Fredrikson
& BYRON, P.A.

February 5, 2018

VIA HAND DELIVERY

Mr. Darrell Nitschke
Executive Secretary
North Dakota Public Service Commission
600 East Boulevard Avenue, Dept. 408
Bismarck, ND 58505-4080

RE: Andeavor Field Services LLC —
Case Number PU-18-_____

Dear Mr. Nitschke:

Enclosed for filing please find an original and ten (10) copies of the following in connection with the above-referenced matter:

1. Consolidated Application for a Certificate of Corridor Compatibility and Route Permit for the Y-Grade Hub Pipeline Project in McKenzie, Billings, and Stark Counties; and

2. Application of Andeavor Field Services LLC for Waiver or Reduction of Procedures and Time Schedules.

Electronic versions of all documents, including relevant shapefiles, are also provided, along with a Black and White Map for Publication. A filing fee in the amount of $100,000 is also enclosed herewith for filing.

If you should have any questions, please advise.

Sincerely,

LAWRENCE BENDER

LB/ber
Enclosures
63216083.2

Attorneys & Advisors / Fredrikson & Byron, P.A.
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fax 701.221.8750 / Bismarck, North Dakota
www.fredlaw.com / 58501-1215

1 PU-18-72 Filed 02/05/2018 Pages: 751
Application for Certificate of Corridor Compatibility and Route Permit with Waiver
Andeavor Field Services LLC
Lawrence Bender, Fredrikson&Byron, P.A.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

IN THE MATTER OF THE APPLICATION OF ANDEAVOR FIELD SERVICES LLC FOR A CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT FOR THE Y-GRADE HUB PIPELINE PROJECT IN MCKENZIE, BILLINGS, AND STARK COUNTIES, NORTH DAKOTA	CASE NO. PU-18-_______

Application of Andeavor Field Services LLC
for Waiver or Reduction of Procedures and Time Schedules

In connection with its submission of a consolidated application for a Certificate of Corridor Compatibility and Route Permit ("Consolidated Application") for the construction of the Y-Grade Hub Pipeline Project (the "Project"), Andeavor Field Services LLC ("Andeavor"), submits to the North Dakota Public Service Commission (the "Commission") this application for a waiver or reduction of procedures and time schedules set forth in Chapter 49-22.1 of the North Dakota Century Code ("Siting Act") and Article 69-06 of the North Dakota Administrative Code ("Siting Rules"). Andeavor requests the Commission waive and/or reduce procedures and time schedules required by the Siting Act and Siting Rules to accomplish the purposes as requested herein. In accordance with North Dakota Century Code Sections 49-22.1-05 and 49-22.1-10, and North Dakota Administrative Code Section 69-06-01-02 and Chapter 69-06-06, Andeavor's request includes, but is not limited to:

1. That the Commission waive the provisions of North Dakota Century Code Sections 49-22.1-06, 49-22.1-07, and 49-22.1-10, and North Dakota Administrative Code Section 69-06-01-02 insofar as they require separate notices of filing of applications for a Certificate of Corridor Compatibility ("Corridor Certificate"), a Route Permit, and the application for waiver of procedures and time schedules ("Waiver

Application"), separate hearings on such applications, and certain time schedules as set forth in said statutes and rules.

2. That the Commission waive the requirements of Section 49-22.1-10 of the North Dakota Century Code insofar as this section requires separate hearings to be held in each of the counties affected by the Project, and instead hold only one hearing addressing all affected counties.

3. That the Commission hold a single consolidated hearing on this waiver request and the Consolidated Application.

4. That the Commission allow for a consolidated notice of publication with respect to the Consolidated Application and Waiver Application.

5. That the Commission waive the requirements of Section 69-06-05-01(2)(f) of the North Dakota Administrative Code insofar as this section may require a corridor width of ten percent of the corridor's length with a maximum width of six miles, reducing the required corridor width to between 200 feet and one mile for the Project.

Consistent with Section 69-06-06-01(2) of the North Dakota Administrative Code, Andeavor provides the following information in support of its waiver requests:

A. <u>Description of Proposed Project.</u>

1. **<u>Type</u>**: The Project will transport mixed NGLs (commonly called "Y-Grade Product") from an existing natural gas plant in McKenzie County to a fractionation facility in Stark County, where the mixed NGLs will be separated into discrete components (e.g. ethane, propane, butane, and natural gasoline), and ultimately on to the Fryburg Rail Terminal. The proposed Project consists of construction of approximately three (3) separate pipeline segments. The first segment is identified as the "North Segment" consisting of 17 miles of 8-inch pipeline.

The "South Segment" consists of 22 miles of 8-inch pipeline. The "Product Transfer Segment" consists of approximately 5 miles of four (4) separate 6-inch pipelines. The "North Segment" will be located within McKenzie County, the "South Segment" originates in Billings County and terminates in Stark County, and finally, the "Product Transfer Segment" will originate in Stark County and terminate in Billings County.

The North Segment and the South Segment will interconnect by utilization of a portion of the previously permitted BakkenLink Pipeline.[1] Andeavor will enter into an agreement to utilize approximately 42 miles of the existing BakkenLink Pipeline for this Project.[2] The North and South Segments of the Y-Grade Project parallel the existing BakkenLink Pipeline, offset as close as reasonably possible.

2. **Product**: The Project will transport mixed NGLs.

3. **Capacity and Design**: The Project will require installation of 8-inch diameter steel pipeline with a nominal wall thickness of 0.25-inches for the North and South Segments. The Transfer Line Segment will require installation of four separate 6-inch diameter steel pipelines with a nominal wall thickness of 0.25-inches. The nominal wall thicknesses will increase to 0.500-inches for all three segments at specific locations requiring boring.

The maximum operating pressure ("MOP") for the North and South Segments is 1,480 pounds per square inch gauge (psig), with the normal operating pressure being 400 psig. The MOP for the Transfer Line Segment is 1,480 psig, with the normal operating pressure being 180-400 psig. The pipelines will be designed to operate at a maximum of 120 degrees Fahrenheit.

[1] Andeavor (as Tesoro) acquired the BakkenLink Pipeline in January 2016, which was previously sited by the North Dakota Public Service Commission in Case Number PU-10-218.

[2] BakkenLink will submit appropriate documentation to the Commission to allow for utilization of this segment by Andeavor.

The North and South Segments of the proposed Project are designed to initially carry up to 15,000 barrels per day ("BPD") and will have expansion capabilities of up to 34,000 BPD. The Transfer Line Segment will have a normal throughput of 7,200 BPD with a maximum design throughput of 43,000 BPD. The Project will be constructed, operated, and maintained in accordance with 49 C.F.R. Part 195.

For additional analysis of the capacity and design for the proposed Project, please see Sections 1.0 and 8.0 of Andeavor's Consolidated Application, which accompanies this Waiver Application.

4. **Location**: The Project is an NGL system consisting of approximately 44 miles of new 6-inch and 8-inch steel pipelines extending from an existing natural gas plant in McKenzie County to the Fryburg Rail Terminal located in Billings County, North Dakota. As noted, approximately 42 miles of existing 12-inch pipeline owned by BakkenLink will be utilized by Andeavor through agreement of the parties to connect the North and South Segments of the Project. The North Segment of the Project will be located within McKenzie County, the South Segment originates in Billings County and terminates in Stark County, and the Product Transfer Segment will originate in Stark County and terminate in Billings County. Maps of the proposed Project are provided in Appendix A to the Consolidated Application filed herewith.

5. **Geographical Service Area**: As noted above, the Project is located in McKenzie, Billings, and Stark Counties. The Project will consist of a pipeline system to collect NGLs from the Oasis Wild Basin Natural Gas plant near Watford City, North Dakota, and transport the NGLs to a fractionation plant near Belfield, North Dakota, and ultimately to the Fryburg Rail Facility where the purity products will be loaded onto rail car. With outlet via the

Fryburg Rail Facility, the Project will provide gas processors in western North Dakota with a much-needed alternative for marketing and transporting NGLs.

6. **Time Schedule**: Andeavor proposes to develop the Project on the following schedule:

- May 2018 – The Commission issues a Corridor Certificate and Route Permit for the Project.
- June 2018 – Andeavor will begin construction of the Project.
- October 2018 – Andeavor will have completed construction of the Project.
- Commissioning and restoration activities will commence immediately following construction of the Project, and the Project will be in-service in October 2018..

7. **Future Plans**: Andeavor has no specific plans for additions to or modification of the Project at this time.

8. **Need for the Facility and Alternatives Considered.**

Andeavor is proposing to construct the Project, which consists of a pipeline system to collect NGLs from the existing Oasis Wild Basin Natural Gas plant near Watford City, North Dakota, and transport the NGLs to a fractionation plant near Belfield, North Dakota, and ultimately to the Fryburg Rail Facility where the purity products will be loaded onto rail car. The Project will address anticipated regional pipeline and outlet constraints as development of the Bakken continues. With outlet via the Fryburg Rail Facility, the Project will provide gas processors in western North Dakota with a much-needed alternative for marketing and transporting NGLs.

For additional analysis of the need for the Project, including a discussion of alternatives evaluated, please see Sections 3.0 and 12.0 of the Consolidated Application, which accompanies this Waiver Application.

9. **Cost.**

The total estimated cost of the Project is $46 million.

B. Waiver Request.

Andeavor requests that the Commission grant the waivers requested herein because these waivers are needed to prevent potentially significant delays to the Project. Without the waivers of time schedules and procedures requested, completion of Andeavor's proposed Project will be delayed, which in turn, will delay the environmentally sound and economic development and utilization of the oil and gas resources in McKenzie, Billings, and Stark Counties, North Dakota.

Section 49-22.1-05 of the North Dakota Century Code provides that the Commission may waive procedures and time schedules upon a finding that "the proposed facility is of a length, design, location, or purpose that it will produce minimal adverse effects." Based upon the investigation and analysis set forth in Andeavor's Consolidated Application, granting the requested waivers is appropriate because the proposed Project will produce minimal adverse effects due to its length (approximately 44-miles of new construction, along with utilization of approximately 42-miles of existing pipeline), its design (underground piping and limited above-ground appurtenances associated with an underground pipeline), its location (located in rural McKenzie, Billings, and Stark Counties, and avoiding Exclusion and Avoidance Areas, as set forth in Section 69-06-08-02 of the North Dakota Administrative Code), and its purpose (underground transportation of NGLs).

In determining whether the proposed facility will result in adverse impacts on the environment, Andeavor evaluated the Project using the criteria set forth in the Siting Act, the Siting Rules, and the Commission's Guidelines. More specifically, Andeavor evaluated the impacts of the Project and associated facilities considering the siting criteria set forth in Section

69-06-08-02 of the North Dakota Administrative Code and the factors set forth in Section 49-22.1-09 of the North Dakota Century Code. Impacts associated with the Project, and mitigation measures that will be taken with respect to said impacts, are summarized in Sections 10.0, 11.0, 13.0, 16.0, and 19.0 of Andeavor's Consolidated Application. Based upon Andeavor's siting criteria evaluation, and the factors set forth in the Guidelines, the Project will have minimal adverse effects.

Accordingly, Andeavor respectfully requests the Commission grant the requested waivers and render an expeditious decision.

Dated this 5th day of February, 2018.

FREDRIKSON & BYRON, P.A.

By______________________________

LAWRENCE BENDER, ND Bar #03908
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Bismarck, ND 58501
(701) 221-8700

Attorneys for Andeavor Field Service LLC

STATE OF NORTH DAKOTA)
) ss.
COUNTY OF BURLEIGH)

LAWRENCE BENDER, of lawful age, being first duly sworn, on oath deposes and says:

That he is the duly elected and qualified attorney for Applicant in the foregoing application; that he executed the foregoing application for and on behalf of said Applicant and as its said attorney that he has read said application and knows the contents thereof, and that the statements made and contained therein are, to the best of his knowledge and belief, true and correct.

LAWRENCE BENDER

Subscribed and sworn to before me this 5th day of February, 2018.

BETH E. RIPPLINGER
Notary Public
State of North Dakota
My Commission Expires January 13, 2022

Beth E Ripplinger
Notary Public

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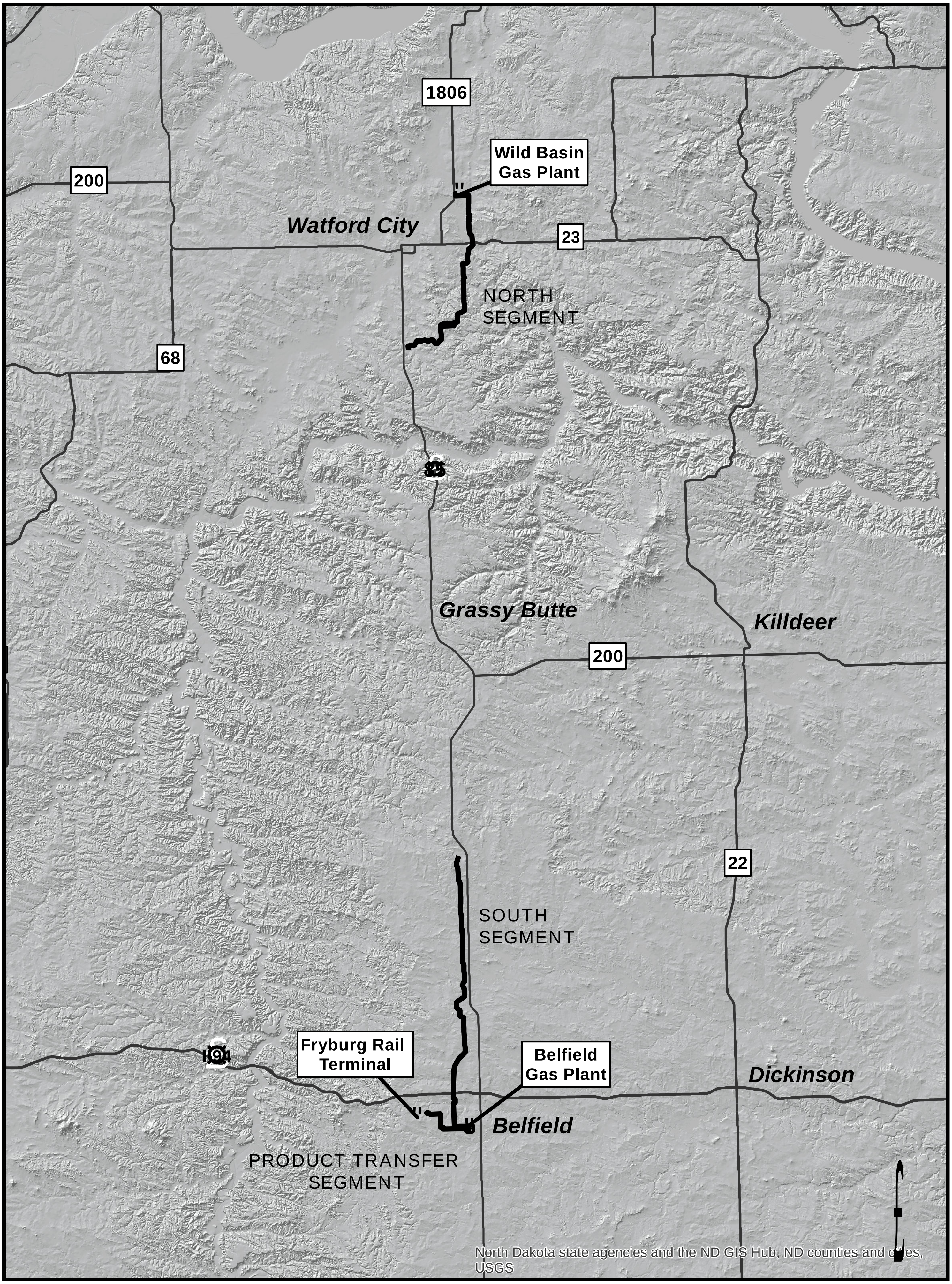

1806
Wild Basin Gas Plant
200
Watford City
23
NORTH SEGMENT
68
Grassy Butte
Killdeer
200
22
SOUTH SEGMENT
Fryburg Rail Terminal
Belfield Gas Plant
Dickinson
Belfield
PRODUCT TRANSFER SEGMENT
North Dakota state agencies and the ND GIS Hub, ND counties and cities, USGS

CONSOLIDATED APPLICATION

Certificate of Corridor Compatibility and Route Permit

andeavor

Y-GRADE HUB PIPELINE PROJECT

February 2018

Prepared by:

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ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

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Acronyms and Abbreviations

API	American Petroleum Institute
AST	Aboveground Storage Tanks
Bakken	Crude oil-bearing intervals including middle Bakken and upper Three Forks
BakkenLink	BakkenLink Pipeline LLC
BMPs	Best Management Practices
BPD	Barrels Per Day
CFR	Code of Federal Regulations
Commission	North Dakota Public Service Commission
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
Guidelines	Commission's Guidelines for Energy Conversion and Transmission Facility Siting
HDD	Horizontal Directional Drilling
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDDH	North Dakota Department of Health
NDDOT	North Dakota Department of Transportation
NDGF	North Dakota Game and Fish
NDIC	North Dakota Industrial Commission
NDPDES	North Dakota Pollutant Discharge Elimination System
NDSWC	North Dakota State Water Commission
NHRP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OSHA	Occupational Safety and Health Administration
PHMSA	Pipeline Hazardous Materials Safety Administration
Psig	Pound-Force per Square Inch Gauge
ROW	Right-of-Way
SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Office
Siting Act	North Dakota Energy Conversion and Transmission Facility Siting Act
SWPPP	Storm Water Pollution Prevention Plan
Tesoro	Tesoro Corporation
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

CHECKLIST FOR COMBINED CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT APPLICATION

Authority	Description	Section(s)
Chapter 49-22.1 CENTURY CODE		
49-22.1-06	Application for a Certificate for a Corridor	
1.a	Description of size and type of facility	1.0, 8.0
1.b	Summary of any studies of environmental impacts	13.0
1.c	Need for the facility	3.0
1.d	Site for energy conversion facility	N/A
1.e	Preferred transmission (pipeline) corridor	2.2
1.f	Analysis of merits and detriments of facility location	2.2, 12.0
1.g	Mitigating measures	19.0
1.h	Corridor evaluation pursuant to 49-22.1-09 and 49-22.1-03	17.0, 16.1, 16.2
49-22.1-07	Application for Route Permit	
1.a	Description of size and type of facility	1.0, 8.0
1.b	Description of the location	2.0
1.c	Route evaluation relative to 49-22.1-09 and 49-22.1-03	17.0, 16.1, 16.2
1.d	Mitigating measures	19.0
1.e	Right-of-way preparation, construction, and reclamation	10.0
1.f	Statement identifying how: 1) landowners informed of right-of-way acquisition; and 2) how landowners will be compensated	9.0
1.g	Other relevant information	18.0
49-22.1-09	Factors to be considered in evaluating corridor and route applications	17.0
1	Research and investigation into effects of the project on public health, welfare, natural resources, and the environment	17.1
2	Effects of transmission technology and design to minimize adverse effects	17.2
3	Potential beneficial uses of waste energy from energy conversion facility	17.3
4	Unavoidable adverse direct and indirect environmental effects	17.4
5	Corridor or route alternatives developed during the hearing which minimize adverse effects	17.5
6	Irreversible and irretrievable commitments of natural resources if designated	17.6
7	Direct and indirect economic impacts of the facility	17.7
8	Existing plans for other developments at or in the vicinity	17.8
9	Effect of project on scenic areas, historic sites and structures, paleontological and archaeological sites	17.9
10	Effect of route on unique biological areas	17.10
11	Problems raised by federal, state, or local entities	17.11

Authority	Description	Section(s)
ADMINISTRATIVE CODE – ARTICLE 69-06		
69-06-05-01	Application for a Transmission Facility Permit	
2.a.(1)	Type of facility proposed	1.0
2.a.(2)	Purpose of facility	3.0
2.a.(3)	Technology to be deployed	5.0
2.a.(4)	Type of product to be transmitted	4.1
2.a.(5)	Source of product being transmitted	4.2
2.a.(6)	Final destination of product being transmitted	4.3
2.a.(7)	Size and design detail and any alternative size and design	8.0
2.a.(7)(a)	The width of right-of-way	8.1.1
2.a.(7)(b)	The approximate length of facility	8.1.2
2.a.(7)(c)	The estimated span length for electric facilities	N/A
2.a.(7)(d)	The anticipated type of structure for electric facilities	N/A
2.a.(7)(e)	The voltage for electric facilities	N/A
2.a.(7)(f)	The requirement for and general location of any associated facilities	8.2.1
2.a.(7)(g)	The estimated distance between pipeline surface structures	8.2.2
2.a.(7)(h)	The pipe size	8.1.3
2.a.(7)(i)	The maximum design for pipeline operating pressure and temperature	8.1.4
2.a.(7)(j)	The maximum design pipeline flow rate	8.2.2
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2.b	Time schedule	7.0
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2.b.(2)	Obtaining route permit	7.2
2.b.(3)	Completing right-of-way acquisition	7.3
2.b.(4)	Starting construction	7.4
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2.b.(6)	Testing operations	7.6
2.b.(7)	Commencing operations	7.7
2.c	A copy of each evaluative study or assessment of environmental impact of the proposed facility submitted to the agencies listed in section 69-06-01-05 and each response received	Appendix J
2.d	Need for facility	3.0
2.e	Description of alternatives	12.0
2.f	Corridor width	2.2, 9.1.1
2.g	Study area to enable the Commission to evaluate the factors in the Century Code section 49-22-09	2.1, 17.0
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Authority	Description	Section(s)
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2.j	Map of criteria that led to route location	Appendix A
2.k	Discuss relative value of each criteria and how the location was selected; how operation will affect criteria	17.0
2.l	Mitigating measures	19.0
2.m	Qualifications of each person involved in location study	20.0
2.n	Map identifying criteria that led to the route location and new facilities	Appendix A
2.o	8½ × 11 black and white map suitable for newspaper publication	Separate Document
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2.q	Maps and GIS data meeting PSC requirements	Appendix A
69-06-06-01	Application for Waiver of Procedures and Time Schedule	Separate Document
69-06-08-02	Transmission Facility Corridor and Route Criteria	
1	Exclusion areas	16.1
1.a	Designated or registered national: parks, sites, landmarks, monuments, wilderness	16.1.1
1.b	Designated or registered state: parks, sites, monuments, archeological sites, natural preserves	16.1.2
1.c	County parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions	16.1.3
1.d	Areas of critical habitat	16.1.4
1.e	Areas where unique or rare species would be irreversibly damaged	16.1.5
1.f	Area within 1,200 feet of ICBM facility	16.1.6
1.g	Areas within 30 feet of direct line of ICBM launch facilities	16.1.7
2	Avoidance areas	16.2
2.a	Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; grasslands	16.2.1
2.b	Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; forest management lands; grasslands	16.2.2
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Authority	Description	Section(s)
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3.a.(2)	Family farms and ranches	16.3
3.a.(3)	Land economically suitable for irrigation	16.3
3.a.(4)	Surface drainage patterns and groundwater flow patterns	16.3
3.b.(1)	Sound sensitive land uses	16.3
3.b.(2)	Visual effect on adjacent area	16.3
3.b.(3)	Extractive and storage resources	16.3
3.b.(4)	Wetlands, woodlands, and wooded areas	16.3
3.b.(5)	Radio and TV reception and other communication or electronic facilities	16.3
3.b.(6)	Human health and safety	16.3
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4.b	Training and utilization of in-state labor	16.4.2
4.c	Economies of construction and operation	16.4.3
4.d	Use of citizen coordinating committees	16.4.4
4.e	Commitment of portion of transmitted product for use in state	16.4.5
4.f	Labor relations	16.4.6
4.g	Coordination of facilities	16.4.7
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4.j	Using existing or proposed transmission facilities	16.4.10

Introduction

Andeavor Field Services LLC ("Andeavor") is a subsidiary of Andeavor Logistics LP ("Andeavor Logistics"), a leading full-service logistics company operating primarily in the western and midcontinent regions of the United States. Andeavor Logistics owns and operates a network of crude oil, refined products, and natural gas pipelines. Andeavor Logistics also owns and operates crude oil and refined products truck terminals, marine terminals and dedicated storage facilities. In addition, Andeavor Logistics owns and operates natural gas processing and fractionation complexes.

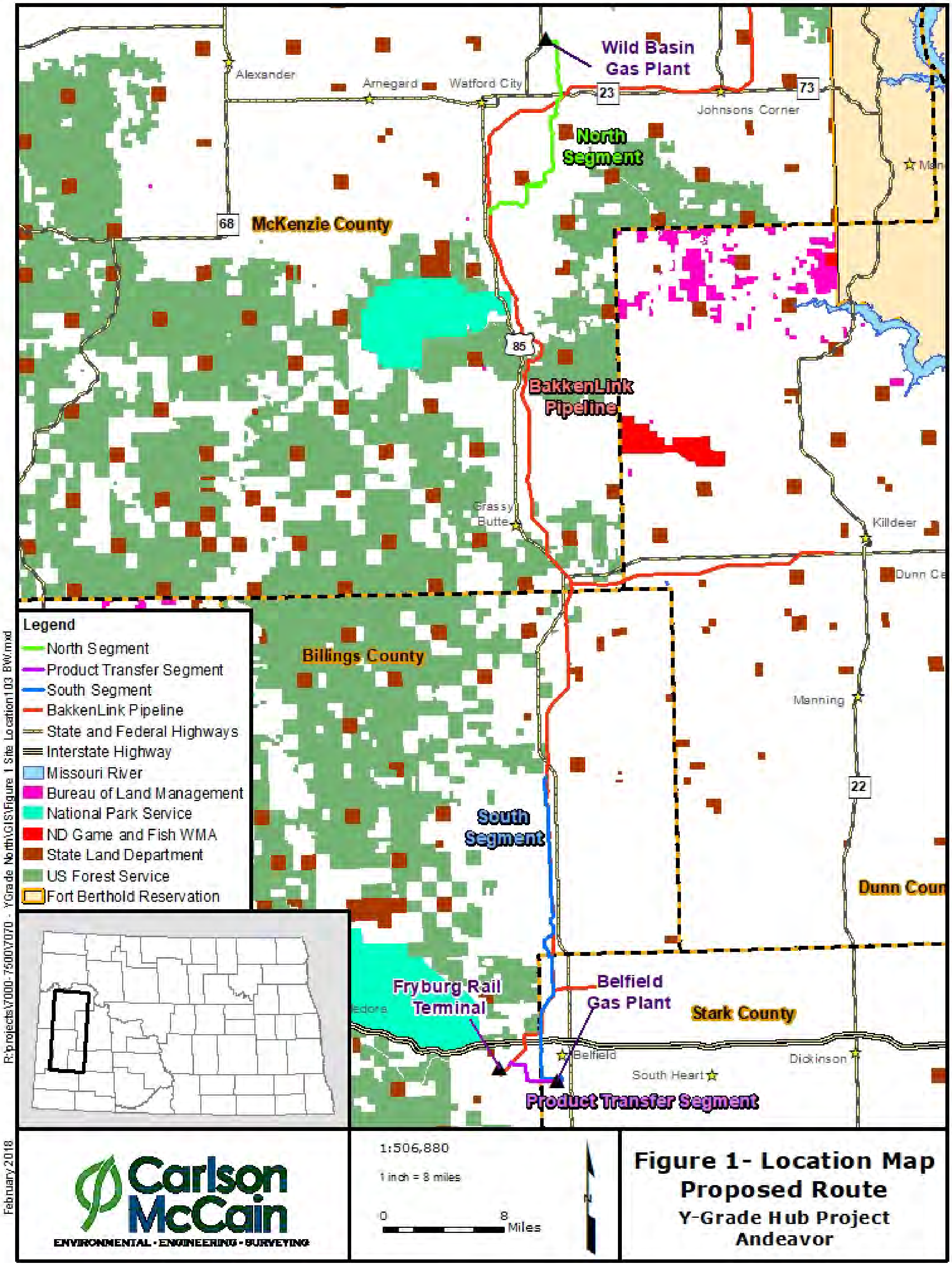
Andeavor is proposing a natural gas liquids (NGL) project that will transport mixed NGLs (commonly called "Y-Grade Product") from the existing Oasis Wild Basin natural gas plant in McKenzie County to a fractionation facility in Stark County, where the mixed NGLs will be separated into discrete components (e.g. ethane, propane, butane, and natural gasoline), and ultimately on to the Fryburg Rail Terminal. The proposed project consists of construction of approximately three (3) separate pipeline segments. The first segment is identified as the "North Segment" consisting of 17 miles of 8-inch pipeline. The "South Segment" consists of 22 miles of 8-inch pipeline. The "Product Transfer Segment" consists of approximately 5 miles of (4) separate 6-inch pipelines. The "North Segment" will be located within McKenzie County, the "South Segment" originates in Billings County and terminates in Stark County, and finally, the "Product Transfer Segment" will originate in Stark County and terminate in Billings County. Andeavor is developing and intends to build, own, and operate the proposed pipeline (hereinafter referred to as the "Project").

The North Segment and the South Segment will interconnect by utilization of a portion of the previously permitted BakkenLink Pipeline.[1] Andeavor will have an agreement to utilize approximately 42 miles of the existing BakkenLink Pipeline for this Project.[2] The North and South Segments of the Y-Grade Project parallel the existing BakkenLink Pipeline, offset as close as reasonably possible. The pipeline location(s) are depicted on Figure 1 (following page) and on the Criteria Maps included as Appendix A.

This application has been prepared in accordance with Chapter 49-22.1 of the North Dakota Century Code governing Energy Conversion and Transmission Facilities, and the North Dakota Administrative Code (Chapter 69-06-05), Transmission Facility Permit.

[1] Andeavor (as Tesoro) acquired the BakkenLink Pipeline in January 2016, which was previously sited by the North Dakota Public Service Commission in Case Number PU-10-218.

[2] BakkenLink will submit appropriate documentation to the Commission to allow for utilization of this segment by Andeavor.


Wild Basin
Gas Plant
Alexander
Arnegard
Watford City
23
73
Johnsons Corner
North
Segment
68
McKenzie County
85
BakkenLink
Pipeline
Grassy
Butte
Killdeer
Legend
North Segment
Product Transfer Segment
South Segment
BakkenLink Pipeline
State and Federal Highways
Interstate Highway
Missouri River
Bureau of Land Management
National Park Service
ND Game and Fish WMA
State Land Department
US Forest Service
Fort Berthold Reservation
Billings County
Manning
22
South
Segment
Dunn Coun
Fryburg Rail
Terminal
Belfield
Gas Plant
Stark County
Belfield
South Heart
Dickinson
Product Transfer Segment
R:\projects\7000-7500\7070 - YGrade North\GIS\Figure 1 Site Location103 BW.mxd
February 2018
Carlson
McCain
ENVIRONMENTAL • ENGINEERING • SURVEYING
1:506,880
1 inch = 8 miles
0
8
Miles
N
Figure 1- Location Map
Proposed Route
Y-Grade Hub Project
Andeavor

1.0 FACILITY TYPE

The Project is an NGL system consisting of approximately 44 miles of new 6-inch and 8-inch steel pipelines extending from the Oasis Wild Basin natural gas plant in McKenzie County to the Fryburg Rail Terminal located in Billings County, North Dakota. As noted, approximately 42 miles of existing 12-inch pipeline owned by BakkenLink will be utilized by Andeavor through agreement of the parties to connect the North and South Segments of the Project.

2.0 LOCATION

2.1 Project Study Area

Andeavor defined the Study Area as a 1.0-mile-wide area (0.5 mile on either side of the proposed centerline) between the natural gas plant and the Fryburg Rail Terminal ("Study Area").

2.2 Preferred Location of Project Corridor and Route

Andeavor is seeking approval of a Corridor that will align with the survey area used for conducting environmental field surveys. The Corridor is primarily 200 feet wide, offset depending on the location of existing parallel pipeline(s) in the area. For example, if the BakkenLink Pipeline was 25' away on one side, the survey took into account that 25' and extended 175' on the other side. The survey area also includes additional areas surveyed due to reroutes and route adjustments in the early stages of Project planning. All areas surveyed and requested as the designated corridor will hereinafter be referred to as the Corridor. The location and width of the proposed Corridor are illustrated on the aerial maps in Appendix A. The location of the proposed route ("Route") within the proposed Corridor is also depicted on the aerial maps provided in Appendix A.

Andeavor's proposed Corridor and Route are the result of a thorough site analysis, and coordination with Andeavor, landowners, local officials, agencies, and existing infrastructure owners. Andeavor obtained and analyzed public and proprietary information to identify sensitive areas and features within the one-mile-wide Study Area, such as exclusion and avoidance areas, populated areas, wetlands, waterbodies, natural resources, areas of cultural significance, and public lands. In addition, Andeavor considered existing ROWs (e.g., pipelines and roads) in an effort to maximize co-location with other infrastructure, where appropriate. Andeavor also sought input from affected landowners, agencies, local governments, and other infrastructure owners, and refined the Corridor and Route based on input received. Andeavor completed civil and environmental field surveys and additional constructability reviews to further refine its Route. Ultimately, the Corridor and Route presented in this Consolidated Application were selected to meet the Project needs, comply with the Commission's siting criteria, and minimize impacts to landowners, the environment, and existing infrastructure.

Additional discussion of the factors considered in selecting the Corridor and the Route is provided in Sections 13.0, 16.0, 17.0, and 18.0 of this Consolidated Application.

3.0 PURPOSE AND NEED OF THE FACILITY

Andeavor is proposing to construct the Project, which consists of a pipeline system to collect NGLs from the existing Oasis Wild Basin Natural Gas plant near Watford City, North Dakota, and transport the NGLs to a fractionation plant near Belfield, North Dakota, and ultimately to the Fryburg Rail Facility where the purity products will be loaded onto rail car.

The Project will address anticipated regional pipeline and outlet constraints as development of the Bakken continues. With outlet via the Fryburg Rail Facility, the Project will provide gas processors in western North Dakota with a much-needed alternative for marketing and transporting NGLs.

Needs Analysis

Over the last several years, development of the middle Bakken and upper Three Forks formations has steadily increased in North Dakota. Technological advancements in horizontal drilling and fracture stimulation have made recovering the oil and associated gas in these formations economically feasible. Even as crude oil production growth has moderated, natural gas production, and the associated NGL's from the gas stream have continued to set monthly records in 2017.

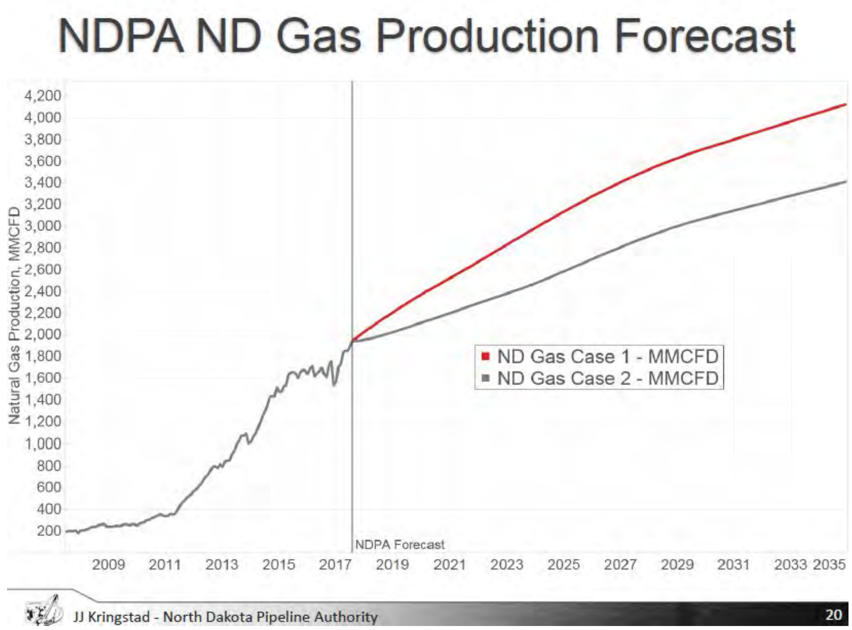


Figure 2. North Dakota Natural Gas Production Forecast

NGL can be processed in North Dakota to produce purity products such as propane, butanes, and natural gasoline. These products can be consumed locally by several demand sources. Propane is primarily for home heating use, while butanes and natural gasoline can be consumed at the Andeavor refinery in Mandan or moved out of the area by pipeline, rail, or truck. NGLs that are not fractionated locally leave the market primarily by a single pipeline originating in North Dakota and shipped to an NGL market hub in Conway, Kansas.

The impact of increased natural gas production and increased gas capture has led to constrain the take-away capacity for producers in North Dakota. According to the North Dakota Pipeline authority, current incremental NGL take-away is driven by truck and rail movements from the basin.

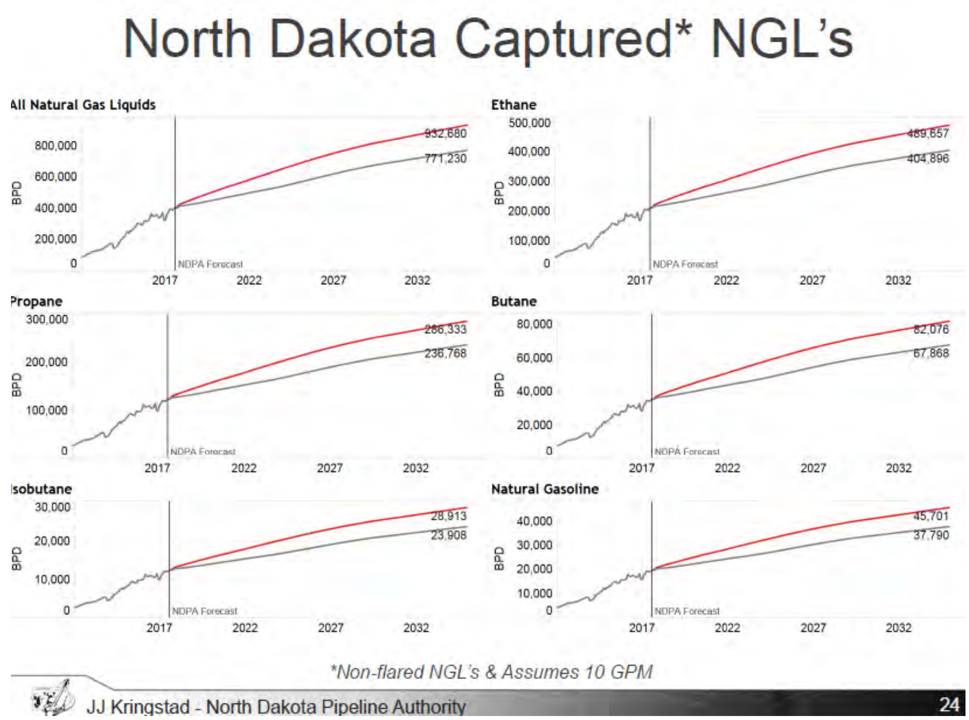


Figure 3. North Dakota Captured NGLs

Production of NGL in the Williston Basin is currently about 400,000 BPD and is expected to grow by 100,000 BPD over the next 5 years. To serve anticipated growth, additional take-away options are required.

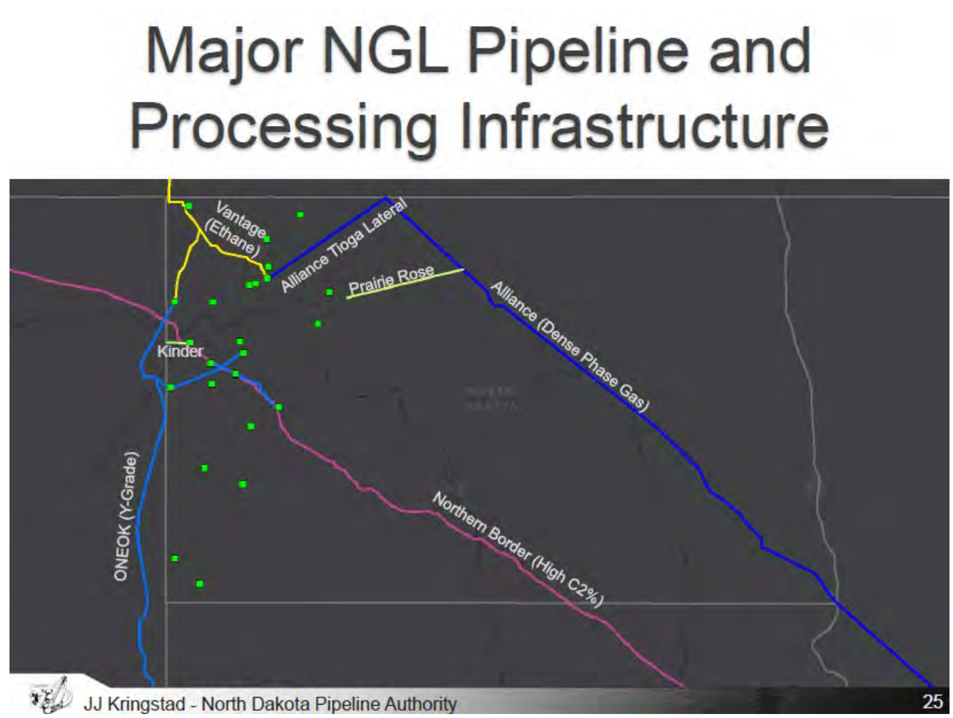


Figure 4. NGL Pipeline and Processing Infrastructure

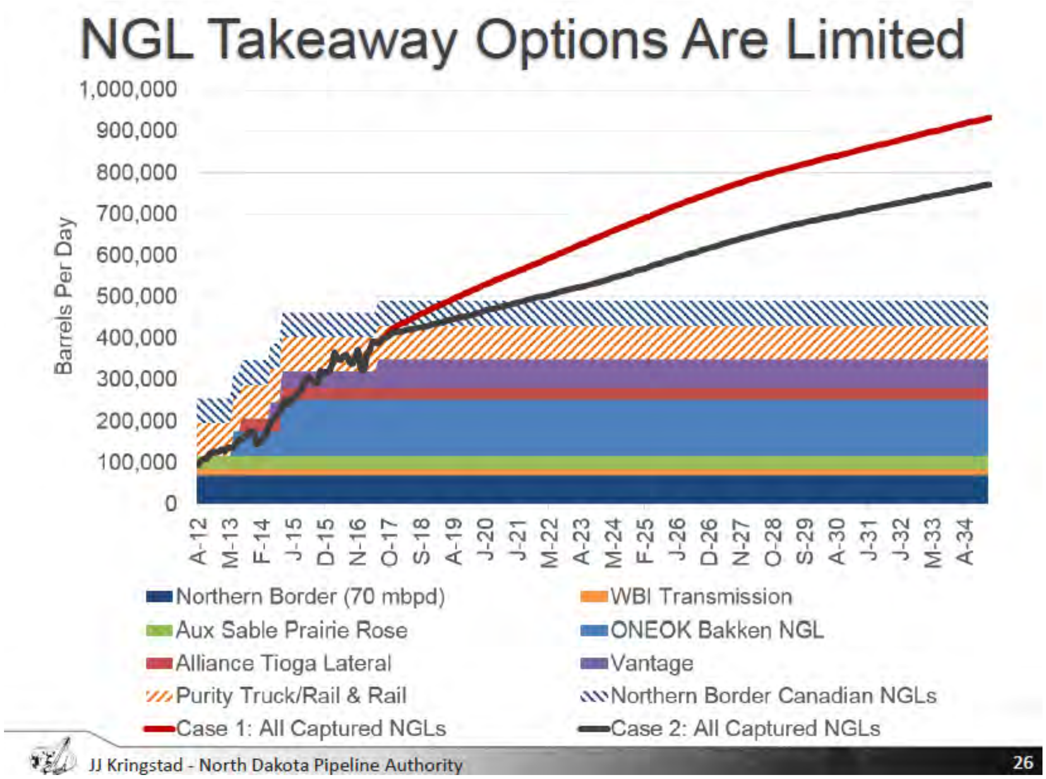


Figure 5. NGL Takeaway Options

4.0 PRODUCT

Type of Product to be Transmitted

The proposed Project will provide much-needed pipeline capacity to transport the increasing supplies of NGLs produced in portions of Billings, Dunn, McKenzie, Stark and Williams Counties, North Dakota.

Source of Product

The NGLs will be produced at the Oasis Wild Basin Natural Gas processing plant.

Final Destination of Product

The Project terminus is located at the Fryburg Rail Facility where the purity products will be loaded onto rail car for further transport. Once the product is loaded onto rail cars, the product can be transported to local markets within the North Dakota region or to the natural gas liquid marketing hub in Conway, Kansas. In addition, products can be transported to the West Coast for use as feedstock to the West Coast refining market. The decision of which destination the products will ultimately be transported will be solely based on market conditions.

5.0 TECHNOLOGY TO BE DEPLOYED

The Project will be designed, constructed, maintained, inspected, and operated to meet or exceed the U.S. Department of Transportation (USDOT) Pipeline Hazardous Materials Safety Administration (PHMSA) regulations, and in accordance with industry standards and company policies. Technologies used to satisfy these requirements and standards include:

- use of an external protective coating and cathodic protection to prevent external pipeline corrosion;
- regular internal pipeline inspection using in-line inspection tools to detect internal anomalies, including corrosion or denting;
- regular aerial and foot patrols of the permanent ROW; and
- leak detection and monitoring systems will be employed utilizing the measuring equipment at the inlet and outlet to the pipeline, which will be interconnected with a SCADA system connected to a central operations center in San Antonio, Texas.

Construction and installation of the pipelines will use different techniques to avoid or minimize impacts to sensitive areas and identified road and ditch crossings, such as trenchless construction methods (e.g., borings). These techniques are discussed further in Section 10.

6.0 ESTIMATED TOTAL COST FOR CONSTRUCTION

The estimated total cost for construction is $46 million.

7.0 SCHEDULE

7.1 Obtaining Certificate of Corridor Compatibility

Andeavor requests a Certificate of Corridor Compatibility and Route Permit from the Commission in May of 2018.

7.2 Obtaining Route Permit

Andeavor requests a Certificate of Corridor Compatibility and Route Permit from the Commission in May of 2018.

7.3 Completing Right-of-Way Acquisition

Andeavor initiated ROW acquisition in January 2018, and anticipates that ROW acquisition will be completed by May of 2018.

7.4 Starting Construction

Construction of the Project is scheduled to begin by June of 2018, or upon receipt of all necessary permits and approvals.

7.5 Completing Construction

Andeavor expects to complete construction of the Project by October 2018.

7.6 Testing Operations

Andeavor expects to conduct testing of the pipeline and associated facilities prior to placing the pipelines in service in November 2018. Once the pipelines are placed into service, an internal inspection tool will be run to establish a baseline assessment of the pipelines.

7.7 Commencing Operations

The Project is anticipated to be operational no later than November 2018.

8.0 FACILITY SIZE AND DESIGN

The following provides a description of the Project design, including the pipeline infrastructure and aboveground facilities.

8.1 Pipeline

8.1.1 Width of Right-of-Way

The temporary construction right-of-way (ROW) will be generally 100 feet wide. Additional temporary workspace will be acquired at certain locations (e.g., road, railroad, and river crossings). The temporary construction ROW may be reduced in some areas as necessary to avoid impacts to environmentally sensitive areas.

The permanent ROW will generally be 50 feet wide. The location of the pipeline within the permanent ROW may vary, however, depending on terrain, the presence of other existing facilities, and landowner concerns. The Project will follow existing pipeline and utility easements where feasible. Andeavor is in the process of acquiring easements and crossing permits.

8.1.2 Length of Facility

North Segment
17 miles of 8-inch pipe

South Segment
22 miles of 8-inch pipe

Transfer Line Segment
5 miles of four (4) separate 6-inch pipes

Existing BakkenLink Pipeline Segment
42 miles of pipeline segment to be utilized by Andeavor through agreement with BakkenLink

The entirety of the new construction for the Project is 44 miles of pipeline. Factoring in the utilization of the BakkenLink Pipeline Segment, the entirety of the Project will be 86 miles in length.

8.1.3 Pipe Size

North and South Segment
- 8-inch diameter steel pipe
- 0.25-inch wall thickness, 0.500-inch bore pipe wall thickness

Transfer Line Segment
- Four (4) 6-inch diameter steel pipes
- 0.25-inch wall thickness, 0.500-inch bore pipe wall thickness

8.1.4 Maximum Design Operating Pressure and Temperature

North and South Segment

- Normal Operating Pressure: 400 psig
- Maximum Operating Pressure: 1,480 psig
- Normal Throughput: 15,000 BPD
- Maximum Design Throughput: 34,000 BPD
- Maximum Operating Temperature: 120° F

Transfer Line Segment

- Normal Operating Pressure: 180 – 400 psig
- Maximum Operating Pressure: 1,480 psig
- Normal Throughput: 7,200 BPD each
- Maximum Design Throughput: 43,000 BPD each
- Maximum Operating Temperature: 120° F

The North and South Segments of the proposed Project are designed to initially carry up to 15,000 BPD and will have expansion capabilities of up to 34,000 BPD. The Transfer Line Segment of the Project is designed to have a normal throughput of 7,200 BPD with expansion capabilities of up to 43,000 BPD. The pipelines will be buried underground. The Project will be designed, constructed, and operated in compliance with applicable portions of the United States Department of Transportation (USDOT) regulations as set forth in 49 CFR Code of Federal Regulations (CFR) Part 195, Transportation of Hazardous Liquids by Pipeline. These regulations encompass general requirements, accident reporting and safety related condition reporting, design requirements, construction, pressure testing, operation and maintenance, qualification of pipeline personnel, and corrosion control. Relevant industry standards are incorporated into these regulations by reference, including those of the American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), and the American Standard for Testing and Materials (ASTM) and others.

8.2 Aboveground Facilities

8.2.1 General Location of New Associated Facilities

Surface facilities will be limited to pipeline markers, cathodic test stations, and block valves along the Route. The cathodic test stations and block valve sites will be secured, fenced facilities with enclosures that will house power, control and communications systems to allow the monitoring and remote operation of the pipeline.

Mainline valve assemblies will be spaced along the pipeline to meet the requirements of 49 CFR, Part 195. A high consequence area location study will be conducted during the initial design phase of the project to determine appropriate placement of the valves to minimize environmental impact.

8.2.2 Maximum Design Flow Rate for Pipeline Facilities

The maximum design flow rate of the North, South, and BakkenLink segments is 34,000 BPD. The maximum design flow rate of the Transfer Line Segment is 43,000 BPD.

8.2.3 Number and Location for Compressor and/or Pumping Stations

No pumping stations will be built as part of the Project. The pressure provided by input at the Oasis Wild Basin Gas Plant will be adequate for operation of the pipeline at the current projected flow rates. A mid-route pumping station can be added in the future to boost the system's capacity if necessary. Aboveground storage tanks (AST) can also be installed in the future at strategic locations to allow for storage and other operational considerations. The location for a mid-route pumping station and future above ground storage tanks (ASTs) will be determined based on future demand and needs.

9.0 EASEMENT ACQUISITION

Andeavor will secure the ROW by obtaining easements from landowners whose property is crossed by the Project. During easement negotiations, landowners will be informed of the easement conditions and restrictions. Landowners will be compensated for the easement, as well as for damages resulting from construction of the Project. Landowners have been contacted to obtain permission to survey and to conduct necessary soil investigations. As the Project progresses, landowners will be advised of the survey and construction schedule, necessary site access, and any vegetation clearing and grading required for construction.

Where possible, staging and lay down areas will be located within the ROW and limited to previously disturbed or developed areas. Temporary easements/workspaces will be obtained from landowners, as needed, for the duration of construction.

10.0 RIGHT-OF-WAY PREPARATION, CONSTRUCTION, AND RECLAMATION PROCEDURES

10.1 Description of Right-Of-Way Preparation and Construction

Andeavor's facilities will be designed, constructed, tested, operated, and maintained in accordance with applicable requirements of the USDOT regulations in 49 CFR Part 195, United States Department of Labor regulations, Occupational Safety and Health Administration requirements, and other applicable federal and state regulations. Among other design standards, 49 CFR Part 195 specifies pipeline material selection, minimum design requirements, protection from internal, external and atmospheric corrosion, and qualification procedures for welding and operations personnel.

Construction of the pipeline involves several procedures that are summarized in the following sections. These operations include: survey and staking; clearing and grading; trenching; pipe stringing; bending; welding; lowering the pipeline; backfilling; hydrostatic testing; and ROW cleanup and restoration.

Construction will proceed along the pipeline in one continuous operation. As construction proceeds along a spread, construction at any single point along the pipeline, from initial surveying and clearing, to backfilling and finish grading, is anticipated to last about six to ten weeks. Multiple spreads may be constructed at the same time. The entire process will be coordinated in such a manner as to minimize the total time an individual tract of land is disturbed, exposed to erosion, or temporarily precluded from its normal use.

10.1.1 Survey and Staking

The first step of construction will involve marking the limits of the approved work area (the construction ROW and temporary workspaces), the pipeline centerline, access roads, existing utility lines, and other special areas. Sensitive areas such as wetland boundaries and cultural resource sites will be marked and flagged. Andeavor will notify landowners in advance of construction activities that could affect their property, business, or operations.

10.1.2 Clearing and Grading

The construction ROW will be cleared and graded (where necessary) to provide a relatively level surface for construction equipment, a sufficiently wide work space for the passage of heavy construction equipment, and safety for the pipeline workers. Vegetation will be mowed and cleared to the edge of the work area in grassland areas where grading is not required.

To avoid soil mixing, topsoil is removed and segregated from the underlying subsoil. Topsoil is stored separately from subsoil and protected from construction-related activities. After pipeline installation is complete, the subsoil is replaced in the pipeline trench and adjacent areas to restore the land’s natural contours. Only then is the topsoil replaced where it had been before.

The depth of topsoil stripping will vary according to the ROW landscape position. Construction activities will be suspended during abnormally wet conditions to prevent excessive rutting or mixing of topsoil with subsurface soils. Topsoil is typically stored at the far edge of the ROW on the opposite side of the trench from where construction machinery does its work. In some instances, topsoil may be stored off site or on the “working side” of the trench. In the latter case, the topsoil is again stored away from where machinery will operate.

Fences and gates will be constructed during the clearing and grading operations to allow continuous use of pastures, grazing units, and livestock facilities. Silt fence will be installed along the ROW adjacent to wetlands and streams.

When crossing small water features such as small ponds, streams, creeks, approved temporary flumed structures will be constructed to minimize impacts to the water feature.

Temporary erosion controls will be installed after initial disturbance of soils, where necessary, to minimize erosion. Erosion controls will be maintained throughout construction.

10.1.3 Trenching

Trenches will be excavated using a wheel trencher or backhoe. Trenches will be excavated to a depth sufficient to provide a minimum of four feet of cover. The depth of cover may be increased if requested by a landowner, or as needed at road and stream crossings, and as needed for safety considerations. The minimum depth of cover at undeveloped sections lines will be six feet (72 inches).

10.1.4 Pipe Stringing, Bending, and Welding

After clearing and grading, the contractor will string the pipe along the ROW. Pipe will be stored at storage yards or transported directly to the pipeline ROW. The pipe lengths are typically 40 to 80 feet long. A stringing crew using special trailers will move the pipe along the ROW.

A pipe-bending machine will be used to make slight bends in the pipe to account for changes in the pipeline route and to conform to the topography. The bending machine uses a series of clamps and hydraulic pressure to make a smooth, controlled bend in the pipe. All bending is performed in strict accordance with federally prescribed standards to ensure integrity of the bend.

Pipe will be bent at the mill when necessary for sharp bends. The pipe will be pre-coated at the mill with a fusion-bonded epoxy external coating (or other coating technique) to provide corrosion protection.

A welding process will be utilized to join the sections of pipe into one continuous length. Each welder will be required to pass an approved qualification test to work on a particular pipeline aspect. The qualification tests will be conducted using project specific weld procedure(s) that will be developed in accordance with federally adopted welding standards.

Welds will be nondestructively tested to ensure structural integrity and compliance with the applicable USDOT regulations. Those welds not meeting established specifications will be repaired or removed. Once the welds are approved, the welded joints will be externally coated and the entire pipeline will be visually and electronically inspected for coating defects, scratches, or other damage. Any damage or defects will be repaired before lowering into the trench.

10.1.5 Pipeline Installation and Trench Backfilling

A series of side-boom tractors will simultaneously lift welded sections of the pipe and carefully lower the sections into the trench. Non-metallic slings protect the pipe and coating as it is raised and moved into position. In rocky areas, the contractor may place sandbags or foam blocks at the bottom of the trench prior to lowering-in to protect the pipe and coating from damage. Trench breakers or water stops will be installed, as necessary, adjacent to wetlands and stream crossings to eliminate groundwater migration along the trench.

The trench will be dewatered, as necessary, prior to lowering in. Dewatering effluent will pass through sediment filters (hay bale structures and/or filter bags), if necessary, to ensure compliance with applicable water quality requirements.

The trench will be backfilled after the pipe has been installed. Soil will be returned to the trench in the reverse order of excavation. Where topsoil has been segregated, subsoil will be backfilled first, followed by the topsoil. The trench line (subsoil) will be compacted with a wheeled-roller or other suitable construction equipment. A crown will be left over the trench line to allow for natural subsidence. If the excavated material (rock) can damage the pipe and/or coating, the pipeline will be protected with a rock shield and/or covered with select fill, obtained from commercial borrow areas or by separating suitable material from nearby trench spoil. Topsoil will not be used for padding.

10.1.6 Hydrostatic Testing

The entire length of the pipeline will be hydrostatically tested before being placed into service. Requirements for this test are prescribed in the USDOT's federal regulations. Depending on the varying elevation of the terrain and the location of available water sources, the pipeline may be divided into sections to facilitate the test. Use from municipal water sources is anticipated.

Each pipe section will be filled with water and pressured to a level higher than the operating pressure. The test pressure will be held for a specific period to confirm that it meets the design strength requirements and if any leaks are present.

Hydrostatic test water will be discharged in accordance with applicable permits. It is anticipated that hydrostatic test water will be discharged overland within or along the edges of the construction ROW using energy dissipation devices to minimize erosion and sedimentation. Test water will contact only new pipe and Andeavor does not anticipate the addition of chemicals to the test water. Once a test section successfully passes the hydrostatic test, the water is emptied from the pipeline in accordance with federal and state requirements. The pipeline will then be dried to assure it has no free water in it before being put in service.

10.1.7 Cleanup

The final step in the construction process is restoring the ROW as closely as possible to its original condition. Depending on the project requirements, this typically involves decompacting soil within construction work areas, replacing the topsoil, and seeding non-cultivated land. Final grading is anticipated to occur within 20 days of backfilling the trench. Permanent erosion controls will be installed within the ROW during this phase.

Pipeline markers and/or warning signs will be placed along the pipeline centerline at specified intervals to identify the location of the pipe. Access roads will be restored to pre-construction conditions, unless otherwise specified by the property owner and approved by regulatory agencies. Private and public property (fences, gates, driveways, roads, etc.) that were disturbed by construction will be restored to their original or better conditions, consistent with agreements with individual landowners, counties and/or townships, and any applicable permit requirements.

10.2 Special Construction Techniques

10.2.1 Highway, Road, and Railroad Line Crossings

Highway, road, and railroad line crossings will be constructed according to applicable crossing permits. Primary roads are generally major roads and highways with relatively large volumes of traffic that have a well-defined traveled roadway (traffic lane) and shoulders with a granular pavement and/or concrete surface. Primary roads and railroad crossings will be constructed using the conventional bore method or by the HDD method. Little or no traffic disruption is expected when using the bore or HDD method.

Secondary roads are generally roads with moderate traffic. Usually the traveled roadway will be defined but may have apparent shoulders. The road surface may contain granular material, soil, or a combination of both. Secondary roads will be crossed using the open-cut method.

Unimproved roads are generally minor roads with minimal, if any, traffic. They will normally be identified as small roadways, trailer, or tracks with no embankment or adjacent ditches and constructed/situated in natural earth material. The surface may have a light sprinkling of granular material. Unimproved roads will be crossed using the open-cut method.

10.2.2 Waterbody Crossings

“Waterbody” includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes. Waterbody crossings will be constructed using HDD technology. Intermittent streams that are dry at the time of crossing, will be constructed using conventional pipeline construction methods.

Andeavor's SWPPP (Appendix B) specifies measures based on best management practices (BMPs) that will address erosion control, equipment refueling, temporary bridge crossings, timing, construction methods, and restoration. Temporary workspaces are typically required on each side of a waterbody crossing to stage construction, fabricate the pipeline, and store materials. Temporary workspace will be located in upland areas a minimum of 50 feet from the waterbody edge. Trench spoil will be stored at least ten feet from the waterbody banks (topography permitting). Sediment barriers, such as silt fence, will be installed to prevent spoil and sediment-laden water from entering the waterbody.

10.2.3 Wetland Crossings

Wetlands will be avoided by using the HDD construction method. Sediment barriers and erosion control measures will be installed and maintained adjacent to wetlands as necessary to minimize the potential for sediment runoff. Sediment barriers will also be installed where necessary to minimize the potential for sediment to run off the construction ROW and into wetland areas outside of work areas. Sediment barriers will be installed across the full width of the construction ROW at the base of slopes adjacent to wetlands. Sediment barriers installed across the working side of the ROW will be removed when construction equipment is present to allow orderly progression along the ROW. Sediment barriers will be replaced at the end of the day.

Temporary erosion control devices will be installed where necessary until vegetation of adjacent upland areas is successful. Permanent slope breakers may be installed across the ROW in upland areas adjacent to the wetland boundary.

Temporary workspace may be required on both sides of the wetland to stage construction, fabricate the pipeline, and store materials. Temporary workspaces will be located in upland areas at least 50 feet from the wetland edge.

10.2.4 Open Cut Construction

The open cut crossing method of construction involves excavating a pipeline trench, installing a section of pipe, and then backfilling the trench with material excavated from the trench. Excavation and backfilling of the trench will be performed using backhoes or other excavation equipment.

10.2.5 Conventional Bore

The boring method requires the excavation of pits on each side of the feature being crossed. Boring equipment is then lowered into the pits. Temporary workspace is needed on each side of the feature to store excavated materials and for pipe stringing. Sufficient pit depth and space is needed to allow boring equipment to bore a hole under the feature at the minimum depth prescribed by the permitting agency (typically five feet).

10.2.6 Horizontal Directional Drill Technology

HDD can reduce or mitigate surface disturbance, traffic interruptions, damage to roads, and environmental impacts to streams, wetlands, cultural resources or other sensitive areas. HDD technology will be used when conventional boring is not feasible for major road crossings, at waterbodies and wetlands, or when environmental sensitivity makes the use of other installation methods undesirable or impractical. HDD technology requires specialized equipment and personnel.

10.3 Restoration Procedures

The construction contractor will limit ground disturbance wherever possible and use appropriate erosion and sediment control measures. Disturbed areas will be restored to their original contours and condition to the extent practical, unless landowner consent is obtained to do otherwise. Post-construction reclamation activities include removing and disposing of debris, dismantling temporary facilities, leveling or filling tire ruts, soil decompaction, and reseeding non-cultivated areas.

11.0 Operation and Maintenance

The following measures will be implemented to prevent or mitigate any adverse effects resulting from the Project operations:

1. Andeavor will follow a written manual of procedures for conducting normal operations and maintenance activities and for handling abnormal operations and emergencies. The manual will delineate the responsibilities of both management and operating personnel and will be reviewed each calendar year to insure it remains effective. The manual will include provisions that address the following:
    a. Retention of important construction, operation and maintenance records, including records of pipeline and equipment inspections.
    b. Procedures for reporting spills, accidents, and safety related conditions.
    c. Identification of sensitive areas along the Project route that would require an immediate response to prevent hazards to the public if the facilities failed or malfunctioned.
    d. Procedures for receiving, identifying and classifying notices of events which need immediate response by Project personnel or notice to fire, police or other appropriate public officials.
    e. Establishing and maintaining liaison with fire, police and other appropriate public officials. Procedures will be included for notifying these officials of pipeline emergencies and coordinating with them pre-planned and actual responses during such emergency.
    f. Maintaining a list and contact information of area contractors that may be used to respond to a spill or emergency.
2. A SCADA system will be installed on the pipeline system. Pressures and flow rates will be monitored at a central location 24 hours a day and 7 days a week. The SCADA system will allow abnormal operating conditions to be discussed immediately and addressed promptly, including shutdown of the system in the event of a leak or other appropriate circumstance.
3. A continuing training program will be implemented to instruct personnel in safely carrying out the operations, maintenance and emergency procedures related to their assignments. This will include instruction on the characteristics and hazards of the NGLs being transported, the recognition of conditions that are likely to cause emergencies, and the steps necessary to control or minimize the impacts of an accidental release.
4. In addition to observation by operating personnel, aerial patrols will be used to inspect the surface conditions on or adjacent to the Project right of way. The frequency of inspection will be approximately every two weeks (26 times per year).

5. A damage prevention program will be established to prevent damage to the pipeline from excavation activities or other encroachments on the right of way. The damage prevention program will include participation in the North Dakota "One-Call" system that provides prior notification when excavation by third parties is to occur near the Project.

A number of Andeavor's operational procedure plans are include in the Appendices to this Consolidated Application. These plans outline the preventative maintenance, inspection, line patrol, leak detection systems, SCADA and other pipeline integrity management procedures to be implemented during the operation of the Project. They also outline emergency and spill response procedures should a release occur. The list of plans and corresponding Appendix is as follows:

- Appendix C – Oil Spill Response Plan (developed for the Tesoro High Plains Pipeline system. This plan will be adapted and modified to include the Y-Grade Hub Pipeline). This Appendix also includes a Letter of Approval from the U.S. Department of Transportation regarding the Oil Spill Response Plan and Andeavor's reportable spill history (five years).
- Appendix D – Emergency Action Plan
- Appendix E – Contingency Planning Standard

12.0 ALTERNATIVES CONSIDERED

As part of Project development, Andeavor analyzed alternatives to the proposed Project. The alternatives analysis considered a no action/no build alternative, shipping alternatives via other pipelines, rail, or truck, and different routes.

12.1 No Action Alternative

If this alternative were selected, the following options would be available:

- Trucking NGL from natural gas processing facilities to receipt locations at existing pipelines or rail loading facilities, or to locations outside of North Dakota. This is a temporary, short-lived solution as production will soon reach and eventually surpass the capacity of existing pipelines to move the required quantities of NGL. Additionally, trucking NGL long distances is not a sustainable solution given the expected future increase in NGL production.

The no action alternative is not an acceptable long-term alternative to the proposed Project.

12.2 North Dakota Pipeline Alternatives

NGL export pipeline capacity within North Dakota is becoming increasingly constrained as a result of increasing NGL production. As additional natural gas is produced, captured, and processed, NGL production will continue to increase. New long-haul pipeline alternatives typically have multi-year lead times before shipping products, and even if sanctioned today, would not be on-stream in time to meet the increased demand forecasts.

The Project will place new inter-basin pipeline capacity close to new and expanding natural gas processing plants. The Project will bring pipeline capacity closer to these plants and shorten trucking distance and alternative pipeline requirements for these producers.

There are no viable pipeline alternatives to the Project. Furthermore, the Project should enhance overall economic values of the existing NGL production within North Dakota as well as adding needed capacity in new areas of the Bakken play.

12.3 Truck and Rail Alternatives

Truck alternatives provide viable outlet to supply local markets. However, as NGL production has continued to grow, the overall production levels exceed local demand and must be shipped to markets outside North Dakota. Trucking is not a viable solution for the growing production due to the long trucking distances required.

Rail transportation, especially when fed by local pipelines, can significantly supplement takeaway capacity. As noted previously, the Project will interconnect to a rail facility at Fryburg. However, NGL producers south of Lake Sakakawea currently have limited access to NGL rail facilities. The rail facilities can be used as a viable supplement to long haul NGL pipelines.

12.4 Route Alternatives

The proposed route was determined based on the location of existing facilities and the route of the existing BakkenLink Pipeline, a portion of which will be converted from crude oil transportation to NGL transportation. No other route would capture the efficiencies of following the existing easement. Any other route would result in greater overall impacts.

13.0 ENVIRONMENTAL STUDIES

Resource assessments, both field and desktop, were performed based on the PSC's siting requirements. The Study Area is a one-mile wide area centered on the proposed alignment, consisting of one-half mile on either side of the pipeline centerline ("Study Area"). The Corridor, consisting of a 200-foot wide survey area, considered in this application does not include the existing BakkenLink Pipeline route that will be converted to NGL use, as this pipeline is already established, and no construction within that corridor is anticipated. The proposed Corridor includes those areas where construction and installation of new pipe is anticipated.

The Study Area and Corridor are depicted on the figures included in the Appendices to this application. Resource assessments include, but are not limited to: A Class I and Class III Cultural Resource Inventory, a wetland determination, consultation and assessments for threatened and endangered species, and determining tree, shrub, and noxious weed locations, as applicable.

13.1 Cultural Resource Inventory

Beaver Creek Archaeology completed a Class I literature search of records on file at the State Historical Society of North Dakota of the Study Area. The file search had two objectives: to identify sites within one mile of the Project in the Study Area and to identify manuscript files in the sections where the proposed Project is located. Additionally, a Class III Cultural Resource Inventory was conducted. The details of this effort are included in *A Class I and Class III Intensive Cultural Resource Inventory of the Y-Grade Hub in McKenzie, Billings, and Stark Counties, North Dakota*, which was submitted to the North Dakota State Historical Preservation Office (SHPO) and is included as Appendix F.

Concurrence, with respect to the effects on known resources and appropriate mitigation measures, has been obtained from the SHPO. A copy of the SHPO concurrence letter is included in Appendix G. In addition, Andeavor has developed an “Unanticipated Discovery Plan” to guide procedures if an unknown cultural resource or human remains are inadvertently encountered during construction. The discovery plan outlines the framework for handling such discoveries in an efficient and legally compliant manner. This plan is included in Appendix H.

13.2 Wetland and Waterbody Inventory

Prior to conducting surveys, Andeavor reviewed USFWS National Wetland Inventory (NWI) data, topographic maps (USGS 2011), and recent aerial photography (USDA Farm Service Agency 2016) to determine the location and extent of mapped wetlands and waterbodies within the Study Area. The NWI records approximately 151.57 acres of wetlands in the Study Area. The North Segment includes 49.68 acres, the South Segment includes 74.52 acres and the Transfer Line Corridor includes 37.27 acres. Freshwater Emergent Wetlands are the most common wetlands in the Corridor. Approximately 30% of the existing wetlands have been diked, impounded, excavated, or otherwise modified. Wetlands in the Corridor range in size from 0.02 to 17.55 acres, with the typical wetland being less than one acre in size.

Wetlands located in the Survey Area were determined during the field survey. A total of 35 wetlands are located in the Survey Area, which corresponds to the Corridor. The majority of the wetlands in the area are drainage crossings. These are generally meandering drainages through the area with oxbow remnants. Refer to Appendix I, Natural Resources Report, for additional information on these features and mapped locations.

13.3 Habitat Assessment

13.3.1 Tree/Sapling/Shrub Inventory

The Commission requires 2:1 mitigation for all trees that are 1-inch diameter at breast height or greater and all shrubs that will be impacted during the construction of the Project. Andeavor conducted field surveys of the Corridor in September and October 2017 to confirm the presence or absence of woody vegetation. Less than 1% of the Corridor contains woody vegetation. Individual tree/stem counts have not been performed at the time of this application. Tree/stem counts will be conducted prior to construction and Andeavor will comply with the Commission tree and shrub mitigation specifications for replacement.

13.3.2 Federally Protected Species

The Endangered Species Act (16 U.S.C. §§ 1531-1544) ensures that any actions authorized, funded, or carried out by federal agencies do not jeopardize the existence of any listed endangered, threatened, or candidate species. The USFWS stratifies potential candidates based upon the species’ biological vulnerability. Species listed as endangered or threatened are provided full protection, which includes prohibition of destruction of critical habitat. Sensitive species are identified within North Dakota although they are not afforded formal protection under the Act.

At this time, the USFWS includes nine listed species and two Designated Critical Habitats in the Project area counties. The Designated Critical habitats, although listed in the Corridor counties, are not within the 1-mile Study Area.

<u>Interior Least Tern</u>
The interior least tern, a shorebird, is known to nest on midstream sandbars along the Yellowstone and Missouri River systems in North Dakota. The species constructs bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches during the nesting period, which occurs between mid-May and mid-August. Nesting adults have been documented to travel 7.5 miles or more from their nest sites to forage in wetlands or riverine habitat (Thompson et al. 1997). Habitat loss due to man-made changes to watersheds and river systems along with low nesting success from predation and human disturbance has caused a decline in least tern populations.

Suitable shoreline habitat for breeding and nesting terns does not occur near the Project. Migrating and foraging least terns could visit wetlands near the Project area. However, it is reasonable to expect that the activities associated with the Project may affect, but are not likely to adversely affect this species.

<u>Whooping Crane</u>
The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Aransas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Parks and Wildlife 2006).

Land use in the Project area is primarily agricultural and oil/gas development. Noise and vehicle activity during construction activities may cause migratory cranes to divert from the area but are unlikely to contribute to any indirect or direct effect that would result in an increase of fatalities and, therefore, are considered insignificant. If a crane is sighted within one mile of the Project area, construction activities will cease and the sighting would be immediately reported to the USFWS. In coordination with the USFWS, construction will resume once the bird(s) have left the area. Following these guidelines, it is reasonable to expect that the proposed action may affect, but is not likely to adversely affect whooping cranes.

<u>Black-Footed Ferret</u>
Black-footed ferrets were historically found in the southwest portion of North Dakota but their present-day existence in North Dakota is unlikely or questionable at this time. The black-footed ferret requires expansive black-tailed prairie dog colonies for food and den habitat. The Black-Footed Ferret Survey Guidelines (USFWS 1989) states that 80 acres is the minimum size prairie dog habitat needed to support black-footed ferret.

Reintroduction of captive-raised individuals into the wild began in 1991 in Wyoming (Black-footed Ferret Recovery Implementation Team 2009). Since then, there have been 20 reintroduction sites, but none of the sites are in North Dakota (USFWS 2013). The Project is expected to have no effect on this species.

<u>Pallid Sturgeon</u>
Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960s. Weighing up to 85 pounds, pallid sturgeons are long lived with individuals possibly reaching 50 years of age.

A known pallid sturgeon population occurs from the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the Lower Yellowstone River up the confluence of the

Tongue River, Montana (USFWS 2007). Factors leading to the decline of the pallid sturgeon and a listing as an endangered species by the USFWS in 1990 include the alteration of habitat through river channelization; creation of impoundments; and alteration of water flow regimes (USFWS 1990). The effect from these alterations within the Missouri River have reduced food sources by lowering productivity, destroying spawning habitat, altered flow conditions which can delay spawning cues, and blocked movements to spawning, feeding, and rearing areas (USFWS 2007).

Pallid sturgeon habitat is not located in the Project area. Due to the nature of the Project, no impacts to Lake Sakakawea or the Missouri River are anticipated during construction and/or operation. Therefore, it is reasonable to expect that the Project will have no effect on this species.

Gray Wolf

Rural areas throughout the state of North Dakota function as dispersal corridors for wolves representing the Western Great Lakes (east of the Missouri River and US Highway 83) and Wyoming portion of the Northern Rocky Mountain distinct population segments (DPS). Wolves representing the Western Great Lakes DPS were relisted under the Endangered Species Act as threatened, effective December 19, 2014. Wolves representing the Wyoming portion of the Northern Rocky Mountain distinct population segment (west of the Missouri River and US 83) were delisted in 2011. However, gray wolves representing a formerly listed DPS could disperse through North Dakota at any time of the year. Wolf habitat within North Dakota occurs statewide and is considered dispersal habitat. Dispersal habitat may be important for maintaining gene flow between DPSs but is not thought to be a limiting factor for the recovery of the species.

To reflect this possibility, the USFWS has classified wolves dispersing through North Dakota as endangered. The net effect of this Project will result in the temporary modification and minimal permanent conversion of dispersal habitat within the Project Area. The construction of the Project is unlikely to hinder potential gray wolf dispersal. In addition, no rendezvous sites, den sites, or pack activity is known to occur within the listed portion of the gray wolf range or non-listed portion in North Dakota. Therefore, this Project may affect dispersing individuals, but is not likely to adversely affect the gray wolf species.

Piping Plover

The piping plover is a migratory shorebird that breeds in North Dakota. Suitable nesting habitat for piping plovers in the Missouri River system is characterized as sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel. The piping plover feeds on worms, insects, and mollusk. Degradation of habitat related to the channelization river systems, nest predation, and human disturbance has led to the decline of piping plover populations.

Suitable shoreline habitat for breeding and nesting plover does not occur near the Project. Migrating and foraging piping plover could visit wetlands near the Project Area; however, it is reasonable to expect that the activities associated with the Project may affect, but is not likely to adversely affect this species. The Project will not modify, alter, disturb, or affect the shoreline of Lake Sakakawea or any if its tributary streams. Therefore, it is reasonable to believe that the Project is not likely to destroy or adversely modify critical habitat for the piping plover.

Northern Long-Eared Bat

The northern long-eared bat is a forest dwelling bat. The home range of the northern long-eared bat is approximately 150 acres (60.7 ha) including a summer and winter habitat. In the summer, northern long-eared bats roost under bark or in crevices of trees, preferring to roost in tall trees and under the exfoliating bark of dead or dying trees. In the winter, northern long-eared bats hibernate in caves and mines. The northern long-eared bat prefers foraging in edge habitats and forests comprised of trees with a diversity of life stages.

Sightings have been documented in the state, but these sightings occurred in the Turtle Mountains, the Missouri River Valley, and in the Badlands (BIA, 2015). White-nose syndrome (WNS) is the predominant threat to the northern long-eared bat at this time; however, in areas not yet affected by WNS, incidental takes are not prohibited. Western North Dakota is not included in the current extent of WNS; therefore, no conservation actions are required at this time. This Project will have no effect on the northern long-eared bat.

Dakota Skipper

Dakota skippers are found in untilled high quality native prairie containing a high diversity of wildflowers. Habitat includes two prairie types: 1) high quality, low (wet-mesic) prairie with little topographic relief dominated by little bluestem grass, wood lily (*Lilium philadelphicum*), bluebell bell flower (*Campanula rotundifolia*), and smooth camas (*Zigadenus elegans*); and 2) rolling native-prairie terrain over gravelly glacial moraine deposits dominated by bluestem grasses and needlegrass (*e.g. Hesperostipa spartea*) with bluebell bell flower, wood lily, purple coneflower (*Echinacea angustifolia*) upright prairie coneflower (*Ratibida columnifera*) and common gaillardia (*Gillardia aritata*). Dakota skipper populations have declined historically due to widespread conversion of native prairie.

There is no suitable Dakota skipper habitat within the Project construction corridor. Land use within the area is primarily agricultural (e.g. cultivated) and oil/gas development. Furthermore, the route follows existing pipeline corridors that have already been disturbed. It is determined that this Project may affect, but is not likely to adversely affect the Dakota skipper and is not likely to destroy or adversely modify critical habitat.

Rufa Red Knot

The rufa red knot is a shorebird that breeds in the central Canadian Arctic, with primary breeding grounds in Nunavut Territory, with some potential breeding habitat extending into the Northwest Territories. The rufa red knot winters along the Atlantic coasts of Argentina and Chile (particularly the island of Tierra del Fuego), the north coast of Brazil, and further north into Mexico and the southeast United States. During migration, the rufa red knot primarily follows the Atlantic coastline to and from breeding and wintering grounds. However, geolocator results from red knots wintering in Texas showed that some birds migrate using a central flyway across the Midwestern U.S. and may have a northern Great Plains stopover. Rufa red knots spend 2 to 3 months at breeding sites in northern Canada.

Rufa red knots are specialized molluscivores, feeding primarily on hard-shelled mollusks in soft wet sand/sediment. In addition to mollusks, red knots may feed upon shrimp, crabs, marine worms, and horseshoe crab eggs and other similar invertebrates. On the breeding ground, rufa red knots feed mostly on terrestrial invertebrates and grass shoots/seeds.

The shoreline of the Missouri River provides stopover habitat for the red knot during its annual migration. Although some individuals may stopover in North Dakota, the species is rare and is not reported in North Dakota in every year. Reported historical sightings since 1900 are primarily one or a few birds; however, larger flocks have been reported. The majority of these sightings have been made in the prairie pothole region during the spring migration in late April through May. An increase in future sightings may result from an increase in public awareness.

There is no potential shoreline habitat within the Project area. It is determined that construction of the Project will have no effect on this species.

13.3.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918, 16 U.S.C. §§ 703-712, protects bird species, including, but not limited to, cranes, ducks, geese, shorebirds, hawks, and songbirds and their nests. Suitable habitat for migratory birds exists in the Survey Area, and field surveys confirmed the presence of suitable habitat along the Route. Specifically, grassland nesting birds have the potential to occur and nest along the Route, especially during the migratory bird breeding season between February 1 and July 15. Suitable woodland nesting habitat occurs along the Route, but it is minimal.

To protect species under the Migratory Bird Treaty Act, a presence/absence survey for active nests will be conducted prior to construction. To minimize impacts, migratory birds and nests will be avoided during construction and operation of the pipeline. Any wildlife encountered during work activities will be avoided to the extent possible. Consultation with the USFWS regarding nesting avian species will be continued during construction activities as necessary. To avoid or minimize potential impacts of the proposed Project on migratory birds, Andeavor will use standard construction practices associated with migratory birds. As such, migratory birds are not expected to be impacted by the proposed Project. Refer to Appendix I, Natural Resources Report, for additional information on migratory birds.

13.3.4 Bald and Golden Eagle Protection Act Consultation

The bald eagle (Haliaeetus leucocephalus) feeds on fish and carrion and typically roosts in large trees near a water source. Bald eagle nesting habitat typically consists of any mature stands of conifer or cottonwood trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. Bald eagles in eastern North Dakota are usually observed along the Red River and Sheyenne River. The nearest known bald eagle nest is located approximately 9 miles to the southeast of the North Segment Study Area. Bald eagles may migrate through the Study Area; however, no bald eagles or nests were observed during the field surveys.

The golden eagle (Aquila chrysaetos) prefers habitat characterized by open prairie, plains, and forested areas. Usually, golden eagles in North Dakota can be found in proximity to badland cliffs, which provide suitable nesting habitat. Golden eagles may occur within or near the Study Area; however, no golden eagles or nests were observed during the field surveys. The closest known golden eagle nest is approximately 3 miles west of the Transfer Line Study Area.

Due to the lack of occupied bald and golden eagle nests in the Study Area and lack of suitable habitat within the Corridor, bald and golden eagles are not expected to be impacted by the proposed Project. Refer to Appendix I, Natural Resources Report, for additional information on these species.

14.0 CONSULTATION

Consultation letters were mailed in October 2017 to various agencies and officials, including those identified in N.D.A.C. Section 69-06-01-05, providing information regarding the Project and requesting input. Additional correspondence has occurred with various agencies. The responses received to-date are summarized below. Please refer to Appendix J, Agency Correspondence/Consultation, for copies of the consultation letters sent and the correspondence received.

14.1 U.S. Army Corps of Engineers

Andeavor provided route and wetland information to the U.S. Army Corps of Engineers. Andeavor will comply with the requirements of Nationwide Permit 12; therefore, no further correspondence with the USACOE is anticipated.

14.2 U.S. Fish and Wildlife Service

The USFWS acknowledged receipt of a consultation letter prepared by Carlson McCain, Inc. However, no comments were provided.

14.3 Aeronautics Commission

Three private airports are located near the Project boundary and should be verified that they are no longer in use if the pipeline route is intended to traverse the airport boundary. Andeavor will verify the non-use of Redmond Brothers Airstrip, Watson Private Airstrip, and Tachenko Airstrip if the pipeline traverses the airport boundary.

14.4 North Dakota Department of Health

The North Dakota Department of Health (NDDH) provide the following comments and recommendations.

- Fugitive dust emissions created during construction must be minimized.
- Fugitive dust complaints must be dealt with efficiently and effectively.
- Prevent the erosion of exposed soil surfaces and trapping sediments being transported.
- Fragile and sensitive areas i.e. wetlands, riparian zones, delicate flora or land resources will be protected against compaction, vegetation loss, and unnecessary damage.
- Construction near water must minimize adverse effects, including: minimal disturbance of stream beds and banks to prevent siltation; replacement and revegetation as soon as possible; prevention of oil and grease into receiving water and/or the handling of fuels on site.
- Use of pesticides or herbicides near aquatic systems is forbidden without NDDH approval.
- Must have a permit to discharge storm water runoff.
- Local officials must be contacted to determine if local storm water management requirements or BMPs are necessary.
- Care must be taken to avoid spills of any materials that will have an adverse effect on groundwater quality.
- Any spills must be immediately reported to NDDH and appropriate remedial actions preformed.
- Select locations that minimize the potential for impacts to human health and the environment during and after construction by avoiding, when possible, source water protection areas and sensitive surface and groundwater environments.
- Human health and the environment should be further protected by developing a spill response plan that emphasizes rapid deployment of prepositioned assets necessary to contain spills and subsequent cleanup.
- Any fill material placed below the highwater mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations) including, but not limited to, asphalt, tires, treated lumber, and construction debris.

- All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

14.5 North Dakota Department of Transportation

The North Dakota Department of Transportation (NDDOT) stated that the proposed Project should have no adverse effect on NDDOT highways. The NDDOT also stated that if any Project work needs to be done on NDDOT highway ROWs, appropriate permits and risk management documents will need to be obtained from the NDDOT.

14.6 North Dakota Game and Fish Department

The North Dakota Game and Fish Department recommended the following:

- Native prairie and wooded draws should be avoided to the extent possible.
- Green River and Cherry Creek, classified fisheries, should be crossed by directional boring to protect the resources.
- Additional precautions be implemented into the design of pipes crossing State waterways; e.g. use of pressure sensing valves on both sides of the waterway.
- Develop a maintenance schedule to insure the integrity of the pipe for the life of the project.
- Wetlands should be avoided, but if cannot be, no alterations should be made to existing drainage patterns.
- Unavoidable destruction or degradation of wetland acres should be mitigated in kind.
- Conduct aerial surveys for raptor nests before construction begins.

Andeavor will develop a maintenance schedule to insure the integrity of the pipe for the life of the project, will take appropriate precautions to prevent the introduction or movement of aquatic nuisance species within the state, and will conduct surveys for raptor nests before construction.

14.7 Geological Survey

In a letter dated November 15, 2017, the North Dakota Geological Survey (NDGS) noted that areas of landslide and slope instability are common in the area of the project, and should be evaluated. The NDGS data is presented on the Criteria Maps in Appendix A. The Route does not cross any landslide or areas of slope instability identified by the NDGS

14.8 Job Service of North Dakota

In a letter dated November 15, 2017, Job Service of North Dakota indicated they will make an accurate determination of project liability following completion of the Construction Project Registration Form.

14.9 State Land Department

In a letter dated November 16, 2017 the State Land Department noted Andeavor crosses a portion of trust lands and should obtain a pipeline right-of-way for the Project. Andeavor will coordinate with the State Land Department to obtain the ROW.

14.10 North Dakota State Water Commission

In a letter dated November 21, 2017, the North Dakota State Water Commission provided the following comments:

- If surface water or groundwater will be diverted for construction of the project, a water permit will be required.
- Floodplains identified in Section 19, Township 140N, Range 99W Stark County are Designated Zone A.
- Hartel Dam, Lemoine 1 is located approximately ¼ mile to the west of the proposed North Segment.
- In the SW¼ of the SE¼ of Section 23, Township 150N, Range 98W,Bbe aware of this structure during construction to ensure it is not affected.

15.0 IDENTIFICATION OF POTENTIAL PERMITS/APPROVALS

Andeavor will comply with all agency rules and regulations having jurisdiction over the proposed Project and will obtain all other necessary licenses and permits prior to construction. Possible Federal, State, and local permits and approvals required are shown in Table 1.

Table 1**. Potential Permits/Approvals**

Agency	Type of Approval	Status	Need
Federal Permits			
Department of Transportation, Federal Highway Administration	Permit	Will be obtained prior to construction.	Required to cross federal-aid highways.
State of North Dakota Permits			
Public Service Commission	Certificate of Corridor Compatibility and Route Permit	Pending	Required to construct a transmission facility.
Department of Health, Water Quality Division	NDPDES Permit to Discharge Hydrostatic Test Water	NDPDES Submitted February 2018. Discharge permit to be submitted prior to construction.	Required for all construction projects that disturb 1 acre or more of land. Must have either: an individual storm water permit, or coverage under one of North Dakota's general permits. Required for dewatering of pipeline following hydrostatic testing.
State Historical Society	Cultural Resource Review	Approved. See Appendix G.	Compliance with N.D.C.C. Ch. 55-03 to assess the potential project impacts to cultural resources

Agency	Type of Approval	Status	Need
Department of Transportation	Utility Occupancy Permit	Will be obtained prior to construction.	ROW occupancy permit for state roadway crossings.
County Permits			
Billings	Conditional Use/Pipeline Permit	Pending – Submitted January 2018	Required to construct a pipeline.
McKenzie	Conditional Use/Pipeline Permit	Pending - Submitted January 2018	Required to construct a pipeline.

16.0 SITING CRITERIA

The exclusion and avoidance area criteria set forth in N.D.A.C. § 69-06-08-02(1) and (2) were taken into consideration when establishing the location of the proposed Route. Any exclusion and avoidance areas located within the Corridor and Route are depicted on the figures in Appendix A. Further discussion of these areas, the selection criteria, the policy criteria and other criteria considered is provided in the following Sections. The criteria set forth in N.D.C.C. § 49-22.1-09 were also evaluated, as discussed in the following Sections.

16.1 Exclusion Areas

In accordance with N.D.A.C. § 69-06-08-02(1), certain geographical areas shall be excluded from consideration for a transmission facility route. A buffer zone of a reasonable width to protect the integrity of the area must be included. Exclusion areas may be located within a corridor, but at no given point may such an area or areas encompass more than 50% of the corridor unless there is no reasonable alternative. A summary of exclusion areas in relation to the Corridor and Route is provided in Table 2.

Table 2. Exclusion Areas Summary

Geographic Area	Present within 1-mile-wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.	No	No	No
Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.	No	No	No
County parks and recreational areas; municipal parks; and parks owned or	No	No	No

Geographic Area	Present within 1-mile-wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route
administered by other governmental subdivisions.			
Areas critical to the life stages of threatened or endangered animal or plant species.	No	No	No
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	No	No	No
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No	No	No
Areas within 30 feet on either side of a direct line between ICBM launch or launch control facility.	No	No	No

16.1.1 Designated or Registered National Parks, Memorial Parks, Historic Sites and Landmarks, Natural Landmarks, Monuments, and Wilderness Areas

No designated or registered national parks, memorial parks, historic sites and landmarks, natural landmarks, monuments, and wilderness areas will be crossed by the Corridor or Route.

16.1.2 Designated or Registered State Parks, Historic Sites, Monuments, Historical Markers, Archaeological Sites, and Nature Preserves

No designated or registered state parks, historic sites, monuments, historical markers, archaeological sites, and nature preserves will be crossed by the Corridor or Route.

16.1.3 County Parks and Recreational Areas, Municipal Parks, and Parks Owned or Administered by Other Governmental Subdivisions

The Corridor and Route do not cross any county parks and recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions.

16.1.4 Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species

The Corridor and Route do not cross any areas critical to the life stages of threatened or endangered animal or plant species.

16.1.5 Areas Where Animal or Plant Species that are Unique or Rare to This State Would be Irreversibly Damaged

The Corridor and Route do not cross any areas where animal or plant species that are unique or rare to this state would be irreversibly damaged by the Project.

16.1.6 Areas within 1,200 Feet of the Geographic Center of an Intercontinental Ballistic Missile Launch or Launch Control Facility

The Corridor and Route are not located within 1,200 feet of the geographic center of an Intercontinental Ballistic Missile Launch or Launch Control Facility.

16.1.7 Areas within 30 Feet on Either Side of a Direct Line between Intercontinental Ballistic Missile Launch or Launch Control Facility

The Project Corridor and Route do not cross areas within 30 feet on either side of a direct line between an Intercontinental Ballistic Missile Launch or Launch Control Facility.

16.2 Avoidance Areas

In accordance with N.D.A.C. § 69-06-08-02(2), certain geographical areas may not be considered in the routing of a transmission facility unless the applicant shows that, under the circumstances, there is no reasonable alternative. In determining whether an avoidance area should be designated for a facility, the Commission may consider, among other things, the proposed management of adverse impacts; the orderly siting of facilities; system reliability and integrity; the efficient use of resources; and alternative routes. In addition, a buffer zone of a reasonable width to protect the integrity of the area must be included, unless a distance is specified in the criteria. Avoidance areas may be located within a corridor, but at no given point may such an area or areas encompass more than 50% of the corridor unless there is no reasonable alternative. Avoidance areas are depicted on the figures in Appendix A.

Table 3. Avoidance Areas Summary

Avoidance Area	Present within 1-mile-wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route	>50% of Study Area Corridor Width
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	No	No	No	No
Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	No	No	No	No
Historical resources which are not specifically designated as exclusion or avoidance areas.	No	No	No	No
Areas that are geologically unstable.	No	No	No	No
Within five hundred feet of a residence, school, or place of business.	No	No	No	No

Avoidance Area	Present within 1-mile-wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route	>50% of Study Area Corridor Width
Reservoirs and municipal water supplies	No	No	No	No
Water sources for organized rural water districts.	No	No	No	No
Irrigated land. This criterion shall not apply to an underground transmission facility.	N/A	N/A	N/A	N/A
Areas of recreational significance which are not designated as exclusion areas	No	No	No	No

16.2.1 Designated or Registered National Avoidance Areas

No designated or registered national historic districts, wildlife areas, wild, scenic, or recreational rivers, wildlife refuges, or grasslands are located within the Study Area, Survey Area, or Route.

16.2.2 Designated or Registered State Avoidance Areas

The Corridor and Route do not cross any designated or registered state, wild, scenic, or recreational rivers, game refuges, game management areas, management areas, forests, forest management lands, or grasslands.

16.2.3 Historical Resources Not Specifically Designated as Exclusion or Avoidance Areas

No historical resources not specifically designated as exclusion or avoidance areas are within the proposed Corridor or crossed by the Route.

16.2.4 Areas that are Geologically Unstable

The Corridor and Route do not cross geologically unstable areas.

16.2.5 Within 500 Feet of a Residence, School, or Place of Business

The Corridor and Route is not located within 500 feet of an inhabited rural residence, school, or place of business.

16.2.6 Reservoirs and Municipal Water Supplies

There are no reservoirs or municipal water supplies crossed by the Corridor and Route.

16.2.7 Water Sources for Organized Rural Water Districts

The Corridor and Route do not cross any water sources for organized rural water districts.

16.2.8 Areas of Recreational Significance that are not Designated as Exclusion Areas

No areas of recreational significance which are not designated as exclusion areas are crossed by the Project Corridor or Route.

16.3 Selection Criteria

Pursuant to N.D.A.C. § 69-06-08-02(3), a corridor or route shall be approved only when it has been demonstrated that any significant adverse effects resulting from the location, construction, and maintenance of the facility as they relate to the criteria shown in Table 4, will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum. The Project satisfies the Selection Criteria requirements.

Table 4. Selection Criteria

Selection Criteria	Anticipated Impact
Land which the owner can demonstrate has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.	No permanent impacts are anticipated.
Surface drainage patterns and ground water flow patterns	No permanent impacts are anticipated.
Noise-sensitive land uses	Noise-sensitive areas include residences near the Project. Increased noise may be experienced at these locations during construction of the project, but no long-term noise impacts are anticipated.
The visual effect on the adjacent area	No permanent impacts are anticipated.
Extractive and storage resources	No permanent impacts are anticipated.
Wetlands, woodlands, and wooded areas	Temporary impacts may occur. Mitigation measures are discussed in Section10.2 and Appendix I.
Radio and television reception, and other communication or electronic control facilities	No permanent impacts are anticipated.
Human health and safety	No permanent impacts are anticipated. Mitigation measures will be implemented as discussed throughout this application.

Selection Criteria	Anticipated Impact
Animal health and safety	No threatened or endangered species were observed in the Study Area. Wildlife species currently inhabiting the Corridor are common and likely will not be permanently displaced by the proposed Project. Temporary disturbance will occur during construction of the proposed Project; however, no direct, long-term impacts to wildlife are anticipated from the Project.
Plant life	Plants species currently inhabiting the Corridor are common. No permanent impacts are anticipated.

16.4 Policy Criteria

16.4.1 Location and Design

Andeavor selected the Corridor and Route based on a number of factors, including environmental, engineering, and constructability considerations.

Andeavor worked with landowners and consulted with local, state, and federal agencies to identify siting constraints and inform the siting of the proposed Corridor and Route. Field surveys, including those assessing natural and cultural resources, provided supplemental information to assist in refining the route to avoid or minimize impacts to sensitive resources.

16.4.2 Training and Use of In-State Labor

Andeavor expects to employ approximately 400 workers during peak Project construction. Local, in-state labor will be used to the extent practicable. However, if specialized skilled workers (e.g., licensed welders) are not available within the state, Andeavor may need to employ workers from out-of-state.

16.4.3 Economies of Construction and Operation

Andeavor will explore all economic efficiencies for construction and operations. Efficiencies may include: starting pipeline construction with completion of similar pipeline projects in order to minimize mobilization/demobilization costs, timing pipe acquisition and delivery with other projects in the area, and constructing the pipeline using multiple spreads in order to minimize overall construction time.

16.4.4 Use of Citizen Coordinating Committees

Andeavor contacted and worked closely with county agencies and personnel, utility companies, and others throughout development of the proposed Project. Other than one-on-one communication with landowners, no formal Citizen Coordinating Committees were used for communications and outreach to the public or jurisdictional entities.

16.4.5 Commitment of a Portion of Transmitted Product for Use in State

Portions of the NGL products will be distributed to North Dakota markets for heating, agriculture, and other uses, while other portions will be delivered to third-party natural gas transmission and NGL facilities for transport to in-state and out-of-state markets.

16.4.6 Labor Relations

Andeavor maintains a positive relationship with its employees, contractors, and the public, and is committed to a safe working environment. Andeavor is an Equal Opportunity Employer and expects to use local personnel for construction of the proposed Project when possible.

16.4.7 Coordination of Facilities

Andeavor performed a centerline survey of the Route and, based on that survey, Andeavor identified all third-party entities/utilities that will be encountered (e.g., petroleum, water, electric, highways). Andeavor will also utilize a portion of the BakkenLink pipeline and share resources during operation and maintenance.

16.4.8 Monitoring Impacts

Andeavor is committed to ensuring that BMPs are utilized during construction to minimize environmental impacts and will monitor construction compliance with the commitments made in this application and applicable permit conditions. The proposed Project will be constructed and maintained in accordance with industry and government requirements and will meet or exceed all applicable federal, state, and local environmental laws, regulations, and standards, including those regulations stipulated by PHMSA. A copy of Andeavor’s Oil Spill Response Plan and Emergency Action Plan are included in Appendix C and D, respectively.

In addition, Andeavor will provide construction oversight to confirm contractor compliance with mitigation measures, landowner agreements, and applicable permits. Andeavor will have third-party inspectors who are knowledgeable of the environmental mitigation requirements for the Project. The inspectors will have the authority to stop construction activities and order corrective mitigation and will maintain appropriate compliance documents.

16.4.9 Using Existing and Proposed Rights-of-Way and Corridors

Andeavor’s proposed Route was sited to co-locate with existing utility corridors, roads, and other existing linear features to the extent practical. The majority of the proposed route parallels the existing BakkenLink Pipeline.

16.4.10 Other Existing or Proposed Transmission Facilities

The Project will provide an outlet for NGLs from the existing Oasis gas plant and utilize the existing Fryburg rail facility for distribution.

17.0 EVALUATION OF N.D.C.C. SECTION 49-22.1-09

In selecting the proposed Corridor and Route for the Project, Andeavor evaluated the factors set forth in N.D.C.C. Section 49-22.1-09. A discussion of each factor is provided below.

17.1 Effects on Public Health, Welfare, Natural Resources, and the Environment

Please see Sections 13.0, 14.0, 16.0, 19.0, and 20.0 of this Consolidated Application for a discussion of available research and investigations relating to the effects of the location, construction, and operation of the proposed Project on public health and welfare, natural resources, and the environment. As discussed further in those sections, the Project is not anticipated to have any significant or long-term negative impacts on public health and welfare, natural resources, or the environment.

17.2 Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects

The Project design is consistent with existing pipeline technologies. Mitigation measures have been or will be used to avoid or minimize any potential impacts to sensitive resources, including use of trenchless construction (bores) at road crossings or due to constructability concerns. In addition, throughout construction, BMPs will be implemented to reduce any potential impacts to resources from ROW clearing, grading, trenching, and pipe and facility installation. Once constructed, leak detection and monitoring systems will be employed utilizing the measuring equipment at the inlet and outlet to the pipeline, which will be interconnected with a SCADA system connected to a central operations center in San Antonio, Texas.

17.3 Potential for Beneficial Uses of Waste Energy from a Proposed Energy Conversion Facility

The proposed Project does not include any energy conversion facilities. As such, the proposed Project does not offer the possibility for the beneficial use of waste energy.

17.4 Unavoidable Adverse Direct and Indirect Environmental Effects

With the exception of aboveground facilities, unavoidable adverse direct and indirect environmental impacts from the Project would be temporary and minimized through the use of mitigation measures and BMPs. See 13.0, 14.0, 16.0, 19.0, and 20.0 for further discussion of the Project's potential direct and indirect environmental effects, as well as planned mitigation measures.

17.5 Corridor or Route Alternatives Developed During the Hearing that Minimize Adverse Effects

Andeavor analyzed alternatives during selection of the proposed Corridor and Route through landowner discussions, and incorporated route deviations proposed by landowners and others in its Route to the extent practicable. As a result, Andeavor has identified a Project Corridor and Route that meets the needs of the Project, as well as the Commission's siting criteria, while minimizing potential impacts to landowners, existing infrastructure, and the environment.

If other corridor or route alternatives are developed during the Commission's hearing process, Andeavor will analyze those alternatives, as necessary.

17.6 Irreversible and Irretrievable Commitments of Natural Resources if Designated

Irreversible and irretrievable commitments of natural resources will be limited in nature and include such resources as steel for the pipeline and associated facilities, gravel/scoria for improvements to service roads, and fossil fuels used to power construction equipment and to provide power to Project facilities.

17.7 Direct and Indirect Economic Impacts of the Facility

Direct and indirect economic impacts from Project construction include short-term employment opportunities during construction, increased local revenue for Project-related expenditures, and increased local and state tax revenues. Local property taxes would be realized on an annual basis during the Project's operational phase. Project-related local expenditures during the construction, for example, would include lodging and food, fuel, and construction materials and equipment.

17.8 Existing Plans for Other Developments (State, Local, and Private) in the Vicinity of the Project

Andeavor has consulted with various federal, state, and local governments, as well as local businesses and residents, and has not identified any conflicts with proposed developments in the vicinity of the Project. Andeavor has identified several energy infrastructure projects near the project but has not identified any potential conflicts.

17.9 Effects of the Proposed Route on Existing Scenic Areas, Historic Sites and Structures, and Cultural Resources

The Project avoids all known scenic areas, historic sites and structures, and cultural resources; therefore, the Project is not anticipated to impact these resources. For further discussion, please see Sections 13.0, 14.0, 16.0, 19.0, and 20.0 of this Consolidated Application.

17.10 Effects of the Proposed Route on Areas Which are Unique Because of Biological Wealth or Rare and Endangered Species Habitats

Although suitable nesting and foraging habitat and migratory birds are present in the Study Area, the Project location is such that the likelihood of migratory birds being impacted by the Project is extremely low. No other potential areas that are unique because of biological wealth or because they are habitats for rare and endangered species are located within the Corridor or crossed by the Route and thus, the Project is not anticipated to impact these resources. For further discussion, please see Sections 13.0, 14.0, 16.0, 19.0, and 20.0 of this Consolidated Application.

17.11 Problems Raised by Federal Agencies, other State Agencies, and Local Entities

A summary of consultations, notifications, and agency responses is provided in Section 14.0. Copies of correspondence are provided in Appendix J. Consultation is ongoing and Andeavor will respond to and address concerns if raised.

18.0 OTHER FACTORS CONSIDERED

Design Construction Limitations

Specific factors taken into account in the selection of the Corridor and Route, including design and construction limitations, are identified in Sections 2.0 and 12.0 and discussed throughout this Consolidated Application. Road crossings (bore) and waterbody/wetland crossings (HDD) will require special construction techniques, which have been incorporated into the proposed Project design (see Section 10.2).

The Project will be designed, constructed, and operated in accordance with USDOT regulations governing the transportation of hazardous liquids by pipeline, which are set forth in 49 CFR Part 195.

18.1 Economic Considerations

In selecting the Corridor and Route, one of many factors Andeavor considered was facilitating construction of the Project in the most economic and efficient manner. However, Corridor and Route selection required balancing of a number of factors, as discussed specifically in Sections 2.2 and 12.0 of this Consolidated Application.

Other economic considerations associated with the Project include the positive direct and indirect economic benefits that the Project will provide within and beyond North Dakota. As discussed in Section 17.7 of this Consolidated Application, the Project will provide short-term employment of workers during construction, increased revenues from local expenditures, and increased tax revenues.

18.2 Present and Future Natural Resource Development

As discussed in Section 16.1, there are no national parks, national memorial parks, national historic sites or landmarks, national wilderness areas, or national monuments located within the Corridor and along the Route. Similarly, there are no designated or registered state parks, sites, monuments, or nature preserves along the Route. There are also no county parks, municipal parks, or parks owned or administered by other governmental subdivisions along the Project Route.

In addition, as discussed in Section 16.2, there are no wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands within the Corridor or along the Route. Also, no designated or registered state wild or recreational rivers, game refuges, game management and management areas, forests, forest management lands, or grasslands will be crossed by the Corridor or Route.

The Project will cross range land and land used for agricultural crop production. Once construction is complete, the ROW will be restored to its prior use. Further, as discussed in Sections Section 16.4.7, Andeavor will continue to work closely with existing infrastructure owners to safely construct and operate the Project and to minimize the potential for impacts to existing facilities. Thus, impacts along the Route are anticipated to be primarily temporary and minimal.

19.0 APPLICANT’S MITIGATION MEASURES AND POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

Andeavor is committed to avoiding, minimizing, and mitigating the environmental impacts of the Project. The Project has been designed and routed with these commitments in mind. The Project will be constructed and operated to meet or exceed federal, state, local, and industry safety, environmental, and operational standards.

In addition to the mitigation measures discussed throughout this Consolidated Application, Andeavor has developed an Emergency Action Plan, included as Appendix D, which outlines general construction related mitigation measures to minimize impacts to natural and cultural resources from Project development. These measures meet or exceed applicable industry standards and regulatory requirements.

Andeavor has also developed a SWPPP for the Project, which addresses BMPs, temporary erosion and sediment control, inspections, and various other requirements. *See* Appendix B.

20.0 QUALIFICATIONS OF PREPARERS

Jude Singleton, PE Andeavor Logistics – Capital Project Development Director

Jude has 23 years of experience in upstream, refining, and downstream sectors of the oil and gas industry as a mechanical engineer, project manager, and engineering team manager. Jude has extensive experience in gathering and storage of crude, gas and water; refining crude oil especially in crude fractionation, reforming, hydro-treating, fluid catalytic cracking, isomerization, amine regeneration, and sulfur recovery process units; transmission pipelines and storage for crude oil and refined products; and rail, marine, and truck loading terminals for refined products. Jude has been involved in numerous projects involving modification or new construction of FERC regulated pipelines in the gulf coast, west coast, and mid-continent regions of the United States.

Education

- B.S. Mechanical Engineering, Texas A&M University, 1994

Registration:

Registered Professional Engineer: TX, CA

Greg Henderson, Andeavor Logistics – Strategy & Business Development Vice President

Greg joined Andeavor in 1993 working in refinery operations at Andeavor’s Kenai, Alaska refinery. Over the span of his almost 25-year career with Andeavor, Mr. Henderson has held increasing leadership roles in refining, supply and trading, commercial optimization, corporate planning, logistics operations, and business development. In his current position as VP, Business Development, Logistics, he is responsible for the logistics growth portfolio for Andeavor

Education

- B.S. Chemical Engineering, University of Arkansas, 1991

James Sanford, Andeavor Logistics – Right of Way Director

James has 39 years of experience in the Right of Way and Real Estate industry. James has extensive experience in project development and execution for FERC regulated pipelines and gathering systems. James has managed internal Right of Way departments for the past 20 years. James has years of experience managing acquisition of land rights.

Carlos Quintanilla, Andeavor – Sr. Project Development Engineer

Carlos has 10 years of comprehensive midstream energy industry experience. He has worked for industry leaders, ConocoPhillips and DCP Midstream, as a Project Development Engineer focusing on oil and gas gathering, processing and transportation systems.

Education

- B.S. Mechanical Engineering, University of Houston, 2008

Todd Hartleben, P.E. – Carlson McCain, Inc.

Todd has over 20 years of experience as an engineer in general civil engineering, environmental permitting and review of pipeline and transmission projects, NEPA documentation, construction services, waste management facility design, and materials testing. Todd's pipeline experience includes compiling FERC Resource Reports, preparing Environmental Assessments and Environmental Impact Statements, construction inspections and planning, and environmental compliance activities.

Education

- B.S. Civil Engineering, North Dakota State University, 1994
- B.A. Math and Biology, Jamestown College, 1990

Registration

- Registered Professional Engineer: ND, MT, MN, IA, IL, VA

Kathie J. Kjar, PhD Senior Ecologist/Botanist – Carlson McCain, Inc.

Kathie has thirty-five years' experience in vegetation and wildlife research and reporting. Since 1991, Kathie has conducted numerous botanical and wildlife surveys and prepared Biological Assessments and Evaluations. She has collected quantitative vegetation data for land grant colleges, federal offices, and coal companies. Kathie has conducted numerous studies and searches for sensitive plant species. Wetland experience includes delineations, ordinary high-water mark determinations, and proper functioning condition of riparian areas. She is experienced with GPS and GIS data acquisition and preparation.

Education

- Ph.D., Botany, North Dakota State University, Fargo, North Dakota, 1985.
- M.S., Agronomy (Range Ecology emphasis), University of Nebraska at Lincoln, Lincoln, Nebraska, 1979.
- B.S., Biology, Kearney State College, Kearney, Nebraska, 1977

Chad Tucker, Wildlife Biologist – Carlson McCain, Inc.

Chad is a wildlife biologist with 13 years of professional experience in wildlife capture, wildlife research, wildlife damage management, wildlife habitat investigations, ground and aerial wildlife surveys, botanical surveys, threatened, endangered, and species of concern surveys, wetland delineations, riparian surveys and fisheries investigations. He is also experienced in the collection and maintenance of data using Trimble GPS and ArcGIS.

Education

- B.S., Wildlife and Fisheries, 2004. Mississippi State University, Starkville

Michael Fettes, Natural Resource Specialist, - Carlson McCain, Inc.

Mike is a natural resource specialist experienced in ecological disciplines including: ornithology, ichthyology, invertebrate zoology, storm water pollution prevention plans, wetland delineations, He is knowledgeable in the taxonomic identification of rangeland, shrub/sapling, and forested vegetation communities in the Northern Great Plains. He is also skilled in the identification of wildlife species including sensitive, threatened, and endangered species.

Education

- B.S., Fisheries and Wildlife Sciences, 2011. Valley City State University.
- A.S., Fisheries and Wildlife Management, 2009. Dakota College at Bottineau

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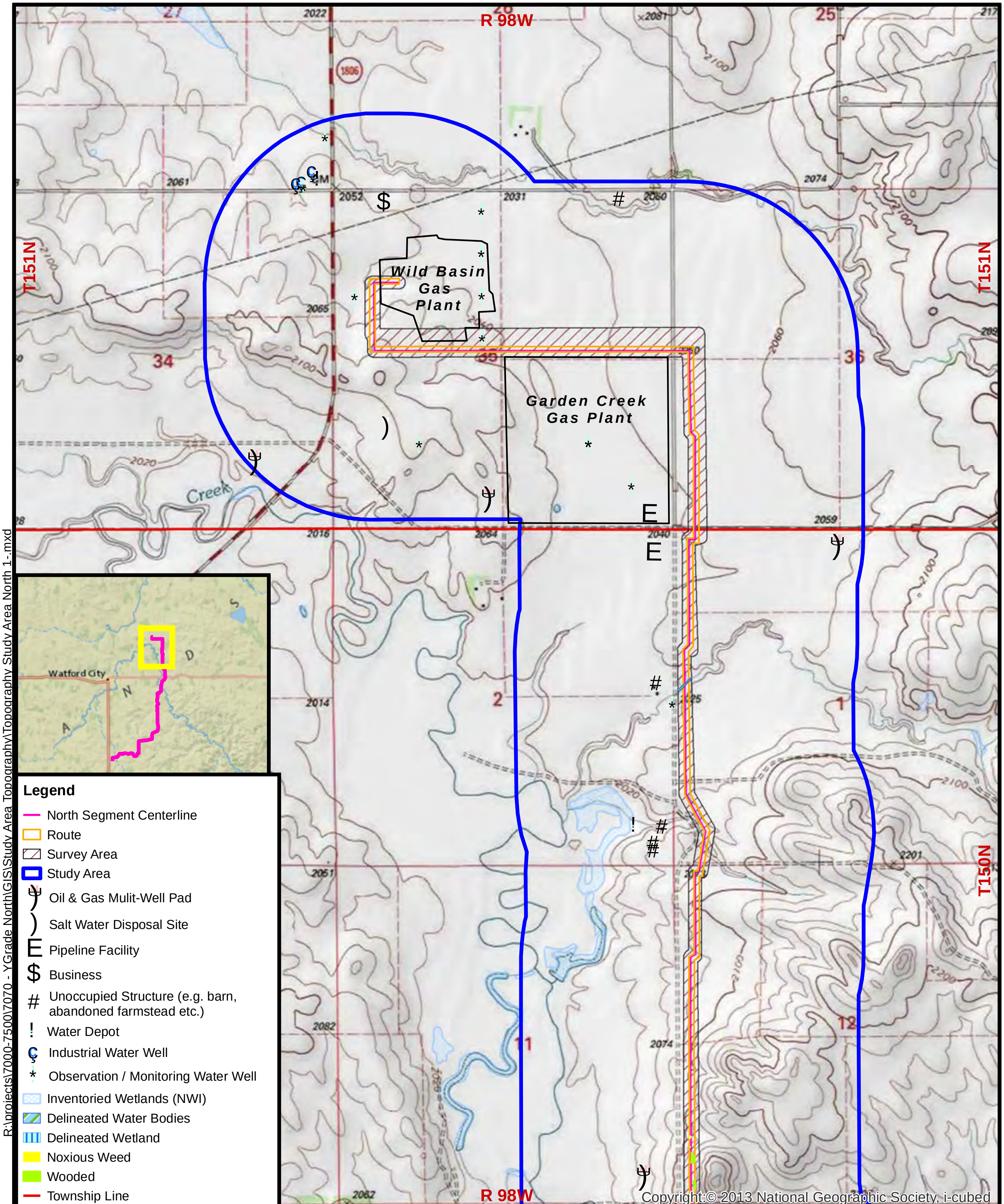

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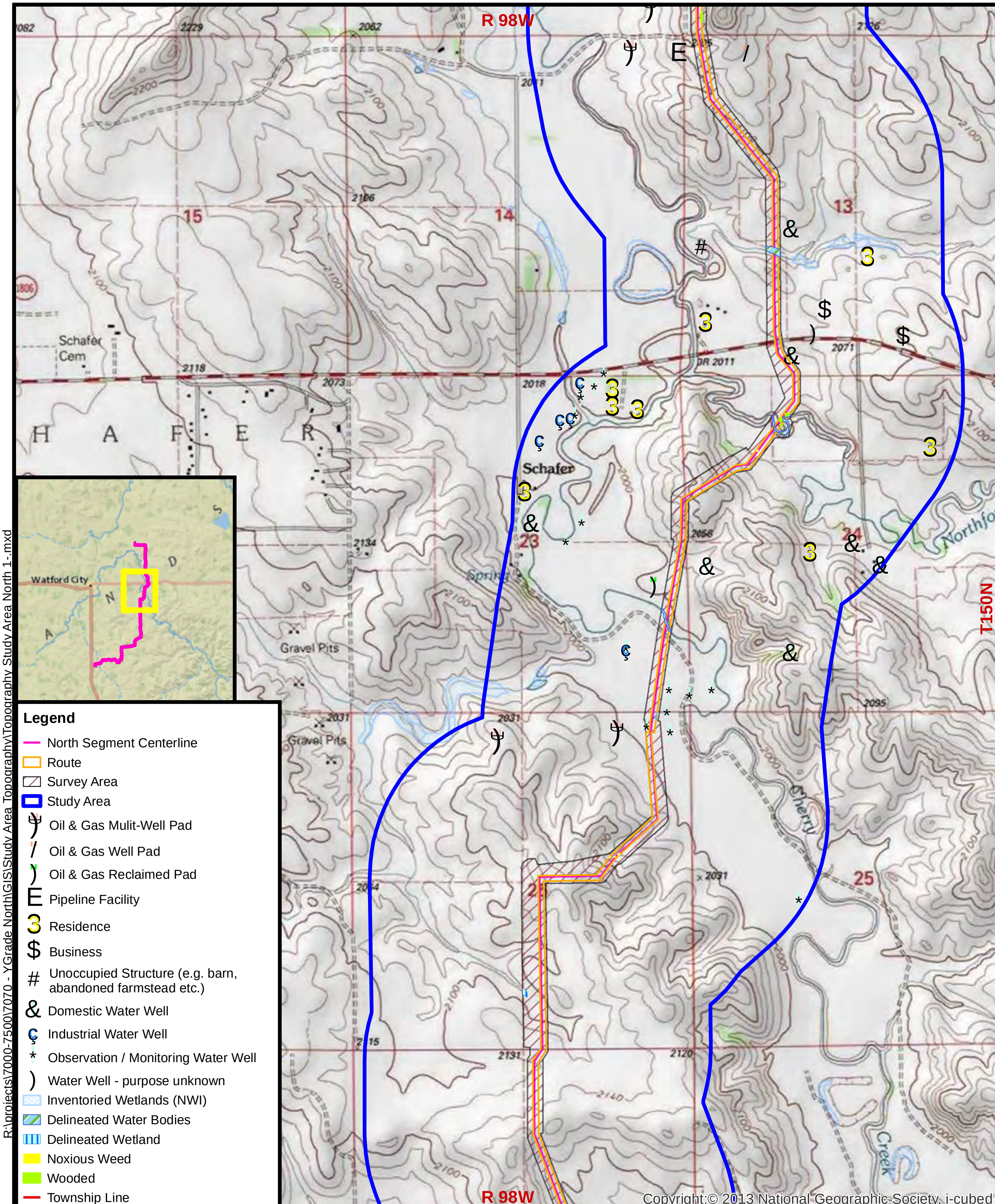

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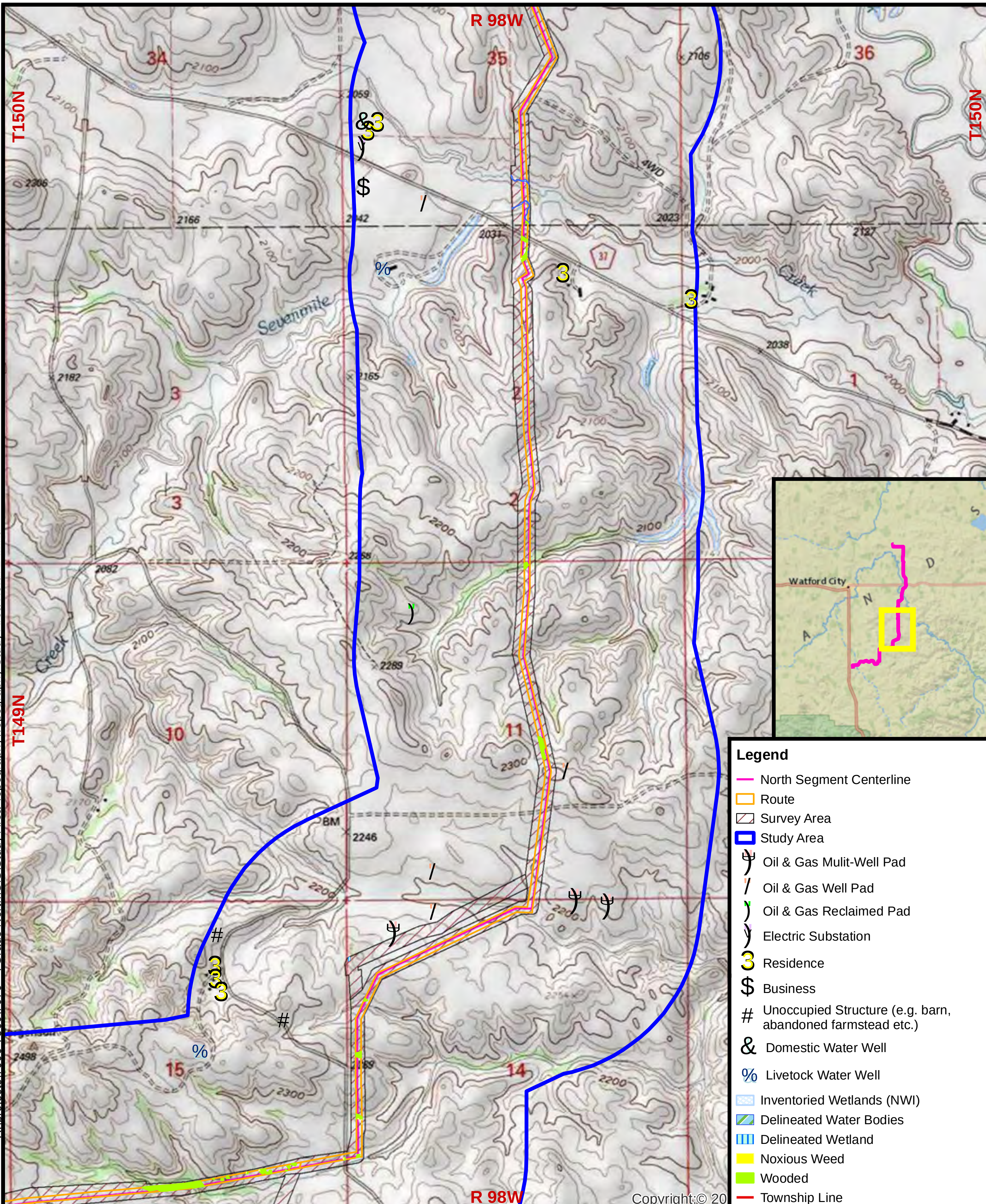

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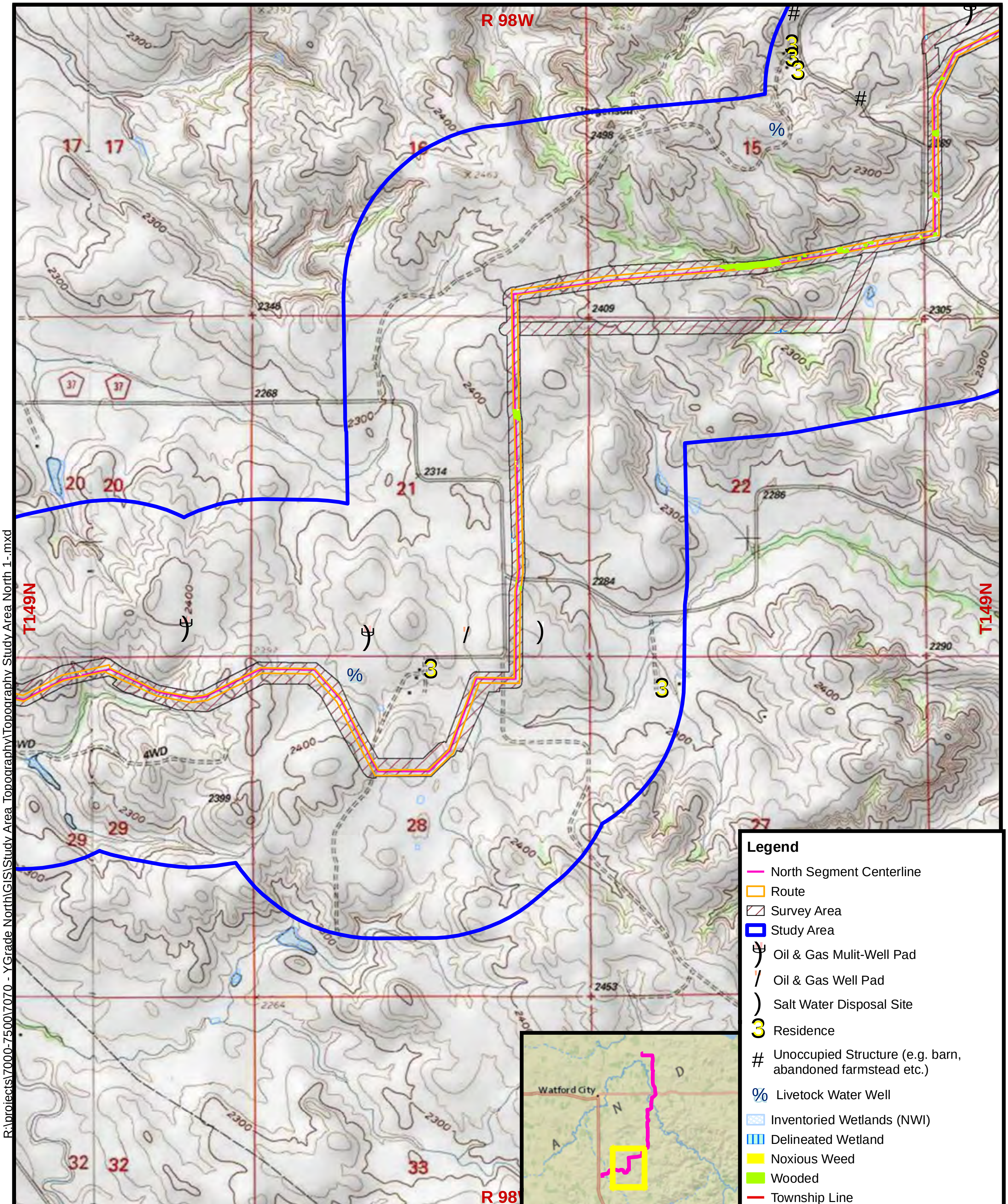

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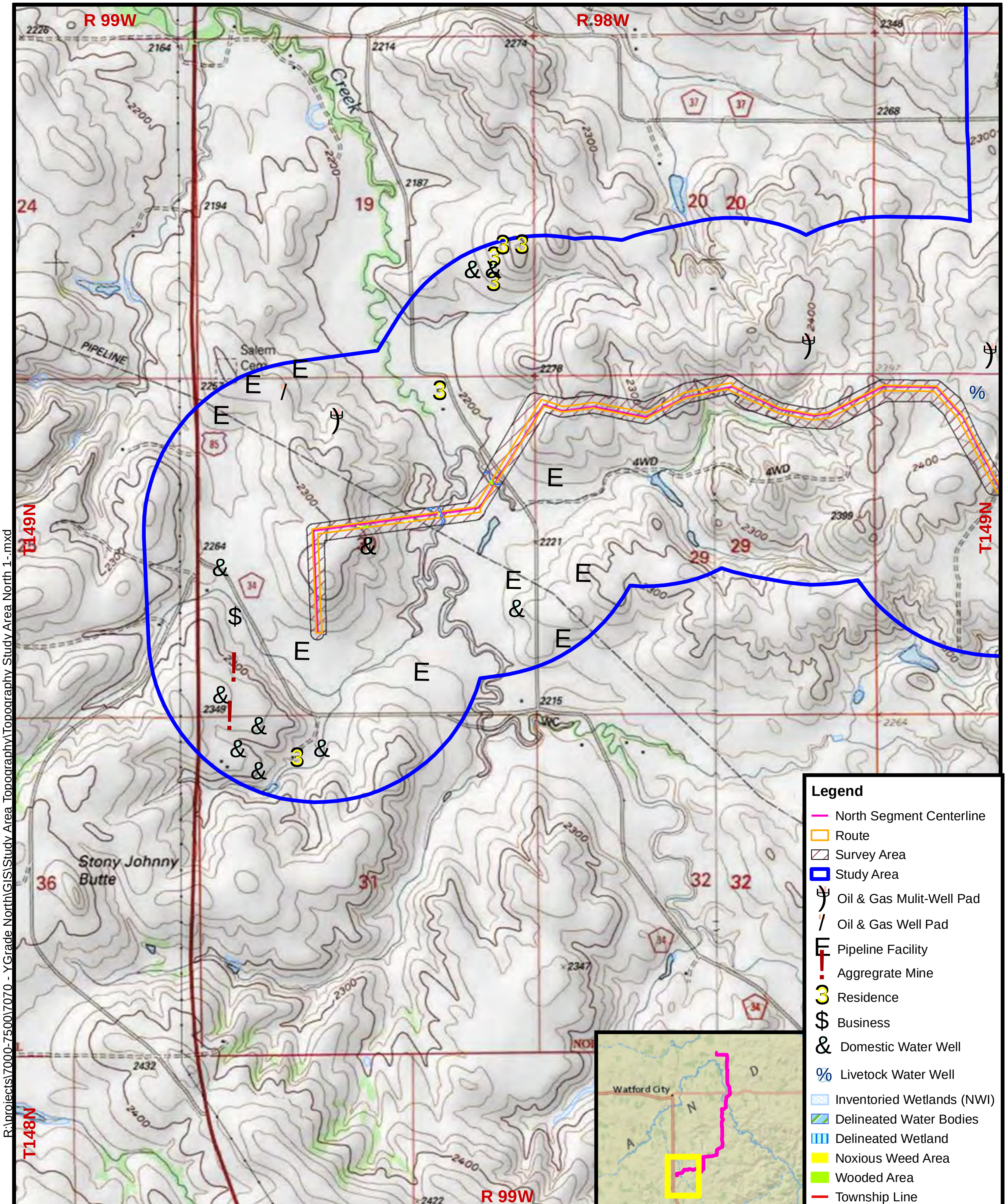

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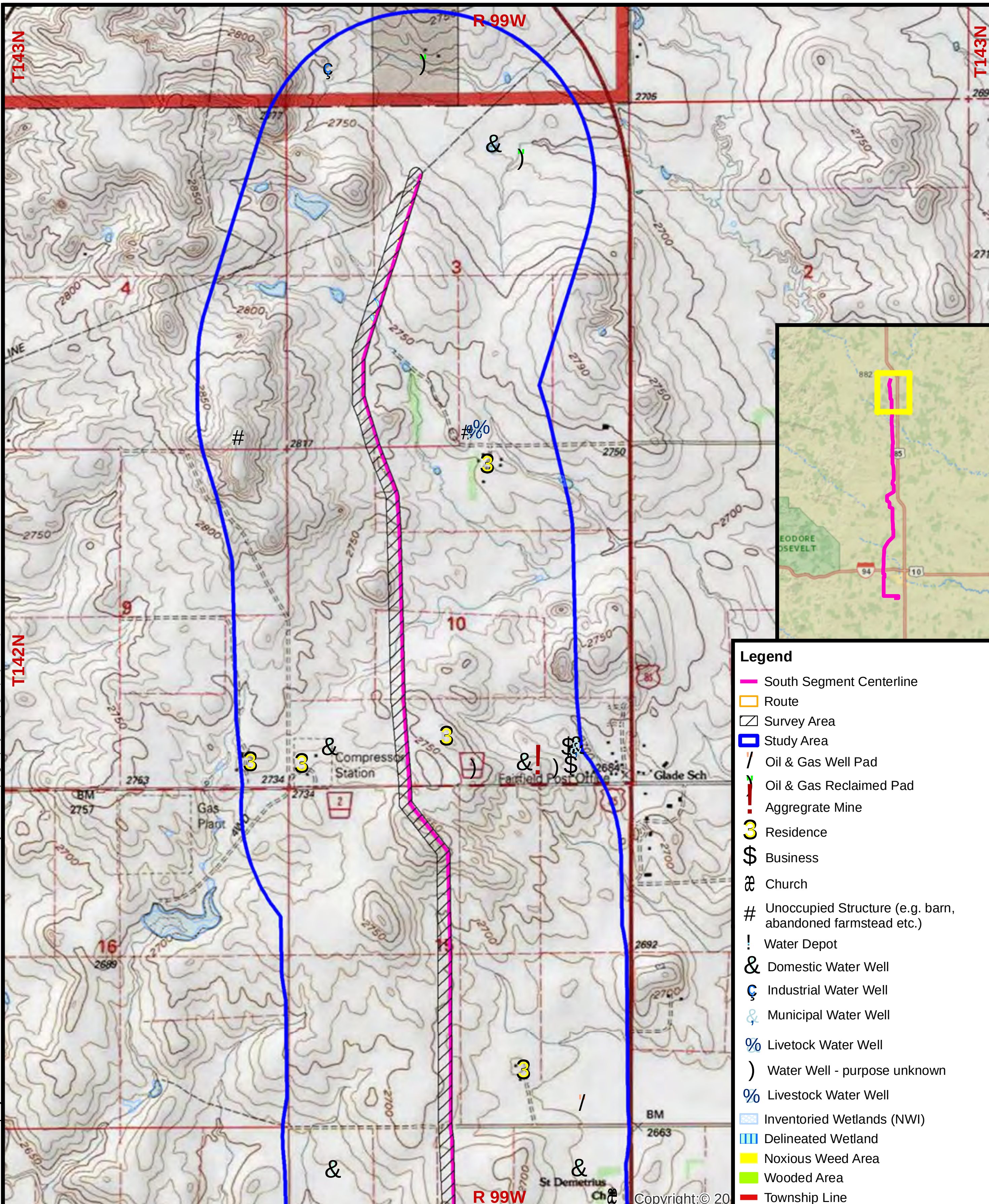

Legend

- South Segment Centerline
- Route
- Survey Area
- Study Area
- Oil & Gas Well Pad
- Oil & Gas Reclaimed Pad
- Aggregate Mine
- Residence
- Business
- Church
- Unoccupied Structure (e.g. barn, abandoned farmstead etc.)
- Water Depot
- Domestic Water Well
- Industrial Water Well
- Municipal Water Well
- Livetock Water Well
- Water Well - purpose unknown
- Livestock Water Well
- Inventoried Wetlands (NWI)
- Delineated Wetland
- Noxious Weed Area
- Wooded Area
- Township Line

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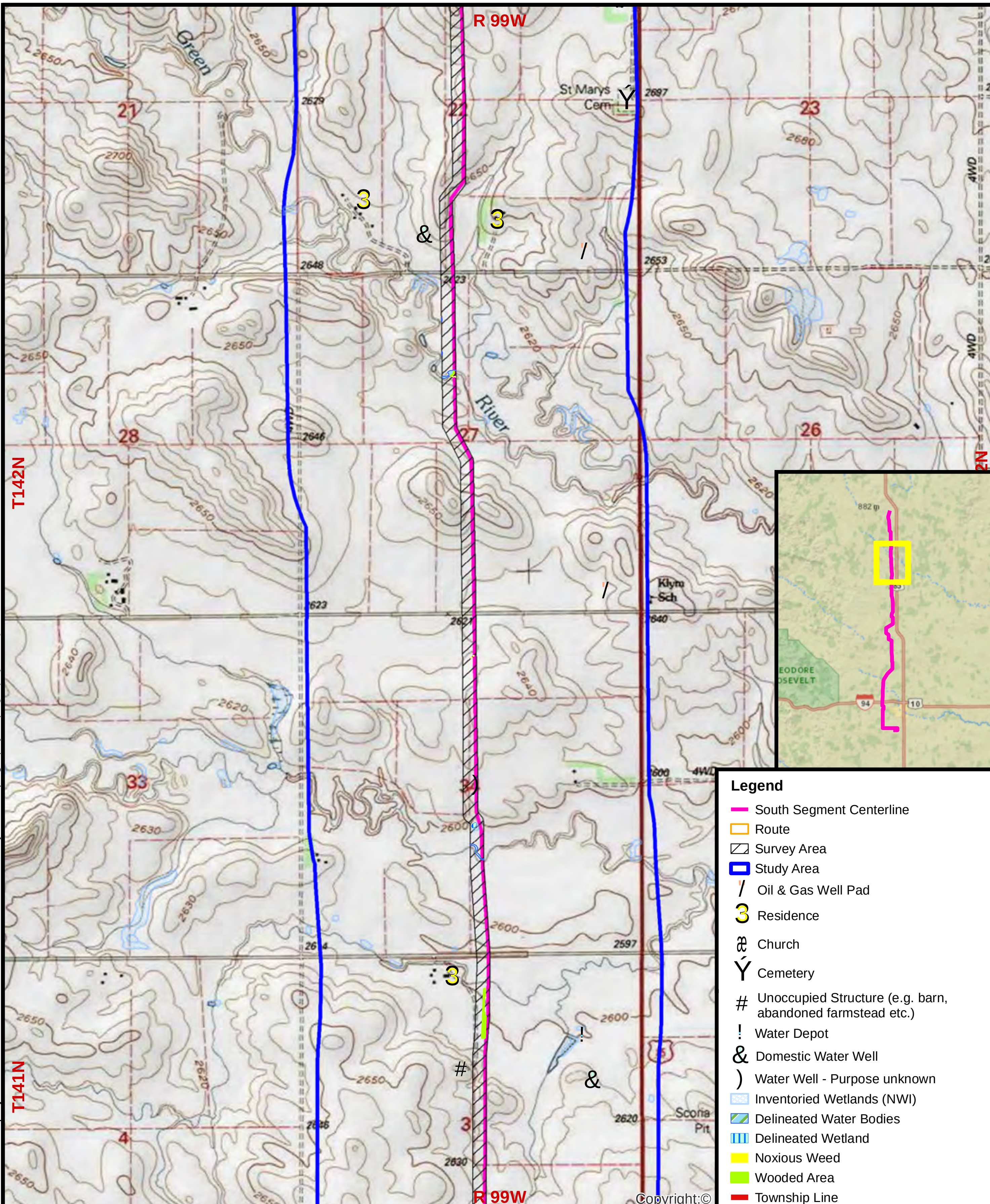

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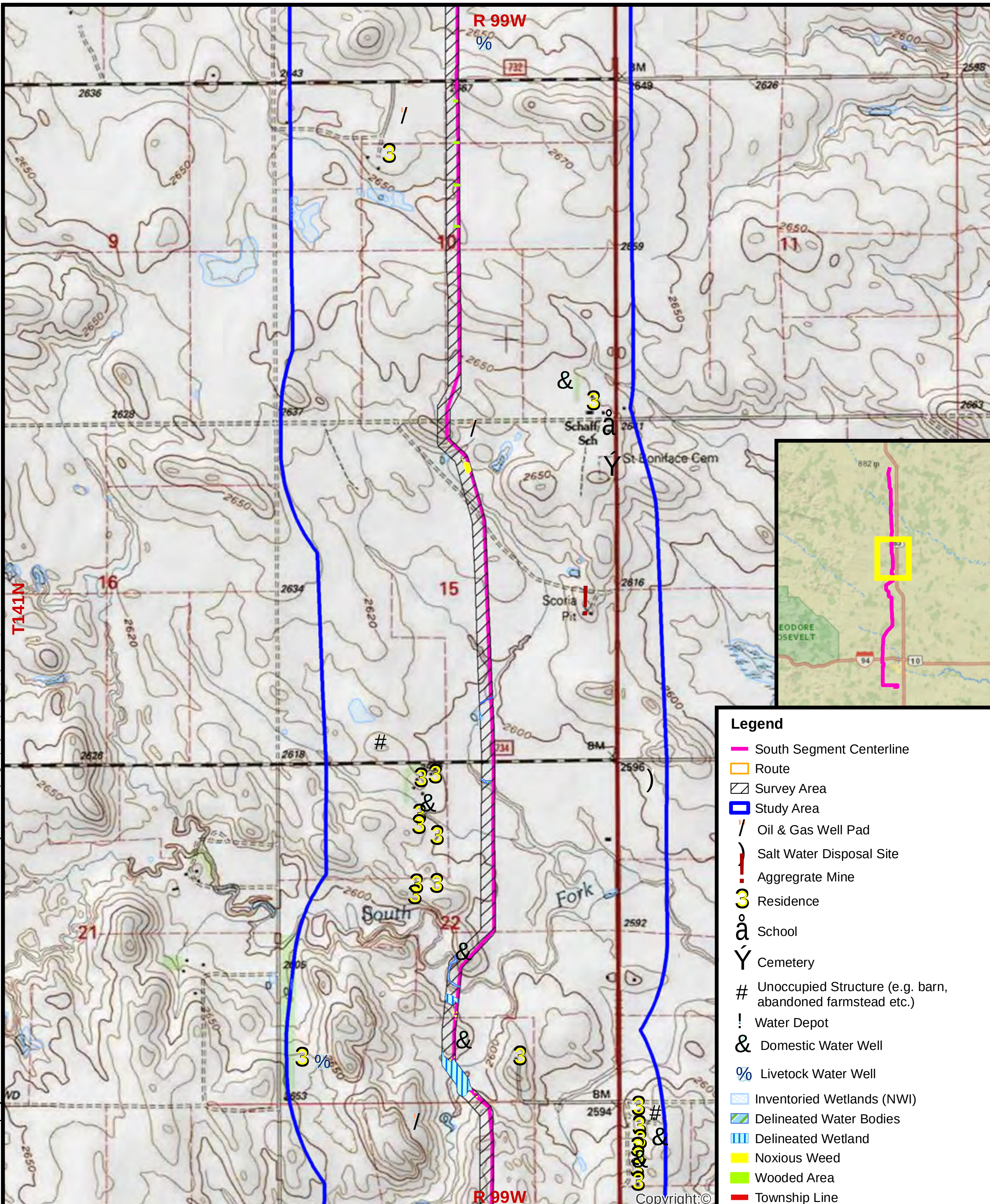

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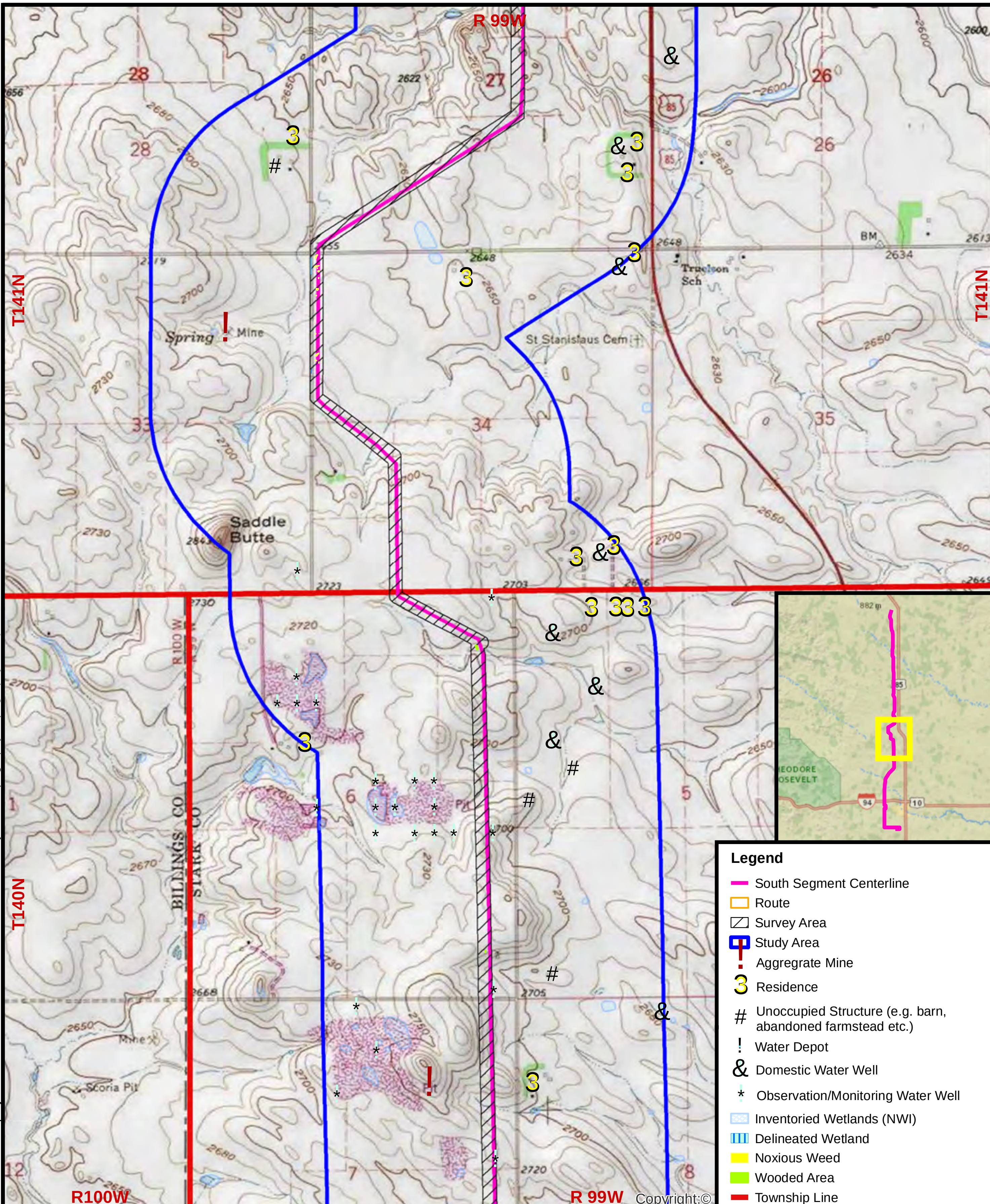

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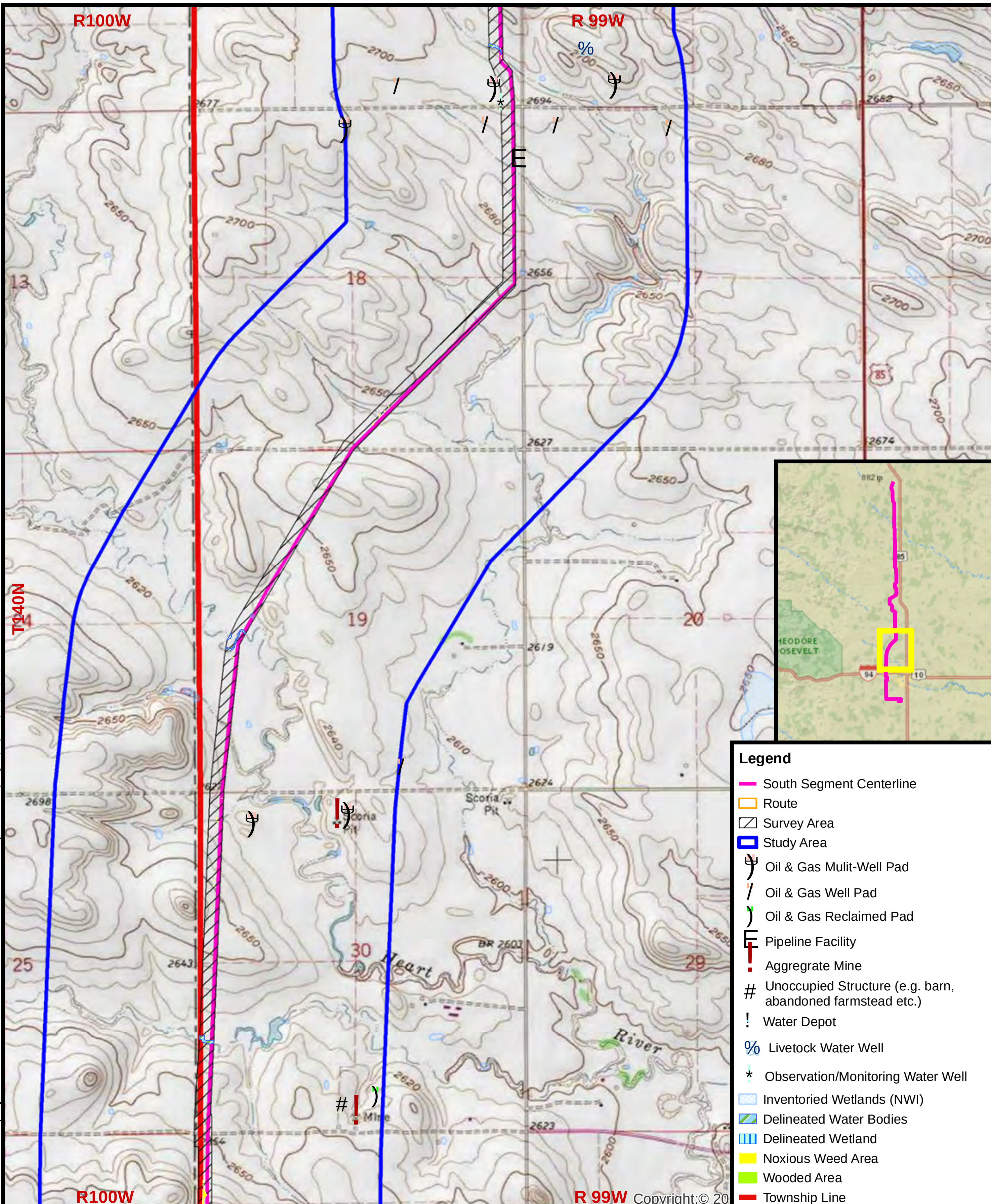
Topography 4 of 6
Andeavor Y-Grade Hub



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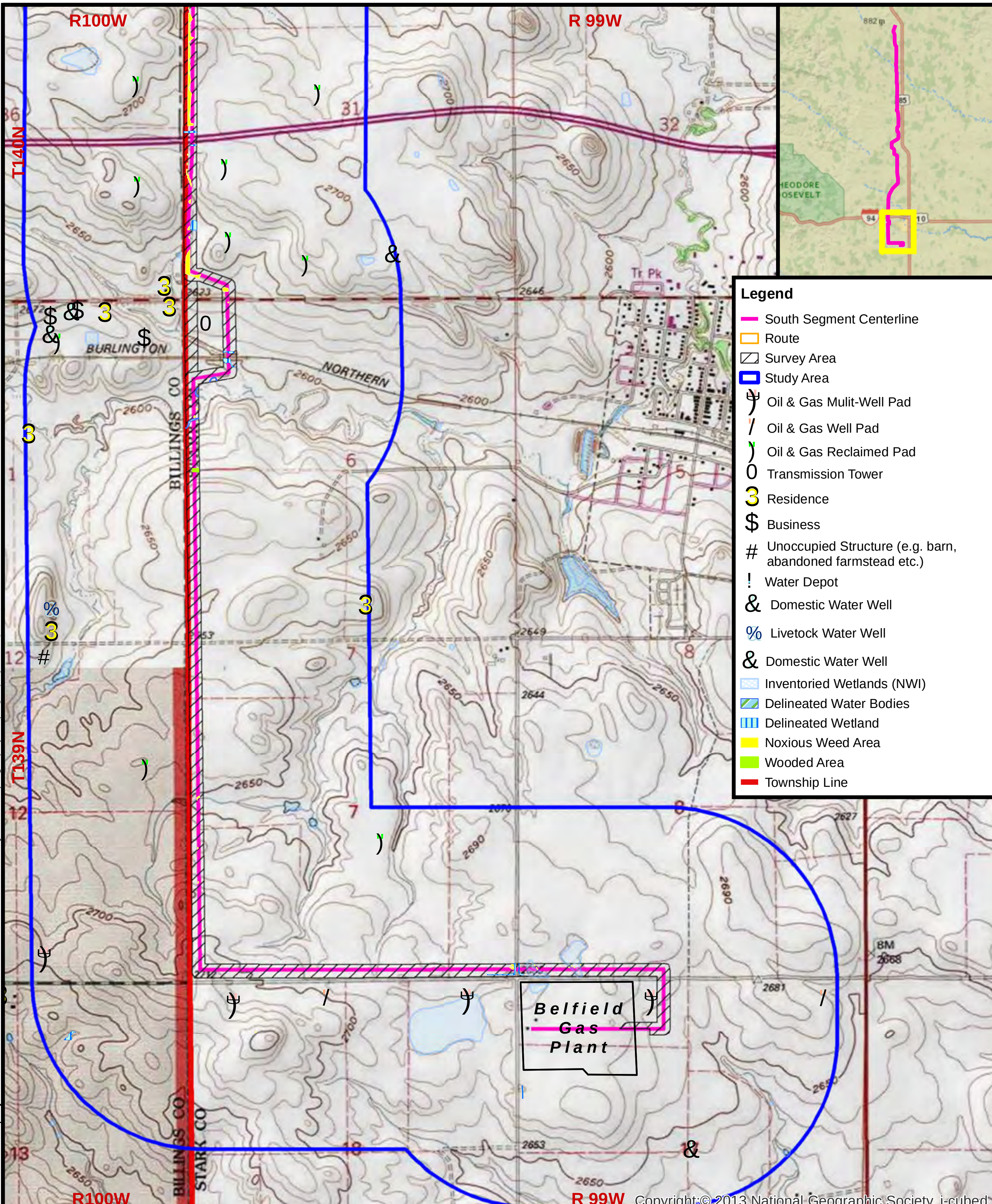
Basemap: USA Topography ESRI

South Segment Siting Criteria
Topography 5 of 6
Andeavor Y-Grade Hub



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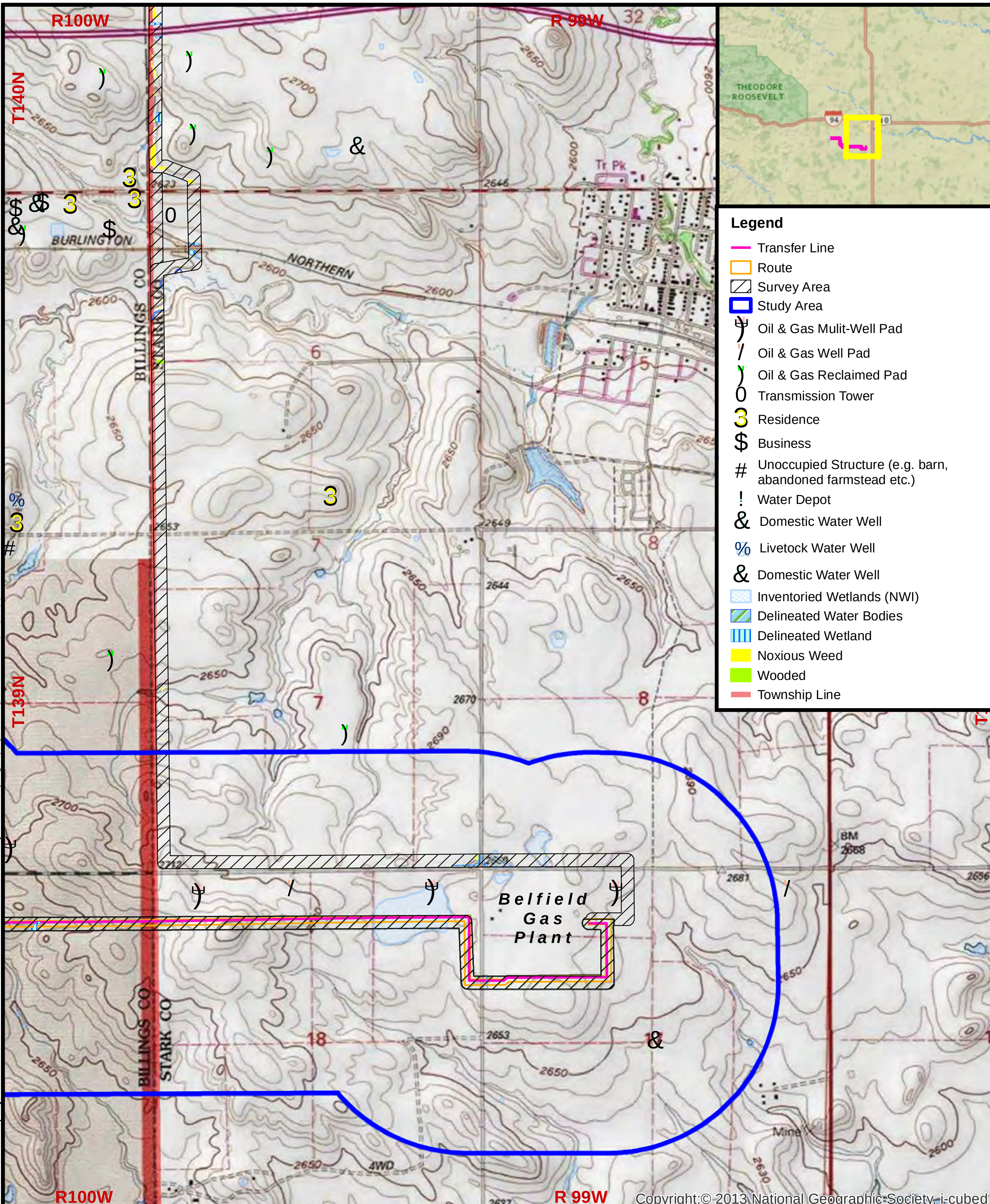
Topography 6 of 6
Andeavor Y-Grade Hub



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Transfer Line Siting Criteria
Topography 1 of 2
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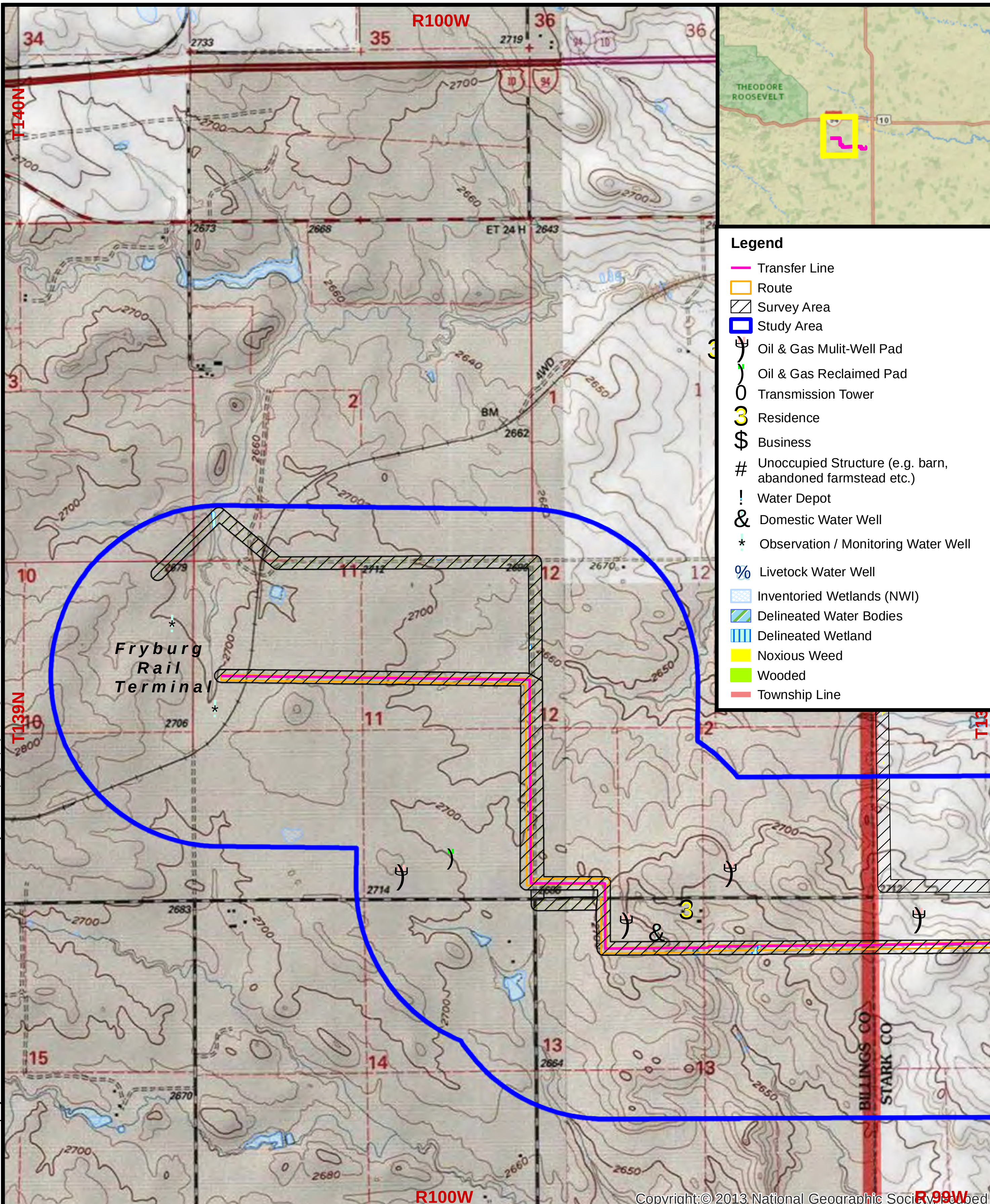

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Transfer Line Siting Criteria
Topography 2 of 2
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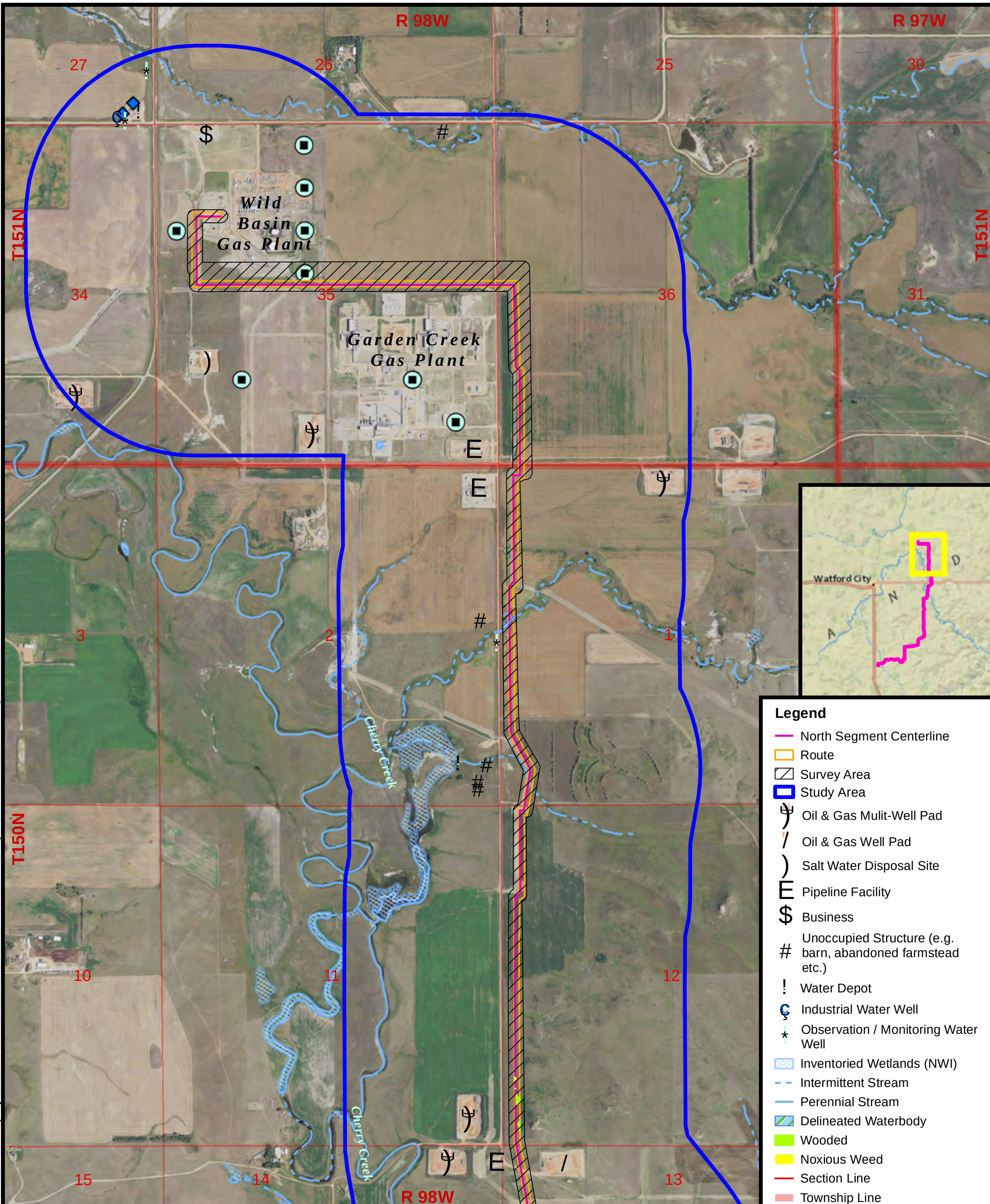

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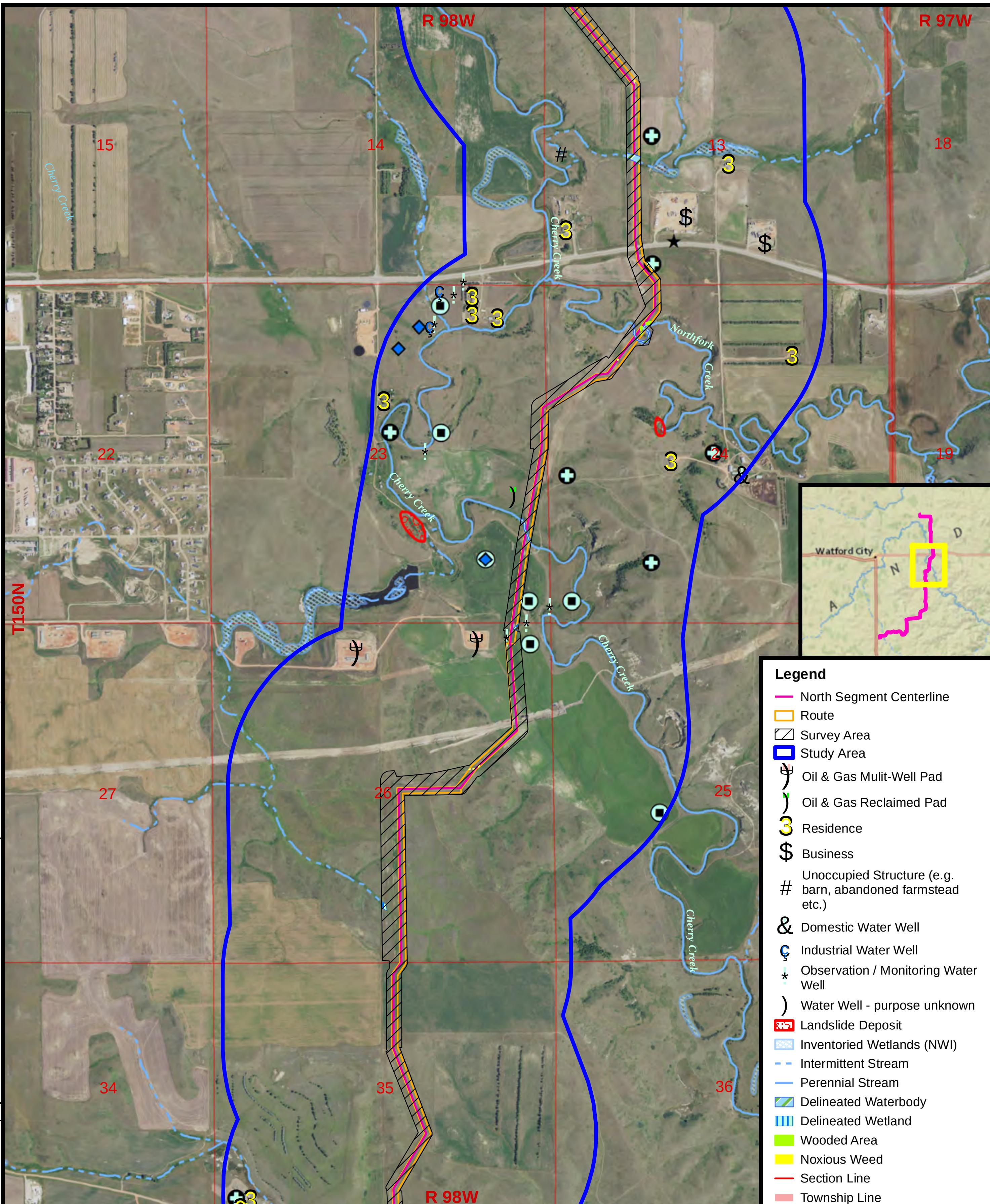
North Segment Siting Criteria
Aerial Photography 1 of 5
Andeavor Y-Grade Hub



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North Segment Siting Criteria
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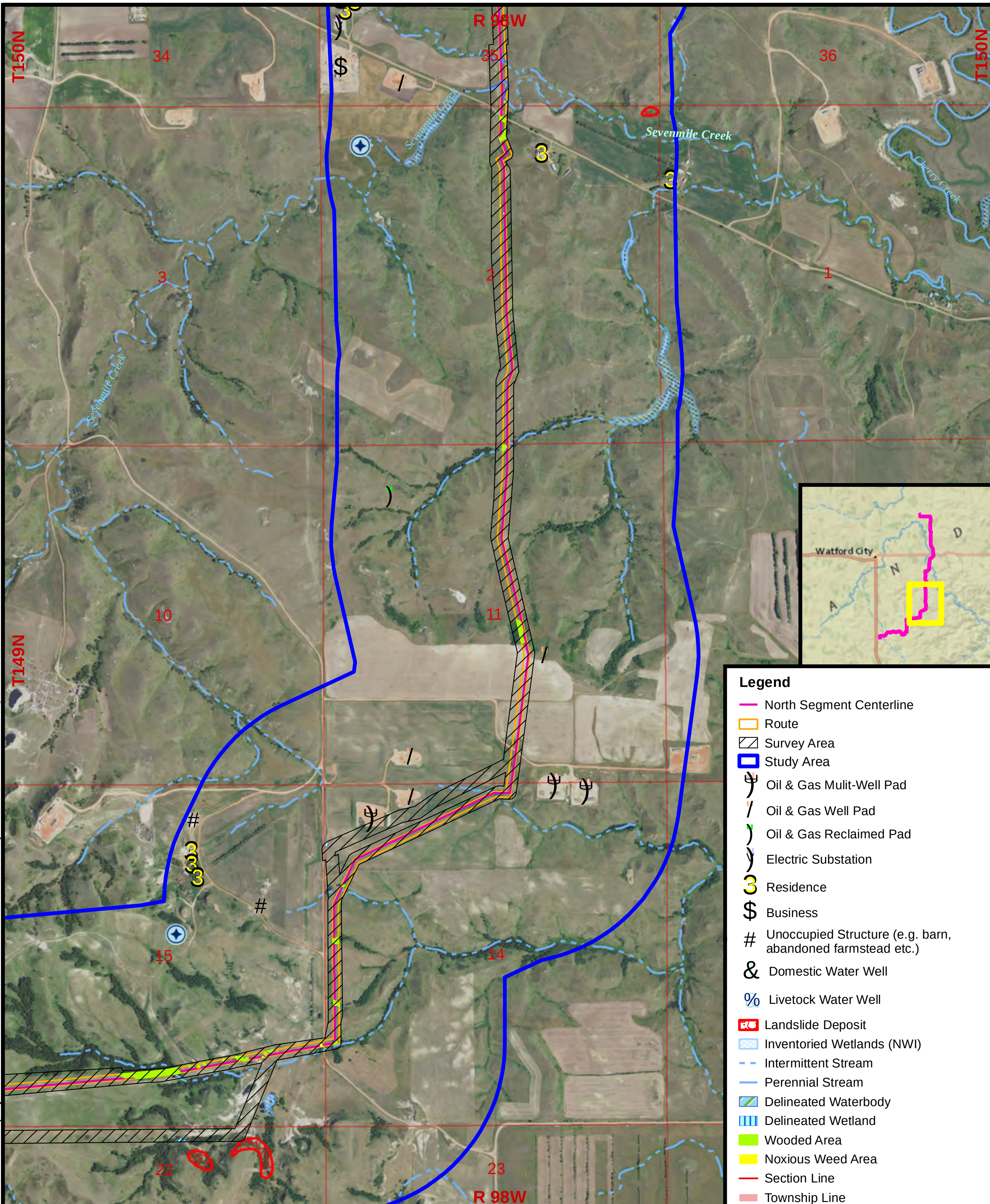

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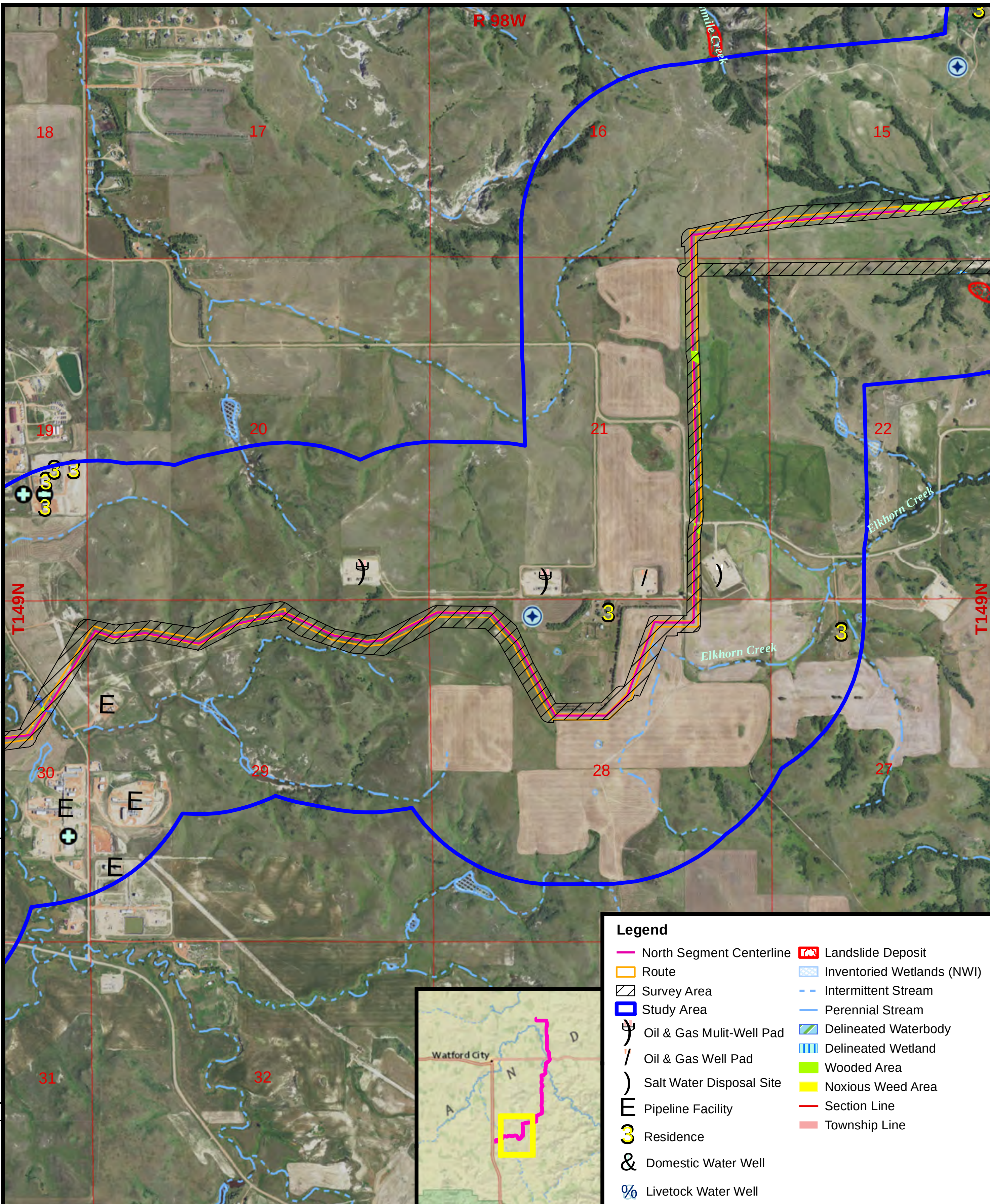
North Segment Siting Criteria
Aerial Photography 3 of 5
Andeavor Y-Grade Hub



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North Segment Siting Criteria
Aerial Photography 4 of 5
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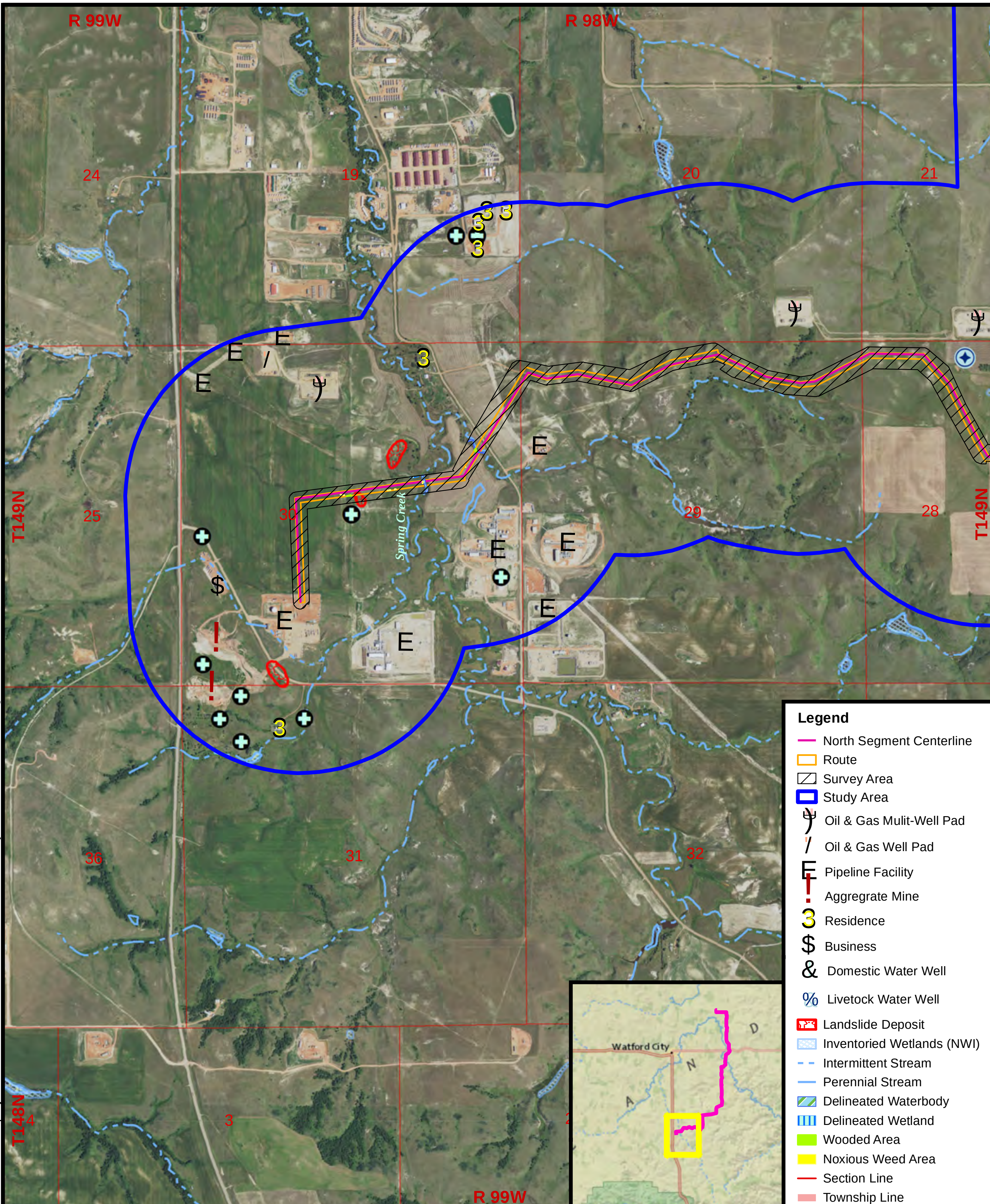

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North Segment Siting Criteria
Aerial Photography 5 of 5
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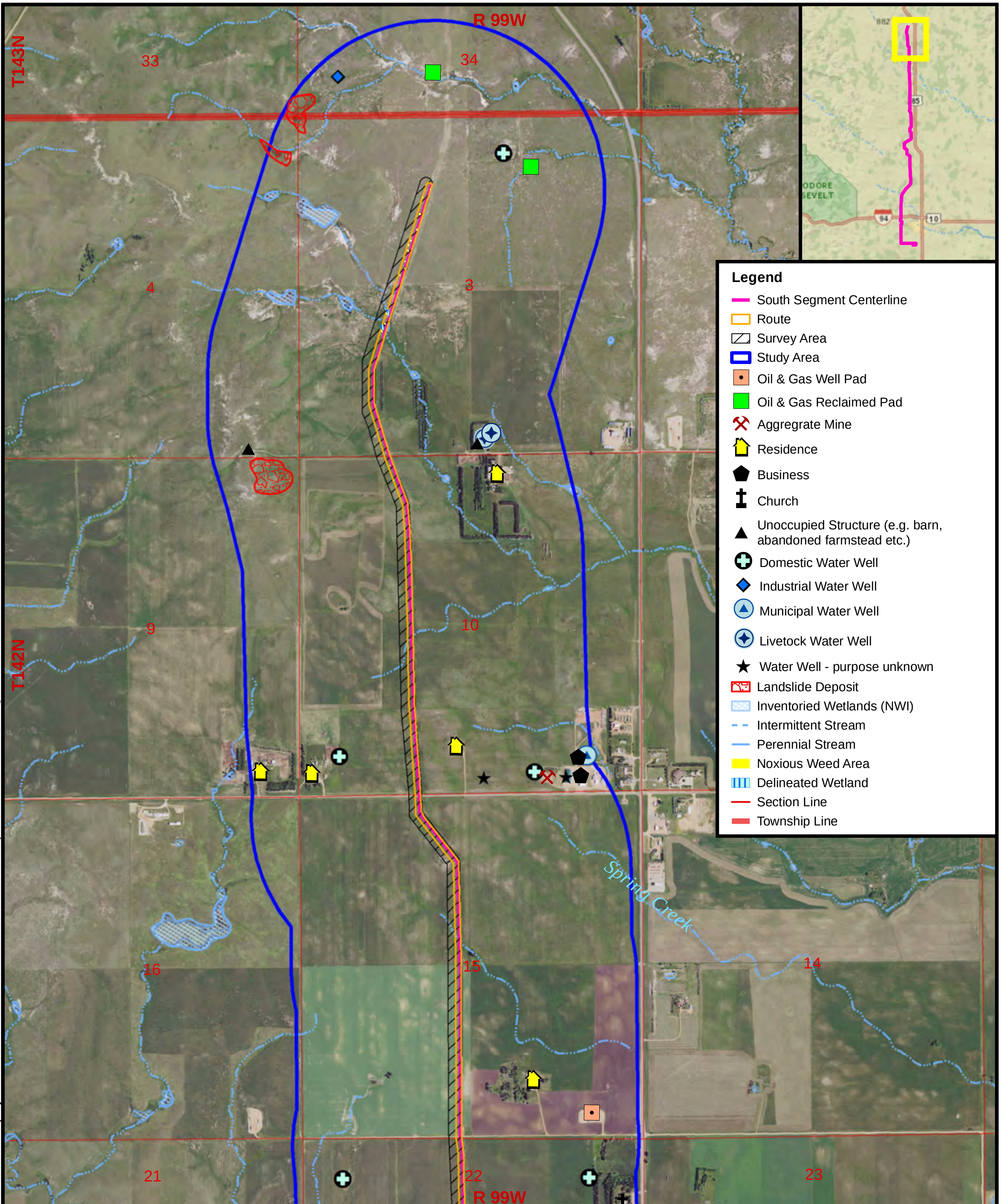

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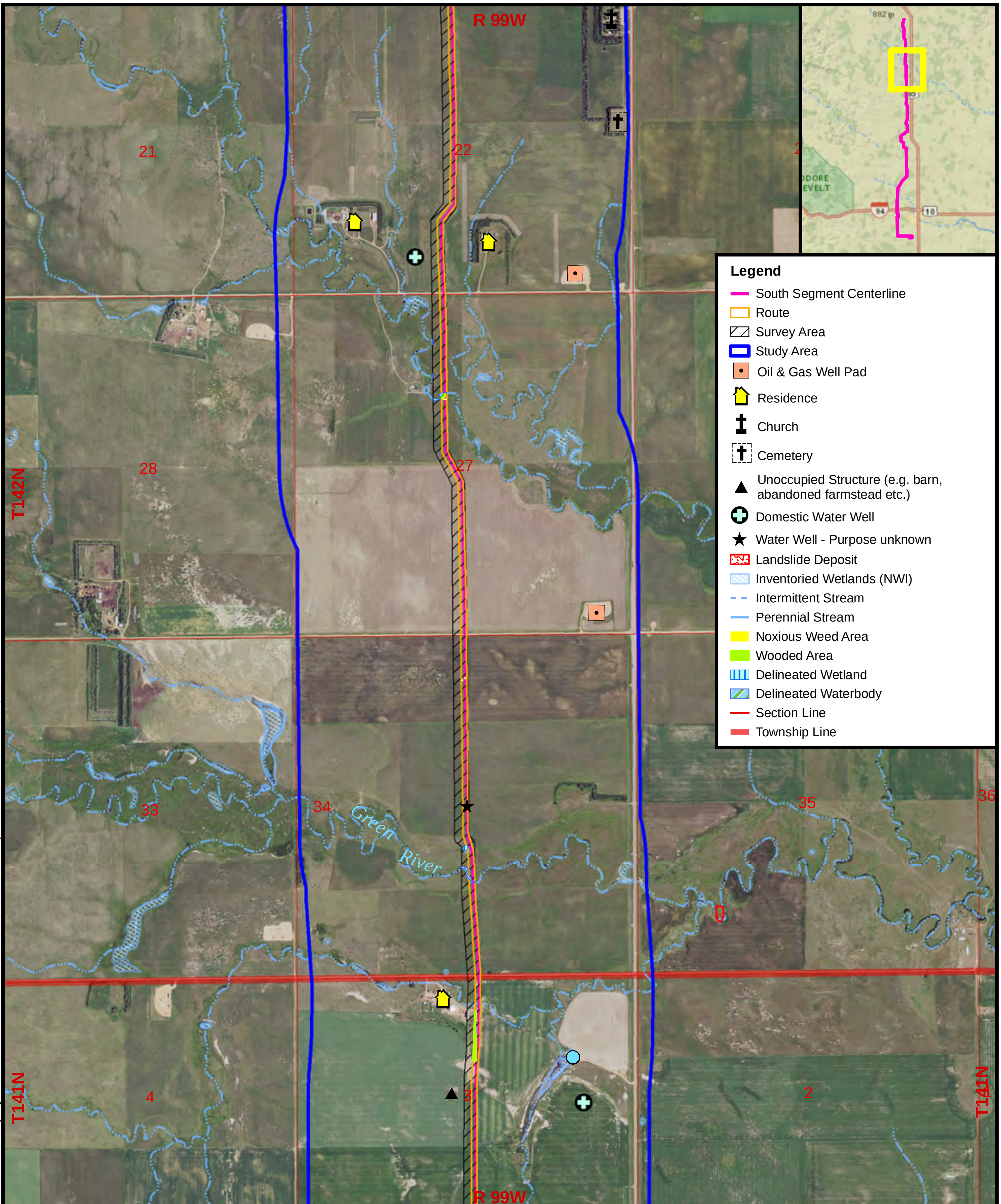
South Segment Siting Criteria
Aerial Photography 1 of 6
Andeavor Y-Grade Hub



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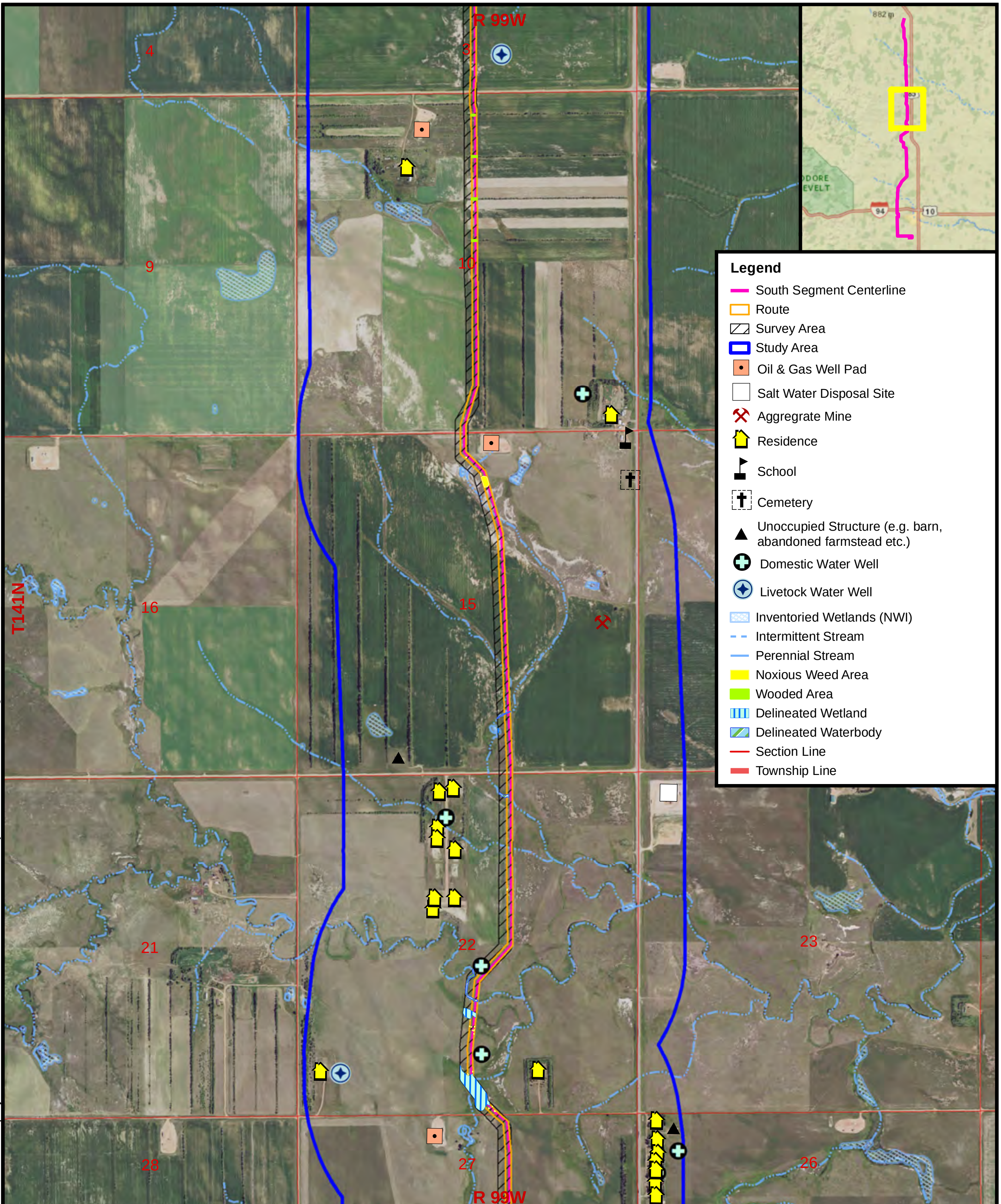
South Segment Siting Criteria
Aerial Photography 2 of 6
Andeavor Y-Grade Hub



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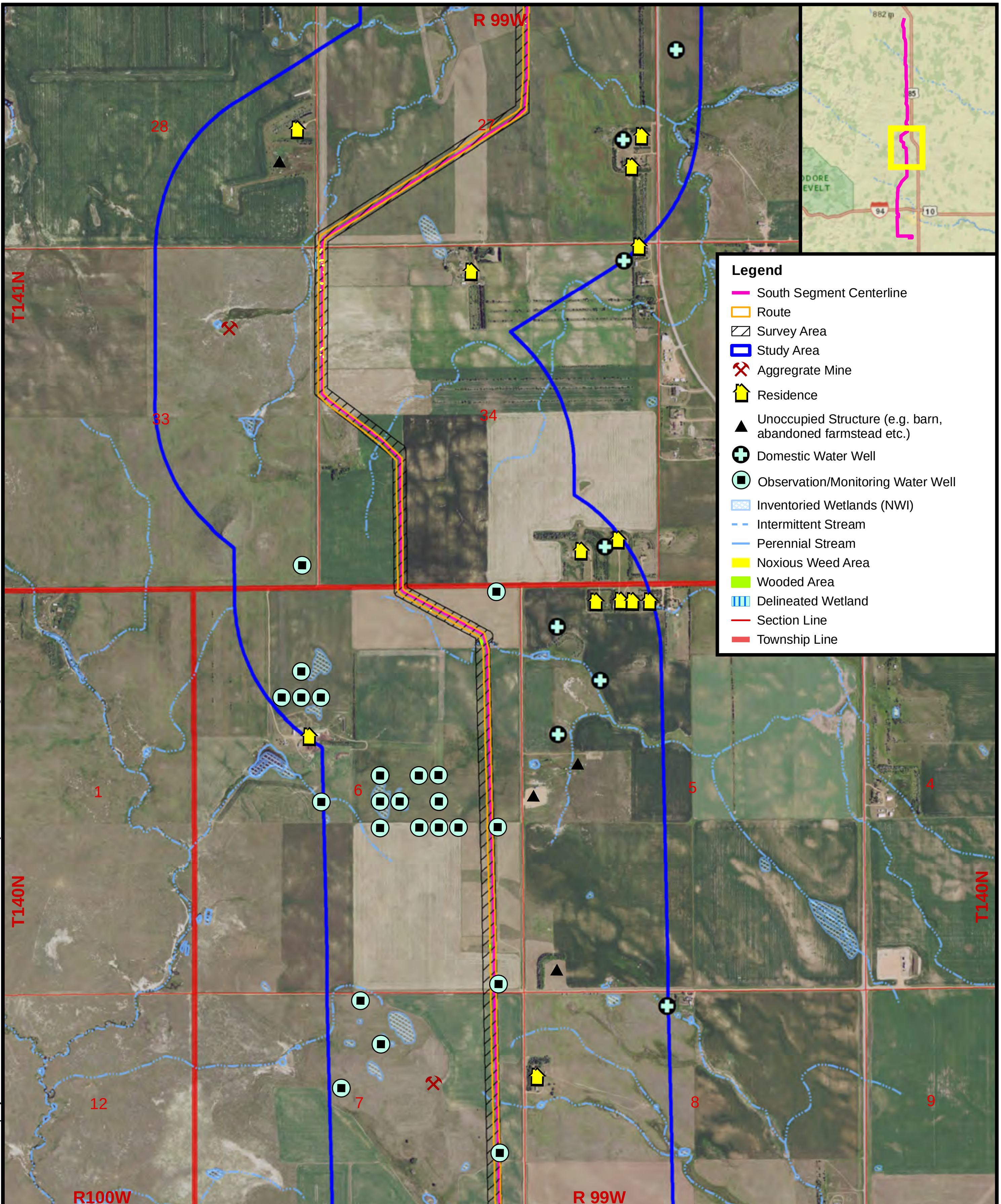
South Segment Siting Criteria
Aerial Photography 3 of 6
Andeavor Y-Grade Hub



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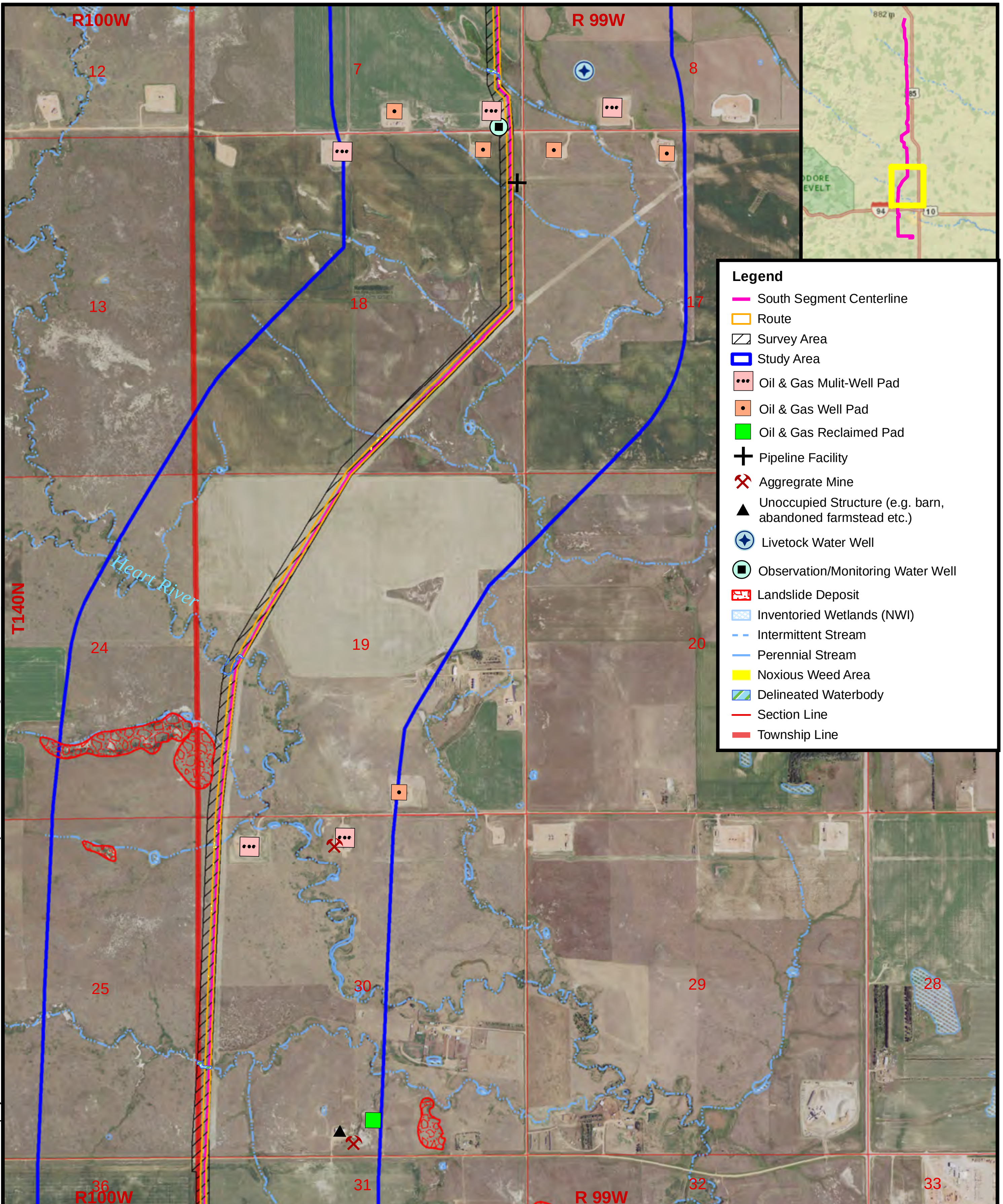
South Segment Siting Criteria
Aerial Photography 4 of 6
Andeavor Y-Grade Hub



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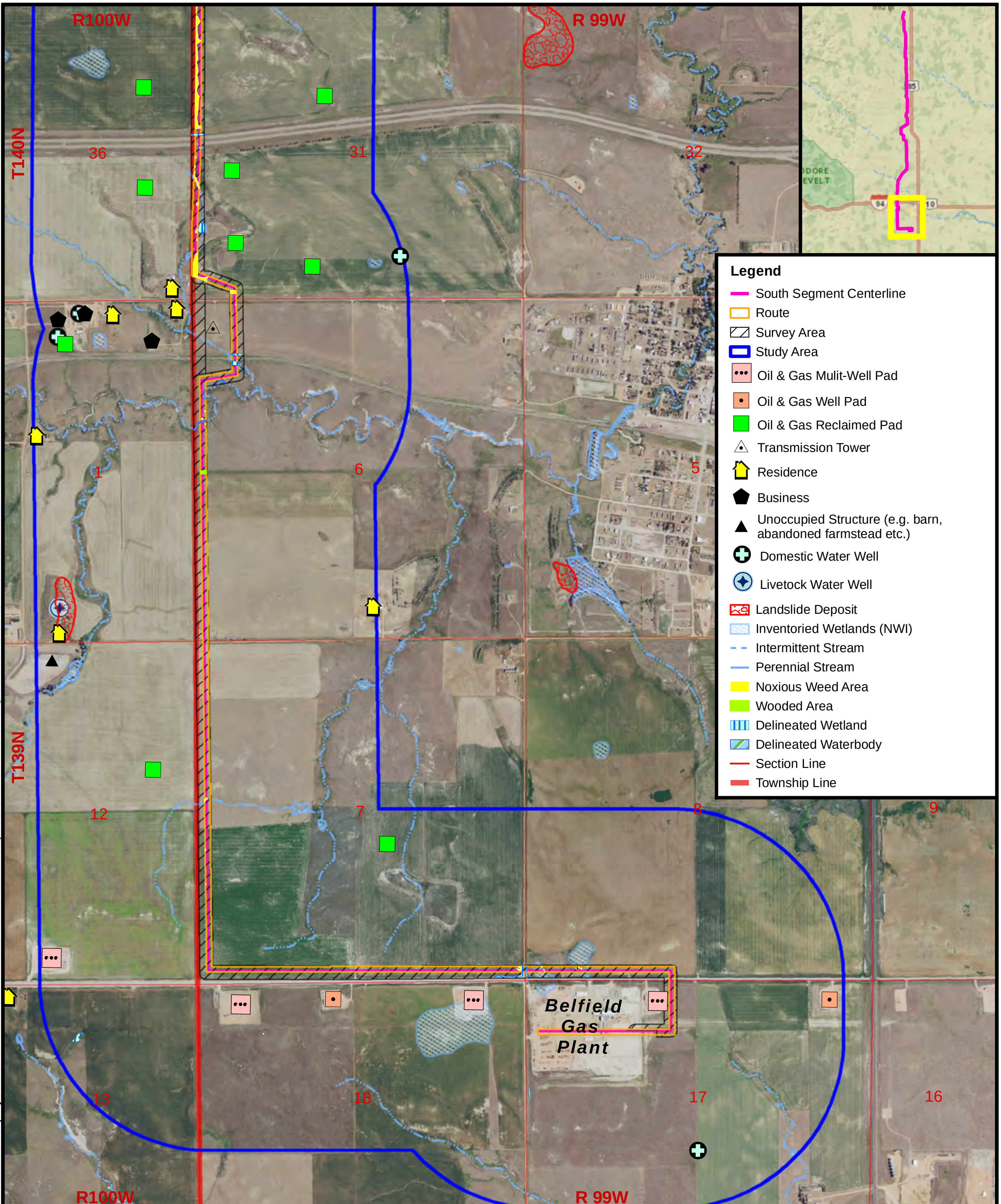
South Segment Siting Criteria
Aerial Photography 5 of 6
Andeavor Y-Grade Hub



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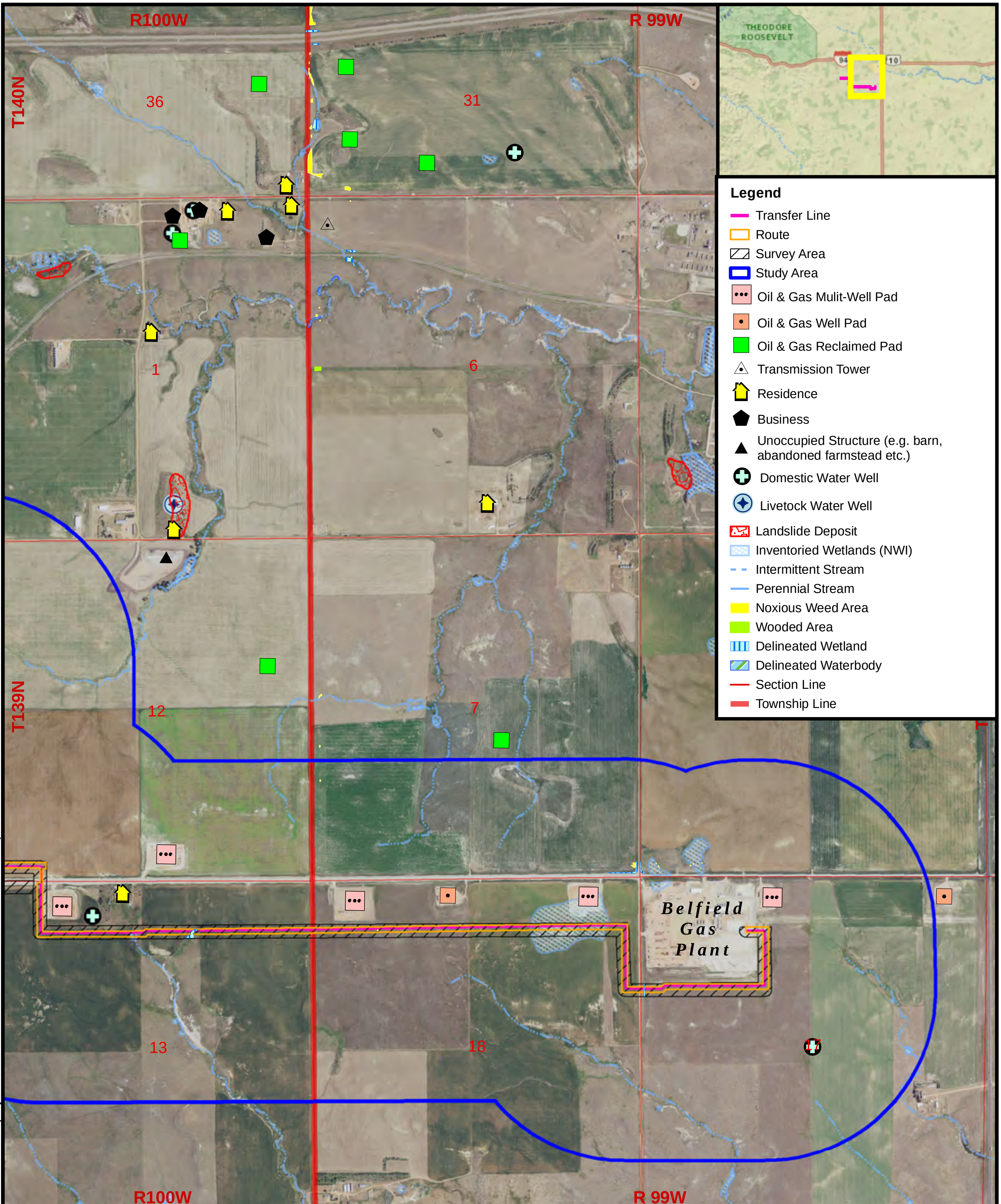
South Segment Siting Criteria
Aerial Photography 6 of 6
Andeavor Y-Grade Hub



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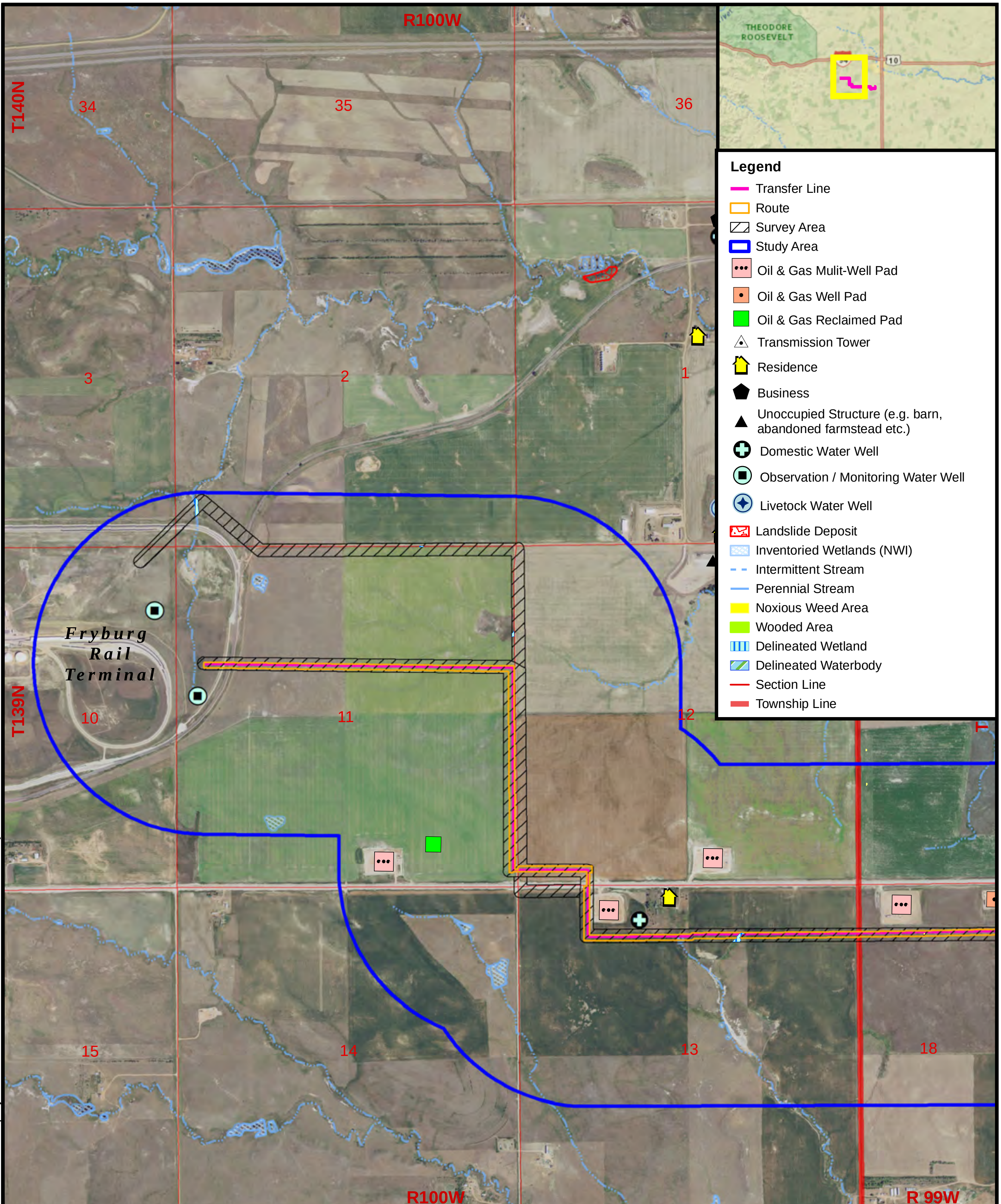
Transfer Line Siting Criteria
Aerial Photography 1 of 2
Andeavor Y-Grade Hub



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Transfer Line Siting Criteria
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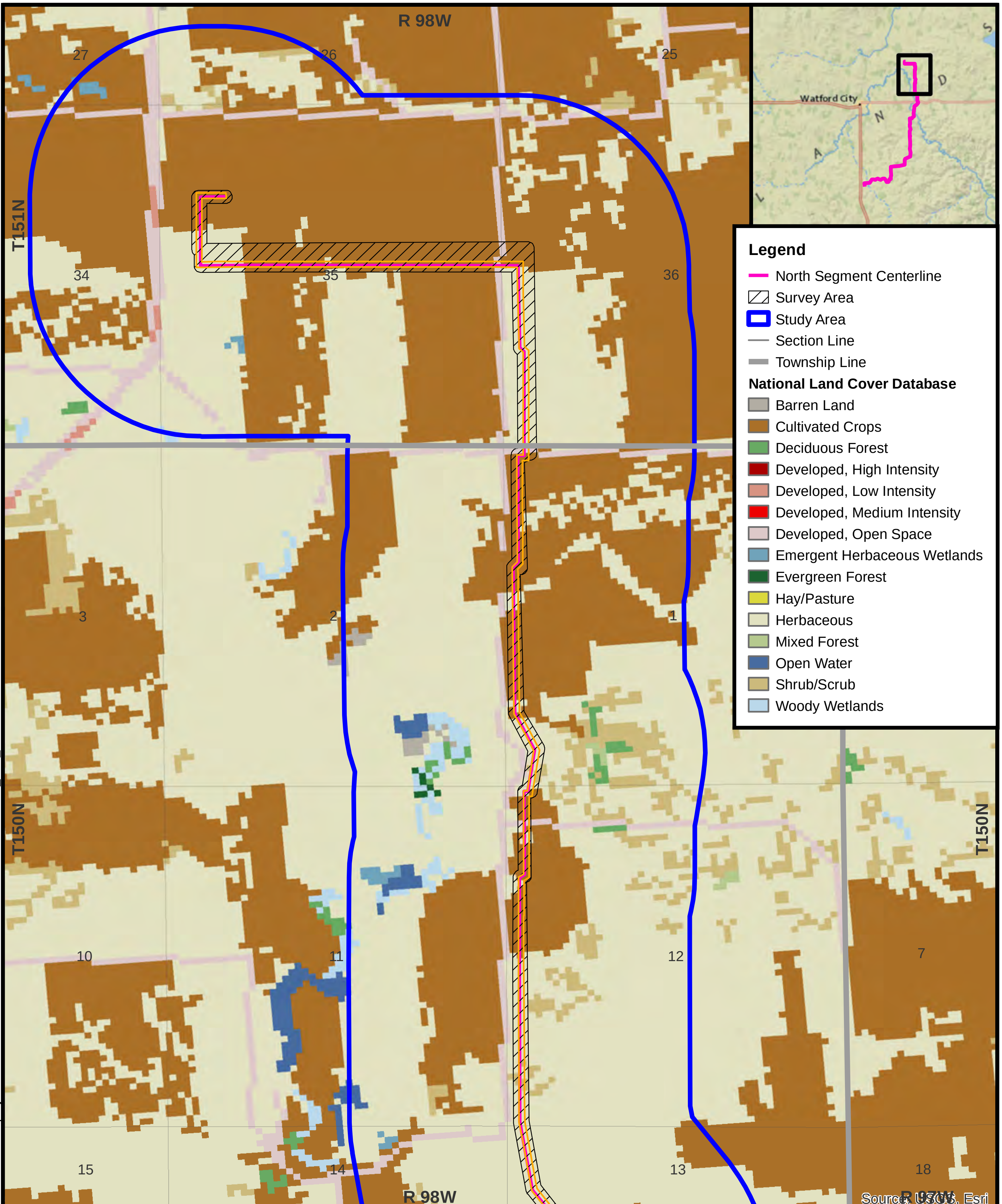
Andeavor Y-Grade Hub



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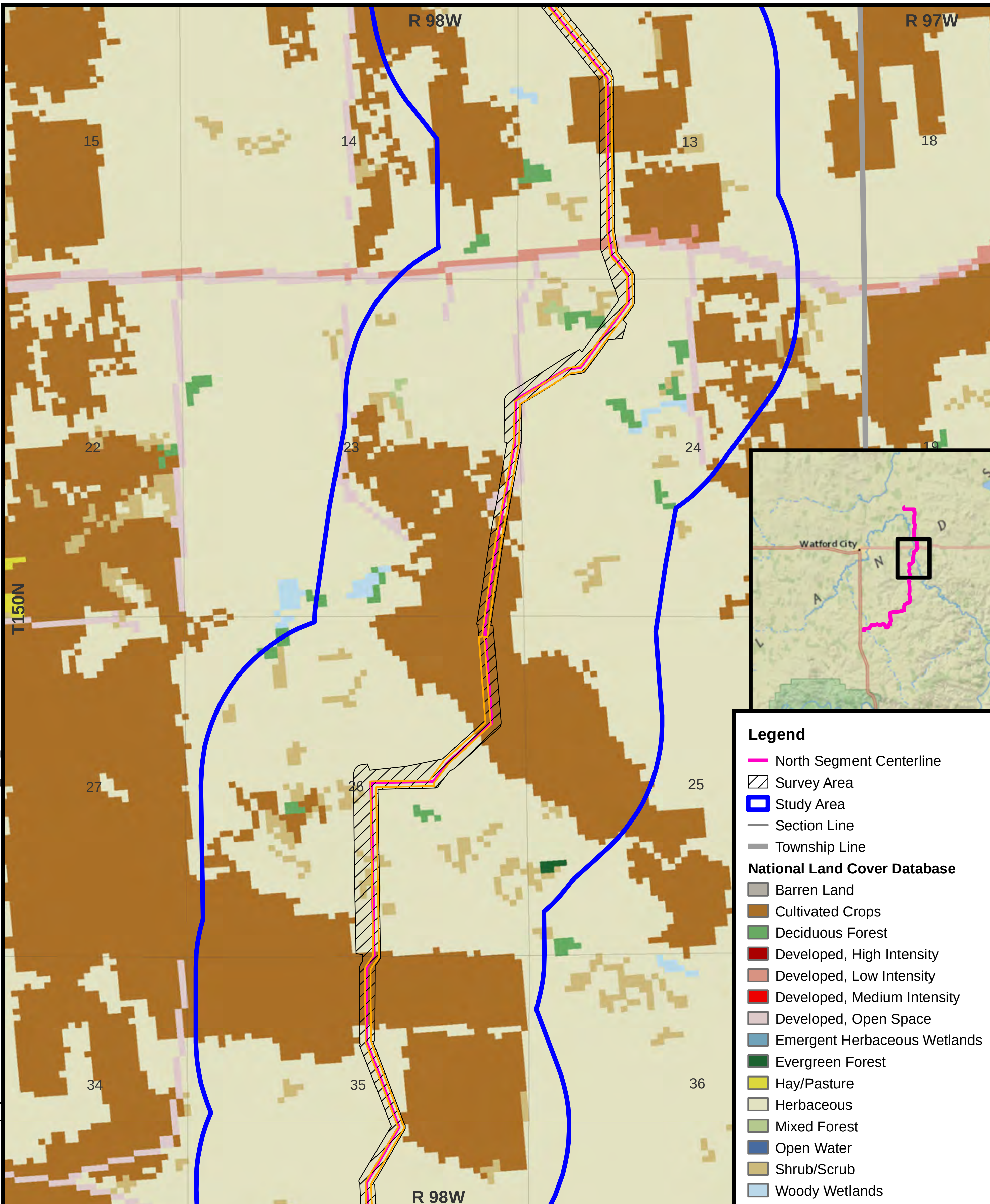
Basemap: National Land Cover Database 2011

North Segment Siting Criteria
Land Use 1 of 5
Andeavor Y-Grade Hub



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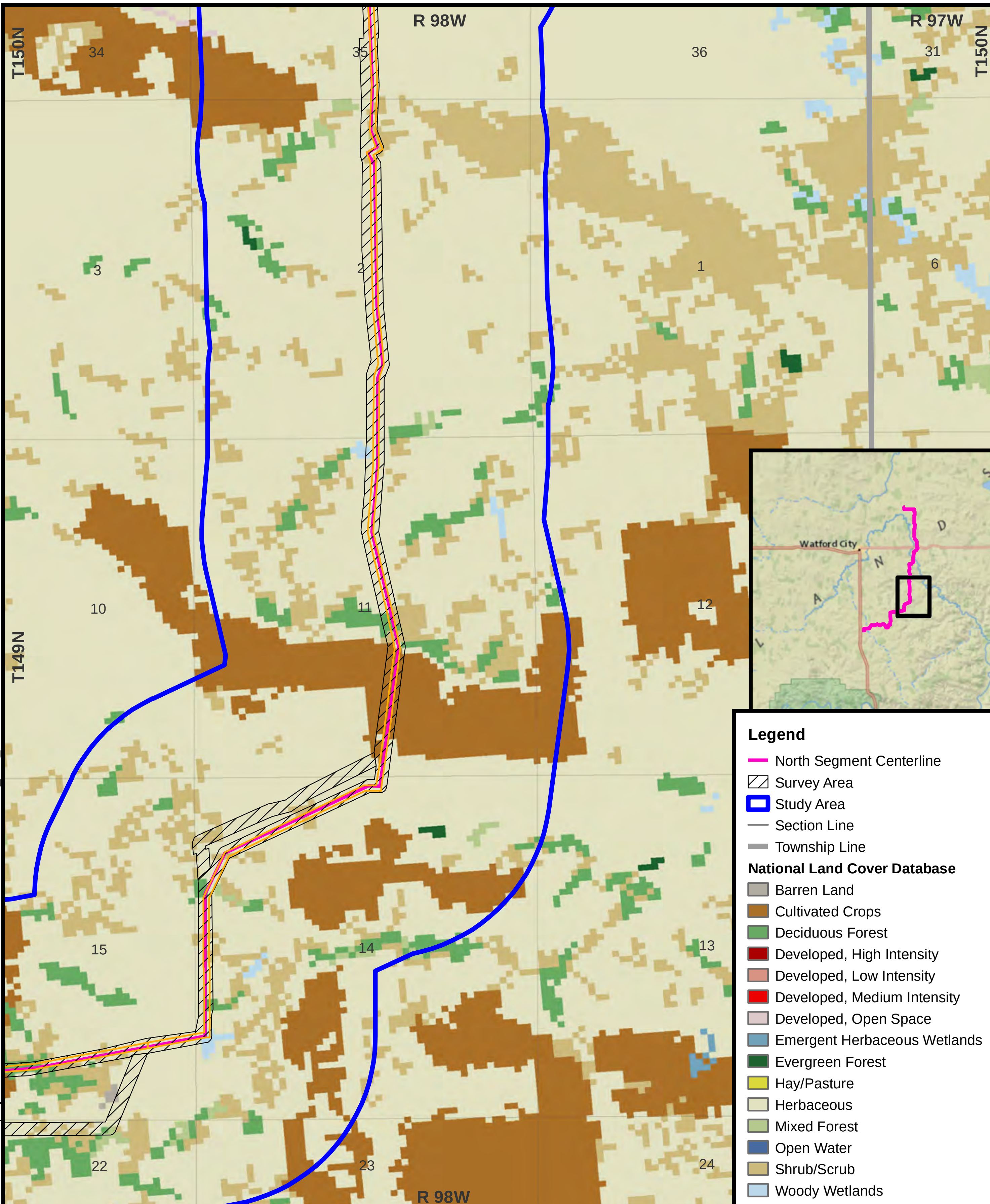
Andeavor Y-Grade Hub



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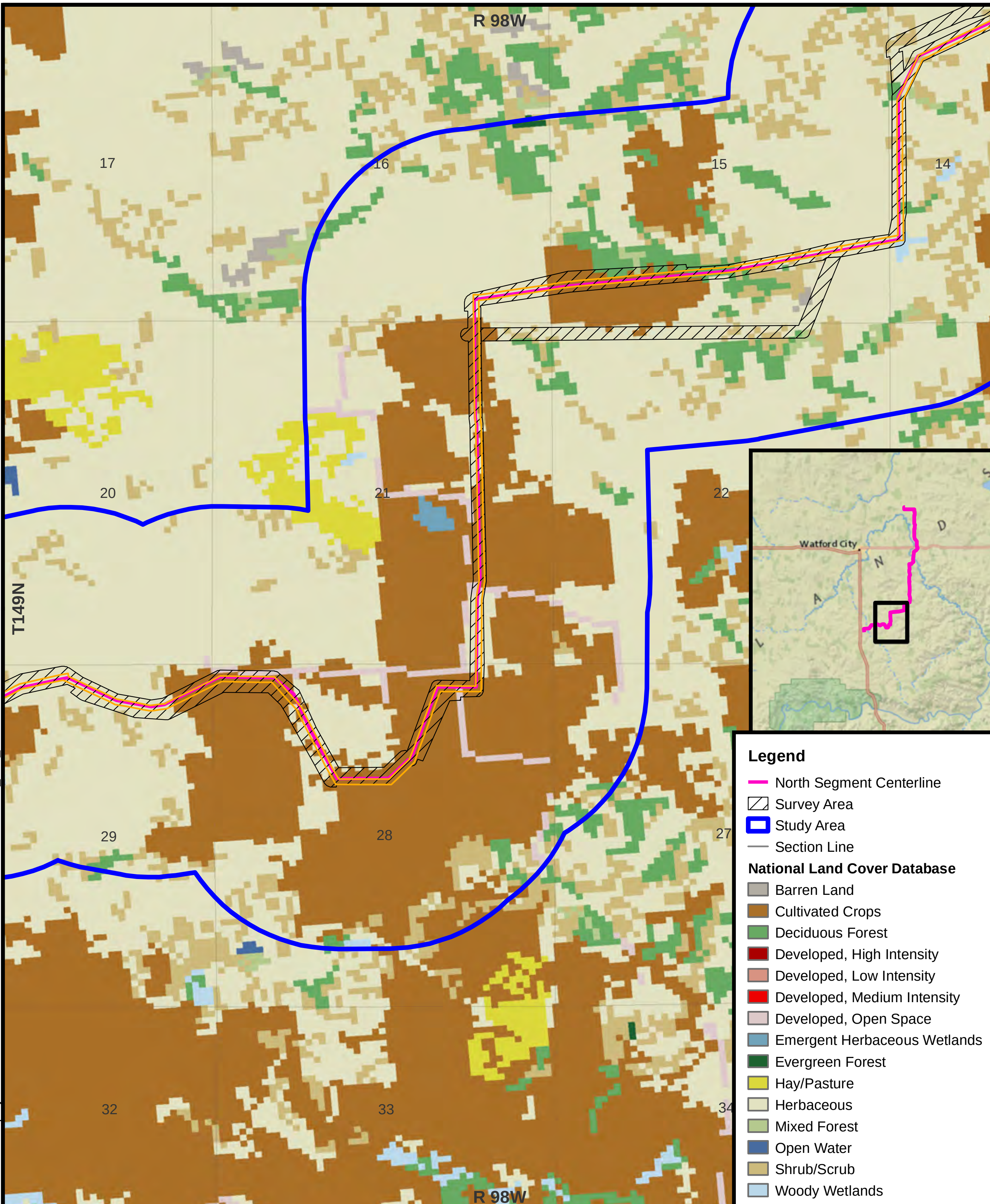
North Segment Siting Criteria
Land Use 3 of 5
Andeavor Y-Grade Hub



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North Segment Siting Criteria
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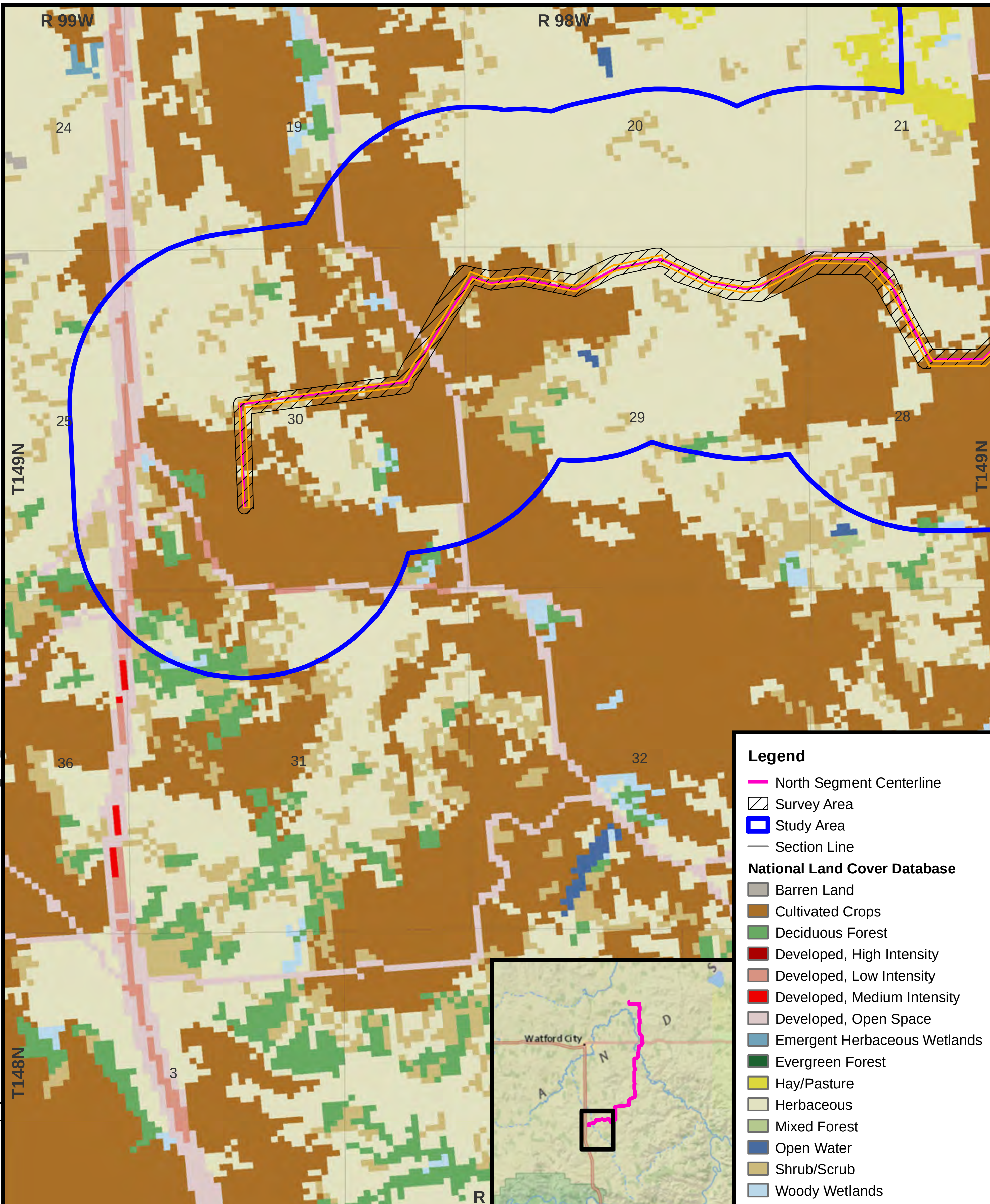
Andeavor Y-Grade Hub



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North Segment Siting Criteria
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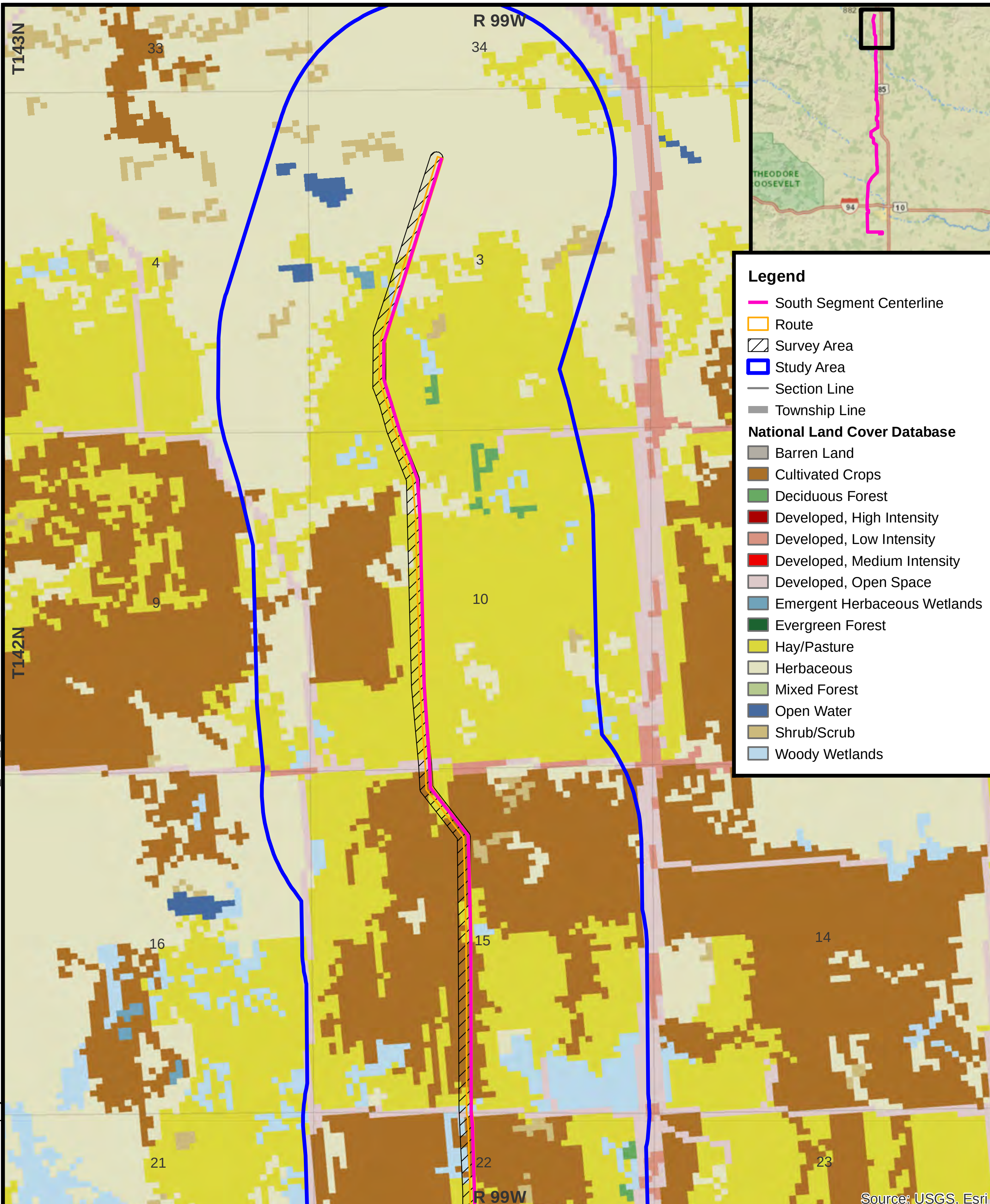
Andeavor Y-Grade Hub



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South Segment Siting Criteria
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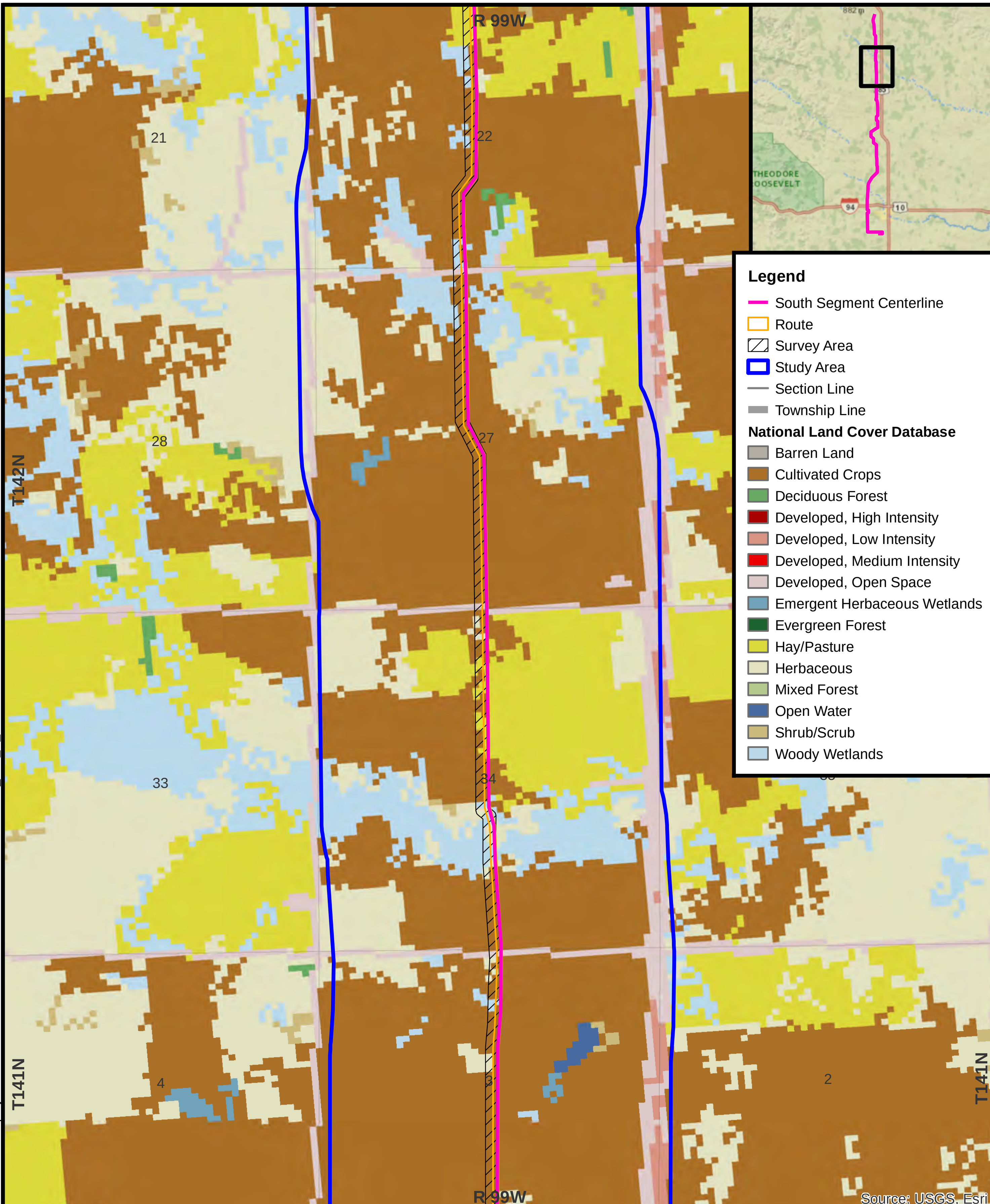
Andeavor Y-Grade Hub



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South Segment Siting Criteria
Land Use 2 of 6
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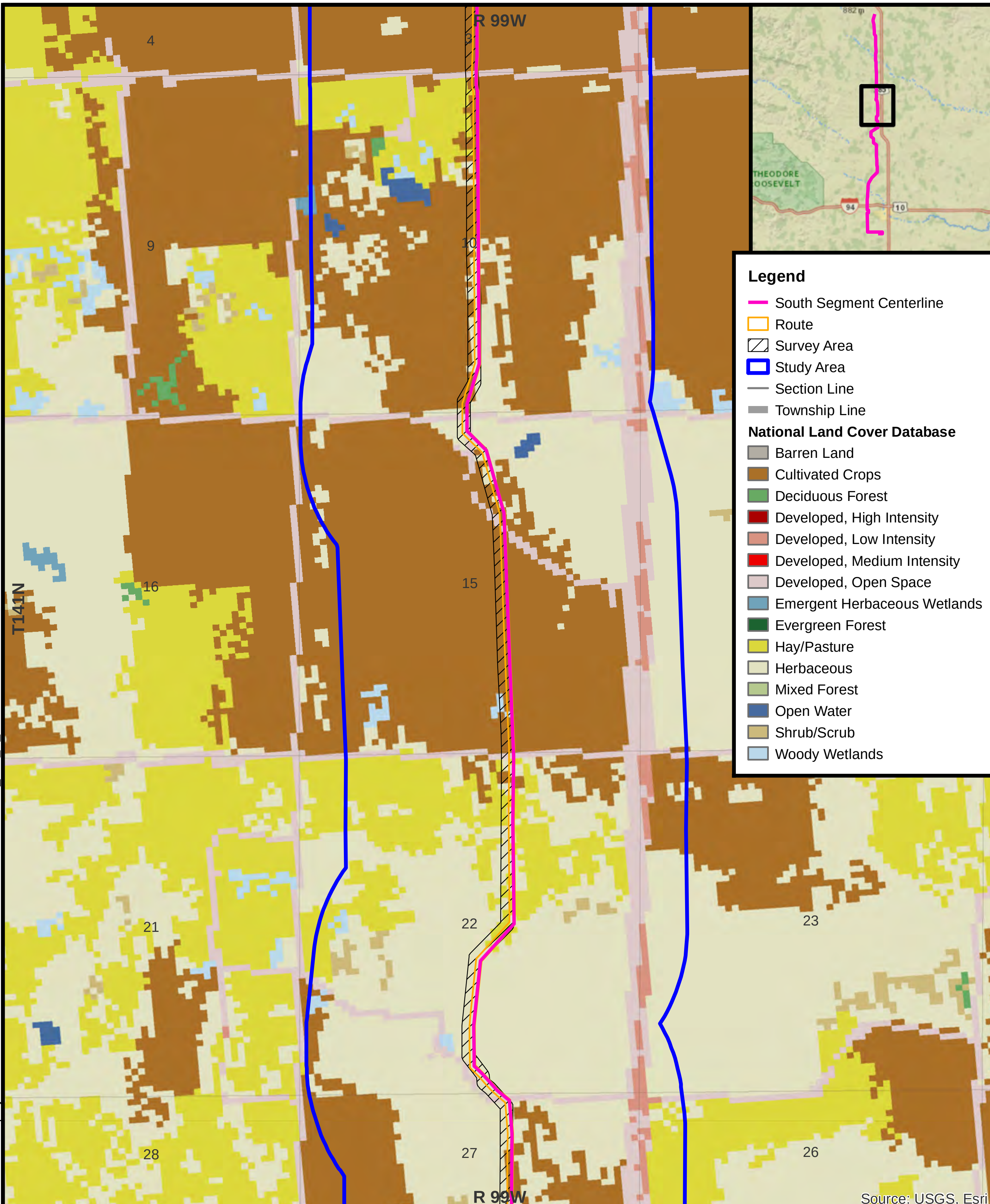

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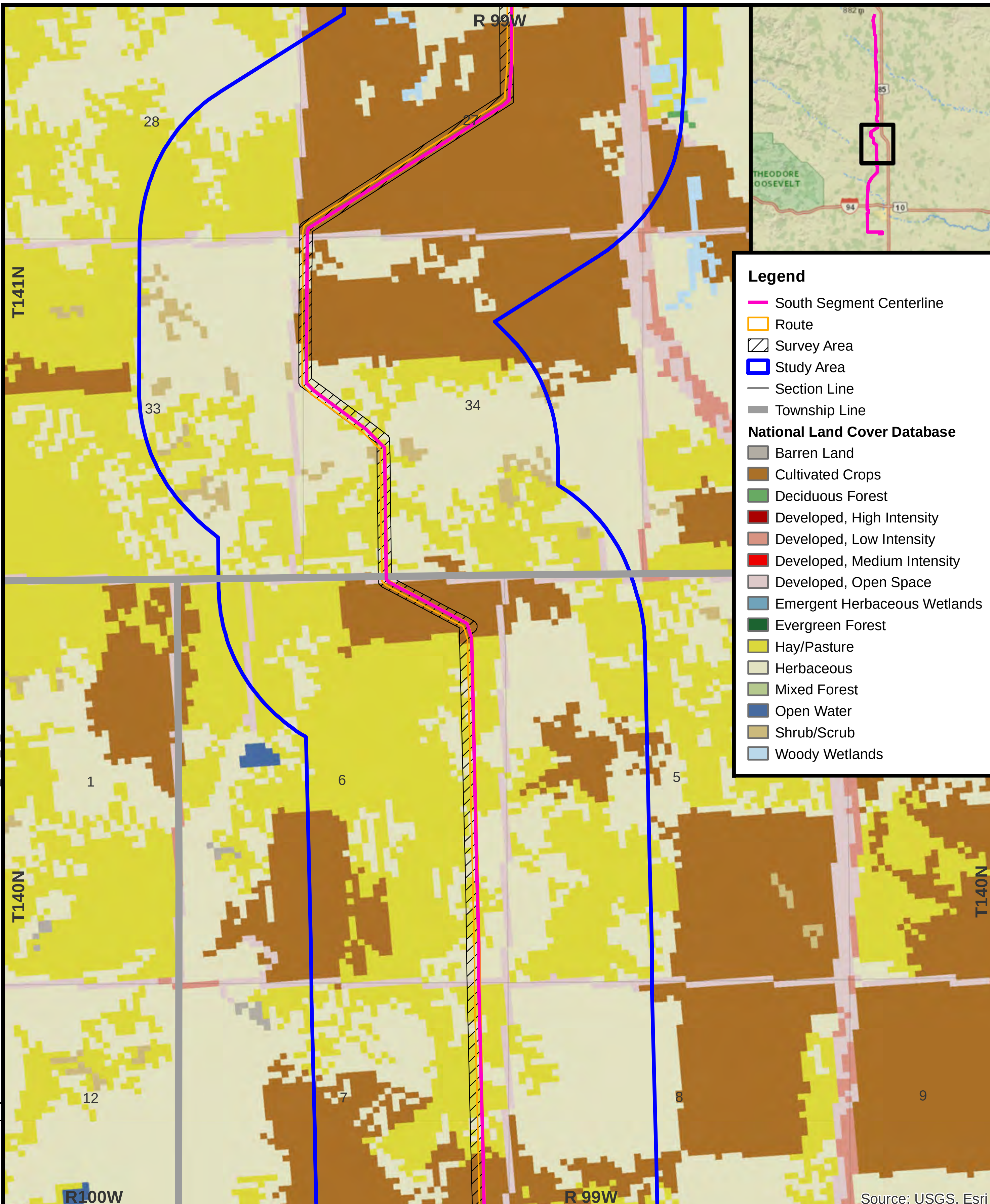

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Land Use 4 of 6
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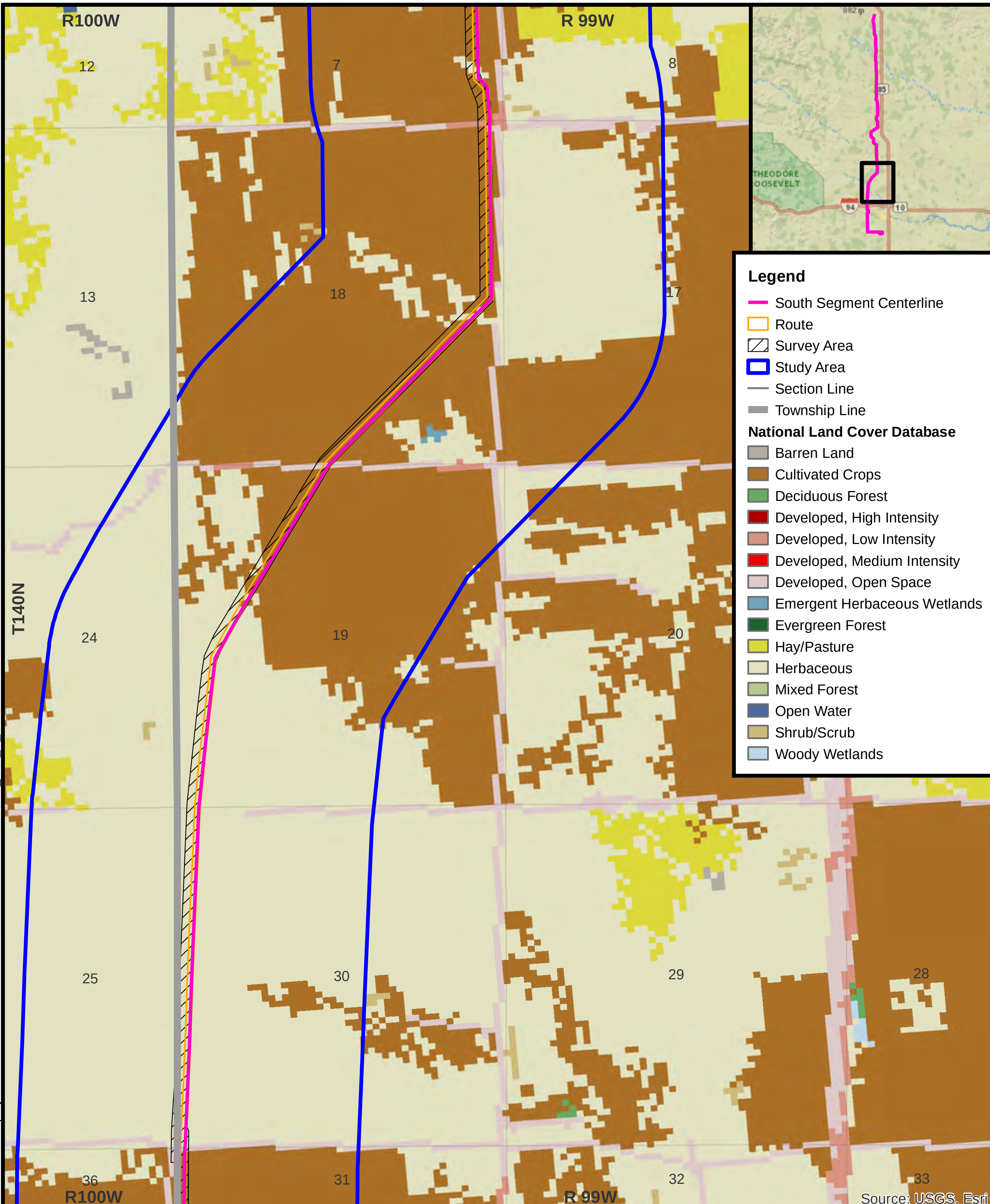

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Land Use 5 of 6
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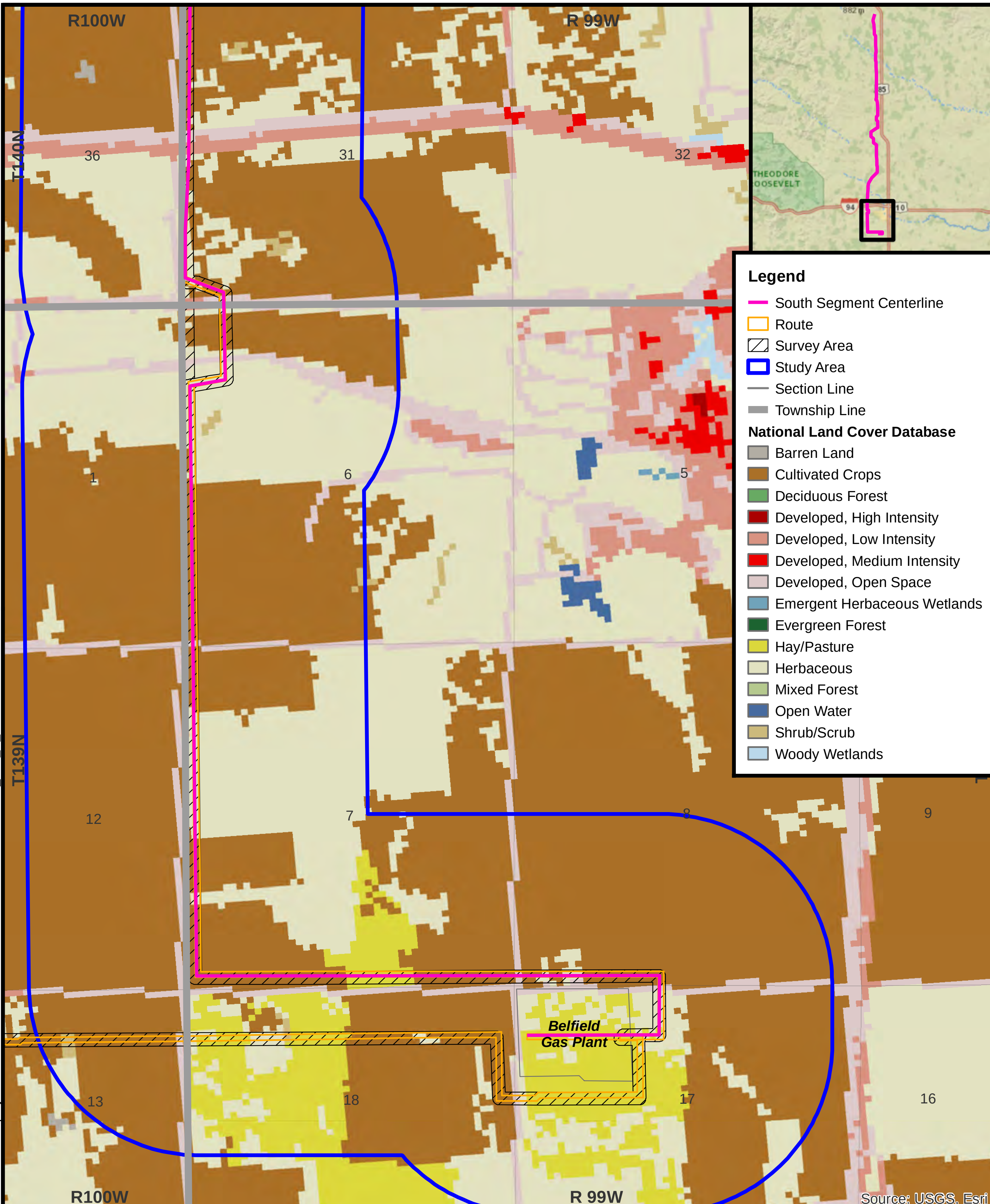

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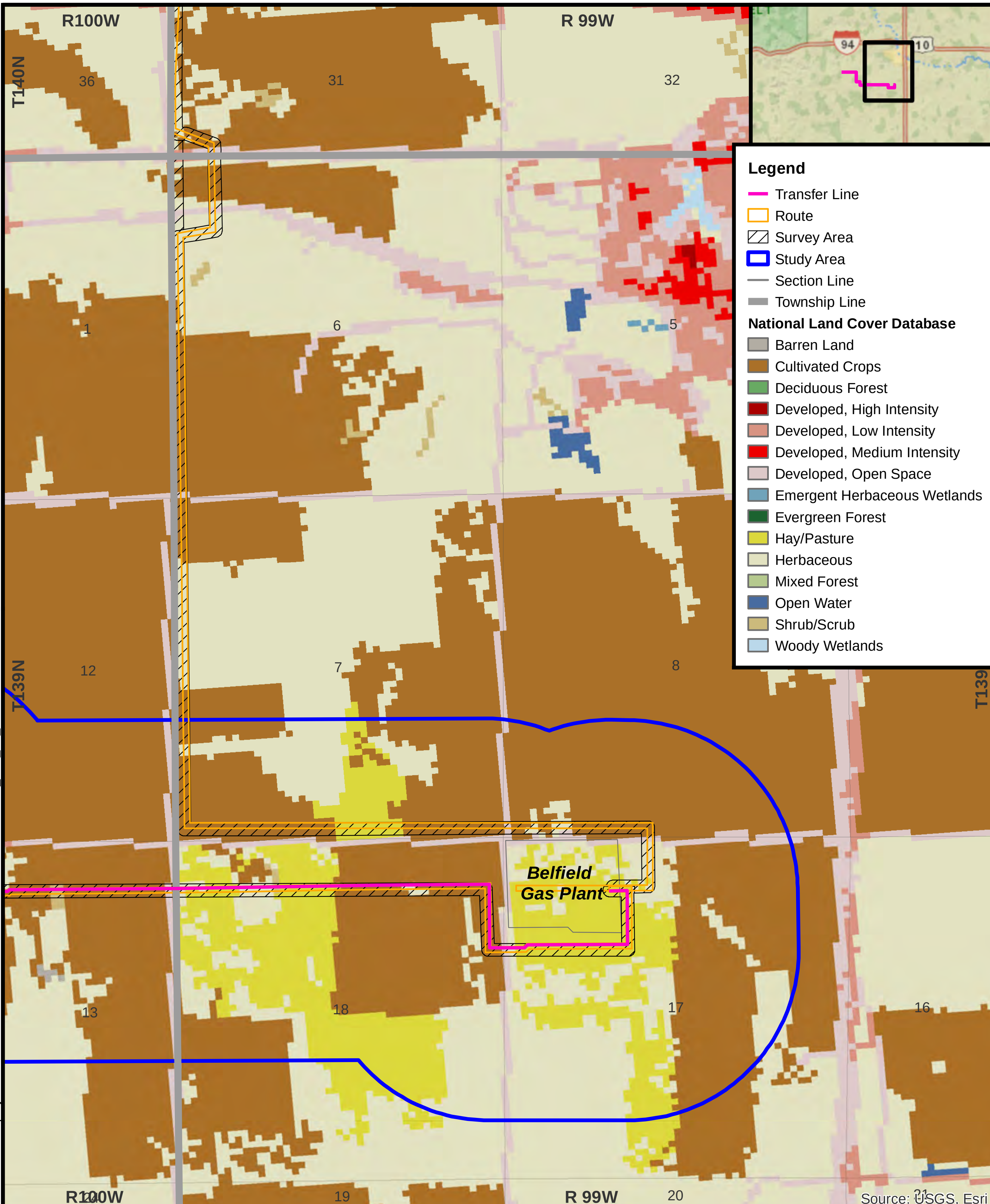
South Segment Siting Criteria
Land Use 6 of 6
Andeavor Y-Grade Hub



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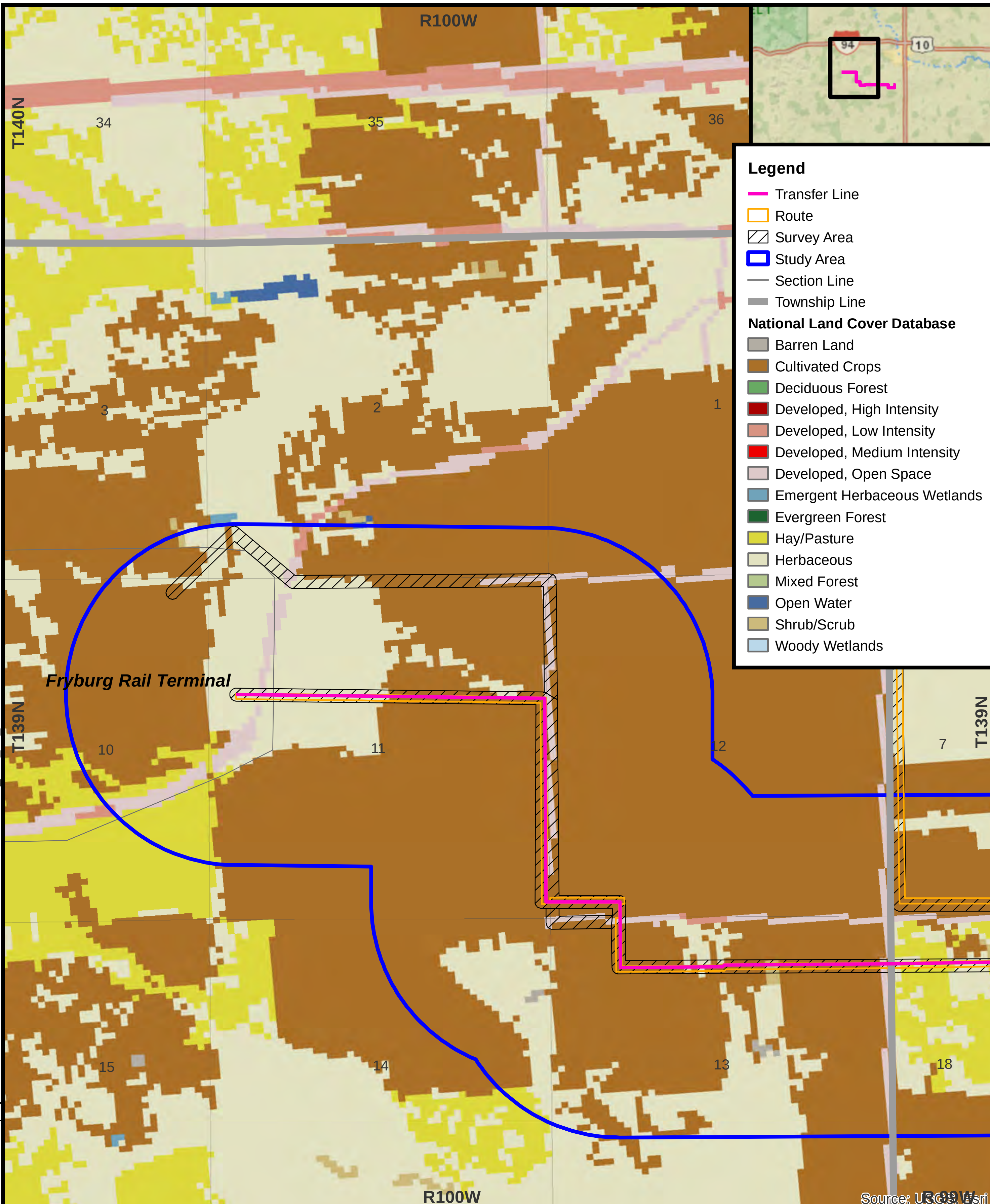
Transfer Line Siting Criteria
Land Use 2 of 2
Andeavor Y-Grade Hub



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Transfer Line Siting Criteria
Land Use 2 of 2
Andeavor Y-Grade Hub

Storm Water Pollution Prevention Plan (SWPPP)

andeavor

Y-GRADE HUB PROJECT

NDPDES Permit #10-0000

January 2018

Storm Water Pollution Prevention Plan (SWPPP)
Andeavor YGrade Hub Project

TABLE OF CONTENTS

APPENDICES

1.0 Introduction

Andeavor Logistics LP (Andeavor) is a leading full-service logistics company operating primarily in the western and midcontinent regions of the United States. Andeavor owns and operates a network of crude oil, refined products, and natural gas pipelines. Andeavor also owns and operates crude oil and refined products truck terminals, marine terminals and dedicated storage facilities. In addition, Andeavor owns and operates natural gas processing and fractionation complexes.

Andeavor is proposing a natural gas liquids (NGL) project that will transport mixed NGLs (commonly called “Y-Grade Product”) from an existing natural gas plant in McKenzie County to a fractionation facility in Stark County, where the mixed NGLs will be separated into discrete components (e.g. ethane, propane, butane, and natural gasoline). The proposed project consists of construction of approximately three (3) separate pipeline segments and the conversion of approximately 42 miles of existing crude oil pipeline (the BakkenLink Pipeline). The first segment is identified as the “North Segment” consisting of 17 miles of 8” pipe. The “South Segment” consists of 22 miles of 8” pipe and the “Product Transfer Segment” which is approximately 5 miles of (4) separate 6” pipes. The “North Segment” will be located within McKenzie County, the “South Segment” originates in Billings County and terminates in Stark County, and finally, the “Product Transfer Segment” will originate in Stark County and terminate in Billings County. Andeavor is developing and intends to build, own, and operate the proposed pipeline. The pipeline route and location are depicted in the figures included in Appendix A.

1.1 Plan Purpose/Objectives

The Storm Water Pollution Prevention Plan (SWPPP) shall identify potential sources of pollution, which may affect the quality of storm water discharges from construction of the pipeline. The SWPPP shall describe and ensure the implementation of Best Management Practices (BMP’s). BMP’s, which must be used to reduce the pollutants in storm water discharges associated with construction activity at the construction site and to assure compliance with the terms and conditions of this permit.

The SWPPP shall:

- Be completed prior to initiating construction activities and updated as appropriate; and
- Provide for compliance with the terms and schedule of the SWPPP beginning with the initiation of construction activities.

For the purposes of this plan, runoff management is defined as practices that divert, infiltrate, reuse, or treat storm water runoff, and not practices that limit exposure of potential pollutants to direct rainfall or runoff. The purpose of the SWPPP is to:

- Identify sources of pollutants associated with construction activities that may affect the quality of storm water runoff from construction sites; and
- Identify storm water management practices to abate pollutants in storm water discharges from the construction site, both during and after construction.

This SWPPP outlines the specific measures implemented at the construction site for minimizing potential pollutants that may impact storm water runoff during construction. See Section 5 for specific BMPs used to minimize runoff and erosion.

1.2 Facility Conformance and Regulatory Compliance

This SWPPP has been prepared in compliance with Standard Conditions provided at 40 CFR 122.41 and as defined at 40 CFR 122.26. Enforcement of these provisions is delegated to the North Dakota Department of Health (NDDH) for activity within the State of North Dakota. The NDDH authorizes permits to discharge under the North Dakota Pollution Discharge Elimination System (NDPDES) rules found in Chapter 33-16-01 promulgated under Chapter 61-28 of the North Dakota Century Code. Further information regarding the requirements of the NDPDES can be found at http://www.ndhealth.gov/WQ/Storm/Construction/ConstructionHome.htm.

Together with inspection reports, maintenance reports, and data records for the construction activities, this SWPPP shall be retained at the construction site during construction. In addition, a record of revisions to the SWPPP (Appendix B) shall be retained at the construction site.

Reports and records are available, upon request, for a period of at least three (3) years following final site stabilization. Further information on record keeping can be found in Section 10 of this SWPPP.

Conformance with the requirements of this SWPPP includes timely inspections, proper maintenance, record keeping, tracking, and documentation. Required maintenance must be conducted as soon as practicable before the next anticipated storm event. If existing BMPs required modification or additional BMPs are necessary, corrections will be completed before the next anticipated storm event.

1.3 Termination Clause

A Notice of Termination (NOT) will be filed within 30 days with the NDDH upon completion of the following:

- Final stabilization of the entire site;
- Another operator has assumed control of the unstabilized areas of the site; or
- Temporary stabilization has been completed and control has been transferred to the property owner.

A copy of the NOT is included as Appendix C.

2.0 Responsible Party/Signatory Certification

Andeavor has prepared this SWPPP in compliance with the requirements of the NDPDES General Permit for Discharges for Large and Small Construction Activities (Permit Number NDR 10-0000) as administered by the NDDH. Andeavor is responsible for implementing the provisions of this operational control over the construction plans and specifications, including the ability to make modifications to those plans and specifications, or day-to-day operational control of those, which are necessary to ensure compliance with the SWPPP for the site or other permit conditions.

Operator
Andeavor Field Services, LLP
19100 Ridgewood Parkway
San Antonio, TX 78259
Ph: (701) 250-1960

Project Manager
Dennis Miller
Andeavor
19100 Ridgewood Parkway
San Antonio, TX 78259
Ph: (303) 454-6644
Email: Dennis.L.Miller@andeavor.com

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: ______________________________ **Title:** ______________________

Signature: __________________________ **Date:** ______________________

3.0 Delegation of Authority

Andeavor will own and operate the pipeline; however, construction of the pipeline will be performed by independent Contractors and construction inspectors hired by Andeavor. These Contractors and inspectors will have day-to-day responsibility to ensure compliance with this SWPPP. Andeavor, by completing the Delegation of Authority Form (Appendix D), grants authority to the named parties to act on its behalf on matters pertaining to this SWPPP. Signed Delegation of Authority forms shall be kept with this SWPPP at all times.

4.0 Project Description

The project consists of a pipeline transportation system to transport natural gas from existing and proposed natural gas processing plants located in Billings, McKenzie, and Stark Counties. The pipeline will be installed within a defined right-of-way (ROW). The temporary construction ROW will generally be 100 feet wide. To avoid impacts to environmentally sensitive areas, the temporary construction ROW may be reduced. The pipeline is proposed to be constructed in rural areas with no established storm water drainage systems. Local roads are predominantly gravel/clay; however, some paved roads will be crossed.

Generally, the permanent pipeline ROW will be 50 feet wide, with the pipeline centered within that ROW. The location of the pipeline within the permanent ROW may vary depending on terrain, the presence of other existing facilities, and landowner requests.

Additional temporary workspace will be required at certain locations (e.g. road, railroad, and river crossings). These workspace areas may vary in size depending on the feature being crossed and crossing construction method(s).

Equipment and pipe storage areas will also be required. These areas may not be located adjacent to the proposed ROW. Off-site material storage areas (also including overburden and stockpiles of dirt, borrow areas, etc.), used solely by the permitted project, are considered a part of the project and shall be subject to the same control requirements as the ROW.

4.1 Sequence of Construction Activity

Construction will occur in the general order listed and includes, but is not limited to, the following:

- Clearing
- Grading
- Stringing
- Bending
- Welding
- Ditching (excavation)
- Laying pipe
- Backfill
- Tie-ins
- Clean up

Construction will proceed along the pipeline in one continuous operation and is anticipated to last about six to ten weeks. Different phases of construction may occur at multiple locations at the same time. The entire process will be coordinated in such a manner as to minimize the total time an individual tract is disturbed, exposed to erosion, or temporarily precluded from its normal use.

4.2 Construction Site Estimates

Total disturbed acres (assume 100-foot temporary ROW) = 524 acres
Temporary workspace acres = ~22 acres
Storage yard(s) acres (assume three yards @ 40 acres each) = 120 acres

4.3 Soils, Slopes, Vegetation, and Drainage Patterns

The construction ROW will be cleared and graded (where necessary) to provide a relatively level surface for construction equipment, a sufficiently wide workspace for the passage of heavy equipment, and safety for pipeline workers. The construction contractor will limit ground disturbance wherever possible. Natural features including native vegetation will be preserved to the maximum extent possible.

To avoid soil mixing, topsoil will be removed and segregated from underlying subsoil. Topsoil will be stored separately from subsoil and protected from construction-related activities.

Once the pipeline is installed, the trench will be backfilled and then compacted while grading. Disturbed areas will be restored to their original contours and condition to the extent practical, unless landowner consent is obtained to do otherwise. After grading is complete and during the process of backfilling, final stabilization measures will be taken to ensure minimal erosion. In general, the ROW will revert to the previous land use after construction is completed and during operation of the pipeline.

The general flow of storm water will remain the same throughout the project. Measures will be taken to ensure minimal erosion and impact on the receiving bodies of water.

General soil map units (MUs) for the Project Area were identified using the NRCS State Soil Geographic Database (STATSGO), and the Soil Survey Geographic Database (SSURGO). The STATSGO data consists of a generalized inventory of soils and non-soil areas that occur in a repeatable pattern on the landscape. The following table provides a summary of the soil type and percentage of occurrence along the Route.

Rhoades-Moreau-Belfield is the most common soil complex found along the route(s), with Rhoades soils being the dominant component of most soils found along the route. Generally, these complexes are well drained, deep and moderately deep soils that are medium, moderately fine, and fine textured.

General Soil Types (STATSCO) - Route

SOIL TYPE	MUSYM	Route (acres)	% of Route
Y-Grade North			
Rhoades-Cabba-Amor	s4809	28.2	16
Rhoades-Daglum-Cabba-Amor	s6782	40.2	23
Rhoades-Reeder-Cabba-Amor	s6783	41.9	23
Shambo-Savage-Regent-Belfield-Amor	s4805	44.3	25
Zahl-Williams-Harriet-Cabba	s4793	22.9	13
Y-Grade South			
Rhoades-Moreau-Belfield	s4830	159.4	67
Straw	s4822	4.1	2
Vebar-Parshall-Flasher-Amor	s4828	27.4	11
Williams-Savage-Regent-Morton-Cabba	s4833	47.5	20
Transfer Line			
Rhoades-Moreau-Belfield	s4830	107.9	100
	Total	**523.8**	

4.4 Receiving Waters

A comprehensive wetland and waterbody delineation survey was conducted along the entire route. The proposed pipeline will cross wetlands and intermittent and perennial waterbodies. The location of delineated wetlands and waterbodies are indicated on the construction drawings. In general, the following practices will be observed at these locations:

- In wetland or riparian zones, the Contractor will install sediment control structures along the construction right-of-way edges prior to vegetation removal where practicable.
- Where waterbodies or wetlands are adjacent to the construction right-of-way, the Contractor shall install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way.
- Sediment barriers will be installed across the entire ROW immediately upslope of the wetland boundary at all standard (saturated or standing water) wetland crossings as necessary to prevent sediment flow into the wetland. Sediment control barriers are not required at “dry” wetlands.
- Sediment barriers will be installed across the entire ROW immediately upslope of any flowing waterbody or impoundment.

Receiving waters can be seen on the Figures in Appendix A.

5.0 Erosion and Sediment Control BMPs

Erosion and sediment controls include stabilization practices, as well as structural controls. General structural practices may include, but are not limited to, silt fences, earth dikes, drainage swales, sediment traps, check dams, reinforced soil retaining systems, gabions, temporary or permanent sediment basins and flow diversion. Typical erosion control details are included in Appendix E. Temporary erosion and sediment control measures shall be installed immediately after initial disturbance of the soil, maintained throughout construction (on a daily basis), and reinstalled as necessary until replaced by permanent erosion control structures or restoration of the construction ROW is complete.

Specifications and configurations for erosion and sediment control measures may be modified by Andeavor as necessary to suit site conditions. However, all work shall be conducted in accordance with applicable permits.

The intent of the BMPs is to prevent any damage due to transported sediments or adding any erosion burden by diverting storm water runoff into sensitive areas. The intent is not to vegetate areas that are not naturally vegetated and prevent an increase in erosion rates over what is caused by natural drainage in the area. In general:

- Construction-phase erosion and sediment controls should be designed to retain sediment on-site to the maximum extent practicable.
- All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates a control is used inappropriately or incorrectly, the permittee must replace or modify the control for site conditions.
- If sediments escape the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts.
- Sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.
- Ensure that silt fences are intact and there are no gaps at the fence-ground interface or tears along the length of the fence. If gaps or tears are found, they should be repaired or the fabric should be replaced immediately. Accumulated sediments should be removed from the fence base when the sediment reaches one-third to one-half the height of the fence.
- Large debris, trash, and leaves must be removed from check dams (hay bales). The center of a check dam should always be lower than its edges. If erosion or heavy flows cause the edges of a dam to fall to a height equal to or below the height of the center, repairs must be made immediately. Accumulated sediment should be removed from the upstream side of a check dam when the sediment has reached a height of approximately one-half the original height of the dam (measured at the center).
- Sediment control barriers shall be placed so as not to hinder construction operations. If silt fence or straw bale sediment barriers (in lieu of drivable berms) are placed across the entire construction ROW, a provision shall be made for traffic to temporarily pass within the structure. Immediately following each day's shutdown of construction activities, a row of straw bales or a section of silt fence shall be placed across the upgradient side of the gap with sufficient overlap at each end of the barrier gap to eliminate sediment bypass flow, followed by bales tightly fitted to fill the gap. Following

completion of the equipment crossing, the gap shall be closed using silt fence or straw bale sediment barrier.

- The Contractor shall remove sediment barriers, except those needed for permanent erosion and sediment control, during cleanup of the construction right-of-way.

The following sections describe erosion and sediment goals to be considered during construction and practices expected to be implemented to achieve those goals during construction.

5.1 Run-on Protection

The pipeline ROW will be graded to provide relatively flat surfaces to facilitate the movement and maneuvering of heavy equipment. Natural drainage swales will be utilized to the extent possible when planning locations to intercept, divert and convey storm water and runoff around the ROW. Some minor contouring may be necessary to enhance the drainage and take advantage of the natural drainage characteristics of the terrain; however, to capture sediment transported by overland flow, some structural BMPs may be installed. These include:

- Earthen dikes established on high side of location to intercept, divert and convey storm water and/or runoff around the project site.
- Trenching/ditching around high side of location to intercept, divert and convey surface runoff around the project site.

Drainage channels or ditches shall be used on a limited basis to provide drainage along the construction right-of-way and toe of cut slopes as well as to direct surface runoff across the construction right-of-way or away from disturbances and onto natural undisturbed ground. Channels or ditches shall be constructed by the Contractor during grading operations. Where there is inadequate vegetation at the channel or ditch outlet, sediment barriers, check berms, or other appropriate measures shall be used to control erosion.

5.2 Stabilizing Soils

The soils that generally will require stabilization are those used for berm construction and soil stockpiles. Stabilization include, but are not limited to, soil compaction and seeding of disturbed soil once backfilling and/or grading is complete. General stabilization practices may include, but are not limited to, establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures.

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

The ROW may be bare in heavily travelled areas. Reseeding should be completed in areas (uncultivated) that have no traffic. Use approved seed to reseed/vegetate existing locations in areas no longer traveled. Stabilize the topsoil piles as soon as practical after stripping is complete. Erosion control matting may be installed on slopes, as needed.

Interim stabilization practices are not expected to be needed or implemented during active construction. Wherever possible, existing vegetation will remain in place to minimize erosion potential. Final re-vegetation and stabilization of each disturbance area will occur once active construction is completed.

Soil stockpile may be stabilized by wetting with water, or by the use of soil tackifiers. When wetting topsoil piles with water does not prevent wind erosion, the Contractor shall temporarily suspend topsoil handling operations and apply a tackifier to topsoil stockpiles at the rate recommended by the manufacturer.

Should construction traffic, cattle grazing, heavy rains, or other related construction activity disturb the tackified topsoil piles and create a potential for wind erosion, additional tackifier shall be applied by the Contractor. Soil stockpiles may also be stabilized by seeding with an approved temporary seed mixture or by hydromulching.

5.3 Slope Protection

Use berms to divert location flow from slopes to established drainages where practical. Minimize removal of existing vegetation on new locations. Use approved seed to reseed/vegetate existing locations in areas no longer traveled.

Trench breakers shall be installed in steep terrain where necessary to limit the potential for trench line erosion and at the base of slopes adjacent to waterbodies and wetlands. Trench breakers shall be constructed of materials such as sand bags, sand/cement bags, bentonite bags, or other suitable materials. The Contractor shall not use topsoil in trench breakers.

Permanent slope breakers (water bars) shall be constructed of soil or, in some instances, sand bags. The Contractor shall construct permanent slope breakers on the construction right-of-way where necessary to limit erosion, except in cultivated areas. Slope breakers shall divert surface runoff to adjacent stable vegetated areas or to energy-dissipating devices. In general, permanent slope breakers should be installed immediately downslope of all trench breakers. Permanent slope breakers shall be installed as specified on the construction drawings or generally with a minimum spacing as shown on the following table:

Slope (%)	Spacing (feet)
5 - 15	300
>15 – 30	200
>30	100

The gradient (fall) for each slope breaker shall be two percent to four percent unless otherwise approved by Andeavor based on site-specific conditions.

Manufactured erosion control mats shall be installed across areas that have eroded and cannot be stabilized by normal seeding and mulching practices. Erosion control matting shall be made of biodegradable, natural fiber such as straw or coir (coconut fiber).

The Contractor shall prepare the soil surface and install the erosion control matting to ensure it is stable and the matting makes uniform contact with the soil of the slope face or waterbody bank with no bridging of rills, gullies, or other low areas. Ensure the mats are properly anchored.

5.4 Perimeter Controls and Sediment Barriers

Install silt fence or fiber rolls (wattles) as necessary to provide a sediment barrier. Sediment barriers should be installed at the lowest elevation of the location, at the boundary where disturbed (bare) soils meet undisturbed (vegetated) soils. Sediment barriers should be installed in ditches along the lower perimeter of locations. Straw bales may be installed as an alternative to silt fence or fiber rolls.

If none of the above BMPs are effective, installation of systems that are more complex are required. This may include the construction of sediment traps or detention basins.

5.5 Additional BMPs

Additional/optional BMPs will be used as necessary when other methods are not effective. BMPs are subject to approval from the project engineer as well as permitting/land management agencies. Other BMPs will be used site-wide to minimize pollutants in storm water from other potential sources in accordance with the control requirements. These include:

Waste Disposal – Solid materials, including building materials, will not be discharged to waters of the State. Solid materials refer to such items as boards, wrapping materials, bricks and concrete debris, and land clearing debris such as leaves and tree limbs, but do not include total suspended solids.

Off-Site Vehicle Tracking – BMPs will be used in the minimization of vehicle tracking of sediments off-site and minimization of dust generation. The construction site will have limited access. Gravel drives will be used at the entrances to undeveloped areas.

State/Local Sanitary Sewer, Septic System or Waste Disposal Regulations – All sanitary wastewater from temporary facilities located within the construction site (trailers, portable toilets, etc.) will be removed, by a contractor, for off-site disposal. Sanitary wastewater will not be discharged from the construction site.

Storage of Construction and Waste Materials – Vehicle maintenance, repair, refueling, and cleaning will be performed in a designated area at the construction site in order to minimize the potential for contamination of storm water by oil and grease. Any waste oil collected during such activities will be collected in drums or other compatible oil container and will be removed from the site. All waste collected from the site will be disposed of off-site at a registered waste disposal facility. There will be no on-site storage of gasoline or diesel for refueling vehicles.

Some dewatering of construction areas and the pipeline trench may occur; however, relatively small volumes are expected. Dewatering effluent will pass through sediment filters (hay bale structures and/or filter bags), if necessary, to ensure compliance with applicable water quality requirements. Sediment filters will be placed where there will be no deposition of sediments into wetlands and waterbodies and will be sized to handle the volume of water discharged. Typical details of sediment filters are included in Appendix E.

Hydrostatic water used for pressure testing the pipeline will be discharged through sediment filters, if necessary. Sediment filters will be placed where there will be no deposition of sediments into wetlands and waterbodies, and will be sized to handle the volume of water discharged. Andeavor will apply for a Permit to Discharge prior to construction.

5.6 Maintenance

Maintenance of the erosion and sediment control BMPs will be conducted in a timely manner once the need for maintenance activities are deemed necessary. If during inspections, a BMP requiring maintenance is identified, the maintenance will be accomplished prior to the next anticipated storm event, or as necessary to maintain the continued effectiveness of the BMP. When maintenance of the BMP cannot be accomplished prior to the next storm event, the maintenance will be scheduled and performed as soon as practicable.

Accumulated sediment shall be removed from structural controls when sediment deposits reach 1/3 to 1/2 the height of the control. Sediments accumulated in sediment basins shall be removed when the capacity has been reduced by 50%. All removed sediment deposits shall be properly disposed of. Non-functioning controls shall be repaired, replaced, or supplemented with functional controls within 24 hours of discovery or as soon as field conditions allow.

6.0 Good Housekeeping BMPs

Good housekeeping is used to maintain a clean and orderly workplace and to reduce the potential for accident spills or releases of materials that could contaminate storm water. Generally, the following general good housekeeping BMPs will be used:

- Designate areas for equipment maintenance and repair. These areas must have provisions to contain any potential pollutants in an area that can be regularly removed and properly disposed.
- Establish proper equipment/vehicle fueling and maintenance practices (drip pans, spill kits).
- Spills that occur shall be cleaned up immediately and reported, as necessary.
- Designate equipment wash-down areas and provide appropriate control of wash water.
- Construction materials should be stored in designated areas until these materials are required and should be loaded and off-loaded in the designated areas.
- Contractors and subcontractors shall bring only the materials necessary for the day.
- Large items should be placed next to their installation locations to minimize handling.
- Provide protected storage areas for chemicals, paints, solvents, fertilizers, and other potentially toxic materials. If such materials are used, these storage areas should be enclosed with temporary fencing where practical. Curbing/temporary berms can be provided to minimize storm water run-on onto storage areas.
- Provide waste receptacles at convenient locations and provide regular collection of wastes.
- Debris and waste should be properly disposed of according to the applicable federal, state, and local laws.
- Provide adequately maintained sanitary facilities.
- Contractors/subcontractors should be provided with a storage yard in which to park vehicles during off-hours.
- Drums and tanks will be clearly tagged and labeled.
- Tanks and equipment will be regularly inspected.

6.1 Material Handling and Waste Management

Keep area clean of all trash and debris. Garbage will be stored in a dumpster and its contents disposed of according to local and state regulations at an approved facility. Disposal will not be allowed on location. Burning or burying of garbage is not allowed.

Portable chemical toilets will be provided for construction personnel. Portable chemical toilets will not be located near drainage facilities or in areas that will collect/accumulate water. Sewage will be disposed of according to local and state requirements

6.2 Material Staging Areas

When possible, store materials indoors. Hazardous materials are to be under cover and not in contact with the ground. Bags, boxes, and drums are to be stored on pallets under cover. Ensure tall bags/boxes are completely covered when not in use. Store materials in original packaging with original product labels. Have MSDS information available on site for all materials. Provide proper secondary containment that will contain the full volume of the original storage container plus 10%, for individual containers. If more than one storage container is placed within the secondary containment, the secondary containment must contain the full volume of the largest storage container plus the volume displaced by the submerged portion(s) of all other storage containers located within the secondary containment structure. Store all products with sufficient space to allow for spill cleanup and emergency response access.

6.3 Equipment/Vehicle Fueling and Maintenance

Fuel will be delivered to the construction areas via steel tanks mounted in pick-up trucks or by bulk delivery trucks. Trucks shall be equipped with spill containment kits and tools. All personnel engaged in refueling operations will be required to attend to all nozzles or transfers during the entire time fuel transfer is occurring.

Oil and oily wastes, such as crankcase oil, cans, rags, and paper dropped in oil and lubricants, can be best disposed of in proper receptacles or recycled. Waste oil for recycling should not be mixed with degreasers, solvents, antifreeze, or brake fluid. Dumping of these wastes in storm sewers and other drainage channels is illegal and could result in fines or job shutdown.

A further source of these pollutants is leaky vehicles. Proper maintenance of equipment and placing tarps/drip pans underneath vehicles parked for a period of one or more days will further reduce pollution by this source.

6.4 Additional BMPs

Wash facilities will not be provided to clean mud and dirt from construction equipment and vehicles. If excessive mud is on vehicles, use shovels and or brooms to brush off prior to entering county roads.

7.0 Post-Construction BMPs

Post construction activities shall, at a minimum, include:

- Reseeding/restoration of areas not needed for agricultural operations.
- Drainage ditches, earthen dikes, drainage swales, and other sediment control and diversion structures shall remain in place. Those not made permanent should be made permanent prior to final stabilization of the project area.
- Any exposed slopes should be protected using BMPs cited above.

Only certified, weed-free, seed will be used for reseeding. Once the points of disturbance have been re-contoured, broadcast seeding will be used as the application method for re-vegetation. If necessary, the seeded area will be lightly dragged after broadcasting the seed in order to get ¼- to ½-inch soil coverage and certified noxious weed-free mulch, composed of either annual grain residue or native hay, will be crimped into the soil. If seeding is done by drill seeding methods, the rates above will be reduced by 50%.

Final stabilization means all soil-disturbing activities at the site have been completed and either of the two following criteria is met:

- A uniform vegetative cover (e.g., evenly distributed, without large bare areas) with a density of at least 70% has been established.
- Equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Once the site has undergone final stabilization, structural controls may be removed.

8.0 Potential Sources of Pollution

The following substances listed below may be expected to be present on-site during construction:

- Concrete
- Detergents
- Paints (enamels and latex)
- Metal studs
- Fertilizers
- Fuels
- Cleaning solvent
- Lubricants
- Wood
- Pipe coatings/lubricants

The most economical and effective way to control pollutants other than sediment is to exercise good housekeeping practices and to require construction workers, planners, engineers, and developers to be aware of the need to comply with federal, state, and local regulations. The following sections discuss practices that will minimize the potential for pollutants to enter storm water discharges.

Petroleum products are commonly used during construction activities. These products are used as fuels and lubricants for vehicular operations, power tools, general operation, and equipment maintenance. These pollutants include oils and fuels such as gasoline, diesel oil, kerosene, lubricating oils, and grease. Most of these pollutants adhere to soil particles and other surfaces easily.

If small quantities of soil become contaminated, they will be removed (hand shovel) and placed in drums. Large quantities of contaminated soil will be collected using heavy equipment and stored in drums or other suitable containers prior to disposal. Disposal of contaminated soil will be in accordance with applicable state and federal regulations.

Guidelines for storing construction related products are as follows:

- Clearly label all products.
- Keep tanks off the ground.
- Keep lids securely fastened.
- Post information for procedures in case of spills. Persons trained in handling spills should be on-site or on-call at all times.
- Store spill kit materials on-site in easily accessible locations. Spills must be cleaned up immediately and the contaminated material properly disposed of according to state and federal regulations.
- Specify a staging area for all vehicle maintenance activities. This area should be away from all drainage courses.
- During subcontractor or safety meetings, remind workers about proper storage and handling of materials.

8.1 Non-Storm Water Discharge Management

Allowable non-storm water discharges are:

- Fresh water used for dust control,
- Fresh uncontaminated water used to test pipelines and flowlines,
- Air Conditioning condensate from vehicles on location,
- Discharges from fire-fighting activities,
- Uncontaminated ground water or spring water,
- Uncontaminated excavation dewatering,
- Landscape irrigation.

9.0 Inspections

The project area will be regularly inspected by qualified personnel to ensure that BMPs are maintained in good and effective order. Personnel shall receive training in the SWPPP plan, SWPPP Plan implementation and BMP purpose, construction, use and inspection.

Erosion and sediment control measures shall be inspected on a regular basis. Disturbed areas and storage areas that are exposed to rainfall or run-on must be inspected for evidence of, or the potential for, pollutants entering site runoff. Site access shall also be inspected to determine if sediment is being tracked onto adjacent roads.

During day-to-day operations, inspections will be conducted by construction personnel. Each location is normally visited at least once per week. An inspection shall be conducted at this time and any problems areas noted on the Inspection Log (Appendix F). If all BMPs are in place and functioning properly, a negative report should be entered.

9.1 Inspection Schedule

Routine inspections will occur a minimum of once every 14 calendar days and within 24 hours of the end of a storm event of or greater than 0.25 inches of precipitation per 24-hour period. Completed areas that have been stabilized but do not meet the 70% (see Section 7) perennial vegetative cover criteria for final stabilization will be inspected once per month.

Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Sedimentation and erosion control measures identified in the SWPPP must be inspected to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

Based on inspection results, the site description and pollution prevention measures must be revised in this SWPPP if inadequacies are discovered. The inspection and plan review process must include timely implementation of any changes to the SWPPP within seven (7) calendar days after the inspection. If existing BMPs need to be modified or if additional BMPs are necessary, implementation shall be completed before the next anticipated storm event. If implementation of changes to BMPs is not practical before the next anticipated storm event, modifications shall be implemented as soon as practical.

Inspections may be suspended where earthwork has been suspended due to frozen ground conditions. Inspections and maintenance will resume as soon as runoff occurs or the ground begins to thaw. Freeze/thaw and runoff dates will be recorded as part of the inspection records.

9.2 Inspection Report

The inspection reports will summarize the scope of inspections, names, the inspection dates, major observations, and remedial actions taken. These records shall be retained as part of the SWPPP for at least three (3) years after the date of inspection.

The Inspection Form describes what to look for during inspections and the types of maintenance measures to undertake. The checklist includes:

- Visual inspection
- Good housekeeping
- Site assessment

Inspection reports will be signed by a duly authorized representative of Andeavor.

9.3 Corrective Action Log

If problems are identified during inspection, the issue shall be promptly reported to the field superintendent or his designated representative. Corrective action shall be planned immediately and initiated as soon as possible. Corrective actions shall be recorded on the Corrective Action Log included in Appendix G.

10.0 Recordkeeping and Training

10.1 Recordkeeping

The following records should be kept for a period of at least three (3) years from the date all site work has been completed:

- A copy of the completed and signed NOI;
- Coverage letter from the NDDH;
- SWPPP;
- Site inspection records;
- The general permit.

10.2 Training

SWPPP training sessions will be held prior to and during construction, as needed. Contractor construction supervisory personnel and construction inspectors are required to attend. Training topics will include the following items:

- General storm water and BMP awareness training for staff and subcontractors;
- Spill prevention and response, as described by the SPCC components of this SWPPP;
- Standard housekeeping measures;
- Materials handling procedures; and
- A review of the most recent inspection results and any resulting changes to storm water pollution prevention or new requirements.

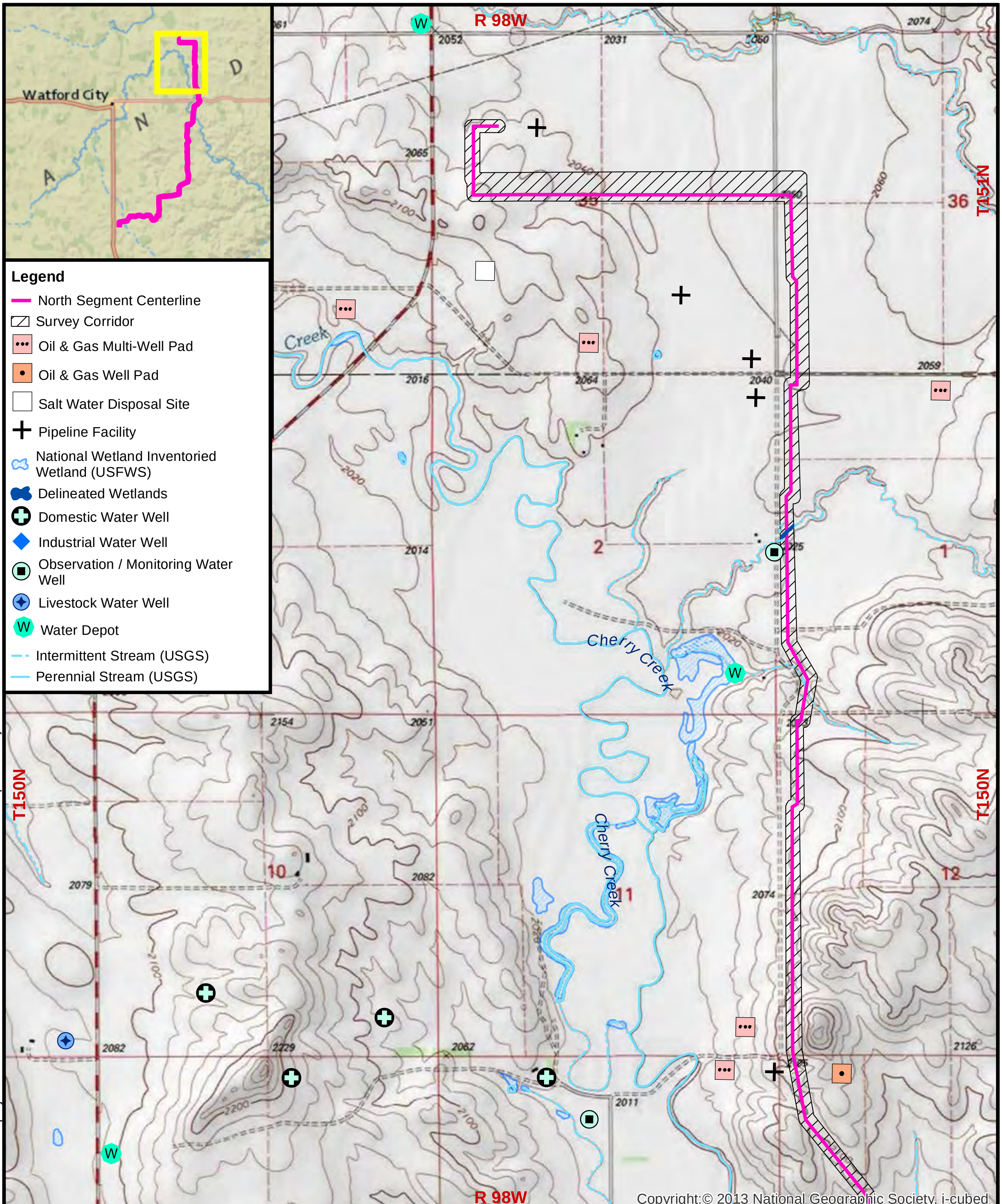
11.0 Log of Changes to the SWPPP

The SWPPP will be amended whenever there is a change in design, construction, operation, maintenance, or BMPs. Additionally, the SWPPP shall be amended if the plan is found to be ineffective in controlling pollutants present in storm water. The SWPPP will be amended as soon as practicable.

Amendments and dates of the amendments shall be recorded on the Revision Record to the SWPPP in Appendix B.

Appendix A

Figures



R:\projects\7000-7500\7070 - YGrade North\GIS\Storm Water permit\Project Location North 1-.mxd

January 2018

ENVIRONMENTAL · ENGINEERING · SURVEYING

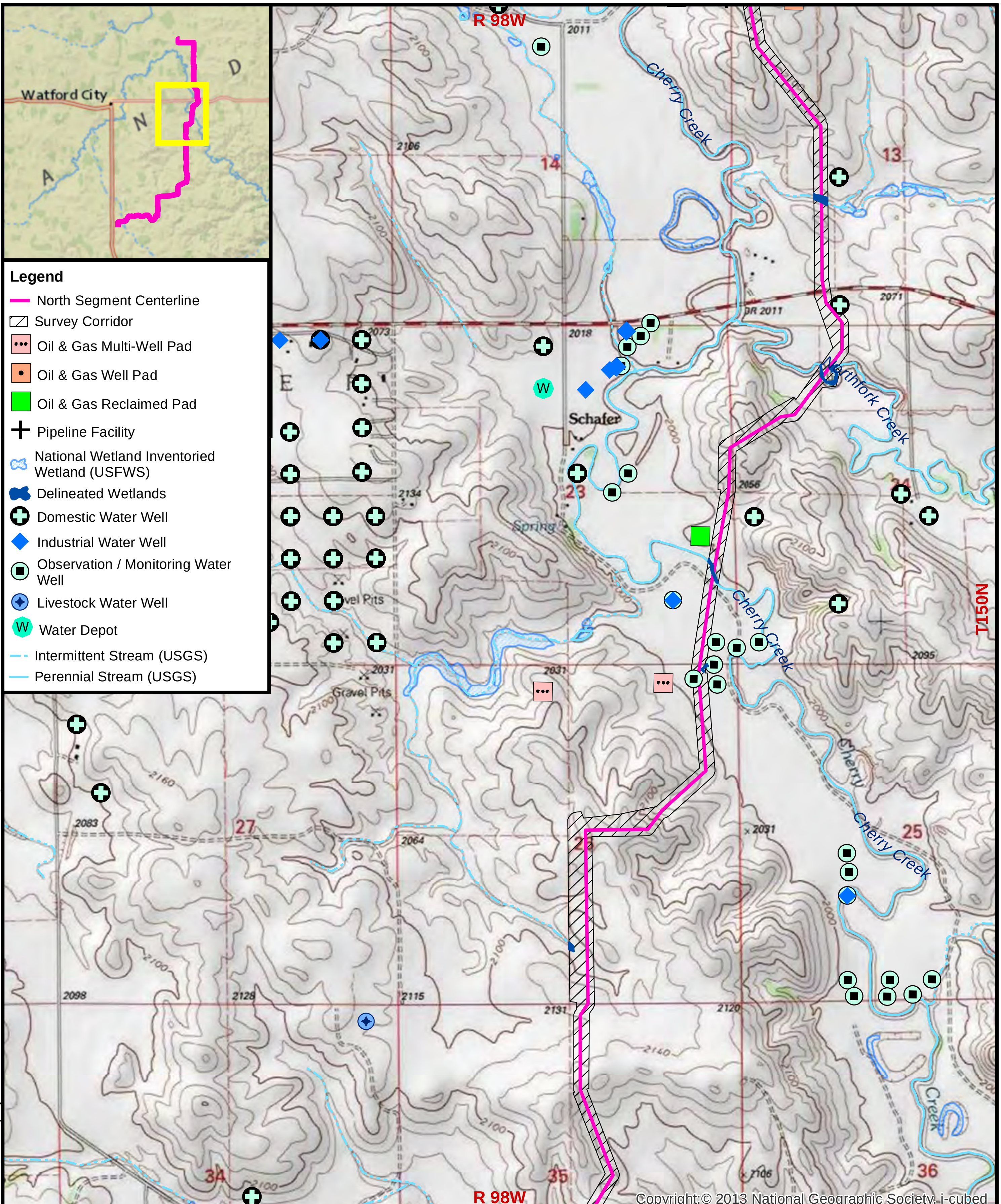
1:24,000   1 inch = 2,000 feet

0   2,000 feet

N

Basemap: USGS Topography

Figure 1-1
North Segment
Project Location
Andeavor Y-Grade Hub



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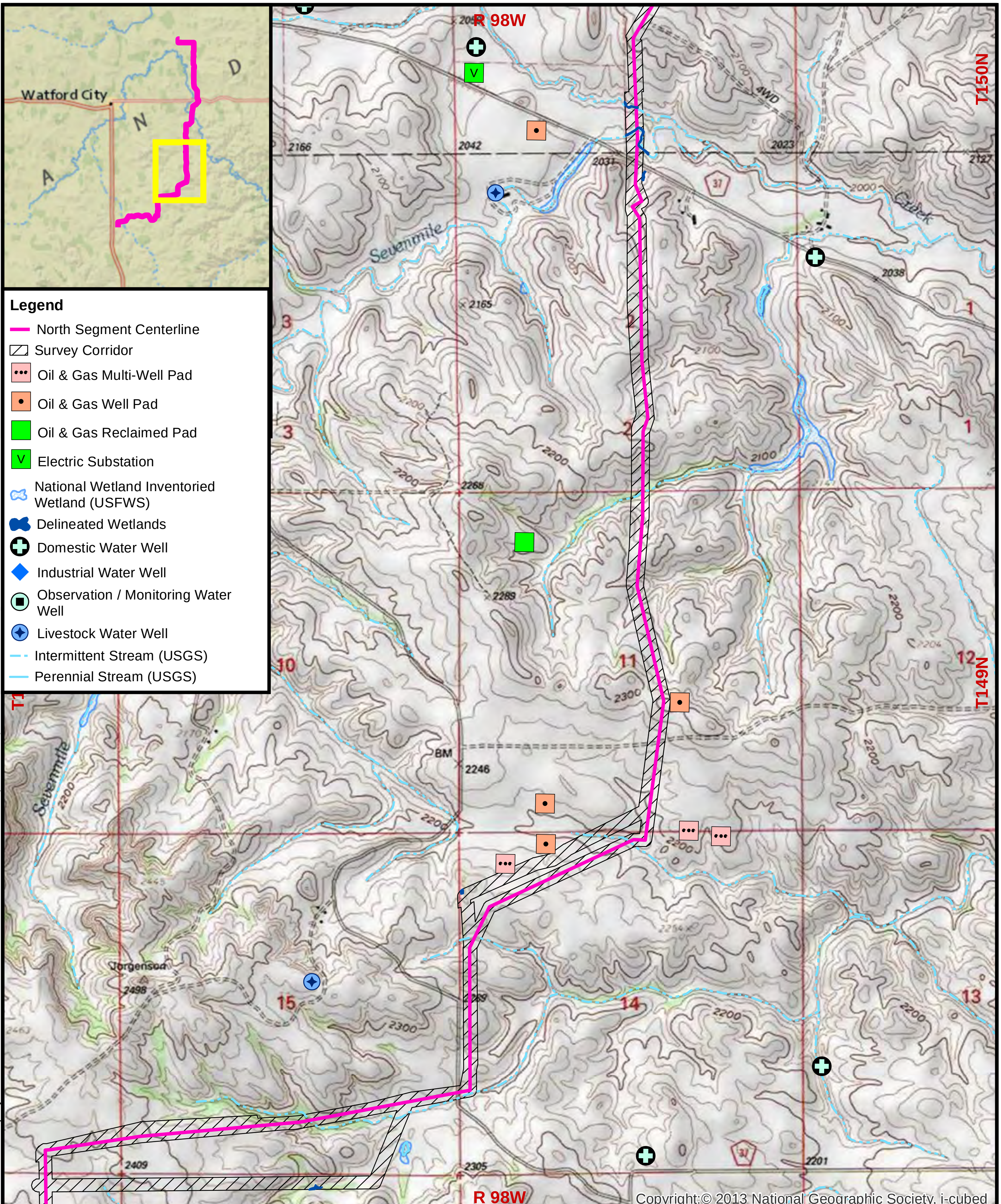
Basemap: USGS Topography

Figure 1-2
North Segment
Project Location
Andeavor Y-Grade Hub



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0 2,000 feet

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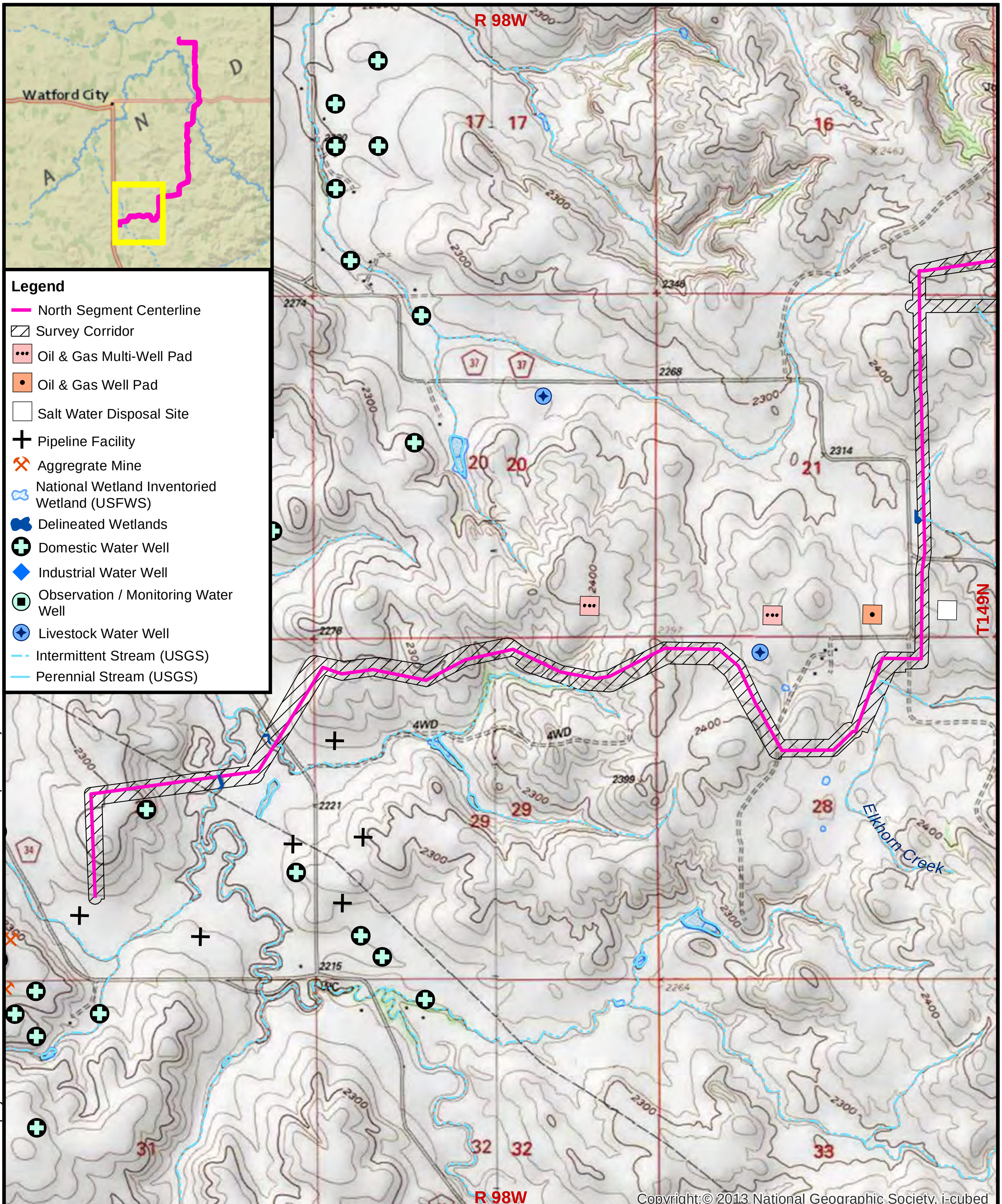
Basemap: USGS Topography

Figure 1-3
North Segment
Project Location
Andeavor Y-Grade Hub



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1:24,000 1 inch = 2,000 feet

0 2,000 feet

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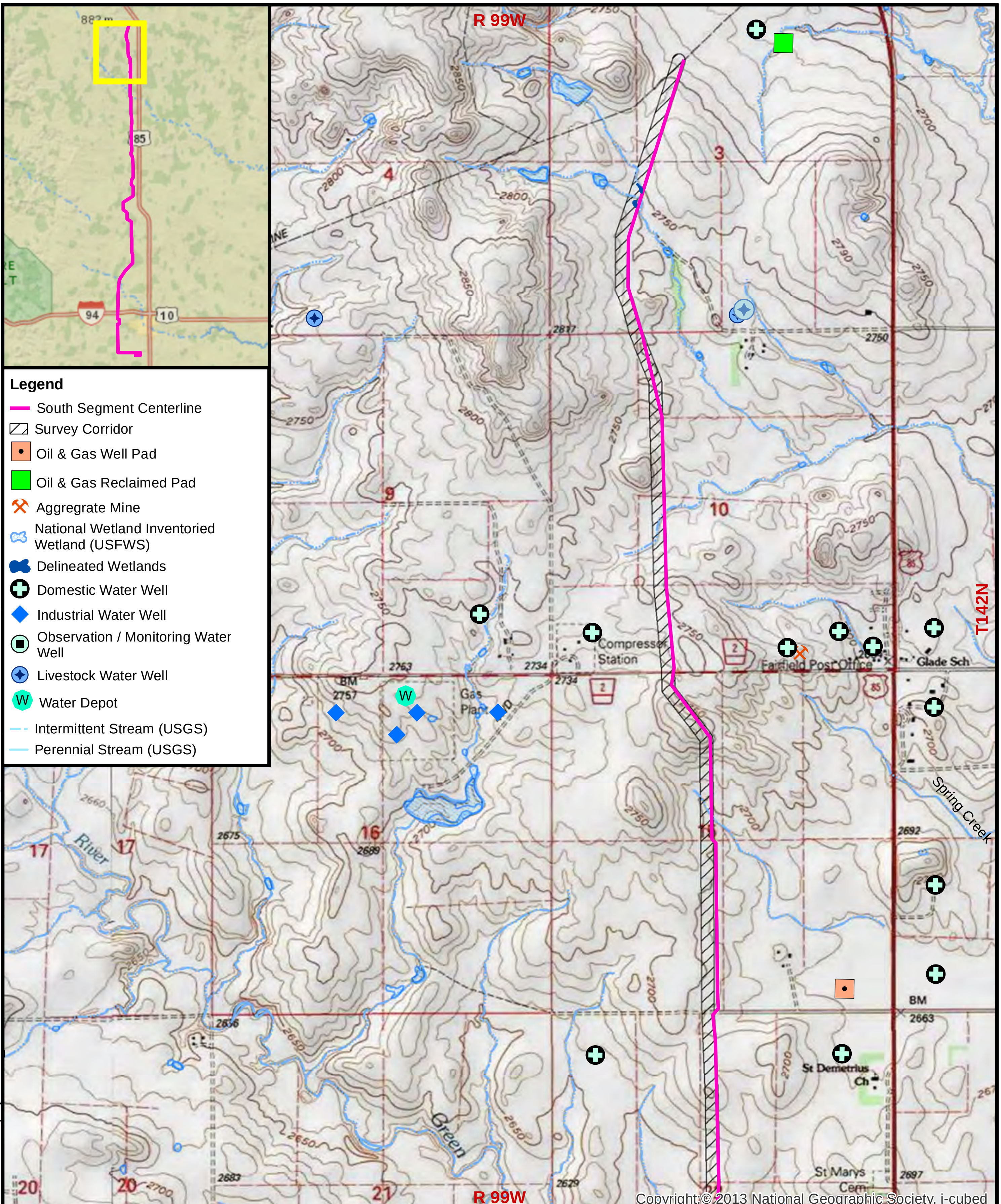
Basemap: USGS Topography

Figure 1-4
North Segment
Project Location
Andeavor Y-Grade Hub



R:\projects\7000-7500\7070 - YGrade North\GIS\Storm Water permit\Project Location South 2-.mxd

January 2018

Carlson McCain
ENVIRONMENTAL · ENGINEERING · SURVEYING

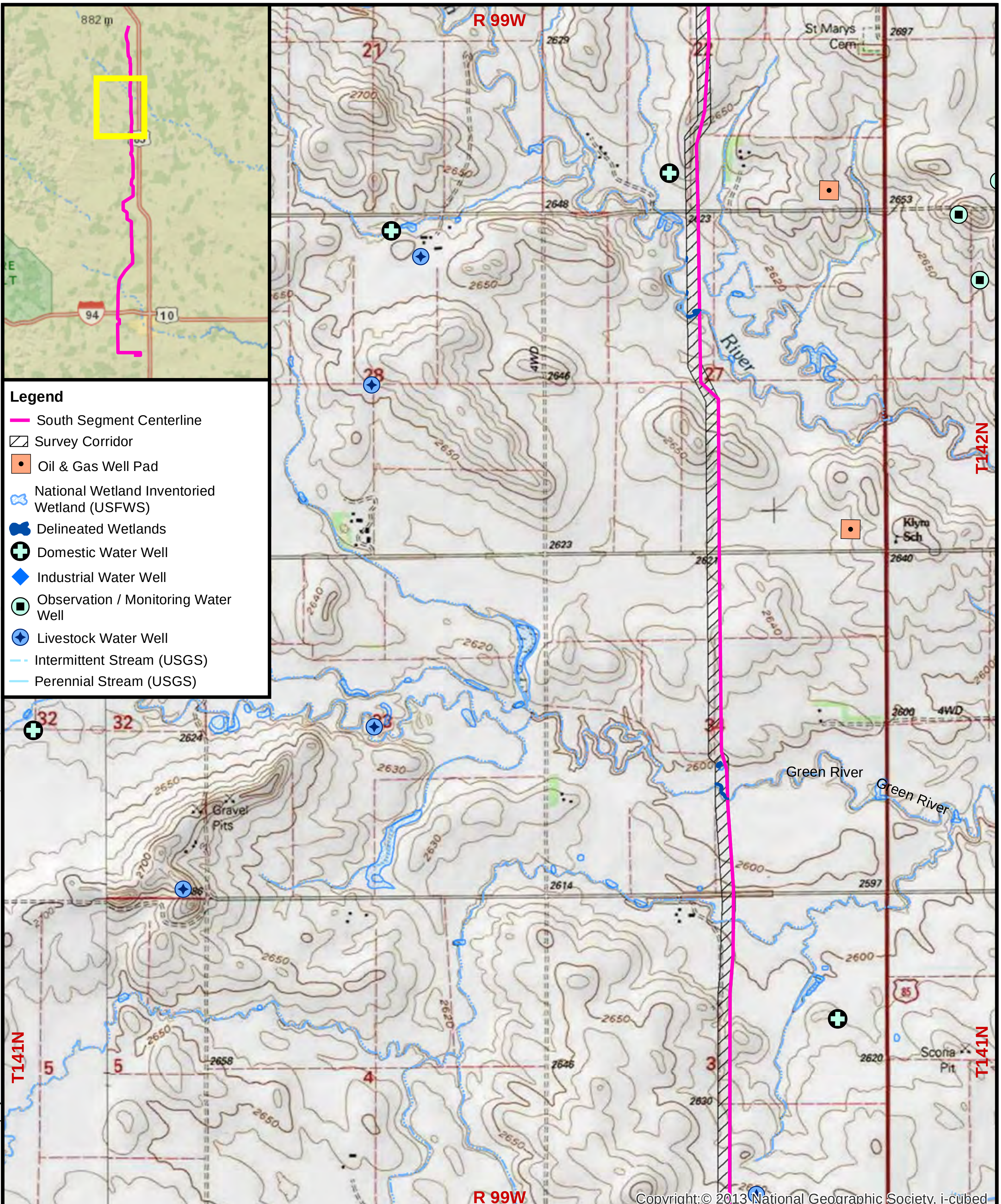
1:24,000 1 inch = 2,000 feet

0 2,000 feet

N

Basemap: USGS Topography

Figure 2-1
South Segment
Project Location
Andeavor Y-Grade Hub



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January 2018

Carlson McCain
ENVIRONMENTAL · ENGINEERING · SURVEYING

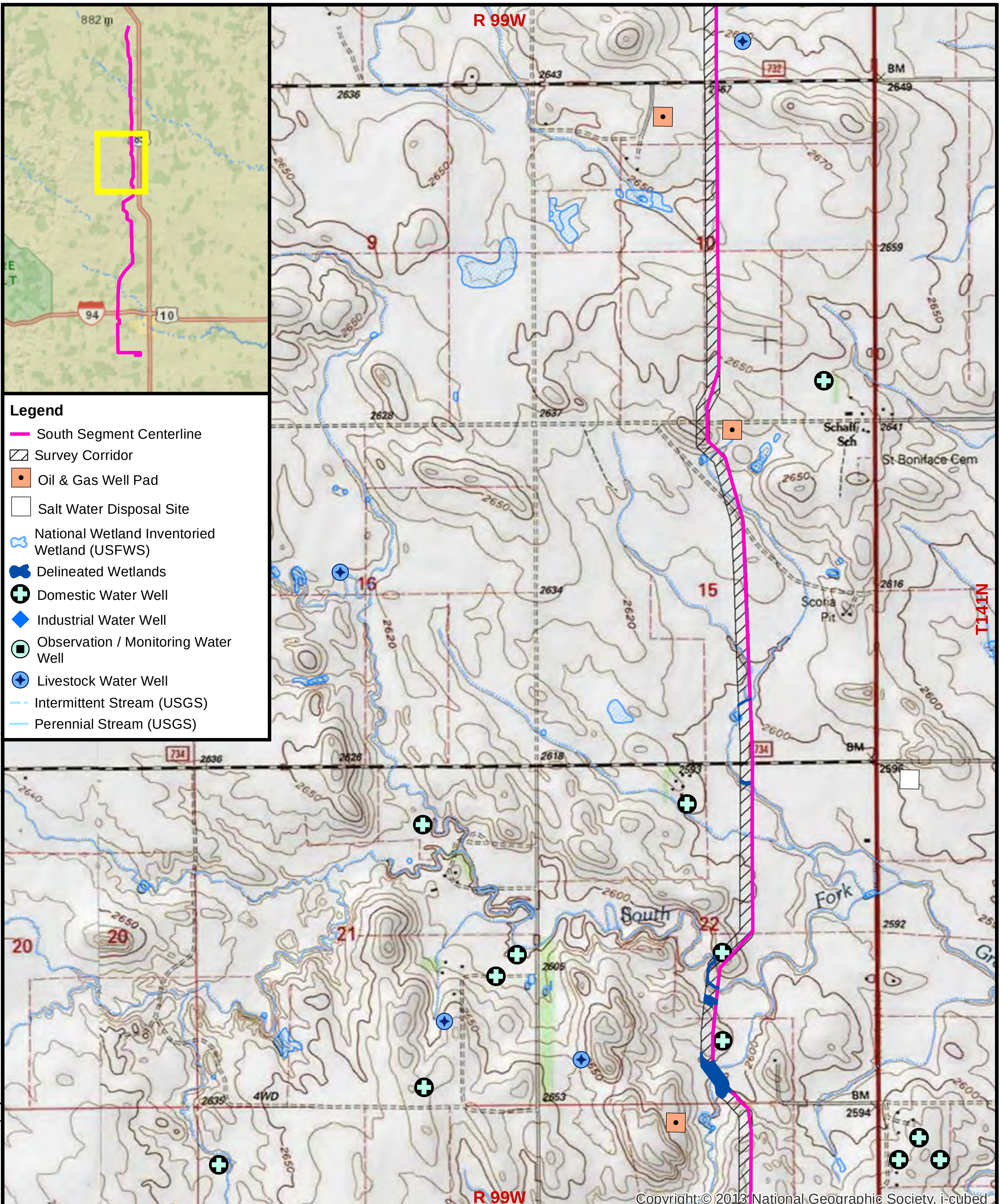
1:24,000 1 inch = 2,000 feet

0 2,000 feet

Basemap: USGS Topography

N

Figure 2-2
South Segment
Project Location
Andeavor Y-Grade Hub



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January 2018

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ENVIRONMENTAL · ENGINEERING · SURVEYING

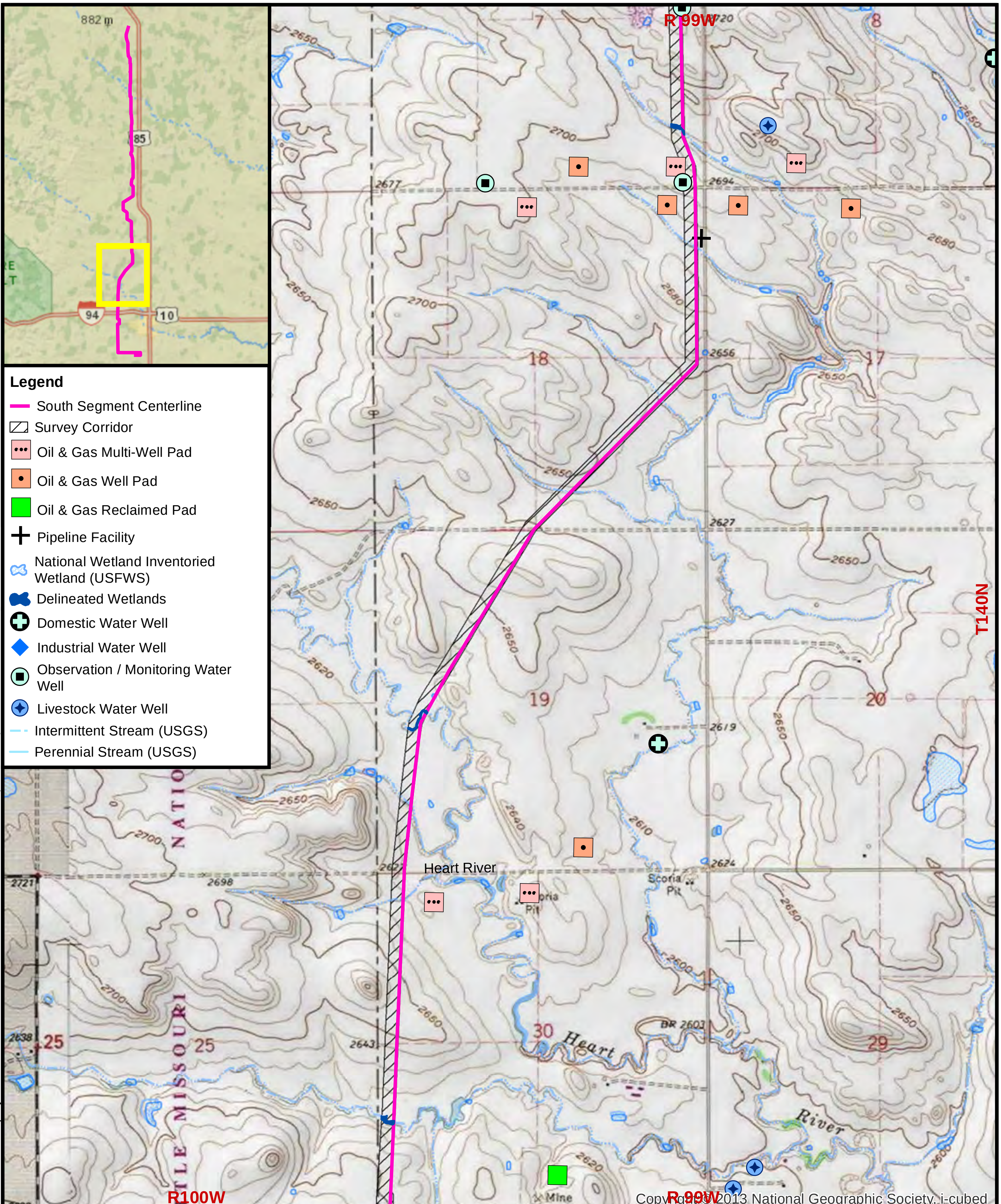
1:24,000 1 inch = 2,000 feet

0 2,000 feet

N

Basemap: USGS Topography

Figure 2-3
South Segment
Project Location
Andeavor Y-Grade Hub



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January 2018

Carlson McCain
ENVIRONMENTAL · ENGINEERING · SURVEYING

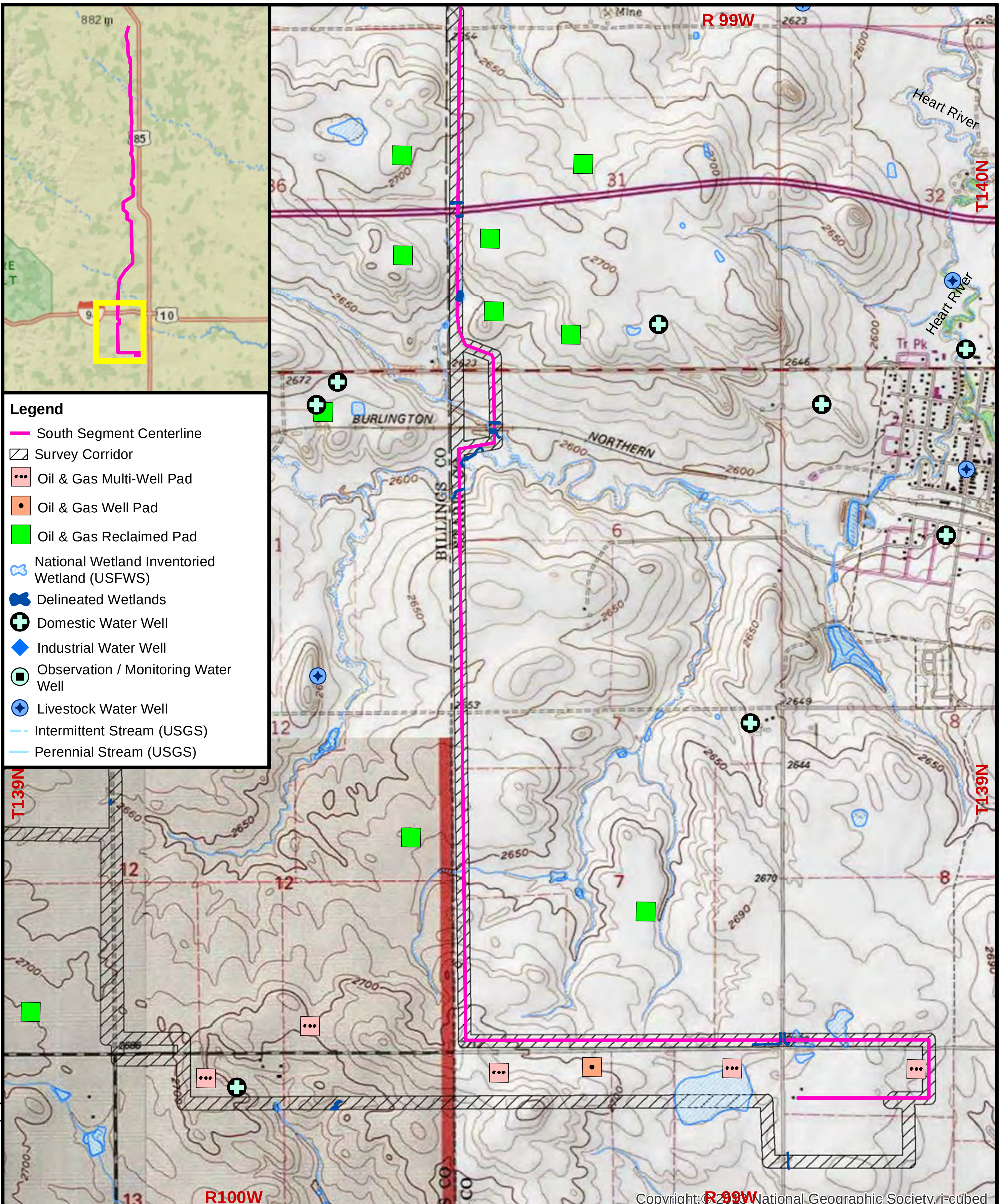
1:24,000 1 inch = 2,000 feet

0 2,000 feet

N

Basemap: USGS Topography

Figure 2-5
South Segment
Project Location
Andeavor Y-Grade Hub



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January 2018

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ENVIRONMENTAL · ENGINEERING · SURVEYING

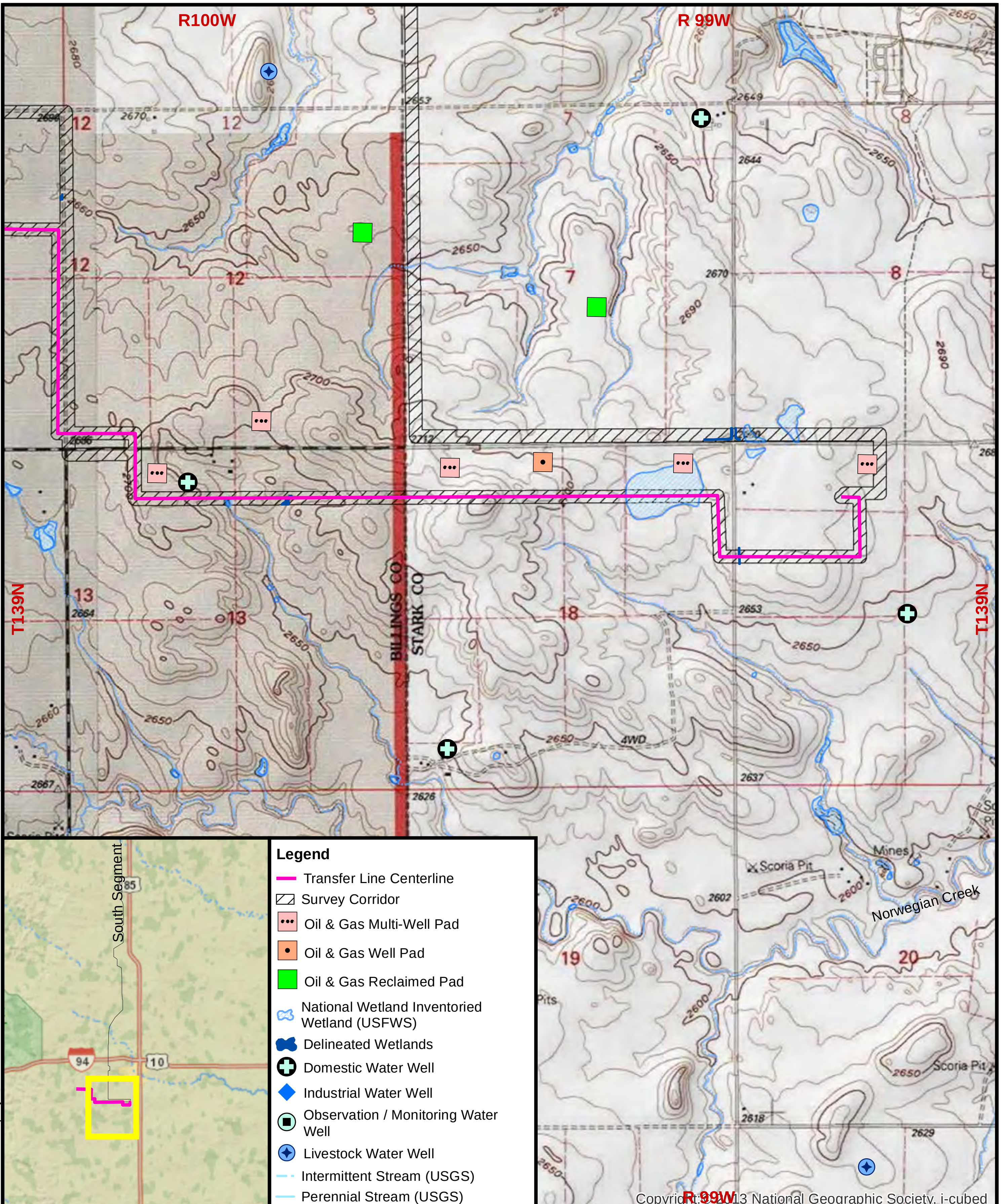
1:24,000 1 inch = 2,000 feet

0 2,000 feet

N

Basemap: USGS Topography

Figure 2-6
South Segment
Project Location
Andeavor Y-Grade Hub



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January 2018

Carlson McCain

ENVIRONMENTAL · ENGINEERING · SURVEYING

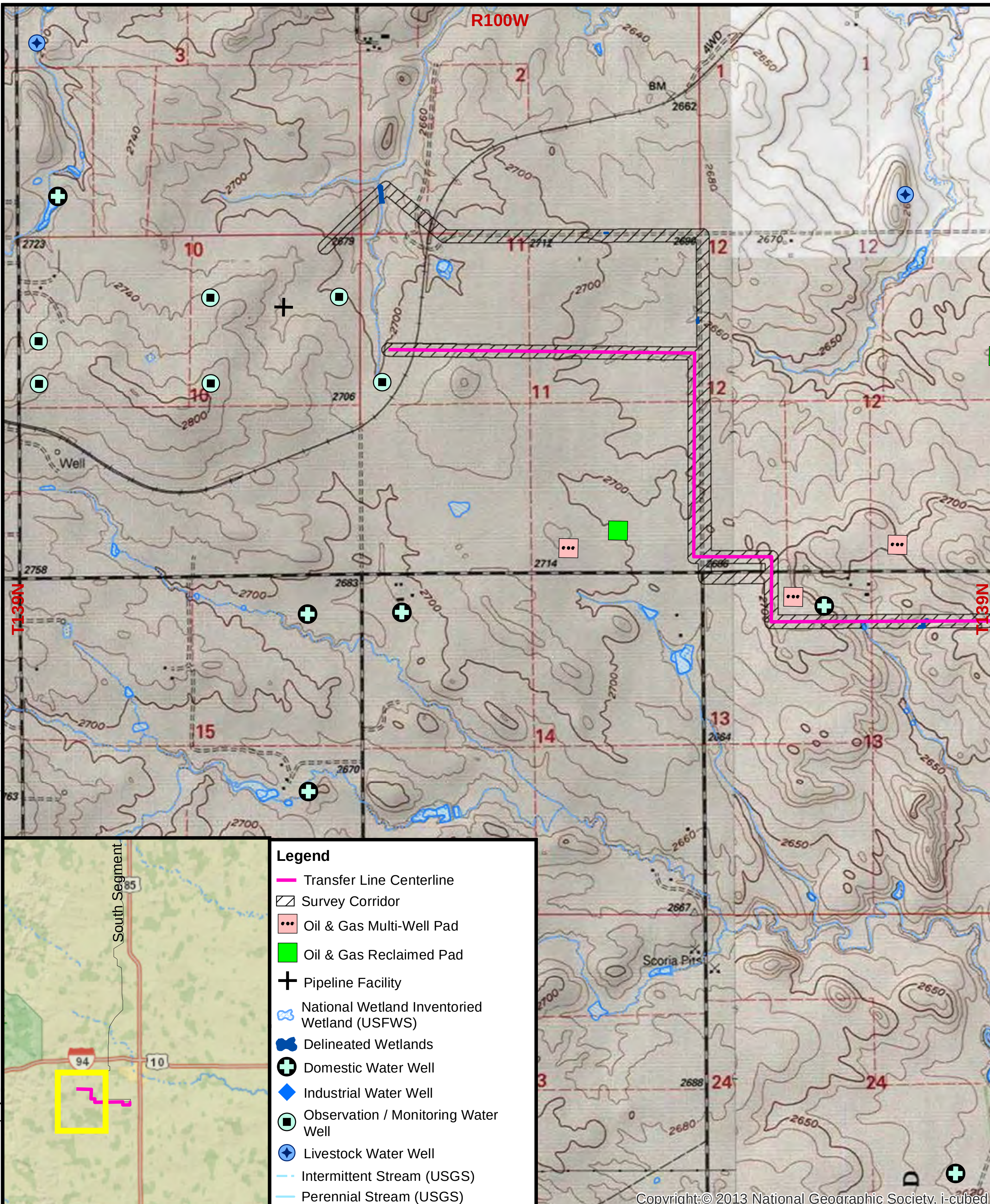
1:24,000 1 inch = 2,000 feet

0 2,000 feet

N

Basemap: USGS Topography

Figure 3-1
Transfer Line Segment
Project Location
Andeavor Y-Grade Hub



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January 2018

Carlson McCain

ENVIRONMENTAL · ENGINEERING · SURVEYING

1:24,000 1 inch = 2,000 feet

0 2,000 feet

N

Basemap: USGS Topography

Figure 3-2
Transfer Line Segment
Project Location
Andeavor Y-Grade Hub

Appendix B

Revision Record

Revision Record

Project Name:
SWPPP Contact:

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title(s)]

Appendix C

Notice of Termination

NOTICE OF TERMINATION TO CANCEL COVERAGE UNDER NDPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (NDR10-0000)

NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF WATER QUALITY
SFN 19146 (04/15)

FOR DEPT. USE ONLY

Date Received ____/____/____

GENERAL INFORMATION

Name of Construction Project		Permit ID Number **NDR10-**	
Name of Owner of Construction Project	Contact Person Name (Mr / Ms)	Contact Phone No.	
Mailing Address	City	State/Province	Zip Code

Please indicate which condition has been met before submitting the NOT.

☐ The site has achieved final stabilization. In order to achieve final stabilization, one of the following conditions must be met. Please indictate which condition has been met.

- ☐ All soil disturbing activities are complete and all soils are stabilized by a uniform perennial vegetative cover with a density of 70 percent of the pre-existing cover over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions and;

  i. All drainage ditches which drain water from the site have been stabilized;

  ii. All temporary erosion prevention and sediment control BMPs (e.g., silt fence) have been removed; and

  iii. All sediment has been removed from conveyances and temporary sediment basins used for permanent water quality management, and the sediment has been stabilized. The cleanout of permanent basins must be sufficient to return the basin to design capacity.

- ☐ For areas with an average annual rainfall of less than 20 inches, all soil disturbing activities at the site have been completed and erosion control measures and stabilization methods have been selected, designed and installed along with an appropriate seed base to provided erosion control for three years and achieve 70 percent vegetative coverage within three (3) years without active maintenance. Sites must meet the conditions above.

- ☐ Disturbed areas on land used for agricultural purposes that are restored to their pre-construction agricultural use are not subject to these final stabilization criteria. If the construction activity removed standing crop, the area must be restored in accordance with the landowner.

  Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to waters of the state, and areas which are not being returned to their pre-disturbance use must mee the final stablization criteria above.

☐ For residential construction, all lots have been sold with temporary erosion protection and down gradient perimeter controls installed; a homeowner fact sheet has been given to the homeowner(s); and all other lots have achieved final stabilization.

If another operator/permittee has assumed control in accordance with the transfer provision (Part I(F) of the permit over all areas of the site that have not achieved final stabilization please file a Notice of Transfer/Modification Form (SFN 54242).

CERTIFICATION STATEMENT

Return Completed Form to:

North Dakota Department of Health
Division of Water Quality, 4th Floor
918 East Divide Avenue
Bismarck, ND 58501-1947

Telephone: 701.328.5210
Fax: 701.328.5200

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name of Owner	Title
Signature of Owner	Date

(Attach additional pages if needed)

Appendix D

Delegation of Authority

Delegation of Authority Form

Delegation of Authority

I, ________________________ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the ______________________________________ construction site. The designee is authorized to sign any reports, storm water pollution prevention plans and all other documents required by the permit.

____ (name of person or position)
____ (company)
____ (address)
____ (city, state, zip)
____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in ______________________________________ (Reference State Permit), and that the designee above meets the definition of a "duly authorized representative" as set forth in ______________________________________ (Reference State Permit).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: ____

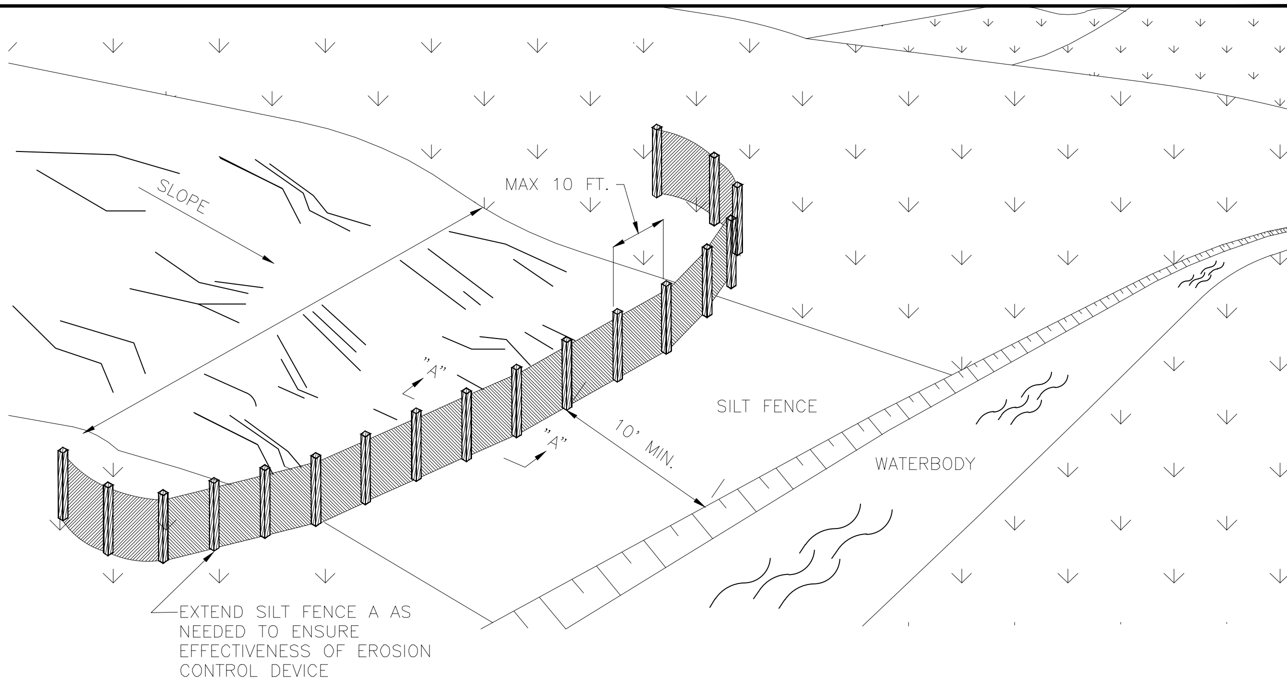
Company: ______________________________________

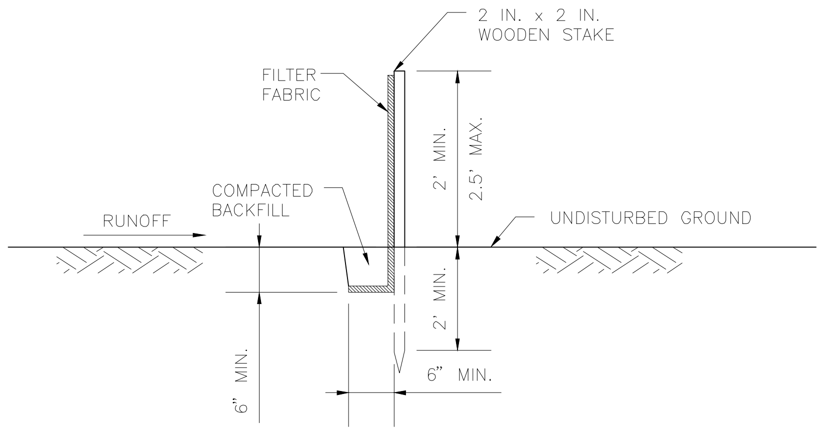
Title: ____

Signature: ______________________________________ **Date:** ____________________

Appendix E

Typical Details





SECTION–"A"–"A"

SCALE: NOT TO SCALE

NOTES:

1. SILT FENCES ARE TO BE USED IN AREAS WHERE SHEET FLOW OR RELATIVELY SMALL VOLUMES OF WATER CAN BE EXPECTED TO OCCUR. FOR LARGER VOLUMES SUCH AS WITHIN A DEFINED CHANNEL, A CHECK DAM WILL BE REQUIRED.

2. STAKES ARE TO BE PLACED A MAXIMUM OF TEN (10) FT. OR CLOSER AS CONDITIONS REQUIRE.

3. ATTACH FILTER FABRIC AT EACH POST AT A MINIMUM OF THREE (3) LOCATIONS.

4. THE FILTER FABRIC (MIN. OF 1 FT.) IS TO BE ANCHORED IN A 6 INCH X 6 INCH TRENCH WITH WELL COMPACTED BACKFILL OVER THE FABRIC TO PREVENT UNDERMINING.

5. TO ELIMINATE POSSIBLE END FLOW, BOTH ENDS OF THE SILT FENCE SHALL BE TURNED AND EXTENDED UPSLOPE.

6. SILT FENCES ARE TO BE CHECKED AND MAINTAINED ON A REGULAR BASIS. REMOVE ANY BUILD UP OF SEDIMENT WHEN THE HEIGHT OF SEDIMENT EXCEEDS APPROXIMATELY 20% OF THE HEIGHT OF THE BARRIER.

7. MATERIAL SHOULD BE WOVEN GEOTEXTILE FABRIC SUCH AS EXXON GTF 180 OR MOBILE 600X, OR AN APPROVED EQUIVALENT. SECONDARY REINFORCEMENT SUCH AS A CONSTRUCTION BARRIER FENCE OR WIRE MESH CAN ALSO BE USED BEHIND THE FILTER FABRIC.

8. WHERE ANCHORING CONDITIONS FOR THE SILT FENCE ARE POOR, PLACE ANCHORED STRAW BALES ON DOWNSTREAM SIDE OF THE SILT FENCE

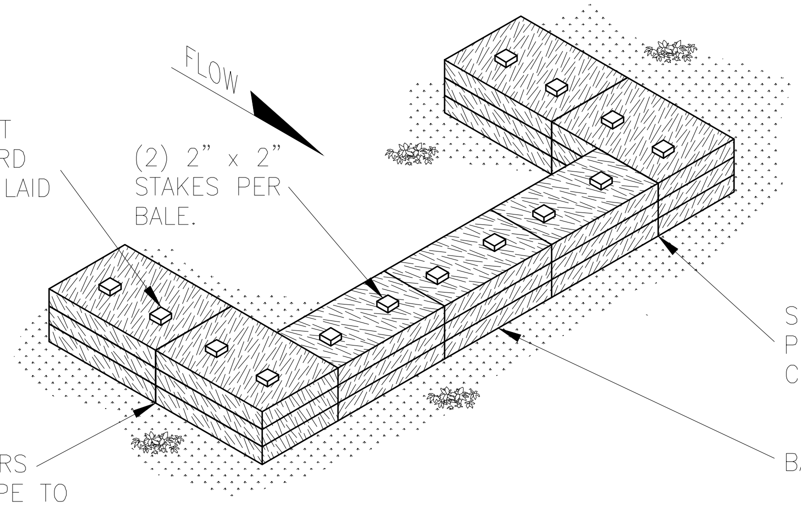
9. MAITAINANCE REQUIREMENTS:
   INSPECT SILT FENCE:
   - DAILY IN AREAS OF ACTIVE CONSTRUCTION
   - WEEKLY IN AREAS OF NO CONSTRUCTION
   - WITHIN 24 HOURS FOLLOWING MAJOR RAIN EVENT
   - REPAIR OR REPLACE SILT FENCE AS NEEDED
   - REMOVE ACCUMILATED SEDIMENTS TO AN UPLAND AREA AS NEEDED

Andeavor

TYPICAL CONSTRUCTION
SILT FENCE
BARRIER INSTALLATION

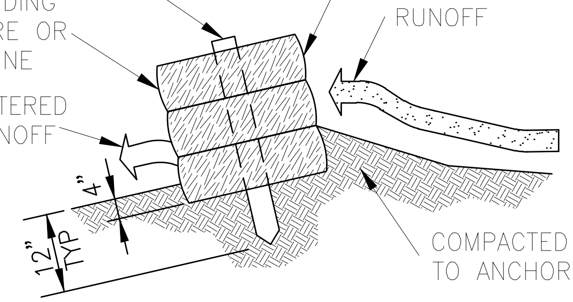
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL-1	REV A

01-03-12 13:58 10045 1 EM z:\quintana\10045\working\civil\typicals\detail-1.dwg



PERSPECTIVE VIEW

NOT TO SCALE



CROSS-SECTION

NOT TO SCALE

INSTALLATION REQUIREMENTS:

WHEN USING STRAW BALES, PLACE THEM:

- WITH THEIR ENDS TIGHTLY ABUTTING AND EMBEDDED IN THE SOIL A TYPICAL OF 4".
- BETWEEN DISTURBED AREAS AND DOWN-SLOPE ENVIRONMENTAL RESOURCE AREAS.
- AT THE BASE OF ALL SLOPES NEXT TO WETLANDS, WATERBODIES, AND ROAD CROSSINGS.
- AT THE INLET AND OUTLET OF OPEN DRAINAGE STRUCTURES.
- APPROXIMATELY 6 FEET BEYOND THE TOE OF THE SLOPE TO GIVE THE SEDIMENT ROOM TO COLLECT.

KEY IN THE BOTTOM OF THE BALE. IN AREAS WHERE IT IS NOT FEASIBLE TO TRENCH IT IN (LEDGES, ROCKY SOIL,LARGE TREE ROOTS, ETC), USE NATIVE SOIL AS BACKFILL UP-SLOPE OF THE BALE.

IF USED IN CONJUNCTIION WITH SILT FENCE, BALES ARE PLACED UP-SLOPE OF THE SILT FENCE AND DO NOT NEED TO BE TRENCHED IN.

MAINTENANCE REQUIREMENTS:

INSPECT BALES:

- DAILY IN AREAS OF ACTIVE CONSTRUCTION.
- WEEKLY IN AREAS WITH NO CONSTRUCTION.
- WITHIN 24 HOURS FOLLOWING EACH MAJOR STORM EVENT.
- REPAIR OR REPLACE BALES AS NEEDED.
- REMOVE ACUMULATED SEDIMENTS TO AN UPLAND AREA AS NEEDED.

Andeavor	
TYPICAL CONSTRUCTION STRAW BALE INSTALLATION	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL-2	REV A

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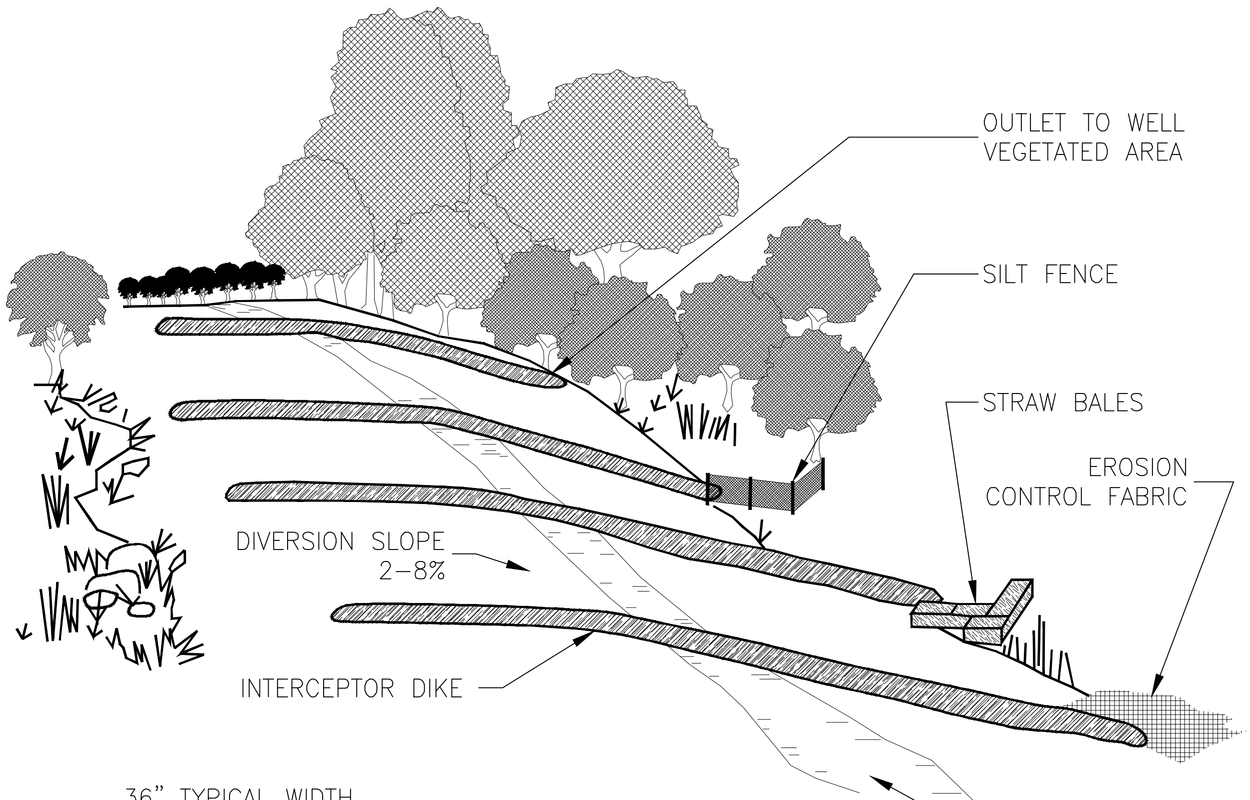
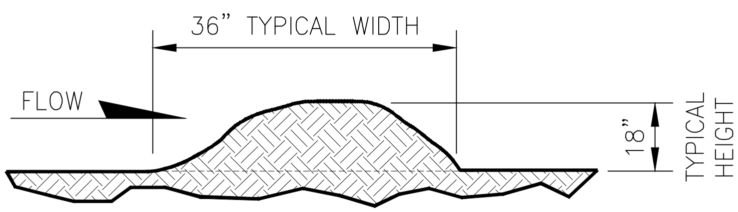




CROSS SECTION

NOT TO SCALE

INSTALLATION REQUIREMENTS:

- INSTALL PERMANENT INTERCEPTOR DIKES IN ALL AREAS EXCEPT RESIDENTIAL OR AGRICULTURAL AS NECESSARY TO AVOID EXCESSIVE EROSION (UNLESS AUTHORIZED BY LANDOWNER OR LAND MANAGING AGENCY IN AGRICULTURAL OR RESIDENTIAL AREA).
- MUST BEINSTALLED ON SLOPES GREATER THAT 5% WHERE THE BASE OIF THE SLOPE IS LESS THAN 50 FEET FROM A WATERBODY, WETLAND OR ROAD CROSSING AT THE FOLLOWING MINIMUM SPACING:

SLOPE (%)	SPACING (FT)
5–15	300
>15–30	200
>30	100

- CONSTRUCT USING EARTH FILLED SACKS, STAKED STRAW BALES, SILT FENCE, OR SOIL FOR TEMPORARY OR COMPACTED EARTH AND ROCK TO PERMANENT.
- INSTALL WITH A 2 – 8% OUTFALL ANGLE.
- POSITION OUTFALL TO PREVENT SEDIMENT DISCHARGE INTO WETLADS, WATERBODIES, OR OTHER SENSITIVE RESOURCES.
- FILTER RUN–OFF WATER BY CONASTRUCTIONG THE OUTLET IN A WELL VEGETATED STABLE AREA, OR BY USING AN ENERGY DISSIPATING DEVICE (SILT FENCE, STRAW BALES, EROSION CONTROL FABRIC), AS DIRECTED BY THE ENVIRONMENTAL INSPECTOE.

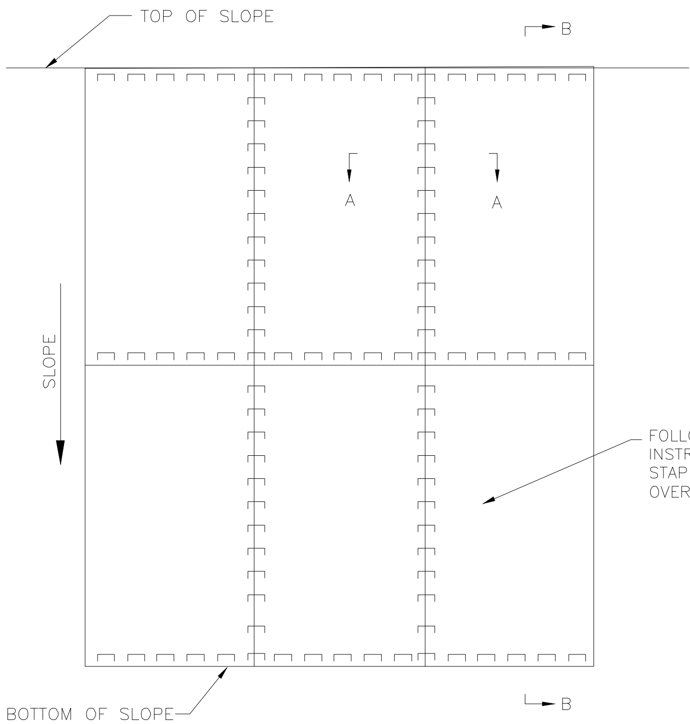
MAINTENANCE REQUIREMENTS:

- INSPECT DURING AND FOLLOWING CONSTRUCTION AND MAKE REPAIRS AS NEEDED.
- KEEP THE CHANNEL FREE OF DEBRIS AND OBSTRUCTIONS.
- SEED AND MULCH PERMANENT INTERCEPTOR DIKES FOLLOWING CONSTRUCTION.

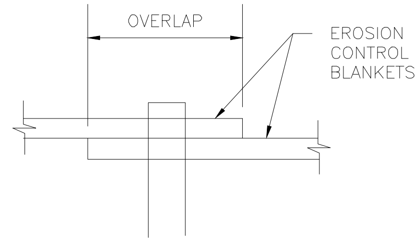
Andeavor

TYPICAL CONSTRUCTION
INTERCEPTOR DIKE INSTALLATION

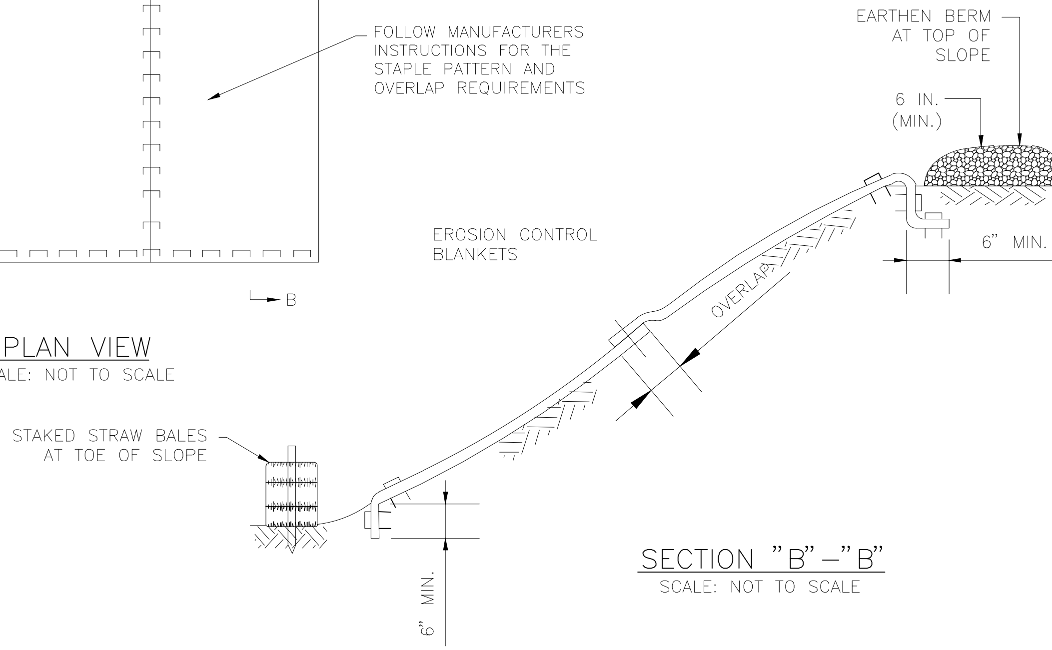
DRAWN BY:	PCS	CHK'D. BY:	PCS
DATE:	11–07–11	APPRV. BY:	PCS
DWG. NO.	DETAIL–3	REV	A



PLAN VIEW
SCALE: NOT TO SCALE



SECTION "A"–"A"
SCALE: NOT TO SCALE



SECTION "B"–"B"
SCALE: NOT TO SCALE

NOTES:

1. EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN S 150 FOR SLOPES 3 TO 1 AND SC 150 FOR SLOPES 2 TO 1 OR APPROVED EQUALS.
2. INSTALL BLANKETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING GRADING, REMOVAL OF LARGE ROCKS AND DEBRIS, AND THE APPLICATION OF SEED AND FERTILIZER.
4. EROSION CONTROL BLANKETS SHALL EXTEND COMPLETELY ACROSS DISTURBED AREAS TO PROTECT ERODIBLE SURFACES.
5. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A MINIMUM SIX (6) INCHES WIDE AND SIX (6) INCHES DEEP TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
7. AS AN ALTERNATIVE TO STAPLES, WOODEN STAKES CAN BE USED.
8. ENSURE COMPLETE CONTACT BETWEEN THE BLANKETS AND THE SLOPE FACE, ADDITIONAL STAPLES CAN BE USED TO ELIMINATE GAPS.
9. EROSION CONTROL BLANKETS WILL BE INSTALLED AS REQUIRED BY LAND OWNER OR APPLICABLE PERMIT.

Andeavor

TYPICAL CONSTRUCTION
EROSION CONTROL
BLANKET INSTALLATION

DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11–07–11	APPRV. BY: PCS
DWG. NO. DETAIL–4	REV A

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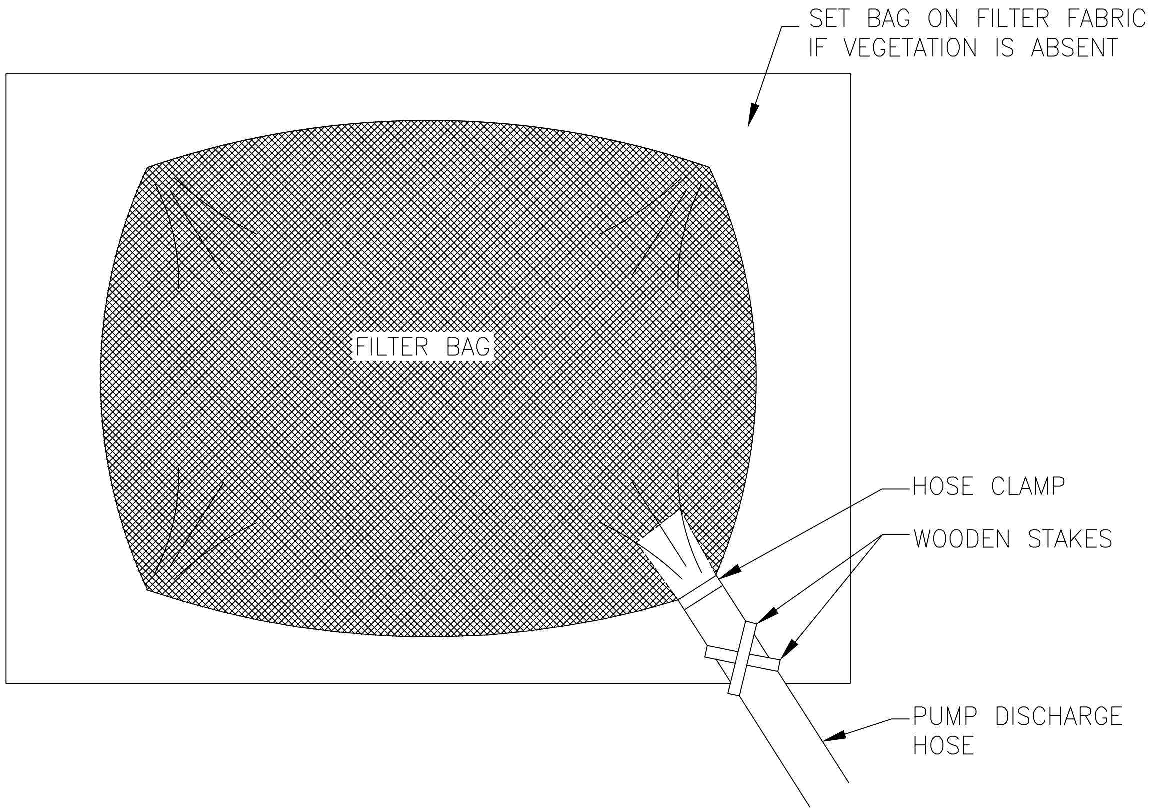
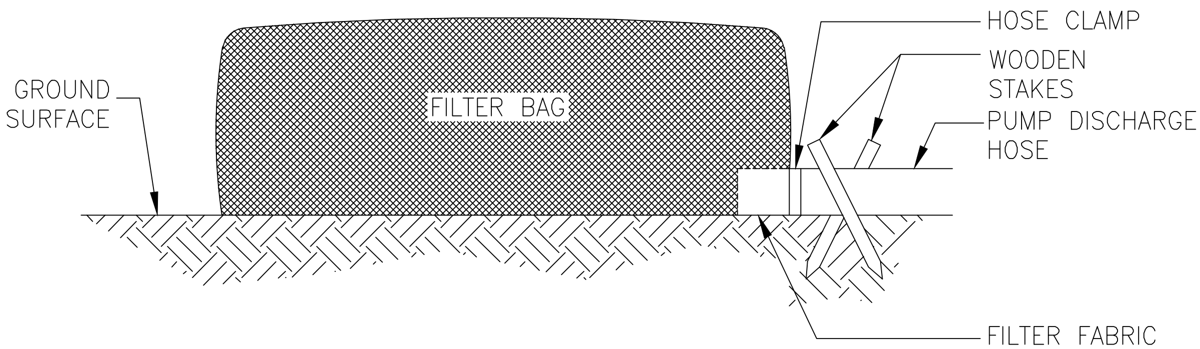


PLAN VIEW

N.T.S.



CROSS–SECTION

N.T.S.

NOTES:

1. LIMIT ONE (1) DISCHARGE HOSE PER BAG.
2. REMOVE DEWATERING STRUCTURE AS SOON AS POSSIBLE AFTER COMPLETION OF DEWATERING ACTIVITIES.

Andeavor	
TYPICAL CONSTRUCTION FILTER BAG INSTALLATION	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11–07–11	APPRV. BY: PCS
DWG. NO. DETAIL–5	REV A

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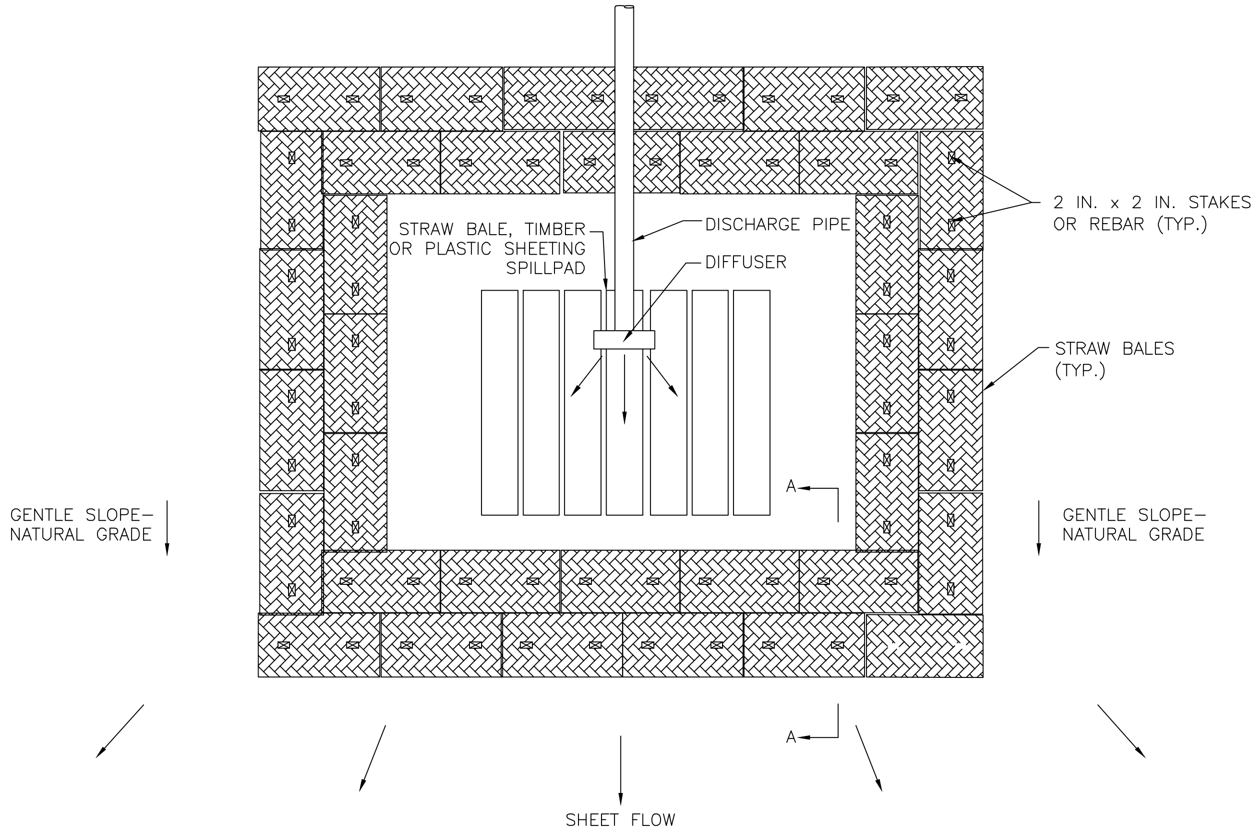

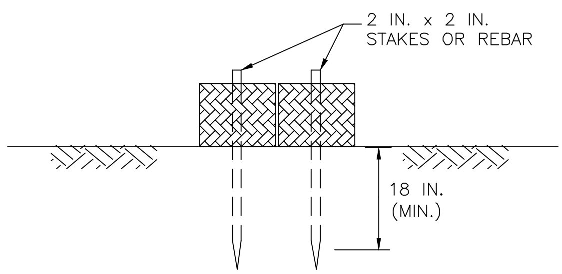

SECTION–"A"–"A"

SCALE: NOT TO SCALE

NOTES:

1. INSTALL A STRAW BALE DEWATERING STRUCTURE WHEREVER IT IS NECESSARY AND AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR TO PREVENT THE FLOW OF HEAVILY SILT LADEN WATER INTO WATER BODIES OR WETLANDS. ALL DEWATERING ACTIVITIES SHALL BE IN ACCORDANCE WITH ENVIRONMENTAL SPECIFICATION AND RELEVANT PERMITS.

2. DISCHARGE SITE SHOULD BE WELL VEGETATED AND LOCATED AT LEAST 50 FEET FROM ANY WATERCOURSE. THE TOPOGRAPHY OF THE SITE SHOULD BE SUCH THAT WATER WILL FLOW INTO THE DEWATERING STRUCTURE AND AWAY FROM ANY WORK AREAS. THE AREA DOWN SLOPE FROM THE DEWATERING SITE MUST BE REASONABLY FLAT OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.

3. DIRECT THE PUMPED WATER ONTO A STABLE SPILL PAD CONSTRUCTED OF ROCKFILL, WEIGHTED TIMBERS, OR A WOVEN GEOTEXTILE STAKED TO THE GROUND SURFACE, SUCH AS MIRAGI 600X, TERRAFIX 400W, OR A COMPANY APPROVED EQUIVALENT.

4. DISCHARGE RATES SHOULD BE SUCH THAT THE CAPACITY OF THE STRUCTURE WILL NOT BE EXCEEDED.

5. DISCHARGE WATER SHALL BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD USING A COMBINATION OF STRAW BALES AND THE NATURAL TOPOGRAPHY. DRIVE TWO (2) STAKES OR REBAR INTO EACH BALE TO ANCHOR THEM IN PLACE.

6. MANUFACTURED FILTER BAGS ARE A SUITABLE ALTERNATIVE TO STRAW BALE STRUCTURES FOR TRENCH DEWATERING. FILTER BAGS SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER. DISPOSE OF FULL FILTER BAGS AT AN APPROVED OFF-SITE FACILITY.

Andeavor	
TYPICAL CONSTRUCTION STRAW BALE DEWATERING STRUCTURE	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL-6	REV A

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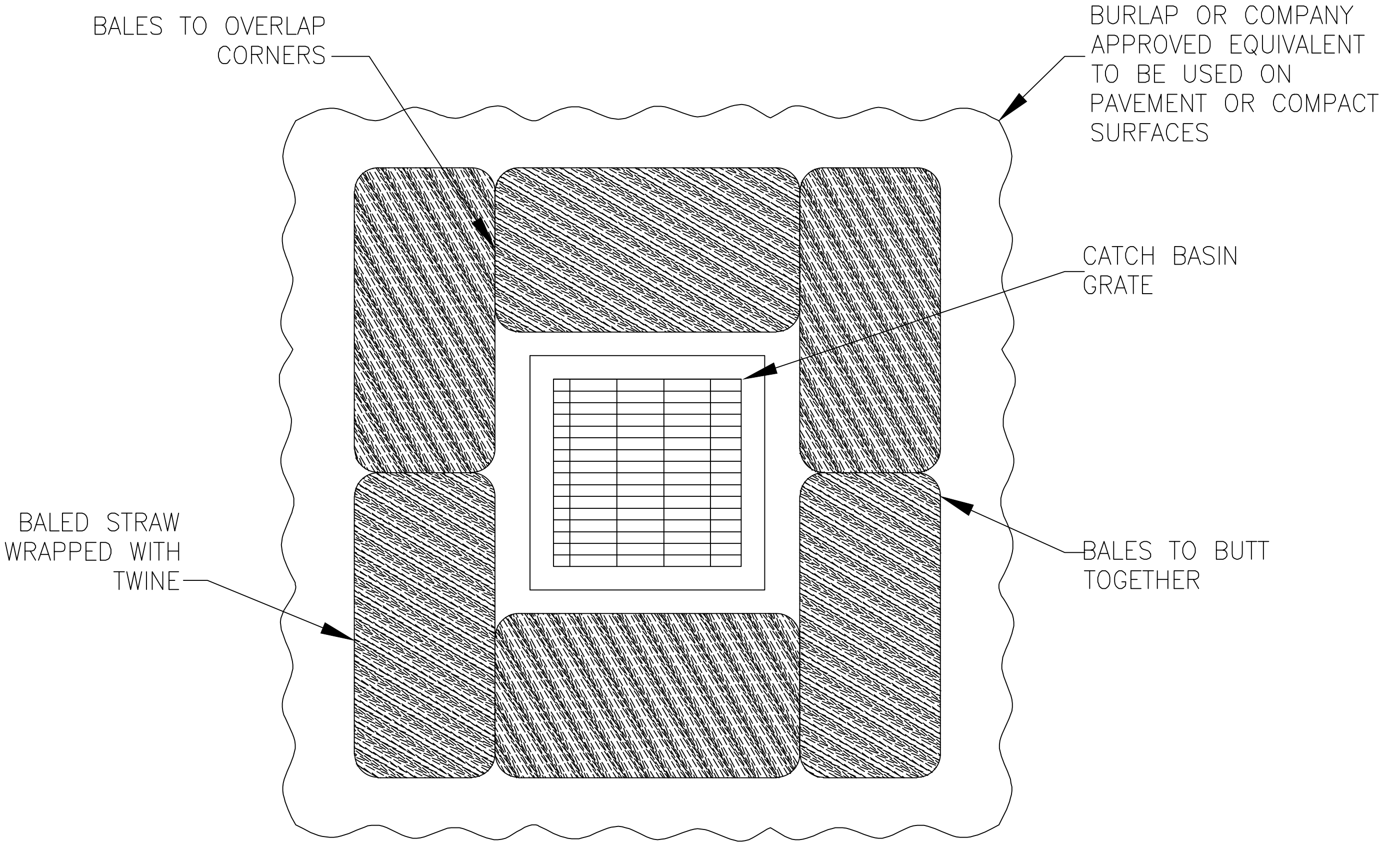

STORM DRAIN INLET PROTECTION

NOT TO SCALE

NOTES:

1. SURROUND STREET DRAINAGE STRUCTURE INLET WITH BALES PRIOR TO CONSTRUCTION AND MAINTAIN UNTIL CONSTRUCTION IS COMPLETED.
2. FOR BALES PLACED ON PAVEMENT (OR COMPACT SURFACES), PLACE BURLAP OR COMPANY APPROVED EQUIVALENT BETWEEN PAVEMENT AND BALE.
3. REMOVE ACCUMULATED SEDIMENT.

Andeavor	
TYPICAL CONSTRUCTION STORM DRAIN INLET PROTECTION	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE:	APPRV. BY: PCS
DWG. NO. DETAIL 25	REV A

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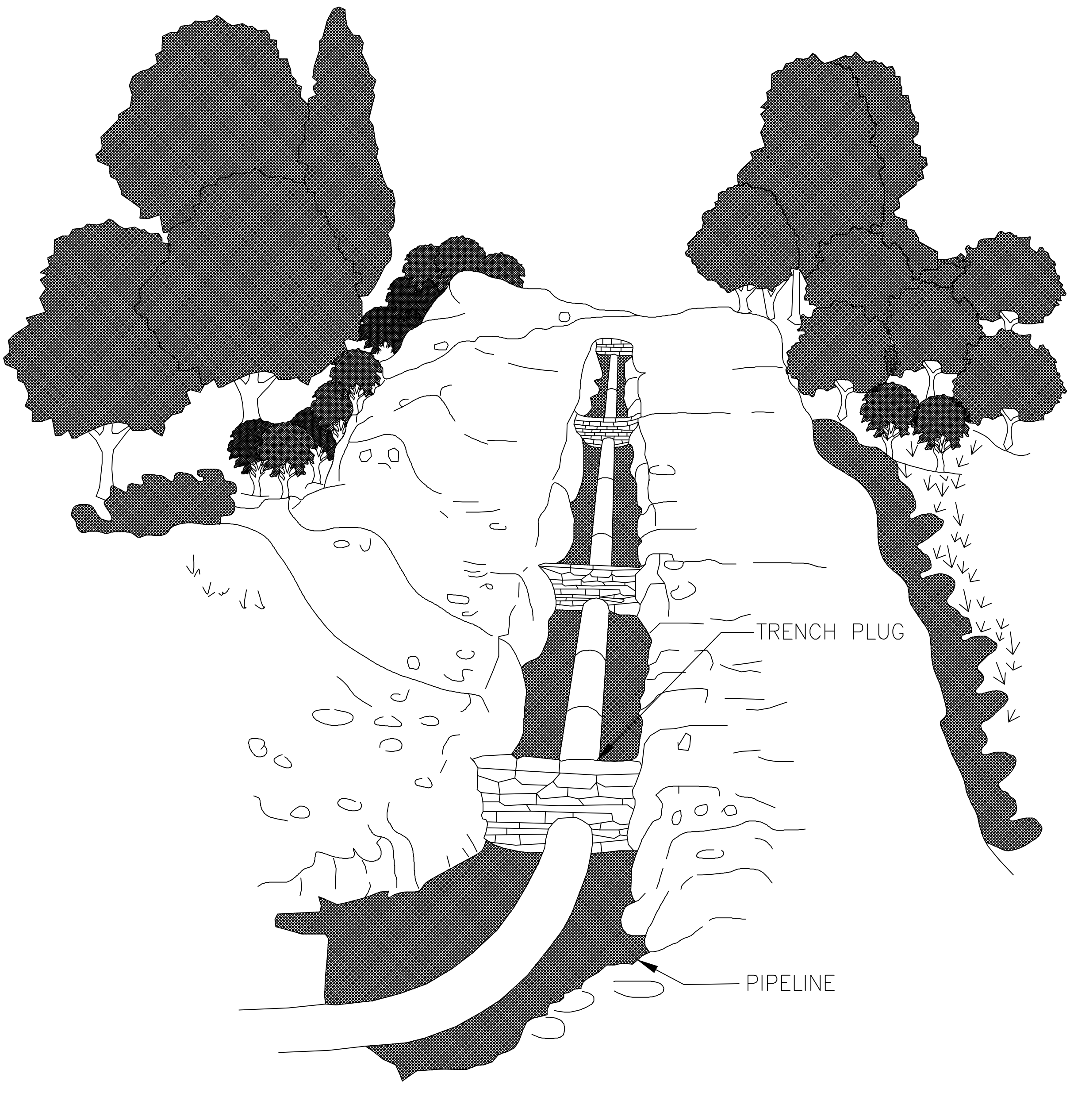

NOTES:

SLOPE (%)	SPACING (FT)
5–15	300
>15–30	200
>30	100

Andeavor	
TYPICAL CONSTRUCTION PERMANENT TRENCH PLUGS	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11–07–11	APPRV. BY: PCS
DWG. NO. DETAIL–7	REV A

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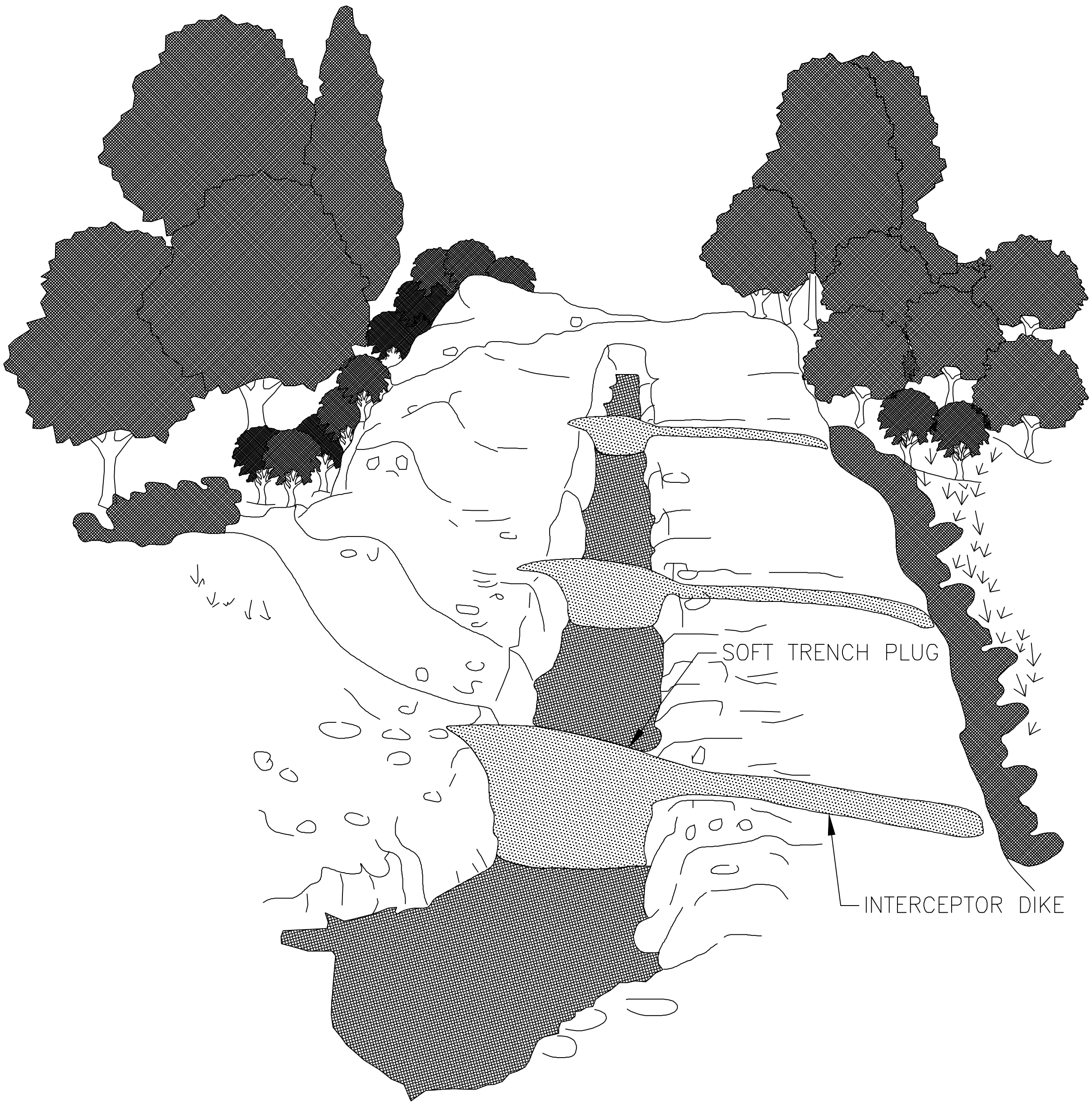

NOTES:

1. TEMPORARY TRENCH PLUGS MAY BE USED IN CONJUNCTION WITH INTERCEPTOR DIKES TO PREVENT WATER FROM OVERFLOWING INTO SENSITIVE RESOURCE AREAS.

2. DIVERT TRENCH OVERFLOW TO A WELL-VEGETATED OFF-RIGHT-OF-WAY LOCATION, OR INSTALL AN APPROPRIATE ENERGY DISSIPATING DEVICE.

Andeavor	
TYPICAL CONSTRUCTION TEMPORARY TRENCH PLUGS	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE:	APPRV. BY: PCS
DWG. NO. DETAIL 27	REV A

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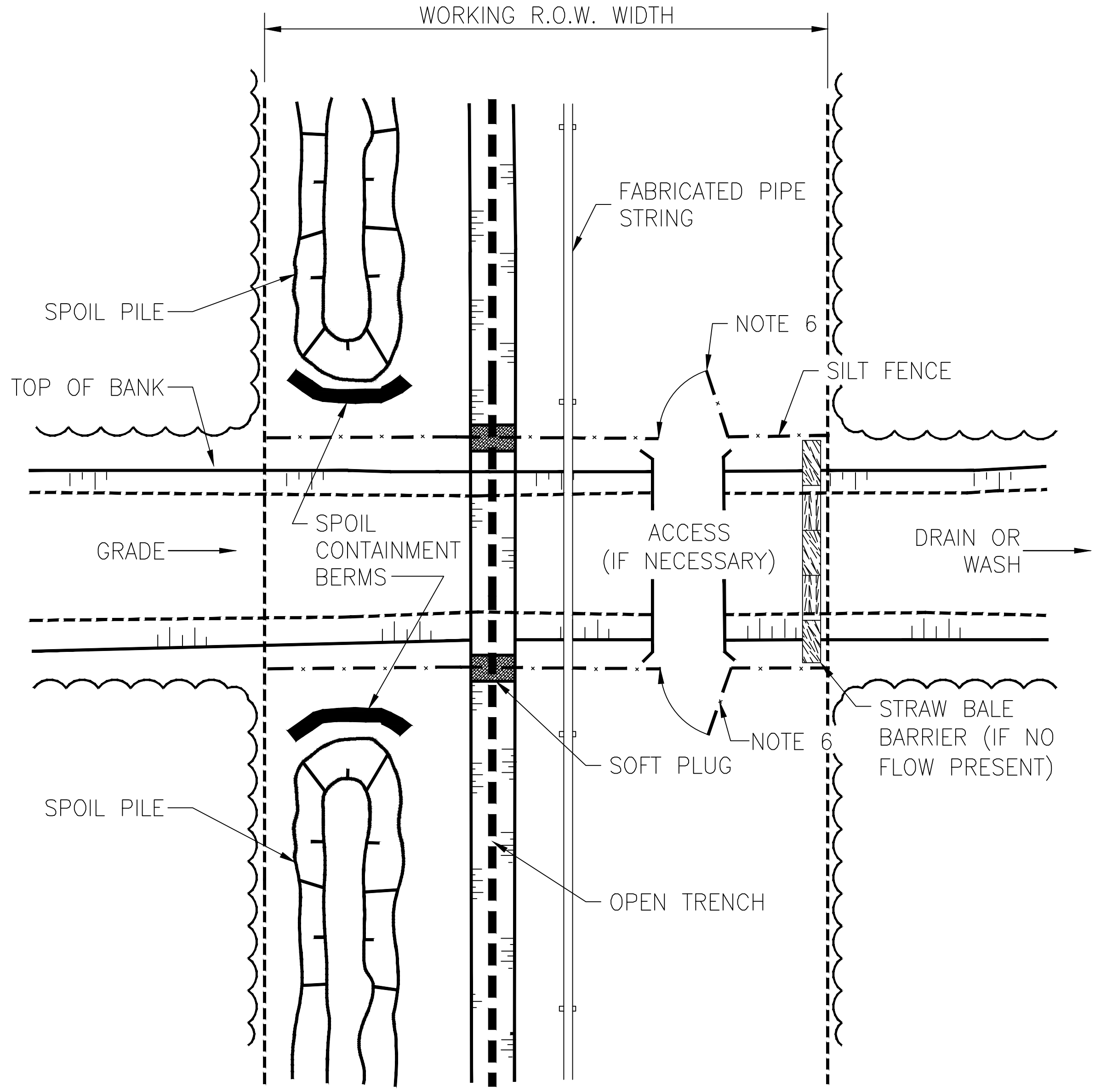


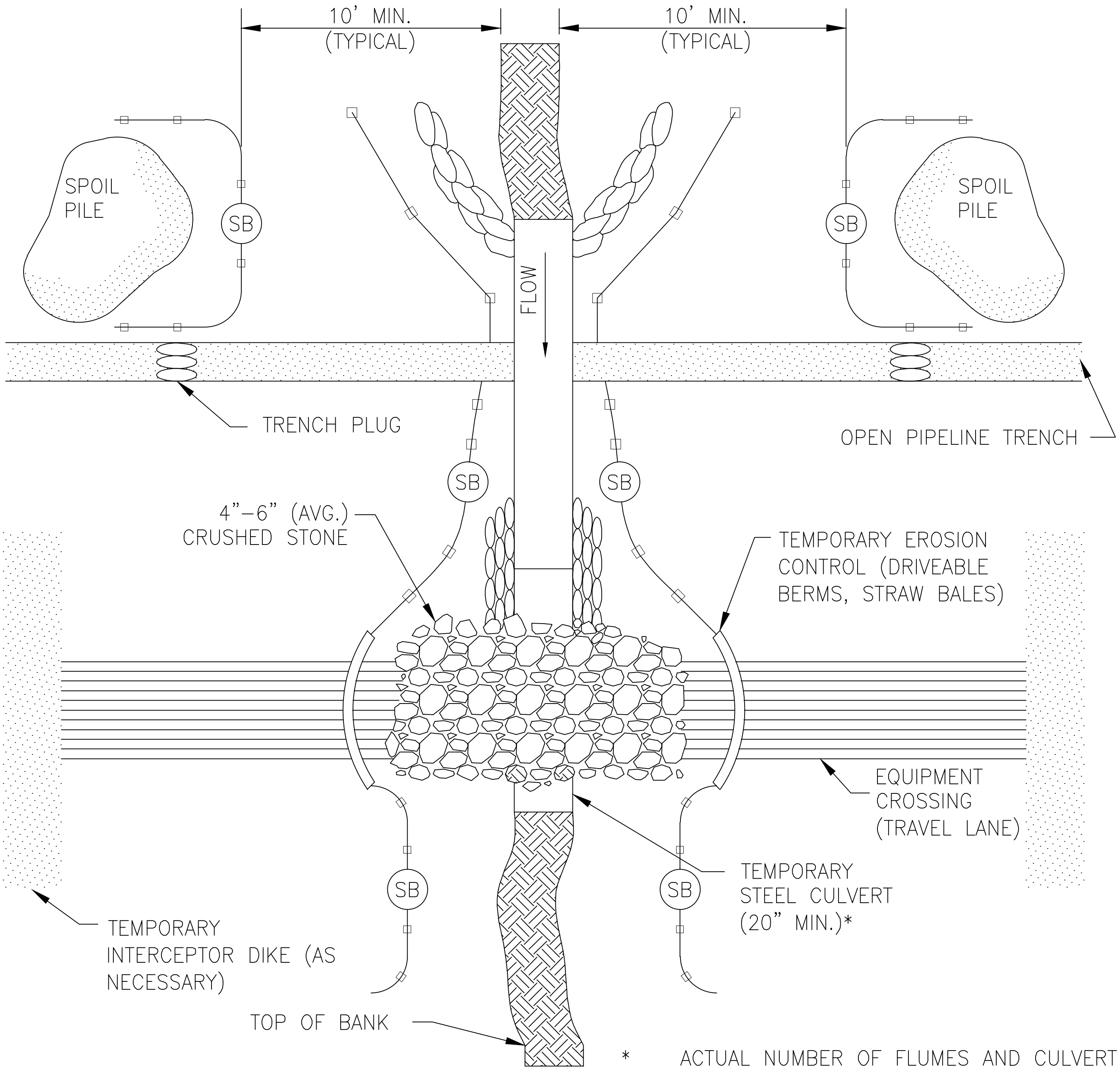
PLAN VIEW

NOT TO SCALE

NOTE:

1. APPLICABLE TO MINOR (<10') WATERBODIES THAT ARE NOT FLOWING AT THE TIME OF CONSTRUCTION, OR DO NOT SUPPORT A SIGNIFICANT FISHERY.
2. WEHICLE ACCESS IS ONLY REQUIRED WHERE NECESSARY TO FACILITATE EQUIPMENT MOVEMENT AND MAY CONSIST OF TIMBER MATS, TEMPORARY BRIDGES, RAIL FLATARS OR FLUME CROSSING.
3. INSTALL SOFT PLUGS FOLLWOING EXCAVATION OF MAINLINE DITCH THROUGH CROSSING.
4. INSTALL SEDIMENT BARRIERS AS INDICATED. PROTECT ACCESS WITH SILT FENCE GATES OR STRAW BALE BARRIERS.
5. MAINLINE PIPE SECTION MAY SPAN CROSSING IN PREPARATION FOR LOWER IN.
6. SILT FENCE OR STRAW BALE "GATE" TO BE CLOSED AT NIGHT OR DURING RAINFALL.

Andeavor	
TYPICAL CONSTRUCTION NON–FLOWING OPEN CUT CROSSING	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL–10	REV A



* ACTUAL NUMBER OF FLUMES AND CULVERT PIPES REQUIRED TO BE DETERMINED BY STREAM WIDTH.

NOTES:

1. SB TEMPORARY SEDIMENT BARRIER OF SILT FENCE AND/OR STRAW BALES, OR APPROPRIATE MATERIALS.

2. FOR MINOR WATERBODIES, COMPLETE TRENCHING AND BACKFILLING IN THE WATERBODY (NOT INCLUDING BLASTING OR OTHER ROCK BREAKING MEASURES) WITHIN 24 HOURS. IF A FLUME IS INSTALLED WITHIN THE WATERBODY DURING MAINLINE ACTIVITIES, IT CAN BE REMOVED JUST PRIOR TO LOWERING IN THE PIPELINE. THE 24-HOUR TIMEFRAME STARTS AS SOON AS THE FLUME IS REMOVED.

3. FOR INTERMEDIATE WATERBODIES, COMPLETE TRENCHING AND BACKFILLING IN THE WATERBODY (NOT INCLUDING BLASTING OR OTHER ROCK BREAKING MEASURES) WITHIN 48 CONTINUOUS HOURS, IF FEASIBLE.

Andeavor	
TYPICAL CONSTRUCTION WET CROSSING	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL-11	REV A

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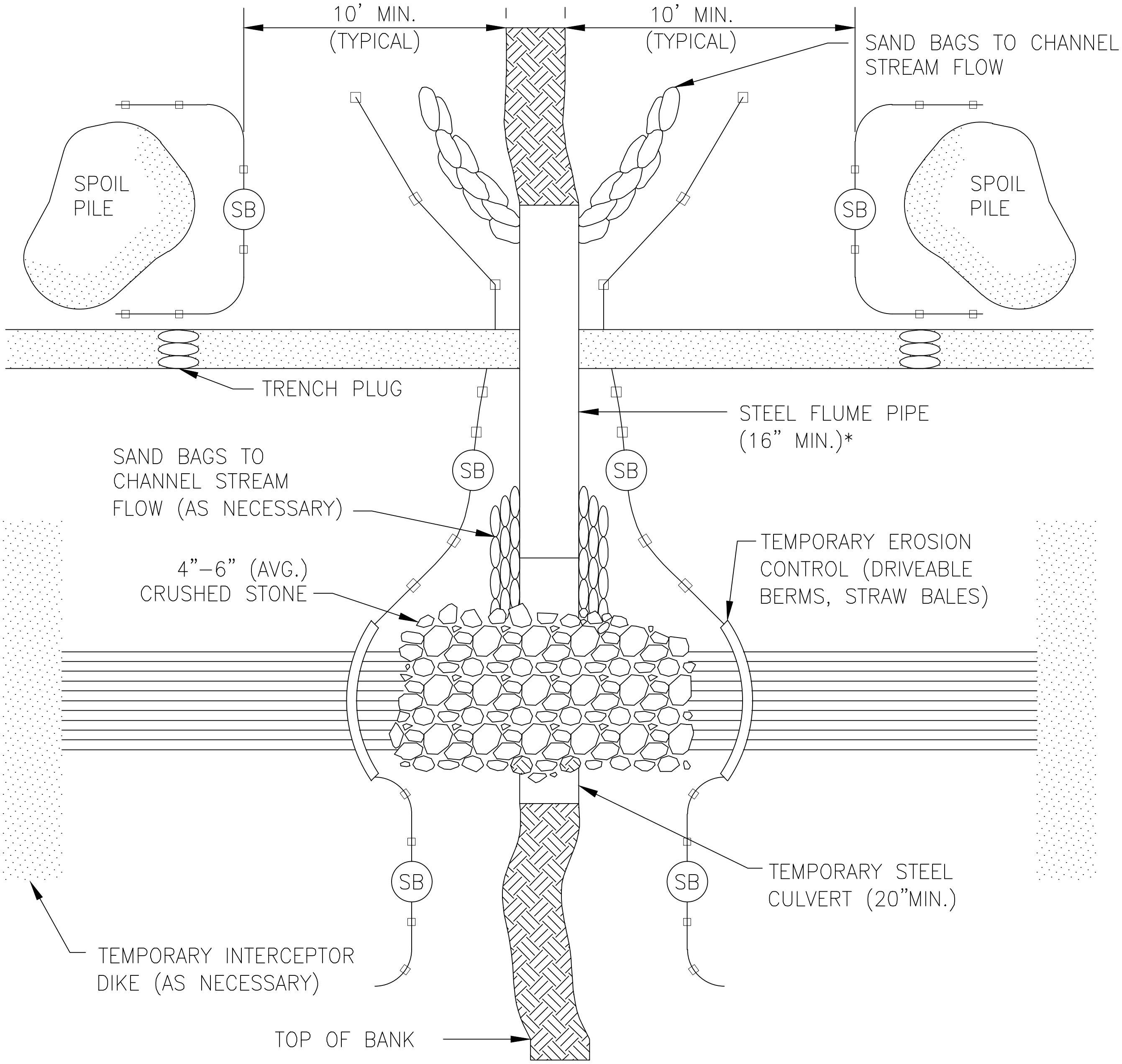

- ACTUAL NUMBER OF FLUMES AND CULVERT PIPES REQUIRED TO BE CONTINUED BY STREAM WIDTH.

NOTES:

1. SB TEMPORARY SEDIMENT BARRIER OF SILT FENCE AND/OR STRAW BALES, OR OTHER APPROPRIATE MATERIALS.
2. SAND BAGS MUST BE FILLED WITH SAND FREE OF SILT, ORGANICS, AND OTHER MATERIAL.
3. ALIGN FLUME(S) TO PREVENT BANK EROSION AND STREAM SCOUR.
4. CONDUCT ALL IN–STREAM ACTIVITY (EXCEPT BLASTING OR OTHER ROCK BREAKING MEASURES) WITH THE FLUME(S) IN PLACE. FLUME PIPE(S) MAY NOT BE REMOVED FOR LOWERING IN OR INITIAL STREAMBED RESTORATION EFFORTS.
5. THE ENDS OF THE FLUME AND CULVERT MUST EXTEND TO AND UNDISTURBED AREA.

Andeavor	
TYPICAL CONSTRUCTION FLUMED CROSSING	
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DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL–12	REV A

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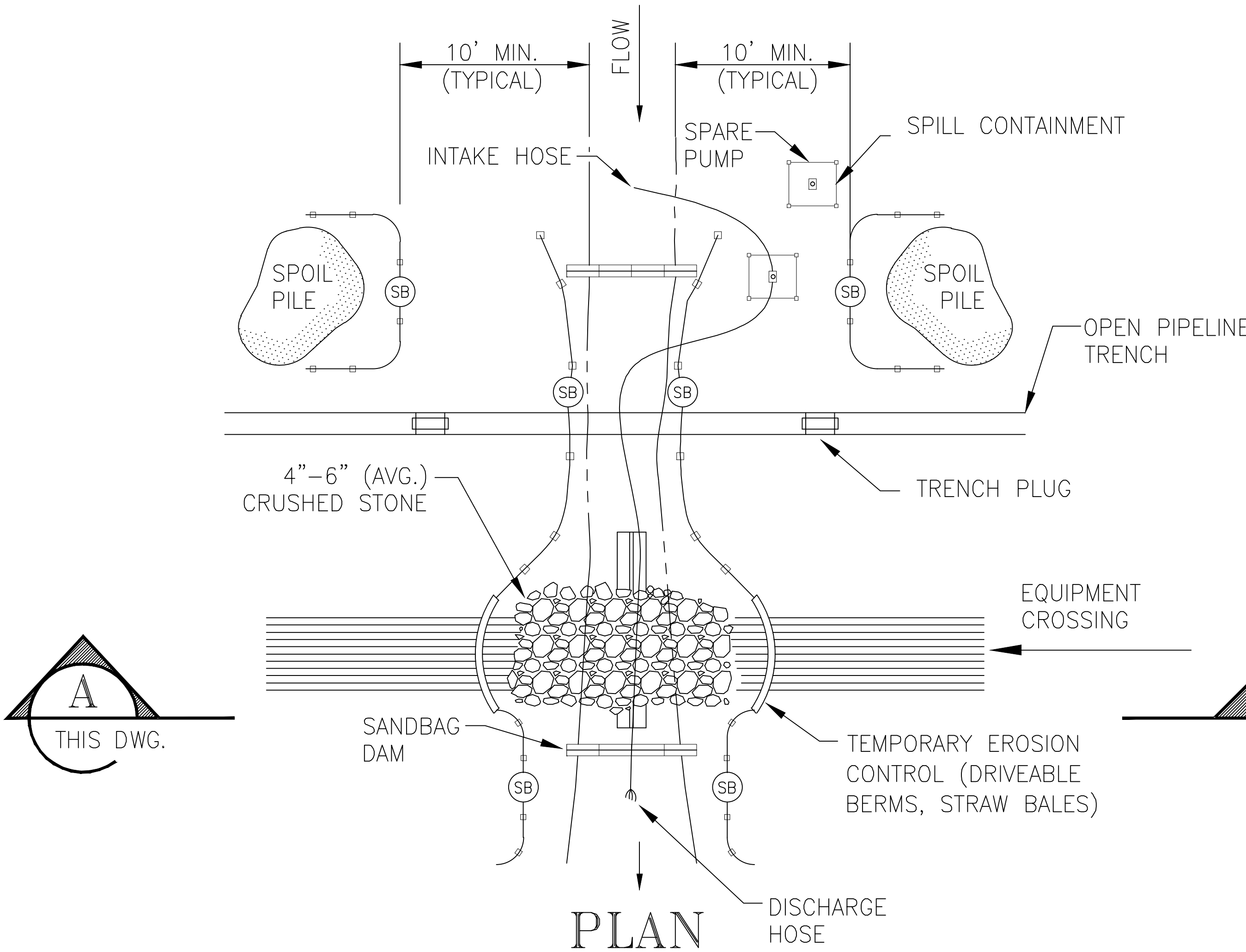
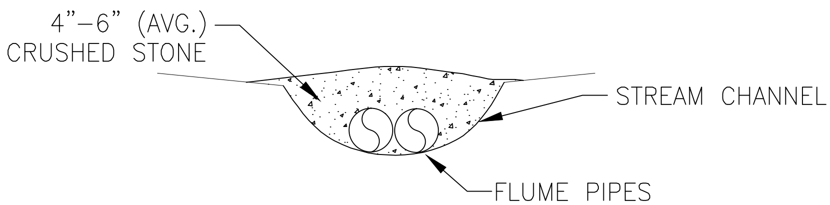


PLAN

NOT TO SCALE



SECTION

SCALE: NOT TO SCALE

A
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NOTES:

1. SB TEMPORARY SEDIMENT BARRIER OF SILT FENCE AND/OR STRAW BALES, OR APPROPRIATE MATERIALS.
2. INSTALL AND SEAL SANDBAGS UPSTREAM AND DOWNSTREAM OF THE CROSSING.
3. CREATE AN UPSTREAM SUMP USING SANDBAGS IF NATURAL SUMP IS UNAVAILABLE FOR THE INTAKE HOSE.
4. EXCAVATE ACROSS STREAM CHANNEL FOLLOWING WATER REROUTING.
5. DO NOT REFUEL OR STORE FUEL WITHIN 100 FEET OF THE WATERBODY, WHERE FEASIBLE.
6. MONITOR PUMPS AT ALL TIMES DURING STREAM CROSSING PROCEDURE.
7. USE SUFFICIENT PUMPS, INCLUDING ONSITE BACKUP PUMPS, TO MAINTAIN DOWNSTREAM FLOW.
8. SCREEN PUMP INTAKES.
9. NUMBER OF FLUME PIPES FOR EQUIPMENT BRIDGE WILL VARY DEPENDING ON SITE CONDITIONS.

Andeavor	
TYPICAL CONSTRUCTION DAM AND PUMP CROSSING	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL-13	REV A

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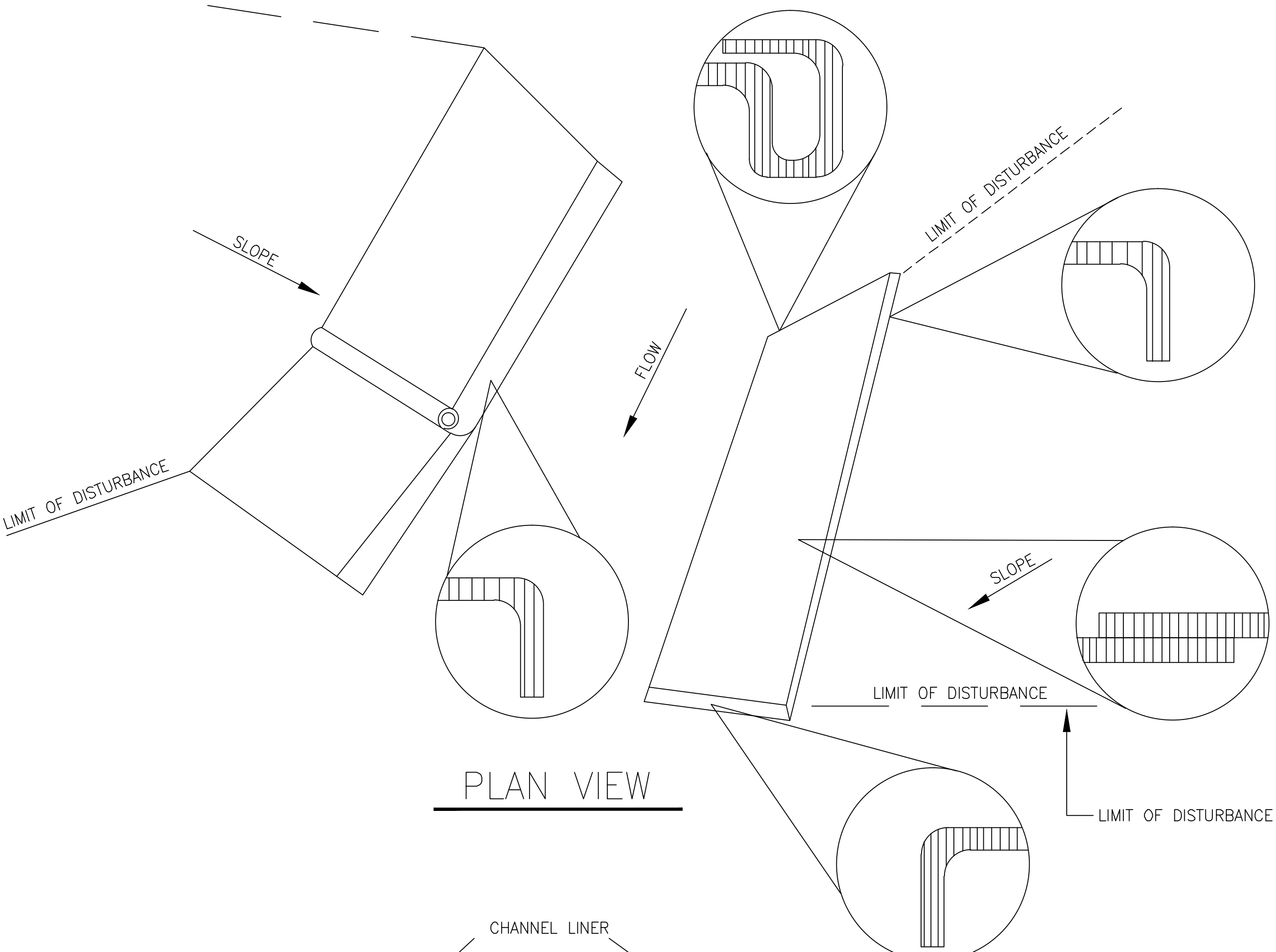
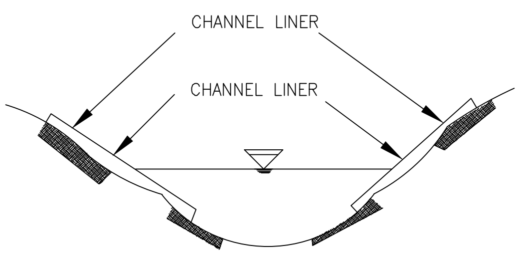


PLAN VIEW



SECTION A–A

NOTES:

1. INSTALL AND ANCHOR LINERS FOLLOWING MANUFACTURER'S INSTRUCTIONS.
2. PREPARE SOIL BEFORE INSTALLING CHANNEL LINER, INCLUDING THE APPLICATION OF FERTILIZER AND SEED. CHANNEL LINERS SHOULD EXTEND COMPLETELY ACROSS DISTURBED BANK AREAS TO PROTECT ERODIBLE SURFACES.
3. BEGIN AT THE END OF THE CHANNEL BY ANCHORING THE LINER IN A TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
4. ROLL LINER IN DIRECTION OF WATER FLOW.
5. INSTALL LINERS END–OVER–END (SHINGLE STYLE) WITH OVERLAP USING A DOUBLE ROW OF STAGGERED STAPLES 4 INCHES BELOW THE FIRST ROW IN STAGGERED PATTERN.
6. IN HIGH FLOW CHANNEL APPLICATIONS A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FEET INTERVAOLS. USE A ROW OF STAPLES 4 INCHES BELOW THE FIRST ROW IN A STAGGERED PATTERN.
7. INSTALL CHANNEL LINER TO THE TOP OF DEFINED CHANNEL SECTION TO OR MORE ROWS OF BLANKETS MAY BE NECESSARY, THESE LINERS MUST BE OVERLAPPED 4 INCHES AND STAPLED.
8. THE CHANNEL LINER SHOULD EXTEND TO THE BASE OF THE CHANNEL AND STAPLED. FOR CHANNELS WITH VERY LITTLE OR NO FLOW, EXTEND A MINIMUM OF 1 FOOT BELOW WATER LEVEL AND STAPLE IN PLACE.
9. INSTALLATION SPECIFICATIONS TO BE MODIFIED AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

Andeavor

TYPICAL CONSTRUCTION
FLEXIBLE CHANNEL
LINER INSTALLATION

DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11–14–11	APPRV. BY: PCS
DWG. NO. DETAIL–18	REV A

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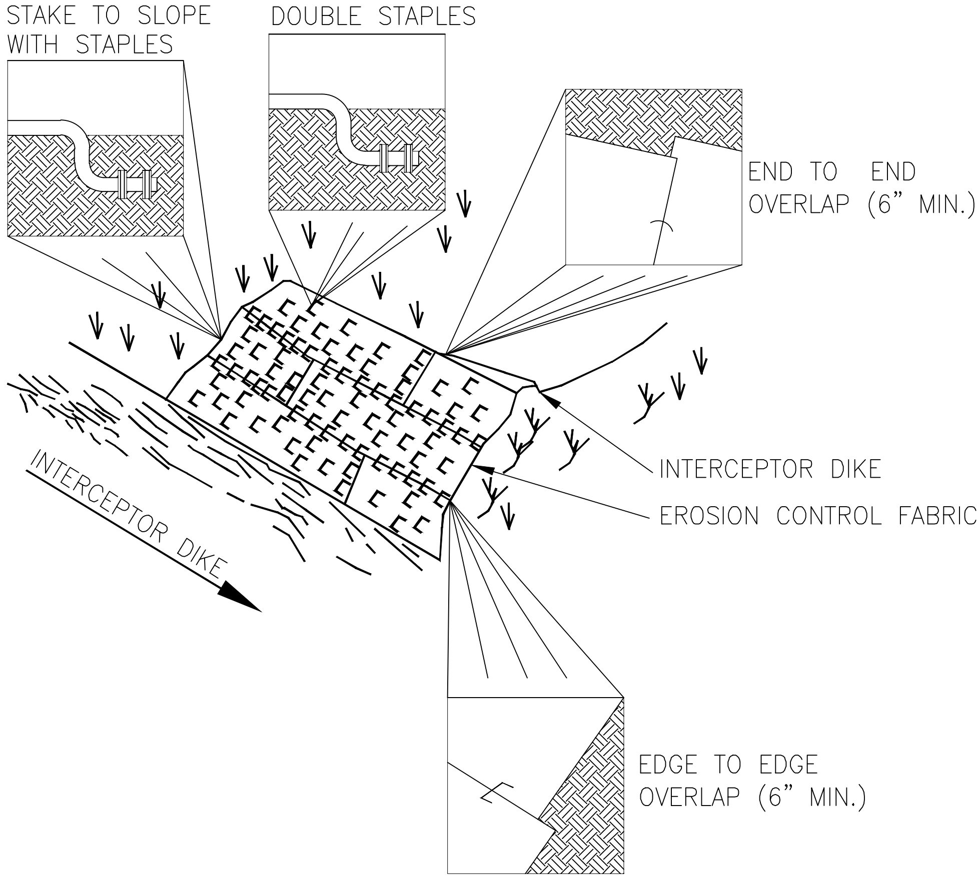

NOTES:

1. EROSION CONTROL MATTING SHALL BE PLACED ON THE BANKS OF FLOWING STREAMS WHERE VEGETATION HAS BEEN REMOVED OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
2. EROSION CONTROL MATTING SHALL MEET THE REQUIREMENTS SPECIFIED IN THE PLAN AND/OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
3. STAPLES SHALL BE MADE OF 11 GAUGE WIRE, U-SHAPED WITH SIX (6) INCH LEGS AND A ONE (1) INCH CROWN. STAPLES SHALL BE DRIVEN INTO THE GROUND FOR THE FULL LENGTH OF THE STAPLE LEGS.
4. MATTING SHALL BE INSTALLED ACCORDING TO MANUFACTURER SPECIFICATIONS OR AS STATED BELOW:
    - EXTEND TOP OF BLANKET THREE (2) FEET PAST THE UPPER EDGE OF THE HIGH WATER MARK. IF AN INTERCEPTOR DIKE IS PRESENT ON THE APPROACH SLOPE, BEGIN THE BLANKET ON THE UPHILL SIDE OF THE INTERCEPTOR DIKE.
    - INSTALL BLANKET(S) ACROSS THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
    - ANCHOR ("KEY") THE UPSTREAM EDGE OF THE BLANKET(S) INTO THE SLOPE USING A SIX (6) INCH DEEP TRENCH. DOUBLE STAPLE EVERY 12" BEFORE BACKFILLING AND COMPACTING TRENCH.
    - ANCHOR ("KEY") THE UPPER EDGE OF THE BLANKET(S) INTO THE SLOPE USING A SIX (6) INCH DEEP TRENCH. DOUBLE STAPLE EVERY 12" BEFORE BACKFILLING AND COMPACTING TRENCH.
    - TRENCH AND ROLL THE BLANKET DOWN THE HILL. DOUBLE STAPLE EVERY 12" BEFORE BACKFILLING AND COMPACTING TRENCH.
    - OVERLAP THE EDGES OF PARALLEL BLANKETS A MINIMUM OF SIX (6) INCHES. PLACE THE UPPER BLANKET OVER THE LOWER BLANKET (SHINGLE STYLE) AND STAPLE EVERY 12" ALONG THE LENGTH OF THE EDGE.
    - WHEN BLANKET ENDS ARE ADJOINED, PLACE THE UPSTREAM BLANKET OVER THE DOWNSTREAM BLANKET (SHIGLE STYLE) WITH APPROXIMATELY (6) INCH OF OVERLAP AND STAPLE THROUGH THE OVERLAPPED AREA EVERY 12".
    - STAPLE DOWN THE CENTER OF THE BLANKET(S), THREE(3) STAPLES IN EVERY SQUARE YARD.
5. IN LIVESTOCK AREAS WHERE EROSION CONTROL MATTING IS APPLIED TO THE SLOPES, FENCING WILL BE USED IF NECESSARY TO EXCLUDE LIVESTOCK, WITH PERMISSION OF THE LANDOWNER.
6. MONITOR WASHOUTS, STAPLE INTEGRITY OR MAT MOVEMENT. REPLACE OR REPAIR AS NECESSARY.

Andeavor	
TYPICAL CONSTRUCTION MATTING OF STREAM BANKS	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE: 11-07-11	APPRV. BY: PCS
DWG. NO. DETAIL-22	REV A

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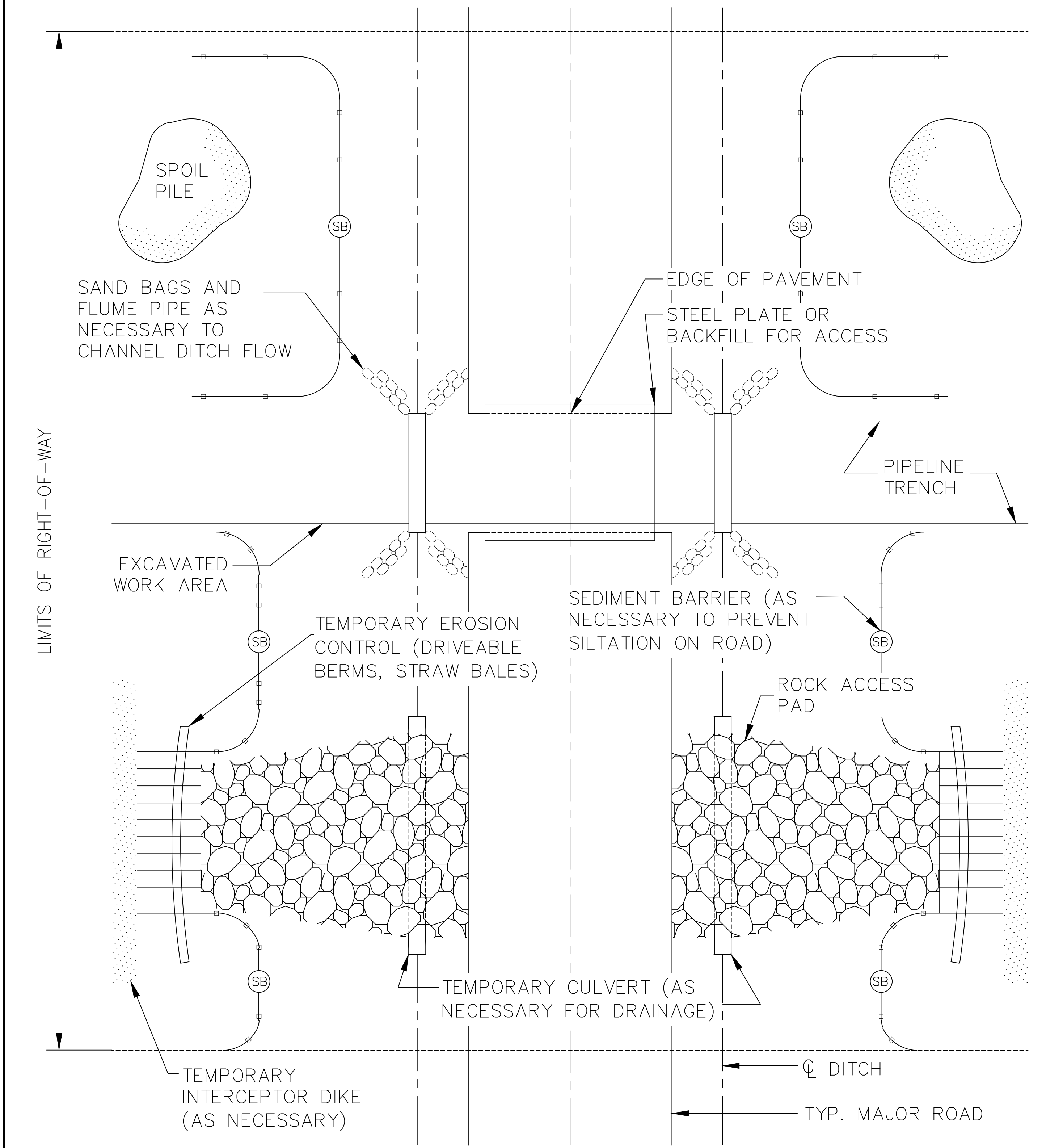

SB TEMPORARY SEDIMENT BARRIER OF SILT FENCE AND/OR STRAW BALES.

Andeavor	
TYPICAL CONSTRUCTION PAVED ROAD CROSSING (OPEN CUT)	
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DATE:	APPRV. BY: PCS
DWG. NO. DETAIL 28	REV A

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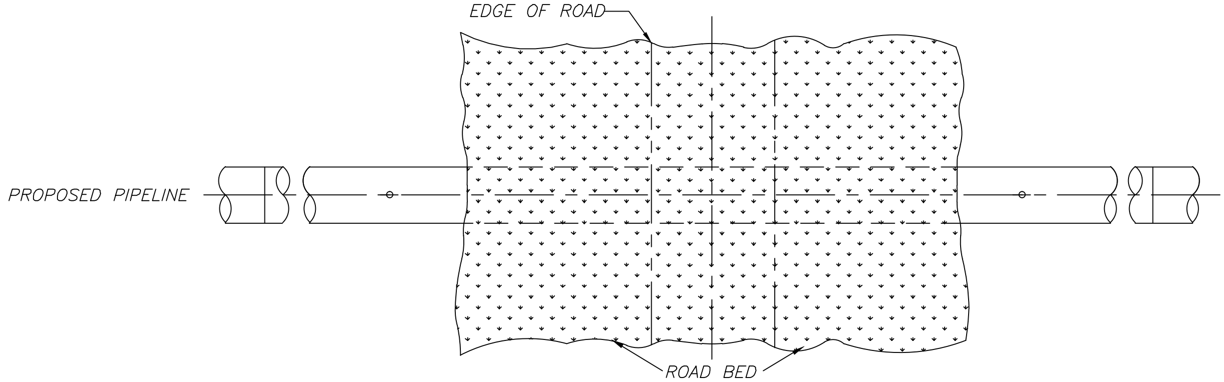
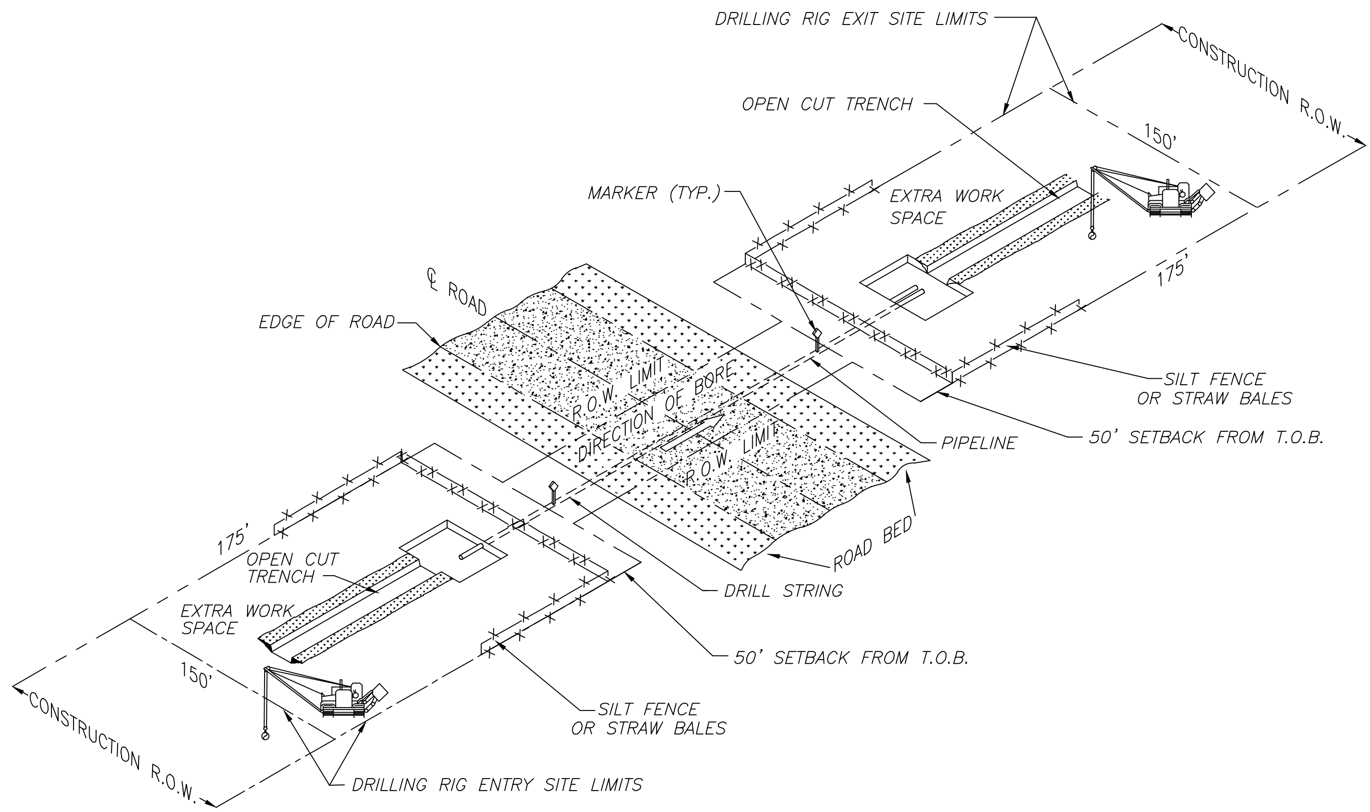


PLAN VIEW

NOT TO SCALE



PLAN VIEW 'A'

NOT TO SCALE

NOTES:

1. EXTRA WORK SPACE NOT LOCATED IN WETLAND WHEN POSSIBLE AND PRACTICAL.
2. RIGHT-OF-WAY LIMITS FOR WETLAND AND UPLAND ARE 100' AND 120' RESPECTIVELY.
3. WORK AREA WILL BE TEMPORARILY MATTED FOR MARSH AREAS.

Andeavor	
TYPICAL CONSTRUCTION BORED ROAD CROSSING	
DRAWN BY: PCS	CHK'D. BY: PCS
DATE:	APPRV. BY: PCS
DWG. NO. DETAIL 40-A	REV A

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Appendix F

Site Inspection Record

SITE INSPECTION RECORD

Project Name: ______________________________

Coverage Number: ______________________________

Inspector: ______________________ Date: ______________ Time: ______________

Precipitation Amount: ______________ Date: ______________

Areas Inspected (Choose Applicable):
- ☐ Active areas
- ☐ Stabilized areas with less than 70% cover
- ☐ Areas that have achieved final stabilization

Is there evidence of, or the potential for, pollutants entering drainage systems or waters of the state from:

- Material Storage Areas ☐ Y ☐ N
- Vehicle Maintenance Areas ☐ Y ☐ N

Observations / Corrective Actions:

____

____

____

☐ Y ☐ N	Have all erosion and sediment controls and best management practices identified in the plan been installed or implemented?
☐ Y ☐ N	Are erosion and sediment controls operating correctly and in serviceable condition?
☐ Y ☐ N	Are erosion and sediment controls operating consistently and effectively?
☐ Y ☐ N	Are there any devices similar to silt fence or fiber rolls where sediment has reached more than 1/3 the height of the device? (Removal and repairs must be made within 24 hours.)
☐ Y ☐ N	Are there any sediment basins where collected sediment has reduced the storage capacity by 1/2? (Drainage and removal must be completed within 72 hours.)
☐ Y ☐ N	Is there evidence of sediment deposits in surface waters, drainage ditches or other storm water conveyance systems? (Removal and stabilization must be completed within 7 days unless prohibited by legal, regulatory or physical access constrains. All reasonable efforts must be made to obtain access. Once permission is granted, removal must take place within 7 days.)
☐ Y ☐ N ☐ NA	Is there evidence of sediment being tracked off-site by vehicles or equipment? (Sediment tracked or deposited on paved surfaces must be removed within 24 hours.)
☐ Y ☐ N	Is there evidence of sediment depositing off-site other than in surface waters, drainage ditches and storm water conveyance systems? (Sediment must be recovered in a manner and frequency sufficient to minimize off-site impacts – for example, sediment could wash away during the next precipitation event.)
☐ Y ☐ N ☐ NA ☐ Y ☐ N ☐ NA ☐ Y ☐ N ☐ NA	Is storm water flow distributed evenly over vegetative buffers? Is sediment accumulating in vegetative buffers? Are rills forming within vegetative buffers? (If vegetative buffers are silted covered, contain rills or are otherwise rendered ineffective, other erosion and sediment controls must be implemented. Eroded areas must be repaired and stabilized.)
☐ Y ☐ N	Are litter, debris, chemicals and parts being managed properly to minimize storm water pollution?
☐ Y ☐ N	Are liquid or soluble materials like oil, fuel, paint, etc., properly stored to prevent spills, leaks or other discharges?

SITE INSPECTION RECORD

☐ Y ☐ N	Is there evidence of concrete wash water discharging to waters of the state, storm sewer systems or onto adjacent properties?
☐ Y ☐ N	Is there evidence of wastewater from processing operations or sanitary facilities (i.e., portable toilets) discharging from the site? (These types of discharges are not covered by the construction general permit, NDR10-0000. They must be stopped immediately if they are not covered by another type of permit. The following non-storm water discharges are allowable if the appropriate prevention measures are in place: fire-fighting, fire hydrant flushing, potable water line flushing, infrequent building and equipment wash down without detergents, uncontaminated foundation drains, springs, lawn watering and air conditioning condensate. Please note that discharges from temporary dewatering activities, such as hydrostatic testing or disinfection of new pipelines may require coverage under the temporary dewatering general permit, NDG07-0000.)
☐ Y ☐ N	Is there evidence of wash water from tools or equipment draining to waters of the state, drainage ditches or storm sewer systems?
☐ Y ☐ N ☐ NA	Are permanent storm water management measures (e.g., oil-water separators, rain gardens) functioning properly?

Corrective Actions and Schedule:

____

____

____

- Are best management practices effective to minimize the discharge of sediment from the site? ☐ Y ☐ N
- Do best management practices need to be adjusted? ☐ Y ☐ N
- Are additional best management practices needed? ☐ Y ☐ N

Comments:

____

____

____

List all spills, leaks or hose-breaks that have occurred since the last inspection:

-Size	-Location	-Was it reportable?	-Was it reported?
________	__________________	☐ Y ☐ N	☐ Y ☐ N
________	__________________	☐ Y ☐ N	☐ Y ☐ N
________	__________________	☐ Y ☐ N	☐ Y ☐ N

- Were Spill Prevention Procedures adequate? ☐ Y ☐ N
- What Spill Response Procedures were used?

Comments

____

____

____

- Has the SWPP Plan been updated as a result of this inspection? ☐ Y ☐ N
- Has the Site Map been updated as a result of this inspection? ☐ Y ☐ N

Inspector Signature ____

Appendix G

Corrective Action Log

Corrective Action Log

Project Name:
SWPPP Contact:

Inspection Date & Time	Inspector Name(s)	Description of BMP Deficiency	Corrective Action Needed (including planned date/responsible person)	Date Action Taken/Responsible person

U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety Administration**

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

January 10, 2018

Austin Bement
Lead Contingency Planning and Emergency Response Coordinator
Andeavor
19100 Ridgewood Parkway, TX-022
San Antonio, TX 78259

RE: LETTER OF APPROVAL: High Plains Pipeline Oil Spill Response Plan, Sequence Number: 3078, April 2017

Dear Mr. Bement:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) has received and reviewed Tesoro Logistics Operations LLC's amended High Plains Pipeline Oil Spill Response Plan dated April 2017. We conclude that the plan complies with PHMSA's regulations concerning onshore oil pipelines found at 49 Code of Federal Regulations (CFR) Part 194. Your response plan is approved.

This approval is valid for five years from the date of this letter. If discrepancies are found during PHMSA inspections, or if new or different operating conditions or information would substantially affect the implementation of this plan, you will be required to resubmit a revised plan. See 49 CFR § 194.121(b).

Should you have any questions or concerns, please contact me at (202) 366-4595 or by email at PHMSA.OPA90@dot.gov. Please include the sequence number and your PHMSA Operator Identification Number on any future correspondence.

Sincerely,

David K. Lehman, Director
Oil Spill Preparedness and Emergency Support Division
Office of Pipeline Safety

cc: PHMSA Central and Western Region

Date	Agnecy Incident ID	Location	Amount Released	Description	Agency
3/11/2013	20130311120433	Alexander Lact	2.5 BBLS	N/A	ND Dept of Health
8/7/2013	2010	Charlson Station	9 BBLS	Tesoro representative contacted Nustar Control Center to shut down Charlson pump. Tesoro crew investagated site,determined the extend of the affected area. Vac truck called in and recovered approximately 8 bbls of crude oil. Crew also cleaned up area a	ND Dept of Health
8/15/2013	20130815135700	Alexander Station	60 BBLS	Pipeline work outside the primary containment, but inside the secondary containment on 8/14 apparently left some debris in the seat of a checkvalve or backflow preventer. As the thank tank level increased, the pressure forced oil past the seat and out the box it contained. Leak was discovered on 8/15 in AM, and response procedures were initiated. Vaccum truck and crews were dispatched, and were on location at time of inpection. Much of the oil had been recovered, and was proceeding. Nothing went beyond the secondary/perimeter containment. Scoria surface and base will be removed and replaced. Perimeter berm will be repaired and height increased to counter long term settling.	ND Dept of Health
9/30/2013	1061615	9 MILES NORTH OF THE TOWN OF TIOGA	Amount Unknown	CALLER REPORTED A REPORT RECEIVED FROM A FARMER OF SOME CRUDE OIL ON THE GROUND DUE TO UNKNOWN REASONS.	NRC
10/8/2013	1062440	9 MILES NORTH OF THE TOWN OF TIOGA	20600 BBLS	*****THIS IS AN UPDATE TO A REPORT#1061615***** (CALLER REPORTED A REPORT RECEIVED FROM A FARMER OF SOME CRUDE OIL ON THE GROUND DUE TO UNKNOWN REASONS.) CALLER STATED THAT THE ACTUAL AMOUNT RELEASED IS 20600 BARRELS OF CRUDE OIL, ALL OF IT CONTAINED WITHIN 7.3 ACRES OF THE UPPER MOST 10 FT OF SOIL. THERE ARE NO SURFACE WATER OR GROUND WATER IMPACTED. THE ENTIRE AREA IS UNDERLAYING BY A CLAY LAYER. IN ADDITION THE COMPANY HAVE DRILLED SHALLOW SOIL BORINGS AROUND THE ENTIRE PERIMETER AND INSTALLED GROUND WATER MONITORING WELLS DOWN GRADIENT TO CONFIRMED NO GROUND WATER IMPACT.	NRC
10/10/2013	1062634	9 MILES NORTH OF THE TOWN OF TIOGA		****THIS IS AN UPDATE TO NRC REPORT # 1062440*** COUNTY GIVEN WAS INCORRECT AND WAS CHANGED FROM WILLIAMS TO MOUNTRAIL COUNTY. *****THIS IS AN UPDATE TO A REPORT#1061615*****	NRC
7/17/2015	3858	48.28810, -102.92790		While daylighting the pipeline, historical crude oil contamination around a 4 inch steel pipe was discovered. This is not an active leak, hydrocarbons are entrained in soils of a 4' x 2' pot hole excavated to locate the pipe.	ND Dept of Health
1/19/2016	1138476	CARTWRIGHT INJECTION FACILITY	1 BBL of Crude	CALLER REPORTED A FITTING CRACKED ON A PIPELINE.	NRC
1/21/2016		Cartwright	1 bbl	½ in. nipple from pipeline to leak detection transmitter cracked at Cartwright, spraying approximately 1 bbl of crude oil to snow	ND Dept of Health
6/28/2016	4150	Johnsons Corner		Contamianted soils were discovered within the gravel working area of Johnsons Corner pump station. Contamination was historic in nature and most likely caused by leaks and drips over an extended period of time.	ND Dept of Health
12/21/2016	5296	Blue Buttes Crude Oil Station	2 BBLS	A mechanical seal on the mixer shaft failed causing a drip. Met with company representative, JR Pinto, who escorted me to the area where the spill occurred. Spill happened on the back side of the large white tank at the back of the tank farm. Contractors have already cleaned up the impacted snow. Three loads, 4.01 and 6.24 tons of impacted snow, and 60 bbls of liquids (snow and oil) have been removed from site. Site is buried under new snow, which made viewing any remaining contamination impossible. Tank still has oil on it and will be cleaned once weather conditions allow for it. An inspection of the site in spring 2017 is needed to confirm complete cleanup. Further follow-up needed.	ND Dept of Health
12/21/2016	5295	Dickinson Truck Shop	70 BBLS	A Tesoro transport driver was traveling on iced roads when the vehicle left the driving surface entering the road ditch. The truck over turned causing release of crude oil to ground.	ND Dept of Health
12/21/2016	1166873	DICKINSON	20-30 BBLS	CALLER STATED THAT A LOADED TANK TRUCK SLID OFF THE ROAD INTO A DITCH DUE A SINGLE VEHICLE ACCIDENT. CALLER STATED 20-30 BARRELS OF CRUDE OIL RELEASED INTO THE ROADSIDE DITCH. NO INJURIES WERE REPORTED AT THIS TIME.	NRC
1/19/2017	1169038	Newtown	Amount Unknown	CALLER IS REPORTING THAT UNKNOWN MATERIALS WERE BEING RELEASED TO THE AIR THROUGH THE FLARE AT A NATURAL GAS PLANT. THE CALLER STATED THAT THIS WAS A LARGE EVENT THAT WAS UNUSUAL.	NRC
4/4/2017	5374	Blue Buttes Station	4 BBLS	Crude oil leaked from a truck load out connection overfilling a catch basin.	ND Dept of Health
4/8/2017	5377	Mandan Refinery	4.5 BBLS	Crude oil was being purged from a pipeline using nitrogen and pigs. While purging crude oil from a pipeline into frac tanks a small amount of nitrogen passed by the pig seal into the frac tanks. As the nitrogen entered the frac tank it pushed crude oil out the tank vent.	ND Dept of Health
7/26/2017	32393	Froehlich 21-28PH	3 BBLS	A Mechanical seal failed on a produced water transfer pump spilling 3 bbls of produced water to ground within the earthen berm secondary containment. Released water was contained on the oil well location and did not impact surface or ground water	NDIC
8/24/2017	20170824221313	Keene Trucking Station	12 BBLS	Visited the site on 9/6/2017 at 11:30 am - Sunny and 71 Degrees F - Met with Aaron Oakland of Tesoro Logistics. Aaron showed me where the spill occurred just north of the truck unloading terminal on the facility. He also showed me a picture on his phone of the spill. Aaron stated about 12 BBLs of salt water and a little oil were spilled. He also stated that about 12 BBLs of salt water and a little oil were recovered by a vac truck. I did not observe any standing liquids or stains in the apparent spill area. Aaron indicated a small amount of salt impacted soil was excavated for off-site disposal. Further follow-up inspections for this incident appear to be un-necessary.	ND Dept of Health

HIGH PLAINS PIPELINE

Oil Spill Response Plan

Table of Contents

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PREFACE

Statement of Corporate Commitment

TESORO HIGH PLAINS PIPELINE
STATEMENT OF COPORATE COMMITMENT

This Oil Spill Response Plan has been prepared for operation of the Tesoro High Plains Pipeline.

MANAGEMENT APPROVAL AND MANPOWER AUTHORIZATION

The necessary resources to implement this Response Plan are hereby committed. In the event of an oil spill for which Tesoro is responsible, best efforts will be initiated to expeditiously control and remove any harmful quantity of oil discharged. Tesoro will adopt and use the local Area Contingency Plan (ACP) in conjunction with this Response Plan. Copies of the Response Plan are kept at appropriate sites and with our field operators ready for use by Tesoro personnel. These documents will be evaluated annually to be sure they are current and updated as necessary.

FEASIBILITY AND EXECUTABILITY

The undersigned executives are authorized to fully implement the Oil Spill Contingency Plan and have reviewed the plan for accuracy, feasibility, and executability for the Tesoro High Plains Pipeline located in North Dakota, and find that the plan is feasible and executable.

"I certify, to the best of my knowledge and belief, the consistency of this response plan with the National Contingency Plan (NCP) as specifically identified in 49 CFR 194.107(b)."

Don J. Sorensen
SVP, Logistics

April 6, 2017
Date

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Plan Distribution

Plan #	To	Address
1	Austin Bement	Andeavor 35159 CR 122 Sidney, MT 59270
2	Brock Carter Region Manager, Contingency Planning & Emergency Response	SLC Truck Loading Rack 474 West 900 North Salt Lake City, UT 84103
3	Darren Snow Area Manager, Pipeline & Terminals ND/MT	Andeavor 4207 Boulder Ridge Dr, Ste 200 Bismarck, ND 58503
4	Greg Andersen	Andeavor 2972 108 S Ave SW Dickinson, ND 58601
5	Jesse Boltz	Andeavor 12766 32nd Street SW Belfield, ND 58622
6	Eric Haugstad Director, Contingency Planning & Emergency Response	Andeavor 19100 Ridgewood Parkway San Antonio, TX 78259
7,8,9	TLO Pipeline Control Center ATTN: Dan McMahan	Andeavor 19100 Ridgewood Parkway San Antonio, TX 78259
10	San Antonio Emergency Operations Center	Andeavor 19100 Ridgewood Parkway San Antonio, TX 78259
11	John Berger	Andeavor 2972 108 S Ave SW Dickinson, ND 58601
12	Mark Glaser	Andeavor 2972 108 S Ave SW Dickinson, ND 58601
13e-23e	THPP Field Backpacks* ATTN: Servil Hoff	Andeavor 2972 108 S Ave SW Dickinson, ND 58601
24e	Mike Hutton	Andeavor - Fryburg 3726 135th Ave SW Belfield, ND 58622
25,26	Control Room Desks 1&2	Andeavor - Fryburg 3726 135th Ave SW Belfield, ND 58622
27	Spill Trailer #1 Fryburg	Andeavor - Fryburg 3726 135th Ave SW Belfield, ND 58622
28	Spill Trailer #2 Dry Creek	Andeavor 2972 108 S Ave SW Dickinson, ND 58601

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Plan #	To	Address
29	Spill Trailer #3 Watford City	Andeavor - Watford City 1918 Spring Creek Rd Watford City, ND 58854
30	Tioga Office	Andeavor 6368 108th Ave NW Tioga, ND 58852
31	Fryburg Rail Terminal	Andeavor - Fryburg 3726 135th Ave SW Belfield, ND 58622
32	Ryan Baumgartner	Andeavor 2972 108 S Ave SW Dickinson, ND 58601
33	Ryan Bebee	Andeavor 2972 108 S Ave SW Dickinson, ND 58601
34e	EPA Region VIII	1595 Wynkoop Street MC 8 EPR-ER Denver, CO 80202-1129
35e,36e	PHMSA	1200 New Jersey Avenue, S.E. Room 220 Washington, D.C. 20590 Phone: (202) 366-4488
37e	ND Emergency Services	PO Box 5511 Bismarck, ND 58504
38	McKenzie County Emergency Manager	201 5th St. NW Watford City, ND 58854

*Tesoro field staff, in the field, has these plans electronically synced to their laptops to ensure most current version of the plan is available for use if they are away from their assigned office.

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Record of Revisions

REVISION NUMBER	REVISION DATE	Description of Changes	Updated By
ORIGINAL	April 2017	Original Submittal	Bement, Carter, Cowan, Kestenbaum, Sheffield, Walker

SECTION 1 INTRODUCTION

1.1 Purpose/Scope Of Plan

The purpose of this Response Plan (hereinafter referred to as "Plan”) is to assist Tesoro Logistics Operations LLC (hereinafter referred to as “Tesoro”) prepare for and respond quickly and safely to a discharge originating from the Tesoro High Plains Pipeline (hereinafter referred to as “THPP”). This Plan provides techniques and guidelines for achieving an efficient, coordinated, and effective response to a discharge incident which may occur along the THPP’s gathering and transmission system to satisfy North Dakota and Montana state statutes and federal oil spill planning requirements of the Pipeline & Hazardous Materials Safety Administration (PHMSA) established by the Oil Pollution Act of 1990 (OPA 90). A cross-reference to PHMSA regulations is included at the end of this section.

This Plan when implemented is capable of protecting natural resources of the United States. The Plan is designed to illustrate Tesoro’s capability to ensure prompt and proper removal of oil and to minimize environmental damages.

The Plan has been prepared so that procedures are in compliance with the National Contingency Plans (NCP) which establishes criteria and guidelines for the response to an oil spill. It is intended to be used in conjunction with the EPA Region VIII Integrated Contingency Plan and its Mid-Missouri River Sub-Area Contingency Plan as reviewed by Tesoro.

1.1.1 Owner and Operator

Owner

Tesoro Logistics Operations LLC
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

Tesoro Refining and Marketing, Corp
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

QEP Field Services
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

Operator

Tesoro Logistics Central Control Center
19100 Ridgewood Parkway /1 2B024
San Antonio, TX 78259
Email: lccrconsole2@tsocorp.com
Phone: (210)626-6014
Cell: (210)527-3885

The San Antonio Operations Center provides monitoring and control capabilities using a PLC/Computer SCADA System.

Response Zones Description

Two response zones have been established for the THPP pipeline gathering and transmission system. The response zones are the Northern Response Zone and the Southern Response Zone. The delineating marker for the response zones is centerline within the Little Missouri River, starting at the southern boundary of Billings County, North Dakota to the confluence of the Little Missouri River into Lake Sakakawea, extending downstream through the centerline within Lake Sakakawea, and extending downstream along the centerline with the Missouri River to the Mandan Refinery. A summary of the pipeline sections/segments are presented in the response zone specific appendices (*Appendix C1 and C2*).

One expectation from Tesoro is that, in the event of an incident in either response zone, response to this incident would come from personnel and equipment in both response zones. The response zones were established along a specific geographical delineation point due to the unique complexity of access across bridges over the Little Missouri and Missouri Rivers.

The Tesoro High Plains Pipeline (THPP) includes approximately 330-mile Trunk Line running from the Canadian Border in the Northwest corner of the state to Tesoro Mandan Refinery located in Mandan, North Dakota and other line laterals and a 238 mile crude oil gathering system. *Figure 1-2* shows a map of the THPP Gathering and Transmission System.

Tesoro has made the main-line from Dunn Center to Black Slough bi-directional flow. The gathering systems are also bi-directional flow. This does not change the worst case discharge identified in this section.

Figure 1-1 THPP Response Zone Counties

Northern		
Burk (ND)	Dunn (ND)	Golden Valley (ND)
McKenzie (ND)	Williams (ND)	McLean (ND)
Montrail (ND)	Ward (ND)	Richland (MT)
Dawson (MT)		
Southern		
Billings (ND)	Golden Valley (ND)	McKenzie (ND)
Mercer (ND)	Morton (ND)	Oliver (ND)
Stark (ND)		

Terrain

The lines run through high plains, semi-arid rolling country with a few low mountains and some national grassland areas. Most of the land under cultivation is used to raise wheat and hay. Most of the remainder is pastureland. There is some irrigated farming especially along the Missouri River. Elevations range from 1,952 feet at Lignite Station (MP 202.23) to 2,414 feet at Keene Station (MP 127.70) to a low of 1,715 feet at the Mandan Refinery on the Trunk Line.

River and Stream Crossings

There are a number of drainage ditches and gullies that have water in them only when it rains or during the spring run-off and a few streams that have water in them all of the time. The waterway crossings are listed in *Figure 1-2* and described by pipeline name, segment, waterway name and type, county and nearest mile post (MP). The Missouri and Little Missouri are both major streams.

Figure 1-2 Waterway Crossings

Pipe Name	Pipeline Segment	Name	Type	State	County	Nearest Mile Post
Lignite to Stampede	East Branch to Short Creek	Short Creek	Creek	ND	Burke	MP 5.8
8” Putnam to Sidney	8” Putnam to Sidney	Yellowstone River	Stream/River	MT	Richland	MP 17
8” Putnam to Sidney	8” Putnam to Sidney	Yellowstone River	Stream/River	MT	Richland	MP 18
Little Knife to Dunn Center	Little Knife to Dunn	Pond	Lake/Pond	ND	Dunn	MP 19
Border to Tioga	Border to Tioga	Pond	Lake/Pond	ND	Burke	MP 22
Border to Tioga	Border to Tioga	Pond	Lake/Pond	ND	Burke	MP 22
Poker Jim to Tree Top	Poker Jim to Tree Top	Little Missouri River	Stream/River	ND	Billings	MP 29
Tree Top to Dunn	TreeTop to Dunn	Pond	Lake/Pond	ND	Dunn	MP 37
Mandan to Tioga	Dunn to Mandan	Brush Creek	Inundation Area	ND	Mercer	MP 51
Mandan to Tioga	Dunn to Mandan	Brush Creek	Inundation Area	ND	Mercer	MP 51
Mandan to Tioga	Dunn to Mandan	Brush Creek	Inundation Area	ND	Mercer	MP 52
Mandan to Tioga	Keene to Dunn	Lake Sakakawea	Lake	ND	Dunn	MP 94
Mandan to Tioga	Ramberg to Keene	Lake Sakakawea	Lake	ND	Williams/ McKenzie	MP 144
Bakken Link	MP 63-MP 51	Little Missouri	River	ND	Billings	MP 51
Bakken Link	Multiple	Green River Sensitive Area	Wetland	ND	Dunn	MP 9.7
Rupple Field	Multiple	Lake Sakakawea	Lake	ND	McLean/ Montrail	NA

Population Exposure

The population exposure across the majority of this system is extremely minimal; crossing open farmland, ranchland and Indian reservations, no major highways, and runs more than two miles away from almost all towns. Population exposure is primarily in the Mandan area where the line terminates. Thus hazards associated with a leak on/near the Missouri River may receive significant attention from State regulatory agencies as well as the media.

1.1.2 High Consequence Areas (HCA)

The most recent documented HCA maps and tables can be found in *Section 6 and Figure 6-3*.

1.2 Products Handled

Group 2 crude oil is transported through the THPP. Material Safety Data Sheets (MSDS) for these products are maintained at the Facility or online through the Tesoro website at https://ssoportal.tesoropetroleum.com/sap/bc/webdynpro/sap/zwda_msds_search

1.3 Qualified Individual Information

Figure 1-3 Qualified Individuals

Primary Qualified Individual	
Darren Snow **Area Manager, Pipeline & Terminals ND/MT** 701-250-1960 – Office 701-204-1619 - Cellular	
Northern Response Zone Alternate Qualified Individuals	
Greg Andersen **Manager, Pipeline Operations** (701) 456-9735– Office (701) 260-2975 – Cellular	**John Berger** **Director of Asset Management** (701) 258-6486 – Office (701) 319-8602 – Cellular
Ryan Baumgartner **Superintendent, Pipeline & Terminal** 406-482-4841 – Office 406-480-4673 - Cellular	
Southern Response Zone Alternate Qualified Individuals	
Greg Andersen **Manager, Pipeline Operations** (701) 456-9735– Office (701) 260-2975 – Cellular	**Michael Hutton** **Manager, Transportation** 701-575-2220 – Office 701-300-0139 - Cellular
Ryan Bebee **Superintendent, Pipeline & Terminal** 701-575-2220 – Office 701-204-3633 - Cellular	**Jesse Boltz** **Superintendent, Pipeline & Terminal** (701) 264-0618-Cellular

1.4 Plan Contents

This Plan is intended to satisfy the requirements of the Oil Pollution Act of 1990 (OPA 90) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Specifically, this Plan is intended to satisfy the oil spill contingency plan requirements of:

- Environmental Protection Agency's (EPA) Requirements for an OPA 90 Plan (40 CFR Part 112.20), Non-Transportation Related Onshore Facilities, Final Rule July 1, 1994
- United States Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA), Onshore Oil Pipelines (49 CFR 194.101), Final Rule

Response to an oil spill may require the immediate coordination of company departments and outside agencies, and possible mobilization of various contractors. Coordination of these efforts will be facilitated by the response procedures set forth in this Plan.

This Plan also contains detailed information on equipment, manpower, and resources available in the region, and oil spill response considerations, which will provide support to response and planning efforts.

1.4.1 Tesoro Policy And Management

Tesoro's goal for operations is zero spillage of oil. However, should a spill occur, response actions described in this Plan will be implemented. Tesoro will comply with applicable federal, state, and local laws and regulations concerning oil spill response operations.

1.5 Plan Review And Update Procedures

The Director, CP&ER, is responsible for ensuring that the Plan is reviewed, updated, and distributed. Plan review and updating will be done on an annual basis or more frequently if significant changes occur at the facility that may affect the facility's spill response capability. Key items that influence response capability and that should be reviewed and updated as necessary include:

- Inventories of pipeline and facility spill response equipment;
- Names and/or telephone numbers of the Oil Spill Response Organizations listed in *Section 3*;
- Names and/or telephone numbers of the Refinery's Incident Management Team personnel, including Qualified Individuals;
- Oil storage, transfer, or handling procedures at the Refinery;
- Response procedures as necessitated by potential deficiencies identified during training or exercises;
- Revised spill response procedures;
- Pertinent regulations; and
- Any change of information relating to circumstances likely to affect full implementation of the Plan.
- 5-year regulated updates from the date of the last year's approval.
    - Under 40 CFR 112.20(c)(4):
        - Review each response plan periodically thereafter on a schedule established by the Regional Administrator provided that the period between plan reviews does not exceed five years
    - Under 49 CFR 194.121(a)(2):
        - Each operator shall update its response plan to address new or different operating conditions or information. In addition, each operator shall review it response plan in full at least every 5 years from the date of the last submission or last approval…

1.5.1 Immediate Plan Updates

Tesoro will immediately modify its response plan to address a new or different operating condition or information that would substantially affect the implementation of a response plan and, within 30 days of making such a change, submit the change to EPA, PHMSA, the North Dakota Division of Energy Management and all plan holders. Examples of changes in operating conditions that would cause a significant change to an operator's response plan are:

- Under 40 CFR 112.20(d)1:
  (1) A change in the facility's configuration that materially alters the information included in the response plan;
  (2) A change in the type of oil handled, stored, or transferred that materially alters the required response resources;
  (3) A material change in capabilities of the oil spill removal organization(s) that provide equipment and personnel to respond to discharges of oil described in paragraph (h)(5) of this section;
  (4) A material change in the facility's spill prevention and response equipment or emergency response procedures; and
  (5) Any other changes that materially affect the implementation of the response plan.
- Under 33 CFR 154.1065(b):
  (1) A change in the facility's configuration that significantly affects the information included in the response plan;
  (2) A change in the type of oil (petroleum oil group) handled, stored, or transported that affects the required response resources;
  (3) A change in the name(s) or capabilities of the oil spill removal organization required by § 154.1045;
  (4) A change in the facility's emergency response procedures;
  (5) A change in the facility's operating area that includes ports or geographic area(s) not covered by the previously approved plan. A facility may not operate in an area not covered in a plan previously submitted or approved, as appropriate, unless the revised plan is approved or interim operating approval is received under § 154.1025; or
  (6) Any other changes that significantly affect the implementation of the plan

Figure -1-4 Facility Information Summary

<table>
<tr><td>Owner</td><td>Tesoro Logistics Operations LLC
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000</td><td>Tesoro Refining and Marketing, Corp
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000</td><td>QEP Field Services
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000</td></tr>
<tr><td>Corporate Parent Company</td><td colspan="3">Tesoro Corporation
19100 Ridgewood Parkway
San Antonio, TX 78255</td></tr>
<tr><td>Operator</td><td colspan="3">Tesoro Logistics Central Control Center
19100 Ridgewood Parkway /1 2B024
San Antonio, TX 78259
Phone: (210)626-6014
Cell: (210)527-3885</td></tr>
<tr><td>Facility Name / SIC & NAICS Codes:</td><td colspan="3">Tesoro High Plains Pipeline</td></tr>
<tr><td>Name and Address of person to whom correspondence should be sent:</td><td colspan="3">Austin Bement
Sr. Contingency Planning & ER Coord
P.O. Box 342
Sidney, MT 59270
Phone: (406) 482-4841
Email: austin.p.bement@tsocorp.com</td></tr>
<tr><td>Agent for Service of Process:</td><td colspan="3">Austin Bement
Sr. Contingency Planning & ER Coord
P.O. Box 342
Sidney, MT 59270
Phone: (406) 482-4841
Email: austin.p.bement@tsocorp.com</td></tr>
<tr><td>Description of Pipeline System:</td><td colspan="3">Crude pipeline system consisting of transmission and gathering pipelines within North Dakota and Montana. The pipeline system gathers and delivers ND/MT Sweet Crude to various stations and terminals in North Dakota and Montana. The pipeline consists of 16, 12, 10, 8, 6 and 4 inch diameter pipeline.</td></tr>
<tr><td>Statement of Environmental Harm</td><td colspan="3">The two response zones pose “significant and substantial harm” to the environment (because the pipelines within the response zones are longer than 10 miles)</td></tr>
<tr><td>Description of Operations:</td><td colspan="3">Crude oil pipeline transportation
Oil storage, rail car loading/offloading</td></tr>
<tr><td>Description of Tanks:</td><td colspan="3">Description of the tanks within each response zone are located in Appendix C1 (Northern Response Zone) and Appendix C2 (Southern Response Zone)</td></tr>
<tr><td>Hours of Operating/Manning:</td><td colspan="3">24-hours per day, 7 days per week</td></tr>
<tr><td>Products Handled:</td><td colspan="3">Crude oil</td></tr>
<tr><td>Worst Case Discharges</td><td colspan="3">Northern Response Zone: Pipeline WCD = 13,027 bbls; Tank WCD = 92,025 bbls (TK 2040 BASH)
Southern Response Zone: Pipeline WCD = 47,092 bbls; Tank WCD = 52,500 bbls (TK 103)</td></tr>
<tr><td>Site Layout</td><td colspan="3">Drawings depicting the pipeline system and terminals are located in Appendix J</td></tr>
<tr><td>Meteorological Conditions</td><td colspan="3">Wind: The prevailing wind direction is from the west and northwest

Temperature: Due to its location in the center of North America North Dakota experiences temperature extremes characteristic of a continental climate, with cold winters and mild to hot summers.

Precipitation:
Annual average precipitation across the state ranges from around 14 in (35.6 cm) in the west to 22 in (55.9 cm) in the east.[6] Snow is the main form of precipitation from November through March, while rain is the most common the rest of the year. It has snowed in North Dakota during every month except July and August.</td></tr>
</table>

Qualified Individuals:	Northern	Darren Snow Area Manager, Pipeline & Terminals ND/MT 701-250-1960 – Office 701-204-1619 - Cellular	Greg Andersen Manager, Pipeline Operations (701) 456-9735– Office (701) 260-2975 – Cellular	John Berger Director of Asset Management (701) 258-6486 – Office (701) 319-8602 – Cellular
		Ryan Baumgartner Superintendent, Pipeline & Terminal 406-482-4841 – Office 406-480-4673 - Cellular		
	Southern	Darren Snow Area Manager, Pipeline & Terminals ND/MT 701-250-1960 – Office 701-204-1619 - Cellular	Greg Andersen Manager, Pipeline Operations (701) 456-9735– Office (701) 260-2975 – Cellular	Michael Hutton Manager, Transportation 701-575-2220 – Office 701-300-0139 - Cellular
		Ryan Bebee Superintendent, Pipeline & Terminal 701-575-2220 – Office 701-204-3633 - Cellular	Jesse Boltz Superintendent, Pipeline & Terminal (701) 264-0618-Cellular	
Wellhead Protection Area:	No			
Date Updated	April 2017			

Refer to Appendix J for THPP System Maps

SECTION 2 INITIAL RESPONSE GUIDE - FIRST RESPONDER

2.1 Initial Response Guide – First Responders

Reference page 3 below for Initial Response Guide

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Initial Response Guide First Responder

Oil Spill

Safety
1
- Your safety first and then the safety of others
- Start a Site Safety Health Plan (SSHP) as soon as possible. This is found on page 5 of the ICS 201 Site Safety and Control Analysis.
- Stay out of the hazard area.
- If performing Recon, approach up-wind, up-stream with 4 gas meter or equivalent.

Shut down, Isolate and Deny Entry
- Eliminate all ignition sources
- Shut down pipeline operations as appropriate
- Evacuate the immediate area and establish an initial Hot Zone
- Deny entry to the immediate area
- If necessary, other Hazwoper trained employees may help deny entry into the area
- If on the scene, ask police and fire resources to help deny entry into immediate area

Notifications (Section 3)
- Contact the control center
- Dial 911 if ambulance, police or fire department assistance is needed
- Follow the Notifications Flowchart (internal and external)

Command Management
2
- Assume the role of Incident Commander
- Make an announcement to all on the scene that you have assumed Command
- Establish a Unified Command Post and Staging Area up-wind and up-stream of the incident in the cold zone
- Begin by assigning initial ICS positions as necessary, such as Deputy IC, Operations and Safety.
- Meet, greet and brief responding Agencies as they arrive at the Unified Command Post
- Turn over the SSHP (ICS 201-5) to the Safety Officer for continuation and completion.

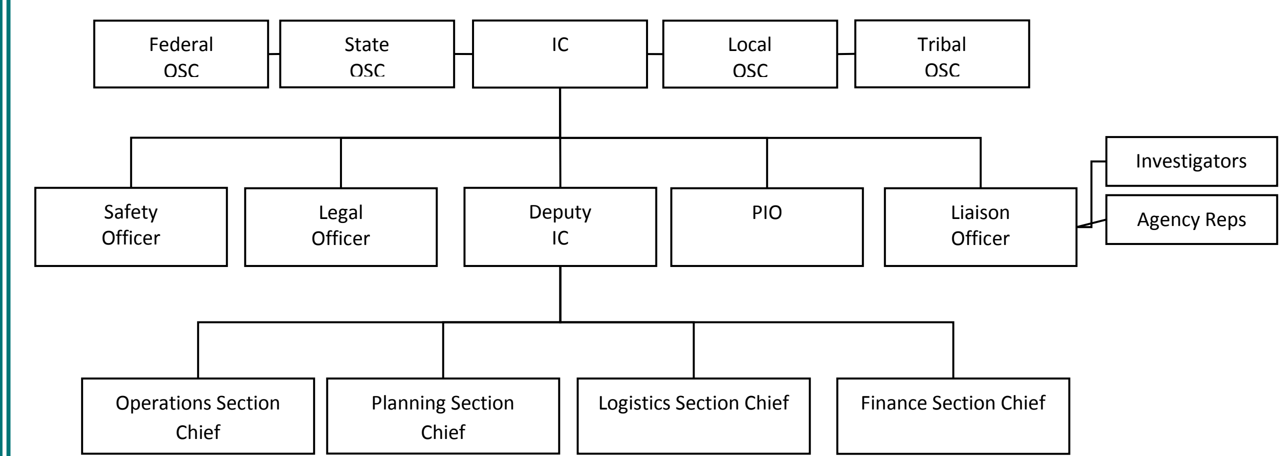
Identification and Assessment
- Continue to evaluate the hot zone and adjust accordingly
- Continue to monitor evacuation activities with the fire department
- Ensure safe Recon to determine extent of impact to the community

Action Planning
- Create an ICS 201 to serve as the de facto Incident Action Plan for the initial period
- Create Unified "Next" period Incident Action Plan (only if required)

Initial ICS Forms that May Be Utilized
- ICS Form 201 (Incident Briefing)
- ICS Form 202 (Incident Objectives)
- ICS Form 214 (Unit Log)
- Site Safety & Health Plan (SSHP)
- Additional forms can be found at: http://gotso/departments/contingency-planning/Pages/default.aspx

General Protection Strategies
- Shut down and isolate flow
- Eliminate sources of ignition
- Contain ahead of spill by safely booming or damming
- Protect bodies of water ahead of spill
- All equipment used when handling product must be grounded
- Four gas detectors are essential for site recon.

Incident Command System Organization Chart



Protective Equipment
3
- Ensure proper levels of PPE
- Ensure PPE is in line with SSHP (ICS 201 page 5)

Containment & Control
- Immediately, valve isolation and control strategies should be developed within the Unified Command Process
- Operations Section Chief oversee containment and control tactical deployment

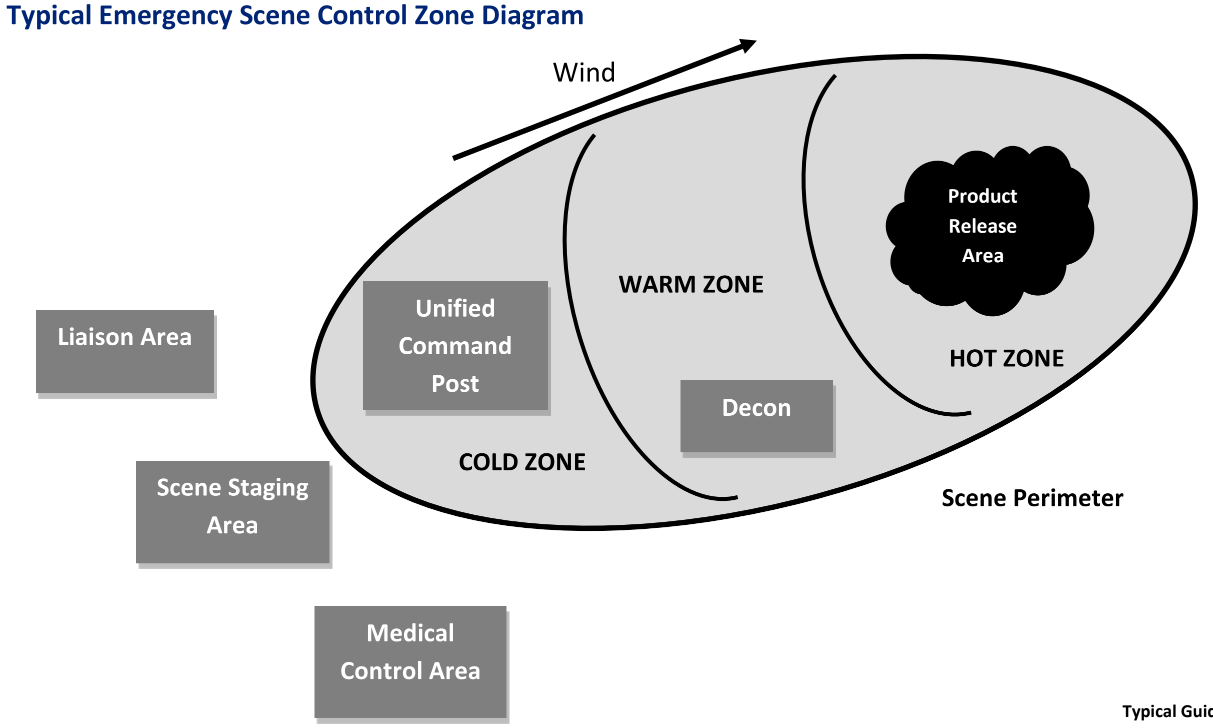
Protective Actions
- Ensure safe Recon to assess impact for potential fire or explosion
- Protective action tactical deployment should be part of the Unified process
- Follow emergency confined space entry procedures for upsteam vault entry.

Decontamination / Clean-up (only in case of a fire)
4
- Decon activities take place under the ICS Ops Section
- Decon capabilities in place before entering Hot Zone
- Ensure proper PPE for Decon Team
- Clean-up strategies should be part of the Unified IAP
- Decon run-off needs to be contained and properly disposed of

Disposal (only in case of a fire)
- Ensure early notification of Waste SMEs

Documentation
- Ensure initial response actions are documented on ICS 201
- Ensure proper retention of all incident related documents
- Ensure timely incident critique and record lessons learned
- Date and initial all field note pages

Typical Emergency Scene Control Zone Diagram



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SECTION 3A NORTHERN RESPONSE ZONE NOTIFICATION PROCEDURES

3A.1 Notification Requirements

This section describes required notifications and information summaries to be provided in the event of a spill. The priority of actions and response procedures will depend upon actual circumstances and will be determined by the Incident Commander.

SPILLAGE OF ANY PETROLEUM HYDROCARBON or OTHER HAZARDOUS SUBSTANCE ONTO LAND OR WATER MUST BE IMMEDIATELY REPORTED.
THERE ARE NO EXCEPTIONS!

Incidents Requiring Immediate INTERNAL CORPORATE MANAGEMENT Notification

The Tesoro Health and Safety standard TSHS-006 will be used to determine the type and severity of an incident. Incidents determined to be at severity Level 3 – Level 5 must be reported to Corporate Headquarters.

TSHS-006 can be found on the Tesoro intranet on the Environmental Health and Safety page at http://gotso/departments/ehs/Documents/Incident%20Matrix.pdf

If a spill is detected the following information must be provided to the Qualified Individual, Incident Commander or his designee and may be reported to the agencies:

1. Name of pipeline	7. Actions taken.
2. Was anyone hurt?	8. Weather conditions.
3. Location of spill.	9. Projected spill movement.
4. Time of spill	10. Equipment needed.
5. Product/volume spilled.	11. Environmental concerns.
6. Cause of spill.	

Figure 3A.1-1 Northern Response Zone Notification Flow Chart

FIELD or EMERGENCY CONTROL CENTER (866-283-7676)
REPORTS SPILL TO QUALIFIED INDIVIDUAL
(Call **911** if necessary)

QI or QI Designee is responsible to make further notification in a timely manner.

TESORO QUALIFIED INDIVIDUALS (QIs)

Contact	Phone Numbers	Time and Person Notified
Darren Snow (primary)	701-250-1960 – Office 701-204-1619 - Cellular	
Greg Andersen (alternate)	(701) 456-9735– Office (701) 260-2975 – Cellular	
John Berger (alternate)	(701) 258-6486 – Office (701) 319-8602 – Cellular	
Ryan Baumgartner (alternate)	406-482-4841 – Office 406-480-4673 - Cellular	

QI or QI Designee is responsible to continue notifications in a timely manner.

Austin Bement, Sr. Contingency Planning & Emergency Response Coordinator
406-482-4841 (Office) 701-226-3398 (Cell)
Or
Brock Carter, Mgr., Regional Contingency Planning & Emergency Response
801-606-2141 (Office) (907) 801-505-8349 (Cell)

TESORO INCIDENT COMMANDERS ON-DUTY
IC DUTY HOTLINE 1-866-516-6758
Report all spills to water and incidents classified as Tier 3 - 5 per EHS-002B

TESORO INCIDENT MANAGEMENT TEAM

1 of 3

OIL SPILL RESPONSE ORGANIZATIONS

Contact	Phone Numbers	Time and Person Notified
Bay West	(800) 279-0456	
VisTec	(701) 301-2262	
QualiTech	(612) 963-5222	
Clean Harbors	(800) 645-8265	
Sakakawea Area Spill Response (call to open gate in Newtown, ND)	(701) 334-6310	

FEDERAL REGULATORY AGENCIES (within 1 hour of incident)

AGENCY	SPILL SIZE	VERBAL REPORT	WRITTEN REPORT
National Response Center (USCG, EPA, and DOT notified)	• Immediately for all spills that impact or threaten navigable water or adjoining shoreline • Any size on land if threatening surface waters • Fire/explosion/injury from regulated pipeline	**Immediately** **(800) 424-8802** **Note: A Safety Data Sheet MUST be provided to federal, state and local responders on site within 6 hours of notification to NRC**	None
EPA	• If spill is 1000 gal or more (on land), or >42 gallons in each of 2 discharges within 12 month period	(800) 227-8917	Yes (within 60 days)
US DOT	• Release of 5 gallons or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels resulting from a pipeline maintenance activity if the release is: o Confined to company property or pipeline right-of-way; and o Cleaned up promptly;	Written Report Only	Within 30 days on DOT Form 7000-1 http://phmsa.dot.gov
	• If a spill causes 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, >$50,000 • If spill results 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 shoreline	**Immediately,** via NRC **(800) 424-8802** **With follow up to** (202) 366-4595	

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NORTH DAKOTA - STATE REGULATORY AGENCIES **<u>Immediate notifications only listed</u>**; See a*dditional requirements in Response Zone Appendices*		
Required Notifications	Primary Phone	
North Dakota Division Of Emergency Management	(701) 328-0820	
County Emergency Management Coordinator	(See Appendix C1)	
MONTANA - STATE REGULATORY AGENCIES **<u>Immediate notifications only listed</u>**; See a*dditional requirements in Response Zone Appendices*		
Montana Department of Environmental Quality	(406) 324-4777	
County Emergency Management Coordinator	(See Appendix C1)	
MHA NATION **<u>Immediate notifications only listed</u>**; See a*dditional requirements in Response Zone Appendices*		
One contact below must be notified if incident is on or near MHA property	Primary Phone	
Superintendent / Kayla Danks	(701) 627-6501	
Tribal TAT Fire / Marle Baker	(701) 421-1423	
Vice Chair/ NR Committee / Randy Phelan	(701) 627-4781	
MHA Engineer / Frankie Lee	(701- 627-8253	

Figure 3A.1-2 Oil Spill Discharge Information Required for NRC

DO NOT DELAY NOTIFICATION IN ORDER TO COLLECT ALL INFORMATION ON THIS SHEET

NATIONAL RESPONSE CENTER (NRC) (800) 424-8802 (within 1 hour)

REPORTING PARTY INFORMATION					
Name:		Position:		Company:	
Day Telephone:		Evening Telephone:			
Address:					
City:		State:		Zip:	
Were Materials Discharged?	YES/NO	Confidential?	YES/NO		
Meeting Federal Obligations to Report?	YES/NO	Date Called:			
Are you calling for the responsible party?	YES/NO	Time Called:			

INCIDENT DESCRIPTION							
Source and/or Cause of Incident:							
Date of Incident:		Time of Incident:					
Incident Address/Location:							
Nearest City:		State:		County		Zip	
Distance From City:		Direction from City:					
Section		Township		Range		Borough	
Container Type		Tank Oil Storage Capacity					
Facility Oil Storage Capacity:							
Facility Latitude:		Facility Longitude:					

MATERIAL DISCHARGE					
CHRIS CODE	Discharged Quantity	Unit of Measure	Material Discharged in Water	Quantity	Unit of Measure

RESPONSE ACTION
Actions Taken to Correct, Control, or Mitigate Incident?

IMPACT			
Number of Injuries:		Number of Fatalities:	
Were there Evacuations?	YES//NO	Number Evacuated:	
Was there any Damage?	YES/NO	Damage in Dollars (approximate):	
Medium Affected:			
Description:			
More Information about Medium:			

ADDITIONAL INFORMATION
Any Information about the incident not recorded elsewhere in the report:

CALLER NOTIFICATIONS									
EPA	YES/NO	USCG	YES/NO	STATE	YES/NO	OTHER	YES/NO	Describe:	

* Incident reports involving fatalities may contain confidential information

3A.2 Notification Information

The following information will be provided during initial and follow-up notifications, as available. Notifications will not be delayed to complete gathering information. Other specific Notification Information may be required by other local, state and federal reporting requirements.

1. Name of Pipeline
2. Time of Discharge
3. Location of Discharge
4. Name of Oil (product type) Involved
5. Reason for Discharge (e.g. material failure, excavation damage, corrosion)
6. Estimated Volume of Oil Discharged
7. Weather Conditions on Scene
8. Actions Taken or Planned by Personnel On-Scene

3A.2.1 Procedures for Notifying Qualified Individuals

Qualified Individuals will be notified via telephone. Qualified Individual responsibilities and authorities are described below. Qualified Individual notification exercises will be conducted quarterly as described in *Appendix A*.

Duties of the qualified individual as identified in 40 CFR 112.20(h) (3):

TASK	NOTES
☐ Activate internal alarms and hazard communication systems for proper notification.	
☐ Notify all response personnel, as needed;	
☐ Identify the release character, exact source, amount, and extent, as well as the other items needed for notification;	
☐ Notify and provide necessary information to the appropriate Federal, State, and local authorities with designated response roles, including the National Response Center (NRC), State Emergency Response Commission, and Local Emergency Planning Committee;	
☐ Assess discharged substance interaction with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment;	
☐ Assess the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion);	

TASK	NOTES
☐ Assess and implement prompt removal actions to contain and remove the substance released;	
☐ Coordinate rescue and response actions as previously arranged with all response personnel;	
☐ Use authority to immediately access company funding to initiate cleanup activities; and	
☐ Direct cleanup activities until properly relieved of this responsibility.	

3A.2.2 Personnel Notifications

Incident Management Team (IMT) members will be notified and/or activated as needed by the Team Lead, Qualified Individual or other appropriate responder.

3A.2.3 Primary and Secondary Notification Methods

Primary notification methods will be via telephone. Secondary notification methods vary according to entity to be notified. Alternate telephone numbers will be used in most instances. On-line notifications are available for some agencies and departments.

Figure 3A.3-1 Notification Summary

FEDERAL AGENCIES			
AFFILIATION	PHONE NUMBER	NAME OF PERSON CONTACTED	TIME CONTACTED
National Response Center	(800) 424-8802		
EPA – Region 8, Denver EPA – Region 8, Denver (EOC)	(800) 227-8914 (800) 227-8917		
DOT – PHMSA	(202) 366-4595		
U.S. Fish and Wildlife Services, Environmental Contaminants Dept. – Northern Region	(701) 662-8611 (406) 329-3511		
Army Corp. of Engineers	(402) 995-2417 701-225-0015 888-835-5971		
Dept. of Commerce – National Weather Service (Recorded Weather)	(701) 223-3700		
Weather Information Number (Dial Up Voice)	(701) 223-4582		

STATE AGENCIES			
AFFILIATION	**PHONE NUMBER**	**NAME OF PERSON CONTACTED**	**TIME CONTACTED**
State Emergency Response Commission (State Radio)	(800) 472-2121		
North Dakota Department of Health • Division of Waste Management • Division of Water Quality • Division of Air Quality	(701) 328-5166 (701) 328-5210 (701) 328-5188		
North Dakota Oil & Gas Division **(Not Required)**	(701) 328-8020		
ND Game and Fish Department	(701) 328-6347		
ND Forest Service	(701) 328-9944		
ND Parks and Recreation Department	(701) 328-5357		
ND National Wildlife Refuges	(701) 662-8611		
ND Federal Waterfowl Production Areas	(701) 662-8611		
Bird and Wildlife De-oiling - U.S. Fish and Wildlife Service	(701) 355-8507		
RESPONSE CONTRACTORS/COOPERATIVES			
AFFILIATION	**PHONE NUMBER**	**NAME OF PERSON CONTACTED**	**TIME CONTACTED**
Marine Spill Response Corp. (MSRC)	(800) OIL-SPIL (800) 645-7745		
MEDICAL			
AFFILIATION	**PHONE NUMBER**	**NAME OF PERSON CONTACTED**	**TIME CONTACTED**
Care OnSite Medical Clinic	(562) 437-0831		
Medcenter One	(701) 323-6000		
St. Alexius Medical Center	(701) 530-7000		
Metro Area Ambulance	Non-Emergency (701)223-1310 Emergency (701) 255-0812		
McKenzie County Memorial Hospital	(701) 842-3000		
St. Joseph's Hospital	(701) 456-4000		
Mercy Medical Center	(701) 774-7400		
Tioga Medical Center	(701) 664-3305		

SECTION 3B SOUTHERN RESPONSE ZONE NOTIFICATION PROCEDURES

3B.1 Notification Requirements

This section describes required notifications and information summaries to be provided in the event of a spill. The priority of actions and response procedures will depend upon actual circumstances and will be determined by the Incident Commander.

SPILLAGE OF ANY PETROLEUM HYDROCARBON or OTHER HAZARDOUS SUBSTANCE ONTO LAND OR WATER MUST BE IMMEDIATELY REPORTED.
THERE ARE NO EXCEPTIONS!

Incidents Requiring Immediate INTERNAL CORPORATE MANAGEMENT Notification

The Tesoro Health and Safety standard TSHS-006 will be used to determine the type and severity of an incident. Incidents determined to be at severity Level 3 – Level 5 must be reported to Corporate Headquarters.

TSHS-006 can be found on the Tesoro intranet on the Environmental Health and Safety page at http://gotso/departments/ehs/Documents/Incident%20Matrix.pdf

If a spill is detected the following information must be provided to the Qualified Individual, Incident Commander or his designee and may be reported to the agencies:

1. Name of pipeline	7. Actions taken.
2. Was anyone hurt?	8. Weather conditions.
3. Location of spill.	9. Projected spill movement.
4. Time of spill	10. Equipment needed.
5. Product/volume spilled.	11. Environmental concerns.
6. Cause of spill.	

Figure 3B.1-1 Southern Response Zone Notification Flow Chart

FIELD or EMERGENCY CONTROL CENTER (866-283-7676)
REPORTS SPILL TO QUALIFIED INDIVIDUAL
(Call **911** if necessary)

QI or QI Designee is responsible to make further notification in a timely manner.

TESORO QUALIFIED INDIVIDUALS (QIs)

Contact	Phone Numbers	Time and Person Notified
Darren Snow (primary)	701-250-1960 – Office 701-204-1619 - Cellular	
Greg Andersen (alternate)	(701) 456-9735– Office (701) 260-2975 – Cellular	
Mike Hutton (alternate)	(701)-575-2220 – Office (701)-300-0139 - Cellular	
Ryan Bebee (alternate)	(701)-575-2220 – Office (701)-204-3633 - Cellular	
Jesse Boltz (alternate)	(701) 264-0618- Cellular	

QI or QI Designee is responsible to continue notifications in a timely manner.

Austin Bement, Sr. Contingency Planning & Emergency Response Coordinator
406-482-4841 (Office) 701-226-3398 (Cell)
Or
Brock Carter, Mgr., Regional Contingency Planning & Emergency Response
801-606-2141 (Office) (907) 801-505-8349 (Cell)

TESORO INCIDENT COMMANDERS ON-DUTY

IC DUTY HOTLINE 1-866-516-6758

Report all spills to water and incidents classified as Tier 3 - 5 per EHS-002B

TESORO INCIDENT MANAGEMENT TEAM

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OIL SPILL RESPONSE ORGANIZATIONS		
Contact	**Phone Numbers**	**Time and Person Notified**
Bay West	(800) 279-0456	
VisTec	(701) 301-2262	
QualiTech	(612) 963-5222	
Clean Harbors	(800) 645-8265	
Sakakawea Area Spill Response (call to open gate in Newtown, ND)	(701) 334-6310	

FEDERAL REGULATORY AGENCIES (within 1 hour of incident)

AGENCY	SPILL SIZE	VERBAL REPORT	WRITTEN REPORT
National Response Center (USCG, EPA, and DOT notified)	• Immediately for all spills that impact or threaten navigable water or adjoining shoreline • Any size on land if threatening surface waters • Fire/explosion/injury from regulated pipeline	**Immediately** **(800) 424-8802** **Note: A Safety Data Sheet MUST be provided to federal, state and local responders on site within 6 hours of notification to NRC**	None
EPA	• If spill is 1000 gal or more (on land), or >42 gallons in each of 2 discharges within 12 month period	(800) 227-8917	Yes (within 60 days)
US DOT	• Release of 5 gallons or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels resulting from a pipeline maintenance activity if the release is: o Confined to company property or pipeline right-of-way; and o Cleaned up promptly;	Written Report Only	Within 30 days on DOT Form 7000-1 http://phmsa.dot.gov
	• If a spill causes 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, >$50,000 • If spill results 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 shoreline	**Immediately,** via NRC **(800) 424-8802** **With follow up to** (202) 366-4595	

NORTH DAKOTA - STATE REGULATORY AGENCIES **<u>Immediate notifications only listed</u>**; See a*dditional requirements in Response Zone Appendices*		
Required Notifications	Primary Phone	
North Dakota Division Of Emergency Management	(701) 328-0820	
County Emergency Management Coordinator	(See Appendix C1)	
MHA NATION **<u>Immediate notifications only listed</u>**; See a*dditional requirements in Response Zone Appendices*		
One contact below must be notified if incident is on or near MHA property	Primary Phone	
Superintendent / Kayla Danks	(701) 627-6501	
Tribal TAT Fire / Marle Baker	(701) 421-1423	
Vice Chair/ NR Committee / Randy Phelan	(701) 627-4781	
MHA Engineer / Frankie Lee	(701- 627-8253	

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Figure 3B.1-2 Oil Spill Discharge Information Required for NRC

DO NOT DELAY NOTIFICATION IN ORDER TO COLLECT ALL INFORMATION ON THIS SHEET

NATIONAL RESPONSE CENTER (NRC) (800) 424-8802 (within 1 hour)

REPORTING PARTY INFORMATION					
Name:		Position:		Company:	
Day Telephone:		Evening Telephone:			
Address:					
City:		State:		Zip:	
Were Materials Discharged?	YES/NO	Confidential?	YES/NO		
Meeting Federal Obligations to Report?	YES/NO	Date Called:			
Are you calling for the responsible party?	YES/NO	Time Called:			

INCIDENT DESCRIPTION							
Source and/or Cause of Incident:							
Date of Incident:		Time of Incident:					
Incident Address/Location:							
Nearest City:		State:		County		Zip	
Distance From City:		Direction from City:					
Section		Township		Range		Borough	
Container Type		Tank Oil Storage Capacity					
Facility Oil Storage Capacity:							
Facility Latitude:		Facility Longitude:					

MATERIAL DISCHARGE					
CHRIS CODE	Discharged Quantity	Unit of Measure	Material Discharged in Water	Quantity	Unit of Measure

RESPONSE ACTION
Actions Taken to Correct, Control, or Mitigate Incident?

IMPACT			
Number of Injuries:		Number of Fatalities:	
Were there Evacuations?	YES//NO	Number Evacuated:	
Was there any Damage?	YES/NO	Damage in Dollars (approximate):	
Medium Affected:			
Description:			
More Information about Medium:			

ADDITIONAL INFORMATION
Any Information about the incident not recorded elsewhere in the report:

CALLER NOTIFICATIONS									
EPA	YES/NO	USCG	YES/NO	STATE	YES/NO	OTHER	YES/NO	Describe:	

* Incident reports involving fatalities may contain confidential information

3B.2 Notification Information

The following information will be provided during initial and follow-up notifications, as available. Notifications will not be delayed to complete gathering information. Other specific Notification Information may be required by other local, state and federal reporting requirements.

1. Name of Pipeline
2. Time of Discharge
3. Location of Discharge
4. Name of Oil (product type) Involved
5. Reason for Discharge (e.g. material failure, excavation damage, corrosion)
6. Estimated Volume of Oil Discharged
7. Weather Conditions on Scene
8. Actions Taken or Planned by Personnel On-Scene

3B.2.1 Procedures for Notifying Qualified Individuals

Qualified Individuals will be notified via telephone. Qualified Individual responsibilities and authorities are described below. Qualified Individual notification exercises will be conducted quarterly as described in *Appendix A*.

Duties of the qualified individual as identified in 40 CFR 112.20(h) (3):

TASK	NOTES
☐ Activate internal alarms and hazard communication systems for proper notification.	
☐ Notify all response personnel, as needed;	
☐ Identify the release character, exact source, amount, and extent, as well as the other items needed for notification;	
☐ Notify and provide necessary information to the appropriate Federal, State, and local authorities with designated response roles, including the National Response Center (NRC), State Emergency Response Commission, and Local Emergency Planning Committee;	
☐ Assess discharged substance interaction with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment;	
☐ Assess the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion);	

TASK	NOTES
☐ Assess and implement prompt removal actions to contain and remove the substance released;	
☐ Coordinate rescue and response actions as previously arranged with all response personnel;	
☐ Use authority to immediately access company funding to initiate cleanup activities; and	
☐ Direct cleanup activities until properly relieved of this responsibility.	

3B.2.2 Personnel Notifications

Incident Management Team (IMT) members will be notified as needed by the Team Lead, Qualified Individual or other appropriate responder.

3B.2.3 Primary and Secondary Notification Methods

Primary notification methods will be via telephone. Secondary notification methods vary according to entity to be notified. Alternate telephone numbers will be used in most instances. On-line notifications are available for some agencies and departments.

Figure 3B.3-1 Notification Summary

FEDERAL AGENCIES			
AFFILIATION	**PHONE NUMBER**	**NAME OF PERSON CONTACTED**	**TIME CONTACTED**
National Response Center	(800) 424-8802		
EPA – Region 8, Denver EPA – Region 8, Denver (EOC)	(800) 227-8914 (800) 227-8917		
DOT – PHMSA	(202) 366-4595		
U.S. Fish and Wildlife Services, Environmental Contaminants Dept. – Northern Region	(701) 662-8611 (406) 329-3511		
Army Corp. of Engineers	(402) 995-2417 701-225-0015 888-835-5971		
Dept. of Commerce – National Weather Service (Recorded Weather)	(701) 223-3700		
Weather Information Number (Dial Up Voice)	(701) 223-4582		

STATE AGENCIES			
AFFILIATION	**PHONE NUMBER**	**NAME OF PERSON CONTACTED**	**TIME CONTACTED**
State Emergency Response Commission (State Radio)	(800) 472-2121		
North Dakota Department of Health • Division of Waste Management • Division of Water Quality • Division of Air Quality	(701) 328-5166 (701) 328-5210 (701) 328-5188		
North Dakota Oil & Gas Division **(Not Required)**	(701) 328-8020		
ND Game and Fish Department	(701) 328-6347		
ND Forest Service	(701) 328-9944		
ND Parks and Recreation Department	(701) 328-5357		
ND National Wildlife Refuges	(701) 662-8611		
ND Federal Waterfowl Production Areas	(701) 662-8611		
Bird and Wildlife De-oiling - U.S. Fish and Wildlife Service	(701) 355-8507		
RESPONSE CONTRACTORS/COOPERATIVES			
AFFILIATION	**PHONE NUMBER**	**NAME OF PERSON CONTACTED**	**TIME CONTACTED**
Marine Spill Response Corp. (MSRC)	(800) OIL-SPIL (800) 645-7745		
MEDICAL			
AFFILIATION	**PHONE NUMBER**	**NAME OF PERSON CONTACTED**	**TIME CONTACTED**
Care OnSite Medical Clinic	(562) 437-0831		
Medcenter One	(701) 323-6000		
St. Alexius Medical Center	(701) 530-7000		
Metro Area Ambulance	Non-Emergency (701)223-1310 Emergency (701) 255-0812		
McKenzie County Memorial Hospital	(701) 842-3000		
St. Joseph's Hospital	(701) 456-4000		
Mercy Medical Center	(701) 774-7400		
Tioga Medical Center	(701) 664-3305		

SECTION 4 RESPONSE TEAM ORGANIZATION

This section describes organizational features and duties of the Incident Management Team (IMT).

The key to an effective emergency response is a rapid, coordinated, tiered response by the affected locality, and the Incident Management Team (IMT), consistent with the magnitude of an incident.

First response to an incident will be provided by Operations. The Incident Management Team (IMT) will respond, to the degree necessary, to incidents exceeding local capability. If a response exceeds Operations capabilities, the Incident Commander will activate the Incident Management Team (IMT).

These response teams will use the NIMS Incident Command System (ICS) to manage the emergency response activities. Because ICS is a management tool that is readily adaptable to incidents of varying magnitude, it will typically be used for all emergency incidents. Staffing levels will be adjusted to meet specific response team needs based on incident size, severity, and type of emergency.

Tesoro Corporate has also provided an Oil Spill Incident Management Handbook (IMH), which provides additional guidelines and resources for managing an incident. The Incident Management Team positions and responsibilities at Tesoro are designed to correspond to those in the IMH. This provides the ability for Tesoro Incident Management Team position holders to report to other Tesoro assets and assist in their incident management in the same position, with minimal learning curve.

4.1 Oil Spill Activation Procedures

Activation of the IMT may be accomplished in stages. Initially, the First Tesoro Responder reports the incident, and assumes the role of Incident Commander. During a very minor spill incident, the Incident Commander (IC) may be able to respond without assistance from the IMT. If the situation requires more resources, he or she will request activation of the IMT.

4.2 Incident Management Team

4.2.1 Unified Command

A Unified Command (UC) will be utilized as a method of integrating federal, state and local agencies within IMT. The purpose of this system is to organize the variety of agencies that may be involved in a response into a consistent team that performs their duties in a concerted, unified effort.

The UC structure consists of three key On-Scene Coordinators: Federal On-Scene Coordinator (FOSC), State On-Scene Coordinator (SOSC), and the Responsible Party Incident Commander. These three entities will share decision-making authority as Incident Commander in the Command Center and will consult with each other regarding spill response management issues.

Depending upon the size and complexity of the incident, additional federal and state agency personnel will be integrated into the other functions of the IMT.

4.2.2 Incident Management Team Duties and Responsibilities

Tesoro positions and roles described below are intended to be representative of the positions and roles described in the Tesoro Incident Management Handbook (IMH). For the purpose of training and/or role clarification we will refer to the ACP roles that apply to our ICS positions. Abbreviated role descriptions in the OSRP are intended to help reduce the bulk of the plan. Tesoro may, from time to time, elect to fill certain ICS support positions with approved response contractor or contract personnel, **at no time will these individuals be cast in the role of IC or Section Chief.** Tesoro will follow a Planning Cycle consistent with the ACP. Refer to the Tesoro Incident Management Handbook and position Job Aids for more information on organization and duties for each specific position.

Incident Command

Incident Commander (IC)

Responsible for managing the crisis including the development and implementation of strategic decisions. The Incident Commander (IC) may designate a Deputy to delegate the duties and responsibilities found on the checklist of positions identified in the IMH.

Deputy Incident Commander (DIC):

Assists by carrying out assignments and duties as given by the IC. In the event the IC could no longer perform required duties the DIC would assume those duties. The DIC is trained to perform the role of the IC.

Command Staff

Legal Officer:

Provides advice on all aspects of an oil spill incident. Ensures that information which may be relevant to the defense and/or settlement of future claims is gathered and preserved. Assists members of the IMT upon request in making legal judgments and decisions related to safe and expedient resolution of the response.

Liaison Officer:

Responsible for communicating with local, state, and federal government agencies not involved in the unified command structure. Also advises interested groups, corporations, and organizations of the actions that the Incident Management Team (IMT) and/or Unified Command is taking to address concerns.

Public Information Officer (PIO):

Responsible for the formulation and release of information about the crisis to the news media. Is expected to work in concert with other members of the Joint Information Center (JIC) when the magnitude of an event warrants formation of a JIC. Provides Company based information to be used in dissemination of facts and information regarding a crisis event.

Safety Officer:

Responsible for monitoring and assessing hazardous and unsafe situations and developing measures for ensuring personnel safety. Follows prescribed guidelines detailed in the IMT and ACP in an effort to anticipate potential hazardous working conditions and prevent exposures to the public and response personnel.

Intelligence Officer:

Responsible for addressing intelligence issues that arise during an incident.

Operations Section

Operations Chief:

Responsible for the management of all operations directly applicable to control, containment, recovery, clean up, and rehabilitation. Activates and supervises organizational elements in accordance with the response objectives set forth in the IAP. Follows the guidance of the ACP by drafting primary and alternative response strategies, work assignments, and identifiable resources necessary to sustain a long-term response activity.

Group/Division Supervisors:

Responsible for the implementation of an assigned portion of the Incident Action Plan, assignment of resources within the progress of control operations and the status of resources.

Air Ops Branch:

Primarily responsible for preparing the air operations portions of the Incident Action Plan. The plan reflects Company or Agency restrictions that have an impact on the operations capability of utilization of resources.

Planning Section

Planning Section Chief:

Responsible for the collection, evaluation, dissemination, and use of information about the development of the spill and status of resources. The information as needed to understand the current situation, predict the probable course of incident events and prepare alternate strategies and control operations for the incident.

Resources Unit:

Responsible for the establishing all check-in activities; preparation and maintenance of displays, charges, and lists that reflect current status; the preparation and processing of resources status change information and the location of incident resources.

Situation Unit:

Collects and organizes spill status and situation information. Responsible for the evaluation, analysis, and display of that information.

Documentation Unit:

Maintains accurate and complete historical files, and provides duplicating services and stores incident files for legal, analytical, and historic purposes.

Environmental Unit:

The Environmental Unit determines extent of environmental damage and evaluates the effects of cleanup methods on the environment; obtains necessary permits, coordinates with government agencies to arrange for disposal of recovered oil and waste, and implements wildlife protection and treatment plans.

Demobilization Unit:

Assists sections/units in ensuring that orderly, safe and cost-effective demobilization of personnel and equipment is accomplished.

Technical Specialist:

Technical specialists are advisors with special skills needed to support incident options. They may report to the Planning Section Chief; function within an existing unit such as the situation unit, form a separate unit if required, or be reassigned to other parts of the organization. Technical Specialist generally filled by contract services personnel.

Logistics Section

Logistics Section Chief:

Responsible for providing facilities, services and materials in support all phases of the incident response.

Supply Unit:

Orders personnel, equipment, and supplies; receives and stores supplies; maintains inventories and distributes supplies as requested.

Facilities Unit:

Provides for office work areas, living quarters and storage buildings; provides sanitation facilities, manages remote camps and general maintenance to facilities.

Group Support Unit:

Provides for transportation of personnel, supplies, food and equipment; performs fueling, service and repair work to vehicles and other ground support equipment; implements traffic plan for the incident.

Medical Unit:

Develops a Medical Emergency Plan and renders medical aid for injured and ill personnel assigned to the spill.

Food Unit:

Determines feeding requirements at all spill locations and facilities; provides drinking water and contractor oversight.

Communications Unit:

Develop plans for the effective use of spill communications equipment and facilities; installs and tests equipment and operates an Incident Communications Center.

Procurement Unit:

Administers and establishes, as necessary, vendor contracts for operations support-related supplies, services, and technical consultants.

Security Unit

Responsible for providing safeguards needed to protect personnel and property from loss and damage.

Finance Section

Finance Section Chief:

Responsible for managing all financial and cost analysis aspects of the spill.

Time/Cost Unit:

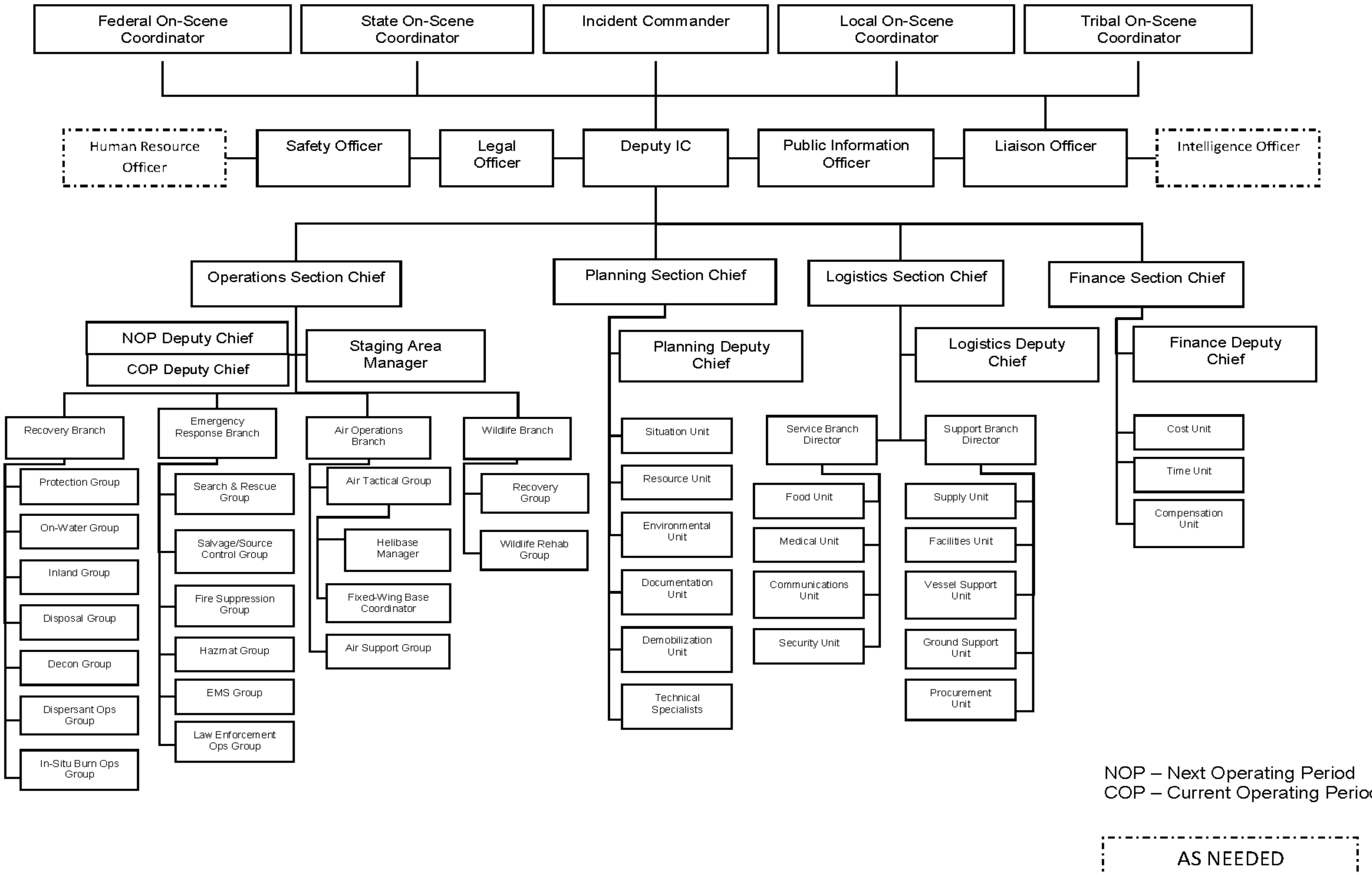
Responsible for providing time/cost estimates, reporting of labor, materials and supplies used during spill containment and repair.

Insurance/Claims Unit:

Initiates investigation and documentation on all claims other than personal injury and arranges damage surveyors and adjusters.

Figure 4-1 provides an example of the Incident Management Team Organization.

Figure 4-1 Incident Management Team Organization



4.3 Qualified Individual

The persons designated for this plan, with written authority to utilize Tesoro resources as necessary for oil spill response, are referred to as Qualified Individuals (QIs). Letters of Designation provide authority to:

- Activate and engage in contracting with oil spill removal organization(s).
- Act as liaison with the pre-designated state and Federal On-Scene Coordinator(s).
- Obligate funds required to carry out response activities.

Individuals named as QIs also have the authority to act as Incident Commanders if necessary. The QIs designated for this Plan are identified in *Sections 1, 3A and 3B*, which also includes contact numbers.

4.4 Incident Command Post

In the event of a major response, a Field Command Post will be activated. This will be done by the IC or his/her designate. When a Field Command Post is established at the scene of the incident as the response effort escalates, it will be located in a Safe Zone near the incident. The Field Command Post will provide a location to coordinate response and control efforts. A Deputy IC may be delegated to operate the Field Command Post.

Tesoro has also contracted for hotel conference rooms for both spills and spill exercises. If necessary, this is an option that is available for a location of a Field Command Post. Hotel contracts are available from the corporate office. The hotel option also provides contract accommodations for command post staff and their field staff.

4.5 Governmental Agencies

The primary government agencies concerned with oil spills will include North Dakota Department of Health or Montana Department of Environmental Quality, PHMSA and the Federal Environmental Protection Agency.

North Dakota Department of Health/ Montana Department of Environmental Quality is pre-designated as the State On-Scene Coordinator (SOSC), and has jurisdictional responsibility for all spills that impact state lands and waters. The SOSC will monitor, supervise, and determine "adequacy" of cleanup of spills which impact state lands or waters.

In the event of a major spill, a Federal On-Scene Coordinator (FOSC) will be designated. The FOSC is usually an EPA representative. The FOSC will facilitate communications with the Federal, state, and local government agencies that will be involved in response operations. The primary responsibility of the FOSC, as defined in 40 CFR, Part 300 (The National Oil and Hazardous Substance Contingency Plan), is to direct the efforts of government agencies during a spill emergency.

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SECTION 5 DOCUMENTATION

5.1 Documentation

Detailed documentation must be kept for all aspects of an oil spill response. It ensures that corresponding company records are correct, and that accurate reports can be provided to government agencies and the media. The following considerations will ensure that effective documentation practices are followed.

Documentation of an oil spill will provide a record of the events as they occur. It will provide the necessary data to determine the accuracy of trajectory analysis, spill size predictions, success of containment, and clean-up operations. Thorough documentation of all events will aid in determining the adequacy of the spill response plan, if any modifications are needed, and what potential improvements could be made for future response operations.

Documentation should begin immediately upon notification of an oil spill and continue until post spill assessments have been made. A member of the IMT will be assigned the duty of documentation during each operational period, which will rotate throughout the spill event. This will include compiling notes and other documentation from other members of the IMT.

The type of information to be documented includes, but is not limited to, the following:

- Section, Unit, and Personnel Activity Logs.
- Spill response status/Incident Action Plans.
- Spill scenario.
- Correspondence with government agencies and other entities.
- Weather information.
- Costs incurred.
- Photographs.

The Tesoro IMT uses ICS forms consistent with the National Incident Management System (NIMS) forms. All Tesoro ICS forms can be found online on the Contingency Planning & Emergency Response Department page:

http://gotso2/departments/contingency-planning/Pages/default.aspx

5.1.1 Spill Response Status

Information relating to the status of ongoing response operations should be maintained and posted in the central and field command posts, if possible. Status boards are a valuable tool to ensure that all response team members are kept informed of the status of the response operation. This aids in efficiency and communications between team members by reducing the length and number of informational briefings required. This also helps to reduce duplicated efforts or ordering of services, and improves the ability of team members to function effectively since they are able to stay informed without being interrupted from their required duties. The type of information that is useful to maintain includes:

- Maps which detailed slick size and location, trajectories, location of environmental and socioeconomic sensitivities, and location of deployed equipment.
- Activity logs
- Resource availability and status
- Recovered oil volumes
- Wildlife impact
- Historic asset impact (obtain locations from environmental unit)
- Personnel counts
- Current and forecasted weather information

5.1.2 Spill Scenario Information

All information pertaining to the oil spill and why it occurred should be documented throughout the event. Information should include the following:

- Person(s) and equipment that caused the spill.
- Details on equipment failure and/or human error.
- Person(s) discovering the spill.
- Date and time spill occurred.
- Location(s) of spill area covered by oil, and estimated volume.
- Product spilled.
- Effectiveness of containment and recovery operations.

5.1.3 Meteorological Reports

Meteorological data to be gathered for the affected areas during the incident would include:

- Temperature.
- Precipitation.
- Wind direction and speed.
- Sunrise/Sunset times.

5.1.4 Correspondence with Government Agencies

The person in charge of documentation should record all correspondence with regulatory agencies. This correspondence may include permitting, requests for permitting, notifications, and orders from the agencies.

In addition to documenting conversations with government agencies, each response team member should document all conversations, meetings, and actions. The Incident Commander must utilize an assistant or recording secretary to accomplish this. ICS Form 214a is a form that can be utilized for response team members to document their conversations and actions.

5.1.5 Cost Tracking

Documentation of all costs incurred should be recorded. This may include claims, legal services, equipment rental and purchases, contract services, and support costs (transportation, meals, lodging). Spill Response Requisitions form the basis for tracking costs for resources required for the spill.

5.1.6 Photographs

Photographs provide excellent documentation of oil spill response operations and should be utilized if conditions permit. Aerial photographs of the spill taken for planning and surveillance purposes are also useful for documentation purposes. In order to ensure adequate documentation, all photographs should be labeled to include location, date, time and direction. Note the following guidelines for photographing oil spills.

- Photographs should be taken from several views:
  - Showing the point of discharge.
  - Showing the complete route of pollutant from point of discharge to the water.
  - Showing the extent of environmental or economic impact of the pollutant. Several angles may be shown, both up close to indicate the thickness, color, and composition of the pollutant, and an overall view showing the total area affected
  - Showing an overall view of the area to establish a geographical reference.
  - Showing identifying markings, such as name of vessels or facilities.

- When photographing oil in or on the water, ensure the distance and angle are such to avoid:
  - Confusion between the oil and natural surface reflection of the water,
  - Shadow effects of organic or inorganic materials in the water column, or on the water,
  - Differences in water temperature and currents.

Photographs may be in the form of instant (Polaroid), regular film (35 mm), digital or video. Instant film is the least desirable, since it does not provide negatives that may be submitted to verify the chain of custody. All types of film should be fresh for each incident, starting with the first picture on the roll, or a new videotape cassette. No other incidents should be filmed on that roll. Those pictures not used should be taken with a lens cap on the camera to use up the remainder of the roll. A chain of custody must be maintained to ensure the authenticity of the evidence. Negatives should be included in the file. If a commercial film developer is utilized, they should be asked to develop the film in a continuous roll, not cut (or in as large a section as possible). **Do not discard pictures that do not turn out properly.**

5.1.7 Activity Logs

Copies of personal logs that individuals maintained during response operations should also be gathered as part of the documentation record. This information would be particularly useful during the post-spill assessment in determining the strengths and weaknesses of the response efforts.

5.2 Site Safety Health Plan

In addition to assessing the dangers of explosion and fire, the Safety Officer will ensure the protection of worker health and safety. This protection is achieved by assessing and establishing exposure control zones to which only appropriately trained and equipped personnel may enter.

The criteria for establishing safety zones and respiratory protection requirements for petroleum products handled may use spill response limits for petroleum distillates (e.g., 500 ppm for 8 hours or 333 ppm or 12 hours).

Personal equipment recommended for protecting SKIN includes PVC gloves and boots for hands/feet, and PVC rain suit or Tyvek coveralls for the body.

At a minimum, safety glasses should be worn for EYE protection. Chemical goggles or a face shield should be used if a splash hazard is present. Eye protection is not required if a full face respirator is worn.

Local police and fire departments will be notified of all major spills and, if necessary, their on-site assistance will be requested to ensure personnel health and safety.

The Safety Officer will prepare an incident-specific Health and Safety Plan. The format to be followed in developing an incident-specific Site Safety & Health Plan is provided at the end of this section and also found on the Contingency Planning and Emergency Response site:

http://gotso2/departments/contingency-planning/Pages/Job-Aids.aspx.

Safety Data Sheets (SDS) are available online. At a minimum, the following Federal safety standards will be addressed in the development of the incident-Specific Health and Safety Plan:

- 29 CFR 1910, Occupational Health & Safety Standards
- 29 CFR Part 1904, Record Keeping & Reporting Occupational Illnesses
- 29 CFR Part 1910.120, Hazardous Waste Operations and Emergency Response
- 29 CFR Part 1910.132-37 Subpart 1, Personal Protection Equipment
- 29 CFR Part 1920.38, Employee Emergency Action Plans & Fire Prevention

The Safety Officer should establish a dialogue with the local oil spill response contractors to assure that safe work places are established for all responders that comply with local regulations.

SECTION 6 SENSITIVE AREAS

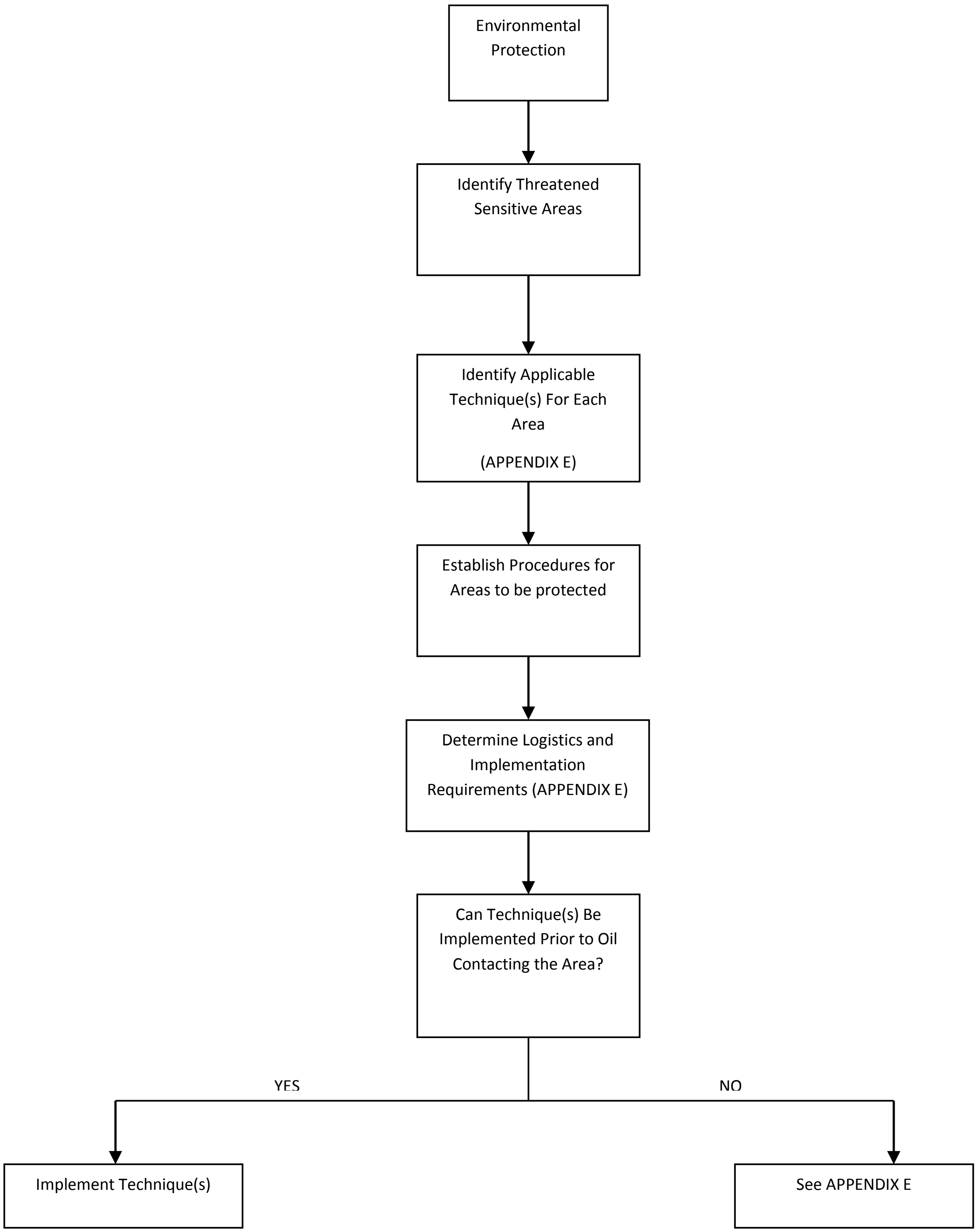
6.1 Introduction

In the event of an oil spill, it may be necessary to protect nearby sensitive areas if it appears that local containment and recovery efforts will not be sufficient to control the entire spill. A critical initial step in protecting sensitive resources is identifying the presence and types of resources in the likely path of the oil. Once these resources have been identified, decisions will be made as to the proper protection strategies for each locale and the priority for application of resources to each sensitive site. The Environmental Unit will utilize the ICS 232 to document identified resources at risk. *Figure 6-1* presents an implementation sequence for protection of sensitive areas. This section describes in general terms different ecologically and culturally/economically sensitive areas.

6.2 Types Of Sensitive Resources

Key resources requiring protection from oil spills include fish and wildlife species, sensitive habitats, and recreationally, culturally, and economically important areas. Examples of sensitive species include terrestrial birds and waterfowl, mammals, shellfish, and commercially important finfish, as well as species with limited distribution or populations. Areas of more direct importance to humans include native lands, national parks and forests and farmlands.

Figure 6-1 Sensitive Area Protection Implementation Sequence



6.2.1 Key Sensitive Areas

Wildlife

Wildlife is susceptible to significant injury and mortality from contact with oil spills. In general, the degree of sensitivity to oil spills is based on habitat location and behavior characteristics. For example, most waterfowl are very sensitive to oil spills due to their extensive use of the water, whereas terrestrial birds may nest near the water but have a low sensitivity to oil spills if they do not frequent shoreline areas.

Similarly, animals that frequent water bodies (lakes, rivers, streams) may be impacted by oil spills if they feed on vegetation or dead animals along the shoreline that could become oiled.

Wildlife impacts may result from the physical effects of the oil on their fur or feathers or through ingestion during preening or scavenging. The effects of ingestion vary depending on the toxicity of the oil. In general, the lighter the crude oil or petroleum product, the more toxic it is to wildlife.

Finfish and Shellfish

The sensitivity of various fish species to oil spills typically depends on their growth stage (juveniles are generally much more sensitive than adults), their feeding or migration habits, and the type of oil. Species that frequent shallow or near-surface areas will often be exposed to higher concentrations of dissolved hydrocarbons than those that reside primarily in deeper waters. Lighter crude oils and refined products have a greater impact on fish than heavier oils due to their generally greater solubility and higher concentrations of toxic components.

The substantial size and exposed nature of many finfish and shellfish spawning and foraging areas and migration routes often makes their protection from oil spills impractical. Therefore, cleanup efforts in these areas may have a low probability for success. It is, however, practical to protect smaller, fishery-related areas such as anadromous fish streams, shellfish beds, and spawning grounds, and other similar areas.

Wetlands

Most wetlands are very productive, biologically diverse, and highly sensitive to impacts from spills. Due, in part, to this productivity and diversity, these locations are typically associated with the congregation of large numbers of waterfowl and marine mammals for feeding and other activities. Many wetlands are also associated with anadromous fish streams and should be given special consideration during spawning and salmoid outmigration seasons. Due primarily to their sensitivity and general difficulty in self-cleansing, wetlands should be given high priority for protection.

6.3 Environmentally Sensitive Areas

A drawing of the Environmentally Sensitive Areas for the Mid-Missouri River Basin is shown as *Figure 6-2*.

6.4 High Consequence Areas

A majority of the THPP system is located in high consequences related to water, environmental sensitivity and population. A drawing of the THPP system High Consequence Areas is shown as *Figure 6-3*.

6.5 Wildlife Protection and Rehabilitation

Major oil spills can adversely impact wildlife that may be in the vicinity of the spill.

In responding to impacted wildlife, two priority items should be addressed:

- Protecting the affected habitats using technologies that minimize ecological impacts, and
- Minimizing impacts to exposed resident wildlife through cleaning and rehabilitation efforts.

With few exceptions, most wildlife populations are so large and dispersed that they would not be affected by a single oil spill incident. Other sections within this plan identify means to protect and minimize the impact of a spill on wildlife habitats.

A variety of pre- and post-spill issues should be addressed. These include:

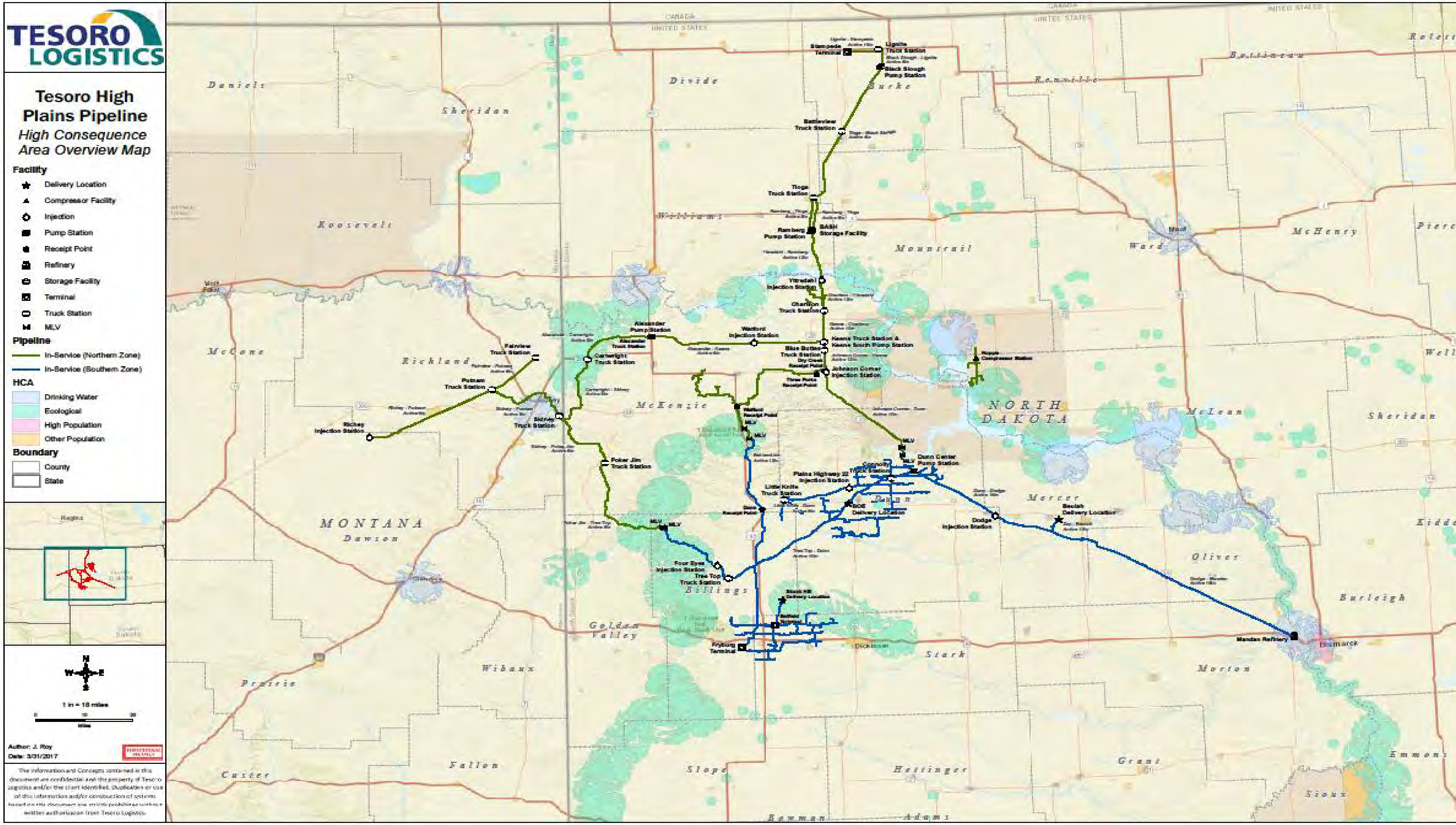
Identification of the potentially affected regional wildlife resources and habitats;

- determination of sensitive species with specific consideration given to threatened and endangered species;
- identification of regulatory and jurisdictional responsibilities as well as lines of authority for key species at risk;
- identification of the appropriate professionals and/or organizations needed for rescue/rehabilitation efforts;
- implementation of steps to care for oiled animals; and preparation and implementation of a plan to deal with the media and public concerns.

Additional information regarding wildlife rehabilitation may be found in the *ACP*.

Figure 6-2 Sensitive Areas – Mid-Missouri River Basin

Figure 6-3 High Consequence Areas



SECTION 7 SUSTAINED RESPONSE ACTIONS

7.1 Response Resources

7.1.1 Oil Spill Recovery Equipment

Tesoro has 20,740 barrels per day (bpd) of recovery equipment available through contracts or direct ownership. A breakdown of specific types, quantities, and de-rated recovery rates is presented in *Figure 7-1*.

Figure 7-1 Oil Spill Recovery Equipment

Owner	Type	Qty	Total De-rated* Recovery (bpd)	Location & Response Time
Bay West	Elastec Drum Skimmer	3	1,200	St. Paul, MN-12hrs
Bay West	Manta Ray skimmer	5	1,032	St. Paul, MN-12hrs
Bay West	JBF DIP-400 skimmer	1	1,083	St. Paul, MN-12hrs
Bay West	2” Air powered double diaphragm pump	6	4,114	St. Paul, MN-12hrs
Quali Tech	FOILEX TDS 200 weir skimmer	1	2,114	Chaska, MN-10 hrs
Quali Tech	FOILEX TDS 150 crane weir skimmer	1	905	Chaska, MN-10 hrs
Quali Tech	FOILEX Mini weir skimmer	1	905	Chaska, MN-10 hrs
Quali Tech	Lamour Minimax 30 Brush skimmer	1	3,622	Chaska, MN-10 hrs
Quali Tech	KLK 252 Drum skimmer	1	603	Chaska, MN-10 hrs
CEDA	100 bbl Vacuum Truck	1	60	Mandan, ND-1hr
CEDA	70 bbl Vacuum Truck	2	84	Mandan, ND-1hr
Tesoro Pipeline	Oil Mop Mark I14-VE rope skimmer 3M-373-1 with 200’ OCW-6 mop (1992 Haulmark Spill Trailer #2)	1	320	Sidney, MT-6 hrs
Tesoro Pipeline	3” Gorman Rupp diaphragm pump w/gasoline engine (Office/Shop)	1	2,688	Sidney, MT-6hrs
Tesoro Mandan Refinery	3” Double diaphragm pump w/ diesel engine (Spill Response Trailer)	1	1,800	Mandan, ND-1hr
Tesoro Mandan Refinery	Rope Mop skimmer w/ 200’ 4” mop (Spill Response Trailer # 23202)	1	210	Mandan, ND-1hr
Total De-rated Recovery Capacity: 20,740 bpd				

* De-rated recovery rates are based on 20% of standard rates

7.1.2 Containment Boom

Tesoro has 27,820 feet of containment boom available through contracts or direct ownership. A breakdown of specific types, and quantities is presented in *Figure 7-2*.

Figure7-2 Containment Boom

Owner	Type	Quantity	Length (Feet)	Location & Response Time
Bay West	Containment boom (Enclosed trailer)	1	2,300	St. Paul, MN-12 hrs
Bay West	Containment boom (Conex box)	1	2,500	St. Paul, MN-12 hrs
Bay West	Containment boom (Conex box - Wakota CAER)	3	4,000	St. Paul, MN-12 hrs
Bay West	Containment boom (Warehouse)	1	2,000	St. Paul, MN-12 hrs
QualiTech	Expandi 4300 air inflatable	1	400	Chaska, MN-10 hrs
QualiTech	Techniboom	1	5,000	Chaska, MN-10 hrs
Tesoro Pipeline	Fast water boom (1997 Road King Tandem axle utility 18’ trailer)	20 x 100’	2,000	Sidney, MT (Office/Shop) –6hrs
Tesoro Pipeline	7” O.K. Corral boom (16’ Trailer #42798)	6 x 100’	600	Watford City, ND-5 hrs
Tesoro Pipeline	7” O.K. Corral boom (16’ Trailer #42798)	12 x 50’	600	Watford City, ND-5 hrs
Tesoro Pipeline	7” O.K. Corral boom (16’ Trailer #42797)	14 x 100’	1,400	Watford City, ND (16’ Trailer #42797)-5 hrs
Tesoro Pipeline	7” O.K. Corral boom (16’ Trailer #42797)	8 x 40’	320	Watford City, ND-5 hrs
Tesoro Pipeline	7” O.K. Corral boom (16’ Trailer #42797)	10 x 100’	1,000	Watford City, ND-5 hrs
Tesoro Pipeline	7” O.K. Corral boom (18’ Road King flatbed trailer)	20 x 100’	2,000	Dickinson, ND (Office/Shop)-2 hrs
Tesoro Mandan Refinery	4” Orange containment boom (Haulmark Spill Trailer)	5 x 100’	500	Mandan, ND – Refinery-1 hr
Tesoro Mandan Refinery	6” OK Corral boom (Spill Response Trailer # 23202)	8 x 50’	400	Mandan, ND – Refinery-1 hr
Tesoro Mandan Refinery	4” Orange (Spill Response Trailer # 23202)	10 x 100’	1,000	Mandan, ND – Refinery-1 hr
Tesoro Mandan Refinery	Orange Mini boom (Spill Response Trailer # 23202)	16 x 50’	800	Mandan, ND – Refinery-1 hr
Tesoro Mandan Refinery	6” Orange containment boom (Spill Response Trailer)	10 x 100’	1,000	Mandan, ND – Refinery-1 hr
Total Containment Boom: 27,820 Feet				

7.1.3 Temporary Storage Capacity

Tesoro has 116,867 bbls of temporary storage capacity available through contracts or direct ownership. A breakdown of specific types, and quantities is presented in *Figure 7-3*.

Figure 7-3 Temporary Storage Capacity

Owner	Type	Capacity (bbls)	Location & Response Time
Bay West	Ashland Refinery (F)	5,952	St. Paul, MN-12 hrs
Bay West	Wayne Transport (P)(T)	13,714	Rosemount, MN-12 hrs
Quali Tech	TSB (P)	500	Chaska, MN-10 hrs
Quali Tech	Fast Tank- 3 each (P)	180	Chaska, MN-10 hrs
CEDA	Tanker Truck (P)(T)	143	Mandan, ND-1 hr
CEDA	Vacuum Trucks- 3 each (P)(T)	240	Mandan, ND-1 hr
Tesoro Pipeline	1000 gallon FDT portable tank (1992 Haulmark Spill Trailer #2)-(P)	24	Sidney, MT-6 hrs
Tesoro Mandan Refinery	2,400 gallon Fast Tank- 2 each (Spill Response Trailer) (P)	114	Mandan, ND-1hr
Tesoro Mandan Refinery	Refinery Tankage (F)	96,000	Mandan, ND-1hr
Total Temporary Storage Capacity: 116,867 bbls			

(P) = Portable Storage
(F) = Fixed Storage
(T) = Transportation Capable

7.1.4 Tesoro-Owned Equipment Inspection And Maintenance

Tesoro-owned spill response equipment is housed in separate spill trailers and can be accessed by the pipeline response personnel. To ensure operational readiness, the equipment is thoroughly inspected during the semi-annual deployment exercises with a final year-end inspection. Inspection and maintenance activities are conducted in accordance with the National Preparedness for Response Exercise Program (NPREP) guidelines and applicable regulations. A copy of the spill response equipment inspection checklists (including status report for each piece of equipment) is presented in *Figures 7-4 through 7-20*.

Figure 7-4 Haulmark "Boom Vane" Spill Trailer - #600 (Status Report)

Location: South Fire Station **Inspector:** ________________________ **Date:** ___________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement
(Identify W.O. # for repair work or PO # for purchases)

Description	Quantity	Status
Boom vane Assembly • Orange float • Main body and stabilizer arms • Handle • Stabilizer wing • Bridle kit • Mooring line (12mm dynema) • Control line (4 mm trim line)	 1 1 1 1 1 300 feet 300 feet	
Orange containment booms (4 x 4)	4-100' sections	
Post driver	1	
Post puller	1	
Bolt cutter	1	
Fence posts (orange)	10	
55 gallon drum	1	
Fire extinguishers (5 lb. ABC)	1	
Personal Protective Equipment • Chest waders w/suspenders • Life vests	 4 pair (9, 10, 11, and 13) 14	
Miscellaneous items • Boom bridles for 4 x 4 boom • Clevises	 4 ½"-2; 5/8"-2; ¾"-2	

Figure 7-5 Spill Response Trailer #23202 (Status Report)

Location: Fire Field **Inspector:** ________________________ **Date:** ___________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement
(Identify W.O. # for repair work or PO # for purchases)

Description	Quantity	Status
O.K. Corral Containment boom – 6 x 6"	8 – 50' sections (400 feet)	
Orange Containment boom – 4 x 4"	10 – 100' sections (1000 feet)	
Boom bridles for 6"x6" boom	6	
Orange Mini booms	16 – 50' sections (800 feet)	
Mini-boom connector plates	14	
Mini-boom bridles	2	
3-1/4" boom pins	23	
3M Sorbent pads – Type 156 (17"x19")	100 pieces	
CONWEB Sorbent pads (17"x17-1/2")	2 bags (100 pieces ea)	
3M Sorbent pillows – Type 240	30	
Absorbent rope booms	2-10' lengths	
Polyethylene sheeting	1 roll (32' x 100')	
300 Gallon galvanized trough	1	
Static storage tank (1500 gallon)	1	
Manta ray skimmer head floats	7	
Heavy duty hand wringer	2	
Chicken wire (4' width)	1 roll	
Funnels	2	
Poly-foam floats (orange)	2	
55 gallon drum	1	
1 pint sample bottles	24	
Rags	1 box	
Rope Mop Skimmer system • Explosion-Proof driver • Skimmer head mounting pan • Floatation tail pulleys • Trough • 4" Rope mop	1 1 1 2 1 200 feet	

Figure 7-6 Spill Response Trailer #602 (Status Report)

Location: North Fire Station **Inspector:** ________________________ **Date:** ___________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement
(Identify W.O. # for repair work or PO # for purchases)

Description	Quantity	Status
Orange containment boom – 6"x 4"	10 – 100' sections (1000' total)	
Boom tow bridles for 6" x 4" boom	20	
Diesel 3" diaphragm pump	1	
3" suction hose (for diaphragm pump)	100 feet	
3" discharge hose (for diaphragm pump)	150 feet	
Manta ray skimmer head	1	
Manat ray skimmer head floats	2	
2400 gallon fast tanks	2	
Sorbent spaghetti boom (5" diameter)	2 bags (4-10' sections/bag)	
Sorbent pads (17"x17")	2 bags	
Viscus sweep (snare on a rope)		
Fire extinguishers (5 lb. ABC)	1	

Figure 7-7 Field ICP – Interstate Spill Response Trailer - #603 (Status Report)

Location: South Fire Station **Inspector:** ________________________ **Date:** ___________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement
(Identify W.O. # for repair work or PO # for purchases)

Description	Quantity	Status
Big Shot (line-throwers) w/pouch	2	A
Sorbent spaghetti booms (5" diameter)	5 boxes of 4-10' sections	A
Sorbent booms (8" diameter)	1 bag	A
Viscus Sweep (Snare on a rope)	4 - 30# boxes	A
Floats (bouys)	6	A
40 lb. Danforth anchor	4	A
14 lb. Danforth anchor	2	A
9 lb. Danforth anchor	1	A
Coleman Powermate 3750w generator	1	A
Anchor arrangements (in buckets) – 27' ¾" polypropylene rope – 50' ¾" polypropylene rope – 68' ¾ " polypropylene rope – 80' ¾" polypropylene rope – 100' ¾" polypropylene rope	10 sets 2 4 2 1 1	A
½" nylon rope (on reel)	500'	A
5/8" polypropylene rope (on spool)	150'	A
5/8" polypropylene rope (on green roller)	150'	A
5/8" polypropylene rope (on spool)	300'	A
½" polypropylene rope	35'	A
Traffic cones (36" high)	4	A

Description	Quantity	Status
Elastol Emulsifier	1 - 25# pail	A
Post driver	1	A
Post puller	1	A
Shovel spades/rakes	4	A
Flat shovel	4	A
Pitch forks	2	A
Ice chopper	1	A
Fence posts (6 footers)	26	A
30 gallon galvanized garbage cans	1	A
55 gallon drum	1	A
Garbage bags (38: x 58: - 2 mil)	1 box – 100 count	A
16 Quart galvanized buckets	3	A
Fire extinguishers (5 lb. ABC)	1	A
Rags	1 garbage can	A
Personal Protective Equipment • Chest waders w/suspenders • BEST Rubber type gloves (#10) • Hip boots • Hazmat disposable boots • Tyvek suits • Rain suits (rubber)	 5 pair (8, 9, 10, 11, and 13) 32 pair 7 pair (9, 10, 3-11's, and2-12) 3 dozen (XL) 3 boxes (25-XL; 25-XXL, 25-XXXL) 2-Lg jackets; 1-XLg set; 2-Lg sets)	 A A A A A A
Miscellaneous items • Boom bridles for 4 x 4 boom • Boat tow harness (Taperflex) • Clevises	 10 1 3/8"-5; ½"-5; 7/16"-5; 9-5/8"; ¾"-5	 A A A
Miscellaneous items – Cont. • Links • FIRELINE – "Do Not Cross" tape • Tire pump • First Aid Kit • Tool box • Plastic (20' x 100') 6 mil • Mor-roll PRF (30' x 150") • 100' – ¼" cotton sash cord • 100' – 3/8" cotton sash cord • Stream light Rechargeable Flashlight	 12 1box 1 1 1 1 roll 2 boxes 2 2 1	 A A A A A A A A A A

Figure 7-8 1981 Wells Spill Trailer #1 (Status Report)

Location: *Sidney, MT (1981 Wells Spill Trailer #1)* **Inspector:** __________________ **Date:** _____________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement

Description	Quantity	Status
Red absorbent booms	4 bags, 10' sections	
Yellow absorbent booms	2 bags, 10 sections	
Absorbent pads	4 boxes, 24 x 24	
Floating skimmer	1	
Floating pump	1	
All purpose gas-powered winch	1	
Light and stand with outlets	1	
Flood type lamps	2	
Emergency flash lights with red lens	2	
Emergency flash lights with yellow lens	5	
100' rope without loops	6	
200' rope without loops	4	
200' rope with loops	1	
500' of 3/8" yellow rope	1	
5/8" x 600'of rope	7 rolls	
Flashlight, water and hazard proof	1	
Lifting harness	1	
Fire extinguisher, 20lb	1	
First Aid kit	1	
Multi-purpose anchor	1	
Megaphones	2	
Towing mirrors, temporary	1 set	
Long handled axe	1	
Float-type ramps	1 set	
Extension cord, 10' with 4 GFCI outlets	1 set	
Pipe, 1" x 3'	10	
Stakes, 3/8" rebar	40	
"Authorized Personnel Only" tape	2 rolls	
Signal flags	8	
"Men Working" signs	2	
Fire extinguishers (5 lb. ABC)	2	
Rags	50	
Personal Protective Equipment • Hip boots • Wet suit, large • Life vests/pillow • Flag vests	 6 pair (assorted sizes) 1 4/2 2	
12" electric exhaust fan	1	
Wash down pump, 3 hp	1	
Honda Model EG-1500 generator	1	
Shovels, spade	4	
Pitch forks	2	
Rakes	2	
Mops	4	
Hose	assortment	

Distribution: Return completed copy to the refinery CERC to be maintained on file for a period of 5-years.

Figure 7-9 1992 Haulmark Spill Trailer #2 (Status Report)

Location: *Sidney, MT (1992 Haulmark Spill Trailer #2)* **Inspector:** _________________ **Date:** ___________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement

Description	Quantity	Status
Oil Mop Mark I14-VE rope skimmer 3M-373-1 with 200' OCW-6 mop	1	
Tpn 16 tail pulleys for mop	2	
Acme FS150A floating saucer wash down pump #42793	1	
1000 W metal halide lamp with stand and cord	2	
Heavy debris 38" x 50" bags	2 rolls	
1000 gallon FDT portable tank, 8' x 8' x 28"	1	

Location: *Sidney, MT (Office/Shop)* **Inspector**: _________________ **Date:** ________

Description	Quantity	Status
1997 Road King Tandem axle utility 18' trailer with fast water boom	20-100' sections	
1997 Alaskan Lund 21' boat with 75 hp outboard motor with Shore Lander trailer	1	
3" Gorman Rupp diaphragm pump w/gasoline engine	1	

Distribution: Return completed copy to the refinery CERC to be maintained on file for a period of 5-years.

Figure 7-10 16' Trailer #42798 (Status Report)

Location: *Watford City, ND (16' Trailer #42798)*_____ **Inspector:** __________________ **Date:** _____________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement

Description	Quantity	Status
O.K. corral booms with 7" diameter flotation and 9"skirt, 3/8" chain, top cable, and quick latch couplers	6 – 100' sections	
O.K. corral booms with 7" diameter flotation and 9"skirt	12 – 50' sections	
40 lb. Danforth anchor	4	
14 lb. Danforth anchor	2	
9 lb. Danforth anchor	1	
Hard shell Mooring buoy	4	
Quick latch towing bridle w/8' of ½" poly rope	1	
30 lb. fire extinguisher	1	
Fire and First Aid blanket	1	
Safety master 24 unit First Aid kit	1	
Life vests (medium and large/X-large)	1/1	
Tyvek coveralls • Large • X-Large	 25 25	
Raingear (coverall and jackets) • Small • Medium • Large • X-Large	 1 1 3 2	
Edmont SOL-VEX Nitrile gloves • Size, 7-7 ½ • Size, 9-9 ½ • Size 11	 12 pair 20 pair 12 pair	
Tingley steel toe hip boots • Size 9 • Size 10 • Size 11 • Size 12	 2 pair 2 pair 1 pair 1 pair	
Miscellaneous Tools • Pitch Forks • Shovels • Rakes • Fence posts • 12 lb sledge hammer • Soldering gun • Wire splicing kit w/misc connections • Tool box with extra tools • Surge outlet strip • Manual air pump	 4 5 2 11 1 2 1 1 1 1	
Honda 3500 Watt generator	1	
Portable flood lights • 1000 Watt • 500 Watt	 2 2	
Cyalume 20-minute safety light	12	
Cyalume 2-hour safety light	22	

Description	Quantity	Status
High Pressure wash down pump package		
• Honda pump, Model WH20X (132 GPM flow rate)	1	
• 2A quick coupler adapter (1-intake; 1- discharge)	2	
• 2 x 1-1/2" reducer coupler discharge adapter	1	
• 2C quick coupler (adapts intake strainer to intake hose using a short section of 2: hose)	1	
• 2" suction hose w/quick couplers	1 – 10' section	
• 1-1/2" discharge hose w/quick coupler	1 – 10' section	
• Tapered nozzle with quick coupler	2	
• 1-1/2 and 2" quick coupler rubber gaskets (spares)	2	
Floating wash down pump, with 25' of 1-1/2" hose with quick couplers spray nozzle; 15' section of 1-1/2" suction type hose with PT coupler, and 10' section of 1-1/2" suction type hose with PT couplers	1	
5/8" Polypropylene rope		
• 30' with hooks	3	
• 50' with chain and hooks	3	
• 60' with hooks	2	
• 100' with hooks	1	
• 150' with chain and hooks	2	
• 150' on spools with hooks	2	
• 600' on spool	1	
Acme oil sorbent booms		
• 10' sections	1	
• 20' sections	5	
Flashlight	1	
6" snatch block	1	
Binoculars, 8x40	1	
Cloth rags	1 box	
Hand soap	2 bottles	
Fence post driver	1	
Inflatable buoy, white	4	
Inflatable buoy, red	2	
6 amp battery charger	1	
1-1/2 ton lever hoist	1	
32 gallon garbage cans	2	
2-1/2 gallon gas can	1	
Cooler	1	
Generator cords	3	
29 amp connector	1 – 50' section	
14.5 amp connector	2 – 50' section	
Extension cord	1 – 25' section	
10-W30 motor oil	1 case	
Outboard motor oil	1 gallon	
Hard hats	2	
Plastic fence 4'x100'	1 section	
3 gallon water dispenser	1	
T-190 oil sorbent (19'Wx144'L)	1 roll	
24" bolt cutter	1	
Half mask rubber cartridge respirator		
• Large	1	
• Medium	3	
Half mask cartridges	3 sets	

Description	Quantity	Status
Weed sprayers	6	

Figure 7-11 20' Haulmark Trailer (Status Report)

Location: *Watford Receipt, ND (20' Trailer)* **Inspector:** __________________ **Date:** _____________

Emergency Response Equipment		
8' x 20' Haulmark Cargo Trailer - Equipment		
Description	Extra Description	Qty
Jus 7150100 5g/19l Safe Can Red		2
Ames 1348500 Shovel Eagle Lh Round	Point Fiberglass	12
Ames 1348300 Shovel Eagle Lh Square	Point Fiberglass	12
Ames 1888000 Rake Eagle Bow	Fiberglass Hdle	5
Ames 1838100 Fork 5-Tine Manure 10	Wd 12-1/4" Lgth 4' Handle	3
Plum 11528 Double Faced Hammer 48	Oz	1
Post Driver		1
Vp Fs118 Squeegee Floor 18"	Steel, No Hndl 10/Cs (Fs55618-10)	4
Vp 4412-10418 Handle Squeegee	Tapered End 1" Diameter 72" Oal	4
Ans 434747 Sentry Fire Extingushr	20a 120b C Foray	1
Ans 30937 Bracket Mounting Fire	Extinguish 20 Lb	1
Vp 4412-10228 Broom Head Floor 18"	Medium Tamipco Wood Block	4
Vp 4408-11963 Handle Push Broom	15/16"X60" Wood Threaded Lacq Hndle	4
5' Steel Fence Posts		12
Igl 00000451 Cooler Hd Plstc 5gal		1
Dup Tm127sbuxl Coverall Tempro Blue	Zip Front/Hood/Elastic Wrist/Ankles	25
Dup Tm127sbu2x Coverall Tempro	Zip Front/Hood/Elastic Wrist/Ankles	25
Pel 2000c.Yw Super Sabrelite Laser	Spot Xenon Flashlight/Yellow	10
Sl 61200 Headlamp 3aa Haz-Lo W/	Batteries Class 1 Div 1	10
Engz En93 Battery Alkaline Sz C	Emergency Indust Lr14dp12 /01921/	50
Engz En91 Battery Alkaline Sz Aa	Energizer Industrial /01919/	100
Poly Cf0620c Film 20'x100'x.006	Mil Clear Poly Sheeting	2
Ipg 83689 Cloth/Duct Tape Ac15 Slv	48mmx54.8m 24rl/Cs	48
Har Bt50 Danger Do Not Enter 4mil	Barrcd Tape-Red Bckgrnd 3"X1000'	5
Mednik 1190 Rgwa White Knits-Shirt	50 Lb.Box	2
Acc Frc750 Sign Stand		2
Acc Frc318mv 36x36 Road Closed Ahead Mesh		2
Acc Frc836 Cross Ribs 36"		2
Falcon Msn Horn Mighty-Sonic	Ind Boxed (Rpl Pbshn134a)	2

Emergency Response Equipment		
Radi Sv252zom Vest Xl Orange	Fr Safety	10
S-G Uchf183jj Corded Canvas Glove	18oz Knit Wrist	108
Ting 35121.Xl Boots Workbrutes Pvc	Black Frigiflex 10" Sz Xl	24
Ting 35121.Lg Boots Workbrutes Pvc	Black Frigiflex 10" Sz Lg	24
Js Hc4411 Glove Sfskn Disp Ambi Sz	Lg Ltx Txtfng 12" Bead Nat Cls	1
Mcr 3881 .42 Mm Pvc/Poly Green	Dominator Coverall/ Xl	5
Mcr 3881 .42 Mm Pvc/Poly Green	Dominator Coverall / 2xl	5
Enc 05068004 160 Goggles 2-66	Clr Bdy& Enfog/Blck Nprn Strap 72c	10
Met 18x60lls Windsock 18" Orange		1
Met 18hbwcp Frame F/18 X 60 Wind	Sock	1
Met 10-P Windsock Pole 10'		1
K-C 17713 Delsey Bathroom Tissues	Wht/4.5"X4/4"Shts/2-Ply(Rpl.077331	1
Vp Twlw85 Towel Household White	8.8" X 11" 2-Ply 85sheets 30 Rls/Cs	1
Poly Cf0420b Film 20'x100x.004 Blk	#420b	2
Vp 4412-10425 Pan Dust Hd Plastic	12" Black 12/Case (Ma614)	2
G-B 46-308uvb Black Tie Wraps	100/Pk	1
Carol 06450.63.06 50' 14/3 Sjow	Froghide Ultra Flex	3
H-A 710160-00250 Indust Grd Multifila	Premium Nylon Natural White	2
Pra Ws1x2x24 Woodstake 1x2x24 50/Bundle		1
Wan Ad50 Generator 9hp		1
Cis Uc1700 Chock Wheel Small		1
Wan Tsp2h Trash Pump		1
Swi 55-60390 Blanket Fire & First	Aid Wool 62" X 80" 6/Cs	1
Ans 434747 Sentry Fire Extingushr	20a 120b C Foray	1
Ans 30937 Bracket Mounting Fire	Extinguish 20 Lb	1
Swi 34180lfp Cabinet Ind First Aid	3 Shelf W/Liner	1
Swi 35-230sb Swi Snake Bite Kit	1/Bx 5/Cs	4
Vp 5wb2 Bucket Plastic 5 Gallon	White 90mil 120/Tray 2 Tray/Pallet	2
Vp 5wl Lid Plastic 3.5 Or 5 Gallon	White 90mil 1200/Pallet	2
Gojo 7200-01 2000ml Dispenser F/Pr	Refills **Part Of Trade Dev**	5
Gojo 7295-04 2000ml Refill F/2000	Disp. Pwr. Gold Hand Cleaner /Crus	5
Spc Env150 Blanket Oil Sorbent	Meltblown/Medwt/30"X150'/Old#Spc1 5	2
Jus 08800 Drum Cradle		1
Spc Env150 Blanket Oil Sorbent	Meltblown/Medwt/30"X150'/Old#Spc1 5	6
Val Vlpb810 Sorbent Boom 8x10	4/Bundle 4 Each=1bundle	2
Val Vlpb510 Sorbent Boom	5x10 4/Bale	3
Spc Env50 Pad 30"X30"		8
Sch Two Way Radios W/Chargers		6
Cc Acln55007 55 Gallon Drum Liners- 4 Mil		50
Cc Mfgfnot55029 55 Gallon Steel Drums W/ Lid		8

Emergency Response Equipment		
Jjk 140rs8 Guidebook Emergency 2008	Moq 500	1
J-S 3019298 Light Sundowner Amber	Body / Amber Lens / 10 Per Case	1
Vp 4412-10269 Brush Economy Scrub	Tampico Fill Wood Block 1-1/8" Tri	2
Hon Eirw01 Hard Hat White Full Brim W/ Logo		10
Hon Fm71 Full Brim Faceshiel Bracket		10
C-S 1102000 Harness Vest Style Ful	Body/Back D-Ring/Universal Sz	2
C-S 1244306 Lanyard Shockwave2 ,	Tubular Web, Snap Hook At Ends X	2
C-S 3101300 Talon, 9.5 Ft, Web,	With Tietack	2
C-S 1240201 Lanyard 2.5'		2
C-S 2000114 Carabiner Saflok Steel	2-3/16" Gate Opening 3600lb	4
Bb 06067 Pro Supergate Tool Bag	19 1/2x12x14 6 Per Case	3
C-S 1202844 Rope 100' 5/8" Thick	Approved For Use On Confined Space	2
Sta 10099 Knife Utility 99 Retract		1
Luf L625 1"X25' Hi Viz Org Power	Return Tape	1
Ekl 10222 Comb Short And	Long Set 22 Keys/Set Inch & Metric	1
Sta 665-65p Screwdriver 6pc Set	Rubber Grip	1
Pro 292nc Pliers Locking 10 Curved	Curved (J292nc)	1
Cres H26v Cee Tee Co. Comb. Slip	Joint Pliers Carded 6" /46768/	1
Pro 260sg Pliers Powertrack Nat 10	W	1
Pro 795 Set Wr Adjustable 3 Pc	3/Pc /10056	1
Plum 11-498 Hammer Hickory Ball	Pein 16oz /11498/	1
Plum 11528 Double Faced Hammer 48	Oz	1
Sta 55515 Wonder Bar 13-3/8	13-3/8	1
Pel 0944000000110 Portable Lighting		4
Lyon 3020 Cabinet Dove Gray	24" W X 12" D X 35" H	7
Lyon Dd67311sd Starter Shelf Dove Gray	6' W X 6' H X 2' D	1
Lyon Dd67311d Add On Shelf Dove Gray	6' W X 6' H X 2' D	1
F-L 80111-01 Cargo Net		2
Dh Sf10e2 Blue Discharge Hose W/Couplings	2" X 100' - Includes G200-C-Al, G200-E-Al, & Js208	3
Dh G200-D-Al 2" Couplings For Pump		2
Dh Rhs200 2" Suction Screen		2
Dh G200-F-Al 2" Coupler For Screens		2
Dh 390sd2 Black Suction Hose W/Couplings	2" X 40' - Includes G200-C-Al, G200-E-Al, & Js209	1
Sorbent Swing Out Platform		1
Wer 6208 Ladder Step	8' Fiberglass Ia Rating	1
Msa 10115822 Frame V-Gard Universal	For Caps W Debris Control	10
Msa 10117750 V-Gard Pc Visor	Flat Box Of 10	10
Gngm – Emergency Response Plan		1
Bakkenlink Pipeline – Emergency Response Plan		1

Figure 7-12 20' Haulmark Trailer (Status Report)

Location: *Fryburg, ND (20' Trailer)* **Inspector:** ________________ **Date:** ____________

Emergency Response Equipment		
8' X 20' Haulmark Cargo Trailer - Equipment		
Description	Extra Description	Qty
Jus 7150100 5g/19l Safe Can Red		2
Ames 1348500 Shovel Eagle Lh Round	Point Fiberglass	12
Ames 1348300 Shovel Eagle Lh Square	Point Fiberglass	12
Ames 1888000 Rake Eagle Bow	Fiberglass Hdle	5
Ames 1838100 Fork 5-Tine Manure 10	Wd 12-1/4" Lgth 4' Handle	3
Plum 11528 Double Faced Hammer 48	Oz	1
Post Driver		1
Vp Fs118 Squeegee Floor 18"	Steel, No Hndl 10/Cs (Fs55618-10)	4
Vp 4412-10418 Handle Squeegee	Tapered End 1" Diameter 72" Oal	4
Ans 434747 Sentry Fire Extingushr	20a 120b C Foray	1
Ans 30937 Bracket Mounting Fire	Extinguish 20 Lb	1
Vp 4412-10228 Broom Head Floor 18"	Medium Tamipco Wood Block	4
Vp 4408-11963 Handle Push Broom	15/16"X60" Wood Threaded Lacq Hndle	4
5' Steel Fence Posts		12
Igl 00000451 Cooler Hd Plstc 5gal		1
Dup Tm127sbuxl Coverall Tempro Blue	Zip Front/Hood/Elastic Wrist/Ankles	25
Dup Tm127sbu2x Coverall Tempro	Zip Front/Hood/Elastic Wrist/Ankles	25
Pel 2000c.Yw Super Sabrelite Laser	Spot Xenon Flashlight/Yellow	10
Sl 61200 Headlamp 3aa Haz-Lo W/	Batteries Class 1 Div 1	10
Engz En93 Battery Alkaline Sz C	Emergency Indust Lr14dp12 /01921/	50
Engz En91 Battery Alkaline Sz Aa	Energizer Industrial /01919/	100
Poly Cf0620c Film 20'x100'x.006	Mil Clear Poly Sheeting	2
Ipg 83689 Cloth/Duct Tape Ac15 Slv	48mmx54.8m 24rl/Cs	48
Har Bt50 Danger Do Not Enter 4mil	Barrcd Tape-Red Bckgrnd 3"X1000'	5
Mednik 1190 Rgwa White Knits-Shirt	50 Lb.Box	2
Acc Frc750 Sign Stand		2
Acc Frc318mv 36x36 Road Closed Ahead Mesh		2
Acc Frc836 Cross Ribs 36"		2
Falcon Msn Horn Mighty-Sonic	Ind Boxed (Rpl Pbshn134a)	2
Radi Sv252zom Vest Xl Orange	Fr Safety	10
S-G Uchf183jj Corded Canvas Glove	18oz Knit Wrist	108
Ting 35121.Xl Boots Workbrutes Pvc	Black Frigiflex 10" Sz Xl	24
Ting 35121.Lg Boots Workbrutes Pvc	Black Frigiflex 10" Sz Lg	24
Js Hc4411 Glove Sfskn Disp Ambi Sz	Lg Ltx Txtfng 12" Bead Nat Cls	1
Mcr 3881 .42 Mm Pvc/Poly Green	Dominator Coverall/ Xl	5

Emergency Response Equipment		
Mcr 3881 .42 Mm Pvc/Poly Green	Dominator Coverall / 2xl	5
Enc 05068004 160 Goggles 2-66	Clr Bdy& Enfog/Blck Nprn Strap 72c	10
Met 18x60lls Windsock 18" Orange		1
Met 18hbwcp Frame F/18 X 60 Wind	Sock	1
Met 10-P Windsock Pole 10'		1
K-C 17713 Delsey Bathroom Tissues	Wht/4.5"X4/4"Shts/2-Ply(Rpl.077331	1
Vp Twlw85 Towel Household White	8.8" X 11" 2-Ply 85sheets 30 Rls/Cs	1
Poly Cf0420b Film 20'x100x.004 Blk	#420b	2
Vp 4412-10425 Pan Dust Hd Plastic	12" Black 12/Case (Ma614)	2
G-B 46-308uvb Black Tie Wraps	100/Pk	1
Carol 06450.63.06 50' 14/3 Sjow	Froghide Ultra Flex	3
H-A 710160-00250 Indust Grd Multifila	Premium Nylon Natural White	2
Pra Ws1x2x24 Woodstake 1x2x24 50/Bundle		1
Wan Ad50 Generator 9hp		1
Cis Uc1700 Chock Wheel Small		1
Wan Tsp2h Trash Pump		1
Swi 55-60390 Blanket Fire & First	Aid Wool 62" X 80" 6/Cs	1
Ans 434747 Sentry Fire Extingushr	20a 120b C Foray	1
Ans 30937 Bracket Mounting Fire	Extinguish 20 Lb	1
Swi 34180lfp Cabinet Ind First Aid	3 Shelf W/Liner	1
Swi 35-230sb Swi Snake Bite Kit	1/Bx 5/Cs	4
Vp 5wb2 Bucket Plastic 5 Gallon	White 90mil 120/Tray 2 Tray/Pallet	2
Vp 5wl Lid Plastic 3.5 Or 5 Gallon	White 90mil 1200/Pallet	2
Gojo 7200-01 2000ml Dispenser F/Pr	Refills **Part Of Trade Dev**	5
Gojo 7295-04 2000ml Refill F/2000	Disp. Pwr. Gold Hand Cleaner /Crus	5
Spc Env150 Blanket Oil Sorbent	Meltblown/Medwt/30"X150'/Old#Spc1 5	2
Jus 08800 Drum Cradle		1
Spc Env150 Blanket Oil Sorbent	Meltblown/Medwt/30"X150'/Old#Spc1 5	6
Val Vlpb810 Sorbent Boom 8x10	4/Bundle 4 Each=1bundle	2
Val Vlpb510 Sorbent Boom	5x10 4/Bale	3
Spc Env50 Pad 30"X30"		8
Sch Two Way Radios W/Chargers		6
Cc Acln55007 55 Gallon Drum Liners- 4 Mil		50
Cc Mfgfnot55029 55 Gallon Steel Drums W/ Lid		8
Jjk 140rs8 Guidebook Emergency 2008	Moq 500	1
J-S 3019298 Light Sundowner Amber	Body / Amber Lens / 10 Per Case	1
Vp 4412-10269 Brush Economy Scrub	Tampico Fill Wood Block 1-1/8" Tri	2
Hon Eirw01 Hard Hat White Full Brim W/ Logo		10
Hon Fm71 Full Brim Faceshiel Bracket		10

Emergency Response Equipment		
C-S 1102000 Harness Vest Style Ful	Body/Back D-Ring/Universal Sz	2
C-S 1244306 Lanyard Shockwave2 ,	Tubular Web, Snap Hook At Ends X	2
C-S 3101300 Talon, 9.5 Ft, Web,	With Tietack	2
C-S 1240201 Lanyard 2.5'		2
C-S 2000114 Carabiner Saflok Steel	2-3/16" Gate Opening 3600lb	4
Bb 06067 Pro Supergate Tool Bag	19 1/2x12x14 6 Per Case	3
C-S 1202844 Rope 100' 5/8" Thick	Approved For Use On Confined Space	2
Sta 10099 Knife Utility 99 Retract		1
Luf L625 1"X25' Hi Viz Org Power	Return Tape	1
Ekl 10222 Comb Short And	Long Set 22 Keys/Set Inch & Metric	1
Sta 665-65p Screwdriver 6pc Set	Rubber Grip	1
Pro 292nc Pliers Locking 10 Curved	Curved (J292nc)	1
Cres H26v Cee Tee Co. Comb. Slip	Joint Pliers Carded 6" /46768/	1
Pro 260sg Pliers Powertrack Nat 10	W	1
Pro 795 Set Wr Adjustable 3 Pc	3/Pc /10056	1
Plum 11-498 Hammer Hickory Ball	Pein 16oz /11498/	1
Plum 11528 Double Faced Hammer 48	Oz	1
Sta 55515 Wonder Bar 13-3/8	13-3/8	1
Pel 0944000000110 Portable Lighting		4
Lyon 3020 Cabinet Dove Gray	24" W X 12" D X 35" H	7
Lyon Dd67311sd Starter Shelf Dove Gray	6' W X 6' H X 2' D	1
Lyon Dd67311d Add On Shelf Dove Gray	6' W X 6' H X 2' D	1
F-L 80111-01 Cargo Net		2
Dh Sf10e2 Blue Discharge Hose W/Couplings	2" X 100' - Includes G200-C-Al, G200-E-Al, & Js208	3
Dh G200-D-Al 2" Couplings For Pump		2
Dh Rhs200 2" Suction Screen		2
Dh G200-F-Al 2" Coupler For Screens		2
Dh 390sd2 Black Suction Hose W/Couplings	2" X 40' - Includes G200-C-Al, G200-E-Al, & Js209	1
Sorbent Swing Out Platform		1
Wer 6208 Ladder Step	8' Fiberglass Ia Rating	1
Msa 10115822 Frame V-Gard Universal	For Caps W Debris Control	10
Msa 10117750 V-Gard Pc Visor	Flat Box Of 10	10
Gngm – Emergency Response Plan		1
Bakkenlink Pipeline Emergency Response Plan		1

Figure 7-13 20' Haulmark Trailer (Status Report)

Location: *Dry Creek, ND (20' Trailer)*______ **Inspector:** __________________ **Date:** _____________

Emergency Response Equipment		
8' X 20' Haulmark Cargo Trailer - Equipment		
Description	Extra Description	Qty
Jus 7150100 5g/19l Safe Can Red		2
Ames 1348500 Shovel Eagle Lh Round	Point Fiberglass	12
Ames 1348300 Shovel Eagle Lh Square	Point Fiberglass	12
Ames 1888000 Rake Eagle Bow	Fiberglass Hdle	5
Ames 1838100 Fork 5-Tine Manure 10	Wd 12-1/4" Lgth 4' Handle	3
Plum 11528 Double Faced Hammer 48	Oz	1
Post Driver		1
Vp Fs118 Squeegee Floor 18"	Steel, No Hndl 10/Cs (Fs55618-10)	4
Vp 4412-10418 Handle Squeegee	Tapered End 1" Diameter 72" Oal	4
Ans 434747 Sentry Fire Extingushr	20a 120b C Foray	1
Ans 30937 Bracket Mounting Fire	Extinguish 20 Lb	1
Vp 4412-10228 Broom Head Floor 18"	Medium Tamipco Wood Block	4
Vp 4408-11963 Handle Push Broom	15/16"X60" Wood Threaded Lacq Hndle	4
5' Steel Fence Posts		12
Igl 00000451 Cooler Hd Plstc 5gal		1
Dup Tm127sbuxl Coverall Tempro Blue	Zip Front/Hood/Elastic Wrist/Ankles	25
Dup Tm127sbu2x Coverall Tempro	Zip Front/Hood/Elastic Wrist/Ankles	25
Pel 2000c.Yw Super Sabrelite Laser	Spot Xenon Flashlight/Yellow	10
Sl 61200 Headlamp 3aa Haz-Lo W/	Batteries Class 1 Div 1	10
Engz En93 Battery Alkaline Sz C	Emergency Indust Lr14dp12 /01921/	50
Engz En91 Battery Alkaline Sz Aa	Energizer Industrial /01919/	100
Poly Cf0620c Film 20'x100'x.006	Mil Clear Poly Sheeting	2
Ipg 83689 Cloth/Duct Tape Ac15 Slv	48mmx54.8m 24rl/Cs	48
Har Bt50 Danger Do Not Enter 4mil	Barrcd Tape-Red Bckgrnd 3"X1000'	5
Mednik 1190 Rgwa White Knits-Shirt	50 Lb.Box	2
Acc Frc750 Sign Stand		2
Acc Frc318mv 36x36 Road Closed Ahead Mesh		2
Acc Frc836 Cross Ribs 36"		2
Falcon Msn Horn Mighty-Sonic	Ind Boxed (Rpl Pbshn134a)	2
Radi Sv252zom Vest Xl Orange	Fr Safety	10
S-G Uchf183jj Corded Canvas Glove	18oz Knit Wrist	108
Ting 35121.Xl Boots Workbrutes Pvc	Black Frigiflex 10" Sz Xl	24

Emergency Response Equipment		
Ting 35121.Lg Boots Workbrutes Pvc	Black Frigiflex 10" Sz Lg	24
Js Hc4411 Glove Sfskn Disp Ambi Sz	Lg Ltx Txtfng 12" Bead Nat Cls	1
Mcr 3881 .42 Mm Pvc/Poly Green	Dominator Coverall/ Xl	5
Mcr 3881 .42 Mm Pvc/Poly Green	Dominator Coverall / 2xl	5
Enc 05068004 160 Goggles 2-66	Clr Bdy& Enfog/Blck Nprn Strap 72c	10
Met 18x60lls Windsock 18" Orange		1
Met 18hbwcp Frame F/18 X 60 Wind	Sock	1
Met 10-P Windsock Pole 10'		1
K-C 17713 Delsey Bathroom Tissues	Wht/4.5"X4/4"Shts/2-Ply(Rpl.077331	1
Vp Twlw85 Towel Household White	8.8" X 11" 2-Ply 85sheets 30 Rls/Cs	1
Poly Cf0420b Film 20'x100x.004 Blk	#420b	2
Vp 4412-10425 Pan Dust Hd Plastic	12" Black 12/Case (Ma614)	2
G-B 46-308uvb Black Tie Wraps	100/Pk	1
Carol 06450.63.06 50' 14/3 Sjow	Froghide Ultra Flex	3
H-A 710160-00250 Indust Grd Multifila	Premium Nylon Natural White	2
Pra Ws1x2x24 Woodstake 1x2x24 50/Bundle		1
Wan Ad50 Generator 9hp		1
Cis Uc1700 Chock Wheel Small		1
Wan Tsp2h Trash Pump		1
Swi 55-60390 Blanket Fire & First	Aid Wool 62" X 80" 6/Cs	1
Ans 434747 Sentry Fire Extingushr	20a 120b C Foray	1
Ans 30937 Bracket Mounting Fire	Extinguish 20 Lb	1
Swi 34180lfp Cabinet Ind First Aid	3 Shelf W/Liner	1
Swi 35-230sb Swi Snake Bite Kit	1/Bx 5/Cs	4
Vp 5wb2 Bucket Plastic 5 Gallon	White 90mil 120/Tray 2 Tray/Pallet	2
Vp 5wl Lid Plastic 3.5 Or 5 Gallon	White 90mil 1200/Pallet	2
Gojo 7200-01 2000ml Dispenser F/Pr	Refills **Part Of Trade Dev**	5
Gojo 7295-04 2000ml Refill F/2000	Disp. Pwr. Gold Hand Cleaner /Crus	5
Spc Env150 Blanket Oil Sorbent	Meltblown/Medwt/30"X150'/Old#Spc1 5	2
Jus 08800 Drum Cradle		1
Spc Env150 Blanket Oil Sorbent	Meltblown/Medwt/30"X150'/Old#Spc1 5	6
Val Vlpb810 Sorbent Boom 8x10	4/Bundle 4 Each=1bundle	2
Val Vlpb510 Sorbent Boom	5x10 4/Bale	3
Spc Env50 Pad 30"X30"		8
Sch Two Way Radios W/Chargers		6
Cc Acln55007 55 Gallon Drum Liners- 4 Mil		50
Cc Mfgfnot55029 55 Gallon Steel Drums W/ Lid		8
Jjk 140rs8 Guidebook Emergency 2008	Moq 500	1
J-S 3019298 Light Sundowner Amber	Body / Amber Lens / 10 Per Case	1
Vp 4412-10269 Brush Economy Scrub	Tampico Fill Wood Block 1-1/8" Tri	2

Emergency Response Equipment		
Hon Eirw01 Hard Hat White Full Brim W/ Logo		10
Hon Fm71 Full Brim Faceshiel Bracket		10
C-S 1102000 Harness Vest Style Ful	Body/Back D-Ring/Universal Sz	2
C-S 1244306 Lanyard Shockwave2 ,	Tubular Web, Snap Hook At Ends X	2
C-S 3101300 Talon, 9.5 Ft, Web,	With Tietack	2
C-S 1240201 Lanyard 2.5'		2
C-S 2000114 Carabiner Saflok Steel	2-3/16" Gate Opening 3600lb	4
Bb 06067 Pro Supergate Tool Bag	19 1/2x12x14 6 Per Case	3
C-S 1202844 Rope 100' 5/8" Thick	Approved For Use On Confined Space	2
Sta 10099 Knife Utility 99 Retract		1
Luf L625 1"X25' Hi Viz Org Power	Return Tape	1
Ekl 10222 Comb Short And	Long Set 22 Keys/Set Inch & Metric	1
Sta 665-65p Screwdriver 6pc Set	Rubber Grip	1
Pro 292nc Pliers Locking 10 Curved	Curved (J292nc)	1
Cres H26v Cee Tee Co. Comb. Slip	Joint Pliers Carded 6" /46768/	1
Pro 260sg Pliers Powertrack Nat 10	W	1
Pro 795 Set Wr Adjustable 3 Pc	3/Pc /10056	1
Plum 11-498 Hammer Hickory Ball	Pein 16oz /11498/	1
Plum 11528 Double Faced Hammer 48	Oz	1
Sta 55515 Wonder Bar 13-3/8	13-3/8	1
Pel 0944000000110 Portable Lighting		4
Lyon 3020 Cabinet Dove Gray	24" W X 12" D X 35" H	7
Lyon Dd67311sd Starter Shelf Dove Gray	6' W X 6' H X 2' D	1
Lyon Dd67311d Add On Shelf Dove Gray	6' W X 6' H X 2' D	1
F-L 80111-01 Cargo Net		2
Dh Sf10e2 Blue Discharge Hose W/Couplings	2" X 100' - Includes G200-C-Al, G200-E-Al, & Js208	3
Dh G200-D-Al 2" Couplings For Pump		2
Dh Rhs200 2" Suction Screen		2
Dh G200-F-Al 2" Coupler For Screens		2
Dh 390sd2 Black Suction Hose W/Couplings	2" X 40' - Includes G200-C-Al, G200-E-Al, & Js209	1
Sorbent Swing Out Platform		1
Wer 6208 Ladder Step	8' Fiberglass Ia Rating	1
Msa 10115822 Frame V-Gard Universal	For Caps W Debris Control	10
Msa 10117750 V-Gard Pc Visor	Flat Box Of 10	10
Gngm – Emergency Response Plan		1
Bakkenlink Pipeline – Emergency Response Plan		1

Figure 7-14 12’ Haulmark Boom Trailer (Status Report)

Location: *Watford Receipt, ND (12’ Trailer)* **Inspector:** ________________ **Date:** ________

Emergency Response Equipment	
6’ x 12’ Haulmark Cargo Trailer - Equipment	
Description	Quantity
Acme 10” containment boom in 100’ sections (4” solid foam float, 6” skirt depth, ¼” chain ballast in a double fabric sleeve, ASTM Pin Hole locations, 22 Ounce Orange Jaton fabric, Quick latch couplers with floats and stainless steel hardware, 22 ounce Orange Jaton fabric). Bundle Dimensions: 60”L x 30” W x 20” H (125 lbs.)	1000 ft.

Figure 7-15 12’ Haulmark Boom Trailer (Status Report)

Location: *Dunn City, ND (12’ Trailer)* **Inspector:** ________________ **Date:** ________

Emergency Response Equipment	
6’ x 12’ Haulmark Cargo Trailer - Equipment	
Description	Quantity
Acme 10” containment boom in 100’ sections (4” solid foam float, 6” skirt depth, ¼” chain ballast in a double fabric sleeve, ASTM Pin Hole locations, 22 Ounce Orange Jaton fabric, Quick latch couplers with floats and stainless steel hardware, 22 ounce Orange Jaton fabric). Bundle Dimensions: 60”L x 30” W x 20” H (125 lbs.)	1000 ft.

Figure 7-16 12’ Haulmark Boom Trailer (Status Report)

Location: *Fryburg, ND (12’ Trailer)* **Inspector:** ________________ **Date:** ________

Emergency Response Equipment	
6’ x 12’ Haulmark Cargo Trailer - Equipment	
Description	Quantity
Acme 10” containment boom in 100’ sections (4” solid foam float, 6” skirt depth, ¼” chain ballast in a double fabric sleeve, ASTM Pin Hole locations, 22 Ounce Orange Jaton fabric, Quick latch couplers with floats and stainless steel hardware, 22 ounce Orange Jaton fabric). Bundle Dimensions: 60”L x 30” W x 20” H (125 lbs.)	1000 ft.

Figure 7-17 16' Trailer #42797 (Status Report)

Location: *Watford City, ND (16' Trailer #42797)* **Inspector:** ________________ **Date:** ________

Description	Quantity	Status
O.K. corral booms with 7" diameter flotation and 9"skirt, 3/8" chain, top cable, and quick latch couplers	14 – 100' sections	
O.K. corral booms with 7" diameter flotation and 9"skirt, 3/8" chain, top cable, and quick latch couplers	8 – 40' sections	
O.K. corral booms with 7" diameter flotation and 9"skirt, 3/8" chain, top cable, and quick latch couplers	10 – 100 sections	
Quick latch towing bridles w/8' of ½" poly rope	4	
30 lb. fire extinguisher	1	

Figure 7-18 Watford City Office/Shop (Status Report)

Location: Watford City, ND (Office/Shop) **Inspector:** ________________ **Date:** ________

Description	Quantity	Status
Honda WH20X High Pressure Wash down pump	1	
Honda 3500 Watt Generator (Eng #1425316)	1	
Alaskan Lund 20' boat with 112 HP OMC	1	

Distribution: Return completed copy to the refinery CERC to be maintained on file for a period of 5-years.

Figure 7-19 Tioga Office/Shop (Status Report)

Location: *Tioga, ND (Office/Shop)* **Inspector:** ________________ **Date:** ________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement

Description	Quantity	Status
Crestliner 16' boat with 60 HP Yamaha rear tiller motor (Serial #'s 550350 and 33076)	1	

Distribution: Return completed copy to the refinery CERC to be maintained on file for a period of 5-years

Figure 7-20 Dickinson Office/Shop (Status Report)

Location: *Dickinson, ND (Office/Shop)* **Inspector:** ________________ **Date:** ________

Legend: A) Equipment "in place" and in good working order
B) Equipment "in service" and in good working order (Identify location)
C) Equipment "out-of-service" and in need of repair or replacement

Description	Quantity	Status
Alaskan Lund 20' boat with 75 HP Mercury motor	1	
18' Road King flatbed trailer with O.K. corral boom (7" diameter flotation x 9" skirt)	20 – 100 sections	

Distribution: Return completed copy to the refinery CERC to be maintained on file for a period of 5-years.

7.1.6 Contractor Equipment and Manpower

A description of Tesoro's contractors is provided in *Appendix B*.

7.1.7 Command Post

The primary Incident Command Post for THPP is at the Dickinson Logistics Office, located at 2972 108th South Avenue Southwest, Dickinson, ND, 58601. Additional mobile command post(s) may be set up in the vicinity of the spill, as needed. The ICP has ample phones, fax machines, copy machines and administrative supplies available to support an oil spill response operation.

7.1.8 Communications Equipment

Tesoro has a variety of communications equipment available through contracts or direct ownership. A breakdown of specific types, and quantities is presented in *Figure 7-21*.

Figure 7-21 Communications Equipment

Owner	Type	Quantity	Location & Response Time
Bay West	Two-way radio	8	St. Paul, MN-10 hrs
Bay West	Boat mounted radio	2	St. Paul, MN-10 hrs
Bay West	Cellular Telephone	12	St. Paul, MN-10 hrs
Bay West	Pager	1	St. Paul, MN-10 hrs
Tesoro Pipeline	Mitusbishi SZ300A satellite radio telephone	25	Various locations along the Pipeline–0.5 hrs
Total Communications Equipment: 48 Units			

Proper communication is vital to effective ICS functioning.

Cell Phones

Key Incident Management Team personnel are partially reimbursed for the monthly cost of their Cell phones. In addition, many cell numbers are noted in the facility email "outlook Properties".

Leasing Additional Equipment

Additional communications equipment may be leased from a communications company in the area. Such equipment might include:

- Motorola UHF portable radios with chargers and accessories.
- Motorola VHF portable radios with chargers and accessories
- Portable communications command post with UHF, VHF, simple-sideboard, telephone, and hard-line capability.

Communications with government agencies; state police, and contractors can be conducted on the hand held and/or other portable radios. Refer to *Figure 7-22* for guidelines to set up communications.

Figure 7-22 Communications Checklist

Setup Communications			
Develop communications plan			
Ensure adequate phone lines per staff element – contact local provider			
Ensure adequate fax lines - contact local provider			
Internet access necessary			
Ensure recharging stations for cellular phones			
VHF radio communications: *establish frequencies *assign call signs *distribute radios *establish communications schedule			
Ensure recharging stations for VHF radios			
Determine need for VHF repeaters			
Ensure copy machine available			
Ensure communications resource accountability			

Note: Actions on this list may not be applicable or may be continuous activities.

7.2 Site Security Measures

Due to the large amount of public attention created at an oil spill site, additional security measures are required. Several measures should be planned in advance to prepare security personnel for possible events that may occur at the spill site. The following are guidelines for site security during an oil spill. Additional guidance is provided within the Pipeline Security Plan; however, distribution of such information is restricted due to the protected nature of Sensitive Security Information. A checklist for Site security is included in *Figure 7-23*.

Security and response personnel should be prepared to:

- Establish a perimeter (zone of safety) around the spill.
- Establish a system for controlled access to the spill site (within the safety zone) to allow easy access for key spill response personnel and equipment.
- Establish a relationship with the general public, to:
  - Ensure that general public safety is a priority.
  - Eliminate any interference from the general public to spill clean-up operations.
- Ensure that all response equipment is safeguarded.

An effective spill site security operation should include a coordinated effort with local and state law enforcement agencies, as well as the USCG (dependent on the size and location of the spill). In many instances, local and state law enforcement agencies must be contacted to close traffic to roads and other areas affected by the spill.

Consider the following spill site security measures:

- Utilize barricades in establishing a spill-site safety zone.
- Contract for additional security personnel or utilize local law enforcement agencies.
- Establish a pass system and distribute pre-prepared security passes to all spill related personnel
- Maintain a liaison with local and state police, as well as the EPA.
- Maintain a log that documents all security-related incidents and observations mad at the spill site.

Figure 7-23 Site Security Checklist

Site Security Checklist			
Close gates to restrict access to the Facility			
Direct traffic away from the spill area			
Request assistance from the spill area			
Request assistance from the Police Department to: Establish road blocks where necessary, to secure the area Divert local traffic away from the spill area Provide access for spill response equipment and personnel			
Coordinate rescue operations with the local fire Department paramedics			
Contact for additional security personnel, as needed			
Maintain strict control of all personnel and vehicular traffic entering			
Position security personnel to effectively control non-response personnel			
Barricade lesser traveled points with appropriate signs warning against entry			
Establish check points at barricaded points to verify security effectiveness			
Maintain a log that documents all security related incidents and observations made at the spill site			

7.3 Oil Handling And Disposal

Oily waste recovery and disposal are critical to an effective oil spill response since shortages of storage areas can effectively shut down recovery operations.

A spill from the Tesoro Pipeline could involve crude oil. Recovered oil would either be returned to tanks at one of the Pipeline Stations stored in bulk tank trucks, or portable tanks until the oil could be transported to the Mandan Refinery.

Waste materials associated with a spill on land would include contaminated absorbent materials, personal protective equipment, and soil. For a spill on water, it is anticipated that oil and potentially significant amounts of oily water would be recovered.

In addition to over 96,000 barrels of tankage at the Mandan Refinery, Tesoro maintains additional interim storage capacity (for recovered liquids) available under contract in the local area as follows:

Figure 7-24 Interim Storage Capacity

Owner	Type	Capacity (bbls)	Location & Response Time
Bay West	Ashland Refinery (F)	5,952	St. Paul, MN-12 hrs
Bay West	Wayne Transport (P)(T)	13,714	Rosemount, MN-12 hrs
Quali Tech	TSB (P)	500	Chaska, MN-10 hrs
Quali Tech	Fast Tank- 3 each (P)	180	Chaska, MN-10 hrs
CEDA	Tanker Truck (P)(T)	143	Mandan, ND-1 hr
CEDA	Vacuum Trucks- 3 each (P)(T)	240	Mandan, ND-1 hr
Tesoro Pipeline	1000 gallon FDT portable tank (1992 Haulmark Spill Trailer #2)-(P)	24	Sidney, MT-6 hrs
Tesoro Mandan Refinery	2,400 gallon Fast Tank- 2 each (Spill Response Trailer) (P)	114	Mandan, ND-1hr
Tesoro Mandan Refinery	Refinery Tankage (F)	96,000	Mandan, ND-1hr
Total Temporary Storage Capacity: 116,867 bbls			

(P) = Portable Storage
(F) = Fixed Storage
(T) = Transportation Capable

7.3.1 Waste Management

Tesoro's waste disposal plan is available on the corporate intraweb at:

http://gotso/departments/contingency-planning/Pages/EnvironmentalPlanPermitTemplates.aspx

The plan is designed to accelerate the waste disposal procedure during a spill response. Tesoro will work closely with EPA to develop a plan for the disposal of oily waste. Recovered oil and oily debris shall be recycled and reused to the extent feasible to reduce the amount of oily waste which must be incinerated or taken to a landfill. Contaminated debris will be disposed of at a facility that has been approved for use by Tesoro.

7.3.2 Recovery of Spilled Oil

Collection methods and activities are under the immediate control of the Operations Section Chief. The Waste Management Specialist is responsible for handling wastes and will be in constant communication with the operations section chief to understand the requirements.

As oil is recovered, it should be placed in sealable containers such as portable tanks, tank trucks, or any other container that can be sealed to prevent spillage. At the Refinery Manager's discretion, recovered oil may be pumped back into sound tanks of compatible material at the Tesoro Mandan Refinery.

Oiled solid wastes should be placed in leak-proof containers to prevent leakage during handling and transportation. Double-walled plastic bags may be used for this purpose. For larger materials or those which could penetrate the bags, debris boxes or similar containers could be used as long as they are lined with plastic or by some other means to prevent leakage. Hazardous waste bins and lined dump truck beds may also be used for collection of oiled solid wastes.

7.3.3 Interim Waste Storage

Interim or temporary waste storage of liquid and solid wastes collected during the recovery and cleanup operations is often required for proper waste classification, segregation, and packaging, in addition to making arrangements for recycling, treatment, or disposal. Small quantities of wastes can be stored in a variety of commercially available containers.

Interim storage of larger quantities of waste may require the construction of a temporary waste storage site. The sites should be located with good access to the cleanup operations and to nearby streets and highways. Flat areas, such as parking lots or undeveloped lots with a minimum slope to minimize runoff potential, are preferable. Interim storage should be sufficient to keep up with recovery operations and handle the entire volume of oil recovered and oily wastes generated.

Use of any site is dependent on the approval of the local health authority and EPA at the time of an incident. In some cases, sites can be pre-designated to save time. For small spills which are located within close proximity to one of the Pipeline Stations, small waste containers, and if needed, constructed storage beds will be located on pipeline property with prior approval. Storage areas for large spills and those that migrate away from the Station's will be located at the staging areas or other mutually agreeable site with appropriate agencies and organizations.

Normally, location approval for interim storage can be accomplished by working in conjunction with the FOSC, SOSC, and local planning representatives within the Unified Command System. Should additional assistance be required, *Figure 7-25* provides information for each relevant agency/ organization such as jurisdiction and telephone numbers. Primary contacts are the local health department and EPA. The other listed agency/organizations may need to be contacted to address additional health, safety, and environmental concerns.

Some of the information which is pertinent in obtaining necessary permits/approvals includes proposed location, anticipated volume of liquid, type of product spilled, known health concerns, and results of analytical testing (if any).

Figure 7-25 Interim Storage-Permit/Approval Guide-Local/State/Federal

MANDAN/BISMARCK AREA

Agency	Area of Jurisdiction	Phone No.
Mandan Fire Department	Local/Morton County	(701) 667-3288
Morton County Emergency Management Director	Morton County	(701) 667-3307
North Dakota Industrial Commission (Oil and Gas Division)	State- Land	(701) 328-8020
EPA – Region 8	Federal/U.S. –Water & Land	(303) 312-6312

When considering a potential site, the following should be reviewed:

- Local geology
- Proximity to groundwater/surface water
- Availability of cover material (if any)
- Soil type
- Flooding potential
- Containment berm
- Land use
- Access
- Public contact
- Capacity
- Climate
- Toxic air emissions
- Security

Temporary storage sites should be designed to use the best achievable technology to protect the environment and human health. These sites should be set up in such a manner as to prevent leakage, contact, and subsequent absorption of oil by the soil.

7.3.4 Waste Characterization

The primary objective of waste characterization is to ensure employee safety and proper waste handling and disposal in accordance with applicable state and federal guidelines. Response operations will generate oily liquid and solid/semi-solid wastes. Some of these materials may be regulated as hazardous wastes. A summary of the types of wastes and the associated response operations that generate the wastes and waste handling procedures are provided below. Additional information on handling wastes generated during an oil spill response can be found in the Waste Disposal Plan.

Liquid Wastes

Oily liquid wastes (i.e., oily water and emulsions) that would be handled, stored, and disposed during response operations are very similar to those generated during routine facility operations. The largest volume of oily liquid wastes would be produced by recovery operations (e.g., through the use of skimmers). In addition, oily water and emulsions would be generated by boat and equipment cleaning operations, the storage area storm water collection systems, and wildlife cleaning and rehabilitation operations.

Solid/Semi-Solid Wastes

Oily solid/semi-solid wastes which would be generated by containment and recovery operations include damaged or worn-out booms, uncleanable equipment, used sorbent materials, saturated soils, contaminated beach sediments, driftwood, and other debris. In addition, wildlife capture, cleaning, and rehabilitation operations would produce oil-soaked towels and newspapers.

Hazardous Wastes

The EPA definition of hazardous wastes is defined in 40 CFR 261.

Per RCRA's Chapter 7045: Hazardous Waste Rules, a material is defined as hazardous for one of two reasons:

1. It could be one of the substances listed in 7045.0020 and/or 40 CFR 261, Subpart D; or
2. It could exhibit one of the following characteristics:

- Ignitable
- Reactive
- Corrosive
- Toxic

All oily waste materials generated from a spill should be characterized as dangerous until indicated otherwise by a state-accredited laboratory. Each waste must be characterized on a case-by-case basis through laboratory analysis of representative samples.

Segregation of Waste Types

The various types of wastes generated during response operations would require different disposal methods. To facilitate the disposal of wastes, all waste materials would be segregated by type for temporary storage and/or transport. *Figure 7-26* lists several options that are available to segregate oily wastes into liquid and solid components and depicts methods that may be employed to separate free and/or emulsified water from the oily liquid waste.

7.3.5 Transportation

Waste materials recovered from the water should be loaded at a location which provides convenient access, such as a boat ramp. Recovered waste materials from land should be loaded at designated transfer locations.

Carriers should be arranged to transport waste. Drums can be used for loading materials that are flammable (flashpoint less than 100°F). United States Department of Transportation (DOT) specification 17E or 17H drums can be used for liquids having a flashpoint between 20°F and 73°F, and a vapor pressure less than 18 psi absolute, at 100°F (49 CFR 119(1)). For loading solid materials that have a flashpoint from 100°F to 200°F, roll-off bins can be used. Vacuum trucks can be used for loading liquid waste materials.

Waste materials should always be covered during transportation. All truck rolloff bins shall be lined with precut plastic sheets before loading to prevent oil from leaking onto the streets. Tarpaulin covers must be used to minimize blowing or spilling of loads. New liners shall be used for each load.

The Tesoro Waste Management Specialist will ensure that waste is transported under proper permits and labels/placards for transportation per Hazardous Waste Manifest and Transport guidelines.

7.3.6 Handling

Spilled free oil and waste materials recovered from land and water require responsible handling. Handling can pose initial and long-range problems including the storage and transportation of the material to a disposal or processing site, as well as the proper recycling, treatment, and disposal methods. Legal requirements for waste handling are established by the EPA.

A primary concern in handling recovered oil and oil solid wastes is to prevent oiling of previously unaffected areas or re-oiling of areas already cleaned. This can be accomplished by using correct handling techniques. All workers associated with the handling portion of waste should be briefed with respect to incident-specific Health and Safety Plan by the Waste Management Specialist.

Disposal of waste must be minimized. This is accomplished by proper identification, waste segregation, recycling, and treatment. Only the residue from these steps must be disposed of by an approved method.

Figure 7-26 Oily Waste Segregation

TYPE OF MATERIAL	SEGREGATION METHODS
Liquids	
Non-emulsified oils	• Treatment at Mandan Refinery, or equivalent. • Gravity separation of free water.
Emulsified oils	• Treatment at Mandan Refinery. • Emulsion broken to release water by: - heat treatment - emulsion breaking chemicals - mixing with sand - centrifuge - filter/belt press
Solids	
Oil mixed with sand	• Collection of liquid oil leaching from sand during temporary storage. • Extraction of oil from sand by washing with water or solvent. • Removal of solid oils by sieving.
Oil mixed with cobbles, pebbles, or shingle	• Screening. • Collection of liquid oil leaching from beach material during temporary storage. • Extraction of oil from beach material by washing with water or solvent.
Oil mixed with wood, plastics, seaweed, and sorbents	• Screening. • Collection of liquid oil leaching from debris during temporary storage. • Flushing of oil from debris with water.
Tar balls	• Separation from sand by sieving.

7.3.7 Waste Disposal

A number of alternatives are available for waste disposal. Recycling, treatment, or incineration of spill-generated wastes are generally preferable to landfilling, where appropriate. In the selection of one or more disposal options, consideration must be given to stipulations set by environmental regulations as well as a clear understanding that if permanent disposal sites (i.e., landfills and treatment/stabilization locations) are utilized, they must have sufficient capacities to handle waste volumes generated.

In accordance with Chapter 70.105.150 of the Oil and Hazardous Substance Spill Prevention and Response Act, management and disposal of hazardous/dangerous wastes should be prioritized as follows:

1. Waste Reduction
2. Recycling
3. Physical, Chemical and Biological Treatment
4. Incineration
5. Solidification/Stabilization Treatment
6. Landfill

Recycling

Recycling is the preferred method of handling recovered oil. The relative salvageability of the recovered oil should be determined by the Waste Management Specialist.

Oil recovered from aquatic areas will typically contain substantial amounts of water, oil, and debris. A tank or vacuum truck can be used as an effective oil water separator by allowing the oil/water mixture to stand long enough for the oil and water to separate. The water is then drained off the bottom through the valved pipe, and the oil is pumped into a storage tank or truck. Any water drained off by separation techniques should be discharged into an aboveground tank, or effluent treatment system, as it may still contain minor amounts of oil. The Tesoro Environmental Unit Leader can assist with proper handling of the separated water.

Material reclaimed from the spill which can be recycled to yield a significant amount of oil and that oil returned to process, can be brought into the Mandan refinery. This recycling activity may be exempt from hazardous waste transport regulations, depending on the characterization of the material.

Treatment

Federal and state land disposal restrictions prohibit the land disposal of hazardous waste without prior treatment to strict standards. These standards vary depending upon whether the waste is classified as RCRA or state hazardous waste, and whether the waste is a listed or characteristic hazardous waste. Contact the Tesoro Environmental Unit Leader for applicable requirements.

Disposal

Non-recyclable waste or treatment residue may need to be disposed of at a licensed Class I landfill. Provisions should be made in advance to factor the landfill's acceptance requirements into any proposed disposal activities. Since the cost for sending non-recyclable oily waste to a landfill is significant, the amount of waste to be disposed of should be minimized to the maximum extent possible given the economic and technical constraints.

Other alternatives such as bioremediation and energy recovery (some recovered oil may be burned through boiler or heating systems) are also encouraged.

Figure 7-27 Hazardous Waste Incinerators

STATE	CITY
Arkansas	El Dorado
Illinois	Chicago Savget
Kansas	Coffeyville
Kentucky	Calvert City
Louisiana	Baton Rouge
New Jersey	Bridgeport
Ohio	Grafton
South Carolina	Rock Hill Roebuck
Texas	Deer Park Houston Port Arthur
Wisconsin	Eau Claire

Figure 7-28 Waste Landfills

FACILITY	CONTACT	PHONE NUMBER
Polk County Sanitary Landfill Crookston, MN 56716	Bill Wilson SW Resource Recovery Plant	(218) 435-6501
Spruce Ridge Resource Management USA Waste Services - Spruce Ridge (former McLeod and Spruce Ridge) Route 3, Box 70A Glencoe, MN 55336	Mark Reinert Spruce Ridge Resource Management McLeod Landfill, Inc.	(320) 864-5503
Superior FCR Landfill, Inc. (former Yonak) P.O. Box 516 Buffalo, MN 55313	Chris Basqell Superior Services, Inc.	(320) 963-3158
Clean Harbors Environmental Services P.O. Box 168 Sawyer, ND 58781		(701) 624-5622
Dishon Disposal 3950 153rd Avenue Williston, ND 58801		(701) 572-9079
SKB Rosemount	Mike Fullerton	(651) 438-1513

*Each facility establishes its own level of acceptable.

7.4 Public Relations

This section contains guidelines for dealing with the media and public during an emergency. The initial Incident Commander will play a key role in providing the initial public assessment and taking the first steps to categorize the incident and provide information for use in preparing the Company's information released to the public. The Public Information Officer will assume this responsibility upon notification.

Guidelines for Dealing with the Media

- If you don't answer the reporter's questions, they will look elsewhere to find out what happened. However, if you do not have this information or are not prepared to answer a particular question, say I will have to get back to you on that. Give them a timeframe as to when they can expect the answers to their questions (i.e., on hour, etc.)
- Make sure that you get a business card to all reporters and that you have given your direct access number to the reporter so that you can be reached before they try and call someone with less knowledge/experience on the incident.
- It is important to be courteous to all media representative and to provide a safe place for them to wait until a company representative can meet them. You may need to provide an initial statement.

Do Provide:

- A brief, general description of what happened.
- Follow-up steps being taken to handle the emergency.

Don't Provide:

- Names of deceased or seriously injured employees until the next of kin have been notified and you have received approval from the Human Resource Department and or Plant Manager.
- Speculation about the case of the emergency.
- Any statement implying person or company negligence.
- Cost estimates of damage.

Other considerations

- Safety considerations should always receive priority in determining access to company property.
- Anticipate likely questions. There are only six questions that can be asked about any subject: Who, What, When, Where, and How.
- Keep answers short and understandable. Answer only the question that is asked by the reporter.
- Give the most important facts first.
- Talk to the public's concern about the incident. Are there deaths or injuries, is there an immediate threat to the public? Is there any danger of explosion, is the fire under control, can it be controlled?
- If you don't know the answer to a question, don't be afraid to say "I don't know." Make note of the question and tell the reporter that you will try to get the answer- then do it.
- Don't be defensive.

- There is no such thing as "talking off the record." Assume that anything and everything you say to a reporter is going to be printed or used in the story.
- Avoid "What if" or speculative questions. These questions should be answered with the restatement of the problem and what is being done to control it.
- Don't speculate about the cause of the incident.
- Don’t minimize the situation.

Holding Statements

Tesoro Corporate Affairs has published a Crisis Communication Playbook that provides guidelines and initial holding statements for different types of incidents, including spills to land or water. Use this playbook or contact a representative from Tesoro Corporate Affairs to get a holding statement developed.

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SECTION 8 DEMOBILIZATION, DECONTAMINATION AND DEBRIEF

This section provides checklists and guidelines for demobilization, decontamination and post incident reviews. The plans provided are examples that are meant to be customized to address site specific or incident specific concerns and actions.

8.1 Demobilization

After the incident is controlled and tactical resources are no longer needed to support the response, a demobilization plan needs to be established to ensure a safe, controlled, efficient and cost-effective release of those resources. The demobilization planning process should begin on day one of the incident. A sample demobilization plan is provided on the Tesoro website at:

http://gotso/departments/contingency-planning/Pages/Job-Aids.aspx

8.2 Equipment/Personnel Decontamination

During and after a spill, equipment and personnel that are exposed to oil or hazardous substances will need to be decontaminated. In addition, private property such as recreational or commercial vessels may need to be decontaminated. All decontamination must be done in accordance with applicable laws and according to this plan. A sample decontamination plan for personnel and equipment is provided on the Tesoro website at:

http://gotso/departments/contingency-planning/Pages/Job-Aids.aspx

8.3 Post-Incident Review

Tesoro Contingency Planning and Emergency Response department has developed a procedure for Lessons Learned. This procedure includes a process for conducting after action reviews, critiques, surveys and evaluations. Elements of the Lessons Learned procedure include:

- **Unit/Section Exercise Evaluation**: After the drill, exercise or incident is concluded, but prior to releasing the participants, the sections and units shall gather together and complete the After Action Review Evaluation Form that is included in the standard.
- **Unit/Section Leader Post Drill Discussion**: As an alternative, or in addition to the Unit/Section Exercise Evaluation, there is a Unit/Section Leader Post Drill Discussion. This is designed to gather feedback from the unit and section leaders in a round table format after the drill is completed.
- **SurveyMonkey® Critique**: SurveyMonkey® is a web-based polling application used to gather information from respondents and then develop a report based on those responses. Tesoro uses SurveyMonkey® after all drills or incidents that involved the activation of the Emergency Operations Center and/or Incident Command Post.
- **Post Incident Critique**: An objective critique of the response to an emergency situation is conducted by the **Fire Brigade** or **Emergency Response Team** as soon as practical after the incident, depending on the scope of the incident and the extent of the lessons learned from the response.

- **Evaluations**: A drill evaluation is designed to allow an Evaluator to perform an objective assessment of the drill, to determine if the drill met specific goals. The assessment also allows for an opportunity to review and record strengths, weaknesses, deficiencies or other observations noted during the drill or exercise.

Actions that are generated as a result of the After Action Reviews, critiques or evaluations will be transferred to an ICS 233 Action Tracker. This form allows for tracking of the issue, responsible party, status, category, priority, comments, due date, and actual completion date.

All forms and documents for the evaluation and lessons learned process are found here: http://gotso/departments/contingency-planning/Pages/Job-Aids.aspx

APPENDIX A TRAINING AND EXERCISES

A.1 Exercise Requirements And Schedules

The Company participates in the National Preparedness for Response Exercise Program (PREP) in order to satisfy the exercise requirements of the EPA, and PHMSA.

A listing of all PREP exercise requirements to be completed within the three-year (triennial) cycle is listed in *Figure A-1*. The company also strives to maintain compliance with the regulations regarding training requirements of OSHA, PHMSA, and EPA. This training includes:

- Emergency response;
- Hazardous waste;
- Oil Spill Response; and
- Health and Safety and Emergency Response Training

Response drills will be designed to:

- Provide an opportunity for IMT personnel to practice responding to a spill.
- Test Facility Response Plan for shortcomings or errors.
- Improve Company personnel's spill response expertise.
- Comply with PREP guidelines.

The Manager, Emergency Response and Preparedness, is responsible for scheduling, maintaining records, implementing and evaluating this drill program, and ensuring that post-drill evaluation improvements are implemented.

Spill Response Exercises will take four forms as described in *Figure A-1*.

Figure A-1 Type and Frequency of Spill Response Exercises

Type of Exercise	Frequency
Qualified Individual (QI) Notification Drills	Quarterly
Tabletop exercises where plan is discussed and each person reviews their role or where team simulates response activities	Annually
Facility Response Equipment Deployment Exercise	Semi-Annually
Facility Emergency Procedures Exercises	Quarterly

Descriptions of these exercises are as follows:

A.1.1 QI Notification Exercises

The Company will conduct QI Notification Drills on a quarterly basis. The notification drill will consist of someone from the Facility initiating a mock spill notification to the QI. The Manager, Emergency

Response and Preparedness, is responsible for ensuring documentation of who was called, the time and date of the notification, and the phone numbers called during the drill.

A.1.2 Equipment Deployment Exercises

The company maintains and trains its employees in the use of the oil spill response and cleanup equipment located within the plan response zones. Contracted OSROs conduct maintenance and training activities for their equipment and personnel that would be employed in an oil spill response clean-up. The Facility will conduct semi-annual equipment deployment exercises as per PREP guidelines. The Company will also verify that the response contractors identified in this Plan participate in annual equipment deployment exercises.

A.1.3 Facility Emergency Procedure Exercises

The Facility will conduct a quarterly facility emergency procedure drill to ensure personnel knowledge of actions to be taken to mitigate a spill and meet the PREP option for unannounced facility drills. The exercise may be a walk-through of actions to report a spill and safely isolate equipment contributing oil to the spill.

A.1.4 Incident Management Team Tabletop Exercises

The Company participates in the National Preparedness for Response Exercise Program (PREP) in order to satisfy the exercise requirements of the EPA. During each triennial cycle, all components of the Plan must be exercised at least once. The 15 core components listed in *Figure A-2* are the types of components that must be exercised.

The Company will conduct IMT Tabletop Exercises in order to test the IMT knowledge of spill response activities and responsibilities as outlined in the Plan. The tabletop exercises will either be announced or unannounced and will involve discussion of each team member's role in a typical spill response. The exercise will document the effectiveness of the Plan and the responsibilities of IMT Members in a simulated spill scenario. Every three years, all components of the entire response plan will be exercised. The drill program is indicated in *Figure A-3*.

Figure A-2 PREP Response Plan Core Components

Core Components	Description
1. Notifications	Test the notifications procedures identified in the Area Contingency Plan and the associated Responsible Party Response Plan.
2. Staff Mobilization	Demonstrate the ability to assemble the spill response organization identified in the Area Contingency Plan and the associated Responsible Party Response Plan.
3. Ability to Operate Within the Response Management System Described in the Plan: • Unified Command • Response Management System	Demonstrate the ability of the spill response organization to work within a unified command. Demonstrate the ability of the response organization to operate within the framework of the response management system identified in their respective plans.
4. Discharge Control	Demonstrate the ability of the spill response organization to control and stop the discharge at the source.
5. Assessment	Demonstrate the ability of the response organization to provide initial assessment of the discharge and provide continuing assessments of the effectiveness of the tactical operations.
6. Containment	Demonstrate the ability of the spill response organization to contain the discharge at the source or in various locations for recovery operations.
7. Recovery	Demonstrate the ability of the spill response organization to recover the discharged product.
8. Protection	Demonstrate the ability of the spill management team organization to protect the environmentally and economically sensitive areas identified in the Area Contingency Plan and the respective industry response plan.
9. Disposal	Demonstrate the ability of the spill response organization to dispose of the recovered material and contaminated debris.
10. Communications	Demonstrate the ability to establish an effective communications system for the spill response organization.
11. Transportation	Demonstrate the ability to establish multi-mode transportation both for execution of the discharge and support functions.
12. Personnel Support	Demonstrate the ability to provide the necessary support of all personnel associated with response.
13. Equipment Maintenance and Support	Demonstrate the ability to maintain and support all equipment associated with the response.
14. Procurement	Demonstrate the ability to establish and effective procurement system.
15. Documentation	Demonstrate the ability of the spill response organization to document all operational and support aspects of the response and provide detailed records of decisions and actions taken.

A.1.5 Unannounced Exercises

An unannounced IMT tabletop exercise, a facility equipment deployment exercise, or a facility emergency procedures exercise will be conducted if quarterly emergency procedures drills are not conducted by the facility.

The Company will ensure that the spill response contractors named in this plan participate in an annual unannounced drill. The unannounced drill may be conducted with Tesoro personnel at a Tesoro location or it may be conducted separately, with documentation provided to Tesoro indicating that an unannounced drill was conducted in a satisfactory manner.

In the event that the Company participates in an unannounced drill initiated by a Federal or State agency that meets PREP requirements, the Company will document and take credit for the agency initiated unannounced drill in lieu of the drill as required by PREP guidelines.

Figure A-3 NPREP Internal Exercise Program

- In the triennial cycle the following internal exercises must be conducted:
- 12 qualified individual notification exercises;
- 3 spill management team tabletop exercises one must involve a worst case discharge scenario;
- 3 unannounced exercises. Any of the exercises, with the exception of the qualified individual notification exercise, if conducted unannounced, would satisfy this requirement;
- Equipment deployment exercises as described below:
- For facilities with facility-owned and operated equipment
- 6 facility-owned and operated equipment deployment exercises (for facilities with facility-owned and operated equipment identified in their response plan).
- For vessels and facilities with OSROs identified for response equipment
- 3 OSRO equipment deployment exercises.
- Triennial Exercise of Entire Response Plan - Each component of the response plan must be exercised at least once in the triennial cycle.

A.1.6 Area Exercises

The Company understands that area exercises will be conducted throughout the area and will determine which exercises are appropriate to participate in, whether agency or industry lead.

A.1.7 Drill Program Evaluation Procedures

The Company conducts post exercise critiques to discuss positive items, areas for improvement and to develop an action item checklist to be implemented at a later date.

Records of Drills

The Company will maintain records of all drills for a period of five years following the completion of each drill. These records are located on site and will be made available for agency inspection through the Health & Safety Department at the refinery and/or through the Contingency Planning and Emergency

Response department at the corporate level. In addition, the Company will verify that appropriate drill records are kept for each response contractor named in this Plan for spill response activities as required by PREP guidelines. This includes response contractors participating in annual equipment deployment drills; with at least one unannounced drill every three years.

A.1.8 Safety Training

Company employees receive regulatory compliance training in areas applicable to their jobs. Training includes classroom training, field training and computer based modules. These records are maintained by the Training Department.

A.1.9 Response Equipment Inspections

Equipment inspections are conducted semi-annually. Equipment inspection logs are maintained on file within response trailer and local office.

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A.2 Training Program

A.2.1 Training in the use of the Oil Spill Plan

All field personnel will be trained in the proper procedures for the reporting and monitoring of spills. Included in this training are procedures for contacting the Qualified Individual on a 24-hour basis, and procedures and telephone numbers for contacting the National Response Center. A copy of the Facility Response Plan will also be made available to all personnel on the IMT.

At least once each calendar year the oil spill plan will be reviewed with affected field personnel and responders. In addition, they will review procedures on how and where to place materials depending on where the spill occurs and various seasonal conditions. **Records of all training activities are maintained for at least five years following completion of training.** The Company will maintain training records for each individual as long as those individuals are assigned duties in this Plan.

A.2.2 Training for Qualified Individuals (QIs)

Training will be conducted for the Qualified Individuals listed in this Plan. The training elements to be presented are listed in *Figure A-4*.

A.2.3 Training for Spill Response Team

All Company personnel that are designated within this Plan will be trained according to the program identified in *Figure A-4*.

Oil spill responders are required to adhere to the training and safety requirements outlined in the OSHA's Hazardous Waste Operations and Emergency Response regulations in 29 CFR 1910.120. Laborers, having a potential for minimal exposure to a hazardous substance are required to have 24 hours of initial oil-spill response instruction and 8 hours of actual field experience. Those spill responders having potential exposure to a hazardous substance at levels exceeding the permissible exposure limits (generally, those situations requiring the use of a respirator and protective clothing) are required to have 40 hours of initial training off site and 24 hours of actual field experience.

On-site management and supervisors are required to receive the same amount of training as the equipment operators and general laborers, with the additional specialized training in hazardous waste management.

A.2.4 Training for Incident Management Team Personnel

The company conducts annual training on the Oil Spill Contingency Plan and Incident Command System for Spill Management Team Members. Members of the IMT are expected to be familiar with their role within this response plan. The Spill Recovery Team receives annual hands-on response training (i.e., boat handling, boom deployment, classroom, ice response). In addition, the team receives HAZWOPER training for the HazMat Technician level. Overall training elements are provided in *Figure A-5*.

A.2.5 Training for Casual Laborers or Volunteers

Spill Response Personnel

Trained spill response cleanup personnel will be provided by spill response contractors provided in this Plan.

The Company does not intend to use casual laborers or volunteers for spill response operations requiring HAZWOPER training.

Wildlife Rescue and Rehabilitation Volunteers

The Company will rely upon the recommendations of the USFWS when dealing with oiled wildlife. Only trained personnel, approved by these agencies will be utilized to respond to incidents involving oiled wildlife.

A.2.6 Training Documentation and Record Maintenance

Spill response personnel training records will be maintained for five years. The Training Department is responsible for maintaining all training records. Records include:

- Documentation of yearly training associated with the Facility Oil Spill Response Plan as provided to IMT and Facility personnel.

Records of training provided for response contractor personnel will be maintained at the respective contractor's office and will be verified by Tesoro on an annual basis. *Figure A-6* provides an example of a training log, as shown from 40 CFR 112.21 Appendix F.

A.2.7 Discharge Prevention Meeting

Each plan holder is required to hold an annual discharge prevention briefing that ensures an adequate understanding of the SPCC plan for the facility. An example of the log of the discharge prevention meeting is provided in *Figure A-7*. This log must be completed each year and maintained with training records for the site.

Figure A-5 Training Elements

Training Type	Training Characteristics
Training in Use of Oil Spill Plan	• All personnel will be trained to properly report/monitor spills • Plan will be reviewed annually with all employees • The Personnel Response Training Log is provided in *Figure A-6*.

OSHA Training Requirements	• All Company responders designated in Plan must have 24 hours of initial spill response training
	  • Laborers having potential for minimal exposure must have 24 hours of initial oil spill response instruction and 8 hours of actual field experience
	  • Spill responders having potential exposure to hazardous substances at levels exceeding permissible exposure limits must have 40 hours of initial training offsite and 24 hours of actual field experience
	  • On-site management/supervisors required to receive same training as equipment operators/general laborers plus 8 hours of specialized hazardous waste management training
	  • Managers/employees require 8 hours of annual refresher training

Incident Management Team Personnel Training	• See recommended PREP Training Matrix (*Figure A-5*)
Training for Casual Laborers or Volunteers	• Company will not use casual laborers/volunteers for operations requiring HAZWOPER training
Wildlife	• Only trained personnel approved by USFWS and appropriate state agency will be used to treat oiled wildlife
Training Documentation and Record Maintenance	• Training activity records will be retained five years for all personnel following completion of training • Training records will be retained per the training department's guidelines.

Figure A-6 Training Program Matrix

Training Element	Qualified Individual (QI)	Incident Management Team (IMT)	Facility Personnel
Captain of the Port (COTP) Zones or Environmental Protection Agency (EPA) regions in which the facility is located.	x	x	X
Notification procedures and requirements for facility owners or operators; internal response organizations; federal and state agencies; and contracted oil spill removal organizations (OSRO's) and the information required for those organizations.	x	x	X
Communication system used for the notifications.	x	x	X
Information on the products, stored, used, or transferred, by the facility, including familiarity with the material safety data sheets, special handling procedures, health and safety hazards, spill and firefighting procedures.	x	x	X
Procedures the facility personnel may use to mitigate or prevent any discharger or a substantial threat of a discharge or oil resulting from facility operational activities associated with internal or external cargo transfers, storage, or use.	x		
Facility personnel responsibilities and procedures for use of facility equipment, which may be available to mitigate or prevent an oil discharge.	x	x	X
Operational capabilities of the contracted OSRO's to respond to the following: Average most probable discharge (small discharge); Maximum most probable discharge (medium discharge); and Worst case discharge.	x	x	x
Responsibilities and authority of the Qualified Individual as described in the facility response plan and company response organization.	x	x	x
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.	x	x	x
The responsibilities and duties of each oil spill management team within the organizational structure.	x	x	
The drill and exercise program to meet federal and state regulations as required under OPA.	x	x	x
The role of the Qualified Individual in the post discharge review of the plan to evaluate and validate its effectiveness.	x		

Training Element	Qualified Individual (QI)	Incident Management Team (IMT)	Facility Personnel
The Area Contingency Plan (ACP) for the area in which the facility is located.	x	x	x
The National Contingency Plan (NCP).	x	x	x
Roles and responsibilities of federal and state agencies in pollution response.	x	x	x
Available response resources identified in response plan.	x	x	
Contracting and ordering procedures to acquire oil spill removal organization resources identified in the response plan.	x	x	
OSHA requirements for worker health and safety (20 CFR 1910.120).	x	x	x
Incident Command System/Unified Command System.	x	x	
Public Affairs.	x	x	
Crisis management.	x	x	
Procedures for obtaining approval for dispersant use or in-situ burning of the spill.	x		
Oil spill trajectory analyses.	x		
Sensitive biological areas.	x	x	
This training procedure as described in the response plan for members of the spill management team.		x	
Procedures for the post discharge review of the plan to evaluate and validate its effectiveness.		x	
Basic information on spill operations and oil spill clean-up technology including: Oil containment; Oil recovery methods and devices; Equipment limitations and uses; Shoreline clean-up and protection; Spill trajectory analysis; Use of dispersants, in-situ burning bioremediation; and Waste storage and disposal considerations.		x	
Hazard recognition and evaluation.		x	
Site safety and security procedures.		x	
Personnel management, as applicable to designated job responsibilities.		x	
Procedures for directing the deployment and use of spill response equipment, as applicable to designated job responsibilities.		x	
Specific procedures to shut down affected operations.			x
Specific procedures to follow in the event of discharge, potential discharge, or emergency involving the following equipment or scenarios: Tank overfill; Tank rupture;			x

Training Element	Qualified Individual (QI)	Incident Management Team (IMT)	Facility Personnel
Piping or pipeline rupture; Piping or pipeline leak, both under pressure or not under pressure, if applicable; Explosion or fire; Equipment failure; and Failure of secondary containment system.			
Name of the Qualified Individual and how to contact.			x

Figure A-7 Personnel Response Activities Training Log (Example)

Name	Response Training/Date And Number Of Hours	Prevention Training/Date And Number Of Hours

Figure A-8 Discharge Prevention Meeting Log

Date: ______________________________

Subject / Issue Identified: ____

____

____

Required Action Item Identified:

1. ____
2. ____
3. ____
4. ____

Date of Implementation of Action Items:

	WO # Issued
1. ____	______________
2. ____	______________
3. ____	______________
4. ____	______________

Meeting Attendee Name/Dept:

______________________________	______________________________
______________________________	______________________________
______________________________	______________________________
______________________________	______________________________
______________________________	______________________________
______________________________	______________________________

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APPENDIX B CONTRACTOR AND MUTUAL AID RESPONSE EQUIPMENT

B.1 Contractor And Mutual Aid Equipment And Manpower

Tesoro's primary response contractors and telephone numbers for the facility are noted in *Section 3*. These contractors can provide oil spill response equipment and personnel in the event of a spill at the facility. The company has ensured by contract the availability of private personnel and equipment necessary to respond, to the maximum extent practicable, to the worst case discharge or the substantial threat of such discharge, including meeting daily recovery rate and shoreline protection planning requirements.

Appendices C1 and C2 also contain a list of additional contractors in the area who provide equipment and services that may be needed during a spill response operation.

Figure B-1 provides response contractor responsibilities. Contractors' general roles and responsibilities are as follows:

- Providing booms, skimmers, temporary storage tanks, vacuum trucks, construction equipment, and other equipment necessary for containment and recovery of an oil spill.
- Providing trained personnel to operate the aforementioned equipment, along with supervising response personnel.
- Interfacing with company supervisors to implement tactical orders relating to the spill response.
- Providing appropriate safety equipment and ensuring personnel are operating according to the company's safety guidelines and applicable federal, state, and local regulations.
- Providing transportation for necessary contractor personnel and equipment.

B.1.1 Bay West

Bay West provides OSRO support for the entire region. A copy of the first two pages of the agreement with Bay West describing the coverage is presented in *Figure B-2*. A list of Bay West equipment is in *Figure B-3*.

B.1.2 Qualitech

Qualitech provides OSRO support for the entire region. A copy of the first and last page of the agreement with Qualitech describing the coverage is presented in *Figure B-4*. A list of Qualitech equipment is in *Figure B-5*.

B.1.3 Clean Harbors Environmental

Clean Harbors Environmental Services (CHESI) provides OSRO support for the entire region. The first and last page of the MSA with CHESI is presented in *Figure B-6*. The equipment list for support from Watford City is provided in *Figure B-7*.

B.1.4 VisTec

VisTec provides OSRO support for the entire region. The first and last page of the MSA with VisTec is presented in *Figure B-8*. The equipment list for support is provided in *Figure B-9*.

B.1.5 Sakakawea Area Spill Response (SASR)

SASR is the mutual aid organization made up of Tesoro, Bridger Pipeline, Whiting Oil and additional petrochemical companies in the Bakken/Williston Basin. A copy of the mutual aid agreement is presented in *Figure B-10*. The equipment list for support is provided in *Figure B-11*.

Figure B-1 Response Contractor Responsibilities

Supervisor
• Assess immediate incident information. • Notify operations personnel of the incident and direct them to carry out their assigned responsibilities. • Proceed to spill site. • Attend meetings held by the on-scene coordinator. • Interface with regulatory officials. • Develop response strategies. • Supervise response activities. • Conduct and plan briefings for contractor response personnel. • Assess what resources will be required during the immediate response and early containment, countermeasures and recovery phases. • Carry out other assigned tasks.
Foreman
• Conduct communication checks with facility and contractor personnel. • Notify personnel of location to assemble. • Assess response actions taken before arrival. • Redirect response activities, if necessary. • Develop safety plan. • Supervise work crews. • Inform supervisor of work progress. • Carry out approved cost accounting documentation. • Additional tasks may be assigned.
Operator/Spill Technician
• Directs response vans to immediately proceed to spill site. • Arrive at incident. • Advise on-scene coordinator that response contractor is on-site. • Initiate response procedures, if first to arrive. • Provide early containment and skimming operations. • Notify management of magnitude of incident. • Work as directed, ensuring personnel safety. • Assume other tasks as needed.

Figure B-2 Bay West Contract

Bay West

Delivering Environmental, Industrial, Marine, and Emergency Solutions

Bay West, Inc. • 24 Hours: 1-800-279-0456 • www.baywest.com
5 Empire Drive, St. Paul, MN 55103 • 651/291-0456 • FAX 651/291-0099
10620 Widmer Rd., Lenexa, KS 66215 • 913/663-2915 • FAX 913/663-3067

AGREEMENT FOR EMERGENCY SPILL RESPONSE SERVICES UNDER THE OIL POLLUTION ACT OF 1990 (OPA 90)

This agreement for emergency spill response services is made and entered into this 22nd day of August 2001, by and between TESORO West Coast Co. (TESORO), a West Coast Company with offices at 300 Concord Plaza Drive, San Antonio, Texas 78216-6999 and Bay West, Inc. (Bay West), a Minnesota corporation with principal offices at 5 Empire Drive, St. Paul, Minnesota 55103.

WHEREAS, the Oil Pollution Act of 1990 (OPA 90) requires that companies with certain levels of petroleum products and proximity to navigable waters complete and submit spill preparedness plans and demonstrate that they have the equipment and personnel in place to respond to a worst case discharge, and

WHEREAS, Bay West is certified as an oil spill removal organization (OSRO) which, pursuant to OPA 90 and the federal regulations promulgated thereunder may provide by contract the equipment and personnel necessary for a company to respond for a worst case discharge, and,

WHEREAS, Bay West is experienced and specializes in planning for and responding to spills of both petroleum-based products and other types of hazardous materials and is willing to provide such services as an OSRO under OPA 90 to companies to which OPA 90 is applicable, and,

WHEREAS, TESORO is a company to which OPA 90 is applicable.

NOW THEREFORE, Bay West and TESORO agree as follows for the obtaining and providing of emergency spill response services:

TESORO's OBLIGATIONS

1. TESORO agrees to pay an annual participation fee based on a calendar year which is used to pay for the selection and training of personnel, management, and the performance of equipment maintenance for the calendar year. For the year of 2001, the annual participation fee will be $5,000 (prorated) and is due and payable upon execution of this agreement. For years after 2001, the annual participation fee will be $15,000 and shall be billed and is payable on November 1 preceding the next calendar year of the agreement. The annual participation fee for years subsequent to 2001 may be adjusted to reflect changes in Bay West's costs.

2. TESORO shall pay for emergency spill response services requested of Bay West pursuant to a fee schedule attached hereto. TESORO shall pay for drill services requested beyond that of Bay West's normal OSRO drilling schedule.

3. TESORO agrees to pay for the repair or replacement of equipment and for all consumables utilized on behalf of TESORO in connection with an emergency spill response or drill such as sorbents, fuel and other expendables.

BAY WEST'S OBLIGATIONS

4. Bay West will respond to any request of TESORO for the providing of emergency spill response services or drills in a manner consistent with the degree of promptness, skill and care expected of a company meeting the requirement of OPA 90. Bay West will provide such emergency spill response services or response to drills only when requested by TESORO whether such requests are oral or in writing. It is understood that oral requests shall be confirmed in writing as soon as reasonably possible.

5. Bay West shall replace consumables expended on behalf of TESORO or other participants hereunder as such consumables are used and the responsible party will be billed.

6. Bay West will respond to any request for emergency spill response services by TESORO, whether or not such request is covered by the provisions of OPA 90.

7. Bay West reserves to itself in its sole discretion the right to enter into similar agreements with other companies to which OPA 90 is applicable, it being understood that such other companies will be required to pay an entry participation fee and/or an annual fee to defray personnel and maintenance costs of Bay West.

GENERAL PROVISIONS

8a. Bay West agrees to indemnify and hold harmless TESORO and its officers, directors, employees and agents from and against any and all losses, damages, claims, liabilities, costs, and expenses, including legal fees and costs of investigation, resulting from or arising out of (a) the failure of Bay West to comply in all material respects with federal, state, and local laws, regulations, and ordinances applicable to the services undertaken by Bay West, (b) a material breach by Bay West of any term or provision of this Agreement, or (c) any negligent act or omission of Bay West or its agents, employees, or subcontractors in the performance of this Agreement.

8b. TESORO agrees to indemnify and hold harmless Bay West and its officers, directors, employees, and agents, from and against any and all losses, damages, claims, liabilities, costs, and expenses, including legal fees and costs of investigation, resulting from or arising out of (a) the negligence or willful misconduct of TESORO or (b) the material breach by TESORO of any term or provision of this Agreement.

9a. TESORO shall treat as confidential, information and data furnished to TESORO in connection with this Agreement by Bay West marked "Confidential" that relate to Bay West's technology, formulas, procedures, processes, inventions, and computer programs. TESORO shall not disclose the confidential information to any unaffiliated third party.

Figure B-3 Bay West Equipment Listing

Bay West

Oil Spill Removal Organization Equipment List

EQUIPMENT TRAILERS
- 2 Equipment Spill Response Trailers

CONTAINMENT BOOM
- 1 Enclosed trailer with 2300' containment boom
- 1 Conex box with 2500' of containment boom
- 3 Conex boxes with a total of 4000' of containment boom (accessible through Wakota CAER)
- 1 St. Paul warehouse with 2000' of containment boom

MARINE
- 1 22' Sea Ark Boom deployment boat w/twin 70 hp Johnson motors
- 1 18' Sea Ark Boom deployment boat w/twin 60 hp Mercury motors
- 2 18' Lund Jon boats with 50 hp Mercury outboard motors w/Trailers
- 1 14' Alumacraft Jon Boat with 15 hp outboard motor
- 25 Life Jackets
- 9 1/2" x 600' rolls of Poly Rope
- 16 22 lb. Danforth type Anchors
- 18 Mooring Balls
- 7 1500 gal. Elastec Tanks
- 6 Air Powered Double Diaphragm Pumps-2"
- 1 Trailer Leroy Air Compressor
- 4 12 hp Emglo Air Compressors
- 1 8 hp Emglo Air Compressors
- 20 50' Suction hoses 2"
- 20 50' x 3/4" Air Hoses
- 20 50' x 3/8" Air Hoses
- 8 Portable Radios
- 3 Elastec Skimmers
- 5 Manta Ray Skimmers
- 1 JBF DIP-400 Skimmer
- 1 Hydraulic JBF Powerpack
- 80 5' Fence Posts for Boom
- 10 Chest Waders

SORBENTS
- 20 Bales T-270 8" x 10' (4 ea.) sorbent booms
- 20 Bales T-280 8" x 10' (4 ea) double boom
- 25 Bales T-126 17" x 100' Sweep
- 40 Bales T-151 17" x 19" Sorbent Pads
- 60 Cases P110 Universal Sorbent Pads
- 80 50 lb. Bags Floor Dry
- 60 Bags of Drizorb

CONTAINERS
- 35 55 gallon Open-top Poly Barrels
- 30 5 gallon Open-top Pails
- 300 6 mil Large Plastic Bags
- 20 Rolls 24' x 100' 6-mil Plastic
- 30 55 gallon Steel Open-top Barrel

PROTECTIVE GEAR
- 100 Sealed Seam Saranex Suits
- 100 Regular Saranex Suits
- 30 Rain Suits
- 400 Pair Nitrile Gloves
- 500 Pair Surgical Gloves
- 30 Hardhats w/Shields
- 30 Encon Safety Glasses

TOOLS
- 6 Safety Gas Can for Compressors
- 5 General Purpose Tool Boxes
- 10 Long-handle Square-point Shovels
- 10 Long-handle Round-point Shovels
- 6 Non-metallic Scoop Shovels
- 1 8" Rubber Squeegees
- 8 16" Flat Rakes
- 12 18" Street Brooms
- 6 Pitchforks
- 4 12' x 1¾" Pike Poles
- 4 650-watt Generators w/light
- 1 Homelite Generator 1500W
- 1 5500W Multiquip Generator
- 2 Exhaust Fans
- 16 12-3 50' Extension Cord
- 4 #2 Premoistened Plug & Patch Kits
- 20 Explosion-proof Flashlights
- 20 Extra Batteries
- 20 Paint Pens
- 80 Duct Tape Rolls

Monitoring Equipment (PID, CGI, Draeger tubes)

SAFETY
- 8 SCBA
- 10 Supplied Airline Respirators
- 45 Full Face Respirators with Cartridges
- 10 Caution Tape 1000' Rolls
- 15 NIOSH Pocket Guide to Hazardous Chemicals
- 10 Grounding Straps for Barrels
- 6 Grounding Rod for Straps
- 3 Eyewash Stations
- 5 First Aid Stations
- 10 20 lb. Fire Extinguishers
- 10 Traffic Vests
- 2 Washing Equipment
- 8 Full Body Harnesses
- 8 25' Lanyards

HEAVY EQUIPMENT
- 1 Melroe Bob

Bay West, Inc. www.baywest.com Updated 11/03

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Figure B-4 Qualitech Contract

TESORO MARITIME COMPANY
300 Concord Plaza Drive
San Antonio, Texas 78216-6999
210-828-8484
210-828-8600 Facsimile

April 1, 2000

Mr. Mark Ploen
318 Lake Hazeltine Drive
Chaska, Minnesota 55318-1093

RE: Consulting Agreement
Tesoro's Legal File No. 70-0007

Dear Mr. Ploen:

This letter, when executed by you, will contain and establish an agreement ("Agreement") between Tesoro Maritime Company, a Delaware corporation ("Tesoro"") and you ("Consultant") whereby Consultant shall act as an independent contractor to Tesoro on a non-exclusive basis to perform consultation services to Tesoro under the following terms and conditions.

1. Consultant shall advise and assist Tesoro with respect to the environmental, regulatory and spill response compliance issues applicable to the Prince William Sound in the State of Alaska. Consultant represents and warrants that he shall at all times during the term of this Agreement act in the best interest of Tesoro, and take no action which is or might be detrimental to the interests of Tesoro.

2. Consultant agrees to on call as needed during the term hereof exclusively to the performance of his duties hereunder.

3. Consultant is not an agent or employee of Tesoro. Consequently, Consultant does not have authority on behalf of Tesoro or to bind Tesoro or any affiliate of Tesoro to any legal obligation whatsoever, or to hire or retain other parties at Tesoro's expense, without Tesoro's prior written approval. Consultant shall coordinate the performance of his duties hereunder with one or more individuals designated by Tesoro in writing. Until further notice, Consultant shall coordinate the performance of his duties hereunder with Mr. Eric Haugstad, manager, contingency planning and emergency response.

4. Tesoro will pay Consultant a fee of $600.00 per day during the term hereof, which shall be payable in arrears, monthly within fifteen (15) days of Tesoro's receipt of Consultant's invoice.

Mr. Mark Ploen
April 1, 2000
Page 4

11. All notices required or permitted under this Agreement shall be in writing and shall be deemed to be given when personally delivered or when deposited in the United States mail, postage prepaid, registered or certified mail, return receipt requested, addressed to the parties at the following respective addresses or at such other addresses as may have been therefore specified by written notice delivered in accordance with this paragraph:

Mark Ploen
318 Lake Hazeltine Drive
Chaska, Minnesota 55318-1093

Tesoro Maritime Company
300 Concord Plaza Drive
San Antonio, Texas 78216-6999
Attn: Eric Haugstad

12. Consultant may not assign this Agreement without the express written consent of Tesoro. Tesoro may assign this Agreement to any party.

13. This Agreement supersedes and shall be deemed to supersede all other agreements, understandings and communications on the subject hereof, both written and oral, which have been heretofore made between Tesoro and Consultant, if any.

TESORO MARITIME COMPANY.

By: ______________________
Stephen L. Wormington, President

ACCEPTED AND AGREED as of
the 9 day of April, 2000

____
Mark Ploen

____
Social Security Number

wplegsh\csp\70-0007\markploen-consltagr.

Figure B-5 Qualitech Equipment Inventory

Revision Date: 10/07/2016	Oil Spill Consulting Inventory			
Manufacturer Skimmers	Model	Recovery Rate	Qty	Location
Desmi	Termite (DOP160)	132 GPM	2	Minneapolis, MN
Foilex	Micro	Rated at Pump Capacity	-	-
Foilex	TDS 150	130 GPM	1	Sauget, Illinois
Foilex	Micro	Rated at Pump Capacity	6	Minneapolis, MN
Foilex	Mini	Rated at Pump Capacity	9	Minneapolis, MN
Foilex	TDS 150	130 GPM	1	Minneapolis, MN
Foilex	PD75 Spate Pump	132 GPM	9	Minneapolis, MN
Markleen	Brush Skimmer	130 GPM	1	Minneapolis, MN
Markleen	Brush Skimmer	130 GPM	1	Minneapolis, MN
HYDRAULIC POWER UNITS				
Foilex	DH20E HPU		1	Minneapolis, MN
Foilex	DH32E HPU		1	Sauget, Illinois
Foilex	DH42E HPU		1	Minneapolis, MN
HOSE PACKAGES				
Foilex	Foilex DH32 Hose Reel		1	Sauget, Illinois
Foilex	Foilex DH32 Hose Reel		2	Minneapolis, MN

CURRENT BUSTERS/BOOMVANES				
ORC / Elastec	Shallow Water Boomvane		3	Minneapolis, MN
ORC / Elastec	Standard Water Boomvane		1	Minneapolis, MN
ORC / Elastec	Ocean Boomvane		1	Minneapolis, MN
AERIAL SURVEILLANCE				
BOATS/VESSEL				
DISASTER EQUIPMENT				
Echo	Backpack Blowers for Inflatable Boom		16	Minneapolis, MN
T&T Marine	TT-900 Fire Pump		1	Minneapolis, MN
Hot Water Pressure Washers	Hot Water Pressure Washers	3500 - 4000 psi	14	Minneapolis, MN
TRUCKS AND TRAILERS				
Misc.	4x4 Truck		n/a	Minneapolis, MN
Polaris	Ranger 600 Crew Cab		5	Minneapolis, MN
Water Truck 2,000 Gal	Water Truck 2,000 Gal		n/a	n/a
Dump Truck, 30 yd off-road	Dump Truck, 30 yd off-road		n/a	n/a
Tractor w/ lowboy	Tractor w/ lowboy		n/a	n/a
Tractor w/ dump trailer	Tractor w/ dump trailer		n/a	n/a
Tractor w/ 45 ft tandem flatbed trailer	Tractor w/ 45 ft tandem flatbed trailer		n/a	n/a
Bumper Pull Trailer	Bumper Pull Trailer		n/a	n/a
Cargo Trailer (18 ft) w/ concrete tools	Cargo Trailer (18 ft) w/ concrete tools		n/a	n/a
Conex Storage Container	Conex Storage Container		n/a	n/a
Dump Trailer, 25 cubic yd	Dump Trailer, 25 cubic yd		n/a	n/a
Flat Trailer, 40-45 ft	Flat Trailer, 40-45 ft		n/a	n/a
Goose neck Trailer	Goose neck Trailer		n/a	n/a

HEAVY EQUIPMENT				
297C Cat track skid steer w/ 4ft Tushhog mulching wheel	297C Cat track skid steer w/ 4ft Tushhog mulching wheel		n/a	n/a
297C Cat track skid steer w/ forks or bucket	297C Cat track skid steer w/ forks or bucket		n/a	n/a
Skid Steer attachments:	Skid Steer attachments:		n/a	n/a
Grapple	Grapple		n/a	n/a
Auger	Auger		n/a	n/a
Broom	Broom		n/a	n/a
Harley rake	Harley rake		n/a	n/a
4-in-1 Bucket	4-in-1 Bucket		n/a	n/a
6 ft Bush hog	6 ft Bush hog		n/a	n/a
78 in. Hi-flow Bush hog	78 in. Hi-flow Bush hog		n/a	n/a
Backhoe	Backhoe		n/a	n/a
Trencher	Trencher		n/a	n/a
Jack hammer	Jack hammer		n/a	n/a
Stump grinder	Stump grinder		n/a	n/a
Mulching wheel	Mulching wheel		n/a	n/a
310E John Deere 4WD backhoe	310E John Deere 4WD backhoe		n/a	n/a
410G John Deere 4WD backhoe	410G John Deere 4WD backhoe		n/a	n/a
3 cubic yd wheel loader	3 cubic yd wheel loader		n/a	n/a
Mini excavator	Mini excavator		n/a	n/a
315 Cat excavator	315 Cat excavator		n/a	n/a
320 Cat excavator	320 Cat excavator		n/a	n/a
325 Cat excavator	325 Cat excavator		n/a	n/a
325 Cat excavator with rock hammer/ripper	325 Cat excavator with rock hammer/ripper		n/a	n/a
330 Cat excavator	330 Cat excavator		n/a	n/a
D4 Cat dozer	D4 Cat dozer		n/a	n/a

D5 Cat dozer	D5 Cat dozer		n/a	n/a
D6 Cat dozer	D6 Cat dozer		n/a	n/a
D6 Cat dozer w/ wench	D6 Cat dozer w/ wench		n/a	n/a
D7 Cat dozer	D7 Cat dozer		n/a	n/a
D8 Cat dozer	D8 Cat dozer		n/a	n/a
120 Caterpillar motor grader	120 Caterpillar motor grader		n/a	n/a
140 Caterpillar motor grader	140 Caterpillar motor grader		n/a	n/a
14M/14H motor grader	14M/14H motor grader		n/a	n/a
PL 61 / D6 combo Side boom	PL 61 / D6 combo Side boom		n/a	n/a
561 Side boom	561 Side boom		n/a	n/a
572 Side boom	572 Side boom		n/a	n/a
583 Side boom	583 Side boom		n/a	n/a
40 Ft Manlift	40 Ft Manlift		n/a	n/a
Forklift 6,000 lbs	Forklift 6,000 lbs		n/a	n/a
Telehandler Forklift, 8,000 lbs	Telehandler Forklift, 8,000 lbs		n/a	n/a
Telehandler Forklift, 12,000 lbs	Telehandler Forklift, 12,000 lbs		n/a	n/a
Self-Leveling Pallet Forks	Self-Leveling Pallet Forks		n/a	n/a
4020 John Deere tractor	4020 John Deere tractor		n/a	n/a
6420 John Deere tractor 4WD w/loader	6420 John Deere tractor 4WD w/loader		n/a	n/a
15,000 BTU Portable heater (no fuel)	15,000 BTU Portable heater (no fuel)		n/a	n/a
3,000 watt generator	3,000 watt generator		n/a	n/a
4,000 watt generator	4,000 watt generator		n/a	n/a
5,600 watt generator	5,600 watt generator		n/a	n/a
30,000 watt generator	30,000 watt generator		n/a	n/a
Air compressor 185 cfm	Air compressor 185 cfm		n/a	n/a
Air compressor 375 cfm	Air compressor 375 cfm		n/a	n/a
Air compressor 750 cfm	Air compressor 750 cfm		n/a	n/a
Fuel tank, 1,000 gal.	Fuel tank, 1,000 gal.		n/a	n/a

Light plant	Light plant		n/a	n/a
Mats - drag line (each)	Mats - drag line (each)		n/a	n/a
Mats - truck (each)	Mats - truck (each)		n/a	n/a

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Figure B-6 Clean Harbors Environmental Services MSA

MASTER SERVICE AGREEMENT NO. MA-2049-TSO-2013

THIS MASTER SERVICE AGREEMENT ("**Agreement**") is dated May 24, 2013 ("**Effective Date**"), by and between Tesoro Logistics Operations LLC, Tesoro Logistics Pipelines LLC, whose address is 19100 Ridgewood Parkway, San Antonio, TX 78259 (hereinafter "**Tesoro**") and Clean Harbors Environmental Services Inc. & its Affiliates and Subsidiaries, whose address is 42 Longwater Drive Norwell, MA 02061 (hereinafter collectively "**Contractor**"). Contractor and Tesoro are each a "**Party**" and collectively are "**Parties**" to this Agreement.

WHEREAS, Tesoro may on one or more occasions, through its duly authorized representatives, request that Contractor perform certain Work for Tesoro in the conduct of Tesoro's operations; and

WHEREAS, by entering into this Agreement, Tesoro and Contractor desire to establish certain general terms and conditions, which shall apply to, govern and control, all Work performed by Contractor for Tesoro.

NOW, THEREFORE, in consideration of the premises and the mutual promises contained herein, the Parties agree as follows:

1. **Nature of Agreement**. This Agreement neither obligates Tesoro to provide Work to Contractor nor obligates Contractor to undertake Work for Tesoro. This Agreement merely establishes the terms and conditions which will apply to any Work offered by Tesoro and performed by Contractor pursuant to an Order. Tesoro's offer of Work to Contractor is conditioned upon full and complete acceptance of all of the terms and conditions contained in this Agreement. In the event that Contractor submits or proposes any terms that state any additions, changes, deviations, or modifications to the Agreement, said terms shall automatically be deemed void, objected to and rejected by Tesoro unless Contractor's terms are expressly agreed to in writing by an Tesoro's Authorized Representative. Work performed by Contractor pursuant to any additions, changes, deviations or modifications by Contractor that are not expressly agreed to in writing by an authorized representative of Tesoro shall not constitute acceptance of such additions, changes, deviations or modifications.

2. **Defined Terms**. The capitalized terms and acronyms not otherwise defined in this Agreement have the following meanings:

2.1 "**Claims**" means all claims, demands, causes of action, judgments, damages (whether compensatory, punitive, statutory or otherwise), losses, penalties, fines, and expenses (including reasonably attorneys' fees, expert fees and litigation or arbitration costs) of every kind and character for (i) bodily injury, illness or death to any persons, including, but not limited to, employees of Contractor and its subcontractors, (ii) loss, damage and destruction of property, including, but not limited to, that of employees or Contractor and its subcontractors, and (iii) any violation of governmental laws, rules, regulations and orders.

2.2 "**Confidential Information**" with respect to Tesoro information means all information relating to this Agreement and an Order, including, but not limited to, all information supplied to Contractor by Tesoro and all information generated by Contractor as part of its Work for Tesoro and with respect to Contractor information means all information developed by Contractor outside the scope of this Agreement and Order and conspicuously marked as Confidential Information when provided to Tesoro.

2.3 "**Contractor's Personnel**" means any of Contractor's agents, employees, subcontractors of every tier and any other persons acting on behalf of Contractor.

2.4 "**Day**" means calendar day unless the reference expressly indicates business day.

2.5 "**Field Change Order**" means a Field Change Request executed by Tesoro's Authorized Representative. A Field Change Order is a binding agreement between the Contractor and Tesoro, is subject to the terms and conditions of this Agreement and amends the Work Order with respect to the Work covered thereby.

1

MA-2049-TSO-3013

THIS AGREEMENT is executed by duly authorized representatives as of the Effective Date.

Tesoro Logistics Operations LLC

By: ______________________

Name: Eric C. Schule

Title: Authorized Signatory, Procurement

Tesoro Logistics Pipelines LLC

By: ______________________

Name: Eric C. Schule

Title: Authorized Signatory, Procurement

CLEAN HARBORS (CONTRACTOR) Environmental Services, Inc.

By: ______________________

Name: Michael McDonald

Title: Asst. Secretary

Figure B-7 Clean Harbors Environmental Services Equipment List

Land Assets		
Description	Quantity	Location
Polaris 4 Seat UTV's w. Dump Bed	2	Wattford City, ND
40ft Command Trailer	1	Wattford City, ND
Climate Controled Restroom Trailer	1	Wattford City, ND
Enclosed Supply Trailer (see inventory)	1	Wattford City, ND
Roll off trucks	2	Wattford City, ND
Roll Offs	35	Wattford City, ND
Custcos	5	Wattford City, ND
Air Guzzler	2	Wattford City, ND
Back Hoe	1	Wattford City, ND
Side Dumps	5	Wattford City, ND
10K PSI Hydroblaster	1	Wattford City, ND

Marine Assets		
Description	Quantity	Location
30' Landing Craft	1	Wattford City, ND
18' Jet Drive Boat	2	Wattford City, ND
12ft John Boat	3	Wattford City, ND
18" Hard Boom	9500 Ft	Wattford City, ND

Supply Trailer Inventory		
DESCRITION	Quantity	Location
2" Trash Pumps w/ attachments	6	Wattford City, ND
36" Drum Skimmer	1	Wattford City, ND
20hp Mercury Outboard w/ Gas Tanks	2	Wattford City, ND
Work Vest	10	Wattford City, ND
Life Vest	7	Wattford City, ND
Poly Tyvek-2lx,3lx,4xl	12 cases	Wattford City, ND
Rain Gear	2 cases	Wattford City, ND
PVC Gloves	120 pairs	Wattford City, ND
Hip Wadders	4 pairs	Wattford City, ND
Hard Hats	20	Wattford City, ND
3/8 x600' Rope	2 boxes	Wattford City, ND
Poly Bags (6mm)	6 rolls	Wattford City, ND
Poly Sheeting	2 rolls	Wattford City, ND
5 Gal Gas Cans	2	Wattford City, ND
Sorbent Blanket	10 rolls	Wattford City, ND
Sorbent Pads	62 bales	Wattford City, ND
5" Sorbent Boom	80 bales	Wattford City, ND
Sorbent Sweep	16 bales	Wattford City, ND
Sorbent Snare	22 bales	Wattford City, ND

Land Assets	
Description	Quanitity
20' Utility Trailer	1
4 Seat UTV w/ Dump Bed	2
UTV Trailers	2

Marine Assets	
Description	Quanitity
18' Jet Drive Boat	2

Figure B-8 VisTec MSA

MASTER SERVICE AGREEMENT

THIS MASTER SERVICE AGREEMENT ("**Agreement**") is made and entered into as of October 27, 2015 ("**Effective Date**"), by and between Tesoro Logistics Operations LLC, a Delaware limited liability company, whose address is 19100 Ridgewood Parkway, San Antonio, TX 78259 (hereinafter "**Tesoro**"), and VisTec Industrial Services Inc., a Delaware corporation, whose address is 7180 West Commerce Circle, Minneapolis, MN 55432 (hereinafter "**Contractor**"). Contractor and Tesoro are each a "**Party**" and collectively are "**Parties**" to this Agreement.

WHEREAS, Tesoro may on one or more occasions, through its duly authorized representatives, request that Contractor perform certain Work for Tesoro in the conduct of its operations; and

WHEREAS, by entering into this Agreement, Tesoro and Contractor desire to establish certain general terms and conditions which shall apply to, govern and control, all Work performed by Contractor for Tesoro;

NOW, THEREFORE, in consideration of the premises and the mutual promises contained herein, the Parties agree as follows:

1.0 Nature of Agreement

1.1 This Agreement does not obligate Tesoro to contract with Contractor, nor does it obligate Contractor to contract with Tesoro with respect to any particular Work. This Agreement establishes the terms applicable to all Work, as may be specified in any Order, Exhibit or other written agreement between the Parties referencing this Agreement.

2.0 Definitions

The capitalized terms and acronyms in this Agreement have the following meanings:

2.1 "**Applicable Laws**" mean laws, regulations, statutes, codes, rules, orders, permits, policies, licenses, certifications, decrees, standards, or interpretations imposed by any governmental authority, including those listed in Section 22 hereof, that apply to the Services or this Agreement, including those within the Area of Operations or the country where the Services are performed.

2.2 "**Area of Operations**" means the area (i) described in an Order or (ii) any other area within Tesoro's operational control where any member of Contractor performs or is expected to perform the Work.

2.3 "**Claim**" means any and all demands, causes of action, damages (whether compensatory, punitive, statutory or otherwise), losses, penalties, fines, and/or expenses (including reasonable attorneys' fees, expert fees and litigation or arbitration costs) of every kind and character, whether asserted by Tesoro or a third party.

2.4 "**Confidential Information**" means shall mean all information (including business, technical, and other information), data, knowledge, works, and ideas that are provided or made available to Contractor by Tesoro orally, visually, by document, electronic mail, computer disks, magnetic tape, or by any other manner, whether directly or indirectly, for the purposes of this Agreement or that Contractor learns, discovers, develops, or creates as a consequence of or arising out of Contractor entering into this Agreement or performing the Services, including all original works of authorship, inventions, discoveries, and improvements that are made or conceived by Contractor Group in the performance of the Services and all intellectual property rights associated with those original works of authorship, inventions, discoveries, and improvements, but does not include any of the following:

1) Contractor Background Technology;

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102447792.2

31.1 The prevailing Party in any dispute hereunder, in addition to actual damages and any other legal or equitable remedies to which it may be entitled, shall be entitled to recover reasonable attorneys' fees and costs from the non-prevailing Party.

32.0 <u>Contract in Entirety</u>

32.1 This Agreement sets forth the full and complete agreement of the Parties as to the subject matter hereof. The terms and conditions contained in this Agreement shall apply to all Work provided during the term hereof with the same force and effect as if such terms and conditions were fully set forth in any Order referencing this Agreement.

32.2 This Agreement supersedes all prior or contemporaneous drafts or representations, written or oral, concerning the subject matter hereof. Where there is any conflict or inconsistency with the express terms in the Agreement and the terms and conditions of any Order referencing this Agreement, the terms stated herein shall control. In the event of a conflict in pricing, the Parties agree that the lowest price shall prevail and shall remain in effect.

32.3 This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns. The Agreement is not intended to and shall not confer any rights or benefits to any third party.

33.0 <u>Modifications or Waivers</u>

33.1 No change, modification, or alteration of this Agreement will be valid unless written and signed by the authorized representatives of the Parties hereto, and no course of dealing between the Parties is construed to alter the terms hereof. No waiver of any breach of this Agreement will be deemed to be a waiver of any other or subsequent breach.

34.0 <u>Survival</u>

34.1 Sections 6.0, 7.0 through 15.0, and 22.0 through 34.0, and all other provisions of this Agreement that by their terms are intended to survive termination or expiration of this Agreement, including any accrued obligations, warranties, representations, and indemnities under this Agreement, shall survive any termination or expiration of this Agreement.

35.0 <u>Construction</u>

35.1 In the event of any ambiguity in any of the terms or conditions of this Agreement such ambiguity shall not be construed for or against any Party hereto on the basis that such Party did or did not author the Agreement. The underlined headings used throughout the Agreement are for administrative convenience only and shall be disregarded for the purposes of construing this Agreement.

THIS AGREEMENT is executed by duly authorized representatives as of the Effective Date.

Tesoro Logistics Operations LLC	**VisTec Industrial Services Inc.**
By: DocuSigned by: Angela Holley	By: DocuSigned by: Robert Schwerdtfenberg
Name: Angela Holley	Name: Robert Schwerdtfenberg
Title: Authorized Signatory, Procurement	Title: President

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005477062

Figure B-9 VisTec Equipment List

VisTec Equipment List
150 HHP 10,000 PSI
150 HHP 15,000 PSI
150 HHP 20,000 PSI
300 HHP 10,000 PSI
300 HHP 15,000 PSI
300 HHP 20,000 PSI
Steamer/Pressure Washer
EBC
IBC
3 TLE
1 TLC
Rotary Lance Sinqle/Dual 10K
Lance Replacement 1OK each
Rotary Lance Sinqle/Dual 20K
Lance Replacement 20K each
Quad Lance 1OK
Quad Lance 20K
2-D Shell Cleaner
Filter Svstem
Rotary Drill
Roto Fan Svstem
BJV 70 GPM 15K
BJV 30 GPM 10K
HF BJV 100 GPM 10K
3-D 100 GPM 10K
3-D 100 GPM 20K
3-D 200 GPM 20K
Boiler Floor Tool
HF COKE Blaster
3-D Cvclone/Refractory Tool 1OK
3-D Cvclone/Refractory Tool 20K
2-D Pendant Tool 10K
2-D DeCoke Tool 1OK
2-D Tube Martin/Ferret/Banshee 1OK
2-D Tube Martin/Ferret/Banshee 20K
Rotary Pioe Badaer 1OK
Rotary Pioe Bad'1er 20K
Spin Nozzles 1OK
Spin Nozzles 20K
Rotary Gun Nozzle 1OK
Rotary Gun Nozzle 20K
Venturi Pump
Primina/Baoster Pumo 2" oer shift
Filtration Svstem

Filter Replacement each
Treatment Additives/Chemicals
Specialty tool fabrication
150 HP
Tube Lancer
300 HP Pump
Vacuum Truck Wet/Drv 27" '
Liquid Ring Vacuum Truck
Wet Vacuum Truck 70 BBL
Sewer Rodder & Vac
Bag Change Out Standard if damaged each
Bag Change Out Nomex
Bag Change Out HEPA
CCU Twin Pumping Unit
3,000-5,000 GPM Pump
Heat Exchanger <250 sq2 per shift
Heat Exchanger <750 sq2 per shift
Heat Exchanger >750 sq2 per shift
Tanker Stainless Steel per shift
Flow Meter Liquid 2"-6" per shift
Flow Meter Gas/02
Diaphragm Pumo Standard 2"-5"
Diaphragm Pump Teflon/Stainless per shift
Portable Lab Hach/Titration
Mobile Lab per shift
Mobile Lab/AA Spectrometer
Filtration Unit
Filter Replacement per change
Gas Monitor 3-4 Gas
Steam Sparger
Open Too Drum each
Salvage Over Pack Drum each
500 BBL Frac Tanks
Transportation
Secondary Containment/Berm
Radio Two-Wav oer shift per radio
Support Vehicle oer shift
PPE (Slickers, Boots, Gloves\ oer man oer day
Light Truck/Trailer Combination oer mile
Support Vehicle per mile
Truck per mile
Truck/Trailer Combination per mile
Shipping/Freight
Frac Tanks

Figure B-10 SASR Mutual Aid Agreement

Execution Copy

LIMITED LIABILITY COMPANY AGREEMENT
OF
SAKAKAWEA AREA SPILL RESPONSE LLC

THIS LIMITED LIABILITY COMPANY AGREEMENT (the "Agreement"), pursuant to Section 18-101(7) of the Act, is entered into as of September 19, 2011 by and among Sakakawea Area Spill Response LLC, a Delaware limited liability company (the "Company"), and various entities who are Eligible Parties and who are members of the Company and listed in Exhibit A attached hereto, and such other entities as are hereafter properly admitted as members of the Company (collectively, the "Members").

ARTICLE I
DEFINITIONS

1.1 Definitions. The words and phrases set forth below shall have the following meanings as used in this Agreement:

(a) **"Act"** - The Delaware Limited Liability Company Act, Delaware Code Annotated, Title 6, Section 18-101, et seq., as amended from time to time, and any reference to a specific provision of the Act shall be deemed to include any future corresponding provision of the Act.

(b) **"Affected Member"** - A Member whose Facility is the source of Oil giving rise to an Oil Spill Emergency.

(c) **"Area of Interest"** - The Williston Basin Area of eastern Montana and western North Dakota; more specifically the northern boundary extending east and west from and including the northern boundary of Williams County, North Dakota, east to a line running north and south from Turtle Lake, North Dakota, west to a line running north and south from Union, Montana, and then south to a line running east and west along, and projecting westward from, the border of North Dakota and South Dakota.

(d) **"Capital Account"** - The account maintained for each Member pursuant to Section 7.1.

(e) **"Code"** - The Internal Revenue Code of 1986, as amended from time to time, and any reference to a specific provision of the Code shall be deemed to include any future corresponding provision of the Code.

(f) **"Company Equipment"** - Equipment and materials owned, and to which title is held, by the Company.

Execution Copy

Member Signature Page

Name of Member: ______________________

By: ______________________

Name: ______________________

Title: Vice President

Contact information:

Address: 2101 46th Ave SE

Suite 2

Attn: Darren Snow

Tel. No.: 701-751-3401

Fax No.: 701-751-3710

Email: dsnow@bakkenlink.com

OPERATING AGREEMENT OF SAKAKAWEA AREA SPILL RESPONSE LLC, A DELAWARE LIMITED LIABILITY COMPANY
PAGE 2

[illegible]
[illegible]

Figure B-11 SASR Equipment List

Company	Address	City	State	Trailer Name
Tesoro Great Plains Gathering and Marketing LLC	1918 Spring Creek Road	Watford City	ND	8’ x 20’ Spill Response trailer and separate 1000’ Boom trailer
Tesoro Great Plains Gathering and Marketing LLC	12664 Highway 200	Grassy Butt	ND	1000’ Boom trailer
Tesoro Great Plains Gathering and Marketing LLC	10729 Highway 73	KEENE	ND	8’ x 20’ Spill Response trailer
ND Land Holdings LLC	3726 135TH AVE SW	BELFIELD	ND	FRYBURG RAIL TERMINAL
BELLE FOURCHE PIPELINE	301 E. Hwy 10	Belfield	ND	BELLE FOURCHE DICKINSON STATION
BRIDGER PIPELINE LLC	8035 HWY 2	STANLEY	ND	BRIDGER STANLEY STATION
BRIDGER PIPELINE LLC	1.8 MILES W. INTERSECTION HWY 23 & HWY 8	VAN HOOK	ND	BRIDGER VAN HOOK TRAILER
Continental Resources, Inc.	SEC 2, TWP 152N, RNG 094W	New Town	ND	Burr Trailer
Continental Resources, Inc.	SEC 6, TWP 153N, RNG 101W	Williston	ND	Atlanta Trailer
Continental Resources, Inc.	SEC 6, TWP 153N, RNG 93W	New Town	ND	Jersey Trailer
Continental Resources, Inc.	SEC 14, TWP 152N, RNG 100W	Williston	ND	Florida/Alpha Trailer
Continental Resources, Inc.	SEC 2, TWP 152N, RNG 094W	New Town	ND	Mack Trailer
Continental Resources, Inc.	SEC 4, TWP 152N, RNG 100W	Williston	ND	Anderson Trailer
ENBRIDGE	WILLISTON YARD	WILLISTON	ND	ENBRIDGE TRAILERS
ENBRIDGE	MINOT TERMINAL	MINOT	ND	ENBRIDGE TRAILERS
ENBRIDGE	GRAND FORKS YARD	GRAND FORKS	ND	ENBRIDGE TRAILERS
ENBRIDGE	STANLEY TERMINAL	STANLEY	ND	ENBRIDGE TRAILERS
HALCON RESOURCES	14092 49th St NW Unit B	Williston	ND	HK WILLIAMS CO SPILL TRAILER
HALCON RESOURCES	SW CORNER OF THE INTX CR 53/BIA 30 AND HWY 22	MANDAREE	ND	HK FBIR SPILL TRAILER
HESS CORPORATION R	1.8 MILES W. INTERSECTION HWY 23 & HWY 1806	KEENE	ND	HESS CORPORATION TRAILER
HESS CORPORATION RAIL	.50 MILE N INTERSECTION 105TH AVE NW AND 67TH ST NW	TIOGA	ND	HESS CORPORATION RAIL TRAILER

Company	Address	City	State	Trailer Name
HESS CORPORATION YARD	.15 MILE E INTERSECTION HWY 40 & 68TH ST NW	TIOGA	ND	HESS CORPORATION YARD TRAILER
MARATHON OIL	AT MARATHON OFFICE	DUNN CENTER	ND	SR TRAILER 7
MARATHON OIL	AT MARATHON OFFICE	DUNN CENTER	ND	SR TRAILER 9
MARATHON OIL	RIG TRAILER LAKE SAKAKAWEA AREA CALL FOR LOCATION	FLOAT TRAILER	ND	SR TRAILER 1
MARATHON OIL	RIG TRAILER LAKE SAKAKAWEA AREA CALL FOR LOCATION	FLOAT TRAILER	ND	SR TRAILER 2
MARATHON OIL	RIG TRAILER LAKE SAKAKAWEA AREA CALL FOR LOCATION	FLOAT TRAILER	ND	SR TRAILER 3
MARATHON OIL	AT MARATHON OFFICE	DUNN CENTER	ND	SR CONNEX STORAGE CONTAINER
MARATHON OIL	AT MARATHON OFFICE	DUNN CENTER	ND	SR CONNEX STORAGE CONTAINER
MARATHON OIL	AT MARATHON OFFICE	NEW TOWN	ND	SR CONNEX STORAGE CONTAINER
MARATHON OIL	AT MARATHON OFFICE	NEW TOWN	ND	SR CONNEX STORAGE CONTAINER
MARATHON OIL	RIG TRAILER LAKE SAKAKAWEA AREA CALL FOR LOCATION	FLOAT TRAILER	ND	SR TRAILER 4
MARATHON OIL	RIG TRAILER LAKE SAKAKAWEA AREA CALL FOR LOCATION	FLOAT TRAILER	ND	SR TRAILER 5
MARATHON OIL	RIG TRAILER LAKE SAKAKAWEA AREA CALL FOR LOCATION	FLOAT TRAILER	ND	SR TRAILER 6
MARATHON OIL	AT MARATHON OFFICE	DUNN CENTER	ND	SR TRAILER 8
SLAWSON EXPLORATION	1.8 MILES E. INTERSECTION HWY 23 & HWY 1804	NEW TOWN	ND	SPILL TRAILER
WHITING PETROLEUM	701 4th Ave NW	Watford City	ND	Watford City Trailer
WHITING PETROLEUM	528 21ST W SUITE E	DICKINSON	ND	Dickinson Trailer
WHITING PETROLEUM	5485 Highway 85 North	WILLISTON	ND	Williston Trailer
WHITING PETROLEUM	4499 HWY 8	NEW TOWN	ND	Robinson Lake Trailer
WPX ENERGY	2 MILES E INTERSECTION 96TH AVE NW & 17TH ST NW	NEW TOWN	ND	WICKER 34-27H

Company	Address	City	State	Trailer Name
WPX ENERGY	28TH ST NW & 87TH AVE NW INTERSECTION	NEW TOWN	ND	BRUNSELL 16-9H
WPX ENERGY	.40 MILE N INTERSECTION HWY 22 & HWY 73	NEW TOWN	ND	KYW 27-34H
WPX ENERGY	.30 MILES W INTERSECTION 18TH ST NW & HWY 22 AKA BIA 30	NEW TOWN	ND	TAT 2-1H
WPX ENERGY	1.5 MILES N 93RD AVE & 20TH ST NW INTERSECTION AKA BIA 12	MANDAREE	ND	MANDAREE STORAGE YARD / COMM CENTER
WPX ENERGY	1.5 MILES E INTERSECTION 12TH ST NW & 92 AVE NW AKA BIA 17	MANDAREE	ND	TRI UNIT PRODUCTION PAD
SASR Trailer 1	AT MARATHON OFFICE 8502 37TH STREET NW	NEW TOWN	ND	SASR SPILL TRAILER 1
SASR Trailer 2	AT MARATHON OFFICE 8502 37TH STREET NW	NEW TOWN	ND	SASR SPILL TRAILER 2
SASR Trailer 3	AT HALCON LOCATION -10270 18TH STREET NW	MANDAREE	ND	SASR SPILL TRAILER 3
QEP ENERGY	BULLWINKLE PAD 6-9D	MANDAREE	ND	SPILL TRAILER
QEP ENERGY	INDY 10 PAD 16-31B	MANDAREE	ND	SPILL TRAILER
QEP ENERGY	DODGER FACILITY PAD	MANDAREE	ND	SPILL TRAILER
QEP ENERGY	PATSEY/LAWLER FACILITY PAD	WATFORD CITY	ND	SPILL TRAILER
QEP ENERGY	QEP PARSHALL OFFICE	PARSHALL	ND	SPILL TRAILER

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APPENDIX C1 NORTHERN RESPONSE ZONE INFORMATION

The purpose of this Response Zone Appendix is to provide response zone-specific information for the Tesoro High Plains Pipeline (THPP) and the operator as required, in part, by 49 CFR 194.107.

C.1.1 Information Summary

The following information is provided in *Section 1*, repeated here as required by 49 CFR 194.113(b)

C.1.1.1 Owner and Operator

Owner

Tesoro Logistics Operations LLC
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

Tesoro Refining and Marketing, Corp
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

QEP Field Services
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

Operator

Tesoro Logistics Central Control Center
19100 Ridgewood Parkway /1 2B024
San Antonio, TX 78259
Email: lccrconsole2@tsocorp.com
Phone: (210)626-6014
Cell: (210)527-3885

The San Antonio Operations Center provides monitoring and control capabilities using a PLC/Computer SCADA System.

Figure C.1-1 Northern Response Zone Counties and Emergency Contact Information

Northern		
Burke (ND) Emergency Management: 701-377-4911 Sheriff: 701-377-2311 Fire/Injury/Ambulance: 911	**Dunn (ND)** Emergency Management: 701-573-4612 Sheriff: 701-573-4449 Fire/Injury/Ambulance: 911	**Golden Valley (ND)** Emergency Management: 701-872-3713 Sheriff: 701-872-4733 Fire/Injury/Ambulance: 911
McKenzie (ND) Emergency Management: 701-580-6936 Sheriff: 701-842-6010 Fire/Injury/Ambulance: 911	**Williams (ND)** Emergency Management: 701-577-7707 Sheriff: 701-577-7700 Fire/Injury/Ambulance: 911	**McLean (ND)** Emergency Management: 701-462-8541 ext. 809 Sheriff: 701-462-8103 Fire/Injury/Ambulance: 911
Montrail (ND) Emergency Management: 701-628-2909 Sheriff: 701-628-2975 Fire/Injury/Ambulance: 911	**Ward (ND)** Emergency Management: 701-857-6534 Sheriff: 701-857-6500 Fire/Injury/Ambulance: 911	**Richland (MT)** Emergency Management: 406-433-2220 Sheriff: 406-433-2919 Fire/Injury/Ambulance: 911
Dawson (MT) Emergency Management: 406-377-2566 Sheriff: 406-377-5291 Fire/Injury/Ambulance: 911		

The response plan cover sheet is shown as *Figure C.1-2.*

Figure C.1-2 Response Plan Cover Sheet – Northern Zone

THPP Northern Response Zone
Response Plan Cover Sheet

Owner/Operator of Facility	Tesoro Logistics Operations LLC 19100 Ridgewood Parkway San Antonio, TX 78259 210-626-6000	Tesoro Refining and Marketing, Corp 19100 Ridgewood Parkway San Antonio, TX 78259 210-626-6000	QEP Field Services 19100 Ridgewood Parkway San Antonio, TX 78259 210-626-6000

Facility Name Tesoro High Plains Pipeline Northern Response Zone
Facility Address (street address or route) 6368 108th Avenue NW Tioga,ND 58852
Facility Mailing Address 6368 108th Avenue NW Tioga,ND 58852
Facility Phone No. 701-664-3091
Latitude 48.338434
Longitude -103.020806
Dun & Bradstreet Number 07-932-9878, 07-936-7071, 07-929-7013, 07-929-6818, 02-975-9037, 00-813-3480
Largest Aboveground Oil Storage Tank Capacity (gallons) 12,600,000
Number of Aboveground Oil Storage Tanks 60
Standard Industrial Classification (SIC) Code 4610, 5171, 4213
Maximum Oil Storage Capacity (gallons) Entire Northern Response Zone 55,649,370
Worst Case oil Discharge Amount (gallons) 3,865,075
Facility Distance to Navigable Water. Mark the appropriate line.
0 - ¼ mile XX ¼ - ½ mile ____ ½ - 1 mile ____ > 1 mile ____

APPLICABILITY OF SUBSTANTIAL HARM CRITERIA

Does the facility transfer oil over-water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons
YES ____ NO XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?
YES ____ NO XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
YES XX NO ____

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility would shut down a drinking water intake?
YES XX NO ____

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
YES XX NO ____

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

Signature Don J. Sorensen Date April 6, 2017

Name Don J. Sorensen Title SVP, Logistics

C.1.2 Qualified Individuals

This information is also included in *Sections 1, 3A and 3B*.

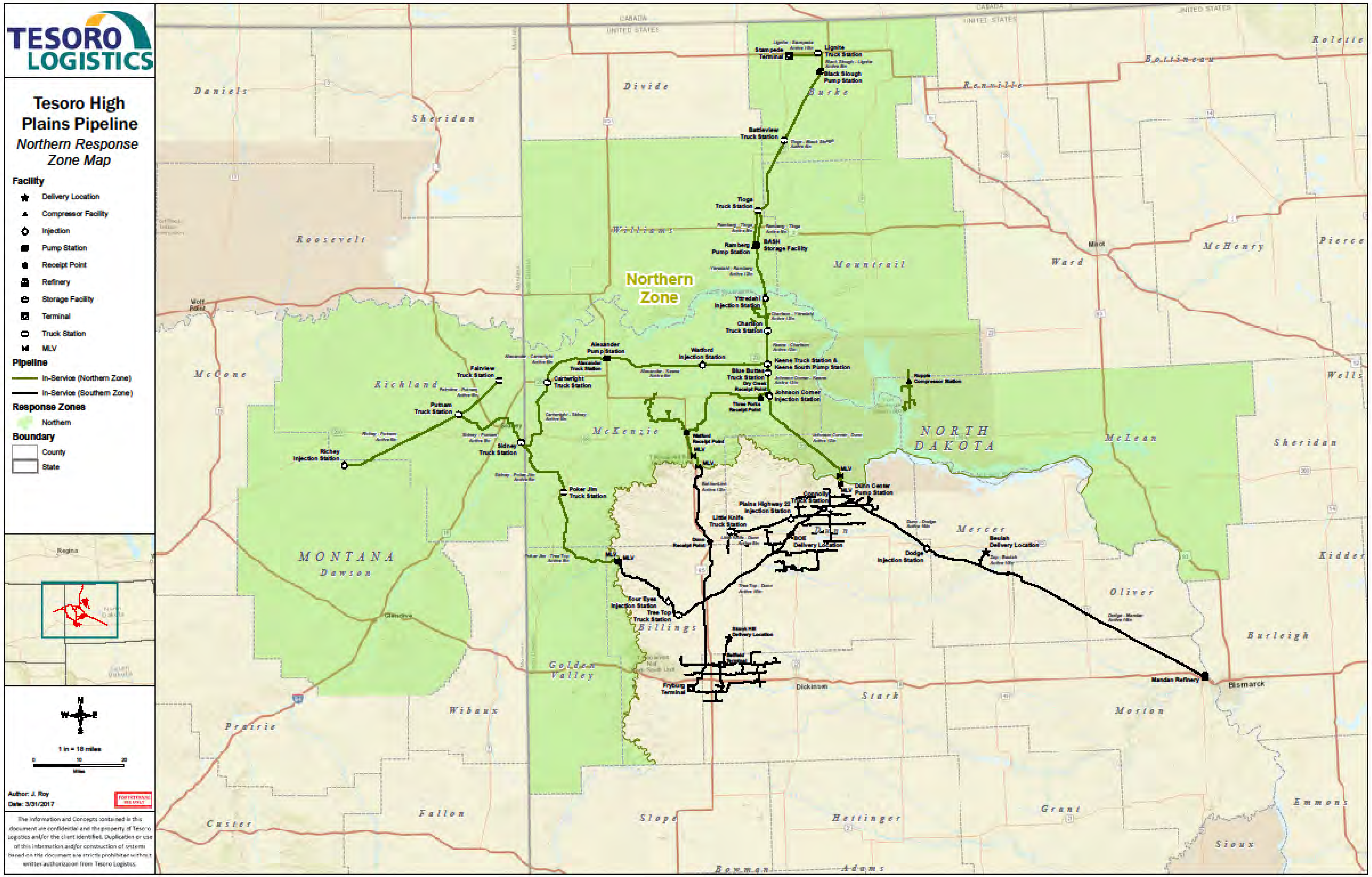
Figure C.1-3 Qualified Individuals

Primary Qualified Individual	
Darren Snow **Area Manager, Pipeline & Terminals ND/MT** 701-250-1960 – Office 701-204-1619 - Cellular	
Northern Response Zone Alternate Qualified Individuals	
Greg Andersen **Manager, Pipeline Operations** (701) 456-9735– Office (701) 260-2975 – Cellular	**John Berger** **Director of Asset Management** (701) 258-6486 – Office (701) 319-8602 – Cellular
Ryan Baumgartner **Superintendent, Pipeline & Terminal** 406-482-4841 – Office 406-480-4673 - Cellular	

C.1.3 Response Zone Description

Two response zones have been established for the THPP pipeline gathering and transmission system. The response zones are the Northern Response Zone and the Southern Response Zone. The delineating marker for the response zones is a centerline within the Little Missouri River, starting at the southern boundary of Billings County, North Dakota to the confluence of the Little Missouri River into Lake Sakakawea, extending downstream through the centerline within Lake Sakakawea, and extending downstream along the centerline with the Missouri River to the Mandan Refinery. The Northern Response Zone encompasses all pipeline segments, gathering systems and terminals on the northern side of the zone delineation line. A drawing depicting the Northern Response Zone is provided as *Figure C.1-4*.

Figure C.1-4 Northern Response Zone



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C.1.3.1 Terminal Descriptions

Alexander

Alexander Station is a 2.5 acre un-staffed, bi-directional station that can receive from Sidney/Cartwright or send to Sidney and/or Keene on the THPP System located in McKenzie County, North Dakota. Alexander also contains an unstaffed truck offloading facility. The tanks for Alexander Station are located in *Figure C.1-5*. The drawing for Alexander Station is *Figure J-2*.

BASH

BASH is a 26.5 acre un-staffed station on the Tesoro High Plains Pipeline Company system trunk line. BASH operates as a breakout station, receiving volume from Ramberg and Tioga Stations located in Williams County, North Dakota. The tanks for BASH are located in *Figure C.1-5*. The drawing for BASH is *Figure J-3*.

Black Slough

Black Slough Station is a 2.9 acre un-staffed injection point on the Tesoro High Plains Pipeline Company system that is owned and operated by Tesoro located in Burke County, North Dakota. The tanks for Black Slough Station are located in *Figure C.1-5*. The drawing for Black Slough Station is *Figure J-4*.

Blue Buttes

Blue Buttes Station is a 2.4 acre un-staffed injection point on the Tesoro High Plains Pipeline Company system trunk line that is owned and operated by Tesoro located in McKenzie County, North Dakota. The tanks for Blue Buttes Station are located in *Figure C.1-5*. The drawing for Blue Buttes Station is *Figure J-5*.

Cartwright

Cartwright, located in McKenzie County, North Dakota, is a 1.0 acre Truck Unloading Facility is an un-staffed bi-directional pump station on the THPP System that can pump crude south to Sidney Station or east to Alexander. The tanks for Cartwright are located in *Figure C.1-5*. The drawing for Cartwright is *Figure J-6*.

Charlson

Charlson is a 7.75 acre un-staffed injection point on the Tesoro High Plains Pipeline Company System trunk line that is owned and operated by Tesoro located in McKenzie County, North Dakota. The tanks for Charlson are located in *Figure C.1-5*. The drawing for Charlson is *Figure J-7*.

Fairview

Fairview Truck Unloading Facility, located in Richland County, Montana, is a 3.15 acre an un-staffed pump station on the THPP System that can pump crude south to Putnam Station. The tanks for Fairview are located in *Figure C.1-5*. The drawing for Fairview is *Figure J-10*.

Johnson Corner

Johnson Corner is a 7.5 acre un-staffed injection facility on the Tesoro High Plains Pipeline Company system trunk line located in McKenzie County, North Dakota. The tanks for Johnson Corner are located in *Figure C.1-5*. The drawing for Johnson Corner is *Figure J-14*.

Keene #1

Keene #1 is a 5.7 acre un-staffed injection point on the Tesoro High Plains Pipeline Company System trunk line that is owned and operated by Tesoro located in McKenzie County, North Dakota. The tanks for Keene #1 are located in *Figure C.1-5*. The drawing for Keene #1 is *Figure J-15*.

CKeene #2

Keene #2 is a 9.1 acre an un-staffed station on the Tesoro High Plains Pipeline Company system trunk line located in McKenzie County, North Dakota. Keene Station #2 normally operates as a breakout station pulling volume from tankage and also has the ability to operate as a booster station.. The tanks for Keene #2 are located in *Figure C.1-5*. The drawing for Keene #2 is *Figure J-16*.

Lignite

Lignite is a 1.3 acre un-staffed leak detection and truck offload facility on the Tesoro High Plains Pipeline Company system that is owned and operated by Tesoro located in Burke County, North Dakota. The tanks for Lignite are located in *Figure C.1-5*. The drawing for Lignite is *Figure J-17*.

Poker Jim

Poker Jim is a 1.6 acre un-staffed station on the THPP System located in McKenzie County, North Dakota. The tanks for Poker Jim are located in *Figure C.1-5*. The drawing for Poker Jim is *Figure J-19*.

Putnam

Putnam is a 2.2 acre un-staffed station on the THPP System located in Richland County, Montana. The tanks for Putnam are located in *Figure C.1-5*. The drawing for Putnam is *Figure J-20*.

Ramberg

Ramberg Station, located in Williams County, North Dakota, is a 6.9 acre an un-staffed terminal/injection point on the Tesoro High Plains Pipeline Company system trunk line that is owned and operated by Tesoro. Crude is received into the Ramberg facility from various points along the THPP pipeline system. The tanks for Ramberg are located in *Figure C.1-5*. The drawing for Ramberg is *Figure J-21.*

Rupple

Rupple is a 10.2 acre xxx station located in McLean County, North Dakota. The tanks for Rupple are located in *Figure C.1-5*. The drawing for Rupple is unavailable at this time.

Sidney

Sidney is a 5.4 acre an un-staffed station THPP System located in Richland County, Montana. The tanks for Sidney are located in *Figure C.1-5*. The drawing for Sidney is *Figure J-22*.

Stampede
Stampede is a .70 acre delivery point located in Burke County, North Dakota. The tanks for Stampede are located in *Figure C.1-5*. The drawing for Stampede is *Figure J-23*.

Tioga
Tioga is a 35.7 acre un-staffed origin station on the Tesoro High Plains Pipeline Company system trunk line that is owned and operated by Tesoro located in Williams County, North Dakota. The tanks for Tioga are located in *Figure C.1-5*. The drawing for Tioga is *Figure J-24*.

Watford City Injection Station
Watford City Injection Station is a 8.5 acre un-staffed station on the Tesoro High Plains Pipeline Company system trunk line located in McKenzie County, North Dakota. Watford City Station operates as a 3rd party injection pump station and/or booster station. The tanks for Watford City Injection Station are located in *Figure C.1-5*. The drawing for Watford City Injection Station is unavailable at this time.

Watford City Receipt Point
Watford City Receipt Point is an 18.8 acre crude oil receipt and truck unloading facility located in McKenzie County, North Dakota. The tanks for Watford City Receipt Point are located in *Figure C.1-5*. The drawing for Watford City Receipt Point is *Figure J-27*.

Yttredahl
Yttredahl is a 1.6 acre un-staffed injection point on the Tesoro High Plains Pipeline Company system trunk line that is owned and operated by Tesoro located in McKenzie County, North Dakota. The tanks for Yttredahl are located in *Figure C.1-5*. The drawing for Yttredahl is *Figure J-26*.

C.1.3.2 Tank Descriptions

Figure C.1-5 Tank Table

TERMINAL	TK. NO.	CAPACITY (BBLS)	Product	BUILT (YEAR)	DIAMETER (FT)	HEIGHT (FT)	ROOF TYPE [1]	DOT BREAKOUT TANK (YES/NO)
Montana								
Fairview								
	1178	400	Crude	2005*	12' 6"	20	Cone	No
	1179	400	Crude	2005*	12' 6"	20	Cone	No
	1180	400	Crude	2005*	12' 6"	20	Cone	No
	1181	400	Crude	2005*	12' 6"	20	Cone	No
Putnam								
	1171	10,000	Crude	1978	42	40	Cone	Yes
	1172	10,000	Crude	1978	42	40	Cone	Yes
	1175	400	Crude		12' 6"	20	Cone	No
	1176	400	Crude		12' 6"	20	Cone	No
	1177	400	Crude		12' 6"	20	Cone	No
Sidney								
	1173	5,000	Crude	1978	30	32	Cone	Yes
	1174	10,000	Crude	1978	42	40	Cone	Yes
	62	400	Crude		12' 6"	20	Cone	No
	63	400	Crude		12' 6"	20	Cone	No
North Dakota								
Alexander								
	42	10,000	Crude	1984	42	40	Cone	Yes
	43711	400	Crude	2015	12' 6"	20	Cone	No
	43712	400	Crude	2015	12' 6"	20	Cone	No
BASH								
	2010	123,908	Crude	2014	141	50	Cone	Yes
	2020	123,422	Crude	2014	141	50	Cone	Yes
	2030	123,655	Crude	2014	141	50	Cone	Yes
	2040	300,000	Crude	2015	220	46	Cone	Yes
Black Slough								
	7801	10,000	Crude	1993	45	40	Cone	Yes
	7396							
Blue Buttes								
	7389	10,000	Crude	1983	42	40	Cone	No
Cartwright								
	43	5,000	Crude	1985	40	24	Cone	No
	80	400	Crude	2012	12	20	Cone	no
	90	400	Crude	2012	12	20	Cone	No
	100	400	Crude	2012	12	20	Cone	No
	110	400	Crude	2012	12	20	Cone	No
Charlson								
	7207	20,000	Crude	1959	60	36	Ext. FR	No
	11	400	Crude		12'6"	20	Cone	No
	12	400	Crude		12'6"	20	Cone	No
	7504	400	Crude		12"6"	20	Cone	No
Keene #1								

	7390	15,000	Crude	1984	52	40	Cone	No
	7406	400	Crude	1992	120	20	Cone	No
		1,000		1983	20	16	Cone	No
Keene#2								
	7510	120,000	Crude	2014	140	50	Cone	Yes
	7520	120,000	Crude	2014	140	50	Cone	Yes
Lignite*								
	7402	400	Crude	1978*	30*	40	Cone	no
	7403	400	Crude	1978*	42.5*	40	Cone	no
	7404*							no
Poker Jim								
	46	10,000	Crude	1985	42	40	Cone	Yes
Rupple								
	230	8,000	Crude	2011	42			
Stampede								
	1401	400	Crude	2013	12	20	Cone	Yes
	1402	400	Crude	2013	12	20	Cone	Yes
Ramberg								
	7377	20,000	Crude	1984	60	40	Cone	Yes
	7800	24,000	Crude	1993	60	48	Cone	Yes
Tioga								
	7206	107,000	Crude	1959	120	48	EFR	Yes
	1000	120,000	Crude	2014	141	50	Cone	Yes
Watford Receipt Pt								
	T-301	30,000	Crude	2013	NA	NA	NA	Yes
	T-311	400	Crude	2013	NA	NA	NA	No
	T-312	400	Crude	2013	NA	NA	NA	No
	T-313	400	Crude	2013	NA	NA	NA	No
	T-314	400	Crude	2013	NA	NA	NA	No
	T-315	400	Crude	2013	NA	NA	NA	No
	T-316	400	Crude	2013	NA	NA	NA	No
	T-321	400	Crude	2013	NA	NA	NA	No
	T-322	400	Crude	2013	NA	NA	NA	No
	T-323	400	Crude	2013	NA	NA	NA	No
	T-324	400	Crude	2013	NA	NA	NA	No
	T-325	400	Crude	2013	NA	NA	NA	No
	T-326	400	Crude	2013	NA	NA	NA	No
Yttredahl								
	7366	5,000	Crude	1979	30	40	Cone	No

C.1.3.3 Pipeline Segment Descriptions

Pipeline response zone Line Sections, identified by mile post numbers and stationing names, are provided in *Figure C.1-6.*

SCADA System

The Controller SCADA System would only indicate the possibility of a spill in segment area. The actual spill verification would then be confirmed by an assigned employee actually locating the leak source, or by the report of a third party who had witnessed the leak or smelled the hydrocarbon vapors. For purposes of the worst case scenario, the assumption was made that the leak verification was made by the investigating employee.

Abnormal operating events, such as those defined in 49 CFR Part 195.402(d), contribute to the possibility of a worst case discharge. Operating procedures, including procedures for dealing with abnormal operations, are covered in the Operations & Maintenance Manual for each pipeline system. These procedures address the requirements of 49 CFR Part 195.402(d). Additional mitigation practices include:

- All pipeline segments are coated and cathodically protected. Cathodic protection inspections are performed in accordance with Tesoro MIPM.
    - All underground pipeline facilities are coated and have cathodic protection.
    - All aboveground facilities are painted and have periodic atmospheric corrosion surveys.
- All valves are inspected for proper operation at least twice per calendar year but at intervals not exceeding 7.5 months. The valve inspections are performed in accordance with Tesoro MIPM.
- The pipelines are routinely monitored by patrols and by a SCADA system that is attended 24 hours per day, 7 days per week.
- Pipeline leak detection is continuously conducted by Atmos. It monitors pressures, flows, line pack, and temperature.
- The pipelines were constructed and are maintained in accordance with applicable API standards.

Figure C.1-6 Pipeline Segment Table

The Northern Response zone encompasses multiple Non-DOT regulated gathering pipeline systems

Regulated Pipeline Segment **denotes pipeline segments that cross the northern and southern response zones	DOT	DOT-IMP	RRG	Non -DOT
Border to Lignite 8”	X			
Lignite to Black Slough 8”	X			
Lignite to Stampede 10”	X			
Black Slough to Tioga 6”	X			
Tioga to Ramberg 6”	X			
Tioga to Ramberg 8”	X			
**Ramberg to Dunn Center 12” (Ramberg to the center of the Little Missouri lies in the northern response zone. From the center of the Little Missouri south to Dunn Center lie within the Southern Response Zone		X		
Fairview to Putnam 6”	X			
Putnam to Richey 6”	X			
Sidney to Putnam 8”			X	
Alexander to Sidney 6”			X	
Alexander to Keene 6”			X	
**Sidney to Tree Top 8” (Sidney to the center of the Little Missouri river lies within the northern response zone, From the center of the Little Missouri River to Tree Top lies within the southern response zone)			X	
Bakkenlink Segment #1 12”- Dry Creek Station to Watford City Receipt Point	X			
**Bakkenlink Segment #2 12”- Watford City Receipt Point to Belfield Interconnect (Watford City Receipt Point to the center of the Little Missouri River lies within the northern response zone. From the center line of the Little Missouri River to Belfield Interconnect lies within the Southern response zone).	X			
Bakkenlink Segment #5 8” Three Forks Lateral	X			
Hidden Bench segment #1 12”			X	
Hidden Bench segment #2 12”			X	
Hidden Bench segment #3 12”			X	

including: Hidden Bench, Charlson, Williston Basin and Targa Antelope gathering systems. These gathering systems gather crude oil from various oil production facilities. Following a custody transfer, the crude oil is shipped via gathering pipelines to storage facilities and tanks.

Figure C.1-7 Mainline Valve Table

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Dunn to Ramberg							
93.66	27546	Voigt MLV (South Side Little Missouri River)	600	12-inch MLV	1,890	S20 - T147N - R93W	(Dunn County, ND): Take State Highway 200 to Dunn Center, ND. Take Little Missouri Bay Road through town (North). Go East on Little Missouri Road (paved) 0.5 mile, North 3 miles, East 5 miles, and North (to Dunn Station) 4.25 miles. Continue North approximately 1 mile to cattle guard in road. Go left (West) 1 mile on road (angling North) to road on left (West). Follow road going West 3 miles to the BV on the left (West) near River bottom.
95.10	27545	Berthold Junction MLV (North Side Little Missouri River)	600	12-inch MLV	2,245	S20 - T147N - R93W	(Dunn County, ND): Take State Highway 22 to Killdeer, ND. Take State Highway 22 North approximately 27 miles to McKenzie Bay Road on the right (East). Take East road about 4.75 miles to road on the right (South). Follow road South 6.75 miles to where it crosses the line at MP 96.71. Take road approximately 1.75 miles South to the valve on the left. (There will be three barb wire gates to open and close). Take the road along the pipeline right-of-way South East approximately 0.5 a mile to the valve on the left (North).
	MOV0120	Legion Station BLV (Plains terminal)	600	12-inch MLV			(McKenzie County, ND): Take State Highway 23 or 73 to junction of 23/73 (Johnson Corner). At junction of Highway 23 and Highway 73 go East 3 miles on State Highway 73. BV is on the left (North).
119.95	HV-0434 HV-0721	Johnson Corner Station	600	12-inch	2,360	N19-T150-R95W	(McKenzie County, ND): Take State Highway 23 or 73 to junction of 23/73 (Johnson Corner). At junction of Highway 23 and Highway 73 go East 3 miles on State Highway 73. BV is on the left (North).
120.65	4355 4353	Johnson Corner MLV	600	12-inch MLV	2,360	S18 - T150N - R95W S18 - T150N - R95W	
125.69	13798	Blue Butte Station	600	12-inch MLV	2,340	SE S19 - T151N - R95W	(McKenzie County, ND): 3.5 miles South and 2.75 miles East of Keene, ND
	HV-0436 HV-0728	Keene Station #2	600	12-inch MLV		NE N18-T151N-R95W	(McKenzie County, ND) On County Road – 1.5 miles South;
127.7	28037 28042	Keene Station #1	600 600	12-inch MLV 12-inch MLV	2,414	S2S2 S7 - T151N - R95W	(McKenzie County, ND) On County Road – 1.5 miles South; 2.75 miles East of State Hwy 23 in Keene, ND.
135.2	40024	Charlson North BLV	600	12-inch MLV North	2,135	S6 - T152N - R95W	(McKenzie County, ND) 2 miles North, then .25 miles West, then 1.25 miles North of the intersection of Hwy 23 and Hwy 1806.
	40020	Charlson South BLV		12-inch MLV South			

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Dunn to Ramberg (continued)							
142.72	11614	Yttredahl MLV (South Side Missouri River)	600	12-inch MOV BLV	1,855	S34 – T154N – R95W	(McKenzie County, ND): From junction of State Highway 23 and Highway 1806 go North approximately 6 miles and West one Mile on Highway 1806 to County Road on right (North). Go to National Grasslands cattle guard. On National Grassland road East 0.5 mile, then North on main traveled road to river bottom approximately 2.5 miles. Turn left (West) at river bottom, and go 0.25 mile. BV is on the right East.
145.23	27933	Zok MLV (North Side Missouri River)	600	12-inch MOV BLV	1,890	S34 – T154N – R95W	(Williams County, ND): Take State Highway 40 South of Tioga, North Dakota, approximately 3 miles to U.S. Highway 2 on the right (West). Go West on U.S. Highway 2 about 1 mile to County Road 21 (aka. 105th Ave. NW) on the left (South). Follow County Road 21 South 10.25 miles to State Highway 1804 on the left (East). Take State Highway 1804 East approximately 2.25 miles to a road on the right (South). Go South on the road about 2 miles past the Adamson Injection Facilities to a road on the left (East). Follow this road East 0.75 miles to a road on the right (South). Take this road South approximately 1 mile to a road on the right (West). Go West on this road about 1 mile to the valve on the left (South).
148.35	11613	Dry Fork Creek	600	12-inch BLV	2271	S4 - T154N - R95W	(Williams County, ND): Take State Highway 40 South of Tioga, North Dakota, approximately three miles to U.S. Highway 2 on the right (West). Go West on U.S. Highway 2 about one mile to County Road 21 on the left (South). Follow County Road 21 South ten and one-fourth miles to State Highway 1804 on the left (East). Take State Highway 1804 East approximately two and one-half miles valve is South side of highway.
154.65 (MP 47.7 from Lignite)	V-1306	Ramberg Junction	600	12-inch Ramberg (Station Block Valve)	2,320	NW S5 - T155N - R95W	(Williams County, ND): On County Road 8 – 4 miles South and .75 miles East of the intersection of Hwy 40 and Hwy 2 (aka. 60th Street NW)
	6069		600	8-inch Ramberg (Station Block Valve)			
	6071		600	6-inch Ramberg (Station Block Valve)			
	2800	BASH	600	8 inch BASH MLV	26		

	2600		600	6 inch BASH MLV			(Williams County, ND): On County Road 8 – 4 miles South and .75 miles East of the intersection of Hwy 40 and Hwy 2, 4 miles north of Ramberg Station.

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Dunn to Ramberg (continued)							
	32336			12 inch BASH Head Gate			
	34013		300	12 inch BASH (MOV-4013)			
	34036		300	12 inch BASH Head Gate (MOV-4036)			
	34022		300	12 inch BASH (MOV-4022)			
	32008	Hawkeye Station		12 inch HESS Station BLV			(Williams County, ND): On County Road 8 – 4 miles South and .75 miles East of the intersection of Hwy 40 and Hwy 2, .5 miles north of Ramberg Station
	34213	Hawkeye Station	600	12 inch HESS By Pass (MOV-4213)			
	34212	Hawkeye Station	300	12 inch HESS Head Gate (MOV-4212)			
MP #	**VALVE #**	**NAME**	**ANSI**	**VALVE SIZE**	**ELEV FEET**	**S – T - R**	**DIRECTIONS**
Tioga to Stampede							
162.63 (MP 39.67 from Lignite)	21223	Tioga Station	600	8-inch Tioga Station BLV	2,200	NE S26 - T157N - R95W	(Williams County, ND): .75 miles East and .25 miles South of the intersection of Hwy 40 and County Road 10 (aka. 68th Street NW).
	21213	Tioga Station	600	6-inch Tioga Station BLV South			
	21215	Tioga Station	600	6-inch Station BLV North			
180.23 (MP 22.01 from Lignite)	18793	Battleview Station	600	6-inch	2,324	SW S1-T159N-R94W	(Burke County, ND): From Battleview, ND, go East on Highway 40 0.7 mile, turn North on Highway 40,go 3 miles to Battleview Station on East side of the Highway. The block valve is located on the East side of the Station

10.82	18792	Foothills	600	6-inch	1975	NW S26 - T162N - R92W	(Burke County, ND): From Lignite, ND, 6 miles South on Highway, then West on gravel road 4 miles, then take gravel road South for 2.4 miles passed a Church. Block Valve is on East side of road about 100 feet.

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Tioga to Stampede (continued)							
	V-60	Black Slough	600	6 inch B lack Slough Station BLV	1954		(Burke County, ND) Intersection of 98th St NW and 86th Ave NW.
	V-69	Black Slough	600	8 inch Black Slough Station BLV	1954		(Burke County, ND) Intersection of 98th St NW and 86th Ave NW.
0	18791	Lignite Station	600	8-inch Lignite station BLV north	1952	SE S34 - T163N - R92W	(Burke County, ND): On Hwy 5 about 2.4 miles West of Hwy 52
	40021	Lignite Station	600	8-inch Head gate	1952	SE S34 - T163N - R92W	(Burke County, ND): On Hwy 5 about 2.4 miles West of Hwy 52
	40022	Lignite Station	600	8-inch By-pass	1952	SE S34 - T163N - R92W	(Burke County, ND): On Hwy 5 about 2.4 miles West of Hwy 52
	40023	Lignite Station	600	10-inch Station BLV	1952	SE S34 - T163N - R92W	(Burke County, ND): On Hwy 5 about 2.4 miles West of Hwy 52
0.0	18790	Border BV	600	8-inch	1,940	SE S26 - T164N - R92W	(Burke County, ND): From Portal, ND, go 1 mile West on gravel road on the South side of US and Canada Border. Block Valve is on South side of road surrounded by chain link fence.
6.83	1002	Stampede	600	10-inch Head Gate			(Burke County, ND) South of Highway 5 on 93d Ave NW approximately .4 miles Station on the east side of 93rd Ave. NW.
6.83	1001	Stampede	600	10-inch By-Bass			(Burke County, ND) South of Highway 5 on 93d Ave NW approximately .4 miles Station on the east side of 93rd Ave. NW.
Richey - Putnam 6”							
	40000	Richey	600	6-inch Richey Station BLV	2870	NW NE S10 - T21N - R53W Dawson County, MT	From Richey MT, Travel South on 254 5.9 Miles to Co Rd.506, East on 506 for 2.4 Miles to Bridger Richey Station
	25226	South Fox Creek	600	6-inch	2440	NW/NW S29-T22N –R55E Richland County, MT	From Sidney MT, West on 200 20.8 to Lambert MT, South of Lambert to Co Rd 325, Then west 5.6 Miles to Valve on north side of road in field
	40001	Fox Creek Station	600	6-inch	2344	SW/NW S14 – T22N – R55E Richland County, MT	From Lambert MT, travel south on CR329 for ½ mile, Turn west onto CR 122 1.10 miles. BV on East side of road.
	25225	MT Highway 200	600	6-inch	2665	SE/SW S34 - T23N - R56E Richland County, MT	From Sidney, West on HW 200, 16.4 miles to BV on North side of Highway in field

	40002	Putnam Station	600	6-inch Putnam Station BLV	2358	NW/NW S13 - T23N - R57E Richland County, MT	From Sidney MT, North on 16 3 Miles to Co Rd 127, West on 127 5 miles to 128, North 1 mile and west 1 mile to station
MP #	**VALVE #**	**NAME**	**ANSI**	**VALVE SIZE**	**ELEV FEET**	**S – T - R**	**DIRECTIONS**
Fairview-Putnam 6”							
	40003	Fairview	600	6-inch Head Gate	2086	SE/SW S36-	From Fairview MT, West on HWY 201 5.75 Miles to Station on right.
	40004			6-inch By pass			
	25235	Highway 16	600	6-inch	2325	SE/SW S27-T24N-R58E Richland County, MT	From Sidney, nW on Hwy 16 for 8.5 miles, 120 East from Main Rd.
	25253	Putnam	600	6-inch Head gate	2358	NW/NW S13 - T23N - R57E Richland County, MT	From Sidney MT, North on 16 3 Miles to Co Rd 127, West on 127 5 miles to 128, North 1 mile and west 1 mile to station
	40005			6-inch By-pass			

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Sidney – Alexander 6”							
	40006	Sidney	300	6-inch Sidney Station BLV	1939	SW/NE S18 - T22N - R60E Richey County, MT	From 200 south of Sidney MT on HW23, East 6.6 miles to access road on south side of 23, south on access road to station
	25242	Wind Mill	600	6-inch	2615	NE/NE S2 - T148N - R105W McKenzie County, ND	From Sidney Station East on MT23/ND68 1 mile to Forest Service Road 837: South on 837 1 mile to valve on west side of road
	25244	Compress or Station Site	300	6-inch	1976	NW/NE S34 - T150N - R104W McKenzie County, ND	From Sidney Station East on MT23/ND68 7.8 miles to County Road 3; North 7.53 miles to gravel road; south on gravel road .6 miles to valve location on west side of road.
	40007	Cartwright Station	300	6-inch South	1910	NW/NE S36 - T151N - R104W McKenzie County, ND	From Fairview MT; HW 200 East 5.28 miles to station on north side of HW 200
	40008			6-inch North			
	25238	Iverson	600	6-inch	2080	SE/SW S31 - T152N - R102W McKenzie County, ND	From Cartwright ND; north on Co Rd 16 10.68 miles; north on 150th Av. 1 mile and west 1/2 mile on 36th St. to valve site on west side of road.
	25246	Anita Monson	600	6-inch	2087	SE/SE S34 - T152N - R102W Mckenzie County, ND	From Cartwright ND; north on Co Rd 16 14.4 miles to inter. 37th St. and 147th Av.; East on 37th to 146th; south on 146 1 mile; west thru gate aprox. 300' to valve in field.
	40010	Alexander 6-inch Station BLV West	600	6-inch	2036	NW/NW S5 - T151N - R101W Mckenzie county, ND	From Alexander ND; North on HW 85 6.5 miles; East on 36th St. to station.

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Alexander-Keene 6”							
	40011	Alexander 6-inch Station BLV East	600	6-inch	2023	NW/NW S5 - T151N - R101W Mckenzie county, ND	From Alexander ND; North on HW 85 6.5 miles; East on 36th St. to station.
	25239	Tower Hill	600	6-inch	2350	SW/SW S11 - T151N - R100W McKenzie County, ND	From HW 85 north of Alexander; East on 41st St. (Co Rd 29) 14.76 miles to valve site on East side of road in the ditch.
		Watford 6-inch Head Gate West	600	6-inch	2032	151N 98W SW of SW Section 11	Intersection of Hwy 23 and Hwy 1806, head north on 1806 approximately 7.5 miles to CR 12 and take a right. Watford City Station is directly on the left (north side) of CR-12 east of 1806.
		Watford 6-inch By pass West	600	6-inch			
		Watford 6-inch Head Gate East	600	6-inch			
		Watford 6-inch By Pass East	600	6-inch			
	25236	Garden Church	600	6-inch	2119	SE/SE S11 - T151N - R98W Mckenzie county, ND	From HW 23 East of Watford City North on 1806 7.4 miles to 34th St. (Co Rd 12); East on 34th 1 mile; north on 118th Av. 1 mile to valve on west side of road.
	40012	Keene 6-inch Station BLV	600	6-inch	2420	SW/SE S7 - T151N - R95W McKenzie county, ND	From HW 23 South of Keene ND: Easton 34th St. 2.6 miles to station on north side of road.
Putnam - Sidney							
	40013	Putnam 8-inch Station BLV	600	8-inch	2356	NW/NW S13 - T23N - R57E Richland County, MT	From Sidney MT, North on 16 3 Miles to Co Rd 127, West on 127 5 miles to 128, North 1 mile and west 1 mile to station
	40014	Peterson	300	8-inch	2010	MT - T23N – R59E	
	5226	West Yellowstone River MOV	600	8-inch	1899	NW/NE S26 – T23N – R59E Richland County, MT	From Sidney, MT, Take HWY 200 North to CR 126, Turn East for 1.8 miles. BV is on the right
28.17	5228	East Yellowstone River MOV	600	8-inch	1860	NW/NE S1 – T22N – R59E Richland County, MT	From Sidney Station take East River Road north approximately 4 miles to a gravel road on the left. Follow the gravel road approximately ½ mile (past a feedlot) to the block valve.
	40016	Sidney Station 8-inch BLV North	600	8-inch	1939	S18 – T22N-R60E	(Richland County, MT) From Sidney, take Hwy 16 south 2 miles; take Hwy 23 east 6.75 miles.

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Sidney – Poker Jim							
	40017	Sidney Station 8-inch BLV South	600	8-inch	2014	S18 – T22N-R60E	(Richland County, MT) From Sidney, take Hwy 16 south 2 miles; take Hwy 23 east 6.75 miles.
	25249	Stateline	600	8-inch	1624	MT - T22N - R60E	From Sidney Station go west to MT Highway 202, 2.2 miles to the block valve on the east side, approximately 1000 feet.
	25229	Klandel 4 Mile	600	8-inch	1628	ND - T148N - R105W	From Sidney Station go south on MT Highway 202 (ND 38), approximately 4 miles to the block valve on the east side of road.
	25232	Spring Creek	600	8-inch	2264	ND - T147N - R104W	From Sidney Station go south on MT Highway 202 (ND 38) approximately 11 miles to the block valve.
	25230	Hatter	600	8-inch	2192	ND - T147N - R104W	From Sidney Station go south on MT Highway 202 (ND 38) approximately 13 miles to the block valve on the south side of the road
	25231	Yates Hill	600	8-inch	2482	ND - T147N - R104W	South on MT Highway 202 (ND 38) approximately 13 miles to Highway 16. Go south on Highway 16 approximately 4 miles, then 2 miles west on top of Yates Hill.
	40018	Poker Jim Station 8-inch BLV North	600	8-inch	2275	S36-T147N-R104W	McKenzie County, ND) From Sidney, MT, take Hwy MT 16 south 2 miles to Hwy 23, then east 6 miles to Hwy 202. Follow Hwy 202 12 miles to ND 16, then go south 5 miles to Forest Service Road 817 to Station.

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
				Poker Jim – Tree Top			
0.050.4 7	40019	Poker Jim Station 8-inch BLV South	600	8-inch	2267	S36-T147N-R104W	(McKenzie County, ND) From Sidney, MT, take Hwy MT 16 south 2 miles to Hwy 23, then east 6 miles to Hwy 202. Follow Hwy 202 12 miles to ND 16, then go south 5 miles to Forest Service Road 817 to Station.
	25234	Goldsbe ry	600	8-inch	2456	ND - T144N - R103W	South of Poker Jim 16 miles on Highway 16 to Blacktail Road South, then 5 miles SE. On left (east) side of the road
	25248	Hall Road	600	8-inch	2456	ND - T144N - R103W	South of Poker Jim 16 miles on Highway 16 to Blacktail Road South, then 5 miles SE. On left (east) side of the road
	5100	Little Missouri (West) MOV	600	8-inch	2115	S15 - T144N - R102W	N 47° 17'.11.5" W 103° 37'3.9" South of Poker Jim 16 miles on Highway 16 to Blacktail Road. Go south to Divide Road to First Service Road 708. On SE side of road
	25309	Little Missouri East BLV	600	8-inch	2118	SW/SE 16--144N 102W	From Fairfield drive west down 20th st SW aka Blacktail road 20.5 miles turn right onto unnamed road For 3 miles to dead end, take a right on a prairie trail through an old ranch and follow prairie trail that heads off west and then north and back west for 2.5 miles to BV
30.44	27150	Ebert MOV (East side of River)	600	8-inch	2152	S15 – T144N – R102W	(Billings County, ND) Take Blacktail Road 15 miles west.

Bakkenlink Segment 1 Dry Creek to Watford Receipt Point							
MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	Lat./Long.	DIRECTIONS
93.3	Dry Creek Receipt Point		N/A	12-inch	2252	47.805949° -102.884621	
77.5	MLV 4		N/A	12-inch	2084	47.803795° -103.165765°	
68.5	Watford Receipt Point		N/A	12-inch	2246	47.692517 -103.275759	
Bakkenlink Segment 2 Watford Receipt Point to Belfield Interconnect							
59.5	MLV 5		N/A	12-inch	2480	47.617035° -103.246941°	
Segment 2 crosses form the Northern Response Zone to the Southern Response Zone at 57.2							
56.5	MLV 6		N/A	12-inch	1947	47.582038° -103.226884°	
Bakkenlink Segment 5 Three Forks Lateral							
	Three Forks Lateral		N/A	8- inch	2458	47.797703 -102.927690	

MP	VALVE#	NAME	ANSI	VALVE SIZE	ELEV FEET	Latitude/longitude	DIRECTIONS
Hidden Bench Mainline Segment 1							
0	Watford Receipt HB	N/A	N/A	12-inch	2249	47.692705° -103.277751°	
8.62	MLV HB #1	Olson	N/A	12-inch	2187	47.735004° -103.390695°	
Hidden Bench Mainline Segment 2							
13.70	MLV HB2	Roy Moen	N/A	12-inch	2313	47.762027° -103.452599°	
Hidden Bench Mainline Segment 3							
18.63	HB Mainline Launcher	N/A	N/A	12-inch	2278	47.790784° -103.472428°	

C.1.4 Significant and Substantial Harm Designation Basis

For the Northern Response Zone, Significant and substantial harm designation is based on the criteria that multiple tank stations in the Northern Response Zone meet the criteria, therefore, the significant and substantial harm criteria is applicable to the entire zone. The criteria response checklist is shown as *Figure C.1-2*. Significant and substantial harm designations are in accordance with 49 CFR 194.103(c).

C.1.5 Worst Case Discharge Determination and Methodology

Consistent with the requirements of §194.105, Tesoro has evaluated maximum spill volumes that potentially could occur for the purpose of emergency response planning. The WCD is defined as the largest volume based on the maximum release time, maximum shut down response time, maximum flow rate, and the largest line drainage volume after shut down of the line section within the response zone. This section describes the methodology used to estimate WCD for the Northern Response Zone of the THPP system.

C.1.5.1 Spill History

Year	Location/Name	Spill Amount(Barrels)
2013	Tioga Spill	20,600

C.1.5-2 Pipeline Worst Case Discharge

Parameter	**Value**
Maximum flow rate (barrels [bbls] per hour)	5,800 bbls/hour
Maximum Shutdown Response Time	
Detection Time	12 minutes(0.2 hrs)
Operator Response Time	10 minutes (0.167 hour)
Pump Shutdown	5 minutes (0.083 hour)
Valve Closure	2 minute (0.033 hour)
Pipeline Specifications- Keene station to Ytterdahl station	
Pipeline Diameter (OD, inches)	12’’
Pipeline Wall Thickness (inches)	0.250’’
Pipeline Length (linear feet)	79,728 linear feet (15.1 Miles)

The following calculation was used to calculate WCD, based on 49 CFR 194.105(b)1:

WCD = (max release time [hours] + max shutdown response time [hours]) * (max flow rate [bbls/hour]) + Maxium drainage volume[bbls]

Figure C.1.5-3 summarizes the WCD for the Northern Response Zone of the THPP pipeline. As indicated above, this methodology for determining the WCD is extremely conservative and assumes complete draindown of the affected pipeline segment. Studies have demonstrated (CSFM 1993) that total discharge from a pipeline rarely approaches WCD volumes due to head space formation and depressurization.

Figure C.1.5-3 Pipeline Worst Case Discharge Volumes

Pipeline Section	**Release Volume Prior to Pipe Isolation (bbls)**	**Maximum Draindown Volume (bbls)**	**Worst Case Discharge (bbls)**
Keene Station to Ytterdahl Station	2,803 bbls	10,224	13,027

C.1.5.3 Tank Worst Case Discharge

The worst case discharge for the Northern Response Zone was calculated in accordance with 49 CFR 194.105. Worst case discharge for this zone would be a catastrophic failure of Tank 4020 (49 CFR 194.105(b) (3)), at Bakken Area Storage Hub (BASH) **(**306,752 bbls of crude oil). With applied prevention credits of 70% the worst case discharge volume would be 92,025.6 for the Northern Response Zone.

The tank credits for worst case discharge are based on the following:

Figure C.1.5-4 PHMSA Prevention Credits

Prevention Measure	**Standard**	**Credit (percent)**
Secondary Containment > 100%	NFPA 30	50
Built/repaired to API standards	API STD 620/650/653	10
Overfill protection standards	API RP 2350	5
Testing/cathodic protection	API STD 650/651/653	5
Tertiary containment/drainage/treatment	NFPA 30	0
Maximum allowable credit		**70**

Figure C.1.5-5 Northern Response Zone WCD

Northern Response Zone Tank Worst Case Discharge (EPA & US DOT PHMSA) BASH Breakout Tank #2040 – 306,752 bbls	
Spill Prevention Measure	***Reduction***
Secondary Containment > 100% NFPA 30	50%
API 653 Inspections (1996, 2001)	10%
Cathodic Protection-API 653	5%
High Level Alarms-API 2350	5%
Total Reduction	*70%*
Total WCD (bbls)	**92,025.6**

APPENDIX C2 SOUTHERN RESPONSE ZONE INFORMATION

The purpose of this Response Zone Appendix is to provide response zone-specific information for the Tesoro High Plains Pipeline (THPP) and the operator as required, in part, by 49 CFR 194.107.

C.2.1 Information Summary

The following information is provided in *Section 1*, repeated here as required by 49 CFR 194.113(b)

C.2.1.1 Owner And Operator

Owner

Tesoro Logistics Operations LLC
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

Tesoro Refining and Marketing, Corp
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

QEP Field Services
19100 Ridgewood Parkway
San Antonio, TX 78259
210-626-6000

Operator

Tesoro Logistics Central Control Center
19100 Ridgewood Parkway /1 2B024
San Antonio, TX 78259
Email: lccrconsole2@tsocorp.com
Phone: (210)626-6014
Cell: (210)527-3885

The San Antonio Operations Center provides monitoring and control capabilities using a PLC/Computer SCADA System.

Figure C.2-1 Southern Response Zone Counties and Emergency Contact Information

Southern		
Billings (ND) Emergency Management: 701-623-4876 Sheriff: 701-623-4323 Fire/Injury/Ambulance: 911	**Golden Valley (ND)** Emergency Management: 701-872-3917 Sheriff: 701-872-4733 Fire/Injury/Ambulance: 911	**McKenzie (ND)** Emergency Management: 701-580-6936 Sheriff: 701.444.3654 Fire/Injury/Ambulance: 911
Mercer (ND) Emergency Management: 701-983-4408 Sheriff: (701) 745-3333 Fire/Injury/Ambulance: 911	**Morton (ND)** Emergency Management: 701.667.3307 Sheriff: 701-667-3330 Fire/Injury/Ambulance: 911	**Oliver (ND)** Emergency Management: 701-794-8760 Sheriff: 701-794-3450 Fire/Injury/Ambulance: 911
Stark (ND) Emergency Management: 701-456-7605 Sheriff: 701-456-7610 Fire/Injury/Ambulance: 911		

The response plan cover sheet is shown as *Figure C.2-2.*

Figure C.2-2 Response Plan Cover Sheet – Southern Zone

THPP Southern Response Zone

Response Plan Cover Sheet

Owner/Operator of Facility	Tesoro Logistics Operations LLC 19100 Ridgewood Parkway San Antonio, TX 78259 210-626-6000	Tesoro Refining and Marketing, Corp 19100 Ridgewood Parkway San Antonio, TX 78259 210-626-6000	QEP Field Services 19100 Ridgewood Parkway San Antonio, TX 78259 210-626-6000

Facility Name Tesoro High Plains Pipeline Southern Response Zone

Facility Address (street address or route) 2972 108 S Avenue SW Dickinson, ND 58601

Facility Mailing Address 2972 108 S Avenue SW Dickinson, ND 58601

Facility Phone No. 701-456-9720

Latitude 46.985335 | Longitude -102.793096

Dun & Bradstreet Number 07-932-9878, 07-936-7071, 07-929-7013, 07-929-6818, 02-975-9037, 00-813-3480

Largest Aboveground Oil Storage Tank Capacity (gallons) 7,350,000

Number of Aboveground Oil Storage Tanks 7,350,000

Standard Industrial Classification (SIC) Code 4610, 5171, 4213, 4013

Maximum Oil Storage Capacity (gallons) Entire Southern Response Zone 41,462,400

Worst Case oil Discharge Amount (gallons) 2,205,000

Facility Distance to Navigable Water. Mark the appropriate line.

0 - ¼ mile ¼ - ½ mile ½ - 1 mile XX > 1 mile

APPLICABILITY OF SUBSTANTIAL HARM CRITERIA

Does the facility transfer oil over-water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons

YES ______ NO XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?

YES ______ NO XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

YES XX NO ______

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility would shut down a drinking water intake?

YES XX NO ______

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

YES NO XX

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

Signature *Don Sorensen* Date *April 6, 2017*

Name Don J. Sorensen Title SVP, Logistics

C.2.2 Qualified Individuals

This information is also included in *Sections 1, 3A and 3B*.

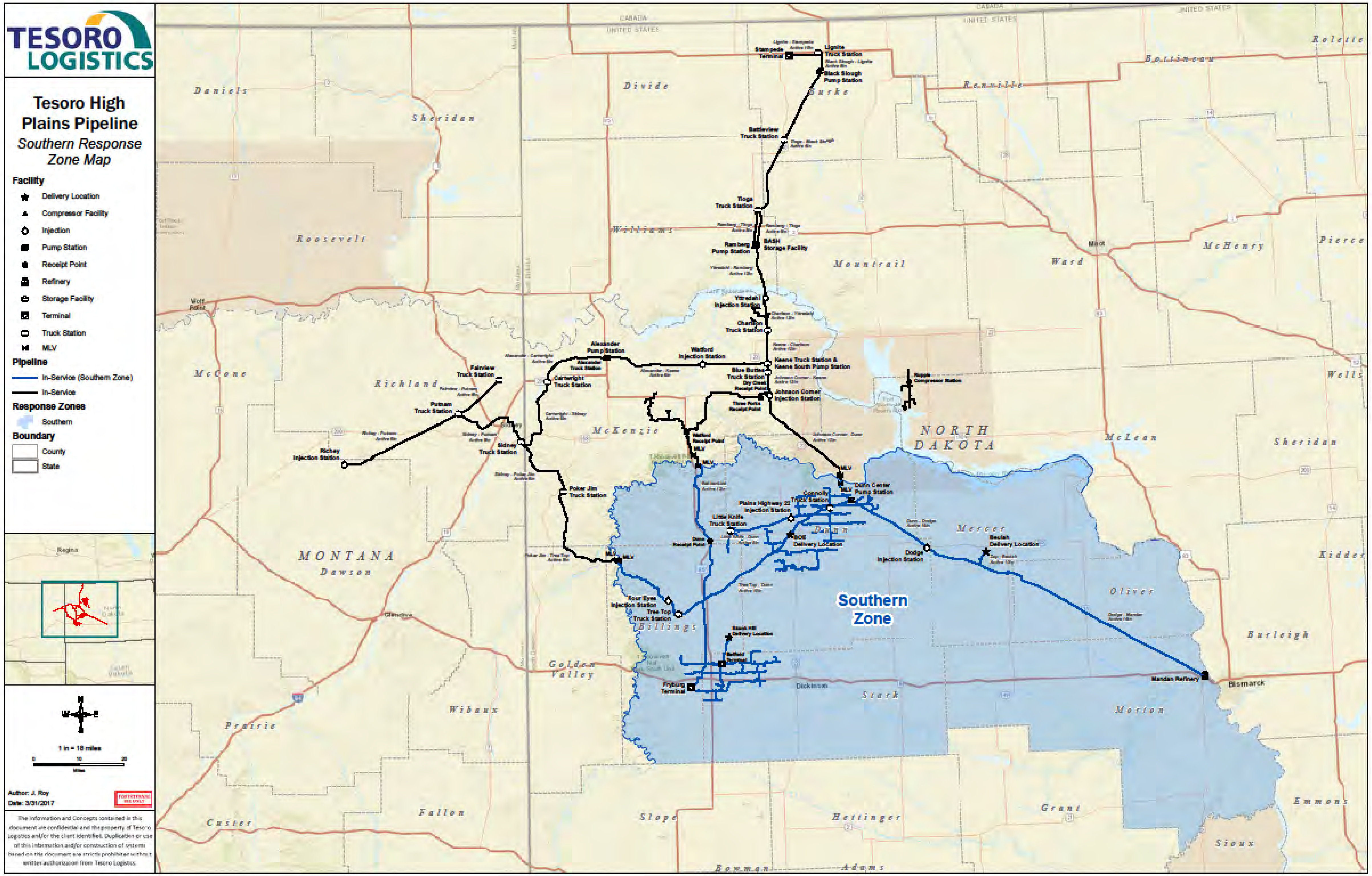
Figure C.2-3 Qualified Individuals

Primary Qualified Individual	
Darren Snow **Area Manager, Pipeline & Terminals ND/MT** 701-250-1960 – Office 701-204-1619 - Cellular	
Southern Response Zone Alternate Qualified Individuals	
Greg Andersen **Manager, Pipeline Operations** (701) 456-9735– Office (701) 260-2975 – Cellular	**Michael Hutton** **Manager, Transportation** 701-575-2220 – Office 701-300-0139 - Cellular
Ryan Bebee **Superintendent, Pipeline & Terminal** 701-575-2220 – Office 701-204-3633 - Cellular	**Jesse Boltz** **Superintendent, Pipeline & Terminal** (701) 264-0618-Cellular

C.2.3 Response Zone Description

Two response zones have been established for the THPP pipeline gathering and transmission system. The response zones are the Northern Response Zone and the Southern Response Zone. The delineating marker for the response zones is centerline within the Little Missouri River, starting at the southern boundary of Billings County, North Dakota to the confluence of the Little Missouri River into Lake Sakakawea, extending downstream through the centerline within Lake Sakakawea, and extending downstream along the centerline with the Missouri River to the Mandan Refinery. The Southern Response Zone encompasses all pipeline segments, gathering systems and terminals on the southern side of the zone delineation line. A drawing depicting the Northern Response Zone is provided as *Figure C.2-4*.

Figure C.2-4 Southern Response Zone



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C.2.3.1 Terminal Descriptions

Bakken Oil Express (BOE)

Bakken Oil Express is a 2.9 acre injection station located in Dunn County, North Dakota. The tanks for BOE are located in *Figure C.2-5*. The drawing for BOE is unavailable at this time.

Belfield Oil Terminal

Belfield Oil Terminal is a 30 acre un-staffed station on the Belfield pipeline system that is owned and operated by Tesoro and is located in Stark county. The tank for Belfield Oil Terminal is located in figure *Figure C.2-5* The drawing for Belfield Oil Terminal is *Figure J-31*.

Beulah Basin

Beulah Basin is a 11.26 acre injection station located in Mercer County, North Dakota. The tanks for Beaulah Basin are located in *Figure C.2-5*. The drawing for Beulah Basin is unavailable at this time.

Connolly

Connolly is a 8.6 acre un-staffed station on the Tesoro High Plains Pipeline Company System that is owned and operated by Tesoro located in Dunn County, North Dakota. The tanks for Connolly are located in *Figure C.2-5*. The drawing for Connolly is *Figure J-8*.

Dodge

Dodge is a 2.25 acre un-staffed injection point on the Tesoro High Plains Pipeline Company system trunk line that is owned and operated by Tesoro located in Dunn County, North Dakota. The tanks for Dodge are located in *Figure C.2-5*. The drawing for Dodge is unavailable at this time.

Dunn Center

Dunn Center, located in Dunn County, North Dakota, is a 4.25 acre un-staffed station on the Tesoro High Plains Pipeline Company system trunk line. Dunn Center Station operates as a breakout station, pulling volume from tankage. The tanks for Dunn Center are located in *Figure C.2-5*. The drawing for Dunn Center is *Figure J-9*.

Dunn Receipt Point

Dunn Receipt Point is a 23.8 acre un-staffed injection point on the Tesoro High Plains Pipeline Company system trunk line that is owned and operated by Tesoro located in Dunn County, North Dakota. The tanks for Dunn Receipt Point are located in *Figure C.2-5*. The drawing for Dunn Center Receipt Point is *Figure J-29*.

Four Eyes

Four Eyes is a 2.5 acre un-staffed station THPP System located in Billings County, North Dakota. The tanks for Four Eyes are located in *Figure C.2-5*. The drawing for Four Eyes is *Figure J-11*.

Fryburg Station

Fryburg Station is a .80 acre idled station located in Billings County, North Dakota. The tanks for Fryburg Station are located in *Figure C.2-5*. The drawing for Fryburg Station is *Figure J-12*.

Fryburg Rail
Fryburg Rail is a 266.1 acre crude oil receipt and loading facility located in Billings County, North Dakota. Crude oil is received by pipeline or tank truck, pumped into storage tanks, and then dispensed in rail cars for transportation. The tanks for Fryburg Rail are located in *Figure C.2-5*. The drawing for Fryburg Rail is *Figure J-28*.

Highway 22
Highway22 is a 2.1 acre un-staffed injection point on the Tesoro High Plains Pipeline Company system that is owned and operated by Tesoro located in Dunn County, North Dakota. The tanks for Highway22 are located in *Figure C.2-5*. The drawing for Dodge is *Figure J-13*.

Little Knife
Little Knife is a 3.3 acre un-staffed station THPP System located in Dunn County, North Dakota. The tanks for Little Knife are located in *Figure C.2-5*. The drawing for Little Knife is *Figure J-18*.

Skunk Hill
Skunk Hill Station is a 1.18 acre un-staffed station located in Stark County, North Dakota. The tanks for Skunk Hill are located in *Figure C.2-5*. The drawing for Skunk Hill is *Figure J-32*.

Treetop
Treetop, located in Billings County, North Dakota, is a 3.3 acre un-staffed origin location that is owned and operated by Tesoro and flows directly to Dunn Center Station. The tanks for Treetop are located in *Figure C.2-5*. The drawing for Treetop is *Figure J-25*.

C.2.3.2 Tank Descriptions

Figure C.2-5 Tank Table

TERMINAL	TK. NO.	CAPACITY (BBLS)	Product	BUILT (YEAR)	DIAMETER (FT)	HEIGHT (FT)	ROOF TYPE [1]	DOT BREAKOUT TANK (YES/NO)
North Dakota								
Bakken Oil Express								
	9503	400	Crude	2015	12	20	Cone	Yes
	9504	400	Crude	2015	12	20	Cone	Yes
	9505	400	Crude	2015	12	20	Cone	Yes
Belfield Oil Terminal								
	T-1500	20,000	Crude	2011	60	40	Cone	Yes
	1531	400	Crude	2011	12	20	Cone	No
	1532	400	Crude	2011	12	20	Cone	No
	1541	400	Crude	2011	12	20	Cone	No
	1542	400	Crude	2011	12	20	Cone	No
Beulah Basin								
	8503	400	Crude	2015	12	20	Cone	Yes
	8504	400	Crude	2015	12	20	Cone	Yes
	8505	400	Crude	2015	12	20	Cone	Yes
	8506	400	Crude	2015	12	20	cone	Yes
***Connolly**								
	7850	15,000	Crude			40		Yes
	7860	56,000	Crude	2014	100	40	Cone	Yes
Dunn Center								
	7380	80,000	Crude	1980	120	40	Cone	Yes
Dunn Receipt Pt								
	T-201	30,000	Crude	2013	NA	NA	NA	No
	T-211	400	Crude	2013	NA	NA	NA	No
	T-212	400	Crude	2013	NA	NA	NA	No
	T-213	400	Crude	2013	NA	NA	NA	No
	T-214	400	Crude	2013	NA	NA	NA	No
	T-215	400	Crude	2013	NA	NA	NA	No
	T-216	400	Crude	2013	NA	NA	NA	No
Four Eyes								
	7367	5,000	Crude	1978	30	40	Cone	No
	7369	10,000	Crude	1978	42.5	40	Cone	Yes
Fryburg Rail Term.								
	T-101	150,000	Crude	2012	NA	NA	NA	No
	T-102	150,000	Crude	2012	NA	NA	NA	No
	T-103	175,000	Crude	2004	NA	NA	NA	No
	T-104	175,000	Crude	2004	NA	NA	NA	No
Little Knife								
	7351	10,000	Crude	1977	42	40	Cone	No
	7354	10,000	Crude	1977	42	40	Cone	No
	7365	20,000	Crude	1979	60	40	Cone	No

Skunk Hill Station								
	1651	400	Crude	2011	12’6”	20	Cone	Yes
	1652	400	Crude	2011	12’6”	20	Cone	Yes
	1653	400	Crude	2011	12’6”	20	Cone	Yes
	1654	400	Crude	2011	12’6”	20	Cone	Yes
	1655	400	Crude	2011	12’6”	20	Cone	Yes
	1656	400	Crude	2011	12’6”	20	Cone	Yes
	1657	400	Crude	2011	12’6”	20	Cone	Yes
	1658	400	Crude	2011	12’6”	20	Cone	Yes
Tree Top*								
	7378	40,000	Crude	N/A	N/A	40	Cone	Yes
	36730	400	Crude	N/A	12’6”	20	Cone	No
	36731	400	Crude	N/A	12’6”	20	Cone	No
	36732	400	Crude	N/A	12’6”	20	Cone	No

C.2.3.3 Pipeline Segment Descriptions

Pipeline response zone Line Sections, identified by mile post numbers, are provided in *Figure J-1* and Figure C2-6

SCADA System

The Controller SCADA System would only indicate the possibility of a spill in segment area. The actual spill verification would then be confirmed by an assigned employee actually locating the leak source, or by the report of a third party who had witnessed the leak or smelled the hydrocarbon vapors. For purposes of the worst case scenario, the assumption was made that the leak verification was made by the investigating employee.

Abnormal operating events, such as those defined in 49 CFR Part 195.402(d), contribute to the possibility of a worst case discharge. Operating procedures, including procedures for dealing with abnormal operations, are covered in the Operations & Maintenance Manual for each pipeline system. These procedures address the requirements of 49 CFR Part 195.402(d). Additional mitigation practices include:

- All pipeline segments are coated and cathodically protected. Cathodic protection inspections are performed in accordance with Tesoro MIPM.
    - All underground pipeline facilities are coated and have cathodic protection.
    - All aboveground facilities are painted and have periodic atmospheric corrosion surveys.
- All valves are inspected for proper operation at least twice per calendar year but at intervals not exceeding 7.5 months. The valve inspections are performed in accordance with Tesoro MIPM.
- The pipelines are routinely monitored by patrols and by a SCADA system that is attended 24 hours per day, 7 days per week.
- Pipeline leak detection is continuously conducted by Atmos. It monitors pressures, flows, line pack, and temperature.
- The pipelines were constructed and are maintained in accordance with applicable API standards.

Figure C.2-6

Regulated Pipeline Segment Southern Response Zone **denotes pipeline segments that cross the northern and southern response zones	DOT	DOT-IMP	RRG	Non -DOT
Ramberg to Dunn Center 12" ** (Ramberg to Voight MLV lies in the northern response zone, Voight MLV to Dunn Center lies in the southern response zone		X		
Dunn Center to Mandan 16"		X		
Zap Block Valve to Beulah Basin 10"	X			
**Sidney to Tree Top 8" (Sidney to the center of the Little Missouri river lies within the northern response zone, From the center of the Little Missouri River to Tree Top lies within the southern response zone)			X	
Tree Top to Connolly 10"	X			
Connolly to Dunn Center 10"	X			
Little Knife to Connolly 8"				X
Connolly to Dunn Center 8"	X			
**Bakkenlink Segment #2 12"- Watford City Receipt Point to Belfield Interconnect (Watford City Receipt Point to the center of the Little Missouri River lies within the northern response zone. From the center line of the Little Missouri River to Belfield Interconnect lies within the Southern response zone).	X			
Bakkenlink Segment #3 12"- Belfield interconnect to Fryburg Rail Terminal	X			
Bakkenlink Segment #4 8"- Belfield Lateral	X			
Belfield Pipeline 8"	X			

Figure C.2-7 Mainline Valve Table

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
			Dunn to Ramberg				
88.29	25303	12 inch Dunn Center Station BLV	600	12-inch	2330	SE S 15-T146N-R93W	(Dunn County, ND): Located on 92nd Ave NW, stay on Little Missouri paved road leaving north end of Dunn Center City and continue on pavement 11 miles to station on left side of road. Or go approx 5.5 miles east of Dunn Center and go north on 92nd Ave NW to station.
93.66	27546	Voigt MLV (South Side Little Missouri River)	600	12-inch MLV	1,890	S20 - T147N - R93W	(Dunn County, ND): Take State Highway 200 to Dunn Center, ND. Take Little Missouri Bay Road through town (North). Go East on Little Missouri Road (paved) 0.5 mile, North 3 miles, East 5 miles, and North (to Dunn Station) 4.25 miles. Continue North approximately 1 mile to cattle guard in road. Go left (West) 1 mile on road (angling North) to road on left (West). Follow road going West 3 miles to the BV on the left (West) near River bottom.
95.10	27545	Berthold Junction MLV (North Side Little Missouri River)	600	12-inch MLV	2,245	S20 - T147N - R93W	(Dunn County, ND): Take State Highway 22 to Killdeer, ND. Take State Highway 22 North approximately 27 miles to McKenzie Bay Road on the right (East). Take East road about 4.75 miles to road on the right (South). Follow road South 6.75 miles to where it crosses the line at MP 96.71. Take road approximately 1.75 miles South to the valve on the left. (There will be three barb wire gates to open and close). Take the road along the pipeline right-of-way South East approximately 0.5 a mile to the valve on the left (North).
			Poker Jim – Tree Top				
MP #	**VALVE #**	**NAME**	**ANSI**	**VALVE SIZE**	**ELEV FEET**	**S – T - R**	**DIRECTIONS**
	5100	Little Missouri (West) MOV	600	8-inch	2115	S15 - T144N - R102W	N 47° 17'.11.5" W 103° 37'3.9" South of Poker Jim 16 miles on Highway 16 to Blacktail Road. Go south to Divide Road to First Service Road 708. On SE side of road
	25309	Little Missouri East BLV	600	8-inch	2118	SW/SE 16--144N 102W	From Fairfield drive west down 20th st SW aka Blacktail road 20.5 miles turn right onto unnamed road For 3 miles to dead end, take a right on a prairie trail through an old ranch and follow prairie trail that heads off west and then north and back west for 2.5 miles to BV
30.44	27150	Ebert MOV (East side of River)	600	8-inch	2152	S15 – T144N – R102W	(Billings County, ND) Take Blacktail Road 15 miles west.
35.07	27151	Elkhorn	600	8-inch	2364	NW/SW 5- 143N-101W	From Fairfield drive west down 20th st SW aka Blacktail road, 18.5 miles to buckhorn road, turn right go across concrete bridge for ¾ of a mile, BV is on right hand side of road in a chain link fence
44.65	27149	Four Eyes	600	8-inch	2439	SE/SW32--143N - 100W	

	27328	Tree Top 8-inch Station BLV	600	8-inch	2727	NE 22-142N-100W	From I94 go north on US 85 for approximately 15 miles turn west onto 22nd St SW follow for approximately 5 miles turn north onto 133rd Ave for 1 mile then turn west onto 21st St SW for 1 mile station is on south side of 21stSW.
Tree Top to Dunn Center							
	27329	Tree Top10-inch Station BLV	600	10-inch	2727	NE 22-142N-100W	From I94 go north on US 85 for approximately 15 miles turn west onto 22nd St SW follow for approximately 5 miles turn north onto 133rd Ave for 1 mile then turn west onto 21st St SW for 1 mile station is on south side of 21stSW.
MP #	**VALVE #**	**NAME**	**AN SI**	**VALVE SIZE**	**ELEV FEET**	**S – T - R**	**DIRECTIONS**
Tree Top to Dunn Center Cont.							
7.8	27220	High way 85	600	10-inch	2708	S32—T143 –R99	From I94 take exit 42, got north on US 85 for 17.5 miles, turn east on 128th Ave SW, go north approx. 1/4 mile, valve is on east side of road
15.9	27221	Romanishin	600	10-inch	2491	S12-T143-R98	From Highway 200, go south on 122nd Ave SW for 4 miles, turn west on 8th St for 1 mile, turn south on 123rd Ave SW, go south 5 miles, turn east on 13th St, go 2 miles, turn south on section like, go approx. 1/8 mile, valve is on east side of road
22.97	27222	Midpoint	600	10-inch	2391	S23-T144-R12	From Highway 200, go south on 122nd Ave SW for 4 miles, turn west on 8th St for 1 mile, turn south on 123rd Ave SW, go south 5 miles, turn east on 13th St, go 2 miles, turn south on section like, go approx. 1/8 mile, valve is on east side of road
31.5	27223	Highway 200	600	10-inch	2273	S29 -T145 -R95	From junction of Highway 22 & Highway 200, go west on Highway 200 for 2 miles, turn south on 109th Ave SW, the valve is on the west side of 109th Ave SW
	HV-9520	10-inch BOE West By-Pass	600	10-inch	2280	SW/SW 21-145N-95W	From junction of Highway 22 & Highway 200, go west on Highway 200 for 2 miles, turn north on 109th Ave SW, the valve is on the east side of 109th Ave SW

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
Tree Top to Dunn Center Cont.							
	HV-9521	10-inch BOE West Head Gate	600	10-inch	2280		From junction of Highway 22 & Highway 200, go west on Highway 200 for 2 miles, turn north on 109th Ave SW, the valve is on the east side of 109th Ave SW
	HV-9517	10-inch BOE East Head Gate	600	10-inch	2280		From junction of Highway 22 & Highway 200, go west on Highway 200 for 2 miles, turn north on 109th Ave SW, the valve is on the east side of 109th Ave SW
	HV-9518	10-inch BOE East By-pass	600	10-inch	2280		From junction of Highway 22 & Highway 200, go west on Highway 200 for 2 miles, turn north on 109th Ave SW, the valve is on the east side of 109th Ave SW
38.3	27224	Grant Carlson	600	10-inch	2270	S32 – T146 – R94	From the junction of Highway 200 & Highway 22, go north 2 miles, turn onto 104th Ave SW, go north 1 mile, turn east on 1st St for 3 miles, turn north on 101st Ave SW for 1 mile, valve is on the east side of 101st Ave
	25314	10 inch Connolly Station BLV East	600	10-inch	2254	NW/SW 25-146N-94W	From east side of city of Dunn Center turn off of hwy 200 turn north onto 98th ave for .3 mile turn east on 4th st nw for .9 miles road curves north and is now 97th ave nw follow 97th North for 3 miles to curve turn left and an immediate right to stay on 97th ave nw going north for 2.5 miles station and BV are on the east side of the road
	25315	10 inch Connolly Station BLV West	600	10-inch	2254		From east side of city of Dunn Center turn off of hwy 200 turn north onto 98th ave for .3 mile turn east on 4th st nw for .9 miles road curves north and is now 97th ave nw follow 97th North for 3 miles to curve turn left and an immediate right to stay on 97th ave nw going north for 2.5 miles station and BV are on the east side of the road
	25313	10 inch Dunn Center Station BLV	600	10-inch	2330	SE S 15-T146N-R93W	(Dunn County, ND): Located on 92nd Ave NW, stay on Little Missouri paved road leaving north end of Dunn Center City and continue on pavement 11 miles to station on left side of road. Or go approx 5.5 miles east of Dunn Center and go north on 92nd Ave NW to station.

Little Knife – Dunn Center							
	25311	Little Knife 8-inch Station BLV	600	8-inch	2598	NE/NE19-145N-97W	From Killdeer round about at Killdeer 15 miles west to119 Ave. SW, 1 mile north to 3rd ST SW Station is on the left
9.3	27156	Gartner Inventory	600	8-inch	2445	S10 – T145 – R94	From the junction of Highway 200 & Highway 22, go north on Highway 22 for approx. 3 miles, turn west on 1st St SW, go 4 3/4 miles, turn south on 110th Ave SW for 1 mile, valve is on the west side of 110th Ave SW
18.7	27157	Grant Carlson	600	8-inch	2270	S31 –T146 – R94	From the junction of Highway 200 & Highway 22, go north 2 miles, turn onto 104th Ave SW, go north 1 mile, turn east on 1st St for 3 miles, turn north on 101st Ave SW for 1 mile, valve is on the east side of 101st Ave
MP #	**VALVE #**	**NAME**	**ANSI**	**VALVE SIZE**	**ELEV FEET**	**S – T - R**	**DIRECTIONS**
Little Knife – Dunn Center Cont.							
	27330	8 inch Connolly Station BLV East	600	8-inch	2254	NW/SW 25-146N-94W	From east side of city of Dunn Center turn off of hwy 200 turn north onto 98th ave for .3 mile turn east on 4th st nw for .9 miles road curves north and is now 97th ave nw follow 97th North for 3 miles to curve turn left and an immediate right to stay on 97th ave nw going north for 2.5 miles station and BV are on the east side of the road
	27331	8 inch Connolly Station BLV West	600	8-inch	2254		From east side of city of Dunn Center turn off of hwy 200 turn north onto 98th ave for .3 mile turn east on 4th st nw for .9 miles road curves north and is now 97th ave nw follow 97th North for 3 miles to curve turn left and an immediate right to stay on 97th ave nw going north for 2.5 miles station and BV are on the east side of the road
	25312	8 inch Dunn Station BLV	600	8-inch	2330	SE S 15-T146N-R93W	(Dunn County, ND): Located on 92nd Ave NW, stay on Little Missouri paved road leaving north end of Dunn Center City and continue on pavement 11 miles to station on left side of road. Or go approx 5.5 miles east of Dunn Center and go north on 92nd Ave NW to station.
Mandan to Dunn							
0.00	11622	Mandan Terminal	300	Head Gate MOV	1,715	S13 - T139 - R81W	(Morton County, ND): Take Interstate 94 to Exit # 153 Mandan, North Dakota. Go North on State Highway 6 under Interstate about 1 miles to the entrance of Mandan Refinery on the right (East). Enter the refinery and take the first road on the left (North) 0.2mile to the trap and valves in the North West corner of the tank farm.
	11623		300	10-inch By-Pass			

MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	S – T - R	DIRECTIONS
				Mandan to Dunn Cont.			
9.07	27143	Mandan North MOV(9 mile)	600	16-inch	2,053	ND – T140N – R82W	(Morton County, ND): From Mandan go West on I-94 to Exit 147, go North on Hwy. 25 for 3 miles, then West on 35th. Street for 1 mile, go North West on 27th. Ave. for 2.2 miles to block valve on South side of gravel road.
45.99	23914	Beulah MOV	600	16-inch	1,800	S20 – T143N – R87W	(Mercer County, ND): From Beulah, North Dakota go South on State Highway 49 to railroad tracks, From tracks proceed 6.2 miles South on State Highway 49, turn East on gravel road, proceed 2.9 miles, turn North on dirt road, 1.1 miles around farm to 16-inch block gate.
55.78	23915	Zap MOV	600	16-inch	1850	S1 - T143N - R89W	(Mercer County, ND): From Zap, North Dakota, go to South edge of town to bridge. From bridge proceed South on County Road 3.5 miles to block gate on East side of road.
	HV-8513	Zap 10-inch to Beulah	600	10-inch	1850		(Mercer County, ND): From Zap, North Dakota, go to South edge of town to bridge. From bridge proceed South on County Road 3.5 miles to block gate on East side of road.
	HV-8507	Beulah 10 inch by-pass	600	10-inch	1853		(Mercer County, ND): From Zap, North Dakota, go to South to Co. Rd. 20 turn east onto Co. Rd 20 for approximately 2 miles station on t north side of Co. Rd. 20.
	HV-8508	Beulah 10-inch Head Gate	600	10-inch	1853		(Mercer County, ND): From Zap, North Dakota, go to South to Co. Rd. 20 turn east onto Co. Rd 20 for approximately 2 miles station on t north side of Co. Rd. 20.
67.18	11620	South Side Spring Creek	600	16-inch	1,970	S18 - T144N - R90W	(Mercer County, ND): Take State Highway 200 to Dodge, North Dakota. Go East 3 miles to gravel road on the right (South). Take this gravel road approximately 0.5 mile to a road on the left (East). Go East on this road about 3/8 miles to the valve on the left (North).
68.55	27142	Dodge Injection Facility MOV	600	16-inch	2,125	SW1/4 S12, T144N, R91W	(Dunn County, ND): Take Highway 200 1.5 miles East of Dodge, North Dakota. Located on North side of highway.
88.29	27444	Dunn Center Station	600	16 inch Head Gate MLV	2,330	SE S15-T146N-R93W	(Dunn County, ND): Located on 92nd Ave NW, stay on Little Missouri paved road leaving north end of Dunn Center City and continue on pavement 11 miles to station on left side of road. Or go approx 5.5 miles east of Dunn Center and go north on 92nd Ave NW to station.
	27443		600	12-inch By-pass			

Bakkenlink Segment 2 Watford City Receipt Point to Belfield Interconnect							
MP #	VALVE #	NAME	ANSI	VALVE SIZE	ELEV FEET	Lat./Long	DIRECTIONS
59.5	MLV 5		N/A	12-inch	2497	47.617035 -103.246941	
Segment 2 crosses form the Northern Response Zone to the Southern Response Zone at 57.2							
56.5	MLV 6		N/A	12-inch	1947	47.582038° -103.226884°	
47.5	MLV 7		N/A	12-inch	2607	47.487800° -103.227260°	
18.5	MLV 8		N/A	12-inch	2699	47.110946° -103.212919°	
14.5	MLV 9		N/A	12-inch	2632	47.052221° -103.211795°	
BakkenLink Segment 3 Belfield Interconnect to Fryburg Rail Terminal							
7	MLV 10	Belfield Inter connect	N/A	12-inch	2654	46.946491° -103.282965°	
0	SDV-1002	Fryberg Rail Terminal	N/A	12-inch	2751	46.872393° -103.282965°	
Bakkenlink Segment 4 Belfield Lateral							
7	MLV 10	Belfield Inter connect	N/A	8-inch	2654	46.946491° -103.282965°	
Belfield Pipeline							
0	N/A	Belfield Oil Terminal	N/A	8-inch			
8.2	N/A	Skunk Hill Facility	N/A	8-inch			

C.2.4 Significant and Substantial Harm Designation Basis

For the Southern Response Zone, Significant and substantial harm designation is based on the criteria that multiple tank stations in the Southern Response Zone meet the criteria, therefore, the significant and substantial harm criteria is applicable to the entire zone. The criteria response checklist is shown as *Figure C.2-2*. Significant and substantial harm designations are in accordance with 49 CFR 194.103(c).

C.2.5 Worst Case Discharge Determination and Methodology

Consistent with the requirements of §194.105, Tesoro has evaluated maximum spill volumes that potentially could occur for the purpose of emergency response planning. The WCD is defined as the largest volume based on the maximum release time, maximum shut down response time, maximum flow rate, and the largest line drainage volume after shut down of the line section within the response zone. This section describes the methodology used to estimate WCD for the Southern Response Zone of the THPP system.

C.2.5.1 Spill History

Year	Location/Name	Volume(barrels)
2002	Hanover Spill	700

C.2.5.2 Pipeline Worst Case Discharge

Parameter	**Value**
Maximum flow rate (barrels [bbls] per hour)	4,000 bbls/hour
Maximum Shutdown Response Time	
Detection Time	12 minutes(0.2 hrs)
Operator Response Time	10 minutes (0.167 hour)
Pump Shutdown	5 minutes (0.083 hour)
Valve Closure	2 minute (0.033 hour)
Pipeline Specifications- Keene station to Ytterdahl station	
Pipeline Diameter (OD, inches)	16’’
Pipeline Wall Thickness (inches)	0.281’’
Pipeline Length (linear feet)	194,937.6 linear feet (36.92 Miles)

The following calculation was used to calculate WCD, based on 49 CFR 194.105(b)1:

WCD = (max release time [hours] + max shutdown response time [hours]) * (max flow rate [bbls/hour]) + Maximum drainage volume[bbls]

Figure C.2-8 summarizes the WCD for the Northern Response Zone of the THPP pipeline. As indicated above, this methodology for determining the WCD is extremely conservative and assumes complete drain down of the affected pipeline segment. Studies have demonstrated (CSFM 1993) that total discharge from a pipeline rarely approaches WCD volumes due to head space formation and depressurization.

Figure C.2-8 Pipeline Worst Case Discharge Volumes

Pipeline Section	Release Volume Prior to Pipe Isolation (bbls)	Maximum Draindown Volume (bbls)	Worst Case Discharge (bbls)
South Knife River Mainline Valve to Mandan North Mainline Valve	1,933	45,159	47,092

C.2.5.3 Tank Worst Case Discharge

The worst case discharge for the Southern Response Zone was calculated in accordance with 49 CFR 194.105. Worst case discharge for this zone would be a catastrophic failure of Tank 7380 (49 CFR 194.105(b) (3)), at Dunn Center Station of (59,993bbls of crude oil). With applied prevention credits of 70% the worst case discharge volume would be 24,000 Bbls for the Southern Response Zone.

The tank credits for worst case discharge are based on the following:

Figure C.2-9 Prevention Credits

Prevention Measure	Standard	Credit (percent)
Secondary Containment > 100%	NFPA 30	50
Built/repaired to API standards	API STD 620/650/653	10
Overfill protection standards	API RP 2350	5
Testing/cathodic protection	API STD 650/651/653	5
Tertiary containment/drainage/treatment	NFPA 30	0
Maximum allowable credit		**70**

Figure C.2-10 Spill Prevention Measurements

Southern Response Zone Tank Worst Case Discharge (EPA & US DOT PHMSA)	
Fryburg Rail Terminal Tank 103 -175,000 Bbls (EPA)	
Spill Prevention Measure	
Secondary Containment > 100% NFPA 30	50%
API 653 Inspections (1996, 2001)	10%
Cathodic Protection-API 653	5%
High Level Alarms-API 2350	5%
Total Reduction	*70%*
Total WCD (bbls)	**52,500 Bbls**
Dunn Center Tank 7380- 80,000 Bbls (US DOT PHMSA)	
Spill Prevention Measure	***Reduction***
Secondary Containment > 100% NFPA 30	50%
API 653 Inspections (1996, 2001)	10%
Cathodic Protection-API 653	5%
High Level Alarms-API 2350	5%
Total Reduction	*70%*
Total WCD (bbls)	**24,000 Bbls**

C.2-6 Gathering Pipelines

In accordance with the NDIC regulation and NDAC 43-02-03-29.1, this plan is current and accurate, and has been reviewed by the appropriate personnel.

The Southern Response Zone encompasses multiple Non-DOT regulated crude gathering pipeline systems including: Little Knife, Connolly and Pronghorn gathering systems show in *Figure C.2-4* These gathering systems gather crude oil from various oil production facilities. Following a custody transfer, the crude oil is shipped via gathering pipelines to storage facilities and tanks.

C.2-6.1 Produced Water Gathering Pipelines

Contained within the southern response zone is produced water gathering system J-36 Produced Water Pipeline Map identifying the produced water system. In accordance with the NDIC regulation and NDAC 43-02-03-29.1, for produced water this plan is current and accurate, and has been reviewed by the appropriate personnel.

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APPENDIX D HAZARD EVALUATION/RISK ANALYSIS

D.1 Introduction

Hazard evaluations have been performed throughout the pipeline system to evaluate spill risks associated with the operation of the facility, identify and implement spill prevention and risk reduction measures, facilitate emergency response planning and reduce impacts from releases. These initial Hazard Evaluations were prepared in response to the following regulations:

- Code of Federal Regulations, 40 CFR Part 112.20(h), EPA Facility Response Plans.

The hazard evaluation conducted for the THPP is presented first with a summary of discharge history for Northern and Southern Zone. Secondly, an evaluation is provided for each terminal, location or pipeline segment with the zone to identify areas where discharges could occur, range of potential discharge and whether that terminal, location or pipeline segment is reasonably expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines.

D.2 Response Zone Reportable Oil Spill History

As per 40 CFR 112.20, the following information is identified to the most reasonable extent and recorded:

- Date of discharge;
- List of discharge causes;
- Materials discharged;
- Amount discharged in gallons;
- Clean-up actions taken;

Available oil spill information at this facility is recorded in *Figure D-1*.

D.3 HAZARD EVALUATION

D.3.1 Station and Pipeline Segment Hazard Evaluation

As per 40 CFR 112.20, the following information is provided as a hazard evaluation:

- Facility
- Discharge Potential
- Potential Effect
- Discharge Mitigation
- Distance to Navigable Water
- Determination if the discharge can cause Substantial Harm.

The table is provided as *Figure D-2*.

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Figure D-1 Spill History

Volumes are approximate

DATE	MATERIAL	SIZE* (BBL)	SOURCE/ LOCATION
2002	Crude	700	Hanover 16'' Pipeline
2013	Crude	20,600	Tioga 6'' Pipeline

Note: TLLP acquired the different assets covered under the THPP plan at different dates as indicated in the table below. The prior owners of these assets have retention of any spill history prior to the acquisition.

Assets	Acquisition Date
Pipeline segments from Richey, MT to Mandan, ND; Portal, ND to Mandan, ND; Fryburg, ND to Mandan, ND and all original pump stations between the pipeline segment endpoints	2002
Rupple Field and associated pipelines/gathering system	2015
Pipeline segments from Dry Creek to Fryburg Rail Terminal, including Hidden Bench gathering system, Watford City Receipt Point, Dunn Receipt Point	2016
Pipeline Segment from Belfield Oil Terminal to Skunk Hill, including Pronghorn Gathering and Belfield Gathering System Produced Water	2017

Figure D-2 Hazard Evaluation

Facility	Discharge Potential	Potential Effect	Discharge Mitigation	Distance to Navigable Water or Shoreline
Alexander	Tank overfill	Spill to secondary containment	Overfill protection alarms	7.49 Missouri River
BASH	Tank overfill	Spill to secondary containment	Overfill protection alarms	9.67 Missouri River
Belfield Oil Terminal	Tank overfill	Spill to secondary containment	Overfill protection alarms	1.07 miles to unnamed creek
Black Slough	Tank overfill	Spill to secondary containment	Overfill protection alarms	48.41 miles to Missouri River
Blue Buttes	Tank overfill	Spill to secondary containment	Overfill protection alarms	9.45miles to Missouri River
Cartwright	Tank overfill	Spill to secondary containment	Overfill protection alarms	1.51 miles to Yellowstone River
Charlson	Tank overfill	Spill to secondary containment	Overfill protection alarms	6.81 miles to Missouri River
Connolly	Tank overfill	Spill to secondary containment	Overfill protection alarms	6.10 miles to Little Missouri River
Dunn Center	Tank overfill	Spill to secondary containment	Overfill protection alarms	2.95 miles to Little Missouri River
Dunn Receipt Point	Tank overfill	Spill to secondary containment	Overfill protection alarms	13.27 miles to Little Missouri River
Fairview	Tank overfill	Spill to secondary containment	Overfill protection alarms	6.28 miles to Yellowstone River
Four Eyes	Tank overfill	Spill to secondary containment	Overfill protection alarms	12.67 miles to Little Missouri River
Fryburg Rail Terminal	Tank overfill	Spill to secondary containment	Overfill protection alarms	.83 miles to Heart River 11.95 miles to Little Missouri River

Facility	Discharge Potential	Potential Effect	Discharge Mitigation	Distance to Navigable Water or Shoreline
Fryburg Station	Tank overfill	Spill to secondary containment	Overfill protection alarms	11.70 miles to Little Missouri River
Johnson Corner	Tank overfill	Spill to secondary containment	Overfill protection alarms	8.48 miles to Missouri River
Keene #1	Tank overfill	Spill to secondary containment	Overfill protection alarms	8.43 miles to Missouri River
Keene #2	Tank overfill	Spill to secondary containment	Overfill protection alarms	8.45 miles to Missouri River
Lignite	Tank overfill	Spill to secondary containment	Overfill protection alarms	52.70 miles to Missouri River
Little Knife	Tank overfill	Spill to secondary containment	Overfill protection alarms	14.15 miles to Little Missouri River
Mandan	Pipeline failure	Spill to ground	Pipeline inspections, leak detection	0.67 miles to Missouri River
Poker Jim	Tank overfill	Spill to secondary containment	Overfill protection alarms	11.15 miles to Little Missouri River
Putnam	Tank overfill	Spill to secondary containment	Overfill protection alarms	12.09 miles to Yellowstone River
Ramberg	Tank overfill	Spill to secondary containment	Overfill protection alarms	9.35 miles Missouri River
Richey	Pipeline failure	Spill to ground	Pipeline inspections, leak detection	28.38 Miles Yellowstone River
Rupple	Tank overfill	Spill to secondary containment	Overfill protection alarms	2.26 Lake Sakakawea
Sidney	Tank overfill	Spill to secondary containment	Overfill protection alarms	3.1 miles Yellowstone River, ~191’ to Bennie Pier Creek
Skunk Hill	Tank overfill	Spill to secondary containment	Overfill protection alarms	.28 miles to Green River
Treetop	Tank overfill	Spill to secondary containment	Overfill protection alarms	21.56 miles Little Missouri River

Facility	Discharge Potential	Potential Effect	Discharge Mitigation	Distance to Navigable Water or Shoreline
Tioga	Tank overfill	Spill to secondary containment	Overfill protection alarms	17.03 miles Missouri River
Watford City Receipt Point	Tank overfill	Spill to secondary containment	Overfill protection alarms	6.30 miles to Little Missouri River
Yttredahl	Tank overfill	Spill to secondary containment	Overfill protection alarms	~291’ to Missouri River

D.4 Discharge Scenarios

The equipment and manpower to respond to a spill are available from several sources and are listed with the equipment and contractors in *Section 7 and Appendix B*.

D.4.1 Small Discharge Scenarios

The majority of spills from hazardous liquid pipelines tend to be relatively small. The mean spill volume of historical spills is 4 barrels, equivalent to 168 gallons (i.e., 50% of all spills are 4 barrels or less). For this Plan, spills up to 500 barrels are considered small, though the media affected and the spills movement is a better delineator of spill tactics. Depending upon the location of the spill and environmental media affected, spill tactics generally will be addressed with a small crew utilizing shovels and absorbent materials. Contaminated soil and other solid materials will be disposed in a facility capable of handling these types of waste. Proper notifications will be made, based on the spill location and environmental media affected. Tesoro personnel will immediate coordinate with the OSRO's to ensure proper cleanup and disposal.

D.4.2 Medium Discharge Scenarios

Spills between 500 and 10,000 barrels are considered to be medium spills. Again, the media affected and the movement of the spill will significantly affect spill response tactics. Proper notifications will be made, based on the spill location and environmental media affected. The Qualified Individual will notify the OSRO's and the IMT. The Incident Commander will establish a Unified Command with the applicable FOSC, SOSC, LOSC and TOSC to begin management of the incident using the NIMS ICS process. Depending upon the location of the spill and environmental media affected, spill tactics generally will be addressed with a small to medium crew(s). Initial response will focus on methods to contain the spill, limiting further spread. This may include building small berms and trenches to contain, direct, and collect the oil. Vacuum trucks and heavy equipment may need to be deployed. Containment and absorbent booms may be required. Contaminated soil and other solid materials will be disposed in a facility capable of handling these types of waste. Tesoro personnel will immediate coordinate with the OSRO's to ensure proper cleanup and disposal.

D.4.3 Worst Case Discharge (WCD) Scenario Discussion

Spills larger than 10,000 barrels are considered to be large spills. While these spills occur in less than 1% of all spill events, these spills have the potential to affect larger areas. The Incident Commander will determine the level of response required. Because the potential for off-site movement increases with spill size, immediate notification becomes paramount. In the event of a large spill, particularly into water, immediate action and additional resources may need to be mobilized. Depending upon the location of the spill and environmental media affected, spill tactics generally will be addressed with multiple response teams and will likely involve an expanded NIMS ICS structure. In addition to notifications, initial response will focus on methods to contain the spill, limiting further spread. This may include building large containment berms and trenches to contain, direct, and collect the oil. Vacuum trucks and heavy equipment may need to be deployed. Containment and absorbent booms will likely be required. Contaminated soil and other solid materials will be disposed in a facility capable of handling these types of waste. Tesoro personnel will coordinate with OSRO's to ensure proper cleanup and disposal.

D.4.4 Discharge Planning Volumes

Under OPA 90, the facility is regulated by EPA (non-transportation-related) and DOT. Calculations are presented in *Section C.1.5 and C.2.5*. Worksheet for determining appropriate response resources is provided in *Figure D-3*. The assumptions used in applying the guidance are that the worst case discharge is a Group 3 oil, the facility is considered "nearshore".

For the purposes of this Plan, the terms "Worst Case Discharge" (as defined under OPA 90) and "Reasonable Worst Case Spill" (as defined under OSPRA) are considered synonymous.

Figure D-3 Response Resources Determination

EPA – Non Transportation Related Scenario **Scenario Basis: Tank 2040** **Products: Crude Oil Oil Group 3** **Geographic Area: Nearshore/ Inland**				
Spill Volume 92,000 bbls.	**Spill Volume WCD (bbls)**	**Persistence** (see note)	**Emulsification** (see note)	**Planning Volume (bbls)**
On-Water	92,000	x 0.5	x 2.0	92,000
Tier 1 (.15)				13,800
Tier 2 (.25)				23,000
Tier 3 (.4)				36,800
On-Shore	92,000	x 0.5	x 2.0	92,000
DOT Pipeline Scenario **Scenario Basis:** **Products: Crude Oil Oil Group 3** **Geographic Area: Nearshore/ Inland**				
Spill Volume 47,092 bbls.	**Spill Volume WCD (bbls)**	**Persistence** (see note)	**Emulsification** (see note)	**Planning Volume (bbls)**
On-Water	47,092	x 0.5	x 2.0	47,092
Tier 1 (.15)				7,063
Tier 2 (.25)				11,773
Tier 3 (.4)				18,836.8
On-Shore	47,092	x 0.5	x 2.0	8,462

APPENDIX E RESPONSE TECHNIQUES AND GUIDELINES

E.1 General Guidance

In the event an oil spill occurs from the pipeline, a response effort will be initiated as rapidly as possible. This section provides information to aid in the assessment of the spill's magnitude and the selection of appropriate response strategies. The sequence of response activities will generally follow those presented in the Response Decision Diagram shown in *Figure E-1*.

E.1.1 Personnel Safety

While Tesoro recognizes the importance of responding rapidly to an oil spill incident, personnel safety is always accorded the highest priority during response operations activities. To ensure personnel safety, the following guidelines will be observed:

1. Deployment of equipment will not be attempted when the threat of fire or explosion exists.
2. Deployment of equipment will not be attempted when flammable vapors are present or suspected, and action will not be taken until the vapors in the surrounding area have been reduced to a safe level (i.e., less than 10 percent of the lower explosive limit [LEL]).
3. Deployment of equipment will not be initiated until all personnel involved in deployment operations are wearing the required protective clothing.

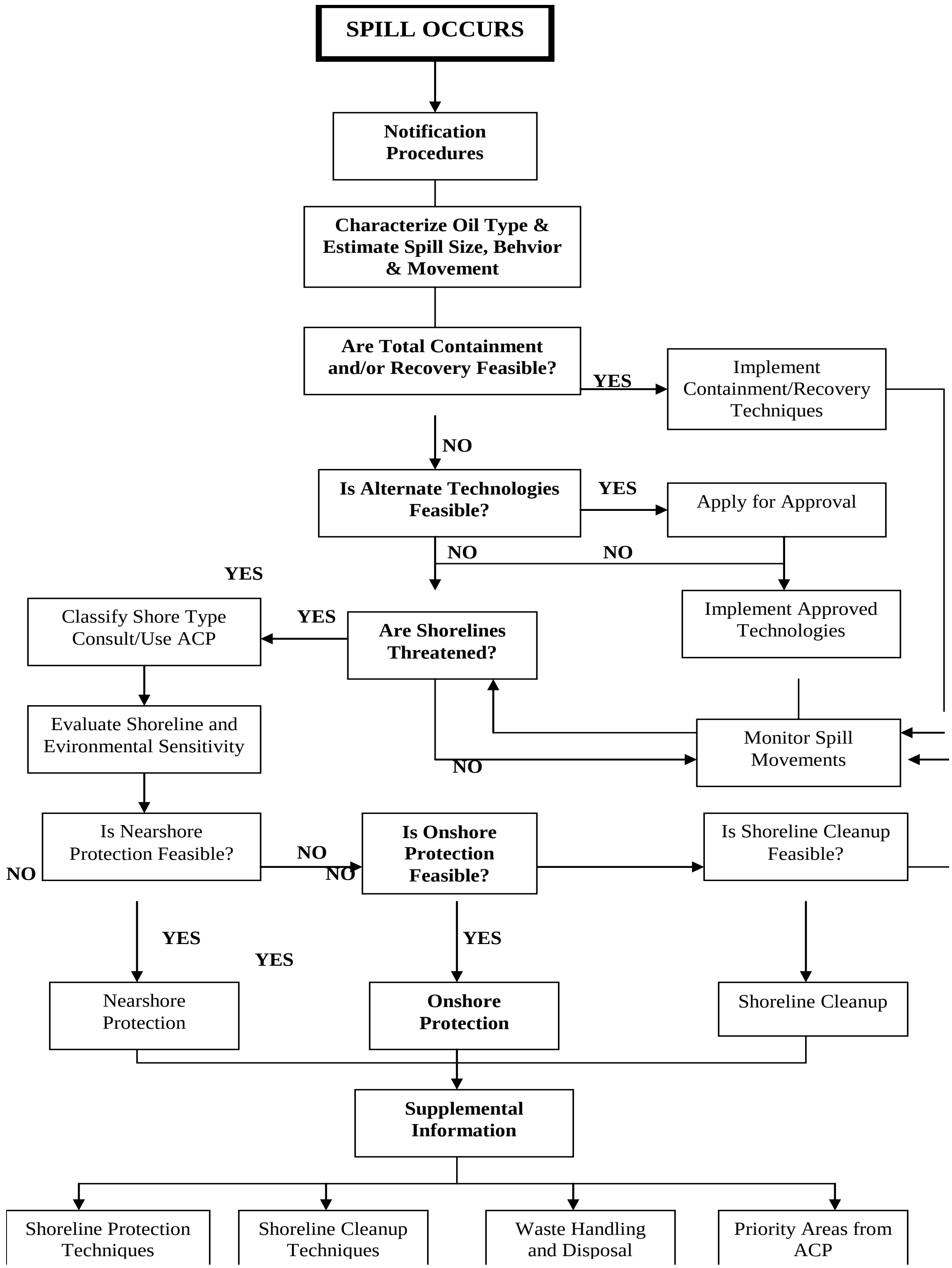
E.1.2 Protection Priorities

To the degree possible, all threatened resources will be protected. Where time or resources will not permit response to all situations (such as in major spills), the Protection Guides may be used to delegate efforts for maximum resource protection on a day-to-day basis in response to events as they unfold in the field.

In cases where resources have not yet been impacted, the setting of response priorities based on spill movement, identification of sensitive areas, and consideration of the feasibility of protective actions is relatively straight-forward. When available response time permits, sensitive areas that can reasonably be protected should be treated in the order of relative sensitivity or vulnerability.

In cases where resources have already been impacted and continued oiling is anticipated, priority judgments become less clear. Generally, if a highly sensitive and/or vulnerable resource has been only lightly oiled, its normal response priority should be maintained. If such a resource has been heavily oiled and a resource of similar value is threatened, response priority should shift to the yet unoiled resource.

Figure E-1 Response Decision Diagram



E.1.3 Environmental Controls For Cleanup Activities

Environmental controls should be implemented when selecting and implementing oil spill containment and recovery techniques. To protect environmental resources from adverse impact from cleanup activities, the following guidelines should be used:

- Cleanup activities on streams and banks of streams will be avoided, unless specifically approved by the appropriate government agencies.
- Cleanup techniques that dislodge riparian vegetation and associated invertebrates will be avoided, unless specifically approved by government agencies.
- Cleaning of marshes or vegetated shorelines will be avoided, unless specifically approved by government agencies.
- Unaffected areas adjacent to shoreline cleanup areas will be boomed off to protect them from oiling during treatment operations.
- Impact to lower emergent vegetation areas that are productive and not oiled will be minimized.
- Sorbents will be employed below oiled upper beach faces to protect emergent vegetation from oiling.
- All signs of human activity will be removed upon completion of cleanup.

All post-emergency response cleanup activities by Tesoro will be in accordance with those given in an approved Incident Action Plan. The Shoreline Countermeasures Manual and matrices presented in the ACP, as well as the NOAA/API document *Inland Oil Spills: Options for Minimizing Environmental Impacts of Freshwater Spill Response* should be consulted in determining appropriate shoreline cleanup techniques.

E.1.4 Description And Location Of Emergency Shutdown System

The San Antonio Operation Center controls pumps and motor-operated valves and can provide rapid shutdown in the event of an emergency.

E.2 Incident Categorization

Incidents are classified as described below. Generally, the classifications are based on the severity of the incident as determined by the Incident Commander.

Tesoro operates a pipeline system, terminal/tank farm storage facilities and truck transportation system. Each of these modes of operation is faced with unique situations and/or potential incidents. As such, the classification system uses common terminology and categorizes the various hazards commonly faced by the company in order to provide a flexible framework for determining the severity of the incident and appropriate response.

Various data are considered when determining the appropriate emergency classification. These data include, but are not limited to:

- Initiating Event
    - Natural Disaster; Operational, Mechanical, System; Human Error
- Safety
    - Injuries/Fatalities
- Protective Actions
    - Evacuation, Sheltering, Personal Protective Equipment
- Surroundings
    - Community: Residential, Industrial, Commercial, Rural
- Proximity to
    - Highways, Railroads, Power Lines, Rivers or Streams, Other Waterways or Watersheds, Combustible Environments
- Commodity
    - Material: HVLs, Gasoline, Chemicals, CO2, Distillate, Crude Oil
- Plume Location
    - Concentration, Potential to affect sensitive areas or populations
- Quantity
    - Reportable Quantity, Amount Spilled, Movement/Containment of released materials
- Weather
    - Wind Velocity, Cloud Cover, Seasonal Factors, Precipitation, Fog
- Actions Taken
    - Emergency Response Organization, Emergency Management Organization (Pipeline Team), Other Tesoro Resources activated; Non-Tesoro Resources (Police, Fire, Regulatory Agencies) activated; Private Contractors, Consultants, Technical Experts activated. Pipeline operations suspended/shutdown and locked in.
- Capability
    - Organization Response Level: Emergency Response Organization (Pipeline Team). Other Tesoro/Non-Tesoro Resources involved.

Figure E-2(a) presents the criteria used to help determine the classification level.

E.2.1 Minor Spills Response Actions

Aquatic

In the event of a minor aquatic spill, the Tesoro Incident Commander will activate response contractors. The following procedures will apply:

1. Shutdown pipeline operations to minimize spill volume and impacts.
2. For minor spills emanating from the pipeline, contractors will:
    a. Launch response boat and containment boom, and deploy boom.
    b. Deploy additional boom as necessary to ensure oil does not escape.
    c. Deploy recovery equipment at downstream corner of containment area to recover floating oil and use sorbent pads for sheen recovery.
    d. Maintain cleanup operations until no visible sheen is apparent.
3. For other minor spills (uncontained):
    a. Alert primary response contractor immediately. Request additional equipment and personnel if available containment and recovery equipment may not be sufficient.
    b. Launch response boat and pull containment boom into water.
    c. Deploy boom around the oil slick or in front of the leading edge to contain all or as much of the oil as possible.
    d. Bring boom ends together and begin recovering oil with recovery equipment and/or sorbent pads.
    e. If all or part of the spill is still not contained, assess wind and current direction to determine the probable trajectory of the slick.
    f. Direct primary response contractor to implement containment and recovery operations (see *Section E.5*) to control remaining oil or protection operations per the ACP if it appears oil cannot be contained prior to contacting a sensitive area.
    g. Utilize primary response or other oil spill contractors to provide rapid and complete cleanup of the spill.

Terrestrial

In the event of a minor terrestrial spill that, in the opinion of the Incident Commander, can be adequately contained and clean up with in-house equipment and personnel, the following procedures will apply:

1. Ensure personnel safety .
2. Stop the flow of the spill.
3. Begin the necessary containment and cleanup procedures. Use Response Contractor to implement the necessary techniques to limit the spread of oil.

Figure E-2(a) Minor Incident Classification

MINOR INCIDENT
Incident Command will normally be assumed by Pipeline Management. Tesoro Corporate Resources support will be utilized on an as needed basis.
Exposure
The potential Public and Environmental exposure is moderate. The type and quantity of material released, while considering the overall nature of the incident (e.g. fire, proximity to private dwellings, etc.), will have moderate impact on the public and/or the environment. Minor incidents generally include occurrences such as: • Oil spills onto pavement or impervious containment that are not greater than the portable spill retrieval equipment on-site. • Oil spills onto gravel or native soil that are less than Reportable Quantities and are not believed to directly threaten groundwater. • Oil spills to water that are readily corrected by self-deployed spill pads and sorbents.
Degree of Control
The incident can be controlled in a short period of time through implementation of the local resources available to the facility (including contract resources).
Governmental Involvement
Government involvement will be moderate and generally restricted to State and Local levels.
Media Involvement
Media interest will be moderate and generally restricted to State and Local Levels.

Figure E-2(b) Serious Incident Classification

SERIOUS INCIDENT
Local Tesoro resources may have to be supplemented with Incident Management Team (IMT) resources to manage the spill incident.
Exposure
The potential Public and Environmental exposure is moderately high. The type and quantity of material released, while considering the overall nature of the incident (e.g., fire, proximity to private dwellings, etc.), will have moderately high impact on the public and/or the environment. Serious environmental incidents include: • Oil spills that require OSRO participation and skimming equipment deployment. • Oil spills or chemical releases that have or will likely result in significant interest by the regulatory agencies. Significant regulatory interests include NOVs or citations issued on-site and/or regulatory personnel requesting additional personnel from the same or other regulatory jurisdictions. • Oil spills or chemical releases that have or will likely result in significant interest by the press. This includes the arrival of radio, newspaper or television press personnel at the scene, or a subsequent request for a detailed telephone interview on the incident. • Oil spills that have directly impacted or oiled wildlife. • Chemical releases resulting in on-site evacuations. • Chemical releases resulting in off-site impacts, shelter-in-place notifications or evacuations.
Degree of Control
The incident can be brought under control in a moderate period of time through implementation of local resources available to the facility (including contract resources) with possible implementation of regional resources.
Governmental Involvement
Government involvement will be moderately high and generally restricted to Regional levels.
Media Involvement
Media Interest will be moderately high and generally restricted to Regional levels.

E.2.2 Major Spills Response Actions

A major spill, for Tesoro's purposes, is one that cannot be contained or managed using only onsite and primary response contractor equipment and personnel. In this case, the Incident Commander will immediately request the assistance of the Tesoro Spill Management Team and primary resource contractors. The initial response actions to be taken for major aquatic and terrestrial spills are as follows.

Aquatic

The initial response actions implemented by the local Immediate Response Team (IRT) in the event of a major spill will focus primarily on personnel safety, controlling the spill near its source, and providing the first line of defense until outside resources arrive. The procedures the Incident Commander should consider are listed below in the recommended order of implementation.

1. Ensure personnel safety.
2. Stop the flow of oil at the source.
3. Initiate slick surveillance and tracking procedures.
4. Request assistance from Tesoro Spill Management Team and primary response and other contractors, as necessary.
5. Deploy the available boom downstream of the source and/or in front of the slick's leading edge to contain as much of the oil as possible.
6. If the spill is continuing, anchor the boom in place and use a skimmer to begin recovering oil as it becomes contained by the boom.
7. If the spill is not continuing, recover the contained oil as soon as possible by skimming or with sorbents and redeploy the boom to contain additional oil or protect sensitive areas as outlined in the ACP.
8. Estimate the probable spill trajectory and identify the sensitive areas at risk per the ACP.
9. Using the ACP and Part 2 of this Plan, determine a strategy for exclusionary, diversionary, and collection booming.
10. Continue to monitor spill movement and begin developing an overall spill response plan in conjunction with the FOSC/SOSC.
11. Set up interim waste storage sites and begin making arrangements for waste characterization and disposal.

Terrestrial

The immediate response procedures implemented by the IRT in the event of a major terrestrial spill will focus primarily on personnel safety, limiting the spread of oil, and preventing any offsite migration. The Incident Commander should consider the procedures listed below in the recommended order of implementation.

1. Ensure personnel safety.
2. Eliminate sources of ignition.

3. Evacuate the area if extreme fire or explosion hazard exists; notify local police, fire department, and Tesoro Spill Response Team.
4. If safe, stop the flow of oil at the source.
5. If spill is within a containment area, block storm drains and construct containment and/or diversion berms to limit the spread of oil and direct the flow to natural depressions or containment areas.
6. If spill is outside of a containment area, implement containment techniques to limit the spread of oil and prevent oil from entering the water.
7. Request assistance from Tesoro Spill Management Team, primary response, and other contractors as needed.
8. Begin recovering contained oil immediately by pumping, using vacuum trucks and/or sorbents to minimize penetration into the substrate.
9. Set up interim waste storage site(s) and begin making arrangements for waste characterization and disposal

Figure E-2(c) Major Incident Classification

MAJOR INCIDENT
Maximum Tesoro and external resources must be implemented to respond to the spill incident. Activation of the Tesoro Response Team would be anticipated during a major incident.
Exposure
The potential Public and Environmental exposure is significant. The type and quantity of material released, while considering the overall nature of the incident (e.g. fire, proximity to private dwellings, etc.), will have significant impact on the public and/or the environment.
Degree of Control
Maximum Tesoro and third party resources must be implemented in order to gain control of the incident.
Governmental Involvement
Government involvement will be intense.
Media Involvement
Media interest will be intense.

Major Spill Plan Implementation

In the event of a major spill, Tesoro must implement this OSRP to the full extent including the activation of the Tesoro Spill Management Team and a number of response/support service contractors. At this point, the Incident Command post may be moved to another suitable location. In addition to the immediate response procedures discussed above, other key initial actions that should be taken when responding to a major spill are outlined below.

1. Establish a Command Post – If the majority of the spill activities are conducted at some distance, a mobile command post may also be established at a more central location using trailers.

2. Establish Communications Systems – Refer to information provided in *Section 7* of the OSRP for communications information including radio and telephone lines.

3. Site Control and Access – The local sheriff/police department or security service should be contacted to cordon off spill area and allow access to authorized personnel only. Photo

identification badges should be issued to all response workers but with an easily identifiable differentiation between Tesoro and contractor personnel.

4. Logistical Support – Arrangements for housing, transportation, meals, supplies, and other logistical support should be initiated for response and support personnel anticipated to be involved in the spill response. The Local Emergency Planning Committee (LEPC) should be consulted to assist in these arrangements.

5. Waste Management – Establish a system for the handling, transport, temporary storage, characterization, and disposal of liquid/solid wastes generated by the spill response. Interim waste storage sites should be identified and constructed, equipment and personnel should be acquired and designated to handle and transfer wastes from the recovery points to the waste storage sites. Potential waste disposal/treatment sites should be identified along with their waste acceptance criteria and profile requirements. *Section 7* provides information on waste management.

6. Government and Public Liaison – Establish a plan and designate personnel to coordinate and maintain communications with response contractors, government agencies, the media, and the public.

7. Public Information – Use the news media to distribute information regarding the nature of the incident and actions underway to mitigate the impacts. A successful response often depends on timely and accurate public information.

8. Equipment Staging Area(s) – Establish areas adjacent to the spill site for equipment staging and deployment.

E.2.3 Climatic and Hydrographic Conditions

The prevailing climatic and hydrographic conditions at the time of a spill can influence a variety of response factors and should be quantified to the extent practical and as soon as possible following the discovery of a spill. Key climatic and hydrographic conditions and affected response factors are:

- Wind speed and direction – Aquatic spill trajectories, vapor plume dispersions, boom deployment, technique effectiveness, vessel and aircraft safety, and others.
- Current speed and direction – Aquatic spill trajectories, boom deployment, technique effectiveness, shoreline access restrictions, and others.
- Visibility – Spill movement tracking and surveillance and aircraft and vessel safety.
- Temperature – Spill volatility, worker productivity and safety, equipment effectiveness, and others.

Wind speed and direction may need to be approximated using best judgment. If an accurate estimate is required, contact the National Weather Service.

Visibility is determined by visual estimates concerning both the horizontal and vertical distances within which objects are clearly visible. The vertical visibility (or ceiling) is typically limited by low cloud cover or overcast conditions but can also be dramatically reduced by heavy fog. Lateral visibility is influenced by fog or heavy rain or snow. In general, normal aircraft operations are restricted to ceilings greater than 500 feet and horizontal visibility in excess of 0.5 miles. Vessel operations are not affected by ceilings but should be discontinued when horizontal visibility is less than a few hundred feet.

Temperature can be determined using an outdoor thermometer or by calling the local weather service or airport. Only temperatures below freezing or above 80 to 90° are of concern to oil spill response operations. Temperatures above or below this range can adversely affect productivity and the health and safety of response personnel.

The temperature gradient between the northwestern and southeastern corners of the state of North Dakota has a maximum intensity in January, with a difference of 16°F (mean average). The difference is nearly as great in June because Lake Superior greatly depresses the temperature along its margin. The least difference across the state occurs in September and October with only 7 to 8°F separating the northern and southern boundaries.

Winters are moderately long and somewhat severe, but more than 120 days have temperatures above 50°F. The frost-free season lasts from 100 to 140 days. Snow usually stays on the ground all winter and on average soils initially freeze in late November, early December. The average annual precipitation is moderate, ranging from 24 to 45 inches. Maximum precipitation comes in the summer months.

In the event of a spill, Tesoro Spill Management Team will assess the potential impact of weather using NOAA forecasts for regional information, local forecasts from the National Weather Service, and/or actual field weather conditions.

Additional real time weather information can be found at the following web sites:

- http://atlwx.com/wxRadar/
- http://www.nws.noaa.gov/view/largemap.php
- http://climate.umn.edu/

E.3 Predicting Slick Movements

E.3.1 Factors Affecting Slick Movement

The movement of spilled oil on the water would depend primarily on the effects of wind and surface currents present near the site of the spill. Surface currents will dominate slick movement unless the winds are strong. When winds are strong, they will cause the slick to move at approximately 3 percent of the wind speed in the same general direction. When currents and strong winds are absent, slick spreading will dictate slick movement. However, even if only weak winds or surface currents are present, they will dominate slick movement.

E.3.2 Visual

The Terminal Manager is familiar with the local geography and, when daylight and weather conditions permit, would be able to determine the initial direction of the slick's movement in relation to the coastline. In the event of a major spill, efforts would be made to enhance vital surveillance activities by placing a knowledgeable observer in a helicopter or fixed-wind aircraft.

E.3.3 Surveillance Guidelines

Surveillance operations would be essential to the conduct of response operations. Through surveillance, the Incident Commander (IC) can determine:

- The areal extent of the affected area.
- The direction of slick movements.
- The position of the slick in relation to unaffected environmentally and/or economically sensitive areas.
- Slick characteristics.
- Areas of heaviest oil concentrations including estimates of slick thicknesses.
- The location of wildlife.
- The location of response equipment.
- The location and degree of oiling on affected shorelines.

With this information, the IC can maintain tracking of the spill response resources under his/her command, and the Operations Section Chief can direct vessels into optimum positions for placing containment, recovery, and shoreline protection devices. Moreover, those conducting surveillance can take videotapes and/or photographs that can be used for documentation purposes.

If possible, aircraft could be dedicated to surveillance operations. This does not mean that the aircraft cannot be used for other operations, but that surveillance operations would always be granted priority treatment.

Surveillance Resources Readily Available in the Local Area

Surveillance resources readily available in the local area consist of helicopters and fixed-wing aircraft which can be contracted at the time of a spill.

E.4 Establishing A Command/Communications Post And Staging Areas

The following procedures provide an outline for establishing a Central Command/ Communications Post and staging areas. It is recognized that these procedures may be somewhat dependent upon the size of the incident. Therefore, an outline of general procedures for establishing a Command/ Communications Post and staging areas in the case of a major spill is provided. A major spill may require larger facilities and additional or larger staging areas. In such a case, the exact location for establishing command and communication posts and staging areas may not be definable until the area of impact is known.

Generalized procedures are followed by pre-designated locations for command and communication posts and staging areas that are designed to deal with localized and more site-specific oil spills.

E.4.1 Command/Communications Post

A Command/Communications Post would be established to serve as the primary location for the Command Staff activities and various meetings and briefings held throughout response operations. The actual location of the Command/ Communications Post would depend upon the specific circumstances surrounding the incident. The Logistics Section Chief would be responsible for establishing the Command/Communications Post and should include:

- Proximity to incident location.
- Sufficient size to allow response personnel to operate effectively and comfortably.
- Room for conferences, Unified Command meetings, and media briefings.
- "Situation Room" with maps to track the spilled oil, response equipment locations, sensitive resource maps, lists of personnel and telephone numbers, and organization charts.
- Telephone and fax lines.
- Security.
- Office support systems (e.g., fax machines, copiers, telephone lines, computers, file system, AM radios, VHF/UHF radio telephone, base communication station, etc.).
- Communications system that would be used in an event could include: cellular telephones, local telephone system, company radios in vehicles and base stations, and pagers as conditions warrant.

E.4.2 Field Command Post

A Field Command Post may also be established at the scene of an incident. The primary function of the Field Command Post is to conduct all activities which are directed toward reduction of the immediate hazard, including recovery and cleanup operations.

E.4.3 Staging Areas

In a major spill response, numerous staging areas may be required to support containment and cleanup operations. Staging areas would need to be equipped with prime movers, cranes, and other machinery necessary to load/unload response equipment and supplies to trucks, vessels, etc. Personnel at staging areas need to establish inventory control systems to track equipment use. In selecting a suitable staging area, the following criteria should be considered:

- Direct access to impacted areas.
- Proximity to secure parking, airports, docks, pier or boat launches.
- Ability to be a secured area.
- Proximity to populated areas or environmentally-sensitive areas.
- Adequate lighting.

E.5 Containment And Recovery

This section describes the techniques that can be employed to contain and recover spilled oil. Containment is most effective when conducted near the source of the spill. The feasibility of effectively implementing containment and recovery techniques is generally dependent on the size of the spill, available logistical resources, implementation time, and environmental conditions or nature of the terrain in the spill area.

Aquatic spill containment is primarily conducted through the use of oil spill containment booms whereas skimmers are usually the most efficient means of recovery. Pumps, vacuum systems, and sorbents can also be effective. For terrestrial spills, trenches and earthen berms or other physical barriers are most often used to contain oil migrating on or just beneath the ground surface. Recovery of free oil from the ground surface is best achieved by using pumps, vacuum systems, and sorbents. Containment and recovery techniques are summarized in *Figure E-3*. The Cleanup Guides presented in this Appendix can aid in determining appropriate techniques.

E.5.1 Terrestrial Spills

Containment and recovery of terrestrial spills is best achieved by using an earthen containment berm, trenches, or physical barriers within a natural or man-made drainage course (generally preferable as the oil is already partially contained and concentrated). The presence of existing drainage courses or containment structures is often critical to effective containment of large terrestrial spills as most containment techniques for flat surfaces do not provide a significant amount of storage capacity. A detailed description of berms, dams and barriers is presented in this Appendix.

Technique selection

The primary factors influencing terrestrial containment and recovery are:

- Size – Most containment techniques provide limited storage capacity.
- Slope – Berms and barriers are generally less effective on steeper slopes and accessibility may be limited.
- Surface Texture – Rough surfaces with natural ridges and depressions enhance containment and should be taken advantage of whenever possible.
- Substrate Permeability – Highly permeable sediments will allow rapid penetration of oil into the substrate thus complicating containment and recovery.
- Existing Draining Courses – Oil is more easily contained and recovered if it is flowing within, or can be diverted to, existing natural or man-made drainage structures.
- Stormwater Runoff – Runoff generally requires the containment of larger quantities of liquids and complicates oil recovery.

E.5.2 Aquatic Spills

Effective containment and recovery of aquatic spills depends, in part, on the spill circumstances, how quickly the techniques can be implemented, and the prevailing environmental conditions. Regardless of the size of the spill, containment is most effective if conducted at or near the source of the spill before the spill spreads into a large area. The larger the area covered by the spill, the more equipment and manpower will be required. Containment at or near the source is also often associated with thicker layers of oil within the containment booms which, in turn, increases the efficiency of most skimmers.

The prevailing environmental conditions can affect containment and recovery, both in terms of effectiveness and deployment of equipment. In high winds, currents, and waves, equipment deployment is difficult and often unsafe. Wind and currents can add significant tension on containment booms making it difficult to anchor the booms in place, tow them in a catenary or "U" configuration, or connect sections of boom together in the water. Strong currents can also cause entrainment of oil in the water stream flowing beneath the boom resulting in ineffective containment. Wind-generated waves can splash oil over the top of the boom also reducing containment effectiveness.

Technique selection

On-water recovery techniques are described in detail in this Appendix. Selection of an appropriate aquatic containment and recovery technique depends on a number of factors, including:

- Current Speed – Surface currents >1 knot can cause boom failure or entertainment of oil beneath the boom.
- Water Depth – Depths >50 feet can complicate boom anchor placement whereas depths <2 feet can preclude effective boom use. Depths <5 to 10 feet can also preclude the use of larger boats for open water containment.
- Channel Width – Widths >200 to 300 feet will generally preclude using booms to completely contain oil floating in the waterway, particularly if strong currents are present.
- Wave Height – Breaking waves >1 to 2 feet and 0.5 to 1 feet will respectively render most booms and skimmers ineffective.
- Slick Thickness – Recovery effectiveness with pumps/vacuum systems and skimmers decreases with slick thickness becoming relatively ineffective for very thin slicks or sheens.
- Shoreline Access – Obstacles (i.e., rocks, debris, etc.) in the water or within steep or densely vegetated backshores could restrict access and present safety and operational problems.
- Anchor Points – Soft bottom substrates can affect boom anchor placement.
- Safety – High currents, winds, and waves, large obstacles, and other dangerous conditions could present safety hazards and preclude technique implementation.

Figure E-3 Summary of Containment and Recovery Techniques

TECHNIQUE	DESCRIPTION	PRIMARY LOGISTICAL REQUIREMENTS	LIMITATIONS[1]	POTENTIAL ENVIRONMENTAL EFFECTS
Terrestrial Spills – Containment				
A. Containment/ Diversion Boom	Construct earthen berms ahead of advancing surface spill to contain spill or divert it to a containment area.	Equipment 1 – Backhoe, bulldozer, front-end loader, or set of hand tools. Personnel 4 – 8 workers	• Steep slopes • Porous substrate	• Disturbance to surface soils and vegetation • Increased oil penetration
B. Storm Drain Blocking	Block drain opening with sediments, plastic sheet, boards, etc., and secure to prevent oil from entering drain.	Equipment Misc. hand tools; 1 – Board, plastic sheet, mat, etc. Personnel 1 – 2 workers	• May be advantageous for oil to enter drain • Heavy precipitation	• Increased oil penetration • Oil can spread to other areas
C. Blocking Drains	Construct dam in drainage course/ streambed to block and contain flowing oil. Cover with plastic sheeting.	Equipment 1 – Backhoe, bulldozer, front-end loader, or set of hand tools. Personnel 4 – 6 workers	• Upstream storage capacity • Flowing water	• Increased oil penetration
D. Culvert Blocking	Block culvert opening with plywood, sediments, sandbags, etc. to prevent oil from entering culvert.	Equipment Misc. – Hand tools; Misc. – plywood, sandbags, etc. Personnel 3 – 4 workers	• Upstream storage capacity • Flowing water	• Increased oil penetration
E. Interception Trench/ Barrier	Excavate trench or install barrier ahead of advancing surface/near-surface spill to contain spill. Cover bottom and down-gradient side with plastic.	Equipment 1 – Backhoe, set of hand tools Misc. – plastic sheeting or plywood/ sheet material Personnel 3 – 6 workers	• Slope • Depth to near-surface flow	• Increased oil penetration • Disturbance to surface soils and vegetation
F. Shoreline Containment Booming	Deploy boom around point of oil entry into water and anchor to shoreline on either side.	Equipment 1 – Boat 100 feet – boom (min.) 3 – Anchor systems (min.) Personnel 2 – 3 workers	• Currents > 1 to 2 knots • Waves > 1 to 2 feet • Water depths > 50 feet	• Minor disturbance to substrate at anchor points • Heavy oiling of shoreline within booms and associated impacts

Aquatic Spills – Containment and Recovery				
G. Open Water Containment Booming	Boom is deployed between two boats in a "U" shape in front of approaching slick to contain oil and prevent contact with shoreline.	Equipment 2 – Boats 200 feet of Boom (min.) Misc. – Tow lines, connectors, bridles, etc. Personnel 4 workers + boat crew	• Waves > 1 to 2 feet • High winds • Currents > 2 knots	• No significant effects
H. Narrow Channel Containment Booming	Boom is deployed across channel at an angle to contain floating oil passing through channel.	Equipment 1– Boat, vehicle or winch 1 to 2 Booms (1.2 channel width ea.) 2 to 10 – Anchor systems Personnel 2 – 3 workers	• Currents > 2 to 3 knots • Water depths > 50 feet (anchoring) • Sensitive shorelines	• Minor substrate disturbance at anchor points • Heavy shoreline oiling at downstream anchor point
I. Sorbent Barriers	A barrier is constructed by installing two parallel lines of stakes across a channel, fastening wire mesh to the stakes, and filling the space between with sorbents.	Equipment (per 100 feet of barrier) 1 – Boat 20 – Fence posts 200 feet – Wire mesh 200 sq. feet – Sorbents Misc. – Hand tools, fasteners, support lines, additional stakes, etc. Personnel 2 – 3 workers	• Water depths > 5 to 10 feet • Currents > 0.5 knots • Soft substrate	• Minor substrate disturbance at post and shoreline anchor points • High substrate disturbance if boat is not used
J. Skimmers	Self-propelled skimmers work back and forth along the leading edge of a slick to recover the oil. Booms may be deployed from the front of a skimmer in a "V" configuration to increase sweep width. Portable skimmers are placed within containment booms in the area of heaviest concentration.	Equipment (Self-Propelled) 200 feet – Boom (min.) 2 – Boats Misc. – Tow lines, connectors, bridles, etc. Equipment (Portable) 50 feet – Hoses (min.) 1 – Pump (if required) 500 gallons – Storage (min.) Personnel 4 workers + boat crew	• Waves > 0.5 to 1 foot • High winds • Currents > 2 knots	• No significant effects

Aquatic Spills – Containment and Recovery (*continued*)				
K. Sorbents	Sorbents are applied manually to heavy oil coatings or accumulations on land or sheens on water to recover the oil.	Equipment Misc. – Sorbents, bags or containers for oiled sorbents Personnel 1 – 10 workers	• Very light or weathered oil coatings/sheens • Steep or slippery shorelines	• Significant substrate disturbance • Foot traffic can trample vegetation/crush organisms • Possible ingestion of residual sorbents by animals

(1) In addition to implementation time and accessibility

NOTE: The quantities, type of equipment and manpower shown in this table are based on experience in performing each individual task. Necessary containment/cleanup techniques will be used in the appropriate timeframes. As needed, Tesoro will allow input from response contractors with regard to an evaluation of the scope of cleanup activities and the availability and location of spill response resources.

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E.6 Sensitive Area Protection

In the event of an aquatic spill from the Tesoro pipeline, it may be necessary to protect sensitive areas if it appears that open water oil containment and recovery efforts will not be sufficient to control the entire spill. Protection refers to the implementation of techniques or methods to prevent oil from making contact with a shoreline or aquatic area that is determined to be sensitive for environmental, cultural, or human use reasons. Sensitive areas in the vicinity of the pipeline include: wildlife refuges, water intakes, waterfront industrial facilities, parks or other recreation areas and shorebird and waterfowl use areas. Sensitive areas are displayed on the maps in *Section 6*.

The common protection techniques are summarized in *Figure E-3* (complete descriptions are presented in this Appendix). Selected containment and recovery techniques listed in this Appendix (e.g., open water and narrow channel containment booming and sorbent barriers [see *Figure E-3*]), can also be used for protection purposes.

E.6.1 Oiled Wildlife Rehabilitation

The rehabilitation of oiled wildlife is a complex and intensive process that includes the retrieval of affected animals, treatment for toxic effects of the oil, medical treatment, careful cleaning, specialized care and feeding, and preparation for release.

North Dakota, this responsibility rests with the North Dakota Department of Game and Fish. Contact phone numbers are listed in *Sections 3A and 3B* and *Appendices C1 and C2* of this OSRP.

The North Dakota Department of Game and Fish are responsible for initiating and coordinating all wildlife rescue efforts. Tesoro will support these efforts and supply equipment as requested through the Unified Command.

Tesoro recognizes that the rehabilitation of oiled waterbirds is a specialized activity and will call upon the services of the Tri-State Bird Reserve to carry out the established rehabilitation procedures.

Figures E-4 and E-6 provide data sheets for the collection of contaminated or dead wildlife. These sheets are provided to accelerate Tesoro’s ability to collect information should a spill occur.

Figure E-4 Summary of Aquatic Protection Techniques

TECHNIQUE	DESCRIPTION	PRIMARY LOGISTICAL REQUIREMENTS	LIMITATIONS[1]	POTENTIAL ENVIRONMENTAL EFFECTS
A. Exclusion Booming	Boom is deployed across or around sensitive areas and anchored in place. Approaching oil is excluded from the area.	<u>Equipment</u> (per 500 feet of boom) 1 – Boat 6 – Anchor systems 750 feet – Boom (min.) <u>Personnel</u> 3 workers + boat crew	• Currents > 1 to 2 knots • Waves > 1 to 2 feet • Water depth > 50 feet (anchoring)	• Minor substrate disturbance at anchoring points
B. Diversion Booming	Boom is deployed from the shoreline at an angle towards the approaching slick and anchored or held in place with a work boat. Oil is diverted towards the shoreline for recovery.	<u>Equipment</u> 1 – Boat 3 – Anchor systems (min.) 100 feet – Boom (min.) <u>Personnel</u> 3 workers + boat crew	• Currents > 2 to 3 knots • Waves > 1 to 2 feet • Water depth > 50 feet (anchoring) • Sensitive shorelines	• Minor substrate disturbance at anchoring points • Heavy oiling at shoreline anchor point
C. Deflection Booming	Boom is deployed from the shoreline away from the approaching slick and anchored or held in place with a work boat. Oil is deflected away from the shoreline.	<u>Equipment</u> 1 – Boat 5 – Anchor systems 200 feet – Boom <u>Personnel</u> 3 workers + boat crew	• Currents > 2 to 3 knots • Waves > 1 to 2 feet • Water depth > 50 feet (anchoring) • Onshore winds	• Minor substrate disturbance at anchoring points • Oil is not contained and may contact other shorelines
D. Inlet Dams	A dam is constructed across the inlet or channel using local shoreline sediments to exclude oil from entering inlet. Dam can be covered with plastic to minimize erosion.	<u>Equipment</u> 1 – Backhoe, bulldozer, front-end loader, or set of hand tools 1 – Plastic sheeting roll <u>Personnel</u> 2 – 6 workers	• Water outflow • Inlet depth > 5 feet • Excessive inlet width	• Sediment/vegetation disturbance at borrow areas • Inlet substrate disturbance • Increased suspended sediments • Water in inlet can become stagnant

[1] In addition to implementation time and accessibility.

NOTE: The quantities, type of equipment and manpower shown in this table are based on experience in performing each individual task. Necessary containment/cleanup techniques will be used in the appropriate timeframes. As needed, Tesoro will allow input from response contractors with regard to an evaluation of the scope of cleanup activities and the availability and location of spill response resources.

Figure E-5 Data Sheet for Collection of Live Contaminated Wildlife

LIVE CONTAMINATED WILDLIFE DATA COLLECTION

DATE:______________________

Oil Spill Incident:	
Rehabilitation Identification Number:	
Specific Capture Location:	
Common Name:	
Genus / Species:	
Was Specimen Obviously Oiled?	
Extent of Oiling (circle one):	1. Completely covered 2. Ventral or dorsal surface only 3. Discrete spots 4. No obvious oil
Date of Arrival at Treatment Center:	
Date Cleaned:	
Date Released:	
Location of Release:	
Date Died (if applicable):	

Collected By:

Print Name	**Signature**
Affiliation	**Date**
Telephone#	**Address**

Relinquished To:

Print Name	**Signature**
Affiliation	**Date**
Telephone#	**Address**

Figure E-6 Data Sheet for Collection of Dead Contaminated Wildlife

DEAD CONTAMINATED WILDLIFE DATA COLLECTION

DATE:______________________

Oil Spill Incident:	
Specific Location	
Specific Found:	
Was Specimen Obviously Oiled?	
Was Specimen Scavenged?:	
Comments:	

Collected By:

Print Name	**Signature**
Affiliation	**Date**
Telephone#	**Address**

Relinquished To:

Print Name	**Signature**
Affiliation	**Date**
Telephone#	**Address**

E.6.2 In Situ Burning And Dispersant Application

The Tesoro Spill Management Team is trained in the use of dispersants and burning techniques for spill response. The team has immediate access to dispersant and burning equipment through contracts with OSROs around the country. It is required that before any in situ burning begins the Unified Command will receive, review and approve a written In Situ Burn Plan.

While the use of dispersants is gaining recognition as a viable response technology in the U.S., the use of dispersants in inland areas (e.g., rivers and lakes) will not be considered.

E.7 Protective Action Procedures

This Appendix provides descriptions of the implementation for various protective action procedures. Based on incident specific information, the responder can choose the most appropriate technique or combination of techniques. The techniques and procedures described in these Sections are intended to be flexible, and the responder is encouraged to modify the techniques as necessary to meet site-specific criteria.

E.7.1 Protection Priorities

To the degree possible, all threatened resources will be protected. Where time or resources will not permit response to all situations (such as in major spills), the following guidelines may be used to delegate efforts for maximum resource protection on a day-to-day basis in response to events as they unfold in the field.

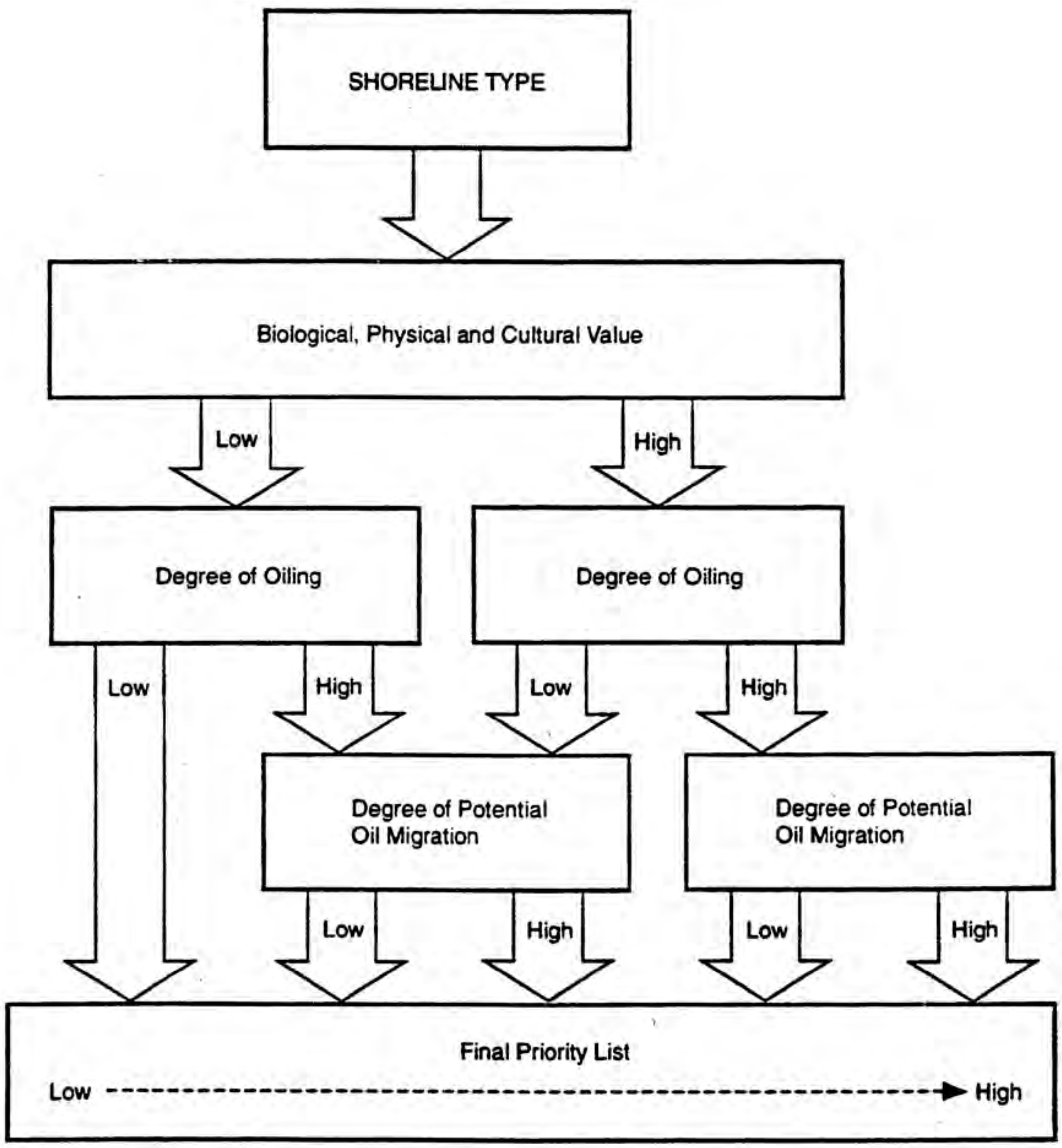
In cases where resources have not yet been impacted, the setting of response priorities based on spill movement, identification of sensitive areas, and consideration of the feasibility of protective actions is relatively straight forward. When available response time permits, sensitive areas that can reasonably be protected should be treated in the order of relative sensitivity or vulnerability. The basic sequence of considerations for the determination of response priorities is indicated in the priority guide, Guide 2-1.

In cases where resources have already been impacted and continued oiling is anticipated, priority judgments become less clear. Generally, if a highly sensitive and/or vulnerable resource has been only lightly oiled, its normal response priority should be maintained. If such a resource has been heavily oiled and a resource of similar value is threatened, response priority should shift to the yet unoiled resource.

E.7.2 Protection Method Selection

As a result of the infinite number of combinations of environmental conditions, no two spills will be identical. Each spill must be evaluated independently on the basis of incident- specific conditions. Therefore, in lieu of identifying specific protection measures, the following subsections provide the decision-making criteria for evaluating and selecting the appropriate protection procedures. The specific protective action procedures referenced by the decision diagrams are presented in this section.

Figure E-7 Priority Guide



Inland and Coastal Waters. Protective actions include those efforts intended to prevent spilled oil from entering a receiving water body and efforts to minimize damage once such water bodies have been impacted. Selection of an appropriate protection technique for an inland or coastal area depends on the following factors:

- Type of water body (e.g., inland waters - lakes, rivers, etc.; coastal waters - bays, tidal channels, open water)
- Velocity of water currents
- Land form and water body configurations (e.g., straight coastline, harbor or bay entrance, etc.)
- Depth of the water
- Presence of breaking waves
- Amount of oil

Decision Guide Use. The decision guides are divided into three categories: protection of coastal waters, protection of inland waters, and protection of terrestrial areas. They are used as follows:

- For inland waters (Guide 2-3), enter the figure at the type of water body where protection is needed and select the appropriate booming technique(s) depending on the amount of oil contamination and the water current speed (except for shallow waters). For a large lake where water currents and/or waves are present, use the decision guide for coastal waters (Guide 2-2).

In any location (inland and coastal waters) where currents exceed 3 knots or breaking waves are greater than 1 foot, it is best to move the proposed boom location away from turbulent waters into a more quiescent area along the water body.

- For terrestrial areas, selection of appropriate protective techniques is dependent on the following factors:
    - Nature of the substrate
    - Slope of terrain
    - Amount of oil
    - Available time

Guide 2-4 is a guide for evaluating the protective technique most appropriate in consideration of substrate and slope only. The amount of oil and the time parameter reflect the reality of constructing a barrier of appropriate size in the time available. These factors can only be judged in the field at the time of the incident. Should it be impossible to implement the recommended method at a desired point due to a lack of time, a new control point will be selected further downslope. If protection is still impossible and human safety is in question, the threatened area will be evacuated.

Once a protection technique has been selected, the implementation requirements should be checked. Instructions on how each technique should be used are given in this Appendix.

Figure E-8 Inland Waters

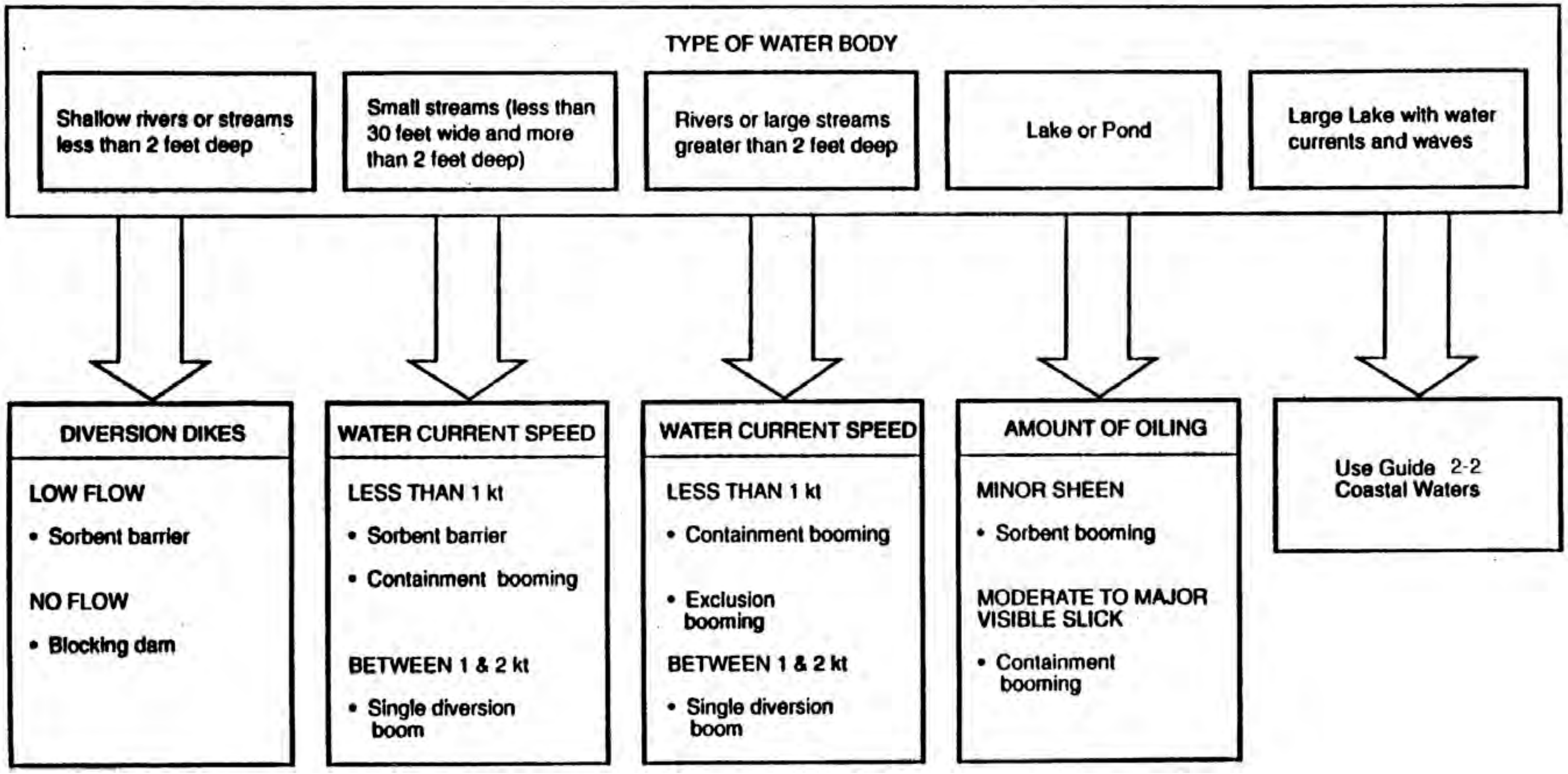
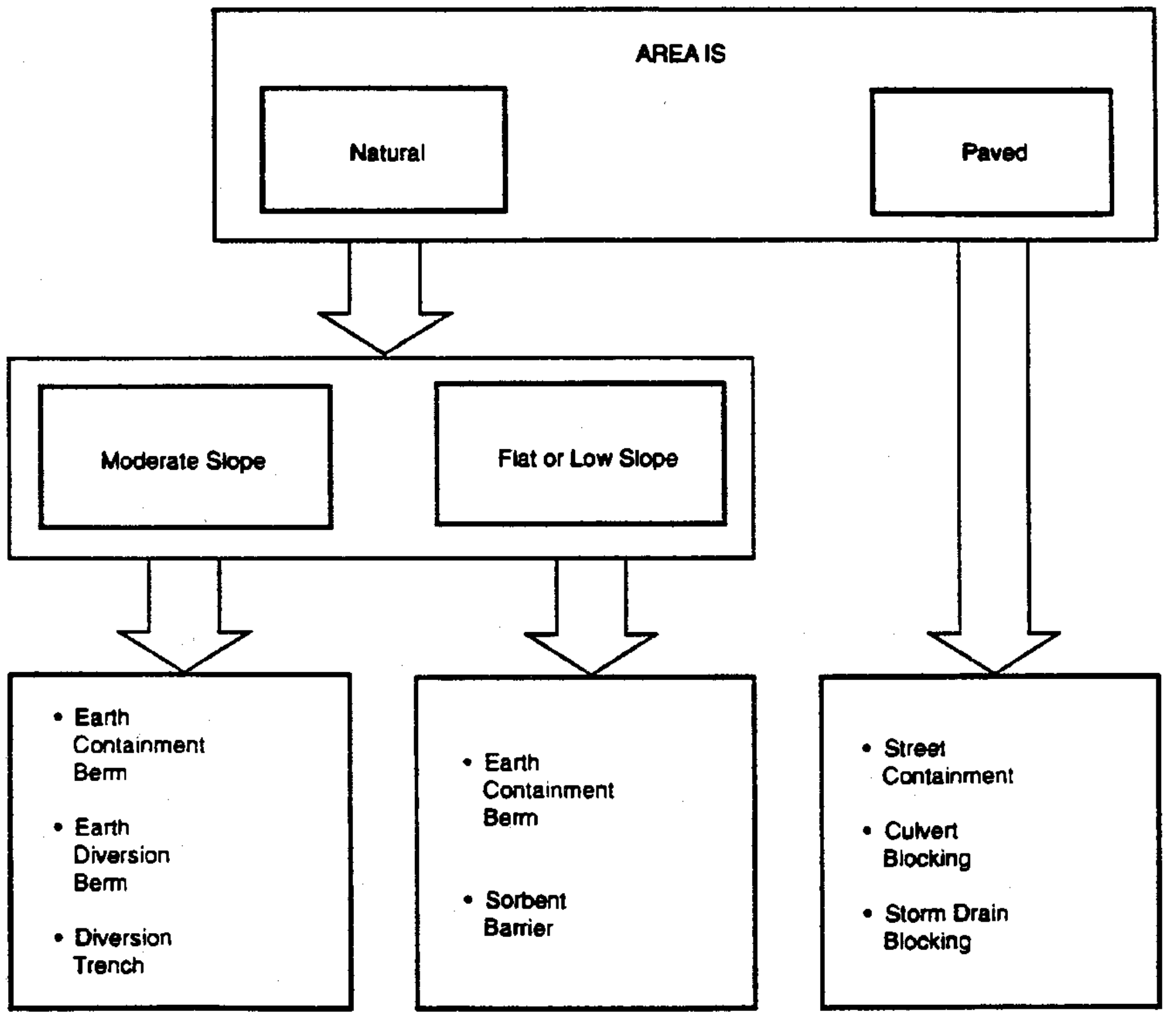


Figure E-9 Terrestrial Areas

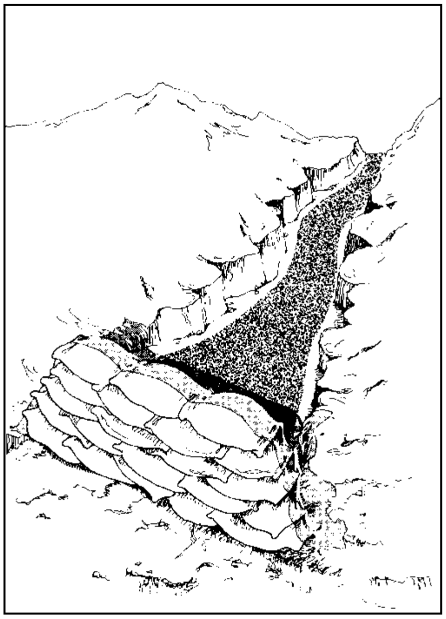


E.8 Berms, Dams And Barriers

E.8.1 Blocking Dams

- **Use**. Dams are constructed across streambeds, ditches, or other dry drainage courses to block and contain any flowing oil and to prevent oil migration during a rising tide.
- **Limitations**. Accessibility, implementation time, adequate storage behind the dam, flowing water, and the availability of construction materials.
- **General Instructions**. Dam locations should have high banks on the upstream side with the dam well-keyed into the banks.
- Construct the dam using on- or near-site earthen materials, sandbags, plywood sheets, or any material that blocks the flow of oil (*Figure E-10*). Excavate earthen materials from the upstream side to increase storage capacity if necessary. Oil is recovered from behind the dam by pumping or using vacuum trucks. Plastic sheeting should be placed over the dam to prevent oil penetration and erosion.
- **Equipment Required**. Bulldozer, front-end loader, backhoe, or hand tools; sand bags, plywood and plastic sheeting.
- **Maintenance**. Periodically check the dam for leaks, structural integrity, and excessive oil buildup.
- **Cleanup**. Recover remaining oil concentrations or sheen with sorbents. Remove or treat oiled sediments. Dismantle the dam or replace earthen materials in excavation site.
- **Variations**. Containment area behind the dam can be water flooded to limit oil penetration into sediments.

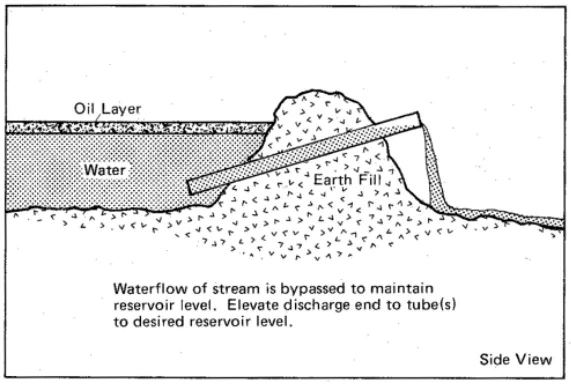
Figure E-10 Sandbag Blocking Dam



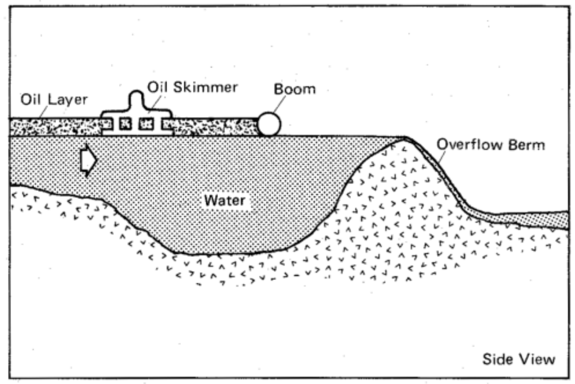
E.8.2 Flowing Water Dams

- **Use**. Dams are constructed across culverts, ditches, shallow streams, etc., to contain floating oil while not obstructing the water flow.
- **Limitations**. Accessibility, implementation time, availability of dam materials, water depth, and high current velocities.
- **General Instructions**. Dam locations should have high banks on the upstream side with the dam well-keyed into the banks. Construct dam with on- or near-site earthen materials, such as sandbags, plywood sheets, etc. If necessary, use heavy equipment or manual labor to excavate materials from the upstream side to increase dam storage capacity. Make the upstream side impermeable with plastic sheeting, if required. Underflow dams utilize inclined or valved pipes that have a flow capacity greater than the stream flow rate. Place valved pipe(s) on the streambed and build a dam on top. Adjust the valve opening(s) until a constant water/oil level is achieved behind the dam. Inclined pipes are placed in the dam at the lower end of the upstream side. The height of the raised end determines the water level behind the dam. Both techniques are illustrated in *Figure E-11a*.
  For overflow dams, water flows over the top of the dam and booms positioned be-hind the dam contain the floating oil. Construct the dam as described above and cover it with plastic sheeting to prevent erosion. Anchor the boom several feet behind the dam (*Figure E-11b*). Pumps or siphons can also be used to pass water over the dam. To be effective, the pumping rate should be greater than the stream flow rate. These techniques are depicted in *Figure E-11c and Figure E-11d*.
- **Equipment Required**. Front-end loader, bulldozer, backhoe, pipes, pumps, hoses and hand tools.
- **Maintenance**. Check dam periodically for leakage and integrity, replace eroded materials, and continually monitor water/oil level. Valved pipes, pumps, or a number of siphons may require periodic adjustment to compensate for changes in the stream flow rate.
- **Cleanup**. Remaining sheens are recovered with sorbents and dam materials are returned to borrow sites.
- **Variations**. None.

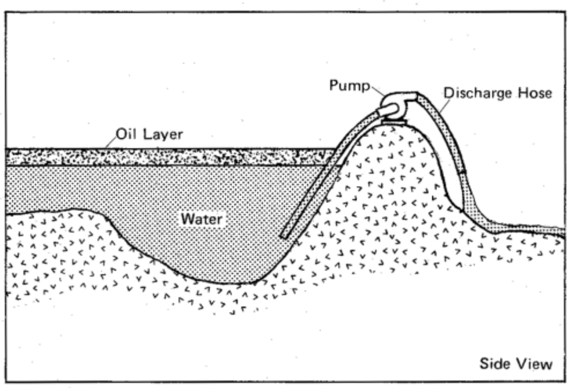
Figure E-11 Flowing Water Dams



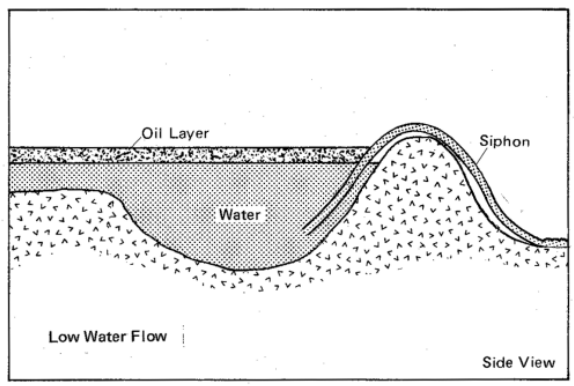
A. Underflow dam



B. Overflow berm



C. Overflow dam with pump

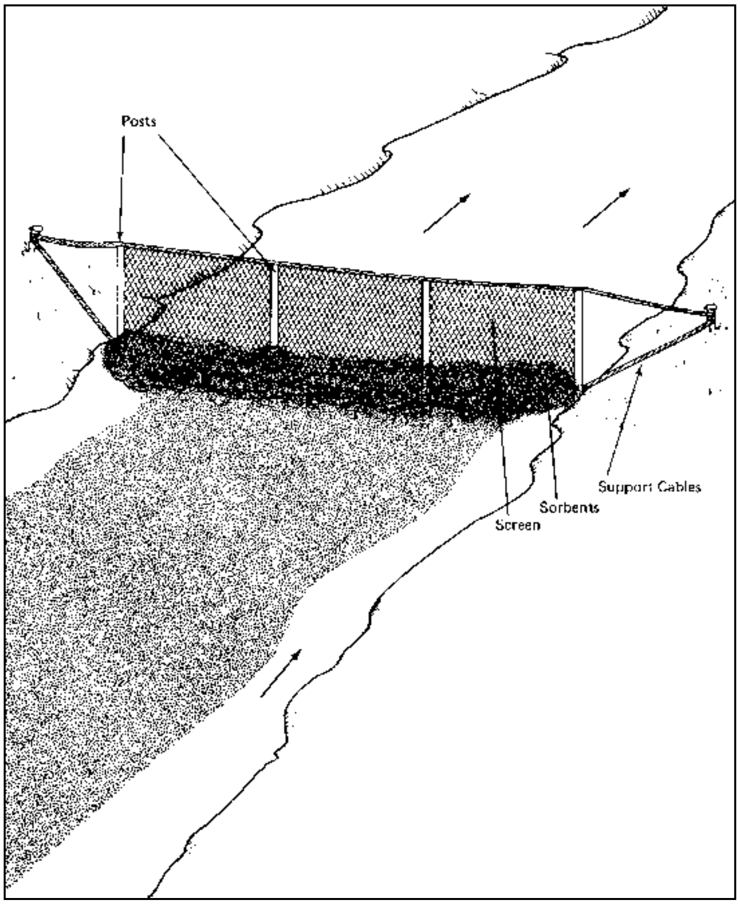


D. Overflow dam with siphon

E.8.3 Sorbent Booms/Barriers

- **Use**. Sorbent booms or barriers constructed with fencing and sorbent materials are used to contain and recover oil floating on creeks, streams, or tidal channels. They are also effective when deployed behind skimmers to pick up oil that escapes skimmers.
- **Limitations**. Implementation time, large quantities of oil, high current velocities, and excessive water depth for barriers.
- **General Instructions**. Deploy sorbent booms across the waterway with each end anchored to the shore. Position each successive boom a few feet downstream from the previous boom.
  - Construct single-sided barriers by driving a line of posts into the stream bottom with wire mesh screen fastened to the upstream side. Place oil snare squares in front of the screens and the current will hold them in place. In tidal channels with reversing currents, construct a double-sided barrier. As depicted in *Figure E-12*, erect two parallel lines of posts across the channel and attach screen along each line of posts. Place oil snare in the area between the screens to trap floating oil and oiled debris.
  - Screen height for both types of barriers must be sufficient to prevent the scattering of loose sorbent from above or beneath the barrier as tidal flow levels change. The screen mesh must be compatible with the type and size of filler sorbent and able to withstand prevailing currents.
- **Equipment Required**. Hand tools, rope.
- **Maintenance**. Turn booms or sorbents regularly for maximum absorbency and replace them when they are completely saturated with oil. Check booms and barriers periodically for leakage or damage.
- **Cleanup**. Store used sorbents in leak-proof containers.
- **Variations**. If significant quantities of oil are to be encountered, construct multiple barriers. Recover oil pooling behind the barrier by skimming, pumping, or using sorbents.

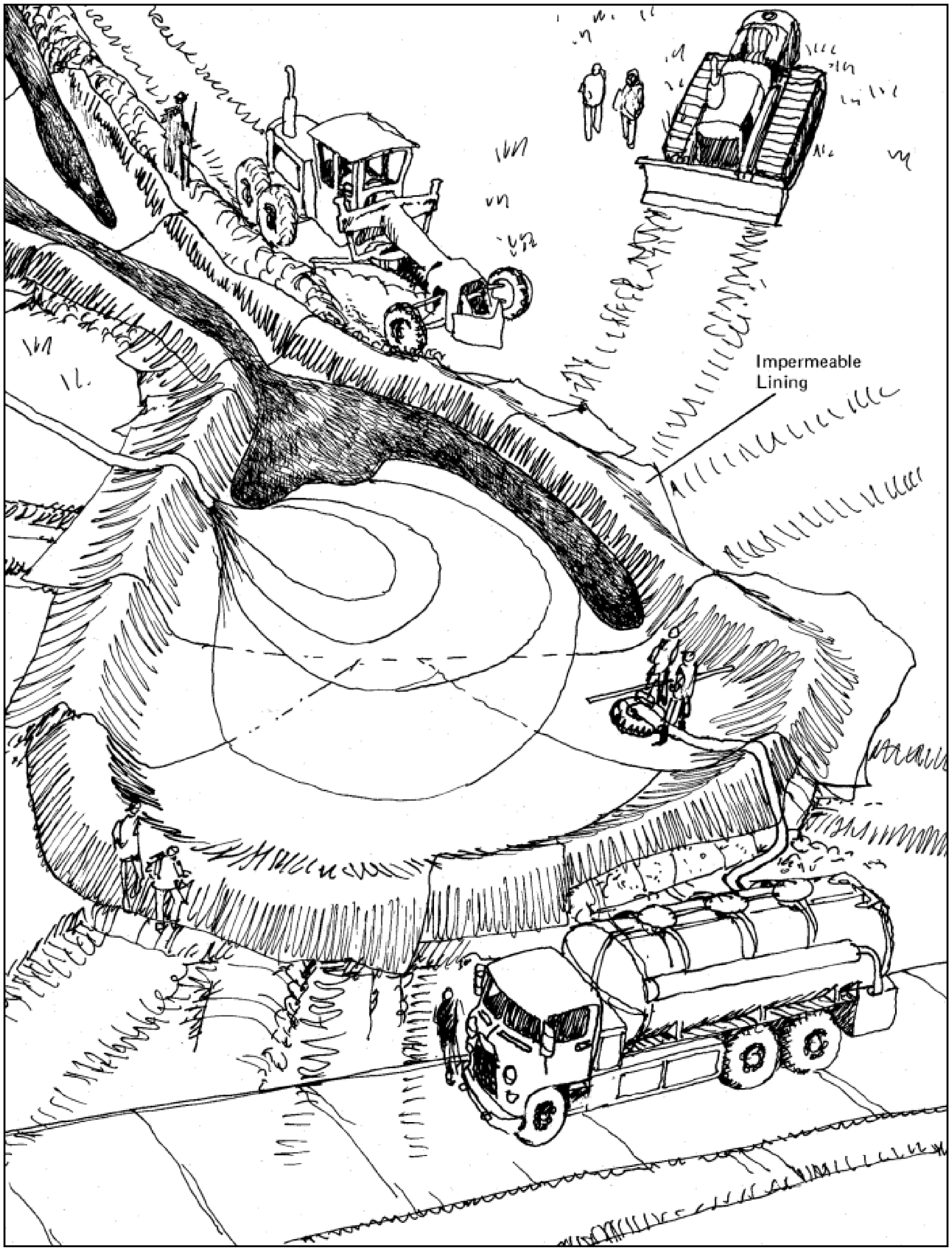
Figure E-12 Sorbent Barrier (Water)



E.8.4 Earth Containment Berms

- **Use**. Low barriers constructed with available materials (e.g., earth, gravel, sandbags, etc.) are used to contain surface oil flow on relatively flat or low-sloped terrain or wetlands.
- **Limitations**. Accessibility, implementation time, highly permeable soils and low-viscosity oils, and environmental damage inflicted by excavation of berm materials.
- **General Instructions**. Use earthmoving equipment or manual labor to construct berms by forming materials into windrows or ridges in a "horseshoe" configuration. Width of containment opening should exceed that of the leading edge of the oncoming oil. Berm height and the size of the containment area are dependent upon the physical characteristics of the oil.
- **Equipment Required**. Motor graders, bulldozers, front-end loaders, and/or hand tools.
- **Maintenance**. Check berms periodically for leakage and adequate height.
- **Cleanup**. Use sorbents to recover residual oil pools. Remove or treat oiled sediments. Backfill excavated area upon completion of cleanup operations.
- **Variations**. In areas with a high ground-water table or high soil permeability, the containment area may be flooded and/or lined with plastic sheeting to inhibit soil penetration. Oil can be recovered from the water surface by skimming. This technique is shown in *Figure E-13* and may be useful in controlling oil movement through secondary wetland drainages or wetland fringes. Earth containment berms can minimize surface disruption and restore normal circulation when cleanup has been completed.

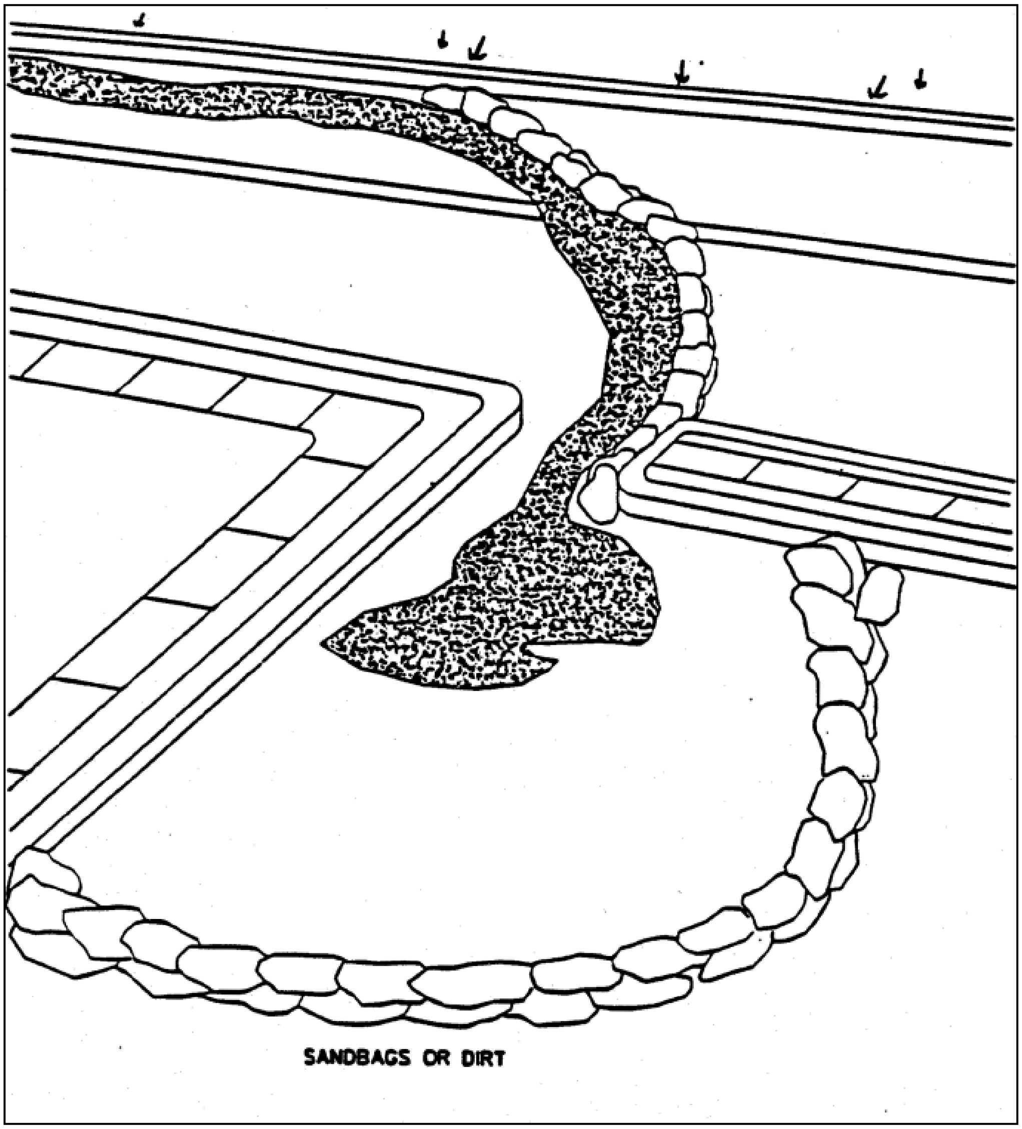
Figure E-13 Earth Containment Berm (Lined)



E.8.5 Street/Pavement Containment

- **Use**. Barriers constructed across streets or paved areas can be used to contain oil flowing onto urban streets or highways.
- **Limitations**. Storage behind barriers, implementation time, and the availability of recovery equipment.
- **General Instructions**. Construct barriers with sandbags, soil, or gravel. If coarse materials are used, the upslope side should be made impermeable with plastic sheeting or similar material. Barrier height should equal curb height. If no curb is present, construct the barrier in a "horseshoe" shape. Should a greater storage area be needed, a diversion barrier can be constructed at an angle across the street to direct oil into a parking lot or open field where a larger containment barrier has been constructed (*Figure E-14*).
  In constructing containment barriers, care must be exercised to minimize potential fire hazards. To avoid causing sparks, the blades of earthmoving equipment should not scrape the pavement, if present. The exhaust and ignition systems of on-scene motorized equipment should be shielded. (Spark arresters and elevated exhaust will be required on all equipment; use diesel-powered equipment when available.)
- **Equipment Required**. Front-end loader, hand tools and/or sandbags.
- **Maintenance**. Periodically check barrier for leakage and adequate height.
- **Cleanup**. Oiled areas should be flushed with water. Direct the spray towards the containment site where the oil can be skimmed or pumped out. Oiled barrier materials must be removed for disposal. Remaining oil can be removed with sorbents.
- **Variations**. The area behind the barrier may be flooded with water in order to float the oncoming oil. This makes recovery easier and prevents further surface oiling.

Figure E-14 Dam on a Large Paved Area



E.8.6 Culvert Blocking

- **Use**. Boards, sandbags, inflatable plugs, or earthen materials are used to block culverts as a means of containing oil flowing into ditches, creeks, or other drainage courses that feed into culverts. Culvert blocking may also be used to prevent oil from entering tidal channels that are connected to the ocean through culverts.
- **Limitations**. Accessibility, implementation time, storage area behind culvert, flowing water, and culvert size.
- **General Instructions.** Block the culverts by piling dirt, sand, or similar material over the upstream end of the culvert, thereby creating a containment dam. Sandbags or plywood sheets are also effective (*Figure E-15*). Inflatable plugs work best if available at the site.
- **Equipment Required.** Front-end loader and/or hand tools.
- **Maintenance**. Periodically check culvert for leakage.
- **Cleanup**. Remove or treat oiled sediments using techniques described in this Appendix and remove the block from the culvert.
- **Variations**. If water is flowing into a drainage ditch, it can be removed by pumping or siphoning to the culvert outlet or a near-by drainage course.
- If there is little or no storage area upslope from a culvert, it may be advantageous to permit the oil to pass through the culvert and to contain the spill at the culvert out-fall. In areas where a culvert outfall discharges into a borrow ditch, the borrow ditch can be dammed to form a storage area for the spilled oil. If there is no borrow ditch or similar structure draining the culvert outfall, a storage area can be created by constructing a horseshoe-shaped dam around the outfall (*Figure E-16*).

Figure E-15 Culvert Blocking

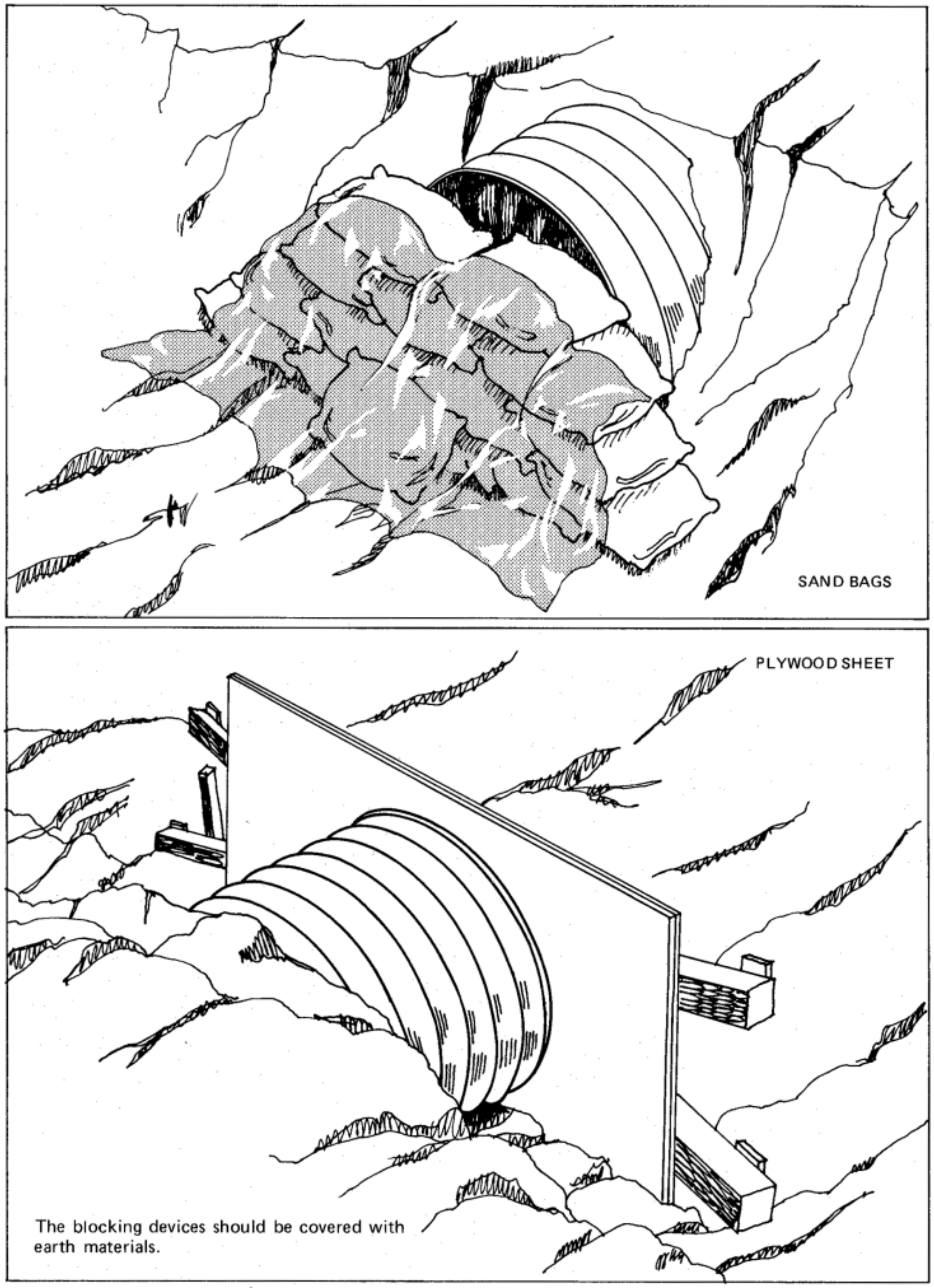
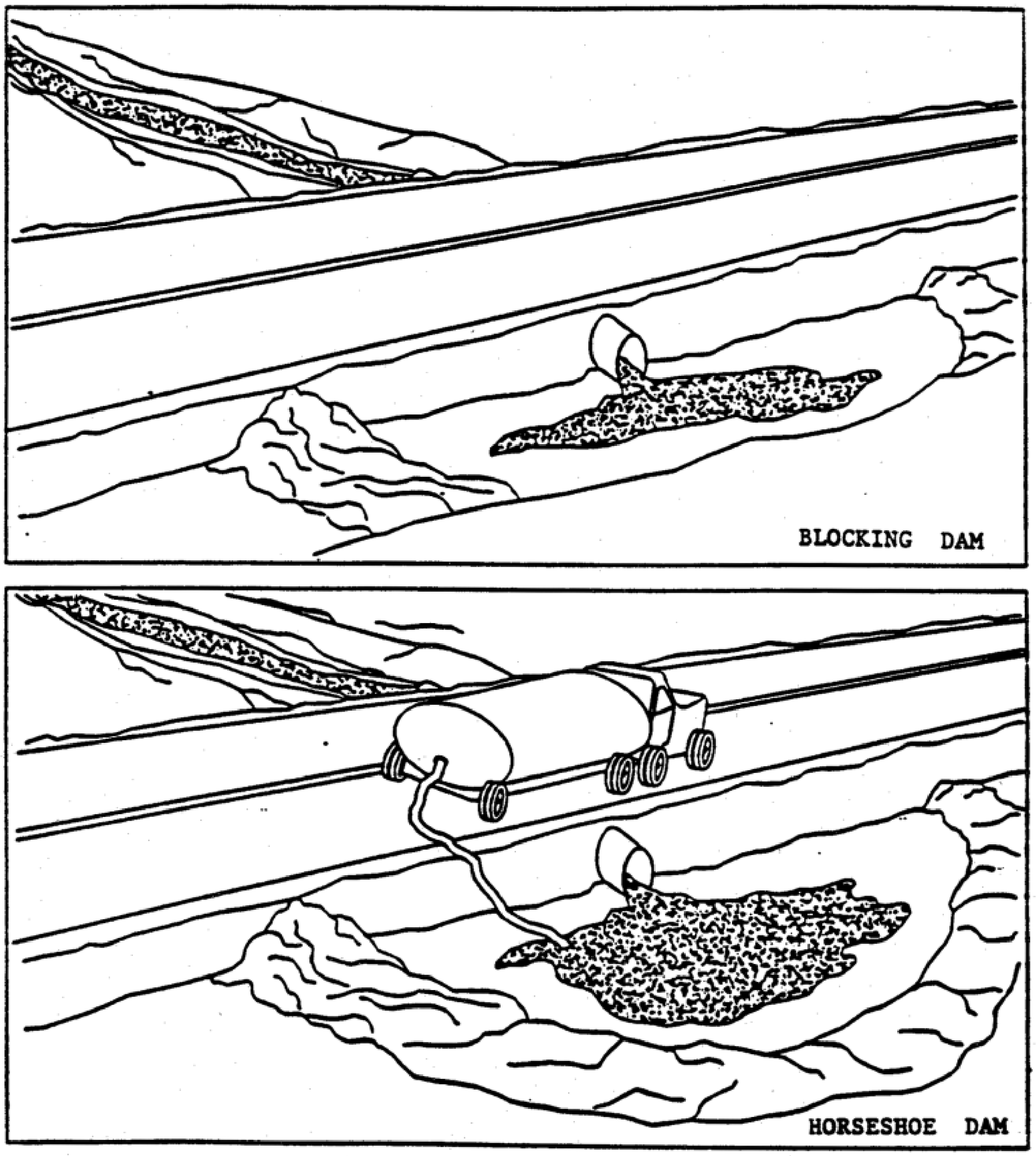


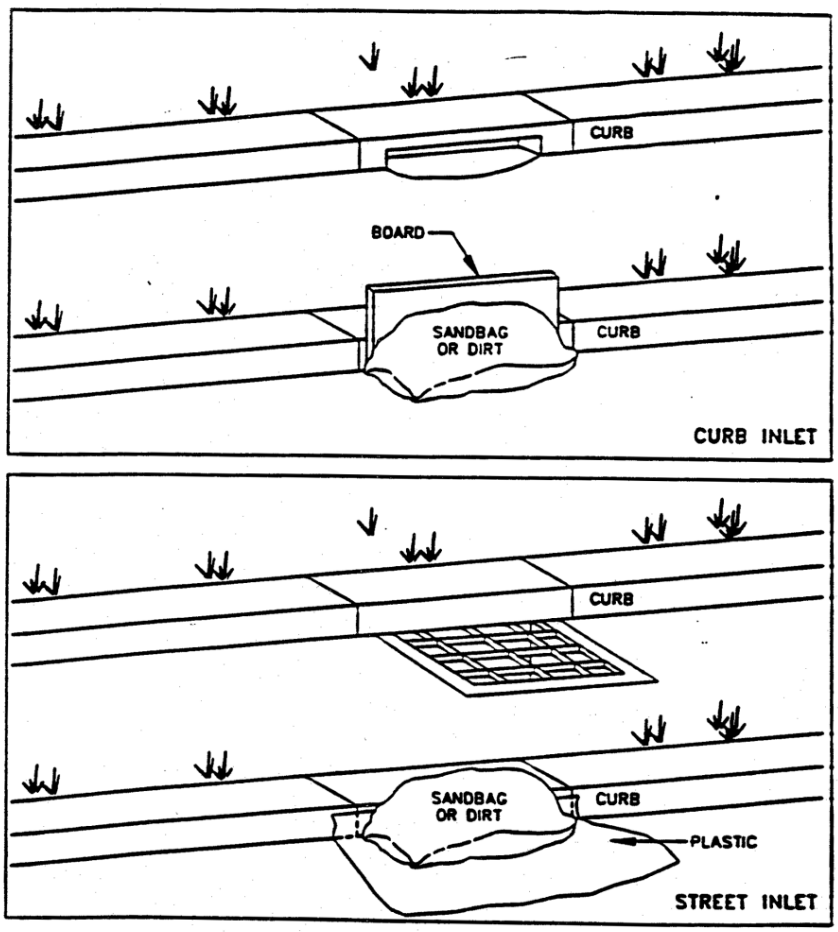
Figure E-16 Damming Flow at Borrow Ditch



E.8.7 Storm Drain Blocking

- **Use**. Sandbags, boards, and specially constructed mats are used to prevent oil spilled on roadways from entering urban storm drains.
- **Limitations**. Implementation time.
- **General Instructions**. For curb inlets, position a board over the curb inlet and hold it in place with a sandbag. Street inlets can be blocked similarly with a board or plastic sheeting. Both inlet-blocking techniques are illustrated in *Figure E-17*. Specially constructed mats can be used expeditiously if they are kept on hand.
- **Equipment Required**. Sandbags, plywood, plastic sheeting.
- **Maintenance**. Periodically check for leak-age.
- **Cleanup**. Water-flush streets to remove remaining oil. Remove blocking materials from storm drains.
- **Variations**. Other materials may be used to block inlets.

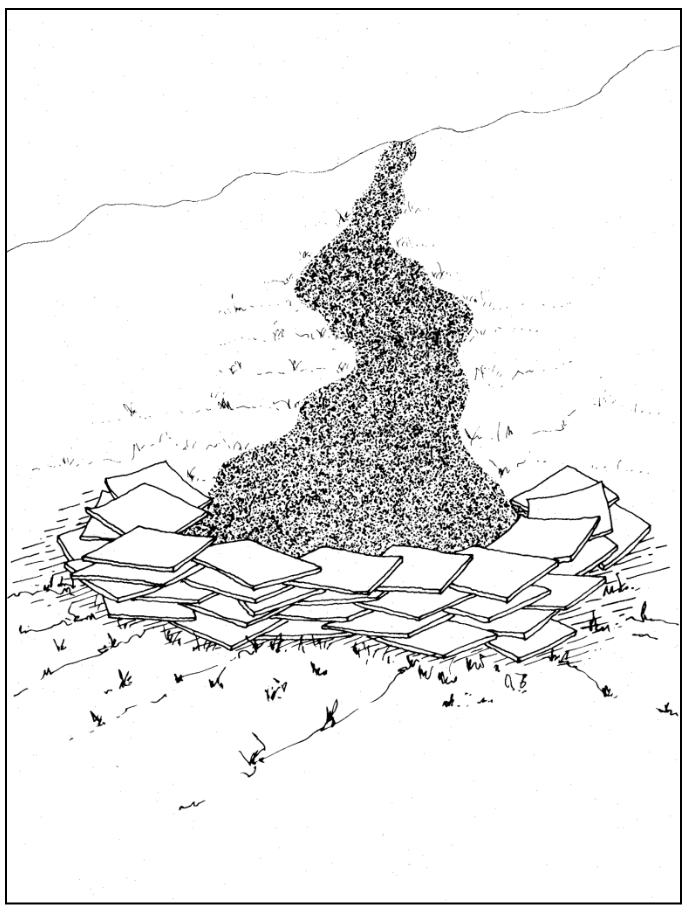
Figure E-17 Storm Drain Blocking Techniques



E.8.8 Sorbent Barrier

- **Use**. Low barriers constructed of sorbents stacked on the ground are used on relatively flat or low-slope terrain to contain minor oil flows and recover a portion of the oil. Sorbents used in this manner also tend to immobilize oil and can be used to limit penetration into permeable soils.
- **Limitations**. Implementation time, steep slopes, and cleanup/disposal problems.
- **General Instructions**. Stack or pile sorbents to form a continuous barrier across the entire leading edge of the advancing oil mass with the ends curved toward the on-coming flow. A sorbent barrier is shown in *Figure E-18* Collected oil is recovered by physical removal of spent sorbents or by vacuuming or pumping if quantity exceeds absorption capabilities of the sorbents.
- **Equipment Required**. No special equipment. Roll and granular sorbents generally work best.
- **Maintenance**. Turn sorbents periodically to maximize recovery and replace saturated sorbents. Add additional material as necessary.
- **Cleanup**. Place oiled sorbents in leak-proof containers (drums or plastic bags) for disposal. Do not store recovered material onsite. Minimize manpower and surface disruption during cleanup.
- **Variations**. Entire spill surface may be covered to immobilize oil.

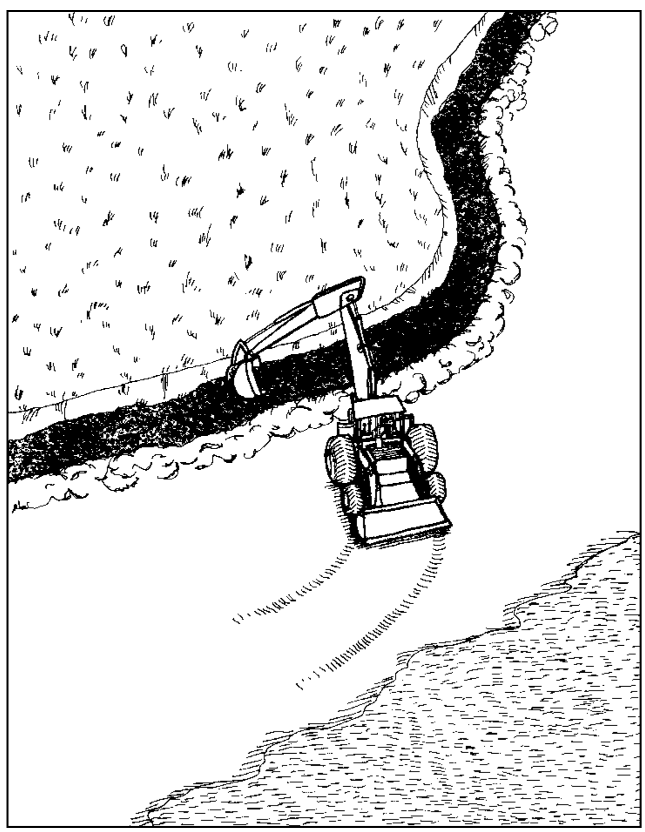
Figure E-18 Sorbent Barrier (Land)



E.8.9 Diversion Trench

- **Use**. Excavated trenches are used to intercept surface oil flows on most terrain types and divert them to recovery points or around sensitive areas.
- **Limitations**. Accessibility, implementation time, low-viscosity oils on highly permeable soils, high water table, and environmental damage inflicted by trench excavation.
- **General Instructions**. Excavate trench in the desired direction of oil flow. Angle trench slightly downhill to avoid excessive flow backup. Trench must completely intercept the oncoming oil and divert it to the recovery point or well past the sensitive area as shown in *Figure E-19*. Trench width and depth is volume dependent. Pile excavated materials on downhill side of trench. For relatively flat areas, such as wetlands, trench depth should increase slightly towards recovery or discharge point to maintain adequate flow in that direction.
- **Equipment Required**. Backhoe, trenching machine, or hand tools.
- **Maintenance**. Periodically check for adequate flow, blockages caused by trench walls sloughing in, and debris.
- **Cleanup**. Flush trench with water (if applicable), recover remaining oil pools with sorbents, remove or treat soil, and backfill trench.
- **Variations**. Partially flood trench with water to inhibit sediment penetration and stimulate flow. Trench can be dug perpendicular to the slope to contain, rather than divert, the oil flow. In tidal wetlands, dig trenches across the mid-intertidal area to intercept incoming oil and/or collect oil draining from back areas. Oil is then diverted to recovery point by increasing the trench depth. Stranded oil can also be drained from back areas by a series of increasing depth trenches.

Figure E-19 Diversion Trench



E.8.10 Earth Diversion Berm

- **Use.** Low barriers are constructed of available materials (earth, gravel, sandbags, etc.) to divert oil flows to a recovery point or around a sensitive area. Used primarily on low- to moderate-slope terrains.
- **Limitations.** Accessibility, implementation time, rugged terrain, and environmental damage inflicted by berm material excavation.
- **General Instructions.** Use earthmoving equipment or manual labor to construct berm(s) by forming materials or placing sandbags in windrows or ridges along the desired path of oil flow. If onsite materials are used, excavate from the downhill side of the berm. Figure E-20 depicts a diversion berm.
- **Equipment Required.** Bulldozer, front-end loader, motor grader, or hand tools.
- **Maintenance.** Periodically check for berm erosion, leakage, and adequate height.
- **Cleanup.** Remove or treat oiled sediments. Recover pooled oil by pumping, vacuuming, or with sorbents. Backfill excavated areas after completion of cleanup operations.
- **Variations.** In areas with little gradient, diversion berms can be constructed on each side of oil flow to limit spread and channel oil to a recovery site (e.g., excavated sump or natural depression). Berms constructed along roadways can prevent oil from crossing road and/or divert oil to a recovery site, as shown in *Figure E-21*.

Figure E-20 Earth Diversion Berm

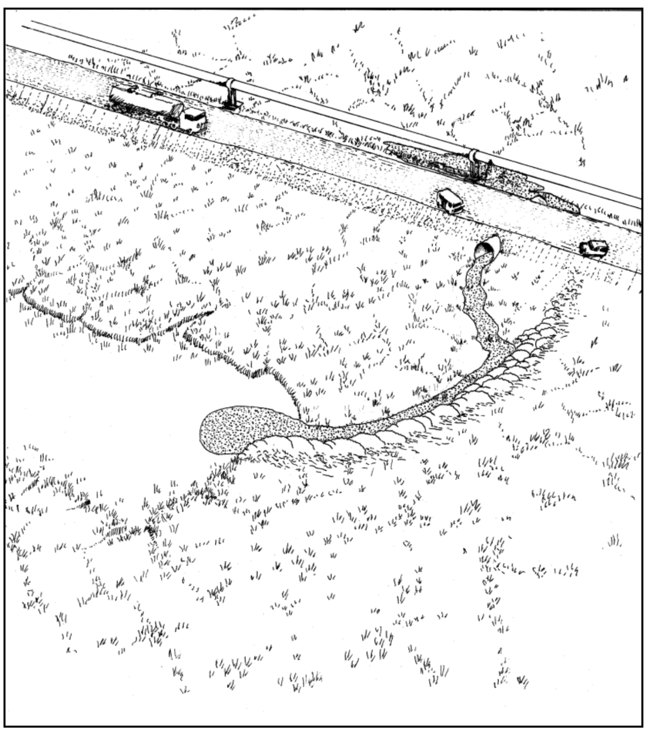
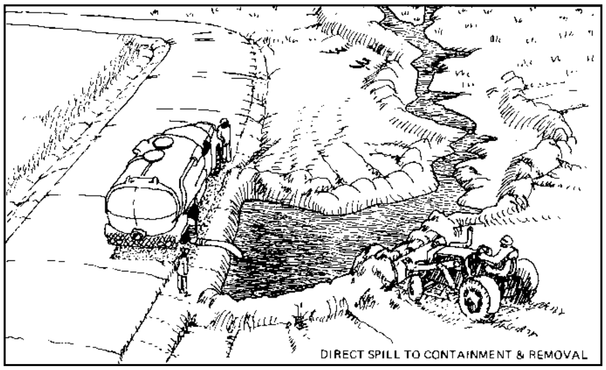
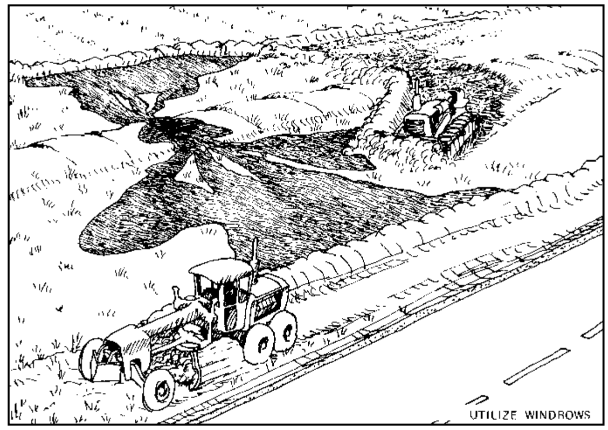


Figure E-21 Alternate Earth Diversion Berm



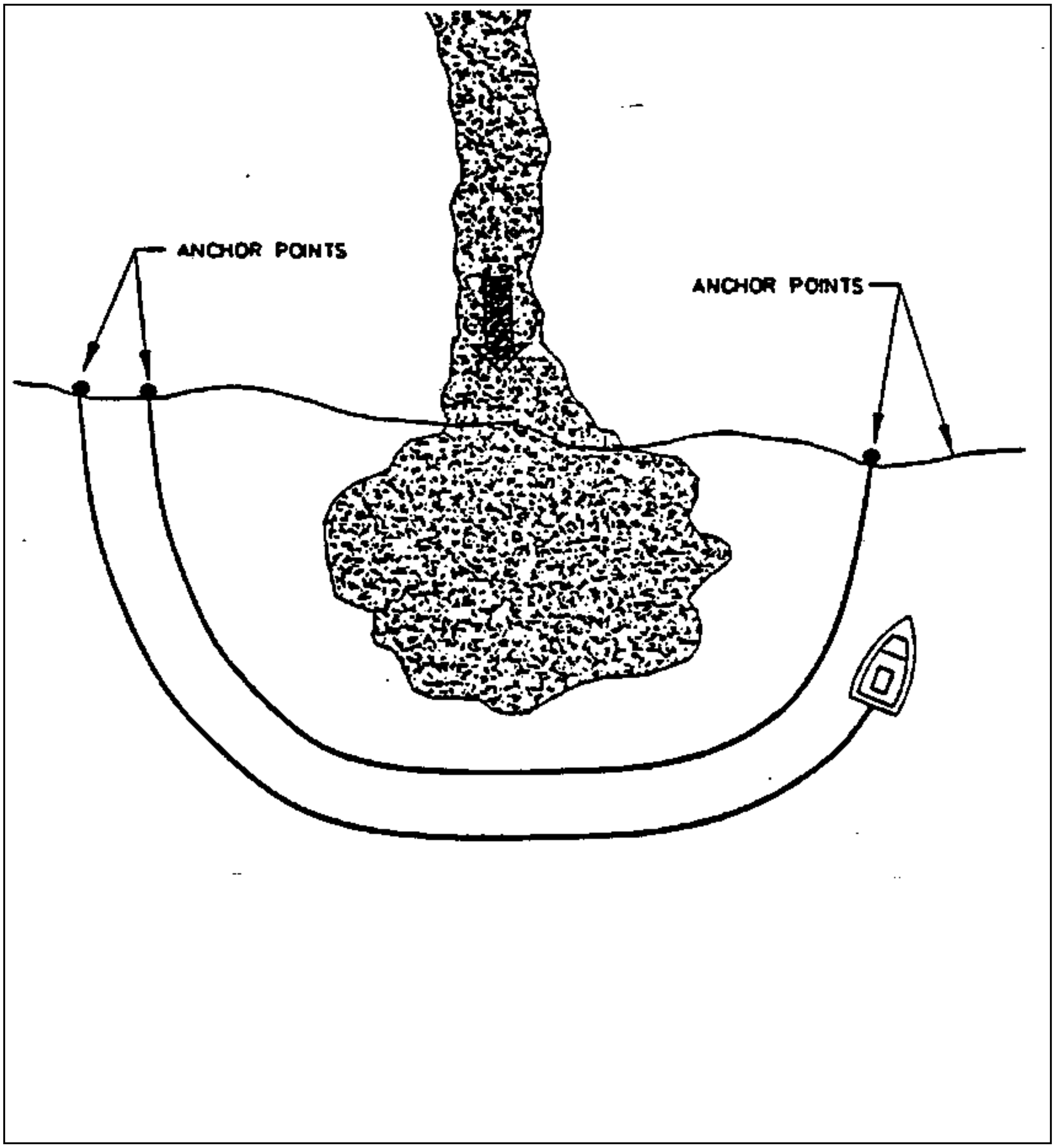


E.9 Protective Booming

E.9.1 Calm Water Containment

- **Use**. Booms are deployed to encircle and contain oil in calm waters where wind, wave, and current effects are minimal.
- **Limitations**. Accessibility and implementation time.
- **General Instructions**. Contain oil flowing into a body of water at its entry point. Anchor one end of the boom to the shoreline. Using a boat, pull the other end out around the leading edge of the slick and back to the shore on the other side of the slick, as illustrated in *Figure E-22*.
- Small slicks or patches of oil can be contained by completely encircling them with the boom. Anchor one boom end near the edge of the slick. Pull the other end around the perimeter of the floating oil and attach it to the anchored end.
- **Equipment Required**. Boat(s) with adequate power to tow the boom, anchors, and hand tools.
- **Maintenance**. Check booms periodically for leakage or broken, twisted, or submerged sections.
- **Cleanup**. Oil contained within the boom is recovered by skimming. Remaining sheens are removed with sorbents.
- **Variations**. None.

Figure E-22 Calm Water Containment at Point of Entry



E.9.1 Flowing Water Containment Booms

- **Use**. Booms are deployed at an angle across a waterway to contain oil floating downstream for subsequent recovery.
- **Limitations**. Accessibility, implementation time, current in excess of 1 knot, and water depths less than 1 foot below the boom skirt.
- **General Instructions**. Use the currents to assist in the streaming and placement of the boom. For example, anchor one boom end to the shoreline. Use a boat or winch to pull the free end across the river and anchor it slightly upstream (*Figure E-23*). The optimum deployment angle depends on current velocity, boom length, and boom stability. In general, boom length should be four times the width of the waterway. As current velocity and boom length increase, the deployment angle relative to the shoreline decreases. To improve boom stability, anchor it in several places.
    - Remove oil from the downstream end of the boom by skimming, pumping, or using vacuum trucks. A containment pit dug into the shoreline can expedite the containment and recovery process (*Figure E-24*).
- **Equipment Required**. Boat or winch, anchors, backhoe (to dig containment pit), and hand tools.
- **Maintenance**. Periodically check the boom for leakage and adjust its placement angle, if necessary. Also, check the boom for twisted, damaged, or submerged sections. Check anchors for security.
- **Cleanup**. Remaining sheens are recovered with sorbents. Booms are removed.
- **Variations**. For fast moving streams, deploy two or more booms from each bank with one positioned slightly downstream from the other. Anchor the free ends so that they overlap slightly past the midstream point. If not enough boom is available, deploy a single boom from the side of the stream with the heaviest concentration of oil or from the outside shore of a bend in the stream where oil concentrates naturally.

Figure E-23 Flowing Water Containment Boom

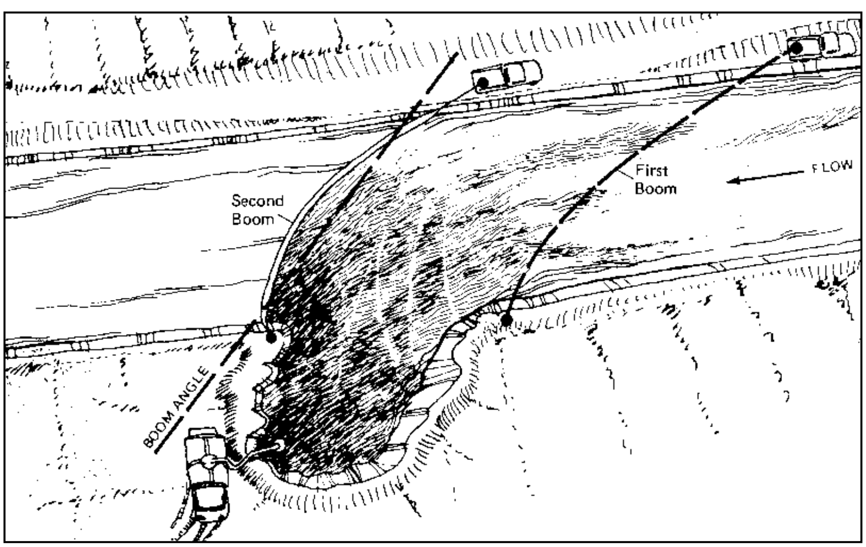
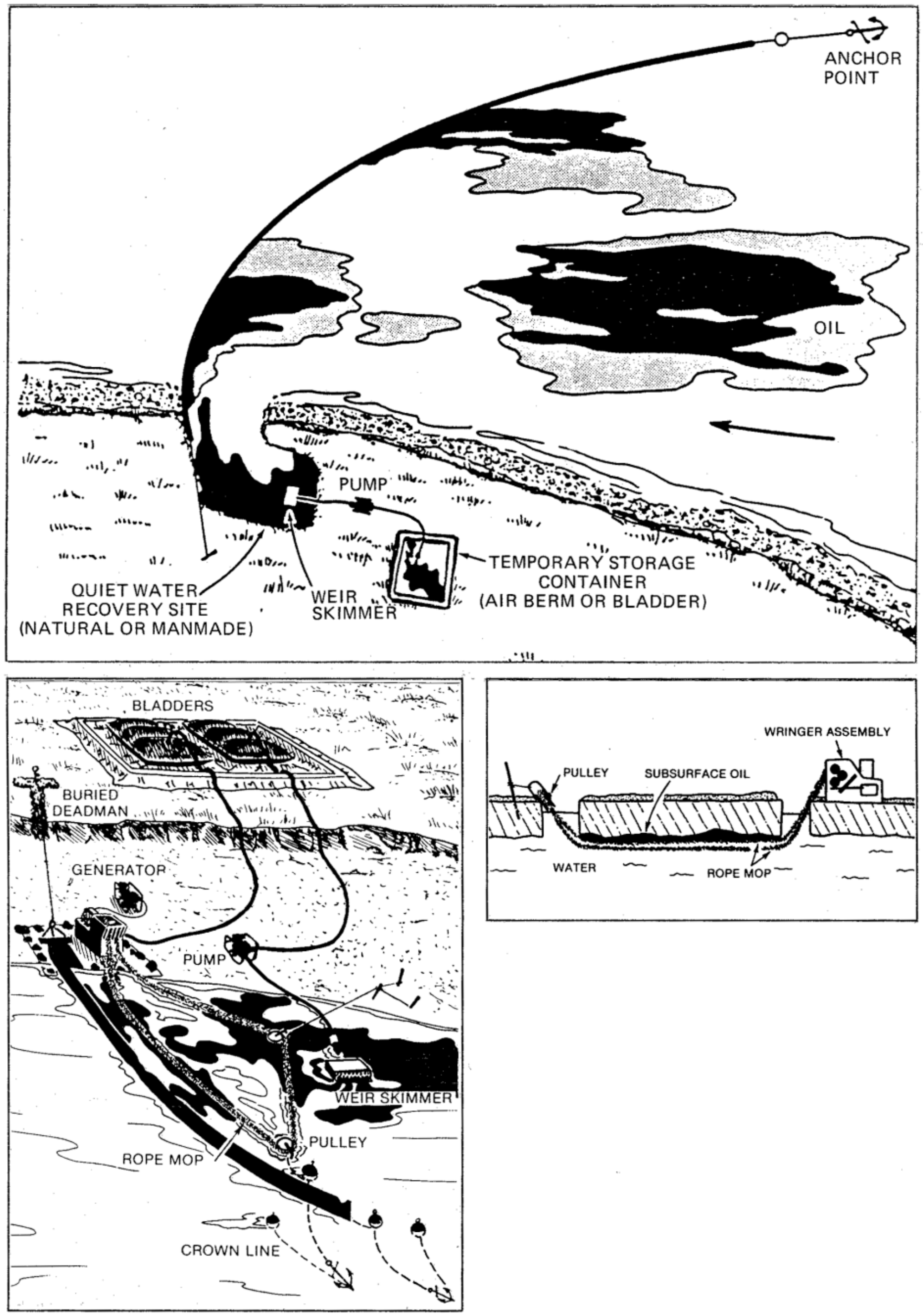


Figure E-24 Use of Skimmers along a Shoreline



E.9.2 Open Water (Lake) Containment Booms

- **Use**. Booms deployed in front of open-water slicks or streamers are used to contain floating oil. Allow winds and currents to concentrate the oil at the boom's closed end for recovery.
- **Limitations**. Excessive spill size, implementation time, large waves, adverse weather, and availability of recovery equipment.
- **General Instructions**. Position the deployment boat along one side of the slick's leading edge. Deploy the boom using an assist boat or attach a drogue to one end. Tow the free end around the slick's leading edge and hold it in place with the assist boat or drogue, as shown in *Figure E-25a*. Wind and currents will concentrate the oil in the boom's apex where a boat can be positioned to begin skimming operations. Under strong wind and sea conditions, it may be advantageous to deploy upwind and chase the slick downwind in order to reduce the relative forces between the boom and the seas.
- **Equipment Required**. Deployment boat(s), drogues, open-water boom, and portable or self-propelled skimmer.
- **Maintenance**. Continually reposition the skimmer to the area of heaviest oil concentration. Check the boom periodically for leakage and broken, twisted, or submerged sections. The boom may require repositioning or redeployment if the current or wind direction changes appreciably.
- **Cleanup**. After skimming, remove oil sheens using sorbents.
- **Variations**. Boom may be deployed to completely or partially encircle the slick as shown in *Figure E-25b*. Two boats or two sea anchors can be used to deploy the boom in a catenary configuration as shown in *Figure E-25c*. Tow the boom ends up either side of a slick until all the oil is contained within the boom. Two additional boom configurations are depicted in *Figures E-26 and E-27*.

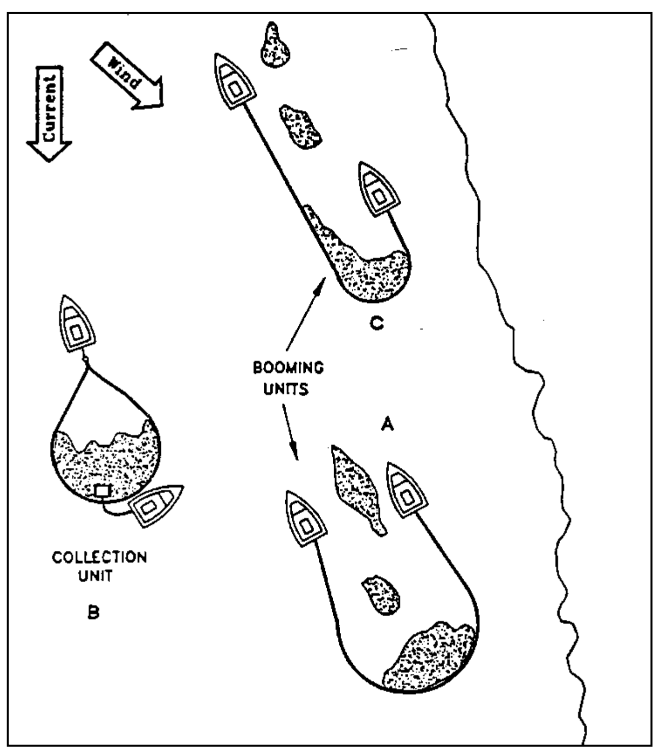


Figure E-25 Open Water Containment

a) Catenary Configuration;

b) Encirclement Configuration;

c) "J" Configuration

Figure E-26 Open Water Containment: Boom in Encirclement Configuration

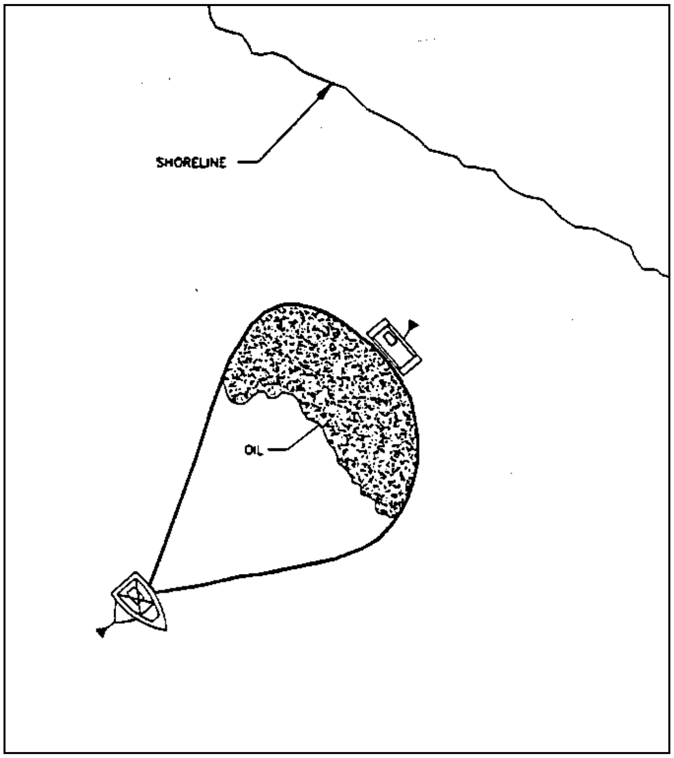
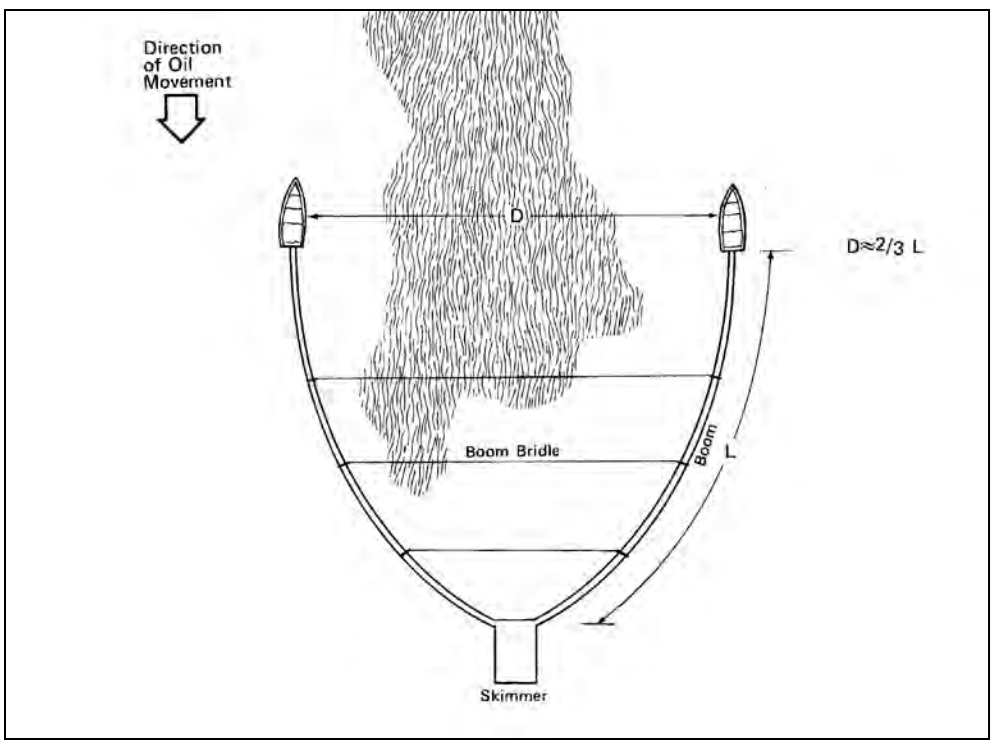


Figure E-27 Open Water Containment: Double Boom Configuration



E.9.3 Diversion Booming

- **Use**. Booms are positioned along low-energy shorelines to divert oil away from sensitive shoreline areas to less sensitive onshore or offshore areas for subsequent recovery. Proven to be an effective booming technique in currents greater than 1 knot.
- **Limitations**. Accessibility, implementation time, availability of deployment equipment, and heavy wave conditions.
- **General Instructions**. Anchor one end of the boom to the shoreline and, using a vessel, position the boom's free end at an angle to the current. If oil is being diverted to the shore, angle the boom's free end towards the oncoming oil, as shown in *Figure E-28*. Oil diverted towards the shore can be recovered by skimming or pumping. If oil is being diverted away from the shore, angle the free end away from the approaching oil. If the spill is large or continuing, the free end of the boom should also be anchored in place.
- As depicted in *Figure E-29*, two booms can be deployed to divert an approaching slick from a shoreline and into a floating skimmer. Secure one end of each boom to opposite sides of the skimmer and tow one free end along or parallel to the threatened shore. By towing the other free end toward open waters, the booms form a "vee" configuration to trap the encroaching oil while the skimmer recovers the contained oil before it reaches the shore.
- The optimum angle of boom deployment is dependent upon the type and length of boom used, the current velocity, and the shape and position of the approaching slick. Generally, the free end of the boom must be angled toward the shoreline as current velocity increases. To avoid boom failure in strong currents, the deployment angle must be smaller than in weak currents. The same relation is true with regard to boom length. The optimum deployment angle decreases as boom length increases unless the boom is anchored at several places along its length. Refer to *Figure E-30* for optimum boom deployment angles as a function of current velocity.
- **Equipment Required**. Boom deployment boat(s), anchor(s), and hand tools.
- **Maintenance**. Check the boom periodically for leakage and broken, twisted, or submerged sections. The deployment angle may require periodic adjustment in the event of significant wind or current changes, oil entrainment beneath the boom, or excessive oil buildup behind the boom. The shoreline anchor point may require occasional repositioning due to water level fluctuations.
- **Cleanup**. Recover residual oil sheens using sorbents. See this Appendix for specific shoreline cleanup techniques.
- **Variations**. For very low-energy shorelines, a secondary boom can be anchored parallel to the shore just beyond the surf line with the down current end connected to the diversion boom. As the oil is diverted towards the shore, the secondary boom prevents contamination of the shoreline.

Figure E-28 Diversion Booming Techniques for Protection of Sensitive Areas

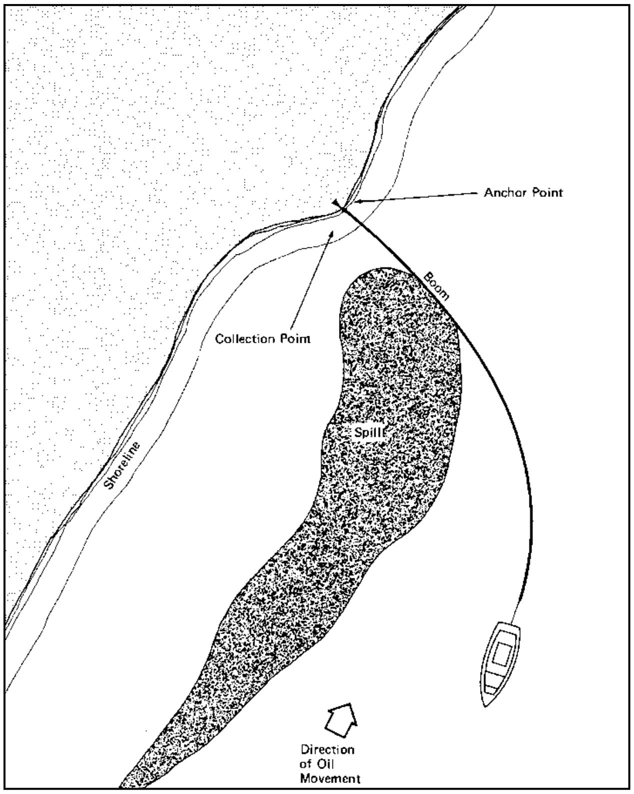


Figure E-29 Shoreline Containment: Diversion Booming to Skimmer

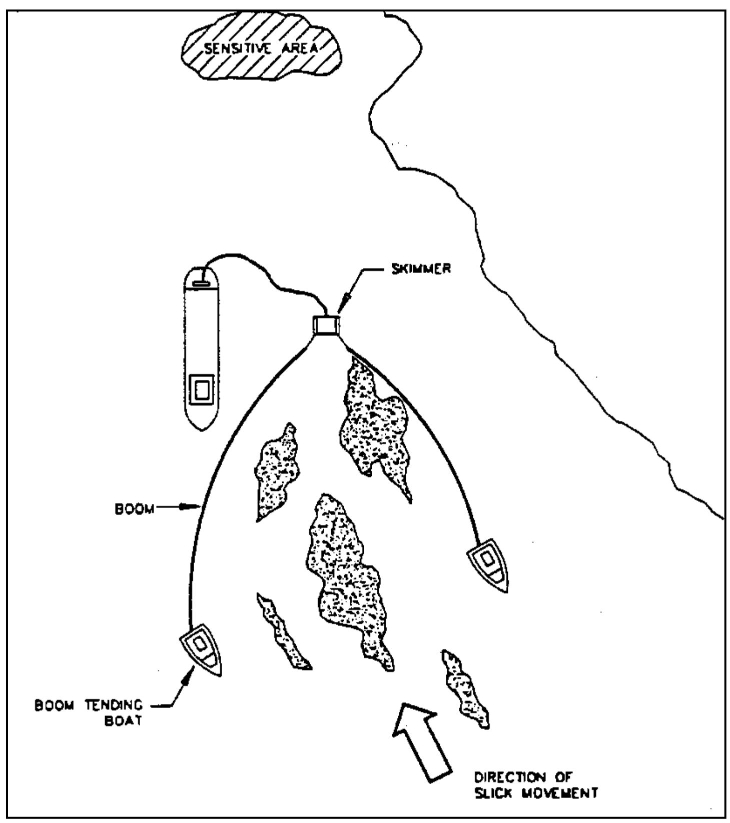
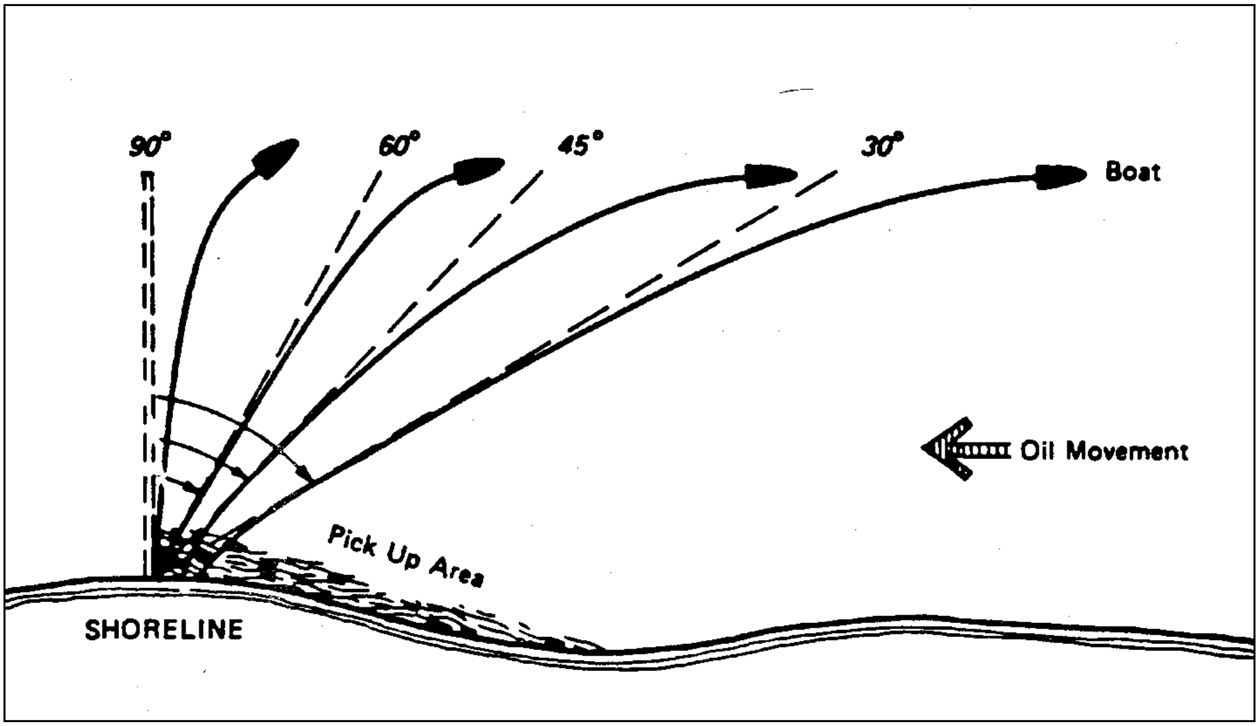


Figure E-30 Shoreline Containment: Boom Deployment Angles



(kts.)	(fps.)	(angle)
1.5	2.5	70
1.6	2.7	60
1.7	2.8	55
1.8	3.0	50
2.0	3.4	45
2.2	3.7	40
2.5	4.2	35
2.8	4.8	30

Difficulty in deployment will increase and effectiveness will decrease as a function of water velocity.

E.9.4 Exclusion Booming

- **Use**. Booms are used to exclude oil from sensitive shorelines by deploying them along the area's periphery.
- **Limitations**. Accessibility, implementation time, adequate water depth for effective boom placement, wave action, and current velocities.
- **General Instructions**. Place booms across the area to be protected and anchor both ends to the shore. For inlets or harbor entrances, booms should be placed inside the openings where current velocities and wave action are lowest. To allow vessel passage through harbor waters, one boom end may be attached to a small, manned boat. Booms may also be deployed in a cascading configuration, as described in this Appendix which provides vessel passage and the exclusion of oil. To maintain boom integrity, anchors should be placed at 100-foot intervals if substantial boom lengths are required. Wind and wave conditions may necessitate more frequent intervals or heavier anchors. Several exclusion techniques are shown in *Figures E-31 through E-33.*
- **Equipment Required**. Anchors, boom deployment equipment (boats, tow lines, etc.), and hand tools.
- **Maintenance**. Check boom periodically for integrity, leakage, or twisted, broken or submerged sections. In tidal waters or areas with fluctuating water levels, reposition the boom and/or its anchor points as water levels change.
- **Cleanup**. Recover contained oil by skimming or pumping. Adjacent shorelines can be cleaned using techniques described in this Appendix.
- **Variations**. Double or triple booming may be employed in areas with high currents. Position a primary boom in the area of strongest currents and deploy secondary or tertiary booms several hundred yards behind the first as a backup safety measure.

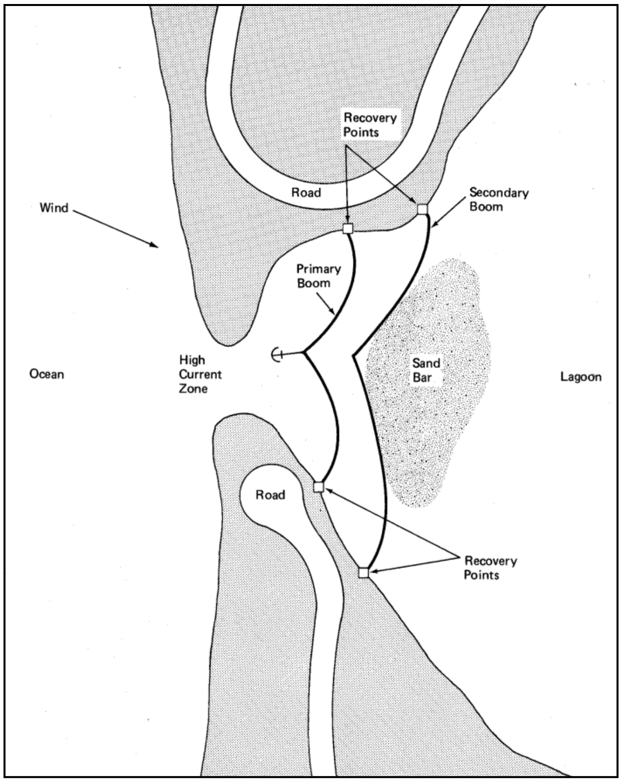


Figure E-31 Shoreline Containment: Exclusion Booming

Figure E-32 Shoreline Containment: Exclusion Booming at Inlet with High Channel Currents

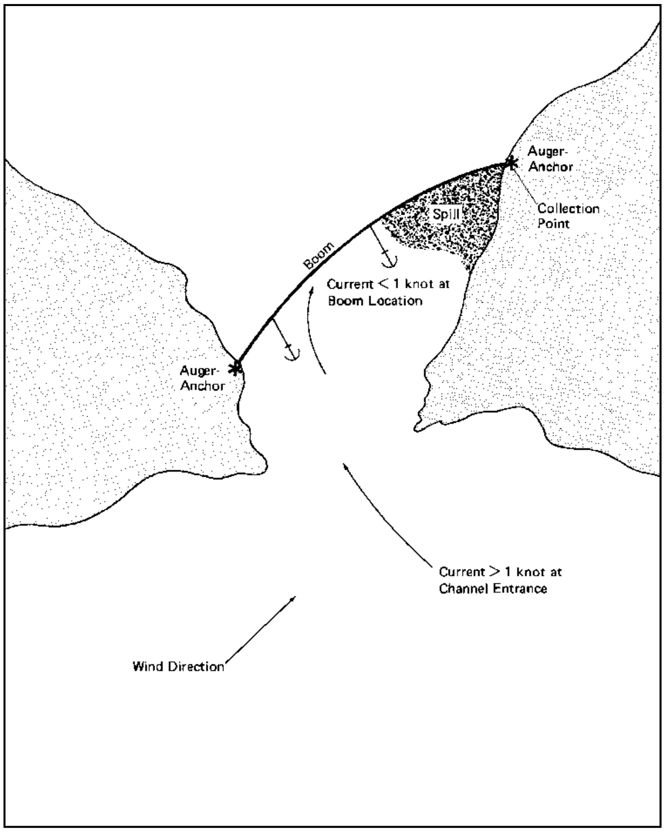
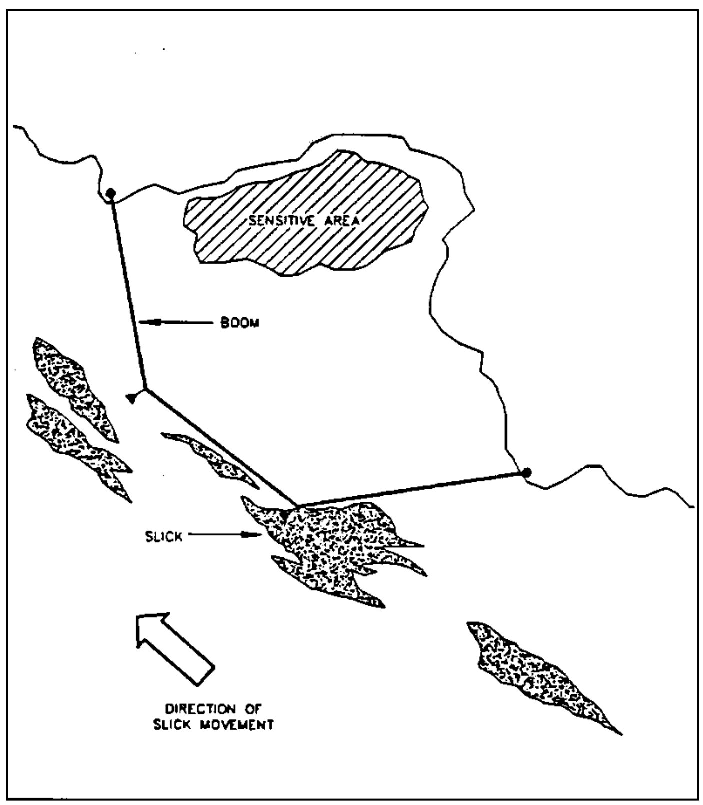


Figure E-33 Shoreline Containment: Exclusion Booming



E.9.5 Cascading Booms

- **Use**. A series of booms deployed in a cascading formation are used on rivers or coastal areas where currents are too strong for standard containment booming. Cascading booms direct oil to the shore for recovery.
- **Limitations**. Accessibility, implementation time, currents over 2.5 knots, and soft stream bottoms.
- **General Instructions**. Tow the lead boom to the opposite shore or to some point mid-stream and anchor it at an angle to the current. Deploy a second boom angled toward the shoreline and anchor the free end 25 to 30 feet downstream from the first so that it overlaps the trailing end of the lead boom. Deploy successive booms in the same manner until the shoreline is reached (*Figures E-34 and E-35*). Diverted oil is recovered by skimming, pumping, or using vacuum trucks. A containment pit can be dug into the river bank or shoreline to assist oil recovery. The optimum boom deployment angle decreases as current velocity and boom length increase, unless several anchor points are set along the length of the boom.
- **Equipment Required**. Deployment boat, anchors, backhoe (to dig containment pit), and hand tools.
- **Maintenance**. Periodically check the boom for leakage and adjust the deployment angle, if necessary. Also, check the boom for damaged, twisted, or submerged sections. Check anchors for security.
- **Cleanup**. Remove booms and recover remaining sheens with sorbents.
- **Variations**. If booms are unavailable or if the water is too shallow, berms may be constructed using streambed or near-site materials arranged in a cascading configuration (see *Figure E-36*). Cascade berming can also make use of existing streambed bars.

Figure E-34 Placement Configuration of 3 Lengths of Boom (Cascading Deflection Booms)

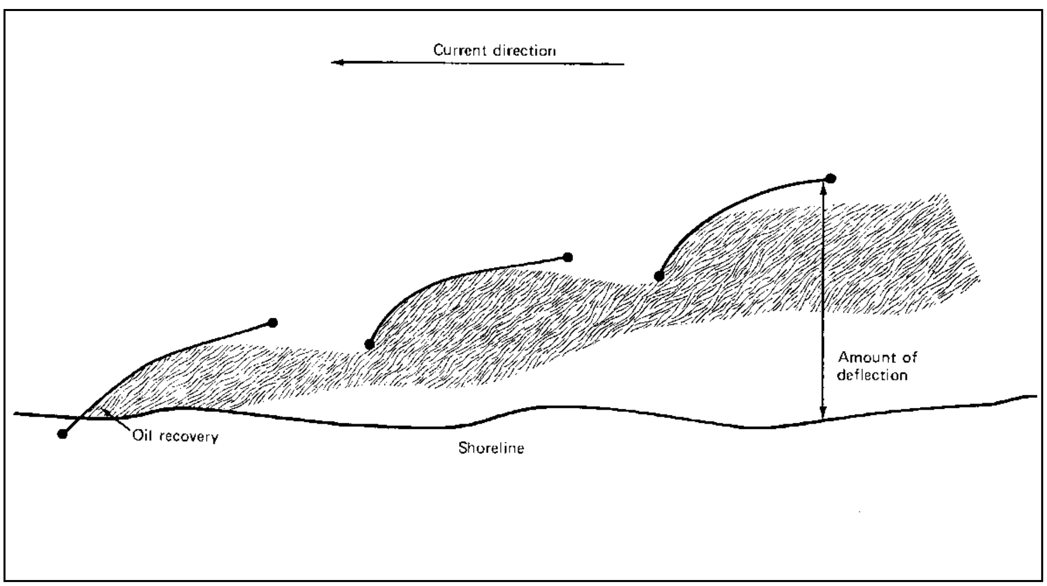


Figure E-35 Cascading Diversion Booms

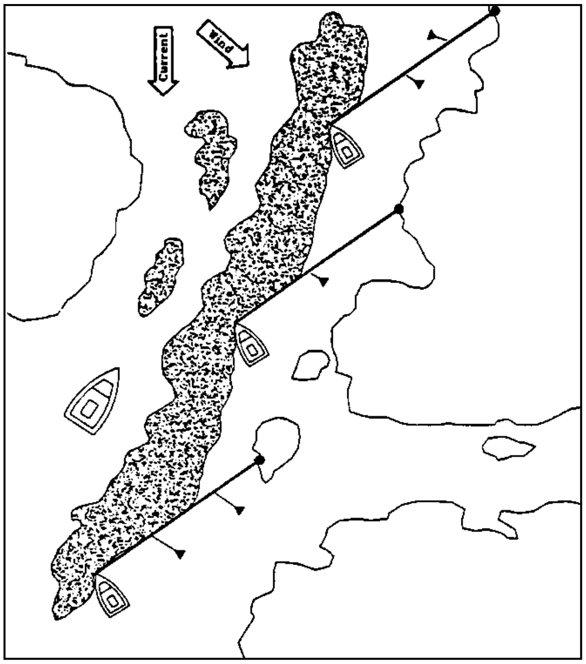
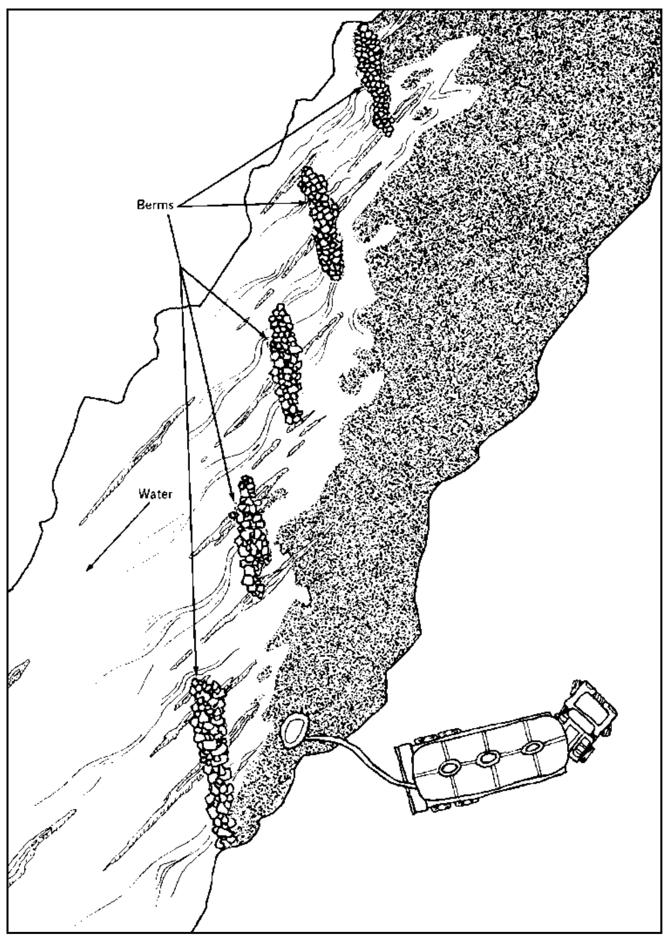


Figure E-36 Cascading Berms



E.10 Cleanup Guides

This Section discusses the various techniques available for mechanical recovery, or cleanup, of spilled oil. The containment and protection techniques addressed in this Appendix typically will be used in combination with mechanical recovery techniques. The strategies and methods for mechanical recovery are discussed in general, describing their objectives, limitations and general instructions. This discussion is intended to be used to assist in the decision-making process for selecting the appropriate method.

Cleanup Method Selection

Historically a number of cleanup techniques have been developed to recover spilled oil. Open water recovery techniques depend primarily on the physical characteristics of the oil and logistical considerations, such as availability of equipment and weather. Selection of the proper technique to clean an oiled shoreline or terrestrial area depends on the following factors:

- Type of substrate
- Amount of spilled oil
- Depth of oil penetration or burial in sediments
- Type of oil
- Type of oiling (i.e., tar balls, pooled oil, viscous-coating, etc.)
- Suitability of surface conditions for equipment operation on shoreline
- Environmental sensitivity of oiled shoreline.

A series of decision guides has been prepared that will allow the user to evaluate these factors or a given shoreline and to select the preferred cleanup technique. Guide 2-5 presents a key to decision guides 2.6 through 2-10.

Decision Guide. The procedure for using the decision guide is as follows:

1. Use Guide 2-5 (Key to Decision Guides) to determine which of the other decision guides is applicable for the cleanup of each area in question. For shorelines, enter with the type of substrate that is oiled and follow the guide, answering the questions where appropriate.

2. Enter the decision guide selected (Guide 2-6, 2-7, 2-8, 2-9 or 2-10) and answer the questions for each surface water or shoreline section that requires cleanup. The guide will lead the user to one or more cleanup techniques applicable to this situation, with the most preferable technique listed first. If the first technique cannot be used because of the lack of equipment or access to shoreline, then the next technique should be chosen.

Shoreline Cleanup Factors. Most of the questions asked in the decision guides can be answered after simple field observations have been made for each shoreline section requiring cleaning. At least two questions, however, may require special local expertise:

Guide 2-5 - Can shoreline sediment be removed without causing erosion of shorelines? The Corps of Engineers, the U.S. Geological Survey, and/or a local shoreline processes geologist should be consulted to determine if sediment removed from shorelines may cause increased erosion of the shoreline.

<u>Guide 2-8</u> - Can oil remain on shoreline or in nearshore areas without causing environmental problems? Tesoro will work with the FOSC and appropriate agencies (generally in consultation with local and regional biologists/ecologists) to determine the impacts of leaving oil on or near a shoreline.

Figure E-37 Key to Decision Guides

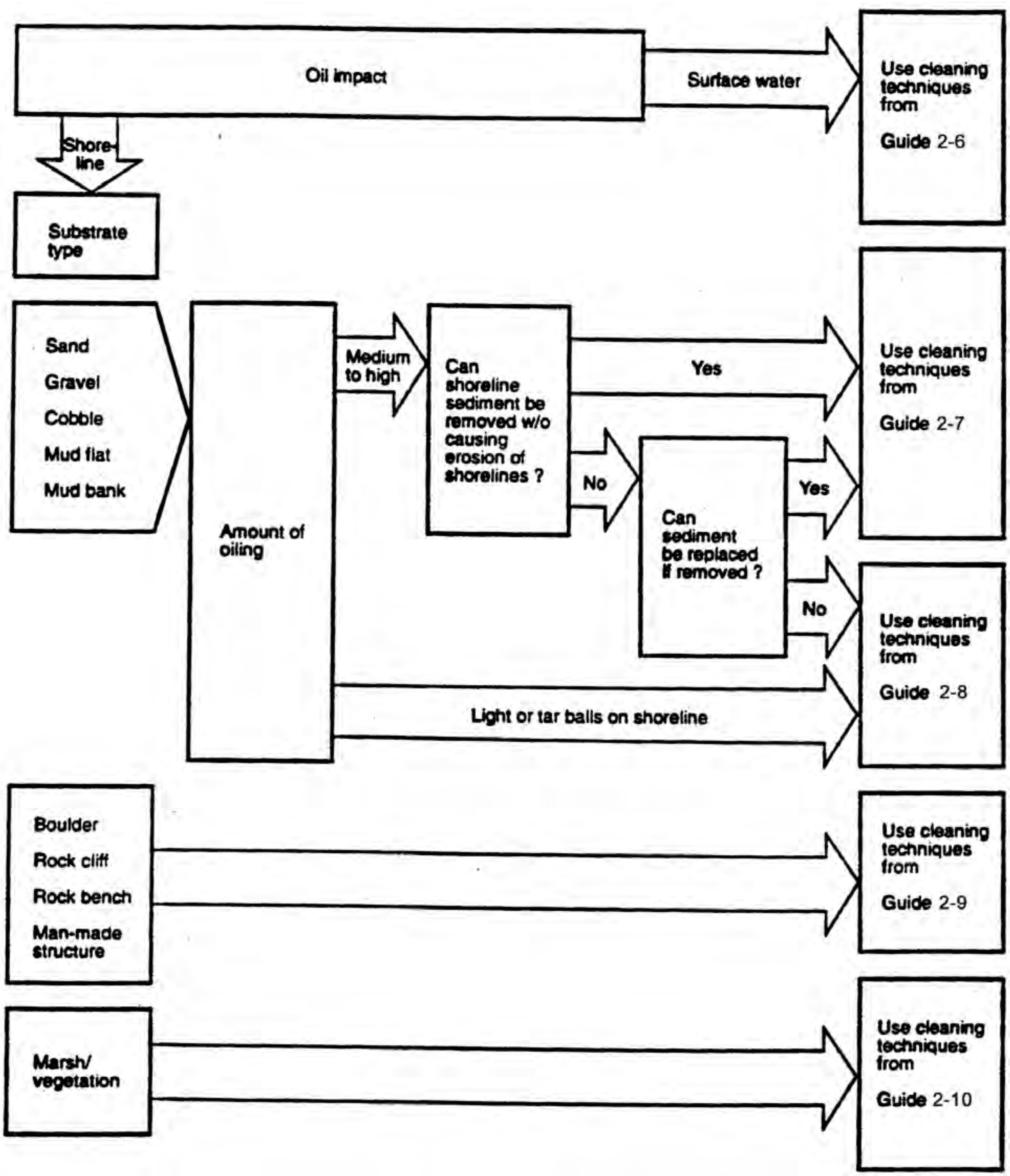


Figure E-38 Surface Water Cleanup Decision Guide

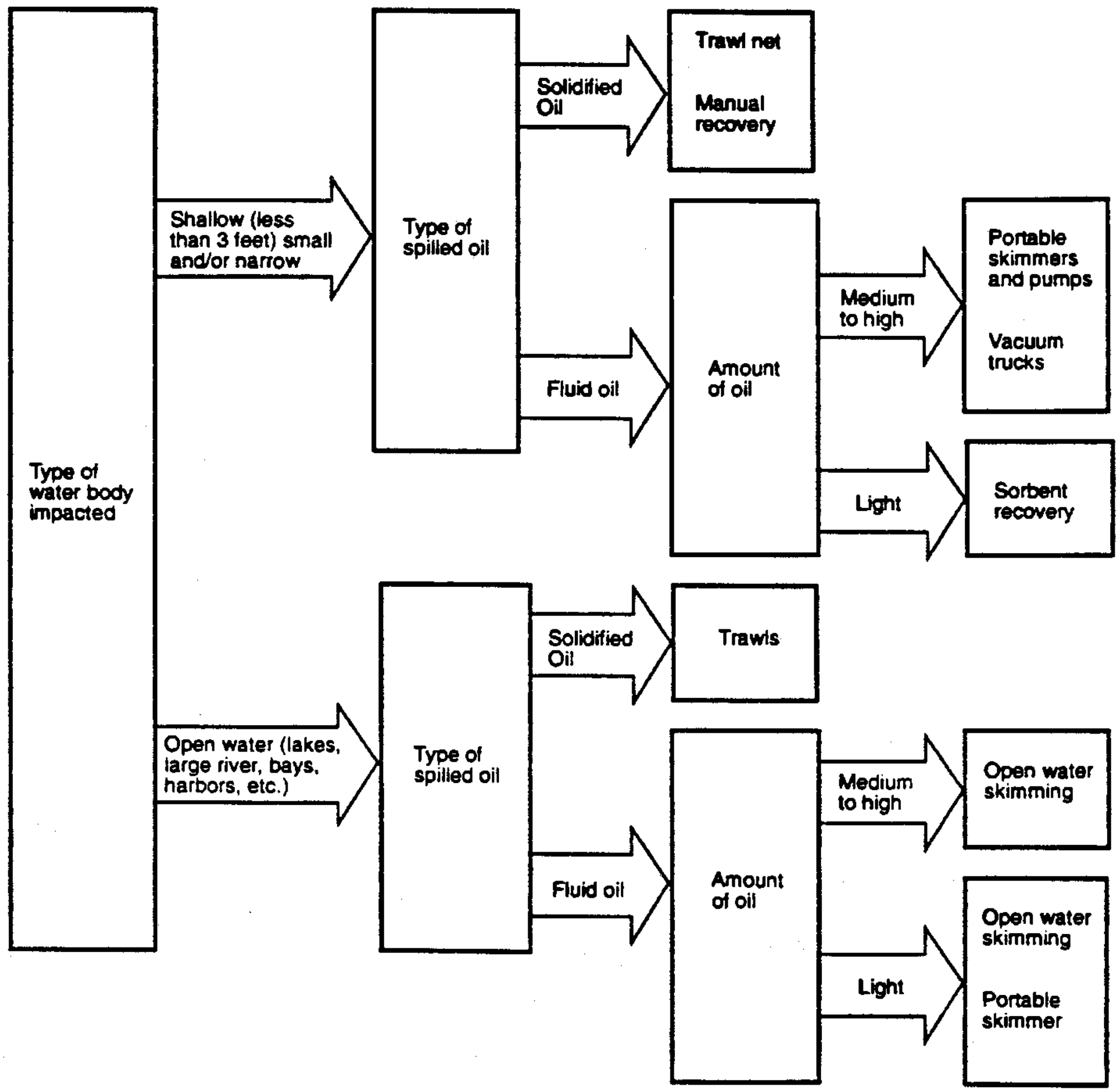


Figure E-39 Mechanized Shoreline Cleanup Decision Guide

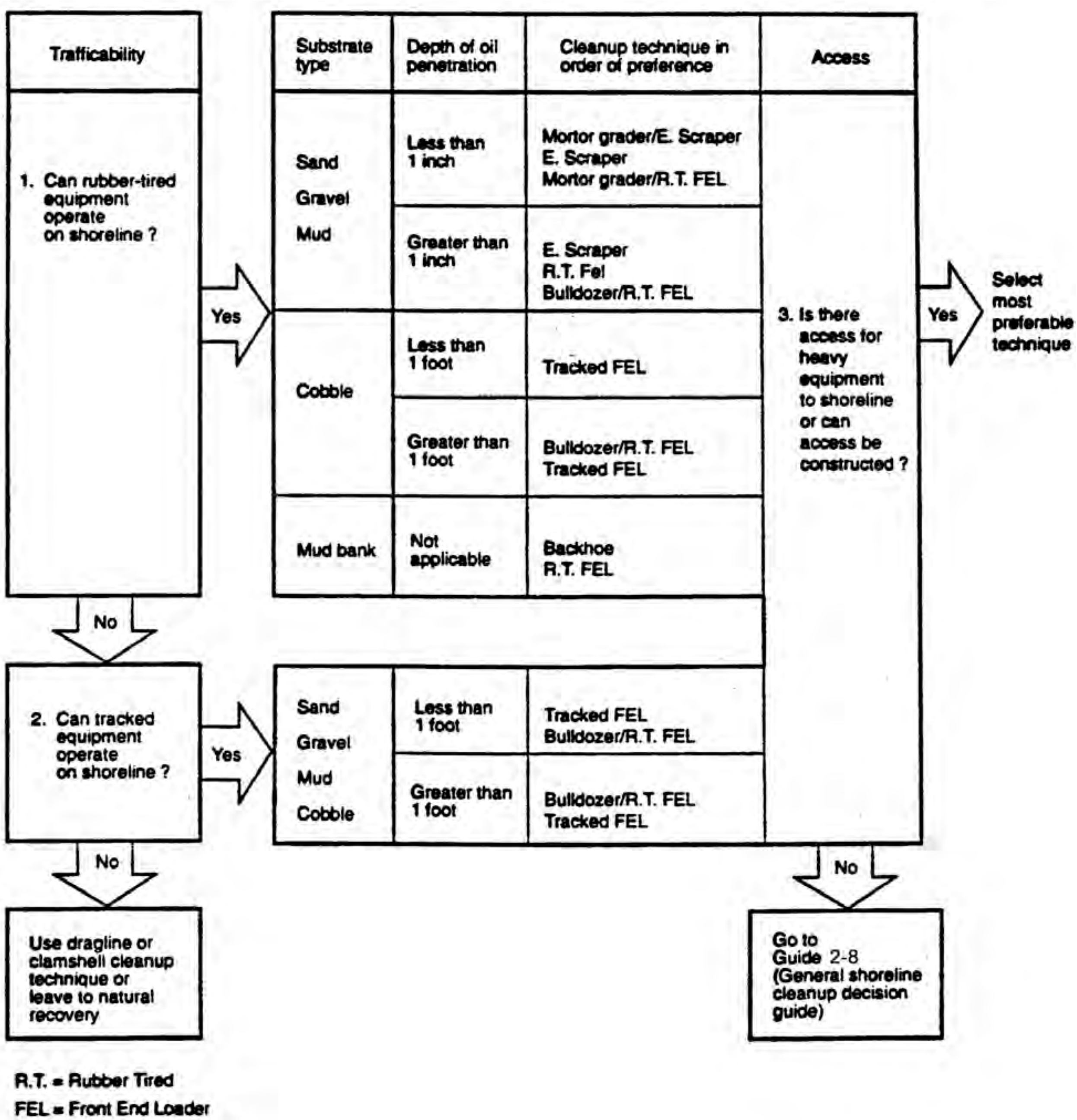


Figure E-40 General Shoreline Cleanup Decision Guide

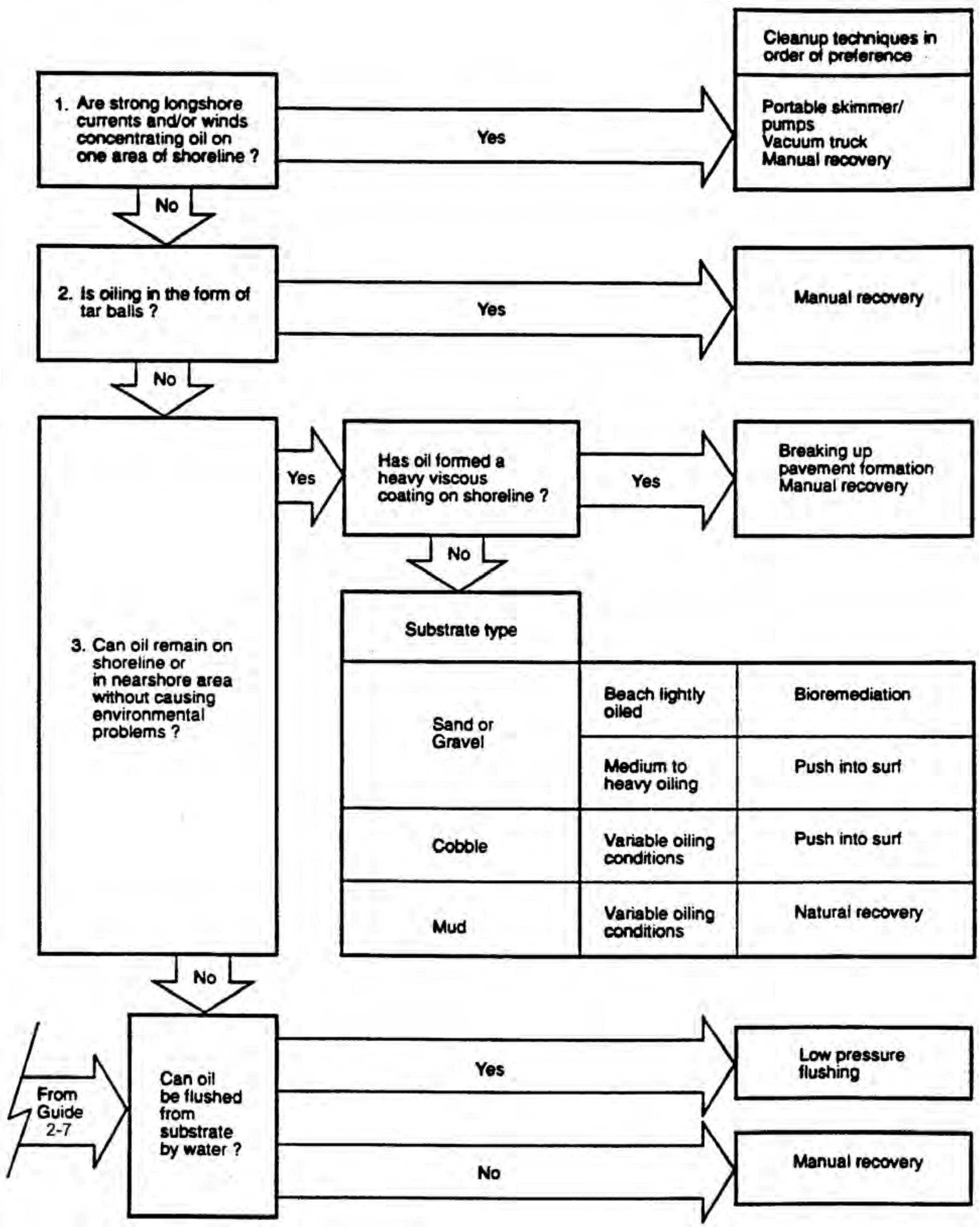


Figure E-41 Non-sediment Substrate Cleanup Decision Guide

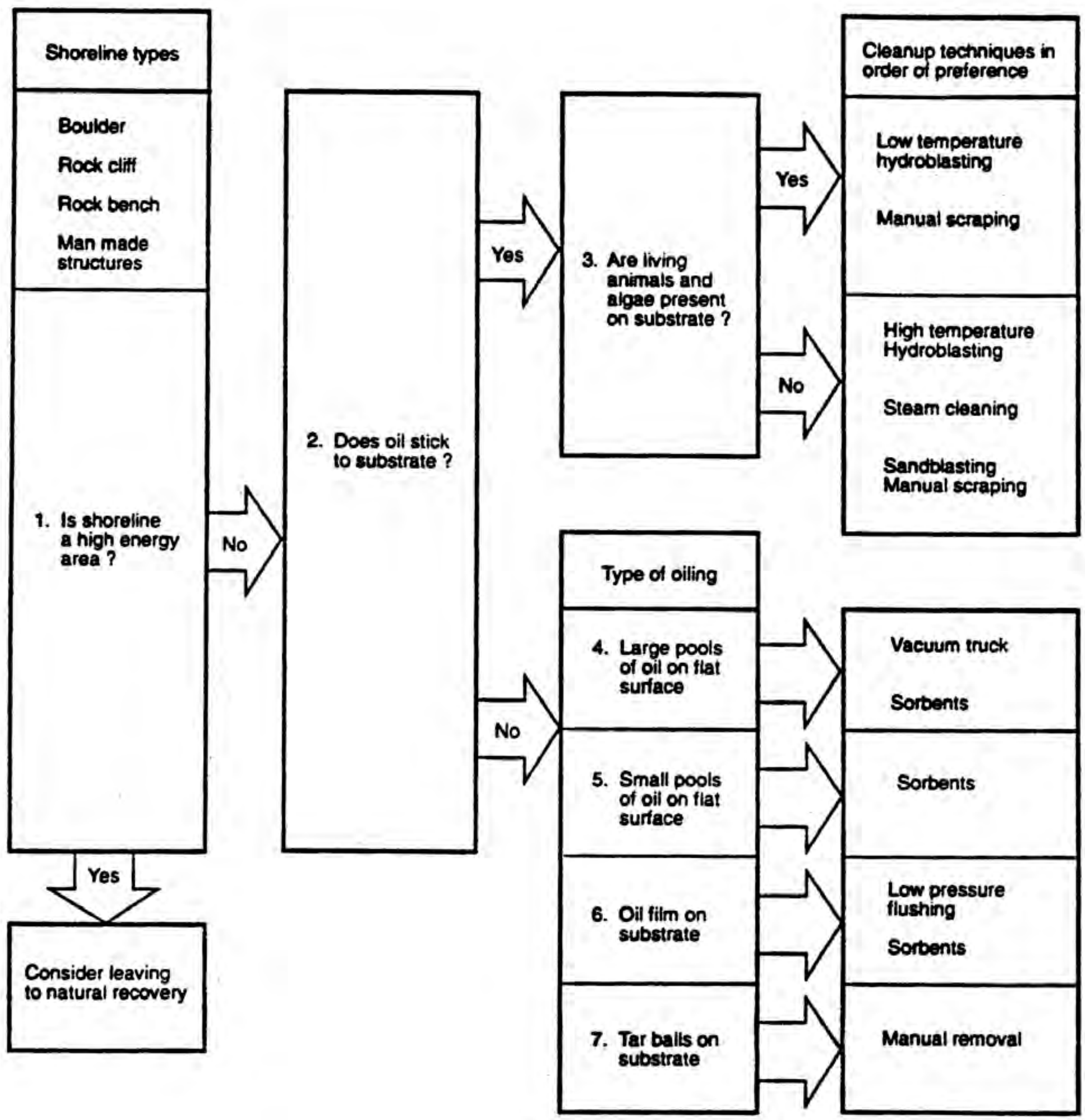
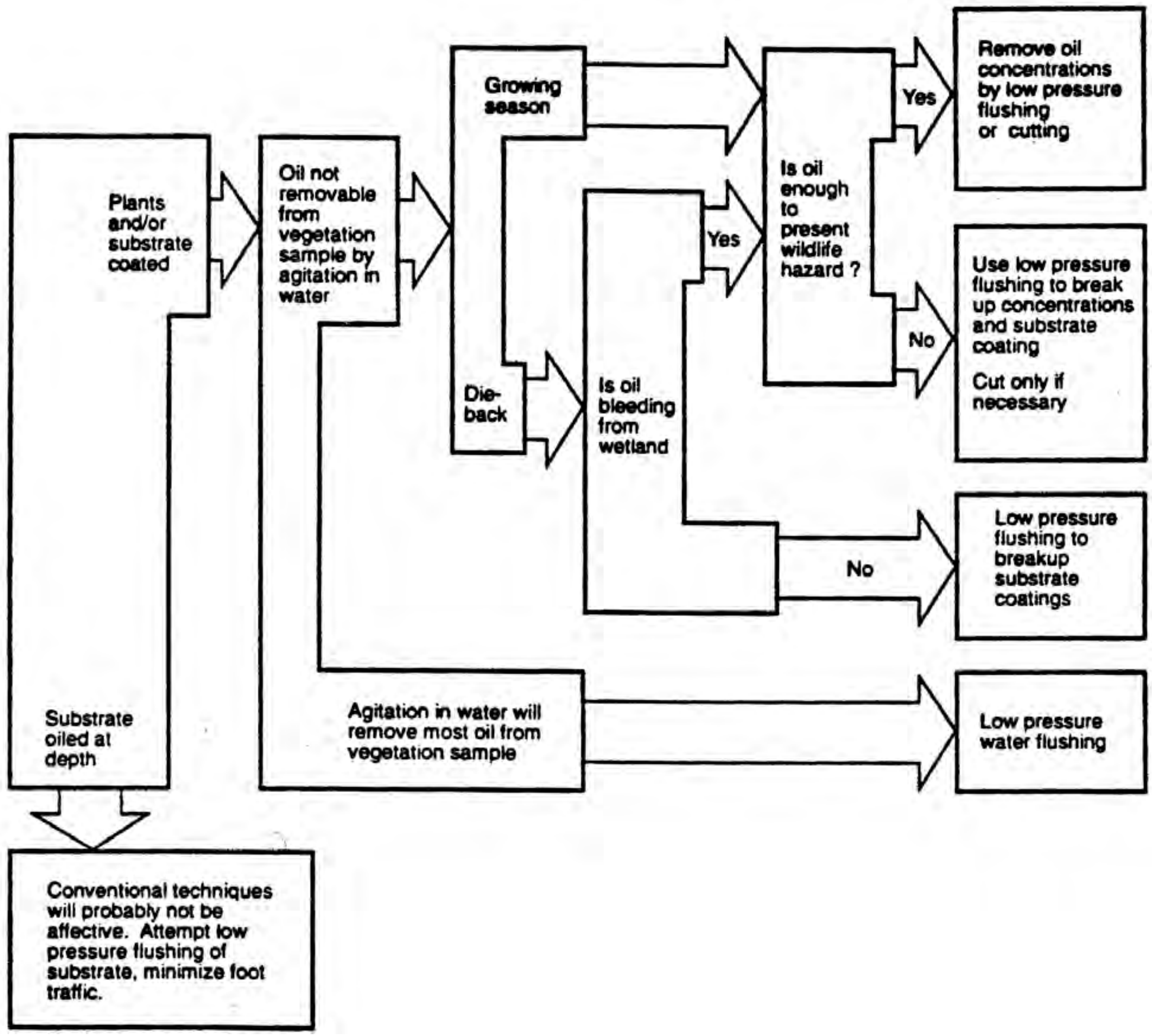


Figure E-42 Wetland Cleanup Decision Guide



E-11 On Water Recovery

E.11.1 Vacuum Trucks

- **Objectives**. To recover oil from land and water surfaces by using suction generated by the vacuum truck to draw oil from concentrated areas into the truck for transport to reprocessing or disposal facilities.
- **Limitations**. Access to spill site, high viscosity oils, very shallow oil concentration, and heavy debris.
- **General Instructions**. Position truck adjacent to area of heaviest oil concentration such as behind booms, berms, trenches, sumps, etc. Suction hose nozzle is placed in the oil and maneuvered manually until recovery becomes inefficient. Light sheens should be recovered with sorbents. Screens should be fitted over nozzle to prevent ingestion of sediments or debris. When recovering oil on water, a duck bill or Manta Ray® type skimmer head should be attached to the suction nozzle. This technique is illustrated in *Figure E-43*.
- **Logistics**. The primary logistical requirements for the vacuum truck techniques are given in *Figure E-44*.
- **Variations**. For contained spills on open water and in the absence of skimmers, a vacuum truck may be placed on a work boat or barge and brought to the containment site for oil recovery using the above method. Vacuum trucks may be left onsite with recovered oil pumped periodically to tank trucks (can improve turn-around time in some cases, and a vacuum truck acts as a primary oil-water separator).

Figure E-43 Vacuum Truck Oil Recovery

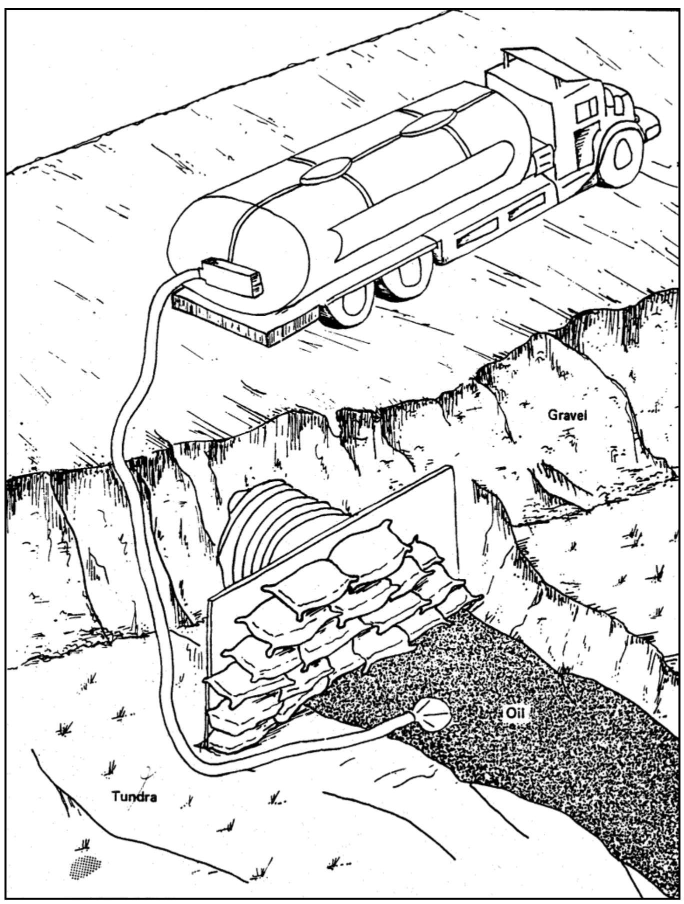


Figure E-44 Logistical Requirements for Use of Vacuum Truck

Equipment	Terrestrial/Shoreline	Surface Water
Vacuum truck w/3" suction hose	Typical Suction Rate for pooled oil, 100 gpm (75% oil); fill time for 110-barrel truck, ¾ hour.	Typical Suction Rate for oil on water, 50 gpm (5% oil), fill time for 110-barrel truck, 1-½ hours.
Number of vacuum trucks required	Dependent of quantity of oil and number of pools present	Dependent on quantity of oil, number of recovery sites, and oil/water ratio.

Personnel - 1 person per suction hose and 1 to 2 persons for manual skimming and concentrating of oil, and 1 supervisor.

Support

- Vacuum truck, 6 to 140 barrel (42 gallons/barrel)
  - 6" suction hose, 700 to 800-900 gpm max.[a]
  - 4" suction hose, 500 to 600 gpm max.[a]
  - 3" suction hose, 300 to 400 gpm max.[a]
- Devices for concentrating oil on water
- Booms, skimming boards, low-pressure water hoses

Access requirements - heavy equipment, barge, or landing craft

[a]Intake completely submerged, drawing water with little or no suction lift.

E.11.2 Portable Skimmers/Pumps

- **Objectives**. To recover small to moderate concentrations of oil from terrestrial or aquatic areas, where larger equipment cannot be brought in.
- **Limitations**. Accessibility, high viscosity oils, sheens, adequate means of storage or disposal, and adverse environmental conditions (excessive wave heights or currents).
- **General Instructions**. Position the skimmer or pump suction hose in the area of heaviest oil concentration behind booms, berms, trenches, etc., or where water currents will drive the oil to the skimmer or hose intake. Continually reposition the intake into area of thickest oil concentration. Duck bill type skimmer heads should be fitted to suction hose for aquatic spills, or screens for terrestrial spills. Pump recovered oil to a temporary storage facility such as a tank truck, 55-gallon drums, pillow tanks, or lined pit. This technique is illustrated in *Figure E-45*.
- When using portable skimmers in shallow water, a hole may have to be excavated in the bottom of the shallow waterway if the skimmer draft is greater than the water depth. Oil can now be herded or forced to the skimmer location by low pressure water flushing or by deploying a boom around a floating slick and pulling it to the floating skimmer.
- **Logistics**. The primary logistical requirements for using portable skimmers or pumps are given in *Figure E-46*.
- **Variations**. Portable skimmers can also be deployed from boats to recover open water spills contained by booms. Skimmer is operated as described previously and may be used with a floating bladder tank for oil storage as illustrated in *Figure E-47*. Portable endless rope skimmers have particular application in shallow water areas such as wetlands or creeks. A typical configuration is shown in *Figure E-48*.

Figure E-45 Oil Recovery Using Portable Pump, Skimmer Head, and Tank Truck

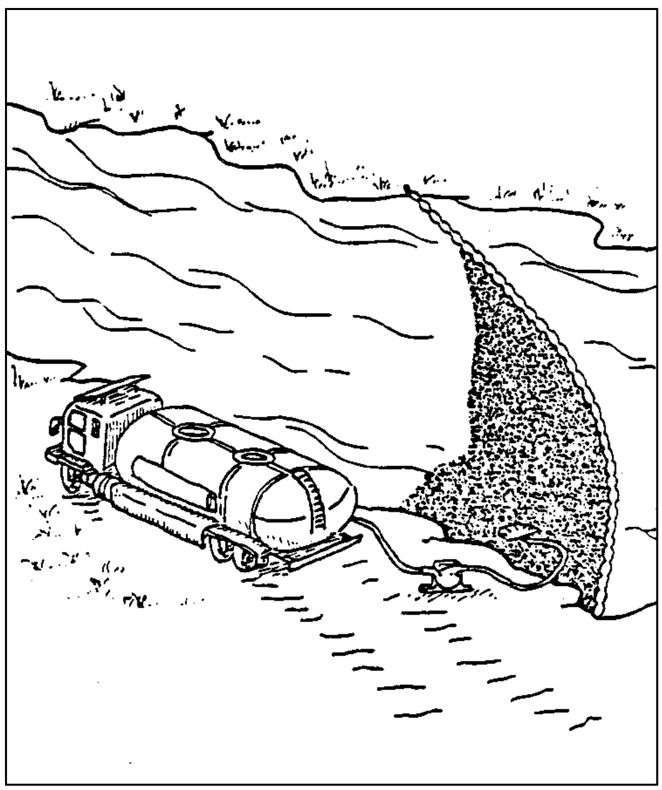


Figure E-46 Logistical Requirements for Portable Skimmer/Pumps

Logistics	Typical Recovery Rate for Thick Oil Layer (2 mm)	Typical Recovery Rate for Thin Oil Layer (.1 mm)
Equipment		
High capacity trash pump w/3" suction hose	75 gpm (50% oil)	50 gpm (5% oil)
Portable weir skimmer	varies	varies
Portable disc skimmer	varies	varies
Number of pumps or skimmers	Dependent upon quantity of oil and rate of introduction to skimmer or pump.	
Personnel - 1 person per pump suction hose, 1 to 2 persons for skimming and concentrating of oil, and 1 supervisor.		
Support	**Range of Capacities**	
• Vacuum truck	6 to 140 barrels	
• Tank truck	20 to 160 barrels	
• 3" Suction hose	300 to 400 gpm max.	
• Pillow tanks	2 to 2,500 barrels	

Figure E-47 Contained Oil Skimming with Portable Skimmer

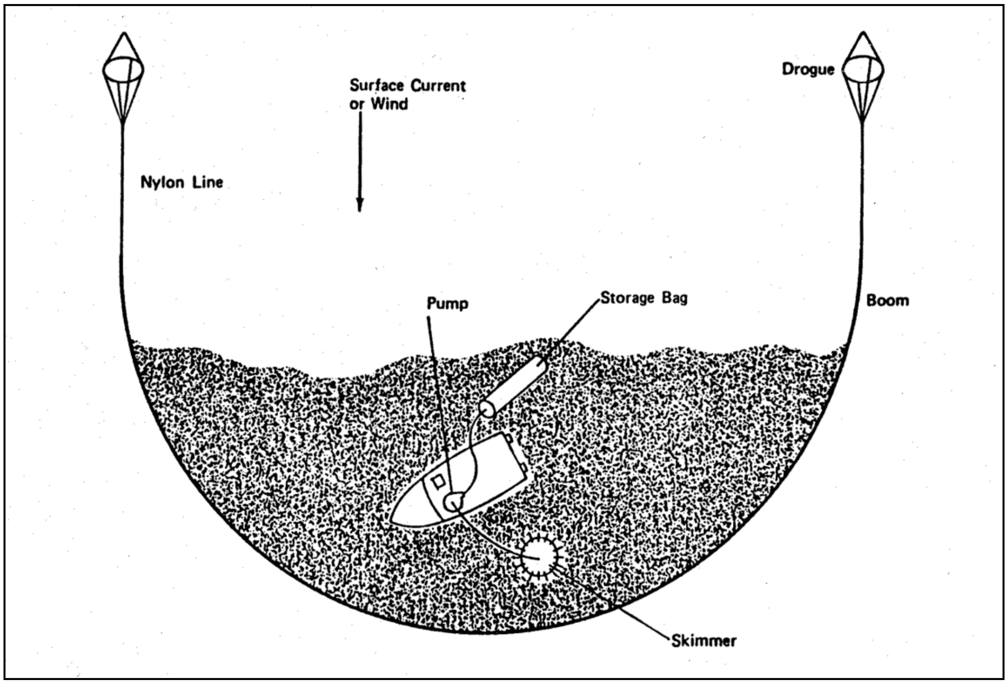
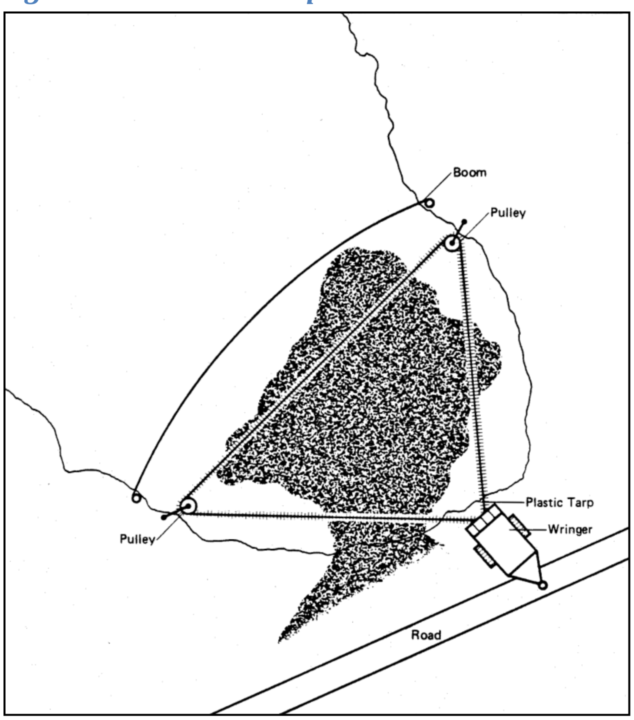


Figure E-48 Endless Rope Skimmer



E.11.3 Open Water Skimming

- **Objectives**. To recover large contained or uncontained spills on open water areas using self-propelled or towed skimmers.
- **Limitations**. High viscosity or solidified oils, and adverse environmental conditions (e.g., wave height, currents, winds).
- **General Instructions**. Large spills contained by booms are best recovered using self-propelled skimmers operating within the containment area to continually remove the heaviest oil concentrations. Portable skimmers are used to recover any remaining patches of oil. Sheens are cleaned up with sorbents, or left to disperse naturally.
- A self-propelled or towed skimmer with booms to concentrate the oil is usually required for large uncontained spills. *Figure E-49* shows the proper relationship of boats, booms, skimmer, and oil slick when it is possible to contain the entire leading edge. Use bridles to stabilize booms and maintain proper con-figuration. If the slick is too wide for complete containment, begin skimming on the downwind side and make successive passes across the slick, staying on the downwind side as shown in *Figure E-50*. Skimming velocity for most skimmers should be approximately 1 to 2 knots. Re-covered oil is kept onboard the skimmer if adequate storage exists, or pumped into a barge or floating storage container towed behind the skimmer.
- **Logistics**. The logistical requirements are directly related to the areal extent and thickness of the slick. The amount of oil a skimmer encounters is the primary factor determining the recovery rate, not the skimmer's rated capacity. *Figure E-51* can help determine the encounter rate of a skimmer with a known sweep width and skimming speed for various surface concentrations of oil per acre (or slick thickness). The encounter rates represent an ideal situation and do not reflect any time lost for maneuvering, offloading of recovered oil, or transit time to an offloading site.
- **Variations**. Self-propelled skimmers can operate alone to recover uncontained spills in the same manner as for use with booms. Small spills or streamers can be recovered using a single boom and boat and a self-propelled or towed skimmer as shown in *Figure E-52*. *Figure E-53* shows the use of skimmers in stationary modes.

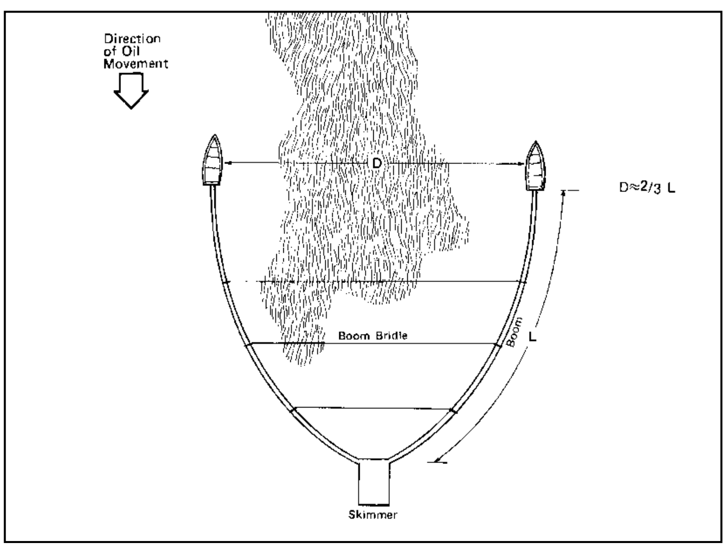


Figure E-49 Boat, Boom, and Skimmer Relationship

Figure E-50 Skimming a Larger Slick

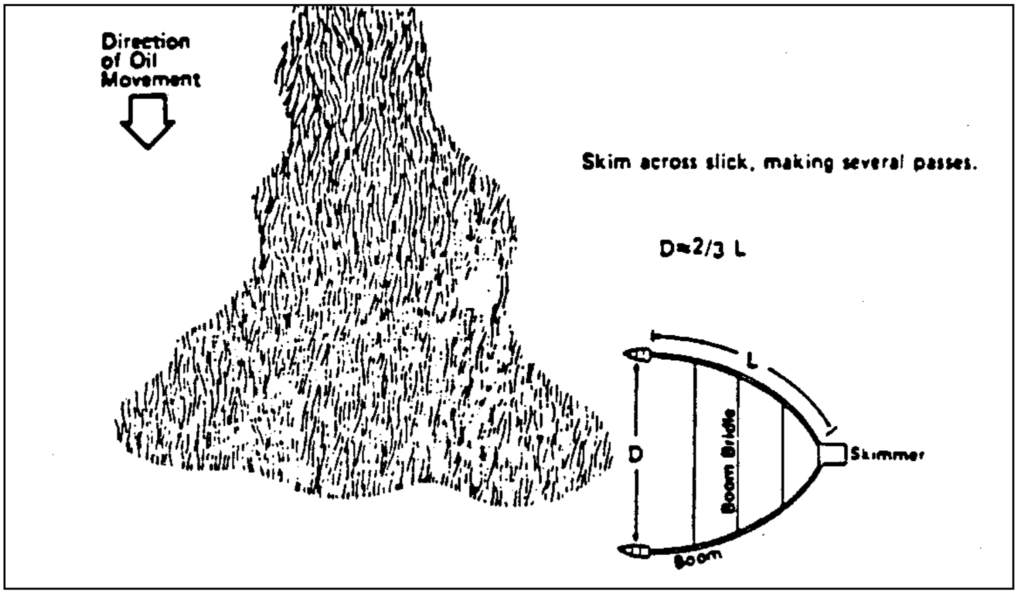


Figure E-51 Skimming with Single Boom

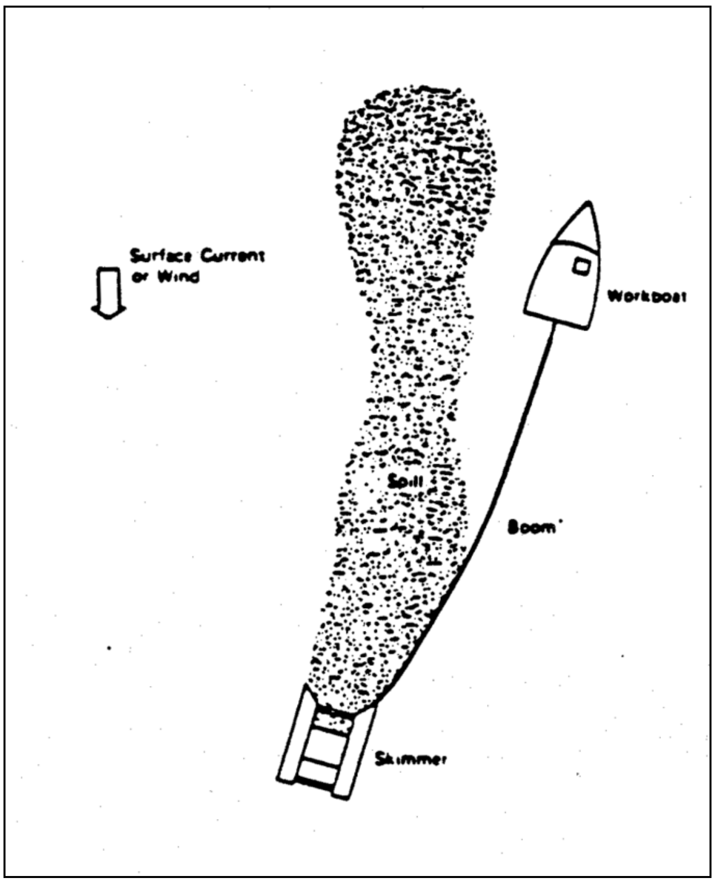
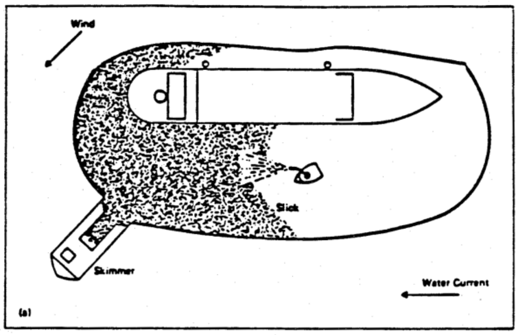


Figure E-52 Use of Skimmers in Stationary Mode



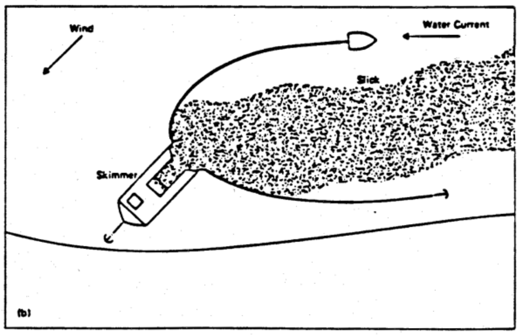
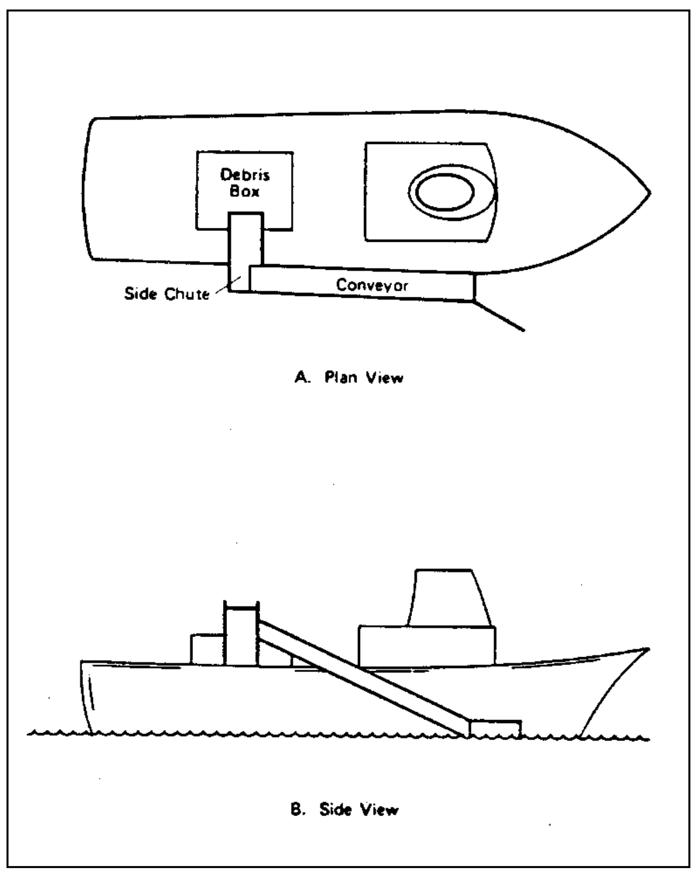


Figure E-53 Vessel Mounted Oil Recovery Conveyor



E.11.4 Sorbent Recovery

- **Objectives**. To recover small quantities of oil from terrestrial or aquatic areas, especially films or sheens remaining after skimming or pumping operations have been completed.
- **Limitations**. Solidified or highly weathered oil, recovery and disposal of oiled sorbents, and potential interface with granular sorbents by surface collecting agents, if used simultaneously.
- **General Instructions**. Place sorbents directly on the oil and turn continually until completely oiled. Put oiled sorbents in plastic bags or leakproof containers and replace with clean ones. Inert substrates can be wiped clean with sorbent pads or sheets. Sorbent sweeps or booms may be pulled between two boats across aquatic areas or anchored across slow moving streams to recover sheens.
- **Logistics**. The logistical requirements are heavily dependent on the type and degree of oiling and therefore cannot be accurately quantified prior to a spill. Some of the basic equipment and materials required for sorbent recovery are pitchforks, rakes, shovels, boats (if needed), and plastic bags, drums, debris boxes, or other leakproof containers.
- **Variations**. Sorbents can be placed on the ground in areas of heavy spill activities to prevent oiling of facilities, paths, work areas, etc.

E.11.5 Ice Slotting And Trenching Techniques

Oil spilled under ice floats up against the underside of the ice and collects in pockets or irregularities. In the presence of currents, oil will become mobile and move downstream on watercourses or spread in the direction of current movement on bodies of water. The degree of movement will be affected by the irregularities under the ice as well as the currents. Subsequent freezing may also trap oil in the ice layer, which may then migrate towards the surface. Spill movement under ice is slower than in open water. Uninfluenced by wind, slicks follow the main current of the river and tend to stay in the center of the channel.

A floating spill moving on the ice and underneath it can be concentrated in slots cut in the ice and can be recovered by means of rope mop skimmers deployed in the slots (*Figure E-54*). If the spill is thick enough, it can be removed using weir skimmers or direct suction. Booms can also be deployed through holes in the ice to recover a spill trapped in under-ice depressions. Two holes are drilled in the ice using augers or chain saws, and the boom is strung under the ice between the holes.

Before ice modifications can be used, the ice must be sufficiently strong to support personnel and heavy equipment.

Ice Slotting Directions:

- Determine ice slot location to contain any product from migrating downstream
- From the shore, cut a slot at a 30° angle upstream to the current (*Figure E-55*). Slot width is about 1-1/2 times the ice thickness and must be wide enough to house the oil skimmer.
- Cut ice into blocs and push under ice on downstream side or lift block with crane or ice tongs.
- Slot should be cut with a slight “J” curve angle at the upstream side to provide current flow toward the shoreline recovery area.

- Remove ice chips from the slot and position skimmer or vacuum device at the downstream end to recover oil on its surface; oil is diverted along the back edges of the slot.
- Length of slot will be determined by width of river and position of slot deployment.
- Cut a second slot just downstream from first slot and extending from the opposite shore.
- If the oil has solidified, it will have to be shoveled out manually.
- Barrier (plywood) extending down into the water level may be fixed to the back edge of the slot to increase the holding capacity and prevent entrainment.

For small quantities of oil in low current waterways or when recovery equipment is unavailable, slots can be cut perpendicular to the current to contain but not concentrate the oil. A slot can also be cut to allow oil to flow “out and over” the surface of the ice. It should be perpendicular to the current and long enough to span the area of highest current velocity. The downstream wall is cut at a 45° angle sloping upstream (*Figure E-56*). If possible, locate the slot over a natural high point in the river bottom or make one by dropping sandbags or large rocks through the slot. This causes the water level to rise in the slot and enhances the flow of oil and water out and over the ice. Sorbents or snow are piled downstream to contain and absorb oil. Partial trenches can be cut to capture oil and facilitate recovery. Any trenches created in the oiled area can be stuffed with sorbents as necessary.

Maintenance
Periodically check the skimmers and any equipment that is in contact with the water for freezing up.

Variations
As determined by real-time ice conditions.

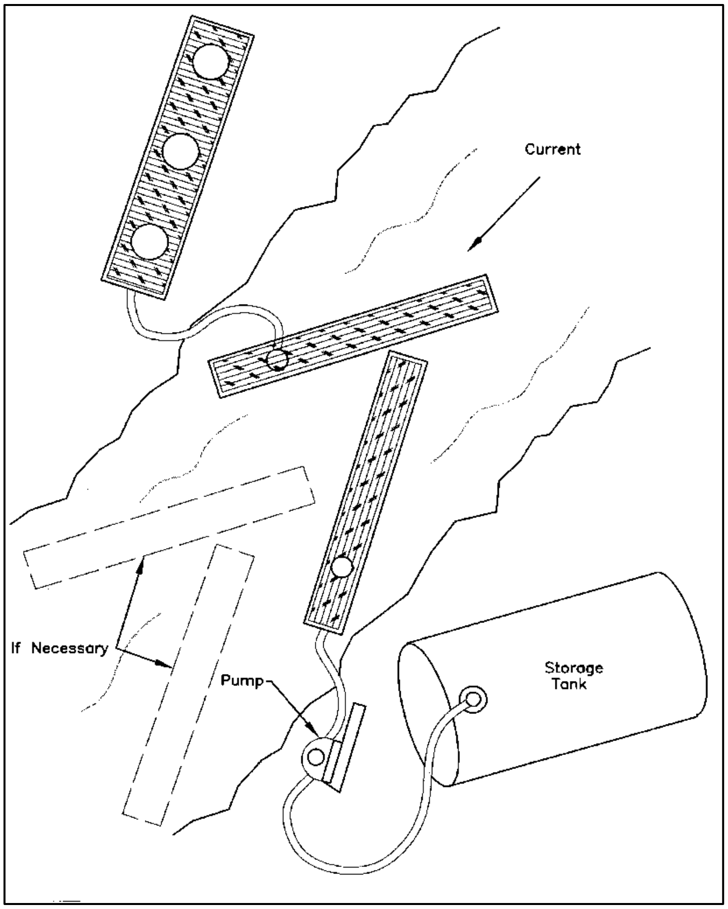


Figure E-54 Ice Slotting

Figure E-55 Ice Slotting and Trenching

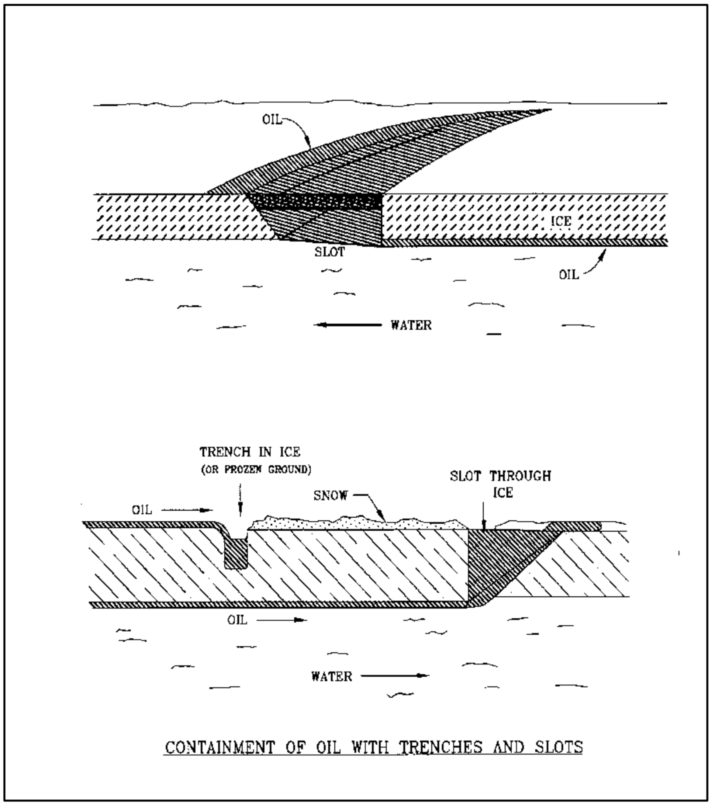
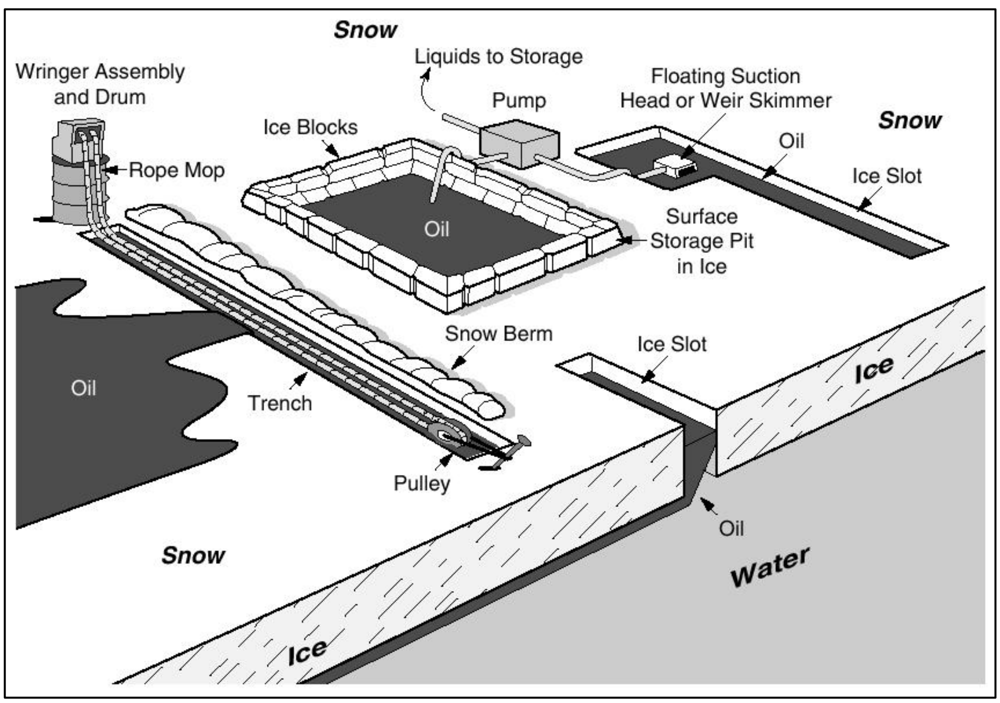


Figure E-56 Ice Slotting and Trenching and Recovery



E.12 Shoreline Cleanup

E.12.1 Manual Recovery

- **Objectives**. To recover oil using manual methods such as scraping, shoveling, brushing, etc., in areas inaccessible to cleanup equipment, with sporadic oiling, or as the final stage of a cleanup operation.
- **Limitations**. Environmental sensitivity of area to intense human activity.
- **General Instructions**. Remove small pools of oil with hand pumps or buckets, and oiled debris and vegetation with shovels, rakes, or pitchforks. Oil layers on rocky outcrops or cliffs, boulders, manmade structures, etc., are removed by scraping or wire brushing. Small quantities of oil or oily debris can be placed in plastic bags and removed for disposal. Larger quantities can be placed in barrels or debris boxes for disposal, or lined pits for temporary storage. On beaches or rivers all material must be stored above the high-water line. Oil and oiled materials can be removed manually or by truck, helicopter, boat, or barge.
- **Logistics**. The primary logistical requirements for manual cleaning will vary with the degree of oiling. *Figure E-57* gives the primary logistical requirements for both light and heavy oiling of a 1 mile by 50 foot area.
- **Variations**. None.

Figure E-57 Logistical Requirements for Manual Removal of Oiled Material

	For Light or Sporadic Oiling	For Heavy Oiling
Equipment		
• Debris box	2	3-4
• Helicopter (if used)	1	1-2
• Boat or barge (if used)	1	2-3
• Truck (if used)	1	2-3
Personnel		
• Workers	10-20	50-100
• Supervisors	1	2-3
Access requirements -foot, light vehicular, shallow craft, or helicopter.		
[a] For 1 mile by 50 foot area.		

E.12.2 Mechanized Recovery

Objectives. Removal of oiled sediments using various types of earthmoving equipment.

Limitations. Adequate access, environmental sensitivity and trafficability of spill area, substrate type, and approval by local authorities.

General Instructions. Operating instructions and recommended use for each type of equipment are discussed below, individually or in combination. Methods of operation for the various equipment is summarized on *Figure E-58*.

Motor Grader/Elevating Scraper. Used on sand and gravel beaches or unconsolidated soil where penetration does not exceed 1 inch. Also used on mud-flats if trafficability permits. Motorized graders cut and remove surface layer of oiled sediments, forming it into windrows which motorized elevating scrapers pick up and haul to unloading area or disposal site. Set the motor grader blade at a 140° angle from the direction of travel and the cut depth equal to the depth of oil penetration. Cast windrows parallel to the surf or along the length of the oiled area. Elevating scrapers straddle the windrows with the cutting blade also set to the depth of oil penetration, and pick up the windrows with their forward movement. *Figure E-59* shows the operational sequence for a motor grader/front-end loader/elevating scraper combination.

Motorized Elevating Scrapers. Used on sand, gravel, or unconsolidated soil substrates where oil penetration exceeds 1 inch or to remove tar balls, oil patties, or debris. Operate scraper parallel to the surf or along the length of the oiled area. *Figure E-60* shows the operation pattern for a motorized elevating scraper. Set cutting blade to depth of oil penetration, or a skim cut for oily debris removal. Once the hopper is full, the scraper is driven to the unloading area, where the collected material is dumped.

Motor Grader/Front-End Loader. Windrows are cast by a motor grader as described above. Front-end loaders are used in place of elevating scrapers to pick up windrowed material and transfer it to nearby unloading areas or directly into trucks for disposal.

Bulldozer/Front-End Loader. Used on coarse sand, gravel, or cobble beaches or rough terrain areas where penetration is deep, oiling extensive, and trafficability poor. Operate bulldozer to push oiled material into piles for removal by the front-end loader to a nearby unloading site or dump truck. The cut depth should not exceed the depth of oil penetration. When operating in a tidal environment, cleaning should be done at low tide and material pushed up the beach above the surf line.

Backhoe. Used to remove oiled sediments (primarily mud or slit) on steep banks where other types of equipment cannot operate. Position backhoe at the top of the bank with the boom fully extended. Maneuver the bucket to the downhill edge of oiling and move up the bank, scraping the layer of oiled sediments into it. The collected materials can be temporarily stockpiled on-site or loaded directly into dump truck.

Front-End Loaders. Primarily used to load stockpiled or windrowed material into trucks but may be used to pick up debris or to clean areas with patchy oiling and/or poor trafficability. Front-end loaders are either rubber-tired or tracked and are fitted with buckets for various uses and with capacities ranging from 3/4 to 10 cubic yards. Rubber-tired loaders with 4-in-1 buckets are preferred. Bucket should only be filled to 2/3 capacity to prevent spillage during transport and loading. *Figure E-59* shows the operational sequence for a front-end loader.

Hauling Trucks. All trucks shall be lined with precut plastic sheets before loading, to prevent oil from leaking onto the streets. New liners shall be used for each load. Tarpaulin covers may be used to minimize blowing or spilling of loads. Washing of truck wheels with pressure water hoses may be required before trucks leave the transfer locations to avoid tracking oil onto city streets. Trucks may be loaded with wheel type front-end loaders. The time required for hauling oiled sand from the transfer locations to the recovery, recycling treatment and/or disposal facility will depend on the type and number of trucks used. The most suitable and available type of trucks are 10-wheel single-bed dumps or truck-trailer combinations. Ten-wheel dump trucks have a capacity of approximately 8 cubic yards.

Discing. For small spills of very light oil or for final cleanup, the most effective cleanup technique may be a simple "discing-in" of the oil. Before this procedure can be used, the appropriate officials must review and approve the discing-in method.

In this technique the oil is not removed but buried into the top layer of sediments and left to degrade naturally. The application of fertilizers to enhance biodegradation is often used in combination with this technique. Bioremediation is discussed in this Appendix. The oil is disced into the sediment using a tracked loader or tractor towing a discer. The following procedure shall be followed:

1. Begin discing along the shoreward edge of the oiled area.
2. Operate the tractor in second gear and continue to the end of the oiled area.
3. The tractor is turned around and a new pass is started adjacent to, and slightly overlapping the previous pass.

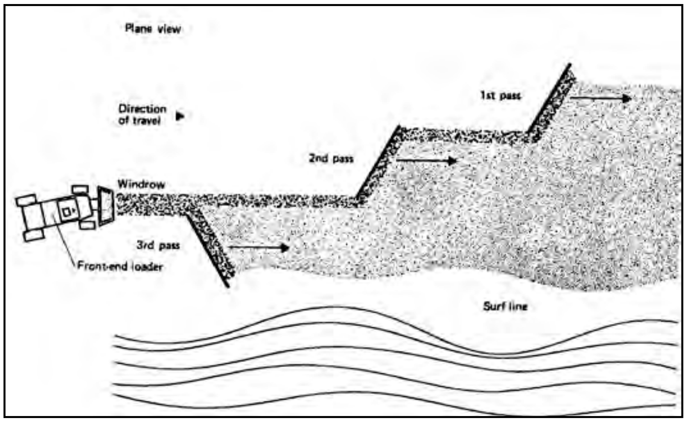
Logistics. The primary logistical requirements depend heavily on the loading capacity of the equipment, and the haul distance to the unloading area. The primary logistical requirements for each of these techniques to clean a 1 mile by 50 foot oiled area are given in *Figure E-58*.

Variations. None.

Figure E-58 Summary of Cleanup Techniques

	Equipment/Technique	Method of Operation
1.	Combination of motorized graders and scrapers	Motorized graders cut and remove surface layer of sediments and form large windrows. Motorized scrapers pick up windrowed material and haul to disposal area for dumping or to unloading ramp-conveyor system for transfer to dump trucks. Screening system utilized to separate debris such as straw and vegetation from sediments when large amounts of debris are present.
2.	Motorized elevating scrapers	Motorized elevating scrapers, working singly, cut and pick up surface layer of sediments and haul to disposal area for dumping or to unloading ramp-conveyor system for transfer to dump trucks. Screening system utilized to separate debris.
3.	Combination of motorized graders and front end loaders	Motorized graders cut and remove surface layer of sediments and form large windrows. Front-end loaders pick up windrowed material and load material into trucks. Trucks remove material to disposal area or to conveyor-screening system for separation of large amounts of debris from sediments.
4.	Front-end loader	Front-end loaders, working singly, cut and pick up surface layer of sediments and load material into trucks. Trucks remove material to disposal area or to conveyor-screening system for separation of large amounts of debris from sediments.
5.	High Pressure Flushing	High pressure water jets remove oil from solid surfaces, and runoff oil/water is controlled and collected.
6.	Steam and Hot Water Cleaning	High-pressure steam or hot water heats oil, allowing it to flow off a surface for collection.
7.	Water Flooding	High volume, low pressure water is used to move stranded oil into collection trenches where it can be contained, concentrated, and collected.
8.	Bioremediation	Nutrients or genetically-engineered micro-organisms are applied to areas to accelerate the natural degradation of oil. Formal approval for use must be obtained.

Figure E-59 Motor Grader/Front-End Loader/Elevating Scraper Operational Sequence



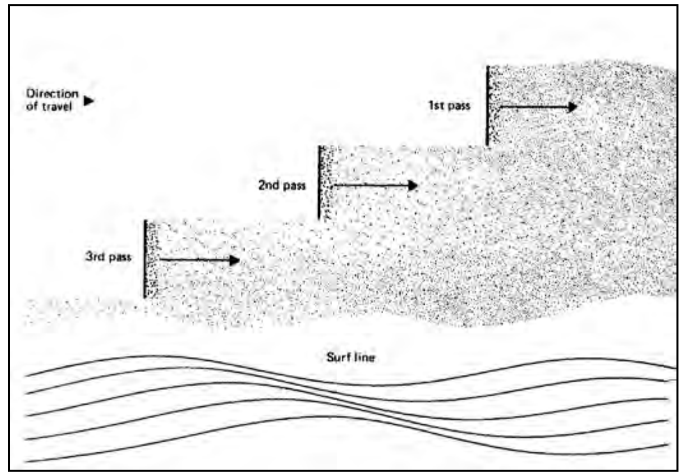


Figure E-60 Operation Pattern for a Motorized Elevating Scraper

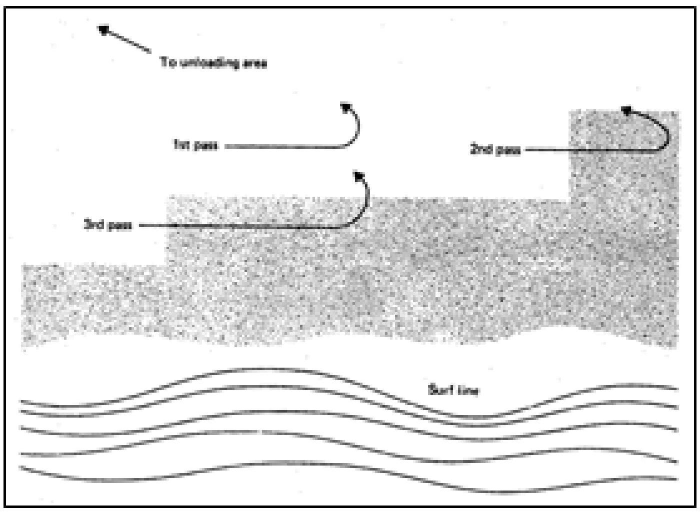


Figure E-61 Operational Sequence for a Front-End Loader

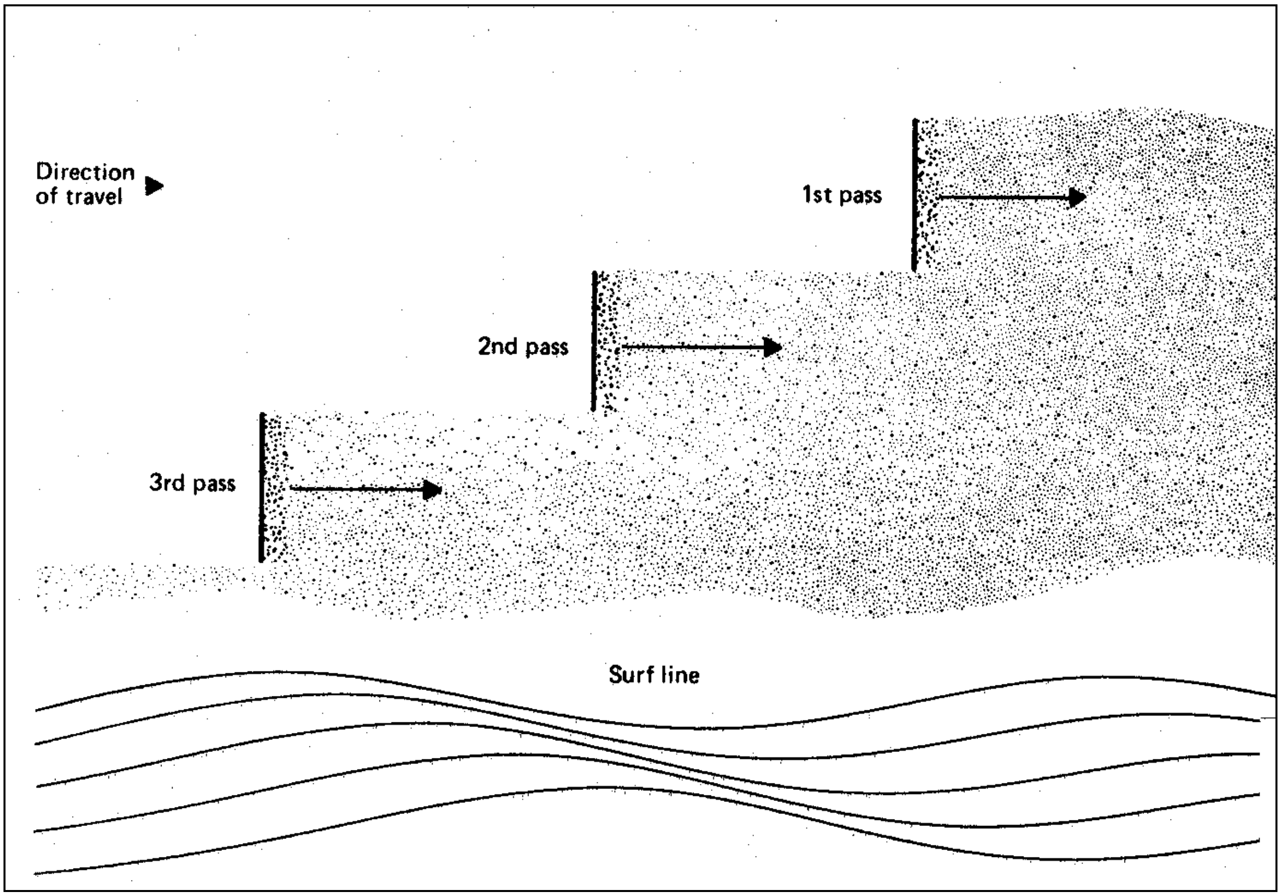


Figure E-62 Logistical Requirements for Mechanized Recovery

Technique and Equipment	Load Capacity	Number of Units Required For: No Haul Distance	100 ft. Haul Distance	500 ft. Haul Distance	2,000 ft. Haul Distance	No. of Truck Loads/Hour	Diesel Fuel Requirements, Gal/Hour	Individual or Combined Cleaning Rate
Motor Grader/Elevating Scraper*								
Motor grader			1	1	1		3-6	
Elevating scraper	20 yd^3		1	2	4		9-15	1-½ hr/acre
Elevating scraper	10 yd^3		1	4	8		11-18	
Motor Grader/Front-End Loader								
Motor grader	3 yd^3	1	1	1			3-6	
Loader - rubber	3 yd^3	1	2	4			2-6	1-½ hr/acre
Loader - tracked	10 yd^3	1	2	6			5-8	1-¾ hr/acre
Dump truck						19	6-12	
Bulldozer/Front-End Loader								
Bulldozer	3 yd^3	1	1	1			4-14	
Loader - rubber	10 yd^3	1	2	4			2-6	5-¼ hr/acre
Dump truck						23	6-12	
Front-End Loader								
Loader - rubber	3 yd^3	1	2	4			2-6	3-½ hr/acre
Loader - tracked	13 yd^3	1	2	6			5-8	4-½ hr/acre
Dump truck	10 yd^3					23	6-12	
Backhoe								
Backhoe	16 ft^3	8					2-4	7 hr/acre
Backhoe	12 ft^3	4					2-4	
Dump truck	10 yd^3					23	6-12	
Personnel - 1 operator for each piece of equipment and 1 supervisor.								
Access - Heavy equipment, barge, or landing craft.								

* Logistical requirements for the elevating scraper operating alone are the same as those listed for motor grader/elevating scraper.

[a] For 1 mile by 50-foot area.

E.12.3 Flushing

- **Objectives**. To remove oil from manmade structures, rocky, boulder, cobble, or sandy shorelines, or any substrate with relatively few or no living organisms, by flushing with high- or low-pressure water streams. Prior to the use of high-pressure flushing, qualified personnel should inspect oiled surfaces for biological activity. In many instances the use of high-pressure will remove attached plant and animal life. Several years may be required to recolonize the areas.
- **Limitations**. Accessibility and substrate erosion potential.
- **General Instructions**. Begin flushing at the highest point of oiling, working down to the lowest point. In tidal areas it should be timed so that the lowest point is reached at low tide. Oil flushed off by the water streams can be recovered by using berms, boards, or trenches to channel the oil to a sump or other collection point for recovery. For aquatic areas, the oil may be allowed to run back into the water where containment booms have been positioned. Pumps, vacuum trucks, skimmers, and/or sorbents are used to recover oil from the containment or collection points. Place plastic sheets over adjacent surfaces to prevent reoiling and direct oil and water to the desired area. For large areas a series of berms or ditches is used to channel the oily runoff to recovery areas as shown in *Figure E-63*. High-pressure flushing (hydroblasting) is used for removing sticky, weathered, or high-viscosity oils from solid substrates, whereas low-pressure flushing should be used for non-sticky oils or unconsolidated substrates.
- **Logistics**. The primary logistical requirements for using hydroblasting or low-pressure flushing to clean a 1 mile by 50 foot lightly oiled area are approximated in *Figure E-64*.
- **Variations**. If authorized by the FOSC, dispersants may be mixed in low concentrations with the flushing water to aid oil removal and prevent reoiling by, and recoalescing of, the removed oil. Low-pressure water streams are also used to flush out oil stranded in backwater areas or under docks and herd it into containment or recovery devices.

Figure E-63 Low Pressure Flushing Tactics

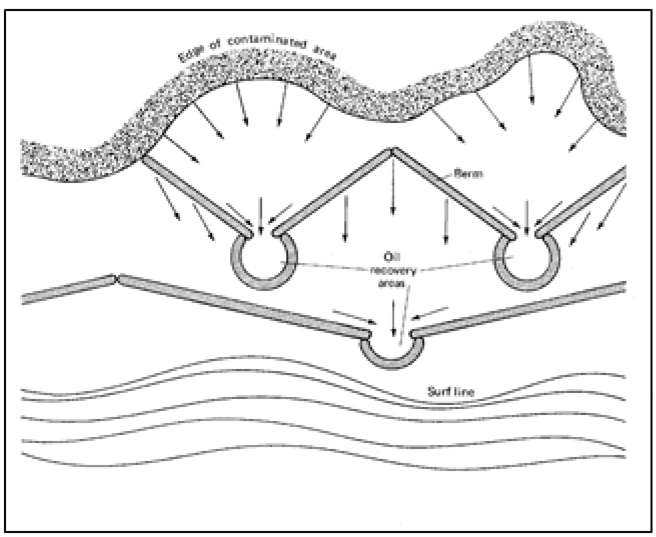


Figure E-64 Logistical Requirements for Flushing Inert Substrates

	Type	No. Required
Equipment		
• Hydroblasting unit	Self-contained, 10 gpm, @ 4,000 to 12,000 psi	2-3
• Flushing unit	Pump and hoses, 50 to 100 gpm @ 10 to 20 psi	3-5
Support		
• Vacuum Truck	60 to 80 bbl. capacity[1]	1
	110 bbl. capacity[2]	1-2
• Trash pump and tank truck	25 to 50 gpm[1]	1
	50 to 75 gpm[2]	1-2
	60 to 80 bbl. capacity[1]	1
	110 bbl. capacity[2]	1-2
Personnel - 1 to 2 operators per flushing or hydroblasting unit and 1 to 2 per recovery equipment, and 1 supervisor.		
Access requirements - heavy equipment; barge or landing craft for trucks and light vehicles; shallow craft or helicopter for flushing unit.		

[1] Hydroblasting

[2] Low-pressure flushing

E.12.4 Flushing Wetlands

- **Objectives**. To remove concentrations of oil from wetland vegetation without significant sediment or vegetation disturbance by low-pressure water flushing.
- **Limitations**. Accessibility and environmental sensitivity of the area. Most effective with nonsticky oils. Effectiveness limited with oiled sediments.
- **General Instructions**. Test flush an area to determine effectiveness. Begin flushing at back of oiled area and work towards front. Flush from small boats whenever possible to avoid substrate disturbance. Any direct application of water stream to oiled substrate is undesirable, as erosion or damage to flora and fauna may result. Bathing the substrate will generally float oil off the surface without any adverse effects. Oil must also be removed from plant stems and leaves. Channel oily runoff with berms or trenches to containment pits or sumps for recovery. It may also be flushed back into the water within the confines of a boom and herded to a recovery point with water jets as illustrated in *Figure E-65*.
- **Logistics**. The primary logistical requirements for cleaning as 1 mile by 50 foot oiled area are given in *Figure E-66*.
- **Variations**. None.

E.12.5 Wetland Cutting

- **Objectives**. To manually or mechanically remove oiled vegetation where required to avoid leaching, reoiling, or direct oiling of biota.
- **Limitations**. Accessibility, water depth, and environmental sensitivity to cutting or to heavy foot traffic associated with manual methods.
- **Logistics**. The primary logistical requirements for a 1 mile by 50 foot area are presented in *Figure E-67*.

Figure E-65 General Wetland Flushing Tactics

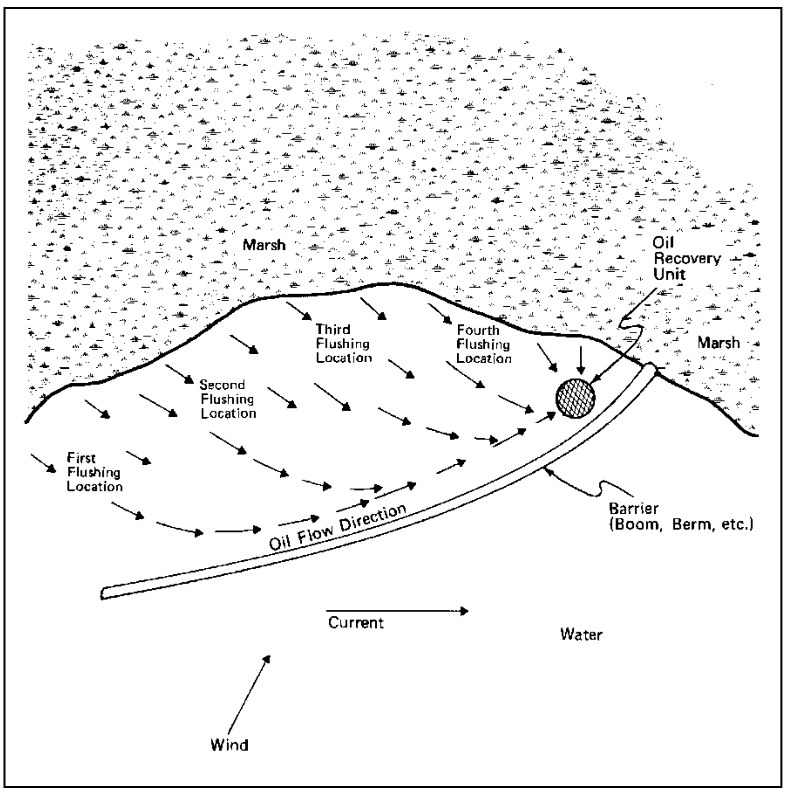


Figure E-66 Logistical Requirements for Flushing Wetlands

	Type	Number Required
Equipment		
• Flushing unit (pump and hoses) vacuum truck	10-20 psi pressure @	3-5
	50-100 gals/min	1-2
	110 barrel capacity	
Or		
• Trash pump and tank truck	50-75 gals/min	1-2
	125 barrel capacity	1-2
Personnel - 1 to 2 per flushing or recovery unit and 1 supervisor.		
Access requirements - heavy equipment, barge or landing craft for trucks and light vehicular, shallow craft, or helicopter for flushing unit.		

[a] For a 1 mile by 50 foot area.

Figure E-67 Logistical Requirements for Wetland Cutting

	Number Per Crew
Equipment	
• Aquatic weed cutter	2
• Kelp harvester	2
• Cutting tools - (Scythes, power cutters, shears, etc.	3-4[b]
• Collecting tools - (pitchforks, rakes, etc.)	4-6
• Plastic or burlap bags	75-100
• Rolls of ground cover - (plastic film, burlap, sorbents, etc.)	1-3
Personnel - 5 crews of 10 workers each and 1 supervisor.	
Access requirements - foot, shallow craft, or helicopter.	

[a] For a 1 mile by 50 foot area.

[b] Should have 1 or 2 extra in case of breakage or blades becoming dull.

E.12.6 Soil Removal

- **Objectives**. Remove persistent oiled sediments in cases where no other treatment is possible.
- **Limitations**. Environmentally damaging, expensive, replacement of removed material generally required, disposal problems.
- **General Instructions**. Conduct detailed survey to determine the extent of removal required. Remove material using conventional earth moving or dredging techniques. Dispose of recovered oiled material. Replace removed material in type and quantity. Re-vegetate if necessary.
- **Variations**. None.

E.12.7 Assisted Natural Recovery

- **Objectives**. Application of in-situ treatments to the oiled area as a means of stimulating or accelerating natural degradation of the oil.
- **Limitations**. Accessibility, trafficability, depth of penetration, energy level of marine shorelines, environmental sensitivity of the area to the oil, and public or private utilization of the area.
- **General Instructions**. Several techniques have been developed to break up the oil layer or oiled substrate, thereby increasing the oil's surface area exposed to photochemical oxidation and microbial degradation. These techniques are primarily used on non-recreational, low-amenity areas or coastal shorelines where sediment removal will cause backshore erosion. Each is described individually below.
    - **Push Oil Sediments Into Surf**. Used on light to moderately oiled beaches where sediment removal may cause erosion. At low tide operate bulldozer to push the oiled sediments onto the lower intertidal area where the increased sediment movement breaks up the oil Sediments are returned to the beach through natural wave and tidal action.
    - **Disc Into Substrate**. Used on lightly contaminated, non-recreational sand or gravel beaches or inland substrates. Tow discing equipment by tractor or tracked loader. Conventional or chisel ploughs should be used where penetration exceeds 8 inches. Operate the tractor parallel to the surf line or perpendicular to the direction of slope for inland areas. Discing should be done periodically to aerate the sediments as much as possible.
    - **Breaking Up Pavement**. Used on cobble, sand, or gravel beaches where thick layers of oil have formed an asphaltic pavement. Attach a ripper consisting of two or three large, curved teeth to the back of a tractor, tracked loader, or bulldozer and drag it through the pavement, breaking it up into smaller pieces. This allows natural wave action to further break up the pavement for rapid degradation.
    - **Bioremediation**. Used in conjunction with discing on inland areas to accelerate or maintain a high rate of biodegradation. After discing, fertilize the oiled soil with a standard spreader, using a nitrogen, phosphorus, and potassium (NPK) inorganic

fertilizer to supplement natural nutrient supplies. A general nitrogen to oil ratio of 1:10 by weight is recommended.

- **Logistics**. The equipment required depends on the technique used and the size and degree of oiling. *Figure E-68* gives the primary logistical requirements for assisted natural recovery. Most of the equipment needed are standard farm items.

Figure E-68 Logistical Requirements for Assisted Natural Recovery

Item	50 ft. Wide Area	150 ft. Wide Area	Cleaning Rate
Equipment			
• Tractor/Ripper	1	2	1-1/2 hr/acre
• Track-type tractor w/8 ft. wide discer	1	1	1-1/2 hr/acre
• Track-type tractor w/12 ft. wide discer	1	1	1/3 hr/acre
• Bulldozer	2	5	1 hr/acre
• Spreader	1	1	N/A
Personnel - 1 operator for each piece of equipment and 1 supervisor.			
Support	**Diesel Fuel Requirements**		
• Tracked-type tractor	2-1/2 - 9 gallons/hr		
• Bulldozer	4 - 14 gallons/hr		
Access requirements - heavy equipment, light vehicular, barge, or landing craft.			

APPENDIX F INSPECTION/PREVENTION AND MAINTENANCE

F.1 Pipeline Operations, Maintenance, Inspection and Security

F.1.1 Pipeline Operations and Maintenance Manual

The operations and maintenance (O&M) manual for the High Plains Pipeline (THPP) is located on the intranet for Tesoro Logistics at:

http://gotso/departments/logistics/DOT%20Compliance/Operations%20and%20Maintenance%20Manuals.aspx

F.1.2 Pipeline Inspection Program

Tesoro maintains this system in accordance with 49 CFR Part 195. Valves are inspected twice a year. Overpressure safety devices are inspected annually. Cathodic protection surveys are conducted annually. Atmospheric corrosion inspections of all aboveground piping are done every three years. Inline Inspection tools are run at least once every five years.

The inspection procedures for the THPP are located within the Integrity Management Program on the Tesoro Logistics intranet at:

http://gotso/departments/logistics/DOT%20Compliance/Integrity%20Management%20Program.aspx

F.1.3 Tank Inspection

Figure F.1 presents a checklist and form for tank inspections utilized at Avon. These include inspections for tank gauging, valves, roofs and seals.

Compatibility

All tanks are designed for and compatible with the material stored and conditions of storage such as pressure, temperature, and corrosivity. Design data is recorded on the tank data sheets and design drawings filed in the Engineering Design Department.

Tank Integrity

The integrity of tanks is ensured through:

1. Hydrostatic testing of bulk storage tanks;
2. Routine visual inspection; and
3. Tank shell thickness testing.

Figure F-1 Tank Inspection Report

.

TESORO

No.: LFM022-01
Title: Monthly Visual Tank Inspection Report
3/12/12 REV. No.: 5

TESORO MONTHLY VISUAL TANK INSPECTION REPORT

TANK #:	LOCATION:	DATE:

THE FOLLOWING ITEMS WILL BE EXAMINED AND DOCUMENTED ON A MONTHLY BASIS FOR EACH TANK:

OK DEF N/A

___ ___ ___ CONDUCTED A VISUAL TANK INSPECTION FOR LEAKS, SPECIFICALLY LOOKING FOR:
- DRIP MARKS
- DISCOLORATION OF TANKS
- CRACKS OR SEEPAGE
- CORROSION
- PUDDLES CONTAINING STORED MATERIAL
- LOCALIZED DEAD VEGETATION
- OTHER (NOTE):

COMMENTS:

___ ___ ___ CONDUCTED A VISUAL INSPECTION OF THE EXTERIOR FOR ANY SHELL DISTORTION:
- SHELL DISTORTION
- OTHER (NOTE):

COMMENTS:

___ ___ ___ CONDUCTED A VISUAL INSPECTION FOR SIGNS OF EDGE SETTLEMENT:
- GAPS BETWEEN TANK AND FOUNDATION
- CHECK THAT TANK CHINE AREA IS FREE OF SOIL AND VEGETATION
- CHECK THAT RAIN WATER DOES NOT POOL AROUND THE TANK
- OTHER (NOTE):

COMMENTS:

___ ___ ___ CONDUCTED A VISUAL INSPECTION FOR SIGNS OF CORROSION OR COATING PROBLEMS:
- TANK CORROSION
- EXCESSIVE PAINT CHIPPING OR PAINT FAILURE
- OTHER (NOTE):

COMMENTS:

___ ___ ___ CONDUCTED A VISUAL INSPECTION OF INSULATION SYSTEM:
- INSULATION FAILURE / DAMAGE

COMMENTS:

___ ___ ___ CONDUCTED A VISUAL INSPECTION OF ALL APPURTENANCES INCLUDING:
- NOZZLES / VALVES
- AUTOGAUGE TAPE FOR PROPER MOVEMENT
- VENTS
- MANWAYS
- SAMPLE STATIONS & WATER DRAWS
- STAIRWAYS / LADDERS
- MIXERS
- DOUBLE-BOTTOM LEAK DETECTION PORTS
- OTHER (NOTE):

COMMENTS:

___ ___ ___ CONDUCTED VISUAL INSPECTION OF THE SECONDARY CONTAINMENT FOR:
- DIKE EROSION
- DRAINAGE VALVES (SHOULD BE LOCKED)
- OIL STAINS
- VEGETATION
- HOLES IN LINER OR LINER FAILURE
- EXCESSIVE WATER
- DEBRIS
- SPRAY-ON LINER ATTACHMENTS TO TANK
- OTHER (NOTE):

COMMENTS:

___ ___ ___ CONDUCTED A VISUAL INSPECTION OF THE ASSOCIATED TANK PIPING:
- DISCOLORATION
- DROPLETS OF STORED MATERIAL OR SEEPAGE
- CORROSION
- BOWING OR DAMAGED PIPE SUPPORTS
- LOCALIZED DEAD VEGETATION
- EVIDENCE OF STORED MATERIAL LEAKAGE ON VALVES OR SEALS
- OTHER (NOTE):

COMMENTS:

CERTIFICATION

I CERTIFY THAT I HAVE COMPLETED A THOROUGH VISUAL INSPECTION OF THE TANK, PIPING AND SECONDARY CONTAINMENT AREA AROUND THE TANK AND THAT ALL DEFICIENCIES (IF NOTED) HAVE BEEN DOCUMENTED IN THE COMMENT SECTION OF THIS REPORT.

OPERATOR SIGNATURE	DATE	SUPERVISOR SIGNATURE	DATE

AFTER INSPECTION REPORT

☐ NO NEW DEFICIENCIES NOTED

☐ MAINTENANCE NOTIFICATION WRITTEN #:________________________ BY: ____________________

F.1.3.1 Tank Inspection Records

Tank inspection records document conditions found during integrity testing and observations made on foundations and support.

Tank internal and external inspections are done according to the principles of the *API Guide for Inspection of Refinery Equipment*, Chapter XIII, “Atmospheric and Low Pressure Storage Tanks” and API Standard 653 (3rd edition, December 2001) and in accordance with 40 CFR 112, Appendix F.

F.1.4 Response Equipment Inspection

Using the Emergency Response Equipment List provided in *Section 7* of this Plan, response equipment will be checked for the following in accordance with 40 CFR 112, Appendix F:

1. Inventory (item and quantity);
2. Storage location;
3. Accessibility (time to access and respond);
4. Operational status/condition;
5. Actual use/testing (last test date and frequency of testing); and
6. Shelf life (present age, expected replacement date).

Oil spill cleanup material and emergency response equipment will be inventoried and tested by the Spill Response Team every six months or immediately after a spill. The Spill Response Team will order the supplies and record inspection notes test results on the equipment records on file at the local office. Consult the Emergency Response Supervisor for more information.

F.1.5 Secondary Containment Inspection

Secondary containment units will be evaluated at the same time as tank inspections. During inspection, discrepancies are notes in any of the items and are reported to the proper facility personnel.

F.2 Prevention Measures Necessary To Reduce An Oil Spill Occurring Due To Facility Operations

Prevention measures are covered in the Spill Prevention, Control, and Countermeasure (SPCC) Plan on file at the facilities. Additionally prevention measures are covered in the pipeline Operations & Maintenance Manual (O&M).

F.2.1 Description of Type and Frequency of Personnel Training

The Company personnel are provided with training in compliance with EPA and PHMSA requirements. *Appendix A* provides a Training/Drills/Inspection matrix listing this information. The Health and Safety Department is responsible for maintaining records. The Training Department is responsible for maintaining master training records for employees.

F.2.2 Pipeline Leak Detection

Tesoro has corrosion prevention programs for this system. This includes maintaining a cathodic protection system and conducting periodic inline inspections. The inline inspection program includes a classification system for damages and anomalies and a required schedule and process for their repair.

Tesoro has thermal relief valves installed on above ground piping to protect against pressure buildup.

All underground pipeline facilities are coated and have cathodic protection. All above ground facilities are painted and have periodic atmospheric corrosion surveys.

Leak detection for the THPP is covered within a section from the O&M manual:

http://gotso/departments/logistics/Documents/Liquid%20OM/Appendix%20C%20-%20NWPS/NWPS%20Apx%20C-11.pdf

F.2.3 Pipeline Security Systems

Multiple elements within the THPP O&M manual cover security for the pipeline, specifically:

Security: http://gotso/departments/logistics/Documents/Liquid%20OM/Appendix%20A%20-%20Procedures%20(5.28.14)/LOM024%20Security%20of%20Facility%20(11.1.14).pdf

Signage: http://gotso/departments/logistics/Documents/Liquid%20OM/Appendix%20A%20-%20Procedures%20(5.28.14)/LOM023%20Signage.pdf

Line markers: http://gotso/departments/logistics/Documents/Liquid%20OM/Appendix%20A%20-%20Procedures%20(5.28.14)/LOM014%20Line%20Markers%20(11.1.14).pdf

ROW Inspection: http://gotso/departments/logistics/Documents/Liquid%20OM/Appendix%20A%20-%20Procedures%20(5.28.14)/LOM015-ROW%20%20(11.1.14).pdf

Damage Prevention: http://gotso/departments/logistics/Documents/Liquid%20OM/Appendix%20A%20-%20Procedures%20(5.28.14)/LOM026_DamagePrevention.pdf

F.2.4 Alcohol and Drug Testing Programs for Key Personnel

The Company has adopted an alcohol and drug testing program. Details about this program are in *Appendix I*.

F.2.5 Implementation of Mitigation and Control Measures to Control Hazards Identified in the Risk and Hazard Analysis

Mitigation and control measures are provided in *Section 2 and Section 7*.

APPENDIX G ACRONYMS, DEFINITIONS, AND REFERENCES

G.1 Acronyms

AC	Area Committee
ACOE	U.S. Army Corps of Engineers
ACP	Area Contingency Plan
ANPRM	Advanced Notice of Proposed Rulemaking
ASTM	American Society of Testing Materials
BBL	Barrel
BLM	Bureau of Land Management (USDOI)
CAMEO	Computer-Aided Management of Emergency Operations
CDC	Center for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act of 1980, as amended
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CHRIS	Chemical Hazards Response Information System
CWA	Clean Water Act of 1977 (Federal)
CWS	Community Warning System
DEQ	Department of Environmental Quality
DOI	Department of Interior
DOT	Department of Transportation
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EQ	Environmental Quality
ERAP	Emergency Response Action Plan
ERC	Emergency Response Coordinator
ERP	Emergency Response Plan
ERT	Emergency Response Team
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Administration
FOSC	Federal On-Scene Coordinator
FR	Federal Register

FRP	Facility Response Plan
FWPCA	Federal Water Pollution Control Act of 1972
FWS	Fish and Wildlife Service
GAL	Gallons
GIS	Geographic Information System
GPM	Gallons Per Minute
HAZMAT	Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HHS	Department of Health and Human Services
HMIS	Hazardous Material Information System
IBRRC	International Bird Rescue Research Center
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IMT	Incident Management Team
IPIECA	International Petroleum Industry Environmental Conservation Association
JIC	Joint Information Center
LEL	Lower Explosive Limit
LEPC	Local Emergency Planning Commission
LEPD	Local Emergency Planning District
LOSC	Local On-Scene Coordinator
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
LRT	Local Response Team
MOU	Memorandum of Understanding
MRL	Minimum Response Levels
NCP	National Contingency Plan
NDDH	North Dakota Department of Health
NDDES	North Dakota Department of Emergency Services
NDIC	North Dakota Industrial Commission
NIC	National Incident Commander
NICa	Alternate National Incident Commander
NIOSH	National Institute for Occupational Safety and Health
NITF	National Incident Task Force
NOAA	National Oceanic and Atmospheric Administration

NPDES	National Pollutant Discharge Elimination System
NPFC	National Pollution Funds Center (USCG)
NPS	National Park Service
NRC	National Response Center (USCG)
NRDA	National Resource Damage Assessment
NRS	National Response System
NRT	National Response Team
OPA 90	Federal Pollution Act of 1990
OSC	On-Scene Coordinator/Commander
OSHA	Occupational Safety and Health Administration (USDL)
OSLTF	Oil Spill Liability Trust Fund
OSPRA	Oil Spill Prevention and Response Act of 1991 (TWC)
OSRO	Oil Spill Removal/Response Organization
OSRP	Oil Spill Response Plan
PFD	Personal Flotation Device
PHMSA	Pipeline and Hazardous Materials Safety Administration
PHS	Public Health Service
PPE	Personal Protective Equipment
PREP	National Preparedness for Response Exercise Program
QI	Qualified Individual
RA	EPA Regional Administrator
RCP	Regional Oil and Hazardous Substance Pollution Contingency Plan
RCRA	Resource Conservation and Recovery Act of 1976
RP	Responsible Party
RRC	Regional Response Centers
RRI	Regional Resource Inventory
RRT	Regional Response Team (Federal)
RQ	Reportable Quantity
SAR	Search and Rescue
SARA	Superfund Amendments and Reauthorization Act
SASR	Sakakawea Area Spill Response
SCBA	Self-Contained Breathing Apparatus
SDWA	Safe Drinking Water Act of 1986
SDS	Safety Data Sheet
SI	Surface Impoundment

SIC	Standard Industrial Classification
SONS	Spill of National Significance
SOP	Standard Operating Procedure
SOSC	State On-Scene Coordinator
SPCC	Spill Prevention Control, and Countermeasure Plan
SRG	State Response Group
SRT	Spill Response Team
SSC	Scientific Support Coordinator (NOAA)
SSSP	Site Specific Safety & Health Plan
TAT	Tactical Assist Team (EPA)
THPP	Tesoro High Plains Pipeline
TLLP	Tesoro Logistics, LP
TRMC	Tesoro Refining and Marketing, Corp
UCS	Unified Command System
USCG	U.S. Coast Guard
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service (USDOI)
USGS	U.S. Geological Survey (USDOI)
USHHS	U.S. Department of Health & Human Services
USPHS	U.S. Public Health Service
WCD	Worst Case Discharge
WDR	Waste Discharge Requirements

G.2 Definitions

Access/Staging Areas - Designated areas offering access to spill sites for the gathering and deployment of spill response equipment and personnel.

Absorbent Material - Any of the several materials designed to absorb oil, both hydrocarbon and non-hydrocarbon.

Adverse Weather - The weather conditions that will be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include ice, temperature and weather-related visibility in which the systems or equipment are intended to function.

Alteration - Any work on a tank or related equipment involving cutting, burning, welding, or heating operations that changes the physical dimensions or configuration of a tank.

Barrel - Measure of space occupied by 42 U. S. gallons at 60 degrees Fahrenheit.

Boom - Any number of specially designed devices that float on water and are used to contain or redirect the flow of oil on the water=s surface.

Boom Deployment - The methodology for installing boom based on differing water depths, currents, wave heights, etc.

Booming Strategies - Techniques which identify the location, quantity, and type of boom required to protect differing water bodies and their shore lines. These strategies are developed by identifying potential spill scenarios and assuming certain conditions which affect oil movement on water.

Clean-Up - For the purposes of this document, clean-up refers to the removal and/or treatment of oil, hazardous substances, and/or the waste or contaminated materials generated by the incident. Clean-up includes restoration of the site and its natural resources.

Clean-Up Contractor - Persons contracted to undertake a response action to contain and clean up a spill.

Command Post – A site located at a safe distance from the spill site where response decisions are made, equipment and manpower deployed, and communications handled. The Incident Commander and the On-Scene Coordinators may direct the on-scene response from this location.

Communication Equipment - Equipment that will be utilized during response operations to maintain communication between employees, contractors, Federal/State/Local agencies. (Radio/telephone equipment and links).

Complex - A facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under Section 311(j) of the CWA.

Containment Boom - A flotation/freeboard device, made with a skirt/curtain, longitudinal strength member, and ballast unit/weight designed to entrap and contain the product for recovery.

Contamination Reduction Zone - The area between the contaminated zone and the clean zone. This area is designed to reduce the probability that the clean zone will become contaminated. Also known as the warm zone.

Contingency Plan - A document used by (1) Federal, state, and local agencies to guide ties planning and response procedures regarding spill of oil, hazardous substances, or other emergencies; (2) a document used by industry as a response plan to spills of oil, hazardous substances, or other emergencies occurring upon their vessels or at their facilities.

Contract or Other Approved Means - Includes:

- A written contractual agreement with a response contractor. The agreement should identify and ensure the availability of the specified personnel and equipment described under USCG Regulations within stipulated response times in the specified geographic areas;
- Certification by the facility owner or operator that the specified personnel and equipment described under USCG Regulations are owned, operated, or under the direct control of the facility owner and operator, and are available within stipulated times in the specified geographic areas;
- Active membership in a local or regional oil spill removal organization that has identified specific personnel and equipment described under USCG Regulations that are available to respond to a discharge within stipulated times in the specified geographic areas; a document which:
  - Identifies the personnel, equipment, services, capable of being provided by the response contractor within stipulated response times in specified geographic areas;
  - Sets out the parties' acknowledgment that the response contractor intends to commit the resources in the event of a response;
  - Permits the Coast Guard to verify the availability of the response resources identified through tests, inspections, and drills; and
  - Is incorporated by reference into the response plan; or
  - For a facility that could reasonably be expected to cause substantial harm to the environment, with the consent of the response contractor or oil spill removal organization, the identification of a response contractor or oil spill removal organization with specified equipment and personnel which are available within stipulated response times in specific geographic areas.

Critical Areas - Areas which, if impacted by a spill, may result in threats to public health and/or safety.

Crude Oil - Any liquid hydrocarbon mixture occurring naturally in the earth, whether or not treated to render it suitable for transportation, and includes crude oil from which certain distillate fractions may have been removed and crude oil to which certain distillate fractions may have been added.

Cultural Resources - Current, historic, prehistoric, and archaeological resources which include deposits, structures, sites, ruins, buildings, graves, artifacts, fossils, or other objects of antiquity which provide information pertaining to historical or prehistoric culture of people as well as the natural history of the state.

Damage Assessment - The process of determining and measuring damages and injury to the human environment and natural resources, including cultural resources. Damages include differences between the conditions and use of natural resources and the human environment that would have occurred without the incident, and the conditions and use that ensued following the incident. Damage assessment includes planning for restoration and determining the costs of restoration.

Decontamination - The removal of hazardous substances from personnel and equipment necessary to prevent adverse health effects.

Discharge - Any spilling, leaking, pumping, pouring, emitting, emptying, or dumping.

Discharge Clean-up Organization - A corporation, proprietorship, partnership, company organization, or association that has, as its primary function, engaged itself in the response to, clean up, and removal of spills of oil or hazardous substance.

Dispersants - Those chemical agents that emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column.

Diversion Boom - A flotation/freeboard device, made with a skirt/curtain, longitudinal strength member, and ballast unit/weight designed to deflect or divert the product towards a pick up point, or away from certain areas.

Emergency Operations Center (EOC) - The pre-designated site where local and state agencies direct and manage off-scene logistics support to on-scene emergency operations.

Emergency Response Phase, Emergency Phase - The portion of a spill response where the primary concern is the alleviation of the immediate danger to human life, health, safety, or property by stabilizing the real or threatened release. This incident specific definition is to be made by the IC representing an appropriate First Response Agency.

Emergency Response Team - The facility-based team that makes notification of a real or threatened release and takes the first action to alleviate the threat or event.

Emergency Service - Those activities provided by the state and local government to prepare for and carry out any activity to prevent, minimize, respond to, or recover from an emergency.

Exclusion Zone - The area where contamination does or may occur.

Environmentally Sensitive Areas - Streams and water bodies, aquifer recharge zones, springs, wetlands, agricultural areas, bird rookeries, endangered or threatened species (flora and fauna) habitat, wildlife preserves or conservation areas, parks, beaches, dunes, or any other area protected or managed for its natural resource value.

Estuary - Unique environment at the mouth of coastal rivers where fresh water and sea water meet, providing important habitat for marine life, birds, and other wildlife.

Facility - Any pipeline, structure, equipment, or device used for handling oil including, but not limited to, underground and aboveground storage tanks, impoundment's, mobile or portable drilling or workover rigs, barge mounted drilling or workover rigs, and portable fueling facilities located offshore or on or adjacent to coastal waters or any place where a discharge of oil from the facility could enter coastal waters or threaten to enter the coastal waters.

Federal Fund - The oil spill liability trust fund established under the Federal Protection Act of 1990.

First Response Agency - A public health or safety agency (i.e., fire service or police department) charged with responding to a spill during the emergency phase and alleviating immediate danger to human life, health, safety, or property.

Fish and Wildlife and Sensitive Environments - Areas that may be identified by either their legal designation or by evaluations of Area Committees (for planning) or members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include wetlands, National and State parks, critical habitats for endangered/threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife refuges, wild and scenic rivers, recreational areas, and historical and archeological sites and parks. These areas may also include unique habitats such as aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats.

Handle - To transfer, transport, pump, treat, process, store, dispose of, drill for, or produce.

Harmful Quantity of Oil - The presence of oil from an unauthorized discharge in a quantity sufficient either to create a visible film or sheen or discoloration upon water, shoreline, tidal flat, beach, or marsh, or to cause a sludge or emulsion to be deposited beneath the surface of the water or on a shoreline, tidal flat, beach, or marsh.

Hazardous Material - Any nonradioactive solid, liquid, or gaseous substance which, when uncontrolled, may be harmful to humans, animals, or the environment. Including but not limited to substances otherwise defined as hazardous wastes, dangerous wastes, extremely hazardous wastes, oil, or pollutants.

Hazardous Substance - Any substance designed as such by the Administrator of EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act**;** regulated pursuant to Section 311 of the Federal Water Pollution Control Act**.**

Hazardous Waste - Any solid waste identified or listed as a hazardous waste by the Administrator of the EPA pursuant to the Federal Solid Waste Disposal Act, as amended by the Resources Conservation and Recovery Act (RCRA), 42 U.S.C., Section 6901, et seq as amended. The EPA Administrator has identified the characteristics of hazardous wastes and listed certain wastes as hazardous in Title 40 of the Code of Federal Regulations, Part 261, Subparts C and D respectively.

Heat Stress - Dangerous physical condition caused by over exposure to extremely high temperatures.

Hypothermia - Dangerous physical condition caused by over exposure to freezing temperatures.

Immediate Response Steps - The immediate steps that are to be taken by the spill observer after detection of a spill.

Incident - Any event that results in the spill or release of oil or hazardous materials. Action by emergency service personnel may be required to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Command Agency - The agency designated under state law (RCW 70.136) as the entity responsible for coordinating all activities and resources at a spill scene, within a particular jurisdiction.

Incident Commander (IC) - The one individual in charge at any given time of an incident. The Incident Commander will be responsible for establishing a unified command with all on-scene coordinators.

Incident Command System (ICS) - A method by which the response to an extra-ordinary event, including a spill, is categorized into functional components and responsibility for each component assigned to the appropriate individual or agency.

Incident Management Team – a.k.a. Spill Management Team. The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation. They will supervise and control all response and clean-up operations. *NOTE: The Tesoro IMT is the same as the required Spill Management Team as identified in 33 CFR 154.1035(b)(3)(v).*

Designated company individuals who will fulfill the roles determined in the oil spill response plan in the event of an oil spill. They will supervise and control all response and clean-up operations.

Initial Clean-up - Remedial action at a site to eliminate acute hazards associated with a spill. An initial clean-up action is implemented at a site when a spill of material is an actual or potentially imminent threat to public health or the environment, or difficulty of cleanup increases significantly without timely remedial action. All sites must be evaluated to determine whether initial cleanup is total cleanup; however, this will not be possible in all cases due to site conditions (i.e., a site where overland transport or flooding may occur).

Initial Notification - The process of notifying necessary company personnel and Federal/State/Local agencies that a spill has occurred, including all pertinent available information surrounding the incident.

Injury - A measurable adverse change, either long- or short-term, in the chemical or physical quality of the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil, or exposure to a product of reactions resulting from a discharge of oil.

Inland Area - The area shoreward of the boundary lines defined on 46 CFR Part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area shoreward of the lines of demarcations (COLREG lines) defined in '80.740 - 80.850 of Title 33 of the CFR. The inland area does not include the Great Lakes.

Interim Storage Site - A site used to temporarily store recovered oil or oily waste until the recovered oil or oily waste is disposed of at a permanent disposal site. Interim storage sites include trucks, barges, and other vehicles, used to store waste until the transport begins.

Lead Agency - The government agency that assumes the lead for directing response.

Lead Federal Agency - The agency which coordinates the Federal response to incidents on navigable waters. The lead Federal agencies are:

- U.S. Coast Guard (USCG): Oil and chemically hazardous materials incidents on navigable waters.
- U.S. Environmental Protection Agency (EPA): Oil and chemically hazardous materials incidents on inland waters.

Lead State Agency - The agency which coordinates state support to Federal and/or Local governments or assumes the lead in the absence of Federal response: California State Office of Oil Spill Prevention and Response (OSPR).

Location Boundaries - Areas where oil may be expected to impact during the first day of a spill event.

Lower Explosive Limit - Air measurement to determine the lowest concentration of vapors that support combustion. This measurement must be made prior to entry into a spill area.

Marinas - Small harbors with docks, services, etc. for pleasure craft.

Marine Facility - Any facility used for tank vessel wharfage or anchorage, including any equipment used for the purpose of handling or transferring oil in bulk to or from a tank vessel.

Maximum Extent Practicable - The planning values derived from the planning criteria used to evaluate the response resources described in the response plan to provide the on-water recovery capability and the shoreline protection and clean-up capability to conduct response activities for a worst case discharge from a facility in adverse weather.

National Contingency Plan - The plan prepared under the Federal Water Pollution Control Act (33 United States Code '1321 et seq) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 United State Code '9601 et seq), as revised from time to time.

Natural Resource - Land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to or otherwise controlled by the State, Federal government, private parties, or a municipality.

Navigable Waters of the State - Waters of the state, and their adjoining shorelines, that are subject to the ebb and flow of the tide and/or are presently used, have been used in the past, or may be susceptible for use to transport intrastate, interstate, or foreign commerce.

Nearshore Area - The area extending seaward 12 miles from the boundary lines defined in 46 CFR Part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area extending seaward 12 miles from the line of demarcation (COLREG) lines) defined in '80.740 - 80.850 of Title 33 of the CFR.

Non-Crude Oil - Any oil other than crude oil.

Non-Persistent or Group I Oil - A petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions:

- At least 50% of which by volume, distill at a temperature of 340°C (645°F); and
- At least 95% of which volume, distill at a temperature of 370°C (700°F).

Non-Petroleum Oil - Oil of any kind that is not petroleum-based. It includes, but is not limited to, animal and vegetable oils.

Ocean - The offshore area and nearshore area as defined in the Appendix.

Oil or Oils - Naturally occurring liquid hydrocarbons at atmospheric temperature and pressure coming from the earth, including condensate and natural gasoline, and any fractionation thereof, including, but not limited to, crude oil, petroleum gasoline, fuel oil diesel oil, oil sludge, oil refuse, and oil mixed with wastes other than dredged spoil. Oil does not include any substance listed in Table 302.4 of 40 CFR Part 302 adopted August 14, 1989, under Section 101(14) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by P.L. 99-499.

Oil Spill Cooperative - Multi-company cooperative organization developed by industry to assist with oil spill response and clean up. Typically, manpower and equipment are identified by a company on a voluntary basis.

Oil Spill Removal Organization - An entity that provides oil spill response resources, and includes any for profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provided required response resources.

Oil Spill Response Contractors - Persons/Companies contracted to undertake a response action to contain and/or clean up a spill.

Oily Waste - Oil contaminated waste resulting from an oil spill or oil spill response operations.

Operating Area - The rivers and canals, inland, nearshore, Great Lakes, or offshore geographic location(s) in which a facility is handling, storing, or transporting oil.

Operating Environment - Rivers and canals, inland, Great Lakes, or ocean. These terms are used to define the conditions in which response equipment is designed to function.

Owner or Operator - (i) in the case of a vessel, any person owning, operating, or chartering by demise, the vessel; (ii) in the case of an onshore of offshore facility, any person owning or operating the facility; and (iii) in the case of an abandoned vessel or onshore or offshore facility, the person who owned or operated the vessel or facility immediately before its abandonment. Note: "Operator" does not include any person who owns the land underlying a facility if the person is not involved in the facility's operations.

Person - Any political subdivision, government agency, municipality, industry, public or private corporation, co-partnership, association, firm, individual, or any other entity whatsoever.

Persistent Oil - A petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. For the purposes of this Appendix, persistent oils are further classified based on specific gravity as follows:

- Group II - specific gravity less than .85.
- Group III - specific gravity between .85 and less than .95.
- Group IV - specific gravity .95 to and including 1.0.
- Group V - specific gravity greater than 1.0.

Plan - Oil Spill Response Plan (OSRP)

Primary Response Contractor(s) - An individual, company, or cooperative that has contracted directly with the plan holder to provide equipment and/or personnel for the containment or clean-up of spilled oil. For use in contingency plans, primary response contractors must be approved by OSPR.

Post-Emergency Response - The portion of a response performed after the immediate threat of a release has been stabilized or eliminated and cleanup of the sites has begun.

Qualified Individual(s) (QIs) - An English-speaking representative(s) of the facility identified in the plan, located in the United States, available on a 24-hour basis, familiar with implementation of the facility response plan, and trained in his or her responsibilities under the plan. This person must have full written authority to implement the facility's response plan. This includes:

- Activating and engaging in contracting with identified oil spill removal organization(s);
- Acting as a liaison with the predesigned Federal On-Scene Coordinator (OCS); and
- Obligating, either directly or through prearranged contracts, funds required to carry out all necessary or directed response activities.

Recreational Areas - Publicly accessible locations where social/sporting events take place.

Refinery - In this document, the term "Refinery" refers to, collectively, the Tesoro Martinez Refinery.

Regional Response Team - The Federal Response Organization (consisting of representatives from selected Federal and State agencies) which acts as a regional body responsible for planning and preparedness before an oil spill occurs and providing advice to the FOSC in the event of a major or substantial spill.

Repair - Any work necessary to maintain or restore a tank or related equipment to a condition suitable for safe operation.

Response Activities - The containment and removal of oil from the water and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to the environment.

Response Contractors - Persons/companies contracted to undertake a response action to contain and/or clean up a spill.

Response Guidelines - Guidelines for initial response that are based on the types of product involved in the spill, these guidelines are utilized to determine clean-up methods and equipment.

Response Resources - The personnel, equipment, supplies, and other capability necessary to perform the response activities identified in a response plan.

Response Plan - A practical plan used by industry for responding to a spill. Its features include (1) identifying the notification sequence, responsibilities, response techniques, etc. in an easy to use format; (2) using decision trees, flowcharts, and checklists to insure the proper response for spills with varying characteristics; and (3) segregating information needed during the response from that required by regulatory agencies to prevent confusion during a spill incident.

Responsible Party - Any person, owner/operator, or facility that has control over an oil or hazardous substance immediately before entry of the oil or hazardous substance into the atmosphere or in or upon the water, surface, or subsurface land of the state.

Restoration - The actions involved in returning a site to its former condition.

Rivers and Canals - A body of water confined within the inland area that has a projected depth of 12 feet or less, including the Intracoastal Waterway and other waterways artificially created for navigation.

Securing the Source - Steps that must be taken to stop the spill of oil at the source of the spill.

Site Security and Control - Steps that must be taken to provide safeguards needed to protect personnel and property, as well as the general public, to ensure an efficient clean-up operation.

Site Conditions - Details of the area surrounding the facility, including shoreline descriptions, typical weather conditions, socioeconomic breakdowns, etc.

Skimmers - Mechanical devices used to skim the surface of the water and recover floating oil. Skimmers fall into four basic categories (suction heads, floating weirs, oleophilic surface units, and hydrodynamic devices) which vary in efficiency depending on the type of oil and size of spill.

Sorbents - Materials ranging from natural products to synthetic polymeric foams placed in confined areas to soak up small quantities of oil. Sorbents are very effective in protecting walkways, boat decks, working areas, and previously uncontaminated or cleaned areas.

Spill - An unauthorized discharge of oil or hazardous substance into the waters of the state.

Spill Observer - The first company individual who discovers an oil spill. This individual must function as the responsible person-in-charge until relieved by an authorized supervisor.

Spill Response Personnel - Federal, state, local agency, and industry personnel responsible for participating in or otherwise involved in spill response. All spill response personnel will be pre-approved on a list maintained in each region.

Staging Areas - Designated areas near the spill site accessible for gathering and deploying equipment and/or personnel.

State Emergency Response Commission (SERC) - A group of officials appointed by the Governor to implement the provisions of Title III of the Federal Superfund Amendments and Reauthorization Act of 1986 (SARA). The SERC approves the State Oil and Hazardous Substance Discharge Prevention and Contingency Plan and Local Emergency Response Plans.

Substantial Threat of a Discharge - Any incident or condition involving a facility that may create a risk of discharge of fuel or cargo oil. Such incidents include, but are not limited to, storage tank or piping failures aboveground or underground leaks, fire explosions, flooding, spills contained within the facility or other similar occurrences.

Tier 2 Response - Oil spills that are beyond Local Response Team capability, and that require assistance from the Region Response Team.

Tier 3 Response - Oil spills that are beyond Local and Region Response Team capabilities, and that require assistance from the Tesoro National Incident Management Team.

Trajectory Analysis - Estimates made concerning spill size, location, and movement through aerial surveillance or computer models.

Unauthorized Spill - Spills excluding those authorized by an in compliance with a government permit, seepage from the earth solely from natural causes, and unavoidable, minute spills of oil from a properly functioning engine, of a harmful quantity of oil from a vessel or facility either: (1) into coastal water; or (2) on any waters or land adjacent to coastal waters where harmful quantity of oil may enter coastal waters or threaten to enter coastal waters if the spill is not abated, not contained and the oil is not removed.

Underwriter - An insurer, a surety company, a guarantor, or any person other than an owner or operator who undertakes to pay all or part of the liability of an owner or operator.

Unified Command (UC) - The method by which local, state, and Federal agencies and the responsible party will work with the Incident Commander to:

- Determine their roles and responsibilities for a given incident.
- Determine their overall objectives for management of an incident.
- Select a strategy to achieve agreed upon objectives.
- Deploy resources to achieve agreed-upon objectives.

Volunteers - An individual who donates their services or time without receiving monetary compensation.

Waste - Oil or contaminated soil, debris, and other substances removed from coastal waters and adjacent waters, shorelines, estuaries, tidal flats, beaches, or marshes in response to an unauthorized discharge. Waste means any solid, liquid, or other material intended to be disposed of or discarded and generated as a result of an unauthorized discharge of oil. Waste does not include substances intended to be recycled if they are in fact recycled within 90 days of their generation or if they are brought to a recycling facility within that time.

Waters of the State - Includes lakes, rivers, ponds, streams, inland waters, underground water, salt water, estuaries, tidal flats, beaches and lands adjoining the seacoast of the state, sewers, and all other surface waters and watercourses within the jurisdiction of the State of California.

Wildlife Rescue - Efforts made in conjunction with Federal and State agencies to retrieve, clean, and rehabilitate birds and wildlife affected by an oil spill.

Worst Case Unauthorized Discharge - The largest foreseeable unauthorized spill under adverse weather conditions. For facilities located above the high water line of coastal waters, a worst case spill includes those weather conditions most likely to cause oil spilled from the facility to enter coastal waters.

Worst Case Discharge (EPA) (Storage Facilities) -

1. Loss of the entire capacity of all aboveground tank(s) at the facility not having secondary containment; plus

2. 100% of the capacity of the largest tank within a secondary containment system or 100% of the combined capacity of the largest group of aboveground tanks permanently manifolded together within the same secondary containment system - whichever is greater.

Worst Case Discharge (Pipeline) -

1. The loss of the entire capacity of all in-line and breakout storage tanks needed for the continuous operation of the pipelines used for the purpose of handling or transporting oil, in bulk, to or from a vessel regardless of the presence of secondary containment; plus

2. The discharge from all piping carrying oil between the marine transfer manifold and the non-transportation-related portion of the facility.

APPENDIX H CROSS REFERENCE

H.1 EPA Cross Reference

This table provides a means of cross referencing this Plan to EPA regulations.

EPA REFERENCE 40 CFR PART 112	DESCRIPTION	TESORO PLAN SECTION
112.7 (d) (2)	Statement of Corporate Commitment	Preface
112.20(g)	ACP/NCP Interface	Section 1
112.20 (h)(1)	Emergency Response Action Plan	Section 2
112.20 (h)(1)(i)	Qualified Individual(s)	Sections 1, 3, Appendices C1,C2
112.20 (h)(1)(ii)	Spill Notification List	Sections 3A, 3B
112.20 (h)(1)(iii)	Reportable Spill Information	Sections 3A, 3B
112.20 (h)(1)(iv)	Response Equipment	Section 7, Appendix B
112.20 (h)(1)(v)	Response Personnel Capabilities	Section 7
112.20 (h)(1)(vi)	Evacuation Plans	N/A
112.20 (h)(1)(vii)	Source Control	Section 2, Appendix E
112.20 (h)(1)(viii)	Facility Diagram	Appendix J
112.20 (h)(2)	Facility Information	Appendices C1, C2
112.20 (h)(3)	Information about Emergency Responses	Sections 2,3
112.20 (h)(3)(i)	Identity of Private Personnel & Equipment	Appendix B
112.20 (h)(3)(ii)	Contracts	Appendix B
112.20 (h)(3)(iii)	Individuals/Organizations Contact List	Section 3
112.20 (h)(3)(iv)	Reportable Spill Information	Section 3
112.20 (h)(3)(v)	Response Personnel Capabilities	Section 4
112.20 (h)(3)(vi)	Facility's Response Equipment	Section 7, Appendix B
112.20 (h)(3)(vii)	Plans for Evacuation of Facility	N/A (facilities are unmanned)
112.20 (h)(3)(viii)	Diagram of Evacuation Routes	N/A (facilities are unmanned)
112.20 (h)(3)(ix)	Duties of the Qualified Individual(s)	Section 3A, 3B
112.20 (h)(4)	Hazard Evaluation	Section D
112.20 (h)(5)	Response Planning Levels	Section D
112.20 (h)(5)(i)	Worst Case Discharge	Section 1, Appendices C1, C2
112.20 (h)(5)(ii)	Small Discharge	Section D
112.20 (h)(5)(iii)	Medium Discharge	Section D
112.20 (h)(6)	Discharge Detection Systems	Appendix F
112.20 (h)(7)	Plan Implementation	Sections 2, 3A, 3B
112.20 (h)(7)(i)	Response Actions to be Carried Out	Sections 7,8 & Appendices A,B,D,J
112.20 (h)(7)(ii)	Response Scenario	Appendix D
112.20 (h)(7)(iii)	Waste Disposal Plan	Section 7
112.20 (h)(7)(iv)	Adequate Containment & Drainage	Appendix E
112.20 (h)(8)	Drills/Exercises & Response Training	Appendix A
112.20 (h)(9)	Site and Drainage Diagrams	Appendix J
112.20 (h)(10)	Security Systems	Section 7
112.20 (h)(11)	Response Plan Cover Sheet	Sections 3A, 3B

H.2 USDOT Cross Reference

This table provides a means of cross referencing this Plan to U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations.

PHSMA REFERENCE 49 CFR PART 194	DESCRIPTION	TESORO PLAN SECTION
194.103	Significant and Substantial Harm	Appendix C1, C2
194.105	Worst Case Discharge	Section 1, Appendices C1, C2
194.107 (a)	Resources for a Worst Case Discharge	Section 7, Appendix B
194.107 (b)	Consistency with ACP and NCP	Section 1
194.107 (b)(1)(i)	Procedures to Notify NRC	Sections 3A, 3B
194.107 (b)(1)(ii)	Safety at Response Site	Appendix A
194.107 (b)(1)(iii)	Alternative Response Strategies	Appendix E
194.107 (b)(2)(i)	Worst Case Discharge	Section 1, Appendices C1, C2
194.107 (b)(2)(ii)	Environmentally & Economically Sensitive Areas	Section 6
194.107 (b)(2)(iii)	Role of Federal, State and Local Agencies	Section 4
194.107 (b)(2)(iv)	Dispersants	N/A
194.107 (c)(1)(i)	Information Summary	Section 1
194.107 (c)(1)(ii)	Notification Procedures	Sections 3A, 3B
194.107 (c)(1)(iii)	Spill Detection and Mitigation	Section F
194.107 (c)(1)(iv)	Oil Spill Response Organization	Sections 3A, 3B, Appendix B
194.107 (c)(1)(v)	Response Activities and Resources	Sections 2, 7 & Appendix B
194.107 (c)(1)(vi)	Federal, State, Local Agency Contact Information	Sections 3A, 3B
194.107 (c)(1)(vii)	Training Procedures	Appendix A
194.107 (c)(1)(viii)	Equipment Testing	Appendix A
194.107 (c)(1)(ix)	Drill Program	Appendix A
194.107 (c)(1)(x)	Plan Review and Update	Section 1
194.107 (c)(2)	Response Zone Specific Information	Section 1
194.107 (c)(3)	Response Management Team	Section 4
194.113 (a)(1)	Name and Address	Section 1
194.113 (a)(2)	Description of Response Zone	Section 1
194.113 (b)(1)	Core Plan Information Summary	Section 1
194.113 (b)(2)	Qualified Individual	Section 1
194.113 (b)(3)	Description of Response Zone	Section 1, Appendices C1,C2
194.113 (b)(4)	List of Line Sections	Appendices C1,C2
194.113 (b)(5)	Determination of Significant & Substantial Harm	Appendices C1,C2
194.113 (b)(6)	Type and Volume of Oil for WCD	Appendices C1,C2
194.115 (a)	Response Contract	Appendix B
197.115 (b)	Response Resources	Appendix B
194.117	Training	Appendix A

APPENDIX I DRUG AND ALCOHOL POLICY

I.1 General Information

The following policy is direct from Tesoro Corporation Human Resources, titled 20.10.040 Drugs and Alcohol. There are two sub-plans that are available upon request:

- Tesoro Anti-Drug Plan
- Tesoro Alcohol Misuse Prevention Policy

I.2 Policy

TESORO	**Drugs and alcohol** 20 - Human resources Employee conduct **20.10.040**	Issued: Revised: Revision: Reviewed:	3/9/2004 4/15/2015 B 4/6/2015 CML

1.0 Purpose

1.1. To establish responsibilities and guidelines for providing a safe and productive workplace that is free from the effects of drugs and alcohol.

1.2. To protect Company Property and assets.

2.0 Scope and responsibility

2.1. This policy will apply to Tesoro Corporation and associated Company Entities as well as to Tesoro Logistics GP, LLC, Tesoro Logistics LP and associated Company Entities.

2.2. The policy committee member responsible for human resources will develop and maintain the content of this policy.

2.3. Human resources business partners (HRBPs) will administer this policy for their respective areas of responsibility.

2.4. Managers and supervisors will implement this policy within their respective areas of responsibility and may consult with human resources.

2.5. Certain employees will be subject to separate or additional drug and alcohol testing requirements, as required by federal Department of Transportation (DOT) regulations in regard to their job functions or work activities. For the purpose of this policy, such employees are referred to as "DOT-covered" employees. These DOT requirements are found in the Company's Anti-Drug Plan and its Alcohol Misuse Prevention Policy. Non DOT-covered employees will follow many of the same guidelines set forth by the DOT, as implemented by this policy. Any DOT tests must take priority and must be completed before a non-DOT test is begun.

2.6. This policy applies to all applicants and non-represented employees as a condition of employment, unless otherwise agreed to in the collective bargaining agreement governing the represented employee's employment. This policy does not alter the at-will nature of employment with the Company or restrict the Company's discretion to discipline employees or terminate the employment relationship at any time, for any reason, with or without notice.

2.7. Non-Company personnel performing work for the Company on Company Premises through a contract or third-party employer are expected to meet requirements comparable to those contained herein. When feasible, these requirements will be reflected in any written agreement between the Company and the contractor or third party providing leased workers.

3.0 References

3.1. Policy 10.20.001, Code of business conduct and ethics

3.2. Policy 10.20.010, Obeying the law

3.3. Policy 10.60.035, Use of fleet vehicles

3.4. Policy 23.10.005, Environmental, health and safety

3.5. Tesoro's Anti-Drug Plan and its Alcohol Misuse Prevention Policy, regarding drug and alcohol use and testing in DOT-covered positions.

3.6. Reasonable Suspicion Observation Checklist

4.0 Definitions

4.1. **Company property or premises** - The broadest sense of Company Property or Premises includes all property, facilities, land, offices, buildings, structures, parking areas, fixtures, installations, trailers, and equipment, whether owned, rented, leased, used or under the control of the Company. Also included are other work locations, such as the job site of a customer, or travel to and from those locations while in the course and scope of employment.

4.2. **Company Vehicles** - all vehicles owned, rented, leased or used by the Company and all vehicles that are used by employees, regardless of who owns or leases them, while working for the Company.

4.3. **Covered substances** - This policy covers all of the following substances:

4.3.1. Alcohol - the intoxication agent in beverage alcohol or any low molecular weight alcohols such as ethyl, methyl or isopropyl alcohol. The term includes beer, wine, spirits, and medications such as cough syrup that contain alcohol.

4.3.2. Illegal Drugs - all controlled substances, designer drugs, synthetic drugs, and other drugs not placed in a schedule by the federal government that are not being used or possessed under the supervision of a licensed health care professional or that are not being used in accordance with the licensed health care professional's prescriptions. Examples of Illegal Drugs include, but are not limited to, marijuana, cocaine, methamphetamine, LSD, and Ecstasy (MDMA) as well as legal drugs such as hydrocodone and codeine not used in a legal manner as described above (controlled substances are listed in Schedules I - V of 21 U.S.C. § 812 and 21 C.F.R. Part 1308).

4.3.3. Inhalants - volatile solvents, aerosols, gases and nitrites, such as paint thinners or removers, gasoline, lighter fluid, butane lighters, glue, hair or deodorant sprays, nitrous oxide or other similar substances that are inhaled intentionally to produce feelings of intoxication or euphoria.

4.3.4. Any otherwise legal but illicitly used substance, including over-the-counter medications or other substances not being used for their intended purpose or in accordance with their directions.

4.4. **Detectable Levels or Identifiable Trace Quantities** - Detectable Levels or Identifiable Trace Quantities are the measurable presence of a Covered Substance found in the breath, hair or body fluids at levels of detection above the lowest cutoff levels as established by analytical methods used by the testing laboratory.

4.5. **Drug Paraphernalia** - Drug Paraphernalia are any items used in connection with Covered Substances.

4.6. **Medical Review Officer (MRO)** - A licensed physician with the knowledge, training, and clinical experience regarding substance abuse disorders and who will, review applicants' and employees' positive drug test results and evaluate any medical explanation for such results. The MRO may be a third-party provider selected by the Company.

4.7. **Possession** - Possession is actual or constructive care, custody, control or immediate access.

4.8. **Refusal to cooperate** - Refusing to take a drug or alcohol test, not promptly proceeding to a collection site as instructed, failing to remain at a testing site until the testing process is complete, attempting to provide or providing an adulterated or substituted specimen, failing to provide a sufficient specimen, failing to timely provide a specimen, failing to sign testing and other required forms, failing to timely contact the MRO, and any other conduct that disrupts or interferes with the collection and/or testing process.

4.9. **Reasonable Suspicion** - Reasonable Suspicion is a belief based on specific, contemporaneous, physical, behavioral, or performance indicator of probable use, Possession or being Under the Influence of Covered Substances by employees while working, operating Company vehicles, machinery or equipment, present on Company Premises or present in any other location while performing services for the Company.

4.10. **Specimen** - Specimen is breath, hair, blood or urine collected for alcohol or drug testing.

4.11. **Test Positive for Alcohol** - To take an alcohol test that results in an alcohol concentration of .04 or more.

4.12. **Test Positive for Illegal Drugs** - To take a drug test that results in a concentration of marijuana, cocaine, opiates, amphetamines, or phencyclidine, or their metabolites, that is equal to or exceeds the cutoff levels that are set forth in 49 C.F.R./Part 490.

4.13. **Under the Influence or Impaired** - Under the Influence or Impaired means to test positive for Covered Substances or an employee's actions, appearances, speech or bodily odors that reasonably cause the Company to conclude that the employee is Impaired due to the use of Covered Substances.

5.0 Policy

5.1. **Rationale:** The Company is committed to providing a safe, healthy and productive workplace, and the use of Illegal Drugs and the misuse of alcohol by applicants, employees, and contractors are inconsistent with this commitment. This is a zero-tolerance termination policy, and the employment of even first-time offenders will be terminated for violations of this policy.

5.2. **Prohibited activities:** Employees are to report for work, including when working remotely, free of any adverse effects of Covered Substances. Whenever employees are working, operating Company Vehicles, machinery or equipment, present on Company Premises, or present in any other location on behalf of the Company or while performing services for the Company, they are prohibited from the following activities, each of which is a violation of this policy:

5.2.1. Using, possessing, selling, manufacturing, distributing, dispensing, or transferring Illegal Drugs or Drug Paraphernalia

5.2.2. Using Inhalants

5.2.3. Possessing or consuming alcoholic beverages, unless otherwise authorized as described in this policy.

5.2.4. Being Under the Influence of Covered Substances

5.2.5. Using Drug Paraphernalia, unless required for a medical condition as authorized by a licensed medical practitioner. Marijuana is considered a controlled substance and remains illegal under federal law and this policy.

5.2.6. Performing duties while Under the Influence of Covered Substances, regardless of whether the employee is on or off Company Property or Premises.

5.3. **Authorized Possession and/or Consumption of Alcohol:** Employees may possess and consume alcohol at Company-sponsored or authorized functions or in certain legitimate business settings, such as client entertainment. At all such times, however, employees are expected to act responsibly and to drink in moderation. Employees working outside of field operating locations and safety-sensitive job sites may also discreetly possess alcoholic beverages in their vehicles on Company property if temporarily stored in the vehicle to be consumed later in accordance with this policy. Company field operating locations and safety-sensitive job sites do not allow employees or contractors to possess alcoholic beverages in their vehicles on Company property, unless the most senior level employee responsible for the site has granted an exception allowing employees to do so outside of restricted, secured areas. Exceptions for non-work social events (e.g. employee picnics and gatherings) that may occur on company-owned recreational property adjacent to operating locations, but outside of established operating area boundaries and safety-sensitive job site areas may be granted by the most senior level employee responsible for the site. The Company may withdraw any privileges provided to employees regarding the possession and/or consumption of alcohol if the privileges are abused.

5.4. **Lawful Possession and Use of Over-the-Counter or Prescribed Medications:** This policy does not prohibit employees from the lawful Possession and use of over-the-counter or prescribed medications. Employees have the responsibility to consult with their health care provider about the effects of such medications on their ability to safely perform specific job duties and to promptly disclose any such adverse effects or related work restrictions (e.g., "cannot operate heavy machinery when taking this medication") to their supervisors or the human resources or medical department. Employees should not, however, disclose underlying medical conditions, impairments or disabilities to their supervisors or the human resources or medical department unless directed to do so by their health care provider. When appropriate, and with the necessary consent, the Company may contact the prescribing physician or health care provider to determine if a drug or medication produces hazardous or unsafe effects. The Company will restrict the use of any such drug or medication on Company Property or Premises, and even restrict the individual's work activity, schedule, or presence at the worksite in accordance with applicable law. Failure to notify the Company of the hazardous or unsafe effects of such over-the-counter or prescribed medications or associated work restrictions or to comply with such restrictions is a violation of this policy.

5.5. **Notification and acknowledgement:** Upon employment, all regular full-time and regular part-time employees subject to this policy will be given a copy of this policy and will be subject to its terms as a condition of employment. Each employee will be required to read and sign an acknowledgement form, confirming receipt of and compliance with this policy.

5.6. **Test types and cutoff levels:** The Company will determine the type of drug and/or alcohol tests to use and the associated cutoff levels, in compliance with applicable law, as described more fully below.

5.7. **Confidentiality and disclosure:** All information and records related to drug and/or alcohol test results or rehabilitation will be kept confidential and maintained in files separate from employees' personnel files. Such records and information may be disclosed to applicants and employees, any third-party designated in writing by an applicant or employee, the MRO, the Employee Assistance Program ("EAP"), a substance abuse professional ("SAP"), physician or other health care provider responsible for determining an employee's ability to safely perform his or her job and/or the employee's successful participation in and/or completion of any and all evaluations, counseling, treatment, and rehabilitation programs, to and among the Company's supervisors on a need-to-know basis, where relevant to the Company's defense in a grievance, arbitration, administrative proceeding, lawsuit or other legal proceeding, or as required or otherwise permitted by law. As a condition of employment, the Company may require an employee to sign a release authorizing disclosure and release of information for coordinating care/evaluation, evaluating fitness for work, and assessing compliance with testing, evaluation, treatment and follow-up conditions for substance abuse.

5.8. **Testing:** The Company may require applicants and employees to submit to a urine, saliva, breath, hair, and/or blood screen test. The primary screening and testing method will be urine or hair for drugs and a breath sample for alcohol.

5.8.1. The Company will conduct drug and/or alcohol tests under the following circumstances:

a. **Pre-employment** - All applicants who receive a conditional offer of employment will be required to pass a drug test before they are hired by and/or begin working for the Company.

b. **Post-accident/incident** - Following a work-related accident/incident, typically involving personal injury and/or environmental or property damage, the employee is required to submit to testing when the Company reasonably believes the employee's conduct either contributed, or cannot be completely discounted as a contributing factor, to the accident/incident. Testing will occur within a maximum of 8 hours for alcohol and within 32 hours for other substances. Employees must notify their supervisors or the human resources department of the accident/incident as soon as safely possible after any accident/incident, even if it does not result in personal injury or environmental or property damage. All employees will be removed from safety-sensitive duties until the tests are complete.

c. **Random** - The Company may conduct random, unannounced testing of employees in accordance to applicable law (e.g., in some locations random testing may be limited to those in safety-sensitive positions. The selection of employees to be randomly tested will be made by a scientifically valid method. Pipeline and Hazardous Materials Safety Administration (PHMSA), Federal Motor Carrier Safety Administration (FMCSA), and non-DOT pools are maintained separately.

d. **Reasonable suspicion** - When the Company reasonably suspects the use, Possession or being Under the Influence of Covered Substances by an employee, a Reasonable Suspicion test will be conducted. All employees will be removed from their duties until the tests are complete. For DOT-covered employees suspected of alcohol misuse, see the Company's Anti-Drug Plan and its Alcohol Misuse Prevention Policy for guidance. See additional guidance regarding Reasonable Suspicion Testing, including a Reasonable Suspicion Observation Checklist, in Exhibit A.

e. **Return to duty & follow-up testing** – As part of any drug and/or alcohol rehabilitation program after voluntary disclosure, return to duty testing will be conducted. Subsequent unannounced follow-up testing will be conducted in accordance with any rehabilitation program for a period not to exceed 24 months from the date of the employee's return to duty unless an extension is warranted. For DOT-covered employees participating in return to duty and/or follow-up testing, see the Company's Anti-Drug Plan and its Alcohol Misuse Prevention Policy for guidance.

5.8.2. Employees who refuse to cooperate in a drug and/or alcohol test will be in violation of this policy.

5.8.3. Any employee required to submit to a test will be informed of the reasons why he or she is being asked to submit the Specimen. An employee failing to submit the Specimen, after a three-hour period or the time mandated by applicable law, will be in violation of this policy. A violation includes an employee who refuses or fails to comply with this policy without a valid medical explanation or who engages in conduct that clearly obstructs the testing procedure.

5.8.4. Use of medical or recreational marijuana – Medical or recreational use of marijuana that is lawful under state law is not a legitimate medical explanation for a positive test result for marijuana. Marijuana is considered a controlled substance and remains illegal under federal law and this policy. Employees are specifically placed on notice that a positive test for marijuana, even if the individual possesses a valid prescription for marijuana, will be deemed a positive test in violation of this policy in any and all circumstances.

5.8.5. Alcohol – pre-duty use – Employees should exercise proper judgment when consuming alcohol so as not to violate any provisions of this policy. For pre-duty alcohol use regarding DOT-covered employees, see the Company's Anti-Drug Plan and its Alcohol Misuse Prevention Policy for guidance.

5.8.6. Summary of alcohol collection and testing procedures – Except where precluded by applicable law, the Company will follow the general alcohol collection and testing procedures set forth below:

a. Employees subject to alcohol testing will be required to sign a written consent form in which they consent to and authorize testing.

b. Employees will be sent or transported to a Company-designated collection site, on or off Company Premises, where they will be required to verify their identity and cooperate in the Specimen collection process.

c. The collection and testing will be conducted in a private manner by trained technicians at a certified laboratory using approved testing devices, methods, and forms. Chain of custody procedures will be maintained from collection to the time specimens may be discarded to ensure proper identification, labeling, recordkeeping, handling, and testing of specimens.

d. A screening test will be conducted first. If the employee's screen test result is less than .02, the employee will have passed the test.

e. If the employee's measured alcohol concentration is .02 or more, the employee will be required to take a confirmation test. The results of the confirmation test, not the initial screen test, are determinative. If the confirmation test result is less than .04, the employee will have passed the test. If the employee's confirmation test result is .04 or more, the employee will have tested positive for alcohol.

f. The testing facility will notify the Company of the employee's alcohol test results in a confidential manner. The Company will notify the employee in writing of their result

5.8.7. Summary of drug collection and testing procedures - Except where precluded by applicable law, the Company will follow the general drug collection and testing procedures set forth below:

a. Applicants and employees subject to drug testing will be required to sign a written consent form in which they consent to and authorize testing.

b. Applicants and employees will be sent or transported to a Company-designated collection site, on or off Company Premises, where they will be required to verify their identity and cooperate in the Specimen collection process. Applicants and employees will have the opportunity to disclose any over-the-counter or prescribed medications that they are using or have recently used, or any other information, medical or otherwise, that they believe may be relevant to the testing.

c. Specimens will be collected in a private manner by a trained collection site person who will used approved collection methods and containers and custody and control forms. An employee who fails to submit a Specimen after a three-hour period or the time mandated by applicable law, will be in violation of this policy. Chain of custody procedures will be maintained from collection to the time specimens may be discarded to ensure proper identification, labeling, recordkeeping, handling, and testing of specimens.

e. If an applicant or employee has a confirmed positive, adulterated, substituted or invalid drug test, the MRO will contact the applicant or employee by telephone at the numbers listed on the custody and control form. Applicants and employees will promptly cooperate with the MRO. If no contact is made with the applicant or employee within five days of the date the MRO receives the positive test result, the MRO will verify the result as positive.

f. The MRO will advise the Company if an applicant or employee has passed or failed the test, refused to cooperate, if a specimen is dilute, or if a test should be cancelled. If the MRO determines that there is a legitimate, medical explanation for a positive, adulterated, or substituted test result, the MRO will report a negative test result to the Company. If the applicant or employee does not provide a legitimate medical explanation for a positive test result, the MRO will verify the test result as positive. If the applicant or employees does not provide a legitimate medical explanation for an adulterated or substituted test result, the MRO will report to the Company that the applicant or employee has refused to take the drug test. Invalid test results will be cancelled and, depending on the circumstances, may subject an applicant or employee to additional testing.

g. The Company will notify applicants and employees in writing of their results.

h. The Company will advise applicants and employees of their rights, if any, to have their same specimen retested or their split specimens tested by a certified laboratory.

5.9. **Consequences:** This is a zero-tolerance termination policy, and the employment of any employee found in violation of this policy will be terminated, even on a first occurrence.

5.9.1. Preliminary findings of a policy violation may result in the employee being suspended, without pay, pending the results of a Company investigation. If the investigation, including a negative GC/MS confirmation, clears the employee of any policy violation, the employee will be fully reinstated.

5.9.2. Applicants who refuse to cooperate in a pre-employment test or who test positive for Covered Substances will not be hired by the Company and will not be eligible for future consideration for employment in accordance with applicable law, including reasonable accommodation considerations.

5.9.3. Employees who refuse to cooperate in a drug and/or alcohol test will be terminated. An employee terminated for a violation of this policy will not be eligible for re-hire in accordance with applicable law, including reasonable accommodation considerations.

5.9.4. Employees who test positive for Covered Substances or who otherwise violate this policy will be terminated and will not be eligible for future consideration for employment.

5.9.5. Employees who intentionally dilute, adulterate, alter, tamper with or substitute a urine Specimen will have violated this policy.

5.9.6. Employees who are convicted or plead guilty because of off-the-job activities (drug- or alcohol-related) may be considered in violation of this policy. In deciding what action to take, the Company will consider the nature of the charges and other factors relative to the impact of the employee's conviction or plea upon the Company's business.

5.9.7. Any illegal, unauthorized or prohibited drug or alcohol related items or Covered Substances taken into custody by the Company will be provided to the proper law enforcement agencies.

5.9.8. All contractors, suppliers and supplier personnel and other third parties on Company Property or Premises will be required to ensure that their employees do not create an appearance of substance abuse in the Company's workplace. In addition, they will be required to provide evidence of a comprehensive substance abuse policy that meets or exceeds the requirement of this policy. Violations of this policy may cause cancellation of the contract between the Company and such contractor or supplier and may result in losing the right to do business with the Company.

5.10. **Inspections:** The Company reserves the right to conduct drug- and/or alcohol-related inspections at any time, with or without notice, in all areas on Company Property or Premises or of its employees while conducting Company business off Company Property or Premises. Such searches may include employees themselves, their work areas, lockers, personal effects (such as lunch boxes, wallets, purses, backpacks, thermos bottles, briefcases), and personal or Company Vehicles. Entry onto Company Property or Premises or engaging in Company business off Company Property or Premises is deemed consent to any such search.

5.10.1. All such searches will be approved by corporate security, the legal department, and the human resources department.

5.10.2. Employees are expected to cooperate with inspections. Employees who refuse to cooperate will be considered in violation of this policy.

5.10.3. Possession of Covered Substances or Drug Paraphernalia is a violation of this policy.

5.11. **Company-sponsored voluntary assistance program:** The Company encourages employees with drug and alcohol problems to seek help before they become subject to termination for violating this policy. The Company will support, assist, and accommodate such employees to the extent required by applicable law. Employees who suspect they have a dependency are encouraged to seek professional advice promptly and to follow appropriate treatment before their dependency affects work performance. The human resources department can assist employees in a confidential manner by referring them to the EAP for evaluation, counseling, treatment, and helping them utilize any available employee benefits.

5.11.1. A Company-sponsored assistance program will provide confidential access to professional services to aid the employee who has an alcohol and/or drug problem, or other personal problems that may harm or be perceived to harm work performance.

5.11.2. Those employees who voluntarily come forth and seek assistance for substance abuse problems before being selected or required to submit to a drug and/or alcohol test may use the program without jeopardizing their continued employment for seeking assistance. Any such employee will be immediately removed from the workplace and will be referred to the Company's EAP for referral to a substance abuse professional (SAP). Employees will not be disciplined for requesting assistance. Employees, may not, however, escape termination by requesting assistance after they violate this policy or are notified of their selection for drug or alcohol testing. Employees who request assistance will not be excused from complying with the Company's policies, including its standards for employee performance and conduct.

5.11.3. Voluntary participation in the program will not prevent disciplinary action for any future violations of the drug-testing program, the requirements of the employee's rehabilitation or return-to-work program or this policy. The participating employee will be required to sign a consent form for the EAP to release medical information to the Company in order to received applicable health benefits. Upon receipt of the consent form, the EAP will provide ongoing updates of the employee's treatment and, upon completion of the required program, the employee's required follow-up testing requirements and any aftercare treatment.

5.12. **Notification Requirement of Crimes Involving Drugs**: Employees are required to notify their supervisor or human resources in writing of any criminal drug conviction for a violation occurring in the workplace within five (5) days of the conviction. Any employee so convicted will be subject to disciplinary action, up to and including termination and/or will be required to participate in a drug abuse assistance program.

5.12.1. The Company has ten (10) days to notify the federal contracting agency upon the Company's receipt of notice of a criminal drug conviction for conduct occurring in the workplace. Managers or human resources personnel with knowledge of such a conviction are required to contact the legal department immediately. Failure to notify the appropriate federal agency may result in termination, debarment or suspension of the federal contract.

5.13. **Validity:** If any part of this policy is held invalid by a competent authority, such as state or federal laws or regulations, that part will be invalid; however the remainder of the policy will continue in full force and effect.

5.14. **Terms:** Terms of this policy are subject to any state or legal requirements or local contractual obligations. The Company reserves the right to unilaterally amend, change, modify, revise, supplement, delete or replace this policy at any time, with or without notice in accordance with the requirements of applicable law, applicable collective bargaining agreements, or for any other lawful reason. This policy is not intended to create, nor does it create, any express or implied contractual rights in any current or prospective employee and does alter the employment status of any "at-will" employee

5.15. **Exceptions:** Any exception to this policy will be handled on an individual basis, will be documented by the requesting party for approval by the policy committee member responsible for human resources and will be processed in accordance with requirements of procedure 10.00.001-Pr3, Policy exception approval process.

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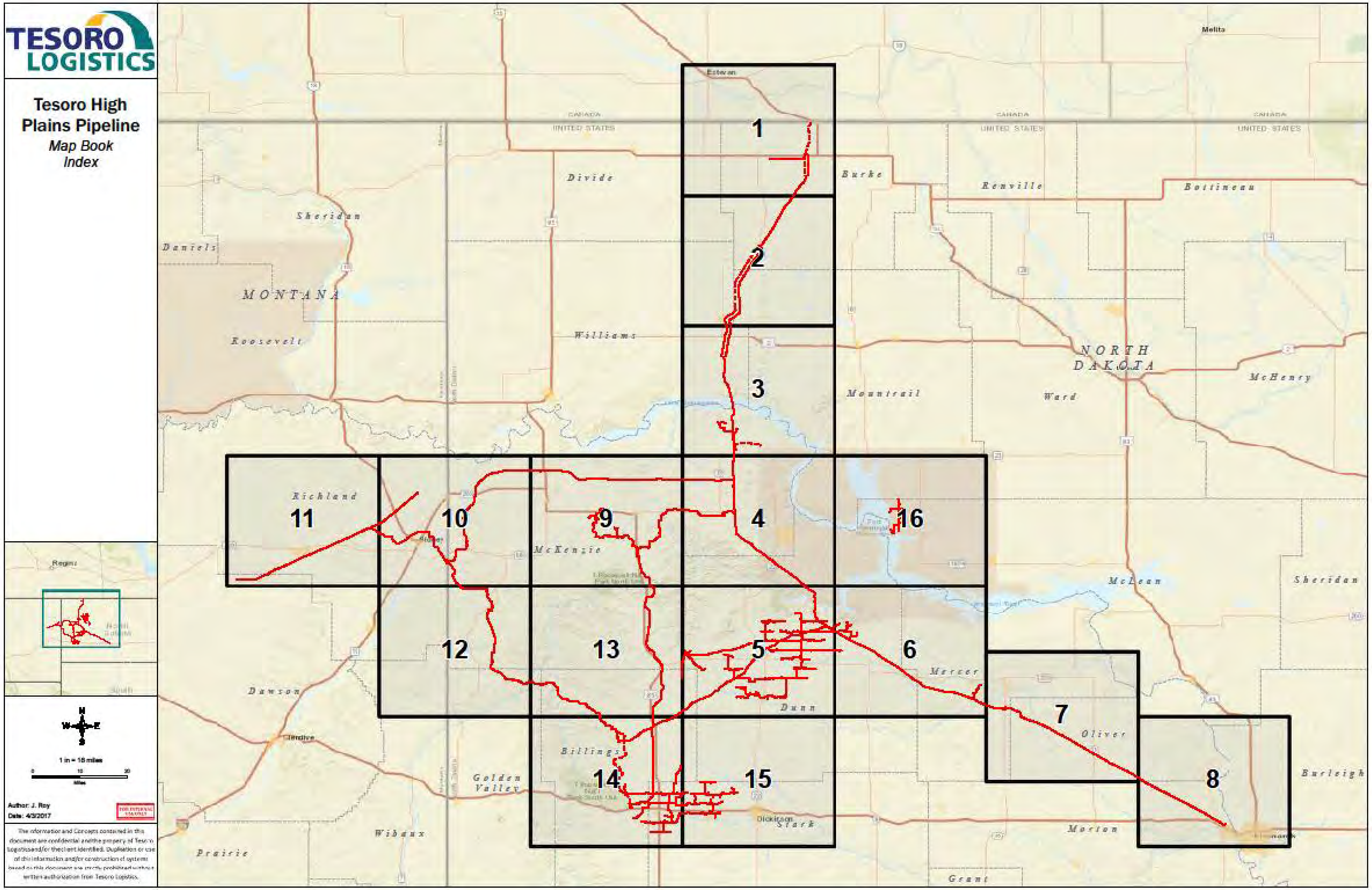
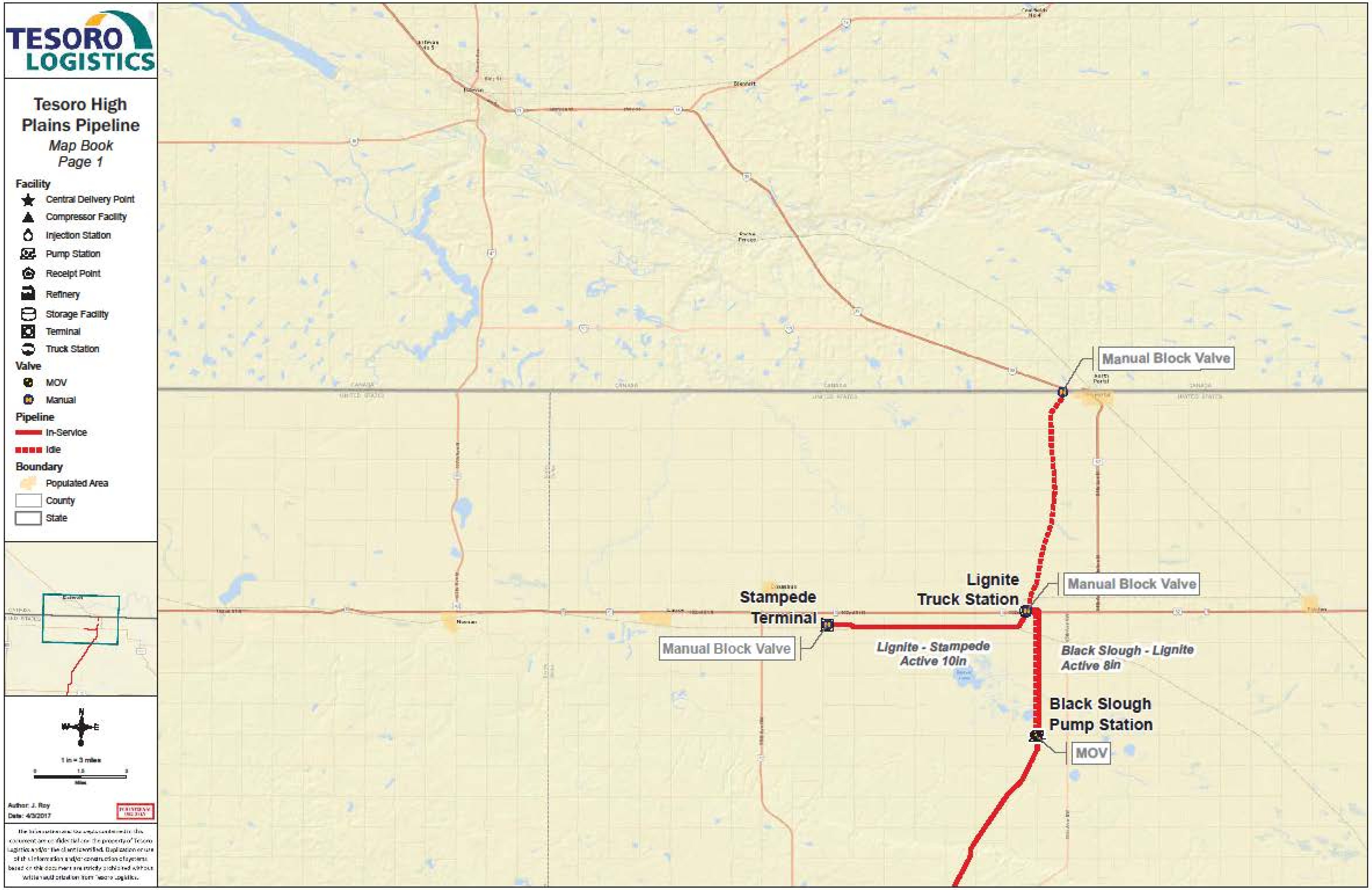
APPENDIX J PIPELINE AND TERMINAL DRAWINGS

Figure J-1 Pipeline System Maps

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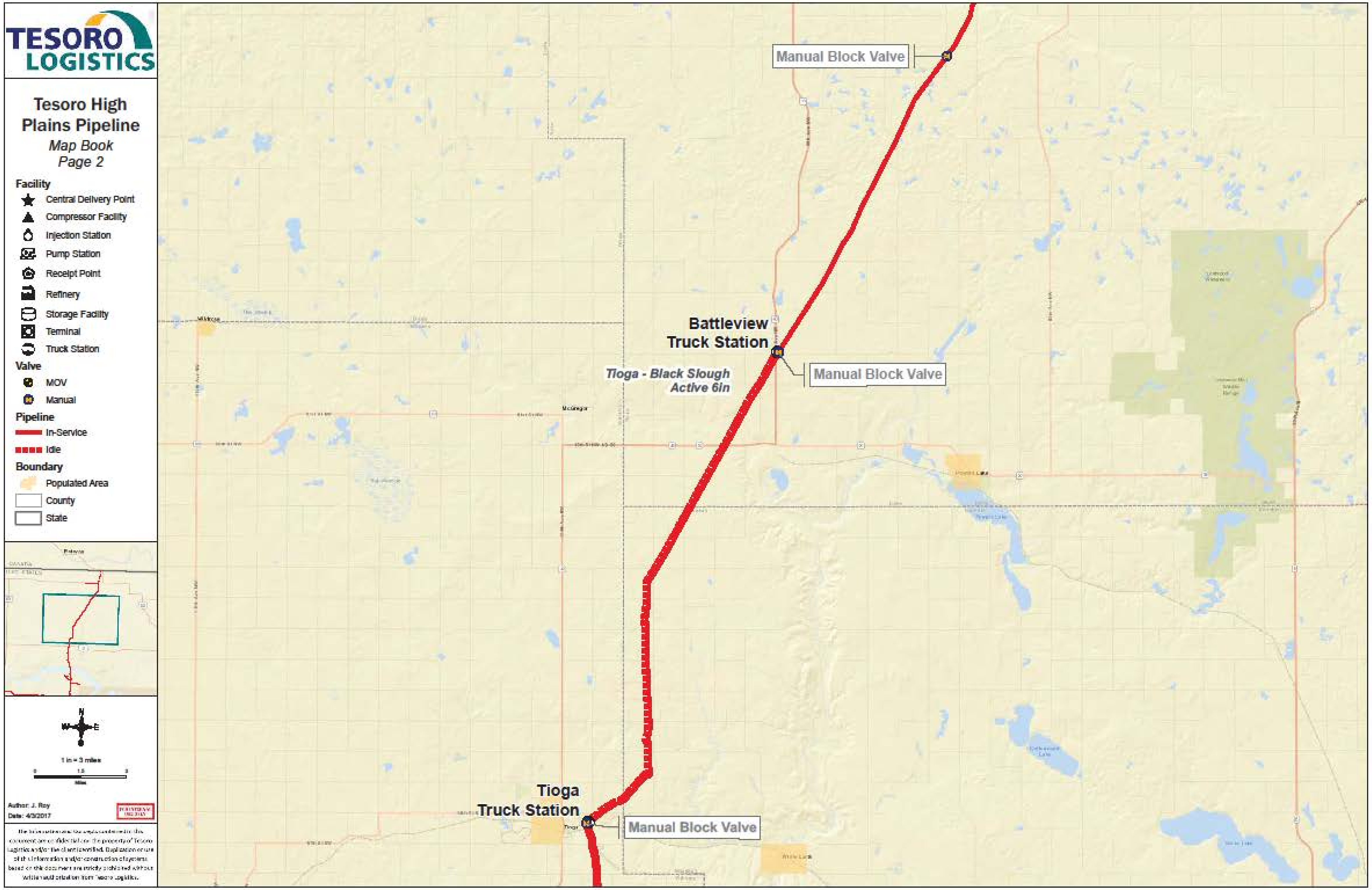
Facility
Central Delivery Point
Compressor Facility
Injection Station
Pump Station
Receipt Point
Refinery
Storage Facility
Terminal
Truck Station
Valve
MOV
Manual
Pipeline
In-Service
Idle
Boundary
Populated Area
County
State
Manual Block Valve
Lignite
Truck Station
Manual Block Valve
Stampede
Terminal
Manual Block Valve
Lignite - Stampede
Active 10in
Black Slough - Lignite
Active 8in
Black Slough
Pump Station
MOV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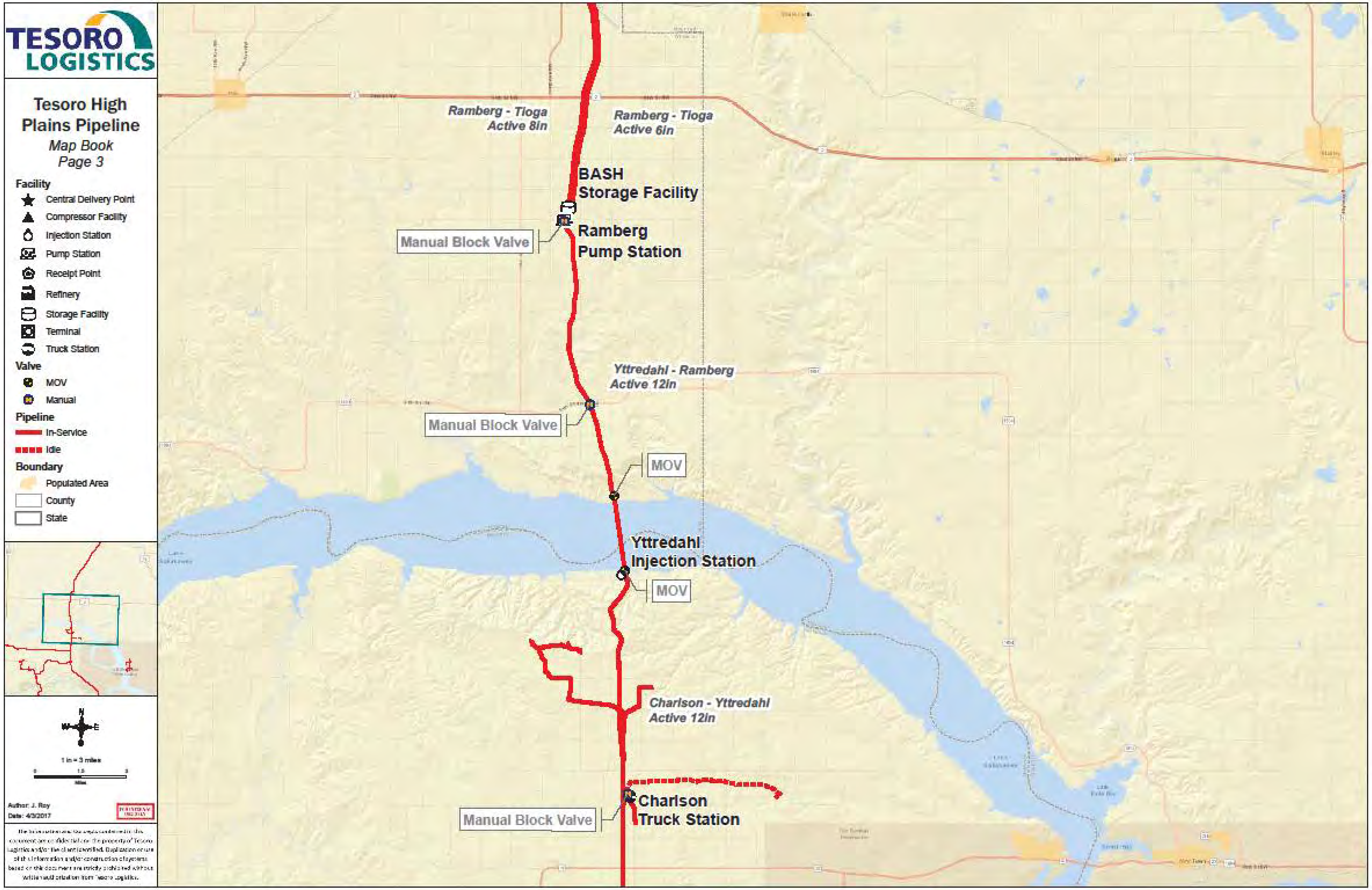
Refinery
Storage Facility
Terminal
Truck Station
Valve
MOV
Manual
Pipeline
In-Service
Idle
Boundary
Populated Area
County
State
1 in = 3 miles
Author: J. Roy
Date: 4/3/2017
Manual Block Valve
Battleview
Truck Station
Manual Block Valve
Tioga - Black Slough
Active 6in
Tioga
Truck Station
Manual Block Valve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Truck Station
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Pipeline
In-Service
Idle
Boundary
Populated Area
County
State
1 in = 3 miles
Author: J. Roy
Date: 4/3/2017
Ramberg - Tioga
Active 8in
Ramberg - Tioga
Active 6in
BASH
Storage Facility
Manual Block Valve
Ramberg
Pump Station
Yttredahl - Ramberg
Active 12in
Manual Block Valve
MOV
Yttredahl
Injection Station
MOV
Charlson - Yttredahl
Active 12in
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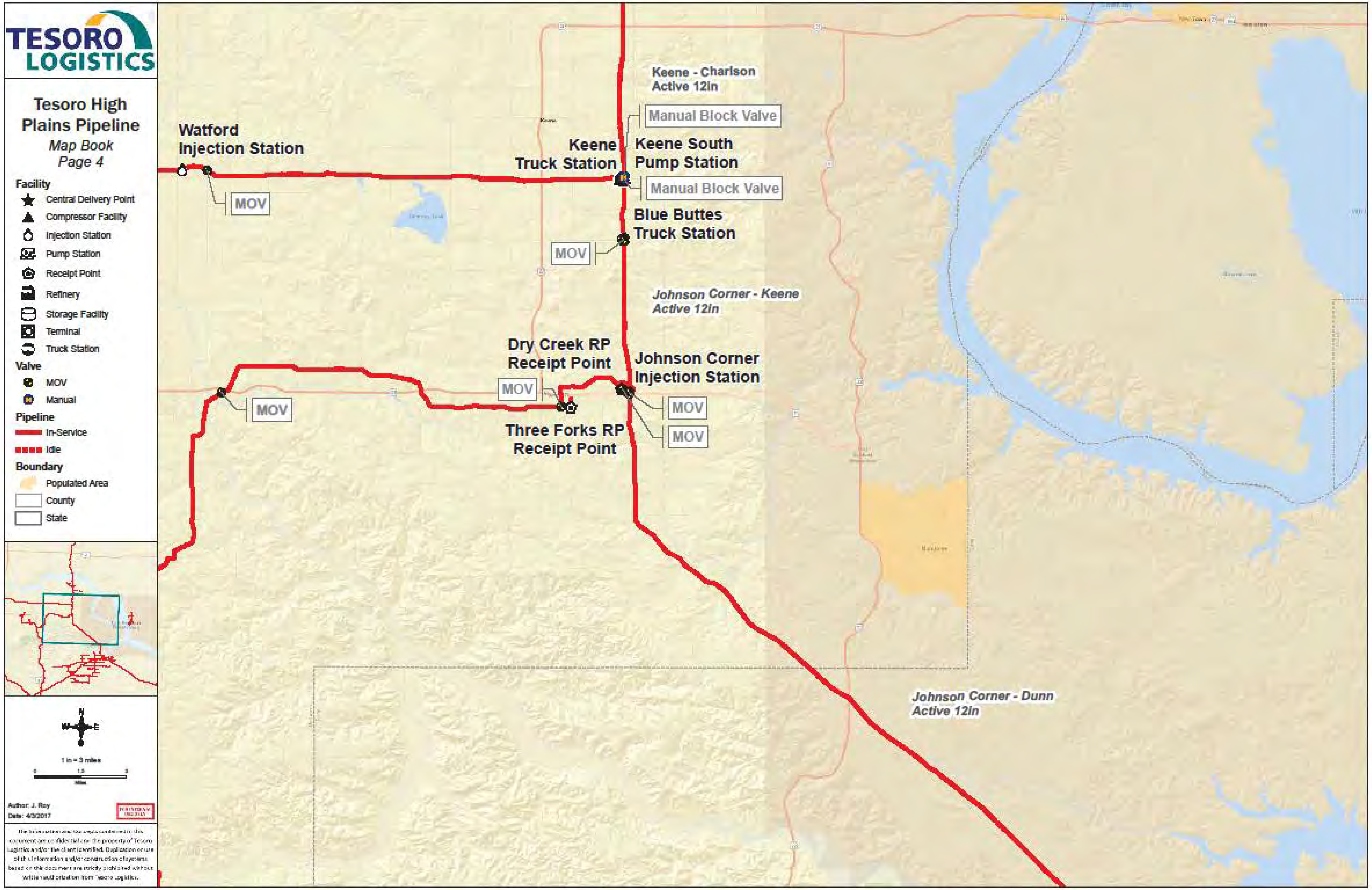
Charlson
Truck Station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Manual
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Idle
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Populated Area
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1 in = 3 miles
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Keene - Charlson
Active 12in
Manual Block Valve
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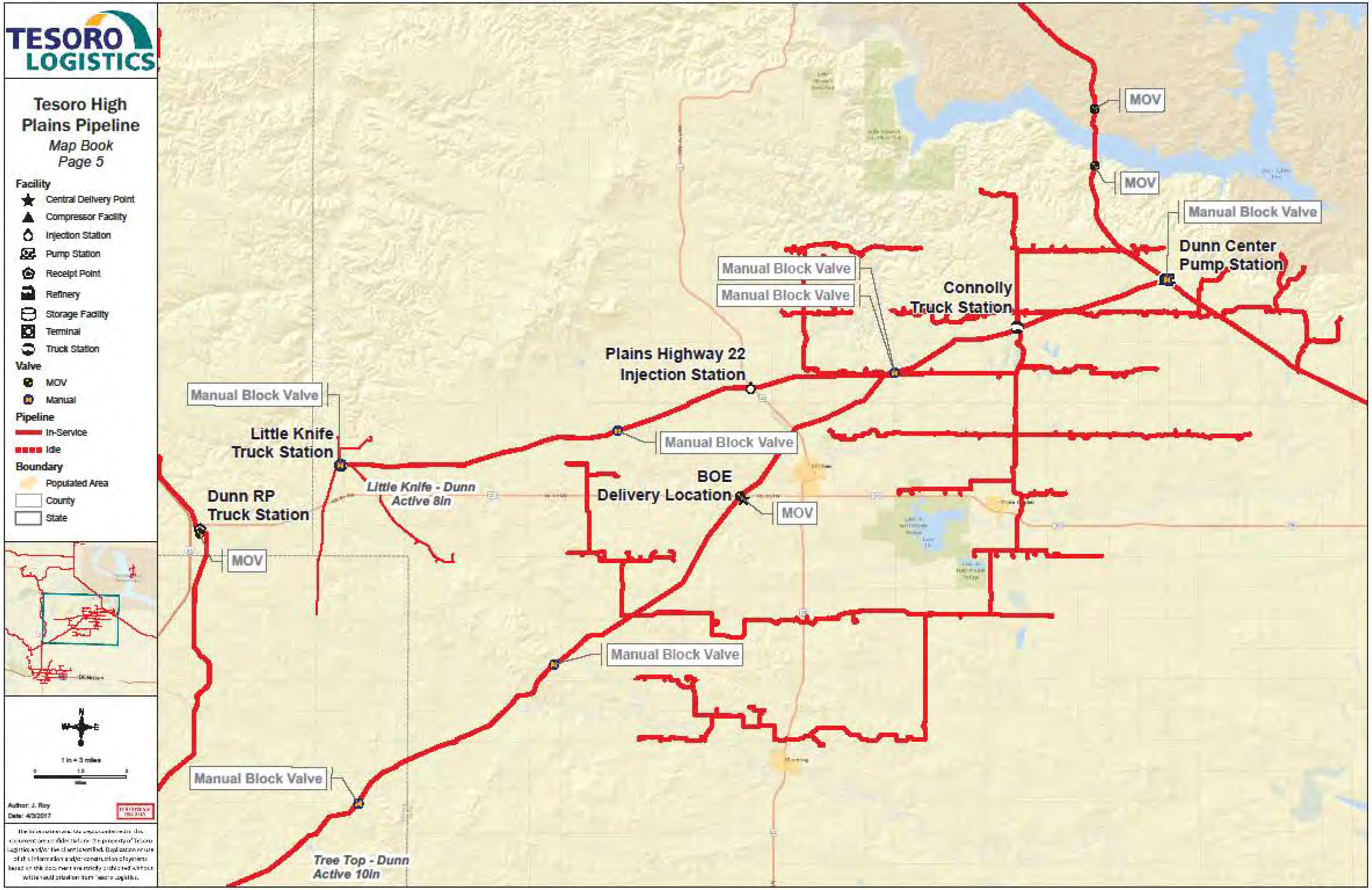
Keene South
Pump Station
MOV
Manual Block Valve
Blue Buttes
Truck Station
MOV
Johnson Corner - Keene
Active 12in
Dry Creek RP
Receipt Point
Johnson Corner
Injection Station
MOV
MOV
MOV
MOV
Three Forks RP
Receipt Point
Johnson Corner - Dunn
Active 12in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Manual Block Valve
Connolly Truck Station
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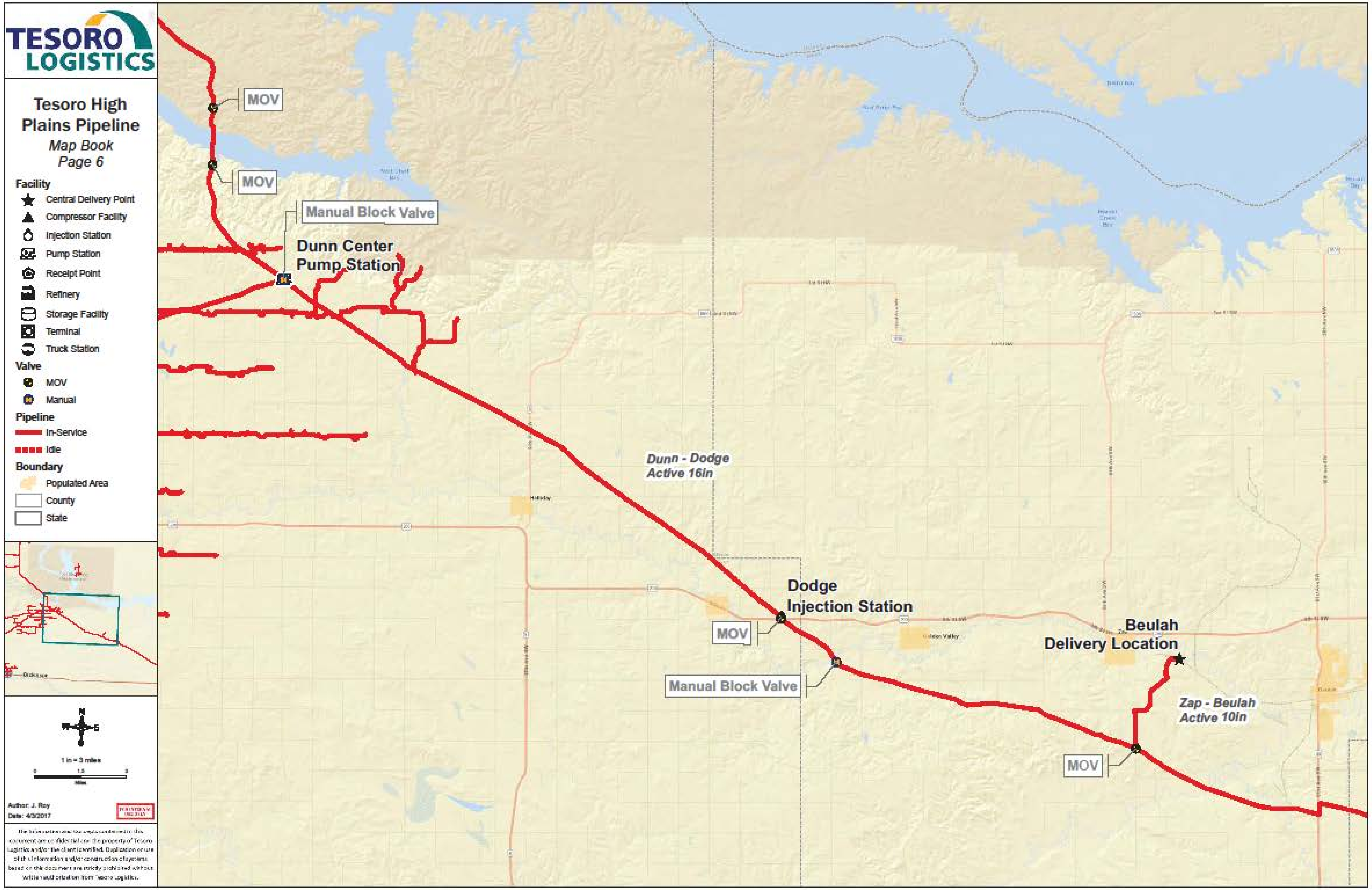
Manual Block Valve
Little Knife Truck Station
Manual Block Valve
BOE Delivery Location
MOV
Dunn RP Truck Station
Little Knife - Dunn Active 8in
MOV
Manual Block Valve
Manual Block Valve
Tree Top - Dunn Active 10in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MOV
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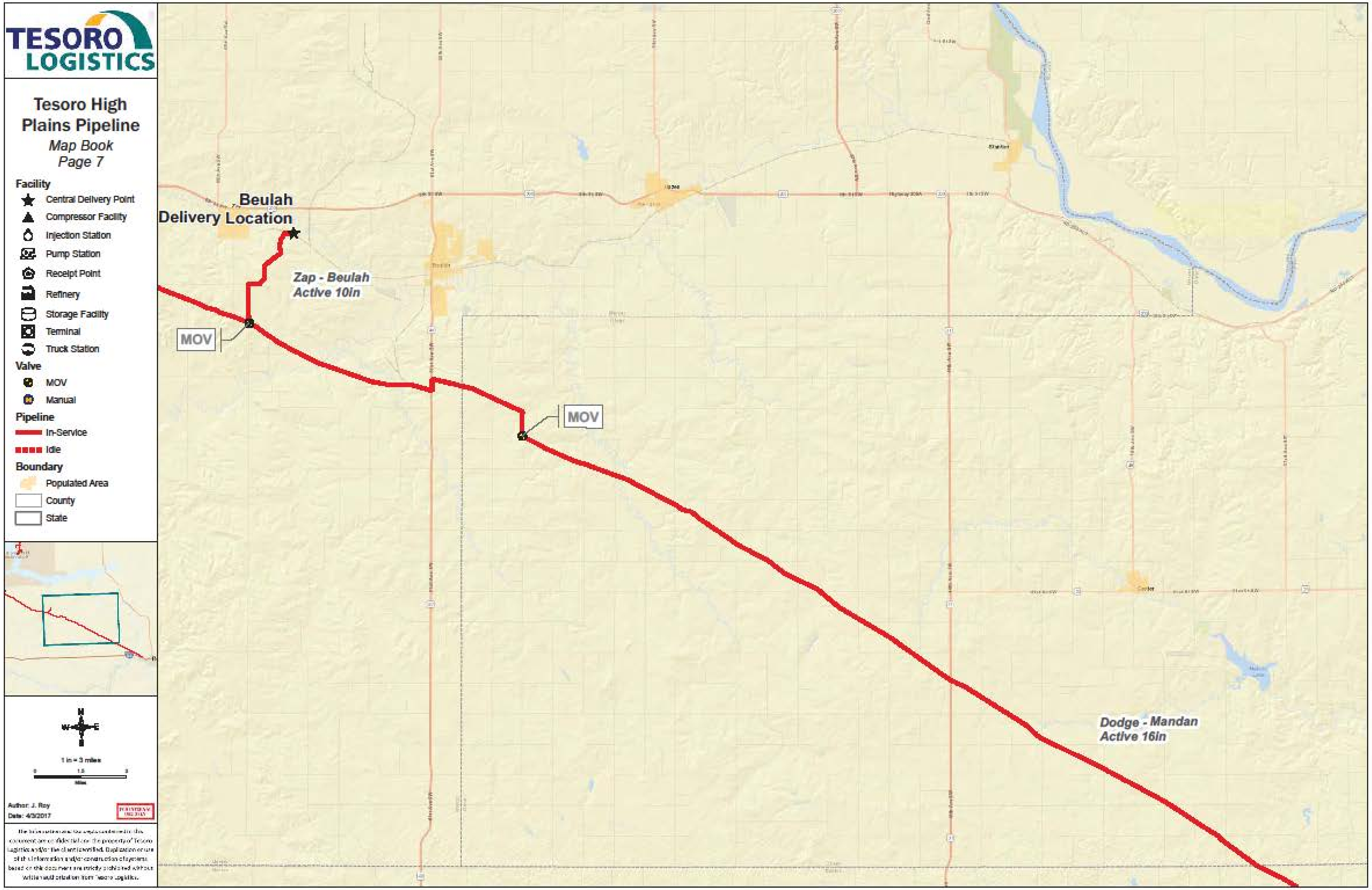
Dunn Center Pump Station
Dunn - Dodge Active 16in
Dodge Injection Station
MOV
Manual Block Valve
Beulah Delivery Location
Zap - Beulah Active 10in
MOV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MOV
Dodge - Mandan
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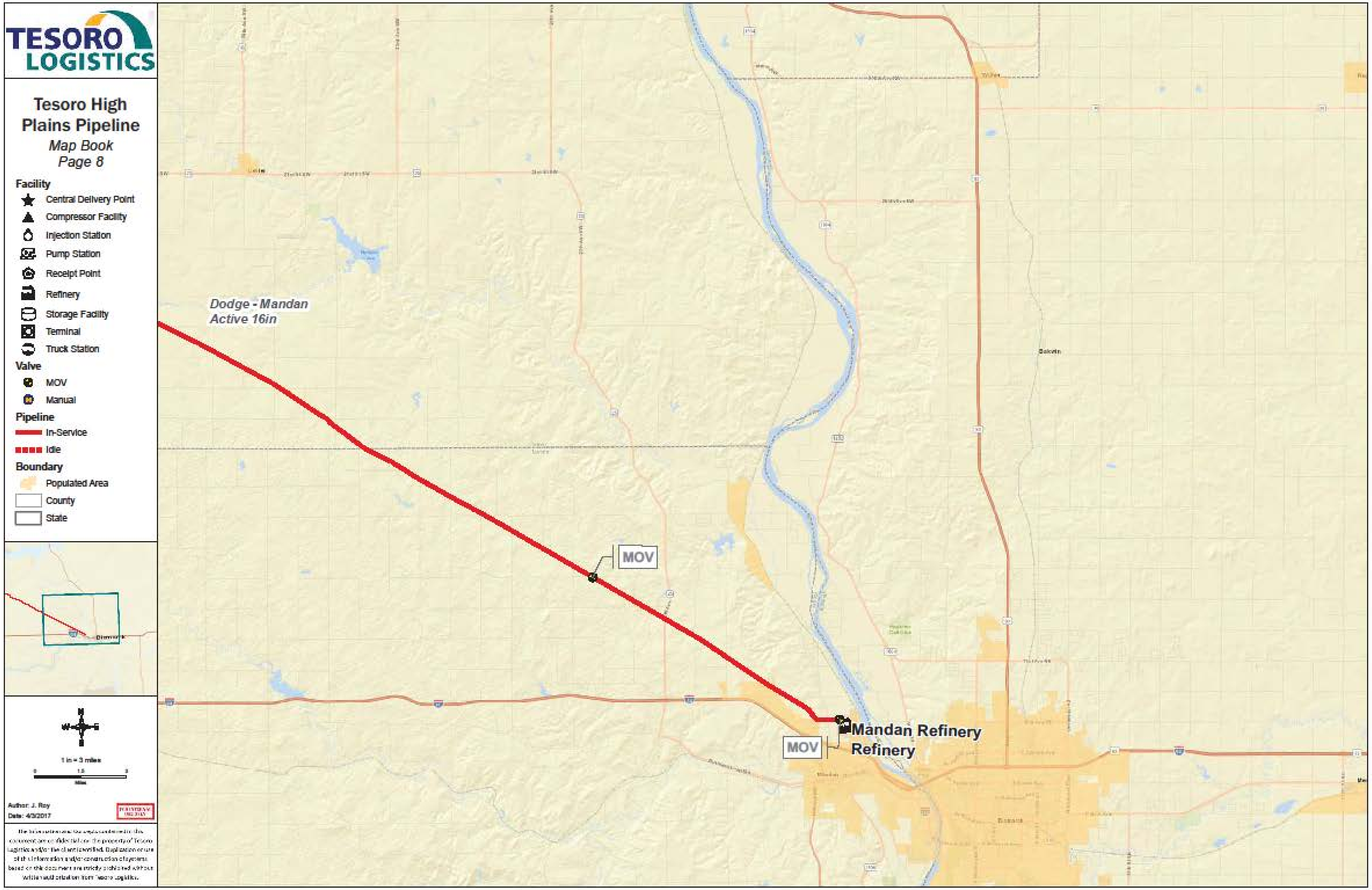

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Date: 4/3/2017
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Alexander Pump Station
Alexander Trucking Truck Station
Manual Block Valve
Manual Block Valve
Alexander - Keene Active 6in
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Watford Injection Station
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MOV
Watford City RP Receipt Point
MOV
MOV
MOV


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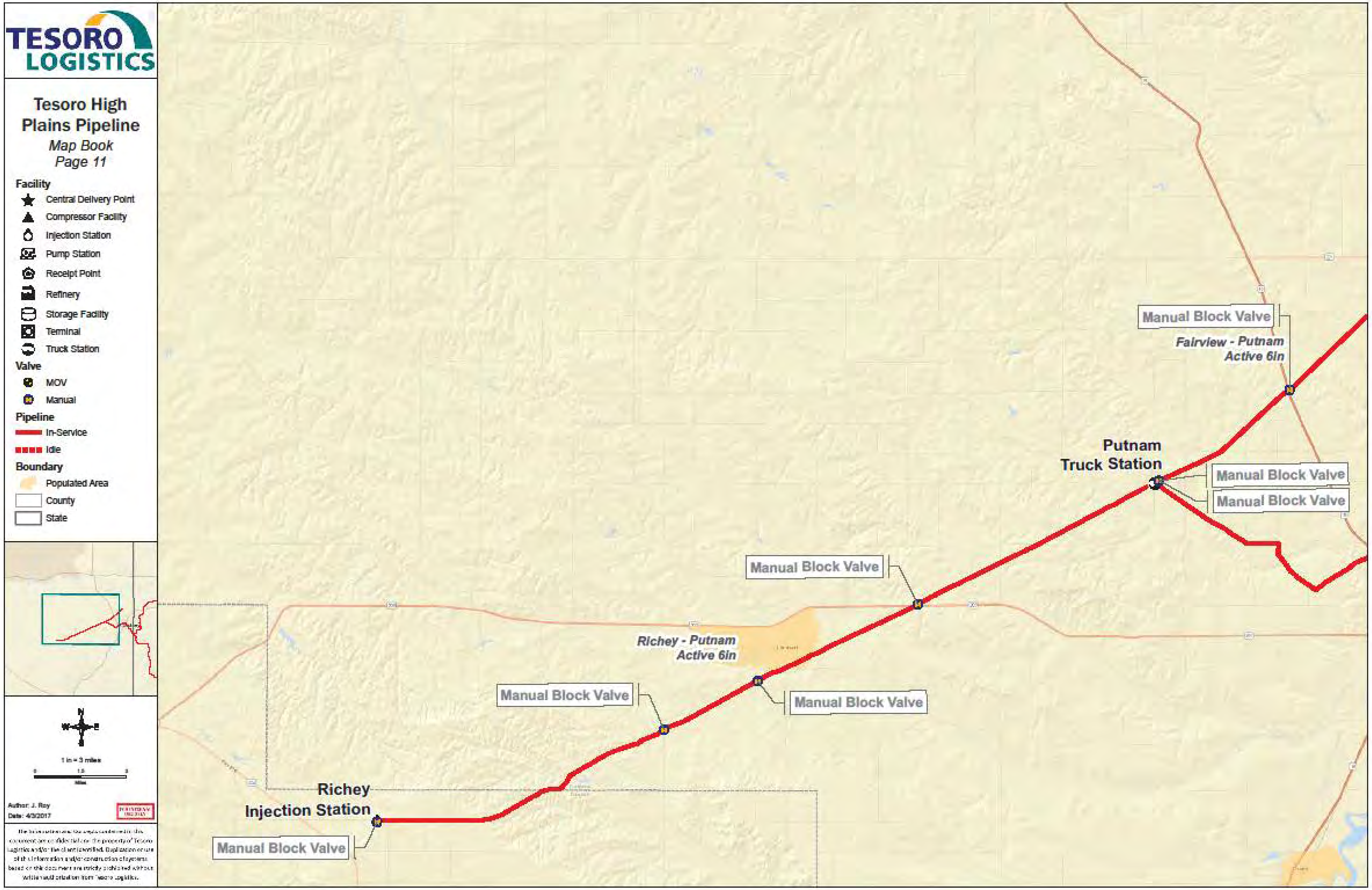
State
1 in = 3 miles
Author: J. Roy
Date: 4/3/2017
Alexander Pump Station
Alexander Trucking Truck Station
Alexander - Cartwright Active 6in
Cartwright Truck Station
Fairview Truck Station
Fairview - Putnam Active 6in
Putnam Truck Station
Sidney - Putnam Active 8in
Cartwright - Sidney Active 6in
Sidney Truck Station
Manual Block Valve
MOV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1 in = 3 miles
Author: J. Roy
Date: 4/3/2017
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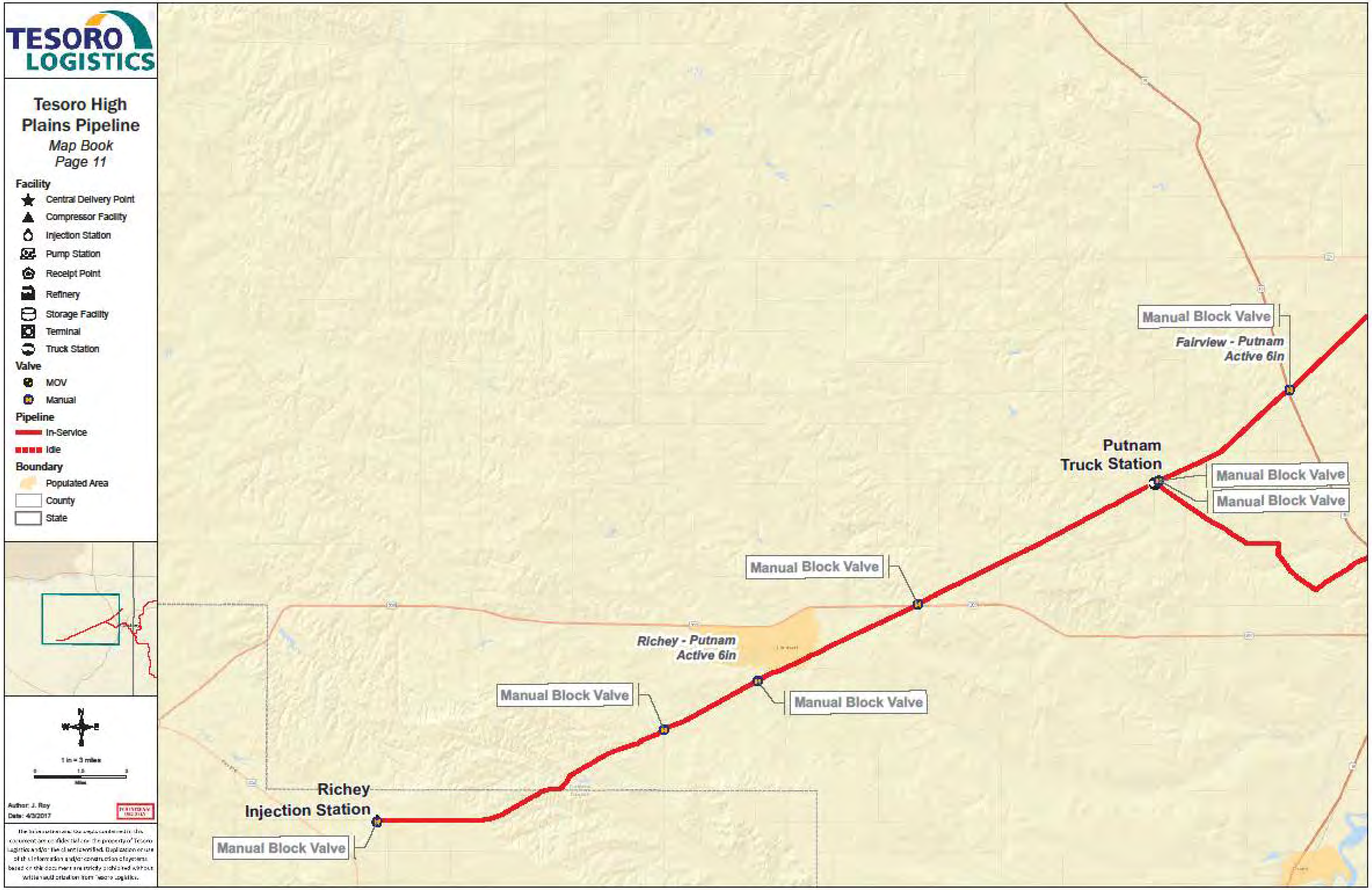
Fairview - Putnam
Active 6in
Putnam
Truck Station
Manual Block Valve
Manual Block Valve
Manual Block Valve
Richey - Putnam
Active 6in
Manual Block Valve
Manual Block Valve
Richey
Injection Station
Manual Block Valve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Manual Block Valve
Manual Block Valve
Richey - Putnam
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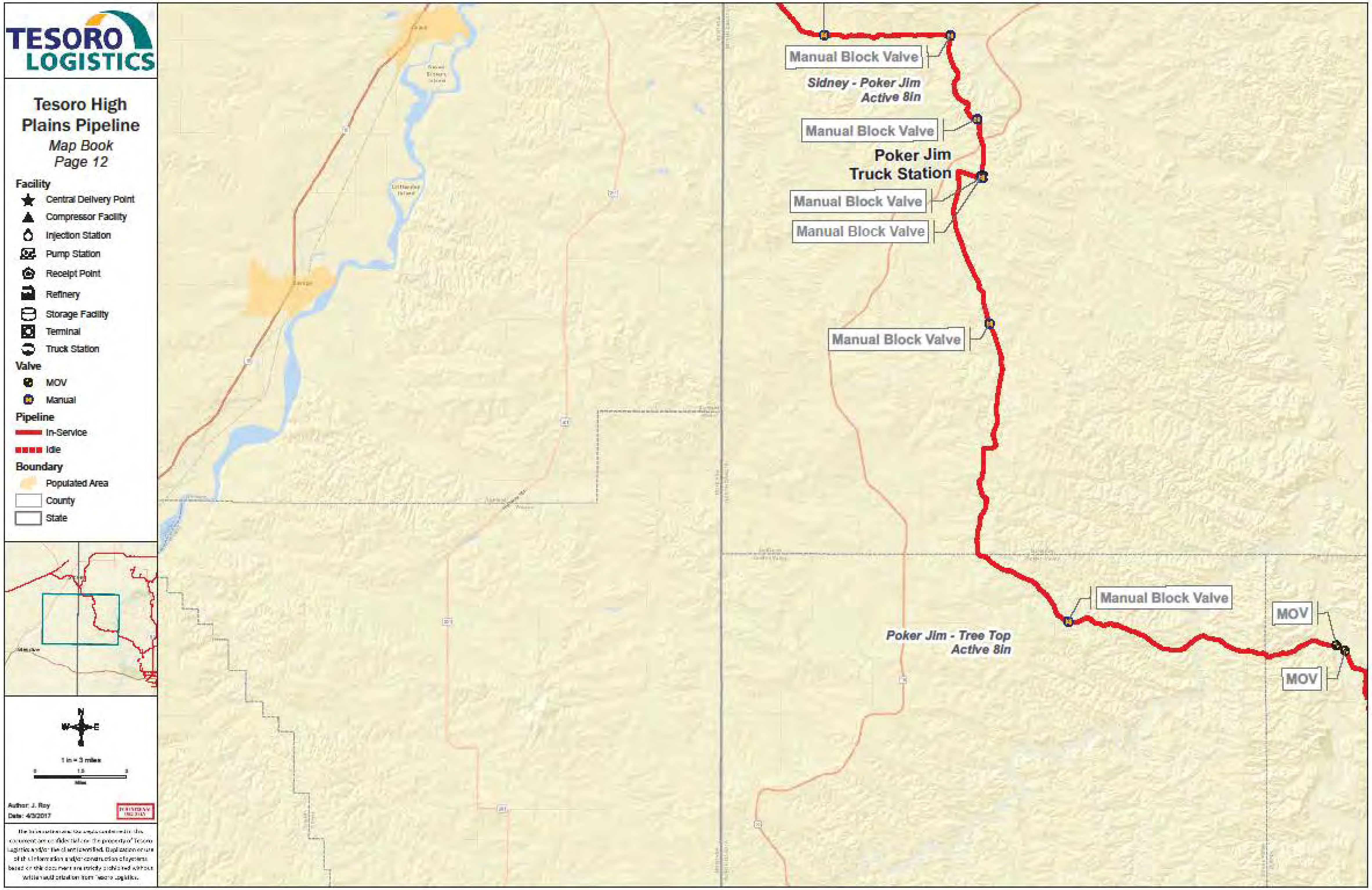
Manual Block Valve
Manual Block Valve
Richey
Injection Station
Manual Block Valve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1 in = 3 miles
Author: J. Roy
Date: 4/3/2017
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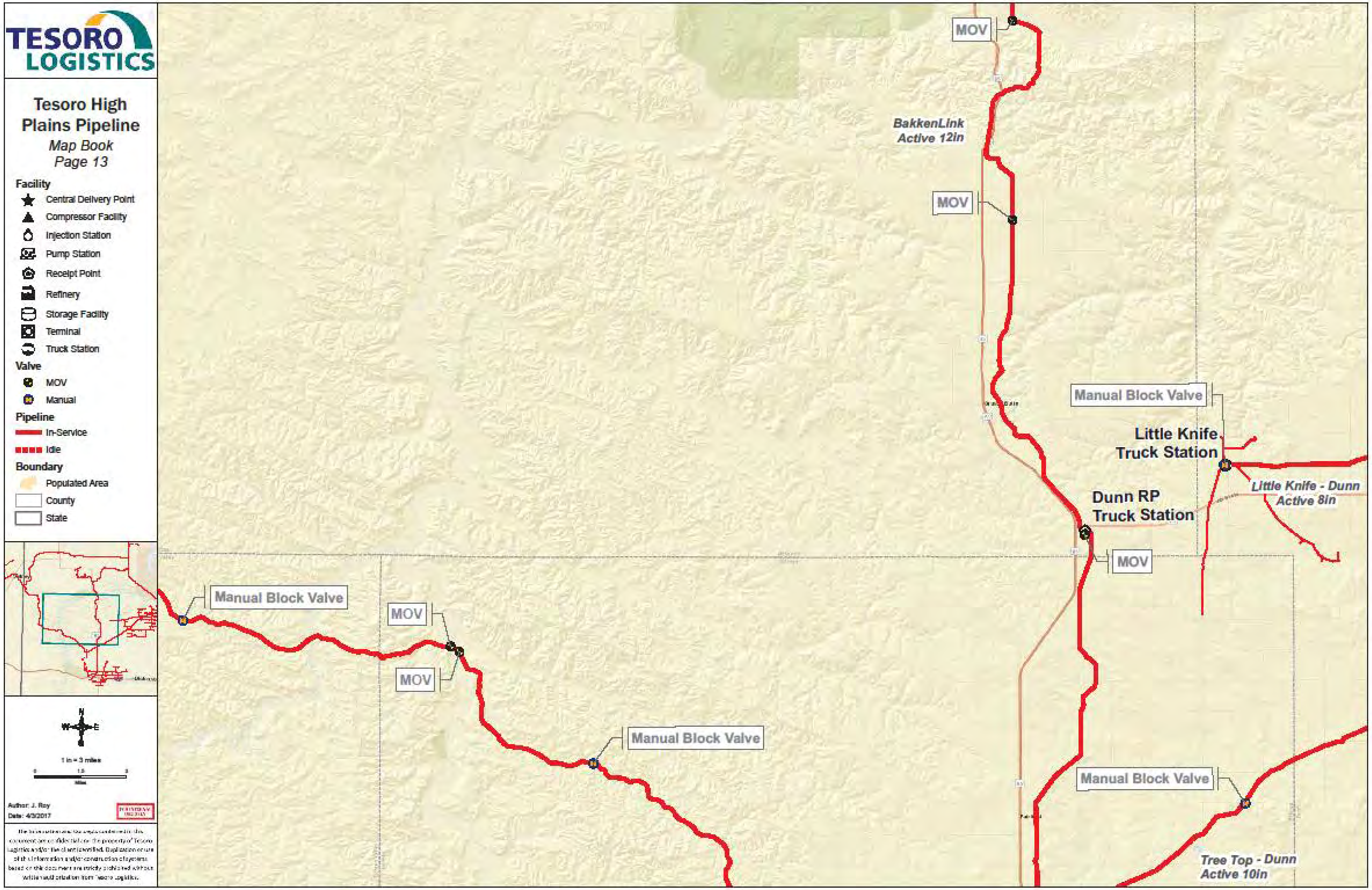
Sidney - Poker Jim
Active 8in
Manual Block Valve
Poker Jim
Truck Station
Manual Block Valve
Manual Block Valve
Manual Block Valve
Manual Block Valve
MOV
Poker Jim - Tree Top
Active 8in
MOV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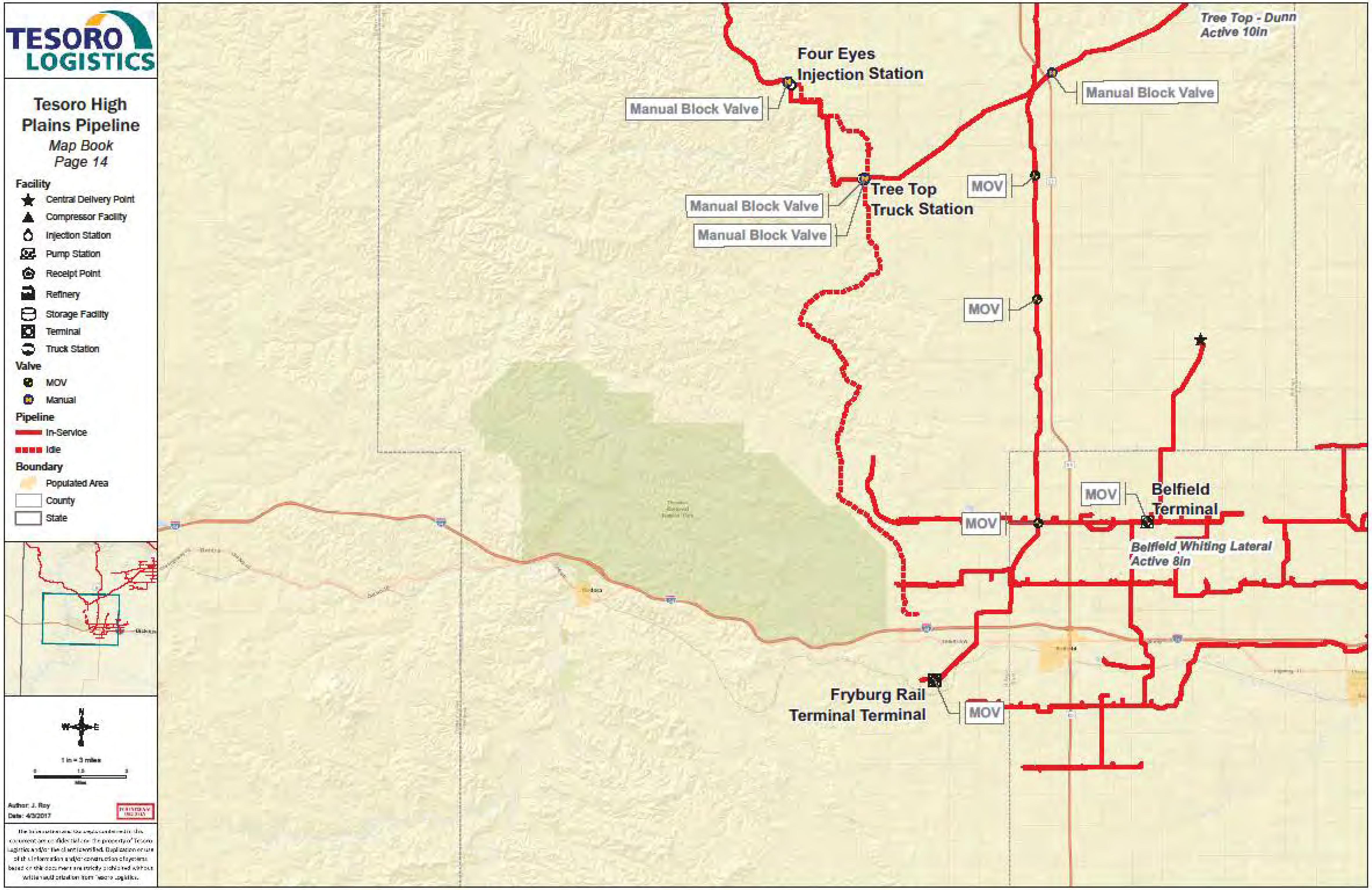
Little Knife
Truck Station
Little Knife - Dunn
Active 8in
Dunn RP
Truck Station
MOV
Manual Block Valve
MOV
MOV
Manual Block Valve
Manual Block Valve
Tree Top - Dunn
Active 10in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Terminal Terminal
MOV
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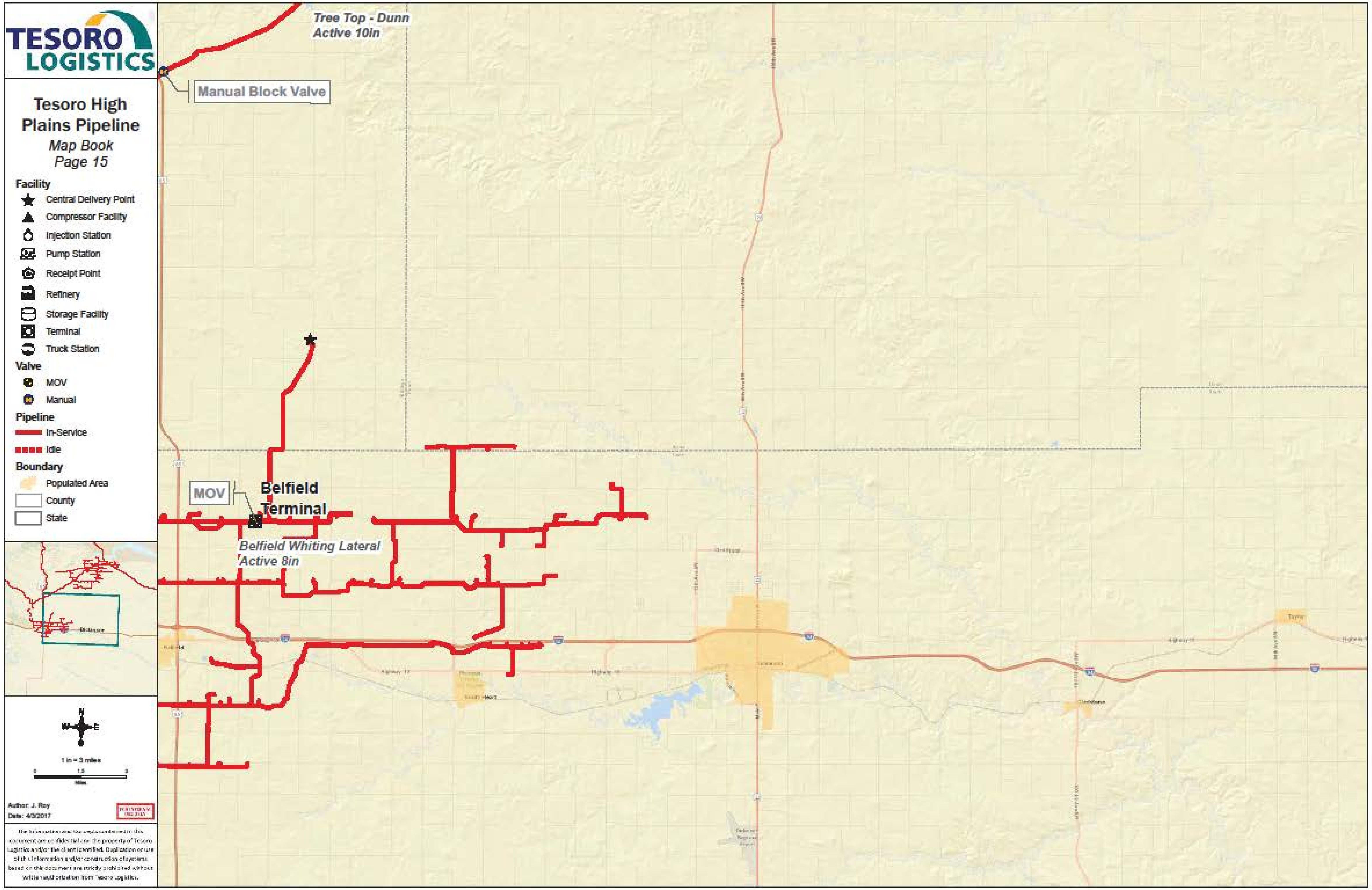
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Date: 4/3/2017
Tree Top - Dunn
Active 10in
Manual Block Valve
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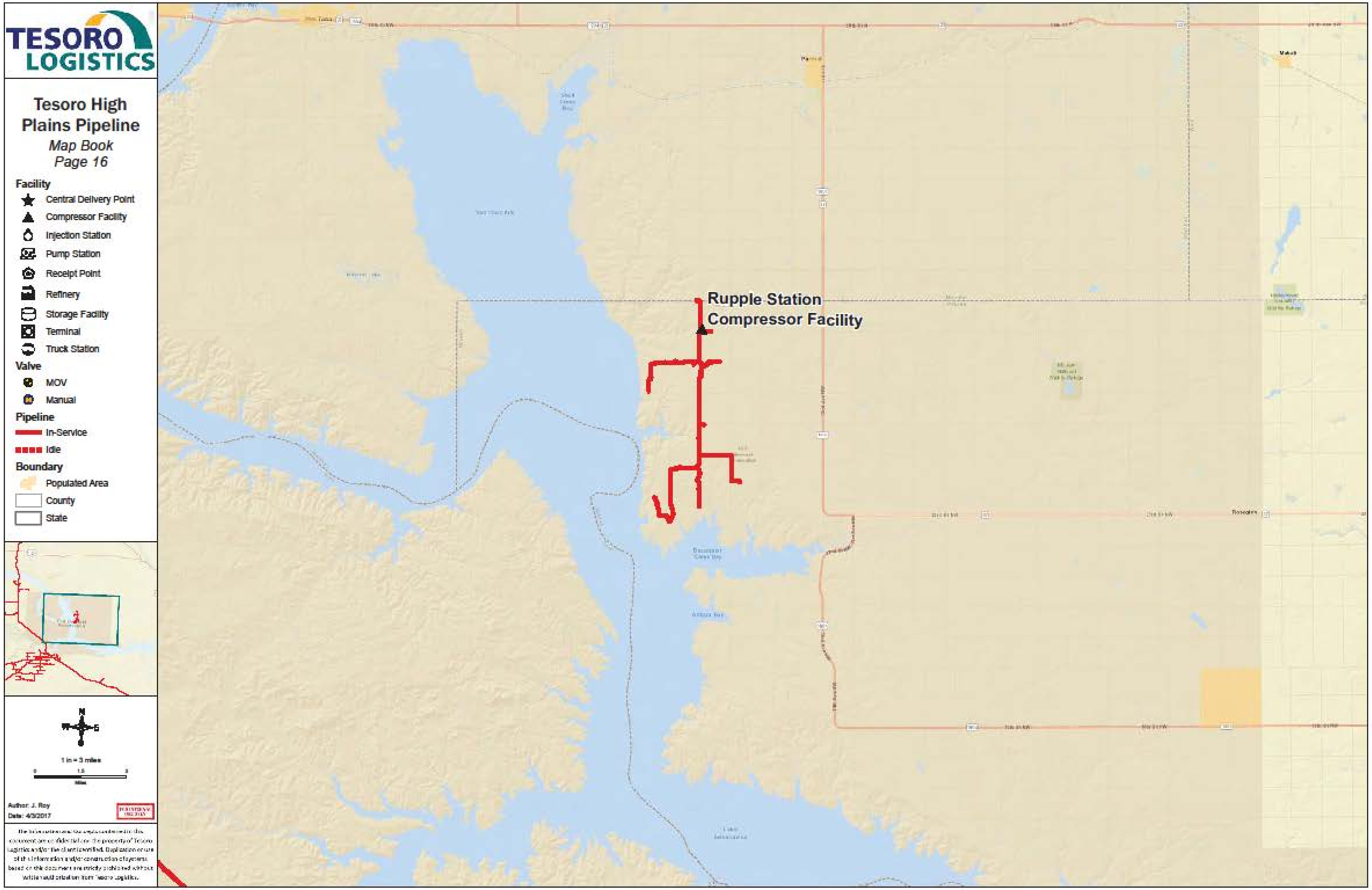
Belfield
Terminal
Belfield Whiting Lateral
Active 8in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1 in = 3 miles
Author: J. Roy
Date: 4/3/2017

Figure J-2 Alexander Plot Plan

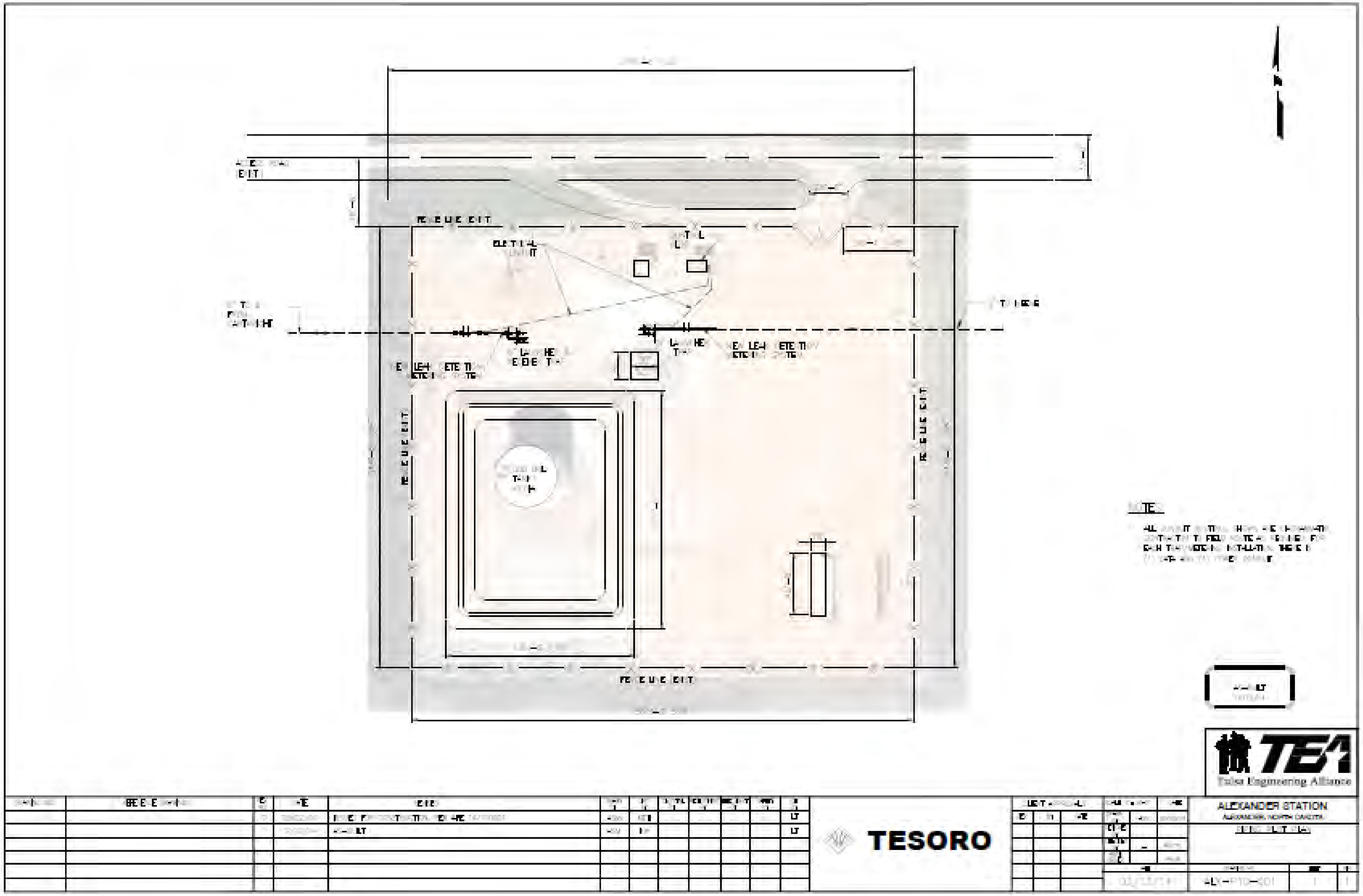


Figure J-3 BASH Facility Map

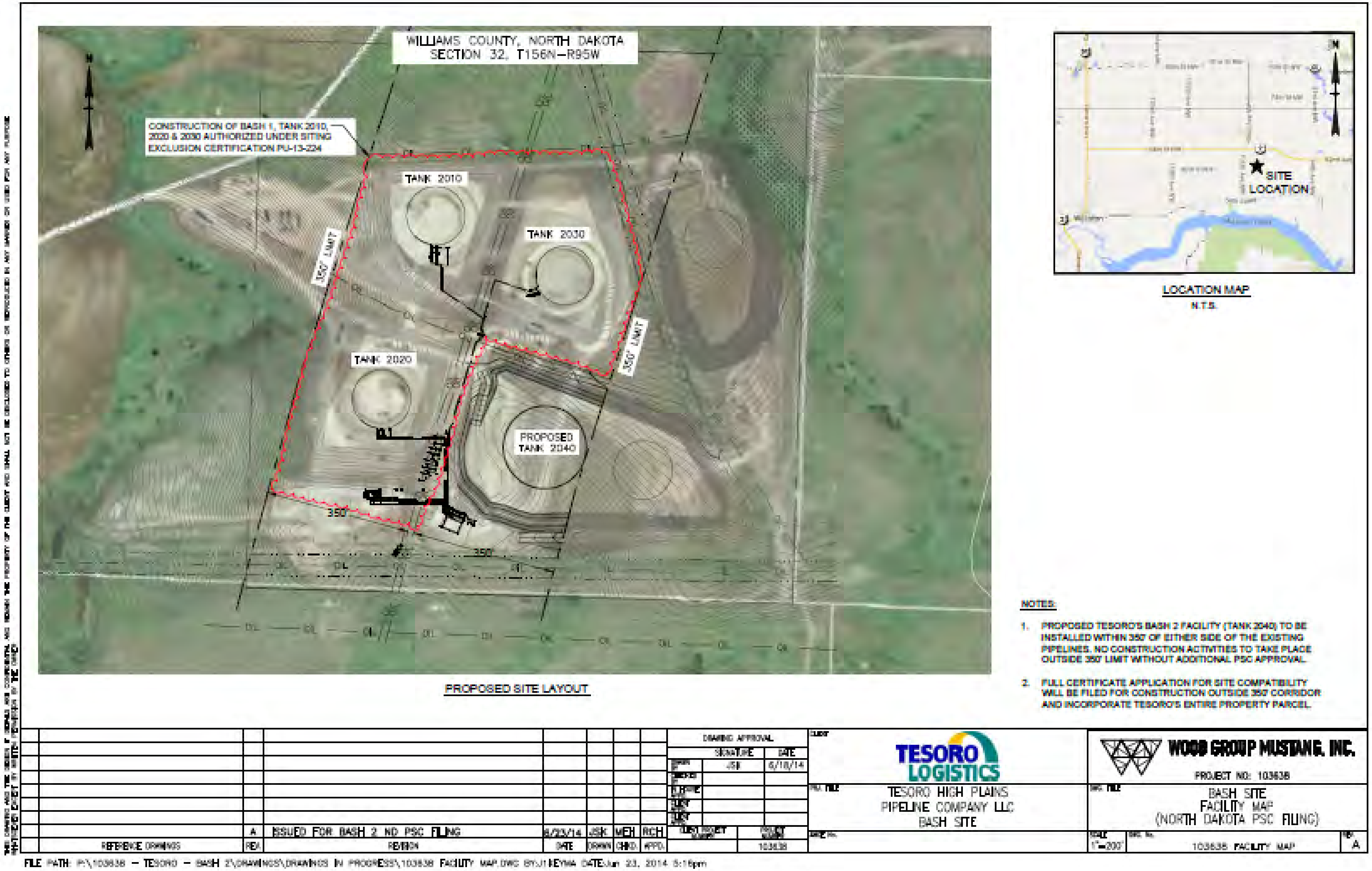


Figure J-4 Black Slough Site

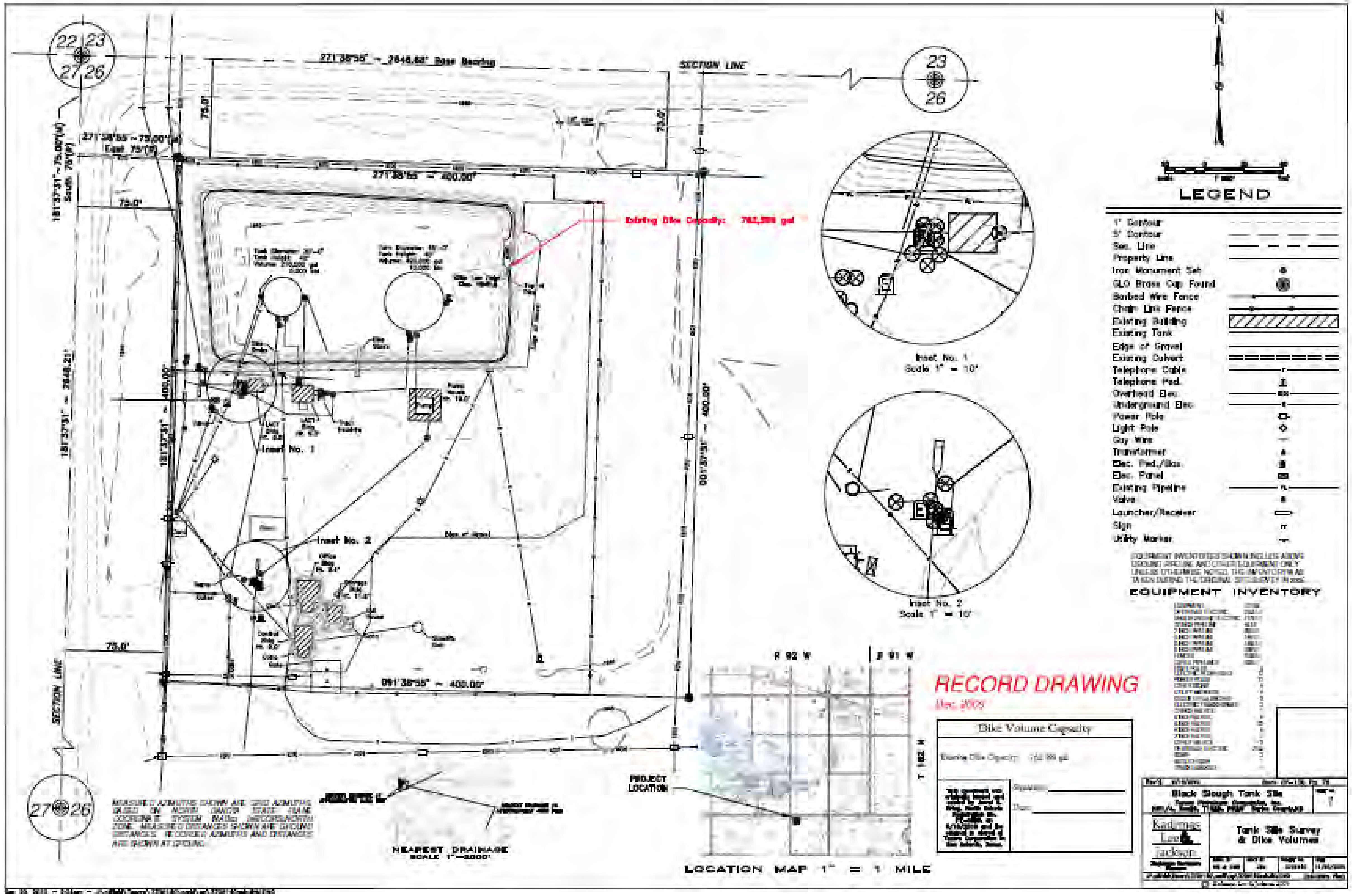


Figure J-5 Blue Buttes Site

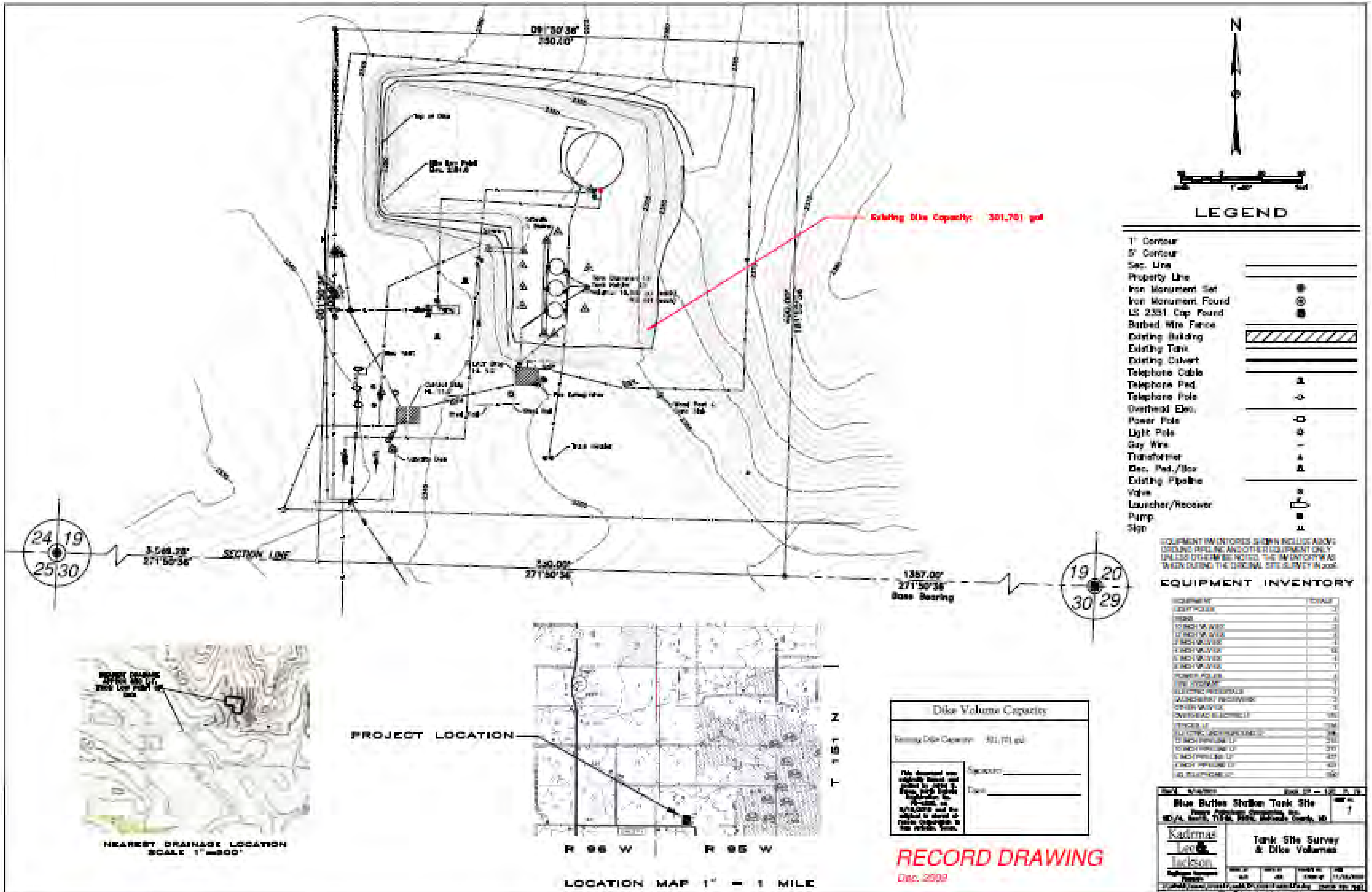


Figure J-6 Cartwright Site

Figure J-7 Charlson Site

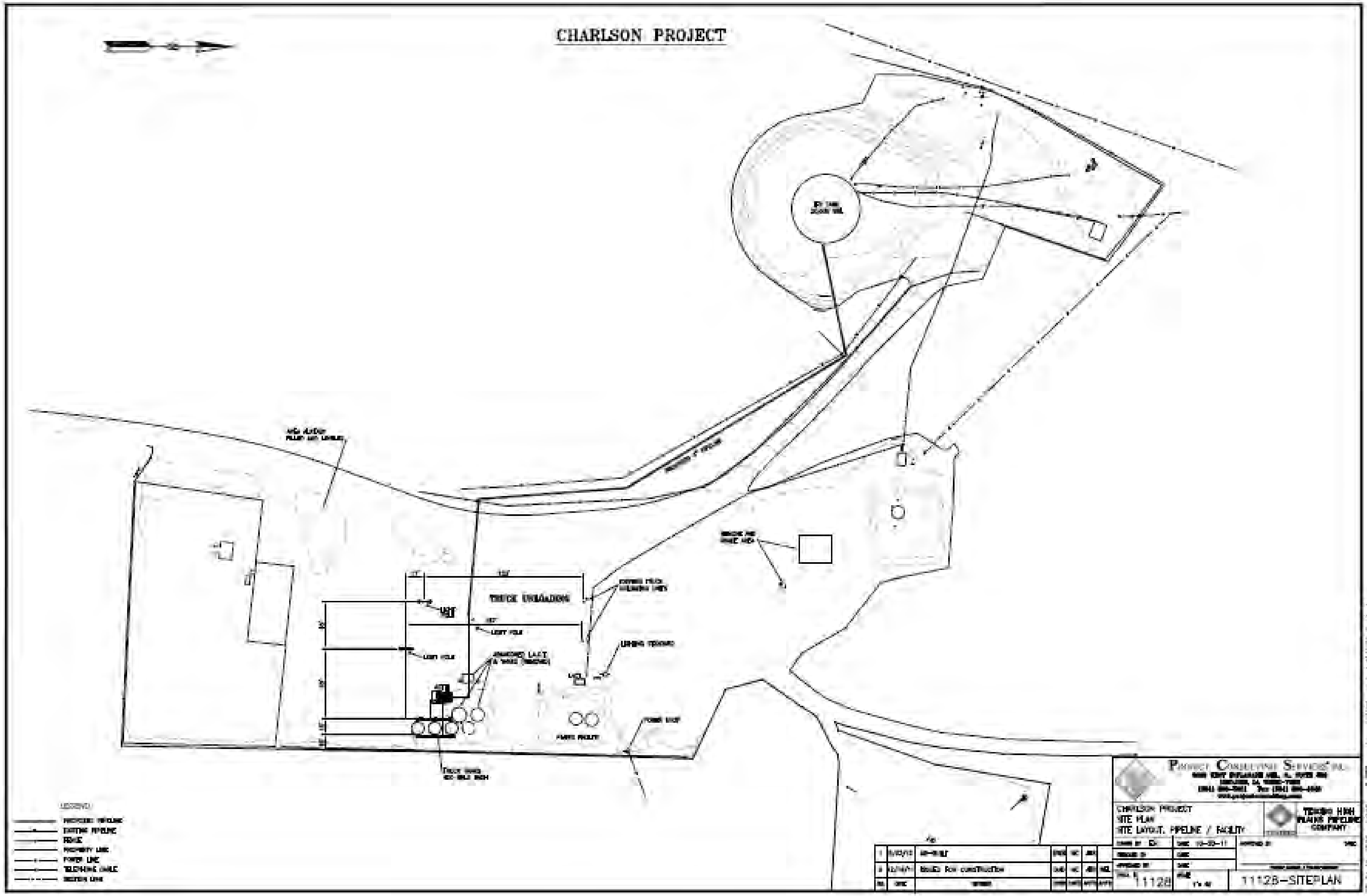


Figure J-8 Connolley Site

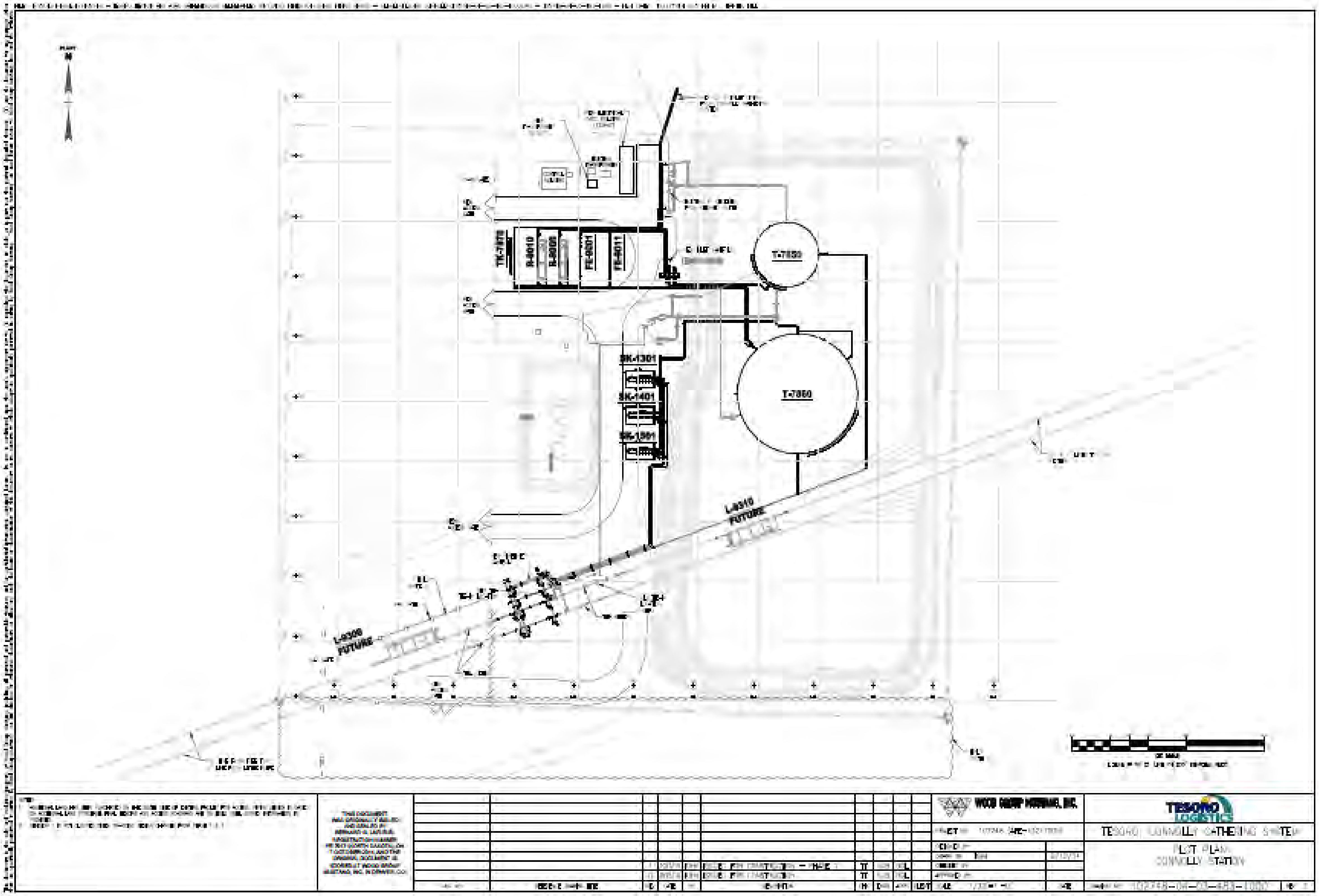


Figure J-9 Dunn Center Site Plan

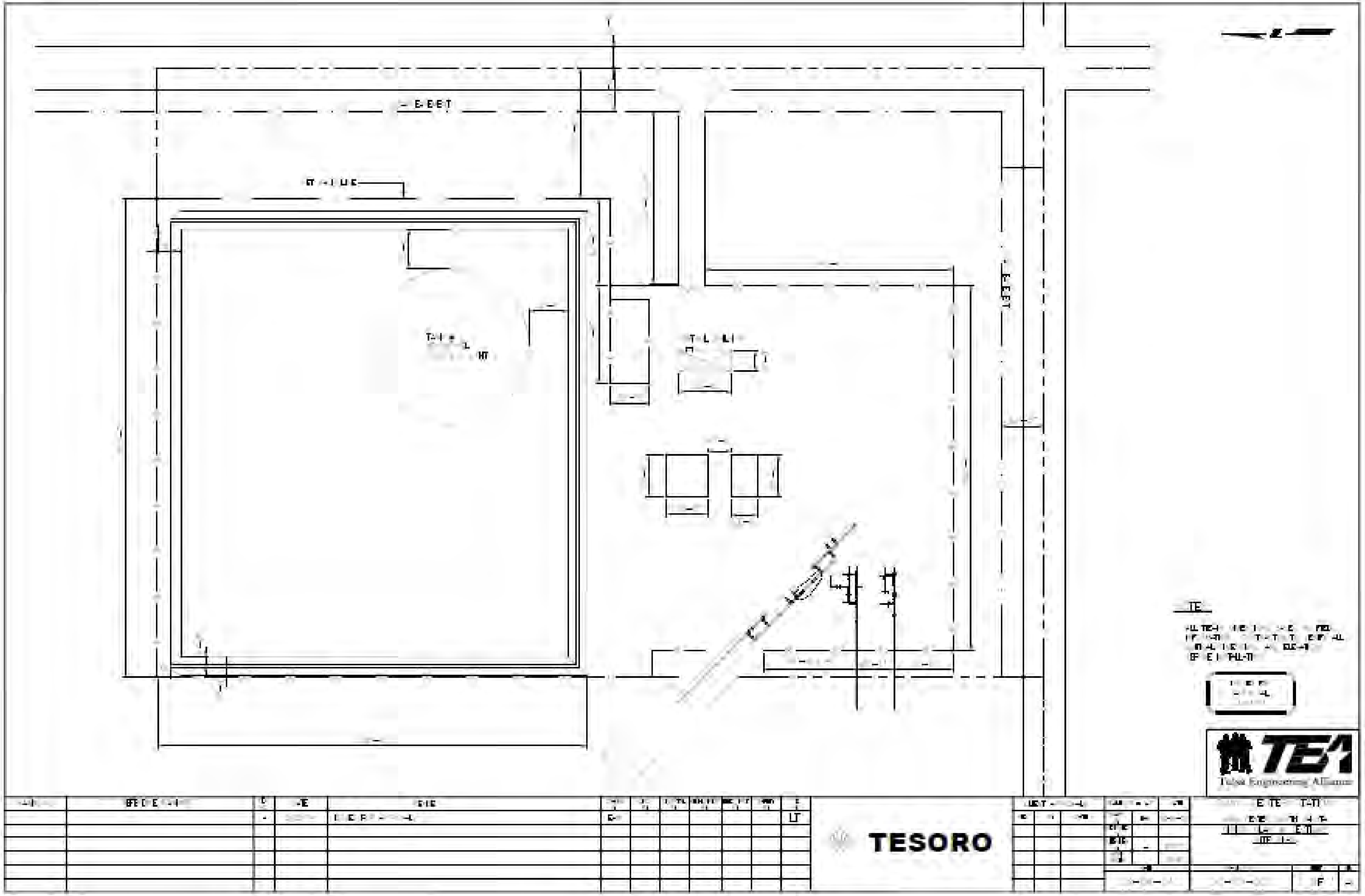


Figure J-10 Fairview Site Plan

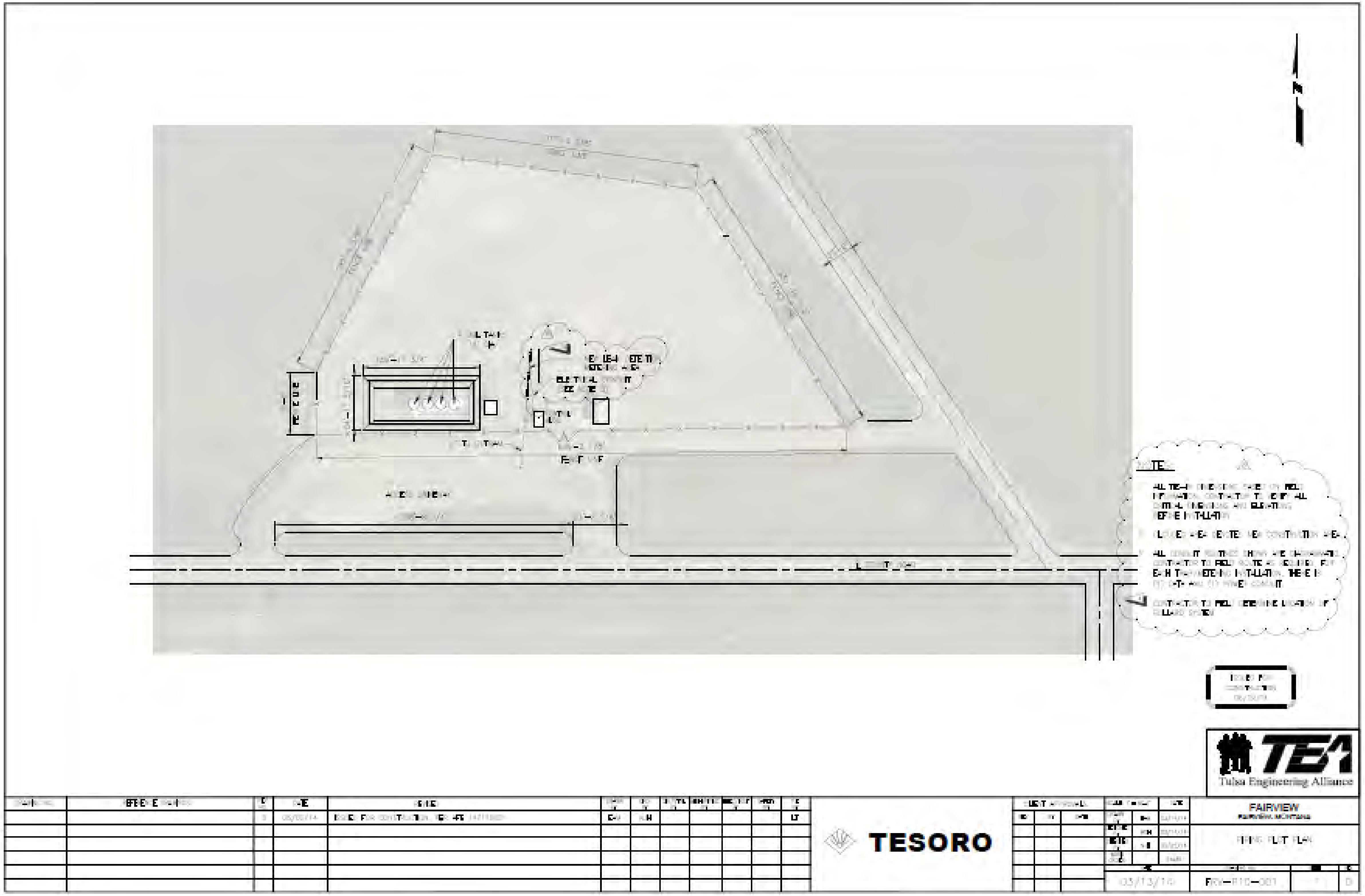


Figure J-11 Four Eyes Plot Plan

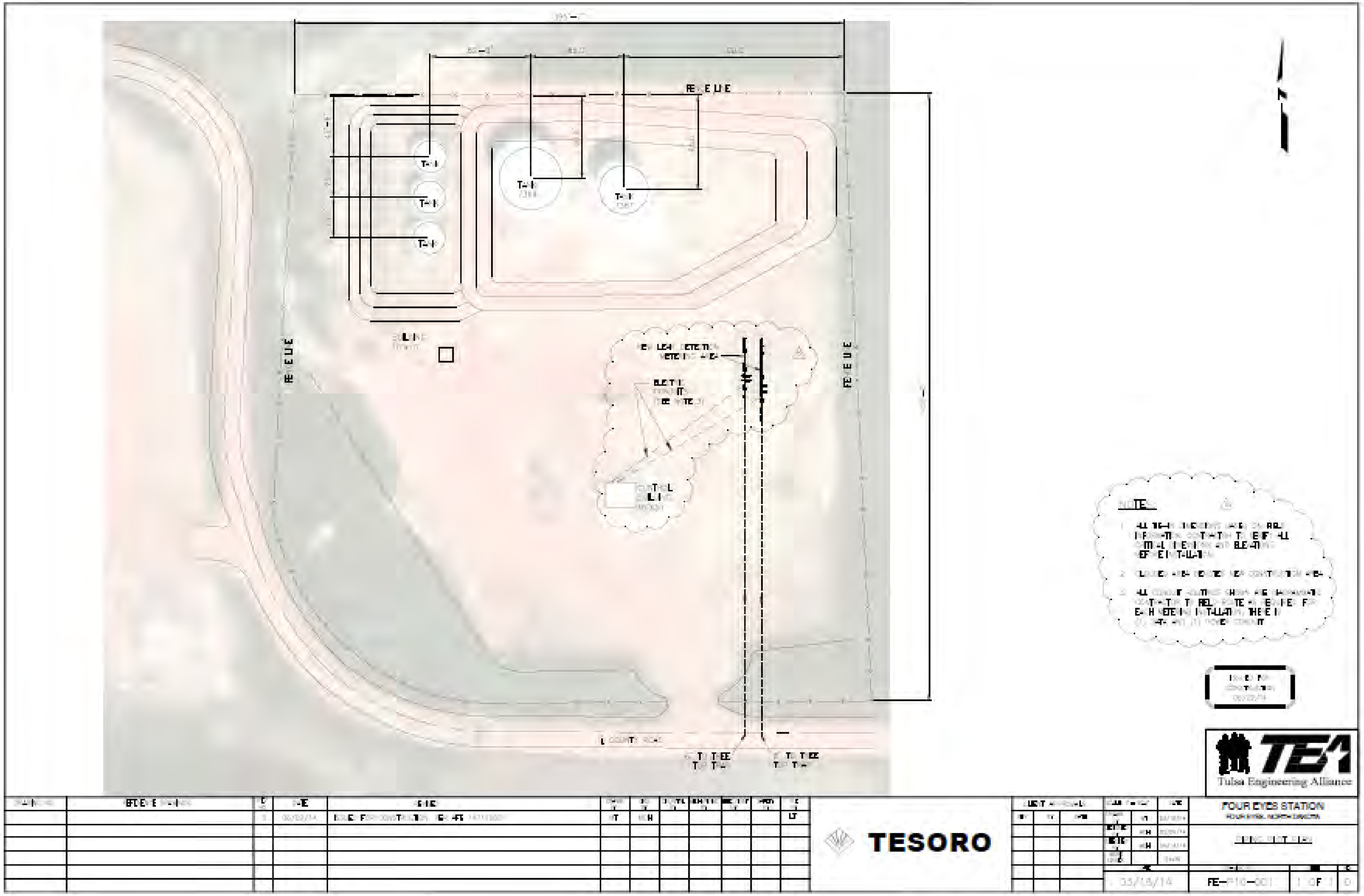


Figure J-12 Fryburg Plot Plan

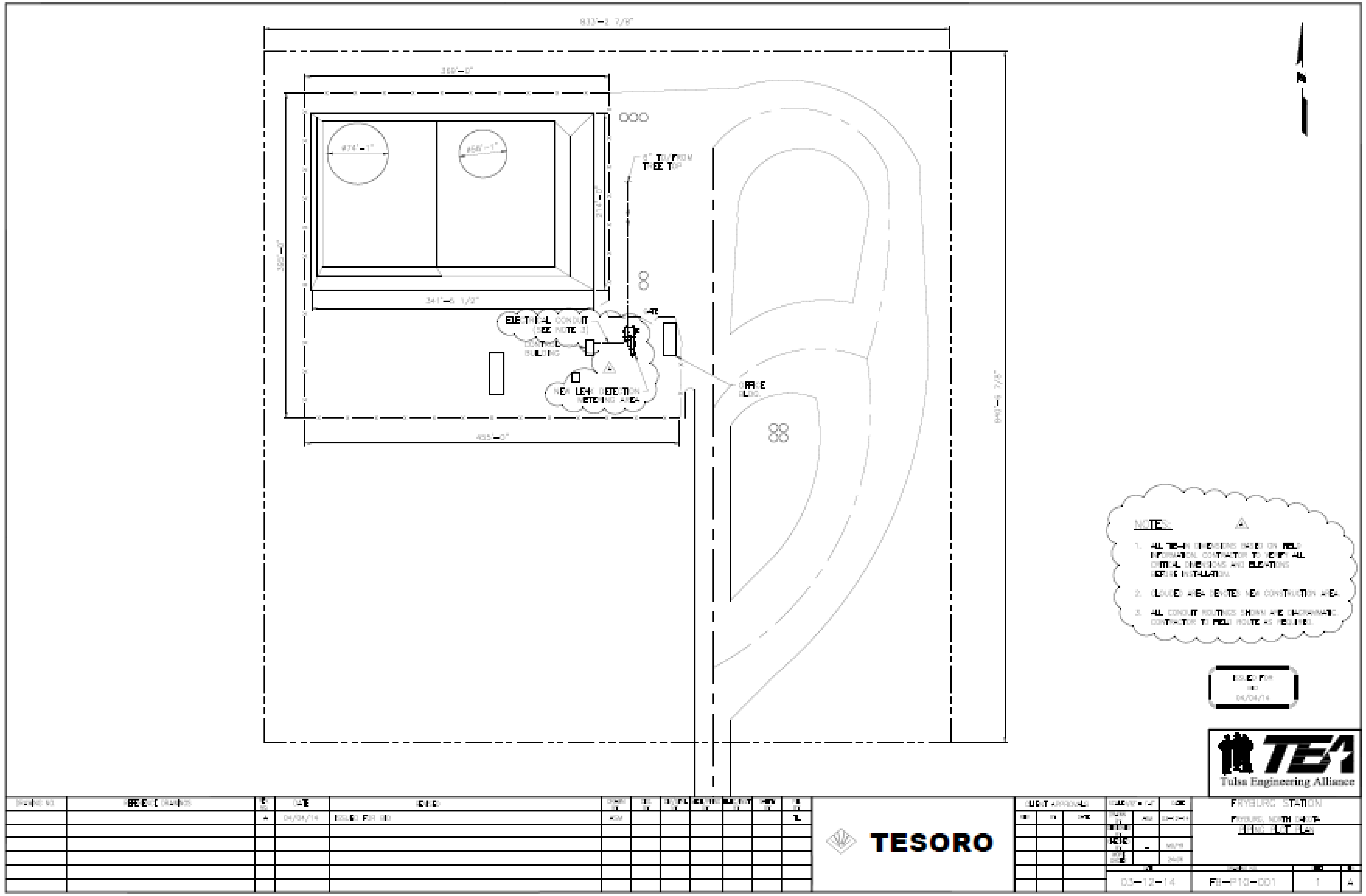


Figure J-13 Highway 22 Station

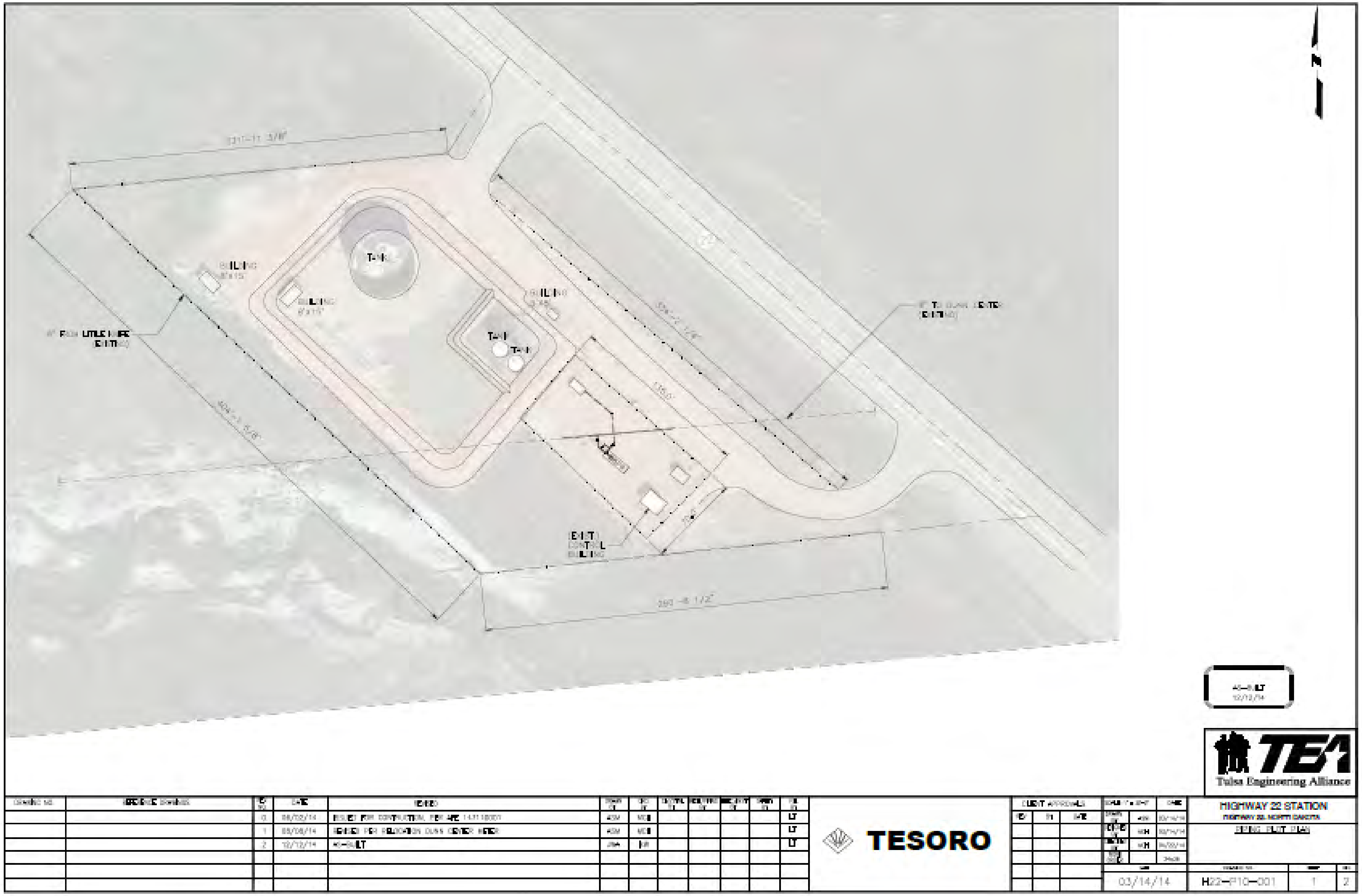


Figure J-14 Johnson Corner Site Plan

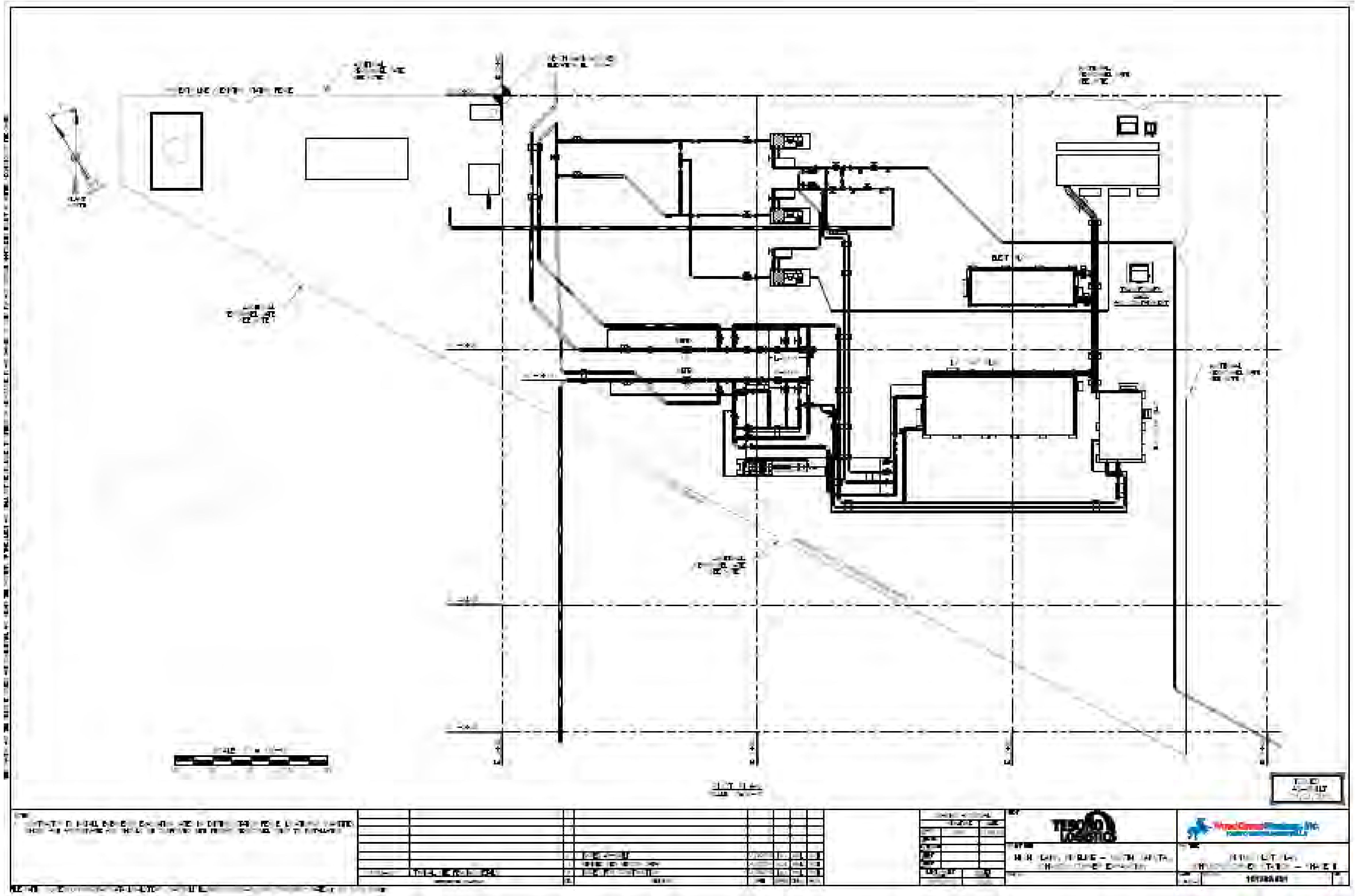


Figure J-15 Keene 1 Plot Plan

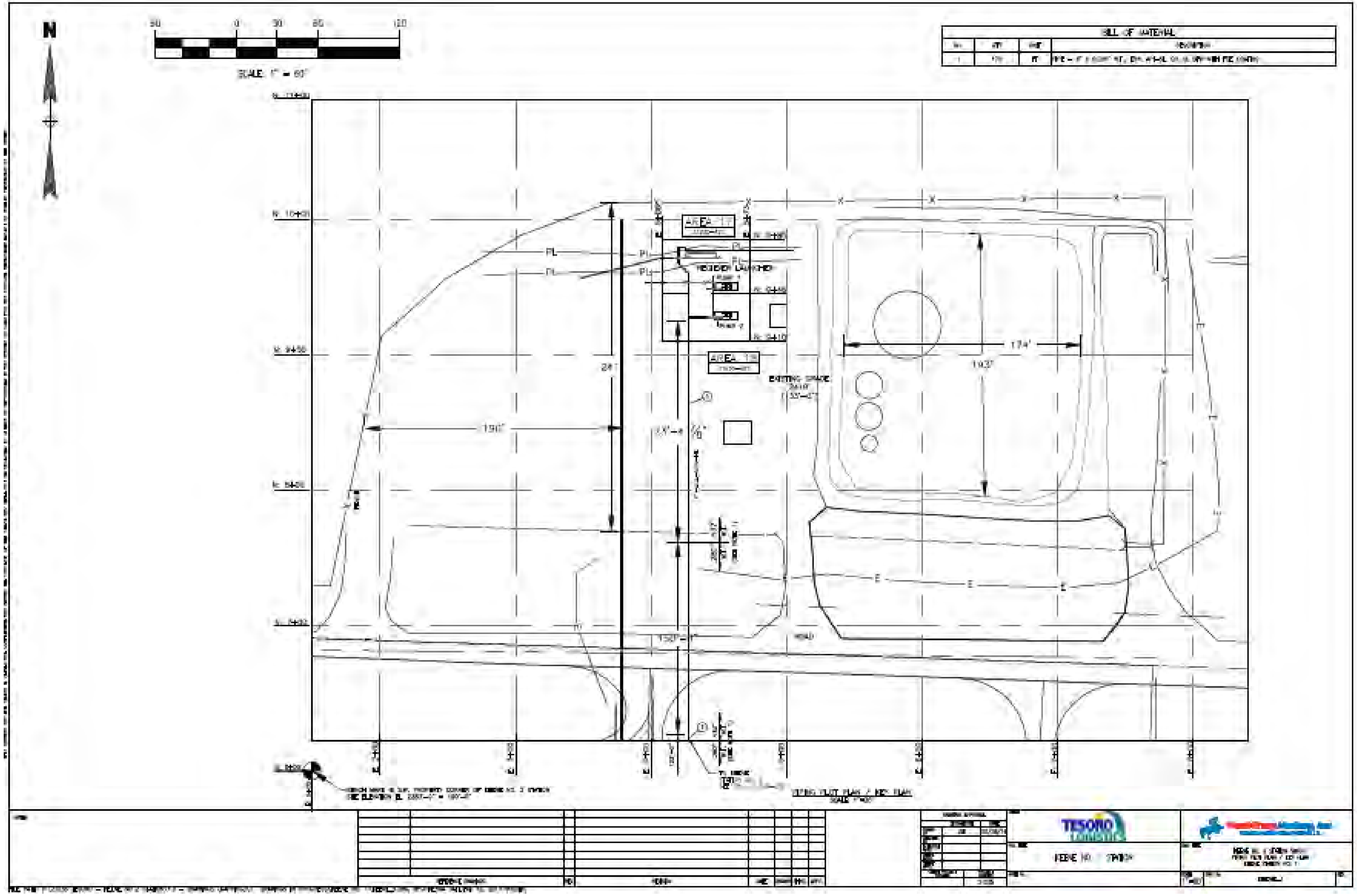


Figure J-16 Keene 2 Plot Plan

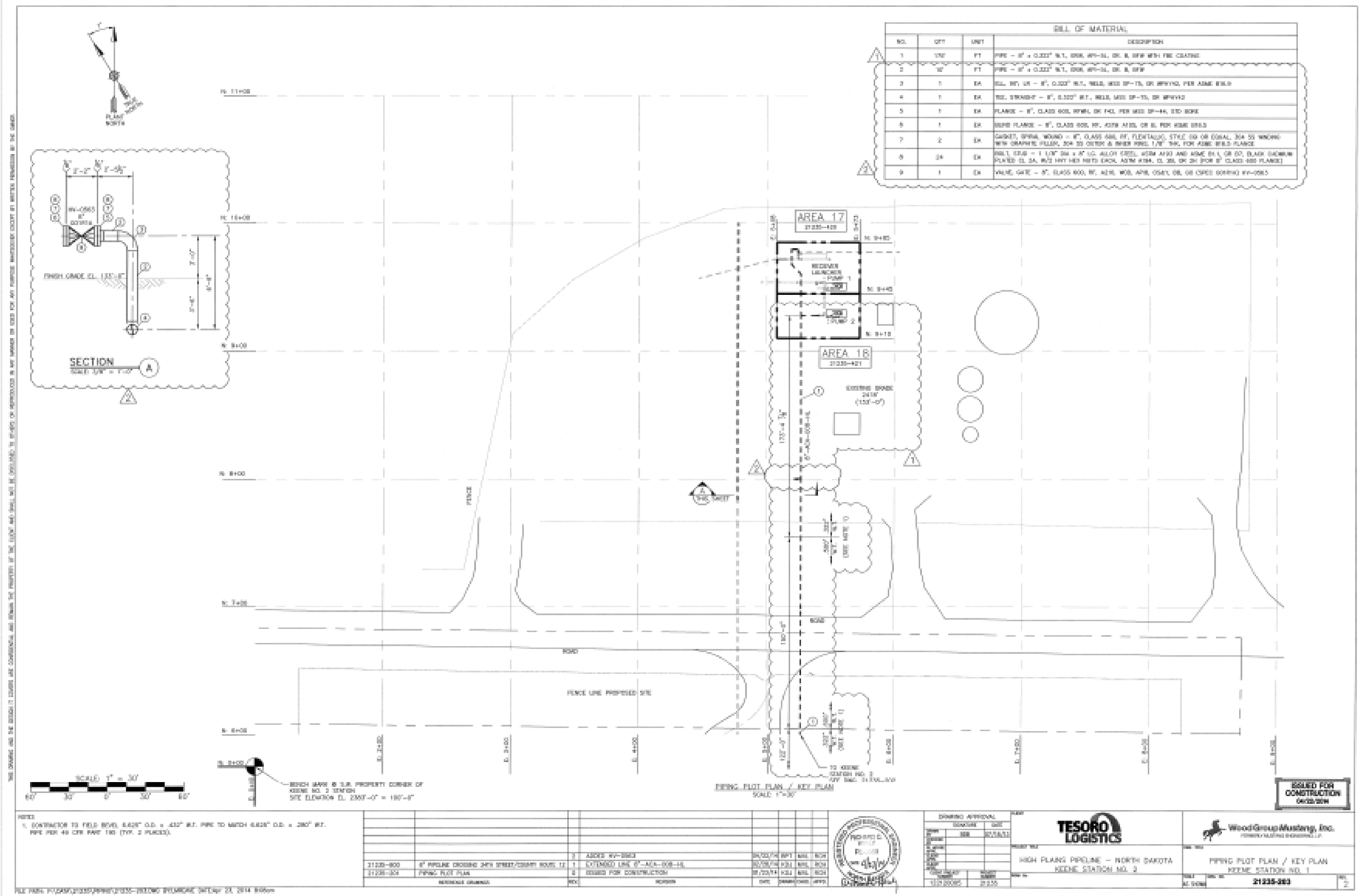


Figure J-17 Lignite Site Plan

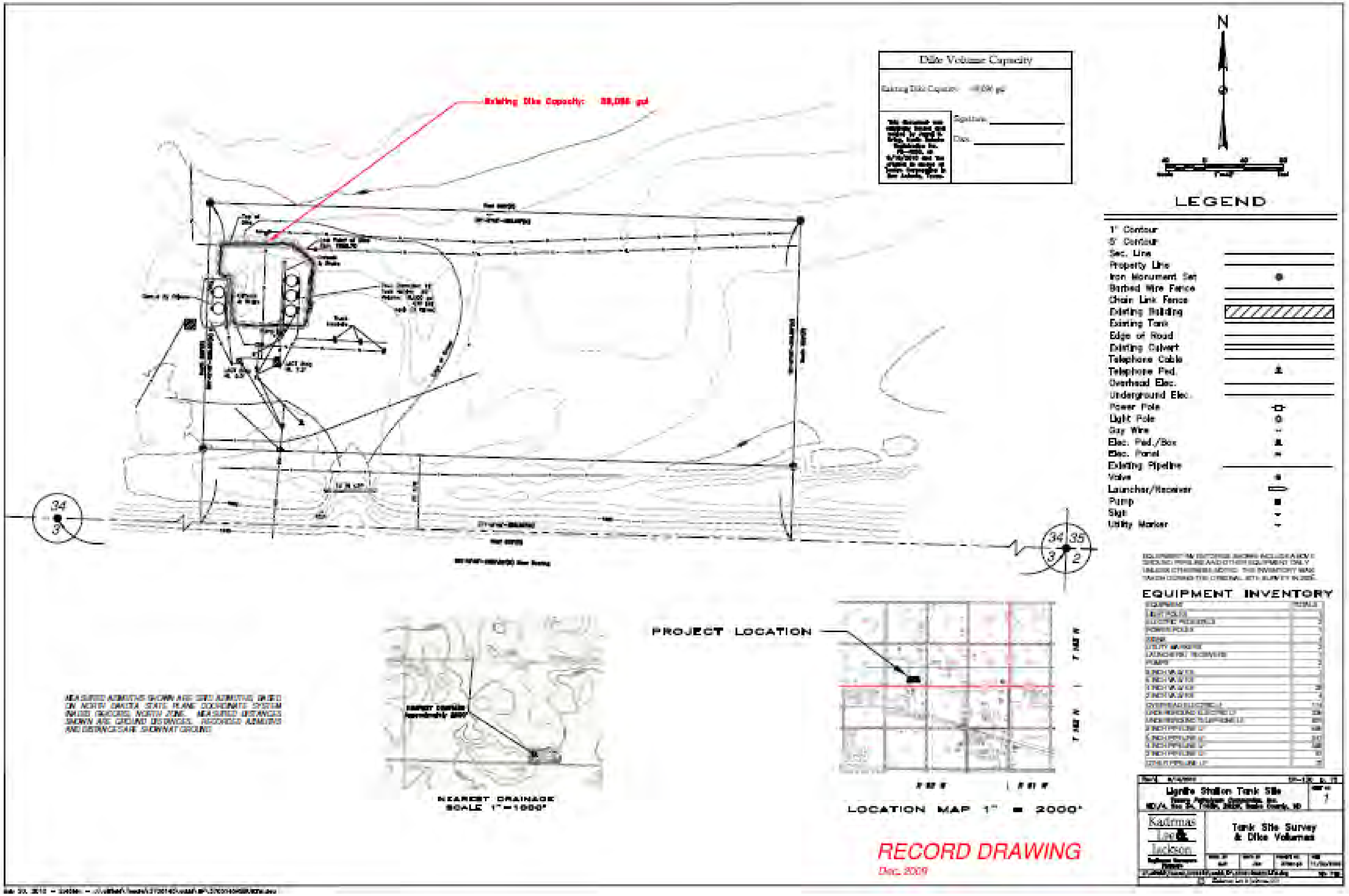


Figure J-18 Little Knife Site Plan

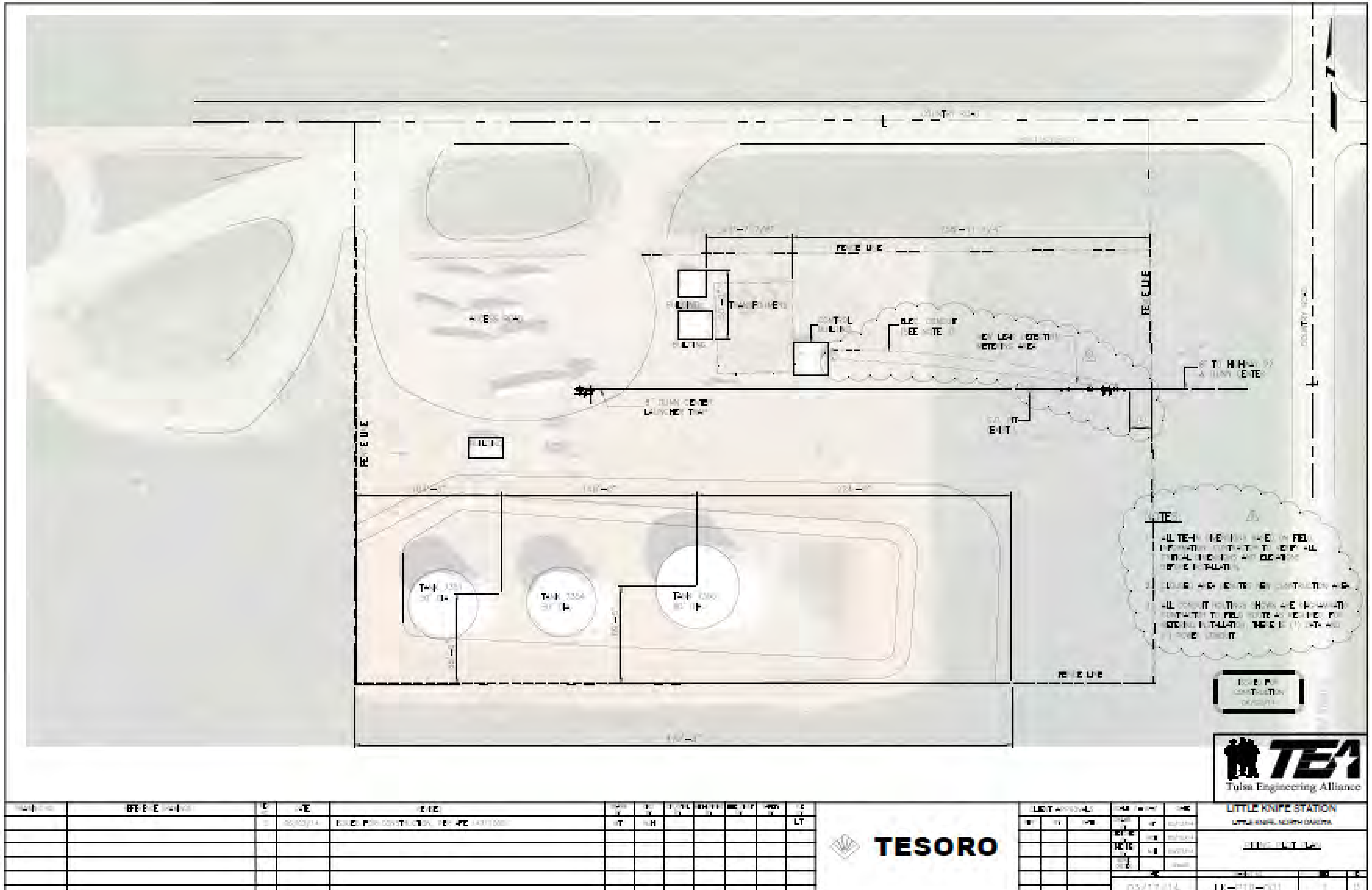


Figure J-19 Poker Jim Site Plan

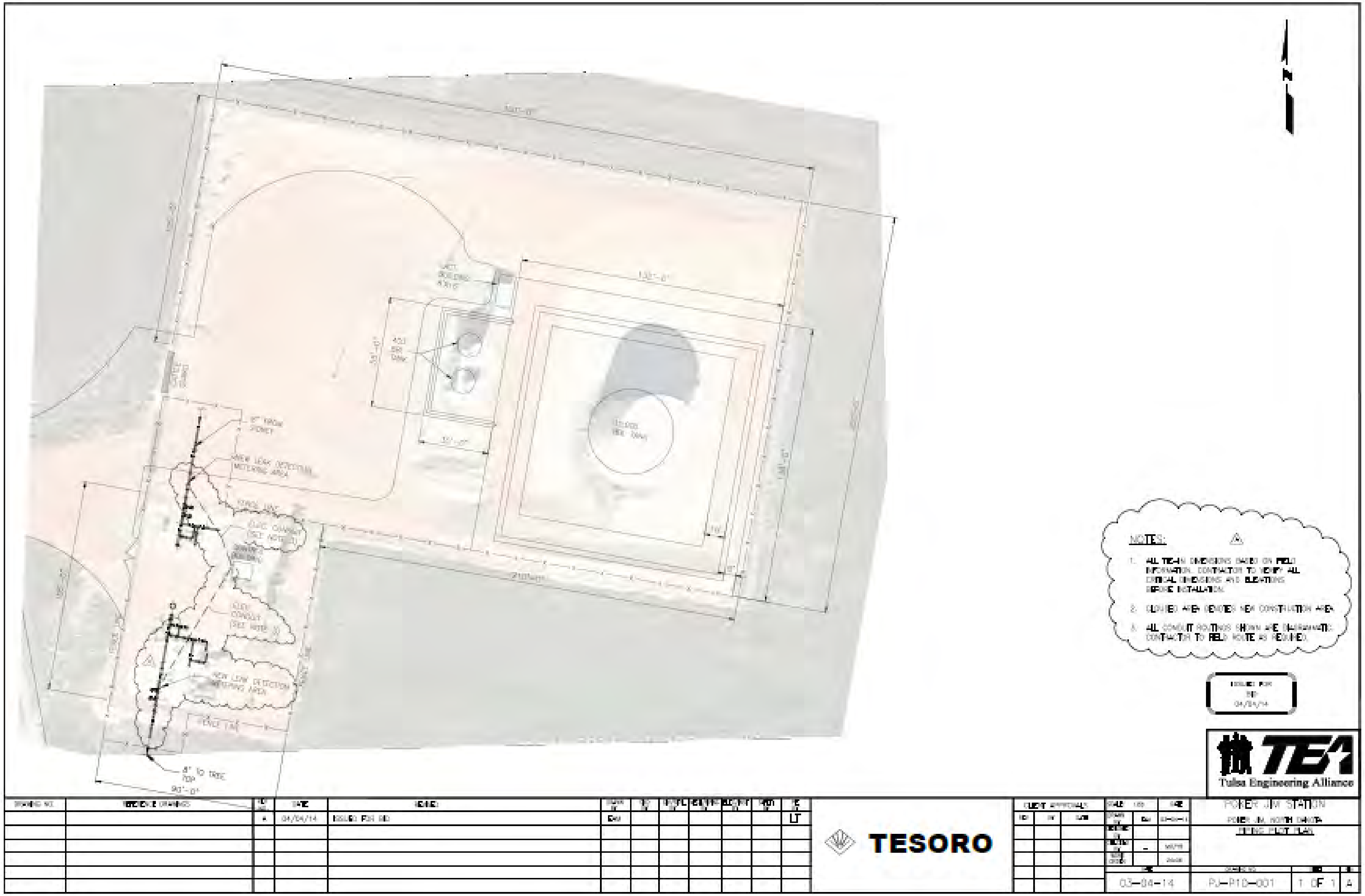


Figure J-20 Putnam Site Plan

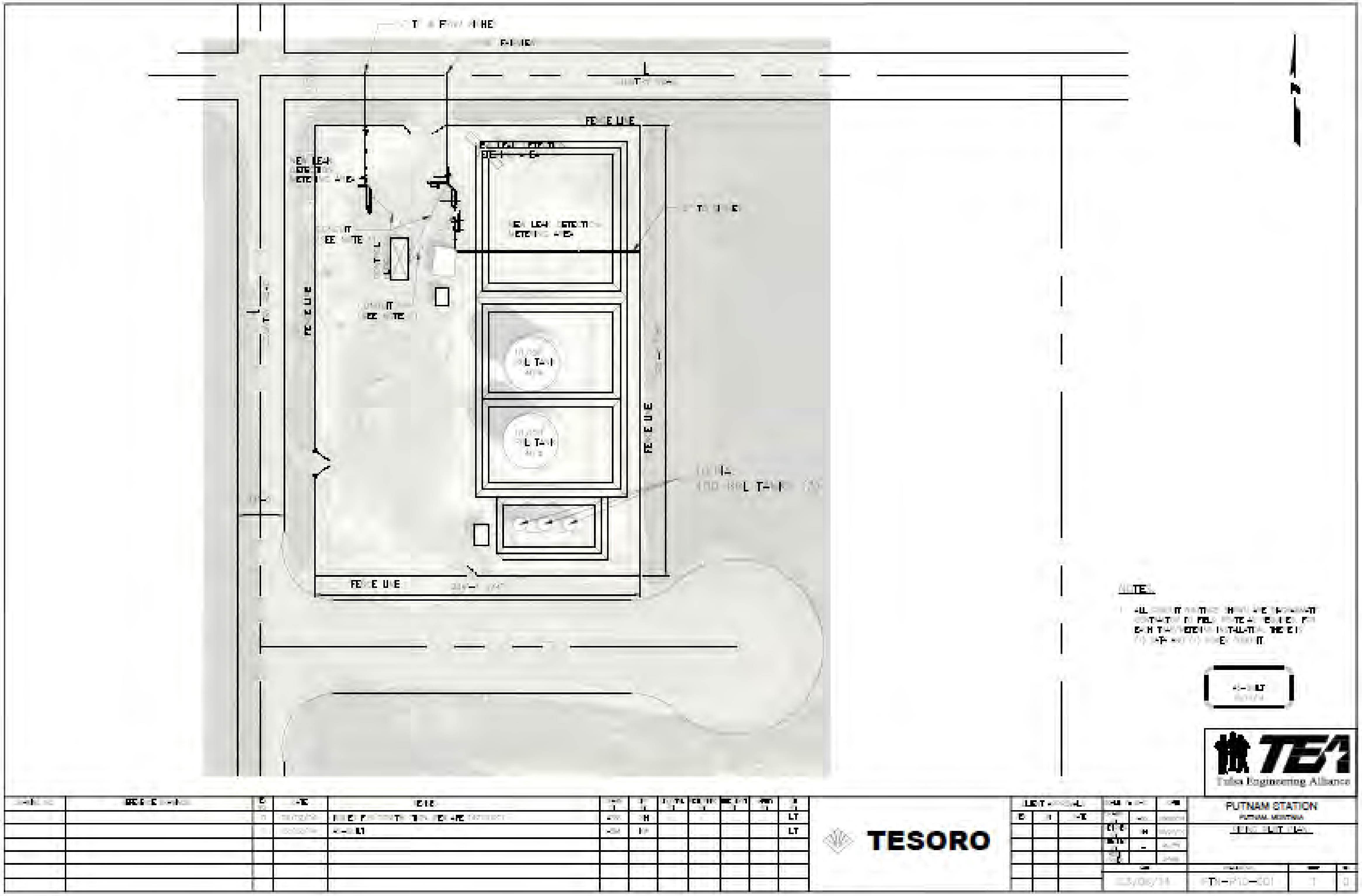


Figure J-21 Ramberg Site Plan

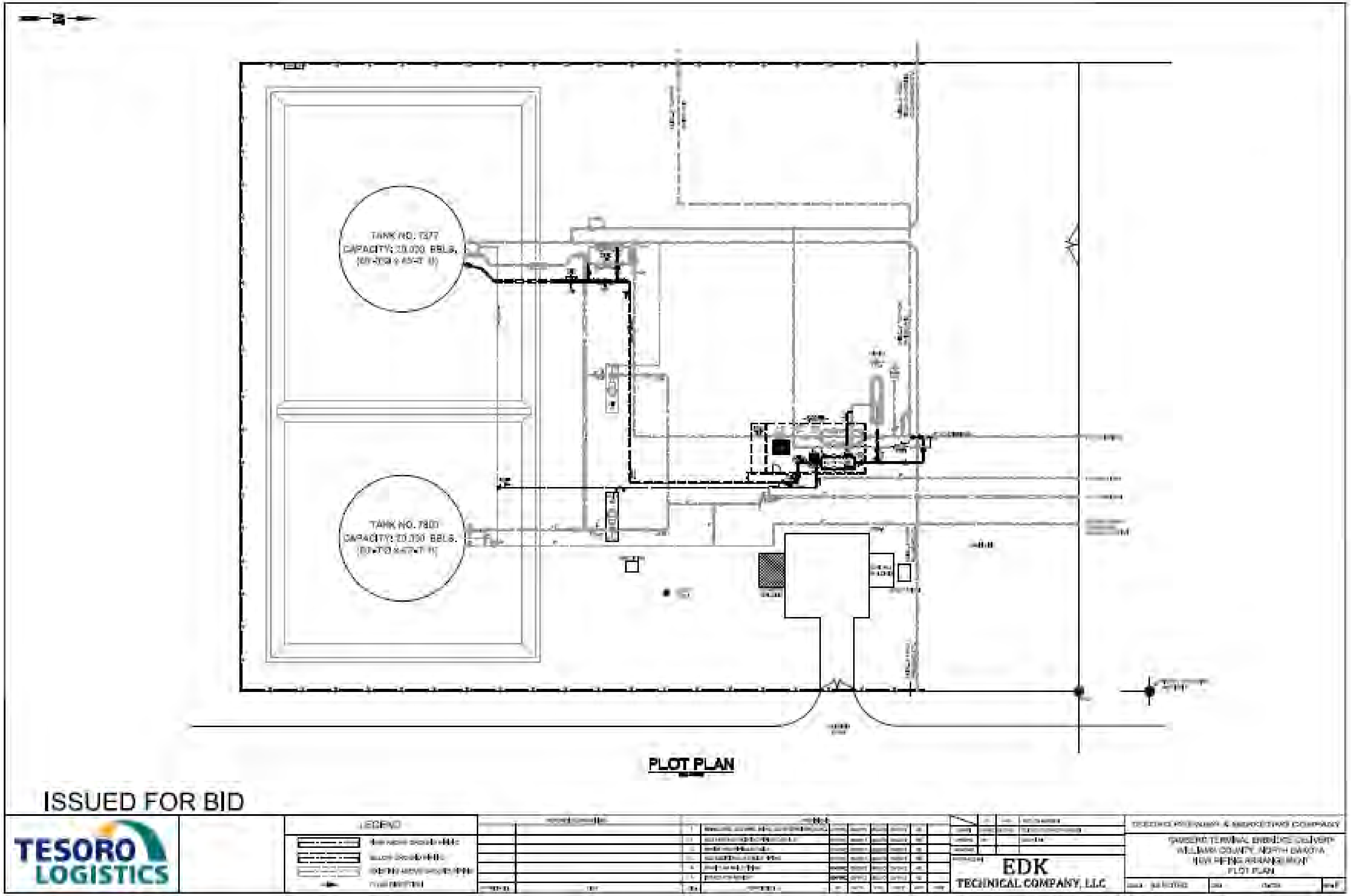


Figure J-22 Sidney Site Plan

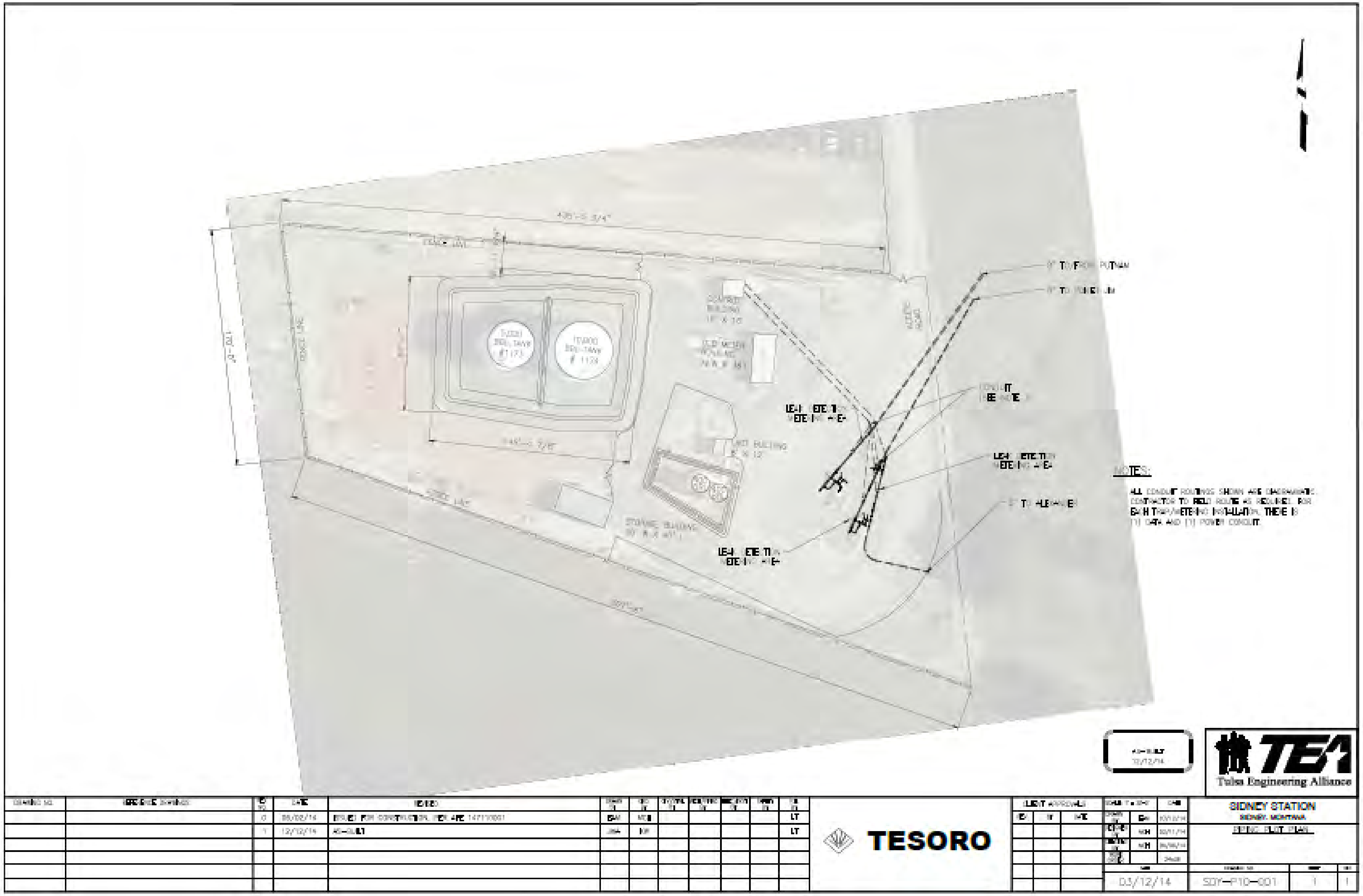


Figure J-23 Stampede Site Plan

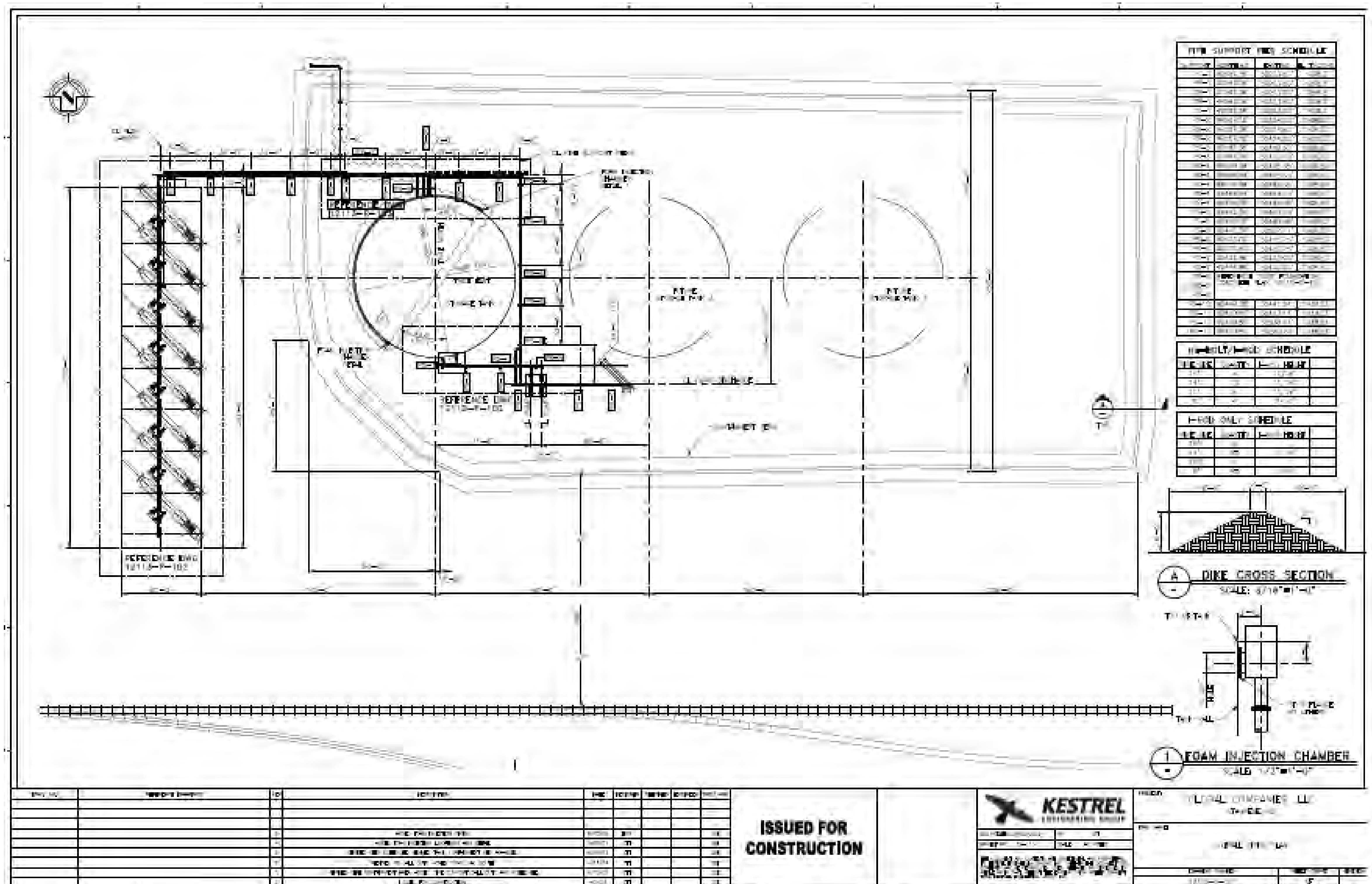


Figure J-24 Tioga Site Plan

Figure J-25 Tree Top Site Plan

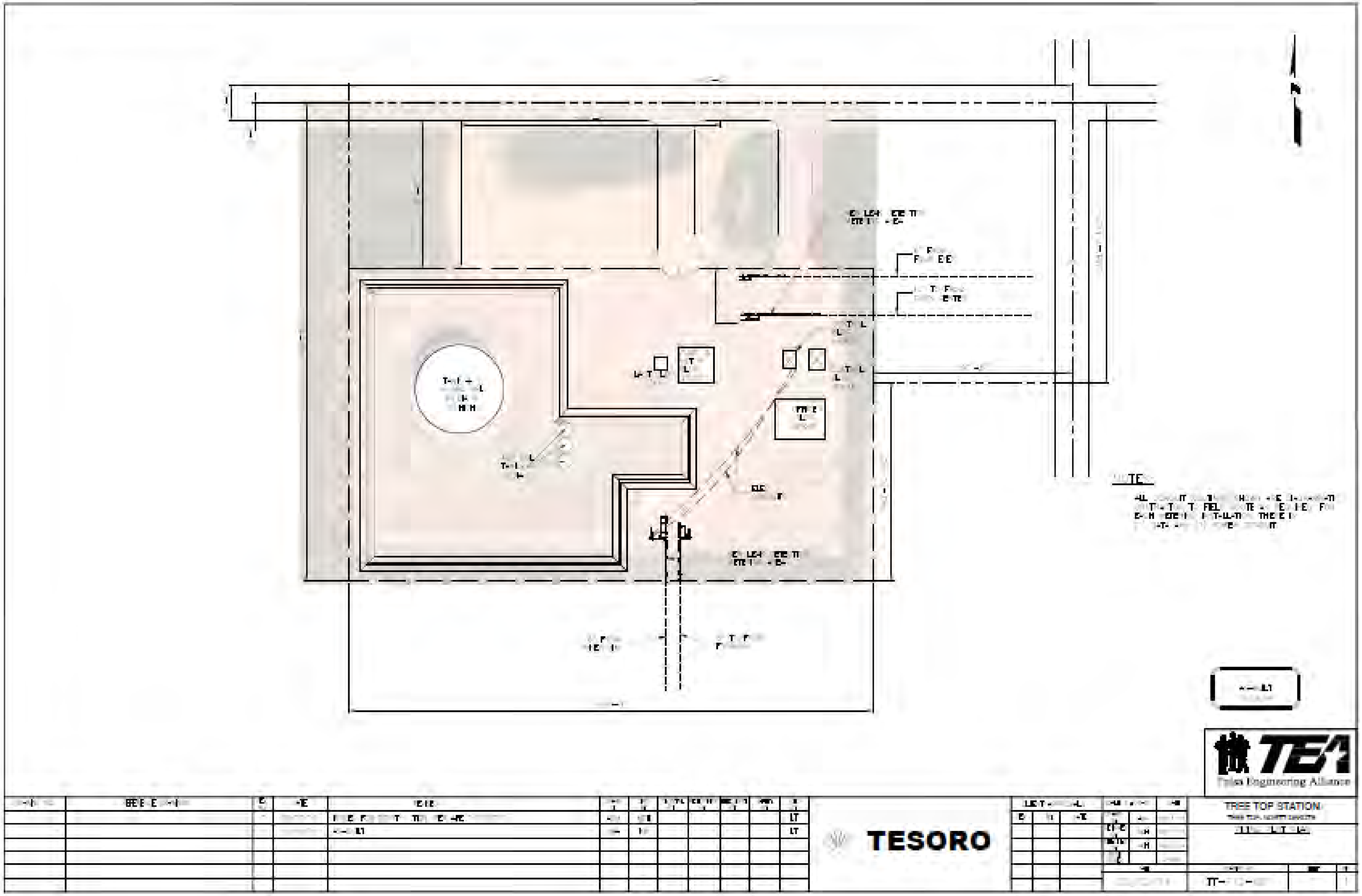


Figure J-26 Yttredahl Site Plan

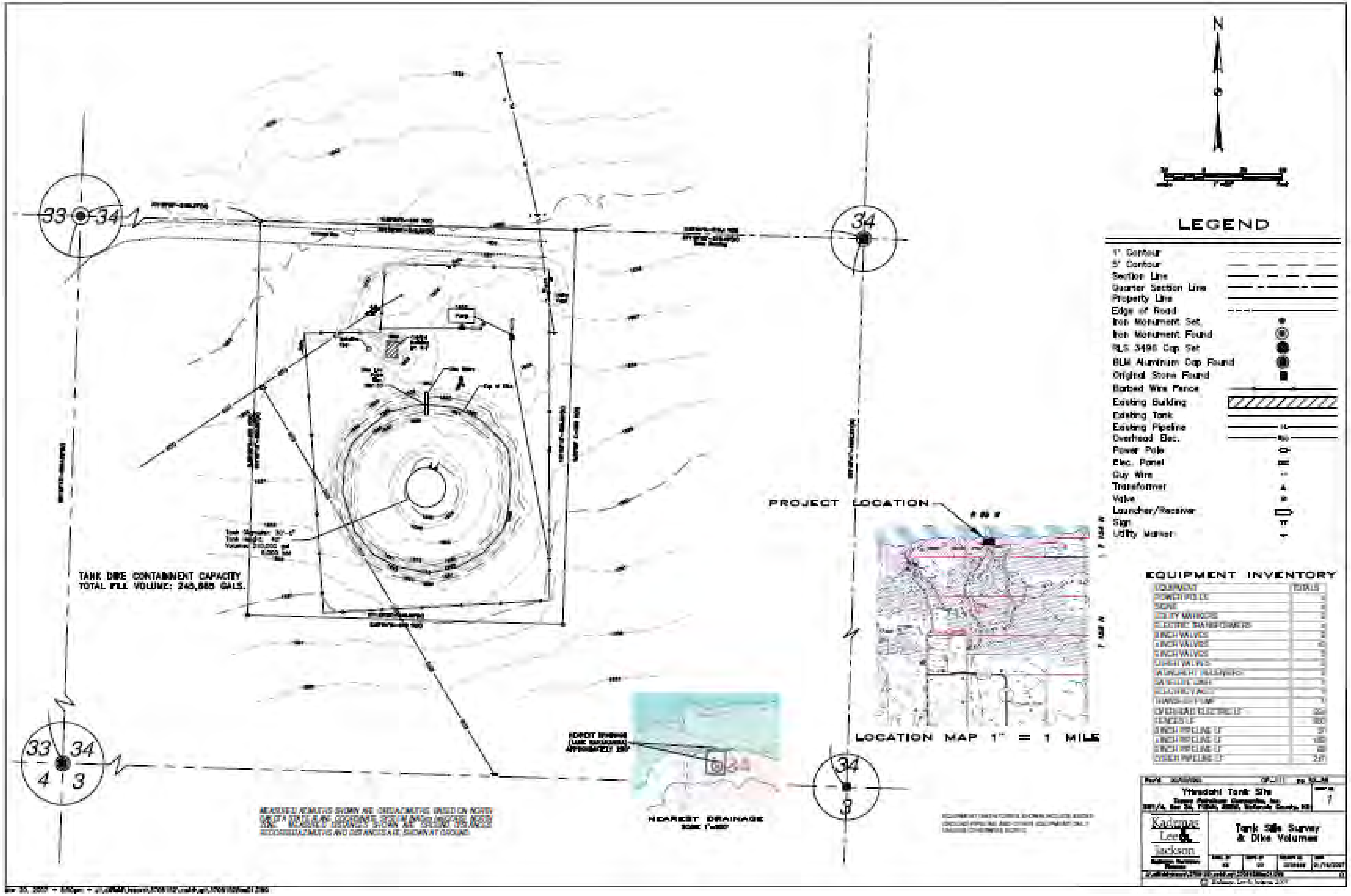


Figure J-27 Watford Receipt Site Plan

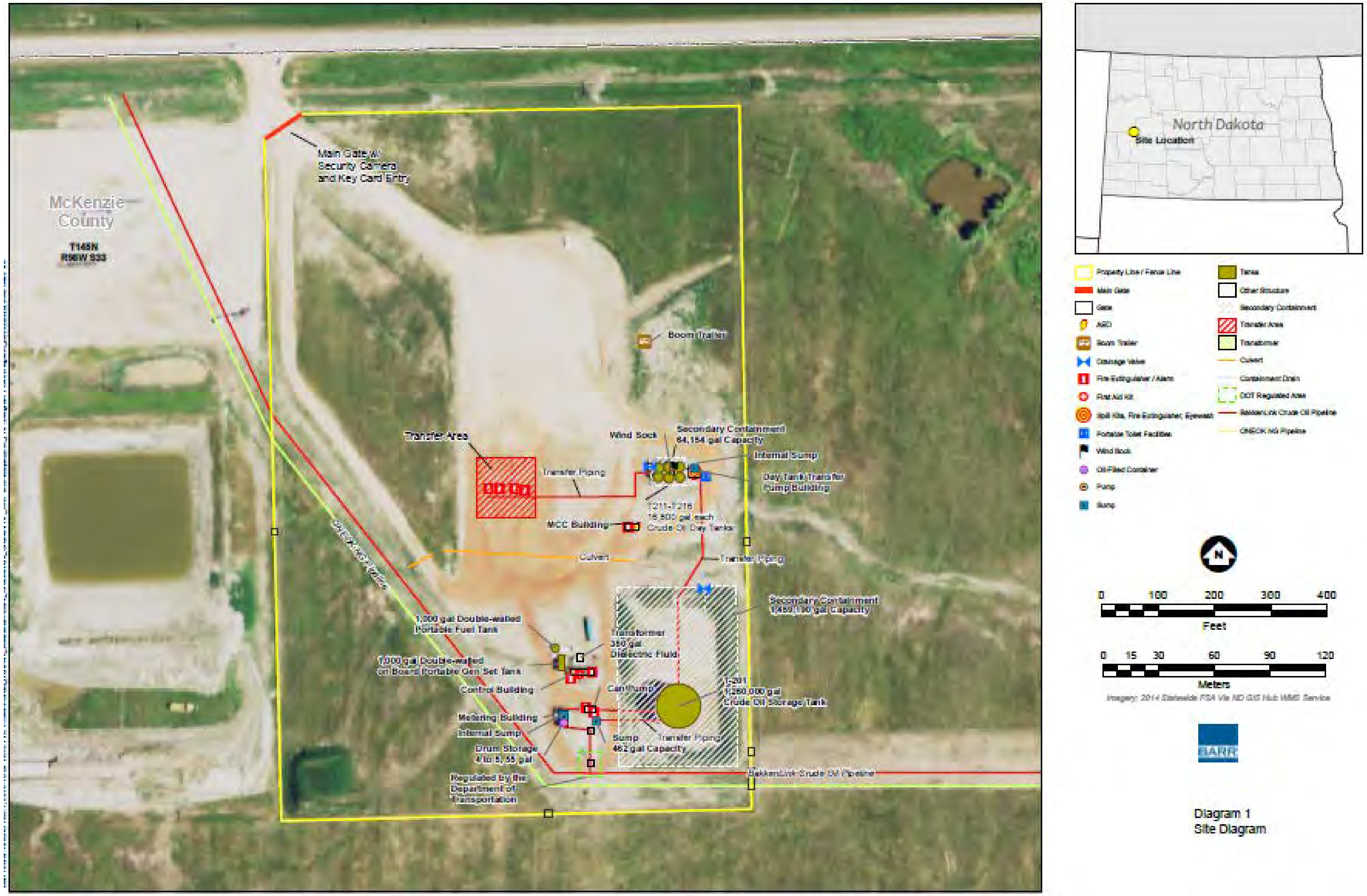


Figure J-28 Fryburg Rail Site Plan

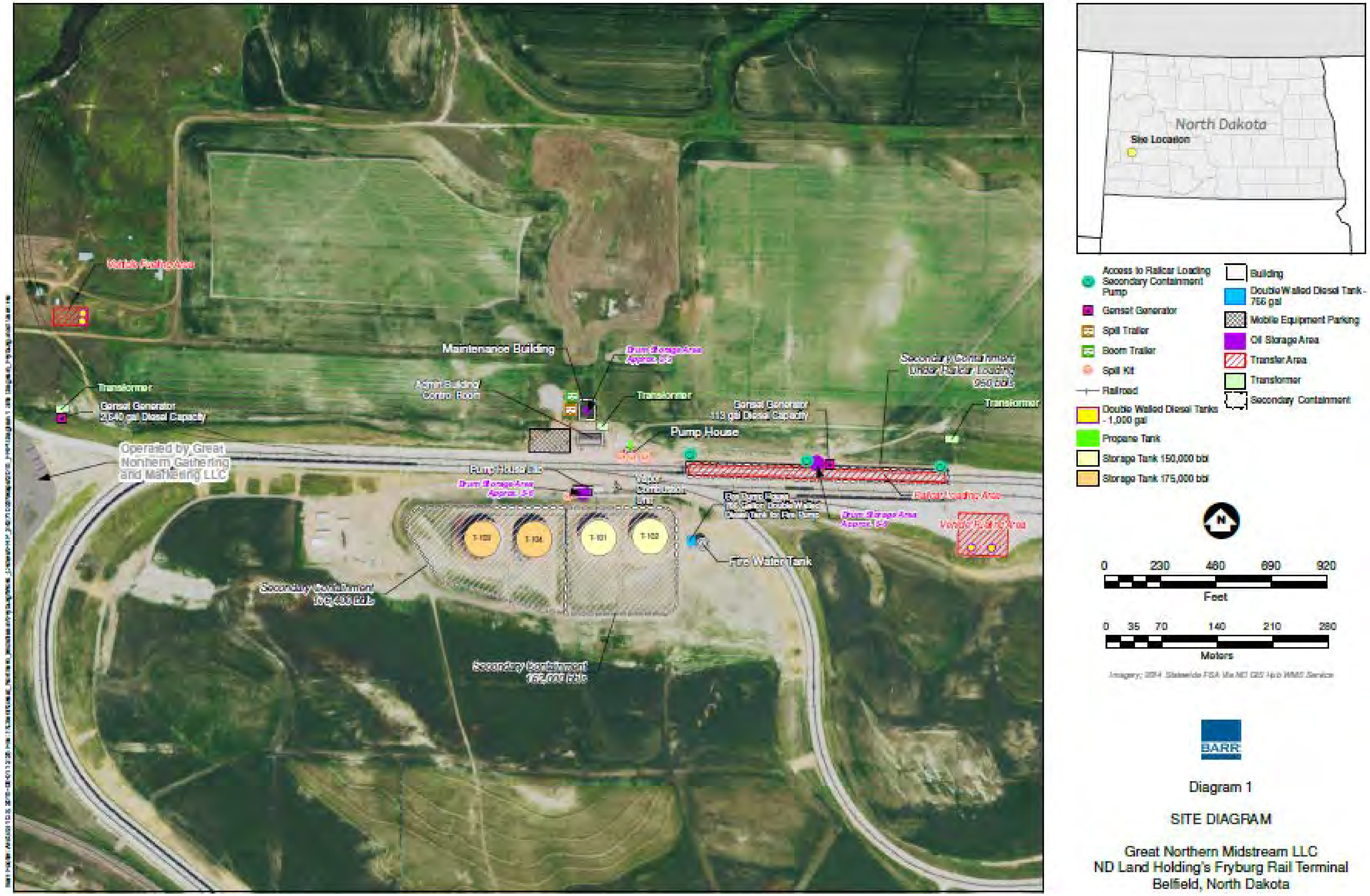


Figure J-29 Dunn Receipt Site Plan

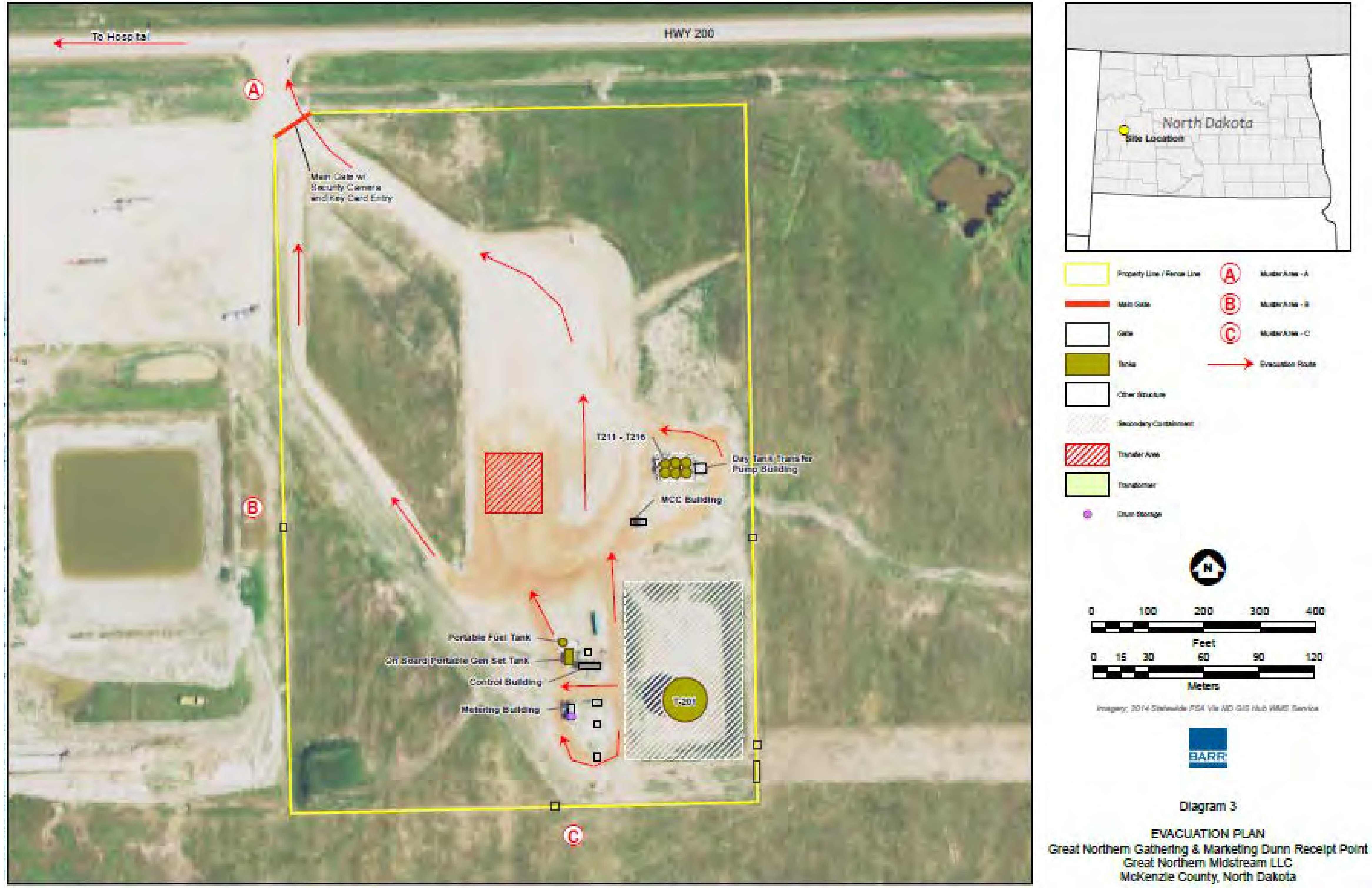


Figure J-30 Rupple Station Site Plan

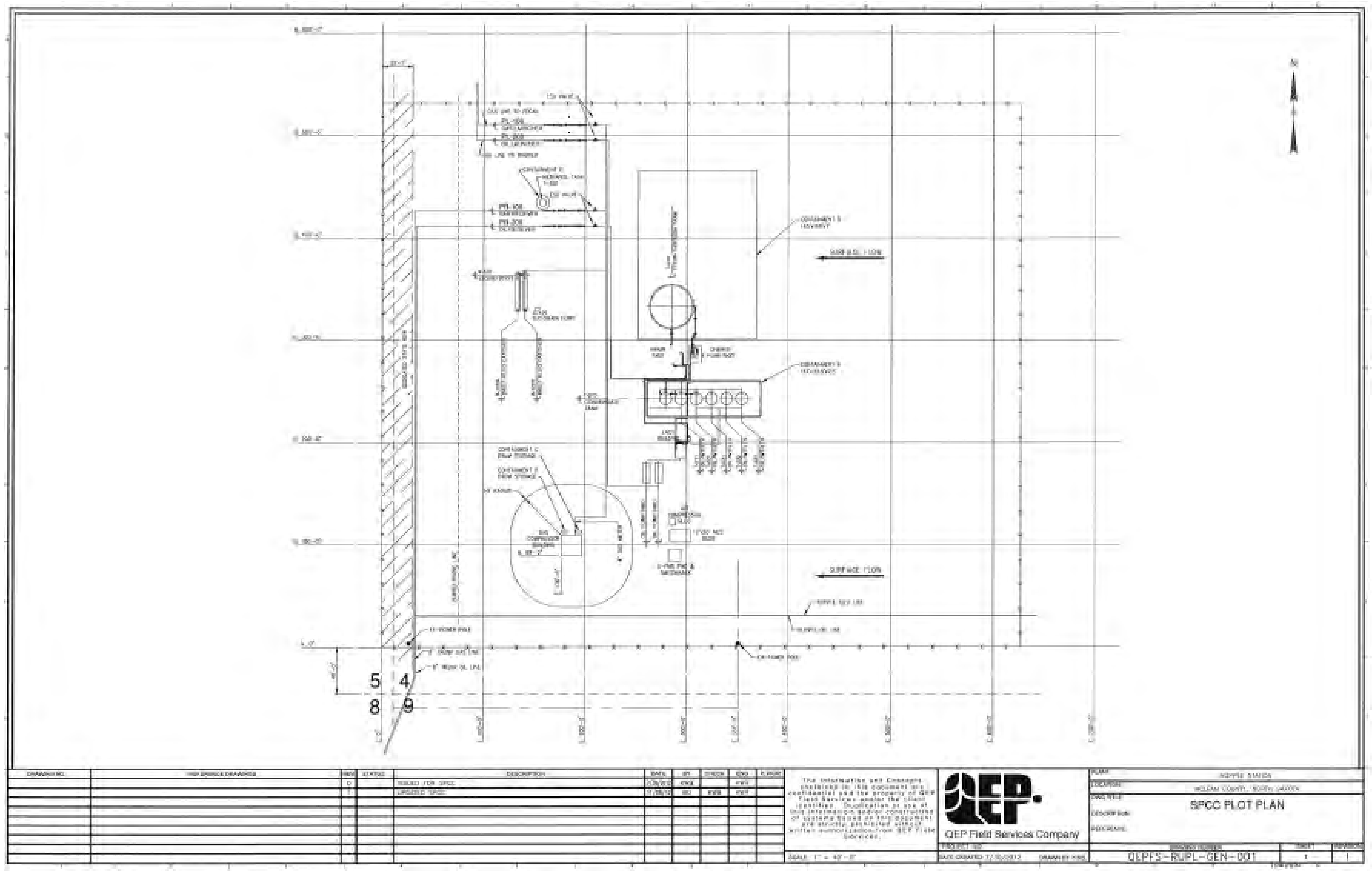


Figure J-31 Belfield Oil Terminal

Figure J-32 Skunk Hill Station

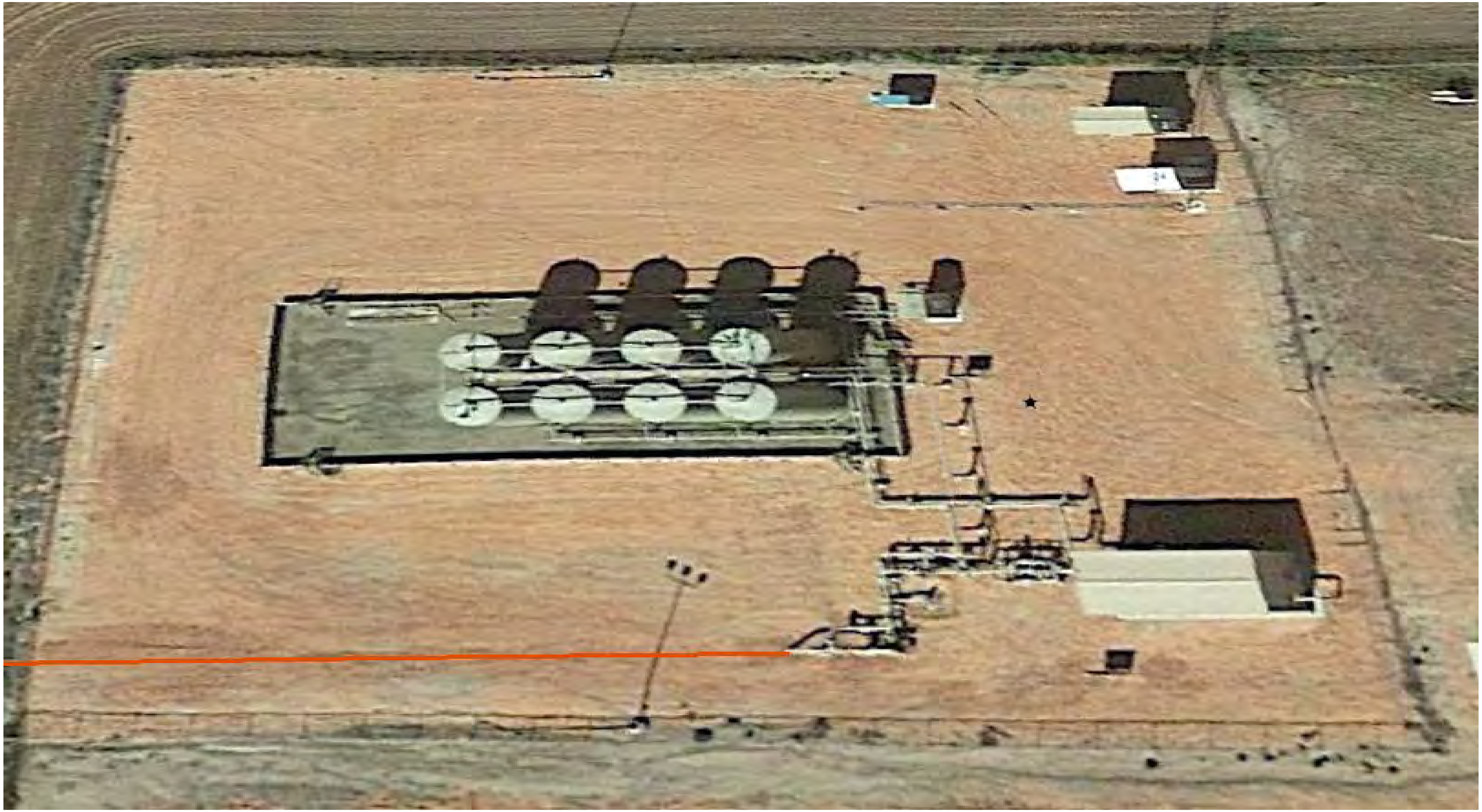


Figure J-33 Response Zone Overview

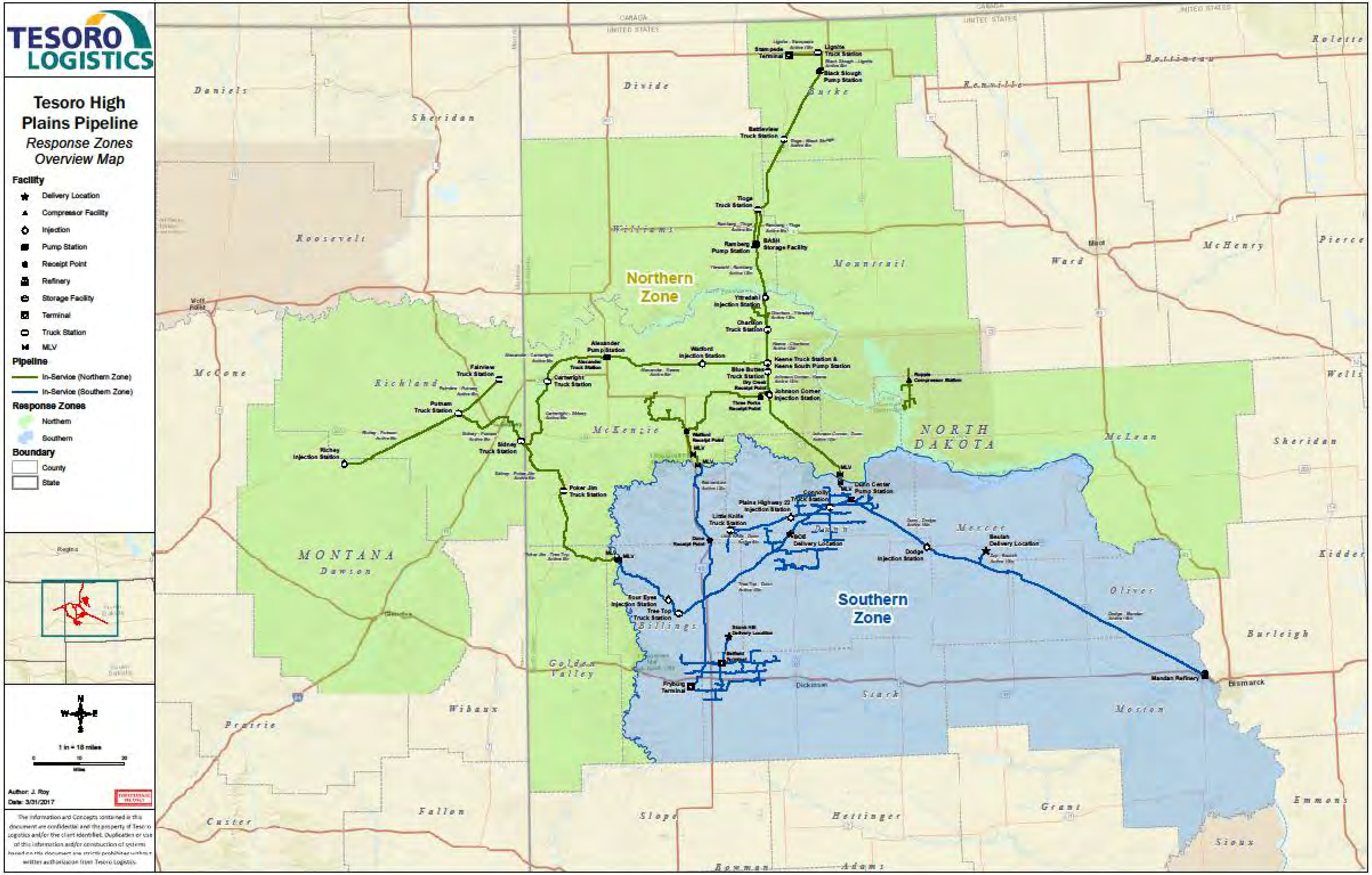


Figure J-34 Northern Response Zone

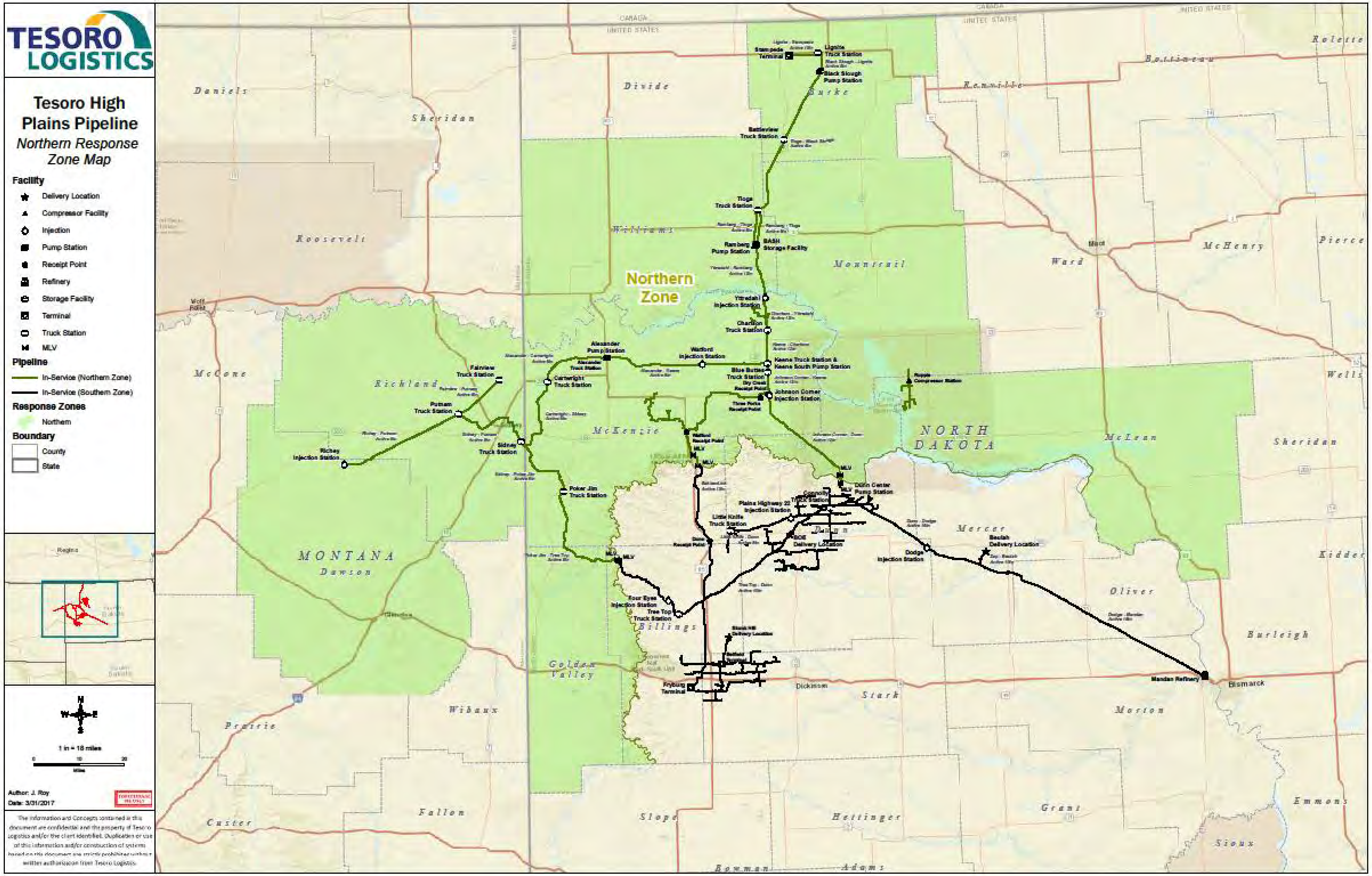


Figure J-35 Southern Response Zone

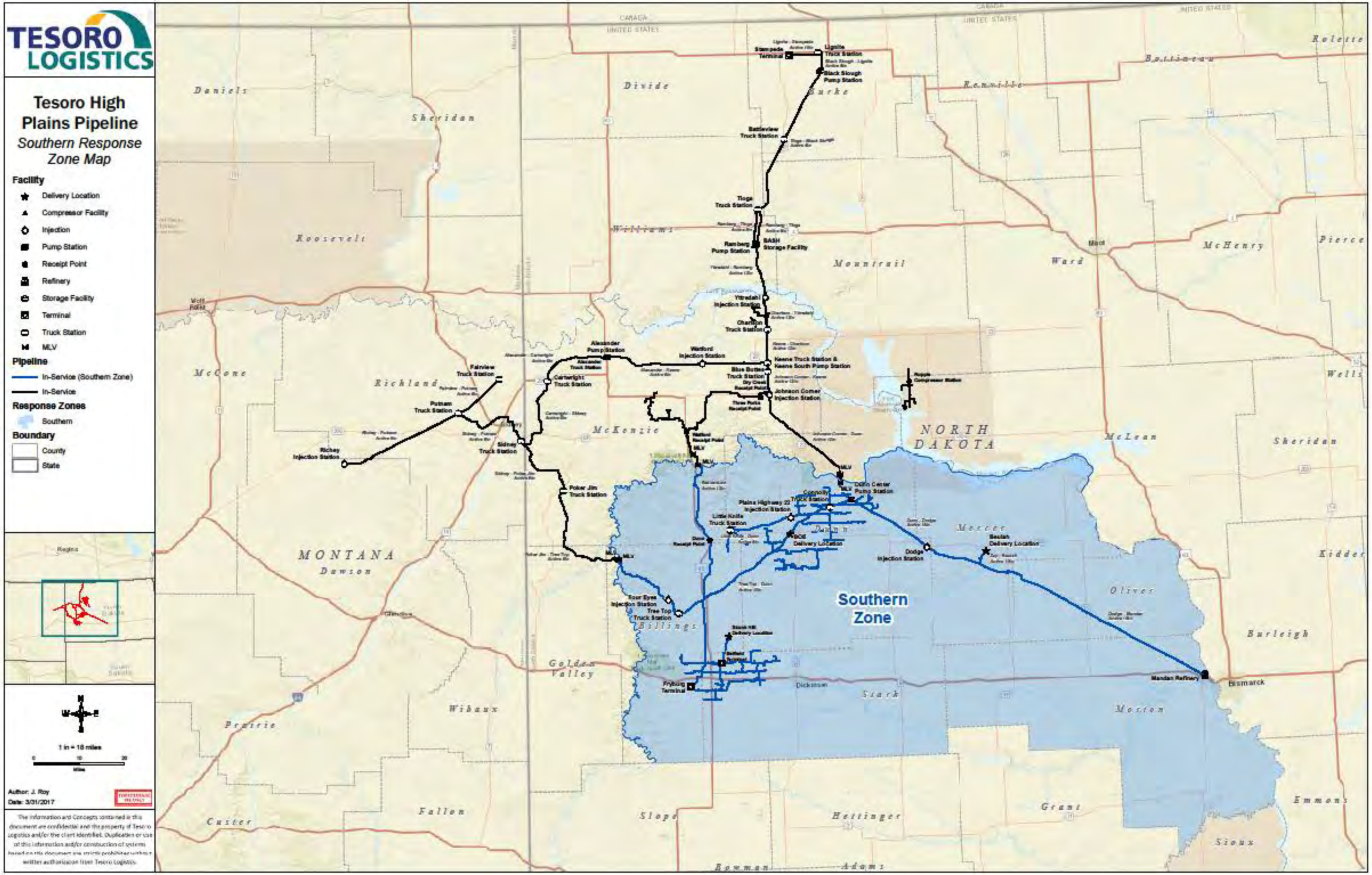
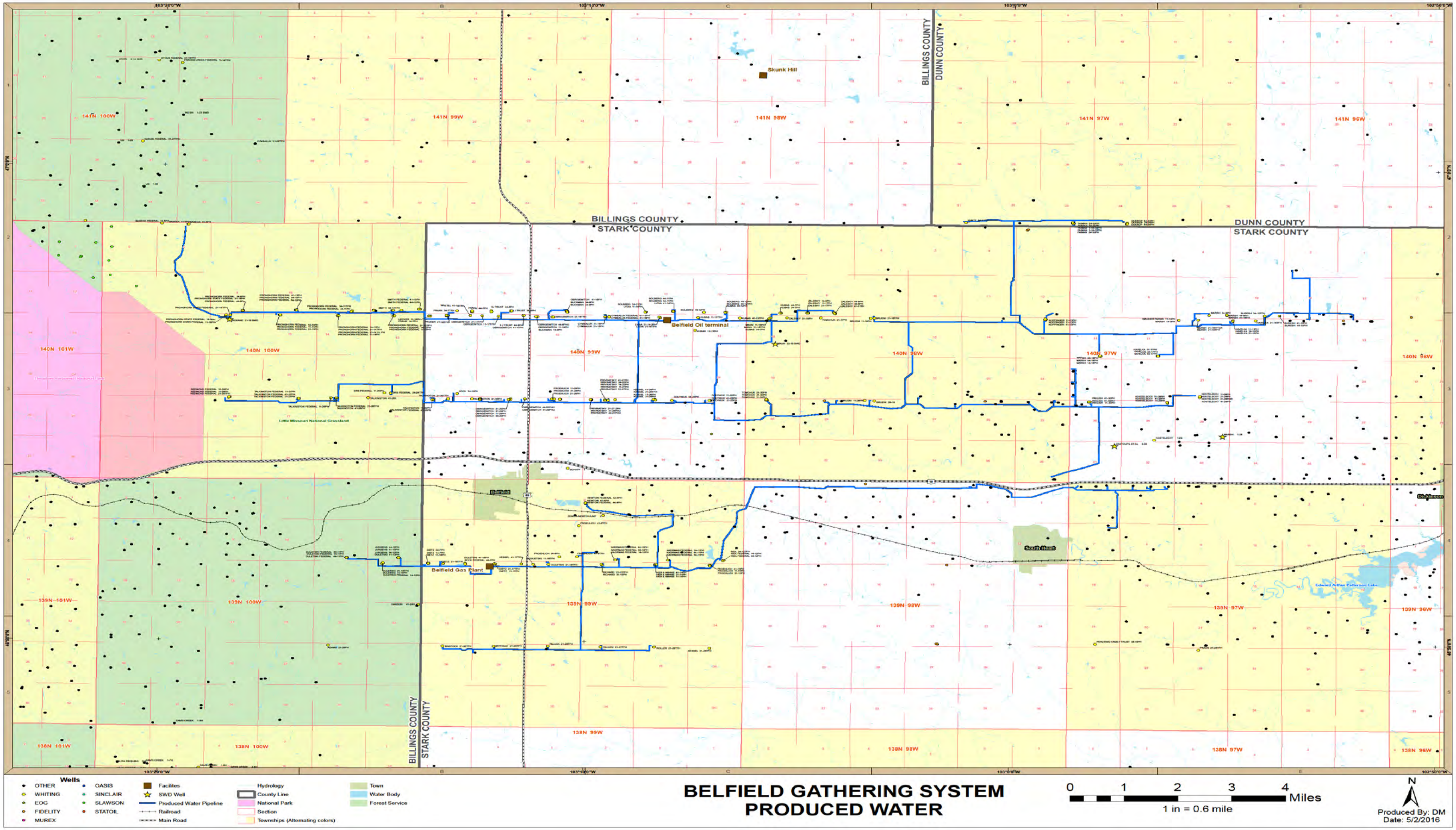


Figure J-36 Produced Water Pipeline Map



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Y-Grade Hub
Emergency Action Plan

Y-GRADE HUB EMERGENCY ACTION PLAN

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Emergency Action Plan
for
Y-GRADE HUB

I. PURPOSE AND SCOPE

The purpose and scope of the Y-Grade Hub Plant Emergency Action Plan is to comply with the Occupational Safety and Health Administration's (OSHA) Emergency Action Plan Standard, 29 CFR 1910.38, and to prepare employees for dealing with emergency situations. This plan is designed to minimize injury and loss of human life and company resources by training employees, and assigning responsibilities. This plan applies to all emergencies that may reasonably be expected to occur at the Y-Grade Hub.

II. ACRONYMS and DEFINITIONS

ABBREVIATION	DESCRIPTION
ACP	(EPA) Area Contingency Plan
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EAP	Emergency Action Plan
EPA	U.S. Environmental Protection Agency
ERT	Emergency Response Team
ESD	Emergency Shut Down
Event	Incidental release that can be safely handled by a qualified employee
HAZCOM	Hazard Communication
HAZMAT	Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCA	High Consequence Area
High Volume Area	An area which an oil pipeline having a nominal outside diameter of 20 inches (508 millimeters) or more crosses a major river or other navigable waters, which, because of the velocity of the river flow and vessel traffic on the river, would require a more rapid response in case of a worst case discharge or substantial threat of such a discharge
HVL	Highly Volatile Liquid (VP >40 psia at 100F)
IC	Incident Commander - is responsible for directing and/or controlling resources by virtue of explicit legal, agency, or delegated authority. The individual responsible for the overall management of the response is called the Incident Commander (OSHA)
ICS	Incident Command System
IMT	Incident Management Team

ABBREVIATION	DESCRIPTION
LEL	Lower Explosive Limit
LEPC	Local Emergency Planning Committee
LPG	Liquefied Petroleum Gas
MSDS (or SDS)	Material Safety Data Sheet
Navigable Waters	The waters of the United States, including the territorial sea and such waters as lakes, rivers, streams; waters which are used for recreation; and waters from which fish or shellfish are taken and sold in interstate or foreign commerce
NCP	(EPA) National Contingency Plan
NRC	National Response Center
OSHA	Occupational Safety and Health Administration
OSC	On-Scene Commander: the individual trained to lead the on scene emergency response and activate the ICS
OSRO	Oil Spill Removal Organization
PPE	Personal Protective Equipment
QI	Qualified Individual: an English-speaking representative of an operator, located in the United States, available on a 24-hour basis, with full authority to: activate and contract with required oil spill removal organization(s); activate personnel and equipment maintained by the operator; act as liaison with a Federal EPA On-scene Commander; and obligate any funds required to carry out all required or directed oil response activities.
Senior Qualified Operations Employee	For the purposes of this Plan, the Senior Qualified Operations Employee is qualified in the operation of the facility, has ICS training and may be one of the following: Operations Foreman, Operations Lead or Shift Owner
RQ	Reportable Quantity
ROW	Right of Way
Tier 1,2,3	Emergency resource response times as defined by DOT (49 CFR 194.115). For Andeavor Tier 1- 12hrs, Tier 2 – 36 hrs. Tier 3 – 60 hrs. (non-high volume areas)
Tornado Warning	A tornado warning is an alert issued by weather services to warn that severe thunderstorms with tornadoes may be imminent. It can be issued after a tornado or funnel cloud has been spotted by the public, storm chasers, emergency management or law enforcement, or more commonly if there are radar indications of tornado formation
Tornado Watch	A Tornado Watch is issued when weather conditions are favorable for the development of severe thunderstorms that are capable of producing tornadoes

III. PLAN DISTRIBUTION

Plan #	Location
1	Y-Grade Hub, Area Supervisor, ND
2	Y-Grade Hub, Control Room, San Antonio, TX
3	Corporate Headquarters EOC, San Antonio, TX

IV. RECORD OF CHANGES

The site Safety department and Lead Contingency Planning and Emergency Response Coordinator shall follow the below for changes to the plan.

- Annual review by local management and EH&S.
- Name and/or telephone number changes updated as they occur.
- Plan review opportunities may occur during response team tabletop exercises or actual emergency responses.
- Immediate Changes – Plan updates required due to changes in operations of a facility or any other condition which would impact plan effectiveness and accuracy may be completed by marking out, in red, the affected part of the plan and writing changes in the margin until permanent changes can be made as part of the official update.
- Significant changes at a facility that may affect response capabilities:
  - Names and/or telephone numbers of the Regional Incident Management Team personnel, including Qualified Individuals.
  - Response procedures as necessitated by potential deficiencies identified during training or exercises.
  - Revised emergency response procedures.
  - Pertinent regulations.
  - Triennial revision of the plan.
  - When revision is complete it will be provided to the CP&ER department for inclusion to Intranet.

Revision Number	Date of Change	Description of Changes	Name
Original	January 2018	Original	R. Kerzman, A. Bement

Site Management Annual Plan Review Acknowledgement				
Year	**Date**	**Reviewer**	**Signature**	**Comments**
2019				
2020				
2021				
2022				
2023				

Safety Annual Plan Review Acknowledgement				
Year	**Date**	**Reviewer**	**Signature**	**Comments**
2019				
2020				
2021				
2022				
2023				

V. INTRODUCTION

The key to an effective emergency response is a rapid, coordinated, tiered response by local municipal emergency responders, and the Incident Management Team (IMT), consistent with the magnitude of an incident.

This Emergency Action Plan (the “Plan”) is designed to help Andeavor Employees (“Andeaver” or “Company”) respond quickly and effectively to conditions that arise when an incident occurs. The Plan's primary goal is to help the Company mitigate or prevent, as far as practical, any injury or loss of life and/or damage to wildlife, ecology or property.

It cannot be overemphasized that the best way to handle emergency situations is to prevent their occurrence.

This Plan provides guidance on the actions that may be performed when an incident occurs. It provides personnel with procedures for handling such incidents effectively.

This Plan is designed to:

- Serve as the basis for an organized action plan for dealing with emergencies and spills of all magnitudes.
- Provide information on the means of handling serious incidents and identify the organizations which are involved.
- Identify the personnel and agencies that must be notified.

The content of this Plan must be understood by all Andeavor personnel who may be called upon to respond to emergencies or spills.

This Plan contains procedures that can be applied to most foreseeable incidents; however, actual conditions will dictate whether deviations from the Plan are appropriate.

All Incident Management Team members will use the NIMS Incident Command System (ICS) to manage the emergency response activities. Because ICS is a management tool that is readily adaptable to incidents of varying magnitude, it will typically be used for all emergency incidents. Staffing levels will be adjusted to meet specific response team needs based on incident size, severity, and type of emergency.

The senior qualified operations employee on location will assume the role of IC and will remain in that role until relieved by a more senior qualified company employee. More information on roles and responsibilities for following the ICS structure and working with local municipal emergency responders in a Unified Command structure is located in the THPP Oil Spill Response Plan. http://gotso/departments/contingency-planning/Pages/default.aspx

VI. ASSIGNMENT OF RESPONSIBILITY

A. Emergency Plan Management

The Area Supervisor and the Safety department shall manage the Emergency Action Plan for the Y-Grade Hub in conjunction with the Contingency Planning and Emergency Response Department. The Safety department shall also maintain all training records pertaining to this plan. The Safety department is responsible for scheduling routine tests of the Y-Grade Hub emergency notification system with the appropriate authorities.

The Lead Contingency Planning and Emergency Response Coordinator shall coordinate with local public resources, such as fire department and emergency medical personnel, to ensure that they are prepared to respond as detailed in this plan.

B. Area Management

- Implementing and enforcing the procedures contained in this plan
- Annual review. See section IV.
- Updates. See section IV.

C. Employees

All Employees associated with the Y-Grade Hub responsible for:

- Being familiar with the Y-Grade Hub EAP, understanding action to be taken, and ensuring actions are initiated properly.
- Being familiar with Safety Data Sheets (SDS) in order to utilize proper decontamination if needed and how to contact local fire and emergency medical care.

D. Contractors

Contractors are responsible for complying with this plan, and shall be trained on their roles and expected action to an emergency or event.

VII. PLAN IMPLEMENTATION

A. Non-Emergency

An event is not an emergency if it can be immediately controlled by the personnel involved and it does not pose a potential safety or health hazard or threat to the environment.

Examples that are not emergencies are as follows;

- Minor injuries which can be treated on-site (first aid) or which do not require emergency transportation to a medical facility.
- Small leaks which do not have a significant impact to the environment.
- Incipient fires not related to the process or with the potential to impact the process which are immediately controlled and extinguished.

B. Notification Process

Emergency notifications should follow the Andeavor –incident reporting process which includes immediate verbal notice to the Senior Qualified Operations Employee. Once verbal notice is confirmed, further notifications are made by the Senior Qualified Operations Employee. The Senior Qualified Operations Employee or his designee should follow the ***Notification Flow Chart***.

Notification to the ND State Radio is required if:

- Deaths or injuries have occurred.
- 3rd party evacuations have occurred or are being considered.
- Waterways have been impacted or threatened.
- State of Federal assistance, beyond mutual aid is requested.

Contact the North Dakota State Radio, ask for DES (Department of Emergency) Duty Officer.

VIII. NOTIFICATION FLOWCHART

FIELD or CONTROL CENTER (210-626-6014 / 210-527-3885)
REPORTS INCIDENT/SPILL TO QUALIFIED INDIVIDUAL
(Call **911** if necessary**)**
QI or QI Designee is responsible to make further notification in a timely manner.

ANDEAVOR QUALIFIED INDIVIDUALS (QIs)		
Contact	**Phone Numbers**	**Time and Person Notified**
Ryan Baumgartner	(701) 456-9733 - Office (406) 480-4673 – Cellular	
Darren Snow	(307) 250-1960 - Office (701) 204-1619 – Cellular	

QI or QI Designee is responsible to continue notifications in a timely manner.

Austin Bement, Sr. Contingency Planning & Emergency Response Coordinator
701-226-3398 (Cell)
Or
Brock Carter, Mgr., Regional Contingency Planning & Emergency Response
801-606-2141 (Office) (907) 801-505-8349 (Cell)

ANDEAVOR INCIDENT COMMANDERS ON-DUTY
IC DUTY HOTLINE 1-866-516-6758
Report all spills to water and incidents classified as Tier 3-5 per EHS-002B

ANDEAVOR LOGISTICS MANAGEMENT CONTACTS		
Contact	**Phone Numbers**	**Time Notified**
Gloria Blanco, EHS&S Director, Andeavor Logistics	(210) 626-7342 (office) (210) 712-9369 (cell)	
Michael Gebhardt, VP, Andeavor Logistics	(303) 454-6620 (office) (732) 306-4081 (cell)	
Don Sorensen, Senior Vice President, Andeavor Logistics	(210) 626-6195 (office) (360) 202-2163 (cell)	

ANDEAVOR INCIDENT MANAGEMENT TEAM

FEDERAL REGULATORY AGENCIES **(within 1 hour of incident)**			
AGENCY	**SPILL SIZE**	**VERBAL REPORT**	**WRITTEN REPORT**
National Response Center **(USCG, EPA, and DOT notified)**	• Immediately for all spills that impact or threaten navigable water or adjoining shoreline • Any size on land if threatening surface waters • Fire/explosion/injury from regulated pipeline	**Immediately** **(800) 424-8802** **Note: A Safety Data Sheet MUST be provided to federal, state and local responders on site within 6 hours of notification to NRC**	None
EPA	• If spill is 1000 gal or more (on land), or >42 gallons in each of 2 discharges within 12 month period	(800) 227-8917	Yes (within 60 days)
US DOT	• Release of 5 gallons or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels resulting from a pipeline maintenance activity if the release is: o Confined to company property or pipeline right-of-way; and o Cleaned up promptly;	Written Report Only	Within 30 days on DOT Form 7000-1 http://phmsa.dot.gov
	• If a spill causes 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, >$50,000 • If spill results 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 shoreline	**Immediately,** via NRC **(800) 424-8802** **With follow up to** (202) 366-8860	

NORTH DAKOTA - STATE REGULATORY AGENCIES **Immediate notifications only listed**		
Required Notifications	Primary Phone	Time and Person Notified
North Dakota Division of Emergency Services/ND State Radio	(701) 328-9921	
North Dakota Department of Health	(701) 328-5210	
McKenzie County Emergency Management Coordinator	(701)-628-2909	
Billings County Emergency Management Coordinator	(701) 623-4876	

Stark County Emergency Management Coordinator	911	

IX. EMERGENCY CONTACT INFORMATION

Emergencies – All		
McKenzie, Billings, or Stark County 911 Emergency Dispatch		911
Hospitals		
McKenzie County Medical Center (Watford City ND)		(701) 628-2424
St. Joseph’s ER Trauma (Dickinson ND)		911 (24 hr. Emergency) 701-456-4000 (Non-emergency
Law Enforcement		
McKenzie, Billings, or Stark County Sheriff Department		McKenzie County: (701) 628-2975 Billings County: (701) Stark: (701)
North Dakota State Highway Patrol		(701) 774-4360
Local and State Emergency Contacts		
North Dakota State Radio		(701) 328-9921
Spill Contractor		
SM Fencing		(701) 483-1890
Bay West		(800) 279-0456
VisTec		(701) 301-2262
QualiTech		(612) 963-5222
Clean Harbors		(800) 645-8265
Andeavor Environmental Contacts		
Jonathan Matt	Director Environmental	(303) 653-8751
Daniel Pring	Supervisor Environmental (Air)	(720) 376-9207
Kenan Bisic	Environmental Specialist, ND (Air)	(303) 810-8247
Lindsay Schneider	Supervisor, Environmental (Multi-Media)	(720) 883-7398
Andeavor Safety Contacts		
Tom Colclazier	Manager Safety	(303) 475-0960
Dustin Rafferty	Associate Safety Specialist	(701) 523-6508
xxxxxxxxx	Lead Safety Specialist	

X. EVACUATION PROCEDURES

If evacuation is required, follow the posted evacuation routes to the designated muster points. The muster points for each area in this Plan are located in Appendix B Diagrams and Muster Points. Other considerations:

1. Personnel on site will be alerted of an evacuation by the sounding the evacuation alarm and or red rotating strobe lights.

2. Evacuate up-wind or cross wind when possible, away from the area.

Important: Use caution not to travel through the impacted area.

Important: Do not get into or start any vehicle during emergency evacuation. Vehicles can ignite vapor clouds that may be invisible to the naked eye.

3. If the primary muster point is unsafe, all personnel shall proceed to the secondary muster points or the remote muster point.

4. The IC will account for all personnel in the area.

5. All personnel shall remain at the muster point until the IC has determined that it is safe to leave.

    a. If necessary, Call 911.

        i. State:

            - "This is the ____________________, I am located at _________________ We have an emergency and need assistance. (Note to caller: Give description of Emergency) Please dispatch emergency help immediately."

    b. The person declaring an emergency to 911 must also state if an evacuation of nearby residents is recommended. The Appropriate County emergency services (McKenzie, Billings, or Stark) will assume the responsibility of notifying and evacuating all residents in the vicinity of the impacted area.

Important: The primary plan for handling a large fire is to evacuate, isolate and let burn. The safety of employees and emergency responders is the highest priority.

XI. GAS or CHEMICAL RELEASE

1. Protect yourself.

2. **Assess** and evaluate the situation.

3. Determine if the release can be quickly isolated safely. If so, isolate and report the event.

4. If the source cannot be quickly and safely secured, **activate the Emergency Shut Down procedure**, and evacuate the area to the designated muster point (See Appendix A & B Diagrams and Muster Points).

   Note: there are numerous ESD buttons throughout the system. See Appendix A for a map of location of the ESD buttons.

5. If the ESD of the system was successful to mitigate the release of product, report the event.

6. If the ESD was unsuccessful, to mitigate the release of product:

   a. **Dial 911** - Contact the Fire Department and/or Sheriff.

      i. State:

         This is the ____________________, I am located at _________________ We have an emergency and need assistance. (Note to caller: Give description of Emergency) Please dispatch emergency help immediately."

   b. The person declaring an emergency to 911 must also state if an evacuation of nearby residents is recommended. The Appropriate County emergency services (McKenzie, Billings, or Stark) will assume the responsibility of notifying and evacuating all residents in the vicinity of the impacted area.

7. Account for all personnel, contractors and visitors.

8. Maintain security of the area until assistance arrives.

9. Initiate the incident notification procedure utilizing the notification flowchart above.

XII. FIRE

Initial Discovery and Response

If a fire is discovered, these initial steps shall be followed:

1. If it can be done safely, **attempt to extinguish** an incipient stage fire with the available portable fire extinguishers.

2. If the fire was successful extinguished, report the event.

   NOTE: Under no circumstances shall an employee attempt to fight a fire that has passed the incipient stage or beyond their level of training (which can be put out with a fire extinguisher), nor shall any employee attempt to enter a burning building to conduct search and rescue. Untrained individuals may endanger themselves and/or those they are trying to rescue.

3. If the fire cannot be quickly controlled with the portable fire extinguishers, **activate the Emergency Shut Down**, and evacuate the area to the designated muster point (See Appendix B Diagrams and Muster Points).

   Note: there are numerous ESD buttons throughout the area. See Appendix A for a map of location of the ESD buttons.

4. If the ESD was unsuccessful, to mitigate the release of product:

   a. Dial 911 - Contact the Fire Department and/or Sheriff.

      i. State:

   This is the ____________________, I am located at _________________ We have an emergency and need assistance. (Note to caller: Give description of Emergency) Please dispatch emergency help immediately."

   b. The person declaring an emergency to 911 must also state if an evacuation of nearby residents is recommended. The Appropriate County emergency services (McKenzie, Billings, or Stark) will assume the responsibility of notifying and evacuating all residents in the vicinity of the impacted area.

Important: The primary plan for handling a large fire is to evacuate, isolate and let burn. The safety of employees and emergency responders is the highest priority.

The senior qualified operations employee on location will assume the role of Incident Commander and will remain in that role until relieved by a more senior qualified employee. The Incident Commander is responsible for, where appropriate and safe to do so:

4. Confirm the Emergency Shut Down has been activated and all employees have reported to the designated muster point.

5. Account for all personnel, contractors and visitors.

6. Maintain security of the area until assistance arrives.

7. Initiate the incident notification procedure utilizing the notification flowchart above.

XIII. EXPLOSION

1. Protect yourself.

2. **Assess** and evaluate the situation.

3. Move to evacuation point and initiate notification procedure. Initiate the incident notification procedure utilizing the notification flowchart above and:
    a. **Dial 911** - Contact the Fire Department and/or Sheriff.
        i. State:

            This is the ____________________, I am located at __________________ We have an emergency and need assistance. (Note to caller: Give description of Emergency) Please dispatch emergency help immediately."

Important: The primary plan for handling a large fire is to evacuate, isolate and let burn. The safety of employees and emergency responders is the highest priority.

The senior qualified operations employee on location will assume the role of Incident Commander and will remain in that role until relieved by a more senior qualified employee. The Incident Commander is responsible for, where appropriate and safe to do so:

4. Confirm the Emergency Shut Down has been activated and all employees have reported to the designated muster point.

5. Account for all personnel, contractors and visitors.

6. Maintain security of the area until assistance arrives.

7. Initiate the incident notification procedure utilizing the notification flowchart above.

XIV. PERSONAL INJURY

The first aid and emergency procedures detailed below could be lifesaving. The steps taken to respond to an incident involving a personal injury will depend on the nature of the injuries. The classification of injuries and suggested actions to take are as follows;

A. Very Serious Injury

- The employee is unconscious, is exhibiting signs of shock or is bleeding seriously.

1. **Dial 911** - Contact the Fire Department and/or Sheriff.
   a. State:

   > "This is the ____________________, I am located at __________________ We have an emergency and need assistance. (Note to caller: Give description of Emergency) Please dispatch emergency help immediately."

2. BASIC LIFE SUPPORT at the scene if it is safe to do so. Ensure that the individuals providing life support are wearing the appropriate PPE.

3. Follow the internal notification process (see Section 5.0 Notification Processes). Notifications must be made through the chain of command until a person is reached.

B. Serious Injury

- The employee is in need of skilled medical assistance but is able to walk.

1. Administer first aid as necessary. Ensure the appropriate PPE for administering First Aid is worn.

2. If required;
   - Consult **Care On Site (**844) 501-2273, follow their instruction
   - Transport or activate professional medical care to provide medical support at local hospital or physician.
   - Dial 911

3. Follow the internal notification process (see Section 5.0 Notification Processes). Notifications must be made through the chain of command until a person is reached.

C. Minor Injury

- The employee has sustained minor cuts, bruises, burns, etc.

1. Administer first aid as necessary. Ensure the appropriate PPE for administering First Aid is worn.

2. Consult **Care On Site (**844) 501-2273, follow their instructions.

3. Report the injury to your supervisor and/or the facility supervisor.

   NOTE: It is the responsibility of the injured employee to report bodily injury to their supervisor as soon as it is safe and they are able to do so.

XV. HAZMAT SPILL

Generally speaking, spills of common chemicals are *mitigated by those personnel trained and knowledgeable with the use of the chemical in the first place. However, any chemical spill (of certain volumes or chemical/physical properties) beyond the capabilities of trained users or other internal response providers is classified as an "****emergency spill****."*

1. Any **emergency spill** of a hazardous chemical or radioactive material beyond the capabilities of trained users or other internal response providers should be reported primarily to 911, and secondarily to the site Supervisor-in-charge.

2. When reporting, be specific about the nature of the involved material and exact location. 911 operators will contact the necessary specialized authorities and medical personnel (as necessary).

3. If possible, the individual discovering the spill should vacate the affected area at once and seal it off to prevent further contamination of other areas until outside services personnel arrive.

4. Anyone who may be contaminated by the spill is to avoid contact with others as much as possible, remain in the vicinity and give their names to the site Supervisor-in-charge. Required first aid and cleanup by specialized authorities should be started at once.

5. If the nature of the spill threatens other people in the area (fire conditions, toxic/acrid vapors or fumes), activate the site alarm to signal an evacuation, walk quickly away from the area upwind, and proceed to the muster point.

6. Following emergency evacuations, If requested, assist Emergency crews as necessary.
7. A Command Post may be set up near the emergency site. Keep clear of the Command Post unless you have official business.

XVI. SEVERE WEATHER PROCEDURE

Note: In the event of weather such as lightning and thunderstorms, it is anticipated the Y-Grade Hub will continue operations.

In the event of severe weather, employees, visitors and contractors should take the following precautions:

1. Turn on weather alert radio and monitor conditions.

2. Stay inside of vehicles or sound structures and avoid open areas

3. During a "Tornado Watch" personnel should continuously monitor weather reports and be prepared to initiate emergency operational procedures.

4. During a "Tornado Warning" personnel should visually and audibly monitor conditions. Any indication of a tornado touchdown and taking a pathway towards your location evacuate to a protected area.

XVII. BOMB THREAT

Most bomb threats are received via telephone. If possible, obtain as much information as possible about the location of the suspected device, when it is set to go off, etc. The caller may refuse to give any information, or may actually want to provide detailed information so that employees can be evacuated. Keep in mind that the bomb threat caller is the best source of information about the bomb.

It is always desirable that more than one person listens in on the call. Try to signal a co-worker to come over and listen in on the call to ensure accuracy of the information.

Personnel who receive telephone bomb threats should remain calm and courteous.The Bomb Threat Call Checklist (Appendix C) shall be maintained at each phone within any Y-Grade Hub facility. This checklist shall be used as a guide for questions to be asked and to document the message as accurately as possible.

Employees shall treat all bomb threats as if they are real. If the caller is familiar with the area, and is specific about the location of the bomb, the call should be regarded with a high degree of urgency and the Emergency Shut Down Procedures should be activated.

The safety of all personnel will be the top priority.

Bomb threats may be received by telephone, written or electronic message, through a third party such as the media, or by actual discovery of what may be an explosive device.

There will be a Bomb Threat Report Form that is posted near each facility telephone. Complete the form as the call progresses. The form is also found in Appendix C.

1. Let the Caller Talk. Do not interrupt or cut him/her off.
2. Listen carefully for, and make note of any background noise, speech defect or accent.
3. Be sure to ask the caller what time the bomb is set to go off.
4. Ask the caller why he/she is threatening the Company.
5. Ask the caller about the exact location of the bomb.
6. Keep the caller on the telephone as long as possible. Try to signal another employee to contact the senior qualified operations employee.
7. Once the call has ended, contact the senior qualified operations employee immediately.

A. Threats received by other methods

In the event someone makes a bomb threat in person, by electronic message or other means, or a suspicious package is discovered, contact the senior qualified operations employee immediately.

In the event that a bomb threat is received;

1. Activate the ESD and evacuate the facility to a safe location (Note: this may be the remote muster point. The IC will direct which muster points shall be used.).

2. Dial 911 - Contact the Fire Department and/or Sheriff.

State:

This is the ____________________, I am located at _________________ We have an emergency and need assistance. (Note to caller: Give description of Emergency) Please dispatch emergency help immediately."

a. The person declaring an emergency to 911 must also state if an evacuation of nearby residents is recommended. The Appropriate County emergency services (McKenzie, Billings, or Stark) will assume the responsibility of notifying and evacuating all residents in the vicinity of the impacted area.

3. The senior qualified operations employee on location will assume the role of Incident Commander and will remain in that role until relieved by a more senior qualified employee. The Incident Commander is responsible for, where appropriate and safe to do so:

   a. Confirm the Emergency Shut Down has been activated and all employees have reported to the designated muster point.

   b. Account for all personnel, contractors and visitors.

   c. Maintain security of the area until assistance arrives.

   d. Initiate the incident notification procedure utilizing the notification flowchart above.

   e. A security perimeter will be established at a safe distance to prevent un-authorized entry.

DO NOT TOUCH ANY SUSPICIOUS PACKAGE OR OBJECT!

The operations at the facility should remain shut-down and the personnel evacuated until the bomb threat has been checked by the appropriate authorities and the facility cleared for operation.

XVIII. CIVIL DISTRUBANCE/TERRORISM

A. General Information

This section outlines guidelines and procedures to be followed in the event that the safety of the Y-Grade Hub and its employees are threatened by a civil disturbance or terrorist event. The purpose of this section is to provide general guidelines to assist personnel in evaluating the nature of the problem and determining what appropriate actions may have to be taken.

When civil disturbances or suspected terrorism events take place, local law enforcement agencies will usually be preoccupied with addressing the protection of the general public. Therefore, it is essential that the site be in a position to initiate defensive measures to assist in the protection of personnel and refinery property prior to the actual arrival of local law enforcement personnel.

B. Communications

The Y-Grade Hub does not anticipate being the initial or a prime target of civil disorders. Due to its location, the facility may have some pre-warning of any such activity taking place at other petrochemical facilities or industrial facilities and locations in the region. However, due to the presence of large quantities of flammable liquids and gases, the Y-Grade Hub could potentially serve as a target for terrorism-related events.

Personnel should be alert to the mood and political atmosphere in the area. When combined with information available through the news media, time will often be available to prepare for any potential occurrences. These guidelines will not be implemented based solely upon rumors, crank calls, or reports from unreliable sources. Fill in Emergency Incoming Call Form Appendix D.

C. Procedure

Any authorized and/or reliable communications received by the site that are a pre-warning to a possible civil disturbance, terrorism event, or a similar emergency should be handled in the following manner:

1. Activate the ESD procedure (Note: this may be the remote muster point. The IC will direct which muster points shall be used.).
2. Dial 911 - Contact the Fire Department and/or Sheriff.
    a. State:

        "This is the ____________________, I am located at _________________ We have an emergency and need assistance. (Note to caller: Give description of Emergency) Please dispatch emergency help immediately."

    b. The person declaring an emergency to 911 must also state if an evacuation of nearby residents is recommended. The Appropriate County emergency services (McKenzie, Billings, or Stark) will assume the responsibility of notifying and evacuating all residents in the vicinity of the impacted area.
3. The senior qualified operations employee on location will assume the role of Incident Commander and will remain in that role until relieved by a more senior qualified employee. The Incident Commander is responsible for, where appropriate and safe to do so:

a. Confirm the Emergency Shut Down has been activated and all employees have reported to the designated muster point

b. Account for all personnel, contractors and visitors.

c. Maintain security of the area until assistance arrives.

d. Initiate the incident notification procedure utilizing the notification flowchart above.

e. A security perimeter will be established at a safe distance to prevent un-authorized entry.

XIX. RE-ENTRY

Gas or chemical releases, fires, explosion, and other major emergencies that result in a facility evacuation may pose a health and safety threat to people. This procedure shall be followed if the ICS is stood up and/or third party responders are called to support an emergency.

Important: The highest priority should always be the safety of the employees, contractors and emergency responders. No re-entry should be attempted until the emergency has been deemed secured.

1. Incident Command will relinquish control of the facility back to operations**.**

2. Depending on the level of damage and/or potential exposure a detailed entry plan shall be written with the appropriate involvement from the following:

    - Operations
    - Engineering
    - Safety
    - Environmental
    - CP & ER
    - Other resources as deemed necessary

3. The plan should take into account:

    - Residual gas/chemicals
    - Residual heat
    - Structure damage
    - Electrified equipment
    - Hazardous atmosphere testing
    - Equipment damaged with trapped pressure
    - Potential movement of automated valves
    - Remote isolation of the facility (isolation of gathering system valves)
    - Congested entryways or walkways
    - PPE requirements
    - Human remains recovery procedure
    - Communication Plan
    - Evacuation plan
    - Site Security
    - Medical Care

4. Plan must be reviewed and approved by the Operations VP

XX. ACCIDENT/INCIDENT INVESTIGATION

The Andeavor Standard EHS-002 will be used to determine the type and severity of an incident for incident investigation classification and internal notification purposes. Incidents determined to be severity Level 3(A) – Level 5 must be reported to Andeavor Corporate Headquarters. This notification is required irrespective of whether an event is deemed an emergency or whether any actual emergency response is initiated.

EHS-002 can be found on the Andeavor intranet on the Environmental Health and Safety page at http://gotso/departments/ehs/Documents/Incident%20Matrix.pdf forms are also posted next to each phone, also see (Appendix G.6: Incident and Near Miss Investigation) for a copy.

XXI. DRILLS and TRAINING

All supervisors and employees must be trained on their roles in responding to an emergency.

Training and/or drills will be conducted to:

- Educate the employees on their roles in responding to an emergency
- Test the plan's effectiveness.

Periodic drills (see table 9.1), either table top or actual on-site, will be conducted. The drills will ensure that employees who are responsible for responding to an emergency stay current on the emergency response procedures. The drills will also be used as an opportunity to update and refine the Plan.

DRILL REQUIREMENTS			
Drill	**How Often**	**Who Must Participate**	**Objectives**
Readiness Drills (Injury, Fire/Explosion, Bomb, Release)	*Monthly*	Operations Teams, OSC	Discuss and review General Response actions
Qualified Individual Notification Drill	*Quarterly* At least once a year, conduct during non-business hours.	QI or designee and field personnel	Field personnel to contact QI or designee to demonstrate accessibility of the QI.
Tabletop Drill	*At least annually* At least one Table Top per year must be conducted unannounced Once in 3 years, the drill must simulate a worst-case discharge.	Personnel involved in emergency response (OSC, ERT, select IMT members)	Discuss, review, and demonstrate understanding of the following: • Response Plan • Notification and communication processes • Implementation of Incident Command System • Mobilization of staff • Coordination with government agencies and contractors • Evaluation of hazards • Spill containment and control methods • Decontamination and disposal procedures

NOTE: Credit can be taken for any of the drills when a full-blown drill is conducted or when responding to an actual emergency if the objectives of the drill are met and documented.

See Appendix E: List of Readiness Drills

XXII. TRAINING RECORDS

The site shall document all training pertaining to this plan and shall maintain records on site and provide copies to the regional training department.

XXIII. POST INCIDENT REVIEW

All facility personnel involved in an incident where the ICS has been activated shall be debriefed by the OSC/IC. Key personnel from outside organizations that provided aid or were involved in an emergency response will be invited to participate.

The primary purpose of the post-incident review is to identify actual or potential deficiencies in the Plan or execution of the Plan and determine the changes required to correct the deficiencies.

The post-incident review will focus on the effectiveness of the employee activities, specific response procedures, emergency response equipment and techniques. Corrective action will be taken on deficiencies.

The Post Incident Review should take place within 30 calendars days of the conclusion of the emergency. The completed Post Incident Review form will be reviewed with the Director of Operations within 60 calendar days of the conclusion of the emergency.

The approved Post Incident Review Form will be sent to the Safety Manager for record keeping.

APPENDIX

Robinson Lake Plant

Appendix A - ESD Location and Emergency Equipment

Stanley Booster Station

Appendix B - Site Map Evacuation Area Location

Appendix B – Site Map Evacuation Area Location

Appendix C - Bomb Threat Call Form

BOMB THREAT CALL PROCEDURES

Most bomb threats are received by phone. Bomb threats are serious until proven otherwise. Act quickly, but remain calm and obtain information with the checklist on the reverse of this card.

If a bomb threat is received by phone:

1. Remain calm. Keep the caller on the line for as long as possible. DO NOT HANG UP, even if the caller does.
2. Listen carefully. Be polite and show interest.
3. Try to keep the caller talking to learn more information.
4. If possible, write a note to a colleague to call the authorities or, as soon as the caller hangs up, immediately notify them yourself.
5. If your phone has a display, copy the number and/or letters on the window display.
6. Complete the Bomb Threat Checklist (reverse side) immediately. Write down as much detail as you can remember. Try to get exact words.
7. Immediately upon termination of the call, do not hang up, but from a different phone, contact FPS immediately with information and await instructions.

If a bomb threat is received by handwritten note:

- Call ____________________
- Handle note as minimally as possible.

If a bomb threat is received by email:

- Call ____________________
- Do not delete the message.

Signs of a suspicious package:

- No return address
- Excessive postage
- Stains
- Strange odor
- Strange sounds
- Unexpected delivery
- Poorly handwritten
- Misspelled words
- Incorrect titles
- Foreign postage
- Restrictive notes

DO NOT:

- Use two-way radios or cellular phone; radio signals have the potential to detonate a bomb.
- Evacuate the building until police arrive and evaluate the threat.
- Activate the fire alarm.
- Touch or move a suspicious package.

WHO TO CONTACT (select one)

- **Follow your local guidelines**
- **Federal Protective Service (FPS) Police 1-877-4-FPS-411 (1-877-437-7411)**
- **911**

BOMB THREAT CHECKLIST

Date: ____________ **Time:** ____________

Time Caller Hung Up: ____________ **Phone Number Where Call Received:** ____________

Ask Caller:

- Where is the bomb located? (Building, Floor, Room, etc.)
- When will it go off?
- What does it look like?
- What kind of bomb is it?
- What will make it explode?
- Did you place the bomb? Yes No
- Why?
- What is your name?

Exact Words of Threat:

____

____

____

____

Information About Caller:

- Where is the caller located? (Background and level of noise)
- Estimated age:
- Is voice familiar? If so, who does it sound like?
- Other points:

Caller's Voice	Background Sounds:	Threat Language:
❑ Accent	❑ Animal Noises	❑ Incoherent
❑ Angry	❑ House Noises	❑ Message read
❑ Calm	❑ Kitchen Noises	❑ Taped
❑ Clearing throat	❑ Street Noises	❑ Irrational
❑ Coughing	❑ Booth	❑ Profane
❑ Cracking voice	❑ PA system	❑ Well-spoken
❑ Crying	❑ Conversation	
❑ Deep	❑ Music	
❑ Deep breathing	❑ Motor	
❑ Disguised	❑ Clear	
❑ Distinct	❑ Static	
❑ Excited	❑ Office machinery	
❑ Female	❑ Factory machinery	
❑ Laughter	❑ Local	
❑ Lisp	❑ Long distance	
❑ Loud		
❑ Male		
❑ Nasal		
❑ Normal		
❑ Ragged		
❑ Rapid		
❑ Raspy		
❑ Slow		
❑ Slurred		
❑ Soft		
❑ Stutter		

Other Information:

____

____

Homeland Security

Appendix D – Emergency Incoming Call Form

Emergency Incoming Call Form

Employee(s) identifying or receiving the notification of an actual or potential emergency requiring an immediate response should attempt to obtain as much information about the emergency as possible and then communicate this information to the next person in the notification process immediately.

Initial Call Information			
Date & Time of Call:			
Person Receiving Call:		Location Call Received:	
Person Making Call:		Callback Number:	
Exact location of the Emergency:		Start Time of the Emergency (if known):	
Nature of the Emergency	Personnel Injured ☐ Fire/Explosion ☐ Liquid Release ☐ Toxic/Flammable Gas Release ☐ HVL Pipeline Release ☐ Security ☐ Tornado ☐ Flood ☐ Earthquake ☐ Other ☐		
	Describe the Emergency:		
Notifications Already Made (if any)	**Emergency Services:** Fire ☐	Medical ☐ Police ☐	Other___________________
	Regulatory: DOT ☐ EPA ☐	State Env ☐ OSHA ☐	Other___________________
	Additional Comments: (time of call, nature of call)		
Current Status	Emergency Ongoing ☐ or Scene Secure ☐ Facility ESD ☐ Evacuation Complete ☐ All Persons Accounted For ☐		
	Additional Comments:		
Follow-up Information			
Resources on Scene			
Resources en Route			
Additional Support Required	ERT ☐ EOC ☐ OSRO ☐ Emergency Response Agency ____________________ Other:		
Follow-up Taken	Internal Notification to: Other:		

Appendix E – List of Readiness Drills Form

Drills – Suggested Scenarios	
Scenario	**Relevant Section**
Notification Drill	VIII. Notification Flowchart
Minor Personal Injury	XIV. Personal Injury
Serious Personal Injury	XIV. Personal Injury
Suspicious Package	XVII. Bomb Threat
Gas Release	XI. Gas or Chemical Release
Chemical Spill	XV. Hazmat Spill
Fire in Compressor Building	XII. Fire
Suspicious odor within the Facility	XI. Gas or Chemical Release
Failure of Propane/Butane Tank	XI. Gas or Chemical Release
Flooding (Rain)	XVI. Severe Weather Procedure
Bomb Threat	XVII. Bomb Threat

Appendix F – Drills/Exercise and Critique Form

POST-INCIDENT CRITIQUE FORM

GENERAL INFORMATION

Incident Name (for ICS purposes):	
Date of Incident:	**Time of Incident:**
Location:	
Type of Incident (fire, rescue, hazmat, medical):	
Level of Incident:	

INCIDENT MANAGEMENT SYSTEM

Incident Commander:	**Ops. Chief/BC:**
Site Safety:	
Captains:	**LTs:**
Outside Agencies:	
Location of Command Post:	
Note: Attach sign-in sheet to this critique form.	

RESPONSE ACTIVATION

How was the response activated?
Action Items:

OPERATIONS DEPARTMENT RESPONSE

Any incipient response actions taken? (example: dry chem., steam hose, monitor, hose line, fixed system)
Did first responders wear proper PPE? (yes/no) Explain:
Action Items:

FIRE DEPARTMENT RESPONSE

What pieces of FD equipment responded to the incident?
Did all equipment work properly? (yes/no)
Was there enough PPE available? (yes/no)
Action Items:

COMMUNICATIONS

Was the communications effective and utilized properly? (yes/no)
Action Items:

EVACUATION

Was the area evacuated?
Were all personnel accounted for? (yes/no)
Action Items:

Drill/Incident Critique Form

Date		Time	
Drill/Incident Description			

Positives	

	Item	Responsible Person	Date Due	Date Completed
Opportunities for Improvement				

Fire Chief Signature	
Date	

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1 INTRODUCTION

1.1 Purpose

The purpose of Tesoro's Contingency Planning standard is to establish a standard that fits the requirement of Oil Pollution Act (OPA 90) as well as other governing bodies as determined by location and type of facilities. This standard defines the requirements for planning, incident management, training, exercises the Contingency Planning Program shall to adhere to.

1.2 Scope

The scope of this standard covers the Contingency Planning Program requirements identified by federal, state and local agencies and includes guidance specific to:

- Regulations
- Contingency Plans
- Incident Management Team Process
- Training, Drills and Exercises

2 REFERENCES

The following sections describe references used to generate this standard.

2.1 Referenced Documentation

2.1.1 Tesoro Standards

- Tesoro Safety Standard EHS-002: Incident and Near Miss Investigation and Learnings
  - EHS-002, Appendix B: Incident Matrix
  - Tesoro Incident Management Handbook

2.1.2 Government Regulations

- Federal
  - Oil Pollution Act of 1990 (OPA 90)
  - 33 CFR 154 (United States Coast Guard)
  - 40 CFR 112 (Environmental Protection Agency)
  - 49 CFR 195 (United States Department of Transportation / Pipeline and Hazardous Materials Safety Administration)
  - National Contingency Plan (NCP)
  - Hazardous Materials 1910.120 (OSHA – Occupational Safety and Health)
- State
  - Alaska – Department of Environmental Conservation (18 AAC 75)
  - California Code of Regulations, Title 14 (14 CCR 815.01 - 820.01) (California Department of Fish and Wildlife, Office of Spill Prevention and Response)
  - California – State Fire Marshal's Office, Pipeline Safety Division, Oil Refinery and Chemical Plant Safety Program. (California Government Code Section 51010-51019.1)
  - Oregon – Oregon Department of Environmental Quality (ORS 468B.300)
  - Washington – Department of Ecology, Washington Administrative Code (WAC 73-182)
  - Area Contingency Plan(s)
- Local (identified within each contingency plan as appropriate)

2.1.3 Other

- National Preparedness for Response Exercise Program (NPREP) – a coordinated exercise program under the Oil Pollution Act of 1990. PREP is a unified federal effort and satisfies the exercise requirement of the United States Coast Guard, the Environmental Protection Agency (EPA), the Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) Office of Pipeline Safety
  - US DOT-PHMSA
  - USCG
  - US EPA

3 CONTINGENCY PLANS

The following section provides guidance for contingency plan requirements.

3.1 Contingency Plan Contents

The corporate standard applies to all applicable Tesoro entities required to maintain a Contingency Plan. This Contingency Plan (also referred to as Facility/Vessel Response Plans, Response Zone Plans and/or Business Continuity Plans) standard should ensure compliance with all applicable federal, state, local regulations as outlined below.

- Plan Approval(s)
- Emergency Response Action Plan (also known as Initial Response Actions)
    - Identification of Qualified Individuals (QI's)
    - Notification list (notification flowchart)
    - Oil Spill Report Form (National Response Center form)
    - Response team capabilities and available equipment
    - Plot and evacuation diagrams
- Facility Information
- Vessel Specific Information
- Information about Emergency Response
- Hazard Evaluation
- Response Planning Standards
- Discharge Detection System
- Incident Command System/Incident Management Team
- Self-Inspections, Drills/Exercises, and Response Training
- Security Systems
- Response Plan Coversheet (also known as Substantial Harm Statement)
- Plan Management
- Other; but not required
    - Critical business processes
    - Critical vendors
    - Resources Requirements

3.2 Contingency Plan Management

The Contingency Planning and Emergency Response (CP&ER) department tracks required plan updates using a compliance system used by Tesoro. Specific plan management during updates is handled by using the Incident Command System (ICS) 233 Incident Action Tracker. Regulatory requirements previously identified state the types of updates:

Duties associated with Plan reviews, updates, certifications and distributions, the assigned CP&ER Coordinator will work in conjunction with a location contact, as appropriate, and a San Antonio Corporate Contact. The following is an overview of the process to be followed when making annual updates, submitting Plans for certification or dealing with immediate changes in operating conditions which would impact Plan effectiveness and accuracy.

Annual Update – Annual Plan review confirming and updating personnel and contact information as well as other data in the plan that changes the effectiveness and accuracy of the plan. NOTE: Typically this type of update does not require agency approval. In Alaska if he update is deemed a 455 review it may require agency approval. A 415 review does not need agency approval nor does it require public comment.

Annual updates tracked in the compliance management system that is set based on the plan approval date and is maintained by the Contingency Planning team.

Immediate Changes – Plan updates required due to changes in operations of a facility or any other condition which would impact plan effectiveness and accuracy.

Recertification – Required full review and update of Plan conducted every five years, from original approval date.. Recertification must be submitted six months prior to plan expiration and must be approved by regulating agencies before distribution.

3.3 Contingency Plan Administration

The Contingency Planning and Emergency Response (CP&ER) Department is responsible for ensuring that all oil spill contingency activity tracking and plans remain current and up to date. Certain plans require review and/or certification by state and federal agencies while others are managed by individual facilities. The following table represents the geographical areas, for Tesoro assets that require contingency plans.

Table 1 Geographic Areas

Location
Alaska
California
Colorado
Idaho
North Dakota
Utah
Washington
Wyoming

Table 2 Pipelines

Location
Mid-Continent: Tesoro High Plains Pipeline
Pacific Northwest: Tesoro Logistics Northwest Pipeline

Table 3 Corporate Business Contingency

Location
All business critical processes**

** Not a regulated plan.

3.4 Contingency Plan Distribution and Ownership

All Oil Spill Contingency Plans have a distribution list that identifies the regulatory entities that require copies and any Tesoro employees and/or departments for each location that have responsibilities of the said plans.

Owners of Oil Spill Contingency Plans are responsible in maintaining the accuracy of their assigned plan as updates are distributed.

4 INCIDENT MANAGEMENT TEAM PROCESS

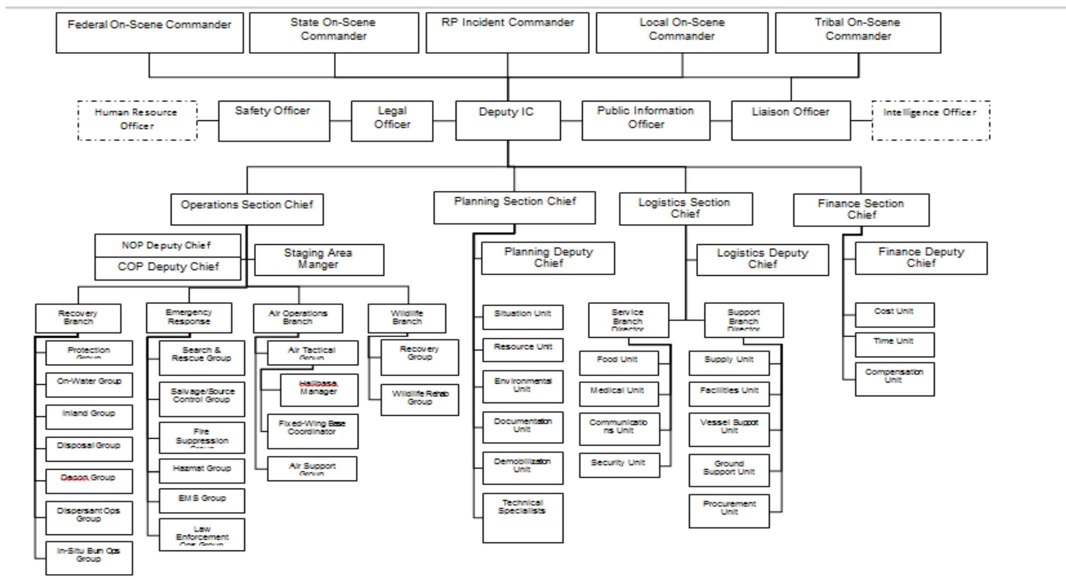
This corporate standard defines the Tesoro Incident Management Team (IMT) process how the Incident Command System (ICS) is used for all hazards incidents as defined in Levels 4 & 5 (3 as applicable) of the EHS-002b Incident and Near Miss Investigation and Learnings–Incident Matrix.

The IMT utilizing the Tesoro Incident Management Handbook (IMH) which serves as the guideline to respond under the National Incident Management System (NIMS) and the appropriate ICS components address internal procedures for an all hazards incident response.

NIMS provides a template for all levels of government and private sector organizations to effectively work together in preparation, response and recovery from incidents. ICS is a standardized, on-scene, all-hazards incident management approach that (1) allows for the integration of facilities, equipment, personnel, procedures and communications operating within a common organizational structure; (2) Enables a coordinated response among various jurisdictional and functional agencies; and (3) Establishes common processes for planning and managing resources.

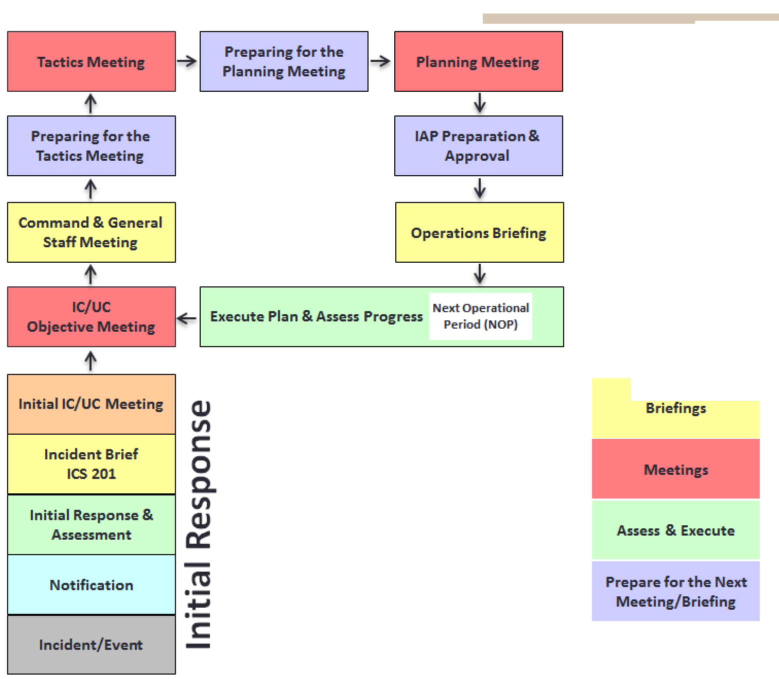
ICS is designed to be objective driven to ensure (1) to meet the needs of incidents no matter the kind or complexity; (2) allows personnel for multiple organizations to meld rapidly into a common management structure; (2) provide logistical and administrative support to the operational staff; and strive to manage costs by avoiding duplication of efforts and resources. The IMT organization structure is built on a per incident basis but typically reflects the following ICS organization chart. This and other ICS Forms and Tools are available on the CP&ER Department page via the intranet.

Figure 1 Incident Management Organization



The ICS Planning Process (as known as "The Planning "P") provides a management direction to ensure a proactive incident response by identifying attainable objectives and develop effective strategies and tactics by managing and tracking the demand of required resources. The "Planning P" follows a prescriptive flow as defined below:

Figure 2 "Planning "P"



5 TRAINING AND EXERCISES

The corporate standard follows the National Preparedness for Response Exercise Program (NPREP) to ensure exercise compliance for oil pollution response. PREP represents the minimum guidelines for ensuring adequate response preparedness. PREP is viewed as an opportunity for continuous improvement of the response plans and the response system.

PREP is applicable to all industry response plan holders. PREP follows the calendar year (January 1 through December 31). To conform with PREP; plan holder locations shall conduct and document the following exercises to receive proper self-certification:

5.1 Training

The corporate contingency planning training program and frequency follows the PREP requires but it not limited to:

Table 4 Training Program

Training Type	Frequency	Training Characteristics
Training in Use of Oil Spill Contingency Plan	Annually	• All field personnel will be trained to properly report/monitor incidents including spills • Plan will be reviewed annually with assigned employees and contract personnel
Incident Management Team Personnel Training	Annually	• Incident Command System (ICS) Features • ICS Organization • The Planning Process • IAP Forms and Tools • Requisition Process • ICS Process Forms (202 – 204a)
Training Documentation and Record Maintenance	Annually	• Identified IMT members will be trained and participate in exercises to provide and understanding of documentation requirements, usage and maintenance. • Training activity records will be retained five years for all personnel following completion of training • Company will retain training records indefinitely for individuals assigned specific duties in Plan • Training records will be retained at (location). (Position) will document all applicable training.

5.2 Exercises

The corporate contingency planning exercise program and frequency follows the PREP requirements but are not limited to:

Table 5 PREP Required Exercises

Exercise Type	Frequency	Exercise Characteristics
QI Notification	Quarterly	• Facility initiates mock spill notification to QI • CP&ER representative documents time/date of notification, name and phone number of individual contacted • Document accordingly NOTE: At least once a year, the qualified Individual notification exercise should be conducted during non-business hours.
Equipment Deployment	Semiannually	• Local IMT members and/or response contractors listed in FRP must participate in annual deployment exercise • Document accordingly
IMT Tabletop	Annually	• Conducted annually • Tests IMT's response activities/responsibilities • Documents plan's effectiveness • Must exercise worst case discharge scenario once every three years • Must test all plan components at least once every three years • Document accordingly
Unannounced	As appropriate	• Company will either participate in unannounced tabletop exercise or Facility equipment deployment exercise on an annual basis, if selected • Company may take credit for participation in government initiated unannounced drill in lieu of drill required by PREP guidelines • Plan holders who have participated in a PREP government-initiated unannounced exercise will not be required to participate in another one for a least 36 months from the date of the exercise. • If equipment is deployed during this exercise, it may be counted as one of the "semi-annual" deployment drills.
Area	Once per six-year period	• Company will participate in a minimum of one area exercise per six-year period as identified in the Area Contingency Plan (ACP)

Table 6 Other Exercises

Exercise Type	Frequency	Exercise Characteristics
IMT Notifications	Monthly	• CP&ER representative initiates notification exercise of all IMT members of said location. • Document accordingly NOTE: At least once a year, the IMT notification exercise should be conducted during non-business hours.

6 DEFINITIONS

The following definitions are applicable to this standard.

Table 7 Definitions

Term	Description
Certification	Certification is the actiion of confirming that exercise and training (1) was completed; (2) was conducted in accordance with the PREP guidelines, meeting all objectives listed; and (3) was evaluated using a mechanism that appraised the effectiveness of the response or contingency plan.
Contingency Plan	A document used by (1) Federal, State, and Local agencies to guide the planning and response procedures regarding spill of oil, hazardous substances, or other emergencies; (2) a document used by industry as a response plan to spills of oil, hazardous substances, or other emergencies occurring upon their vessels or at their facilities.
Geographic Response Plans (GRP)	Geographic-specific response plans for oil spills to water. They include response strategies tailored to a specific beach, shore, or waterway and meant to minimize impact on sensitive resources threatened by the spill.
Equipment Deployment Exercise	An equipment deployment exercise is an exercise where response equipment is deployed to a specific site and operated in its normal operating medium
Facility	Any mobile or fixed, onshore or offshore building, property, parcel, lease, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and oil waste treatment, or in which oil is used.
Incident Command System	A method by which the response to an extra-ordinary event, including a spill, is categorized into functional components and responsibility for each component assigned to the appropriate individual or agency
Incident Management Team (IMT)	The personnel identified to staff of the organizational structure identified in a response plan to manage response plan implementation
Owner / Operator	Any company and/or person owning or operating an onshore facility or an offshore facility, and in the case of any abandoned offshore facility, the person who owned or operated or maintained the facility immediately prior to such abandonment.
Oil	Oil of any kind or in any form, including but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil

Term	Description
National Contingency Plan (NCP)	The plan prepared under the Federal Water Pollution Control Act (33 United States Code 1321 et seq) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 United State Code 9601 et seq), as revised from time to time.
Navigable Waters	The waters of the United States, including the territorial sea and such waters as lakes, rivers, streams; waters which are used for recreation; and waters from which fish or shellfish are taken and sold in interstate or foreign commerce.
Plan Holder	The plan holder is the industry for which a response plan is required by federal regulation to be submitted by a vessel or facility's owner/operator.
Qualified Individual (QI)	An English-speaking representative of an operator, located in the United States, available on a 24-hour basis, with full authority to: activate and contract with required oil spill removal organization(s); activate personnel and equipment maintained by the operator; act as liaison with the Operations Section Chief (OSC); and obligate any funds required to carry out all required or directed oil response activities.
Response Plan	A practical plan used by industry for responding to a spill. Its features include (1) identifying the notification sequence, responsibilities, response techniques, etc. in an easy to use format; (2) using decision trees, flowcharts, and checklists to insure the proper response for spills with varying characteristics; and (3) segregating information needed during the response from that required by regulatory agencies to prevent confusion during a spill incident.
Vessel	Any watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel.
Response Zone	A geographic area either along a length of pipeline or including multiple pipelines, containing one or more adjacent line sections, for which the operator must plan for the deployment of, and provide, spill response capabilities. The size of the zone is determined by the operator after considering available capability, resources, and geographic characteristics.

Site 32MZ2653 is located on a small hill set above the proposed construction area, with the site boundary located 27’ from the proposed construction disturbance. However, the single feature which comprises the site is 51’ away from the disturbance. BCA recommends installing avoidance fencing around the site and monitoring to ensure construction stays at least 50’ from the feature.

The avoidance recommendations are summarized in the table below:

Table 2. Site Avoidance Measures

SITS No.	Description	Distance from Surface Disturbance	Recommendation
32MZ2644	Cultural material scatter with ineligible, non-contributing element in pipeline scar	88’(Unevaluated portion of site)	Fence at edge of disturbance/existing pipeline and avoid the unevaluated part of the site; monitor construction
32MZ2653	Stone feature site on hill above construction	27’ (Site) 51’ (Feature)	Fence site boundary and avoid site; minimize work area to avoid the feature by at least 50’; monitor construction
32MZ3129	Stone feature separated from proposed construction by existing pipeline	47’ (Site) 108’ (Feature)	Fence site boundary and avoid site; keep work area on west side of existing pipeline; monitor construction

As long as the sites are fenced following the avoidance plan outlined above and construction in the vicinity of the sites is monitored by a professional archaeologist, BCA recommends a finding of *No Historic Properties Affected* for this project.

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Appendix A: Survey Area Photographs

Figure 1. Overview of the survey area. View to the east.

Figure 2. Overview of the survey area. View to the north.

Figure 3. Overview of the survey area. View to the southwest.

Figure 4. Overview of the survey area. View to the north.

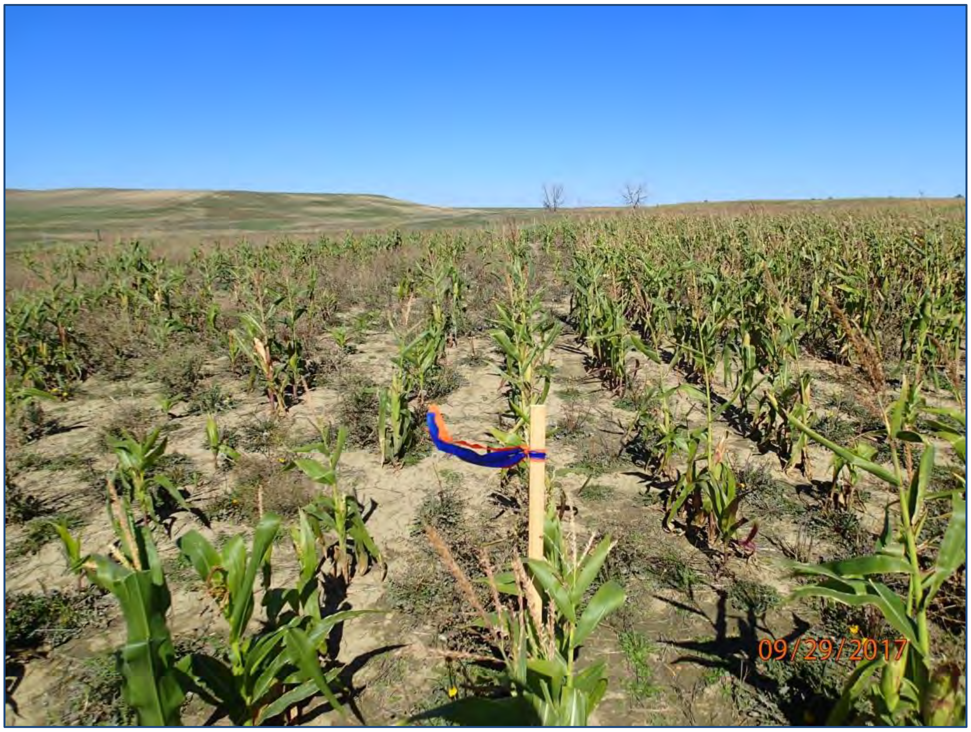


Figure 5. Overview of the survey area. View to the north.

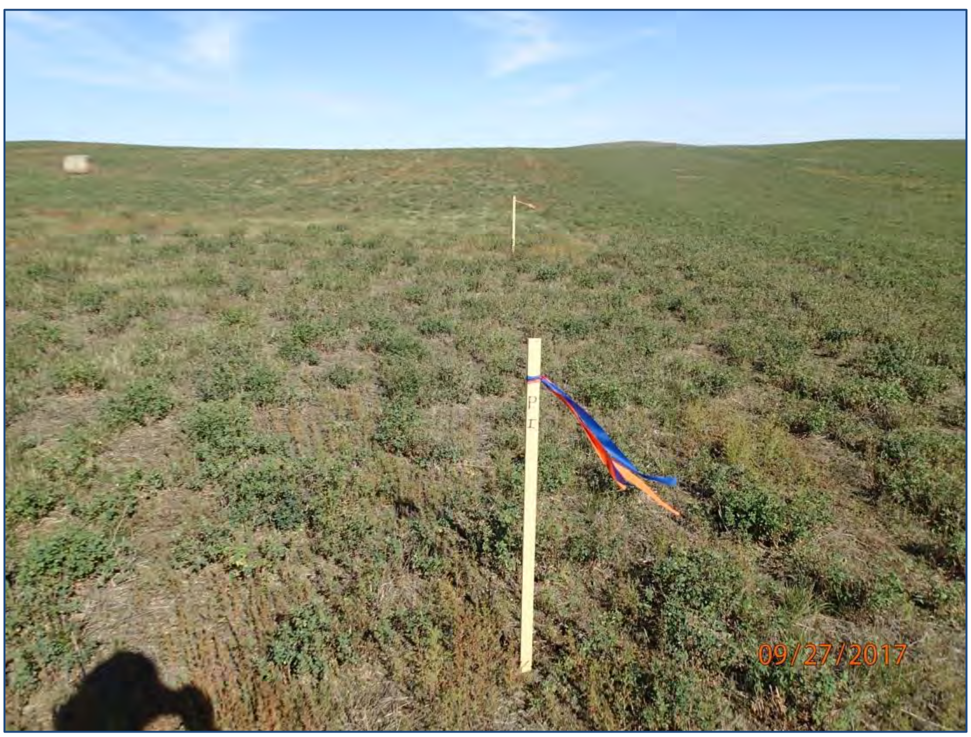


Figure 6. Overview of the survey area. View to the north.

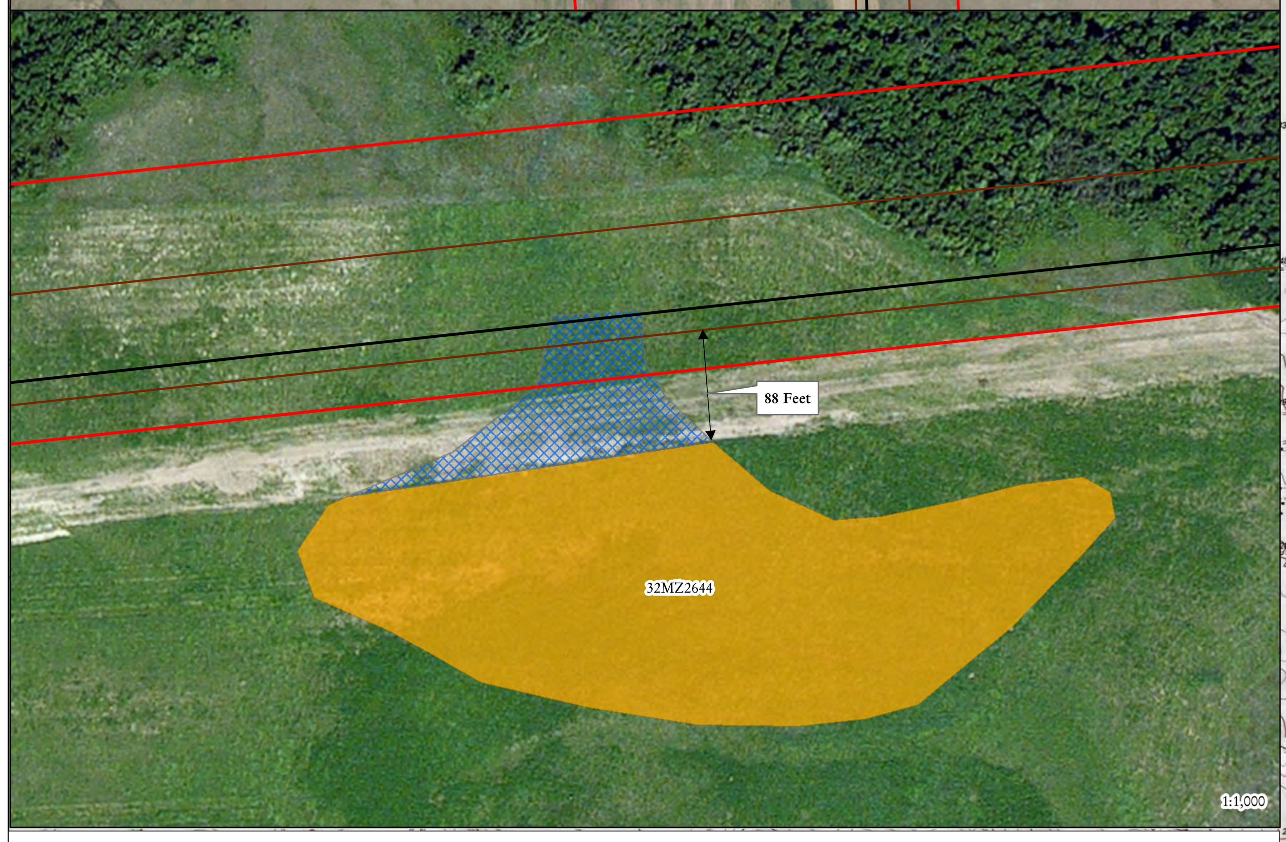
Figure 7. Overview of the survey area. View to the east. (Date Taken: 11/17/2017)

Figure 8. Overview of the survey area. View to the north.

Figure 9. Overview of the survey area. View to the north.

Figure 10. Overview of the survey area. View to the south.

Appendix B: Maps



Andeavor Y-Grade Hub Project
Redacted

Legend

- Survey Area (1,399 Acres)
- Previously Surveyed (651 Acres)
- Features
- Centerline
- Construction Limits

Cultural Resources

- Eligible/Unevaluated Site
- Ineligible/Isolated Find
- Unevaluated Site Lead
- Non-Contributing Element

Carlson-McCain, Inc.

T149N R98W, T150N R98W, T151N R98W

Schafer, Lone Butte NW, Teepee Buttes Quad. Maps
Little Missouri & Missouri River Drainages

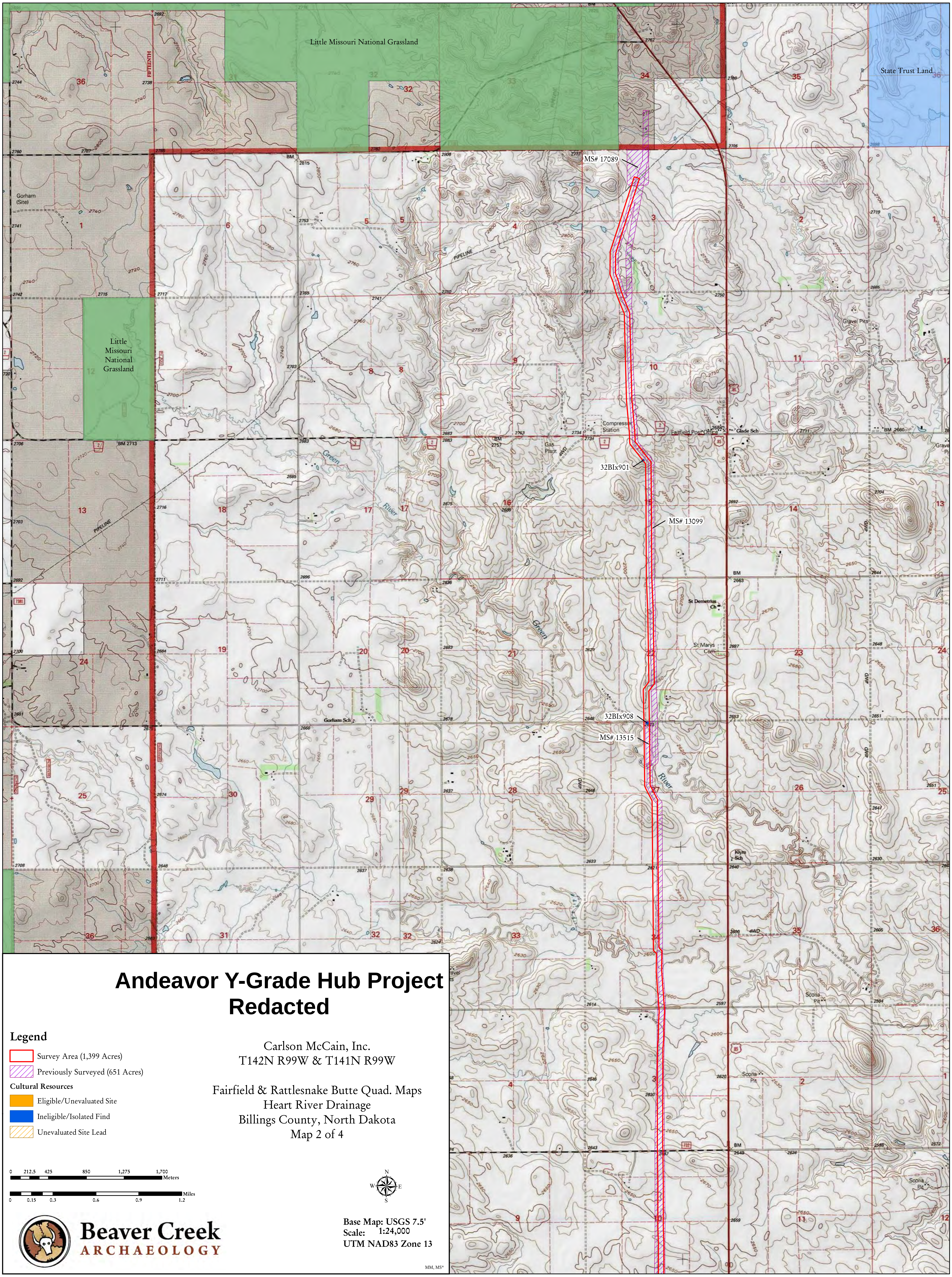
McKenzie County, North Dakota
Map 1 of 4

0 425 850 1,700 2,550 3,400 Meters
0 0.25 0.5 1 1.5 2 Miles

N W E S

Beaver Creek
ARCHAEOLOGY

Base Map: USGS 7.5'
Scale: 1:24,000
UTM NAD83 Zone 13



Andeavor Y-Grade Hub Project Redacted

Legend

- Survey Area (1,399 Acres)
- Previously Surveyed (651 Acres)

Cultural Resources

- Eligible/Unevaluated Site
- Ineligible/Isolated Find
- Unevaluated Site Lead

Carlson McCain, Inc.
T142N R99W & T141N R99W

Fairfield & Rattlesnake Butte Quad. Maps
Heart River Drainage
Billings County, North Dakota
Map 2 of 4

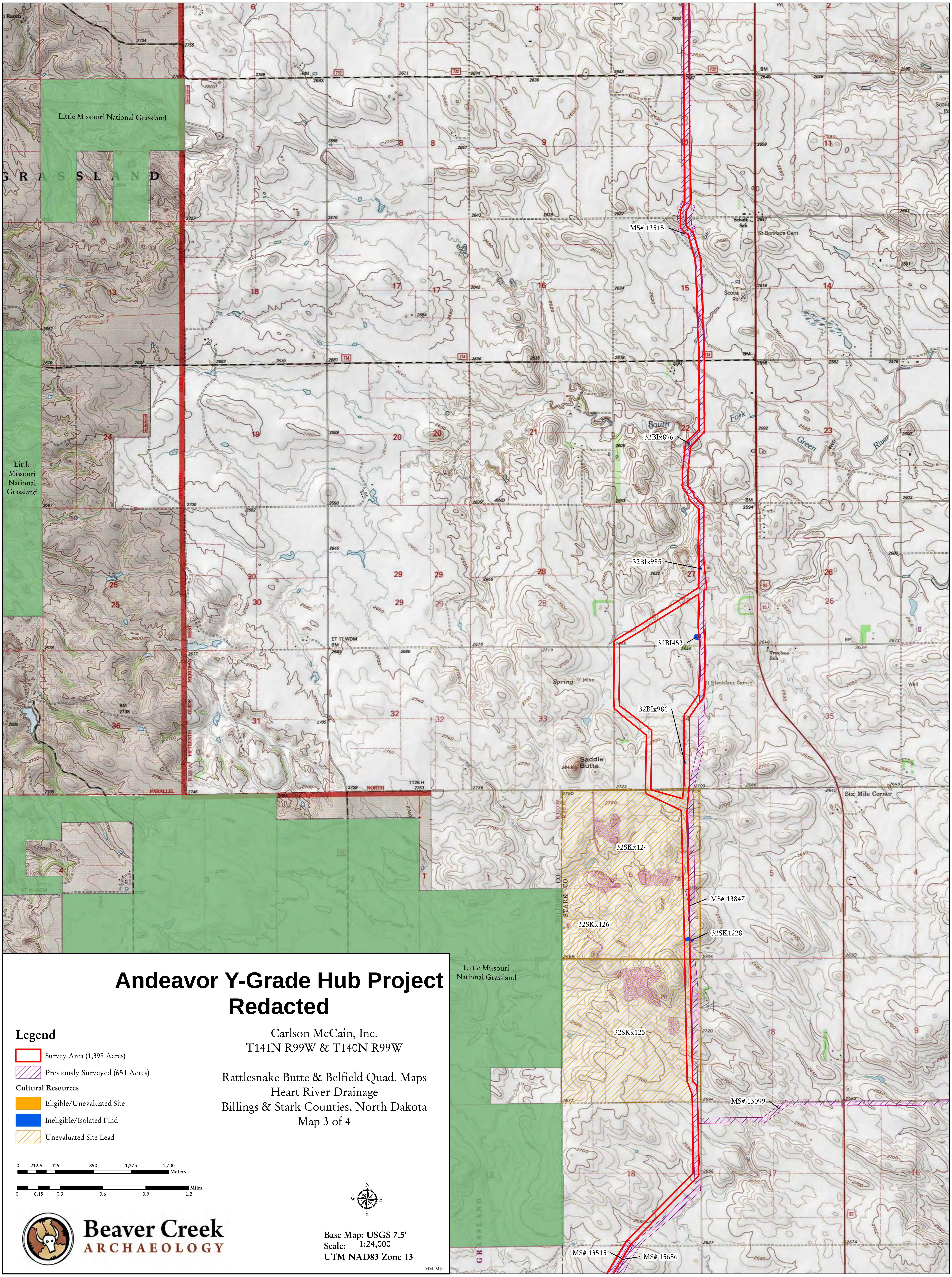
0 212.5 425 850 1,275 1,700 Meters

0 0.15 0.3 0.6 0.9 1.2 Miles

Beaver Creek ARCHAEOLOGY

Base Map: USGS 7.5'
Scale: 1:24,000
UTM NAD83 Zone 13

MM, MS



Andeavor Y-Grade Hub Project
Redacted

Carlson McCain, Inc.
T141N R99W & T140N R99W

Rattlesnake Butte & Belfield Quad. Maps
Heart River Drainage
Billings & Stark Counties, North Dakota
Map 3 of 4

Legend

- Survey Area (1,399 Acres)
- Previously Surveyed (651 Acres)

Cultural Resources

- Eligible/Unevaluated Site
- Ineligible/Isolated Find
- Unevaluated Site Lead

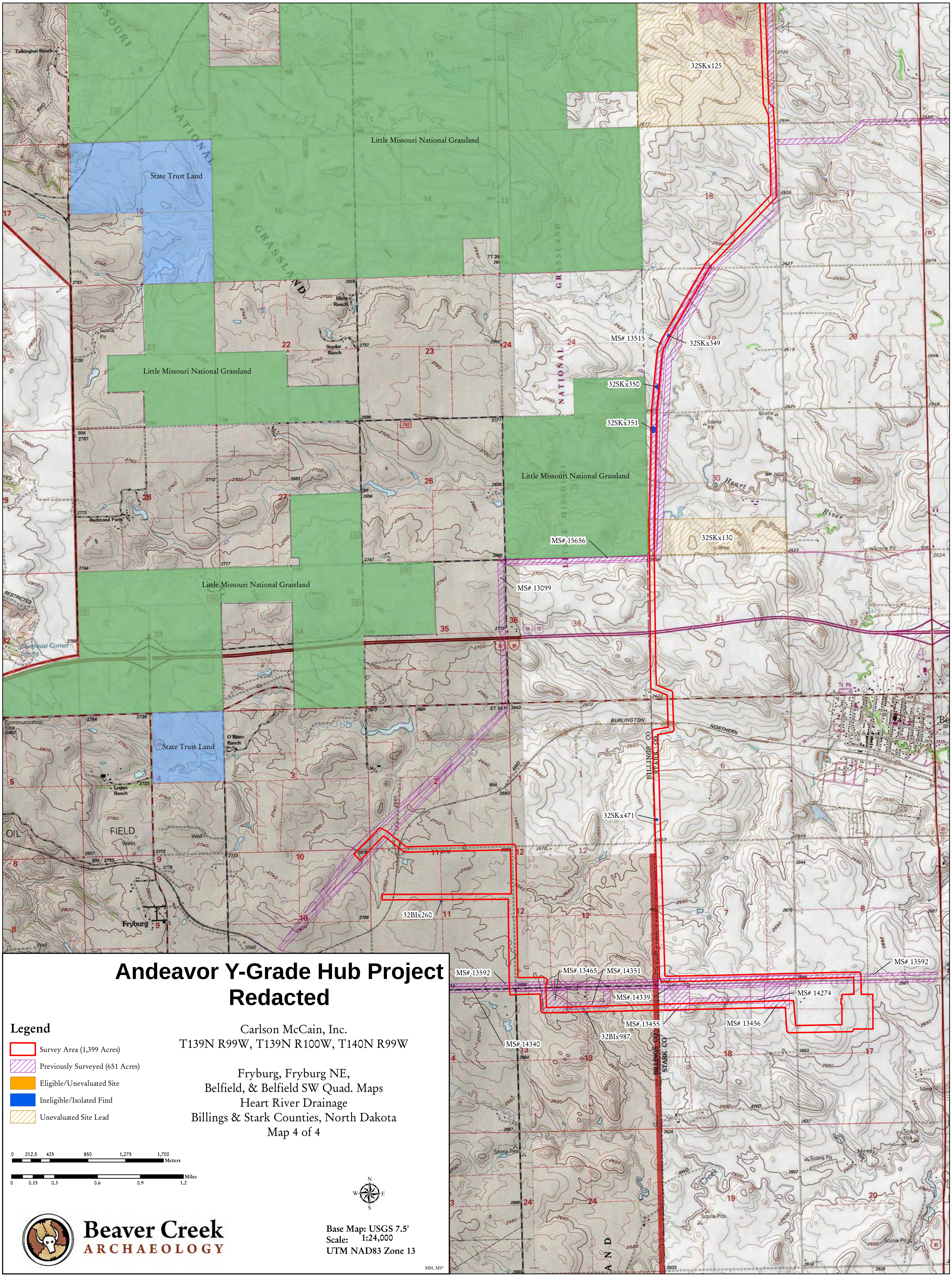
0 212.5 425 850 1,275 1,700 Meters

0 0.15 0.3 0.6 0.9 1.2 Miles

Beaver Creek
ARCHAEOLOGY

Base Map: USGS 7.5'
Scale: 1:24,000
UTM NAD83 Zone 13

MM, MS



Andeavor Y-Grade Hub Project Redacted

Legend

- Survey Area (1,399 Acres)
- Previously Surveyed (651 Acres)
- Eligible/Unevaluated Site
- Ineligible/Isolated Find
- Unevaluated Site Lead

0 212.5 425 850 1,275 1,700 Meters

0 0.15 0.3 0.6 0.9 1.2 Miles

Carlson McCain, Inc.
T139N R99W, T139N R100W, T140N R99W

Fryburg, Fryburg NE,
Belfield, & Belfield SW Quad. Maps
Heart River Drainage
Billings & Stark Counties, North Dakota
Map 4 of 4

N
W E
S

Beaver Creek
ARCHAEOLOGY

Base Map: USGS 7.5'
Scale: 1:24,000
UTM NAD83 Zone 13

MM, MS*

Appendix C: Literature Search and Site Descriptions

REDACTED

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

January 22, 2018

Ms. Brittany Brooks
Beaver Creek Archaeology Inc.
1632 Capitol Way
Bismarck, ND 58501

ND SHPO Ref: 18-0305 "A Class I and Class III Intensive Cultural Resources Inventory of the Y-Grade Hub in McKenzie, Billings, and Stark Counties, North Dakota"

Dear Ms. Brooks,

We reviewed "A Class I and Class III Intensive Cultural Resources Inventory of the Y-Grade Hub in McKenzie, Billings, and Stark Counties, North Dakota," and find the report acceptable. There has been a good faith effort to identify and avoid impacts to "Significant Sites," provided the avoidance recommendations on 32MZ2644, 32MZ2653 and 32MZ3129 are implemented.

Thank you for the opportunity to review this project. If you have questions please contact or Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

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

ANDEAVOR LOGISTICS
CONSTRUCTION PROJECTS IN
NORTH DAKOTA

PLAN FOR THE UNANTICIPATED DISCOVERY OF ARCHEAOLOGICAL AND/OR HISTORIC PROPERTIES AND HUMAN REMAINS DURING CONSTRUCTION

Prepared for

andeavor

Andeavor Logistics
1801 California St #1200,
Denver, CO 80202

Prepared by

OLSSON® ASSOCIATES

4690 Table Mountain Drive, Suite 200
Golden, CO 80403

November 2017

The purpose of this Unanticipated Discovery Plan (UDP) is to assist Andeavor Logistics (Andeavor) with meeting the requirements of Section 106 as defined in the Advisory Council on Historic Preservation (Council) regulations "Protection of Historic Properties" (36 Code of Federal Regulation [CFR] Part 800), as well as the applicable North Dakota laws related to human remains. This UDP is specific to Andeavor construction projects located in North Dakota (Projects) and is to be implemented should cultural resources be found after construction has begun on a Project.

This UDP has been developed in reference to the regulations embodied in “Protection of Historic Properties” issued by the Council (revised August 2004, www.achp.gov/regs-rev04.pdf).

Termed "unanticipated discovery" or “post-review discovery,” the identification of new cultural resources during implementation of an undertaking typically occurs in the case of projects that involve excavation or ground-disturbing activities. The plan detailed here will be implemented by Andeavor if previously undiscovered archaeological resources and/or human remains are identified during soil disturbance (excavation, boring, and coring) or during pipeline construction. Development of this plan reflects provisions in 36 CFR 800.13, which state that when agency identification efforts in accordance with Section 800.4 indicate that cultural resources are likely to be discovered during an undertaking, then a plan for treatment of such properties should be developed.

Some projects will have clearances and/or permits with specific requirements and/or mitigation commitments to be followed in the event of an unanticipated discovery, for example on Tribal land. Applicable project-specific requirements must always be followed at a minimum; this plan serves as a supplement to any project-specific requirements.

The following steps will be implemented should an unanticipated discovery be made by an Andeavor employee, inspector, contractor, or subcontractor during an undertaking:

1) Construction activities within the immediate area of an unanticipated discovery will be halted ("immediate area" is a context-specific measure. However, approximately 30 to 50 feet (10- 15 meters) feet should be adequate, although special attention should be given to the possible extension of a new find beyond this buffer zone), and the discovery protected from further disturbance.

2) Andeavor will notify their cultural resources consultant (consultants with offices in North Dakota are listed at the end of this plan) on the Project who will notify by telephone the North Dakota State Historic Preservation Office (SHPO) contact, Tribal Historic Preservation Office (THPO) contact and/or Bureau of Indian Affairs (BIA) contact as applicable, and, if necessary, the applicable law enforcement agency and coroner (the latter parties will be notified only in the case of a finding of human remains). These notifications will take place within 24 hours of an unanticipated discovery. In addition,

interested Native American tribes will be contacted; these tribes will be identified by the SHPO, THPO, BIA and/or cultural resources consultant.

3) Specific SHPO/ THPO/ BIA instructions concerning an unanticipated discovery resulting from the notification as described above will be followed. At a minimum, sufficient archaeological work will be performed on the unanticipated discovery location to stabilize deposits, protect deposits from scavengers or looters, and to collect readily available samples (e.g., for radiocarbon dating) that may help pinpoint the age of deposits or the presence (in the case of burials) of data that may serve to identify lineal or cultural descendants.
4) Andeavor and their cultural resources consultant will consult with the SHPO/ THPO/ BIA to follow through on the course of action. This may involve further archaeological study or consultation with Native American groups. Construction activities will remain halted until the agency with jurisdiction indicates to Andeavor that it may proceed in the area of a specific unanticipated discovery.

In the case of an unanticipated discovery of human remains, Andeavor will follow all relevant federal and/or state law:

Federal Statutes and Guidelines:

- Native American Graves Repatriation Act (NAGPRA) – Public Law 101-601; 25 U.S.C. 3001 et seq.
- Advisory Council on Historic Preservation (ACHP) Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects.

North Dakota Statutes and Regulations:

- North Dakota Century Code §23-06-27: Protection of human burial sites, human remains, and burial goods.
- North Dakota Century Code §55-03-06: Protection of prehistoric sites and deposits: upon sale of land by state or municipality archeological or paleontological materials retained.
- North Dakota Century Code §55-03-07: Protection of prehistoric sites and deposits: violation; penalty.
- North Dakota Administrative Code §40-02-03: Protection of prehistoric and historic human burial sites, human remains, and burial goods

Andeavor recognizes the importance of providing careful and respectful treatment for human remains recovered as an unanticipated discovery or as part of an archaeological investigation. In the event of an unanticipated discovery of human remains, Andeavor will contact the applicable SHPO/ THPO/ BIA to identify and coordinate consultation with the appropriate Native American groups. Lastly, in coordination with the SHPO/ THPO/ BIA and other interested parties, a decision will be made for the treatment of the remains (e.g., reburial, preservation in place, scientific study, sacred rituals, or a combination thereof).

The following table provides the contact information for the Andeavor point of contact, the North Dakota SHPO, and potential cultural resources consultants with offices in North Dakota that can be contacted in the event of an unanticipated discovery during the construction of pipeline projects.

Andeavor Logistics Contacts	
(Main Contact)	**(Alternate Contact)**
Kathryn Fontaine Manager, Project Environmental – Logistics 1801 California Street, Suite 1200 Denver, CO 80202 O (303) 454-6680 M (303) 775-8624 cell Kathryn.V.Fontaine@Andeavor.com	Rob Stowers, C.P.G. Director, Project EHS – Logistics 19100 Ridgewood Parkway San Antonio, TX 78259 M (281)382-6408 O (210)6266373 Robert.E.Stowers@Andeavor.com
North Dakota State Historic Preservation Office	
The State Historical Society of North Dakota 612 East Boulevard Ave. Bismarck, North Dakota 58505 701-328-2666 histsoc@nd.gov	
Cultural Resources Consultants in North Dakota	
Metcalf Archaeological Consultants, Inc. PO Box 2154 Bismarck, ND 58502 701-258-1215 **Golder Associates Inc.** 400 East Broadway Ave, Suite 300 Bismarck, ND 58501 701-258-5905 **AECOM** 1000 E. Calgary Ave Suite 1 Bismarck, ND 58503 701-221-4140 **Carlson McCain, Inc.** 600 S. 2nd St., Suite 105 Bismarck, ND 58504 701-255-1475	**KLJ** 4585 Coleman Street Bismarck, ND 58503-0431 701-355-8400 **Barr Engineering Company** 234 West Century Avenue Bismarck, ND 58503 701-255-5460 **SWCA** 116 N. Fourth Street, Suite 200 Bismarck, ND 58501 701-258-6622

Natural Resources and Wetland Delineation Report

Y-Grade Hub Project
Billings, McKenzie, and Stark Counties, North Dakota
Carlson McCain Project #7075

Prepared for:

Andeavor
19100 Ridgewood Parkway
San Antonio, TX 78259
(210) 626-6000

February 1, 2018

Carlson McCain
600 South 2nd Street, Suite 105
Bismarck, ND 58504
Tel 701-255-1475
Fax 701-255-1477
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ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

Andeavor Y-Grade Hub Project
Billings, McKenzie and Stark Counties, North Dakota

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TABLES

APPENDICES

1.0 INTRODUCTION

1.1 Background

Andeavor Field Services LLC (Andeavor) is proposing to construct the Andeavor Y-Grade Hub Pipeline (Project) in western North Dakota. The Project is a natural gas liquids (NGL) project that will transport mixed NGLs (commonly called "Y-Grade") from the existing Oasis Wild Basin natural gas plant in McKenzie County to a fractionation facility in Stark County, where the mixed NGLs will be separated into discrete components (e.g. ethane, propane, butane, and natural gasoline), and ultimately on to the Fryburg Rail Terminal. The proposed project consists of construction of approximately three (3) separate pipeline segments. The first segment is identified as the "North Segment" consisting of 17 miles of 8-inch pipe. The "South Segment" consists of 22 miles of 8-inch pipe. The "Product Transfer Segment" consists of approximately 5 miles of (4) separate 6-inch pipes. The "North Segment" will be located within McKenzie County, the "South Segment" originates in Billings County and terminates in Stark County, and finally, the "Product Transfer Segment" will originate in Stark County and terminate in Billings County.

The Project is proposed to be located on privately owned lands, with the exception of a 0.3-mile portion of the North Segment, which is located on North Dakota State Trust Land. The North Dakota Public Service Commission (NDPSC) has regulatory jurisdiction over the Project, which requires a Route Permit and a Certificate of Corridor Compatibility to be obtained by Andeavor before construction can commence. Table 1 identifies the Route's relation to the Public Land Survey System (PLSS). The Route is defined as the pipeline easement after construction.

Table 1. Project Route within Public Land Survey System

Route	Sections	Township	Range	County	Length (Miles)	Acres
North Segment	35, 36	151 N.	98 W.	McKenzie	17.16	176.78
	1, 12, 13, 23, 24, 26, 35	150 N.	98 W.	McKenzie		
	2, 11, 14, 15, 16, 21, 28, 29, 30,	149 N.	98 W.	McKenzie		
South Segment	3, 10, 15, 22, 27, 34	142 N.	99 W.	Billings	23.15	238.57
	3, 10, 15, 22, 27, 28, 33, 34	141 N.	99 W.	Billings		
	6, 7, 18, 19, 30, 31	140 N.	99 W.	Stark		
	6, 7, 8, 17, 18	139 N.	99 W.	Stark		
	25, 36	140 N.	100 W.	Billings		
Transfer Line	11, 12, 13	139 N.	100 W	Billings	4.43	45.53
	17, 18	139 N.	99 W.	Billings		
				Totals	**44.74**	**460.88**

Carlson McCain, Inc. (Carlson McCain) biologists performed field surveys to determine the presence or absence of federally protected species and their habitats and to define the boundaries of wetlands/waterbodies, state and county listed noxious weeds, and wooded areas within the Project's Survey Area. The field surveys occurred between September 19-

22; September 25-26; and October 27, 2017. Appendix A contains maps depicting the location(s) of natural resource features identified during the field surveys.

The results and methodology of the field surveys are contained within this report comply with regulations set by the NDPSC and United States Army Corps of Engineers (USACE) Nationwide Permit 12.

1.2 Regulatory Background

1.2.1 Clean Water Act, Section 404

Section 404 of the Clean Water Act prohibits the discharge of dredge or fill materials into waters that are under the jurisdiction of the USACE (waters of the U.S.) without a permit.

1.2.2 USACE Nationwide Permit 12

The USACE Nationwide Permit 12 authorizes the construction of utility lines and associated facilities in waters of the U.S., provided the activity does not result in the permanent loss of greater than 0.5 acres of waters of the U.S., including wetlands. Andeavor has committed to horizontal directional drilling (HDD) wetland and waterbody areas crossed by the Project.

2.0 METHODS

2.1 Survey Area

The proposed Project is located within the Great Plains (Level I) ecoregion, the West-Central Semi-Arid Prairies (Level II) ecoregion, and the Northwestern Great Plains (Level III) ecoregion. The majority of the Project is within the Missouri Plateau (Level IV) ecoregion, with approximately 3.2 miles of the North Segment being located in the River Breaks (Level IV) ecoregion.

The Northwestern Great Plains (Level III) ecoregion encompasses the Missouri Plateau section of the Great Plains. It is a semiarid rolling plain of shale, siltstone, and sandstone punctuated by occasional buttes and badlands. Native grasslands persist in areas of steep or broken topography, but they have been largely replaced by spring wheat and alfalfa over most of the ecoregion. Agriculture is limited by erratic precipitation patterns and limited opportunities for irrigation (Bryce et al. 1998).

The Missouri Plateau (Level IV) ecoregion was largely unaffected by glaciation and retains its original soils and complex steam drainage patterns. The River Breaks (Level IV) ecoregion form broken terraces and uplands that descend to the Missouri River and its major tributaries. They have formed particularly in soft, easily erodible strata, such as Pierre shale. The dissected topography, wooded draws, and uncultivated areas provide a haven for wildlife (Bryce et al. 1998).

The field surveys occurred between September 19-22; September 25-26; and on October 27, 2017 and were performed by Carlson McCain biologists. The Survey Area for the Project Route varied in width from 200 feet to 375-feet and contains approximately 1,331.6 acres. Spatial data was recorded using Sony Android Tablets in combination with EOS ARROW Lite sub-meter global positioning systems.

2.2 Wetland/Waterbody Determination

Prior to field work, existing resource information was used to aid in identifying and delineating wetlands and drainage features within the Project Area. These resources included: Billings, McKenzie, and Stark Counties National Agriculture Imagery Program (NAIP) aerial photographs; U.S. Fish and Wildlife Service National Wetland Inventory (USFWS 2014a); USDA digital Web Soil Survey (USDA, NRCS 2017) of the Project counties; and the U.S. Geological Survey National Hydrography Dataset (NHD) (USGS 2017).

Hydrological indicators used for wetland identification were determined on-site and were based on topographic position and presence of hydric vegetation. Waterbodies were defined using U.S. Army Corps of Engineers Ordinary High Water Mark criteria and definitions provided by the U.S. Environmental Protection Agency in *Draft Guidance on Identifying Waters Protected by the Clean Water Act*.

2.3 Tree/Shrub Survey

Boundaries of tree and shrub locations were delineated during the field survey. Individual stem counts will be conducted, in accordance with the NDPSC regulations, once the right-of-way has been surveyed and staked.

2.4 Noxious Weed Survey

North Dakota Century Code Chapter 63-01.1 and the North Dakota Department of Agriculture recognize 11 species as noxious weeds. Billings, McKenzie, and Stark Counties have additional species listed. Table 2 identifies the state and county noxious weeds applicable to the Route.

Locations of state and county listed noxious weed populations were mapped within the Survey Area. Andeavor will implement pre-construction weed control measures, along with post construction monitoring to manage noxious weed populations. Table 2 identifies state and county listed noxious weeds.

Table 2. State and County Noxious Weeds

North Dakota		Billings County	McKenzie County	Stark County
Absinth wormwood (*Artemisia absinthium*)	Purple loosestrife (*Lythrum salicaria*)	Black henbane (*Hyoscyamus niger*)	Black henbane (*Hyoscyamus niger*)	Black henbane (*Hyoscyamus niger*)
Canada thistle (*Cirsium arvense*)	Russian knapweed (*Acroptilon repens*)	Common burdock (*Arctium minus*)	Common burdock (*Arctium minus*)	Hoary cress (*Cardaria draba*)
Dalmatian toadflax (*Linaria genistifolia*)	Saltcedar (*Tamarisk spp.*)	Hoary cress (*Cardaria draba*)	Houndstongue (*Cynoglossum officinale*)	
Diffuse knapweed (*Centaurea diffusa*)	Spotted knapweed (*Centaurea maculosa*)	Houndstongue (*Cynoglossum officinale*)	Halogeton (*Halogeton glomeratus*)	
Leafy spurge (*Euphorbia esula*)	Yellow toadflax (*Linaria vulgaris*)	Field bindweed (*Convolvulus arvensis*)	Baby's breath (*Gypsophila paniculata*)	
Musk thistle (*Carduus nutans*)				

2.5 Threatened and Endangered Species

U.S. Fish and Wildlife Services (USFWS) and North Dakota Game and Fish Department (NDGF) databases containing habitat, known range, and species sighting data for federally listed species were consulted prior to the field surveys. Species specific surveys were not conducted; however, the Survey Area was observed to determine if potential habitat for threatened and endangered species was present.

2.6 Mapping

A Sony Experia tablet in conjunction with an EOS ARROW Lite global positioning system, with sub-meter accuracy capability, was used to geographically record the boundaries of wetland/waterbodies, trees/shrubs, and noxious weed populations. The data was recorded in the datum of North American Datum 1983 and the projected coordinate system of Universal Transverse Mercator Zone 13 North. Maps depicting the collected field data were produced using ESRI ArcGIS v10.3.

3.0 RESULTS

3.1 Vegetation

Specific land cover types found within the Project Corridor and temporary construction ROW acreages were determined using the Gap Analysis Program (GAP) 2010 National Land Cover dataset (USGS 2010). Cover types in the Corridor are detailed in Table 3.

Table 3. GAP 2010 National Land Cover Dataset

GAP Cover Type	Description	Corridor	
		Acres	%
Cultivated Cropland	Areas used for the production of annual crops, such as wheat, corn, soybeans, sugar beets, and peas. Crop vegetation accounts for greater than 20% of total vegetation. This class includes all land that is actively tilled.	12,642	46
Developed, Low Intensity	Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-49% of total cover. These areas most commonly include single-family housing units.	<1	2
Developed, High Intensity	Includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80 to100 percent of the total cover.	621	2
Developed, Open Space	Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	492	2
Disturbed, Non-specific	Areas that are barren or have relatively low vegetation cover that is associated with some form of generic human alteration or management regime. Typically associated with heavy grazing.	3	<1
Inter-Mountain Basins Big Sagebrush Steppe	This widespread matrix-forming ecological system occurs throughout much of the Columbia Plateau and northern Great Basin, east into the Wyoming Basins, central Montana, and north and east onto the western fringe of the Great Plains in Montana and South Dakota. It is found at slightly higher elevations farther south. In central Montana, this system differs slightly, with more summer rain than winter precipitation, more precipitation annually, and it occurs on glaciated landscapes. Soils are typically deep and non-saline, often with a microphytic crust. This shrub-steppe is dominated by perennial grasses and forbs (>25% cover) with *Artemisia tridentata ssp. tridentata* (this is not at all important in Wyoming occurrences), *Artemisia tridentata ssp. xericensis, Artemisia tridentata ssp. wyomingensis, Artemisia tripartita ssp. tripartita* (Snake River valley in Wyoming), *Artemisia cana ssp. cana*, and/or *Purshia tridentata* dominating or codominating the open to moderately dense (10-40% cover) shrub layer. *Atriplex confertifolia, Chrysothamnus viscidiflorus, Ericameria nauseosa, Sarcobatus vermiculatus, Tetradymia* spp., or *Artemisia frigida* may be common especially in disturbed stands. In Montana and Wyoming, stands are more mesic, with more biomass of grass, have less shrub diversity than stands farther west, and 50 to 90% of the occurrences are dominated by *Artemisia tridentata ssp.*	2	<1

GAP Cover Type	Description	Corridor	
		Acres	%
	wyomingensis with *Pascopyrum smithii*. In addition, *Bromus japonicus* and *Bromus tectorum* are indicators of disturbance, and *Bromus tectorum* is typically not as abundant as in the Intermountain West, possibly due to a colder climate. Associated graminoids can include *Achnatherum hymenoides, Calamagrostis montanensis, Elymus lanceolatus ssp. lanceolatus, Koeleria macrantha, Poa secunda, Pascopyrum smithii, Hesperostipa comata, Nassella viridula, Bouteloua gracilis*, and *Pseudoroegneria spicata*. Important rhizomatous species include *Carex filifolia* and *Carex duriuscula*, which are very common and important in the eastern distribution of this system in both Wyoming and Montana. *Festuca idahoensis* is uncommon in this system, although it does occur in areas of higher elevations/precipitation; *Festuca campestris* is also uncommon. In Wyoming, both *Nassella viridula* and *Pseudoroegneria spicata* rarely occur, with the latter typically found in eastern Wyoming on ridgetops and rocky slopes outside of this system. In Montana, there is an absence of *Festuca* spp., except *Vulpia octoflora*. Common forbs are *Phlox hoodii, Arenaria* spp., *Opuntia* spp., *Sphaeralcea coccinea, Dalea purpurea, Liatris punctata*, and *Astragalus* spp. Areas with deeper soils more commonly support *Artemisia tridentata ssp. tridentata* but have largely been converted for other land uses. The natural fire regime of this ecological system likely maintains a patchy distribution of shrubs, so the general aspect of the vegetation is a grassland. Shrubs may increase following heavy grazing and/or with fire suppression, particularly in moist portions of the northern Columbia Plateau where it forms a landscape mosaic pattern with shallow-soil scabland shrublands. Where fire frequency has allowed for shifts to a native grassland condition, maintained without significant shrub invasion over a 50-to 70-year interval, the area would be considered ~Columbia Basin Foothill and Canyon Dry Grassland (CES304.993).		
Inter-Mountain Basins Big Sagebrush Shrubland	This ecological system occurs throughout much of the western U.S., typically in broad basins between mountain ranges, plains and foothills between 1500 and 2300 m elevation. Soils are typically deep, well-drained and non-saline. These shrublands are dominated by *Artemisia tridentata ssp. tridentata* (not as common in Wyoming or Montana but possibly on stabilized part of Killpecker Dunes in Wyoming) and/or *Artemisia tridentata ssp. wyomingensis* (predominant in Wyoming and Montana). Scattered *Juniperus* spp., *Sarcobatus vermiculatus*, and *Atriplex* spp. may be present in some stands. *Ericameria nauseosa, Chrysothamnus viscidiflorus, Purshia tridentata* (not commonly in Montana or Wyoming), or *Symphoricarpos oreophilus* may codominate disturbed stands (e.g., in burned stands, these may become more predominant). Perennial herbaceous components typically contribute less than 25% vegetative cover. Common graminoid species can include *Achnatherum hymenoides, Bouteloua gracilis, Elymus lanceolatus, Festuca idahoensis* (not in Montana or Wyoming), *Hesperostipa comata, Leymus cinereus, Pleuraphis jamesii* (not present in northeastern portions of the range), *Pascopyrum smithii, Poa secunda*, or *Pseudoroegneria spicata* (not in Wyoming). Some	1	<1

GAP Cover Type	Description	Corridor	
		Acres	%
	semi-natural communities are included that often originate on abandoned agricultural land or on other disturbed sites. In these locations, *Bromus tectorum* or other annual bromes and invasive weeds can be abundant. Most *Artemisia tridentata ssp. wyomingensis* communities in Wyoming are placed in ~Inter-Mountain Basins Big Sagebrush Steppe (CES304.778); the shrubland system is more restricted in environmental setting than the steppe. Dunes in the Red Desert have areas of large basin big sage with very dense canopies. In Wyoming, this system is likely to only contain *Artemisia tridentata ssp. tridentata*.		
Inter-Mountain Basins Greasewood Flat	This ecological system occurs throughout much of the western U.S. in Intermountain basins and extends onto the western Great Plains and into central Montana. It typically occurs near drainages on stream terraces and flats or may form rings around more sparsely vegetated playas. Sites typically have saline soils, a shallow water table and flood intermittently, but remain dry for most growing seasons. The water table remains high enough to maintain vegetation, despite salt accumulations. This system usually occurs as a mosaic of multiple communities, with open to moderately dense shrublands dominated or co-dominated by *Sarcobatus vermiculatus*. Other shrubs that may be present to codominant in some occurrences include *Atriplex canescens, Atriplex confertifolia, Atriplex gardneri, Artemisia tridentata ssp. wyomingensis, Artemisia tridentata ssp. tridentata, Artemisia cana ssp. cana*, or *Krascheninnikovia lanata*. Occurrences are often surrounded by mixed salt desert scrub or big sagebrush shrublands. The herbaceous layer, if present, is usually dominated by graminoids. There may be inclusions of *Sporobolus airoides, Pascopyrum smithii, Distichlis spicata* (where water remains ponded the longest), *Calamovilfa longifolia, Poa pratensis, Puccinellia nuttalliana*, or *Eleocharis palustris* herbaceous types.	3	<1
Introduced Upland Vegetation	Areas that are dominated by introduced perennial forb or grassland species such as Canada thistle, bull thistle, star thistle, leafy spurge, mustards, sweetclover, scotch thistle, crested wheatgrass, smooth brome, Kentucky bluegrass, intermediate wheatgrass.	3	<1
NW Great Plains Mixed Grass Prairie	Grasses typically comprising the greatest canopy cover include western wheatgrass, green needlegrass, and fescue. Fire and grazing constitute the primary dynamics affecting this system. Drought can also impact this system, in general favoring the shortgrass component at the expense of the mid-grasses. With intensive grazing, cool-season exotics such as Kentucky bluegrass and brome can increase in dominance. Shrub species such as can also increase in dominance with fire suppression.	10,108	36
NW Great Plains Shrubland	This ecological system is found on shallow to deep, fine to sandy loam soils. These sites are typically moister than most of the surrounding area. This system is composed largely of tall, deciduous shrubs occurring along upper terraces, gentle slopes near breaks, and toeslopes, often in upper terraces or near rivers and streams. It usually is composed of one or more shrubs with grasses such as junegrass, bluebunch wheatgrass, thread-leaf	89	<1

GAP Cover Type	Description	Corridor	
		Acres	%
	sedge and fescue. It is similar to midgrass prairie systems, but can be easily distinguished by the presence of at least 10% cover of shrubs assuming that little to no fire suppression has occurred. Fire and grazing constitute the primary dynamics affecting this system. Drought can also impact this system.		
Open Water	All areas of open water, generally less than 25% cover of vegetation or soil. Specifically, inland waters of streams, rivers, ponds and lakes.	38	<1
Pasture / Hay	Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.	2,176	8
Ruderal	Vegetation resulting from succession following significant anthropogenic disturbance of an area. It is generally characterized by unnatural combinations of species (primarily native species, though they often contain slight or substantial numbers and amounts of species alien to the region as well).	336	1
Western Great Plains Badland	This ecological system is found within the northern Great Plains region of the United States and Canada with some of the better known and extensive examples in North and South Dakota. In contrast to Western Great Plains Cliff and Outcrop (CES303.665), this system is typified by extremely dry and easily eroded, consolidated clay soils with bands of sandstone or isolated consolidates and little to no cover of vegetation (usually less than 10% but can be as high as 20%). Vegetated patches within the badlands system may have cover higher than 20%. In north-central Montana, badlands often are a mosaic of bare substrate with small patches of grasses and/or shrubs that may exceed 10% cover. In those areas with vegetation, species can include scattered individuals of many dryland shrubs or herbaceous taxa, including *Grindelia squarrosa, Gutierrezia sarothrae* (especially with overuse and grazing), *Sarcobatus vermiculatus, Atriplex gardneri, Artemisia pedatifida, Eriogonum* spp., *Muhlenbergia cuspidata, Pseudoroegneria spicata*, and *Arenaria hookeri*. Patches of *Artemisia* spp. can also occur. This system can occur where the land lies well above its local base level or below and is created by several factors, including elevation, rainfall, carving action of streams, and parent material.	7	<1
W Great Plains Depression Wetland Systems	This systems group includes wetlands that form in upland and lowland depressions. Isolated depression wetlands form in small basins within upland landscapes that are rarely linked to outside groundwater sources and do not have an extensive watershed. Open depression wetlands form in lowlands, including lake borders and stream margins, that have more open basins, usually have a larger watershed, and a permanent water source throughout most of the year (except during exceptional drought years). The isolated depressions are typified by the presence of an impermeable layer such as dense clay, hydric soil and are usually recharged by rainwater and nearby runoff. Isolated ponds and lakes can experience periodic draw-downs during drier seasons and years and are often replenished by spring rains. Spike rush, foxtail barley,	423	2

GAP Cover Type	Description	Corridor	
		Acres	%
	and common forbs such as beggars ticks, marsh aster, and smartweed are common vegetation in the wetter and deeper depressions, while western wheatgrass and buffalo grass are more common in shallow depressions in rangeland. Open depression wetlands include submergent and emergent marshes with cattails and bulrush and associated wet meadows and wet prairies. In areas of saline soils, both isolated and open depressions will be more brackish, with associated vegetation differences. Salt encrustations can occur on the surface in some depressions, and the soils are severely affected and have poor structure. Species that typify these systems are salt-tolerant and halophytic species such as saltgrass, alkali grass, and foxtail barley. Other commonly occurring taxa include seep weed, prairie cordgrass, and shrubs such as greasewood and winterfat.		
W Great Plains Tallgrass Prairie	This System can be found throughout the Western Great Plains Division. It is found primarily in areas where soil characteristics allow for mesic conditions more typical of the Eastern Great Plains Division and thus are able to sustain tallgrass species. This system may be small patches interspersed within ~Northwestern Great Plains Mixed Grass Prairie or ~Western Great Plains Shortgrass Prairie and may also be associated with upland terraces above floodplain system where these more mesic conditions persist. Soils are primarily loamy Mollisols that are moderately deep and rich. Those areas that contain more sandy soils should be considered part of ~Western Great Plains Sand Prairie. This system is dominated primarily by *Andropogon* gerardii and may also include *Sorghastrum nutans, Schizachyrium scoparium, Pascopyrum smithii, Hesperostipa spartea, and Sporobolus heterolepis. Andropogon gerardii* often dominates the lowland regions, although *Pascopyrum smithii* can be prolific if conditions are favorable. Forbs in varying density may also be present. The primary dynamics for this system include fire, climate and grazing. Fire suppression in these areas has allowed for the invasion of woody species such as *Juniperus virginiana* and *Prunus spp.* Grazing also has contributed to these changes and likewise led to a decrease of this system as overgrazing favors shortgrass and mixed grass systems. Conversion to agriculture likewise has probably decreased the range of this system. Thus, this system likely only occurs in small patches and in scattered locations throughout the division. Large-patch occurrences are mostly isolated to slopes and swales of rolling uplands where either grazing or cultivation are more problematic.	327	1
W Great Plains Floodplain Systems	This riparian system group is found in the floodplains of medium and large rivers. Alluvial soils and periodic, intermediate flooding (every 5-25 years) typify this system. Dominant communities range from floodplain forests to wet meadows to gravel/sand flats; however, they are linked by underlying soils and the flooding regime. Stands are also on alluvial soils in highly variable landscape settings, from deep cut ravines to wide, braided streambeds. Dominant species include big bluestem, silver sagebrush, hairy sedge, cottonwood, ryegrass, green ash, switch grass, western wheatgrass, bur oak, willows, little bluestem, sand dropseed, and	15	<1

GAP Cover Type	Description	Corridor	
		Acres	%
	American elm. In addition, exotic species such as salt cedar, Siberian elm, and Russian olive can invade these systems.		
W Great Plains Sand Prairie	Sandhills have coarse-textured soils predominate and the dominant grasses are well-adapted to this condition. Another important feature is their susceptibility to wind erosion. Grasses dominate the sand prairies, although relative dominance can change due to impacts of wind disturbance. Sand bluestem and prairie sandreed are the most common species. The primary use of this system has been grazing. The fragility of the soils and the cautions used by ranchers to avoid poor grazing practices have allowed for fewer significant changes in the vegetation of sand prairies compared to other grassland systems. Fire also can influence this system.	21	<1
W Great Plains Wooded Draw and Ravine	This system is typically associated with permanent or ephemeral streams. It may occur on steep northern slopes or within canyon bottoms that do not experience periodic flooding, although soil moisture and topography allow greater than normal moisture conditions compared to the surrounding areas. Occurrences can be either tree-dominated or predominantly shrub land. Ash and elm trees typically characterize this system. Fire can influence this system; however, grazing is the most prevalent dynamic process influencing this system. This system can be heavily degraded in some areas. In addition, exotic species such as Siberian elm and Russian olive can invade this system.	310	1
Quaries, Mines, Gravel Pits and Oil Wells	Areas of extractive mining activities with significant surface expression.	5	<1

Source: USGS 2010

Grasslands comprise approximately one-half of the land use in the Survey Area. Grasslands include the mixed grass prairie area, where western wheatgrass, needle-and-thread, blue grama and little bluestem are widespread. Other common grasses include green needlegrass, side-oats grama, big bluestem, and prairie dropseed. The primary use of these grasslands is grazing.

Annual crops planted and harvested are diverse, but wheat is the most common crop in the project area. Wheat comprised 61% of the cropland in Stark County, 59% in Billings County, and 58% in McKenzie County. Other crops planted in 2012 included barley, corn, oats, canola, lentils, dry edible peas, dry edible beans, sugar beets, and sunflowers (NASS 2017).

Alfalfa is the primary component of hay land, and is often grown with smooth brome. Crested wheatgrass has been seeded in pastures and is common throughout western North Dakota.

3.2 Hydrology

Prior to the field surveys, precipitation data from the North Dakota Agricultural Weather Network (NDAWN) was reviewed. This data was used to determine moisture levels of current conditions versus historic averages. Data from the NDAWN Watford City 2E Station, located approximately 3 miles west of the North Segment, along with data from the Dickinson 1NW Station, located approximately 19 miles east of the South Segment and Transfer Line, was reviewed. The precipitation data covered May-October 2017. Table 4 summarizes the data. Overall field conditions are drier than normal with the Watford City 2E Station receiving -2.86" of precipitation less than normal for the 6-month period and the Dickinson 1NW Station received -1.46" of precipitation less than normal (NDAWN 2017).

Table 4. NDAWN Precipitation Data

	Watford City 2E Station			Dickinson 1NW Station		
	2017 Monthly Totals	Normal Monthly Average	Departure from Normal	2017 Monthly Totals	Normal Monthly Average	Departure from Normal
May	0.86"	2.20"	-1.34"	1.24"	2.32"	-1.08"
June	2.36"	3.00"	-0.64"	0.85"	3.60"	-2.75"
July	0.87"	2.59"	-1.72"	0.79"	2.58"	-1.79"
August	1.70"	1.42"	0.28"	2.20"	1.56"	0.64"
September	2.25"	1.00"	1.25"	2.98"	1.49"	1.49"
October	0.34"	1.03"	-0.69"	0.0"	1.27"	-1.27"
Totals	**8.38"**	**11.24"**	**-2.86"**	**8.06"**	**12.82"**	**-1.46"**

Source: NDAWN 2017

3.3 Soils

The USDA Natural Resources Conservations Service's Web Soil Survey lists 84 Soil Map Units within the Project Route. Table 5 contains the acreages of each Soil Map Unit within the Route. The most common soil components are discussed below. Figures showing Soil Map Units along the pipeline route are included in Appendix B.

Table 5. NRCS Soil Map Units within the Route

Soil Map Unit	Map Unit Symbol	Acres by Map Unit
Janesburg fine sandy loam 0-6% slopes	E0563B	26.20
Flasher-Vebar-Parshall complex 9-35% slopes	E1423F	25.50
Rhoades-Daglum complex 0-6% slopes	E0515B	22.57
Daglum-Rhoades complex 0-6% slopes	E0454B	21.53
Vebar-Parshall fine sandy loams 3-6% slopes	E1625B	20.79
Dogtooth-Janesburg silt loams 0-6% slopes	E0559B	20.42
Sen-Janesburg silt loams 3-6% slopes	E2439B	17.34
Vebar-Flasher-Tally complex 9-15% slopes	E1355D	14.65
Amor-Shambo loams 3-6% slopes	E2803B	13.82
Cabba-Chama-Sen silt loams 9-15% slopes	E2741D	11.01

Soil Map Unit	Map Unit Symbol	Acres by Map Unit
Barkof-Janesburg complex 3-6% slopes	E0727B	10.52
Sen-Golva silt loams 0-3% slopes	E2985A	10.32
Vebar-Tally fine sandy loams 6-9% slopes	E1635C	9.92
Arnegard loam 2-6% slopes	E2120A	9.69
Chama-Sen-Cabba silt loams 3-6% slopes	E2913B	9.62
Belfield-Grail clay loams 0-2% slopes	E0605A	9.22
Harriet loam 0-2% slopes occasionally flooded	E4005A	8.93
Amor-Cabba loams 6-9% slopes	E2601C	8.69
Tally-Parshall fine sandy loams 2-6% slopes	E1865B	8.20
Farnuf loam 2-6% slopes	E2120B	7.83
Regent-Janesburg complex 3-6% slopes	E0651B	7.19
Cabba-Chama-Shambo loams 9-50% slope	E2617F	7.08
Savage-Grail silty clay loams 0-2% slopes	E0835A	7.07
Korchea-Fluvaquents complex channeled 0-2% slopes frequently flooded	E4139A	6.99
Vebar-Cohagen fine sandy loams 6-9% slopes	E1333C	6.86
Sen-Janesburg silt loams 6-9% slopes	E2439C	6.29
Williams-Zahl loams 6-9% slopes	E3541C	6.06
Rhame-Fleak complex 9-50% slopes	L1425F	6.04
Belfield-Savage-Daglum complex 2-6% slopes	E0617B	5.40
Brandenburg-Cabba-Dogtooth complex 15-70% slopes	E3013F	5.18
Boxwell-Kremlin loams 9-15% slopes	L2807D	4.97
Zahl-Max loams 15-25% slopes	E3609F	4.95
Chama-Cabba-Sen silt loams 6-9% slopes	E2737C	4.92
Korchea loam 0-2% slopes occasionally flooded	E4137A	4.77
Dooley-Zahl complex 9-15% slopes	E3703D	4.44
Barkof-Janesburg complex 0-3% slopes	E0727A	4.43
Lawther-Daglum complex 0-2% slopes	E0634A	4.10
Zahl-Beisigl-Tally complex 9-15% slopes	E3637D	3.92
Zahl-Williams-Cabba complex 6-9% slopes	E3639C	3.92
Heil silty clay loam 0-1% slopes	E4729A	3.85
Williams-Zahl loams 3-6% slope	E3541B	3.75
Shambo loam 2-6% slopes	E2145B	3.49
Boxwell-Cabbart-Arikara complex 9-70% slopes	L2633F	3.47
Amor-Cabba loams 9-15% slopes	E2601D	3.15
Manning-Schaller-Wabek complex 6-35%	E4561F	3.09
Beisigl-Flasher-Telfer loamy fine sands 6-15% slopes	E1403D	2.72
Ustorthents sandy 6-15% slopes	E4909D	2.69
Zahl-Williams loams 9-15% slopes	E3555D	2.62
Cabbart-Badland complex 6-70% slopes	L3107F	2.56
Stady-Lehr loams 2-6% slopes	E4538B	2.48

Soil Map Unit	Map Unit Symbol	Acres by Map Unit
Regent-Savage silty clay loams 3-6% slopes	E1025B	2.38
Korell-Daglum-Fluvaquents complex channeled 0-2% slopes frequently flooded	E4180A	2.23
Regent-Janesburg complex 0-3% slopes	E0651A	2.10
Cabba-Chama-Havrelon occasionally flooded complex 2-70% slopes	E4190F	1.97
Golva silt loam 0-2% slopes	E2213C	1.96
Zahl-Cabba-Williams complex 9-15% slopes	E3641D	1.90
Moreau-Barkof silty clays 3-6% slopes	E1009B	1.67
Barkof-Janesburg complex 6-9% slopes	E0727C	1.63
Daglum-Belfield complex 0-6% slopes	E0447B	1.60
Stady loam 0-2% slopes	E4537A	1.51
Manning fine sandy loam 0-2% slopes	E4585A	1.51
Scairt-Maltese-Boxwell complex 2-25% slopes	L2311E	1.30
Niobell-Williams loams 3-6% slopes	E3513B	1.14
Regent-Janesburg complex 6-9% slopes	E0651C	1.03
Dooley-Zahl complex 3-6% slopes	E3703B	1.00
Brandenburg-Searing-Dogtooth complex 6-15% slopes	E3013D	0.96
Amor-Brandenburg complex 3-25% slopes	E3003E	0.94
Searing-Ringling loams 3-6% slopes	E3043B	0.93
Flasher-Rock outcrop-Vebar complex 9-70% slopes	E1475F	0.92
Williams-Bowbells loams 3-6% slopes	E3527B	0.91
Patent loam 0-6% slopes occasionally flooded	L3241B	0.80
Orthents-Urban land highway complex 0-35% slopes	E4981F	0.79
Dooley-Zahl complex 6-9% slopes	E3703C	0.77
Arnegard loam 0-2% slopes	E2107A	0.63
Golva silt loam 0-2% slopes	E2213B	0.61
Haplustolls-Ustorthents complex 0-6% slopes	E4907B	0.56
Beisigl-Telfer loamy fine sands 6-15% slopes	E1603D	0.49
Boxwell-Kremlin loams 3-6% slopes	L2803B	0.46
Williams-Bowbells loams 0-3% slopes	E3527A	0.45
Dooley fine sandy loam 0-3% slopes	E3701A	0.36
Lihen-Parshall complex 0-6% slopes	E1805B	0.08
Lambert-Badland-Cabba complex 6-45% slopes	E3185F	0.06
Dogtooth-Janesburg-Cabba complex 6-35% slopes	E0701F	0.03
Manning fine sandy loam 2-6% slopes	E4585B	0.02

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Belfield
The Belfield series consists of deep and very deep, well or moderately well drained slowly permeable soils formed in alkaline, calcareous residuum or alluvium on uplands, flats, terraces and in swales. Mean annual air temperature is 43 degrees F, and mean annual

precipitation is 15 inches. The mollic epipedon ranges from 7 to 30 inches in thickness and in many pedons includes all or part of the Btn horizon. The depth to carbonates ranges from 15 to 55 inches. The substratum, below depths of 36 inches, typically is alkaline local alluvium or partially weathered soft siltstone, shale or sandstone. Saline phases are recognized. Belfield soils are on level and nearly level terraces, flats and upland swales and on nearly level to moderately sloping uplands. Slopes from 1 to 4 percent are most common, but slope ranges from 0 to 9 percent. Most areas are cropped to small grains. Some are used for hay or pasture. Native vegetation is mid and short prairie grasses such as western wheatgrass (*Pascopyrum smithii*), blue grama (*Bouteloua gracilis*), and green needlegrass (*Nassella viridula*) (USDA 2017).

Daglum

The Daglum series consists of deep and very deep, moderately well and well drained soils formed in clayey alluvium or residuum on foot slopes and swales on terraces and uplands. These soils have slow or very slow permeability. Mean annual air temperature is about 42 degrees F, and the mean annual precipitation is about 16 inches. Soft sedimentary beds of shale, siltstone or fine-grained sandstone are below depths of 40 inches. Daglum soils are on level and nearly level terraces and on level to moderately steep uplands. They are on foot slopes and swales. Slope gradients range from 0 to 25 percent. Used for range, pasture and small grains. Native vegetation is western wheatgrass, blue grama, green needlegrass, needleleaf sedge (*Carex duriuscula*) and forbs (USDA 2017).

Rhoades

The Rhoades series consists of deep and very deep, well or moderately well drained, very slowly permeable soils formed in stratified loamy and clayey materials derived from soft shale, siltstone or mudstone. Mean annual air temperature is 42 degrees F, and mean annual precipitation is 16 inches. Depth to soft shale, siltstone or mudstone is more than 40 inches. Rhoades soils are on level to steep concave swales on uplands and terraces. Slope gradients commonly are 1 to 9 percent but range from 0 to 25 percent. Mostly in grassland used for range and pasture. Native vegetation is short- and mid-prairie grasses such as western wheatgrass, blue grama, sedges and also some legumes, prickly pear and clubmoss. Some areas are cultivated mostly to small grains (USDA 2017).

3.4 Wetlands

During the field survey, 14 wetlands, 1.87 acres combined, were identified and delineated within the boundaries of the Project Route. Wetland attributes are outlined in Table 6. Figures in Appendix A depict the locations of the wetland features. Photographs of delineated wetlands are included in Appendix C.

Table 6. Delineated Wetland Attributes

Feature Name	Segment	Acres	Crossing Length (Feet)	Cowardin Classification	Wetland Type	County
Wetland 6	North Segment	0.03	N/A	PEMA	Depression	McKenzie
Wetland 19	South Segment	0.06	N/A	PEMA	Depression	Billings
Wetland 20	South Segment	0.06	N/A	PEMA	Depression	Billings

Feature Name	Segment	Acres	Crossing Length (Feet)	Cowardin Classification	Wetland Type	County
Wetland 24	South Segment	0.02	N/A	PEMA	Depression	Billings
Wetland 30	South Segment	0.15	65	PEMC	Oxbow	Billings
Wetland 31	South Segment	1.12	568	PEMC	Depression / Drainage	Billings
Wetland 42	South Segment	0.05	28	PEMA	Depression / Road Ditch	Stark
Wetland 43	South Segment	0.03	15	PEMA	Depression / Road Ditch	Stark
Wetland 45	South Segment	0.02	23	PEMA	Road Ditch	Stark
Wetland 38	South Segment	0.06	30	PEMA	Depression / Road Ditch	Stark
Wetland 46	South Segment	0.04	30	PEMA	Depression / Railroad Ditch	Stark
Wetland 40	South Segment	0.12	60	PEMA	Depression	Stark
Wetland 14	Transfer Line	0.03	15	PEMA	Depression / Road Ditch	Stark
Wetland 15	Transfer Line	0.09	49	PEMA	Depression	Billings
Totals						
North Segment Wetland Acres					**0.03**	
South Segment Wetland Acres					**1.73**	
Transfer Line Wetland Acres					**0.12**	
Total Wetland Acres					**1.87**	

3.5 Waterbodies

The field survey identified and mapped 17 waterbodies that will be crossed by the pipeline. Waterbody attributes are outlined in Table 7. The figures in Appendix A depict the locations of the waterbody features. Photographs of delineated waterbodies are included in Appendix C.

Table 7. Delineated Waterbody Attributes

Feature Name	Segment	Crossing Length (Feet)	Cowardin Classification	Flow Type	Stream Name[1]	Tributary to[1]	County
Waterbody 2	North Segment	34	R4SB7	Intermittent	Unnamed	Cherry Creek	McKenzie
Waterbody 3	North Segment	108	R4SB5	Intermittent	Unnamed	Cherry Creek	McKenzie
Waterbody 4	North Segment	30	R2UB2	Perennial	Northfork Creek	Cherry Creek	McKenzie
Waterbody 5	North Segment	51	R2UB2	Perennial	Cherry Creek	Little Missouri River	McKenzie
Waterbody 8	North Segment	17	R4SB7	Intermittent	Unnamed	Sevenmile Creek	McKenzie
Waterbody 9	North Segment	17	R4SB7	Intermittent	Sevenmile Creek	Cherry Creek	McKenzie
Waterbody 22	North Segment	26	R4SB5	Intermittent	Spring Creek	Cherry Creek	McKenzie

Feature Name	Segment	Crossing Length (Feet)	Cowardin Classification	Flow Type	Stream Name[1]	Tributary to[1]	County
Waterbody 23	North Segment	13	R4SB7	Intermittent	Unnamed	Spring Creek	McKenzie
Waterbody 21	South Segment	14	R4SB7	Intermittent	Green River	Heart River	Billings
Waterbody 25	South Segment	12	R4SB5	Intermittent	Unnamed	Green River	Billings
Waterbody 26	South Segment	10	R4SB7	Intermittent	Unnamed	South Fork Green River	Billings
Waterbody 28	South Segment	N/A	R4SB7	Intermittent	Unnamed	South Fork Green River	Billings
Waterbody 29	South Segment	25	R4SB5	Intermittent	South Fork Green	Green River	Billings
Waterbody 34	South Segment	52	R4SB7	Intermittent	Unnamed	Heart River	Stark
Waterbody 36	South Segment	27	R4SB5	Intermittent	Heart River	Missouri River	Stark
Waterbody 37	South Segment	47	R4SB7	Intermittent	Unnamed	Heart River	Stark
Waterbody 41	South Segment	18	R4SB5	Intermittent	Unnamed	Heart River	Stark

[1]Waterbody Names were derived from the National Hydrography Dataset

3.6 Trees and Shrubs

The field survey determined the boundaries of the trees and shrubs located within the proposed construction easement. The survey identified 30 locations of woody vegetation, totaling 3.36 acres, within the North Segment construction easement. The South Segment construction easement held nine woody vegetation locations, totaling 0.83 acres. No woody vegetation was documented along the Transfer Line construction easement. Total acres of woody vegetation within the construction easement totals 4.2 acres. Stem counts will be conducted once construction staking occurs in order to comply with the NDPSC regulations.

3.7 Noxious Weeds.

The field survey identified 7.08 acres of noxious weeds within the construction easement. The boundaries of the weed locations are depicted on figures in Appendix A. Table 8 identifies attributes associated with noxious weeds within the construction easement.

Table 8. Noxious Weeds

Segment	Species	Acres	County
North Segment	Canada thistle	0.192	McKenzie
North Segment	Musk thistle	0.166	McKenzie
South Segment	Canada thistle	0.232	Billings
South Segment	Canada thistle	5.597	Stark
South Segment	Musk thistle	0.51	Billings
South Segment	Musk thistle	0.38	Stark
Transfer Line	Canada thistle	0.0	Billings
Transfer Line	Canada thistle	0.0	Stark

Segment	Species	Acres	County
Transfer Line	Musk thistle	0.0	Billings
Transfer Line	Musk thistle	0.003	Stark
Total		**7.08**	

3.8 Threatened and Endangered Species

Assessments for federally listed threatened and endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the Survey Area. Threatened and endangered species that have been documented and/or have the potential to occur in Billings, McKenzie and Stark Counties are listed in Table 9**.** During the field survey, no threatened or endangered species were observed. Habitat considerations of the sites are discussed below.

Table 9. Federally Threatened and Endangered Species

Species	Status	County Occurrence
Whooping Crane	Endangered	Billings, McKenzie and Stark
Gray Wolf	Endangered	Billings, McKenzie and Stark
Dakota Skipper and designated critical habitat	Threatened	McKenzie
Northern Long-eared Bat	Threatened	Billings, McKenzie and Stark
Red knot	Threatened	McKenzie
Piping plover and critical habitat	Threatened	McKenzie
Pallid sturgeon	Endangered	McKenzie
Least tern	Endangered	McKenzie

Source: USFWS 2018

3.9 Whooping Crane (*Grus americana*)

Federal Status: Endangered
Affect Determination: May affect, is not likely to adversely affect

The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Aransas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Parks and Wildlife 2006).

Approximately 75% of the whooping crane sightings in North Dakota occur within a 90-mile corridor that includes the Project Route. There are two confirmed whooping crane sightings in Billings County, eight confirmed sightings in McKenzie County and one confirmed sighting in Stark County according to the USFWS Database (USFWS 2015a). The nearest sighting to the Route (Transfer Line) took place in 1975, and is approximately 9.52 miles west in Section 19, Township (T) 149 North (N), Range (R) 100 West (W) of Billings County. Annual cropland, rangeland and wetlands may be temporarily impacted by the Project. Noise and vehicle activity during construction activities may cause migratory cranes to divert from the area but is unlikely to contribute to any additional indirect or direct effect that will result in an increase of fatalities and therefore is considered insignificant. The majority of the Project construction will be within existing pipeline right-of-ways. Any cranes that may temporarily feed or land in the area would likely relocate away from any activities.

If a crane was to be sighted within one mile of the Project, construction would cease and would be immediately reported to the USFWS and NDGFD. In coordination with the USFWS, construction would resume once the bird(s) have left the area. Following these guidelines, it is reasonable to expect that the activities associated with the Project ***may affect, is not likely to adversely affect*** whooping cranes.

3.10 Gray Wolf (*Canis lupus*)

Federal Status: Endangered
Affect Determination: May affect, is not likely to adversely affect

Rural areas throughout the state of North Dakota function as dispersal corridors for gray wolves representing the Western Great Lakes (east of the Missouri River and US Highway 83) and Wyoming portion of the Northern Rocky Mountain distinct population segments (DPS). However, gray wolves representing either DPS could disperse through North Dakota at any time of the year. Wolf habitat within North Dakota occurs statewide and is considered dispersal habitat. Dispersal habitat may be important for maintaining gene flow between DPSs but is not thought to be a limiting factor for the recovery of the species.

To reflect this possibility, the USFWS has classified gray wolves dispersing through North Dakota as endangered. There have been two verified sightings in McKenzie County and none in either Billings or Stark Counties. The nearest sighting is approximately 18.9 miles southeast of the Project in Section 20, T148N, R95W of Dunn County. Verified sighting data of gray wolves in North Dakota was obtained from the North Dakota Game and Fish Department (NDGF 2017).

The net effect of this Project will result in the temporary modification and minimal permanent conversion of dispersal habitat within the Project Route. The construction of the Project is unlikely to hinder potential gray wolf dispersal. In addition, no rendezvous sites, den sites, or pack activity is known to occur within the listed portion of the gray wolf range or non-listed portion in North Dakota. The majority of the Project construction will be within existing pipeline right-of-way. Therefore, this Project ***may affect*** dispersing individuals, but ***is not likely to adversely affect*** the gray wolf species.

3.11 Dakota Skipper (*Hesperia dacotae*)

Federal Status: Threatened
Affect Determination: May affect, is not likely to adversely affect

Dakota skippers are found in untilled high quality native prairie containing a high diversity of wildflowers. Habitat includes two prairie types: 1) high quality, low (wet-mesic) prairie with little topographic relief dominated by little bluestem grass, wood lily (*Lilium philadelphicum*), bluebell bell flower (*Campanula rotundifolia*), and smooth camas (*Zigadenus elegans*); and 2) rolling native-prairie terrain over gravelly glacial moraine deposits dominated by bluestem grasses and needlegrass (*e.g. Hesperostipa spartea*) with bluebell bell flower, wood lily, purple coneflower (*Echinacea angustifolia*) upright prairie coneflower (*Ratibida columnifera*) and common gaillardia (*Gaillardia aristata*). Dakota skipper populations have declined historically due to widespread conversion of native prairie (Dana 1991).

There is no suitable Dakota skipper habitat within the project construction corridor. Land use within the area is primarily agricultural (e.g. cultivated) and oil/gas development. Furthermore, the route follows existing pipeline corridors, that have already been disturbed. It is determined that this Project **may affect, is not likely to adversely affect** the Dakota skipper.

3.12 Dakota Skipper Critical Habitat

Federal Status: Designated
Affect Determination: No effect

The USFWS has designated 16 units of Dakota skipper critical habitat in North Dakota (USFWS 2015b). Billings and Stark Counties do not have designated critical habitat. McKenzie County has two areas designated as critical habitat; however, the closest point to the Project is over 18 miles to the northeast of the Project. The Project will have ***no effect*** on Dakota Skipper critical habitat.

3.13 Northern Long-eared Bat (*Myotis septentrionalis*)

Federal Status: Threatened
Affect Determination: May affect, is not likely to adversely affect

The northern long-eared bat is a forest dwelling bat. The home range of the northern long-eared bat is approximately 150 acres (60.7 ha) including a summer and winter habitat. In the summer, northern long-eared bats roost under bark or in crevices of trees, preferring to roost in tall trees and under the exfoliating bark of dead or dying trees. In the winter, northern long-eared bats hibernate in caves and mines. The northern long-eared bat prefers foraging in edge habitats and forests comprised of trees with a diversity of life stages. The primary threats to the northern long-eared bat are white-nose syndrome (WNS), alteration/loss of habitat, and wind energy.

The USFWS has announced that starting May 4, 2015, the northern long-eared bat will be listed as threatened and a Final 4(d) ruling was declared on January 14, 2016 (FR 2016). WNS is the predominant threat to the northern long-eared bat at this time. WNS has not been documented in North Dakota; however, it has been detected in in northwestern Minnesota. Billings, McKenzie and Stark Counties lie outside the 150-mile WNS buffer, but all three counties do lie within the northern long-eared bat range (USFWS 2014b).

Existing forest habitat adjacent and within the Project Route would be avoided to the extent possible. Based on the analysis of the Project, the status of the northern long-eared bat in Billings, McKenzie and Stark Counties and incorporation of avoidance or minimization measures, it is determined that construction of the Project ***may affect, is not likely to adversely affect*** the northern long-eared bat

3.14 Red Knot (*Calidris canutus*)

Federal Status: Threatened
Affect Determination: No effect

The red knot is a shorebird that breeds in the central Canadian Arctic, with primary breeding grounds in Nunavut Territory, with some potential breeding habitat extending into the Northwest Territories (FR 2013). The red knot winters along the Atlantic coasts of Argentina and Chile (particularly the island of Tierra del Fuego), the north coast of Brazil, and further north into Mexico and the southeast United States (USFWS 2014a). During migration, the red knot primarily follows the Atlantic coastline to and from breeding and wintering grounds. However, geolocator results from red knots wintering in Texas showed that some birds migrate using a central flyway across the Midwestern U.S. and may have a northern Great Plains stopover (FR 2013). Red knots spend 2 to 3 months at breeding sites in northern Canada.

Red knots are specialized molluscivores, feeding primarily on hard-shelled mollusks in soft wet sand/sediment (USFWS 2014c). In addition to mollusks, red knots may feed upon shrimp, crabs, marine worms, and horseshoe crab eggs and other similar invertebrates. On the breeding ground, red knots feed mostly on terrestrial invertebrates and grass shoots/seeds (FR 2013).

The shoreline of the Missouri River provides stopover habitat for the red knot. Although some individuals may stopover in North Dakota during annual migrations, the species is rare and is not reported in North Dakota every year. Reported historical sightings since 1900 (Igl 2015), are primarily one or a few birds; however, larger flocks have been reported. The majority of these sightings have been made in the prairie pothole region during the spring migration in late April through May. There have been no sightings reported in McKenzie or Billings Counties. However, Patterson Lake, located in Stark County, had two confirmed individuals sighted in 2009 which is about 15 miles east of the Project Area (Transfer Line) (Igl 2015). An increase in future sightings may result from an increase in public awareness.

The red knot migrates annually from its breeding grounds in the Artic to wintering habitat in southern climates. It does not nest in North Dakota but may use areas along the Missouri River as stopover habitat. The Project is approximately 14.8 miles from the closest point of the Missouri River/Lake Sakakawea. It is determined that construction of the Project will have ***no effect*** on this species.

3.15 Piping Plover (*Charadrius melodus*)

Federal Status: Threatened
Affect Determination: May affect, is not likely to adversely affect

The piping plover is a migratory shorebird that breeds in North Dakota. Suitable nesting habitat for piping plovers in the Missouri River system is characterized as sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel. The piping plover feeds on worms, insects, and mollusk. Degradation of habitat related to the channelization river systems, nest predation, and human disturbance has led to the decline of piping plover populations.

No piping plovers or piping plover habitat was observed during the field surveys. The Project is approximately 14.8 miles from the closest point of the Missouri River/Lake Sakakawea and critical habitat (USFWS 2015b). Plovers that will migrate and forage away from the designated critical habitat area could possibly visit the wetlands near the Project. However, due to the lack of alkaline wetlands and the heavy grass and shrub cover, nesting would be unlikely. It is reasonable to expect that the Project ***may affect, is not likely to adversely affect*** this species.

3.16 Piping Plover Critical Habitat

Federal Status: Designated
Affect Determination: Not likely to destroy or adversely modify

The Project will not modify, alter, disturb, or affect the shoreline of the Missouri River/Lake Sakakawea or any if its tributary streams. Therefore, it is reasonable to believe that the completion of the Project is ***not likely to destroy or adversely modify*** designated critical habitat for the piping plover.

3.17 Pallid Sturgeon (*Scaphirhynchus albus*)

Federal Status: Endangered
Affect Determination: No effect

Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960s (Grondahl and Martin, no date). Weighing up to 85 pounds, pallid sturgeons are long lived with individuals possibly reaching 50 years of age.

A known pallid sturgeon population occurs from the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the Lower Yellowstone River up the confluence of the Tongue River, Montana (USFWS 2007). Factors leading to the decline of the pallid sturgeon and a listing as an endangered species by the USFWS in 1990 include the alteration of habitat through river channelization; creation of impoundments; and alteration of water flow regimes (USFWS 1990). The effect from these alterations within the Missouri River have reduced food sources by lowering productivity, destroying spawning habitat, altered flow conditions which can delay spawning cues, and blocked movements to spawning, feeding, and rearing areas (USFWS 2007).

The Project is approximately 14.8 miles from the Missouri River/Lake Sakakawea. Due to the nature of the Project, no impacts to the Missouri River/Lake Sakakawea are anticipated during construction and/or operation. Therefore, it is reasonable to expect that the activities associated with the Project will have ***no effect*** *on* this species.

3.18 Interior Least Tern (*Sterna antillarum*)

Federal Status: Endangered

Affect Determination: May affect, is not likely to adversely affect

The interior least tern, a shorebird, is known to nest on midstream sandbars along the Yellowstone and Missouri River systems in North Dakota. The species constructs bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches during the nesting period, which occurs between mid-May and mid-August. Nesting adults have been documented to travel 7.5 miles or more from their nest sites to forage in wetlands or riverine habitat (Thompson et al. 1997). Habitat loss due to man-made changes to watersheds and river systems along with low nesting success from predation and human disturbance has caused a decline in least tern populations.

No individuals were observed in the area during the field surveys. The Project is approximately 14.8 miles from the closest point of the Missouri River/Lake Sakakawea. Migrating and foraging least terns could visit wetlands near the Project Route; however, due to the lack of suitable nesting habitat and the presence of heavy grass and shrub cover, the interior least tern would likely not utilize such conditions. Therefore, it is reasonable to expect that the Project ***may affect, is not likely to adversely affect*** this species.

3.19 Bald and Golden Eagles

Status: Not listed, protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

Affect Determination: No adverse effects anticipated

Proposed development may affect Bald and Golden Eagles through direct mortality, habitat degradation, and/or displacement of individual birds. These impacts are regulated in part through the *Migratory Bird Treaty Act* (916 USC 703-711) and the *Bald and Golden Eagle Protection Act* (16 USC 668–668c).

The Project is located within the primary nesting range of the golden eagle (*Aquila chrysaetos*). The buttes and badlands around Lake Sakakawea make for suitable foraging and nesting habitat for both golden and bald eagles (*Haliaeetus leucocephalus*). A review of the North Dakota Game and Fish eagle nest database revealed no eagle nests within 1-mile of the Project (NDGF 2015). The closest known eagle nest location is a golden eagle cliff nest that is located approximately 3.2 miles northwest of the west end of the Transfer Line (NDGFD 2015). Golden and bald eagles do have the potential to pass through the project area; however, the distances from the nearest recorded nesting locations should provide adequate buffers to any possible disturbance to nesting bald or golden eagles.

The Project complies with the conservation measure that all known nests be avoided by greater than one-half mile. If any new nest were discovered prior to construction, the USFWS would be consulted for additional information on how to proceed. Recommended mitigation measures would be implemented to avoid any disturbance of bald and golden eagle nesting sites.

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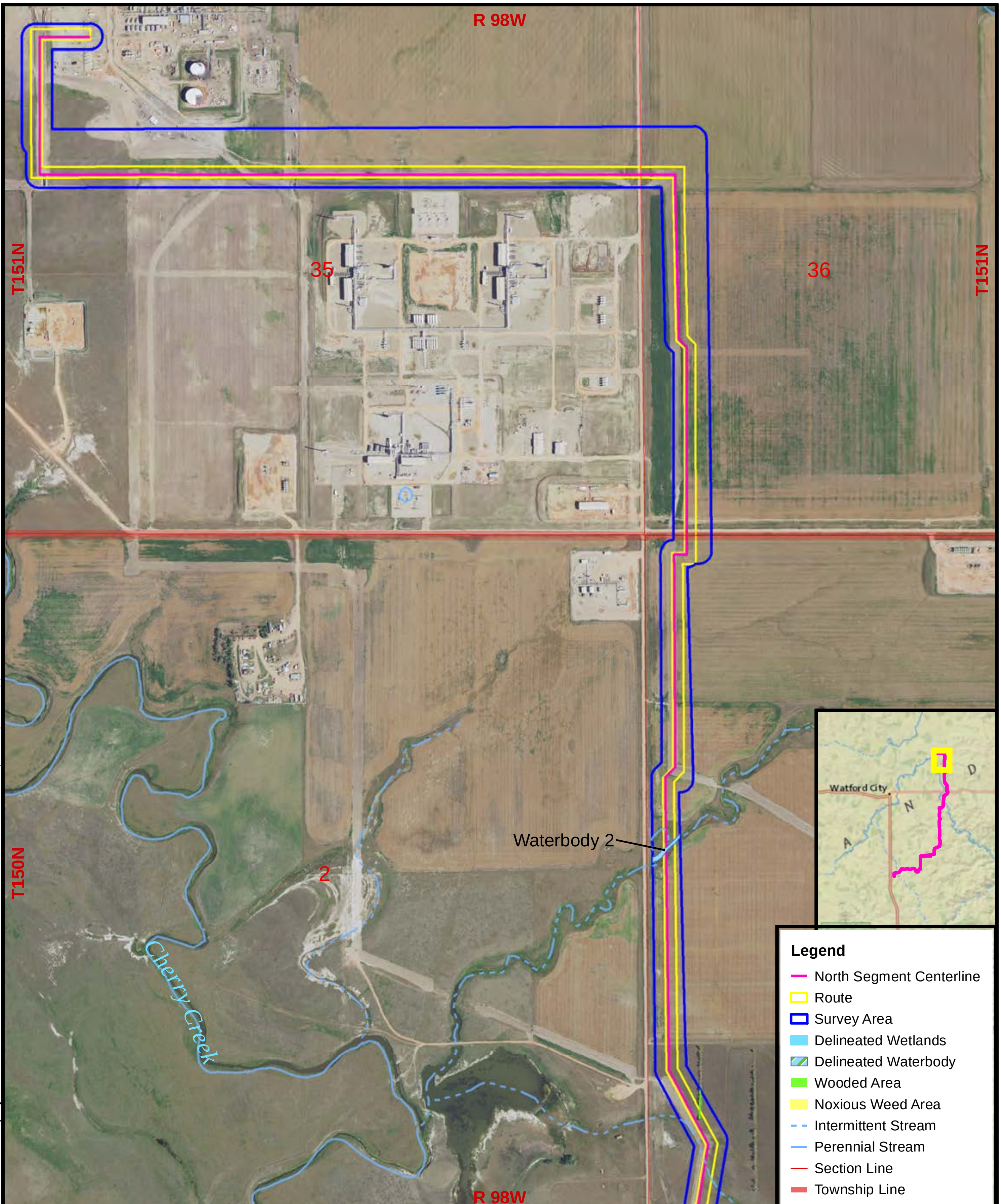
Appendix A

Andeavor Y-Grade Hub Project
Natural Resources Figures



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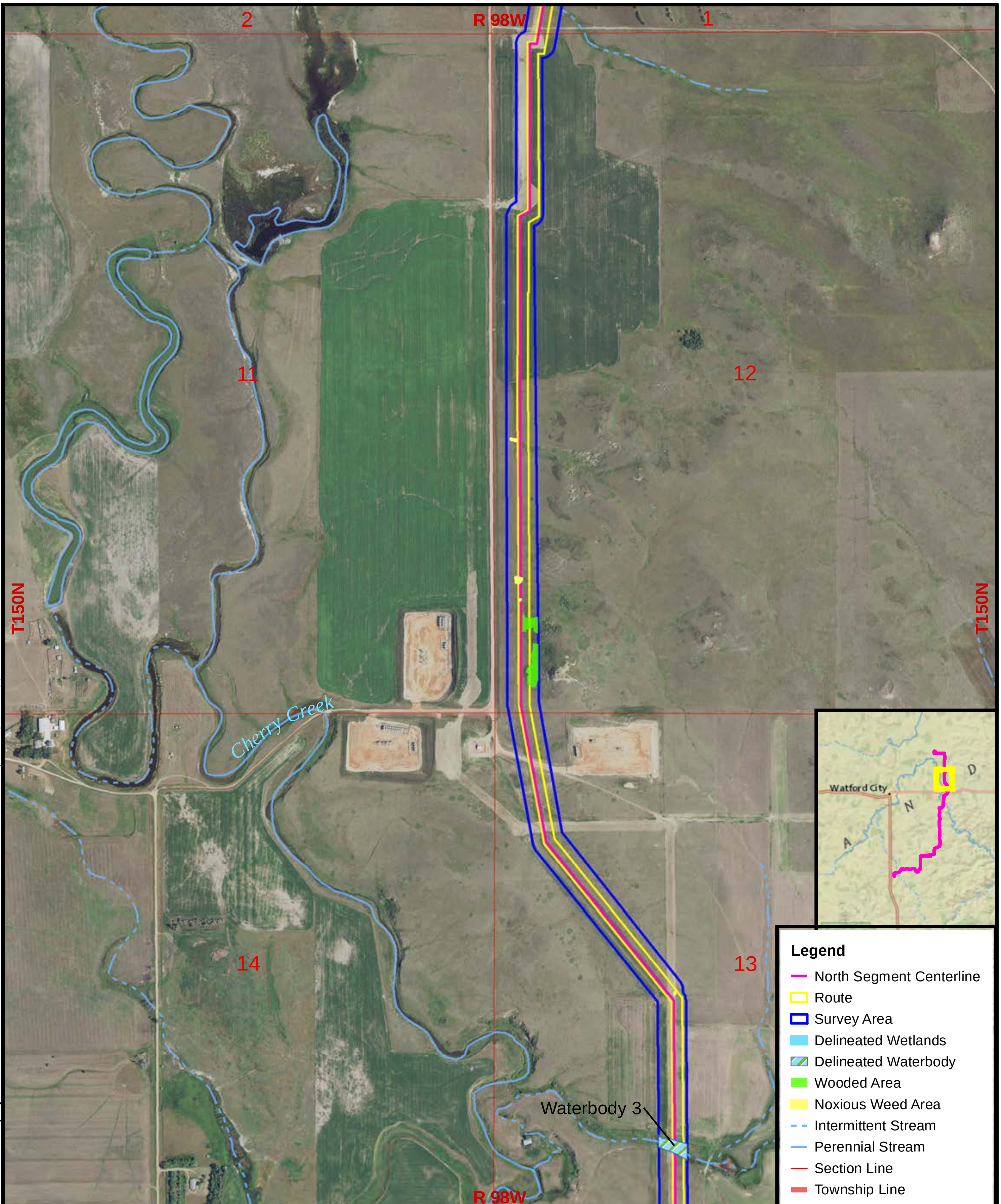
Appendix A Figure 1-1
North Segment
Natural Resources
Andeavor Y-Grade Hub



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Appendix A Figure 1-2
North Segment
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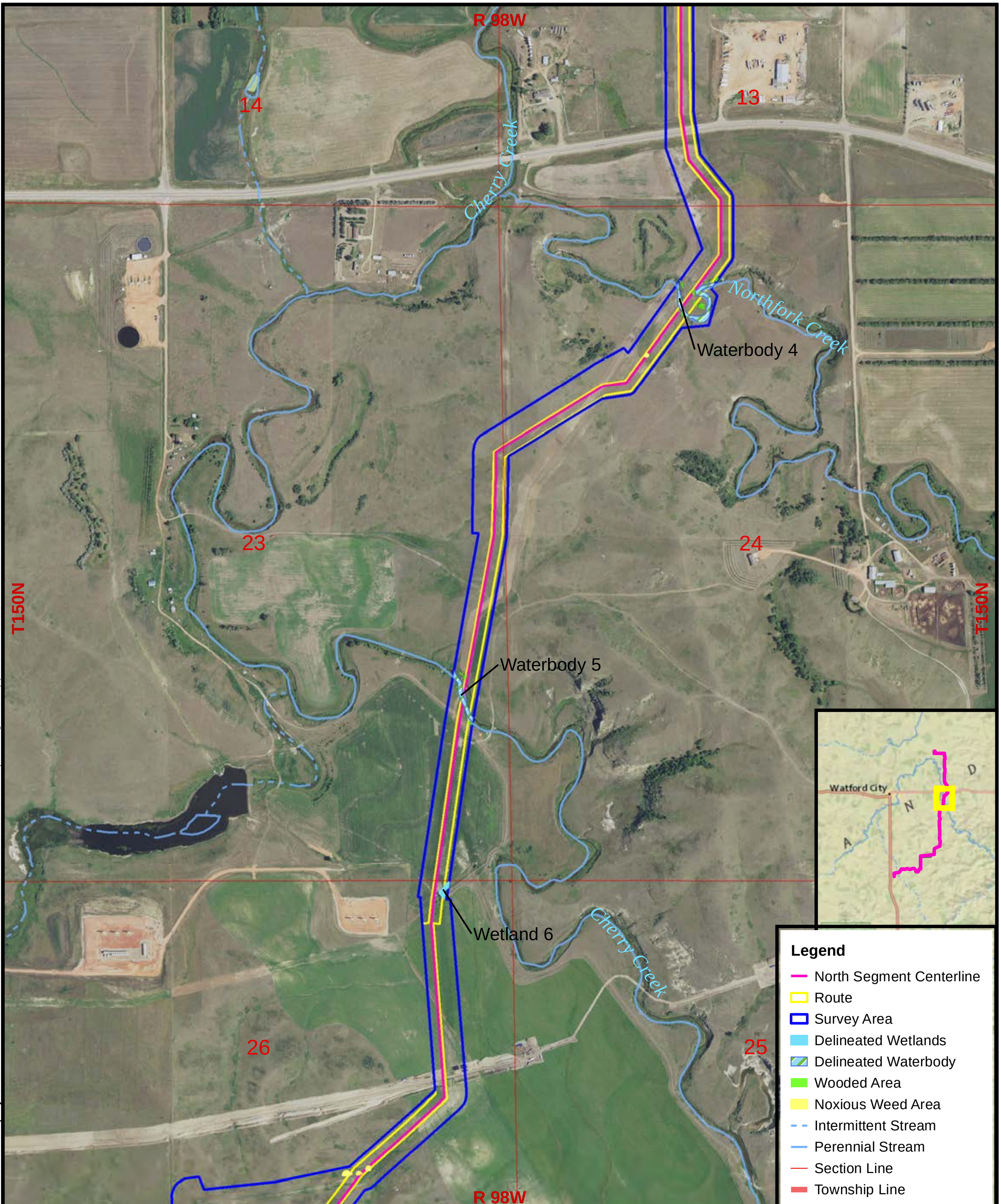

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North Segment
Natural Resources
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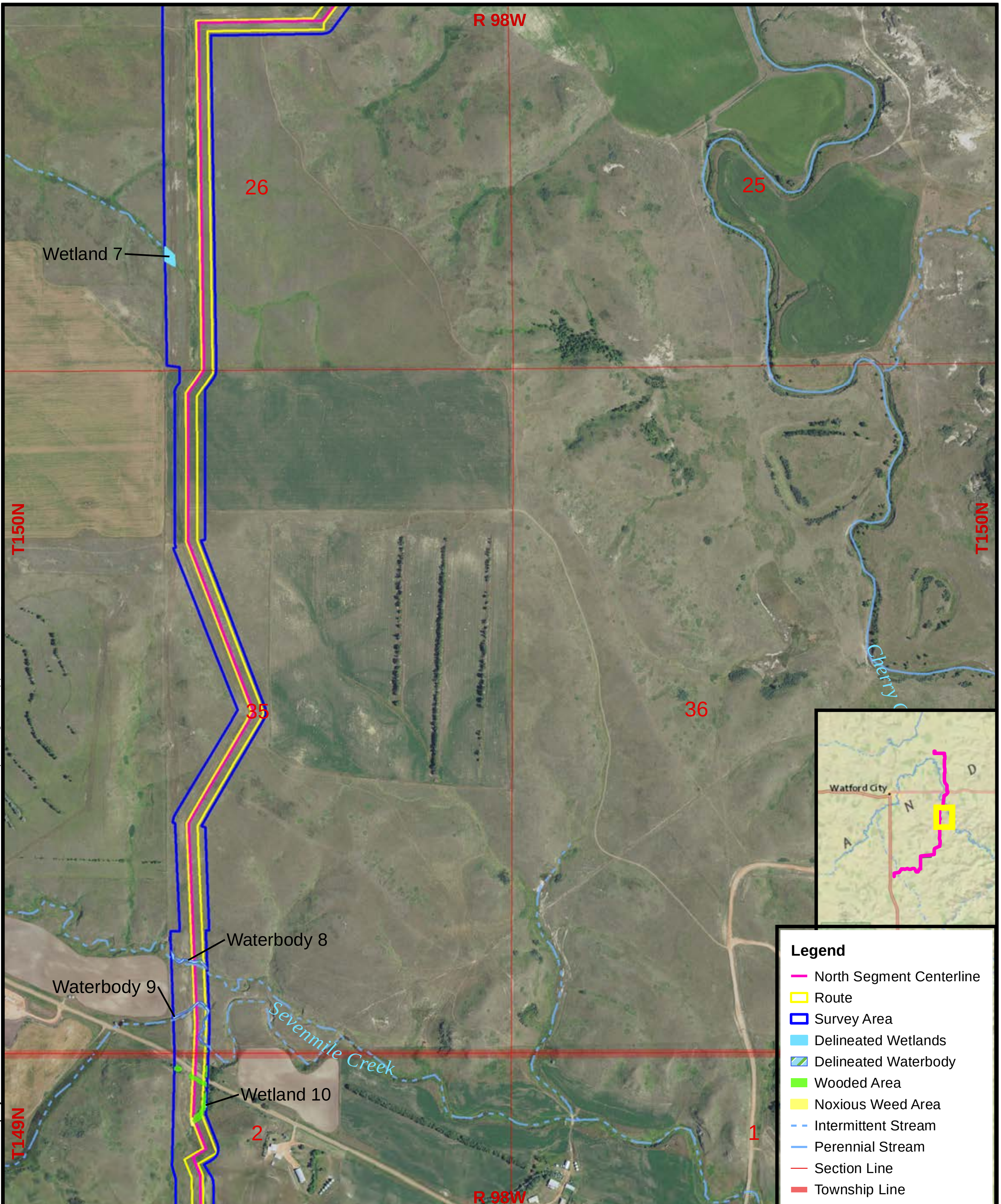

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Appendix A Figure 1-4
North Segment
Natural Resources
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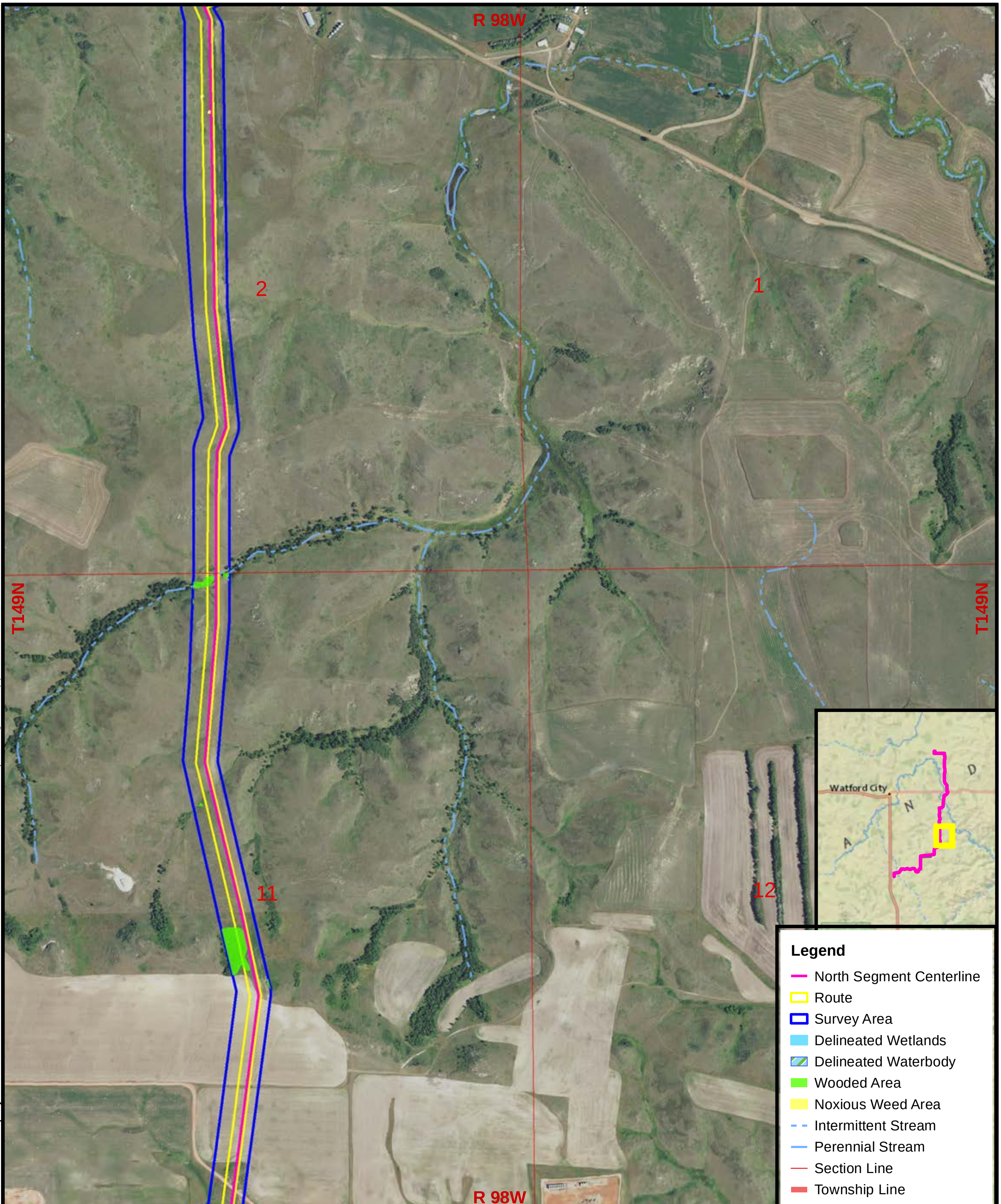

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Appendix A Figure 1-5
North Segment
Natural Resources
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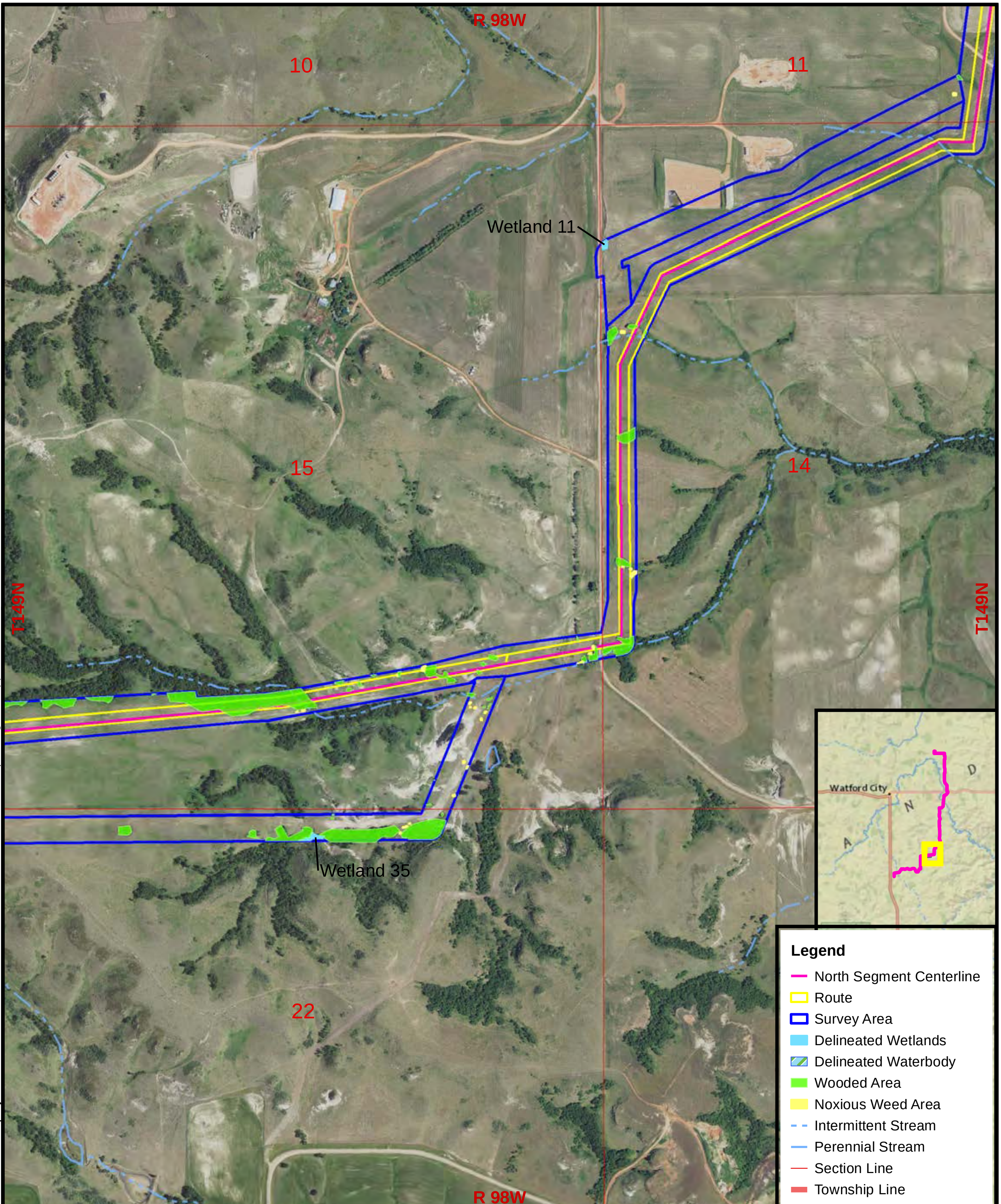

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Appendix A Figure 1-6
North Segment
Natural Resources
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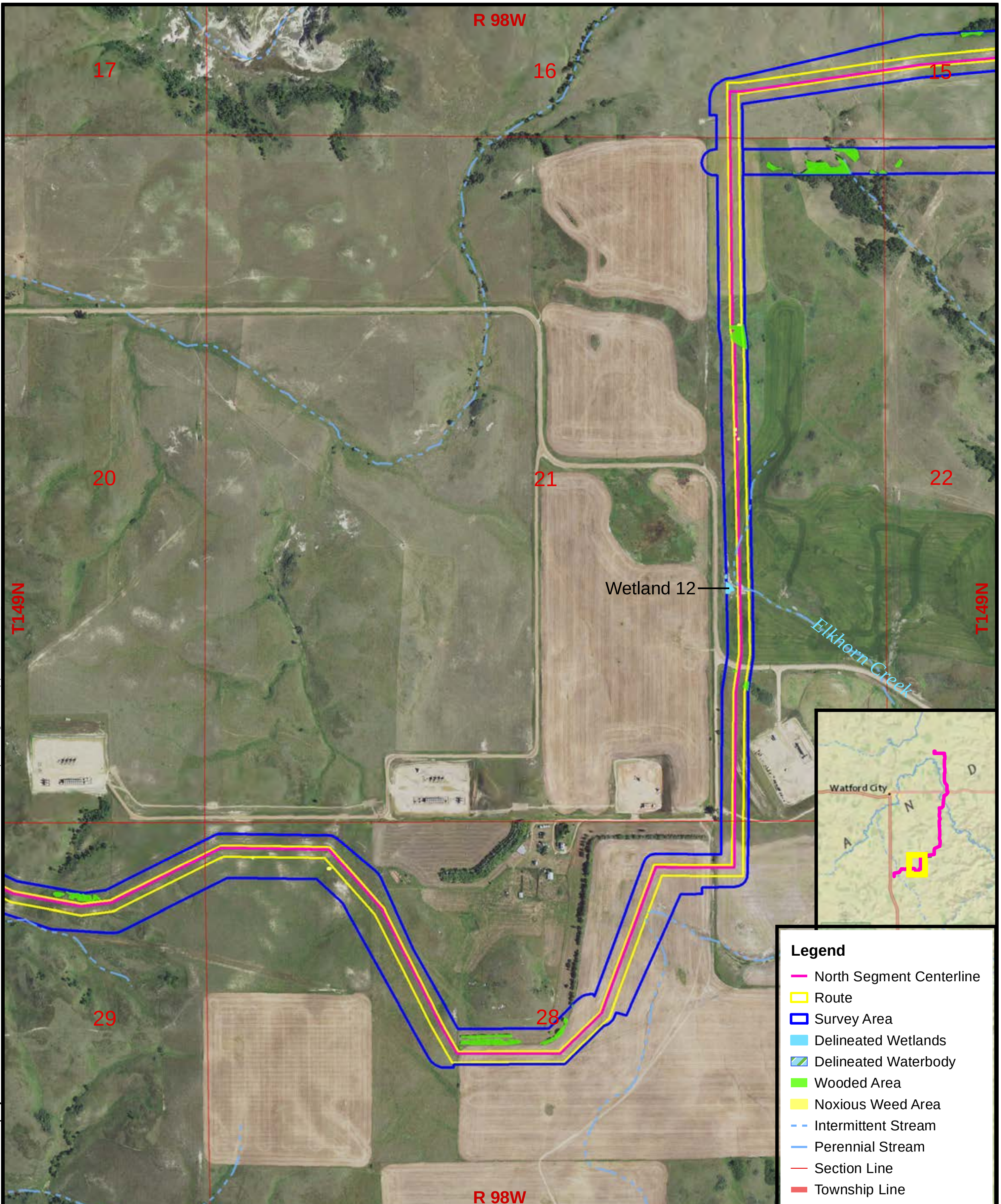

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Appendix A Figure 1-7
North Segment
Natural Resources
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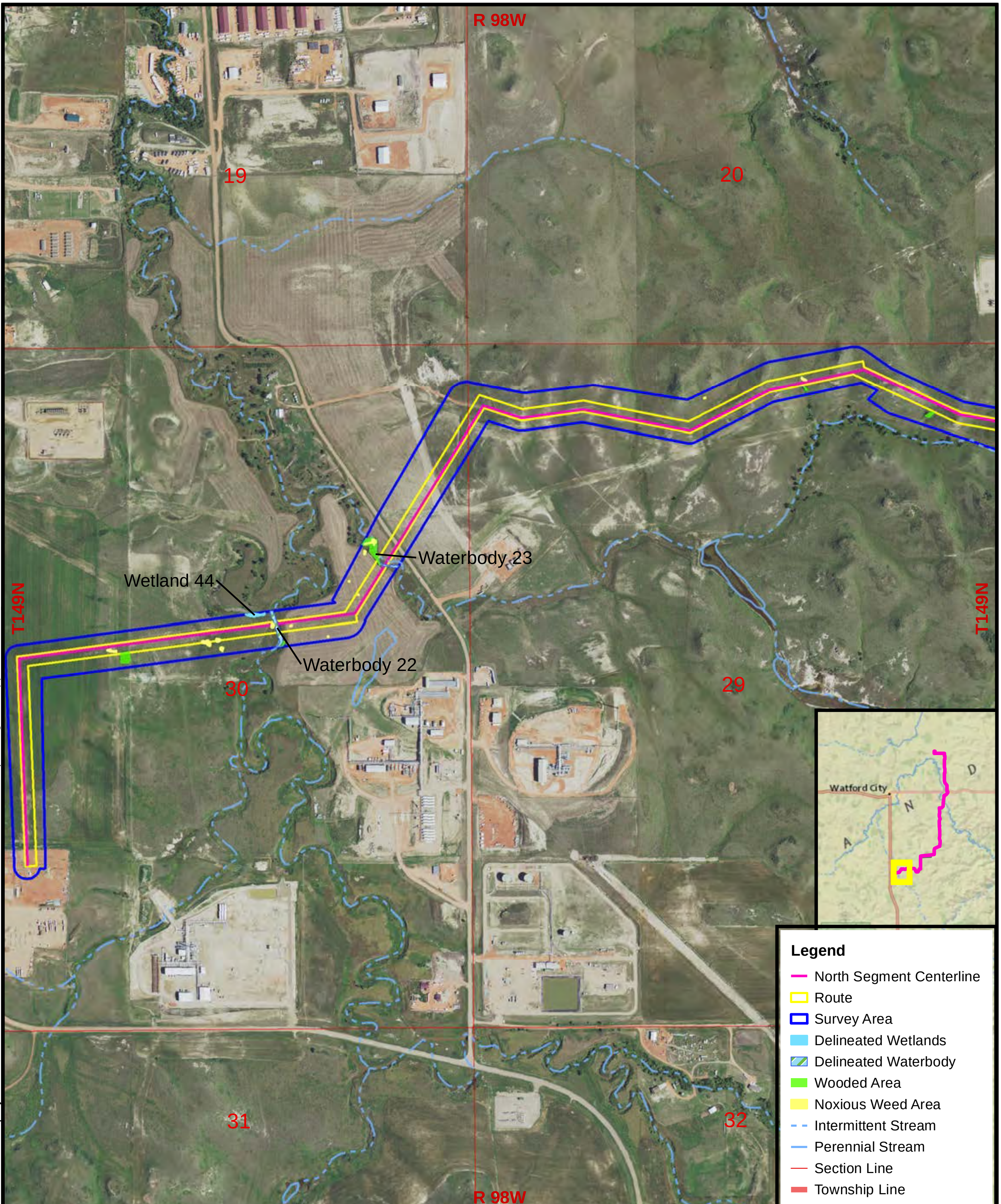

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North Segment
Natural Resources
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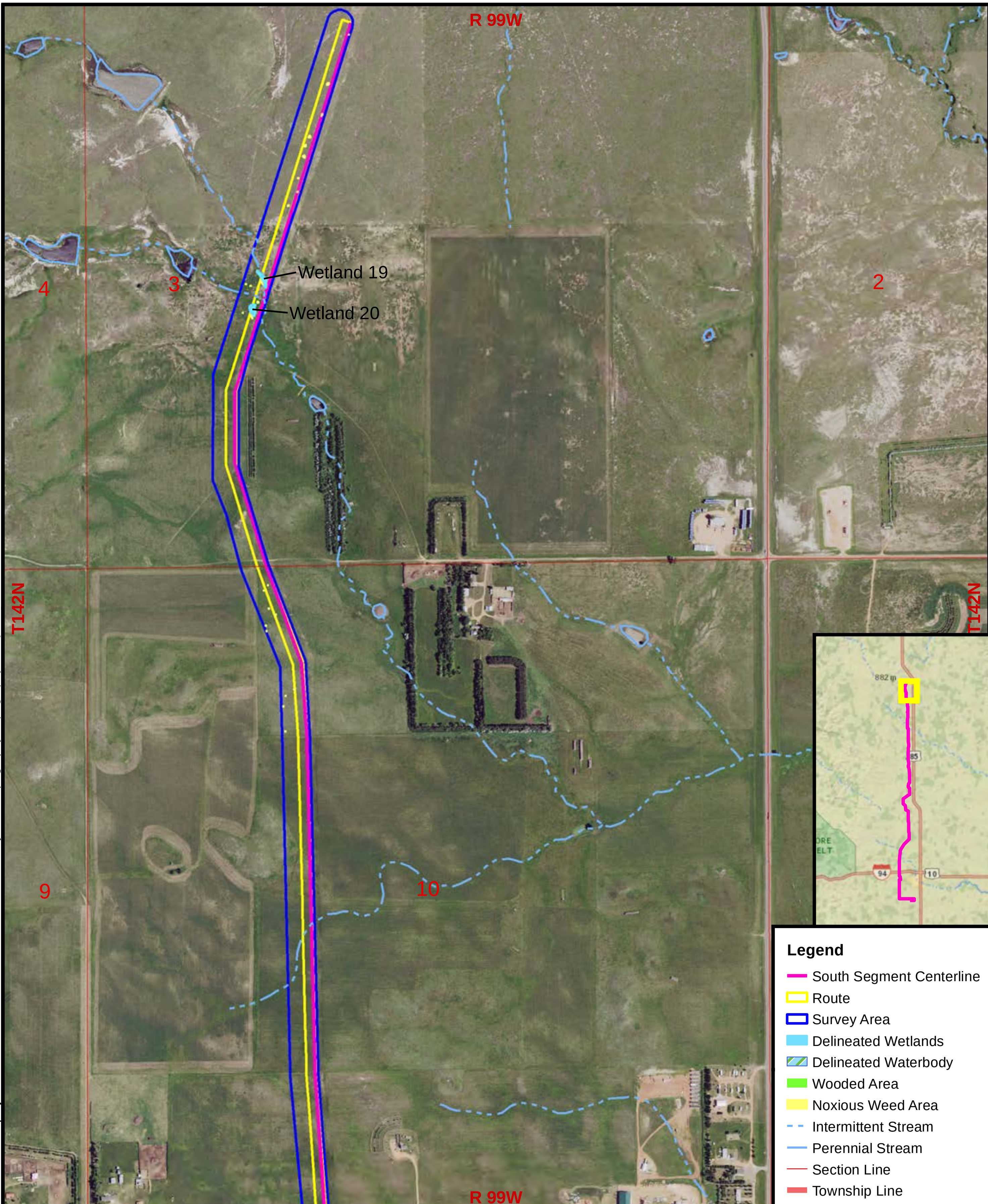

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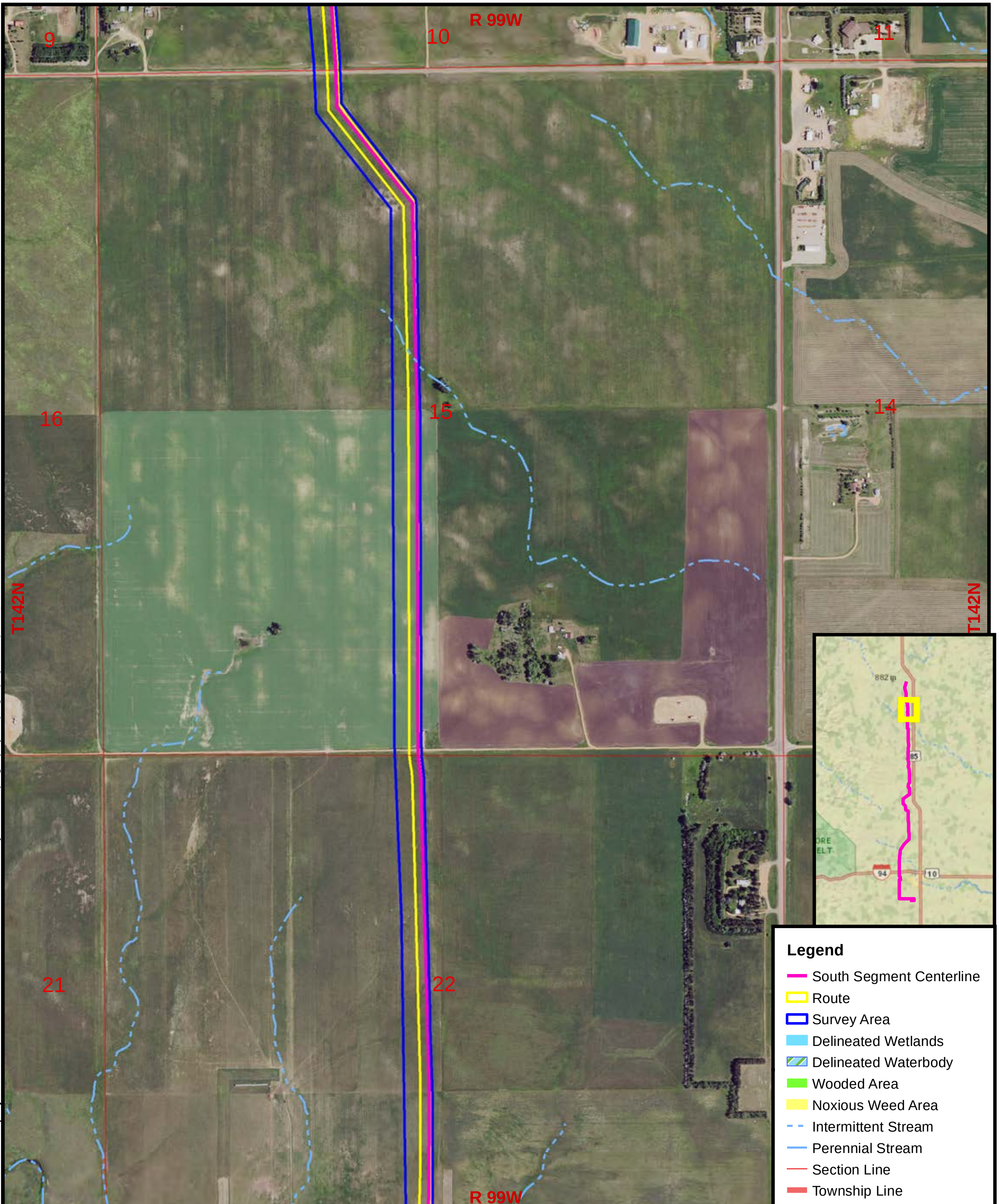
Appendix A Figure 2-1
South Segment
Natural Resources
Andeavor Y-Grade Hub



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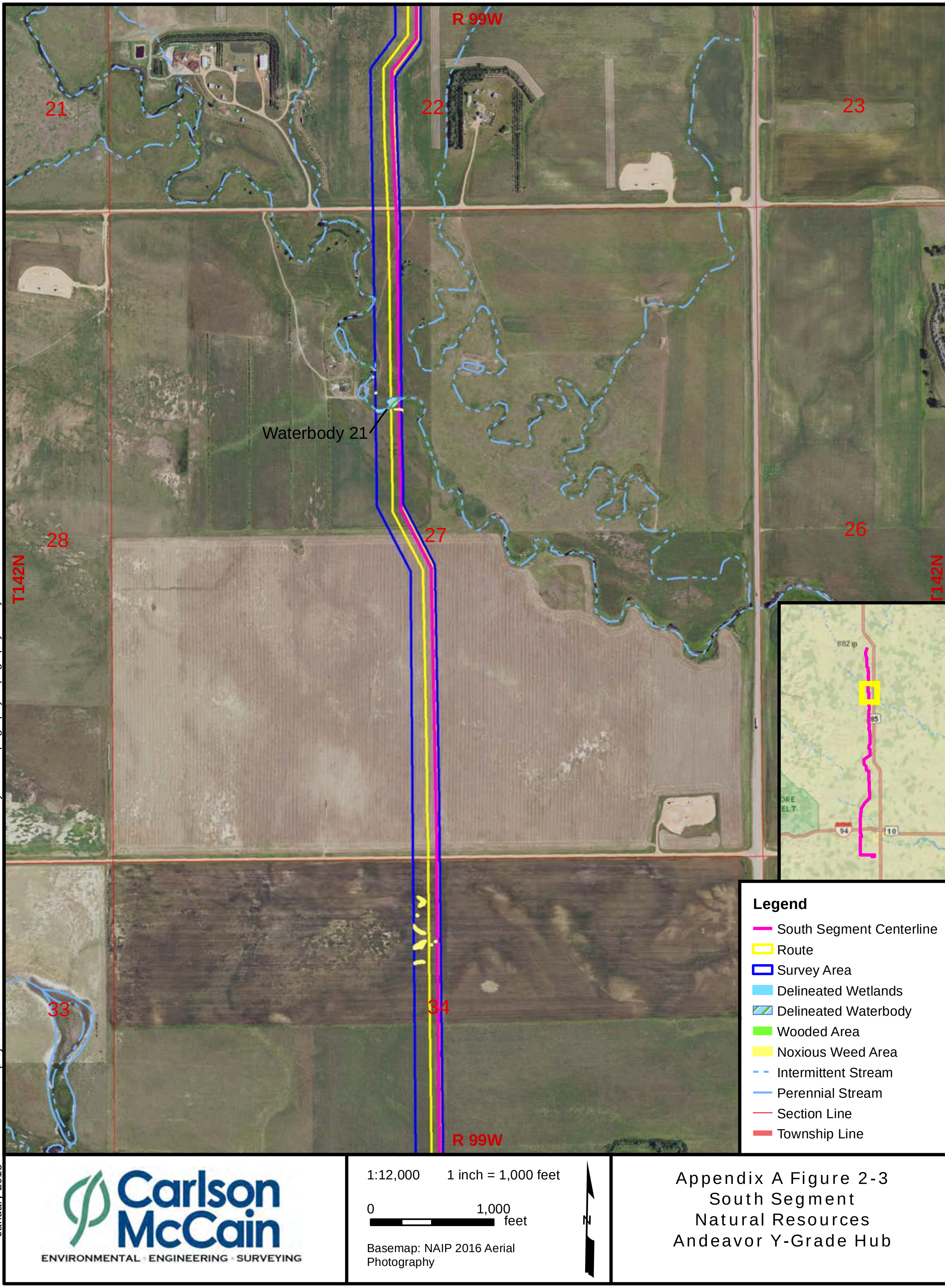
Appendix A Figure 2-2
South Segment
Natural Resources
Andeavor Y-Grade Hub



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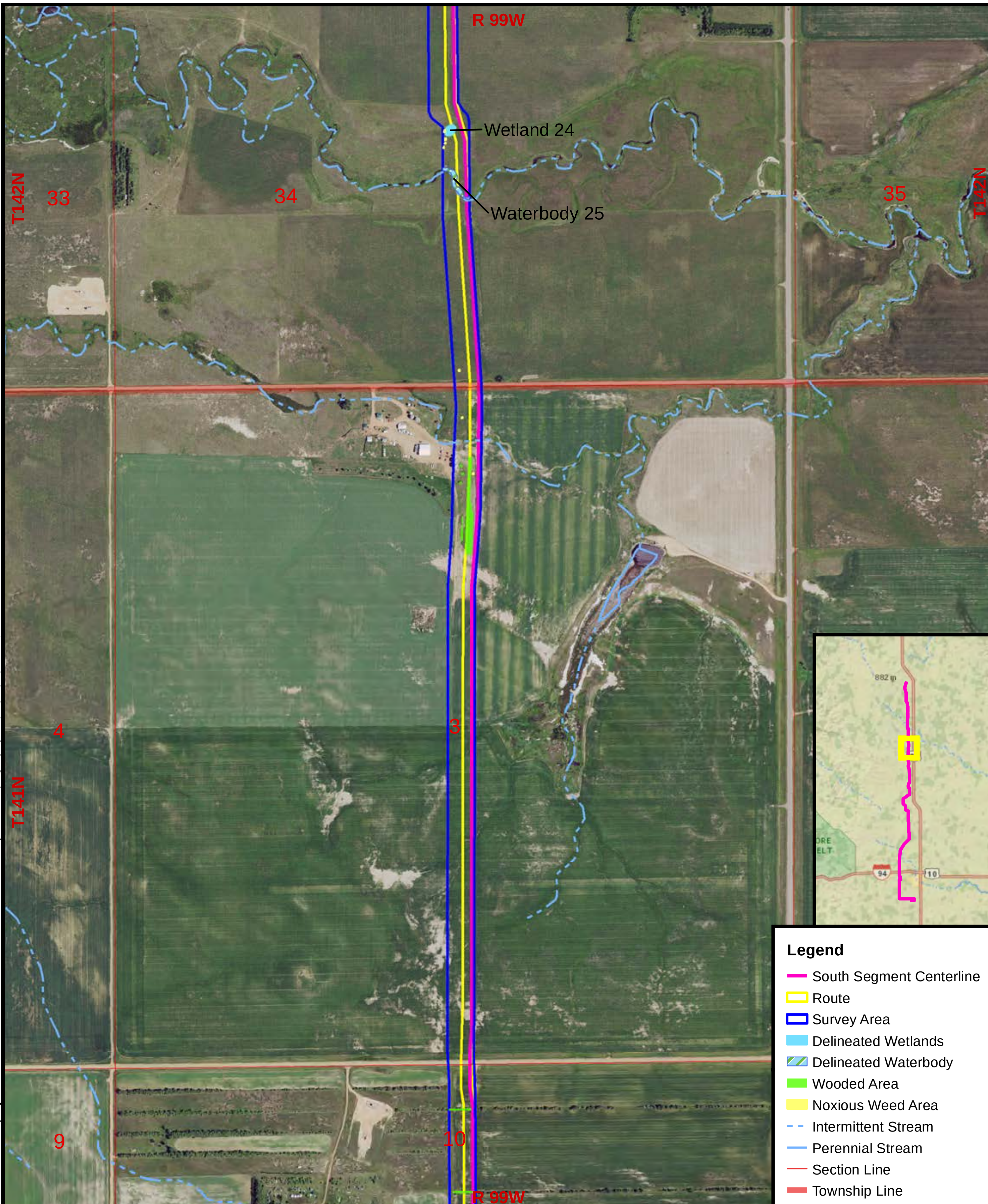
Appendix A Figure 2-3
South Segment
Natural Resources
Andeavor Y-Grade Hub



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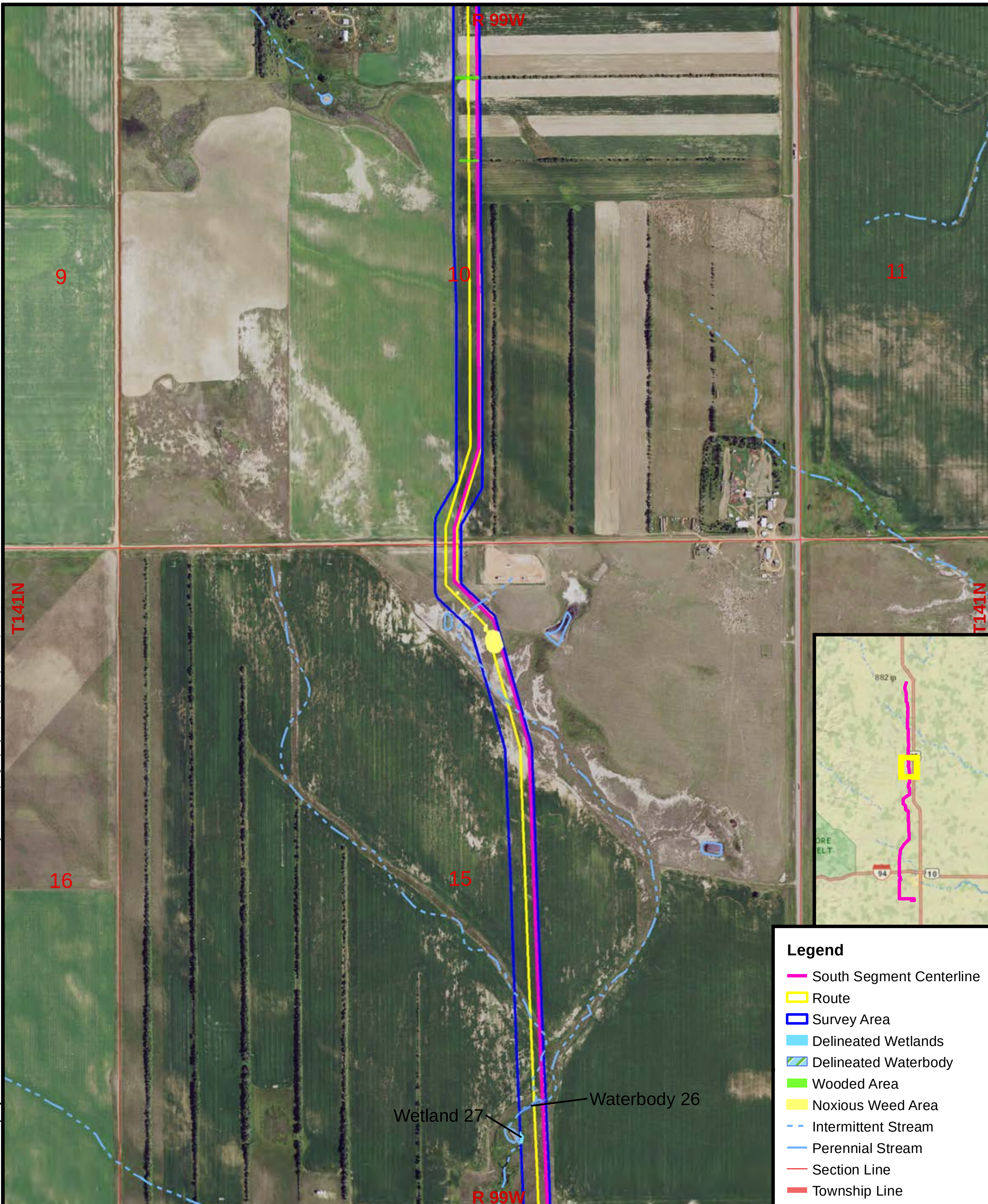
Appendix A Figure 2-4
South Segment
Natural Resources
Andeavor Y-Grade Hub



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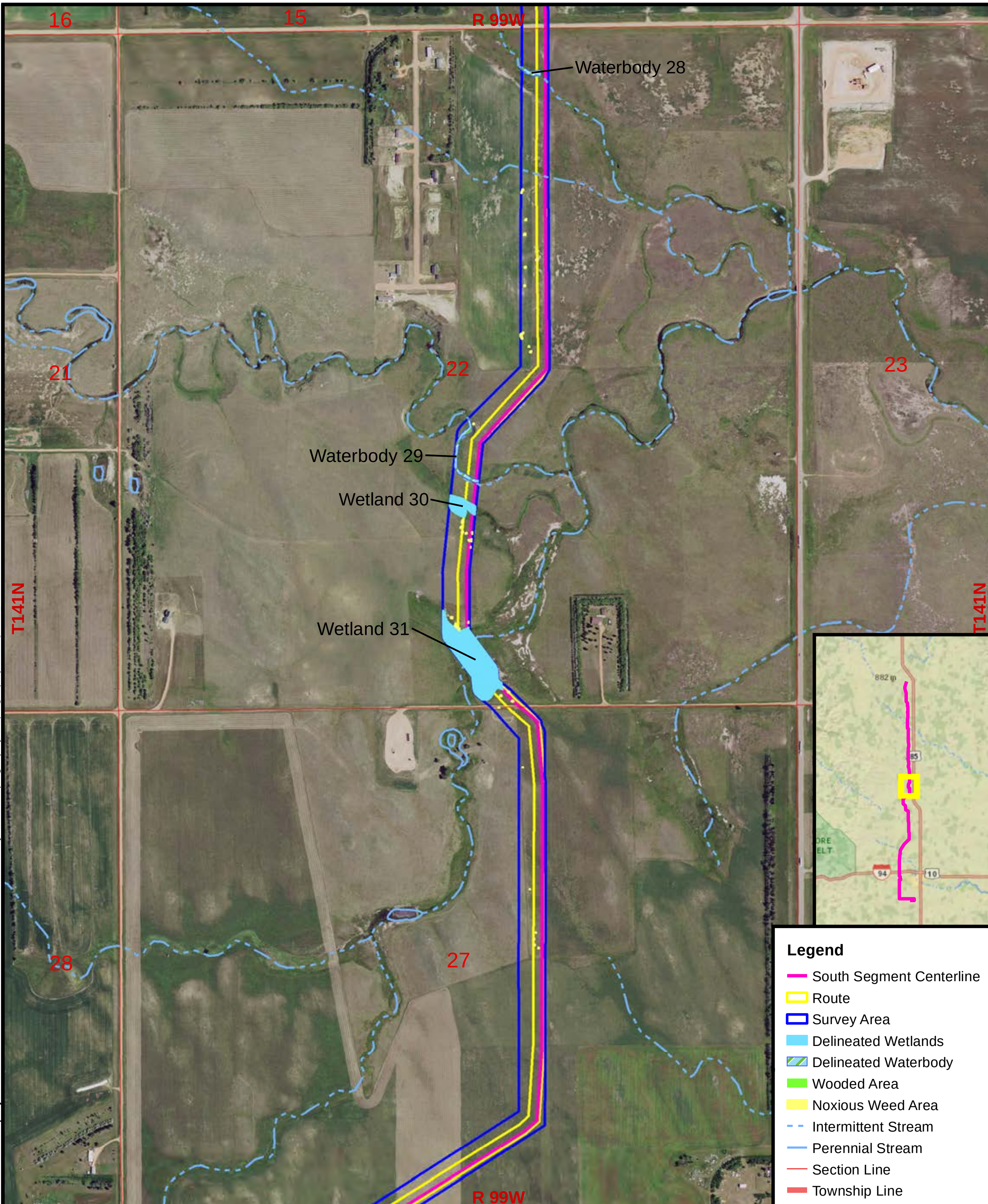
Appendix A Figure 2-5
South Segment
Natural Resources
Andeavor Y-Grade Hub



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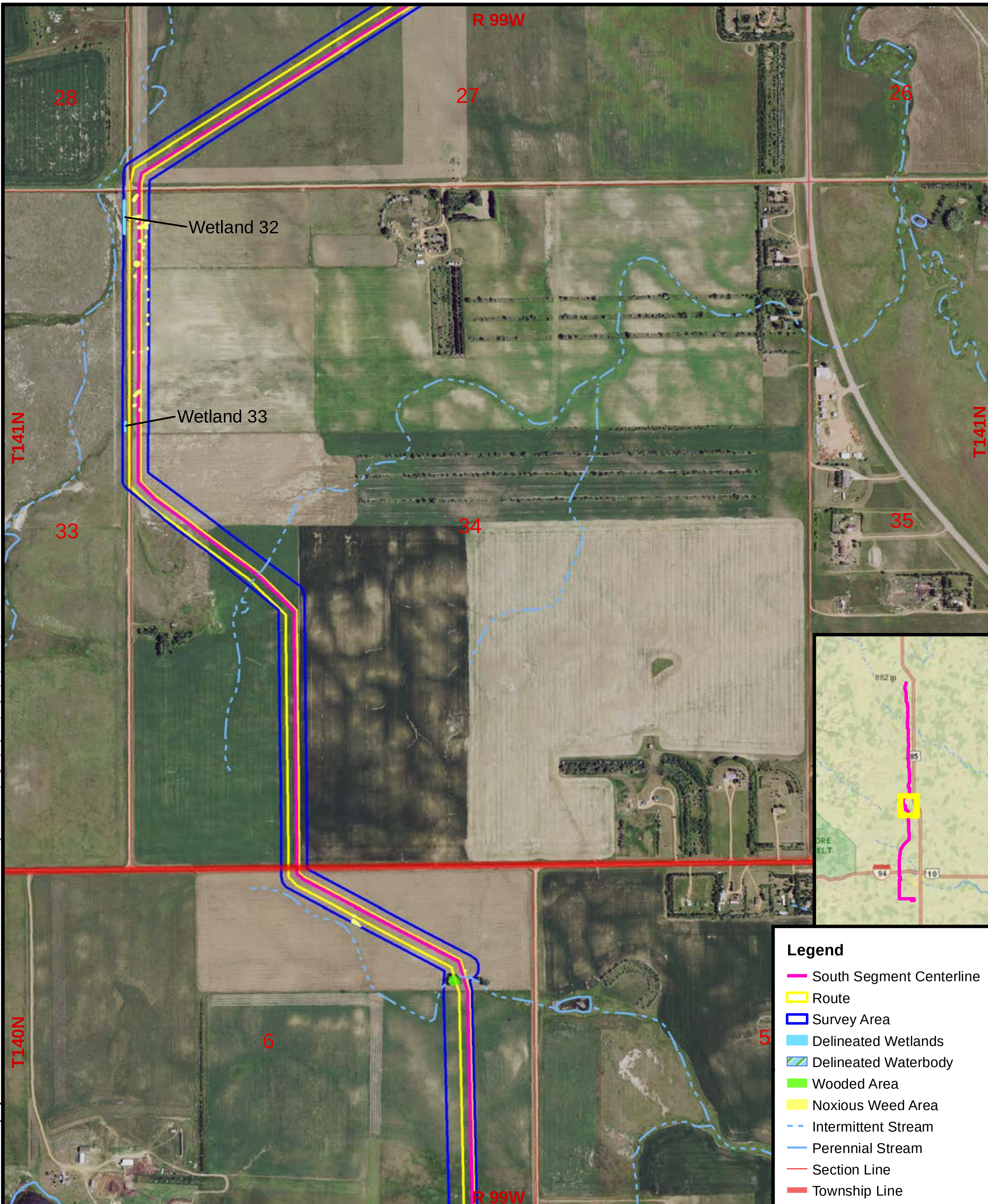
Appendix A Figure 2-6
South Segment
Natural Resources
Andeavor Y-Grade Hub



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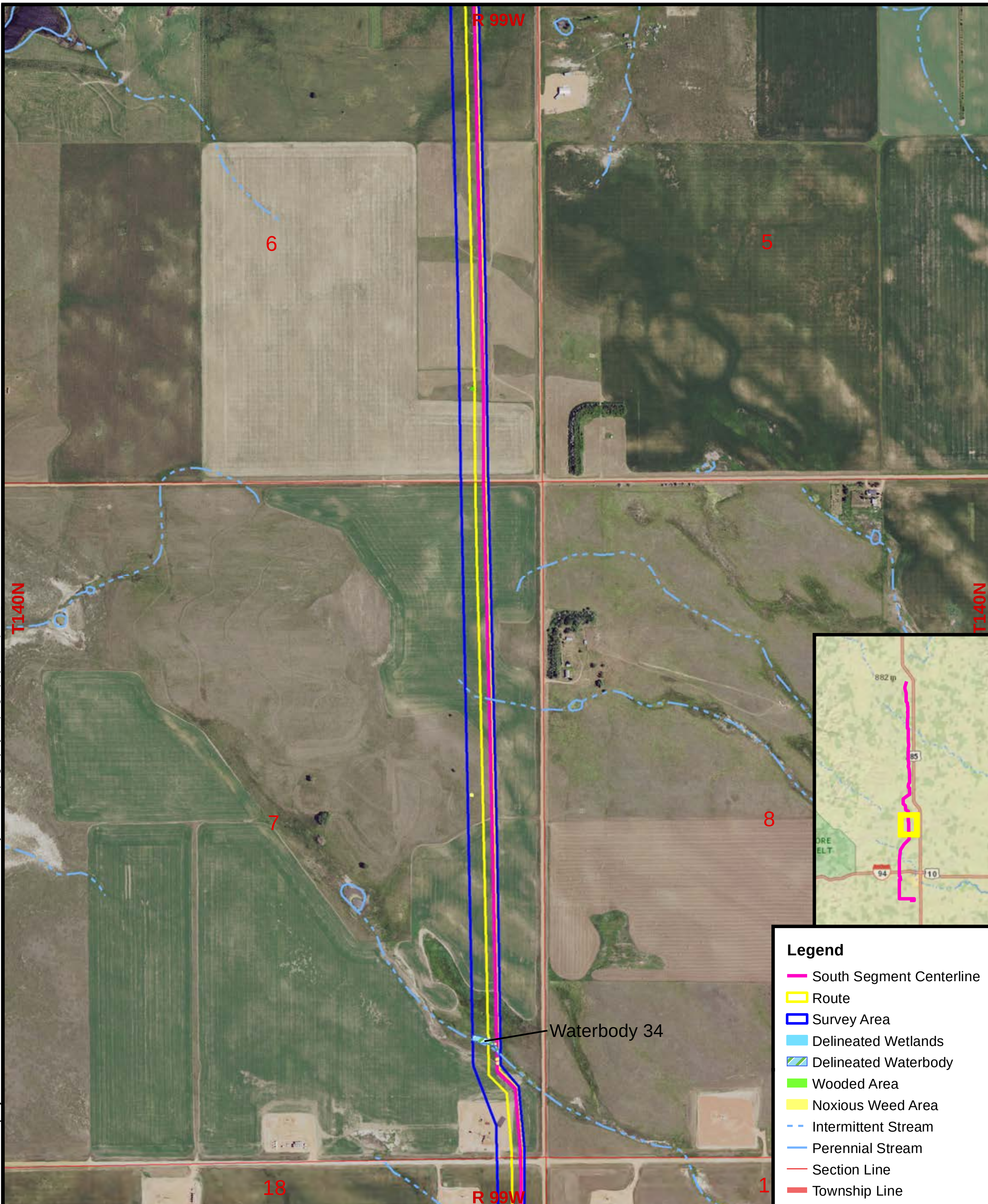
Appendix A Figure 2-7
South Segment
Natural Resources
Andeavor Y-Grade Hub



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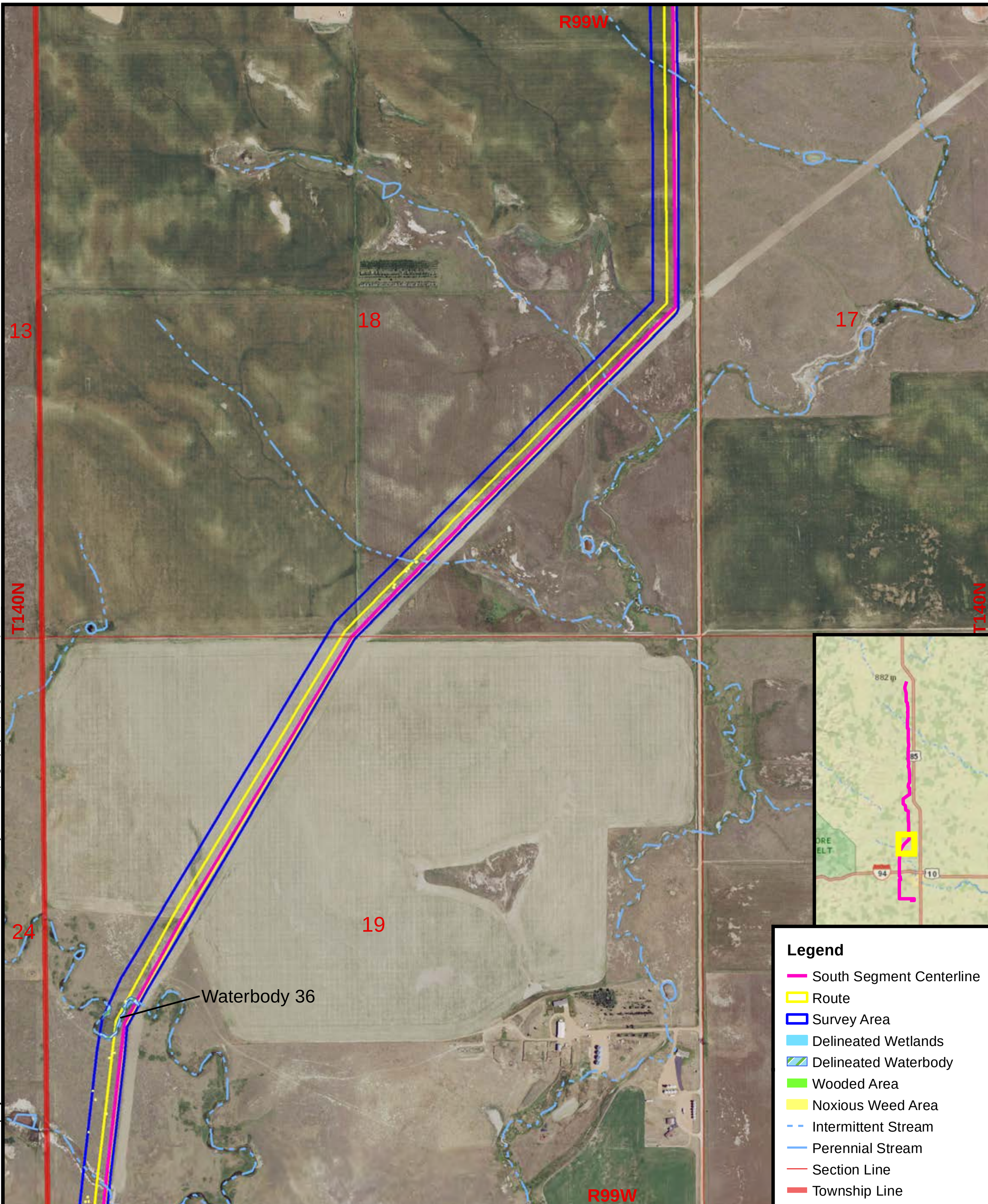
Appendix A Figure 2-8
South Segment
Natural Resources
Andeavor Y-Grade Hub



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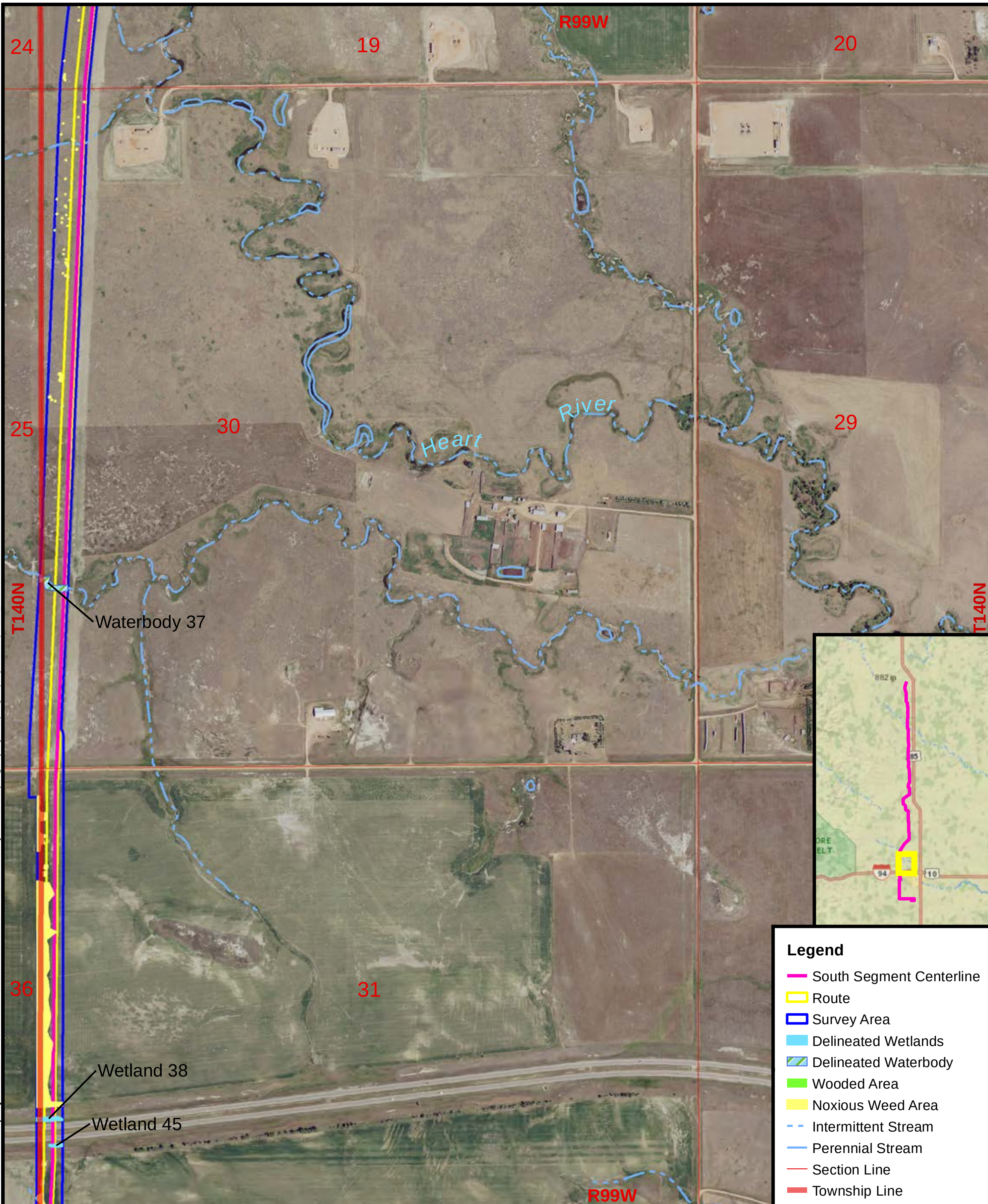
Appendix A Figure 2-9
South Segment
Natural Resources
Andeavor Y-Grade Hub



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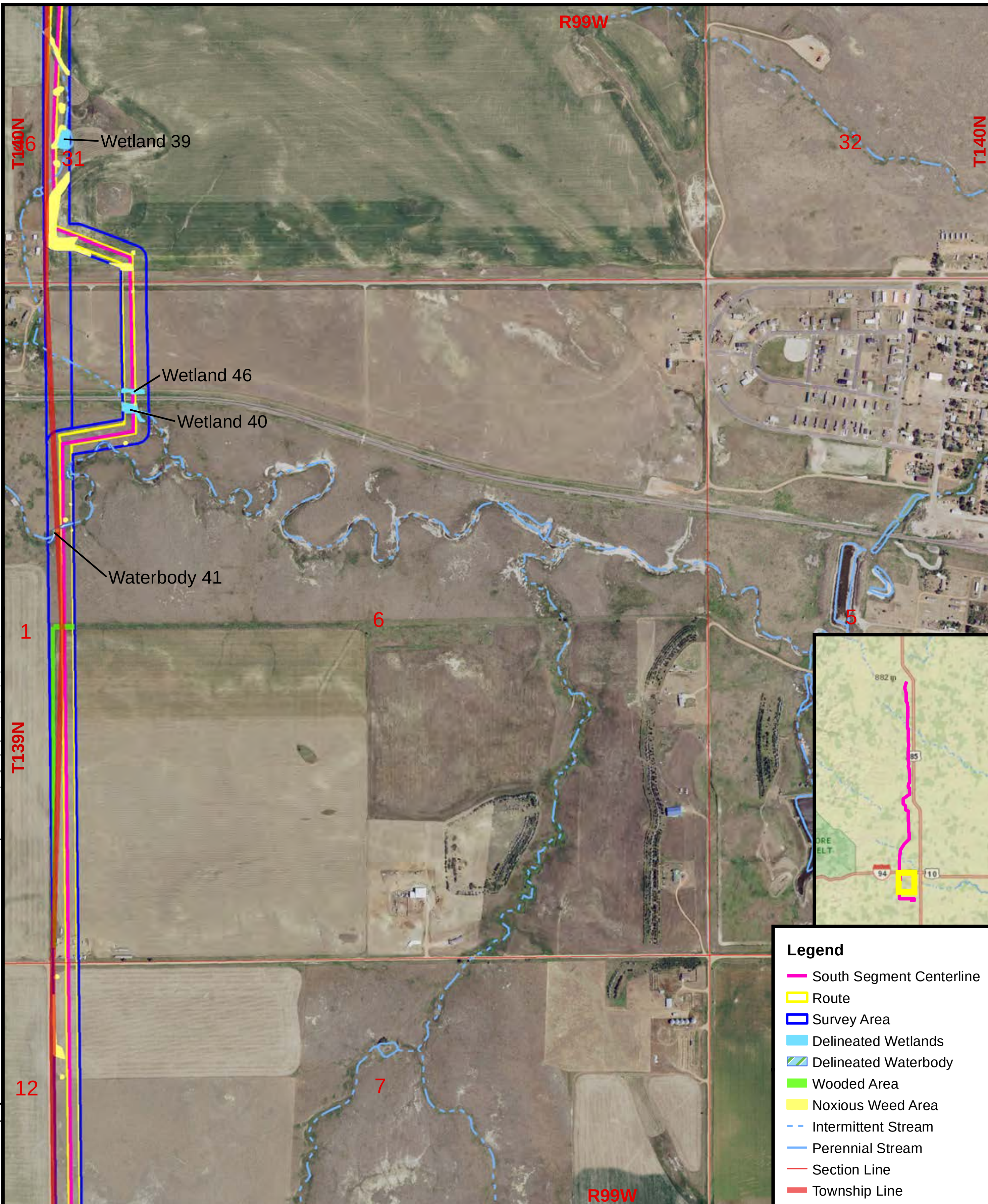
Appendix A Figure 2-10
South Segment
Natural Resources
Andeavor Y-Grade Hub



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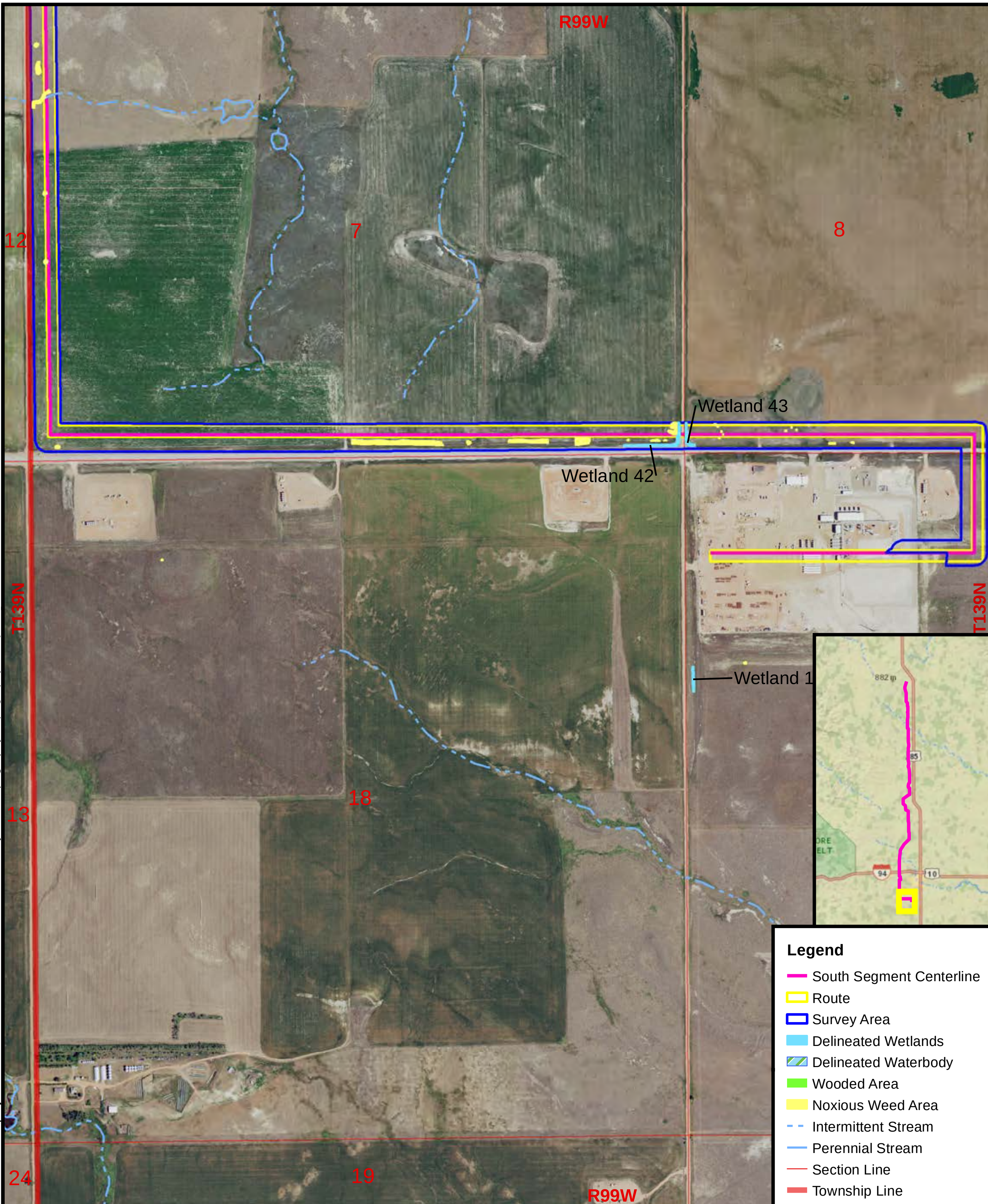
Appendix A Figure 2-11
South Segment
Natural Resources
Andeavor Y-Grade Hub



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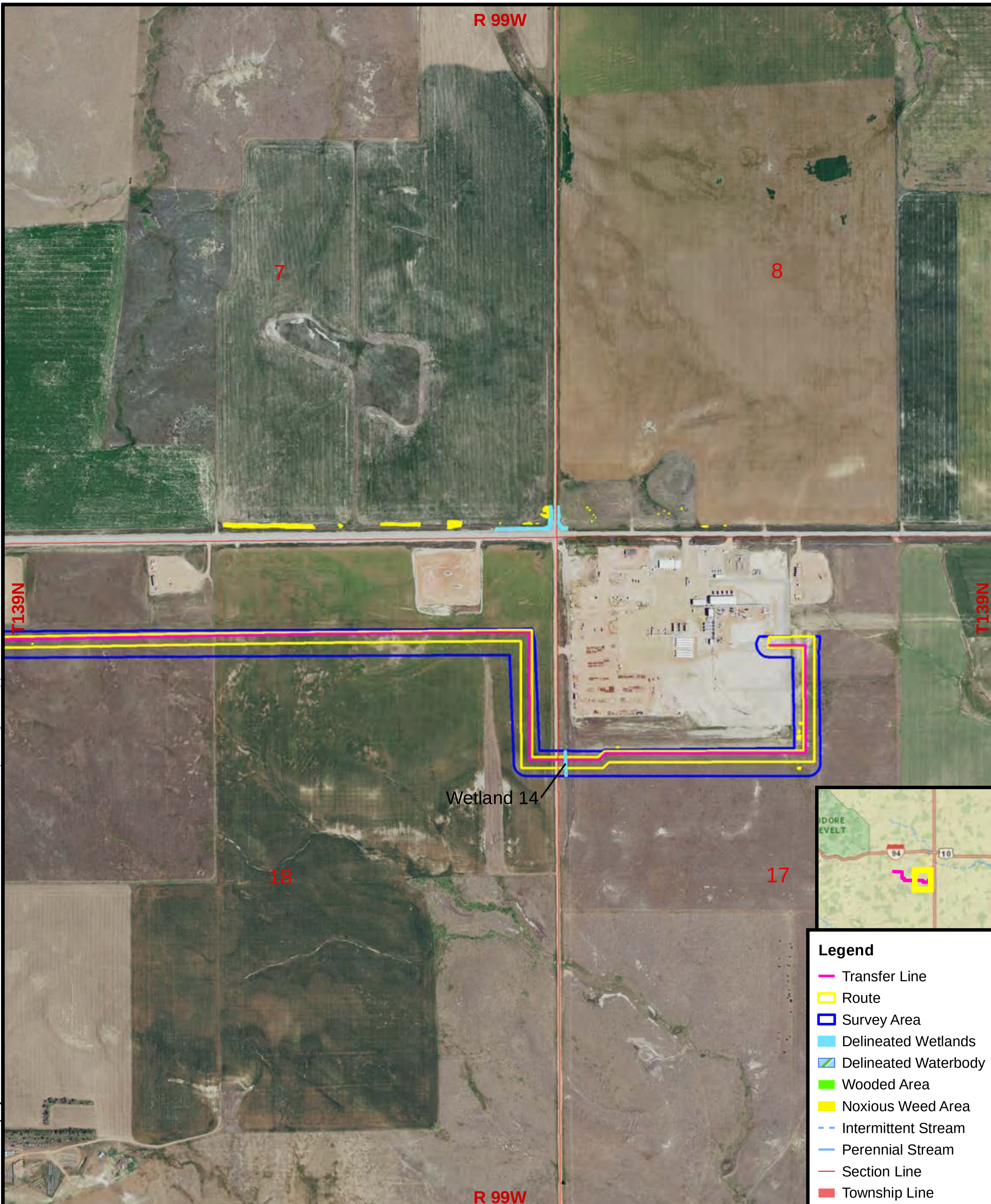
Appendix A Figure 2-12
South Segment
Natural Resources
Andeavor Y-Grade Hub



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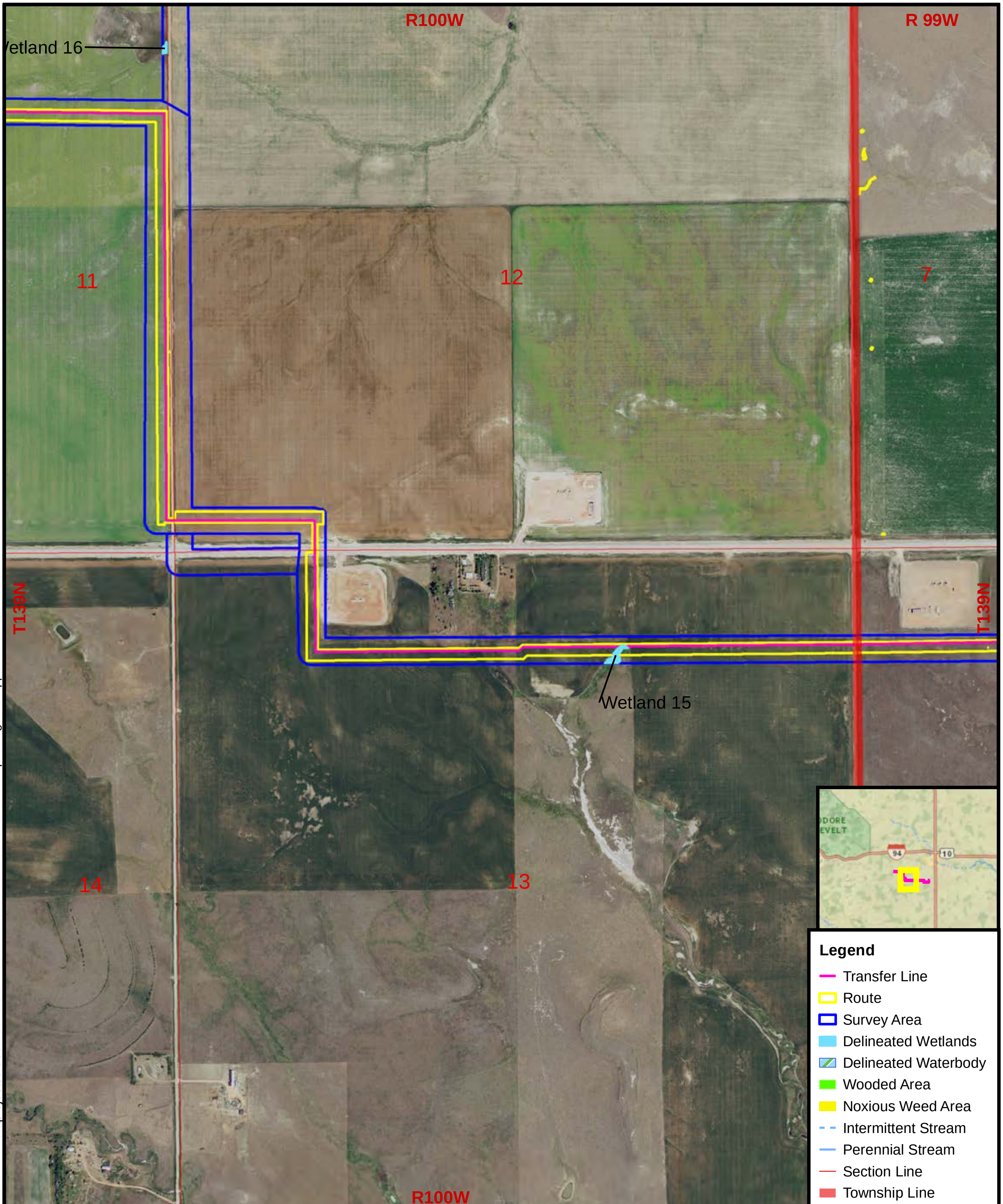
Appendix A Figure 3-1
Transfer Line
Natural Resources
Andeavor Y-Grade Hub



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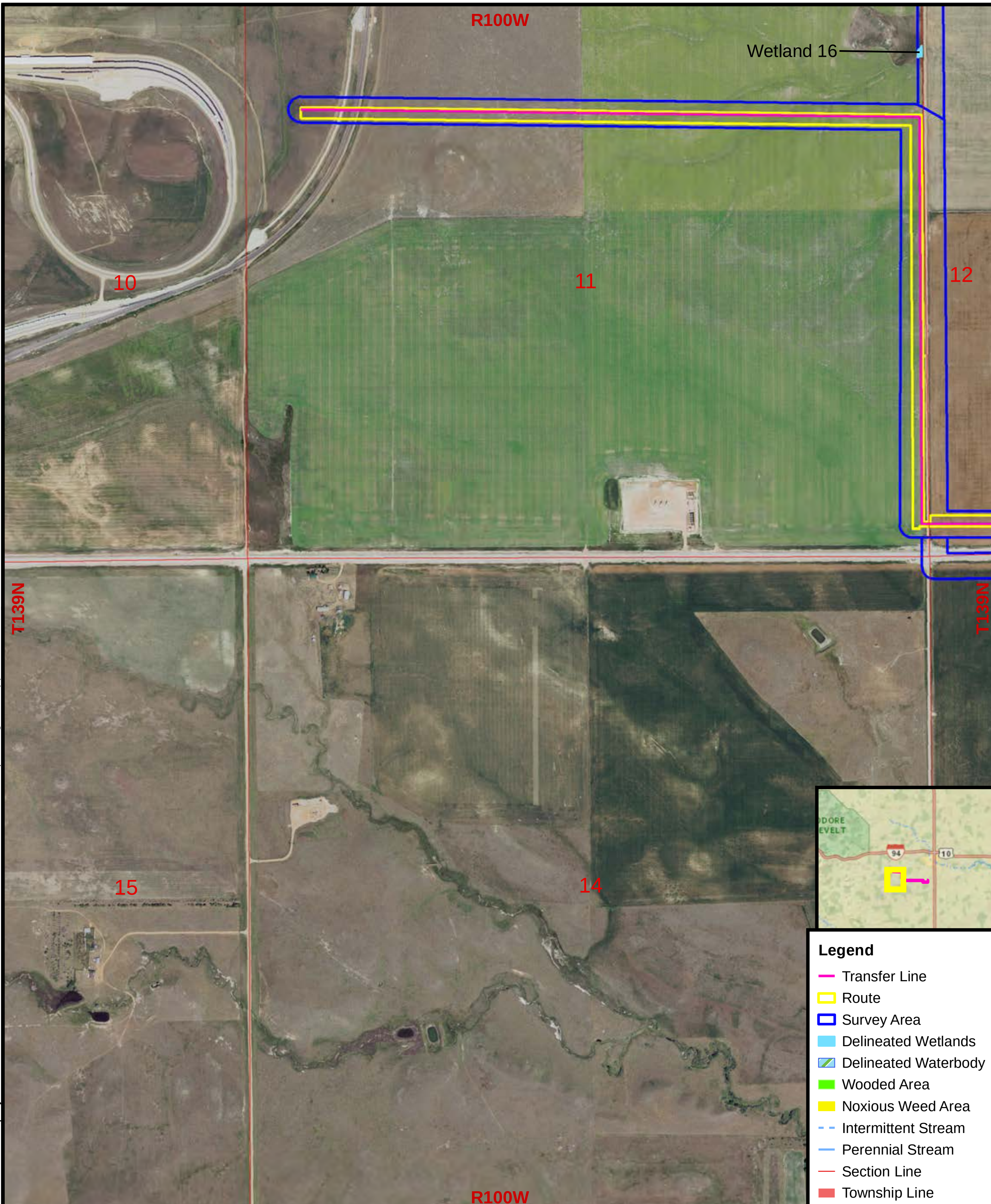
Appendix A Figure 3-2
Transfer Line
Natural Resources
Andeavor Y-Grade Hub



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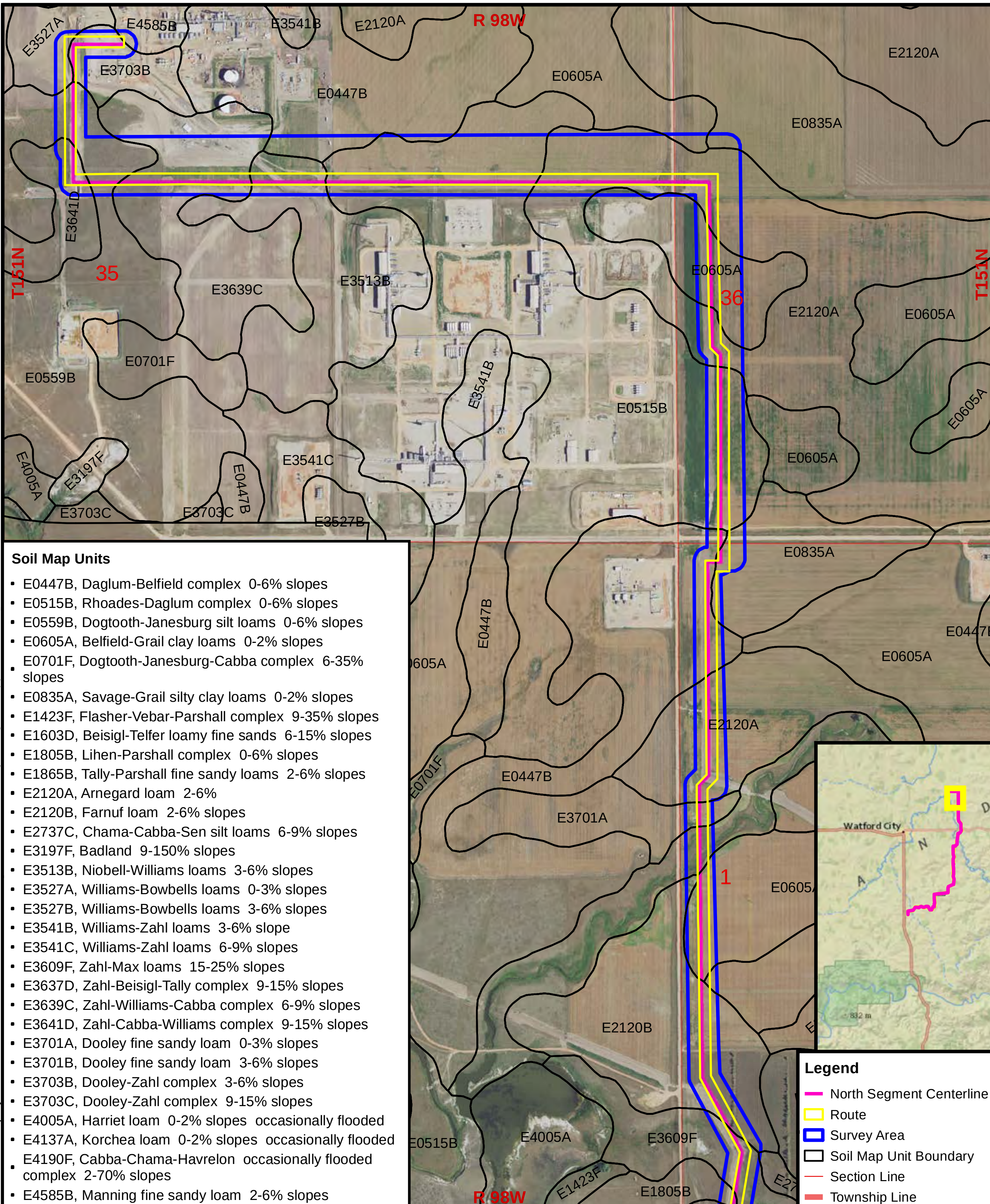
Appendix A Figure 3-3
Transfer Line
Natural Resources
Andeavor Y-Grade Hub

Appendix B

Andeavor Y-Grade Hub Project
Soil Map Unit Figures



Soil Map Units

- E0447B, Daglum-Belfield complex 0-6% slopes
- E0515B, Rhoades-Daglum complex 0-6% slopes
- E0559B, Dogtooth-Janesburg silt loams 0-6% slopes
- E0605A, Belfield-Grail clay loams 0-2% slopes
- E0701F, Dogtooth-Janesburg-Cabba complex 6-35% slopes
- E0835A, Savage-Grail silty clay loams 0-2% slopes
- E1423F, Flasher-Vebar-Parshall complex 9-35% slopes
- E1603D, Beisigl-Telfer loamy fine sands 6-15% slopes
- E1805B, Lihen-Parshall complex 0-6% slopes
- E1865B, Tally-Parshall fine sandy loams 2-6% slopes
- E2120A, Arnegard loam 2-6%
- E2120B, Farnuf loam 2-6% slopes
- E2737C, Chama-Cabba-Sen silt loams 6-9% slopes
- E3197F, Badland 9-150% slopes
- E3513B, Niobell-Williams loams 3-6% slopes
- E3527A, Williams-Bowbells loams 0-3% slopes
- E3527B, Williams-Bowbells loams 3-6% slopes
- E3541B, Williams-Zahl loams 3-6% slope
- E3541C, Williams-Zahl loams 6-9% slopes
- E3609F, Zahl-Max loams 15-25% slopes
- E3637D, Zahl-Beisigl-Tally complex 9-15% slopes
- E3639C, Zahl-Williams-Cabba complex 6-9% slopes
- E3641D, Zahl-Cabba-Williams complex 9-15% slopes
- E3701A, Dooley fine sandy loam 0-3% slopes
- E3701B, Dooley fine sandy loam 3-6% slopes
- E3703B, Dooley-Zahl complex 3-6% slopes
- E3703C, Dooley-Zahl complex 9-15% slopes
- E4005A, Harriet loam 0-2% slopes occasionally flooded
- E4137A, Korchea loam 0-2% slopes occasionally flooded
- E4190F, Cabba-Chama-Havrelon occasionally flooded complex 2-70% slopes
- E4585B, Manning fine sandy loam 2-6% slopes

Legend

- North Segment Centerline
- Route
- Survey Area
- Soil Map Unit Boundary
- Section Line
- Township Line

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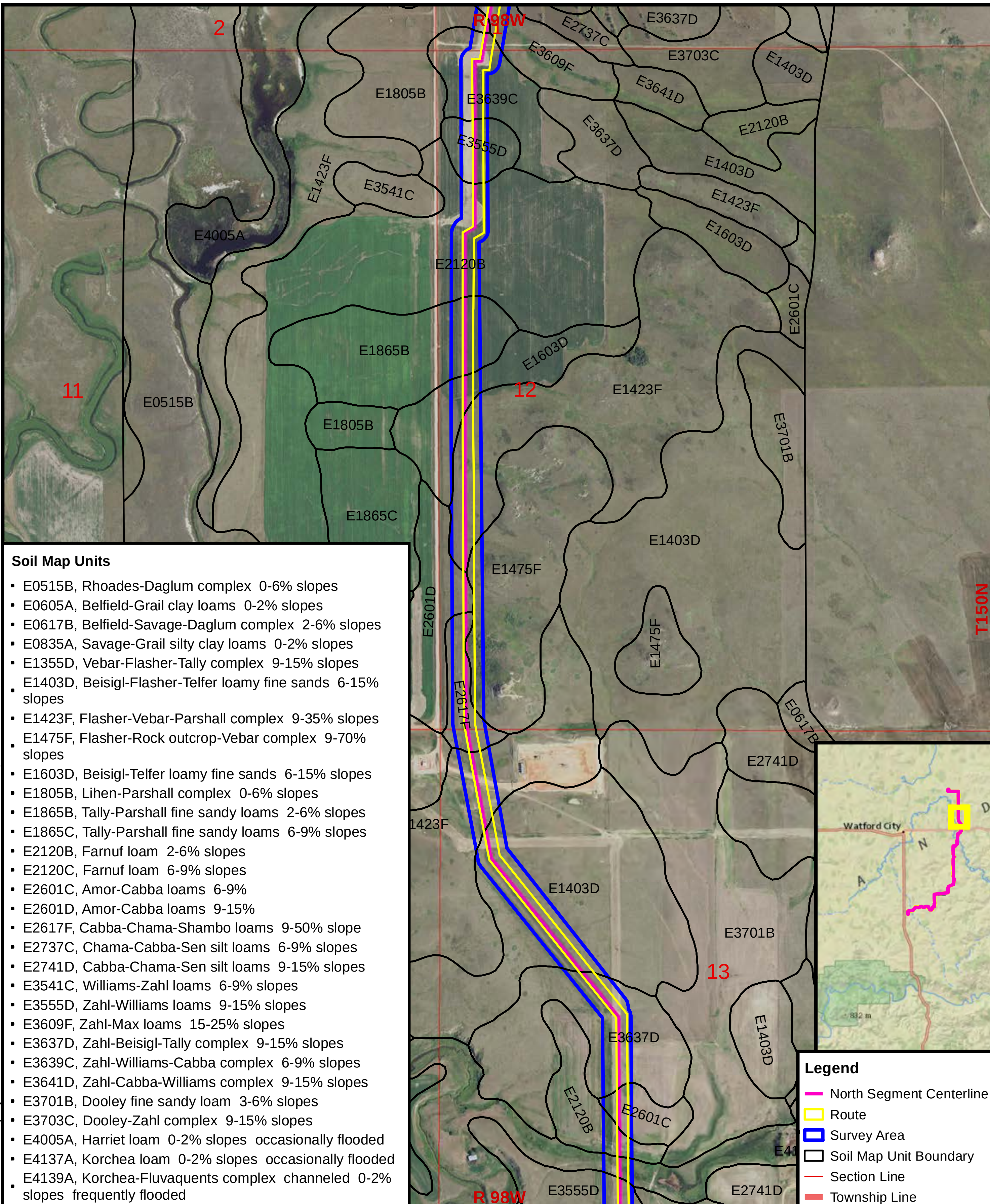
Appendix B Figure 1-1
North Segment
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0515B, Rhoades-Daglum complex 0-6% slopes
- E0605A, Belfield-Grail clay loams 0-2% slopes
- E0617B, Belfield-Savage-Daglum complex 2-6% slopes
- E0835A, Savage-Grail silty clay loams 0-2% slopes
- E1355D, Vebar-Flasher-Tally complex 9-15% slopes
- E1403D, Beisigl-Flasher-Telfer loamy fine sands 6-15% slopes
- E1423F, Flasher-Vebar-Parshall complex 9-35% slopes
- E1475F, Flasher-Rock outcrop-Vebar complex 9-70% slopes
- E1603D, Beisigl-Telfer loamy fine sands 6-15% slopes
- E1805B, Lihen-Parshall complex 0-6% slopes
- E1865B, Tally-Parshall fine sandy loams 2-6% slopes
- E1865C, Tally-Parshall fine sandy loams 6-9% slopes
- E2120B, Farnuf loam 2-6% slopes
- E2120C, Farnuf loam 6-9% slopes
- E2601C, Amor-Cabba loams 6-9%
- E2601D, Amor-Cabba loams 9-15%
- E2617F, Cabba-Chama-Shambo loams 9-50% slope
- E2737C, Chama-Cabba-Sen silt loams 6-9% slopes
- E2741D, Cabba-Chama-Sen silt loams 9-15% slopes
- E3541C, Williams-Zahl loams 6-9% slopes
- E3555D, Zahl-Williams loams 9-15% slopes
- E3609F, Zahl-Max loams 15-25% slopes
- E3637D, Zahl-Beisigl-Tally complex 9-15% slopes
- E3639C, Zahl-Williams-Cabba complex 6-9% slopes
- E3641D, Zahl-Cabba-Williams complex 9-15% slopes
- E3701B, Dooley fine sandy loam 3-6% slopes
- E3703C, Dooley-Zahl complex 9-15% slopes
- E4005A, Harriet loam 0-2% slopes occasionally flooded
- E4137A, Korchea loam 0-2% slopes occasionally flooded
- E4139A, Korchea-Fluvaquents complex channeled 0-2% slopes frequently flooded

Legend

- North Segment Centerline
- Route
- Survey Area
- Soil Map Unit Boundary
- Section Line
- Township Line

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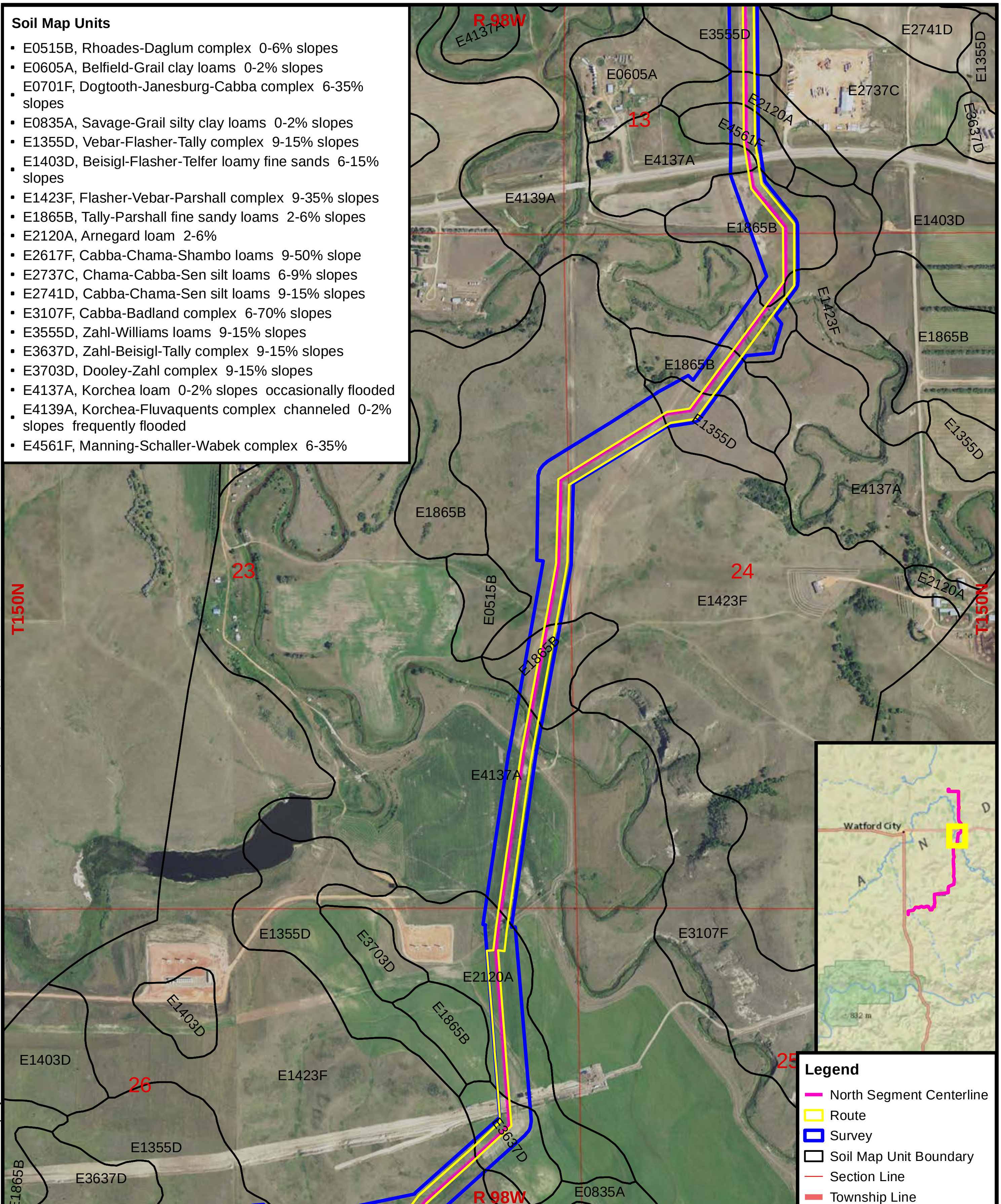
Appendix B Figure 1-2
North Segment
Soil Map Units
Andeavor Y-Grade Hub



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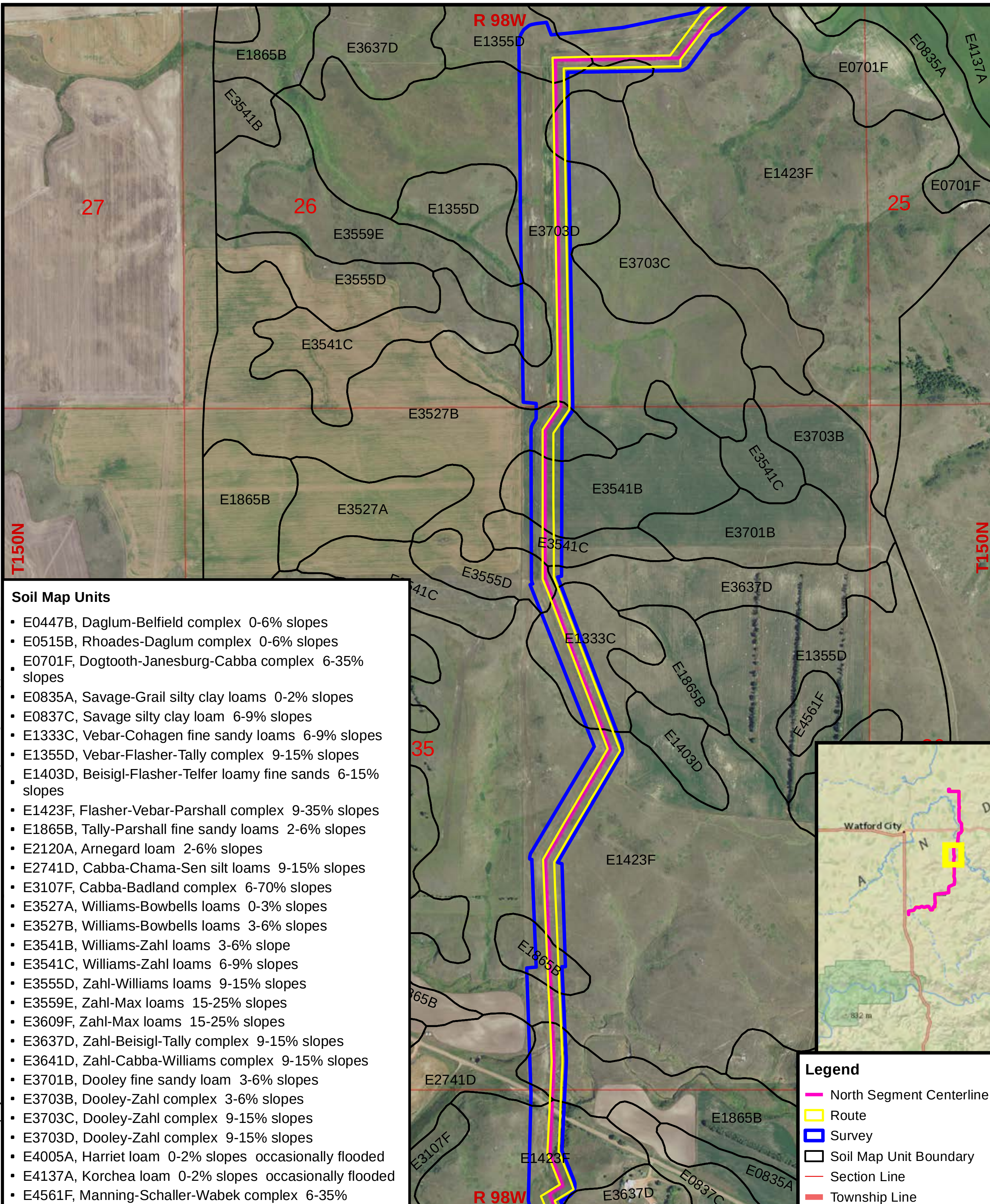
Appendix B Figure 1-3
North Segment
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0447B, Daglum-Belfield complex 0-6% slopes
- E0515B, Rhoades-Daglum complex 0-6% slopes
- E0701F, Dogtooth-Janesburg-Cabba complex 6-35% slopes
- E0835A, Savage-Grail silty clay loams 0-2% slopes
- E0837C, Savage silty clay loam 6-9% slopes
- E1333C, Vebar-Cohagen fine sandy loams 6-9% slopes
- E1355D, Vebar-Flasher-Tally complex 9-15% slopes
- E1403D, Beisigl-Flasher-Telfer loamy fine sands 6-15% slopes
- E1423F, Flasher-Vebar-Parshall complex 9-35% slopes
- E1865B, Tally-Parshall fine sandy loams 2-6% slopes
- E2120A, Arnegard loam 2-6% slopes
- E2741D, Cabba-Chama-Sen silt loams 9-15% slopes
- E3107F, Cabba-Badland complex 6-70% slopes
- E3527A, Williams-Bowbells loams 0-3% slopes
- E3527B, Williams-Bowbells loams 3-6% slopes
- E3541B, Williams-Zahl loams 3-6% slope
- E3541C, Williams-Zahl loams 6-9% slopes
- E3555D, Zahl-Williams loams 9-15% slopes
- E3559E, Zahl-Max loams 15-25% slopes
- E3609F, Zahl-Max loams 15-25% slopes
- E3637D, Zahl-Beisigl-Tally complex 9-15% slopes
- E3641D, Zahl-Cabba-Williams complex 9-15% slopes
- E3701B, Dooley fine sandy loam 3-6% slopes
- E3703B, Dooley-Zahl complex 3-6% slopes
- E3703C, Dooley-Zahl complex 9-15% slopes
- E3703D, Dooley-Zahl complex 9-15% slopes
- E4005A, Harriet loam 0-2% slopes occasionally flooded
- E4137A, Korchea loam 0-2% slopes occasionally flooded
- E4561F, Manning-Schaller-Wabek complex 6-35%

Legend

- North Segment Centerline
- Route
- Survey
- Soil Map Unit Boundary
- Section Line
- Township Line

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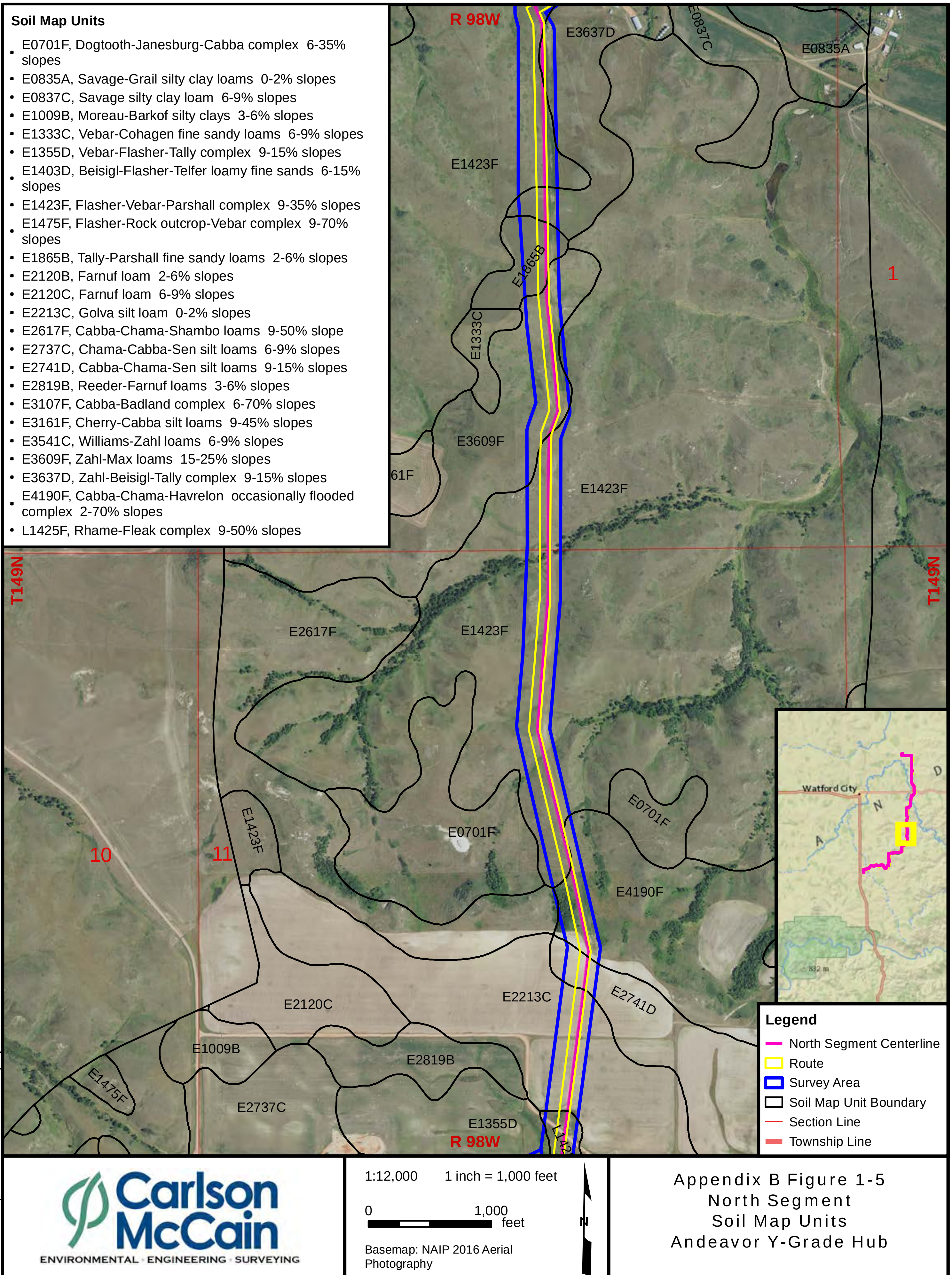
Appendix B Figure 1-4
North Segment
Soil Map Units
Andeavor Y-Grade Hub



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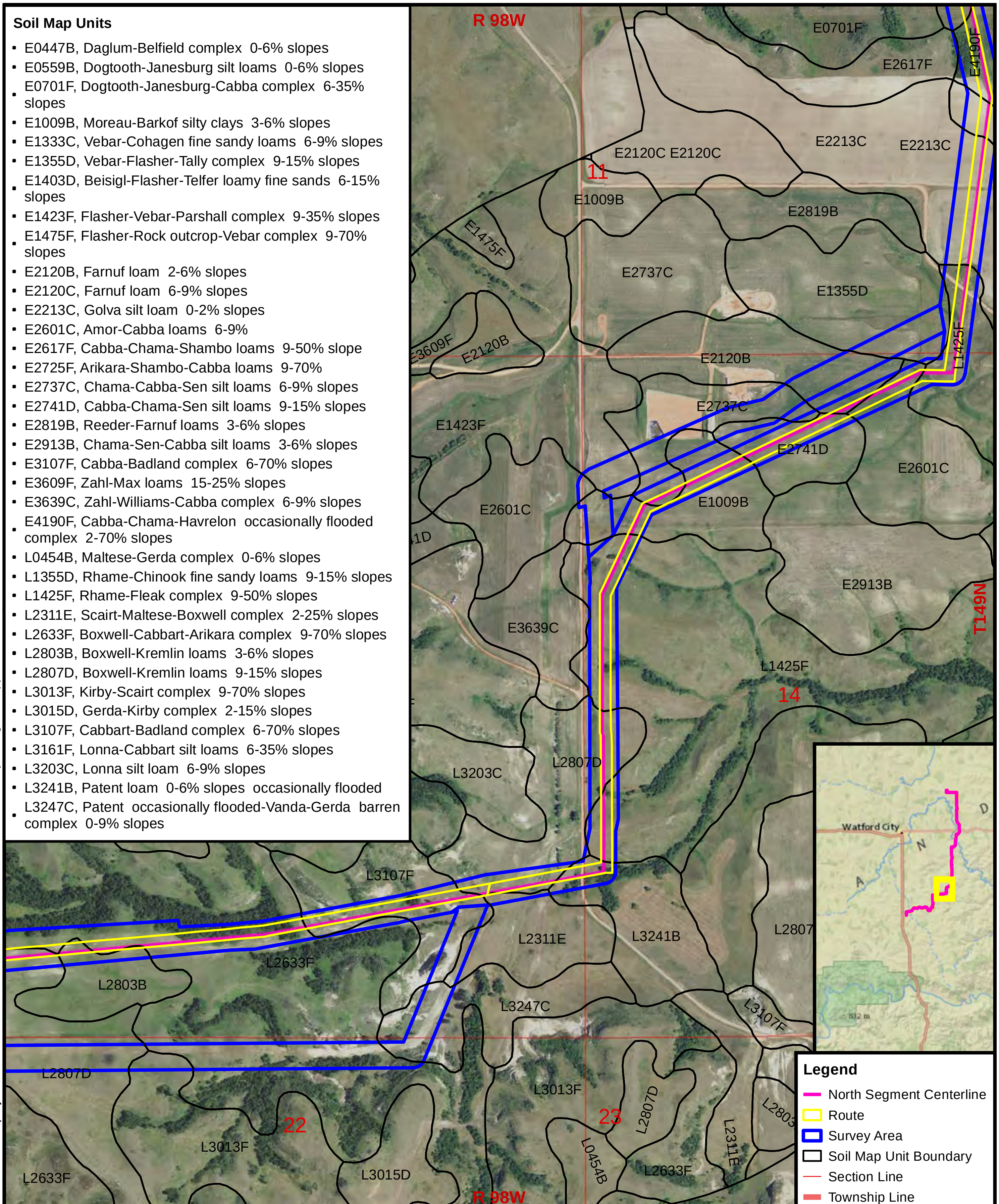
Appendix B Figure 1-5
North Segment
Soil Map Units
Andeavor Y-Grade Hub



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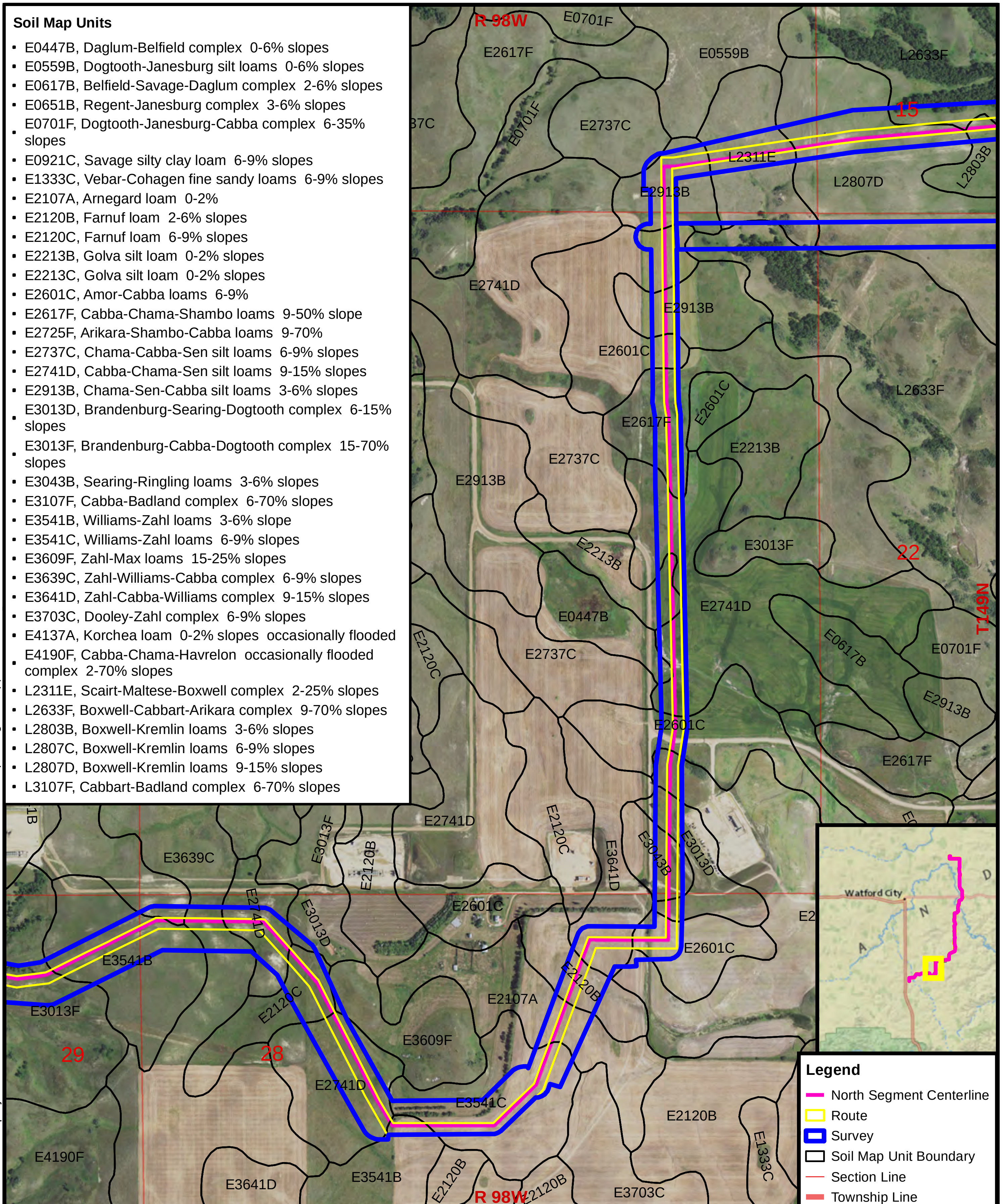
Appendix B Figure 1-6
North Segment
Soil Map Units
Andeavor Y-Grade Hub

Soil Map Units

- E0447B, Daglum-Belfield complex 0-6% slopes
- E0559B, Dogtooth-Janesburg silt loams 0-6% slopes
- E0617B, Belfield-Savage-Daglum complex 2-6% slopes
- E0651B, Regent-Janesburg complex 3-6% slopes
- E0701F, Dogtooth-Janesburg-Cabba complex 6-35% slopes
- E0921C, Savage silty clay loam 6-9% slopes
- E1333C, Vebar-Cohagen fine sandy loams 6-9% slopes
- E2107A, Arnegard loam 0-2%
- E2120B, Farnuf loam 2-6% slopes
- E2120C, Farnuf loam 6-9% slopes
- E2213B, Golva silt loam 0-2% slopes
- E2213C, Golva silt loam 0-2% slopes
- E2601C, Amor-Cabba loams 6-9%
- E2617F, Cabba-Chama-Shambo loams 9-50% slope
- E2725F, Arikara-Shambo-Cabba loams 9-70%
- E2737C, Chama-Cabba-Sen silt loams 6-9% slopes
- E2741D, Cabba-Chama-Sen silt loams 9-15% slopes
- E2913B, Chama-Sen-Cabba silt loams 3-6% slopes
- E3013D, Brandenburg-Searing-Dogtooth complex 6-15% slopes
- E3013F, Brandenburg-Cabba-Dogtooth complex 15-70% slopes
- E3043B, Searing-Ringling loams 3-6% slopes
- E3107F, Cabba-Badland complex 6-70% slopes
- E3541B, Williams-Zahl loams 3-6% slope
- E3541C, Williams-Zahl loams 6-9% slopes
- E3609F, Zahl-Max loams 15-25% slopes
- E3639C, Zahl-Williams-Cabba complex 6-9% slopes
- E3641D, Zahl-Cabba-Williams complex 9-15% slopes
- E3703C, Dooley-Zahl complex 6-9% slopes
- E4137A, Korchea loam 0-2% slopes occasionally flooded
- E4190F, Cabba-Chama-Havrelon occasionally flooded complex 2-70% slopes
- L2311E, Scairt-Maltese-Boxwell complex 2-25% slopes
- L2633F, Boxwell-Cabbart-Arikara complex 9-70% slopes
- L2803B, Boxwell-Kremlin loams 3-6% slopes
- L2807C, Boxwell-Kremlin loams 6-9% slopes
- L2807D, Boxwell-Kremlin loams 9-15% slopes
- L3107F, Cabbart-Badland complex 6-70% slopes



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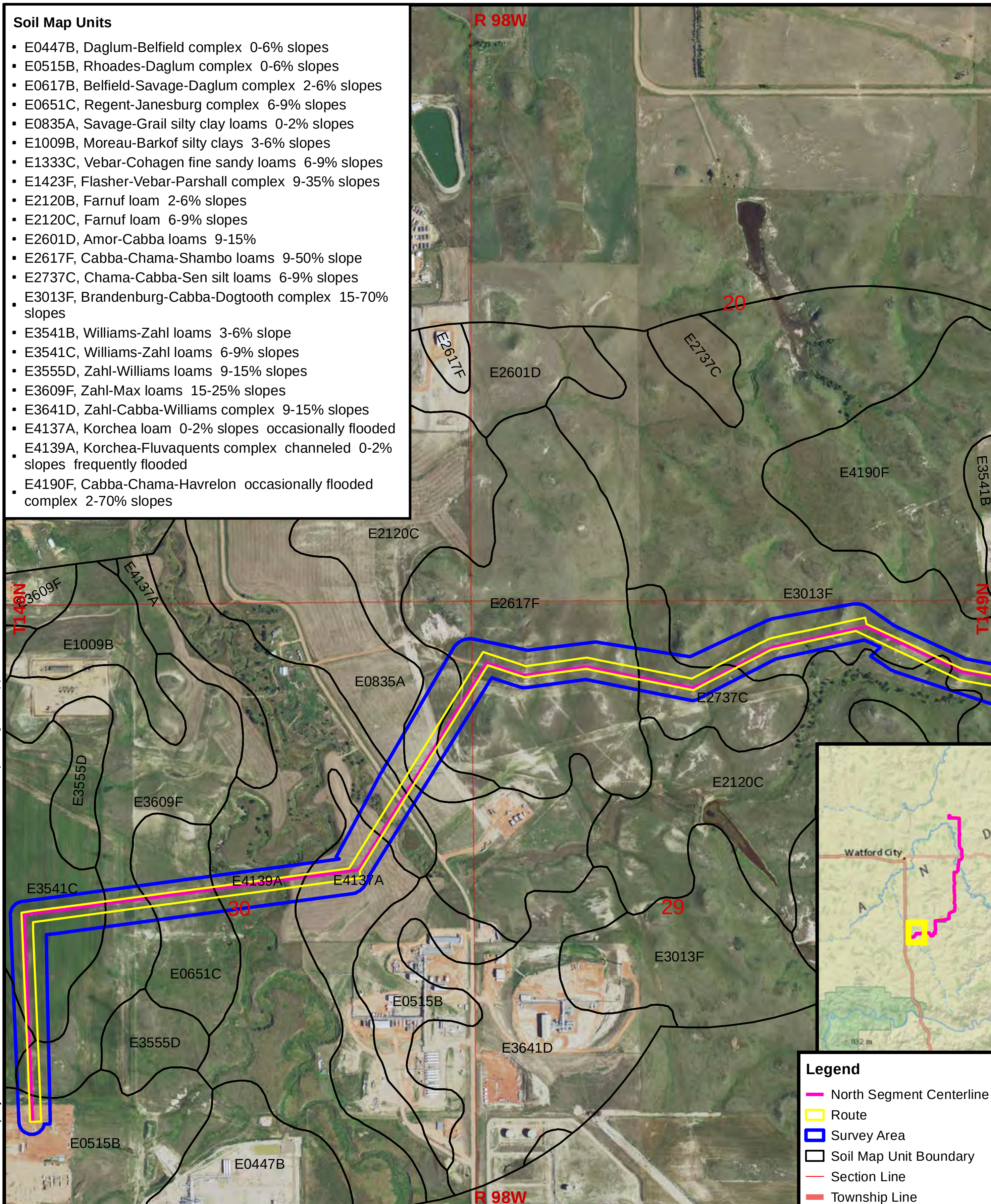
Appendix B Figure 1-7
North Segment
Soil Map Units
Andeavor Y-Grade Hub



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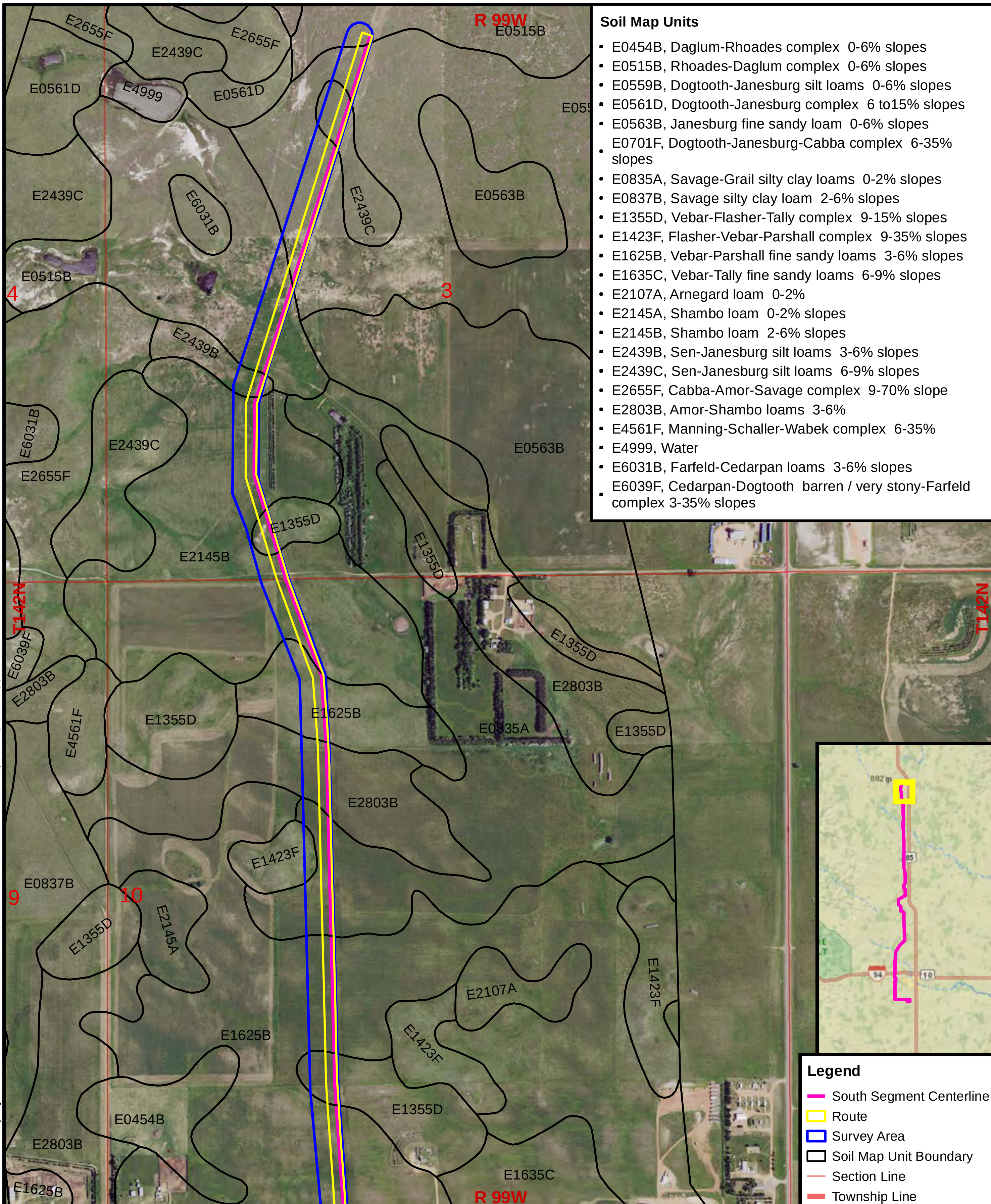
Appendix B Figure 1-8
North Segment
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0454B, Daglum-Rhoades complex 0-6% slopes
- E0515B, Rhoades-Daglum complex 0-6% slopes
- E0559B, Dogtooth-Janesburg silt loams 0-6% slopes
- E0561D, Dogtooth-Janesburg complex 6 to15% slopes
- E0563B, Janesburg fine sandy loam 0-6% slopes
- E0701F, Dogtooth-Janesburg-Cabba complex 6-35% slopes
- E0835A, Savage-Grail silty clay loams 0-2% slopes
- E0837B, Savage silty clay loam 2-6% slopes
- E1355D, Vebar-Flasher-Tally complex 9-15% slopes
- E1423F, Flasher-Vebar-Parshall complex 9-35% slopes
- E1625B, Vebar-Parshall fine sandy loams 3-6% slopes
- E1635C, Vebar-Tally fine sandy loams 6-9% slopes
- E2107A, Arnegard loam 0-2%
- E2145A, Shambo loam 0-2% slopes
- E2145B, Shambo loam 2-6% slopes
- E2439B, Sen-Janesburg silt loams 3-6% slopes
- E2439C, Sen-Janesburg silt loams 6-9% slopes
- E2655F, Cabba-Amor-Savage complex 9-70% slope
- E2803B, Amor-Shambo loams 3-6%
- E4561F, Manning-Schaller-Wabek complex 6-35%
- E4999, Water
- E6031B, Farfeld-Cedarpan loams 3-6% slopes
- E6039F, Cedarpan-Dogtooth barren / very stony-Farfeld complex 3-35% slopes

Legend

- South Segment Centerline
- Route
- Survey Area
- Soil Map Unit Boundary
- Section Line
- Township Line

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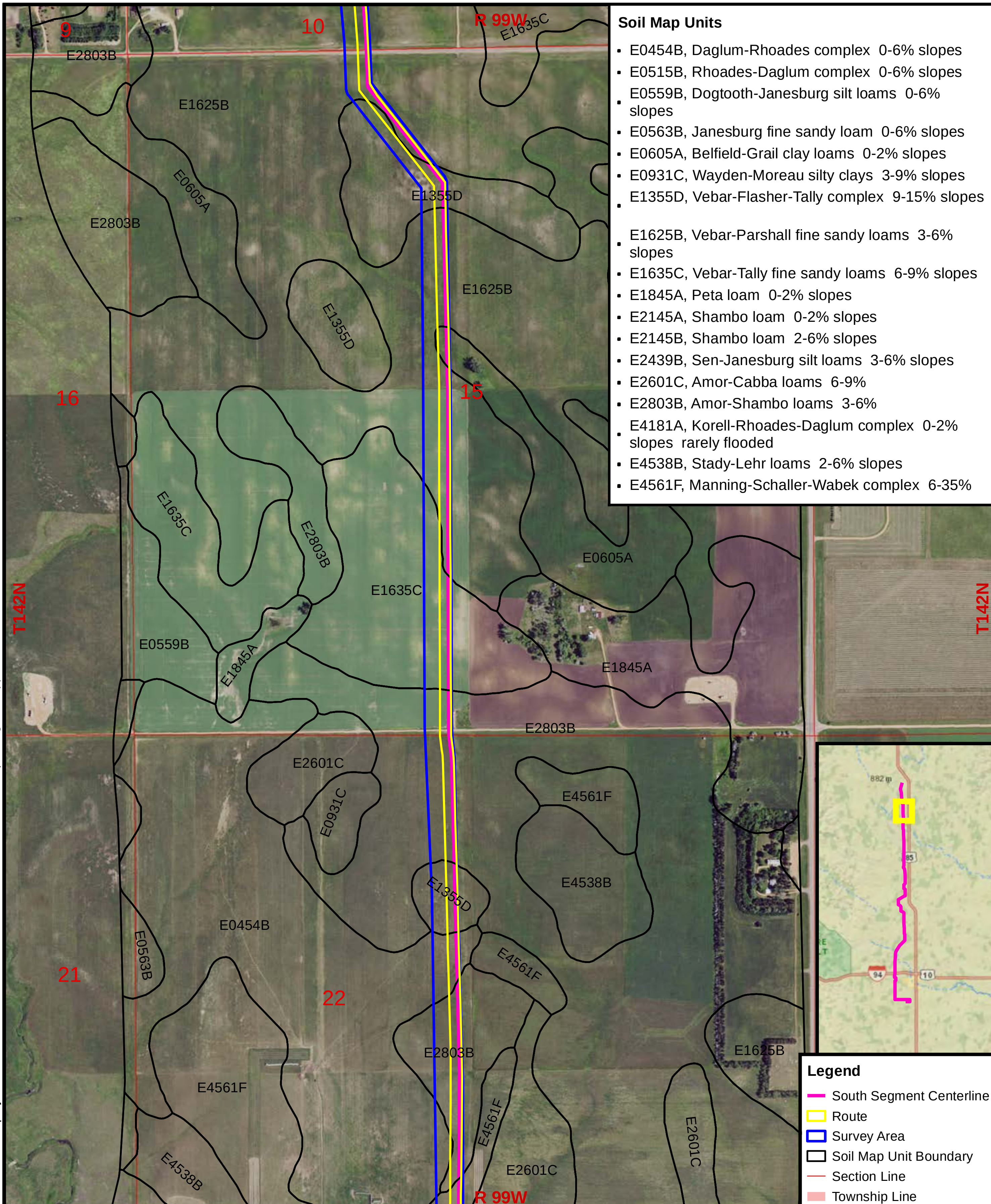
Appendix B Figure 2-1
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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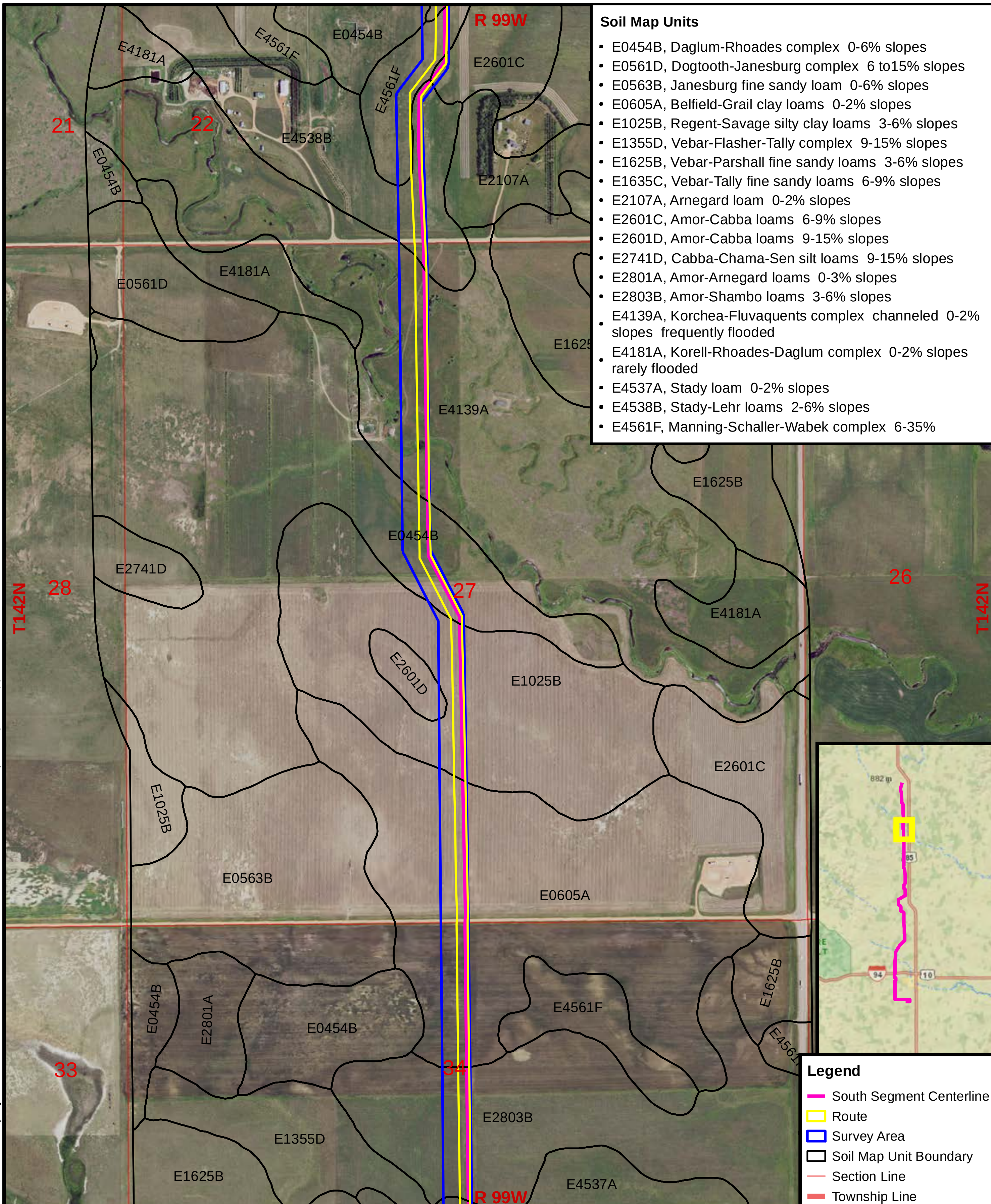
Appendix B Figure 2-2
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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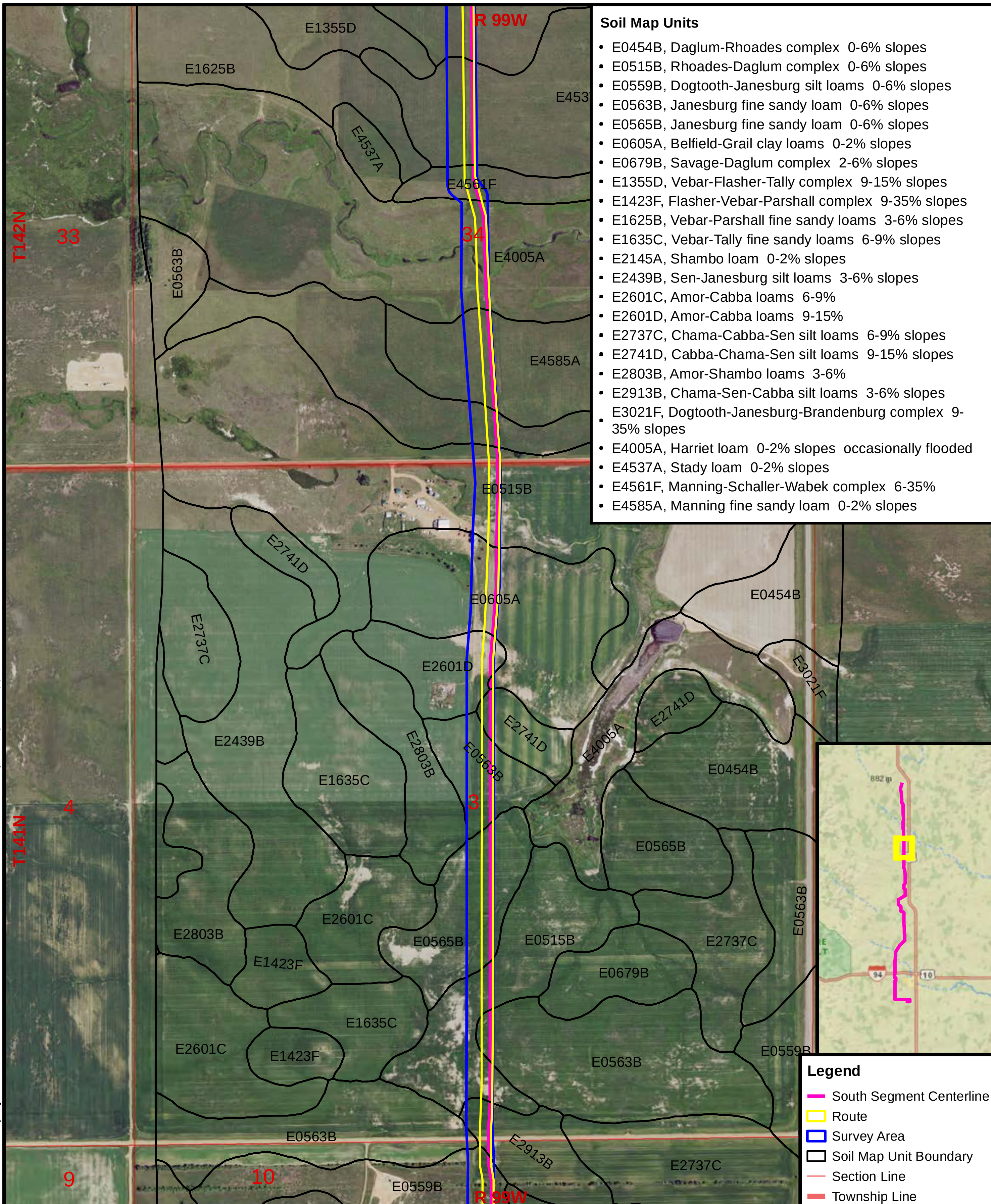
Appendix B Figure 2-3
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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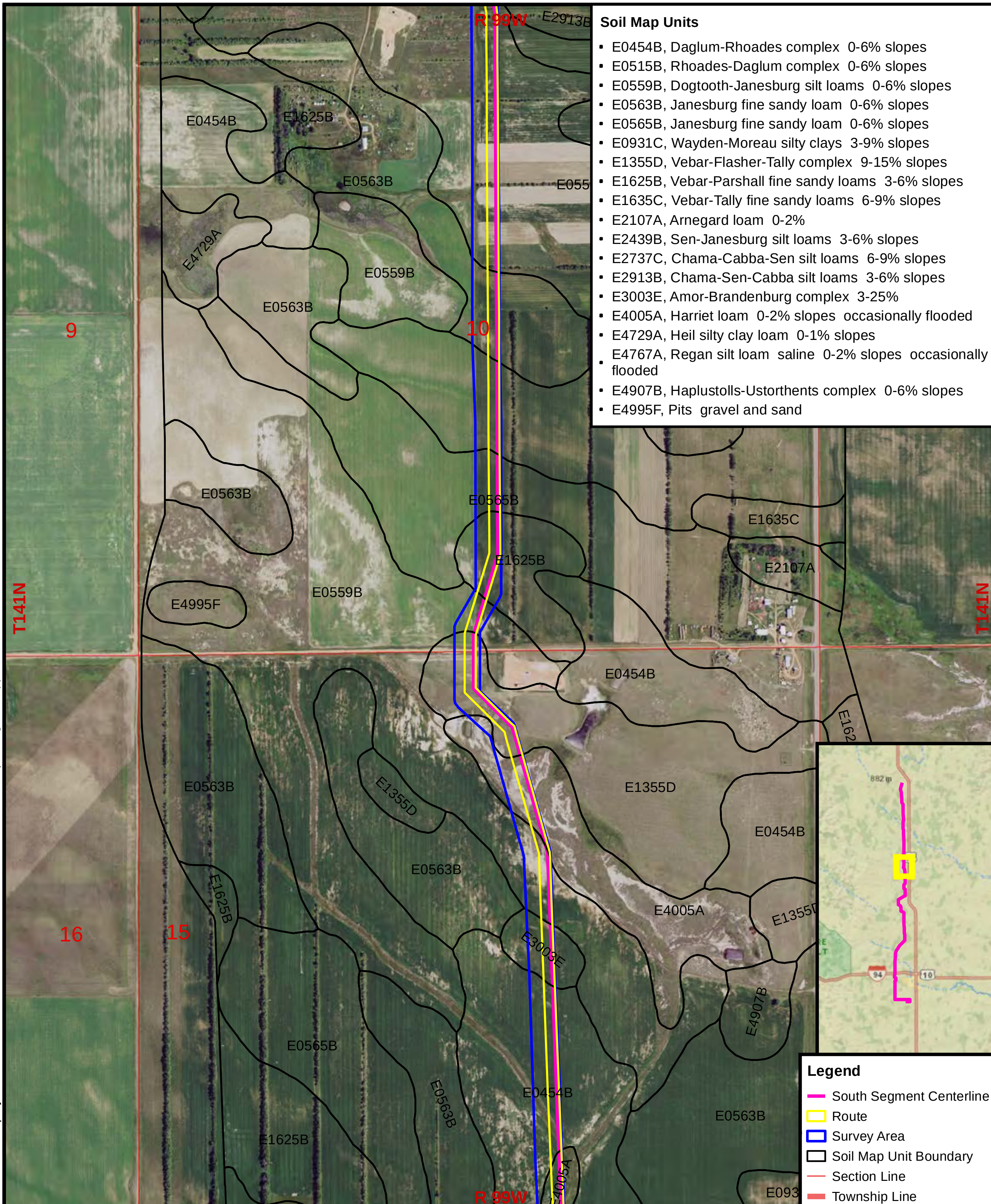
Appendix B Figure 2-4
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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Basemap: NAIP 2016 Aerial Photography

Appendix B Figure 2-5
South Segment
Soil Map Units
Andeavor Y-Grade Hub

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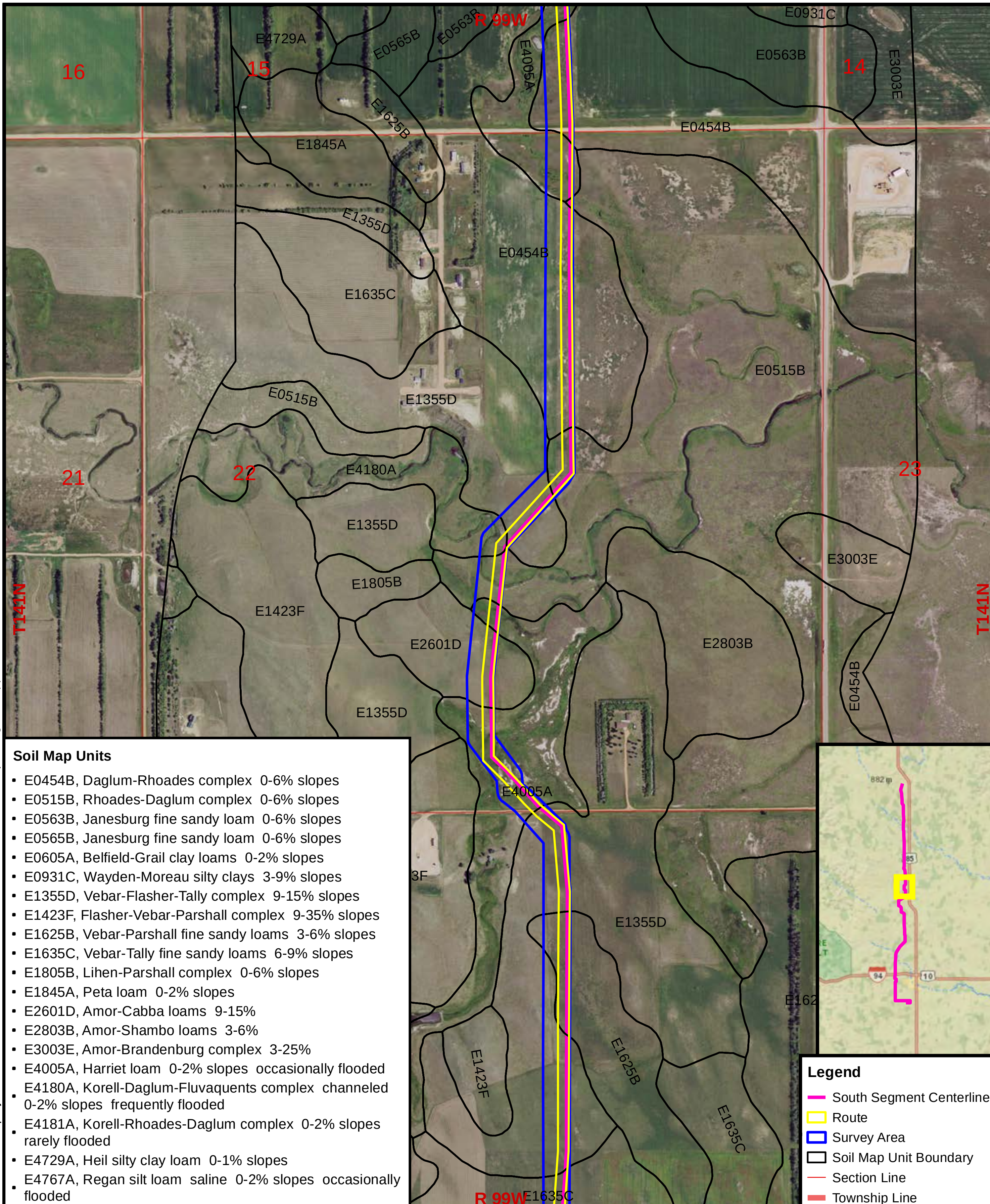

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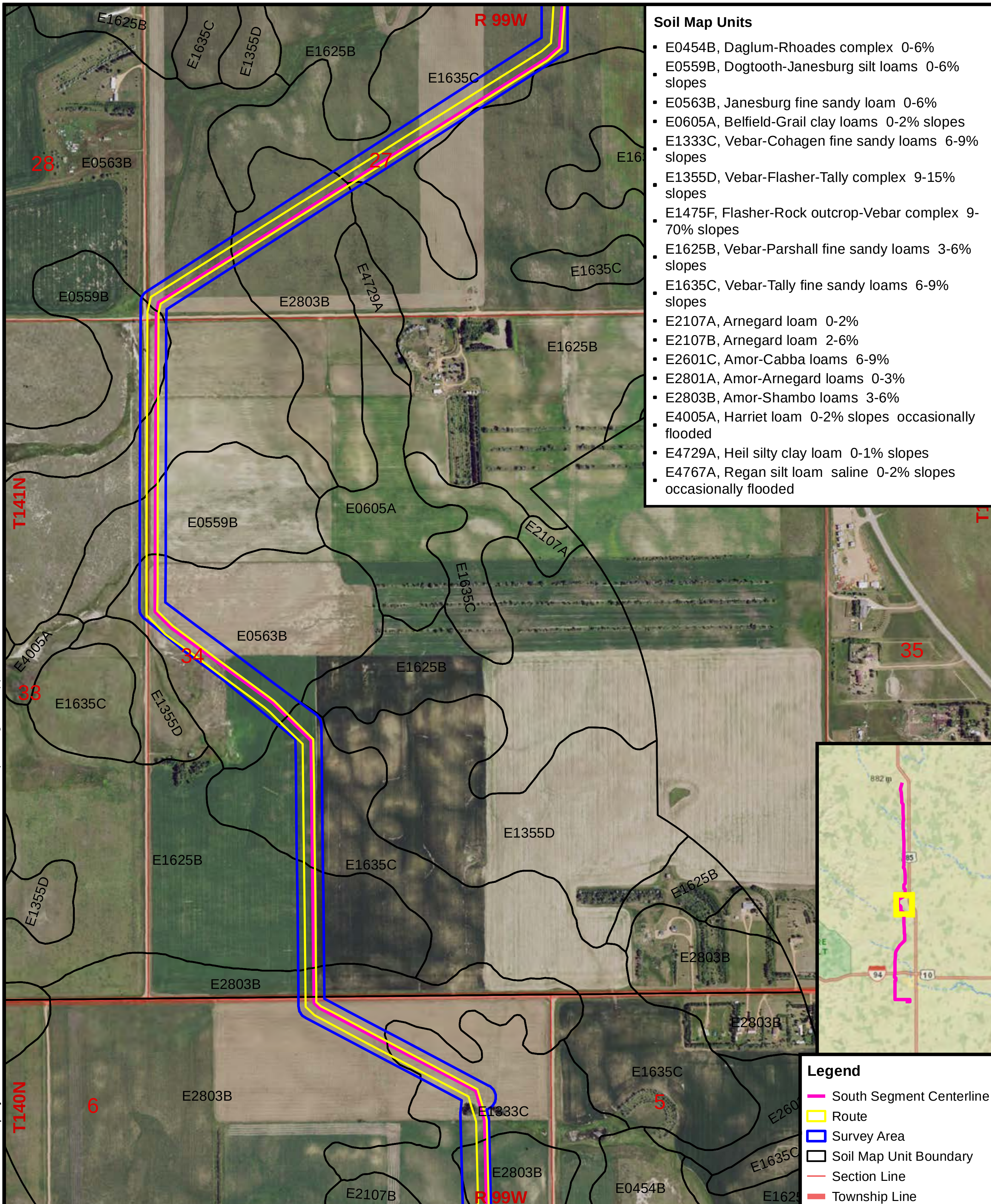
Appendix B Figure 2-6
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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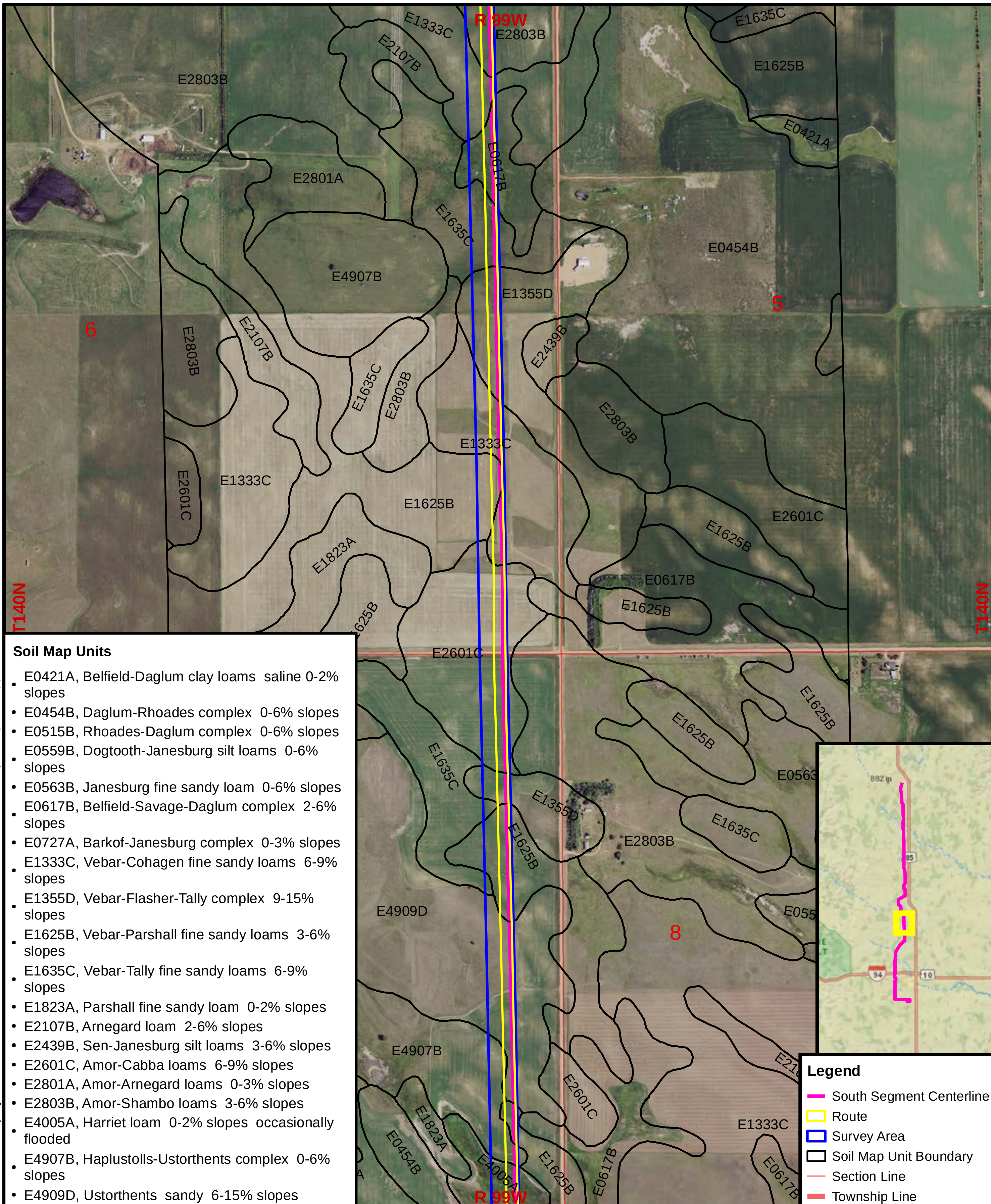
Appendix B Figure 2-7
South Segment
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0421A, Belfield-Daglum clay loams saline 0-2% slopes
- E0454B, Daglum-Rhoades complex 0-6% slopes
- E0515B, Rhoades-Daglum complex 0-6% slopes
- E0559B, Dogtooth-Janesburg silt loams 0-6% slopes
- E0563B, Janesburg fine sandy loam 0-6% slopes
- E0617B, Belfield-Savage-Daglum complex 2-6% slopes
- E0727A, Barkof-Janesburg complex 0-3% slopes
- E1333C, Vebar-Cohagen fine sandy loams 6-9% slopes
- E1355D, Vebar-Flasher-Tally complex 9-15% slopes
- E1625B, Vebar-Parshall fine sandy loams 3-6% slopes
- E1635C, Vebar-Tally fine sandy loams 6-9% slopes
- E1823A, Parshall fine sandy loam 0-2% slopes
- E2107B, Arnegard loam 2-6% slopes
- E2439B, Sen-Janesburg silt loams 3-6% slopes
- E2601C, Amor-Cabba loams 6-9% slopes
- E2801A, Amor-Arnegard loams 0-3% slopes
- E2803B, Amor-Shambo loams 3-6% slopes
- E4005A, Harriet loam 0-2% slopes occasionally flooded
- E4907B, Haplustolls-Ustorthents complex 0-6% slopes
- E4909D, Ustorthents sandy 6-15% slopes

Legend

- South Segment Centerline
- Route
- Survey Area
- Soil Map Unit Boundary
- Section Line
- Township Line

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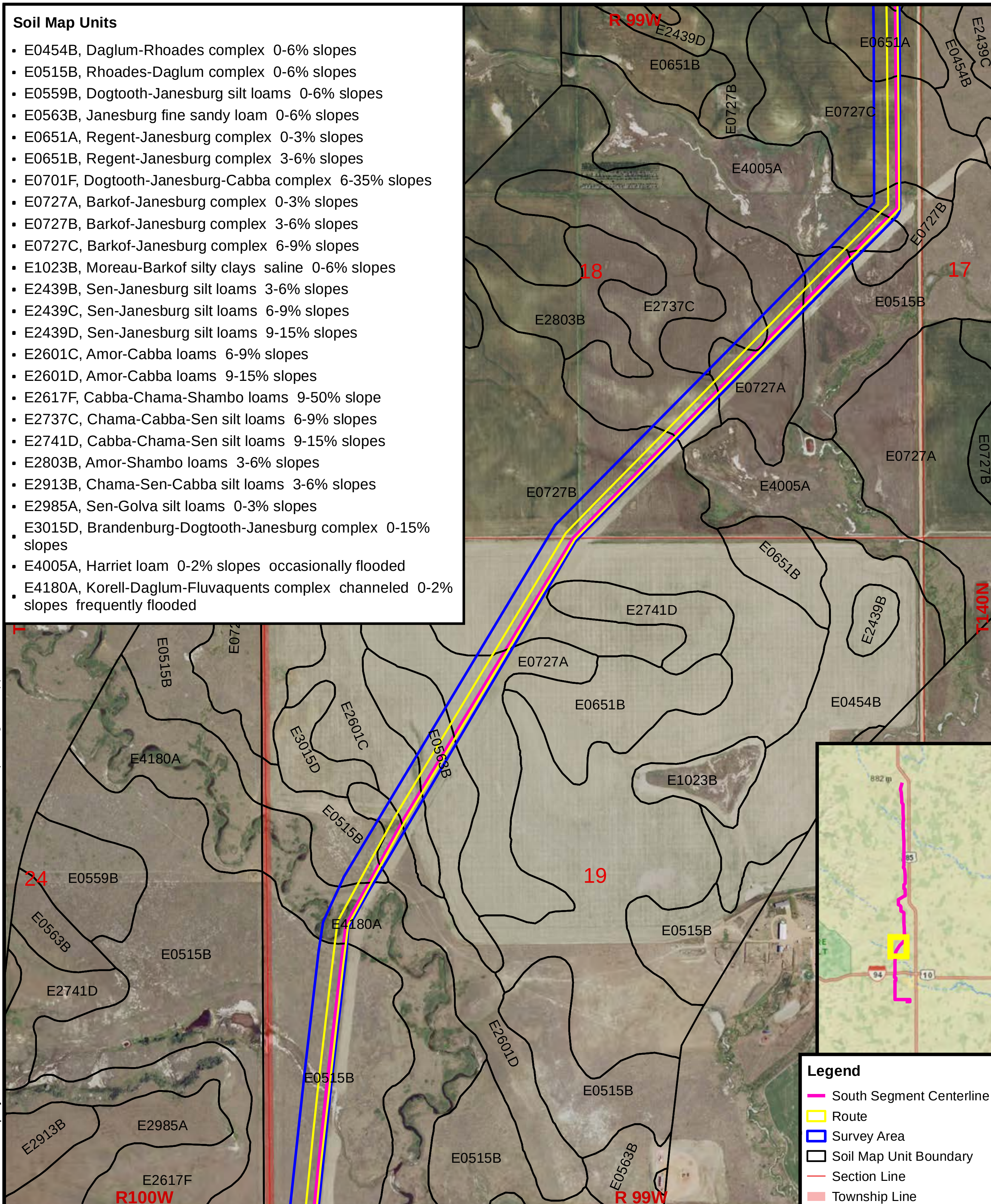
Appendix B Figure 2-8
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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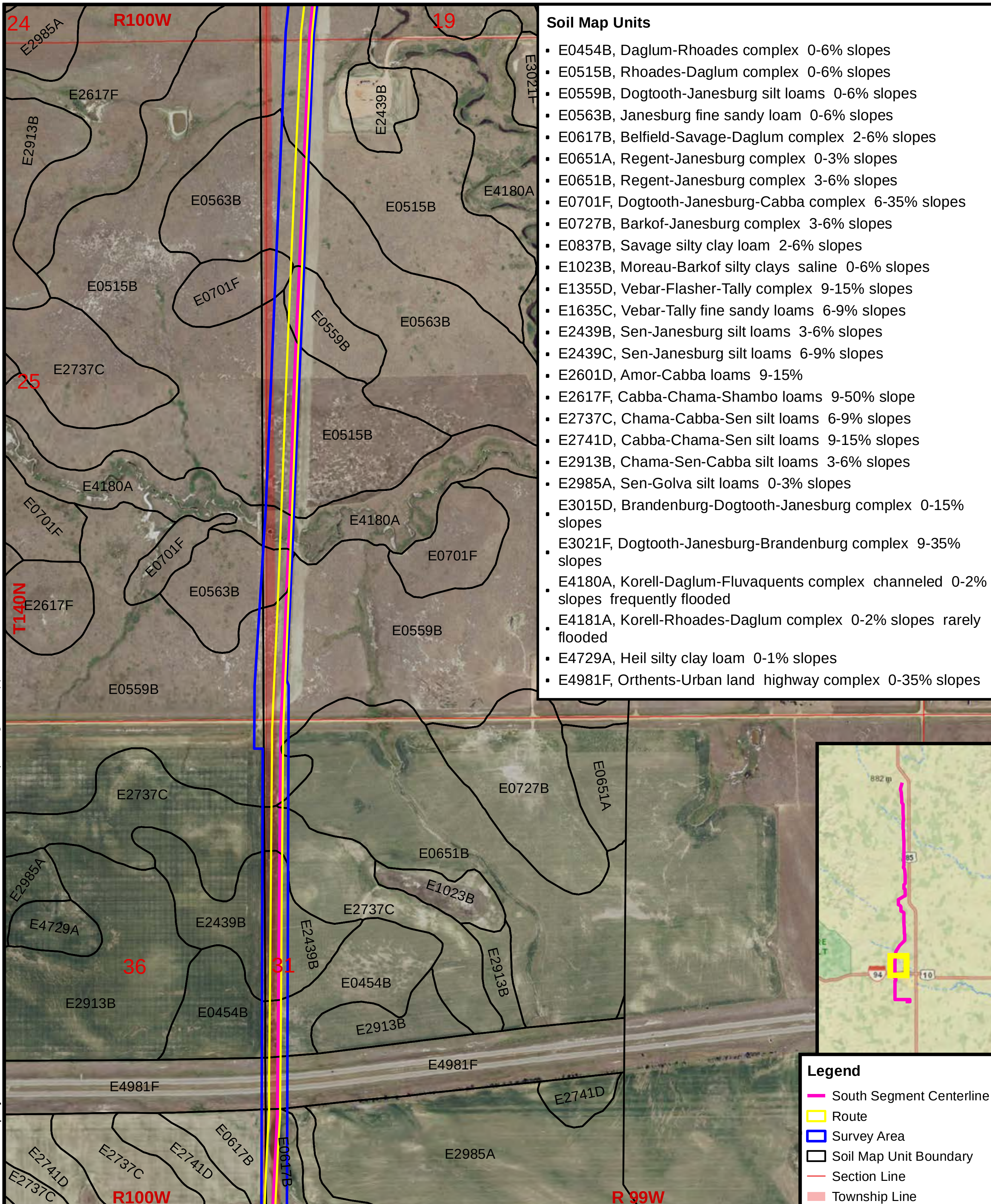
Appendix B Figure 2-9
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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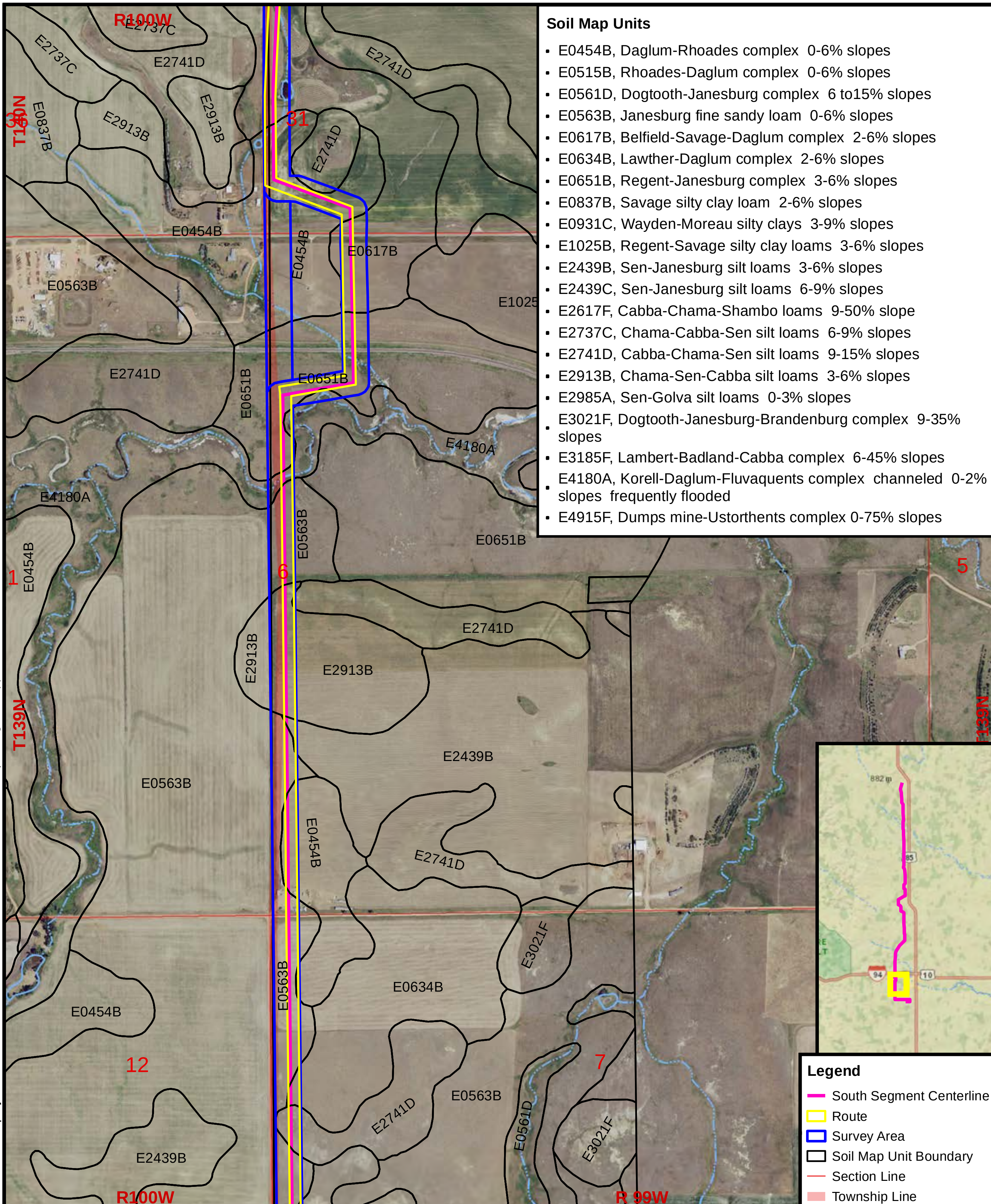
Appendix B Figure 2-10
South Segment
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0454B, Daglum-Rhoades complex 0-6% slopes
- E0515B, Rhoades-Daglum complex 0-6% slopes
- E0561D, Dogtooth-Janesburg complex 6 to15% slopes
- E0563B, Janesburg fine sandy loam 0-6% slopes
- E0617B, Belfield-Savage-Daglum complex 2-6% slopes
- E0634B, Lawther-Daglum complex 2-6% slopes
- E0651B, Regent-Janesburg complex 3-6% slopes
- E0837B, Savage silty clay loam 2-6% slopes
- E0931C, Wayden-Moreau silty clays 3-9% slopes
- E1025B, Regent-Savage silty clay loams 3-6% slopes
- E2439B, Sen-Janesburg silt loams 3-6% slopes
- E2439C, Sen-Janesburg silt loams 6-9% slopes
- E2617F, Cabba-Chama-Shambo loams 9-50% slope
- E2737C, Chama-Cabba-Sen silt loams 6-9% slopes
- E2741D, Cabba-Chama-Sen silt loams 9-15% slopes
- E2913B, Chama-Sen-Cabba silt loams 3-6% slopes
- E2985A, Sen-Golva silt loams 0-3% slopes
- E3021F, Dogtooth-Janesburg-Brandenburg complex 9-35% slopes
- E3185F, Lambert-Badland-Cabba complex 6-45% slopes
- E4180A, Korell-Daglum-Fluvaquents complex channeled 0-2% slopes frequently flooded
- E4915F, Dumps mine-Ustorthents complex 0-75% slopes

Legend

- South Segment Centerline
- Route
- Survey Area
- Soil Map Unit Boundary
- Section Line
- Township Line

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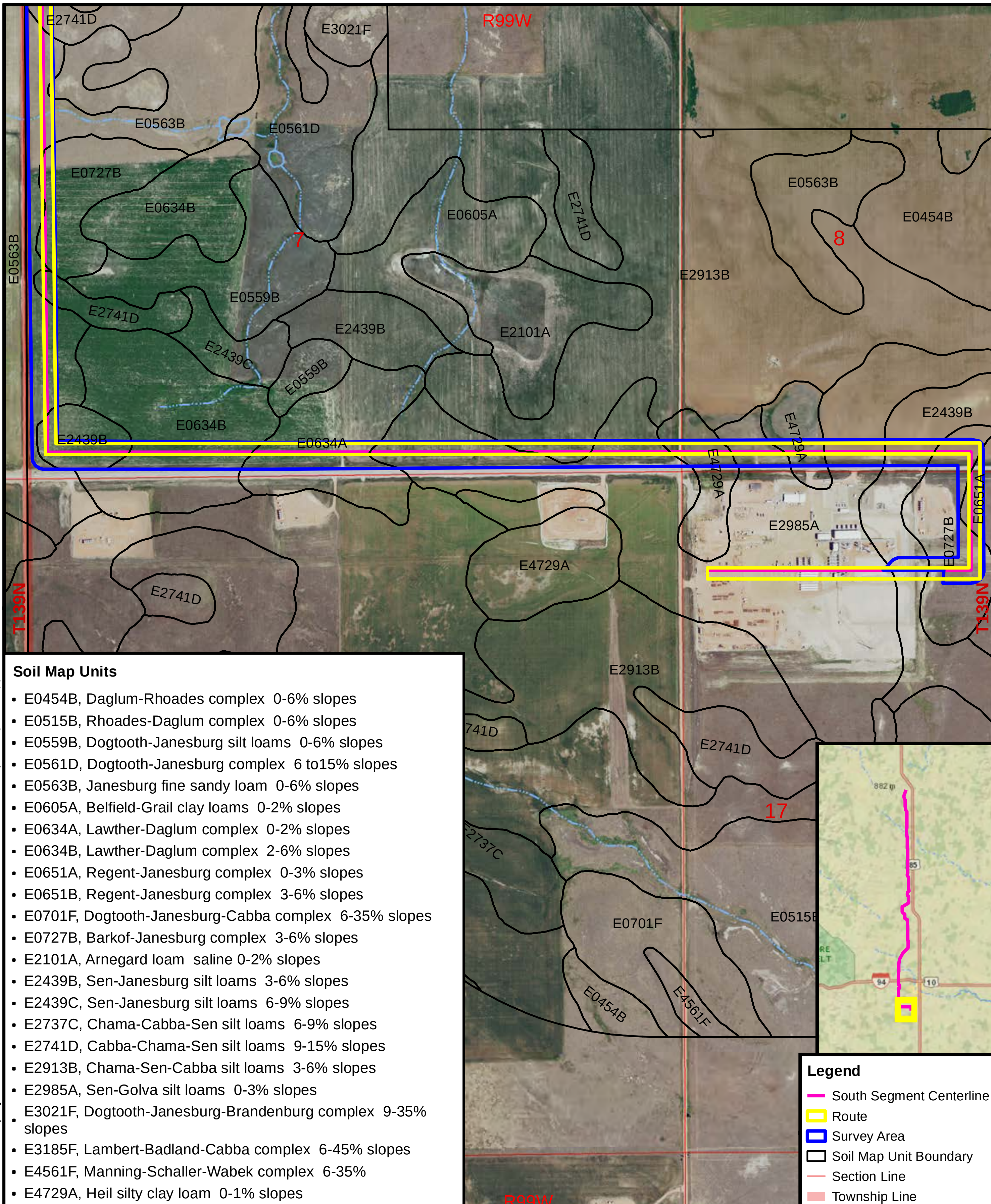
Appendix B Figure 2-11
South Segment
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0454B, Daglum-Rhoades complex 0-6% slopes
- E0515B, Rhoades-Daglum complex 0-6% slopes
- E0559B, Dogtooth-Janesburg silt loams 0-6% slopes
- E0561D, Dogtooth-Janesburg complex 6 to15% slopes
- E0563B, Janesburg fine sandy loam 0-6% slopes
- E0605A, Belfield-Grail clay loams 0-2% slopes
- E0634A, Lawther-Daglum complex 0-2% slopes
- E0634B, Lawther-Daglum complex 2-6% slopes
- E0651A, Regent-Janesburg complex 0-3% slopes
- E0651B, Regent-Janesburg complex 3-6% slopes
- E0701F, Dogtooth-Janesburg-Cabba complex 6-35% slopes
- E0727B, Barkof-Janesburg complex 3-6% slopes
- E2101A, Arnegard loam saline 0-2% slopes
- E2439B, Sen-Janesburg silt loams 3-6% slopes
- E2439C, Sen-Janesburg silt loams 6-9% slopes
- E2737C, Chama-Cabba-Sen silt loams 6-9% slopes
- E2741D, Cabba-Chama-Sen silt loams 9-15% slopes
- E2913B, Chama-Sen-Cabba silt loams 3-6% slopes
- E2985A, Sen-Golva silt loams 0-3% slopes
- E3021F, Dogtooth-Janesburg-Brandenburg complex 9-35% slopes
- E3185F, Lambert-Badland-Cabba complex 6-45% slopes
- E4561F, Manning-Schaller-Wabek complex 6-35%
- E4729A, Heil silty clay loam 0-1% slopes

Legend

- South Segment Centerline
- Route
- Survey Area
- Soil Map Unit Boundary
- Section Line
- Township Line

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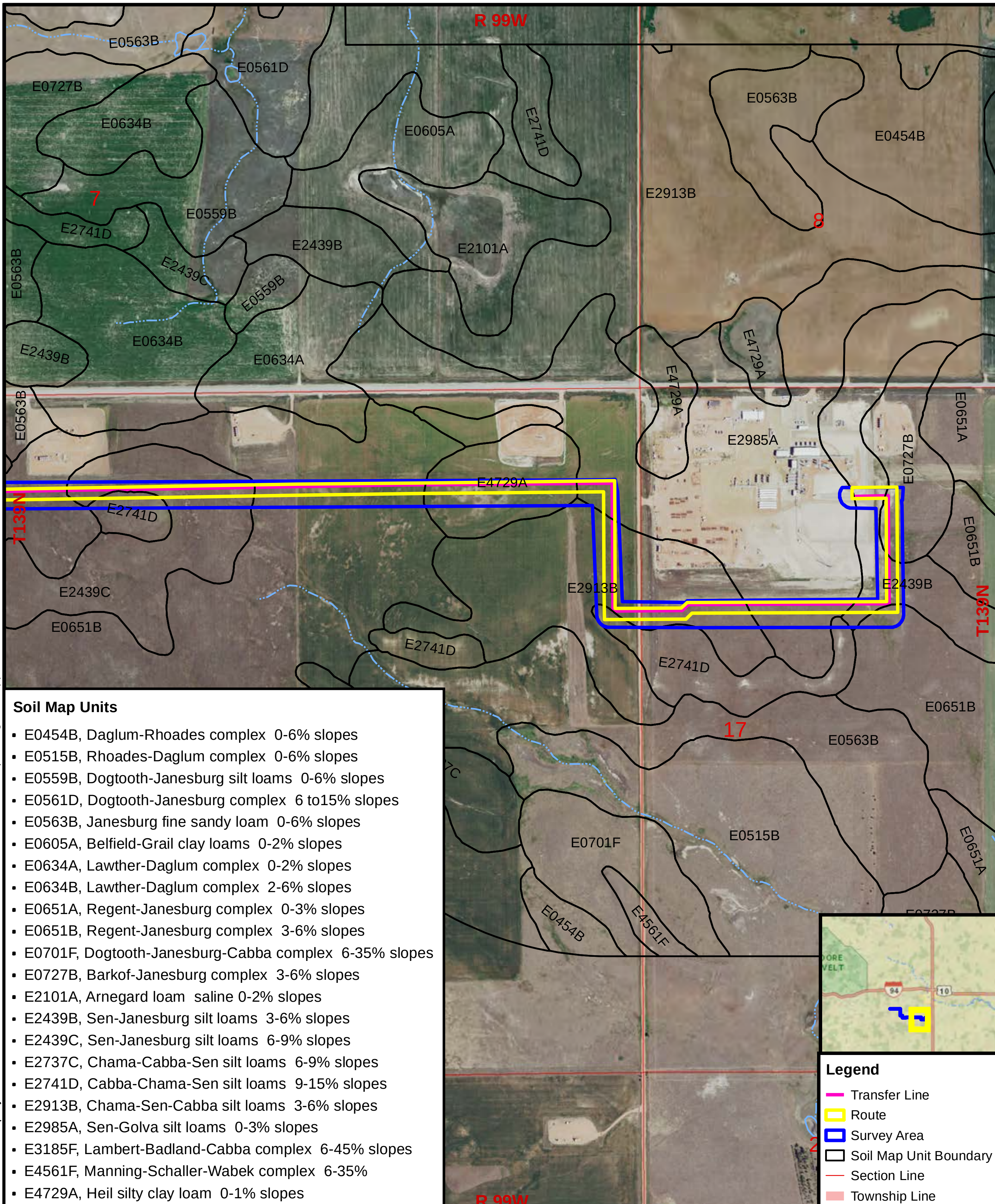
Appendix B Figure 2-12
South Segment
Soil Map Units
Andeavor Y-Grade Hub



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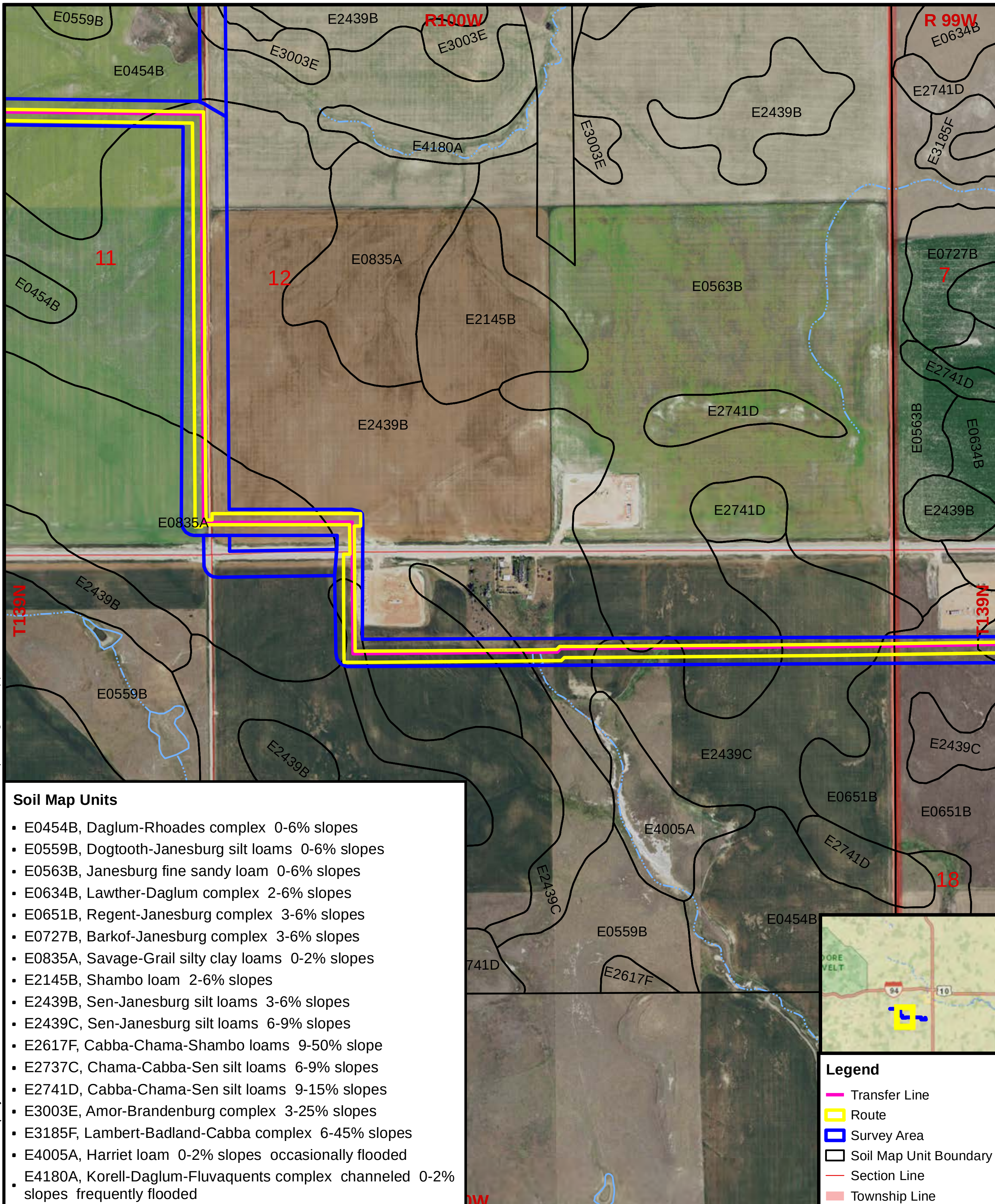
Appendix B Figure 3-1
Transfer Line
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0454B, Daglum-Rhoades complex 0-6% slopes
- E0559B, Dogtooth-Janesburg silt loams 0-6% slopes
- E0563B, Janesburg fine sandy loam 0-6% slopes
- E0634B, Lawther-Daglum complex 2-6% slopes
- E0651B, Regent-Janesburg complex 3-6% slopes
- E0727B, Barkof-Janesburg complex 3-6% slopes
- E0835A, Savage-Grail silty clay loams 0-2% slopes
- E2145B, Shambo loam 2-6% slopes
- E2439B, Sen-Janesburg silt loams 3-6% slopes
- E2439C, Sen-Janesburg silt loams 6-9% slopes
- E2617F, Cabba-Chama-Shambo loams 9-50% slope
- E2737C, Chama-Cabba-Sen silt loams 6-9% slopes
- E2741D, Cabba-Chama-Sen silt loams 9-15% slopes
- E3003E, Amor-Brandenburg complex 3-25% slopes
- E3185F, Lambert-Badland-Cabba complex 6-45% slopes
- E4005A, Harriet loam 0-2% slopes occasionally flooded
- E4180A, Korell-Daglum-Fluvaquents complex channeled 0-2% slopes frequently flooded

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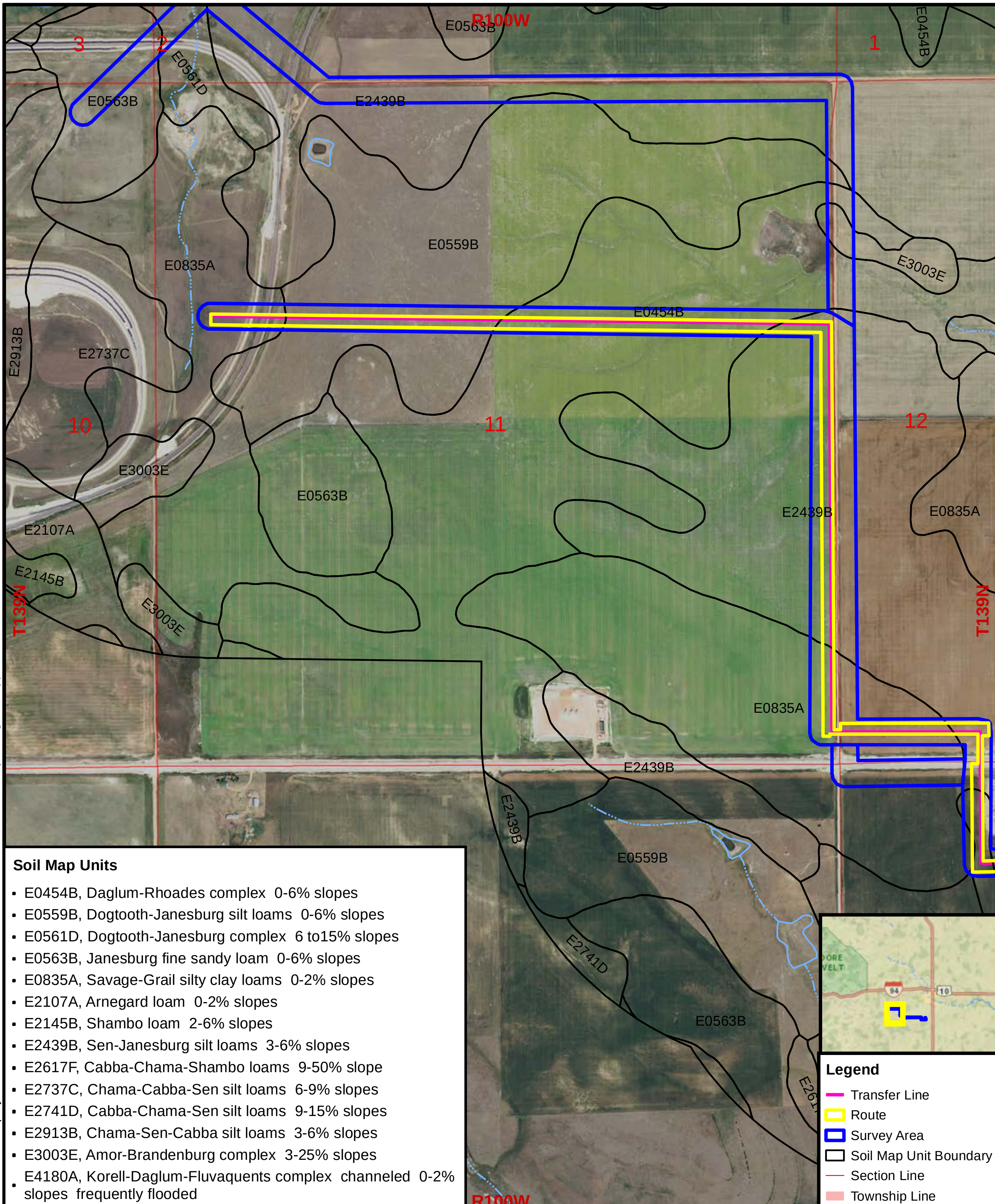
Appendix B Figure 3-2
Transfer Line
Soil Map Units
Andeavor Y-Grade Hub



Soil Map Units

- E0454B, Daglum-Rhoades complex 0-6% slopes
- E0559B, Dogtooth-Janesburg silt loams 0-6% slopes
- E0561D, Dogtooth-Janesburg complex 6 to15% slopes
- E0563B, Janesburg fine sandy loam 0-6% slopes
- E0835A, Savage-Grail silty clay loams 0-2% slopes
- E2107A, Arnegard loam 0-2% slopes
- E2145B, Shambo loam 2-6% slopes
- E2439B, Sen-Janesburg silt loams 3-6% slopes
- E2617F, Cabba-Chama-Shambo loams 9-50% slope
- E2737C, Chama-Cabba-Sen silt loams 6-9% slopes
- E2741D, Cabba-Chama-Sen silt loams 9-15% slopes
- E2913B, Chama-Sen-Cabba silt loams 3-6% slopes
- E3003E, Amor-Brandenburg complex 3-25% slopes
- E4180A, Korell-Daglum-Fluvaquents complex channeled 0-2% slopes frequently flooded

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Appendix B Figure 3-3
Transfer Line
Soil Map Units
Andeavor Y-Grade Hub

Appendix C

Andeavor Y-Grade Hub Project
Project Photographs

Photograph 1. View of Waterbody 4 facing north. Waterbody 4 is also known as Northfork Creek according to the United States Geological Survey (USGS) and was labeled as a perennial stream.

Photograph 2. View of Waterbody 5 facing northwest. Waterbody 5 is also known as Cherry Creek according to the USGS and was labeled as a perennial stream. Waterbody 5 did not have any associated fringe wetlands observed within the Route.

Photograph 3. View of Waterbody 8 facing southeast. Waterbody 8 is an unnamed intermittent stream according to the USGS and is part of a tributary to Sevenmile Creek. Waterbody 8 had several Ordinary High Water Mark (OHWM) characteristics such as presence of litter and debris, destruction of terrestrial vegetation and water staining.

Photograph 4. View of Waterbody 22 facing west. Waterbody 22 is also known as Spring Creek according the USGS and was labeled as an intermittent stream. Waterbody 22 had an average width of approximately 22 feet.

Photograph 5. View of Waterbody 23 facing northwest. Waterbody 23 is an unnamed intermittent stream according to the USGS and is part of a tributary to Spring Creek. Waterbody 23 had several OHWM characteristics such as scouring, vegetation matted down, bent or absent and water staining.

Photograph 6. View of Wetland 19 facing northwest. Wetland 19 was recorded as a palustrine-emergent-temporarily flooded (PEMA) wetland in the field and makes up approximately 0.06 acres within the Route.

Photograph 7. View of Waterbody 21 facing southwest. Waterbody 21 is also known as the Green River according to the USGS and was labeled as an intermittent stream.

Photograph 8. View of Waterbody 25 facing south. Waterbody 25 is an unnamed intermittent stream according to the USGS and is part of a tributary to the Green River.

Photograph 9. View of Waterbody 29 facing northwest. Waterbody 29 is also known as the South Fork Green creek according to the USGS and was labeled as an intermittent stream. Waterbody 29 did not have any associated fringe wetlands observed within the Route.

Photograph 10. View of Wetland 31 facing south. Wetland 31 was recorded as a palustrine-emergent-seasonally flooded (PEMC) wetland in the field and makes up approximately 1.12 acres within the Route.

Photograph 11. View of Waterbody 41 facing northeast. Waterbody 41 had 3 separate crossings within the Route and had an average width of approximately 16 feet.

Photograph 12. View of Wetland 15 facing south. Wetland 15 was recorded a PEMA wetland and makes up approximately 0.09 acres within the Route.

Table 1. Consultation Letter Tracking Sent / Received

ADDRESSEE	DATE LETTER SENT	DATE RESPONSE RECEIVED
North Dakota Aeronautics Commission	10/24/2017	11/21/2017
North Dakota Attorney General	10/24/2017	No response
Billings County Commission	10/24/2017	No response
North Dakota Department of Agriculture	10/24/2017	No response
North Dakota Department of Human Services	10/24/2017	No response
North Dakota Trust Lands	10/30/2017	11/20/2017
North Dakota Department of Career and Technical Education	10/24/2017	No response
North Dakota Department of Commerce	10/24/2017	No response
North Dakota Department of Transportation	10/30/2017	11/29/2017
North Dakota Energy Development Impact office	10/30/2017	No response
Federal Aviation Administration	10/24/2017	No response
North Dakota Game & Fish Department	10/30/2017	11/29/2017
Office of Governor	10/24/2017	No response
North Dakota Indian Affairs Commission	10/30/2017	No response
North Dakota Industrial Commission	10/30/2017	11/20/2017
Job Service of ND	10/24/2017	11/15/2017
North Dakota Labor Department	10/24/2017	No response
McKenzie County Commission	10/24/2017	No response
North Dakota Pipeline Authority	10/30/2017	No response
North Dakota Transmission Authority	10/30/2017	No response
North Dakota Parks and Recreation Department	10/30/2017	No response
Soil Conservation Committee	10/30/2017	No response
Stark County Commission	10/24/2017	No response
North Dakota Department of Health	10/30/2017	11/9/2017
North Dakota State Water Commission	10/30/2017	11/21/2017
US Army Corps of Engineers	10/31/2017	No response
US Department of Defense	10/24/2017	No response
US Fish and Wildlife Service	10/24/2017	11/30/2017

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ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

October 31, 2017

Mr. Benjamin D. Reile
Program Manager
U.S. Army Corps of Engineers
1513 South 12th Street
Bismarck, ND 58504

Re: Proposed Pipeline
Andeavor Y-Grade Hub Project

Dear Mr. Reile:

Andeavor is proposing a natural gas liquids (NGL) project that will transport mixed NGLs (commonly called “Y-Grade Product”) from an existing natural gas plant in McKenzie County to a fractionation facility in Billings County, where the mixed NGLs will be separated into discrete components (e.g. propane, butane, and natural gasoline). The proposed project consists of construction of approximately three (3) separate pipeline segments and the conversion of approximately 42 miles of existing crude oil pipeline (the BakkenLink Pipeline). The first segment is identified as the “North Segment” consisting of 17 miles of 10” pipe. The “South Segment” consists of 22 miles of 10” pipe and the “Product Transfer Segment” which is approximately 5 miles of (4) separate 6” pipes. The “North Segment” will be located within McKenzie County, the “South Segment” originates in Billings County and terminates in Stark County, and finally, the “Product Transfer Segment” will originate in Stark County and terminate in Billings County. The attached figure (Figure 1) shows the project location(s) and separate pipeline segments.

The North and South Segments parallel the existing BakkenLink Pipeline, offset as close as reasonably possibly. Legal descriptions where new pipe will be placed are included in the tables below.

Segment	Section	Township	Range
North Segment	2	149N	98W
North Segment	11	149N	98W
North Segment	14	149N	98W
North Segment	15	149N	98W
North Segment	16	149N	98W
North Segment	21	149N	98W
North Segment	22	149N	98W
North Segment	28	149N	98W
North Segment	29	149N	98W
North Segment	30	149N	98W
North Segment	1	150N	98W
North Segment	12	150N	98W
North Segment	13	150N	98W
North Segment	23	150N	98W
North Segment	24	150N	98W
North Segment	26	150N	98W
North Segment	35	150N	98W
North Segment	35	151N	98W
North Segment	36	151N	98W

Segment	Section	Township	Range
Transfer Segment	2	139N	100W
Transfer Segment	3	139N	100W
Transfer Segment	10	139N	100W
Transfer Segment	11	139N	100W
Transfer Segment	12	139N	100W
Transfer Segment	13	139N	100W
Transfer Segment	17	139N	99W
Transfer Segment	18	139N	99W

Segment	Section	Township	Range
South Segment	6	139N	99W
South Segment	7	139N	99W
South Segment	8	139N	99W
South Segment	17	139N	99W
South Segment	6	140N	99W
South Segment	7	140N	99W
South Segment	18	140N	99W
South Segment	19	140N	99W
South Segment	30	140N	99W
South Segment	31	140N	99W
South Segment	3	141N	99W
South Segment	10	141N	99W
South Segment	15	141N	99W
South Segment	22	141N	99W
South Segment	27	141N	99W
South Segment	34	141N	99W
South Segment	3	142N	99W
South Segment	10	142N	99W
South Segment	15	142N	99W
South Segment	22	142N	99W
South Segment	27	142N	99W
South Segment	34	142N	99W

Wetlands and Waterbodies
Carlson McCain has field evaluated the route for wetlands and waterbodies (see attached figures). No waters regulated by Section 10 of the Rivers and Harbors Act will be crossed. Other wetlands and waterbodies will be avoided the to the extent practical. Those that cannot be avoided will be horizontal directionally drilled, thus avoiding disturbance. Precautions will be taken to avoid impacts to adjacent riparian habitat by maintaining construction corridor setbacks, limiting the number of construction vehicles, and use of erosion control devices. Fill material will not be placed in wetlands or waterbodies.

At this time, we anticipate that construction will occur in compliance with the requirements of Nationwide Permit 12, and no permit application will be submitted for the proposed pipeline. If changes to the route and/or construction procedures occur, we will notify your office for permitting instructions.

On behalf of Andeavor, Carlson McCain is seeking comments regarding the referenced project in compliance with the North Dakota Energy Conversion and Transmission Facility Siting Act. We request comments be submitted by November 28, 2017. Please call me at 701-255-1475 if you have any questions.

Sincerely,

Todd Hartleben, P.E.
Professional Engineer

From:	Chad Tucker
To:	Todd Hartleben
Subject:	FW: Proposed pipeline Andeavor
Date:	Friday, December 1, 2017 4:21:53 PM
Attachments:	Andeavor Y-Grade Hub Project11152017.pdf

From: Adolf, Sharon [mailto:sharon_adolf@fws.gov]
Sent: Thursday, November 30, 2017 8:38 AM
To: Chad Tucker <ctucker@carlsonmccain.com>
Cc: Kevin Shelley <kevin_shelley@fws.gov>
Subject: Proposed pipeline Andeavor

Mr. Tucker,attached is our stamped document indicating the completion of the environmental reivew. A hard copy will not be provided unless requested. Please don"t hesitate to contact our office if you or staff have any questions.

--
Sharry Adolf
Office Assistant
US FWS - Bismarck, ND
3425 Mariam Ave.
Bismarck, ND 58501

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ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

October 24, 2017

US Fish and Wildlife Service
Mr. Kevin Shelley
Field Supervisor
3425 Miriam Avenue
Bismarck, ND 58501

Re: Proposed Pipeline
Andeavor Y-Grade Hub Project

Dear Mr. Shelley:

Andeavor is proposing a natural gas liquids (NGL) project that will transport mixed NGLs (commonly called "Y-Grade Product") from an existing natural gas plant in McKenzie County to a fractionation facility in Billings County, where the mixed NGLs will be separated into discrete components (e.g. propane, butane, and natural gasoline). The proposed project consists of construction of approximately three (3) separate pipeline segments and the conversion of approximately 42 miles of existing crude oil pipeline (the BakkenLink Pipeline). The first segment is identified as the "North Segment" consisting of 17 miles of 10" pipe. The "South Segment" consists of 22 miles of 10" pipe and the "Product Transfer Segment" which is approximately 5 miles of (4) separate 6" pipes. The "North Segment" will be located within McKenzie County, the "South Segment" originates in Billings County and terminates in Stark County, and finally, the "Product Transfer Segment" will originate in Stark County and terminate in Billings County. The attached figure (Figure 1) shows the project location(s) and separate pipeline segments.

The North and South Segments parallel the existing BakkenLink Pipeline, offset as close as reasonably possibly. Legal descriptions where new pipe will be placed are included in the tables below.

Segment	Section	Township	Range
North Segment	2	149N	98W
North Segment	11	149N	98W
North Segment	14	149N	98W
North Segment	15	149N	98W
North Segment	16	149N	98W
North Segment	21	149N	98W
North Segment	22	149N	98W
North Segment	28	149N	98W
North Segment	29	149N	98W
North Segment	30	149N	98W
North Segment	1	150N	98W
North Segment	12	150N	98W
North Segment	13	150N	98W
North Segment	23	150N	98W
North Segment	24	150N	98W
North Segment	26	150N	98W
North Segment	35	150N	98W
North Segment	35	151N	98W
North Segment	36	151N	98W

Segment	Section	Township	Range
Transfer Segment	2	139N	100W
Transfer Segment	3	139N	100W
Transfer Segment	10	139N	100W
Transfer Segment	11	139N	100W
Transfer Segment	12	139N	100W
Transfer Segment	13	139N	100W
Transfer Segment	17	139N	99W
Transfer Segment	18	139N	99W

Segment	Section	Township	Range
South Segment	6	139N	99W
South Segment	7	139N	99W
South Segment	8	139N	99W
South Segment	17	139N	99W
South Segment	6	140N	99W
South Segment	7	140N	99W
South Segment	18	140N	99W
South Segment	19	140N	99W
South Segment	30	140N	99W
South Segment	31	140N	99W
South Segment	3	141N	99W
South Segment	10	141N	99W
South Segment	15	141N	99W
South Segment	22	141N	99W
South Segment	27	141N	99W
South Segment	34	141N	99W
South Segment	3	142N	99W
South Segment	10	142N	99W
South Segment	15	142N	99W
South Segment	22	142N	99W
South Segment	27	142N	99W
South Segment	34	142N	99W

Wetlands and Waterbodies
Carlson McCain has field evaluated the route for wetlands and waterbodies and they will be avoided the to the extent practical by horizontal directional drill. Precautions will be taken to avoid impacts to adjacent riparian habitat by maintaining construction corridor setbacks, limiting the number of construction vehicles, and use of erosion control devises. Fill material will not be placed in wetlands or waterbodies.

Migratory Birds and Raptors
The proposed development may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. These impacts are regulated in part through the Migratory Bird Treaty Act (MBTA, 916 USC 703-711) and the Bald and Golden Eagle Protection Act (BGEPA). A desktop review of known eagle nest locations was conducted (Figure 2 – Species of Concern). No known eagle nests are located within ½-mile of the proposed pipeline.

Due to seasonal timing, a ground survey for other raptor nests and general migratory bird habitat evaluation along the proposed route has not been conducted. However, it is known that suitable nesting habitat for raptors and migratory birds exists adjacent to and within the proposed corridor. If portions of the pipeline will be constructed during the nesting season (February 1 - July 15) ground surveys for migratory birds (including raptors) and nests will be conducted. Active and non-active golden and bald eagle nests will be avoided and a minimum ½-mile buffer between nests and the construction corridor will be maintained. Other raptor nests will be avoided to the extent possible and evaluated on a case-by-case basis in coordination with your office.

Areas identified as migratory bird nesting habitat will be mowed or grubbed in the early spring to minimize the potential for nesting of ground-nesting birds. An avian bird survey will be conducted five days prior to spring construction to determine if active nests are present. If nesting migratory birds are found, measures will be taken to protect the birds until fledged.

Critical Habitats

The ND Parks and Recreation Department (NDPRD) houses the North Dakota Natural Heritage biological conservation database. A review by the NDPRD will be done to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Critical habitats will be avoided to the extent possible and a minimum buffer of ½-mile will be maintained when possible.

Threatened and Endangered Species

Assessments for federally listed threatened and endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the Project Area. A determination was made concerning direct and cumulative effects of the proposed activities on each species and habitat. Determinations made for federally listed species are:

- No effect
- May affect, but is not likely to adversely affect
- May affect, and is likely to adversely affect
- Is likely to jeopardize a proposed species or adversely modify critical habitat
- Is not likely to jeopardize a proposed species or adversely modify critical habitat

Threatened and endangered species that may occur in Billings, McKenzie, and Stark Counties are listed in the table below. Determinations concerning direct and cumulative effects of the proposed activities on each species and their habitat are presented in the following paragraphs. Historical locations of species siting's, as determined from database record searches, indicate that there are no sightings of threated and/or endangered species within a 5-mile radius (Figure 2).

Threatened, Endangered, and Candidate species and Designated Critical Habitat

Species	County Status			Project Effects Determination
	Billings	**McKenzie**	**Stark**	
Black-footed Ferret (*Mustela nigripes*)	Endangered	Endangered	Endangered	No Effect
Gray Wolf (*Canis lupus*)	Endangered	Endangered	Endangered	No Effect
Interior Least Tern (*Sternula antillarum*)	N/A	Endangered	N/A	May affect, is not likely to adversely affect
Pallid Sturgeon (*Scaphirynchus albus*)	N/A	Endangered	N/A	May affect, is not likely to adversely affect
Piping Plover (*Charadrius melodus*)	N/A	Threatened	N/A	May affect, is not likely to adversely affect
Piping Plover Critical Habitat	N/A	Designated	N/A	May affect, is not likely to adversely affect
Whooping Crane (*Grus americana*)	Endangered	Endangered	Endangered	May affect, is not likely to adversely affect
Dakota Skipper (*Hesperia dacotae*)	N/A	Threatened	N/A	May affect, is not likely to adversely affect
Dakota Skipper Critical Habitat	N/A	Designated	N/A	No effect
Northern Long-Eared Bat (*Myotis septentrionalis)*	Threatened	Threatened	Threatened	No effect
Rufa Red knot (*Calidris canuta rufa*)	Threatened	Threatened	Threatened	No effect

Black-footed Ferret

Black-footed ferrets were historically found in the southwest portion of North Dakota but their present-day existence in North Dakota is unlikely or questionable at this time. The black-footed ferret requires expansive black-tailed prairie dog colonies for food and den habitat. The Black-Footed Ferret Survey Guidelines (USFWS 1989) states that 80 acres is the minimum size prairie dog habitat needed to support black-footed ferret.

Reintroduction of captive-raised individuals into the wild began in 1991 in Wyoming (Black-footed Ferret Recovery Implementation Team 2009). Since then, there have been 20 reintroduction sites, but none of the sites is in North Dakota (USFWS 2013The Project is expected to have no effect on this species.

Gray Wolf

Rural areas throughout the state of North Dakota function as dispersal corridors for wolves representing the Western Great Lakes (east of the Missouri River and US Highway 83) and Wyoming portion of the Northern Rocky Mountain distinct population segments (DPS). Wolves representing the Western Great Lakes DPS were relisted under the Endangered Species Act as threatened, effective December 19, 2014. Wolves representing the Wyoming portion of the Northern Rocky Mountain distinct population segment (west of the Missouri River and US 83) were delisted in 2011. However, gray wolves representing a formerly listed DPS could disperse through North Dakota at any time of the year. Wolf habitat within North Dakota occurs statewide and is considered dispersal habitat. Dispersal habitat may be important for maintaining gene flow between DPSs but is not thought to be a limiting factor for the recovery of the species.

To reflect this possibility, the USFWS has classified wolves dispersing through North Dakota as endangered. The net effect of this Project will result in the temporary modification and minimal permanent conversion of dispersal habitat within the Project Area. The construction of the Project is unlikely to hinder potential gray wolf dispersal. In addition, no rendezvous sites, den sites, or pack activity is known to occur within the listed portion of the gray wolf range or non-listed portion in North Dakota. Therefore, this Project may affect dispersing individuals, but is not likely to adversely affect the gray wolf species.

Interior Least Tern

The interior least tern, a shorebird, is known to nest on midstream sandbars along the Yellowstone and Missouri River systems in North Dakota. The species constructs bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches during the nesting period, which occurs between mid-May and mid-August. Nesting adults have been documented to travel 7.5 miles or more from their nest sites to forage in wetlands or riverine habitat (Thompson et al. 1997). Habitat loss due to man-made changes to watersheds and river systems along with low nesting success from predation and human disturbance has caused a decline in least tern populations.

Suitable shoreline habitat for breeding and nesting terns does not occur near the Project. Migrating and foraging least terns could visit wetlands near the Project Area; however, it is reasonable to expect that the activities associated with the Project may affect, but is not likely to adversely affect this species.

Pallid Sturgeon

Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960s (Grondahl and Martin, no date). Weighing up to 85 pounds, pallid sturgeons are long lived with individuals possibly reaching 50 years of age.

A known pallid sturgeon population occurs from the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the Lower Yellowstone River up the confluence of the Tongue River, Montana (USFWS 2007). Factors leading to the decline of the pallid sturgeon and a listing as an endangered species by the USFWS in 1990 include the alteration of habitat through river channelization; creation of impoundments; and alteration of water flow regimes (USFWS 1990). The effect from these alterations within the Missouri River have reduced food sources by lowering productivity, destroying spawning habitat, altered flow conditions which can delay spawning cues, and blocked movements to spawning, feeding, and rearing areas (USFWS 2007).

Pallid sturgeon habitat is not located in the project area. Due to the nature of the project, no impacts to Lake Sakakawea or the Missouri River are anticipated during construction and/or operation. Therefore, it is reasonable to expect that the Project may affect but is not likely to adversely affect this species.

Piping Plover and Critical Habitat

The piping plover is a migratory shorebird that breeds in North Dakota. Suitable nesting habitat for piping plovers in the Missouri River system is characterized as sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel. The piping plover feeds on worms, insects, and mollusk. Degradation of habitat related to the channelization river systems, nest predation, and human disturbance has led to the decline of piping plover populations.

Suitable shoreline habitat for breeding and nesting terns does not occur near the Project. Migrating and foraging least terns could visit wetlands near the Project Area; however, it is reasonable to expect that the activities associated with the Project may affect, but is not likely to adversely affect this species. The Project will not modify, alter, disturb, or affect the shoreline of Lake Sakakawea or any if its tributary streams. Therefore, it is reasonable to believe that the Project is not likely to destroy or adversely modify critical habitat for the piping plover.

Whooping Crane

The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Aransas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Parks and Wildlife 2006)

Land use in the area is primarily agricultural and oil/gas development. Noise and vehicle activity during construction activities may cause migratory cranes to divert from the area but are unlikely to contribute to any indirect or direct effect that would result in an increase of fatalities and, therefore, are considered insignificant. If a crane is sighted within one mile of the project area, construction activities will cease and the sighting would be immediately reported to the USFWS. In coordination with the USFWS, construction will resume once the bird(s) have left the area. Following these guidelines, it is reasonable to expect that the proposed action may affect, but is not likely to adversely affect whooping cranes.

Dakota Skipper and Critical Habitat

Dakota skippers are found in untilled high quality native prairie containing a high diversity of wildflowers. Habitat includes two prairie types: 1) high quality, low (wet-mesic) prairie with little topographic relief dominated by little bluestem grass, wood lily (*Lilium philadelphicum*), bluebell bell flower (*Campanula rotundifolia*), and smooth camas (*Zigadenus elegans*); and 2) rolling native-prairie terrain over gravelly glacial moraine deposits dominated by bluestem grasses and needlegrass (*e.g. Hesperostipa spartea*) with bluebell bell flower, wood lily, purple coneflower (*Echinacea angustifolia*) upright prairie coneflower (*Ratibida columnifera*) and common gaillardia (*Gillardia aritata*). Dakota skipper populations have declined historically due to widespread conversion of native prairie.

There is no suitable Dakota skipper habitat within project construction corridor. Land use within the area is primarily agricultural (e.g. cultivated) and oil/gas development. Furthermore, the route follows existing pipeline corridors, that already have been disturbed. It is determined that this project may affect, but is not likely to adversely affect the Dakota skipper and is not likely to destroy or adversely modify critical habitat.

Northern Long-Eared Bat

The northern long-eared bat is a forest dwelling bat. The home range of the northern long-eared bat is approximately 150 acres (60.7 ha) including a summer and winter habitat. In the summer, northern long-eared bats roost under bark or in crevices of trees, preferring to roost in tall trees and under the exfoliating bark of dead or dying trees. In the winter, northern long-eared bats hibernate in caves and mines. The northern long-eared bat prefers foraging in edge habitats and forests comprised of trees with a diversity of life stages.

Sightings have been documented in the state, but in the Turtle Mountains, the Missouri River Valley, and in the Badlands (BIA, 2015). White-nose syndrome (WNS) is the predominant threat to the northern long-eared bat at this time; however, in areas not yet affected by WNS, incidental takes are not prohibited. Western North Dakota is not included in the current extent of WNS; therefore, no conservation actions are required at this time. This project will have no effect on the northern long-eared bat.

Rufa Red Knot

The rufa red knot is a shorebird that breeds in the central Canadian Arctic, with primary breeding grounds in Nunavut Territory, but some potential breeding habitat extending into the Northwest Territories. The rufa red knot winters along the Atlantic coasts of Argentina and Chile (particularly the island of Tierra del Fuego), the north coast of Brazil, and further north into Mexico and the southeast United States. During migration, the rufa red knot primarily follows the Atlantic coastline to and from breeding and wintering grounds. However, geolocator results from red knots wintering in Texas showed that some birds migrate using a central flyway across the Midwestern U.S. and may have a northern Great Plains stopover. Rufa red knots spend 2 to 3 months at breeding sites in northern Canada.

Rufa red knots are specialized molluscivores, feeding primarily on hard-shelled mollusks in soft wet sand/sediment. In addition to mollusks, red knots may feed upon shrimp, crabs, marine worms, and horseshoe crab eggs and other similar invertebrates. On the breeding ground, rufa red knots feed mostly on terrestrial invertebrates and grass shoots/seeds.

The shoreline of the Missouri River provides stopover habitat for the red knot during its annual migration. Although some individuals may stopover in North Dakota, the species is rare and is not reported in North Dakota in every year. Reported historical sightings since 1900, are primarily one or a few birds; however, larger flocks have been reported. The majority of these sightings have been made in the prairie pothole region during the spring migration in late April through May. An increase in future sightings may result from an increase in public awareness.

There is no potential shoreline habitat within the project area. It is determined that construction of the Project will have no effect on this species.

Cumulative Impacts

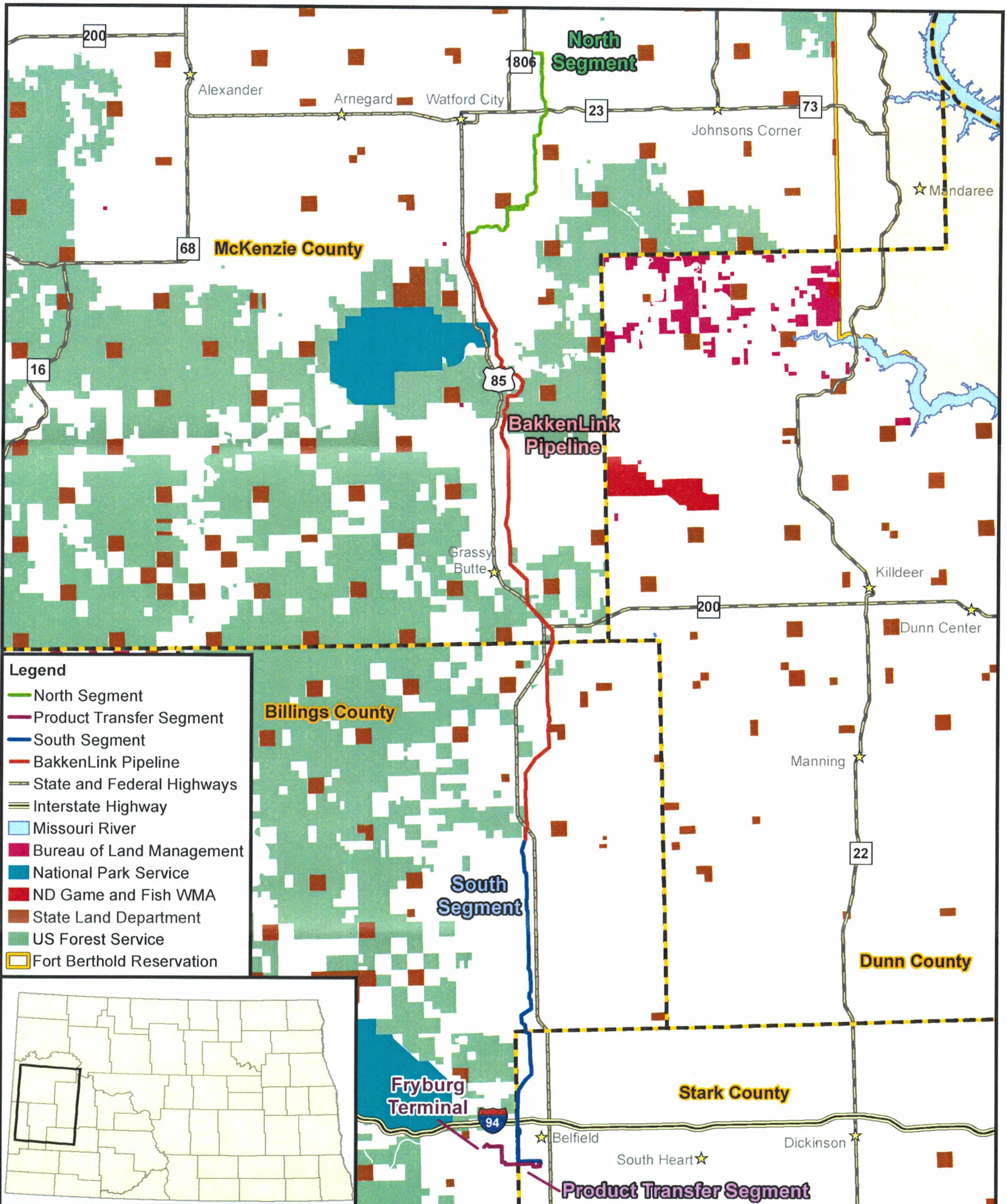
The proposed project is located in a highly developed (oil and gas) landscape and parallels existing pipeline(s) for the extent of the route. Potential impacts to wildlife include displacement due to construction activities and temporary loss of ground cover in native and planted grassland areas. Ground clearing may temporarily impact habitat for unlisted species, including migratory birds, small and large mammals, and other wildlife species. These effects are not likely to cause long-term declines in populations in the area.

On behalf of Andeavor, Carlson McCain is seeking comments regarding the referenced project in compliance with the North Dakota Energy Conversion and Transmission Facility Siting Act. We request comments be submitted by November 28, 2017. Please call me at 701-255-1475 if you have any questions.

Sincerely,

Todd Hartleben, P.E.
Professional Engineer

Attachments



R:\projects\7000-7500\7070 - YGrade North\GIS\Figure 1 Site Location103.mxd

October 2017

Carlson McCain

ENVIRONMENTAL · ENGINEERING · SURVEYING

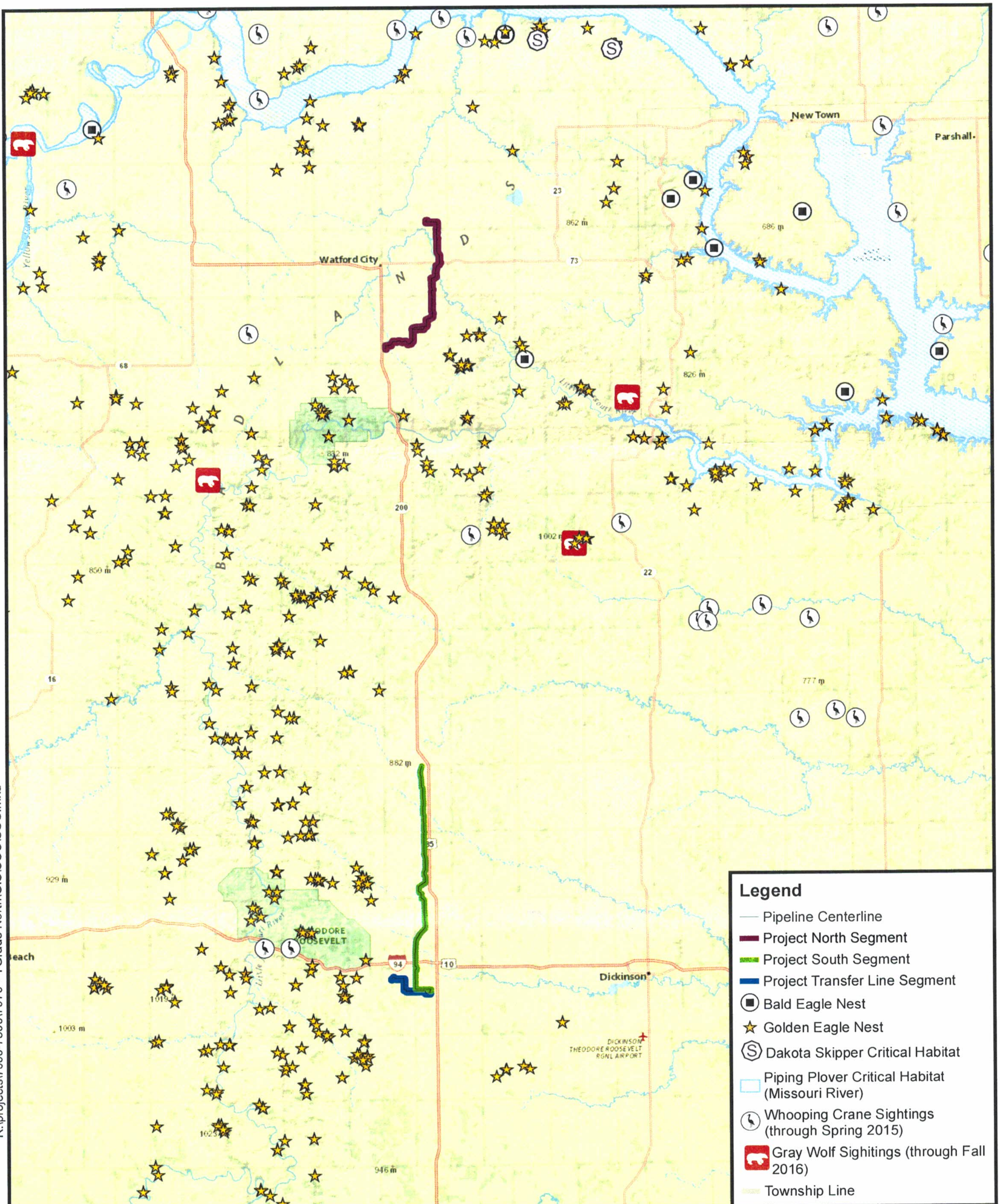
1:506,880

1 inch = 8 miles

0 8 Miles

N

Figure 1- Location Map
Proposed Route
Y-Grade Hub Project
Andeveaor



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October 2017

Carlson McCain
ENVIRONMENTAL ENGINEERING SURVEYING

1:729,134 1 inch = 12 miles

0 6 12 miles

Basemap: National Geographic World Map

N

Figure 2 - Species of Concern

Y-Grade Hub Project
Andeveaor

21 November 2017

Todd Hartleben, P.E.
Professional Engineer, Carlson McCain, Inc.
600 South 2nd St., Ste 105.
Bismarck, ND 58504

I am writing in response to the invitation for comments concerning Project: PROPOSED PIPELINE, ANDEAVOR Y-GRADE HUB PROJECT

Upon review of the proposed project sketch, the North Dakota Aeronautics Commission (NDAC) found three (3) private-use airports within/near the project's boundary. Based on Google Earth, the airports' previously mentioned may no longer be in use. For reference, here are the three private-use airports located near the project boundary.

Redmond Brothers Airstrip – located approximately 3 miles North of Fryburg, ND
Watson Private Airstrip – located approximately 8 miles North of Grassy Butte, ND
Tachenko Strip – located approximately 7 miles South of Grassy Butte, ND

The NDAC recommends verifying these private-use airports are no longer in use if the pipeline route is intended to traverse the airport boundary.

Please give the NDAC a call if you have any comments, concerns, and/or questions.

Sincerely,

Jared L. Wingo
Airport Planner
North Dakota Aeronautics Commission
Office: (701) 328-9655
Email: jwingo@nd.gov

NORTH DAKOTA
DEPARTMENT *of* HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

November 3, 2017

Mr. Todd Hartleben, P.E.
Carlson McCain
600 South 2nd Street, Suite 105
Bismarck, ND 58504

Re: Andeavor Y-Grade Hub Project
McKenzie, Billings and Stark Counties

Dear Mr. Hartleben:

This department has reviewed the information concerning the above-referenced project submitted under date of October 30, 2017, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Oil and gas projects disturbing one or more acres are required to obtain a permit to discharge storm water if runoff from the project will carry eroded material to a water of the state. A permit is not required for oil and gas projects if runoff from the project will not carry eroded material to a water of the state. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). In addition, cities or counties may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. The proposed construction project overlies the Cherry Creek and Little Missouri River glacial drift aquifers, both of which are sensitive groundwater areas. In addition, it is possible that some portions of the project may be located within wellhead or source water protection areas and in close proximity to domestic and/or stock water supply wells. Care should be taken to avoid spills of any materials that may have an adverse effect on groundwater quality. All spills must be immediately reported to this Department and appropriate remedial actions performed.

5. Projects that involve construction of pipelines should select locations that minimize the potential for impacts to human health and the environment during and after construction by avoiding, when possible, source water protection areas and sensitive surface and groundwater environments. Additionally, when possible, pipeline routes should select areas with natural barriers to both surface and ground waters. Human health and the environment should be further protected by developing a spill response plan that emphasizes rapid deployment of prepositioned assets necessary to contain spills and subsequent cleanup. Proper surveillance and monitoring for early detection of leaks should be required.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT *of* HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

North Dakota Department of Transportation

Thomas K. Sorel
Director

Doug Burgum
Governor

November 29, 2017

Todd Hartleben, P.E.
Carlson McCain
600 S. 2nd Street, Suite 105
Bismarck, ND 58504

PROPOSING PIPELINE ANDEAVOR Y-GRADE HUB, MCKENZIE COUNTY, NORTH DAKOTA

We have reviewed your October 30, 2017, letter.

This project should have no adverse effect on the North Dakota Department of Transportation highways.

However, if because of this project any work needs to be done on highway right of way, appropriate permits and risk management documents will need to be obtained from the Department of Transportation District Engineer, Joel Wilt at 701-774-2700.

Robert Fode

ROBERT A. FODE, P.E., DIRECTOR - OFFICE OF PROJECT DEVELOPMENT

57\raf\js
c: Joel Wilt, Williston District Engineer

GOVERNOR, Doug Burgum
DIRECTOR, Terry Steinwand
DEPUTY, Scott A. Peterson

"VARIETY IN HUNTING AND FISHING"
NORTH DAKOTA GAME AND FISH DEPARTMENT
100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

November 27, 2017

Todd Hartleben, PE
Professional Engineer
Carlson McCain
600 South 2nd Street, Suite 105
Bismarck, ND 58504

Dear Mr. Hartleben:

RE: Andeavor Y-Grade Hub Project

Andeavor is proposing a natural gas liquids (NGL) project that will transport mixed NGLs from an existing natural gas plant in McKenzie County to a fractionation facility in Billings County, North Dakota. The proposed project consists of construction of approximately three separate pipeline segments and the conversion of 42 miles of existing crude oil pipeline. The North Dakota Game and Fish Department has reviewed this project for wildlife concerns.

A primary concern with pipeline projects is the possible disturbance of native prairie and wooded draws associated with construction of the pipeline and access roads. Avoidance of native prairie areas reduces impacts to a number of grassland species including many of the species of conservation priority. We ask that work within these areas be avoided to the extent possible, every effort be made to prevent destruction of woody vegetation, and disturbed areas be reclaimed to pre-project conditions.

The pipeline route crosses the Green River and Cherry Creek, both Classified fisheries. We recommend that these streams be crossed by directional boring to protect the resource. If this method is not feasible, construction should not take place within the waterway between April 15 and June 1, and controls should be implemented to minimize erosion and sedimentation. The department also recommends that additional precautions be implemented into the design of pipes crossing under the State's waterways. One means of minimizing a potentially large pipeline failure is to incorporate pressure sensing valves on both sides of the waterway. These valves should be placed as close to the waterway as possible while staying out of the floodplain to reduce potential damage from ice and other floating debris. A maintenance schedule should be developed to insure the integrity of the pipe for the life of the project.

Aquatic nuisance species (ANS) are a major concern in North Dakota. State law requires that the contractor, including any and all subcontractors involved in this project, take appropriate precautions to prevent the introduction or movement of ANS within the state. The contractor should provide the department a reasonable opportunity to inspect any equipment prior to these items being launched or placed into waters of the state. The Department's Aquatic Nuisance Species Coordinator, Ms. Jessica Howell, can be contacted at 701-368-8368 for equipment inspections or additional information regarding ANS prevention protocols.

The National Wetland Inventory indicates a variety of wetlands within the proposed project corridor. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas. Unavoidable destruction or degradation of wetland acres should be mitigated in kind.

Aerial surveys should be conducted for raptor nests before construction begins. We recommend that a ½-mile construction buffer be implemented around active eagle nest sites (known occupied within the past 5 years). Ms. Sandra Johnson, Conservation Biologist, may be contacted at 701-328-6327 for additional information on golden eagle nest sites in the state.

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat provided these recommendations are implemented where appropriate during project construction.

Sincerely,

Steve Dyke

(for) Greg Link
Chief
Conservation & Communication Division

js

North Dakota Geological Survey

Edward C. Murphy - State Geologist

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.state.nd.us/ndgs

November 15, 2017

Mr. Todd Hartleben, P.E.
Carlson McCain, Inc.
600 South 2nd Street, Suite 105
Bismarck, ND 58504

Re: Proposed Pipeline – Andeavor Y-Grade Hub Project

The North Dakota Geological Survey appreciates the notification and opportunity to review and provide comment on the proposed pipeline project. The comment solicitation letter was reviewed on November 15, 2017.

Regarding the location of this project and the proposed pipeline corridors, it should be noted that it has been found that areas of landslides and slope instability are common throughout this part of North Dakota and particularly along HWY 85. We have recently completed landslide mapping work in several 1:24,000 scale quadrangles that cover the proposed project areas and do contain some landslide areas that appear to be near project locations that should be noted and evaluated.

Our landslide area maps and associated data files are available on our website at:

https://www.dmr.nd.gov/ndgs/landslides/

Please feel free to contact our offices at any time with any additional questions, comments, or concerns at (701) 328-8000 or via email at fjanderson@nd.gov

Sincerely,

North Dakota Geological Survey:

Fred Anderson

Fred Anderson
Geologist

FJA\

JOB SERVICE NORTH DAKOTA
UNEMPLOYMENT INSURANCE

TAX & FIELD SERVICES
PO Box 5507
Bismarck ND 58506-5507
701-328-2814
TTY RELAY ND 800-366-6888 FAX: 701-328-1882
Email: jsuits@nd.gov

November 15, 2017

ANDEAVOR LOGISTICS
19100 RIDGEWOOD PKWY
SAN ANTONIO, TX 78259

RE: ANDEAVOR Y GRADE HUB PROJECT

Dear Employer:

ACCOUNT NUMBER: PA

We have been advised that you are undertaking a large construction project that may be liable to the construction project risk protection provision of North Dakota Century Code, Section 52-04-06.1. A project is liable to that statute if it meets the following criteria:

1. Bids are let after August 1, 2001, **and**
2. Construction costs are $50 million or more, **and**
3. The project is planned to be completed or discontinued within a period of seven years.

The construction costs included in this determination include costs for labor, equipment, materials and incidental items provided in the contractor's bid; contractor's overhead costs and profit; cost for field engineering and inspection that occur after the project is bid, but exclude pre-construction design and engineering costs. Enclosed is the *Construction Project Risk Protection Compliance* document, which provides general information regarding, and procedures for complying with, the requirements of the statute.

Please complete the enclosed *Construction Project Registration Form* and return to the address above within 15 days of the date of this letter, so Job Service North Dakota may make an accurate determination of project liability.

If you have any questions, please call 701-328-2814.

Sincerely,

UI/TAX AND FIELD SERVICES
UNEMPLOYMENT INSURANCE

Enclosures

CONSTRUCTION PROJECT REGISTRATION
UNEMPLOYMENT INSURANCE
SFN 52990 (02-2013)

Job Service North Dakota
Tax & Field Services
PO Box 5507
Bismarck, ND 58506-5507
701-328-2414
FAX 701-328-1882
TTY 1-800-366-6888

Date (MM/DD/YYYY)	Project Name	Project Number
Owner/Contractor	JSND Account Number	
Project Start Date	Bid Letting Date	Estimated Project Completion Date
Number of Employees (Total Amount of Contractors on the Project)		

Calculation of Total Construction Costs:
(Excluding Pre-Construction Design and Engineering Costs)

	AMOUNT
Labor	
Equipment	
Materials	
Field Engineering (occurring after project is bid)	
Inspection (occurring after project is bid)	
Other-Specify	
Other-Specify	
Total Construction Costs	

Name	Telephone Number
Title	Date

Signature of Authorized Representative	Telephone Number
Title	Date

1707 North 9th Street
PO Box 5523
Bismarck, ND 58506-5523
Phone: (701) 328 – 2800
Fax: (701) 328 – 3650

www.land.nd.gov

DEPARTMENT OF
ND TRUST LANDS
INVESTING FOR EDUCATION

Lance D. Gaebe, Commissioner

November 16, 2017

Todd Hartleben, P.E.
Carlson McCain, Inc.
600 South 2nd Street, Suite 105
Bismarck, ND 58504

RE: **Proposed Pipeline**
Andeavor Y-Grade Hub Project

Dear **Todd Hartleben**:

After reviewing the proposed Andeavor Y-Grade Hub Project, the route will cross a tract of School Trust Land in the SE4 of Section 16, Township 149N, Range 98W, McKenzie County. Carlson McCain, on behalf of Andeavor, will need to apply for a pipeline right-of-way by filling out an online application at: https://land.nd.gov/SurfaceROW/RightOfWay. After Carlson McCain applies for the right-of-way, the Department of Trust Lands will respond with specific instruction on how to proceed with the right-of-way process.

Should you have any further questions, feel free to contact me at 701-328-1912.

Sincerely,

Joseph Stegmiller
Natural Resource Professional

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
(701) 328-2750 • TTY 1-800-366-6888 or 711 • FAX (701) 328-3696 • http://swc.nd.gov

November 21, 2017

Todd Hartleben
Carlson McCain
600 South 2nd Street, STE 105
Bismarck, ND 58504

Dear Mr. Hartleben:

This is in response to your request for a review of the environmental impacts associated with the Proposed Pipeline, Andeavor Y-Grade Hub Project.

The proposed project has been reviewed by State Water Commission staff, and the following comments are provided:

- If surface water or groundwater will be diverted for construction of the project, a water permit will be required per North Dakota Century Code (NDCC) § 61-04-02. Permits for temporary surface water diversions within the Little Missouri River Basin, if issued, have additional conditions per an Interim Policy signed by the State Engineer on June 22, 2017. Please consult with the Water Appropriations Division of the Office of the State Engineer (OSE) if you have any questions regarding this comment at 701-328-2754 or waterpermits@nd.gov.

- There are floodplains identified in Section 19, Township 140N, Range 99W in Stark County (see attached FIRMette). Areas are designated to be in Zone A. North Dakota has no formal permitting authority as a state entity in NFIP identified floodplain areas. The permitting is always done by the local entity, which has jurisdiction in the area in question. Please work closely with the county floodplain administrator for permitting purposes.

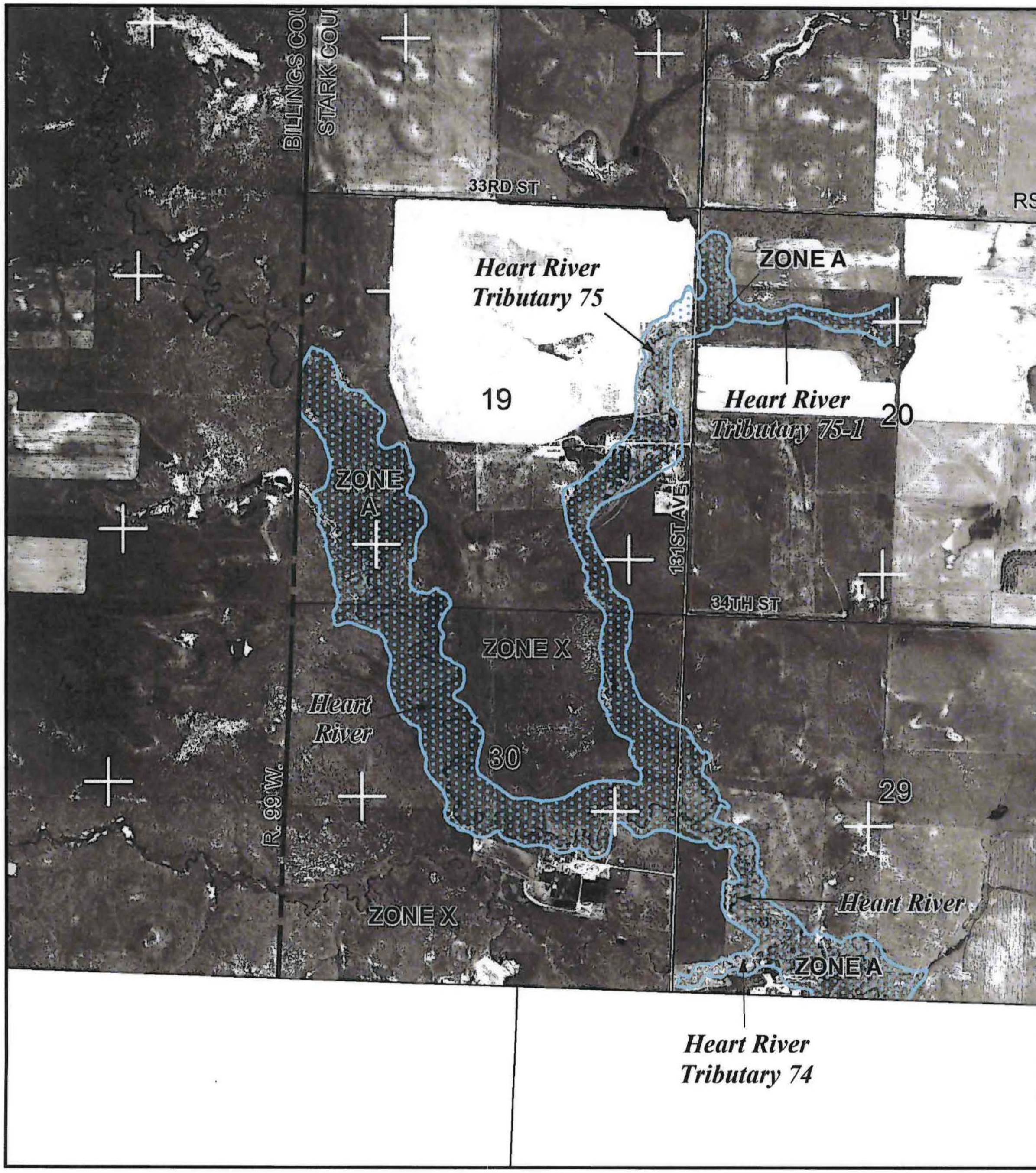
- Hartel Dam, Lemoine 1 is located approximately ¼ mile to the west of the proposed North Segment in the SW ¼ of the SE ¼ of Section 23, Township 150N, Range 98W. Be aware of this structure during construction to ensure it is not affected.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 701-328-4967.

Sincerely,

Jared Huibregtse
Water Resource Planner IV

JH:dm/1570



MAP SCALE 1" = 2000'

00 0 2000 4000 FEET

METE

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0125E

FIRM
FLOOD INSURANCE RATE MAP

STARK COUNTY, NORTH DAKOTA
AND INCORPORATED AREAS

PANEL 125 OF 850

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
STARK COUNTY	385369	0125	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

U.S. DEPARTMENT OF HOMELAND SECURITY

MAP NUMBER
38089C0125E

EFFECTIVE DATE
NOVEMBER 4, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov