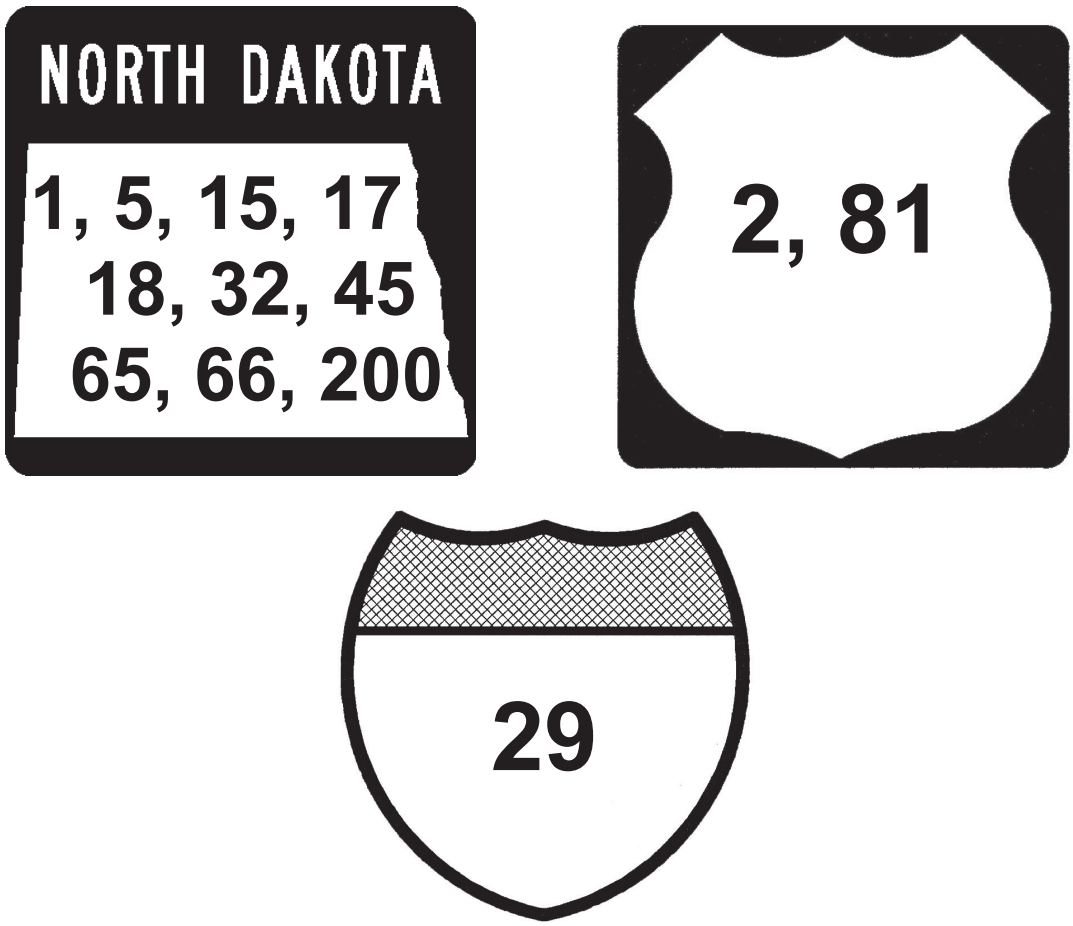
SCOPING REPORT

Project No. **PCN**

Various Pipes – Grand Forks District



Prepared by

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
BISMARCK, NORTH DAKOTA

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

DIRECTOR
Ronald J. Henke, P.E.

DEPUTY DIRECTOR OF PLANNING
Chad M. Orn, P.E.

Principal Author: Miguel Andrews, P.E.
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23 USC § 407
NDDOT Reserves All Objections

SCOPING REPORT

A. GENERAL INFORMATION

Project Number:
District: Grand Forks
Highway: 1, 2, 5, 15, 17, 18, 29, 32, 45, 65, 66, 81, 200
Location: Various pipes
Reference Point: Varies
Counties: Pembina, Cavalier, Walsh, Nelson, Grand Forks, Foster, Griggs, Steele, Barnes
Legal Description: Varies
Functional and Funding Roadway Classification:

ND 1 – District Corridor
US 2 – Interregional
ND 5 – State Corridor
ND 15 – District Corridor
ND 17 – District Corridor
ND 18 – District Corridor
I-29 – Interstate
ND 32 – District Corridor/Collector
ND 45 – District Collector
ND 65 – District Collector
ND 66 – District Corridor
US 81 – State Corridor
ND 200 – State Corridor

National Highway System: 1, 2, 5, 29, 81, 200
Speed Limit: Varies
Freight Level: Varies
Freight Constraints: N/A
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 Grand Forks District conducted pipe inspections on various highways, identifying locations in need of repair. Issues include separation, scouring, erosion, misalignment, sediment infiltration, rusting, broken or missing end sections, blockages, or collapse.

There are no major corridor projects that coincide with the location and timing for the pipe repairs and replacements.

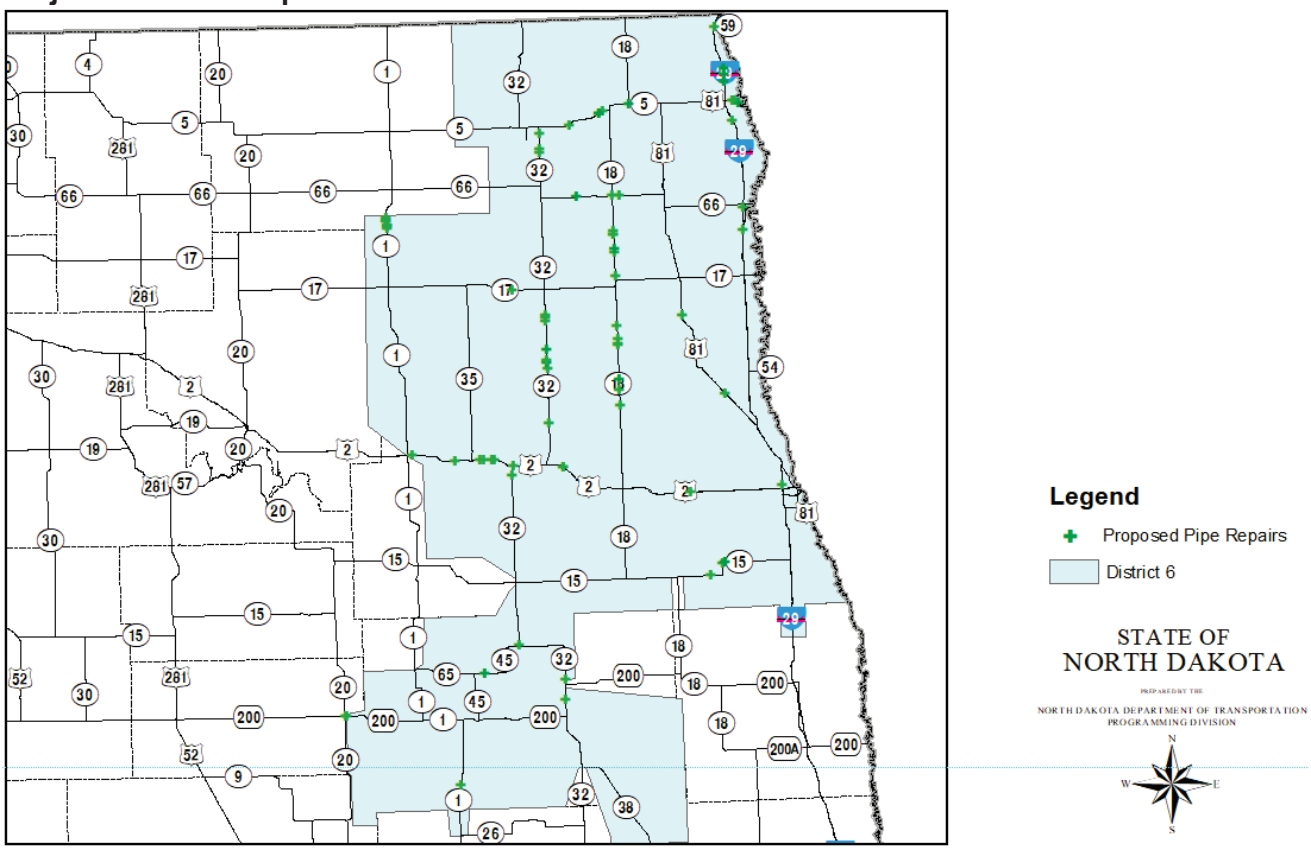
Proposed Improvements:
The district proposed multiple pipe rehabilitation projects prioritized based on pipe conditions.

During the initial inspection, underwater pipes were identified as needing dewatering, cleaning, and lining. However, they should be revisited during project development to determine if additional work is needed to address the depressions and pavement distress visible on the roadway surface.

The pipe rehabilitation locations are not expected to need hydraulic analysis if the liner does not exceed the thickness requirements set in Chapter III-04.11 of the Design Manual.

Total Work Summary		
Work Type	**Quantity**	**Unit**
Pipe Cleaning	95	EA
Dewater	11	EA
Pipe Lining	4,996	LF
Void Fill/Foam	3,900	GAL
Replace End Sections	120	EA
Extend Pipe	30	LF
Replace Median Grate	6	EA

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: No
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

H. ISSUES AND APPURTENANCES CHECKLIST

1.	Curb and Gutter?	Yes ____	No X
2.	Sidewalk?	Yes ____	No X
3.	Multi-Use Path?	Yes ____	No X
4.	ADA Ramps?	Yes ____	No X
5.	State Bicycling Network?	Yes X	No ____

ND 18 is a proposed Tier 1, ND 5, 65, and US 81 are proposed Tier 2, and US 2 is a proposed Tier 3. There are no proposed improvements with this project.

6.	Lighting?	Yes ____	No X
7.	Signals?	Yes ____	No X
8.	Storm Sewer?	Yes ____	No X
9.	Manholes?	Yes ____	No X
10.	Water, Sewer, or Other Underground Work?	Yes ____	No X
11.	Parking Facilities?	Yes ____	No X
12.	Frontage Roads?	Yes ____	No X

13. Utility Issues? Yes X No _____

There are various utilities in the vicinity of the pipe locations. There may be impacts depending on the work types proposed.

14. Landscaping? Yes ____ No X

15. Approach or Ditch Block Flattening? Yes ____ No X

16. T Intersection Recovery Approaches? Yes ____ No X

17. Fence? Yes X No _____

Fencing may be impacted if staging areas are needed to complete pipe repairs/linings. An assumed value is included in the cost estimate for removing and resetting fence.

18. Railroad Crossings? Yes X No _____

There are 3 pipes near railroad crossings:

- ND 18 RP 205.7 (lining and end section) – 60' from crossing
- ND 32 RP 180.453 (lining and fill/foam) – 170' from crossing
- ND 81 RP 192.398 (replacement) – 150' from crossing

19. Detours? Yes X No _____

Detours may be required for pipe replacements. Detours are assumed to be off site, but the need for onsite detours may be determined in project development. An estimated quantity is included in the cost estimate to account for the potential for onsite detours.

20. Automatic Traffic Recorder Locations? Yes X No _____

The proposed pipe replacement at I-29 RP 196.516 may impact an ATR site at RP 196.587.

21. Weigh-In-Motion Sites? Yes ____ No X

22. ITS (Deicing, Snow Gates, VMS, RWIS, etc.)? Yes X No _____

There's a camera site near the proposed pipe repair at I-29 RP 215.237 and a DMS site near the proposed pipe replacement at US 2 RP 344.232. Impacts are not expected.

23. Highway Patrol/Truck Pullouts or Rest Areas? Yes ____ No X

24. Additional Right of Way? Yes X No _____

The existing ROW varies by location. Temporary construction easements may be needed to provide staging areas and constructing onsite detours, if necessary.

25. Drainage Issues? Yes X No _____

See "Purpose and Need" section.

26. Snow Impact Areas? Yes ____ No X

27. Subgrade Issues? Yes ____ No X

28. Noise Analysis: Type I Project? Yes ____ No X Maybe ____

29. Maintenance Issues? Yes X No ____

See “Purpose and Need” section.

30. Guardrail? Yes ____ No X

31. Milling? Yes X No ____

Milling may be required with pipe replacements.

32. Repeated ER Events? Yes ____ No X

33. Interstate Access Gates? Yes ____ No X N/A ____

34. Steep Slopes? Yes ____ No ____ N/A X

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

The 75 pipe rehabilitation locations were split into multiple repair projects based on the overall culvert condition and district preference.

Pipe Rehabilitation Project 1 (27 locations)

HWY	RP	Size (IN)	Length (LF)	Type	District Recommendation
5	332.849	24	68	RCP	Clean, Line
5	333.433	24	86	RCP	Replace End Sections, Foam
18	179.376	24	52	RCP	Clean, Replace End Sections, Fill/Foam

18	181.731	24	66	RCP	Replace End Sections, Fill/Foam
18	183.466	24	48	RCP	Clean, Replace End Sections, Fill/Foam, Line
18	188.645	30	40	RCP	Clean, Replace End Sections, Fill/Foam, Line
18	188.841	36	58	Tpl RCP	Clean, Replace End Sections, Fill/Foam, Line
18	190.233	36	38	Dbl RCP	Replace End Sections, Fill/Foam, Extend
18	192.402	24	48	RCP	Replace End Sections, Fill/Foam, Extend
18	199.873	30	80	RCP	Clean, Replace End Sections, Fill/Foam, Line
18	203.353	36	96	RCP	Clean, Replace End Sections, Fill/Foam
18	203.660	36	100	Dbl RCP	Clean, Replace End Sections, Fill/Foam, Line
18	205.659	24	78	RCP	Clean, Replace End Sections
18	205.700	36	78	Dbl RCP	Clean, Replace End Sections, Line
18	206.561	30	80	RCP	Clean, Replace End Sections, Line
29 NB	141.718	24	76	RCP	Clean, Replace End Sections, Line
29 NB	186.740	24	66	RCP	Clean, Foam/Fill, Lining
29 NB	200.209	24	65	RCP	Clean and Revisit (Assume Line)
29 NB	207.463	51	58	Dbl RCP	Clean, Foam/Fill, Lining
29 NB	208.149	36	218	RCP	Clean and Revisit (Assume Line)
29 NB	208.189	24	65	RCP	Clean and Revisit (Assume Line)
29 NB	209.513	73	68	RCP Arch	Clean, Foam/Fill, Line
29 SB	183.427	24	45	RCP	Clean, Replace End Sections, Line
29 SB	183.876	54	92	RCP	Foam
29 SB	215.285	24	80	RCP	Clean and Revisit (Assume Line)
81	170.554	24	58	RCP	Clean, Fill/Foam, Line
81	187.215	44	56	RCP Arch	Clean, Fill/Foam, Line

Pipe Rehabilitation Project 2 (25 locations)

HWY	RP	Size (IN)	Length (LF)	Type	District Recommendation
2 EB/WB	296.235	24	82	RCP	Dewater, Clean, Line
2 EB/WB	303.077	30	41	Smooth Metal	Dewater, Clean, Line
2 EB/WB	306.916	24	81	RCP	Dewater, Clean, Line
2 EB/WB	307.470	30	78	RCP	Dewater, Clean, Line
2 EB/WB	308.684	30	96	RCP	Dewater, Clean, Line
2 EB/WB	309.083	24	76	RCP	Dewater, Clean, Line
2 WB	319.814	24	92	RCP	Clean, Line, Replace Median Grate
2 EB/WB	320.133	24	91	RCP	Clean, Line, Replace Median Grate
2 EB/WB	341.259	30	82	RCP	Clean, Replace End Sections, Fill/Foam, Line
5	304.479	30	48	RCP	Clean, Replace End Sections, Line
5	311.458	36	64	Dbl RCP	Clean, Replace End Sections, Line
5	311.662	36	64	Tpl RCP	Clean, Line East & West Pipe, Foam Middle Pipe
5	312.329	36	40	Tpl RCP	Clean, Replace End Sections, Line
5	317.220	18	66	RCP	Clean, Replace South End Section, Line
32	170.846	36	46	Tpl RCP Arch	Clean, Replace End Sections, Fill/Foam, Line
32	179.365	30	56	RCP	Clean, Replace End Sections, Fill/Foam, Line
32	180.367	30	44	Dbl RCP	Clean, Fill/Foam, Line
32	180.453	30	72	RCP	Clean, Fill/Foam, Line
32	182.243	36	50	RCP	Clean, Replace End Sections, Fill/Foam, Line

32	187.020	30	44	Dbl RCP	Clean, Fill/Foam, Line
32	187.390	92	104	Dbl SPP Arch	Clean, Rigid Steel Slipliner, Floor (Pending Confirmation Of Pipe Condition)
32	187.065	36	59	RCP	Clean, Replace End Sections, Line
32	213.034	30	58	RCP	Clean, Replace End Sections, Line
32	213.256	24	74	RCP	Clean, Replace End Sections, Line
32	216.134	45	46	RCP Arch	Clean, Foam

Pipe Rehabilitation Project 3 (23 locations)

HWY	RP	Size (IN)	Length (LF)	Type	District Recommendation
1	103.430	24	44	RCP	Clean, Fill/Foam, Line
1	198.853	24	52	RCP	Clean, Fill/Foam, Line, Reattach Grate
1	198.918	24	46	RCP	Clean, Replace West End Section, Fill/Foam, Line, Reattach Grate
1	199.137	24	52	RCP	Dewater, Clean, Line, Reattach Grate
1	199.596	30	46	RCP	Clean, Replace End Sections, Fill/Foam, Line, Reattach Grate
1	199.809	60	46	RCP	Clean, Replace End Sections, Fill/Foam, Line
1	199.907	30	46	RCP	Clean, Replace End Sections, Fill/Foam, Line, Reattach Grate
1	200.227	36	38	RCP	Clean, Replace End Sections, Reattach Grate
15	120.209	24	54	RCP	Clean, Fill/Foam, Line
15	124.024	36	60	RCP	Dewater, Clean, Line
15	125.443	36	58	Dbl RCP	Clean, Fill/Foam, Line
32	116.011	36	144	Tpl RCP	Clean, Replace End Sections, Fill/Foam, Line
32	118.903	24	66	RCP	Dewater, Clean, Line, Replace End Sections
32	131.275	24	84	RCP	Clean, Line
32	157.442	36	60	RCP	Dewater, Clean, Line
45	9.787	73	56	RCP Arch	Clean, Replace End Sections, Line
66	112.706	42	72	RCP	Clean, Replace End Sections, Line
66	115.908	36	46	Dbl RCP	Clean, Replace End Sections, Line
66	116.905	36	46	Tpl RCP	Clean, Replace End Sections, Line
200	321.172	24	50	RCP	Dewater, Clean, Line
200	321.410	24	48	RCP	Clean, Line
200	321.433	24	48	RCP	Clean, Line
200	321.862	24	54	RCP	Clean, Line

M. ADDITIONAL COMMENTS

District Engineer:
"These projects need to move forward to address pipe issues in the district. If the projects do not move forward the district will be forced to do this work with district maintenance forces and from district budget which are already stretched thin."

N. COST ESTIMATE

Pipe Rehabilitation Project 1:

Work Type	Quantity	Unit
Pipe Cleaning	33	EA
Dewater	0	EA
Pipe Lining	1635	LF
Void Fill/Foam	800	GAL
Replace End Sections	42	EA
Extend Pipe	30	LF
Replace Median Grate	0	EA

Pipe Rehabilitation Project 2:

Work Type	Quantity	Unit
Pipe Cleaning	33	EA
Dewater	6	EA
Pipe Lining	1621	LF
Void Fill/Foam	1650	GAL
Replace End Sections	30	EA
Extend Pipe	0	LF
Replace Median Grate	0	EA

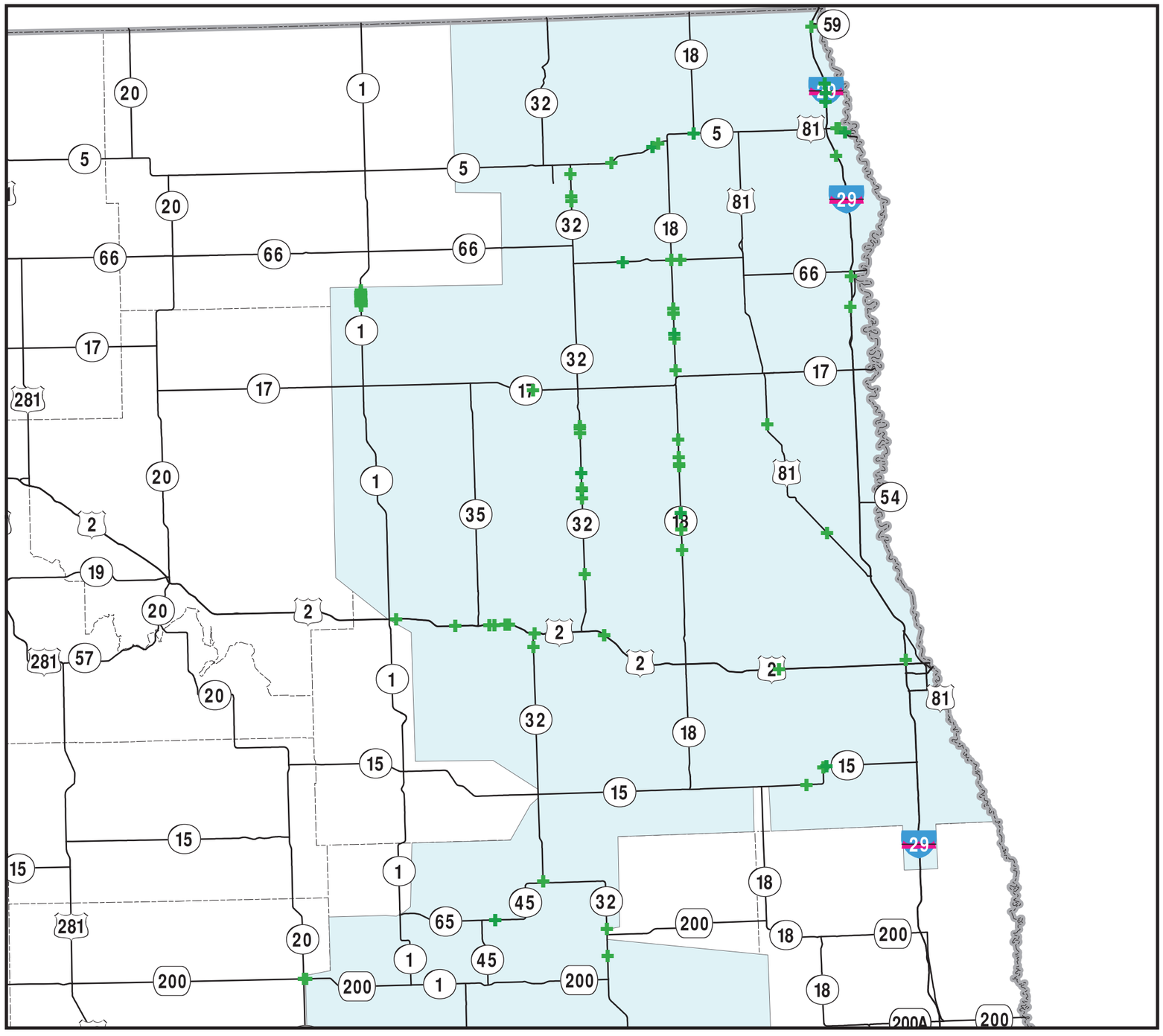
Pipe Rehabilitation Project 3:

Work Type	Quantity	Unit
Pipe Cleaning	29	EA
Dewater	5	EA
Pipe Lining	1740	LF
Void Fill/Foam	1450	GAL
Replace End Sections	48	EA
Extend Pipe	0	LF
Replace Median Grate	6	EA

Appendix

Pipe Location Map

Proposed Pipe Repairs



Legend

- Proposed Pipe Repairs
- District 6

STATE OF
NORTH DAKOTA

PREPARED BY THE

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
PROGRAMMING DIVISION

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