

UNITED STATES FOREST SERVICE



2004 BRIDGE INSPECTION

APALACHICOLA NATIONAL FOREST
BRIDGE NO. 115-02.3
RIVER STYX BRANCH



Michael K. Rice
Michael K. Rice, P.E.

2/20/04
Date

This inspection report was prepared under my supervision. The condition data and recommendations contained within this report are based on a visual inspection of accessible portions of the existing structure. No responsibility is accepted for the existence of latent defects that cannot be detected during visual inspection.



Engineers, Scientists, and Planners

10 North Park Drive

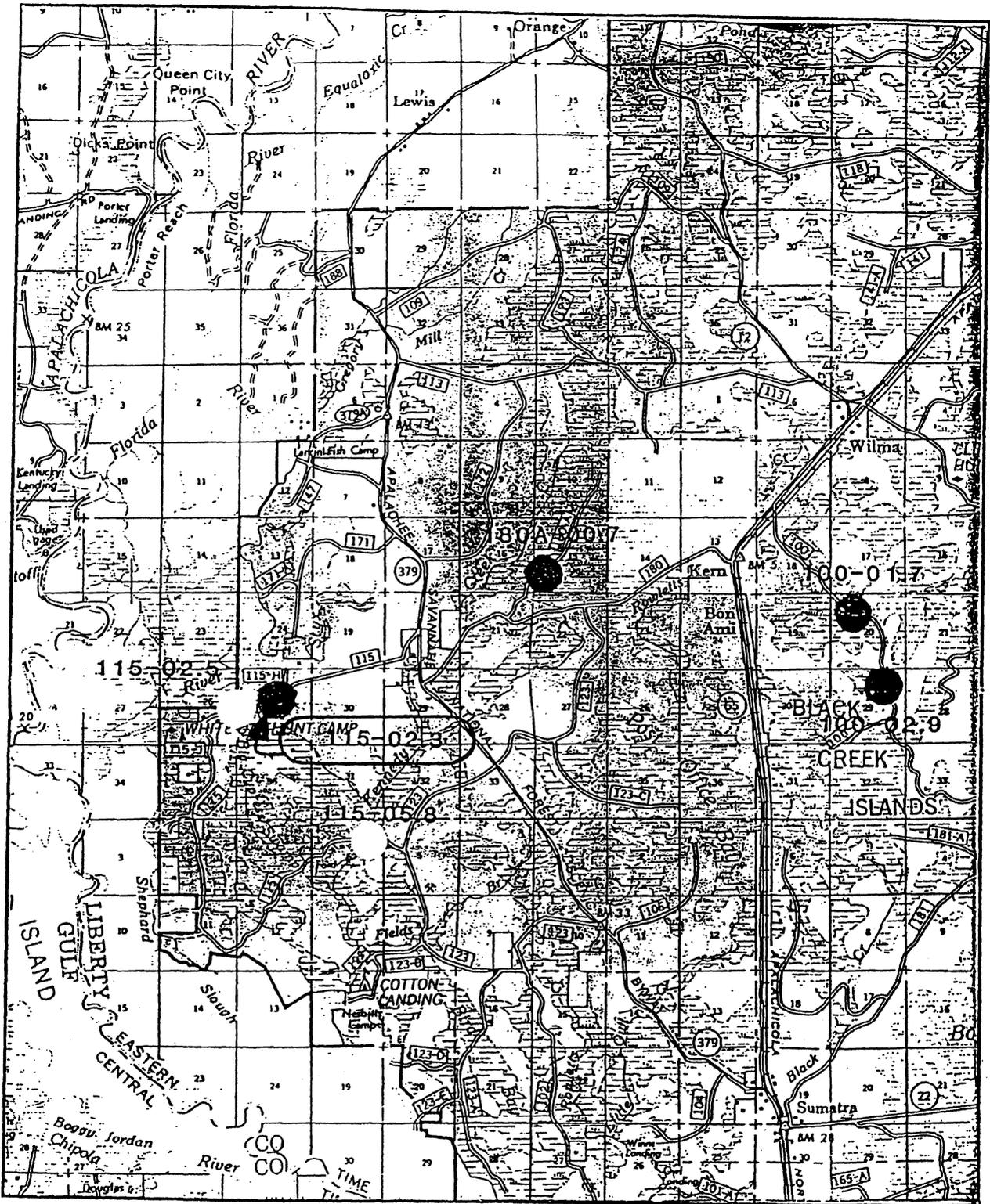
Hunt Valley, MD 21030-1846

In Association with Mercado Consultants, Inc.

2004 USFS BRIDGE INSPECTION
APALACHICOLA NATIONAL FOREST

BRIDGE NO. 115-02.3
RIVER STYX BRANCH

1. Location Map
2. Report Summary
3. Photographs
4. Field Notes
5. Sketches/Channel Sections
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LOCATION MAP

1 INCH = 1 MILE

REPORT SUMMARY

BRIDGE NO. 115-02.3 RIVER STYX BRANCH

Description

Bridge No. 115-02.3 is a three span timber beam bridge constructed in 1937 (see Photos 1-6). The deck was replaced in 1982. The bridge has an overall length of 46'-0"± with a curb to curb width of 14'-0"±. The superstructure consists of a timber plank deck supported by timber beams. The substructure consists of timber pile bents with three piles each and timber sheeting. The bridge rail consists of timber rails and posts. There are no approach guardrails. The bridge is currently not posted. The bridge inspection was performed on February 20, 2004. The numbering convention for reporting purposes is from the north and the east.

Condition Summary

Overall, the bridge is in poor condition (SI&A condition rating 4). The following is a summary of the bridge inspection findings:

1. The deck running boards are soft at random locations with ½" pick penetrations.
2. Hardware is missing from the bridge rail in four locations.
3. The beams at the West Abutment typically have 1" deep decay in the bottom half at the bearing area (see Photo 7). Typical pick penetrations into the beams at Bents 1 and 2 are ½" to ¾". Beams 3, 4 and 6 are decayed at the East Abutment bearing area (see Photo 8).
4. The sheeting at each wingwall has numerous areas of severe decay with full depth pick penetrations and loss of fill (see Photos 9 and 10).
5. The inner pile at the Southwest Wingwall has a heavy termite infestation that has destroyed the pile (see Photo 11).
6. The top 3" of the top sheeting board at the West Abutment is heavily decayed. The bottom 2" of the 4th board and the top 2" of the 5th board are decayed for the full length of the West Abutment. The sheeting at the East Abutment has numerous areas of severe decay with loss of fill (see Photo 12).
7. The West Abutment Cap is decayed up to 2½" high x 4½" deep at the top below Beams 2 through 8 (see Photo 7).
8. Pile 3 at the West Abutment is decayed up to 2" deep for the full height and full circumference (see Photo 13). Pile 1 at the East Abutment has severe decay (see Photo 14). Piles 2 and 3 have areas of moderate decay at the waterline.
9. All of the piles at the pier bents have random areas of minor to moderate decay.
10. There was heavy vegetation and debris in the channel.
11. There were no approach guardrails.

Recommendations

1. Replace the bridge.

Posting Recommendation

The decay throughout the structure is significant enough to affect the load carrying capacity. Load rating should be performed to determine a safe posting level that accounts for the decay. Until the load ratings are performed, it is recommended to post the bridge for 20 tons gross load.

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BRIDGE NO. 115-02.3 - RIVER STYX BRANCH



Photo 1 – West Approach.



Photo 2 – East Approach.

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BRIDGE NO. 115-02.3 - RIVER STYX BRANCH



Photo 3 – North Elevation.



Photo 4 – South Elevation.

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BRIDGE NO. 115-02.3 - RIVER STYX BRANCH



Photo 5 – Looking North (Upstream).



Photo 6 – Looking South (Downstream).

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BRIDGE NO. 115-02.3 - RIVER STYX BRANCH

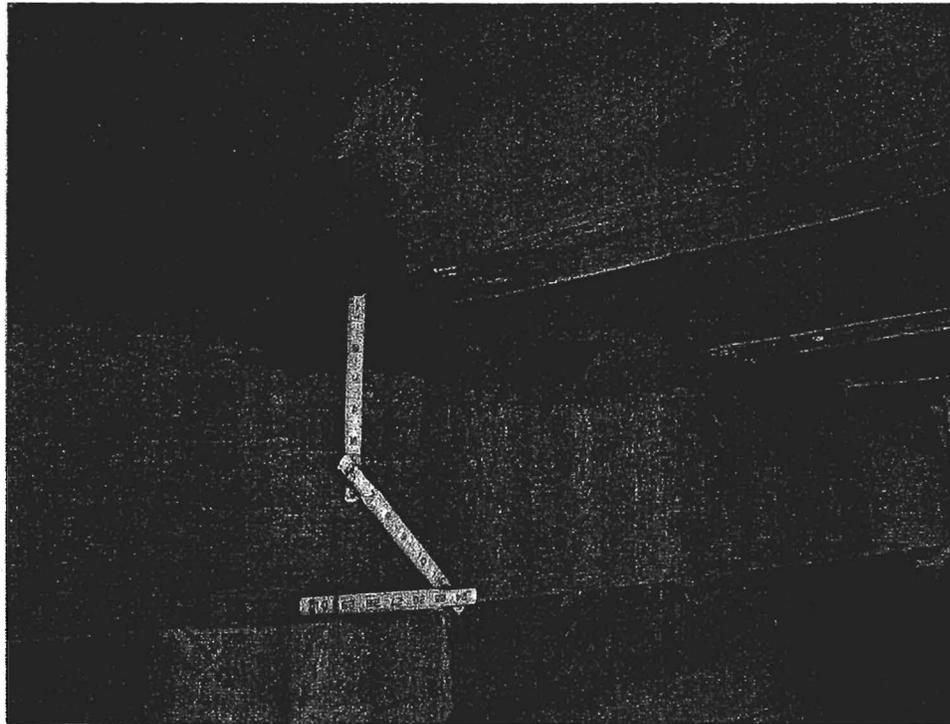


Photo 7 – Decay in the West Abutment Cap and Beam 5.

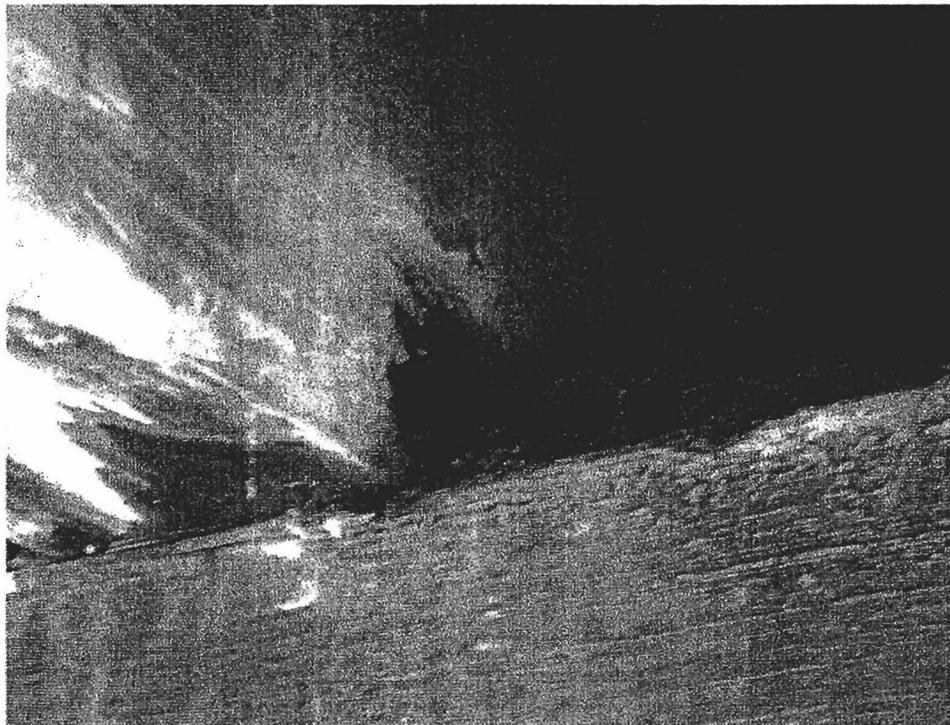


Photo 8 – Decay in Beam 4 at the East Abutment.

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Photo 9 – Decayed Sheeting in the Southeast Wingwall.



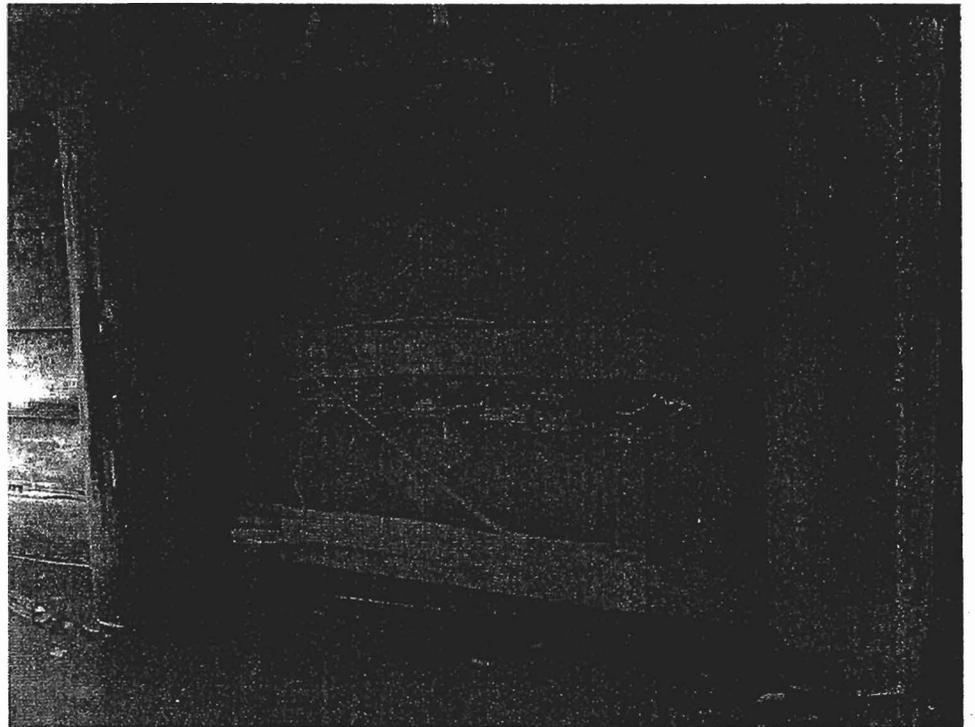
Photo 10 – Failed Sheeting in the Northeast Wingwall.

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*Photo 11 (left) – Termite Infestation
of Inner Pile at the Southwest
Wingwall.*

*Photo 12 (below) – Decayed Sheeting
at the East Abutment.*



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Photo 13 (left) – Decay in Pile 3 at the West Abutment.

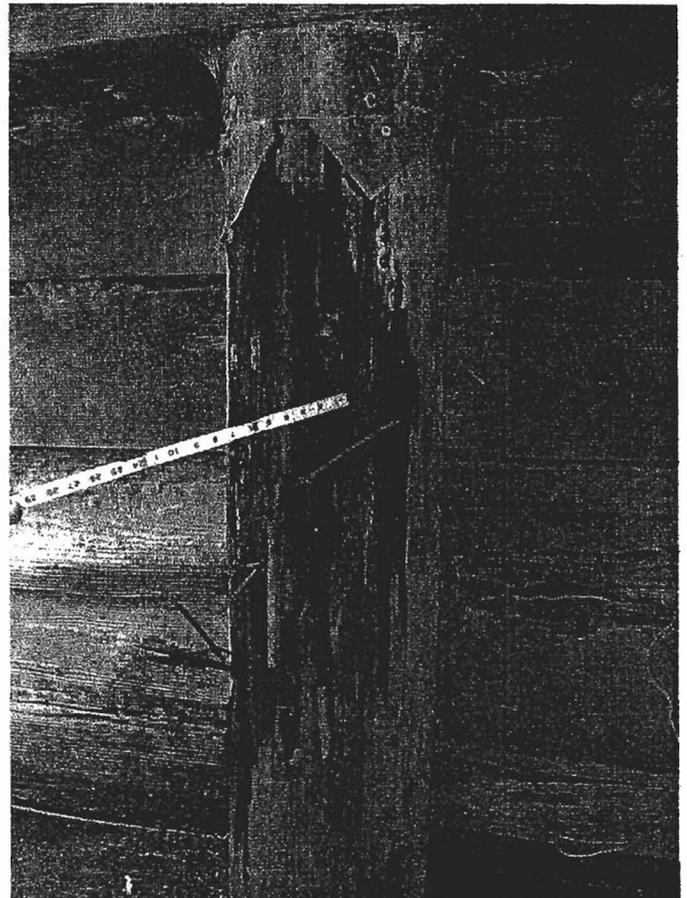


Photo 14 (right) – Decay in Pile 1 at the East Abutment.

USDA FOREST SERVICE

2004 USFS STRUCTURAL CONDITION INSPECTION REPORT

Forest: Apalachicola

Bridge No.: 115-02.3 Inspection Crew: MG/CF Date: 2/20/2004

Name: Route 115 Over River Styx Branch

Bridge Type: Timber Beams And Deck Year Built: 1937

58. DECK

CONDITION
RATING

1. Wearing Surface	N/A
2. Deck	7
3. Deck Joints	7
4. Rideability	7
5. Curbs & Sidewalks	7
6. Drainage System	7
7. Cleanliness	7
8. Utilities	N/A
9. Paint	N/A
10. Bridge Railing	5

58.2- The timber running boards are soft in random areas with 1/2" pick penetrations. Minor splintering at edges of running boards.

58.10- Random timber bridge rail posts have moderate decay at top surface. One nut and bolt missing at the 3rd post from the east on the south rail. One nut and washer is missing from the 6th post from the east end of the North Rail and the 3rd post from each end of the South Rail.

Summary Condition Rating (58) **7**

58.5- The West Curb is splintered at both ends.

59. SUPERSTRUCTURE

1. Bearing Devices	N/A
2. Longitudinal Beams	4
a. Diaphragms	7
b. Bracing	N/A
3. Transverse Beams	N/A
4. Prestress Slabs	N/A
5. Trusses	N/A
a. Chords	N/A
b. Diagonals	N/A
c. Verticals	N/A
6. Paint	N/A
7. Deflection Under Load	7
8. Vibrations Under Load	7

59.2- Isolated areas on the timber beams have heavy stains. The timber beams typically have longitudinal checks up to 1/16" wide. The beams at the West Abutment typically have 1" deep decay in the bottom half of the beam at the bearing area. Typical pick penetrations into the beams at Bents 1 and 2 are 1/2" to 3/4". Beams 3, 4 and 6 are decayed at the East Abutment bearing area.

Summary Condition Rating (59) **4**

USDA FOREST SERVICE

2004 USFS STRUCTURAL CONDITION INSPECTION REPORT

Forest: Apalachicola
 Bridge No.: 115-02.3 Inspection Crew: MG/CF Date: 2/20/2004
 Name: Route 115 Over River Styx Branch
 Bridge Type: Timber Beams And Deck Year Built: 1937

60. SUBSTRUCTURE

	CONDITION RATING
<u>Abutments:</u>	
1. Bearing Seats	N/A
2. Wing Walls	3
3. Backwalls or Bulkheads	4
4. Breast wall and Caps	4
5. Weep Holes	N/A
6. Footings	N/A
7. Piles & Bracing	4
8. Erosion/ Scour	7
9. Settlement	8
<u>Piers and Bents:</u>	
10. Bearing Seats	N/A
11. Caps	6
12. Columns or Walls	N/A
13. Footings	N/A
14. Piles & Bracing	5
15. Scour / Erosion	7
16. Settlement	8
Summary Condition Rating (60)	4

60.2- The timber sheeting at each wingwall has numerous areas of severe decay with full depth pick penetrations and loss of fill. The second pile from the bridge on the Northwest Wingwall has severe rot on the bottom half up to 1 1/2" deep. The inner timber pile at the Southwest Wingwall has heavy termite infestation that has destroyed the pile.

60.3- The top 3" of the top timber sheeting board at the West Abutment is heavily decayed. The bottom 2" of the 4th board and the top 2" of the 5th board are decayed for the full length of the West Abutment. The sheeting at the East Abutment has numerous areas of severe decay with loss of fill.

60.4- The West Abutment Timber Cap is decayed up to 2 1/2" high x 4 1/2" deep at the top below Beams 2 through 8. There is moderate debris on the caps between the beams.

60.7- Timber Pile 3 at the West Abutment is decayed up to 2" deep for the full height and full circumference. Pile 1 at the East Abutment has severe decay. Piles 2 and 3 have areas of moderate decay at the waterline.

60.14- All of the timber piles at Bent 1 have areas of moderate decay with 1" pick penetrations. Pile 1 at Bent 1 has a 6" wide x full height x 1" deep area of decay on the southwest face. Piles 1 and 2 at Bent 2 have 5" high x 3" wide x 1" deep areas of decay on the south face. Pile 3 at Bent 2 has a 8" high x 2" wide x 2" deep area of decay on the south face.

61.3 & 61.4- Heavy vegetation and debris (tree stumps) in channel.

61. CHANNEL AND CHANNEL PROTECTION

1. Channel Scour/Erosion	7
2. Channel Protection	N/A
3. Vegetation	6
4. Waterway Obstruction/Drift	5
5. Normal Velocity	
<input type="checkbox"/> High <input type="checkbox"/> Med <input checked="" type="checkbox"/> Low	
Summary Condition Rating (61)	7

USDA FOREST SERVICE

2004 USFS STRUCTURAL CONDITION INSPECTION REPORT

Forest: Apalachicola

Bridge No.: 115-02.3 Inspection Crew: MG/CF Date: 2/20/2004

Name: Route 115 Over River Styx Branch

Bridge Type: Timber Beams And Deck Year Built: 1937

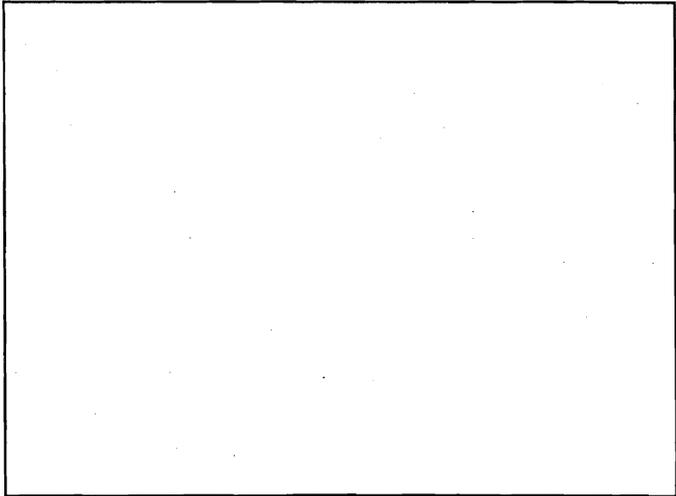
71. WATERWAY ADEQUACY

Opening	<u>Good</u>	Fair	Poor	
Alignment	<u>Good</u>	Fair	Poor	
Frequency of Overtopping	Remote	<u>Slight</u>	Occasional	Frequent

Overall Appraisal Rating (71) 7

72. APPROACH ROADWAY ALIGNMENT

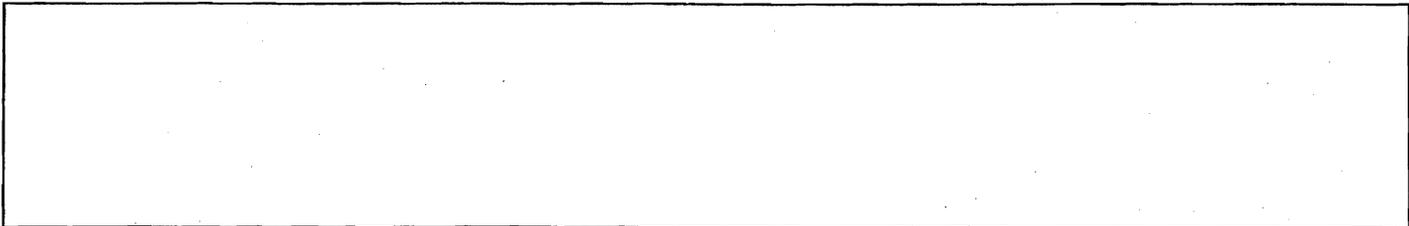
		CONDITION RATING
1.	Surfacing: <u>Sand/Clay</u>	7
2.	Shoulder Embankment	7
3.	Roadway Embankment	7
4.	Approach Slabs	N/A
5.	Approach Alignment	6
	a. Vertical	7
	b. Horizontal	6
	(incl. Sight distance)	



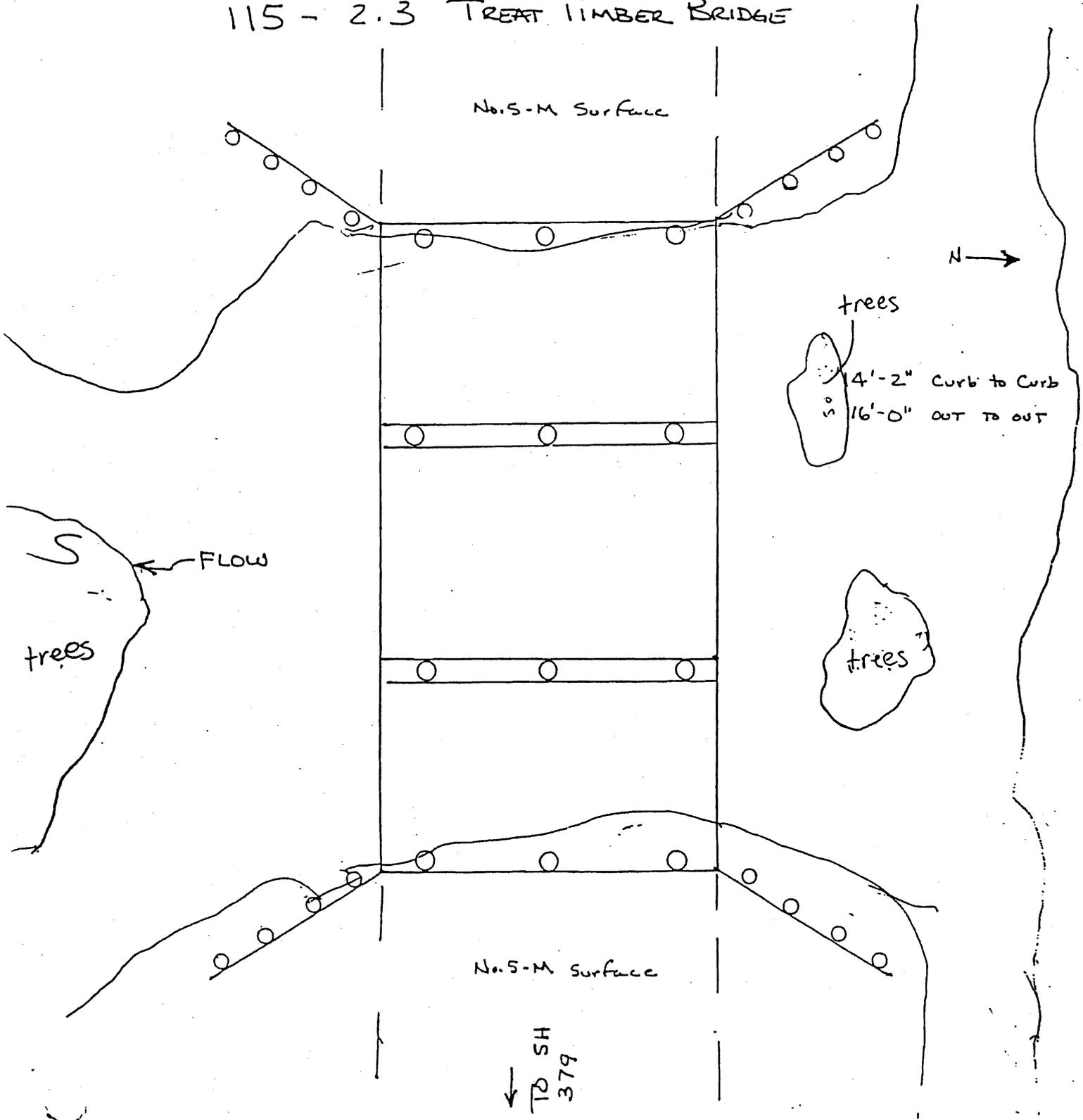
Summary Condition Rating (72) 6

36. TRAFFIC SAFETY FEATURES

		RATING
Bridge Railings:	<u>Timber rails and posts.</u>	0
Rail Transitions:	<u>None.</u>	N
Approach Guardrail:	<u>None.</u>	N
Approach Rail Ends:	<u>None.</u>	N
Signing:	<u>Hazard Object Markers and One Lane Bridge signs.</u>	N/A



115 - 2.3 TREAT TIMBER BRIDGE



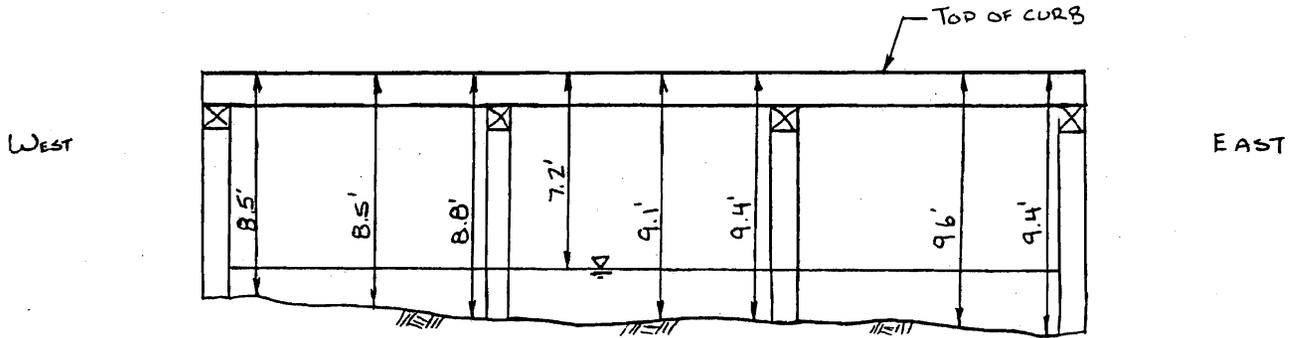


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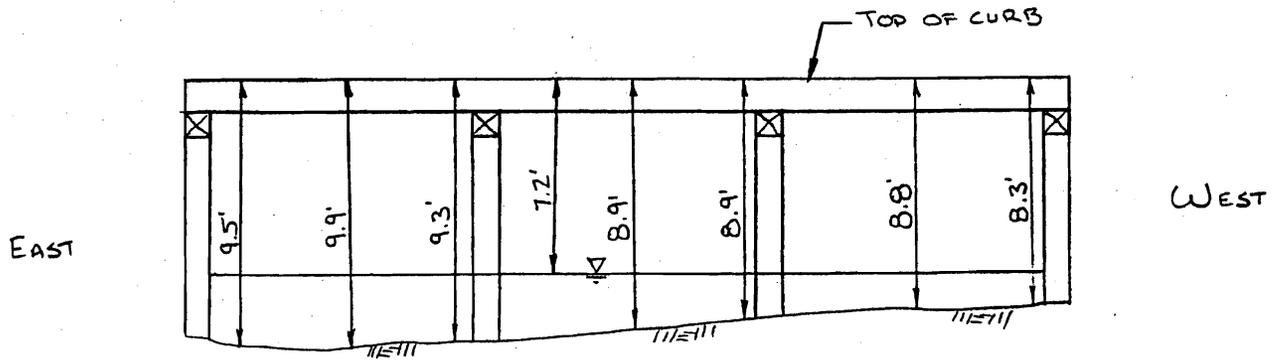
3105 LORENA AVENUE
 3220 TILLMAN DRIVE, SUITE 104
 7739 FROSCH ROAD
 211 ROANOKE STREET, SUITE 12
 387-A CORNELIUS STREET
 10 NORTH PARK DRIVE
 14502 GREENVIEW DRIVE, SUITE 424
 5001 LOUISE DRIVE, SUITE 201
 240 SCOTT AVENUE, SUITE 2
 153 E. CHESTNUT HILL RD., SUITE 102
 6525 THE CORNERS PARKWAY, SUITE 400
 1500 MARKET STREET, EAST TOWER
 3424 WILLIAM PENN HWY., SUITE 230
 4601 SIX FORKS ROAD, SUITE 200
 9211 ARBORETUM PARKWAY, SUITE 100
 1320B SEYMOUR DR.
 9205 STATE ROUTE 43, #104
 10150 HIGHLAND MANOR DR., SUITE 120
 1200 G STREET, NW, SUITE 800

BALTIMORE, MD 21230
 BENSLEM, PA 19020-2083
 CHARLOTTE, NC 28208
 CHRISTIANSBURG, VA 24073
 HILLSBOROUGH, NC 27278
 HUNT VALLEY, MD 21030-1846
 LAUREL, MD 20708
 MECHANICSBURG, PA 17055-6912
 MORGANTOWN, WV 26505
 NEWARK, DE 19713
 NORCROSS, GA 30092
 PHILADELPHIA, PA 19102
 PITTSBURGH, PA 15235
 RALEIGH, NC 27609-5210
 RICHMOND, VA 23236
 SOUTH BOSTON, VA 24592
 STREETSBORO, OH 44241
 TAMPA, FL 33610
 WASHINGTON, DC 20005

DESIGN _____ DATE _____ SUBJECT _____ J.O. _____
 CHECK MG/CF DATE 2/20/04 BRIDGE No. 115-2.3 SHEET _____ OF _____



UPSTREAM PROFILE



DOWNSTREAM PROFILE

c. Supplemental for Channel and Channel Protection

<u>Code</u>	<u>Description</u>
N	NOT APPLICABLE- bridge is not over a waterway.
9	There are no noticeable or noteworthy deficiencies, which affect the condition of the channel.
8	Banks are protected or well vegetated. River control devices, such as spur dikes and embankment protection, are not required or are in a stable condition.
7	Bank protection is in need of minor repairs. River control devices and embankment protection have little minor damage. Banks and/or channel have minor amounts of drift.
6	Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor streambed movement evident. Debris is restricting the waterway slightly.
5	Bank protection is being eroded. River control devices or embankment have major damage. Trees and brush restrict the channel.
4	Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the waterways.
3	Bank protection has failed. River control devices have been destroyed. Streambed aggradation, degradation or lateral movement has changed the waterway to now threaten the bridge or approach roadway.
2	The waterway has changed to the extent the bridge is near a state of collapse.
1	Bridge is closed because of channel failure. Corrective action may put it back in light service.
0	Bridge is closed because of channel failure. Replacement is necessary.

d. Supplemental for Approach Roadway Alignment

<u>Code</u>	<u>Description</u>
8	Speed reduction is NOT required.
6	A VERY MINOR speed reduction is required.
3	A SUBSTANTIAL speed reduction is required.