

SCOPING REPORT

Project No.

PCN

RP 41.5 to RP 42.2



Prepared by
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
BISMARCK, NORTH DAKOTA

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

DIRECTOR
William T. Panos

OFFICE OF TRANSPORTATION PROGRAMS
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January 2021

23 USC § 409
NDDOT Reserves All Objections

SCOPING REPORT

A. GENERAL INFORMATION

Project Number:

District: Valley City

Highway: ND 9

Location: RP 41.5 to RP 42.2

Reference Point: RP 41.5 to RP 42.2 – 0.7 Miles

Counties: Barnes

Legal Description: T142N, R61W, Sec 19, 20, 29, 30

Functional and Funding Roadway Classification: District Corridor

National Highway System: No

Speed Limit: 65 mph

Freight Level: 2

Freight Constraints: Travel Way Restriction

Project Schedule: Proposed to be added to the STIP for a 2022 Safety Project.

dTIMS Recommendations:

Constrained: PM Asphalt 2031

Unconstrained: PM Asphalt 2029

B. PURPOSE, NEED, AND IMPROVEMENT

Purpose and Need of Project:

This is a low segment of roadway that is located within a curve and splits small bodies of water. There is water within the clear zone, approximately 4' away from edge line. Widening projects have been done in the past, however, water continues to overtop onto the flat area adjacent to the roadway. Water has created a soft asphalt pavement slough and shoulder, leading to any traffic that leaves the asphalt pavement to get sucked into the water by the soft shoulder. Cattails and vegetation growing close to the roadway, block visibility of traffic on mainline and traffic trying to enter on south township approach.

The area is difficult to maintain during snow and ice control. The low elevation of the roadway and high vegetation creates an environment for the curve to drift in with snow on a regular basis. There are currently 2 approaches/accesses along this curve, one on each end. Hydraulics was consulted and an exact overflow elevation for the watershed is not available but based off of available LIDAR data, which is low accuracy, a 5-foot grade raise is close to the outlet elevation.

Proposed Improvements:

Perform a grade raise to remove water and vegetation from the clear zone to improve the quality of the shoulder material and improve the visibility for both the mainline traffic and the approach traffic. The grade raise will also help eliminate the snow trap condition, by improving snow and ice control, and will also make the roadway more consistent throughout the segment of the roadway. The minor road on the south end will need to be raised to tie into the new roadway elevation. This segment of ND 9 is currently scheduled for a PM mill & overlay in 2023.

Additional Improvements:**Radial T:**

Combine the approaches into one improved approach (Radial T), to improve the visibility for both mainline and approach traffic, and to eliminate conflict points. If radial T is chosen, there will be a slight cost reduction to the proposed roadway improvement due to not needing to raise the south minor road to tie into the new roadway.

C. TRAFFIC AND CRASH ANALYSIS

RP 41.5 to RP 42.2	Year	Pass	Trucks	Total AADT	30 th Max Hr	Flex ESALs	Rigid ESALs
Current Traffic	2020	170	80	250	25	70	115
Forecast Traffic	2040	220	115	335	40	100	160

Crash Analysis:

There were no reported crashes from 5/1/2015 to 4/30/2020.

Recommendation: None at this time.

D. EXISTING ROADWAY CHARACTERISTICS

	International Roughness Index (IRI)	Distress Score	Rut
Excellent	< =60	≥ 98	< 0.25"
Good	61 – 99	88 – 97	0.25" to 0.375"
Fair	100 – 145	77 – 87	0.376" to 0.50"
Poor	> 145	≤ 76	> 0.50"

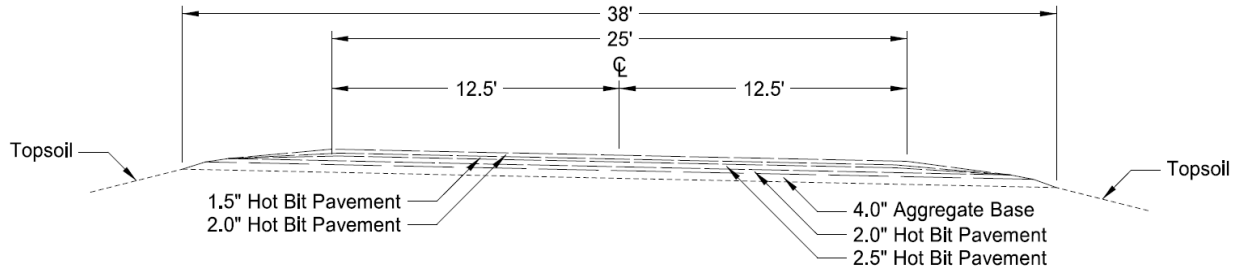
RP 41.5 to RP 42.2

Actual Age	IRI	IRI Rating	SI or SCI	Faulting
57	77	Good	3	N/A
Effective Age	Distress	Distress Score	Rutting	Rutting Score
20	90	Fair	.09	Excellent

CONSTRUCTION HISTORY				
Year	Construction	Depth (in)	Width (ft)	Oil
1963	GRADE	-	38.0	-
1963	AGGREGATE BASE	4.0	36.0	-
1963	HOT BIT PAVEMENT	2.0	34.0	120-150
1974	HOT BIT PAVEMENT	2.5	24.0	200-300
1985	CONTRACT CHIP SEAL	-	24.0	AE-150S
1993	INT MTCE PATCH-1.0"	-	24.0	200-300
1997	HOT BIT PAVEMENT	1.5	24.0	120-150
2000	FEDERAL AID CHIP SEAL	-	24.0	HFMS-2
2010	HOT BIT PAVEMENT	2.0	25.0	PG 58-28
2013	FEDERAL AID CHIP SEAL	-	25.0	CRS2P

Existing Foreslopes: 4:1

Existing Typical Section:



E. EXISTING GEOMETRY

Horizontal Curves: No proposed changes.

Vertical Curves: No proposed changes.

F. EXISTING STRUCTURES

Bridges: None

Centerline Pipes: Use Existing.

G. LAND INTERESTS

Small Community: None

Reservation: None

Public Land: None

Adjacent Land Usage: Agricultural, Residential

H. ISSUES AND APPURTENANCES CHECKLIST

- | | | | | |
|---|-----|-------------------------------------|----|-------------------------------------|
| 1. Curb and Gutter? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 2. Sidewalk? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 3. Multi-Use Path? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 4. ADA Ramps? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 5. State Bicycling Network? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |
| Project is located within Tier 1 State Bike Corridor. For Tier 1 corridors, there is no expectation of wide, bikeable shoulders. As funding allows, safe, emergency pull off should be provided (shallow inslopes, paved, unpaved, or grass shoulders, etc.). Signage could be used to improve awareness of bicycle traffic among vehicle driver as well. | | | | |
| 6. Lighting? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 7. Signals? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 8. Storm Sewer? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 9. Manholes? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
| 10. Other Underground Work? | Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |

11. Parking Facilities? Yes No
12. Frontage Roads? Yes No
13. Utility Issues? Yes No
There is buried telephone line throughout the corridor.
14. Landscaping? Yes No
15. Approach or Ditch Block Flattening? Yes No
16. T Intersection Recovery Approaches? Yes No
The terminating minor roads are not a county highways. A recovery approach is not required by century code and there is no crash history involving lack of recovery approaches identified that would warrant one.
17. Fence? Yes No
18. Railroad Crossings? Yes No
19. Detours/Bypasses? Yes No
20. Automatic Traffic Recorder Locations? Yes No
21. Weigh-In-Motion Sites? Yes No
22. ITS (Deicing, Snow Gates, VMS, RWIS, etc.)? Yes No
23. Highway Patrol/Truck Pullouts or Rest Areas? Yes No
24. Additional Right of Way? Yes No
Existing ROW in area ranges from 100' to 120'. It is likely temporary ROW will be needed to perform grade raise. Permanent ROW will be needed to construct radial T.
25. Drainage Issues? Yes No
26. Snow Impact Areas? Yes No
The HSIP application mentions that due to the low elevation of the roadway and high vegetation, this area drifts in with snow on a regular basis.
27. Subgrade Issues? Yes No
28. Noise Analysis: Type I Project? Yes No Maybe
29. Maintenance Issues? Yes No
The area is difficult to maintain during snow and ice control. The low elevation of the roadway and high vegetation creates an environment for the curve to drift in with snow on a regular basis.
30. Guardrail? Yes No

31. Milling?

Yes _____ No X

I. Load Restrictions

Travel Information Map Proposed Load Restriction: Legal Weight

HPCS Load Restrictions: 8-Ton

Projected Load Restrictions after project is complete: Legal Weight

J. Roadway Widths

Required Minimum Roadway Width: 32'

Freight Level Required Minimum Width: $\geq 26'$

Surrounding Corridor Widths: 25'

K. PERFORMANCE GUIDELINES

Design Speed: 65 mph

Clear Zone (from edge of driving lane): AASHTO Roadside Design = 20'

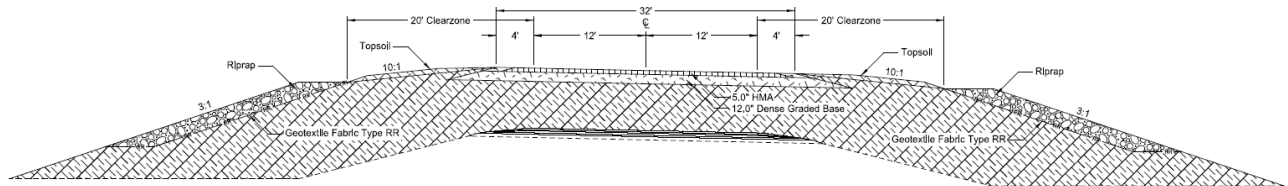
Shoulder Surface: Paved

Foreslopes: (Transitions), 10:1 Minimum (Grade Raise)

L. PROPOSED IMPROVEMENTS

- Perform a grade raise throughout the project limits.
- Combine approaches into one improved approach (Radial T).

Proposed Typical Sections:



Proposed Layouts:

The layout of the proposed improvement is conceptual. Final design criteria should be determined during project development.



M. ADDITIONAL COMMENTS

Valley City District Engineer:

N. COST ESTIMATE

ND 9 RP 41.5 to RP 42.2: Grade Raise

(Inflation factor of 4% was used to estimate costs for bid year)

ITEM	ESTIMATED COST
Contract Bond	\$20,000
Mobilization	\$98,000
HMA (Includes 5.0" HMA, AC, Tack, Prime, and Cores)	\$358,000
Aggregate	\$271,000
Geosynthetic Material	\$66,000
Rip Rap	\$392,000
Embankment and Water	\$780,000
Topsoil	\$13,000
Erosion and Sediment Control	\$22,000
Rumble Strips	\$3,000
Pavement Markings	\$3,000
Traffic Control	\$50,000
Subtotal	\$2,076,000
20% Engineering	\$415,000
Total Cost	\$2,491,000
Total Cost with Inflation	\$2,694,000

O. DECISIONS

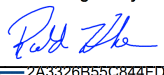
1. Which advancement option(s) should be chosen for the project?

 X Option 1: ND 9 RP 41.5 to RP 42.2: Grade Raise
Estimated Cost: \$2,694,000

 ^{**} Option 2: Combine approaches (Radial T)
Estimated Cost: \$375,000

* If radial T is chosen, there will be a slight cost reduction to the proposed roadway improvement due to not needing to raise the south minor road to tie into the new roadway.

DDE Comments: **Look at combining approaches or eliminating one if possible.

DocuSigned by:

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Deputy Director for Engineering

1/5/2021
Date

Certificate Of Completion

Envelope Id: BBFAE96A52BC4058A9D334245CAA1DBE	Status: Completed
Subject: Please DocuSign: Scoping Report	
Contract Number:	
PCN:	
Source Envelope:	
Document Pages: 8	Signatures: 1
Certificate Pages: 2	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelopeld Stamping: Enabled	Michael Wilz
Time Zone: (UTC-06:00) Central Time (US & Canada)	608 E Boulevard Ave
	Bismarck, ND 58505
	mwilz@nd.gov
	IP Address: 165.234.252.245

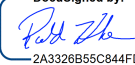
Record Tracking

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1/5/2021 10:01:29 AM	mwilz@nd.gov	
Security Appliance Status: Connected	Pool: StateLocal	
Storage Appliance Status: Connected	Pool: Carahsoft OBO North Dakota Department of Transportation CLOUD	Location: DocuSign

Signer Events

Ronald Henke
rhenke@nd.gov
ND Department of Transportation
Security Level: Email, Account Authentication (None), Authentication

Signature

DocuSigned by:

2A3326B55C844FD...
Signature Adoption: Uploaded Signature Image
Using IP Address: 165.234.92.2

Timestamp

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Viewed: 1/5/2021 10:33:33 AM
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Electronic Record and Signature Disclosure:
Not Offered via DocuSign

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp
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Notary Events	Signature	Timestamp
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Envelope Summary Events	Status	Timestamps
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Certified Delivered	Security Checked	1/5/2021 10:33:33 AM
Signing Complete	Security Checked	1/5/2021 10:33:47 AM
Completed	Security Checked	1/5/2021 10:33:47 AM

Payment Events	Status	Timestamps
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