



# NUSTAR PIPELINE

## Second Compliance Inspection Report



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## FIGURES

Figure 1: Site Visit Location Maps

## 1 EXECUTIVE SUMMARY

The North Dakota Public Services Commission (NDPSC) has contracted with Houston Engineering, Inc. (HEI) to perform permit compliance inspection services for the Nustar Pipeline Express, LLC project, (Case No. PU-15-674), an 8-inch pipeline spanning 7.3 miles near the city of Prosper in Cass County, North Dakota. This report documents the second inspection compliance site visit, which was conducted on November 4, 2016. This site visit focused on the following activities conducted by the contractors:

- Observation of the pipe's installation depth;
- Topsoil replacement;
- Observation of regraded areas, verifying restored topography;
- Photographic documentation of recently regraded areas; and
- Observation of any erosion issues.

The site was inspected by Ryan David, Civil Engineer from the HEI Fargo office. Mr. David coordinated with Charley Young, the Chief Inspector of NuStar Energy, while on site. Construction observation occurred both in areas where backfilling of the 8-inch pipe was completed, and where backfilling had not yet occurred. Mr. David also observed topsoil replacement, recently backfilled areas, and restored topography. He did not observe any erosion problems during the inspection.

Based on our observations during the November 4<sup>th</sup>, 2016 construction site inspection, backfilling for the 8-inch pipe, topsoil replacement, and regrading activities are being completed in accordance with the PSC permit conditions and standard construction procedures. The pipe was estimated to be buried to a depth of a minimum 48 inches below the ground surface, per permit conditions. The construction methods used by the contractor were appropriate for the site and site conditions.

## 2 INTRODUCTION AND PURPOSE

HEI was contracted by the NDPSC to complete construction inspection services for an 8-inch crude oil pipeline known as the NuStar Pipeline Project (*NDPSC. Case No. PU-15-674*). The purpose of the inspection service is to determine compliance with the permit issued on February 24, 2016 by the NDPSC. The following is a summary of the compliance inspections completed to date and the anticipated timeframe for the completion of the permit compliance review. Two permit compliance site visits have been completed to date. Two additional site visits will be scheduled, one immediately after construction is concluded (anticipated November - December), and one final inspection approximately one year after completion (fall 2017) to observe reclamation activities and vegetation growth.

This Compliance Inspection Report is for the second construction observation site visit, which occurred on November 4, 2016. The purpose of this inspection report is to document the construction activities observed for pipe installation, grading and topsoil replacement, placement of seed and mulch, and to document any construction erosion issues.

### 3 SITE VISIT SUMMARY AND CONCLUSION

HEI arrived on site at the temporary field office at 9:00 a.m. CDT on November 4, 2016 to meet with Charley Young, Chief Inspector, NuStar Energy. Upon arrival, HEI discussed project progress and status. Charley Young and Ryan David drove the entire length of pipeline alignment (beginning from the south to the north end of the project) and discussed the construction process and installation of the pipe. At the time of the field visit, most of the backfilling and regrading activities had been completed, and no backfilling activities were occurring at that time. One area observed in the northern portion of the pipeline route, on the southside of the Maple River crossing, was not yet backfilled. This area was to remain open until a new check valve was installed (see **Photographs 1-5, 16**). There was one area along the alignment, in a standing cornfield that had not been graded due to wet conditions. Silt fence was removed from all areas except for the north end tie-in location (**Photographs 24-27**). It was observed that the topsoil which was previously separated as observed during the first construction inspection site visit, was replaced at the ground surface where backfilling and regrading were complete.

Charley described the field methodologies for pipe installation and documentation. A survey crew surveys the pipeline at the location of every weld to verify the backfill depth. If the contractor installs the pipe at a depth less than the required depth, the pipe is pulled out, the trench is regraded to meet the backfill requirement of 48 inches, then the pipe is reinstalled. At the location noted earlier with the open trench, the pipe depth was within the permit condition requiring a depth of 48" below the ground surface. A valve will be installed at this location prior to the backfill operations (**Photographs 1-5, 16**).

Most of the pipeline alignment located on agricultural lands had been constructed, regraded by the contractors, and immediately tilled and reworked by landowners. Reseeding had not been conducted at the time of the inspection, and it appears much of these areas are in agriculture production and will not require seeding and vegetative establishment. Along the alignment, naturally vegetated/grassy areas were undisturbed on the surface due to the pipe being installed via horizontal directionally drilling (HDD) techniques (such as within road right-of-ways)

Based on our construction observations on November 4<sup>th</sup>, 2016, HEI concludes that the contractor has successfully completed the following:

- Installed the pipe at or below the required minimum depth. Based on our observations of open trench areas and discussions with the Chief Inspector, pipe has been installed at the minimum depths outlined in the permit conditions.
- Replaced topsoil. In all areas where backfilling had occurred, topsoil was observed on the ground surface—no subsoils were observed at the surface.
- Regraded areas and restored surficial topography. The topography in all areas where backfill and regrading were complete were graded to match the adjacent undisturbed lands.
- Conducted their activities in such a manner as to prevent erosion. No erosion problems were observed.

See **Table 1** for a summary of permit conditions and compliance information.

**Table 1: Permit Conditions and Order Provisions – Secondary Compliance Inspection**

Permit Conditions/Order Provisions	Compliance	Discussion
<p>Order Provision 11: Pipeline Depth</p> <p>“...pipeline buried to a minimum depth from the ground surface to the top of the pipe of 48 inches in range land, 48 inches for cultivated land, 48 inches at the bottom of the ditch for road crossings, and 72 inches across undeveloped section lines”</p>	<p>Yes</p>	<p>As discussed and observed, pipeline depth is at or greater than 48”.</p>
<p>Order Provision 12: Topsoil Replacement</p> <p>“...all topsoil, up to 12 inches, or topsoil to the depth of cultivation, whichever is greater, over and along trench areas where cuts will be made, must be carefully stripped and segregated from the subsoil. Any area on which excavated subsoil will be placed must also be stripped of topsoil. The stripped topsoil must not be stockpiled in natural drainages, and must be protected from water erosion. Care must be taken to protect topsoil from unnecessary compaction by heavy machinery. Unless otherwise approved by the Commission, topsoil must be removed before topsoil is placed in the late fall/early winter to the point that frost inhibits proper soil segregation. After backfilling with subsoil is completed, any excess subsoil must be placed over the excavation area, blending the grade into existing topography. Topsoil must be replaced over areas from which it was stripped only after the subsoil is replaced.”</p>	<p>Yes</p>	<p>Topsoil was observed to be proficiently segregated during the first compliance inspection (August 23, 2016). Subsoil and topsoil have since been properly reclaimed and regraded, restoring the topography across the alignment. Topsoil was observed to be replaced at the ground surface.</p>
<p>Order Provision 13: Boring Across Roadways</p> <p>“...all buried facility crossings of graded roads must be bored unless the responsible governing agency specifically permits Company to open cut the road.”</p>	<p>Yes</p>	<p>HEI inspected the entire 7.3-mile pipeline. No road cuts were observed.</p>
<p>Order Provision 16: Construction conditions</p> <p>“...construction must be suspended when weather conditions are such that construction activities will cause irreparable damage to roads or land, unless adequate protection measures are taken by Company.”</p>	<p>Yes</p>	<p>No irreparable construction damage was observed.</p>
<p>Order Provision 18: Restoration</p> <p>“...as soon as practicable upon the completion of the construction of the transmission facility, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.”</p>	<p>Yes</p>	<p>Grading, topsoil replacement, and restoration activities were observed to be completed and/or in the process of being complete, with the exception of the area that remained open for the installation of a valve. Restoration will be observed in subsequent compliance inspections.</p>

## 4 FUTURE PLANNED ACTIVITIES

HEI will perform the third permit compliance site visit after construction is complete, and the final site visit approximately one year after restoration activities are completed. HEI will monitor construction completion to schedule our final site visits with Nustar Energy. Based on the current conditions, HEI anticipates that the next site visit will occur late November or December 2016. HEI will complete one final inspection to observe the status of the restoration activities in late fall of 2017. If as-built conditions and restoration activities cannot be complete or observed due to weather (snow conditions), the third site visit will occur in the spring of 2017.



## 5 SITE PHOTOGRAPHY



**Photo 1:** View of pipe depth installed on south side of Maple River (northern portion of alignment).



**Photo 2:** View of pipe depth installed on south side of Maple River (northern portion of alignment).



**Photo 3:** View of pipe depth installed on south side of Maple River (northern portion of alignment).



**Photo 6:** Alignment at County Road 10 crossing (looking south).



**Photo 8:** Alignment at County Road 10 crossing (looking north).



**Photo 9:** Alignment at 90-degree bend on north side of farm on 165<sup>th</sup> Ave SE (looking east).



**Photo 11:** Alignment located on north side of 35<sup>th</sup> Street SE (looking north).



**Photo 12:** Alignment located on north side of 35<sup>th</sup> Street SE (looking north).



**Photo 13:** Alignment located at 165<sup>th</sup> Ave SE crossing (looking west).



**Photo 14:** Alignment located at 165<sup>th</sup> Ave SE crossing (looking east).



**Photo 16:** South side of open trench, south side of Maple River (looking south).



**Photo 18:** County Road 20 crossing (looking south).



**Photo 19:** County Road 20 crossing (looking north).



**Photo 21:** Alignment at 22-degree bend, north of County Road 20 (looking northeast).



**Photo 25:** Alignment at north end of project, at end of project tie-in location (looking east).



**Photo 26:** Alignment at north end of project, at end of project tie-in location.



**Photo 27:** Alignment at north end of project, at end of project tie-in location.

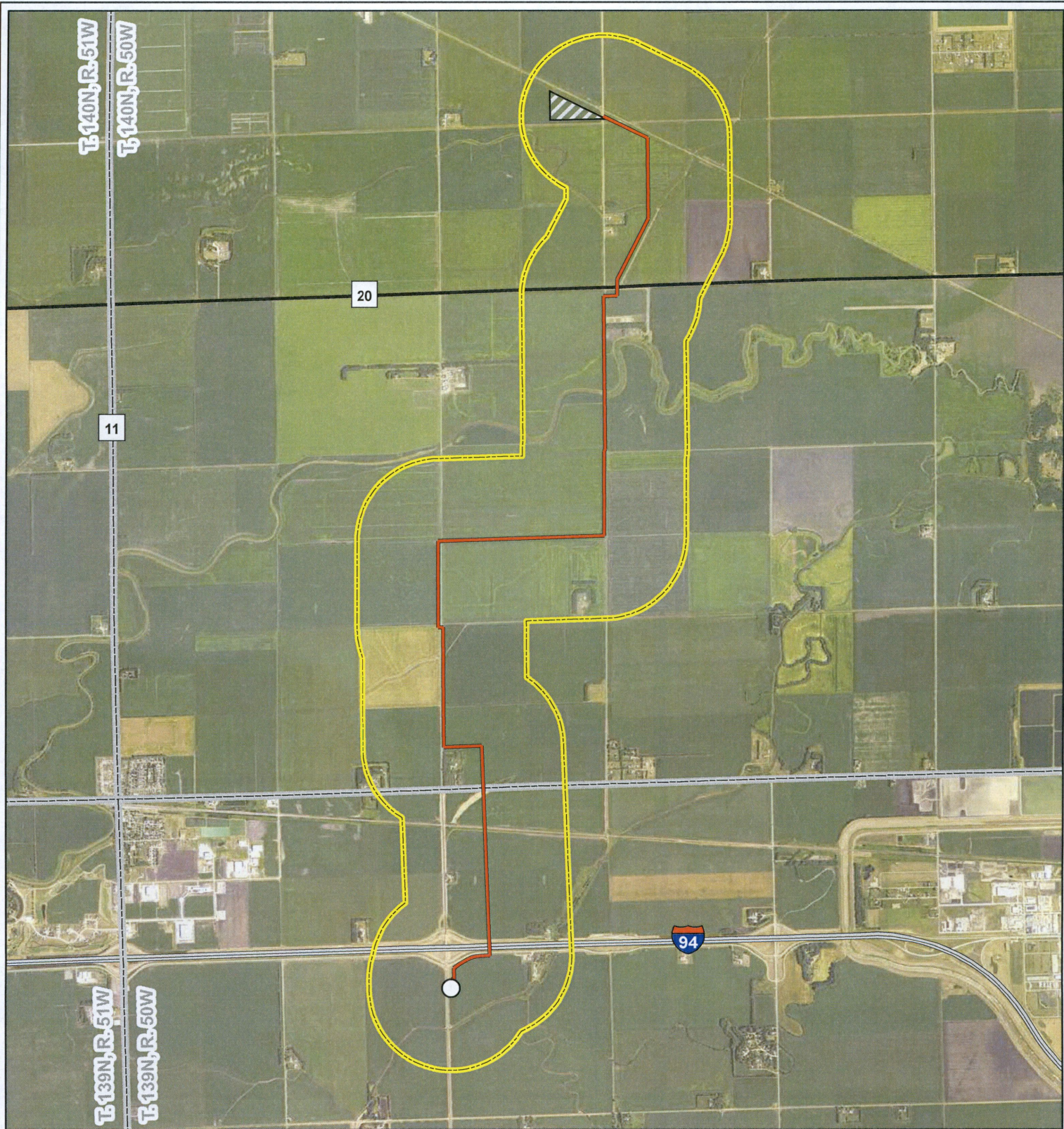


**Photo 28:** Approach along 165<sup>th</sup> Ave SE.










**Photo 29:** Approach along 165<sup>th</sup>  
Ave SE.

Site Photography



**Fig. 2: Laurel Interconnect Pipeline Project**

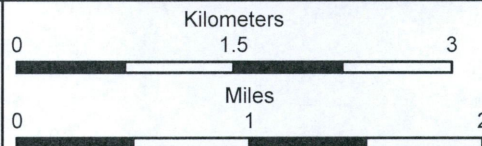
-  Proposed Mapleton Junction Site
-  Proposed Route
-  Interstate Highway
-  County Highway
-  Proposed Cenex Fargo Terminal
-  Study Area
-  Township/Range Boundary

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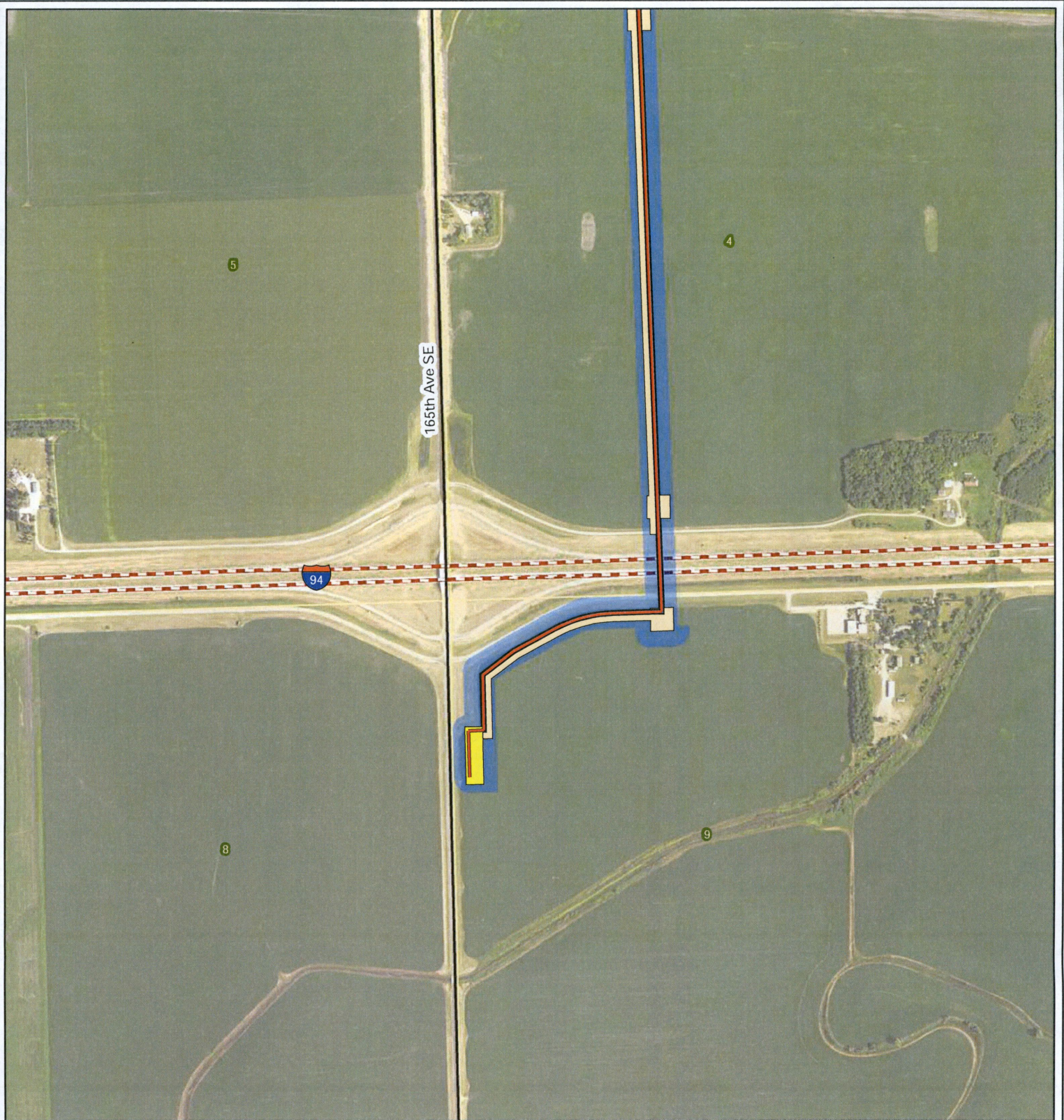
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Base Map: 2014 Aerial Imagery  
 Source: USDA/FSA -  
 Aerial Photography Field Office  
 Casselton SE (1976), Mapleton (1976),  
 West Fargo North (1976)  
 T. 139N, R. 50W & T. 140N, R. 50W  
 Cass County, North Dakota

Projection: NAD 1983 UTM Zone 14N





Laurel Interconnect Pipeline Project -  
Exclusion and Avoidance Area

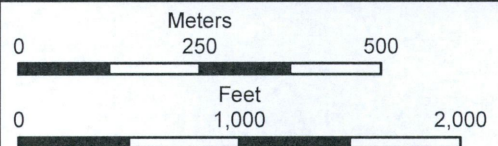
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|---------------------------------|-------------------------------|
| Proposed Route                  | Proposed Corridor             |
| Maple River                     | Proposed Cenex Fargo Terminal |
| Interstate Highway              | Township/Range Boundary       |
| County Highway                  | Section Boundary              |
| Existing Road                   |                               |
| Permanent ROW                   |                               |
| Temporary Workspace             |                               |
| Proposed Mapleton Junction Site |                               |



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Base Map: 2014 Aerial Imagery  
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Quadrangle: Casselton SE (1976)  
and Mapleton (1976)  
Township/Range: T. 139N, R. 50W

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Projection: NAD 1983 UTM Zone 14N





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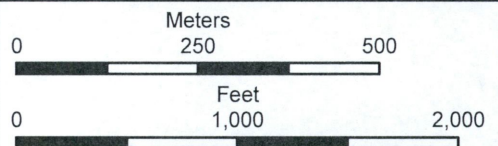
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|  | Maple River                     |  | Proposed Cenex Fargo Terminal |
|  | Interstate Highway              |  | Township/Range Boundary       |
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

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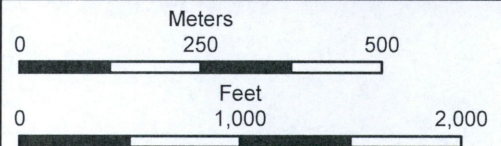
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|  Proposed Route                  |  Proposed Corridor             |
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Laurel Interconnect Pipeline Project -  
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Meters  
0 250 500

Feet  
0 1,000 2,000

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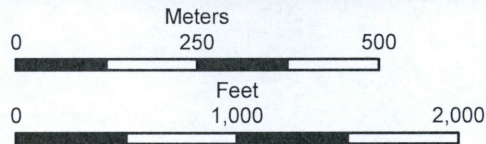
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