WEMS
Wastren-EnergX Mission Support, LLC

P.O. Box 307 • Piketon, OH 45661

DOE Contract No. DE-CI0000004
PM-14-014
June 18, 2014

Mr. Johnny Reising, Federal Project Director
U.S. Department of Energy
Portsmouth/Paducah Project Office
P.O. Box 700
Piketon, OH 45661

DOE Contract No. DE-CI0000004: 2014 South Fog Road Bridge Inspection Report

Dear Mr. Reising:

Attached for your review is a copy of the 2014 South Fog Road Bridge Inspection Report, completed by Burgess & Niple, Inc. after their routine inspection of the South Fog Road Bridge on May 29, 2014.

If you have any questions or comments, please contact Chris Ondera, WEMS Deputy Project Manager, at (740) 897-2344.

Sincerely,

for Damon A. Detillion
Project Manager
Wastren-EnergX Mission Support, LLC

DAD:CO:sd

Attachment: Inspection Report

c w/attach:
Vince Adams, DOE/PPPO
Joel Bradburne, DOE/PPPO
Tony Canterbury, WEMS
Dennis Carr, FBP
Rick Ginther, FBP
Jeremy Harley, DOE/PPPO
Phil Moore, WEMS
Chris Ondera, WEMS
File – Project Management
File – RMDC-RC

BURGESS & NIPLE

5085 Reed Road | Columbus, OH 43220 | 614.459.2050

Mr. Timothy Estrada
Wastren-EnergX
Mission Support, LLC
3930 US 23 South
Piketon, Ohio 45661

Re: 2014 Inspection of South Fog Road Bridge at Piketon Gaseous Diffusion Plant

May 23, 2014

Dear Mr. Estrada:

On May 19, 2014, Burgess & Niple, Inc. (B&N) performed a routine inspection of the South Fog Road Bridge located near the Gaseous Diffusion Plant complex near Piketon, Ohio.

The Burgess & Niple inspection team consisted of Dale Poorman, PE and Reed Case, EI. Mark Pelfrey of Wastren-EnergX Mission Support (WEMS) accompanied the inspection team during the field work.

The bridge is located on the Northeast Access Road within the complex which generally runs north-south. A map of the location is shown below. The structure is identified as the South Fog Road Bridge for the purposes of this report. The ODOT Bridge Inspection Field Report form and the DOE NBI Record Data Collection form are included at the end of this report.

Bridge Location

The bridge was inspected according to the *Bridge Inspector's Reference Manual* published by the Federal Highway Administration (FHWA) and the Ohio Department of Transportation (ODOT) *Manual of Bridge Inspection (Revised 2013 v.8)*. This letter report summarizes our findings and recommendations.

The bridge currently is posted with the following load limits:

Truck Configuration	Load Limit
2F1	11 tons
3F1	11 tons
4F1	12 tons
5C1	20 tons

The bridge is rated poor based on the condition of the deck and substructure. The load postings and condition ratings have not changed since the 2013 inspection.

Photo 1 – Elevation view looking southeast.

Photo 2 – End view looking south.

SUMMARY OF FINDINGS

The original South Fog Road Bridge structure consisted of six rolled steel beams and one steel channel (east exterior beam) that spans 34-feet 6-inches over Little Beaver Creek. The steel beams are partially encased in the concrete deck, with corrugated metal pipe arches spanning between the steel beams. No detailed bridge plans or history are available for this portion of the structure. Information supplied by site personnel indicates that the original bridge was most likely constructed in the 1930's. This structure was widened at a later unknown date. The widened portion of the bridge consists of six rolled steel beams supporting a reinforced concrete deck with corrugated metal stay-in-place form. The beams are numbered 1 through 13, from west to east.

Deck

The original bridge deck consists of reinforced concrete which encases the web and top flange of the beams, using half-segments of steel corrugated pipe as forms for the deck (commonly referred to as a jack arch deck). A single layer of reinforcing steel exists in the existing deck. The widened portion of the deck is a 6-inch thick reinforced concrete deck supported by conventional metal stay-in-place forms.

A thin epoxy concrete overlay wearing surface was installed in 2010 on the original portion of the deck to improve the riding surface; however, the new wearing surface has approximately 120 square feet of unsound and spalled epoxy concrete (an increase from 66 square feet in 2013) **(Photo 3)**. The deteriorated wearing surface has exposed 2-inch deep potholes, producing an extremely rough riding surface. This deterioration is possibly the result of chloride contamination of the existing concrete due to application of deicing chemicals over the life of the bridge.

The east exterior 3-1/2 feet of the original deck did not receive the epoxy concrete overlay and still exhibits a full depth hole due to scaling concrete and a large accumulation of deck debris. The full depth hole along the inside edge of beam 13 measures 26.5-foot long by 17-inch wide (an increase from 23-feet long by 9-inch maximum width in 2011 and 26 feet long by 13-inch maximum width in 2013) **(Photos 4 & 5)**. The hole is encroaching into the roadway at this point. This deterioration is common for jack arch decks of this era and is most likely a result of freeze thaw damage from deck drainage penetrating the concrete. The accumulation of debris present along the edge of the roadway will continue to trap water and accelerate the deterioration of the deck. Consideration should be given to replacing the entire original deck. This will not only lengthen the useful life of the structure, but can raise the allowable truck loads, due to the reduction in dead load on the controlling original steel beams. A partial depth deck rehabilitation may result in accelerated deterioration of the existing concrete due to the probable high levels of chlorides in the existing concrete.

Portions of the underside of the concrete deck could not be observed due to stay-in-place forms and corrugated metal pipe covering the widened and original deck portions, respectively. Surface corrosion and section loss are common on the stay-in-place forms in the widened portion of the structure. The corrugated metal pipe arches have significant corrosion, and have corroded away at several locations, exposing the concrete underside. The exposed concrete was generally in good condition, with a few minor cracks. Deterioration of these forms will not significantly affect the load carrying capacity of the concrete deck.

The widened portion of the deck appears to be in good condition with no notable deficiencies.

The twin-steel tube railings are in good condition with no apparent traffic impacts. Railing transition to the southeast approach railing is missing railing block outs and decreased post spacing. These were due to the proximity of the railing posts to the riprap, preventing additional posts from being installed at the proper distance away from the edge of the roadway.

Superstructure

The original section of superstructure consists of six rolled steel beams and one steel channel (east exterior). The bottom flanges of the original portion were painted since the 2010 inspection. The interior beam bearings for this portion are covered with wood forms and likely encased in concrete making them inaccessible for inspection. The original beams bear on a masonry abutment, and the newer beams bear on reinforced concrete abutments. No significant signs of distress were noted at these beam ends.

The newer portion of the superstructure consists of six rolled steel beams supporting a conventional concrete deck with metal stay-in-place forms. The steel superstructure has been painted since the 2010 inspection. Square steel bars are welded across the bottom flanges of the beams at the new bridge railing supports. These welded bars and railing supports create fatigue prone details in the beam bottom flange. No cracks were observed at these welded details.

The steel beams in the widened portion of the bridge are in fair condition. Laminating corrosion noted on the west fascia beam has worsened since the 2013 inspection. Corrosion currently exists on both faces of the west fascia beam on the underside of the top flange, top of the bottom flange, and web. Section loss up to 1/8-inch deep was observed at several locations in the west fascia girder **(Photo 6)**. The beam end at the north abutment for beam 1 also exhibits considerable laminating corrosion with up to 1/8-inch section loss to the beam web **(Photo 7)**. The corrosion of the exterior beam is promoted by deck drainage passing over the edge of the bridge deck. A drip strip is absent from the edge of the deck allowing the drainage to run back to the beam, and the corrugated deck which is placed on top of the top flange allows the drainage to reach the inboard face of the beam.

The east fascia beam bearing is severely undermined due to heavy spalling of the south abutment bearing seat **(Photo 8)**. Approximately 10% of the bearing area still exists at this location. Due to high water events at this structure, moderate amounts of debris exist around many of the bearings for the widened portion of the structure at the north abutment.

Substructure

The widened portion of the substructure consists of reinforced concrete abutments while the original portion of the substructure consists of dry stacked block masonry (likely sandstone). The concrete for the abutments and wingwalls of the widened portion are generally in good condition, with no significant spalls, delaminations, or cracks noted. The concrete footings are exposed at both the north and south abutments with the north abutment being exposed along its entire length with some undercutting/fracturing of the supporting bedrock. This condition has not significantly changed from the 2013 inspection. No signs of rotation or settlement were noted in the concrete substructure units. See below for further description of scour conditions.

In the original portion of the substructure, many of the masonry blocks exhibit cracks and or missing stones. At the south abutment, 3/16-inch wide cracks exist under beams 8, 11, and 13 in the top course of masonry block. At the north abutment, one missing and one heavily cracked masonry block exists under beams 7 and 8 **(Photo 9)**. Also at the north abutment, 1 1/8-inch maximum wide cracks exist in the second course of masonry blocks under beams 11 and 13 **(Photo 10)**. The overall condition of the masonry blocks have not significantly changed since the 2012 inspection. No signs of rotation or settlement were noted within the masonry block substructure units.

Both abutments are supported on spread footings cast/laid on bedrock. Scour was noted along both abutments at the following locations: the west end of the north abutment is undermined laterally 14-inches maximum; the northwest wingwall is undermined laterally a maximum of 20-inches starting 5 feet west of the abutment breastwall; the north abutment under beam 8 is undermined a maximum of 8-inches laterally; the east corner of the south abutment is undermined laterally 12-inches maximum. These conditions have not changed significantly since the 2013 inspection and should be monitored during future inspections. No signs of rotation or settlement were noted during the inspection. Large diameter riprap was added at the southeast and northeast wingwalls prior to the 2011 inspection as scour countermeasures. The riprap is in place and appears to be functioning as designed.

Erosion was noted behind both the southeast and northwest wingwalls. The erosion to the embankment behind the northwest wingwall exposes the top five feet of the rear face of the wingwall. The erosion behind the southeast wingwall creates a steep slope which is 4-feet wide by 6-feet deep by 6-feet long **(Photo 11)**. These conditions do not appear to have changed significantly since the 2013 inspection.

Channel

The channel streambed is rocky and the banks are well vegetated both upstream and downstream of the structure. The channel alignment on this bridge is classified as poor. The channel was previously cutting into the embankment below and behind the southeast wingwall. Large riprap was installed at the northeast and southeast wingwalls help redirect the channel through the bridge. The riprap appears to be functioning as designed and is in good condition. The channel currently flows directly into the face of the north abutment, causing ongoing undermining of the footing. Undermining does not appear to have increased significantly since the 2012 inspection. A pipe exists across the channel just upstream of the bridge. Large debris has become trapped against the pipe directing the flow further east **(Photo 12)**.

Approach

The approaches are paved with asphalt and are in poor condition. Approach pavement settlement exists in the north and south approach pavements adjacent to the abutments with significantly larger settlement noted in the north approach. A 1 1/2-inch maximum vertical offset with unsealed cracks were noted in the north approach pavement. This condition appears to have worsened by 1/4 inch in depth since the 2013 inspection **(Photo 13)**. The settlement most likely is due to the excavation and installation of concrete pavement added at both ends of the bridge during the railing installation. This condition causes an extremely rough transition onto the bridge and increases the impact loads on the bridge. The unsealed cracks allow deck drainage to infiltrate the approach embankment, promoting further settlement of the pavement. Unsealed cracks are typical along the centerline in both asphalt pavements.

Newer steel guardrail with timber and steel posts exists at all four approach quadrants. Reflective tape exists at the ends of the oncoming guardrails; however, Z-board or chevron type signs are preferable to act as bridge end markers.

Photo 3 – Looking north at the original portion of the deck in the northbound lane. Note the concrete wearing surface exhibits scaling and spalling in multiple locations.

Photo 4 – Looking southeast at the east edge of the deck. Note a 26.5-foot long by 17-inch maximum wide hole exists in the deck edge with exposed and corroding reinforcing steel.

Photo 5 – Looking up and north at the underside of the deck between beam 12 and the fascia channel beam along the east edge of the bridge. Note a 26-foot long by 13-inch wide hole exists through the deck.

Photo 6 – Looking south along the exterior face of beam 1. Note the active laminating corrosion with section loss up to 1/8-inch deep on the flanges and web.

Photo 7 – Looking north along the end of beam 1 at the north abutment. Note heavy laminating corrosion on the beam web with up to 1/8-inch section loss.

Photo 8 – Looking southwest at the east fascia beam at the south abutment. Note severe undermining of the bearing due to heavy spalling of bearing seat. The structural tee bearing assembly is also heavily deteriorated with active section loss.

Photo 9 – Looking north at the masonry block abutment under beam 8 at the north abutment. Note small missing block and heavily cracked and deteriorated block above.

Photo 10 – Looking north at the second course of masonry block under beam 13. Note 1 1/8-inch wide crack in masonry block.

Photo 11 – Looking down and northeast at the embankment behind the southeast wingwall. Note steep erosion to embankment.

Photo 12 – Looking southeast at the upstream channel. Note pipe crosses channel. Also note debris build up along east end of pipe crossing.

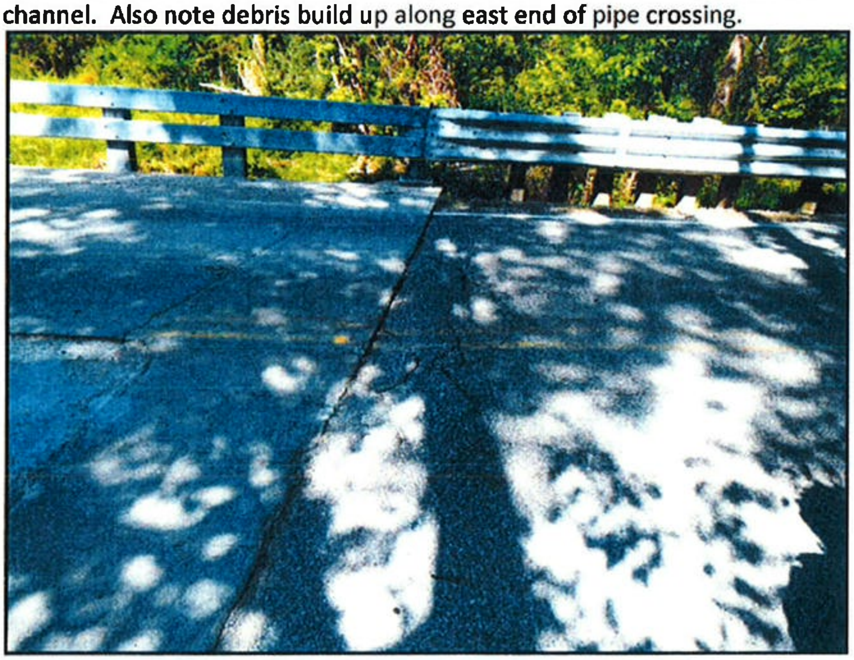

Photo 13 – Looking west at approach pavement adjacent to the north abutment. Note: cracking and settlement of approach pavement.

RECOMMENDATIONS

The following recommendations should be performed to maintain the current level of service for this structure for an extended period of time.

- Abrasively clean and paint the west fascia beam (beam 1).
- Repair the beam 13 bearing area at the south abutment. Remove all loose concrete, abrasively clean and paint the beam 13 channel, and place concrete up to the bottom flange of the channel. Dowel the new concrete into the existing masonry block.
- Patch areas of the northbound wearing surface which are spalled or delaminated. Monitor the newly placed and patched concrete wearing surface. When patching, remove all loose or unsound surfaces before placing new epoxy concrete. Due to the high probability of chloride contamination in the existing concrete, it is recommended that a full depth deck replacement be considered in lieu of patching. An alternative could be to replace the original structure with a pre-stressed concrete slab.
- Fill the eroded areas behind the southeast and northwest wingwalls with crushed aggregate and protect the aggregate with riprap.
- Remove debris from the north abutment beam seats.
- Remove the pipe crossing the channel upstream of the bridge and the ensnared drift.
- Add Z-board or chevron type bridge end markers at all four corners of the bridge.
- Continue to monitor the undermining of the abutments due to scour. Consider placing riprap along both abutments and removing streambed material to realign the stream under the bridge.
- Continue to monitor the cracked and missing masonry blocks at the abutments, especially under beams 7 and 8 at the north abutment. Consider doweling into the existing bedrock and masonry and pour concrete to encompass the area of distressed masonry.

We appreciate the opportunity to provide engineering services to you. If you have any questions or concerns, please feel free to contact this office.

Sincerely,

Dale E. Poorman, PE
Project Engineer

STATE OF OHIO
DALE E. POORMAN
E-52913
REGISTERED
PROFESSIONAL ENGINEER
5-23-2014

copy: Mr. Mark E. Bernhardt, PE, Director of Facility Inspection
File

STATE OF OHIO
BRIDGE INSPECTION FIELD REPORT

SFN: not assigned
DIST: 9
Bridge Number: not assigned
Feature Intersected: Little Beaver Creek
Year Built: 1,930
Municipality:

APPROACH ITEMS

Item		Qty.	1	2	3	4	cr TR
c1.	Wearing Surface (SF)						3
c2.	Slab (SF)						
c3.	Relief Joint (LF)						
c4.	Embankment (LF) ded						2
c5.	Guardrail (LF)						1
N36.	Safety Features: Tr, Gr, Tm	36)B ☐ 36)C ☐ 36)D ☐					
c6.	Approach Summary					(9-0)	5

DECK ITEMS

Item		Qty.	1	2	3	4	cr TR
c7.1	Floor/Slab (SF)						3
c7.2	Edge of Floor/Slab (LF)						4
c8.	Wearing Surface (SF)						3
c9.	Curbs/Sidewalk (LF)						
c10.	Median (LF)						
c11.	Railing (LF)						1
N36.	Safety Features: Rail	36)A ☒					
c12.	Drainage (EA) ded						1
c13.	Expansion Joint (LF) ded						
N58.	Deck Summary					(9-0)	3

SUPERSTRUCTURE ITEMS

Item		Qty.	1	2	3	4	cr TR
c14.	Alignment (EA) ded						1
c15.1	Beams/Girders (LF)						3
c15.2	Slab (SF)						
c16.	Diaphragm/X-Frames (EA)						
c17.	Stringers (LF)						
c18.	Floorbeams (LF)						
c19.	Truss Verticals (EA)						
c20.	Truss Diagonals (EA)						
c21.	Truss Upper Chord (EA)						
c22.	Truss Lower Chord (EA)						
c23.	Truss Gusset Plate (EA) ded						
c24.	Lateral Bracing (EA)						
c25.	Sway Bracing (EA)						
c26.	Bearing Devices (EA) ded						
c27.	Arch (LF)						
c28.	Arch Column/Hanger (EA)						
c29.	Arch Spandrel Walls (LF)						
c30.	Prot. Coating System (LF) ded						3
c31.	Pins/Hangers/Hinges (EA) ded						
c32.	Fatigue (LF) ded						
N59.	Superstructure Summary					(9-0)	5

SUBSTRUCTURE ITEMS

Item	Qty.	1	2	3	4	cr TR
c33. Abutment Walls (LF)						3
c34. Abutment Caps (LF)						
c35. Abut. Colmns/Bents (EA)						
c36. Pier Walls (LF)						
c37. Pier Caps (LF)						
c38. Pier Columns/Bents (EA)						
c39. Backwalls (LF)						1
c40. Wingwalls (LF)						1
c42. Scour (LF) ded						2
c43. Slope Protection (LF) ded						
N60. Substructure Summary					(9-0)	7

CULVERT ITEMS

Item	Qty.	1	2	3	4	cr TR
c44. General (LF)						
c45. Alignment (LF) ded						
c46. Shape (LF) ded						
c47. Seams (LF) ded						
c48. Headwall/Endwall (LF)						
c49. Scour (LF) ded						
c50. Abutments (LF)						
N62. Culvert Summary					(9-0)	

CHANNEL ITEMS

Item	Qty.	1	2	3	4	cr TR
c51. Alignment (LF) ded						3
c52. Protection (LF) ded						1
c53. HydraulicOpening (EA) ded						2
c54. Navigation Lights (EA) ded						
N61. Channel Summary					(9-0)	6

SIGN/UTILITY ITEMS

Item	Qty.	1	2	3	4	cr TR
c55. Signs (EA) ded						1
c56. Sign Supports (EA) ded						1
c57. Utilities (LF) ded						
N59, 60 or 62 General Appraisal					(9-0)	3
N41. Operating Status					(Open, Restricted, or Closed)	11

Inspector Name Reed Case
Inspection Date/Type May 19, 2014 / RT ~~FC~~ ~~UW~~ ~~SP~~

Reviewer Name Dale Poorman
Review Date Jun 12, 2014
PE Number (Insp or Rev) 52913

Key: "Qty" = Quantity necessary for Element Level inspection; "(LF)" = Linear Feet; "(SF)" = Square Feet; "(EA)" = Each or count; "CR" = 1,2,3 or 4 Condition Rating; "TR" = Transition Rating or weighted average of condition states; "ded" = dedicated or specific chart and guidance; "c" = condition prefix; "N" = NBIS rating

NBI Data Item	Item 1	Item 8	Item 5	Item 2	Item 3	Item 4	Item 6	Item 7
Data Item Name	State Code	Structure Number	Inventory Route	Highway Agency District	County (Parish) Code	Place Code	Features Intersected	Facility Carried by Structure
Length-Type of Data Item	3 digit Numeric	15 digit Alpha/Numeric	9 digit Alpha/Numeric	2 digit Alpha/Numeric	3 digit Numeric	5 digit Numeric	25 digit Alpha/Numeric	18 digit Alpha/Numeric
DOE Submission Requirement	Required	Required	Required	Required	Required	Required	Required	Required
DOE Specific Instructions		Use: FIMS Property Sequence Number		Item 2 should be coded 00 if Highway Agency District is unreported.				
Create one NBI record for each asset. Each row corresponds to a single bridge.	395		180000000	09	131	00000	Little Beaver Creek	South Fog Road

Item 9	Item 10	Item 11	Item 12	Item 13	Item 16	Item 17	Item 19	Item 20	Item 21	Item 22	Item 26
Location	Inventory Route, Minimum Vertical Clearance	Kilometer point	Base Highway Network	LRS Inventory Route, Subroute Number	Latitude	Longitude	Bypass, Detour Length	Toll	Maintenance Responsibility	Owner	Functional Classification of Inventory Route
25 digit Alpha/Numeric	4 digit Numeric	7 digit Numeric	1 digit Numeric	12 digit Numeric	8 digit Numeric	9 digit Numeric	3 digit Numeric	1 digit Numeric	2 digit Numeric	2 digit Numeric	2 digit Numeric
Required	Required	Required	Required	Required	Required	Required	Required	Required	Required	Required	Required
	Enter in this form: "XX.XX" **meters** (e.g., for 8.8 meters, type 0880)	Enter in this form: "XXXX.XXX" (e.g., For 130.34, type 0130340)			e.g., for 35°27'18.55", enter "35271855"	e.g., for 81°5'50.65", enter "081055065"			Use 79 for Department of Energy (DOE)	Use 79 for Department of Energy (DOE)	
E of US23 @ Piketon Plant	9999	0000000	0		39013177	82591732	003	3	79	79	09

Item 27	Item 28	Item 29	Item 30	Item 31	Item 32	Item 33	Item 34	Item 35	Item 36	Item 37
Year Built	Lanes On and Under the Structure	Average Daily Traffic	Year of Average Daily Traffic	Design Load	Approach Roadway Width	Bridge Median	Skew	Structure Flared	Traffic Safety Features	Historical Significance
4 digit Numeric	4 digit Numeric	6 digit Numeric	4 digit Numeric	1 digit Numeric	4 digit Numeric	1 digit Numeric	2 digit Numeric	1 digit Numeric	4 digit Alpha/Numeric	1 digit Numeric
Required	Required	Estimate Required	Estimate Required	Required	Required	Required	Required	Required	Required	Required
	e.g., for 3 lanes on, 1 lane under, type "0301"									
1935	0200	000040	2013	0	0056	0	25	0	0110	5

Item 38	Item 39	Item 40	Item 41	Item 42	Item 43	Item 44	Item 45	Item 46	Item 47	Item 48	Item 49
Navigation Control	Navigation Vertical Clearance	Navigation Horizontal Clearance	Structure, Open, Posted, or Closed to Traffic	Type of Service	Structure Type, Main	Structure Type, Approach Spans	Number of Spans in Main Unit	Number of Approach Spans	Inventory Route, Total Horizontal Clearance	Length of Maximum Span	Structure Length
1 digit Alpha/Numeric	4 digit Numeric	5 digit Numeric	1 digit Alpha/Numeric	2 digit Numeric	3 digit Numeric	3 digit Numeric	3 digit Numeric	4 digit Numeric	3 digit Numeric	5 digit Numeric	6 digit Numeric
Required	Required	Required	Required	Required	Required	Required	Required	Required	Required	Required	Required
N	000	0000	A	15	302	000	001	0000	080	00126	00126

Item 50	Item 51	Item 52	Item 53	Item 54	Item 55	Item 56	Item 58	Item 59	Item 60
Curb or Sidewalk Widths	Bridge Roadway Width, Curb-to-Curb	Deck Width, Out-to-Out	Minimum Vertical Clearance Over Bridge Roadway	Minimum Vertical Underclearance	Minimum Lateral Underclearance on Right	Minimum Lateral Underclearance on Left	Deck Condition Rating	Superstructure Condition Rating	Substructure Condition Rating
6 digit Numeric	4 digit Numeric	4 digit Numeric	4 digit Numeric	5 digit Alpha/Numeric	4 digit Alpha/Numeric	3 digit Numeric	1 digit Alpha/Numeric	1 digit Alpha/Numeric	1 digit Alpha/Numeric
Required	Required	Required	Required	Required	Required	Required	Required	Required	Required
000000	0080	0084	9999	N0000	N000	N00	3	5	4

Item 61	Item 62	Item 63	Item 64	Item 65	Item 66	Item 67	Item 68	Item 69	Item 70
Channel/Channel Protection	Culverts	Method Used to Determine Operating Rating	Operating Rating	Method Used to Determine Inventory Rating	Inventory Rating	Structural Evaluation Appraisal Rating	Deck Geometry Appraisal Rating	Underclearances, Vertical and Horizontal Appraisal Rating	Bridge Posting
1 digit Alpha/Numeric	1 digit Alpha/Numeric	1 digit Numeric	3 digit Numeric	1 digit Numeric	3 digit Numeric	1 digit Alpha/Numeric	1 digit Alpha/Numeric	1 digit Alpha/Numeric	1 digit Numeric
Required	Required	Required	Required	Required	Required	Not Required	Not Required	Not Required	Required
4	N	5		5					5

Item 71	Item 72	Item 75	Item 76	Item 90	Item 91	Item 92	Item 93	Item 94	Item 95
Waterway Adequacy Appraisal Rating	Approach Roadway Alignment Appraisal Rating	Type of Work	Length of Structure Improvement	Inspection Date	Designated inspection Frequency	Critical Feature Inspection	Critical Feature Inspection Date	Bridge Improvement Cost ($000)	Roadway Improvement Cost ($000)
1 digit Alpha/Numeric	1 digit Alpha/Numeric	3 digit Alpha/Numeric	6 digit Numeric	4 digit Numeric	2 digit Numeric	9 digit Alpha/Numeric	12 digit Alpha/Numeric	6 digit Numeric	6 digit Numeric
Required	Required	Required	Optional	Required	Required	Required	Required	Optional	Optional
6	6			0513	12	N N			

Item 96	Item 97	Item 98	Item 99	Item 100	Item 101	Item 102	Item 103	Item 104	Item 105	Item 106
Total Project Cost ($000)	Year of Improvement Cost Estimate	Border Bridge	Border Bridge Structure Number	STRAHNET Highway Designation	Parallel Structure Designation	Direction of Traffic	Temporary Structure Designation	Highway System of Inventory Route	Federal lands Highways	Year Reconstructed
6 digit Numeric	4 digit Numeric	5 digit Alpha/Numeric	15 digit Alpha/Numeric	1 digit Numeric	1 digit Alpha/Numeric	1 digit Numeric	1 digit Alpha/Numeric	1 digit Numeric	1 digit Numeric	4 digit Numeric
Optional	Optional	Required	Required	Required	Required	Required	Required	Required	Required	Required
				0	N	2		0	0	

Item 107	Item 108	Item 109	Item 110	Item 111	Item 112	Item 113	Item 114	Item 115	Item 116
Deck Structure Type	Wearing Surface/Protective System	Average Daily Truck Traffic	Designated National Network	Pier/Abutment Protection	NBIS Bridge Length	Scour Critical Bridges	Future Average Daily Traffic	Year of Future Average Daily Traffic	Minimum Navigational Vertical Clearance, Vertical Lift Bridge
1 digit Alpha/Numeric	3 digit Alpha/Numeric	2 digit Numeric	1 digit Numeric	1 digit Numeric	1 digit Alpha/Numeric	1 digit Alpha/Numeric	6 digit Numeric	4 digit Numeric	4 digit Numeric
Required	Required	Required	Required	Required	Required	Required	Estimate Required	Estimate Required	Required
1	000	00	0	1	Y	6	000300	2020	