United States Department of the Interior

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

IN REPLY REFER TO:
DESCRM
MC-208

SEP 21 2012

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, an Environmental Assessment (EA) has been completed and a Finding of No Significant Impact (FONSI) has been issued. The EA authorizes land use for the drilling of twelve oil and gas wells from one pad on the Fort Berthold Indian Reservation.

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

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

Tim LaPointe

Attachment

cc: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)
Elgin Crows Breast, Tribal Historic Preservation Officer (with attachment)
Derek Enderud, BLM, Bureau of Land Management (with attachment)
Grady Wolf, KLJ (with attachment)
Carson Hood/Fred Fox, MHA Energy Dept. (with attachment)
Eric Wortman, EPA (with attachment)
Jonathon Shelman, Corps of Engineers (e-mail)
Jeff Hunt, Fort Berthold Agency (e-mail)

Finding of No Significant Impact

QEP Energy Company (QEP)

Environmental Assessment for

Drilling of MHA 1-10-11H-149-91, MHA 2-10-11H-149-91, MHA 3-10-11H-149-91, MHA 4-10-11H-149-91, MHA 1-10-14H-149-91, MHA 2-10-14H-149-91, MHA 3-10-14H-149-91, MHA 4-10-14H-149-91, MHA 1-10-15H-149-91, MHA 2-10-15H-149-91, MHA 3-10-15H-149-91, and MHA 4-10-15H-149-91 Oil & Gas Wells

Fort Berthold Indian Reservation
Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill 12 oil and gas wells located atop a single well pad as follows:

- MHA 1-10-11H-149-91, MHA 2-10-11H-149-91, MHA 3-10-11H-149-91, MHA 4-10-11H-149-91, MHA 1-10-14H-149-91, MHA 2-10-14H-149-91, MHA 3-10-14H-149-91, MHA 4-10-14H-149-91, MHA 1-10-15H-149-91, MHA 2-10-15H-149-91, MHA 3-10-15H-149-91, and MHA 4-10-15H-149-91 located in T149N, R91W, 5th P.M., Section 10 (Dunn County)

Associated federal actions by BIA include determinations of effect regarding environmental resources and positive recommendations to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed action to impact the human environment is analyzed in the following Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the EA, I have determined that the proposed project would not significantly affect the quality of the human or natural environment. No Environmental Impact Statement is required for any portion of the proposed activities.

This determination is based on the following factors:

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

8. The proposed project would improve the socio-economic condition of the affected Indian community.

Tim LaPointe

Regional Director

9-21-2012

Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

QEP Energy Company

Drilling of MHA 1-10-11H-149-91, MHA 2-10-11H-149-91, MHA 3-10-11H-149-91, MHA 4-10-11H-149-91, MHA 1-10-14H-149-91, MHA 2-10-14H-149-91, MHA 3-10-14H-149-91, MHA 4-10-14H-149-91, MHA 1-10-15H-149-91, MHA 2-10-15H-149-91, MHA 3-10-15H-149-91, and MHA 4-10-15H-149-91 Oil & Gas Wells

Fort Berthold Indian Reservation

September 2012

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

CHAPTERS

FIGURES

TABLES

CHAPTER 1 PURPOSE AND NEED FOR ACTION

1.1 Introduction

This EA (Environmental Assessment) was prepared in accordance with NEPA (the National Environmental Policy Act) of 1969, as amended, and the regulations of the CEQ (Council on Environmental Quality), 40 CFR parts 1500 through 1508. An EA is an informational document intended for use by both decision-makers and the public. It discloses relevant environmental information concerning the proposed action and the no-action alternative.

1.2 Description of the Proposed Action

The Fort Berthold Reservation encompasses 988,000 acres, 457,837 of which are in tribal and individual Indian ownership by the Three Affiliated Tribes (Mandan, Hidatsa, and Arikara) and its members. The reservation is located in west central North Dakota and is split into three areas by Lake Sakakawea, which traverses the center of the reservation. It occupies sections of six counties: Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward.

The Fort Berthold Reservation lies atop the Bakken Formation, a geologic formation rich in oil and gas deposits that extends approximately 25,000 square miles beneath North Dakota, Montana, Saskatchewan, and Manitoba, with approximately two-thirds of the acreage beneath North Dakota. The Three Forks Formation lies beneath the Bakken. The North Dakota Department of Mineral Resources estimates that there are approximately 2 billion barrels of recoverable oil in each of these Formations. (The Bakken contains about 169 billion barrels of oil and the Three Forks contains about 20 billion barrels; however, most of this is not expected to be recoverable.) The Department's director estimates that there are 30–40 remaining years of production, or more if technology improves.

The proposed action includes approval by the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM) for QEP Energy Company (QEP) to drill and complete 12 wells from a single well pad targeting the Bakken and Three Forks Formations. The proposed action is located on the Fort Berthold Reservation and is proposed to be located in T149N, R92W, 5th P.M., Section 10 (Dunn County). Please refer to ***Figure 1.1, Project Location Map.***

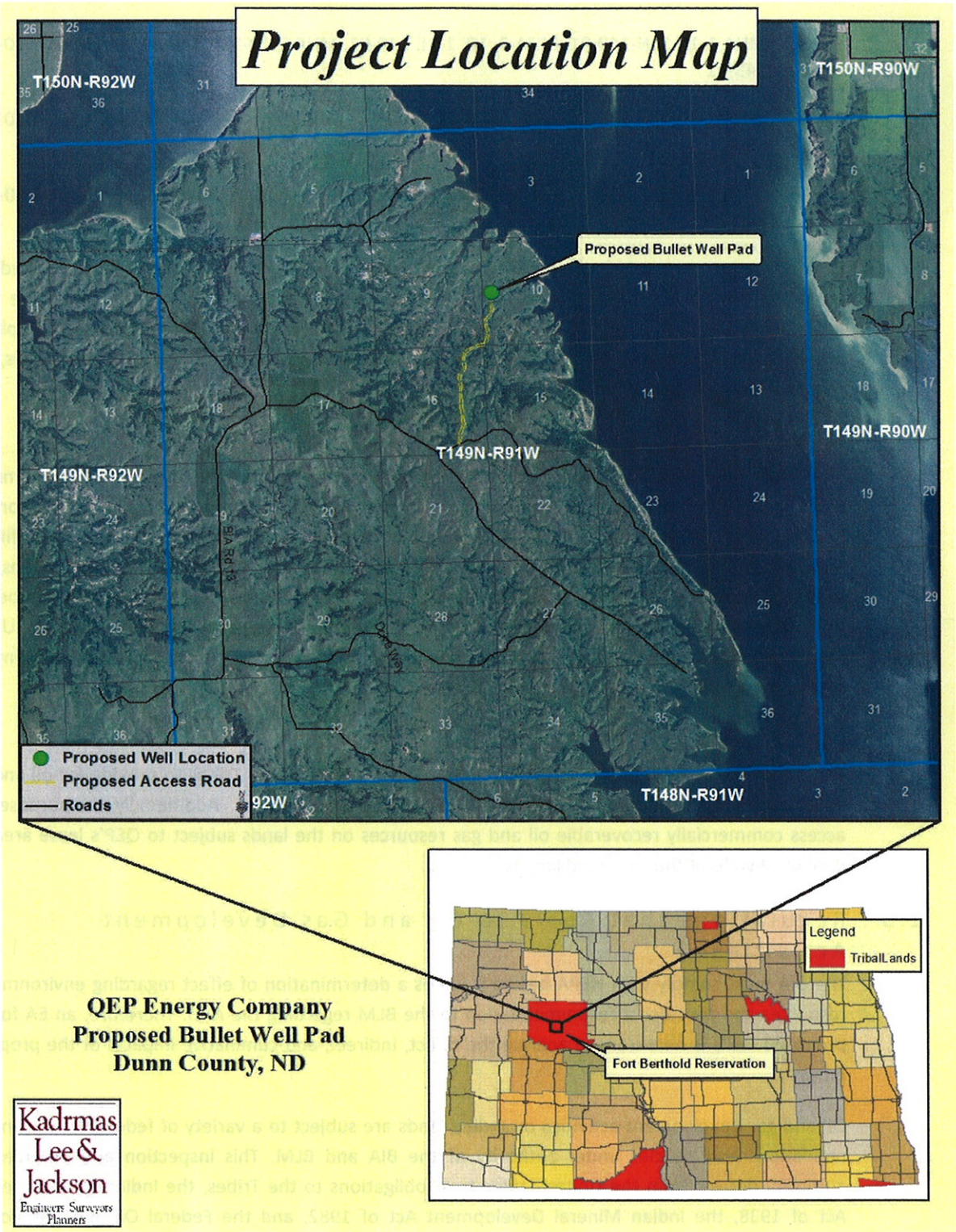

Figure 1.1, Project Location Map

The proposed well pad would support 12 wells. The 12 wells are proposed to be paired into three groups of four wells, as shown below:

- MHA 1-10-11H-149-91, MHA 3, 10, 11H, 149-91, MHA 2-10-11H-149-91, and MHA 4-10-11H-149-91
- MHA 1-10-14H-149-91, MHA 3-10-14H-149-91, MHA 2-10-14H-149-91, and MHA 4-10-14H-149-91
- MHA 1-10-15H-149-91, MHA 3-10-15H-149-91, MHA 2-10-15H-149-91, and MHA 4-10-15H-149-91

Each of the groups would have its own spacing unit in which the minerals are to be developed. The wells beginning with "MHA 1" or "MHA 2" would target the Bakken Formation, while the wells beginning with "MHA 3" or "MHA 4" would target the Three Forks Formation. Proposed completion activities include acquisition of rights-of-way (ROW), infrastructure for the proposed wells, and roadway improvements.

1.3 Need for the Proposed Action

The Tribes own their mineral resources, which are held in trust by the United States government through the BIA. The BIA's positive recommendation to the BLM for approval of the Applications for Permit to Drill (APDs) to drill the 12 wells would provide important benefits to the Three Affiliated Tribes, including revenue that could contribute to the Tribal budgets, satisfy Tribal obligations, and fund land purchase programs to stabilize its land base. It would also provide individual members of the Tribes with needed employment and income. Furthermore, the proposed action gives the United States an opportunity to reduce its dependence on foreign oil and gas by exploring for domestic sources of oil and gas.

1.4 Purpose of the Proposed Action

The purpose of the proposed action is to allow the Three Affiliated Tribes to provide for oil and gas development on the identified lands on the Fort Berthold Reservation. Additionally, the purpose is to access commercially recoverable oil and gas resources on the lands subject to QEP's lease areas by drilling 12 wells at the identified location.

1.5 Regulations that Apply to Oil and Gas Development Activities

The BIA must comply with NEPA before it issues a determination of effect regarding environmental resources and provides a recommendation to the BLM regarding the APD. Therefore, an EA for the proposed wells is necessary to analyze the direct, indirect, and cumulative impacts of the proposed project.

Oil and gas development activities on Indian lands are subject to a variety of federal environmental regulations and policies under authority of the BIA and BLM. This inspection and enforcement authority derives from the United States trust obligations to the Tribes, the Indian Mineral Leasing Act of 1938, the Indian Mineral Development Act of 1982, and the Federal Oil and Gas Royalty Management Act of 1982. Under the BIA's regulations at 25 CFR Part 225, the BLM exercises authority over oil and gas development on Tribal lands under its implementing regulations at 43 CFR Part 3160 and its internal supplemental regulations and policies. The BLM's authority includes the

inspection of oil and gas operations to determine compliance with applicable statutes, regulations, and all applicable orders. These include, but are not limited to, conducting operations in a manner which ensures the proper handling, measurement, disposition, and site security of leasehold production; and protecting other natural resources, environmental quality, life, and property.

CHAPTER 2 ALTERNATIVES

2.1 Introduction

This chapter provides information on the development and evaluation of project alternatives. The development of alternatives is directly related to the purpose and need for the project. Two alternatives are being considered for this project: a no action alternative and a proposed action alternative.

2.2 Alternative A: No Action

Under the no action alternative (Alternative A), the BIA and BLM would not authorize the development of the 12 well pad, resulting in no drilling or completion of the 12 proposed oil and gas wells. There would be no environmental impacts associated with Alternative A. However, the Three Affiliated Tribes would not receive potential royalties on production or other economic benefits from oil and gas development on the Reservation. Further, the oil and gas resources targeted by the proposed action would not be explored for commercial production or recovered and made available for domestic energy use.

2.3 Alternative B: Proposed Action

The proposed action (Alternative B) includes authorization by the BIA and BLM to construct a multiple well pad, resulting in the drilling and completion of 12 oil and gas wells, as well as associated ROW acquisition, roadway improvements, and infrastructure for the wells. Infrastructure would include oil and gas gathering pipelines, water pipelines, and buried electrical and telecommunication lines, all of which would be located within the area cleared during the on-site surveys. In addition, a communication tower would be constructed at the well pad location. The free standing, unguyed, communication tower would be approximately 30 to 60 feet tall. The access road would be located in ROW acquired by QEP.

The project would consist of a 2,560 acre spacing unit developed by the 12 wells, located atop a single three tiered well pad with an access road and associated infrastructure. The well pad is where the actual surface disturbance caused by drilling activities would occur. The spacing unit is the location of the minerals that are to be developed. The location of the proposed well site, access road, and proposed horizontal drilling techniques were chosen to minimize surface disturbance.

The well pad location would require new right-of-way for the site area, access points, and associated infrastructure. Rights-of-way would be located to avoid sensitive surface resources and any cultural resources identified in site surveys. The access road would be improved as necessary to eliminate overly steep grades, maintain current drainage patterns, and provide all-weather driving surfaces.

Intensive, pedestrian resource surveys of the proposed well pad and access road were conducted on September 19, 2011 and October 19, 2011 by KL&J. The purpose of this survey was to gather site-specific data and photos with regards to botanical, biological, threatened and endangered species, eagle, and water resources. The well pad study area consisted of 36.5 acres centered on the proposed well pad center point and a 400-foot wide corridor along the proposed access road. Resources were evaluated using visual inspection and pedestrian transects across the site. In addition, a survey for eagles and eagle nests within 0.5 miles of the project disturbance area was

conducted. This survey consisted of pedestrian transects focusing specifically on potential nesting sites within 0.5 miles of the project disturbance areas, including cliffs and wooded draws. Wooded draws were observed both from the upland areas overlooking the draws and from bottomlands within the actual draws.

BIA EA on-site assessments of the well pad and access road were also conducted on September 19, 2011 and October 19, 2011. The BIA Environmental Protection Specialist and representatives from QEP and KL&J were present. The site was evaluated for cultural resources clearance on September 19, 2011 and October 19, 2011 with representatives from the Tribal Historic Preservation Office and KL&J. Construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. The well pad and access road locations were finalized, and the BIA gathered information needed to develop site-specific mitigation measures and Best Management Practices (BMPs) to be incorporated into the final APDs. Those present at the on-site assessment agreed that the selected location, along with the minimization measures QEP plans to implement, are positioned to minimize impacts to sensitive wildlife and botanical resources. In addition, comments received from the United States Fish and Wildlife Service (USFWS) have been considered in the development of this project.

The 12 proposed wells would be located in the W½ of Section 10, Township 149 North, Range 91 West, 5th P.M. to access potential oil and gas resources within sections 10, 11, 14, and 15, Township 149 North, Range 91 West, 5th P.M. Please refer to ***Figure 2.1,***

The proposed wells would be accessed from the south. A new access road approximately 12,410 feet long would be constructed beginning in the SE¼ Section 16, Township 149 North, Range 91 West and ending in the NW¼ Section 10, Township 149 North, Range 91 West. The proposed access road would be used to access the wells on the 12 well pad. The access road has been situated to avoid drainages and wooded draws to the extent possible. Spot grading would be needed to flatten existing landscape grades along the proposed access road alignment. Please refer to ***Figure 2.2, Proposed Access Road.*** Culverts and cattle guards would be installed along the new access road. For specific locations of the proposed culverts, please refer to ***Appendix C, Well Pad and Access Road Plat.***

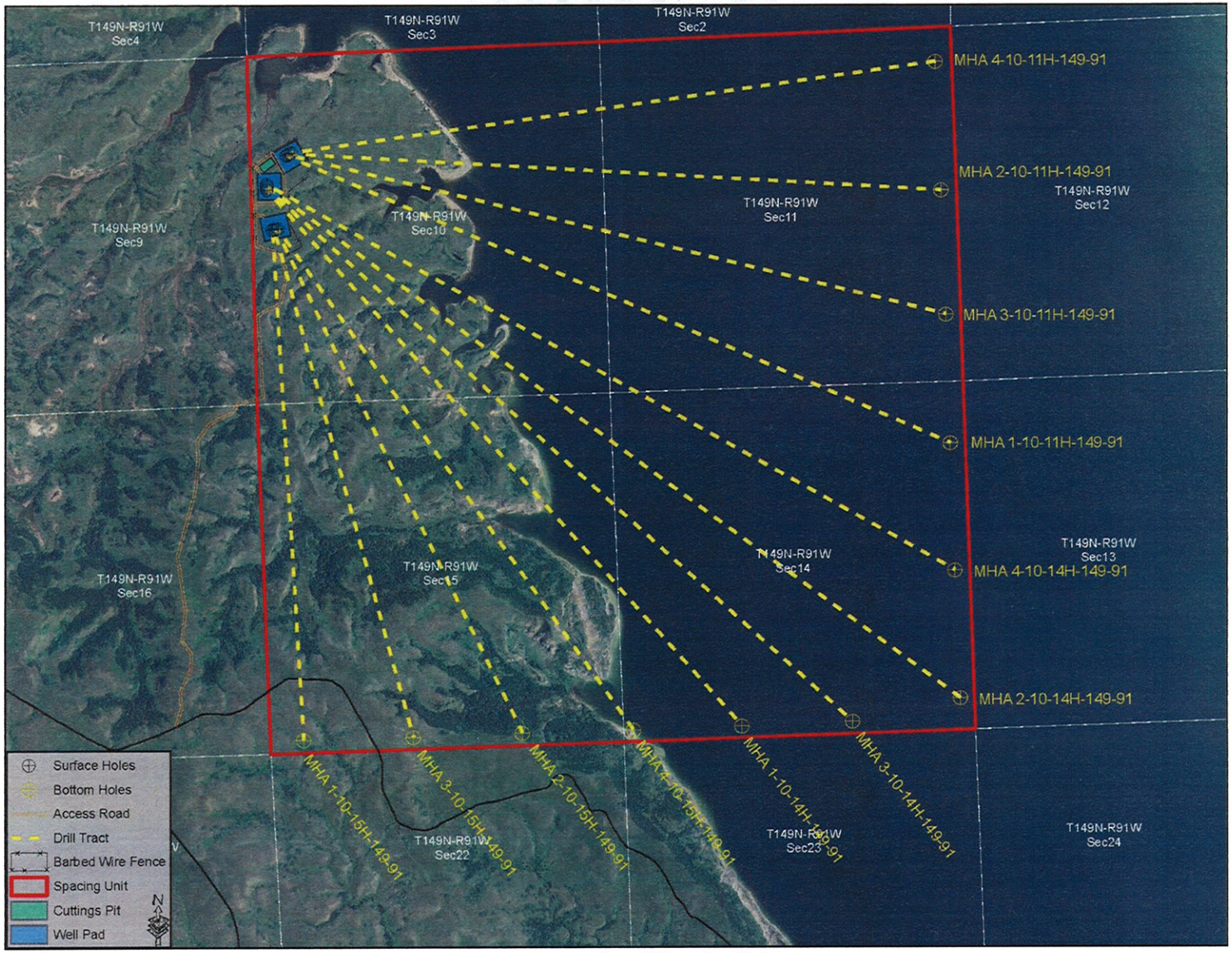

Figure 2.1, Location of Spacing Units

Figure 2.2, Proposed Access Road

2.4 Field Camps

Self-contained trailers may temporarily house key personnel on-site during drilling operations. No long-term residential camps are proposed. Sewage would be collected in standard portable chemical toilets or service trailers on-site and then transported off-site to a state-approved wastewater treatment facility. Other solid waste would be collected in enclosed containers and disposed of at a state-approved facility.

2.5 Access Roads

Existing roadways and two-track trails would be used to the extent possible to access the proposed wells; however, the construction of approximately 12,410 feet of new access road (66.68 acres) would also be required. The new access road would be constructed off of 22nd Street Northwest, and travel north to the proposed well pad. The running surface of the access road would be surfaced with crushed gravel or scoria from a previously approved location, and erosion control measures would be installed. Erosion control measures would include straw wattles and fiber matting on areas of steeper slopes, as well as culverts to maintain drainage. In addition, reclamation efforts would occur soon after construction is completed. For specific locations of the proposed culverts, please refer to ***Appendix C, Well Pad and Access Road Plat***. Proposed right-of-way varies from 90 to 300 feet in width, due to areas of steep or rugged terrain. Construction activities within the right-of-way would consist of a 20 to 28-foot wide roadway with the remainder of the disturbed area due to borrow ditches and construction slopes, gathering pipelines, and electrical infrastructure. The access road borrow ditches and construction slopes would be re-seeded upon completion of construction to reduce access road related disturbance. Access road construction shall follow road design standards outlined in the BLM's Gold Book.

Construction of the proposed wells is planned to occur in late 2012/early 2013. It is anticipated that construction of the proposed project may take place during the migratory bird nesting and breeding season (between February 1 and July 15). In the event that construction should occur during future migratory bird nesting and breeding seasons, a qualified biologist would conduct pre-construction surveys for migratory birds or their nests within five days prior to the initiation of all construction activities. Mowing of the site prior to nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of these surveys would be reported to USFWS.

2.6 Well Pads

The proposed well pad would consist of three leveled areas, or pods, covered with several inches of crushed gravel or scoria. The pods would be used for the drilling rig and related equipment. The dry cuttings would be stabilized and placed into a single on-site cuttings pit. Each pod required for drilling and completing operations would be approximately 350 feet x 400 feet, or approximately 3.34 acres in size. Cut and fill slopes on the edge of the well pad would be 2:1 where less than eight feet and 3:1 where eight feet or greater. In areas where livestock are present, the entire well pad would also be fenced. By placing 12 wells on one pad location, the disturbance has been minimized from approximately 60-acres (five acres/well location) to the approximate 24.56 acres that would be located within the well pad fenced area.

The well pad area would be cleared of vegetation, stripped of topsoil, and graded to specifications in the APDs submitted to the BLM and would comply with the standards and guidelines prescribed in the BLM's "Gold Book." Topsoil would be stockpiled and stabilized until disturbed areas are reclaimed

and re-vegetated. Excavated subsoils would be used in pad construction, with the finished well pad graded to ensure water drains away from the drill site. Erosion control at the site would be maintained through the use of BMPs, which may include, but are not limited to, water bars, bar ditches, diversion ditches, bio-logs, silt fences, and re-vegetation of disturbed areas. A minimum of an 18-inch berm would be constructed around the entire pad to protect against run-off and contaminants from leaving the pad. In addition, ground water monitoring wells would be installed east of the proposed topsoil stockpile to identify if any sub surface contaminants are moving off-site. Construction of the proposed wells is planned to occur in late 2012/early 2013. It is anticipated that construction of the proposed project may take place during the migratory bird nesting and breeding season (February 1 to July 15). In the event that construction should occur during future migratory bird nesting and breeding seasons, a qualified biologist would conduct a pre-construction survey for migratory birds or their nests within five days prior to the initiation of all construction activities. Mowing of the site prior to nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of the survey would be reported to USFWS.

2.7 Drilling

Following the access road construction and well pad preparation, a drilling rig would be rigged up at the multiple well sites. The time for rigging up, drilling the well, and rigging down the well is anticipated to be about 30 days. During this phase, vehicles and equipment would access the site several times a day.

Initial drilling would be vertical to a depth of approximately 9,800 feet to reach the Bakken Formation and 10,200 feet to reach the Three Forks Formation, at which it would angle to become horizontal. The laterals along the horizontal plane would extend approximately 11,200 feet. This horizontal drilling technique would minimize surface disturbance.

For the first 2,000 feet drilled at each well (commonly referred to as a "surface hole"), a fresh water based mud system with non-hazardous additives would be used to minimize contaminant concerns. Water would be obtained from a commercial source for this drilling stage. About eight gallons of water would be used per foot of hole drilled, for a total of about 40,000 gallons (20,000 gallons in the hole and 20,000 gallons as working volume at the surface). After setting and cementing the surface casing, an oil-based mud system consisting of about 80 percent diesel fuel and 20 percent saltwater would be used to drill the remainder of the vertical hole and curve. Once the seven-inch production casing is set and cemented through the curve (into the lateral), a saltwater based drilling mud would be utilized for the horizontal portion of the wellbore.

A modified-closed loop drilling system would be utilized. As part of this, QEP would implement a modified-closed loop circulation drilling mud system, whereby drill cuttings from the well are separated from the drilling fluid at the shale shaker. The liquid drilling mud is then returned to the active drilling mud tanks for continued use. If it is determined that the cuttings would be placed within an onsite cuttings pit, the drill cuttings would be stabilized, dried and placed in the reinforced lined cuttings pit. The drill cuttings pit would be reclaimed to BLM and NDIC standards immediately upon finishing completion operations. If it is determined that the cuttings would be hauled off site, the drill cuttings would be dried and transported to an approved disposal site operated by TJD Consulting, LLC.

The cuttings are stacked up starting in one end of the earthen pit until they reach a point approximately 3-feet below ground level. A loader brings dry dirt from the cuttings pit spoil pile and covers the dry drilling cuttings. This process continues by stacking drill cuttings then covering with dirt until the end of drilling. At this point, all the dry, stackable cuttings would be buried and covered by dirt leaving a stable level surface.

Any minimal free fluid present in the pit, while the pit is open and in use, would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site. The drill cuttings pit would be reclaimed to BLM and NDIC standards immediately upon finishing completion operations.

2.8 Casing and Cementing

Casing and cementing methods would be used to isolate all near-surface aquifers and hydrocarbon zones encountered during drilling.

2.9 Completion and Evaluation

Once each well is drilled and cased, approximately 30-45 additional days are required for the completion and evaluation process. Completion and evaluation activities include cleaning out the well bore, pressure testing the casing, perforating and fracturing to stimulate the horizontal portion of the well, and running production tubing for potential future commercial production. Fluids utilized in the completion process would be captured in tanks and would be disposed of in accordance with BLM and NDIC rules and regulations. Once the wells are completed, site activity and vehicle access would be reduced. If the wells are determined to be successful, tank trucks (and, if appropriate, natural gas gathering lines) would transport the product to market.

2.10 Commercial Production

If commercially recoverable oil and gas resources are found at the proposed site, the site would become established as a production facility. Production equipment, including well pumping units, vertical heater treaters, storage tanks and flare systems with associated piping would be installed. A minimum of an 18-inch berm would be constructed around the entire pad to protect against runoff and contaminants from leaving the pad. In addition, ground water monitoring wells would be installed east of the proposed topsoil stockpile to identify if any sub surface contaminants are moving off-site. Tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24-hour record precipitation. Additionally, the proposed topsoil stockpile and straw wattles would be used as tertiary containment to guard against the accidental release of fluids from the site. The straw wattles would be placed in all drainages within close proximity to the pad. All permanent above ground production facilities would be painted shale green to blend in to the surrounding landscape.

During initial production, oil would be collected in the storage tanks and periodically trucked into an existing oil terminal to be sold. Produced water is captured in storage tanks and periodically trucked to an approved disposal site. The frequency of trucking activities for both oil resources and produced water is dependent upon volumes and rates of production. All useable haul routes would consist of private roads or roads approved for this type of transportation use by local governing tribal, township, county and/or state entities. All associated applicable permits would be obtained and

restrictions complied. Production facilities at the proposed site would be tied to regional oil, gas, and/or saltwater pipelines. The oil, gas, and/or saltwater pipelines would be constructed within the 400-foot cleared corridor or additional NEPA analysis and subsequent approval from the BIA would be undertaken.

Natural gas would be flared on-site in accordance with BIA's Notice to Lessees 4A and NDIC regulations, which prohibit gas flaring for more than the initial year of operation.

When any of the proposed wells cease to flow naturally, a pump jack would be installed. After production ceases, the wells are plugged and abandoned, and the land would be fully reclaimed in accordance with BIA and BLM requirements.

QEP would avoid, minimize, and mitigate the environmental effects of the 12 wells by incorporating applicable conditions, mitigation measures, and BMPs from the BLM's regulations, BLM's Gold Book (4th Edition, 2006), and applicable BLM Onshore Oil and Gas Orders, including Numbers 1, 2, and 7.

2.11 Operation and Maintenance

QEP has contracted Arrow Pipeline, LLC (Arrow) as the pipeline provider for the wells proposed in this EA document. As current estimates expect the Bakken field to remain active for 30 to 40 years, it is important that pipeline systems are designed to perform for this period of time. Pipelines, if designed effectively and well maintained, may have an indefinite life expectancy.

To ensure their long-term viability, steel pipelines (type 5L X52) would be coated with a fusion bonded epoxy coating, which protects the steel pipelines against corrosive elements in the soil. In addition to the epoxy, a cathodic protection system is utilized to minimize external corrosion of the pipelines. The corrosion tolerance for each steel pipeline is 1/16-inch. Due to the non-corrosive nature of Bakken crude and low concentrations of hydrogen sulfide, Arrow does not anticipate excessive corrosion beyond the 1/16-inch threshold during the operating lifetime of the pipeline.

All welds completed on the steel pipelines are subjected to a 100 percent Non-Destructive Testing. After the welds have passed testing and covered for corrosion protection, the external coating of the pipe is inspected using a jeepmeter to detect holes and cracks. Before the pipelines are put into service, the steel pipe is hydrotested to approximately 1.5 times the minimum design pressure of 1,180 pounds per square inch gauge (psig). The produced water pipe is designed to sustain a minimum pressure of 750 psig and is hydrotested to approximately 900 psig prior to being approved for service.

2.12 Reclamation

Other interim reclamation measures to be implemented upon well completion include reduction of cut and fill slopes, where necessary; redistribution of stockpiled topsoil, and re-seeding of the disturbed areas. If commercial production equipment is installed, the well site would be reduced in size to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations with the remainder of the well pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfill, and reseeding with native vegetation. Erosion control measures would be installed as appropriate. Stockpiled topsoil would be redistributed and reseeded as recommended by the BIA.

In addition, reclamation of the pipeline corridor would occur within six-months after construction. If conditions prevent reclamation activities or seed germination, Arrow would spread and crimp straw for ground cover to minimize erosion. Additional reclamation activities would occur throughout the life of the pipeline, due to routine maintenance or addition of infrastructure.

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

Disturbed areas would be covered with stockpiled topsoil and reseeded as recommended by the BIA. Arrow would control noxious weeds within the ROW and other applicable facilities by approved chemical or mechanical methods.

Reclamation would be considered successful when seeded areas are established, adjacent vegetative communities spread back into the disturbed areas, and noxious weeds are under control. If reclamation is not considered successful after two years, the BIA may require additional efforts to establish vegetation.

Final reclamation would occur when the pipeline is decommissioned. All surface facilities would be removed and compacted areas would be ripped or scarified. All disturbed areas would be re-contoured to match topography of the original landscape as closely as possible and reseeded with vegetation consistent with surrounding native species to ensure a healthy and diverse mix free of noxious weeds. An exception to these reclamation measures may occur if the BIA approves assignment of the access road either to the BIA roads inventory or to concurring surface allottees. The pipelines would be purged with water to remove hydrocarbons, capped, and abandoned in place. Long-term monitoring would be required to ensure successful reclamation.

If no commercial production were developed from the twelve proposed wells or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. As part of the final reclamation process, all well facilities would be removed, well bores would be plugged with cement, and dry hole markers would be set in accordance with NDIC and BLM requirements. The access road and well pad area would be re-contoured to match topography of the original landscape and reseeded with a native grass seed mixture consistent with surrounding native species to ensure a healthy and diverse vegetative community that is free of noxious weeds. Erosion control measures would be installed as appropriate. Maintenance of the grass seeding would continue until such time that the productivity of the stand is consistent with surrounding undisturbed vegetation and is free of noxious weeds. An exception to these reclamation measures may occur if the BIA approves assignment of the access road either to the BIA roads inventory or to concurring surface allottees.

2.13 Potential for Future Development

Development beyond the 12 wells discussed in this document is not included with this proposal. Further development would be subject to applicable regulations, including 43 CFR Part 3160, and the

BLM's Onshore Oil and Gas Order No. 1 – Approval of Operations on Onshore Federal and Indian Oil and Gas Leases, and would be subject to review under NEPA, as appropriate.

CHAPTER 3 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS

3.1 Introduction

This chapter describes the existing conditions within the study area. The existing conditions, or affected environment, are the baseline conditions that may be affected by the proposed action. This chapter also summarizes the positive and negative direct environmental impacts of the project alternatives, as well as cumulative impacts. Indirect impacts are discussed in the impact categories where relevant. Information regarding the existing environment, potential effects to the environment resulting from the proposed alternatives, and avoidance, minimization, and/or mitigation measures for adverse impacts is included.

3.2 Climate, Geologic Setting, and Land Use

The proposed wells and access road are situated geologically within the Williston basin, where the shallow stratigraphy consists of sandstones, silts and shales dating to the Tertiary Period (65 to 2 million years ago), including the Sentinel Butte and Golden Valley Formations. The underlying Bakken and Three Forks Formations are a well-known source of hydrocarbons; its middle member is targeted by the proposed project. Although earlier oil and gas exploration activity within the Fort Berthold Reservation was limited and commercially unproductive, recent advances in drilling technologies, including horizontal drilling techniques, now make accessing oil in the Bakken and Three Forks Formations feasible.

According to Great Plains Regional Climate Center data collected at the Dunn Center weather station from 1971–2000, temperatures in excess of 80 degrees Fahrenheit are common in summer months. The area receives approximately 16.5 inches of rain annually, predominantly during spring and summer. Winters in this region are cold, with temperatures often falling near zero degrees Fahrenheit. An annual snowfall of approximately 38.5 inches generally remains on the ground from November to March.

The topography within the project area is primarily identified as part of the Northwestern Great Plains, River Breaks Ecoregion, which consists of broken terraces and upland areas that descend to the Missouri River and its major tributaries. They have formed particularly in soft, easily erodible strata of the Bullion Creek, Sentinel Butte, and Golden Valley formations.

The western and southern portions of the Fort Berthold Reservation consist of prairie grasslands and buttes. The northern and eastern areas of the Reservation provide fertile farmland. The proposed project area is located within a predominately rural area. According to National Agricultural Statistics Services (NASS) data, land within the proposed project area is predominantly grassland (65%), woodlands (30%) and shrubland (5%). Please refer to ***Figure 3.1, Land Use.***

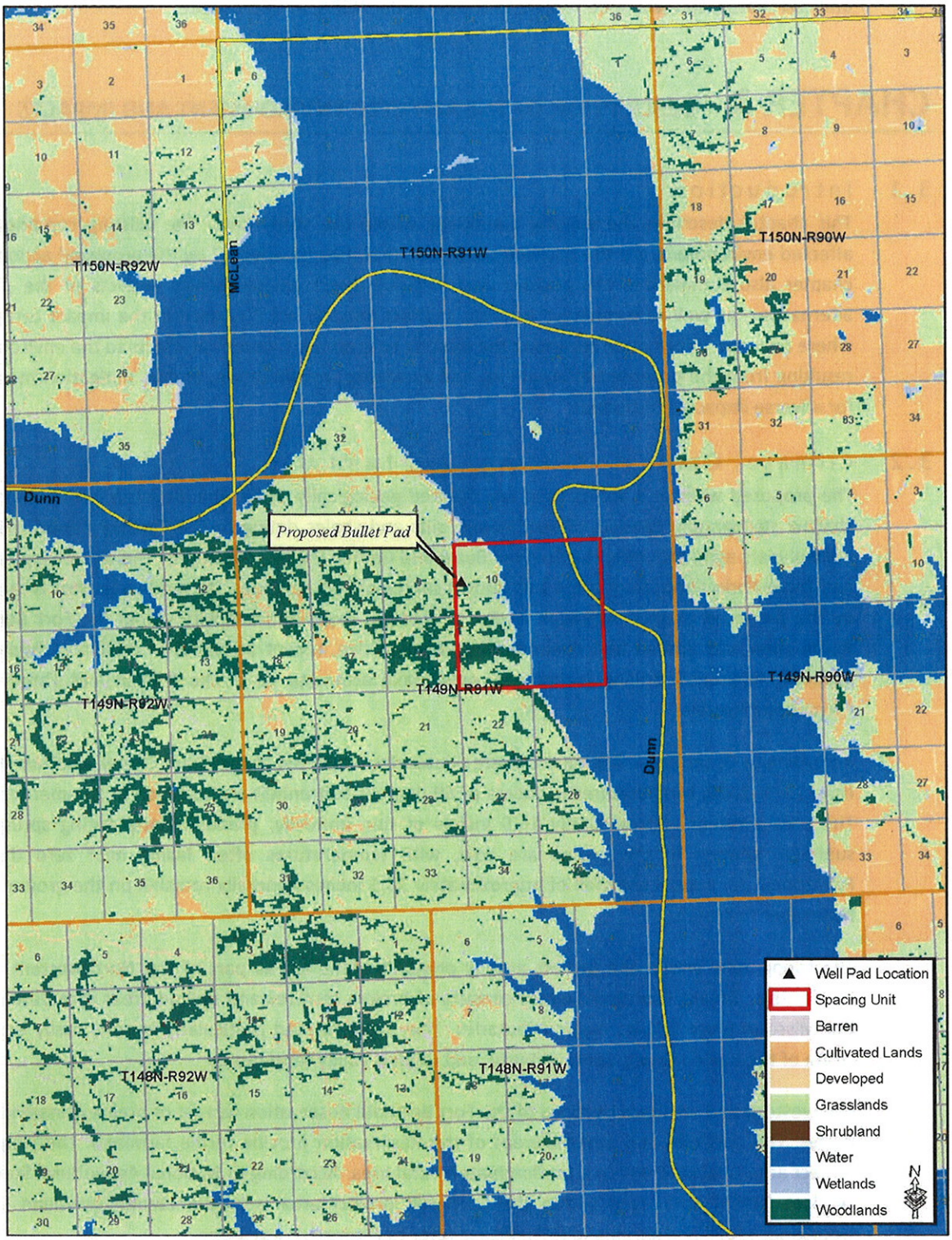

Figure 3.1, Land Use

3.2.1 Climate, Geologic Setting and Land Use Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact land use, climatic conditions, or geological setting.

Alternative B (Proposed Action) – Alternative B would result in the conversion of approximately 91.24 acres of land from present use to part of an oil and gas network. Of this, 24.56 acres would be as a result of well pad construction and 66.68 acres from access road construction.

Mineral resources would be impacted through the development of oil and gas resources at the proposed well sites, as is the nature of this project. Impacts to the geologic setting and paleontological resources are not anticipated.

3.3 Soils

The NRCS (Natural Resource Conservation Service) Soil Survey of Dunn County dates from 1982, with updated information available online through the NRCS Web Soil Survey. There are ten soil types identified within the project impact area. Location and characteristics of these soils are identified in ***Table 3.1, Soils.***

Table 3.1, Soils

MAP UNIT SYMBOL	SOIL NAME	PERCENT SLOPE	COMPOSITION (IN UPPER 60 INCHES)			EROSION FACTOR[1]		HYDROLOGIC SOIL GROUP[2]
			% SAND	% SILT	% CLAY	T	KF	
30E	Cohagen-Vebar fine sandy loams	9 to 25	78.5	14.0	7.5	2	.49	D
31F	Cohagen-Vebar-Rock outcrop complex	15 to 40	78.5	14.0	7.5	2	.49	D
46B	Bowdle loam	2 to 6	63.2	24.9	11.9	4	.32	B
48B	Tembik silt loam	3 to 6	19.1	53.0	27.9	5	.43	B
62D	Dogtooth-Cabba complex	9 to 15	5.1	46.6	48.3	2	.32	D
81D	Vebar fine sandy loams	9 to 15	75.4	14.8	9.8	3	.49	B
88C	Williams loam	6 to 9	34.8	35.2	30.0	5	.37	B
93C	Williams-Zahl loams	6 to 9	34.8	35.2	30.0	5	.37	B
93D	Zahl-Williams loams	9 to 15	35.0	35.0	30.0	5	.37	B
93E	Zahl-Williams loams	15 to 25	35.0	34.4	30.6	5	.37	B

[1] Erosion Factors indicate susceptibility of a soil to sheet and rill erosion by water. Kf indicates the erodibility of material less than two millimeters in size. Values of K range from 0.02 to 0.69. Higher values indicate greater susceptibility. T Factors estimate maximum average annual rates of erosion by wind and water that would not affect crop productivity. Tons/acre/year range from 1 for shallow soils to 5 for very deep soils. Soils with higher T values can tolerate higher rates of erosion without loss of productivity. The Erosion Factors were calculated within the upper 60 inches of the soil profile.

[2] Hydrologic Soil Groups (A, B, C, and D) are based on estimates of runoff potential according to the rate of water infiltration under the following conditions: soils are not protected by vegetation, soils are thoroughly wet, and soils receive precipitation from long-duration storms. The rate of infiltration decreases from Group A (high infiltration, low runoff) to D (low infiltration, high runoff).

These soils listed have moderate susceptibility to sheet and rill erosion. In addition, most of these soils can tolerate high to moderate levels of erosion without loss of productivity, with the exception to Coahgen-Vebar fine sandy loams, Coahgen-Vebar-Rock outcrop complex, and Dogtooth-Cabba complex. The Cohagen-Vebar fine sandy loams, Cohagen-Vebar-Rock outcrop complex, and Dogtooth-Cabba complex have very slow infiltration rates with high runoff potential, while the rest of the soils are moderately well to well drained. Depth to the water table is generally recorded at greater than six feet. None of the soils listed within the project impact area are susceptible to flooding or ponding.

3.3.1 Soil Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact soils.

Alternative B (Proposed Action) – Construction activities associated with the proposed well site and access road would result in soil disturbances, though impacts to soils are not anticipated to be significant. Stockpile quantities for the location were calculated using an assumed six inches of existing topsoil. A minimum of 9,145 cubic yards of topsoil and 13,945 cubic yards of sub-soil material would be stockpiled on site.

Based on NRCS soil data, topsoil exists in approximately 6-8 inches at the well site, yielding sufficient quantity of topsoil for construction and reclamation activities. Topsoil depths taken during the onsite survey also indicated a soil depth of six to eight inches at the well site. The stockpile would be positioned to allow for interim reclamation soon after the well is put into production. The topsoil stockpile would be located on the east side of the well pad.

Soil impacts would be localized, and BMPs would be implemented to minimize these impacts. Surface disturbance caused by well development, road improvements, and facilities construction would result in the removal of vegetation from the soil surface. This can damage soil crusts and destabilize the soil. As a result, the soil surface could become more prone to accelerated erosion by wind and water. BMPs used at the site to reduce these impacts would include erosion and sediment control measures during and after construction, segregating topsoil from subsurface material for future reclamation, chipping any woody vegetation that is removed on-site and incorporating it into topsoil stockpiles, re-seeding of disturbed areas immediately after construction activities are completed, the use of construction equipment appropriately sized to the scope and scale of the project, ensuring the road gradient fits closely with the natural terrain, and maintaining proper drainage. According to discussions at the field on-site assessment and standard industry practices, BMPs identified in the BLM Gold Book shall be utilized, to further minimize site erosion.

Another soil resources issue is soil compaction, which can occur by use of heavy equipment. When soil is compacted, it decreases permeability and increases surface runoff. This is especially evident in silt and clay soils. In addition, soils may be impacted by mixing of soil horizons. Soil compaction and mixing of soil horizons would be minimized by the previously discussed topsoil segregation.

Contamination of soils from various chemicals and other pollutants used during oil development activities is not anticipated. In the rare event that such contamination may occur, the event shall be immediately reported to the BLM, the NDIC, and where appropriate the North Dakota Department of

Health and the procedures of the surface management agency shall be followed to contain spills and leaks.

3.4 Water Resources

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, provides the authority to Environmental Protection Agency (EPA) and United States Army Corps of Engineers (USACE) to establish water quality standards, control discharges into surface and ground waters, develop waste treatment management plans and practices, and issue permits for discharges (Section 402) and for dredged or fill material (Section 404). Within the Fort Berthold Reservation, the Missouri River and Lake Sakakawea are both considered navigable waters and are therefore subject to Section 10 of the Rivers and Harbors Act of 1899.

The EPA also has the authority to protect the quality of drinking water under the SDWA (Safe Drinking Water Act) of 1974. As amended in 1986 and 1996, the SDWA requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells[3]. The Energy Policy Act of 2005 excludes hydraulic fracturing operations related to oil, gas, or geothermal production activities from EPA regulation under the SDWA[4].

3.4.1 Surface Water

The project area is situated in the Great Plains region of North Dakota that borders the Badlands to the west. This is an arid area with few isolated surface water basins. The majority of the surface waters in the region are associated with the Missouri River, Lake Sakakawea, and tributaries to these water bodies. Surface water generally flows overland until draining into these systems.

The proposed well site is located in the Lake Sakakawea basin, meaning surface waters within this basin drain to Lake Sakakawea. In addition, the proposed well sites are located in the Saddle Butte Watershed and the Lucky Mound Creek Bay Sub-Watersheds. Please refer to ***Figure 3.2, Surface Water Resources.*** Runoff throughout the study area is by sheet flow until collected by ephemeral and perennial streams draining to Lake Sakakawea. The proposed Bullet well pad primarily drains to the north and east. Runoff near the north side of the pad would flow north approximately 0.16 miles before draining into Lake Sakakawea. Runoff near the east side of the pad would follow two drainageways to Lake Sakakawea. The north half of the pad would flow east approximately 0.20 miles before draining into Lake Sakakawea and the south half of the pad would flow east approximately 0.27 miles before draining into Lake Sakakawea.

3.4.1.1 Surface Water Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact surface water.

Alternative B (Proposed Action) – No significant impacts to surface water are expected to result from Alternative B. The proposed project has been sited to avoid direct impacts to surface waters and to minimize the disruption of drainage patterns across the landscape. Construction site plans would contain measures to divert surface runoff around the well pad, as well as installation of culverts to maintain natural drainages. Please refer to ***Appendix C, Well Pad and Access Road Plat*** for proposed

[3] The SDWA does not regulate private wells that serve fewer than 25 individuals.

[4] The use of diesel fuel during hydraulic fracturing is still regulated under the SDWA.

locations of diversion ditches and culverts. Roadway engineering and the implementation of BMPs to control erosion would minimize runoff of sediment downhill or downstream.

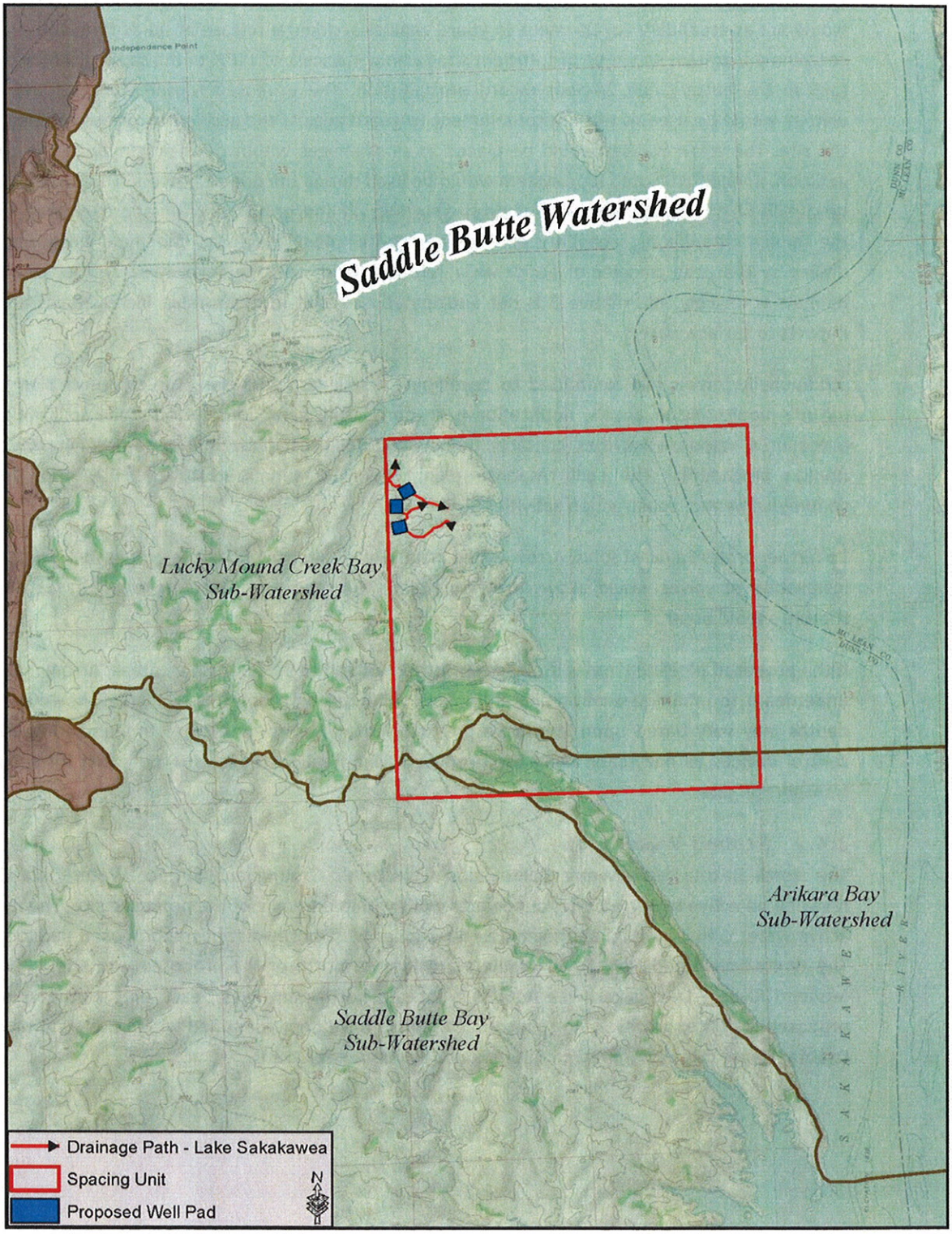

Figure 3.2, Surface Water Resources

A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and 24-hour record precipitation. The proposed topsoil stockpile and straw wattles would be used as tertiary containment to guard against the accidental release of fluids from the site. The straw wattles would be placed in all drainages within close proximity to the pad. In addition, a modified-closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site cuttings pit and/or hauled to an approved area. Due to the implementation of secondary and tertiary containment measures and modified-closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Alternative B is not anticipated to result in measurable increases in runoff or impacts to surface waters.

Additionally, Arrow has committed to developing a spill response plan. The response plan would include monitoring protocols, notification procedures, spill detection and on-scene spill mitigation procedures, response activities, contacts, training and drill procedures, and response plan review and update procedures. The spill response plan would be submitted to the BIA prior to the commencement of construction activities.

To further protect against spills, Arrow would install valves at each end of the proposed pipelines. The installation of valves would allow Arrow to isolate the proposed gathering pipeline, if a leak or rupture should occur.

If the proposed pipeline crosses drainages or other environmentally sensitive areas, Arrow may bore underneath to minimize environmental impacts. A typical bore depth is eight feet; however, bore depths may vary based upon landscape position. Arrow has committed to implementing erosion control devices as necessary along the proposed alignment to reduce the potential for sediment transport off-site.

3.4.2 Ground Water

The North Dakota State Water Commission's electronic Ground and Surface Water Data Query revealed no active or permitted groundwater wells within one-mile of the proposed site. The nearest active water well is located approximately 1.07 miles west-northwest of the proposed pad location. The White Shield and New Town Aquifers are located north of the proposed well site, while the Missouri River – Lake Sakakawea Aquifer is located north, northwest, east, and southeast of the proposed well site; however, no sole source aquifers have been identified within the state of North Dakota. Please refer to ***Figure 3.3, Aquifers and Groundwater Wells.***

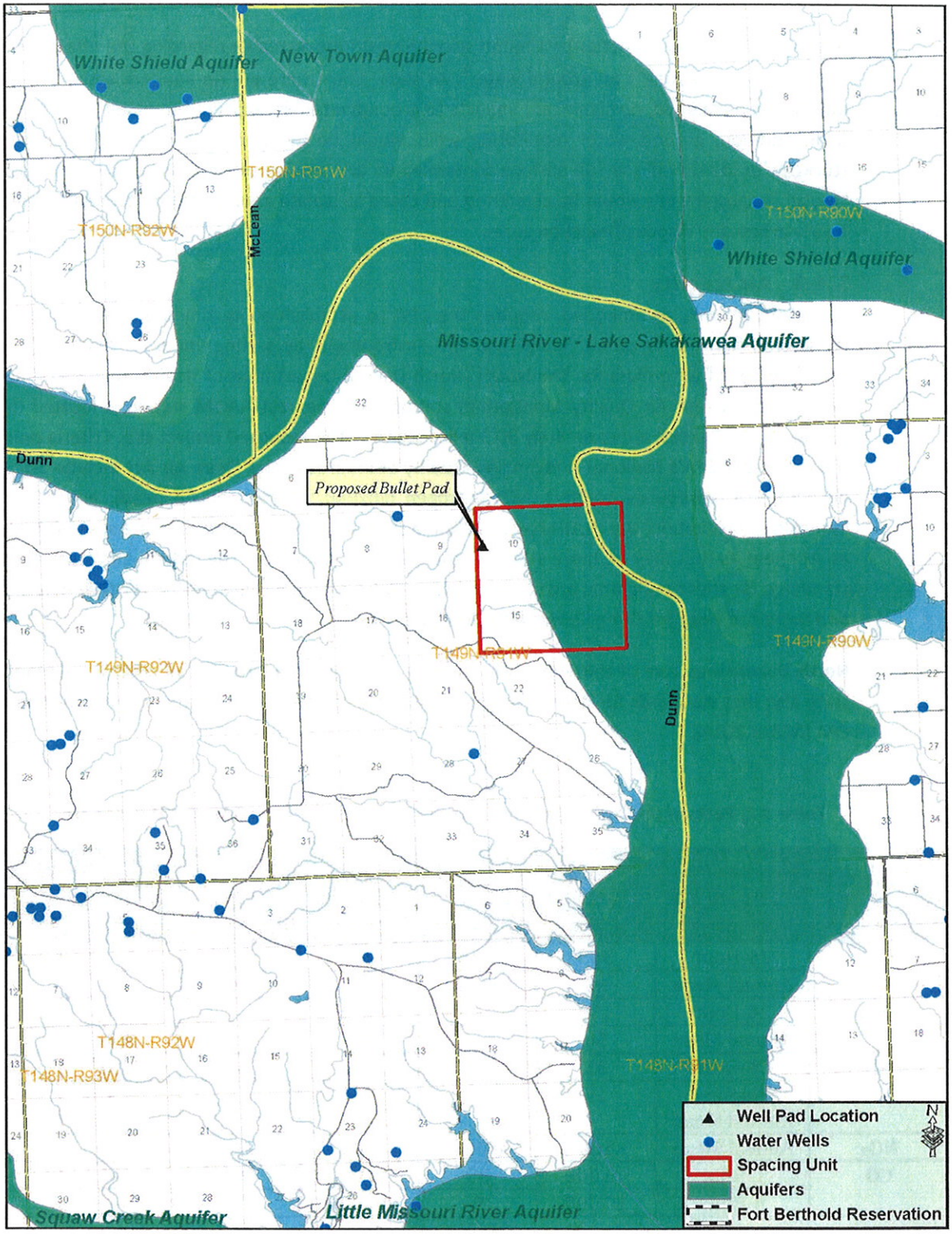

Figure 3.3, Aquifers and Groundwater Wells

3.4.2.1 Ground Water Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact groundwater.

Alternative B (Proposed Action) – Limited scientific data are available regarding the effects of hydro-fracturing (or "fracking") on ground water[5]. As such, since there are no aquifers within the spacing units being developed, no significant impacts to groundwater are expected to result from Alternative B. In addition, ground water monitoring wells would be installed east of the proposed topsoil stockpile to identify if any sub surface contaminants are moving off-site. As required by applicable law, all proposed wells would be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones.

3.4.3 Air Quality

The Clean Air Act, as amended, requires the EPA to establish air quality standards for pollutants considered harmful to public health and the environment by setting limits on emission levels of various types of air pollutants. The NDDH (North Dakota Department of Health) operates a network of AAQM (Ambient Air Quality Monitoring) stations. The nearest AAQM station is located in Dunn Center, North Dakota, approximately 30.3 miles south of the proposed project site. Criteria pollutants tracked under EPA's National Ambient Air Quality Standards in the Clean Air Act include SO_2 (sulfur dioxide), PM (particulate matter), NO_2 (nitrogen dioxide), O_3 (ozone), Pb (lead), and CO (carbon monoxide). In addition, the NDDH has established state air quality standards. State standards must be as stringent as (but may be more stringent than) federal standards. The federal and state air quality standards for these pollutants are summarized in ***Table 3.2, Federal and State Air Quality Standards and Reported Data for Dunn Center*** (EPA 2006, NDDH 2011, Dunn Center 2010).

North Dakota was one of thirteen states in 2010 that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight-hour ozone standards established by the EPA (NDDH 2010).

Table 3.2, Federal and State Air Quality Standards and Reported Data for Dunn Center

POLLUTANT	AVERAGING PERIOD	EPA AIR QUALITY STANDARD		NDDH AIR QUALITY STANDARD		DUNN CENTER 2010 REPORTED DATA	
		µg/m³	PARTS PER MILLION	µg/m³	PARTS PER MILLION	µg/m³	PARTS PER MILLION
SO_2	24-Hour	365	0.14	260	0.099	—	.0035
	Annual Mean	80	0.030	60	0.023	—	.0007
PM_{10}	24-Hour	150	—	150	—	31.0	—
	Annual Mean	50	—	50	—	9.7	—
$PM_{2.5}$	24-Hour	35	—	35	—	12.0	—
	Weighted Annual Mean	15	—	15	—	3.9	—
NO_2	Annual Mean	100	0.053	100	0.053	—	.0014
CO	1-Hour	40,000	35	40,000	35	—	—
	8-Hour	10,000	9	10,000	9	—	—

[5] The EPA is currently scoping a study on fracking, which would address potential impacts to ground water. The study is anticipated to be completed in 2014.

Pb	3-Month	1.5	—	1.5	—	—	—
O3	1-Hour	240	0.12	235	0.12	—	0.066
	8-Hour	—	0.08	—	0.08	—	0.061

Additionally, the Fort Berthold Reservation complies with the North Dakota National Ambient Air Quality Standards and visibility protection. The Clean Air Act affords additional air quality protection near Class I areas. Class I areas include national parks greater than 6,000 acres in size, national monuments, national seashores, and federally designated wilderness areas larger than 5,000 acres designated prior to 1977. There are no Federal Class I areas within the project area. The Theodore Roosevelt National Park is the nearest Class I area, located approximately 44.9 miles west-southwest of the proposed project site.

3.4.3.1 Air Quality Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact air quality.

Alternative B (Proposed Action) – The Fort Berthold Reservation complies with North Dakota National Ambient Air Quality Standards and visibility protection. The Dunn Center AAQM Station reported air quality data well below the state and federal standards. Alternative B would not include any major sources of air pollutants. Construction activities would temporarily generate minor amounts of dust and gaseous emissions of PM, SO_2, NO_2, CO, and volatile organic compounds. Emissions would be limited to the immediate project areas and are not anticipated to cause or contribute to a violation of National Ambient Air Quality Standards. In addition, QEP would provide dust control for their access and haul roads. No detectable or long-term impacts to air quality or visibility are expected within the airsheds of the Fort Berthold Reservation, State, or Theodore Roosevelt National Park. No mitigation or monitoring measures are recommended. QEP would obtain a synthetic minor source permit from the EPA as required.

3.5 Threatened, Endangered, and Candidate Species

In accordance with Section 7 of the ESA (Endangered Species Act) of 1973, 50 CFR Part 402, as amended, each federal agency is required to ensure the following two criteria. First, any action funded or carried out by such agency must not be likely to jeopardize the continued existence of any federally-listed endangered or threatened species or species proposed to be listed. Second, no such action can result in the destruction or adverse modification of habitat of such species that is determined to be critical by the Secretary. An endangered species is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. A candidate species is a plant or animal for which the USFWS has sufficient information on its biological status and threats to propose it as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. While candidate species are not legally protected under the ESA, it is within the spirit of the ESA to consider these species as having significant value and worth protecting.

The proposed action area was evaluated to determine the potential for occurrences of federally-listed threatened, endangered, and candidate species. The USFWS February 2012 Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota county list identified the black-footed ferret, gray wolf, interior least tern, pallid sturgeon, and whooping crane

as endangered species that may be found within Dunn County. The piping plover is listed as a threatened species and the Dakota Skipper and Sprague's pipit are listed as candidate species. In addition, Dunn County contains designated critical habitat for the piping plover adjacent to Lake Sakakawea. None of these species were observed in the field. Habitat requirements, the potential for suitable habitat within the project area, and other information regarding listed species for Dunn County are as follows:

3.5.1 Threatened Species

Piping Plover (*Charadrius melodus*)

The piping plover is a small migratory shorebird. Historically, piping plovers could be found throughout the Atlantic Coast, Northern Great Plains, and the Great Lakes. Drastically reduced, sparse populations presently occur throughout this historic range. In North Dakota, breeding and nesting sites can be found along the Missouri River. Preferred habitat for the piping plover includes riverine sandbars, gravel beaches, alkali areas of wetlands, and flat, sandy beaches with little vegetation. The USFWS has identified critical habitat for the piping plover on the Missouri River system. Critical habitat includes reservoir reaches composed of sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with water bodies.

There is no existing or potential habitat within the project area. Critical habitat in the form of sandy/gravely Lake Sakakawea shoreline exists approximately 0.14 miles north of the proposed project site.

3.5.1.2 Threatened Species Impacts/Mitigation

Alternative A (No Action)—Alternative A would have no effect to the piping plover and would not impact designated piping plover critical habitat.

Alternative B (Proposed Action)—Suitable habitat for the piping plover is largely associated with Lake Sakakawea and its shoreline. Potential habitat for this species exists approximately 0.14 miles north of the proposed site.

A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and 24-hour record precipitation. The proposed topsoil stockpile and straw wattles would be used as tertiary containment to guard against the accidental release of fluids from the site. The straw wattles would be placed in all drainages within close proximity to the pad. In addition, a modified-closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site cuttings pit and/or hauled to an approved area. Due to the implementation of secondary and tertiary containment measures and modified-closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Due to the proximity of the proposed project to Lake Sakakawea (approximately 0.14 miles) the proposed project may affect but is not likely to adversely affect the piping plover. The proposed project is not likely to impact critical habitat for the piping plover.

3.5.2 Endangered Species

Black-Footed Ferret (*Mustela nigripes*)

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. Preferred habitat for the black-footed ferret includes areas around prairie dog towns, as ferrets rely on prairie dogs for food and live in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive. In North Dakota, the southwestern corner of the state provided suitable habitat and supported the black-footed ferret. However, this species has not been confirmed in North Dakota for nearly 30 years and is presumed extirpated.

Gray Wolf (*Canis lupus*)

The gray wolf is the largest wild canine species in North America. It is found throughout northern Canada, Alaska, and the forested areas of Northern Michigan, Minnesota, and Wisconsin and has been re-introduced to Yellowstone National Park in Wyoming. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. Historically, its preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. Gray wolves live in packs of up to 21 members, although some individuals will roam alone. The project area is located far from other known wolf populations.

Interior Least Tern (*Sterna antillarum*)

The interior least tern nests along inland rivers. The interior least tern is found in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande Rivers. In North Dakota, it is sighted along the Missouri River during the summer nesting season. The interior least tern nests in sandbars or barren beaches, preferably in the middle of a river for increased safety while nesting. These birds nest close together, using safety in numbers to scare away predators.

There is no existing or potential habitat within the project area. Potential habitat in the form of sandy/gravely Lake Sakakawea shoreline may exist approximately 0.14 miles north of the proposed site.

Pallid Sturgeon (Scaphirhynchus albus)

The pallid sturgeon is known to exist in the Yellowstone, Missouri, middle and lower Mississippi, and Atchafalaya Rivers, and seasonally in some tributaries. In North Dakota, the pallid sturgeon is found principally in the Missouri River and upstream of Lake Sakakawea in the Yellowstone River. Dating to prehistoric times, the pallid sturgeon has become well adapted to living close to the bottom of silty river systems. According to the USFWS, its preferred habitat includes "a diversity of water depths and velocities formed by braided river channels, sand bars, sand flats, and gravel bars." Weighing up to 80 pounds, pallid sturgeons are long lived, with individuals possibly reaching 50 years of age.

Potential habitat for pallid sturgeon can be found in Lake Sakakawea approximately 0.14 miles north of the proposed site.

Whooping Crane (*Grus americana*)

The whooping crane is the tallest bird in North America. In the United States, this species ranges through the Midwest and Rocky Mountain regions from North Dakota south to Texas and east into Colorado. Whooping cranes migrate through North Dakota along a band running from the south central to the northwest parts of the state. They use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting and various cropland and emergent wetlands for

feeding. During migration, whooping cranes are often recorded in riverine habitats, including the Missouri River. Currently there are three wild populations of whooping cranes, yielding a total species population of about 383. Of these flocks, only one is self-sustaining.

The proposed project site and access road are not located near crop sources; however, a shallow, emergent wetland was observed near the access road. Due to the wetland being located within a wooded draw, the area does not provide suitable habitat for whooping cranes. The proposed project is located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. Lake Sakakawea, which provides potential stopover habitat for whooping crane migration, is approximately 0.14 miles away.

3.5.2.2 Endangered Species Impacts/Mitigation

Alternative A (No Action)—Alternative A would have no effect to the gray wolf, interior least tern, pallid sturgeon, or whooping crane.

Alternative B (Proposed Action)—Due to lack of preferred habitat characteristics and/or known populations the proposed project is anticipated to have no effect on the gray wolf or black-footed ferret.

Suitable habitat for the interior least tern and pallid sturgeon is largely associated with Lake Sakakawea and its shoreline. Lake Sakakawea is located approximately 0.14 miles north of the proposed well pad.

A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and 24-hour record precipitation. The proposed topsoil stockpile and straw wattles would be used as tertiary containment to guard against the accidental release of fluids from the site. The straw wattles would be placed in all drainages within close proximity to the pad. In addition, a modified-closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site cuttings pit and/or hauled to an approved area. Due to the implementation of secondary and tertiary containment measures and modified-closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Due to the proximity of the proposed project to Lake Sakakawea (approximately 0.14 miles) the proposed project may affect but is not likely to adversely affect the interior least tern or pallid sturgeon.

The proposed project is located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. Due to the proximity of the site to Lake Sakakawea and their occurrence within the 75 percent of confirmed sightings corridor, adjacent habitat may be used as stopover habitat. The proposed project may affect but is not likely to adversely affect whooping cranes or their habitat. If a whooping crane is sighted within one-mile of a well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area. In addition, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by whooping cranes.

3.5.3 Candidate Species

Dakota Skipper (*Hesperia dacotae*)

The Dakota skipper is a small butterfly with a one-inch wing span. These butterflies historically ranged from southern Saskatchewan, across the Dakotas and Minnesota, to Iowa and Illinois. The preferred habitat for the Dakota skipper consists of flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. Dakota skippers are visible in their butterfly stage from mid-June to early July.

The proposed site is located on moderately grazed rangeland that does contain bluestem prairies with abundant wildflowers. Although grazing is evident, it is moderate in nature; therefore, the project site does contain suitable habitat for the Dakota skipper. No Dakota skippers were observed during the field visits; however, the visits likely occurred after the Dakota skipper butterfly stage.

Sprague's pipit (*Anthus spragueii*)

The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance.

The proposed site is located on moderately grazed rangeland that does contain bluestem prairies with abundant wildflowers. Although grazing is evident, it is moderate in nature; therefore, the project site does contain suitable habitat for the Sprague's pipit. No Sprague's pipits were observed during the field visits.

3.5.3.2 Candidate Species Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact threatened or endangered species or designated critical habitat.

Alternative B (Proposed Action)—The proposed site contains suitable habitat for both the Dakota skipper and Sprague's pipit. Due to the presence of potential habitat for the Dakota skipper and Sprague's pipit within the project area, the proposed project may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

3.6 Bald and Golden Eagles

Protection is provided for the bald and golden eagle through the BGEPA (Bald and Golden Eagle Protection Act). The BGEPA of 1940, 16 U.S.C. 668–668d, as amended, was written with the intent to protect and preserve bald and golden eagles, both of which are treated as species of concern within the Department of the Interior. The BGEPA prohibits, except under certain specified conditions, the taking, possession, or commerce of bald and golden eagles. Under the BGEPA, to "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb, wherein "disturb" means to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment.

The bald eagle (*Haliaeetus leucocephalus*) is sighted in North Dakota along the Missouri River during spring and fall migration periods and periodically in other places in the state such as the Devils Lake and Red River areas. The ND Game and Fish Department estimated in 2009 that 66 nests were

occupied by bald eagles, though not all eagle nests were visited and verified. Preferred habitat for the bald eagle includes open areas, forests, rivers, and large lakes. Bald eagles tend to use the same nest year after year, building atop the previous year's nest. No bald eagles or nests were observed within 0.5 miles of proposed project disturbance areas during the field surveys conducted on September 19, 2011 and October 19, 2011.

The golden eagle (*Aquila chrysaetos*) can be spotted in North Dakota throughout the badlands and along the upper reaches of the Missouri River in the western part of the state. Golden eagle pairs maintain territories that can be as large as 60 square miles and nest in high places including cliffs, trees, and human-made structures. They perch on ledges and rocky outcrops and use soaring to search for prey. Golden eagle preferred habitat includes open prairie, plains, and forested areas. No golden eagle nests were observed within 0.5 miles of proposed project disturbance areas during the field surveys conducted on September 19, 2011 and October 19, 2011.

The United States Geological Survey (USGS) Northern Prairie Wildlife Research Center maintains information on bald eagle and golden eagle habitat within the state of North Dakota. According to the USGS data, the 0.5 mile buffered survey area for the proposed well pad site does contain recorded habitat for both the bald eagle and the golden eagle. In addition, Dr. Anne Marguerite Coyle of Dickinson State University has completed focused research on golden eagles and maintains a database of golden eagle nest sightings. According to Dr. Coyle's information, the closest recorded golden eagle nest is located approximately 7.1 miles south of the proposed project site. Please refer to ***Figure 3.4, Bald and Golden Eagle Habitat and Nest Sightings***.

3.6.1 Bald and Golden Eagle Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact bald or golden eagles.

Alternative B (Proposed Action)—The proposed project is located within areas of recorded suitable bald and golden eagle habitat. However, no evidence of eagle nests were found within 0.5 miles of the project areas and no nest sightings have been recorded within 0.5 miles of the project areas. Therefore, no impacts to bald or golden eagles are anticipated to result from the proposed project. If a bald or golden eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed. Furthermore, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by bald or golden eagles.

Figure 3.4, Bald and Golden Eagle Habitat and Nest Sightings

3.7 Migratory Birds and Other Wildlife

Intensive, pedestrian resource surveys of the proposed well pad and access road were conducted on September 19, 2011 and October 19, 2011 by KL&J. The purpose of this survey was to gather site-specific data and photos with regards to botanical, biological, and water resources. The well pad study area consisted of 36.5 acres centered on the proposed well pad center point and a 400-foot wide corridor along the proposed access road. Resources were evaluated using visual inspection and pedestrian transects across the site. In addition, a survey for eagles and eagle nests within 0.5 miles of the project disturbance area was conducted. This survey consisted of pedestrian transects focusing specifically on potential nesting sites within 0.5 miles of the project disturbance area, including cliffs and wooded draws. Wooded draws were observed both from the upland areas overlooking the draws and from bottomlands within the actual draws.

BIA EA on-site assessments of the well pad and access road were also conducted on September 19, 2011 and October 19, 2011. The BIA Environmental Protection Specialist, as well as representatives from QEP and KL&J were present. The site was evaluated for cultural resources clearance on September 19, 2011 and October 19, 2011 with representatives from the Tribal Historic Preservation Office and KL&J. Construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. The well pad and access road locations were finalized, and the BIA gathered information needed to develop site-specific mitigation measures and BMPs to be incorporated into the final APDs. Those present at the on-site assessments agreed that the selected locations, along with the minimization measures QEP plans to implement, are positioned to minimize impacts to sensitive wildlife and botanical resources. In addition, comments received from the USFWS (United States Fish and Wildlife Service) have been considered in the development of this project.

3.7.1 Migratory Birds and Other Wildlife

The MBTA (Migratory Bird Treaty Act), 916 U.S.C. 703–711, provides protection for 1,007 migratory bird species, 58 of which are legally hunted. The MBTA regulates impacts to these species such as direct mortality, habitat degradation, and/or displacement of individual birds. The MBTA defines "taking" to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof, except when specifically permitted by regulations.

The proposed project study area lies in the Central Flyway of North America. As such, this area is used as resting grounds for many birds on their spring and fall migrations, as well as nesting and breeding grounds for many waterfowl species. In addition, the project areas contain suitable habitat for mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), sharp-tailed grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicas*), raptors, American badger (*Taxidea taxus*), song birds, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), Eastern cottontail rabbit (*Sylvilagus floridanus*), wild turkey (*Meleagris gallopavo*), jackrabbit (*Lepus townsendii*), and North American porcupine (*Erethizon dorsatum*).

During the pedestrian field surveys, migratory birds, raptors, big and small game species, non-game species, potential wildlife habitats, and and/or bird nests were identified if present. Six sharp-tailed grouse were observed during the field surveys.

3.7.1.1 Migratory Birds and Other Wildlife Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact migratory birds or other wildlife.

Alternative B (Proposed Action) – Due to the presence of suitable habitat at the project site for many wildlife and avian species, ground clearing, drilling, and long-term production activities associated with the proposed project may impact individuals by displacing animals from suitable habitat. Construction of the proposed wells is planned to occur late 2012/early 2013. If construction takes place in the spring during the migratory bird nesting and breeding season, QEP would have a qualified biologist conduct pre-construction surveys for migratory birds or their nests within five days prior to the initiation of all construction activities. Mowing of the site prior to nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of these surveys would be reported to USFWS.

While many species of wildlife may continue to use the project area for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts. Therefore, the proposed project may affect individuals and populations within these wildlife species, but is not likely to result in a trend towards listing of any of the species identified.

During drilling activities, the noise, movements, and lights associated with the drilling are expected to deter wildlife from entering the area. In addition, the drill cuttings would be dried prior to being placed in the cuttings pit. It is expected that very minimal free fluid would be present in the pit. The absence of exposed liquids in the pit would minimize their attractiveness to wildlife. If the cuttings pit is not fully backfilled by the time the drilling rig leaves the location, the pit would be netted with State and Federal approved nets. These would remain in place until the closure of the cuttings pit.

In addition, design considerations would be implemented to further protect against potential habitat degradation. A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and 24-hour record precipitation. The spoil pile would be placed on the east side of the proposed pad. The proposed topsoil stockpile and straw wattles would be used as tertiary containment to guard against the accidental release of fluids from the site. The straw wattles would be placed in all drainages within close proximity to the pad. In addition, a modified-closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site cuttings pit and/or hauled to an approved area. Due to the implementation of secondary and tertiary containment measures and modified-closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. BMPs to minimize wind and water erosion of soil resources would also be put into practice.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species would be implemented during the construction and operation phases. These measures would include: the use of suitable mufflers on all internal combustion engines; certain compressor

components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil.

3.8 Vegetation

Botanical resources were evaluated using visual inspection. The project area was also investigated for the presence of invasive plant species.

Vegetation at the proposed project site largely consisted of native upland grasses and shrubs. Western snowberry (*Symphoricarpos occidentalis*), Kentucky bluegrass (*Poa pratensis*), green needlegrass (*Nasella viridula*), blue grama (*Bouteloua gracilis*), fringed sagewort (*Artemisia frigida*), and prairie junegrass (*Koeleria pyramidata*) were observed at the proposed project site. Green ash (*Fraxinus pennsylvanica*) and silver buffaloberry (*Shepherdia argentea*) were observed growing in the drainages. Foxtail barley (*Hordeum jubatum*) and bald spikerush (*Eleocharis erythropoda*) were observed growing in a wetland within the access road corridor. There are no threatened or endangered plant species listed for Dunn County. Please refer to ***Figure 3.5, Dominant Well Pad Vegetation View East, Figure 3.6, Drainage North of Pad, Figure 3.7, Proposed Access Road View Southwest,*** and ***Figure 3.8, Wetland within the Access Road Corridor*** for examples of vegetation observed at the site.

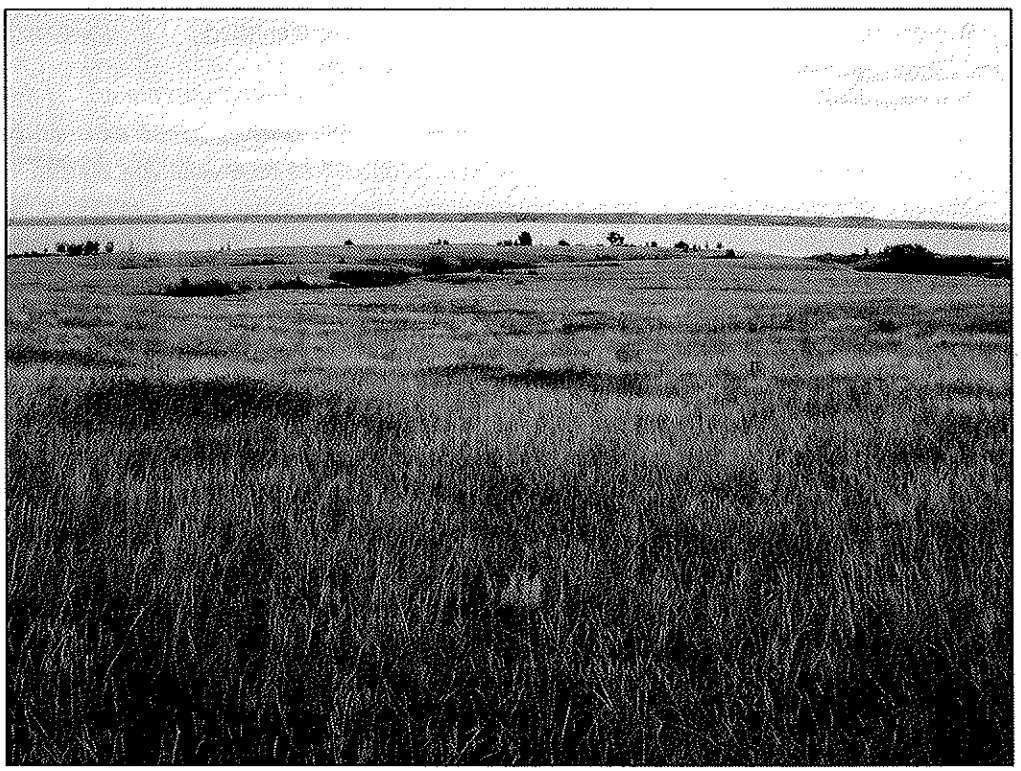

Figure 3.5, Dominant Well Pad Vegetation View East

Figure 3.6, Drainage North of Pad

Figure 3.7, Proposed Access Road View Southwest

Figure 3.8, Wetland within the Access Road Corridor

In addition, the project area was surveyed for the presence of noxious weeds. Of the 11 species declared noxious under the North Dakota Century Code (Chapter 63-01.0), three are known to occur in Dunn County. Please refer to ***Table 3.3, Noxious Weed Species.*** No noxious weeds were identified during the on-site assessments. In addition, counties and cities have the option to add species to the list to be enforced within their jurisdictions. There are no additional noxious weeds listed for Dunn County.

Table 3.3, Noxious Weed Species

COMMON NAME	SCIENTIFIC NAME	2011 DUNN COUNTY REPORTED ACRES
Absinth wormwood	*Artemesia absinthium L.*	51,900
Canada thistle	*Cirsium arvense (L.) Scop*	41,200
Dalmatian toadflax	*Linaria genistifolia ssp. Dalmatica*	60
Diffuse knapweed	*Centaurea diffusa Lam*	—
Leafy spurge	*Euphorbia esula L.*	8,100
Musk thistle	*Carduus nutans L.*	—
Purple loosestrife	*Lythrum salicaria*	—
Russian knapweed	*Acroptilon repens (L) DC.*	—
Salt cedar (tamarisk)	*Tamarix ramosissima*	—
Spotted knapweed	*Centaurea maculosa Lam.*	—
Yellow Toadflax	*Linaria vulgaris*	—

3.8.1 Vegetation Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact vegetation.

Alternative B (Proposed Action) – Ground clearing activities associated with construction of the proposed well pad and access road would result in vegetation disturbance; however, the areas of proposed surface disturbances are minimal in the context of the setting, and these impacts would be further minimized in accord with the BLM Gold Book standards for well reclamation. Following construction, interim reclamation measures to be implemented include reduction of cut and fill slopes, redistribution of stockpiled topsoil, and re-seeding of disturbed areas with a native grass seed mixture consistent with surrounding vegetation. If commercial production equipment is installed, the well site would be reduced in size to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the well pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfill, and re-seeding with a native grass seed mixture from a BIA/BLM-approved source. Erosion control measures would be installed as appropriate. Stockpiled topsoil would be redistributed and re-seeded as recommended by the BIA.

If no commercial production developed from any of the proposed wells, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. The access road and well pad areas would be re-contoured to match topography of the original landscape as closely as possible and re-seeded with vegetation consistent with surrounding native species to ensure a healthy and diverse mix free of noxious weeds. Seed would be obtained from a BIA/BLM-approved source. Re-vegetation of the site would be consistent with the BLM Gold Book standards. QEP would use certified weed-free seed mixtures for re-vegetation. Erosion control measures would be installed as appropriate in a manner that is consistent with the BLM Gold Book standards. Maintenance of the re-vegetated site would continue until such time that the stand was consistent with the surrounding undisturbed vegetation and the site free of noxious weeds. The surface management agency would provide final inspection of the site to deem the reclamation effort complete.

3.9 Wetlands

Wetlands are defined in both the 1977 Executive Order 11990, Protection of Wetlands, and in Section 404 of the Clean Water Act of 1986, as those areas that are inundated by surface or groundwater with a frequency to support and under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Three parameters that define a wetland, as outlined in the Federal Manual for Delineating Jurisdictional Wetlands (USACE, 1987), are hydric soils, hydrophytic vegetation, and hydrology. Wetlands are an important natural resource serving many functions, such as providing habitat for wildlife, storing floodwaters, recharging groundwater, and improving water quality through purification.

The USACE administers regulations set forth in Section 404 of the Clean Water Act of 1986; specifically, impacts to wetlands that fall under the USACE jurisdiction. If a project would impact a USACE jurisdictional wetland, a 404 permit would be required. In addition, if impacts to the jurisdictional wetland would be in excess of 0.10 acres, a wetland mitigation plan would be required as part of the 404 permit.

A field wetlands delineation was conducted on October 19, 2011, by Kadrmas, Lee & Jackson in accordance with the March 2010 Regional Supplement to the Corps of Engineers [1987] Wetland Delineation manual: Great Plains Region. The results of the survey revealed one area within the project corridor that exhibited the necessary characteristics to be considered a wetland. The identified wetland was determined to be USACE jurisdictional on September 10, 2012 (NWO-2012-2035-BIS).

3.9.1 Wetland Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact wetlands.

Alternative B (Proposed Action) – Alternative B would include the construction of an access road and well pad. Construction of the proposed access road would permanently impact approximately 0.15 acres of jurisdictional wetlands. No temporary wetland impacts are anticipated. Wetland impacts could not be avoided due to the overall length and position of the identified wetland; however, the access road was rerouted to minimize the total wetland impacts. Wetland impacts exceeded 0.10 acres; therefore, a 404 permit and wetland mitigation plan was submitted to the USACE. Please refer to ***Appendix D, 404 Permit and Wetland Mitigation Plan.***

The USACE approved the 404 permit and wetland mitigation plan on September 10, 2012, pending the following conditions:

- Wetland mitigation would be constructed at a 1:1 ratio as proposed in the mitigation plan.
- Wetland mitigation must be constructed concurrent with project construction
- Top soil from the filled wetland shall be salvaged and incorporated into the wetland mitigation area as inoculum to minimize temporal loss and enable the initial approval of a 1:1 ratio.
- Wetland mitigation must meet success criteria as described in the attached mitigation plan.
- An annual monitoring report must be submitted to the Corps of Engineers North Dakota Regulatory Office no later than September 15 for five years, or until the site is determined to meet full success criteria.
- A legally executed long term protection instrument must be completed within 60 days of the verification letter dated September 10, 2012.

3.10 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, requires that projects needing federal approval and/or federal permits be evaluated for the effects on historic and cultural properties included or eligible for listing on the NRHP (National Register of Historic Places). The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistoric, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a Federal, federally licensed, or federally funded project.

The NAGPRA (Native American Graves Protection and Repatriation Act) of 1990 is triggered by the possession of human remains or cultural items by a Federally-funded repository or by the discovery of human remains or cultural items on Federal or Tribal lands and provides for the inventory, protection, and return of cultural items to affiliated Native American groups. Permits are required for intentional excavation and removal of Native American cultural items from Federal or Tribal lands.

The American Indian Religious Freedom Act of 1978 requires consultation with Native American groups concerning proposed actions on sacred sites on Federal land or affecting access to sacred sites. It establishes Federal policy to protect and preserve for American Indians, Eskimos, Aleuts, and Native Hawaiians the right to free exercise of their religion in the form of site access, use and possession of sacred objects, as well as the freedom to worship through ceremonial and traditional rites. The Act requires Federal agencies to consider the impacts of their actions on religious sites and objects important to these peoples, regardless of eligibility for listing on the NRHP.

In accordance with 16 U.S.C. 470hh(a), information concerning the nature and location of archaeological resources and traditional cultural properties, and detailed information regarding archaeological and cultural resources, is confidential. Such information is exempt from the Freedom of Information Act and is not included in this EA.

A cultural resource inventory of this well pad and access road was conducted by personnel of Kadrmas, Lee & Jackson, Inc., using an intensive pedestrian methodology. Approximately 74.8 acres were inventoried between September 14 and October 19, 2011 (Ó Donnchadha 2012). Two archaeological sites were located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. Two additional properties were located that may qualify for protection under the American Indian Religious Freedom Act (42 USC 1996). As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for this undertaking, as the archaeological sites and areas "of tribal interest" will be avoided. This determination was communicated to the THPO on February 22, 2012; however, the THPO did not respond within the allotted 30 day comment period.

3.10.1 Cultural Resources Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact cultural resources.

Alternative B (Proposed Action) – Two cultural resource sites were identified within close proximity to the project corridor. The proposed well pad and access road locations were amended to avoid these sites. In addition, a temporary barrier would be erected around the two newly recorded cultural properties and areas of tribal interest prior to construction, and an archaeologist would be present to monitor construction activities. As such, cultural resources impacts are not anticipated. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA. All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

3.11 Socioeconomic Conditions

Socioeconomic conditions depend on the character, habits, and economic conditions of people living within the proposed project area. Business, employment, transportation, utilities, etc. are factors that affect the social climate of a community. Other factors that distinguish the social habits of one particular area from another include the geography, geology, and climate of the area.

The Fort Berthold Reservation is home to six major communities, consisting of New Town, White Shield, Mandaree, Four Bears, Twin Buttes, and Parshall. These communities provide small business amenities such as restaurants, grocery stores, and gas stations; however, they lack the larger shopping centers that are typically found in larger cities of the region such as Minot and Bismarck. According to 2000 US Census data, educational/health/social services is the largest industry on the Reservation, followed by the entertainment/recreation/accommodation/food industry[6]. The Four Bears Casino, Convenience Store, and Recreation Park are also major employers with over 320 employees, 90% of whom are tribal members. In addition, several industries are located on the Reservation, including Northrop Manufacturing, Mandaree Enterprise Cooperative, Three Affiliated Tribes Lumber Construction Manufacturing Corporation, and Uniband.

Several paved state highways provide access to the Reservation including ND Highways 22 and 23 and Highway 1804. These highways provide access to larger communities such as Bismarck, Minot and Williston. Paved and gravel BIA Route roadways serve as primary connector routes within the Reservation. In addition, networks of rural gravel roadways are located throughout Reservation boundaries providing access to residences, oil and gas developments, and agricultural land. Major commercial air service is provided out of Bismarck and Minot, with small-scale regional air service provided out of New Town and Williston.

3.11.1 Socioeconomic Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact the socioeconomic conditions in the project area. However, Alternative A would not permit the development of oil and gas resources, which could have positive effects on employment and income through the creation of jobs and payment of leases, easement, and/or royalties to Tribal members.

Alternative B (Proposed Action) – Alternative B is not anticipated to substantially impact the socioeconomic conditions in the project areas, but it does have the potential to yield beneficial impacts on Tribal employment and income. Qualified individual tribal members may find employment through oil and gas development and increase their individual incomes. Additionally, the proposed action may result in indirect economic benefits to tribal business owners resulting from construction workers expending money on food, lodging, and other necessities. The increased traffic during construction may create more congested traffic conditions for residents. QEP would follow Dunn County, BIA, and North Dakota Department of Transportation rules and regulations regarding rig moves and oversize/overweight loads on state and county roads used as haul roads in order to maintain safe driving conditions.

[6] Since 2010, there has been an increasing focus on oil and gas development on the Fort Berthold Reservation. As such, it is anticipated that the trends have potentially shifted; however, recent data from the US Census/American Community Survey is not available for the Fort Berthold Reservation.

3.12 Environmental Justice

Per Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, measures must be taken to avoid disproportionately high adverse impacts on minority or low-income communities.

The Three Affiliated Tribes qualify for environmental justice consideration as both a minority and low-income population.

The population of North Dakota is predominantly Caucasian. Tribal members compromise 6.2% of North Dakota's population and 13.2% of the population of Dunn County. Population decline in rural areas of North Dakota has been a growing trend as individuals move toward metropolitan areas of the state, such as Bismarck and Fargo. While Dunn County's population had been slowly declining prior to the oil boom, the Fort Berthold Reservation had witnessed a steady increase in population. The recent intensification of drilling activity in the western part of the state has likely dramatically increased populations in many western counties including the Fort Berthold Reservation. American Indians are the majority population on the Fort Berthold Reservation but are the minority population in Dunn County and the State of North Dakota. Please refer to ***Table 3.4, Employment and Income***.

Table 3.4, Employment and Income

LOCATION	POPULATION IN 2010	% OF STATE POPULATION	% CHANGE 2000–2010	PREDOMINANT RACE	PREDOMINANT MINORITY
Dunn County	3,477	0.52%	-1.78%	White	American Indian (13.2%)
Fort Berthold Reservation	6,162	0.92%	+7.2%	American Indian[7]	White (34.7%)
Statewide	659,858	—	4.7%	White	American Indian (6.2%)

Source: U.S. Census Bureau, 2006-2010 American Community Survey and 2000 & 2010 Census

[7] According to the North Dakota Tourism Division, there are 10,400 enrolled members of the Three Affiliated Tribes.

According to 2006-2010 U.S. Census Bureau data, the Fort Berthold Reservation has lower than statewide averages of per capita income and median household income, whereas Dunn County has a lower per capita income and higher median household income than the statewide averages. In addition, Dunn County has a lower rate of unemployment than the state average, while Fort Berthold's rate of unemployment was substantially greater[8]. Please refer to ***Table 3.5, Demographic Trends.***

Table 3.5, Demographic Trends

LOCATION	PER CAPITA INCOME	MEDIAN HOUSEHOLD INCOME	UNEMPLOYMENT RATE	INDIVIDUALS LIVING BELOW POVERTY LEVEL
Dunn County	$24,832	$48,707	3.6%	8.6%
Fort Berthold Reservation	$18,059	$41,658	6.9%	26.0%
Statewide	$25,803	$46,781	3.6%	12.3%

Source: U.S. Census Bureau, 2006-2010 American Community Survey

3.12.1 Environmental Justice Impacts/Mitigation

Alternative A (No Action) – Alternative A would not result in environmental justice impacts.

Alternative B (Proposed Action) – Alternative B would not require relocation of homes or businesses, cause community disruptions, or cause disproportionately adverse impacts to members of the Three Affiliated Tribes. The proposed project has not been found to pose significant impacts to any other critical element (public health and safety, water, wetlands, wildlife, soils, or vegetation) within the human environment. The proposed project is not anticipated to result in disproportionately adverse impacts to minority or low-income populations. Oil and gas development of the Bakken and Three Forks Formations is occurring both on and off the Fort Berthold Reservation. Employment opportunities related to oil and gas development may lower the unemployment rate and increase the income levels on the Fort Berthold Reservation. In addition, the Three Affiliated Tribes and allotted owners of mineral interests may receive income from oil and gas development on the Fort Berthold Reservation in the form of royalties, if drilling and production are successful, as well as from TERO (Tribal Employee Rights Office) taxes on construction of drilling facilities.

3.13 Infrastructure and Utilities

The Fort Berthold Reservation's infrastructure consists of roads, bridges, utilities, and facilities for water, wastewater, and solid waste.

[8]While more current data reflecting income, unemployment, and poverty levels within the Fort Berthold Reservation are not available, it is anticipated that 2011 numbers may show different trends. The exploration and production of oil and gas resources on the Reservation has created employment opportunities and have likely affected these economic indicators; however, this assessment uses the best available data.

Known utilities and infrastructure within the vicinity of the proposed project includes paved and gravel roadways. There are no known water pipelines in the vicinity of the proposed project. The Bureau of Reclamation manages the Fort Berthold Rural Water System. Existing waterlines were noted southwest of the proposed pad location. This area would not be affected by the proposed project.

3.13.1 Infrastructure and Utility Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact infrastructure or utilities.

Alternative B (Proposed Action) – Vehicular traffic associated with construction, operation, and maintenance of the proposed action would increase the overall traffic on the local roadway network. Alternative B would also require construction of a new gravel roadway approximately 11,405 feet long.

Safety hazards posed from increased traffic during the drilling phase are anticipated to be short-term and minimal for the proposed site. It is anticipated that approximately 30 to 40 trips, over the course of several days, would be required to transport the drilling rig and associated equipment to the proposed well site. If commercial operations are established at the proposed well sites following drilling activities, the pump would be checked daily and oil and water hauling activities would commence. Oil would be hauled using a semi tanker trailer, typically capable of hauling 140 barrels of oil per load. Traffic to and from the well site would depend upon the productivity of the well. A 1,000 barrel per day well would require approximately seven tanker visits per day, while a 300 barrel per day well would require approximately two visits per day.[9] Produced water would also be hauled from the site using a tanker, which would typically haul 110 barrels of water per load. The number of visits would be dependent upon daily water production[10].Established load restrictions for state and BIA roadways would be followed and haul permits would be acquired as appropriate.

To minimize potential impacts to the roadway conditions and traffic patterns in the area, all haul routes used would either be private roads or roads that have been approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. QEP would follow Dunn County, BIA, and North Dakota Department of Transportation rules and regulations regarding rig moves and oversize/overweight loads on state and county roads used as haul roads. All contractors are required to permit their oversize/overweight roads through these entities. QEP's contractors would be required to adhere to all local, county, tribal, and state regulations regarding rig moves, oversize/overweight loads, and frost restrictions.

The well site may also require the installation of supporting electrical lines. In addition, if commercially recoverable oil and gas are discovered at the well site, a natural gas gathering system would be installed. It is expected that electric lines and other pipelines would be constructed within

[9]A typical Bakken oil well initially produces at a high rate and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 500 to 1,000 BOPD (barrels of oil per day) could be expected, dropping to 200 to 400 BOPD after several months.

[10]A typical Bakken oil well initially produces water at 200 bbls per day and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 200 BWPD (barrels of water per day) could be expected, dropping to 30 to 70 BWPD after several months.

the existing right-of-way, or additional NEPA analysis and BIA approval would be completed prior to construction of these utilities. Other utility modifications would be identified during design and coordinated with the appropriate utility company.

Drilling operations at the proposed well site would generate produced water. In accordance with the BLM Gold Book and BLM Onshore Oil and Gas Order Number 7, produced water would be disposed of via subsurface injection, or other appropriate methods that would prevent spills or seepage. Produced water may be trucked to nearby oil fields where injection wells are available.

3.14 Public Health and Safety

Health and safety concerns associated with this type of development include hydrogen sulfide (H_2S) gas[11] and hazardous materials used or generated during well installation or production.

3.14.1 Public Health and Safety Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact public health and safety.

Alternative B (Proposed Action) – Project design and operational precautions would minimize the likelihood of impacts from H_2S gases and hazardous materials as described below.

H_2S Gases. It is unlikely that the proposed action would result in release of H_2S in dangerous concentrations; however, QEP would submit H_2S Contingency Plans to the BLM as part of the site APDs. These plans establish safety measures to be implemented throughout the drilling process to prevent accidental release of H_2S into the atmosphere. The Contingency Plans are designed to protect persons living and/or working within 3,000 feet (0.57 miles) of each well location and include emergency response procedures and safety precautions to minimize the potential for an H_2S gas leak during drilling activities. Satellite imagery revealed that there are no residences/buildings within 3,000 feet of the proposed site.

Hazardous Materials. The Environmental Protection Agency (EPA) specifies chemical reporting requirements under the Superfund Amendments and Reauthorization Act of 1986, as amended. No materials used or generated by this project for production, use, storage, transport, or disposal are on either the Superfund list or on the EPA's list of extremely hazardous substances in 40 CFR 355.

The Spill Prevention, Control, and Countermeasure (SPCC) rule includes EPA requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans.

Spill Response Plan. Arrow has committed to developing a spill response plan. The response plan would include monitoring protocols, notification procedures, spill detection and on-scene spill mitigation procedures, response activities, contacts, training and drill procedures, and response plan review and update procedures. The spill response plan would be submitted to the BIA prior to the commencement of construction activities.

[11] H_2S is extremely toxic in concentrations above 500 parts per million. H_2S has not been found in measurable quantities in the Bakken Formation. However, before reaching the Bakken, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S.

Pipeline Marking Procedures. Third-party intrusions are one of the biggest contributing factors to spills. To aid in the prevention of such intrusions, Arrow would fully comply with the marking requirements specified in the US Department of Transportation's rules and regulations, specifically contained in 49 CFR Parts 192 and 195.

3.15 Cumulative Considerations

Cumulative impacts result from the incremental consequences of an action "when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Effects of an action may be minor when evaluated in an individual context, but these effects can add to other disturbances and collectively may lead to a measureable environmental change. By evaluating the impacts of the proposed action with the effects of other actions, the relative contribution of the proposed action to a projected cumulative impact can be estimated. In addition, developers on the Fort Berthold Reservation are currently working on a programmatic environmental assessment.

3.16 Past, Present, and Reasonably Foreseeable Actions

Oil and gas development in western North Dakota has occurred with varying intensity for the past 100 years. Gas development began in the area in 1909, and the first recorded oil well was drilled in 1920. North Dakota's oil production has boomed twice prior to the current boom; first in the 1950s, peaking in the 1960s, and again in the 1970s, peaking in the 1980s. North Dakota is currently experiencing its third oil boom, which has already far surpassed the previous booms in magnitude. This oil boom is occurring both within and outside the Fort Berthold Reservation.

According to the NDIC, as of January 17, 2012, there were approximately 722 active and/or confidential oil and gas wells within the Fort Berthold Reservation and 1,758 within the 20-mile radius outside the boundaries of the Fort Berthold Reservation. Please refer to ***Figure 3.9, Existing and Proposed Oil and Gas Wells.***

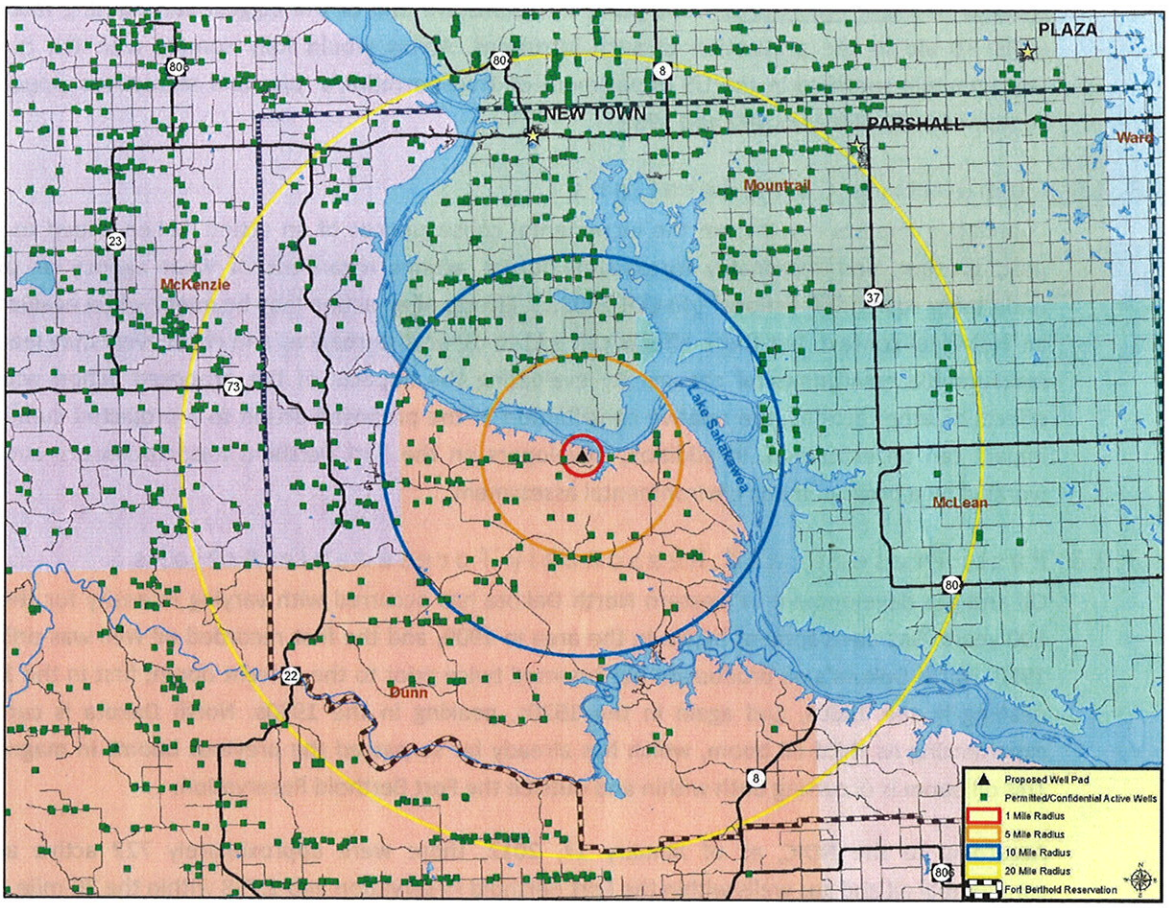

Figure 3.9, Existing and Proposed Oil and Gas Wells

There are two known oil and gas wells within one mile of the well pad site. Please refer to ***Table 3.6, Summary of Active and Proposed Wells.***

Table 3.6, Summary of Active and Proposed Wells

DISTANCE FROM SITE	NUMBER OF ACTIVE OR PROPOSED WELLS
1 mile radius	0
5 mile radius	50
10 mile radius	167
20 mile radius	681

As mentioned previously in this EA, the Bakken Formation (the primary target of the proposed action) covers approximately 25,000 square miles beneath North Dakota, Montana, Saskatchewan, and Manitoba, with approximately two-thirds of the acreage beneath North Dakota. The Three Forks Formation (the secondary target of the proposed action) lies beneath the Bakken. The North Dakota Department of Mineral Resources estimates that there are approximately 2 billion barrels of

recoverable oil in each of these Formations and that there would be 30–40 remaining years of production, or more if technology improves.

Commercial success at any new well can be reasonably expected to result in additional nearby oil/gas exploration proposals; however, it is speculative to anticipate the specific details of such proposals. While such developments remain speculative until APDs have been submitted to the BLM or BIA, it is reasonable to assume based on the estimated availability of the oil and gas resources that further development would continue in the area for the next 30-40 years. It is also reasonable to assume that natural gas and oil gathering and/or transportation systems would be proposed and likely built in the future to facilitate the movement of products to market. Currently, natural gas gathering systems are being considered and/or proposed on the Fort Berthold Reservation, and some small systems have been approved.

3.17 Cumulative Impact Assessment

The proposed project is not anticipated to directly impact other oil and gas projects. It is a reasonable generalization that, while oil and gas development proposals and projects vary based on the developer, well location, permit conditions, site constraints, and other factors, this proposed action is not unique among others of its kind. It is also a reasonable generalization based on regulatory oversight by the BIA, BLM, NDIC, and other agencies as appropriate, that this proposed action is not unique in its attempts to avoid, minimize, or mitigate harm to the environment through the use of BMPs and site-specific environmental commitments. The following discussion addresses potential cumulative environmental impacts associated with the proposed project and other past, present, and reasonably foreseeable actions.

Land Use — As oil and gas exploration and production of the Bakken and Three Forks Formations proceed, lands atop these formations are converted from existing uses (often agricultural or vacant) to industrial, energy-producing uses. The proposed project would convert grasslands to a well pad, access road, and associated uses. However, the well pad and access road have been selected to avoid or minimize sensitive land uses and to maintain the minimum impact footprint possible. In addition, the BIA views these developments to be temporary in nature as impacted areas would be restored to original conditions upon completion of oil and gas activity.

Air Quality — Air emissions related to construction and operation of past, present, or reasonably foreseeable oil and gas wells, when added to emissions resulting from the proposed project, are anticipated to have a negligible cumulative impact. Dunn County is currently well below the Ambient Air Quality Standards, and it is anticipated that mobile air source toxics from truck traffic for the proposed project and other projects, as well as air emissions related to gas flaring, would be minor; therefore, the contribution of the proposed project to air emissions is not expected to be significant.

Threatened and Endangered Species — The potential for cumulative impacts to threatened and endangered species comes to those listed species that may be affected by the proposed project or candidate species that may be impacted by the proposed project. The proposed project occurs within the central flyway through which whooping cranes migrate and whooping cranes may forage in adjacent cropland. The indirect impact through the disruption of the use of this grassland may cause a cumulative impact when added to past, present, and reasonable foreseeable actions. Continual development (e.g., agriculture, oil and gas, and wind) within the central flyway has compromised whooping crane habitat both through direct impacts via conversion of potential habitat to other uses

and indirect impacts due to disrupting the use of potential stopover habitat, as whooping cranes prefer isolated areas and are known to avoid large-scale development. However, the proposed action, when added to other development directly and indirectly impacting whooping cranes and their habitat, is not anticipated to significantly contribute to cumulative impacts occurring to the whooping crane population.

As previously stated, habitat for the interior least tern, pallid sturgeon, and piping plover is primarily associated with Lake Sakakawea and its shoreline. When added to other past, present, and reasonably foreseeable projects, such as oil and gas wells and water intake structures on Lake Sakakawea, the proposed project may have an indirect cumulative impact on potential habitat (Lake Sakakawea and its shoreline) for these species due to potential leaks or spills. However, due to the implementation of a modified-closed loop drilling system, as well as secondary and tertiary containment measures for the proposed project, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Furthermore, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by the interior least tern and piping plover. Therefore, it is unlikely the project would contribute to cumulative impacts to the interior least tern, pallid sturgeon, and piping plover.

Please refer to the discussion below (Wetlands, Eagles, Other Wildlife, and Vegetation) for an analysis of potential cumulative impacts to candidate species (Dakota skipper and Sprague's pipit).

Wetlands, Wildlife, and Vegetation — The proposed project, when added to previously constructed and reasonably foreseeable oil and gas wells, would contribute to habitat loss and fragmentation associated with construction of well pads, access roads, and associated development. By placing multiple wells at one location, habitat loss has been minimized. The North Dakota Parks and Recreation Department notes in its undated publication, "*North Dakota Prairie: Our Natural Heritage*" that approximately 80% of the state's native prairie has been lost to agriculture, with most of the remaining areas found in the arid west; ongoing oil and gas activity has the potential to threaten remaining native prairie resources. While many species of wildlife may continue to use the project area for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts.

However, the proposed action and other similar actions are carefully planned to avoid or minimize these impacts. Multiple components of the process used by the BIA to evaluate and approve such actions, including biological and botanical surveys, on-site assessments with representatives from multiple agencies and entities, public and agency comment periods on this EA, and the use of BMPs and site-specific environmental commitments are in place to ensure that environmental impacts associated with oil and gas development are minimized. The practice of utilizing existing roadways to the greatest extent practicable further minimizes impacts to wildlife habitats and prairie ecosystems. The proposed wells have been sited to avoid sensitive areas such as surface water, wetlands, and riparian areas. Reclamation activities are anticipated to minimize and mitigate disturbed habitat.

Infrastructure and Utilities — The proposed action, along with other oil and gas wells proposed and drilled in the Bakken and Three Forks Formations, requires infrastructure and utilities to provide needed resource inputs and accommodate outputs such as fresh water, power, site access, transportation for products to market, disposal for produced water and other waste materials. As with the proposed action, many other well sites currently being proposed and/or built are positioned to make the best use of existing roads and to minimize the construction of new roads; however, some length of new access roads are commonly associated with new wells. The well pad has been positioned in close proximity to existing roadways to minimize the extent of access road impacts in the immediate area. Additionally, existing two track roadways have been utilized wherever possible to minimize impacts to the surrounding landscape. The contribution of the proposed project and other projects to stress on local roadways used for hauling materials may result in a cumulative impact to local roadways. However, abiding by permitting requirements and roadway restrictions with the jurisdictional entities are anticipated to offset any cumulative impact that may result from the proposed project and other past, present, or future projects. BMPs would be implemented to minimize impacts of the proposed project.

The proposed action has been planned to avoid impacts to resources such as wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable impacts to these or other resources would be minimized and/or mitigated in accordance with applicable regulations.

3.18 Irreversible and Irretrievable Commitment of Resources

Removal and consumption of oil or gas from the Bakken and Three Forks Formations would be an irreversible and irretrievable commitment of resources. Other potential resource commitments include acreage devoted to disposal of cuttings, soil lost through wind and water erosion, cultural resources inadvertently destroyed, wildlife killed during earth-moving operations or in collisions with vehicles, and energy expended during construction and operation.

3.19 Short-term Use of the Environment Versus Long-term Productivity

Short-term activities would not significantly detract from long-term productivity of the project area. The area dedicated to the access road and well pad would be unavailable for livestock grazing, wildlife habitat, or other uses. However, allottees with surface rights would be compensated for loss of productive acreage and project footprints would shrink considerably once the wells were drilled and non-working areas reclaimed and reseeded. Successful and ongoing reclamation of the landscape would reestablish the land's use for wildlife and livestock grazing, stabilize the soil, and reduce the potential for erosion and sedimentation. The primary long-term resource loss would be the extraction of oil and gas resources from the Bakken and three Forks Formations, which is the purpose of this project.

3.20 Permits

QEP would be required to acquire the following permits prior to construction:

- *Application for Permit to Drill* – Bureau of Land Management
- *Application for Permit to Drill* – North Dakota Industrial Commission

- *Synthetic Minor Source Permit* – Environmental Protection Agency
- *404 Permit* – United States Army Corps of Engineers

3.21 Environmental Commitments/Mitigation

The following commitments have been made by QEP:

- Topsoil would be segregated and stored on-site to be used in the reclamation process. All disturbed areas would be re-contoured to original elevations as close as possible as part of the reclamation process.
- Per BIA guidance, interim reclamation measures would occur within six months of construction; however, if circumstances prevent interim reclamation from occurring within this timeframe, QEP would contact BIA to request and extension. When conditions prevent interim reclamation, such as winter when seed cover cannot be established, crimping straw and/or mulch would be utilized to cover bare ground areas until conditions improve.
- BMPs (may include, but are not limited to, hydro-seeding, erosion mats and biologs) would be implemented to minimize wind and water erosion of soil resources. Soil stockpiles would be positioned to help divert runoff around the well pads.
- The proposed well pad and access road would avoid surface waters. The proposed project would not alter stream channels or change drainage patterns.
- Wetland mitigation would be constructed at a 1:1 ratio as proposed in the mitigation plan.
- Wetland mitigation would be constructed concurrent with project construction
- Top soil from the filled wetland would be salvaged and incorporated into the wetland mitigation area as inoculum to minimize temporal loss and enable the initial approval of a 1:1 ratio.
- Wetland mitigation would meet the success criteria as described in the attached mitigation plan before the wetland mitigation would be considered complete.
- An annual monitoring report would be submitted to the Corps of Engineers North Dakota Regulatory Office no later than September 15 for five years, or until the site is determined to meet full success criteria.
- A legally executed long term protection instrument would be completed within 60 days of the verification letter (the verification letter was dated September 10, 2012).
- A modified-closed loop drilling system would be utilized. As part of this, QEP would implement a modified-closed loop circulation drilling mud system, whereby drilling fluid is circulated from the well into steel mud tanks and the drill cuttings are separated from the drilling fluid. If it is determined that the cuttings would be placed within an onsite cuttings pit, the drill cuttings would be stabilized, dried and placed in the reinforced lined cuttings pit. The drill cuttings pit would be reclaimed to BLM and NDIC standards immediately upon finishing completion operations. If it is determined that the cuttings would be hauled off site, the drill cuttings would be dried and transported to an approved disposal site operated by TJD Consulting, LLC.

- The reinforced lining of the cuttings pit would have a thickness of 30 mil to prevent seepage and contamination of underlying soil.

- Any minimal free fluid present in the pit would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site.

- All spills or leaks of chemicals and other pollutants would be reported to the BLM and EPA. The procedures of the surface management agency shall be followed to contain leaks or spills.

- The 12 proposed wells would be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones.

- Disturbed vegetation would be re-seeded in kind upon completion of the project, and a noxious weed management plan would be implemented. The re-seeded site would be maintained until such time that the vegetation is consistent with surrounding undisturbed areas and the site is free of noxious weeds. Seed would be obtained from a BIA/BLM approved source.

- In addition, reclamation of the pipeline corridor would occur within six months after construction. If conditions prevent reclamation activities or seed germination, Arrow would spread and crimp straw for ground cover to minimize erosion. Additional reclamation activities would occur throughout the life of the pipeline, due to routine maintenance or addition of infrastructure. Reclamation would be considered successful when seeded areas are established, adjacent vegetative communities spread back into the disturbed areas, and noxious weeds are under control.

- The proposed well pad and access road would avoid impacts to cultural resources. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA.

- The access road would be located at least 75 feet away from identified cultural resources. The boundaries of these 75-foot "exclusion zones" would be pin-flagged as an extra measure to ensure that inadvertent impacts to cultural resources are avoided.

- All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

- QEP would ensure all contractors working for the company would adhere to all local, county, tribal, and state regulations and ordinances regarding rig moves, oversize/overweight loads, and frost law restrictions.

- Utility modifications would be identified during design and coordinated with the appropriate utility company

- An H_2S Contingency Plan would be submitted to the BLM as part of the APD

- QEP would provide dust control for their access roads and haul roads.

- Established load restrictions for State and BIA roadways would be followed and haul permits would be acquired as appropriate.

- Shale green paint would be used on structures to not take away from the surrounding landscape.

- BMPs would be used during both the construction and operational phases to ensure contaminants do not move off site. Specific BMPs would include the Sioux containment system around the tank battery, the 18-inch berm around the pad, placement of the proposed topsoil stockpile on the downslope side of the well pad, and placement of straw wattles within all drainages in close proximity to the pad.

- Ground water monitoring wells would be installed east of the proposed topsoil stockpile to identify if any sub surface contaminants are moving off-site.

- If a whooping crane is sighted within one-mile of a well site or associated facilities while it is under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area. In addition, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by whooping cranes.

- In the event that a construction activity needs to take place within the nesting and breeding season (February 1 to July 15), pre-construction surveys for migratory birds or their nests would be conducted within five days prior to the initiation of construction activities. Mowing the site prior to the nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of these surveys would be reported to USFWS.

- If a bald or golden eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed.

- Wire mesh or grate covers would be placed over barrels or buckets placed under valves and spigots to collect dripped oil. Suitable mufflers would be put on all internal combustion engines and certain compressor components to mitigate noise levels.

- A minimum of an 18-inch berm would be constructed around the entire pad to protect against runoff and contaminants from leaving the pad.

- Tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24-hour record precipitation.

- Straw wattles would be placed within all drainages in close proximity to the proposed well pad to guard against accidental release of fluids from the site.

- All additional fill material required for construction of the project would be obtained from a supplier whose material has been certified weed-free.

- Prior to mobilization, drilling rigs and associated equipment would be pressure washed or air blasted off Tribal lands to prevent the possible transportation of noxious or undesirable vegetation onto Tribal lands as well as USACE managed lands.

- All welds completed on the steel pipelines are subjected to a 100 percent Non-Destructive Testing. After the welds have passed testing and covered for corrosion protection, the external coating of the pipe is inspected using a jeepmeter to detect holes and cracks. Before the pipelines are put into service, the steel pipe is hydrotested to approximately 1.5 times

the minimum design pressure of 1,180 pounds per square inch gauge (psig). The produced water pipe is designed to sustain a minimum pressure of 750 psig and is hydrotested to approximately 900 psig prior to being approved for service.

- Additionally, Arrow has committed to developing a spill response plan. The response plan would include monitoring protocols, notification procedures, spill detection and on-scene spill mitigation procedures, response activities, contacts, training and drill procedures, and response plan review and update procedures. The spill response plan would be submitted to the BIA prior to the commencement of construction activities.

- Arrow would fully comply with the marking requirements specified in the US Department of Transportation's rules and regulations, specifically contained in 49 CFR Parts 192 and 195.

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Appendix A

Agency Scoping Material

November 4, 2011

Mr. Scott Davis
Indian Affairs Commission
600 E. Blvd. Ave. 1st Floor, Judicial Wing, Rm 117
Bismarck, ND 58505-0300

RE: QEP Energy Company
Bullet well pad
Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Davis,

On behalf of QEP Energy Company (QEP), Kadrmas, Lee & Jackson, Inc. (KL&J) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM for the development, drilling, and completion of 12 wells on one well pad on the Fort Berthold Reservation.

The *Bullet* well pad would be located in the NW¼ of Section 10, Township 149 North, Range 91 West, 5th P.M. ***Please refer to the enclosed project location map***. The well pad has been positioned to utilize existing roadways for access to the greatest extent possible. Construction of the proposed well pad and access road is scheduled to begin in late 2011/early 2012.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit your views and comments on the proposed action. We are interested in existing or proposed developments you may have that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee, or otherwise value that might be adversely impacted.

Please provide your comments by **December 5, 2011**. We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the EA.

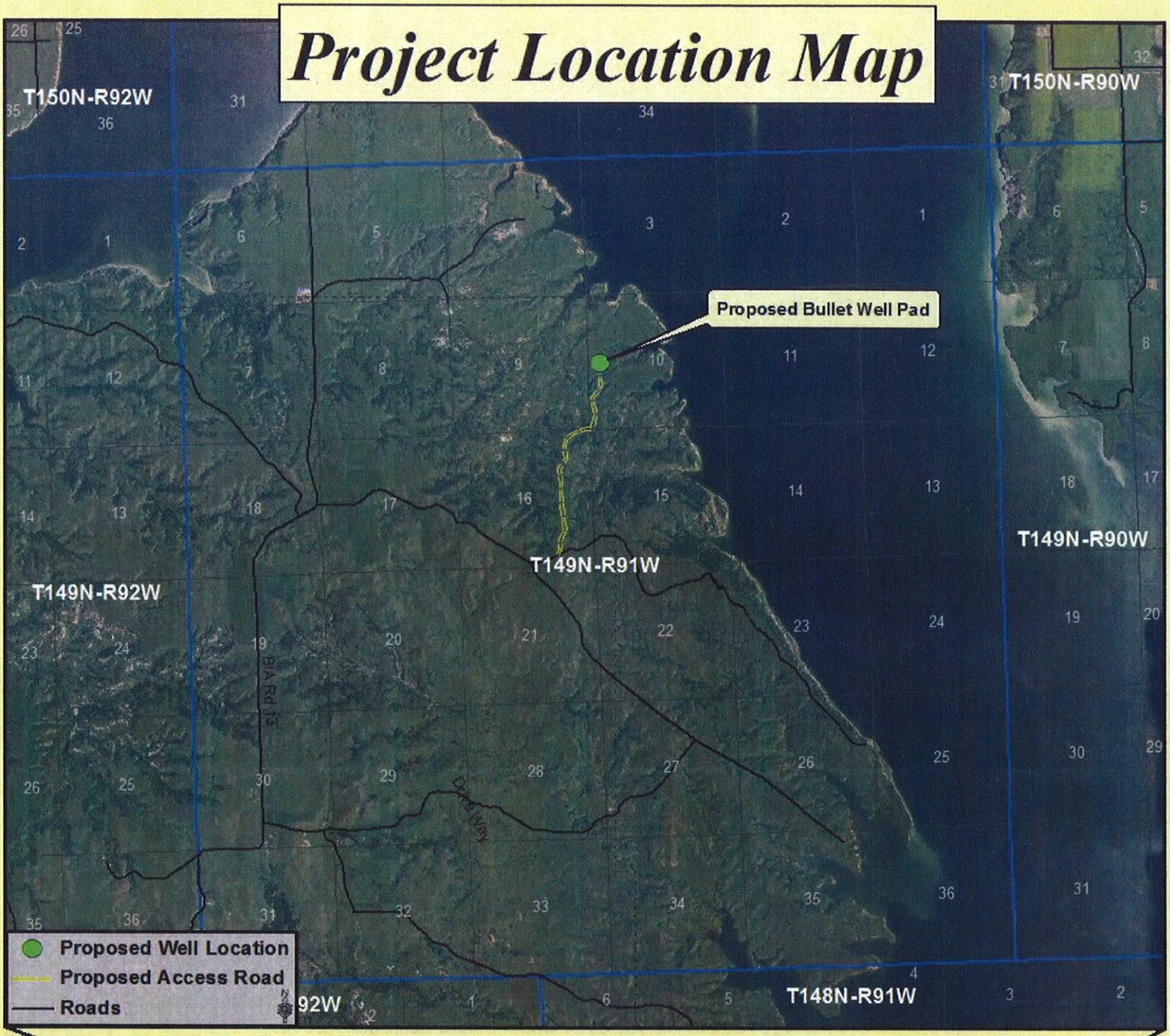
If you would like further information regarding this project, please contact me at (701) 355-8726. Thank you for your cooperation.

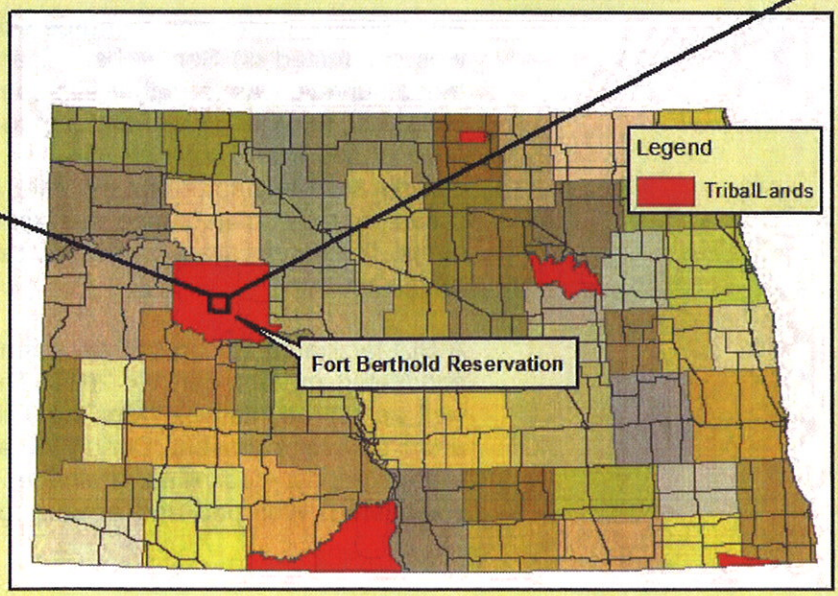
Sincerely,

Kadrmas, Lee & Jackson, Inc.

Grady Wolf
Environmental Scientist
Enclosure (Project Location Map)

Project Location Map





QEP Energy Company
Proposed Bullet Well Pad
Dunn County, ND

Kadrmas Lee & Jackson
Engineers Surveyors Planners

November 4, 2011

Jeffrey Towner
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

Re: QEP Energy Company
Bullet well pad
Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Towner,

On behalf of QEP Energy Company (QEP), Kadrmas, Lee & Jackson, Inc. (KL&J) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM for the development, drilling, and completion of 12 wells on one well pad and one access road on the Fort Berthold Reservation. The 12 wells are to be placed on one pad to minimize environmental impacts. The proposed well pad is to be positioned in the following location:

- Bullet well pad; T149N, R91W, NW¼ of Section 10

Please refer to the enclosed project location map.

The proposed action would advance the exploration and production of oil from the Bakken and Three Forks Pools. The well pad has been positioned to utilize existing roadways for access to the extent possible. Construction of the proposed well pad and access road is scheduled to begin in late 2011/early 2012.

An intensive, pedestrian resource survey of the proposed well pad and access road was conducted on September 19 and October 19, 2011 by KL&J. The purpose of these surveys was to gather site-specific data and photos with regards to botanical, biological, threatened and endangered species, eagles, and water resources. A study area of the entire potential area of disturbance and a 250-foot wide access road corridor was evaluated for the site. In addition, a 0.50 mile wide buffer around all areas of project disturbance was used to evaluate the presence of eagles and eagle nests. Resources were evaluated using visual inspection and pedestrian transects across the sites.

A BIA-facilitated EA on-site assessment of the well pad and access road was also conducted on October 19, 2011. The BIA Environmental Protection Specialist, as well as representatives from the Tribal Historic Preservation Office (THPO), QEP, and KL&J were present. During the assessment, construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. Well pad and access road locations were adjusted as appropriate, to

avoid conflicts with identified environmental areas of concern. Those present at the on-site assessment agreed that the chosen locations, along with the minimization measures QEP plans to implement, are positioned in areas which would minimize impacts to sensitive wildlife and botanical resources. BMPs and other commitments QEP has made to avoid, minimize, or mitigate impacts are listed at the end of this letter.

Threatened and Endangered Species: The proposed pad site occurs in Dunn County. In Dunn County, the interior least tern, whooping crane, black-footed ferret, pallid sturgeon, and gray wolf are all listed as endangered species. The piping plover is listed as a threatened species, and the Dakota skipper and Sprague's pipit are listed as a candidate species. Dunn County also contains designated critical habitat for the piping plover. None of these species were observed during the field survey and on-site assessment.

Whooping cranes use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting, and various cropland and emergent wetlands for feeding. The proposed projects are located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. Lake Sakakawea is located approximately 0.14 miles north of the proposed Bullet well pad. Due to the proximity of the site to Lake Sakakawea and their occurrence within the 75 percent of confirmed sightings corridor, adjacent habitat may be used as stopover habitat. The proposed project may affect but is not likely to adversely affect whooping cranes or whooping crane habitat. If a whooping crane is sighted within one-mile of a well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

Suitable habitat for the interior least tern, pallid sturgeon, and piping plover is largely associated with Lake Sakakawea and its shoreline. Lake Sakakawea is located approximately 0.14 miles north of the proposed Bullet well pad. No additional habitat was identified during the on-site survey. The well pad and access road is located on an upland area composed of grassland. USFWS determined Lake Sakakawea's shoreline to be critical habitat for the piping plover.

The tank battery would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24hr record precipitation. A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. Secondary containment measures consisting of earth berms, fiber rolls or additional BMP's would be placed in all drainages in close proximity to the proposed pad. In addition, solidification and drying of drill cuttings before placement in the pit and the 30 mil reinforced lining of the cuttings pit would diminish the potential for pit leaching. Due to the implementation of secondary

containment measures and dry cuttings pit, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Due to the proximity of the proposed project to Lake Sakakawea (approximately 0.14 miles at the nearest point) the proposed project may affect but is not likely to adversely affect the interior least tern, pallid sturgeon, and piping plover or their associated habitats.

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. There has not been a confirmed sighting of a black-footed ferret in North Dakota for over 30 years and they are presumed extirpated. Its preferred habitat includes areas around prairie dog towns, as it relies on prairie dogs for food and lives in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive. Due to a lack of suitable habitat and known populations, the proposed project is anticipated to have no effect on the black-footed ferret.

Historically, the gray wolf's preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. The project area is located far from other known wolf populations and is positioned on rangeland that is grazed. No wolves or indications of wolves were observed during the field survey. Due to a lack of preferred habitat characteristics and known populations, the proposed project is anticipated to have no effect on the gray wolf.

The preferred habitat for the Dakota skipper consists of undisturbed, flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. The proposed site is located on moderately grazed rangeland that does contain bluestem prairies with abundant wildflowers. Although grazing is evident, it is moderate in nature; therefore, the project site does contain suitable habitat for the Dakota skipper. Due to the presence of potential habitat for the Dakota skipper within the project area, the proposed project may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance. The proposed project area consists of moderately grazed rangeland which may provide potential habitat for the Sprague's pipit. No Sprague's pipit were observed during the field surveys. Due to the presence of preferred habitat for the Sprague's pipit within the project area, the proposed project may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species. In the event that construction activity needs to take place within the nesting and breeding season, pre-construction surveys for migratory

birds or their nests would be conducted within five days prior to the initiation of construction activities; or mowing of the site prior to the nesting/breeding season would be completed.

Botanical Resources: The proposed Bullet well pad consists of moderately grazed native upland grasses. The Bullet well pad and access road is surrounded by rolling topography and wooded draws with shrub-scrub along the access route. The well pad and access road were mostly dominated by Kentucky bluegrass (*Poa pratensis)*, green needlegrass (*Stipa viridula)*, *western wheatgrass (Agropyron smithii), little bluestem (Andropogon scoparius),* blue grama (*Bouteloua gracilis*), smooth brome (*Bromus inermis*), purple coneflower (*Echinacea angustifolia*), and western snowberry (*Symphoricarpos occidentalis*). Green ash (*Fraxinus pennsylvanica*), and silver buffalo berry (*Shepherdia argentae*) were observed growing in the drainages surrounding the well pad and access road. Foxtail barley (*Hordeum jubatum*) and bald spikerush (*Eleocharis erythropoda*) were observed growing in a wetland within the access road corridor. No noxious weeds were observed within the study area. There are no threatened or endangered plant species listed for Dunn County.

Biological Resources: The project area contains suitable habitat for mule deer (*Odocoileus hemionus*), whitetail deer (*Odocoileus virginianus*), sharp-tailed grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicas*), raptors, North American badger (*Taxidea taxus*), song birds, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), Eastern cottontail rabbit (*Sylvilagus floridanus*), wild turkey (*Meleagris gallopavo*), jackrabbit (*Lepus townsendii*), and North American porcupine (*Erethizon dorsatum*). Six sharp-tailed grouse were observed during the field survey. No additional wildlife was observed during the survey.

During drilling activities, the noise, movements and lights associated with having a drilling rig on-site is expected to deter wildlife from entering the area. The dry cuttings pit would only be used for solid material storage, and any fluid present in the pit would be removed and disposed of in accordance with BLM and North Dakota Industrial Commission (NDIC) rules and regulations. In addition, the reinforced lining of the cuttings pit would have a thickness of 30 mil to prevent seepage and contamination of underlying soil. Immediately after the drilling rig leaves the location, reserve pits would be netted with State and Federal approved nets. These would remain in place with proper maintenance until the closure of the reserve pits. Interim reclamation and closure of the cuttings pit would occur within six months of construction; however, if circumstances prevent interim reclamation from occurring within this timeframe, QEP would contact BIA to request an extension.

Design considerations would be implemented to further protect against potential habitat degradation. A minimum of an 18-inch high berm would be constructed around the entire well pad to provide additional containment at the well pad to control runoff. The tank battery would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against

accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24hr record precipitation. BMPs to minimize wind and water erosion of soil resources, as well as implementation of a semi-closed loop system with a dry cuttings pit during drilling, would also be put into practice. Secondary containment measures consisting of earthen berms, straw wattles or other BMP's would be installed in adjacent drainages to the well pad and access road.

All efforts would be made for construction activities to begin after July 15 and end prior to February 1, in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that a construction activity needs to take place within the nesting and breeding season, a pre-construction survey for migratory birds or their nests would be conducted within five days prior to the initiation of construction activities; or mowing of the site prior to nesting/breeding season may be completed in lieu of the pre-construction survey.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species would be implemented during the construction and operation phases. These measures would include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining dry cuttings pit, and covering the pit with netting that has a maximum mesh size of 1.5 inches.

Eagles: A survey for eagle nests was conducted on October 19, 2011. The proposed project site was thoroughly searched and no eagles or eagle nests were observed. Dr. Anne Marguerite Coyle of Dickinson State University has completed focused research on golden eagles and maintains a database of golden eagle nest sightings. According to Dr. Coyle's information, the closest recorded golden eagle nest is located approximately 7.1 miles south of the proposed project. If a bald or golden eagle or eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed.

Water Resources: The proposed Bullet well pad primarily drains to the north and east. Runoff near the north side of the pad would flow north approximately 0.16 miles before draining into Lake Sakakawea. Runoff near the east side of the pad would follow two drainageways to Lake Sakakawea. The north half of the pad would flow east approximately 0.20 miles before draining into Lake Sakakawea and the south half of the pad would flow east approximately 0.27 miles before draining into Lake Sakakawea.

A minimum of an 18-inch high berm would be constructed around the well pad to protect against runoff and contaminants from leaving the pad. Secondary containment measures consisting of earthen berms, straw wattles or additional

BMP's would be placed in adjacent drainages as needed. In addition, two monitoring wells will be placed near the tank battery and well pad to detect any subsurface contamination.

Best Management Practices: BMPs for soil and wind erosion would be implemented as needed to include seeding of cut areas and soil piles as well as the use of diversion ditches, silt fences, straw wattles and matting for all fill areas. Any woody vegetation removed during site construction would be incorporated into topsoil stockpiles or removed from the location to a proper disposal site. The alteration of drainages near the proposed well pad would be avoided. Culverts to maintain drainage along the access road would also be installed where needed. The Bullet well pad access road was adjusted during the on-site survey to provide buffers to cultural sites and minimize wetland impacts.

Upon completion of the wells, a portion of the well pad would be reclaimed to further avoid environmental areas of concern. Per BIA guidance, interim reclamation measures would occur within six months of construction; however, if circumstances prevent interim reclamation from occurring within this timeframe, QEP would contact BIA to request an extension. When conditions prevent interim reclamation, such as winter when seed cover cannot be established, crimping and/or mulch would be utilized to cover bare ground areas until conditions improve.

Summary of Commitments to Avoid or Minimize Impacts: In an effort to minimize the potential environmental effects associated with the proposed project, QEP would also implement the following measures into the development of the site:

- A semi-closed loop system would be used during drilling. Drill cuttings would be solidified and dried before being placed in the reinforced lined cuttings pit. The reinforced lining of the cuttings pit would have a thickness of 30 mil to prevent seepage and contamination of underlying soil. Any minimal free fluid present in the pit would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site. The drill cuttings pit would be reclaimed to BLM and NDIC standards immediately upon finishing completion operations.
- Per BIA guidance, interim reclamation measures would occur within six months of construction; however, if circumstances prevent interim reclamation from occurring within this timeframe, QEP would contact BIA to request an extension. When conditions prevent interim reclamation, such as winter when seed cover cannot be established, crimping and/or mulch would be utilized to cover bare ground areas until conditions improve.
- All efforts would be made for construction activities to begin after July 15 and end prior to February 1, in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that a construction activity needs to take place within the nesting and breeding season, pre-construction surveys for migratory birds or their nests would be conducted within five days prior to

the initiation of construction activities. Mowing the site prior to the nesting/breeding season would prevent birds from nesting at the site.

- Measures implemented during construction to avoid the taking of migratory bird species would include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining dry cuttings pit, and covering the pit with netting that has a maximum mesh size of 1.5 inches.
- If a whooping crane is sighted within one-mile of a well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.
- The tank battery would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24hr record precipitation. BMPs would be implemented to minimize wind and water erosion of soil resources.
- A minimum of an 18-inch berm would be constructed around the entire pad to protect against runoff and contaminants from leaving the pad.
- Secondary containment measures consisting of earthen berms, straw wattles or additional BMP's would be placed in adjacent drainages as needed. In addition, two monitoring wells will be placed near the tank battery and well pad to detect any subsurface contamination.
- Topsoil will be segregated and stored on-site to be used in the reclamation process. All disturbed areas would be re-contoured to original elevations as close as possible as part of the reclamation process.
- Shale green paint will be used on structures to not take away from the surrounding landscape.

To ensure that social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed development of this project, pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are particularly interested in any property that your department may own, or have an interest in, located within the project area. We would also appreciate being made aware of any proposed development your department may be contemplating in the area of the proposed project. Any information that might help us in our study would be appreciated.

It is requested that any comments or information be forwarded to our office on or before **December 5, 2011**. We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the necessary environmental documentation.

Bullet Well Pad
QEP
Fort Berthold Reservation

If you would like further information regarding this project, please contact me at (701) 355-8726. Thank you for your cooperation.

Sincerely,

Kadrmas, Lee & Jackson, Inc.

Grady Wolf
Environmental Planner

Enclosures (Maps)

Eagle Buffer Map

Appendix B

Agency Scoping Responses

List of Scoping Responses
QEP Energy Company

Environmental Assessment for Drilling of

Drilling of MHA 1-10-11H-149-91, MHA 2-10-11H-149-91, MHA 3-10-11H-149-91, MHA 4-10-11H-149-91, MHA 1-10-14H-149-91, MHA 2-10-14H-149-91, MHA 3-10-14H-149-91, MHA 4-10-14H-149-91, MHA 1-10-15H-149-91, MHA 2-10-15H-149-91, MHA 3-10-15H-149-91, and MHA 4-10-15H-149-91 *Oil & Gas Wells*

Fort Berthold Indian Reservation
Dunn County, North Dakota

Federal

U.S. Department of Agriculture – Natural Resources Conservation Service

U.S. Department of the Army – Corps of Engineers, Garrison Dam/Lake Sakakawea Project

U.S. Department of the Army – Corps of Engineers, Omaha District: North Dakota Regulatory Office

U.S. Department of the Army – Corps of Engineers, Omaha District

U.S. Department of the Interior – Bureau of Reclamation

U.S. Department of the Interior – Fish and Wildlife Service

State

North Dakota Department of Health

North Dakota Game and Fish Department

North Dakota State Water Commission

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
P.O. Box 1458
Bismarck, ND 58502-1458

RECEIVED
NOV 18 2011

RECEIVED
NOV 18 2011

November 17, 2011

Grady Wolf
Kadrmas, Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157

RE: QEP Energy Company
11-31G Well Pad
11-26E Well Pad
Bullet well pad
Fort Berthold Reservation
Dunn County, ND

Dear Mr. Wolf:

The Natural Resources Conservation Service (NRCS) has reviewed your letters dated November 4 and 8, 2011, concerning proposed well pad sites on the Fort Berthold Reservation in Dunn County, North Dakota.

Important Farmlands - NRCS has a major responsibility with Farmland Protection Policy Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use when the project utilizes federal funds. It appears your proposed project is not supported by federal funding; therefore, FPPA does not apply and no further action is needed.

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for the installation of buried utilities. If these guidelines are followed, the impacts to the wetland(s) will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements: 1) Disturbance to the wetland(s) must be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

NRCS would recommend that impacts to wetlands be avoided. If the alignment of the project requires passage through a wetland, NRCS can complete a certified wetland determination, if requested by the landowner/operator.

If you have additional questions pertaining to FPPA, please contact Steve Sieler, State Soil Liaison, NRCS, Bismarck, North Dakota (701-530-2019).

Sincerely,

JEROME M. SCHAAR
State Soil Scientist/MO 7 Leader

Grady Wolf

From: Sorensen, Charles G NWO [Charles.G.Sorensen@usace.army.mil]
Sent: Thursday, November 17, 2011 1:30 PM
To: grady.wolf@kljeng.com
Cc: Ames, Joel O NWO
Subject: Comments on QEP Energies Bullet Well Pad (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Grady

Thank you for letting the U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project comment on QEP Energy Companies Bullet Well Pad location within the Fort Berthold Reservation

At this time the U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project request that consideration and if possible implement the following management practices during the exploration phase of those wells listed in the request letter

Due to the close proximity of the well locations to lands managed by the U.S. Army Corps of Engineers (USACE) there is a high risk that any storm water runoff from the well location will enter the Missouri River/Lake Sakakawea.
As such the USACE would request that QEP Energy consider the construction/establishment of a imperviously lined catch trench located on the down sloping side of the well pad. Said trench would help in containing any hazardous wastes from the well pad. Those fluids that accumulate in the trench should be pumped out and disposed of properly. In addition to the catch trench the USACE would also request that prior to pad construction that an impervious liner be placed over the proposed pad location.

As previously mentioned the location of the proposed well site is extremely close to lands managed by the USACE and as previously stated the possibility for contamination of the Missouri River/Lake Sakakawea is of great concern to this agency. To aid in the prevention of hazardous wastes from entering the aforementioned bodies of water, the USACE would strongly recommend that a Closed Loop Drilling Method be used in the handling of all drilling fluids

Should living quarters be established onsite it is requested that all sewage collection systems be of a closed design and all holding tanks are to be either double walled or contained in a secondary containment system. All sewage waste removed from the well site location should be disposed of properly.

That all additional fill material required for the construction of the well pad is obtained from a private supplier whose material has been certified as being free of all noxious weeds.

Prior to the drilling rig and associated equipment being moved/ placed that all equipment be either pressure washed or air blasted off Tribal lands to prevent the possible transportation of noxious or undesirable vegetation onto Tribal lands as well as USACE managed lands.

That no surface occupancy be allowed within ½ mile of any known Threatened or Endangered Species critical habitat.

If possible, all construction activities should occur between August 15th and April 1st. If trees are present, the appropriate dates are August 15th - February 1st. By constructing during these dates, disruptions to wildlife during the breeding season maybe kept to a minimum.

Cumulative impacts are often overlooked, in the completion of NEPA compliance.To adequately assess cumulative impacts, the following activities should consider.

a. Has the project area already been degraded, and if so, to what extent?
b. Are other ongoing activities in the area causing impacts, and if so, to what extent?
c. What is the likelihood that this project will lead to a number of associated projects?
d. What are the trends for activities and impacts in the area?

If you have any questions regarding the above recommendations please feel free to contact me

Charles Sorensen
Natural Resource Specialist
U.S. Army Corps of Engineers
Garrison Dam/Lake Sakakawea Project
Riverdale, North Dakota Office
(701) 654 7411 ext 232

Classification: UNCLASSIFIED
Caveats: NONE

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

November 23, 2011

REPLY TO
ATTENTION OF

[NWO-2011-2401-BIS]

North Dakota Regulatory Office

Kadrmas, Lee & Jackson, Inc.
Attn: Mr. Grady Wolf
128 Soo Line Drive
P.O. Box 1157
Bismarck, North Dakota 58502-1157

Dear Mr. Wolf:

This letter is in reply to your November 4, 2011, solicitation of views (SOV) letter on behalf of QEP Energy Company (QEP), requesting comments concerning the proposed Bullet well pad located on the Fort Berthold Reservation, in the NW ¼ of Section 10, Township 149 North, Range 91 West, in Dunn County, North Dakota.

The Corps of Engineers regulates work affecting navigable waterways under Section 10 of the Rivers and Harbors Act (RHA) and the discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act (CWA). The Missouri River (Lake Sakakawea), its tributaries and adjacent wetlands are regulated by the Corps under the auspices of the RHA and CWA; therefore, if the project, including access roads, staging area, or other associated facilities, would require work in, under or above these waters or potential waters of the United States, you should contact this office for a permit determination.

In addition, the project appears to be located in close proximity to the Corps of Engineers' Lake Sakakawea boundary line. Inquiries concerning activities that may affect Corps lands and/or easements should be directed to the Lake Sakakawea Project, Attn: Ms. Linda Phelps, 201 1st Street, Riverdale, North Dakota 58565 (Phone: (701) 654-7411).

If you have any questions regarding this letter, our program, or specific issues concerning your project, please do not hesitate to write, at the above address, or call me at (701) 255-0015. Reference Corps Identification No. NWO-2011-2401-BIS in all future correspondence concerning this project.

The Omaha District, North Dakota Regulatory Office is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://per2.nwp.usace.army.mil/survey.html. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

Sincerely,

Matthew J. Mikulecky
Regulatory Project Manager
North Dakota Regulatory Office

CF: Phelps (CENWO-OD-GA-N)

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

November 17, 2011

Planning, Programs, and Project Management Division

Kadrmas Lee & Jackson
Attention: Mr. Grady Wolf
128 Soo Line Drive
P.O. Box 1157
Bismarck, North Dakota 58502-1157

Dear Mr. Wolf:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated November 4, 2011, regarding the proposed development, drilling and completion of twelve wells on one well pad on the Fort Berthold Reservation in Dunn County, North Dakota. The Corps offers the following comments:

The Corps is aware of recent reports that describe environmental impacts associated with the use of oil waste pits in North Dakota. Oil waste pits may be susceptible to flooding, which may threaten drinking water supplies, wildlife, soil and other water resources. Due to the proximity of the proposed wells to Lake Sakakawea, a significant drinking water resource, the Corps requests the applicant consider using a closed loop drilling system. A closed loop drilling system may reduce or eliminate the discharge of toxic drilling wastes and their potential negative impacts to the environment.

The Corps is also aware that the Bureau of Indian Affairs is currently developing a programmatic environmental assessment (EA) for oil and gas development on the Fort Berthold Reservation. The Corps requests QEP Energy Company include some information about the programmatic evaluation in the site specific EA. It is important for the reader to know that an overarching analysis is currently underway that will address the scale and rapid development of oil and gas wells within this region.

Also, the proposed location for the pad that will accommodate twelve wells appears to be located on top of a bluff that drains less than 1,000 feet into Lake Sakakawea. The Corps requests QEP Energy Company consider in their EA alternative locations that would move the pad site further away from the lake. By setting back the pad site from the lake, potential environmental impacts resulting from accidental spills or blowouts may be reduced. Additionally, removing the large pad from atop a lakeside bluff will also reduce the impact to visual resources experienced by recreational users on the lake. The Corps recommends that viable alternatives be considered in the Environmental Assessment for this project due to our management of important environmental resources that may be adversely impacted.

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Your plans should also be coordinated with the state water quality office in which the project is located to ensure compliance with federal and state water quality standards and regulations mandated by the Clean Water Act and administered by the U.S. Environmental Protection Agency (EPA). Please coordinate with the North Dakota Department of Health concerning state water quality programs.

If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the North Dakota Game and Fish Department regarding fish and wildlife resources. In addition, the North Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

Since the proposed project does not appear to be located within Corps owned or operated lands, we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area, please consult the following floodplain management office:

North Dakota State Water Commission
Attention: Jeff Klein
900 East Boulevard Avenue
Bismarck, North Dakota 58505-0850
jjkein@nd.gov
Telephone: 701-328-4898
Fax: 701-328-3747

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website (https://www.nwo.usace.army.mil/html/od-r/district.htm) to determine if this project requires a 404 permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Bismarck Regulatory Office
Attention: CENWO-OD-R-ND/Cimarosti
1513 South 12th Street
Bismarck, North Dakota 58504

In addition, please update your records with our current mailing address:

U.S. Army Corps of Engineers, Omaha District
Environmental Resources and MRRP Plan Formulation
Attention: CENWO-PM-AC
1616 Capitol Ave.
Omaha, Nebraska 68102-4901

If you have any questions, please contact Mr. Shannon Sjolie of my staff at (402) 995-2887.

Sincerely,

Eric Laux
Acting Chief, Environmental Resources and Missouri River Recovery Program Plan Formulation Section

Copy Furnished:
CENWO-OD-R- ND/Cimarosti

United States Department of the Interior

BUREAU OF RECLAMATION
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DK-5000
ENV-6.00

NOV 8 2011

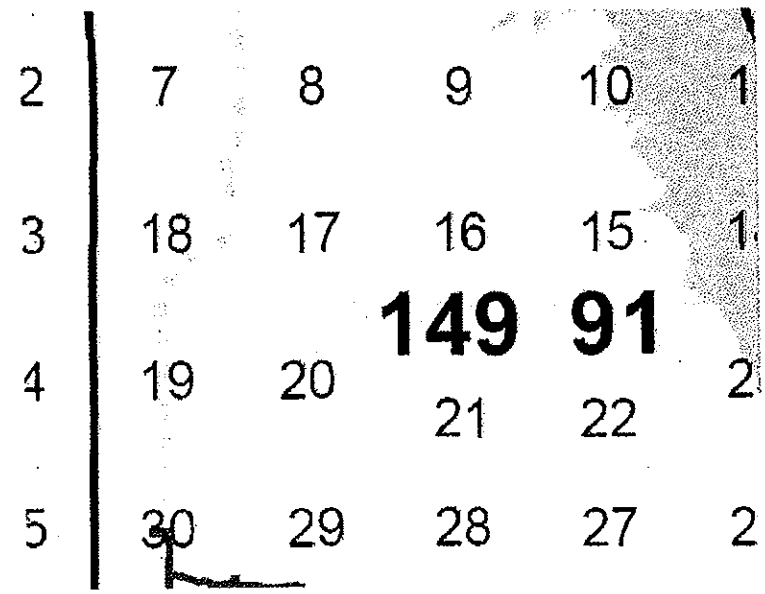
Mr. Grady Wolf
Environmental Scientist
KLJ
P.O. Box 1157
Bismarck, ND 58502-1157

Subject: Solicitation for an Environmental Assessment for the Proposed Construction of up to Twelve Exploratory Oil and Gas Wells on One Well Pad, Section 10, T149N, R91W, Saddle Butte, North Dakota, on the Fort Berthold Indian Reservation in Dunn County, North Dakota

Dear Mr. Wolf:

This letter is written to inform you that we received your letter of November 4, 2011, and the information and map of your proposed well pad has been reviewed by Bureau of Reclamation staff.

The proposed well pad in Section 10, T149N, R91W, Saddle Butte, North Dakota, in Dunn County appears to be clear of federal Reclamation facilities, in this case the rural water pipelines of the Fort Berthold Rural Water System, by several miles. Please note that municipal, rural, and industrial water lines commonly follow roads, therefore, we have provided the map below of the general area and associated federal pipelines in the vicinity of your proposed wells and access roads (red lines):



Sections 10, T149N, R91W, Saddle Buttes, ND

The map we have provided should aid you in identification of potential for adverse effect to, or crossings of, federal facilities. Also, should you have need to cross a Fort Berthold Rural Water System pipeline while accessing your proposed project, please refer to the enclosed sheet for pipeline crossing specifications and contact our engineer Colin Nygaard, as shown below.

Since Reclamation is the lead federal agency for the Fort Berthold Rural Water System, we request that any work planned on the reservation be coordinated with Mr. Lester Crows Heart, Fort Berthold Rural Water Director, Three Affiliated Tribes, 308 4 Bears Complex, New Town, North Dakota 58763.

Thank you for providing the information and opportunity to comment. If you have any further environmental questions, please contact me at 701-221-1287 or for engineering questions Colin Nygaard, Civil Engineer, at 701-221-1260.

Sincerely,

Kelly B. McPhillips
Environmental Specialist

Enclosure

cc: Bureau of Indian Affairs
Great Plains Regional Office
Ms. Marilyn Bercier
Acting Regional Director - Indian Services
115 Fourth Avenue S.E.
Aberdeen, SD 57401

Mr. Lester Crows Heart
Fort Berthold Rural Water Director
Three Affiliated Tribes
308 4 Bears Complex
New Town, ND 58763
(w/encl)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

MAR 16 2012

Mr. Grady Wolf
Environmental Planner
Kadrmas, Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck, North Dakota 58502-1157

Re: QEP Bullet Well Pad, Fort Berthold Reservation,
Dunn County, North Dakota
In response, please reference Tails # 2012-CPA-0121

Dear Mr. Wolf:

This is in response to your November 8, 2011, scoping letter and request for concurrence, subsequent email correspondence between you and Heidi Riddle of my staff, and a February 14, 2012, memorandum regarding a proposed oil and gas well on one pad to be drilled and completed by QEP Energy Company (QEP) on the Fort Berthold Reservation, Dunn County, North Dakota.

Specific location for the proposed pad is:

Bullet Well Pad: T. 149 N., R. 91 W., North West ¼ of Section 10

We offer the following comments under the authority of and in accordance with the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*) (NEPA), the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*) (ESA), Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*) (MBTA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), and Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds."

Threatened and Endangered Species

In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated Kadrmas Lee & Jackson (KLJ) to represent the BIA for informal Section 7 consultation under the ESA. Therefore, the U.S. Fish and Wildlife Service (Service) is responding to you as the designated non-Federal representative for the purposes of ESA, and under our other authorities as the entity preparing the NEPA document for adoption by the BIA.

Your letter states that the proposed Bullet well pad is located approximately 0.02 and 0.27 stream-miles from potential habitat for interior least tern, piping plover and pallid sturgeon. KLJ believes a setback distance of 1.0 stream-mile adequate to contain most spills before product can reach the lake through draws and drainages.

The Service recommended in a January 6, 2012, email that QEP implement a closed-loop drilling system. The Service believes that the-absence of a reserve pit greatly reduces the potential of migration of fluids off the pad. Additionally, the potential for leaching is minimized or eliminated, so risk to federally-listed species occurring on or near Lake Sakakawea from contamination through potential drainage to the lake reduces the threat. On February 14, 2012, we received your memo which addresses our concerns regarding the use of a reserve pit. You stated that the proposed Bullet well pad is located approximately 444 meters from the shoreline of Lake Sakakawea; therefore, according to your calculations, it would take approximately 51 years for bank erosion to reach the proposed pit site. Your analysis also concludes that any petroleum products that may be associated with the dry cuttings pit would naturally break down over time due to bioremediation from microorganisms. Additionally, QEP will implement secondary containment measures, including an impervious dike which will be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and 24-hr record precipitation. Based on the foregoing measures, the Service concurs with your "may affect, is not likely to adversely affect" determination for interior least tern, piping plover, pallid sturgeon and designated critical habitat for piping plover.

Your letter states that QEP has committed to ceasing work on the proposed site if a whooping crane(s) is sighted within 1.0 mile of the project area and immediately contacting the Service. Work may resume in coordination with the Service after the bird(s) leaves. Additionally, per BIA requirements, all new power lines must be buried. Therefore, the Service concurs with your "may affect, is not likely to adversely affect" determination for whooping crane.

The Service acknowledges your no effect determination for black-footed ferret and gray wolf.

The Dakota skipper and Sprague's pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting. Although not required, Federal action agencies such as the BIA have the option of requesting a conference on any proposed action that may affect candidate species such as the Dakota skipper and Sprague's pipit.

Migratory Birds
The letter states that QEP will implement the following measures to avoid/minimize take of migratory birds:

- Construction will be completed outside of the migratory bird nesting season (Feb. 1-July 15). If construction cannot be completed outside of the migratory bird nesting season, QEP will either:

- Mow, maintain, or completely remove vegetation within the project area prior to and during the breeding season to deter migratory birds from nesting in the project area until construction is underway;
- If the project areas are not mowed and maintained as indicated above, pre-construction surveys for migratory birds and their nests will be conducted within five days prior to the initiation of construction activities. If birds or nests are discovered, the Service will be contacted for additional information on how to proceed.

Bald and Golden Eagles
The letter states that a ground survey for cliff, tree and ground raptor nests was conducted within line-of-sight of the proposed project. No eagles or nests were discovered within 0.5-mile of the project area. The eagle nest database maintained by North Dakota Game and Fish Department does not indicate any recorded eagle nests within 0.5-mile of the project area.

The Service believes the commitment to implement the aforementioned measures will assist in complying with the MBTA and the BGEPA.

Thank you for the opportunity to comment on this project proposal. If you require further information or the project plans change, please contact Heidi Riddle of my staff at (701) 250-4481 or at the letterhead address.

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

cc: Bureau of Indian Affairs, Aberdeen, SD
(Attn: Marilyn Bercier)
Bureau of Land Management, Dickinson, ND
ND Game & Fish Department, Bismarck, ND

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 15, 2011

Mr. Grady Wolf
Environmental Scientist
Kadrmas, Lee & Jackson, Inc.
P.O. Box 1157
Bismarck, ND 58502-1157

RECEIVED
NOV 17 2011

Re: QEP Energy Company
12 Oil and Gas Wells on the Bullet Well Pad
Fort Berthold Reservation, Dunn County

Dear Mr. Wolf:

This department has reviewed the information concerning the above-referenced project submitted under date of November 4, 2011 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. Development of the production facilities and any access roads, well pads or pipelines should have a minimal effect on air quality provided measures are taken to minimize fugitive dust. However, operation of the wells has the potential to release air contaminants capable of causing or contributing to air pollution. We encourage the development and operation of the wells in a manner that is consistent with good air pollution control practices for minimizing emissions. Detailed guidance is available at www.ndhealth.gov/AQ/OilAndGasWells.htm.

   Any questions about air pollution control or permitting requirements should be addressed to Ms. Kathleen Paser at the U.S. Environmental Protection Agency, Region 8. She may be reached at (303) 312-6526 or Paser.Kathleen@epa.gov.

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 related construction activities located within tribal boundaries in North Dakota may be required to obtain a permit to discharge storm water runoff from the U.S. Environmental Protection Agency. Further information may be obtained from the U.S. EPA website or by calling the U.S. EPA - Region 8 at (303) 312-6312. Also, 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.

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.

"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

RECEIVED
DEC 05 2011

December 2, 2011

Grady Wolf
Environmental Scientist
Kadrmas, Lee & Jackson, Inc.
PO Box 1157
Bismarck, ND 58502-1157

Dear Mr. Wolf:

RE: Bullet Well Pad
11-26E Well Pad
11-31G Well Pad

QEP Energy Company is proposing 31 wells on three well pads on the Fort Berthold Reservation in Dunn County, North Dakota.

Our primary concern with oil and gas development is the fragmentation and loss of wildlife habitat associated with construction of the well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

Due to the proximity of these well pads to Lake Sakakawea, we ask that additional steps be taken to completely contain any run-off from potential spills at these sites. We also suggest that botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests before construction begins.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

April 18, 2012

Grady Wolf
Kadrmas, Lee and Jackson
PO Box 1157
Bismarck, ND 58502-1157

Dear Mr. Wolf:

This is in response to your request for review of environmental impacts associated with the QEP Energy Company, Bullet well pad, Fort Berthold Reservation, Dunn County, ND. The Bullet well pad would be located in the NW1/4 of Section 10, Township 149 North, Range 91 West, 5th P.M.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- There are no floodplains identified and/or mapped where this proposed project is to take place. The project takes place in an unmapped county. No floodplain permits are necessary from Dunn County relative to the National Flood Insurance Program.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 701-328-4967.

Sincerely,

Linda Weispfenning
Water Resource Planner

LW:dp/1570

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
SECRETARY AND STATE ENGINEER

United States Department of the Interior

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

FEB 22 2012

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

Dear Mr. Crows Breast:

We have considered the potential effects on cultural resources of an oil well pad in Dunn County, North Dakota. Approximately 74.8 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area depicted in the enclosed report. Two archaeological sites (32DU1694, 32DU1695) were located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. Two additional properties were located that may qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have reached a determination of **no historic properties affected** for this undertaking, as the archaeological sites and the "areas of tribal interest" will be avoided. Catalogued as **BIA Case Number AAO-2070/FB/12**, the proposed undertaking, location, and project dimensions are described in the following report:

Ó Donnchadha, Brian
(2012) Bullet Well Pad and Access Road: A Class III Cultural Resource Investigation in Dunn County, North Dakota. KLJ Cultural Resources for QEP, Denver.

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

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

Sincerely,

ACTING Regional Director

Enclosure

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

Appendix C

Well Pad and Access Road Plat

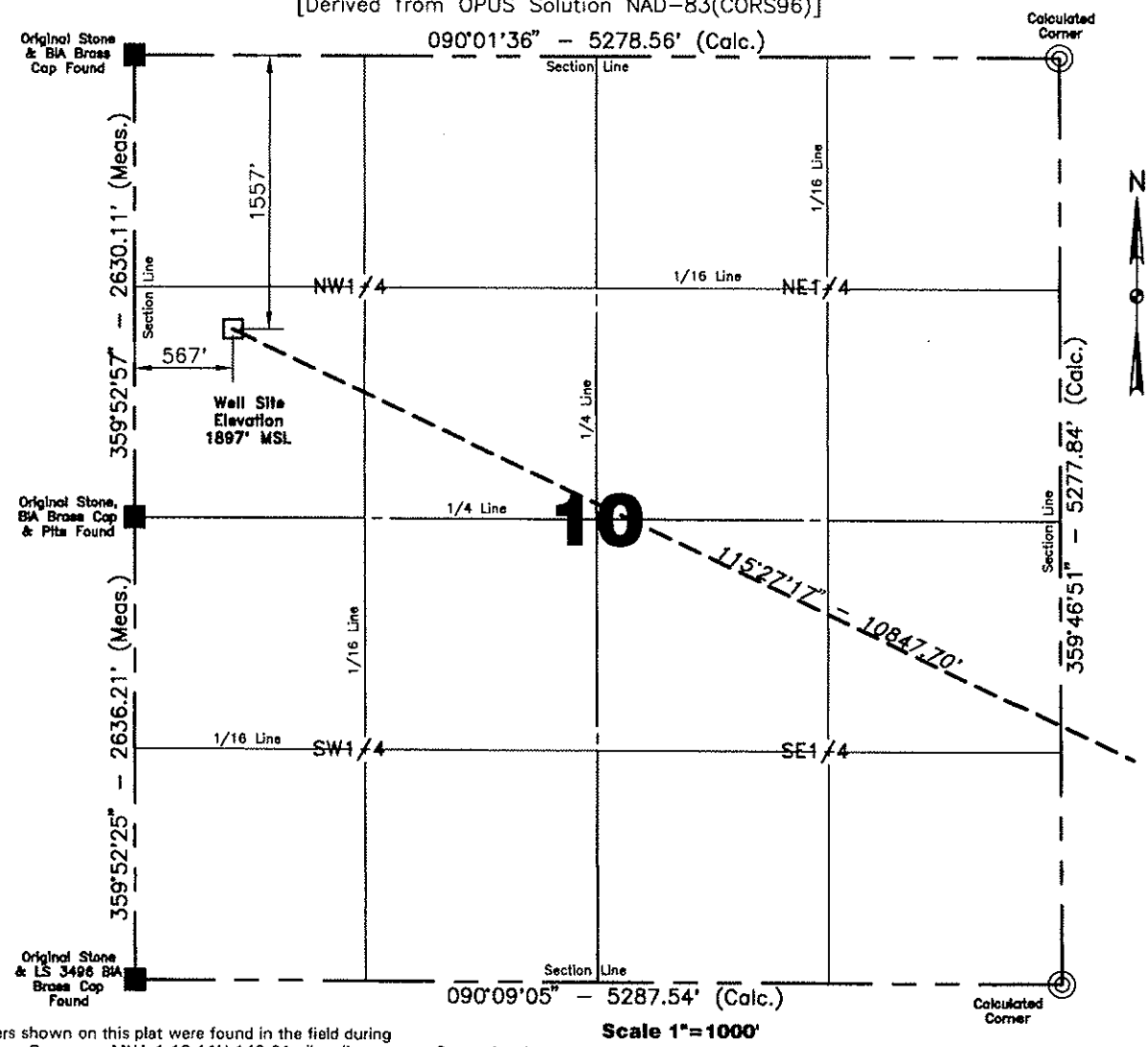
WELL LOCATION PLAT

QEP Energy Company
1050 17th Street, Suite 500, Denver, Colorado 80235

MHA 1-10-11H-149-91

1557 feet from the north line and 567 feet from the west line (surface location)
Section 10, T. 149 N., R. 91 W., 5th P.M.
942 feet from the north line and 200 feet from the east line (bottom location)
Section 14, T. 149 N., R. 91 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 549

Latitude 47°44'31.682" North; Longitude 102°19'10.293" West (surface location)
Latitude 47°43'45.663" North; Longitude 102°16'47.027" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



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Scale 1"=1000'

NOTE:
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I, William J. Haddick, Professional Land Surveyor, N.D. No. 6294, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

Nick Jensen — Surveyed By
09/01/2011 — Date

REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 4-04-2012
NORTH DAKOTA

Revised: 03/30/2012

Vertical Control Datum Used
North American Vertical Datum 1988 (NAVD 88)
Based on elevation derived from OPUS Solution on CP*27-149-91 (iron rebar) Located a distance of 6714.35' on an azimuth of 175°28'00" from the SQ corner of Section 15, T.149N., R.91W., 5th P.M. being at 2142.22' Elevation MSL.

Project No. 3711700

Book OW-261/270 Pg. 71-79/1-5 Staking

Professional Consulting Engineers and Surveyors
Registered in
North Dakota, South Dakota
Montana, Wyoming & Minnesota
Tele-Fax No. 701-483-2795
Bus. Phone No. 701-483-1284
P.O. Box 290
677 27th Ave. East
Dickinson, North Dakota 58602
Certificate of Authorization #C-061

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

HORIZONTAL SECTION PLAT

QEP Energy Company
1050 17th Street, Suite 500, Denver, Colorado 80235

MHA 1-10-11H-149-91

1557 feet from the north line and 567 feet from the west line (surface location)
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Dunn County, North Dakota
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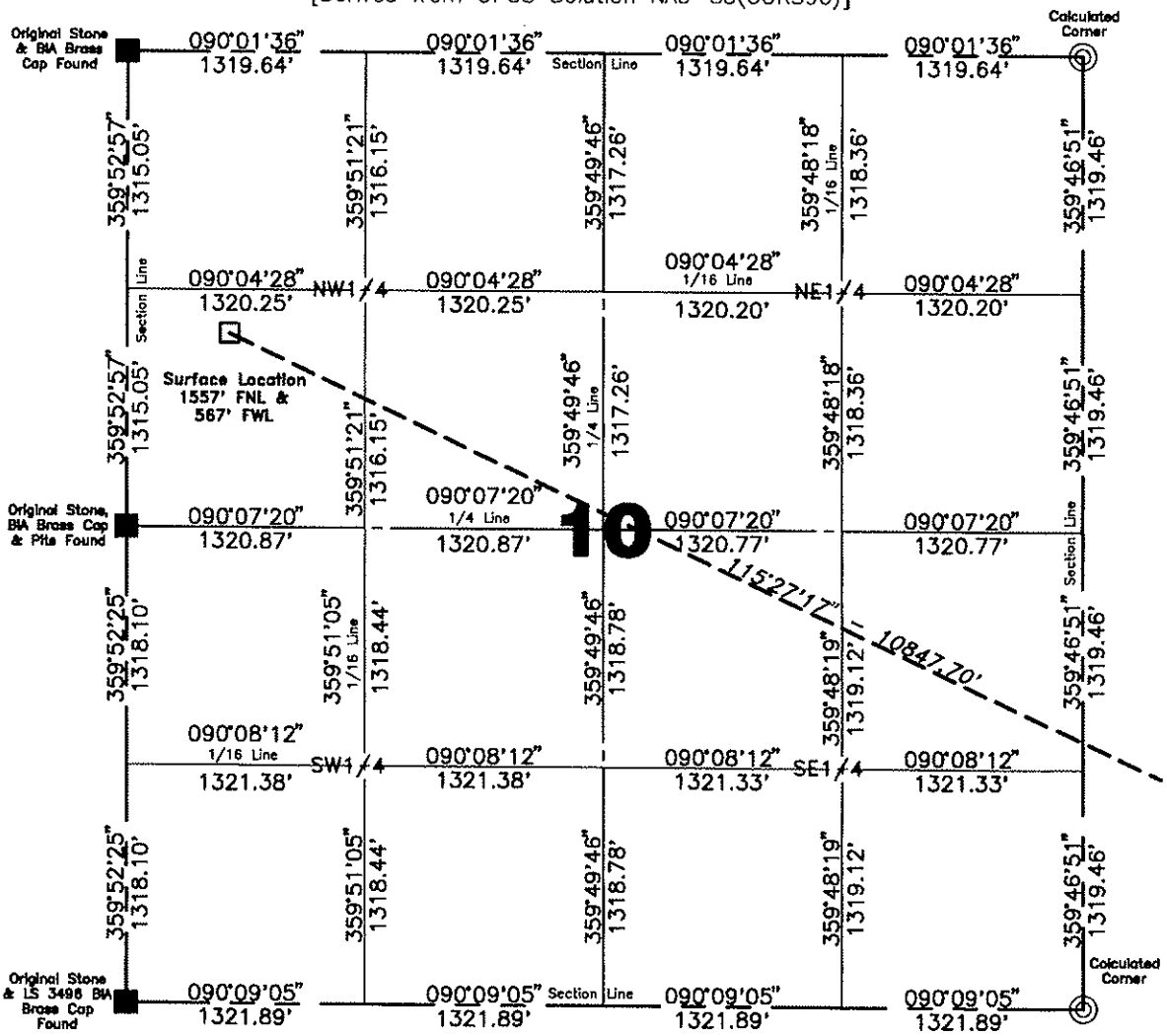

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REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 4-04-2012
NORTH DAKOTA

Surveyed By	Field Book
Nick Jensen	OW-261/270
Computed & Drawn By	Project No.
A. Romann	3711700

Revised: 03/30/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Mar 30, 2012 – 10:57am – J:\oilfield\Questar\3711700\Cadd\3711700BAS01.dwg

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HORIZONTAL SECTION PLAT

QEP Energy Company
1050 17th Street, Suite 500, Denver, Colorado 80235

MHA 1-10-11H-149-91

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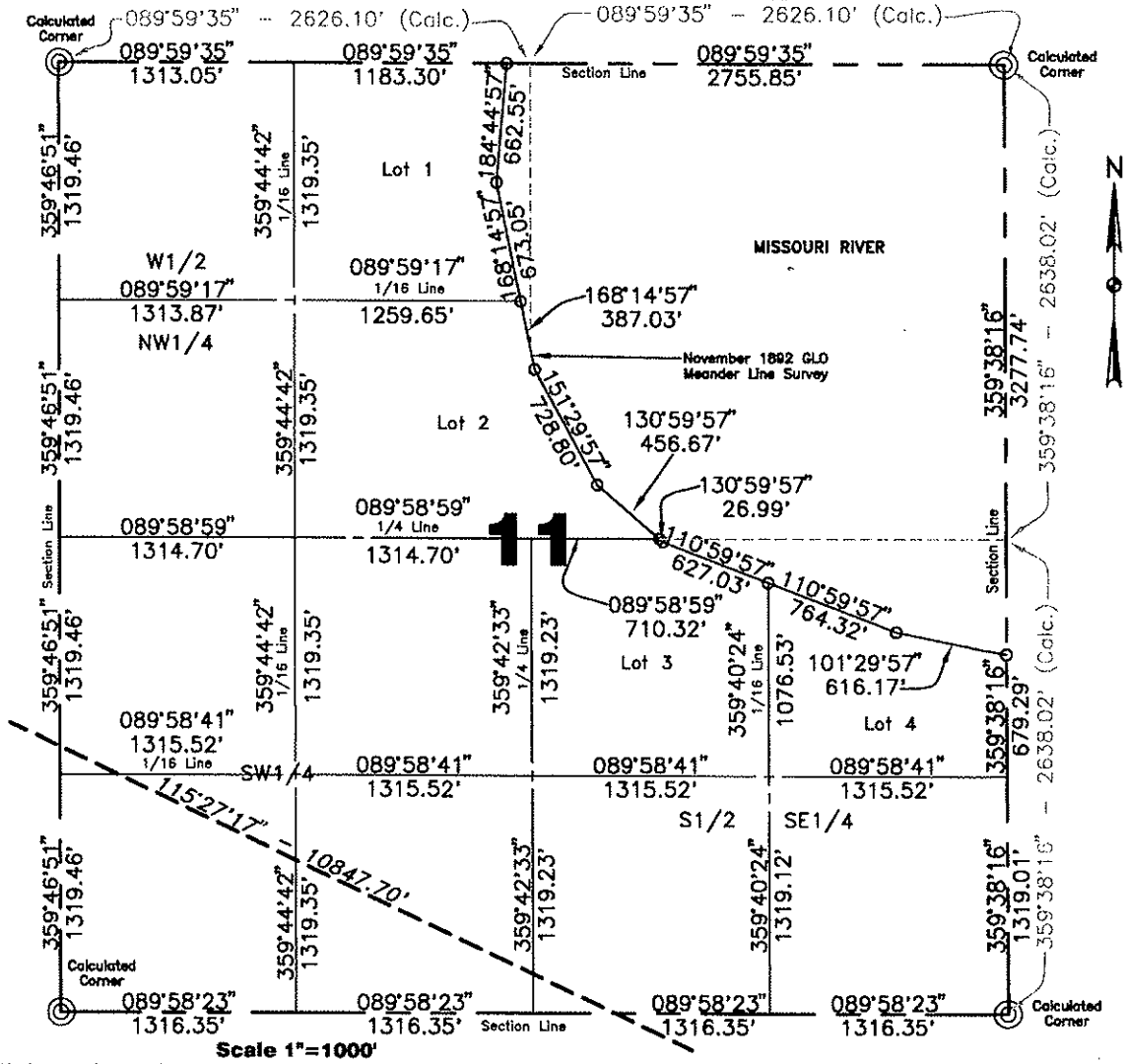

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REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 4-04-2012
NORTH DAKOTA

Surveyed By	Field Book
Nick Jensen	OW–261/270
Computed & Drawn By	Project No.
A. Romann	3711700

Revised: 03/30/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

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HORIZONTAL SECTION PLAT

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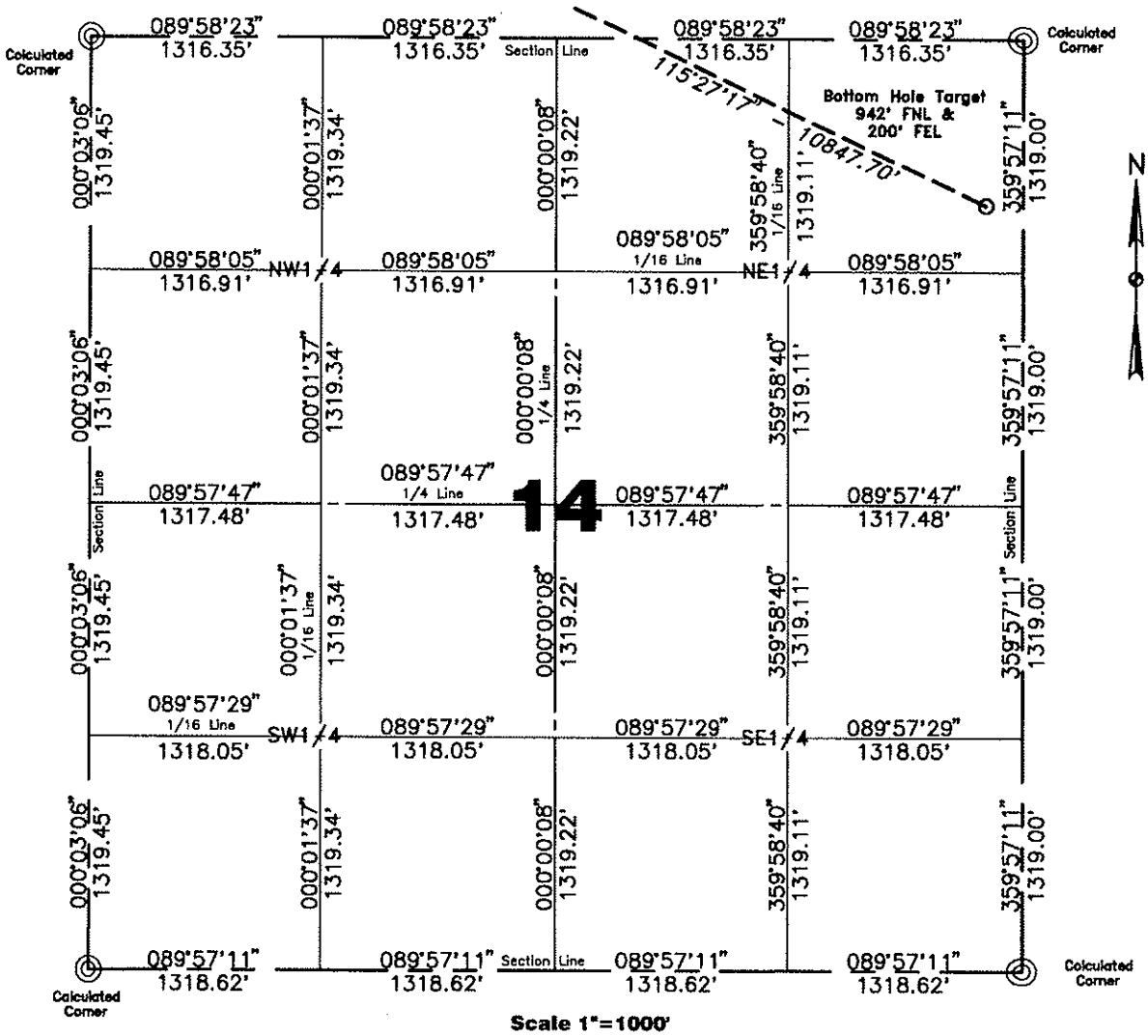

Scale 1"=1000'

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REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 4-04-2012
NORTH DAKOTA

Surveyed By	Field Book
Nick Jensen	OW-261/270
Computed & Drawn By	Project No.
A. Romann	3711700

Revised: 03/30/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

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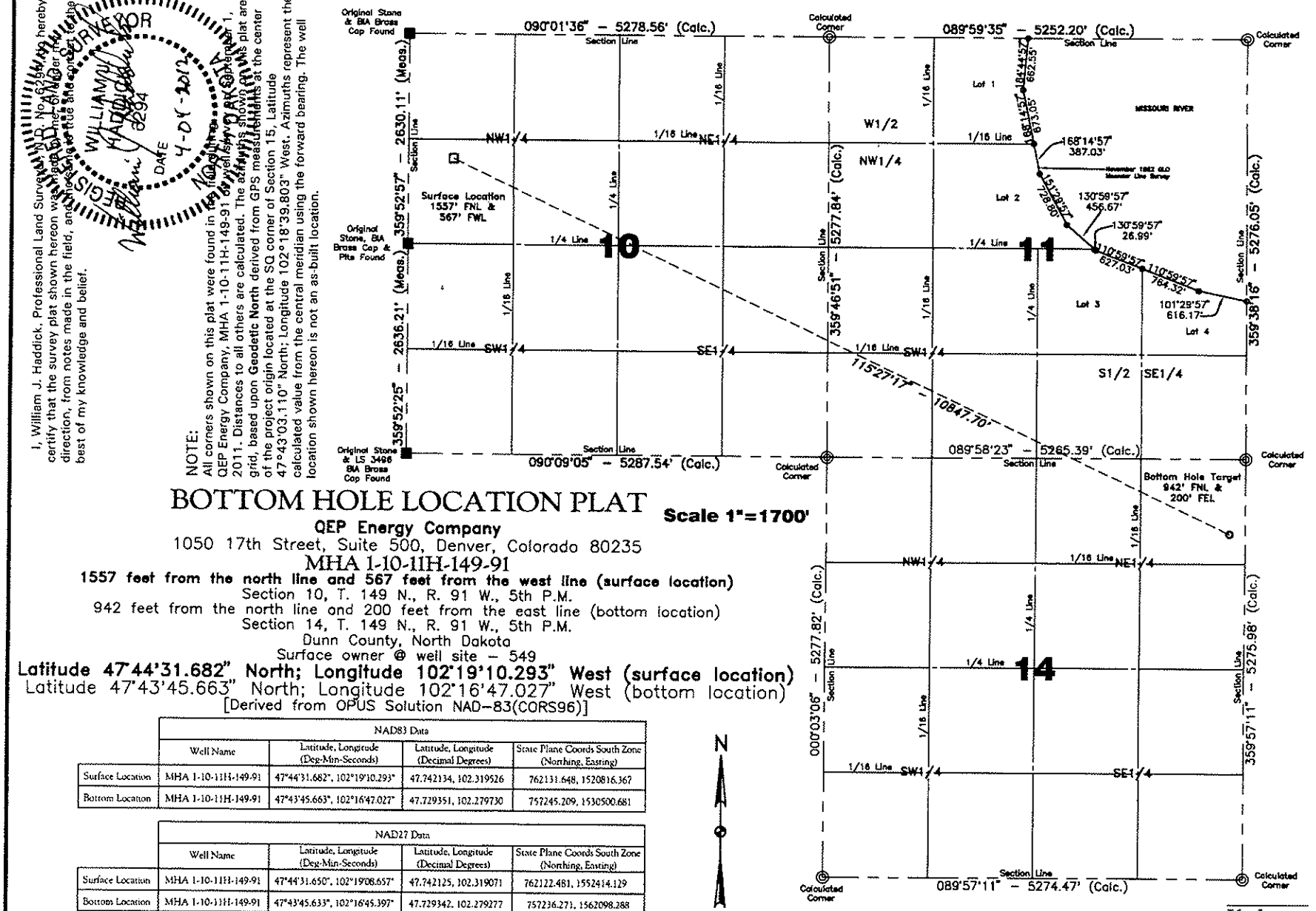

I, William J. Haddick, Professional Land Surveyor, No. 3294, do hereby certify that the survey plat shown hereon was made by me or under my direction, from notes made in the field, and that this plat is true and correct to the best of my knowledge and belief.

NOTE:
All corners shown on this plat were found in the field as described. Bearings for this QEP Energy Company, MHA 1-10-11H-149-91 well survey plat, dated December 1, 2011. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SQ corner of Section 15, Latitude 47°43'03.110" North; Longitude 102°18'39.803" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

BOTTOM HOLE LOCATION PLAT

Scale 1"=1700'

QEP Energy Company
1050 17th Street, Suite 500, Denver, Colorado 80235
MHA 1-10-11H-149-91
1557 feet from the north line and 567 feet from the west line (surface location)
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Latitude 47°44'31.682" North; Longitude 102°19'10.293" West (surface location)
Latitude 47°43'45.663" North; Longitude 102°16'47.027" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]

NAD83 Data	Well Name	Latitude, Longitude (Deg-Min-Seconds)	Latitude, Longitude (Decimal Degrees)	State Plane Coords South Zone (Northing, Easting)
Surface Location	MHA 1-10-11H-149-91	47°44'31.682", 102°19'10.293"	47.742134, 102.319526	762131.648, 1520816.367
Bottom Location	MHA 1-10-11H-149-91	47°43'45.663", 102°16'47.027"	47.729351, 102.279730	757245.209, 1530500.681

NAD27 Data	Well Name	Latitude, Longitude (Deg-Min-Seconds)	Latitude, Longitude (Decimal Degrees)	State Plane Coords South Zone (Northing, Easting)
Surface Location	MHA 1-10-11H-149-91	47°44'31.650", 102°19'08.657"	47.742125, 102.319071	762122.481, 1552414.129
Bottom Location	MHA 1-10-11H-149-91	47°43'45.633", 102°16'45.397"	47.729342, 102.279277	757236.271, 1562098.288

Surveyed By	Computed & Drawn By	Approved By	Scale	Date
Nick Jensen	A. Romann	W. J. Haddick	1"=1700'	01/04/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW–261/270	B.H. Layout	03/30/2012	3711700	5

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Kadrmas Lee & Jackson
Engineers Surveyors Planners

Mar 30, 2012 – 1:11pm – J:\oilfield\Questar\3711700\Cadd\3711700BAS01.dwg

© Kadrmas, Lee & Jackson 2012

QEP Energy Company
Bullet Pad-Pod 1
Section 10, T. 149 N., R. 91 W., 5th P.M.
Dunn County, North Dakota

MHA 1-10-11H-149-91 Well Site Elevation	1897.3' MSL
MHA 2-10-11H-149-91 Well Site Elevation	1896.9' MSL
MHA 3-10-11H-149-91 Well Site Elevation	1897.2' MSL
MHA 4-10-11H-149-91 Well Site Elevation	1896.3' MSL

Well Pad Elevation 1894.4' MSL

Excavation	8,505 C.Y.
Embankment	4,165 C.Y.
Plus Shrinkage (+30%)	1,250 C.Y.
	5,415 C.Y.
Stockpile Top Soil (6")	2,825 C.Y.
Road Embankment & Stockpile from Pad	265 C.Y.
Disturbed Area From Pad	3.50 Acres
Area Inside Barbed Wire Fence-SW1/4NW1/4	21.22 Acres
Area Inside Barbed Wire Fence-NW1/4SW1/4	3.34 Acres
Total Area Inside Barbed Wire Fence	24.56 Acres

NOTE :
All cut end slopes are designed at 3:1 slopes &
All fill end slopes are designed at 3:1 slopes

Well Site Locations

MHA 1-10-11H-149-91, 1557' FNL 567' FWL
MHA 2-10-11H-149-91, 1534' FNL 611' FWL
MHA 3-10-11H-149-91, 1546' FNL 589' FWL
MHA 4-10-11H-149-91, 1522' FNL 633' FWL

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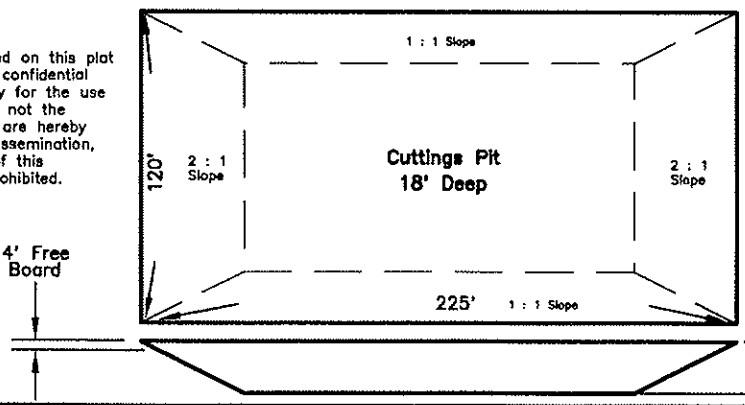

Drawn By: A. Romann	Surveyed By: Nick Jensen	Approved By: W. J. Haddick	Scale: None	Date: 01/04/2012
Field Book: OW-261/270	Material: Quantities	Revised: 03/30/2012	Project No.: 3711700-3711711	Drawing No.: 6

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Engineers Surveyors Planners

Mar 30, 2012 - 10:59am - J:\oilfield\Questar\3711700\Cadd\3711700BAS02.dwg

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Bullet Pad-Pod 2
Section 10, T. 149 N., R. 91 W., 5th P.M.
Dunn County, North Dakota

MHA 1-10-14H-149-91 Well Site Elevation	1909.0' MSL
MHA 2-10-14H-149-91 Well Site Elevation	1907.7' MSL
MHA 3-10-14H-149-91 Well Site Elevation	1908.0' MSL
MHA 4-10-14H-149-91 Well Site Elevation	1906.9' MSL
Well Pad Elevation	1906.6' MSL

Excavation	12,300 C.Y.
Plus Pit	13,445 C.Y.
	25,745 C.Y.
Embankment	6,970 C.Y.
Plus Shrinkage (+30%)	2,090 C.Y.
	9,060 C.Y.
Stockpile Pit	13,445 C.Y.
Stockpile Top Soil (6")	3,010 C.Y.
Road Embankment & Stockpile from Pad	230 C.Y.
Disturbed Area From Pad	3.73 Acres
Area Inside Barbed Wire Fence-SW1/4NW1/4	21.22 Acres
Area Inside Barbed Wire Fence-NW1/4SW1/4	3.34 Acres
Total Area Inside Barbed Wire Fence	24.56 Acres

NOTE :
All cut end slopes are designed at 3:1 slopes &
All fill end slopes are designed at 3:1 slopes

Well Site Locations

MHA 1-10-14H-149-91, 2059' FNL 248' FWL
MHA 2-10-14H-149-91, 2009' FNL 248' FWL
MHA 3-10-14H-149-91, 2034' FNL 248' FWL
MHA 4-10-14H-149-91, 1984' FNL 248' FWL

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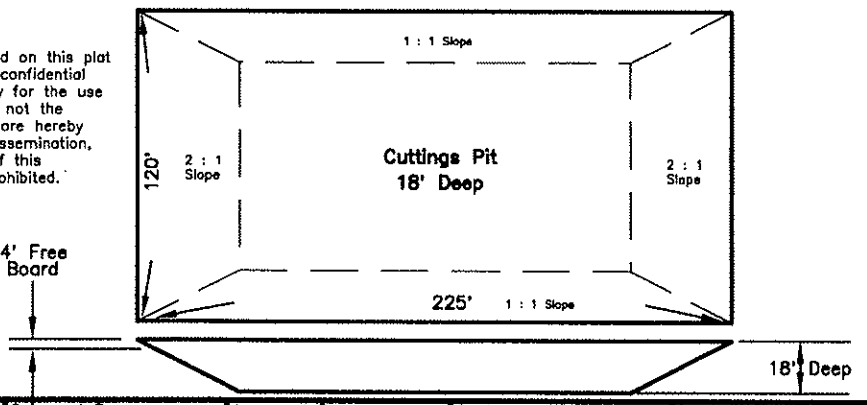

Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	Nick Jensen	W. J. Haddick	None	01/04/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-261/270	Quantities	03/30/2012	3711700-3711711	7

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QEP Energy Company
Bullet Pad-Pod 3
Section 10, T. 149 N., R. 91 W., 5th P.M.
Dunn County, North Dakota

MHA 1-10-15H-149-91	Well Site Elevation	1917.9' MSL
MHA 2-10-15H-149-91	Well Site Elevation	1916.8' MSL
MHA 3-10-15H-149-91	Well Site Elevation	1917.3' MSL
MHA 4-10-15H-149-91	Well Site Elevation	1916.2' MSL
	Well Pad Elevation	1914.7' MSL

Excavation	18,390 C.Y.
Embankment	11,595 C.Y.
Plus Shrinkage (+30%)	3,480 C.Y.
	15,075 C.Y.
Stockpile Top Soil (6")	3,310 C.Y.
Road Embankment & Stockpile from Pad	5 C.Y.
Disturbed Area From Pad-SW1/4NW1/4	2.06 Acres
Disturbed Area From Pad-NW1/4SW1/4	2.04 Acres
Total Disturbed Area From Pad	4.10 Acres
Area Inside Barbed Wire Fence-SW1/4NW1/4	21.22 Acres
Area Inside Barbed Wire Fence-NW1/4SW1/4	3.34 Acres
Total Area Inside Barbed Wire Fence	24.56 Acres

NOTE :
All cut end slopes are designed at 3:1 slopes &
All fill end slopes are designed at 3:1 slopes

Well Site Locations

MHA 1-10-15H-149-91, 2594' FSL 320' FWL
MHA 2-10-15H-149-91, 2604' FSL 370' FWL
MHA 3-10-15H-149-91, 2599' FSL 345' FWL
MHA 4-10-15H-149-91, 2608' FSL 394' FWL

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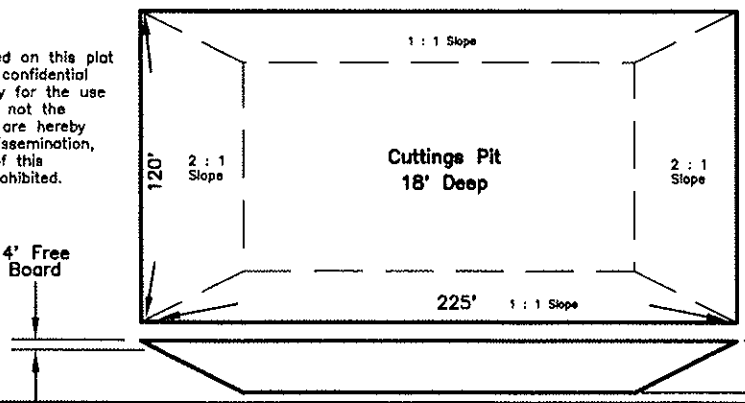

Drawn By: A. Romann	Surveyed By: Nick Jensen	Approved By: W. J. Haddick	Scale: None	Date: 01/04/2012
Field Book: OW-261/270	Material: Quantities	Revised: 03/30/2012	Project No.: 3711700-3711711	Drawing No.: 8

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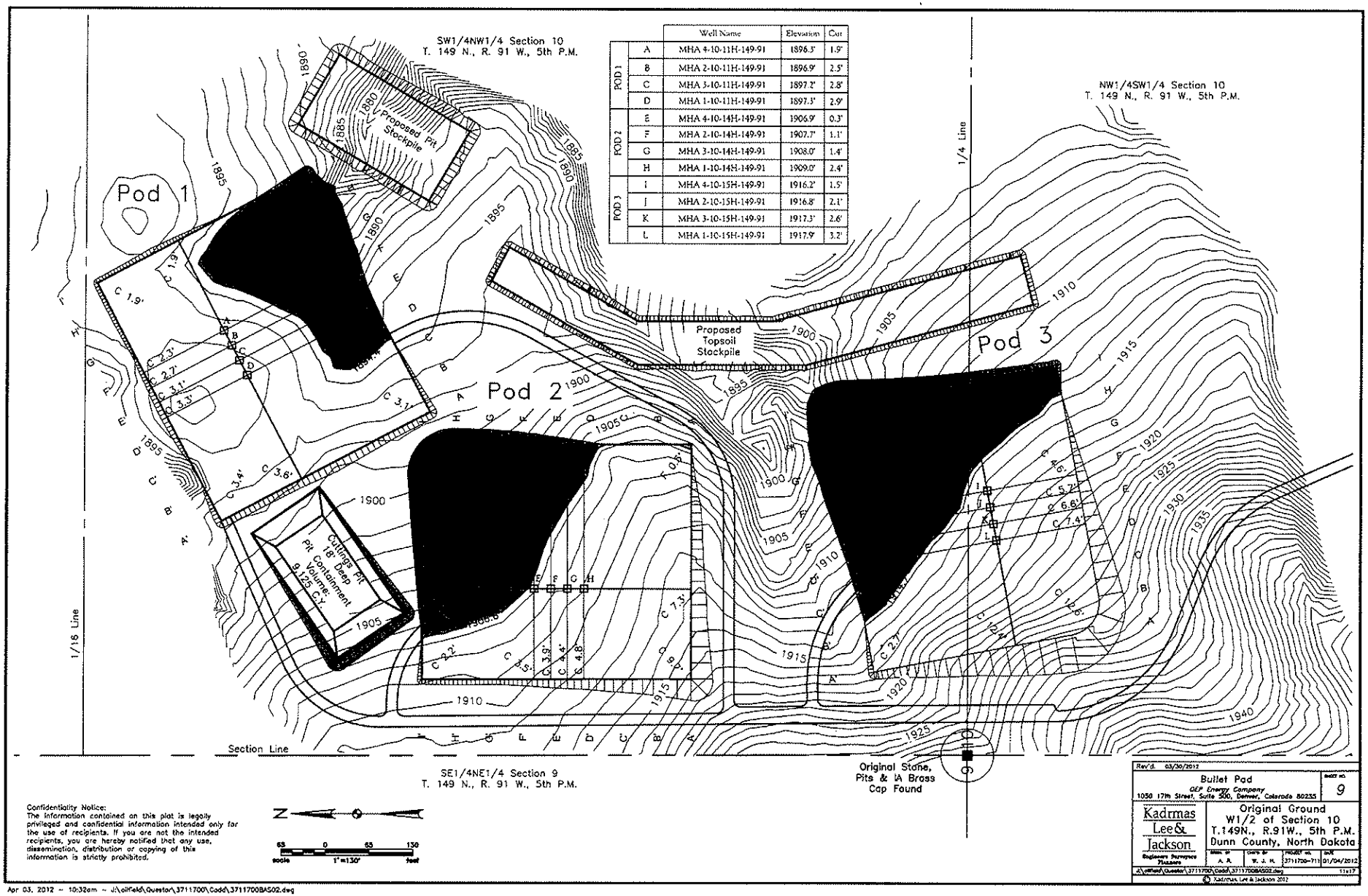

		Well Name	Elevation	Cut
POD 1	A	MHA 4-10-11H-149-91	1896.3'	1.9'
	B	MHA 2-10-11H-149-91	1896.9'	2.5'
	C	MHA 3-10-11H-149-91	1897.2'	2.8'
	D	MHA 1-10-11H-149-91	1897.3'	2.9'
POD 2	E	MHA 4-10-14H-149-91	1906.9'	0.3'
	F	MHA 2-10-14H-149-91	1907.7'	1.1'
	G	MHA 3-10-14H-149-91	1908.0'	1.4'
	H	MHA 1-10-14H-149-91	1909.0'	2.4'
POD 3	I	MHA 4-10-15H-149-91	1916.2'	1.5'
	J	MHA 2-10-15H-149-91	1916.8'	2.1'
	K	MHA 3-10-15H-149-91	1917.3'	2.6'
	L	MHA 1-10-15H-149-91	1917.9'	3.2'

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scale 1" = 130' feet

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Bullet Pad
QEP Energy Company
1050 17th Street, Suite 500, Denver, Colorado 80265

sheet no. 9

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Original Ground
W1/2 of Section 10
T.149N., R.91W., 5th P.M.
Dunn County, North Dakota

drawn by A. R. | check by W. J. K. | PROJECT no. 3711700-711 | DATE 01/04/2012

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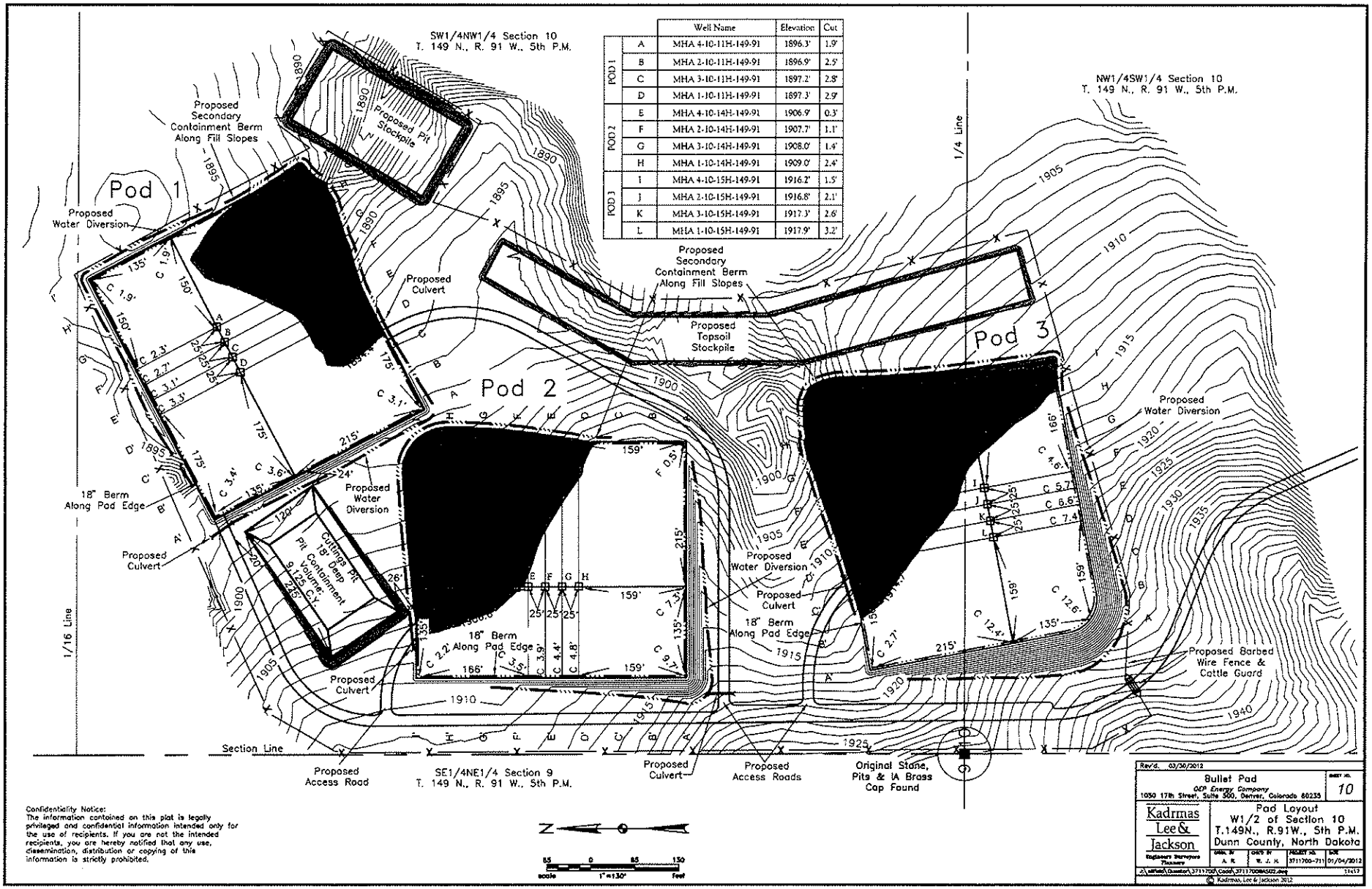

		Well Name	Elevation	Cut
POD 1	A	MHA 4-10-11H-149-91	1896.3'	1.9'
	B	MHA 2-10-11H-149-91	1896.9'	2.5'
	C	MHA 3-10-11H-149-91	1897.2'	2.8'
	D	MHA 1-10-11H-149-91	1897.3'	2.9'
POD 2	E	MHA 4-10-14H-149-91	1906.9'	0.3'
	F	MHA 2-10-14H-149-91	1907.7'	1.1'
	G	MHA 3-10-14H-149-91	1908.0'	1.4'
	H	MHA 1-10-14H-149-91	1909.0'	2.4'
POD 3	I	MHA 4-10-15H-149-91	1916.2'	1.5'
	J	MHA 2-10-15H-149-91	1916.8'	2.1'
	K	MHA 3-10-15H-149-91	1917.3'	2.6'
	L	MHA 1-10-15H-149-91	1917.9'	3.2'

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Bullet Pad
GCP Energy Company
1050 17th Street, Suite 500, Denver, Colorado 80235

Sheet No. 10

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Pad Layout
W1/2 of Section 10
T.149N., R.91W., 5th P.M.
Dunn County, North Dakota

Des. by	Dft'g by	Project No.	Date
A. R.	W. J. K.	3711700-711	01/04/2012

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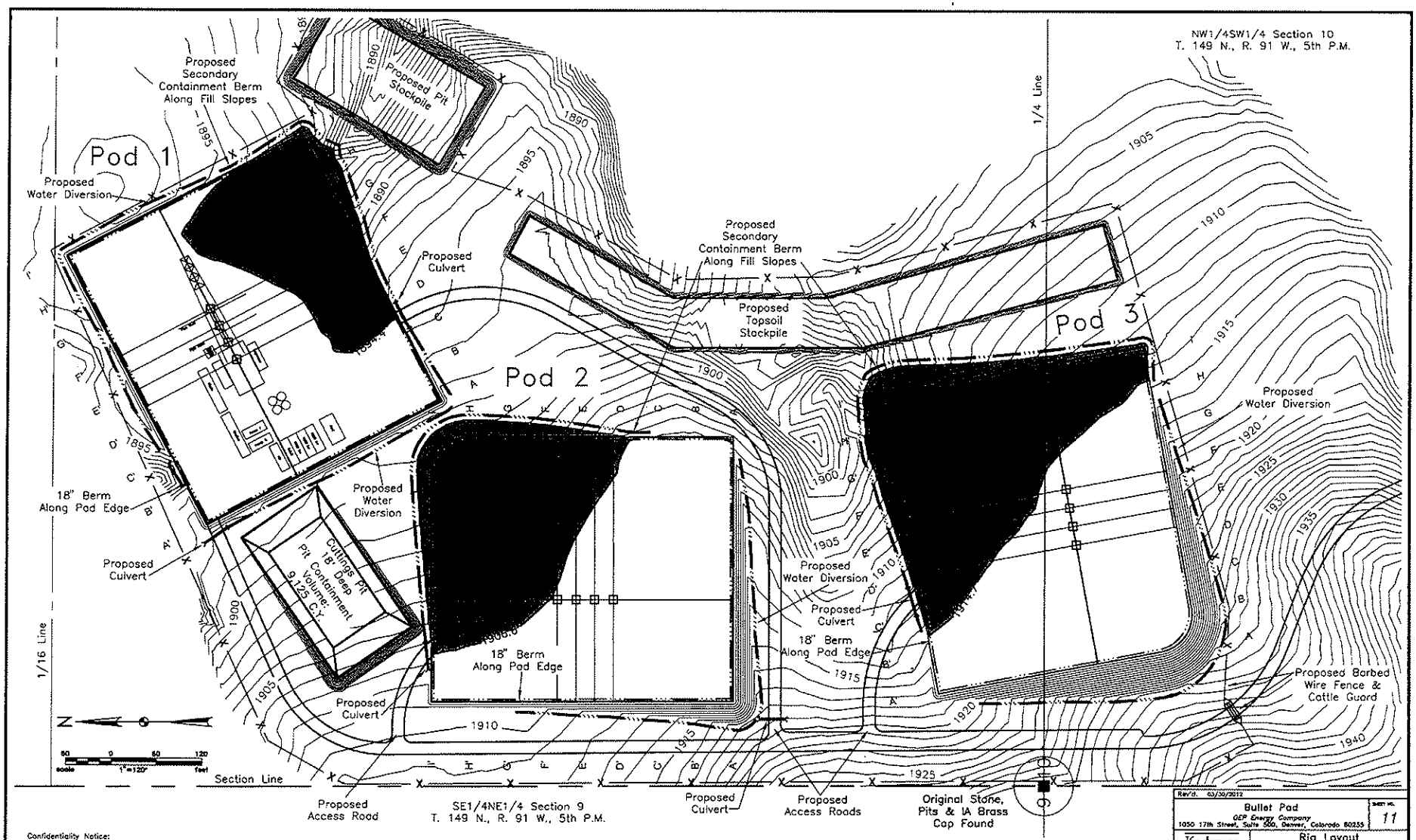

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SHEET NO. 11

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Rig Layout
W1/2 of Section 10
T.149N., R.91W., 5th P.M.
Dunn County, North Dakota

DRAWN BY A. R. | CHECK BY B. J. K. | PROJECT NO. 3711700-211 | DATE 01/04/2012

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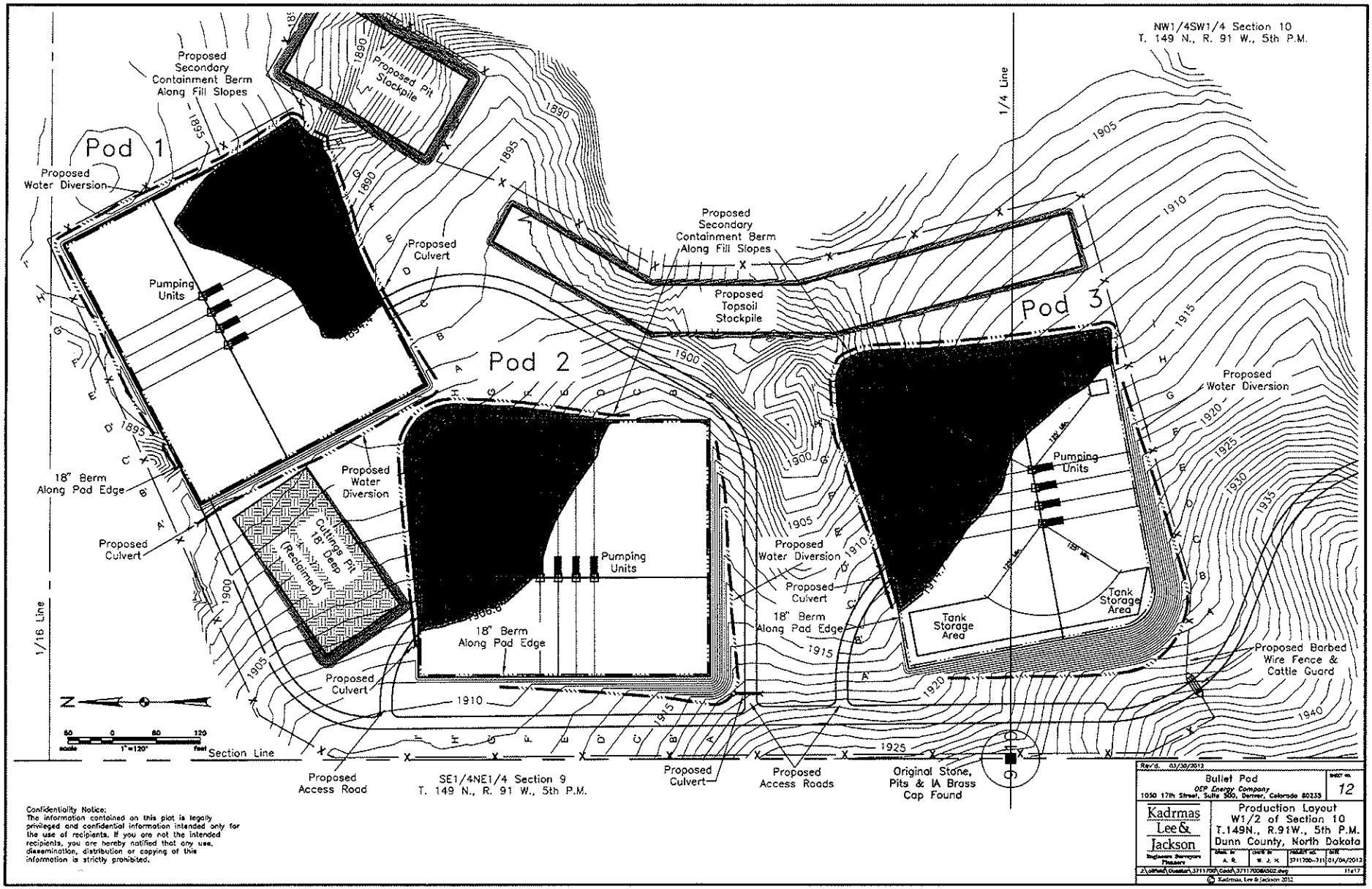

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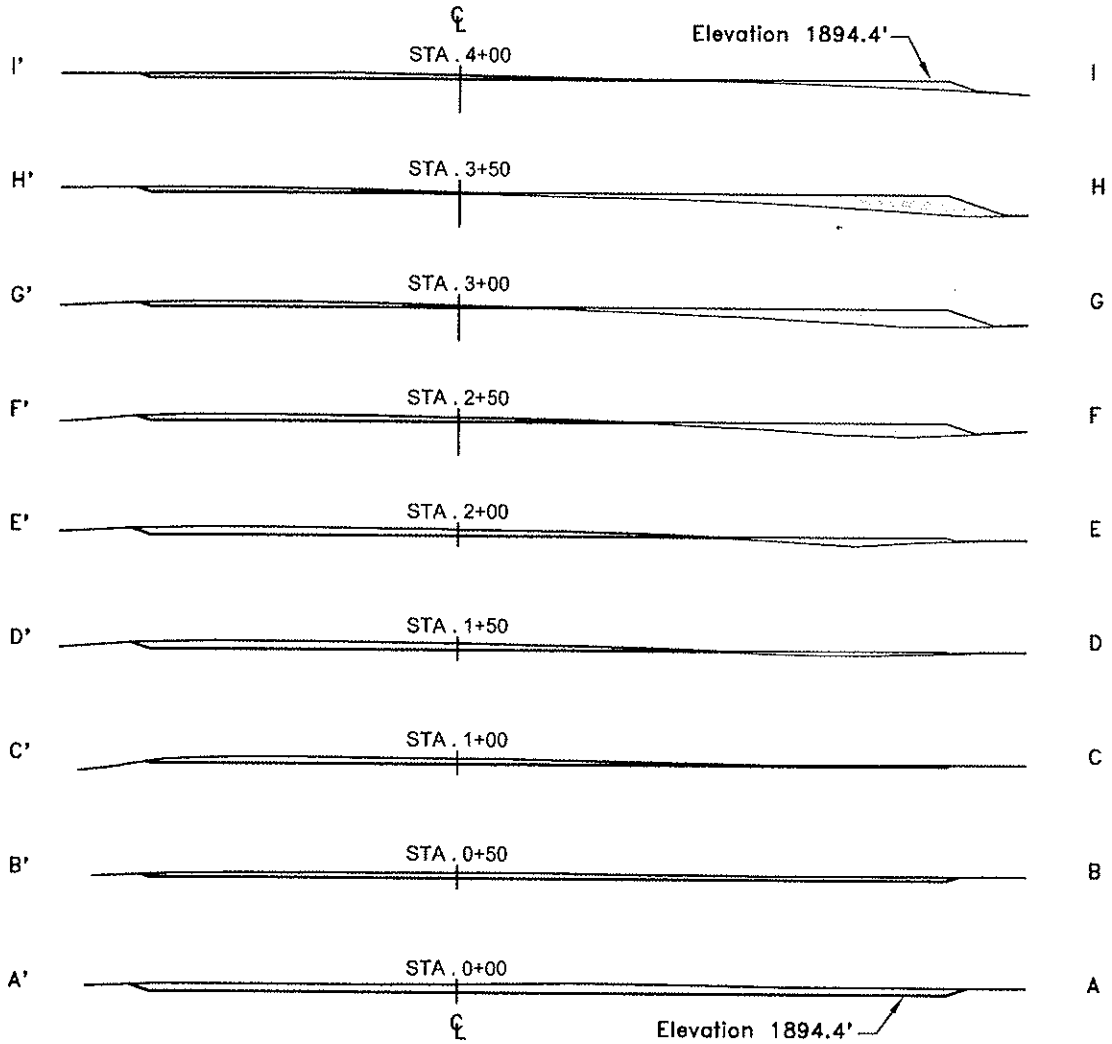
Bullet Pad - Pod 1
Cross Sections



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Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	Nick Jensen	W. J. Haddick	1" = 80'	01/04/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-261/270	Cross Sections	03/30/2012	3711700-3711711	13

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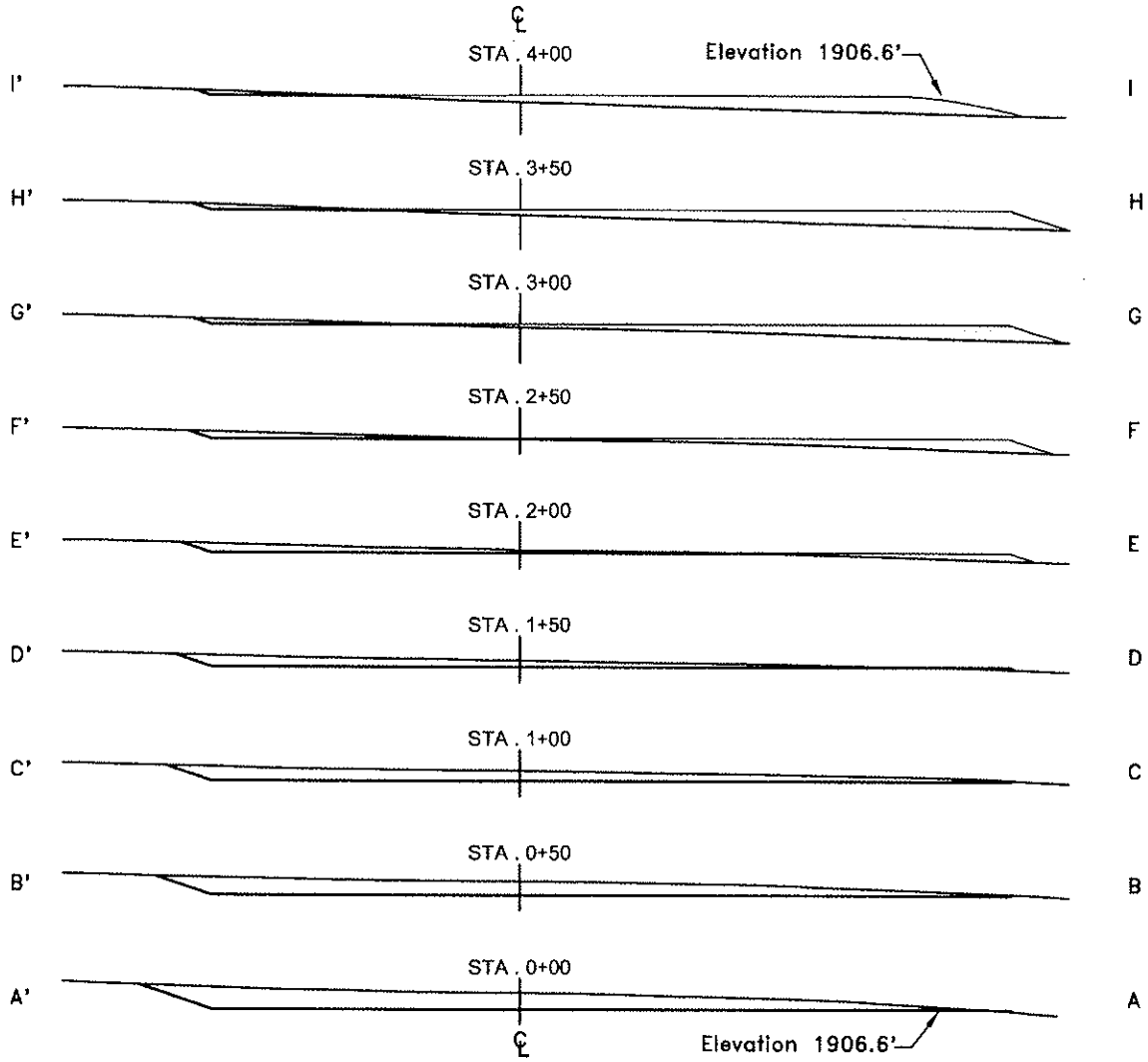
Bullet Pad - Pod 2
Cross Sections



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Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	Nick Jensen	W. J. Haddick	1" = 80'	01/04/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-261/270	Cross Sections	03/30/2012	3711700-3711711	14

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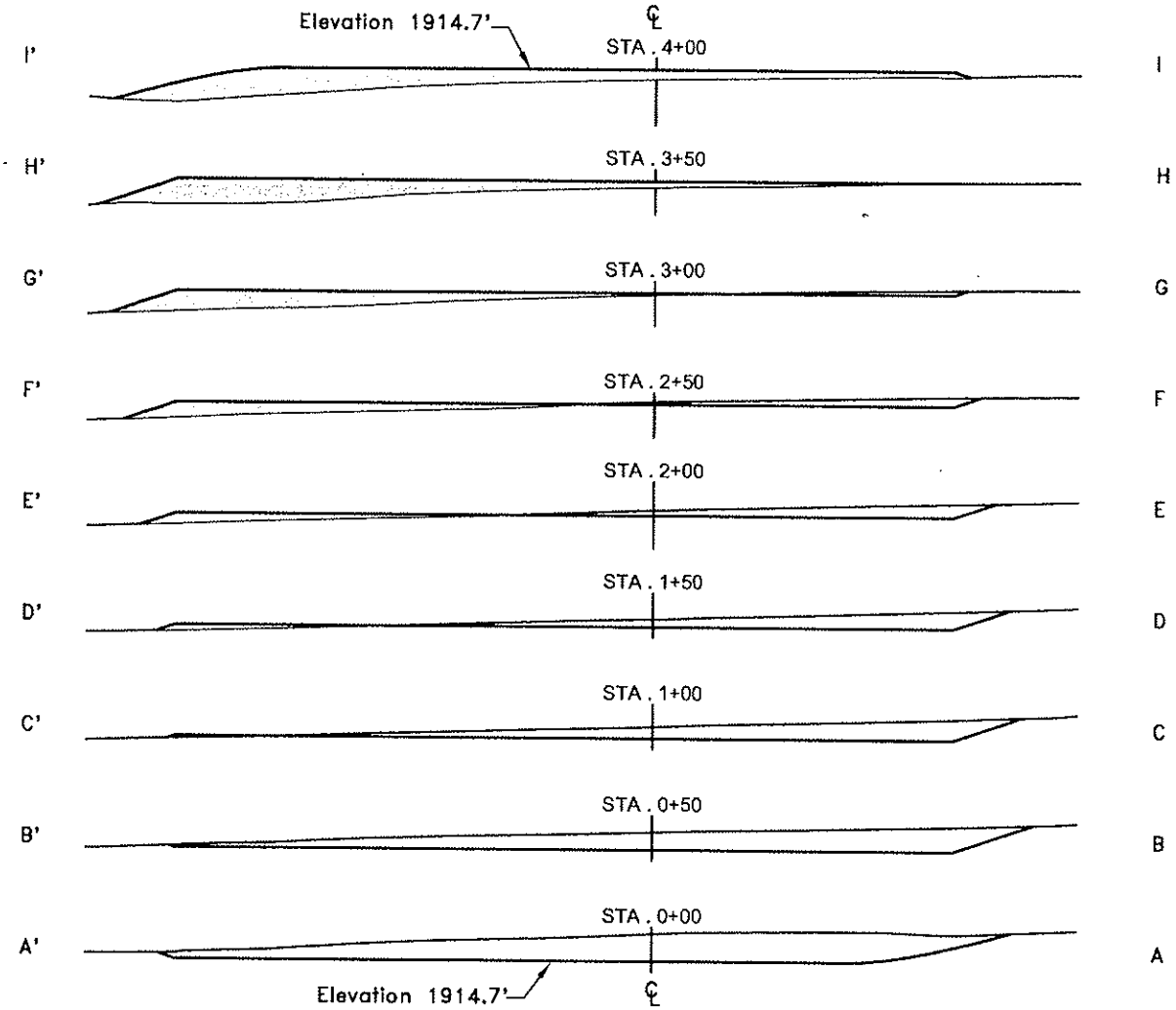
Bullet Pad - Pod 3
Cross Sections



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Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	Nick Jensen	W. J. Haddick	1" = 80'	01/04/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-261/270	Cross Sections	03/30/2012	3711700-3711711	15

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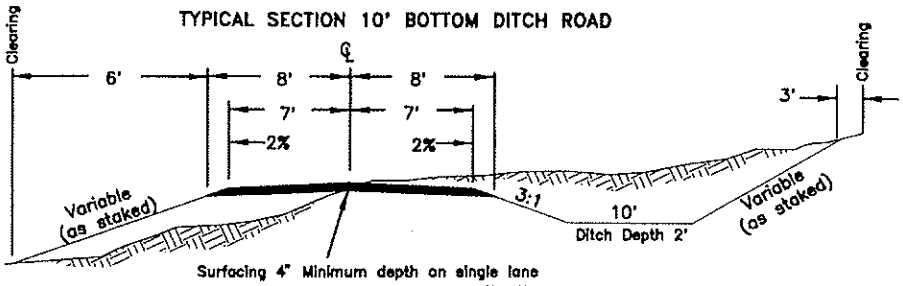
Bullet Pad
Roadway Typical Sections



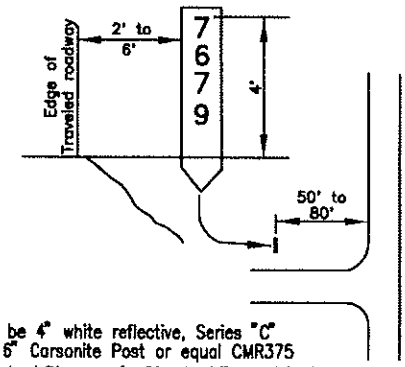
TYPICAL "B"

No Scale

FILL SLOPES	FILL WIDENING	CUT SLOPES
3:1 Under 4' Height 2:1 Over 4' Height (–) Slopes steeper than 2:1 will be subject to FS approval	2' to 5' high/add 1' Over 5' high/add 2'	3:1 Under 10' height 2:1 10' to 20' height (–) Variable over 20' height W/FS approval

CURVE WIDENING
130 / R

TYPICAL SECTION VERTICAL ROUTE MARKER



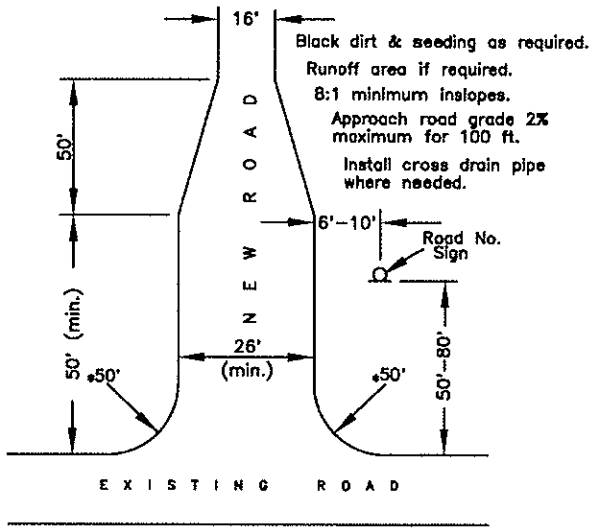
Letters shall be 4" white reflective, Series "C" on Brown 6' 5" Carsonite Post or equal CMR375

Figure 11-28.- Typical Signage for Vertical Route Markers

TYPICAL "F"

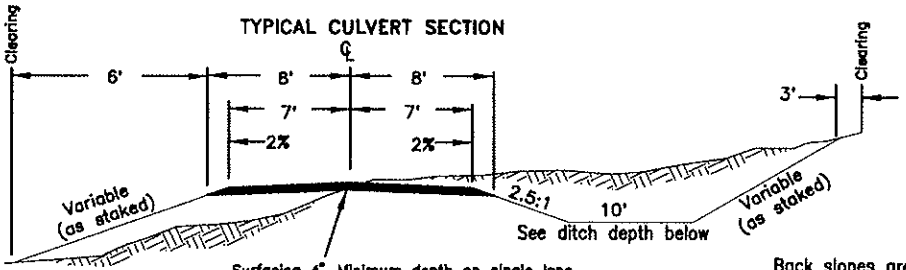
No Scale

TYPICAL APPROACH ROAD CONNECTION



*As noted on road sheets

TYPICAL CULVERT SECTION



Fill slopes are V1 H1.5 (1.5:1) or as staked

Ditch width shall be the larger of the following:
A. Standard ditch width
B. 2 times the pipe diameter
C. 4.25'

Ditch depth shall be: CMP diameter	Ditch depth
18"	2.5'
24"	3.0'
36"	4.0'
48"	5.0'

Back slopes are V1 H1 (1:1) or as staked

TYPICAL "A"

No Scale

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Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	Nick Jensen	W. J. Haddick	None	01/04/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW–261/270	Road Typical	03/30/2012	3711700–3711711	16

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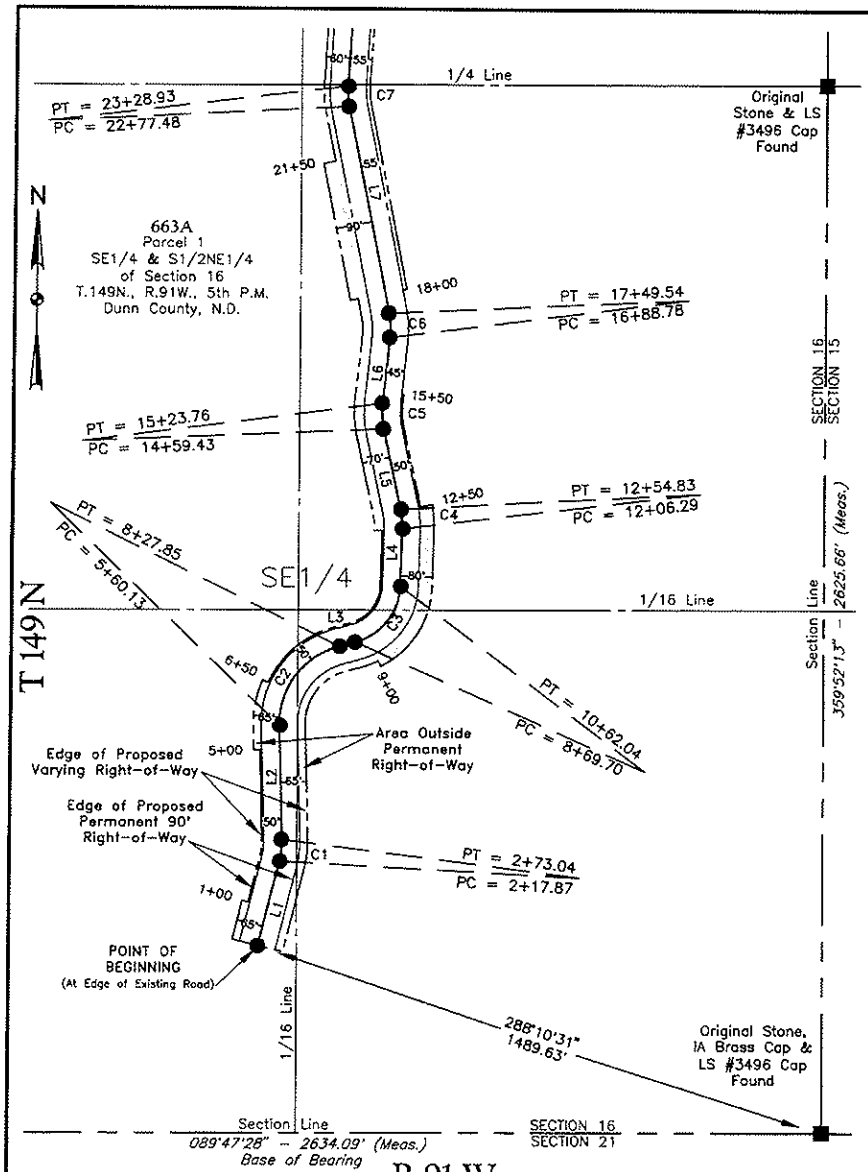

Stationing
0+00.00
2+17.87
2+73.04
5+60.13
8+27.85
8+69.70
10+62.04
12+06.29
12+54.83
14+59.43
15+23.76
16+88.78
17+49.54
22+77.48
23+28.93

Line/Curve No.	Azimuth	Distance
L1	014°00'55"	217.87'
C1	015°48'17"	55.17'
L2	358°12'38"	287.09'
C2	076°41'46"	267.72'
L3	074°54'25"	41.85'
C3	073°28'01"	192.34'
L4	001°26'24"	144.25'
C4	013°54'17"	48.54'
L5	347°32'07"	204.60'
C5	018°25'40"	64.33'
L6	005°57'47"	165.02'
C6	017°24'27"	60.76'
L7	348°33'20"	527.94'
C7	014°44'17"	51.45'

Curve C1	
D	015°48'17"
R	200.00'
L	55.17'
T	27.76'
C	54.99'

Curve C2	
D	076°41'46"
R	200.00'
L	267.72'
T	158.22'
C	248.17'

Curve C3	
D	073°28'01"
R	150.00'
L	192.34'
T	111.94'
C	179.43'

Curve C4	
D	013°54'17"
R	200.00'
L	48.54'
T	24.39'
C	48.42'

Curve C5	
D	018°25'40"
R	200.00'
L	64.33'
T	32.44'
C	64.05'

Curve C6	
D	017°24'27"
R	200.00'
L	60.76'
T	30.62'
C	60.53'

Curve C7	
D	014°44'17"
R	200.00'
L	51.45'
T	25.87'
C	51.30'

Parcel	Land Owner	Linear Feet	Linear Rods	Disturbed Area From Pad	Pad Fence Acreage	Permanent 90' Right-of-Way Acreage	Varying Width Right-of-Way Acreage
1	663A	3,727.34'	225.90 Rods	--	--	7.70 Acres	11.09 Acres
2	T1812	1,753.34'	106.26 Rods	--	--	3.62 Acres	9.19 Acres
3	T2214	2,390.25'	144.86 Rods	--	--	4.94 Acres	10.27 Acres
4	434	1,958.08'	118.67 Rods	2.04 Acres	3.34 Acres	4.05 Acres	7.37 Acres
5	360	--	--	--	--	--	0.07 Acres
6	T611	--	--	--	--	--	0.13 Acres
7	549	1,282.77'	77.74 Rods	9.29 Acres	21.22 Acres	2.65 Acres	2.96 Acres

REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 9-04-2012
NORTH DAKOTA

I, William J. Haddick, Professional Land Surveyor, N.D. No. 6294, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

William J. Haddick

William J. Haddick, Professional Land Surveyor N.D. No. 6294

scale 1" = 300' (150 0 150 300 feet)

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Rev'd. 03/23/2012

Bullet Pad
OEP Energy Company
Denver, Colorado 80235

SHEET NO. 17

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Access Road Right-Of-Way
E1/2SE1/4 Section 16
T.149N., R.91W., 5th P.M.
Dunn County, N.D.

DRAWN BY A. R. | CHK'D BY W. J. H. | PROJECT NO. 37117001-T01 | DATE 01/04/2012

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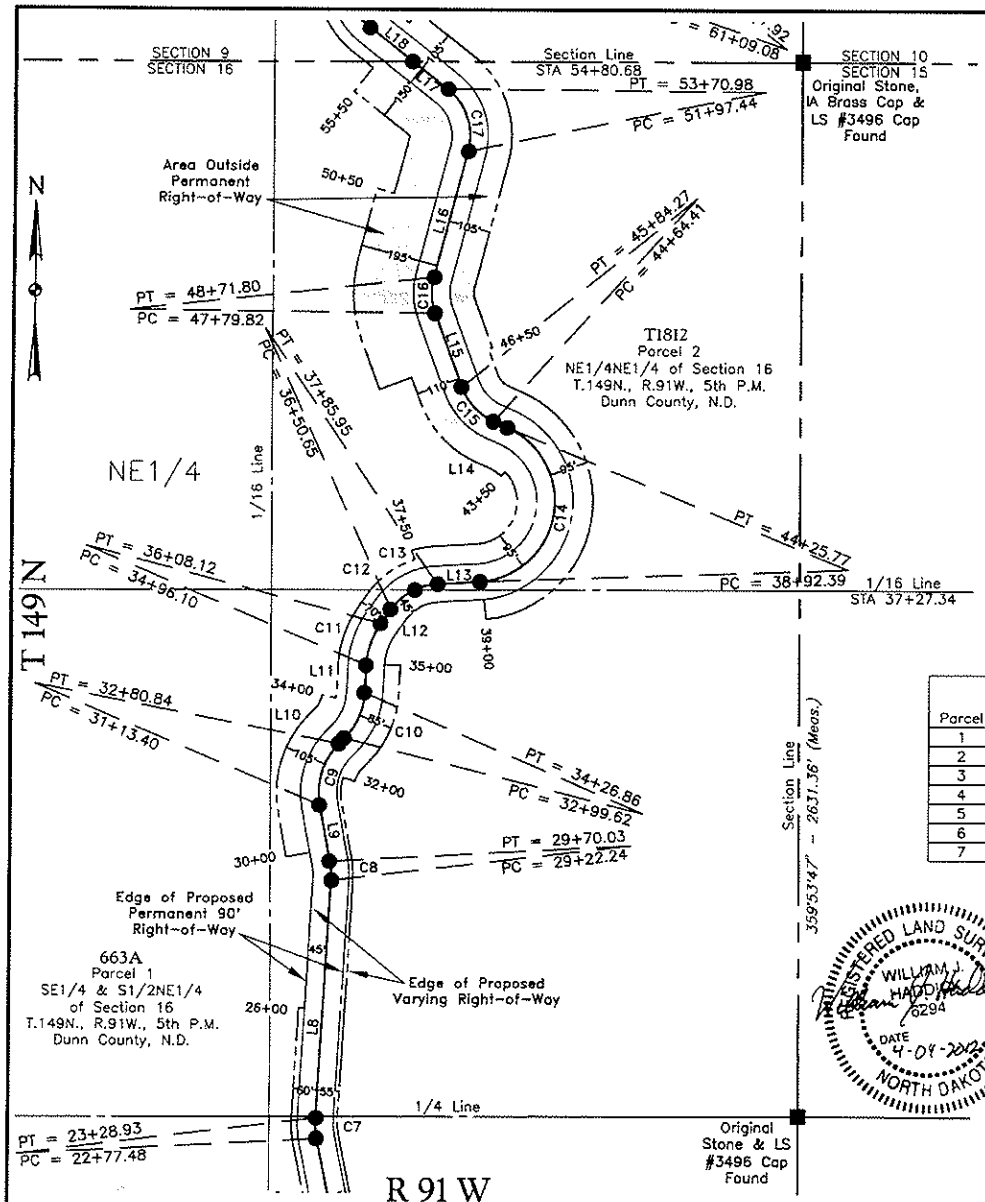

Stationing
22+77.48
23+28.93
29+22.24
29+70.03
31+13.40
32+80.84
32+99.62
34+26.86
34+96.10
36+08.12
36+50.65
37+27.34
37+85.95
38+92.39
44+25.77
44+64.41
45+84.27
47+79.82
48+71.80
51+97.44
53+70.98
54+80.68

Line/Curve No.	Azimuth	Distance
C7	014°44'17"	51.45'
L8	003°17'38"	593.31'
C8	013°41'23"	47.79'
L9	349°36'15"	143.37'
C9	054°49'20"	167.44'
L10	044°25'34"	18.78'
C10	041°39'30"	127.24'
L11	002°46'04"	69.24'
C11	032°05'32"	112.02'
L12	034°51'36"	42.53'
C12	029°17'39"	76.69'
C13	022°23'18"	58.61'
L13	086°32'33"	106.44'
C14	152°48'04"	533.38'
L14	293°44'29"	38.64'
C15	045°47'00"	119.86'
L15	339°31'29"	195.55'
C16	035°08'06"	91.98'
L16	014°39'34"	325.64'
C17	066°17'23"	173.54'
L17	308°22'11"	109.70'

Curve C7	Curve C12	Curve C17
D = 014°44'17"	D = 029°17'39"	D = 066°17'23"
R = 200.00'	R = 150.00'	R = 150.00'
L = 51.45'	L = 76.69'	L = 173.54'
T = 25.87'	T = 39.20'	T = 97.95'
C = 51.30'	C = 75.86'	C = 164.03'
Curve C8	**Curve C13**	
D = 013°41'23"	D = 022°23'18"	
R = 200.00'	R = 150.00'	
L = 47.79'	L = 58.61'	
T = 24.01'	T = 29.68'	
C = 47.67'	C = 58.24'	
Curve C9	**Curve C14**	
D = 054°49'20"	D = 152°48'04"	
R = 175.00'	R = 200.00'	
L = 167.44'	L = 533.38'	
T = 90.75'	T = 826.73'	
C = 161.13'	C = 388.78'	
Curve C10	**Curve C15**	
D = 041°39'30"	D = 045°47'00"	
R = 175.00'	R = 150.00'	
L = 127.24'	L = 119.86'	
T = 66.58'	T = 63.34	
C = 124.45'	C = 116.70'	
Curve C11	**Curve C16**	
D = 032°05'32"	D = 035°08'06"	
R = 200.00'	R = 150.00'	
L = 112.02'	L = 91.98'	
T = 57.52'	T = 47.49'	
C = 110.56'	C = 90.55'	

Parcel	Land Owner	Linear Feet	Linear Rods	Disturbed Area From Pad	Pad Fence Acreage	Permanent 90' Right-of-Way Acreage	Varying Width Right-of-Way Acreage
1	663A	3,727.34'	225.90 Rods	--	--	7.70 Acres	11.09 Acres
2	T1812	1,753.34'	106.26 Rods	--	--	3.62 Acres	9.19 Acres
3	T2214	2,390.25'	144.86 Rods	--	--	4.94 Acres	10.27 Acres
4	434	1,958.08'	118.67 Rods	2.04 Acres	3.34 Acres	4.05 Acres	7.37 Acres
5	360	--	--	--	--	--	0.07 Acres
6	T611	--	--	--	--	--	0.13 Acres
7	549	1,282.77'	77.74 Rods	9.29 Acres	21.22 Acres	2.65 Acres	2.96 Acres

REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 4-09-2012
NORTH DAKOTA

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I, William J. Haddick, Professional Land Surveyor, N.D. No. 6294, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

William J. Haddick

William J. Haddick, Professional Land Surveyor N.D. No. 6294

scale 1"=300' feet

Rev'd. 03/23/2012

Bullet Pad
QEP Energy Company
Denver, Colorado 80235

SHEET NO. 18

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Access Road Right-Of-Way
E1/2NE1/4 Section 16
T.149N., R.91W., 5th P.M.
Dunn County, N.D.

Work By	Dwn By	Project No.	Date
A. R.	W. J. H.	3711700-711	01/04/2012

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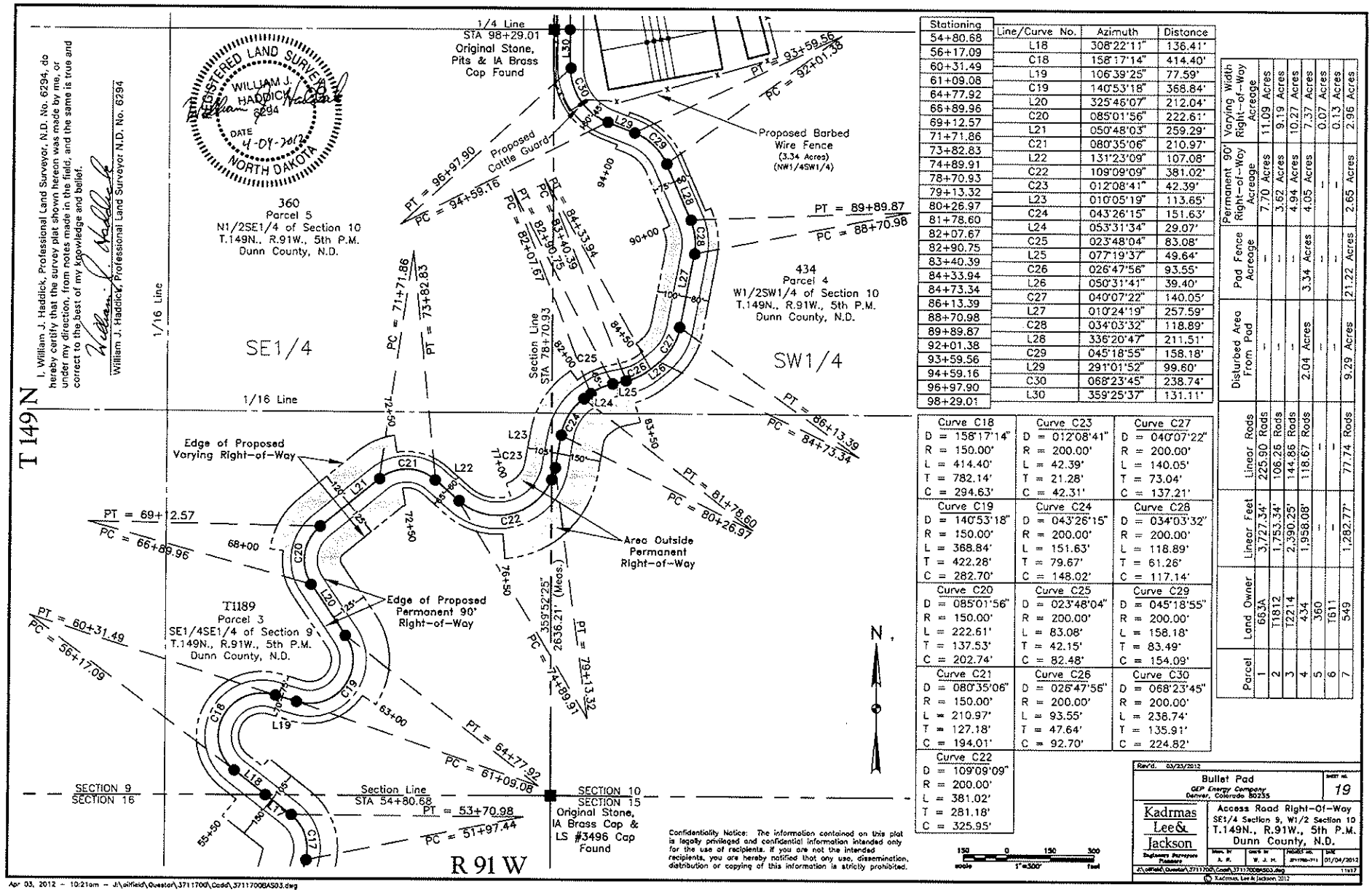

Stationing
54+80.68
56+17.09
60+31.49
61+09.08
64+77.92
66+89.96
69+12.57
71+71.86
73+82.83
74+89.91
78+70.93
79+13.32
80+26.97
81+78.60
82+07.67
82+90.75
83+40.39
84+33.94
84+73.34
86+13.39
88+70.98
89+89.87
92+01.38
93+59.56
94+59.16
96+97.90
98+29.01

Line/Curve No.	Azimuth	Distance
L18	308°22'11"	136.41'
C18	158°17'14"	414.40'
L19	106°39'25"	77.59'
C19	140°53'18"	368.84'
L20	325°46'07"	212.04'
C20	085°01'56"	222.61'
L21	050°48'03"	259.29'
C21	080°35'06"	210.97'
L22	131°23'09"	107.08'
C22	109°09'09"	381.02'
C23	012°08'41"	42.39'
L23	010°05'19"	113.65'
C24	043°26'15"	151.63'
L24	053°31'34"	29.07'
C25	023°48'04"	83.08'
L25	077°19'37"	49.64'
C26	026°47'56"	93.55'
L26	050°31'41"	39.40'
C27	040°07'22"	140.05'
L27	010°24'19"	257.59'
C28	034°03'32"	118.89'
L28	336°20'47"	211.51'
C29	045°18'55"	158.18'
L29	291°01'52"	99.60'
C30	068°23'45"	238.74'
L30	359°25'37"	131.11'

Curve C18	Curve C23	Curve C27
D = 158°17'14"	D = 012°08'41"	D = 040°07'22"
R = 150.00'	R = 200.00'	R = 200.00'
L = 414.40'	L = 42.39'	L = 140.05'
T = 782.14'	T = 21.28'	T = 73.04'
C = 294.63'	C = 42.31'	C = 137.21'
Curve C19	**Curve C24**	**Curve C28**
D = 140°53'18"	D = 043°26'15"	D = 034°03'32"
R = 150.00'	R = 200.00'	R = 200.00'
L = 368.84'	L = 151.63'	L = 118.89'
T = 422.28'	T = 79.67'	T = 61.26'
C = 282.70'	C = 148.02'	C = 117.14'
Curve C20	**Curve C25**	**Curve C29**
D = 085°01'56"	D = 023°48'04"	D = 045°18'55"
R = 150.00'	R = 200.00'	R = 200.00'
L = 222.61'	L = 83.08'	L = 158.18'
T = 137.53'	T = 42.15'	T = 83.49'
C = 202.74'	C = 82.48'	C = 154.09'
Curve C21	**Curve C26**	**Curve C30**
D = 080°35'06"	D = 026°47'56"	D = 068°23'45"
R = 150.00'	R = 200.00'	R = 200.00'
L = 210.97'	L = 93.55'	L = 238.74'
T = 127.18'	T = 47.64'	T = 135.91'
C = 194.01'	C = 92.70'	C = 224.82'
Curve C22		
D = 109°09'09"		
R = 200.00'		
L = 381.02'		
T = 281.18'		
C = 325.95'		

Parcel	Land Owner	Linear Feet	Linear Rods	Disturbed Area From Pad	Pad Fence Acreage	Permanent 90' Right-of-Way Acreage	Varying Width Right-of-Way Acreage
1	663A	3,727.34'	225.90 Rods	-	-	7.70 Acres	11.09 Acres
2	T1812	1,753.34'	106.25 Rods	-	-	3.62 Acres	9.19 Acres
3	T2214	2,390.25'	144.86 Rods	-	-	4.94 Acres	10.27 Acres
4	434	1,958.08'	118.67 Rods	2.04 Acres	3.34 Acres	4.05 Acres	7.37 Acres
5	360	-	-	-	-	-	0.07 Acres
6	T611	-	-	-	-	-	0.13 Acres
7	549	1,282.77'	77.74 Rods	9.29 Acres	21.22 Acres	2.65 Acres	2.96 Acres

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Denver, Colorado 80235

Sheet No. 19

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Access Road Right-Of-Way
SE1/4 Section 9, W1/2 Section 10
T.149N., R.91W., 5th P.M.
Dunn County, N.D.

Des. by J. P. | Chk'd by W. J. H. | Project No. 3711700-711 | Date 01/04/2012

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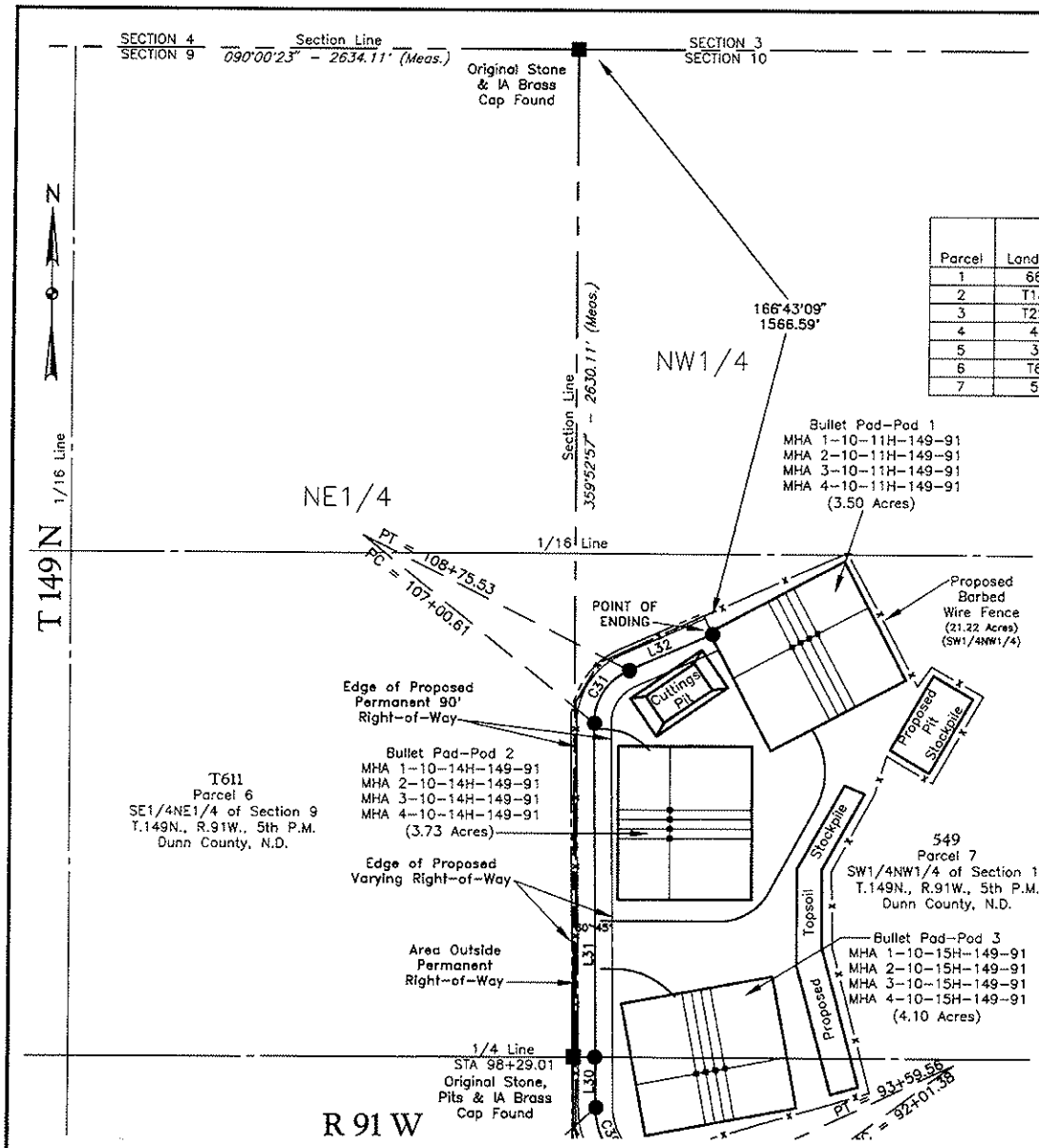

Stationing
96+97.90
98+29.01
107+00.61
108+75.53
111+11.78

Line/Curve No.	Azimuth	Distance
L30	359°25'37"	131.11'
L31	359°25'37"	871.60'
C31	066°48'47"	174.92'
L32	066°14'25"	236.25'

Curve C31
D = 066°48'47"
R = 150.00'
L = 174.92'
T = 98.93'
C = 165.17'

Parcel	Land Owner	Linear Feet	Linear Rods	Disturbed Area From Pad	Pad Fence Acreage	Permanent 90' Right-of-Way Acreage	Varying Width Right-of-Way Acreage
1	663A	3,727.34'	225.90 Rods	–	–	7.70 Acres	11.09 Acres
2	T1812	1,753.34'	106.26 Rods	–	–	3.62 Acres	9.19 Acres
3	T2214	2,390.25'	144.86 Rods	–	–	4.94 Acres	10.27 Acres
4	434	1,958.08'	118.67 Rods	2.04 Acres	3.34 Acres	4.05 Acres	7.37 Acres
5	360	–	–	–	–	–	0.07 Acres
6	T611	–	–	–	–	–	0.13 Acres
7	549	1,282.77'	77.74 Rods	9.29 Acres	21.22 Acres	2.65 Acres	2.96 Acres

REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 4-04-2012
NORTH DAKOTA

I, William J. Haddick, Professional Land Surveyor, N.D. No. 6294, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

William J. Haddick

William J. Haddick, Professional Land Surveyor N.D. No. 6294

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150 0 150 300
scale 1" = 300' feet

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Denver, Colorado 80235

sheet no. 20

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Access Road Right-Of-Way
SE1/4 Section 9, W1/2 Section 10
T.149N., R.91W., 5th P.M.
Dunn County, N.D.

Drawn by A. R. | Check by W. J. H. | Project no. 3711700-111 | Date 01/04/2012

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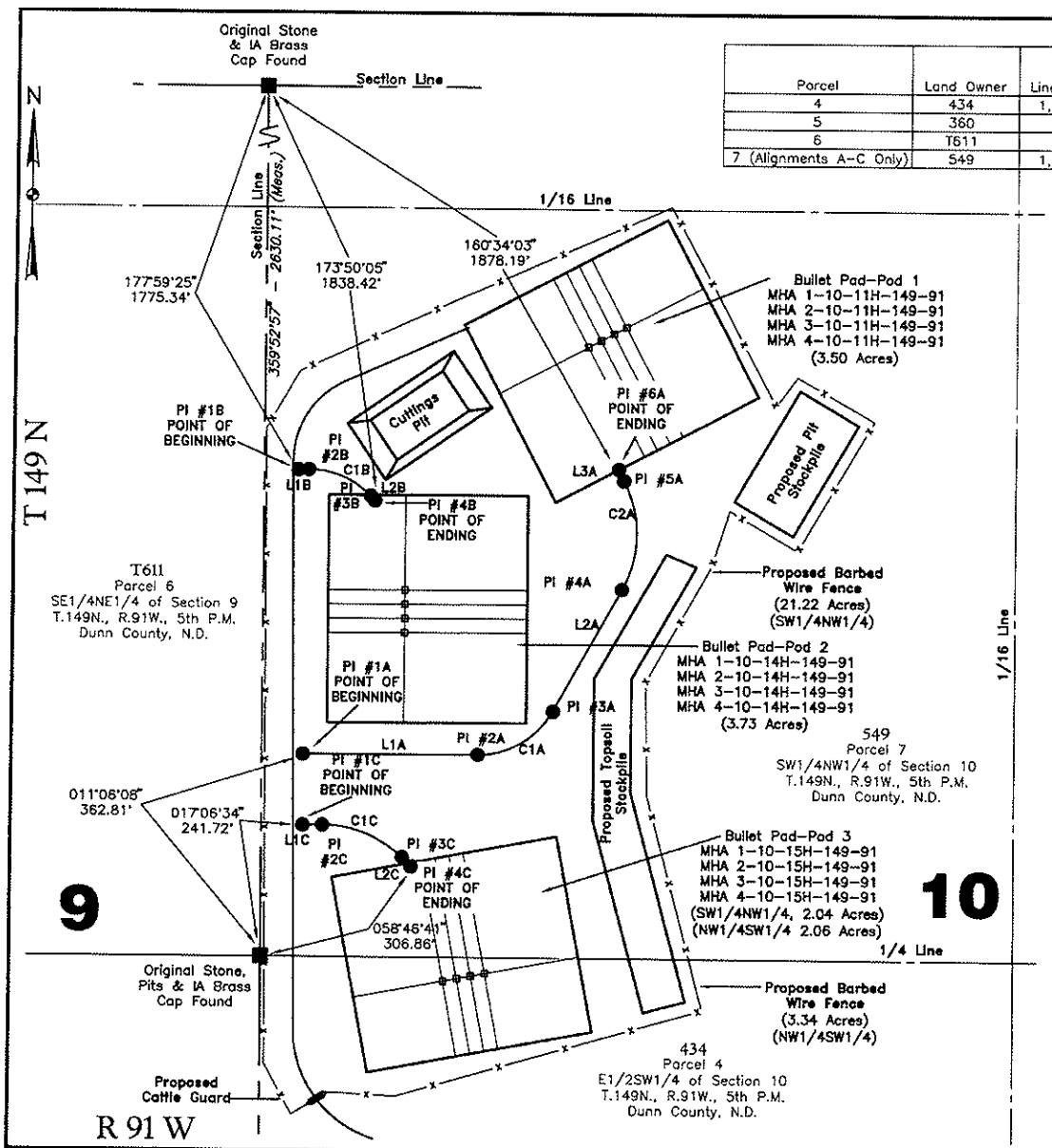

Parcel	Land Owner	Linear Feet	Linear Rods	Disturbed Area From Pad	Pad Fence Acreage	Permanent 90' Right-of-Way Acreage	Varying Width Right-of-Way Acreage
4	434	1,958.08'	118.67 Rods	2.04 Acres	3.34 Acres	4.05 Acres	7.37 Acres
5	360	--	--	--	--	--	0.07 Acres
6	T611	--	--	--	--	--	0.13 Acres
7 (Alignments A–C Only)	549	1,298.00'	78.67 Rods	9.29 Acres	21.22 Acres	2.68 Acres	--

PI #	Stationing
1A–POB	0+00.00
2A	3+07.63
3A	4+67.26
4A	7+13.41
5A	9+12.11
6A–POE	9+34.55

Line/Curve No.	Azimuth	Distance
L1A	090°00'00"	307.63'
C1A	060°58'21"	159.63'
L2A	029°01'39"	246.15'
C2A	056°55'23"	198.70'
L3A	332°06'16"	22.44'

PI #	Stationing
1B–POB	0+00.00
2B	0+19.35
3B	1+39.73
4B–POE	1+51.00

Line/Curve No.	Azimuth	Distance
L1B	089°51'30"	19.35'
C1B	045°58'57"	120.38'
L2B	135°50'27"	11.27'

PI #	Stationing
1C–POB	0+00.00
2C	0+34.51
3C	1+89.57
4C–POE	2+12.45

Line/Curve No.	Azimuth	Distance
L1C	089°38'10"	34.51'
C1C	044°25'20"	155.06'
L2C	134°03'30"	22.88'

Curve C1A
D = 060°58'21"
R = 150.00'
L = 159.63'
T = 88.31'
C = 152.20'

Curve C2A
D = 056°55'23"
R = 200.00'
L = 198.70'
T = 108.42'
C = 190.63'

Curve C1B
D = 045°58'57"
R = 150.00'
L = 120.38'
T = 63.64'
C = 117.18'

Curve C1C
D = 044°25'20"
R = 200.00'
L = 155.06'
T = 81.66'
C = 151.21'

I, William J. Haddick, Professional Land Surveyor, N.D. No. 6294, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

William J. Haddick

William J. Haddick, Professional Land Surveyor N.D. No. 6294

REGISTERED LAND SURVEYOR
WILLIAM J. HADDICK
6294
DATE 4-04-2012
NORTH DAKOTA

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100 0 100 200
scale 1" = 200' feet

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OEP Energy Company
Denver, Colorado 80235

SHEET NO. 21

Kadrmas Lee & Jackson
Bismarck Fargo Minot Williston

Access Road Right-Of-Way
E1/2 Section 10
T.149N., R.91W., 5th P.M.
Dunn County, N.D.

DRWN. BY A. R. | CHK'D BY W. J. H. | PROJECT NO. 3711700-711 | DATE 03/04/2012

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Access Road Right-of-Way Description

A tract of land located in the East Half (E1/2) of Section 16, the Southeast Quarter (SE1/4) of Section 9, and the West Half (W1/2) of Section 10, Township 149 North, Range 91 West of the 5th Principal Meridian, Dunn County, State of North Dakota, being more specifically described as a strip of land with a permanent right-of-way of ninety (90) feet in width, lying forty-five (45) feet on each side, and also including the varying right-of-way as shown of the following described road centerline:

Commencing at the southeast corner of said Section 16; thence on an azimuth of 288°10'31", a distance of 1489.63 feet to the POINT OF BEGINNING; thence on an azimuth of 014°00'55", a distance of 217.87 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 015°48'17" and an arc length of 55.17 feet; thence on an azimuth of 358°12'38", a distance of 287.09 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 076°41'46" and an arc length of 267.72 feet; thence on an azimuth of 074°54'25", a distance of 41.85 feet; thence in a northeasterly direction with a tangent curve turning to the left with a radius of 150.00 feet, having a central angle of 073°28'01" and an arc length of 192.34 feet; thence on an azimuth of 001°26'24", a distance 144.25 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 013°54'17" and an arc length of 48.54 feet; thence on an azimuth of 347°32'07", a distance of 204.60 feet; thence in a northerly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 018°25'40" and an arc length of 64.33 feet; thence on an azimuth of 005°57'47", a distance of 165.02 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 017°24'27" and an arc length of 60.76 feet; thence on an azimuth of 348°33'20", a distance of 527.94 feet; thence in a northerly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 014°44'17" and an arc length of 51.45 feet; thence on an azimuth of 003°17'38", a distance of 593.31 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 013°41'23" and an arc length of 47.79 feet; thence on an azimuth of 349°36'15", a distance of 143.37 feet; thence in a northerly direction with a tangent curve turning to the right with a radius of 175.00 feet, having a central angle of 054°49'20" and an arc length of 167.44 feet; thence on an azimuth of 044°25'34", a distance of 18.78 feet; thence in a northeasterly direction with a tangent curve turning to the left with a radius of 175.00 feet, having a central angle of 041°39'30" and an arc length of 127.24 feet; thence on an azimuth of 002°46'04", a distance of 69.24 feet; thence in a northerly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 032°05'32" and an arc length of 112.02 feet; thence on an azimuth of 034°51'36", a distance of 42.53 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 029°17'39" and an arc length of 76.69 feet to a point on the north line of the Southeast Quarter of the Northeast Quarter (SE1/4NE1/4) of said Section 16; thence continuing in the Northeast Quarter of the Northeast Quarter (NE1/4NE1/4) of said Section 16 in a northeasterly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 022°23'18" and an arc length of 58.61 feet; thence on an azimuth of 086°32'33", a distance of 106.44 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 152°48'04" and an arc length of 533.38 feet; thence on an azimuth of 293°44'29", a distance of 38.64 feet; thence in a northwesterly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 045°47'00" and an arc length of 119.86 feet; thence on an azimuth of 339°31'29", a distance of 195.55 feet; thence in a northerly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 035°08'06" and an arc length of 91.98 feet; thence on an azimuth of 014°39'34", a distance of 325.64 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 150.00 feet, having a central angle of 066°17'23" and an arc length of 173.54 feet; thence on an azimuth of 308°22'11", a distance of 109.70 feet to a point on the north line of said Section 16; thence continuing in the Southeast Quarter (SE1/4) of said Section 9 on an azimuth of 308°22'11", a distance of 136.41 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 158°17'14" and an arc length of 414.40 feet; thence on an azimuth of 106°39'25", a distance of 77.59 feet; thence in a northeasterly direction with a tangent curve turning to the left with a radius of 150.00 feet, having a central angle of 140°53'18" and an arc length of 368.84 feet; thence on an azimuth of 325°46'07", a distance of 212.04 feet; thence in a northerly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 085°01'56" and an arc length of 222.61 feet; thence on an azimuth of 050°48'03", a distance of 259.29 feet; thence in an easterly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 080°35'06" and an arc length of 210.97 feet; thence on an azimuth of 131°23'09", a distance of 107.08 feet; thence in an easterly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 109°09'09" and an arc length of 381.02 feet to a point on the east line of said Section 9; thence continuing in the Southwest Quarter (SW1/4) of said Section 10 in an easterly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 012°08'41" and an arc length of 42.39 feet; thence on an azimuth of 010°05'19", a distance of 113.65 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 043°26'15" and an arc length of 151.63 feet; thence on an azimuth of 053°31'34", a distance of 29.07 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 023°48'04" and an arc length of 83.08 feet; thence on an azimuth of 077°19'37", a distance of 49.64 feet; thence in a northeasterly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 026°47'56" and an arc length of 93.55 feet; thence on an azimuth of 050°31'41", a distance of 39.40 feet; thence in a northeasterly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 040°07'22" and an arc length of 140.05 feet; thence on an azimuth of 010°24'19", a distance of 257.59 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 034°03'32" and an arc length of 118.89 feet; thence on an azimuth of 336°20'47", a distance of 211.51 feet; thence in a northwesterly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 045°18'55" and an arc length of 158.18 feet; thence on an azimuth of 291°01'52", a distance of 99.60 feet; thence in a northwesterly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 068°23'45" and an arc length of 238.74 feet; thence on an azimuth of 359°25'37", a distance of 131.11 feet to a point on the north line of the of the Southwest Quarter (SW1/4) of Section 10; thence continuing in the Northwest Quarter (NW1/4) of said Section 10 on an azimuth of 359°25'37", a distance of 871.60 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 066°48'47" and an arc length of 174.92 feet; thence on an azimuth of 066°14'25", a distance of 236.25 feet to the edge of POD 1 and the POINT OF ENDING; said ending point being located on an azimuth of 166°43'09", a distance of 1566.59 feet from the northwest corner of said Section 10.

Said tract contains 11,111.78 feet or 673.44 rods (22.96 acres) of permanent right-of-way. Said tract also contains 41.04 acres of varying right-of-way.

A tract of land located in the Northwest Quarter (NW1/4) of Section 10, Township 149 North, Range 91 West of the 5th Principal Meridian, Dunn County, State of North Dakota, being more specifically described as a strip of land ninety (90) feet in width, lying forty-five (45) feet on each side of the following described road centerline:

Commencing at the west quarter corner of said Section 10; thence on an azimuth of 011°06'08", a distance of 362.81 feet to the POINT OF BEGINNING (A); thence on an azimuth of 090°00'00", a distance of 307.63 feet; thence in an easterly direction with a tangent curve turning to the left with a radius of 150.00 feet, having a central angle of 060°58'21" and an arc length of 159.63 feet; thence on an azimuth of 029°01'39", a distance of 246.15 feet; thence in a northerly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a central angle of 056°55'23" and an arc length of 198.70 feet; thence on an azimuth of 332°06'16", a distance of 22.44 feet to the edge of POD 1 and the POINT OF ENDING (A); said ending point being located on an azimuth of 160°34'03", a distance of 1878.19 feet from the northwest corner of said Section 10.

Said tract contains 934.55 feet or 56.64 rods (1.93 acres).

A tract of land located in the Northwest Quarter (NW1/4) of Section 10, Township 149 North, Range 91 West of the 5th Principal Meridian, Dunn County, State of North Dakota, being more specifically described as a strip of land ninety (90) feet in width, lying forty-five (45) feet on each side of the following described road centerline:

Commencing at the northwest corner of said Section 10; thence on an azimuth of 177°59'25", a distance of 1775.34 feet to the POINT OF BEGINNING (B); thence on an azimuth of 089°51'30", a distance of 19.35 fee; thence in an easterly direction with a tangent curve turning to the right with a radius of 150.00 feet, having a central angle of 045°58'57" and an arc length of 120.38 feet; thence on an azimuth of 135°50'27", a distance of 11.27 feet to the POINT OF ENDING (B); said ending point being located on an azimuth of 173°50'05", a distance of 1838.42 feet from the northwest corner of said Section 10.

Said tract contains 151.00 feet or 9.15 rods (0.31 acres).

A tract of land located in the Northwest Quarter (NW1/4) of Section 10, Township 149 North, Range 91 West of the 5th Principal Meridian, Dunn County, State of North Dakota, being more specifically described as a strip of land ninety (90) feet in width, lying forty-five (45) feet on each side of the following described road centerline:

Commencing at the west quarter corner of said Section 10; thence on an azimuth of 017°06'34", a distance of 241.72 feet to the POINT OF BEGINNING (C); thence on an azimuth of 089°38'10", a distance of 34.51 feet; thence in an easterly direction with a tangent curve turning to the right with a radius of 200.00 feet, having a central angle of 44°25'20" and an arc length of 155.06 feet; thence on an azimuth of 134°03'30", a distance of 22.88 feet to the POINT OF ENDING (C); said ending point being located on an azimuth of 058°46'41", a distance of 306.86 feet from the west quarter corner of said Section 10.

Said tract contains 212.45 feet or 12.88 rods (0.44 acres).

Rev'd. 03/23/2012		
Bullet Pad QEP Energy Company Denver, Colorado 80235		Sheet No. 22
Kadrmas Lee & Jackson Engineers Surveyors Planners	Access Road Right-Of-Way Sections 16, 9 & 10 T.149N., R.91W., 5th P.M. Dunn County, N.D.	
	Drawn By: A. R. / Check By: W. J. H. / Project No.: 3711700-111 / Date: 01/04/2012	
J:\oilfield\Questar\3711700\Cadd\3711700BAS03.dwg		11x17
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QEP Energy Company
Bullet Pad
W1/2 Section 10
T.149N., R.91W., 5th P.M.
Dunn County, ND

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MHA 1-10-11H-149-91
MHA 2-10-11H-149-91
MHA 3-10-11H-149-91
MHA 4-10-11H-149-91
MHA 1-10-14H-149-91
MHA 2-10-14H-149-91
MHA 3-10-14H-149-91
MHA 4-10-14H-149-91
MHA 1-10-15H-149-91
MHA 2-10-15H-149-91
MHA 3-10-15H-149-91
MHA 4-10-15H-149-91

Proposed Routes
± 12,408 feet

± 15.2 Miles to Mandaree, ND

± 5.0 Miles to Intersection

± 2.0 Miles to Intersection

22nd St. NW

21st St. NW

19th St. NW

BIA 12

BIA 13

R 93 W

R 92 W

R 91 W

T 150 N

T 149 N

T 148 N

Mountrail County

Dunn County

McLean County

SAKAKAWEA

LAKE

SADDLE BUTTES

LITTLE MISSOURI

INDIAN

Narrative Directions

From Mandaree, ND, go east out of town on BIA 12 for 15.2 miles, turn left (northeast) on BIA 13 and go 5.0 miles, turn right (east) on 22nd Street NW and go 2.0 miles to the start of the QEP Energy Company Bullet Pad access road, turn left (north) and go 11,111 feet to POD 1.

Map "A"
County Access Route

Legend
Existing Roads
Proposed Roads

Revised: 03/30/2012

Scale 1"=2 Miles

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Bullet Pad
W1/2 Section 10
T.149N., R.91W., 5th P.M.
Dunn County, ND

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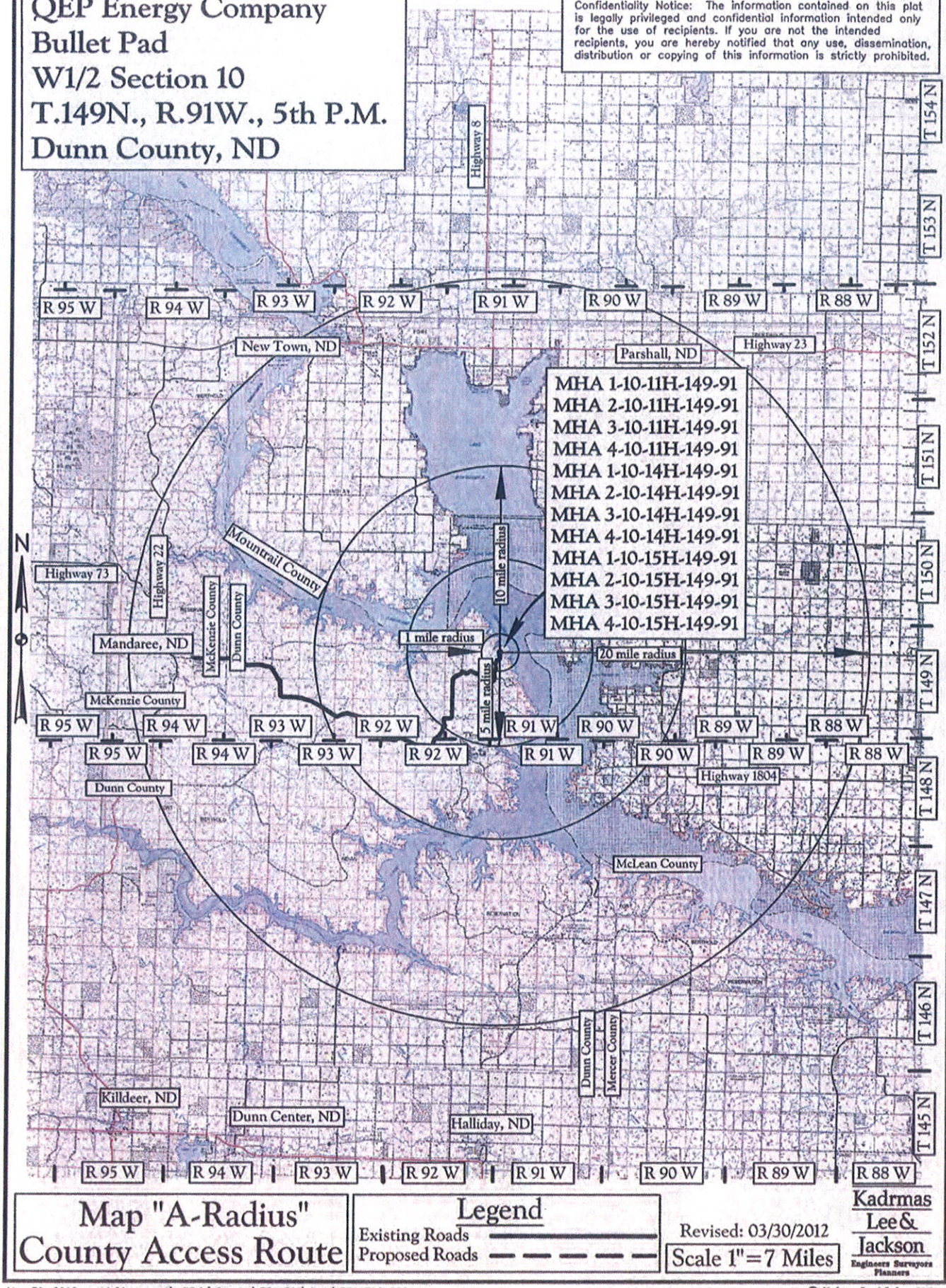

Map "A-Radius" County Access Route

Legend

Existing Roads ——————

Proposed Roads — — — — —

Revised: 03/30/2012

Scale 1"=7 Miles

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Bullet Pad
W1/2 Section 10
T.149N., R.91W., 5th P.M.
Dunn County, ND

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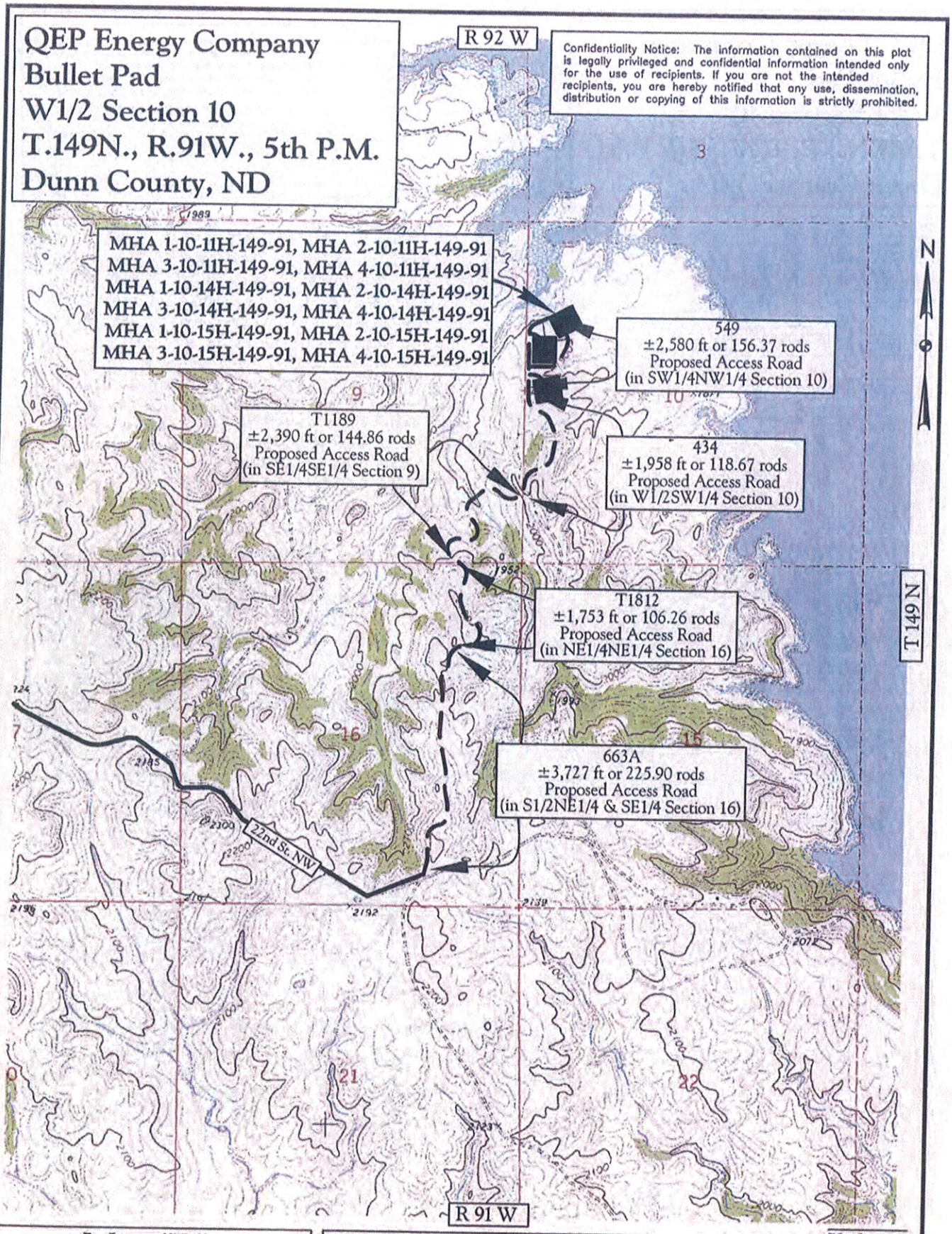

Map "B"
Quad Access Route

Legend
Existing Roads
Proposed Roads

Revised: 03/30/2012
Scale 1"=2000'

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Bullet Pad
W1/2 Section 10
T.149N., R.91W., 5th P.M.
Dunn County, ND

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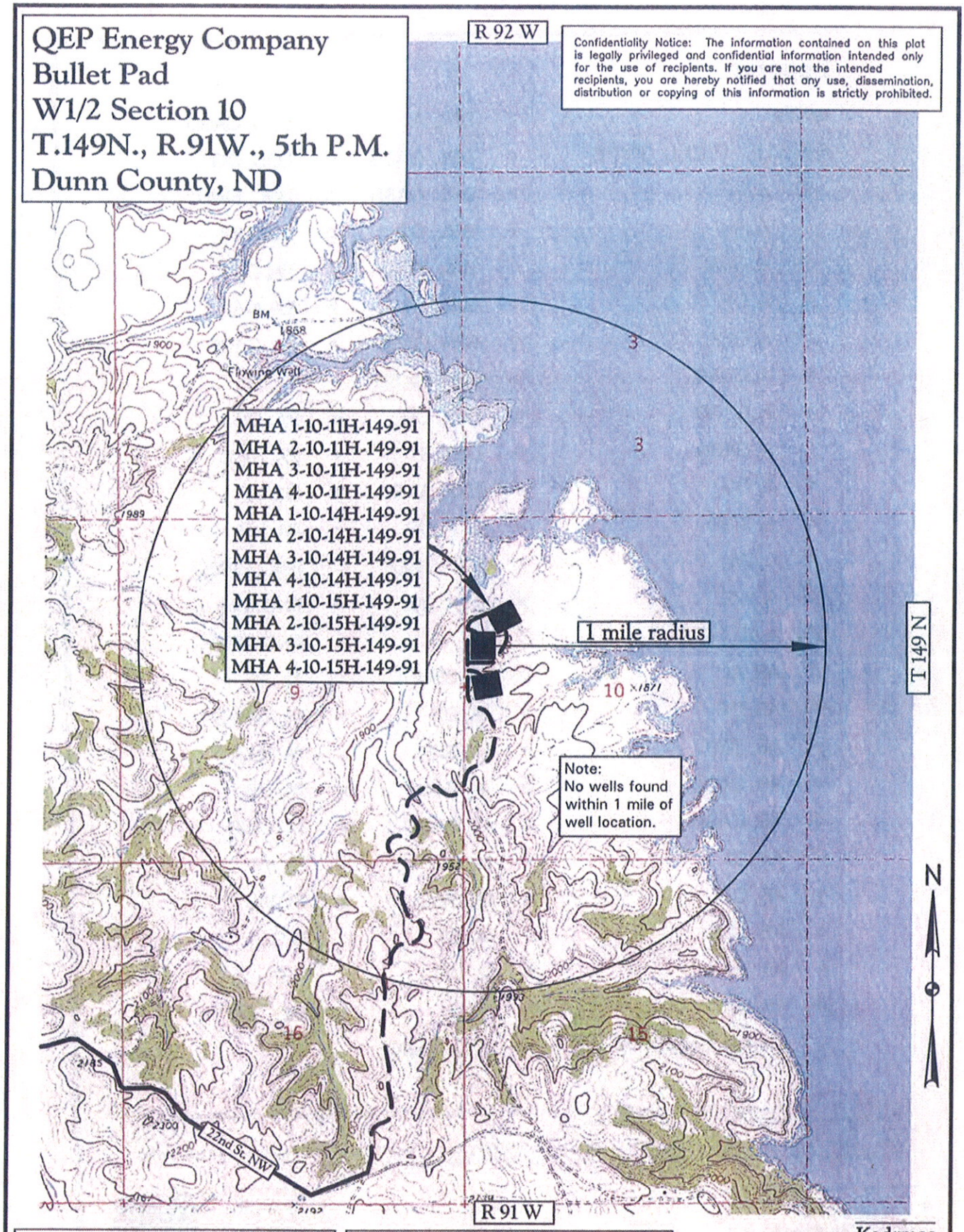

Map "C"
One Mile Radius Map

Legend
Existing Roads
Proposed Roads

Revised: 03/30/2012

Scale 1"=2000'

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Engineers Surveyors Planners

Mar 30, 2012 – 11:28am – J:\oilfield\Questar\3711700\Cadd\3711700LOC01.dwg

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Legend

wells

STATUS, WELL_TYPE

- A, AGD
- A, AI
- A, CBM
- A, DF
- A, DFP
- A, GASC
- A, GASD
- A, GASN
- A, OG
- A, SWD
- A, WI
- A, WS
- A,AI
- AB, AI
- AB, DF
- AB, DFP
- AB, GASC
- AB, GASD
- AB, GI
- AB, OG
- AB, SWD
- AB, WI
- AB, WS
- Confidential, Confidential
- DRL, AI
- DRL, GASC
- DRL, GASD
- DRL, OG
- DRL, SWD
- DRL, WI
- DRY, GASC
- DRY, GASD
- DRY, OG
- DRY, ST
- EXP, GASD
- EXP, OG
- EXP, SWD
- EXP, WS
- IA, AI
- IA, CBM
- IA, DF
- IA, DFP
- IA, GASC
- IA, GASD
- IA, OG
- IA, SWD
- IA, WI
- IA, WS
- IA,AI
- LOC, GASC
- LOC, GASD
- LOC, OG
- LOC, SWD
- LOC, WI
- PA, DF
- PA, GASC
- PA, GASD
- PA, GS
- PA, OG
- PA, SWD
- PA, WI
- PA, WS
- PNC, GASD
- PNC, OG
- PNC, SWD
- TA, AI
- TA, GASC
- TA, GASD
- TA, OG
- TA, SWD
- TA, WI
- TA, WS
- TAO, GI
- TAO, OG
- TAO, WI

A = Active, AB = Abandoned, DRL = Drilling, Dry = Dry, EXP = Expired, IA = Inactive, LOC = Location, PA = Producer Abandoned, PNC = Permit Now Cancelled TA = Temporarily Abandoned, TAO = Temporarily Abandoned Observation.

AGD = Acid Gas Disposal, AI = Air Injection, DF = Dump Flood, DFP = Dump Flood Producing, GASN = Nitrogen Gas Well, GASC = Gas Condensate, GASD = Gas Dry, GI = Gas Injection, GS = Gas Storage, OG = Oil or Gas Well, SWD = Salt Water Disposal, WI = Water Injection, WS = Water Supply, ST = Strat Test

Exhibit "D"
GIS Well Symbols

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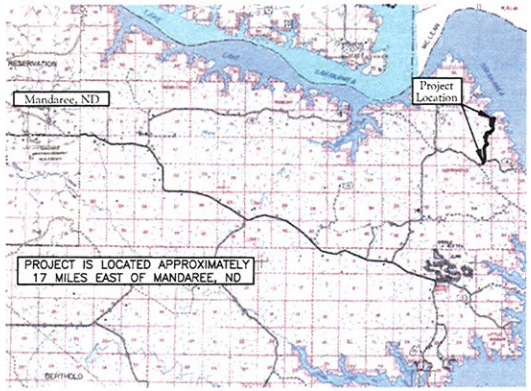
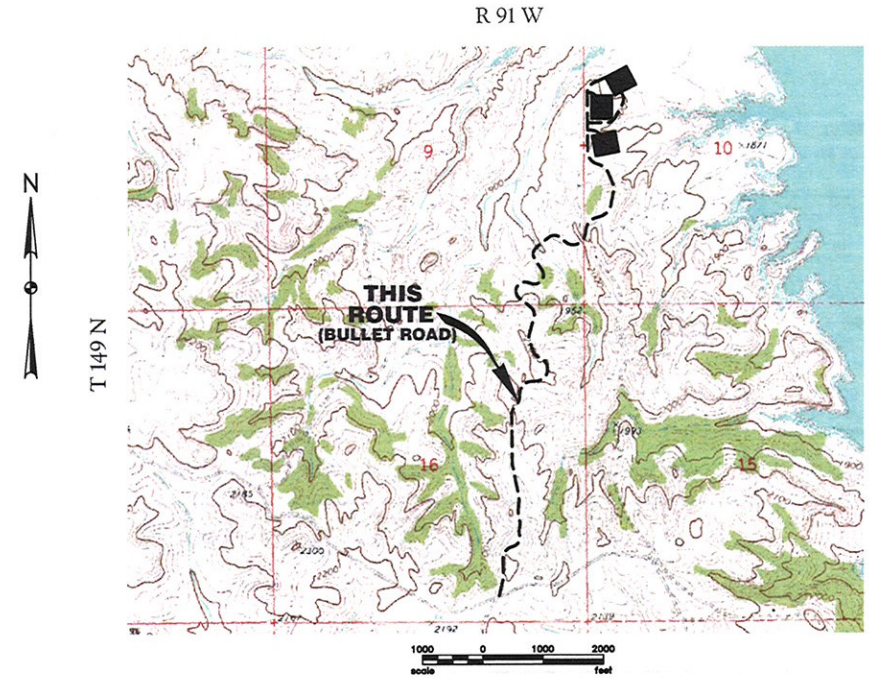
Prepared by N.D.I.C. Oil and Gas Division

QEP ENERGY COMPANY
BULLET PAD ACCESS ROADS
Sections 9, 10 & 16, T149N, R91W, 5th PM
Dunn County, North Dakota



Vicinity Map

R 91 W



INDEX OF SHEETS	
No.	Sheet Description
1	Cover Sheet
2	Estimate of Quantities & Specification Lists
3	Culvert Listing Sheet
4	Mass Haul Diagram
5-7	Bullet Road - Right-of-Way
8-12	Bullet Road - Plan & Profile Sheets
13	Pod 3 Access - Plan & Profile Sheets
14	Pod 1 Loop - Plan & Profile Sheets
15	Pod 2 Access - Plan & Profile Sheets
16-43	Bullet Road - Cross Section Sheets
44-45	Pod 3 Access - Cross Section Sheets
46-47	Pod 1 Loop - Cross Section Sheets
48	Pod 2 Access - Cross Section Sheets
Standard Sheets	
Typical Section Detail	
Drainage Detail	

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Bullet Pad Access Roads
Pod 1, Pod 2 & Pod 3
Sections 9, 10 & 16, T149N, R91W, 5th P.M.
Dunn County, North Dakota

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SURVEY COMPLETED USING NAVD 88 DATUM

BASIS OF BEARING:
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359° 46' 51" AND 1638.92'

Drawn By:	ZDH
Checked By:	JSK
Project No.	3711700-3711711
Issued:	02-10-2012
Revised:	03-12-2012
Field Book:	0W-261, 270

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COVER SHEET

SHEET NO. 1

Mar 13, 2012 - 9:07am - J:\oilfield\Questar\3711700\CAD\3711700CVR.dwg

ESTIMATE OF QUANTITIES

PAY ITEM NUMBER	DESCRIPTION OF WORK	UNIT	TOTAL QUANTITY
152.06	Construction Survey & Staking, Off-set Center Line; (in Road Design area as shown in sheets 5-48)	Miles	2.35
204.17	Roadway Excavation (Compaction Method FSS 204.11 d)	Cu. Yard	190,977
301.10	Untreated Aggregate, Includes 20% Compaction, 4 in. Thickness	Cu. Yard	3,750
602.10	18" Corrugated Metal Pipe, 0.064" Thickness (Compaction Method FSS 209.11 B)	Lin. Feet	418
602.10	24" Corrugated Metal Pipe, 0.079" Thickness (Compaction Method FSS 209.11 B)	Lin. Feet	80
602.10	42" Corrugated Metal Pipe, 0.109" Thickness (Compaction Method FSS 209.11 B)	Lin. Feet	200
624.07	Placing Topsoil, 4 in. Thickness	Cu. Yard	12,931
625.12	Seeding, Dry Method (without mulch)	Acres	18.23
	Total Disturbed Area (Well Access Road)	Acres	25.33
	Total Disturbed Area (Well Pad-fill & cut areas)	Acres	11.33 } 36.66 Total

GOVERNING SPECIFICATIONS

Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03, adopted by the U.S. Forest Service and applicable Forest Service Supplements to the FP-03, shall apply to the contract, along with other contract provisions submitted herein. The current edition of FP-03 can be viewed and downloaded at https://www.wfl.fhwa.dot.gov/design/specs/fp03.htm. Supplements for use with FP-03 can be viewed at https://fsplaces.fs.fed.us/fsfiles/unit/r4/fp03.nsf.

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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING:
EASTERLY LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN ASSUMED BEARING OF S00°46'51"E AND 1320.92'

Drawn By:	ZDH
Checked By:	JSK
Project No.	3711700/3711711
Issued	02-29-2012
Revised:	03-12-2012
Field Book:	OW-261/270

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ESTIMATE OF QUANTITIES

SHEET NO. 2

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DESIGN		AS CONSTRUCTED			ALLOWABLE ALTERNATES				INSTALLATION DETAILS				SPECIAL SECTIONS			DISSIPATOR			RIP RAP		DITCH		
STATION	LENGTH FEET	STATION	LENGTH FEET	SIZE INCHES	STEEL 2 2/3" x 1/2" SIZE	STEEL 2 2/3" x 1/2" THICK	ALUMINUM 2 2/3" x 1/2" SIZE	ALUMINUM 2 2/3" x 1/2" THICK	▲ TYPE	SKEW *	% SLOPE MIN.	SPECIAL ANCHORS	ELBOWS EACH	TEE EACH	GASKETS	SIZE	CLASS	QUANTITY	CLASS	QUANTITY	INLET	OUTLET	
BULLET ROAD																							
0+50 ℄	48				18"	.064															X		
15+00 ℄	44				18"	.064															X		Construct ditch block @ 15+15 Lt.
22+00 ℄	54				18"	.064																	Construct ditch block @ 22+15 Lt.
28+00 ℄	58				18"	.064																	Construct ditch block @ 28+15 Lt.
35+15 ℄	42				18"	.064																	
47+00 ℄	34				18"	.064															X	X	Construct ditch block @ 47+15 Lt.
51+50 ℄	34				18"	.064															X	X	Construct ditch block @ 51+65 Lt.
69+78 ℄	200				42"	.109				5° L.A.													
90+88 ℄	80				24"	.079																	
110+85 ℄	34				18"	.064															X	X	
POD 3 ACCESS																							
1+75 ℄	36				18"	.064															X		
POD 1 LOOP																							
9+15 ℄	34				18"	.064															X	X	Daylight Rt. ditch to drain.

* R.A. = RIGHT & AHEAD L.A. = LEFT & AHEAD R.B. = RIGHT & BACK L.B. = LEFT & BACK ▲ SEE PIPE INSTALLATION DETAIL SHEET

	DRAINAGE AREA								
	25-YEAR DESIGN FREQUENCY						100-YEAR DESIGN FREQUENCY		
STATION	Size Inches	Drainage Area Acres	Design H.W. Ft.	Design Discharge C.F.S.	Design Velocity F.P.S.	Max. Stage Elev.	Design Discharge C.F.S.	Design Velocity F.P.S.	Max. Stage Elev.
69+78 ℄	42"	115	5.4	74	9.5	1907.0	118	12.7	1914.4
90+88 ℄	24"	9	2.3	14	9.6	1922.8	22	10.7	1924.3

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SURVEY COMPLETED USING NAD 83 DATUM
BASIS OF BEARING:
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359°46'51" AND 2636.92'

Drawn By:	JDH
Checked By:	JSR
Project No.	3711700-3711721
Issued:	02-10-2012
Revised:	03-12-2012
Field Book:	GW-261, 270

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CULVERT DETAIL SHEET

SHEET NO. 3

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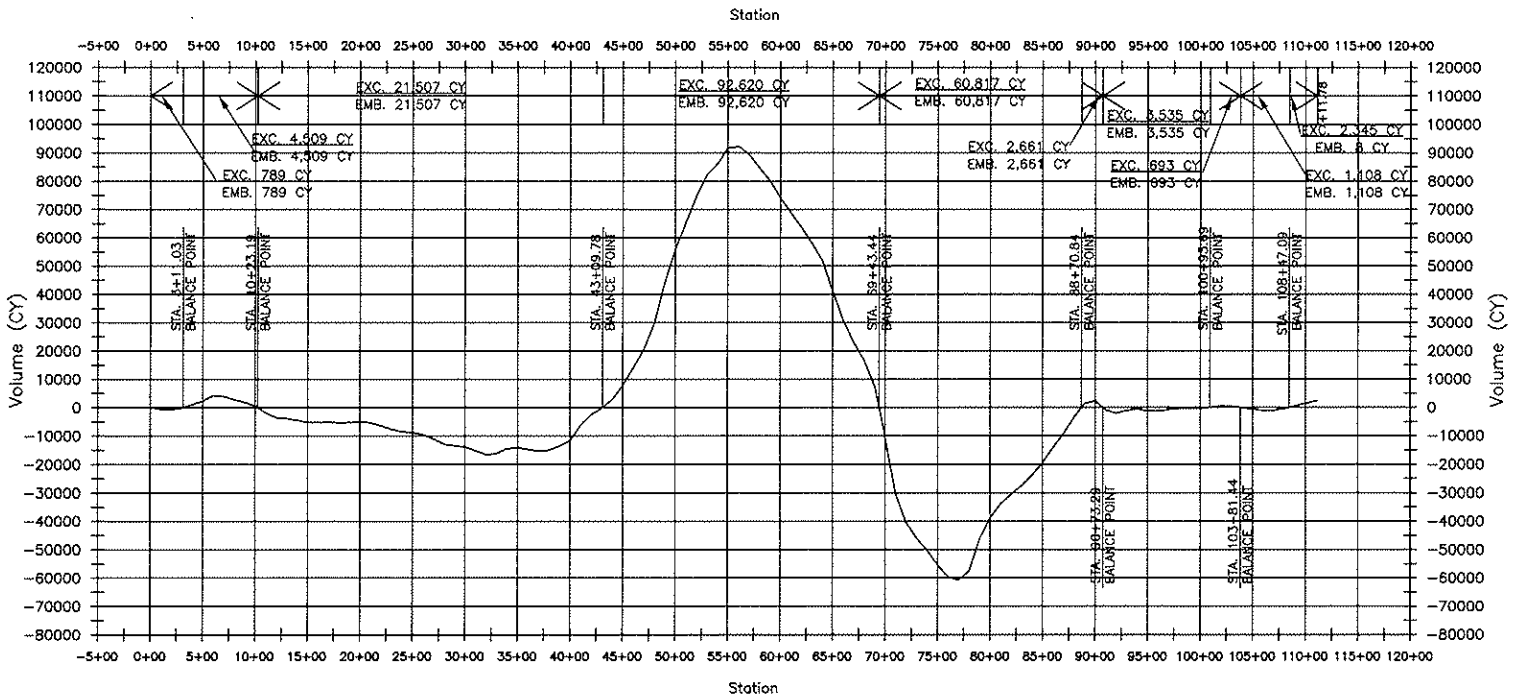
Bullet Road
Mass Haul Diagram



EARTHWORK QUANTITIES (CY)

ROAD	EXC	EMB	BORROW	BORROW SOURCE
Bullet Road	190,584	188,247	0	-
Pad 1 Loop	317	1,826	1,509	Bullet Road EXC
Pad 2 Access	72	110	38	Bullet Road EXC
Pad 3 Access	4	791	787	Bullet Road EXC
Totals	190,977	190,974	2,334	

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SURVEY COMPLETED USING NAVD 88 DATUM

BASIS OF BEARING:
EASTERLINE OF THE SOUTHWEST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 159° 46' 51" AND MARKED

Drawn By	ZDH
Checked By	JSK
Project No.	3711700-3711711
Issued	02-20-2012
Revised	03-12-2012
Field Book	GW-261-270

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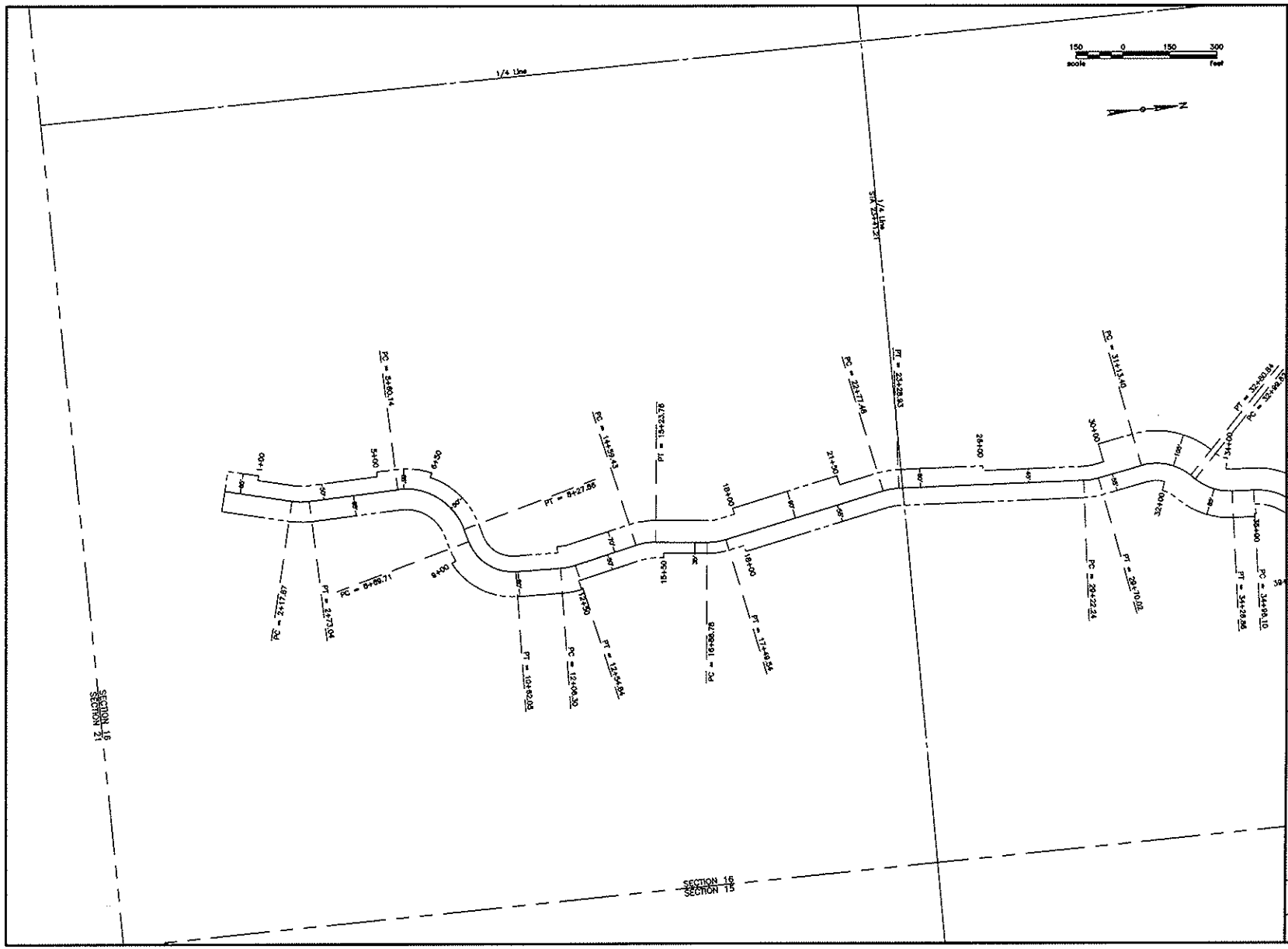
MASS HAUL DIAGRAM

SHEET NO. 4

Mar 13, 2012 - 9:08am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg



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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359° 46' 51" AND 20.00 FEET

Drawn By:	ZDF
Checked By:	SK
Project No.	3711700-3711711
Issued	02-10-2012
Revised:	03-12-2012
Field Book:	GW 261/270

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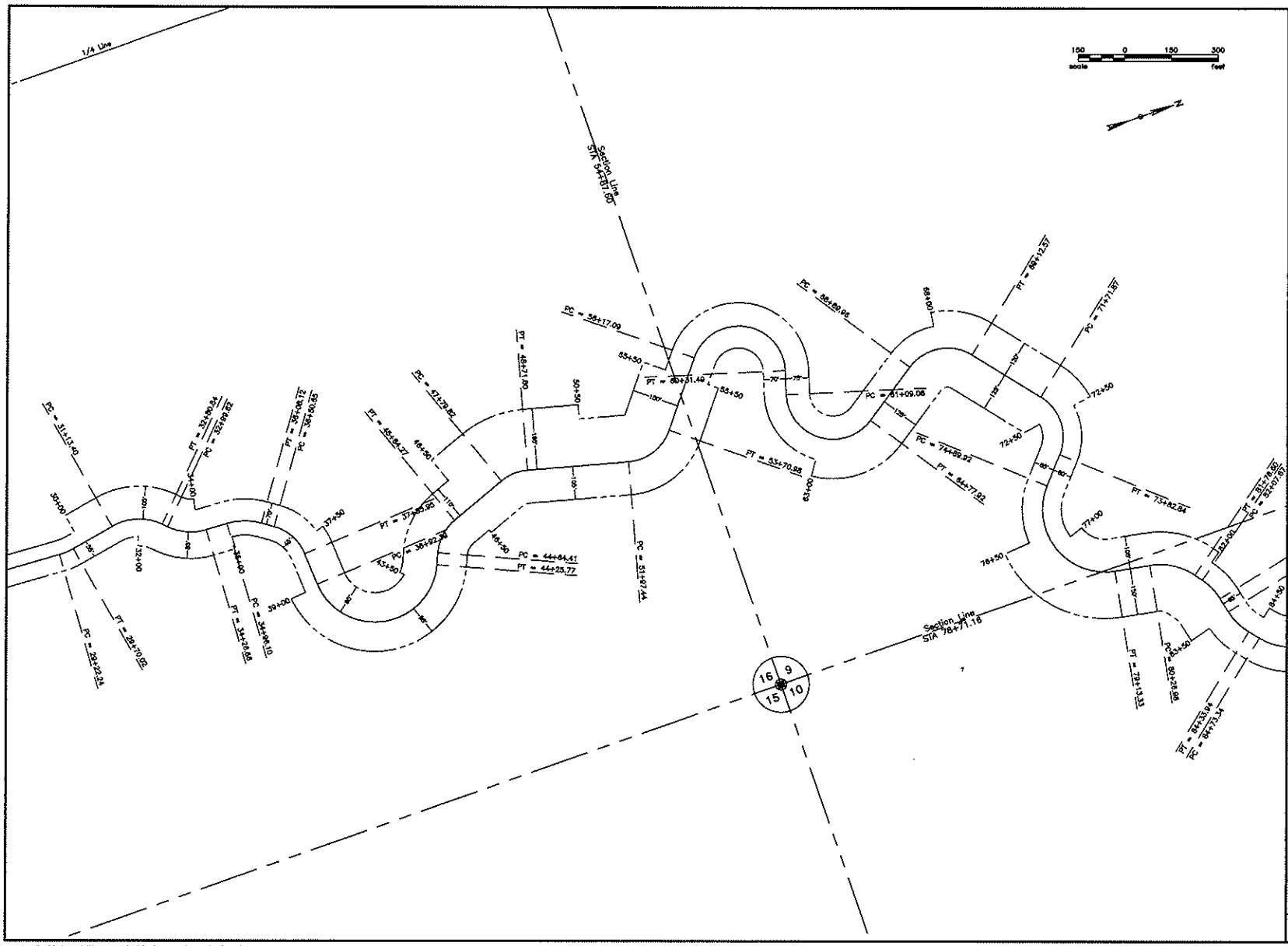
RIGHT-OF-WAY
STA. 0+00 TO 35+00

SHEET NO. 5



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SURVEY COMPLETED USING NAD 83 DATUM
BASIS OF BEARING
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359° 46' 51" AND HEREBY

Drawn By:	JDH
Checked By:	JSR
Project No.	3711700-3711711
Issued:	02-10-2012
Revised:	03-12-2012
Field Book:	GW-261/270

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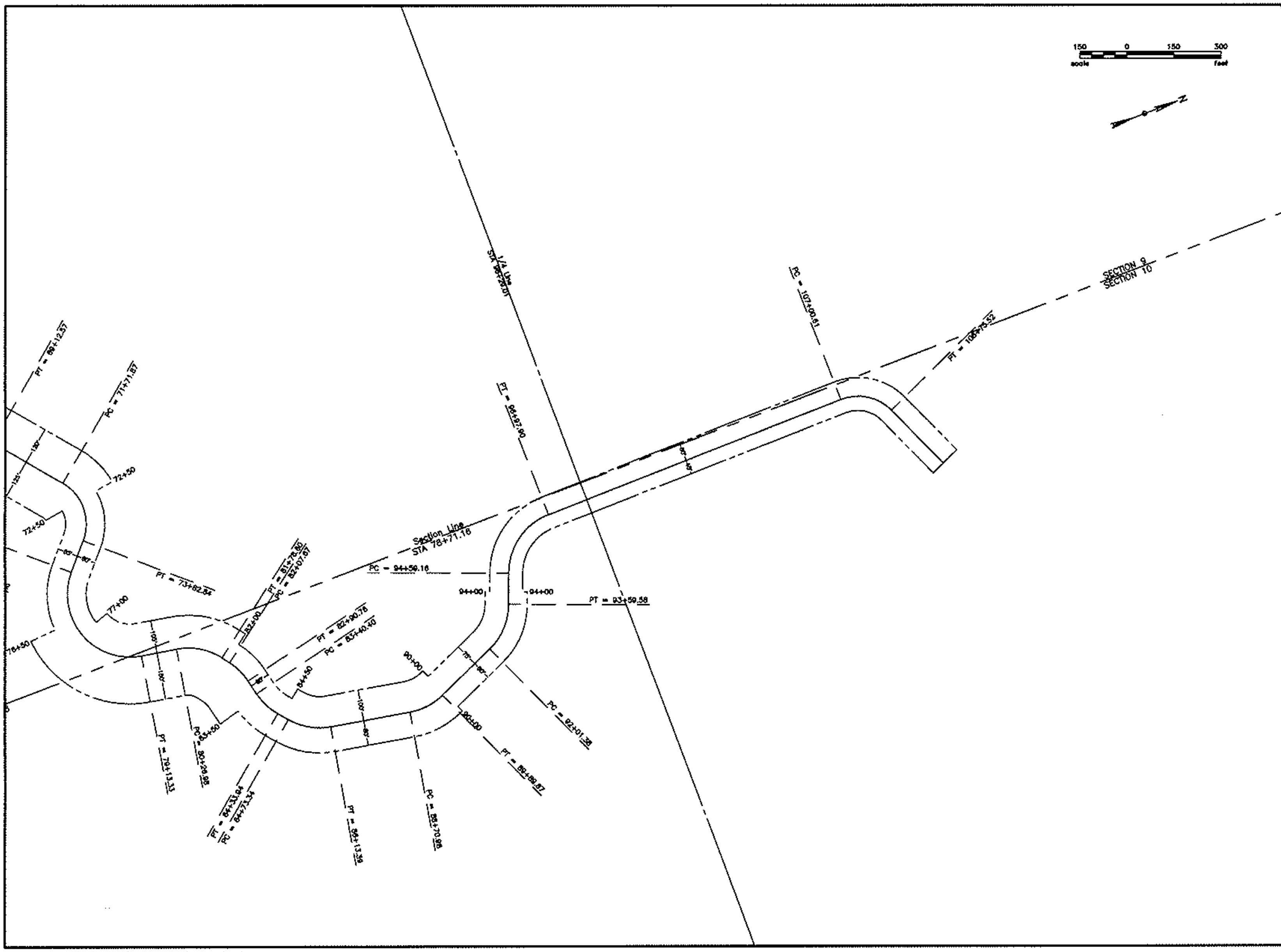
RIGHT-OF-WAY
STA. 35+00 TO 76+00

SHEET NO. 6



Mar 13, 2012 – 9:32am – J:\oilfield\Questar\3711700\CAD\3711700ROW.dwg

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SURVEY COMPLETED USING NAVD 88 DATUM

BASIS OF BEARING:
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359°46'51" AND 2636.92'

Drawn By	ZDP
Checked By:	JSK
Project No	3711700-3711711
Issued	02-10-2012
Revised	03-12-2012
Field Book	OW-261-270

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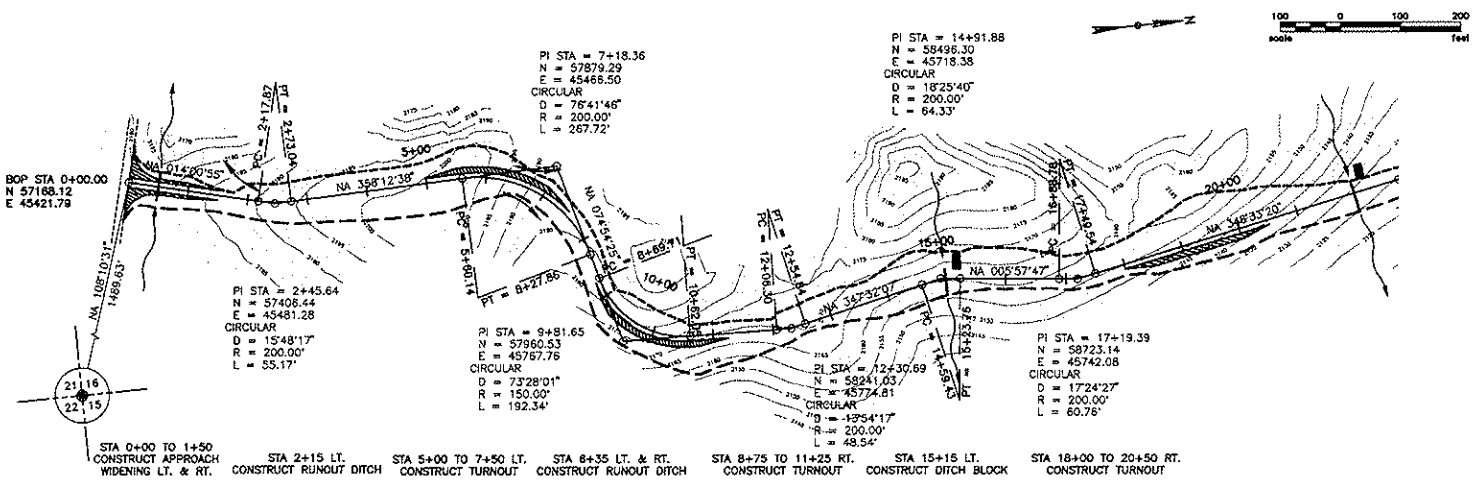
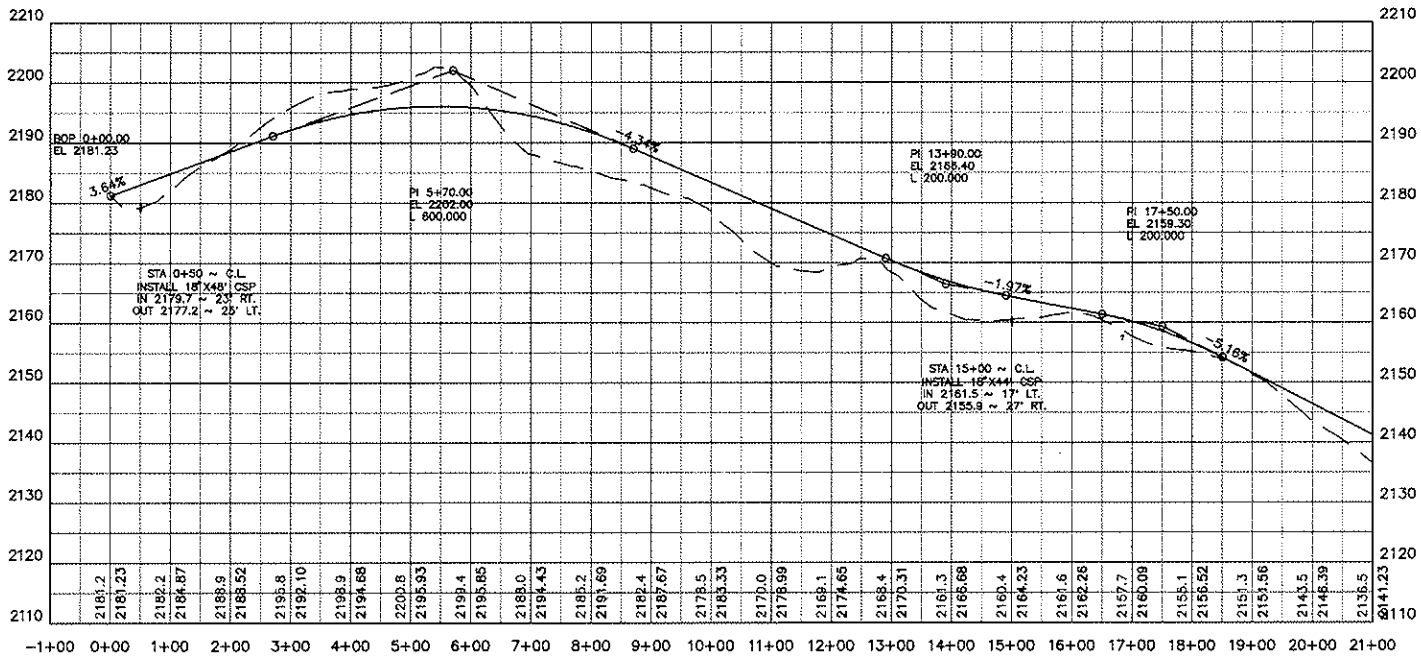
RIGHT-OF-WAY
STA. 76+00 TO 111+11.78

SHEET NO. 7





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SURVEY COMPLETED USING NAVD 88 DATUM

BASIS OF BEARING
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359°46'51" AND 359°46'09"

Drawn By:	ZDH
Checked By:	JSK
Project No.	3711700/3711711
Issued:	02-10-2012
Revised:	03-12-2012
Field Book:	DW-261-270

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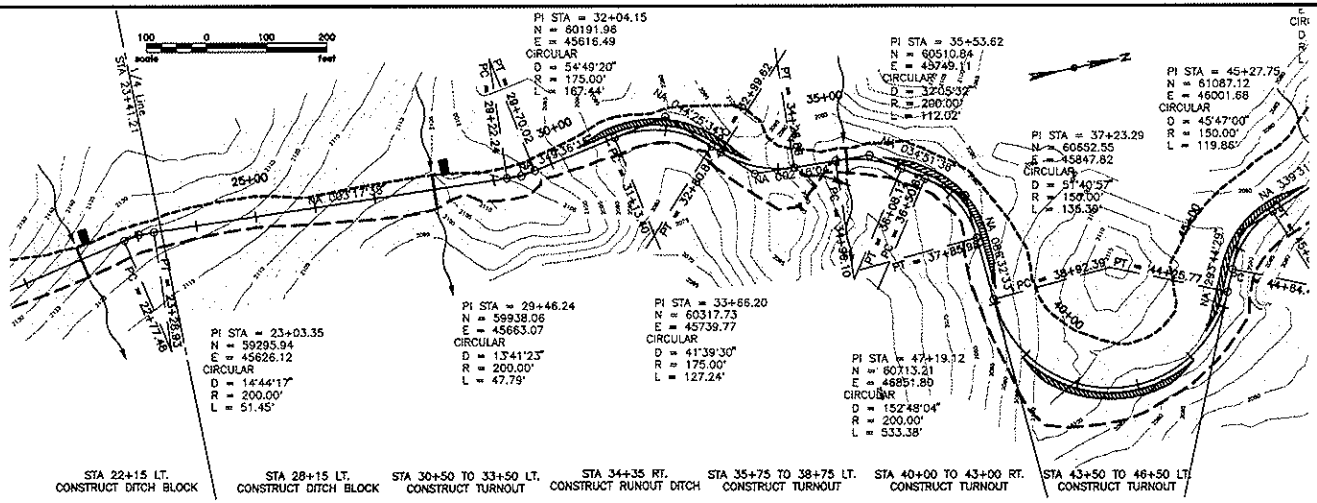
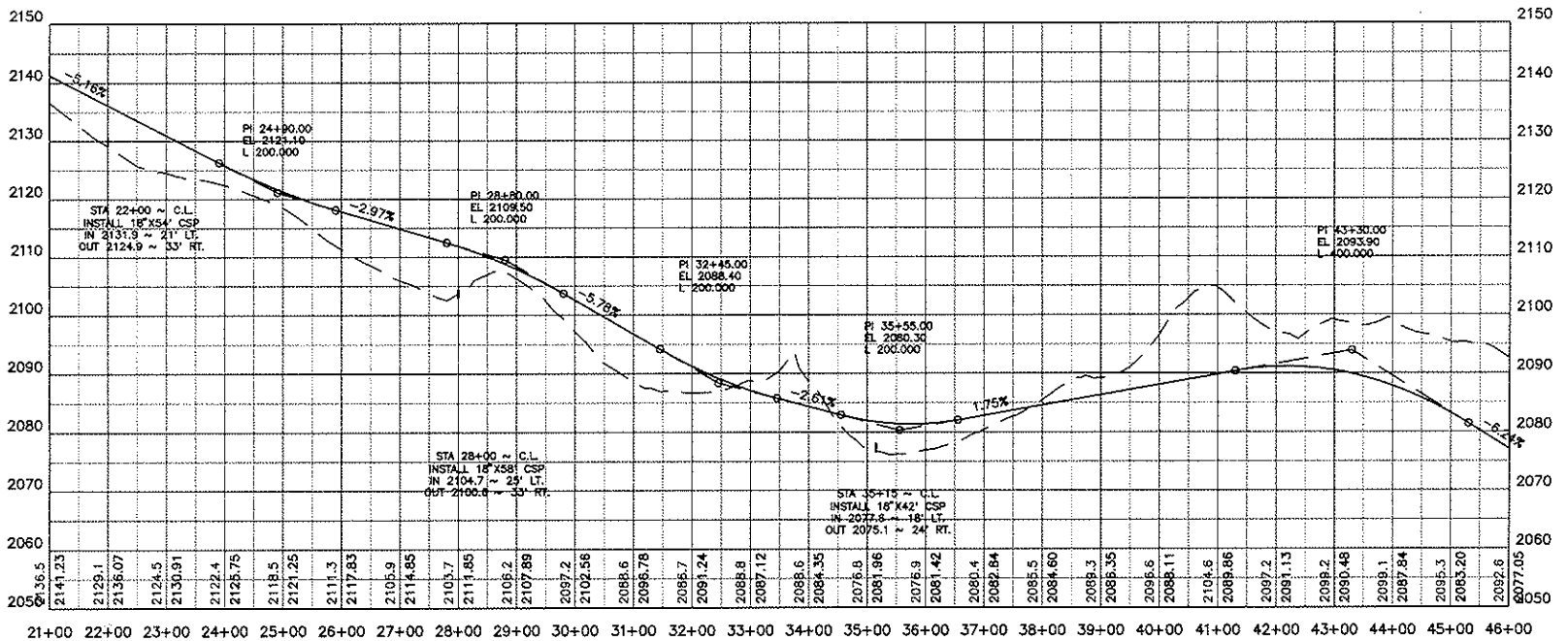
PLAN & PROFILE
STA. 0+00 TO 21+00

SHEET NO. 8

Mar 13, 2012 - 9:11am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg





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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359°46'51" AND DUNN 9.0'

Drawn By:	JDP
Checked By:	JSK
Project No.	3711700-3711711
Issued	02-10-2012
Revised:	03-12-2012
Field Book:	GW(261-270

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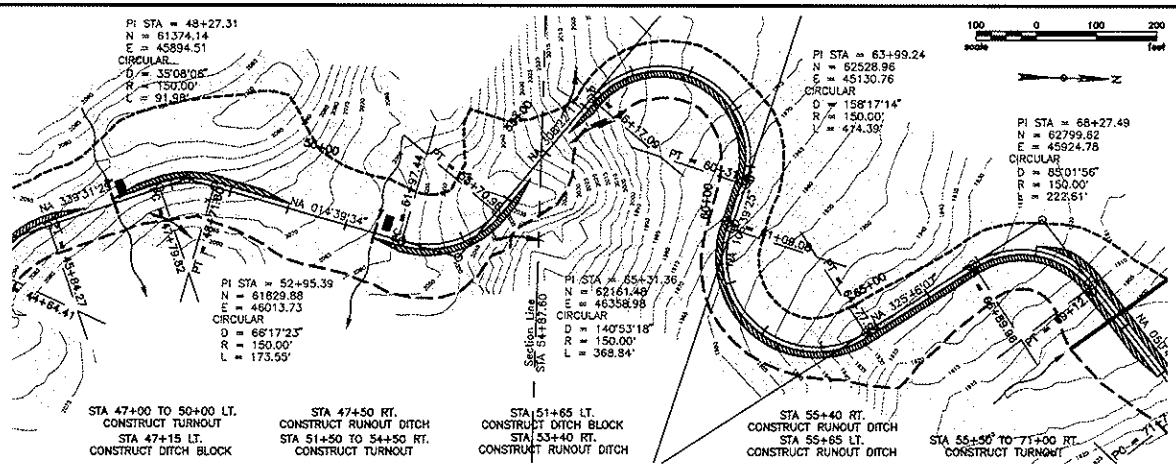
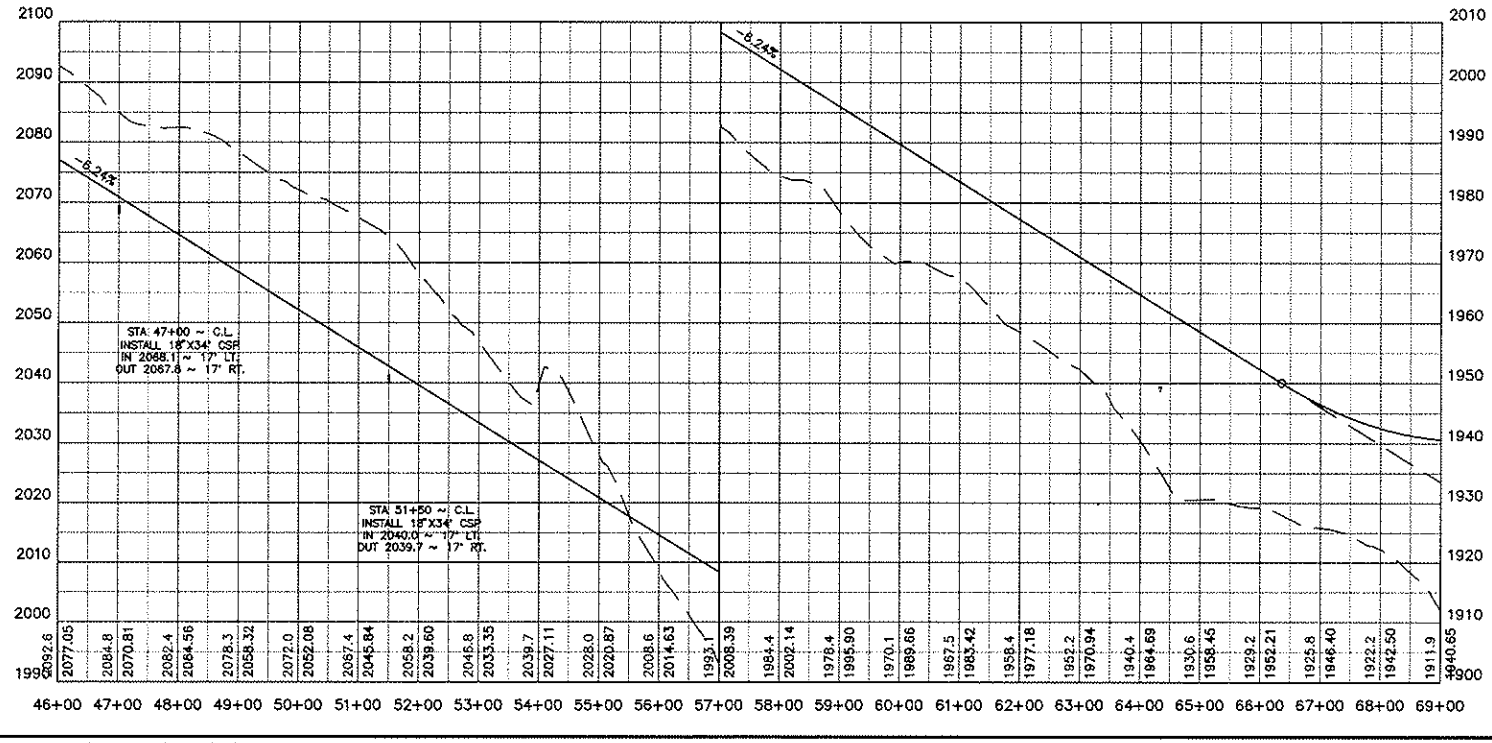
PLAN & PROFILE
STA. 21+00 TO 46+00

SHEET NO. 9

Mar 13, 2012 - 9:12am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg





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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING:
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 16 BEING AN AZIMUTH OF 359°46'51" AND 2636.90'

Drawn By:	ZDH
Checked By:	JSK
Project No.	3711700-3711711
Issued:	02-10-2012
Revised:	03-12-2012
Field Book:	OW 261; 270

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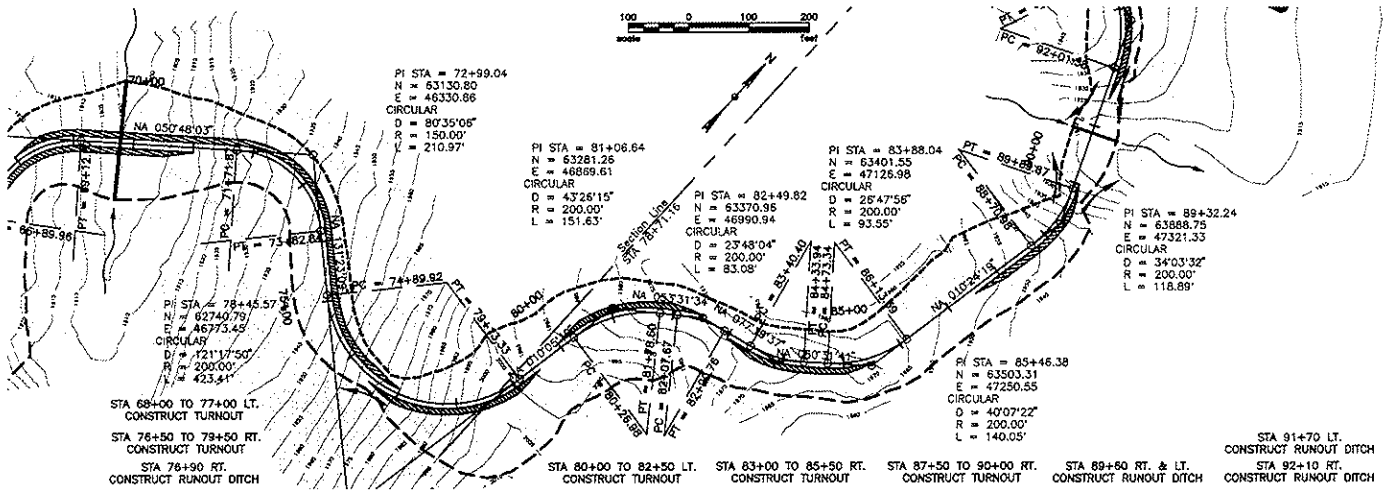
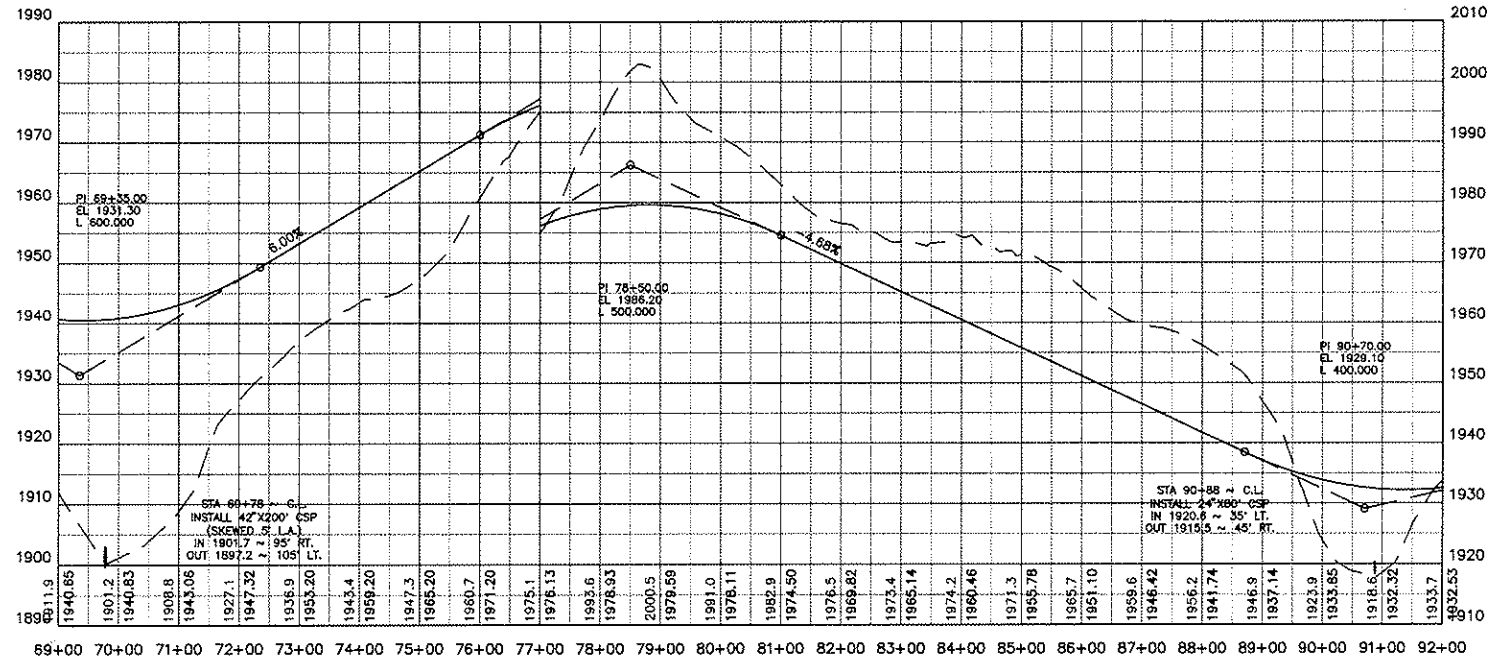
PLAN & PROFILE
STA. 46+00 TO 69+00

SHEET NO. 10

Mar 13, 2012 - 9:12am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg





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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359°40'51" AND 2639.90'

Drawn By:	ZDH
Checked By:	JSK
Project No.	3711700-3711711
Issued:	02-10-2012
Revised:	03-12-2012
Field Book:	DW-261-270

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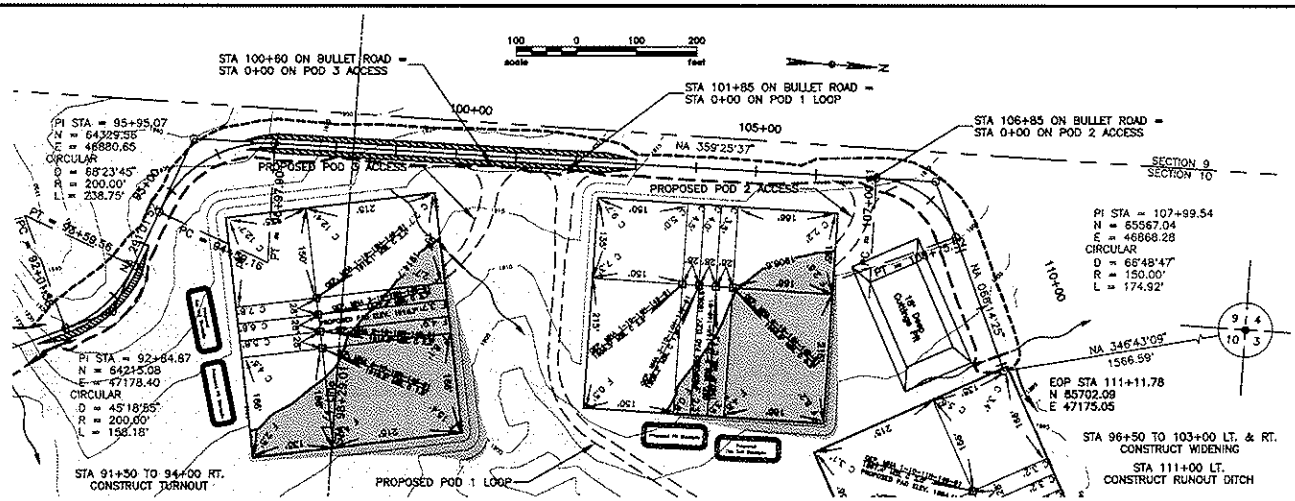
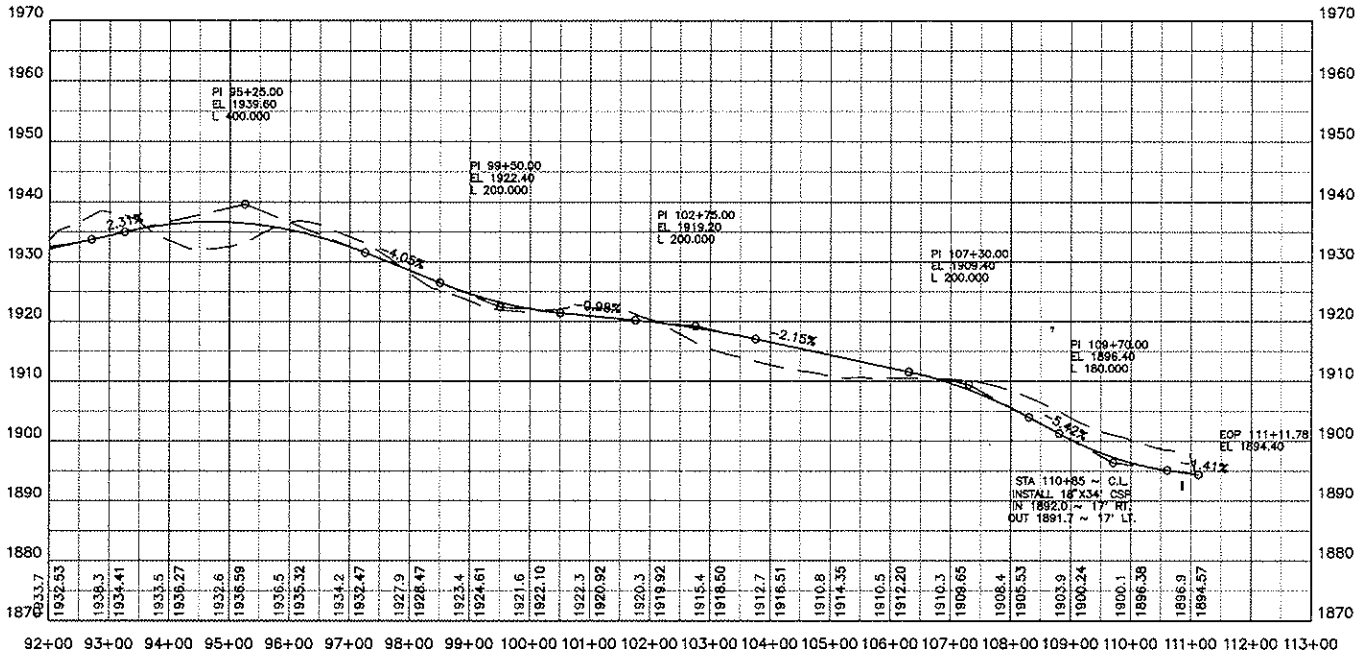
PLAN & PROFILE
STA. 69+00 TO 92+00

SHEET NO. 11

Mar 13, 2012 - 9:13am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg





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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING:
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359°48'51" AND 2,639.91'

Drawn By	JDH
Checked By:	JSK
Project No.	3711709-3711711
Issued	02-10-2012
Revised:	03-12-2012
Field Book:	OW-261-270

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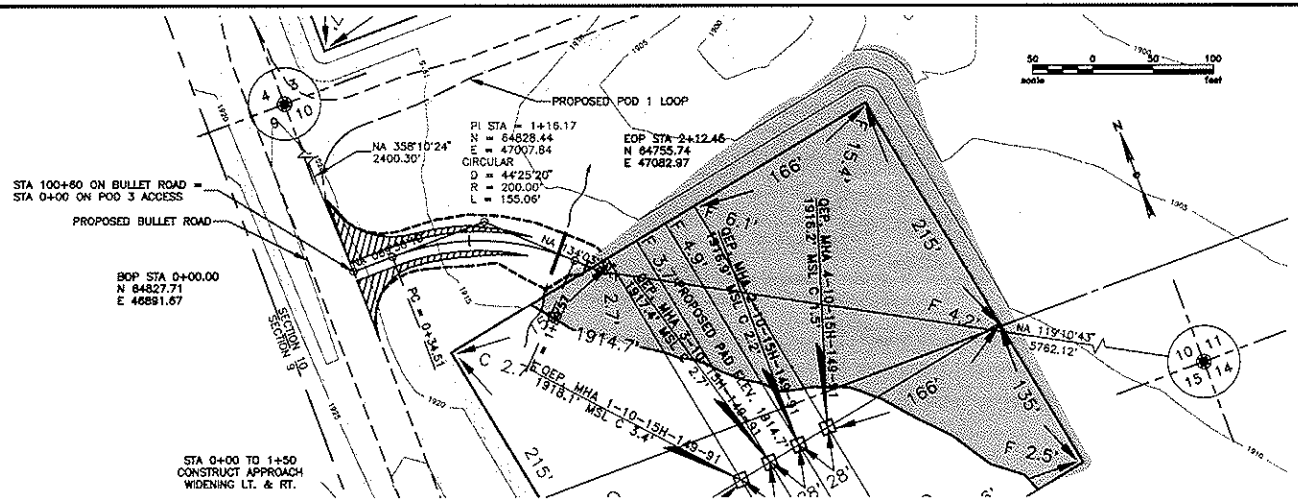
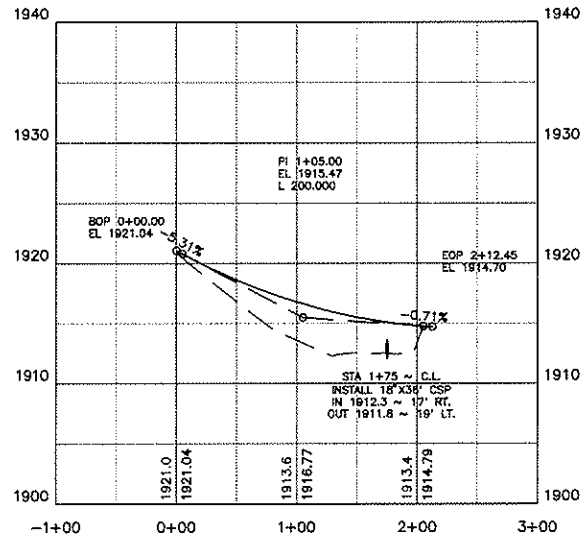
STA. 92+00 TO 111+11.78

SHEET NO. 12

Mar 13, 2012 - 9:13am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg





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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING:
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 159° 40' 51" AND 3938.91'

Drawn By:	ZDH
Checked By:	JSK
Project No.	3711700-3711711
Issued:	02-29-2012
Revised:	03-12-2012
Field Book:	GW-251, 270

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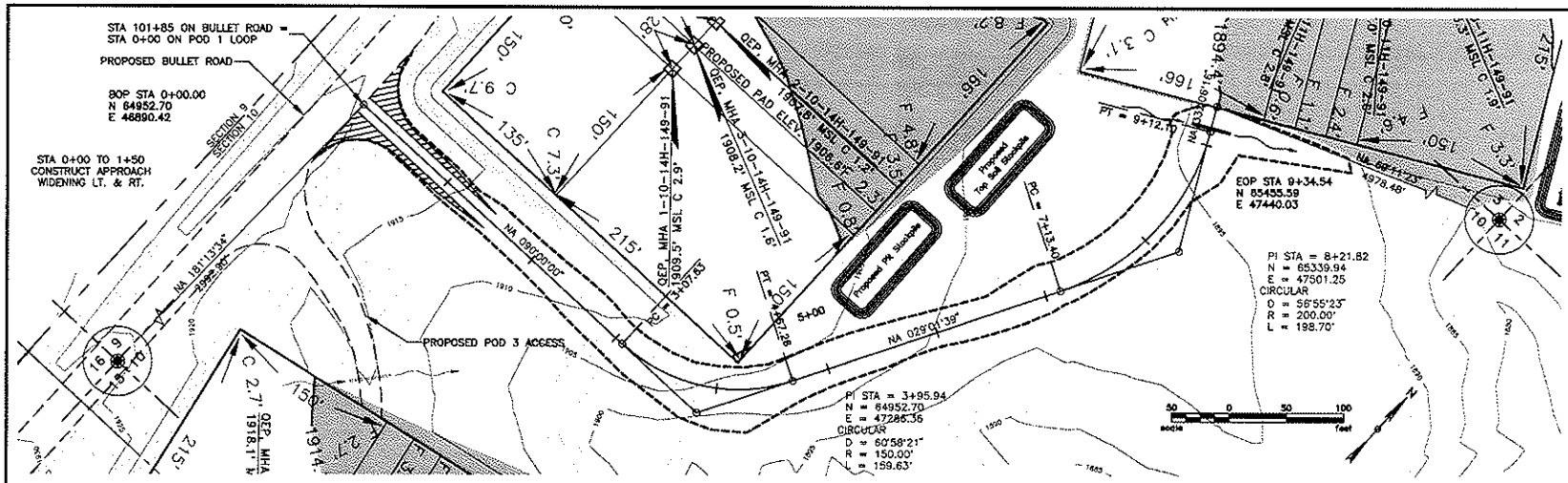
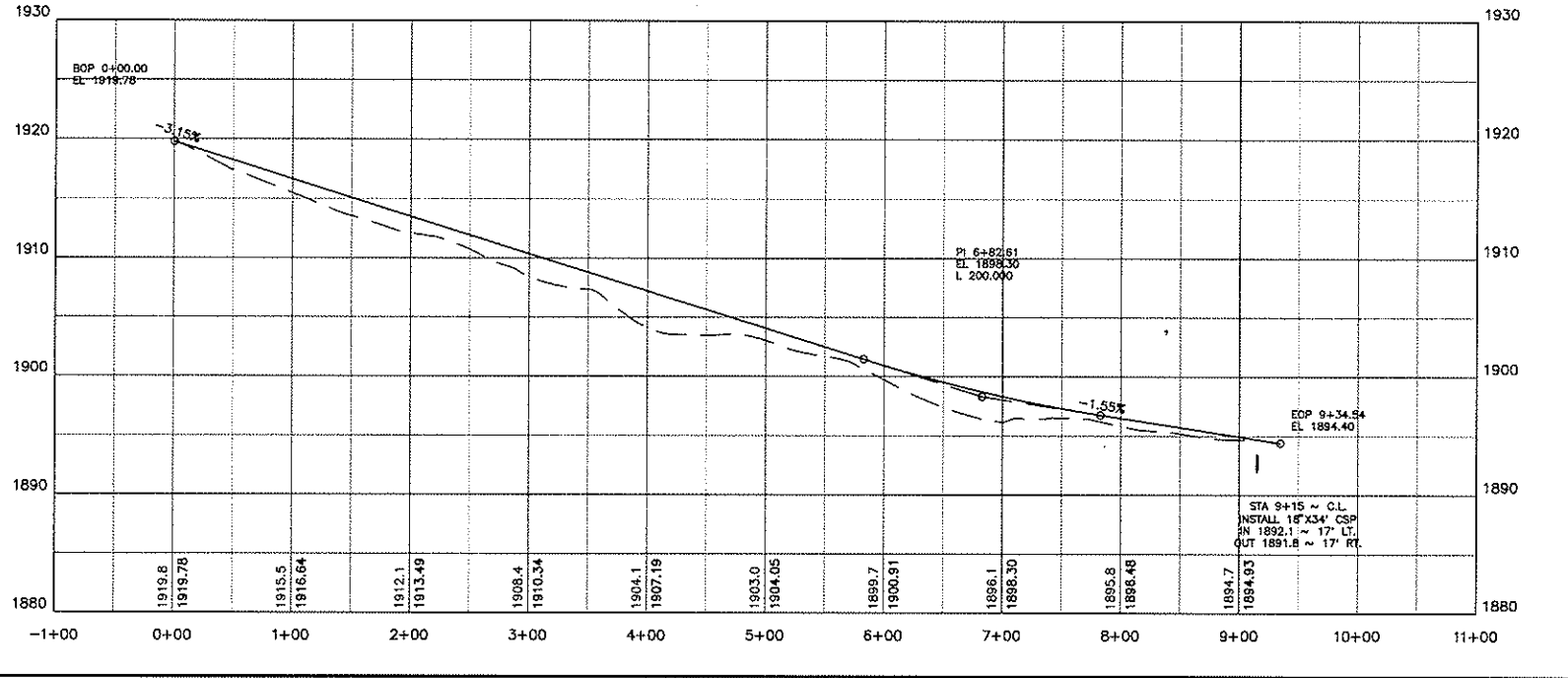
PLAN & PROFILE
STA. 0+00 TO 2+12.45

SHEET NO. 13

Mar 13, 2012 - 9:14am - J:\oilfield\Questar\3711700\CAD\3711700BAS03_SOUTH.dwg





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SURVEY COMPLETED USING NAVD 88 DATUM

BASIS OF BEARING
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359°46'51" AND BEARS N

Drawn By:	JDH
Checked By:	JSK
Project No:	371-1700-37-11711
Issued:	02-10-2012
Revised:	03-12-2012
Field Book:	GW-261, 270

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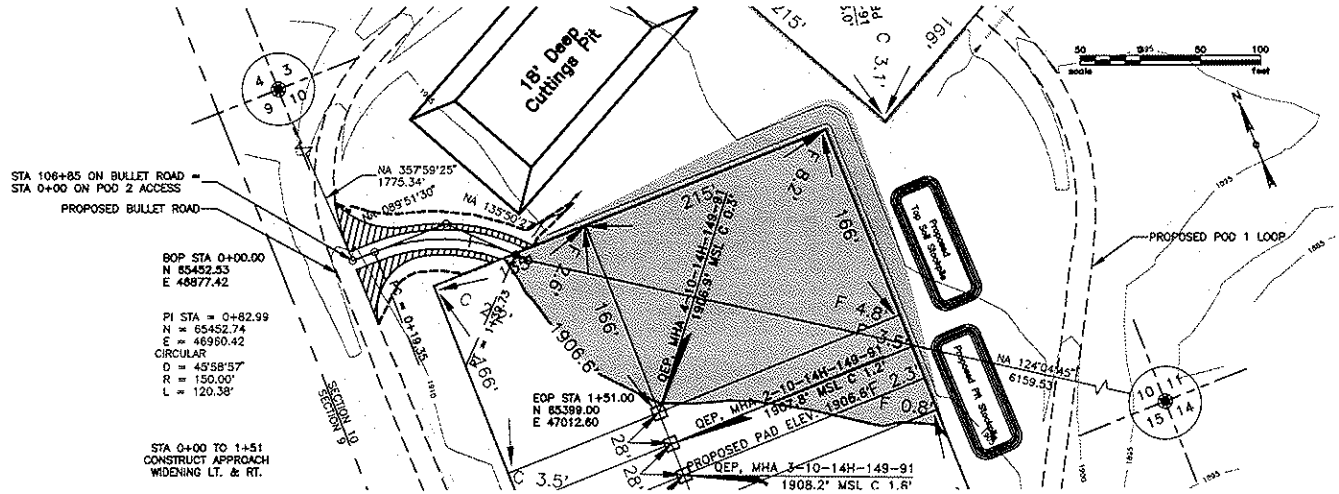
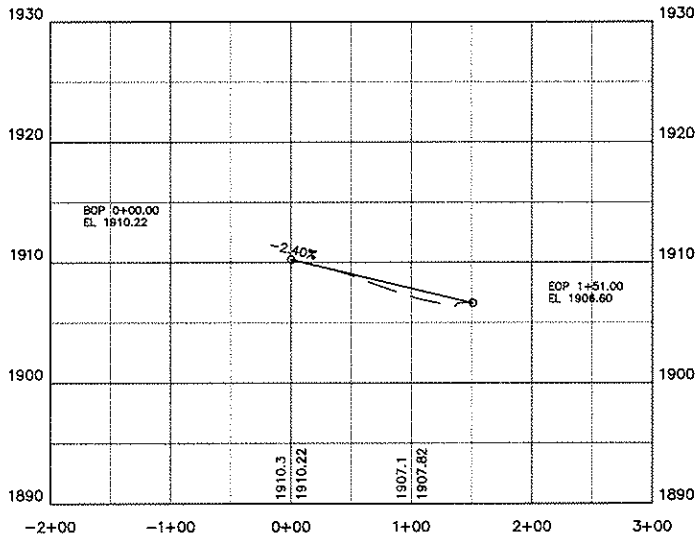
PLAN & PROFILE
STA. 0+00 TO 9+34.54

SHEET NO. 14

Mar 13, 2012 - 9:15am - J:\oilfield\Questar\3711700\CAD\3711700BAS03_Loop.dwg





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SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING
EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 10 BEING AN AZIMUTH OF 359° 46' 51" AND DENOTED

Drawn By:	ZDH
Checked By:	JSK
Project No.	3711700/3711711
Issued	02-10-2012
Revised:	03-12-2012
Field Book:	GW-261, 270

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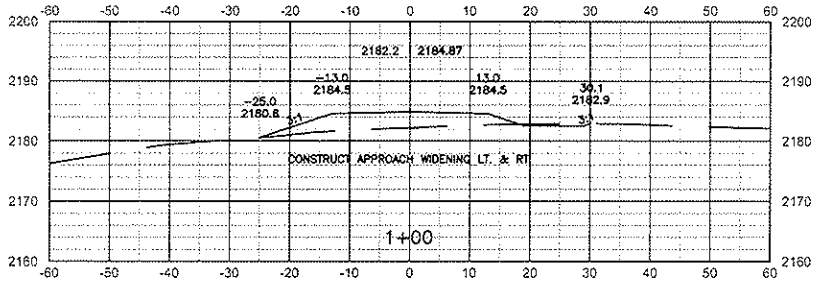
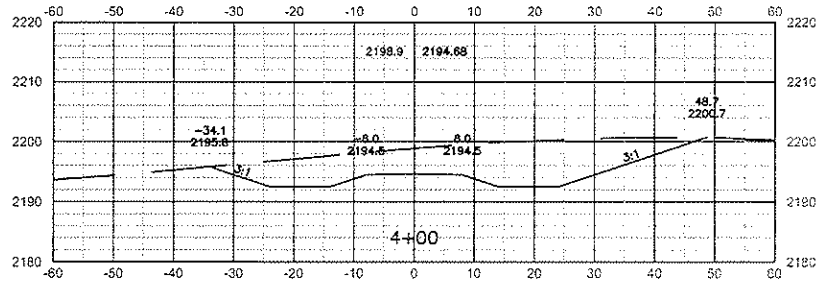
STA. 0+00 TO 1+51.00

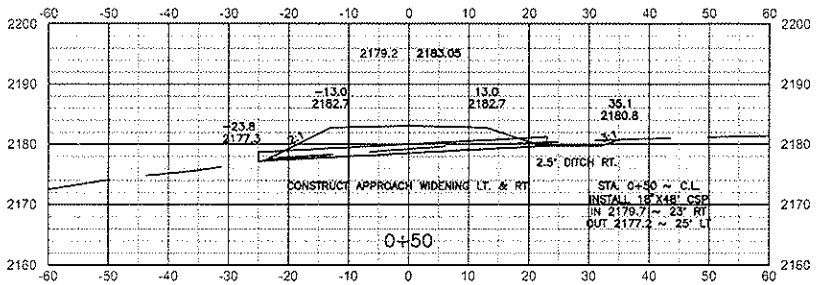
SHEET NO. 15

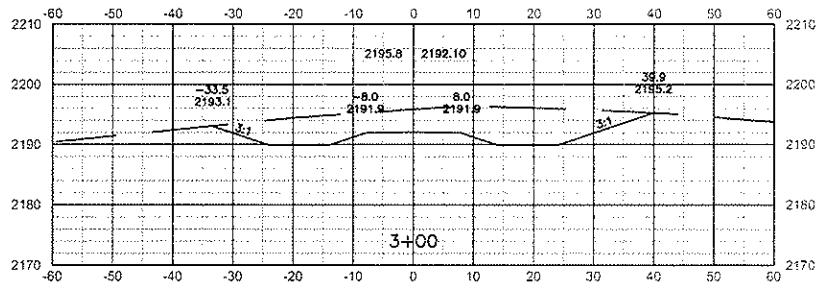
Mar 13, 2012 - 9:17am - J:\oilfield\Questar\3711700\CAD\3711700BAS03_MD.dwg

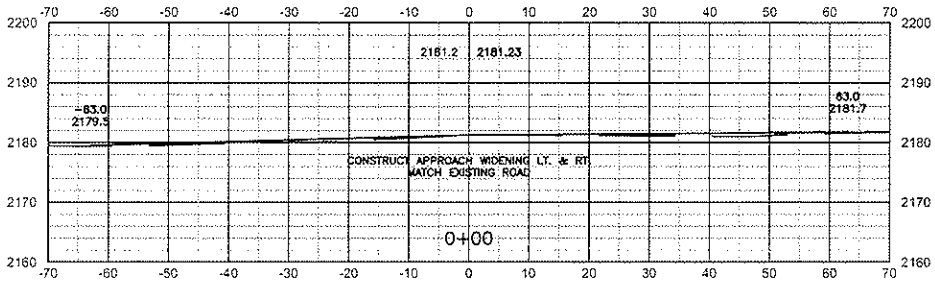
CROSS SECTIONS

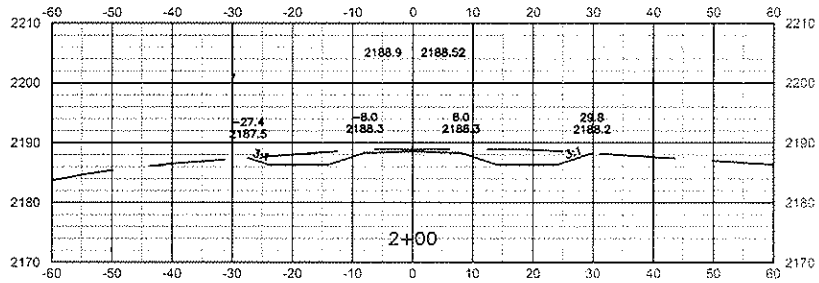






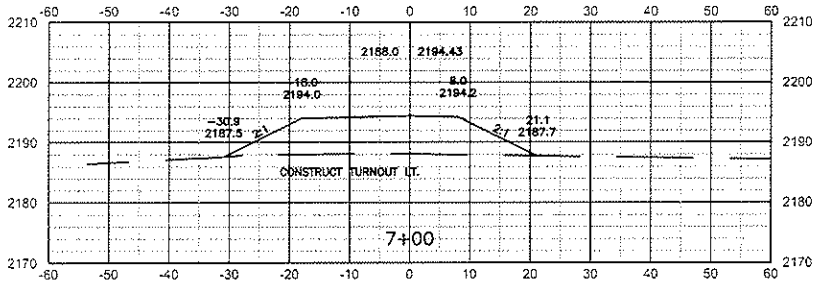


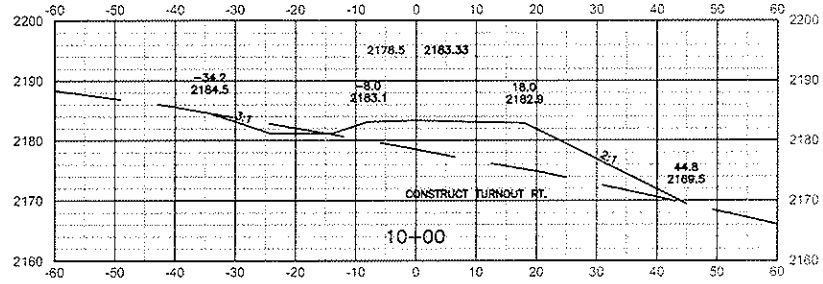


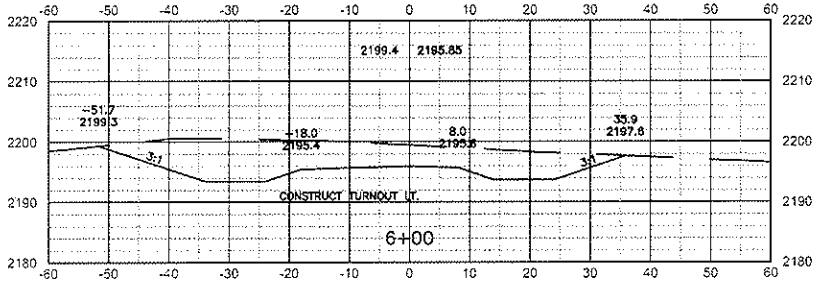


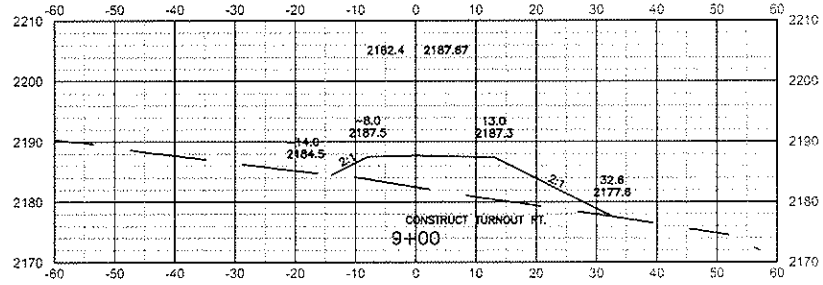
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	16

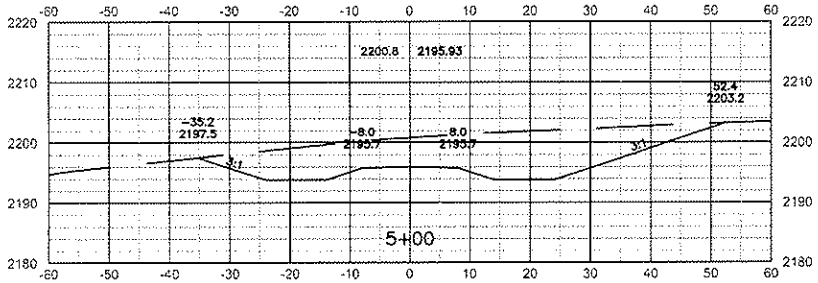
CROSS SECTIONS

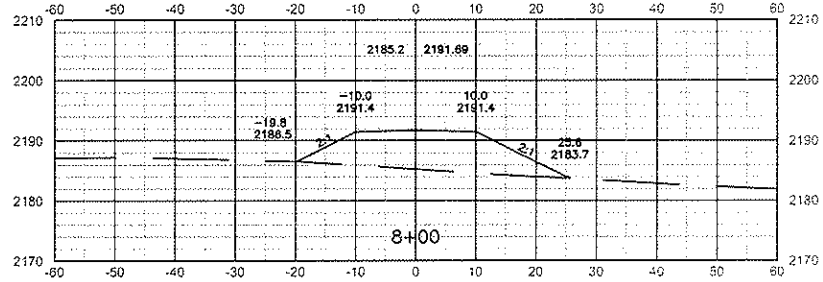






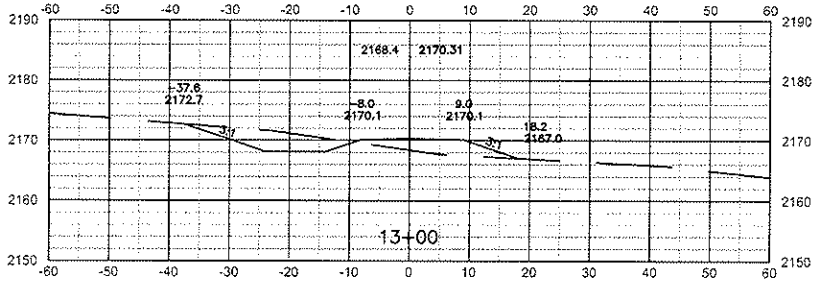


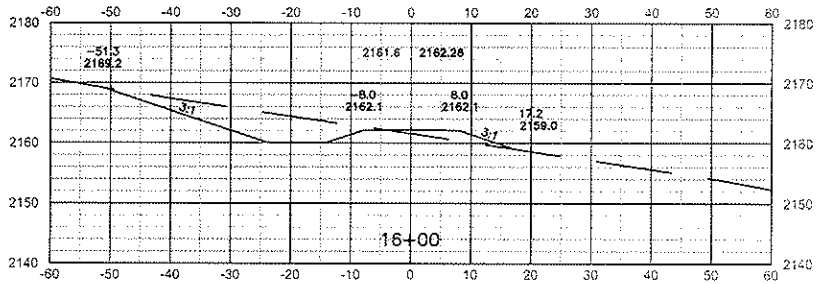


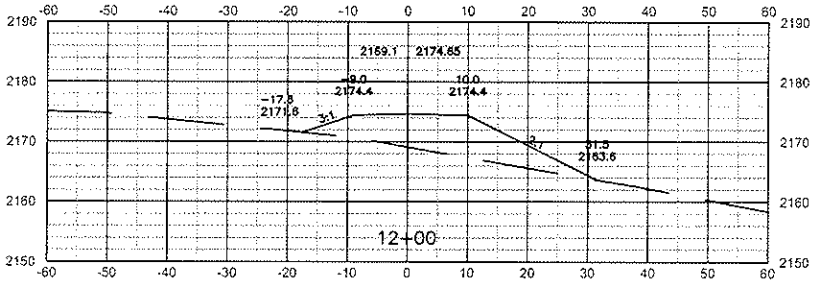


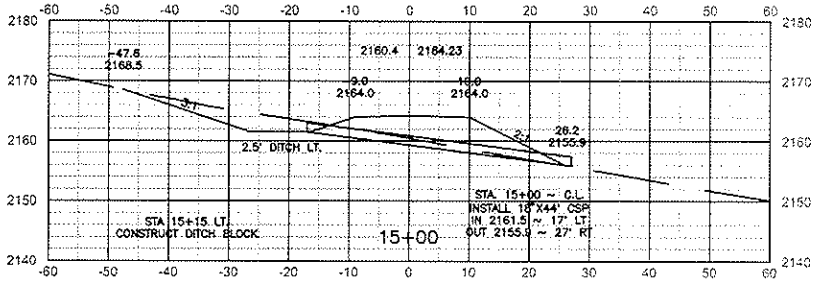
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	17

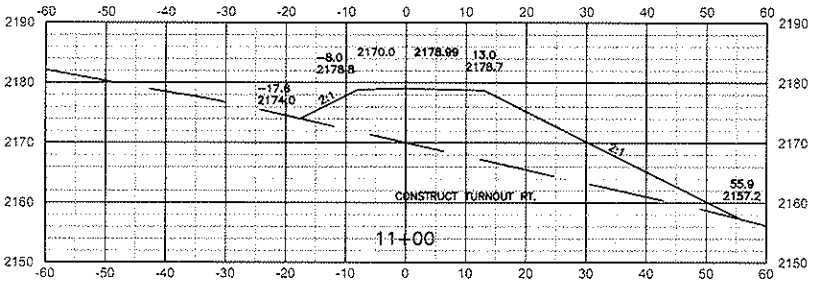
CROSS SECTIONS

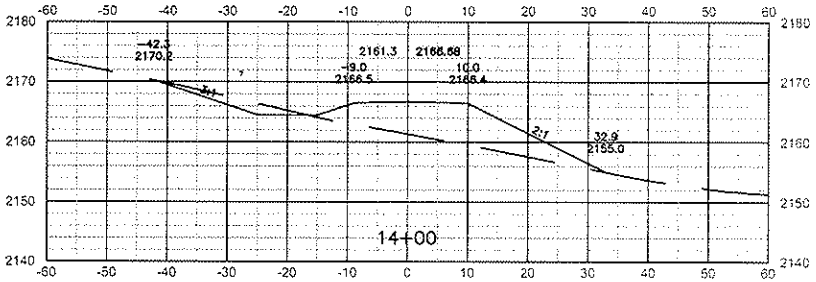












STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	18

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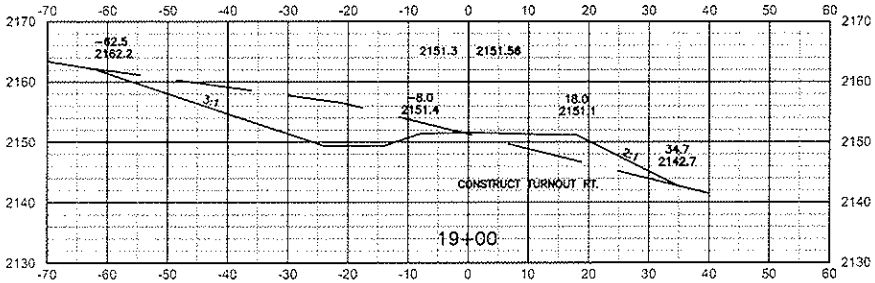
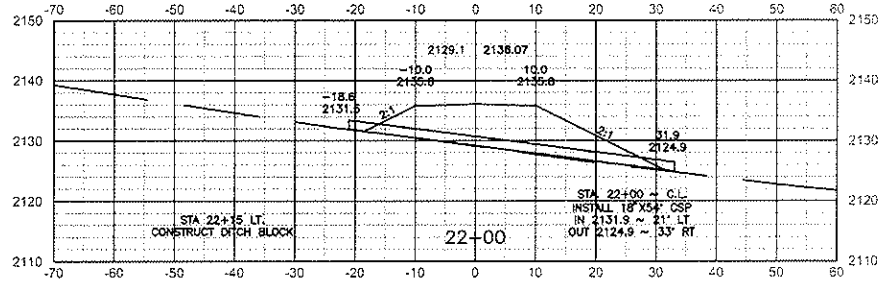
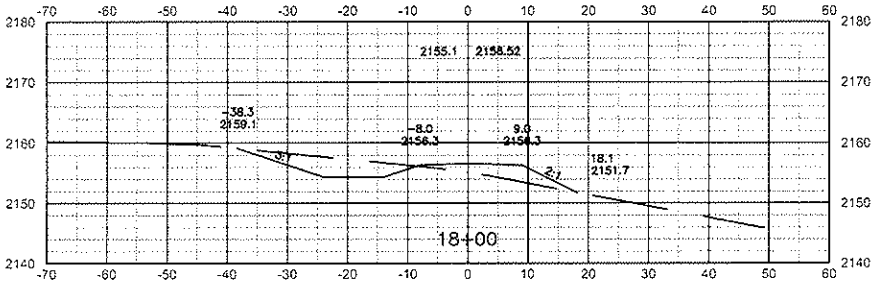
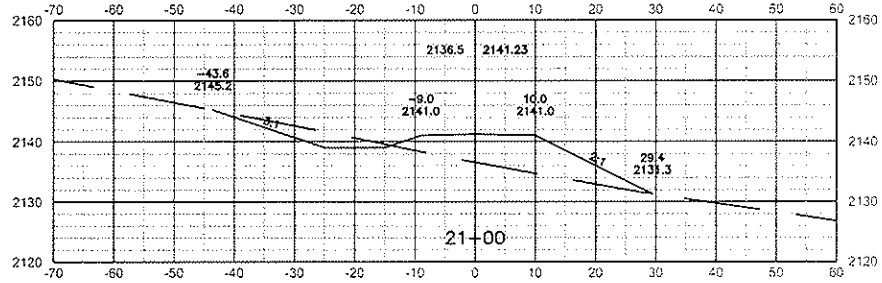
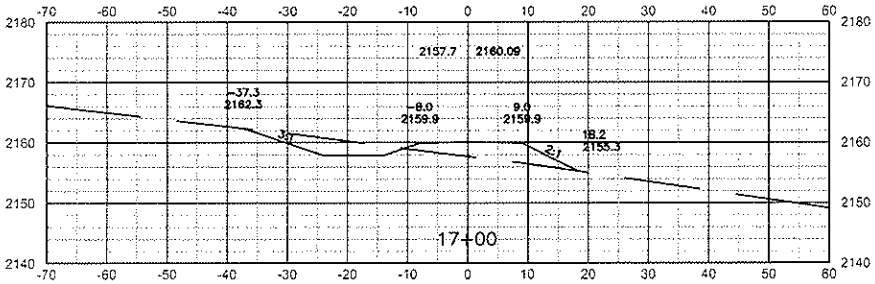
CROSS SECTIONS

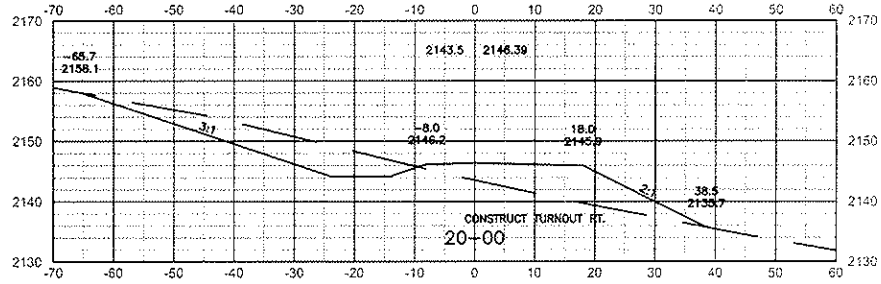






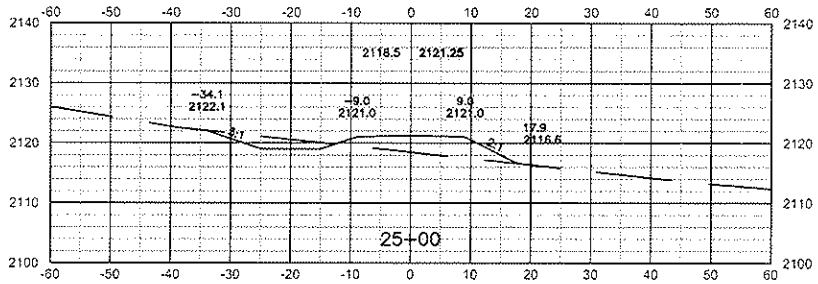


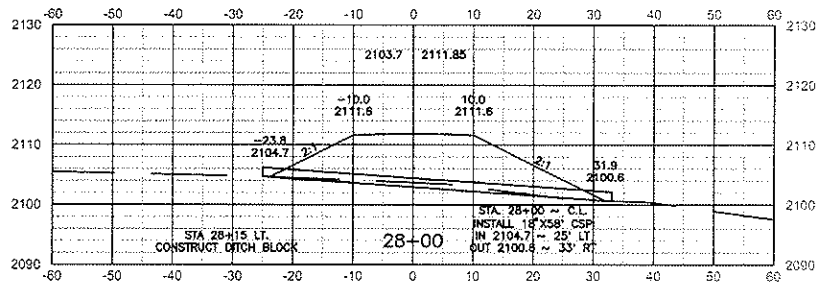


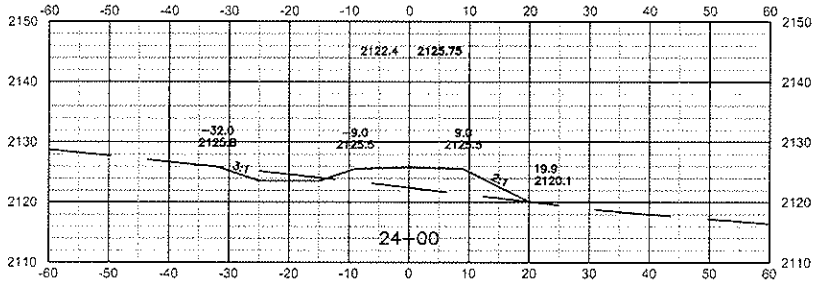


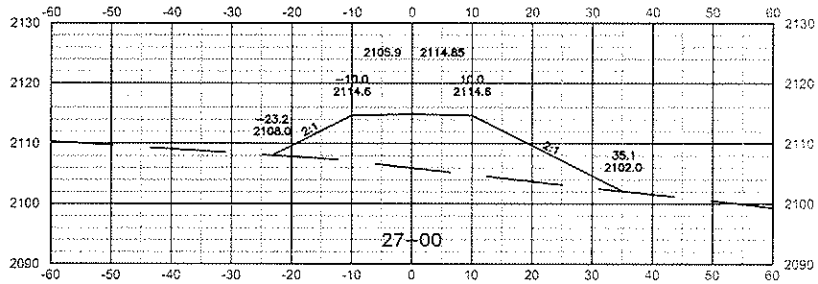
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	19

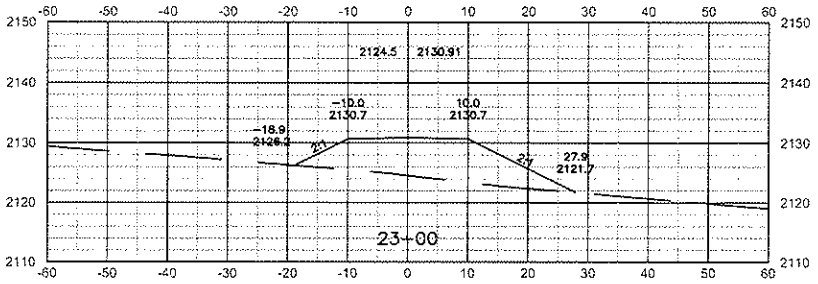
CROSS SECTIONS

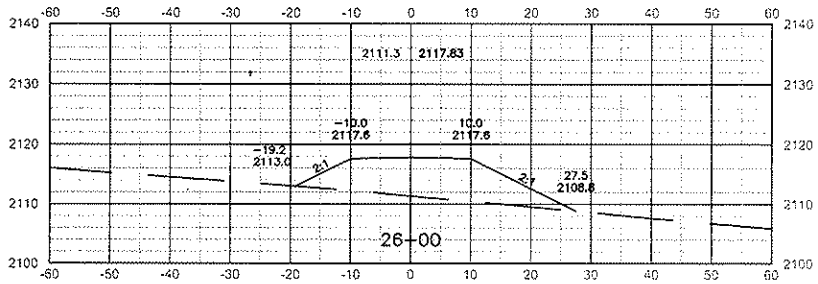






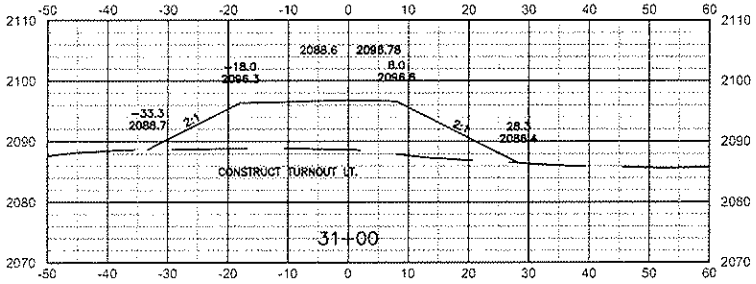


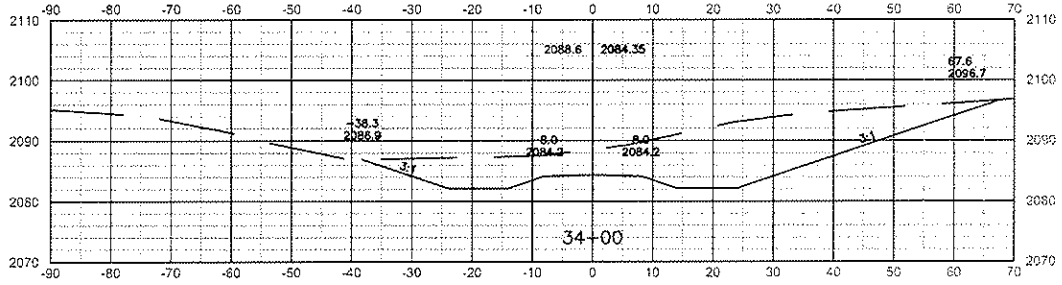


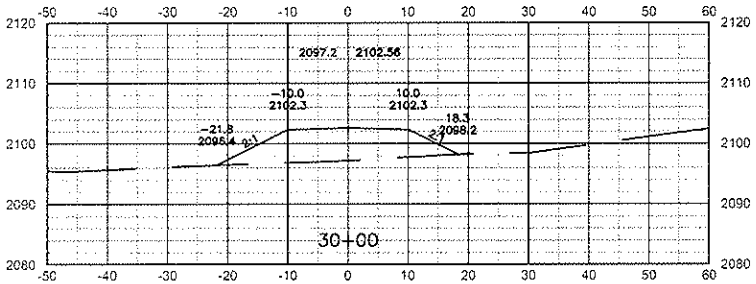


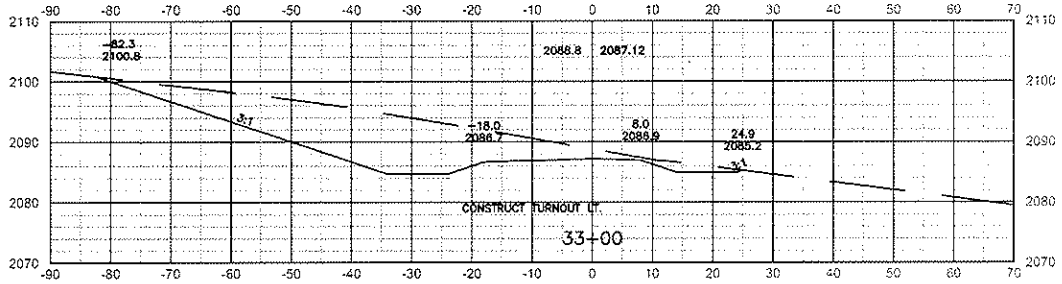
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	20

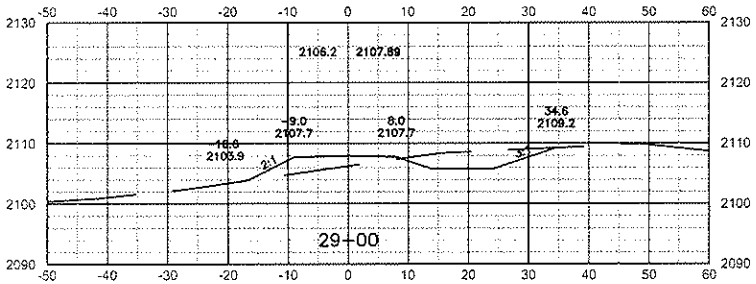
CROSS SECTIONS

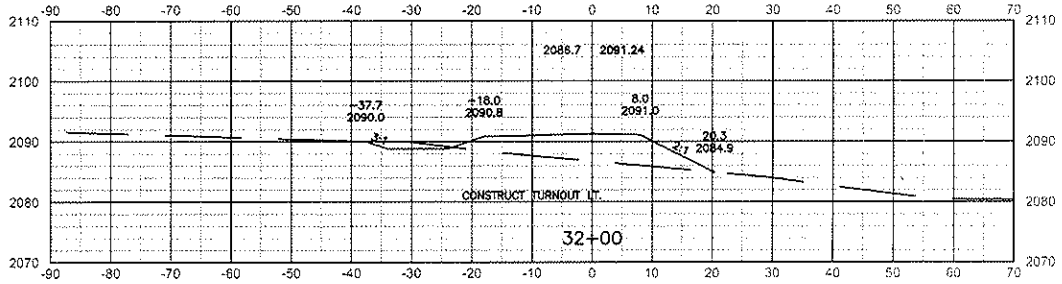












STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	21

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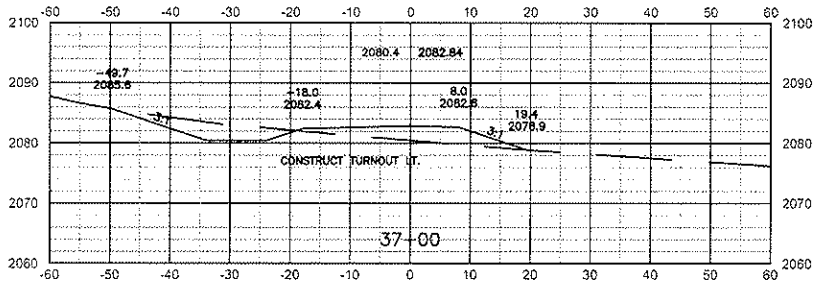
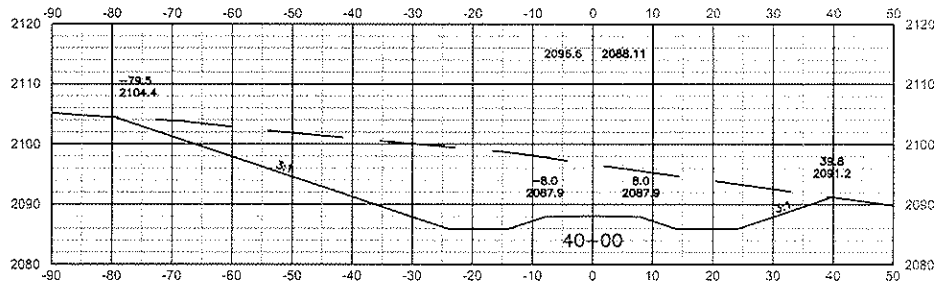
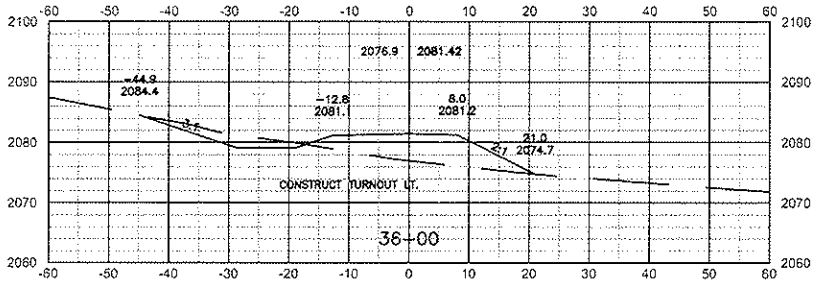
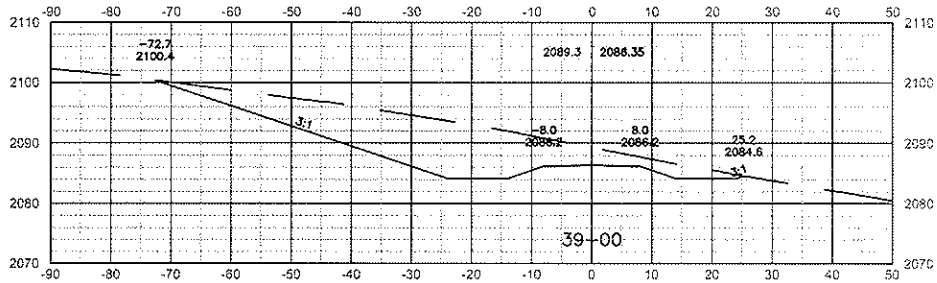
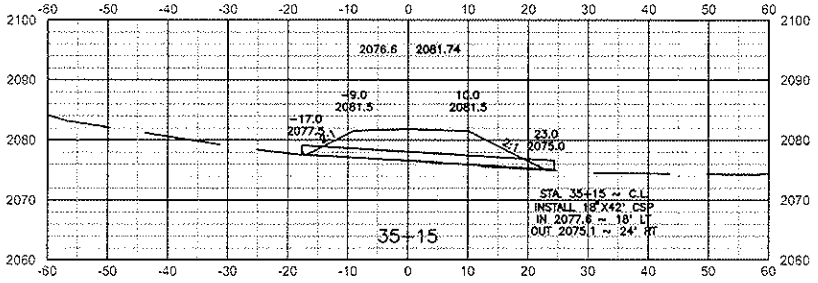
CROSS SECTIONS

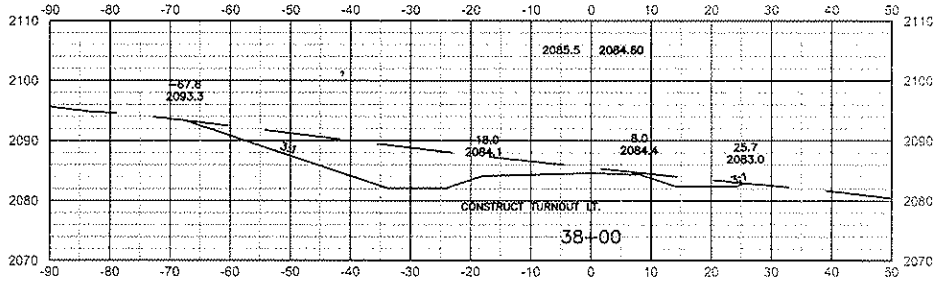






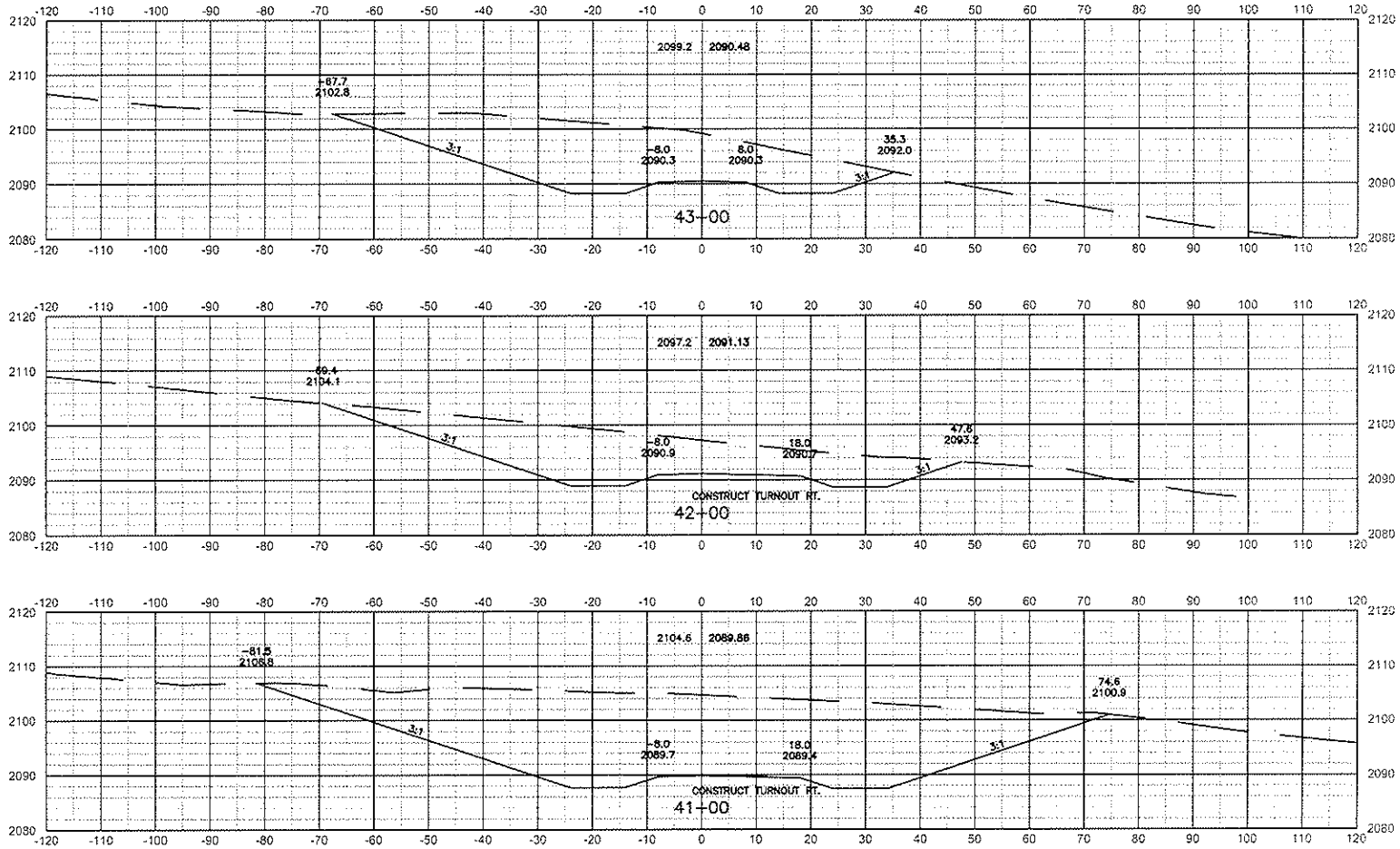






STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	22

CROSS SECTIONS



STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	23

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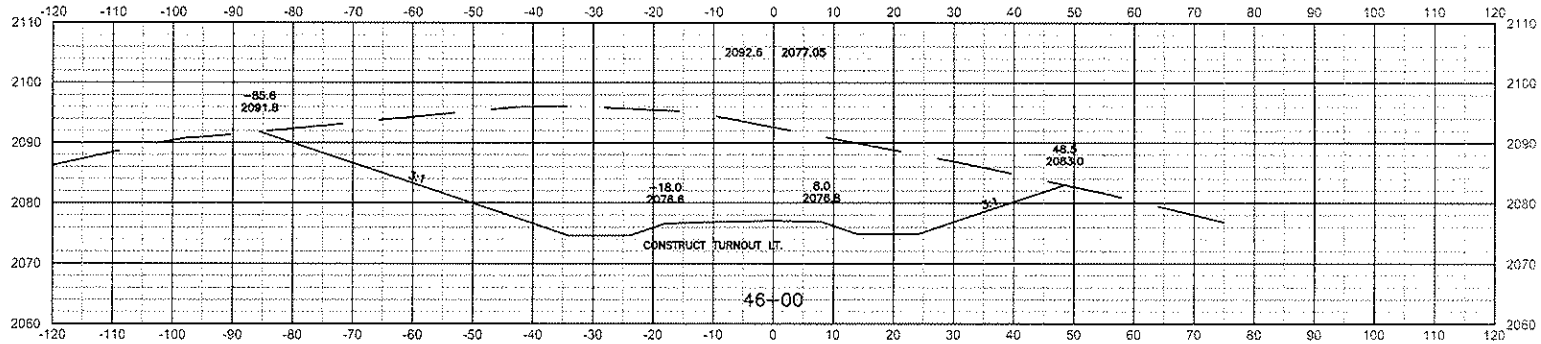
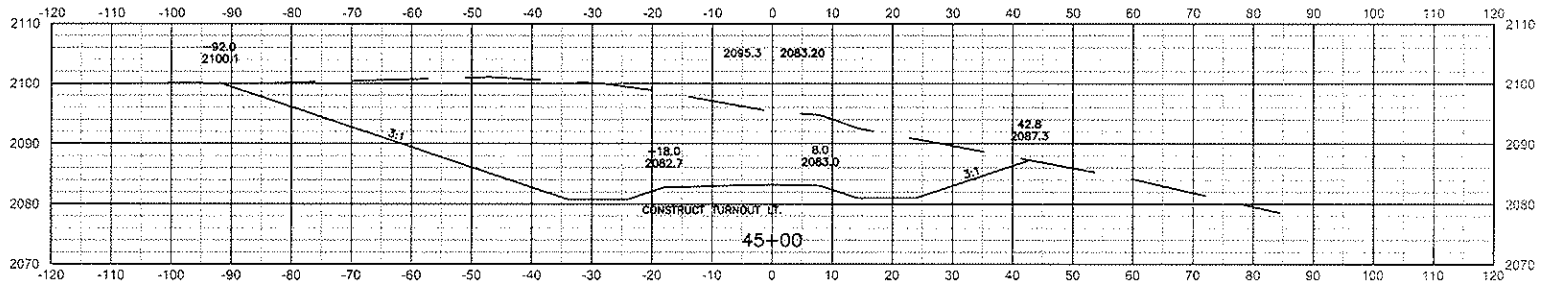
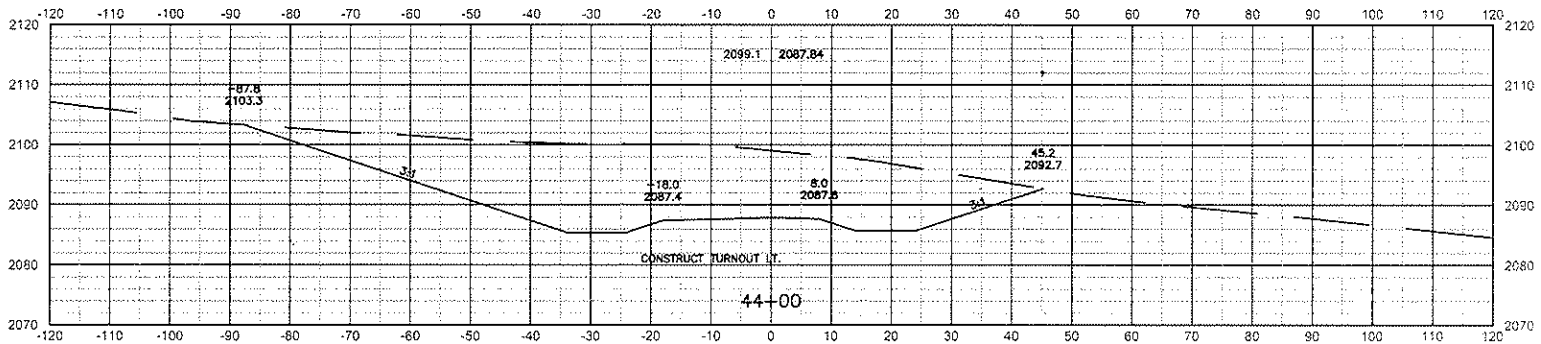
CROSS SECTIONS

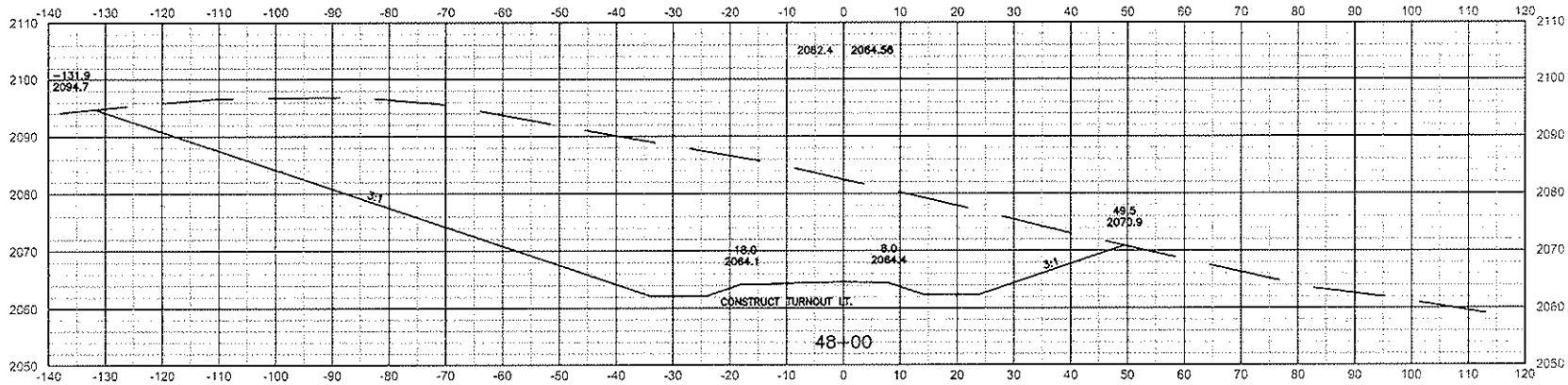


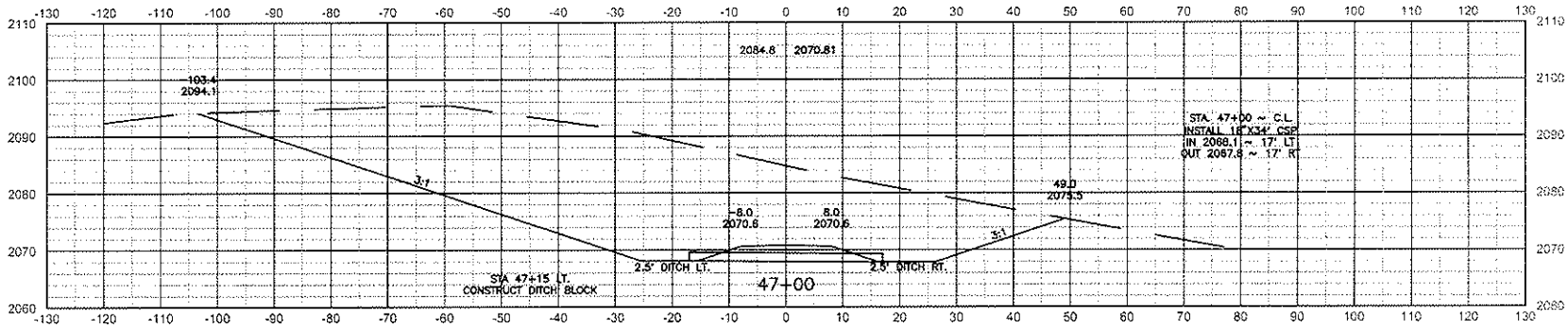




STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	24

CROSS SECTIONS





STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	25

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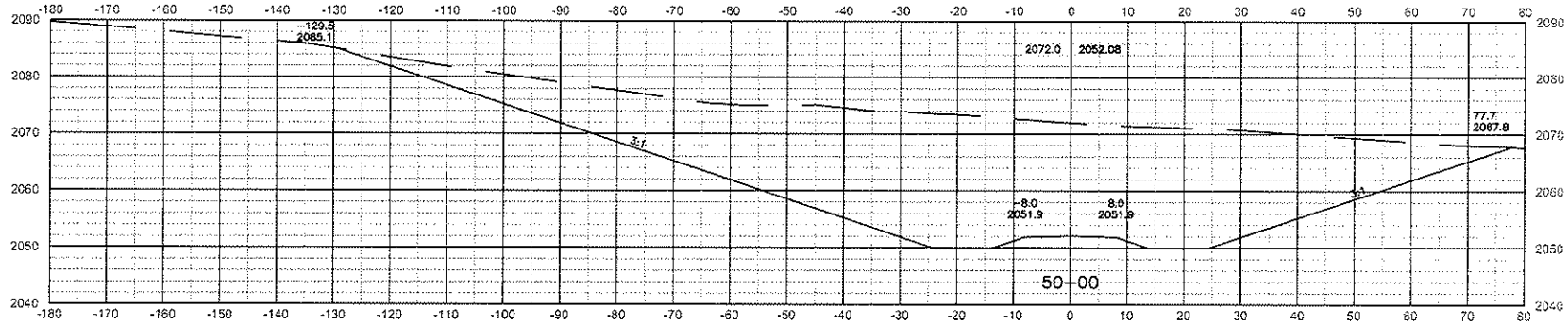
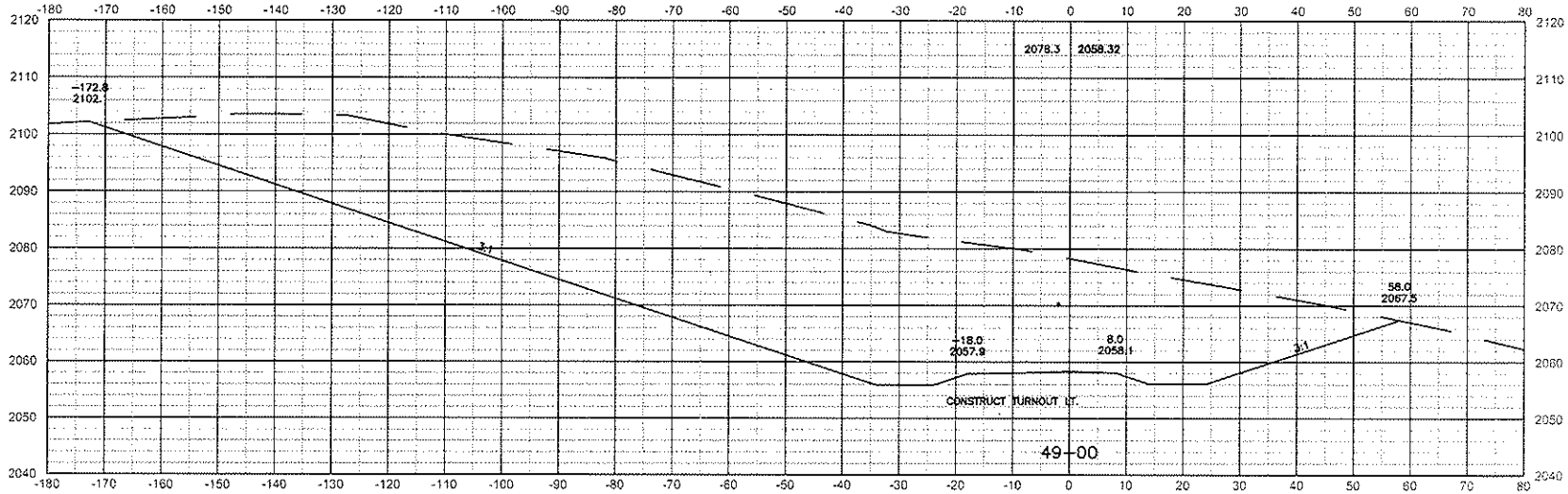
CROSS SECTIONS





STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	26

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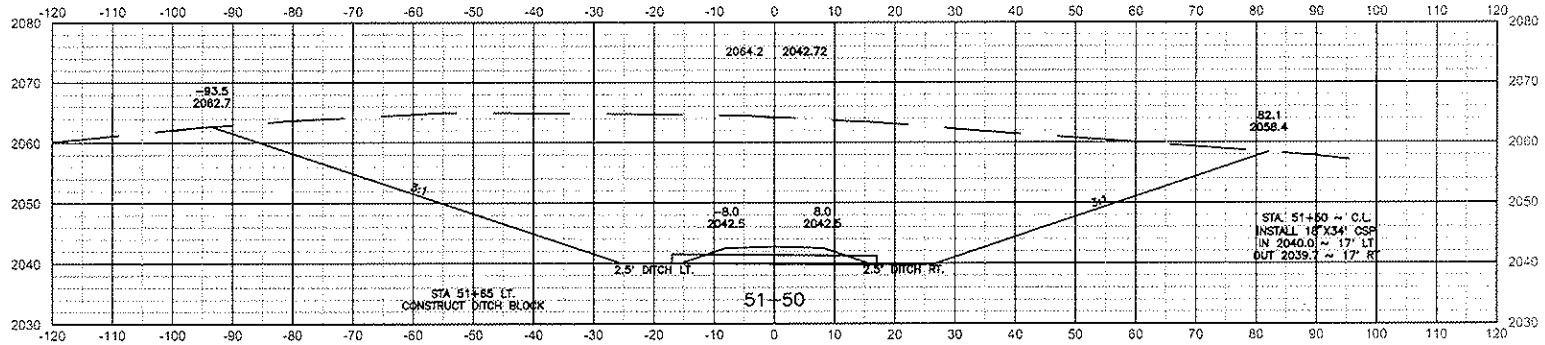
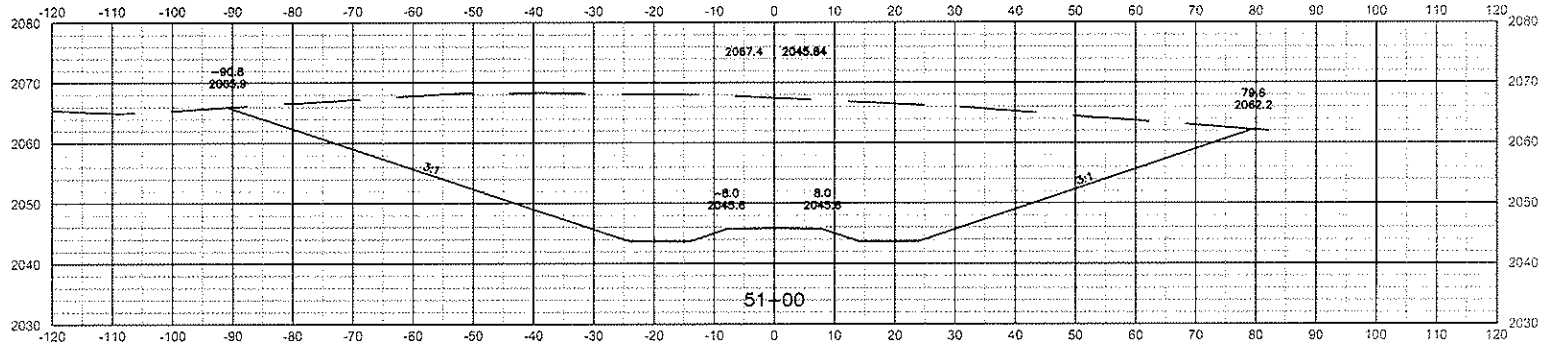
CROSS SECTIONS





STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	27

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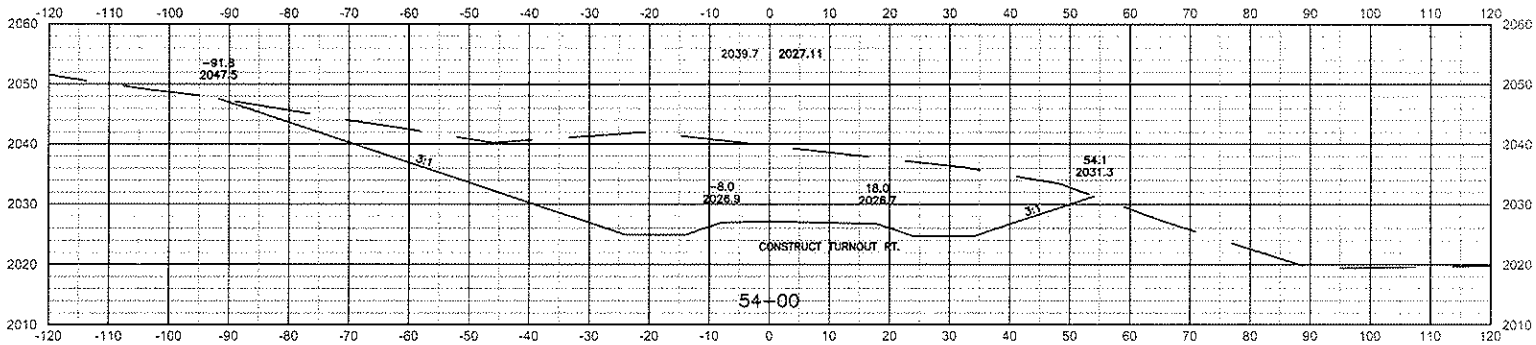
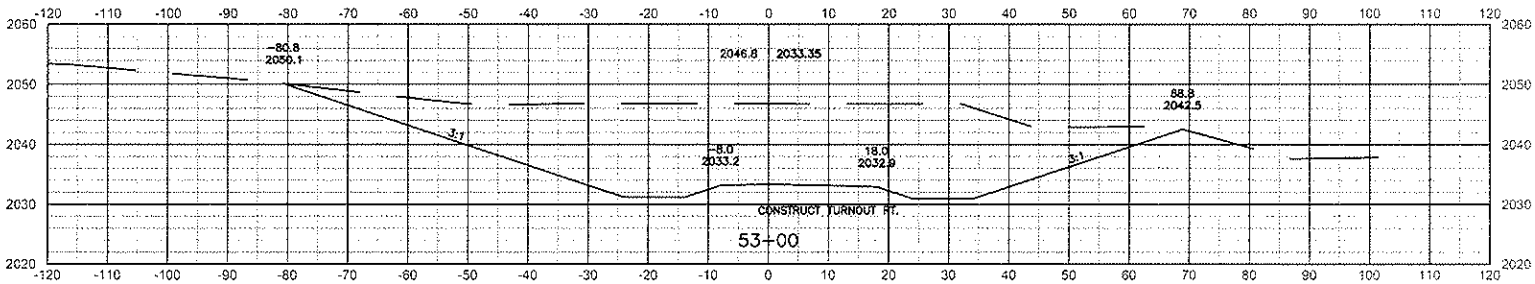
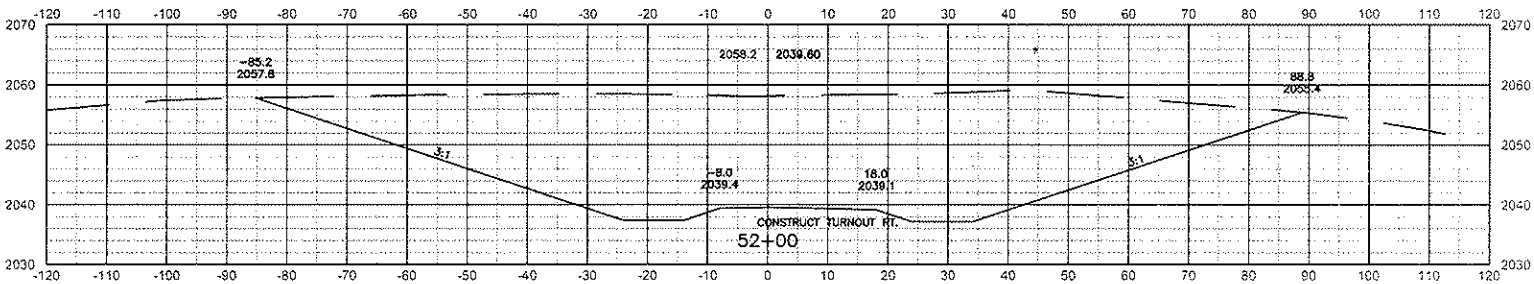
CROSS SECTIONS







STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	28

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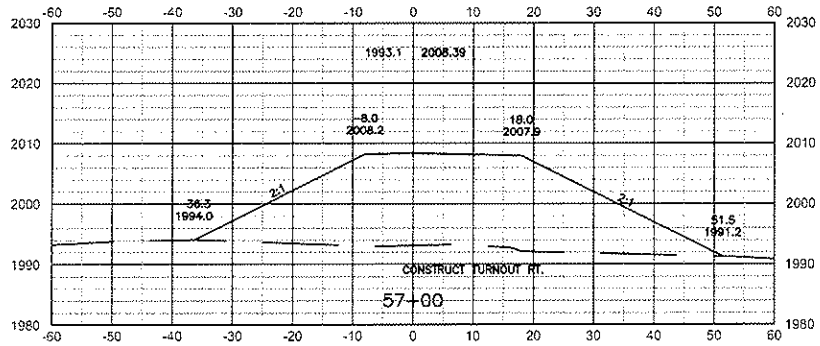
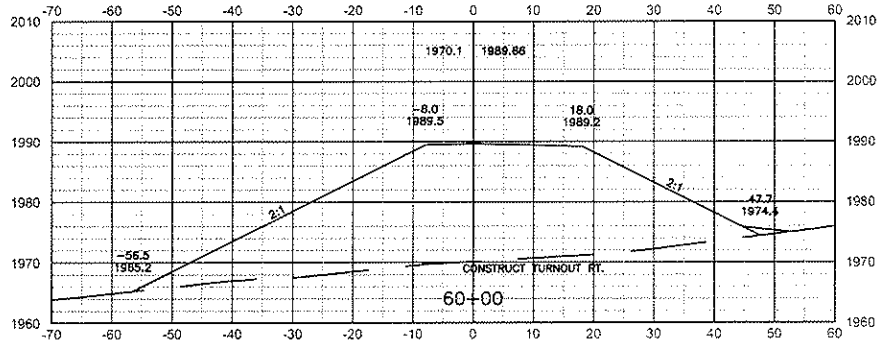
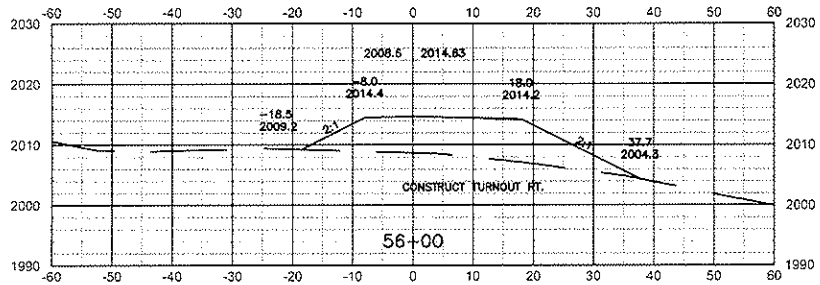
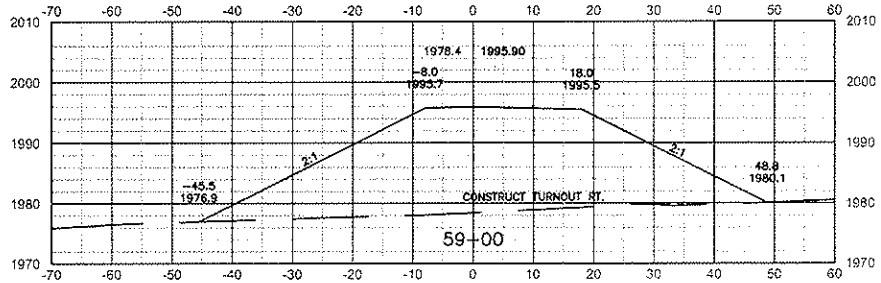
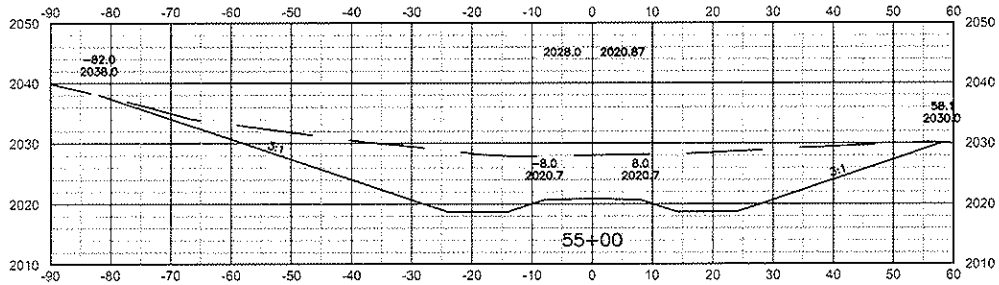
CROSS SECTIONS

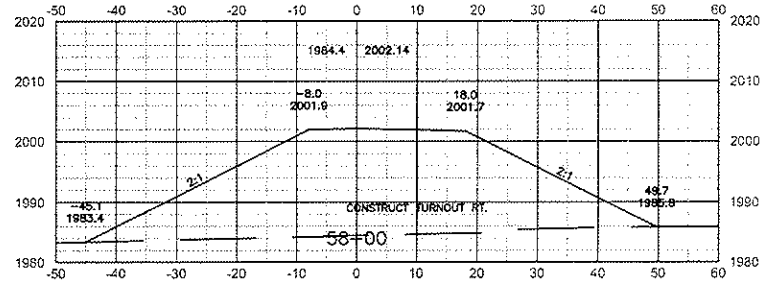












STATE	ROAD NO.	SHEET
ND	BULLET ROAD	29

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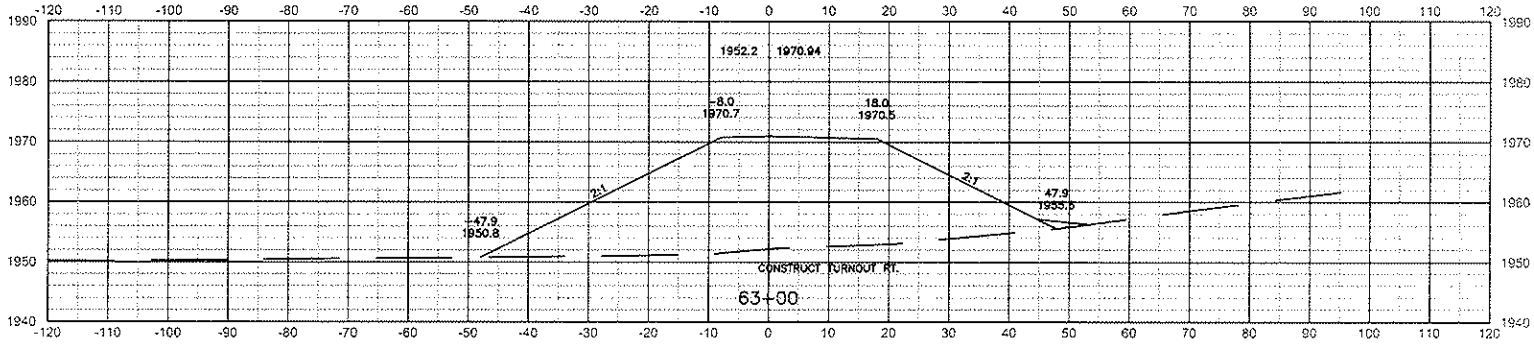
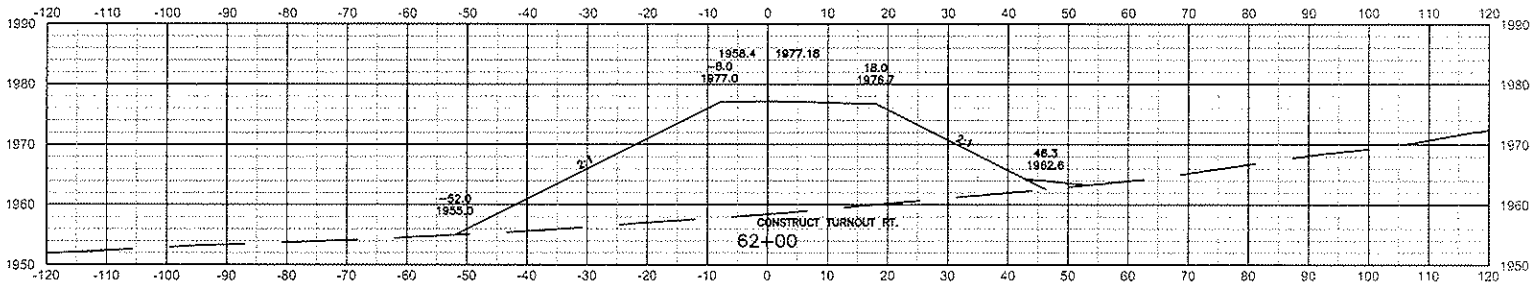
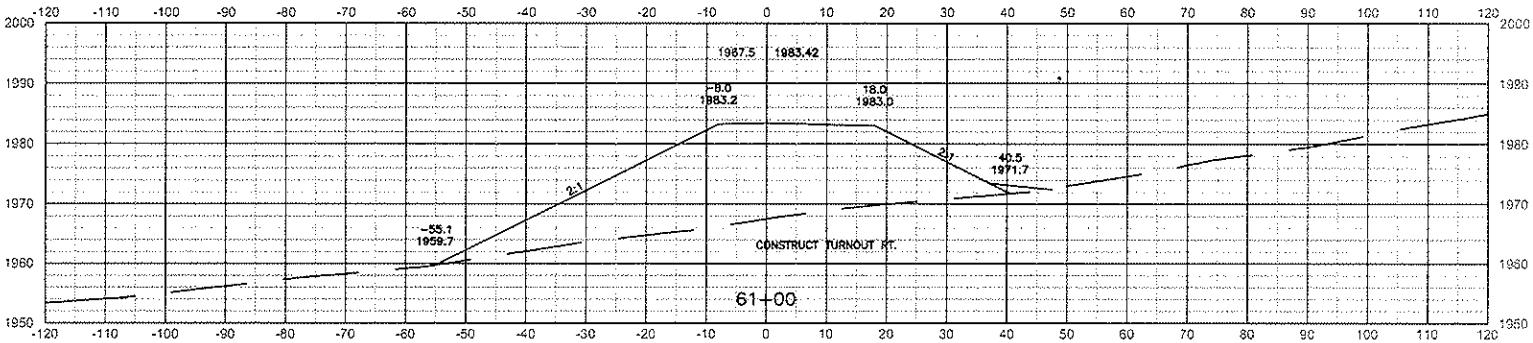
CROSS SECTIONS



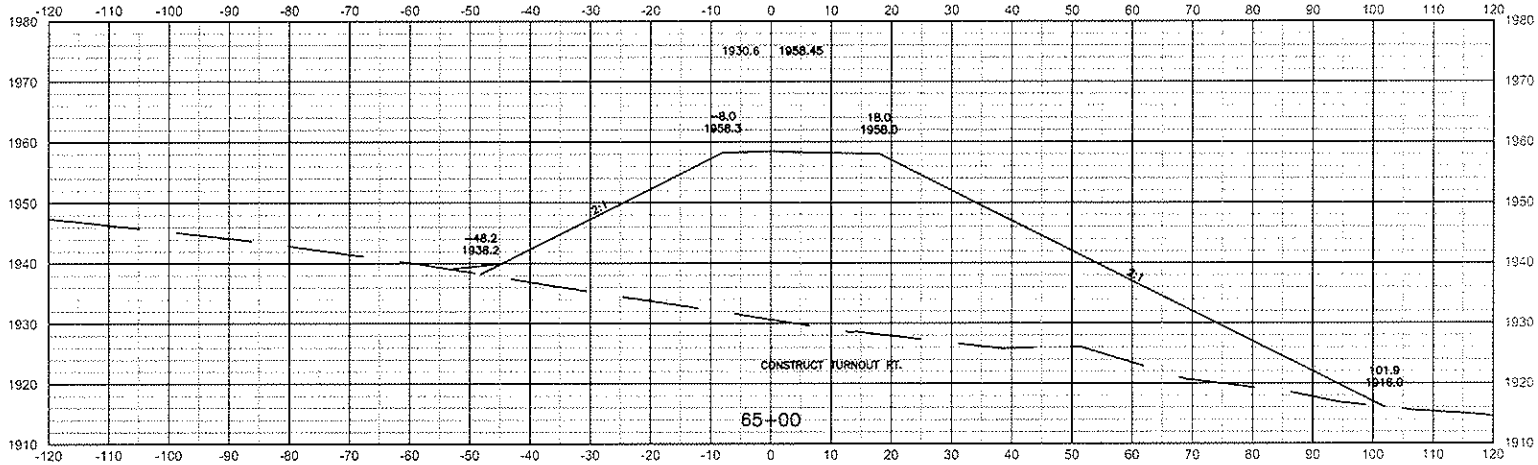


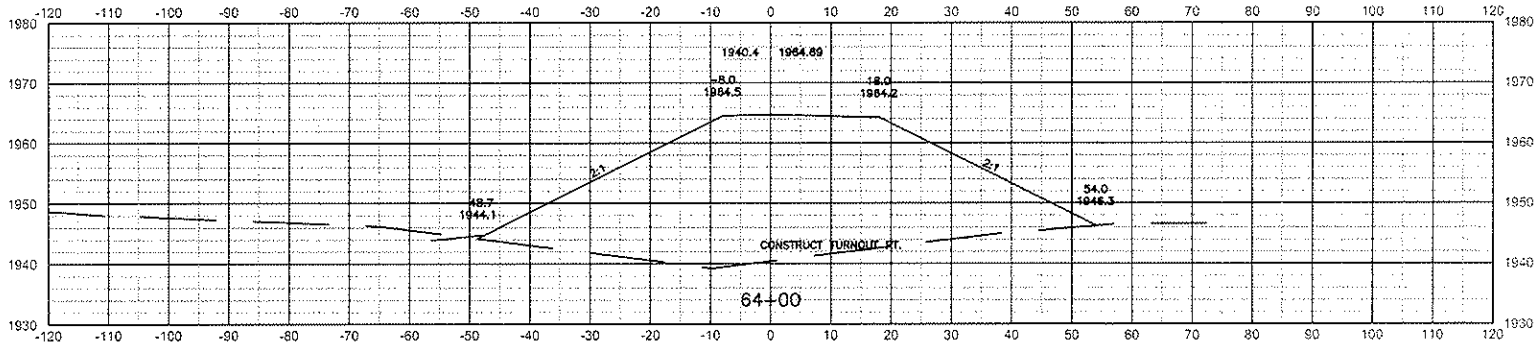


STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	30

Mar 13, 2012 – 9:23am – J:\oilfield\Questor\3711700\CAD\3711700BAS03.dwg

CROSS SECTIONS

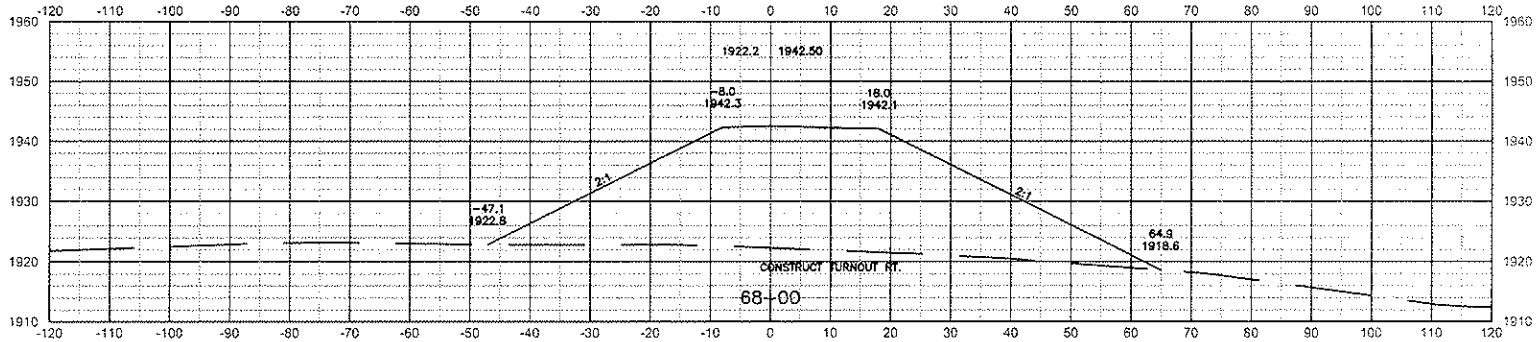


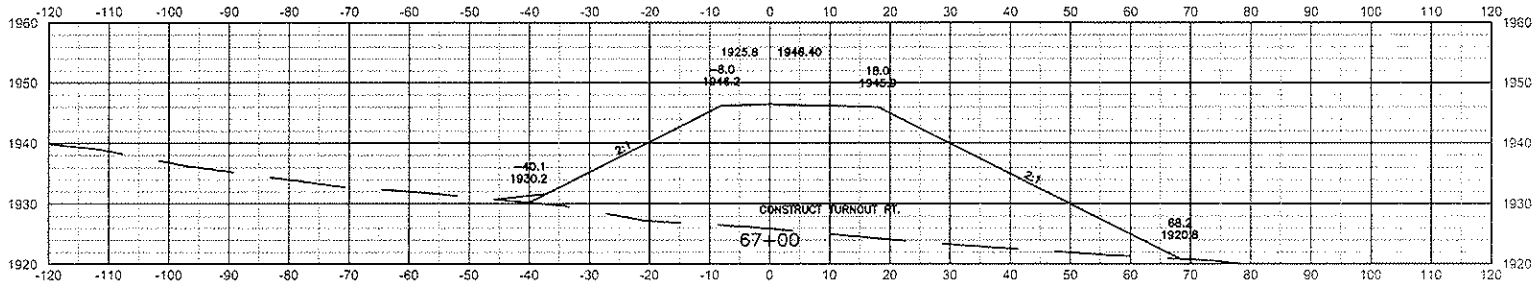


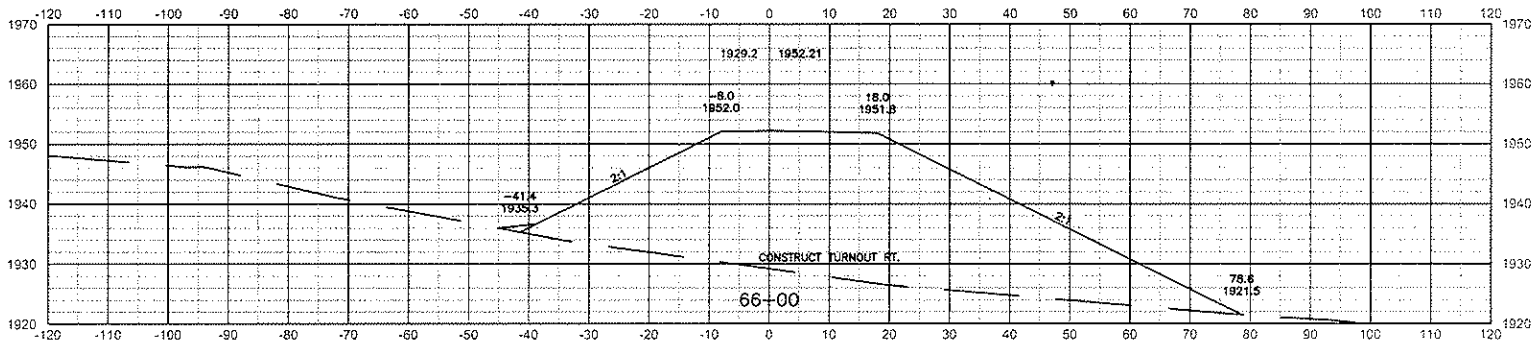
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	31

Mar 13, 2012 - 9:23am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg

CROSS SECTIONS



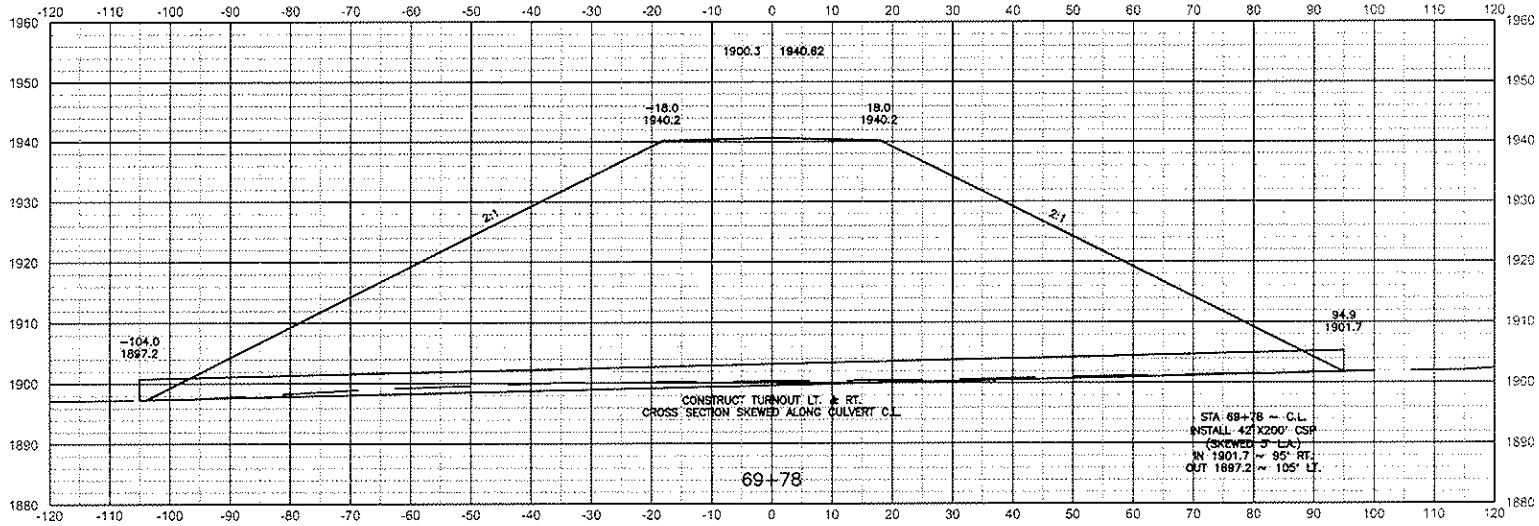


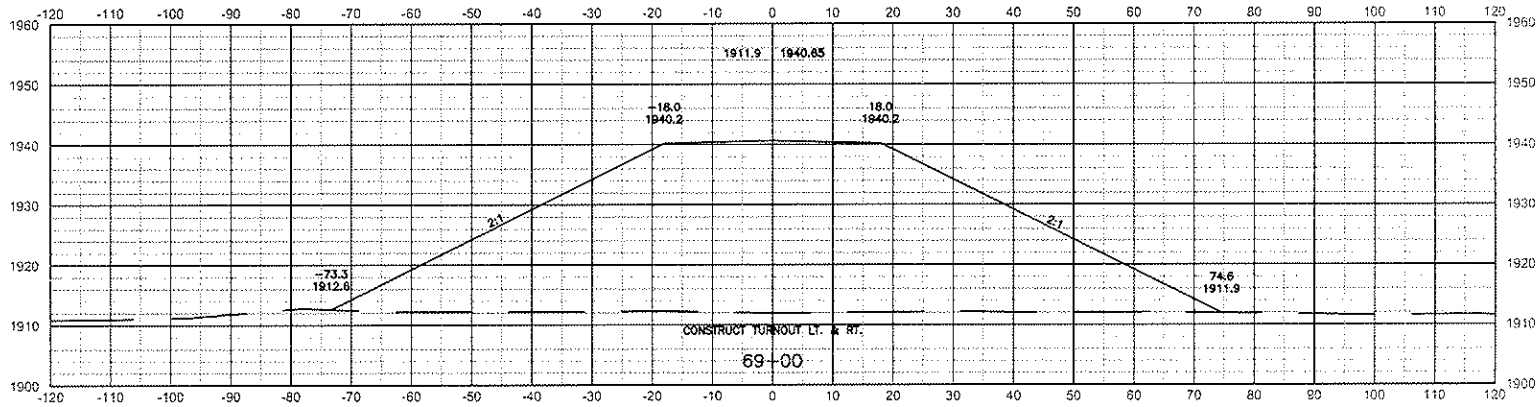


STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	32

Mar 13, 2012 – 9:23am – J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg

CROSS SECTIONS

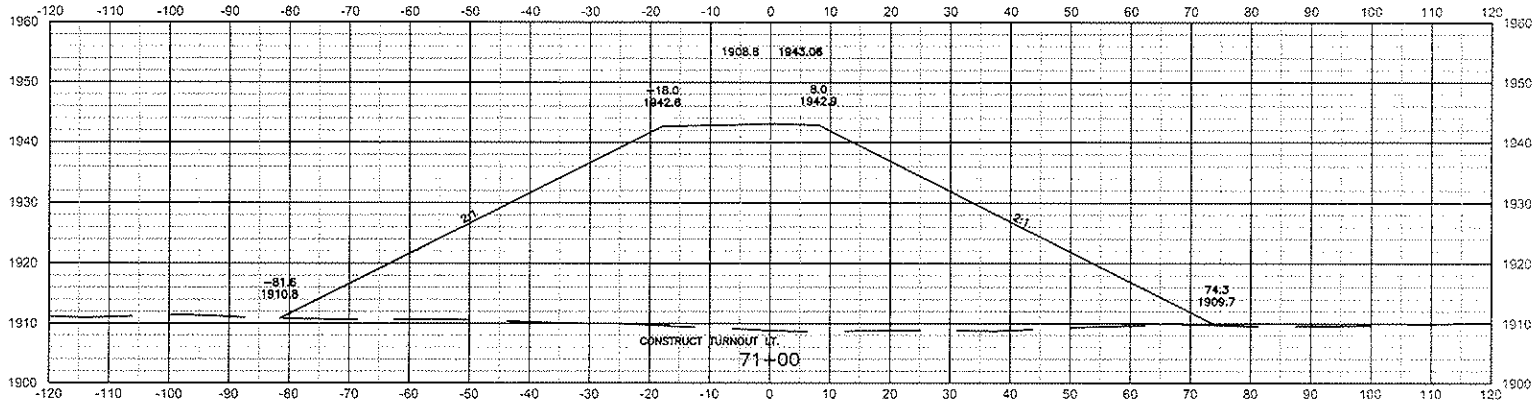


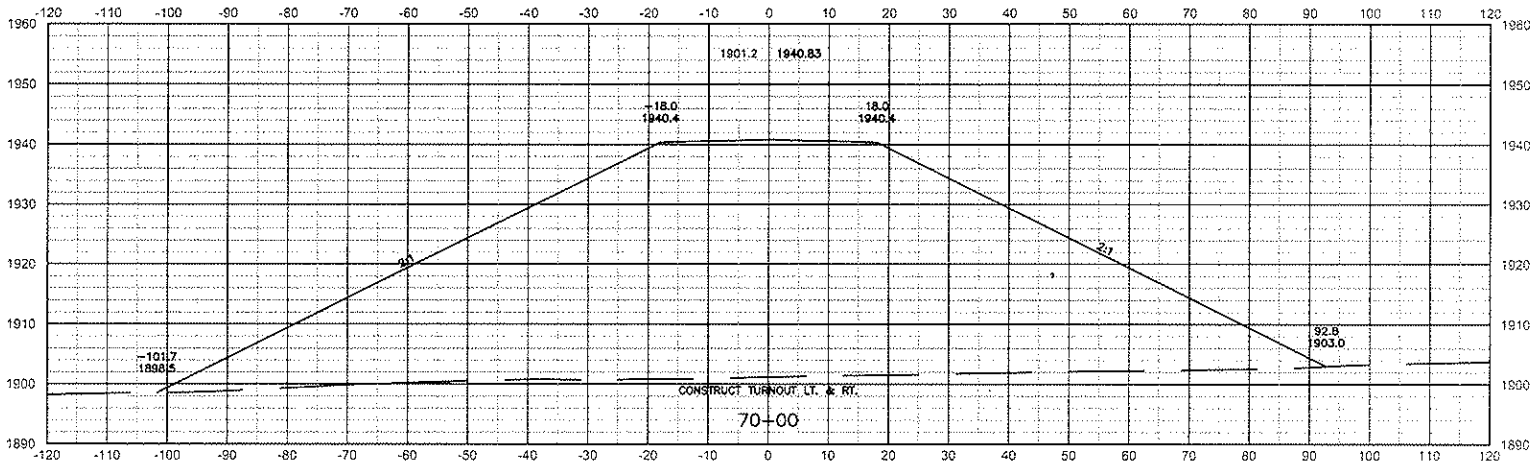


STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	33

Mar 13, 2012 - 10:30am - J:\oilfield\Questar\3711700\CAD\3711700BAS03.dwg

CROSS SECTIONS

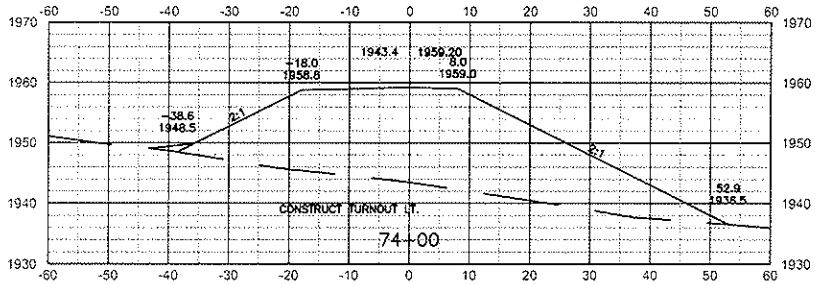


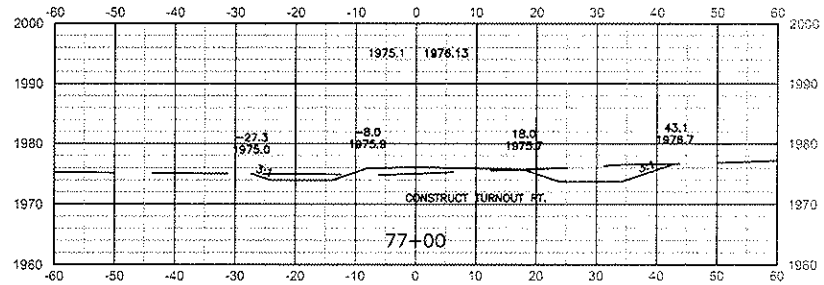


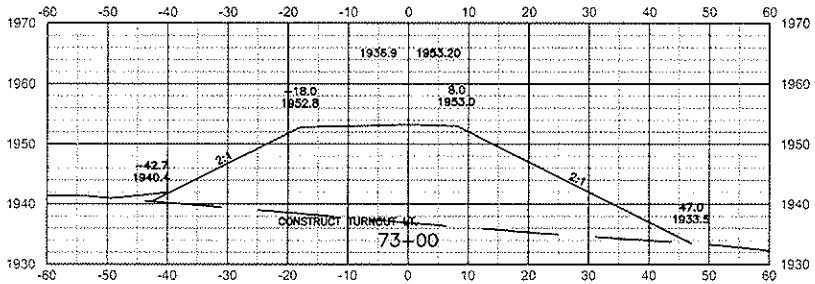
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	34

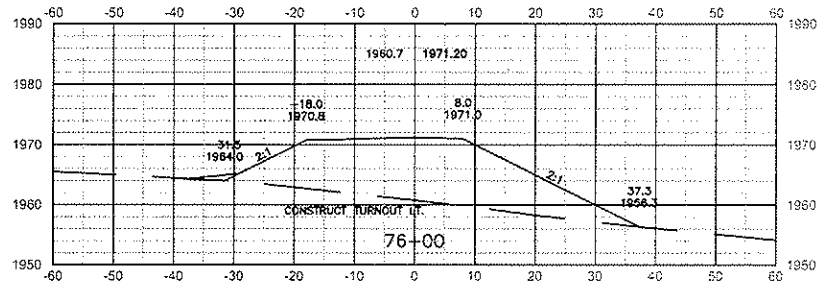
Mar 13, 2012 - 9:23am - J:\oilfield\Questor\3711700\CAD\3711700BAS03.dwg

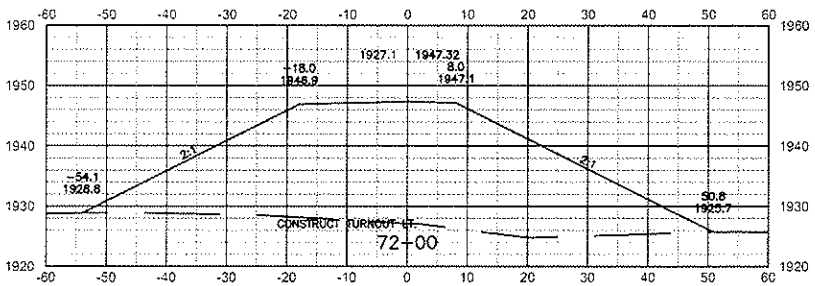
CROSS SECTIONS

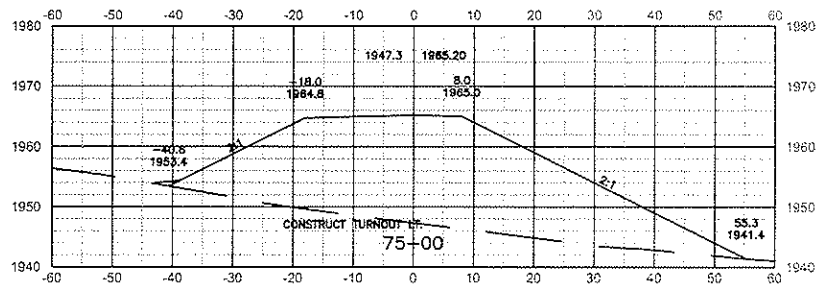






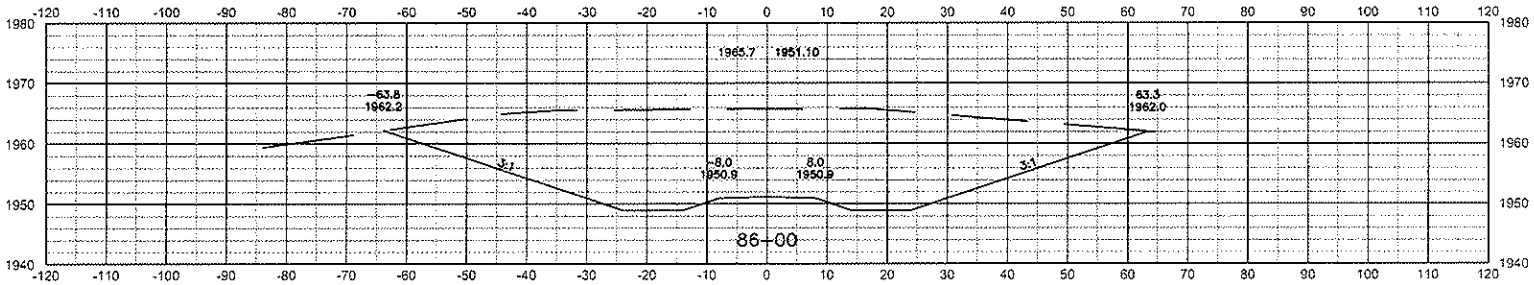


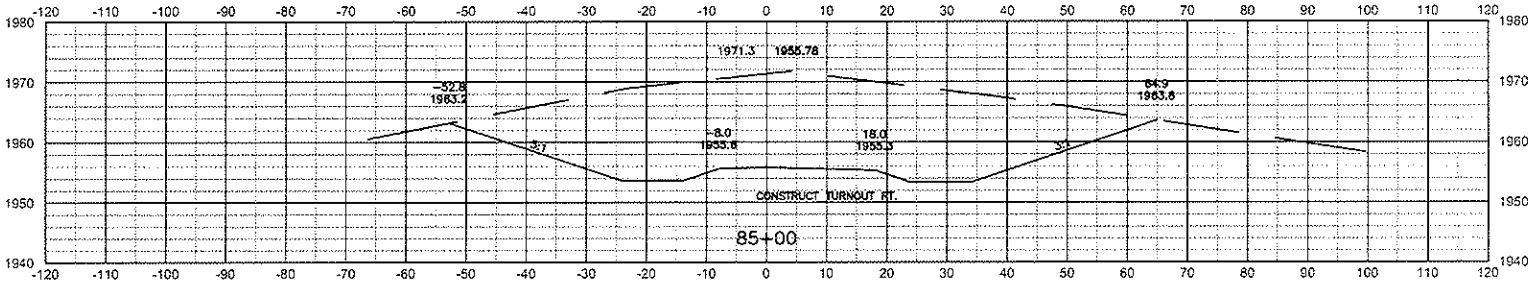


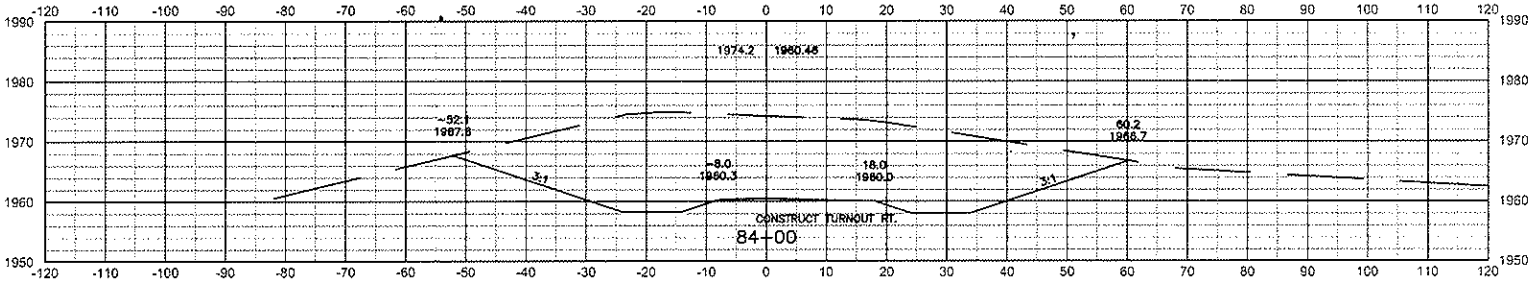


STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	35

CROSS SECTIONS







STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	38

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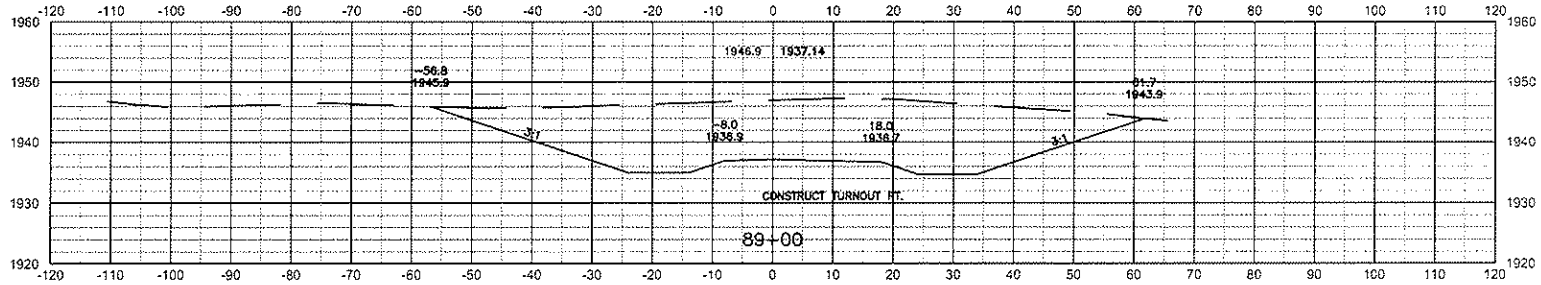
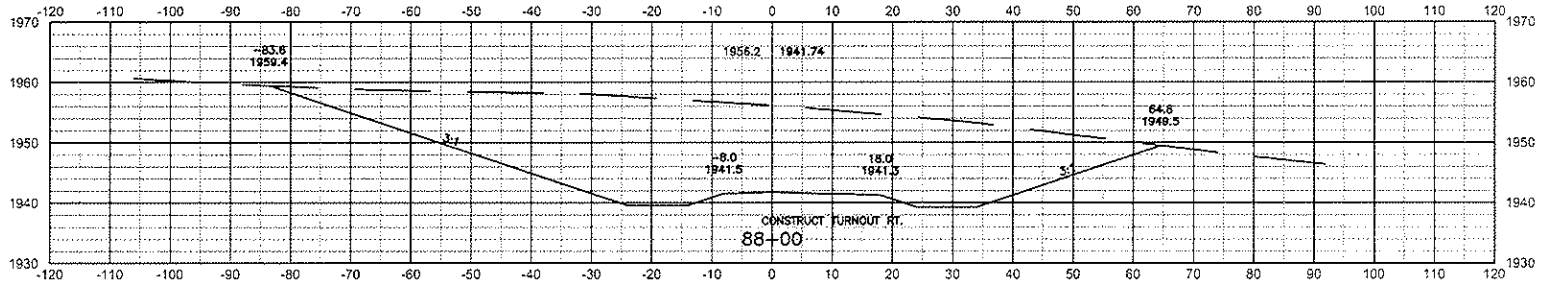
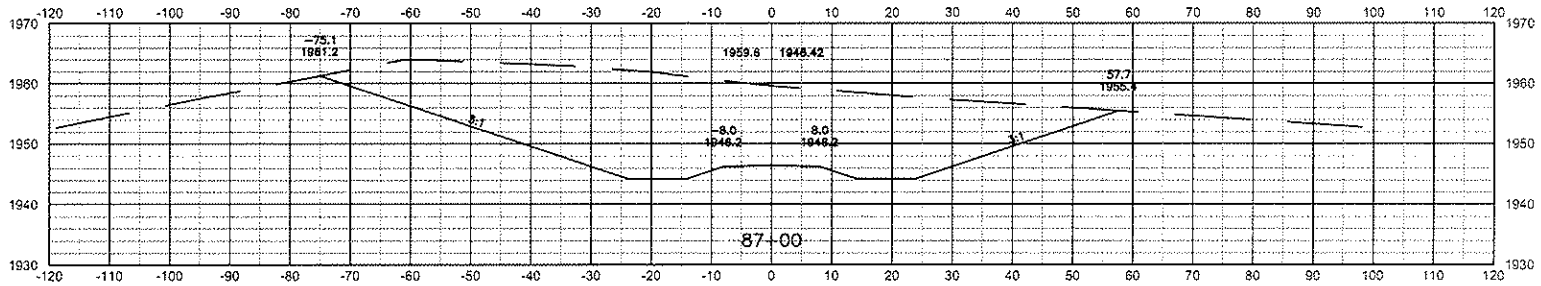
CROSS SECTIONS



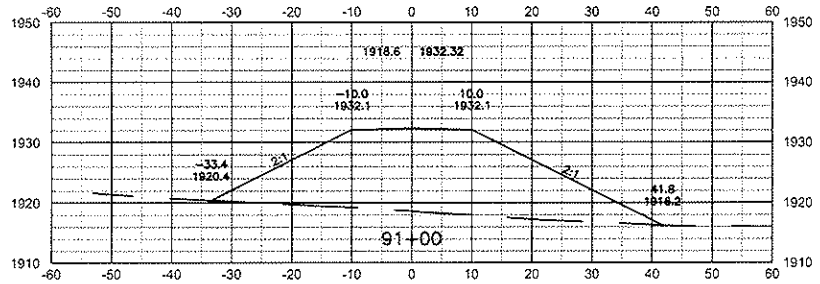


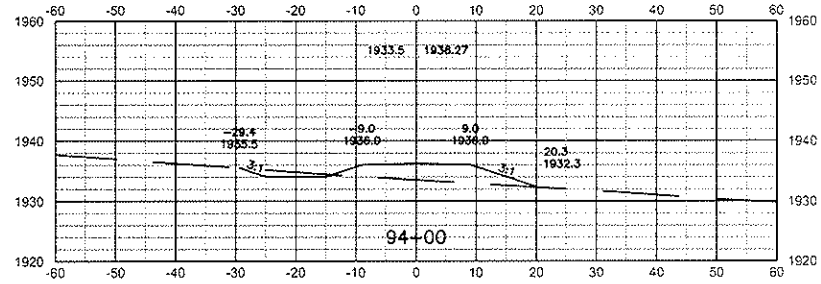


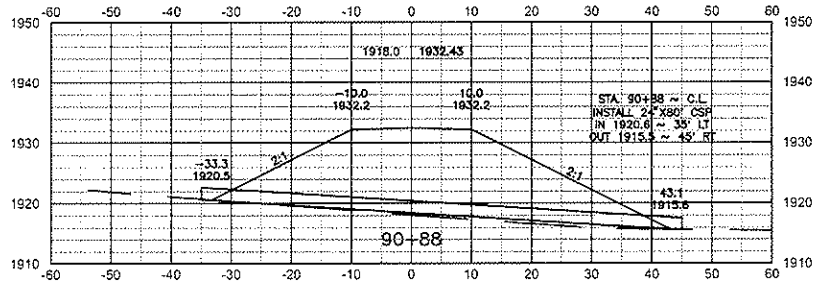
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	39

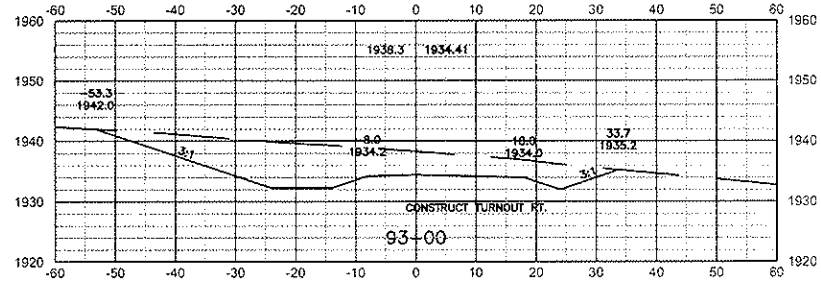
Mar 13, 2012 – 9:25am – J:\oilfield\Questor\3711700\CAD\3711700BAS03.dwg

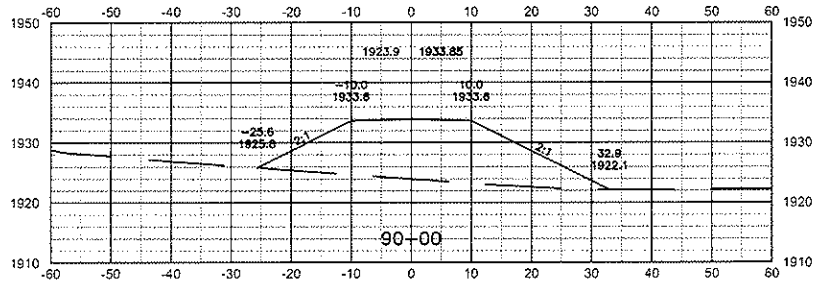
CROSS SECTIONS

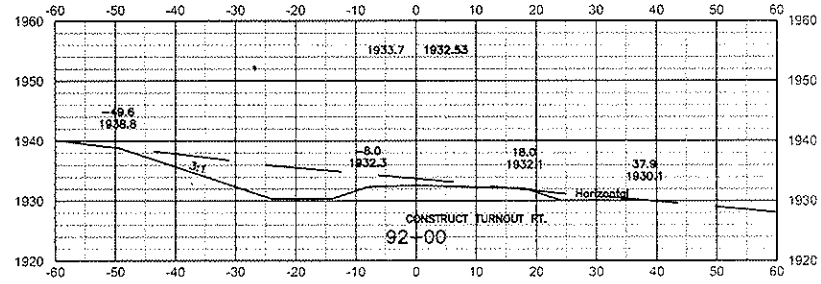








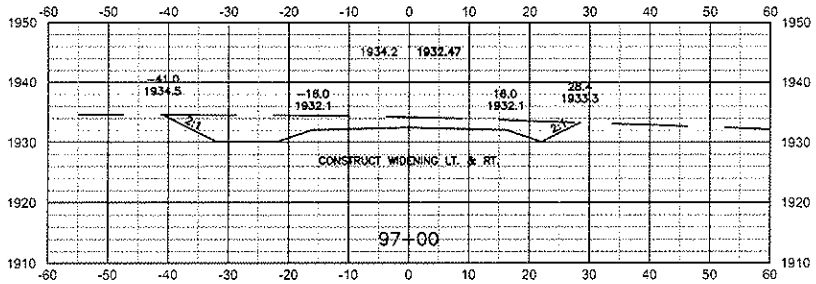


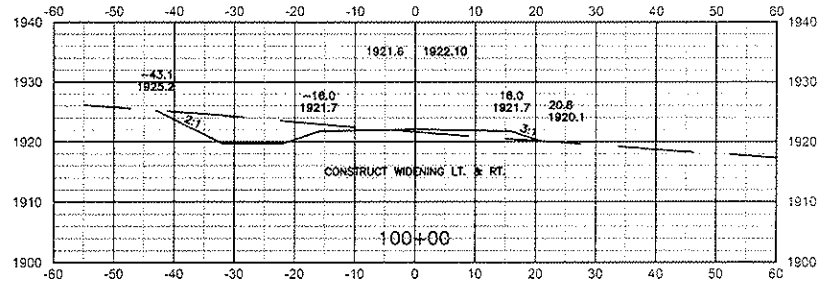


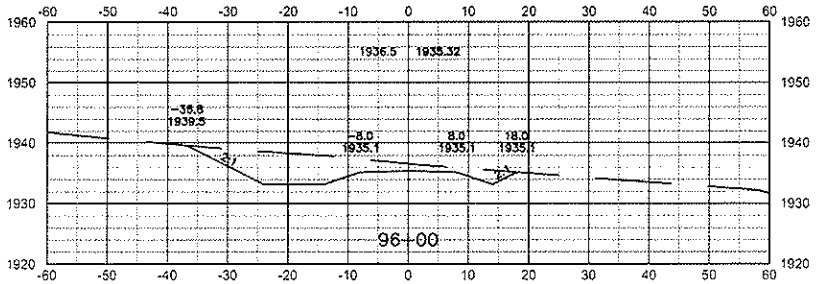
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	40

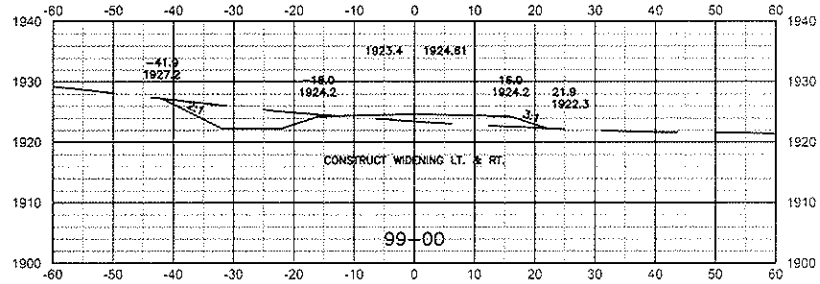
Mar 13, 2012 - 9:25am - J:\oilfield\Questar_5711700\CAD_5711700BAS03.dwg

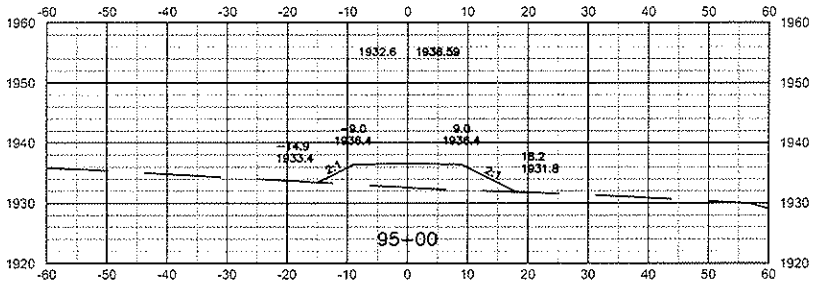
CROSS SECTIONS

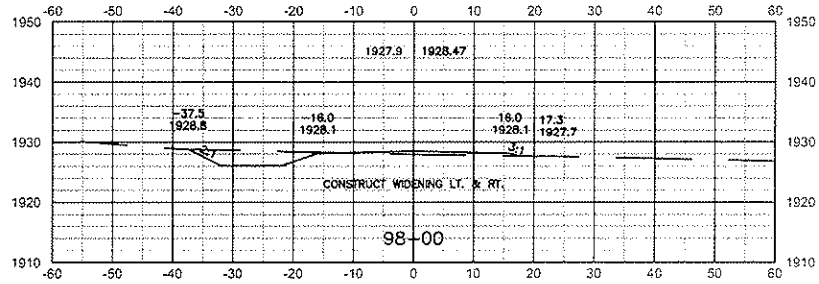








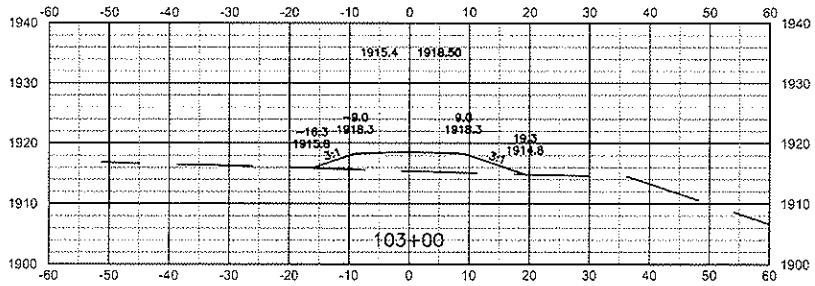


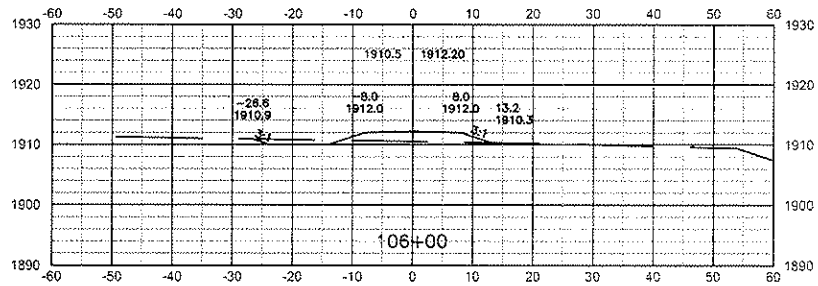


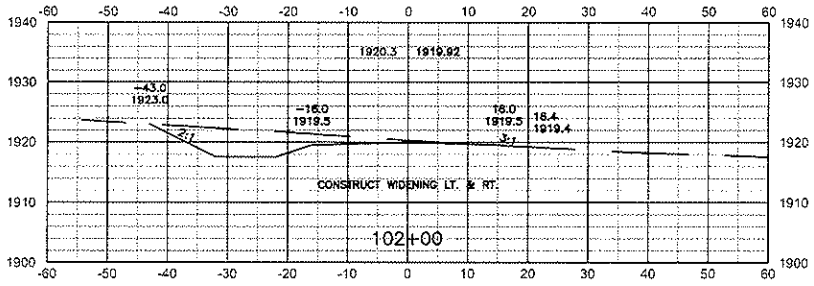
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	41

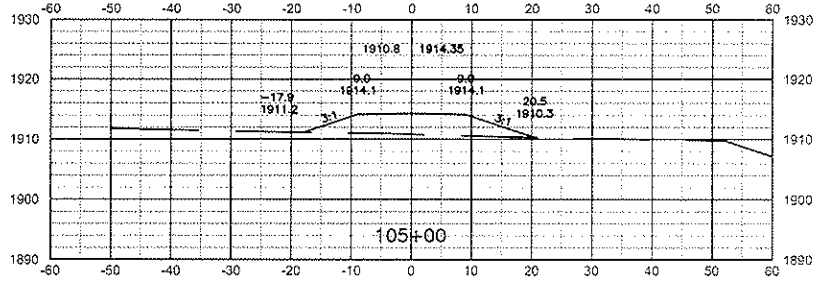
Mar 13, 2012 - 9:25am - J:\oilfield\Questor\3711700\CAD\3711700BAS03.dwg

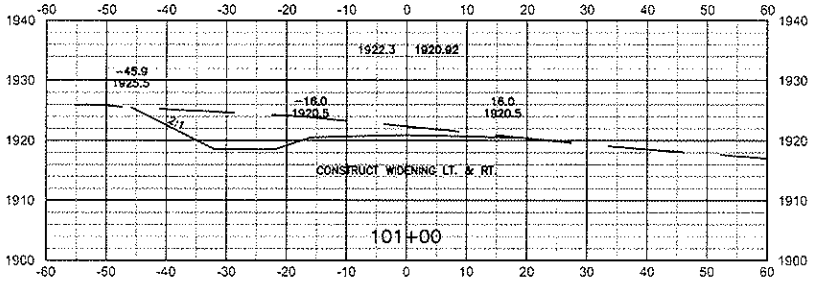
CROSS SECTIONS

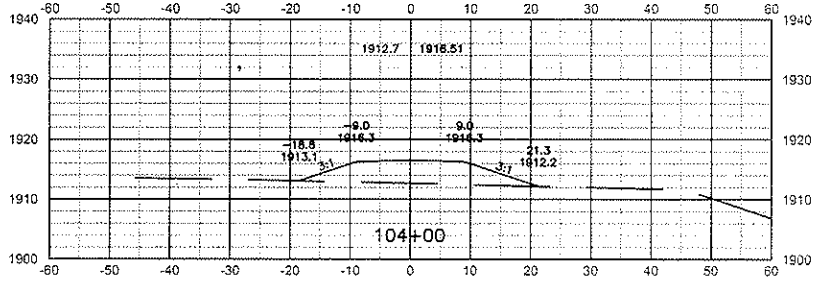






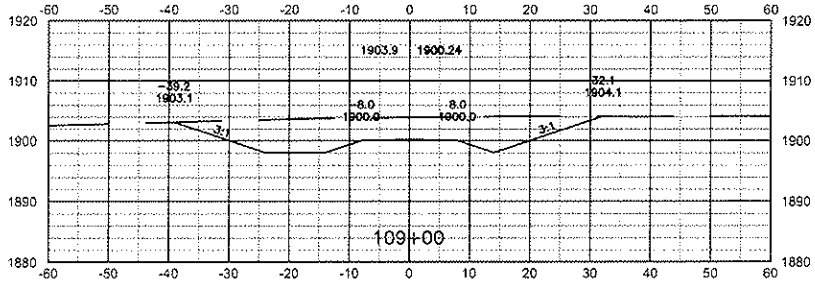


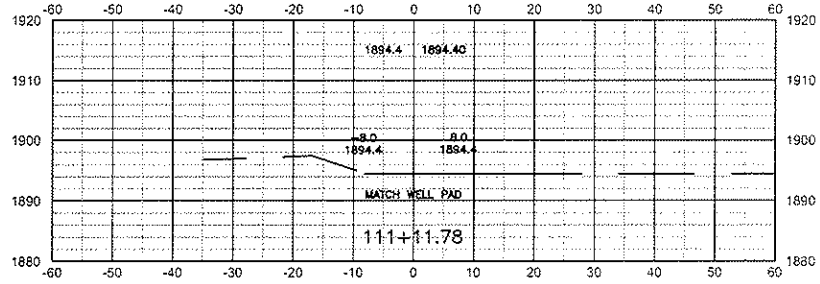


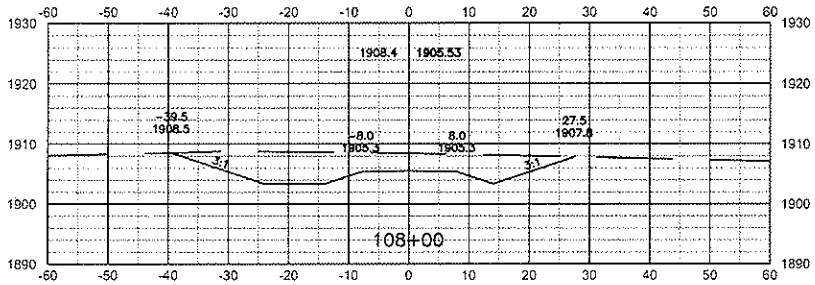


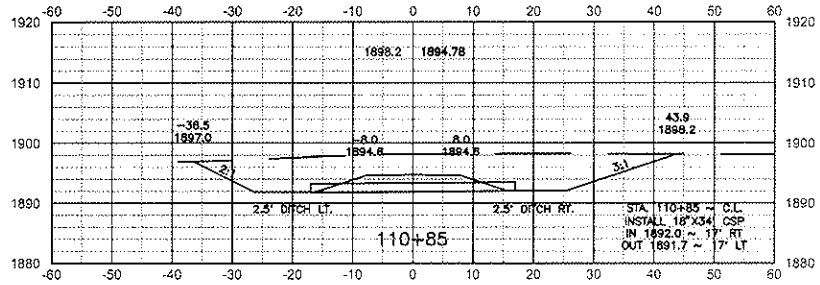
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	42

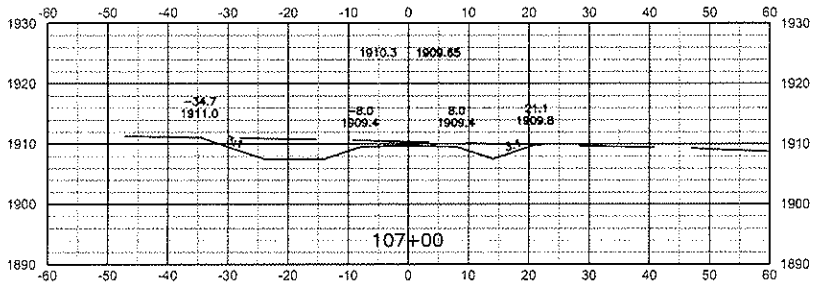
CROSS SECTIONS

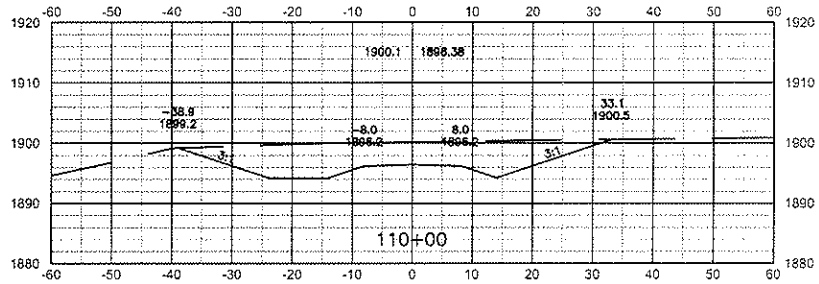






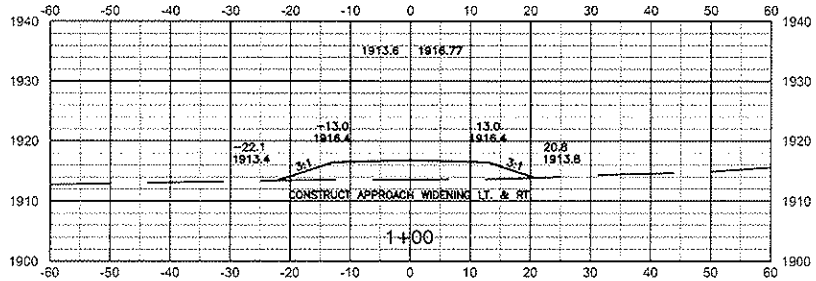


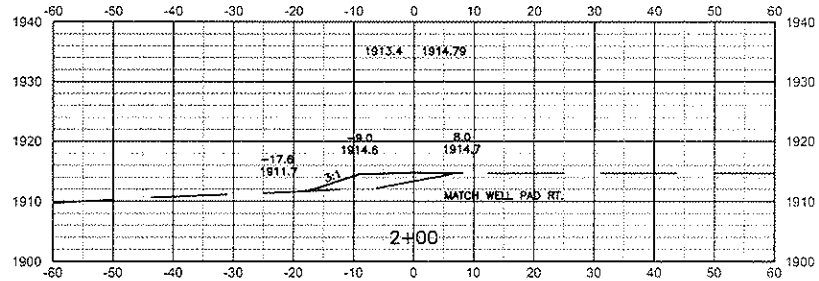


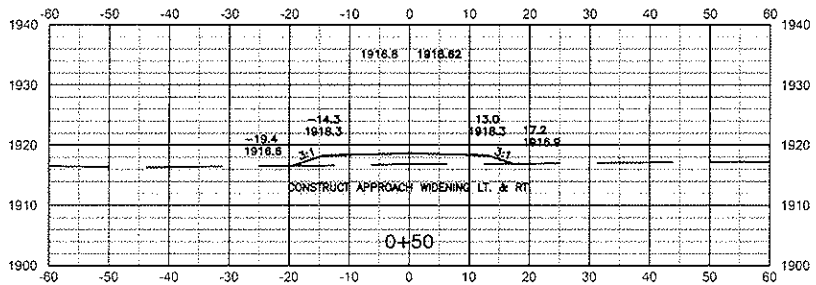


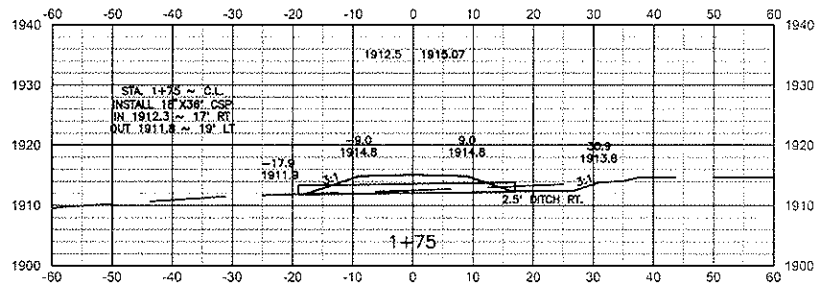
STATE	ROAD NO.	SHEET NO.
ND	BULLET ROAD	43

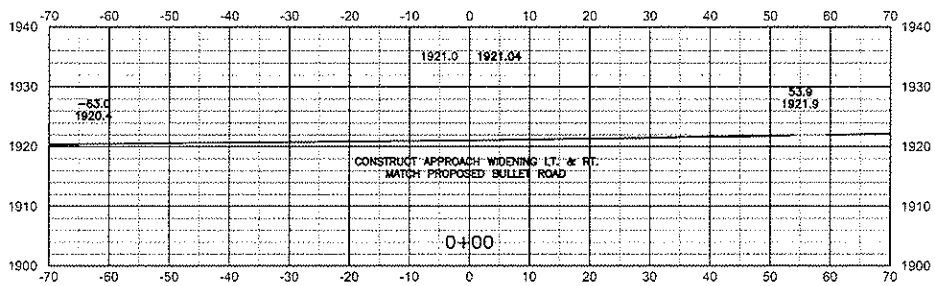
CROSS SECTIONS

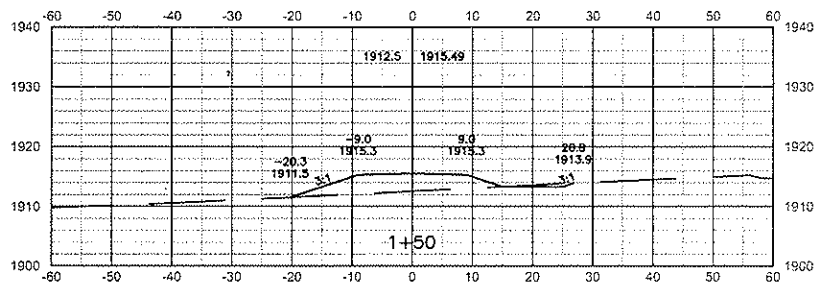












STATE	ROAD NO.	SHEET NO.
ND	POD 3 ACCESS	44

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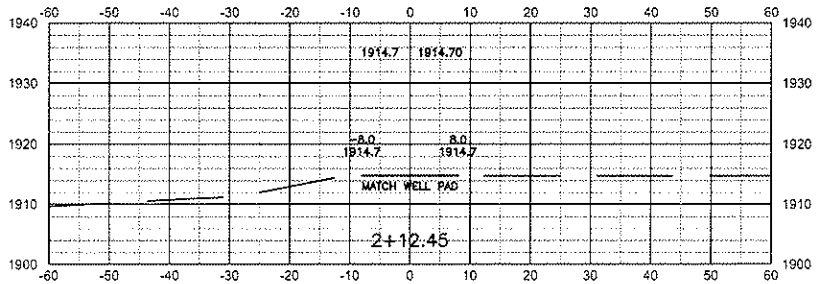
CROSS SECTIONS



STATE	ROAD NO.	SHEET NO.
ND	POD 3 ACCESS	45

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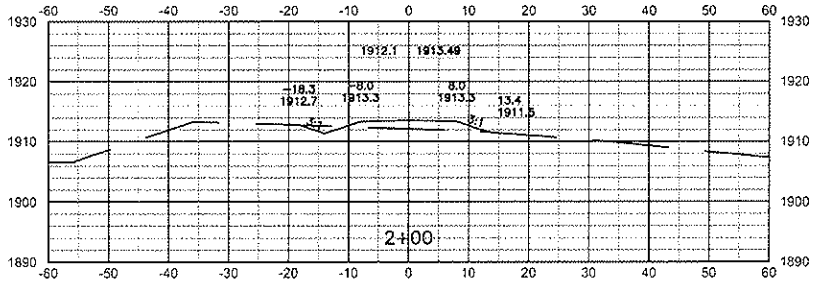

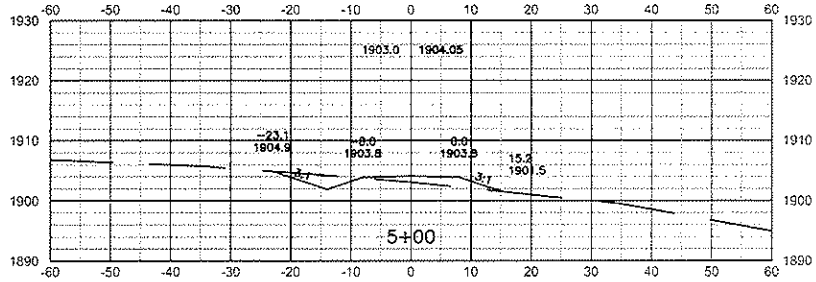

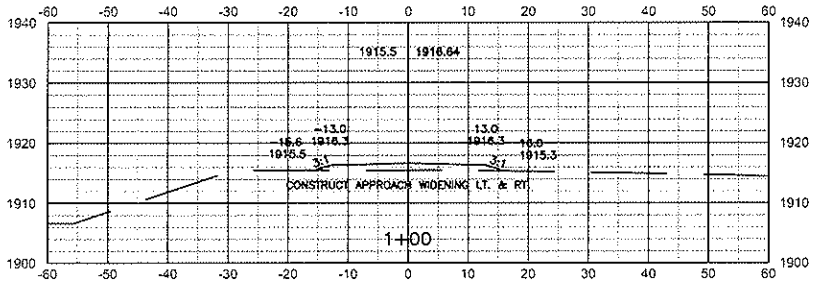

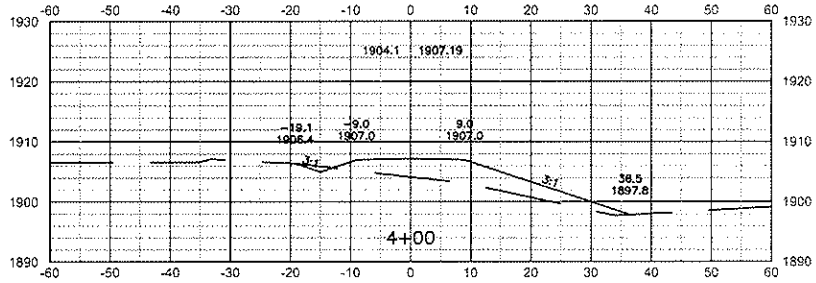

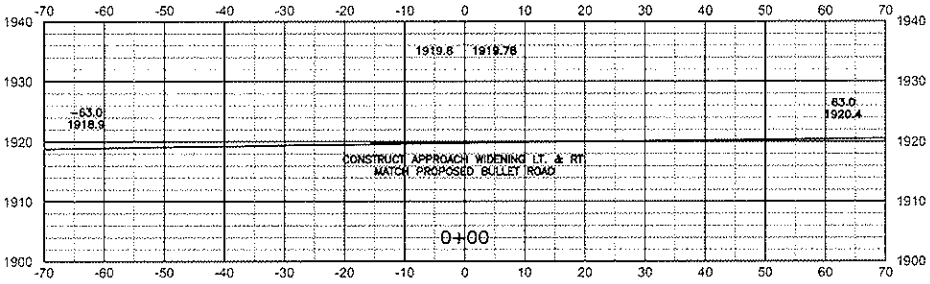

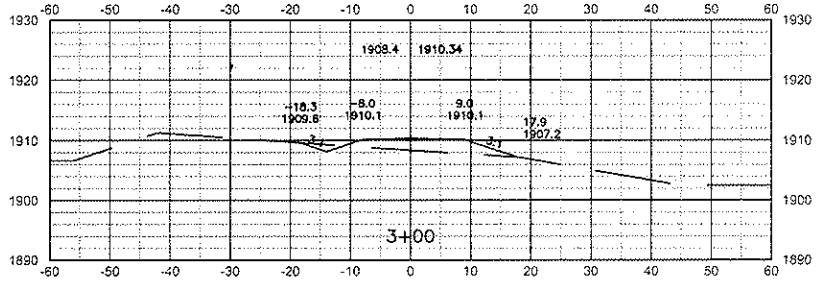

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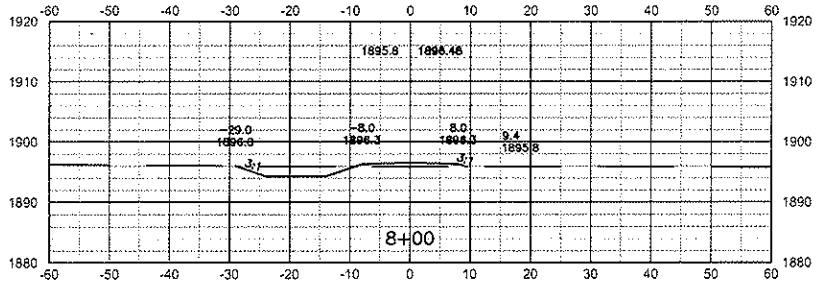

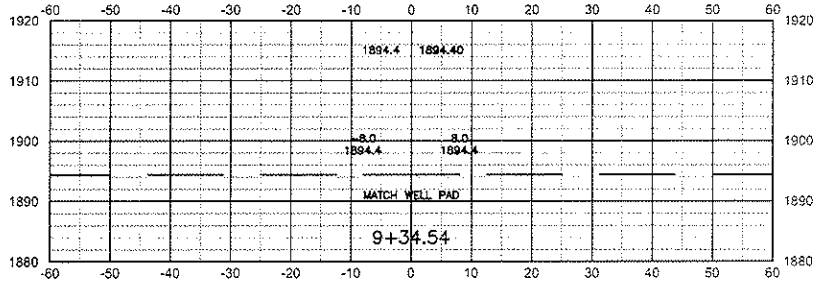

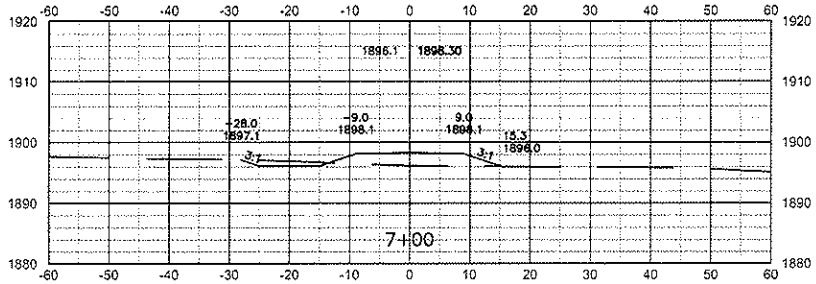

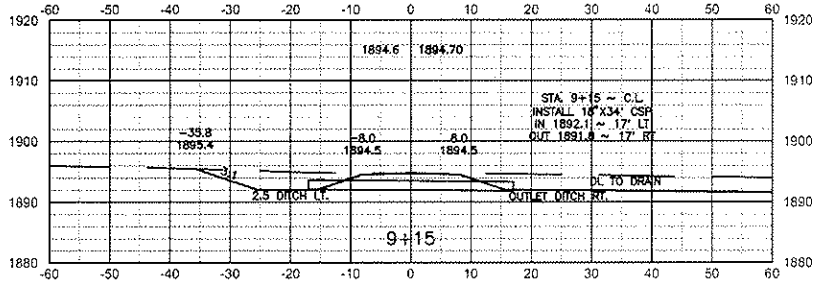

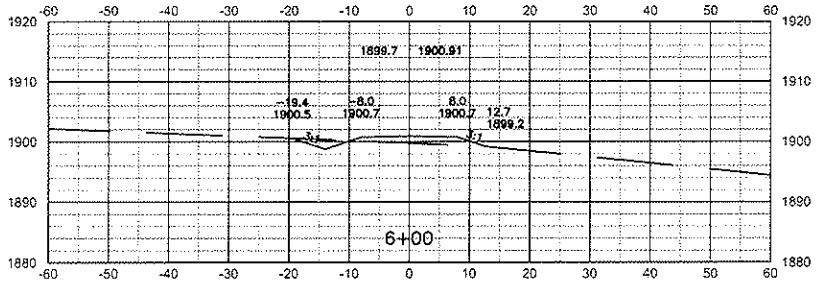

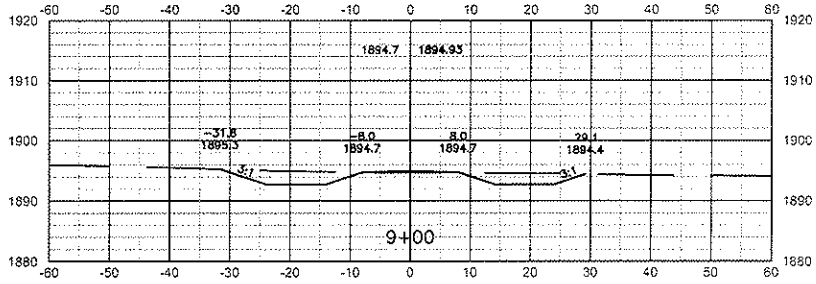

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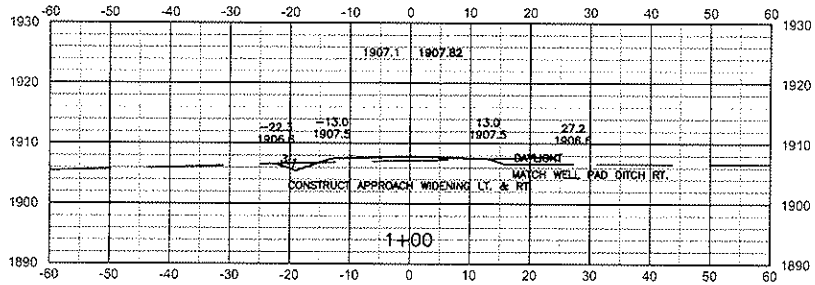

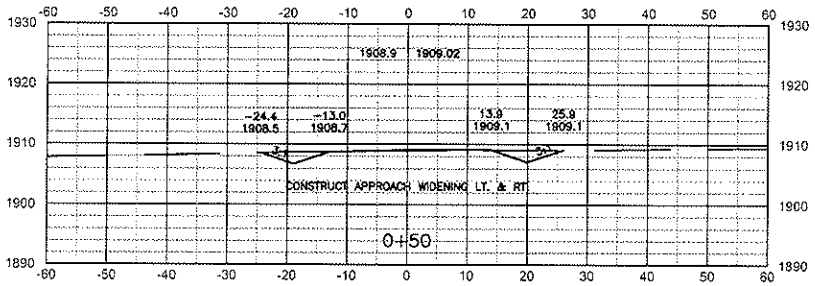

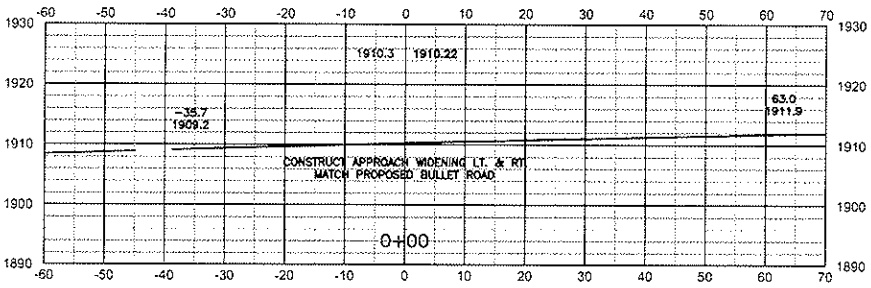

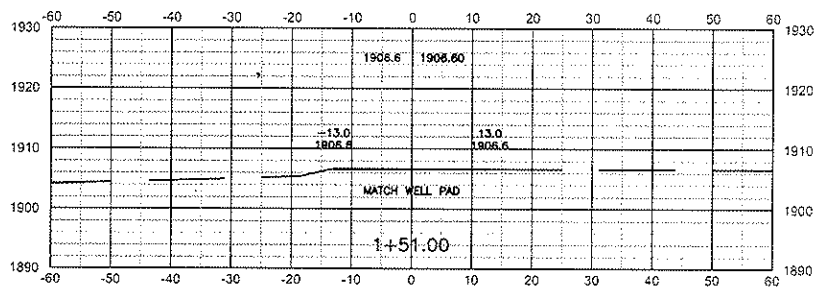

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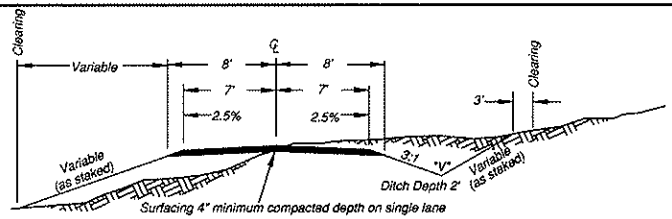
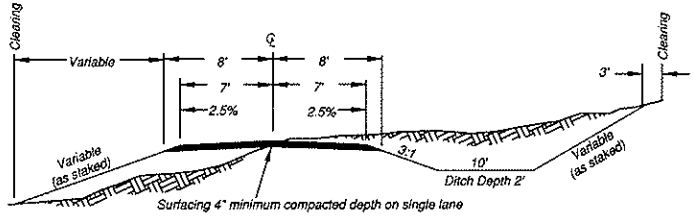


TYPICAL SECTION "V" DITCH ROAD
No Scale



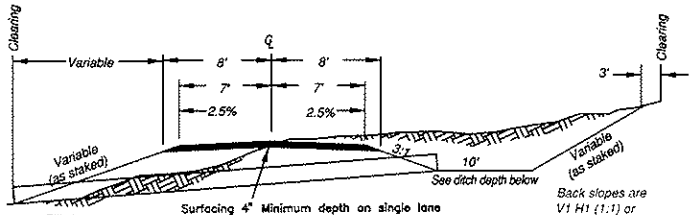
TYPICAL SECTION 10' FLAT BOTTOM DITCH ROAD
No Scale

FILL SLOPES
3:1 Under 4' Height
2:1 Over 4' Height
(-) Slopes steeper than 2:1 will be subject to FS approval

FILL WIDENING
2' to 5' high / add 1'
Over 5' high / add 2'

CURVE WIDENING
130 / R

CUT SLOPES
3:1 Under 10' height
2:1 10' to 20' height
(-) Variable over 20' height with FS approval



Fill slopes are as staked

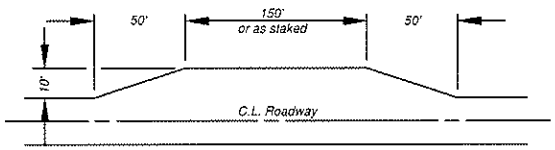
Back slopes are V1 H1 (1:1) or as staked

TYPICAL CULVERT SECTION
No Scale

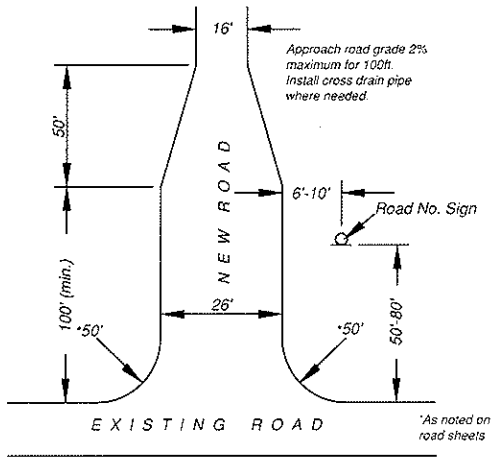
Ditch width shall be the larger of the following:
A. Standard ditch width
B. 2 times the pipe diameter
C. 4 25'

Ditch depth shall be:

CMP diameter	Ditch depth
18"	2.5'
24"	3.0'
36"	4.0'
48"	5.0'

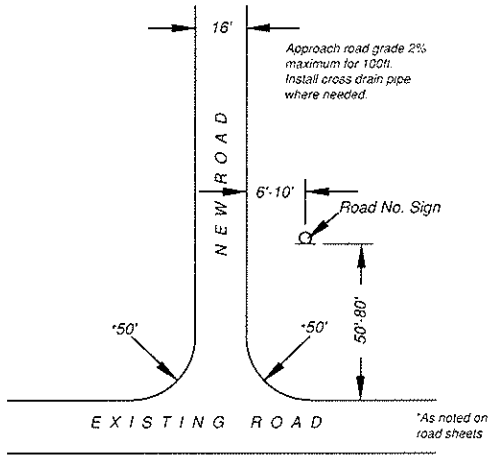


TYPICAL TURNOUT PLAN VIEW
No Scale



TYPICAL APPROACH ROAD CONNECTION
(DOUBLE LANE) No Scale

Note: State or County road approach fill slope shall be constructed to applicable State/County standard. FS road approach fill slope shall be 4:1 minimum.



TYPICAL APPROACH ROAD CONNECTION
(SINGLE LANE) No Scale

Note: State or County road approach fill slope shall be constructed to applicable State/County standard. FS road approach fill slope shall be 4:1 minimum.

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STANDARD SHEET

Typical Section Detail

NORTH DAKOTA ONE CALL
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1-800-795-0555

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Drawn by:	MJR
Checked by:	JSK
Issued:	6/29/2007
Revised:	4/22/2011

This document was originally issued and sealed by Jerrel S. Krieg, Registration No. PE-4530, on 4/26/11 and the original is stored at Kadrmas, Lee & Jackson in Dickinson, North Dakota.

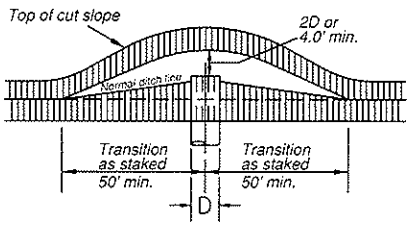
TYPICAL SECTION DETAIL

GENERAL NOTES

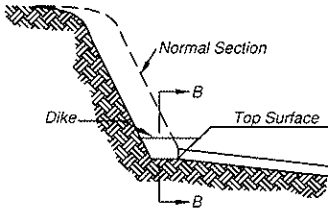
TREATMENT OF DAMAGED SPELTER: The damaged or corroded ends of existing metal pipe to be extended shall be removed. If the damaged end is flame cut, the burned spelter on the galvanized pipe shall be wire brushed to clean metal. and the area shall be painted with two coats of paint, high in zinc content, for repair of the galvanized surfaces.

CAMBER: Pipes shall be cambered as necessary to compensate for any anticipated settlement in the foundation or bed. Camber shall be on a parabolic curve, with no paint along the invert being higher than the invert at the inlet.

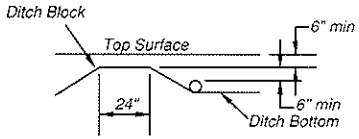
CULVERT BANDS: Bands with dimpled projections are not acceptable. Two foot band minimum width.



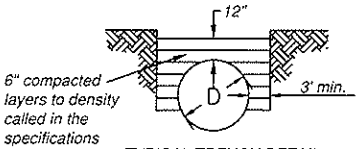
TYPICAL CATCH BASIN DETAIL



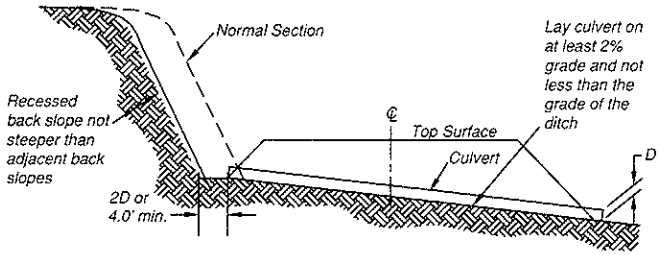
DITCH DIKE



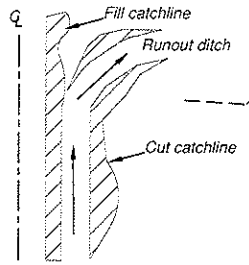
SECTION B-B



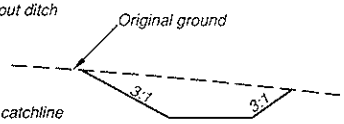
TYPICAL TRENCH DETAIL



TYPICAL INSTALLATION IN CUT SECTION

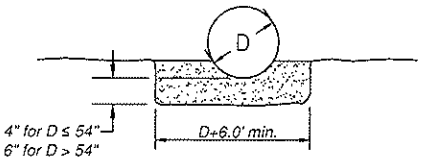


PLAN VIEW RUNOUT DITCH

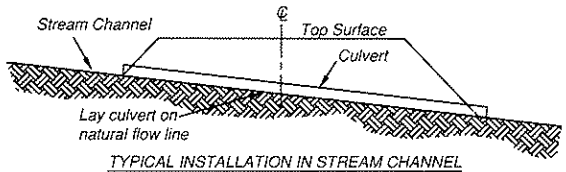


TYPICAL RUNOUT DITCH

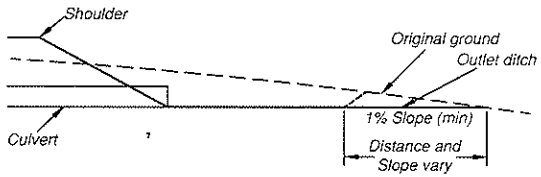
Runout ditch cross section shall match the design ditch. Runout ditches are shown on plans but are located on the ground.



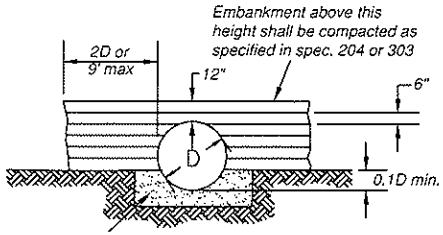
YIELDING FOUNDATION



TYPICAL INSTALLATION IN STREAM CHANNEL

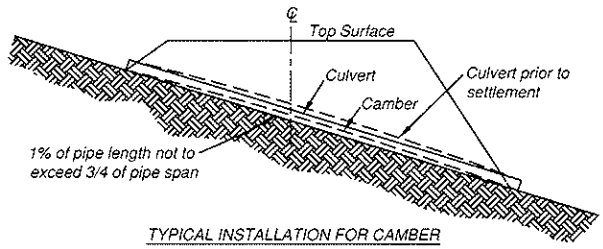


TYPICAL OUTLET DITCH

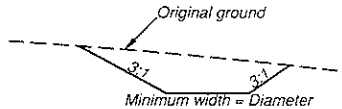


Bedding shall be suitable material, uniformly compacted and shaped to fit the bottom

BACKFILL AND BEDDING DETAIL



TYPICAL INSTALLATION FOR CAMBER



TYPICAL OUTLET DITCH SECTION

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STANDARD SHEET

Drainage Detail

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Drawn By:	DMB
Checked By:	JSK
Issued:	6/25/2007
Revised:	4/18/2011

This document was originally issued and sealed by Jerrel S. Krieg, Registration No. PE-4530, on 4/26/11 and the original is stored at Kadrmas, Lee & Jackson in Dickinson, North Dakota.

DRAINAGE DETAIL

Appendix D

Wetland Delineation Report, 404 Permit Application, Wetland Mitigation Plan and 404 Permit Approval

WETLAND DELINEATION

Bullet Well Pad Access Road

Dunn County,
North Dakota

Prepared for:

QEP Energy Company
Dunn County, North Dakota

Prepared by:

Grady Wolf
Kadrmas, Lee & Jackson, Inc.

Kadrmas Lee & Jackson
Engineers Surveyors Planners

June 2012

Table of Contents

Introduction

Kadrmas, Lee & Jackson (KL&J) was contracted by QEP Energy Company (QEP) to conduct a field wetlands delineation for a proposed well pad access road in Dunn County, North Dakota. The study area occurred in the SE¼ of Section 9, Township 149 North, Range 91 West. The project is anticipated to be constructed in fall 2012. ***Please refer to Figure 1, Project Location Map below.*** The wetlands delineation and GPS data collection were conducted on October 19, 2011 by Grady Wolf and Nick Anderson of KL&J. A study area of approximately 1.34 acres was surveyed.

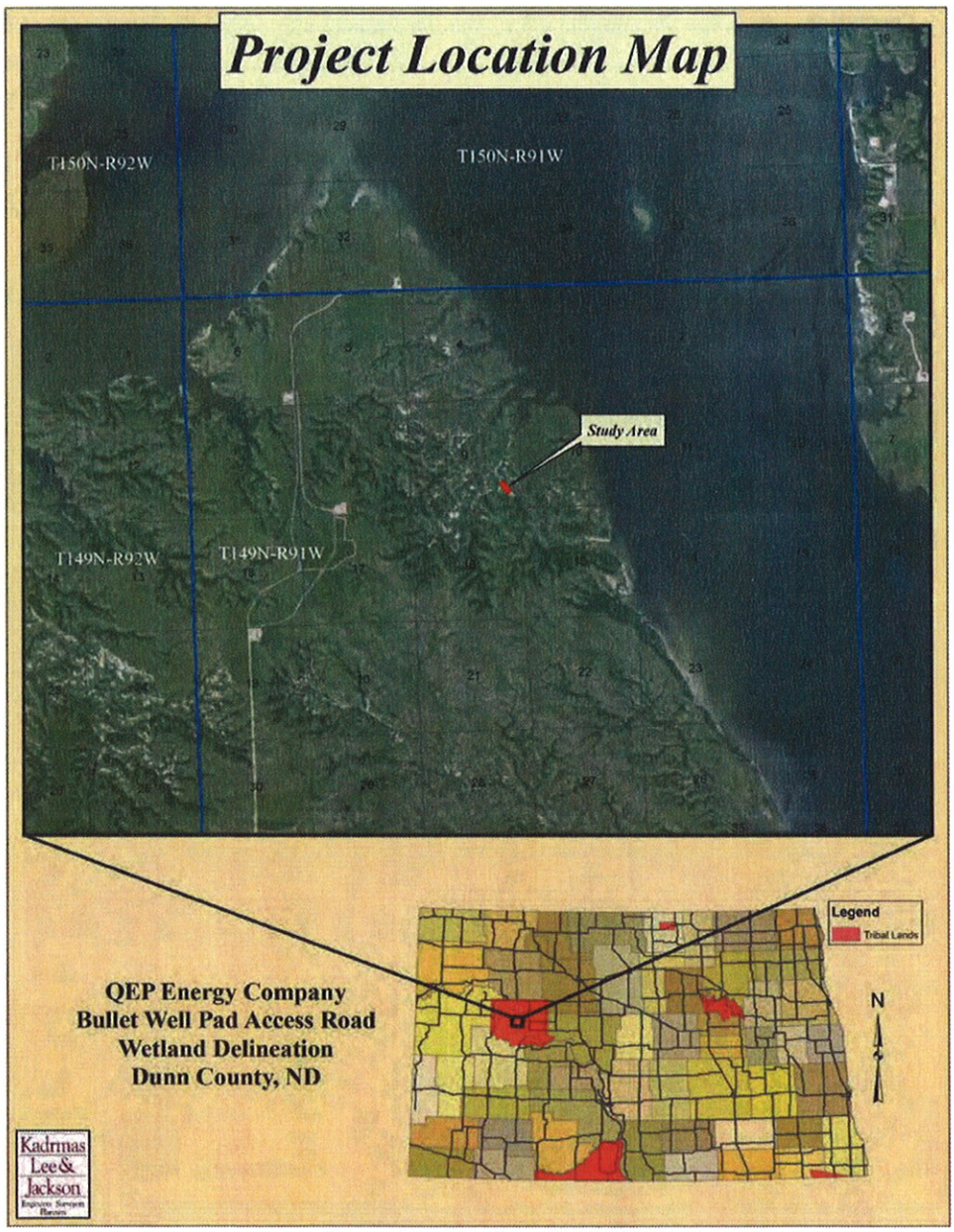

Figure 1, Project Location Map

Definitions and Methods

The wetlands delineation conducted by KL&J was in accordance with the 1987 USACE (United States Army Corps of Engineers) Wetland Delineation Manual and the USACE March 2010 Regional Supplement: Great Plains Region (Version 2.0). The routine approach with onsite inspection was utilized, including the standard multi-parameter approach (vegetation, hydrology, and soils) for wetland identification. An area is considered to be a wetland if hydrophytic vegetation, wetland hydrology, and hydric soils are all present. Sample locations were determined using NWI (National Wetlands Inventory) maps along with sites which visually supported a hydrophytic plant community, as well as characteristics of wetland hydrology and hydric soils. Definitions and methodologies for determining each of these three parameters are summarized below:

Hydrophytic Vegetation

Definition: The prevalence (>50%) of dominant plant species that are adapted to life in saturated soil conditions.

Method: To determine if vegetation was hydrophytic, the scientific name and indicator status of dominant plant species at each wetland were recorded on USACE data sheets. Dominance refers to the spatial extent of a species that is directly observed in the field. Dominance is calculated by identifying the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum as well as any other species that, by itself, accounts for at least 20 percent of the total. Where 50 percent or more of all dominant species were hydrophytic, the hydrophytic vegetation parameter was met. Absolute percent cover[1] of dominant species within each stratum is listed on data sheets.

Wetland Hydrology

Definition: Inundated or saturated to the surface for a minimum of 5 percent, in consecutive days, of the growing season.

Method: Wetland hydrology was determined by observing the presence of primary and/or secondary indicators listed on the USACE data sheet. If one primary indicator or two secondary indicators were present, the wetland hydrology parameter was met.

Hydric Soils

Definition: Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper 12-inches.

Method: According to delineation techniques outlined in the 1987 USACE Manual, sufficient information was present to make a wetland determination without evaluating soils at all of the locations.

[1] Absolute percent cover within each stratum is not required to add up to 100 percent on the data sheets.

Base field maps were developed using aerial photography in combination with information from the USFWS (United States Fish and Wildlife Service) NWI maps, NRCS (Natural Resources Conservation Service) soil survey data from Dunn County, and USGS (United States Geological Service) quadrangle maps.

One wetland drainage was delineated within the study area. Wetland boundaries that extended beyond the study area limits were not delineated to their full extents. This wetland was part of a naturally occurring drainage way. ***Please refer to Appendix A for Delineated Wetland Maps.***

Wetland boundaries at each wetland were determined based on the USACE wetland delineation process through completing paired sample points as needed and investigating vegetation, hydrology, and/or hydric soils parameters. The wetland boundaries were surveyed using GPS data collection.

Results and Discussion

The study area is located in the ecoregion identified by the USGS as the Northwestern Great Plains of North Dakota. The ecoregion encompasses the Missouri Plateau section of the Great Plains. The area is characterized by buttes and occasional badlands, with limited agriculture throughout the region. Land use in the study area consisted of a rangeland.

One wetland totaling approximately 0.35 acres was delineated by KL&J within the the study area. ***Please refer to Table 1, Summary of Delineated Wetlands. Please refer to Appendix B, Site Photos*** for a visual overview of the delineated wetland. Additional information regarding vegetation dominance and hydrologic indicators can be found on data sheets included in ***Appendix C, Data Sheets***.

Table 1
Summary of Delineated Wetlands

Wetland #	Delineated Acreage	Cowardin Classification
1	*0.35*	*PEMA*

Conclusion

Approximately 0.35 acres of delineated wetlands were identified within the study area. Final determination of jurisdictional wetlands within the study area is ultimately the decision of the USACE. All necessary permits shall be acquired in the event that the delineated wetland within the study area is determined to be jurisdictional by the USACE and will be affected by the proposed construction.

References

Cowardin et al. 1979. Classification of Wetlands and Deepwater Habitats of the U.S. as modified for National Wetland Inventory Mapping Convention. <http://www.fws.gov/wetlands/Documents/Wetlands-and-Deepwater-Habitats-Classification-chart.pdf>.

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United States Fish and Wildlife Service. National Wetlands Inventory. <http://www.fws.gov/wetlands/Data/Mapper.html>.

United States Geological Survey. Digital Data Services. <http://www.usgsquads.com/mapfinder.html>.

Delineators' Credentials

Grady Wolf

Education:	North Dakota State University – BS Natural Resources Management
Training:	Wetland Training Institute – Basic Wetland Delineation and Field Practicum (training base in part on the U.S. Army Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1 (1987 Manual), as provided for in training materials developed in conjunction with Section 307(e) of the water Resources Development Act of 1990 for the Wetland Delineator Certification Program)

Nick Anderson

Education:	University of Minnesota, Crookston – BS Natural Resources Management
Certifications:	Minnesota Wetland Delineator Certification Program: Delineator In-Training Certification
Training:	Wetland Delineator Certification Program – 5-Day Basic Wetland Delineation Course-University of Minnesota

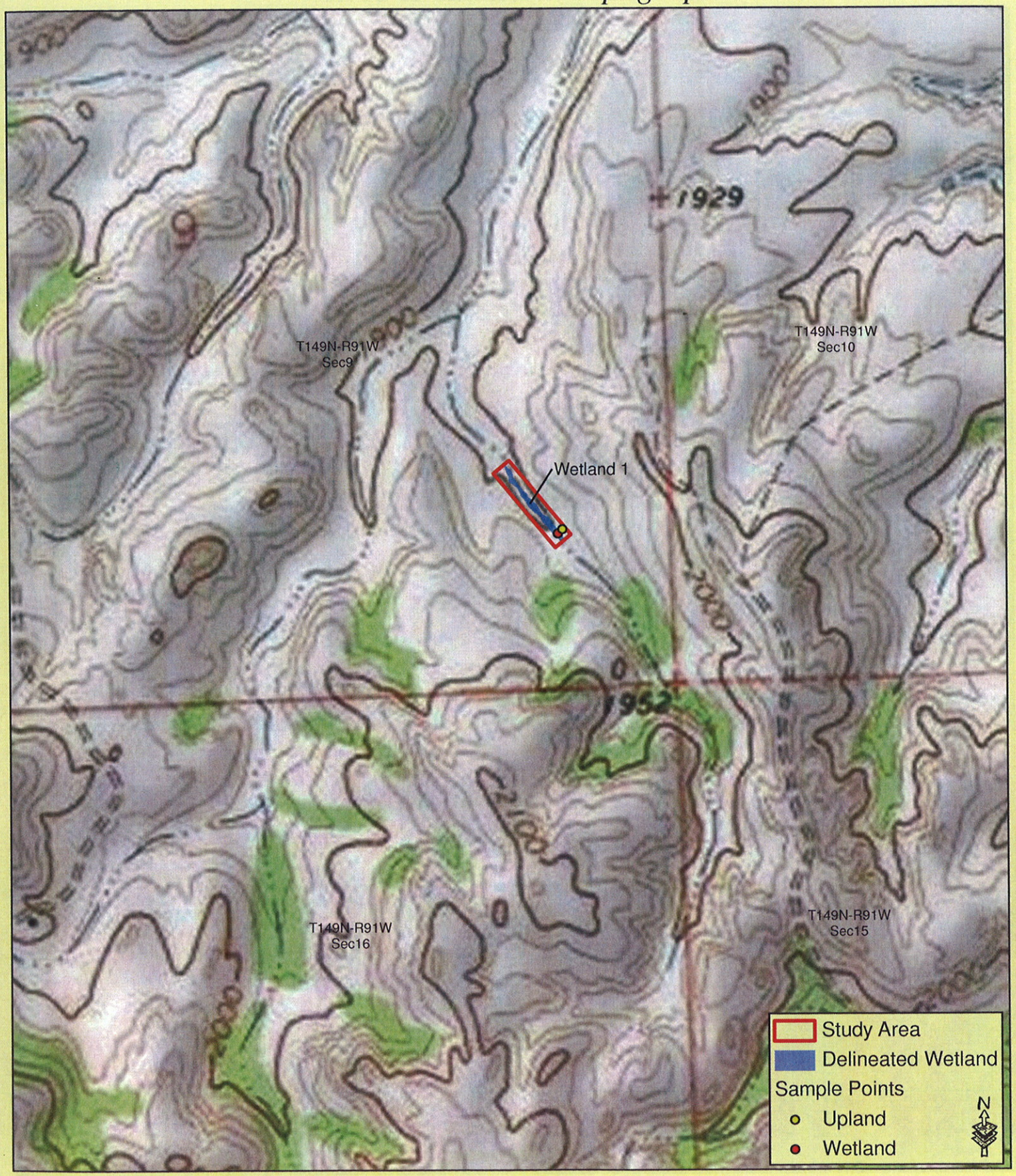
Appendix A

Delineated Wetland Maps

QEP Energy Company
Bullet Well Pad Access Road
Dunn County, North Dakota
Delineated Wetlands

QEP Energy Company
Bullet Well Pad Access Road
Dunn County, North Dakota
Delineated Wetlands & Soils

QEP Energy Company
Bullet Well Pad Access Road
Dunn County, North Dakota
Delineated Wetlands & Topographic



Appendix B

Site Photos

Wetland 1, View North

Appendix C

Datasheets

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Bullet Pad Access Road City/County: Dunn County Sampling Date: 10/19/2011
Applicant/Owner: QEP State: ND Sampling Point: 1a
Investigator(s): Grady Wolf, Nick Anderson Section, Township, Range: 9, T149N, R91W
Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 1%
Subregion (LRR): F Lat: 47.734275 Long: -102.324404 Datum: NAD 83
Soil Map Unit Name: NWI classification: PEMA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ____ No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Eleocharis erythropoda	60	X	OBL
2. Carex rostrata	20	X	OBL
3. Spartina pectinata	20	X	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum <5%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): ____ (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 1a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks: Soils were not classified due to guidance in the 1987 manual. A definite wetland boundary was observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 1/8 inch

Water Table Present? Yes X No ____ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Bullet Pad Access Road City/County: Dunn County Sampling Date: 10/19/2011
Applicant/Owner: QEP State: ND Sampling Point: 1b
Investigator(s): Grady Wolfe, Nick Anderson Section, Township, Range: 9, T 149 N, R 91 W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Convex Slope (%): 6%
Subregion (LRR): F Lat: 47.734337 Long: -102.324301 Datum: NAD 83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Poa pratensis	50	X	FACU
2. Nassella viridula	30	X	—
3. Pascopyrum smithii	20	X	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum <5%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): ____ (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 1b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks: Soils were not classified due to guidance in the 1987 Manual. A definite wetland boundary was observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

August 17, 2012

Mr. Dan Cimarosti, State Program Manager
US Army Corps of Engineers
North Dakota Regulatory Office
1513 S. 12th St.
Bismarck, ND 58504

Re: QEP Bullet Well Pad
404 Permit and Wetland Mitigation Plan
Dunn County, North Dakota
T149N, R91W, Section 9

Kadrmas, Lee & Jackson Inc. (KL&J) was contracted by QEP Energy Company (QEP) to complete an Environmental Assessment (EA) for construction of an access road and three adjacent well pads consisting of drilling of 10 wells in Dunn County, North Dakota. The EA is being completed to fulfill the National Environmental Policy Act requirements for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). A on-site visit in coordination with the BIA Environmental Protection Specialist as well as KL&J cultural resource staff and Tribal Historic Preservation Office (THPO) staff was completed on October 19th 2011. During the field survey, one wetland associated with a drainage was delineated within the proposed access road study area. ***Please refer to the attached Wetland Delineation Report.***

Construction of the proposed access road would impact 0.15 acres of wetlands assumed to fall under jurisdiction of the USACE. Wetland mitigation of 0.15 acres is being proposed adjacent to the proposed wetland impacts. The project is planned to be constructed during the 2012 construction season.

Attached is a 404 Permit and Wetland Mitigation Plan to offset the proposed impacts to presumed jurisdictional wetlands. ***Please refer to the attached 404 Permit and Wetland Mitigation Plan*** and consider the attachments for fulfillment of permitting and mitigation requirements for Section 404.

If further information is desired regarding the attached documents or project, please contact me at (701) 355-8726 or grady.wolf@kljeng.com.

Sincerely,
Kadrmas, Lee & Jackson, Inc.

Grady Wolf
Environmental Scientist

Enclosures

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 EXPIRES: 31 August 2012

Public reporting burden for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME:
First - Tracy Middle - G Last – Opp
Company – QEP Energy Company
E-mail Address – Tracy.Opp@qepres.com

6. APPLICANT'S ADDRESS.
Address - 1050 17th St., Ste 500
City – Denver State – CO Zip – 80265 Country – USA

7. APPLICANT'S PHONE NOs. W/AREA CODE.
a. Residence b. Business 303-308-3630 c. Fax

8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
First - Grady Middle - Last – Wolf
Company – Kadrmas, Lee & Jackson
E-mail Address – grady.wolf@kljeng.com

9. AGENT'S ADDRESS
Address - 128 Soo Line Drive
City – Bismarck State – ND Zip – 58501 Country – USA

10. AGENT'S PHONE NOs. W/AREA CODE
a. Residence b. Business 701-355-8726 c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Kadrmas, Lee & Jackson to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Bullet Well Pad Access Road

13. NAME OF WATERBODY, IF KNOWN (if applicable)
N/A

14. PROJECT STREET ADDRESS (if applicable)
Address N/A
City - State – Zip -

15. LOCATION OF PROJECT
Latitude: °N 47.734275
Longitude: °W -102.324404

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section – SE 1/4, 9 Township – 149 North Range – 91 West

17. DIRECTIONS TO THE SITE
See attached document

18. Nature of Activity (Description of project, include all features)

See attached document

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

See attached document

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

See attached document

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Foundation Fill, 120 CY	Earthen Fill, 8465 CY	Include CY of Scoria

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 0.15

Or

Liner Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Efforts made to reduce overall wetland impacts included alignment selection (i.e., route selection with minimal associated wetland impacts) and designing fill slopes as steep as the design standards would allow. All permanent wetland impacts will be mitigated onsite as shown in the attached mitigation plan.

24. Is Any Portion of the Work Already Complete? Yes ☐ No ☑ IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Address – Three Affiliated Tribes, 404 Frontage Road

City – New Town State – ND Zip – 58760

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
BIA	NEPA		Not Approved Yet		

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Block 17. Directions to site

The proposed project is located approximately 16.4 miles east of Mandaree, North Dakota. The nearest roadway is BIA Road 13, located approximately 1.9 miles west of the project area. For a visual overview of the proposed project location please refer to the attached ***Project Location Map.***

Block 18. Nature of Activity

The proposed project would involve construction of a new access road to provide access to a proposed well pad located in Sec. 10, T149N, R91W (Bullet well pad). Construction of this access road near the impacted wetland would involve dredging approximately 120CY of in situ soil from the natural channel bottom and replacing it with 120CY of foundation fill (aggregate) to provide a solid base for the installation of a 200 foot long by 42 inch wide corrugated metal pipe (CMP). Approximately 5,996 cubic yards of earthen fill would then be backfilled around and over the CMP to create the road embankment and approximately 16CY of compacted scoria would be placed for a driving surface. Fill would likely be placed using a combination of scrapers, backhoes and dozers. ***Please refer to the attached Mitigation Drawing.***

Block 19. Project Purpose

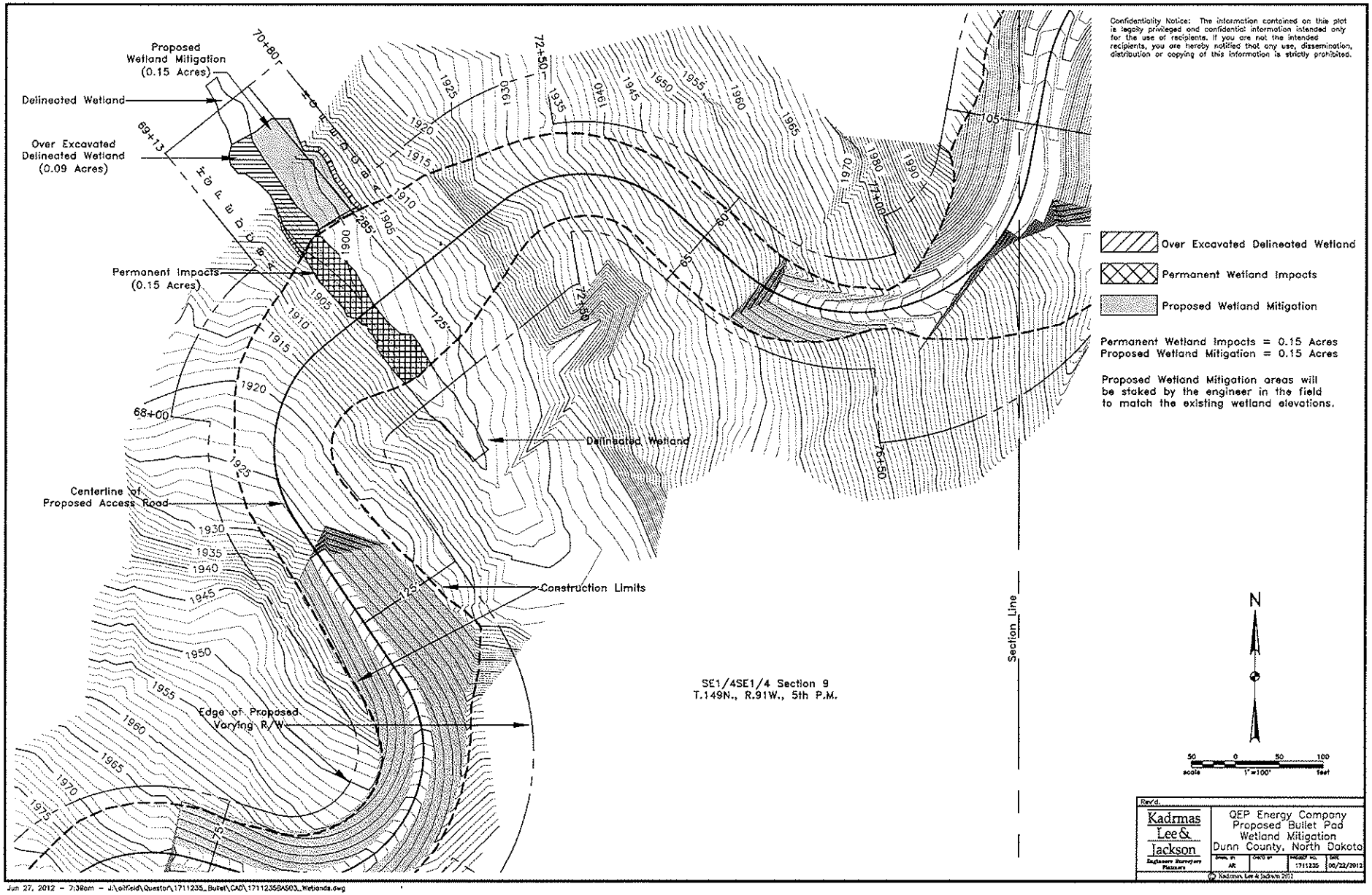
The purpose of the proposed project is to provide access to the proposed QEP Bullet well pad to allow oil and gas development on lands subject to QEP's lease areas. Additionally, the purpose is to provide a safe and reliable all weather driving surface for truck and equipment traffic accessing the proposed well pad. Construction is anticipated to occur during the 2012 construction season.

Block 20. Reason(s) for discharge

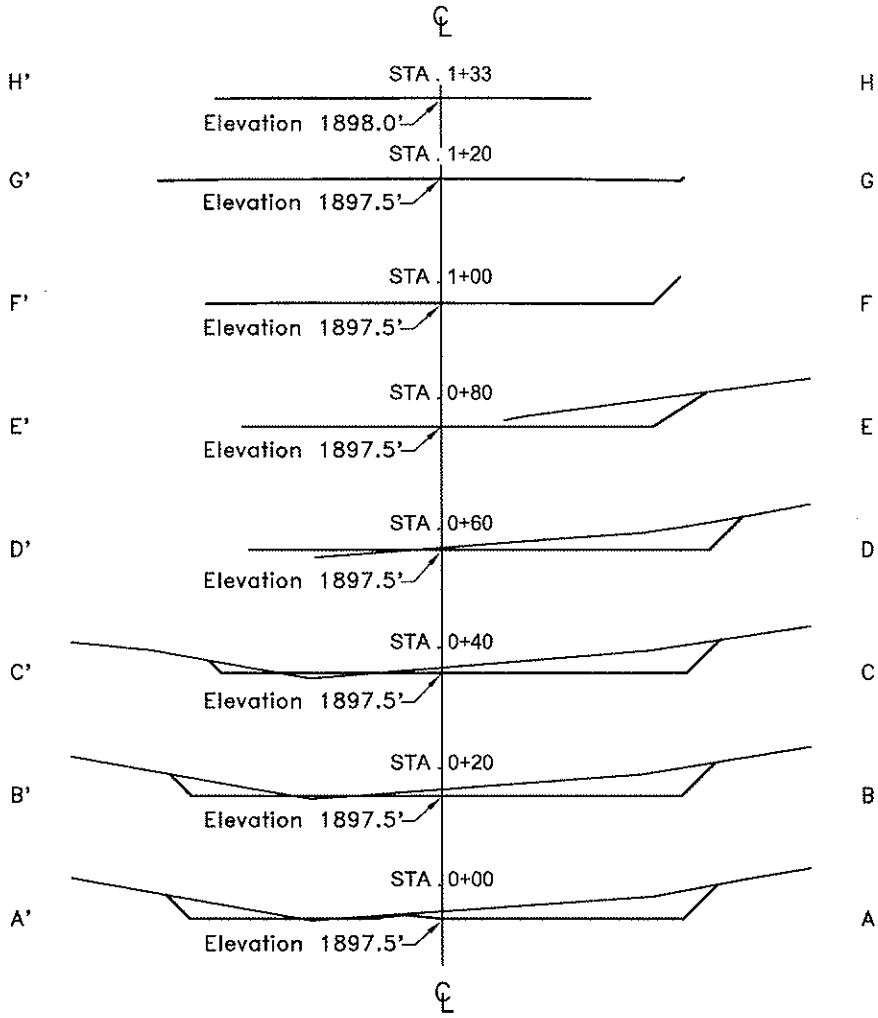
Permanent wetland impacts would occur from the placement of foundation fill, CMP, earthen fill, and scoria in wetland areas in order create a roadway that is safe and reliable for all weather conditions. The filled areas are necessary to minimize slope of the roadway as it crosses the steep terrain associated with the drainage.

Block 21. Type(s) of Material Being Discharged

- Foundation Fill (aggregate): 120 CY
- Earthen Fill: 5,996 CY
- Scoria: 16 CY
- Corrugated Metal Pipe: 42" x 200'


Proposed Wetland Mitigation (0.15 Acres)
Delineated Wetland
Over Excavated Delineated Wetland (0.09 Acres)
Permanent Impacts (0.15 Acres)
Centerline of Proposed Access Road
Edge of Proposed Varying R/W
Construction Limits
Delineated Wetland
Section Line
SE1/4SE1/4 Section 9
T.149N., R.91W., 5th P.M.
70+80
69+13
68+00
72+50
71+00
74+50
76+50
Confidentiality Notice: The information contained on this plot is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.
Over Excavated Delineated Wetland
Permanent Wetland Impacts
Proposed Wetland Mitigation
Permanent Wetland Impacts = 0.15 Acres
Proposed Wetland Mitigation = 0.15 Acres
Proposed Wetland Mitigation areas will be staked by the engineer in the field to match the existing wetland elevations.
N
50 0 50 100
scale 1"=100' feet
Rev'd.
Kadrmas Lee & Jackson
Engineers Surveyors Planners
QEP Energy Company
Proposed Bullet Pad
Wetland Mitigation
Dunn County, North Dakota
Drwn. by AR
Chkd. by
Project No. 1711235
Date 06/22/2012
© Kadrmas, Lee & Jackson 2012
Jun 27, 2012 - 7:38am - J:\oilfield\Questar\1711235_Bullet\CAD\1711235BAS03_Wetlands.dwg

Proposed Bullet Pad Wetland Mitigation
Cross Sections



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	—	—	1" = 30'	06/22/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
—	Cross Sections	—	1711235	2

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Wetland Mitigation Plan

QEP Energy Company
Proposed Access Road
Dunn County, North Dakota

July 2012

Kadrmas
Lee &
Jackson
Engineers Surveyors
Planners

PURPOSE

The purpose of this document is to identify the wetland mitigation plan for the proposed QEP Energy Company (QEP) Bullet Well Pad access road construction in Dunn County, North Dakota. The purpose of the proposed project is to provide access to the proposed QEP Bullet Well Pad to allow oil and gas development on lands subject to QEP's lease areas. Additionally, the purpose is to provide a safe and reliable all weather driving surface for truck and equipment traffic accessing the proposed well pad. The proposed project would permanently impact one wetland which is assumed to be jurisdictional.

LOCATION

The proposed project is located approximately 16.4 miles east of Mandaree, North Dakota in the SE¼ of Section 9, Township 149 North, Range 91 West, 5th P.M. ***Please refer to the Project Location Map in Appendix A.***

EXISTING CONDITIONS

The proposed project would involve the construction of approximately 2.10 miles of new access road. Grazing is the primary land use within the project corridor with the landscape composed of open rangeland and wooded draws with scattered ephemeral drainages. The wetland delineation identified one wetland within the project corridor, 0.15 acres of which would be permanently impacted by the proposed project. There are no temporary wetland impacts anticipated. ***Please refer to the Wetland Mitigation Design Drawings and Project Location Map in Appendix A***.

PROJECT DESCRIPTION

The proposed project would involve construction of a new access road to provide access to a proposed well pad located in Sec. 10, T149N, R91W (Bullet Well Pad). Construction activities in and around the impacted wetland would include dredging approximately 120 CY of in situ soil from the natural channel bottom and replacing it with 120 CY of foundation fill (aggregate) to provide a solid base for the installation of a 42" x 200' corrugated metal pipe (CMP). Approximately 5,996 CY of earthen fill would then be backfilled around and over the CMP to create the road embankment and 16 CY of scoria would be placed for a driving surface.

Construction is anticipated to occur during the 2012 construction season.

WETLAND MITIGATION

A field wetlands delineation was conducted on October 19, 2011 by Kadrmas, Lee & Jackson for the proposed study area. One wetland was delineated within the study area. Project activities would result in approximately 0.15 acres of permanent impacts and no temporary impacts. All permanent wetland impacts would fall under Nationwide Permit 14 (linear transportation project).

Wetland mitigation for the 0.15 acres is being proposed adjacent to the impacted wetland at a 1:1 ratio.

The delineated wetland exists as part of a natural sloped wetland extending from springs from the adjacent hillsides. Mitigation of the impacted wetland would consist of expanding the wetland on the north side of the proposed roadway by excavating to a bottom depth 6-inchs below the existing wetland. In addition, a portion of the existing wetland would also be over excavated to this depth to promote ponding of water during runoff events. QEP would acquire additional right-of-way for the proposed mitigation site. The mitigated wetland boundary would approximately follow the 1,898.0 (MSL) contour elevations which are similar to that of the delineated wetland. The mitigated wetland area is designed to have a fairly flat bottom consisting of a 6-inch depth. The mitigated parcel would have a bottom elevation depth of approximately 1,897.5 and would comprise an area of approximately 0.15 acres. The mitigation area would hold a maximum of 6-inches of water in the middle of the site, and any overflow would discharge from the mitigation area and continue down the existing sloped wetland. The proposed design and drainage flows should provide ample hydrology at the mitigation site. ***Please refer to Design Drawings in Appendix A.***

Wetland vegetation found during the field delineation consisted primarily of prairie cordgrass (*Spartina pectinata*), wolly sedge (*Carex pellita*) and bald spikerush (*Eleocharis erythropoda*). It is anticipated that wetland seed establishment would occur naturally at the mitigation site due to the adjacency of natural wetlands. An annual stabilizing grass should be planted, such as rye or oats, to hold the soils in place until natural seed establishment can establish. Further development of hydric soils at the mitigation site is expected to naturally evolve over time

MAINTENANCE

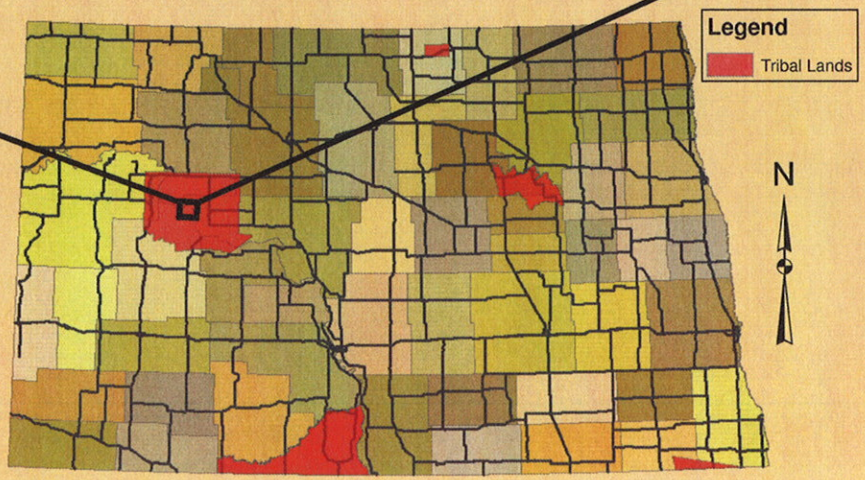
QEP would be responsible for long term maintenance of the mitigation sites. Potential maintenance includes cleaning siltation from the mitigation area if it no longer exhibits wetland characteristics for which it was designed. All dredged materials would be disposed of in an approved manner. The wetland mitigation area shall be permanently preserved, the maintenance of which would be the responsibility of QEP.

MONITORING

The wetland being impacted by the proposed project is assumed to be jurisdictional by the US Army Corps of Engineers (USACE). The mitigation site would be monitored for success as follows: The wetland boundary would be determined based on guidelines in USACE 1987 Wetland Delineation Manual and Regional Supplements. Datasheets, a series of photos, and photo reference maps of the mitigation site would be submitted to the USACE North Dakota Regulatory Office no later than September 15 of the year following construction of the site. The photos submitted would be taken in such a manner as to show establishment of wetland characteristics within the mitigation site. Success of the site would be determined by the establishment of hydrophytic vegetation, soils, and the presence of hydrology within the site. Submitted photos shall be taken during the growing season of each year. The photos shall be taken in the same locations and submitted to the USACE annually until the USACE has deemed the mitigation area a success. If the mitigation site is not successful, QEP would work with the USACE to develop and implement an alternative mitigation plan.

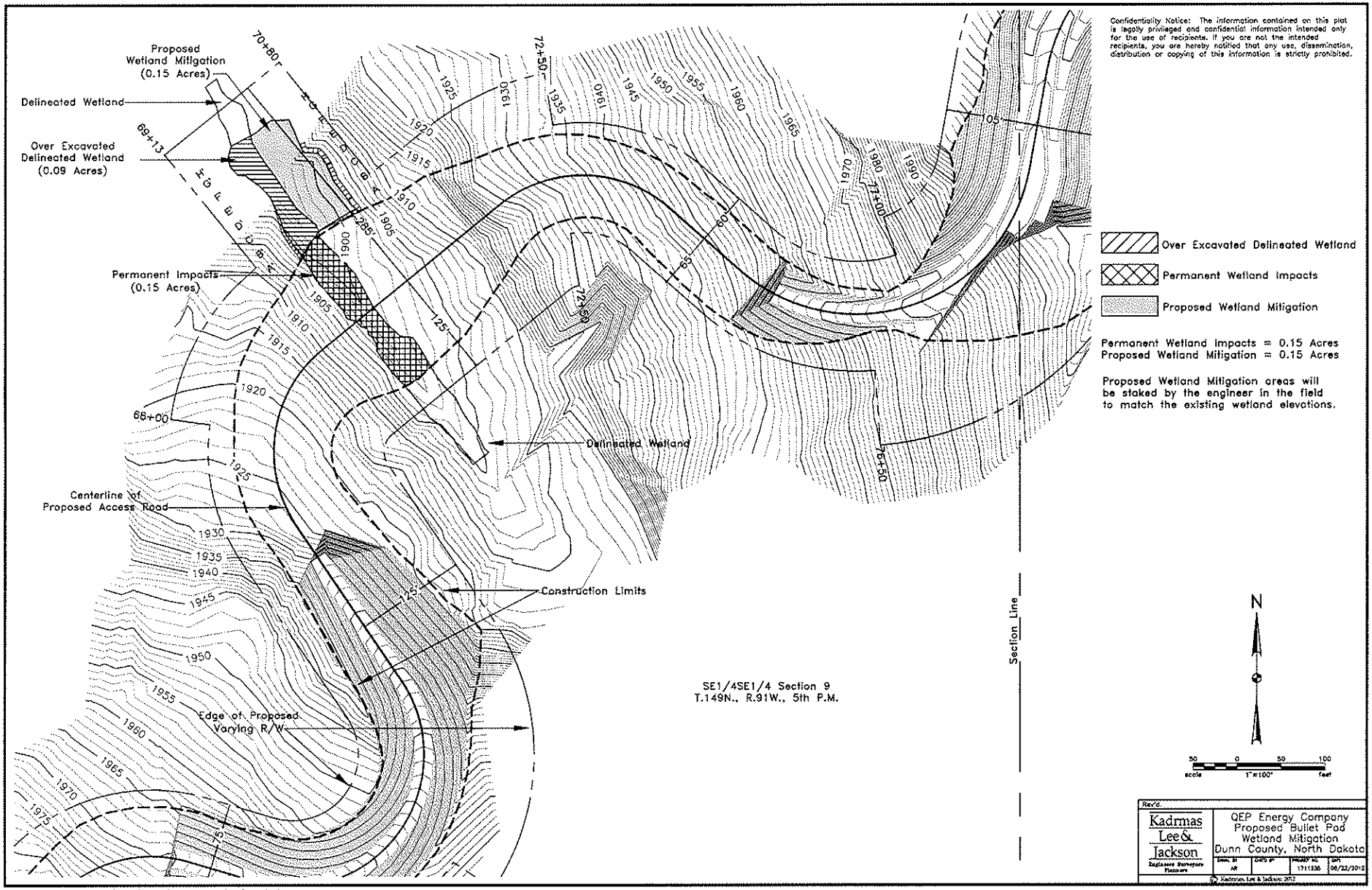
Appendix A

Project Location Map

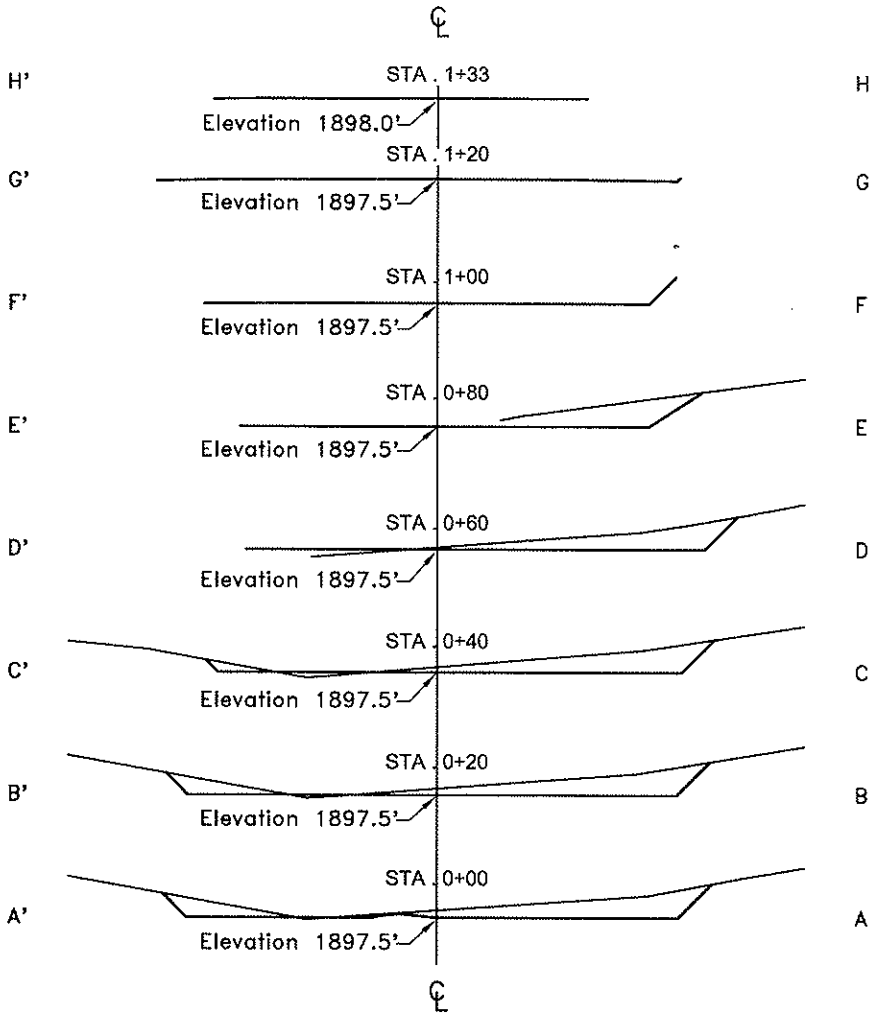


QEP Energy Company
Bullet Well Pad Access Road
Wetland Study Area
Dunn County, ND

Kadrmas Lee & Jackson
Engineers Surveyors Planners


Proposed Wetland Mitigation (0.15 Acres)
Delineated Wetland
Over Excavated Delineated Wetland (0.09 Acres)
Permanent Impacts (0.15 Acres)
Centerline of Proposed Access Road
Edge of Proposed Varying R/W
Construction Limits
Delineated Wetland
Section Line
SE1/4SE1/4 Section 9
T.149N., R.91W., 5th P.M.
70+80
72+50
69+13
68+00
76+50
77+00
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.
Over Excavated Delineated Wetland
Permanent Wetland Impacts
Proposed Wetland Mitigation
Permanent Wetland Impacts = 0.15 Acres
Proposed Wetland Mitigation = 0.15 Acres
Proposed Wetland Mitigation areas will be staked by the engineer in the field to match the existing wetland elevations.
N
50 0 50 100
scale 1"=100' feet
Rev'd.
Kadrmas Lee & Jackson
Engineers Surveyors Planners
QEP Energy Company
Proposed Bullet Pad
Wetland Mitigation
Dunn County, North Dakota
Drwn. By AR
Chk'd By
Project No. 1711235
Date 06/22/2012
© Kadrmas Lee & Jackson 2012
Jun 27, 2012 - 7:38am - J:\oilfield\Questar\1711235_Bullet\CAD\1711235BAS05_WetlandsMit.dwg

Proposed Bullet Pad Wetland Mitigation
Cross Sections



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Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	–	–	1" = 30'	06/22/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
–	Cross Sections	–	1711235	2

Kadrmas Lee & Jackson
Engineers Surveyors Planners

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U.S. Army Corps of Engineers
North Dakota Regulatory Office
1513 South 12th Street
Bismarck, North Dakota 58504
Telephone (701) 255-0015 Fax (701) 255-4917

IMPORTANT INSTRUCTIONS FOR OUR PERMIT CUSTOMERS

Notice of the Reissuance of Nationwide Permits was published in the Federal Register [76 FR 9174] on February 21, 2012. The Nationwide Permits went into effect on March 19, 2012. Project compliance certification is required by General Condition 30. The following instructions are provided to clarify the information contained within the nationwide permit authorization letter and attachments. [1]

STEP 1
Review the permit authorization and be sure you understand the terms and conditions for the authorization to remain valid. If you do not understand, or have any questions, please do not hesitate to contact this office at the above address.

STEP 2
Complete your project in accordance with the permit terms and conditions. [Remember that any deviation from the original plans and specifications of your project could require additional authorization from this office.]

STEP 3
Within thirty (30) days of project completion, please complete the permit compliance certification contained within your permit authorization letter. A photocopy of the first page (marked with a colored COPY stamp) has been provided for this purpose. Mark the applicable statements, sign and date where indicated, and forward the COPY to this office at the above address.

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[1]There is no charge associated with any aspect of this nationwide authorization or the follow-up compliance certification.

COPY

This determination is applicable only to the permit program administered by the Corps of Engineers. It does not eliminate the need to obtain other Federal, state or local approvals before beginning work.

You are responsible for all work accomplished in accordance with the terms and conditions of the Nationwide Permit, **including the Regional Conditions specific to projects undertaken in North Dakota.** If a contractor or other authorized representative will be accomplishing the work authorized by the Nationwide Permit in your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable Nationwide Permit. Any activity that fails to comply with all of the terms and conditions of the Nationwide Permit will be considered unauthorized and subject to appropriate enforcement action.

SIGN HERE

In compliance with General Condition 30, ***you are required to submit the following project compliance certification within thirty (30) days of project completion.*** *[Please check all applicable statements]*

[ ] I certify that I have completed the projects as permitted.
[ ] I certify that I have completed a modified version of the projects.
[ ] I certify that I have completed all required mitigation.

Permittee's Signature:_____ **Date:**_____

This verification will be valid until **September 10, 2014.**

Should you at any time become aware that either an endangered and/or threatened species or its critical habitat exists within the project area, you must immediately notify this office.

The Omaha District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://per2.nwp.usace.army.mil/survey.html. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

If you have any questions concerning this determination or jurisdiction, please feel free to contact Matt Mikulecky, of my staff, at (701) 255-0015 and reference Corps Permit No. **NWO-2012-2035-BIS**.

Sincerely,

Joseph M. Tanko
Acting State Program Manager
North Dakota

Enclosures

Copy Furnished (w/out enclosures):

Kadrmas, Lee and Jackson, Inc.
Attn: Mr. Grady Wolf
P.O. Box 1157
128 Soo Line Drive
Bismarck, North Dakota 55502-1157

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

September 10, 2012

North Dakota Regulatory Office [NWO-2012-2035-BIS]

QEP Energy Company
Attn: Mr. Tracy G. Opp
1050 17th Stre, Suite 500
Denver, Colorado 80265

Dear Mr. Opp:

We have reviewed your request for Department of the Army authorization to construct an oil well pad access road in and across an unnamed wetland tributary to Lake Sakakawea. The project will place a 42-inch diameter by 200-foot long corrugated metal pipe and associated roadway embankment fill in 0.15 acre of jurisdictional wetlands. These permanent impacts will be mitigated onsite at a 1:1 ratio by creating 0.15 acre of wetlands contiguous with the natural wetland system. The project is located in Section 9, Township 149 North, Range 91 West, in Dunn County, North Dakota.

We have prepared a preliminary jurisdictional determination (JD) for the site which is a written indication that the waterway in the project area may be jurisdictional waters of the United States (US). Such waters have been treated as jurisdictional for purposes of computation of impacts and compensatory mitigation requirements. If you concur with the preliminary JD, please sign it and return it to the letterhead address. If you believe the preliminary JD is inaccurate, you may request this office complete an approved JD prior to commencement of any work in waters of the US. An approved JD is an official determination regarding the presence or absence of such waters. Completion of an approved JD may require coordination with the US Environmental Protection Agency.

If you do not want the Corps to complete an approved JD, you may proceed your project in accordance with the terms and conditions of Department of the Army Nationwide Permit No. 14 (NWP 14), found in the February 21, 2012 Federal Register (77 FR 10184), Reissuance of Nationwide Permits. Enclosed is a fact sheet that fully describes this Nationwide Permit and lists the General, Regional and Water Quality Certification Conditions that must be adhered to for this authorization to remain valid. **Please note that deviations from the original plans and specifications of your project could require additional authorization from this office.**

SPECIAL CONDITIONS:

The following special conditions, by reference, become requirements of this NWP 14 verification. You must meet these conditions in order for this verification to remain valid:

a. **You shall construct wetland mitigation at a 1:1 ratio as proposed in the attached mitigation plan.**
b. **Wetland mitigation must be constructed concurrent with project construction.**
c. **Top soil from the filled wetland shall be salvaged and incorporated into the wetland mitigation area as inoculum to minimize temporal loss and enable the initial approval of a 1:1 ratio.**
d. **Wetland mitigation must meet success criteria as described in the attached mitigation plan.**
e. **You shall submit annual monitoring reports, as proposed, to the Corps of Engineers, North Dakota Regulatory Office (NDRO) no later than September 15 for five years, or until the site is determined to meet full success criteria.**
f. **You shall submit a legally executed long term protection instrument within 60 days of the date of this verification letter (Corps approved template is attached).**

Printed on Recycled Paper

This determination is applicable only to the permit program administered by the Corps of Engineers. It does not eliminate the need to obtain other Federal, state or local approvals before beginning work.

You are responsible for all work accomplished in accordance with the terms and conditions of the Nationwide Permit, **including the Regional Conditions specific to projects undertaken in North Dakota.** If a contractor or other authorized representative will be accomplishing the work authorized by the Nationwide Permit in your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable Nationwide Permit. Any activity that fails to comply with all of the terms and conditions of the Nationwide Permit will be considered unauthorized and subject to appropriate enforcement action.

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Attn: Mr. Grady Wolf
P.O. Box 1157
128 Soo Line Drive
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Notice of Availability and Appeal Rights

QEP: 1-10-11H-149-91, MHA 2-10-11H-149-91, MHA 3-10-11H-149-91, MHA 4-10-11H-149-91, MHA 1-10-14H-149-91, MHA 2-10-14H-149-91, MHA 3-10-14H-149-91, MHA 4-10-14H-149-91, MHA 1-10-15H-149-91, MHA 2-10-15H-149-91, MHA 3-10-15H-149-91, and MHA 4-10-15H-149-91 Oil & Gas Wells

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to the drilling of twelve wells from one pad on the Berthold Reservation as shown on the attached map. Construction by QEP is expected to begin in 2012.

An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Earl Silk, Superintendent at 701-627-6570 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA's decision to proceed with administrative actions *can* be appealed until October 20, 2012, by contacting:

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

Procedural details are available from the BIA Fort Berthold Agency at 701-627-6570.

Project locations.