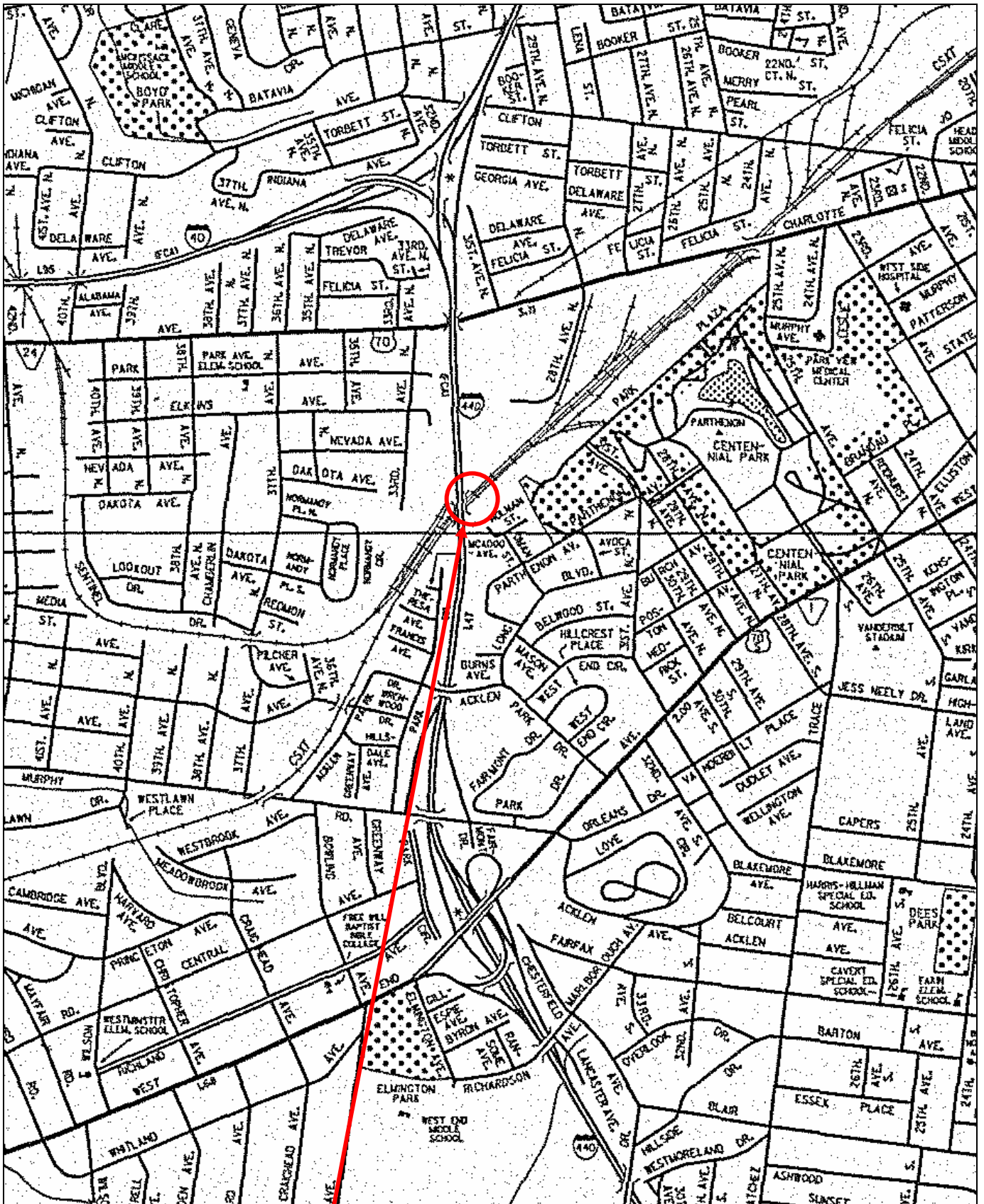


DAVIDSON COUNTY



19I0440003
19-I0440-0.72 RT
1440 RL/CSX RR

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BRIDGE MAINTENANCE RECOMMENDATIONS



Tennessee Department
of Transportation

COUNTY: DAVIDSON
 LOCATION: 19-I0440-00.72-R
 CO. SEQ.: 1 SPEC. CASE: 0
 MILEPOST: 0.63

CROSSING: I440-RL / CSX RR
 FED. BRIDGE NO.: 19I04400003
 MAINT. DIST.: 19

REPAIR LIST NO.: N
 DATE ADDED:
 REVISED: 02/26/2010

FACILITY CARRIED:	I440	NUMBER OF MAIN SPANS:	3
HIGHWAY SYSTEM:	02-INTERSTATE URBAN	NUMBER OF APPROACH SPANS:	0
BRIDGE WIDTH (CURB TO CURB):	54 FT 1 IN	BRIDGE LENGTH (FT):	253
BRIDGE WIDTH (OUT TO OUT):	56 FT 1 IN	MAXIMUM SPAN LENGTH (FT):	115
APPROACH ROADWAY (W/SHOULDERS):	54 FT 1 IN	SKEW ANGLE (DEGREES):	52
MAINTAINED BY:	STATE HIGHWAY AGENCY		
MAIN SPAN MATERIAL:	PRESTRESSED CONCRETE CONTINUOUS		
MAIN SPAN DESIGN TYPE:	BOX BEAM OR GIRDERS - SINGLE OR SPREAD		
APPROACH SPAN MATERIAL:	OTHER OR NOT APPLICABLE		
APPROACH SPAN DESIGN TYPE:	OTHER OR NOT APPLICABLE		
INSPECTION DATE:	02/22/2016	GENERAL CONDITION:	FAIR
EVALUATION DATE:	05/08/2014	STRUCTURALLY DEFICIENT:	NO
PPRM PIN NUMBER:		SUFFICIENCY RATING:	83.0
H TRUCK RATING @ INV.:	20 TONS		

No.	RECOMMENDATIONS	REPAIR DATE	REPAIRED BY
1.	REPAIR/REPLACE APPROACH SLABS 'A' AND 'B' ENDS		
2.	LEVEL APPROACHES		

SUGGESTED ROUTINE MAINTENANCE AND COMMENTS
REPAIR SETTLEMENT @ ABUTMENT #2
SEAL CONCRETE WEARING SURFACE
REPAIR EXPANSION JOINTS @ BOTH ENDS
REPAIR APPROACH EMBANKMENT "B" END RIGHT SIDE
REPAIR BRIDGE PARAPET RAILING SPAN #3 RIGHT

GENERAL COMMENTS:

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 02/22/2016

Bridge Number: 19I044000031
(Includes Item 5A)

Feature Intersected: I440-RL / CSX RR

Evaluation Status: CONDITION ITEM CHANGE

County: 19

Route: I0440

Special Case: 0

County Sequence: 1

Log Mile: 0.72

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	CONDITION CODING GUIDELINES
90	LAST INSPECTION DATE	02/22/2016	(Values for Coding Items 58, 59, 60 and 62)
	EARLIEST DATE OF NEXT REGULAR INSPECTION	12/23/2017	
		<u> / /</u>	
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN.	N NOT APPLICABLE 9 EXCELLENT CONDITION 8 VERY GOOD CONDITION - NO PROBLEMS NOTED.
		<u> FT. IN.</u>	
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN.	7 GOOD CONDITION - SOME MINOR PROBLEMS. 6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.
		<u> FT. IN.</u>	
36	TRAFFIC SAFETY FEATURES		5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.
	Br. Rail Trans. Appr. Rail Terminal SPEED LIMIT	1 0 0 1 55	
41	STRC OPEN/CLOSED/POSTED	A	4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.
	A K P	<u> </u>	
58	DECK	5	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.
59	SUPERSTRUCTURE	7	
60	SUBSTRUCTURE	7	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.
61	CHANL/CHANL PROTECTION	N	
62	CULVERT AND RETAIN WALL	N	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.
71	WATERWAY ADEQUACY	N	
72	APPROACH RDWY ALIGNMENT	8	0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.
521	OVERALL CONDITION	FAIR	
16	LATITUDE	17 LONGITUDE	
	N 36° 8.8820'	W 86° 49.3570'	
	<u> </u>	<u> </u>	
	<u> / /</u>		
	TEAM LEADER SIGNATURE	REVIEW DATE	

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Bridge ID#: 19I04400003

Date: 02/22/2016



APPROACH "A"



VIEW ACROSS TOP OF WEARING SURFACE

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Date: 02/22/2016



APPROACH "B"



WEARING SURFACE SP. #3 W/ ROUGH A/C , SCALE

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WEARING SURFACE SP. #2 W/ CRACKS



ABUTMENT #1

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BRIDGE NO.



BENT #1 - FRONT VIEW

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BTM DECK VIEW SP. #2



CLEARANCE VIEW RT. SIDE

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EXP. PILE AT ABUT. #2



DECK PANEL BAY "D" ABUT.#2 W/ CRACKS

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Bridge ID#: 19I04400003

Date: 02/22/2016



SETTLEMENT AT ABUTMENT #2



DECK PANEL BAY "B" ABUT. #2 W/ FIRE DAMAGE

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DECK PANEL BAY "A" ABUT. #2 W/ CRACK

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BRIDGE INSPECTION REPORT

Page No. _____

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

Field Report No. 21 Date 2/22/2016
Previous Report No. 20 Date 2/25/2014
Plans: DESIGN

Bridge No. 19I04400003
Eleven Digit No.

Bridge Location No. 19 - I0440 - 0.72 R
Co. Route Log Mile

I440RL over I440-RL / CSX RR *
Road Name Crossing Structure Name (If Named)
Year Constructed 1985 ACTUAL County Davidson Maintenance District 37
Year Widened _____ Year Rehabilitated _____

FEATURES

Wearing Surface CONCRETE Depth _____ (in.)
Flared Width NO Median Width OPEN
Navigational Control NO Bridge Skew 52°
Structure Type (Main Span) HBB
Structure Type (Appr.Spans) _____
No. Main Spans 3 No. Approach Spans _____
Maximum Span Length 114.6' (**.* ft.)
Total Length 252.6 (**.* ft.)

INSPECTORS

1. BILLINGSLEY TL
2. VOGEL
3. BROWN
4. LOVE
5. _____
6. _____
7. _____
8. _____

WIDTHS (*.* ft.)

Deck Out-to-Out 56
Roadway Curb/Curb _____
Roadway Rail/Rail 54'
Sidewalk Rt. _____ Lt. _____
*Approach Roadway 36
*(Does Not Include Shoulders)
Approach Shoulder Rt. 12'
Lt. 6'

CLEARANCES

Min. Vertical Clearance over Deck 20'4" (ft.-in.)
Min. Vertical Under Clearance 22'10" (ft.-in.)
Min. Lateral Under Clearance Rt. 15.5' (*.* ft.)
Min. Lateral Under Clearance Lt. _____ (*.* ft.)

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

NBIS Bridge Length (<25 ft.) OVER 25' (ft.-in.)

UNDERWATER INSPECTION

To Be Performed By: NA Date _____

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

COMMENTS:

Supervising Bridge Inspector: GEREMY BILLINGSLEY

BRIDGE RATING: GOOD

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PERFORMANCE EVALUATION

Time of Day Inspected 10:22 AM Weather Conditions CLDY 54
Vehicles Observed ALL

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	POOR	TRANS CRACKS AND STLMNT 'A' & 'B' END, MOD AGG POPOUTS
Joints	POOR	HVY LOSS 'A' & 'B' END
Pavement	FAIR	MOD ROUGH A/C & UNEVEN TRANS 'A' & 'B' ENDS, CRACKS UP TO 1/4" OPEN
Embankment	POOR	MOD-HVY SETTLEMENT @ 'B' END RT
Drains	NA	

TRAFFIC SAFETY FEATURES

	Rating	Standard/ SubStandard	Comments
Bridgerailing	FAIR	STANDARD	MOD SCALE & DELAM. SP #3 RT.
Transitions	GOOD	SUBSTANDARD	INCORRECT BLOCKOUTS
Guardrail	GOOD	SUBSTANDARD	INCORRECT BLOCKOUTS
Guardrail Terminal	GOOD	STANDARD	

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	FAIR	MOD CRACKS, MOD- HVY SCALE, AGG POPOUTS
Deck - Structural Condition	GOOD	SP #3 BAY 'A' PANEL #7 & #8-TRANSV CRACKS UP TO 1/16" OPEN & BAY 'D' PANEL #9 TRANSV CRACKS W/EFF
Curbs	NA	
Median	NA	
Sidewalks	NA	
Parapet	FAIR	MOD HVY SCALE W/EXP. STL., SP #3 RT.
Railing	NA	
Paint	NA	
Drains	NA	
Lighting Standards	GOOD	
Utilities	NA	
Joint Leakage	GOOD	
Expansion Joints	POOR	TORN FILLER, PAVED OVER IN SP 33 W/FAILING A/C PATCHES

SUPERSTRUCTURE

Bearing Devices	GOOD	
Girders or Beams	GOOD	H.L. MAP CRACKS @ ABUTMENTS
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 NA Needs Spot Painting NO
 Overall Appearance Needs Repainting NO
 Staining Rating Comments
 Fading Rating
 Scaling Rating

SUBSTRUCTURE

ABUTMENTS

	Rating	Comments
Caps	GOOD	
Breastwall	NA	
Wings	GOOD	
Backwall	GOOD	ABUT #1 LGH SPALL, RANDOM H.C.'S
Plumb	GOOD	
Footing	NA	
Piles	GOOD	1 EXP. @ ABUT #2
Embankment	FAIR	SETTLEMENT @ ABUT #2
Bearing Surface	GOOD	
Slope Paving	NA	
Rip Rap	NA	

PIERS

Caps	NA	
Columns		
Plumb		
Footings		
Piles		
Bearing Surface		

BENTS

Caps	GOOD	RANDOM LONGIT H.C.'S, LGH SPALLS W/EXP. STL.
Columns	GOOD	
Plumb	GOOD	
Footings	NV	
Piles	NV	
Bearing Surface	GOOD	

Piles Need Replacement: NO

Piles To Be Replaced:

SUMMARY
19-I440-0.72 RT
02/22/2016

I440 RT Lane/C.S.X. R.R.
3 Span/H.B.B.

This bridge was inspected and found to be in **fair** condition. Approach alignment is good. Approach slabs are fair at "A" and "B" ends, due to settlement cracks, spalls. Embankment and parapet at "B" end right side has 5" settlement. Approach guardrail and transitions are good, but substandard. Bridge parapet rail is fair and standard with moderate-heavy scale with exposed steel span #3 right. End terminals are good and standard.

The concrete wearing surface is fair due to light-moderate scale, transverse, diagonal, and longitudinal cracks 1/16" open. Open joints are poor in span#3 being filled with asphalt and 100% filler loss. Deck panels are good with random transverse cracks with efflorescence.

Beams and bearings are good.

Abutments and bents are good with a light spall at abutment #1 backwall.

Abutment #1 embankment is fair with light-moderate settlement.

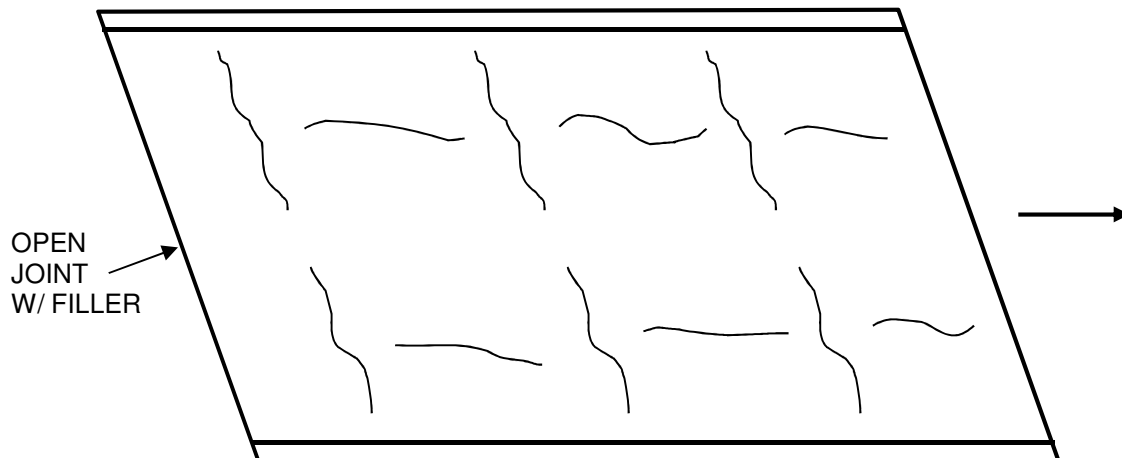
Underpass crash walls are good. The minimum distance from the centerline of track to the nearest bent is 15.4'.

Jeremy Billingsley

Top of Deck Span No. 1

Date 2/22/2016
GB

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

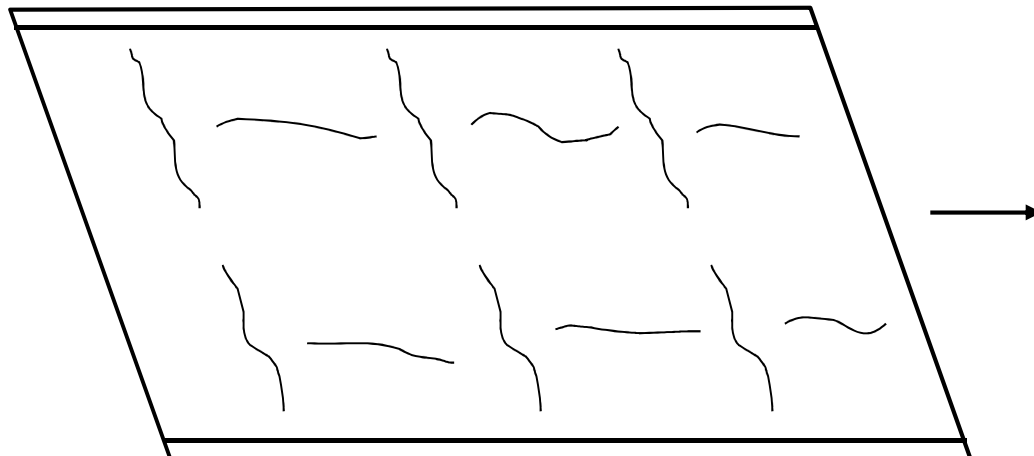


DECK	FAIR	CONCRETE- LGH-MOD. SCALE 1/4" DP, TRANSV., DIAG.,
		& LONGIT CRACKS 1/8" OPEN
PARAPET	GOOD	STANDARD-LGH SURFACE SCALE, AGG POPOUTS
JOINTS	POOR	HVY FILLER LOSS & MOD. BREAKOUTS 'A' END

Top of Deck Span No. 2

Date 2/22/2016
GB

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

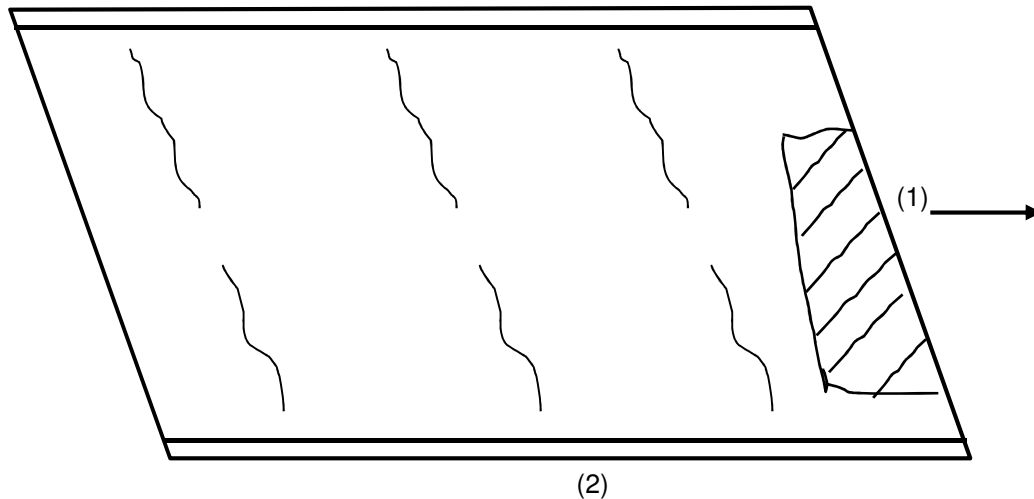


DECK	FAIR	CONCRETE- LGH-MOD. SCALE 1/4" DP, TRANSV., DIAG.,
		& LONGIT CRACKS 1/8" OPEN
PARAPET	GOOD	LGH. SCALE, AGG POPOUTS

Top of Deck Span No. 3

Date 2/22/2016
GB

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

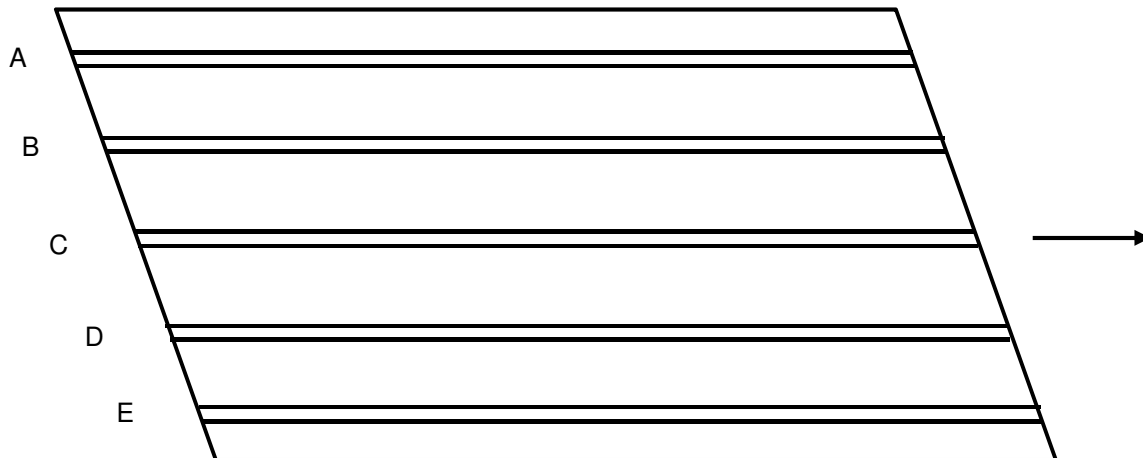


DECK	FAIR	CONCRETE-LGH. TRANSV. LGH. H.C.'S, LGH-MOD SCALE, (1) ROUGH A/C OVERLAY
PARAPET	FAIR	(2) MOD. - HVY SCALE W/EXP. STL.
JOINTS	POOR	FILLED W/ ASPHALT, FAILING A/C PATCHES

Bottom of Slab Span No. 1

Date 2/22/2016
JB

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

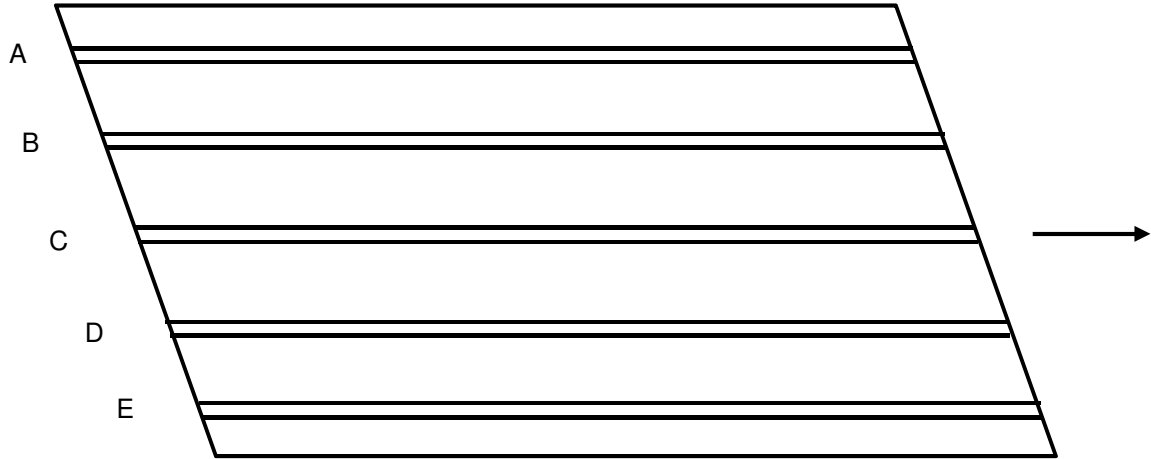


DECK	GOOD	SOOT STAINS
DIAPHRAGMS	GOOD	
BEAMS	GOOD	H.L. MAP CRACKS ALL BEAMS @ ABUT.
OVERHANG	GOOD	

Bottom of Slab Span No. 2

Date 2/22/2016
JB

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

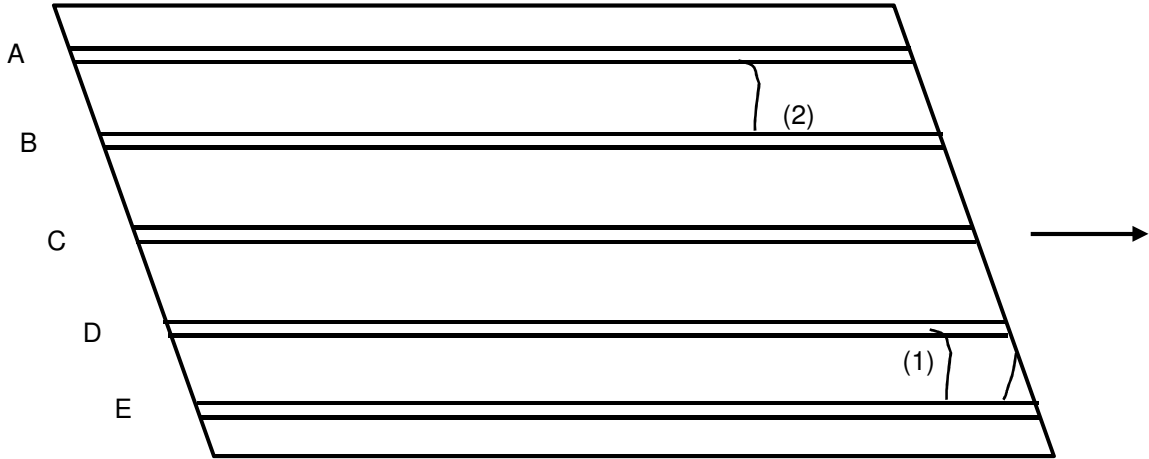


DECK	GOOD	HVY SOOT STAINS
DIAPHRAGMS	GOOD	
BEAMS	GOOD	HVY SOOT STAINS
OVERHANG	GOOD	H.C.'S W/ EFF.

Bottom of Slab Span No. 3

Date 2/22/2016
JB

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

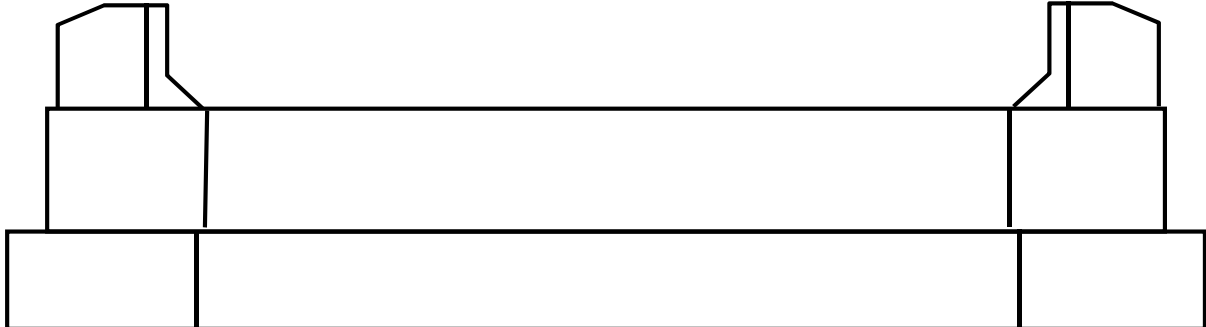


DECK	GOOD	(1) I.P.B.O. 6" DIA, TRANSV CRACKS W/EFF, BAY 'D' PANEL 7 & 8, (2) TRANSV. CRACKS @ PANEL 7 BAY 'A' UP TO 1/16" OPEN.
DIAPHRAGMS	GOOD	
BEAMS	GOOD	H.L. MAP CRACKS ALL BEAMS @ ABUT.
OVERHANG	GOOD	

Abutment No. 1

Date 2/22/2016
JV

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

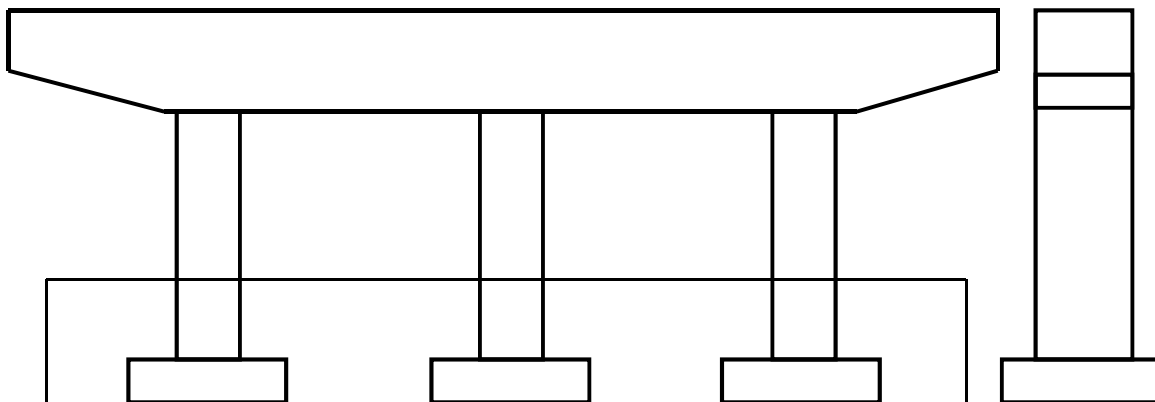


BACKWALL	GOOD	RANDOM DIAG VERT H.C.'S W/EFF, SPALL 3' H X 2' W X 1' DP
		BETWEEN BEAMS 'D' & 'E'
CAP	GOOD	
WINGS	GOOD	
BEARINGS	GOOD	
EMBANKMENT	GOOD	

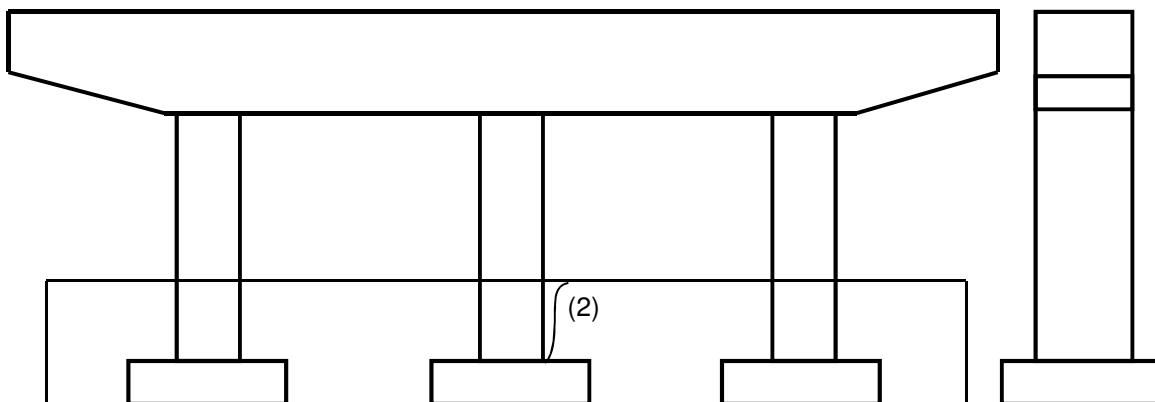
Bent No. 1

Date 2/22/2016
JV

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile



FRONT



BACK

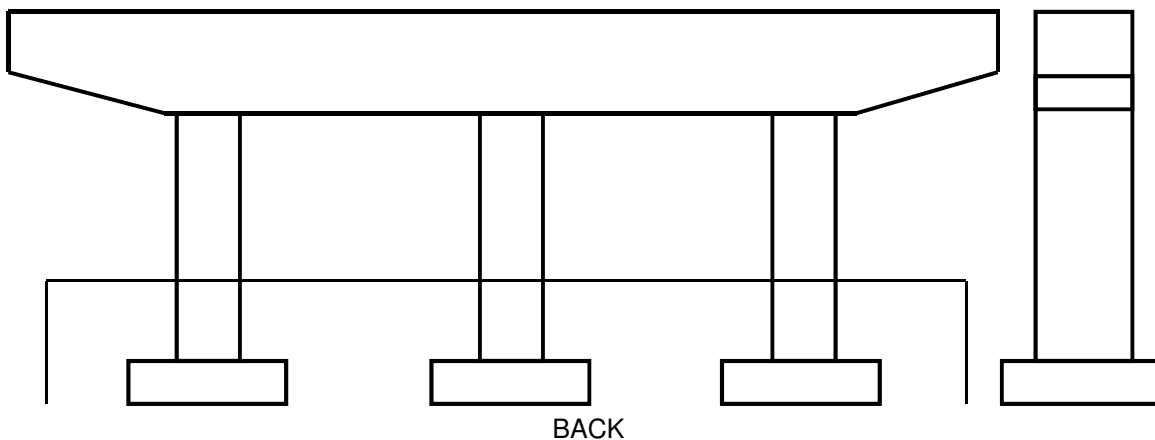
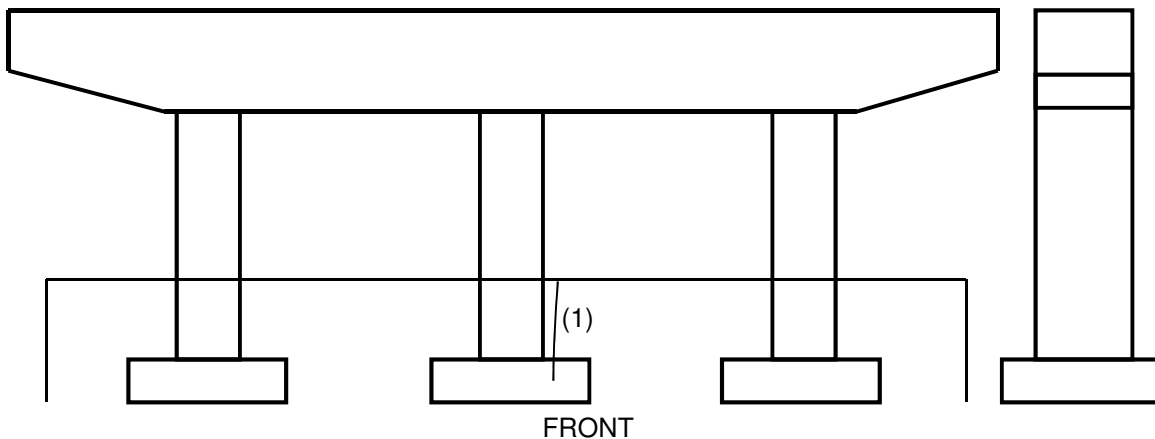
CAP	GOOD	I.P.B.O., RANDOM LONGIT H.C.'S
COLUMNS	GOOD	
FOOTINGS	NV	
BEARINGS	GOOD	
CRASH WALL	GOOD	(2) VERT. CRACK 1/8" FULL HEIGHT

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Bent No. 2

Date 2/22/2016
JV

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile



CAP	GOOD	RANDOM H.S. POPOUTS
COLUMNS	GOOD	
FOOTINGS	NV	
BEARINGS	GOOD	
CRASH WALL	GOOD	(1) VERT. CRACK 1/8" X 7' L

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Abutment No. 2

Date 2/22/2016
JV

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile

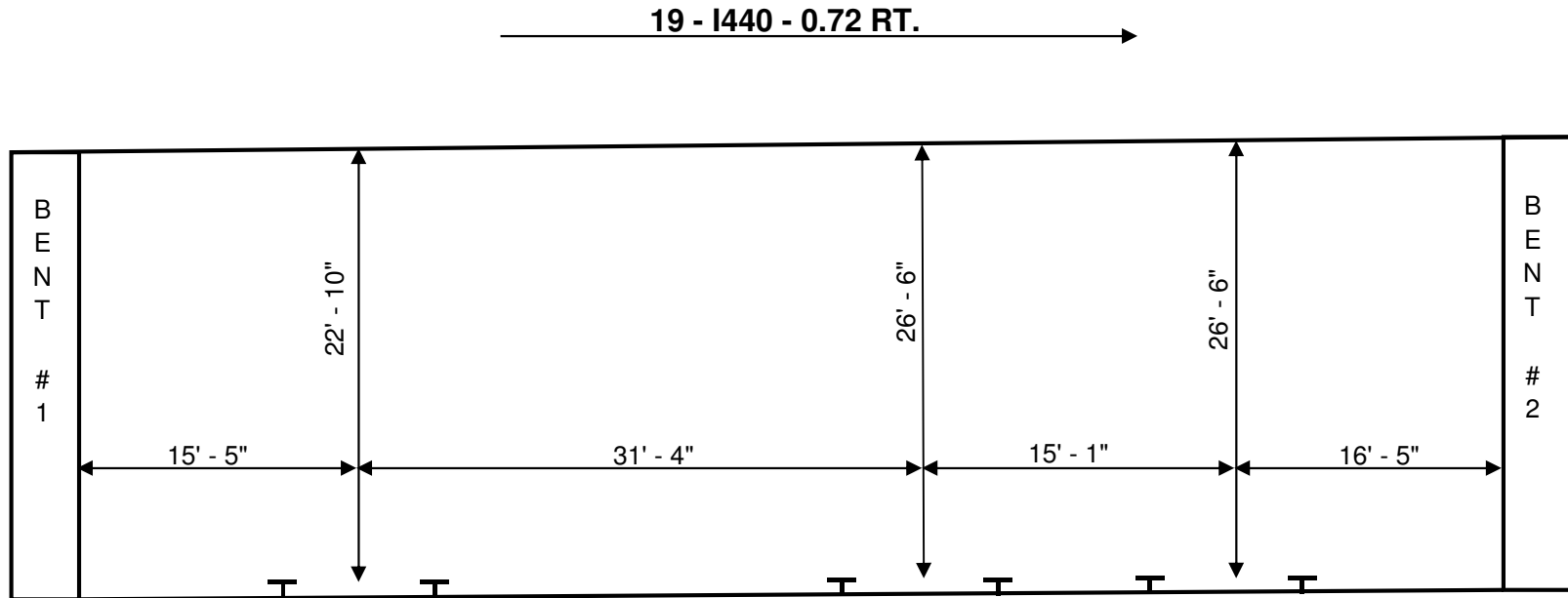


BACKWALL	GOOD	
CAP	GOOD	
WINGS	GOOD	
BEARINGS	GOOD	
EMBANKMENT	FAIR	(1) SETTLEMENT 6" H X 20' L W/1 EXP. PILE
PILES	GOOD	LIGHT CORROSION

CLEARANCE SKETCH

Date 2/22/2016

Bridge Location No. 19 I440 0.72 RT.
County Route Log Mile



S.S. R.R.

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