Glossary

Term	Definition
Abutment	A retaining wall supporting the ends of a bridge or viaduct
Alluvium	A fine-grained fertile soil consisting of mud, silt and sand deposited by flowing water in river beds, flood plains and in estuaries
American Railway Engineering and Maintenance-of-Way Association (AREMA)	AREMA was formed on October 1, 1997, as the result of a merger of three engineering support associations, namely the American Railway Bridge and Building Association, the American Railway Engineering Association and the Roadmaster's and Maintenance of Way Association, along with functions of the Communications and Signals Division of the Association of American Railroads
Bascule Span	A movable span that rotates on a horizontal hinged axis to raise one end vertically. A large counterweight is used to offset the weight of the raised leaf. May have a single raising leaf or two that meet in the center when closed
Bridge Condition Ratings	Through periodic safety inspections, data is collected on the condition of the primary components of a structure. Condition ratings, based on a scale of 0-9, are collected for the following components of a bridge
Caisson	"Caisson" is the French word for "box." A caisson is a huge box made of steel-reinforced and waterproof concrete with an open central core. At the base of the caisson is its "cutting edge" of plate steel.
Catenary	Curve formed by a rope or chain hanging freely between two supports.
Chord	Top and bottom principal members of a truss extending from end to end, connected by web members
Confluence	A body of water formed or flowing together of two or more streams, rivers, etc.
Deck	The roadway or railway portion of a bridge, including shoulders

End Posts	The outwardmost vertical or angled compression member of a truss
Façade	The exterior face of the bridge usually the front or chief face
Fixed Span	Unmovable span of a bridge.
Flanges	One of the principal longitudinal members of a girder which resist tension or compression, also sometimes called the top and bottom chords of a girder.
Flood Insurance Study (FIS)	FIS is a compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the National Flood Insurance Program, the information and maps are assembled into an FIS. The FIS report contains detailed flood elevation data in flood profiles and data tables
Floorbeams	Horizontal members that are placed transversely to the major beams, girders or trusses; used to support the deck
Girder	A horizontal structure member supporting vertical loads by resisting bending. A girder is a larger beam, especially when made of multiple metal plates. The plates are usually riveted or welded together
Gusset Plate	A metal plate used to unite multiple structural members of a truss
Hangers	A tension member serving to suspend an attached member
Igneous Rocks	Rocks formed by the cooling and solidifying of molten materials that form beneath or at the earth's surface
Knee Brace	Additional support connecting the deck with the main beam that keeps the beam from buckling outward. Commonly made from plates and angles
Lateral Bracing	Members used to stabilize a structure by introducing diagonal connections.
Load Capacity	The maximum weight for the bridge that can be carried by a beam, girder, truss, span, or structure of any sort, or any part of such structure, including its own weight
Load Demands	The vertical load that the structure will be subjected to while the bridge is in service

Metamorphic Rocks	Rock that was once one form of rock, but changed to another under the influence of heat, pressure or some other agent without passing through a liquid phase
Moveable Bridge	A bridge in which the deck moves to clear a navigation channel; a swing bridge has a deck that rotates around a center point
Navigation Channel	A deeper channel cut into the sea or river bed to enable larger ships to pass through to a port
North American Vertical Datum (NAVD88)	The vertical control datum or orthometric height established for vertical control surveying in the US based upon the general adjustment of the North American Datum of 1988
Panel Points	The point at which the axis of a principal web member intersects the axis of a chord of a truss
Piers	A vertical structure that supports the ends of a multi-span superstructure at a location between abutments
Plans, Specifications and Estimates (PS&E)	The detailed plans and accompanying specifications and construction cost estimates which serve as documents for construction contract letting purposes
Stiffeners	A secondary member, usually an angle, attached to a plate to prevent buckling
Stringers	A bridge superstructure element which is repeated in the superstructure, primarily in the longitudinal direction but occasionally in the transverse direction; used interchangeably with beam or girder
Substructure	Structural parts of the bridge, which support the horizontal span. The main components are: abutments, piers, footings and piling
Superstructure	Structural parts of the bridge, which provide the horizontal span. It includes: bridge deck, structural members, parapets, handrails, sidewalk, lighting and drainage features
Sway Bracing	Horizontal bracing of a bridge to prevent swaying
Swing Span	A movable deck span of a bridge that opens by rotating horizontally on an axis

Through Girder Span	A span that carries its traffic between the trusses with lateral bracing between the parallel top and bottom chords.
Tie	A tension member of a truss.
Turntable Member	The framework under the swing span which transmits the load to the bearings
Web	The system of members connecting the top and bottom chords of a truss. Or the vertical portion of an I-beam or girder
Wingwall	One of the side walls of an abutment extending outward from the head wall in order to hold back the slope of an embankment

Glossary

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Chord	Top and bottom principal members of a truss extending from end to end, connected by web members
Confluence	A body of water formed or flowing together of two or more streams, rivers, etc.
Deck	The roadway or railway portion of a bridge, including shoulders

End Posts	The outwardmost vertical or angled compression member of a truss
Façade	The exterior face of the bridge usually the front or chief face
Fixed Span	Unmovable span of a bridge.
Flanges	One of the principal longitudinal members of a girder which resist tension or compression, also sometimes called the top and bottom chords of a girder.
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Girder	A horizontal structure member supporting vertical loads by resisting bending. A girder is a larger beam, especially when made of multiple metal plates. The plates are usually riveted or welded together
Gusset Plate	A metal plate used to unite multiple structural members of a truss
Hangers	A tension member serving to suspend an attached member
Igneous Rocks	Rocks formed by the cooling and solidifying of molten materials that form beneath or at the earth's surface
Knee Brace	Additional support connecting the deck with the main beam that keeps the beam from buckling outward. Commonly made from plates and angles
Lateral Bracing	Members used to stabilize a structure by introducing diagonal connections.
Load Capacity	The maximum weight for the bridge that can be carried by a beam, girder, truss, span, or structure of any sort, or any part of such structure, including its own weight
Load Demands	The vertical load that the structure will be subjected to while the bridge is in service

Metamorphic Rocks	Rock that was once one form of rock, but changed to another under the influence of heat, pressure or some other agent without passing through a liquid phase
Moveable Bridge	A bridge in which the deck moves to clear a navigation channel; a swing bridge has a deck that rotates around a center point
Navigation Channel	A deeper channel cut into the sea or river bed to enable larger ships to pass through to a port
North American Vertical Datum (NAVD88)	The vertical control datum or orthometric height established for vertical control surveying in the US based upon the general adjustment of the North American Datum of 1988
Panel Points	The point at which the axis of a principal web member intersects the axis of a chord of a truss
Piers	A vertical structure that supports the ends of a multi-span superstructure at a location between abutments
Plans, Specifications and Estimates (PS&E)	The detailed plans and accompanying specifications and construction cost estimates which serve as documents for construction contract letting purposes
Stiffeners	A secondary member, usually an angle, attached to a plate to prevent buckling
Stringers	A bridge superstructure element which is repeated in the superstructure, primarily in the longitudinal direction but occasionally in the transverse direction; used interchangeably with beam or girder
Substructure	Structural parts of the bridge, which support the horizontal span. The main components are: abutments, piers, footings and piling
Superstructure	Structural parts of the bridge, which provide the horizontal span. It includes: bridge deck, structural members, parapets, handrails, sidewalk, lighting and drainage features
Sway Bracing	Horizontal bracing of a bridge to prevent swaying
Swing Span	A movable deck span of a bridge that opens by rotating horizontally on an axis

Through Girder Span	A span that carries its traffic between the trusses with lateral bracing between the parallel top and bottom chords.
Tie	A tension member of a truss.
Turntable Member	The framework under the swing span which transmits the load to the bearings
Web	The system of members connecting the top and bottom chords of a truss. Or the vertical portion of an I-beam or girder
Wingwall	One of the side walls of an abutment extending outward from the head wall in order to hold back the slope of an embankment

Long Bridge Inspection Form (1 of 2)

Date: November 2, 2012

Team Leader: Juan Rocha

Team Member: Chris Panning

Team Member:

SPAN NO: 1
Abutment A & Span 1 side of Pier 1

Weather: Sunny

Temp: 50 degrees

Total Hours:

Item 58 Deck	Condition Rating	DEF
1. Structural Condition	X	X
2. Ballast	N	N
3. Ties	N	N
4. Deck Joints	N	N
5. Walkways	N	N
6. Drainage	N	N
7. Fire Protection	N	N
8. Handrails	N	N
9. Utilities	N	N
10. Approach Settlement	N	N
11.		

Elements of Item 58 not inspected

APPROACHES		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N)	N	DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Item 59 SUPERSTRUCTURE	Condition Rating: 5	DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	S
b. Bottom Flange or Chord	F	S
c. Web or Diagonals	F	S
d. Truss Joints	N	
e. Bearing Stiffeners	F	S
f. Cross Frames, Diaphragms	F	S
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	S
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	S
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	S
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	S
r.		
2. Floor Beams		
a. Top Flanges	F	S
b. Bottom Flanges	F	S
c. Webs	F	S
d. Stiffeners	F	S
e. Rivets or Bolts	F	S
f. Welds	F	S
g. Connections	F	S
h.		
3. Stringers		
a. Top Flanges	F	S
b. Bottom Flanges	F	S
c. Webs	F	S
d. Stiffeners	F	S
e. Rivets or Bolts	F	S
f. Welds	N	
g. Connections	F	S
h. Diaphragms	F	S
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Item 60 SUBSTRUCTURE	Condition Rating: 6	DEF
1. Abutments		
a. Stems	F	M
b. Wingwalls	F	M
c. Backwalls	F	M
d. Pedestals	G	
e. Bridge Seat	G	
f. Pointing	F	M
g. Footing	H	
h. Erosion	G	
i. Settlements	G	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 7

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	F	M
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat		
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: November 2, 2012

Team Leader: Juan Rocha

Team Member: Chris Panning

Team Member:

SPAN NO: 2
Span 2 side of Pier 1 and
Span 2 side of Pier 2

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

Condition Rating

Item 59 SUPERSTRUCTURE — 6 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 7

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	F	M
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat		
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
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P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
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S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

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C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 3
Span 3 side of Pier 2 and
Span 3 side of Pier 3

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Y/N) N
(Attached to Bridge)

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 6 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 4
Span 4 side of Pier 3 and
Span 4 side of Pier 4

Weather: Sunny

Temp: 50 degrees

Total Hours:

Item 58 Deck	Condition Rating	DEF
1. Structural Condition	X	X
2. Ballast	N	N
3. Ties	N	N
4. Deck Joints	N	N
5. Walkways	N	N
6. Drainage	N	N
7. Fire Protection	N	N
8. Handrails	N	N
9. Utilities	N	N
10. Approach Settlement	N	N
11.		

Elements of Item 58 not inspected

APPROACHES		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N)	N	DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Item 59 SUPERSTRUCTURE	Condition Rating	DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	S
b. Bottom Flange or Chord	F	S
c. Web or Diagonals	F	S
d. Truss Joints	N	
e. Bearing Stiffeners	F	S
f. Cross Frames, Diaphragms	F	S
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	S
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	S
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	S
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	S
r.		
2. Floor Beams		
a. Top Flanges	F	S
b. Bottom Flanges	F	S
c. Webs	F	S
d. Stiffeners	F	S
e. Rivets or Bolts	F	S
f. Welds	F	S
g. Connections	F	S
h.		
3. Stringers		
a. Top Flanges	F	S
b. Bottom Flanges	F	S
c. Webs	F	S
d. Stiffeners	F	S
e. Rivets or Bolts	F	S
f. Welds	N	
g. Connections	F	S
h. Diaphragms	F	S
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Item 60 SUBSTRUCTURE	Condition Rating	DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

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C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 5
Span 5 side of Pier 4 and
Span 5 side of Pier 5

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 6 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

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C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 6
Span 6 side of Pier 5 and
Span 6 side of Pier 6

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 6 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

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CATEGORIES OF DEFICIENCIES:

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Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 7
Span 7 side of Pier 6 and
Span 7 side of Pier 7

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 6 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 8
Span 8 side of Pier 7 and
Span 8 side of Pier 8

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None ( ) Minor (X) Moderate( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None ( ) Minor (X) Moderate( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

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S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

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C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 9
Span 9 side of Pier 8 and
Span 9 side of Pier 9

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Y/N) N
(Attached to Bridge)

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

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Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 10
Span 10 side of Pier 9 and
Span 10 side of Pier 10

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Y/N) N
(Attached to Bridge)

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

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CATEGORIES OF DEFICIENCIES:

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Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 11
Span 11 side of Pier 10 and
Span 11 side of Pier 11

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Y/N) N
(Attached to Bridge)

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 6 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 12
Span 12 side of Pier 11 and
Span 12 side of Pier 12

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Y/N) N
(Attached to Bridge)

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 6 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 13
Span 13 side of Pier 12 and
Span 13 side of Pier 13

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

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C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 14
Span 14 side of Pier 13 and
Span 14 side of Pier 14

Weather: Sunny

Temp: 50 degrees

Total Hours:

Item 58 Deck	Condition Rating	DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N)	N	DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Item 59 SUPERSTRUCTURE	Condition Rating	DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pl's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Item 60 SUBSTRUCTURE	Condition Rating	DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain	N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate( ) Severe ( )

Any Fracture Critical Member: (Y/N)	Y
Any Cracks in Tension Plates: (Y/N)	N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

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C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 15
Span 15 side of Pier 14 and
Span 15 side of Pier 15

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 16
Span 16 side of Pier 15 and
Span 16 side of Pier 16

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pl's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

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C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 17
Span 17 side of Pier 16 and
Span 17 side of Pier 17

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Y/N) N
(Attached to Bridge)

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 18
Span 18 side of Pier 17 and
Span 18 side of Pier 18

Weather: Sunny

Temp: 50 degrees

Total Hours:

Item 58 Deck	Condition Rating	DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

Item 59 SUPERSTRUCTURE	Condition Rating	DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Item 60 SUBSTRUCTURE	Condition Rating	DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain	N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N)	Y
Any Cracks in Tension Plates: (Y/N)	N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

APPROACHES		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N)	N	DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 — 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 19
Span 19 side of Pier 18 and
Span 19 side of Pier 19

Weather: Sunny

Temp: 50 degrees

Total Hours:

Item 58 Deck — Condition Rating: N

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N): N

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Item 59 SUPERSTRUCTURE — Condition Rating: 5

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Item 60 SUBSTRUCTURE — Condition Rating: 7

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 20
Span 20 side of Pier 19 and
Span 20 side of Pier 20

Weather: Sunny

Temp: 50 degrees

Total Hours:

Item 58 Deck — Condition Rating: N

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N): N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Item 59 SUPERSTRUCTURE — Condition Rating: 4

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	P	S
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	P	C-S
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Item 60 SUBSTRUCTURE — Condition Rating: 7

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 21
Span 21 side of Pier 20 and
Span 21 side of Pier 21

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condtion of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	P	S
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 22
Span 22 side of Pier 21 and
Span 22 side of Pier 22

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	P	S
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 8

CHANNEL & CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	G	
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket		
Ladder		
Boat	Y	Y
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

SPAN NO: 23
Span 23 side of Pier 22 and
Span 23 side of Pier 23

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	N	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	P	S
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 7 — DEF

		DEF
1. Abutments		
a. Stems	N	
b. Wingwalls	N	
c. Backwalls	N	
d. Pedestals	N	
e. Bridge Seat	N	
f. Pointing	N	
g. Footing	N	
h. Erosion	N	
i. Settlements	N	
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	F	M
g. Diagonal Bracing	N	
h. Fender System	F	M
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (1 of 2)

Date: November 2, 2012

Team Leader: Juan Rocha

Team Member: Chris Panning

Team Member:

SPAN NO: 24
Abutment B and Span 24 side of Pier 23

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — N — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	N
3. Ties	N	N
4. Deck Joints	N	N
5. Walkways	N	N
6. Drainage	N	N
7. Fire Protection	N	N
8. Handrails	N	N
9. Utilities	N	N
10. Approach Settlement	N	N
11.		

Elements of Item 58 not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	P	S
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	P	S
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 6 — DEF

		DEF
1. Abutments		
a. Stems	F	M
b. Wingwalls	F	M
c. Backwalls	F	M
d. Pedestals	G	
e. Bridge Seat	G	
f. Pointing	F	M
g. Footing	H	
h. Erosion	G	
i. Settlements	F	M
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

TIDAL SPANS

SPAN NO: 1
Abutment A & Span 1
side of Pier 1

Weather: Sunny

Temp: 50 degrees

Total Hours:

Item 58 Deck — Condition Rating: 5 — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	F	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Only bottom of concrete deck inspected
remaining Elements of Item 58
not inspected

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Y/N) N
(Attached to Bridge)

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

Item 59 SUPERSTRUCTURE — Condition Rating: 5 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Pit's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	P	S
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	P	S
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Item 60 SUBSTRUCTURE — Condition Rating: 7 — DEF

		DEF
1. Abutments		
a. Stems	F	M
b. Wingwalls	F	M
c. Backwalls	F	M
d. Pedestals	G	
e. Bridge Seat	G	
f. Pointing	F	M
g. Footing	H	
h. Erosion	G	
i. Settlements	F	M
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain: N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (1 of 2)

Date: October 23, 2012

Team Leader: John Coleman

Team Member: Juan Rocha

Team Member:

TIDAL SPANS

SPAN NO: 2
Abutment B & Span 2
side of Pier 1

Weather: Sunny

Temp: 50 degrees

Total Hours:

Condition Rating

Item 58 Deck — 5 — DEF

		DEF
1. Structural Condition	X	X
2. Ballast	N	
3. Ties	N	
4. Deck Joints	F	
5. Walkways	N	
6. Drainage	N	
7. Fire Protection	N	
8. Handrails	N	
9. Utilities	N	
10. Approach Settlement	N	
11.		

Only bottom of concrete deck inspected
remaining Elements of Item 58
not inspected

Condition Rating

Item 59 SUPERSTRUCTURE — 5 — DEF

		DEF
1. Girders, Beams or Trusses		
a. Top Flange or Chord	F	M
b. Bottom Flange or Chord	F	M
c. Web or Diagonals	F	M
d. Truss Joints	N	
e. Bearing Stiffeners	F	M
f. Cross Frames, Diaphragms	F	M
g. Knee Braces	N	
h. Pins	N	
i. Rivets or Bolts	F	M
j. Welds	N	
k. Conn Plt's, Gussets & Angles	F	M
l. Top Lateral Bracing	N	
m. Bottom Lateral Bracing	F	M
n. Sway Frames	N	
o. Portals	N	
p. Hangers	N	
q. Bearings	F	M
r.		
2. Floor Beams		
a. Top Flanges	F	M
b. Bottom Flanges	F	M
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	P	S
f. Welds	F	M
g. Connections	F	M
h.		
3. Stringers		
a. Top Flanges	F	M
b. Bottom Flanges	P	S
c. Webs	F	M
d. Stiffeners	F	M
e. Rivets or Bolts	F	M
f. Welds	N	
g. Connections	F	M
h. Diaphragms	F	M
i.		
4. Superstructure (General)		
a. Paint	P	S
b. Action Under Trains	G	
c. Collision Damage	N	
d. Member Alignment	G	
e.		

Condition Rating

Item 60 SUBSTRUCTURE — 5 — DEF

		DEF
1. Abutments		
a. Stems	F	M
b. Wingwalls	P	S
c. Backwalls	F	M
d. Pedestals	G	
e. Bridge Seat	G	
f. Pointing	F	M
g. Footing	H	
h. Erosion	G	
i. Settlements	F	M
j.		
2. Piers or Bents		
a. Piles	H	
b. Footings	H	
c. Stem or Columns	F	M
d. Cap Beams	N	
e. Top of Stem or Cap	G	
f. Pedestals	G	
g. Diagonal Bracing	N	
h. Fender System	N	
i. Erosion or Scour	G	
j. Settlement	G	
k. Pointing	F	M
l.		

Undermining (Y/N) If YES, explain — N

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks in Tension Plates: (Y/N) N

Year Painted : Unknown

COLLOSION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION:
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION:
None (X) Minor ( ) Moderate ( ) Severe ( )

APPROACHES

		DEF
a. Appr. rail condition	N	
b. Appr. Railway Settlement	N	
c. Appr. Sidewalk Settlement	N	
d.		

OVERHEAD SIGNS (Attached to Bridge) (Y/N) N

		DEF
a. Condition of Welds	N	
b. Condition of Bolts	N	
c. Condition of Signs	N	

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

Long Bridge Inspection Form (2 of 2)

ITEM 61 7

CHANNEL &

CHANNEL PROTECTION

		DEF
1. Channel Scour	X	
2. Embankment Erosion	G	
3. Drift	G	
4. Channel Alignment	G	
5. Vegetation	F	M
6. Rip-Rap	G	
7. Silt	H	
8. Debris in Channel	G	
9.		

ACCESSIBILITY (Y/N/P)

	Needed	*Used*
Lift Bucket		
Ladder		
Boat		
Wader		
Inspector 50		
Rigging		
Staging		
Traffic Control		
RR Flagger		
Police		
Other - Binoculars	Y	Y

Inspection was performed from the ground for Spans 1, 2 and 24 and from a boat for the remaining spans.

CONDITION RATING GUIDE (for Items 58, 59, 60)

	CODE	*CONDITION*	*DEFECTS*
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structure elements. Fatigue cracks in steel or shear craks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service – beyond corrective action.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M = Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion to steel, Minor scouring, Clogged drainage, etc.

S = Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroding rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S = Critical-Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H = Critical-Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

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Appendix B:
Field Notes

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VISUAL INSPECTION – FIELD NOTES AND PHOTOS
LONG BRIDGE OVER THE POTOMAC RIVER
OCTOBER 23, 2012 and NOVEMBER 2, 2012

The following are specific findings from the visual inspection of spans 1 through 24 of the Long Bridge over the Potomac River between the District of Columbia and the Commonwealth of Virginia. Present during the inspection of spans 3 through 23 on October 23, 2012 were John Coleman and Juan Rocha from Michael Baker Jr., Inc., Jeff Brown and Matt Owings from M&N Engineering & Diving Services who supplied and operated the boat and Kristin Kersavage of DDOT. Present during the inspection of Spans 1, 2 and 24 on November 2, 2012 were Juan Rocha and Chris Panning from Michael Baker Jr., Inc.

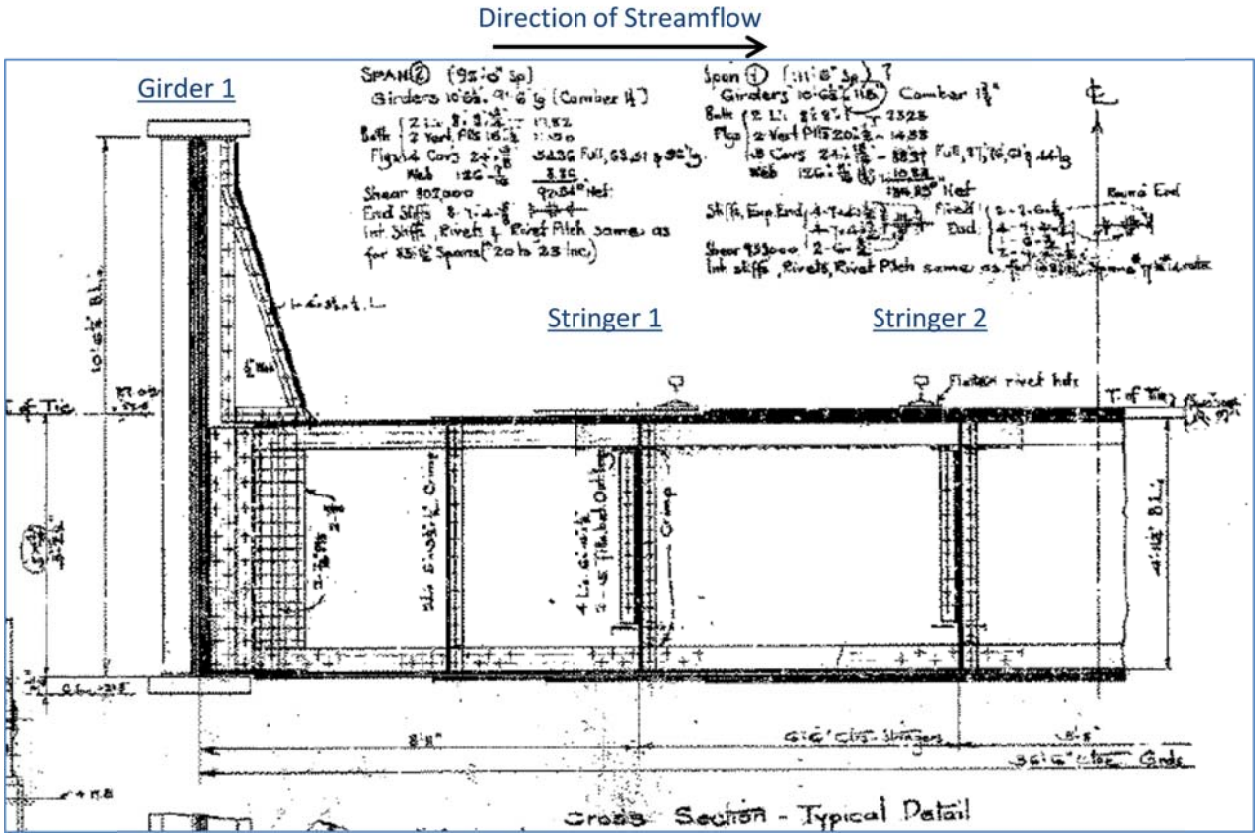
The visual inspection was conducted for 24 spans - 22 spans are through-girder spans built in 1942 and 2 spans are part of a swing span truss built in 1904. The swing span has not been in operation since 1969. Each through-girder span is approximately 100 feet in length and each swing span is approximately 140 feet in length. The total bridge length is approximately 2,500 feet.

Numbering Configuration

For this report the superstructure and substructure elements are numbered from the Virginia end of the bridge to the District of Columbia end of the bridge. The spans are numbered 1 through 24 and the piers are numbered 1 through 23. Abutment A is located at the Virginia end of the bridge. Shown below is the numbering scheme for spans and piers used to prepare the field notes.

The floorbeams are numbered beginning at each pier closest to the Virginia end of the bridge and the numbering continues to the next pier. The girders and stringers are numbered with the number 1 girder or stringer being at the upstream side of the bridge. The truss members follow the same numbering scheme.

Shown below is the numbering scheme for girders and stringers used to prepare the field notes.



For the two spans over the Tidal Basin, the superstructure and substructure elements are numbered 1 and 2 from the Virginia end of the bridge to the District of Columbia end of the bridge. Abutment A is located at the Virginia end of the bridge.

General Findings

- All steel shows heavy to moderate corrosion (Photo 1) with no steel flaking and no section loss except as noted for specific elements of the bridge.
- All of the piers are of masonry construction and exhibit efflorescence of the mortar joints (Photo 2) and scaling of the masonry at the waterline for a maximum depth of 1 inch.
- There are old plates of various sizes, welded or riveted to the bottom flange of the stringers. These plates are typically the same width as the bottom flange of the stringer and from 6 to 12 inches long (Photo 3). They do not appear to be structural in nature. Some of these plates are beginning to fall away from the bottom flange of the stringers.

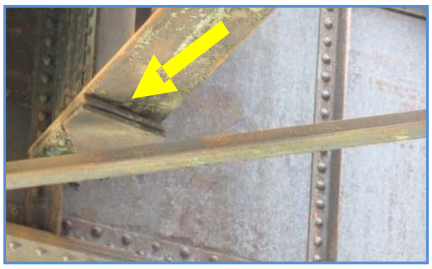


Photo 1

Photo 2

Photo 3

Specific Span and Pier Notes

Span 1

- Superstructure
  - The web of all the Floorbeams between the downstream stringer and downstream girder exhibits up to approximately 1/16 inch section loss.
  - At Abutment A the bottom flange of Stringer 3 exhibits heavy corrosion, steel flaking and up to 1/16 inch section loss.

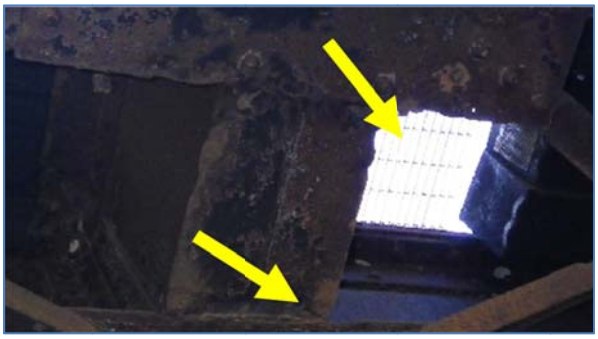


Photo 4

- Abutment A Photo 4
  - Vegetation growing around each end.
  - Mortar is missing from between the masonry for a length of 8 feet.
  - The top stone near Girder 1 exhibits a full height 1/16 inch crack.
- Pier 1
  - There is a large tree growing at the upstream end of the pier.

Span 2

- Superstructure
  - There is vegetation and large trees growing on the upstream side of Span 2 (Photo 5).
- Pier 1
  - Nothing additional.
- Pier 2
  - Nothing additional.

Photo 5

Span 3

- Superstructure
  - Nothing additional.
- Pier 2
  - Nothing additional.
- Pier 3
  - Nothing additional.

Span 4

- Superstructure
  - The gusset plate at Girder 1 over Pier 4, Span 4 has an undetermined amount of section loss (Photo 6).

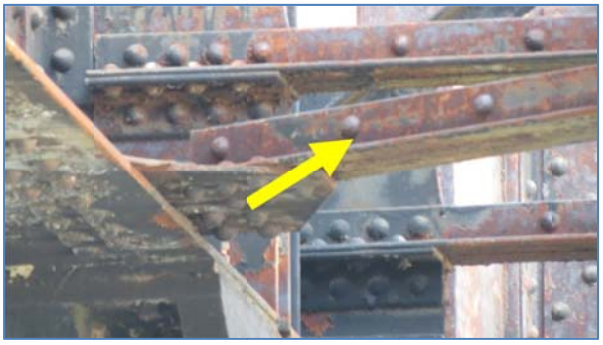


Photo 6

- Pier 3
  - Nothing additional.
- Pier 4
  - Mortar joints are beginning to deteriorate and mortar is missing for a depth up to 1.5 inches (Photo 7).

Photo 7

Span 5

- Superstructure
  - Nothing additional.
- Pier 4
  - Nothing additional.
- Pier 5
  - Nothing additional.

Span 6

- Superstructure
  - Nothing additional.
- Pier 5
  - Nothing additional.
- Pier 6
  - There appears to be some type of riprap in place on the Span 6 side of Pier 6 approximately 4 feet below the waterline. This was found by the use of a depth fathometer and determined to be riprap due to the slope of the material.

Span 7

- Superstructure
  - Nothing additional.
- Pier 6
  - The pedestal under stringer 1 exhibits spalling exposing horizontal reinforcing steel which is corroded but does not appear to have section loss (Photo 8).

Photo 8

- Pier 7
  - Nothing additional.

Span 8

- Superstructure
  - There is a fender system at Pier 8. The fender system has been struck causing minor damage (Photo 9).

Photo 9

  - There are holes in the gusset plate at Stringer 3 approximately 3 feet from the bearing at Pier 8 (Photo 10).

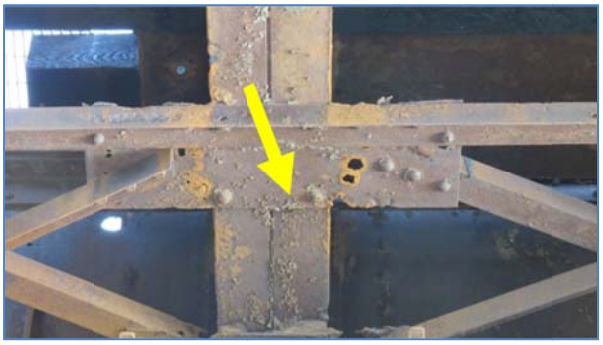


Photo 10

- Where the gussets connect to the stringers over Pier 8 both the gusset plate and the top of the bottom flange exhibit section loss (Photo 11).

Photo 11

- Pier 7
  - Nothing additional.
- Pier 8
  - Nothing additional.

Span 9

- Superstructure
  - There are several locations on the bottom flange of the stringers that exhibit section loss. These areas are located at the bearings, at quarter points and at midspan.
  - There are several areas of pack rust which involves section loss in the turntable member over Pier 9 at and near where the bottom chord rests on the turntable member (Photo 12).

Photo 12

  - There is heavy corrosion, steel flaking and section loss on the bottom flange of the floorbeams where the stringer connects

to the floorbeam and on the web between the exterior stringer and the truss (Photo 13).

Photo 13

- Pier 8
  - Nothing additional.
- Pier 9
  - The top several layers of masonry are cracking and spalling (Photo 14).

Photo 14

Span 10

- Superstructure
  - There are several locations on the bottom flange of the stringers that exhibit section loss. These areas are located at the bearings, at quarter points and at midspan.
  - There are several areas of pack rust which involves section loss in the turntable member over Pier 9 at and near where the bottom chord rests on the turntable member.
  - The web of Floorbeam 9 between the downstream stringer and downstream truss exhibits heavy corrosion with heavy pitting. There are pinholes thru the web at this location

indicating 100 percent section loss (Photo 15).

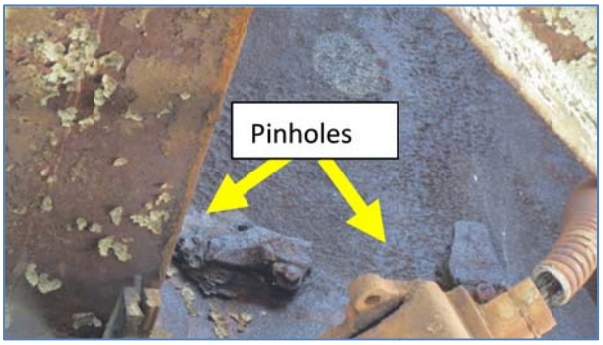


Photo 15

- There is heavy corrosion, steel flaking and section loss on the bottom flange of the floorbeams where the stringer connects to the floorbeam over Piers 9 and 10 (Photo 16).

Photo 16

- Pier 9
  - The top several layers of masonry are cracking and spalling.

- Pier 10
  - Nothing additional.

Span 11

- Superstructure
  - Nothing additional.
- Pier 10
  - The mortar is missing from between the top stones on the upstream end of the pier (Photo 17).

Photo 17

- There appears to be a footer on the Span 11 side of Pier 10. This footer extends approximately 14.5 feet above the mudline and is approximately 5 feet wide. This was found by the use of a depth fathometer due to its sharp angle it is believed that this is a concrete footer.

- Pier 11
  - The mortar is missing from the between stones on the upstream end of the pier at the waterline.

Span 12

- Superstructure
  - The web of Floorbeam 3 and 4 between the downstream stringer and downstream girder exhibits up to approximately 1/8 inch section loss (Photo 18).

Photo 18

- Pier 11
  - The pedestal over Pier 11 has a horizontal hairline crack approximately 3 inches below the top of the pedestal.
- Pier 12

- Several of the pedestals over Pier 12 exhibits spalling exposing horizontal reinforcing steel which is corroded but does not appear to have section loss (Photo 19).

Photo 19

- There appears to be a footer on the Span 12 side of Pier 12. This footer extends approximately 14.5 feet above the mudline and is approximately 5 feet wide. This was found by the use of a depth fathometer due to its sharp angle it is believed that this is a concrete footer. Beyond the footer there appears to be some type of riprap.

Span 13

- Superstructure
  - The web of all the floorbeams between the downstream stringer and downstream girder exhibits up to approximately 1/16 inch section loss.

- Pier 12
  - Nothing additional.
- Pier 13
  - The top stone on the upstream end is cracked.

Span 14

- Superstructure
  - Under Stringers 2 and 3 at the bearing at Pier 14 the gusset plates and the bottom flange of the stringers exhibit up to approximately 1/8 inch section loss (Photo 20).

Photo 20

- The web of floorbeam 5 between the downstream stringer and downstream girder exhibits up to approximately 1/8 inch section loss (Photo 21).

Photo 21

- Pier 13
  - Nothing additional.
- Pier 14
  - There appears to be a footer on the Span 14 side of Pier 14. This footer extends approximately 14.5 feet above the mudline and is approximately 5 feet wide. This was found by the use of a depth fathometer due to its sharp angle it is believed that this is a concrete footer.

Span 15

- Superstructure
  - The web of all the floorbeams between the downstream stringer and downstream girder exhibits up to approximately 1/8 inch section loss.

- Pier 14
  - Nothing additional.
- Pier 15
  - Nothing additional.

Span 16

- Superstructure
  - The web of all the floorbeams between the downstream stringer and downstream girder exhibits up to approximately 1/8 inch section loss.
- Pier 15
  - Nothing additional.
- Pier 16
  - The pedestal over Pier 16 under stringer 3 exhibits spalling exposing horizontal reinforcing steel which is corroded but does not appear to have section loss (Photo 22).

Photo 22

Span 17

- Superstructure
  - The web of Floorbeams 5, 6 and 8 between the downstream stringer and downstream girder exhibits up to approximately 1/8 inch section loss.
- Pier 16
  - The pedestal over Pier 16 under stringer 1 exhibits spalling exposing horizontal reinforcing steel which is corroded but does not appear to have section loss.
- Pier 17
  - Nothing additional.

Span 18

- Superstructure
  - The web of all the floorbeams between the downstream stringer and downstream girder exhibits up to approximately 1/8 inch section loss.
- Pier 17
  - Nothing additional.
- Pier 18
  - The pedestal over Pier 18 under stringer 1 exhibits spalling exposing horizontal reinforcing steel which is corroded but does not appear to have section loss.

Span 19

- Superstructure
  - The web of all the floorbeams between the downstream stringer and downstream girder and the upstream stringer and the upstream girder exhibits up to approximately 1/16 inch section loss.
- Pier 18
  - Nothing additional.
- Pier 19
  - Nothing additional.

Span 20

- Superstructure
  - Stringer 3 between Floorbeam 1 and 2 exhibits a crack beginning at the top of Floorbeam 1 and extending down to the first vertical stiffener. Light shines through the crack and it is estimated that the crack is 1/16 inch wide (Photo 23).

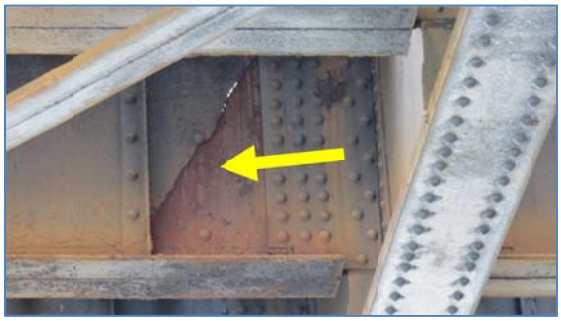


Photo 23

- Several rivets are missing in the connection of the crossframe to the upstream girder over Pier 19 (Photo 24).

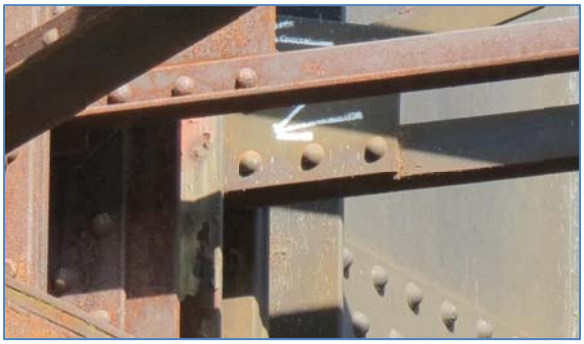


Photo 24

- The web of all the floorbeams between the upstream stringer and the upstream girder and floorbeams 3, 4, 5 and 6 between the downstream stringer and downstream girder exhibit up to approximately 1/16 inch section loss.
- The rivets heads in the lower angle of Floorbeams 3, 4, 5 and 6 exhibit up to 75 percent section loss in the portion of the girder between the downstream girder and the downstream stinger.
- The rivets heads in the lower angle of Floorbeams 1, 2 and 5 exhibit up to 75 percent section loss in the portion of the girder between the upstream girder and the upstream stinger.
- Stringers 2, 3 and 4 have 1/8 inch section loss in the web and bottom flange where it attaches to the cross-girder over Pier 20.

- Pier 19
  - Nothing additional.
- Pier 20
  - Pedestals 2, 3 and 4 over Pier 20 exhibit spalling exposing horizontal reinforcing steel which is corroded but does not appear to have section loss.
  - The cross-girder over Pier 20 exhibits 1/8 inch pitting in the web. The rivet heads in the top angle of the cross-girder have up to 50 percent section loss.

Span 21

- Superstructure
  - The web of all the floorbeams between the upstream stringer and the upstream girder exhibit up to approximately 1/16 inch section loss at random locations near the lower angles.
  - The rivets heads in the lower angle of Floorbeams 4, 5, 6 and 7 exhibit up to 90 percent section loss in the portion of the girder between the upstream girder and the upstream stinger (Photo 25).

Photo 25

- Pier 20
  - Nothing additional.
- Pier 21
  - Nothing additional.

Span 22

- Superstructure
  - The web of Floorbeam 6 between the upstream stringer and the upstream girder exhibit up to approximately 1/16 inch section loss near the lower angles.
  - The rivets heads in the lower angle of Floorbeams 6 exhibits up to 90 percent section loss in the portion of the girder between the upstream girder and the upstream stinger.
- Pier 21
  - Nothing additional.
- Pier 22
  - Pedestals 1 and 2 over Pier 22 are spalling exposing reinforcing steel which is corroded but does not appear to have section loss (Photo 26).

Photo 26

Span 23

- Superstructure
  - There is pitting and section loss in the bottom flange of the cap over Pier 22 in the bottom flange (Photo 27).

Photo 27

  - The rivets heads in the lower angle of all floorbeams exhibits up to 100 percent section loss in the portion of the girder between the upstream girder and the upstream stinger and between the downstream girder and the downstream stinger (Photo 28).

Photo 28

- Pier 22
  - Pedestal 3 over Pier 22 is spalling exposing reinforcing steel which is corroded but does not appear to have section loss.
- Pier 23
  - Nothing additional.

Span 24

- Superstructure
  - One bottom lateral brace is bent between Floorbeam 6 and 7 (Photo 29).

Photo 29

  - Both of the girders, Floorbeam 6 and the bottom lateral bracing between Floorbeams 6 and 7 exhibit minor impact scrapes from overheight vehicles. If this involves gouging of the steel it appears to be very minor (Photo 30).

Photo 30

- Pier 23
  - Nothing additional.

- Abutment B
  - At both the upstream and downstream wingwalls the wingwall is separated from the abutment by 1 inch (Photo 31).

Photo 31

  - The downstream wingwall approximately 20 feet from the abutment there is a 1 inch wide vertical crack.
  - At Abutment B the bottom flange of Stringer 3 exhibits heavy corrosion, steel flaking and up to 100 percent section loss 2 inches wide (Photo 32).

Photo 32

  - At Abutment B the bottom flange of Stringer 1 exhibits heavy corrosion, steel flaking and up to 100 percent section loss for half its width.

Tidal Spans

The majority of the steel exhibit moderate to heavy corrosion with no section loss.

Span 1

- Superstructure
  - The bottom of the deck exhibits spalling exposing reinforcing steel with heavy corrosion and no visible section loss on the edge of the concrete deck between the two separate decks each carrying a track (Photo 33).

Photo 33

  - The fascia beams, which carry no load, exhibit extensive spalling with reinforcing falling away. There is heavy corrosion of the reinforcing steel with no section loss.
- Abutment A
  - The bearings exhibit heavy corrosion with no section loss.
- Pier 1
  - No problems noted.

Span 2

- Superstructure
  - The fascia beams, which carry no load, exhibit extensive spalling with reinforcing falling away. There is heavy corrosion of the reinforcing steel with no section loss (Photo 34).

Photo 34

- The bottom of the deck exhibits spalling exposing reinforcing steel with heavy corrosion and no visible section loss on the edge of the concrete deck between the two separate decks each carrying a track and on the downstream edge (Photo 35).

Photo 35

- Abutment B
  - There is a crack in the downstream wingwall that extends from below the waterline to the top of the backwall. The crack is open up to 2 inches in the wing proper and measures 4 inches wide in one row of stones near the top of the backwall. A sounding rod could penetrate this crack 6 feet plus (Photo 36).
- Pier 1
  - No problems noted.

Photo 36

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Appendix C:
Detailed Inspection Process

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Detailed Inspection Process

1. Topside INSPECTION SCOPE

The inspection will employ visual, physical and advanced inspection techniques to document deficiencies, identify critical deficiencies and recommend repairs to maintain short-term serviceability. The inspection will be primarily visual in nature performed up-close for individual elements of the structure. When necessary, specific inspection techniques will be used to measure, locate and quantify deficiencies. Cleaning of an area may entail the use of a hammer or wire brush to remove corrosion and/or paint and the use of a straight edge, measuring tape, calipers or ultrasonic thickness gauges (D-meters) to determine the remaining section of steel. If the extent of a deficiency cannot be clearly determined using visual and/or physical inspection methods, advanced non-destructive methods will be used. Several advanced methods may be used such as (but not limited to) dye penetrant, magnetic particle and ultrasonic testing.

Specific attention will be focused on fracture critical members. Fracture critical members are defined as steel members in tension or with a tension element, whose failure would probably result in a portion or full bridge collapse. Such members may be welded or mechanically fastened by rivets or bolts. Some examples of fracture critical members located in this structure are flanges and webs in two girder structures, chords, diagonals and floorbeams in trusses, and metal caps of abutments and piers.

1.1 Types of Equipment Used

- Access to the underside of the structure for the spans over water, in particular the trusses used as swing spans, would be accomplished by the use of a barge with a man-lift or scaffolding. This will eliminate impeding rail traffic but will still require the need for a railroad flag person.

- Access to the underside of the through girder spans could also be accomplished by the use of a rail mounted underbridge inspection unit. This will impede rail traffic and limit inspections to only several hours a night and will require the need for a railroad flag person. Further investigation and discussions with CSX personnel will reveal which method will be the most cost effective.

- Access to the underside of the spans that are not over water can be accomplished by the use of ladders. This will only minimally impede rail traffic and will still require the need for a railroad flag person. The span over Ohio Drive on the District end of the bridge will require maintenance of traffic regardless of the type of inspection access.

- Access to the members of the trusses that are above the level of the deck will be accomplished by the use of a rail mounted bucket truck. This will impede rail traffic and limit inspections to only several hours a night. There will also be a need for a railroad flag person.

- For those spans that are not trusses, access to the top portion of the members of the spans above the level of the deck will be accomplished by walking the spans during night inspections. This will impede rail traffic and limit inspections to only several hours a night. There will also be a need for a railroad flag person.

1.2 Number of People and Their Role in Inspection

Overall management of the inspections will be the responsibility of an inspection manager. The inspection manager will make sure the inspection is safely planned and prepared by:

- Identifying the most economical and efficient methods and time for access.
- Contacting CSX to make them aware of the inspection schedule.
- Obtaining proper flagging services from CSX.
- Acquiring all necessary railway insurance.
- Contacting the United States Coast Guard, the Harbor Master, the Department of Homeland Security, and local and state law enforcement

groups to apprise them of the inspection.

- Assuring proper access equipment will be on-site.
- Obtaining maintenance of traffic for the inspection over Ohio Drive.
- Obtaining and reviewing available plans.
- Identifying critical structure members.
- Assuring inspection methods meet the needs of the inspection.
- Determining that personnel meet the required qualifications.

There will be quality assurance/quality control (QA/QC) officer responsible for assuring the inspections are carried out in a safe manner suitable to DDOT and CSX. The QA/QC officer will review each inspection report for clarity, accuracy and completeness. The QA/QC officer will be well versed in inspections of the type being performed.

The on-site inspection will be led by one or more team leaders supervising team members. The team leader will be responsible for planning, preparing and performing the day-to-day inspection work and will be present at all times the structure is being inspected.

Personnel in the role of inspection manager and team leader will meet the qualifications as listed in the Code of Federal Regulations, Title 23 – Highways, Subpart G, Part 650 – Bridges, Structures and Hydraulics.

TITLE 23--Highways

CHAPTER I--FEDERAL HIGHWAY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

SUBCHAPTER G--ENGINEERING AND TRAFFIC OPERATIONS

PART 650--BRIDGES, STRUCTURES, AND HYDRAULICS

650.309 Qualifications of personnel.

a. A program manager must, at a minimum:
   (1) Be a registered professional engineer, or have ten years bridge inspection experience; and
   (2) Successfully complete a Federal Highway Administration (FHWA) approved comprehensive bridge inspection training course.
b. There are five ways to qualify as a team leader. A team leader must, at a minimum:
   (1) Have the qualifications specified in paragraph (a) of this section; or
   (2) Have five years bridge inspection experience and have successfully completed an FHWA approved comprehensive bridge inspection training course; or
   (3) Be certified as a Level III or IV Bridge Safety Inspector under the National Society of Professional Engineer's program for National Certification in Engineering Technologies (NICET) and have successfully completed an FHWA approved comprehensive bridge inspection training course, or
   (4) Have the qualifications specified in paragraph (a) of this section; or
   (5) Have five years bridge inspection experience and have successfully completed an FHWA approved comprehensive bridge inspection training course; or
   (6) Be certified as a Level III or IV Bridge Safety Inspector under the National Society of Professional Engineer's program for National Certification in Engineering Technologies (NICET) and have successfully completed an FHWA approved comprehensive bridge inspection training course, or

TITLE 23--Highways

CHAPTER I--FEDERAL HIGHWAY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

SUBCHAPTER G--ENGINEERING AND TRAFFIC OPERATIONS

PART 650--BRIDGES, STRUCTURES, AND HYDRAULICS

(7) Have all of the following:
   i. A bachelor's degree in engineering from a college or university accredited by or determined as substantially equivalent by the Accreditation Board for Engineering and Technology;
   ii. Successfully passed the National Council of Examiners for Engineering and Surveying Fundamentals of Engineering examination;
   iii. Two years of bridge inspection experience; and
   iv. Successfully completed an FHWA approved comprehensive bridge inspection training course, or

(8) Have all of the following:
   i. An associate's degree in engineering or engineering technology from a college or university accredited by or determined as substantially equivalent by the Accreditation Board for Engineering and Technology;
   ii. Four years of bridge inspection experience; and
   iii. Successfully completed an FHWA approved comprehensive bridge inspection training course.

c. The individual charged with the overall responsibility for load rating bridges must be a registered professional engineer.

(d) An underwater bridge inspection diver must complete an FHWA approved comprehensive bridge inspection training course or other FHWA approved underwater diver bridge inspection training course.

1.3 Interaction with Track Operations and Need for Flagmen

At no time will inspection activities be allowed to interrupt the flow of rail traffic. Scheduling of inspections must work around the schedule of rail traffic operations. A flagman from CSX will be required at all times during the inspection whether inspection activities will directly affect rail traffic or not. Coordination with CSX will take place well in advance of inspection activities so all parties are aware of the requirements and needs of the inspection process. This will allow coordination of all activities and take full advantage of the time

allowed for inspection activities.

1.4 Inspection time(s) within the 24 hours

To maximize inspection time, all inspections will be performed at night when rail operations are at a minimum. It is assumed to expect a maximum of only four hours per night of uninterrupted inspection time.

1.5 Total Duration of Inspection

The total field inspection time to determine the number of nights that will be required to complete the inspection is as follows:

Non-truss spans

- Inspection of the lower members

  Access by use of a barge with a man-lift/scaffolding, a rail mounted underbridge inspection unit or ladders is estimated to be 2 hours per span.

  2 hours per span x 22 spans = **44 hours**

- Inspection of the portion at and above the ballast

  Access by walking the area is estimated to be 0.5 hours per span.

  0.5 hours per span x 22 spans = **11 hours**

Truss spans

- Inspection of the lower members

  Access by use of a barge with a man-lift/scaffolding, a rail mounted underbridge inspection unit or ladders is estimated to be 2 hours per span.

  2 hours per span x 2 spans = **4 hours**

- Inspection of the truss and the portion at and above the ballast

  A rail mounted bucket truck will provide access to the upper members of the truss and the portion at and above the ballast will be accessed the by walking the area is estimated to be 8 hours per

span.

8 hours per span x 2 spans = **16 hours**

This estimate results in 75 hours divided by 4 hours per night for a duration of 19 nights. This duration estimate is then combined with the number of field inspection personnel to determine the cost of executing the inspection.

The topside inspection hours assume no lost time due to inclement weather, holidays or the need for limited advanced inspection techniques. This estimate is for the field inspection portion of the work and does not include time for writing the report to compile the field notes, write the report, add photos, perform a quality assurance review of the report and make any necessary changes.

1.6 Reporting

The inspection findings will be documented in a report including an Executive Summary. The report will be supplemented by the photographs and measurements taken for the critical deteriorations elements of the bridge, as well as verification of the as-built drawings regarding the critical bridge components.

2. Underwater INSPECTION SCOPE

This topside inspection work will collect the necessary underwater inspection information. The underwater inspection utilizes divers to inspect critical locations in the structure to collect the type of information needed to perform a detailed assessment of the underwater pier conditions.

The underwater inspection will include of all twenty-three submerged piers and one submerged abutment. The underwater inspections will be performed by an OSHA/ADC compliant 3-person dive team from a work vessel using a standard 2-diver surface supplied air dive station. Constant communication between the diver and the engineer will be maintained for the duration of the inspections. The underwater inspection data acquisition will be in accordance with the National Bridge Inspection Standards and contract documents. The work will include a Level I Inspection (visual / tactile inspection) of the entire structure, combined with a Level II Inspection (detailed inspection with partial cleaning) on 10% of the structural elements. All structural elements from the high water line to the mud line will be inspected, as well as the timber fender system and any dolphins. In addition, sounding data will be collected around the piers, at mid spans and at 10'-20'-30' from each end of the piers. All data will be recorded by the engineer and included in the final inspection report.

The final reports will include an assessment of the substructure condition in a written summary of the inspection findings, as well as scaled computer drawings detailing the pier structures and conditions. The sounding data will also be compiled into a spreadsheet and included in the report.

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LONG BRIDGE STUDY

DISTRICT DEPARTMENT OF TRANSPORTATION

LONG BRIDGE STUDY

Existing Conditions Bridge Assessment Report

This material is based upon work supported by the Federal Railroad Administration under the Long Bridge Study American Recovery and Reinvestment Act of 2009 Grant dated December 9, 2011. Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the Federal Railroad Administration and/or the U.S. Department of Transportation.

District Department of Transportation

ONE CITY

Federal Railroad Administration