

SCOPING REPORT

Project No.

PCN

## Various Pipe Repairs



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Prepared by

**NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
BISMARCK, NORTH DAKOTA**

<http://www.dot.nd.gov/>

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## SCOPING REPORT

### A. GENERAL INFORMATION

**Project Number:**

**District:** Fargo

**Highway:** ND 18

**Location:** Various pipes

**Reference Point:** 76.666 to 105.017 (28.351 miles)

**Counties:** Cass, Traill

**Legal Description:** T140N, R52W, Sec 2-3, 10-11, 14-15, 22-23, 26-27

T141N, R52W, Sec 1-2, 11-13, 24-25, 35-36

T142N, R52W, Sec 1-2, 11-14, 23-26, 35-36

T143N, R52W, Sec 1-2, 11-14, 23-26, 35-36

T144N, R52W, Sec 1-2, 11-14, 23-26, 35-36

T145N, R52W, Sec 36

T145N, R51W, Sec 31

**Functional and Funding Roadway Classification:** State Corridor

**National Highway System:** No

**Speed Limit:** N/A

**Freight Level:** Level 2

**Freight Constraints:** None

**Project Schedule:** Proposed to be added to the STIP as a pipe rehabilitation project.

**dTIMS Recommendations:** N/A

### B. PURPOSE, NEED, AND IMPROVEMENT

**Purpose and Need of Project:**

The Fargo District completed pipe inspections on various pipes along ND 18 and identified locations in need of repairs. Issues include joint separation, spalling, scouring, erosion, and sediment infiltration.

There are no major corridor projects in the STIP that coincide with the pipe locations.

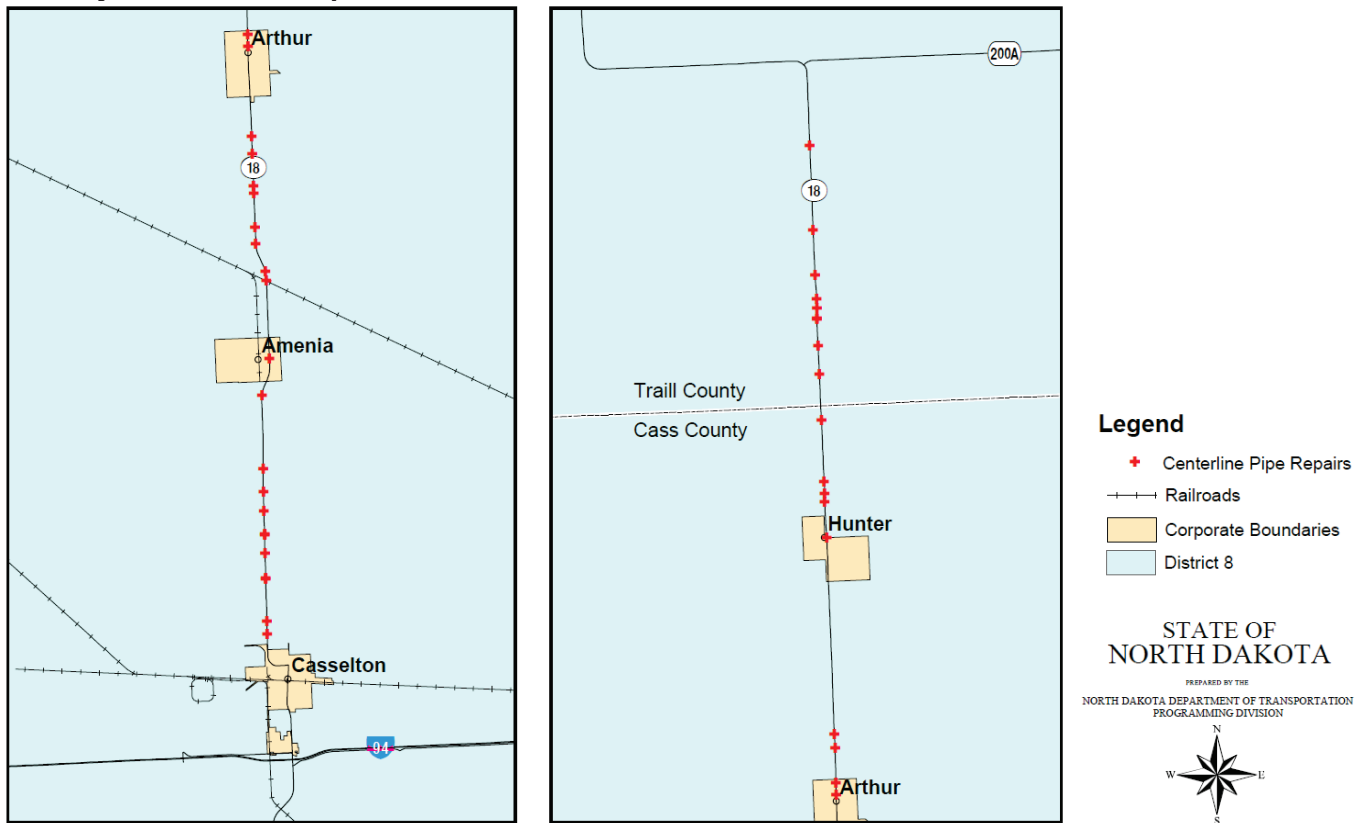
**Proposed Improvement:**

The district identified 35 locations along ND 18. The proposed work types and approximate quantities are listed in the table below.

Work Type	Quantity	Unit
Pipe Cleanout	50	EA
Cofferdam	22	EA
Cured-in-Place Pipe Lining	1170	LF
Repair and Seal Joints	62	EA
Remove and Relay End Sections	46	EA
Remove and Relay Pipe	16	LF
Void Poly Foam	1971.87	GAL

The pipe lining locations are not expected to need a hydraulic analysis, as long as the liner does not exceed the thickness requirements set in Chapter III-04.11 of the Design Manual. Any locations that need a thicker liner would require a hydraulic analysis.

### Project Location Map



\*Full sized map in Appendix.

## C. TRAFFIC AND CRASH ANALYSIS

N/A

## D. EXISTING ROADWAY CHARACTERISTICS

Roadway characteristics vary by location and are not anticipated to be impacted by the proposed pipe work.

## E. EXISTING GEOMETRY

Horizontal Curves & Superelevations: N/A

Vertical Curves: N/A

## F. EXISTING STRUCTURES

**Bridges:** None

**Centerline Pipes:** See proposed improvements.

## G. LAND INTERESTS

**Communities:** Arthur (pop: 323), Hunter (pop: 332), Amenia (pop: 85)

**Reservation:** No

**Surface Trust Land:** No

**National Parks/Grasslands:** No

**State Parks/Forests:** No

**Waterfowl Production Area:** No

**Wildlife Management Area:** No

**Adjacent Land Usage:** Agricultural, Commercial

## H. ISSUES AND APPURTENANCES CHECKLIST

1. Curb and Gutter? Yes ☐ No ☒

2. Sidewalk? Yes ☐ No ☒

3. Multi-Use Path? Yes ☒ No ☐

There's a multi-use path connecting Hunter and Arthur on the west side of ND 18. No proposed improvements.

4. ADA Ramps? Yes ☐ No ☒

5. State Bicycling Network? Yes ☐ No ☒

6. Lighting? Yes ☐ No ☒

7. Signals? Yes ☐ No ☒

8. Storm Sewer? Yes ☐ No ☒

9. Manholes? Yes ☐ No ☒

10. Water, Sewer, or Other Underground Work? Yes ☐ No ☒

11. Parking Facilities? Yes ☐ No ☒

12. Frontage Roads? Yes ☐ No ☒

13. Utility Issues? Yes ☐ No ☒

There are various utilities in the vicinity of the pipe locations. Impacts are not anticipated with the proposed pipe improvements.

- |   |     |                                     |    |                                     |
|---|-----|-------------------------------------|----|-------------------------------------|
| 14. Landscaping?                        | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |
| 15. Approach or Ditch Block Flattening? | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |
| 16. T Intersection Recovery Approaches? | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |
| 17. Fence?                              | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |
| 18. Railroad Crossings?                 | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |

One of the pipes (RP 84.778) is located 40' away from a BNSF railroad crossing.

- |  |     |                          |    |                                     |
|--|-----|--------------------------|----|-------------------------------------|
| 19. Detours?                                     | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 20. Automatic Traffic Recorder Locations?        | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 21. Weigh-In-Motion Sites?                       | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 22. ITS (Deicing, Snow Gates, VMS, RWIS, etc.)?  | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 23. Highway Patrol/Truck Pullouts or Rest Areas? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 24. Additional Right of Way?                     | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |

The existing ROW varies from 65' to 125'. Temporary construction easements may be needed to provide staging areas. Permanent ROW is not anticipated.

- |                      |     |                                     |    |                          |
|----------------------|-----|-------------------------------------|----|--------------------------|
| 25. Drainage Issues? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
|----------------------|-----|-------------------------------------|----|--------------------------|

See "Purpose and Need" section.

- |                                     |     |                                     |    |                                     |       |                          |
|-------------------------------------|-----|-------------------------------------|----|-------------------------------------|-------|--------------------------|
| 26. Snow Impact Areas?              | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |       |                          |
| 27. Subgrade Issues?                | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |       |                          |
| 28. Noise Analysis: Type I Project? | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> | Maybe | <input type="checkbox"/> |
| 29. Maintenance Issues?             | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |       |                          |

See "Purpose and Need" section.

- |                              |     |                          |    |                                     |     |                                     |
|------------------------------|-----|--------------------------|----|-------------------------------------|-----|-------------------------------------|
| 30. Guardrail?               | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |     |                                     |
| 31. Milling?                 | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |     |                                     |
| 32. Repeated ER Events?      | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |     |                                     |
| 33. Interstate Access Gates? | Yes | <input type="checkbox"/> | No | <input type="checkbox"/>            | N/A | <input checked="" type="checkbox"/> |
| 34. Steep Slopes?            | Yes | <input type="checkbox"/> | No | <input type="checkbox"/>            | N/A | <input checked="" type="checkbox"/> |

**I. LOAD RESTRICTIONS**

N/A

**J. ROADWAY WIDTHS**

N/A

**K. PERFORMANCE GUIDELINES****Design Speed:** N/A**Clear Zone:** Use existing.**Foreslopes:** Use existing.**L. PROPOSED IMPROVEMENTS**

HWY	RP	Size (IN)	Length (LF)	Type	District Recommendation
18	76.666	36	50	5 RCP	Joint Repair and Seal, Remove and Relay End Sections, Void Foaming
18	76.963	36	48	4 RCP	Clean, Cofferdam, Cured-in-Place Pipe Lining, Remove and Relay End Sections, Void Foaming
18	77.937	36	50	Double RCP	Clean, Joint Repair and Seal, Remove and Relay End Sections, Void Foaming
18	77.956	30	50	Single RCP	Clean, Joint Repair and Seal, Remove and Relay End Sections, Void Foaming
18	78.536	36	42	Double RCP	Clean, Joint Repair and Seal, Remove and Relay End Sections, Void Foaming
18	78.939	36	42	Triple RCP	Clean, Remove and Relay End Sections
18	78.956	30	50	Single RCP	Clean, Cured-in-Place Pipe Lining, Remove and Relay End Sections, Void Foaming
18	79.508	30	50	Double RCP	Clean, Cured-in-Place Pipe Lining, Remove and Relay End Sections, Void Foaming
18	79.958	36	46	Double RCP	Clean, Cured-in-Place Pipe Lining, Void Foaming
18	80.455	36	42	Double RCP	Joint Repair and Seal, Remove and Relay End Sections
18	82.119	24	54	Single RCP	Clean, Cofferdam, Cured-in-Place Pipe Lining, Void Foaming
18	82.991	36	42	Double RCP	Clean, Cofferdam, Cured-in-Place Pipe Lining, Joint Repair and Seal, Void Foaming
18	84.778	24	68	Single RCP	Clean, Remove and Relay End Sections
18	84.972	24	54	Single RCP	Clean, Cofferdam, Cured-in-Place Pipe Lining, Void Foaming
18	85.672	36	44	Triple RCP	Clean, Cofferdam, Joint Repair and Seal, Void Foaming

18	86.031	36	42	Double RCP	Clean, Cofferdam, Joint Repair and Seal, Void Foaming
18	86.804	27x44	46	Double Arch RCP	Clean, Cofferdam, Joint Repair and Seal, Void Foaming
18	86.974	36	42	Double RCP	Remove and Relay End Sections, Remove and Relay Pipe
18	87.708	36	42	Single RCP	Clean, Cured-in-Place Pipe Lining, Remove and Relay End Sections, Void Foaming
18	88.088	36	42	Single RCP	Clean, Cured-in-Place Pipe Lining, Void Foaming
18	90.161	36	42	Double RCP	Clean, Joint Repair and Seal, Remove and Relay End Sections, Void Foaming
18	90.435	30	62	Double RCP	Clean, Remove and Relay End Sections
18	91.236	36	48	Triple RCP	Clean, Joint Repair and Seal, Remove and Relay End Sections, Void Foaming
18	91.564	36	44	Triple RCP	Clean, Remove & Relay Pipe
18	96.044	30	54	Single RCP	Clean, Cured-in-Place Pipe Lining, Void Foaming
18	97.048	36	42	Double RCP	Clean, Cofferdam, Cured-in-Place Pipe Lining
18	97.320	36	42	Single RCP	Clean, Cured-in-Place Pipe Lining, Remove and Relay End Sections, Void Foaming
18	98.740	36	42	Single RCP	Clean, Cured-in-Place Pipe Lining, Void Foaming
18	99.801	36	50	Single RCP	Clean, Cured-in-Place Pipe Lining, Void Foaming
18	101.058	42	62	Single RCP	Joint Repair and Seal, Void Foaming
18	101.076	42	58	Single RCP	Clean, Joint Repair and Seal, Remove and Relay End Sections, Void Foaming
18	101.300	42	50	Single RCP	Clean, Joint Repair and Seal, Void Foaming
18	101.505	36	50	Double RCP	Clean, Cured-in-Place Pipe Lining, Void Foaming
18	102.078	36x58	48	Single RCP	Clean, Joint Repair and Seal, Void Foaming
18	103.092	42	60	Triple RCP	Clean, Cured-in-Place Pipe Lining, Void Foaming

## M. ADDITIONAL COMMENTS

### District Engineer:

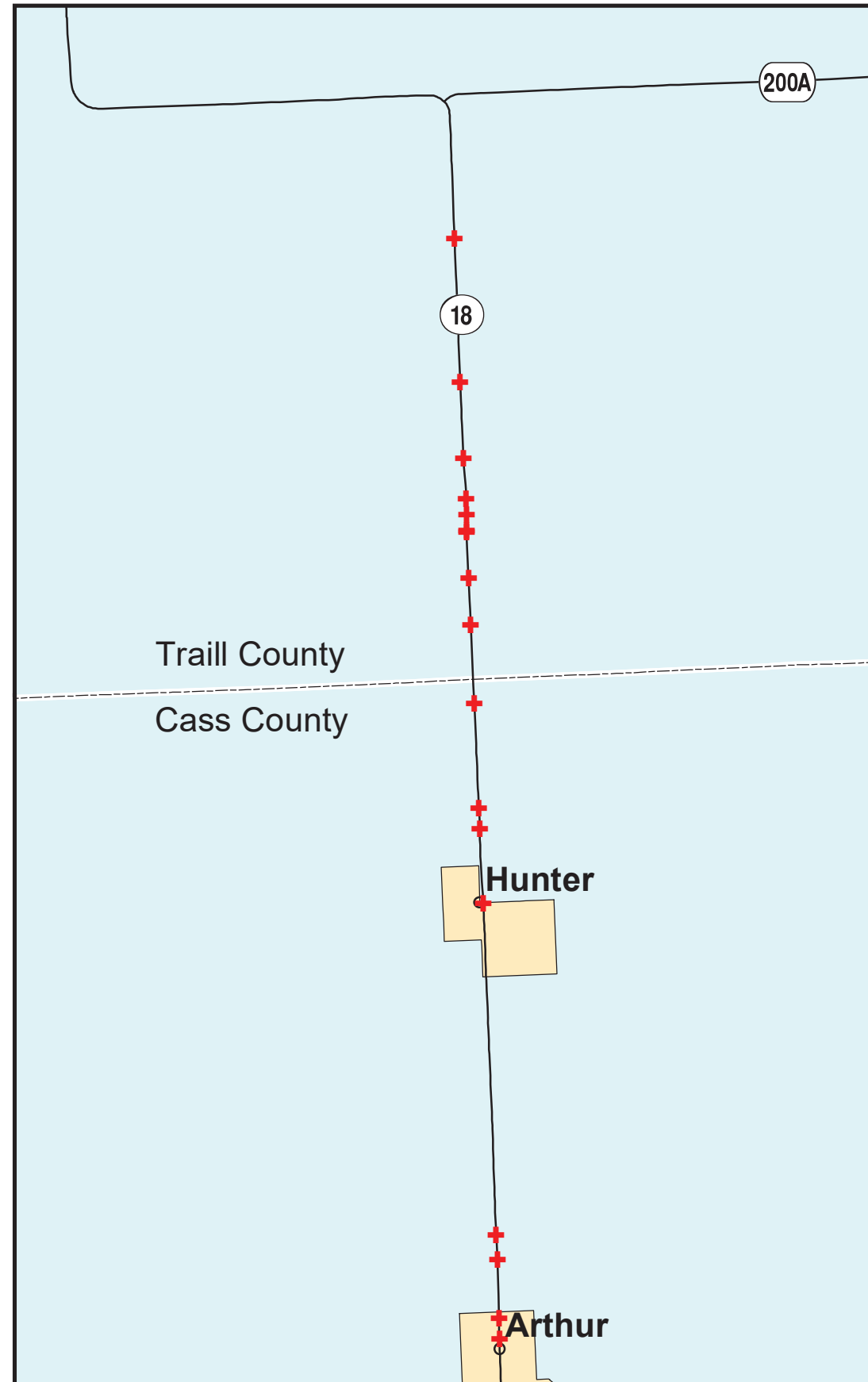
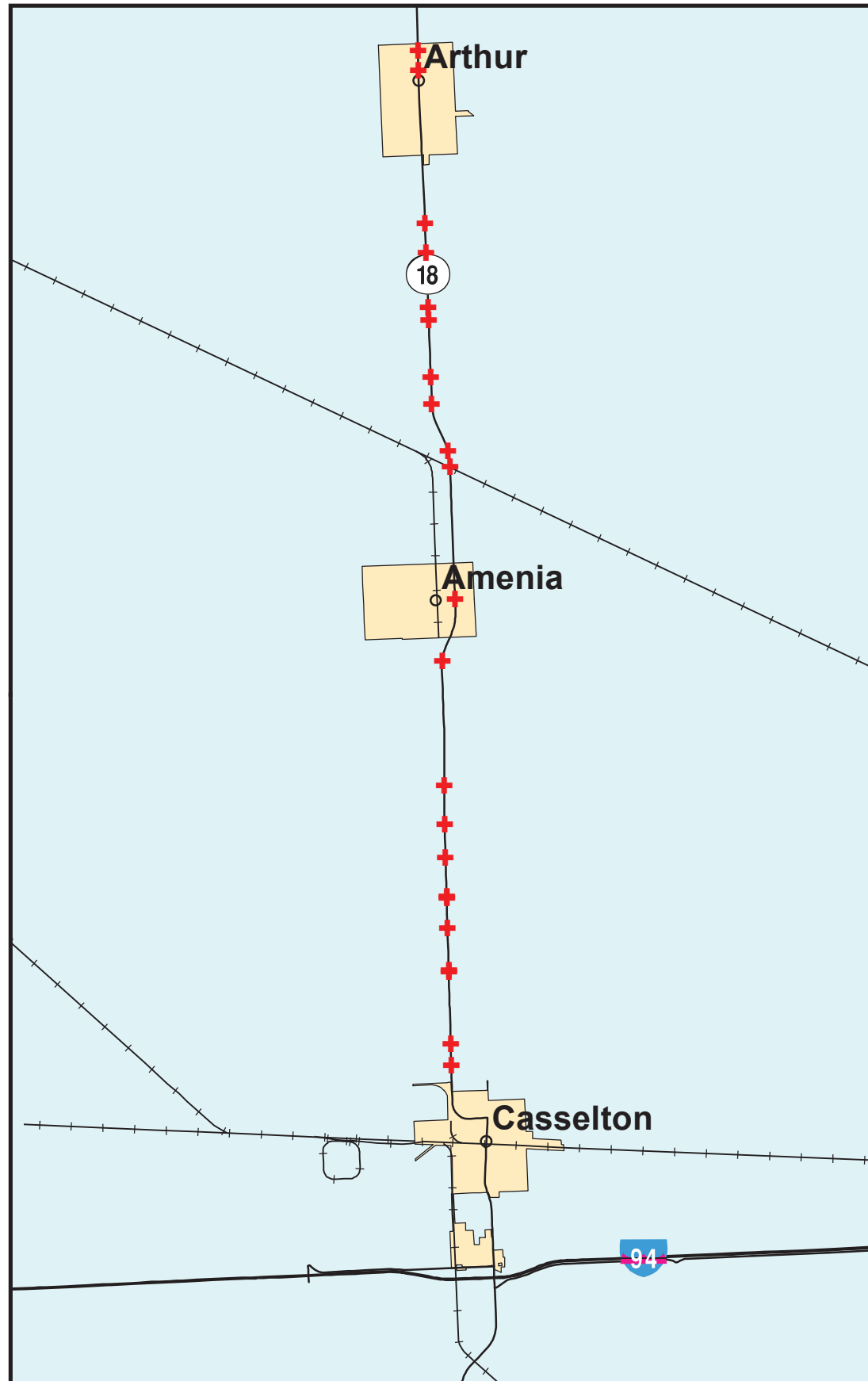
These pipe projects are excellent and we would like to continue to see more of them. This project will increase the resiliency of the roadway. The pipes included in this project are in areas which the District sees the most maintenance and recurring issues with. When the project is complete there will still be a need to address pipes beyond what is included. Pipes here are a portion of the priorities that would benefit from additional projects like this.

## **Appendix**





### Pipe Location Map



# Proposed Pipe Repairs



## Legend

-  Centerline Pipe Repairs
-  Railroads
-  Corporate Boundaries
-  District 8

STATE OF  
NORTH DAKOTA

PREPARED BY THE  
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
PROGRAMMING DIVISION

