NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT

ATTENTION: UPDATES MADE TO SPAN 1 LENGTH, APPROACH ROADWAY SKETCH AND TYPICAL SECTION SKETCH

Structure Safety Report

Routine Element Inspection - Contract

COUNTY: DAVIDSON **STRUCTURE NUMBER:** 280058 **FREQUENCY:** 24 MONTHS

FACILITY CARRIED: NC109 **MILE POST:**

LOCATION: 0.3 MI. N. JCT. SR2266

FEATURE INTERSECTED: US64

LATITUDE: 35° 46' 17.63" **LONGITUDE:** 80° 6' 6.59"

SUPERSTRUCTURE: REINFORCED CONCRETE DECK GIRDERS

SUBSTRUCTURE: END BENTS:RC CAP ON TIMBER PILES, INT.BENTS:RC POST & BEAM

SPANS: 1@48'6 ,1@47'6,1@39'6
2@47'6 ,1@39'6

☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☐ SCOUR CRITICAL ☐ SCOUR PLAN OF ACTION

PRESENT CONDITION: Poor **INSPECTION DATE:** 01/07/2016

POSTED SV: Not Posted **POSTED TTST:** Not Posted

OTHER SIGNS PRESENT: 4 DELINEATORS, 4 VERTICAL CLEARANCE SIGNS

LOOKING NORTH

Sign noticed issued for		Number Required
NO	**WEIGHT LIMIT**	0
NO	**DELINEATORS**	0
NO	**NARROW BRIDGE**	0
NO	**ONE LANE BRIDGE**	0
NO	**LOW CLEARANCE**	0

INSPECTED BY	SIGNATURE	ASSISTED BY
MATTHEW MOYER	Matthew Moyer	DAVID WAGNER

Span Element Report

Structure Number: 280058 Inspection Date: 01/07/2016

Span Number 1 **Span Length** 48.5 Feet **Number of Beams/Girders:** 4

Element Number	Parent Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code
12		Reinforced Concrete Deck	1,423	1,423	0	0	0	0	3326
110		Reinforced Concrete Open Girder/Bear	196	149	26	21	0	47	3306
215		Reinforced Concrete Abutment	27	27	0	0	0	0	3350
234		Reinforced Concrete Pier Cap	27	27	0	0	0	0	3348
301		Pourable Joint Seal	26	26	0	0	0	0	3310
331		Reinforced Concrete Bridge Railing	98	97	1	0	0	1	3318
510		Wearing Surface	1,261	1,225	0	36	0	36	2816

"Near" Approach and Substructure quantities have been include for reporting purposes. The last span will also include End Bent 2 and Far Approach quantities where applicable

Span Number 2 **Span Length** 47.5 Feet **Number of Beams/Girders:** 4

Element Number	Parent Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code
12		Reinforced Concrete Deck	1,394	1,394	0	0	0	0	3326
110		Reinforced Concrete Open Girder/Bear	192	146	27	19	0	46	3306
205		Reinforced Concrete Column	2	1	0	1	0	20	3348
234		Reinforced Concrete Pier Cap	27	0	8	19	0	27	3348
301		Pourable Joint Seal	26	26	0	0	0	0	3310
331		Reinforced Concrete Bridge Railing	96	96	0	0	0	0	3318
510		Wearing Surface	1,235	1,235	0	0	0	0	2816

"Near" Approach and Substructure quantities have been include for reporting purposes. The last span will also include End Bent 2 and Far Approach quantities where applicable

Span Number 3 **Span Length** 39.5 Feet **Number of Beams/Girders:** 4

Element Number	Parent Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code
12		Reinforced Concrete Deck	1,159	1,158	0	1	0	1	3326
110		Reinforced Concrete Open Girder/Bear	160	112	23	25	0	48	3306
205		Reinforced Concrete Column	2	2	0	0	0	0	3348
215		Reinforced Concrete Abutment	27	25	2	0	0	2	3350
234		Reinforced Concrete Pier Cap	54	25	0	29	0	29	3348
301		Pourable Joint Seal	52	52	0	0	0	0	3310
331		Reinforced Concrete Bridge Railing	80	80	0	0	0	0	3318
510		Wearing Surface	1,027	1,000	0	27	0	27	2816

"Near" Approach and Substructure quantities have been include for reporting purposes. The last span will also include End Bent 2 and Far Approach quantities where applicable

Superstructure Detailed Element Quantites

Structure Number: 280058 Inspection Date: 01/07/2016

Span Number 1

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☑ Deck	1	12	Reinforced Concrete Deck	1423	1423	0	0	0	0	3326	☐ Requested
☑ Bridge Rail	1	331	Reinforced Concrete Bridge Railing	49	49	0	0	0	0	3318	☐ Requested
☑ Bridge Rail	2	331	Reinforced Concrete Bridge Railing	49	48	1	0	0	1	3318	☐ Requested
☑ Wearing Surfaces		510	Wearing Surface	1261	1225	0	36	0	36	2816	☐ Requested
☑ Beam	1	110	Reinforced Concrete Open Girder/Beam	49	39	7	3	0	10	3306	☐ Requested
☑ Beam	2	110	Reinforced Concrete Open Girder/Beam	49	38	5	6	0	11	3306	☐ Requested
☑ Beam	3	110	Reinforced Concrete Open Girder/Beam	49	36	5	8	0	13	3306	☐ Requested
☑ Beam	4	110	Reinforced Concrete Open Girder/Beam	49	36	9	4	0	13	3306	☐ Requested
☐ Expansion Joints	1	301	Pourable Joint Seal	26	26	0	0	0	0	3310	☐ Requested

Span Number 2

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☑ Deck	1	12	Reinforced Concrete Deck	1394	1394	0	0	0	0	3326	☐ Requested
☑ Bridge Rail	1	331	Reinforced Concrete Bridge Railing	48	48	0	0	0	0	3318	☐ Requested
☑ Bridge Rail	2	331	Reinforced Concrete Bridge Railing	48	48	0	0	0	0	3318	☐ Requested
☑ Wearing Surfaces		510	Wearing Surface	1235	1235	0	0	0	0	2816	☐ Requested
☑ Beam	1	110	Reinforced Concrete Open Girder/Beam	48	40	5	3	0	8	3306	☐ Requested
☑ Beam	2	110	Reinforced Concrete Open Girder/Beam	48	42	5	1	0	6	3306	☐ Requested
☑ Beam	3	110	Reinforced Concrete Open Girder/Beam	48	37	5	6	0	11	3306	☐ Requested
☑ Beam	4	110	Reinforced Concrete Open Girder/Beam	48	27	12	9	0	21	3306	☐ Requested
☐ Expansion Joints	1	301	Pourable Joint Seal	26	26	0	0	0	0	3310	☐ Requested

Structure Number: 280058 Inspection Date: 01/07/2016

Span Number 3

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☑ Deck	1	12	Reinforced Concrete Deck	1159	1158	0	1	0	1	3326	☐ Requested
☑ Bridge Rail	1	331	Reinforced Concrete Bridge Railing	40	40	0	0	0	0	3318	☐ Requested
☑ Bridge Rail	2	331	Reinforced Concrete Bridge Railing	40	40	0	0	0	0	3318	☐ Requested
☑ Wearing Surfaces		510	Wearing Surface	1027	1000	0	27	0	27	2816	☐ Requested
☑ Beam	1	110	Reinforced Concrete Open Girder/Beam	40	22	6	12	0	18	3306	☐ Requested
☑ Beam	2	110	Reinforced Concrete Open Girder/Beam	40	31	7	2	0	9	3306	☐ Requested
☑ Beam	3	110	Reinforced Concrete Open Girder/Beam	40	31	5	4	0	9	3306	☐ Requested
☑ Beam	4	110	Reinforced Concrete Open Girder/Beam	40	28	5	7	0	12	3306	☐ Requested
☐ Expansion Joints	1	301	Pourable Joint Seal	26	26	0	0	0	0	3310	☐ Requested
☐ Expansion Joints	1	301	Pourable Joint Seal	26	26	0	0	0	0	3310	☐ Requested

Superstructure Element Defect Descriptions

Structure Number: 280058 Inspection Date: 01/07/2016

Span Number 1

Span 1 **Bridge Rail** 2 **Component Name:** Concrete Railing

Element: 331 **Name** Reinforced Concrete Bridge Ra **Qty:** 49 **Lvl 2:** 1 **Lvl 3** 0 **Lvl 4** 0 **Maint. Qty** 1

Defect Description:

4" DIAMETER X 1/2" DEEP SPALL WITH EXPOSED REBAR IN CURB AT END BENT 1

Span 1 **Wearing Surfaces** **Component Name:** Asphalt Wearing Surface

Element: 510 **Name** Wearing Surface **Qty:** 1261 **Lvl 2:** 0 **Lvl 3** 36 **Lvl 4** 0 **Maint. Qty** 36

Defect Description:

26 FT. LONG TRANSVERSE CRACK AT END BENT 1
10 FT. LONG LONGITUDINAL CRACK NEAR MIDSPAN

Span 1 **Beam** 1 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 49 **Lvl 2:** 7 **Lvl 3** 3 **Lvl 4** 0 **Maint. Qty** 10

Defect Description:

27" X 4" DELAMINATION IN WEST FACE NEAR MIDSPAN
2 FT. LONG LONGITUDINAL HAIRLINE CRACK IN WEST FACE AT END BENT 1
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
END DIAPHRAGM BAY 1 AT BENT 1: 60" X 6" X 2" DEEP SPALL WITH EXPOSED REBAR
END DIAPHRAGM BAY 1 AT END BENT 1: 24" X 4" X 2" DEEP SPALL WITH EXPOSED REBAR

Span 1 **Beam** 2 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 49 **Lvl 2:** 5 **Lvl 3** 6 **Lvl 4** 0 **Maint. Qty** 11

Defect Description:

2 FT. OF HAIRLINE MAP CRACKING IN PATCH AT BENT 2
20" X 18" X 3" DEEP SPALL AT END OF GIRDER AT END BENT 1
18" X 4" DELAMINATION IN EAST FACE AT END BENT 1
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
END DIAPHRAGM BAY 2 AT BENT 1: 60" X 6" X 3" DEEP SPALLS WITH EXPOSED REBAR

Span 1 **Beam** 3 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 49 **Lvl 2:** 5 **Lvl 3** 8 **Lvl 4** 0 **Maint. Qty** 13

Defect Description:

22" X 5" X 3" DEEP SPALL IN WITH EXPOSED REBAR IN WEST FACE AT END BENT 1
8" X 2" X 2" DEEP SPALL IN WEST FACE AT END OF GIRDER AT END BENT 1
8" X 2" X 2" DEEP SPALL IN EAST FACE AT END OF GIRDER AT END BENT 1
30" X 8" DELAMINATION IN WEST FACE AT BENT 1
8" DIAMETER X 1/2" DEEP SPALL WITH EXPOSED REBAR IN WEST FACE AT BENT 1
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
END DIAPHRAGM BAY 3 AT BENT 1: 4 FT. LONG HORIZONTAL CRACK 1/16" WIDE

Span 1 **Beam** 4 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 49 **Lvl 2:** 9 **Lvl 3** 4 **Lvl 4** 0 **Maint. Qty** 13

Defect Description:

3 FT. LONG LONGITUDINAL HAIRLINE CRACK IN BOTTOM FACE NEAR MIDSPAN
8" X 2" X 2" DEEP SPALL IN WEST FACE AT END OF GIRDER AT END BENT 1
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
FULL HEIGHT VERTICAL HAIRLINE CRACK IN WEST FACE AT BENT 1
3 FT. LONG LONGITUDINAL CRACK 1/16" WIDE IN WEST FACE AT BENT 1

Span Number 2

Span 2 **Beam** 1 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 48 **Lvl 2:** 5 **Lvl 3** 3 **Lvl 4** 0 **Maint. Qty** 8

Defect Description:

12" X 6" X 1" DEEP SPALL FROM IMPACT DAMAGE NEAR MIDSPAN
12" X 12" X 1" DEEP SPALL IN EAST FACE AT BENT 2
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
END DIAPHRAGM BAY 1 AT BENT 1: 36" X 3" X 2" DEEP SPALL WITH EXPOSED REBAR
END DIAPHRAGM BAY 1 AT BENT 2: 60" X 8" DELAMINATION

Span 2 **Beam** 2 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 48 **Lvl 2:** 5 **Lvl 3** 1 **Lvl 4** 0 **Maint. Qty** 6

Defect Description:

5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
1 FT. LONG DIAGONAL CRACK 1/16" WIDE IN WEST FACE AT BENT 1
END DIAPHRAGM BAY 2 AT BENT 1: 48" X 8" X 3" DEEP SPALL WITH EXPOSED REBAR
END DIAPHRAGM BAY 2 AT BENT 2: 60" X 8" X 2" DEEP SPALL WITH EXPOSED REBAR

Span 2 **Beam** 3 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 48 **Lvl 2:** 5 **Lvl 3** 6 **Lvl 4** 0 **Maint. Qty** 11

Defect Description:

72" X 18" X 1" DEEP SPALL FROM IMPACT DAMAGE AT MIDSPAN
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
END DIAPHRAGM BAY 3 AT BENT 1: 60" X 12" X 3" DEEP SPALL WITH EXPOSED REBAR
END DIAPHRAGM BAY 3 AT BENT 2: 60" X 12" X 3" DEEP SPALL WITH EXPOSED REBAR

Span 2 **Beam** 4 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 48 **Lvl 2:** 12 **Lvl 3** 9 **Lvl 4** 0 **Maint. Qty** 21

Defect Description:

48" X 18" X 1" DEEP SPALL FROM IMPACT DAMAGE AT MIDSPAN
48" X 18" X 1" DEEP SPALL FROM IMPACT DAMAGE AT 1/4 POINT
6" X 2" DELAMINATION IN EAST FACE AT BENT 1
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
6 FT. LONG LONGITUDINAL HAIRLINE CRACK IN BOTTOM FACE AT BENT 2
FULL HEIGHT VERTICAL CRACK 1/16" WIDE IN WEST FACE AT BENT 1

Span Number 3

Span 3 **Deck** 1 **Component Name:** Reinforced Concrete Deck

Element: 12 **Name** Reinforced Concrete Deck **Qty:** 1159 **Lvl 2:** 0 **Lvl 3** 1 **Lvl 4** 0 **Maint. Qty** 1

Defect Description:

36" X 4" X 2" DEEP SPALL WITH EXPOSED REBAR IN END DIAPHRAGM BAY 3 AT BENT 2
60" X 10" DELAMINATION IN END DIAPHRAGM BAY 3 AT BENT 2
12" DIAMETER X 1" DEEP SPALL IN BOTTOM OF DECK WEST OVERHANG NEAR MIDSPAN

Span 3 **Wearing Surfaces** **Component Name:** Asphalt Wearing Surface

Element: 510 **Name** Wearing Surface **Qty:** 1027 **Lvl 2:** 0 **Lvl 3** 27 **Lvl 4** 0 **Maint. Qty** 27

Defect Description:

26 FT. LONG TRANSVERSE CRACK AT END BENT 2
6" DIAMETER X 2" DEEP POTHOLE AT END BENT 2

Span 3 **Beam** 1 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 40 **Lvl 2:** 6 **Lvl 3** 12 **Lvl 4** 0 **Maint. Qty** 18

Defect Description:

10 FT. LONG LONGITUDINAL CRACK 1/16" WIDE IN EAST FACE NEAR MIDSPAN
1 FT. LONG LONGITUDINAL HAIRLINE CRACK IN WEST FACE NEAR MIDSPAN
21" X 6" DELAMINATION IN EAST FACE AT BENT 2
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
END DIAPHRAGM BAY 1 AT BENT 2: 60" X 6" DELAMINATION

Span 3 **Beam** 2 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 40 **Lvl 2:** 7 **Lvl 3** 2 **Lvl 4** 0 **Maint. Qty** 9

Defect Description:

14" DIAMETER DELAMINATION IN EAST FACE AT BENT 2

5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
1 FT. LONG VERTICAL CRACK 1/16" WIDE IN WEST FACE AT BENT 2
2 - 1 FT. LONG LONGITUDINAL HAIRLINE CRACKS IN WEST FACE AT BENT 2
END DIAPHRAGM BAY 2 AT BENT 2: 60" X 6" DELAMINATION

Span 3 **Beam** 3 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 40 **Lvl 2:** 5 **Lvl 3** 4 **Lvl 4** 0 **Maint. Qty** 9

Defect Description:

20" X 8" DELAMINATION IN WEST FACE AT BENT 2
20" X 8" DELAMINATION IN EAST FACE AT BENT 2
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS
END DIAPHRAGM BAY 3 AT BENT 2: 48" X 6" X 2" DEEP SPALL WITH EXPOSED REBAR

Span 3 **Beam** 4 **Component Name:** Reinforced Concrete Girder

Element: 110 **Name** Reinforced Concrete Open Gird **Qty:** 40 **Lvl 2:** 5 **Lvl 3** 7 **Lvl 4** 0 **Maint. Qty** 12

Defect Description:

29" X 12" DELAMINATION IN WEST FACE AT END BENT 2
28" X 6" DELAMINATION AND 14" X 4" X 3" DEEP SPALL IN WEST FACE 10 FT. FROM END BENT 2
5 - FULL HEIGHT VERTICAL HAIRLINE CRACKS

Substructure Detailed Element Quantites

Structure Number: 280058 Inspection Date: 01/07/2016

End Bent 1

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☑ Caps	1	234	Reinforced Concrete Pier Cap	27	27	0	0	0	0	3348	☐ Requested
☑ Abutments	1	215	Reinforced Concrete Abutment	27	27	0	0	0	0	3350	☐ Requested

Bent 1

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☑ Caps	1	234	Reinforced Concrete Pier Cap	27	0	8	19	0	27	3348	☐ Requested
☑ Piles and Columns	1	205	Reinforced Concrete Column	1	0	0	1	0	20	3348	☐ Requested
☑ Piles and Columns	2	205	Reinforced Concrete Column	1	1	0	0	0	0	3348	☐ Requested

Bent 2

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☑ Caps	1	234	Reinforced Concrete Pier Cap	27	7	0	20	0	20	3348	☐ Requested
☑ Piles and Columns	1	205	Reinforced Concrete Column	1	1	0	0	0	0	3348	☐ Requested
☑ Piles and Columns	2	205	Reinforced Concrete Column	1	1	0	0	0	0	3348	☐ Requested

End Bent 2

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☑ Caps	1	234	Reinforced Concrete Pier Cap	27	18	0	9	0	9	3348	☐ Requested
☑ Abutments	1	215	Reinforced Concrete Abutment	27	25	2	0	0	2	3350	☐ Requested

Substructure Element Defect Descriptions

Structure Number: 280058 Inspection Date: 01/07/2016

Bent 1

Bent 1 **Row** 1 **Caps** 1

Element: 234 **Name** Reinforced Concrete Pier Cap **Qty:** 27 **Lvl 2:** 8 **Lvl 3** 19 **Lvl 4** 0 **Maint. Qty** 27

Defect Description:

72" X 10" DELAMINATION IN NORTH FACE UNDER BAY 1
36" X 18" DELAMINATION IN NORTH FACE UNDER BAY 1
120" X 24" DELAMINATION IN BOTTOM FACE BETWEEN COLUMNS 1 AND 2
4 - 2 FT. LONG VERTICAL HAIRLINE CRACKS IN SOUTH FACE UNDER BAY 2

Bent 1 **Row** 1 **Piles and Columns** 1

Element: 205 **Name** Reinforced Concrete Column **Qty:** 1 **Lvl 2:** 0 **Lvl 3** 1 **Lvl 4** 0 **Maint. Qty** 20

Defect Description:

5 FT. LONG VERTICAL CRACK 1/16" WIDE IN SOUTH FACE
5 FT. LONG VERTICAL CRACK 1/16" WIDE IN EAST FACE
10 FT. LONG VERTICAL CRACK 1/16" WIDE IN WEST FACE

Bent 2 **Row** 1 **Caps** 1

Element: 234 **Name** Reinforced Concrete Pier Cap **Qty:** 27 **Lvl 2:** 0 **Lvl 3** 20 **Lvl 4** 0 **Maint. Qty** 20

Defect Description:

8 FT. LONG HORIZONTAL CRACK 1/16" WIDE IN NORTH FACE UNDER BAY 3
12 FT. LONG HORIZONTAL CRACK 1/8" WIDE IN NORTH FACE UNDER BAY 1

End Bent 2 **Row** 1 **Caps** 1

Element: 234 **Name** Reinforced Concrete Pier Cap **Qty:** 27 **Lvl 2:** 0 **Lvl 3** 9 **Lvl 4** 0 **Maint. Qty** 9

Defect Description:

36" X 24" X 1" DEEP SPALL WITH EXPOSED REBAR IN BOTTOM OF CAP BETWEEN COLUMNS 1 AND 2
72" X 24" X 1" DELAMINATION IN BOTTOM OF CAP BETWEEN COLUMNS 1 AND 2

End Bent 2 **Row** 1 **Abutments** 1

Element: 215 **Name** Reinforced Concrete Abutment **Qty:** 27 **Lvl 2:** 2 **Lvl 3** 0 **Lvl 4** 0 **Maint. Qty** 2

Defect Description:

2 FT. LONG VERTICAL HAIRLINE CRACK IN BAY 2

National Bridge and NC Inspection Items

Structure Number: 280058 **Inspection Date:** 01/07/2016

National Bridge Inventory Items

Item	Grade Scale	Grade
Item 58: Deck	0 - 9 , N	**7**
Item 59: Superstructure	0 - 9 , N	**5**
Item 60: Substructure	0 - 9 , N	**4**
Item 61: Channel and Channel Protection	0 - 9 , N	**N**
Item 62: Culvert	0 - 9 , N	**N**
Item 71: Waterway Adequacy	0 - 9 , N	**N**
Item 72: Approach Roadway Alignment	0 - 9 , N	**8**

Note: If NBI Inspection Item is not present, code NBI item with "N"

NC SMU Inspection Items

Item	Grade Scale	Grade	Maint. Qty.	Maint. Code
Deck Debris	G, F, P, or C	**G**	**0**	**3376**
Drainage System	G, F, P, or C	**G**	**0**	**3332**
Utilities	G, F, P, or C			
Slope Protection	G, F, P, or C		**0**	**3352**
Scour	G, F, P, or C			
Wingwall	G, F, P, or C	**G**	**0**	**3350**
Field Scour Evaluation				
Drift	G, F, P, or C		**0**	**3366**
Fender System	G, F, P, or C		**0**	**3364**
Movable Span Machinery	G, F, P, or C			
Response to Live Load	G, F, P, or C	**G**		
Estimated Remaining Life	0 - 100 Years	**6**		

Note: If NC SMU Insepction Item is not present, leave NC SMU item blank

Inspection Information

Item	Grade Scale	Grade
Regulatory Sign Noticed Issued	YES/NO	**N**
Priority Maintenance Request Submitted	YES/NO	**N**
Inspection Time	Hours	**10**
Traffic Control Time	Hours	**0**
Snooper Time	Hours	**0**
Ladder Used	YES/NO	**Y**
Bucket Truck Used	YES/NO	**N**
Boat Used	YES/NO	**N**
Other Equipment Used	YES/NO	**N**

National Bridge and NC SMU Inspection Item Details

Structure Number: 280058 **Inspection Date:** 01/07/2016

Item Superstructure - Item 59 **Grade** 5 **Maint Code** **Qty.** 0

Details REPAIR OF GIRDER 1 SPAN 1 AT MIDSPAN
REPAIR OF GIRDER 4 SPAN 1 AT MIDSPAN
REPAIR OF GIRDER 4 SPAN 1 NEAR 3/4 POINT
REPAIRS OF GIRDER 1 SPAN 2
REPAIRS OF GIRDER 4 SPAN 2
REPAIR OF GIRDER 2 SPAN 2 NEAR MIDSPAN
REPAIR OF GIRDER 2 SPAN 2 AT BENT 2
REPAIR OF GIRDER 3 SPAN 2 NEAR MIDSPAN
REPAIR OF GIRDER 3 SPAN 2 AT BENT 2
REPAIRS OF GIRDER 4 SPAN 2

Item Substructure - Item 60 **Grade** 4 **Maint Code** **Qty.** 0

Details 10 FT. LONG X 1 FT. HIGH AREA OF EROSION WITH 32" OF UNDERMINING OF END BENT 1 CAP UNDER BAYS 2 AND 3
6 FT. LONG X 1 FT. HIGH AREA OF EROSION WITH 27" OF UNDERMINING OF END BENT 1 CAP AT WEST END

Item Approach Roadway Alignment - Item 72 **Grade** 8 **Maint Code** **Qty.** 0

Details IMPACT DAMAGE TO GUARDRAIL END TREATMENT AT SOUTHEAST. SIMILAR CONDITION SOUTHWEST, NORTHEAST AND NORTHWEST CORNERS
10 FT. OF IMPACT DAMAGE TO SOUTHEAST GUARDRAIL 50 FT. FROM BRIDGE

IMPACT DAMAGE TO GUARDRAIL END TREATMENT AT SOUTHEAST CORNER

10 FT. OF IMPACT DAMAGE TO SOUTHEAST GUARDRAIL 50 FT. FROM BRIDGE

26 FT. LONG TRANSVERSE CRACK AT END BENT 1

Span 3 Beam 4: 29" X 12" DELAMINATION IN WEST FACE AT END BENT 2

Span 3 Beam 4: 28" X 6" DELAMINATION AND 14" X 4" X 3" DEEP SPALL IN WEST FACE 10 FT. FROM END BENT 2

Span 3 Beam 1: 10 FT. LONG LONGITUDINAL CRACK 1/16" WIDE IN EAST FACE NEAR MIDSPAN

Span 3 Wearing Surface: 6" DIAMETER X 2" DEEP POTHOLE AT END BENT 2

Span 2 Beam 4: 48" X 18" X 1" DEEP SPALL FROM IMPACT DAMAGE AT MIDSPAN

Span 2 Beam 3: 72" X 18" X 1" DEEP SPALL FROM IMPACT DAMAGE AT MIDSPAN

Span 2 Beam 4: 48" X 18" X 1" DEEP SPALL FROM IMPACT DAMAGE AT 1/4 POINT

Span 2 Beam 1: 12" X 6" X 1" DEEP SPALL FROM IMPACT DAMAGE NEAR MIDSPAN

Span 1 Beam 1: 27" X 4" DELAMINATION IN WEST FACE NEAR MIDSPAN

10 FT. LONG X 1 FT. HIGH AREA OF EROSION WITH 32" OF UNDERMINING OF END BENT 1 CAP UNDER BAYS 2 AND 3

Span 1 Beam 2: 20" X 18" X 3" DEEP SPALL AT END OF GIRDER AT END BENT 1

Span 1 Beam 3: 22" X 5" X 3" DEEP SPALL WITH EXPOSED REBAR IN WEST FACE AT END BENT 1

Span 3 Beam 1: 21" X 6" DELAMINATION IN EAST FACE AT BENT 2

Span 2 Beam 1: 12" X 12" X 1" DEEP SPALL IN EAST FACE AT BENT 2

Span 3 Beam 2: 14" DIAMETER DELAMINATION IN EAST FACE AT BENT 2

Span 3 Beam 3: 20" X 8" DELAMINATION IN WEST FACE AT BENT 2

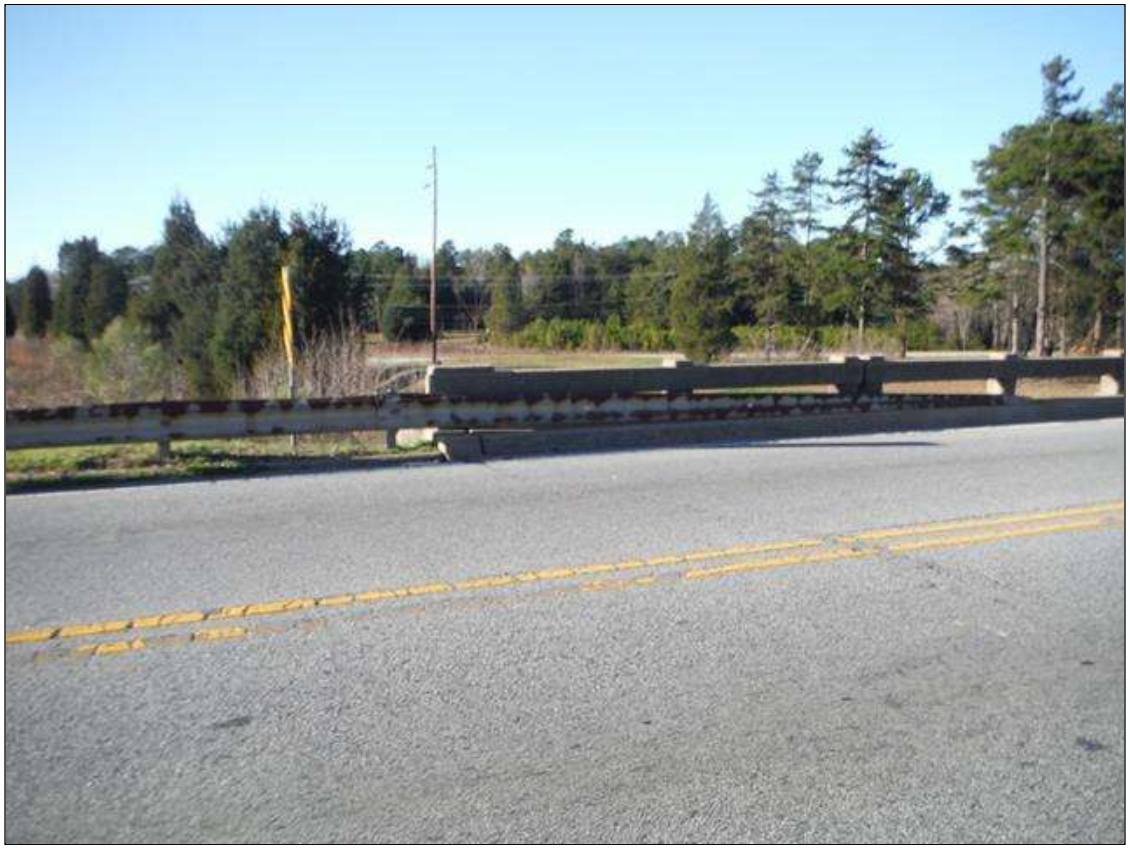
Span 3 Beam 3: 20" X 8" DELAMINATION IN EAST FACE AT BENT 2

End Bent 2 Cap : 36" X 24" X 1" DEEP SPALL WITH EXPOSED REBAR IN BOTTOM OF CAP BETWEEN COLUMNS 1 AND 2

Span 1 Beam 3: 30" X 8" DELAMINATION IN WEST FACE AT BENT 1

TYPICAL GUARDRAIL END TREATMENT, SOUTHWEST CORNER SHOWN

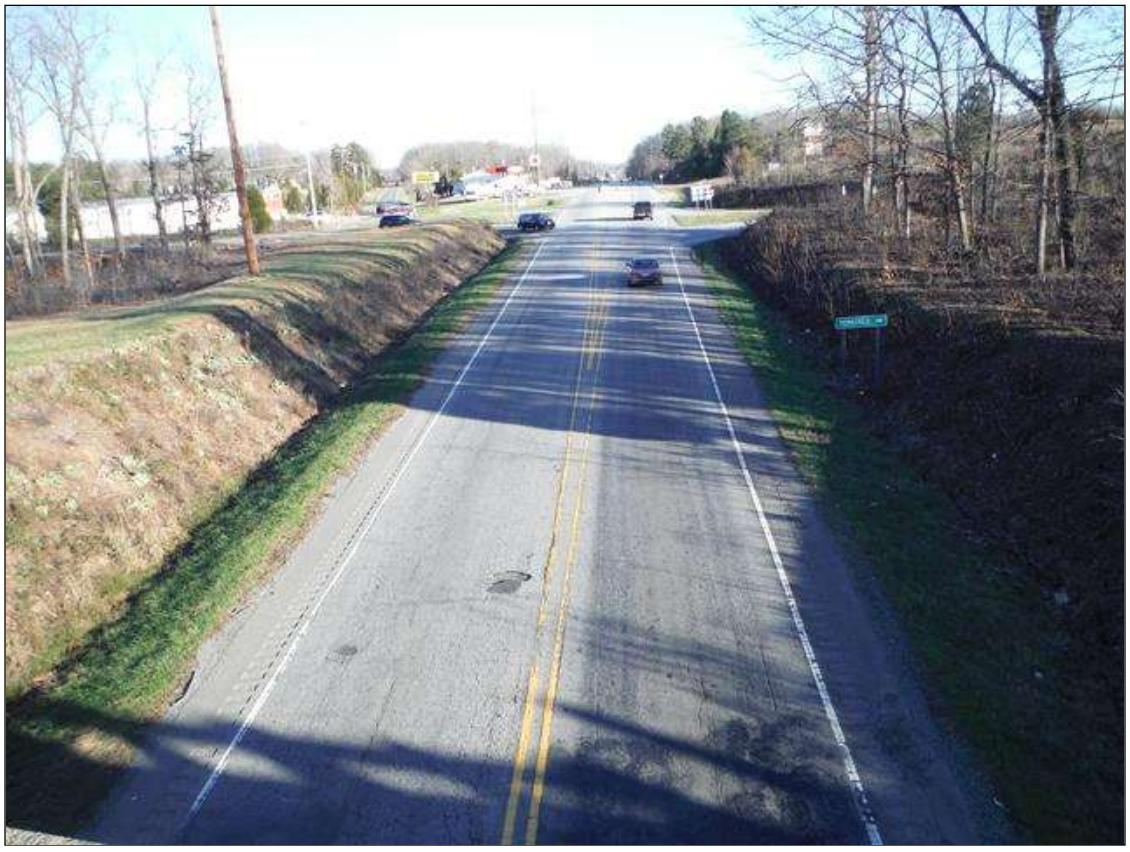
LOOKING NORTH



TYPICAL GUARDRAIL TO BRIDGE RAIL TRANSITION, SOUTHWEST CORNER SHOWN

WEST BRIDGE RAIL, EAST BRIDGE RAIL SIMILAR

JOINT AT BENT 1, BENT 2 SIMILAR



LOOKING EAST

LOOKING WEST

END BENT 2

LOOKING SOUTH

REPAIRS OF GIRDER 4 SPAN 2

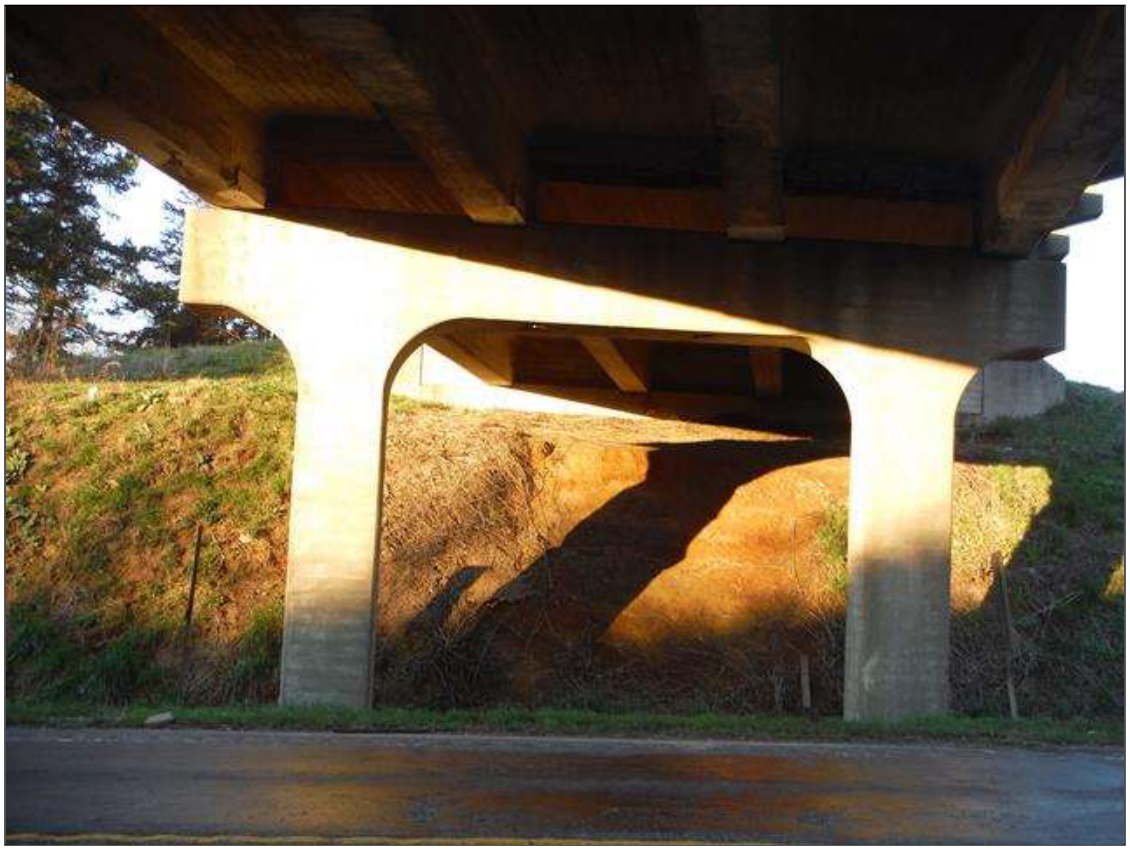
REPAIR OF GIRDER 3 SPAN 2 NEAR MIDSPAN

REPAIR OF GIRDER 3 SPAN 2 NEAR BENT 2

REPAIR OF GIRDER 2 SPAN 2 NEAR MIDSPAN

REPAIRS OF GIRDER 1 SPAN 2

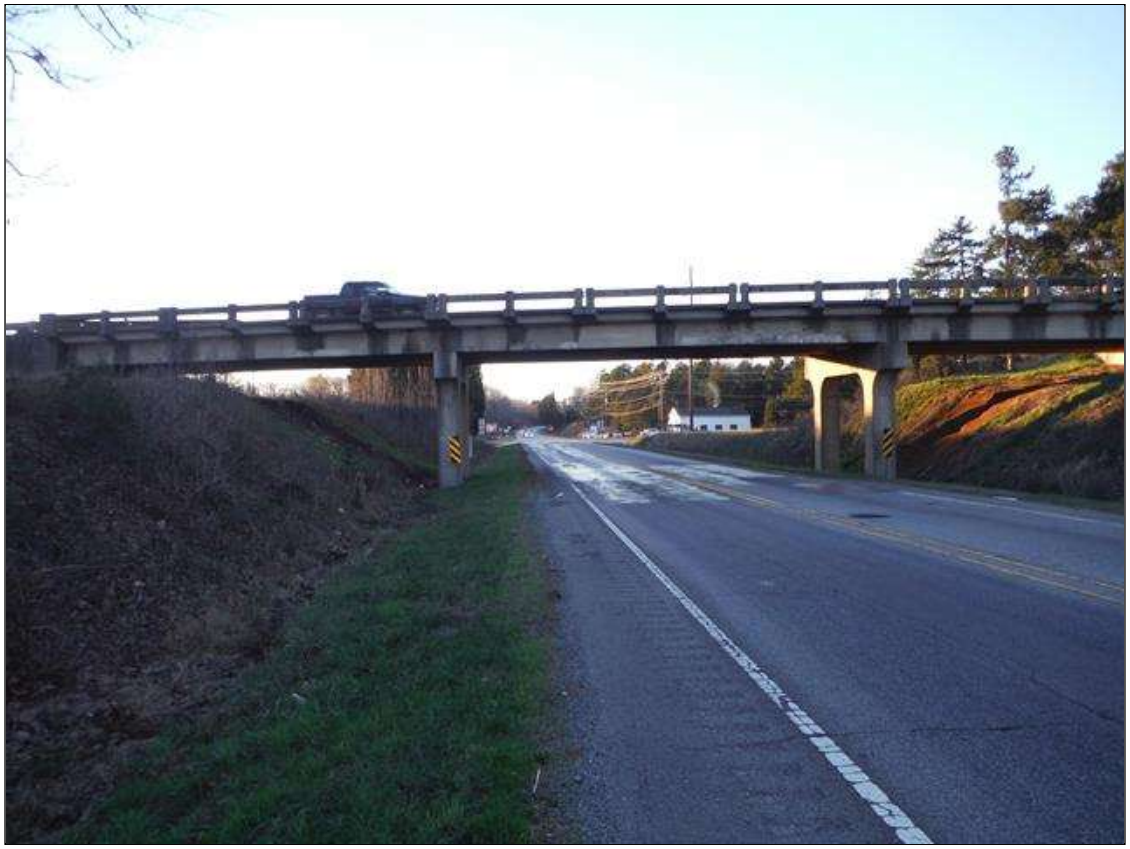
REPAIR OF GIRDER 2 SPAN 2 AT BENT 2



BENT 2, BENT 1 SIMILAR

TYPICAL SUPERSTRUCTURE, SPAN 2 SHOWN

WEST PROFILE



EAST PROFILE

UNDERCLEARANCE LOOKING WEST

REPAIR OF GIRDER 4 SPAN 1 NEAR 3/4 POINT

REPAIR OF GIRDER 4 SPAN 1 AT MIDSPAN

END BENT 1

REPAIR OF GIRDER 1 SPAN 1 AT MIDSPAN

VERTICAL CLEARANCE SIGN 1500 FT. WEST OF BRIDGE

VERTICAL CLEARANCE SIGN 1500 FT. EAST OF BRIDGE

VERTICAL CLEARANCE SIGN ON WESTBOUND RAMP

TYPICAL BEARING, BEAM 4 AT BENT 1 SHOWN

VERTICAL CLEARANCE SIGN ON EASTBOUND RAMP

NATIONAL BRIDGE INVENTORY-------- STRUCTURE INVENTORY AND APPRAISAL Run Date: 05/26/2016

IDENTIFICATION

(1) STATE NAME -NORTH CAROLINA BRIDGE **280058**
(8) STRUCTURE NUMBER(FEDERAL) 000000000570058
(5) INVENTORY ROUTE (ON/UNDER) - ON 31001090
(2) STATE HIGHWAY DEPARTMENT DISTRICT 1
(3) COUNTY CODE 57 (4) PLACE CODE 0
(6) FEATURE INTERSECTED - US64
(7) FACILITY CARRIED NC109
(9) LOCATION 0.3 MI. N. JCT. SR2266
(11)MILEPOINT 0
(16)LAT 35° 46' 17.63" (17)LONG 80° 6' 6.59"
(98)BORDER BRIDGE STATE CODE PCT SHARE
(99)BORDER BRIDGE STRUCTURE NO

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: Concrete
TYPE - Tee Beam CODE 104
(44) STRUCTURE TYPE APPR :
TYPE - CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS
(107)DECK STRUCTURE TYPE - 1 CODE
(108)WEARING SURFACE / PROTECTIVE SYSTEM :
(A) TYPE OF WEARING SURFACE - CODE
(B) TYPE OF MEMBRANE - CODE
(C) TYPE OF DECK PROTECTION - CODE

AGE AND SERVICE

(27) YEAR BUILT 1951
(106)YEAR RECONSTRUCTED
(42) TYPE OF SERVICE : ON - Overpass - Interchange
UNDER - Highway CODE 61
(28) LANES: ON STRUCTURE 2 UNDER STRUCTURE 2
(29) AVERAGE DAILY TRAFFIC 9900
(30) YEAR OF ADT 2013 (109) TRUCK ADT PCT 8%
(19) BYPASS OR DETOUR LENGTH 0 MI

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN 47 FT
(49) STRUCTURE LENGTH 136 FT
(50)CURB OR SIDEWALK: LEFT .4585 FT RIGHT .4585 FT
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 26 FT
(52) DECK WIDTH OUT TO OUT 29.333 FT
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 24 FT
(33) BRIDGE MEDIAN - No Median CODE 0
(34) SKEW 12° (35) STRUCTURE FLARED 0
(10) INVENTORY ROUTE MIN VERT CLEAR 999.9 FT
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 26 FT
(53) MIN VERT CLEAR OVER BRIDGE RDWY 999.9 FT
(54) MIN VERT UNDERCLEAR REF Highway 13.917 FT
(55) MIN LAT UNDERCLEAR RT REF Highway 8 FT
(56) MIN LAT UNDERCLEAR LT REF - 0 FT

NAVIGATION DATA

(38) NAVIGATION CONTROL - Not Applicable CODE N
(111)PIER PROTECTION - CODE
(39) NAVIGATION VERTICAL CLEARANCE 0
(116)VERT - LIFT BRIDGE NAV MIN VERT CLEAR FT
(40) NAVIGATION HORIZONTAL CLEARANCE 0 FT

SUFFICIENCY RATING = 48.56
STATUS = Structurally Deficient

CLASSIFICATION — CODE

(112)NBIS BRIDGE SYSTEM - YES
(104)HIGHWAY SYSTEM Is not on NHS 0
(26) FUNCTIONAL CLASS - Minor Arterial 06
(100)STRAHNET HIGHWAY - Not a STRAHNET Route 0
(101)PARALLEL STRUCTURE - No Parallel Structure N
(102)DIRECTION OF TRAFFIC - 2-way Traffic 2
(103)TEMPORARY STRUCTURE -
(110)DESIGNATED NATIONAL NETWORK - Not on the National Network 0
(20) TOLL On Free Road 3
(31) MAINTAIN - State Highway Agency 01
(22) OWNER - State Highway Agency 01
(37) HISTORICAL SIGNIFICANCE - Not Eligible 5

CONDITION — CODE

(58) DECK 7
(59) SUPERSTRUCTURE 4
(60) SUBSTRUCTURE 4
(61) CHANNEL & CHANNEL PROTECTION N
(62) CULVERTS N

LOAD RATING AND POSTING — CODE

(31) DESIGN LOAD HS 15 3
(63) OPERATING RATING METHOD - Load Factor 1
(64) OPERATING RATING - HS-31 56
(65) INVENTORY RATING METHOD - Load Factor 1
(66) INVENTORY RATING - HS-18 33
(70) BRIDGE POSTING - No Posting Required 5
(41) STRUCTURE OPEN, POSTED ,OR CLOSED A
DESCRIPTION - Open, No Restriction

APPRAISAL — CODE

(67) STRUCTURAL EVALUATION 4
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES,VERTI & HORIZ 3
(71) WATERWAY ADEQUACY N
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0100
(113)SCOUR CRITICAL BRIDGES N

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK - CODE
(76) LENGTH OF STRUCTURE IMPROVEMENT
(94) BRIDGE IMPROVEMENT COST
(95) ROADWAY IMPROVEMENT COST
(96) TOTAL PROJECT COST
(97) YEAR OF IMPROVEMENT COST ESTIMATE
(114)FUTURE ADT 19800 (115) YEAR FUTURE ADT 2025

INSPECTIONS

(90) INSPECTION DATE 01/07/2016
(92) CRITICAL FEATURE INSPECTION : (93) CFI DATE
A) FRACTURE CRIT DETAIL - NO A)
B) UNDERWATER INSP - NO B)
C) OTHER SPECIAL INSP NO C)
SCOUR

Structure No: 280058 County: DAVIDSON Run Date:

Span Number	Feature Intersected	Inventory Route	Minimum Maximum Vertical Clearance	Milepoint	Base Highway Network	LRS Inventory Route	Toll	Functional Classification	Numer of Lanes	Average Daily Traffic	Year of Average Daily Traffic	Total Horizontal Clearance	*See Note 1*					STRAHNET Highway Designator	Direction of Traffic	Highway System of Route
													Reference Feature	Minimum Vertical Underclearance	Right Lateral Underclearance	Left Lateral Underclearance	Underclearance Appraisal Grade			
	6	5	10	11	12	13	20	26	28	29	30	47	54A	54	55	56	69	100	102	104
2	US64W	2100640	14	0	1	20064		2	2	6150	2013	43.83	H	13.92	8		9	0	2	0

Note 1: Items 54, 55, and 56 are not reported FHWA under route data points but are collected for each under route to determine the minimum value for Underclearance Appraisal Item 69. The under route that generates the lowest Underclearance Appraisal value will be reported on the Facility Carried record.

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE Run Date: 05/26/2016

COUNTY : DAVIDSON
DIVISION : 9
DISTRICT: 1
STRUCTURE NUMBER : 280058
LENGTH : 136 FEET

ROUTE CARRIED : NC109
FEATURE INTERSECTED : US64

LOCATED : 0.3 MI. N. JCT. SR2266
BRIDGE NAME :
CITY :

FUNC. CLASS : 06
SYST.ON : FA
SYST.UNDER : NFA
ADT & YR : 9900 2013
RAIL TYPE : LT 111 RT 111

BUILT : 1951
BY : SHPWC
PROJ : 6-7-51-41
FED.AID PROJ :
DESIGN LOAD : HS 15

REHAB :
BY :
PROJ :
ALIGNMENT : TAN
SKEW : 78
LANES : ON 2 UNDER 2

NAVIGATION : VC 0 FT HC 0 FT
HT. CRN. TO BED : 0 FT
WATER DEPTH : 0 FT

SUPERSTRUCTURE : REINFORCED CONCRETE DECK GIRDERS

SUBSTRUCTURE : END BENTS:RC CAP ON TIMBER PILES, INT.BENTS:RC POST & BEAM

SPANS : 2@47'6 ,1@39'6

BEAMS OR GIRDERS : 4 LINES OF 18 X35 RC DECK GIRDERS @ 7'6 CENTERS

FLOOR : 6.5 SLAB,3"AWS
ENCROACHMENT :
DECK (OUT TO OUT) : 29.333 FT

CLEAR ROADWAY : 26 FT
BETWEEN RAILS : 26.917 FT
SIDEWALK OR CURB : LT .4585 FT RT .4585 FT

VERT.CL.OVER : 999.9 FT

INV.RTG. : HS-18
OPE.RTG. : HS-31
CONTR.MEMBER : RCDG - Sp A/B
POSTED : SV
TTST
DATE 02/23/2009

SYSTEM : Primary N.C. Route
GREEN LINE ROUTE : Y

UNDER ROUTES AND CLEARANCES

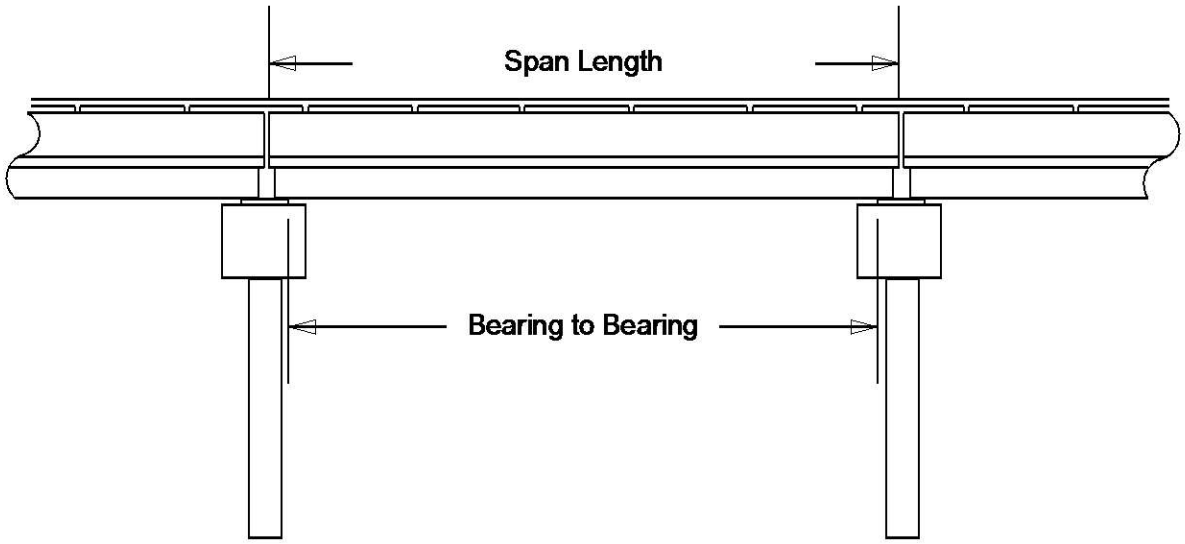
		Vertical Clearances		Horizontal Clearances		
Span	**Route Description**	**MMVC**	**MVC**	**Total**	**Left**	**Right**
2	US64W	14	13.9170	43.8330	0	8

Note: All measurements are in feet.

REMARKS :

Structure Data Worksheet

County: DAVIDSON **Structure No:** 280058 **Date:** **Inspected By:** MJM



Span No	Span Length	Bearing to Bearing	Comments
1	48.5	46.5	NBIS BRIDGE LENGTH = 130.5 FT.
2	47.5	46.5	MEASUREMENTS UPDATED 1/7/2016 BY MJM
3	39.5	37.5	

Bridge Inspection Field Sketch

NC-109

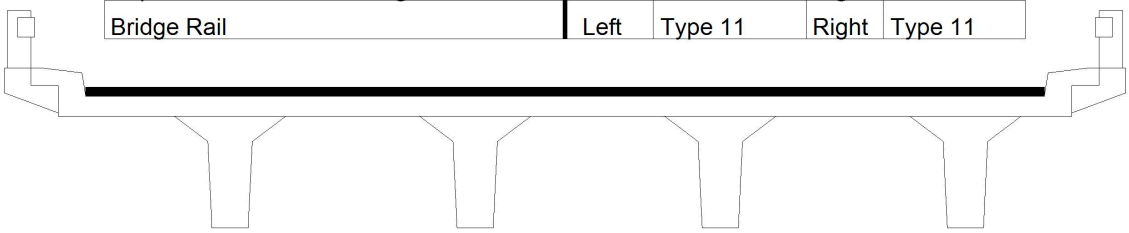
Roadway	24ft Wide	2 Paved Lanes	Looking North
Left Shoulder	12ft Wide		12ft Unpaved
Right Shoulder	12ft Wide		12ft Unpaved
Left Guardrail	1ft from road		
Right Guardrail	1ft from road		

MEASUREMENTS UPDATED 1/7/2016 BY MJM

Title	**Description**		
APPROACH ROADWAY	SHEET 1		
Bridge No: 280058	**Drawn By:** BTH	**Date:** 04/17/08	**File Name:** S0090001106

Bridge Inspection Field Sketch

Deck Width/Out to Out	29.333ft	Between Rails				26.917ft
Clear Roadway	26ft	Wearing Surface				0.25ft
Median Width		Median Height				
Curb Height		Left	0.667ft	Right	0.667ft	
Sidewalk Width		Left		Right		
Clear Roadway (Rail to Median)		Left		Right		
Guardrail Width		Left	0.875ft	Right	0.875ft	
Top of Rail to Deck/Wearing Surface		Left	2.417ft	Right	2.417ft	
Bridge Rail		Left	Type 11	Right	Type 11	



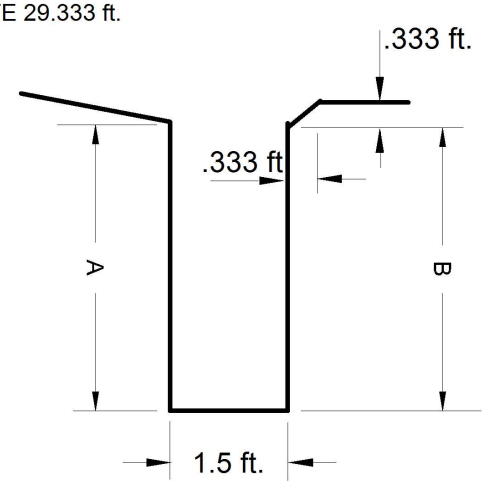
Measurements for Span #	1		
Deck Thickness	0.542	Left Overhang	4.417
Top of Rail to Bottom of Beam	5.833	Right Overhang	4.417

Beam Number	Beam Type	Spacing	Comments
1	RC Deck Girder	7.5ft	
2	RC Deck Girder	7.5ft	
3	RC Deck Girder	7.5ft	
4	RC Deck Girder	ft	

ABUTS: RC CAP ON TIMBER PILES. PIERS: 2 COLUMN RCP&B.

BETWEEN THE RAILS MEASURED AT STEEL GUARDRAIL.

RAIL TO RAIL AT CONCRETE 29.333 ft.



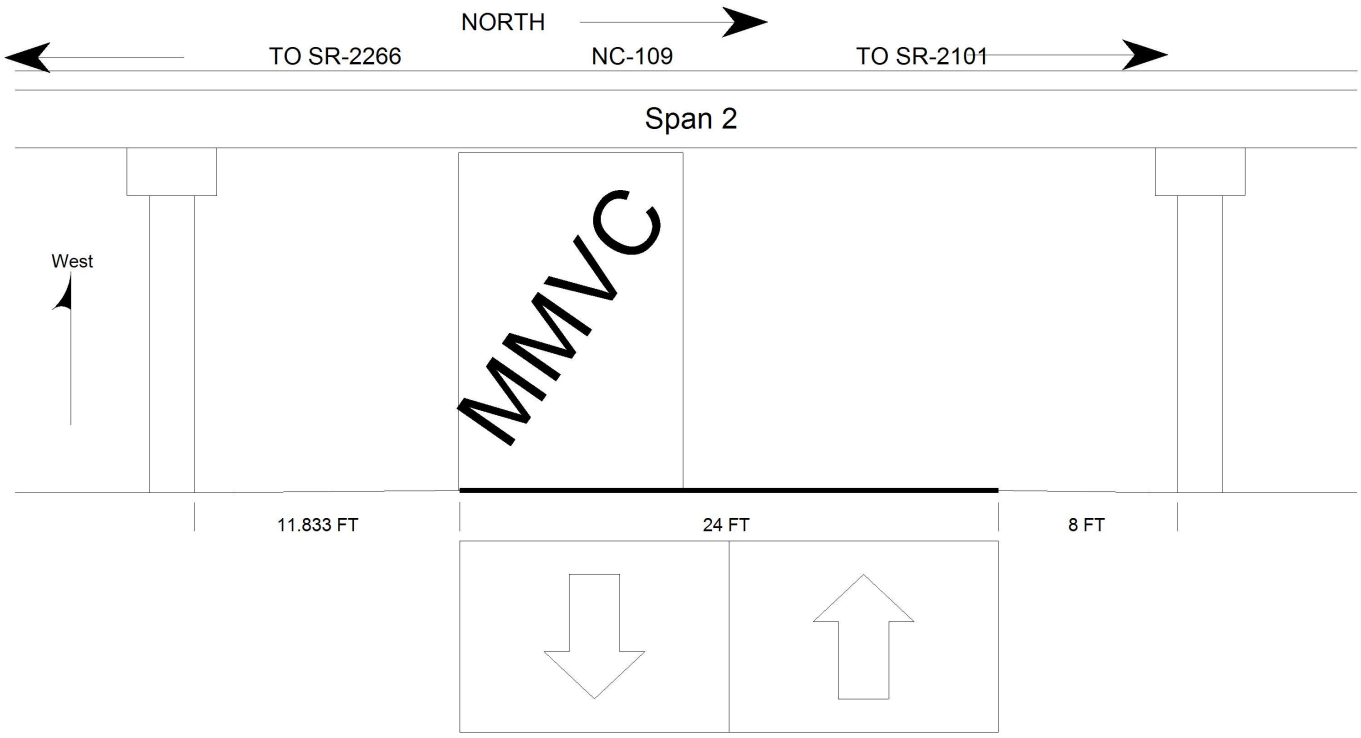
GIRDER	Dim. A	Dim. B
1	2.417 ft	2.417 ft
2	2.5 ft.	2.5 ft.
3	2.5 ft.	2.5 ft.
4	2.417 ft	2.417 ft

MEASUREMENTS UPDATED 1/7/2016 BY MJM

Title	Description
SUPERSTRUCTURE	SHEET 2

Bridge No:	Drawn By:	Date:	File Name:
280058	BTH	04/17/08	S0090001107

Bridge Inspection Field Sketch



US-64

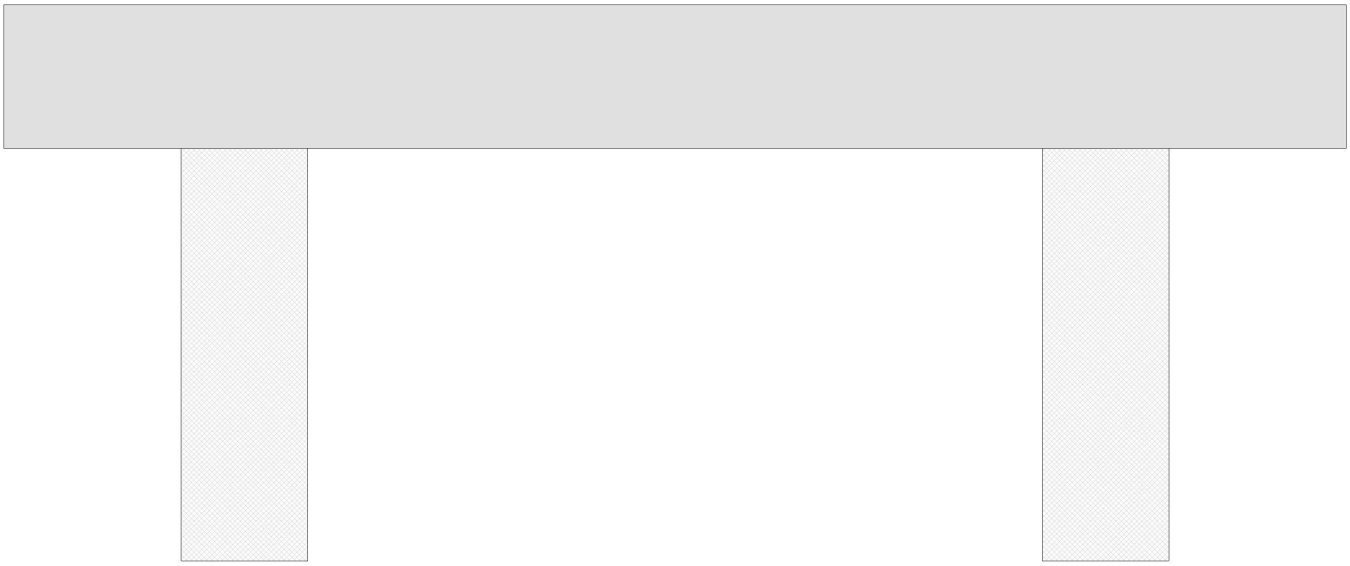
Roadway 1		Direction of Traffic	East West
Distance to Left Rail		Distance to Right Rail	
Distance to Left Toe of Slope		Distance to Left Bent	11.833 FT
Distance to Right Toe of Slope		Distance to Right Bent	8FT
MMVC	14 Ft at Beam 4, 10 FT from LT. EDGE OF ROADWAY		
MVC	13.917 Ft at Beam 4, 24 FT from LT. EDGE OF ROADWAY		

MEASUREMENTS VERIFIED 1/7/2016 BY MJM

Title	**Description**
UNDER CLEARANCE	SHEET 3

Bridge No: 280058	**Drawn By:** BTH	**Date:** 04/17/08	**File Name:** S0090001108

Bridge Inspection Field Sketch



Cap Information			Material Cast-in-Place Concrete			
Length	Width	Height	Left Overhang	Right Overhang	Left Beam to End of Cap.	Right Beam to End of Cap.
26.500 ft.	2.500 ft.	2.833 ft.	4.750 ft.	4.750 ft.	1.667 ft.	1.667 ft.

Subcap Information			Material		
Length	Width	Height	Left Overhang	Right Overhang	Left Pile to Splice.

Sill Information			Material
Length	Width	Height	

Pile #	Material	Spacing	Width/Dia.	Height	Length	Orientation	Driven?	Replacement?	Removed?	Collar?
1	Concrete	17.0 ft.	2.5 ft.	2.5 ft.		Vertical	No	No	No	No
2	Concrete		2.5 ft.	2.5 ft.		Vertical	No	No	No	No

MEASUREMENTS VERIFIED 1/7/2016 BY MJM

Bent/Abutment #: 1 Similar Bents: 1

Title	**Description**
PIERS	SHEET 4

Bridge No: 280058	**Drawn By:** BTH	**Date:** 4/17/2008	**File Name:** S0090002767