

Inspection Report with SI&A Data

Structure Description: 43.96 Foot - 2 Span Concrete Culvert (includes frame culverts)

2 District: 09 **3 County:** Rowan **16 Latitude:** 38°14'29.00" **7 Longitude:** 83°21'02.00"

7 Facility Carried: LITTLE PERRY RD

Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	X
Element	
Fracture Critical	
Underwater	
Special	X

NBI CONDITION RATINGS			
58 Deck:	6	61 Channel:	5
59 Superstructure:	6	62 Culvert:	N
60 Substructure:	4	Sufficiency Rating:	6

GEOMETRIC DATA		
48 Max Length Span:		20.997 ft
49 Structure Length:		43.963 ft
32 Approach Roadway:		18.045 ft
33 Median:		(0) No Median
34 Skew:		10°
35 Flare:		No Flare
50A Curb/Sidewalk Width L:		0.000 ft
50B Curb/Sidewalk Width R:		0.000 ft
47 Horiz. Clearance:		19.685 ft
51 Width Curb to Curb:		19.685 ft
52 Width Out to Out:		20.013 ft

DESIGN	
Substandard:	Weight
43A Main Span Material:	(1) Concrete
43B Main Span Design:	(01) Slab
45 Number of Spans Main:	2
44A Approach Span Material:	Not Applicable (0)
44B Approach Span Design:	Not Applicable (00)
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	in
Overlay Date:	

ADMINISTRATIVE		
27 Year Built:		1969
106 Year Reconstructed:		0
42A Type of Service On:		(1) Highway
42B Type of Service Under:		(5) Waterway
37 Historical Significance:		(5) Not Eligible
21 Maintenance Responsibility:		(02) County Hwy Agency
22 Owner:		(02) County Hwy Agency
101 Parallel Structure:		(N) No II Structure Exists

APPRAISAL	
36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
36C Approach Guardrail:	(0) Substandard
36D Approach Guardrail Ends:	(0) Substandard
71 Waterway Adequacy:	(5) Above Tolerable
72 Approach Alignment:	(7) Above Minimum
92A Fracture Critical Inspection:	No
92B Under Water Inspection:	No
113 Scour Critical:	(4) Stable, needs action
Recommended Scour Critical:	(4) Stable, Needs Attention

CLEARANCES		
10 Vert. Clearance:		99.999 ft
53 Min. Vert. Clearance Over:		99.999 ft
54A Vert. Under Reference:		(N) Feature not hwy or RR
54B Min. Vert. Underclearance:		0.000 ft
55A Lateral Under Reference:		(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:		0.000 ft
56 Min. Lat. Underclearance L:		0.000 ft

LOAD RATINGS	
63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

POSTINGS	
41 Posting Status:	(P) Posted For Load
Signs Posted Cardinal:	Yes
Signs Posted Non-Cardinal:	Yes
Field Postings Gross:	9 tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

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:									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
			%		%		%		%

STRUCTURE NOTES
<p>There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16. 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.</p>

INSPECTION NOTES
<p>This is a special NBI inspection to only verify that the proper posting signs are in place and to change item (41) to P posted for load. Both ends of the bridge are posted as recommended. Inspection by A. Greiner & W. K. Shugars</p>

WORK		
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Overlay Thickness:	in
Overlay Date:	

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36B Transitions	(0) Substandard
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64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

POSTINGS	
41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	No
Signs Posted Non-Cardinal:	No
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

Inspection Report with SI&A Data

38: Re Concrete Slab

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	879.84	805.84	92%	70	8%	4	0%	0	0%

A moderate intensity of minor sized cracking is present in the wearing surface over the pier. Minor sized longitudinal cracking is present in the downstream wearing surface near the north and south abutments. The underside of the slab in the south span has a moderate sized spall with exposed steel near the center third at the downstream end and a moderate spall adjacent to the downstream end of the south abutment. Moderate spalls are present in the upstream slab face at rail posts 4 and 5 from the south. See photos.

1080: Delamination/Spall/Patched Area

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	1	0	0%	0	0%	1	100%	0	0%

See element 38.

1130: Cracking (RC and Other)

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	1	0	0%	1	100%	0	0%	0	0%

See element 38.

210: Re Conc Pier Wall

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	20	18	90%	1	5%	1	5%	0	0%

Pier wall has areas of minor cracking with some minor shallow spalling. Scour is present at the downstream end of the structure. Please see the notes under element 215.

Inspection Report with SI&A Data

215: Re Conc Abutment

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	72	45	62%	15	21%	12	17%	0	0%

The downstream end of the south abutment has some large cracking and spalling with exposed steel. The steel that is exposed is rusty and heavily corroded. The width of the spall/crack varies, but, it measures ~ 4.5" -5" wide near mid-height. The cracking/spalling is approximately 3" deep, but, with a smaller instrument you could go further back into the smaller crevice. This deterioration actually begins as moderate cracking in the footing and extends up through the abutment (becoming a larger area of cracking and spalling) to the top of the downstream south wingwall. 1.5" of cracking/separation was measured at this location, the top of the the downstream south wingwall (this appears to have increased from 1.25" during the last inspection). There is also 3/16 in. of lateral displacement (slight rotation of the wingwall toward the stream). Moderate cracking in the floor/wingwall footing interface at the downstream end of the south abutment measures ~ 1/2 in. wide. This deterioration appears to be due to settlement that is due to significant scour at the outlet of the structure. The downstream south and north wingwalls have minor diagonal cracking that extends from the footing to the top of the wall. The upstream end of the north abutment has a couple of minor diagonal cracks that extend from the floor to the ceiling. See photos.

Significant scour is present for the entire length of the structure at the outlet end. A concrete protection apron is in place below the structure's concrete floor. The protection apron extends the length of the structure and is ~ 7.5' wide. The vertical fall off the floor onto this protection apron is ~ 18". The vertical fall off the protection apron is ~ 3.5' and it is vertically undermined 2'- 2.5'. The apron is horizontally undermined 7.5'- 8' at the south end and ~ 6' -7' along the north end. Below this apron are large cyclopean stone and ruins of an old concrete structure (scour countermeasures). Continued in Additional Notes 1 (896).

896: Additional Notes 1

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	1	1	100%	0	0%	0	0%	0	0%

Continued from element 215. Several of the stones below the apron have washed out since the last inspection. The scour hole below these stones and ruins was ~ 3' -4' deep during this inspection. There is a substantial elevation difference between the streambed at the inlet of the structure and the streambed below the structure and its countermeasures.

Scour is also present along the inlet of the south span. The vertical rise (elevation difference from the streambed to the top of the floor) is ~ 3'. The floor is horizontally undermined 12" -18" for a length of ~ 10'. The streambed at this location is mostly solid rock and the vertical undermining is minimal. It is assumed that some water is seeping/flowing underneath of the structure.

4000: Settlement

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	1	0	0%	0	0%	1	100%	0	0%

See element 215.

Inspection Report with SI&A Data

6000: Scour									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	1	0	0%	0	0%	1	100%	0	0%
See element 215.									

330: Metal Bridge Railing									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	88	76	86%	12	14%	0	0%	0	0%
The inlet rail has moderate impact damage along the top near mid-length. The coating is dull with areas of surface rust throughout. See photos.									

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	134.11	0	0%	134.11	100%	0	0%	0	0%
See element 330.									

856: Chan Drift									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
A moderate sized drift pile is present at the inlet of the south span. Minor sized piles of drift are present at the inlet end of the pier and scattered along the large stones just downstream of the structure.									

Inspection Report with SI&A Data

857: Embankment Erosion									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	1	100%	0	0%
<p>Moderate erosion is present behind the downstream north wingwall. The roadway shoulder is beginning to break up and should be repaired.</p>									

860: Erosion Ctrl/Prt									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
<p>The downstream south embankment is lined with large Class III rock covered with a concrete slurry. This has some minor undermining but is in satisfactory condition. The downstream north bank has some large stones in place that are beginning to slip around the wingwall, but overall they are performing well. See photos.</p>									

STRUCTURE NOTES
<p>There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16. 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.</p>

INSPECTION NOTES
<p>There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). Bridge Inspection by A.Greiner & K.Shugars.</p>

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Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	
Element	
Fracture Critical	
Underwater	
Special	X

NBI CONDITION RATINGS	
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59 Superstructure: N	62 Culvert: 5
60 Substructure: N	Sufficiency Rating: 44.6

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108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	in
Overlay Date:	

ADMINISTRATIVE	
27 Year Built:	1969
106 Year Reconstructed:	0
42A Type of Service On:	(1) Highway
42B Type of Service Under:	(5) Waterway
37 Historical Significance:	(5) Not Eligible
21 Maintenance Responsibility:	(02) County Hwy Agency
22 Owner:	(02) County Hwy Agency
101 Parallel Structure:	(N) No II Structure Exists

APPRAISAL	
36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
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INSPECTION NOTES
<p>This Special-Other inspection was performed due a recent high-water-event. There appears to be no advancement of scour or undermining from the previous inspection. It does not appear that the bridge was overtopped during the high-water-event. There is a minor accumulation of drift/debris present on the upstream pier noise. Inspection by B.Jones.</p>

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56 Min. Lat. Underclearance L:	0.000 ft

POSTINGS

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Signs Posted Cardinal:	Unknown
Signs Posted Non-Cardinal:	Unknown
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

LOAD RATINGS

63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
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Inspection Report with SI&A Data

38: Re Concrete Slab

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SQ.FT	879.84	835.85	95%	43.99	5%	0	0%	0	0%

Random cracking is present in the at grade wearing surface in the north end of the deck near the downstream end. Minor transverse cracking is also present over the center pier. Otherwise, the deck is in satisfactory condition. See photos.

210: Re Conc Pier Wall

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	20	20	100%	0	0%	0	0%	0	0%

Pier wall has areas of cracking with some shallow spalling.

215: Re Conc Abutment

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	72	67	93%	2	3%	3	4%	0	0%

The south exterior wall near the outlet of the culvert has heavy vertical cracking with exposed steel. The steel that is exposed is rusty and corroded. The width of the spall/crack varies, but, it measures 4.5 in. wide at 44 in. off the floor and has not changed since the previous inspection.. It is approximately 3 in. deep, but, with a smaller instrument you could go further back into the smaller crevice. The spall extends down approximately 40 in. from the ceiling while the cracking extends on down to the floor. This spalling also extends along the ceiling with steel exposed at the ceiling interface. 3.25 in. of separation cracking/spalling was measured between the bottom of the ceiling and the south downstream wingwall. This separation crack is 1.25 in. wide at the top of the wingwall and there is 3/16 in. of lateral displacement (slight rotation of the wingwall toward the stream). Moderate cracking is also present in the floor/wingwall footing interface at the downstream end of the south abutment. One of these cracks is approximately 1/2 in. wide. The downstream south wingwall has light diagonal cracking that extends from the upstream footing to the top of the wall near mid-length. The outlet south wingwall have minor diagonal cracking for the full height of the wingwall. The north exterior wall has minor diagonal cracking that extends from the floor to the ceiling of the culvert. See photos.

330: Metal Bridge Railing

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	88	88	100%	0	0%	0	0%	0	0%

Rail is in good condition at this time. See photos.

Inspection Report with SI&A Data

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	0.3	0.3	100%	0	0%	0	0%	0	0%

856: Chan Drift									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
Minor drift at upstream nose of pier wall needs to be removed. See photos.									

860: Erosion Ctrl/Prt									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
The downstream south embankment is lined in Class III rock with concrete slurry. Embankment erosion is in good condition with only minor undermining. Since the previous inspection, large cyclopean stone has been placed along the downstream north embankment. See photos.									

7360: DO NOT USE Settlement									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
4.5 in. of max of separation cracking/spalling was measured between the bottom of the slab and the south downstream wingwall. This separation crack is 1.25 in. wide at the top of the wingwall and there is 3/16 in. of lateral displacement (slight rotation of the wingwall toward the stream).									

Inspection Report with SI&A Data

7361: DO NOT USE Scour

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	0	0%	1	100%

Approximately 3 ft. of vertical scour is present at the upstream end of the floor in the south span. This was measured from the top of the floor to the bottom of the streambed and extends for a length of approximately 8 ft. from the pier wall. Horizontal undermining is up 1.5 ft. at this location. During the last inspection the 2nd ft. step down ft. or the protection apron at the downstream outlet end had 8 ft.+ of horizontal undermining for the full width of the culvert and that was still the case during this inspection. The protection apron is approximately 7 ft. wide so the possibility of the structure having undermining is high. It is also very likely that water is beginning to seep under the structure since there is undermining of the floor at the upstream and downstream ends. There is a significant elevation difference between the height of the streambed upstream and downstream of the structure. A large deep ~6 ft. scour hole is present just downstream of the protection apron. See photos.

STRUCTURE NOTES

There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16. 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.

INSPECTION NOTES

Bridge Inspection by B.Combs.

WORK

Action:	-
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Inspection Report with SI&A Data

Structure Description: 43.96 Foot - 2 Span Concrete Culvert (includes frame culverts)

2 District: 09 **3 County:** Rowan **16 Latitude:** 38°14'29.00" **7 Longitude:** 83°21'02.00"

7 Facility Carried: LITTLE PERRY RD

Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	
Element	X
Fracture Critical	
Underwater	
Special	X

NBI CONDITION RATINGS

58 Deck:	N	61 Channel:	5
59 Superstructure:	N	62 Culvert:	5
60 Substructure:	N	Sufficiency Rating:	44.6

GEOMETRIC DATA

48 Max Length Span:	20.997 ft
49 Structure Length:	43.963 ft
32 Approach Roadway:	18.045 ft
33 Median:	(0) No Median
34 Skew:	10°
35 Flare:	No Flare
50A Curb/Sidewalk Width L:	0.000 ft
50B Curb/Sidewalk Width R:	0.000 ft
47 Horiz. Clearance:	19.685 ft
51 Width Curb to Curb:	19.685 ft
52 Width Out to Out:	20.013 ft

DESIGN

Substandard:	Weight
43A Main Span Material:	(1) Concrete
43B Main Span Design:	(01) Slab
45 Number of Spans Main:	2
44A Approach Span Material:	Not Applicable (0)
44B Approach Span Design:	Not Applicable (00)
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	in
Overlay Date:	

ADMINISTRATIVE

27 Year Built:	1969
106 Year Reconstructed:	0
42A Type of Service On:	(1) Highway
42B Type of Service Under:	(5) Waterway
37 Historical Significance:	(5) Not Eligible
21 Maintenance Responsibility:	(02) County Hwy Agency
22 Owner:	(02) County Hwy Agency
101 Parallel Structure:	(N) No II Structure Exists

APPRAISAL

36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
36C Approach Guardrail:	(0) Substandard
36D Approach Guardrail Ends:	(0) Substandard
71 Waterway Adequacy:	(8) Equal Desirable
72 Approach Alignment:	(7) Above Minimum
92A Fracture Critical Inspection:	No
92B Under Water Inspection:	No
113 Scour Critical:	(4) Stable, needs action
Recommended Scour Critical:	(4) Stable, Needs Attention

CLEARANCES

10 Vert. Clearance:	99.999 ft
53 Min. Vert. Clearance Over:	99.999 ft
54A Vert. Under Reference:	(N) Feature not hwy or RR
54B Min. Vert. Underclearance:	0.000 ft
55A Lateral Under Reference:	(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:	0.000 ft
56 Min. Lat. Underclearance L:	0.000 ft

POSTINGS

41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	Unknown
Signs Posted Non-Cardinal:	Unknown
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

LOAD RATINGS

63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

Inspection Report with SI&A Data

38: Re Concrete Slab

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	879.84	835.85	95%	43.99	5%	0	0%	0	0%

The wearing surface has minor transverse cracking mostly over the center pier cap. Otherwise the at grade wearing surface is in good condition at this time. See photos.

210: Re Conc Pier Wall

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	20	20	100%	0	0%	0	0%	0	0%

Pier wall has areas of cracking with some shallow spalling.

215: Re Conc Abutment

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	72	67	93%	2	3%	3	4%	0	0%

The south abutment has moderate cracking and heavy spalling at the downstream end near the downstream wingwall connection. Steel is exposed and it is rusty and corroded. The width of the spall/crack varies, but, it measures 4.5 in. wide at 44 in. off the floor. It is approximately 3 in. deep, but, with a smaller instrument you could go further back into the smaller crevice. The spall extends down approximately 40 in. from the ceiling while the cracking extends on down to the floor. This spalling also extends along the ceiling with steel exposed at the ceiling interface. 3.25 in. of separation cracking/spalling was measured between the bottom of the slab and the south downstream wingwall. This separation crack is 1.25 in. wide at the top of the wingwall and there is 3/16 in. of lateral displacement (slight rotation of the wingwall toward the stream). Moderate cracking is also present in the floor/wingwall footing interface at the downstream end of the south abutment. One of these cracks is approximately 1/2 in. wide. The downstream south wingwall has light diagonal cracking that extends from the upstream footing to the top of the wall near mid-length. Both upstream exterior walls of the south barrel and the north barrel have minor vertical and diagonal cracking. See photos.

330: Metal Bridge Railing

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	88	88	100%	0	0%	0	0%	0	0%

Rail is in good condition at this time. See photos.

Inspection Report with SI&A Data

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	0.3	0.3	100%	0	0%	0	0%	0	0%

856: Chan Drift									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
Minor drift at upstream nose of pier wall needs to be removed. See photos.									

860: Erosion Ctrl/Prt									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
The downstream south embankment is lined in Class III rock with concrete slurry. Embankment erosion is in good condition with only minor undermining. See photos.									

7360: DO NOT USE Settlement									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
3.25 in. of separation cracking/spalling was measured between the bottom of the slab and the south downstream wingwall. This separation crack is 1.25 in. wide at the top of the wingwall and there is 3/16 in. of lateral displacement (slight rotation of the wingwall toward the stream).									

Inspection Report with SI&A Data

7361: DO NOT USE Scour

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	0	0%	1	100%

Approximately 3 ft. of vertical scour is present at the upstream end of the floor in the south span. This was measured from the top of the floor to the bottom of the streambed and extends for a length of approximately 8 ft. from the pier wall. Horizontal undermining is up 1 ft. at this location. During the last inspection the 2nd ft. step down ft. or the protection apron at the downstream outlet end had 8 ft.+ of horizontal undermining for the full width of the culvert. During this inspection only the southern most end was accessed (due to the water flow) and up to 5 ft. of horizontal undermining was probed. The protection apron is approximately 7 ft. wide so the possibility of the structure having undermining is high. It is also very likely that water is beginning to seep under the structure since there is undermining of the floor at the upstream and downstream ends. There is a significant elevation difference between the height of the streambed upstream and downstream of the structure. A large deep scour hole is present just downstream of the protection apron. See photos.

STRUCTURE NOTES

There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16. 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.

INSPECTION NOTES

This is a special inspection to monitor the scour, undermining, and the progression of settlement at the downstream south end of the structure. Element inspection notes were only updated to reflect these particular issues. Inspected by A.Greiner.

WORK

Action:	-
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Inspection Report with SI&A Data

Structure Description: 43.96 Foot - 2 Span Concrete Culvert (includes frame culverts)

2 District: 09 **3 County:** Rowan **16 Latitude:** 38°14'29.00" **7 Longitude:** 83°21'02.00"

7 Facility Carried: LITTLE PERRY RD

Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	X
Element	X
Fracture Critical	
Underwater	
Special	

NBI CONDITION RATINGS			
58 Deck:	N	61 Channel:	5
59 Superstructure:	N	62 Culvert:	5
60 Substructure:	N	Sufficiency Rating:	44.6

GEOMETRIC DATA		
48 Max Length Span:		20.997 ft
49 Structure Length:		43.963 ft
32 Approach Roadway:		18.045 ft
33 Median:		(0) No Median
34 Skew:		10°
35 Flare:		No Flare
50A Curb/Sidewalk Width L:		0.000 ft
50B Curb/Sidewalk Width R:		0.000 ft
47 Horiz. Clearance:		19.685 ft
51 Width Curb to Curb:		19.685 ft
52 Width Out to Out:		20.013 ft

DESIGN	
Substandard:	Weight
43A Main Span Material:	(1) Concrete
43B Main Span Design:	(01) Slab
45 Number of Spans Main:	2
44A Approach Span Material:	Not Applicable (0)
44B Approach Span Design:	Not Applicable (00)
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	in
Overlay Date:	

ADMINISTRATIVE		
27 Year Built:		1969
106 Year Reconstructed:		0
42A Type of Service On:		(1) Highway
42B Type of Service Under:		(5) Waterway
37 Historical Significance:		(5) Not Eligible
21 Maintenance Responsibility:		(02) County Hwy Agency
22 Owner:		(02) County Hwy Agency
101 Parallel Structure:		(N) No II Structure Exists

APPRAISAL	
36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
36C Approach Guardrail:	(0) Substandard
36D Approach Guardrail Ends:	(0) Substandard
71 Waterway Adequacy:	(8) Equal Desirable
72 Approach Alignment:	(7) Above Minimum
92A Fracture Critical Inspection:	No
92B Under Water Inspection:	No
113 Scour Critical:	(4) Stable, needs action
Recommended Scour Critical:	(4) Stable, Needs Attention

CLEARANCES		
10 Vert. Clearance:		99.999 ft
53 Min. Vert. Clearance Over:		99.999 ft
54A Vert. Under Reference:		(N) Feature not hwy or RR
54B Min. Vert. Underclearance:		0.000 ft
55A Lateral Under Reference:		(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:		0.000 ft
56 Min. Lat. Underclearance L:		0.000 ft

LOAD RATINGS	
63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

POSTINGS	
41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	Unknown
Signs Posted Non-Cardinal:	Unknown
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

Inspection Report with SI&A Data

38: Re Concrete Slab

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	879.84	835.85	95%	43.99	5%	0	0%	0	0%

The wearing surface has minor transverse cracking mostly over the center pier cap. Otherwise the at grade wearing surface is in good condition at this time. See photos.

210: Re Conc Pier Wall

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	20	20	100%	0	0%	0	0%	0	0%

Pier wall has areas of cracking with some shallow spalling.

215: Re Conc Abutment

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	72	70	97%	2	3%	0	0%	0	0%

The south barrel has a 3 in.dx5 in.w crack/spall with exposed steel near the outlet on the exterior wall. The 5 in.w spall extends down 40 in. from the ceiling while the crack extends on down to the floor. Both upstream exterior walls of the south barrel and the north barrel have minor vertical and diagonal cracking. See photos.

330: Metal Bridge Railing

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	88	88	100%	0	0%	0	0%	0	0%

Rail is in good condition at this time. See photos.

Inspection Report with SI&A Data

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	0.3	0.3	100%	0	0%	0	0%	0	0%

856: Chan Drift									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
Minor drift at upstream nose of pier wall needs to be removed. See photos.									

860: Erosion Ctrl/Prt									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
The downstream south embankment is lined in Class III rock with concrete slurry. Embankment erosion is in good condition with only minor undermining. See photos.									

7361: DO NOT USE Scour									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	0	0%	1	100%
Approximately 3.5 ft. of scour is present at the inlet end of the south barrel. The inlet of the south barrel also has up to 1 ft. of undermining which starts at the center pier and extends to the center of the south barrel. The 2nd ft. step down ft. at the outlet has 8 ft.+ of undermining for the full width of the culvert. The 1st step down (1.5 ft.) is approximately 7 ft. wide so the possibility of the culvert having undermining is high. Its also highly possible that water is beginning to seep under the culvert due to undermining at both the inlet and outlet ends of the culvert. See photos.									

Inspection Report with SI&A Data

STRUCTURE NOTES

There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16. 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.

INSPECTION NOTES

Inspected by A.Greiner and B.Combs.

WORK

Action: -

Inspection Report with SI&A Data

Structure Description: 43.96 Foot - 2 Span Concrete Culvert (includes frame culverts)

2 District: 09 **3 County:** Rowan **16 Latitude:** 38°14'29.00" **7 Longitude:** 83°21'02.00"

7 Facility Carried: LITTLE PERRY RD

Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	X
Element	X
Fracture Critical	
Underwater	
Special	

NBI CONDITION RATINGS			
58 Deck:	6	61 Channel:	5
59 Superstructure:	6	62 Culvert:	N
60 Substructure:	5	Sufficiency Rating:	44.6

GEOMETRIC DATA		
48 Max Length Span:		20.997 ft
49 Structure Length:		43.963 ft
32 Approach Roadway:		18.045 ft
33 Median:		(0) No Median
34 Skew:		10°
35 Flare:		No Flare
50A Curb/Sidewalk Width L:		0.000 ft
50B Curb/Sidewalk Width R:		0.000 ft
47 Horiz. Clearance:		19.685 ft
51 Width Curb to Curb:		19.685 ft
52 Width Out to Out:		20.013 ft

DESIGN	
Substandard:	Weight
43A Main Span Material:	(1) Concrete
43B Main Span Design:	(01) Slab
45 Number of Spans Main:	2
44A Approach Span Material:	Not Applicable (0)
44B Approach Span Design:	Not Applicable (00)
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	in
Overlay Date:	

ADMINISTRATIVE		
27 Year Built:		1969
106 Year Reconstructed:		0
42A Type of Service On:		(1) Highway
42B Type of Service Under:		(5) Waterway
37 Historical Significance:		(5) Not Eligible
21 Maintenance Responsibility:		(02) County Hwy Agency
22 Owner:		(02) County Hwy Agency
101 Parallel Structure:		(N) No II Structure Exists

APPRAISAL	
36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
36C Approach Guardrail:	(0) Substandard
36D Approach Guardrail Ends:	(0) Substandard
71 Waterway Adequacy:	(8) Equal Desirable
72 Approach Alignment:	(7) Above Minimum
92A Fracture Critical Inspection:	No
92B Under Water Inspection:	No
113 Scour Critical:	(4) Stable, needs action
Recommended Scour Critical:	(4) Stable, Needs Attention

CLEARANCES		
10 Vert. Clearance:		99.999 ft
53 Min. Vert. Clearance Over:		99.999 ft
54A Vert. Under Reference:		(N) Feature not hwy or RR
54B Min. Vert. Underclearance:		0.000 ft
55A Lateral Under Reference:		(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:		0.000 ft
56 Min. Lat. Underclearance L:		0.000 ft

LOAD RATINGS	
63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

POSTINGS	
41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	Unknown
Signs Posted Non-Cardinal:	Unknown
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

Inspection Report with SI&A Data

38: Re Concrete Slab									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	879.84	835.85	95%	43.99	5%	0	0%	0	0%
<p>Concrete slab has minor cracking throughout.</p> <p>Same comment By Bobby Giles May 10,2010</p>									

210: Re Conc Pier Wall									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	20	20	100%	0	0%	0	0%	0	0%
<p>Pier wall has areas of cracking with some shallow spalling.</p> <p>Same comment By Bobby Giles May 10,2010(see photo)</p>									

215: Re Conc Abutment									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	72	70	97%	2	3%	0	0%	0	0%
<p>< none ></p>									

330: Metal Bridge Railing									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	88	88	100%	0	0%	0	0%	0	0%
<p>< none ></p>									

Inspection Report with SI&A Data

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	0.3	0.3	100%	0	0%	0	0%	0	0%

856: Chan Drift									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%
<p>Drift at upstream nose of pier wall needs to be removed. See photo.</p> <p>Heavy Drift Accumalated at Upstream Wall needs to be removed (see photo)</p>									

7361: DO NOT USE Scour									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	0	0%	1	100%
<p>Scour at inlet and outlet ends. Scour is significant enough to warrant analysis. See photos for details.</p> <p>Same comment By Bobby Giles May 10,2010 (See Photo)</p>									

STRUCTURE NOTES
<p>There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16.</p> <p>06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.</p>

INSPECTION NOTES

WORK		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Action:</td> <td>-</td> </tr> </table>	Action:	-
Action:	-	

Inspection Report with SI&A Data

Structure Description: 43.96 Foot - 2 Span Concrete Culvert (includes frame culverts)

2 District: 09 **3 County:** Rowan **16 Latitude:** 38°14'29.00" **7 Longitude:** 83°21'02.00"

7 Facility Carried: LITTLE PERRY RD

Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	X
Element	X
Fracture Critical	
Underwater	
Special	

NBI CONDITION RATINGS			
58 Deck:	6	61 Channel:	5
59 Superstructure:	6	62 Culvert:	N
60 Substructure:	5	Sufficiency Rating:	44.6

GEOMETRIC DATA		
48 Max Length Span:		20.997 ft
49 Structure Length:		43.963 ft
32 Approach Roadway:		18.045 ft
33 Median:		(0) No Median
34 Skew:		10°
35 Flare:		No Flare
50A Curb/Sidewalk Width L:		0.000 ft
50B Curb/Sidewalk Width R:		0.000 ft
47 Horiz. Clearance:		19.685 ft
51 Width Curb to Curb:		19.685 ft
52 Width Out to Out:		20.013 ft

DESIGN	
Substandard:	Weight
43A Main Span Material:	(1) Concrete
43B Main Span Design:	(01) Slab
45 Number of Spans Main:	2
44A Approach Span Material:	Not Applicable (0)
44B Approach Span Design:	Not Applicable (00)
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	in
Overlay Date:	

ADMINISTRATIVE		
27 Year Built:		1969
106 Year Reconstructed:		0
42A Type of Service On:		(1) Highway
42B Type of Service Under:		(5) Waterway
37 Historical Significance:		(5) Not Eligible
21 Maintenance Responsibility:		(02) County Hwy Agency
22 Owner:		(02) County Hwy Agency
101 Parallel Structure:		(N) No II Structure Exists

APPRAISAL	
36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
36C Approach Guardrail:	(0) Substandard
36D Approach Guardrail Ends:	(0) Substandard
71 Waterway Adequacy:	(8) Equal Desirable
72 Approach Alignment:	(7) Above Minimum
92A Fracture Critical Inspection:	No
92B Under Water Inspection:	No
113 Scour Critical:	(U) Unknown Scour
Recommended Scour Critical:	(4) Stable, Needs Attention

CLEARANCES		
10 Vert. Clearance:		99.999 ft
53 Min. Vert. Clearance Over:		99.999 ft
54A Vert. Under Reference:		(N) Feature not hwy or RR
54B Min. Vert. Underclearance:		0.000 ft
55A Lateral Under Reference:		(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:		0.000 ft
56 Min. Lat. Underclearance L:		0.000 ft

LOAD RATINGS	
63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

POSTINGS	
41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	Unknown
Signs Posted Non-Cardinal:	Unknown
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

Inspection Report with SI&A Data

38: Re Concrete Slab									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	879.84	835.85	95%	43.99	5%	0	0%	0	0%
Concrete slab has minor cracking throughout.									

210: Re Conc Pier Wall									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	20	20	100%	0	0%	0	0%	0	0%
Pier wall has areas of cracking with some shallow spalling.									

215: Re Conc Abutment									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	72	70	97%	2	3%	0	0%	0	0%
< none >									

330: Metal Bridge Railing									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	88	88	100%	0	0%	0	0%	0	0%
< none >									

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	0.3	0.3	100%	0	0%	0	0%	0	0%

Inspection Report with SI&A Data

856: Chan Drift

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%

Drift at upstream nose of pier wall needs to be removed. See photo.

7361: DO NOT USE Scour

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	0	0%	1	100%

Scour at inlet and outlet ends. Scour is significant enough to warrant analysis. See photos for details.

STRUCTURE NOTES

There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16.
 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.

INSPECTION NOTES

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WORK

Action: -

Inspection Report with SI&A Data

Structure Description: 43.96 Foot - 2 Span Concrete Culvert (includes frame culverts)

2 District: 09 **3 County:** Rowan **16 Latitude:** 38°14'29.00" **7 Longitude:** 83°21'02.00"

7 Facility Carried: LITTLE PERRY RD

Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	X
Element	X
Fracture Critical	
Underwater	
Special	

NBI CONDITION RATINGS			
58 Deck:	6	61 Channel:	5
59 Superstructure:	6	62 Culvert:	N
60 Substructure:	5	Sufficiency Rating:	44.6

GEOMETRIC DATA		
48 Max Length Span:		20.997 ft
49 Structure Length:		43.963 ft
32 Approach Roadway:		18.045 ft
33 Median:		(0) No Median
34 Skew:		10°
35 Flare:		No Flare
50A Curb/Sidewalk Width L:		0.000 ft
50B Curb/Sidewalk Width R:		0.000 ft
47 Horiz. Clearance:		19.685 ft
51 Width Curb to Curb:		19.685 ft
52 Width Out to Out:		20.013 ft

DESIGN	
Substandard:	Weight
43A Main Span Material:	(1) Concrete
43B Main Span Design:	(01) Slab
45 Number of Spans Main:	2
44A Approach Span Material:	Not Applicable (0)
44B Approach Span Design:	Not Applicable (00)
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	in
Overlay Date:	

ADMINISTRATIVE		
27 Year Built:		1969
106 Year Reconstructed:		0
42A Type of Service On:		(1) Highway
42B Type of Service Under:		(5) Waterway
37 Historical Significance:		(5) Not Eligible
21 Maintenance Responsibility:		(02) County Hwy Agency
22 Owner:		(02) County Hwy Agency
101 Parallel Structure:		(N) No II Structure Exists

APPRAISAL	
36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
36C Approach Guardrail:	(0) Substandard
36D Approach Guardrail Ends:	(0) Substandard
71 Waterway Adequacy:	(8) Equal Desirable
72 Approach Alignment:	(7) Above Minimum
92A Fracture Critical Inspection:	No
92B Under Water Inspection:	No
113 Scour Critical:	(8) Stable above footing
Recommended Scour Critical:	(6) Calcs Not Made

CLEARANCES		
10 Vert. Clearance:		99.999 ft
53 Min. Vert. Clearance Over:		99.999 ft
54A Vert. Under Reference:		(N) Feature not hwy or RR
54B Min. Vert. Underclearance:		0.000 ft
55A Lateral Under Reference:		(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:		0.000 ft
56 Min. Lat. Underclearance L:		0.000 ft

LOAD RATINGS	
63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

POSTINGS	
41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	Unknown
Signs Posted Non-Cardinal:	Unknown
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

Inspection Report with SI&A Data

38: Re Concrete Slab									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	879.84	835.85	95%	43.99	5%	0	0%	0	0%
Concrete slab has cracking throughout.									

210: Re Conc Pier Wall									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	20	20	100%	0	0%	0	0%	0	0%
Pier wall has areas of cracking with some shallow spalling.									

215: Re Conc Abutment									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	72	70	97%	2	3%	0	0%	0	0%

330: Metal Bridge Railing									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	88	88	100%	0	0%	0	0%	0	0%

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	0.3	0.3	100%	0	0%	0	0%	0	0%

Inspection Report with SI&A Data

7361: DO NOT USE Scour

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	0	0%	1	100%

Scour is significant enough to warrant analysis if the structure.

STRUCTURE NOTES

There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16.
 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.

INSPECTION NOTES

-

WORK

Action:	-
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Inspection Report with SI&A Data

Structure Description: 43.96 Foot - 2 Span Concrete Culvert (includes frame culverts)

2 District: 09 **3 County:** Rowan **16 Latitude:** 38°14'29.00" **7 Longitude:** 83°21'02.00"

7 Facility Carried: LITTLE PERRY RD

Milepoint: 0.090

6A Feature Intersected: TRIPLETT CREEK

9 Location: .2 MI N OF JCT US 60

NBI	X
Element	
Fracture Critical	
Underwater	
Special	

NBI CONDITION RATINGS			
58 Deck:	7	61 Channel:	5
59 Superstructure:	7	62 Culvert:	N
60 Substructure:	6	Sufficiency Rating:	-1

GEOMETRIC DATA		
48 Max Length Span:		20.997 ft
49 Structure Length:		43.963 ft
32 Approach Roadway:		18.045 ft
33 Median:		(0) No Median
34 Skew:		10°
35 Flare:		No Flare
50A Curb/Sidewalk Width L:		0.000 ft
50B Curb/Sidewalk Width R:		0.000 ft
47 Horiz. Clearance:		19.685 ft
51 Width Curb to Curb:		19.685 ft
52 Width Out to Out:		20.013 ft

DESIGN	
Substandard:	Weight
43A Main Span Material:	(1) Concrete
43B Main Span Design:	(01) Slab
45 Number of Spans Main:	2
44A Approach Span Material:	Not Applicable (0)
44B Approach Span Design:	Not Applicable (00)
46 Number of Approach Spans:	0
107 Deck Type:	(1) Concrete-Cast-in-Place
108A Wearing Surface:	(1) Monolithic Concrete
108B Membrane:	(0) None
108C Deck Protection:	(0) None
Overlay Y/N:	No
Overlay Type:	None
Overlay Thickness:	0.000 in
Overlay Date:	

ADMINISTRATIVE		
27 Year Built:		1969
106 Year Reconstructed:		0
42A Type of Service On:		(1) Highway
42B Type of Service Under:		(5) Waterway
37 Historical Significance:		(5) Not Eligible
21 Maintenance Responsibility:		(02) County Hwy Agency
22 Owner:		(02) County Hwy Agency
101 Parallel Structure:		(N) No II Structure Exists

APPRAISAL	
36A Bridge Railings:	(1) Meets Standards
36B Transitions	(0) Substandard
36C Approach Guardrail:	(0) Substandard
36D Approach Guardrail Ends:	(0) Substandard
71 Waterway Adequacy:	(8) Equal Desirable
72 Approach Alignment:	(7) Above Minimum
92A Fracture Critical Inspection:	No
92B Under Water Inspection:	No
113 Scour Critical:	(4) Stable, needs action
Recommended Scour Critical:	(6) Calcs Not Made

CLEARANCES		
10 Vert. Clearance:		99.999 ft
53 Min. Vert. Clearance Over:		99.999 ft
54A Vert. Under Reference:		(N) Feature not hwy or RR
54B Min. Vert. Underclearance:		0.000 ft
55A Lateral Under Reference:		(N) Feature not hwy or RR
55B Min. Lat. Underclearance R:		0.000 ft
56 Min. Lat. Underclearance L:		0.000 ft

LOAD RATINGS	
63 Operating Type:	(0) Eng Jdgmnt tons
64 Operating Rating:	9.0 tons
65 Inventory Type:	(0) Eng Jdgmnt tons
66 Inventory Rating:	9.0 tons
Truck Capacity Type I:	9 tons
Truck Capacity Type II:	9 tons
Truck Capacity Type III:	9 tons
Truck Capacity Type IV:	9 tons

POSTINGS	
41 Posting Status:	(A) Open, No Restriction
Signs Posted Cardinal:	No
Signs Posted Non-Cardinal:	No
Field Postings Gross:	tons
Field Postings Type I:	tons
Field Postings Type II:	tons
Field Postings Type III:	tons
Field Postings Type IV:	tons

Inspection Report with SI&A Data

:									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
			%		%		%		%

STRUCTURE NOTES
<p>There has been confusion as how to properly code the type of design for this structure; at grade culvert or slab? Item (43B) had been coded as a slab up till the 2012 inspection and items (58), (59), and (60) were rated accordingly. During the 2012 inspection (43B) was changed to a culvert and item (62) was rated. Since plans for this structure are not available to see if it is actually a rigid type structure, this office will conservatively code this structure as a slab bridge and rate items (58), (59), and (60). ATG. 5-17-16. 06/15/16 The load rating is by engineering judgment for this concrete structure with no plans. Posting memo for 9 tons gross due to scour and the poor condition of the substructure. ALI.</p>

INSPECTION NOTES
-

WORK		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; padding: 2px;">Action:</td> <td style="padding: 2px;">-</td> </tr> </table>	Action:	-
Action:	-	



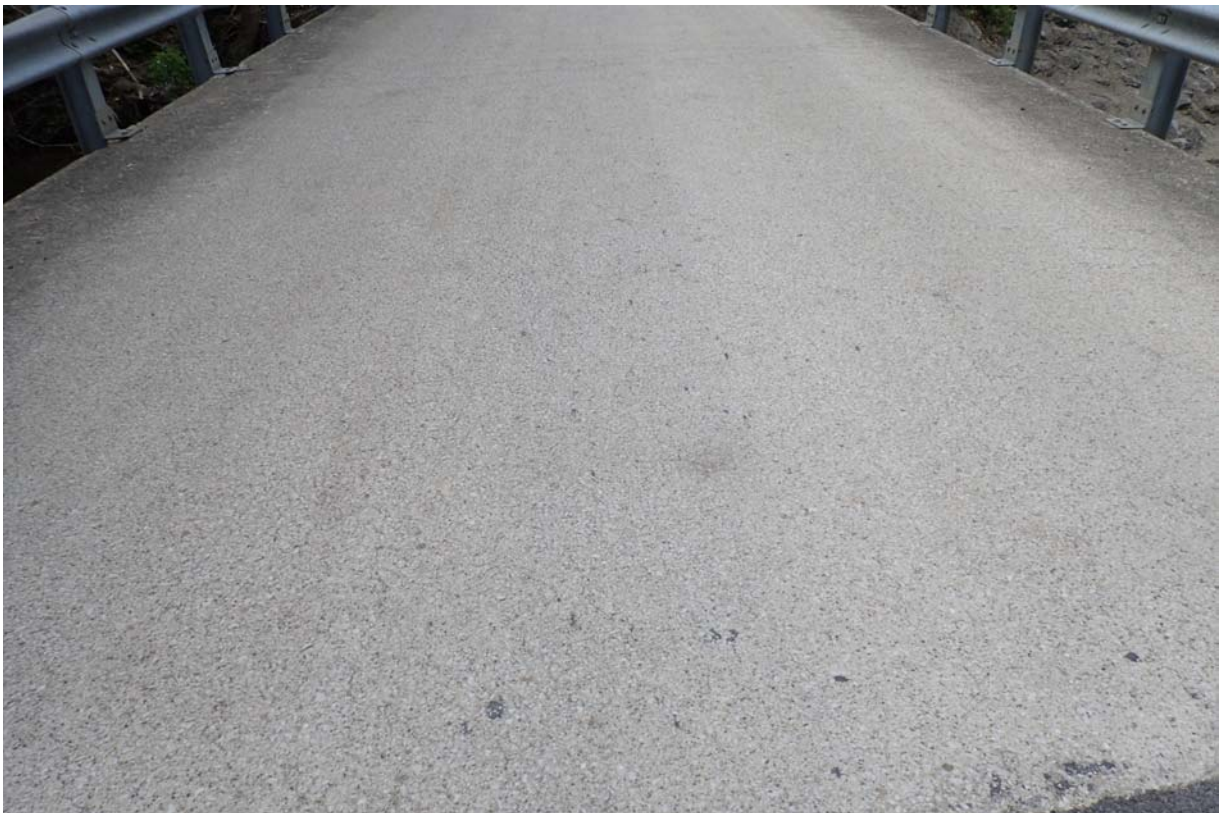
North view.



View of moderate cracking, potholes, and patching along the north approach.



View along the upstream railing. Notice the moderate impact damage near mid-length.



Typical view of the wearing surface.



View of several longitudinal cracks at the downstream north end of the wearing surface.



View of several minor sized transverse cracks in the wearing surface over the pier.



View of moderate erosion at the downstream north wingwall. Notice the roadway shoulder is breaking up.



Typical view looking downstream from the south end of the structure.



Typical view from the south approach.



View of several minor sized cracks at the downstream south end of the wearing surface.



View of ~ 1.5" of separation at the top of the downstream south wingwall.



View of ~ 1.5" of separation at the top of the downstream south wingwall.



View of moderate cracking and spalling at upstream rail post 4 from the south.



View of moderate cracking and spalling at upstream rail post 5 from the south.



Upstream view.



View of a moderate drift pile at the inlet end of the south span.



View of ~ 12" of horizontal undermining under the inlet floor of the south span.



View of ~ 12" of horizontal undermining under the inlet floor of the south span.



View of ~ 18" of horizontal undermining under the inlet floor of the south span.



View of ~ 12" of horizontal undermining under the inlet floor in the south span.



View of moderate spalls in the upstream face of the deck at rail post 4 and 5 from the south.



View of some minor cracking at the inlet end of the north abutment.



View of some minor cracking at the outlet end of the north abutment.



View of an ~ 18" vertical drop of the floor in the north span.



View of the stamp at the outlet end of the slab face.



Typical view looking through the north span.



Typical view looking through the south span.



View of the vertical rise from the bottom of the streambed to the floor at the inlet of the south span.



View of large heavy cracking and spalling with exposed steel at the downstream end of the south abutment. This cracking measures ~ 4.5"-5" wide at mid-height.



View of large heavy cracking and spalling with exposed steel at the downstream end of the south abutment. This cracking measures ~ 4.5"-5" wide at mid-height.



View of large heavy cracking and spalling with exposed steel at the top downstream end of the south abutment/slab interface.



View of large heavy cracking and spalling with exposed steel at the downstream end of the south abutment. This cracking measures ~ 4.5" -5" wide at mid-height. Notice the cracking extends from the bottom of the footing to the top of the wingwall.



View of large heavy cracking and spalling with exposed steel at the downstream end of the south abutment. This cracking measures ~ 4.5" -5" wide at mid-height. Notice the cracking extends up through the top of the wingwall.



View of full depth cracking in the footing of the downstream south wingwall.



View of a minor sized full height diagonal crack in the downstream south wingwall.



View of the ~ width of the downstream protection apron.



View of the ~ vertical drop off the protection apron.



View of ~ 7.5'-8' of horizontal undermining at the south end of the protection apron.



View of ~ 6' of horizontal undermining near the center of the protection apron.



View of ~ 6.5' of horizontal undermining at the north end of the protection apron.



View of ~ 3' deep scour hole below the protection apron.



View of ~ 2'-2.5' of vertical undermining of the protection apron.



Downstream view.