



## Hamilton County

### Regular Inspection Report

Location: 33-I0075-01.17-RIGHT

Federal ID: 33I00750009

Maintenance Responsibility:

State of Tennessee

Description:

3 Span Bridge

I-75 - Northbound

OVER

Big Spring Creek

Inspection Date: July 19, 2016

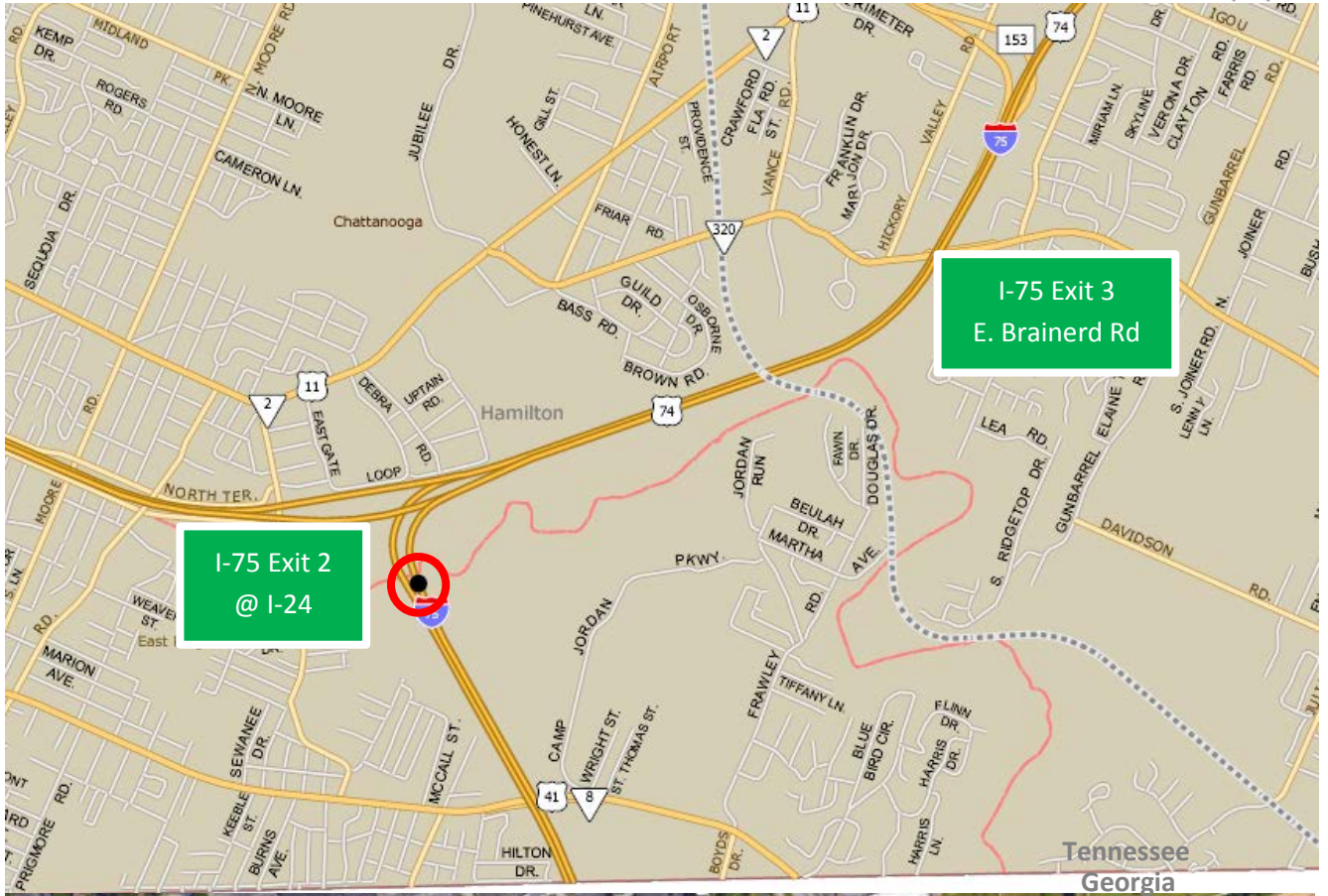
Overall Condition Rating:

# GOOD



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# LOCATION MAP



- Route Direction ON Structure
- Direction of Waterway Flow
- Traffic Direction ON Structure

**BRIDGE MAINTENANCE RECOMMENDATIONS**



Tennessee Department  
of Transportation

COUNTY: HAMILTON  
 LOCATION: 33-I0075-01.17-R  
 CO. SEQ.: 1 SPEC. CASE: 0  
 MILEPOST: 1.11

CROSSING: BIG SPRING CREEK  
 FED. BRIDGE NO.: 33I00750009  
 MAINT. DIST.: 33

REPAIR LIST NO.: 2  
 DATE ADDED: 05/01/2001  
 REVISED: 07/26/2012

FACILITY CARRIED:	I75	NUMBER OF MAIN SPANS:	3
HIGHWAY SYSTEM:	02-INTERSTATE URBAN	NUMBER OF APPROACH SPANS:	0
BRIDGE WIDTH (CURB TO CURB):	71 FT 10 IN	BRIDGE LENGTH (FT):	107
BRIDGE WIDTH (OUT TO OUT):	74 FT 1 IN	MAXIMUM SPAN LENGTH (FT):	36
APPROACH ROADWAY (W/SHOULDERS):	65 FT 11 IN	SKEW ANGLE (DEGREES):	81
MAINTAINED BY:	STATE HIGHWAY AGENCY		
MAIN SPAN MATERIAL:	PRESTRESSED CONCRETE		
MAIN SPAN DESIGN TYPE:	BOX BEAM OR GIRDERS - MULTIPLE		
APPROACH SPAN MATERIAL:	OTHER OR NOT APPLICABLE		
APPROACH SPAN DESIGN TYPE:	OTHER OR NOT APPLICABLE		
INSPECTION DATE:	07/19/2016	GENERAL CONDITION:	GOOD
EVALUATION DATE:	07/31/2014	STRUCTURALLY DEFICIENT:	NO
PPRM PIN NUMBER:	113275.00		
H TRUCK RATING @ INV.:	20 TONS	SUFFICIENCY RATING:	93.0

**GENERAL COMMENTS:**  
 THIS BRIDGE REHABILITATION WAS LET ON AUGUST 6, 2010 UNDER CONTRACT # CNJ919 TO MID-STATE CONSTRUCTION COMPANY, INC. COMPLETION TIME: ON OR BEFORE NOVEMBER 15, 2010 BID AMOUNT: \$ 291,483.77. REPAIR PLANS ADDED TO FILENET.



STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

# Bridge Condition Coding Form

Revised 07/21/2016

Bridge Number:   
 (Includes Item 5A)

Feature Intersected:

Evaluation Status:

County:

Route:

Special Case:

County Sequence:

Log Mile:

**CODE ONLY THOSE VALUES WHICH HAVE CHANGED**

ITEM #	DESCRIPTION	VALUE	CONDITION CODING GUIDELINES (Values for Coding Items 58, 59, 60 and 62)
90	LAST INSPECTION DATE	<input type="text" value="07/19/2016"/>	N NOT APPLICABLE 9 EXCELLENT CONDITION 8 VERY GOOD CONDITION - NO PROBLEMS NOTED. 7 GOOD CONDITION - SOME MINOR PROBLEMS. 6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS. 5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR. 4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR. 3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOUSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT. 2 CRITICAL CONDITION - ADVANCED DETERIORATION OF PRIMARY STRUCTURAL ELEMENTS. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT OR SCOUR MAY HAVE REMOVED SUBSTRUCTURE SUPPORT. UNLESS CLOSELY MONITORED IT MAY BE NECESSARY TO CLOSE THE BRIDGE UNTIL CORRECTIVE ACTION IS TAKEN. 1 "IMMINENT" FAILURE CONDITION - MAJOR DETERIORATION OR SECTION LOSS PRESENT IN CRITICAL STRUCTURAL COMPONENTS OR OBVIOUS VERTICAL OR HORIZONTAL MOVEMENT AFFECTING STRUCTURAL STABILITY. BRIDGE IS CLOSED TO TRAFFIC BUT CORRECTIVE ACTION MAY PUT IT BACK IN LIGHT SERVICE. 0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.
	EARLIEST DATE OF NEXT REGULAR INSPECTION	<input type="text" value="05/20/2018"/>	
		<input type="text" value="/ /"/>	
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN.	
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN.	
36	TRAFFIC SAFETY FEATURES		
	Br. Rail Trans. Appr. Rail Terminal SPEED LIMIT		
	1 1 1 N 55		
41	STRC OPEN/CLOSED/POSTED	A	
	A K P		
58	DECK	7	
59	SUPERSTRUCTURE	7	
60	SUBSTRUCTURE	7	
61	CHANL/CHANL PROTECTION	7	
62	CULVERT AND RETAIN WALL	N	
71	WATERWAY ADEQUACY	8	
72	APPROACH RDWY ALIGNMENT	8	
521	OVERALL CONDITION	GOOD	
16	LATITUDE		
	N 35° .0710'		
17	LONGITUDE		
	W 85° 12.6440'		
		<input type="text" value="/ /"/>	
	TEAM LEADER SIGNATURE	REVIEW DATE	

# Photographs

Bridge ID#: 33I00750009

Date: 07/19/2016



BRIDGE # - SPAN 1 - RIGHT



LOOKING AHEAD I75 - NB

# Photographs



LOOKING BACK I75 - NB



RIGHT SIDEVIEW - OUTLET

# Photographs



RIGHT SIDEVIEW - OUTLET



UPSTREAM

# Photographs



DOWNSTREAM



ABUTMENT



## Photographs



BENT



BEARINGS - ABUTMENT

# Photographs



BEARINGS - BENT



WEARING SURFACE

## Photographs



TRAFFIC SAFETY FEATURES

# BRIDGE INSPECTION REPORT

Page No. \_\_\_\_\_

Form BIR 3.0  
(Rev. 9-22-98)  
DT-0069

Field Report No. 23 Date 7/19/2016  
Previous Report No. 22 Date 7/7/2014  
Plans: DESIGN

Bridge No. 33100750009  
Eleven Digit No.

Bridge Location No. 33 - I0075 - 0117 R  
Co. Route Log Mile

I75 over BIG SPRING CREEK \*  
Facility Carried by Structure Crossing Structure Name (If Named)  
Year Constructed 1959 ACTUAL County \_\_\_\_\_ Maintenance District 21  
Year Widened 1989 ACTUAL Year Rehabilitated 1989 ACTUAL

## FEATURES

Wearing Surface CONCRETE Depth 8.0 (in.)  
Flared Width YES Median Width NONE  
Navigational Control NO Bridge Skew 81 ° LT  
Structure Type (Main Span) PCBB  
Structure Type (Appr.Spans) NA  
No. Main Spans 3 No. Approach Spans 0  
Maximum Span Length 35.7 (\*\*.\* ft.)  
Total Length 107.0 (\*\*.\* ft.)

## TEAM LEADER

Tays

## INSPECTORS

Haas

## WIDTHS (\*.\* ft.)

Deck Out-to-Out 74.0  
Roadway Curb/Curb NA  
Roadway Rail/Rail 70.0  
Sidewalk Rt. NA Lt. NA  
\*Approach Roadway 48.0  
\*(Does Not Include Shoulders)  
Approach Shoulder Rt. 10.0  
Lt. 12.0

## CLEARANCES

Min. Vertical Clearance over Deck 99-99 (ft.-in.)  
Min. Vertical Under Clearance NA (ft.-in.)  
Min. Lateral Under Clearance Rt. NA (\*.\* ft.)  
Min. Lateral Under Clearance Lt. NA (\*.\* ft.)

FRACTURE CRITICAL: NO  
(If Yes, Include BIR 3.9)

NBIS Bridge Length (<25 ft.) \_\_\_\_\_ (ft.-in.)

## UNDERWATER INSPECTION

To Be Performed By: DOT FIELD TEAM Date \_\_\_\_\_

Change in Structural Condition: NO Major Repairs Made: YES BRIDGE is: OPEN

## COMMENTS:

Supervising Bridge Inspector: Tays

BRIDGE RATING: GOOD

**PERFORMANCE EVALUATION**

Time of Day Inspected AM Weather Conditions 75F SUNNY  
 Vehicles Observed ALL TYPES

**LIVE LOAD BEHAVIOR**

Substructure	Yes/No	Comments
Horiz./ Vert. Defl.	NO	
Vibration	NO	
Superstructure		
Horiz./ Vert. Defl.	NO	
Vibration	NO	

**APPROACH**

	Rating	Comments
Alignment	GOOD	
Slab	NA	
Joints	NA	
Pavement	GOOD	
Embankment	GOOD	
Drains	GOOD	

**TRAFFIC SAFETY FEATURES**

	Rating	Standard/ SubStandard	Comments
Bridgerailing	GOOD	STANDARD	
Transitions	GOOD	STANDARD	
Guardrail	GOOD	STANDARD	
Guardrail Terminal	N/A	STANDARD	>100 FEET

**SIGNING**

	Yes/ No/ Needed
Paddleboards	NO
Vertical Clearance (<14'-6")	NO
Narrow Bridge Signs	NO
One Lane Bridge Signs	NO

Weight Limit Posted NO  
 Gross..... Tons  
 2 Axle..... Tons  
 3 or more Axles.. Tons

Other Signs or Plaques:

Comments Regarding any  
 Problems with Signing:

**DECK**

	Rating	Comments
Wearing Surface	GOOD	
Deck - Structural Condition	NV	<i>HL CRACKS W/EFF. Asphalt overlay. No visible issues</i>
Curbs	NA	
Median	NONE	
Sidewalks	NONE	
Parapet	N/A	
Railing	N/A	
Paint	NA	
Drains	FAIR	
Lighting Standards	NONE	
Utilities	NONE	
Joint Leakage	NA	
Expansion Joints	NONE	

**SUPERSTRUCTURE**

Bearing Devices	GOOD	<i>Abutments - None - Integral</i>
Girders or Beams	G-F	<i>HL CRACKS. MINOR SPALLS W/ CABLE EXPOSED.</i>
Floor Beams	NA	
Stringers	NA	
Diaphragms	GOOD	
Bracing	NA	
Trusses - General	NA	
Portals	NA	
Bracing	NA	
Paint	NA	
Alignment of Members	GOOD	

**TEXTURE COAT**

Condition Rating	<u>GOOD</u>	Needs Spot Painting	<u>NO</u>
Overall Appearance	<u>GOOD</u>	Needs Repainting	<u>NO</u>
Staining Rating	<u>GOOD</u>	Comments	
Fading Rating	<u>GOOD</u>		
Scaling Rating	<u>GOOD</u>		

**SUBSTRUCTURE**

**ABUTMENTS**

	Rating	Comments
Caps	GOOD	
Breastwall	G-F	<i>HL CRACKS W/ EFF, SPALL, DELAM @ CJs.</i>
Wings	GOOD	
Backwall	GOOD	
Plumb	GOOD	
Footing	NA	
Piles	GOOD	
Embankment	GOOD	<i>SETTLED</i>
Bearing Surface	GOOD	
Slope Paving	NA	
Rip Rap	GOOD	

**PIERS**

Caps	N/A	
Columns	N/A	
Plumb	N/A	
Footings	N/A	
Piles	N/A	
Bearing Surface	N/A	

**BENTS**

Caps	GOOD	<i>HL cracks</i>
Columns	GOOD	<i>Walls - HL cracks</i>
Plumb	GOOD	
Footings	NV	
Piles	NV	
Bearing Surface	GOOD	

Piles Need Replacement: \_\_\_\_\_

Piles To Be Replaced:

**STREAM CHANNEL DATA AND CONDITIONS**

Stream Crossing: BIG SPRING CREEK \*

- I. 1. Type of bed material? MUD, SEDIMENT
- 2. Has channel shifted? NO (Yes/ No/ Not Apparent)
- 3. Condition of rip-rap? GOOD Est. % failed        %
- 4. Overall condition of channel? GOOD
- 5. Item 61 - Code values 0 thru 9 according to the recording and coding guide currently in effect: 7
- 6. Underwater diver inspection recommended? NO  
If yes, why? \_\_\_\_\_

- II. Channel and bank stability conditions: (yes if applicable)
  - 1. Steep bank conditions: Failures upstream No Failures downstream No
  - 2. Moderate bank erosion No
  - 3. Bank vegetation: a. low growth YES b. large timber YES c. clear banks No  
d. dead trees upstream No e. dead trees downstream No
  - 4. Sediment or gravel accumulation: NO (Yes/ No/ Unknown)
  - 5. Channel altered or straightened: NO (Yes/ No/ Unknown)
  - 6. Stable conditions: a. live growth YES b. bedrock Yes  
c. boulders No d. flat slopes (<=2:1) No

- III. Waterway adequacy and debris characteristics: (yes if applicable)
  - 1. Bridge deck elevations:
    - a. level with approach roadway. . . . . YES
    - b. higher than approach roadway. . . . . No
    - c. roadway approach >= 2 ft. above natural ground line. . YES
  - 2. Abutment encroaches into channel. . . . . No
  - 3. Large scour (blowhole) under bridge. . . . . No
  - 4. Indications that flood waters overtop bridge: NO (Yes/No)  
If YES, Answer: Occasionally, Frequently, or Unknown \_\_\_\_\_
  - 5. Debris characteristics:
    - a. debris/drift present No
    - b. debris/drift likely to accumulate No
    - c. dead trees upstream No dead trees downstream No

IV. Comments: MACHINE-PLACED RIPRAP BAGS.

**SPECIAL INSPECTION DATA - FOR REASONS OTHER THAN FC OR SCOUR**

- I. Does this bridge need a special inspection? NO
- II. Reason for special inspection:



Inspection Team's Summary  
Bridge Location No. 33 - I0075 - 0117 R  
Inspection Date 7/19/2016  
Bridge Rating GOOD

TYPE SERVICE: I 75 NBL  
OVER: BIG SPRING CREEK \*

On Tuesday, July 19, 2016, a Region Two bridge inspection team inspected this structure and found it to be in GOOD condition.

**TOP OF DECK**

*Traffic Safety Features*

Bridge Rail:	GOOD	STANDARD	
Transitions:	GOOD	STANDARD	
Approach Rail:	GOOD	STANDARD	
Terminals:	N/A	STANDARD	>100 FEET

*Wearing Surfaces*

Approach Pvm:	GOOD
Deck - Wearing Surface:	GOOD

**BOTTOM OF DECK**

Deck - Structural Condition:	NV	HL CRACKS W/EFF. Asphalt overlay. No visible issues
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**SUPERSTRUCTURE**

Beams:	G-F	HL CRACKS. MINOR SPALLS W/ CABLE EXPOSED.
Bearings:	GOOD	Abutments - None - Integral

**SUBSTRUCTURE**

*Abutments*

Caps:	GOOD	
Breastwall:	G-F	HL CRACKS W/ EFF, SPALL, DELAM @ CJs.
Wings:	GOOD	
Backwall	GOOD	
Bearing Surface:	GOOD	

*Bents*

Caps:	GOOD	HL cracks
Columns:	GOOD	Walls - HL cracks
Bearing Surface:	GOOD	

**UNDERCLEARANCE**

Min Vert Under Clear(ft-in): NA

**SPECIAL NOTES**

BRIDGE LOCATION NO. 33 I-75 1.17 RT 1.88 DATE: 03/04/98  
COUNTY ROUTE LOG MILE LOG km

STATION/ LOCATION	TOP OF LT. CURB/RAIL	GUTTER/ EDGE DECK	CENTERLINE	GUTTER/ EDGE DECK	TOP OF RT. CURB/RAIL
ABUT # 1	208.48	207.69		207.48	208.29
BENT # 1	208.49	207.67		207.48	208.33
BENT # 2	208.49	207.67		207.50	208.33
ABUT # 2	208.55	207.74		207.53	208.35

BENCH MARK LOCATION BRIDGE SEAT, ABUT. # 2, RT. SIDE. (NBL)

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BENCH MARK ELEVATION 678.32 ft - 206.75 m

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NOTE: ELEVATIONS TAKEN FROM PREVIOUS REPORT.

# RT. EDGE OF BRIDGE

**BRIDGE LOC. NO.:**

**33-I75-1.17 RT**

**DATE: 07/26/2012**

DOWNSTREAM

CROSSING: BIG SPRING CREEK

NO CHANGE: 2010, 2012

( m )	LOCATION	ELEV '98
ABUT #1	1.00	206.09
	3.00	204.95
	6.00	202.83
	9.00	201.12
EDG WTR	10.30	200.22
PIER #1	11.00	199.83
	12.00	199.73
	15.00	199.78
	18.00	199.73
EDG WTR	21.00	200.21
PIER #2	22.00	200.57
	24.00	201.41
	27.00	203.74
	30.00	205.35
ABUT #2	32.00	206.15

**BOTTOM FOOTING ELEVATIONS**

PIER #1 197.02 m

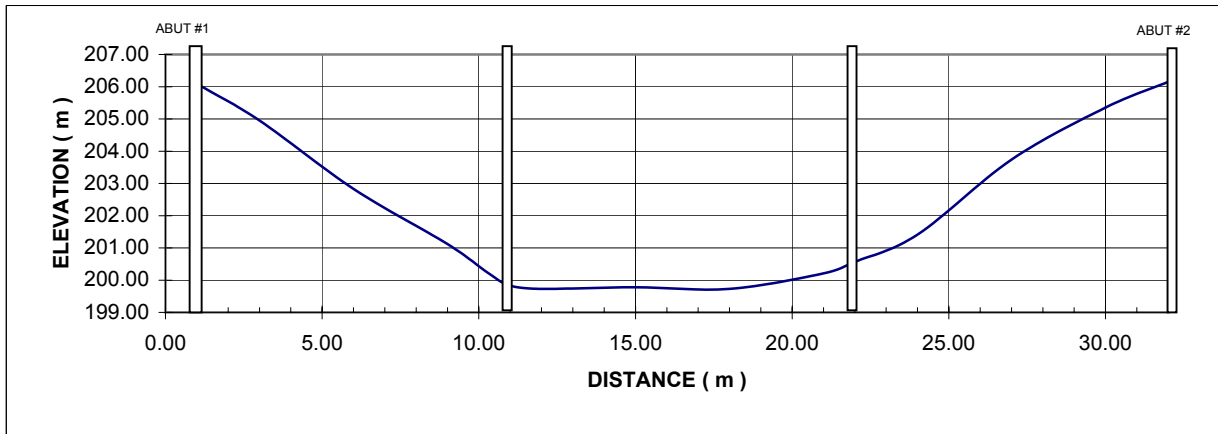
PIER #2 198.55 m

BENCH MARK ELEVATION 206.75 m

LOCATION : BRIDGE SEAT, ABUT #2

RIGHT SIDE. (NBL)

BOTTOM VISIBLE



# LEFT EDGE OF BRIDGE

PAGE NO. \_\_\_

**BRIDGE LOC. NO.:**

**33-I75-1.17 RT**

**DATE: 07/26/2012**

UPSTREAM

CROSSING: BIG SPRING CREEK

NO CHANGE: 2010, 2012

BOTTOM FOOTING ELEVATIONS

PIER #1 197.02 m

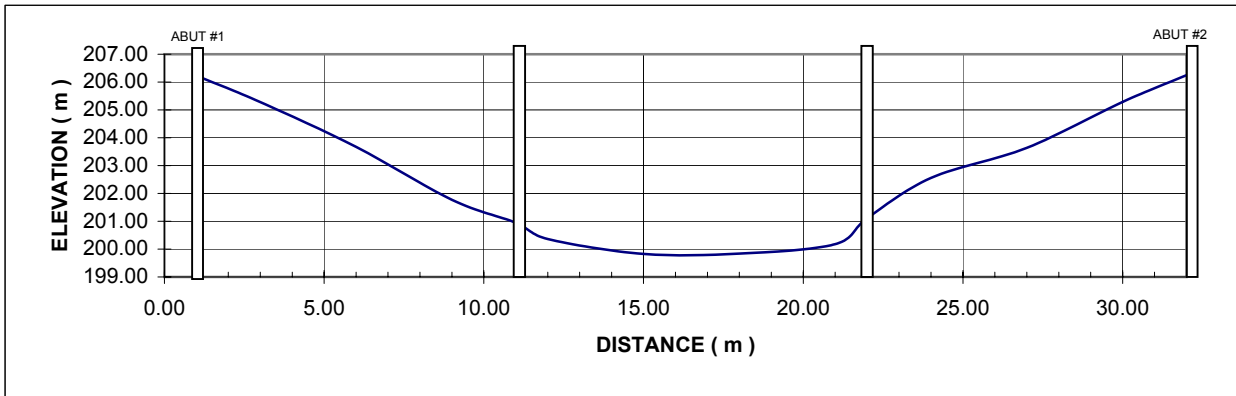
PIER #2 198.55 m

BENCH MARK ELEVATION 206.75 m

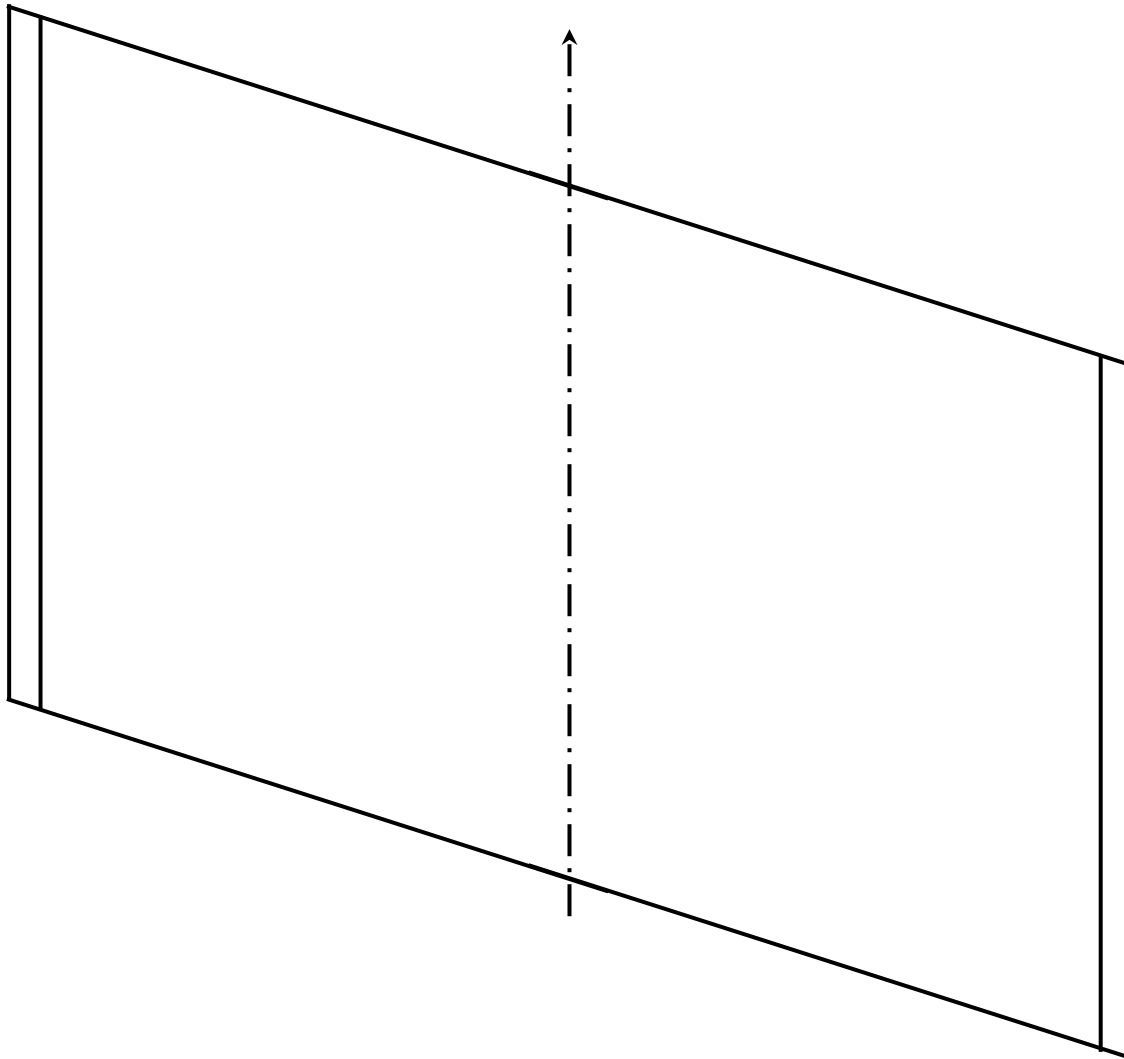
LOCATION : TOP OF BRIDGE SEAT, ABUT #2  
RIGHT SIDE (NBL)

( m )	LOCATION	ELEV.'98
ABUT. #1	1.00	206.23
	3.00	205.28
	6.00	203.67
	9.00	201.77
PIER #1	11.00	200.95
EDG WTR	12.00	200.36
	15.00	199.83
	18.00	199.84
EDG WTR	21.00	200.18
PIER #2	22.00	201.11
	24.00	202.56
	27.00	203.64
	30.00	205.29
ABUT. #2	32.00	206.25

BOTTOM VISIBLE



Embankment: G  
App Pvmnt: G  
App Rail: G  
Wearing Surface: G  
Bridge Rail: G

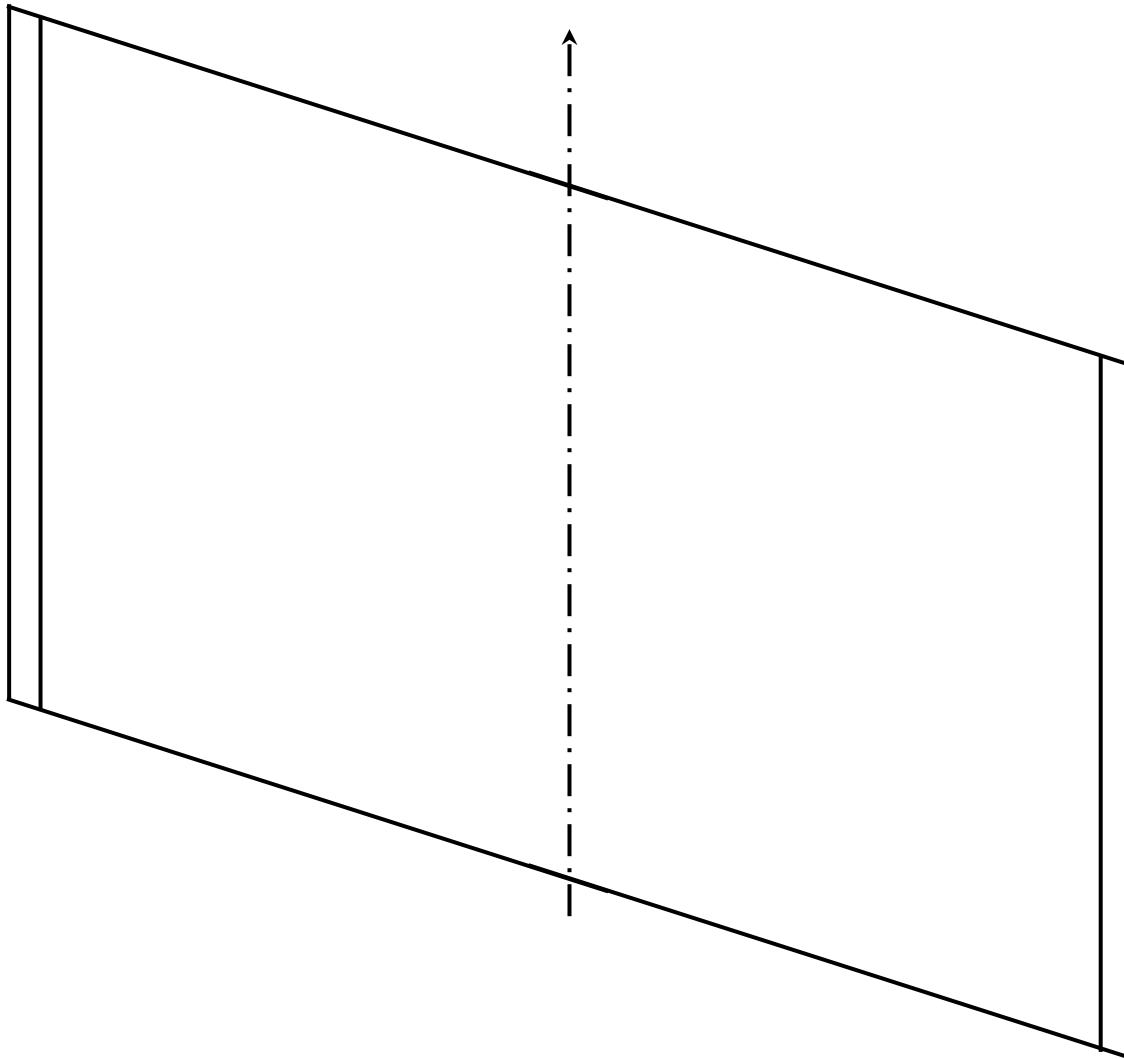


This span - Traffic Approach

2016 Changes in RED

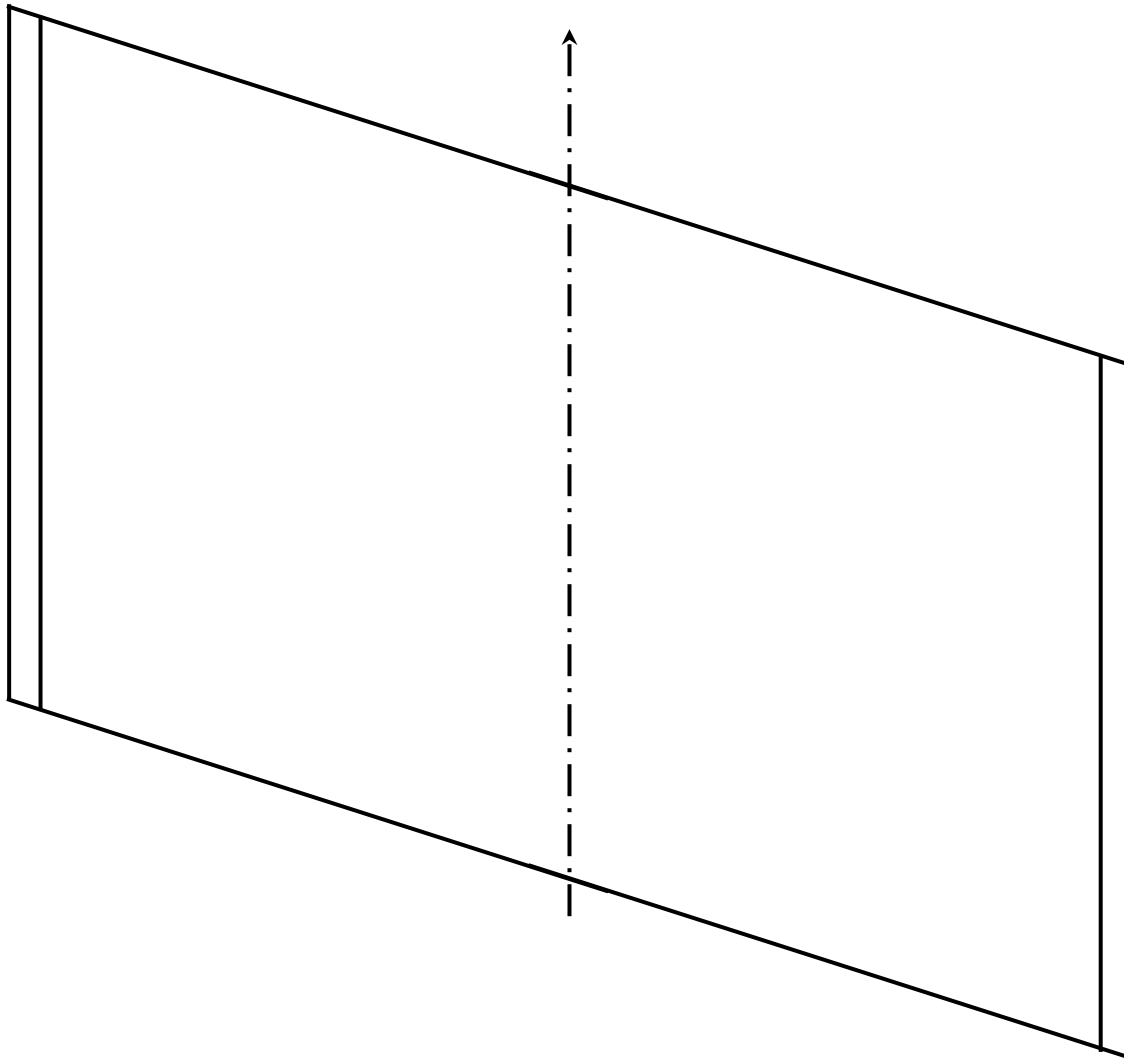
Wearing Surface: G

Bridge Rail: G



2016 Changes in RED

Embankment: G  
Approach Rail: G  
Wearing Surface: G  
Bridge Rail: G



This Span - Traffic Departure

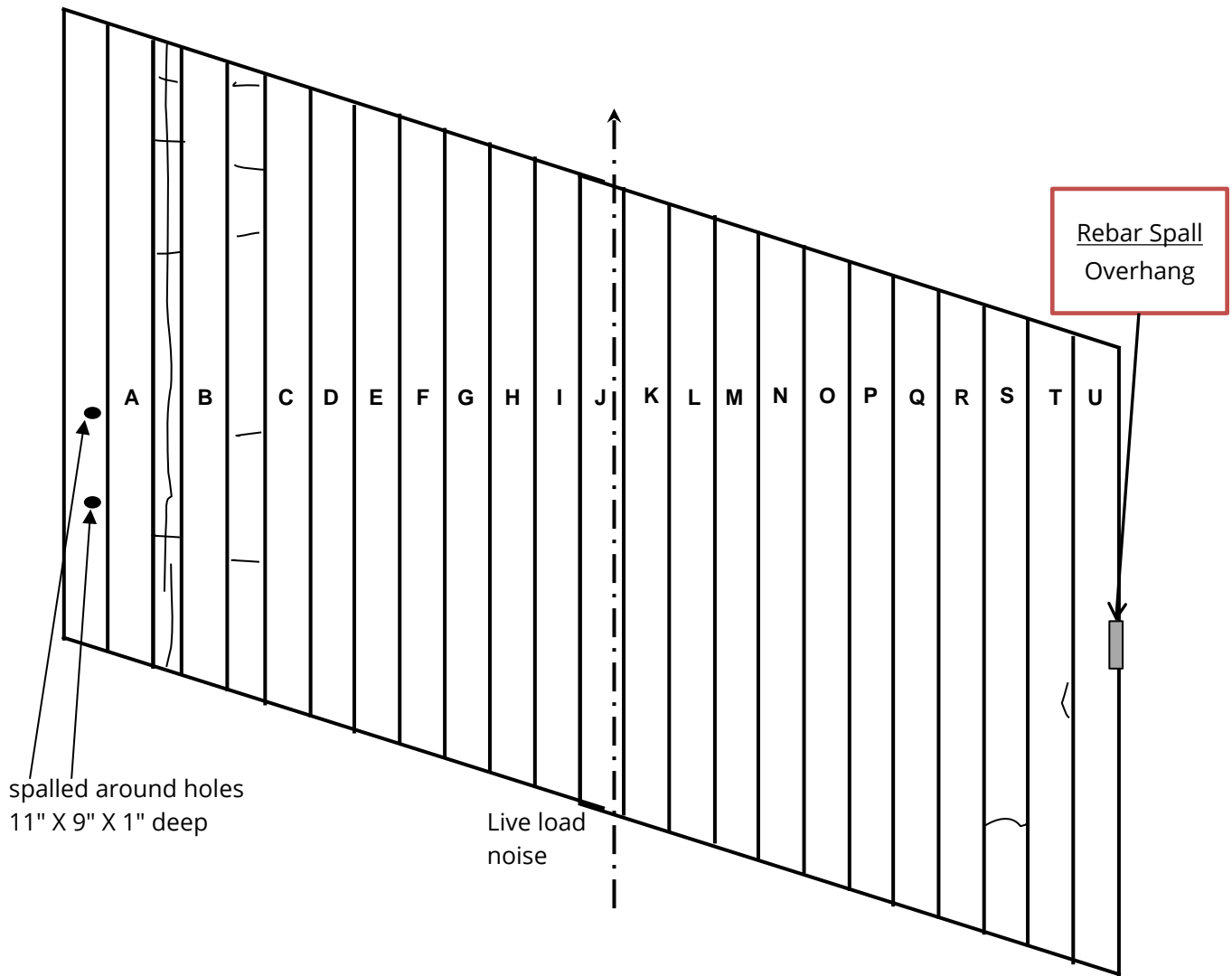
2016 Changes in RED

Approach Rail: G Traffic departure end

Beams: G

Deck: GF

cracks are hairline with efflorescence

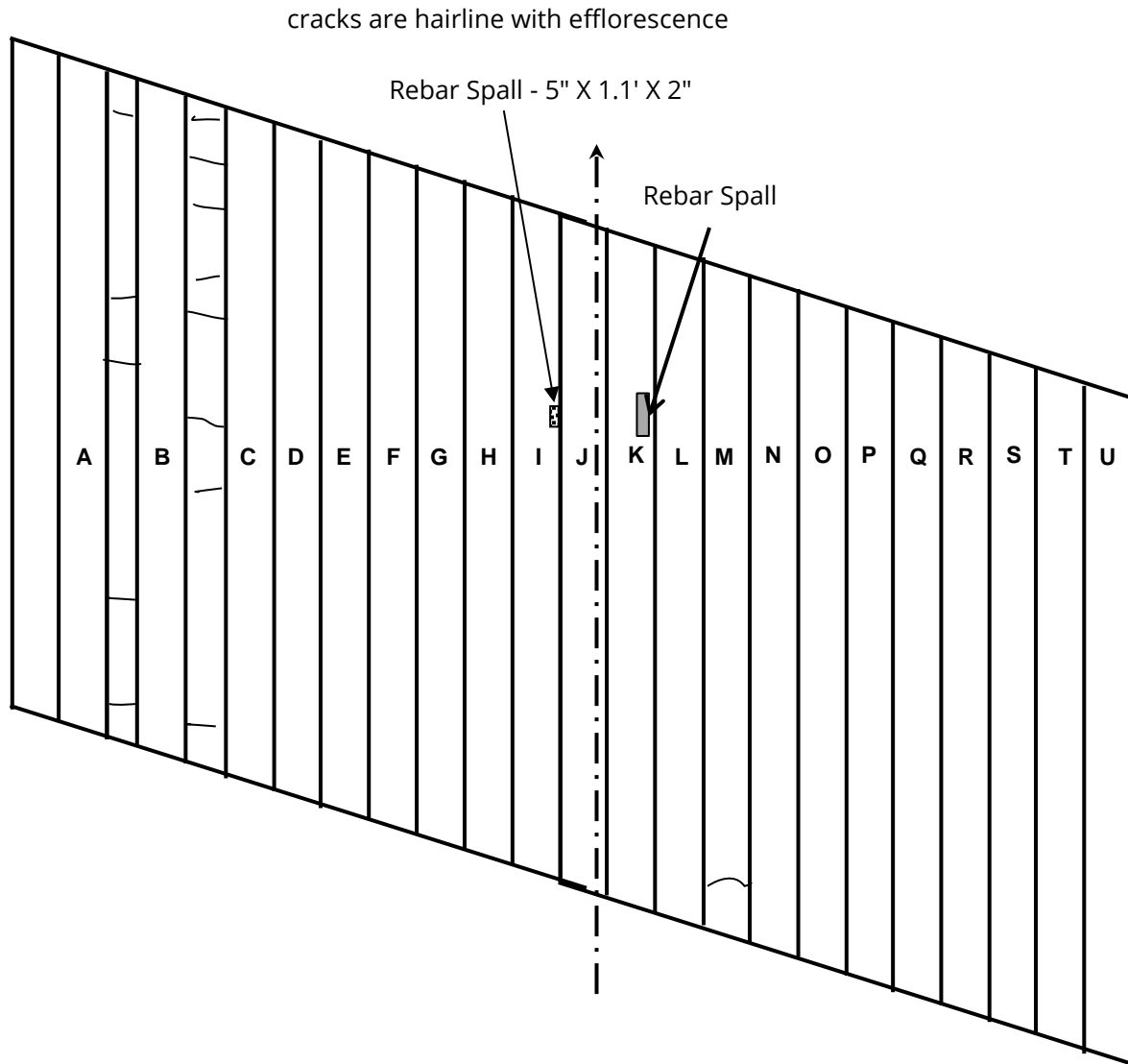


2016 Changes in RED



Beams: G

Deck: GF

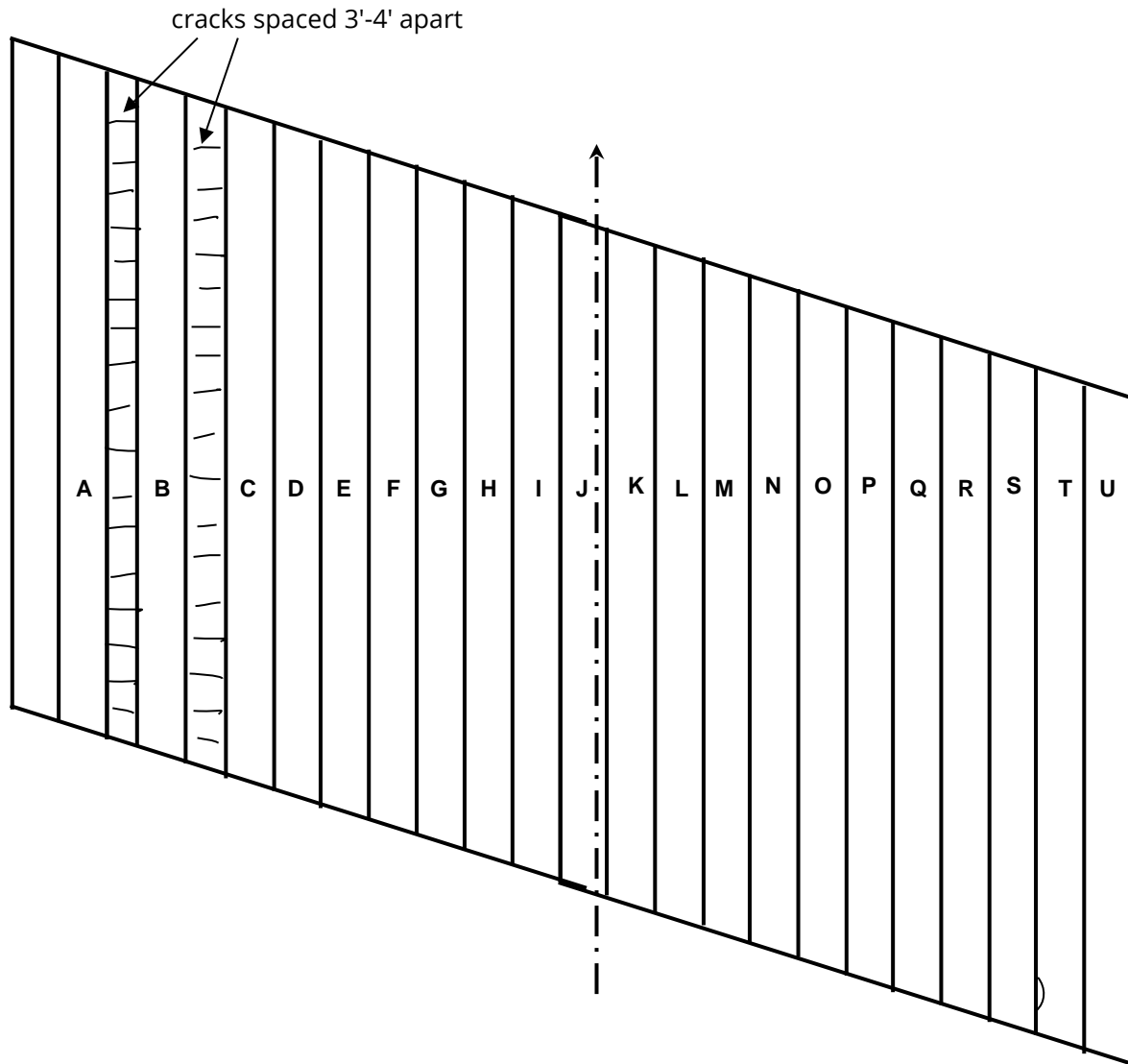


2016 Changes in RED

Beams: G 'J' - sag

Deck: GF

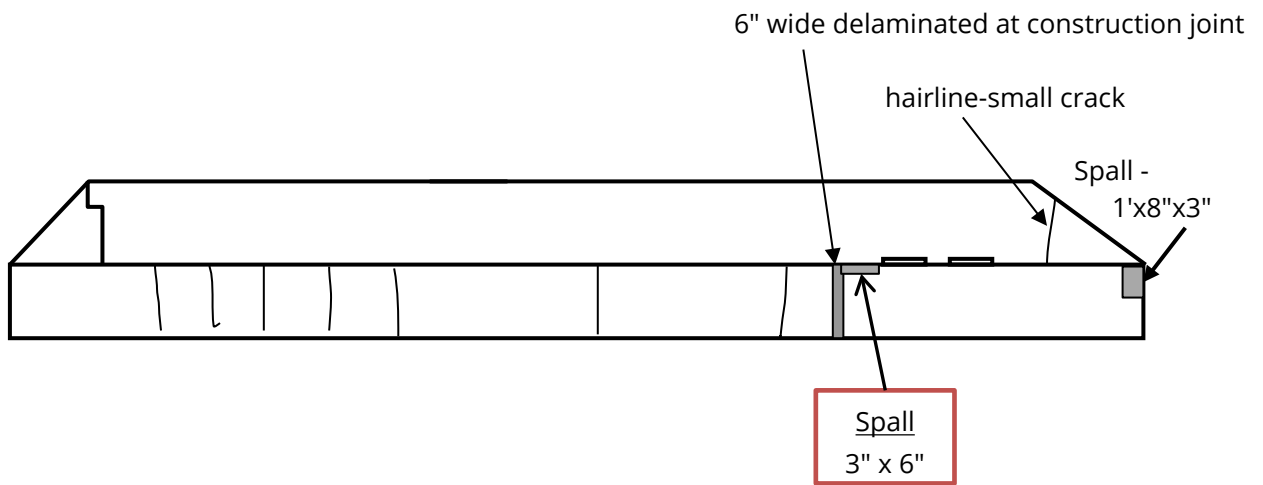
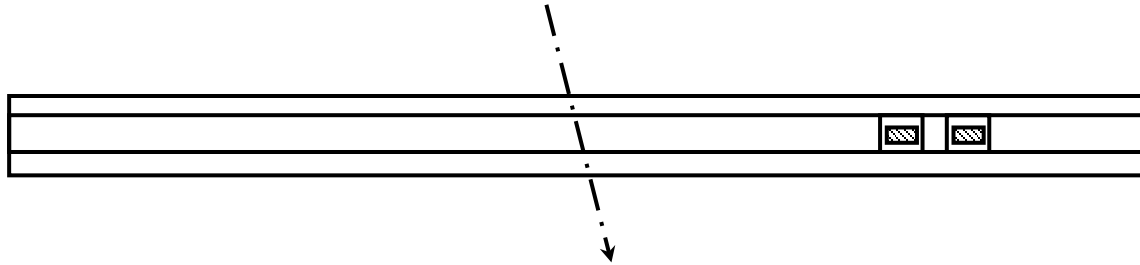
Eff leakage between beams



2016 Changes in RED

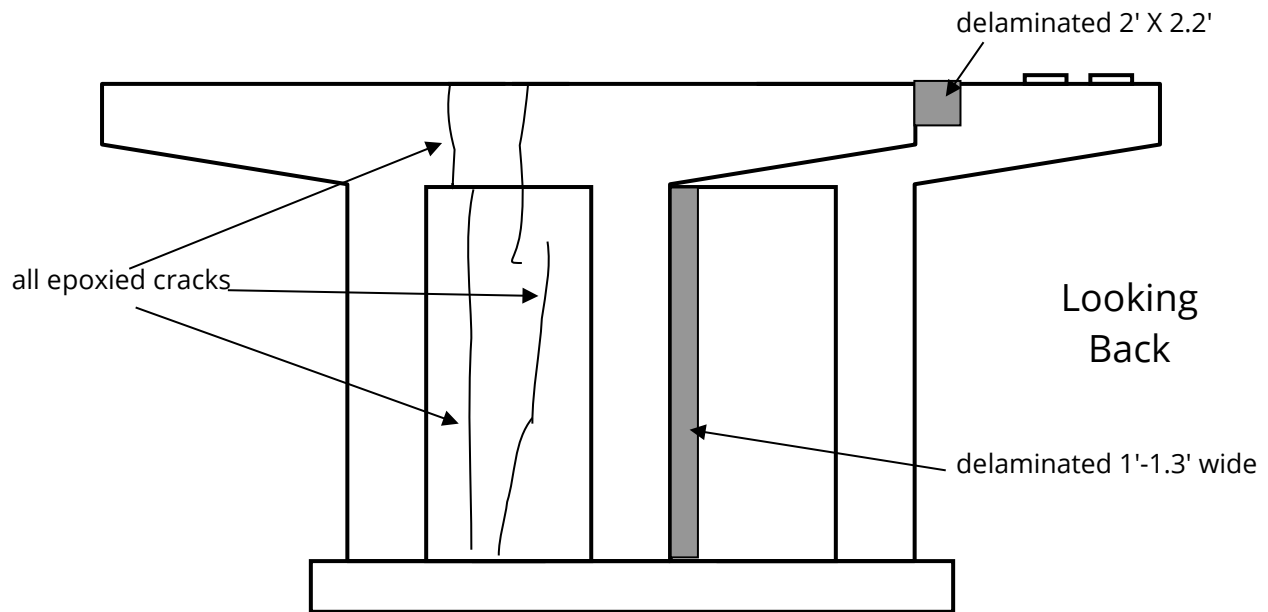
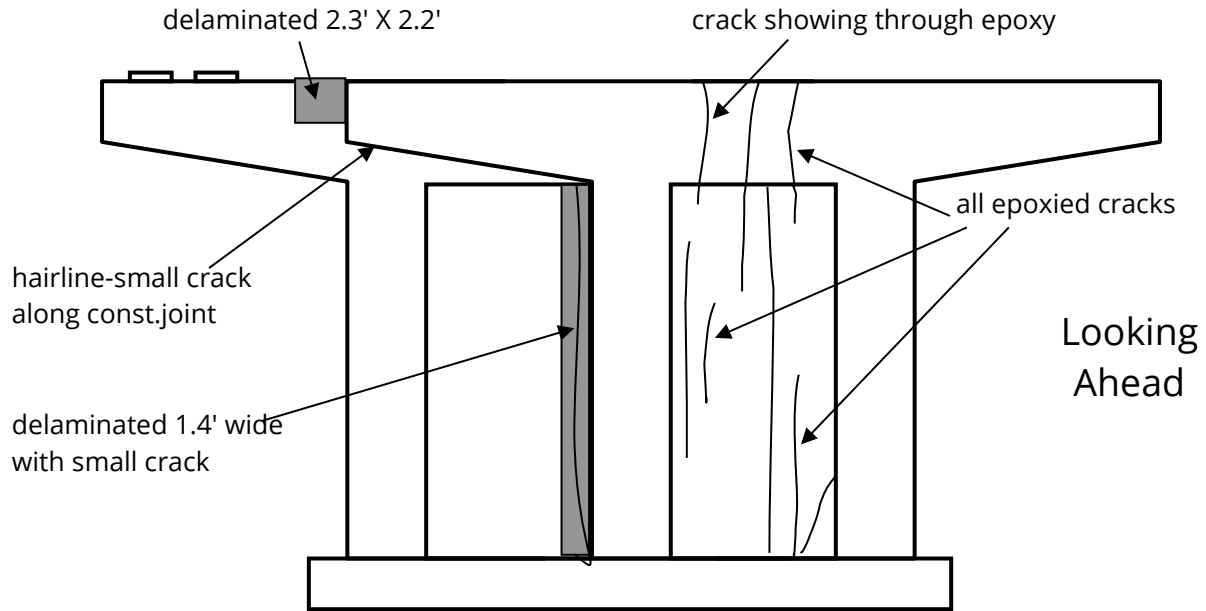
Walls: G

Bearings: None Integral



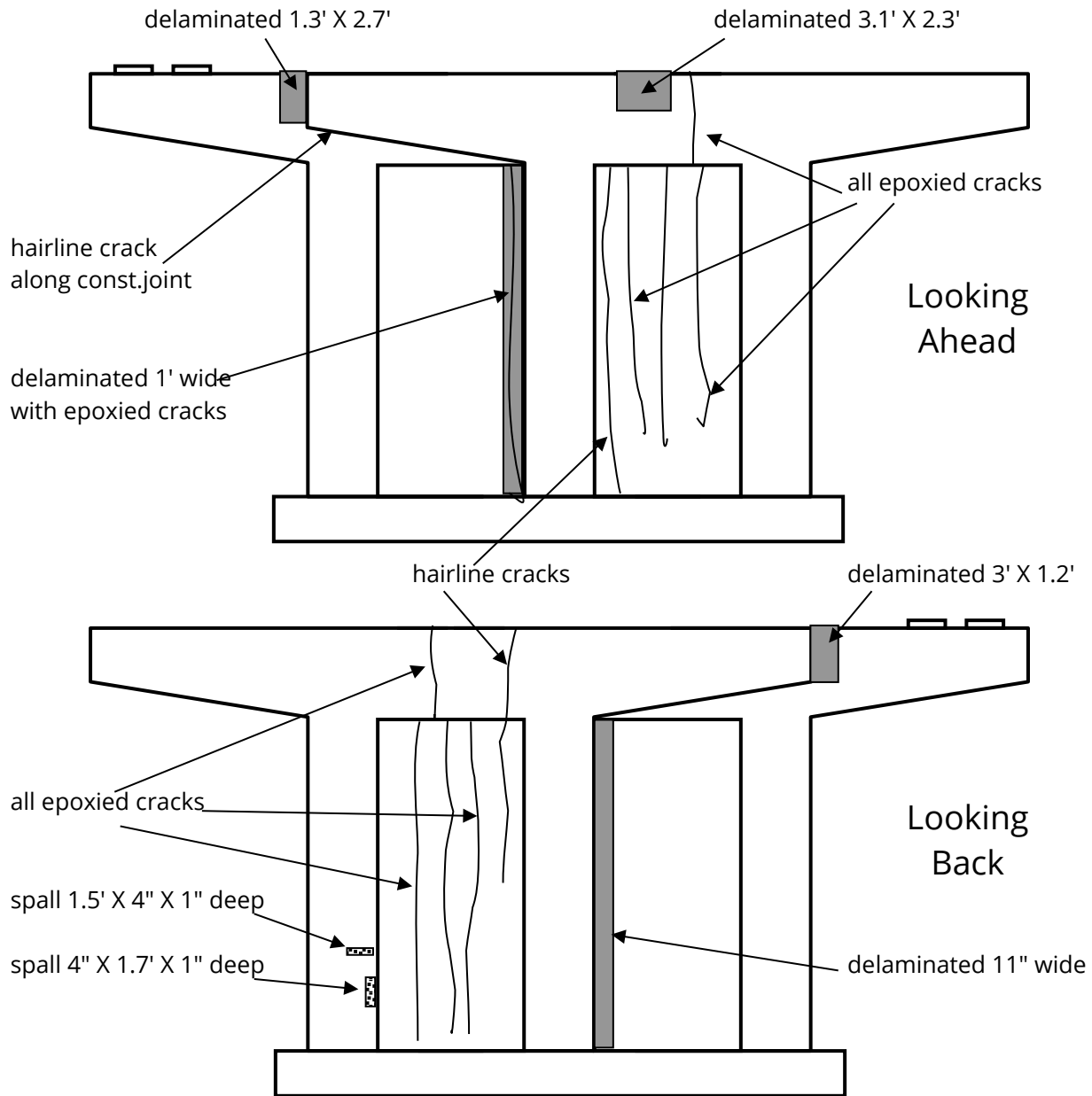
2016 Changes in RED

Pier Wall GF  
Cap: GF  
Bearings: G Fixed



2016 Changes in RED

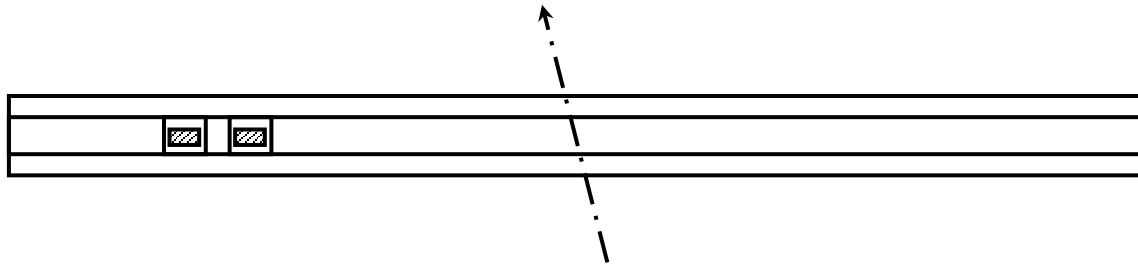
Pier Wall GF  
Cap: GF  
Bearings: G Fixed



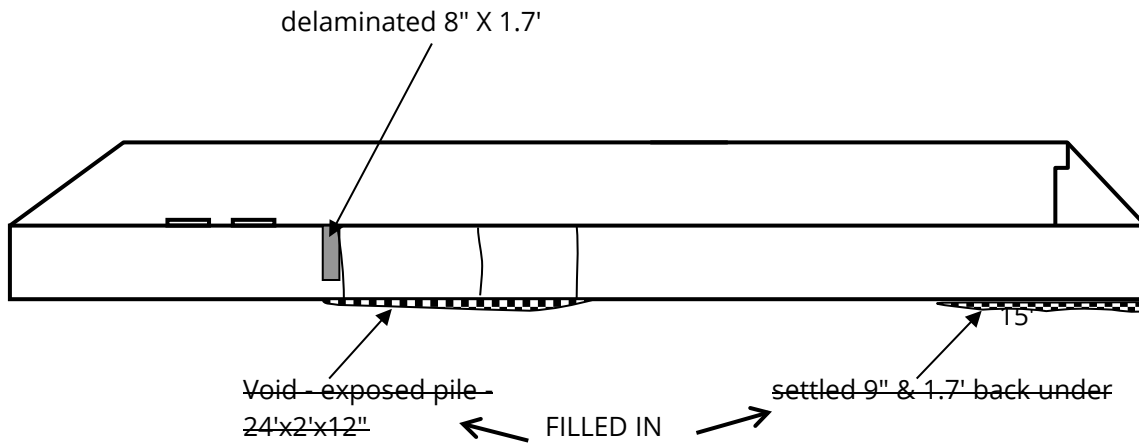
2016 Changes in RED

Walls: G

Bearings: None Integral



cracks are hairline



2016 Changes in RED

### Structure Inventory and Appraisal Sheet (English Units)

ELEMENT CONDITION STATE DATA												
Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4
0	12/1	Re Concrete Deck	sq.ft	8,025	100%	8,025	0%	0	0%	0	0%	0
0	510/1	Wearing Surfaces	sq.ft	7,704	100%	7,704	0%	0	0%	0	0%	0
0	104/1	Pre Clsd Box Girder	ft	2,247	100%	2,247	0%	0	0%	0	0%	0
0	210/1	Re Conc Pier Wall	ft	150	100%	150	0%	0	0%	0	0%	0
0	215/1	Re Conc Abutment	ft	190	100%	190	0%	0	0%	0	0%	0
0	234/1	Re Conc Pier Cap	ft	150	100%	150	0%	0	0%	0	0%	0
0	313/1	Fixed Bearing	each	42	100%	42	0%	0	0%	0	0%	0
0	331/1	Re Conc Bridge Railing	ft	214	100%	214	0%	0	0%	0	0%	0