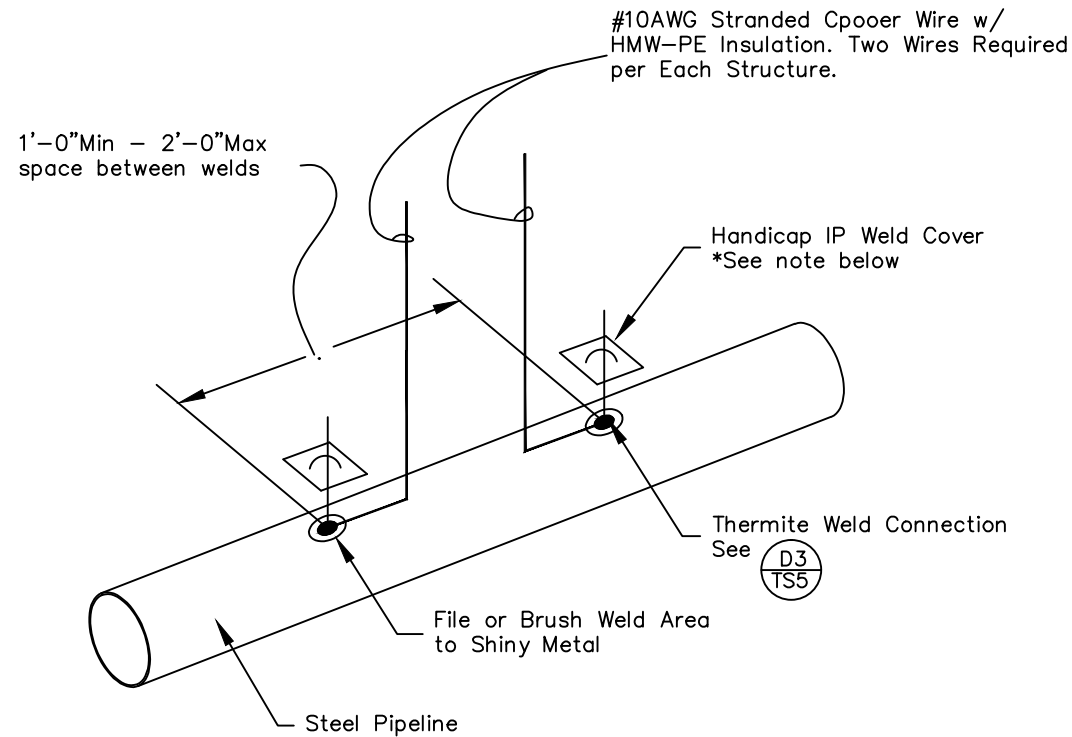
DUNN & STARK COUNTY, NORTH DAKOTA

KLJ

4585 Coleman Street
Bismarck, ND 58502

BOE PIPELINE PHASE I AS-CONSTRUCTED ALIGNMENT SHEETS

DUNN & STARK COUNTY, NORTH DAKOTA



Notes:

Copper sleeve required for thermite welding of #10 and smaller wire.

T1 WIRE CONNECTION
NTS

D1

AS-CONSTRUCTED

FINAL
6/11/15

Handy Cap IP & IP XL Application Directions:

1. Clean all mud, dirt, grease, oil and other contaminants from the metal surface and mill coating which is going to be covered. The Handy Cap incorporates an integrated primer in its adhesive and does not require the use of a liquid primer.
2. Remove the release paper from the bottom of the Handy Cap. Position and place the Handy Cap on the welded area with the tunnel over the leadwire.
3. Push the dome of the cap firmly into the weld area. lift the lead wire away from the pipe and squeeze the adhesive compound completely around and underneath the wire. Push the lead wire back down on the pipe and press the elastomeric compound into firm contact with the pipe over the entire area.
4. If the mill coating is inadvertently excessively removed where the Handy Cap will not cover all exposed pipeline steel, the area shall be recoated following the pipeline coating repair specifications.

LEGEND

—	PROPERTY LINE	—*—	EXISTING FENCE		AVOIDANCE AREA
- - -	SECTION LINE	FO	FIBER OPTIC COM. LINE		WETLAND EASEMENT
- - -	EASEMENT LINE	—	RAILROAD		TEST LEAD
- - -	PIPELINE CENTERLINE	—	OVERHEAD ELECTRIC		VALVE SETTING
—	WATER LINE	—	UTILITY POLE		MARKER POST
—	FOREIGN PIPELINE	—	AS-CONSTRUCTED BORE		
—	EXISTING ROAD				
—	UNDERGROUND COM. LINE				



MATERIAL SUMMARY			REVISIONS		
MK.NO.	QTY.	DESCRIPTION	NO.	DATE	DESCRIPTION

REVISIONS		
NO.	DATE	DESCRIPTION

SCALE: NTS
DRAWN BY: B.C.
DATE: 6/11/15
CHECKED BY: —
APPROVED BY: —
KLJ JOB NUMBER: 1713140
REVISION: — SHEET: 119

BOE PIPELINE, LLC

BOE PIPELINE PHASE I

CATHODIC PROTECTION TEST STATION TYPICAL DRAWING

DUNN & STARK COUNTY, NORTH DAKOTA

4585 Coleman Street
Bismarck, ND 58502

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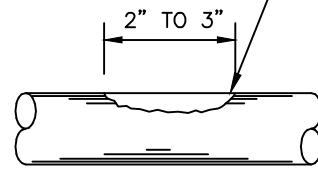
BOE PIPELINE PHASE I AS-CONSTRUCTED ALIGNMENT SHEETS

DUNN & STARK COUNTY, NORTH DAKOTA

EXOTHERMIC WELDING NOTES

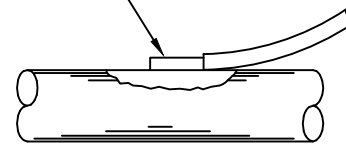
1. WHEN USING No. 10 TO No. 14 AWG SOLID WIRE, IT WILL BE NECESSARY TO INSTALL A COPPER SLEEVE OF ADEQUATE SIZE OVER THE BARE END OF THE WIRE AND CRIMP IN PLACE BEFORE ATTEMPTING TO MAKE THE CONNECTION. THE WIRE SHOULD PROTRUDE AT LEAST 1/16" FROM THE END OF THE SLEEVE.
2. INSERT THE CONDUCTOR INTO MOLD
INFORMATION UNDER "POSITIONING" FOR APPLICATION TYPE IN THE MANUFACTURERS INSTRUCTIONS PACKAGED WITH THE WELDER.
3. INSERT STEEL DISK IN BOTTOM OF CAVITY INSIDE MOLD. DUMP THE WELD METAL INTO MOLD BEING CAREFUL NOT TO UPSET THE STEEL DISK. TAP THE BOTTOM OF THE TUBE TO LOOSEN ALL THE STARTING POWDER AND SPREAD IT EVENLY OVER THE WELD METAL. PLACE A SMALL AMOUNT OF STARTING POWDER ON THE TOP EDGE OF MOLD UNDER COVER OPENING FOR EASY IGNITION.
4. CLOSE COVER AND IGNITE WITH THE FLINT GUN. MOVE FLINT GUN AWAY QUICKLY TO PREVENT FOULING. IF FLINT GUN SHOULD BECOME FOULED, SOAK IT IN HOUSEHOLD AMMONIA.
5. AFTER IGNITION, HOLD THE WELDER IN PLACE FOR A MOMENT TO ALLOW THE WELD TO SOLIDIFY. AFTER THE WELD HAS COOLED, REMOVE THE SLAG WITH A CHIPPING HAMMER OR WIRE BRUSH.
6. COAT THE CONNECTION AND THE ENTIRE PREPARED SURFACE WITH THE SPECIFIED WELD COATING.
7. REMOVE ALL SLAG FROM THE WELDER BEFORE MAKING WELD. CLEAN THE COVER EVERY 6 TO 10 WELDS.
8. WET OR DAMP MOLDS WILL PRODUCE POROUS WELDS. MOLDS MUST BE DRIED OUT BEFORE ATTEMPTING TO WELD.
9. CONNECTIONS ARE TO BE PLACED A MINIMUM OF 1-FT APART. UNSUCCESSFUL WELDS ARE TO BE ABANDONED AND MOVED TO ANOTHER PREPARED SURFACE NOT LESS THAN 1-FT AWAY.

REMOVE PIPELINE COATING FILE PIPE TO BRIGHT METAL AND DRY ANY MOISTURE WITH A TOWEL



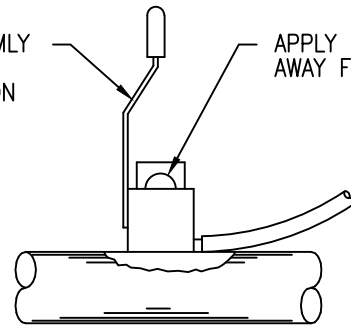
STEP 1

STRIP INSULATION FROM WIRE (SEE NOTE No. 1)



STEP 2

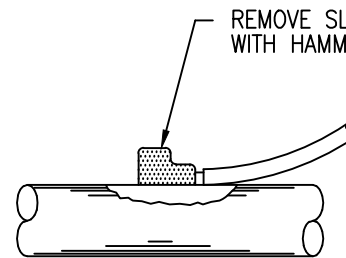
HOLD WELDER FIRMLY IN PLACE WHILE MAKING CONNECTION



STEP 3

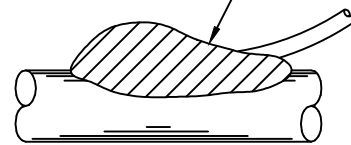
APPLY SPARK GUN AWAY FROM OPERATOR

REMOVE SLAG WITH HAMMER

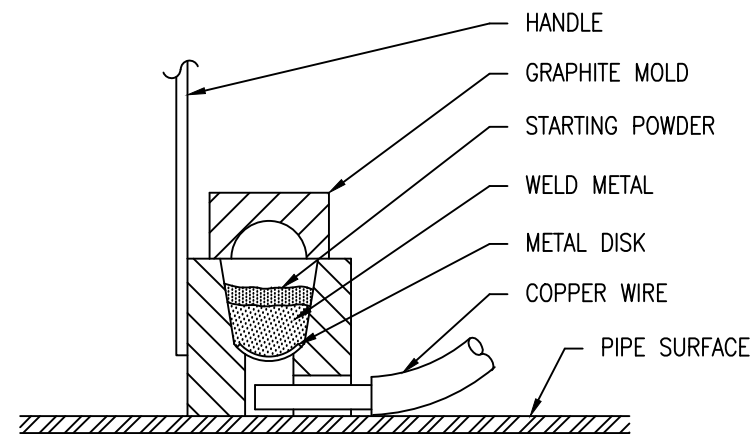


STEP 4

COVER WITH PROPERLY SIZED HANDICAP



STEP 5



THERMITE WELD DETAIL

NTS

D3

FINAL
6/11/15

AS-CONSTRUCTED

LEGEND

—●— PROPERTY LINE	—*— EXISTING FENCE	—/— AVOIDANCE AREA
—-— SECTION LINE	—FO— FIBER OPTIC COM. LINE	—W— WETLAND
—- - - EASEMENT LINE	—R— RAILROAD	—E— EASEMENT
—●— PIPELINE CENTERLINE	—E— OVERHEAD ELECTRIC	—T— TEST LEAD
—W— WATER LINE	—U— UTILITY POLE	—V— VALVE SETTING
—F— FOREIGN PIPELINE	—B— AS-CONSTRUCTED BORE	—M— MARKER POST
—●— EXISTING ROAD		
—- - - UNDERGROUND COM. LINE		



MATERIAL SUMMARY			REVISIONS		
MK.NO.	QTY.	DESCRIPTION	NO.	DATE	DESCRIPTION

SCALE: NTS
DRAWN BY: B.C.
DATE: 6/11/15
CHECKED BY: -
APPROVED BY: -
KLJ JOB NUMBER: 1713140
REVISION: - SHEET: 120

BOE PIPELINE, LLC

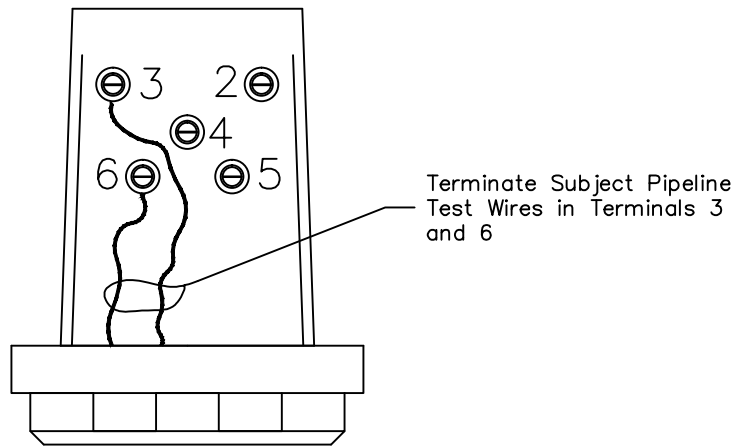
BOE PIPELINE PHASE I

CATHODIC PROTECTION TEST STATION TYPICAL DRAWING
DUNN & STARK COUNTY, NORTH DAKOTA

KLJ

4585 Coleman Street
Bismarck, ND 58502

**BOE PIPELINE PHASE I
AS-CONSTRUCTED ALIGNMENT SHEETS**
DUNN & STARK COUNTY, NORTH DAKOTA



Notes:

See test lead color code chart for proper test lead color coding.

Fill out TS connection chart and install in terminal cover.
RECORD ENGINEERING STATION ON LABEL.

TYPE 1 TS TERMINATIONS

D4

NTS

Test Lead Color Codes		
Structure	Wire/Cable	Tape Color
Bakken Oil Express PL	#10 HMW-PE	No Tape
Steel Foreign PL	#10 HMW-PE of Foreign preference	White Tape
Permanent Reference Electrode	factory yellow or #10 HMW-PE if spliced	Yellow Tape if Spliced

AS-CONSTRUCTED

**FINAL
6/11/15**

LEGEND - - - - - PROPERTY LINE - - - - - SECTION LINE - - - - - EASEMENT LINE - - - - - PIPELINE CENTERLINE - - - - - WATER LINE - - - - - FOREIGN PIPELINE - - - - - EXISTING ROAD - - - - - UNDERGROUND COM. LINE * * * * * EXISTING FENCE FO FIBER OPTIC COM. LINE RAILROAD OVERHEAD ELECTRIC UTILITY POLE AS-CONSTRUCTED BORE MARKER POST AVOIDANCE AREA WETLAND EASEMENT TEST LEAD VALVE SETTING		MATERIAL SUMMARY		REVISIONS		SCALE: NTS DRAWN BY: B.C. DATE: 6/11/15 CHECKED BY: APPROVED BY: KLJ JOB NUMBER: 1713140 REVISION: SHEET: 121																																													
		<table border="1"> <thead> <tr> <th>MK.NO.</th> <th>QTY.</th> <th>DESCRIPTION</th> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	MK.NO.	QTY.	DESCRIPTION	NO.	DATE	DESCRIPTION																																											BOE PIPELINE PHASE I CATHODIC PROTECTION TEST STATION TYPICAL DRAWING DUNN & STARK COUNTY, NORTH DAKOTA
MK.NO.	QTY.	DESCRIPTION	NO.	DATE	DESCRIPTION																																														

APPENDIX G

SITE SAFETY PLAN

G. SITE SAFETY PLAN

The safety and security of response and support personnel and others involved in an emergency response incident is the primary concern. The section on health and safety provides a general framework for the protection of oil spill response worker's health and safety and complies with the requirements of state and federal laws.

The information contained in the health and safety section should be used as a guide by the Qualified Individual (QI)/Incident Commander (IC) for preparing and implementing worker health and safety protection measures in order to maximize safety and allow critical oil spill response activities to proceed. Specific site control and emergency response procedures should be developed using forms provided in this outline or other forms developed by the activity. Other procedures for activities such as confined space entry or hot work will require additional controls in order to fulfill the regulatory requirements. The IC must identify these and other health and safety and regulatory matters. Once identified, the IC will then need to take appropriate action to address those safety issues or regulatory requirements.

MEDICAL MONITORING

All persons who will be exposed or will have the potential to be exposed to hazardous substances will take part in a medical monitoring program that meets the requirements of 29 CFR 1910.120(f). In general, medical monitoring will be conducted for workers as follows:

- Workers who have the potential to be exposed to hazardous substances at or above the PEL.
- Workers whose duties require them to wear a respirator for more than 30 days/year
- Workers who are believed to have been exposed to hazardous substances or who exhibit symptoms of exposure.

RECORDS AND REPORTS

Both state and federal regulations require employers to prepare and maintain records of occupational injuries and illnesses.

G.1 Health Hazards

Health hazards must be identified in the Site Safety Plan. The following is a list of typical hazards that may be involved during an oil/hazardous substance spill response.

The Safety Data Sheet (SDS) for all products used on or carried by the BOE Pipeline must be on file in each work area for every hazardous chemical substance used, stored, or handled within that work area. Copies should be kept in a SDS Book located at a Hazardous Communication Work Station. A master copy should also be kept in the main

office of Progress Solutions, LLC. An archive file of past MSDSs and SDSs must be maintained for a minimum of 30 years.

New substances that come in without an SDS must not be introduced into the work area until a SDS is obtained. OSHA requires a copy of the most current SDS. On-line computer services are not updated frequently, and therefore SDS copies obtained from them may not be current or valid.

Oil and hazardous substance spill responses require the use of a wide variety of chemicals and materials which may singularly or in conjunction with the site work conditions create various hazards to site workers. Several of these hazards are identified in the following table.

TABLE APPENDIX G.1a
SECONDARY CHEMICAL HAZARDS

HAZARD DESCRIPTION	RECOMMENDED PROTECTIVE EQUIPMENT	CONDITIONS UNDER WHICH EXPOSURE MAY OCCUR
<p>Low Oxygen Levels Confined or restricted space atmospheres may be dangerous to life and health if O₂ levels are below 19.5% (oxygen deficient) or greater than 25% (oxygen enriched)</p>	<p>Monitor O₂ levels and ventilate area. Do not enter O₂ deficient atmosphere without a confined space entry permit and supervision from the Safety Officer. Supplied air Personal Protective Equipment (PPE) is required. Safe O₂ levels 19.5%-25%.</p>	<p>Poorly ventilated areas in the vicinity of oxygen consuming materials or equipment. This includes waste undergoing biological degradation or oil powered equipment and confined or restricted spaces (e.g., tanks).</p>
<p>High Carbon Monoxide Levels Carbon monoxide is a colorless and odorless gas, slightly less dense than air and is toxic by inhalation. Carbon monoxide is also highly flammable (Lower Explosive Limit (LEL) = 12%; Upper Explosive Limit (UEL) = 75% by volume in air)</p>	<p>Monitor CO, and ventilate area. Use of supplied air PPE is required. Do Not enter high CO atmosphere without a confined space entry permit and supervision from Safety Officer. Safe CO levels are less than 50 ppm TWA.</p>	<p>Poorly ventilated areas in the vicinity of internal combustion engines. Acetylene welding, industrial heating equipment and processes involving incomplete combustion may also create this hazard.</p>
<p>Other Spill Response Specialty Agents Due to the varied nature of oil spill cleanup operations, numerous specialty chemicals in solid, liquid, and gaseous phases may be used or stored in work areas.</p>	<p>Obtain and review SDSs for all products. Verify safety precautions and PPE needs. Obtain any required respirator, skin, eye, and splash protection.</p>	<p>Exposure to these materials in poorly ventilated areas or in open areas may occur if workers are unaware of the chemicals' toxic or physical properties.</p>
<p>Particulates Particulates may cause irritation to lungs, eyes, and mucous membranes. Particulates may also have toxic effects (e.g., lead, asbestos, cadmium, and silica).</p>	<p>Use half-mask respirator with particulate filter and appropriate cartridges. Use other PPE for eye and skin protection as needed.</p>	<p>Use of powdered or granular oil absorbent (vermiculite, diatomaceous earth, etc.) or other specialty products where particles become airborne and enter the breathing zone of personnel. Wind carried silts, and other dusts may also be a factor.</p>
<p>Biological Nutrients Inhalation of vapors, mists, and particulates or skin contact with nutrients used for biological treatment may result in irritation to lungs, eyes, and mucous membranes. Dermal absorption is also possible.</p>	<p>Obtain and review SDS for the specific product. Verify safety precautions and PPE needs. Obtain required respirator, skin, eye, and splash protection.</p>	<p>Use of nutrients (fertilizers) in a spill cleanup effort may create potential exposures during spray application or other distribution and mixing process.</p>
<p>Dispersant Inhalation of vapors or mists or skin contact may result in irritation to lungs, eyes, and mucous membranes. Dermal absorption is also possible.</p>	<p>Obtain and review SDS for specific product. Personnel involved in handling or applying dispersant will be provided specific training.</p>	<p>Application of dispersant during the initial spill event may expose workers to respiratory and dermal hazards.</p>
<p>Confined Spaces Inadequate ventilation coupled with limited egress creates potentially hazardous situations for workers. Oxygen deficient, toxic or flammable atmospheres may exist in these areas. All OSHA procedures regarding confined space entry will be followed.</p>	<p>Monitor CO, O₂, toxic, and flammable gas levels, and ventilate area. Do not enter a confined space without a confined space entry permit and supervision from the Safety Officer. Safe O₂ levels = 19.5% to 25%; flammable gas limits = less than 10% LEL; toxic limits = less than ½ PEL or Threshold Limit Value (TLV) which ever is the lower value.</p>	<p>Confined spaces may be encountered on vessels, inside tanks, inside buildings, on drill rigs, in sumps, in ditches, etc. Product vapors or other emissions resulting from response operations may intensify this hazard.</p>
<p>Flammable Atmosphere A flammable gas, vapor, mist, or dust when mixed with air may create a flammable or explosive condition. Volatile vapors or gases will generally be of a sufficient quantity during the initial few hours of a spill to cause a flammable atmosphere.</p>	<p>Conduct flammable gas and oxygen monitoring prior to starting any work. Purge or inert atmospheres when possible. Obtain hot work permits prior to starting any cutting or welding. Safe flammable limits are less than 10% of the Lower Explosive Limit.</p>	<p>Flammable conditions may exist during the initial phase of a spill or at any time in areas where flammable dusts or vapors may concentrate. Holds of vessels and oiling areas are prime locations to find flammable atmospheres.</p>

Subjecting response personnel to the hazards identified above can be avoided through the use of the proper personal protective equipment (PPE) and through proper

monitoring and supervision by health and safety personnel. The following paragraphs briefly discuss proper procedures associated with some of the secondary hazards.

HAZARDOUS CONDITIONS

The hazards associated with the contaminants listed in the above table are best controlled through early detection, use of PPE, implementation of engineering controls, or by avoiding the hazard. Using common sense and understanding the Health and Safety Plan can accomplish early detection.

CONFINED SPACE ENTRY

Entry into confined spaces (spaces with restricted egress and potentially hazardous atmospheres) will be conducted under the direct supervision of the Safety Officer and through the use of a confined space entry permit. Confined spaces may be oxygen deficient or have flammable or toxic atmospheres. Confined space entry will be permitted only if the parameters listed in the above table are within acceptable limits.

PHYSICAL HAZARDS

Physical hazards associated with oil spill cleanup operations are varied and the associated hazards depend upon the site-specific conditions, cleanup operations, and the type of equipment being used. Severe environmental and weather conditions, complex transportation and logistical requirements, long work hours, and intensive labor needs contribute to the high susceptibility of oil spill workers to physical hazards. The following table summarizes some of the physical hazards associated with spill cleanup operations.

**TABLE APPENDIX G.1b
GENERAL PHYSICAL HAZARDS**

Hazard Description	Hazard Treatment Guidance	Hazard Abatement Technique
Slip, Trip, Fall Oil spill responders work in places where poor footing and lighting creates slip, trip, fall hazards.	Survey responders for possible unknown injuries. If injured, treat with first aid and seek medical attention.	Provide proper illumination in work areas. Keep work areas free of excess clutter. Move cautiously in work areas and use non-slip soles on footwear. Attempt to recognize and avoid or control hazards in the work area. Conduct hazard awareness briefings.
Back Injuries The requirement to mobilize and use great quantities of equipment during the oil spill response creates high probability of back injuries. Slips, trips, and falls contribute to back injuries.	Remove worker from the work area to prevent further stress on the worker's back. If necessary, stabilize the victim in a prone position with a backboard to prevent additional injury. Seek medical attention.	Lift objects correctly. Obtain assistance from co-workers. Use mechanical devices to reduce lifting effort. Do back and stretching exercises prior to lifting objects. Bend the legs when lifting instead of bending from the waist.
Eye Injuries An oil spill response may expose workers to numerous eye hazards, including those resulting from chemical exposure, equipment hazards, open flames, and impacts from particulates or other foreign bodies.	If chemicals have contacted a worker's eye, flush eye with water immediately. If particulate is in the eye, flush eye with water. If an object is imbedded in the eye, do not attempt to remove it. Cover the affected eye to prevent further irritation and seek medical assistance.	Use appropriate eye protection such as safety glasses, goggles, and face shields. Avoid exposure to vapors, mists, fumes, and dusts.
Handling of Hand Tools and Spill Response Equipment Tools used in cleanup operations such as shovels, picks, axes, etc. can inflict injury to adjacent workers if adequate distance is not maintained. Improper use of tools may also cause back injuries. Sorbents, containment booms, and waste materials can be heavy and awkward and handling and moving them may cause back injuries.	If injured, treat with first aid and seek medical assistance.	Team leaders must provide orientation for workers to familiarize them with the equipment that is being used. Use hand tools in a manner that will limit physical stress. Take frequent breaks to limit fatigue. Allow water to drain or remove ice from equipment prior to moving it. Use mechanical devices to handle heavy materials.
In Situ Burning In situ burning will present physical fire hazards as well as particulate hazards, visibility problems and heated gas hazards resulting from the combustion of oil and oily debris.	Determine weather conditions and select escape route from plume of burn area. Contact other vessels for assistance and exit burn area as rapidly as possible.	Adhere to burn safety plans, obtain frequent weather forecasts, and stay upwind. Refer to tide and current predictions to assist in burn area avoidance.
Hypothermia Hypothermia is the lowering of the body temperature resulting from exposure to the elements. Hypothermia will induce death if not treated properly. Symptoms include shivering, loss of lucidity, loss of coordination, confusion, and cold skin temperature. Hypothermia will occur rapidly when immersed in cold water.	Prevent additional heat loss and warm victim by any means available. Remove any wet clothing; add heat by placing warm items next to the victim's body. Do not give alcoholic beverages to victim. Seek medical assistance.	Dressing appropriately for weather conditions and regulating body temperature during work activities can avoid hypothermia. Establishing a system to visually monitor workers for hypothermia warning signs will assist early detection. Avoid situation where clothes become wet such as from rain or ocean spray. Avoid excess heat loss through wind exposure.
Frostbite Frostbite may occur when workers are exposed to subfreezing weather conditions and improperly protected from the cold. Frostbite may affect exposed flesh or non-exposed body parts which transfer heat at rates sufficient to cause freezing.	Seek medical attention at once. Frostbit skin will appear white or light colored and may feel cold and solid. Thaw out body parts with warm water or by application of firm steady pressure with a warm body part. Do not thaw body parts unless they can be maintained at a warm temperature after thawing.	Carefully monitor weather conditions to allow time for work crews to prepare for forecasted cold weather. Workers should eat high-energy foods, keep clothing dry, bring extra dry clothing, and test for extremity circulation on a regular basis.

<p>Noise Injuries Sound sources that generate noise greater than 85 decibels include aircraft, outboard engines, generators, compressors, heaters, and heavy equipment. Noises that are greater than 85 decibels may cause permanent damage to hearing.</p>	<p>Monitor noise levels. Remove affected worker from duties that have high noise exposure potential. Provide worker with additional hearing protection equipment. Seek medical assistance as necessary.</p>	<p>Workers should use ear protection equipment or avoid high noise areas.</p>
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TABLE APPENDIX G.1b (continued)
GENERAL PHYSICAL HAZARDS

Hazard Description	Hazard Treatment Guidance	Hazard Abatement Technique
Site Illumination Response operations during conditions of poor visibility or darkness may create dangerous or unhealthy conditions for response workers.	Provide substantial amounts of lighting and generator equipment. Personal headlamps and vehicle lighting may be used as supplemental lighting.	Provide adequate lighting. Use headlamps, portable lighting, and equipment lights to illuminate work sites.
Specialty or Heavy Equipment Mechanical equipment may have exposed moving parts, generate heat capable of causing burns, or generate high-pressure liquids or gases that may injure workers. Movement of heavy equipment may cause injuries to personnel.	Perform first aid; seek medical attention immediately.	Read all operating guide manuals. Be aware of any moving parts that may cause injury. Avoid direct exposure to heat or pressure generated by equipment. Wear appropriate PPE to limit possible injury. Install backup alarms on heavy equipment. Ensure all guards are in place.
Vehicle, Aircraft, or Vessel Accidents Response efforts will in many cases require response personnel to travel by various modes of transportation. The emergency nature of the response may expose worker to marginally safe traveling conditions.	Be aware of you position at all times and know the locations of safe refuges along your intended travel route. Notify the Incident Command Post if an accident occurs and what assistance is required.	During all vehicle, aircraft, or vessel travel, workers will adhere to all established travel safety procedures. This includes fastening seat belts, maintaining communications, and wearing or having easy access to safety equipment such as life vests and survival gear.
Heat Stress Heat stress may occur when a worker is exposed to elevated temperature conditions. Examples of when this may occur include worker suited in protective clothing that limits cooling of the individual and worker subjected to high ambient temperatures.	Move victim to cool, shaded location. Cool victim quickly by wrapping in wet towels. Treat victim for shock. Seek medical assistance immediately.	Taking frequent breaks to cool down and consuming large amounts of liquids may avoid heat stress. PPE can be fitted with cooling equipment. Ventilation may be used to assist with cooling. New site workers must acclimate themselves to the site conditions.
Worker Exhaustion Spill response activities often involve strenuous tasks and long work hours. Symptoms of exhaustion include loss of concentration, increased frequency of trips, falls, and slips, and worker complaints of cramping and pain. Work exhaustion often manifests itself in other hazards such as accidents and back injuries.	Supervisors must closely observe workers for signs of exhaustion. Once an exhausted worker is identified, he shall be assigned to a less stressful task or removed from labor duties entirely until recovered. Seek medical assistance as necessary.	Close observation by supervisors and use of the buddy system will be used to detect and prevent worker exhaustion. Frequent breaks along with consumption of high-energy foods and liquids will also decrease the likelihood of exhaustion.
Wildlife Spill workers may encounter a wide variety of wildlife during response activities. Some of the wildlife may be capable of inflicting injuries to or killing response personnel.	Treat injuries with standard first aid methods. Treat victim for shock. Seek medical assistance as necessary.	Wildlife protection procedures will be established for each specific spill event.
Weather Sudden changes in weather conditions may jeopardize the safety of responders. Storms, high winds, dramatic temperature changes, or fog can all pose a serious threat.	If caught in severe weather, consider options carefully. Evacuation of work site may be necessary.	Obtain daily weather forecasts and updates as available. Preplan work site evacuation plans for worst-case scenarios. Workers should bring extra clothing and emergency survival gear. Communications with the Incident Command Center must be maintained in order to coordinate evacuation or to receive support.
Electric Shock Electric equipment operated at greater than 12 volts, used inlet or conductive areas, or damaged equipment can produce a severe electrical shock.	Remove victim from contact with energized parts. Administer CPR and first aid as necessary. Obtain medical assistance.	Use intrinsically safe equipment or ground fault interrupter circuits to prevent shock.

G.2 Initial Response Actions

INITIAL SITE ASSESSMENT

An Initial Site Assessment Form, such as Table Appendix H.5 (Part 1), should be used by the ICI/Initial Incident Commander to determine the hazards at the spill site. This assessment must be made before any response effort can be undertaken. When the response effort is to be initiated, an Initial Site Safety Plan, similar to Table Appendix H.5 (Part 2), should be used to identify the spilled substance, the level of PPE needed, type of monitoring to be used, and other pertinent response information.

SITE SECURITY

The Initial Incident Commander must evaluate the seriousness of the situation and determine the level of a health or safety risk to response personnel or the public in general and notify the Incident Commander as soon as possible. If the situation requires security, local law enforcement should be contacted. Local law enforcement officials should also be contacted for evacuations, establishing roadblocks, and limiting access to response areas.

SURFACE TERRAIN AND METEOROLOGY

The direction and velocity of prevailing winds and the proximity of the spill to possible sources of ignition, such as operating equipment, must be immediately addressed. All potential ignition sources must be kept upwind of the spill or secured immediately. Some flammable vapors may be heavier than air and travel for long distances along the surface or settle in low-lying areas.

ATMOSPHERIC TESTING

A hazard evaluation procedure must be established and implemented by a trained individual in order to establish safe work practices, level of personal protective equipment, and other control procedures before any personnel are committed to spill response activities. At a minimum, the flammability of the vapors and the oxygen levels must be evaluated throughout the spill site. These levels should continue to be evaluated periodically throughout the work shift to detect changes in airborne hazards that may result from response activities or changing weather conditions.

G.3 Health Program

SITE SAFETY PLAN

The Site Safety Plan must address the safety and health hazards of each phase of the response operation including the requirements and procedures for employee protection. The Site Safety Plan should include the following:

- A safety and health risk and/or hazard analysis for each response task and operation. The risk/hazard analysis will include the following:
 - Location and approximate size of the response area.
 - Description and duration of the response activities to be performed.
 - Site topography and accessibility by air and roads.
 - Safety and health hazards expected to be encountered.
 - Exposure routes of expected contaminants and other risks such as potential skin absorption and irritation, potential eye irritation, and concentrations that are immediately dangerous to life and health (IDLH).
 - Present status and capabilities of emergency response teams that would provide assistance to response personnel in the event of an emergency.
 - Health hazards involved or expected from contaminants present and their chemical and physical properties.
- Personal protective equipment to be used by employees during each of the response operations. The requirement for personal protective equipment will be based on the results of the preliminary site evaluation and the guidance provided in the BOE/Progress Solutions written safety and health program.
- Employee training requirements to assure compliance with the OSHA requirements. The training program section of the BOE/Progress Solutions written safety and health program should be used as guidance in preparation of this section.
- Medical surveillance requirements to ensure compliance with the OSHA requirements. The medical surveillance program section of the BOE/Progress Solutions written safety and health program should be used as guidance in preparation of this section.
- A schedule for and the types of air monitoring to be conducted for IDLH conditions, combustible gases, and other conditions that may cause death or serious harm.
- Methods of maintenance and calibration of monitoring and sampling equipment to be used.
- A schedule for and the types of environmental sampling techniques and instruments to be used.
- A site control program for protecting employees involved in response operations. The site control program will include a site map, an indication of the work zones, and a description of the "buddy" system, site communications, emergency alert signals, standard operating procedures, or safe work practices, and identification of the nearest medical assistance.
- Standard operating procedures must minimize personnel and equipment contact with spill substances.
- Decontamination procedures must be developed that cover all phases of response operations. These procedures must be communicated to all response personnel and implemented before any response employees or equipment enters areas where they can potentially be exposed.
- An emergency response plan that is a separate section of the Site Safety Plan must be developed that covers:

- Pre-emergency planning, personnel roles, lines of authority, and communication.
- Emergency recognition and prevention; safe distances and places of refuge.
- Site security and control evacuation routes and procedures.
- Decontamination procedures (those not covered by the Site Safety Plan).
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Personal protective equipment and emergency equipment.
- Response area topography, layout, and prevailing weather conditions.
- Procedures for reporting incident to local, state, and federal governmental agencies.
- A section covering the critique of a response and follow-up.
- Confined space entry procedures.
- A procedure for handling, labeling, and transporting drums and containers of recovered oil and oil-contaminated debris.

SAFETY BRIEFING

The Site Safety Plan must provide for daily safety briefings that will be conducted prior to the start of each workday. The briefings should cover safety and health items that have changed or new information that has been obtained. These briefings should be used as a means to ensure that all response personnel have received information concerning updates of the Site Safety Plan.

AUDITS

The BOE Pipeline/Progress Solutions must conduct safety and health audits. The audits will be used to determine the effectiveness of the Site Safety Plan and to determine if additional procedures are needed to protect response personnel.

GENERIC SITE SAFETY PLAN

The following section contains a generic site health and safety plan that should be used by the BOE Pipeline in preparing the Site Safety Plan.

GENERIC SITE SAFETY PLAN FOR OIL SPILLS

References:

- (a) 29 CFR 1910.120 OSHA regulations for Hazardous Waste Sites
- (b) 40 CFR 311 Worker Protection
- (c) NIOSH/OSHA/USCG/EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH 85-115)

A. SITE DESCRIPTION

Location:				
Hazards:	Oil:	Hazardous Substance:		
Treatment chemicals and general safety hazards.				
Surrounding population:	Industrial:	Residential:	Rural:	Unpopulated:
	Other:			
Topography:	Rocky:	Sandy:	Docks:	Cliffs:
	Other:			
Weather related hazards:	Heat stress:	Hypothermia:	Frostbite:	Severe storms
Additional information:				

B. ENTRY OBJECTIVES

Daily objectives may include oil recovery, booming, bioremediation, dispersant application, and related activities. Detailed objectives shall be developed daily, and shall be described during the pre-entry safety briefing.

C. SITE ORGANIZATION

1. The site organization shall be developed each morning by the Sector Recorder for each individual Sector, and is modified as new personnel arrive or depart. All personnel arriving or departing from the sector/site shall report to the designated recorder.
2. **GENERIC ORGANIZATION.** The appropriate employee develops incident organizations on a case-by-case basis. The following organization serves as one

example of a site organization, which is used to define the language in this document.

- a. STAFF (all incidents): The supervising, office-level command and control organization for the entire incident.
- b. SITE (all incidents): Primary field organization on-site for the entire incident. For small spills this may be the only level of discrete field organization required.
- c. SECTOR (large/complex incidents) subunits inserted between field teams and the site level. This level is typically needed for large spills where an organizational level is needed between the entire site and individual teams. For example, a large spill might have a vessel off-loading sector, a floating oil recovery sector with several boat teams, an east beach oil recovery sector with several teams, and a west beach oil recovery sector with no teams.
- d. FIELD TEAM (medium to large incidents): Supervisors or monitors assigned to site subunits, or (for very large organizations) assigned to sector subunits. This would be the smallest discrete level of supervision.

D. SITE CONTROL

1. Anyone entering or departing a work area, or associated control zones, should report to the designated Recorder for that location. Entry is conditional, based on approval by the Site Supervisor.
2. No person should enter a site without subscribing to this or another approved Site Safety Plan.
3. No person should enter a site without adequate training in hazardous waste operations safety and health; based on work assignment and applicable hazardous conditions.
4. Site Boundaries.
 - a. EXCLUSION ZONE(S): That part of the work area where oil recovery is taking place, shall be treated as an Exclusion Zone. Only properly outfitted and trained personnel (wearing appropriate protective clothing) should be allowed in these zones.
 - b. CONTAMINATION REDUCTION ZONE(S): Contamination Reduction Zones should be established at those parts of work areas used for cleaning and storage of oily clothing and equipment. These zones should provide an area for personnel to wash their hands and face, and change into street clothing before leaving the site or consuming food and beverages.
 - c. SUPPORT ZONE(S): Related uncontaminated field locations; such as command posts, equipment staging/storage, and eating areas. The Support Zone(s) should be maintained as clean as practicable by observing decontamination procedures.

- d. The above zones should be marked as needed to control traffic and enforce decontamination procedures. Appropriate placards, barricades, traffic cones, and/or boundary tape should be used for this purpose. The Site Safety Officer should periodically inspect work areas to ensure the effectiveness of boundaries. The following color-coding applies:
 - (1) Exclusion Zones: Orange, red, or black and yellow
 - (2) Contamination Reduction Zones: Yellow
 - (3) Support Zones: Green
5. A site map should be developed and modified as necessary for each sector, and attached to the applicable Site Safety Plan. The map should include items such as (but not limited to) the following:
 - a. Exclusion Zone
 - b. Contamination Reduction Zone
 - Decontamination layout
 - Equipment storage
 - Temporary waste storage areas
 - Washing, toilets, and hygiene facilities
 - c. Support Zone
 - First aid stations
 - Emergency fire fighting equipment
 - Command posts/office spaces
 - New equipment staging/storage
 - Eating/rest areas
 - Bird/mammal cleaning and rehabilitation
 - d. Location of Identified Hazards
 - Underground cables
 - Overhead cables
 - Pits, trenches, open holes/hatches
 - Wasted deck plate
 - Hearing protection areas
 - Hard hat areas
 - Suspected locations of poisonous plants, insects, or animals
 - High pressure wash areas
 - Bioremediation application areas
 - Dispersant application areas

E. HAZARD EVALUATION

1. Potentially hazardous chemical substances/mixtures.

a. OIL: used oil

- (1) Composed of an indefinite petroleum distillate mixture. The content typically includes benzene, toluene, xylene, naphthalene, and Polyaromatic Hydrocarbons (PAHs) as well as elevated levels of heavy metals such as lead. The concentration of these products will vary widely depending on the source of the oil, weathering, and aging.
- (2) HAZARD DESCRIPTION: May cause dermatitis by skin contact; nausea by inhalation; and eye irritation by contact. Benzene is a hematologic toxin (it affects the blood and blood forming organs), and is a carcinogen. The most important potential benzene, toluene, or xylene hazard is in poorly ventilated areas (such as pits or under docks), or around freshly spilled oil. Benzo(a)pyrene is a skin contact hazard and potentially may cause skin cancer with chronic skin contact. As oil weathers and ages, benzo(a)pyrene becomes more concentrated because it evaporates much slower than other chemicals in the mixture.
- (3) BASIC PRECAUTIONS: Stay away from, or upwind of, fresh oil spills; wear chemical resistant clothing as necessary to protect against skin or eye contact; periodically change protective clothing that has oil on it; immediately change clothing that is showing evidence of oil penetrating to your skin; and wash skin with soap and water when changing into street clothing, before eating/drinking, or when exiting to a contamination reduction zone. Flush eyes with water if oil gets in them. If ingested, do not induce vomiting. Contact a physician. Urine phenol should be tested as soon as possible (and not later than 72 hours after exposure) if there is a suspected overexposure to benzene. Urine specific gravity should be corrected to 1.024 for this test. If urine phenol values exceed 75 mg per liter further testing in accordance with 29 CFR 1910.1028(i) (4) may be needed, and individuals must be removed from areas of potential benzene exposure until values return to normal.

2. Additional hazards may be encountered on site and should be marked on the attached project maps (along with any other applicable hazards found during the site survey). See also the attached listing of generic health hazard information.

- Slippery rocks
- Dangerous working surfaces (e.g., wasted deck plating or rot wood floors)
- Difficult access/egress between vessels and docks
- Drowning
- Heat stress ___ hypothermia ___ cold stress

- UV sunlight (eyes/skin)
- Noise hazards
- Ticks ___ snakes ___ bees ___ yellow jackets
- Poison ___ ivy/ ___ oak/ ___ sumac
- Overhead/buried electrical cables
- Open ___ manholes/ ___ pits/ ___ trenches/ ___ hatches
- Falling objects
- Carbon monoxide from vehicle exhaust
- Fire and explosion hazards

F. CONTROLS

The following controls shall be observed on site.

1. FIRES. Each restriction zone and associated contamination reduction zone shall have at least one each of the following:
 - A fully charged Class A fire extinguisher for ordinary fires,
 - A fully charged Class B fire extinguisher for liquid fires, and
 - A hand held foghorn to alert personnel.

The above items should be maintained in a readily accessible location, clearly labeled in red, with the location noted on the project map.
2. SLIPPERY ROCKS AND SURFACES. All personnel in the work area shall wear rubber safety boots with steel toe/shank and textured bottoms. Boat crews may substitute clean deck shoes with textured soles (free of oil on cloth/leather uppers, and no oil observable inside the shoes).
3. LIGHTING. Portable lighting should be provided for dark areas or work after sunset.
4. WORK NEAR WATER. All personnel working in boats, on docks, or generally within ten feet of water deeper than three feet, should wear Coast Guard approved personal flotation devices (PFDs).
5. HEAT STRESS. The QI/Incident Commander should make heat stress determinations throughout the day. If it is determined that a heat stress hazard exists, an alert should be passed to all teams to implement mandatory rest periods. The QI/Incident Commander should generally be guided by the American Conference of Governmental Industrial Hygienists (ACGIH) guidelines in determining work/rest periods. Fluids should be available at all times and encouraged during rest periods. (See attached information sheet on heat related health effects.)
6. COLD STRESS. Workers should be provided with adequate warm clothing. The QI/Incident Commander should make cold stress determinations throughout the day when temperatures fall below 50 degrees F.

- a. If a cold stress hazard exists, an alert should be passed to all teams to implement mandatory rest/warm-up periods. The QI/Incident Commander should generally be guided by the ACGIH guidelines in determining rest/warm-up periods.
 - b. For prolonged cold weather operations, warming shelters should be provided for rest periods. Warm and/or sweet fluids (such as soups, cocoa, cider, or sweetened - low caffeine - hot teas) should also be available during rest periods. Drinking coffee should not be encouraged.
 - c. For prolonged water temperatures below 59 degrees F, or a combined water and air temperature less than 100 degrees F, exposure suits should be worn by personnel working/traveling in small boats or aircraft over water.
7. HIGH NOISE LEVELS. Hearing protection should be used in high noise areas (exceeding 84 dBA, or designated by the QI/Incident Commander). Locations likely to exceed this level include: the vicinity of vacuum trucks and heavy equipment; bird hazing stations; and generally where noise levels require personnel to raise their voices to be heard.
 8. BITING INSECTS (e.g., mosquitoes and ticks). All personnel should be provided with long sleeved clothing and insect repellent in designated areas.
 9. POISONOUS SNAKES. All personnel working in designated areas should wear snake proof leggings or hip high rubber boots.
 10. POISONOUS PLANTS (e.g., poison ivy, oak, and sumac). Long sleeved clothing should be worn in areas designated to contain these plants. Areas known to contain these plants should be marked/posted to the extent possible at the site. Emergency medical personnel should prescribe first aid treatments to be carried in these areas.
 11. ELECTRICAL HAZARDS. Electrical power lines (buried or overhead) should be marked on applicable project maps, and physically marked in the field as necessary.
 12. TRAP HAZARDS. Open manholes, pits, trenches, or similar hazards should be noted on project maps, and marked with placarded barricades. The SITE RECORDER should ensure that these locations are periodically checked during the day; and additionally in the event that entering personnel are not accounted for at the end of a shift.
 13. CARBON MONOXIDE. Vehicle/equipment operators should ensure that personnel are not allowed to linger or work near exhaust pipes or sources of carbon monoxide.
 14. FALLING OBJECTS. Hardhat areas determined by site survey should be noted on project maps.
 15. UV LIGHT EXPOSURE. Sunscreens of protection factor 15 (or greater), and UV tinted safety glasses should be made available for response personnel as needed to prevent overexposure to UV light.

16. **BUDDY SYSTEM.** The buddy system should be observed inside the Work Area (EXCLUSION and CONTAMINATION REDUCTION ZONES). Personnel must work within sight of their assigned partner at all times. The RECORDER should assign a partner as personnel check in. Personnel should use whistles to indicate that they need assistance in areas where personnel may be obscured from supervisors (e.g. high grass, boulders, or warehouse areas) as noted on the Project Map.
17. **Personal Protective Equipment (PPE).** The following PPE ensembles should be used while on site. If designated "as needed" the equipment does not need to be worn unless the item is needed to keep oil off of clothing and skin. The OI/Incident Commander may modify ensembles on a case-by-case basis as approved by the Sector/Site Supervisor.

LOCATION	JOB FUNCTION	LEVEL
Work Area	Bioremediation crews	C1
	High-pressure wash crews	C2
	Sampling crews	C3
	Dispersant crews	D
	All others	D
Contamination Reduction Zone	All personnel	D
Support Zone	All personnel	Street clothing

18. **Sanitation and potable water.**
- a. **Potable water.** An adequate supply of potable water, or other drinking fluids, should be maintained at all times throughout the site. Containers for drinking fluids should be capable of being tightly closed, and equipped with a tap. These containers must also be labeled in such a manner that the contents are not accidentally used for other purposes. Where single service cups are supplied, the unused cups should be maintained in a sanitary container; and a separate disposal container provided for used cups.
 - b. **Non-potable water.** Water intended for uses other than drinking or washing should be identified in such a way that it is not accidentally used for drinking, washing, or cooking. There should be no cross-connection of potable and non-potable water supplies.
 - c. **Toilet facilities.** Toilet facilities should be provided at a minimum in accordance with Table H-120.2 (Toilet Facilities) of 29 CFR 1910.120(n).
 - (1) 20 or fewer people 1 facility
 - 20-200 people: 1 toilet seat, and
 1 urinal per 40 persons
 - More than 200 people: 1 toilet seat, and
 1 urinal per 50 persons

- (2) Toilets should be provided such that they are readily accessible from all work areas. Mobile work crews with ready access to toilet facilities using their own transportation do not need to have toilet facilities located at their temporary work sites.
- (3) Sewage should be handled in accordance with local health codes using one of the following means:
 - Sanitary sewer,
 - Chemical toilets,
 - Recirculating toilets,
 - Combustion toilets, or
 - Flush toilets.
- d. Food handling should be conducted in accordance with the requirements of local jurisdiction.
- e. Washing Facilities. Washing facilities should be readily accessible by all employees. In addition to sanitary cleaning, these facilities should be so equipped that they can be used to remove oily residues from the skin. Washing facilities should be maintained free of contaminants above exposure limits, and as free as practical from oily residues.
- f. Showers. For oil spill operations lasting more than six months, showers and changing rooms must be provided in accordance with 29 CFR 1910.120(n)(7); and 29 CFR 1910.141(d)(3) and 1910.141(e).

G. COMMUNICATIONS

- 1. Cellular phone number of QI/Incident Commander: _____
- 2. Other cellular phone numbers: _____

- 3. Medical Assistance:
 Nearest Medical Facility (attach map):
 Phone: _____

 Location: _____
 Phone for Ambulance: 911 _____

4. Phone
Police/Sheriff: 911

5. Phone _____ for _____ Fire
Dept: 911

H. DECONTAMINATION PROCEDURES

1. Personnel with contaminated clothing and equipment should leave the Work Area by following the prescribed decontamination below:

- a. Wipe off oily equipment and PPE clothing with a sorbent pad.
- b. Inspect PPE clothing for rips or other damage. Inspect the inside of PPE clothing for signs of oil penetration. Discard if damaged or oil penetration observed.
- c. Store oily equipment in contaminated equipment storage.
- d. Store oily PPE clothing in labeled lockers.
- e. Discard oily articles in appropriate trash bins.
- f. Remove, clean, and inspect respirators.
- g. Store cleaned respirators in respirator storage.
- h. Place cloth coveralls in laundry basket or discard if excessively dirty.
- i. Wash face and hands with soap and water.
- j. Change into street clothing.

2. Equipment for Decontamination:

- Decontamination shelter;
- Orange, red, yellow, green, and black and yellow tape for zones/hazards;
- Plastic or painted metal placards for "Exclusion Zone", "Contamination Reduction Zone", "Support Zone", and blank placards and markers;
- Saw horses, wood stakes, hammers, and nails;
- Area for new/clean equipment storage;
- Area for new PPE storage;
- Area for clean cloth coverall storage;
- Hangers for oily PPE clothing;
- Lockable storage for street clothing;
- Waterless soap;
- Soapy water for respirators (when applicable);
- Sterilizing solution for respirators;
- Clean plastic bags for respirator storage;
- Towels;
- Sorbent pads;
- Lined bins for oily debris;
- Trash cans and trash bags for other debris/garbage.

I. EMERGENCY PROCEDURES

1. Emergency Medical Procedures:

- REMAIN WITH YOUR ASSIGNED BUDDY AT ALL TIMES.
- Use whistle to call for assistance if necessary.
- Do not attempt to move seriously injured personnel, call for an ambulance to come to the injured person.
- Report all injuries to your supervisor.

2. Emergency Fire Procedures:

- REMAIN WITH YOUR ASSIGNED BUDDY AT ALL TIMES.
- Do not attempt to fight fires other than small fires.
- Do not take extraordinary measures to fight fires.
- Sound fire signal if fire cannot be put out quickly.
- Alert nearby personnel to call fire department.
- Notify supervisor and Site/Sector Recorder.
- All other personnel hearing the Fire Foghorn signal should immediately proceed, WITH THEIR ASSIGNED BUDDY, to the designated entry/exit point and Site/Sector Recorder for role call.
- The Site/Sector Supervisor or the Fire Department should ensure that the fire is extinguished or the Fire Department is called for assistance BEFORE restarting work.

J. SITE SAFETY MEETINGS

Each Supervisor should hold site Safety Meetings immediately before a shift or beginning a new work assignment; and at the end of each shift. At a minimum these meetings will describe the work to be accomplished, discuss safety procedure changes, and develop "pass-the-word" notes for the Site/Sector Recorder to pass to personnel entering the area.

K. THE SITE SAFETY OFFICER

The Site Safety Officer for this incident is: _____

The responsibilities of the SITE SAFETY OFFICER include (but are not limited to):

- Coordination of the safety and health concerns with the Scientific Support Coordinator;
- Keeping this plan current; and
- Liaison with site safety officers from other organizations.

L. AUTHORIZATIONS

OI/INCIDENT COMMANDER	Name:	Date:
	Signature:	
FEDERAL ON SCENE COORDINATOR	Name:	Date:
	Signature:	

SITE/SECTOR ORGANIZATION RECORD SHEET

The Site/Sector Recorder maintains an up-to-date, comprehensive, organization record. When relieved: the Recorder provides this site organization record/log to the incident's Documentation Officer; and assists the relief in starting a new organization record, and accounts for all personnel logged into the area. All persons wishing to enter the work area (including the Exclusion and Contamination Reduction Zones) must subscribe to a site safety plan, be adequately trained in hazardous waste site safety, and be adequately trained for their work assignment.

SITE/SECTOR NAME: _____

RECORDERS NAME: _____

Start Date/Time		Stop Date/Time			
Title	Printed name	Time In	Time Out	Time In	Time Out
Supervisor:					
Site/Sector Safety:					
Security:					
EMT/First Aid:					
Other Reps:					

FIELD TEAM NAME:
(e.g. oil recovery team, bioremediation team, water wash team)

SUPERVISOR MEMBERS:

Use Continuation Sheet if additional room is needed

G.4 PPE Levels of Protection

LEVEL D ENSEMBLE:

- Cloth coveralls
 - OPTION: long sleeved coveralls (poison plant areas)
 - OPTION: short sleeved coveralls (heat stress alert)
 - OPTION: supervisory personnel, technicians, specialists, etc may wear street clothing that will not be exposed to liquid oil, high-pressure wash sprays, etc.
- Rubber steel toe/shank safety boots with textured bottoms
 - OPTION: hip high rubber boots (e.g., designated snake areas)
 - OPTION: deck shoes with textured soles (e.g., boat operations)
- Rubber gloves (as needed)
 - OPTION: leather gloves (if no contact with oil)
- Rubber rain pants (as needed)
 - OPTION: disposable if oiling is light
- Rubber rain jacket & hood (as needed)
 - OPTION: disposable if oiling is light
- Rubber apron (as needed)
 - OPTION: disposable if oiling is light
- PFD (all personnel on or near water)
- Quart bottle to carry fluids (during heat stress alerts)
- Hearing protection (in noisy areas)
- Insect repellent (in designated mosquito/tick areas)
- Hard hat (all personnel in designated areas)
- Safety glasses (as required by Site Safety Officer)
 - OPTION: with tinted lenses (as required for sunlight)
- Sunscreen (if needed for sunlight)
- Whistle (in designated areas)

NOTES:

- 1) "AS NEEDED" means to use when and in such a way as to prevent significant skin contact with oil.
- 2) "RUBBER" means chemical resistant material that resists oil penetrating to the skin or cloth garments underneath.

LEVEL C ENSEMBLE:

- All LEVEL D items
- Rubber gloves (MANDATORY)
- Plastic rain pants (MANDATORY)
 - OPTION: disposable if oiling/contamination is light
- Plastic rain jacket with hood (MANDATORY)
 - OPTION: disposable if oiling/contamination is light
- Respiratory protection
- Full face respirator
- Half mask respirator
- Cartridges
 - Organic vapor cartridge
 - Dust, fume, mists cartridge
 - Paint spray combination cartridge
 - Other cartridges:
- Eye/face protection
 - Goggles
 - Face shields
 - Other eye/face protection:

NOTES:

- 1) "AS NEEDED" means to use when and in such a way so as to prevent significant skin contact with oil.
- 2) "RUBBER" means a chemical resistant material that resists oil penetrating to the skin or cloth garments underneath.

GENERAL SIGNS/SYMPTOMS THAT INDICATE POTENTIAL TOXIC EXPOSURES

- Sudden weight loss or change in appetite
- Unusual fatigue or new sleeping difficulties
- Unusual irritability
- Skin rashes/allergies/sores
- Hearing loss
- Vision loss/problems
- Changes in sense of smell
- Shortness of breath/asthma/cough or sputum production
- Chest pains
- Nausea/vomiting/diarrhea/constipation
- Weakness/tremors
- Headaches
- Personality changes.

G.5 Manifestations of Toxic Effects to Various Target Organs

TARGET ORGAN: skin

MANIFESTATIONS: dermatitis, chloracne, skin cancer

CHEMICAL/PHYSICAL AGENT(S): Hydrocarbon solvents, chlorinated hydrocarbons (e.g., PCB), dioxane, alcohols

TARGET ORGAN: respiratory system

MANIFESTATIONS: acute pulmonary edema, pneumonitis, asthma, lung cancer

CHEMICAL/PHYSICAL AGENT(S): many forms of dusts, fumes, and vapors

TARGET ORGAN: cardiovascular system

MANIFESTATIONS: arrhythmias, angina

CHEMICAL/PHYSICAL AGENT(S): carbon monoxide, hydrogen sulfide, organophosphates, glues/glue-solvents, temperature extremes

TARGET ORGAN: gastrointestinal system

MANIFESTATIONS: abdominal pain, nausea, vomiting, diarrhea, bloody stools, hepatic necrosis, hepatic cancer, hepatic fibrosis

CHEMICAL/PHYSICAL AGENT(S): Hydrocarbon solvents, halogenated hydrocarbons, organic solvents, petroleum products, organophosphates, corrosives

TARGET ORGAN: genitourinary system

MANIFESTATIONS: chronic renal disease, bladder cancer

CHEMICAL/PHYSICAL AGENT(S): halogenated hydrocarbons

TARGET ORGAN: nervous system

MANIFESTATIONS: headache, convulsions, coma, peripheral neuropathy

CHEMICAL/PHYSICAL AGENT(S): carbon monoxide, organophosphates, organic solvents

TARGET ORGAN: auditory system

MANIFESTATIONS: temporary and permanent hearing loss/shift

CHEMICAL/PHYSICAL AGENT(S): loud noise

TARGET ORGAN: ophthalmic system

MANIFESTATIONS: eye irritation, cataracts

CHEMICAL/PHYSICAL AGENT(S): petroleum products, UV radiation

TARGET ORGAN: hematological system

MANIFESTATIONS: anemia, bleeding disorder, leukemia

CHEMICAL/PHYSICAL AGENT(S): benzene

G.6 Heat Stress Information From NIOSH 86-112 Health

SAFETY PROBLEMS

Safety problems are common to hot environments, as heat tends to promote accidents due to slippery objects from sweaty palms, dizziness, or the visual distortions from fogged safety glasses.

The frequency of accidents, in general, appears to be higher in hot environments than in more moderate environmental conditions. Working in a hot environment lowers the mental alertness and physical performance of an individual. Increased body temperature and physical discomfort promote irritability, and other emotional states that can cause workers to overlook safety procedures or to divert attention from hazardous tasks.

HEALTH PROBLEMS

Excessive exposure to a hot work environment can bring about a variety of heat-induced disorders.

HEAT STROKE. Heat stroke is the most serious health problems associated with working in a hot environment. It occurs when the body's temperature regulatory system fails and sweating becomes inadequate. A heat stroke victim's skin is hot, usually dry, red, or spotted. Body temperature is generally 105 degrees F or higher, and the victim can be mentally confused, delirious, convulsive, or unconscious.

Any person showing symptoms of heat stroke requires immediate hospitalization. First aid including removing the victim to a cool area, thoroughly soaking the clothing with water, and vigorously fanning the body should be administered immediately. Further treatment, at a medical facility, should include the continuation of the cooling process and the monitoring of complications that often accompany the heat stroke. Early recognition and treatment of heat stroke is the only means of preventing permanent brain damage or death.

HEAT EXHAUSTION. Heat exhaustion includes several clinical disorders having symptoms that may resemble the early symptoms of heat stroke. Heat exhaustion is caused by the loss of large amounts of fluid by sweating, sometimes with excessive loss of salt. A worker suffering from heat exhaustion still sweats but experiences extreme weakness or fatigue, giddiness, nausea, or headache. In more serious cases, the victim may vomit or lose consciousness. The skin is clammy and moist, the complexion is pale or flushed, and the body temperature is normal or only slightly elevated.

In most cases, treatment involves resting the victim in a cool place and administering plenty of liquids. Victims with mild cases of heat exhaustion generally recover quickly. Those with severe cases may require extended care. There are no known permanent effects.

CAUTION - PERSONS WITH HEART PROBLEMS OR THOSE ON A "LOW SODIUM" DIET WHOM WORK IN HOT ENVIRONMENTS SHOULD CONSULT A PHYSICIAN ABOUT POTENTIAL HEALTH PROBLEMS.

HEAT CRAMPS. Heat cramps are painful spasms of the muscles that can occur during times of high sweat without an adequate replacement of the body's salt. The drinking of large quantities of water tends to dilute the body's fluids, while the body continues to lose salt. Shortly thereafter, the low salt level in the muscles can cause painful cramps. The affected muscles may be part of the arms, legs, or abdomen; but tired muscles (those used in performing the work) are generally the ones most susceptible. Cramps may occur during or after work hours and may be relieved by ingesting salted liquids.

CAUTION - PERSONS WITH HEART PROBLEMS OR THOSE ON A "LOW SODIUM" DIET WHOM WORK IN HOT ENVIRONMENTS SHOULD CONSULT A PHYSICIAN ABOUT POTENTIAL HEALTH PROBLEMS.

FAINTING. A worker who is not accustomed to hot environments and who stands immobile in the heat can faint. Due to the body's attempts to control internal temperature enlarged blood vessels in the skin and lower body may pool blood rather than return to the heart to be pumped to the brain. Upon lying down, the worker should soon recover. By keeping active and moving around, blood should be prevented from pooling, and the patient can avoid further fainting.

HEAT RASH. Heat rash is likely to occur in hot, humid environments where heat is not readily evaporated from the surface of the skin leaving the skin wet most of the time. Sweat ducts become plugged, and a skin rash can develop. When the rash is extensive or complicated by infection, heat rash can be very uncomfortable and may reduce a worker's performance. The worker can prevent this condition by resting in a cool place part of each day and by regularly bathing and drying the skin.

TRANSIENT HEAT FATIGUE. Transient heat fatigue refers to the temporary state of discomfort and mental or psychological strain arising from prolonged heat exposure. Workers unaccustomed to the heat are particularly susceptible and can suffer to varying degrees, a decline in task performance, coordination, alertness, and vigilance. The severity of transient heat fatigue can be lessened by a period of gradual adjustment to the hot environment (heat acclimatization).

PREPARING FOR WORK IN THE HEAT

One of the best ways to reduce heat stress in workers is to minimize the heat in the work place. However, there are some work environments where heat production is difficult to control, such as outdoors where exposed to various weather conditions.

Humans, to a large extent, are capable of adjusting to the heat. Adjusting to heat under normal circumstances usually takes five to seven days, during which time the body will undergo a series of changes that will make continued exposure to heat more endurable.

Gradual exposure to heat gives the body time to become accustomed to higher environmental temperatures. Heat disorders in general are more likely to occur among workers who have not been given time to adjust to working in the heat or among workers who have been away from hot environments or who have gotten accustomed to lower temperatures. Hot weather conditions of the summer are likely to affect the

worker who is not acclimatized to heat. Likewise, the heat in the work environment can affect workers who return to work after a leisurely vacation or extended illness. Under such circumstances, the worker should be allowed to acclimate to the hot environment.

Heat stress depends, in part, on the amount of heat the worker's body produces while a job is being performed. The amount of heat produced during hard, steady work is much higher than that produced during intermittent or light work. One way of reducing the potential for heat stress is to make the job less strenuous or lessen its duration by providing adequate rest time.

NUMBER AND DURATION OF EXPOSURES

Rather than be exposed to heat for extended periods of time during the course of a job, workers should, wherever possible, be permitted to distribute the workload evenly over the day and incorporate work-rest cycles. Work-rest cycles give the body an opportunity to get rid of excess heat, slow down the production of internal body heat, and provide greater blood flow to the skin. Workers employed outdoors are especially subject to weather changes. A hot spell or a rise in humidity can create overly stressful conditions.

REST AREAS. Providing cool rest areas in hot work environments considerably reduces the stress of working in those environments. Rest areas should be as close to the work area as possible, and provide shade. Individual work periods should not be lengthened in favor of prolonged rest periods. Shorter but frequent work-rest cycles are the greatest benefit to the worker.

DRINKING WATER. In the course of a day's work in the heat, a worker may produce as much as two to three gallons of sweat. Because so many heat disorders involve excessive dehydration of the body, it is essential that water intake during the workday be about equal to the amount of sweat produced. Most workers exposed to hot conditions drink fewer fluids than needed due to an insufficient thirst drive. A worker, therefore, should not depend on thirst to signal when and how much to drink. Instead, the worker should drink five to seven ounces of fluids every 15 to 20 minutes to replenish the necessary fluids in the body. There is no optimum temperature of drinking water, but most people tend not to drink warm or very cold fluids as readily as they will cool ones. Whatever the temperature of the water, it must be palatable and readily available. Individual drinking cups should be provided. Avoid using a common drinking cup.

Heat acclimatized workers lose much less salt in their sweat than do workers who are not adjusted to the heat. The average American diet contains sufficient salt for acclimatized workers even when sweat production is high. If, for some reason, salt replacement is required, the best way to compensate for the loss is to add a little extra salt to the food. Salt tablets SHOULD NOT be used.

CAUTION - PERSONS WITH HEART PROBLEMS OR THOSE ON A "LOW SODIUM" DIET WHOM WORK IN HOT ENVIRONMENTS SHOULD CONSULT A PHYSICIAN ABOUT POTENTIAL HEALTH PROBLEMS.

PROTECTIVE CLOTHING. Clothing inhibits the transfer of heat between the body and the surrounding environment. Therefore, in hot jobs where the air temperature is lower than skin temperature, wearing excessive clothing reduces the body's ability to lose heat to the air. When air temperature is higher than skin temperature, however clothing can help to prevent the transfer of heat from the air to the body. The advantage of wearing additional clothes, however, may be nullified if the clothes interfere with the evaporation of sweat (such as rain slickers or chemical protective clothing).

APPENDIX H

SPILL RESPONSE CHECKLISTS

APPENDIX H

This appendix contains the following tables:

Table APPENDIX H.1	First Responder Checklist
Table APPENDIX H.2	Incident Commander Checklist
Table APPENDIX H.3	Response Actions
Table APPENDIX H.4	Additional Assistance Requested
Table APPENDIX H.5	Initial Site Safety and Control Analysis

H. SPILL RESPONSE CHECKLISTS

TABLE APPENDIX H.1 FIRST RESPONDER CHECKLIST PIPELINE SPILL DISCOVERY & NOTIFICATION (SEE TABLE 2.1)			
Incident Name:			
Status			Steps to be taken in an Emergency Situation
Done	To Do	N/A	Item to be Accomplished
			Identify the source of the spill. Do not enter or touch spill.
			Make Initial Notifications to BOE / Progress Solutions Control Room Dispatch (844) 220-9234 and Responders. Control room to implement closing of valves and shut down pumps and notify responders including QI/IC.
			Identify the source of the spill and perimeter.
			Take immediate actions necessary to preserve life if safe to do.
			Warn personnel within the immediate area.
			Operations level will have nonessential personnel evacuate to the area up gradient and upwind and report to the meeting place (BOE Rail Terminal facility).
			Provide first aid to any injured.
			Operations level: Stop the flow of oil (w/o endangering personnel)
			a. SCADA valve closure (Control Room) or manual valve closure.
			b. Emergency shutdown of pumps (Control Room) or manual pump shutdown.
			c. Notify Belle Fourche, Oxy, and Tesoro High Plains pipeline. (Control Room).
			d. Provide any necessary action to stop the flow of oil.
			Secure the area. Prevent any vehicles (other than response team) from entering the site.
			Identify hazards and immediate areas threatened.
			Estimate the amount and type of oil spilled.
			Operations level should isolate the discharge spill area, eliminate ignition sources, and confine the release to the smallest area possible.
DISCOVERY AND NOTIFICATION			
			Notify QI Area Manager Don Boroff (701) 690-0690. Notify QI Foreman Dana Rathjen (701) 690-6245 if Area Manager not available (Table 2.2) Notify Progress Solutions 24 Hour Control Center (844) 220-9234. Senior person directing activities may call 911 for site perimeter control, personnel rescue, and fire assistance.
			Deploy facility emergency response assets.

TABLE APPENDIX H.1 (continued)
FIRST RESPONDER CHECKLIST
PIPELINE SPILL DISCOVERY & NOTIFICATION

INITIAL ACTIONS

Done	To Do	N/A	Items to be accomplished
			Preliminary Spill Assessment: Initial Site Safety and Control Analysis - Part 1 found in Appendix H table appendix H.5. <ul style="list-style-type: none"> • Time and type of Incident (Spill/Leak/Fire): • Type of material spilled: Crude Oil • Approximate quantity: • Spill source isolated (time): • Personnel injuries: • Personnel rescue: • Areas threatened: • Weather conditions: • Appropriate safety considerations addressed: • Response operations underway:
			Advise Incident Commander on initial actions.
			Eliminate ignition sources.
			Preliminary assessment of risk to response personnel.
			Activate additional support assets as required.

DEFENSIVE ACTIONS

Done	To Do	N/A	Items to be accomplished
			Notify nearby locations that could be impacted.
			Notify contracted oil spill response organization to respond.
			Make notification and initiate isolation and evacuation, if safe to do.
			Secure the source of pollution: <ul style="list-style-type: none"> • Anticipated movement of spill:
			Deploy additional response assets.
			Request assistance, if required.

Continue to direct initial response actions until relieved by Incident Commander or other recognized authority.

**TABLE APPENDIX H.2
INCIDENT COMMANDER CHECKLIST
PIPELINE SPILL DISCOVERY & NOTIFICATION**

EMERGENCY ACTIONS (ALSO SEE SECTION 4.5.1)

Done	To Do	N/A	Item to be accomplished
			IC briefed on activities performed.
			Assess the nature and extent of the release.
			Determined level of spill (Table 4.3.2).
			Determination of threat to human health or the environment.
			Ensure Initial Response Actions described in Table 2.2 are completed.
			Verify the Progress Solutions Control Room has been called.
			Assign staff positions as needed from Organizational Chart Figure 4.3.2. Discuss assigned responsibilities (See section 4.3.2)
			Ensure proper response personnel and equipment are contacted and respond.
			Review with Safety Officer Section 9.10 Crude Oil, Health Hazards, and response. Complete an Initial Site Safety and Control Analysis (Table Appendix H.5 Part 1), and develop a Site Safety Plan (Appendix G) to insure that personnel safety is accorded highest priority.
			Arrangements to evacuate personnel, notify local authorities, and advise if area control or evacuation of the surrounding area is required. See Section 3.4.2.2 for dwelling along pipelines.
			The QI/IC will ensure fire fighting resources are available and in place. The Rural Fire Department will be responsible for providing firefighting services at the site and must be aware of the situation to ensure the surrounding area is secure. The QI/IC will offer assistance of BOE/Progress Solutions personnel and resources. Rural Fire Department has ultimate authority for ordering evacuation in surrounding areas of site.
			Should rescue of human life be required, QI/IC will assure local 911 is called.
			The QI/IC will assure medical assistance for transportation of injured personnel to a medical facility.
			QI/IC will assure immediate action to control the spill and to contain the spill within Right-of-Way. Block all storm and sanitary drains.
			Keep an accurate log of activities during the spill event.
			QI/IC is responsible for completing notifications and follow-up actions.
			If a spill poses a significant threat to human health or the environment, QI/IC will initiate mitigation procedures to protect sensitive areas. See section 3.4.2.3.

**TABLE APPENDIX H.2 (continued)
INCIDENT COMMANDER CHECKLIST
PIPELINE SPILL DISCOVERY & NOTIFICATION**

EMERGENCY ACTIONS

Done	To Do	N/A	Notifications to be accomplished (Section 2.3)
			<p>Spill incident that may have potential to effect human health or pollute the waters of the State, the QI/IC will notify:</p> <ul style="list-style-type: none"> • North Dakota Department of Health (701-328-5210). • ND Public Service Commission (877-245-6685). • ND Industrial Commission (701-328-3722). • Emergency Manager (Stark 701-627-4805, Dunn 701-290-1769).
			<p>If any spill reaches waters of the state (surface or ground water) or navigable water, the IC will notify:</p> <ul style="list-style-type: none"> • National Response Center (contact if discharge reaches water) (800-424-8802) PHMSA, EPA, OSHA, USCG, ACOE. (Table 2.4.1) <ul style="list-style-type: none"> ○ Time of notification: ○ NRC report number: • North Dakota Department of Health (701-328-5210). • ND Public Service Commission (877-245-6685). • ND Industrial Commission (701-328-3722). • Emergency Manager (Stark 701-627-4805, Dunn 701-290-1769).
			<p>Notify National Response Center for a reportable incident when;</p> <ul style="list-style-type: none"> • A person is killed; • A person receives an injury requiring admittance to a hospital; • General public evacuated for one hour or more; • A major transportation artery or facility is closed or shut down for one hour or more; or • An operational flight pattern or routine of an aircraft is altered. • Judgment of operator that it should be reported. <p>NRC must be notified at the earliest practicable moment (within 2 hours) after a discharge of oil is discovered.</p>
			Use Response Notification Form Table 2.4.2.
			Provide contact with federal and state regulators.
			Provide primary spokesperson for news media and issue press releases.

INITIAL ACTIONS

Done	To Do	N/A	Item to be accomplished
			Time of discovery of leak/discharge:
			Spill management team activated (time):
			Arrive time of spill management team:
			Time the response resources are deployed (on site):
			Cleanup team activated (time):

**TABLE APPENDIX H.2 (continued)
INCIDENT COMMANDER CHECKLIST
PIPELINE SPILL DISCOVERY & NOTIFICATION**

INITIAL ACTIONS

Done	To Do	N/A	Item to be accomplished
			Evaluate the incident: <ul style="list-style-type: none"> • Materials involved: • Personnel hazards: • Fire/explosion hazard: • Total amount lost: _____ Recovered: _____ • Evaporated/burned: _____ Uncontained: _____ • Sources: • Injuries/loss of life: • Area threatened: • Wildlife impact:
			Advise the F.O.S.C. on actions being taken.
			Determine if support is sufficient: <ul style="list-style-type: none"> • Land response equipment • Water response equipment
DEFENSIVE ACTIONS			
Done	To Do	N/A	Item to be accomplished
			Secure the source and repair if necessary.

TABLE APPENDIX H.2 (continued)
INCIDENT COMMANDER CHECKLIST
PIPELINE SPILL DISCOVERY & NOTIFICATION

DEFENSIVE ACTIONS

Done	To Do	N/A	Item to be accomplished
			Prepare and follow site safety plan: <ul style="list-style-type: none"> • Initial Safety Site Safety assessment. • Site description and establish and follow entry objectives. • Work area will be continuously monitored for toxic and flammable gases. • Site Control will include establishing exclusion, contamination reduction zones and support zones. • Establishment of buddy system. • Conduct site safety briefings for response personnel. • Establish decontamination procedures for response personnel. • Set up eyewash/wash down station. • Establish decontamination procedures • Determine PPE level of protection and monitor use.
			Set up First-aid stations.
			Designate exposure-monitoring personnel.
			Deploy response assets.
			Evacuations:
			Request assistance if required.
			HAZMAT team assists with containment and control until the site is "made safe".
			Establish site traffic control.
			Establish command post (use ICS structure) and communications center. LL Terminals truck terminal (primary), BOE Rail facility (alternate).
			Obtain source(s) for Material Handling Equipment.
			Communications: (Section 2.5) <ul style="list-style-type: none"> • Cellular phones. • Land lines • Emails. • Send texts. • Company radio. • Establish working channels (VHF). • Develop a Communications Plan.

TABLE APPENDIX H.2 (continued)

INCIDENT COMMANDER CHECKLIST

PIPELINE SPILL DISCOVERY & NOTIFICATION

RECOVERY, CLEAN-UP, AND DISPOSITION

Done	To Do	N/A	Item to be accomplished
			HAZMAT personnel will responsible for clean-up.
			Coordinate cleanup with federal and state agencies.
			Determine proper storage procedures for contaminated materials.
			Determine proper disposal procedures for contaminated materials and coordinate disposal with appropriate federal and state agencies.
			Obtain food and water for response personnel.
			Obtain sanitary facilities within reasonable distance of site.
			Document respiratory and/or skin reaction complaints.
			Salvage operations.
			Fire control.
			Obtain samples for analysis.
			Approve demobilization of equipment and resources after decontamination procedures.

DOCUMENTATION AND COST RECOVERY

Done	To Do	N/A	Item to be accomplished
			Review and approve resource allocation changers.
			Prepare preliminary damage assessment and update frequently.
			Prepare natural resource damage assessment.
			Maintain field accounting for accurate cost tracking.
			Identify funding sources: <ul style="list-style-type: none"> • Contact USCG/EPA pollution funds. • Verify Senior Management has contacted Insurance Carrier.
			Waste Management: <ul style="list-style-type: none"> • Type of OHS: • Amount of contaminated liquids: • Amount of contaminated solids: • Amount of HAZMAT:
			Communicate available information on response activities to Public Affairs.
			If a reportable spill, issue written report to PHMSA within 30 days of discover of the incident, within 60 days to US EPA and North Dakota Department of Health, Division of Water Quality if spill exceeds 1,000 gallons or occurs within a year of a previous reportable spill.
			Conduct a post-incident analysis.
			Determine a corrective action plan and ensure deficiencies are corrected within 30 days of the corrective action plan's publication date.

TABLE APPENDIX H.3 RESPONSE ACTIONS

INITIAL RESPONSE ACTIONS (Section 3.4.1, 4.5.1)	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
PERSONNEL RESCUE	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
DWELLING EVACUATION	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
COMMUNITY EVACUATION	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
SITE TRAFFIC CONTROL	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
SITE SAFETY AND HEALTH PLAN ESTABLISHED	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
FIRST AID STATIONS ESTABLISHED	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
SANITATION AND POTABLE WATER ESTABLISHED	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
EXPOSURE MONITORING	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
FIRE CONTROL AND RESOURCES	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
MEDICAL ASSISTANCE & TRANSPORTATION	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
LOG OF ACTIVITIES	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
NOTIFICATIONS	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
UTILITIES SECURED		
ELECTRIC	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
GAS PIPELINES	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
WATER	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
OIL PIPELINES	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
OTHER(S)- BSNF RAILROAD	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
SPILL/RELEASE SOURCE CONTROLLED	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
SPILL/RELEASE CONTAINED	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
REPAIR OF LEAK	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
SPILL/RELEASE CLEANUP/REMOVAL	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
SALVAGE OPERATIONS	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
POST-INCIDENT ANALYSIS	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED
CORRECTIVE ACTION PLAN	<input type="checkbox"/> IN PROGRESS	<input type="checkbox"/> COMPLETED

TABLE APPENDIX H.4 ADDITIONAL ASSISTANCE REQUESTED

LOCAL FIRE DEPARTMENT(S)	<input type="checkbox"/> YES <input type="checkbox"/> NO
LOCAL/STATE POLICE	<input type="checkbox"/> YES <input type="checkbox"/> NO
LOCAL AMBULANCE/HOSPITAL(S)	<input type="checkbox"/> YES <input type="checkbox"/> NO
LOCAL CONTRACTOR(S)	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAZMAT RESPONSE TEAM	<input type="checkbox"/> YES <input type="checkbox"/> NO
GENERAL CONTRACTORS	<input type="checkbox"/> YES <input type="checkbox"/> NO
PIPELINE MAINTENANCE & REPAIR	<input type="checkbox"/> YES <input type="checkbox"/> NO
PLANE & HELICOPTER SERVICES	<input type="checkbox"/> YES <input type="checkbox"/> NO
VACUUM & TRANSPORTATION TRUCKS	<input type="checkbox"/> YES <input type="checkbox"/> NO
WELDING CONTRACTOR	<input type="checkbox"/> YES <input type="checkbox"/> NO
X-RAY SERVICES	<input type="checkbox"/> YES <input type="checkbox"/> NO
US ENVIRONMENTAL SERVICES	<input type="checkbox"/> YES <input type="checkbox"/> NO
EMERGENCY RESPONSE MANAGERS	<input type="checkbox"/> YES <input type="checkbox"/> NO
LOCAL COAST GUARD MARINE SAFETY OFFICE	<input type="checkbox"/> YES <input type="checkbox"/> NO
BOE HEADQUARTERS	<input type="checkbox"/> YES <input type="checkbox"/> NO
PROGRESS SOLUTIONS HEADQUARTERS	<input type="checkbox"/> YES <input type="checkbox"/> NO
<i>REGIONAL INCIDENT COMMANDER</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO

TABLE APPENDIX H.5 INITIAL SITE SAFETY AND CONTROL ANALYSIS — PART 1

Incident Name:	Date Prepared:	Time Prepared:	Location:
To be completed by Safety Officer prior to any immediate response actions			
OI / On-Scene Commander:			
Wind direction across incident:	Toward your position <input type="checkbox"/>	Away from your position <input type="checkbox"/>	
1. Are people: (1) trapped <input type="checkbox"/> Yes <input type="checkbox"/> No? ; (2) injured <input type="checkbox"/> Yes <input type="checkbox"/> No? ; (3) Dead <input type="checkbox"/> Yes <input type="checkbox"/> No?			
Are people involved: (1) as unorganized observers? <input type="checkbox"/> Yes <input type="checkbox"/> No; or (2) in rescue attempts? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Are there any immediate signs of potential hazards:	a. Electrical lines down or overhead? b. Unidentified liquid or solid products visible? c. Colored vapors visible? d. Smells noted that are not natural? e. Fire, sparks nearby, sources of ignition present? f. Holes, caverns, deep ditches, fast-moving water, cliffs nearby? g. Local traffic that could be a potential problem? h. Signs, placards, or color-codes indicating danger? i. Spill Zone	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Dry <input type="checkbox"/> Wet <input type="checkbox"/> Icy	
2. As you approached the scene from the upwind side, did you note a change in the status of any of the above? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Have you established control of the area involved in the incident? <input type="checkbox"/> Yes <input type="checkbox"/> No			
3. Have you determined the necessity for any of the following:	a. Security? b. Hazardous material technician to identify or monitor substances involved in the incident? c. Protective gear and to what level of protection? d. Decontamination center? e. Command center? f. Safety equipment you will need to eliminate the problems? g. Placement of the warning signs (i.e., benzene, no smoking, etc.)? h. Number of personnel needed to control the situation?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	
<p>Notes:</p> <p>Before entering a potentially hazardous work environment, IT MUST BE EVALUATED BY A COMPETENT PERSON to establish safe work practices, personnel protective equipment, and other control procedures. As a minimum, lower explosive limit (LEL), oxygen, and benzene concentrations must be evaluated.</p> <p>Spill cleanup areas shall be controlled as "regulated areas." If benzene vapors are or may be expected to equal the action level of 0.5 parts per million, then the area must be posted with the following warning:</p> <p style="text-align: center;"> DANGER BENZENE CANCER HAZARD FLAMMABLE — NO SMOKING AUTHORIZED PERSONNEL ONLY RESPIRATOR REQUIRED </p>			
Prepared by:	BOE/Progress Solutions		
Frequency	At Onset of Response Operations		
Contents	Information Source		
General Advisories	BOE/Progress Solutions		
Division/Group	BOE/Progress Solutions		
Chemical/Physical Hazards	BOE/Progress Solutions		
Precautions	BOE/Progress Solutions		
Approved by:	BOE/Progress Solutions		
Distribution	All Recipients of Incident Action Plans		

TABLE APPENDIX H.5
INITIAL SITE SAFETY AND CONTROL ANALYSIS — PART 2 (CONTINUED)

Incident Name:	Date Prepared:	Time Prepared:	Location:																
<p>7. Is a vehicle/vessel/tank involved? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p>If yes</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; border: none;">Driver's/Captain's Name:</td> <td style="width: 35%; border: none;"><hr/></td> <td style="width: 35%; border: none;">Driver's/Captain's License:</td> <td style="border: none;"><hr/></td> </tr> <tr> <td style="border: none;">Equipment/Vehicle No:</td> <td style="border: none;"><hr/></td> <td style="border: none;">Tractor/Trailer No:</td> <td style="border: none;"><hr/></td> </tr> <tr> <td style="border: none;">Railcar No:</td> <td style="border: none;"><hr/></td> <td style="border: none;">Vessel No.:</td> <td style="border: none;"><hr/></td> </tr> <tr> <td style="border: none;">Ship Name & Number:</td> <td style="border: none;"><hr/></td> <td></td> <td></td> </tr> </table>				Driver's/Captain's Name:	<hr/>	Driver's/Captain's License:	<hr/>	Equipment/Vehicle No:	<hr/>	Tractor/Trailer No:	<hr/>	Railcar No:	<hr/>	Vessel No.:	<hr/>	Ship Name & Number:	<hr/>		
Driver's/Captain's Name:	<hr/>	Driver's/Captain's License:	<hr/>																
Equipment/Vehicle No:	<hr/>	Tractor/Trailer No:	<hr/>																
Railcar No:	<hr/>	Vessel No.:	<hr/>																
Ship Name & Number:	<hr/>																		
<p>8. General Information:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%; border: none;">Carrier's Name:</td> <td style="width: 40%; border: none;">Phone number:</td> </tr> <tr> <td style="border: none;"> Bakken Oil Express, LLC 8301 E 21st Street North, Suite 420, Wichita, KS 67206 (316) 630-0287 </td> <td style="border: none;"><hr/></td> </tr> <tr> <td style="border: none;">Material Transported:</td> <td style="border: none;"><hr/></td> </tr> <tr> <td style="border: none;">Crude Oil</td> <td style="border: none;"><hr/></td> </tr> <tr> <td style="border: none;">Point of origin along pipeline:</td> <td style="border: none;">Flow path:</td> </tr> <tr> <td style="border: none;"><hr/></td> <td style="border: none;"><hr/></td> </tr> <tr> <td style="border: none;">Operator Name & Number:</td> <td></td> </tr> <tr> <td style="border: none;">Progress Solutions, LLC. (844) 220-9234</td> <td></td> </tr> </table>				Carrier's Name:	Phone number:	Bakken Oil Express, LLC 8301 E 21 st Street North, Suite 420, Wichita, KS 67206 (316) 630-0287	<hr/>	Material Transported:	<hr/>	Crude Oil	<hr/>	Point of origin along pipeline:	Flow path:	<hr/>	<hr/>	Operator Name & Number:		Progress Solutions, LLC. (844) 220-9234	
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Crude Oil	<hr/>																		
Point of origin along pipeline:	Flow path:																		
<hr/>	<hr/>																		
Operator Name & Number:																			
Progress Solutions, LLC. (844) 220-9234																			
9. Call for medical help if required. Call for police or security assistance, if required.																			
10. **Determine degree of decontamination required and designate area.																			
11. Set up security area and notify area residents, if applicable.																			
12. Establish safe work practices, personnel protective equipment requirements, and area vapor monitoring requirements. Hold a tailgate meeting with all personnel to explain in detail communication requirements, PPE, and other site-specific requirements as necessary.																			
13. Start control, containment, cleanup decontamination, and disposal process.																			
** To be completed by qualified technician.																			


8.2.2 EMERGENCY RESPONSE PLAN - OIL POLLUTION ACT (OPA) CHANGE LOG

The following Change Log should be reviewed every 30 days by the Regulatory Compliance Officer or Foreman for the Pipeline.

If any of the answers to the questions below is "Yes," the Area Pipeline Manager should be notified and a written copy sent to him immediately. The Area Pipeline Manager will decide if the change(s) require immediate notification to the applicable regulatory agencies. A "Yes" answer may require immediate (within 30 days) changes to the Response Plan. Significant changes require a submittal or response plan revisions to the Department of Transportation within 30 days of the change. If the answers are "No" there is no need to notify the Area Pipeline Manager of this information. Retain a copy in the manuals for your records and agency inspections.

Have any of the following changes occurred to the pipeline with in the last 30 days?

1. Have you removed or modified any pipeline sections or added to existing sections?
YES NO
2. Have there been any changes in the type of products handled, stored, or transferred?
YES NO
3. Have there been any flow changes regarding the pump station on the north end of the pipeline?
Flow northwest then west to containment in northwest corner of property
YES NO
4. Have there been any significant changes in throughput, i.e., changes to pump rates?
YES NO
5. Have you added/deleted/relocated any spill response or communication equipment?
YES NO
6. Have any employees transferred in or out of your area?
YES NO
7. Has the QI or Alternate QI changed or have any of their phone numbers changed?
YES NO
8. Do you have a new set of drawings since the last pipeline response plan update?
YES NO
9. Has anything occurred in your area that could affect your ability to respond to a spill?
YES NO
10. Have your changed your primary OSRO (Spill Contractor)?
YES NO
11. Have there been any changes to response strategies or procedures?
YES NO

Date Reviewed	Reviewed By	Next Review Due
12/15/15		1/31/16

OWNER/OPERATOR REVIEW AND CERTIFICATION LOG 49 CFR 194.121 and §194.107(b)

Per 49 CFR 194.121, a review and evaluation of this Response Plan is conducted at least every 5 years from the date of the last submission or last approval. In accordance with 49 CFR 194.107 (b), a review and evaluation of this Response Plan is conducted at least every year for consistency with the National Contingency Plan and Area Contingency Plans. This log is to serve as a certification of a review in accordance with 49 CFR 194.107.

I have completed review and evaluation of the Response Plan for BOE Pipeline in Dunn and Stark County, ND.			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
8/12/14	<i>[Signature]</i>	<input checked="" type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	7/31/2015
Remarks			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
7/15/15	<i>[Signature]</i>	<input checked="" type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	7/31/2016
Remarks			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
12/15/15	<i>[Signature]</i>	<input checked="" type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	12/31/16
Remarks			
Date Reviewed	Reviewed By	Reviewed For	Next Review Due
		<input type="checkbox"/> Annual Response Plan Consistency <input type="checkbox"/> Five Year Currency of Operation	
Remarks			