Bridge Inspection Report

SR 42

over

BOGUE HOMA CREEK

PERRY County

- INSPECTION DATE 06/29/2023
- STRUCTURE NUMBER 310004205607620
- BRIDGE ID 13920

Suffiency Rating:
45.5

Health Index:
67.01

Status:
OK

Inspected By: Team Leader Paul Purvis

Paul Purvis,

Inspection Type(s): Routine, Fracture Critical

Inspection Performed By: State

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County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
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Executive Summary

General Description

The bridge on S.R. 42 over Bogue Homa Creek was built in 1942. The total length of the bridge is 902 feet. The main span is a 150 foot steel thru truss. Main span bents 20 and 21.

The truss contains 7 bays 21.43 feet apart for the total length of 150 feet. The bays are labeled according to the plans which begin on the west end of the truss with bay 0 proceeding to bay 3 and 4 at mid-span, then continuing to 7 at the east end of the truss. The upper portion of each bay is labeled with a U while the lower portion with an L. The bearings for the truss are at L0 and L7. The highest part of the truss is at U3 and U4. Each bay contains a floor beam resting on the inner C-section of the lower cord. The floor beams are spaced at 21'-5" with stringers spanning in between floor beams to support the bridge deck. All of the members are connected with rivets except where repairs have been made with bolts. The deck contains an open joint directly over each floor beam. 4" diameter drain holes are spaced every 7' on the deck.

HORIZONTAL MEMBERS: L0-L7

VERTICAL MEMBERS: U1-L1, U2-L2, U3-L3, U4-L4, U5-L5, and U6-L6

DIAGONAL MEMBERS: U1-L2, U2-L3, U3-L4, U4-L3, U5-L4, and U6-L5

FLOOR BEAMS: FB0 – FB7

Lower Portion of Trusses

Stringers-The stringers are connected to the floor beams by way of an angle iron connected with rivets. All of the riveted connections to the floor beams were in good condition. The popped off rivet heads for Stringer 2 and 3 of Bay 1 and Stringer 3 and 4 of Bay 7 were replaced with bolts in October of 2009. The bolts appear to be tight.

No cracks were found in the stringers where the top flange is coped to connect to the floor beam. All of the outside stringers (#1 and #5) of each bay contain rust with minor section loss on the top flange at the connection with the floor beams. A small gap exists between the top flange of the stringer and the top flange of the floor beam, the gap collects debris and moisture. Overall the stringers are in good to fair condition.

Floor Beams-The floor beams are resting on top of the inner C-section of the bottom chord. The bottom lateral cross bracing is connected to the floor beams by way of a horizontal gusset plate and the floor beams are connected to the verticals by way of vertical gusset plate and angle iron.

The floor beams contain a lot of dirt and mold/fungus. It appears a lot of water runs down the side of the floor beams from the open joint in the deck. The members contain light surface rust with heavier rust on the top flanges. The riveted connections to the gusset plates at the bottom chord are all in good condition.

The floor beams at L5 right side West face and L3 right side East face contains a small area of section loss where the top flange and web meet at Stringer 5 connection. The area is 8" long by 2" wide and 1/8" deep.

The floor beams at L1, L2 and L5 right side L3 and L5 left side has section loss the width of bottom flange of floor beam where gusset plate connects and is 1/8” deep.Overall the floor beams are in good condition.

Bottom Lateral Bracing-All of the lateral bracing connecting the left truss to the right truss is on good condition. All of the riveted connections with gusset plates were in good condition.

Bottom Chord-The bottom chord is constructed of two (2) C-sections connected by batten plates with rivets to form a box section. The C-sections are spliced together with splice plates.

The connection of the bottom chord with top chord at locations L0 and L7 on the right and left trusses were in good condition. The rivets in the connection are in good condition. The inside of the connections were free of excessive buildup of debris. No pack rust was discovered.

The splices in the lower chord were all in good condition. No loose rivets were discovered. Minimal debris has accumulated on the lower batten plates at splices. Light rust is evident on the edges of the splice plates.

The areas where the two (2) C-sections are connected with batten plates are prone to collecting debris. The outer C-section of the bottom chord of the left truss at the 7th batten plate from location L0 contains an area of section loss 1/8” deep by 12” long by 1.5” high and near L2 section loss 1/16” deep by 12” long by 2” high in the web just above the lower batten plate.

The bottom chord of the right truss contains three (3) areas of localized section loss where the vertical members are attached to the chord. The locations are at Vertical 3, 5 and 6. The areas are small in size with section loss ranging from 1/8” to 1/4” deep. See notes for size and location. All batten plates on left side of truss bottom chord has debris and minor section loss. Batten plates need to be cleaned off and painted to prevent further section loss.Overall the bottom chords are in satisfactory condition with some deterioration, no deviation in member alignment was evident.

Lower Panel Points-The lower panel points where the lateral bracing is connected to the floor beams and lower chord by a horizontal gusset plate are prone to collecting debris and water. Debris and moisture collect in a gap between the vertical gusset plates and the bottom flange of the floor beams causing pack rust. All of the vertical gusset plates have section loss ranging from 1/16” to 1/8” with gusset plate thickness being 3/8”. See notes for locations and measurements on section loss in gusset plates. The areas of section loss were somewhat cleaned and spot painted with RUSTGRIP in the past. The spot painted areas are beginning to show signs of rust or the paint is flaking off in some locations.

Upper Portion of Trusses

Upper Chord-The upper chord is constructed of two (2) C-sections connected with rivets by a solid plate on top and intermittent batten plates and lattice members on bottom to form a box section. The top plate of the chord contains minor surface rust throughout the whole length. No loose rivets were discovered. No deviation in alignment or distortion in member was evident. Overall the upper chord is in good condition.

Vertical Members-All of the vertical members consist of WF sections. No deterioration was evident on the WF sections where joined up with bottom chord. Vertical members show signs of damage repair from over-height load impact. Verticals U2-L2, U3-L3, U4-L4 and U5-L5 on the left truss and U3-L3 and U5-L5 on the right truss have been replaced as evident by the bolted connections on the upper and lower ends. The members are beginning to show signs of light surface rust. Overall the vertical members are in good condition.

Diagonals-All of the diagonal bracing for the left and right truss consist of WF sections. Minor surface rust is on the members. Overall the diagonals are in good condition.

Sway Bracing-All sway bracing has been repaired in the past from over-height load impacts. All sway bracing over the West bound lane is currently bent westward ranging from 6 to 12", while the East bound lane has minor damage. The angle iron connecting sway bracing to Vertical 2 of left truss and Vertical 5 of right truss is cracked. Overall the sway bracing is in fair condition. The cracks in the angles do not appear to have grown since the last in inspection.

Top Lateral Struts-The top lateral struts are a built-up section of a single plate with 2 sets of L-sections riveted to the top and bottom of the plate. The top lateral struts contain light surface rust but appear to be in good condition.

Top Lateral "X" Bracing-The top lateral "X" bracing is a built-up section of 2 sets of L-sections connected with lattice plates by rivets. The top lateral bracing contains light surface rust but appear to be in good condition.

Upper Panel Points-The upper panel points contain a series of gusset plates connecting the upper chord, verticals, diagonals, top lateral struts and top lateral "X" bracing. All of the connections are made with rivets. Overall the connections are in good condition. No loose rivets were discovered. No out of plane distortion was evident in the gusset plates. The gusset plates on the top of the truss contain light surface rust and isolated areas of flaking rust.

Portals-The bottom member of both portals has been replaced in the past, as evident of bolted connections. Both the East and West portal show signs of damage from over-height impact. The bottom member of the East and West portal over the West bound lane is severely bent and damaged in places. The damage appears to be the same since the last inspection. Surface rust is on the top portion of portals with overall condition being fair.

Comments-The bridge has been repaired in the past due to impacts from over-height loads. The fracture critical members of the trusses are all in good to satisfactory condition with some isolated minor deterioration in the lower chord at the batten plate connections and near the verticals. The paint overall is in fair to good condition. The majority of members only show light surface rust. Rust has produced minor section loss in the vertical gusset plates at the lower panel points of the trusses. The rusted areas have been cleaned and spot painted with RUSTGRIP paint, the spot painting is not well and will need an additional application of paint. The joints need sealing and the drain holes need cleaning to prevent water from deteriorating the lower panel points. The portals will need repairing in the future if another over height impact occurs. Overall the trusses and stringer/floor beam system are in fair condition with some moderate deterioration in isolated areas.

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National Bridge Inventory

IDENTIFICATION

(1) STATE CODE 284 - Mississippi
(8) STRUCTURE NUMBER 310004205607620
(5) INV. ROUTE (ON/UNDER) 1 3 1 00042 0
(2) HIGHWAY AGENCY 06 (3) COUNTY CODE 111
(4) PLACE CODE 91242
(6) FEATURES INTERSECTED BOGUE HOMA CREEK
(7) FACILITY CARRIED SR 42
(9) LOCATION 5.1 MI W SR 15
(11) MILEPOINT 7.382 (12) BASE HIGHWAY NETWORK 1
(13A) LRS INVENTORY ROUTE 000000042P (13B) SUBROUTE NUMBER 1
(16) LATITUDE 31.35819 (17) LONGITUDE -89.027891
(98A) BORDER BRIDGE CODE
PERCENT RESPONSIBILITY (99) BORDER BRIDGE STRUCT

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE, MAIN
A) KIND OF MATERIAL/DESIGN: 3 - Steel
B) TYPE OF DESIGN/CONSTR: 10 - Truss - Thru
(44) STRUCTURE TYPE, APPROACH SPANS
A) KIND OF MATERIAL/DESIGN: 3 - Steel
B) TYPE OF DESIGN/CONSTR: 02 - Stringer/Multi-beam or Girder
(45) NUMBER OF SPANS IN MAIN 1 (46) NUMBER OF APPROACH 25
(107) DECK STRUCTURE TYPE 1 (108A) WEARING SURFACE 0
(108B) DECK MEMBRANE 0 (108C) DECK PROTECTION 0

AGE OF SERVICE

(27) YEAR BUILT 1942 (106) YEAR RECONSTRUCTED
(42) TYPE OF SERVICE ON 1 UNDER 5
(28) LANES ON 02 UNDER 00
(29) AVERAGE DAILY TRAFFIC 2600 (19) BYPASS DETOUR LENGTH 43
(30) YEAR OF AVERAGE DAILY TRAFFIC 2020
(109) AVERAGE DAILY TRUCK TRAFFIC 14

GEOMETRIC DATA

(48) LENGTH OF MAX SPAN (ft.) 149.9 (49) STRUCTURE LENGTH (ft.) 901.9
(50) CURB/SIDEWALK WIDTHS (ft.) LEFT 0 RIGHT 0
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.) 24
(52) DECK WIDTH, OUT-TO-OUT (ft.) 26.9
(32) APPROACH ROADWAY WIDTH (ft.) 29.9
(33) BRIDGE MEDIAN 0 (34) SKEW (DEG.) 0
(35) STRUCTURE FLARED 0 (10) INV RTE, MIN VERT CLEAR (ft.) 14.9
(47) TOTAL HORIZONTAL CLEARANCE (ft.) 24
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.) 14.9
(54) VERTICAL UNDER CLEARANCE (ft.) N 0
(55) LATERAL UNDER CLEARANCE RIGHT (ft.) N 0
(56) MIN LATERAL UNDER CLEARANCE (ft.) 0

PROPOSED IMPROVEMENTS

(75A) TYPE OF WORK PROPOSED 31 (75B) WORK DONE BY 1
(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.) 1077.4
(94) BRIDGE IMPROVEMENT COST ($) 3289000
(95) ROADWAY IMPROVEMENT COST ($) 329000
(96) TOTAL PROJECT COST 8993000
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2011
(114) FUTURE ADT 2600 (115) YEAR OF FUTURE ADT 2041

INSPECTIONS

(90) INSPECTION DATE 06/29/2023
(91) DESIGNATED INSPECTION FREQUENCY 12
(92) CRITICAL FEATURE INSPECTION (93) CFI DATE
A. FRACTURE CRITICAL DETAIL Y 12 06/29/2023
B. UNDERWATER INSPECTION N
C. OTHER SPECIAL N

CONDITION

(58) DECK 6
(59) SUPERSTRUCTURE 5 (60) SUBSTRUCTURE 5
(61) CHANNEL & CHANNEL PROTECTION 5 (62) CULVERT N

LOAD RATING AND POSTING

(31) DESIGN LOAD 2
(63) METHOD USED TO DETERMINE OPERATING RATING 1
(64) OPERATING RATING 42.3
(65) METHOD USED TO DETERMINE INVENTORY RATING 1
(66) INVENTORY RATING 25.3
(70) BRIDGE POSTING 1
(41) STRUCTURE OPEN/POSTED/CLOSED P

APPRAISAL

(67) STRUCTURAL EVALUATION 5
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATERWAY ADEQUACY 6
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURE
36A) BRIDGE RAILINGS: 0
36B) TRANSITIONS: 0
36C) APPROACH GUARDRAIL: 1
36D) APPROACH GUARDRAIL ENDS: 1
(113) SCOUR CRITICAL BRIDGES 5
SUFFICIENCY RATING 45.5 STATUS 2

CLASSIFICATION

(112) NBIS BRIDGE LENGTH Y
(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE 0
(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE 06
(100) STRAHNET HIGHWAY DESIGNATION 0
(101) PARALLEL STRUCTURE DESIGNATION N
(102) DIRECTION OF TRAFFIC 2
(103) TEMP STRUCTURE
(105) FEDERAL LANDS HIGHWAYS 0
(110) DESIGNATED NATIONAL NETWORK 1
(20) TOLL 3
(21) MAINTENANCE RESPONSIBILITY 01
(22) OWNER 01
(37) HISTORICAL 5

NAVIGATION DATA

(38) NAVIGATION CONTROL 0
(111) PIER OR ABUTMENT PROTECTION
(39) NAV VERT CLEARANCE (ft.) 0
(116) MIN NAVIGATION VERT CLEARANCE, VERT LIFT BRIDGE (ft.)
(40) NAV HORIZONTAL CLEARANCE (ft.) 0

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Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12 - Reinforced Concrete Deck	Ben.	24300	sq. ft.	0	24300	0	0
1090 - Exposed Rebar		10		0	10	0	0
1120 - Effloresence/Rust Staining		2430		0	2430	0	0
1130 - Cracking (RC and Other)		4860		0	4860	0	0
1190 - Abrasion/Wear (PSC/RC)		17000		0	17000	0	0
107 - Steel Open Girder/Beam	Ben.	3000	ft.	1000	2000	0	0
1000 - Corrosion		2000		0	2000	0	0
515 - Steel Protective Coating		18660	sq. ft.	0	18660	0	0
3410 - Chalking (Steel Protective Coatings)		13062		0	13062	0	0
3440 - Effectiveness (Steel Protective Coatings)		5598		0	5598	0	0
113 - Steel Stringer	Ben.	750	ft.	0	750	0	0
1000 - Corrosion		750		0	750	0	0
515 - Steel Protective Coating		3653	sq. ft.	0	2557	548	548
3410 - Chalking (Steel Protective Coatings)		2557		0	2557	0	0
3440 - Effectiveness (Steel Protective Coatings)		1096		0	0	548	548
120 - Steel Truss	Ben.	300	ft.	0	300	0	0
1000 - Corrosion		300		0	300	0	0
515 - Steel Protective Coating		8196	sq. ft.	0	5737	1229	1230
3410 - Chalking (Steel Protective Coatings)		5737		0	5737	0	0
3440 - Effectiveness (Steel Protective Coatings)		2459		0	0	1229	1230
152 - Steel Floor Beam	Ben.	231	ft.	0	231	0	0
1000 - Corrosion		231		0	231	0	0
515 - Steel Protective Coating		1838	sq. ft.	0	1287	276	275
3410 - Chalking (Steel Protective Coatings)		1287		0	1287	0	0
3440 - Effectiveness (Steel Protective Coatings)		551		0	0	276	275
162 - Steel Gusset Plate	Ben.	48	each	0	48	0	0
1000 - Corrosion		48		0	48	0	0
515 - Steel Protective Coating		960	sq. ft.	0	672	144	144
3410 - Chalking (Steel Protective Coatings)		672		0	672	0	0
3440 - Effectiveness (Steel Protective Coatings)		288		0	0	144	144
205 - Reinforced Concrete Column	Ben.	4	each	4	0	0	0
215 - Reinforced Concrete Abutment	Ben.	60	ft.	60	0	0	0
225 - Steel Pile	Ben.	92	each	90	0	2	0
1000 - Corrosion		2		0	0	2	0
515 - Steel Protective Coating		2703	sq. ft.	2697	0	6	0

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7000 - Damage		6		0	0	6	0
234 - Reinforced Concrete Pier Cap	Ben.	607	ft.	607	0	0	0
304 - Open Expansion Joint	Ben.	729	ft.	729	0	0	0
311 - Movable Bearing	Ben.	198	each	0	198	0	0
1000 - Corrosion		198		0	198	0	0
313 - Fixed Bearing	Ben.	6	each	0	6	0	0
1000 - Corrosion		6		0	6	0	0
330 - Metal Bridge Railing	Ben.	300	ft.	0	300	0	0
1000 - Corrosion		300		0	300	0	0
515 - Steel Protective Coating		774	sq. ft.	0	542	116	116
3410 - Chalking (Steel Protective Coatings)		542		0	542	0	0
3440 - Effectiveness (Steel Protective Coatings)		232		0	0	116	116
331 - Reinforced Concrete Bridge Railing	Ben.	900	ft.	900	0	0	0

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ADMINISTRATION

Structure Assessment

Structural/Functional Classification: OK

Health Index: 67.01

Suffiency Rating: 45.5

Replacement Index: 62.5

Proposed Improvements

75A Type of Work Proposed: 31 - Replacement -

94 Bridge Improvement Cost: 3289000 $

75B Work Done By: 1 - Work to be done by contract

95 Roadway Improvement Cost: 329000 $

76 Length Of Structure Improvement: 1077.4 Ft.

96 Total Project Cost: 8993000

Project Notes: 8993390.521223953

97 Year Of Improvement Cost Estimate: 2011

Original Construction

Project Number: FAS-48A(1)

Plans Available: Unknown

Station: 776+34.12

Site Conditions

Snooper Required: Yes

Site Vegetation: Unknown

Traffic control required: Lane Closure

Utility Attachments:

☐ Water ☐ Sewer ☐ Telecom

☐ Gas ☐ Electric ☐ Other

Overhead Appurtenances:

☐ Sign Truss ☐ Signal ☐ Lighting

☐ Utility Line ☐ Other

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Approach Report

NBI Info	
(36B) TRANSITIONS	0 - Does not meet acceptable standards/safety feature is required
(36C) APPROACH GUARDRAIL	1 - Meets acceptable standards
(36D) APPROACH GUARDRAIL ENDS	1 - Meets acceptable standards
(72) APPROACH ROADWAY ALIGNMENT	8 - Equal to present desirable criteria

Approach	
Appr Guardrail-rear Left Position	Good
Appr Guardrail-rear Right Position	Good
Appr Guardrail-forward Left Position	Good
Appr Guardrail-forward Right Position	Good
Appr Roadway Condition	Good
Appr Roadway Transitions	Good

Signage	
End Of Bridge Markers	Good
Vertical Clearance Signing	Good
Posting Sign - Rear	NA
Posting Sign - Forward	NA
Posting Values Correct	
Valid Posting Limits	H TRUCK LIMIT - 26 TONS HS SHORT LIMIT - 32 TONS HS LONG LIMIT - 40 TONS

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DECK

NBI Info

(58) DECK	6 - Satisfactory Condition (minor deterioration)	
(036A) BRIDGE RAIL	0 - Does not meet acceptable standards/safety feature is required	
(108A) WEARING SURFACE	0 - None	
LEFT SHOULDER WIDTH		FT.
RIGHT SHOULDER WIDTH		FT.
ASBESTOS DRAINS	U	
DECK AREA	24261	SQ FT.

Full Bridge

	Condition	Notes
Structure:	Good	Drop slabs are cracking and spalling off near top flange of steel girders.
Wearing Surface:	Good	Light wear throughout deck.
Curbs:	Good	
Median:	NA	
Sidewalk:	NA	
Joints:	Good	
Railing:	Good	
Drainage:	Fair	Most drains are clogged and need to be unclogged.
Lighting:	NA	
Utilities:	NA	
Overlay Thickness:		in

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SUPERSTRUCTURE

NBI Info

(59) SUPERSTRUCTURE 5 - Fair Condition (minor section loss)

NUMBER OF BRIDGE PINS

FRACTURE CRITICAL DETAILS D - Steel trusses

Full Bridge

CONDITION

	Condition	Notes
Girders:	Fair	Approach span steel girders have minor corrosion near bearing area and along top and bottom flanges.
Floor Beams:	Good	The floor beams are resting on top of the inner C-section of the bottom chord. The bottom lateral cross bracing is connected to the floor beams by way of a horizontal gusset plate and the floor beams are connected to the verticals by way of vertical gusset plate and angle iron. The floor beams contain a lot of dirt and mold/fungus. It appears a lot of water runs down the side of the floor beams from the open joint in the deck. The members contain light surface rust with heavier rust on the top flanges. The riveted connections to the gusset plates at the bottom chord are all in good condition. The floor beams at L5 right side West face and L3 right side East face contains a small area of section loss where the top flange and web meet at Stringer 5 connection. The area is 8” long by 2” wide and 1/8” deep. The floor beams at L1, L2 and L5 right side L3 and L5 left side has section loss the width of bottom flange of floor beam where gusset plate connects and is 1/8” deep.
Stringers:	Good	The stringers are connected to the floor beams by way of an angle iron connected with rivets. All of the riveted connections to the floor beams were in good condition. The popped off rivet heads for Stringer 2 and 3 of Bay 1 and Stringer 3 and 4 of Bay 7 were replaced with bolts in October of 2009. The bolts appear to be tight. No cracks were found in the stringers where the top flange is coped to connect to the floor beam. All of the outside stringers (#1 and #5) of each bay contain rust with minor section loss on the top flange at the connection with the floor beams. A small gap exists between the top flange of the stringer and the top flange of the floor beam, the gap collects debris and moisture.
Steel Risers:	NA	
Bearings:	Fair	Minor to moderate corrosion.
Hinge Pins/Hangers:	NA	
Diaphragms/Cross Frames:	Good	
Paint:	Fair	
Collision Damage:	Fair	Portal sway bracing has damage from over height loads.
Deflection/Vibration:	Good	
Cap/Girder Debris:	Good	

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Navigation Lighting: NA

TRUSS

	Condition	Notes
End Posts:	Good	The end post are in good condition with minor surface rust.
Portals:	Fair	The bottom member of both portals has been replaced in the past, as evident of bolted connections. Both the East and west portals show signs of damage from over-height loads. The bottom members of both portals over the Westbound lane is severely bent and torn in places. The damage appears to be the same since the last inspection. Surface rust is evident on the top portion of portals with overall condition being fair.
Chords-top:	Good	The upper chord is constructed of two (2) C-sections connected with rivets by a solid plate on top and intermittent batten plates and lattice members on bottom to form a box section. The top plate of the chord contains minor surface rust throughout the whole length. No loose rivets were discovered. No deviation in alignment or distortion in member was evident. The upper panel points contain a series of gusset plates connecting the upper chord, verticals, diagonals, top lateral struts and top lateral “X” bracing. All of the connections are made with rivets. Overall the connections are in good condition. No loose rivets were discovered. No out of plane distortion was evident in the gusset plates. The gusset plates on the top of the truss contain light surface rust and isolated areas of flaking rust. Overall the upper chord is in good condition
Chords-bottom:	Fair	The areas where the two (2) C-sections are connected with batten plates are prone to collecting debris. The outer C-section of the bottom chord of the left truss at the 7th batten plate from location L0 contains an area of section loss 1/8” deep by 12” long by 1.5” high and near L2 section loss 1/16” deep by 12” long by 2” high on the web just above the lower batten plate. The bottom chord of the right truss contains three (3) areas of localized section loss where the vertical members are attached to the chord. The locations are at Verticals 3, 5 and 6. The areas are small in size with section loss ranging from 1/8” to 1/4” deep. See notes for size and location. All batten plates on left side of truss bottom chord has debris and minor section loss. Batten plates need to be cleaned off and painted to prevent further section loss. Overall the bottom chords are in satisfactory condition with some deterioration, no deviation in member alignment was evident. The lower panel points where the lateral bracing is connected to the floor beams and lower chord by a horizontal gusset plate are prone to collecting debris and water. Debris and moisture collect in a gap between the vertical gusset plates and the bottom flange of the floor beams causing pack rust. All of the vertical gusset plates have section loss ranging from 1/16” to 1/8” with gusset plate thickness being 3/8”. See notes for locations and measurements on section loss on gusset plates. The areas of section loss need to be cleaned and spot painted with RUSTGRIP paint. Previous spot painted areas are beginning to show signs of rust or the paint is flaking off in some locations.
Verticals:	Good	All of the vertical members consist of WF sections. No deterioration was

		evident on the WF sections where connected with bottom chord. Vertical members show signs of damage repair from over height load impact, with verticals bent inward slightly. Verticals U2-L2, U3-L3, U4-L4, and U5-L5 on the left truss and U3-L3 and U5-L5 on the right truss have been replaced as evident by the bolted connections on the upper and lower ends. The members are beginning to show signs of light surface rust. Overall the vertical members are in good condition.
Diagonals:	Good	All of the diagonal bracing for the left and right truss consist of WF sections. Minor surface rust is on the members. Overall the diagonals are in good condition.
Sway Bracing:	Fair	All sway bracing has been repaired in the past from over height load impacts. All sway bracing over the Westbound lane is currently bent Westward ranging from 6 to 12”, while the Eastbound lane has minor damage. The angle iron connecting sway bracing to Vertical 2 of left truss and Vertical 5 of right truss is cracked. Overall the sway bracing is in fair condition. The cracks in the angles do not appear to have grown since the last in inspection.
Top Lateral Struts:	Good	The top lateral struts are a built-up section of a single plate with 2-sets of L-sections riveted to the top and bottom of the plate. The top lateral struts contain light surface rust but appear to be in good condition.
Top Lateral X Bracing:	Good	The top lateral “X” bracing is a built-up section of 2 sets of L-sections connected with lattice plates by rivets. The top lateral bracing contains light surface rust but are in good condition.
Bottom Laterals:	Good	All of the lateral bracing connecting the left truss to the right truss is on good condition. All of the riveted connections with gusset plates were in good condition.

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

SUBSTRUCTURE

NBI Info

(60) SUBSTRUCTURE 5 - Fair Condition (minor section loss)

(111) PIER PROTECTION

Abutments

	Condition	Notes
Backwall:	NA	
Bulkhead:	NA	
Wing Walls:	Good	
Cap:	Good	
Footings:	NA	
Piles:		Not visible. East abutment piles have been encased.
Embankment:	Good	
Slope Paving:	NA	

Full Bridge

	Condition	Notes
Cap:	Good	
Risers:	NA	
Columns/Piles:	Good	Spalls in some of the encasement around the steel piles. Some steel piles are completely exposed showing signs of moderate corrosion issues.
Footings:		Not visible
Web Walls:	Good	
Bracing:	NA	
Pier Protection-Navigation:	NA	
Pier Protection Lighting:	NA	

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Hydraulics Report

NBI Info

(61) CHANNEL & CHANNEL PROTECTION	5 - Bank eroded.. major damage
(113) SCOUR CRITICAL BRIDGES	5 - Scour within limits of footing or piles
(71) WATERWAY ADEQUACY	6 - Occasional Overtopping of Approaches - Insignificant Delays

Hydraulics

DESIGN MAIN CHANNEL SPAN		CURRENT MAIN CHANNEL SPAN
BANK CONDITION-UPSTREAM	Good	
BANK CONDITION-SITE	Good	Light
BANK CONDITION-DOWNSTREAM	Good	
SCOUR COUNTERMEASURES	Good	Rip rap as been added to West abutment due to bank erosion.

☐ SPURS	☐ BENDWAY WEIRS	☐ DROP STRUCTURES	☐ HARDPOINTS
☐ JACKS	☐ LONGITUDINAL DIKES	☐ GUIDE BANKS	☑ RIPRAP
☐ GABIONS	☐ CRUTCH BENTS/UNDERPINNING	☐ CROSS BRACING	☐ SHEET PILE/COFFERDAM
☐ DEBRIS DEFLECTORS	☐ VISUAL SCOUR MONITORING	☐ FIXED SCOUR MONITORING INSTRUMENTATION	

STREAMBED MATERIAL

☐ COBBLE/BOULDER	☑ GRAVEL	☑ SAND	☐ SILT	☐ SILT-CLAY

UNKNOWN FOUNDATION

SCOUR EVALUATION DONE	S
USGS GAGING STATION	None
OBSERVED STREAM VELOCITY	Medium
STREAMBED AGGRADATION EVIDENT	None
STREAMBED DEGRADATION EVIDENT	None
ABUTMENTS ENCROACH INTO CHANNEL	No
INDICATIONS OF SCOUR	No
EVIDENCE OF ABUTMENT UNDERMINING	No
EVIDENCE OF PIER UNDERMINING	No
INDICATIONS THAT FLOODWATERS OVERTOP BRIDGE	No
INDICATIONS THAT FLOODWATERS OVERTOP APPROACHES	No

SCOUR NOTES

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 1 Approach

Description West approach

Pictures

PHOTO 2 Approach

Description West end posting

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

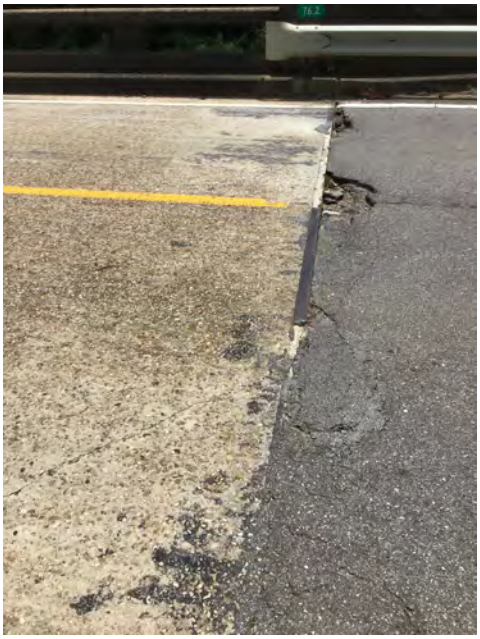


PHOTO 3 Deck

Description West end joint

Pictures

PHOTO 4 Deck

Description Deck cracking

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 5 Truss

Description L0 left truss

Pictures

PHOTO 6 Truss

Description L1 left truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 7 Truss

Description L2 left truss

Pictures

PHOTO 8 Truss

Description L3 left truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 9 Truss

Description Outside L3 left truss

Pictures

PHOTO 10 Truss

Description L4 left truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 11 Truss

Description L5 left truss

Pictures

PHOTO 12 Truss

Description L6 left truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 13 Truss

Description L7 left truss

Pictures

PHOTO 14 Deck

Description East end joint

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 15 Truss

Description L7 right truss

Pictures

PHOTO 16 Truss

Description L6 right truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 17 Truss

Description L5 right truss

Pictures

PHOTO 18 Truss

Description L4 right truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 19 Truss

Description L3 right truss

Pictures

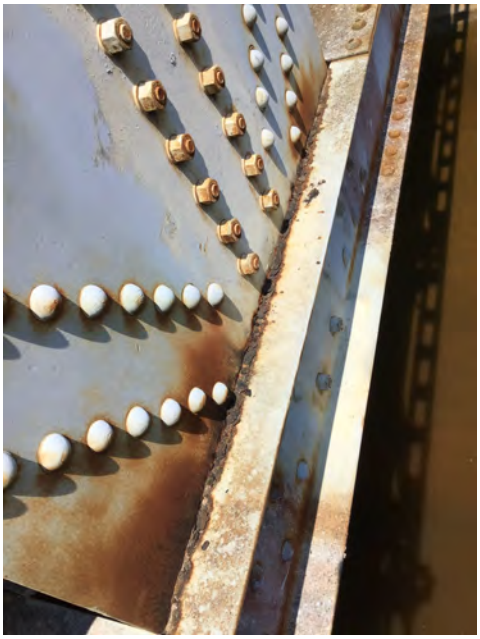


PHOTO 20 Truss

Description Outside L3 right truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 21 Truss

Description L2 right truss

Pictures

PHOTO 22 Truss

Description L1 right truss

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 23 Truss

Description L0 right truss

Pictures

PHOTO 24 Channel

Description Downstream

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 25 Channel

Description Upstream

Pictures

PHOTO 26 Truss

Description East portal

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 27 Deck

Description Typical intermediate joints.

Pictures

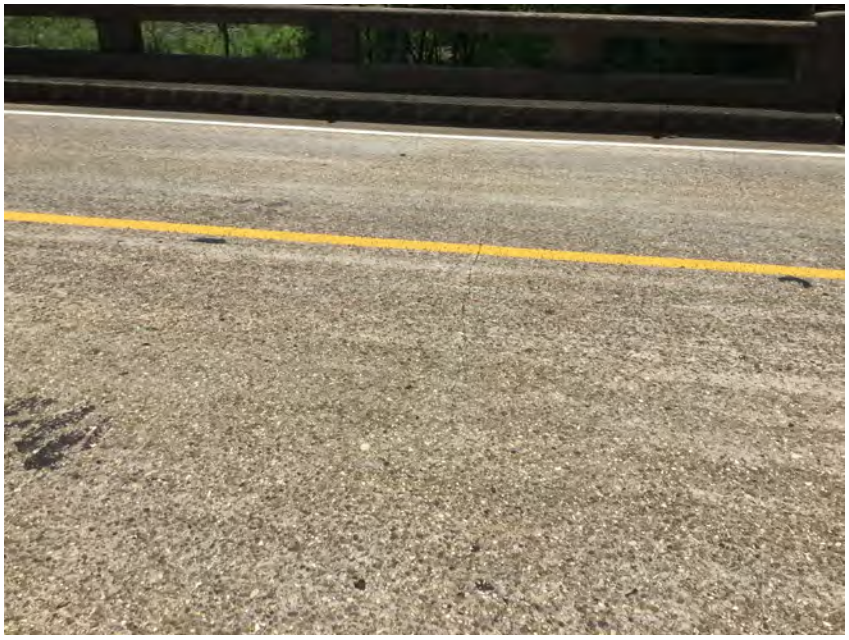


PHOTO 28 Deck

Description Typical cracks in deck

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 29 Deck

Description Typical wear in riding surface

Pictures

PHOTO 30 Approach

Description Left side looking West

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 31 Substructure

Description East abutment

Pictures

PHOTO 32 Superstructure

Description Typical bearings

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 33 Substructure, Channel

Description West bank

Pictures

PHOTO 34 Approach

Description Approach looking west.

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 35 Approach

Description Right side looking East.

Pictures

PHOTO 36 Superstructure

Description Typical girder ends.

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 37 Superstructure

Description Typical paint loosing its effectiveness on steel girders.

Pictures

PHOTO 38 Channel

Description East embankment.

County:	PERRY	Structure Number:	310004205607620	Facility Carried:	SR 42
Inspection Date:	06/29/2023	Bridge ID:	13920	Feature Intersected:	BOGUE HOMA CREEK

Pictures

PHOTO 39 Approach

Description West portal approach looking East.

FRACTURE CRITICAL BRIDGE INSPECTION PROCEDURE

Effective Date: 02/18/2009

Structure #	310004205607620	Structure Key	13920	County	PERRY				
Feature Int.	BOGUE HOMA CREEK	Location	5.1 MI W SR 15						
Facility	SR 42	Mile Post	76.2	Year Built	1942	ADT	3300	Year ADT	2006
Fracture Critical Member (s)	BOT. TRUSS CHORD; ALL VERT.; ALL DIAG; ALL FLOORBEAMS								
Inspection Frequency	12	Special Equipment Required	☐ Yes	☐ No					

Date Created

Inspection Procedure

Purpose:

Identify the location of Fracture Critical Members (FCM) and describe the required inspection procedure.

Definition:

A FCM is a steel member in tension, or with a tension element, whose failure would probably cause a portion of or the entire bridge to collapse.

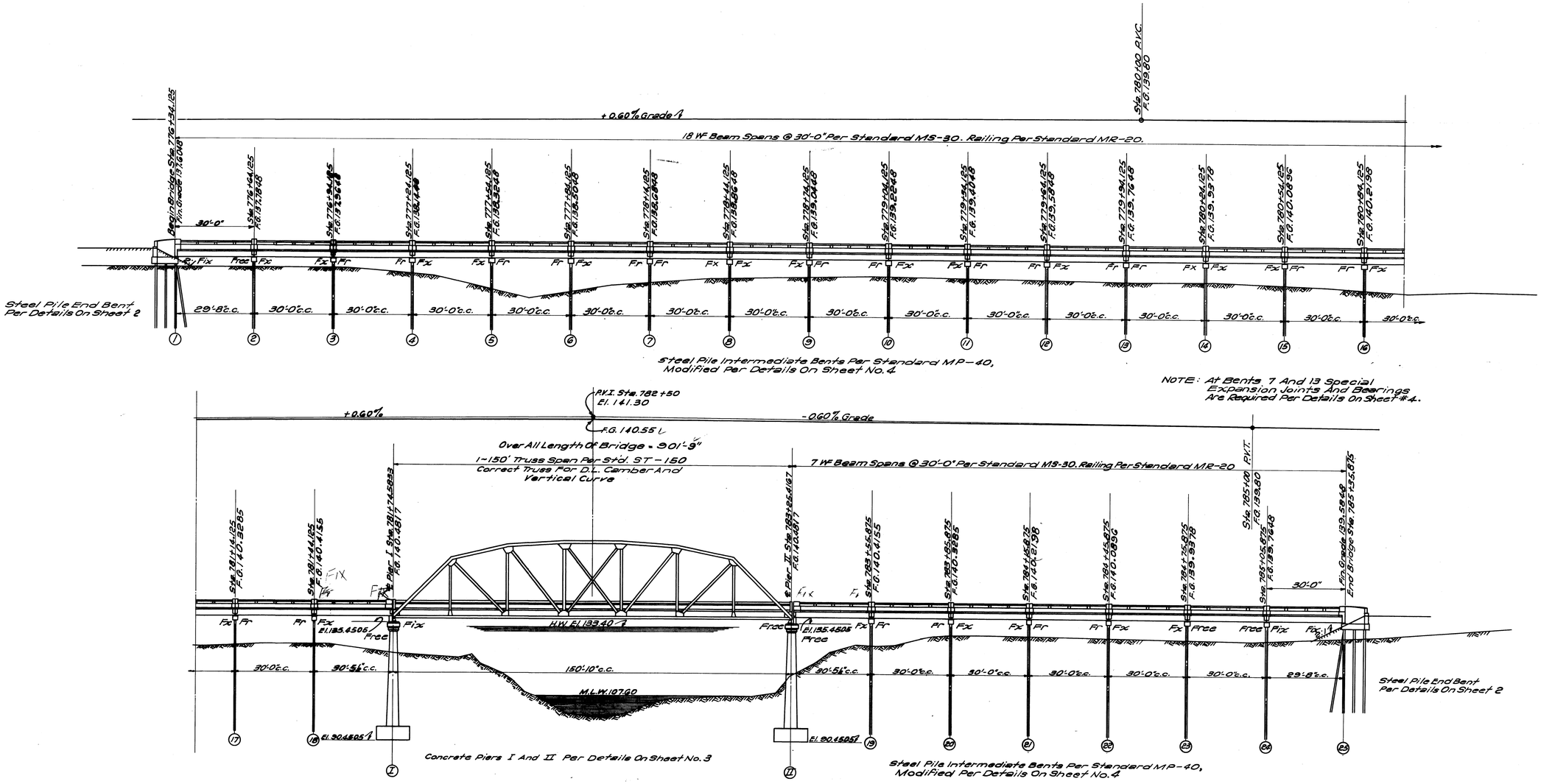
Procedure:

1) All FCM shall receive a very detailed, close visual “hands-on” inspection of all surface areas. To assist the inspector in identifying FCM, these designated members are color highlighted on the contract plan drawings previously provided to the inspector. As necessary, surface areas should be properly cleaned to allow a thorough inspection. Additional lighting and magnification may be required. Special attention shall be given to areas vulnerable to corrosion, sudden change in cross-section such as cover plates, field welds, and any discontinuities resulting in stress risers. Note any evidence of corrosion, cracks, defects, warping, or damage. Check for any out-of-plane bending that could result in fatigue cracks and prying action that may occur at bolted/riveted connection plates. Take digital photographs as necessary to aid in documenting the deficiencies.

2) In the event that a crack in the FCM is suspected an in-depth inspection such as NDT (dye penetrant or UT) shall be used to confirm the existence and size of the crack. Particular care should be taken to document the size and length of any crack.

3) Upon discovery of a crack, or defect, in a FCM which could threaten the structural stability of the bridge, the BITC (or Team Leader) shall take immediate action to ensure public safety by closing the bridge to all traffic and subsequently follow the critical findings procedures prescribed in MDOT’s ***Bridge Safety Inspection Policy and Procedure Manual.***

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	MISS.	FAS48A(1)	19	I	IV



ELEVATION WITH PROFILE ON ℄ ROADWAY

Scale: 1" = 20'-0"

ESTIMATED QUANTITIES

Item / Location	Class "B" Concrete Cu. Yds.	Class "C" Concrete Cu. Yds.	Reinforcing Steel Lbs.	Structural Steel Lbs.	Steel Superstructure Lump Sum	Bridge Railing Lin. Ft.	Bridge Excavation Cu. Yds.	Steel Piling Lin. Ft.	Test Pile Units	Loading Tests Units
Approach Spans	541.73		129,620	225,900		1500.0				
150' Truss Span	102.20		28,100		1 Unit					
End Bents	33.42		4,460					900		
Int. Bents	109.15		10,580					3,960	6	3
Piers I & II		236.0	18,300				600			
Totals	788.50	236.0	185,060	225,900	1 Unit	1500.0	600	4,860	6	3

GENERAL NOTES:

1. Specifications: Mississippi State Highway Department.
2. Test Piles Shall Be Driven To A Minimum Bearing Capacity Of 25 Tons And A Minimum Penetration Of 45 Feet. Test Piles Shall Be Driven As Permanent Piles In Bents 1, 7, 13, 17, 20 And 25. Payment Will Be Made As Test Pile Only. Test Pile Data And Recommended Pile Lengths Shall Be Submitted To The Bridge Engineer Before Piles Are Ordered.
3. Steel Sheet Piling Is Required At Piers I & II, And Shall Be 8" Minimum Thickness, Which Shall Be Cut Off At Low Water Or Removed.
4. Expansion Joint Fillers Shall Be Cork Or Rubber.
5. Forms For All Exposed Concrete Surfaces Shall Be Lined With Plywood.
6. Work For Which No Pay Items Are Shown In The Proposal Will Not Be Paid For Directly And The Cost Thereof Will Be Considered As Included In The Prices And Payments For Bid Items.
7. Embankments At Bridge Ends Shall Be Constructed Before Piles For End Bents Are Driven.
8. Piles For Bents 16 And 18 Shall Not Be Driven Until After Piers I & II Are Constructed.
9. All Permanent Steel Piles Shall Be Driven To A Minimum Bearing Capacity Of 22 Tons, However Refusal Will Be Required In The Event Test Piles Indicate Such Can Be Obtained Within Reasonable Additional Penetration.

Standard Plans Required: MP-40, MR-20, MS-30, MF-20, ST-150.

DATE	BY	REVISIONS
6-24-41	J.T.G.	E.XP.

MISSISSIPPI STATE HIGHWAY DEPARTMENT

BRIDGE AT STA. 776+34.125

OVER BOGUE HOMA CREEK

F.A.S. 48 A (1)

PERRY COUNTY

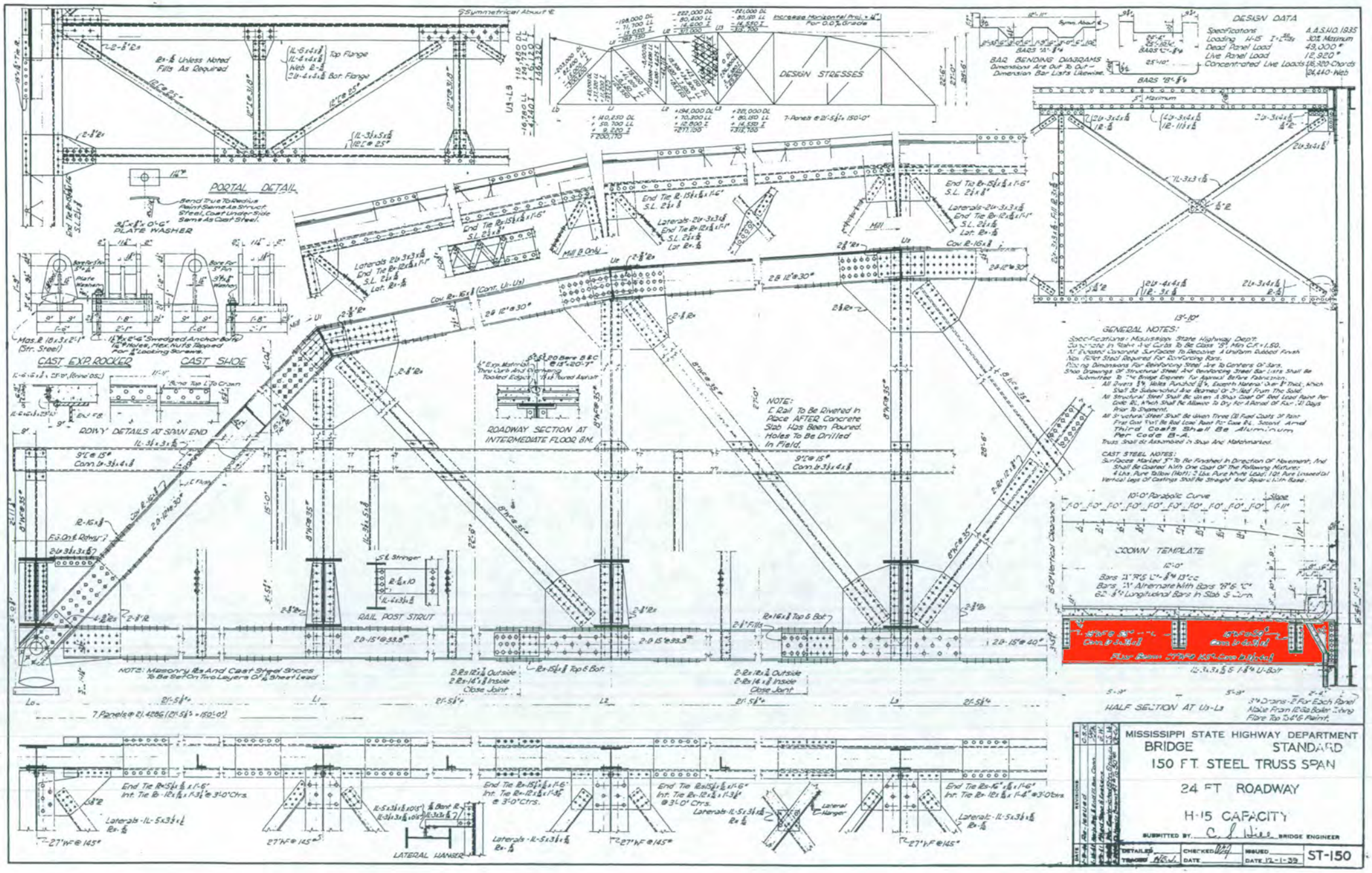
SUBMITTED BY C. S. Hill BRIDGE ENGINEER

DETAILED E.W.	CHECKED [illegible]	ISSUED	SHEET NUMBER
TRACED J.O.C.	DATE 5-13-41	DATE 5-20-41	1 OF 4

13920

DIETZGEN IMPERIAL No. 139

45' ± Assumed Pile Length


PORTAL DETAIL
CAST EXP. ROCKER
CAST SHOE
ROADWAY DETAILS AT SPAN END
ROADWAY SECTION AT INTERMEDIATE FLOOR BM.
RAIL POST STRUT
DESIGN STRESSES
DESIGN DATA
Specifications A.A.S.H.O. 1935
Loading H-15 Impact 30% Maximum
Dead Panel Load 49,000 #
Live Panel Load 12,920 #
Concentrated Live Loads 16,320 Chords 24,440 Web
BAR BENDING DIAGRAMS
GENERAL NOTES:
CAST STEEL NOTES:
HALF SECTION AT U3-L3
MISSISSIPPI STATE HIGHWAY DEPARTMENT
BRIDGE STANDARD
150 FT. STEEL TRUSS SPAN
24 FT ROADWAY
H-15 CAPACITY
SUBMITTED BY C. H. Wise BRIDGE ENGINEER
DETAILED
TRACED N.C.J.
CHECKED
DATE
ISSUED
DATE 12-1-39
ST-150

SR 42 76.2 13920 FRACTURE CRITICAL MEMBERS

HORIZONTAL MEMBERS

L0-L7

VERTICAL MEMBERS

U1-L1, U2-L2, U3-L3, U4-L4, U5-L5, U6-L6.

DIAGONAL MEMBERS

U1-L2, U2-L3. U3-L4, U4-L3, U5-L4, U6-L5.

FLOORBEAMS

FB0-FB7

FRACTURE CRITICAL INSPECTION FOR TRUSS (FCM)

STRUCTURE 310004205607620

S.R 42 #76.2 Bogue Homa Creek
Perry County

Date of Inspection: June 29, 2023

Inspection Team Summary

Inspection Team

Tommy Keyes, Kevin Henry, Jeremy Craft, James Reeves, Terry Sanders and Paul Purvis

General Description

The bridge on S.R. 42 over Bogue Homa Creek was built in 1942. The total length of the bridge is 902 feet. The main span is a 150 foot steel thru truss.

The truss contains 7 bays 21.43 feet apart for the total length of 150 feet. The bays are labeled according to the plans which begin on the West end of the truss with Bay 0 proceeding to Bay 3 and 4 at mid-span, then continuing to 7 at the East end of the truss. The upper portion of each bay is labeled with a U while the lower portion with an L. The bearings for the truss are at L0 and L7. The highest part of the truss is at U3 and U4. Each bay contains a floor beam resting on the inner C-section of the lower cord, stringers span between floor beams to support the bridge deck. The members are connected with rivets. The deck contains an open joint directly over each floor beam. 4" diameter drain holes are spaced every 7' on the deck.

Inspection Procedure

The routine inspection was conducted on June 29, 2023. An under bridge inspection truck (UB 60) was utilized for the inspection of the bottom cords, floor beams, stringers and upper portions of the truss while an aerial bucket truck was utilized on the verticals, sway bracing, diagonals and portals. The fracture critical members are as follows:

HORIZONTAL MEMBERS
L0-L7

VERTICAL MEMBERS
U1-L1, U2-L2, U3-L3, U4-L4, U5-L5, and U6-L6

DIAGONAL MEMBERS
U1-L2, U2-L3, U3-L4, U4-L3, U5-L4, and U6-L5

FLOOR BEAMS
FB0 – FB7

Lower Portion of Trusses

Stringers

The stringers are connected to the floor beams by way of an angle iron connected with rivets. All of the riveted connections to the floor beams were in good condition. The popped off rivet heads for Stringer 2 and 3 of Bay 1 and Stringer 3 and 4 of Bay 7 were replaced with bolts in October of 2009. The bolts appear to be tight.

No cracks were found in the stringers where the top flange is coped to connect to the floor beam. All of the outside stringers (#1 and #5) of each bay contain rust with minor section loss on the top flange at the connection with the floor beams. A small gap exists between the top flange of the stringer and the top flange of the floor beam, the gap collects debris and moisture.

Overall the stringers are in good to fair condition.

Floor Beams

The floor beams are resting on top of the inner C-section of the bottom chord. The bottom lateral cross bracing is connected to the floor beams by way of a horizontal gusset plate and the floor beams are connected to the verticals by way of vertical gusset plate and angle iron.

The floor beams contain a lot of dirt and mold/fungus. It appears a lot of water runs down the side of the floor beams from the open joint in the deck. The members contain light surface rust with heavier rust on the top flanges. The riveted connections to the gusset plates at the bottom chord are all in good condition.

The floor beams at L5 right side West face and L3 right side East face contains a small area of section loss where the top flange and web meet at Stringer 5 connection. The area is 8” long by 2” wide and 1/8” deep.

The floor beams at L1, L2 and L5 right side L3 and L5 left side has section loss the width of bottom flange of floor beam where gusset plate connects and is 1/8” deep.

Overall the floor beams are in good condition.

Bottom Lateral Bracing

All of the lateral bracing connecting the left truss to the right truss is on good condition. All of the riveted connections with gusset plates were in good condition.

Bottom Chord

The bottom chord is constructed of two (2) C-sections connected by batten plates with rivets to form a box section. The C-sections are spliced together with splice plates.

The connection of the bottom chord with top chord at locations L0 and L7 on the right and left trusses were in good condition. The rivets in the connection are in good condition. The inside of the connections were free of excessive buildup of debris. No pack rust was discovered.

The splices in the lower chord were all in good condition. No loose rivets were discovered. Minimal debris has accumulated on the lower batten plates at splices. Light rust is evident on the edges of the splice plates.

The areas where the two (2) C-sections are connected with batten plates are prone to collecting debris. The outer C-section of the bottom chord of the left truss at the 7th batten plate from location L0 contains an area of section loss 1/8" deep by 12" long by 1.5" high and near L2 section loss 1/16" deep by 12" long by 2" high in the web just above the lower batten plate.

The bottom chord of the right truss contains three (3) areas of localized section loss where the vertical members are attached to the chord. The locations are at Vertical 3, 5 and 6. The areas are small in size with section loss ranging from 1/8" to 1/4" deep. See notes for size and location. All batten plates on left side of truss bottom chord has debris and minor section loss. Batten plates need to be cleaned off and painted to prevent further section loss.

Overall the bottom chords are in satisfactory condition with some deterioration, no deviation in member alignment was evident.

Lower Panel Points

The lower panel points where the lateral bracing is connected to the floor beams and lower chord by a horizontal gusset plate are prone to collecting debris and water. Debris and moisture collect in a gap between the vertical gusset plates and the bottom flange of the floor beams causing pack rust. All of the vertical gusset plates have section loss ranging from 1/16" to 1/8" with gusset plate thickness being 3/8". See notes for locations and measurements on section loss in gusset plates. The areas of section loss were somewhat cleaned and spot painted with RUSTGRIP paint since the last inspection. The spot painted areas are beginning to show signs of rust or the paint is flaking off in some locations.

Left Truss Panel Point at L3

Bearings

All of the bearings at locations 0 and 7 on the left and right trusses are in good condition. The caps were fairly clean and did not contain any debris to promote deterioration.

Drain Pipes

The drain pipes are in good condition. The ends of the drains show minimal deterioration. All deck drain holes are clogged up with debris. The drains were constructed with slight elbow bend from the soffit to the bottom chord. The bends in the pipe cause debris to build up easily and also make cleaning difficult. All drain holes needs to be cleaned out to allow proper drainage.

Upper Portion of Trusses

Upper Chord

The upper chord is constructed of two (2) C-sections connected with rivets by a solid plate on top and intermittent batten plates and lattice members on bottom to form a box section. The top plate of the chord contains minor surface rust throughout the whole length. No loose rivets were discovered. No deviation in alignment or distortion in member was evident. Overall the upper chord is in good condition.

Top of Truss Upper Chord Viewing West

Vertical Members

All of the vertical members consist of WF sections. No deterioration was evident on the WF sections where joined up with bottom chord. Vertical members show signs of damage repair from over-height load impact. Verticals U2-L2, U3-L3, U4-L4 and U5-L5 on the left truss and U3-L3 and U5-L5 on the right truss have been replaced as evident by the bolted connections on the upper and lower ends. The members are beginning to show signs of light surface rust. Overall the vertical members are in good condition.

Diagonals

All of the diagonal bracing for the left and right truss consist of WF sections. Minor surface rust is on the members. Overall the diagonals are in good condition.

Sway Bracing

All sway bracing has been repaired in the past from over-height load impacts. All sway bracing over the West bound lane is currently bent westward ranging from 6 to 12”, while the East bound lane has minor damage. The angle iron connecting sway bracing to Vertical 2 of left truss and Vertical 5 of right truss is cracked. Overall the sway bracing is in fair condition. The cracks in the angles do not appear to have grown since the last inspection.

Top Lateral Struts

The top lateral struts are a built-up section of a single plate with 2 sets of L-sections riveted to the top and bottom of the plate. The top lateral struts contain light surface rust but appear to be in good condition.

Top Lateral “X” Bracing

The top lateral “X” bracing is a built-up section of 2 sets of L-sections connected with lattice plates by rivets. The top lateral bracing contains light surface rust but appear to be in good condition.

Upper Panel Points

The upper panel points contain a series of gusset plates connecting the upper chord, verticals, diagonals, top lateral struts and top lateral “X” bracing. All of the connections are made with rivets. Overall the connections are in good condition. No loose rivets were discovered. No out of plane distortion was evident in the gusset plates. The gusset plates on the top of the truss contain light surface rust and isolated areas of flaking rust.

Portals

The bottom member of both portals has been replaced in the past, as evident of bolted connections. Both the East and West portal show signs of damage from over-height impact. The bottom member of the East and West portal over the West bound lane is severely bent and damaged in places. The damage appears to be the same since the last inspection. Surface rust is on the top portion of portals with overall condition being fair.

West Portal

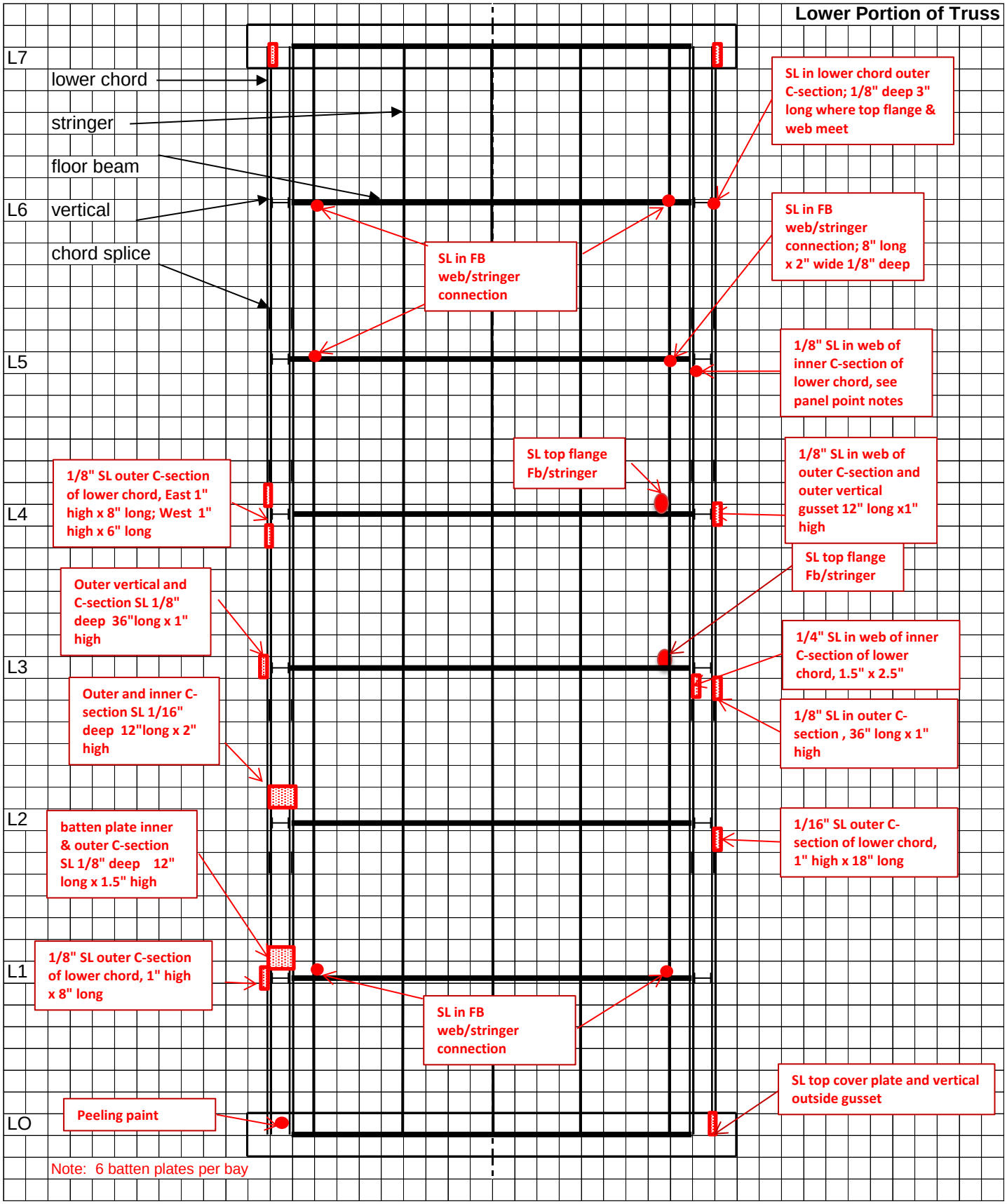
East Portal

Comments

The vertical clearance for the truss is 15.01 feet. The bridge has been repaired in the past due to impacts from over-height loads. The fracture critical members of the trusses are all in good to satisfactory condition with some isolated minor deterioration in the lower chord at the batten plate connections and near the verticals. The paint overall is in fair to good condition. The majority of members only show light surface rust. Rust has produced minor section loss in the vertical gusset plates at the lower panel points of the trusses. The rusted areas have been cleaned and spot painted with RUSTGRIP paint, the spot painting is not well and will need an additional application of paint. The joints need sealing and the drain holes need cleaning to prevent water from deteriorating the lower panel points. The portals will need repairing in the future if another over height impact occurs. Overall the trusses and stringer/floor beam system are in fair condition with some moderate deterioration in isolated areas.

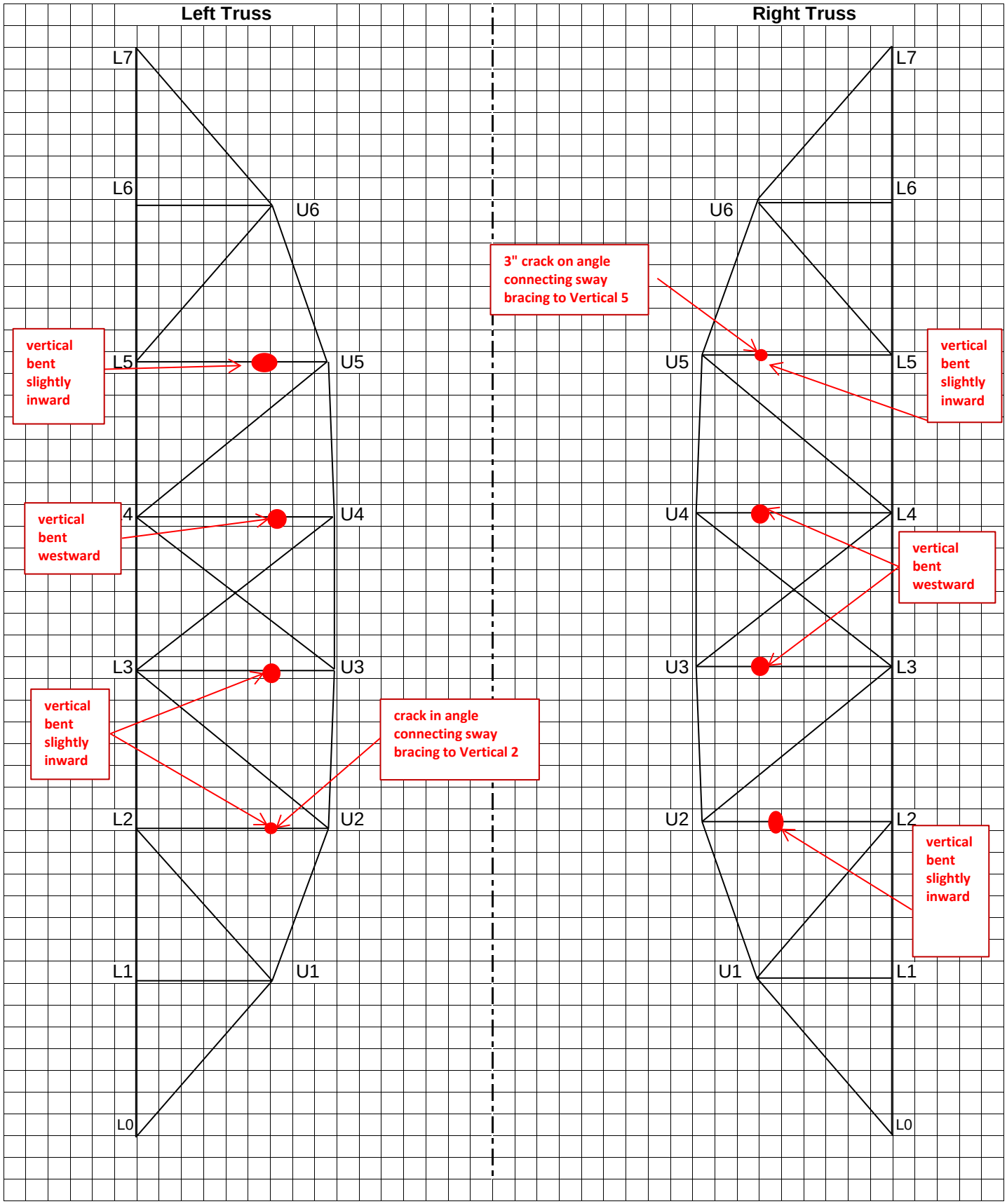
Bridge Layout

Route	SR 42	Featured Intersection	Bogue Homa Creek	Date	6/29/2023
Bridge No.	76.2	County	Perry	Inspected By	PP TK JeC KH JR JC AC



Bridge Layout

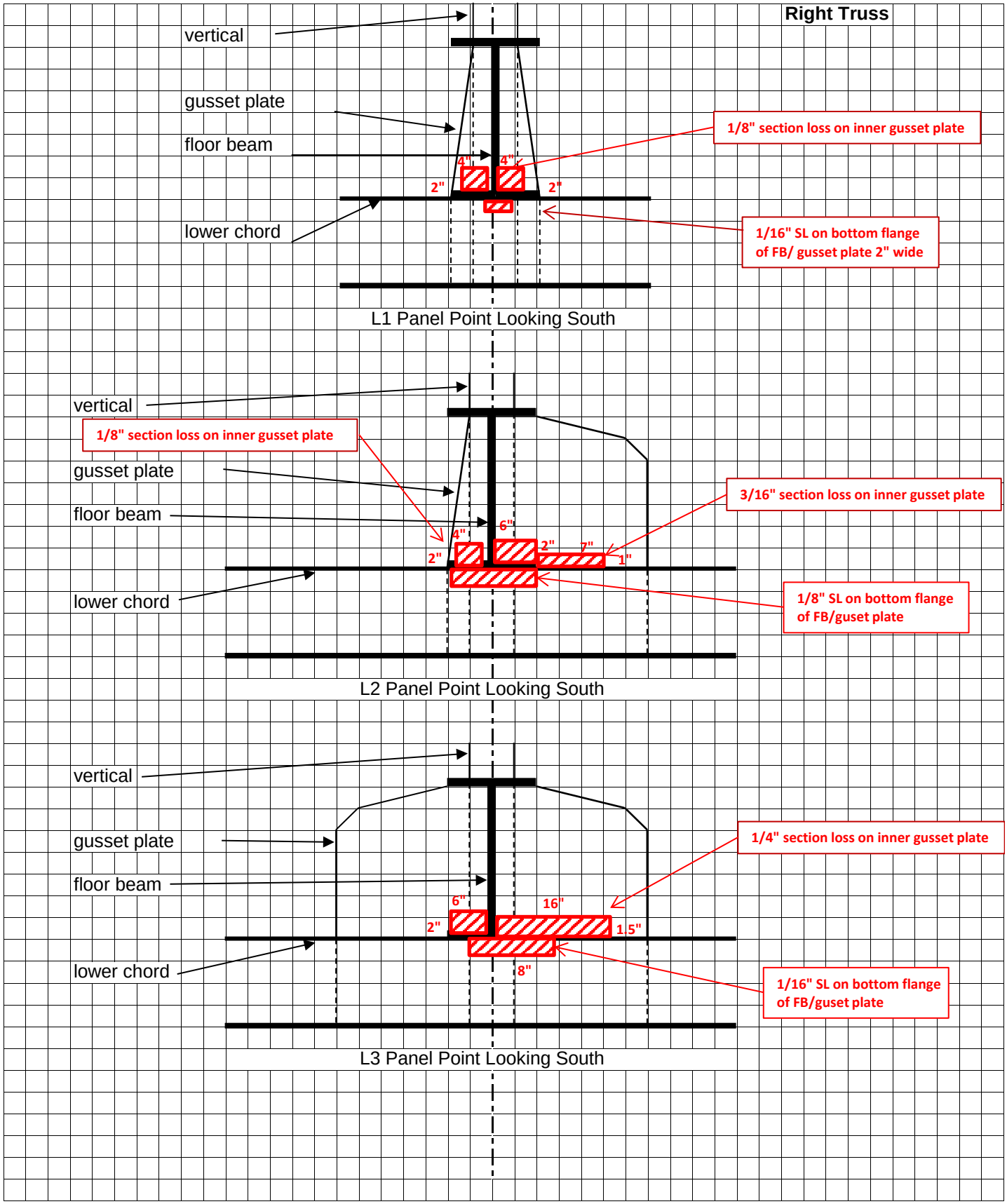
Route	SR 42	Featured Intersection	Bogue Homa Creek	Date	6/29/2023
Bridge No.	76.2	County	Perry	Inspected By	PP TK JeC KH JR JC AC



Bridge Layout

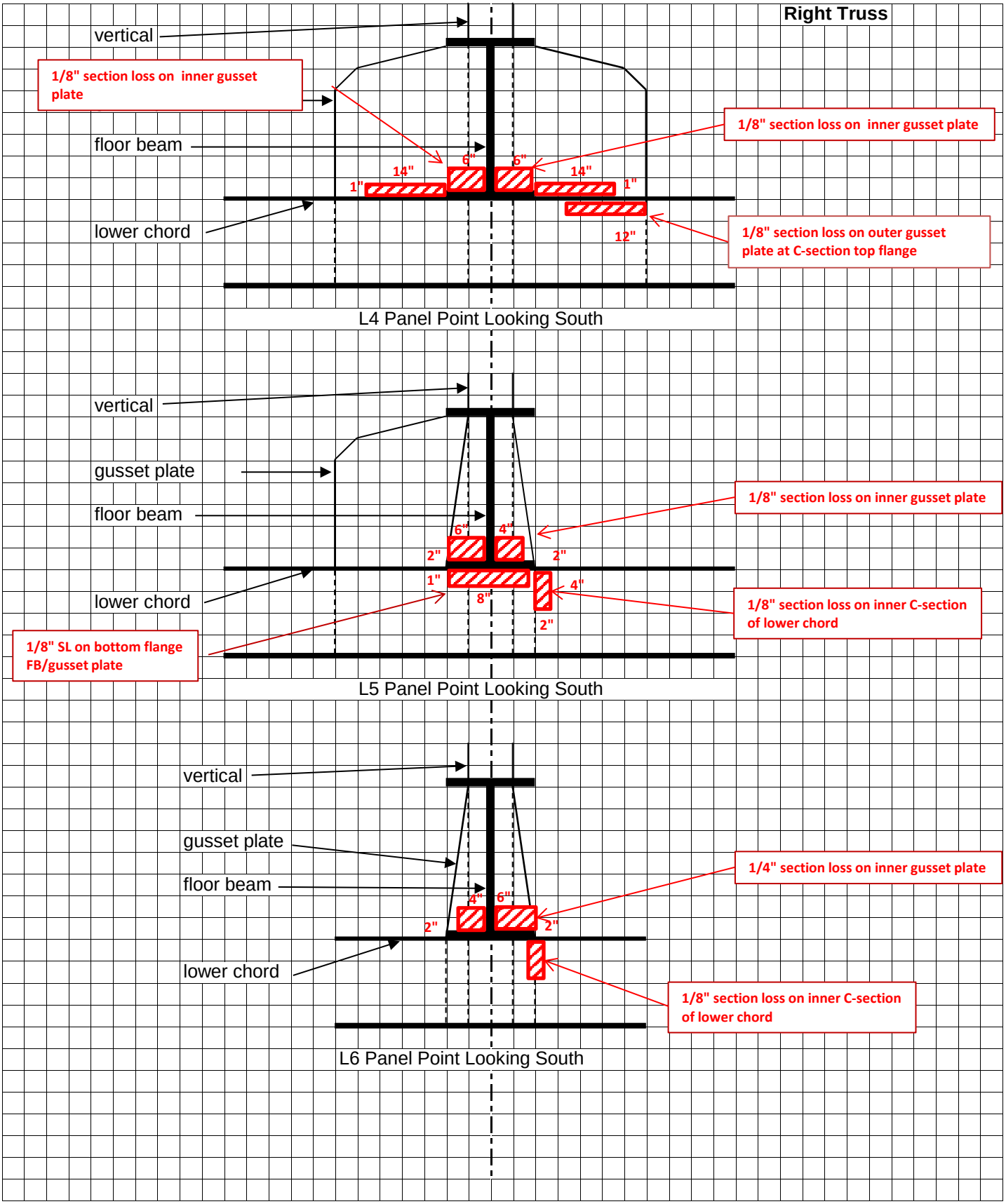
Route	SR 42	Featured Intersection	Bogue Homa Creek	Date	6/29/2023
Bridge No.	76.2	County	Perry	Inspected By	PP TK JeC KH JR JC AC

Right Truss



Bridge Layout

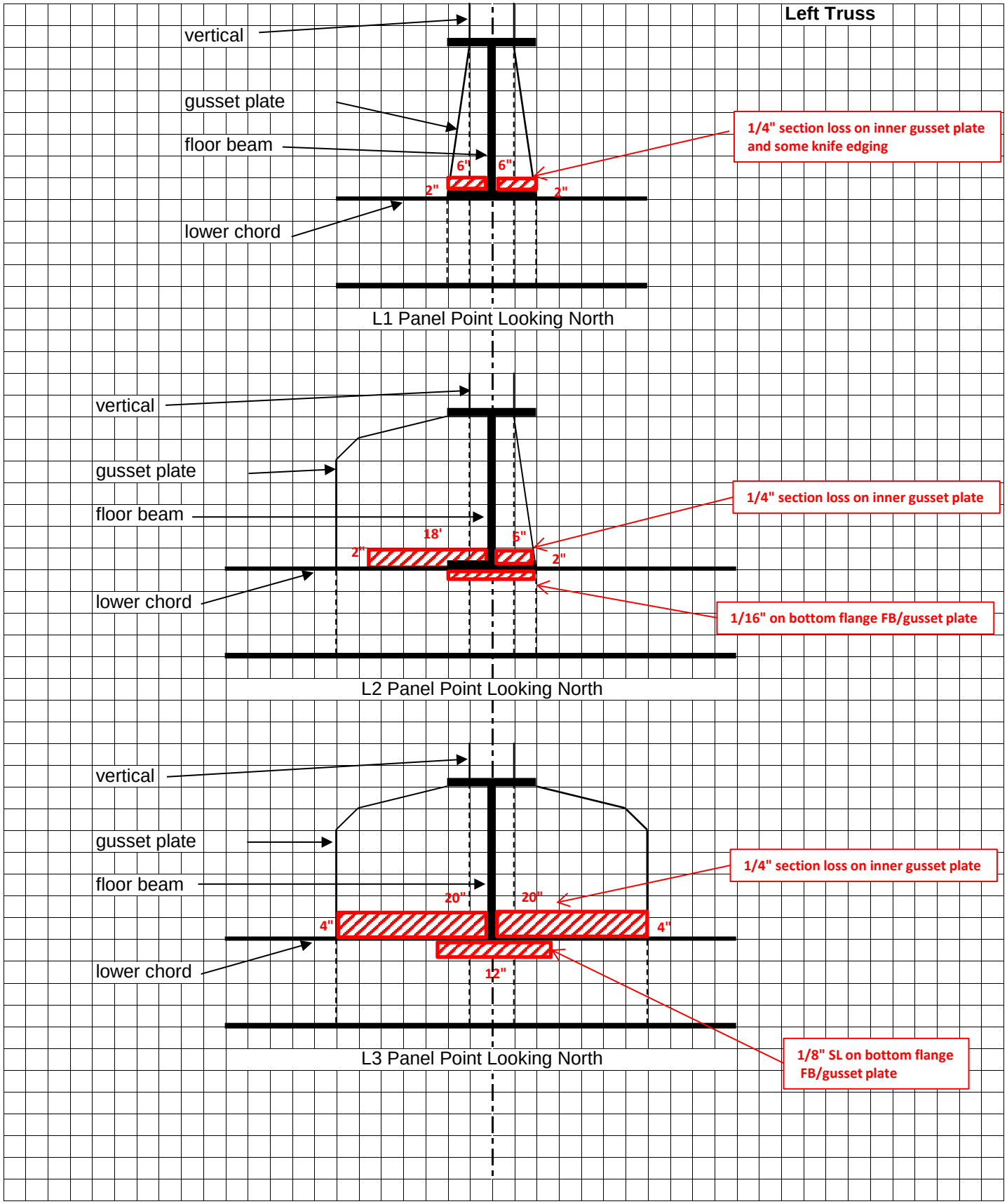
Route	SR 42	Featured Intersection	Bogue Homa Creek	Date	6/29/2023
Bridge No.	76.2	County	Perry	Inspected By	PP TK JeC KH JR JC AC



Bridge Layout

Route	SR 42	Featured Intersection	Bogue Homa Creek	Date	6/29/2023
Bridge No.	76.2	County	Perry	Inspected By	PP TK JeC KH JR JC AC

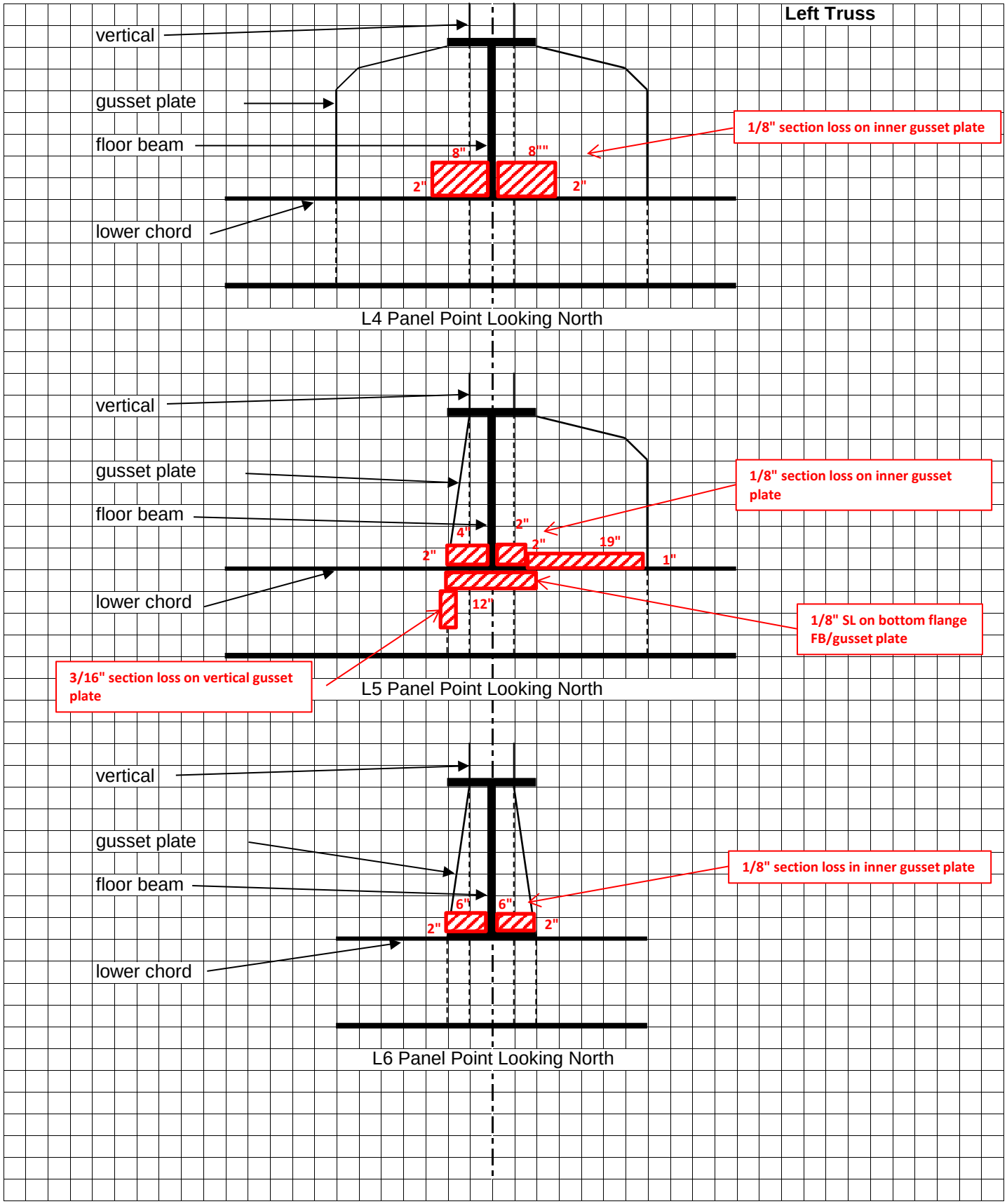
Left Truss



Bridge Layout

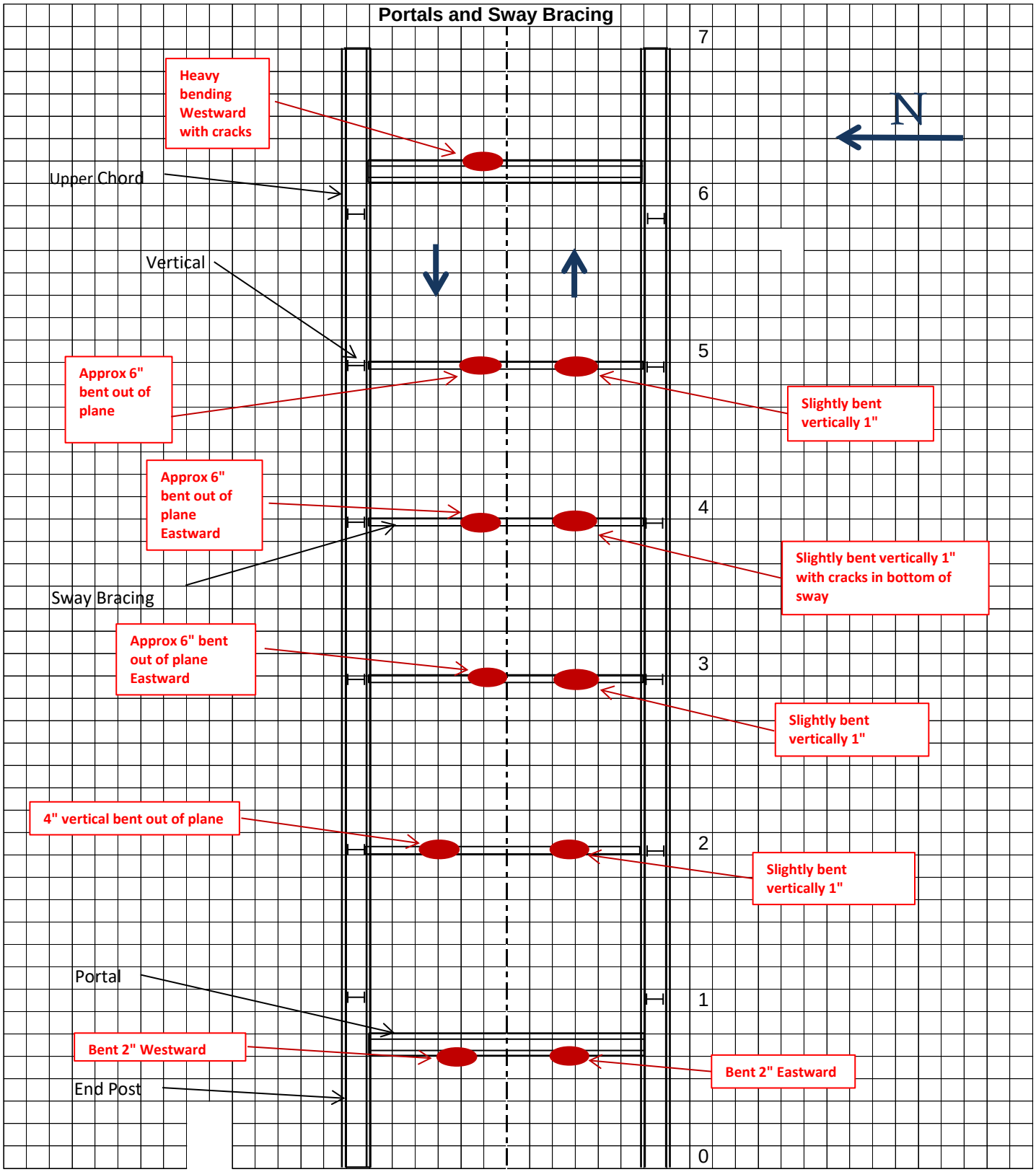
Route	SR 42	Featured Intersection	Bogue Homa Creek	Date	6/29/2023
Bridge No.	76.2	County	Perry	Inspected By	PP TK JeC KH JR JC AC

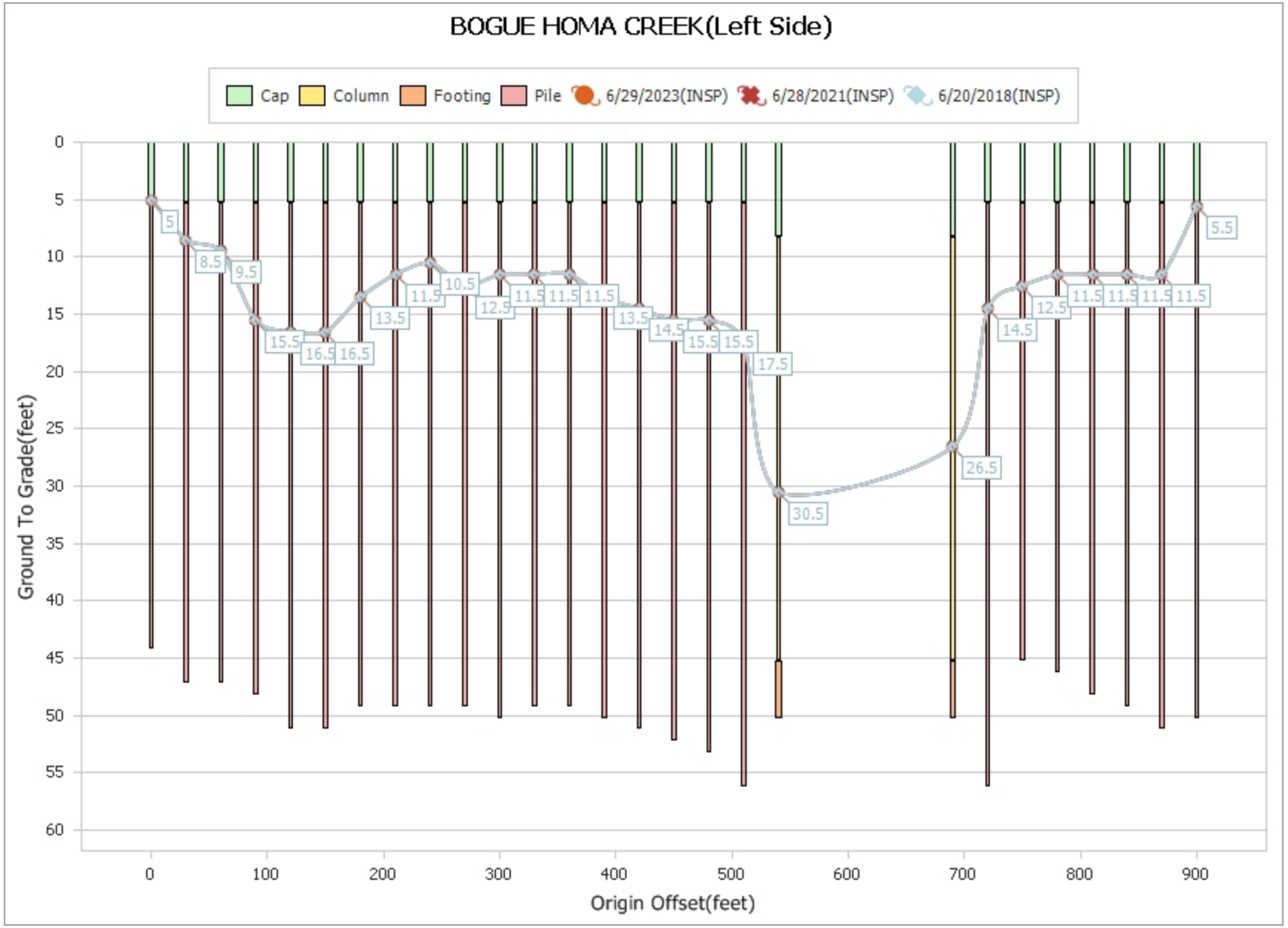
Left Truss



Bridge Layout

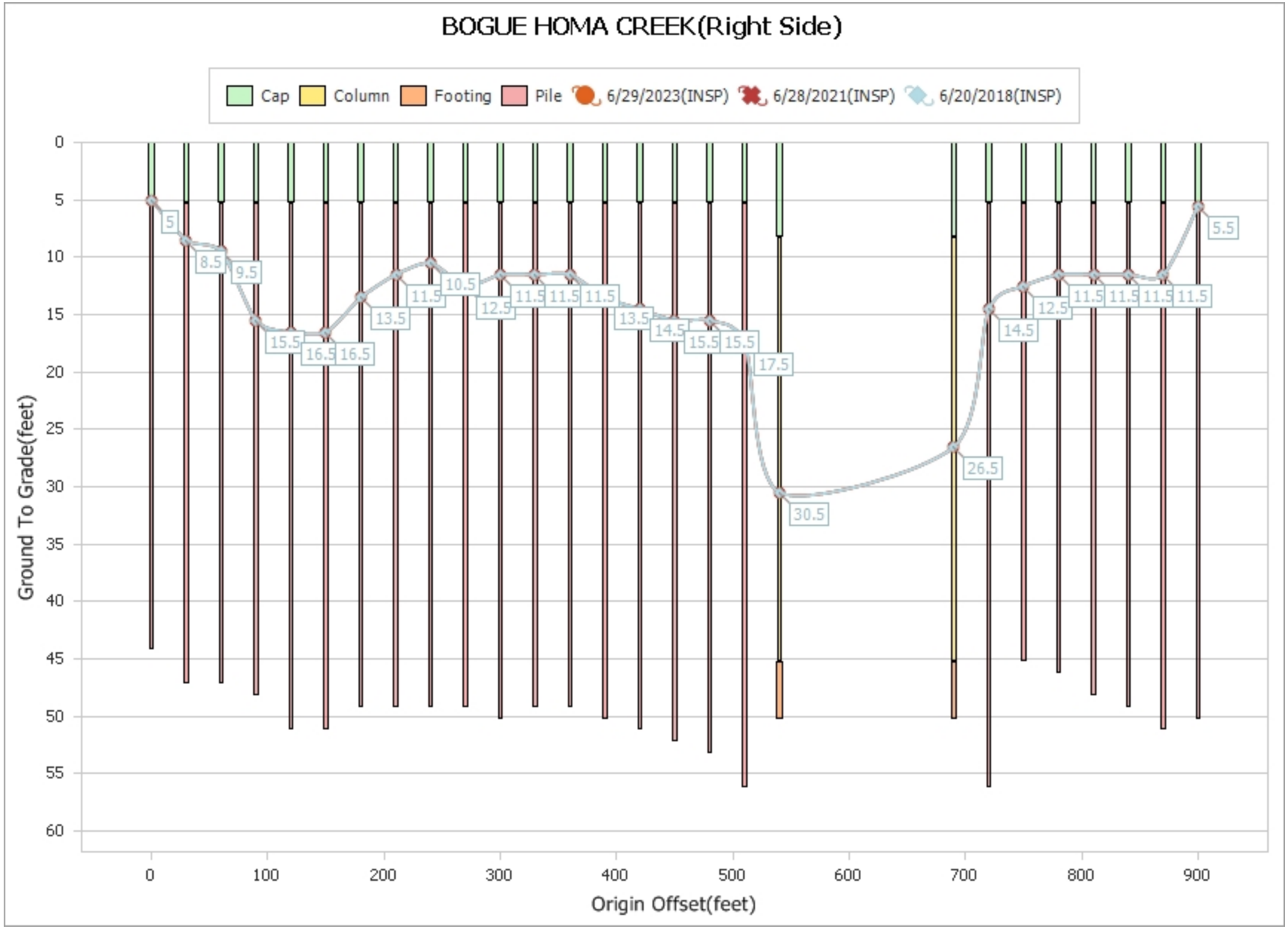
Route	SR 42	Featured Intersection	Bogue Homa Creek	Date	6/29/2023
Bridge No.	76.2	County	Perry	Inspected By	PP TK JeC KH JR JC AC





Print Date: 12/14/2023

Structure#: 310004205607620 County: Perry Feature Intersected: BOGUE HOMA CREEK
Bridge ID: 13920 Facility: SR 42 Location: 5.1 MI W SR 15



Print Date: 12/14/2023