



Latitude:35.82143, Longitude:-84.28900

Region 01, 53 - Loudon County

Team Leader: Aaron Blake

Inspectors: Brian Rader, Roger Carico, Alfred Sautner



I-75 Crossing NFA 1247 KINGSTON ST

35.82143, -84.28900

90 - LAST INSPECTION DATE 09/11/2024

10 - MIN. V.C. OVER DECK  
(ROADWAY + SHOULDERS) 99.99 FT.

520 - MIN. V.C. OVER DECK  
(EXCLUDES SHOULDERS) 99.99 FT.

36 - TRAFFIC SAFETY FEATURES

| Br. Rail | Trans. | Appr. Rail | Terminal | SPEED LIM. |
|----------|--------|------------|----------|------------|
| 0        | 0      | 0          | 1        | 70         |

41 - STRC OPEN/CLOSED/POSTED A

58 - DECK 7

59 - SUPERSTRUCTURE 7

60 - SUBSTRUCTURE 7

61 - CHANL/CHANL PROTECTION N

62 - CULVERT AND RETAIN WALL N

71 - WATERWAY ADEQUACY N

72 - APPROACH RDWY ALIGNMENT 8

521 - OVERALL CONDITION 1 - Good

| 16 - LATITUDE | 17 - LONGITUDE |
|---------------|----------------|
| 35.821433     | -84.289000     |

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 CORREC

Aaron Blake Digitally signed by Aaron Blake  
Date: 2024.10.03 15:49:55  
-04'00'

TEAM LEADER SIGNATURE

| IDENTIFICATION                            |                                         |
|-------------------------------------------|-----------------------------------------|
| (1) State Names                           | 47 - Tennessee                          |
| (8) Structure Number                      | 53I00750034                             |
| (5) Inventory Route                       | 1                                       |
| (2) Highway Agency District               | Region 1                                |
| (3) County Code                           | 53 - Loudon                             |
| (4) Place Code                            | 00000                                   |
| (6) Features Intersected                  | NFA 1247 KINGSTON ST                    |
| (7) Facility Carried                      | I75 RT LN                               |
| (9) Location                              | 1.4 M SE OF LENIOR CITY                 |
| (11) Mile Point                           | 14.240 mi                               |
| (12) Base Highway Network                 | Yes                                     |
| (13) LRS Inventory Rte & Subrte           | 53I0075001                              |
| (16) Latitude                             | 35.821433                               |
| (17) Longitude                            | -84.289000                              |
| (98) Border Bridge State Code             |                                         |
| (99) Border Bridge Structure No.          |                                         |
| STRUCTURE TYPE AND MATERIAL               |                                         |
| (43) Main Structure Type                  | 62                                      |
| Material                                  | 6 - Prestressed concrete continuous *   |
| Type                                      | 2 - Stringer/Multi-beam or girder       |
| (44) Approach Structure Type              | 00                                      |
| Material                                  | 0 - Other / None                        |
| Type                                      | 0 - Other / None                        |
| (45) No. of Spans in Main Unit            | 3                                       |
| (46) No. of Approach Spans                | 0                                       |
| (107) Deck Structure Type                 | 1 - Concrete Cast-in-Place              |
| (108) Wearing Surface/Protective System   |                                         |
| Type of Wearing Surface                   | 6 - Bituminous                          |
| Type of Membrane                          | 0 - None                                |
| Type of Deck Protection                   | 0 - None                                |
| AGE AND SERVICE                           |                                         |
| (27) Year Built                           | 1972                                    |
| (106) Year Reconstructed                  | 0                                       |
| (42) Type of Service                      | 11                                      |
| On                                        | 1 - Highway                             |
| Under                                     | 1 - Highway, with or without pedestrian |
| (28) Lane                                 |                                         |
| On                                        | 2                                       |
| Under                                     | 2                                       |
| (29) Average Daily Traffic                | 55134                                   |
| (30) Year of ADT                          | 2021                                    |
| (109) Truck ADT                           | 6 %                                     |
| (19) Bypass, Detour Length                | 1 mi                                    |
| GEOMETRIC DATA                            |                                         |
| (48) Length of Maximum Span               | 67.9 ft                                 |
| (49) Structure Length                     | 155.8 ft                                |
| (50) Curb or Sidewalk Width               |                                         |
| Left                                      | 0.0 ft                                  |
| Right                                     | 0.0 ft                                  |
| (51) Bridge Roadway Width Curb to Curb    | 42.0 ft                                 |
| (52) Deck Width Out to Out                | 44.0 ft                                 |
| (32) Approach Roadway Width (W/Shoulders) | 42.0 ft                                 |
| (33) Bridge Median                        | 1 - Open median                         |
| (34) Skew                                 | 50 Deg                                  |
| (35) Structure Flared                     | 0 - No flare                            |
| (10) Inventory Route Min Vert Clear       | 99.99 ft                                |
| (47) Inventory Route Total Horiz Clear    | 42.0 ft                                 |
| (53) Min Vert Clear Over Bridge Rdwy      | 99.99 ft                                |
| (54) Min Vert Underclear                  | 13.85 ft                                |
| Ref:                                      |                                         |
| (55) Min Lat Underclear RT                | 13.1 ft                                 |
| Ref:                                      |                                         |
| (56) Min Lat Underclear LT                | 0.0 ft                                  |
| NAVIGATION DATA                           |                                         |
| (38) Navigation Control                   | N - Not applicable, no waterwa          |
| (111) Pier Protection                     |                                         |
| (39) Navigation Vertical Clearance        | 0.0 ft                                  |
| (116) Vert-Lift Bridge Nav Min Vert Clear | ft                                      |
| (40) Navigation Horizontal Clearance      | 0.0 ft                                  |

| CLASSIFICATION                         |                                            |
|----------------------------------------|--------------------------------------------|
| (112) NBIS Bridge Length               | Y                                          |
| (104) Highway System                   | 1                                          |
| (26) Functional Class                  | 11 - Urban Principal Arterial              |
| (100) Defense Highway                  | 1 - The inventory route is on              |
| (101) Parallel Structure               | L - The left structure of para             |
| (102) Direction of Traffic             | 1 - way traffic                            |
| (103) Temporary Structure              |                                            |
| (105) Federal Lands Highways           | 0 - N/A                                    |
| (110) Designated National Network      | 1 - The inventory route is par             |
| (20) Toll                              | 3 - On free road. The structu              |
| (21) Maintain                          | 1 - State Highway Agency                   |
| (22) Owner                             | 1 - State Highway Agency                   |
| (37) Historical Significance           | 4 - Historical significance is             |
| CONDITION                              |                                            |
| (58) Deck                              | 7                                          |
| (59) Superstructure                    | 7                                          |
| (60) Substructure                      | 7                                          |
| (61) Channel & Channel Protection      | N                                          |
| (62) Culverts                          | N                                          |
| LOAD RATING AND POSTING                |                                            |
| (31) Design Load                       | 5 - MS 18 / HS 20                          |
| (63) Operating Rating Method           | 8                                          |
| (64) Operating Rating                  |                                            |
| Type                                   | 8 - Load and Resistance Factor Rating (LRF |
| Rating                                 | 46.01                                      |
| (65) Inventory Rating Method           | 8 - Load and Resistance Factor             |
| (66) Inventory Rating                  |                                            |
| Type                                   |                                            |
| Rating                                 | 33.37                                      |
| (70) Bridge Posting                    | 5 - Equal to or above legal loads          |
| (41) Structure Open/Posted/Closed      | A - Open, no restriction                   |
| APPRAISAL                              |                                            |
| (67) Structural Evaluation             | 6                                          |
| (68) Deck Geometry                     | 8                                          |
| (69) Clearances, Vertical/Horizontal   | 3                                          |
| (71) Waterway Adequacy                 | N                                          |
| (72) Approach Roadway Alignment        | 8                                          |
| (36A) Bridge Railings                  | 0 - Inspected feature does not meet        |
| (36B) Transitions                      | 0 - Inspected feature does not meet        |
| (36C) Approach Guardrail               | 0 - Inspected feature does not meet        |
| (36D) Approach Guardrail Ends          | 1 - Inspected feature meets current        |
| (113) Scour Critical Bridges           | N - Bridge not over waterway.              |
| PROPOSED IMPROVEMENTS                  |                                            |
| (75) Type of Work                      |                                            |
| (76) Length of Structure Improvement   | ft                                         |
| (94) Bridge Improvement Cost           | \$                                         |
| (95) Roadway Improvement Cost          | \$                                         |
| (96) Total Project Cost                | \$                                         |
| (97) Year of Improvement Cost Estimate |                                            |
| (114) Future ADT                       | 88214                                      |
| (115) Year of Future ADT               | 2042                                       |

| INSPECTIONS *                                                                                                                                                                                      |            |             |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|------|
| (90) Inspection Date                                                                                                                                                                               | 09/11/2024 |             |      |
| (91) Frequency                                                                                                                                                                                     | 24         |             |      |
| (92) Critical Feature Inspection                                                                                                                                                                   | Done       | Freq. (Mon) | Date |
| A: Fracture Critical Detail                                                                                                                                                                        | No         |             |      |
| B: Underwater Inspection                                                                                                                                                                           | No         |             |      |
| C: Other Special Inspection                                                                                                                                                                        | No         |             |      |
| * The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted. |            |             |      |

## PERFORMANCE EVALUATION

Time of Day Inspected 9:25 am

Weather Conditions 56, clear

Vehicles Observed All types

## LIVE LOAD BEHAVIOR

Sub Horiz./ Vert. Defl (No)

Sub Vibration (No)

Super Horiz./ Vert. Defl (No)

Super Vibration (No)

## APPROACH

Alignment (Good)

Pavement (Good)

Asphalt overlay

Embankment (Fair)

Moderate erosion ditches at approach 2 left

Approach Drains (Good)

## TRAFFIC SAFETY FEATURES

Bridge Railing Rating (Good) SUBSTANDARD

Transitions Rating (Fair) SUBSTANDARD, collision damage to rub rail at approach 2 left

Guardrail Rating (Good) SUBSTANDARD

Guardrail Terminal Rating (Poor) STANDARD, collision damage approach 2 left

## SIGNS POSTED ON ROUTE

Paddleboards Yes

Weight Limit Posted Not Needed

Vertical Clearance (<14'-6") Yes

Gross ..... Tons

Posted Height 13.67

Single-unit Vehicle Tons

Narrow Bridge Signs No

Multi-unit Vehicle Tons

One Lane Bridge Signs No

564 Assigned Bridge Name

Other Signs or Plaques

## ATTACHED SIGNS

| Sign No | Location | Text on Sign | Noted Defects |
|---------|----------|--------------|---------------|
|---------|----------|--------------|---------------|

## DECK

| Wearing Surface Type        |        | Asphalt                                          | Wearing Surface Depth | 6 |
|-----------------------------|--------|--------------------------------------------------|-----------------------|---|
| Wearing Surface             | (Good) | Asphalt overlay                                  |                       |   |
| Deck - Structural Condition | (Good) | Bottom deck span 1 - Hairline cracks w/ leaching |                       |   |
| Parapet                     | (Good) |                                                  |                       |   |
| Railing                     | (Good) |                                                  |                       |   |

## SUPERSTRUCTURE

|                      |        |                                                                                                                                                                                                                                                                                                                           |  |  |
|----------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Bearing Devices      | (Good) | NEOPRENE PADS                                                                                                                                                                                                                                                                                                             |  |  |
| Beams                | (Fair) | Span 2 beams with areas of collision damage- scrapes, spalls up to 2' long and 1" deep; Span 2 beam A left side has area of recent collision damage to a previously repaired area with 2' long spall up to 1" deep, hairline crack on left side of lower flange, and scrapes. All beams span 1&3 filler - Hairline cracks |  |  |
| Diaphragms           | (Good) | Filler over bents - Hairline cracks                                                                                                                                                                                                                                                                                       |  |  |
| Alignment of Members | (Good) |                                                                                                                                                                                                                                                                                                                           |  |  |

## TEXTURE COAT

## ABUTMENTS

|                          |               |                                             |
|--------------------------|---------------|---------------------------------------------|
| Abutment Caps            | (Good)        |                                             |
| Abutment Wings           | (Good)        | Hairline cracks with leaching ; minor spall |
| Abutment Backwall        | (Good)        |                                             |
| Abutment Plumb           | (Good)        |                                             |
| Abutment Footing         | (Not visible) |                                             |
| Abutment Piles           | (Not Visible) |                                             |
| Abutment Embankment      | (Good)        |                                             |
| Abutment Bearing Surface | (Good)        |                                             |
| Abutment Slope Paving    | (Good)        | 2" separation at berm                       |

## PIERS

## BENTS

|                      |               |                                 |
|----------------------|---------------|---------------------------------|
| Bent Caps            | (Good)        |                                 |
| Bent Columns         | (Good)        | Bent 2 - column B - minor spall |
| Bent Plumb           | (Good)        |                                 |
| Bent Footing         | (Not Visible) |                                 |
| Bent Piles           | (Not Visible) |                                 |
| Bent Bearing Surface | (Good)        |                                 |

### Inspection Team's Summary

The subject bridge was inspected on the above date and found to be in GOOD condition.

Approach roadway alignment is good. Approach wearing surface is good, asphalt overlay. Approach rails are good, substandard, and few tire marks. Approach terminals are poor, standard, collision damage approach 2 left. Paddleboard decals on approach 2 terminals (with traffic direction).

Deck wearing surface is good, asphalt overlay. Bridgerails are good, substandard, popouts, and scrapes.

The bottom of the deck is good, hairline cracks with leaching in span 1. The beams are good, spalls due to collision damage in all span 2 beams, and hairline cracks in fillers. Bearings are good, neoprene pads. Diaphragms are good.

Abutments are good. Wings are good, hairline cracks with leaching. Bents are good, minor spall in column.

No pier protection exist under the bridge on Old Highway 95. There are 13'-8" clearance signs at both underpass approaches.

A. Blake

### General Inspection Comment

### HQ notes to TL

| ELEMENTS | DESCRIPTION                     | UNITS | TOTAL | CS1  | CS2 | CS3 | CS4 |
|----------|---------------------------------|-------|-------|------|-----|-----|-----|
| 12       | Re Concrete Deck                | SF    | 6864  | 6864 | 0   | 0   | 0   |
| 510      | Wearing Surfaces                | SF    | 6678  | 6678 | 0   | 0   | 0   |
| 109      | Pre Opn Conc Girder/Beam        | LF    | 752   | 742  | 8   | 2   | 0   |
| 1080     | Delamination/Spall/Patched Area | LF    | 10    | 0    | 8   | 2   | 0   |
| 205      | Re Conc Column                  | EA    | 6     | 6    | 0   | 0   | 0   |
| 215      | Re Conc Abutment                | LF    | 115   | 115  | 0   | 0   | 0   |
| 234      | Re Conc Pier Cap                | LF    | 98    | 98   | 0   | 0   | 0   |
| 310      | Elastomeric Bearing             | EA    | 20    | 20   | 0   | 0   | 0   |
| 330      | Metal Bridge Railing            | LF    | 306   | 306  | 0   | 0   | 0   |
| 331      | Re Conc Bridge Railing          | LF    | 306   | 292  | 14  | 0   | 0   |
| 1090     | Exposed Rebar                   | LF    | 14    | 0    | 14  | 0   | 0   |

## Equipment List

### General Inspection

- ☐ Pocket knife
- ☐ Sounding/chipping hammer
- ☐ Chain drag
- ☐ Range pole
- ☒ 25' rod - depth and clearance

### Visual Aid

- ☐ Binoculars
- ☐ Flashlight
- ☐ Magnifying glass
- ☐ Hand mirror

### Cleaning

- ☐ Wisk broom
- ☐ Wire brush
- ☐ Flat bladed screwdriver
- ☐ Hand shovel
- ☐ Penetrating oil (WD-40, etc.)

### Tools For Access

- ☐ Ladders
- ☐ Rope
- ☐ Waders
- ☐ Machete or bush axe

### Comment

### Tools For Measuring

- ☐ Masonry/Wood Ruler
- ☐ 6' Pocket Tape
- ☒ 25' and 100' Tape
- ☐ Calipers
- ☐ Thermometer
- ☐ Carpenter's Level
- ☐ String and Weighted line (plumb bob)

### Special Purpose Equipment

- ☐ Reach All
- ☐ Bucket Truck
- ☐ Traffic control
- ☐ Boat
- ☐ Sonar depth finder
- ☐ Increment borer
- ☐ Survey equipment
- ☐ Safety Harness
- ☐ Climbing equipment
- ☐ Dye penetrant
- ☐ Drone
- ☐ Air Meter

### Special Purpose Equipment

## Reach-All Approval and Comments



Approach 2 left transition rub rail - collision damage



Back on log



Approach 2 left rail - collision damage



Approach 2 left rail - collision scrapes



Approach 2 left embankment - moderate erosion ditches



Approach 2 right rail - tire marks



Deck 1 right rail - popouts



View across deck



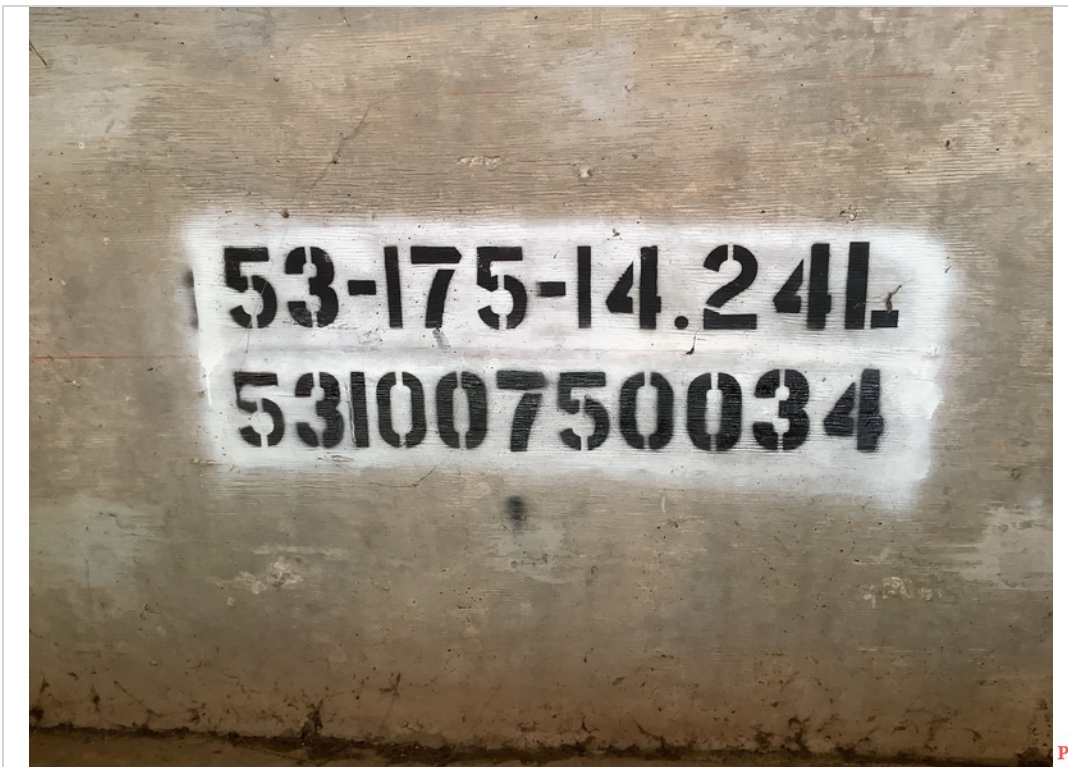
Approach on log



Underpass forward clearance sign



Underpass back clearance sign



Abutment 1 - bridge number



Bottom deck span 1 - Hairline cracks w/ leaching



Beam A thru E right span 2 - Collision damage w/ scrapes & spalls up to 2' long 1" deep



Beam E filler span 1 - Hairline crack (Typical all beams span 1&3)



Span 2 beam A left side - spall (2' l x 6" w x 1" deep)



Beam A over bent 2 diaphragm filler - Hairline cracks (Typical other diaphragms over bents)



Abutment 2 slope pavement - " separation (typical)



Bent 2 column B front - spall (6" diameter x 2"Dp)



Wing 1 right - Hairline cracks with leaching - spall ( 4" diameter x 1/2" Dp)



Elevation right



U.P. - Forward on log



Elevation left



Span 2 - View underneath

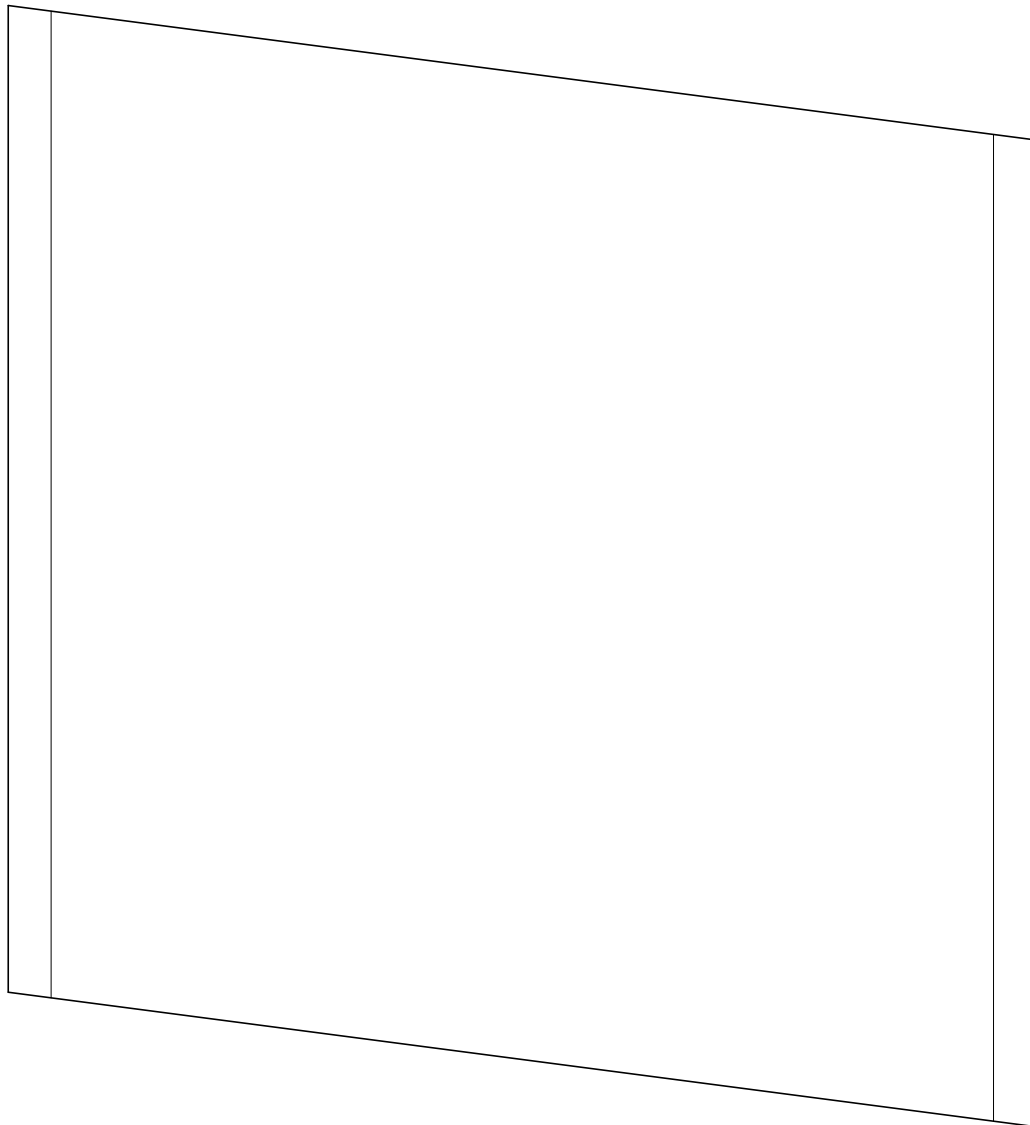


U.P.- Back on log

### Maintenance Recommendations

525 - Repair List #   N        523 - Repair List Add Date                           524 - Repair List Revise Date   9/23/2022  

| Date Added | Recommendation                                                | Priority |
|------------|---------------------------------------------------------------|----------|
| 09/27/2004 | UNDERPASS SUBSTRUCTURE PROTECTION GUARDRAILS ARE NON-EXISTENT |          |
| 01/24/2003 | BRIDGERAILS ARE SUBSTANDARD                                   |          |
| 10/15/2008 | GUARDRAIL TRANSITIONS ARE SUBSTANDARD                         |          |
| 10/15/2008 | GUARDRAILS ARE SUBSTANDARD                                    |          |
| 09/11/2024 | REPAIR APPROACH 2 LEFT TERMINAL                               |          |
| 09/11/2024 | REPAIR APPROACH 2 LEFT RUB RAIL                               |          |
| 03/02/2023 | Repair span 2 beam A lower flange                             |          |

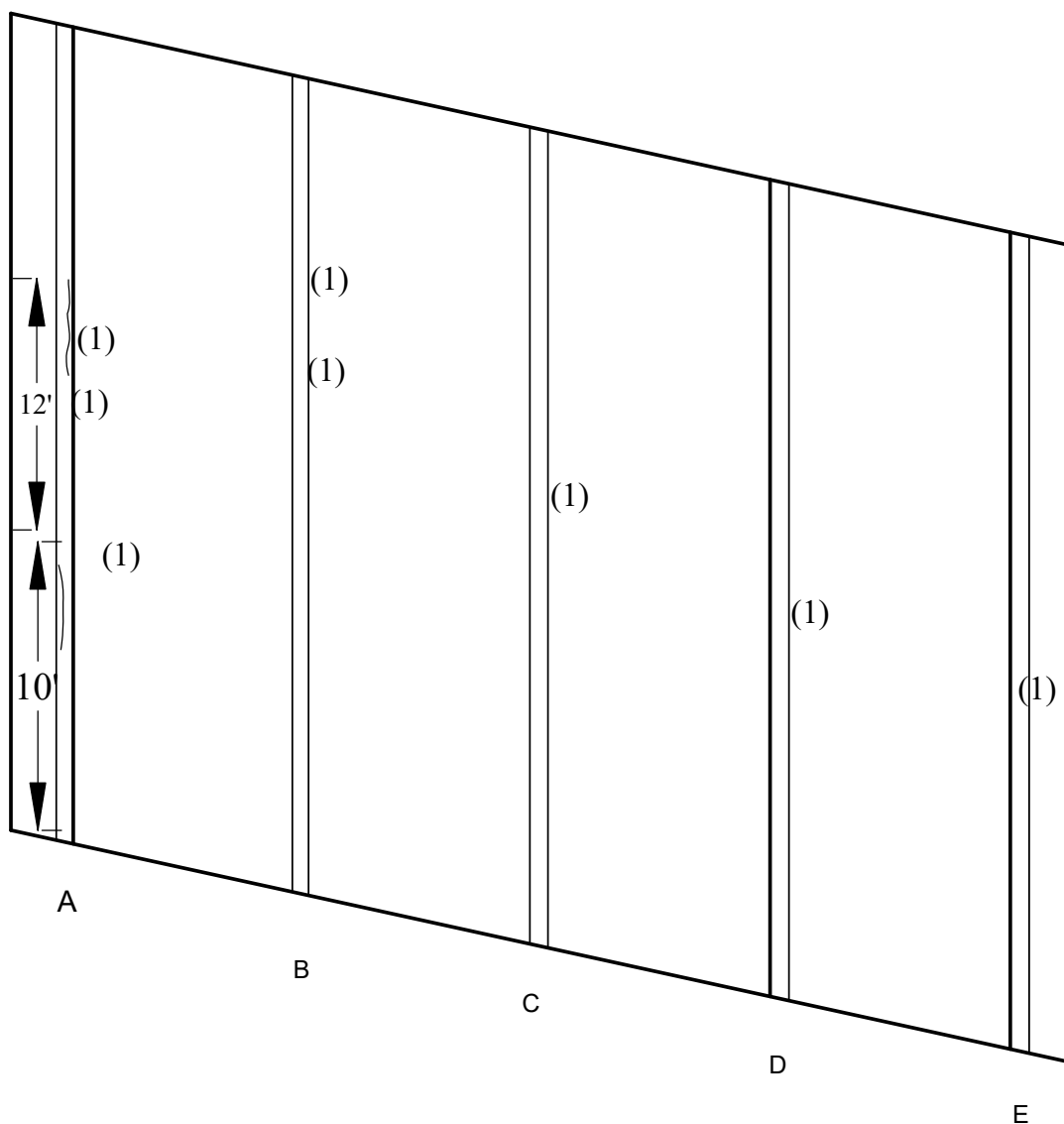


↑  
Log

Bridge No. 53-I-75-14.24 LT. 09-11-24 AB Span No. 1 - 3

|          |     |                                   |
|----------|-----|-----------------------------------|
| Top Deck | G   | ASPHALT OVERLAY                   |
|          |     |                                   |
| Parapet  | G   | SUBSTANDARD, LIGHT SCALE, POPOUTS |
|          |     |                                   |
| RAILING  | G   |                                   |
|          |     |                                   |
| JOINTS   | N/V | PAVED OVER                        |
|          |     |                                   |
|          |     |                                   |
|          |     |                                   |

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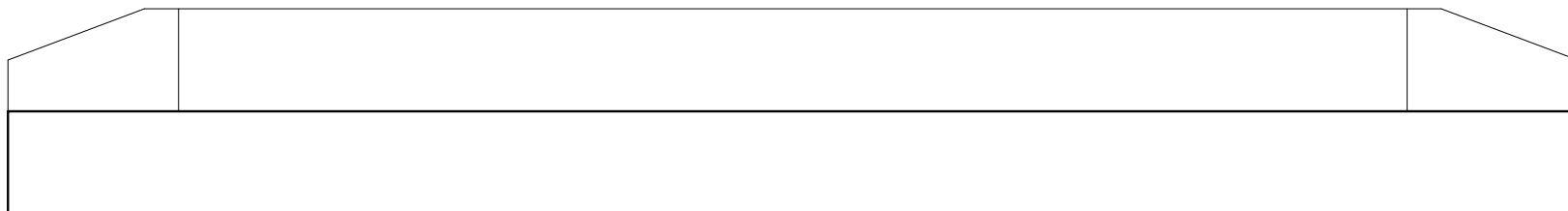
BRIDGE NO. 53-I-75-14.24 LT.

09-11-24 ACSIII

SPAN 2

|             |   |                                                          |
|-------------|---|----------------------------------------------------------|
| Bottom Deck | G |                                                          |
|             |   |                                                          |
| Beams       | G | (1) BEAMS A-E - COLLISION DAMAGE UP TO 2' LONG x 1" DEEP |
|             |   |                                                          |
| Diaphragms  | G | HAIRLINE CRACKS IN FILLER                                |
|             |   |                                                          |

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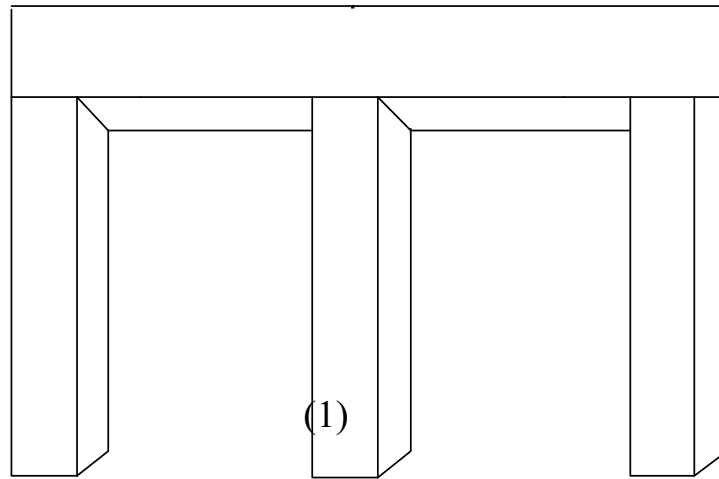
09-11-24 BR

Abutment No. 1 & 2

|                |   |                                                      |
|----------------|---|------------------------------------------------------|
| Cap            | G |                                                      |
|                |   |                                                      |
|                |   |                                                      |
| Backwall       | G |                                                      |
|                |   |                                                      |
|                |   |                                                      |
| Wings          | G | HAIRLINE CRACKS WITH LEACHING                        |
|                |   |                                                      |
|                |   |                                                      |
| BEARING AREA   | G |                                                      |
|                |   |                                                      |
| SLOPE PAVEMENT | G | 2" SEPARATION FROM ABUTEMENT CAP - ABUTMENTS 1 AND 2 |

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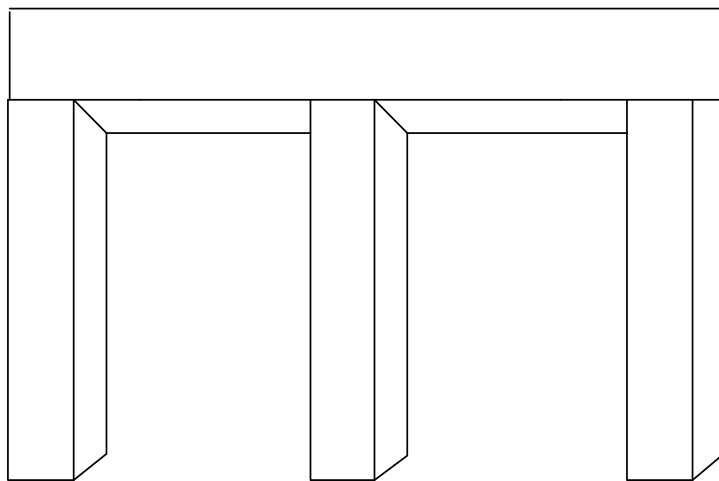
FRONT



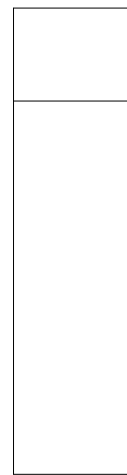
RIGHT



BACK



LEFT

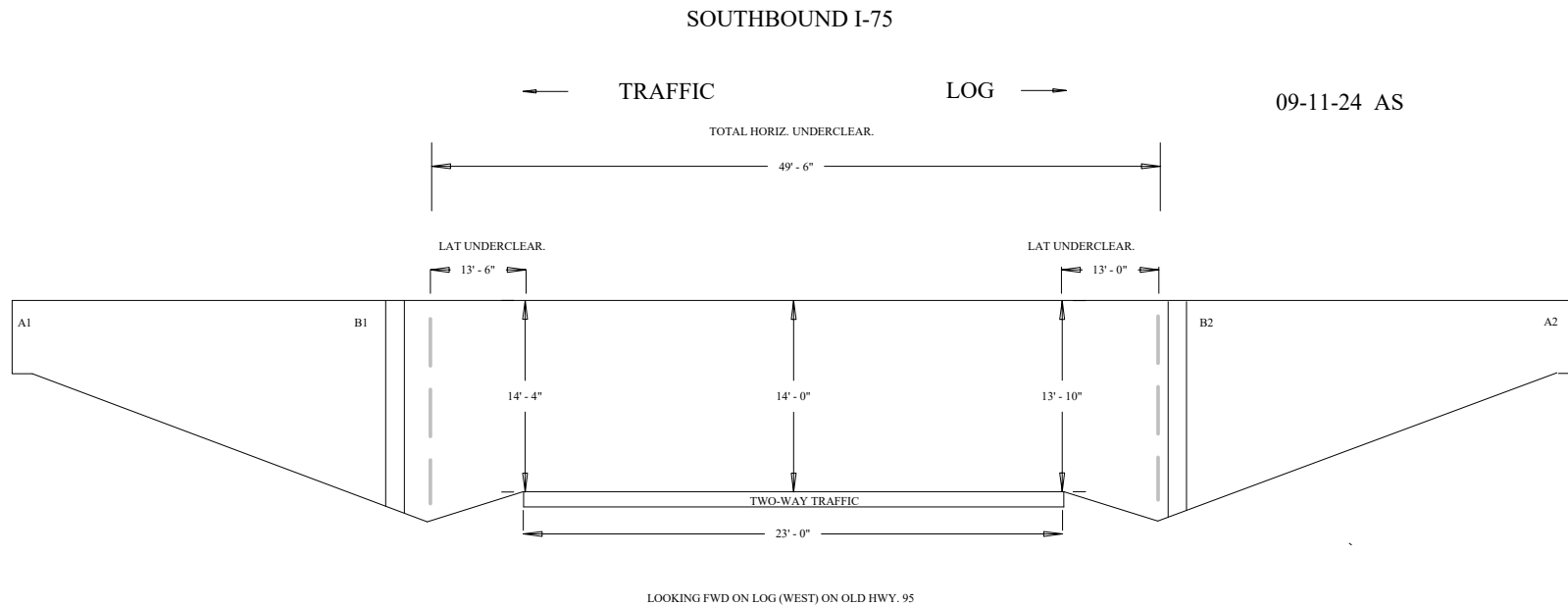


Bridge No. 53-I-75-14.24 LT. 09-11-24 BR

Bent No. 1&2

|          |   |                                           |
|----------|---|-------------------------------------------|
| CAP      | G |                                           |
|          |   |                                           |
| COLUMNS  | G | BENT 2 COLUMN B – SPALL 6” DIA. x 2” DEEP |
|          |   |                                           |
| BEARINGS | G |                                           |
|          |   |                                           |
|          |   |                                           |
|          |   |                                           |
|          |   |                                           |

OVERHEAD ROAD NAME = SB I-75  
LOCATION NO. 53-I0075-14.24L



NO TRAFFIC SAFETY FEATURES ARE PRESENT

UNDERPASS ROAD NAME = OLD HWY. 95  
LOCATION NO. 53-1247-02.68

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