

OFFERING PACKAGE

For Local Route 02268 (Easley Ford Road) Bridge over the Conasauga River at Log Mile 1.53

Polk County



Offered by

***Tennessee Department of Transportation
and the Federal Highway Administration***

November 2020

I. Introduction

The Tennessee Department of Transportation is proposing to replace the existing bridge on Easley Ford Road over the Conasauga River at Log Mile 1.53 is being offered for reuse at its existing location. TDOT has a Historic Bridge Marketing Program and through this program, a number of the state's historic bridges that were originally scheduled for demolition due to replacement have been preserved in place. The Easley Ford Road Bridge is a 170-foot long one-span, open spandrel dual ribbed concrete arch and is being offered for reuse.

Through this program, bridges have been preserved on-site either as a pedestrian bridge or a historic ruin. Bridges have also been moved to new locations. Additionally, several bridges have been abandoned, closed permanently to vehicular traffic, and preserved by local governments or preservation organizations. For example, the Tennessee Department of Environment and Conservation (TDEC) has assumed responsibility for two historic bridges at Rock Island State Park and at Port Royal State Park and has incorporated them into pedestrian trails.

One preservation option would leave the historic bridge as a ruin in its existing location. An example of this occurred in Lincoln County where the historic bridge had its approach spans and flooring removed and was left standing adjacent to the new bridge as an engineering landmark. This Baltimore Petit type truss bridge is the only one remaining in Tennessee.

TDOT hopes you are interested in reusing the historic Easley Ford Bridge at its existing location thus preserving this historic concrete arch bridge. The following information has been provided to you by TDOT in order to prepare a proposal for the reuse of the bridge.

II. History of the Easley Ford Road Bridge

The following information was taken from: *Tennessee's Survey Report for Historic Highway Bridges*:

Unlike most other counties, Polk County had no bridges spanning its three major rivers by the turn of the century. Feeling that ferry service hindered the county's growth, Polk County initiated an ambitious bridge building program. In 1899 the state legislature authorized the county to issue bonds for \$25,000 to build bridges. However, it was not until about 1905 that the county contracted for major bridges. At that time it contracted with the Converse Bridge Company for \$40,000 to build six bridges, including a bridge at this site. It is not clear why this contract was not honored, but local mining interests (a major component of the local economy) opposed construction of the bridges and they may have succeeded in stopping the work. However, over the following years, the county built these six bridges and others, one at a time, primarily between 1908 and 1915 (Carver 1983c; Clemmer Book 3:384, 385, 382; Polk Quarterly Court Minutes Volumes 13-19).

Although Polk County's original 1905 contract with Converse included this bridge (see #70, 70-01223-02.53), the county did not build the bridge until 1923. In July 1919, the county court appointed a committee of W. G. Willis, W. Davis, and James Headrick to investigate building a bridge at this site. In October the committee reported that a bridge 160 feet long was needed and that engineer C. P. Williams had submitted plans for a 16-foot wide bridge of steel (110 and 50 feet spans) and a two span concrete bridge (80 feet each). The report stated that each bridge was designed to carry either a "road roller" or "two heavily loaded freight trucks passing each other in the center of the span." While a steel bridge was slightly cheaper, the committee felt a concrete bridge would be more cost efficient in the end saying, "a concrete bridge should stand from one to two hundred years without a dollar's cost for upkeep." This committee also stated that this was the last major bridge this county would need for several years and could concentrate on roadwork.

However, it was not until April 1923 that the court appropriated \$14,000 to build the bridge. In May the committee received a bid for \$8,978 from Roehl and Steel for a one span arch and a bid for \$12,900 from the Lutten Bridge Company for a two-span arch. The county awarded the contract May 9 to Roehl and Steel and amended it in June to \$12,854. However, the contract was a "plus cost" arrangement providing Roehl and Steel a fifteen percent profit above cost. The

firm finished the bridge by the end of the year, but due to foundation problems and raising the bridge higher than planned, the final cost to the county was \$21,376.53 (*Polk County News* 5 April, 9 May 1923, 27 March, 10 April 1924; Polk County Court Minutes Volume 20:462, 557-558; Volume 22:46, 125, 164, 206).

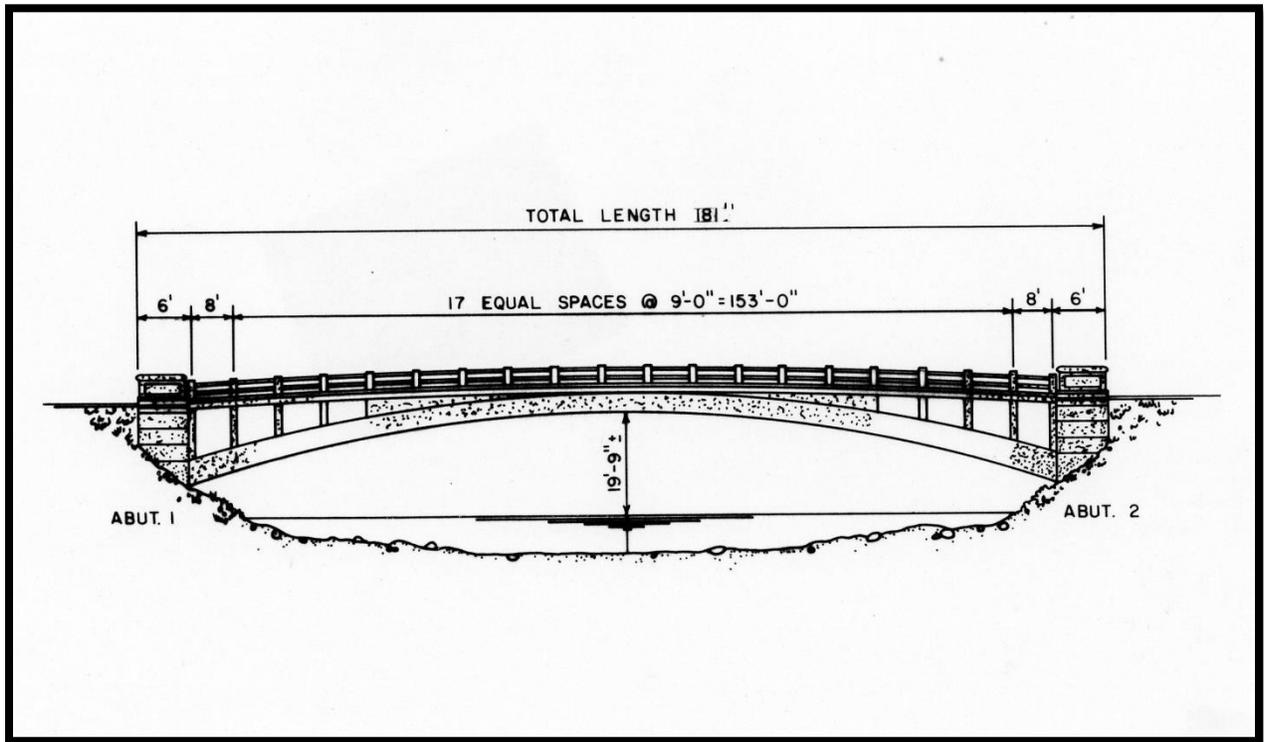
The 182-foot bridge contains one span, a 170-foot open spandrel dual ribbed concrete arch. Lateral bracing bars connect the paired ribs. The bridge has a curb-to-curb width of 15.7 feet and an out-to-out width of 17.7 feet. The railing is post and rail.

The structure has an out-to-out width of 17 feet 8 inches and a 15 foot 8 inch curb-to-curb width, making it a single lane bridge. The overall structure length is 171 feet with approximately 19 feet of maximum vertical clearance to the top of ordinary water height. The posted weight limit is 8 tons/15 tons. The sufficiency rating for this structure is 28.2 based on the inspection report revisions dated December 7, 2015.

The Easley Ford Road Bridge is eligible for listing in the National Register of Historic Places under Criterion C as a good example of an open spandrel arch bridge by the Roehl and Steel Bridge Company.



Figure Two: Photographs of the bridge



Drawing of the Easley Ford Road Bridge

III. Historic Open Spandrel Concrete Arch Bridge Offered for Reuse

A. The National Register Eligible Bridge Proposed for Replacement

TDOT is proposing to replace the historic bridge with a new bridge approximately 50 feet to the north of the historic bridge. The historic bridge is rated in poor condition and concrete requires to the arch ribs, spandrel columns, rib braces, floor beams at spandrel columns, and rail & end posts. It will also require scour repairs on abutment 1 side of the arch. Appendices B and C contain, respectively, a historic bridge assessment prepared by TDOT Structures Office and excerpts from TDOT bridge inspection reports.

Because of substandard condition of the bridge, TDOT proposes to replace it with a safe, modern structure that meets current standards. Typically, a bridge replacement project results in the demolition of the existing bridge. However, because the demolition of the bridge would adversely affect this National Register eligible structure, federal law mandates that alternatives to the action be considered.

Three alternatives are currently being proposed for the historic structure. One option would leave the historic bridge in its existing location, correct for deficiencies, and open it to the public for pedestrian traffic. Another option would be to leave it in its current location as a historic ruin. The third option would allow a qualified recipient to remove the bridge from its existing location and move it to a new location.

B. Reuse at Existing Location

The Easley Ford Road Bridge is available to interested groups or individuals for reuse at its existing location. TDOT is currently proposing to build a new standard bridge adjacent to the historic bridge which will allow for the preservation of the historic structure in place. A party or individual must present TDOT with a feasible plan for reuse and that party must agree to maintain and accept responsibility for the historic bridge.

One option for reuse at the existing location would include rehabilitating the historic bridge for use as a pedestrian facility. TDOT has gathered cost figures and some requirements for changing the historic structure from a vehicular bridge to a pedestrian bridge. Some costs associated with it include concrete repairs to the arch ribs, spandrel columns, rib braces, floor beams at spandrel columns and rail and end posts. These repairs would be needed for the structure to meet safety standards for pedestrians. These costs would be approximately \$400,000. More detailed rehabilitation needs can be found in Appendix B.

A second option for the historic structure would be to leave it in its existing location as a historic ruin. A qualified recipient that submits an acceptable feasibility proposal could keep the historic structure as a ruin. Under this option, approach work, scour repair, and wing wall/end post replacement would be needed to keep the bridge in place as a historic ruin.

If a feasibility proposal is submitted to TDOT and is subsequently accepted for the preservation of the bridge in place, the bridge will be donated to the approved recipient. The recipient will then be asked to sign a contract agreeing to preserve the historic bridge (Appendix A contains sample contracts). Any work that TDOT agrees to do up to but not exceeding the cost of the bridge's demolition, estimated demolition

cost is \$200,000, would then be written into the construction contract for execution by the project's contractor.

Federal regulations pertaining to the funding of this project stipulate that if the bridge is abandoned it cannot remain in service as a facility for public vehicular traffic after the replacement structure is built.

C. Reuse at New Location

This historic bridge is an open spandrel concrete arch bridge. It cannot be reused at a new location because of the type of bridge and the materials of which it is made. Therefore, no additional information is provided on the preservation option.

IV. Proposal Submission

Interested parties should submit a reuse proposal to TDOT by February 15, 2021. A feasible plan should protect the historic integrity of the bridge and should provide for future maintenance.

The plan should also discuss the following:

- Proposed use of the bridge (for example, pedestrian use or fishing pier)
- Proposed funding sources
- Cost estimates by a contractor or engineer for proposed work (items should include, but are not limited to, a new deck, sandblasting and painting the truss, any structural repairs to the truss, any needed site improvements, and a schedule for the recipients work on the bridge).
- For reuse of the historic bridge at a new location, the proposal must also include plans for moving the bridge including a map with the proposed relocation site, potential delivery routes, and prospective methods of delivery.

A detailed list of needed repairs and their estimated costs are included in Appendix B. Private or public recipients who have the capabilities and facilities to do portions of the repairs themselves may have substantially lower costs.

Proposals will be reviewed by the Tennessee State Historic Preservation Officer (TN-SHPO), the Federal Highway Administration (FHWA), and TDOT. If these groups approve a proposal for the preservation of the bridge in place, the historic bridge will be donated to the approved recipient. Any work that TDOT agrees to do up to but not exceeding the cost of the bridge's demolition would then be written into the construction contract for execution by the project's contractor.

V. Conclusion

Proposals are due to TDOT by February 15, 2021. After that date, if no qualified recipient has been identified, TDOT will continue with the proposed project. If you need additional information, please contact Katherine Looney, Historic Preservation Supervisor.

Proposals can be submitted to Katherine Looney at the following address.

Katherine Looney, Historic Preservation Supervisor
Tennessee Department of Transportation
Environmental Division
505 Deaderick Street
Suite 900 James K. Polk Building
Nashville, TN 37243

APPENDICES

- A. Recipient Contracts: Private Entity and Government Entity
- B. Historic Bridge Assessment and Estimated Cost Figures
- C. Excerpts from TDOT Bridge Inspection Reports

APPENDIX A

CONTRACT

This Contract made and entered into on this _____ day of _____, 2000, between the State of Tennessee acting through its Department of Transportation, hereinafter, DEPARTMENT, and _____, hereinafter, RECIPIENT.

WITNESSETH:

Whereas, Congress has declared it to be in the national interest to encourage the rehabilitation, reuse and preservation of bridges significant in American history, architecture, engineering and culture; and,

Whereas, historic bridges are important links to our past, serve as safe vital transportation routes in the present, and can represent significant resources for the future; and,

Whereas, certain federal funds have been made available to provide for preservation of historic integrity of historic bridges; and,

Whereas, the Department has determined the historic significance of a bridge known as _____ that is located in _____ County, Tennessee and that is or will be no longer used for motorized vehicular traffic in its existing location; and,

Whereas, the RECIPIENT, a governmental entity, desires to accept the donation of the noted bridge, and to comply with all requirements provided for herein.

NOW, THEREFORE, in consideration of the mutual promises herein contained, the parties agree as follows:

1. RECIPIENT, accepts the donation and transfer of title of a bridge known as _____ in _____ County, Tennessee.

2. RECIPIENT agrees that the provisions contained herein shall be binding on its assigns, and successors in interest.

3. At no expense to the RECIPIENT, the Department will accomplish the items described in "Exhibit A", which is attached hereto, and incorporated herein by reference.

4. RECIPIENT shall make use of the bridge in the manner set forth in a proposal dated _____ which has been approved by the DEPARTMENT, and which is attached hereto as "Exhibit B", and incorporated herein by reference. RECIPIENT shall not deviate from said proposal without the prior written approval of the DEPARTMENT.

5. RECIPIENT agrees to maintain the bridge and the features, which give it its historic significance. Such features are those that qualify the bridge for inclusion in the National Register. These features are attached hereto as "Exhibit C", which is hereby made a part of this agreement and is incorporated herein by referenced.

6. RECIPIENT agrees to assume all future legal and financial responsibility for the bridge and agrees to hold the Department and the Federal Highway Administration harmless to the extent allowed by law from all claims and actions at law of any type whatsoever arising from the bridge.

7. The RECIPIENT, covenants and agrees that no person shall, on the ground of sex, handicap, race, color, religion or national origin, be denied the benefits of, or be subjected to discrimination, in RECIPIENT's use of the subject bridge. RECIPIENT further covenants and agrees that RECIPIENT's use of the bridge shall comply with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulation, Department of Transportation, Subtitle A, Part 21, nondiscrimination in Federally-assisted programs of the Department of Transportation-Effectuation of Title VI of the

Civil Rights Act of 1964, and as said Regulations may be amended; Title 49, Code of Federal Regulations, Part 27, Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance and as said Regulations may be amended; and 23 U.S.C. 324, Prohibition of Discrimination of the Basis of Sex.

IN WITNESS WHEREOF, the parties have caused this Contract to be executed by their respective authorized officials.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RECIPIENT

John Schroer, Commissioner

APPROVED:

John Reinbold
Department Attorney

SAMPLE

CONTRACT

This Contract made and entered into on this _____ day of _____, 2000, between the State of Tennessee acting through its Department of Transportation, hereinafter, DEPARTMENT, and _____, hereinafter, RECIPIENT, of _____, Tennessee.

WITNESSETH:

Whereas, Congress has declared it to be in the national interest to encourage the rehabilitation, reuse and preservation of bridges significant in American history, architecture, engineering and culture; and,

Whereas, historic bridges are important links to our past, serve as safe vital transportation routes in the present, and can represent significant resources for the future; and,

Whereas, certain federal funds have been made available to provide for preservation of historic integrity of historic bridges; and,

Whereas, the Department has determined the historic significance of a bridge known as _____ that is located in _____ County, Tennessee and that is or will be no longer used for motorized vehicular traffic in its existing location; and,

Whereas, the RECIPIENT, a responsible private entity, desires to accept the donation of the noted bridge, and to comply with all requirements provided for herein.

NOW, THEREFORE, in consideration of the mutual promises herein contained, the parties agree as follows:

1. RECIPIENT, accepts the donation and transfer of title of a bridge known as _____ in _____ County, Tennessee.

2. RECIPIENT agrees that the provisions contained herein shall be binding on his or her assigns, heirs or successors in interest.

3. At no expense to the RECIPIENT, the Department will accomplish the items described in "Exhibit A", which is attached hereto, and incorporated herein by reference.

4. RECIPIENT shall make use of the bridge in the manner set forth in a proposal dated _____ which has been approved by the DEPARTMENT, and which is attached hereto as "Exhibit B", and incorporated herein by reference. RECIPIENT shall not deviate from said proposal without the prior written approval of the DEPARTMENT.

5. RECIPIENT has demonstrated his or her economic and administrative ability to perform the essential obligations set forth in the referenced proposal by setting forth a plan that is contained in the proposal to accomplish same. In the event RECIPIENT fails to fulfill his or her responsibilities, as determined by the DEPARTMENT, title to the bridge may revert to the TENNESSEE DEPARTMENT OF TRANSPORTATION.

6. RECIPIENT agrees to maintain the bridge and the features, which give it its historic significance. Such features are those that qualify the bridge for inclusion in the National Register. These features are attached hereto as "Exhibit C", which is hereby made a part of this agreement and is incorporated herein by referenced.

7. RECIPIENT agrees to assume all future legal and financial responsibility for the bridge and agrees to hold the Department and the Federal Highway Administration harmless from all claims and actions at law of any type whatsoever arising from the bridge.

8. The RECIPIENT, covenants and agrees that no person shall, on the ground of sex, handicap, race, color, religion or national origin, be denied the benefits of, or be subjected to discrimination, in RECIPIENT's use of the subject bridge. RECIPIENT further covenants and agrees that RECIPIENT's use of the bridge shall comply with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulation, Department of Transportation, Subtitle A, Part 21, nondiscrimination in Federally-assisted programs of the Department of Transportation-Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended; Title 49, Code of Federal Regulations, Part 27, Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance and as said Regulations may be amended; and 23 U.S.C. 324, Prohibition of Discrimination of the Basis of Sex.

IN WITNESS WHEREOF, the parties have caused this Contract to be executed by their respective authorized officials.

RECIPIENT

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

John Schroer, Commissioner

APPROVED:

John Reinbold
Department Attorney

APPENDIX B



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

ENVIRONMENTAL DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 741-3655

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

MEMORANDUM

TO: Wayne Seger, Director, Structures

FROM: Tammy Sellers, Historic Preservation Manager

DATE: December 11, 2015

SUBJECT: Information on the proposed replacement of the Easley Ford Road Bridge over the Conasauga River at Log Mile 1.53 (Bridge # 7002268001), Polk County PIN 122332.00

I've been contacted by Mike Gilbert in Strategic Transportation Investments Division/Project Investigation regarding a TIR he is preparing for the replacement of the Easley Ford Road Bridge over the Conasauga River in Polk County. As I understand the project, it was previously a State-Aid bridge replacement project but the county had issues completing the project so it has now become a TDOT project. This bridge was determined eligible for listing in the National Register of Historic Places in the historic bridge survey completed in the 1980s and 1990s and the bridge remains eligible for the National Register (see attachment for bridge survey information).

Since this bridge is eligible for the National Register, Federal laws require TDOT to evaluate a variety of options to preserve the bridge. The Environmental Division will prepare the reports that meet these requirements, but we will need information from your division to do that.

In order for our office to prepare these federally mandated reports, please provide the following information:

1. Can this bridge be rehabilitated for continued use on the existing route?
 - What specific repairs would be necessary?
 - What would be the estimated cost of these repairs? What would be the estimated cost of a new structure?
 - How long would such repairs extend the life of the bridge (versus the life expectancy of a new bridge)?
 - What would be the relative advantages and disadvantages of repairing the bridge?
 - What would be the relative advantages and disadvantages of replacing the bridge?

2. If a new structure is built, could the existing bridge be left in place either as a ruin or for pedestrian use? (This issue is dependent on the feasibility of an alternative alignment and the identification of a party who would accept liability and maintenance responsibilities on the existing bridge.)
 - If the bridge were left in place, how would that affect the location of a new bridge?
 - Would it be necessary to make any repairs to the bridge (such as to the substructure) if the existing bridge were left in place as a ruin?
 - If the existing bridge were left in place for pedestrian use, would it be necessary to make any repairs to the bridge? If so, how much would these repairs cost?

3. If preservation in place is not feasible, can the structure be relocated for re-use to other sites?
 - If it were to be feasible to relocate the structure, how much would it cost?
4. Are the structural elements and/or the collective structure sufficiently sound to re-use for pedestrian traffic at a new location?
 - If repairs were needed for pedestrian re-use, what repairs would be needed?
 - How much would these repairs cost?
5. What is the estimated demolition cost of this bridge?
6. Do you have any general comments on the feasibility of preserving this bridge, either on its existing location (for continued vehicular use, as a ruin, or for pedestrian use) or at a new location?

Thank you for your assistance. If you have any questions or comments, please feel free to contact me.

COMMENTS:

**STRUCTURES' REPLY TO HISTORIC
PRESERVATION OFFICE MEMO DATED
12/11/2015**

1.

Necessary repairs:

Concrete repairs to the arch ribs, spandrel columns, rib braces, floor beams at spandrel columns, and rail and end posts.

Full and partial depth deck repairs, place thin epoxy overlay to protect the deck in the future.

The wing walls that are leaning will need to be replaced on the abutment 1 side.

The bridge will also need scour repairs on the abutment 1 side of the arch, and approach work to correct and prevent the erosion from rain undermining the roadway on the approach 1 side. We anticipate this work using gabion walls. The wall will be near the edge and into the water for scour protection. The river classification could create a problem getting permits for the scour repair.

Estimated repair cost

Estimated cost to the repair existing bridge - \$180,000

Estimated cost to modify and repair approach 1 to prevent future erosion and scour- \$100,000*

*(this is a guess, could be higher because of proximity to and in river work)

Traffic Control and mobilization - \$80,000

Estimated total cost of the repair project - \$360,000

Estimated cost for replacement

Strategic Transportation Investments Division has this info.

Life extension of bridge

I would expect the repair would extend the bridge life at least another 20 years.

Relative advantages and disadvantages of repairing the bridge

Advantages:

There would still be a historic bridge at the location.

The local's share of the project would be less than the cost for the estimated replacement project.

Disadvantages:

Still have an old bridge that will likely have a shorter life than a replacement.

Repairs will likely not remove the 8 ton posting on the bridge.

There will still be an obsolete single lane bridge at the location.

Relative advantages and disadvantages of replacing the bridge

Advantages:

There would be an alignment with a current template with 2 lanes and shoulders.

The new bridge would be designed for current loads, no longer a posted bridge there.

The new bridge should have a design life of 75 years.

Disadvantages:

The only disadvantage would be the amount of the local's share of a replacement project.

2.

Affect new bridge location?

If the bridge was left in place, it would not affect the location of the new bridge.

Repairs if left as ruin?

Yes, the bridge would still need to have the approach work, scour repair, and wing wall / end post replacement to keep the bridge in place as a ruin.

Repairs if used for pedestrians?

All the repairs needed for vehicular traffic will be required for pedestrian traffic. The cost would be the same as part 1 above.

3.

Can it be relocated?

Because of the type of bridge and material it's made of, it would not be able to relocate the bridge to another site.

4.

Are structural elements and/or structure sufficiently sound to re-use for pedestrians at a new location?

It would not be possible to move the bridge to a new location.

5.

Estimated demolition cost

\$ 200,000

6.

General comments on feasibility of preserving the bridge, either on its existing location or at a new location.

The bridge would be an acceptable candidate for preservation for vehicular traffic in place; overall the critical parts of the bridge seem to be in relatively good shape. The only problem would be that the bridge would still be posted for 8 tons and vehicles over 8 tons have been observed crossing the bridge.

Appendix C



Polk County

Regular Inspection Report

Location: 70-02268-01.53

Federal ID: 70022680001

Description:

Easley Ford Road - 2268

OVER

Conasauga River

Type of Structure: 1 - Arch

Inspection Date: June 8, 2016

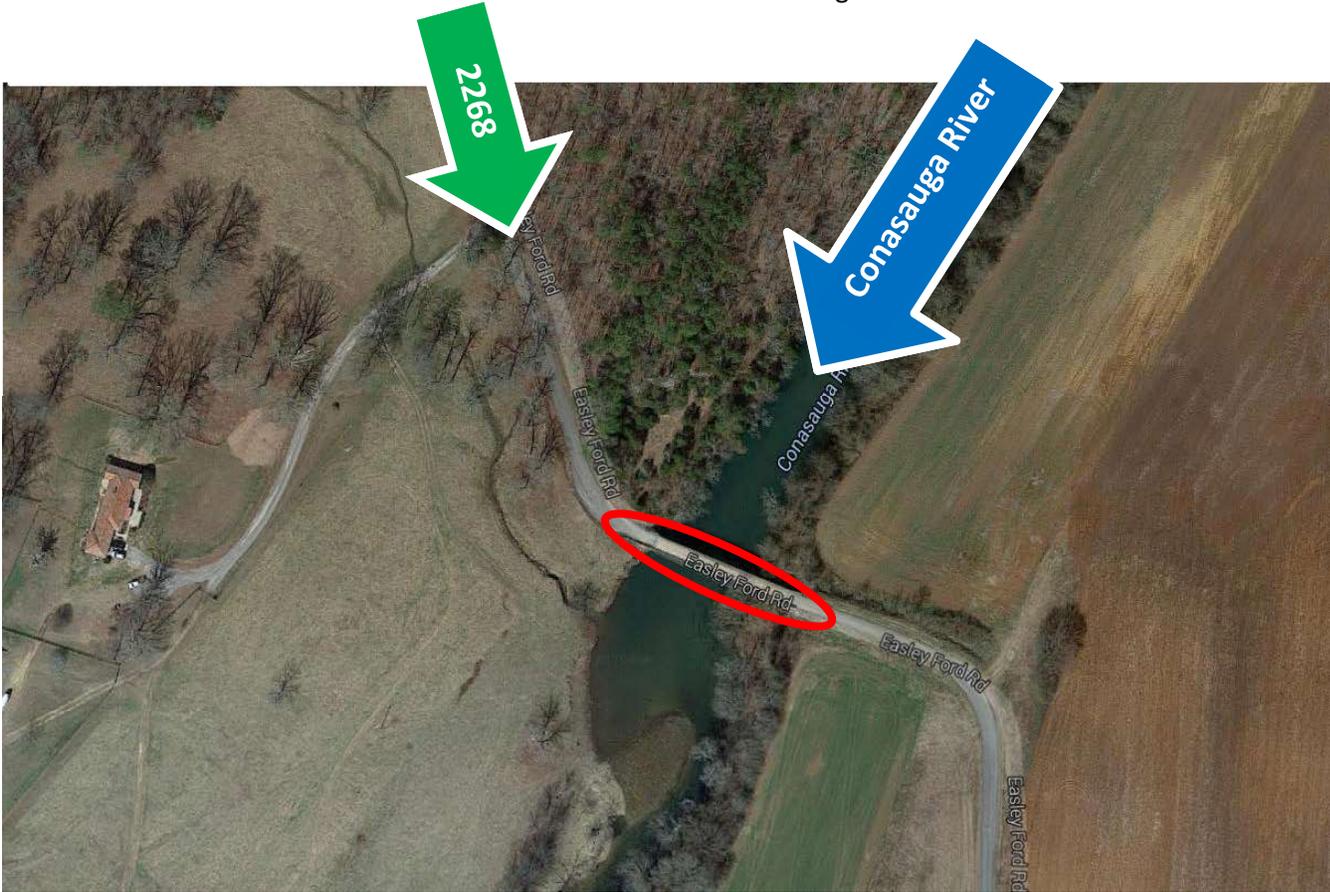
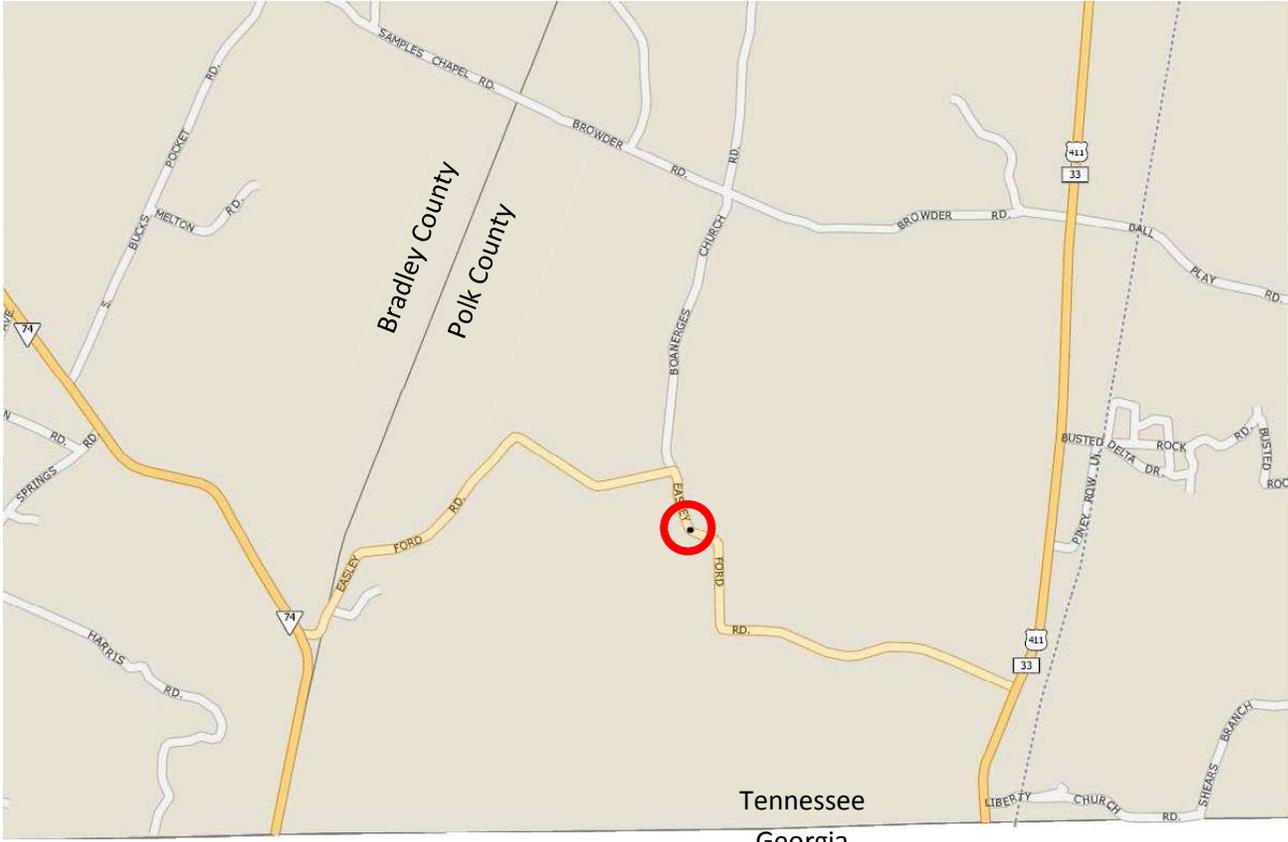
Rating: POOR



Approach 1 Conditions are CRITICAL

PRODUCED PURSUANT TO
PUBLIC RECORDS REQUEST
This document is covered by 23 USC §409
And its production pursuant to a public
document records request does not
waive the provisions of §409

LOCATION MAP





STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/16/2016

Bridge Number: 700226800011
(Includes Item 5A)
Feature Intersected: CONASAUGA RIVER
Evaluation Status: NO CHANGE BUT STILL EVALUATE

County: 70
Route: 0A242
Special Case: 0
County Sequence: 1
Log Mile: 1.53

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

| ITEM # | DESCRIPTION | VALUE | CONDITION CODING GUIDELINES (Values for Coding Items 58, 59, 60 and 62) | | | |
|--------|--|--|---|-------------|-------------|--|
| 90 | LAST INSPECTION DATE | 06/08/2016 | N NOT APPLICABLE 9 EXCELLENT CONDITION 8 VERY GOOD CONDITION - NO PROBLEMS NOTED. 7 GOOD CONDITION - SOME MINOR PROBLEMS. 6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS. 5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR. 4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR. 3 SERIOUS CONDITION - 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. 2 CRITICAL CONDITION - ADVANCED DETERIORATION OF PRIMARY STRUCTURAL ELEMENTS. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS 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. 1 "IMMINENT" FAILURE CONDITION - MAJOR DETERIORATION OR SECTION LOSS PRESENT IN CRITICAL STRUCTURAL COMPONENTS OR OBVIOUS VERTICAL OR HORIZONTAL MOVEMENT AFFECTING STRUCTURAL STABILITY. BRIDGE IS CLOSED TO TRAFFIC BUT CORRECTIVE ACTION MAY PUT IT BACK IN LIGHT SERVICE. 0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION. | | | |
| | EARLIEST DATE OF NEXT REGULAR INSPECTION | 04/09/2018 | | | | |
| | | <u> </u> / <u> </u> / <u> </u> | | | | |
| 10 | MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS) | 99 FT. 99 IN. <u> </u> FT. <u> </u> IN. | | | | |
| 520 | MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS) | 99 FT. 99 IN. <u> </u> FT. <u> </u> IN. | | | | |
| 36 | TRAFFIC SAFETY FEATURES | | | | | |
| | Br. Rail | Trans. | Appr. Rail | Terminal | SPEED LIMIT | |
| | 0 | 0 | 0 | 0 | UNKNOWN | |
| | <u> </u> | <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 41 | STRC OPEN/CLOSED/POSTED | P | | | | |
| | A K P | <u> </u> | | | | |
| 58 | DECK | 5 | | | | |
| 59 | SUPERSTRUCTURE | 5 | | | | |
| 60 | SUBSTRUCTURE | 4 | | | | |
| 61 | CHANL/CHANL PROTECTION | 8 | | | | |
| 62 | CULVERT AND RETAIN WALL | N | | | | |
| 71 | WATERWAY ADEQUACY | 8 | | | | |
| 72 | APPROACH RDWY ALIGNMENT | 6 | | | | |
| 521 | OVERALL CONDITION | POOR | | | | |
| 16 | LATITUDE | 17 LONGITUDE | | | | |
| | N 35° .0523' | W 84° 45.2250' | | | | |

Jason Tays

TEAM LEADER SIGNATURE

Digitally signed by Jason Tays
DN: cn=Jason Tays, o=Chattanooga Bridge Inspection, ou=Tennessee
Department of Transportation, email=jason.tays@tn.gov, c=US
Date: 2016.06.20 12:28:51 -0400

REVIEW DATE

Photographs

Bridge ID#: 70022680001

Date: 06/08/2016



LOOKING AHEAD



WEIGHT POSTING - AHEAD

Photographs



LOOKING BACK



WEIGHT POSTING - BACK

Photographs



UPSTREAM



DOWNSTREAM

Photographs



APPROACH 1



WEARING SURFACE

Photographs



TRAFFIC SAFETY FEATURES



APPROACH 2

Photographs



ARCH 2 - LEFT - BETWEEN RIBS 17 & 18



RIB 18 - REBAR SPALL

Photographs



ABUTMENT 1



ABUTMENT 1

Photographs



ABUTMENT 1



APPROACH 1 - LEFT

Photographs



APPROACH 1 - RIGHT



APPROACH 1 - RIGHT

Photographs



APPROACH 1 - RIGHT



APPROACH 1 - RIGHT - UNDERCUTTING

BRIDGE INSPECTION REPORT

Page No. _____

Form BIR 3.0
(Rev. 9-22-98)
DT-0069Field Report No. 23 Date 6/8/2016
Previous Report No. 22 Date 12/7/2014
Plans: ASBUILTBridge No. 70022680001
Eleven Digit No.Bridge Location No. 70 - 02268 - 0153 NA
Co. Route Log MileEasley Ford Rd - 2268 over Conasauga River
Facility Carried by Structure Crossing Structure Name (If Named)
Year Constructed 1924 ESTIMATED County Polk Maintenance District 21
Year Widened NA NA Year Rehabilitated NA NA

FEATURES

Wearing Surface Concrete Depth 4.5 (in.)
Flared Width NO Median Width NONE
Navigational Control NO Bridge Skew 90°
Structure Type (Main Span) CONCRETE
Structure Type (Appr.Spans) NA
No. Main Spans 1 No. Approach Spans 0
Maximum Span Length 171.0 (**.* ft.)
Total Length 171.0 (**.* ft.)

TEAM LEADER

J. TAYS

INSPECTORS

G. HAAS

WIDTHS (*.* ft.)

Deck Out-to-Out 17.7
Roadway Curb/Curb 15.7
Roadway Rail/Rail 15.7
Sidewalk Rt. N/A Lt. N/A
*Approach Roadway 17.0
*(Does Not Include Shoulders)
Approach Shoulder Rt. 0
Lt. 0

CLEARANCES

Min. Vertical Clearance over Deck 99-99 (ft.-in.)
Min. Vertical Under Clearance NA (ft.-in.)
Min. Lateral Under Clearance Rt. NA (*.* ft.)
Min. Lateral Under Clearance Lt. NA (*.* ft.)FRACTURE CRITICAL: NO
(If Yes, Include BIR 3.9)

NBIS Bridge Length (<25 ft.) _____ (ft.-in.)

UNDERWATER INSPECTION

To Be Performed By: DOT FIELD TEAM Date _____Change in Structural Condition: NO Major Repairs Made: NO BRIDGE is: OPEN

COMMENTS:

REACH ALL - 2004Supervising Bridge Inspector: J. TAYSBRIDGE RATING: POOR

PERFORMANCE EVALUATION

Time of Day Inspected _____ PM Weather Conditions Sunny/75F

Vehicles Observed Delivery truck, Cars

LIVE LOAD BEHAVIOR

| Substructure | Yes/No | Comments |
|---------------------|--------|---|
| Horiz./ Vert. Defl. | NO | |
| Vibration | NO | |
| Superstructure | | |
| Horiz./ Vert. Defl. | NO | |
| Vibration | NO | <i>None detected at this inspection</i> |

APPROACH

| | Rating | Comments |
|------------|----------|--|
| Alignment | GOOD | <i>Minimal reduction required compared to approach roadway</i> |
| Slab | N/A | |
| Joints | N/A | |
| Pavement | POOR | <i>Approach beginning to washout</i> |
| Embankment | CRITICAL | <i>Approach 1 needs stabilization and erosion control measures installed</i> |
| Drains | N/A | |

TRAFFIC SAFETY FEATURES

| | Rating | Standard/ SubStandard | Comments |
|--------------------|--------|--------------------------|------------------------------------|
| Bridgerailing | POOR | NONSTANDARD | <i>Damage. Loose rails</i> |
| Transitions | NONE | NONSTANDARD | |
| Guardrail | POOR | NONSTANDARD | <i>Approach 1 - Right - Damage</i> |
| Guardrail Terminal | POOR | NONSTANDARD | <i>Terminal 1 - Right - Damage</i> |

SIGNING

| | Yes/ No/ Needed | Weight Limit Posted <u>YES</u> |
|------------------------------|-----------------|----------------------------------|
| Paddleboards | YES | Gross..... _____ Tons |
| Vertical Clearance (<14'-6") | NO | 2 Axle..... <u>8</u> Tons |
| Narrow Bridge Signs | NEEDED | 3 or more Axles.. <u>15</u> Tons |
| One Lane Bridge Signs | NEEDED | |

Other Signs or Plaques:

Comments Regarding any Problems with Signing: Approach 2 - One Lane Bridge sign needed

DECK

| | Rating | Comments |
|-----------------------------|--------|---|
| Wearing Surface | F-P | <i>SM-LG cracks. Heavy scale. Exposed aggregate</i> |
| Deck - Structural Condition | FAIR | <i>HL-SM cracks. Some rebar spalls at joints</i> |
| Curbs | N/A | |
| Median | N/A | |
| Sidewalks | N/A | |
| Parapet | N/A | |
| Railing | | <i>See Traffic Safety Features</i> |
| Paint | N/A | |
| Drains | N/A | |
| Lighting Standards | N/A | |
| Utilities | N/A | |
| Joint Leakage | N/A | |
| Expansion Joints | N/A | |

SUPERSTRUCTURE

| | | |
|----------------------|------|-----------------------------|
| Bearing Devices | N/A | |
| Girders or Beams | FAIR | <i>Delams, rebar spalls</i> |
| Floor Beams | N/A | |
| Stringers | N/A | |
| Diaphragms | N/A | |
| Bracing | N/A | <i>LG rebar spalls</i> |
| Trusses - General | N/A | |
| Portals | N/A | |
| Bracing | N/A | |
| Paint | N/A | |
| Alignment of Members | GOOD | |

TEXTURE COAT

| | | | |
|--------------------|--------------------|---------------------|-------------|
| Condition Rating | <u> N/A </u> | Needs Spot Painting | <u> </u> |
| Overall Appearance | <u> N/A </u> | Needs Repainting | <u> </u> |
| Staining Rating | <u> N/A </u> | Comments | |
| Fading Rating | <u> N/A </u> | | |
| Scaling Rating | <u> N/A </u> | | |

SUBSTRUCTURE

ABUTMENTS

| | Rating | Comments |
|-----------------|----------|---|
| Caps | N/A | |
| Breastwall | FAIR | <i>HL-SM cracks, spalls, delams</i> |
| Wings | CRITICAL | <i>Approach 1 - RT & LT - separated from abutment, out of plumb</i> |
| Backwall | N/A | |
| Plumb | GOOD | <i>Abutment - Good. Wings - Critical</i> |
| Footing | NV | |
| Piles | NV | |
| Embankment | POOR | <i>Approach 1 drainage needs to be addressed</i> |
| Bearing Surface | N/A | |
| Slope Paving | N/A | |
| Rip Rap | | <i>See stream data sheet</i> |

PIERS

| | | |
|-----------------|--|--|
| Caps | | |
| Columns | | |
| Plumb | | |
| Footings | | |
| Piles | | |
| Bearing Surface | | |

BENTS

| | | |
|-----------------|--|--|
| Caps | | |
| Columns | | |
| Plumb | | |
| Footings | | |
| Piles | | |
| Bearing Surface | | |

Piles Need Replacement: NO

Piles To Be Replaced:

TYPE SERVICE: EASLEY FORD ROAD
OVER: Conasauga River

On Wednesday, June 08, 2016, a Region Two bridge inspection team inspected this structure and found it to be in POOR condition.

TOP OF DECK

Traffic Safety Features

| | | | |
|----------------|------|-------------|-----------------------------|
| Bridge Rail: | POOR | NONSTANDARD | Damage. Loose rails |
| Transitions: | NONE | NONSTANDARD | |
| Approach Rail: | POOR | NONSTANDARD | Approach 1 - Right - Damage |
| Terminals: | POOR | NONSTANDARD | Terminal 1 - Right - Damage |

Wearing Surfaces

| | | |
|-------------------------|------|--|
| Approach Pvm: | POOR | Approach beginning to washout |
| Deck - Wearing Surface: | F-P | SM-LG cracks. Heavy scale. Exposed aggregate |

BOTTOM OF DECK

Deck - Structural Condition: FAIR HL-SM cracks. Some rebar spalls at joints

SUPERSTRUCTURE

| | | |
|-----------|------|----------------------|
| Beams: | FAIR | Delams, rebar spalls |
| Bearings: | N/A | |

SUBSTRUCTURE

Abutments

| | | |
|------------------|----------|--|
| Caps: | N/A | |
| Breastwall: | FAIR | HL-SM cracks, spalls, delams |
| Wings: | CRITICAL | Approach 1 - RT & LT - separated from abutment, out of plumb |
| Backwall | N/A | |
| Bearing Surface: | N/A | |

Bents

| | |
|------------------|--|
| Caps: | |
| Columns: | |
| Bearing Surface: | |

UNDERCLEARANCE

Min Vert Under Clear(ft-in): NA

SPECIAL NOTES

Coding Item 60 = 4 - This rating reflects the scour issues at Abutment 1.

Coding Item 61 = 6 - The original rating of 4 also reflected the scour at Abutment 1. This item is an evaluation of the Conasauga River. The scour issue is believed to be a product of the drainage conditions at Approach 1 and not due to issues with the flow of the river.

Item 71 = 8 - The possibility of the Conasauga River overtopping this structure is "remote".

Item 72 = 6 - The Coding guide specifically stipulates the evaluation of horizontal and vertical alignment only for this item. Any reduction of speed required due to bridge width is ignored. Although this is a narrow bridge, only a minor speed reduction is required, due to alignment, compared to the approach roadway.

CRITICAL FINDINGS

The wings and embankment slopes at approach 1 need immediate attention. The wings are cracked and separated from Abutment 1. They are out of plumb and the potential for complete failure of the approach roadway exists.

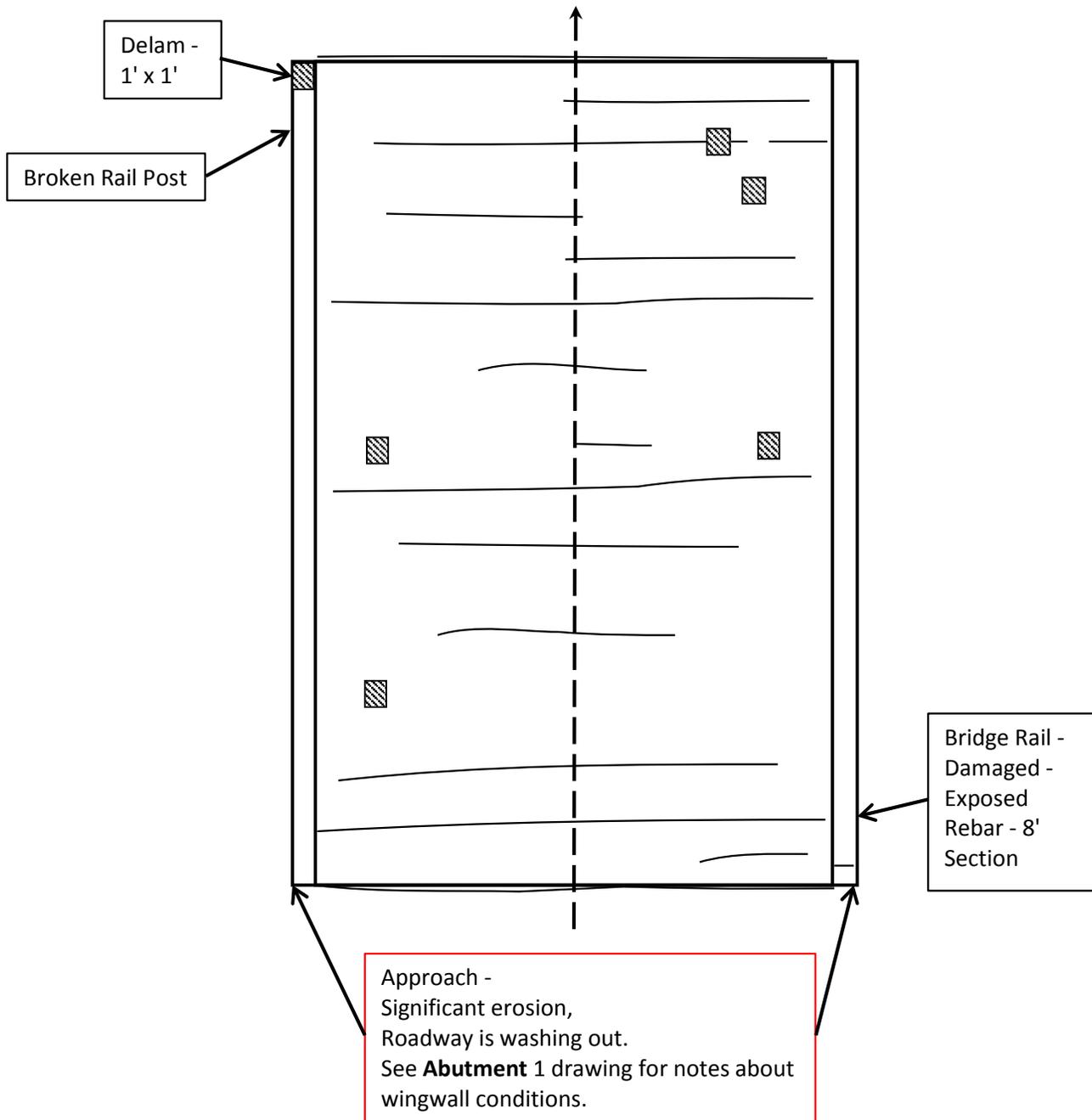
Approach Embankment: **Critical** Steep slope, lt & rt, failures are possible

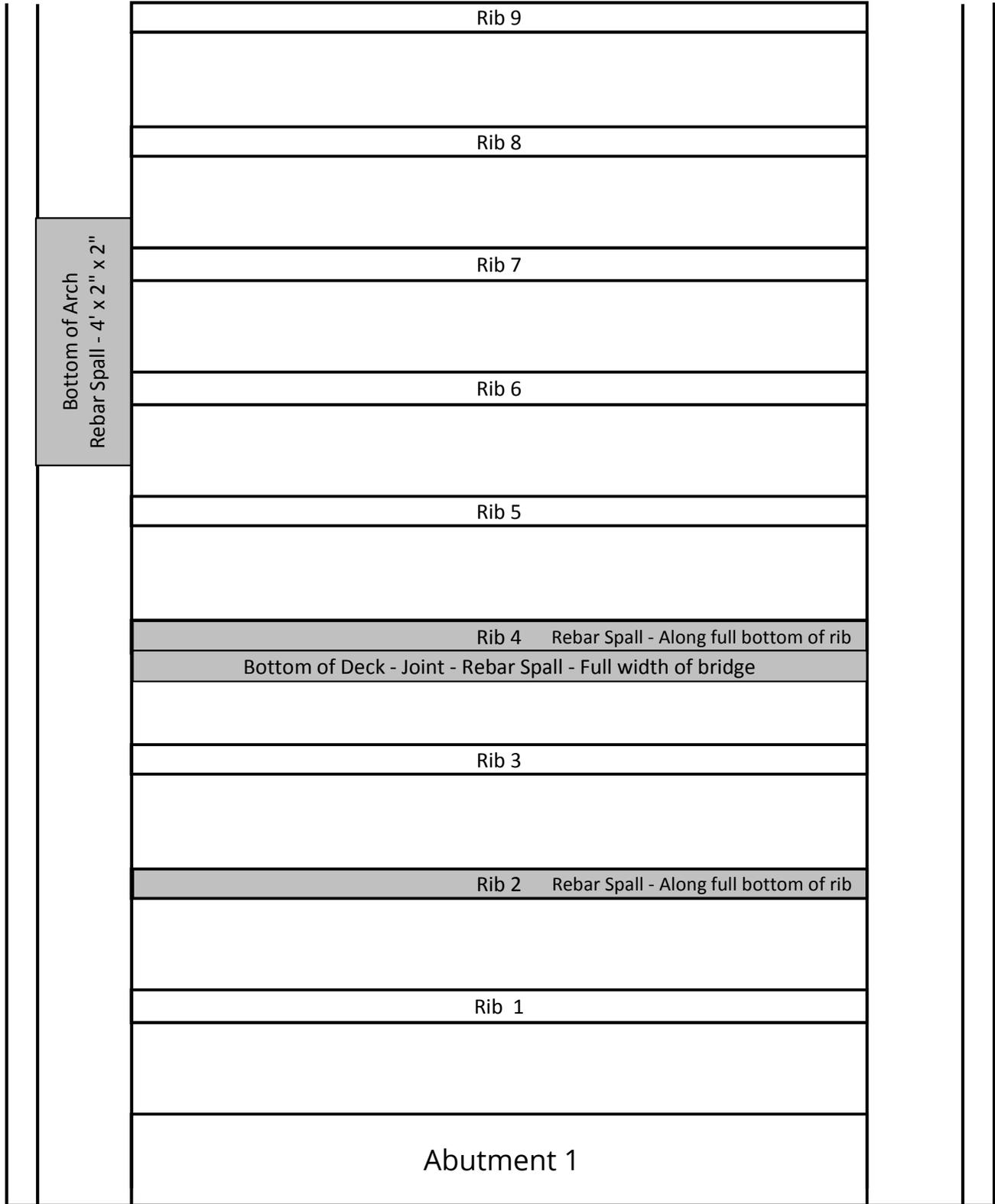
Approach Pvmnt: F Rough

Approach Rail: P

Wearing Surface: FP Rough, uneven, aggregate exposed - throughout

Bridge Rail: FP Damage





Easly Ford Road - 2268
Route: W-E - Toward SR 33

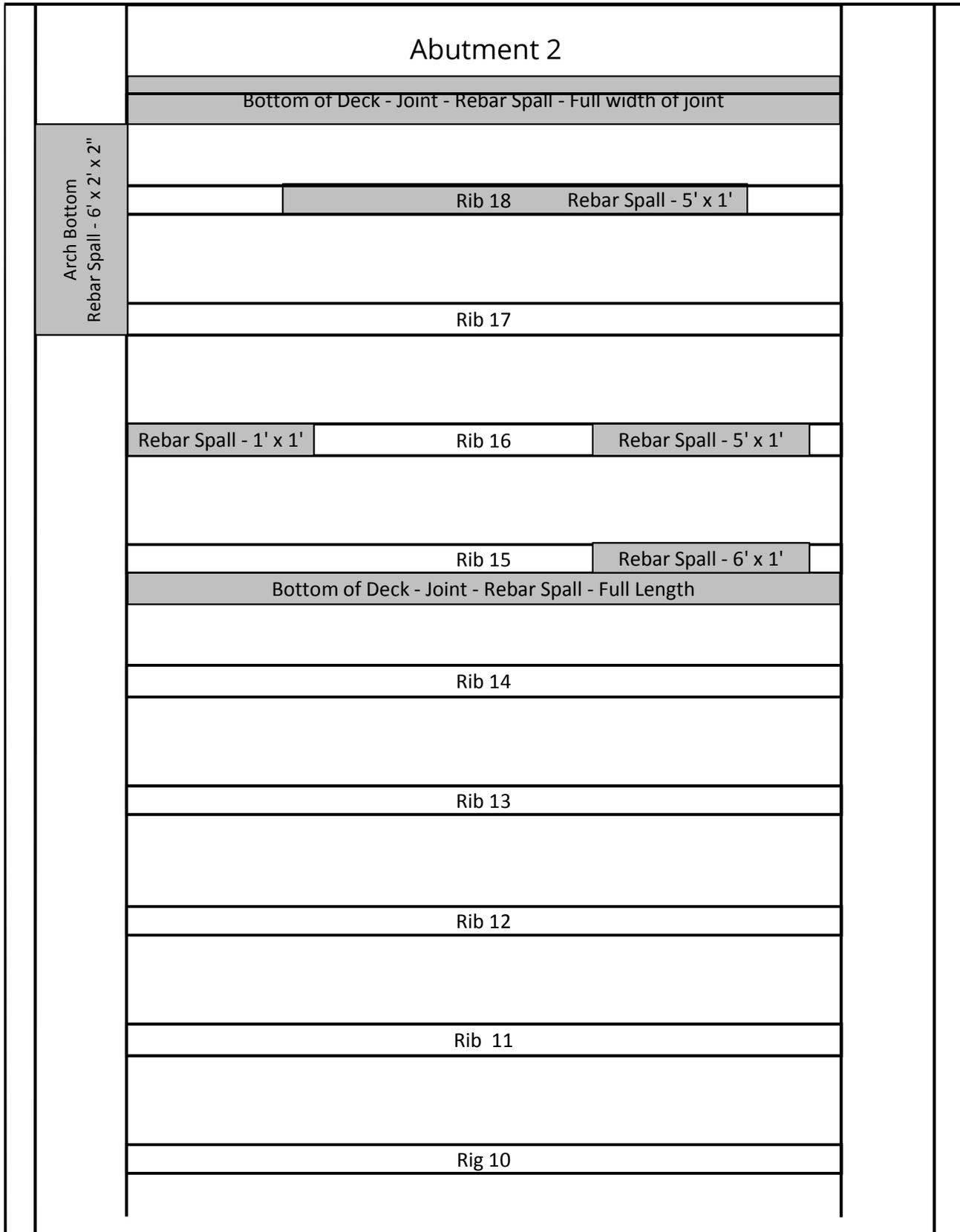
Bottom of Deck - Ribs 1-9

OVER: Conasauga River

70-02268-01.53
70022680001

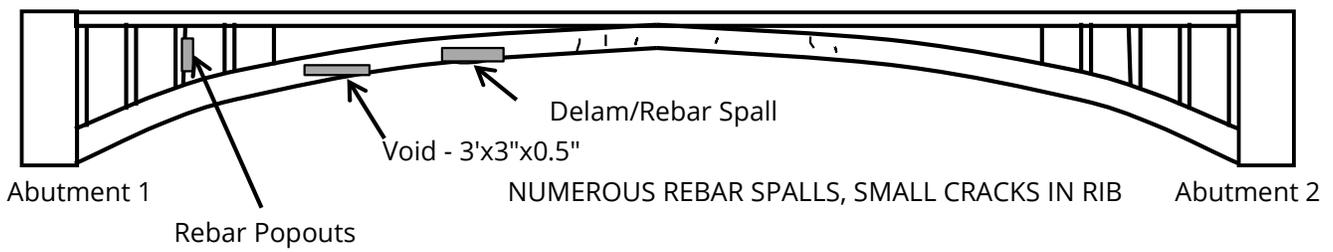
Bottom of Deck - Ribs 1-9

Inspection Date: 06/08/2016
1 Span Arch

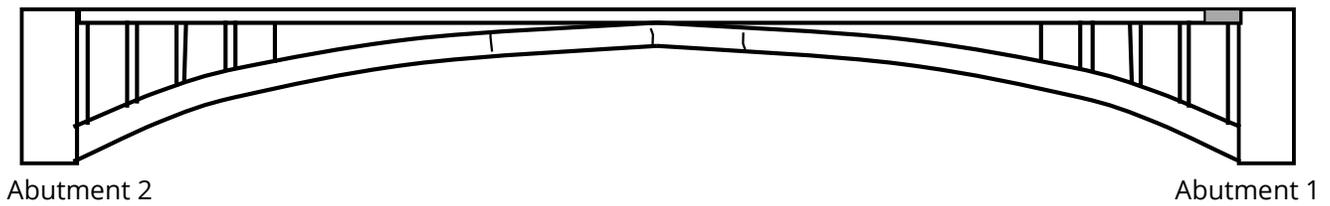


Bottom of Deck - Ribs 1-9 - See Previous Page

Right Side - Looking Upstream



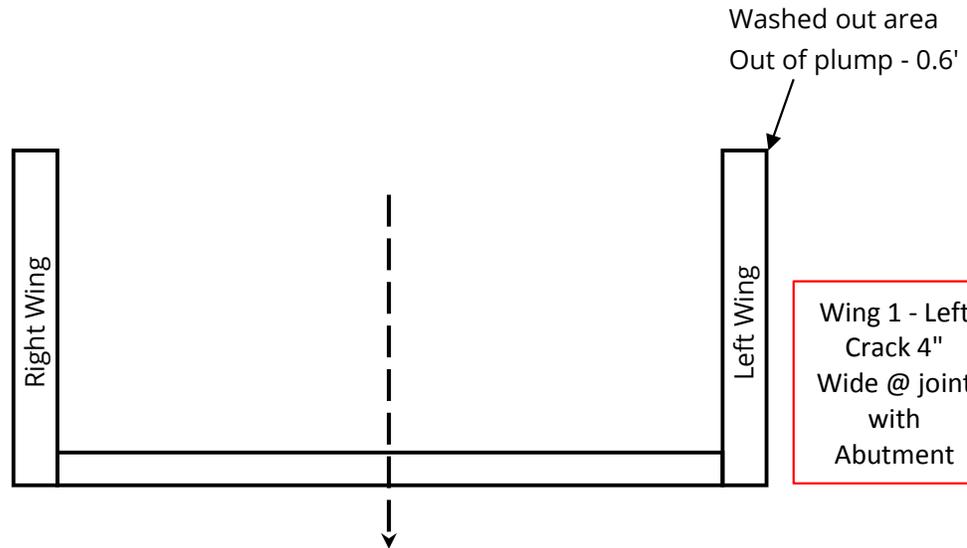
Left Side - Looking Downstream



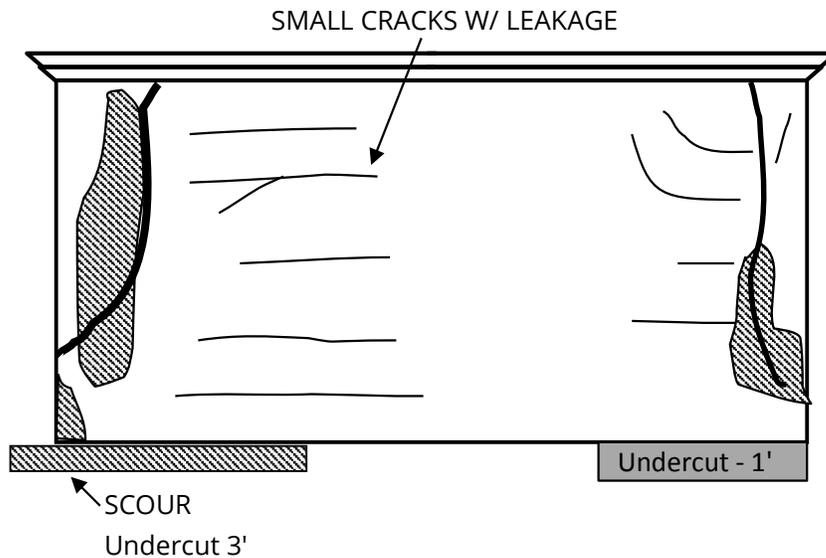
Wings: **Critical** LT - Breaking away from the breastwall, spalls & delams

Breast Wall: GF HL cracks. Scour. Exposed foundation

Wing 1 - Right
Significant crack
8" Wide @ joint
with Abutment.
Wing is leaning
out and support
of roadway is
compromised



Wing 1 - Left
Crack 4"
Wide @ joint
with
Abutment



Wings: GF Wall junction - crack

Breast Wall: GF Previously reported rebar spall is at the joint on the bottom of the deck
See "Bottom of Deck - Ribs 10-18" for details of that rebar spall

