FY2024 Annual Inspection and Underwater Inspection, Trestles ANB, A'NB & ASB

FY2024 Facility Annual Inspection Report FINAL

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January 8, 2024

Chesapeake Bay Bridge and Tunnel District

Task Orders 14 & 15

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FY2024 Annual Inspection and Underwater Inspection, Trestle CSB

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Executive Summary

Enclosed is a combination of the GASB 34 with the Maintenance Rating Program (MRP) Condition Scale and ratings for the trestles along with repair recommendations, and recommended insurance coverages for the facilities that make up the Chesapeake Bay Bridge Tunnel District (the District) for Fiscal Year 2024 (FY2024, July 1, 2023 – June 30, 2024). The ratings of the GASB 34 Cluster Item Ratings are summarized below in Table 1, and can be observed in detail in Section 2: Ratings for GASB 34 of the report.

Table 1: GASB 34 Cluster Item Ratings

Cluster Item	Rating
A. Approach Roads	8
B. Fisherman Island Causeway	8
C. Tunnels	7
D. Portal Islands	8
E. Toll Plaza Infrastructure	8
F. Site-Wide Utilities	8

No critical findings were reported during the inspection. A few specific facility components were rated less than Good Condition (numeric rating of 7 or above) at the time of the inspection, with some of these items being typical components that are regularly monitored and repaired or replaced as needed. The components rated less than 7 make up a minority percentage of the overall cluster items, such that the overall ratings were all 7 or greater as shown in Table 1.

The trestle components were found to be in Good Condition or better (numeric rating of 7 or above). A detailed breakdown of the components can be observed in Section 4: Virginia Department of Transportation (VDOT Structure Inventory and Appraisal (SI&A) Records (B-6 and B-7 Forms) of the report. Approximately 20% of the piles along Trestle BNB and 6% of the piles along Trestle CNB were coded as Condition State 4 (Severe) due to bay bottom elevations found to be below the Allowable Scour Depth. Otherwise, most of the piles would be coded as Condition State 2 (Fair) based on the physical condition of the pile. It is believed that a conservative approach was taken in the historical structural analysis.

A list of supplemental information used to develop the ratings provided in the report has been submitted to the District electronically. A list of these supplemental items is displayed in Section 11: Electronic Submittals.

Repair recommendations are separated into two categories: Priority Repairs and Routine Repairs and have been provided in Section 3: Repair Recommendations. It is understood by Jacobs that the District is in the process of performing or developing contract documents for the repair or engineering analysis of several of these components such as:

- Repairs to spalled concrete areas on concrete columns, walls, roof beams, and ceiling of the supply fan room of all ventilation buildings.
- Little Creek Pier Fender System will be replaced as part of the lease agreement that the District has with Chesapeake Tunnel Joint Venture (CTJV) prior to the expiration of necessary permits in March 31, 2024.
- Facility wide repairs to concrete pile substructure units to extend service life by approximately 50 years.

Inspection Personnel

The inspection team consisted of the following personnel:

Bridge

Todd Eckhart – **Team Leader**

Joseph DeJesus – **Assistant Inspector**

Amit Thakkar – **Assistant Inspector**

Tunnel

Casey Funk **– Civil/Structural Inspection Lead**

Todd Eckhart **– Assistant Inspector**

Jennifer Robinson **– Assistant Inspector**

Tom Andreassen **– M&E Inspection Lead**

David Gibbings **- Inspector**

1. Inspection Schedule

Portions of the CBBT facility covered during the FY2024, FY2023, FY2022, FY2021 & FY2020 Inspections are noted in Table 2. An underwater inspection was performed on Trestles ANB, A'NB & ASB.

Table 2: CBBT Facility Component Inspection Schedule

Facility Component		Portion Inspected
1	Trestle A - Northbound (ANB)	Completed in FY2024: Hands-on: Spans ANB132 to Span ANB178 *Underwater Inspection of Trestle ANB (including ANB')* Visual: Spans A'NB1 to Abutment ANB226
		Completed in FY2023: Hands-on: Spans ANB83 to Span ANB132
		Completed in FY2022: Hands-on: Spans ANB33 to Span ANB81 Visual: Spans A'NB1 to Span ANB33 and ANB82 to Abutment ANB226
		Completed in FY2021: *Hands-on: Abutment A'NB1 to Span ANB32*
		Completed in FY2020: *Hands-on: Spans ANB177 to Abutment ANB226* *Visual: Spans A'NB1 to ANB176*
2	Trestle A - Southbound (ASB)	Completed in FY2024: Hands-on: Spans ASB81 to ASB 120 *Underwater Inspection of Trestle ASB*
		Completed in FY2023: Hands-on: Spans ASB121 to ASB164 Visual: *Spans ASB1 to ASB18 from Chic's Beach and ASB19 to Abutment ASB205*
		Completed in FY2022: Hands-on: Spans ASB167 to ASB186 and ASB194 to Abutment ASB205
		Completed in FY2021: *Hands-on: Spans ASB1 to ASB38* *Visual: Spans ASB39 to Abutment ASB205*
		Completed in FY2020: *Hands-on: Spans ASB39 to ASB80* *Visual: Spans ASB1 to ASB18 from Chic's Beach and ASB204 and Abutment ASB205*

3	Trestle B - Northbound (BNB)	Completed in FY2024: Hands-on: Spans BNB105 to BNB158 Visual: Spans BNB1 to BNB264
		Completed in FY2023: Hands-on: Spans BNB55 to Abutment BNB104 *Visual: Spans BNB1 to Abutment BNB212*
		Completed in FY2022: Hands-on: Spans Abutment BNB1 to BNB44 Visual: Spans BNB45 to BNB264
		Completed in FY2021: *Hands-on: Spans BNB213 to Abutment BNB266* *Visual: Spans BNB1 to Abutment BNB212*
		Completed in FY2020: *Hands-on: Spans BNB159 to BNB212* *Visual: Spans BNB1 to 158 and 213 to 265* *Underwater Inspection of Trestle BNB*
4	Trestle B - Southbound (BSB)	Completed in FY2024: Hands-on: Spans BSB101 to BSB142
		Completed in FY2023: Hands-on: Spans BSB143 to BSB178 *Visual: Spans Abutment BSB1 to Abutment BSB203*
		Completed in FY2022: Hands-on: Spans BSB1 to BSB16, BSB179-BSB202 Underwater Inspection of Trestle BSB
		Completed in FY2021: *Hands-on: Spans BSB17 to BSB56* *Visual: Spans Abutment BSB1 to Span BSB16 and BSB57 to Abutment BSB203*
		Completed in FY2020: *Hands-on: Spans BSB57 to BSB100* *Visual: Spans BSB1 and BSB202*
5	Trestle C - Northbound (CNB)	Completed in FY2024: Hands-on: Spans CNB132 to Span CNB196 Visual: Spans CNB1 to CNB322
		Completed in FY2023: Hands-on: Spans CNB67 to Span CNB131
		Completed in FY2022: Hands-on: Spans CNB1 to Span CNB45 Visual: Spans CNB46 to CNB322

		Completed in FY2021: *Hands-on: Spans CNB264 to Span CNB322 and Pier NCB-NB1* *Visual: Spans CNB1 to 263 and 264 to 322* *Underwater Inspection of Trestle CNB*
		Completed in FY2020: *Hands-on: Spans CNB198 to CNB263* *Visual: Spans CNB1 to 197 and 264 to 322*
6	Trestle C - Southbound (CSB)	Completed in FY2024: Hands-on: Spans CSB97 to CSB154
		Completed in FY2023: Hands-on: Abutment CSB149 to Spans CSB200 Visual: Spans CSB1 to CSB246
		Completed in FY2022: Hands-on: Abutment CSB200 to Spans CSB246
		Completed in FY2021: Hands-on: Abutment CSB1 to Spans CSB52 Visual: Spans CSB53 to CSB246
		Completed in FY2020: *Hands-on: Spans CSB53 to CSB104* *Visual: CSB1*
7	North Channel Bridge - Northbound (NCB-NB)	Fracture Critical: Spans 1 thru 18 completed in FY2024 Above Water: Piers 1 thru 18 completed in FY2024 Underwater Inspection of NCB-NB completed in FY2022
8	North Channel Bridge - Southbound (NCB-SB)	*Hands-on: Entire component completed in FY2023*
		Underwater Inspection of NCB-SB completed in FY2020
9	Trestle D - Northbound (DNB)	Hands-on: Entire component completed in FY2023
		Underwater Inspection of DNB completed in FY2022
10	Trestle D - Southbound (DSB)	*Hands-on: Entire component completed in FY2023*
		Underwater Inspection of DSB completed in FY2020
11	Trestle E - Northbound, Fisherman Inlet Bridge - Northbound, Trestle F - Northbound (ENB, FIB-NB, FNB)	*Hands-on: Entire component completed in FY2023*
		Underwater Inspection of ENB, FIB-NB, FNB completed in FY2020
12	Trestle E - Southbound, Fisherman Inlet Bridge - Southbound, Trestle F - Southbound (ESB, FIB-SB, FSB)	*Hands-on: Entire component completed in FY2023*
		Underwater Inspection of ESB, FIB-SB, FSB completed in FY2022
13	Thimble Shoals Channel Tunnel (TSCT)	Routine inspection of the entire Tunnel, including Open Approaches on Islands 1 and 2 (completed in FY2024)
14	Chesapeake Channel Tunnel (CCT)	*Routine inspection of the entire Tunnel, including Open Approaches on Islands 3 and 4 (completed in FY2023)*

15	Approach Roads	Main components and spot check minor components (support GASB 34)
16	Fisherman Island Causeway	Main components and spot check minor components (support GASB 34)
17	Portal Islands No. 1, 2, 3, and 4	Main components, spot check minor components (support GASB 34). Portal Islands No. 3 & 4 (completed in FY2023) and Portal Islands No. 1 & 2 (completed in FY2024).
18	South Toll Plaza	Main components and spot check minor components
		Overhead Sign Structures (S-1, S-2, and S-3) Inspection completed in FY2023
19	North Toll Plaza	Main components and spot check minor components
		Overhead Sign Structures (N-2 & N-3) and Butterfly Sign Structure (N-1) Inspections completed in FY2023
20	Toll Plaza Infrastructure	Main components and spot check minor components
21	Site-Wide Utilities	Main components and spot check minor components

The projected hands-on inspection schedule for Trestles ANB, ASB, BNB, BSB, CNB, and CSB is noted in Table 3. Southbound portions of the facility are approximated as the crew aims to hit the quota (approximately 1/5 of trestle) while looking to stop at or beyond the quota at light poles that will require the bridge inspection platform to be stowed and redeployed. Visual inspections will be performed on Trestles ANB, BNB, and CNB during even FYs (FY2024, FY2026, etc.) and Trestles ASB, BSB, and CSB during odd FYs (FY2023, 2025, etc.). The rest of the structures on the facility receive hands-on inspections at intervals not to exceed 24-months.

Table 3: CBBT Trestles ANB, ASB, BNB, BSB, CNB, and CSB Projected Hands-on Inspection Schedule

Facility Component		Project Spans to be Inspected				
		FY2024	FY2025	FY2026	FY2027	FY2028
1	Trestle ANB (48 spans/year)	129 – 176	177 – Abutment 226	1' - 32	33 - 81	82-128
2	Trestle ASB (41 spans/year)	81-120	39 - 80	1 - 38	165 – Abutment 205	121-164
3	Trestle BNB (54 spans/year)	105-158	159 - 212	213 – Abutment 266	Abutment 1 – 55	56-104
4	Trestle BSB (41 spans/year)	101-142	57 - 100	17 - 56	Abutment 1-16 & 179-202	143-177
5	Trestle CNB (65 spans/year)	132-196	197 - 263	264 - 322	Abutment 1 - 66	67-131
6	Trestle CSB (41 spans/year)	97-154	53 - 97	1 - 52	196-246	155-195

2. Ratings for GASB 34

The following tables represent condition ratings to support the requirements of Statement No. 34 of the Governmental Accounting Standards Board: Basic Financial Statements - and Management's Discussion and Analysis - for State and Local Governments (GASB 34). The overall Cluster Item Ratings were found to be in Good Condition or better (numeric rating of 7 or above). Table 4 identifies specific components with a condition rating below 7.

Table 4: GASB 34 Components with Condition Rating Below 7

Item	Component	Rating	Explanation of Rating
1	Tunnel Ventilation Buildings - Structural Framing	6	Spalls on columns and roof beams. Some repaired. However, new and existing patches deteriorating. Programmed for repair.
2	Tunnel Ventilation Building - Elevator	6	Elevator will not level out in Ventilation Building Nos. 1 or 2 when the doors open. Programmed for replacement.
3	Portal Island No. 1 - Splash Walls	6	Based on tipping panels at southeast corner, appears to have stabilized in recent years although continue to monitor. To be replaced as part of the Parallel Thimble Shoal Tunnel (PTST) Project.
4	Portal Islands – Approach Walls	6	Several locations of spalled/delaminated concrete, some with exposed reinforcing.

Table 5: GASB 34 Condition Ratings

Overall Ratings Summary	FY2024
A. Approach Roads	8
B. Fisherman Island Causeway	8
C. Tunnels	7
D. Portal Islands	8
E. Toll Plaza Infrastructure	8
F. Site-Wide Utilities	8

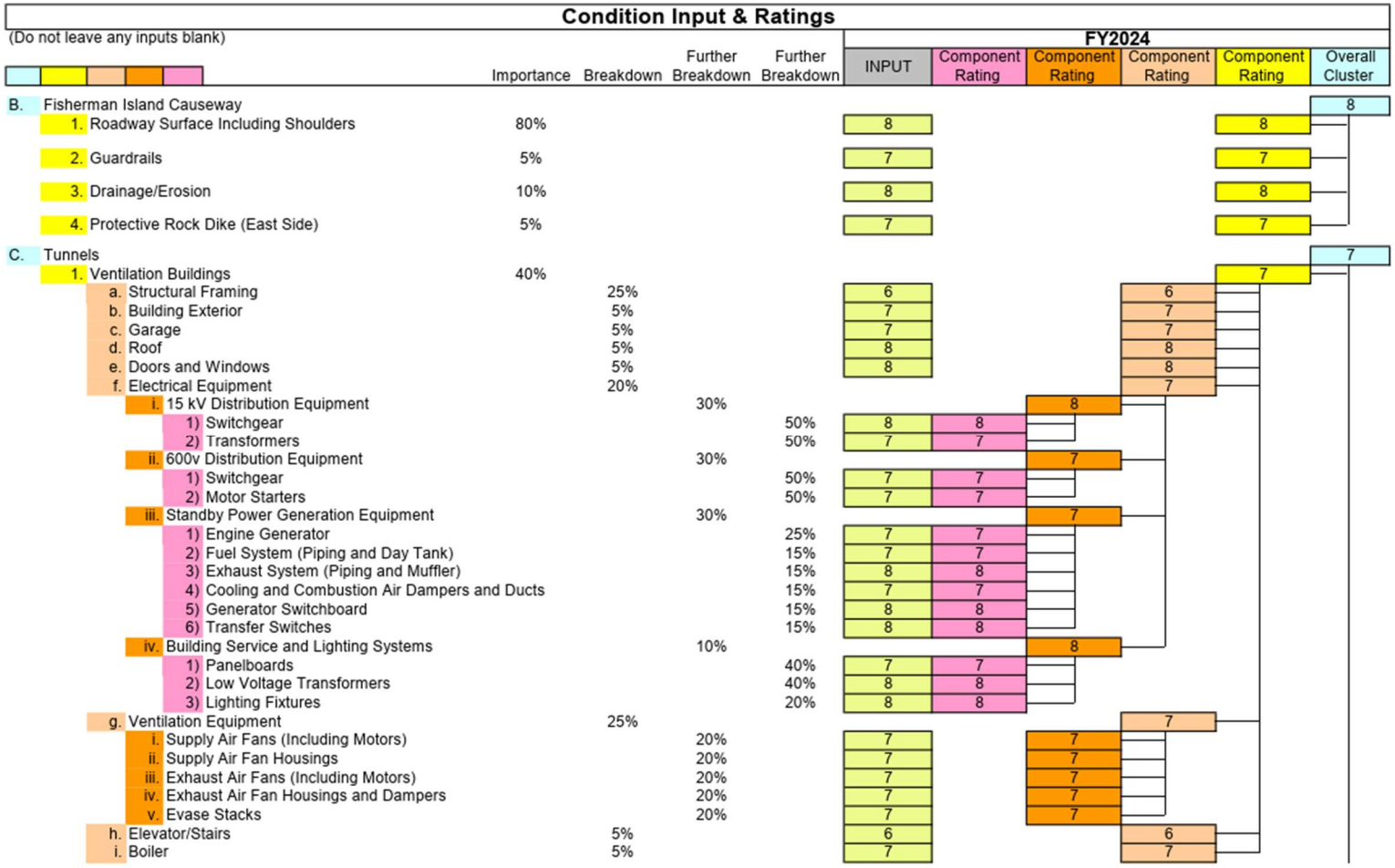
Numeric Code	Narrative Code	Definition
9	Excellent	Component/Element has been recently put in service or remains in new condition
8	Very Good	No problems noted, potential exists for minor preventative maintenance
7	Good	Potential exists for minor maintenance
6	Satisfactory	Potential exists for major maintenance
5	Fair	Potential exists for minor repair or rehabilitation
4	Poor	Potential exists for major repair or rehabilitation
3	Serious	Major repair or rehabilitation is required
2	Critical	The need for repair or rehabilitation is urgent, Component/Element should be taken out of service until indicated repair is complete
1	Imminent Failure	Component/Element is out of service; study feasibility for repair or rehabilitation
0	Failed	Component/Element is out of service and beyond repair, replacement required

Condition Input & Ratings

(Do not leave any inputs blank)

		Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
A.	Approach Roads										8
	1. Eastern Shore (North)	70%								8	
	a. Roadway Surface Including Shoulders - WP to NTP		35%			8			8		
	b. Roadway Surface Including Shoulders - NTP to Rte 600		15%			7			7		
	c. Overhead Sign Structures		15%			7			7		
	d. Guardrails		5%			8			8		
	e. Drainage/Erosion		10%			7			7		
	f. Protective Rock Dike (West Side)		5%			8			8		
	g. Scenic Overlook		5%			7			7		
	h. Wise Point		5%			8			8		
	i. Fencing		5%			8			8		
	2. Chesapeake Beach (South)	30%								8	
	a. Roadway Surface Including Shoulders		65%			8			8		
	b. Overhead Sign Structures		15%			8			8		
	c. Guardrails		5%			7			7		
	d. Drainage/Erosion		10%			7			7		
	e. Fencing		5%			7			7		

Table 5: GASB 34 Condition Ratings (continued)



Condition Input & Ratings (Do not leave any inputs blank)	Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
B. Fisherman Island Causeway										8
1. Roadway Surface Including Shoulders	80%				8				8	
2. Guardrails	5%				7				7	
3. Drainage/Erosion	10%				8				8	
4. Protective Rock Dike (East Side)	5%				7				7	
C. Tunnels										7
1. Ventilation Buildings	40%								7	
a. Structural Framing		25%			6			6		
b. Building Exterior		5%			7			7		
c. Garage		5%			7			7		
d. Roof		5%			8			8		
e. Doors and Windows		5%			8			8		
f. Electrical Equipment		20%						7		
i. 15 kV Distribution Equipment			30%				8			
1) Switchgear				50%	8	8				
2) Transformers				50%	7	7				
ii. 600v Distribution Equipment			30%				7			
1) Switchgear				50%	7	7				
2) Motor Starters				50%	7	7				
iii. Standby Power Generation Equipment			30%				7			
1) Engine Generator				25%	7	7				
2) Fuel System (Piping and Day Tank)				15%	7	7				
3) Exhaust System (Piping and Muffler)				15%	8	8				
4) Cooling and Combustion Air Dampers and Ducts				15%	7	7				
5) Generator Switchboard				15%	8	8				
6) Transfer Switches				15%	8	8				
iv. Building Service and Lighting Systems			10%				8			
1) Panelboards				40%	7	7				
2) Low Voltage Transformers				40%	8	8				
3) Lighting Fixtures				20%	8	8				
g. Ventilation Equipment		25%						7		
i. Supply Air Fans (Including Motors)			20%		7		7			
ii. Supply Air Fan Housings			20%		7		7			
iii. Exhaust Air Fans (Including Motors)			20%		7		7			
iv. Exhaust Air Fan Housings and Dampers			20%		7		7			
v. Evase Stacks			20%		7		7			
h. Elevator/Stairs		5%			6			6		
i. Boiler		5%			7			7		

Table 5: GASB 34 Condition Ratings (continued)

Condition Input & Ratings

(Do not leave any inputs blank)

	Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
C. Tunnels (continued)										
2. Tunnel Structure	60%									7
a. Tunnel Roadway Slab		20%			7			7		
b. Tunnel Walls		15%			7			7		
c. Tunnel Ceiling		10%			7			7		
d. Lighting		10%						8		
i. Fixtures			20%		9		9			
ii. Panelboards			20%		8		8			
iii. Transformers			20%		8		8			
iv. Uninterruptible Power Supply (UPS)			20%		8		8			
v. Controls Panel			20%		7		7			
e. Supply Air Duct		10%			7			7		
f. Exhaust Air Duct		10%			7			7		
g. Emergency Crew Walkway (Sidewalk)		5%			7			7		
h. Portal Drains and Gutters		5%			7			7		
i. Mid-Channel Pump Room Equipment		5%						8		
i. Lighting Fixtures			20%		7		7			
ii. Motor Control Equipment			40%		8		8			
iii. Pumps and Valves			20%		8		8			
iv. Piping			20%		8		8			
j. Fire Emergency Equipment		5%			7			7		
k. Portal Pump Rooms		5%			7			8		
i. Lighting Fixtures			20%		8		8			
ii. Motor Control Equipment			40%		8		8			
iii. Pumps and Valves			20%		8		8			
iv. Piping			20%		8		8			

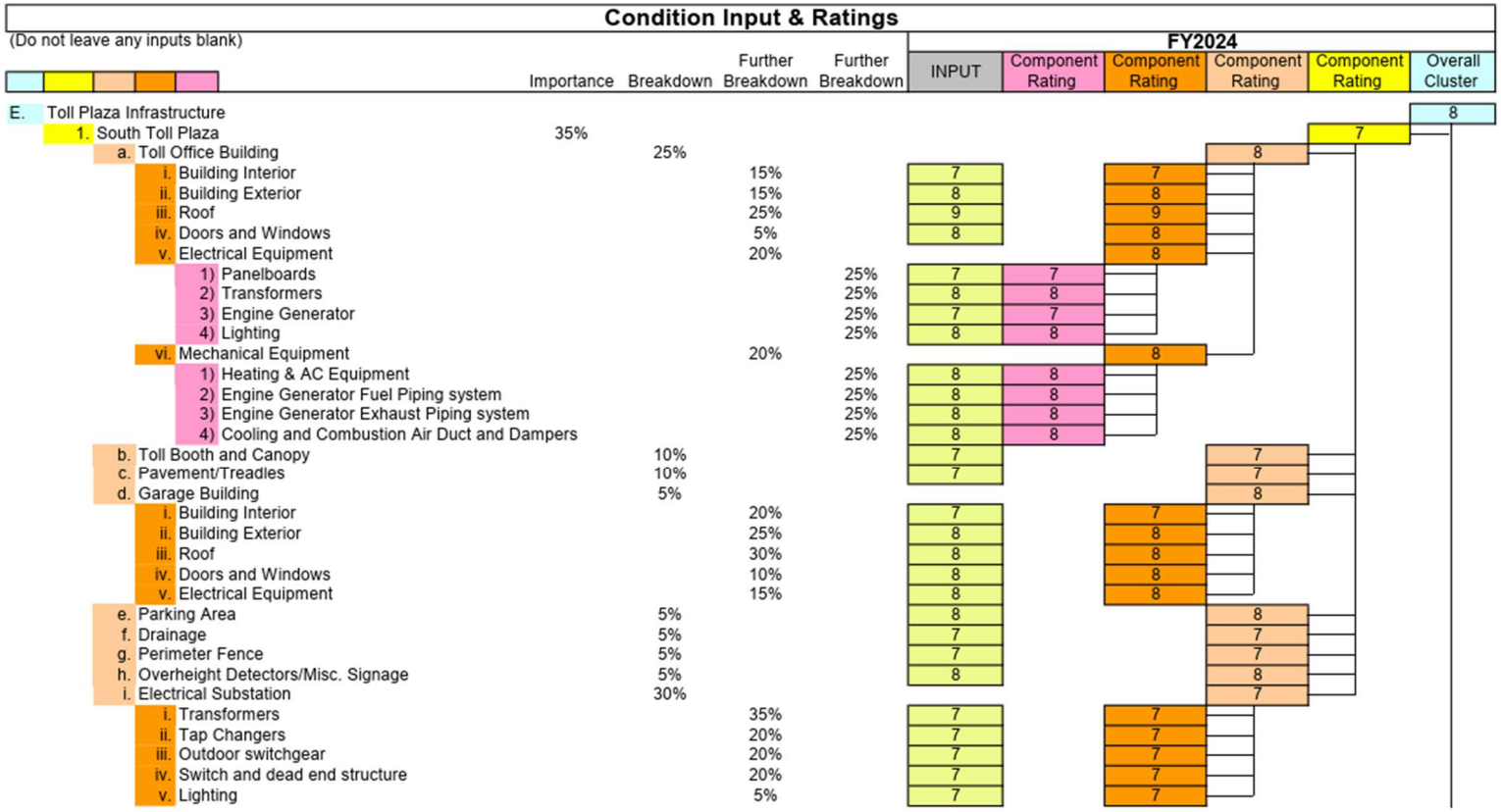
Table 5: GASB 34 Condition Ratings (continued)

Condition Input & Ratings

(Do not leave any inputs blank)

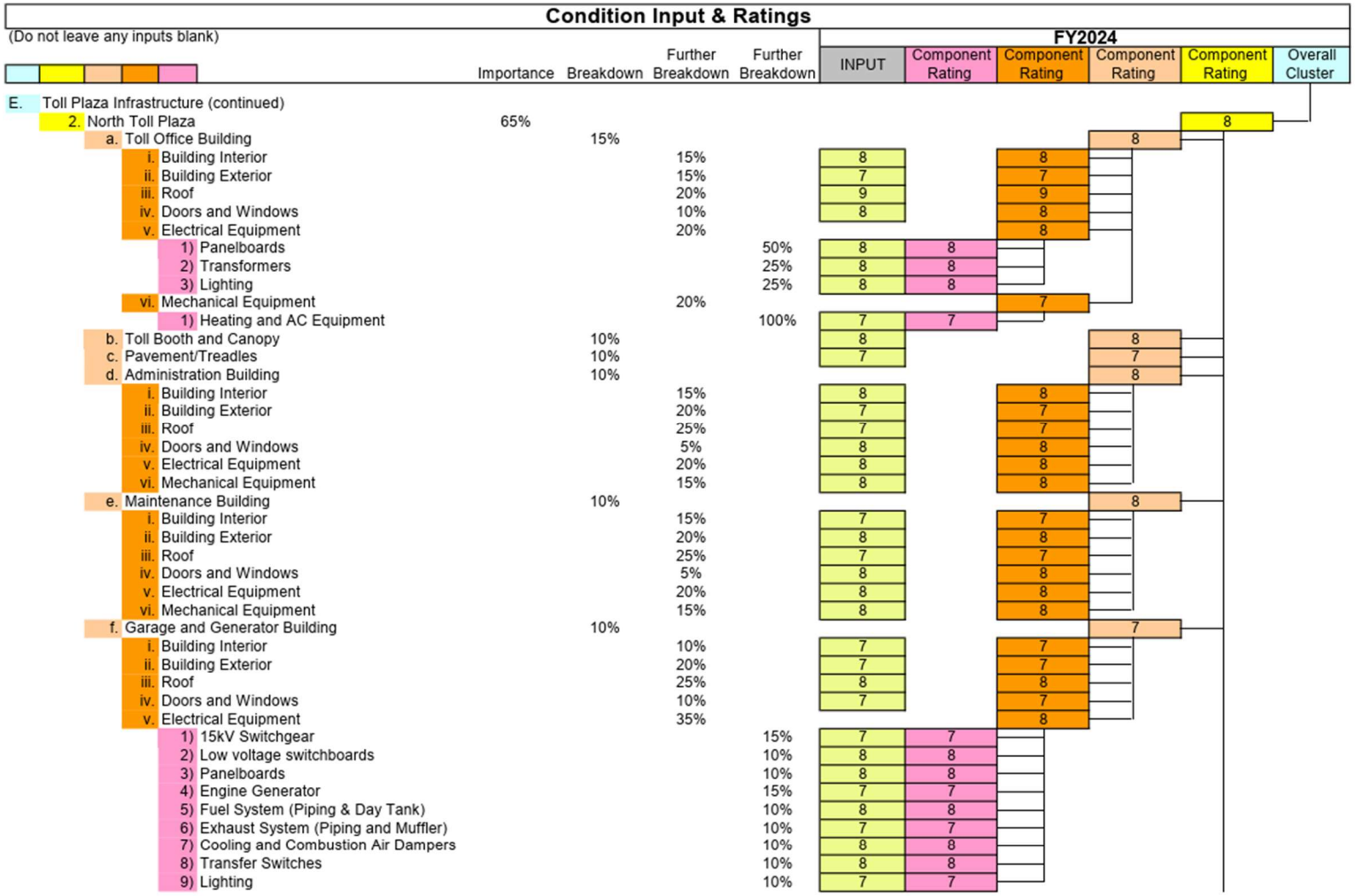
		Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
D.	Portal Islands										8
1.	Island No. 1	25%								7	
a.	Splash Walls		20%			6			6		
b.	Open Approach Walls		25%			6			6		
c.	Open Approach Roadway		10%			8			8		
d.	Portal Island Surface		10%			7			7		
e.	Guardrails		5%			7			7		
f.	Armor Stone		20%			8			8		
g.	Perimeter Fencing	To be Replaced Post PTST	0%			6			6		
h.	Fishing Pier	Fishing Pier Not Inspected.	5%						7		
i.	Deck/Railing	Ratings carried forward from last inspection until completion of Rehabilitation.		20%		7		7			
ii.	Superstructure			40%		7		7			
iii.	Substructure			40%		7		7			
2.	Other Islands	75%								8	
a.	Splash Walls		25%			7			7		
b.	Open Approach Walls		25%			7			7		
c.	Open Approach Roadway		15%			8			8		
d.	Portal Island Surface		5%			7			7		
e.	Guardrails		5%			9			9		
f.	Armor Stone		25%			8			8		

Table 5: GASB 34 Condition Ratings (continued)



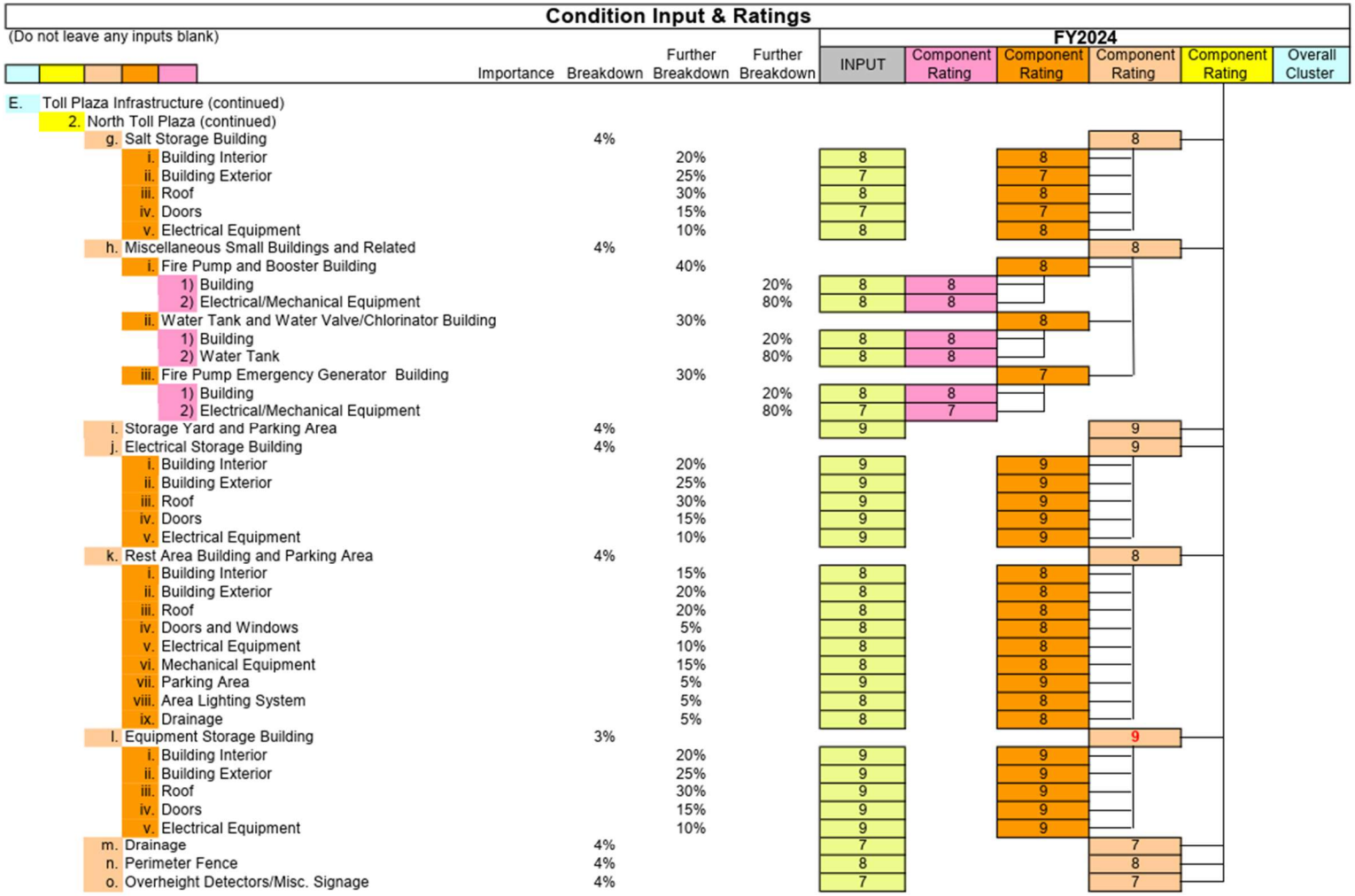
Condition Input & Ratings (Do not leave any inputs blank)	Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
E. Toll Plaza Infrastructure										8
1. South Toll Plaza	35%								7	
a. Toll Office Building		25%						8		
i. Building Interior			15%		7		7			
ii. Building Exterior			15%		8		8			
iii. Roof			25%		9		9			
iv. Doors and Windows			5%		8		8			
v. Electrical Equipment			20%				8			
1) Panelboards				25%	7	7				
2) Transformers				25%	8	8				
3) Engine Generator				25%	7	7				
4) Lighting				25%	8	8				
vi. Mechanical Equipment			20%				8			
1) Heating & AC Equipment				25%	8	8				
2) Engine Generator Fuel Piping system				25%	8	8				
3) Engine Generator Exhaust Piping system				25%	8	8				
4) Cooling and Combustion Air Duct and Dampers				25%	8	8				
b. Toll Booth and Canopy		10%			7			7		
c. Pavement/Treadles		10%			7			7		
d. Garage Building		5%						8		
i. Building Interior			20%		7		7			
ii. Building Exterior			25%		8		8			
iii. Roof			30%		8		8			
iv. Doors and Windows			10%		8		8			
v. Electrical Equipment			15%		8		8			
e. Parking Area		5%			8			8		
f. Drainage		5%			7			7		
g. Perimeter Fence		5%			7			7		
h. Overheight Detectors/Misc. Signage		5%			8			8		
i. Electrical Substation		30%						7		
i. Transformers			35%		7		7			
ii. Tap Changers			20%		7		7			
iii. Outdoor switchgear			20%		7		7			
iv. Switch and dead end structure			20%		7		7			
v. Lighting			5%		7		7			

Table 5: GASB 34 Condition Ratings (continued)



Condition Input & Ratings (Do not leave any inputs blank)	Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
E. Toll Plaza Infrastructure (continued)										
2. North Toll Plaza	65%									8
a. Toll Office Building		15%							8	
i. Building Interior			15%		8		8			
ii. Building Exterior			15%		7		7			
iii. Roof			20%		9		9			
iv. Doors and Windows			10%		8		8			
v. Electrical Equipment			20%				8			
1) Panelboards				50%	8	8				
2) Transformers				25%	8	8				
3) Lighting				25%	8	8				
vi. Mechanical Equipment			20%				7			
1) Heating and AC Equipment				100%	7	7				
b. Toll Booth and Canopy		10%			8			8		
c. Pavement/Treadles		10%			7			7		
d. Administration Building		10%						8		
i. Building Interior			15%		8		8			
ii. Building Exterior			20%		7		7			
iii. Roof			25%		7		7			
iv. Doors and Windows			5%		8		8			
v. Electrical Equipment			20%		8		8			
vi. Mechanical Equipment			15%		8		8			
e. Maintenance Building		10%						8		
i. Building Interior			15%		7		7			
ii. Building Exterior			20%		8		8			
iii. Roof			25%		7		7			
iv. Doors and Windows			5%		8		8			
v. Electrical Equipment			20%		8		8			
vi. Mechanical Equipment			15%		8		8			
f. Garage and Generator Building		10%						7		
i. Building Interior			10%		7		7			
ii. Building Exterior			20%		7		7			
iii. Roof			25%		8		8			
iv. Doors and Windows			10%		7		7			
v. Electrical Equipment			35%				8			
1) 15kV Switchgear				15%	7	7				
2) Low voltage switchboards				10%	8	8				
3) Panelboards				10%	8	8				
4) Engine Generator				15%	7	7				
5) Fuel System (Piping & Day Tank)				10%	8	8				
6) Exhaust System (Piping and Muffler)				10%	7	7				
7) Cooling and Combustion Air Dampers				10%	8	8				
8) Transfer Switches				10%	8	8				
9) Lighting				10%	7	7				

Table 5: GASB 34 Condition Ratings (continued)



Condition Input & Ratings (Do not leave any inputs blank)	Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
E. Toll Plaza Infrastructure (continued)										
2. North Toll Plaza (continued)										
g. Salt Storage Building		4%								8
i. Building Interior			20%		8		8			
ii. Building Exterior			25%		7		7			
iii. Roof			30%		8		8			
iv. Doors			15%		7		7			
v. Electrical Equipment			10%		8		8			
h. Miscellaneous Small Buildings and Related		4%								8
i. Fire Pump and Booster Building			40%				8			
1) Building				20%	8	8				
2) Electrical/Mechanical Equipment				80%	8	8				
ii. Water Tank and Water Valve/Chlorinator Building			30%				8			
1) Building				20%	8	8				
2) Water Tank				80%	8	8				
iii. Fire Pump Emergency Generator Building			30%				7			
1) Building				20%	8	8				
2) Electrical/Mechanical Equipment				80%	7	7				
i. Storage Yard and Parking Area		4%			9			9		
j. Electrical Storage Building		4%						9		
i. Building Interior			20%		9		9			
ii. Building Exterior			25%		9		9			
iii. Roof			30%		9		9			
iv. Doors			15%		9		9			
v. Electrical Equipment			10%		9		9			
k. Rest Area Building and Parking Area		4%						8		
i. Building Interior			15%		8		8			
ii. Building Exterior			20%		8		8			
iii. Roof			20%		8		8			
iv. Doors and Windows			5%		8		8			
v. Electrical Equipment			10%		8		8			
vi. Mechanical Equipment			15%		8		8			
vii. Parking Area			5%		9		9			
viii. Area Lighting System			5%		8		8			
ix. Drainage			5%		8		8			
l. Equipment Storage Building		3%						9		
i. Building Interior			20%		9		9			
ii. Building Exterior			25%		9		9			
iii. Roof			30%		9		9			
iv. Doors			15%		9		9			
v. Electrical Equipment			10%		9		9			
m. Drainage		4%			7			7		
n. Perimeter Fence		4%			8			8		
o. Overheight Detectors/Misc. Signage		4%			7			7		

Table 5: GASB 34 Condition Ratings (continued)

Condition Input & Ratings (Do not leave any inputs blank)	Importance	Breakdown	Further Breakdown	Further Breakdown	FY2024 INPUT	Component Rating	Component Rating	Component Rating	Component Rating	Overall Cluster
F. Site-Wide Utilities										8
1. Water supply from South Shore to Island #1		5%			7				7	
2. Sewer From South Shore to Island #1		5%			7				7	
3. Roadway Lighting System		15%							9	
a. Fixtures			20%		9			9		
b. Poles			20%		8			8		
c. Substations			20%		9			9		
d. Panelboards			20%		9			9		
e. Cable and Cable Tray System			20%		8			8		
4. Emergency Telephone system		15%							9	
a. Telephones			50%		9			9		
b. Cabling/wiring			50%		9			9		
5. SCADA System		20%							9	
a. CNC Cabinets and Equipment			25%		9			9		
b. Standby Engine-Generators			25%		8			8		
c. Panelboards			25%		9			9		
d. Traffic Control signals			25%		9			9		
6. 15K Distribution System		30%							8	
a. 15Kv Cable			70%		8			8		
b. Cable Tray System			30%		7			7		
7. Toll Collection Systems		10%			8				8	

3. Repair Recommendations

Repair recommendations are separated into two categories, Priority Repairs and Routine Repairs, and are subject to change at each annual report based on progression of degradation observed during each inspection cycle. For this facility, Priority Repairs are for defects that likely will become problematic or repair costs could escalate significantly if not addressed within the next 24 months. Routine Repairs are for defects that will likely not become problematic or see a significant increase in repair costs if not addressed within 60 months and should be completed as the opportunities present themselves during other maintenance and capital improvement operations. All Critical Findings require "immediate" action and each Critical Finding is listed with the date it was reported to the District, and the recommended action or follow-up.

3.1 Trestles, North Channel Bridges, and Fisherman Inlet Bridges

3.1.1 Trestle A – Northbound (ANB)

Table 6: ANB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 7: ANB Priority Repairs

Element	Item Description	Quantity	Unit
Prestressed Concrete Piles	Repair Lifejacket system at ANB57 Pile A where anode does not have a cable connecting it to the junction box at the top of the pile accordingly	1	EA

Table 8: ANB Routine Repairs

Element	Item Description	Quantity	Unit
Metal Bridge Railing (Curb)	Repair spalled concrete curb with exposed reinforcement at ANB'9, ANB11, 23, 34, 35, 47, 48, 50, & 155	14	LF
Metal Bridge Railing (Curb)	Repair delaminated failed concrete curb repair at ANB131, 165 and 198 (all left lane)	3	LF
Metal Bridge Railing	Repair bent or damaged railing on Spans ANB10, 12, 23, 27, 31, & 217	10	LF
Reinforced Concrete Slab (Underside)	Repair area of delaminated concrete on Span ANB226	6	SF
Concrete Top Flange (Underside)	Repair spalling with exposed longitudinal and transverse reinforcement or where previous repairs have failed at 1 location	1	SF
Prestressed Concrete Piles	Provide a repair to piles and pile caps with failed protective concrete coatings at locations where cracks, delamination, or spalling is present.	1,859	SF
Prestressed Concrete Piles	Monitor damaged Lifejacket system and repair as needed at Bent-Pile: ANB33-A, 81-C, 89-A, 133-A, 133-B, 135-C, 142-C, 152-C, and 173-A	9	EA
Prestressed Concrete Piles	Replace anodes on piles with Life Jacket Systems where anode section loss was reported to be greater than 50%: Bent-Pile ANB18-C, 33-B, 39-B, 44-B, 45-B, 57-A, 62-A, 62-B, 62-C, and 210-C	10	EA
Light Pole	Replace light poles that exhibit cracking at baseplate at: ANB129, 141, 213, 219, and 222	5	EA

3.1.2 Trestle A – Southbound (ASB)

Table 9: ASB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 10: ASB Priority Repairs

Element	Item Description	Quantity	Unit
Metal Bridge Railing	Repair spalled concrete near railing post on west side of ASB2.	3	LF

Table 11: ASB Routine Repairs

Element	Item Description	Quantity	Unit
Prestressed Concrete Girder	Repair failed repairs of delamination with rust staining or spalling with exposed prestressing strands at ASB41 G6-Z3; 46 G6-Z3; 49 G6-Z3; 57 G4-Z3; and 61 G6-Z3	6	LF
Prestressed Concrete Piles	Repair top portion of pile exhibiting minor spall with exposed reinforcement at Bent-Pile: ASB20-A, 46-A, & 53-C	3	EA
Prestressed Concrete Piles	Repair failed repairs or areas of delamination with rust staining or spalling with exposed prestressing strands or reinforcement at Bent-Pile: ASB43-B, 60-B, 62-B, & 64-B	4	EA
Light Poles	Monitor light poles at ASB42, 45, 57, & 69 that exhibit cracking or delamination/spalling near the baseplate and replace if vertically oriented steel reinforcement becomes exposed and degraded.	4	EA

3.1.3 Trestle B – Northbound (BNB)

Table 12: BNB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 13: BNB Priority Repairs

Element	Item Description	Quantity	Unit
Prestressed Concrete Piles	Install Scour Countermeasures at 39 pile locations where scour exceeds the Allowable Scour Depth (ASD).	39	EA

Table 14: BNB Routine Repairs

Element	Item Description	Quantity	Unit
Metal Bridge Railing	Repair/replace dented railing on Span BNB219, 234, 238, 249, and 261.	5	EA
Metal Bridge Railing	Replace corroded anchor bolt connections with section loss at 51 Locations	51	EA
Reinforced Concrete Slab (Underside)	Repair area of delaminated and spalled concrete on Span BNB265 at 3 locations.	15	SF
Concrete Top Flange (Underside)	Repair spalling with exposed longitudinal and transverse reinforcement or where previous repairs have failed at 7 locations	18	SF
Prestressed Concrete Piles	Repair piles with wide cracks, exposed prestressing strand on top portion, or exhibit rust staining at 100 locations	100	EA
Prestressed Concrete Piles	Repair top portion of piles exhibiting minor spalls with exposed reinforcement at 34 locations	34	EA
Prestressed Concrete Piles	Perform a repair to the steel built-up pile at BNB78 Pile B to prevent additional degradation or corrosion.	1	EA
Light Pole	Replace light poles that exhibit cracking at baseplate at: BNB18, 108, 111, 120, 129, 132, 141, 144, 156, 180, and 189	11	EA

3.1.4 Trestle B – Southbound (BSB)

Table 15: BSB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 16: BSB Priority Repairs

Element	Item Description	Quantity	Unit
Metal Bridge Railing	Repair spalled concrete near railing post on west side of BSB32.	3	LF
Bridge Abutment	Replace material that has eroded away under the bridge abutment at Portal Island No. 2 (BSB1).	1	EA

Table 17: BSB Routine Repairs

Element	Item Description	Quantity	Unit
Metal Bridge Railing	Repair/replace dented railing on Span BSB20, 21, and 67 near mid-span on West Side	5	LF
Steel Girders	Repair paint system at scattered locations where overcoat is peeling.	1	LS
Prestressed Concrete Girder	Repair minor spalling with exposed strands at BSB98 G8-Z1	1	LF
Prestressed Concrete Piles	Repair portion of piles exhibiting minor spalls with exposed reinforcement at BSB3-A, 5-B, 8-A, 46-A&B, 98-B, 103-A, 103-C, and 111-B	8	EA
Light Poles	Monitor light poles at BSB59, 61, 63, 67, 73, 91, 93, 151, 161 and 175 that exhibit cracking or delamination/spalling near the baseplate and replace if vertically oriented steel reinforcement becomes exposed.	10	EA

3.1.5 Trestle C – Northbound (CNB)

Table 18: CNB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 19: CNB Priority Repairs

Element	Item Description	Quantity	Unit
Prestressed Concrete Piles	Fill void in spalled pile joint on CNB267 Pile C with Epoxy	1	EA

Table 20: CNB Routine Repairs

Element	Item Description	Quantity	Unit
Metal Bridge Railing	Repair/replace dented railing on Span CNB149, 181, 185, 193.	4	EA
Metal Bridge Railing (Curb)	Repair spalled concrete curb with exposed reinforcement at CNB149, 232, and 241 on underside of curb	6	LF
Metal Bridge Railing (Curb)	Repair failed concrete curb repair at CNB158, 177, 187, 188, 216, and 220	10	LF
Concrete Top Flange (Underside)	Repair spalling with exposed longitudinal and transverse reinforcement at Span CNB2, 150, 186, 253 (2 locations), and 303.	11	SF
Prestressed Concrete Piles	Repair top portion of piles exhibiting minor spalls with exposed reinforcement at 26 locations	26	EA
Prestressed Concrete Piles	Replace junction box cover on Lifejacket System at Bent-Pile: 183-B and 191-C	2	EA
Light Pole	Replace light pole at CNB108, 111, 120, 129, 153, 159, 162, 165, 186, 192, 195, 198, 222, 246, and 258	15	EA
Light Pole	Tighten loose anchor nut at light pole at CNB131	1	EA

3.1.6 Trestle C – Southbound (CSB)

Table 21: CSB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 22: CSB Priority Repairs

Element	Item Description	Quantity	Unit
None	N/A	N/A	N/A

Table 23: CSB Routine Repairs

Element	Item Description	Quantity	Unit
Metal Bridge Railing	Repair bent or damaged railing on Spans CSB26, 75, and 82.	3	EA
Metal Bridge Railing (Curb)	Repair spalling with exposed reinforcement or failed repairs at 25 locations	50	SF
Concrete Top Flange (Underside)	Repair failed repairs of delamination with rust staining or spalling with exposed reinforcement at: CSB23, 29, 32, 42, 52, 54, & 82 (7 locations)	7	SF
Steel Diaphragms and Bracing	Replace top protective coating on steel girders at locations where coating has bubbled and exhibits freckled rust along CSB1.	1	LS
Concrete Pier Caps	Repair detached conduit at CSB25 north face and replace broken conduit near light pole at CSB57	2	EA
Light Poles	Monitor light poles at CSB55, 67, 73, 85, 91, 93, 99, 101, 103 & 169 that exhibit cracking or delamination/spalling near the baseplate and replace if vertically oriented steel reinforcement becomes exposed and degraded.	10	EA

3.1.7 North Channel Bridge – Northbound (NCB-NB)

This component was last inspected in FY2024 and will be inspected again in FY2026.

Table 24: NCB-NB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 25: NCB-NB Priority Repairs

Element	Item Description	Quantity	Unit
None	N/A	N/A	N/A

Table 26: NCB-NB Routine Repairs

Element	Item Description	Quantity	Unit
Steel Floorbeams	Repair/retrofit floorbeam webs with isolated moderate to severe section loss below stringer connections at the following locations: Span-Floorbeam-Stringer: Truss-3'-1 and 5, and 17-6-4	3	EA
Steel Floorbeams	Repair/retrofit areas of bottom flanges with isolated areas of minor section loss along 13-2 and 16-6 (south face)	4	LF
Steel Floorbeams	Repair/retrofit floorbeam stiffeners over the longitudinal girders with minor to moderate section loss at the following locations, Span-Floorbeam-Quadrant: 2-8-SW, 2-9-SW, 2-10-SW, 3-3-SW, 3-9-SW, 15-1-NW, 15-2-SW, 15-3-NW and SW, 15-9-NW and SW, 15-10-SW, 16-2-NW and SW, 16-10-SW	15	EA
Steel Superstructure	Retrofit or replace areas with greater than 25% section loss throughout the facility	1	LS
Steel Superstructure	Clean and repaint areas exhibiting coating system failure	1	LS
Reinforced Concrete Columns	Seal cracks in splash zone at Piers 1, 2, 3, 7, 8, 11, 12, 13, and 14	9	EA
Steel Truss	Repair/retrofit truss members with moderate section loss throughout the structure	1	LS
Light Pole	Repair cracks in light poles in the following spans: NCB-4, NCB-6, NCB-9, NCB-15	4	EA

3.1.8 North Channel Bridge – Southbound (NCB-SB)

This component was last inspected in FY2023 and will be inspected again in FY2025.

Table 27: NCB-SB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 28: NCB-SB Priority Repairs

Element	Item Description	Quantity	Unit
None	N/A	N/A	N/A

Table 29: NCB-SB Routine Repairs

Element	Item Description	Quantity	Unit
Steel Superstructure	Clean and repaint areas exhibiting coating system failure	1	LS

3.1.9 Trestle D – Northbound (DNB)

This component last received a hands-on inspection in FY2023 and will be inspected again in FY2025. An underwater inspection was performed in FY2022.

Table 30: Trestle DNB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 31: Trestle DNB Priority Repairs

Element	Item Description	Quantity	Unit
Prestressed Concrete Piles	Repair piles exhibiting wide cracks or rust staining at Bent-Pile 3-A, 3-B, 6-B, 9-B, and 10-A	5	EA

Table 32: Trestle DNB Routine Repairs

Element	Item Description	Quantity	Unit
Prestressed Concrete Piles	Repair piles exhibiting minor spalls with exposed reinforcement at Bent-Pile: 1-C, 2-C, 3-A, 4-C, 7-A, 8-B, 8-C, and 13-B	8	EA

3.1.10 Trestle D – Southbound (DSB)

This component was last inspected in FY2023 and will be inspected again in FY2025.

Table 33: Trestle DSB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 34: Trestle DSB Priority Repairs

Element	Item Description	Quantity	Unit
None	N/A	N/A	N/A

Table 35: Trestle DSB Routine Repairs

Element	Item Description	Quantity	Unit
None	N/A	N/A	N/A

3.1.11 Trestle E, Fisherman Inlet Bridge, Trestle F – Northbound (ENB, FIB-NB, and FNB)

A hands-on inspection was performed in FY2023 and will be inspected again in FY2025. An underwater inspection was performed in FY2022, and element level data is presented in this section.

Table 36: ENB, FIB-NB, and FNB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 37: ENB, FIB-NB, and FNB Priority Repairs

Element	Item Description	Quantity	Unit
N/A	N/A	N/A	N/A

Table 38: ENB, FIB-NB, and FNB Routine Repairs

Element	Item Description	Quantity	Unit
N/A	N/A	N/A	N/A

3.1.12 Trestle E, Fisherman Inlet Bridge, Trestle F – Southbound (ESB, FIB-SB, and FSB)

This component last received a hands-on inspection in FY2023 and will be inspected again in FY2025. An underwater inspection was performed in FY2022.

Table 39: ESB, FIB-SB, and FSB Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 40: ESB, FIB-SB, and FSB Priority Repairs

Element	Item Description	Quantity	Unit
None	N/A	N/A	N/A

Table 41: ESB, FIB-SB, and FSB Routine Repairs

Element	Item Description	Quantity	Unit
Prestressed Concrete Piles	Repair piles exhibiting minor spalls with exposed reinforcement at Span-Bent-Pile: FSB-3-C, FSB-5-A	2	EA
Prestressed Concrete Piles	Monitor damaged Lifejacket system and repair as needed at Span-Bent-Pile: FIB-SB-2-C, FIB-SB-3B, and FIB-SB-3-C	3	EA

3.2 Tunnels

3.2.1 Thimble Shoal Channel Tunnel (TSCT)

A hands-on inspection was performed in FY2024. Maintenance records were reviewed as part of the NTIS inspection.

Table 42: TSCT Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 43: TSCT Priority Repairs

Element	Item Description	Quantity	Unit
Fan System	Repair fan system as needed to ensure 100% operation in emergency mode.	1	LS

Table 44: TSCT Routine Repairs

Element	Item Description	Quantity	Unit
Concrete Invert Slab	Repair spalled concrete along roadway edge of Sidewalk Side at several locations	50	SF
Steel Pedestrian Railing	Clean and repaints steel railing along the Roadway.	15,840	SF
Concrete Tunnel Liner	Repair spalls with exposed reinforcement and conduits in exhaust duct at several locations	741	SF
Concrete Tunnel Liner	Repair spalls with exposed reinforcement in supply duct at several locations	40	SF
Invert Slab	Repair spalls with exposed reinforcement in supply duct at several locations	275	SF

3.2.2 Chesapeake Channel Tunnel (CCT)

This component was last inspected in FY2023 and will be inspected again in FY2025.

Table 45: CCT Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 46: CCT Priority Repairs

Element	Item Description	Quantity	Unit
None	N/A	N/A	N/A

Table 47: CCT Routine Repairs

Element	Item Description	Quantity	Unit
Steel Pedestrian Railing	Clean and repaint steel railing along the Roadway.	15,840	SF
Concrete Tunnel Liner	Repair spalls with exposed reinforcement and conduits in exhaust duct at several locations	741	SF

3.3 General Facility

Table 48: General Facility Critical Findings

Element	Item Description	Date Reported	Recommended Action/Follow-Up
None	N/A	N/A	N/A

Table 49: General Facility Priority Repairs

Element	Item Description	Quantity	Unit
Portal Island #4 – Light Poles	Replace light poles exhibiting cracking and significant concrete spalling with exposed & corroded reinforcing	8	EA

Table 50: General Facility Routine Repairs

Element	Item Description	Quantity	Unit
Portal Island #3 & #4 – Approach Walls	Repair spalled and delaminated concrete along top of wall.	60	LF
Portal Island #3 – Light Pole	Repair/replace light poles exhibiting cracking with random rust staining	7	EA
Portal Island #3 & #4 – Grading	Continue to monitor and fill washouts and sinkholes near splash walls as required to prevent erosion.	1	LS
Portal Island #3 & #4 – Splash Wall	Repair spalled and delaminated concrete along the splash walls.	1	LS

4. VDOT Structure Inventory and Appraisal (SI&A) Records (B-6 and B-7 Forms)

4.1 Trestle ANB SI&A Forms

B-6 ANB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 2**

Structure-ID:	1002	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/11/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	46.62	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

WORK DONE: Routine Maintenance

CONDITION OF STRUCTURE: Fair to Generally Good

1. Bent or damaged railing on spans 10, 12, 23, 27, 31 and 217.
2. Some spalls on bottom flanges of some prestressed girders. locations with exposed rebar at bearings.
3. Some existing spall repairs on concrete girders are failing or have failed, with some exposing two strands near mid-span or exposing rebar at bearings. Hairline diagonal web cracks on approx. Approximately 50% of concrete girder ends inspected.
4. Minor to moderate defects on approximately 5% of elastomeric bearings.
5. One location requiring repair of expansion joint strap in the cable tray at ANB117.
6. Scattered minor damage to fiberglass jackets on some piles. Nine piles exhibit damage of fiberglass jacket exposing sacrificial zinc mesh (33-A, 81-C, 89-A, 133-A, 133-B, 135-C, 142-C, 152-C, 173-A). Anode is disconnected at bent 57 pile A.
7. Minor reflective cracking through coating at some piles and bent caps, with isolated rust staining and efflorescence at a few locations. Other areas of spalling coating noted. Piles exhibiting rust staining were sounded and concrete was intact.
8. Minor to moderate cracking and map cracking on many of the bent caps inspected, primarily at the ends of the bent caps.
9. Existing repairs to piles with impact damage are typically sound.
10. Bay bottom is typically at or above the Allowable Scour Depth (ASD), with some previous scour remediation in place. Bent ANB214 has bay bottom slightly below ASD, but has scour remediation in place, and bay bottom appears to have stabilized with slight migration towards the north.
11. Spalls recommended for repair noted in the underside of the deck at 57 locations.

REVISED STRESS ANALYSIS:

1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. Structure load rating controlled by modular superstructure units with reduced capacity from having two-prestressing strands removed due to corrosion (worst-case observed during past inspections).
3. No posting of the structure is required.

RECOMMENDATIONS:

1. Continue periodic hydrographic surveys in interim between underwater inspections scheduled every 5 years
2. Continue to patch spalls on prestressed concrete girders, giving priority to girders exhibiting two or more exposed strands per location.

B-6 ANB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 2**

3. Repair bent or damaged railing on spans 10, 12, 23, 27, 31, and 217.
4. Continue to patch any new spalls and failed repairs on prestressed concrete girders.
5. Retrofit any deteriorated cable tray expansion joint straps as required.
6. Repair spalls in underside of deck with priority to those exposing multiple layers of steel.
7. Repair spalls in curbs with exposed reinforcement.

SIGNATURE OF INSPECTOR

B-7 ANB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1002	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/11/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	46.62	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [7]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Replacement of Asphalt Wearing Surface and Open Expansion Joint Header Material was completed in Spring 2020.
b. Scattered minor cracking with some locations having efflorescence, and spalling on underside of deck
c. Bent or damaged railing on spans 10, 12, 23, 27, 31 and 217.
d. Replace light poles that exhibit cracking at baseplate.

B-7 ANB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Bearing Devices	F
2. Stringers	N
3. Girders, Beams, or Slab Spans	
A. General	F
B. Diaphragms or Cross Frames	G
C. Bracing	N
4. Trusses	
A. General	N
B. Portals	N
C. Bracing	N
5. Paint	N
Year Painted	N
6. Machinery (Moveable Span)	N

REMARKS:

a. Minor to moderate splitting of isolated bearings pads
b. Hairline diagonal web cracks on approx. 66% of concrete girders inspected
c. Isolated spalls on bottom face of random prestressed girder flanges, and some existing spall repairs on girders are failing or have failed. The District is continuously performing girder repairs as weather conditions allow. Worse conditions observed do not exhibit more than one prestressing strand being exposed and degraded.

60 SUBSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Abutments	
A. Wings	G
B. Backwall	G
C. Bearing Seats	G
D. Breastwall	N
E. Weepholes	N
F. Footing	G
G. Piles	*
H. Erosion/Scour	G
I. Settlement	G
2. Pier/Bent	
A. Caps	_
B. Piles	_
C. Column, Stem, Wall	_
D. Piles	_
E. Bracing	_
F. Erosion/Scour	_
G. Settlement	_
3. Pile Bent	
A. Caps	F
B. Bearing Seats	G
C. Piles	G
D. Bracing	N

***Not Visible**

REMARKS:

a. Underwater Inspection performed 5/2023 – 10/2023. See FY2023 Underwater Inspection Forms for location of underwater defects and Element Level Inspection Forms for condition ratings of substructure units.
b. Minor to moderate map cracking at ends of some of the bent caps inspected
c. Most all repairs completed as part of Substructure Repair Project generally appear in good condition. Minor spalls of fiberglass jackets of the cathodic protection jackets noted. Nine piles have a large spall of fiberglass jacket exposing sacrificial zinc mesh (33-A, 81-C, 89-A, 133-A, 133-B, 135-C, 142-C, 152-C, 173-A). Anode is disconnected at bent 57 pile A.
d. Minor cracking visible through coating on scattered bent cap faces and at some piles with scattered delamination of pile coatings noted, as well as isolated rust staining and efflorescence at a few pile locations. Piles exhibiting rust staining were sounded and concrete was intact.
e. Most of the underwater portions of the piles are rated CS1 or CS2 (86%) with a majority of the CS2 ratings attributed to good repairs.

B-7 ANB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [8]**

1. Channel Scour	G	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Bay bottom is typically at or above ASD, with some previous scour remediation in place. Bent ANB214 has bay bottom slightly below ASD, but has scour remediation in place, and bay bottom appears to have stabilized with slight migration towards the north.

66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by modular superstructure units with reduced capacity from having two-prestressing strands removed due to corrosion (worst-case observed during past inspections, not present this year).
c. No posting of the structure is required.

4.2 Trestle ASB SI&A Forms

B-6 ASB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 2**

Structure-ID:	1010	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/15/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	46.72	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

WORK DONE: Routine Maintenance.

CONDITION OF STRUCTURE: Good

1. Light poles at ASB42, 45, 57, 69, 81, 86, 99, 105, 107, 109, 115, 119, 121, 129, 131, and 133 exhibited cracking at the baseplate.
2. Minor hairline cracking and minor spalls on some of the piles above waterline.
3. Bent bridge railing on Spans ASB125 and 126 and loose shim plate or anchor plate at Span ASB151 and 167. Misaligned anchor plates along ASB56 (5 total). Two posts with impact damage, ASB3 and ASB56.
4. Deck spall with exposed reinforcement at Span ASB109 and 164, and minor cracking and efflorescence at scattered locations in underside of deck. Spalls in concrete wearing surface of span ASB2 with no exposed reinforcement.
5. Spalled and cracked concrete at lower post tension duct at ASB82 and 93.
6. Girder spall with exposed prestressing strand at Span 54 Girder 3 and Span 56 Girder 2, and reinforcement at bearing on Span ASB132.
7. Scattered minor spalls along bottom flanges and webs where insufficient cover is provided to shear reinforcement or prestressing strands.
8. Large spalling or locations with exposed reinforcing or exposed strands at girder ends or in the lower portion of the continuity closure pours at 75 locations.
9. Roadway striping replaced in 2018 remains in good condition.
10. Bay bottom is typically at or above the Allowable Scour Depth (ASD), accretion occurring where scour remediation was placed near Bents ASB202 and 203 with some previous scour remediation in place. Bent ASB193 has bay bottom slightly below ASD, but has scour remediation in place, and bay bottom appears to have stabilized at adjacent bents with slight migration towards the south.
11. Most of the underwater portions of the piles are in very good condition. Minor spalling, a few hairline cracks and one narrow crack at a few bents at or below the waterline.
12. Erosion on east side of the South Abutment ASB1 around water and sewer lines and under slope protection and on the west side of the abutment.

REVISED STRESS ANALYSIS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by the simple span steel structure at Span ASB204.
c. No posting of the structure is required.

B-6 ASB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 2**

RECOMMENDATIONS:

1. Monitor light poles that exhibit cracking or delamination/spalling near the baseplate and replace if vertically oriented steel reinforcement becomes exposed and degraded.
2. Continue periodic hydrographic surveys in interim between underwater inspections scheduled every 5 years.
3. Perform structural review (if historical data is not available) to determine the effect on strength or serviceability of the piles considered to be Scour Condition State 4 at Bent-Pile: 193-A, C, D, E, and F, and 203-B, C, and D. Results of structural review should be used to develop a strategy to mitigate the hazard of scour at these locations and to revise the Scour Condition State Criteria if necessary
4. Clean exposed reinforcing and repair spalling in girder bottom flanges noted this year and in previous reports.
5. Clean exposed reinforcing and patch spalls/voids previously noted in piles above water.
6. Place fill at locations of erosion on east side of the South Abutment ASB1 around water and sewer lines and under slope protection.
7. Retrofit any deteriorated cable tray expansion joint straps as required.
8. Clean and fill voids at joint header and asphalt wearing surface interface with joint sealant material.

Todd Eckhart

SIGNATURE OF INSPECTOR

B-7 ASB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1010	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/15/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	46.72	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [8]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Light poles at ASB42, 45, 57, 69, 81, 86, 99, 105, 107, 109, 115, 119, 121, 129, 131, and 133 exhibited cracking at the baseplate.
b. Deck spall with exposed reinforcement at Span ASB109 and 164, and minor cracking and efflorescence at scattered locations in underside of deck
c. Bent bridge railing on Spans ASB125 and 126 and loose shim plate or anchor plate at Span ASB151 and 167. Misaligned anchor plates along ASB56 (5 total). Two posts with impact damage, ASB2 and ASB56.
d. Deck spall with exposed reinforcement at Span ASB109 and 164, and minor cracking and efflorescence at scattered locations in underside of deck. Spalls in concrete wearing surface of span ASB3 with no exposed reinforcement.
e. Roadway striping replaced in 2018 remains in good condition

B-7 ASB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [8]**

1. Bearing Devices **G**
2. Stringers **N**
3. Girders, Beams, or Slab Spans
   - A. General **G**
   - B. Diaphragms or Cross Frames **G**
   - C. Bracing **N**
4. Trusses
   - A. General **N**
   - B. Portals **N**
   - C. Bracing **N**
5. Paint **G**
   - Year Painted **2013**
6. Machinery (Moveable Span) **N**

REMARKS:

a. Large spalling or locations with exposed reinforcing or exposed strands at girder ends or in the lower portion of the continuity closure pours at 75 locations.
b. Scattered minor spalls along bottom flanges and webs where insufficient cover is provided to shear reinforcement or prestressing strands.
c. Girder spall with exposed prestressing strand at Span 54 Girder 3 and Span 56 Girder 2, and reinforcement at bearing on Span ASB132
d. Damaged expansion joint plates in the cable trays at Bents ASB 125 and 128, and disconnected ground wires at ASB 123, 127, and 151.

60 SUBSTRUCTURE **GENERAL CONDITION RATING [8]**

1. Abutments
   - A. Wings **N**
   - B. Backwall **N**
   - C. Bearing Seats **N**
   - D. Breastwall **N**
   - E. Weepholes **N**
   - F. Footing **N**
   - G. Piles **N**
   - H. Erosion/Scour **N**
   - I. Settlement **N**

***Not Visible**

2. Pier/Bent
   - A. Caps _
   - B. Piles _
   - C. Column, Stem, Wall _
   - D. Piles _
   - E. Bracing _
   - F. Erosion/Scour _
   - G. Settlement _
3. Pile Bent
   - A. Caps **G**
   - B. Bearing Seats **G**
   - C. Piles **G**
   - D. Bracing **N**

REMARKS:

a. Underwater Inspection performed 6/2023 – 10/2023. See FY2019 Underwater Inspection Forms for location of underwater defects and Element Level Inspection Forms for condition ratings of substructure units
b. Minor spalling, a few hairline cracks and one narrow crack at a few bents at or below the waterline
c. Minor hairline cracking and minor spalling on some of the piles
d. Minor hairline cracking or map cracking on scattered bent caps
e. Erosion on east side of the South Abutment ASB1 around water and sewer lines and under slope protection

B-7 ASB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [8]**

1. Channel Scour	G	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Bay bottom is typically at or above the Allowable Scour Depth (ASD), accretion occurring where scour remediation was placed near Bents ASB202 and 203 with some previous scour remediation in place. Bent ASB193 has bay bottom slightly below ASD, but has scour remediation in place, and bay bottom appears to have stabilized at adjacent bents with slight migration towards the south.

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66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by the simple span steel structure at Span ASB204. No posting of the structure is required.

4.3 Trestle BNB SI&A Forms

B-6 BNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 2**

Structure-ID:	1004	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/12/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	41.31	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

WORK DONE: Routine Maintenance. The wearing surface was replaced in Fall 2020.

CONDITION OF STRUCTURE: Generally Fair to Good

1. Light poles at BNB108, 111, 120, 129, 132, 141, 144, 156, 180, and 189 exhibited cracking at the baseplate.
2. Exposed sacrificial mesh or wide cracking in grouted annulus of LifeJacket System on Bent BNB23 Pile B, 74-C, 102-A, 117-A, 127-A, 161-A, and 214-A.
3. New spall repairs on bottom flange of girders in good condition with minor shrinkage cracks noted.
4. Scattered cracks and spalls on bottom flanges of prestressed girders. A few failed patches at older repair locations, including exposed strands near mid-span and exposed rebar at some bearings.
5. Minor cracking on many of the piles and some spalling also noted on a few piles and a few longitudinal wide cracks noted with exposed prestressing strands in the top portion of the pile.
6. Hairline diagonal web cracking on approximately 50% of concrete girder ends inspected.
7. Minor to moderate splitting on approximately 9% of elastomeric bearings.
8. Minor map cracking on a few of the bent cap ends inspected.
9. Several locations where main cable tray grounding straps are disconnected.
10. Approximately 8% of the piles along Trestle BNB were coded as Condition State 4 (Severe) due to bay bottom elevations found to be below the Allowable Scour Depth with no Scour countermeasures present.
11. For complete details on condition of the underwater portion of piles, see the FY2020 Underwater Inspection Forms. A Level II and III Inspection of the Pile Repair at BNB78 Pile B was performed and the steel built-up pile used for the repair appears to exhibit moderate corrosion (approximately 25% section loss).

REVISED STRESS ANALYSIS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by modular superstructure units with reduced capacity from having two- prestressing strands removed due to corrosion (worst-case observed during past inspections).
c. No posting of the structure is required.

B-6 BNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 2**

RECOMMENDATIONS:

1. Repair all cracks narrow or greater and repair spalls with exposed reinforcing in the piles.
2. Determine effectiveness of damaged LifeJacket System on Bent BNB23 Pile B, 74-C, 102-A, 117-A, 127-A, 161-A, and 214-A; repair accordingly. CBBT is exploring an alternative repair method that will utilize carbon fiber shells to address the deterioration.
3. Continue periodic hydrographic surveys in interim between underwater inspections scheduled every 5 years.
4. Continue to monitor paint condition of steel beam span (BNB1/BNB2).
5. Repair bent cable tray retainer plate at BNB71.
6. Perform a repair to the steel built-up pile at BNB78 Pile B to prevent additional degradation or corrosion.

SIGNATURE OF INSPECTOR

B-7 BNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1004	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/13/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	41.31	**Location:**	Over Chesapeake Bay
Lead Inspector:	Chris Williams	**Additional Inspector(s):**	Todd Eckhart/Matt Meyers

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	N
2. Transition	N	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [7]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Replacement of the asphalt wearing surface and open expansion joint header material is underway as part of the Mill and Repave Trestles, Replace End Dams Project (RMF 2053.2025) that began on September 8, 2020 (immediately following the inspection of this structure). Work on this structure was completed by the end of Fall 2020.
b. Scattered minor cracking and spalling on underside of deck.
c. Scattered minor transverse cracking in curbs

B-7 BNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Bearing Devices	F
2. Stringers	N
3. Girders, Beams, or Slab Spans	
A. General	F
B. Diaphragms or Cross Frames	G
C. Bracing	N
4. Trusses	
A. General	N
B. Portals	N
C. Bracing	N
5. Paint	F
Year Painted	2013
6. Machinery (Moveable Span)	N

REMARKS:

a. Minor splitting of 5% of the bearing pads inspected.
b. Some spalls on bottom flanges of some prestressed girders, and some existing spall repairs on girders are failing or have failed. The District is continuously performing girder repairs as weather conditions allow. Worse conditions observed do not exhibit more than one prestressing strand being exposed and degraded.
c. Hairline diagonal web cracking on 25% of girders inspected

60 SUBSTRUCTURE **GENERAL CONDITION RATING [4]**

1. Abutments	
A. Wings	G
B. Backwall	G
C. Bearing Seats	G
D. Breastwall	N
E. Weepholes	N
F. Footing	G
G. Piles	*
H. Erosion/Scour	G
I. Settlement	G
2. Pier/Bent	
A. Caps	_
B. Piles	_
C. Column, Stem, Wall	_
D. Piles	_
E. Bracing	_
F. Erosion/Scour	P
G. Settlement	_
3. Pile Bent	
A. Caps	F
B. Bearing Seats	G
C. Piles	F
D. Bracing	N

***Not Visible**

REMARKS:

a. Erosion/Scour Condition rating for the Pier/Bent is controlled by scour, see Item a) under Remarks under 61 Channel: Channel Slope/Protection.
b. Spalls with exposed reinforcement on pile cap at BNB100 and abutment at BNB266, and delamination on BNB85, 243, & 265,
c. Minor cracking on many of the piles. A few longitudinal wide cracks noted with exposed prestressing strands in the top portion of the pile or rust staining. Some spalling with exposed reinforcing steel noted near top.
d. Spall of LifeJacket fiberglass jacket with exposed sacrificial mesh on Bent BNB23 Pile B, 74-C, 102-A, 117-A, 127-A, 161-A, and 214-A are recommended for evaluation to determine effectiveness of the cathodic protection system and to be repaired accordingly.
e. Defects noted during 2019 Underwater Inspection include wide, narrow and hairline cracks, large spalls and moderate scaling. See Underwater Inspection Forms for additional details. A Level II and III Inspection of the Pile Repair at BNB78 Pile B was performed and the steel built-up pile used for the repair appears to exhibit moderate corrosion (approximately 25% section loss).

B-7 BNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [4]**

1. Channel Scour	P	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Approximately 8% of the piles along Trestle BNB were coded as Condition State 4 (Severe) from the UWI due to bay bottom elevations found to be below the Allowable Scour Depth, without scour countermeasures in place.
b. Scour remediation present at some locations and recommended at other locations (2019 UWI Report)

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66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by modular superstructure units with reduced capacity from having two-prestressing strands removed due to corrosion (worst-case observed during past inspections, not present this year).
c. No posting of the structure is required.

4.4 Trestle BSB SI&A Forms

B-6 BSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 2**

Structure-ID:	1012	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/15/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	41.38	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

WORK DONE: Routine Maintenance. Underwater Inspection performed 6/27 - 9/28/21.

CONDITION OF STRUCTURE: Good

a. Light poles at BSB59, 61, 63, 67, 73, 91, 93 exhibit cracking or delamination/spalling at the base plate, light pole at BSB175 has a spall at the base plate with exposed reinforcement, and light poles at BSB151 and 161 exhibit minor spalling.
b. Dented railing on Span BSB20, 21, and 67.
c. Asphalt wearing surface exhibits cracks, splits, surface spalls, and scaling at isolated locations throughout.
d. Minor hairline cracking and minor spalling on some piles and bent caps.
e. Minor cracking and spalling with exposed reinforcing near the bearings in a few concrete girders.
f. Minor hairline cracking scattered on the underside of the deck.
g. Steel beam span BSB1 and 202 repainted in 2013, structurally in good condition with scattered minor rusting of girders, diaphragms, and bearing connections in areas over armor stones.
h. Large spalling or locations with exposed reinforcing or exposed strands at girder ends or in the lower portion of the continuity closure pours at 99 locations.
i. Minor horizontal cracking, some with efflorescence, in intermediate concrete girder diaphragms.
j. Active scour, with bay bottom at or above Acceptable Scour Depth, was noted at many bents in 2021 UWI Report.
k. The underwater portion of the piles are in generally good condition as noted during the 2021 Underwater Inspection. Large repairs previously completed at Bent BSB90 Pile C and at Bent BSB199 Pile C remain in good condition. Minor cracks and spalls were noted on some underwater portions of piles, with 21% of bents rated 6 or lower.
l. Roadway striping replaced in 2018 remains in good condition.

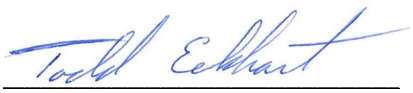
REVISED STRESS ANALYSIS:

1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. Structure load rating controlled by the simple span steel structures at Span BSB1 and BSB202.
3. No posting of the structure is required.

B-6 BSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 2**

RECOMMENDATIONS:

1. Monitor light poles that exhibit cracking or delamination/spalling near the baseplate and replace if vertically oriented steel reinforcement becomes exposed and degraded.
2. Repair/replace dented railing on Span BSB20, 21, and 67.
3. Repair paint system at scattered locations where overcoat is peeling.
4. Continue periodic hydrographic surveys in interim between underwater inspections.
5. Repair spalls noted this year along with those previously noted on girder bottom flanges.



SIGNATURE OF INSPECTOR

B-7 BSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1012	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/15/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	41.38	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph De Jesus

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	N	4. Approach Guardrail	N

REMARKS:

58 DECK **GENERAL CONDITION RATING [7]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Light poles at BSB59, 61, 63, 67, 73, 91, and 93 exhibit cracking or delamination/spalling at the base plate, light pole at BSB175 has a spall at the base plate with exposed reinforcement, and light poles at BSB151 and 161 exhibit minor spalling.
b. Minor hairline and map cracking scattered on the underside of the deck
c. Isolated minor shallow spalls on underside of deck at one location
d. Longitudinal reflective cracks in the overlay sealed, but a few scattered unsealed cracks were noted
e. Transverse cracks in bare concrete deck need sealing
f. Roadway striping replaced in 2018 remains in good condition

B-7 BSB **VDOT – BRIDGE INSPECTION REPORT**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [8]**

1. Bearing Devices **G**
2. Stringers **N**
3. Girders, Beams, or Slab Spans
   - A. General **G**
   - B. Diaphragms or Cross Frames **G**
   - C. Bracing **N**
4. Trusses
   - A. General **N**
   - B. Portals **N**
   - C. Bracing **N**
5. Paint **F**
   - Year Painted **2013**
6. Machinery (Moveable Span) **N**

REMARKS:

a. Spans BSB1 and BSB202 are painted steel girder spans and exhibit scattered minor widespread rust with little to no section loss on portions over armor stones with remaining paint system in Good Condition and are structurally sound
b. Large spalling or locations with exposed reinforcing or exposed strands at girder ends or in the lower portion of the continuity closure pours at 99 locations.
c. Minor cracking and spalls with exposed reinforcing at isolated locations on a few girders

60 SUBSTRUCTURE **GENERAL CONDITION RATING [8]**

1. Abutments
   - A. Wings **G**
   - B. Backwall **G**
   - C. Bearing Seats **G**
   - D. Breastwall **N**
   - E. Weepholes **N**
   - F. Footing **G**
   - G. Piles *
   - H. Erosion/Scour **G**
   - I. Settlement **G**

***Not Visible**

2. Pier/Bent
   - A. Caps _
   - B. Piles _
   - C. Column, Stem, Wall _
   - D. Piles _
   - E. Bracing _
   - F. Erosion/Scour _
   - G. Settlement _
3. Pile Bent
   - A. Caps **G**
   - B. Bearing Seats **G**
   - C. Piles **G**
   - D. Bracing **N**

REMARKS:

a. Repairs to large spalls with exposed spiral reinforcing on underwater portions of BSB90 Pile C and BSB199 Pile C remain in good condition (2021 UWI Report)
b. Minor cracks and spalls underwater at 21% of Bents (2021 UWI Report)
c. Minor vertical hairline cracks, map cracks and spalls in scattered bent caps
d. Minor hairline cracking and minor spalling on some of the above water portions of the piles

B-7 BSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [8]**

1. Channel Scour	G	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	G

REMARKS:

a. Active scour, with bay bottom at or above Acceptable Scour Depth, was noted at many bents in 2021 UWI Report. 8% of bents were rated 6 or lower for scour as noted in the 2021 UWI Report.

66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by the simple span steel structures at Span BSB1 and BSB202.
c. No posting of the structure is required.

4.5 Trestle CNB SI&A Forms

B-6 CNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 2**

Structure-ID:	1009	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/13/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	35.23	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

WORK DONE: Routine Maintenance. Replacement of Asphalt Wearing Surface and Open Expansion Joint Header Material was completed in Spring 2020. Open Expansion Joint Steel Angle Headers were repaired or replaced as required as part of this effort.

CONDITION OF STRUCTURE: Generally Fair to Good

1. Damaged railing on spans CNB149, 181, 185, 193.
2. Light poles at CNB108, 111, 120, 129, 153, 159, 162, 165, 186, 192, 195, 198, 222, 246, and 258 exhibited cracking or spalling at the baseplate, and the light pole at CNB131 has a loose anchor nut.
3. Damaged expansion joint plates in cable tray and misaligned cable tray plate at Bent CNB124.
4. New spall repairs on bottom flange of girders in good condition with minor shrinkage cracks noted.
5. A few failed patches at older repair locations, including exposed strands near mid-span and exposed rebar at some bearings.
6. Minor to moderate splitting on appr. 13% of the elastomeric bearings.
7. Hairline diagonal web cracking on approximately 26% of concrete girder ends inspected.
8. Map cracking at the ends of many of the bent caps.
9. Scattered minor to moderate cracking and spalling on a few of the piles, some of which are recommended for repair. Spall in grout at pile joint with rust staining and minor cracking with rust staining on CNB267 Pile C.
10. Scour ratings govern over the condition ratings at approximately 37% of the bents (2020 UWI).
11. Bay bottom elevation below Allowable Scour Depth (ASD) at 55 locations, and all have scour protection. For complete details on condition of the underwater portion of piles, see the Underwater Inspection Forms included as an electronic submittal this year.
12. Underwater pile repairs previously completed at large spalls exposing spirals and post tensioning strands were at Pile C of Bent CNB59 and Pile A of Bent CNB154 remain in good condition.

REVISED STRESS ANALYSIS:

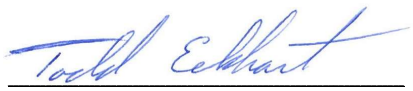
1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. Structure load rating controlled by modular superstructure units with reduced capacity from having two-prestressing strands removed due to corrosion (worst-case observed during past inspections).
3. No posting of the structure is required.

RECOMMENDATIONS:

1. Continue to patch spalls on prestressed concrete girders.
2. Patch spalled grout at pile joint on CNB267 Pile C with epoxy.
3. Reconnect loose bridge railing on spans 193 and 194, and repair bent or damaged railing on spans 149, 181, 185, and 193, 210, 242, 283 and 298.

B-6 CNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 2**

4. Replace light poles at CNB108, 111, 120, 129, 153, 159, 162, 165, 186, 192, 195, and 198.
5. Replace damaged expansion joint plates in the cable tray at Bent CNB124 and realign cable tray plate.
6. Repair piles that exhibit significant cracking or spalling.
7. Continue periodic hydrographic surveys in interim between underwater inspections.
8. Monitor conditions of bay bottom where elevations are below ASD.



SIGNATURE OF INSPECTOR

B-7 CNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1009	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/13/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	35.23	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [7]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Replacement of Asphalt Wearing Surface and Open Expansion Joint Header Material was completed in Spring 2020.
b. Light poles at CNB108, 111, 120, 129, 153, 159, 162, 165, 186, 192, 195, 198, 222, 246, and 258 exhibited cracking or spalling at the baseplate, and the light pole at CNB131 has a loose anchor nut
c. Damaged expansion joint plates in cable tray and misaligned cable tray plate at Bent CNB124
d. Scattered minor transverse cracking and spalling in curbs, with exposed reinforcement at spans CNB82, 98, and 118
e. Minor cracking, some exhibiting efflorescence on the underside of the deck in scattered spans

B-7 CNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Bearing Devices	F
2. Stringers	N
3. Girders, Beams, or Slab Spans	
A. General	F
B. Diaphragms or Cross Frames	G
C. Bracing	N
4. Trusses	
A. General	N
B. Portals	N
C. Bracing	N
5. Paint	F
Year Painted	N
6. Machinery (Moveable Span)	N

REMARKS:

a. Minor to moderate splitting of 13% of bearings pads inspected
b. Some cracks and spalls on bottom flanges of some prestressed girders
c. Deterioration or failure of some existing patches on concrete girders
d. Some spalls on bottom flanges of some prestressed girders, and some existing spall repairs on girders are failing or have failed. The District is continuously performing girder repairs as weather conditions allow. Worse conditions observed do not exhibit more than one prestressing strand being exposed and degraded.
e. Hairline diagonal web cracking on 26% of concrete girders inspected

60 SUBSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Abutments	
A. Wings	N
B. Backwall	G
C. Bearing Seats	G
D. Breastwall	N
E. Weepholes	N
F. Footing	G
G. Piles	*
H. Erosion/Scour	G
I. Settlement	G
2. Pier/Bent	
A. Caps	_
B. Piles	_
C. Column, Stem, Wall	_
D. Piles	_
E. Bracing	_
F. Erosion/Scour	_
G. Settlement	_
3. Pile Bent	
A. Caps	F
B. Bearing Seats	G
C. Piles	F
D. Bracing	N

***Not Visible**

REMARKS:

a. Condition rating controlled by scour, see 61 Channel: Channel Slope/Protection.
b. Some minor cracking and spalling on many of the piles above water
c. Minor to moderate map cracking at ends of some bent cap beams
d. Spall in grout at pile joint with rust staining and minor cracking with rust staining on CNB267 Pile C
e. Large underwater spalls exposing spirals and post tensioning strands at Pile C of Bent CNB59 and Pile A of Bent CNB154, repaired in 2012 remain in Good condition
f. Bent CNB20 Pile B and Bent CNB46 Pile C retrofitted with Cathodic Protection jackets and remain in good condition
g. Defects noted during the Underwater Inspection include wide, narrow and hairline cracks, large spalls and moderate scaling. See Underwater Inspection Forms for additional details.

B-7 CNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [7]**

1. Channel Scour	F	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Scour ratings govern over the condition ratings at approximately 37% of the bents
b. Bay bottom elevation below Allowable Scour Depth (ASD) at 55 locations, and all have scour protection.
c. Scour remediation present at approximately 50% of the pile bents.

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66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by modular superstructure units with reduced capacity from having two-prestressing strands removed due to corrosion (worst-case observed during past inspections, not present this year).
c. No posting of the structure is required.

4.6 Trestle CSB SI&A Forms

B-6 CSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 1**

Structure-ID:	1014	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/14/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	35.28	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Joseph DeJesus

WORK DONE: Routine Maintenance.

REVISED DIMENSIONS: None

MISCELLANEOUS: No Encroachment Violations

CONDITION OF STRUCTURE: Good

1. Light poles at CSB55, 67, 73, 85, 99, 101 & 128 exhibited cracking or spalling at the baseplate. Light poles at CSB85, 91, 93, & 103 have one anchor bolt that does not extend past the nut when the nut is fully engaged. The light pole at CSB93 has one bolt (same anchor bolt that does not extend past the nut) that is near the outer edge of the baseplate.
2. Portions of guardrail on Spans 26, 75, and 82 has minor impact damage on one section of railing.
3. Minor hairline cracking and minor map cracking on some of the above-water portions of piles and bent caps. Some minor spalls on a few piles.
4. Minor spalling with no exposed reinforcement (except at span 187), and minor cracking and efflorescence at scattered locations in underside of deck.
5. Large spalling or locations with exposed reinforcing or exposed strands at girder ends or in the lower portion of the continuity closure pours at 126 locations.
6. Minor horizontal cracking, some with efflorescence, in intermediate concrete girder diaphragms.
7. Scour generally stable indicated by Bay Bottom elevations, but several bents noted at or below acceptable scour depth (FY2023 Hydrographic Survey).

REVISED STRESS ANALYSIS:

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by the simple span steel structures at Span CSB1.
c. No posting of the structure is required.

RECOMMENDATIONS:

1. Continue periodic hydrographic surveys in interim between underwater inspections.
2. Replace top protective coating on steel girders at locations where coating has bubbled and exhibits freckled rust.
3. Monitor light poles exhibit cracking or delamination/spalling near the baseplate and replace if vertically oriented steel reinforcement becomes exposed and degraded.
4. Replace corroded and missing conduit brackets on bent cap faces with stainless steel.

Todd Eckhart

SIGNATURE OF INSPECTOR

B-7 CSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1014	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/15/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	35.28	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [8]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	F

REMARKS:

a. Replacement of Asphalt Wearing Surface, Open Expansion Joint Header Material was completed in Fall 2019
b. Minor spalling with no exposed reinforcement (except at span 187), and minor cracking and efflorescence at scattered locations in underside of deck
c. Scattered minor transverse cracking and spalling or failed repairs in curbs, with exposed reinforcement at spans 54, 88, 100, 105, 108, 116, 119, 121, 122, 130, 131, 134, 135, 138, 140, 141, 142, 145, 146(2), 150, 151, 156, 169, and 170.
d. Adjust bridge railing baseplate on underside of deck on Spans CSB 98 near midspan on the East side and 170 near midspan on the West side such that both bolts are connected instead of only one as is the current condition.

B-7 CSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Bearing Devices	G
2. Stringers	N
3. Girders, Beams, or Slab Spans	
A. General	G
B. Diaphragms or Cross Frames	G
C. Bracing	N
4. Trusses	
A. General	N
B. Portals	N
C. Bracing	N
5. Paint	N
Year Painted	N
6. Machinery (Moveable Span)	N

REMARKS:

a. Minor girder spalling with exposed reinforcement at 81 locations, 75 locations are at girder ends or in the lower portion of the continuity closure pours.
b. Minor spalling with no exposed reinforcement (except at span 187), and minor cracking and efflorescence at scattered locations in underside of deck.
c. Minor cracking and spalling in concrete girder diaphragms.
d. Freckled rust and coating failure typical at the flanges and connections from near mid-span to Portal Island #4 due to being in the splash zone of breaking waves.

60 SUBSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Abutments	
A. Wings	G
B. Backwall	G
C. Bearing Seats	G
D. Breastwall	N
E. Weepholes	N
F. Footing	G
G. Piles	*
H. Erosion/Scour	G
I. Settlement	G
2. Pier/Bent	
A. Caps	_
B. Piles	_
C. Column, Stem, Wall	_
D. Piles	_
E. Bracing	_
F. Erosion/Scour	_
G. Settlement	_
3. Pile Bent	
A. Caps	G
B. Bearing Seats	G
C. Piles	G
D. Bracing	N

***Not Visible**

REMARKS:

a. Underwater Inspection performed 6/2022 – 8/2022. See FY2023 Underwater Inspection Forms for location of underwater defects and Element Level Inspection Forms for condition ratings of substructure units
b. Minor hairline cracking and minor map cracking on some of the above-water portions of piles and bent caps, a few piles with minor efflorescence
c. Minor shallow spalls noted on a few piles, some with exposed reinforcing

B-7 CSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [8]**

1. Channel Scour	F	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Five (5) bents have scour below the acceptable scour depth but are relatively stable. See attached Hydrographic Survey for further information

66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by the simple span steel structures at Span CSB1.
c. No posting of the structure is required.

4.7 NCB-NB SI&A Forms

B-6 NCB-NB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 2**

Structure-ID:	1006	**Type:**	Regular & Fracture Critical Inspection
County/City:	Northampton	**Date of Inspection:**	9/18-9/22/23, 9/25/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.51	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Amit Thakkar

WORK DONE: Routine Maintenance. Ongoing Structural Steel Repairs. Underwater Inspection performed 6/21 – 9/27/21.

CONDITION OF STRUCTURE: Generally Good

1. Steel bridge components received overcoat painting in 2012/2013.
2. Concrete deck has scattered transverse hairline cracks.
3. Isolated scattered areas of peeling overcoat paint system.
4. Existing cracks in steel floorbeam webs at stiffener locations over the girders.
5. Section loss at random floorbeam web stiffeners over the longitudinal girders.
6. Scattered areas of minor rust.
7. Deteriorated bolts and rivets replaced.
8. Pack rust and crevice corrosion mostly sealed between multiple cover plates at isolated areas along top and bottom girder flanges and at corners of lower chord in Span 9.
9. Minor isolated rust in scattered upper and lower truss joints.
10. Miscellaneous minor spalls and cracks in the piers.
11. Minor cracking and light to moderate scaling in splash zone on some piers.
12. For the underwater portion of the piers, see the 2021 UWI Report.
13. Scouring of the bay bottom appears stable based on the latest hydrographic survey information provided by the District.
14. Bay bottom at each pier is typically protected by a riprap blanket.
15. Fender system at Piers 9 and 10 replaced in 2013 and noted in good condition.

REVISED STRESS ANALYSIS:

1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. Structure load rating controlled by Unit NCBA1 – 4-Span Steel Approach Girders, NCBA2 – Steel Floorbeams (on Approach), and NCBT4 – Truss Gusset Plates.
3. No posting of the structure is required.

RECOMMENDATIONS:

1. Annually clean debris from interior of lower chords at panel points.
2. Seal transverse cracks in the concrete deck.
3. Monitor coating placed on interior of lower chords at Panel Points L0 and L0′.
4. Monitor rusting welds at some hanger connections for lateral bracing.
5. Monitor floorbeam web cracks.
6. Repair floorbeam web stiffeners with section loss.
7. Monitor scattered minor to moderate corrosion of bolted girder splice connections.
8. Monitor section loss on stringer and floorbeam details at L3 and L3′ in Span 9. (Note: This work is ongoing).
9. Monitor any pack rust and crevice corrosion between top and bottom flange cover plates and at corners of lower chord truss members.

B-6 NCB-NB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 2**

10. Monitor minor rust inside scattered upper and lower chord truss joints.
11. Seal minor cracks in all pier tops extending from bearing grout pads.
12. Monitor stringer-to-floorbeam connection for pack rust development and corrosion of connection hardware.
13. Seal cracks in splash zone at Piers 1, 2, 3, 7, 8, 11, 12, 13 and 14.
14. Repair paint system at scattered location where overcoat is peeling.
15. Repair areas of section loss on truss diagonals and verticals.

SIGNATURE OF INSPECTOR

B-7 NCB-NB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1006	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/18-9/22/23, 9/25/23
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.51	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Amit Thakkar

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	**X**	5. Segmental	**_**
2. Underwater	**_**	6. Pin & Hanger	**_**
3. Scour Critical	**X**	7. Fatigue Prone	**_**
4. Moveable	**_**		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	**1**	3. Approach	**1**
2. Transition	**N**	4. Approach Guardrail	**N**

REMARKS:

58 DECK **GENERAL CONDITION RATING [8]**

1. Wearing Surface	**N**	6. Railing	**G**
2. Deck – Structural	**G**	7. Drains	**N**
3. Curbs	**G**	8. Lighting	**G**
4. Median	**N**	9. Utilities	**G**
5. Sidewalks	**N**	10. Expansion Joints or Devices	**G**

REMARKS:

a. Deck replaced in 1998 as part of the Parallel Crossing Project
b. Scattered transverse hairline cracks, which require sealing
c. 2005 repair adjacent to joint at Panel Point 3 in Span 9 remains sound
d. Replace loose guardrail nut at Span 3 Floorbeam 10 east side

B-7 NCB-NB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Bearing Devices	G
2. Stringers	G
3. Girders, Beams, or Slab Spans	
A. General	F
B. Diaphragms or Cross Frames	G
C. Bracing	F
4. Trusses	
A. General	F
B. Portals	G
C. Bracing	G
5. Paint	G
Year Painted	2013
6. Machinery (Moveable Span)	N

REMARKS:

a. Steel bridge components received overcoat painting in 2012/2013
b. Newer repaired lateral bracing hanger connections in good condition, a few others with scattered rust
c. Pack rust and crevice corrosion mostly sealed between multiple cover plates at isolated areas along top and bottom girder flanges and at corners of lower chord in Span 9, but some bleed-thru emerging
d. Deteriorated bolts and rivets replaced, some scattered rust on those not replaced
e. Existing web cracks in floorbeams over girders
f. Minor isolated rust in scattered upper and lower truss joints
g. Isolated areas of scattered minor rust on various members
h. Section loss at some floorbeam stiffeners over the longitudinal girders. Ongoing repairs to floorbeam stiffeners as of FY2024 inspection.
i. Scattered section loss on floorbeam, stringer seats and associated details at L3 and L3' in truss span. Previous repairs in good condition
j. Isolated section loss on truss diagonals and verticals

60 SUBSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Abutments	
A. Wings	N
B. Backwall	N
C. Bearing Seats	N
D. Breastwall	N
E. Weepholes	N
F. Footing	N
G. Piles	N
H. Erosion/Scour	N
I. Settlement	N
2. Pier/Bent	
A. Caps	G
B. Piles	_
C. Column, Stem, Wall	G
D. Piles	*
E. Bracing	G
F. Erosion/Scour	F
G. Settlement	G
3. Pile Bent	
A. Caps	N
B. Bearing Seats	N
C. Piles	N
D. Bracing	N

***Not Visible**

REMARKS:

a. Miscellaneous minor spalls and cracks in the piers
b. Seal cracks in splash zones at Piers 1, 2, 3, 7, 8, 11, 12, 13 and 14. with carbon fiber sheets
c. Repair cracks in tops of pier columns
d. For the underwater portions of the piers, see the 2021 Underwater Inspection Report

B-7 NCB-NB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING** **[8]**

1. Channel Scour	G	5. Fender System	F
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Scouring of the bay bottom appears stable based on the latest hydrographic survey information provided by the District (Fall 2022) and 2021 Underwater Inspection
b. Bay bottom at each pier is typically protected by a riprap blanket
c. Fender systems at Piers 9 and 10 replaced in 2013 and in good condition

66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by Unit NCBA1 – 4-Span Steel Approach Girders, NCBA2 – Steel Floorbeams (on Approach), and NCBT4 – Truss Gusset Plates.
c. No posting of the structure is required.

4.8 NCB-SB SI&A Forms

B-6 NCB-SB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 1**

Structure-ID:	1015	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/14-9/15/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.69	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

WORK DONE: Routine Maintenance. Replacement of Steel Sliding Plate Expansion Joints with Steel Tooth Expansion Joints completed in Fall 2020. Damaged Pier 9 Fender System repairs completed in July 2021.

REVISED DIMENSIONS: None

MISCELLANEOUS: No Encroachment Violations

CONDITION OF STRUCTURE: Generally Good

1. Steel Tooth Expansion Joint at Pier 1 opening was off by about 1/4" from the east side (2 1/2") to the west side (2 1/4"). The weather was cloudy at the time of measurement (9/14/2020 at 5:07pm) with an ambient air temperature around 76°F with the steel girders and concrete girders measuring at 77°F and 78°F, respectively. The opening dimension for these conditions should have been 2 1/16" according to construction documents.
2. Steel Tooth Expansion Joint at Pier 15 opening was off by about 1/4" from the east side (2 13/16") to the west side (1 7/8"). The weather was cloudy at the time of measurement (9/14/2020 at 1:12pm) with an ambient air temperature around 77°F with the steel girders and concrete girders measuring at 79°F and 80°F, respectively. The opening dimension for these conditions should have been 2 1/16" according to construction documents.
3. Rust around perimeter of some bearing base plates.
4. Isolated minor rust spots on crossframes, diaphragms, and lower lateral bracing members.
5. Minor rust on scattered nuts and bolts of longitudinal girder splices and of crossframe, diaphragm and lower lateral bracing connections.
6. Scattered minor rust on ladder systems at Piers NCB-SB9 and NCB-SB10. Minor rusting of bolts anchoring ladder systems to piers.
7. Minor cracking on some of the pier caps. Repairs to pile cap (footing) completed in fall of 2015 to NCB-SB9 appear satisfactory with minor cracking of the repair material.
8. Minor transverse cracks scattered in concrete deck, mostly hairline, but some noted as narrow.
9. Failing patch in bridge deck surface in Span NCB-SB8.
10. 2019 Hydrographic Survey and the 2019 Underwater Inspection indicates bay bottom was below ASD at Pier NCB-SB13. Bay bottom is stable due to scour blanket in place as indicated in the 2009, 2014, and 2019 Underwater Inspections.
11. No significant defects noted on the underwater portions of the piles in the FY2020 Underwater Inspection Forms.

REVISED STRESS ANALYSIS:

1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. No posting of the structure is required.

B-6 NCB-SB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 2**

RECOMMENDATIONS:

1. Monitor Steel Tooth Expansion Joints on extremely cold days when temperatures are expected to remain near or below 25°F for several hours to observe if decreased tooth (finger) overlap has created an unsafe condition for the travelling public or snowplow equipment. At 25°F the tooth overlap is anticipated to be below the 1.5" requirement specified in the AASHTO LRFD Bridge Design Specifications.
2. Continue periodic hydrographic surveys in interim between underwater inspections scheduled every 5 years. Perform an engineering analysis on all piles with a Condition State Rating Below 4 due to Scour.
3. Replace top protective coating on steel girders at locations where zinc primer is exposed or coating has bubbled and exhibits freckled rust.

SIGNATURE OF INSPECTOR

B-7 NCB-SB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1015	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/14-9/15/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.69	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	N	4. Approach Guardrail	N

REMARKS:

58 DECK **GENERAL CONDITION RATING [8]**

1. Wearing Surface	N	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Monitor Steel Tooth Expansion Joints on extremely cold days (temperatures approaching 25°F) to observe if decreased tooth (finger) overlap has created an unsafe condition for the travelling public or snowplow equipment. At 25°F the tooth overlap is anticipated to be below the 1.5" requirement specified in the AASHTO LRFD Bridge Design Specifications.
b. Minor transverse hairline cracks in deck surface, with a few cracks up to 1/8"
c. Curb and railing are generally in good condition
d. Minor failing patch in deck surface of NCB-SB8

B-7 NCB-SB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Bearing Devices	G
2. Stringers	_
3. Girders, Beams, or Slab Spans	
A. General	G
B. Diaphragms or Cross Frames	G
C. Bracing	G
4. Trusses	
A. General	_
B. Portals	_
C. Bracing	_
5. Paint	G
Year Painted	2014
6. Machinery (Moveable Span)	_

REMARKS:

a. No significant structural defects noted and minor section loss at areas exhibiting corrosion
b. Minor rust on scattered nuts and bolts of longitudinal girder splices and also of crossframe, diaphragm and lower lateral bracing connections
c. Minor rusting areas at bottom of bearings base plates and surface rust on bearing web plates
d. Lubricate bearings as required
e. Replace top protective coating on steel girders at locations where zinc primer is exposed or coating has bubbled and exhibits freckled rust
f. Span 4 Bay 2 Cross Frame 4 Intermediate Crossframe Lower Member Distorted with surface rust, no action required

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60 SUBSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Abutments	
A. Wings	N
B. Backwall	N
C. Bearing Seats	N
D. Breastwall	N
E. Weepholes	N
F. Footing	N
G. Piles	N
H. Erosion/Scour	N
I. Settlement	N
2. Pier/Bent	
A. Caps	G
B. Piles	_
C. Column, Stem, Wall	G
D. Piles	_
E. Bracing	_
F. Erosion/Scour	F
G. Settlement	_
3. Pile Bent	
A. Caps	_
B. Bearing Seats	_
C. Piles	_
D. Bracing	_

***Not Visible**

REMARKS:

a. Minor cracks in some columns and pier caps
b. Minor cracks in the backwall of pier caps at NCB-SB8 and NCB-SB11
c. The 2019 Underwater Inspection revealed minor structural defects.
d. Scattered minor rust on ladder systems at Piers NCB-SB9 and NCB-SB10. Minor rusting of bolts anchoring ladder systems to piers.

B-7 NCB-SB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [7]**

1. Channel Scour	F	5. Fender System	G
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	_
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. 2019 Hydrographic Survey and the 2019 Underwater Inspection indicates bay bottom was below ASD at Pier NCB-SB13. Bay bottom is stable due to scour blanket in place as indicated in the 2009, 2014, and 2019 Underwater Inspections, and based on current Hydro Survey data provided.

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66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. No posting of the structure is required.

4.9 Trestle DNB SI&A Forms

B-6 DNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 1**

Structure-ID:	1008	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/26/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.25	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

WORK DONE: Routine Maintenance. Underwater Inspection performed 8/3/21.

REVISED DIMENSIONS: None

MISCELLANEOUS: No Encroachment Violations

CONDITION OF STRUCTURE: Generally Good

1. The 2021 Underwater Inspection Report revealed only light to moderate scaling and no other apparent defects.
2. Minor cracking on many of the piles and a few of the bent caps.
3. Spalls with exposed reinforcing noted near the tops of a few piles.
4. Some spalls on bottom flanges of some prestressed girders and some deteriorating patches.
5. Girder spall repairs with new method are in good condition.
6. Hairline diagonal web cracking on the concrete girders noted at scattered locations.
7. Minor to moderate defects on several of the elastomeric bearings.
8. Roadway striping replaced in 2018.
9. Bay bottom depths noted in the 2021 Underwater Inspection Report are well above the acceptable scour depth.

REVISED STRESS ANALYSIS:

1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. Structure load rating controlled by modular superstructure units with reduced capacity from having two-prestressing strands removed due to corrosion (worst-case observed during inspection).
3. No posting of the structure is required.

RECOMMENDATIONS:

1. Patch any spalls that occur on prestressed concrete girders.
2. Patch spalls on cylinder piles.
3. Future inspections and hydrographic surveys should monitor for active scouring.

Todd Eckhart

SIGNATURE OF INSPECTOR

B-7 DNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1008	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/26/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.25	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [7]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Top of roadway deck and components in good condition with limited minor impact damage to railings noted
b. No significant defects noted in underside of deck in spans 1 thru 18

B-7 DNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Bearing Devices	F
2. Stringers	N
3. Girders, Beams, or Slab Spans	
A. General	F
B. Diaphragms or Cross Frames	G
C. Bracing	N
4. Trusses	
A. General	N
B. Portals	N
C. Bracing	N
5. Paint	N
Year Painted	N
6. Machinery (Moveable Span)	N

REMARKS:

a. Minor splitting of isolated bearing pads, and bulging of bearing pad at DNB1 G1 greater than 15% of the bearing thickness
b. Some cracks and spalls on bottom flanges of some prestressed girders and some deteriorating patches
c. Hairline diagonal web cracking on the concrete girders noted at scattered locations

60 SUBSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Abutments	
A. Wings	G
B. Backwall	G
C. Bearing Seats	G
D. Breastwall	N
E. Weepholes	N
F. Footing	G
G. Piles	*
H. Erosion/Scour	G
I. Settlement	G
2. Pier/Bent	
A. Caps	_
B. Piles	_
C. Column, Stem, Wall	_
D. Piles	_
E. Bracing	_
F. Erosion/Scour	_
G. Settlement	_
3. Pile Bent	
A. Caps	G
B. Bearing Seats	G
C. Piles	F
D. Bracing	N

***Not Visible**

REMARKS:

a. The 2021 Underwater Inspection revealed only some light to moderate scaling and a shallow failed repair and spall
b. Minor cracking on many of the piles and a few bent caps above water
c. Spalls with exposed reinforcing noted near the tops of a few piles

B-7 DNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [8]**

1. Channel Scour	G	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Bay bottom depths noted in the 2021 Underwater Inspection Report are well above the acceptable scour depth

66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by modular superstructure units with reduced capacity from having two-prestressing strands removed due to corrosion (worst-case observed during past inspections, not present this year).
c. No posting of the structure is required.

4.10 Trestle DSB SI&A Forms

B-6 DSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 1**

Structure-ID:	1016	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/13 & 9/14/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.29	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

WORK DONE: Routine Maintenance and Roadway Striping Replaced in Spring 2020.

REVISED DIMENSIONS: None

MISCELLANEOUS: No Encroachment Violations

CONDITION OF STRUCTURE: Generally Good

1. Scour remediation was performed at Bent DSB1 in 2002.
2. Minor hairline cracks in many piles above water/land and some bent caps.
3. Widespread map cracking (hairline to narrow) of concrete deck surface in Spans DSB13, DSB14, DSB17 and DSB18.
4. The 2019 Underwater Inspection revealed only a few hairline cracks and a few minor shallow spalls on some of the piles.

REVISED STRESS ANALYSIS:

1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. No posting of the structure is required.

RECOMMENDATIONS:

1. Continue periodic hydrographic surveys in interim between underwater inspections scheduled every 5 years.
2. Seal piles exhibiting degradation with carbon fiber sheets.

SIGNATURE OF INSPECTOR

B-7 DSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 3**

Structure-ID:	1016	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/13 & 9/14/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	34.29	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [7]**

1. Wearing Surface	_	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	_
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Hairline cracks with efflorescence in the deck overhangs of several spans inspected
b. No other significant defects noted in underside of deck
c. Widespread map cracking (hairline to narrow) of concrete deck surface in Spans DSB2, DSB3, DSB,5, DSB13, DSB14, DSB17, and DSB18.

B-7 DSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 2 of 3**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [8]**

1. Bearing Devices **G**
2. Stringers **N**
3. Girders, Beams, or Slab Spans
   - A. General **G**
   - B. Diaphragms or Cross Frames **G**
   - C. Bracing **N**
4. Trusses
   - A. General **N**
   - B. Portals **N**
   - C. Bracing **N**
5. Paint **N**
   - Year Painted _
6. Machinery (Moveable Span) **N**

REMARKS:

a. Minor cracking and spalling at scattered closure pour diaphragms with exposed reinforcement/prestressing with little to no relevant section loss.
b. Spans 1 thru 19 inspected from Snooper vehicle

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60 SUBSTRUCTURE **GENERAL CONDITION RATING [7]**

1. Abutments
   - A. Wings _
   - B. Backwall _
   - C. Bearing Seats _
   - D. Breastwall **N**
   - E. Weepholes **N**
   - F. Footing _
   - G. Piles *
   - H. Erosion/Scour _
   - I. Settlement _

***Not Visible**

2. Pier/Bent
   - A. Caps _
   - B. Piles _
   - C. Column, Stem, Wall _
   - D. Piles _
   - E. Bracing _
   - F. Erosion/Scour **F**
   - G. Settlement _
3. Pile Bent
   - A. Caps **G**
   - B. Bearing Seats **G**
   - C. Piles **G**
   - D. Bracing **N**

REMARKS:

a. The 2019 Underwater Inspection revealed only a few hairline cracks and a few minor shallow spalls on some of the piles
b. Minor hairline cracks in most piles above water or above ground line adjacent to pile section joints. Crack with rust staining observed above water on Bent 7 Pile B.
c. Minor hairline cracks on a few bent caps.

B-7 DSB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING [7]**

1. Channel Scour	F	5. Fender System	_
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Scour remediation was performed at Bent DSB1 in 2002
b. Bay bottom is relatively stable as indicated in the 2004, 2009, 2014, the 2019 Underwater Inspections.
c. Scour ratings govern over condition ratings at a majority of the bents in the water

66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. No posting of the structure is required.

4.11 Trestle ENB, FIB-NB, & FNB SI&A Forms

B-6 ENB, FIB-NB, & FNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 1 of 2**

Structure-ID:	1017	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/12/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	32.32	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

WORK DONE: Routine Maintenance.

REVISED DIMENSIONS: None

MISCELLANEOUS: No Encroachment Violations

CONDITION OF STRUCTURE: Good

1. Minor hairline cracking on many of the piles above water or land.
2. Steel Tooth Expansion Joint at FIB-NB Pier 4 opening was off by about 1/2" from the east side (1 3/4") to the west side (1 1/4"). The weather was cloudy at the time of measurement (9/10/2020 at 2:11pm) with an ambient air temperature around 80°F with both the steel girders and concrete girders measuring at 80°F. The opening dimension for these conditions should have been 1 15/16" according to construction documents.
3. No apparent change in spiral cracking on piles at Bents ENB7 and ENB9 (caused during construction).
4. Rip rap encompassing Bent FNB4 remains well placed and stable.
5. Minor spalls noted in the girders and at the diaphragm closure pours at scattered locations in the trestle spans.
6. Isolated surface spalls in Span ENB1.
7. Scattered minor transverse cracks in concrete portions of FIB bridge deck.
8. Isolated minor rust spots and peeled off topcoat with exposed zinc primer on FIB girders, cross frames and bracing.
9. Minor rust continues to develop on nuts and bolts of FIB girder splices and at cross frames and lower lateral bracing connections.
10. Moderate rust around perimeter of FIB rocker bearing base plates and isolated rust spots on some pins and anchor bolts.
11. The 2019 Underwater Inspection revealed only a few hairline cracks and a few minor shallow spalls on some of the piles.
12. North Fender system was repaired in Fall 2018 after damage that was caused around May 27, 2018.

REVISED STRESS ANALYSIS:

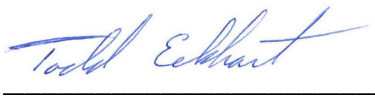
1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. Structure load rating controlled by the interior girders of FIB-NB.
3. No posting of the structure is required.

RECOMMENDATIONS:

1. Monitor the Steel Tooth Expansion Joint opening on extremely hot days (temperatures approaching 120°F) to observe if opening closes and if any distress occurs on the superstructure.

B-6 ENB, FIB-NB, & FNB VDOT – BRIDGE INSPECTION REPORT Page: 2 of 2

2. Clean exposed reinforcing and patch girder spalls on trestle spans.
3. Replace top protective coating on steel girders at locations where zinc primer is exposed or coating has bubbled and exhibits freckled rust (girder splices, cross frames, and rocker bearings).
4. Monitor piles exhibiting spiral cracking for further degradation.



SIGNATURE OF INSPECTOR

B-7 ENB, FIB-NB, & FNB **VDOT – BRIDGE INSPECTION REPORT**

Structure-ID:	1017	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/12/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	32.32	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s) :**	Chris Williams

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING** **[8]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. Minor transverse hairline cracks scattered in concrete FIB-NB deck surface.
b. Steel Tooth Expansion Joint at FIB-NB Pier 4 opening was off by about 1/2" from the east side (1 3/4") to the west side (1 1/4"). The weather was cloudy at the time of measurement (9/10/2020 at 2:11pm) with an ambient air temperature around 80°F with both the steel girders and concrete girders measuring at 80°F. The opening dimension for these conditions should have been 1 15/16" according to construction documents.
c. Isolated surface spalls on ENB1 east side.

B-7 ENB, FIB-NB, & FNB **VDOT – BRIDGE INSPECTION REPORT**

59 SUPERSTRUCTURE **GENERAL CONDITION RATING [8]**

1. Bearing Devices	G
2. Stringers	N
3. Girders, Beams, or Slab Spans	
A. General	G
B. Diaphragms or Cross Frames	G
C. Bracing	N
4. Trusses	
A. General	N
B. Portals	N
C. Bracing	N
5. Paint	G
Year Painted	2013
6. Machinery (Moveable Span)	N

REMARKS:

a. Minor spalls noted in the girders and at the diaphragm closure pours at scattered locations in the trestle spans
b. Isolated minor rust spots and peeled off topcoat with exposed zinc primer on FIB girders, cross frames and bracing
c. Minor rust continues to develop on nuts and bolts of FIB girder splices and at cross frame and lower lateral bracing connections
d. Rust around perimeter of FIB rocker bearing base plates and isolated rust spots on some pins and anchor bolts

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60 SUBSTRUCTURE **GENERAL CONDITION RATING [8]**

1. Abutments	
A. Wings	G
B. Backwall	G
C. Bearing Seats	G
D. Breastwall	N
E. Weepholes	N
F. Footing	G
G. Piles	*
H. Erosion/Scour	G
I. Settlement	G
2. Pier/Bent	
A. Caps	_
B. Piles	_
C. Column, Stem, Wall	_
D. Piles	_
E. Bracing	_
F. Erosion/Scour	_
G. Settlement	_
3. Pile Bent	
A. Caps	G
B. Bearing Seats	G
C. Piles	G
D. Bracing	N

***Not Visible**

REMARKS:

a. Minor hairline cracking on many of the piles above water or land
b. Some spalls with exposed reinforcing noted at pile joints of a few piles
c. No apparent change in spiral cracking on piles at Bents ENB7 and ENB9 (caused during construction)
d. The 2019 Underwater Inspection revealed only a few hairline cracks and a few minor shallow spalls on some of the piles.

B-7 ENB, FIB-NB, & FNB **VDOT – BRIDGE INSPECTION REPORT** **Page: 3 of 3**

61 CHANNEL: CHANNEL/SLOPE PROTECTION **GENERAL CONDITION RATING** **[7]**

1. Channel Scour	G	5. Fender System	F
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Rip rap encompassing Bent FNB4 remains well placed and stable.

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66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS

a. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
b. Structure load rating controlled by the interior girders of FIB-NB.
c. No posting of the structure is required.

4.12 Trestle ESB, FIB-SB, & FSB SI&A Forms

B-6 ESB, FIB-SB, & FSB VDOT – BRIDGE INSPECTION REPORT Page: 1 of 2

Structure-ID:	1007	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/13/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	32.32	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

WORK DONE: Routine Maintenance.

REVISED DIMENSIONS: None

MISCELLANEOUS: No Encroachment Violations

CONDITION OF STRUCTURE: Generally Fair to Good

1. Random spalls on bottom flanges of prestressed girders, with some previous patches failed or failing.
2. Isolated minor rust spots on FIB girders, crossframes & bracing members.
3. Distortion on one FIB girder bottom flange for approximately 3 feet that does not require mitigation; and buckling of one lower lateral bracing diagonal.
4. Minor rust on isolated nuts and bolts of FIB girder splices and other field connections.
5. Cracks in the asphalt wearing surface sealed, but a few scattered unsealed cracks were noted and recommended for sealing.
6. Minor transverse cracks scattered in the FIB concrete deck surface.
7. Roadway striping replaced in 2020.
8. Hairline cracking on many of the piles above water or land.
9. Isolated spalling on some of the piles.
10. Repairs involving installation of cathodic protection jackets on FIB-SB2 and FIB-SB3 were completed in 2014. Several piles at Pier FIB-SB2 and FIB-SB3 exhibited damage to the fiberglass jackets.
11. Previously noted cracks above the jackets on FIB-SB2 and FIB-SB3 were noted to be routed and packed with minor periphery cracking.
12. Fender System at Bent FIB-SB3 was replaced in 2006. Bottom whaler exhibiting 70% section loss at the waterline, but the rest exhibit minimal deterioration. North Fender system was repaired in Fall 2018 after damage that was caused around May 27, 2018.
13. Three pile cluster dolphins and portions of each whaler replaced at west end of fender system in front of Pier FIB-SB2 in 2016 and in good condition.
14. Isolated minor cracks and spalls on a few piles underwater. For a detailed condition of piles underwater and bay bottom scour conditions, see the 2021 Underwater Inspection Report.

REVISED STRESS ANALYSIS:

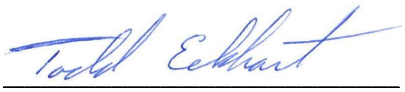
1. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
2. No posting of the structure is required.

RECOMMENDATIONS:

1. Patch spalls on prestressed concrete girders and piles.
2. Perform periodic hydrographic surveys in interim between underwater inspections.
3. Monitor and repair any exposed zinc mesh under the spalled fiberglass jackets on Pier FIB-SB2 and FIB-SB3. CBBT is exploring an alternative repair method that will utilize carbon fiber shells to address the deterioration.
4. Clean out and seal transverse cracks in concrete deck spans of FIB-SB.

B-6 ESB, FIB-SB, & FSB VDOT – BRIDGE INSPECTION REPORT **Page: 2 of 2**

5. Clean and lubricate rocker bearings on FIB-SB.
6. Replace buckled lower lateral bracing diagonal.



SIGNATURE OF INSPECTOR

B-7 ESB, FIB-SB, & FSB VDOT – BRIDGE INSPECTION REPORT

Structure-ID:	1007	**Type:**	Regular Inspection
County/City:	Northampton	**Date of Inspection:**	9/13/22
Structure:	_____(Co./Str.No)	**Feature/Intersection:**	Chesapeake Bay
Main Route:	13	**Facility/Carried:**	
Milepost:	32.32	**Location:**	Over Chesapeake Bay
Lead Inspector:	Todd Eckhart	**Additional Inspector(s):**	Chris Williams

SPECIAL CONDITIONS OR REQUIREMENTS

1. Fracture Critical	_	5. Segmental	_
2. Underwater	X	6. Pin & Hanger	_
3. Scour Critical	X	7. Fatigue Prone	_
4. Moveable	_		

36 TRAFFIC SAFETY FEATURES

1. Bridge Railing	1	3. Approach	1
2. Transition	1	4. Approach Guardrail	1

REMARKS:

58 DECK **GENERAL CONDITION RATING [8]**

1. Wearing Surface	G	6. Railing	G
2. Deck – Structural	G	7. Drains	N
3. Curbs	G	8. Lighting	G
4. Median	N	9. Utilities	G
5. Sidewalks	N	10. Expansion Joints or Devices	G

REMARKS:

a. The typical simple span fixed and expansion open deck joints of the trestle spans were paved over during the 1999 overlay
b. Minor transverse cracks scattered in the FIB concrete deck surface recommended for sealing

B-7 ESB, FIB-SB, & FSB VDOT – BRIDGE INSPECTION REPORT Page: 2 of 3

59 SUPERSTRUCTURE GENERAL CONDITION RATING [7]

1. Bearing Devices **G**
2. Stringers **N**
3. Girders, Beams, or Slab Spans
   - A. General **F**
   - B. Diaphragms or Cross Frames **G**
   - C. Bracing **N**
4. Trusses
   - A. General **N**
   - B. Portals **N**
   - C. Bracing **N**
5. Paint **G**
   - Year Painted **2013**
6. Machinery (Moveable Span) **N**

REMARKS:

a. Some spalls on bottom flanges of some prestressed girders of trestle spans, with some previous patches failed or failing
b. Minor rust spots on FIB girders, crossframes & bracing members
c. Minor rust on some nuts and bolts of FIB girder splices and other field connections
d. Distortion on one FIB girder bottom flange for approximately 3 feet that does not require mitigation, and buckling of one lower lateral bracing diagonal

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60 SUBSTRUCTURE GENERAL CONDITION RATING [7]

1. Abutments
   - A. Wings **G**
   - B. Backwall **G**
   - C. Bearing Seats **G**
   - D. Breastwall **N**
   - E. Weepholes **N**
   - F. Footing **G**
   - G. Piles *
   - H. Erosion/Scour **G**
   - I. Settlement **G**

***Not Visible**

2. Pier/Bent
   - A. Caps _
   - B. Piles _
   - C. Column, Stem, Wall _
   - D. Piles _
   - E. Bracing _
   - F. Erosion/Scour _
   - G. Settlement _
3. Pile Bent
   - A. Caps **G**
   - B. Bearing Seats **G**
   - C. Piles **F**
   - D. Bracing **N**

REMARKS:

a. Minor cracking and isolated spalls on the piles
b. Repairs involving installation of cathodic protection jackets on Piers FIB-SB2 and FIB-SB3 were completed in 2014. Several piles noted to have large sections of spalled fiberglass jackets at Pier FIB-SB3
c. Previously noted cracks above the jackets on FIB-SB2 and FIB-SB3 were noted to be routed and packed with minor periphery cracking
d. Minor to moderate map cracking at ends of some trestle bent caps
e. Isolated minor cracks and spalls on a few piles underwater. For a detailed condition of piles underwater and bay bottom scour conditions, see the 2021 Underwater Inspection Report.

B-7 ESB, FIB-SB, & FSB VDOT – BRIDGE INSPECTION REPORT Page: 3 of 3

61 CHANNEL: CHANNEL/SLOPE PROTECTION GENERAL CONDITION RATING [8]

1. Channel Scour	G	5. Fender System	G
2. Embankment Erosion	_	6. Spur Dikes/Jetties	_
3. Drift	_	7. Rip Rap/Slope Protection	G
4. Vegetation	_	8. Adequacy of Opening	F

REMARKS:

a. Fender system at Pier FIB-SB3 was replaced in 2006. Bottom whaler exhibits 70% section loss at the waterline, but the rest exhibit minimal deterioration. North Fender system was repaired in Fall 2018 after damage that was caused around May 27, 2018.
b. Three pile cluster dolphins and portions of each whaler replaced at west end of fender system in front of Pier FIB-SB2 in 2016 and in good condition
c. North Fender system was under repair at the time of inspection for damage that was caused around May 27, 2018.

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66 POSTED LOADING

1. Posted Loading -		2. Legibility	N
(R12 -1)	N	3. Visibility	N
(R12 – 5) – Single	N		
(R12 – 5) – Semi	N		

REMARKS

c. Load rating completed in 12/2018 in accordance with VDOT Instructional and Informational Memorandum 86.2: Load Rating and Posting of Structures (Bridges and Culverts) dated 11/16/2018.
d. No posting of the structure is required.

5. Bridge Element Level Data

The tables provided in this section display the element level bridge condition data and condition states coded per the AASHTO Manual for Bridge Element Inspection, First Edition and the VDOT Supplement to the AASHTO Manual for Bridge Element Inspection (2016) at the time of this inspection.

For Defect 6000 Scour, the Condition State (CS) for each element was determined utilizing the following system:

Condition State	Description	
1 Good	No Scour	The bay bottom profile at the substructure unit is greater than 10-feet above the Allowable Scour Depth (ASD)
2 Fair	Within Tolerable Limits	The bay bottom at the substructure unit is greater than 5-feet above the ASD, or scour remediation has been placed at the substructure unit, but not below ASD
3 Poor	Within Critical Limits	The bay bottom at the substructure unit is above the ASD, or scour remediation has been placed at the substructure unit at or above the ASD
4 Severe	Warrants a Structural Review	The bay bottom at the pile is below its ASD and scour remediation has not been placed at the substructure unit

5.1 Trestle ANB Element Level Data

Trestle ANB consists of Spans A'NB1-10 and Spans ANB 1-226. Spans ANB 129-176 received a hands-on inspection this year (approximately 20% of the entire trestle). Element level data is presented in this section for all portions of the trestle that have a received hands-on inspection since FY2018. An underwater inspection was performed on the entire trestle this year, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2024 Trestle ANB Element Level Form.

Table 51: ANB Element Level Data

ANB (1002) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
16	Reinforced Concrete Top Flange	SF	527,586	554	122	0	528,262
1080	*Delamination/Spall/ Patched Area*	*SF*		*41*	*63*		*104*
1090	*Exposed Rebar*	*SF*		*29*	*59*		*96*
1120	*Efflorescence/Rust Staining*	*SF*		*341*			*341*
1130	*Cracking (RC and Other)*	*SF*		*143*			*143*
38	Reinforced Concrete Slab	SF	1,188	6	0	0	1,194
1080	*Delamination/Spall/ Patched Area*	*SF*		*6*			*6*
RAILINGS							
330	Metal Bridge Railing	LF	33,099	487	14	0	33,600
1020	*Connection*	*LF*		*3*			*3*
1080	*Delamination/Spall/ Patched Area*	*LF*		*75*	*13*		*88*
1090	*Exposed Rebar*	*LF*		*12*	*1*		*13*
1130	*Cracking (RC and Other)*	*LF*		*383*			*383*
7000	*Damage*	*LF*		*14*			*14*

ANB (1002) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
SUPERSTRUCTURE							
109	Prestressed Concrete Open Girder/Beam	LF	141,775	4,089	247	0	146,111
1080	*Delamination/Spall/ Patched Area*	*LF*		*543*	*83*		*626*
1090	*Exposed Rebar*	*LF*		*67*	*91*		*158*
1100	*Exposed Prestressing*	*LF*		*15*	*19*		*34*
1110	*Cracking (PSC)*	*LF*		*3,457*	*3*		*3,460*
1120	*Efflorescence/Rust Staining*	*LF*		*7*	*51*		*58*
811	Beam/Girder End	EA	2,035	1,758	115	0	3,908
1080	*Delamination/Spall/ Patched Area*	*EA*		*55*	*30*		*85*
1090	*Exposed Rebar*	*EA*		*13*	*52*		*65*
1100	*Exposed Prestressing*	*EA*			*8*		*8*
1110	*Cracking (PSC)*	*EA*		*1,679*	*1*		*1,680*
1120	*Efflorescence/Rust Staining*	*EA*		*11*	*24*		*35*
BEARINGS							
310	Elastomeric Bearing	EA	3,834	14	68	0	3,916
1000	*Corrosion*	*EA*		*8*			*8*
2230	*Bulging, Splitting, or Tearing*	*EA*		*6*	*68*		*74*

ANB (1002) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	LF	66	0	0	0	66
226	Prestressed Concrete Pile	EA	185	576	79	0	720
1080	*Delamination/Spall/ Patched Area*	*EA*		*175*	*25*		*200*
1090	*Exposed Rebar*	*EA*		*1*	*4*		*5*
1110	*Cracking (PSC)*	*EA*		*190*	*6*		*196*
1120	*Efflorescence/Rust Staining*	*EA*		*78*	*44*		*122*
1190	*Abrasion/Wear (PSC/RC)*	*EA*		*6*			*6*
6000	*Scour*	*EA*		*6*			*6*
234	Reinforced Concrete Pier Cap	LF	7,548	562	15	0	8,125
1080	*Delamination/Spall/ Patched Area*	*LF*		*45*	*14*		*59*
1120	*Efflorescence/Rust Staining*	*LF*		*196*	*1*		*197*
1130	*Cracking (RC and Other)*	*LF*		*321*			*321*
824	Reinforced Concrete Wingwall	EA	2	0	0	0	2
JOINTS							
304	Open Expansion Joint	LF	8,541	0	0	0	8,541
845	Joint Effectiveness	EA	246	0	0	0	246
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	507,251	170	196	0	507,617
3210	*Delamination/Spall/ Patched Area/Pothole (Wearing Surface)*	*SF*		*2*			*2*
3220	*Crack*	*SF*		*168*	*196*		*364*

ANB (1002) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
520	Concrete Reinforcing Steel Protective System	SF	59,941	2,568	1,490	587	64,586
3600	*Effectiveness - Protective System (e.g. cathodic)*	*SF*		*2,568*	*1,484*	*407*	*4,459*
7000	*Damage*	*SF*			*6*	*180*	*186*
521	Concrete Protective Coating	SF	138,800	257	170	2,092	141,319
3540	*Effectiveness (Concrete Protective Coatings)*	*SF*		*257*	*170*	*2,092*	*2,519*
SLOPE AND CHANNEL ELEMENTS							
852	Protected Slope – Paved	EA	1	0	0	0	1
6506	*Paved Slope Effectiveness*	*EA*	*1*				*1*
853	Protected Slope - Riprap	EA	1	0	0	0	1
6507	*Loss of Riprap*	*EA*	*1*				*1*
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.2 Trestle ASB Element Level Data

Trestle ASB consists of Spans ASB 1-205. Spans 81-120 received a hands-on inspection this year (approximately 19% of the entire trestle). Element level data is presented in this section for all portions of the trestle that have a received hands-on inspection since FY2018. An underwater inspection was performed on the entire trestle this year, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2024 Trestle ASB Element Level Form.

Table 52: ASB Element Level Data

ASB (1010) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	35,961	666	3	0	36,630
1080	*Delamination/Spall/ Patched Area*	*SF*			*3*		*3*
1120	*Efflorescence/Rust Staining*	*SF*		*178*			*178*
1130	*Cracking (RC and Other)*	*SF*		*488*			*488*
16	Reinforced Concrete Top Flange	SF	619,723	1,164	75	0	620,962
1080	*Delamination/Spall/ Patched Area*	*SF*		*22*	*46*		*68*
1090	*Exposed Rebar*	*SF*		*2*	*27*		*29*
1120	*Efflorescence/Rust Staining*	*SF*		*8*			*8*
1130	*Cracking (RC and Other)*	*SF*		*1,132*	*2*		*1,134*
RAILINGS							
330	Metal Bridge Railing	LF	35,017	116	35	0	35,166
1020	*Connection*	*LF*		*3*			*3*
1080	*Delamination/Spall/ Patched Area*	*LF*		*28*	*6*		*34*
1090	*Exposed Rebar*	*LF*			*6*		*6*
1120	*Efflorescence/Rust Staining*	*LF*			*21*		*21*
1130	*Cracking (RC and Other)*	*LF*		*72*			*72*
1900	*Distortion*	*LF*		*13*	*2*		*14*

ASB (1010) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
SUPERSTRUCTURE							
107	Steel Open Girder/Beam	LF	1,340	20	0	0	1,360
1000	*Corrosion*	*LF*		*20*			*20*
109	Prestressed Concrete Open Girder/Beam	LF	104,607	217	58	0	104,882
1080	*Delamination/Spall/ Patched Area*	*LF*		*112*	*12*		*119*
1090	*Exposed Rebar*	*LF*		*60*	*46*		*106*
1100	*Exposed Prestressing*	*LF*		*12*			*12*
1110	*Cracking (PSC)*	*LF*		*27*			*27*
1120	*Efflorescence/Rust Staining*	*LF*		*6*			*6*
811	Beam/Girder End	EA	3,684	141	43	0	3,868
1080	*Delamination/Spall/ Patched Area*	*EA*		*92*	*7*		*99*
1090	*Exposed Rebar*	*EA*		*41*	*35*		*76*
1100	*Exposed Prestressing*	*EA*		*3*			*3*
1110	*Cracking (PSC)*	*EA*		*4*	*1*		*5*
1120	*Efflorescence/Rust Staining*	*EA*		*1*			*1*
BEARINGS							
310	Elastomeric Bearing	EA	2,448	0	0	0	2,448
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	LF	89	0	0	0	89

ASB (1010) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
226	Prestressed Concrete Pile	EA	323	280	32	0	635
1080	*Delamination/Spall/ Patched Area*	*EA*		*76*	*20*		*96*
1090	*Exposed Rebar*	*EA*		*7*	*2*		*9*
1110	*Cracking (PSC)*	*EA*		*132*	*3*		*135*
1120	*Efflorescence/Rust Staining*	*EA*		*6*	*4*		*10*
1190	*Abrasion/Wear (PSC/RC)*	*EA*		*44*	*1*		*45*
6000	*Scour*	*EA*		*15*	*3*		*18*
234	Reinforced Concrete Pier Cap	LF	7,056	466	15	0	7,537
1080	*Delamination/Spall/ Patched Area*	*LF*		*17*	*14*		*31*
1090	*Exposed Rebar*	*LF*			*1*		*1*
1120	*Efflorescence/Rust Staining*	*LF*		*1*			*1*
1130	*Cracking (RC and Other)*	*LF*		*448*			*448*
824	Reinforced Concrete Wingwall	EA	2	0	0	0	2
JOINTS							
304	Open Expansion Joint	LF	3,888	44	0	0	3,932
2360	*Adjacent Deck or Header*	*LF*		*44*			*44*
845	Joint Effectiveness	EA	67	0	0	0	67
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	574,565	1,210	0	0	575,775
3210	*Delamination/Spall/ Patched Area/Pothole (Wearing Surface)*	*SF*		*1*			*1*
3220	*Crack (Wearing Surface)*	*SF*		*1,209*			*1,209*
SLOPE AND CHANNEL ELEMENTS							
853	Protected Slope - Riprap	EA	1	0	0	0	1

ASB (1010) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.3 Trestle BNB Element Level Data

Trestle BNB consists of Spans BNB 1/2-265. Spans 105-158 received a hands-on inspection this year (approximately 20% of the entire trestle). Element level data is presented in this section for all portions of the trestle that have a received hands-on inspection since FY2018. An underwater inspection was performed on the entire trestle in FY2020, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2024 Trestle BNB Element Level Form.

Table 53: BNB Element Level Data

BNB (1004) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	3,500	0	0	0	3,500
16	Reinforced Concrete Top Flange	SF	596,468	1,115	17	0	597,600
1080	*Delamination/Spall/ Patched Area*	*SF*		*22*	*3*		*25*
1090	*Exposed Rebar*	*SF*		*6*	*14*		*20*
1120	*Efflorescence/Rust Staining*	*SF*		*489*			*489*
1130	*Cracking (RC and Other)*	*SF*		*598*			*598*
38	Reinforced Concrete Slab	SF	1,174	15	5	0	1,194
1080	*Delamination/Spall/ Patched Area*	*SF*		*11*			*11*
1090	*Exposed Rebar*	*SF*			*4*		*4*
1120	*Efflorescence/Rust Staining*	*SF*		*4*	*1*		*5*
RAILINGS							
330	Metal Bridge Railing	LF	35,891	528	11	0	36,430
1000	*Corrosion*	*LF*		*60*			*60*
1020	*Connection*	*LF*		*18*	*2*		*20*
1080	*Delamination/Spall/ Patched Area*	*LF*		*4*	*9*		*13*
1130	*Cracking (RC and Other)*	*LF*		*473*			*473*
7000	*Damage*	*LF*		*33*			*33*

BNB (1004) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
SUPERSTRUCTURE							
109	Prestressed Concrete Open Girder/Beam	LF	140,276	4,780	722	22	145,800
1080	*Delamination/Spall/ Patched Area*	*LF*		*1,632*	*130*		*1,762*
1090	*Exposed Rebar*	*LF*		*25*	*63*		*88*
1100	*Exposed Prestressing*	*LF*		*10*	*432*	*22*	*464*
1110	*Cracking (PSC)*	*LF*		*3,112*	*4*		*3,116*
1120	*Efflorescence/Rust Staining*	*LF*		*1*	*93*		*94*
811	Beam/Girder End	EA	2,356	1,422	110	0	3,888
1080	*Delamination/Spall/ Patched Area*	*EA*		*44*	*28*		*72*
1090	*Exposed Rebar*	*EA*		*16*	*45*		*61*
1110	*Cracking (PSC)*	*EA*		*1,361*	*3*		*1,364*
1120	*Efflorescence/Rust Staining*	*EA*		*1*	*34*		*35*
BEARINGS							
310	Elastomeric Bearing	EA	3,562	38	288	0	3,888
1000	*Corrosion*	*EA*		*18*			*18*
2230	*Bulging, Splitting, or Tearing*	*EA*		*20*	*288*		*308*
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	EA	62	3	5	0	70
1080	*Delamination/Spall/ Patched Area*	*LF*		*2*			*2*
1090	*Exposed Rebar*	*LF*			*4*		*4*
1120	*Efflorescence/Rust Staining*	*LF*			1		*1*
1130	*Cracking (RC and Other)*	*LF*		*1*			*1*

BNB (1004) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
226	Prestressed Concrete Pile	EA	5	380	390	39	814
1080	*Delamination/Spall/ Patched Area*	*EA*		*17*	*14*		*31*
1090	*Exposed Rebar*	*EA*		*1*	*20*		*21*
1110	*Cracking (PSC)*	*EA*		*144*	*20*		*164*
1120	*Efflorescence/Rust Staining*	*EA*		*62*	*30*		*92*
1190	*Abrasion/Wear (PSC/RC)*	*EA*		*38*			*38*
6000	*Scour**	*EA*		*118*	*306*	*39*	*463*
234	Reinforced Concrete Pier Cap	LF	6,700	1,328	4	0	8,032
1080	*Delamination/Spall/ Patched Area*	*LF*		*27*	*1*		*28*
1090	*Exposed Rebar*	*LF*			*1*		*1*
1120	*Efflorescence/Rust Staining*	*LF*		*2*			*2*
1130	*Cracking (RC and Other)*	*LF*		*1,299*	*2*		*1,301*
JOINTS							
304	Open Expansion Joint	LF	8,572	0	0	0	8,572
845	Joint Effectiveness	EA	252	0	0	0	252
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	514,352	0	0	0	514,352
520	Concrete Reinforcing Steel Protective System	SF	2,533	745	12	45	3,335
3600	*Effectiveness - Protective System (e.g. cathodic)*	*SF*		*745*	*12*	*45*	*802*

BNB (1004) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
SLOPE AND CHANNEL ELEMENTS							
853	Protected Slope - Riprap	EA	1	0	0	0	1
6507	*Loss of Riprap*	*EA*	*1*				*1*
854	Channel	EA	0	0	0	1	1
6000	*Scour**	*EA*				*1*	*1*

*The condition state rating of 463 piles (approximately 57%) is governed by Scour, with 39 piles at Condition State 4 in accordance with the guidelines set at the beginning of this section. These guidelines were developed from historical engineering analysis performed for the facility and in accordance with the AASHTO Manual for Bridge Element Inspection, First Edition and the VDOT Supplement to the AASHTO Manual for Bridge Element Inspection (2016). The District has an on-going monitoring program that includes an annual hydrographic survey of the entire facility to monitor changes in the bay bottom. The District also has an ongoing program for scour remediation that targets locations along the facility in which the bay bottom elevation has dropped below the Allowable Scour Depth (ASD) that has resulted in stabilization of the bay bottom where installed. The District will use the results of the additional engineering analysis to identify where additional scour remediation will have the greatest immediate impact and proceed accordingly.

5.4 Trestle BSB Element Level Data

Trestle BSB consists of Spans BSB 1-203. Spans 101-142 received a hands-on inspection this year (approximately 20% of the entire trestle). Element level data is presented in this section for all portions of the trestle that have a received hands-on inspection since FY2018. An underwater inspection was performed on the entire trestle in FY2022, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2024 Trestle BSB Element Level Form.

Table 54: BSB Element Level Data

BSB (1012) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	8,907	0	0	0	8,907
16	Reinforced Concrete Top Flange	SF	781,944	998	59	0	783,001
1080	*Delamination/Spall/ Patched Area*	*SF*		*44*	*34*		*78*
1090	*Exposed Rebar*	*SF*		*5*	*7*		*12*
1120	*Efflorescence/Rust Staining*	*SF*		*256*	*18*		*274*
1130	*Cracking (RC and Other)*	*SF*		*693*			*693*
RAILINGS							
330	Metal Bridge Railing	LF	39,345	74	8	0	39,427
1080	*Delamination/Spall/ Patched Area*	*LF*		*8*	*5*		*13*
1090	*Exposed Rebar*	*LF*			*3*		*3*
1130	*Cracking (RC and Other)*	*LF*		*60*			*60*
7000	*Damage*	*LF*		*6*			*6*
SUPERSTRUCTURE							
107	Steel Beam/Girder	LF	1,322	460			1,782
1000	*Corrosion*	LF		460			460
109	Prestressed Concrete Open Girder/Beam	LF	119,826	422	89	0	120,337
1080	*Delamination/Spall/ Patched Area*	*LF*		*208*	*23*		*231*
1090	*Exposed Rebar*	*LF*		*80*	*65*		*145*
1100	*Exposed Prestressing*	*LF*		*27*			*27*

BSB (1012) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
1110	*Cracking (PSC)*	*LF*		*103*	*1*		*104*
1120	*Efflorescence/Rust Staining*	*LF*		*4*			*4*
811	Beam/Girder End	EA	2,176	236	62	0	2,474
1080	*Delamination/Spall/ Patched Area*	*EA*		*144*	*17*		*161*
1090	*Exposed Rebar*	*EA*		*37*	*38*		*75*
1100	*Exposed Prestressing*	*EA*		*1*	*6*		*7*
1110	*Cracking (PSC)*	*EA*		*53*	*1*		*54*
1120	*Efflorescence/Rust Staining*	*EA*		*1*			*1*
BEARINGS							
310	Elastomeric Bearing	EA	2,473	0	1	0	2,474
2230	*Bulging, Splitting, or Tearing*	*EA*			*1*		*1*
SUBSTRUCTURE							
226	Prestressed Concrete Pile	EA	320	287	26	0	633
1080	*Delamination/Spall/ Patched Area*	*EA*		*3*	*2*		*5*
1090	*Exposed Rebar*	*EA*		*9*	*6*		*15*
1110	*Cracking (PSC)*	*EA*		*268*	*6*		*274*
1120	*Efflorescence/Rust Staining*	*EA*		*6*	*12*		*18*
1190	*Abrasion/Wear (PSC/RC)*	*EA*		*1*			*1*
234	Reinforced Concrete Pier Cap	LF	7,640	496	7	0	8,143
1080	*Delamination/Spall/ Patched Area*	*LF*		*13*	*1*		*14*
1090	*Exposed Rebar*	*LF*		*4*	*6*		*6*
1120	*Efflorescence/Rust Staining*	*LF*		*2*			*2*

BSB (1012) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
1130	*Cracking (RC and Other)*	*LF*		*477*			*477*
JOINTS							
304	Open Expansion Joint	LF	2,720	0	0	0	2,720
845	Joint Effectiveness	EA	68	0	0	0	68
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	673,379	0	686	0	674,065
3220	*Crack (Wearing Surface)*	*SF*			*686*		*686*
515	Steel Protective Coating	SF	13,870	4,624	0	0	18,494
3440	*Effectiveness (Steel Protective Coating)*	*SF*		4,624			*4,624*
SLOPE AND CHANNEL ELEMENTS							
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.5 Trestle CNB Element Level Data

Trestle CNB consists of Spans CNB 1-322. Spans 67-131 received a hands-on inspection this year (approximately 20% of the entire trestle). Element level data is presented in this section for all portions of the trestle that have a received hands-on inspection since FY2018. An underwater inspection was performed on the entire trestle in FY2021, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2024 Trestle CNB Element Level Form.

Table 55: CNB Element Level Data

CNB (1009) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
16	Reinforced Concrete Top Flange	SF	734,666	3,182	502	0	738,350
1080	*Delamination/Spall/ Patched Area*	*SF*		*8*	*75*		*83*
1090	*Exposed Rebar*	*SF*		*1*	*3*		*4*
1120	*Efflorescence/Rust Staining*	*SF*		*396*	*400*		*796*
1130	*Cracking (RC and Other)*	*SF*		*2,777*	*24*		*2,801*
38	Reinforced Concrete Slab	SF	1,194	0	0	0	1,194
RAILINGS							
330	Metal Bridge Railing	LF	42,961	505	32	0	43,498
1020	*Connection*	*LF*		*19*			*19*
1080	*Delamination/Spall/ Patched Area*	*LF*		*31*	*14*		*45*
1090	*Exposed Rebar*	*LF*		*5*	*9*		*14*
1130	*Cracking (RC and Other)*	*LF*		*415*			*415*
7000	*Damage*	*LF*		*35*	*9*		*44*

CNB (1009) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
SUPERSTRUCTURE							
109	Prestressed Concrete Open Girder/Beam	LF	167,732	6,481	981	0	175,194
1080	*Delamination/Spall/ Patched Area*	*LF*		*4,418*	*584*		*4,502*
1090	*Exposed Rebar*	*LF*		*25*	*88*		*113*
1100	*Exposed Prestressing*	*LF*		*27*	*198*		*225*
1110	*Cracking (PSC)*	*LF*		*1,981*	*11*		*1,992*
1120	*Efflorescence/Rust Staining*	*LF*		*30*	*100*		*130*
811	Beam/Girder End	EA	3,324	1,069	263	0	4,656
1080	*Delamination/Spall/ Patched Area*	*EA*		*89*	*148*		*237*
1090	*Exposed Rebar*	*EA*		*7*	*51*		*58*
1100	*Exposed Prestressing*	*EA*		*2*	*3*		*5*
1110	*Cracking (PSC)*	*EA*		*950*	*4*		*954*
1120	*Efflorescence/Rust Staining*	*EA*		*21*	*57*		*78*
BEARINGS							
310	Elastomeric Bearing	EA	4,119	32	505	0	4,656
1000	*Corrosion*	*EA*		*16*			*16*
2220	*Alignment*	*EA*		*5*			*5*
2230	*Bulging, Splitting, or Tearing*	*EA*		*11*	*505*		*516*
311	Movable Bearing	EA	0	*8*	0	0	8
1000	*Corrosion*	*EA*		*8*			*8*

CNB (1009) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
SUBSTRUCTURE							
226	Prestressed Concrete Pile	EA	0	687	297	0	984
1080	*Delamination/Spall/ Patched Area*	*EA*		*37*	*73*		*110*
1090	*Exposed Rebar*	*EA*		*6*	*15*		*21*
1100	*Exposed Prestressing*	*EA*			*3*		*3*
1110	*Cracking (PSC)*	*EA*		*204*	*15*		*219*
1120	*Efflorescence/Rust Staining*	*EA*		*94*	*98*		*192*
1190	*Abrasion/Wear (PSC/RC)*	*EA*		*78*			*78*
6000	*Scour*	*EA*		*268*	*93*		*361*
234	Reinforced Concrete Pier Cap	LF	8,248	2,391	22	0	10,661
1080	*Delamination/Spall/ Patched Area*	*LF*		*1*	*14*		*15*
1120	*Efflorescence/Rust Staining*	*LF*		*4*	*3*		*7*
1130	*Cracking (RC and Other)*	*LF*		*2,386*	*5*		*2,391*
JOINTS							
304	Open Expansion Joint	LF	10,168	0	0	0	10,168
845	Joint Effectiveness	EA	302	0	0	0	302
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	613,988	10	3	0	614,001
3230	*Effectiveness (Wearing Surface)*	*SF*		*10*	*3*		*13*
520	Concrete Reinforcing Steel Protective System	SF	1,979	0	0	0	1,979
SLOPE AND CHANNEL ELEMENTS							
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.6 Trestle CSB Element Level Data

Trestle CSB consists of Spans CSB 1-246. Spans 97-154 received a hands-on inspection this year (approximately 23% of the entire facility). Element level data is presented in this section for all portions of the trestle that have received hands-on inspection since FY2018. An underwater inspection was performed on the entire trestle in FY2018, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2024 Trestle CSB Element Level Form.

Table 56: CSB Element Level Data

CSB (1014) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	41,123	435	0	0	41,558
1120	*Efflorescence/Rust Staining*	*SF*		*435*			*435*
16	Reinforced Concrete Top Flange	SF	898,615	273	18	0	898,906
1080	*Delamination/Spall/ Patched Area*	*SF*		*45*	*12*		*57*
1090	*Exposed Rebar*	*SF*		*3*			*3*
1120	*Efflorescence/Rust Staining*	*SF*		*6*	*6*		*12*
1130	*Cracking (RC and Other)*	*SF*		*219*			*219*
RAILINGS							
330	Metal Bridge Railing	LF	46,642	181	50	0	46,873
1020	*Connection*	*LF*		*62*	*1*		*63*
1080	*Delamination/Spall/ Patched Area*	*LF*		*33*	*19*		*52*
1090	*Exposed Rebar*	*LF*		*1*	*30*		*31*
1130	*Cracking (RC and Other)*	*LF*		*79*			*79*
7000	*Damage*	*LF*		*6*			*6*
SUPERSTRUCTURE							
107	Steel Open Girder/Beam	LF	493	419	0	0	912
1000	*Corrosion*	*LF*		*419*			*419*

CSB (1014) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
109	Prestressed Concrete Open Girder/Beam	LF	141,631	796	182	0	142,609
1080	*Delamination/Spall/ Patched Area*	*LF*		*376*	*71*		*446*
1090	*Exposed Rebar*	*LF*		*116*	*95*		*207*
1100	*Exposed Prestressing*	*LF*		*44*	*2*		*46*
1110	*Cracking (PSC)*	*LF*		*158*			*158*
1120	*Efflorescence/Rust Staining*	*LF*		*102*	*13*		*115*
811	Beam/Girder End	EA	2,462	338	62	0	2,862
1000	*Corrosion*	*LF*		*16*			*16*
1080	*Delamination/Spall/ Patched Area*	*EA*		*253*	*20*		*273*
1090	*Exposed Rebar*	*EA*		*55*	*41*		*96*
1100	*Exposed Prestressing*	*EA*		*9*	*1*		*10*
1110	*Cracking (PSC)*	*EA*		*21*			*21*
1120	*Efflorescence/Rust Staining*	*EA*		*3*	*7*		*10*
BEARINGS							
310	Elastomeric Bearing	EA	2,847	14	1	0	2,862
1000	*Corrosion*	*EA*		*14*			*14*
2230	*Bulging, Splitting, or Tearing*	*EA*			*1*		*1*
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	LF	40	0	0	0	40
226	Prestressed Concrete Pile	EA	308	350	79	15	752
1080	*Delamination/Spall/ Patched Area*	*EA*		*41*	*18*		*58*
1090	*Exposed Rebar*	*EA*			*2*		*2*
1110	*Cracking (PSC)*	*EA*		*179*			*179*
1120	*Efflorescence/Rust Staining*	*EA*		*4*	*12*		*16*
1190	*Abrasion/Wear (PSC/RC)*	*EA*		*26*			*26*
6000	*Scour*	*EA*		*100*	*47*	*15*	*162*

CSB (1014) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
234	Reinforced Concrete Pier Cap	LF	8,634	687	7	0	9,328
1080	*Delamination/Spall/ Patched Area*	*LF*		*12*	*4*		*16*
1090	*Exposed Rebar*	*LF*			*1*		*1*
1120	*Efflorescence/Rust Staining*	*LF*		*28*	*2*		*30*
1130	*Cracking (RC and Other)*	*LF*		*647*			*647*
824	Reinforced Concrete Wingwall	EA	2	0	0	0	2
JOINTS							
304	Open Expansion Joint	LF	2,680	0	0	0	2,680
845	Joint Effectiveness	EA	67	0	0	0	67
APPROACH SLABS							
321	Reinforced Concrete Approach Slab	SF	771	0	0	0	771
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	643,528	0	0	0	643,528
515	Steel Protective Coating	SF	8,994	419	0	10	9,423
3420	*Peeling/Bubbling/ Cracking (Steel Protective Coatings)*	*SF*		*419*			*419*
SLOPE AND CHANNEL ELEMENTS							
853	Protected Slope - Riprap	EA	1	0	0	0	1
6507	*Loss of Riprap*	*EA*	*1*				*1*
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.7 NCB-NB Element Level Data

NCB-NB consists of Spans 1-17. The entire structure received a routine and fracture critical inspection this year. Element level data is presented in this section. An underwater inspection was performed on the entire trestle in FY2022, and element level data has been provided for all piles that were inspected in this section. Condition State values are based on the FY2024 Trestle NCB-NB Element Level Form.

Table 57: NCB-NB Element Level Data

NCB-NB (1006) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	109,562	6,749	16	0	116,327
1080	*Delamination/Spall/ Patched Area*	*SF*			*2*		*2*
1130	*Cracking (RC and Other)*	*SF*		*6,747*	*14*		*6,761*
1190	*Abrasion/Wear (PSC/RC)*	*SF*		*2*			*2*
RAILINGS							
330	Metal Bridge Railing	LF	7,582	1	3	0	7,587
1080	*Delamination/Spall/ Patched Area*	*LF*		*2*			*2*
7000	*Damage*	*LF*			*3*		*3*
SUPERSTRUCTURE							
107	Steel Open Girder/Beam	LF	1,411	5,362	158	0	6,931
1000	*Corrosion*	*LF*		*5,360*	*157*		*5,517*
1020	*Connection*	*LF*		*2*	*1*		*3*
113	Steel Stringer	LF	13,944	4,461	494	0	18,899
1000	*Corrosion*	*LF*		4,467	494		4,961
120	Steel Truss	LF	123	527	5	0	655
1000	*Corrosion*	*LF*		527	5		532
152	Steel Floor Beam	LF	2,780	1,626	510	0	4,916
1000	*Corrosion*	*LF*		*1,245*	*503*		*1,862*
1010	*Cracking*	*LF*		*353*	*1*		*365*
1020	*Connection*	*LF*		*28*	*6*		*34*
162	Gusset Plate	EA	30	10	0	0	40

NCB-NB (1006) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
1000	*Corrosion*	*EA*		10			10
811	Beam/Girder End	EA	7	48	11	0	66
1000	*Corrosion*	*EA*		*48*	*11*		*59*
BEARINGS							
311	Movable Bearing	EA	0	34	0	0	34
1000	*Corrosion*	*EA*		*34*			*34*
313	Fixed Bearing	EA	0	10	0	0	10
1000	*Corrosion*	*EA*		*10*			*10*
SUBSTRUCTURE							
205	Reinforced Concrete Column	EA	16	19	1	0	36
1080	*Delamination/Spall/ Patched Area*	*EA*			*1*		*1*
1120	*Efflorescence/Rust Staining*	*EA*		*6*			*6*
1130	*Cracking (RC and Other)*	*EA*		*13*			*13*
226	Prestressed Concrete Pile	EA	2	4	30		36
1080	Delamination/Spall/ Patched Area	EA		3	6		9
1120	Efflorescence/Rust Staining	EA		1	7		8
1130	Cracking (RC and Other)	EA			17		17
234	Reinforced Concrete Pier Cap	LF	48	8	0	0	56
1130	*Cracking (RC and Other)*	*LF*		*8*			*8*
JOINTS							
305	Assembly Joint without Seal	LF	144	24	0	0	168
2370	*Metal Deterioration or Damage*	*LF*		*24*			*24*

NCB-NB (1006) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
845	Joint Effectiveness	EA	6	0	0	0	6
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
515	Steel Protective Coating	SF	369,229	292	0	27,813	397,334
3420	*Peeling/Bubbling/ Cracking (Steel Protective Coatings)*	*SF*		*292*			*292*
3440	*Effectiveness (Steel Protective Coatings)*	*SF*				*27,813*	*27,813*
886	Beam/Girder End Protective Coating - Steel	EA	7	48	11	0	66
3440	*Effectiveness (Steel Protective Coatings)*	*EA*		*48*	*11*		*59*
SLOPE AND CHANNEL ELEMENTS							
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.8 NCB-SB Element Level Data

A hands-on inspection was performed in FY2023, and element level data is presented in this section. An underwater inspection was performed on the entire trestle in FY2020, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2023 Trestle NCB-SB Element Level Form.

Table 58: NCB-SB Element Level Data

NCB-SB (1015) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	90,867	33,133	0	0	124,000
1080	*Delamination/Spall/ Patched Area*	*SF*		*17*			*17*
1130	*Cracking (RC and Other)*	*SF*		*33,116*			*33,116*
RAILINGS							
330	Metal Bridge Railing	LF	6,176	7	17	0	6,200
1080	*Delamination/Spall/ Patched Area*	*LF*		*2*			*2*
1130	*Cracking (RC and Other)*	*LF*		*5*			*5*
7000	*Damage*	*LF*			*17*		*17*
SUPERSTRUCTURE							
107	Steel Open Girder/Beam	LF	11,204	1,194	2	0	12,400
1000	*Corrosion*	*EA*		*1,194*	*2*		*1,196*
811	Steel Open Beam/Girder End	EA	0	32	0	0	32
1000	*Corrosion*	*EA*		*32*			*32*
BEARINGS							
311	Movable Bearing	EA	0	32	0	0	32
1000	*Corrosion*	*EA*		*32*			*32*
313	Fixed Bearing	EA	10	30	0	0	40
1000	*Corrosion*	*EA*		*30*			*30*
SUBSTRUCTURE							
205	Reinforced Concrete Column	EA	8	20	2	0	30

NCB-SB (1015) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
1080	*Delamination/Spall/ Patched Area*	*EA*		*2*	*1*		*3*
1120	*Efflorescence/Rust Staining*	*EA*			*1*		*1*
1130	*Cracking (RC and Other)*	*EA*		*18*			*18*
220	Reinforced Concrete Pile Cap/Footing	LF	435	3	446	0	884
1080	*Delamination/Spall/ Patched Area*	*LF*			*430*		*430*
1120	*Efflorescence/Rust Staining*	*LF*			*16*		*16*
1130	*Cracking (RC and Other)*	*LF*		*3*			*3*
226	Prestressed Concrete Pile	EA	133	54	32	0	219
6000	*Scour*	*EA*		54	32	0	86
234	Reinforced Concrete Pier Cap	LF	411	129	0	0	540
1080	*Delamination/Spall/ Patched Area*	*LF*		*2*			*2*
1120	*Efflorescence/Rust Staining*	*LF*		*23*			*23*
1130	*Cracking (RC and Other)*	*LF*		*104*			*104*
JOINTS							
305	Assembly Joint without Seal	LF	200	0	0	0	200
845	Joint Effectiveness	EA	5	0	0	0	5
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
515	Steel Protective Coating	SF	295,198	4,462	0	10	299,670
3420	*Peeling/Bubbling/ Cracking (Steel Protective Coatings)*	*SF*		*4,461*			*4,461*
3440	*Effectiveness (Steel Protective Coatings)*	*SF*		*1*		*10*	*11*

NCB-SB (1015) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
886	Beam/Girder End Protective Coating - Steel	EA	0	32	0	0	32
SLOPE AND CHANNEL ELEMENTS							
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.9 Trestle DNB Element Level Data

A hands-on inspection was performed in FY2023, and element level data is presented in this section. Condition State values are based on the FY2023 Trestle DNB Element Level Form.

Table 59: DNB Element Level Data

DNB (1008) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
DECKS AND SLABS							
16	Reinforced Concrete Top Flange	SF	41,551	116	5	0	41,672
1080	*Delamination/Spall/ Patched Area*	*SF*		*3*	*2*		*5*
1090	*Exposed Rebar*	*SF*			*1*		*1*
1120	*Efflorescence/Rust Staining*	*SF*		*107*	*2*		*109*
1130	*Cracking (RC and Other)*	*SF*		*6*			*6*
RAILINGS							
330	Metal Bridge Railing	LF	2,489	62	0	0	2,551
1130	*Cracking (RC and Other)*	*LF*		*37*			*37*
7000	*Damage*	*LF*		*25*			*25*
SUPERSTRUCTURE							
109	Prestressed Concrete Open Girder/Beam	LF	9,916	209	79	0	10,204
1080	*Delamination/Spall/ Patched Area*	*LF*		*25*	*5*		*30*
1090	*Exposed Rebar*	*LF*		*4*	*15*		*19*
1100	*Exposed Prestressing*	*LF*		*4*	*49*		*53*
1110	*Cracking (PSC)*	*LF*		*173*			*173*
1120	*Efflorescence/Rust Staining*	*LF*		*3*	*10*		*13*
811	Beam/Girder End	EA	195	87	6	0	288
1080	*Delamination/Spall/ Patched Area*	*EA*		*2*			*2*
1090	*Exposed Rebar*	*EA*		*2*	*1*		*3*
1110	*Cracking (PSC)*	*EA*		*81*			*81*

DNB (1008) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
1120	*Efflorescence/Rust Staining*	*EA*		*2*	*5*		*7*
BEARINGS							
310	Elastomeric Bearing	EA	272	3	5		280
2230	*Bulging, Splitting, or Tearing*	*EA*		*3*	*5*		*8*
311	Movable Bearing	EA		8			8
1000	*Corrosion*	*EA*		*8*			*8*
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	LF	31	2	0	0	33
1130	*Cracking (RC and Other)*	*LF*		2			2
226	Prestressed Concrete Pile	EA	0	37	14	0	51
1080	*Delamination/Spall/ Patched Area*	*EA*			*4*		*4*
1090	*Exposed Rebar*	*EA*			*7*		*7*
1110	*Cracking (PSC)*	*EA*		*34*	*1*		*35*
1120	*Efflorescence/Rust Staining*	*EA*		*2*	*2*		*4*
1190	*Abrasion/Wear (PSC/RC)*	*EA*		*1*			*1*
234	Reinforced Concrete Pier Cap	LF	560	37	0	0	597
1130	*Cracking (RC and Other)*	*LF*		*37*			*37*
824	Reinforced Concrete Wingwall	EA	2	0	0	0	2
JOINTS							
304	Open Expansion Joint	LF	588	0	0	0	588
2360	*Adjacent Deck or Header*	*LF*	*588*				*588*
845	Joint Effectiveness	EA	18				18
APPROACH SLABS							
321	Reinforced Concrete Approach Slab	SF	672	0	0	0	672

DNB (1008) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	35,715	0	0	0	35,715
SLOPE AND CHANNEL ELEMENTS							
853	Protected Slope Riprap	EA	1				1
854	Channel	EA		1			1
6000	*Scour*	*EA*		*1*			*1*

5.10 Trestle DSB Element Level Data

A hands-on inspection was performed in FY2023, and element level data is presented in this section. An underwater inspection was performed on the entire trestle in FY2020, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2023 Trestle DSB Element Level Form.

Table 60: DSB Element Level Data

DSB (1016) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	76,275	7,256	0	0	83,531
1120	*Efflorescence/Rust Staining*	*SF*		*6*			*6*
1130	*Cracking (RC and Other)*	*SF*		*7,250*			*7,250*
RAILINGS							
330	Metal Bridge Railing	LF	4,166	11	0	0	4,177
1080	*Delamination/Spall/ Patched Area*	*LF*		*7*			*7*
1130	*Cracking (RC and Other)*	*LF*		*4*			*4*
SUPERSTRUCTURE							
109	Prestressed Concrete Open Girder/Beam	LF	10,345	70	26	0	10,441
1080	*Delamination/Spall/ Patched Area*	*LF*		*33*	*26*		*59*
1090	*Exposed Rebar*	*LF*		*19*			*19*
1110	*Cracking (PSC)*	*LF*		*18*			*18*
811	Beam/Girder End	EA	119	65	26	0	210
1080	*Delamination/Spall/ Patched Area*	*EA*		*29*	*26*		*55*
1090	*Exposed Rebar*	*EA*		*18*			*18*
1110	*Cracking (PSC)*	*EA*		*18*			*18*
BEARINGS							
310	Elastomeric Bearing	EA	210	0	0	0	210
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	LF	40	0	0	0	40

DSB (1016) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
226	Prestressed Concrete Pile	EA	5	36	19	0	60
1080	*Delamination/Spall/ Patched Area*	*EA*		*4*	*3*		*7*
1090	*Exposed Rebar*	*EA*		*7*	*1*		*8*
1110	*Cracking (PSC)*	*EA*		*23*			*23*
1120	*Efflorescence/Rust Staining*	*EA*			*1*		*1*
6000	*Scour*	*EA*		*2*	*14*		*16*
234	Reinforced Concrete Pier Cap	LF	640	135	0	0	775
1080	*Delamination/Spall/ Patched Area*	*LF*		*1*			*1*
1120	*Efflorescence/Rust Staining*	*LF*		*1*			*1*
1130	*Cracking (RC and Other)*	*LF*		*133*			*133*
824	Reinforced Concrete Wingwall	EA	2	0	0	0	2
JOINTS							
304	Open Expansion Joint	LF	280	0	0	0	280
845	Joint Effectiveness	EA	7	0	0	0	7
SLOPE AND CHANNEL ELEMENTS							
854	Channel	EA	0	1	0	0	1
6000	*Scour*	*EA*		*1*			*1*

5.11 Trestle ENB, FIB-NB, & FNB Element Level Data

A hands-on inspection was performed in FY2023, and element level data is presented in this section. An underwater inspection was performed on the entire trestle in FY2020, and element level data has been provided for all piles that were inspected along the trestle. Condition State values are based on the FY2023 Trestle ENB, FIB-NB & FNB Element Level Form.

Table 61: ENB, FIB-NB, & FNB Element Level Data

ENB, FIB-NB, and FNB (1017) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	17,540	860	0	0	18,400
1130	*Cracking (RC and Other)*	*SF*		*860*			*860*
16	Reinforced Concrete Top Flange	SF	65,644	45	4	0	65,693
1080	*Delamination/Spall/ Patched Area*	*SF*		*12*	*4*		*16*
1090	*Exposed Rebar*	*LF*		*2*			*2*
1130	*Cracking (RC and Other)*	*SF*		*31*			*31*
RAILINGS							
330	Metal Bridge Railing	LF	4,185	15	5	0	4,205
1080	*Delamination/Spall/ Patched Area*	*LF*		*2*	*1*		*3*
1090	*Exposed Rebar*	*LF*			*4*		*4*
1130	*Cracking (RC and Other)*	*LF*		*7*			*7*
7000	*Damage*	*LF*		*6*			*6*
SUPERSTRUCTURE							
107	Steel Open Girder/Beam	LF	1,656	180	0	0	1,836
1000	*Corrosion*	*LF*		*180*			*180*
811	Steel Open Beam/Girder End	EA	0	8	0	0	8
1000	*Corrosion*	*EA*		*8*			8

ENB, FIB-NB, and FNB (1017) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
109	Prestressed Concrete Open Girder/Beam	LF	9,787	64	3	0	9,854
1080	*Delamination/Spall/ Patched Area*	*LF*		*50*	*2*		*52*
1090	*Exposed Rebar*	*LF*		*12*	*1*		*13*
1100	*Exposed Prestressing*	*LF*		*1*			*1*
1110	*Cracking (PSC)*	*LF*		*1*			*1*
811	Beam/Girder End	EA	25	45	2	0	72
1080	*Delamination/Spall/ Patched Area*	*EA*		*39*	*2*		*41*
1090	*Exposed Rebar*	*EA*		*5*			*5*
1110	*Cracking (PSC)*	*EA*		*1*			*1*
BEARINGS							
310	Elastomeric Bearing	EA	204	0	0	0	204
311	Movable Bearing	EA	0	8	0	0	8
1000	*Corrosion*	*EA*		*8*			*8*
313	Fixed Bearing	EA	0	8	0	0	8
1000	*Corrosion*	*EA*		*8*			*8*
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	LF	80	0	0	0	80
226	Prestressed Concrete Pile	EA	2	58	5	0	65
1080	*Delamination/Spall/ Patched Area*	*EA*		*1*	*2*		*3*
1090	*Exposed Rebar*	*EA*		*2*			*2*
1110	*Cracking (PSC)*	*EA*		*52*			*52*
1120	*Efflorescence*	*EA*		*2*	*3*		*5*
1190	*Abrasion/Wear*	*EA*		*1*			*1*
234	Reinforced Concrete Pier Cap	LF	686	45	1	0	732
1080	*Delamination/Spall/ Patched Area*	*LF*			*1*		*1*
1130	*Cracking (RC and Other)*	*LF*		*45*			*45*

ENB, FIB-NB, and FNB (1017) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
824	Reinforced Concrete Wingwall	EA	4	0	0	0	4
JOINTS							
304	Open Expansion Joint	LF	320	0	0	0	320
305	Assembly Joint without Seal	LF	80	0	0	0	80
845	Joint Effectiveness	EA	10	0	0	0	10
APPROACH SLABS							
321	Reinforced Concrete Approach Slab	SF	1,440	0	0	0	1,440
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	59,124	0	0	0	59,124
515	Steel Protective Coating	SF	30,699	101	0	0	30,800
3440	*Effectiveness (Steel Protective Coatings)*	*SF*		*101*			*101*
886	Beam/Girder End Protective Coating - Steel	EA	0	8	0	0	8
3440	*Effectiveness (Steel Protective Coatings)*	*EA*		*8*			*8*
SLOPE AND CHANNEL ELEMENTS							
853	Protected Slope Riprap	EA	2	0	0	0	2
854	Channel	EA	0	1	0	0	1

5.12 Trestle ESB, FIB-SB, & FSB Element Level Data

A hands-on inspection was performed in FY2023 and an underwater inspection was performed in FY2022, and element level data is presented in this section. Condition State values are based on the FY2023 Trestle ESB, FIB-SB & FSB Element Level Form.

Table 62: ESB, FIB-SB, & FSB Element Level Data

ESB, FIB-SB, and FSB (1007) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
DECKS AND SLABS							
12	Reinforced Concrete Deck	SF	13,871	992	0	0	14,863
1130	*Cracking (RC and Other)*	*SF*		*992*			*992*
16	Reinforced Concrete Top Flange	SF	53,830	101	17	0	53,948
1080	*Delamination/Spall/ Patched Area*	*SF*		*5*			*5*
1090	*Exposed Rebar*	*SF*			*2*		*2*
1120	*Efflorescence/Rust Staining*	*SF*		*82*	*15*		*97*
1130	*Cracking (RC and Other)*	*SF*		*14*			*14*
RAILINGS							
330	Metal Bridge Railing	LF	4,139	73	1	0	4,213
1080	*Delamination/Spall/ Patched Area*	*LF*		*8*	*1*		*9*
1130	*Cracking (RC and Other)*	*LF*		*62*			*62*
7000	*Damage*	*LF*		*3*			*3*
SUPERSTRUCTURE							
107	Steel Open Girder/Beam	LF	0	1,817	3	0	1,820
1000	*Corrosion*	*LF*		*1,813*	*3*		*1,816*
1900	*Distortion*	*LF*		*4*			*4*
811	Steel Open Beam/Girder End	EA	0	8	0	0	8
1000	*Corrosion*	*EA*		8			8
109	Prestressed Concrete Open Girder/Beam	LF	12,717	428	67	0	13,212

ESB, FIB-SB, and FSB (1007) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
1080	*Delamination/Spall/ Patched Area*	*LF*		*151*	*28*		*179*
1090	*Exposed Rebar*	*LF*		*2*	*2*		*4*
1100	*Exposed Prestressing*	*LF*		*2*	*32*		*34*
1110	*Cracking (PSC)*	*LF*		*271*	*4*		*275*
1120	*Efflorescence/Rust Staining*	*LF*		*2*	*1*		*3*
811	Prestressed Concrete Beam/Girder End	EA	203	145	4	0	352
1080	*Delamination/Spall/ Patched Area*	*EA*		2			2
1090	*Exposed Rebar*	*EA*		*1*	*1*		*2*
1100	*Exposed Prestressing*	*EA*			*1*		*1*
1110	*Cracking (PSC)*	*EA*		*140*	*2*		*142*
1120	*Efflorescence/Rust Staining*	*EA*		*2*			*2*
BEARINGS							
310	Elastomeric Bearing	EA	332	20	0	0	352
2230	*Bulging, Splitting, or Tearing*	*EA*		*20*			*20*
311	Movable Bearing	EA	0	12	0	0	12
1000	*Corrosion*	*EA*		*12*			*12*
313	Fixed Bearing	EA	0	4	0	0	4
1000	*Corrosion*	*EA*		*4*			*4*
SUBSTRUCTURE							
215	Reinforced Concrete Abutment	LF	62	3	0	0	65
1130	*Cracking (RC and Other)*	*LF*		*3*			*3*
226	Prestressed Concrete Pile	EA	3	70	13	0	86
1080	*Delamination/Spall/ Patched Area*	*EA*		*2*	*1*		*3*
1090	*Exposed Rebar*	*EA*		*8*	*4*		*12*
1110	*Cracking (PSC)*	*EA*		*59*	*2*		*61*

ESB, FIB-SB, and FSB (1007) Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
1120	*Efflorescence/Rust Staining*	*EA*		*1*	*6*		*7*
234	Reinforced Concrete Pier Cap	LF	556	239	1	0	796
1080	*Delamination/Spall/ Patched Area*	*LF*		*1*			*1*
1120	*Efflorescence/Rust Staining*	*LF*		*7*	*1*		*8*
1130	*Cracking (RC and Other)*	*LF*		*231*			*231*
824	Reinforced Concrete Wingwall	EA	4	0	0	0	4
JOINTS							
304	Open Expansion Joint	LF	689	30	0	0	719
2360	*Adjacent Deck or Header*	*LF*		*30*			*30*
305	Assembly Joint without Seal	LF	57	8	0	0	65
2370	*Metal Deterioration or Damage*	*LF*		*8*			*8*
845	Joint Effectiveness	EA	24	0	0	0	24
APPROACH SLABS							
321	Reinforced Concrete Approach Slab	SF	1,344	0	0	0	1,344
WEARING SURFACES, PROTECTIVE COATINGS, AND CONCRETE REINFORCING STEEL PROTECTIVE SYSTEMS							
510	Wearing Surfaces	SF	45,691	550	0	0	46,241
3220	*Crack (Wearing Surface)*	*SF*		*259*			*259*
3230	*Effectiveness (Wearing Surface)*	*SF*		*291*			*291*
515	Steel Protective Coating	SF	26,344	6,193	0	0	32,537
3440	*Effectiveness (Steel Protective Coatings)*	*SF*		*6,193*			*6,193*
520	Concrete Reinforcing Steel Protective System	SF	5,524	0	0	63	5,587

ESB, FIB-SB, and FSB (1007) Element Level Data							
Element Number	**Element Name**	**Unit**	**Condition State 1**	**Condition State 2**	**Condition State 3**	**Condition State 4**	**Total**
3540	*Effectiveness (Concrete Protective Coatings)*	*SF*				*63*	*63*
521	Concrete Protective Coating	SF	112	63	0	0	175
886	Beam/Girder End Protective Coating - Steel	EA	0	8	0	0	8
3440	*Effectiveness (Steel Protective Coatings)*	*EA*		*8*			*8*
SLOPE AND CHANNEL ELEMENTS							
853	Protected Slope Riprap	EA	2	0	0	0	2
854	Channel	EA	1	0	0	0	1

6. Tunnel Inventory Items

The tables provided in this section reflect the current tunnel inventory data coded per the Specifications for the National Tunnel Inventory (SNTI) at the time of this inspection.

6.1 TSCT Inventory Items

Table 63: TSCT Identification Items

TSCT Identification Items			
I.1	Tunnel Number	CBBT0000000001R	AN15
I.2	Tunnel Name	Thimble Shoal Tunnel	AN100
I.3	State Code	51	N (2,0)
I.4	County Code	131	N (3,0)
I.5	Place Code	12808	N (5,0)
I.6	Highway Agency District	HR	AN2
I.7	Route Number	00013	AN5
I.8	Route Direction	0	N (1,0)
I.9	Route Type	2	N (1,0)
I.10	Facility Carried	US13	AN100
I.11	LRS Route ID	000000001300	AN120
I.12	LRS Mile Point	43.059	N (8,3)
I.13	Tunnel Portal's Latitude	00000000036.96619400	N (11,8)
I.14	Tunnel Portal's Longitude	00000000076.11261100	N (11,8)
I.15	Border Tunnel State or Country Code		AN2
I.16	Border Tunnel Financial Responsibility		N (3,0)
I.17	Border Tunnel Number		AN15
I.18	Border Tunnel Inspection Responsibility		N (1,0)

Table 64: TSCT Age and Service Items

TSCT Age and Service Items			
A.1	Year Built	1964	N (4,0)
A.2	Year Rehabilitated	2014	N (4,0)
A.3	Total Number of Lanes	02	N (2,0)
A.4	Annual Average Daily Traffic	011650	N (6,0)
A.5	Annual Average Daily Truck Traffic	001065	N (6,0)
A.6	Year of Average Daily Traffic	2021	N (4,0)
A.7	Detour Length	425	N (3,0)
A.8	Service in Tunnel	1	N (1,0)

Table 65: TSCT Classification Items

TSCT Classification Items			
C.1	Owner	32	N (2,0)
C.2	Operator	32	N (2,0)
C.3	Direction of Traffic	2	N (1,0)
C.4	Toll	2	N (1,0)
C.5	NHS Designation	1	N (1,0)
C.6	STRAHNET Designation	1	N (1,0)
C.7	Functional Classification	2	N (1,0)
C.8	Urban Code	90892	N (5,0)

Table 66: TSCT Geometric Data Items

TSCT Geometric Data Items			
G.1	Tunnel Length	005738	N (6,0)
G.2	Minimum Vertical Clearance over Tunnel Roadway	00013.5	N (5,1)
G.3	Roadway Width, Curb-to-Curb	0024.0	N (4,1)
G.4	Left Sidewalk Width	002.5	N (3,1)
G.5	Right Sidewalk Width	000.0	N (3,1)

Table 67: TSCT Inspection Items

TSCT Inspection Items			
D.1	Routine Inspection Target Date	10012021	D
D.2	Actual Routine Inspection Date	09162021	D
D.3	Routine Inspection Interval	24	N (2,0)
D.4	In-Depth Inspection	0	N (1,0)
D.5	Damage Inspection	0	N (1,0)
D.6	Special Inspection	0	N (1,0)

Table 68: TSCT Load Rating and Posting Items

TSCT Load Rating and Posting Items			
L.1	Load Rating Method	1	AN1
L.2	Inventory Load Rating Factor	0.63	N (4,2)
L.3	Operating Load Rating Factor	1.05	N (4,2)
L.4	Tunnel Load Posting Status	A	AN1
L.5	Posting Load - Gross		N (2,0)
L.6	Posting Load - Axle		N (2,0)
L.7	Posting Load - Type 3		N (2,0)
L.8	Posting Load - Type 3S2		N (2,0)
L.9	Posting Load - Type 3-3		N (2,0)
L.10	Height Restriction	1	N (1,0)
L.11	Hazardous Material Restriction	1	N (1,0)
L.12	Other Restrictions	1	N (1,0)

Table 69: TSCT Navigation Items

TSCT Navigation Items			
N.1	Under Navigable Waterway	1	N (1,0)
N.2	Navigable Waterway Clearance	055.0	N (3,1)
N.3	Tunnel or Portal Island Protection from Navigation	1	N (1,0)

Table 70: TSCT Structure Type and Materials Items

TSCT Structure Type and Material Items			
S.1	Number of Bores	1	N (1,0)
S.2	Tunnel Shape	4	N (1,0)
S.3	Portal Shapes	3	N (1,0)
S.4	Ground Conditions	1	N (1,0)
S.5	Complex	1	N (1,0)

6.2 CCT Inventory Items

Table 71: CCT Identification Items

CCT Identification Items			
I.1	Tunnel Number	CBBT00000000002	AN15
I.2	Tunnel Name	Chesapeake Channel Tunnel	AN100
I.3	State Code	51	N (2,0)
I.4	County Code	131	N (3,0)
I.5	Place Code	12808	N (5,0)
I.6	Highway Agency District	HR	AN2
I.7	Route Number	00013	AN5
I.8	Route Direction	0	N (1,0)
I.9	Route Type	2	N (1,0)
I.10	Facility Carried	US13	AN100
I.11	LRS Route ID	000000001300	AN120
I.12	LRS Mile Point	37.319	N (8,3)
I.13	Tunnel Portal's Latitude	00000000037.03638900	N (11,8)
I.14	Tunnel Portal's Longitude	00000000076.07680600	N (11,8)
I.15	Border Tunnel State or Country Code		AN2
I.16	Border Tunnel Financial Responsibility		N (3,0)
I.17	Border Tunnel Number		AN15
I.18	Border Tunnel Inspection Responsibility		N (1,0)

Table 72: CCT Age and Service Items

CCT Age and Service Items			
A.1	Year Built	1964	N (4,0)
A.2	Year Rehabilitated	2019	N (4,0)
A.3	Total Number of Lanes	02	N (2,0)
A.4	Annual Average Daily Traffic	011650	N (6,0)
A.5	Annual Average Daily Truck Traffic	001065	N (6,0)
A.6	Year of Average Daily Traffic	2021	N (4,0)
A.7	Detour Length	425	N (3,0)
A.8	Service in Tunnel	1	N (1,0)

Table 73: CCT Classification Items

CCT Classification Items			
C.1	Owner	32	N (2,0)
C.2	Operator	32	N (2,0)
C.3	Direction of Traffic	2	N (1,0)
C.4	Toll	2	N (1,0)
C.5	NHS Designation	1	N (1,0)
C.6	STRAHNET Designation	1	N (1,0)
C.7	Functional Classification	2	N (1,0)
C.8	Urban Code	90892	N (5,0)

Table 74: CCT Geometric Data Items

CCT Geometric Data Items			
G.1	Tunnel Length	005424	N (6,0)
G.2	Minimum Vertical Clearance over Tunnel Roadway	00013.5	N (5,1)
G.3	Roadway Width, Curb-to-Curb	0024.0	N (4,1)
G.4	Left Sidewalk Width	002.5	N (3,1)
G.5	Right Sidewalk Width	000.0	N (3,1)

Table 75: CCT Inspection Items

CCT Inspection Items			
D.1	Routine Inspection Target Date	10012016	D
D.2	Actual Routine Inspection Date	09192022	D
D.3	Routine Inspection Interval	24	N (2,0)
D.4	In-Depth Inspection	0	N (1,0)
D.5	Damage Inspection	0	N (1,0)
D.6	Special Inspection	0	N (1,0)

Table 76: CCT Load Rating and Posting Items

CCT Load Rating and Posting Items			
L.1	Load Rating Method	1	AN1
L.2	Inventory Load Rating Factor	0.63	N (4,2)
L.3	Operating Load Rating Factor	1.05	N (4,2)
L.4	Tunnel Load Posting Status	A	AN1
L.5	Posting Load - Gross		N (2,0)
L.6	Posting Load - Axle		N (2,0)
L.7	Posting Load - Type 3		N (2,0)
L.8	Posting Load - Type 3S2		N (2,0)
L.9	Posting Load - Type 3-3		N (2,0)
L.10	Height Restriction	1	N (1,0)
L.11	Hazardous Material Restriction	1	N (1,0)
L.12	Other Restrictions	1	N (1,0)

Table 77: CCT Navigation Items

CCT Navigation Items			
N.1	Under Navigable Waterway	1	N (1,0)
N.2	Navigable Waterway Clearance	055.0	N (3,1)
N.3	Tunnel or Portal Island Protection from Navigation	1	N (1,0)

Table 78: CCT Structure Type and Material Items

CCT Structure Type and Material Items			
S.1	Number of Bores	1	N (1,0)
S.2	Tunnel Shape	4	N (1,0)
S.3	Portal Shapes	3	N (1,0)
S.4	Ground Conditions	1	N (1,0)
S.5	Complex	1	N (1,0)

7. Tunnel Element Level Data

The tables provided in this section display the tunnel elements and condition states coded per the Specifications for the National Tunnel Inventory (SNTI) at the time of this inspection.

7.1 Thimble Shoal Channel Tunnel - Element Level Data

A hands-on inspection was performed in FY2024 and element level data is presented in this section. Condition State values are based on the FY2024 Thimble Shoal Tunnel Element Level Form.

Table 79: TSCT Element Level Data

TSCT Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
STRUCTURAL SECTION							
10002	Precast Concrete Tunnel Liner	SF	610,800	1,017	1,083	0	612,900
10051	Concrete Portal	SF	3,256	20	10		3,286
10061	Concrete Ceiling Slab	SF	149,988	178	19		150,185
10080	Steel Hangers and Anchorages	EA	469				469
10101	Concrete Invert Slab	SF	117,895	16,986	2,831		137,712
10132	Compression Joint Seal	LF	184				184
CIVIL SECTION							
10158	Asphalt Wearing Surface	SF	128,627				128,627
10161	Concrete Traffic Barrier	LF	11,475	1			11,476
10170	Steel Pedestrian Railing	LF	0	5,710	28		5,738
10950	*Steel Corrosion Protective Coating*	*SF*		*6,422*		*714*	*7,136*
MECHANICAL SYSTEMS SECTION							
10200	Ventilation System	EA	0	2			2
10201	Fans	EA	0	11	1		12
10300	Drainage and Pumping System	EA	3				3
10301	Pumps	EA	13				13
10400	Emergency Generator System	EA	2				2

TSCT Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
ELECTRICAL AND LIGHTING SYSTEMS SECTION							
10500	Electrical Distribution System	EA		1			1
10550	Emergency Distribution System	EA	2				2
10600	Tunnel Lighting Systems	EA	2				2
10601	Tunnel Lighting Fixture	EA	1,453				1,453
10620	Emergency Lighting System	EA	2				2
FIRE/LIFE SAFETY/SECURITY SYSTEMS SECTION							
10650	Fire Detection System	EA	1				1
10700	Fire Protection System	EA		1			1
10750	Emergency Communication System	EA	1				1
10800	Tunnel Operations and Security System	EA	1				1
SIGNS SECTION							
10850	Traffic Sign	EA	19				19
10910	Lane Signal	EA	1		1		2

7.2 Chesapeake Channel Tunnel - Element Level Data

A hands-on inspection was performed in FY2023 and element level data is presented in this section. Condition State values are based on the FY2023 Chesapeake Tunnel Element Level Form.

Table 80: CCT Element Level Data

CCT Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
STRUCTURAL SECTION							
10002	Precast Concrete Tunnel Liner	SF	574,347	2,721	1,545	695	579,308
10051	Concrete Portal	SF	3,266	20			3,286
10061	Concrete Ceiling Slab	SF	140,544	429	38		141,011
10080	Steel Hangers and Anchorages	EA	446				446
10101	Concrete Invert Slab	SF	95,606	33,881	631	46	130,164
10132	Compression Joint Seal	LF	184				184
CIVIL SECTION							
10158	Asphalt Wearing Surface	SF	121,569	8			121,577
10161	Concrete Traffic Barrier	LF	10,821	7	19		10,847
10170	Steel Pedestrian Railing	LF	4,881	543			5,424
10950	Steel Corrosion Protective Coating	*SF*		*6070*		*674*	6,744
MECHANICAL SYSTEMS SECTION							
10200	Ventilation System	EA	1	1			2
10201	Fans	EA	3	9			12
10300	Drainage and Pumping System	EA	3				3
10301	Pumps	EA	13				13
10400	Emergency Generator System	EA	2				2

CCT Element Level Data							
Element Number	Element Name	Unit	Condition State 1	Condition State 2	Condition State 3	Condition State 4	Total
ELECTRICAL AND LIGHTING SYSTEMS SECTION							
10500	Electrical Distribution System	EA	1				1
10550	Emergency Distribution System	EA	2				2
10600	Tunnel Lighting Systems	EA	2				2
10601	Tunnel Lighting Fixture	EA	1,382				1,382
10620	Emergency Lighting System	EA	2				2
FIRE/LIFE SAFETY/SECURITY SYSTEMS SECTION							
10650	Fire Detection System	EA	1				1
10700	Fire Protection System	EA	1	1			2
10750	Emergency Communication System	EA	1				1
10800	Tunnel Operations and Security System	EA	1				1
SIGNS SECTION							
10850	Traffic Sign	EA	3				3
10870	Egress Sign	EA	67				67

8. Photographs

8.1 Trestle ANB Photographs

Photo 1: ANB141 Asphalt Wearing Surface – Typical Good Condition of Wearing Surface (Looking North)

Photo 2: ANB141 Concrete Curb & Metal Bridge Railing – Typical Good Condition of Curb & Railing (Looking Southwest)

Photo 3: ANB140 - General Condition of Superstructure

Photo 4: ANB Bent 133 – Typical Substructure with Fiberglass Jackets around Piles

Photo 5: ANB133 Prestressed Concrete Girder – Spall with Exposed Strand in Girder 4 near Midspan

Photo 6: ANB133 – Prestressed Concrete Girder – 2′ Long Spall with Exposed & Corroded Strand in Girder 3 at Bent 133

Photo 7: ANB137 Prestressed Concrete Girder – Delamination at End of Girder 1 at Bent 137

Photo 8: ANB157 Prestressed Concrete Girder – Two (2) Spalls with Exposed Strand in Girder 8

Photo 9: ANB159 – Prestressed Concrete Girder – 2′ Long Spall with Exposed Strand in Girder 4

8.2 Trestle ASB Photographs

Photo 10: ASB119 Asphalt Wearing Surface – Typical Good Condition of Wearing Surface (Looking South)

Photo 11: ASB118 Metal Bridge Railing – Typical Good Condition of Bridge Railing and Curb (Looking Southwest)

Photo 12: ASB119 Open Expansion Joint – Typical Good Condition of Joint (Looking East)

Photo 13: ASB119 – Typical Condition of Superstructure (Looking South)

Photo 14: ASB119 – Typical Pile Bent Condition (Bent 119 Shown)

Photo 15: ASB111 Metal Bridge Railing – Minor Vehicle Impact Damage

Photo 16: ASB102 Concrete Curb – Random Exposed Rebar in West Curb

Photo 17: ASB98 Reinforced Concrete Pier Cap – Shallow Spall with Exposed Reinforcing

Photo 18: ASB115 – Vertical Crack in Light Pole at Bent 115

8.3 Trestle BNB Photographs

Photo 19: BNB132 - Wearing Surface and Metal Bridge Railing – Typical Good Condition (Looking Southeast)

Photo 20: BNB129 Wearing Surface – Typical Condition of EPO (Looking North)

Photo 21: BNB133 Metal Bridge Railing – Typical Good Condition of Railing (Looking Southwest)

Photo 22: BNB129 – General Good Condition of Bent Cap and Piles (Looking North)

Photo 23: BNB124 Prestressed Concrete Girder – Failed Patch in Girder 2 with Formwork in Place

Photo 24: BNB108 Prestressed Concrete Girder – Spall with Exposed Strand in Girder 6

Photo 25: BNB110 Prestressed Concrete Girder – Girder 7 Spall with Exposed Strand

Photo 26: BNB109 Prestressed Concrete Girder – Girder 3 Spall with Exposed Strand at Bent 109

Photo 27: BNB121 Prestressed Concrete Girder – Girder 8 Spalling with Exposed Strands

Photo 28: BNB123 Prestressed Concrete Pile – Bent 123, Pile A CS3 Crack in Southwest Face

Photo 29: BNB123 Prestressed Concrete Pile – Bent 123, Pile A CS3 Crack in Southwest Face

8.4 Trestle BSB Photographs

Photo 30: BSB140 Wearing Surface – Typical Good Condition of Wearing Surface (Looking Southeast)

Photo 31: BSB140 Metal Bridge Railing – Typical Good Condition of Bridge Railing & Curb (Looking Northwest)

Photo 32: BSB138 Open Joint - Typical Condition of Open Joint

Photo 33: BSB141 – Typical Condition of Superstructure

Photo 34: BSB142 - Typical Condition of Pile Bents

Photo 35: BSB113 Reinforced Concrete Pier Cap – Exposed Reinforcing due to Insufficient Cover

Photo 36: BSB111 Prestressed Concrete Pile – Spall in Pile B in South Face

Photo 37: BSB108 Prestressed Concrete Pile – Spall in Pile A in West Face (Looking East)

8.5 Trestle CNB Photographs

Photo 38: CNB140 - Wearing Surface – Typical Condition of Wearing Surface (Looking South)

Photo 39: CNB140 – Metal Bridge Railing – Typical Condition of Metail Railing & Curb (Looking Southwest)

Photo 40: CNB141 – Typical Condition of Superstructure & Substructure

Photo 41: CNB136 Prestressed Concrete Girder – Girder 4 Spall with Exposed & Corroded Strand

Photo 42: CNB137 Prestressed Concrete Girder – Girder 3 Spall with Exposed & Corroded Strand

Photo 43: CNB196 Prestressed Concrete Girder – Girder 3 Spall with Exposed Strand at Bent 197

8.6 Trestle CSB Photographs

Photo 44: CSB153 Wearing Surface – Typical Good Condition of Deck and Bridge Railing (Looking South)

Photo 45: CSB153 Metal Bridge Railing– Typical Good Condition of Bridge Railing (Looking Northwest)

Photo 46: CSB153 Open Expansion Joint – Typical Good Condition of Open Expansion Joints (Looking East)

Photo 47: Typical Condition of Superstructure (CSB Span 154 Shown)

Photo 48: Typical Good Condition of the Pile Bents (Bent 154 Shown)

Photo 49: CSB100 – Prestressed Concrete Girder – Girder 4, Spall with Exposed Reinforcing

Photo 50: CSB127 Prestressed Concrete Piles – Bent 127, Pile B, Spall with Exposed Reinforcing

8.7 NCB-NB Photographs

Photo 51: General Condition of Deck and Metal Bridge Railing

Photo 52: Typical Condition of Finger Joints

Photo 53: NCB-NB6 – General View of Steel Superstructure

Photo 54: NCB-NB7 – General Condition of Concrete Bent

Photo 55: NCB-GB2 Floorbeam – Corrosion Hole in Floorbeam 4, Northeast Stiffener in Span 2

Photo 56: NCB-NB Corrosion with 100% Section Loss in Horizontal Connection Plate

Photo 57: NCB-NB4 Floorbeams – Repaired Northwest Stiffener at Floorbeam 3

Photo 58: NCB-NB4 Floorbeams: Northeast Stiffener Repair at Floorbeam 2

Photo 59: NCB-NB5 Steel Girder – Typical Corrosion at Haunch Splice, Girder 2 at Pier 6

Photo 60: NCB-NB – Bent Connection for Channel Marker at Pier 6, West Side

Photo 61: NCB-NB6 Steel Floorbeam – Repaired Northeast Stiffener at Floorbeam 5

Photo 62: NCB-NB7 Reinforced Concrete Column – Cracking with Heavy Efflorescence on Column 1 at Bent 7

Photo 63: NCB-NB9 – Bearings – Loose Keeper Bolt at Bearing 1

Photo 64: NCB-NB11 Steel Floorbeam – Repaired Southwest Stiffener at Floorbeam 1

Photo 65: NCB-NB11 Reinforced Concrete Deck – Spall with Exposed Reinforcing in the West Fascia near Floorbeam 9

Photo 66: NCB-NB12 Steel Floorbeam – Crack in Connection Plate at the Southwest Stiffener at Floorbeam 8

Photo 67: NCB-NB14 Steel Floorbeam – Northwest Stiffener Prepared for Repair at Floorbeam 2

Photo 68: NCB-NB15 – Peeling Paint with up to 100% Section Loss in Cross Bracing at Floorbeam 6

Photo 69: NCB-NB17 Steel Floorbeam – Corrosion with Section Loss on Bottom Flange of Floorbeam 8, West Cantilever

Photo 70: NCB-NB9 Steel Truss – Typical Condition of South Portal Bracing at Bent 9

Photo 71: NCB-NB9 Steel Truss – Typical View and Condition of Upper Chord, Verticals and Diagonals

Photo 72: NCB-NB9 Steel Truss – Corrosion with 100% Section Loss of Batten Plates at South Portal Bracing

Photo 73: NCB-NB9 Steel Truss – Corrosion with Minor Section Loss at Handhole in the Upper Chord at U5, West Truss

Photo 74: NCB-NB9 Steel Truss – Corrosion Holes in Vertical U4'L4', West Truss

Photo 74: NCB-NB9 Steel Floorbeam – 100% Section Loss in Floorbeam 3 Web at the Northeast Corner below Stringer 5

Photo 75: NCB-NB9 Steel Floorbeam – Severe Corrosion with 100% Section Loss in Floorbeam 3 Web under Stringer 1

Photo 76: NCB-NB9 Steel Floorbeam – Severe Corrosion with 100% Section Loss in Floorbeam 3' Web

Photo 77: NCB-NB9 Steel Floorbeam – Severe Corrosion with 100% Section Loss in Floorbeam 3' Web at Stringer 1

8.8 NCB-SB Photographs

Not inspected this year, will be inspected in FY2025

8.9 Trestle DNB Photographs

Not inspected this year, will be inspected in FY2025

8.10 Trestle DSB Photographs

Not inspected this year, will be inspected in FY2025

8.11 Trestle ENB, FIB-NB, & FNB Photographs

Not inspected this year, will be inspected in FY2025

8.12 Trestle ESB, FIB-SB, & FSB Photographs

Not inspected this year, will be inspected in FY2025

8.13 TSCT Photographs

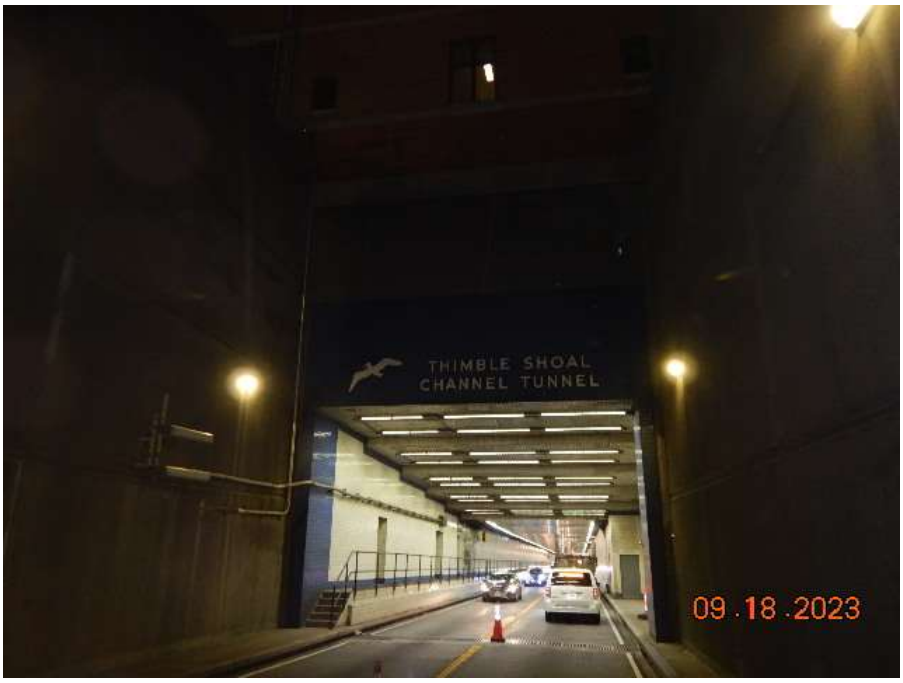

Photo 78: Island 1 Portal

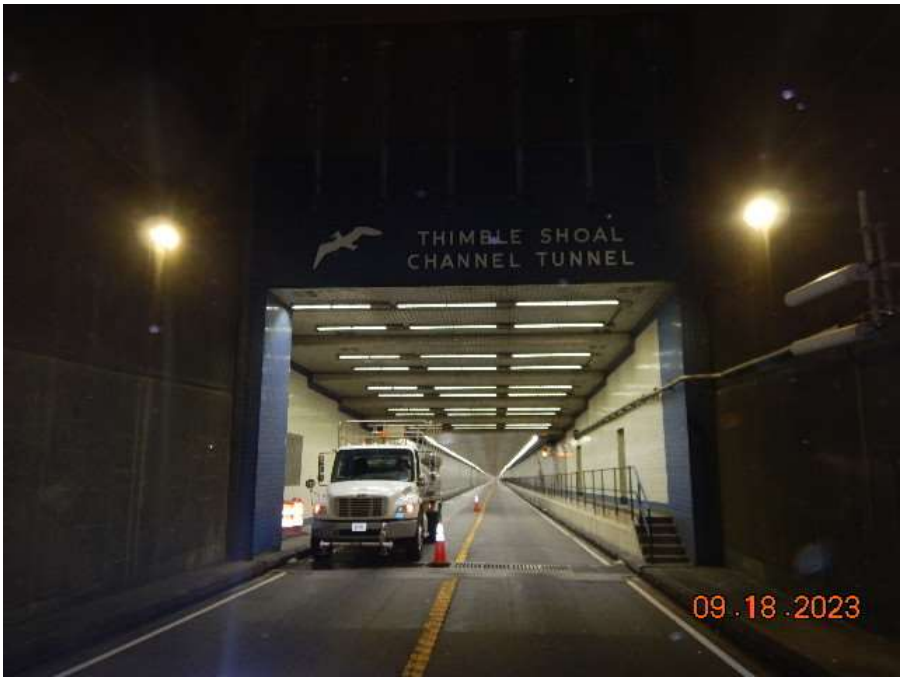

Photo 79: Island 2 Portal

Photo 80: General View of Roadway in Tunnel

Photo 81: Typical Replaced Fire Extinguisher (100% of Fire Extinguishers replaced since 2021)

Photo 82: Sta. 190+00 – Non-functioning Signal Light (Bottom Light Never Illuminated)

Photo 83: Typical Condition of Metal Handrail with Corrosion

Photo 84: Sta. 194+05 – Broken and Missing Tiles on West Wall Adjacent to Safety Walkway

Photo 85: Sta. 210+95 – Four Cracked Tiles with Rust Staining Below Safety Walkway

Photo 86: Sta. 195+65 – Cracked Ceiling Tiles with Rust Stains over NB Lane

Photo 87: Typical Spalling of Invert Slab along Curbline (175 SF Total in Tunnel)

Photo 88: Typical Hairline Cracking with Efflorescence of Open Approach Retaining Walls (Island 2 Approach Shown)

Photo 89: Supply Duct – Sta. 191+10 Spall with Exposed Reinforcement in Underside of Invert Slab

Photo 90: Supply Duct – Sta. 194+50 Patch in Underside of Slab with Carbon Fiber Wrap

8.14 CCT Photographs

Not inspected this year, will be inspected in FY2025

8.15 General Facility

Photo 91: South Toll Plaza (Looking North)

Photo 92: South Toll Plaza Building Roof (Looking North)

Photo 93: South Toll Plaza Roof (Looking West)

Photo 94: South Toll Plaza Garage (Looking North)

Photo 95: North Toll Plaza (Looking Southeast)

Photo 96: General Condition of Maintenance Building Roof (Looking Northwest)

Photo 97: General View of Maintenance Yard (Looking South)

Photo 98: General Condition of CBBT Administration Building (Looking East)

Photo 99: General Good Condition of North Toll Plaza Building Roof (Looking North)

Photo 100: General Condition of North Toll Plaza Roof (Looking East)

9. Bay Bottom Profiles

Original copies of Hydrographic Survey data are on file with CBBT.

10. Testing Documentation

11. Electronic Submittals

The following supplemental items will be submitted electronically to the District with the Final Report:

- Inspection Database and Photograph Logs: Includes majority of field notes from the annual inspection and the routine inspections performed on the trestles, and routine inspection of the TSCT
- Bridge Element Level Data for each component that received a hands-on inspection
- Tunnel Element Level Data for TSCT and CCT
- Underwater Inspection Forms (Level I & II) of Trestle CSB
- TSCT Mechanical, Electrical and Lighting, Fire/Life Safety/Security Systems field notes