



NST EXPRESS, LLC

Permit Compliance Inspection Report #4

NDPSC CASE NO. PU-15-232



TABLE OF CONTENTS

1 EXECUTIVE SUMMARY	1
2 INTRODUCTION AND PURPOSE	1
3 SITE VISIT SUMMARY AND CONCLUSION.....	2
4 FUTURE PLANNED ACTIVITIES.....	3
5 SITE PHOTOGRAPHY	3

EXHIBITS

Exhibit 1: Site Visit and Photograph Location Map

1 EXECUTIVE SUMMARY

The North Dakota Public Services Commission has contracted with Houston Engineering, Inc. (HEI) to perform permit compliance inspection services for the NST Express, LLC project, (Case No. PU-15-232), a 12-inch crude oil pipeline spanning 23 miles in McKenzie County, North Dakota. This report documents the inspection compliance site visit, which was conducted on June 20, 2017. This is the fourth of five site visits, with the final visit for the purpose of inspecting the site restoration. Construction of the pipeline was completed in the fall of 2016, as such the inspection site visit focused on the following:

- Observation of regraded areas and restoration to pre-construction topography;
- Seeded areas;
- Road conditions near and adjacent to the pipeline corridor;
- Directional boring under roads, no road cuts;
- Erosion control measures and addressing any erosion issues. Also, determine if there is a need for additional erosion control measures.

The site was inspected by Doug Dilliplane, Civil Engineer, from the HEI Bismarck office. Mr. Dilliplane toured the pipeline corridor from the road right-of-way and observed the current conditions. All open pit areas have been backfilled, regraded and seeded, where appropriate. Many areas of the pipeline are in or adjacent to active farming areas, therefore, no reseeded was performed. There were no erosion control issues or sedimentation identified during the site inspection.

Based on our observations from the construction site inspection, reclamation and restoration activities have been completed in an acceptable manner. The topography is being restored to the pre-construction conditions, and seeding activities have been performed on the surface of recently graded areas. In areas where the pipeline crosses a roadway, a direct bore method was used as opposed to open road-cuts. No road cuts were observed during the site visit.

As-built documentation was reviewed to verify the depth of pipeline burial. All areas met the depth requirements of the permit (**Order Provision 10** stating that required 4' range land, 4' cultivated land, 4' from the bottom of the ditch for road crossings, and 6' across undeveloped section lines) with the exception of the pipe at STE 662+00.0, which shows 3.4' of ground cover.

2 INTRODUCTION AND PURPOSE

Houston Engineering, Inc. was selected by the North Dakota Public Services Commission (NDPSC) to complete construction inspection services for the 12-inch crude oil pipeline known as the NST Express Pipeline project (*PSC. Case No. PU-15-232*). The purpose of the inspections is to determine compliance with the permit issued by the NDPSC. The following is a summary of the work completed to date, and the anticipated timeframe for completion of the permit compliance tasks. Four permit compliance site visits have been completed and documented. One final inspection will occur during the fall 2017, to observe reclamation activities and seeding progress.

This field inspection report is for the fourth, site visit, which was completed on June 20, 2017. The site inspection included observations throughout the entire construction corridor, with the exception of the area west of the Yellowstone River. This area has been completed, regraded, and seeded.

3 SITE VISIT SUMMARY AND CONCLUSION

HEI arrived on site at approximately 11:00am MDT on June 20, 2017. Upon arrival, HEI traveled the pipeline construction corridor along public roads, observed the site conditions, and documented the site conditions with photographs. Currently, all pipe is in the ground and all construction activities are complete, including regrading and restoration activities throughout the corridor. The site visit and photo locations are shown in **Exhibit 1**.

All areas where vegetation was observed were restored with a smooth transition between the graded areas and the existing ground. Top soil was adequately spread and topography had been restored in areas where an open pit was used for pipeline construction. No erosion issues were observed.

In addition to the site visit, HEI reviewed the as-built documentation submitted to the NDPSC on February 3, 2017 for compliance with the depth requirements. All areas met the depth requirements of the permit (Order Provision 10 stating that required 4' range land, 4' cultivated land, 4' from the bottom of the ditch for road crossings, and 6' across undeveloped section lines) with the exception of the pipe at STE 662+00.0, which shows 3.4' of ground cover.

HEI completed four inspections to date, and concludes that the contractors have contained construction activities within the designated easements and avoided impacts to cultural resource areas. The contractors have direct bored in areas required by the permit, including the Yellowstone River corridor and under roadways. The project proceeded and was completed with no significant erosion issues. Proper regrading and reseeding efforts were visible on the landscape during the site visit. HEI will revisit the entire pipeline corridor one final time in the fall of 2017 to observe revegetation progress. **Table 1** summarizes permit conditions and order provisions which were observed.

Table 1: Summary of Permit Conditions and Order Provision Compliance, Site Visit #4

Permit Conditions / Order Provisions	Compliance	Discussion
NDCC 69-06-08-02 Avoidance Areas: Historical Resources	Y	Historical resources were observed to be staked and avoided by construction activities.
Order Provision 10. Pipeline burial depth	N	As-built documentation was reviewed to verify the depth of pipeline burial. All areas met the depth requirements of the permit (4' range land, 4' cultivated land, 4' from the bottom of the ditch for road crossings, and 6' across undeveloped section lines) with the exception of the pipe at STE 662+00.0, which shows 3.4' of ground cover, which is short 0.6' of the 4' requirement on range / cultivated land.
Order Provision 11. Topsoil	Y	Topsoil was observed to be separated and stockpiled at the beginning of construction. Topsoil was observed to be replaced on the surface and adequately spread.

Permit Conditions / Order Provisions	Compliance	Discussion
Order Provision 12. Road Boring	Y	No road cuts were observed.
NDCC 69-06-08-02 Selection Criteria: Wetlands	Y	Wetland resources were observed to be restored to their pre-construction topography.
Order Provision 16: Restoration of construction areas.	Y	
Order Provision 18. Restoration	TBD	Grading, topsoil replacement, and restoration activities were observed to be recently completed throughout the project area. No erosion issues were observed. Will verify compliance during final inspection site visit.
Order Provision 19: Fences and Gates	Y	Replacement fence was observed to be in the same or better condition than the existing fence.
Order Provision 20: Tree and Shrub Replacement	Y	Per letter dated December 27, 2016, 22 trees and shrubs were removed for construction, therefore, the project does not meet the criteria for the required tree and shrub replacement outlined in the permit.

4 FUTURE PLANNED ACTIVITIES

HEI will perform the fifth and final permit compliance site visit in the late fall of 2017, to observe site conditions and the final restoration activities.

5 SITE PHOTOGRAPHY



Photo 1: Corridor facing south near Highway 58, on far west side of project.



Photo 2/3: Pipeline corridor facing east, at 32nd Street NW, near far west side of project.



Photo 4: Pipeline corridor facing east near a wetland. Parallel to 32nd Street NE.



Photo 5: Corridor facing west. Parallel to 32nd Street NE.



Photo 6/7: Pipeline corridor facing west along 32nd Street NW.



Photo 8: Pipeline corridor facing north and northeast, perpendicular to 32nd Street NW.



Photo 9: Corridor facing south parallel to 160th Avenue NW.



Photo 10/11: Pipeline signage at 160th Avenue NW.



Photo 12/13: Pipeline corridor in foreground, facing southwest.



Photo 14: Pipeline corridor and signage facing west at 159th Avenue NW.



Photo 15: Pipeline corridor and signage facing east and 159th Avenue NW.



Photo 19: Pipeline corridor facing east at 33rd Street NW.



Photo 20: Pipeline corridor on the east side of Highway 16.

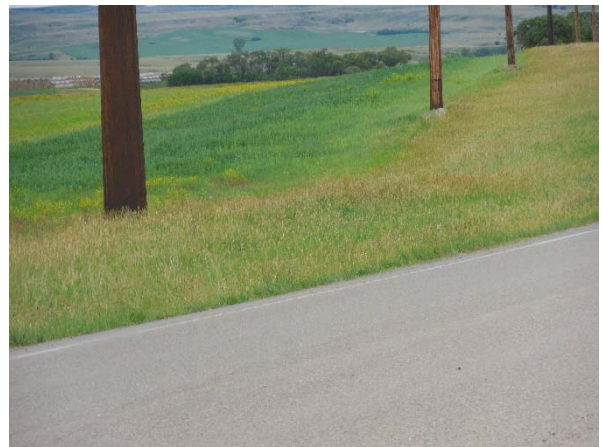


Photo 21: Pipeline corridor restoration area from Highway 16, facing south southeast.



Photo 22: Pipeline corridor facing northeast parallel to Highway 16. Note the dominance of cultivated land.



Photo 23: Pipeline corridor facing west at 154th Avenue NW. Bare land is present here, however these lands are intended for cultivation, so no seeding is necessary here.



Photo 24: Pipeline signage in need of repair. At 154th Avenue NW, facing east.



Photo 25: Corridor and signage facing east over recently planted agriculture land.



Photo 27: Corridor and signage facing southwest at 34th Street NW. Recent grading is observed in the foreground.



Photo 29: Pipeline corridor from 34th Street NW, facing east northeast. Grading footprint is visible.



Photo 30: Pipeline corridor near 152nd Avenue NW, near intermittent stream. Facing west.



Photo 31: Pipeline corridor and signage near 152nd Avenue NW, facing east.



Photo 32: Pipeline corridor and signage facing west at 149th Avenue NW. Note recent agricultural tilling and planting.



Photo 33: Pipeline corridor at 149th Avenue NW, facing east. Note recent tilling.



Photo 34: Pipeline corridor over range land at 149th Avenue NW, facing west. Corridor footprint is visible as the linear green path through the photo.



Photo 35: Pipeline corridor at 146th Avenue NW, facing north northwest.



Photo 38: Pipeline corridor and signage at 146th Avenue NW, facing west.



Photo 39: Pipeline corridor at 146th Avenue NW, facing east.



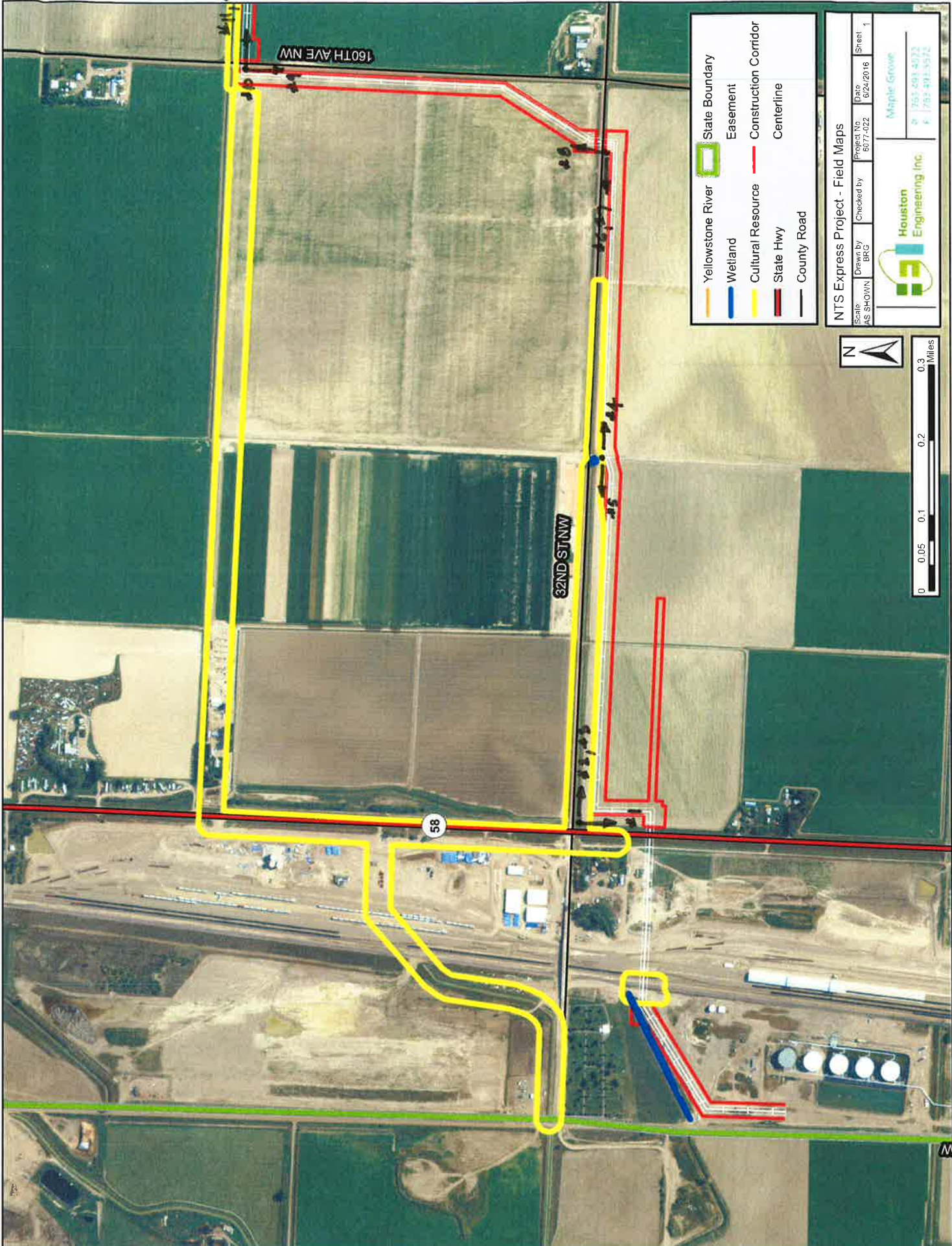
Photo 40: Pipeline corridor parallel to 146th Avenue NW, facing north.



Photo 41/42: Pipeline corridor at 145th Avenue NW, facing east over range land. Pipeline footprint visible at the right side of photo.

EXHIBIT 1







- Yellowstone River
- Wetland
- Cultural Resource
- State Hwy
- County Road
- State Boundary
- Easement
- Construction Corridor
- Centerline

NTS Express Project - Field Maps

Scale AS SHOWN	Drawn by BRG	Checked by	Project No. 6077-022	Date 02/24/2016	Sheet 1
-------------------	-----------------	------------	-------------------------	--------------------	------------

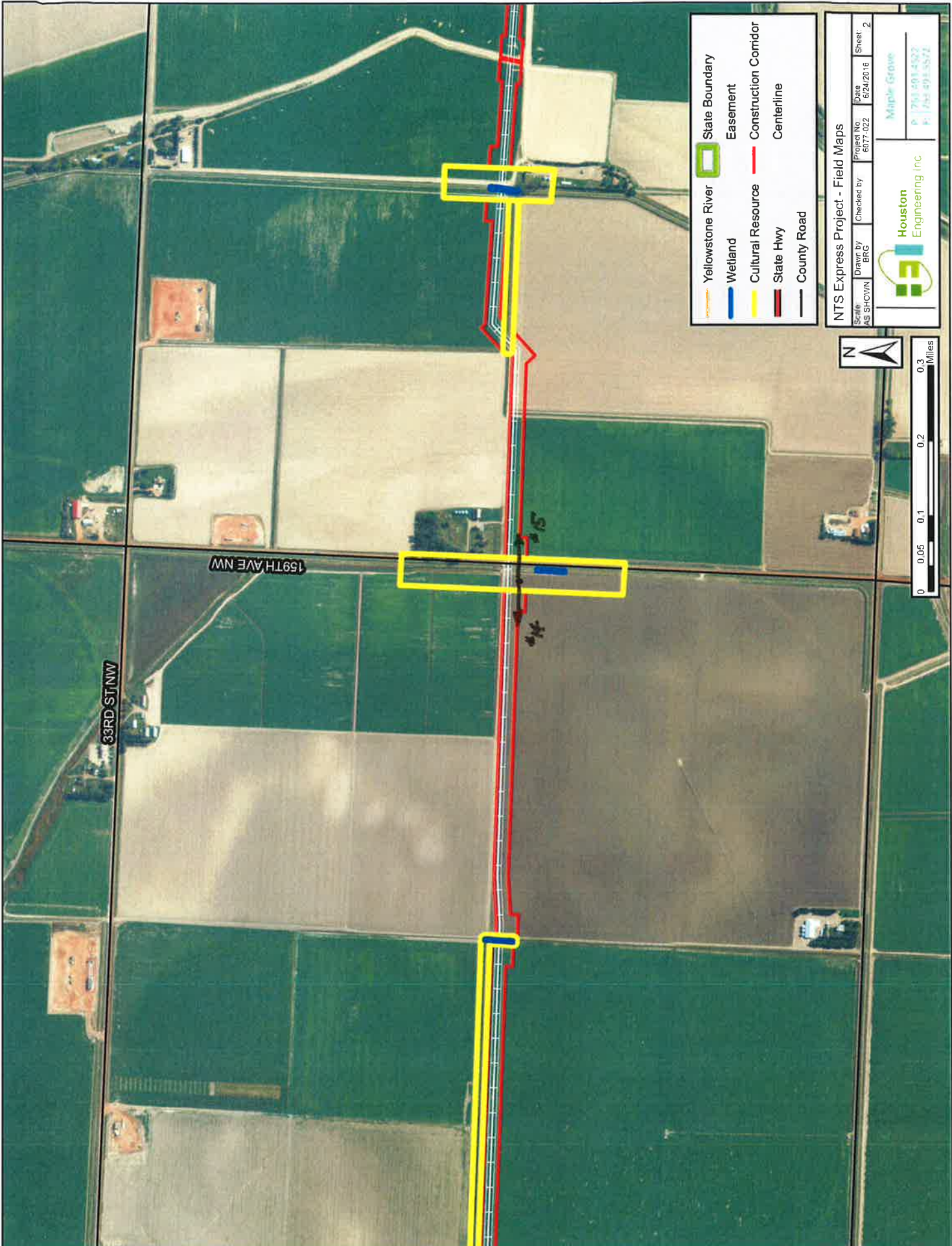











 Houston Engineering Inc.
 P: 754-594-4033
 F: 754-493-5572



 Maple Grove






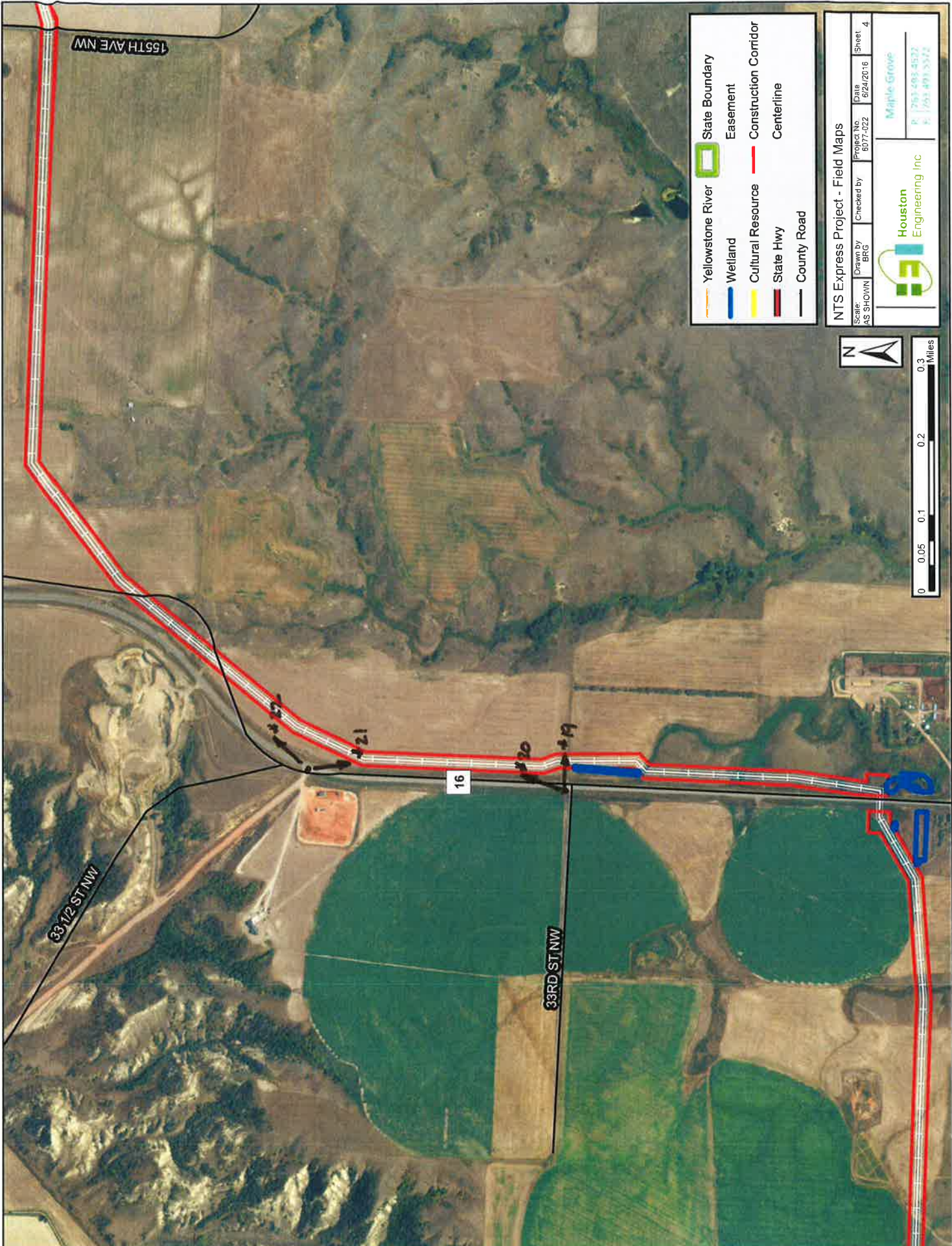
-  Yellowstone River
-  Wetland
-  Cultural Resource
-  State Hwy
-  County Road
-  State Boundary
-  Easement
-  Construction Corridor
-  Centerline

NTS Express Project - Field Maps

Scale AS SHOWN	Drawn By BRG	Checked by	Project No. 6077-022	Date 5/24/2016	Sheet 2
-------------------	-----------------	------------	-------------------------	-------------------	------------

Houston Engineering Inc

 Maple Grove
 P: 761-591-4522
 F: 761-491-5572





	Yellowstone River		State Boundary
	Wetland		Easement
	Cultural Resource		Construction Corridor
	State Hwy		Centerline
	County Road		

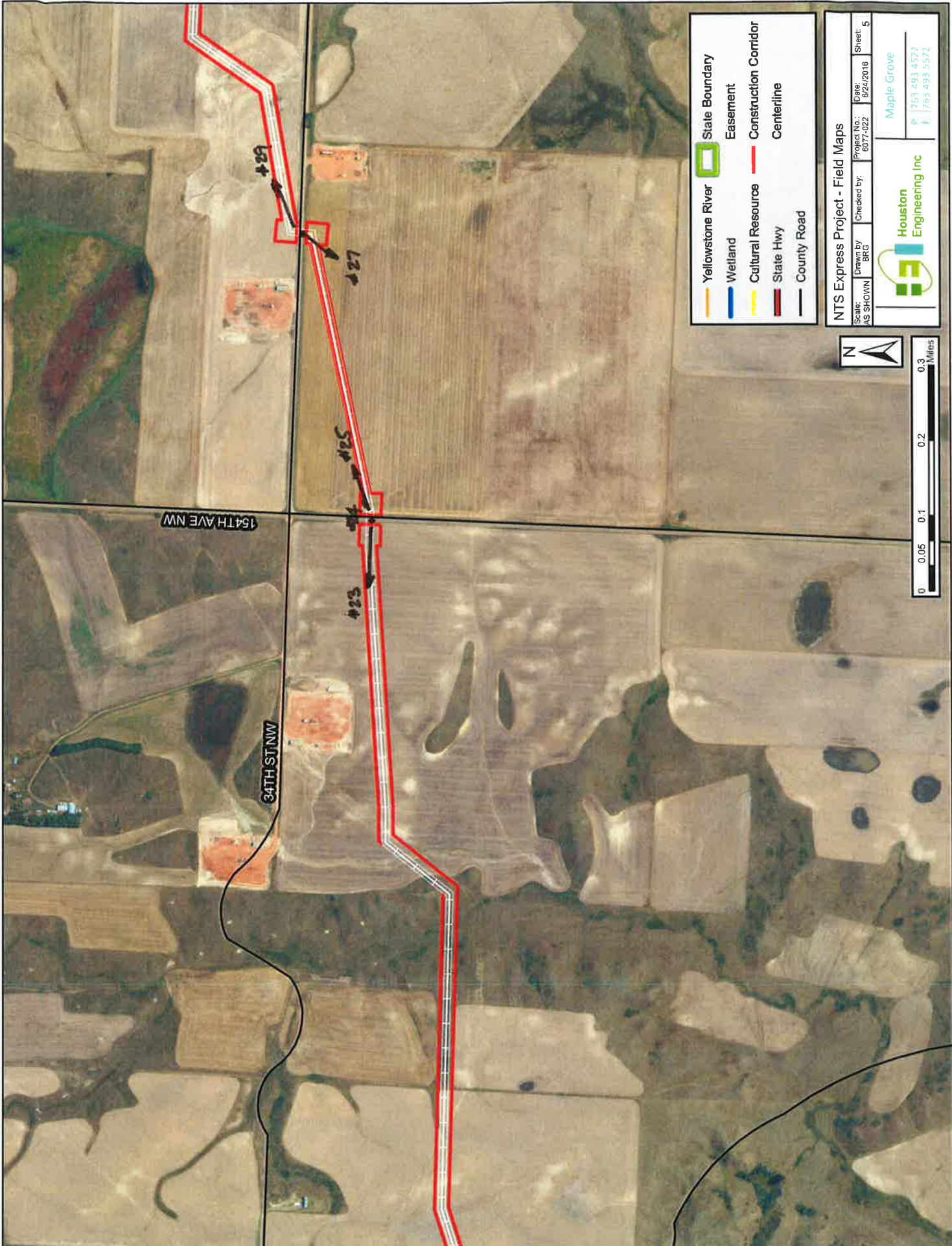
NTS Express Project - Field Maps










Scale: AS SHOWN	Drawn by: BRG	Checked by:	Project No: 8077-522	Date: 8/24/2016	Sheet: 4
-----------------	---------------	-------------	----------------------	-----------------	----------

Houston Engineering Inc
 P: 281-493-4522
 F: 281-493-5572

Maple Grove





-  State Boundary
-  Wetland
-  Cultural Resource
-  State Hwy
-  County Road
-  Yellowstone River
-  Easement
-  Construction Corridor
-  Centerline

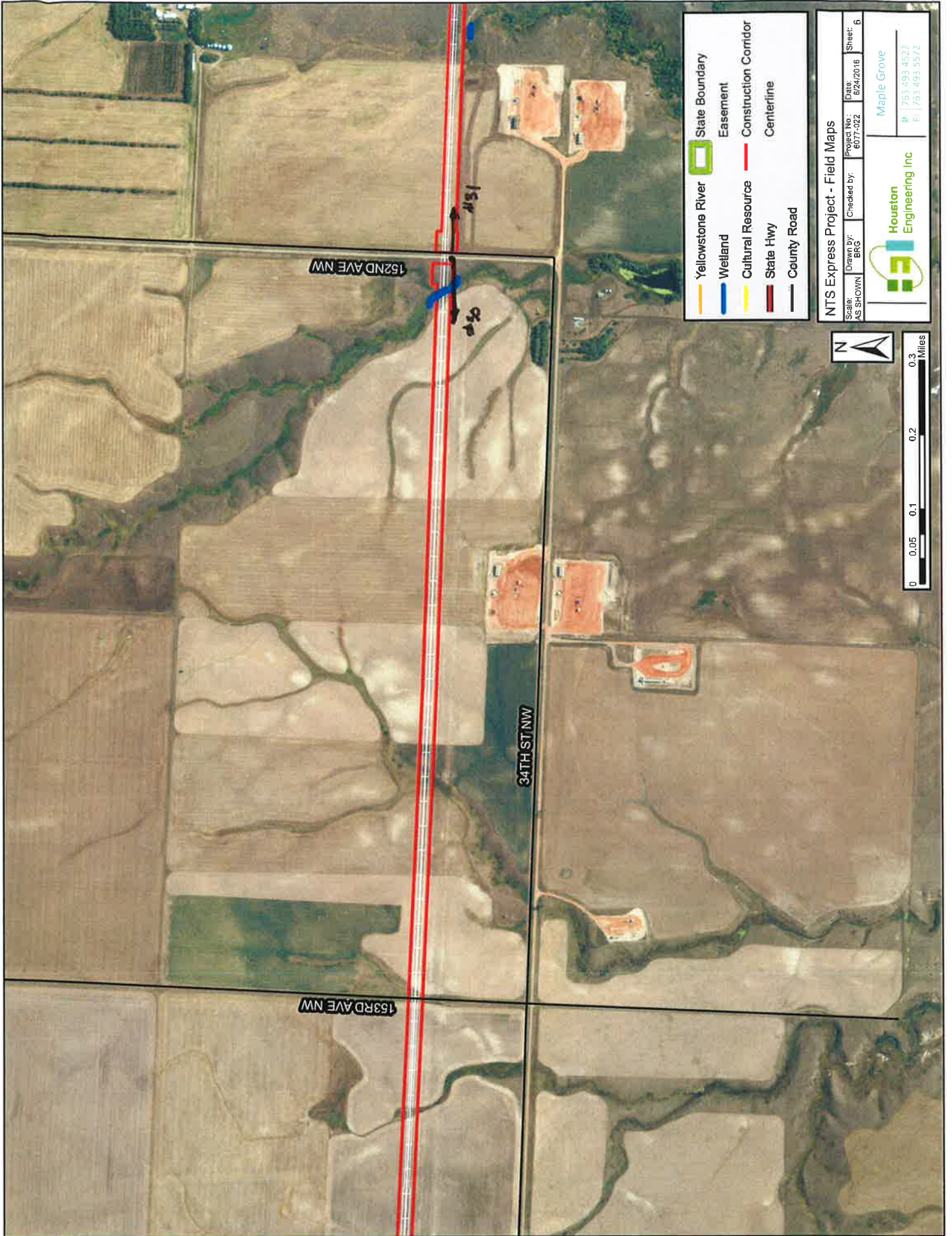
NTS Express Project - Field Maps

Scale: AS SHOWN	Drawn by: BRG	Checked by:	Project No.: 6077-522	Date: 8/22/2018	Sheet: 5
-----------------	---------------	-------------	-----------------------	-----------------	----------

Houston Engineering Inc

Maple Grove

P: 763.493.4522
F: 763.493.5572



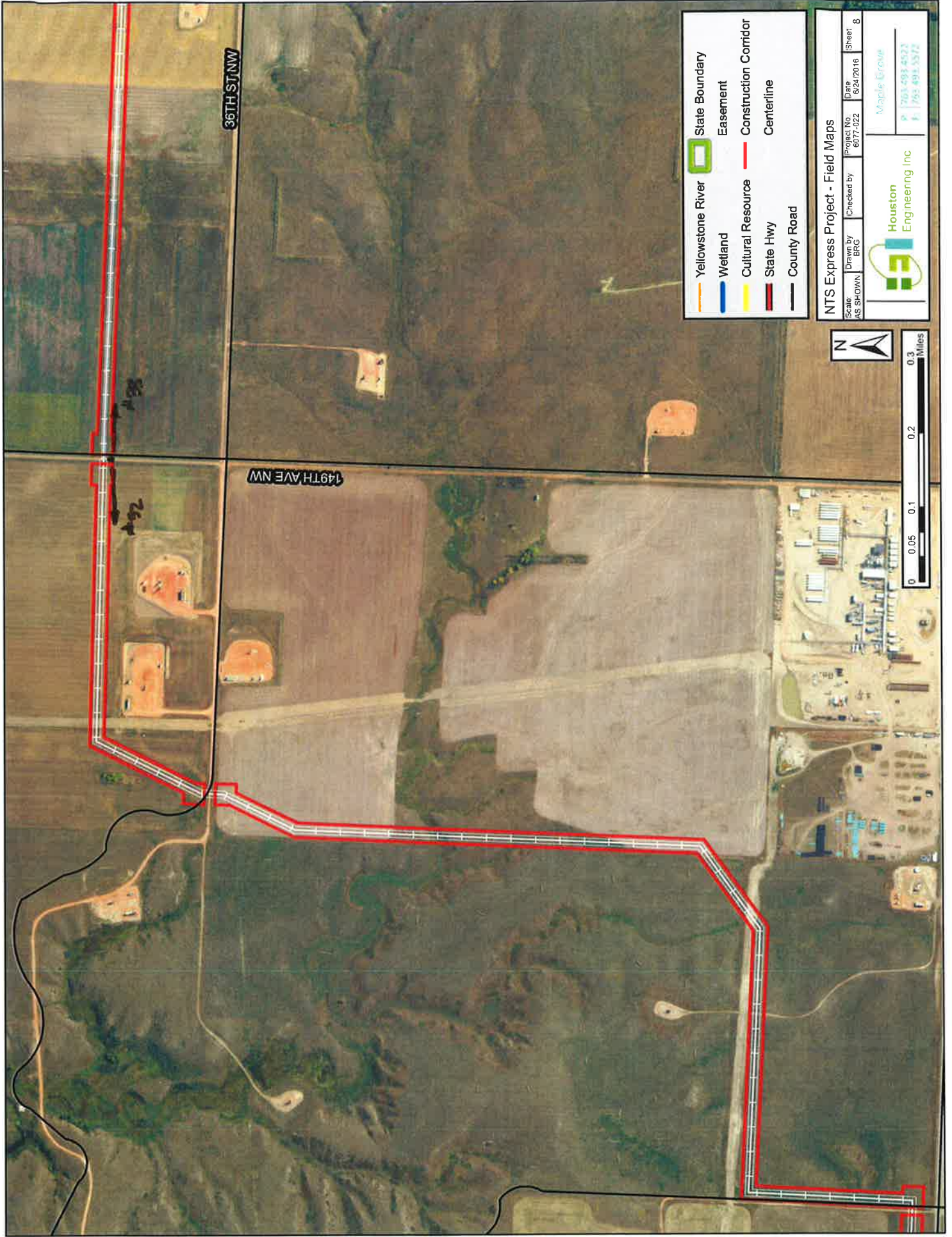
- Yellowstone River
- Wetland
- Cultural Resource
- State Hwy
- County Road
- State Boundary
- Easement
- Construction Corridor
- Centerline

NTS Express Project - Field Maps

Scale: AS SHOWN	Drawn by: BRG	Checked by:	Project No.: 6077-022
			Date: 6/24/2016
			Sheet: 6

Maple Grove
 P: 753.493.4522
 F: 753.493.5572





36TH ST, NW

149TH AVE, NW

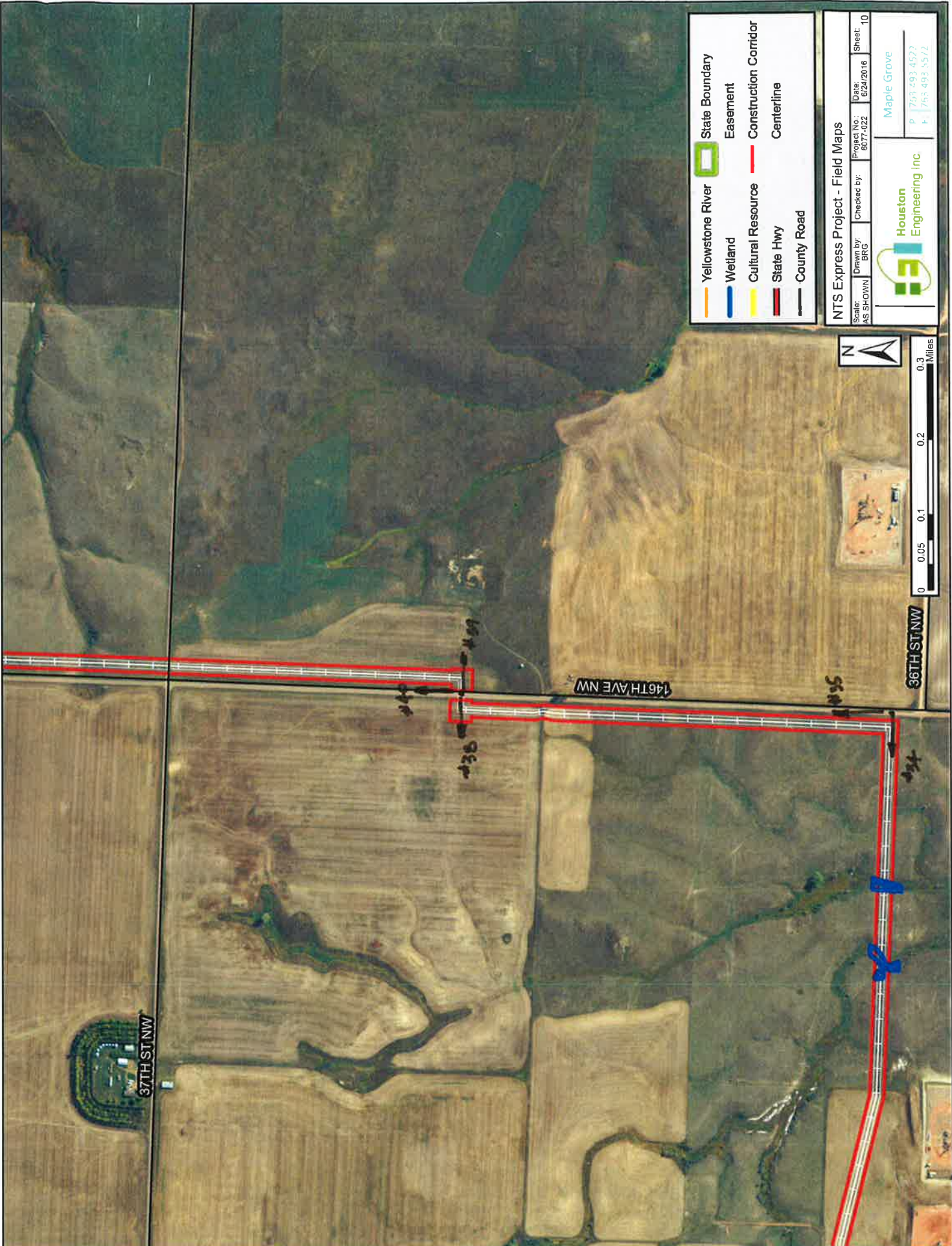
- Yellowstone River
- Wetland
- Cultural Resource
- State Hwy
- County Road
- State Boundary
- Easement
- Construction Corridor
- Centerline










NTS Express Project - Field Maps

Scale: AS SHOWN	Drawn by: BRG	Checked by:	Project No: 6077-022	Date: 02/21/16	Sheet: 8
-----------------	---------------	-------------	----------------------	----------------	----------

Houston Engineering Inc
 Maple Grove
 P: 763.493.4223
 F: 763.493.5372






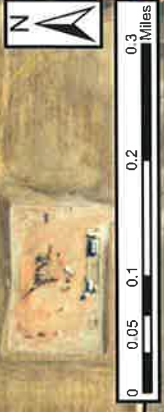
-  Yellowstone River
-  Wetland
-  Cultural Resource
-  State Hwy
-  County Road
-  State Boundary
-  Easement
-  Construction Corridor
-  Centerline

NTS Express Project - Field Maps

Scale: AS SHOWN	Drawn by: BRS	Checked by: BRS	Project No: 6077-022	Date: 8/29/2016	Sheet: 10
--------------------	------------------	--------------------	-------------------------	--------------------	--------------

 **Houston Engineering Inc**

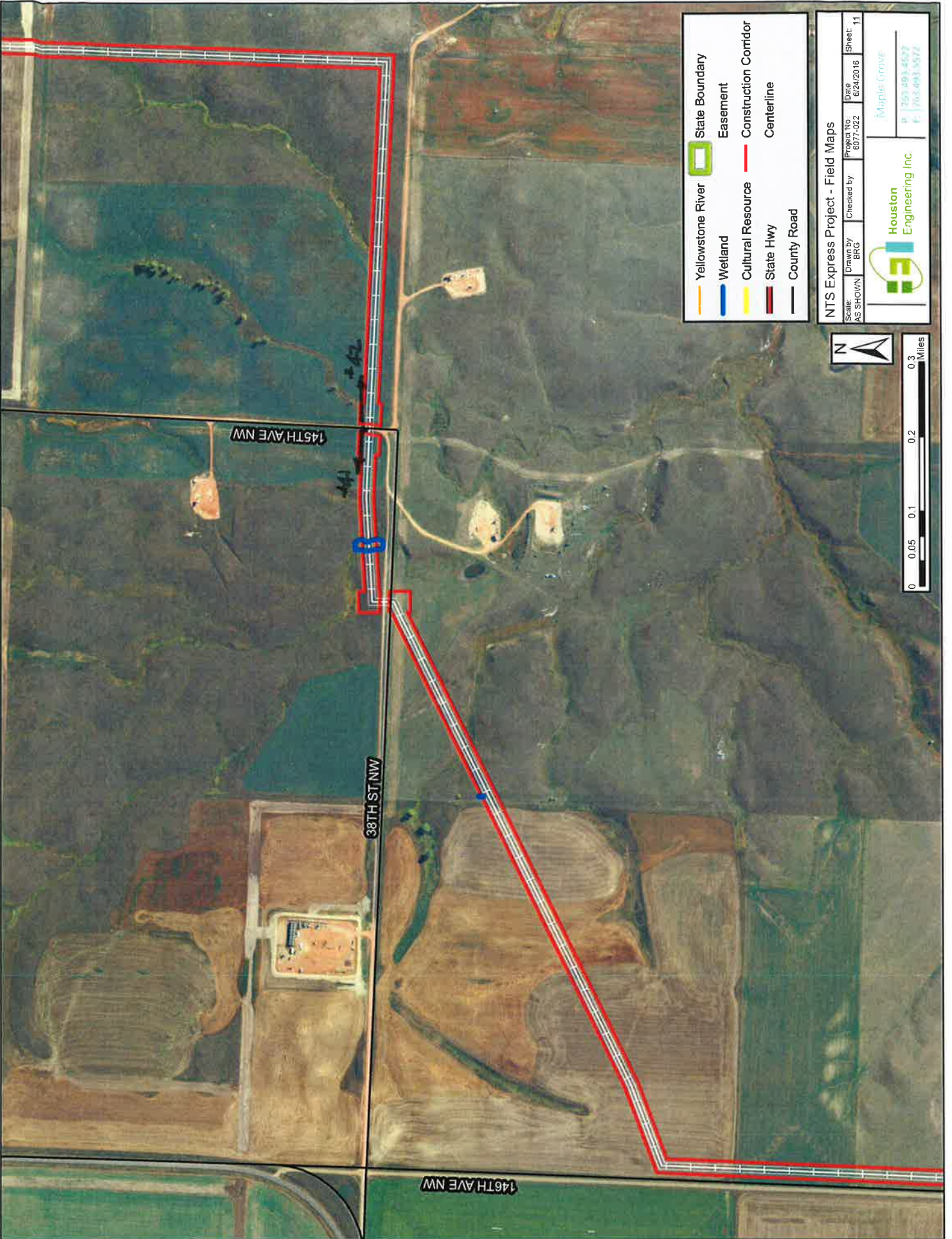
Maple Grove
P: 763.493.4522
F: 763.493.5572












37TH ST NW

146TH AVE NW

36TH ST NW



-  Yellowstone River
-  Wetland
-  Cultural Resource
-  State Hwy
-  County Road
-  State Boundary
-  Easement
-  Construction Corridor
-  Centerline

NTS Express Project - Field Maps

Scale: AS SHOWN	Drawn By: BRG	Checked by:	Project No: 6077-022	Date: 6/24/2016	Sheet: 11
-----------------	---------------	-------------	----------------------	-----------------	-----------

Houston Engineering Inc.
 Maple Grove
 P: 754-493-4577
 F: 754-493-5572

