NORTH Dakota | Transportation
Be Legendary.

Bridge #0041-008.742(Routine)
ND HIGHWAY 41 over PAINTED WOODS CREEK
Location: 9 NORTH OF US 83
Inspection Date: November 16, 2020

Latitude:47.27167, Longitude:-100.75000

Route:00041 Log:8.74

District 61, McLean County

Owner: 1-State Highway Agency

Team Leader: Jake Mertz

Approved By: Travis McCloud

9 NORTH OF US 83

47.27167, -100.75000

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IDENTIFICATION	
(1) State Names	North Dakota
(8) Structure Number	0041-008.742
(5) Inventory Route	00041
(2) Highway Agency District	61
(3) County Code	McLean, North Dakota
(4) Place Code	0
(6) Features Intersected	PAINTED WOODS CREEK
(7) Facility Carried	ND HIGHWAY 41
(9) Location	9 NORTH OF US 83
(11) Mile Point	8.74 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte	0000000000
(16) Latitude	47.27167
(17) Longitude	-100.75000
GPS X	367700.4
GPS Y	5236742.5
(98) Border Bridge State Code	-1
(99) Border Bridge Struct. No.	_
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	21
Material	2-Concrete continuous
Type	1-Slab
(44) Approach Structure Type	00
Material	0-Other
Type	0-Other
(45) No. of Spans in Main Unit	3
(46) No. of Approach Spans	0
Culvert	
(107) Deck Structure Type	1-Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	1-Monolithic Concrete (concurrently placed
Type of Membrane	0-None
Type of Deck Protection	0-None
Deck overburden	1
AGE AND SERVICE	
(27) Year Built	1959
(106) Year Reconstructed	
(42) Type of Service	15
On	1-Highway
Under	5-Waterway
(28) Lane	
On	2
Under	0
(29) Average Daily Traffic	640
(30) Year of ADT	2019
(109) Truck ADT	8 %
(19) Bypass, Detour Length	20 mi
(114) Future ADT	589
(115) Year of Future ADT	2039
GEOMETRIC DATA	
(48) Length of Maximum Span	27.9 ft
(49) Structure Length	75.1 ft
(50) Curb or Sidewalk Width	
Left	2 ft
Right	2 ft
(51) Bridge Roadway Width Curb to Curb	29.9 ft
(52) Deck Width Out to Out	36.7 ft
(32) Approach Roadway Width (W/Shoulders)	29.9 ft
(33) Bridge Median	0-No median
(34) Skew	0 Deg
(35) Structure Flared	No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	29.9 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	0 ft
Ref:	
(55) Min Lat Underclear RT	99.9 ft
Ref:	
(56) Min Lat Underclear LT	0 ft

CLASSIFICATION	
(A-7) Agency Admin Area	1
(112) NBIS Bridge Length	Y
(104) Highway System	Non-NHS
(26) Functional Class	6-Rural Minor Arterial
(100) Defense Highway	0-The inventory route is not a S
(A16) TE Route	
(101) Parallel Structure	N-No parallel structure exists.
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0-N/A
(110) Designated National Network	0-The inventory route is not part of
(20) Toll	3-On free road. The structure is toll-
(21) Maintain	1-State Highway Agency
(22) Owner	1-State Highway Agency
(37) Historical Significance	5-Bridge is not eligible for the NRHP
CONDITION	
(58) Deck	4
(59) Superstructure	5
(60) Substructure	7
(61) Channel & Channel Protection	6
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	5-MS 18 / HS 20
(63) Operating Rating Method	1
(64) Operating Rating	58.6
(65) Inventory Rating Method	1-Load Factor(LF)
(66) Inventory Rating	31.8
(70) Bridge Posting	5-Equal to or above legal loads
(41) Structure Open/Posted/Closed	A-Open, no restriction
APPRAISAL	
(67) Structural Evaluation	7
(68) Deck Geometry	6
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36) Traffic Safety Features	1110
A) Bridge Railings	1-Inspected feature meets currently a
B) Transitions	1-Inspected feature meets currently a
C) Approach Guardrail	1-Inspected feature meets currently a
D) Approach Guardrail Ends	0-Inspected feature does not meet cur
(113) Scour Critical Bridges	8-Bridge foundations determined to be

APPROVED INSPECTIONS			
(90) Inspection Date			11/2020
(91) Frequency			24 Months
(92) Critical Feature Inspection	Req	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	No		
C: Other Special Inspection	Yes	0	08/2021

NAVIGATION DATA	
(38) Navigation Control	0-No navigation control on water
(111) Pier Protection	-
(39) Navigation Vertical Clearance	0 ft
(116) Vert-Lift Bridge Nav Min Vert Clr	ft
(40) Navigation Horizontal Clearance	0 ft
AGENCY ITEMS	
(A-21) Fedaid Project no.	S-1-041(00)000
(A-14) Chaining Date	
(A-15) Delamination Pct	
(A-2) Rating Date	4/24/2017 12:00:00 AM

Bridge Health Index	82.53

Inspection Team Lead: Jake Mertz

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Team Lead: Jake Mertz, **Inspection Date:** November 16, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
38	RC Slab	SF	2250	1138	1000	112	0
1080	Delamination/Spall/Patched Area	SF	112	0	0	112	0
1130	Cracking (RC and Other)	SF	1138	1138	0	0	0
1190	Abrasion/Wear (PSC/RC)	SF	1000	0	1000	0	0
(38-1080)							
map cracking on top of deck, even throughout. Maintenance has patched popouts on top. - 4/15/2019							
There are numerous spalls on the deck and the south end of the deck at the joint has patched spalls. 16November2020							
(38-1130)							
The deck has cracks throughout thee entire deck that are spaced 1 - 2 feet apart. These cracks have been sealed. 16November2020							
(38-1190)							
Both shoulders and scattered areas on the deck have abrasion. 16November2020							
210	Reinforced Concrete Pier Wall	LF	59	56	3	0	0
1130	Cracking (RC and Other)	LF	3	0	3	0	0
(210-1130)							
1/8" vertical crack down the center of the pipe - 4/15/2019							
Pier 3 has 1 crack and pier 2 has 2 cracks that measured approximately 0.040 in width in the middle of the pier. 16November2020							
215	Reinforced Concrete Abutment	LF	75	58	0	17	0
1130	Cracking (RC and Other)	LF	17	0	0	17	0
(215-1130)							
diagonal and vertical cracks where abutment and wings meet. - 4/15/2019							
Abutment 1 has 4 feet of heavy map cracking on the West end and 8 feet of heavy map cracking on the East end. These cracks average approximately 0.016 in width. Abutment 4 has 1 foot of crack on the East end and 4 feet of map cracking on the West end. These cracks measured approximately 0.016 in width. 16November2020							
330	Metal Bridge Railing	LF	151	151	0	0	0
515	Steel Protective Coating	SF	100	100	0	0	0
(330-515)							
coating has come off and starting to rust - 4/15/2019							
The rail was repainted in the damaged area. 16November2020							
331	Reinforced Concrete Bridge Railing	LF	151	0	146	5	0
1080	Delamination/Spall/Patched Area	LF	5	0	0	5	0
1130	Cracking (RC and Other)	LF	10	0	10	0	0

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1190	Abrasion/Wear (PSC/RC)	LF	136	0	136	0	0
(331-1080)							
spalled out and 2 bolts exposed - 4/15/2019							
(331-1130)							
shrinkage cracks - 4/15/2019							
There are approximately 10 cracks in both rails that average approximately 0.016 in width. 16November2020							
(331-1190)							
Both rails have abrasion that has exposed thee large aggregate. 16November2020							
8398	Slope Protection	EA	2	0	2	0	0
4000	Settlement	EA	2	0	2	0	0
(8398-4000)							
rip rap is missing in spots of slope - 4/15/2019							
8401	Wings	EA	4	1	1	2	0
1130	Cracking (RC and Other)	EA	3	0	1	2	0
(8401-1130)							
diagonal cracks where wings meet abutments. - 4/15/2019							
The Northwest wing is cracked and measured approximately 0.006 in width. The Southwest wing has diagonal cracks that average approximately 0.035 in width. The Southeast wing has diagonal cracks that average approximately 0.030 in width. 16November2020							

Inspection Comments

04/15/2019 NBI Remarks: Map cracking on deck. Curb has shrinkage cracks. Backwalls cracked on all 4 corners where deck & wings meet. Old pile in channel.
Numerous popouts and small spalls on concrete slab, no exposed rebar. - 4/15/2019
Channel profile not completed do to iced over channel 11/16/2020

Span 1 underside deck cracking

Pier 2 south face crack .040

Pier 2 south face crack

SE wing crack .030

Abutment 1 crack .016

Abutment 1 east end cracks

Abutment 1 crack .016

West end abutment 1 cracks

SW wing cracks .035

West curb crack .016

South joint and deck spalls

Deck cracks

Deck cracks

Deck cracks

Deck abrasion and cracks

Deck abrasion and cracks

Iced up channel

Looking north

Looking south

East concrete barrier

East concrete barrier

Looking west

Old rail pedestal spot east rail

Looking east

East curb spall 2'x1'

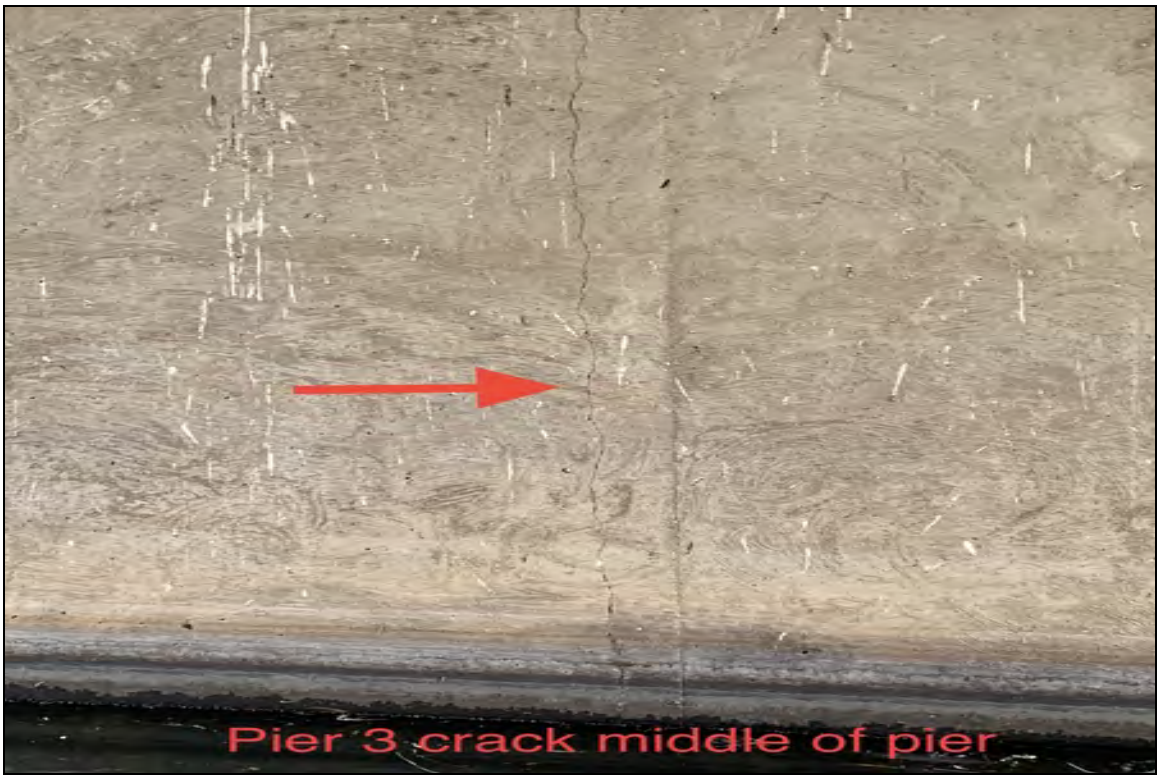
.050 east rail crack

.006 NW wing crack

North abutment west end cracking

East box rail attachment

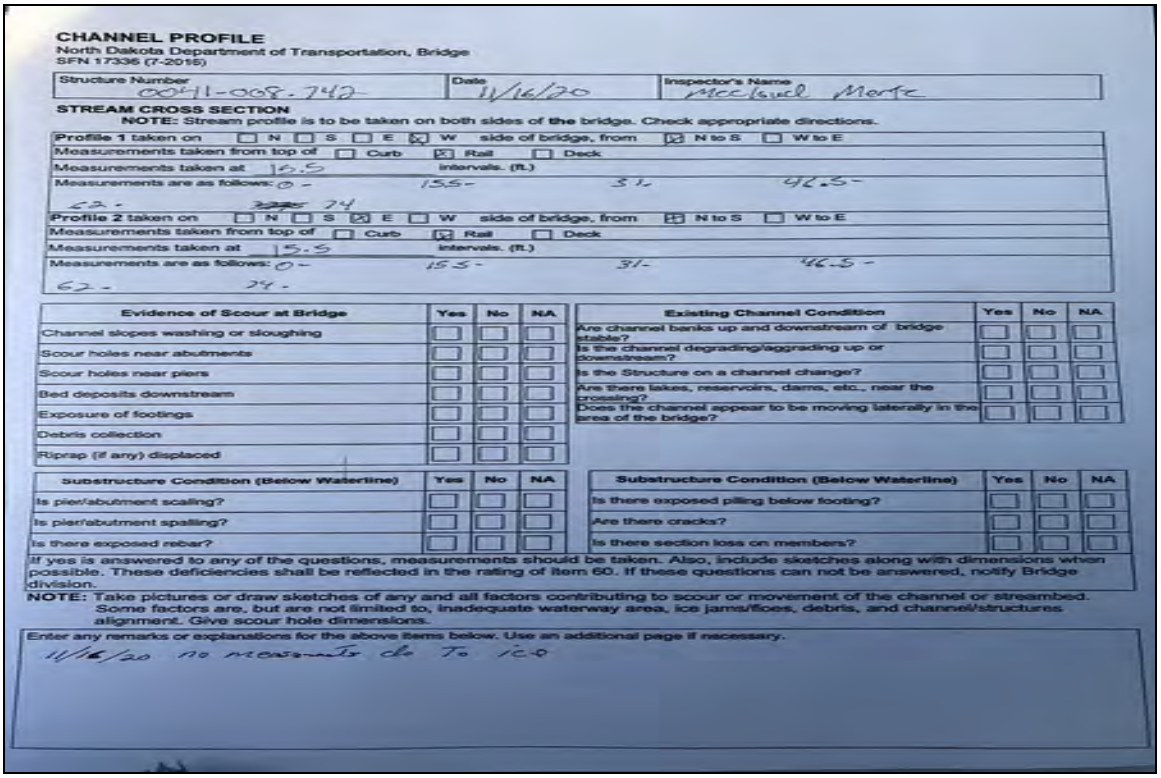
Old piling



Pier 3 crack middle of pier

.016 north abutment crack

North abutment crack east end



CHANNEL PROFILE
North Dakota Department of Transportation, Bridge
SFN 17336 (7-2015)

Structure Number	Date	Inspector's Name
0041-008.742	11/16/20	Michael Mertz

STREAM CROSS SECTION
NOTE: Stream profile is to be taken on both sides of the bridge. Check appropriate directions.

Profile 1 taken on ☐ N ☐ S ☐ E ☒ W side of bridge, from ☒ N to S ☐ W to E
Measurements taken from top of ☐ Curb ☒ Rail ☐ Deck
Measurements taken at 15.5 intervals. (ft.)
Measurements are as follows: 0 - 15.5 - 31 - 46.5 - 62 - 74

Profile 2 taken on ☐ N ☐ S ☒ E ☐ W side of bridge, from ☒ N to S ☐ W to E
Measurements taken from top of ☐ Curb ☒ Rail ☐ Deck
Measurements taken at 15.5 intervals. (ft.)
Measurements are as follows: 0 - 15.5 - 31 - 46.5 - 62 - 74

Evidence of Scour at Bridge	Yes	No	NA
Channel slopes washing or sloughing	☐	☐	☐
Scour holes near abutments	☐	☐	☐
Scour holes near piers	☐	☐	☐
Bed deposits downstream	☐	☐	☐
Exposure of footings	☐	☐	☐
Debris collection	☐	☐	☐
Riprap (if any) displaced	☐	☐	☐

Existing Channel Condition	Yes	No	NA
Are channel banks up and downstream of bridge stable?	☐	☐	☐
Is the channel degrading/aggrading up or downstream?	☐	☐	☐
Is the Structure on a channel change?	☐	☐	☐
Are there lakes, reservoirs, dams, etc., near the crossing?	☐	☐	☐
Does the channel appear to be moving laterally in the area of the bridge?	☐	☐	☐

Substructure Condition (Below Waterline)	Yes	No	NA
Is pier/abutment scaling?	☐	☐	☐
Is pier/abutment spalling?	☐	☐	☐
Is there exposed rebar?	☐	☐	☐

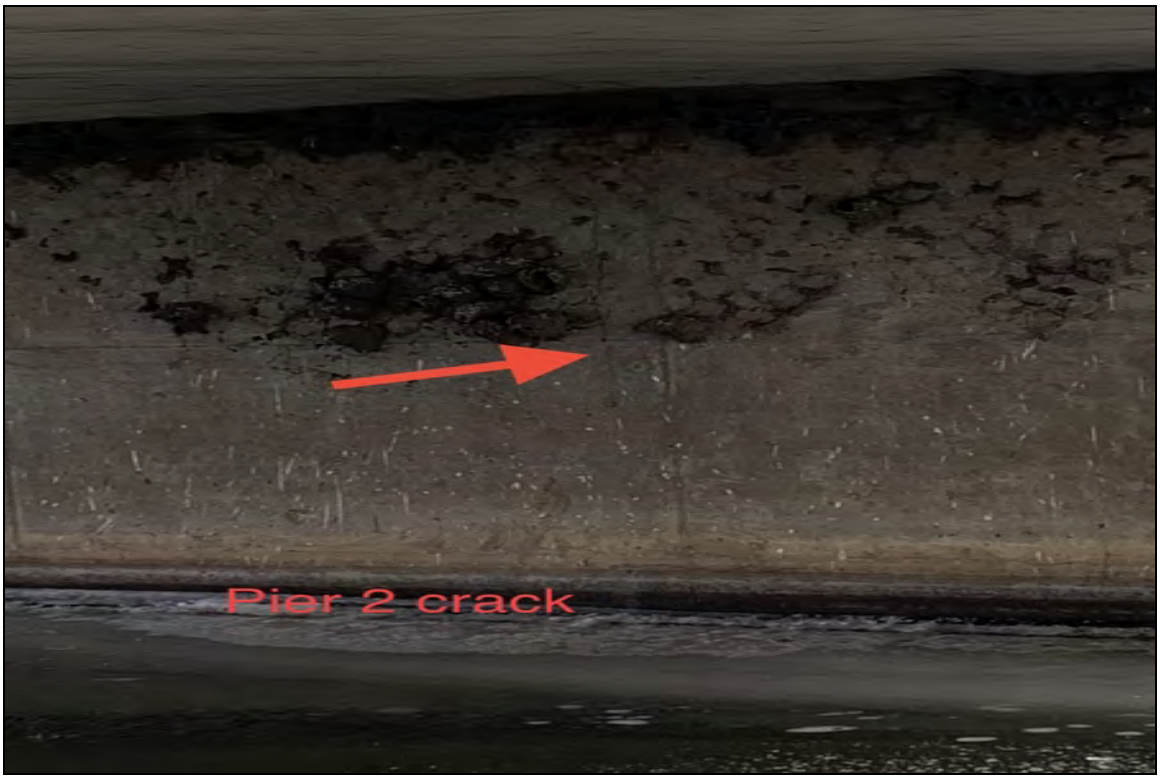
Substructure Condition (Below Waterline)	Yes	No	NA
Is there exposed piling below footing?	☐	☐	☐
Are there cracks?	☐	☐	☐
Is there section loss on members?	☐	☐	☐

If yes is answered to any of the questions, measurements should be taken. Also, include sketches along with dimensions when possible. These deficiencies shall be reflected in the rating of item 60. If these questions can not be answered, notify Bridge division.

NOTE: Take pictures or draw sketches of any and all factors contributing to scour or movement of the channel or streambed. Some factors are, but are not limited to, inadequate waterway area, ice jams/floes, debris, and channel/structures alignment. Give scour hole dimensions.

Enter any remarks or explanations for the above items below. Use an additional page if necessary.
11/16/20 no measurments do To ICO

No channel measurement do to iced up channel



Pier 2 crack