Bridge Data

Identification data

Bridge Number (B.ID.01):	176110000000000	Agency Bridge ID:	17611
Bridge Name (B.ID.02):	5159 0300 X	Local ID:	-1
Feature Intersected:	ARKANSAS RIVER	Bridge Nickname:	S.H. 100 OVER ARKANSAS RIVER
Past Bridge ID (B.ID.03):		Facility Carried:	S.H. 100

Bridge notes:

15 span structure consisting of: Spans 1-4 100-foot long continuous steel multi girders spans; Spans 5-7 three span continuous steel twin girders (207 feet, 334 feet, 207 feet); Spans 8-10 three 100-foot long continuous steel multi girders spans; Spans 11-14 four 100-foot long continuous steel multi girders spans; Span 15 100-foot long simple steel multi girder span.

Other-Special Inspection Items include:
Monitor girder web cracks at horizontal splice terminations:
- Span 5, girder 1 at the field splice near floor beam 5 – 1 1/4-inch-long crack with no arrestor hole on interior face.
- Span 6, girder 2 near floor beam 11 – 1 1/8-inch-long vertical crack in the lower web plate.

Monitor girder web cracks with drilled hole retrofits at the horizontal splice terminations:
- Span 5, girder 2 at the field splice near floor beam 5.
- Span 6, girder 1 at the field splice near floor beam 3.
- Span 7, girder 1 at the field splice near floor beam 4.
- Span 7, girder 2 at the field splice near floor beam 4.

Monitor the 1 1/4-inch-long vertical crack at the longitudinal stiffener cored hole for girder 1, span 5 at floor beam 4.
Monitor cracks in the welded connections between stringer connection angles and floor beam webs at:
- Span 5, stringer 3 connection to floor beam 3.
- Span 6, stringer 1 connection to floor beam 0.
- Span 6, stringer 2 connection to floor beam 0.
- Span 6, stringer 3 connection to floor beam 0.
- Span 7, stringer 1 connection to floor beam 0.
- Span 7, stringer 2 connection to floor beam 0.
- Span 7, stringer 3 connection to floor beam 0.

Monitor cracked web connection plate weld for floor beam 6, span 5 at girder 1.
Monitor broken connection between floor beam 0 and girder 2, span 6.
Monitor cracks at the floor beam 0, span 7 connection to girder 2.

Location data

State Code (B.L.01):	40 Oklahoma	County Code (B.L.02):	MUSKOGEE
City (B.L.03):	Unknown	Highway Agency District (B.L.04):	Division 1
Metro Planning Org 1 (B.L.12):		County Districts:	Unknown
Bridge Location (B.L.11):	SEQUOYAH C/L	Latitude (B.L.05):	35.520719
		Longitude (B.L.06):	-95.123581

Border data

Designated Lead State (B.L.10):		Border Bridge Number (B.L.07):	N
Border State or Country (B.L.08):		Border Insp. Responsibility (B.L.09):	

Classification data

Owner (B.CL.01):	S01 State transportation department	Maintenance Responsibility (B.CL.02):	S01 State transportation department
Federal or Tribal Land Access (B.CL.03):	BIA	Historical Significance (B.CL.04):	N Not eligible & not in historic eligible district
Toll (B.CL.05):	N Does not carry toll road and is not toll bridge	Emergency Evacuation Designation (B.CL.06):	N Not an Emergency evacuation route

Construction data

Year Built (B.W.01):	1969		
Design Load (B.LR.01):	HS-20	Design Method (B.LR.02):	U Unknown

Geometry data

NBIS Bridge Length (B.G.01):	1,920.00	Total Bridge Length (B.G.02):	1,928.20
Maximum Span Length (B.G.03):	334.00	Minimum Span Length (B.G.04):	75.00
Bridge Width Out-to-Out (B.G.05):	35.30	Bridge Width Curb-to-Curb (B.G.06):	28.00
Left Curb or Sidealk Width (B.G.07):	1.50	Right Curb or Sidewalk Width (B.G.08):	4.00
Approach Roadway Width (B.G.09):	44.00	Bridge Median (B.G.10):	0 No median
Skew (B.G.11):	0	Curved Bridge (B.G.12):	N Not curved
Maximum Bridge Height (B.G.13):	50	Sidehill Bridge (B.G.14):	N Not a sidehill bridge
Irregular Deck Area (B.G.15):		Calculated Deck Area (B.G.16):	68,065.50

Design Data

Superstructure set data

M01 - Superstructure Set 3 - 13645 - Type: M Main

Number of Spans (B.SP.02):	3	Number of Beam Lines (B.SP.03):	1
Span Material (B.SP.04):	S02 Steel - welded shapes	Span Continuity (B.SP.05):	2 Continuous
Span Type (B.SP.06):	G09 Girder/beam - girder & floor beam	Span Protective System (B.SP.07):	0 None
Deck Interaction (B.SP.08):	CU Composite - unshored construction	Deck Material & Type (B.SP.09):	C01 Reinforced concrete - cast-in-place
Wearing Surface (B.SP.10):	P01 Polymer - epoxy	Deck Protective System (B.SP.11):	0 None
Deck Reinforcing Protective System (B.SP.12):	0 None	Deck Stay-in-Place Forms (B.SP.13):	0 None

A01 - Superstructure Set 4 - 715 - Type: A Approach

Number of Spans (B.SP.02):	11	Number of Beam Lines (B.SP.03):	1
Span Material (B.SP.04):	S02 Steel - welded shapes	Span Continuity (B.SP.05):	1 Simple or single span
Span Type (B.SP.06):	G02 Girder/beam - I-shaped spread	Span Protective System (B.SP.07):	C01 Coating - paint
Deck Interaction (B.SP.08):	CU Composite - unshored construction	Deck Material & Type (B.SP.09):	C01 Reinforced concrete - cast-in-place
Wearing Surface (B.SP.10):	P01 Polymer - epoxy	Deck Protective System (B.SP.11):	0 None
Deck Reinforcing Protective System (B.SP.12):	0 None	Deck Stay-in-Place Forms (B.SP.13):	0 None

Substructure set data

A01 - Abutments - Type: A Abutment

Number of Sub Units (B.SB.02):	2	Substructure Material (B.SB.03):	C01 Reinforced concrete - cast-in-place
Substructure Type (B.SB.04):	A02 Abutment - stub	Substructure Protective System (B.SB.05):	0 None
Foundation Type (B.SB.06):	P01 Pile - steel H-shape	Foundation Protective System (B.SB.07):	0 None

P01 - Piers - Type: P Pier or Bent

Number of Sub Units (B.SB.02):	13	Substructure Material (B.SB.03):	C01 Reinforced concrete - cast-in-place
Substructure Type (B.SB.04):	P03 Pier - multiple column	Substructure Protective System (B.SB.05):	0 None
Foundation Type (B.SB.06):	F01 Footing - not on rock	Foundation Protective System (B.SB.07):	0 None

Feature Data

S.H. 100

Feature Name (B.F.03):	S.H. 100	Feature Type (B.F.01):	H Highway
Feature Location (B.F.02):	C		

Route Information

Designation (B.RT.01)	Route Number (B.RT.02)	Route Direction (B.RT.03)	Route Type (B.RT.04)	Service Type (B.RT.05)
R01	100	EW Eastbound and Westboun	3 State route	1 Mainline

Highway Information

LRS Route ID (B.H.06):	5100059HX0000	LRS Data as of Date:	
LRS Mile Point (B.H.07):	3.361	Lanes on Highway (B.H.08):	2
Functional Classification (B.H.01):	5 Major Collector	Urban Code (B.H.02):	99999
NHS Designation (B.H.03):	N Non-NHS	National Highway Freight Network (B.H.04):	N Not on the NHFN
STRAHNET Designation (B.H.05):	N Not a STRAHNET route		

User Costs

Route Speed:	-1	Bypass Detour Length (B.H.17)::	10
Bypass Average Speed:	-1	Lanes on Bypass:	

AADT

AADT (B.H.09):	3,300	Future AADT:	5,280
ADTT (B.H.10):	495	Future ADTT:	
Year of AADT (B.H.11):	2022	Future Year:	2042
Percent Truck Traffic:	15.00	Directional Percentage:	

Clearances

Highway Maximum Usable Vertical Clearance (B.H.12):	99.90	Highway Minimum Vertical Clearance (B.H.13):	99.90
Highway Minimum Horizontal Clearance, Left (B.H.14):		Highway Minimum Horizontal Clearance, Right (B.H.15):	
Highway Maximum Usable Surface Width (B.H.16):	28.00		

ARKANSAS RIVER

Feature Name (B.F.03):	ARKANSAS RIVER	Feature Type (B.F.01):	W Waterway
Feature Location (B.F.02):	B		

Waterway Details

Navigable Waterway (B.N.01):	Y Navigable waters	Navigation Minimum Vertical Clearance (B.N.02):	52.00
Movable Bridge Maximum Navigation Vertical Clearance (B.N.03):		Navigable Channel Width (B.N.04):	299.90
Navigation Channel Minimum Horizontal Clearance (B.N.05):	0.00	Substructure Navigation Protection (B.N.06):	2 Protective system in place and functioning.

Inspection Data

Schedule

Inspection Type	Required for Bridge	Inspection Performed (B.IE.01)	Inspector	Most Recent Inspection Date	Interval (months) (B.IE.05)	Inspection Due Date (B.IE.06)
Bridge Assignment	☑	☐				
NSTM	☑	☑	Dickson, Douglas	7/23/2025	24	7/23/2027
Routine	☑	☑	Dickson, Douglas	7/23/2025	24	7/23/2027
Special	☑	☐		7/18/2024	24	7/14/2026
Underwater	☑	☐		10/14/2022	60	10/14/2027

Inspection Condition

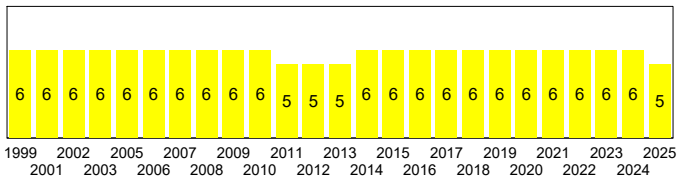
Bridge Condition (B.C.12):	F Fair	Lowest Condition Rating (B.C.13):	5
Deck (B.C.01):	5 Fair	Superstructure (B..C.02):	5 Fair
Substructure (B.C.03):	5 Fair	Culvert (B.C.04):	N Not Applicable
Railing (B.C.05):	5 Fair	Railing Transition (B.C.06):	7 Good
Bearing (B.C.07):	5 Fair	Joints (B.C.08):	6 Satisfactory
Channel (B.C.09):	6 Satisfactory	Channel Protection (B.C.10):	N Not Applicable
Scour (B.C.11):	8 Insignificant scour	NSTM Inspection Condition (B.C.14):	5 Fair
Underwater Inspection (B.C.15):	6 Satisfactory		

Appraisal

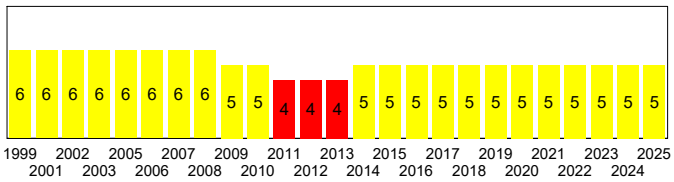
Approach Roadway Alignment (B.AP.01):	F Fair	Overtopping Liklihood (B.AP.02):	1 Remote - once every 100 years or less frequently
Scour Vulnerability (B.AP.03):	A Stable for scour	Scour Plan of Action (B.AP.04):	0 A scour POA is not required.

Condition History Graph

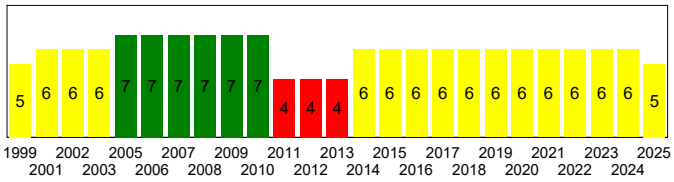
Deck Rating



Superstructure Rating



Substructure Rating



Inspection Notes

Inspection Notes (B.IE.11): No inspection notes.

Agency Inspection Notes:

Channel Notes: The channel in the vicinity of the bridge has a slight bend and is well aligned with the piers. There are spur dikes on the east bank (outside of the bend), approximately 450-ft, 1400-ft, and 2700-ft upstream of the bridge.. Both embankments are protected with dense vegetation. The embankments appear stable. There is light to moderate timber debris on the channel bottom at Piers 3, 4, 7, 8, 9, and 10; however, there are no significant restrictions to flow at the bridge. The channel bottom material at the piers consists of sand, gravel, and rock.

UW Inspection General Notes: The submerged portions of the substructure are in satisfactory condition. There is light
abrasion on the columns and webwalls ranging from 1/16-in deep to 1/8-in deep and algae growth.

PX Items:
Replace missing anchor bolts for the easternmost post along the north approach railing.
Repair the 11 consecutive broken/damaged blockouts along the northeast approach railing.
Unclog deck scuppers on the driving surface and from the deck soffit.
Reseal both abutment joints.
Arrest girder web cracks at the horizontal splice terminations:
Span 5, girder 1 at the field splice near floor beam 5 – 1 1/4-inch-long crack with no arrestor hole on interior face.
Span 6, girder 2 near floor beam 11 – 1 1/8-inch-long vertical crack in the lower web plate.
Replace missing bolts and tighten loose bolts at:
Girder splice locations
Floor beam connection to the girders in spans 5, 6 and 7.
Stringer connection to floor beams in spans 5, 6 and 7.
Repair cracked web connection plate weld for floor beam 6, span 5 at girder 1.
Reattach floor beam 0 lower connection to girder 2 in span 6. Consider bolting the previously welded connection.
Repair cracks in the lower lateral bracing connections.
Tighten loose anchor bolts and replace missing or bent anchor bolts.
FX Items:
Monitor spalls with exposed reinforcement in the deck soffit along overhangs and superstructure members for additional deterioration.
Monitor vertical offsets at the abutment joints and pier 4 and 7 finger joints for additional offsets.
Monitor locations of girder web cracks having drilled hole retrofits or paint cracks at the horizontal splice termination.
Monitor the 1 1/4-inch-long vertical crack at the longitudinal stiffener cored hole for girder 1, span 5 at floor beam 4.
Monitor cored hole locations in the longitudinal stiffeners for crack development in the girder web.
Monitor bow in the web of girder 1, span 7 at the field splice between floor beams 3 and 4.
Monitor cracked welds at cross frame connection to girders due to pack rust.
Monitor cracks in the welded connections between stringer connection angles and floor beam webs.
Monitor welded connections at previously replaced floor beams due to irregular weld contour.
Monitor cracks at the floor beam 0, span 7 connection to girder 2.
Monitor undermining of both abutment breastwalls for exposure of the foundation.
Misc. Notes:
PX – The easternmost post along the north approach railing at the end of the east approach slab is missing all four anchor bolts.
PX – The northeast approach railing exhibits eleven consecutive broken/damaged blockouts over a 60-foot length near the transition.
The west termination of the north bridge railing is missing one post.
The southeast approach railing exhibits isolated locations of minor impact damage, including one disconnected post near the transition and nine damaged blockouts near mid-length.
The southwest corner approach guardfence exhibits three consecutive damaged and fully disconnected steel posts.
Approach railings exhibit isolated locations of minor impact damage along the w-beam and blockouts at other locations.
Refer to the NSTM report for floor system bracing notes.

Flowline Notes:

Load Posting Status

Posting Status Change Date (B.PS.02)	Open/Posted/Closed	Permanent/Temp/Supported	Load Posting Status (B.PS.01)
7/18/2024 12:00:00AM	Open	Permanent	PO

Text of Load Posting Signs:

Railings and Transitions

Railings (B.RH.01):	I	Transitions (B.RH.02):	I

Oklahoma Items

200c. Temperature:	95	246b. Overlay Thickness:	0.50
214b. Posted Speed Limit:	NR	246c. Overlay Date:	05/01/2014
214c. Narrow 1 way Bridge Sign:	N	246d. Overlay Depth Change > 1":	N
214d. Vertical Clearance Sign:	N	258. Plans w/Found in ODOT File:	_
214d. Advanced Warning Sign:	N	263. Interchange at Intersection:	0
222. Fill over RCB:	0	264. Interstate Milepoint:	
240. Approach Roadway Type:	1		

Element Data

Elem /	Elemement Name	Total	Unit	State 1	State 2	State 3	State 4
12	Re Concrete Deck	53,984	sq.ft	0	53,964	20	0
	PX – Minor to moderate debris accumulation exists along both curbs, worst is along the north curb. Several scuppers are clogged or partially clogged with dirt and vegetation. Span 5 through 6 driving surfaces exhibit up to 1/32-inch-wide transverse cracks spaced at 1 to 3 feet. Remaining spans exhibit less than 1/32-inch-wide transverse cracks spaced at approximately 10 feet. Driving surfaces away from joints exhibit up to 22-inch-wide x 12-inch-long x 3/4-inch-deep unpatched spalls, some with exposed reinforcement. The driving surface exhibits isolated less than 1/32-inch-wide longitudinal cracks near the edges. The driving surface exhibits widespread concrete and asphalt patches, most prevalent at piers and concrete joints. Concrete patches are typically sound and exhibit isolated up to 1/32-inch-wide transverse and longitudinal cracks and isolated up to 36-inch-wide x 9-inch-long x 1-inch-deep delaminations/spalls within the patches. Asphalt patches typically exhibit minor to moderate deterioration with up to 18-inch-diameter x 2-inch-deep delaminations/spalls (some with exposed reinforcement) extending from patch edges. Patches are most prominent within the main spans. Scattered delaminations/spalls have been patched since the prior inspection.						
510	Wearing Surfaces	53,984		2,699	26,992	24,293	0
	The 2014 epoxy grit overlay has largely failed throughout the driving surface.						
107	Steel Opn Girder/Beam	4,780	ft	3,486	478	816	0

NSTM twin girder spans exist in spans 5 through 7 and have the following comments:
PX/FX – Cracks were observed at the ends of the horizontal splice at the following locations.
- PX – SP5, G1 at the field splice near FB5 – 1 1/4-in-long crack with no arrestor hole on the INT face.
- FX – SP5, G2 at the field splice near FB5 – two 7/8-in-long paint cracks in the girder web at the toe of the longitudinal stiffener to web weld. Paint was removed and this location it was determined that no crack exists in the base metal or weld material.
- FX – SP6, G1 at the field splice near FB3 – 3/4-in-long crack arrested with two drilled hole retrofits. The crack has not propagated past the arrestor holes; however, two paint cracks exist in the underside of the top drilled hole.
- PX – SP6, G2 near FB11 – 1/4-in-long vertical crack in the lower web plate without arrestor holes.
- FX – SP7, G1 near FB4 – 1-in-long paint crack in the upper web arrested with an arrestor hole, and a 1 1/8-in-long crack along the weld between the lower web and the termination of a longitudinal stiffener.
- FX – SP7, G2 near FB4 – Two vertical cracks arrested with drilled hole retrofits.

PX – Missing or loose bolts were observed at the following locations:
- SP5, G2, near FB5.
- SP6, G1, EXT face top flange.
- SP6, G1, INT face horiz. splice over P6.
- SP6, G2, EXT face top and bottom flanges near FB3.
- SP6, G2, EXT face horiz. splice near FB12.
- SP7, G1, EXT face horiz. splice near FB4.
- SP7, G2, EXT face horiz. splice near P6.

FX – Longitudinal stiffeners on the EXT face of the girders have been retrofitted with a cored hole made through the stiffener and tangent with the girder web at the butt weld locations noted below.
- SP5, G1 at FB4 at the lower longitudinal stiffener – 1 1/2-in-long vertical base metal crack in the girder web at the cored hole propagating from toe of the longitudinal stiffener. Approximately 1/2-in propagation was noted since the prior inspection.
- SP6, G1 near FB7 at the upper longitudinal stiffener – Crack in the free edge of the stiffener.
- SP6, G1 near FB9 at the upper longitudinal stiffener.
- SP6, G2 near FB9 at the upper longitudinal stiffener.
- SP7, G2 between FBS7 and 8 at the lower longitudinal stiffener.

FX – SP7, G1 web between FBS3 and 4 exhibits a global bow up to 1/2-in at the field splice. No signs of distress were noted to the splice plates or bolts.
Girder top flanges exhibit surface corrosion and 1/4-in-thick pack rust between the flange and soffit at multiple locations lifting the deck. Flanges at several deck joints exhibit up to 1/4-in-deep section loss due to the pack rust.
Girder webs adjacent to lower lateral bracing gusset plates exhibit up to 1/8-in-deep painted over pitting above the plates. Active laminate corrosion and minor section loss exists in the adjacent girder web and girder bottom flange.
Girder webs at bearing stiffeners over Pexhibits up to 1/8-in-deep painted over pitting.
Horizontal web splice plates exhibit up to 1/4-in-thick pack rust between plates causing distortion at several locations.
Isolated bottom flange splice plates exhibit up to 5/16-in-thick pack rust.
Heavy laminating corrosion exists along horizontal girder splices at bearing stiffeners over P5 and 6. G2 over P6 exhibits additional greater than 50% section loss to 4 of 6 bolts.

Multi-girder spans exist in spans 1 through 4 and 8 through 15 and have the following comments:
FX – Multiple cross frame top struts exhibit cracked and broken welds between the cross frame and connection plates due to pack rust.
SP11, G3 near cross frame 3 exhibits one missing bolt in the web splice.
Girder cross frames at P9 and 10 exhibit a 3-in bow between girders 1 through 3, most likely due to the bearing rehabilitation project.
A previously noted 1 3/4-in-long crack in the EXT face of G1, SP15 at P14 was determined to be a paint crack after paint was removed.

515	Steel Protective Coating	140,000	0	0	140,000	0

The bridge was repainted in 2010. Areas of previous corrosion, section loss, and pack rust have reactivated at many locations, most prominent at bracing gusset plates near expansion joints. Active pack rust exists along most girder horizontal web splices. Pack rust between lateral brace connection plates and lateral bracing and girder bottom flanges have reactivated at multiple locations within the main spans.

113	Steel Stringer	1,914 ft	1,843	50	21	0

PX – Loose and missing stringer connection bolts were observed between the connection angle and the floor beam web at the following locations:

- Span 5, stringer 2 at floor beam 4 – 1 loose bolt
- Span 5, stringer 3 at floor beam 4 – 1 loose bolt
- Span 5, stringer 3 at floor beam 8 – 1 loose bolt
- Span 6, stringer 1 at floor beam 3 – 4 loose bolts
- Span 6, stringer 2 at floor beam 3 – 1 loose bolt
- Span 6, stringer 3 at floor beam 4 – 1 loose bolt
- Span 6, stringer 1 at floor beam 5 – 2 loose bolts
- Span 6, stringer 1 at floor beam 6 – 2 loose bolts
- Span 6, stringer 2 at floor beam 6 – 1 loose bolt
- Span 6, stringer 3 at floor beam 6 – 3 loose bolts
- Span 6, stringer 3 at floor beam 8 – 3 loose bolts
- Span 6, stringer 1 at floor beam 11 – 5 loose bolts
- Span 6, stringer 1 at floor beam 12 – 1 loose bolt
- Span 7, stringer 3 at floor beam 4 – 1 missing bolt

The bolts appear to have not been properly tightened during construction with most locations being the result of improper fit or alignment.

FX – Stringer connection angles welded to the replaced floor beams exhibit cracks in the bottom weld at the following locations:

- Span 5, stringer 3 connection to the east face of floor beam 3 – 2 5/8-inch-long crack in north connection angle and 1 1/4-inch-long crack in south connection angle along bottom horizontal weld to floor beam.
- Span 6, stringer 1 connection to the west face of floor beam 0 – 1 7/16-inch-long crack and a 7/8-inch-long crack.
- Span 6, stringer 2 connection to the west face of floor beam 0 – 5/16-inch-long crack.
- Span 6, stringer 2 connection to the east face of floor beam 0 – 1 1/4-inch-long crack and a 2 3/16-inch-long crack in the east face.
- Span 6, stringer 3 connection to the east face of floor beam 0 – 1 7/8-inch-long crack.
- Span 7, stringer 1 connection to the east face of floor beam 0 – 1 3/8-inch-long crack and a 2 1/8-inch-long crack.
- Span 7, stringer 2 connection to the east face of floor beam 0 – 1 1/8-inch-long crack and a 1 7/8-inch-long crack.
- Span 7, stringer 3 connection to the east face of floor beam 0 – 7/8-inch-long and a 1/2-inch-long crack.

Span 7, stringer 3 at floor beam 0 has been previously repaired by removing the deteriorated end and welding in a new steel section.

Multiple stringers exhibit mis-drilled holes in the bottom flange at floor beam connections.

152	Steel Floor Beam	891	ft	445	223	223	0

PX – SP5, FB6 at G1 exhibits a 5 1/8-in-long crack in the west face weld and a 6-in-long crack in the east face weld for the web connection plate due to pack rust.

PX – SP6, FB0 over P5 at G2 is cracked for the full width of the horiz. weld along the bottom edge of the truss floor beam gusset plate. The vertical weld at this location is cracked full height (3 1/2 inches). The gusset plate has been reinforced with a welded 3-in x 1/2-in diagonal bar which is bowed 1/16-in out-of-plane.

PX – Loose and misaligned bolts and blind holes exist in floor beam to girder connections at the following locations:

- SP5, FB0 upper conn to G1 – 2 bolts not fully seated.
- SP6, FB1 lower conn to G1 – 11 loose bolts. There is an up to 1/4-in gap between the transverse stiffener and the connection plate over an 8-in length.
- SP6, FB4 lower conn to G1 – 2 blind holes at the top of the gusset plate with adjacent pack rust up to 11/16-in-thick
- SP6, FB5 lower conn to G2 – 2 blind holes.
- SP6, FB12 lower conn to G1 – 1 unseated bolt due to misaligned hole.
- SP6, FB13 lower conn to G1 – 4 loose bolts and one bolt without a nut allowing up to 1/4-in-thick active pack rust at the loose bolts.
- SP7, FB2 lower conn to G1 – 1 missing bolt.
- SP7, FB3 upper conn to G2 – 3 loose bolts and one bolt without a washer.
- SP7, FB9 upper conn to G1 – 2 missing bolts.

FX – The following FBS have been replaced as of the 2014 OS:

- SP5, FB3.
- SP6, FB0.
- SP7, FB0.

FX – SP7, FB0 exhibits a previous repair at G2 with the floor beam reattached to the girder via welded plate prior to the 2014 OS inspection. The weld has a 1 1/8-in-long crack and a 5/8-in-long crack at the lower end of the weld. The lower strut and connection plate to G2 at this location exhibits advanced painted over section loss and multiple up to 6-in-long x 2-in-high corrosion holes.

MEMBER ALIGNMENT – Several kinks and bends were noted in the floor beam members and gusset plates. Specific details and locations are as follows:

- SP5, FB2 at G2 – L4 gusset plate exhibits a slight bow.
- SP5, FB5 at G2 – L4 gusset plate exhibits a slight bow.
- SP5, FB7 adjacent to G2 – U3 gusset plate exhibits an 3/8-in kink under stringer 3 and L4 gusset plate exhibits an 1/8-in bow.
- SP6, FB4 – Center gusset plate kinked.
- SP6, FB13 – L0L1 exhibits 2 minor kinks.
- SP7, FB1 at stringer 3 – upper chord bottom flange is twisted/rolled 7° to the east. The upper gusset plate under stringer 3 is kinked 1/2 inch on the vertical edges and 1/2 inch on the bottom horiz. edge. The vertical stiffeners are out of alignment due to the roll in the bottom flange of the floor beam. The center gusset plate is kinked 1/4 inch to the west.
- SP7, FB5 – upper chord is rotated 4.5° to the east.
- SP7, FBS 2, 5, and 8 at stringer 3 – bottom horiz. face of gusset plate kinked 1/4-in and rotated up to 1/2-in to the west. FB2 exhibits a poor-quality weld between the north vertical stiffener under stringer 3 and the floor beam bottom flange that appears to have never properly been attached at this location.

SP6, FB2 – U3L2 (tension member) exhibits several shallow gouges up to 3/8-in-deep in the bottom flange.

SP6, FB4 exhibits two mis-drilled holes in the bottom flange under stringer 3.

SP6, FB6 top flange exhibits advanced section loss with a 14-in-long x 3-in-wide corrosion hole and adjacent knife edging. The corrosion hole is painted over, but the adjacent areas exhibit reactivated section loss.

Oversized holes exist randomly throughout the floor beam connections. The holes appear to have been re-drilled during the erection of the bridge.

Several FBS exhibit surface corrosion along the top flange with evidence of deck pumping due to splash marks on the deck soffit.

Floor beams exhibit corrosion on both flanges and up to 1/8-in-deep pitting on top flange undersides.

205	Re Conc Column	26	each	14	7	5	0

Pier 4
South column exhibits a full circumference spall/delamination with exposed reinforcement on the east face at the pier wall.
North column exhibits moderate scaling at mid-height on the east face and a full circumference delamination at the pier wall.

Pier 5
The column exhibits an isolated area of minor delaminations on the west face.

Pier 6
The column exhibits random full height vertical cracks with light efflorescence and full width spalling with exposed reinforcement at the cross-section change near the waterline.

Pier 7
The north column exhibits a full circumference spall with exposed reinforcement at the pier wall.

Pier 8
Both columns exhibit multiple spalls with exposed reinforcement.

Pier 10
The north column exhibits a 6-square-foot x 2-inch-deep spall with exposed reinforcement and vertical delamination cracks with minor efflorescence on the east face.

Pier 11
The web wall exhibits five minor cover spalls with exposed reinforcement along the east edge.

Pier 12
The south column exhibits a 1 1/2-square-foot x 2-inch-deep spall with exposed reinforcement.

215	Re Conc Abutment	80	ft	0	80	0	0

FX – Bases of both abutment breastwalls are exposed and undermined up to 6 inches high x 4 feet wide at both ends with up to 32-inch-deep penetration. Steel piles are not exposed.
Abutment backwalls appear to be leaning towards the channel. Girder ends remain near vertical, verified with a level. Abutments are supported on vertical piles. Transverse measurements between the abutment backwall and girder flanges were taken at the following locations:

- West abutment at girder 4 top flange – 4 1/4 inches (previously 4 7/8 inches).
- West abutment at girder 4 bottom flange – 6 7/8 inches (previously 7 inches).
- East abutment at girder 4 top flange – 1 3/4 inches (previously 1 1/8 inches).
- East abutment at girder 4 bottom flange – 3 1/8 inches (previously 3 1/4 inches).

The west abutment exhibits isolated up to 10-inch-wide x 3-inch-high x 8-inch-deep varmint holes under the breastwall between girders 3 and 4.
West abutment bearing seat exhibits a light accumulation of spalled concrete and debris.
The east abutment exhibits a 7-foot-wide patched area between girders 2 and 3 and two less than 1/16-inch-wide horizontal cracks (one with rust staining) near the girder 3 pedestal. The patch exhibits some insignificant cracks with light efflorescence. Moist sand from the epoxy overlay exists on the east abutment seat.

234	Re Conc Pier Cap	594	ft	356	178	60	0

Pier 1
East cap edge between girders 2 and 3 exhibits a 6-foot-long x 1-foot-wide incipient corner spall/delamination.

Pier 2
East and west cap edges exhibit a 3/16-inch-wide cracks between girders 1 and 2. The cap top face in this area is delaminated. Cracking and delaminations are due to corrosion of the reinforcing steel.

Pier 3
West cap face below girder 3 exhibits a full height x 10-foot-wide delamination in a prior patch.

Pier 4
Cap bearing seat areas exhibit spalling and scaling concrete with exposed corroded reinforcement.
West cap face exhibits three up to 1-square-foot x 1-inch-deep spalls with exposed reinforcement over the north column.
Top half of east cap face exhibits less than 1/16-inch-wide longitudinal and transverse cracks with light efflorescence in a prior patch.
Bottom half of east cap face exhibits a 12-foot-long x less than 1/16-inch-wide delamination crack at the center with light efflorescence.

Pier 5
West cap face at the column interface exhibits multiple exposed and corroding reinforcement ends.
Cap exhibits random insignificant shrinkage cracks and multiple up to 2 square foot x 2-inch-deep delaminations/spalls with exposed reinforcement.

Pier 7
East cap face exhibits a 48-inch-high x 24-inch-wide x 2 1/2-inch-deep spall with exposed and corroded reinforcement.
West cap face exhibits multiple less than 1/32-inch-wide transverse and longitudinal cracks throughout.

Pier 8
West and east top cap edges exhibit 1/16-inch-wide x 5-foot-long longitudinal cracks at girders 1 and 2 and delaminated concrete. Cracking and delaminations are due to corrosion of the reinforcement.

Pier 10
East cap face exhibits a 1/16-inch-wide vertical delamination crack, 1/16-inch-wide horizontal cracks, and a minor spall over the north column.
West cap face exhibits multiple up to 1/16-inch-wide horizonal cracks with minor efflorescence.

Pier 11
East cap face exhibits widespread insignificant to up to 1/32-inch-wide map cracking and minor scaling on the south cantilever.
West cap face exhibits a full height concrete patch between the columns, a minor spall near the south column, and 6 feet of minor delaminations and less than 1/16-inch-wide along the bottom edge.

Pier 12
East cap face between girders 1 and 4 exhibits less than 1/16-inch-wide horizontal cracks between girders 1 and 4.
West cap face exhibits a minor spall near the north column and a 2-foot-long diagonal delamination crack at the south end.

Pier 13
East cap face exhibits 16 square feet patch over the north column.
West cap face exhibits a large patch at the center.
Both cap faces exhibit less than 1/16-inch-wide horizontal cracks along the edges under girders 1 and 2.

Pier 14
Top cap face exhibits exhibits 1/16-inch-wide cracks with large delaminated areas.
South end of the cap exhibits a 43-inch-long x 12-inch-high x 3-inch-deep spall with exposed and corroded reinforcement.
East cap face exhibits an 8-foot-long x 1/8-inch-wide horizontal crack.
Previously noted delaminations in the west cap face have been sealed since the prior inspection. Up to 1/16-inch-wide

horizontal delamination cracks are present near the sealed area.

310	Elastomeric Bearing	12	each	12	0	0	0

Previous rocker bearings for span 4 at pier 4, span 8 at pier 7; and span 11 at pier 10 have been replaced with elastomeric bearings

311	Moveable Bearing	30	each	0	21	9	0

PX – Bearing anchor bolts and fasteners exhibit the following conditions:

- Pier 1, girder bearings – all anchor bolts are missing.
- Pier 4, girder 1 bearing – northeast connection bolt is missing between the girder bottom flange and sole plate.
- Pier 6, girder 1 bearing – north anchor bolt not fully seated with up to 5 inches of shaft exposed above rocker bearing.
- Pier 14, girder bearings – all anchor bolts are missing.

The keeper plates used to contain the rocker bearing within the limits of the sole plate have broken welds or are missing at the abutment for girders 3 and 4 as well as in span 15 at pier 14. The girder 4 bearing has moved south 1/2 inch with no significant lateral movement since the last painting.

Pier 10, girder 1 bearing has rotated clockwise (looking down), and the southwest (span 9 side) corner of the rocker overhangs the masonry plate 1/4-inch.

Rocker bearings typically exhibit rust staining and active laminating corrosion with 1/4-inch-deep section loss between the rocker and masonry plate.

313	Fixed Bearing	30	each	0	30	0	0

PX – Bearing anchor bolts and fasteners exhibit the following conditions:

- Pier 2, girder 4 bearing – southeast anchor bolt nut backed off 1/2-inch.
- Pier 3, girder 1 bearing – fixed bearing anchor bolts are bent and exhibit corrosion.
- Pier 5, girder 1 bearing – fixed bearing exhibits several different length anchor bolts, and the bolts are typically not fastened tightly. This possibly is the result of the anchor bolts working up out of the bearing seat due to rocking of the fixed bearings.
- Pier 8, girder 1 bearing – connection bolts are backed off up to 1-inch with the nuts still in place between the girder bottom flange and bearing sole plate.
- Pier 8, girder 2 bearing – northeast connection bolt is non-functional and hangs down 3 inches between girder bottom flange and sole plate. The bearing pedestal exhibits 18-inch-long x 12-inch-wide x 1 1/2-inch-deep spall undermining the bearing.
- Pier 9, girder 1 bearing – fixed bearing is missing one anchor bolt at the southwest corner of the bearing with the remaining 3 bolts exhibiting nuts not completely threaded onto the bolt. The southwest anchor bolt for the sole plate connection to the bottom flange is loose.
- Pier 11, girder 4 bearing – southwest anchor bolt nut backed off 1/2 inch.
- Pier 12, girder 4 bearing – east anchor bolts are slightly bent to the east and exhibit negative thread counts to the nuts.
- East abutment, girder 2 and 4 bearings – anchor bolts exhibit up to approximately 50% loss to bolt heads due to corrosion.

Fixed bearings typically exhibit surface corrosion forming at stiffeners and masonry plates and minor pack rust developing between the masonry plate and concrete bearing seat.

321	Re Conc Approach Slab	2	sq.ft	0	0	2	0

Both approach slabs exhibit up to 1/32-inch-wide transverse and longitudinal cracks, most prevalent in the wheel paths.

The west concrete approach roadway approximately 40 feet from the abutment exhibits a 7 1/2-inch-diameter infilled core hole in the west travel lane.

The east approach slab exhibits an up to 36-inch-wide x 5-inch-long x 1-inch-deep spall exists along the abutment joint. This spall is patched with asphalt; however, the patch is failing.

Relief joint seals exhibit locations of adhesion loss, and isolated minor vegetation growth and loose debris accumulation are present within the relief joints.

330	Metal Bridge Railing	3,856	ft	3,648	200	8	0

Steel rails along bridge railings in spans 3 through 7 exhibit isolated locations of laminating corrosion with up to 18-inch-long x 1-inch-wide corrosion holes.

The south bridge railing over pier 4 exhibits a 1 1/4-inch gap in the top rail due to a shifted splice tube.

The south steel rail near floor beam 3, span 10 exhibits minor impact damage.

Painted protective coatings on steel portions of bridge railings exhibit isolated areas of peeling paint due to adhesion failure between the top and intermediate coats. Areas of corrosion are beginning to blead through.

919	St.(Rail) Prot. Coat	9,260		0	0	9,260	0

Painted protective coatings on steel portions of bridge railings exhibit isolated areas of peeling paint due to adhesion failure between the top and intermediate coats. Areas of corrosion are beginning to blead through.

331	Re Conc Bridge Railing	3,856	ft	3,470	386	0	0

Concrete parapets exhibit isolated insignificant cracks, some with very light efflorescence, and isolated minor cover spalls with exposed reinforcement. The skim coat along concrete parapets exhibit areas of insignificant map cracking with light efflorescence.
Tapered concrete curbs have been installed at both approaches to address blunt impact potential apart from the northeast corner. The northeast approach safety curb extends 14 inches from the face of the railing and is unprotected, creating a blunt end at the transition.
The south sidewalk in spans 3 and 5 exhibits up to 3-foot-diameter x 1/2-inch-deep spalls, some with exposed reinforcement.
The south sidewalk in span 7 exhibits three up to 24-inch-diameter x 2-inch-deep spalls with exposed reinforcement.
The south sidewalk exhibits isolated minor spalls, some with exposed reinforcement, at other locations.
The north curb exhibits multiple up to 10-foot-long x full height x up to 2-inch-deep spalls with exposed and corroded reinforcement.
Very minor debris accumulation exists along the toe of both concrete parapets.

960	Settlement SF	1	each	0	0	1	0

Abutment backwalls appear to be leaning towards the channel. Girder ends remain near vertical, verified with a level. Abutments are supported on vertical piles. Transverse measurements between the abutment backwall and girder flanges were taken at the following locations:

- West abutment at girder 4 top flange – 4 1/4 inches (previously 4 7/8 inches).
- West abutment at girder 4 bottom flange – 6 7/8 inches (previously 7 inches).
- East abutment at girder 4 top flange – 1 3/4 inches (previously 1 1/8 inches).
- East abutment at girder 4 bottom flange – 3 1/8 inches (previously 3 1/4 inches).

957	Pack Rust Smart Flag	1	each	0	0	1	0

Rusting between plates has caused serious distress to the connection. The plates may be badly distorted; however, all connectors as still functioning.

958	Concrete Cracking SF	1	each	0	0	1	0

Span 5 through 6 driving surfaces exhibit up to 1/32-inch-wide transverse cracks spaced at 1 to 3 feet. Remaining spans exhibit less than 1/32-inch-wide transverse cracks spaced at approximately 10 feet.
The driving surface exhibits isolated less than 1/32-inch-wide longitudinal cracks near the edges.

956	St. Cracking/Fatigue	1	each	0	0	1	0

Fatigue damage exists and has not been arrested. Crack length is between 1 and 2 inches long.

877	St. Stringer End(5Ft)	30	ft	30	0	0	0

PX – Loose and missing stringer connection bolts were observed between the connection angle and the floor beam web at the following locations:

- Span 5, stringer 2 at floor beam 4 – 1 loose bolt
- Span 5, stringer 3 at floor beam 4 – 1 loose bolt
- Span 5, stringer 3 at floor beam 8 – 1 loose bolt
- Span 6, stringer 1 at floor beam 3 – 4 loose bolts
- Span 6, stringer 2 at floor beam 3 – 1 loose bolt
- Span 6, stringer 3 at floor beam 4 – 1 loose bolt
- Span 6, stringer 1 at floor beam 5 – 2 loose bolts
- Span 6, stringer 1 at floor beam 6 – 2 loose bolts
- Span 6, stringer 2 at floor beam 6 – 1 loose bolt
- Span 6, stringer 3 at floor beam 6 – 3 loose bolts
- Span 6, stringer 3 at floor beam 8 – 3 loose bolts
- Span 6, stringer 1 at floor beam 11 – 5 loose bolts
- Span 6, stringer 1 at floor beam 12 – 1 loose bolt
- Span 7, stringer 3 at floor beam 4 – 1 missing bolt

The bolts appear to have not been properly tightened during construction with most locations being the result of improper fit or alignment.

FX – Stringer connection angles welded to the replaced floor beams exhibit cracks in the bottom weld at the following locations:

- Span 5, stringer 3 connection to the east face of floor beam 3 – 2 5/8-inch-long crack in north connection angle and 1 1/4-inch-long crack in south connection angle along bottom horizontal weld to floor beam.
- Span 6, stringer 1 connection to the west face of floor beam 0 – 1 7/16-inch-long crack and a 7/8-inch-long crack.
- Span 6, stringer 2 connection to the west face of floor beam 0 – 5/16-inch-long crack.
- Span 6, stringer 2 connection to the east face of floor beam 0 – 1 1/4-inch-long crack and a 2 3/16-inch-long crack in the east face.
- Span 6, stringer 3 connection to the east face of floor beam 0 – 1 7/8-inch-long crack.
- Span 7, stringer 1 connection to the east face of floor beam 0 – 1 3/8-inch-long crack and a 2 1/8-inch-long crack.
- Span 7, stringer 2 connection to the east face of floor beam 0 – 1 1/8-inch-long crack and a 1 7/8-inch-long crack.
- Span 7, stringer 3 connection to the east face of floor beam 0 – 7/8-inch-long and a 1/2-inch-long crack.

Span 7, stringer 3 at floor beam 0 has been previously repaired by removing the deteriorated end and welding in a new steel section.

Multiple stringers exhibit mis-drilled holes in the bottom flange at floor beam connections.

879	St.Strng.Un Const.Jt	300	ft	300	0	0	0

PX – Loose and missing stringer connection bolts were observed between the connection angle and the floor beam web at the following locations:

- Span 5, stringer 2 at floor beam 4 – 1 loose bolt
- Span 5, stringer 3 at floor beam 4 – 1 loose bolt
- Span 5, stringer 3 at floor beam 8 – 1 loose bolt
- Span 6, stringer 1 at floor beam 3 – 4 loose bolts
- Span 6, stringer 2 at floor beam 3 – 1 loose bolt
- Span 6, stringer 3 at floor beam 4 – 1 loose bolt
- Span 6, stringer 1 at floor beam 5 – 2 loose bolts
- Span 6, stringer 1 at floor beam 6 – 2 loose bolts
- Span 6, stringer 2 at floor beam 6 – 1 loose bolt
- Span 6, stringer 3 at floor beam 6 – 3 loose bolts
- Span 6, stringer 3 at floor beam 8 – 3 loose bolts
- Span 6, stringer 1 at floor beam 11 – 5 loose bolts
- Span 6, stringer 1 at floor beam 12 – 1 loose bolt
- Span 7, stringer 3 at floor beam 4 – 1 missing bolt

The bolts appear to have not been properly tightened during construction with most locations being the result of improper fit or alignment.

FX – Stringer connection angles welded to the replaced floor beams exhibit cracks in the bottom weld at the following locations:

- Span 5, stringer 3 connection to the east face of floor beam 3 – 2 5/8-inch-long crack in north connection angle and 1 1/4-inch-long crack in south connection angle along bottom horizontal weld to floor beam.
- Span 6, stringer 1 connection to the west face of floor beam 0 – 1 7/16-inch-long crack and a 7/8-inch-long crack.
- Span 6, stringer 2 connection to the west face of floor beam 0 – 5/16-inch-long crack.
- Span 6, stringer 2 connection to the east face of floor beam 0 – 1 1/4-inch-long crack and a 2 3/16-inch-long crack in the east face.
- Span 6, stringer 3 connection to the east face of floor beam 0 – 1 7/8-inch-long crack.
- Span 7, stringer 1 connection to the east face of floor beam 0 – 1 3/8-inch-long crack and a 2 1/8-inch-long crack.
- Span 7, stringer 2 connection to the east face of floor beam 0 – 1 1/8-inch-long crack and a 1 7/8-inch-long crack.
- Span 7, stringer 3 connection to the east face of floor beam 0 – 7/8-inch-long and a 1/2-inch-long crack.

Span 7, stringer 3 at floor beam 0 has been previously repaired by removing the deteriorated end and welding in a new steel section.

Multiple stringers exhibit mis-drilled holes in the bottom flange at floor beam connections.

872	St.Gird Und Const.Jt	1,236	ft	920	100	216	0

NSTM twin girder spans exist in spans 5 through 7 and have the following comments:
PX/FX – Cracks were observed at the ends of the horizontal splice at the following locations.
- PX – SP5, G1 at the field splice near FB5 – 1 1/4-in-long crack with no arrestor hole on the INT face.
- FX – SP5, G2 at the field splice near FB5 – two 7/8-in-long paint cracks in the girder web at the toe of the longitudinal stiffener to web weld. Paint was removed and this location it was determined that no crack exists in the base metal or weld material.
- FX – SP6, G1 at the field splice near FB3 – 3/4-in-long crack arrested with two drilled hole retrofits. The crack has not propagated past the arrestor holes; however, two paint cracks exist in the underside of the top drilled hole.
- PX – SP6, G2 near FB11 – 1/4-in-long vertical crack in the lower web plate without arrestor holes.
- FX – SP7, G1 near FB4 – 1-in-long paint crack in the upper web arrested with an arrestor hole, and a 1 1/8-in-long crack along the weld between the lower web and the termination of a longitudinal stiffener.
- FX – SP7, G2 near FB4 – Two vertical cracks arrested with drilled hole retrofits.

PX – Missing or loose bolts were observed at the following locations:
- SP5, G2, near FB5.
- SP6, G1, EXT face top flange.
- SP6, G1, INT face horiz. splice over P6.
- SP6, G2, EXT face top and bottom flanges near FB3.
- SP6, G2, EXT face horiz. splice near FB12.
- SP7, G1, EXT face horiz. splice near FB4.
- SP7, G2, EXT face horiz. splice near P6.

FX – Longitudinal stiffeners on the EXT face of the girders have been retrofitted with a cored hole made through the stiffener and tangent with the girder web at the butt weld locations noted below.
- SP5, G1 at FB4 at the lower longitudinal stiffener – 1 1/2-in-long vertical base metal crack in the girder web at the cored hole propagating from toe of the longitudinal stiffener. Approximately 1/2-in propagation was noted since the prior inspection.
- SP6, G1 near FB7 at the upper longitudinal stiffener – Crack in the free edge of the stiffener.
- SP6, G1 near FB9 at the upper longitudinal stiffener.
- SP6, G2 near FB9 at the upper longitudinal stiffener.
- SP7, G2 between FBS7 and 8 at the lower longitudinal stiffener.

FX – SP7, G1 web between FBS3 and 4 exhibits a global bow up to 1/2-in at the field splice. No signs of distress were noted to the splice plates or bolts.
Girder top flanges exhibit surface corrosion and 1/4-in-thick pack rust between the flange and soffit at multiple locations lifting the deck. Flanges at several deck joints exhibit up to 1/4-in-deep section loss due to the pack rust.
Girder webs adjacent to lower lateral bracing gusset plates exhibit up to 1/8-in-deep painted over pitting above the plates. Active laminate corrosion and minor section loss exists in the adjacent girder web and girder bottom flange.
Girder webs at bearing stiffeners over Pexhibits up to 1/8-in-deep painted over pitting.
Horizontal web splice plates exhibit up to 1/4-in-thick pack rust between plates causing distortion at several locations.
Isolated bottom flange splice plates exhibit up to 5/16-in-thick pack rust.
Heavy laminating corrosion exists along horizontal girder splices at bearing stiffeners over P5 and 6. G2 over P6 exhibits additional greater than 50% section loss to 4 of 6 bolts.

Multi-girder spans exist in spans 1 through 4 and 8 through 15 and have the following comments:
FX – Multiple cross frame top struts exhibit cracked and broken welds between the cross frame and connection plates due to pack rust.
SP11, G3 near cross frame 3 exhibits one missing bolt in the web splice.
Girder cross frames at P9 and 10 exhibit a 3-in bow between girders 1 through 3, most likely due to the bearing rehabilitation project.
A previously noted 1 3/4-in-long crack in the EXT face of G1, SP15 at P14 was determined to be a paint crack after paint was removed.

916	St.Bearing Assembly	12	each	0	12	0	0
	Previous rocker bearings for span 4 at pier 4, span 8 at pier 7; and span 11 at pier 10 have been replaced with elastomeric bearings						
870	Concrete Wingwall	4	each	4	0	0	0
	No significant deficiencies.						
865	St.Open Gird End(5Ft	180	ft	90	45	45	0

NSTM twin girder spans exist in spans 5 through 7 and have the following comments:
PX/FX – Cracks were observed at the ends of the horizontal splice at the following locations.
- PX – SP5, G1 at the field splice near FB5 – 1 1/4-in-long crack with no arrestor hole on the INT face.
- FX – SP5, G2 at the field splice near FB5 – two 7/8-in-long paint cracks in the girder web at the toe of the longitudinal stiffener to web weld. Paint was removed and this location it was determined that no crack exists in the base metal or weld material.
- FX – SP6, G1 at the field splice near FB3 – 3/4-in-long crack arrested with two drilled hole retrofits. The crack has not propagated past the arrestor holes; however, two paint cracks exist in the underside of the top drilled hole.
- PX – SP6, G2 near FB11 – 1/4-in-long vertical crack in the lower web plate without arrestor holes.
- FX – SP7, G1 near FB4 – 1-in-long paint crack in the upper web arrested with an arrestor hole, and a 1 1/8-in-long crack along the weld between the lower web and the termination of a longitudinal stiffener.
- FX – SP7, G2 near FB4 – Two vertical cracks arrested with drilled hole retrofits.

PX – Missing or loose bolts were observed at the following locations:
- SP5, G2, near FB5.
- SP6, G1, EXT face top flange.
- SP6, G1, INT face horiz. splice over P6.
- SP6, G2, EXT face top and bottom flanges near FB3.
- SP6, G2, EXT face horiz. splice near FB12.
- SP7, G1, EXT face horiz. splice near FB4.
- SP7, G2, EXT face horiz. splice near P6.

FX – Longitudinal stiffeners on the EXT face of the girders have been retrofitted with a cored hole made through the stiffener and tangent with the girder web at the butt weld locations noted below.
- SP5, G1 at FB4 at the lower longitudinal stiffener – 1 1/2-in-long vertical base metal crack in the girder web at the cored hole propagating from toe of the longitudinal stiffener. Approximately 1/2-in propagation was noted since the prior inspection.
- SP6, G1 near FB7 at the upper longitudinal stiffener – Crack in the free edge of the stiffener.
- SP6, G1 near FB9 at the upper longitudinal stiffener.
- SP6, G2 near FB9 at the upper longitudinal stiffener.
- SP7, G2 between FBS7 and 8 at the lower longitudinal stiffener.

FX – SP7, G1 web between FBS3 and 4 exhibits a global bow up to 1/2-in at the field splice. No signs of distress were noted to the splice plates or bolts.
Girder top flanges exhibit surface corrosion and 1/4-in-thick pack rust between the flange and soffit at multiple locations lifting the deck. Flanges at several deck joints exhibit up to 1/4-in-deep section loss due to the pack rust.
Girder webs adjacent to lower lateral bracing gusset plates exhibit up to 1/8-in-deep painted over pitting above the plates. Active laminate corrosion and minor section loss exists in the adjacent girder web and girder bottom flange.
Girder webs at bearing stiffeners over Pexhibits up to 1/8-in-deep painted over pitting.
Horizontal web splice plates exhibit up to 1/4-in-thick pack rust between plates causing distortion at several locations.
Isolated bottom flange splice plates exhibit up to 5/16-in-thick pack rust.
Heavy laminating corrosion exists along horizontal girder splices at bearing stiffeners over P5 and 6. G2 over P6 exhibits additional greater than 50% section loss to 4 of 6 bolts.

Multi-girder spans exist in spans 1 through 4 and 8 through 15 and have the following comments:
FX – Multiple cross frame top struts exhibit cracked and broken welds between the cross frame and connection plates due to pack rust.
SP11, G3 near cross frame 3 exhibits one missing bolt in the web splice.
Girder cross frames at P9 and 10 exhibit a 3-in bow between girders 1 through 3, most likely due to the bearing rehabilitation project.
A previously noted 1 3/4-in-long crack in the EXT face of G1, SP15 at P14 was determined to be a paint crack after paint was removed.

859	Soffit	1	each	0	0	1	0

FX – The deck soffit exhibits isolated 4 to 6-square-foot x up to 1 3/4-inch-deep spalls with exposed and some corroded reinforcement. Main span deck soffits exhibit scattered up to 4 square feet x 3-inch-deep spalls with exposed reinforcement where prior full depth patches exist.
FX – Shallow spalls are typical along top flanges of superstructure members. Isolated locations have larger up to 5-square-foot spalls with exposed and heavily corroded reinforcement.
Stringer deck haunches in span 6 exhibit multiple 1/4-inch-wide cracks at locations where stringers are not continuous over floor beam members.
The deck soffit exhibits random transverse cracking with efflorescence throughout. Cracking is heaviest within 3 floor beams/diaphragms of the piers and is typically spaced at 5 feet. Cracks are due to flexure in the negative moment region over the piers. Shrinkage and insignificant map cracking is common throughout the soffit.
Main span deck soffits typically exhibit scattered up to 1/32-inch-wide dense map cracking with moderate efflorescence.
Deck soffit overhangs typically exhibit up to 12-square-foot x 2-inch-deep spalls with exposed and corroded reinforcement. The south deck soffit overhang near floor beam 5, span 6 exhibits an up to 5-square-foot x full haunch depth spall with exposed reinforcement.
Isolated areas of the deck have lifted from top flanges of girders or floor beams due to pack rust.
Many main span scuppers are sealed off with closed cell spray foam. This foam was temporarily installed during the prior deck overlay; however, the foam was not removed at all locations.

969	OutOfPlane Dist./Load	1	each	0	1	0	0

FX – Span 7, girder 1 web between floor beams 3 and 4 exhibits a global bow up to 1/2-inch at the field splice. No signs of distress were noted to the splice plates or bolts.
MEMBER ALIGNMENT – Several kinks and bends were noted in the floor beam members and gusset plates. It was unable to be determined at the time of the inspection if this is an as-built condition or if this is the result of recent damage due to overload; however, the lack of fatigue or crack indications suggests that the kinks are an as-built condition. Specific details and locations are as follows:

- Span 5, floor beam 2 at girder 2 – L4 gusset plate exhibits a slight bow.
- Span 5, floor beam 5 at girder 2 – L4 gusset plate exhibits a slight bow.
- Span 5, floor beam 7 adjacent to girder 2 – U3 gusset plate exhibits an approximately 3/8-inch kink under stringer 3 and L4 gusset plate exhibits an approximately 1/8-inch bow.
- Span 6, floor beam 4 – Center gusset plate kinked.
- Span 6, floor beam 13 – L0L1 exhibits 2 minor kinks.
- Span 7, floor beam 1 at stringer 3 – upper chord bottom flange is twisted/rolled 7° to the east. The upper gusset plate under stringer 3 is kinked 1/2 inch on the vertical edges and 1/2 inch on the bottom horizontal edge. The vertical stiffeners are out of alignment due to the roll in the bottom flange of the floor beam. The center gusset plate is kinked 1/4 inch to the west.
- Span 7, floor beam 5 – upper chord is rotated 4.5° to the east.
- Span 7, floor beams 2, 5, and 8 at stringer 3 – bottom horizontal face of gusset plate kinked 1/4-inch and rotated up to 1/2-inch to the west. Floor beam 2 exhibits a poor-quality weld between the north vertical stiffener under stringer 3 and the floor beam bottom flange that appears to have never properly been attached at this location.

909	Pourable Fix Jt.Seal	1,890	ft	0	1,190	700	0

PX – Abutment joint seals exhibit up to 2-foot lengths of adhesion failure, and joints are partially filled with loose dirt and debris, worst in the shoulders. Abutment joint headers exhibit isolated up to 48-inch-wide x 3-inch-long x 3/4-inch-deep spalls and large sound concrete patches.
FX – The west abutment poured fixed joint exhibits a 1/2-inch vertical offset with the deck armor side lower than the approach armor side.
Poured seal deck control joints are typically spaced at 18 feet in the approach spans and at 50 to 75 feet in the main spans. Deteriorated asphalt patches and up to 48-inch-wide x 5-inch-long x 1 1/2-inch-deep spalls/delaminations (some with exposed reinforcement) exist along control joints. Seal material within control joints exhibits minor to moderate deterioration with up to 50% failed/missing.

906	Sealed Exp.Jt.(SEJ-3	105	ft	0	95	11	0

PX – Abutment joint seals exhibit up to 2-foot lengths of adhesion failure, and joints are partially filled with loose dirt and debris, worst in the shoulders. Abutment joint headers exhibit isolated up to 48-inch-wide x 3-inch-long x 3/4-inch-deep spalls and large sound concrete patches.
Pier 10 and 14 sealed expansion joints are approximately 75% filled with loose dirt and debris, worst in the shoulders.

963	Steel Section Loss SF	1	each	0	0	1	0

Measurable section loss (15% or more) to steel elements exists that warrants analysis to determine the serviceability of the elements or the bridge, or an analysis has been done and it has been determined that serviceability has not been affected.

907	St.Finger Jt. (SED-2	70	ft	0	35	35	0

FX – The pier 4 finger joint has two 5-foot-long sections replaced with a welded steel plate. The pier 4 finger joint exhibits up to 1/2-inch vertical misalignment between plates, and the pier 7 finger joint exhibits up to 1/8-inch vertical misalignment between plates.

Pier 4 and 7 finger joints have an elastomeric trough under the joints. Debris has filled the trough causing debris impaction with most severe conditions observed at the shoulders. The seal is torn at pier 7.