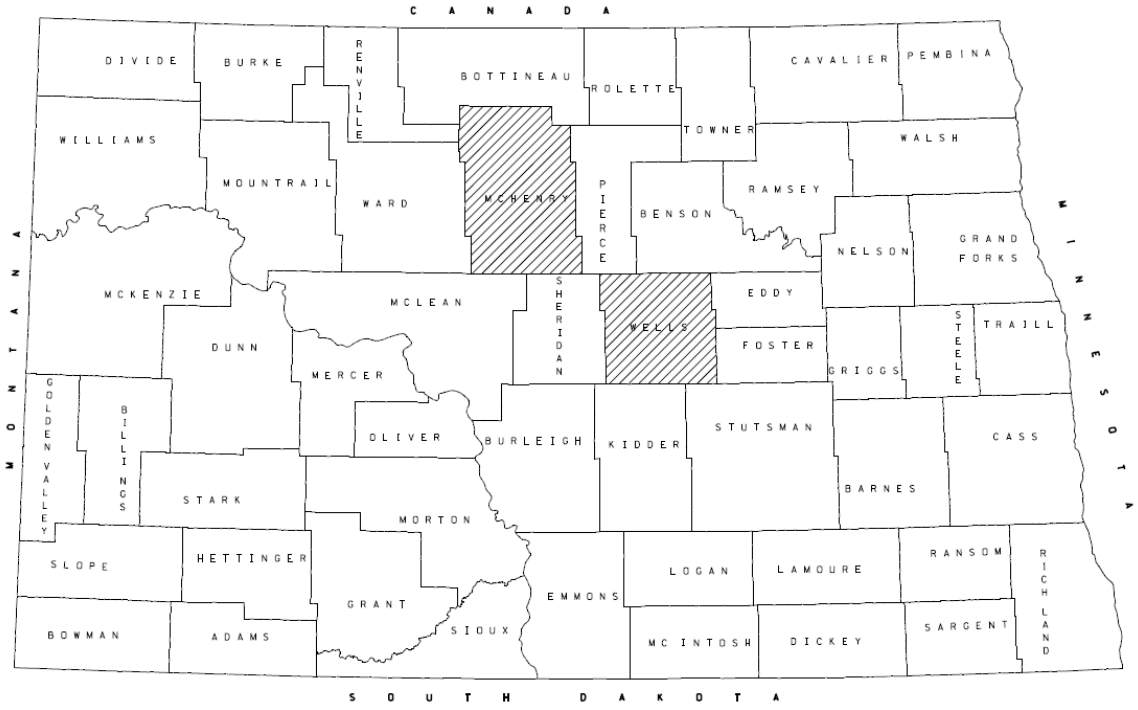
LINEAR SOILS SURVEY AND RECOMMENDATIONS

Project NO. NH-4-052(104)141

PCN 23641

County Wells & Mchenry

HWY 52, RP 141.0 to 185.548



PREPARED BY: Riley McAdoo-Roesler

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION MATERIAL AND RESEARCH DIVISION

November 2023

NH-4-052(104)141

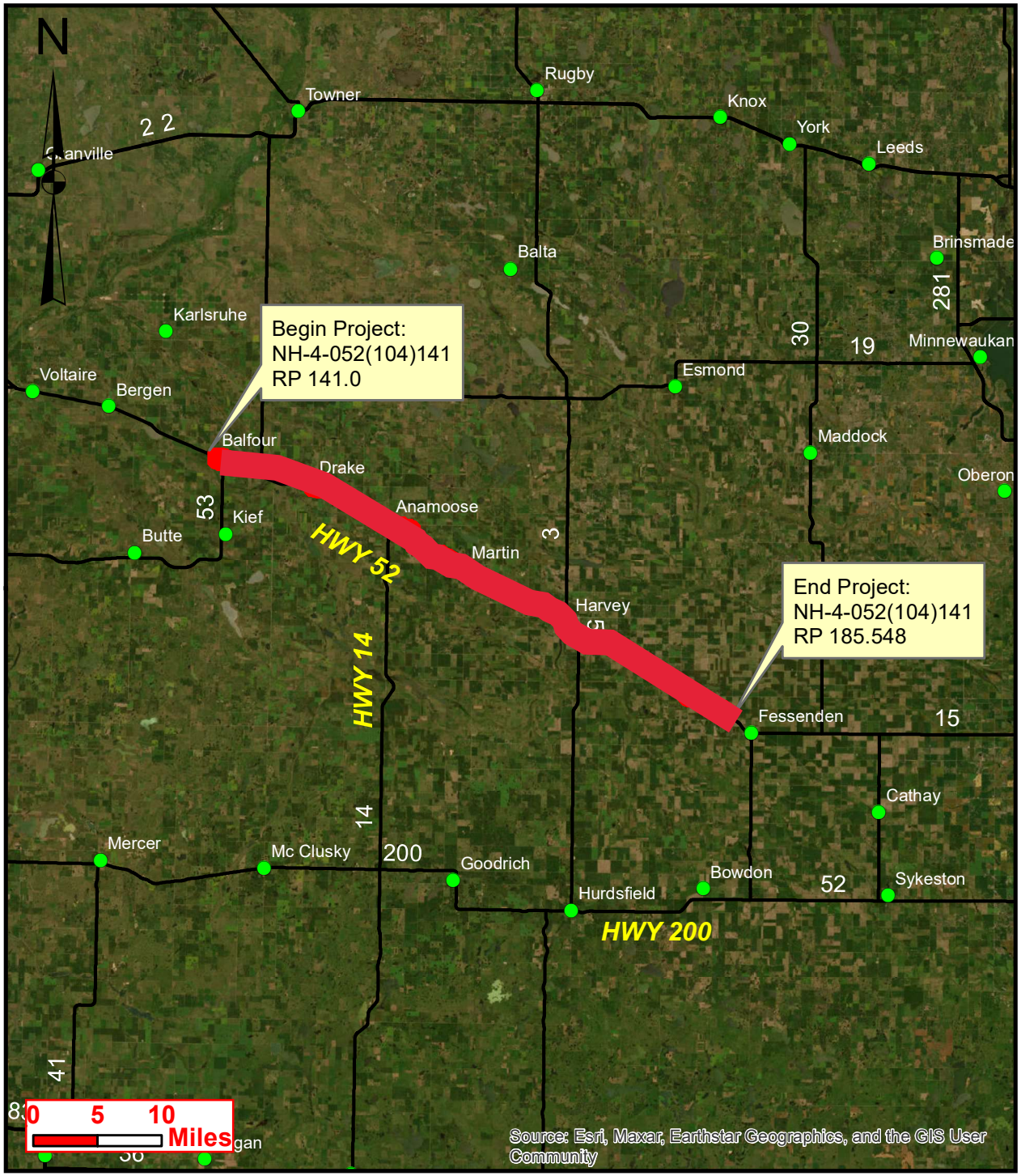
Near JCT 53 to Near Fessenden

CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of North Dakota. This document was originally issued and sealed by Jared J. Loegering, Registration number PE-10931 on 11/30/2023 and the original document is stored at the North Dakota Department of Transportation.

Project Location

Project: NH-4-052(104)141
PCN: 23641
Scope: Minor Rehabilitation, Overlay
Location:RP 141.0 to RP 185.548



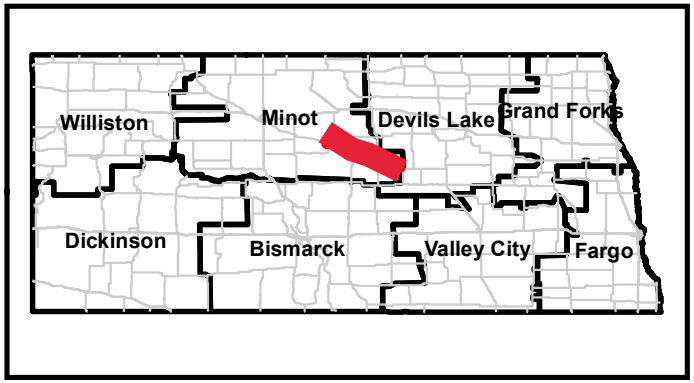


Table of Contents

List of Figures

List of Tables

Appendices

Introduction

Location: HWY 52, Near JCT 53 to Near Fessenden
Reference Points: 141.0 to 185.548
Project Length: 44.1387 Miles
Proposed Project Scope: Minor Rehabilitation, Overlay
Investigation Scope: Identified Maintenance Areas

Maintenance Review

Date of Maintenance Review: 12/12/2022
Materials and Research Person Conducting the Review: Brent Flaa
Maintenance Person Conducting Review: Vince Sabbe

Table 1 - Identified Maintenance Areas

Location RP + Feet	Distress Identified	Maintenance Comments	Drilling Required
145+0565 to 167+4224	Rutting	-	NO
145+0565 to 167+4224	Transv. Cracks	-	NO
137+1540 to 137+4224	Bituminous patch	Scoping report calls out a subcut at this location, through intersection, both sides	YES
145+0866 to 145+1344	Bituminous patch	Multiple patches like this throughout project	YES
145+2440 to 145+2840	Bituminous patch	Scoping report calls out a subcut at this location, Blade Patch	YES
145+3101 to 145+3696	Bituminous patch	Scoping report calls out a subcut at this location, Starts WB only and moved to both lanes	YES
146+2218 to 146+3432	Bituminous patch	Around Curve, EB only for final 150 ft	YES
150+4382 to 150+4594	Bituminous patch	Blade Patch	YES

151+1278 to 151+3034	Bituminous patch	Multiple patches, east patch is surrounded by cattails	YES
152+3464 to 152+4118	Bituminous patch	Blade Patch	YES
153+1531 to 153+1742	Bituminous patch	Blade Patch	YES
153+3432 to 153+3749	Bituminous patch	Blade Patch	YES
156+3062 to 156+4066	Bituminous patch	Scoping report calls out a subcut at this location, primally WB lane	YES
157+0000 to 157+0589	Bituminous patch	East end is WB only, more rutting then other patches, cut/fill transistion	YES
157+0950 to 157+1214	Bituminous patch	Small misc.	YES
157+1848 to 157+2059	Bituminous patch	Misc. patch	YES
157+2990 to 157+3901	Bituminous patch	Big Patch	YES
157+3960 to 157+4382	Bituminous patch	Switches lanes. Uneven.	YES
157+4699 to 157+5544	Bituminous patch	Starting at west end it is WB only, then both, then finishes EB only	YES
180+0845 to 180+2534	Bituminous patch	Scoping report calls out a subcut at this location, Rutting leading into patch from west	YES
182+4858 to 183+1320	Bituminous patch	Scoping report calls out a subcut at this location, Rutting lanes likely pushing up center.	YES

Summary of Soil Investigation

The soil investigation was completed on 05/31/2023. The investigation consisted of 77 borings.

Table 2 - Boring Locations Summary

Boring Location	Pavement Distress	Justification for Boring	Boring Depth	Boring Locations/Comments
137+1540 to 137+4224	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 5 borings in the identified area and one boring on each side approximately 100' away. A total of 7 borings.
145+0866 to 145+1344	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 2 borings in the identified area and one boring on each side approximately 100' away. A total of 4 borings.
145+2440 to 145+2840	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 2 borings in the identified area and one boring on each side approximately 100' away. A total of 4 borings.
145+3101 to 145+3696	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 2 borings in the identified area and one boring on each side approximately 100' away. A total of 4 borings.
146+2218 to 146+3432	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 3 borings in the identified area and one boring on each side approximately 100' away. A total of 5 borings.
150+4382 to 150+4594	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 1 borings in the identified area and one boring on each side approximately 100' away. A total of 3 borings.
151+1278 to 151+3034	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 4 borings in the identified area and one boring on each side approximately 100' away. A total of 6 borings.
152+3464 to 152+4118	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 1 borings in the identified area and one boring on each side approximately 100' away. A total of 3 borings.
153+1531 to 153+1742	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 1 borings in the identified area and one boring on each side approximately 100' away. A total of 3 borings.

153+3432 to 153+3749	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 1 borings in the identified area and one boring on each side approximately 100' away. A total of 3 borings.
156+3062 to 156+4066	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 3 borings in the identified area and one boring on each side approximately 100' away. A total of 5 borings.
157+0000 to 157+0589	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 2 borings in the identified area and one boring on each side approximately 100' away. A total of 4 borings.
157+0950 to 157+1214	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 1 borings in the identified area and one boring on each side approximately 100' away. A total of 3 borings.
157+1848 to 157+2059	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 1 borings in the identified area and one boring on each side approximately 100' away. A total of 3 borings.
157+2990 to 157+3901	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 2 borings in the identified area and one boring on each side approximately 100' away. A total of 4 borings.
157+3960 to 157+4382	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 2 borings in the identified area and one boring on each side approximately 100' away. A total of 4 borings.
157+4699 to 157+5544	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 3 borings in the identified area and one boring on each side approximately 100' away. A total of 5 borings.
180+0845 to 180+2534	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 4 borings in the identified area and one boring on each side approximately 100' away. A total of 6 borings.
182+4858 to 183+1320	Bituminous patch	Identified Maintenance Area	5 Feet	Conduct 4 borings in the identified area and one boring on each side approximately 100' away. A total of 6 borings.

Map of the boring locations are shown in Appendix C. The lab results and included in Appendix E.

Summary of Soil Analysis

Soil Sample Distribution

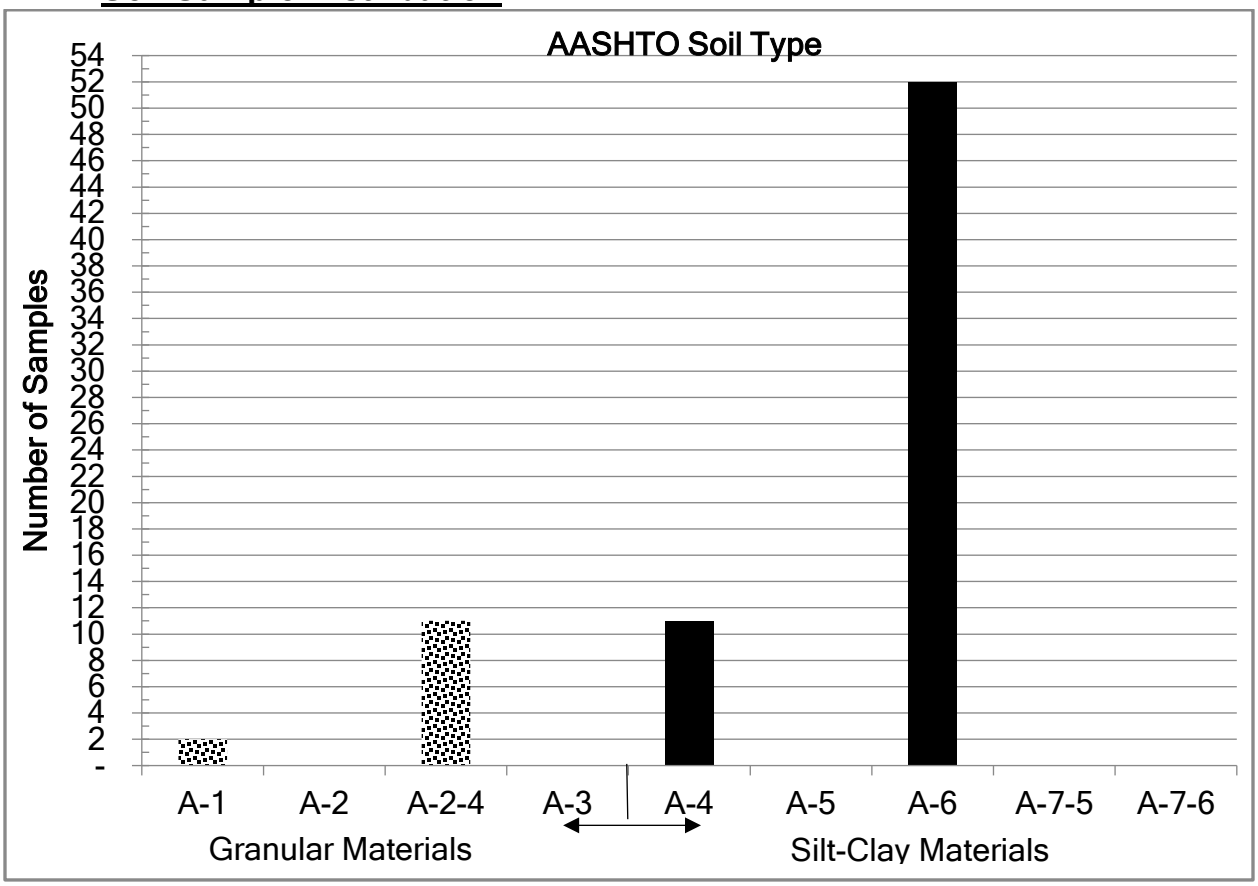


Figure 1 - Soil Sample Distribution

Design Recommendations

Project Limits – 137+3817 to 183+0000: The project limits fall within a geologic area of collapsed glacial sediment. The soils found this project our typical of glacial till include Sand, silts, and clays. The soils within the project are primarily sandy lean clay. The condition of these soils does not indicate subgrade mitigation is required or recommended.

Identified Maintenance Area – 137+1540 to 137+4224: The soils within the identified maintenance area are sandy lean clays**.** There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. The scoping report calls out this location as a protentional subcut. However, the condition of the subgrade does not indicate that it is causing the issue at this maintenance area. Therefore, it is recommended to conduct a pavement repair section from RP+feet 137+1490 to 137+4275. See table 4 for pavement repair sections.

Identified Maintenance Area – 145+0866 to 145+1344: The soils within the identified maintenance area are clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 145+2440 to 145+2840: The soils within the identified maintenance area are clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. The scoping report calls out this location as a protentional subcut. However, the condition of the subgrade does not indicate that it is causing the issue at this maintenance area. Therefore, it is recommended to conduct a pavement repair section from RP+feet 145+2390 to 145+2890. See table 4 for pavement repair sections.

Identified Maintenance Area – 145+3101 to 145+3696: The soils within the identified maintenance area are sandy lean clays. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. The scoping report calls out this location as a protentional subcut. However, the condition of the subgrade does not indicate that it is causing the issue at this maintenance area. Therefore, it is recommended to conduct a pavement repair section from RP+feet 145+3050 to 145+3750. See table 4 for pavement repair sections.

Identified Maintenance Area – 146+2218 to 146+3432: The soils within the identified maintenance area are sandy lean clays. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 150+4382 to 150+4594: The soils within the identified maintenance area are sandy lean clay. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 151+1278 to 151+3034: The soils within the identified maintenance area are silt/clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 152+3464 to 152+4118: The soils within the identified maintenance area are clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 153+1531 to 153+1742: The soils within the identified maintenance area are clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 153+3432 to 153+3749: The soils within the identified maintenance area are sandy lean clay. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 156+3062 to 156+4066: The soils within the identified maintenance area are silty, clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. The scoping report calls out this location as a protentional subcut. However, the condition of the subgrade does not indicate that it is causing the issue at this maintenance area. Therefore, it is recommended to conduct a pavement repair section from RP+feet 156+3010 to 156+4120. See table 4 for pavement repair sections.

Identified Maintenance Area – 157+0000 to 157+0589: The soils within the identified maintenance area are sandy lean clay. This maintenance area occurs in a cut/fill transition which likely correlates to the change in soil type and the substandard performance of the pavement through this area. Based on the change in soil type it is recommended to perform a subcut from RP+feet 156+5180 to 157+0700 at a depth of 36”. See table 3 for subcut specifications.

Identified Maintenance Area – 157+0950 to 157+1214: The soils within the identified maintenance area are silty, clayey sand with gravel. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 157+1848 to 157+2059: The soils within the identified maintenance area are clayey sand with an elevated moisture content. There is a change in water content from the surrounding soils that would indicate that the subgrade is causing the roadway distress at this location. Therefore, it is recommended to perform a subcut from RP+feet 157+1800 to 157+2110 at a depth of 36". See table 3 for subcut specifications.

Identified Maintenance Area – 157+2990 to 157+3901: The soils within the identified maintenance area are clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 157+3960 to 157+4382: The soils within the identified maintenance area are sandy lean clay. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 157+4699 to 157+5544: The soils within the identified maintenance area are sandy lean clay. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. No subgrade mitigation is recommended.

Identified Maintenance Area – 180+0845 to 180+2534: The soils within the identified maintenance area are clayey sand. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. The scoping report calls out this location as a protentional subcut. However, the condition of the subgrade does not indicate that it is causing the issue at this maintenance area. Therefore, it is recommended to conduct a pavement repair section from RP+feet 180+0800 to 180+2580. See table 4 for pavement repair sections.

Identified Maintenance Area – 182+4858 to183+1320: The soils within the identified maintenance area are sandy lean clay. There is not a change in soil type, geology or water content that would indicate that the subgrade is causing the roadway distress at this location. The scoping report calls out this location as a protentional subcut. However, the condition of the subgrade does not indicate that it is causing the issue at this maintenance area. Therefore, it is recommended to conduct a pavement repair section from RP+feet 182+4800 to 183+1370. See table 4 for pavement repair sections.

Design Information

Pipe Replacement: None

Compaction Method: T-180

Subgrade Prep: None

Subcut Recommendations:

Location RP + Feet	Length	Depth
156+5180 to 157+0700	800’	36”
157+1800 to 157+2110	310’	36”

Table 3 - Subcut Recommendations

Calculate the subcut quantity based on the lengths and depths as shown in Table 3 above and adhere to the guidelines stated below.

Remarks: Subcut from the top of proposed pavement. Replace the removed material with Class 5 aggregate and line the excavation with Geosynthetic Geogrid (Type G) in accordance with NDDOT Specification 709. Do not scarify the bottom of the subcut.

Pavement Repair Section:

Location RP + Feet	Length
145+2390 to 145+2890	500’
145+3050 to 145+3750	700’
137+1540 to 137+4275	3035’
156+3010 to 156+4120	1110’
180+0800 to 180+2580	1780’
182+4800 to 183+1370	1850’

Table 4 – Pavement Repair Section

Remarks: It is recommended to repair the distress areas according to the pavement design recommendation. See NDDOT Filenet for pavement recommendations. Line the excavation with Geosynthetic Geogrid (Type G) in accordance with NDDOT Specification 709. Do not scarify the bottom.

Drainage: None

Plan Notes

None

The recommendations in this report are based on the scope specified in the Introduction. If the scope of work, vertical profile or horizontal alignment is changed, in either the conceptual phase or the design phase, the Geotechnical Engineer must be notified as soon as possible to ensure that there is adequate geotechnical information addressing these areas.

APPENDIX A

SOIL CLASSIFICATION

AASHTO Classification System

Table 5.1. AASHTO Classification System

General Classification	*Granular materials (35% or less passing No. 200 Sieve (0.075 mm)*							*Silt-clay Materials More than 35% passing No. 200 Sieve (0.075 mm)*			
Group Classification	*A—1*		*A—3*	*A—2*				*A—4*	*A—5*	*A—6*	*A—7*
	A—1—a	*A—1—b*		*A—2—4*	*A—2—5*	*A—2—6*	*A—2—7*				*A—7—5 A—7—6*
(*a*) Sieve Analysis: Percent Passing											
(*i*) 2.00 mm (No. 10)	50 max										
(*ii*) 0.425 mm (No. 40)	30 max	50 max	51 min								
(*iii*) 0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
(*b*) Characteristics of fraction passing 0.425 mm (No. 40)											
(*i*) Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
(*ii*) Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min*
(*c*) Usual types of significant Constituent materials	Stone Fragments Gravel and sand		Fine Sand	Silty or Clayey Gravel Sand				Silty Soils		Clayey Soils	
(*d*) General rating as subgrade.	Excellent to Good							Fair to Poor			

* If plasticity index is equal to or less than (liquid Limit—30), the soil is A—7—5 (*i.e.* PL > 30%)
If plasticity index is greater than (Liquid Limit—30), the soil is A—7—6 (*i.e.* PL < 30%)

Unified Soil Classification System, USCS

Table 5.2 Unified Soil Classification System (Based on Material Passing 76.2-mm Sieve)

Criteria for assigning group symbols				Group symbol
Coarse-grained soils More than 50% of retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines[a]	$C_u \geq 4$ and $1 \leq C_c \leq 3$[c]	GW
			$C_u < 4$ and/or $1 > C_c > 3$[c]	GP
		Gravels with Fines More than 12% fines[a,d]	$PI < 4$ or plots below "A" line (Figure 5.3)	GM
			$PI > 7$ and plots on or above "A" line (Figure 5.3)	GC
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines[b]	$C_u \geq 6$ and $1 \leq C_c \leq 3$[c]	SW
			$C_u < 6$ and/or $1 > C_c > 3$[c]	SP
		Sands with Fines More than 12% fines[b,d]	$PI < 4$ or plots below "A" line (Figure 5.3)	SM
			$PI > 7$ and plots on or above "A" line (Figure 5.3)	SC
Fine-grained soils 50% or more passes No. 200 sieve	Silts and clays Liquid limit less than 50	Inorganic	$PI > 7$ and plots on or above "A" line (Figure 5.3)[e]	CL
			$PI < 4$ or plots below "A" line (Figure 5.3)[e]	ML
		Organic	$\frac{\text{Liquid limit — oven dried}}{\text{Liquid limit — not dried}} < 0.75$; see Figure 5.3; OL zone	OL
	Silts and clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line (Figure 5.3)	CH
			PI plots below "A" line (Figure 5.3)	MH
		Organic	$\frac{\text{Liquid limit — oven dried}}{\text{Liquid limit — not dried}} < 0.75$; see Figure 5.3; OH zone	OH
Highly Organic Soils	Primarily organic matter, dark in color, and organic odor			Pt

[a] Gravels with 5 to 12% fine require dual symbols: GW-GM, GW-GC, GP-GM, GP-GC.

[b] Sands with 5 to 12% fines require dual symbols: SW-SM, SW-SC, SP-SM, SP-SC.

[c] $C_u = \frac{D_{60}}{D_{10}}$; $C_c = \frac{(D_{30})^2}{D_{60} \times D_{10}}$

[d] If $4 \leq PI \leq 7$ and plots in the hatched area in Figure 5.3, use dual symbol GC-GM or SC-SM.

[e] If $4 \leq PI \leq 7$ and plots in the hatched area in Figure 5.3, use dual symbol CL-ML.

Plasticity Chart :

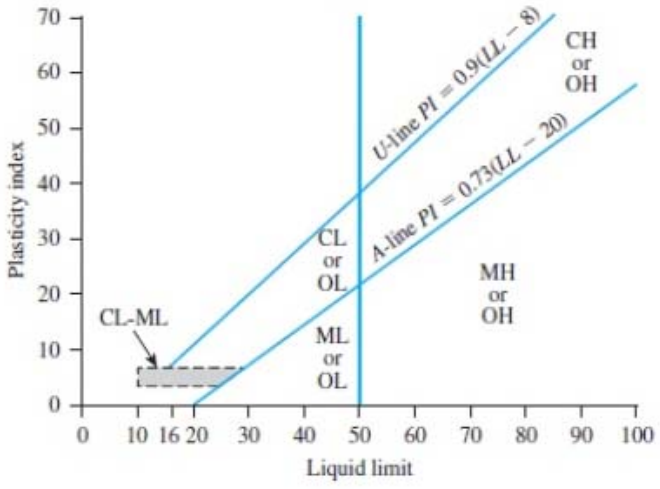


Table 7-12. Frost susceptibility classification of soils (NCHRP 1-37A).

Frost Group	Degree of Frost Susceptibility	Type of Soil	Percentage Finer than 0.075 mm (# 200) by wt.	Typical Soil Classification
F1	Negligible to low	Gravelly soils	3-10	GC, GP, GC-GM, GP-GM
F2	Low to medium	Gravelly soils	10-20	GM, GC-GM, GP-GM
		Sands	3-15	SW, SP, SM, SW-SM, SP-SM
F3	High	Gravelly Soils	Greater than 20	GM-GC
		Sands, except very fine silty sands	Greater than 15	SM, SC
		Clays PI>12	—	CL, CH
F4	Very high	All Silts	—	ML-MH
		Very Fine Silty Sands	Greater than 15	SM
		Clays PI<12	—	CL, CL-ML
		Varied clays and other fine grained, banded sediments	—	CL, ML, SM, CH

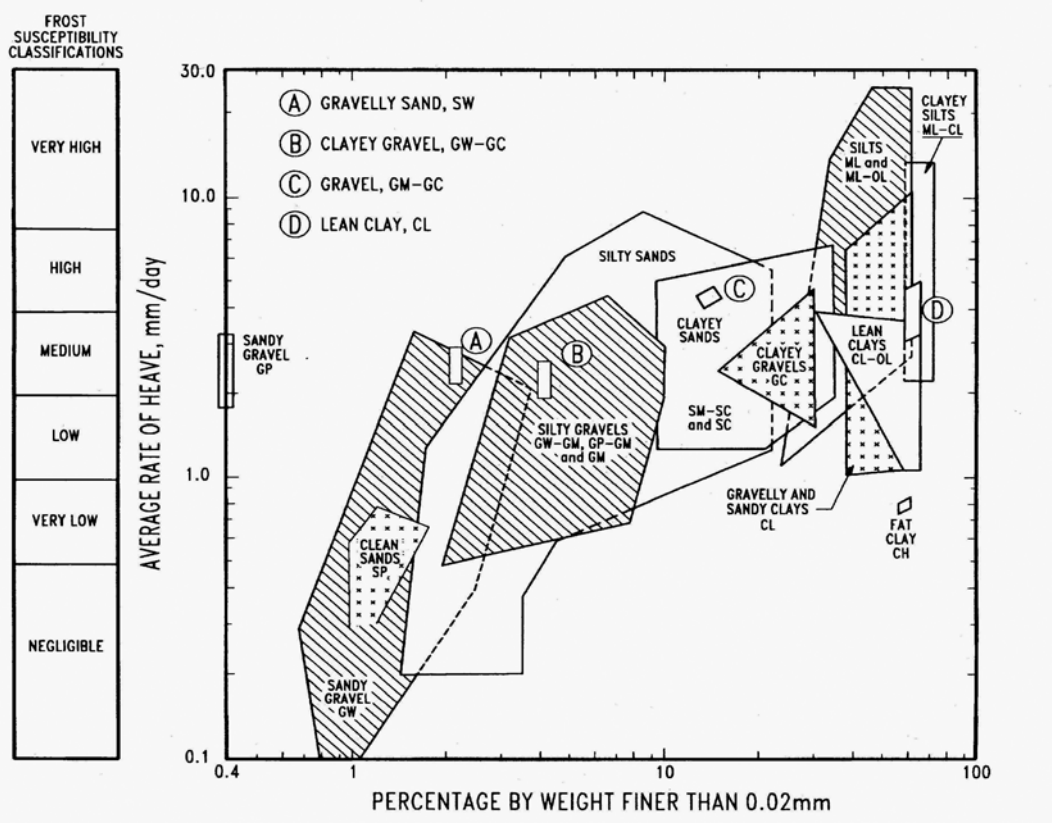


Figure 7-20. Average rate of heave versus % fines for natural soil gradations (Kaplar, 1974).

Frost Depth Map

*Values shown are in meters

APPENDIX B

MAINTENANCE REVIEW AND SUBSURFACE INVESTIGATION SCOPE

PAVEMENT EVALUATION LOG FOR LINEAR SOIL SURVEY

North Dakota Department of Transportation, Materials & Research

SFN 60472 (6-2017)

Project Number	PCN	Date of Survey
NH-4-052(104)137	23641	12/12/2022

Section Maintenance Contact	Completed By
Vince Sabbe	Brent Flaa

Highway Reference Points	Surface Types
137+3817 to 183+0000	Asphalt

Location	Pavement Distress	Description	Maintenance Comment	Picture Number	Drilling Required
137+1540 to 137+4224	Bituminous Patch	Through intersection both sides.	Scoping report calls out a subcut at this location	1-3	Yes
145+0866 to 145+1344	Bituminous Patch	Dal says we will see multiple patches like this throughout the project	NA	4	Yes
145+2440 to 145+2840	Bituminous Patch	Blade Patch	Scoping report calls out a subcut at this location	5	Yes
145+3101 to 145+3696	Bituminous Patch	Starts westbound only and moves to both lanes.	Scoping report calls out a subcut at this location	6-8	Yes
146+2218 to 146+3432	Bituminous Patch	Around curve. Eastbound only for final 150 ft	NA	9-11	Yes
150+4382 to 150+4594	Bituminous Patch	Blade Patch	NA	12	Yes
151+1278 to 151+3034	Bituminous Patch	Multiple patches,East patch is surrounded by cattails	NA	13-15	Yes
152+3464 to 152+4118	Bituminous Patch	Blade Patch	NA	16	Yes
153+1531 to 153+1742	Bituminous Patch	Blade Patch	NA	NA	Yes

Comments

PAVEMENT EVALUATION LOG FOR LINEAR SOIL SURVEY

North Dakota Department of Transportation, Materials & Research
SFN 60472 (6-2017)

Project Number	PCN	Date of Survey
NH-4-052(104)137	23641	12/12/2022

Section Maintenance Contact	Completed By
Vince Sabbe	Brent Flaa

Highway Reference Points	Surface Types
137+3817 to 183+0000	Asphalt

Location	Pavement Distress	Description	Maintenance Comment	Picture Number	Drilling Required
153+3432 to 153+3749	Bituminous Patch	Blade Patch	NA	NA	Yes
156+3062 to 156+4066	Bituminous Patch	West end is westbound lane only. East end is westbound only.	Scoping report calls out a subcut at this location	17-18	Yes
157+0000 to 157+0589	Bituminous Patch	East end is West bound only, More rutting then other patches Cut fill transition	NA	19-21	Yes
157+0950 to 157+1214	Bituminous Patch	Small Misc	NA	NA	Yes
157+1848 to 157+2059	Bituminous Patch	Misc Patch	NA	NA	Yes
157+2990 to 157+3901	Bituminous Patch	Big Patch	NA	22	Yes
157+3960 to 157+4382	Bituminous Patch	Switches lanes. Uneven lanes	NA	23-24	Yes
157+4699 to 157+5544	Bituminous Patch	Starting at west end it is west bound only then both and finishes east bound only	NA	25-26	Yes
180+0845 to 180+2534	Bituminous Patch	Rutting leading into patch from west	Scoping report calls out a subcut at this location	27-29	Yes

Comments

PAVEMENT EVALUATION LOG FOR LINEAR SOIL SURVEY

North Dakota Department of Transportation, Materials & Research

SFN 60472 (6-2017)

Sheet 3 of 3

Project Number	PCN	Date of Survey
NH-4-052(104)137	23641	12/12/2022

Section Maintenance Contact	Completed By
Vince Sabbe	Brent Flaa

Highway Reference Points	Surface Types
137+3817 to 183+0000	Asphalt

Location	Pavement Distress	Description	Maintenance Comment	Picture Number	Drilling Required
182+4858 to 183+1320	Bituminous Patch	Rutting lanes likely pushing up in center. Center of lane possibly ground down from snowplow blade	Scoping report calls out a subcut at this location	30-34	Yes
145+0565 to 167+4224	Rutting	Whole project varying in depth.		NA	No
145+0565 to 167+4224	Transv. Cracks	Scattered throughout project.		NA	No

Comments

1
137+4224

2
137+4224

3
137+4224

4
145+0866 to 145+1344

5
145+2640

6
145+3101 to 145+3696

7
145+3101 to 145+3696

8
145+3101 to 145+3696

9
146+2218 to 146+3432

10
146+2218 to 146+3432

11
146+2218 to 146+3432

12
150+4382 to 150+4594

13
151+1278 to 151+3034

14
151+1278 to 151+3034

15
151+1278 to 151+3034

16
152+3464 to 152+4118

17
156+3062 to 156+4066

18
156+3062 to 156+4066

19
157+0000 to 157+0589

20
157+0000 to 157+0589

21
157+0000 to 157+0589

22
157+2990 to 157+3901

23
157+3960 to 157+4382

24
157+3960 to 157+4382

25
157+4699 to 157+ 1.05

26
157+4699 to 157+ 1.05

27
180+0845 to 180+2534

28
180+0845 to 180+2534

29
180+0845 to 180+2534

30
182+4858 to 183+1320

31
182+4858 to 183+1320

32
182+4858 to 183+1320

33
182+4858 to 183+1320

34
182+4858 to 183+1320