

APPENDIX A QUALITY CONTROL OFFICE REVIEW FORM (INTERNAL)

(One copy of this sheet shall be filled out for each Inspection Team Leader.) Date: 7/24/10

Company/District: Beam, Longest and Neff

Quality Control Officer: Michael W. Cox, P.E.

QCO Team Leader No.: IN000163-2016

Team Leader: Tyler S. Wolf, P.E.

Team Leader No.: IN000161-2016

Team Members: Patrick A. Conner, P.E.

County/County No.: Fountain County/023

List Selected Bridges	<u>00004</u>	<u>00020</u>	<u>00021</u>
(5% or 5 min) (15 max):	<u>00028</u>	<u>00062</u>	<u>00071</u>
	<u>00088</u>	<u>00105</u>	<u>00113</u>
	<u>00116</u>	<u>00126</u>	<u>00140</u>
	<u>00152</u>	<u>00169</u>	<u>00206</u>

The Quality Control Office Review shall be performed on selected bridges that meet any of the following criteria:

- A rating of 4 or less for Items 58, 59, 60, or 62
- A rating that changed by 2 or more for Items 58, 59, 60, or 62
- Posted for 10 tons or less
- A rating of 3 or less for Item 113A

For bridges inspected by Inspection Consultants, the minimum number of bridges to undergo the Quality Control Office Review shall be the greater of five percent of the total number of bridges, or five bridges.

The maximum number of bridges required to undergo the Quality Control Office Review shall be 15 bridges.

If the number of bridges which meet the sampling criteria is less than the minimum number listed above, the bridges with the lowest sufficiency ratings shall be selected for the remaining bridges for the Quality Control Office Review. If multiple Inspection Team Leaders are involved in the inspections, all efforts shall be made to review every Inspection Team Leader.

For bridges inspected by state employees, five bridges per Inspection Team Leader, per quarter, shall be reviewed by the Quality Control Officer for the above criteria. In addition, if the Inspection Team Leader is responsible for any Fracture Critical or Special Inspections, one of each shall be sampled for each of these inspection types, per quarter.

Date: 7/24/10 Bridge No. 00140

Office Review Form – (One copy of this sheet shall be filled out for each bridge.)

Item #	Items to Review
1	All inspectors qualified
2	Inspection completed within the required frequency
3	Ratings of 4 or less for Items 58, 59, 60, or 62 have been documented properly (photos, notes, and sketches)
4	Critical Deficiencies properly handled (Part 1 – Section 7)
5	Load ratings performed and reflect current site conditions (Part 3)
6	Posting policies have been complied with (Part 3)
7	Maintenance and repair items reflective of noted deficiencies
8	“Estimated Year Remaining Life” values consistent with the condition ratings
9	Bridge files contain all available data (Part 1 – Section 5)
10	Priority schedule consistent with the bridge usage and deterioration
11	If required, scour Plan of Action developed, on file, and current (Part 4 – Section 7)
12	Printed inspection report uses standard format

Provide items reviewed, printed name, and signature in space below.

Item(s)	Inspection Team Leader	Quality Control Officer
1,3-12	Signature	Signature
	Tyler S. Wolf, P.E.	Michael W. Cox, P.E.

Comments:

Item 2: Bridge was temporarily closed for repairs. Bridge inspected prior to re-opening, but outside of 24 months.

Date: 7/24/10 Bridge No. 00169

Office Review Form – (One copy of this sheet shall be filled out for each bridge.)

Item #	Items to Review
1	All inspectors qualified
2	Inspection completed within the required frequency
3	Ratings of 4 or less for Items 58, 59, 60, or 62 have been documented properly (photos, notes, and sketches)
4	Critical Deficiencies properly handled (Part 1 – Section 7)
5	Load ratings performed and reflect current site conditions (Part 3)
6	Posting policies have been complied with (Part 3)
7	Maintenance and repair items reflective of noted deficiencies
8	“Estimated Year Remaining Life” values consistent with the condition ratings
9	Bridge files contain all available data (Part 1 – Section 5)
10	Priority schedule consistent with the bridge usage and deterioration
11	If required, scour Plan of Action developed, on file, and current (Part 4 – Section 7)
12	Printed inspection report uses standard format

Provide items reviewed, printed name, and signature in space below.

Item(s)	Inspection Team Leader	Quality Control Officer
1-3, 5-12	Signature	Signature
	Tyler S. Wolf, P.E.	Michael W. Cox, P.E.

Comments:

Item 4: No critical deficiencies noted.

Date: 7/24/10 Bridge No. 00152

Office Review Form – (One copy of this sheet shall be filled out for each bridge.)

Item #	Items to Review
1	All inspectors qualified
2	Inspection completed within the required frequency
3	Ratings of 4 or less for Items 58, 59, 60, or 62 have been documented properly (photos, notes, and sketches)
4	Critical Deficiencies properly handled (Part 1 – Section 7)
5	Load ratings performed and reflect current site conditions (Part 3)
6	Posting policies have been complied with (Part 3)
7	Maintenance and repair items reflective of noted deficiencies
8	“Estimated Year Remaining Life” values consistent with the condition ratings
9	Bridge files contain all available data (Part 1 – Section 5)
10	Priority schedule consistent with the bridge usage and deterioration
11	If required, scour Plan of Action developed, on file, and current (Part 4 – Section 7)
12	Printed inspection report uses standard format

Provide items reviewed, printed name, and signature in space below.

Item(s)	Inspection Team Leader	Quality Control Officer
1-2,5-12	Signature	Signature
	Tyler S. Wolf, P.E.	Michael W. Cox, P.E.

Comments:

Item 3: No ratings 4 or less

Item 4: No critical deficiencies noted.

Item 11: Bridge not Scour Critical

APPENDIX B QUALITY CONTROL FIELD REVIEW FORM (INTERNAL)

(One copy of this sheet shall be filled out for each Inspection Team Leader.) Date: 7/24/10

Company/District: Beam, Longest and Neff

Quality Control Officer: Michael W. Cox, P.E.

Team Leader No.: IN000163-2016

Team Leader: Tyler S. Wolf, P.E.

Team Leader No.: IN000161-2016

Team Members: Patrick A. Conner, P.E.

County/County No.: Fountain County/023

List Selected Bridges 00004 00020 00021

(5% or 5 min) (15 max): 00028 00062 00071

00088 00105 00113

00116 00126 00140

00152 00169 00206

The Quality Control Field Review shall be performed on selected bridges that meet any of the following criteria:

- A rating of 4 or less for Items 58, 59, 60, or 62
- A rating that changed by two or more for Items 58, 59, 60, or 62
- A rating of 3 or less for Item 113A
- Posted for 10 tons or less

The minimum number of bridges to undergo the Quality Control Field Review shall be the greater of five percent of the total number of bridges inspected, or five bridges.

The maximum number of bridges required to undergo the Quality Control Field Review shall be 15 bridges

If the number of bridges which meet the sampling criteria exceeds 15 bridges, then only 15 bridges are required to be reviewed. If multiple Inspection Team Leaders are involved in the inspections, all efforts shall be made to review every Inspection Team Leader.

For bridges inspected by state employees, five bridges per Inspection Team Leader, per quarter, shall be reviewed by the Quality Control Officer for the above criteria. In addition, if the Inspection Team Leader is responsible for any Fracture Critical or Special Inspections, one of each shall be sampled for each of these inspection types, per quarter.

Date: 7/24/10 Bridge No. 00140

QC #	Items to Review
1	Main structure type correct (43A)
2	“One Lane Bridge” or “Narrow Bridge” (51, 28A, 102, & 41) postings in place; if not, is it recommended (41)?
3	Load limit (66B) bridge postings in place (66C & 70); if not, is it recommended (41)?
4	Bridge rail and approach coding (36A) acceptable
5	Foundation type acceptable (113B)
6	Maintenance and repair items properly addressed
7	Photos taken of load posting
8	Photos taken of condition ratings of 4 or less for Items 58, 59, 60, or 62
9	Channel profiles or cross-sections taken for all bridges
10	If scour noted, was it adequately documented?
11	If deterioration noted, was it adequately documented?
12	Stream channel alignment problems are noted using sketches

Comments:

Item 12: No Stream Channel Alignment problem

Date: 7/24/10 Bridge No. 00140

QC #		Ratings		QCO Concur*	
		Prev. Inv.	Curr. Inv.	Yes	No
15	Item 58: Deck	4	4	X	<input type="checkbox"/>
16	Item 59: Superstructure	4	4	X	<input type="checkbox"/>
17	Item 60: Substructure	4	4	X	<input type="checkbox"/>
18	Item 62: Culvert			<input type="checkbox"/>	<input type="checkbox"/>
19	Item 113A: Scour Critical Bridge	4	4	X	<input type="checkbox"/>

*The Quality Control Officer shall provide concurrence for all items coded a 4 or less, or a change of two or more from the previous inspection. If no ratings are 4 or less, a minimum of one item is to be concurred with.

Comments:

Provide items reviewed, printed name, and signature in space below.

QC Nos.	Inspection Team Leader	Quality Control Officer
1-11, 15-17, 19	Signature	Signature
	Tyler S. Wolf, P.E.	Michael W. Cox, P.E.

Date: 7/24/10 Bridge No. 00169

QC #	Items to Review
1	Main structure type correct (43A)
2	“One Lane Bridge” or “Narrow Bridge” (51, 28A, 102, & 41) postings in place; if not, is it recommended (41)?
3	Load limit (66B) bridge postings in place (66C & 70); if not, is it recommended (41)?
4	Bridge rail and approach coding (36A) acceptable
5	Foundation type acceptable (113B)
6	Maintenance and repair items properly addressed
7	Photos taken of load posting
8	Photos taken of condition ratings of 4 or less for Items 58, 59, 60, or 62
9	Channel profiles or cross-sections taken for all bridges
10	If scour noted, was it adequately documented?
11	If deterioration noted, was it adequately documented?
12	Stream channel alignment problems are noted using sketches

Comments:

Date: 7/24/10 Bridge No. 00169

QC #		Ratings		QCO Concur*	
		Prev. Inv.	Curr. Inv.	Yes	No
15	Item 58: Deck			<input type="checkbox"/>	<input type="checkbox"/>
16	Item 59: Superstructure	3	3	X	<input type="checkbox"/>
17	Item 60: Substructure	4	4	X	<input type="checkbox"/>
18	Item 62: Culvert			<input type="checkbox"/>	<input type="checkbox"/>
19	Item 113A: Scour Critical Bridge	4	4	X	<input type="checkbox"/>

*The Quality Control Officer shall provide concurrence for all items coded a 4 or less, or a change of two or more from the previous inspection. If no ratings are 4 or less, a minimum of one item is to be concurred with.

Comments:

Provide items reviewed, printed name, and signature in space below.

QC Nos.	Inspection Team Leader	Quality Control Officer
1-12, 16-17, 19	Signature	Signature
	Tyler S. Wolf, P.E.	Michael W. Cox, P.E.

Date: 7/24/10 Bridge No. 00152

QC #	Items to Review
1	Main structure type correct (43A)
2	“One Lane Bridge” or “Narrow Bridge” (51, 28A, 102, & 41) postings in place; if not, is it recommended (41)?
3	Load limit (66B) bridge postings in place (66C & 70); if not, is it recommended (41)?
4	Bridge rail and approach coding (36A) acceptable
5	Foundation type acceptable (113B)
6	Maintenance and repair items properly addressed
7	Photos taken of load posting
8	Photos taken of condition ratings of 4 or less for Items 58, 59, 60, or 62
9	Channel profiles or cross-sections taken for all bridges
10	If scour noted, was it adequately documented?
11	If deterioration noted, was it adequately documented?
12	Stream channel alignment problems are noted using sketches

Comments:

Item 2, 3, 7, 8 & 10: Not Applicable

Date: 7/24/10 Bridge No. 00140

QC #		Ratings		QCO Concur*	
		Prev. Inv.	Curr. Inv.	Yes	No
15	Item 58: Deck			<input type="checkbox"/>	<input type="checkbox"/>
16	Item 59. Superstructure	7	5	X	<input type="checkbox"/>
17	Item 60: Substructure			<input type="checkbox"/>	<input type="checkbox"/>
18	Item 62: Culvert			<input type="checkbox"/>	<input type="checkbox"/>
19	Item 113A: Scour Critical Bridge			<input type="checkbox"/>	<input type="checkbox"/>

*The Quality Control Officer shall provide concurrence for all items coded a 4 or less, or a change of two or more from the previous inspection. If no ratings are 4 or less, a minimum of one item is to be concurred with.

Comments:

Provide items reviewed, printed name, and signature in space below.

QC Nos.	Inspection Team Leader	Quality Control Officer
1, 4-6, 9, 11-12, 16	Signature	Signature
	Tyler S. Wolf, P.E.	Michael W. Cox, P.E.

Appendix C: Quality Control Field Log Form

NBI #	County/ District / Toll Road / LA	Bridge #	Item 43A Bridge Type	Item 58 Deck	Item 59 Super	Item 60 Sub.	Item 62 Culv.	Item 113A Scour	Item 66B H Rating	Suff. Rating	Date of Field Rev.	Team Leader Name
2300002	23	00004	102B	5	5	5	N	U	10	47	7/24/10	Tyler S. Wolf, P.E.
2300003	23	00005	310B	5	5	5	N	U	08	40.1		Adam J. Reihl, P.E.
2300008	23	00010	302D	4	5	5	N	U	09	46.1		Tyler S. Wolf, P.E.
2300018	23	00020	300A	5	5	4	N	U	16	38.5	7/24/10	Tyler S. Wolf, P.E.
2300019	23	00021	201A	4	4	5	N	U	10	28.6	7/24/10	Adam J. Reihl, P.E.
2300021	23	00023	505	7	7	4	N	2	16	46.7		Tyler S. Wolf, P.E.
2300026	23	00028	505	5	5	4	N	4	20	69.9	7/24/10	Tyler S. Wolf, P.E.
2300032	23	00039	310A	5	4	7	N	U	13	36.9		Adam J. Reihl, P.E.
2300037	23	00044	302D	5	5	5	N	U	10	47.1		Adam J. Reihl, P.E.
2300050	23	00062	102B	4	5	5	N	5	20	60.6	7/24/10	Tyler S. Wolf, P.E.
2300059	23	00071	102B	4	3	4	N	U	15	24.9	7/24/10	Tyler S. Wolf, P.E.
2300068	23	00085	302D	5	7	4	N	U	12	31.3		Tyler S. Wolf, P.E.
2300071	23	00088	300A	5	6	6	N	8	10	47.3	7/24/10	Adam J. Reihl, P.E.
2300075	23	00097	310B	5	4	5	N	U	08	24.3		Adam J. Reihl, P.E.
2300082	23	00105	310A	7	5	6	N	U	06	23.2	7/24/10	Adam J. Reihl, P.E.
2300085	23	00108	111A	5	4	3	N	2	05	17.2		Adam J. Reihl, P.E.
2300087	23	00110	101A	4	4	4	N	2	15	43.4		Adam J. Reihl, P.E.
2300088	23	00113	310B	5	3	5	N	5	03	18.5	7/24/10	Tyler S. Wolf, P.E.

All structures that meet the sampling criteria shall be input into the Quality Control Log Form, however, only structures that were reviewed by the QCO should have values in the "Date of Field Review" and "Comments" fields. If additional structures were added to meet the minimum number of reviewed structures criteria, these should also be input into the form.

Submitted by QCO: _____ Signature _____ Date: 7/24/10
 (Signature)

Printed Name: Michael W. Cox, P.E. _____ Company/District: Beam, Longest and Neff

Appendix C: Quality Control Field Log Form

NBI #	County/ District / Toll Road / LA	Bridge #	Item 43A Bridge Type	Item 58 Deck	Item 59 Super	Item 60 Sub.	Item 62 Culv.	Item 113A Scour	Item 66B H Rating	Suff. Rating	Date of Field Rev.	Team Leader Name
2300119	23	00152	505	5	5	7	N	5	20	72.9	7/24/10	Tyler S. Wolf, P.E.
2300090	23	00116	302D	5	4	5	N	3	16	34.7	7/24/10	Tyler S. Wolf, P.E.
2300096	23	00122	111A	4	5	6	N	U	10	35.2		Adam J. Reihl, P.E.
2300099	23	00126	111A	4	4	5	N	U	09	25.7	7/24/10	Adam J. Reihl, P.E.
2300108	23	00138	302D	6	5	6	N	U	10	39		Adam J. Reihl, P.E.
2300109	23	00139	710	5	5	4	N	4	00	26.4		Tyler S. Wolf, P.E.
2300110	23	00140	111A	4	3	4	N	3	08	16.2	7/24/10	Tyler S. Wolf, P.E.
2300112	23	00142	310B	5	4	5	N	U	03	27.2		Adam J. Reihl, P.E.
2300113	23	00143	310B	5	4	5	N	U	08	34		Tyler S. Wolf, P.E.
2300116	23	00149	102B	5	5	3	N	2	06	24.9		Tyler S. Wolf, P.E.
2300117	23	00150	302D	5	6	7	N	U	07	41.2		Adam J. Reihl, P.E.
2300157	23	00169	102B	5	3	4	N	2	08	31.3	7/24/10	Adam J. Reihl, P.E.
2300134	23	00205	101A	4	4	4	N	2	10	30.7		Adam J. Reihl, P.E.
2300135	23	00206	302D	8	7	4	N	U	10	34.9	7/24/10	Tyler S. Wolf, P.E.
2300158	23	00256	300A	3	6	7	N	U	04	27.5		Adam J. Reihl, P.E.

All structures that meet the sampling criteria shall be input into the Quality Control Log Form, however, only structures that were reviewed by the QCO should have values in the "Date of Field Review" and "Comments" fields. If additional structures were added to meet the minimum number of reviewed structures criteria, these should also be input into the form.

Submitted by QCO: _____ Signature _____ Date: 7/24/10 _____
 (Signature)

Printed Name: _____ Michael W. Cox, P.E. _____ Company/District: _____ Beam, Longest and Neff _____

APPENDIX D QUALITY ASSURANCE QUESTIONNAIRE

(To be completed by the District Engineer or Inspection Consultant)

Date 7/24/10	Inspection Agency Under Review Beam, Longest and Neff	District/County/Toll Road/LA Fountain County
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QUALIFICATIONS

Refer to Part 1, Section 2.4 of the Indiana Bridge Inspection Manual for personnel qualification requirements.

Quality Control Officer – Person in charge of inspection program

Name: Michael W. Cox, P.E.

Team Leader No: IN000163-2016

Registered Professional Engineer: Yes No Complex Bridge Certified: Yes No

Inspection Team Leaders – Personnel that sign the inspection reports

Name: Tyler S. Wolf, P.E.

Team Leader No: IN000161-2016

Registered Professional Engineer: Yes No Complex Bridge Certified: Yes No

Name: _____

Team Leader No: _____

Registered Professional Engineer: Yes No Complex Bridge Certified: Yes No

Name: _____

Team Leader No: _____

Registered Professional Engineer: Yes No Complex Bridge Certified: Yes No

PART 2: QA/QC

Quality Assurance Questionnaire

Inspection Team Members – Personnel that assisted Inspection Team Leaders with Field Inspections and do not sign inspection reports

Date: 7/24/10

Name: Patrick A. Conner, P.E.

On INDOT Inspection Team Member list: Yes No

Registered Professional Engineer: Yes No

Experience: 4 years of Bridge Inspection

Training: 2 week NHI Course

2 day Fracture Critical Course

Name: _____

On INDOT Inspection Team Member list: Yes No

Registered Professional Engineer: Yes No

Experience: _____

Training: _____

Name: _____

On INDOT Inspection Team Member list: Yes No

Registered Professional Engineer: Yes No

Experience: _____

Training: _____

RECORD KEEPING

Bridge owners should maintain a complete, accurate, and current record of each bridge under their jurisdiction. Complete information, in good usable form, is vital to the effective management of bridges. Such information also provides a record which may be important in legal action.

Bridge File – The bridge file should contain all cumulative information about each individual bridge.

Location of bridge file: BLN Office and Fountain County Highway Department

Date: 7/24/10

File accessible to users: Yes No

Length of time information is kept in the file: Permanent

Comments: Plans and old data kept at Fountain County Highway Department
Current information such as load ratings, correspondence and improvement costs kept at BLN.

Planning and Scheduling

Number of bridges Inspection Team Leaders responsible to inspect (per Inspection Team Leader): 416

Number of inspections performed in the past calendar year (per Inspection Team Leader): 142

Load-Posted/Closed Bridges

Number of bridges posted or closed: 37

Computations or summary on file for load-posted/closed bridges (provide number): 142

Computations or summary not on file for load-posted/closed bridges (provide number): 0

Comments: _____

Routine Inspections

Number of inspections performed within the recommended frequency (provide number): 141

Number of inspections performed outside of the recommended frequency: 1

Number of bridges scheduled for a Routine Inspection at less than a 24-month frequency: 0

Comments: Bridge 140 was temporarily closed for repairs and was inspected prior to re-opening, however, it was outside of 24 month interval

Special Inspections

Number of bridges that require part or all of the bridge to be examined in more detail or at a greater frequency than standard for Routine Inspections:

- Cantilevered Bearings
- Cover Plates
- Fatigue Details E and E'
- Hinge Connections
- Pin or Hinge Connections
- Hangers
- Hoan Details
- Bridges or Details as Determined by the State Program Manager
- Primary Truss Gusset Plates With Corrosion and Difficulty Quantifying Section Loss
- Bridges Crossing Major Rivers
- Cable-Stayed Bridges
- Suspension Bridges
- Timber-Covered Bridge
- Steel Box Girders
- Movable Bridges
- Bridges With Post-Tensioned Elements

Fracture Critical Inspections

Number of bridges requiring a Fracture Critical Inspection: 13

Number of Fracture Critical Inspections performed within the recommended frequency: 13

Number of Inspections performed outside of the recommended frequency: 0

Underwater Inspections

Number of bridges requiring an Underwater Inspection: 0

Bridge No.	Inspection Frequency	Bridge No.	Inspection Frequency
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Scour Critical Bridges

Number of Scour Critical Bridges: 8

Number of bridges that require inspections at a reduced frequency due to scour issues: 0

Number of Scour Critical bridges with a scour Plan of Action on file: 8

Number of Scour Critical bridges without a scour Plan of Action on file: 0

Comments: _____

Unknown Foundations

Review the steps taken to eliminate unknown foundations, classify the scour risk for bridges with unknown foundations, and provide an appropriate Plan of Action:

Review plans

Examine soil type.

Compare to nearby bridges with plans

Movable Bridge Inspections

Number of movable bridges: 0

Bridge No.	Inspection Frequency
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Coordination with Bridge Owner

The bridge file should contain all cumulative information about each individual bridge.

List inspector's contacts for emergency closures or repairs: Rusty Peevler, Fountain County Highway Supervisor
(765) 294-2971

List who has authority to close a bridge in an emergency: Rusty Peevler, Fountain County Highway Supervisor
(765) 294-2971

List who has authority to open a bridge: Rusty Peevler, Fountain County Highway Supervisor
(765) 294-2971

Tyler S. Wolf, P.E.

(Inspection Team Leader Printed Name)

(Inspection Team Leader Signature)

7/24/10

(Date)